Appendix L

SD-01 Dewatering Press Package

AECOM

SHOP DRAWING DISTRIBUTION

PROJECT NAME:	WSTP - NEWPCC - Primary Clarifiers Supply of Rotary Press and Appurtenances	PAGE	1 of 1
		PROJECT NO.:	60661262
CONTRACTOR:	Fournier Industries Inc.	DATE:	
SUPPLIER/MANUFACTURER	Fournier Industries Inc.	DATE RECEIVED:	
DRAWING SUBJECT:	SD-01R3-Dewatering Scope of Supply-Control Narrative		

THIS SHEET MUST REMAIN WITH SHOP DRAWING. DO NOT DETACH!!

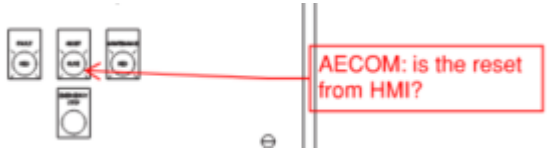
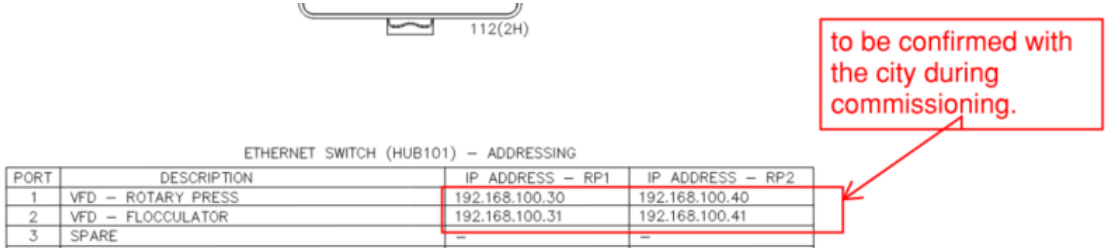
Distribution	**MK**	**NW**	**SB**				
Comments							

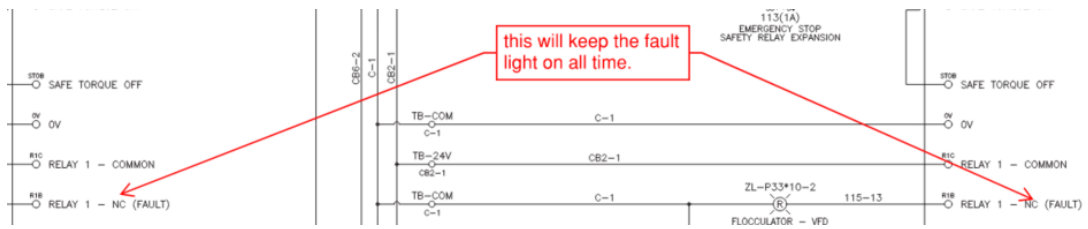
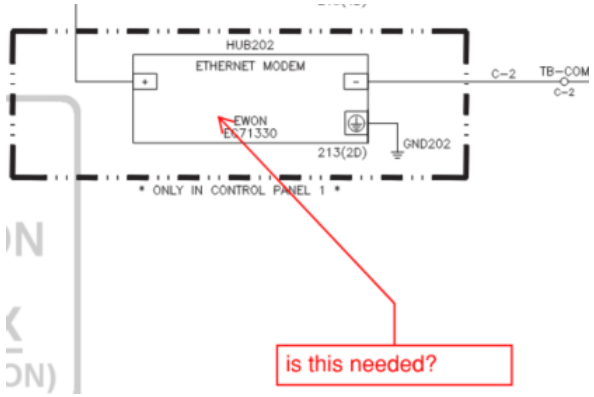
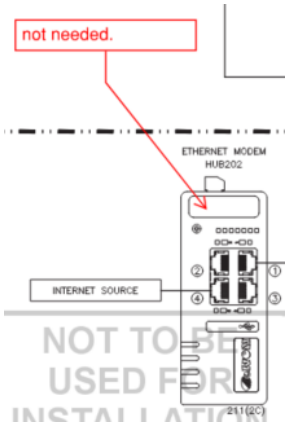
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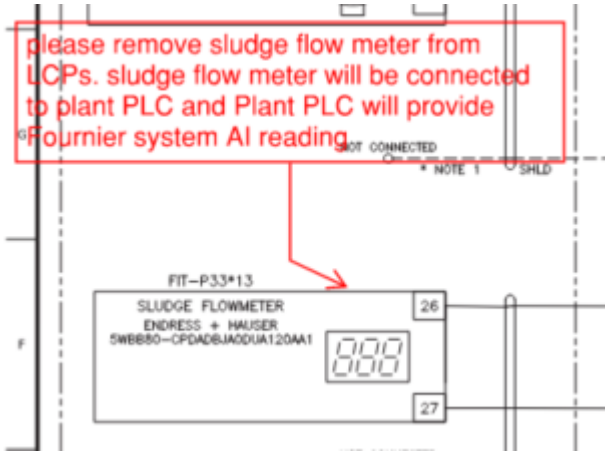
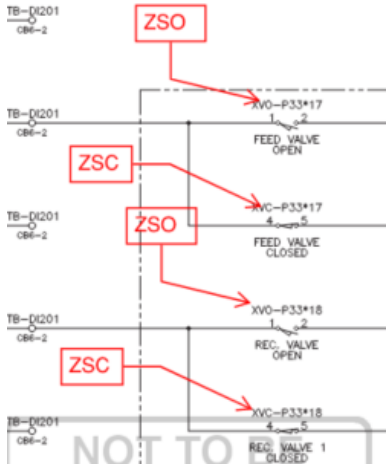
Submission No. : SD-01R3	SUBMITTAL REVIEW AECOM	
Project No. : 60661262	Discipline : Process Electrical	
	Reviewed - No Comment	Reviewed - Revise and Resubmit
X	Reviewed - As Noted	Review by Consultant Not Required
Review is solely for general conformity with contract. The Consultant does not warrant or represent that information in this submittal is accurate or complete. Review does not relieve Contractor of responsibility for errors/omissions in designs, including this submittal, that are the Contractor's responsibility, and for conforming/correlating with all quantities/dimensions, performing the Work, selecting performance means/methods, coordinating with other parts of the Work/between trades, and performing the Work safely. Notwithstanding this review, Contractor remains solely responsible for contract compliance.		
By : MK, SB	Date : August 09, 2024	

Project: Winnipeg, MB
February 26th, 2024

Document Name: SD-01R1-20240208-Dewatering Scope of Work-For approval Winnipeg, MB - rev01-RAR-20240215
Number of pages: 643
Received on: 15/02/2024

	Page	AECOM Comments	Fournier Answers
1	1	2) Original comment in "SD-01-Dewatering Scope of Work-RAR-20230801" asked to provide a Process Control Narrative. Please provide the document. Note that as discussed during initial stages the control should be based on controlling the flow via control valves FV P3311 and FV P33122 via magmeters FE P3311 and FE P3312 (not sludge pumps directly) since the sludge will flow in a loop.	Control Narrative will be provided i Revision 2. Flow is controlled via magmeters and a PID loop with the pump VFD. see review attached at the end of the document
2	28		This is for troubleshooting an remote access by Fournier. Th Ethernet module is in our star panel provision, and we highl recommend providing interne during the warranty period fo assistance. Remote access will be granted by the City IT team through the City network. It's acceptable to provide but it will not be used.
3	28		The reset is controlled by the PLC. This is the proper way to indicate/acknowledge the fault status of the system.
4	39		Noted.

5	40		This is the proper way to connect the fault signal contact from the VFD to the light. The VFD internal relay is programmed accordingly. noted
6	45		See comment 2, above. see comment above
7	47		Will be provided for troubleshooting and remote assistance. see comment above

8	48		Noted.
9	51		noted Tags will be revised.

DAVID COX, ing., P. Eng.
Ingénieur de procédés
Process Engineer

d.cox@fournierindustries.com
T: 418-423-4241 ext. 3560 I C: 418-334-1855

LES INDUSTRIES FOURNIER INC.
3787, boul. Frontenac O.
Thetford Mines Qc, Canada, G6H 2B5

Documents and shop drawings
For Approval

City of Winnipeg, Winnipeg, MB



Fournier Industries Inc.
3787, Frontenac Blvd. West,
Thetford Mines (Quebec) Canada, G6H 2B5
www.fournierindustries.com

Rev. 2
2024-02-26
F.Binette, P. Eng.

Table of contents

Section 1 : Mechanical drawings

Section 2 : Electrical drawings

Section 3 : Technical datasheets

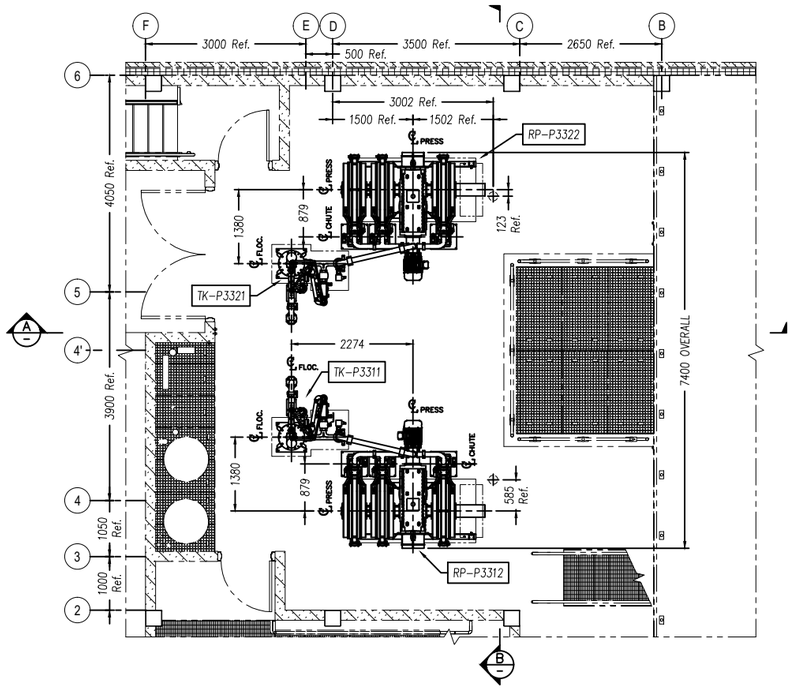
Section 4 : Other Documents

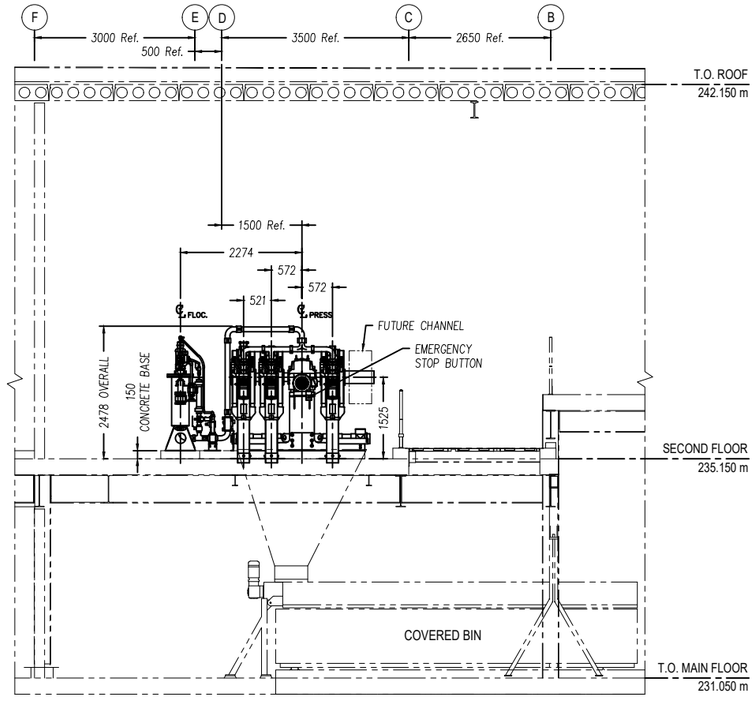
Section 1

Mechanical Drawings

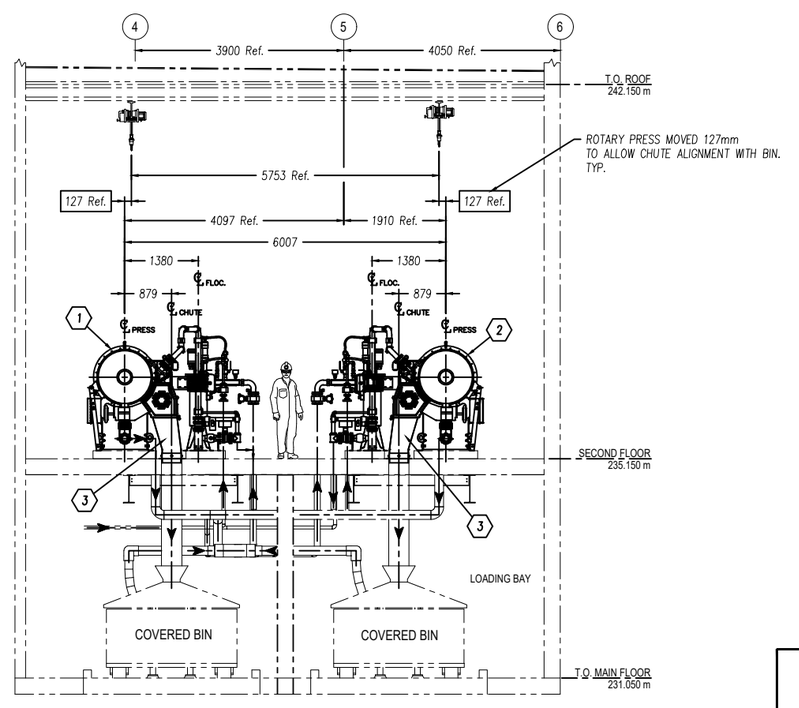
Mechanical Drawings

Sheet	Rev	Description
53371 1 of 1	Rev.00	Dewatering System - Rotary Press - Layout
53372 1 of 1	Rev.00	Dewatering System - Rotary Press #1 - General arrangement
53373 1 of 1	Rev.00	Dewatering System - Rotary Press #2 - General arrangement
53374 1 of 1	Rev.00	Dewatering System - Rotary #1 Press Assembly - Exploded view
53375 1 of 1	Rev.00	Dewatering System - Rotary #2 Press Assembly- Exploded view
53376 1 of 1	Rev.0	Dewatering System - Rotary Press #1 - Process diagram
53377 1 of 1	Rev.0	Dewatering System - Rotary Press #2 - Process diagram
53378 1 of 1	Rev.00	Dewatering System - Flocculator #1 - General arrangement
53379 1 of 1	Rev.00	Dewatering System - Flocculator #2- General arrangement
53380 1 of 1	Rev.00	Dewatering System - Piping arrangement - Flocculator #1 inlet section
53381 1 of 1	Rev.00	Dewatering System - Piping arrangement - Flocculator #2 inlet section
53382 1 of 1	Rev.00	Dewatering System - Piping arrangement - Flocculator #1 outlet section
53383 1 of 1	Rev.00	Dewatering System - Piping arrangement - Flocculator #2 outlet section
53384 1 of 1	Rev.00	Dewatering System - Rotary Press #1 - Cake chute arrangement
53385 1 of 1	Rev.00	Dewatering System - Rotary Press #2 - Cake chute arrangement
53388 1 of 1	Rev.00	Dewatering System - Rotary Press - Floor plan
53389 1 of 1	Rev.00	Dewatering System - Rotary Press - Channel assembly
STD-1417 1 of 1	Rev.00	Dewatering System - Rotary Press - Field pipe connection





SECTION A



SECTION B

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #1FI	AVIS/REV
1		1	ROTARY PRESS # 1 MODEL 3(4)-900/4000CVP-SS304	SS304L	5415	D-53372	
2		1	ROTARY PRESS # 2 MODEL 3(4)-900/4000CVP-SS304	SS304L	5415	D-53373	
3		6	CHUTE EXTENSION	SS304L	34		
4		1	LIQUID POLYMER SYSTEM ø1/2" (2 PUMPS) NOT SHOWN	SS	150	P-P3411 / P-P3412	
300		1	CONTROL PANEL C/W AIR COND. NOT SHOWN	STEEL	180		
301		1	SPARE PARTS NOT SHOWN				

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	11370	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53371 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8456

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

TOTAL WEIGHT:
11370 KG
25014 LBS

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 — FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM		SYSTÈME MÉTRIQUE / METRIC SYSTEM	
	0 - 36"		0 - 1000mm 1000mm +
FRACTION	± 1/16" ± 1/8"	ENTIER / INTEGER	± 1 mm ± 2mm
2 PLACES .XX	± .010"	1 PLACES .X	± .50 mm
3 PLACES .XXX	± .005"	2 PLACES .XX	± .25 mm
ANGLES	± 1/2°	3 PLACES .XXX	± .125 mm

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

THIS DRAWING AND ALL THE INFORMATION IT CONTAINS ARE THE EXCLUSIVE PROPERTY OF LES INDUSTRIES FOURNIER INC. IT IS STRICTLY FORBIDDEN TO COMMUNICATE OR USE THE INFORMATION FOR PURPOSES OTHER THAN THE ORIGINAL INTENDED ONES OR IF THE USE COULD BE HARMFUL TO THE INTERESTS OF LES INDUSTRIES FOURNIER INC. THIS DRAWING IN WHOLE OR IN PART MAY NOT BE REPRODUCED IN ANY FASHION AND HAS TO BE RETURNED TO LES INDUSTRIES FOURNIER INC. UPON REQUEST.

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	MONT	ELEC	EXPÉD						
ETAPES		1	2	3	4	5	6	7	8	9

23-8456

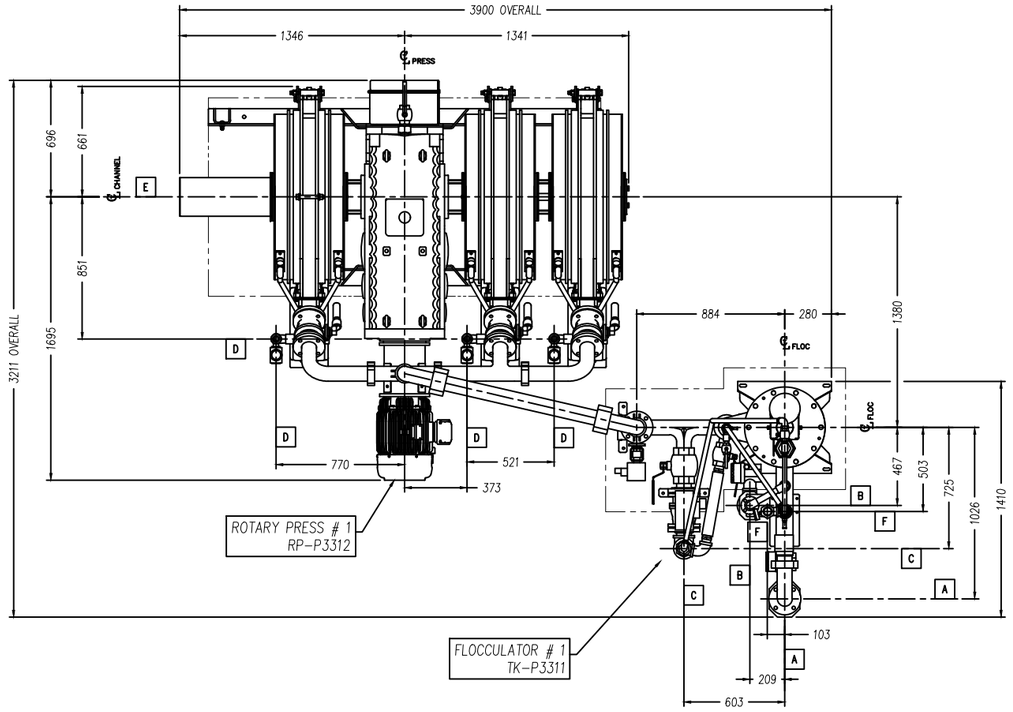
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

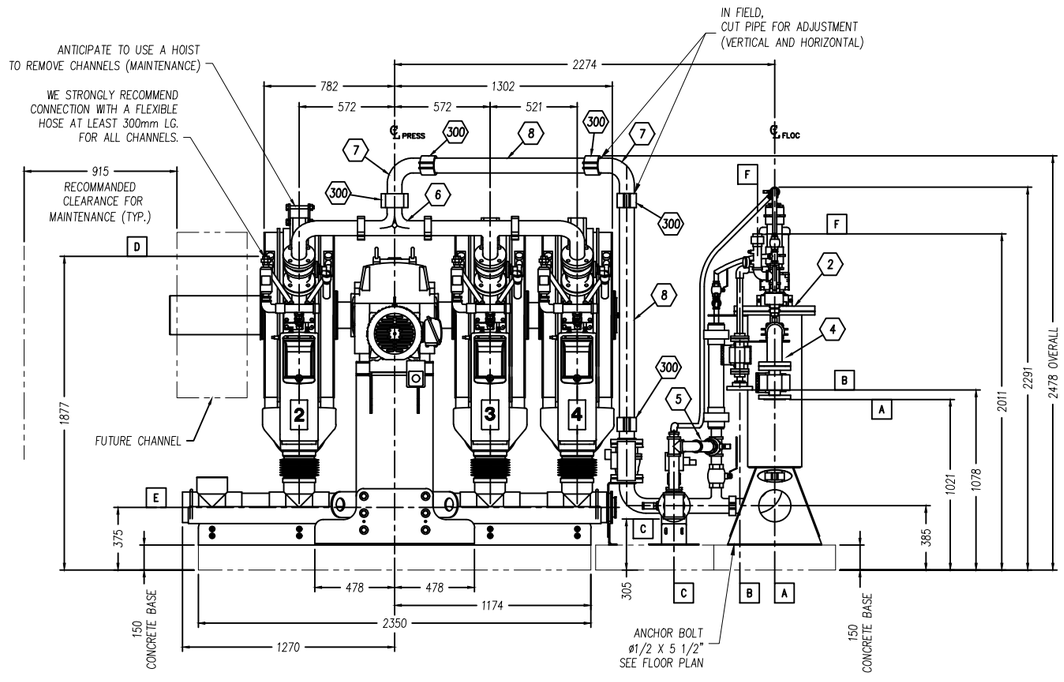
WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS ø900mm
LAYOUT
MODEL (2X) 3(4)-900/4000CVP-SS304

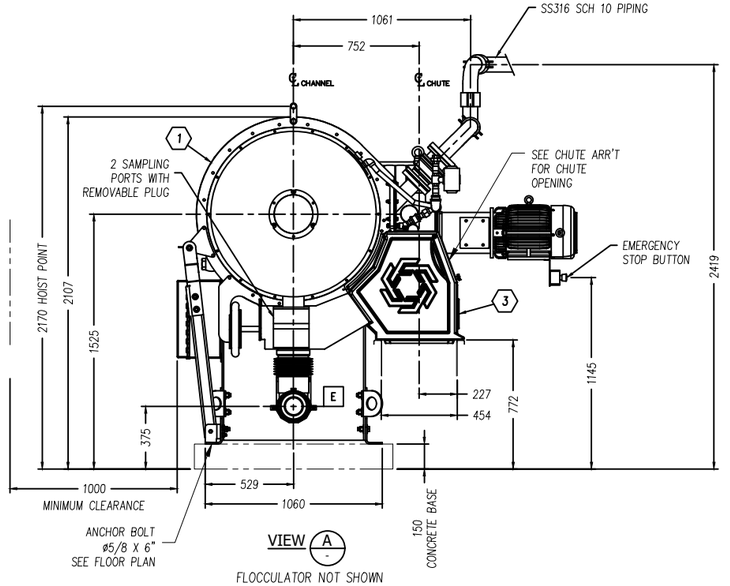
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M.BERNIER	E.GAMACHE	D. CLICHE	
Date 03-07-2023	Echelle / Scale 1:50	No Équipement du Client / Customer Equipment No.	

Grand./Size D | Dessin No / Drawing No. 53371 | Page/Sheet 1 of 1 | Révision 00

FQF084 (08-2017)







ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #1FI
1		1	ROTARY PRESS #1 EXPLODED VIEW	S.S.304L	4955	D-53374
			FLOOR PLAN			D-53388
			FLOW SHEET #1			D-53376
2		1	FLOCCULATOR #1 ASSEMBLY	STEEL	216	D-53378
3		3	CAKE CHUTE #1 ASSEMBLY	LLDPE	7	D-53384
4		1	FLOCCULATOR #1 INLET PIPING	S.S.316L	52	D-53380
5		1	FLOCCULATOR #1 OUTLET PIPING	S.S.316L	109	D-53382
6		1	MIDDLE MANIFOLD ø3"	S.S.316L	4	IFI-02314
7		2	ADJUSTING ELBOW 90°, ø3"	S.S.316L	3	IFI-01620
8		2	FEED PIPE ø3" X 80" (CUT TO SUIT)	S.S.316L	14	IFI-02464
300		5	RIGID UNION ø3", TYPE "ROUST-A-BOUT"	CAST IRON	4	VICTAULIC, STYLE 99 VI-99-3

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

- A — SLUDGE INLET ø76.2mm(ø3") (FLANGE)
- B — POLYMER INLET ø50.8mm(ø2")-(FLANGE)
- C — SLUDGE RECIRCULATION OUTLET ø76.2mm(ø3")-NPT
- D — WASH WATER INLET ø25.4mm(ø1")-NPT (3 PLACES) (ROTARY PRESS)
- E — FILTRATE OUTLET ø152.4mm(ø6") PIPE
- F — WASH WATER INLET ø38.1mm(ø1 1/2")-NPT (FLOCCULATOR)

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	5415	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53372 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8456

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

TOTAL WEIGHT: 11913 LBS (5415 Kg)

ESTIMATED SLUDGE WEIGHT: 671 LBS (305 Kg)

PIPING AND ACCESSORIES DESIGNED AND TESTED TO RESIST AT 103 kPa (15 PSI) HYDROSTATIC PRESSURE.

NOTES:
- *NOISE LEVEL: NOT EXCEED 75 dBA MEASURED AT 3 FEET FROM THE SOURCE.*
- *Fournier Industries Paint Procedure # 3*

Surface preparation:
Sand blasting according to SSPC-SP10 for the equipment.
Pickling SSPC-SP8 for the piping.

Primer:
Type: Epoxy resin (high-built)
Dry thickness: 6 mils minimum

Paint:
Type: Polyurethane
Dry thickness: 1.5 mls by layer (2 layers) = 3 mls minimum
Total thickness: 9 mls minimum
Color: Carbothane 134 HG Special Fournier Blue V111

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 — FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM			SYSTÈME MÉTRIQUE / METRIC SYSTEM		
	0 - 36"	36" +		0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"	=	1 PLACES .X	± .50 mm	=
3 PLACES .XXX	± .005"	=	2 PLACES .XX	± .25 mm	=
ANGLES	± 1/2°		3 PLACES .XXX	± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	MONT	ELEC							
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23-8456

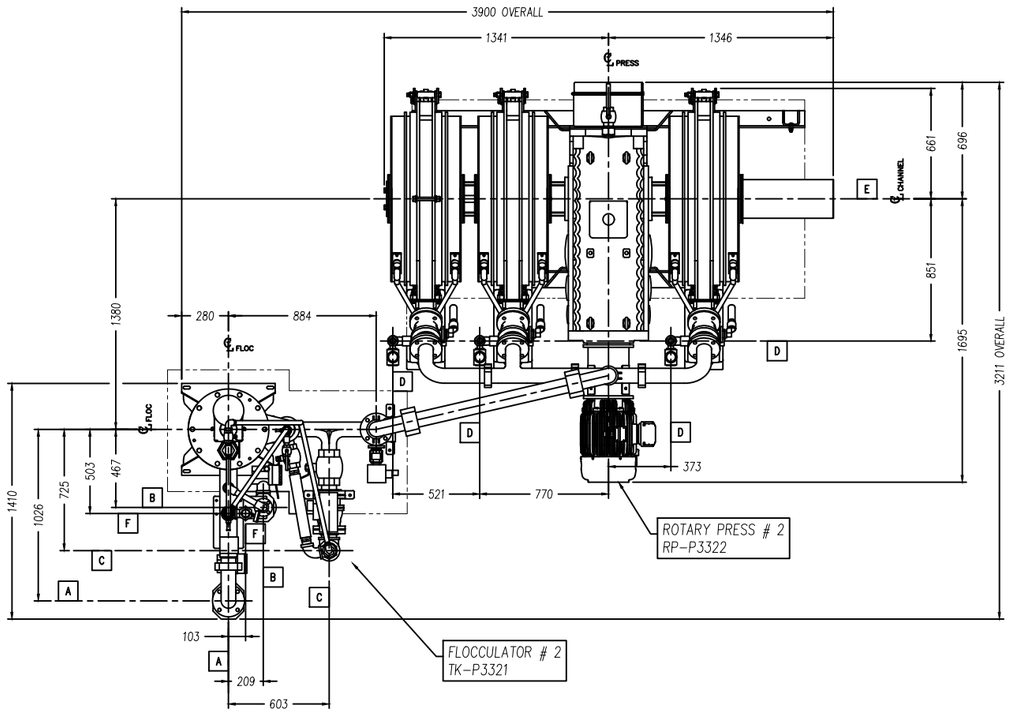
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LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

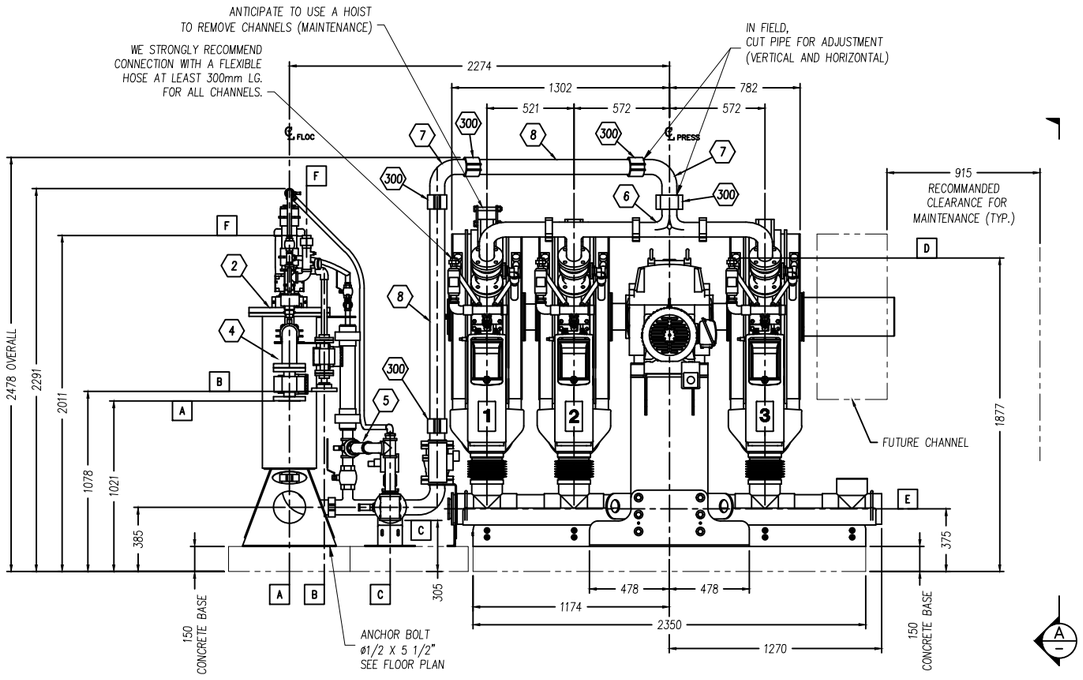
WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS ø900mm
GENERAL ARRANGEMENT ROTARY PRESS # 1
MODEL 3(4)-900/4000CVP-SS304

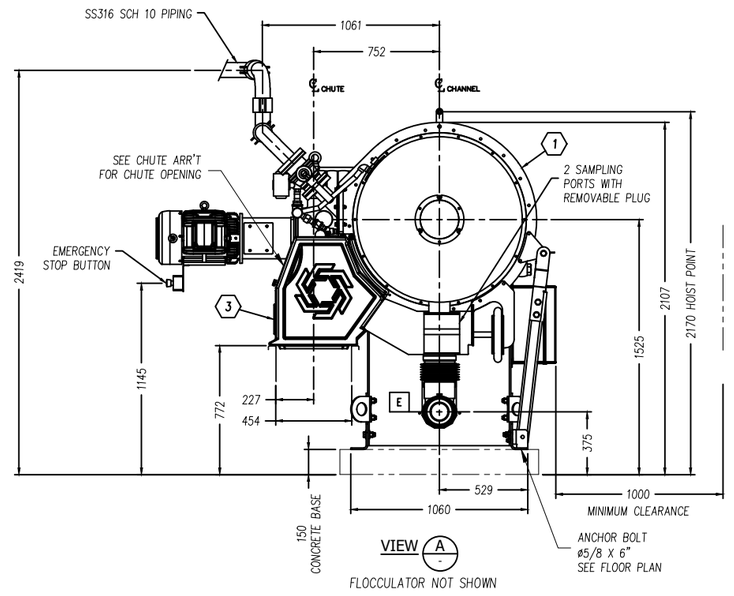
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	
Date: 28-06-2023	Echelle / Scale: 1:16	No Equipement du client / Customer Equipment No. RP-P3312 & TK-P3311	

Grand./Size D | Dessin No / Drawing No. 53372 | Page/Sheet 1 of 1 | Révision 00

FQF804 (06-2017)







ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #1FI
1		1	ROTARY PRESS #2 EXPLODED VIEW	S.S.304L	4955	D-53375
			FLOOR PLAN			D-53388
			FLOW SHEET #2			D-53377
2		1	FLOCCULATOR #2 ASSEMBLY	STEEL	216	D-53379
3		3	CAKE CHUTE #2 ASSEMBLY	LLDPE	7	D-53385
4		1	FLOCCULATOR #2 INLET PIPING	S.S.316L	52	D-53381
5		1	FLOCCULATOR #2 OUTLET PIPING	S.S.316L	109	D-53383
6		1	MIDDLE MANIFOLD ø3"	S.S.316L	4	IFI-02314
7		2	ADJUSTING ELBOW 90°, ø3"	S.S.316L	3	IFI-01620
8		2	FEED PIPE ø3" X 80" (CUT TO SUIT)	S.S.316L	14	IFI-02464
300		5	RIGID UNION ø3", TYPE "ROUST-A-BOUT"	CAST IRON	4	VICTAULIC, STYLE 99 VI-99-3

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

- A — SLUDGE INLET ø76.2mm(ø3") (FLANGE)
- B — POLYMER INLET ø50.8mm(ø2")-(FLANGE)
- C — SLUDGE RECIRCULATION OUTLET ø76.2mm(ø3")-NPT
- D — WASH WATER INLET ø25.4mm(ø1")-NPT (3 PLACES) (ROTARY PRESS)
- E — FILTRATE OUTLET ø152.4mm(ø6") PIPE
- F — WASH WATER INLET ø38.1mm(ø1 1/2")-NPT (FLOCCULATOR)

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	5415	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53373 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8457

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

TOTAL WEIGHT: 11913 LBS (5415 Kg)

ESTIMATED SLUDGE WEIGHT: 671 LBS (305 Kg)

PIPING AND ACCESSORIES DESIGNED AND TESTED TO RESIST AT 103 kPa (15 PSI) HYDROSTATIC PRESSURE.

NOTES:
-NOISE LEVEL: NOT EXCEED 75 dBA MEASURED AT 3 FEET FROM THE SOURCE.
- Fournier Industries Paint Procedure # 3

Surface preparation:
Sand blasting according to SSPC-SP10 for the equipment.
Pickling SSPC-SP8 for the piping.

Primer:
Type: Epoxy resin (high-built)
Dry thickness: 6 mils minimum

Paint:
Type: Polyurethane
Dry thickness: 1.5 mils by layer (2 layers) = 3 mils minimum
Total thickness: 9 mils minimum
Color: Carbothane 134 HG Special Fournier Blue V111

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION / PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 — Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM		SYSTÈME MÉTRIQUE / METRIC SYSTEM	
	0 - 36"		0 - 1000mm 1000mm +
FRACTION	± 1/16"	ENTIER / INTEGER	± 1 mm ± 2mm
2 PLACES .XX	± .010"	1 PLACES .X	± .50 mm
3 PLACES .XXX	± .005"	2 PLACES .XX	± .25 mm
ANGLES	± 1/2°	3 PLACES .XXX	± .125 mm

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

THIS DRAWING AND ALL THE INFORMATION IT CONTAINS ARE THE EXCLUSIVE PROPERTY OF LES INDUSTRIES FOURNIER INC. IT IS STRICTLY FORBIDDEN TO COMMUNICATE OR USE THE INFORMATION AS IT IMPLIES, OTHER THAN THE PURPOSE FOR WHICH IT WAS SENT, WITHOUT THE PRIOR WRITTEN CONSENT OF LES INDUSTRIES FOURNIER INC. THIS DRAWING IN WHOLE OR IN PART MAY NOT BE REPRODUCED IN ANY FASHION AND HAS TO BE RETURNED TO LES INDUSTRIES FOURNIER INC. UPON REQUEST.

CE DESSIN ET TOUTES LES INFORMATIONS QU'IL CONTIENT SONT LA PROPRIÉTÉ EXCLUSIVE DE LES INDUSTRIES FOURNIER INC. IL EST STRICTEMENT INTERDIT DE COMMUNIQUER OU UTILISER SON CONTENU À D'AUTRES FINS QUE CELLES PRÉVUES CI-DESSUS/AUTREMENT OU POUVANT ÊTRE PRÉJUDICIABLES AUX INTÉRÊTS DE LES INDUSTRIES FOURNIER INC. TOUTE REPRODUCTION DE CE DESSIN EST INTERDITE ET IL DOIT ÊTRE RETOURNÉ SUR DEMANDE.

Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	MONT	ELEC							
ETAPES		1	2	3	4	5	6	7	8	9

23-8457

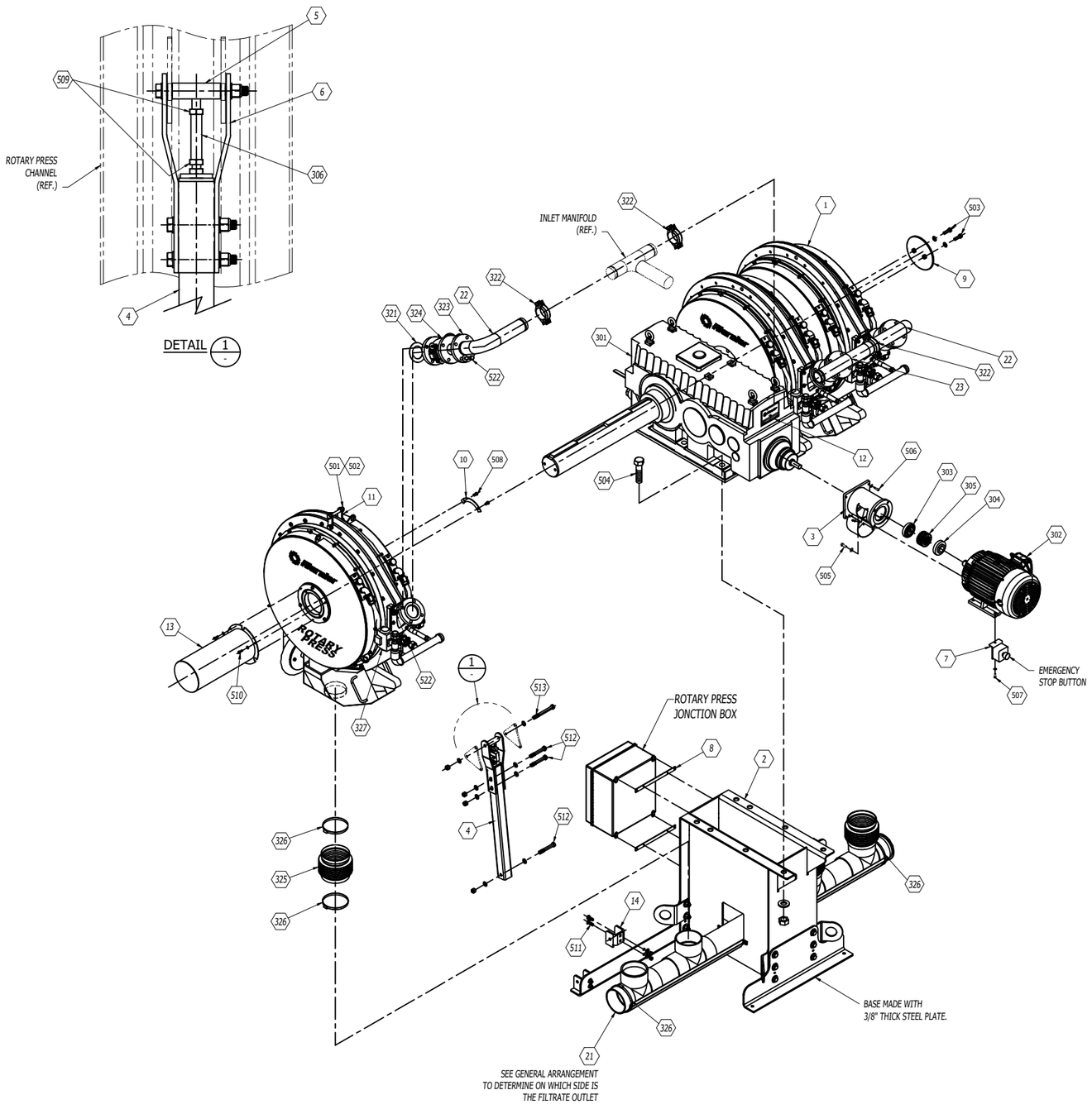
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS ø900mm
GENERAL ARRANGEMENT ROTARY PRESS # 2
MODEL 3(4)-900/4000CVP-SS304

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	
Date: 28-06-2023	Echelle / Scale: 1:16	No Equipement / Item / Article / Item No.: RP-P3322 & TK-P3321	

Grand./Size D | Dessin No / Drawing No. 53373 | Page/Sheet 1 of 1 | Révision 00

FQF084 (06-2017)



ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI
1		3	CONCENTRIC MODULE MODEL #1-900/1000CVP - SS304L			IFI-02552
2		1	REDUCER BASE	STEEL		
3		1	BELL HOUSING 254TC VS M5RSF60	STEEL		
4		3	LOWER LOADCELL MOUNTING	STEEL		
5		3	UPPER LOADCELL MOUNTING	S.S.316L		
6		3	LOADCELL PROTECTOR	STEEL		
7		1	EMERGENCY STOP BUTTON SUPPORT	S.S.304L		IFI-02112
8		2	JONCTION BOX SUPPORT	S.S.304L		IFI-02123
9		1	CAP PLATE	S.S.316L		53374-9
10		2	KEY LOCK	S.S.316L		IFI-02537
11		2	LIFTING DEVICE	S.S.316L		IFI-01856
12		1	ROTARY PRESS NAME PLATE	ALUMINUM		
13		1	SPEED REDUCER GUARD	S.S.304L		
14		4	ANTI-ROTATION ARM SUPPORT	S.S.304L		IFI-02440
301		1	SPEED REDUCER, RATIO 1560:1			SEW EURODRIVE #M5RSF60
302		1	ELEC. MOTOR 15 HP, 1800 RPM, 575/3/60 Hz,			TECO-WESTINGHOUSE PDH0154C
			254TC, TEFC, CLASS "F" INSULATION - C-FLANGE			
303		1	HALF COUPLING, BORE Ø30mm, KEYWAY 8mm x 3.3mm	CAST IRON		MARTIN #6S x Ø30mm
304		1	HALF COUPLING, Ø1 5/8", KEYWAY 3/8"x 3/16"	CAST IRON		MARTIN #6S x Ø1 5/8"
305		1	SLEEVE, TYPE H	HYTREL		MARTIN #6H
306		3	LOADCELL 0-5000 LBS	NICKEL PLATED		ANYLOAD #101NH-5KLB
501		2	HEX. BOLT M20 x 2.5 - 150mm LG	S.S.316L		
502		2	HEX. NUT M20 x 2.5 NYLON INSERT	S.S.316L		
503		2	HEX. BOLT M16 x 2 - 50mm LG	S.S.316L		C/W FLAT WASHER
504		8	HEX. BOLT M30 x 3.5 - 140mm LG	ZINC PLATED		C/W 1 HN, 1 FW
505		4	HEX. BOLT 1/2"-13NC - 1 1/4" LG	S.S.316L		C/W 1 LOCK WASHER
506		4	HEX. BOLT M12 x 1.75 - 40mm LG	S.S.316L		C/W 1 FLAT WASHER
507		1	HEX. BOLT M10 x 1.5 - 25mm LG	S.S.316L		C/W 1 HN, 1 FW
508		4	SOCKET HEAD CAP SCREW M16 x 2 - 25mm LG	S.S.316L		
509		6	THIN HEX. NUT 3/4"-16NF	S.S.316L		
510		3	HEX. BOLT M10 x 1.5 - 25mm LG	S.S.316L		C/W 1 LOCK WASHER
511		8	CARRIAGE BOLT 1/2-13nc - 1 3/4" LG	S.S.316L		C/W 1 NYLON NUT & 1 FW
512		9	HEX. BOLT 3/4"-10NC - 5 1/2" LG	S.S.316L		C/W 1 NYLON NUT & 2 FW
513		3	HEX. BOLT 3/4"-10NC - 7 1/2" LG	S.S.316L		C/W 1 NYLON NUT & 2 FW
			PIPING PARTS			
21		1	FILTRATE MANIFOLD Ø152.4mm [Ø6"]	PVC		53374-21
22		2	ELBOW INLET MANIFOLD Ø76.2mm [Ø3"]	S.S.316L		IFI-01917
23		1	TEE INLET MANIFOLD Ø76.2mm [Ø3"]	S.S.316L		IFI-01871
321		3	GASKET FOR FLANGE Ø76.2mm [Ø3"]	SBR		IFI-01722
322		3	FLEXIBLE COUPLING Ø76.2mm [Ø3"]			VICTAULIC STYLE 77
323		3	FLANGE, CLASS 150# Ø76.2mm [Ø3"]			VICTAULIC STYLE 741
324		3	BALL VALVE FULL PORT FLANGE Ø76.2mm [Ø3"]	CAST IRON		IFI-02077-2017
325		3	ROUND BELLOWS	RUBBER		IFI-02559
326		8	Ø145mm TO Ø195mm HOSE CLAMP	S.S.316L		TRIDON #HAS-128
327		3	PNEUMATIC VALVE Ø25.4mm [Ø1"]	S.S.		FESTO #13117333
522		24	HEX. BOLT 5/8"-11NC x 3" LG.	S.S.316L		C/W 1 HN, 2 FW

ROTARY PRESS #1
RP-P3312

- CONCENTRIC MODULE WEIGHT: 818 Kg (1800 lbs) / MODULE
- REDUCER WEIGHT: 1795 Kg. (3950 lbs) WITH 22 GALLONS OF OIL
- BASE WEIGHT: 312 Kg. (686 lbs)
- INLET MANIFOLD PIPING WEIGHT: 85 Kg. (187 lbs)

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	4955	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size: D | Dessin No / Drawing No.: 53374 | Page/Sheet: 1 of 1 | Révision: 00

No Projet / Project No.: 2023-11911 | No Production / Job No.: 23-8456

LÉGENDE/LEGEND
1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

-NOISE LEVEL: NOT EXCEED 75 dBA MEASURED AT 3 FEET FROM THE SOURCE.

- Fournier Industries Paint Procedure # 3

Surface preparation:
Sand blasting according to SSPC-SP10 for the equipment.
Pickling SSPC-SP8 for the piping.

Primer:
Type: Epoxy resin (high-built)
Dry thickness: 6 mls minimum

Paint:
Type: Polyurethane
Dry thickness: 1.5 mls by layer (2 layers) = 3 mls minimum
Total thickness: 9 mls minimum
Color: Carbothane 134 HG Special Fournier Blue V111

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION / PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 / FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM			SYSTÈME MÉTRIQUE / METRIC SYSTEM		
	0 - 36"	36" +		0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"	=	1 PLACES .X	± .50 mm	=
3 PLACES .XXX	± .005"	=	2 PLACES .XX	± .25 mm	=
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm	=

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	MONT	ELEC							
ETAPES		1	2	3	4	5	6	7	8	9

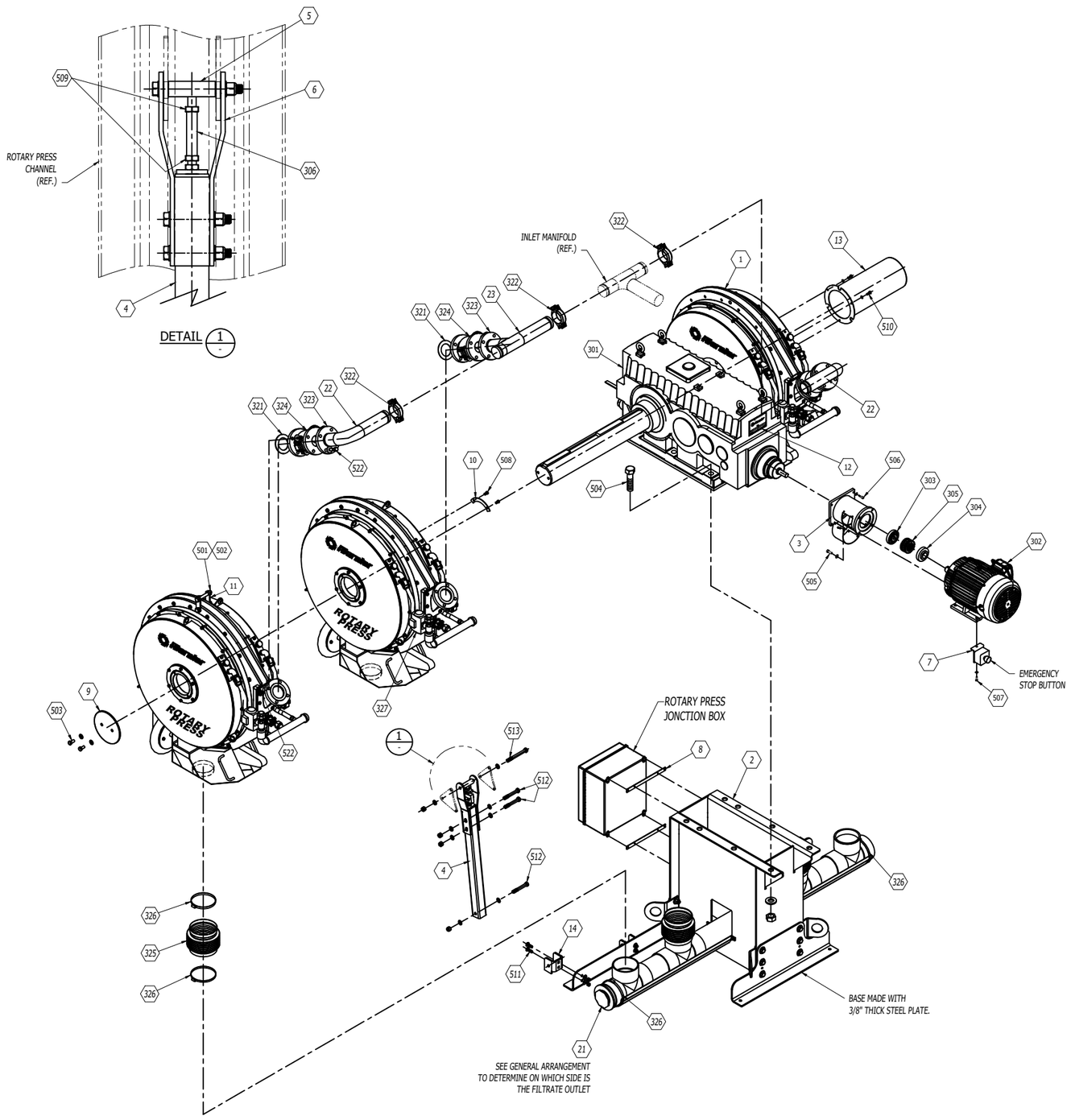
23-8456

FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS Ø900mm
ROTARY PRESS #1 RP-P3312 - EXPLODED VIEW
MODEL 3(4)-900/4000CVP - SS304L

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
S. LEBEL	E. GAMACHE	D. CLICHE	
Date: 27/06/2023	Echelle / Scale: 1:15	No Équipement du Client / Customer Equipment No.: RP-P3312	

Grand./Size: D | Dessin No / Drawing No.: 53374 | Page/Sheet: 1 of 1 | Révision: 00



- CONCENTRIC MODULE WEIGHT: 818 Kg (1800 lbs) / MODULE
- REDUCER WEIGHT: 1795 Kg. (3950 lbs) WITH 22 GALLONS OF OIL
- BASE WEIGHT: 312 Kg. (686 lbs)
- INLET MANIFOLD PIPING WEIGHT: 85 Kg. (187 lbs)

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #1FI
1		3	CONCENTRIC MODULE MODEL #1-900/1000CVP - SS304L			1FI-02552
2		1	REDUCER BASE	STEEL		
3		1	BELL HOUSING 254TC VS M5RSF60	STEEL		
4		3	LOWER LOADCELL MOUNTING	STEEL		
5		3	UPPER LOADCELL MOUNTING	S.S.316L		
6		3	LOADCELL PROTECTOR	STEEL		
7		1	EMERGENCY STOP BUTTON SUPPORT	S.S.304L		1FI-02112
8		2	JONCTION BOX SUPPORT	S.S.304L		1FI-02123
9		1	CAP PLATE	S.S.316L		53375-9
10		2	KEY LOCK	S.S.316L		1FI-02537
11		2	LIFTING DEVICE	S.S.316L		1FI-01856
12		1	ROTARY PRESS NAME PLATE	ALUMINUM		
13		1	SPEED REDUCER GUARD	S.S.304L		
14		4	ANTI-ROTATION ARM SUPPORT	S.S.304L		1FI-02440
301		1	SPEED REDUCER, RATIO 1560:1			SEW EURODRIVE #M5RSF60
302		1	ELEC. MOTOR 15 HP, 1800 RPM, 575/3/60 Hz,			TECO-WESTINGHOUSE PDH0154C
			254TC, TEFC, CLASS "F" INSULATION - C-FLANGE			
303		1	HALF COUPLING, BORE Ø30mm, KEYWAY 8mm x 3.3mm	CAST IRON		MARTIN #6S x Ø30mm
304		1	HALF COUPLING, Ø1 5/8", KEYWAY 3/8"x 3/16"	CAST IRON		MARTIN #6S x Ø1 5/8"
305		1	SLEEVE, TYPE H	HYTREL		MARTIN #6H
306		3	LOADCELL 0-5000 LBS	NICKEL PLATED		ANYLOAD #101NH-5KLB
501		2	HEX. BOLT M20 x 2.5 - 150mm LG	S.S.316L		
502		2	HEX. NUT M20 x 2.5 NYLON INSERT	S.S.316L		
503		2	HEX. BOLT M16 x 2 - 50mm LG	S.S.316L		C/W FLAT WASHER
504		8	HEX. BOLT M30 x 3.5 - 140mm LG	ZINC PLATED		C/W 1 HN, 1 FW
505		4	HEX. BOLT 1/2"-13NC - 1 1/4" LG	S.S.316L		C/W 1 LOCK WASHER
506		4	HEX. BOLT M12 x 1.75 - 40mm LG	S.S.316L		C/W 1 FLAT WASHER
507		1	HEX. BOLT M10 x 1.5 - 25mm LG	S.S.316L		C/W 1 HN, 1 FW
508		4	SOCKET HEAD CAP SCREW M16 x 2 - 25mm LG	S.S.316L		
509		6	THIN HEX. NUT 3/4"-16NF	S.S.316L		
510		3	HEX. BOLT M10 x 1.5 - 25mm LG	S.S.316L		C/W 1 LOCK WASHER
511		8	CARRIAGE BOLT 1/2-13nc - 1 3/4" LG	S.S.316L		C/W 1 NYLON NUT & 1 FW
512		9	HEX. BOLT 3/4"-10NC - 5 1/2" LG	S.S.316L		C/W 1 NYLON NUT & 2 FW
513		3	HEX. BOLT 3/4"-10NC - 7 1/2" LG	S.S.316L		C/W 1 NYLON NUT & 2 FW
			PIPING PARTS			
21		1	FILTRATE MANIFOLD Ø152.4mm [Ø6"]	PVC		53375-21
22		2	ELBOW INLET MANIFOLD Ø76.2mm [Ø3"]	S.S.316L		1FI-01917
23		1	TEE INLET MANIFOLD Ø76.2mm [Ø3"]	S.S.316L		1FI-01871
321		3	GASKET FOR FLANGE Ø76.2mm [Ø3"]	SBR		1FI-01722
322		3	FLEXIBLE COUPLING Ø76.2mm [Ø3"]			VICTAULIC STYLE 77
323		3	FLANGE, CLASS 150# Ø76.2mm [Ø3"]			VICTAULIC STYLE 741
324		3	BALL VALVE FULL PORT FLANGE Ø76.2mm [Ø3"]	CAST IRON		1FI-02077-2017
325		3	ROUND BELLOWS	RUBBER		1FI-02559
326		8	Ø145mm TO Ø195mm HOSE CLAMP	S.S.316L		TRIDON #HAS-128
327		3	PNEUMATIC VALVE Ø25.4mm [Ø1"]	S.S.		FESTO #13117333
522		24	HEX. BOLT 5/8"-11NC x 3" LG.	S.S.316L		C/W 1 HN, 2 FW

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	4955	REQUIS TOTAL TOTAL REQ'D	1

ROTARY PRESS #2
RP-P3322

Grand./Size: D | Dessin No / Drawing No.: 53375 | Page/Sheet: 1 of 1 | Révision: 00

No Projet / Project No.: 2023-11911 | No Production / Job No.: 23-8457

LÉGENDE/LEGEND
1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

-NOISE LEVEL: NOT EXCEED 75 dBA MEASURED AT 3 FEET FROM THE SOURCE.

- Fournier Industries Paint Procedure # 3

Surface preparation:
Sand blasting according to SSPC-SP10 for the equipment.
Pickling SSPC-SP8 for the piping.

Primer:
Type: Epoxy resin (high-built)
Dry thickness: 6 mls minimum

Paint:
Type: Polyurethane
Dry thickness: 1.5 mls by layer (2 layers) = 3 mls minimum
Total thickness: 9 mls minimum
Color: Carbothane 134 HG Special Fournier Blue V111

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINITION 125

Tolérances sauf indications contraires/Tolerances unless otherwise stated
SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM — SYSTÈME MÉTRIQUE / METRIC SYSTEM

FRACTION	0 - 36"	36" +		0 - 1000mm	1000mm +
2 PLACES .XX	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
3 PLACES .XXX	± .010"		1 PLACES .X	± .50 mm	
ANGLES	± .005"		2 PLACES .XX	± .25 mm	
		± 1/2°	3 PLACES .XXX	± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	MONT	ELEC							
ETAPES		1	2	3	4	5	6	7	8	9

23-8457

FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS Ø900mm
ROTARY PRESS #2 RP-P3322 - EXPLODED VIEW
MODEL 3(4)-900/4000CVP - SS304L

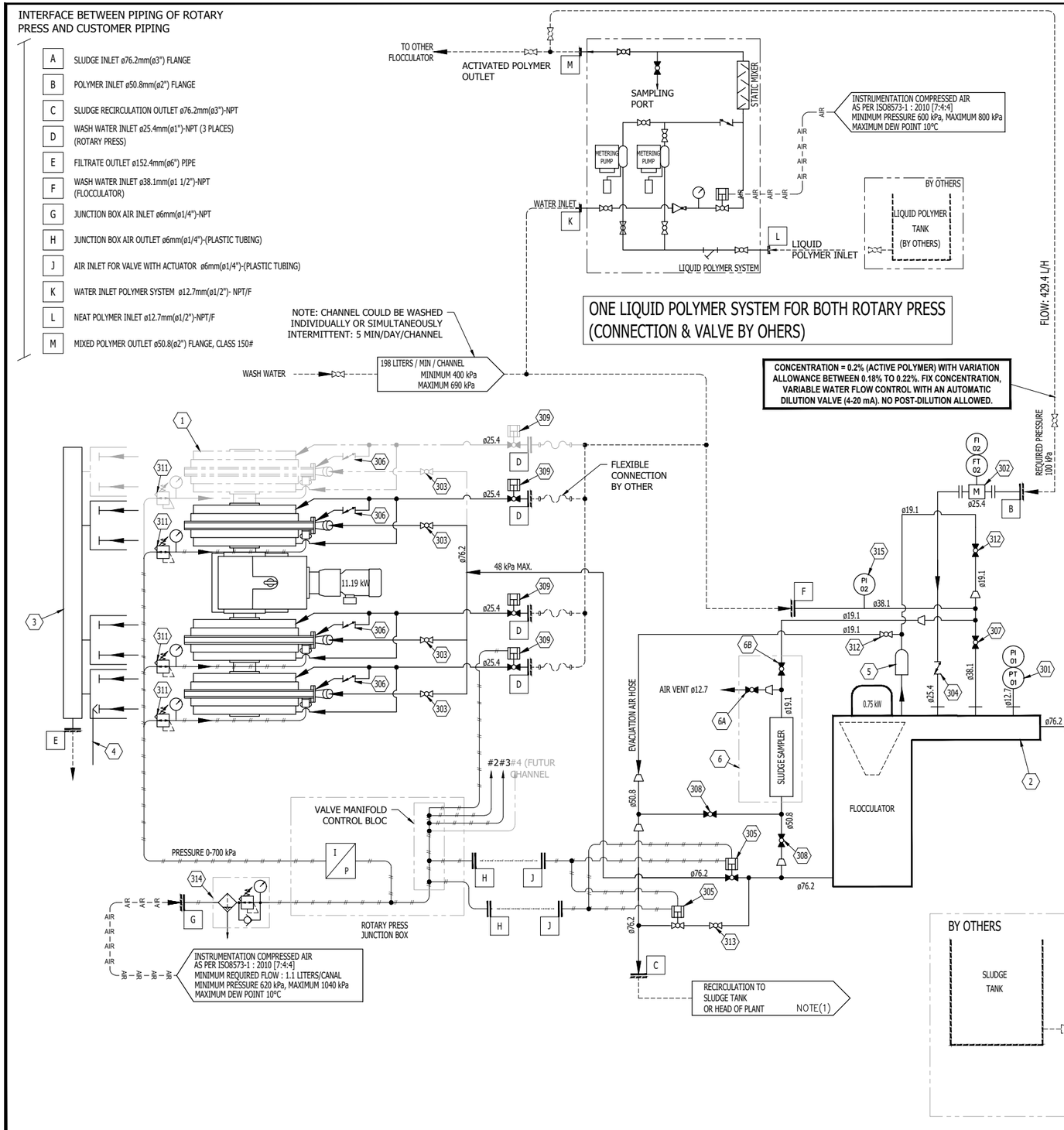
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IPI / IPI No.
S. LEBEL	E. GAMACHE	D. CLICHE	
Date: 27/06/2023	Échelle / Scale: 1:15	No Équipement du Client / Customer Equipment No.: RP-P3322	

Grand./Size: D | Dessin No / Drawing No.: 53375 | Page/Sheet: 1 of 1 | Révision: 00

FQF004 (06-2017)

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

A	SLUDGE INLET ø76.2mm(ø3") FLANGE
B	POLYMER INLET ø50.8mm(ø2") FLANGE
C	SLUDGE RECIRCULATION OUTLET ø76.2mm(ø3")-NPT
D	WASH WATER INLET ø25.4mm(ø1")-NPT (3 PLACES) (ROTARY PRESS)
E	FILTRATE OUTLET ø152.4mm(ø6") PIPE
F	WASH WATER INLET ø38.1mm(ø1 1/2")-NPT (FLOCCULATOR)
G	JUNCTION BOX AIR INLET ø6mm(ø1/4")-NPT
H	JUNCTION BOX AIR OUTLET ø6mm(ø1/4")-(PLASTIC TUBING)
J	AIR INLET FOR VALVE WITH ACTUATOR ø6mm(ø1/4")-(PLASTIC TUBING)
K	WATER INLET POLYMER SYSTEM ø12.7mm(ø1/2")- NPT/F
L	NEAT POLYMER INLET ø12.7mm(ø1/2")-NPT/F
M	MIXED POLYMER OUTLET ø50.8(ø2") FLANGE, CLASS 150#



ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI
1		1	ROTARY PRESS #3(4)-900/4000CVP SS304			
			WITH VARIABLE SPEED MOTOR 11.19 kW (15 HP)			
2		1	FLOCCULATOR MODEL #20-300-900			
			WITH VARIABLE SPEED MOTOR 0.75 kW (1 HP)			
3		1	FILTRATE MANIFOLD	PVC		
4		1	FILTRATE SAMPLER			IFI-01903
5		1	AIR BLEEDER Ø51mm (Ø2")	PVC		IFI-01719
6		1	SLUDGE SAMPLER			IFI-01522
6A		1	FULL PORT BALL VALVE Ø13mm (Ø1/2") NPT	S.S.		C.F.F. MODEL 1/2" SS-2
6B		1	FULL PORT BALL VALVE Ø19mm (Ø3/4") NPT	S.S.		C.F.F. MODEL 3/4" SS-2
301		1	PRESSURE TRANSMITTER, 4-20 mA	S.S.		E&H CERABAR S PMC71B
302		1	POLYMER FLOWMETER, Ø25mm (Ø1") 24 VOLTS			E&H MODEL #5WB825-24V
303		3	FULL PORT BALL VALVE, Ø76mm (Ø3") FLANGED	CAST IRON		AMERICAN VALVE 4000
304		1	CHECK VALVE Ø25mm (Ø1") NPT, CLASS 150#			IFC #1"SC6000TSSSSM
305		2	FULL PORT BALL VALVE , Ø76mm (Ø3") FLANGED	CAST IRON		AMERICAN VALVE 4000
			C/W PNEUMATIC ACTUATOR			FESTO 13117330, 13117331
306		3	CHECK VALVE Ø19mm (Ø3/4") NPT, CLASS 150#			IFC #3/4"SC6000TSSSSM
307		1	FULL PORT BALL VALVE Ø38mm (Ø1 1/2") NPT	S.S.		C.F.F. MODEL 1 1/2" SS-2
308		2	FULL PORT BALL VALVE Ø51mm (Ø2") NPT	S.S.		C.F.F. MODEL 2" SS-2
309		3	PNEUMATIC FULL PORT BALL VALVE Ø25mm (Ø1")	S.S.		FESTO #13117333
310		1	SLUDGE FLOWMETER, Ø76mm (Ø3") 24 VOLTS			E&H MODEL #5WB880-24V
311		3	PRESSURE REGULATOR			FESTO VPPE
312		2	FULL PORT BALL VALVE Ø19mm (Ø3/4") NPT	S.S.		C.F.F. MODEL 3/4" SS-2
313		1	FULL PORT BALL VALVE Ø76mm (Ø3") NPT	S.S.		C.F.F. MODEL 3" SS-2
314		1	AIR FILTER / REGULATOR WITH AUTMOMATED DRAIN			FESTO 527694
315		1	PRESSURE GAUGE 0-160 PSI	S.S.		ROYAL #SSG-2502-160
316		1	FOURNIER LIQUID POLYMER SYSTEM			POLYSYS-1/2-120V
317		1	POLYMER PUMP HEAD (POLYMER SYSTEM SPARE)			WM-RENU30
318		1	FITTING HOSEBARB ø12.7(ø1/2) (POLYMER SYSTEM SPARE)			INT-OM9.401H.P05

NOTES GÉNÉRALES/GENERAL NOTES

NOTE (1):THIS LINE SHALL BE DRAINED BY GRAVITY TO ALLOW THE DRAINAGE OF THE SLUDGE SAMPLER.

-SCHEDULE 80 PVC FOR POLYMER PIPING
-SCHEDULE 10 SS FOR SLUDGE PIPING

- - - - - - - - : PIPING SUPPLY BY OTHERS.
// // // // : AIR TUBE SUPPLY AND INSTALLED BY FOURNIER.
AIR AIR AIR AIR : AIR TUBE SUPPLY & INSTALLED BY OTHER.
. . . . . : AIR TUBE SUPPLY BY FOURNIER INSTALLED BY OTHER.

LEGEND
FI: FLOW INDICATOR
FT: FLOW TRANSMITTER
PI: PRESSURE INDICATOR
PT: PRESSURE TRANSMITTER
PS: PRESSURE SWITCH

LÉGENDE/LEGEND
1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	0	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53376 | Page/Sheet 1 of 1 | Révision 0
No Projet / Project No. 2023-11911 | No Production / Job No. 23-8457

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION / PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 — Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM		SYSTÈME MÉTRIQUE / METRIC SYSTEM	
	0 - 36"		0 - 1000mm 1000mm +
	36" +		
FRACTION	± 1/16" ± 1/8"	ENTIER / INTEGER	± 1 mm ± 2mm
2 PLACES .XX	± .010"	1 PLACES .X	± .50 mm
3 PLACES .XXX	± .005"	2 PLACES .XX	± .25 mm
ANGLES	± 1/2°	3 PLACES .XXX	± .125 mm

FINITION SURFACE — Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

WINNIPEG, MA
DEWATERING SYSTEM
ROTARY PRESS ø36"
PROCESS DIAGRAM #1
MODEL 3(4)-900/4000CVP SS304

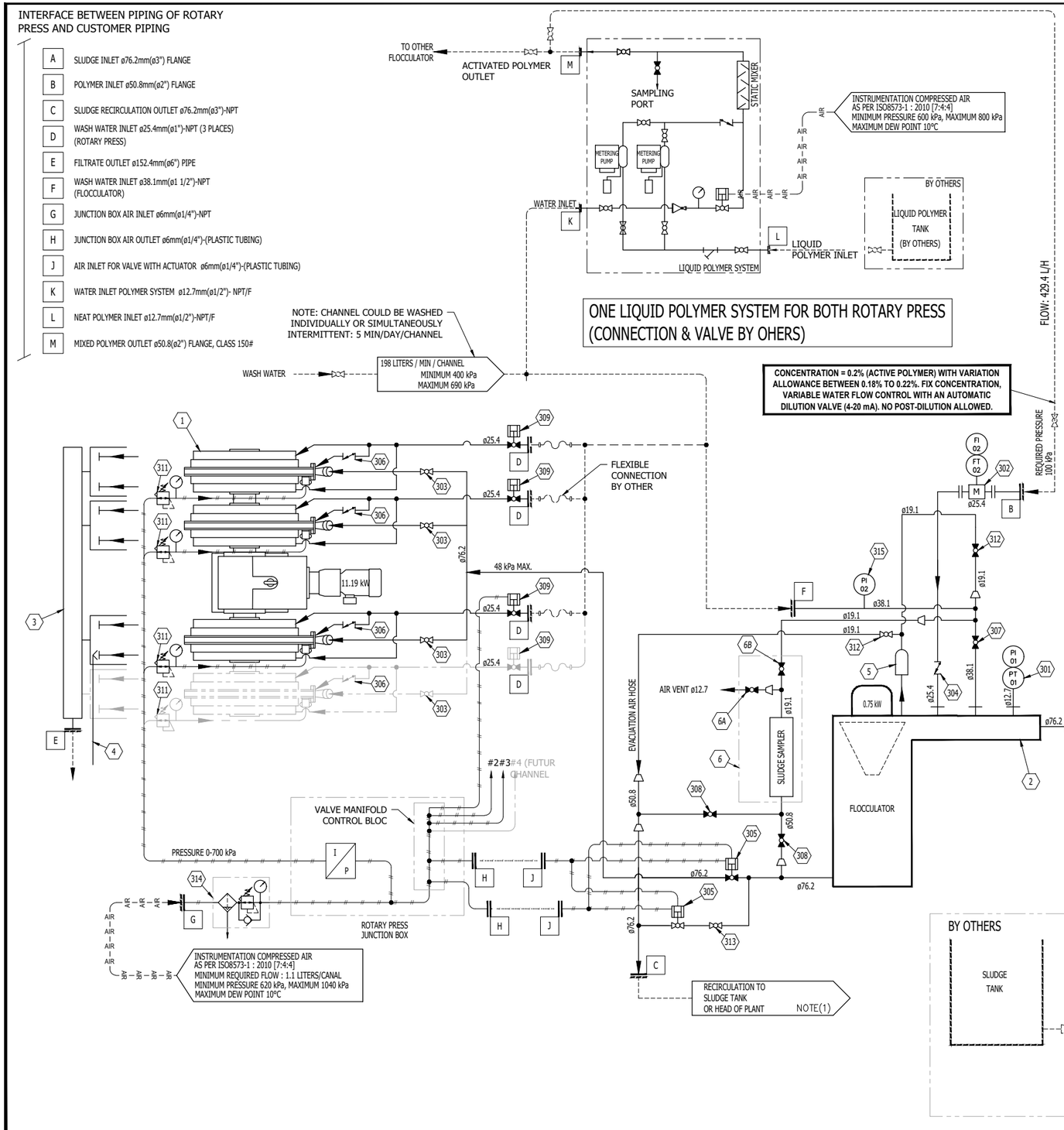
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
J.LESSARD	E.GAMACHE	A.DORVAL	
Date 26-06-2023	Echelle / Scale -----	No Équipement du Client / Customer Equipment No.	

Grand./Size D | Dessin No / Drawing No. 53376 | Page/Sheet 1 of 1 | Revision 0

FQF084 (06-2017)

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

A	SLUDGE INLET ø76.2mm(ø3") FLANGE
B	POLYMER INLET ø50.8mm(ø2") FLANGE
C	SLUDGE RECIRCULATION OUTLET ø76.2mm(ø3")-NPT
D	WASH WATER INLET ø25.4mm(ø1")-NPT (3 PLACES) (ROTARY PRESS)
E	FILTRATE OUTLET ø152.4mm(ø6") PIPE
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ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #1FI	AVANT AVIS
1		1	ROTARY PRESS #3(4)-900/4000CVP SS304				
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2		1	FLOCCULATOR MODEL #20-300-900				
			WITH VARIABLE SPEED MOTOR 0.75 kW (1 HP)				
3		1	FILTRATE MANIFOLD	PVC			
4		1	FILTRATE SAMPLER			IFI-01903	
5		1	AIR BLEEDER Ø51mm (Ø2")	PVC		IFI-01719	
6		1	SLUDGE SAMPLER			IFI-01522	
6A		1	FULL PORT BALL VALVE Ø13mm (Ø1/2") NPT	S.S.		C.F.F. MODEL 1/2" SS-2	
6B		1	FULL PORT BALL VALVE Ø19mm (Ø3/4") NPT	S.S.		C.F.F. MODEL 3/4" SS-2	
301		1	PRESSURE TRANSMITTER, 4-20 mA	S.S.		E&H CERABAR S PMC71B	
302		1	POLYMER FLOWMETER, Ø25mm (Ø1") 24 VOLTS			E&H MODEL #5WB825-24V	
303		3	FULL PORT BALL VALVE, Ø76mm (Ø3") FLANGED	CAST IRON		AMERICAN VALVE 4000	
304		1	CHECK VALVE Ø25mm (Ø1") NPT, CLASS 150#			IFC #1"SC6000TSSSSM	
305		2	FULL PORT BALL VALVE , Ø76mm (Ø3") FLANGED	CAST IRON		AMERICAN VALVE 4000	
			C/W PNEUMATIC ACTUATOR			FESTO 13117330, 13117331	
306		3	CHECK VALVE Ø19mm (Ø3/4") NPT, CLASS 150#			IFC #3/4"SC6000TSSSSM	
307		1	FULL PORT BALL VALVE Ø38mm (Ø1 1/2") NPT	S.S.		C.F.F. MODEL 1 1/2" SS-2	
308		2	FULL PORT BALL VALVE Ø51mm (Ø2") NPT	S.S.		C.F.F. MODEL 2" SS-2	
309		3	PNEUMATIC FULL PORT BALL VALVE Ø25mm (Ø1")	S.S.		FESTO #13117333	
310		1	SLUDGE FLOWMETER, Ø76mm (Ø3") 24 VOLTS			E&H MODEL #5WB880-24V	
311		3	PRESSURE REGULATOR			FESTO VPPE	
312		2	FULL PORT BALL VALVE Ø19mm (Ø3/4") NPT	S.S.		C.F.F. MODEL 3/4" SS-2	
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314		1	AIR FILTER / REGULATOR WITH AUTMOMATED DRAIN			FESTO 527694	
315		1	PRESSURE GAUGE 0-160 PSI	S.S.		ROYAL #SSG-2502-160	
316		1	FOURNIER LIQUID POLYMER SYSTEM			POLYSYS-1/2-120V	
317		1	POLYMER PUMP HEAD (POLYMER SYSTEM SPARE)			WM-RENU30	
318		1	FITTING HOSEBARB ø12.7(ø1/2) (POLYMER SYSTEM SPARE)			INT-OM9.401H.P05	

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PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	0	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53377 | Page/Sheet 1 of 1 | Révision 0

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8459

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

NOTE (1):THIS LINE SHALL BE DRAINED BY GRAVITY TO ALLOW THE DRAINAGE OF THE SLUDGE SAMPLER.

-SCHEDULE 80 PVC FOR POLYMER PIPING
-SCHEDULE 10 SS FOR SLUDGE PIPING

: PIPING SUPPLY BY OTHERS.
: AIR TUBE SUPPLY AND INSTALLED BY FOURNIER.
: AIR TUBE SUPPLY & INSTALLED BY OTHER.
: AIR TUBE SUPPLY BY FOURNIER INSTALLED BY OTHER.

LEGEND
FI: FLOW INDICATOR
FT: FLOW TRANSMITTER
PI: PRESSURE INDICATOR
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PS: PRESSURE SWITCH

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION / PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 / FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM		SYSTÈME MÉTRIQUE / METRIC SYSTEM	
	0 - 30°		0 - 1000mm 1000mm +
	30° +		
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER ± 1 mm ± 2mm
2 PLACES .XX	± .010"		1 PLACES .X ± .50 mm
3 PLACES .XXX	± .005"		2 PLACES .XX ± .25 mm
ANGLES	± 1/2°		3 PLACES .XXX ± .125 mm

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

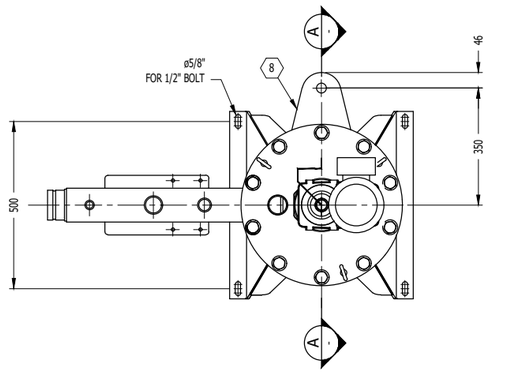
FOURNIER INDUSTRIES INC.
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3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

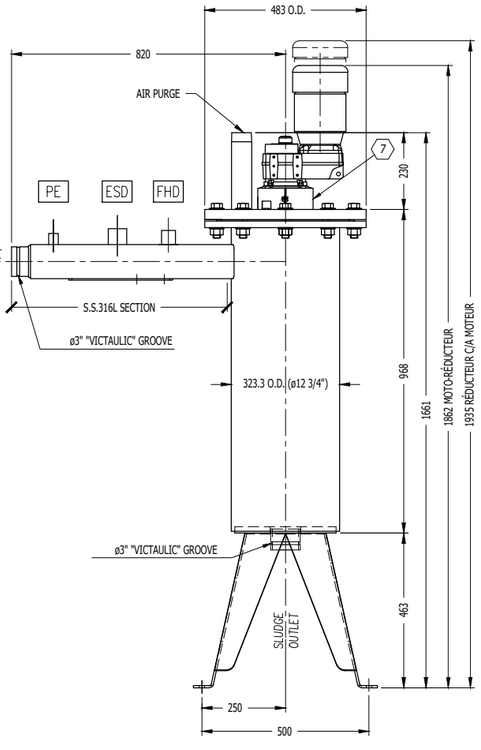
WINNIPEG, MA
DEWATERING SYSTEM
ROTARY PRESS ø36"
PROCESS DIAGRAM #2
MODEL 3(4)-900/4000CVP SS304

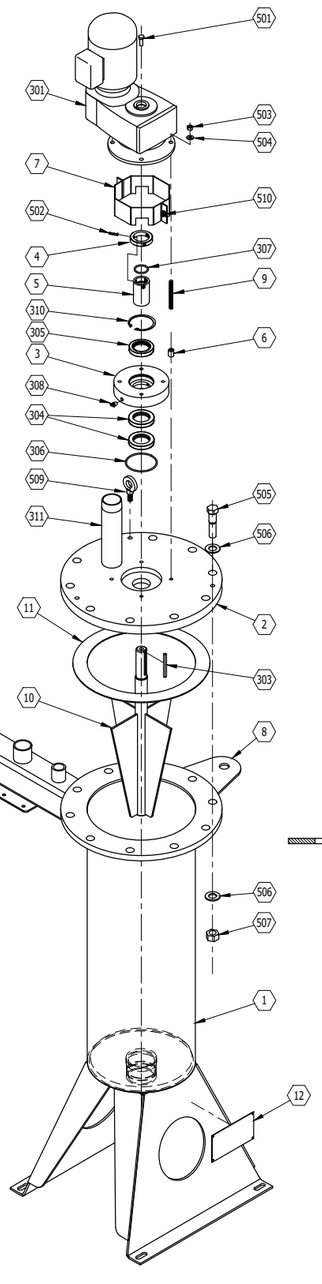
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
J.LESSARD	E.GAMACHE	A.DORVAL	
Date 26-06-2023	Échelle / Scale -----	No Équipement du Client / Customer Equipment No.	

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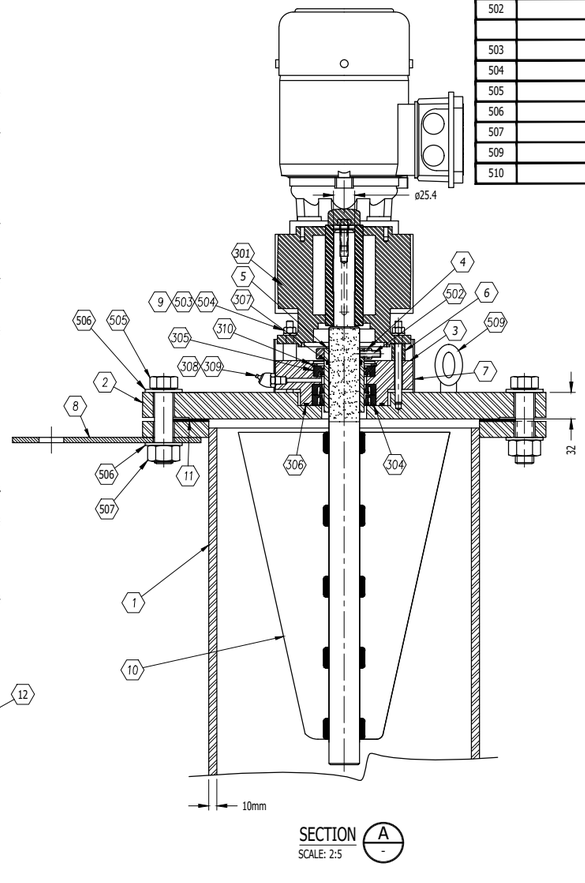
FQF084 (06-2017)







EXPLODED VIEW



SECTION A
SCALE: 2:5

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI
1		1	TANK	STEEL		IFI-01825
2		1	COVER	STEEL		IFI-02395
3		1	HOUSING SEAL	STEEL		IFI-01229
4		1	COLLAR	S.S.316L		IFI-01742
5		1	WEAR SLEEVE, FINISH 16 RMS, NITRIDING	S.S.316L		IFI-00832
6		4	SPACER	S.S.316L		IFI-01264
7		1	SHAFT GUARD	S.S.316L		IFI-02457
8		1	SAMPLER SUPPORT	S.S.316		IFI-01927
9		4	THREADED ROD M8 x 1.25 - 100mm LG	S.S.316L		IFI-01743
10		1	AGITATOR	S.S.316L		IFI-02404
11		1	COVER GASKET	SBR		IFI-00685
12		1	IDENTIFICATION PLATE			IFI-00686
301		1	GEAR MOTOR, HOLLOW SHAFT ø1"			NORD #SK0282.1 AXFBH
			MOTOR SPEED 1750 RPM, RATIO 4.79:1,			-80LP/4
			0.75 kW (1 HP), 575/3/60			
303		1	KEY 1/4" X 1/4" - 3"LG	C1020		
304		2	SHAFT SEAL, TYPE LUP ø1.875" X ø3.000"			IFI-00690
305		1	SHAFT SEAL, TYPE LDS ø1.875" X ø2.890"			IFI-00691
306		1	"O" RING ø0.139" X I.D. 3.484"	BUNA-N		JTO-2-238-70B
307		1	"O" RING ø0.139" X I.D. 1.421"	BUNA-N		JTO-2-221-70B
308		1	GREASE FITTING 30°, 1/8" NPT	PLATED		ALE-1611-BKP
309		1	RELIEF FITTING, 1/8" NPT	PLATED		ALE-47200KP
310		1	INTERNAL RETAINING RING ø73mm	S.S.		IFI-00987
311		1	ø2" NPT X 10" NIPPLE SCH.40	S.S.316		117817
501		1	HEX. BOLT ø3/8"-16NC - 1"LG	S.S.316		102111KP
502		3	SOCKET HEAD SET SCREW "CUP POINT"	S.S.316		107615KP
			M8 x 1.25 - 25mm LG			
503		4	HEX. NUT M8 x 1.25	S.S.316		100574KP
504		4	LOCK WASHER M8 NOM.	S.S.316		100566KP
505		10	HEX. BOLT M22 x 2.5 - 90mm LG	S.S.316		104246KP
506		20	FLAT WASHER M22 NOM.	S.S.316		117930KP
507		10	HEX. NUT M22 x 2.5	S.S.316		107614KP
509		3	EYE BOLT M12 x 1.75	S.S.		104403KP
510		2	HEX. BOLT M6 x 1.0 - 20mm LG	S.S.316		C/W 1 HN, 1 FW

FLOCCULATOR # 1
TK-P3311

NOTES:

- Flocculator, gear reducer and motor will be painted with the following specifications:

Surface preparation:
Sand blasting according to SSPC-SP10 for the equipment.

Primer:
Type: Epoxy resin (high-built) Carboguard 893 (outside)
Epoxy resin (high-built) Plasite 7122 (inside)
Dry thickness: 6 mls minimum

Paint:
Type: Polyurethane
Dry thickness: 1.5 mls by layer (2 layers) = 3 mls minimum
Total thickness: 9 mls minimum
Color: Carbothane 134 HG Special Fournier Blue V111

During the installation of the wiring for the electric motor, please provide an additional 2 meters of wire to allow the disassembly of the flocculator cover without disconnecting the electric motor.

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	216	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53378 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8458

LÉGENDE/LEGEND
1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

FHD COUPLING ø1"–NPT FOR POLYMER PIPE ø1"

ESD COUPLING ø1 1/2"–NPT FOR CLEANING WATER PIPE ø1 1/2"

PE COUPLING ø1/2"–NPT FOR PRESSURE TRANSMITTER

VOLUME: 65 Liters
DESIGN FOR 15 PSI AT 60°C MAX.
DRY WEIGHT: 216 Kg.

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH / FINITION SURFACE 125

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM			SYSTÈME MÉTRIQUE / METRIC SYSTEM		
	0 - 36"	36" +		0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"		1 PLACES .X	± .50 mm	
3 PLACES .XXX	± .005"		2 PLACES .XX	± .25 mm	
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	INVENT	GREN	PEINT	MONT	ELEC				
ETAPES		1	2	3	4	5	6	7	8	9

23-8458

Fournier
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

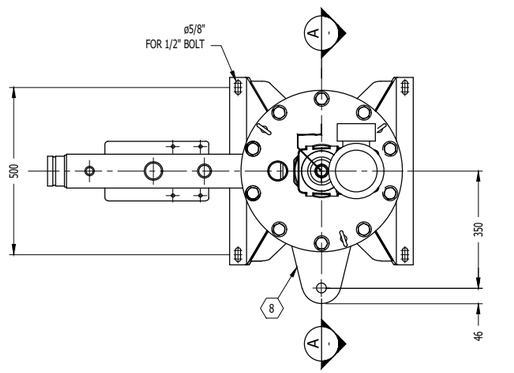
WINNIPEG, MB
DEWATERING SYSTEM

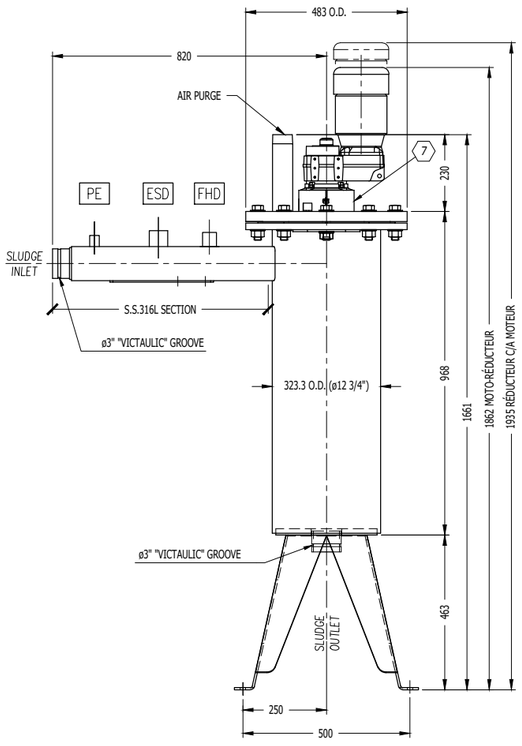
FLOCCULATOR # 1 TK-P3311 MODEL 20-300-900
GENERAL ARRANGEMENT

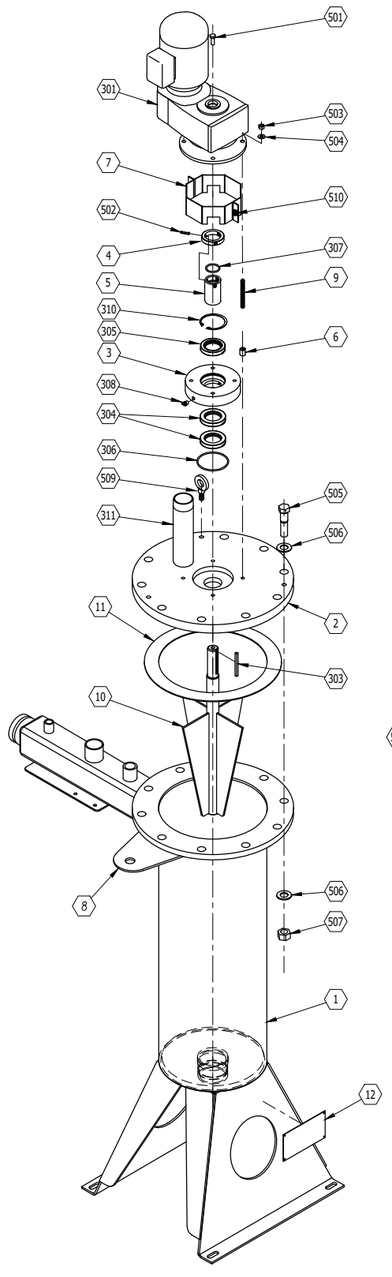
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No
M.BERNIER	E.GAMACHE	D. CLICHE	IFI-02403
Date: 27-06-2023	Echelle / Scale: 1 1/2"=12"	No Équipement du Client / Customer Equipment No.: TK-P3311	

Grand./Size D | Dessin No / Drawing No. 53378 | Page/Sheet 1 of 1 | Révision 00

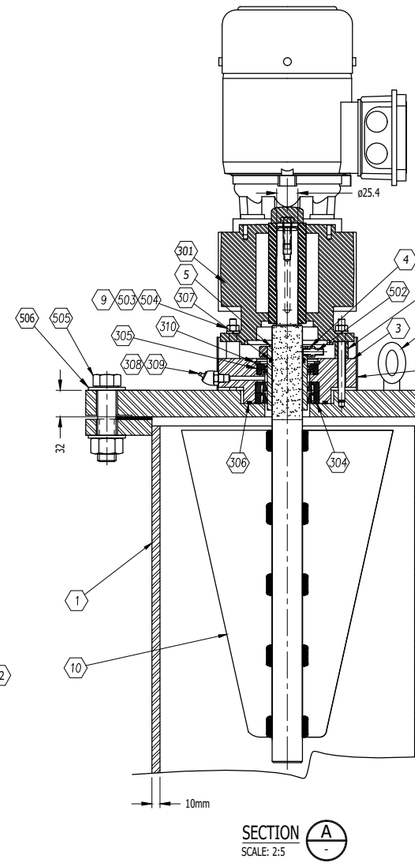
FQF084 (06-2017)







EXPLODED VIEW



SECTION A
SCALE: 2:5

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI
1		1	TANK	STEEL		IFI-01825
2		1	COVER	STEEL		IFI-02395
3		1	HOUSING SEAL	STEEL		IFI-01229
4		1	COLLAR	S.S.316L		IFI-01742
5		1	WEAR SLEEVE, FINISH 16 RMS, NITRIDING	S.S.316L		IFI-00832
6		4	SPACER	S.S.316L		IFI-01264
7		1	SHAFT GUARD	S.S.316L		IFI-02457
8		1	SAMPLER SUPPORT	S.S.316		IFI-01927
9		4	THREADED ROD M8 x 1.25 - 100mm LG	S.S.316L		IFI-01743
10		1	AGITATOR	S.S.316L		IFI-02404
11		1	COVER GASKET	SBR		IFI-00685
12		1	IDENTIFICATION PLATE			IFI-00686
301		1	GEAR MOTOR, HOLLOW SHAFT ø1"			NORD #SK0282.1 AXFBH
			MOTOR SPEED 1750 RPM, RATIO 4.79:1,			-80LP/4
			0.75 kW (1 HP), 575/3/60			
303		1	KEY 1/4" X 1/4" - 3"LG	C1020		
304		2	SHAFT SEAL, TYPE LUP ø1.875" X ø3.000"			IFI-00690
305		1	SHAFT SEAL, TYPE LDS ø1.875" X ø2.890"			IFI-00691
306		1	"O" RING ø0.139" X I.D. 3.484"	BUNA-N		JTO-2-238-70B
307		1	"O" RING ø0.139" X I.D. 1.421"	BUNA-N		JTO-2-221-70B
308		1	GREASE FITTING 30°, 1/8" NPT	PLATED		ALE-1611-BKP
309		1	RELIEF FITTING, 1/8" NPT	PLATED		ALE-47200KP
310		1	INTERNAL RETAINING RING ø73mm	S.S.		IFI-00987
311		1	ø2" NPT X 10" NIPPLE SCH.40	S.S.316		117817
501		1	HEX. BOLT ø3/8"-16NC - 1"LG	S.S.316		102111KP
502		3	SOCKET HEAD SET SCREW "CUP POINT"	S.S.316		107615KP
			M8 x 1.25 - 25mm LG			
503		4	HEX. NUT M8 x 1.25	S.S.316		100574KP
504		4	LOCK WASHER M8 NOM.	S.S.316		100566KP
505		10	HEX. BOLT M22 x 2.5 - 90mm LG	S.S.316		104246KP
506		20	FLAT WASHER M22 NOM.	S.S.316		117930KP
507		10	HEX. NUT M22 x 2.5	S.S.316		107614KP
509		3	EYE BOLT M12 x 1.75	S.S.		104403KP
510		2	HEX. BOLT M6 x 1.0 - 20mm LG	S.S.316		C/W 1 HN, 1 FW

FLOCCULATOR # 2
TK-P3321

NOTES:

- Flocculator, gear reducer and motor will be painted with the following specifications:

Surface preparation:
Sand blasting according to SSPC-SP10 for the equipment.

Primer:
Type: Epoxy resin (high-built) Carboguard 893 (outside)
Epoxy resin (high-built) Plasite 7122 (inside)
Dry thickness: 6 mls minimum

Paint:
Type: Polyurethane
Dry thickness: 1.5 mls by layer (2 layers) = 3 mils minimum
Total thickness: 9 mils minimum
Color: Carbothane 134 HG Special Fournier Blue V111

During the installation of the wiring for the electric motor, please provide an additional 2 meters of wire to allow the disassembly of the flocculator cover without disconnecting the electric motor.

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	216	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53379 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8459

LÉGENDE/LEGEND
1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

FHD COUPLING ø1"–NPT FOR POLYMER PIPE ø1"

ESD COUPLING ø1 1/2"–NPT FOR CLEANING WATER PIPE ø1 1/2"

PE COUPLING ø1/2"–NPT FOR PRESSURE TRANSMITTER

VOLUME: 65 Liters
DESIGN FOR 15 PSI AT 60°C MAX.
DRY WEIGHT: 216 Kg.

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION / PROJECTION TROISIÈME ANGLE

SURFACE FINISH 125 FINITION SURFACE
Tolérances sauf indications contraires/Tolerances unless otherwise stated
SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM — SYSTÈME MÉTRIQUE / METRIC SYSTEM

	0 - 36"	36" +		0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"		1 PLACES .X	± .50 mm	
3 PLACES .XXX	± .005"		2 PLACES .XX	± .25 mm	
ANGLES	± 1/2°		3 PLACES .XXX	± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	INVENT	GREN	PEINT	MONT	ELEC				
ETAPES	1	2	3	4	5	6	7	8	9

23-8459

Fournier
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUÉBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM

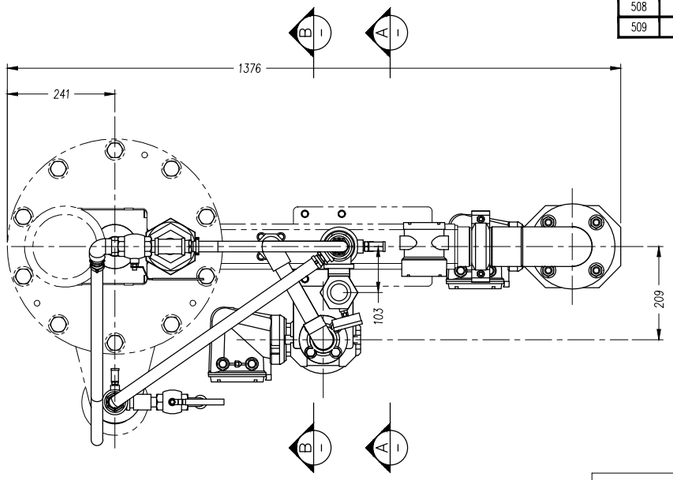
FLOCCULATOR # 2 TK-P3321 MODEL 20-300-900
GENERAL ARRANGEMENT

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	IFI-02403
Date 27-06-2023	Echelle / Scale 1 1/2"=12"	No Équipement du Client / Customer Equipment No. TK-P3321	

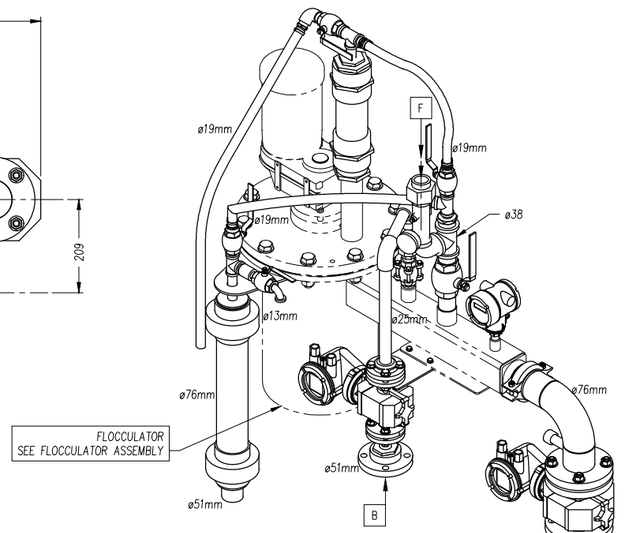
Grand./Size D | Dessin No / Drawing No. 53379 | Page/Sheet 1 of 1 | Révision 00

FQF084 (06-2017)

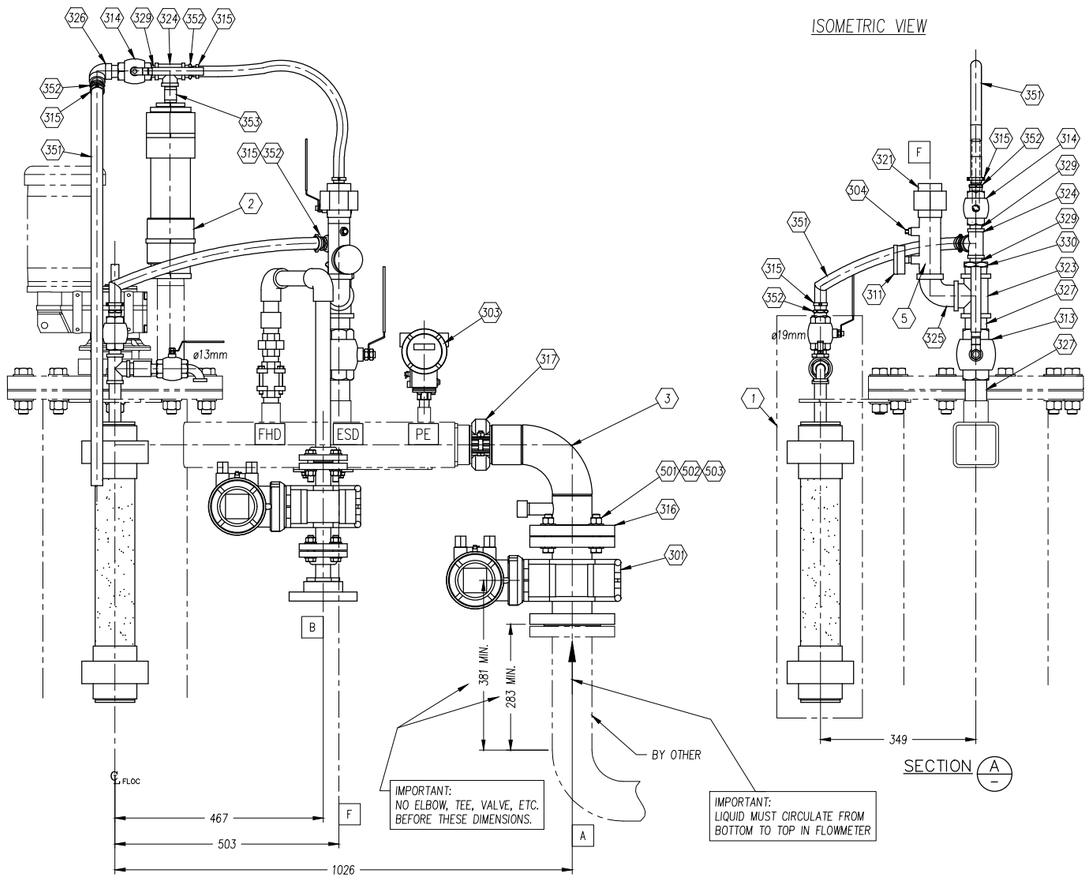
507		4	HEX. BOLT 5/16-18 X 1in SS 316			102097KP.	
508		4	HEX. NUT 5/16-18 SS 316			102065KP	
509		8	FLAT WASHER 5/16in SS 316			102040KP	



PLAN VIEW

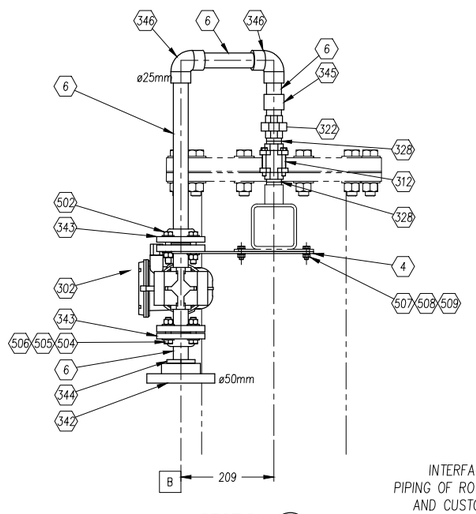


ISOMETRIC VIEW



FRONT VIEW

SECTION A



SECTION B

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

- A SLUDGE INLET ø76.2mm– FLANGE
- B POLYMER INLET ø50.8mm– FLANGE
- F WASH WATER INLET ø38.1mm–NPT

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI	AVIS/REVS
1		1	FLOCCULATED SLUDGE SAMPLER	CLEAR PVC		IFI-01522	
2		1	AIR BREATHER ø2"	PVC		IFI-01719	
* 3		1	ø3" INLET ELBOW	S.S.316L		IFI-02144	
4		1	FLOWMETER SUPPORT	S.S.316L		IFI-01799	
5		1	PRESSURE GAUGE MANIFOLD	S.S.316L		IFI-02135	
6		1	ø1" SCH.80 PIPE	PVC		TU16VC80KP.	
* 301		1	ø3" SLUDGE FLOWMETER			E&H, END-5WBB80-24V	
302		1	ø1" POLYMER FLOWMETER			E&H, END-5WBB25-24V	
303		1	PRESSURE TRANSMITTER, 0-30 PSI, 4-20 MA			E&H, END-PMC71B-24V	
304		1	ø1/4" HEX. PLUG	S.S.316		102469	
311		1	PRESSURE GAUGE	S.S.		ROY-SSG-2502-160	
312		1	ø1" NPT CHECK VALVE, CLASS 150#	S.S.		IFC 1"SC600TSSSSM IFI-01939	
313		1	ø1 1/2" NPT BALL VALVE FULL PORT	S.S.		C.F.F.# 1 1/2" SS-2 104616	
314		2	ø3/4" NPT BALL VALVE FULL PORT	S.S.		C.F.F.# 3/4" SS-2 102517	
315		5	"MIKALOR" CLAMP FOR HOSE ø1 1/16"	S.S.		W4-27-29 MIK-W4-27-29KP	
* 316		1	ø3" CLASS 150# FLANGE			VICTAULIC STYLE 741W-741-3	
* 317		1	ø3" RIGIDE COUPLING			VICTAULIC STYLE 07 VI-07-3	
321		1	ø1 1/2" NPT HEX. UNION	S.S.316L		102449	
322		1	ø1" NPT HEX. UNION	S.S.316L		102447	
323		1	ø1 1/2" NPT, CLASS 150# TEE	S.S.316L		102443	
324		2	ø3/4" NPT, 150# TEE	S.S.316L		102440	
325		1	ø1 1/2" NPT STREET ELBOW 90°	S.S.316L		102597	
326		1	ø3/4" NPT STREET ELBOW 90°	S.S.316L		102433	
327		2	ø1 1/2" – 1 3/4" LG, SCH. 40, CLOSE NIPPLE	S.S.316L		102400	
328		2	ø1" NPT – 1 1/2" LG, SCH. 40, CLOSE NIPPLE	S.S.316L		102393	
329		3	ø3/4" NPT – 1 3/8" LG, SCH 40, CLOSE NIPPLE	S.S.316L		102388	
330		1	ø1 1/2" NPT/M x ø3/4" NPT/F REDUCER	S.S.316L		102339	
342		1	ø2" SCH. 80 SLIP FLANGE	PVC		LAS-851-020	
343		2	ø1" SCH. 80 SLIP FLANGE	PVC		LAS-851-010	
344		1	REDUCER ø2" SPIG TO ø1" SLIP	PVC		LAS-837-249	
345		1	ø1"NPT/M x ø1" SLIP MALE ADAPTOR	PVC		LAS-836-010	
346		2	ø1 SLIP x ø1" SLIP ELBOW 90°	PVC		LAS-806-010KP	
351		1	ø3/4" x 120" LG, HOSE	BLACK EPDM		MAG-CWD150007KP	
352		5	ø3/4" NPT/M – 3/4" BARB, HOSE ADAPTOR	S.S.316		IFI-02524	
353		1	ø3/4" NPT – 2" LG, SCH. 40, HEX. NIPPLE	S.S.316		SWA-SS12HN	
* 501		4	HEX. BOLT 5/8-11 X 3in SS 316			104204KP	
* 502		4	HEX. NUT 5/8-11 SS 316			102069KP	
* 503		8	FLAT WASHER M16 SS 316			100562KP	
504		8	HEX. BOLT 1/2-13 X 2.25in SS 316			102134KP	
505		8	NYLON-INSERT LOCKNUT 1/2-13 SS 316			102078KP	
506		16	FLAT WASHER M12 SS 316			100561KP	

FLOCCULATOR # 1
TK-P3311

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(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	52	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53380 | Page/Sheet 1 of 1 | Revision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8458

LÉGENDE/LEGEND

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500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

FHD COUPLING ø25.4mm–NPT FOR POLYMER PIPE ø25.4mm

ESD COUPLING ø38.1mm–NPT FOR CLEANING WATER PIPE ø38.1mm

PE COUPLING ø12.7mm–NPT FOR PRESSURE TRANSMITTER

* SHIPPED LOOSE

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM			SYSTÈME MÉTRIQUE / METRIC SYSTEM		
	0 - 36"	36" +		0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"		1 PLACES .X	± .50 mm	
3 PLACES .XXX	± .005"		2 PLACES .XX	± .25 mm	
ANGLES	± 1/2°		3 PLACES .XXX	± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
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UT: As per symbol MT: As per symbol
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Lifting lugs: 100% MT , 100%VT

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VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par / Date (DD/MM/YY)	INVENT	MONT	ELEC						
ETAPES	1	2	3	4	5	6	7	8	9

23-8458

fournier
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

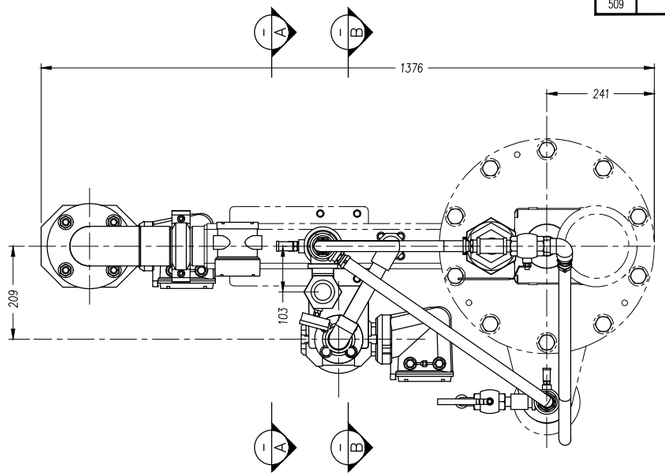
WINNIPEG, MB
DEWATERING SYSTEM
PIPING ARRANGEMENT
FLOCCULATOR # 1 TK-P3311 INLET SECTION (LEFT ARR'T)
C/W 25.4mm(1") AND 76.2mm(3") FLOWMETERS

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	
Date: 27-06-2023	Echelle / Scale: 1:6	No Équipement du Client / Customer Equipment No.: TK-P3311	

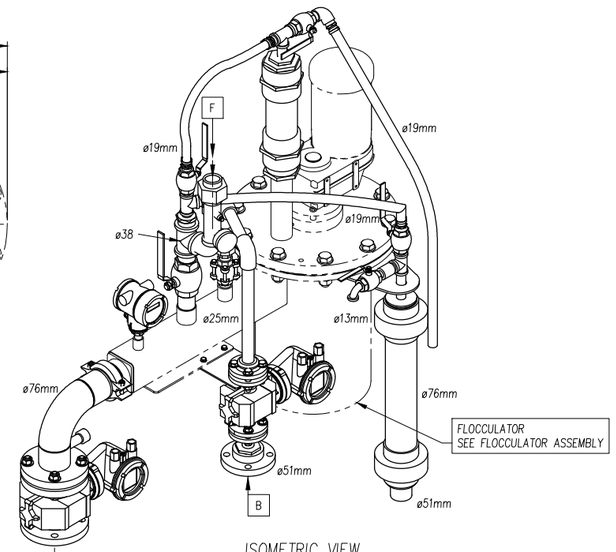
Grand./Size D | Dessin No / Drawing No. 53380 | Page/Sheet 1 of 1 | Revision 00

FQF084 (06-2017)

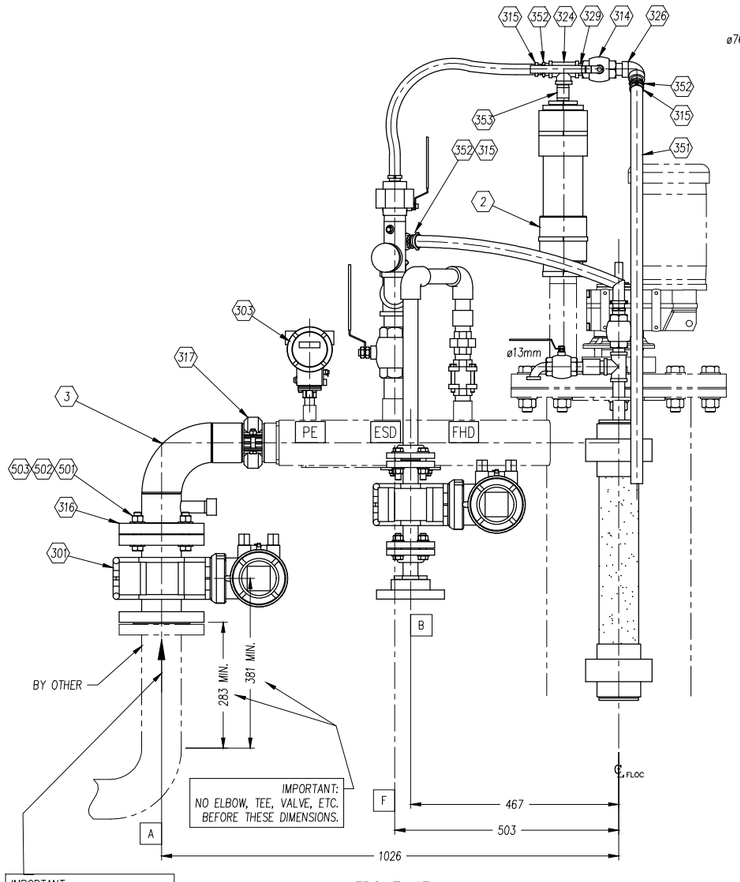
507		4	HEX. BOLT 5/16–18 X 1in SS 316			102097KP.
508		4	HEX. NUT 5/16–18 SS 316			102065KP
509		8	FLAT WASHER 5/16in SS 316			102040KP



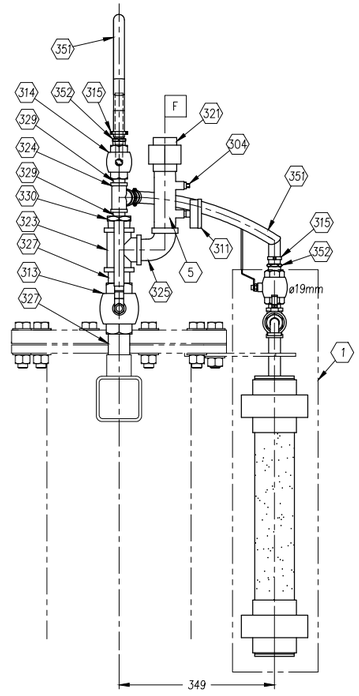
PLAN VIEW



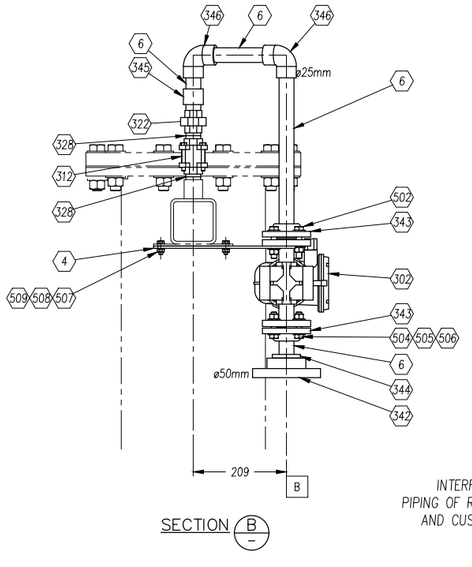
ISOMETRIC VIEW



FRONT VIEW



SECTION A



SECTION B

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

A	SLUDGE INLET ø76.2mm– FLANGE
B	POLYMER INLET ø50.8mm– FLANGE
F	WASH WATER INLET ø38.1mm–NPT

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI	
1		1	FLOCCULATED SLUDGE SAMPLER	CLEAR PVC		IFI–01522	
2		1	AIR BREATHER ø2"	PVC		IFI–01719	
* 3		1	ø3" INLET ELBOW	S.S.316L		IFI–02144	
4		1	FLOWMETER SUPPORT	S.S.316L		IFI–01799	
5		1	PRESSURE GAUGE MANIFOLD	S.S.316L		IFI–02135	
6		1	ø1" SCH.80 PIPE	PVC		TU16VC80KP.	
* 301		1	ø3" SLUDGE FLOWMETER			E&H, END–5WBB80–24V	
302		1	ø1" POLYMER FLOWMETER			E&H, END–5WBB25–24V	
303		1	PRESSURE TRANSMITTER, 0–30 PSI, 4–20 MA			E&H, END–PMC71B–24V	
304		1	ø1/4" HEX. PLUG	S.S.316		102469	
311		1	PRESSURE GAUGE	S.S.		ROY–SSG–2502–160	
312		1	ø1" NPT CHECK VALVE, CLASS 150#	S.S.		IFC 1"SC600TSSSSM IFI–01939	
313		1	ø1 1/2" NPT BALL VALVE FULL PORT	S.S.		C.F.F.# 1 1/2" SS–2 104616	
314		2	ø3/4" NPT BALL VALVE FULL PORT	S.S.		C.F.F.# 3/4" SS–2 102517	
315		5	"MIKALOR" CLAMP FOR HOSE ø1 1/16"	S.S.		W4–27–29 MIK–W4–27–29KP	
* 316		1	ø3" CLASS 150# FLANGE			VICTAULIC STYLE 741W–741–3	
* 317		1	ø3" RIGIDE COUPLING			VICTAULIC STYLE 07 VI–07–3	
321		1	ø1 1/2" NPT HEX. UNION	S.S.316L		102449	
322		1	ø1" NPT HEX. UNION	S.S.316L		102447	
323		1	ø1 1/2" NPT, CLASS 150# TEE	S.S.316L		102443	
324		2	ø3/4" NPT, 150# TEE	S.S.316L		102440	
325		1	ø1 1/2" NPT STREET ELBOW 90°	S.S.316L		102597	
326		1	ø3/4" NPT STREET ELBOW 90°	S.S.316L		102433	
327		2	ø1 1/2" – 1 3/4" LG, SCH. 40, CLOSE NIPPLE	S.S.316L		102400	
328		2	ø1" NPT – 1 1/2" LG, SCH. 40, CLOSE NIPPLE	S.S.316L		102393	
329		3	ø3/4" NPT – 1 3/8" LG, SCH 40, CLOSE NIPPLE	S.S.316L		102388	
330		1	ø1 1/2" NPT/M x ø3/4" NPT/F REDUCER	S.S.316L		102339	
342		1	ø2" SCH. 80 SLIP FLANGE	PVC		LAS–851–020	
343		2	ø1" SCH. 80 SLIP FLANGE	PVC		LAS–851–010	
344		1	REDUCER ø2" SPIG TO ø1" SLIP	PVC		LAS–837–249	
345		1	ø1"NPT/M x ø1" SLIP MALE ADAPTOR	PVC		LAS–836–010	
346		2	ø1 SLIP x ø1" SLIP ELBOW 90°	PVC		LAS–806–010KP	
351		1	ø3/4" x 120" LG, HOSE	BLACK EPDM		MAG–CWD150007KP	
352		5	ø3/4" NPT/M – 3/4" BARB, HOSE ADAPTOR	S.S.316		IFI–02524	
353		1	ø3/4" NPT – 2" LG, SCH. 40, HEX. NIPPLE	S.S.316		SWA–SS12HN	
* 501		4	HEX. BOLT 5/8–11 X 3in SS 316			104204KP	
* 502		4	HEX. NUT 5/8–11 SS 316			102069KP	
* 503		8	FLAT WASHER M16 SS 316			100562KP	
504		8	HEX. BOLT 1/2–13 X 2.25in SS 316			102134KP	
505		8	NYLON–INSERT LOCKNUT 1/2–13 SS 316			102078KP	
506		16	FLAT WASHER M12 SS 316			100561KP	

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	52	REQUIS TOTAL TOTAL REQ'D	1

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

FLOCCULATOR # 2
TK–P3321

Grand./Size D | Dessin No / Drawing No. 53381 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8459

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

FHD — COUPLING ø25.4mm–NPT FOR POLYMER PIPE ø25.4mm

ESD — COUPLING ø38.1mm–NPT FOR CLEANING WATER PIPE ø38.1mm

PE — COUPLING ø12.7mm–NPT FOR PRESSURE TRANSMITTER

* SHIPPED LOOSE

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION / PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 — FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM		SYSTÈME MÉTRIQUE / METRIC SYSTEM	
	0 - 36"		0 - 1000mm 1000mm +
FRACTION	± 1/16"	ENTIER / INTEGER	± 1 mm ± 2mm
2 PLACES .XX	± .010"	1 PLACES .X	± .50 mm
3 PLACES .XXX	± .005"	2 PLACES .XX	± .25 mm
ANGLES	± 1/2°	3 PLACES .XXX	± .125 mm

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	INVENT	MONT	ELEC						
ETAPES		1	2	3	4	5	6	7	8	9

23-8459

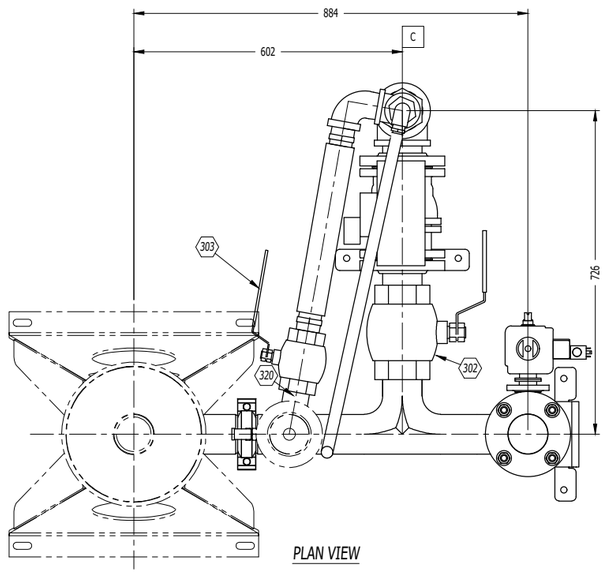
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

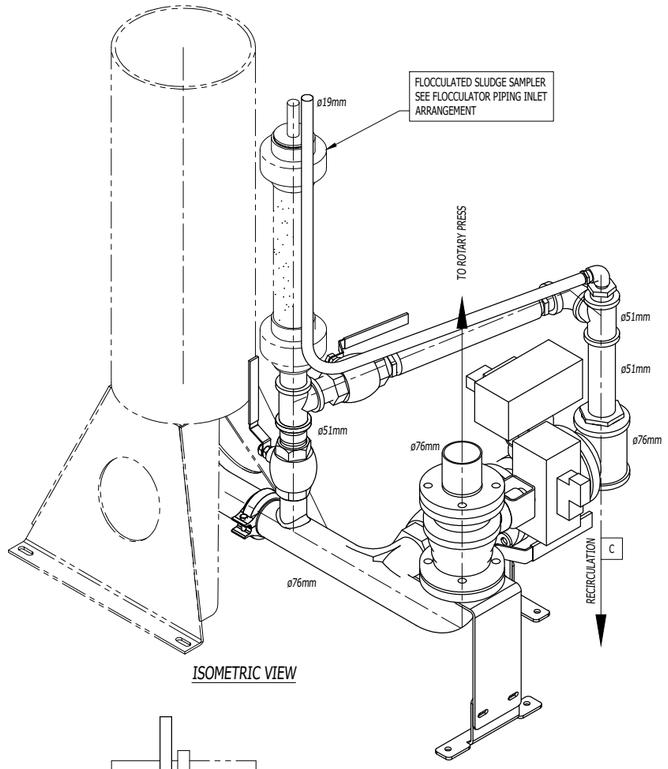
WINNIPEG, MB
DEWATERING SYSTEM
PIPING ARRANGEMENT
FLOCCULATOR # 2 TK-P3321 INLET SECTION (RIGHT ARR'T)
C/W 25.4mm(1") AND 76.2mm(3") FLOWMETERS

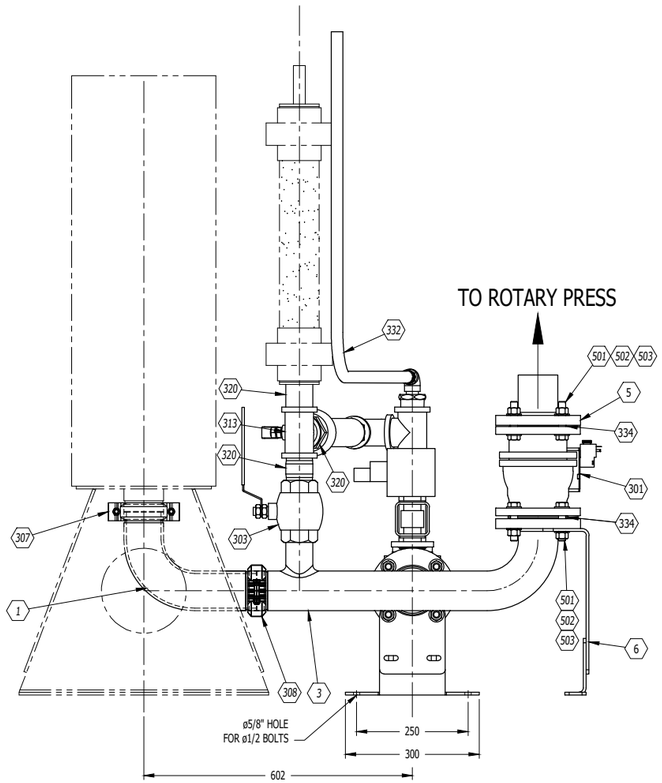
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	
Date: 27-06-2023	Echelle / Scale: 1:6	No Équipement du Client / Customer Equipment No.: TK-P3321	

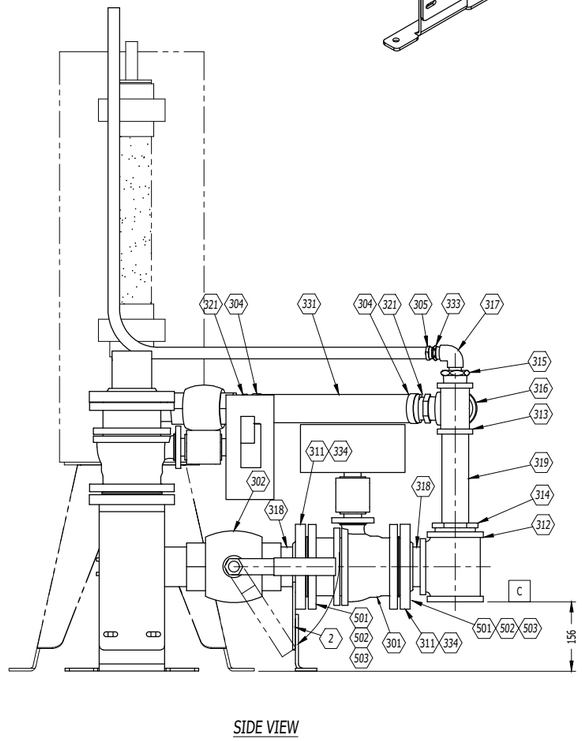
Grand./Size D | Dessin No / Drawing No. 53381 | Page/Sheet 1 of 1 | Révision 00

FQF084 (06-2017)









INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

C SLUDGE RECIRCULATION OUTLET ø76.2mm–NPT

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI
1		1	ø3" OUTLET ELBOW	S.S.316L		IFI-02085
2		1	ADJUSTABLE VALVE SUPPORT	S.S.316L		IFI-02232
3		1	ø3" - 2" - 3" TEE	S.S.316L		IFI-02126-GA
5		1	ø3" SLUDGE OUTLET ADAPTER	S.S.316L		IFI-02463
6		1	ADJUSTABLE VALVE SUPPORT	S.S.316L		IFI-02564
301		2	ø3" FLANGE, BALL VALVE FULL PORT, AMERICAN VALVE MODEL 4000	CAST IRON		IFI-02077-2017
			C/W PNEUMATIC ACTUATOR FESTO			IFI-02175-2017
302		1	ø3" NPT BALL FULL PORT	S.S.316L		C.F.F. # 3" SS-2 102521
303		2	ø2" NPT BALL FULL PORT	S.S.316L		C.F.F. # 2" SS-2 102520
304		2	"MIKALOR" CLAMP FOR HOSE ø2.3"	S.S.		MIK-W4-59-63KP
305		1	"MIKALOR" CLAMP FOR HOSE ø1 1/16"	S.S.		MIK-W4-27-29KP
307		1	ø3" FLEXIBLE COUPLING	CAST IRON		VICTAULIC STYLE 77 VI-77-3
308		1	ø3" RIGIDE COUPLING	CAST IRON		VICTAULIC STYLE 07 VI-07-3
311		2	ø3" CLASS 150# THREADED FLANGE	S.S.316L		104216
312		1	ø3"NPT, 150#, TEE	S.S.316L		111335
313		2	ø2"NPT, 150#, TEE	S.S.316L		102444
314		1	ø3"NPT/M x ø2" NPT/F HEX. REDUCER	S.S.316L		104173
315		1	ø2"NPT/M x ø3/4" NPT/F HEX. REDUCER	S.S.316L		102342
316		1	ø2"NPT STREET ELBOW 90°	S.S.316L		102435
317		1	ø3/4"NPT STREET ELBOW 90°	S.S.316L		102433
318		2	ø3" x 3"LG, SCH. 40, SHORT NIPPLE	S.S.316L		102413
319		1	ø2" x 8"LG, SCH. 40, NIPPLE	S.S.316L		104934
320		3	ø2" x 3"LG, SCH. 40, NIPPLE	S.S.316L		102408
321		2	ø2"NPT/M x ø2" HOSE BARB, ADAPTER	S.S.316L		AMI-CNT-200-SS
331		1	ø2" x 17 1/16" HOSE, 150 PSI	RUBBER		MAG-CWD150020KP
332		1	ø3/4" HOSE	BLACK EPDM		MAG-CWD150007KP
333		1	ø3/4"NPT/M x ø3/4" HOSE BARB, ADAPTER	S.S.316		IFI-02524
334		4	GASKET 1/8" X 3 3/8" I.D. X 5 5/16" O.D.	SBR		IFI-01722
501		16	HEX. BOLT 5/8-11 X 3in SS 316			104204KP
502		16	HEX. NUT 5/8-11 SS 316			102069KP
503		32	FLAT WASHER M16 SS 316			100562KP

FLOCCULATOR # 1
TK-P3311

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	109	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53382 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8458

LÉGENDE/LEGEND
1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated
SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM SYSTÈME MÉTRIQUE / METRIC SYSTEM

	0 - 36"	36" +		0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"	—	1 PLACES .X	± .50 mm	—
3 PLACES .XXX	± .005"	—	2 PLACES .XX	± .25 mm	—
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm	—

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	DWG CD/DWN YY/YY	INVENT	MONT	ELEC						
ETAPES		1	2	3	4	5	6	7	8	9

23-8458

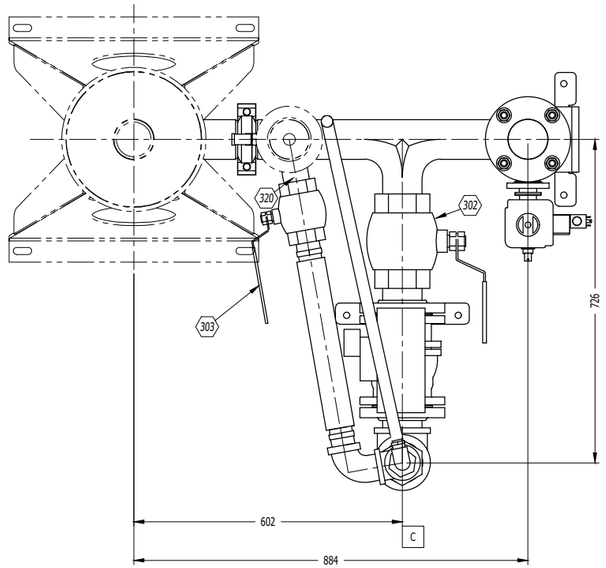
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUÉBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM
PIPING ARRANGEMENT
FLOCCULATOR # 1 TK-P3311 OUTLET SECTION
C/W 2 WAYS BALL VALVE

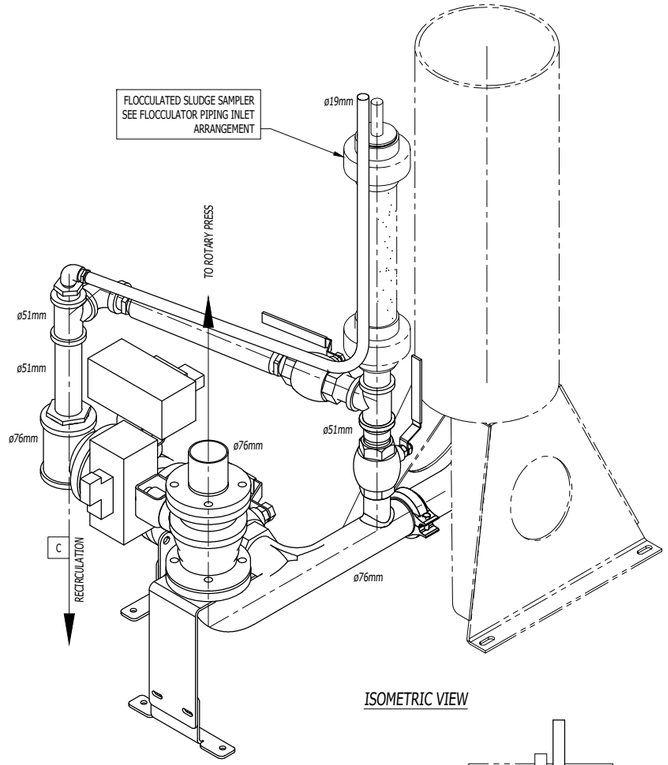
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	
Date 27-06-2023	Echelle / Scale 1:6	No Équipement du Client / Customer Equipment No. TK-P3311	

Grand./Size D | Dessin No / Drawing No. 53382 | Page/Sheet 1 of 1 | Révision 00

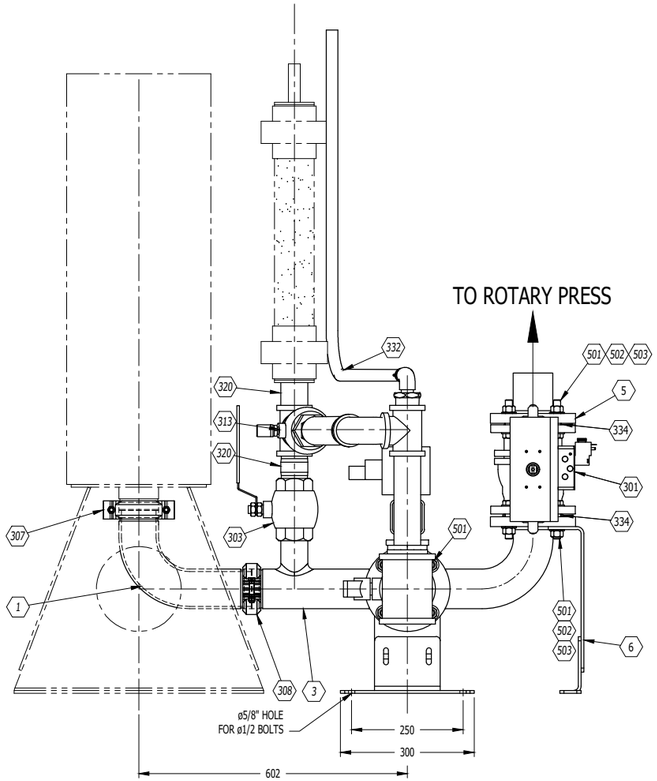
FQF08A (06-2017)



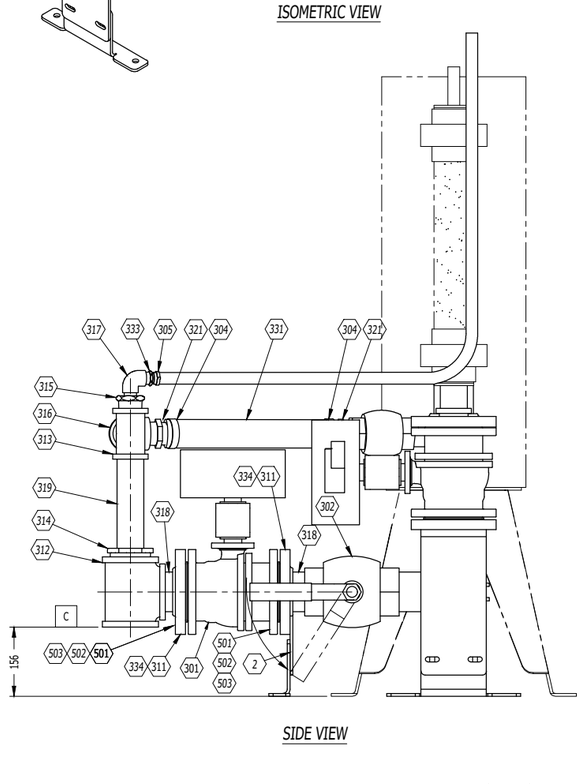
PLAN VIEW



ISOMETRIC VIEW



FRONT VIEW



SIDE VIEW

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

C SLUDGE RECIRCULATION OUTLET ø76.2mm–NPT

ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI	AS/BS
1		1	ø3" OUTLET ELBOW	S.S.316L		IFI-02085	
2		1	ADJUSTABLE VALVE SUPPORT	S.S.316L		IFI-02232	
3		1	ø3" - 2" - 3" TEE	S.S.316L		IFI-02126-DR	
5		1	ø3" SLUDGE OUTLET ADAPTER	S.S.316L		IFI-02463	
6		1	ADJUSTABLE VALVE SUPPORT	S.S.316L		IFI-02564	
301		2	ø3" FLANGE, BALL VALVE FULL PORT, AMERICAN VALVE MODEL 4000	CAST IRON		IFI-02077-2017	
			C/W PNEUMATIC ACTUATOR FESTO			IFI-02175-2017	
302		1	ø3" NPT BALL FULL PORT	S.S.316L		C.F.F. # 3" SS-2 102521	
303		2	ø2" NPT BALL FULL PORT	S.S.316L		C.F.F. # 2" SS-2 102520	
304		2	"MIKALOR" CLAMP FOR HOSE ø2.3"	S.S.		MIK-W4-59-63KP	
305		1	"MIKALOR" CLAMP FOR HOSE ø1 1/16"	S.S.		MIK-W4-27-29KP	
307		1	ø3" FLEXIBLE COUPLING	CAST IRON		VICTAULIC STYLE 77 VI-77-3	
308		1	ø3" RIGIDE COUPLING	CAST IRON		VICTAULIC STYLE 07 VI-07-3	
311		2	ø3" CLASS 150# THREADED FLANGE	S.S.316L		104216	
312		1	ø3"NPT, 150#, TEE	S.S.316L		111335	
313		2	ø2"NPT, 150#, TEE	S.S.316L		102444	
314		1	ø3"NPT/M x ø2" NPT/F HEX. REDUCER	S.S.316L		104173	
315		1	ø2"NPT/M x ø3/4" NPT/F HEX. REDUCER	S.S.316L		102342	
316		1	ø2"NPT STREET ELBOW 90°	S.S.316L		102435	
317		1	ø3/4"NPT STREET ELBOW 90°	S.S.316L		102433	
318		2	ø3" x 3"LG, SCH. 40, SHORT NIPPLE	S.S.316L		102413	
319		1	ø2" x 8"LG, SCH. 40, NIPPLE	S.S.316L		104934	
320		3	ø2" x 3"LG, SCH. 40, NIPPLE	S.S.316L		102408	
321		2	ø2"NPT/M x ø2" HOSE BARB, ADAPTER	S.S.316L		AMI-CNT-200-SS	
331		1	ø2" x 17 1/16" HOSE, 150 PSI	RUBBER		MAG-CWD150020KP	
332		1	ø3/4" HOSE	BLACK EPDM		MAG-CWD150007KP	
333		1	ø3/4"NPT/M x ø3/4" HOSE BARB, ADAPTER	S.S.316		IFI-02524	
334		4	GASKET 1/8" X 3 3/8" I.D. X 5 5/16" O.D.	SBR		IFI-01722	
501		16	HEX. BOLT 5/8-11 X 3in SS 316			104204KP	
502		16	HEX. NUT 5/8-11 SS 316			102069KP	
503		32	FLAT WASHER M16 SS 316			100562KP	

FLOCCULATOR # 2
TK-P3321

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITE EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	109	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53383 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8459

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 / FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM			SYSTÈME MÉTRIQUE / METRIC SYSTEM	
	0 - 36"	36" +	0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER ± 1 mm	± 2mm
2 PLACES .XX	± .010"	—	1 PLACES .X ± .50 mm	—
3 PLACES .XXX	± .005"	=	2 PLACES .XX ± .25 mm	=
ANGLES	± 1/2°		3 PLACES .XXX ± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	INVENT	MONT	ELEC						
ETAPES		1	2	3	4	5	6	7	8	9

23-8459

FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM
PIPING ARRANGEMENT
FLOCCULATOR # 2 TK-P3321 OUTLET SECTION
C/W 2 WAYS BALL VALVE

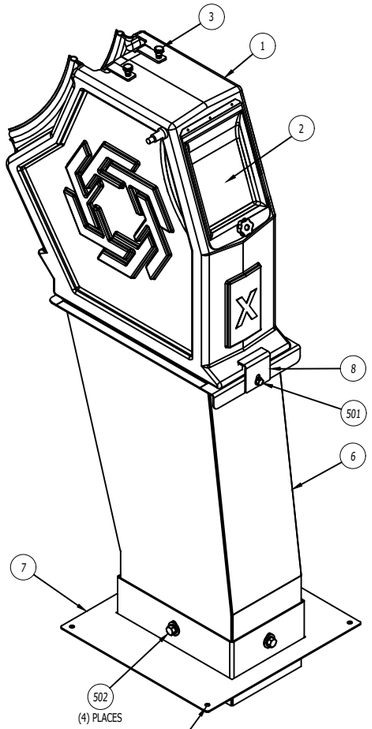
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	
Date 27-06-2023	Echelle / Scale 1:6	No Équipement du Client / Customer Equipment No. TK-P3321	

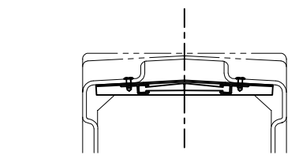
Grand./Size D | Dessin No / Drawing No. 53383 | Page/Sheet 1 of 1 | Révision 00

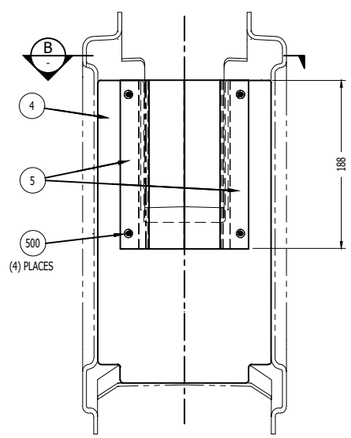
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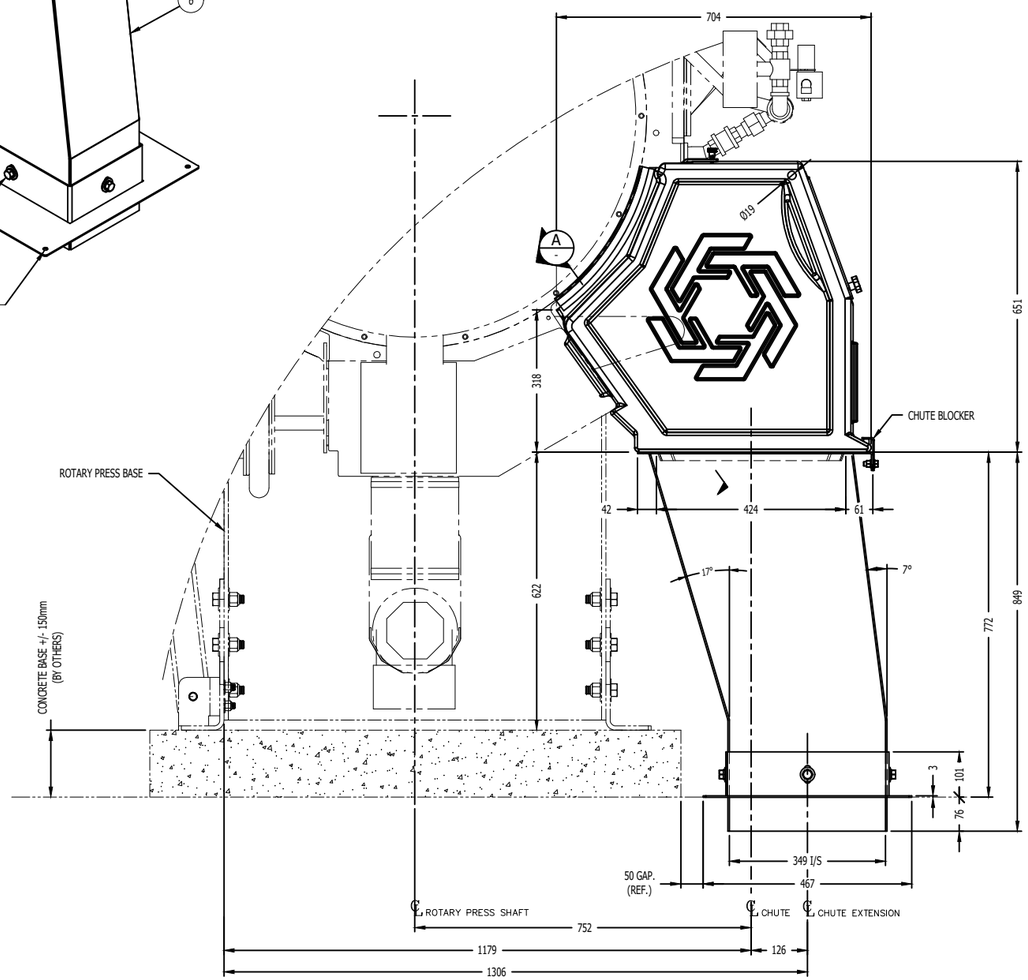
ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI	AVIS/REVISIONS
1		1	BODY OF CHUTE	LLDPE	5.5	IFI-02151	
2		1	DOOR	LLDPE	0.3	IFI-01935-2-ASS	
3		1	DEFLECTOR	S.S.304L	0.8	IFI-02462	
4		1	CAKE SLIDE	S.S.304L	0.3	IFI-02572	
5		2	BRUSH ASSEMBLY + BRACKET		0.2	IFI-02571	
6		1	CHUTE EXTENSION	S.S.304L	27.3		
7		1	ADJUSTABLE CHUTE EXTENSION FLOOR PLATE	S.S.304L	6.6		
8		1	CHUTE BLOCKER	S.S.304L	0.1		
300		1	CAKE DETECTOR - SCHNEIDER #XT218A1PCM12	PLASTIC		IFI-02165	
500		4	LARGE Ø DOMED HEAD Ø1/4" (0.376"-0.5" THK MAT)	ALUMINUM		#117952	
501		1	HEX. BOLT Ø3/8"-16nc X 1" LG.	S.S.316L		C/W (1) H.N. (1) F.W. & (1) L.W.	
502		4	HEX. BOLT Ø1/2"-13nc X 1 1/4" LG.	S.S.316L		C/W (1) F.W. & (1) L.W.	

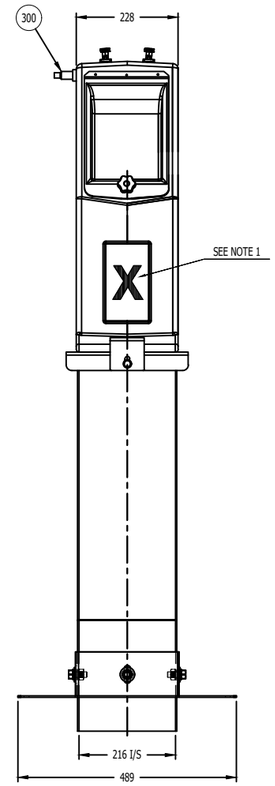
CAKE CHUTES FOR PRESS #RP-P3322











(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	41	REQUIS TOTAL TOTAL REQ'D	3

Grand./Size D | Dessin No / Drawing No. 53384 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8456

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

NOTES:
1-THE CHUTES WILL BE IDENTIFIED BY THE NUMBERS 1 TO 3.
2-REMOVABLE CHUTE DEVICE WEIGHT: 6 Kg app.

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH / FINITION SURFACE 125

Tolérances sauf indications contraires/Tolerances unless otherwise stated
SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM — SYSTÈME MÉTRIQUE / METRIC SYSTEM

		0 - 36"	0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 2mm
2 PLACES .XX	± .010"		1 PLACES .X	± .50 mm
3 PLACES .XXX	± .005"		2 PLACES .XX	± .25 mm
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	MONT	ELEC							
ETAPES		1	2	3	4	5	6	7	8	9

23-8456

Fournier
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS Ø900mm CVP
LLDPE CAKE CHUTE WITH SS304L CHUTE EXTENSION
ARRANGEMENT

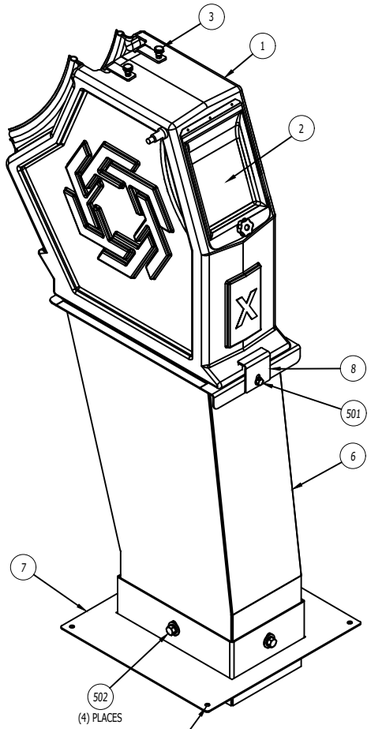
Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
S.LEBEL	E.GAMACHE	D.CLICHE	
Date 26/06/2023	Echelle / Scale 1:6	No Équipement du Client / Customer Equipment No.	

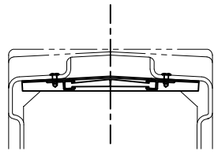
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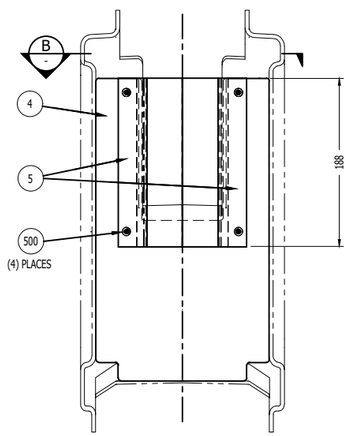
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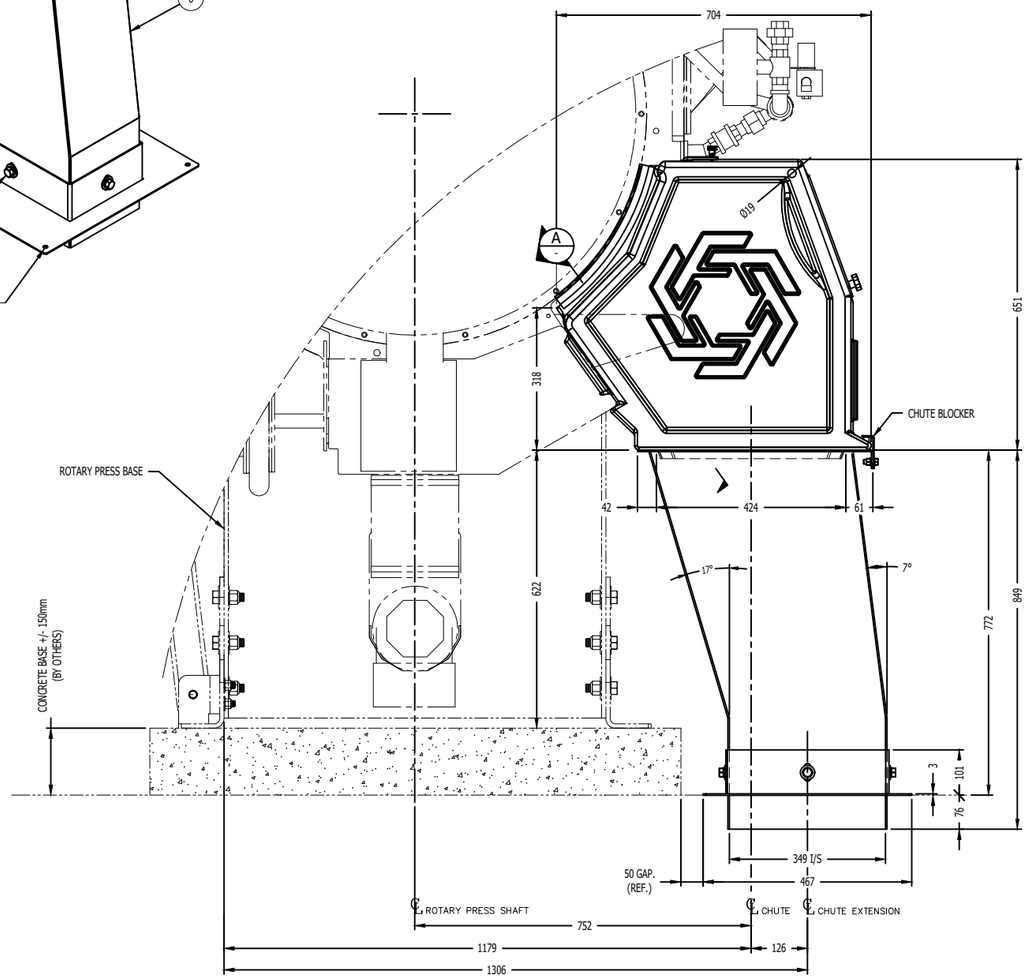
ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI	AVIS/NOTES
1		1	BODY OF CHUTE	LLDPE	5.5	IFI-02151	
2		1	DOOR	LLDPE	0.3	IFI-01935-2-ASS	
3		1	DEFLECTOR	S.S.304L	0.8	IFI-02462	
4		1	CAKE SLIDE	S.S.304L	0.3	IFI-02572	
5		2	BRUSH ASSEMBLY + BRACKET		0.2	IFI-02571	
6		1	CHUTE EXTENSION	S.S.304L	27.3		
7		1	ADJUSTABLE CHUTE EXTENSION FLOOR PLATE	S.S.304L	6.6		
8		1	CHUTE BLOCKER	S.S.304L	0.1		
300		1	CAKE DETECTOR - SCHNEIDER #XT218A1PCM12	PLASTIC		IFI-02165	
500		4	LARGE Ø DOMED HEAD Ø1/4" (0.376"-0.5" THK MAT)	ALUMINUM		#117952	
501		1	HEX. BOLT Ø3/8"-16nc X 1" LG.	S.S.316L		C/W (1) H.N. (1) F.W. & (1) L.W.	
502		4	HEX. BOLT Ø1/2"-13nc X 1 1/4" LG.	S.S.316L		C/W (1) F.W. & (1) L.W.	

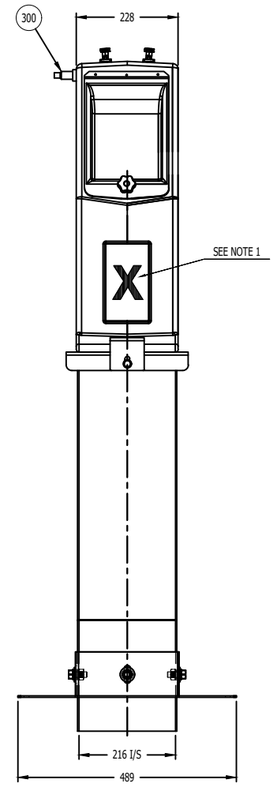
CAKE CHUTES FOR PRESS #RP-P3312











LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

NOTES:
1-THE CHUTES WILL BE IDENTIFIED BY THE NUMBERS 2 TO 4.
2-REMOVABLE CHUTE DEVICE WEIGHT: 6 Kg app.

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	41	REQUIS TOTAL TOTAL REQ'D	3

NO.	REVISIONS	DATE DD-MM-YY	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH / FINITION SURFACE 125

Tolérances sauf indications contraires/Tolerances unless otherwise stated
SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM — SYSTÈME MÉTRIQUE / METRIC SYSTEM

FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"		1 PLACES .X	± .50 mm	
3 PLACES .XXX	± .005"		2 PLACES .XX	± .25 mm	
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm	

0 - 36° / 36° + / 0 - 1000mm / 1000mm +

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted	Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: As per symbol	VT: 100% PT: Selon symbole
UT: As per symbol MT: As per symbol	UT: Selon symbole MT: Selon symbole
Sealed welds: 100% LT (leak test)	Soudures étanches: 100% LT (essai d'étanchéité)
Lifting lugs: 100% MT , 100%VT	Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)	MONT	ELEC						
ETAPES		1	2	3	4	5	6	7	8	9

23-8457

FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUÉBEC, CANADA, G6H-2B5

WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS Ø900mm CVP
LLDPE CAKE CHUTE WITH SS304L CHUTE EXTENSION
ARRANGEMENT

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
S.LEBEL	E.GAMACHE	D.CLICHÉ	
Date: 26/06/2023	Échelle / Scale: 1:6	No Équipement du Client / Customer Equipment No.	

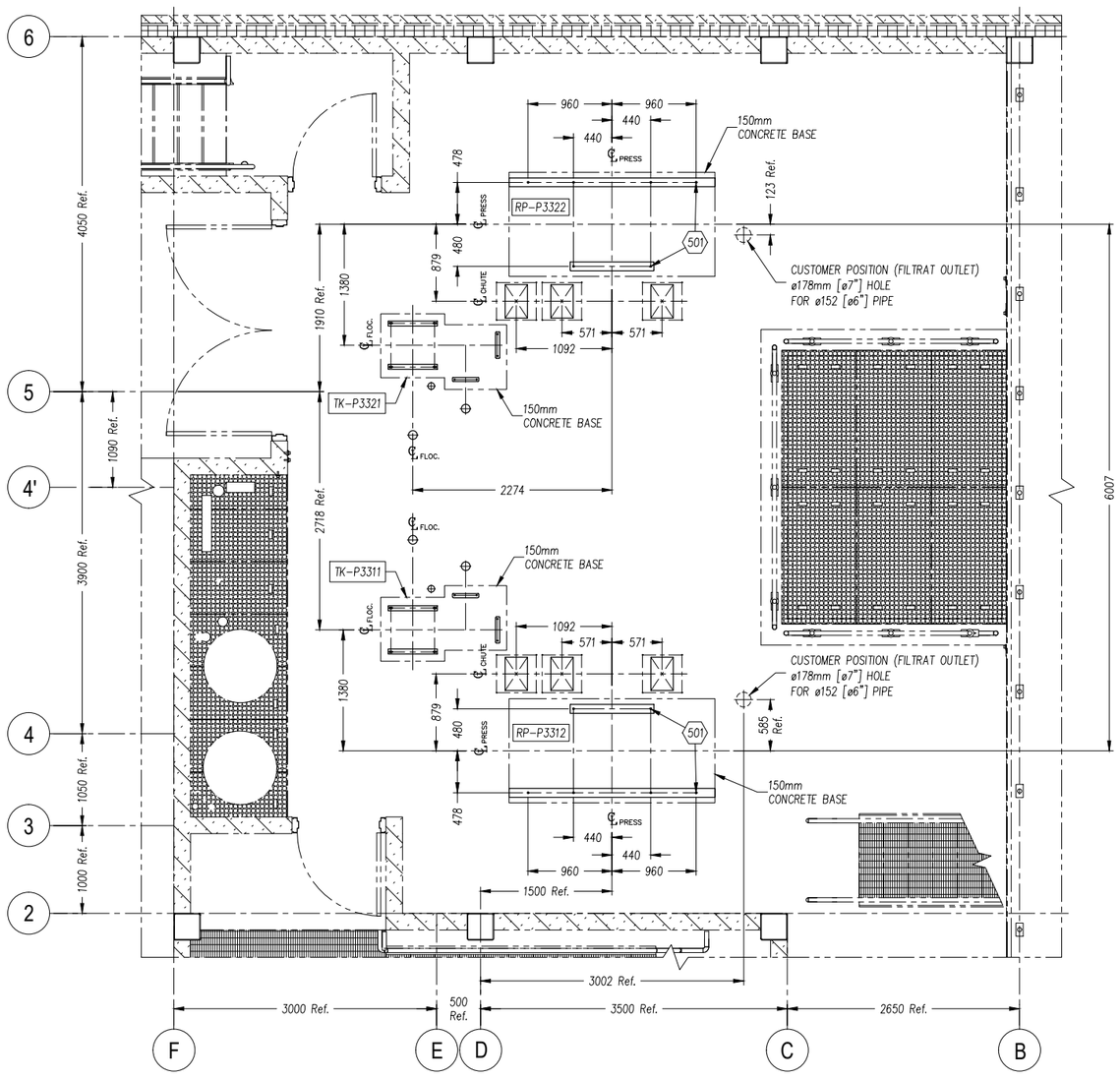
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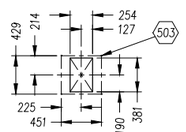
ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #1FI	AUTRES
501		12	ANCHOR BOLT TYPE "WEDGE" ø5/8" x 6"	S.S.304		UCAN #SS 586	
502		16	ANCHOR BOLT TYPE "WEDGE" ø1/2" x 5 1/2"	S.S.304		UCAN #SS 12512	
503		24	ANCHOR BOLT TYPE "WEDGE" ø3/8" x 3 3/4"	S.S.304		UCAN #SS 38334	

INTERFACE BETWEEN PIPING OF ROTARY PRESS AND CUSTOMER PIPING

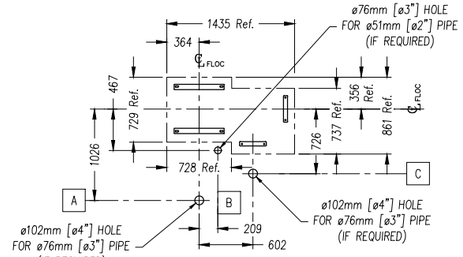
PROVIDE & INSTALLED BY OTHER

A	SLUDGE INLET ø3"(ø76.2mm) FLANGE
B	POLYMER INLET ø2"(ø50.8mm) FLANGE
C	SLUDGE RECIRCULATION OUTLET ø3"(ø76.2mm) NPT/F
E	FILTRATE OUTLET ø6"(ø152.4mm) PVC PIPE

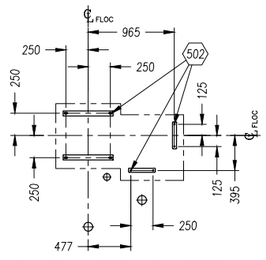




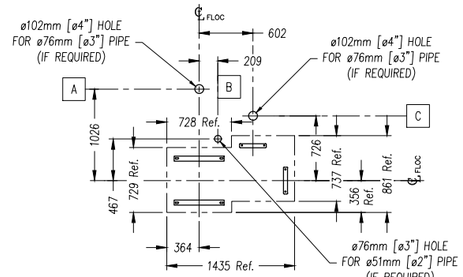
CHUTE OPENING



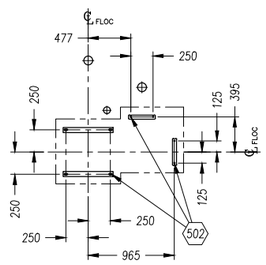
FLOCCULATOR # TK-P3321
FLOOR HOLE DETAIL



FLOCCULATOR # TK-P3321
ANCHOR BOLT LOCATIONS



FLOCCULATOR # TK-P3311
FLOOR HOLE DETAIL



FLOCCULATOR # TK-P3311
ANCHOR BOLT LOCATIONS

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	0	REQUIS TOTAL TOTAL REQ'D	1

Grand./Size D | Dessin No / Drawing No. 53388 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8456

LÉGENDE/LEGEND

1 @ 299	= ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499	= COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699	= BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

ANCHOR BOLT REQUIREMENTS :

ø3/8" ANCHORS:
- MINIMUM EMBEDMENT = 2"
- MINIMUM CONCRETE EDGE DISTANCE = 4"
- MINIMUM C/C ANCHOR = 4" C/C

ø1/2" ANCHORS:
- MINIMUM EMBEDMENT = 2 1/2"
- MINIMUM CONCRETE EDGE DISTANCE = 4"
- MINIMUM C/C ANCHOR = 5 1/2" C/C

ø5/8" ANCHORS:
- MINIMUM EMBEDMENT = 3"
- MINIMUM CONCRETE EDGE DISTANCE = 4 1/2"
- MINIMUM ANCHOR SPACING = 6 1/2" C/C

NO.	REVISIONS	DATE YYYY-MM-DD	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated

SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM			SYSTÈME MÉTRIQUE / METRIC SYSTEM		
	0 - 36"	36" +		0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"		1 PLACES .X	± .50 mm	
3 PLACES .XXX	± .005"		2 PLACES .XX	± .25 mm	
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT, 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT, 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Dawn (DD/MM/YY)	MONT								
ETAPES		1	2	3	4	5	6	7	8	9

23-8456

fournier
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

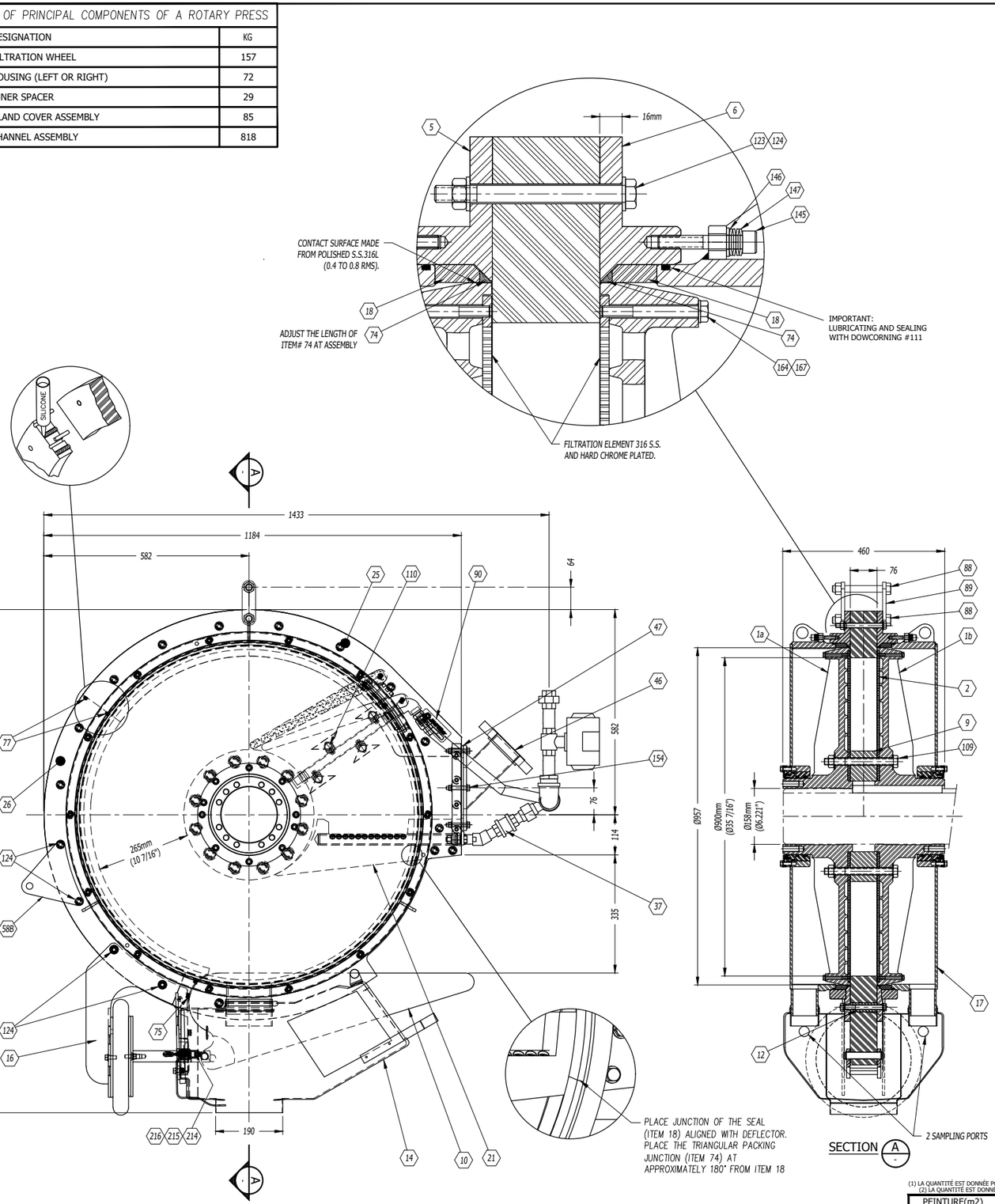
WINNIPEG, MB
DEWATERING SYSTEM
ROTARY PRESS ø900mm
FLOOR PLAN
MODEL (2X) 3(4)-900/4000CVP-SS304

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHE	
Date: 29-06-2023	Echelle / Scale: 1:30	No Équipement du Client / Customer Equipment No.	

Grand./Size D | Dessin No / Drawing No. 53388 | Page/Sheet 1 of 1 | Révision 00

FQF084 (06-2017)

WEIGHT OF PRINCIPAL COMPONENTS OF A ROTARY PRESS		
ITEM	DESIGNATION	KG
1	FILTRATION WHEEL	157
5-6	HOUSING (LEFT OR RIGHT)	72
9	INNER SPACER	29
17	GLAND COVER ASSEMBLY	85
	CHANNEL ASSEMBLY	818



ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES - #IFI	F	REVISIONS
1a		1	FILTRATION WHEEL WITHOUT KEYWAY	S.S. 304L		IFI-02545		
1b		1	FILTRATION WHEEL WITH KEYWAY	S.S. 304L		IFI-02545CLE		
2		2	FILTRATION ELEMENT 0.015" - 36"	S.S. 316L		IFI-01778CU-SW		
5		1	LEFT HOUSING	S.S. 304L		IFI-02444		
6		1	RIGHT HOUSING	S.S. 304L		IFI-02443		
9		1	INNER SPACER (76mm CHANNEL)	S.S. 316L		IFI-02420		
10		1	VERTICAL RESTRICTOR	UHMW-PE		IFI-02092		
12		1	SLEEVE	S.S. 316L		IFI-02279KP		
14		1	FILTRATE COLLECTOR	LLDPE		IFI-02266		
16		1	ACTUATOR SUPPORT ASSEMBLY	S.S. 316L		43410		
17		2	GLAND COVER ASSEMBLY	S.S. 304L		41453		
18		2	SEAL	ACETAL		IFI-02568		
21		1	DEFLECTOR ASSEMBLY (76mm CHANNEL)	NYLATRON S.S. 316L		49214		
25		1	INLET OUTER SPACER ASS. (76mm CHANNEL)	UHMW-PE		51465		
26		1	OUTLET OUTER SPACER ASS. (76mm CHANNEL)	UHMW-PE		IFI-02094		
37		1	WASHING WATER SYSTEM CONNECTION ASSEMBLY	S.S. 316L		35820		
46		1	INLET (76mm CHANNEL)	S.S. 316L		IFI-02424		
47		1	INLET SEAL (76mm CHANNEL)	NEOPRENE		IFI-02425		
58B		2	ANTI-ROTATION PLATE	S.S. 316L		IFI-01859		
74		2	TRIANGULAR PACKING	GRAPHITE		IFI-02567		
75		2	KEVLAR PACKING 13mm SQ x 76mm	KEVLAR		3R-740		
77		1	SEAL ø3/8" x 153mm (NITRILE B46)	BUNA N		CORT0038-375PO-BKP		
88	SEE 52290		HEX BOLT M20 x 2.5 x 150mm LG.	S.S. 316		MAINTENANCE 103925		
88	SEE 52290		NYLON INSERT LOCKNUT M20 x 2.5	S.S. 316		MAINTENANCE 117858		
89	SEE 52290		LIFTING BRACKET FOR ø900mm CHANNEL	S.S. 316L		MAINTENANCE IFI-01856		
90		1	IDENTIFICATION PL, CONCENTRIC CHANNEL TYPE	DURABLACK		IFI-01915-2		
109		12	HEX BOLT M20 x 2.5 x 200mm LG.	S.S. 304		107888KP		
109		12	HEX NUT M20 x 2.5 DIN 934	S.S. 316		IFI-01925KP		
109		24	FLAT WASHER M20 DIN 125A	S.S. 316		IFI-01926KP		
110		2	WHEEL WASH WATER SYSTEM ASSEMBLY	S.S. 316		26939		
123		13	HEX BOLT M12 x 1.75 x 130mm LG.	S.S. 316		100601KP		
123		13	HEX NUT M12 x 1.75 DIN 934	S.S. 316		100576KP		
123		26	FLAT WASHER M12 DIN 125A	S.S. 316		100561KP		
124		4	HEX BOLT M12 x 1.75 x 140mm LG.	S.S. 316		117882KP		
124		4	HEX NUT M12 x 1.75 DIN 934	S.S. 316		100576KP		
124		8	FLAT WASHER M12 DIN 125A	S.S. 316		100561KP		
145		28	HEX-SOCKET HEAD CAP SCREW M10x1.5x60mm	S.S. 316		104683KP		
146		28	FLAT WASHER M10 DIN125A	S.S. 316		100560KP		
147		112	ø3/8" BELLEVILLE WASHER K0750-C-062	S.S 17-7		117782KP		
154		6	HEX BOLT M10 x 1.50 x 60mm LG.	S.S. 316		100592KP		
154		6	HEX NUT M10 x 1.50 DIN 934	S.S. 316		100575KP		
154		12	FLAT WASHER M10 DIN 125A	S.S. 316		100558KP		
164		60	HEX BOLT M8 x 1.0 x 70mm LG (70 MAX/69 MIN)	S.S. 316		(FINE THREAD) IFI-01763KP		
167		60	FLAT WASHER M8 DIN 433 SPAE-NAUR #659-036	S.S. 316		100557KP		
191		6	HEX BOLT M10 x 1.50 x 20mm LG	NYLON		SPA-353-071KP		
212	SEE 52290		EYE BOLT M16 x 2.0 SHOULDER TYPE	STEEL		MAINTENANCE SPA-026-004		
214		4	BUTTON HEAD HEX DRIVE SCREW M4x7.0x15mm LG	S.S. 316		BT-ISO7380-M4x15KP		
215		4	NYLON INSERTION NUT M4x0.7	S.S. 316		178184KP		
216		4	WASHER M4	S.S. 316		178167KP		

(1) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE / QUANTITY GIVEN IS FOR ONE ASSEMBLY.
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PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PL.USURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	818	REQUIS TOTAL TOTAL REQ'D	6

Grand./Size D | Dessin No / Drawing No. 53389 | Page/Sheet 1 of 1 | Révision 00

No Projet / Project No. 2023-11911 | No Production / Job No. 23-8456

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH 125 FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated
SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM — SYSTÈME MÉTRIQUE / METRIC SYSTEM

	0 - 36"	± 1/16"	± 1/8"	0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"		1 PLACES .X	± .50 mm	
3 PLACES .XXX	± .005"		2 PLACES .XX	± .25 mm	
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm	

Ébavurer les arêtes vives (S.I.C.)/Deburring sharp edges (U.O.S)

Weld inspection according CSA W59 section 11 except otherwise noted
VT: 100% PT: As per symbol
UT: As per symbol MT: As per symbol
Sealed welds: 100% LT (leak test)
Lifting lugs: 100% MT , 100%VT

Inspection des soudures selon CSA W59 section 11 sauf indication contraire
VT: 100% PT: Selon symbole
UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT , 100%VT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par	Date (DD/MM/YY)								
ETAPES	1	2	3	4	5	6	7	8	9

23-8456

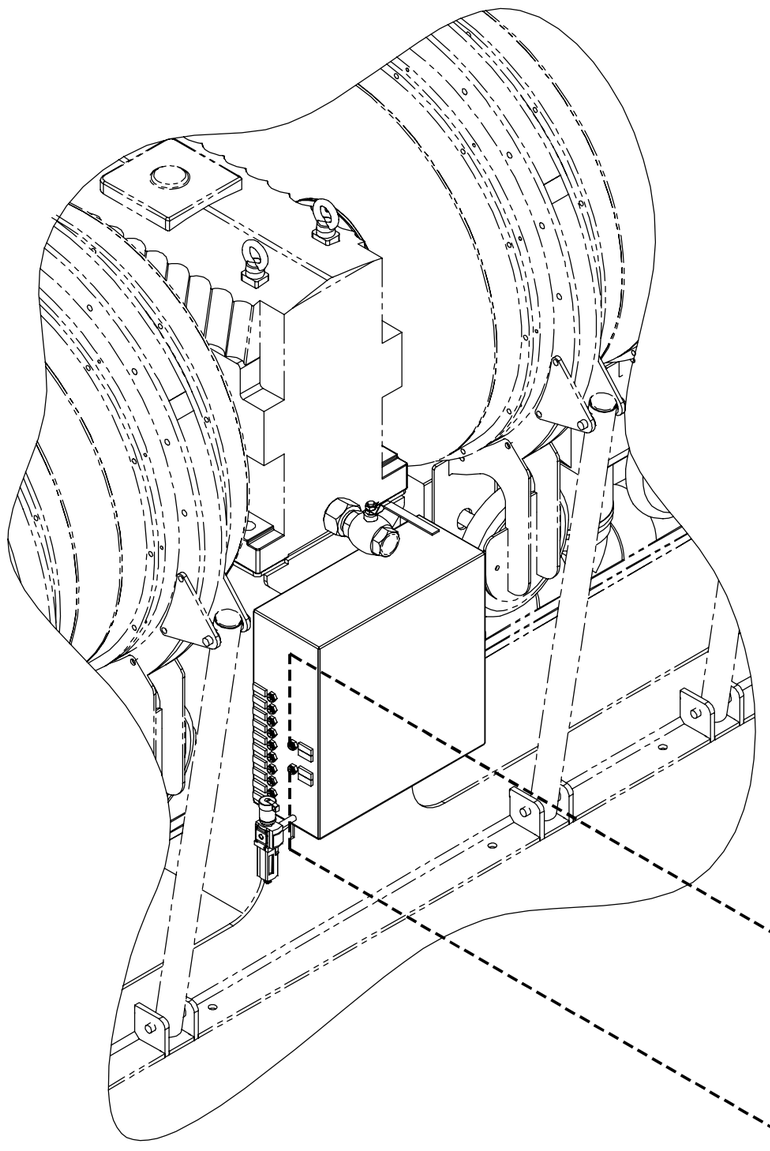
FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUÉBEC, CANADA, G6H-2B5

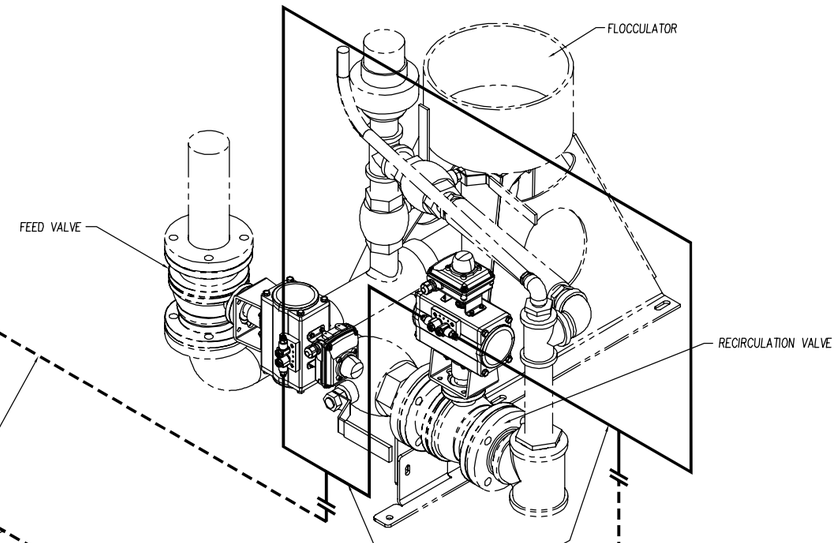
WINNIPEG, MB
ROTARY PRESS ø900mm CVP
CHANNEL 75mm X 265mm
C/W STAINLESS STEEL COVER
CHANNEL ASSEMBLY - 304L

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
M.BERNIER	E.GAMACHE	D. CLICHÉ	IFI-02552
Date 26-06-2023	Echelle / Scale 1:6	No Équipement du Client / Customer Equipment No.	

Grand./Size D | Dessin No / Drawing No. 53389 | Page/Sheet 1 of 1 | Révision 00

FQF084 (06-2017)





ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY(1)	DÉSIGNATION / DESIGNATION	MATÉRIEL MATERIAL	POIDS(kg) WEIGHT UNIT.(1)	REMARQUES / NOTES	AUTRES OTHERS

Grand. / Size: D | Dessin No / Drawing No.: STD-1417 | Page/Sheet: 1 de 1 | Revision: 00

No Projet / Project No.: 2018-XXXX | No Production / Job No.: XX-XXXX

LÉGENDE/LEGEND

1 @ 299 = ASSEMBLAGES FABRIQUÉS / FABRICATED ASSEMBLY
300 @ 499 = COMPOSANTES MÉCANIQUE / MECHANICAL COMPONENTS
500 @ 699 = BOULONNERIE / BOLTS

NOTES GÉNÉRALES/GENERAL NOTES

NO.	REVISIONS	DATE (DD-MM-YY)	BY/PAR

THIRD ANGLE PROJECTION
PROJECTION TROISIEME ANGLE

SURFACE FINISH / FINITION SURFACE

Tolérances sauf indications contraires/Tolerances unless otherwise stated
SYSTÈME IMPÉRIAL / IMPERIAL SYSTEM | SYSTÈME MÉTRIQUE / METRIC SYSTEM

			0 - 36"	36" +	0 - 1000mm	1000mm +
FRACTION	± 1/16"	± 1/8"	ENTIER / INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .010"	——	1 PLACES .X	± .50 mm	——
3 PLACES .XXX	± .005"	——	2 PLACES .XX	± .25 mm	——
ANGLES		± 1/2°	3 PLACES .XXX	± .125 mm	——

Weld inspection according CSA W59 section 11 except otherwise noted
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UT: Selon symbole MT: Selon symbole
Soudures étanches: 100% LT (essai d'étanchéité)
Anneaux de levage: 100% MT, 1000YT

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Lire conjointement avec PRIE approuvé / Read in conjunction with the approved ITP

Par AMD Date (DD-MM-YY) 26-06-18	MONT								
ETAPES	1	2	3	4	5	6	7	8	9

XX-XXXX

FOURNIER INDUSTRIES INC.
LES INDUSTRIES FOURNIER INC.
3787 BOUL. FRONTENAC, THETFORD-MINES
QUEBEC, CANADA, G6H-2B5

ø1/4 PIPE - FIELD CONNECTION GENERAL ARRANGEMENT

Dessiné / Drawn	Vérifié / Checked	Approuvé / Approved	No IFI / IFI No.
AMD	E. GAMACHE	R. ROY	
Date: 12-06-2018	Echelle / Scale	No Équipement du Client / Customer Equipment No.	

Grand. / Size: D | Dessin No / Drawing No.: STD-1417 | Page/Sheet: 1 de 1 | Revision: 00

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(2) LA QUANTITÉ EST DONNÉE POUR UN ASSEMBLAGE EXCLUANT LES ARTICLES MARQUÉS D'UN ASTÉRISQUE / QUANTITY GIVEN FOR ONE ASSEMBLY EXCLUDING ITEMS MARKED WITH AN ASTERISK.

PEINTURE(m2) PAINT SURFACE(2)	0	CAOUTCHOUC(m2) RUBBER SURFACE(2)	0	PLUSURE(kg) WEIGHT OF LINERS(2)	0	POIDS TOT.(kg) TOT. WEIGHT(2)	0	REQUIS TOTAL TOTAL REQ'D	1

FoFE44 (04-2017)

Section 2

Electrical Drawings

WINNIPEG, MB

2 X ROTARY PRESS – 3(4)–900/4000CVP

	PROJECT	SHEET	REVISION	LOCALISATION	DESCRIPTION
GENERAL	23–8460	0	0.3		DRAWING LIST – (1 OF 2)
	23–8460	1	0.3		DRAWING LIST – (2 OF 2)
	23–8460	2	0.3		SINGLE LINE DIAGRAM – (1 OF 3)
	23–8460	3	0.3		SINGLE LINE DIAGRAM – (2 OF 3)
	23–8460	4	0.3		SINGLE LINE DIAGRAM – (3 OF 3)
	23–8460	5	0.3		LIST OF MATERIAL – EXTERNAL COMPONENTS
	23–8460	6	0.3		LIST OF REFERENCES
	23–8460	7	0.3		GENERAL NOTES & ASSEMBLY INSTRUCTIONS
POWER PANEL (TYPICAL)	23–8460	100	0.3	POWER PANEL	GENERAL ARRANGEMENT
	23–8460	101	0.3	POWER PANEL	LIST OF MATERIAL
	23–8460	110	0.3	POWER PANEL	ELECTRICAL ARRANGEMENT – 600 VAC
	23–8460	111	0.3	POWER PANEL	ELECTRICAL ARRANGEMENT – 120 VAC
	23–8460	112	0.3	POWER PANEL	ELECTRICAL ARRANGEMENT – 24 VDC
	23–8460	113	0.3	POWER PANEL	SAFETY – EMERGENCY STOP
	23–8460	114	0.3	POWER PANEL	NETWORK ARRANGEMENT
	23–8460	115	0.3	POWER PANEL	VFD – ROTARY PRESS & FLOCCULATOR
CONTROL PANEL (TYPICAL)	23–8460	200	0.3	CONTROL PANEL	GENERAL ARRANGEMENT
	23–8460	201	0.3	CONTROL PANEL	LIST OF MATERIAL – (1 OF 2)
	23–8460	202	0.3	CONTROL PANEL	LIST OF MATERIAL – (2 OF 2)
	23–8460	210	0.3	CONTROL PANEL	ELECTRICAL ARRANGEMENT – 120 VAC
	23–8460	211	0.3	CONTROL PANEL	ELECTRICAL ARRANGEMENT – 24 VDC
	23–8460	212	0.3	CONTROL PANEL	SAFETY ARRANGEMENT
	23–8460	213	0.3	CONTROL PANEL	PLC & NETWORK ARRANGEMENT
	23–8460	214	0.3	CONTROL PANEL	ANALOG INPUTS – MODULE 1
	23–8460	215	0.3	CONTROL PANEL	ANALOG INPUTS – MODULE 2
	23–8460	216	0.3	CONTROL PANEL	ANALOG OUTPUTS – MODULE 1
	23–8460	217	0.3	CONTROL PANEL	DISCRETE INPUTS – MODULE 1 – (1 OF 2)
	23–8460	218	0.3	CONTROL PANEL	DISCRETE INPUTS – MODULE 1 – (2 OF 2)
	23–8460	219	0.3	CONTROL PANEL	DISCRETE OUTPUTS – MODULE 1
	23–8460	220	0.3	CONTROL PANEL	DISCRETE OUTPUTS – CONTACTS

NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

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0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
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0.0	FOR APPROVAL	04/07/2023	D. MARTEL

FOURNIER
LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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Sceau / Stamp

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Vérifié par / Checked by	G. ARCAND
Approuvé par / Approved by	M.–A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB
2 X ROTARY PRESS 3(4)–900/4000CVP

DRAWING LIST – (1 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 0	0.3

WINNIPEG, MB

2 X ROTARY PRESS – 3(4)–900/4000CVP

	PROJECT	SHEET	REVISION	LOCALISATION	DESCRIPTION
ROTARY PRESS 1 JUNCTION BOX	23–8460	300	0.3	ROTARY PRESS 1 – JB	PANEL ARRANGEMENT
	23–8460	301	0.3	ROTARY PRESS 1 – JB	LIST OF MATERIAL
	23–8460	310	0.3	ROTARY PRESS 1 – JB	PNEUMATIC ARRANGEMENT
	23–8460	311	0.3	ROTARY PRESS 1 – JB	ELECTRICAL ARRANGEMENT – (1 OF 2)
ROTARY PRESS 2 JUNCTION BOX	23–8460	312	0.3	ROTARY PRESS 1 – JB	ELECTRICAL ARRANGEMENT – (2 OF 2)
	23–8460	400	0.3	ROTARY PRESS 2 – JB	PANEL ARRANGEMENT
	23–8460	401	0.3	ROTARY PRESS 2 – JB	LIST OF MATERIAL
	23–8460	410	0.3	ROTARY PRESS 2 – JB	PNEUMATIC ARRANGEMENT
	23–8460	411	0.3	ROTARY PRESS 2 – JB	ELECTRICAL ARRANGEMENT – (1 OF 2)
	23–8460	412	0.3	ROTARY PRESS 2 – JB	ELECTRICAL ARRANGEMENT – (2 OF 2)
MISC	23–8460	1000	0.3	MISC	LEGEND PLATES

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3787 BOUL. FRONTENAC OUEST
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WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

DRAWING LIST – (2 OF 2)

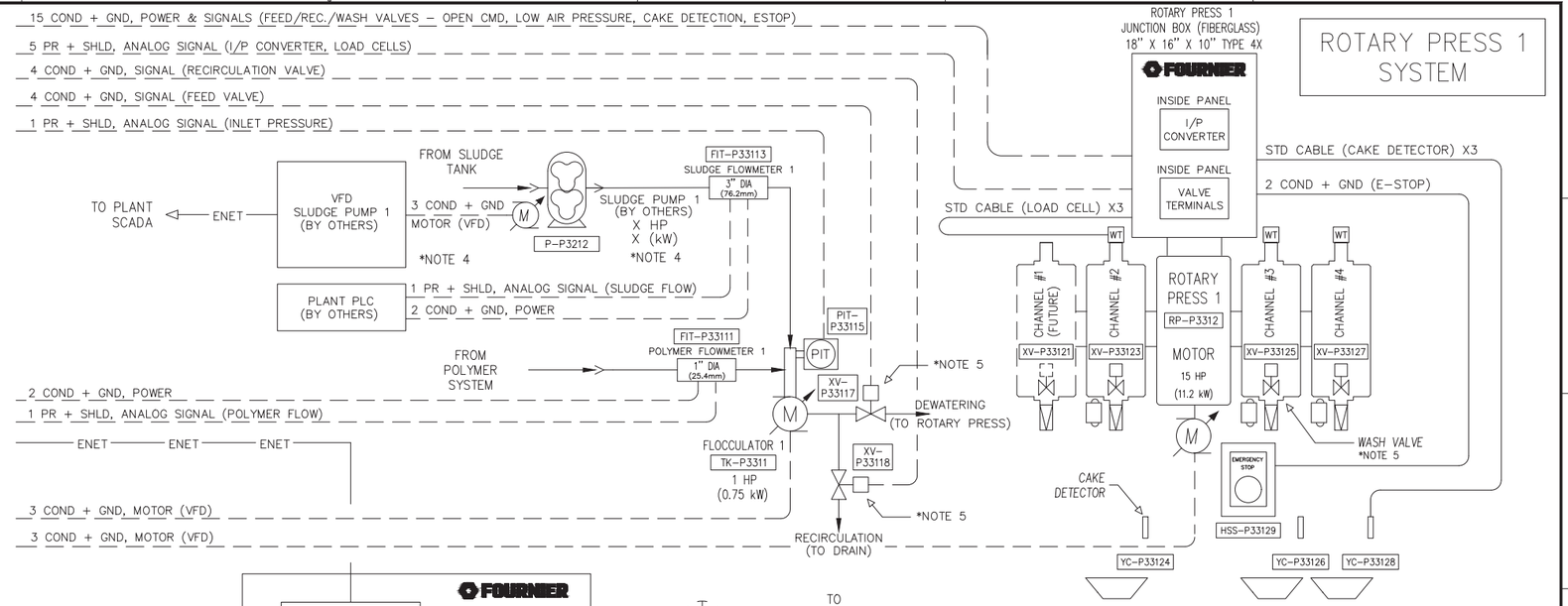
No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 1	0.3

CABLE: SUPPLIED AND INSTALLED BY FOURNIER.
CABLE: SUPPLIED AND INSTALLED BY OTHERS.
ENET — ETHERNET CABLE: SUPPLIED AND INSTALLED BY OTHERS.

DEVICES CONTROLLED VIA SCADA
- SLUDGE PUMP 1 – VFD
- SLUDGE PUMP 2 – VFD

CONTROL PANEL (LCP–P3310)

POWER PANEL (CP–P3310)



NOT TO BE USED FOR INSTALLATION

USE REV 2.X (FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:
SLUDGE PUMP SPEED NEEDS TO BE VFD CONTROLLED TO KEEP A CONSTANT INLET PRESSURE.

NOTE 2:
LOCAL MOTORS DISCONNECT SWITCHES TO BE PROVIDED BY OTHERS.

NOTE 3:
POLYMER PUMP SPEED NEEDS TO BE VFD CONTROLLED TO KEEP A CONSTANT POLYMER / SLUDGE RATIO.

NOTE 4:
COULD BE SUPPLIED ON REQUEST.

NOTE 5:
PNEUMATICALLY ACTIVATED.

NOTE 6:
AIR SUPPLY PROVIDED VIA ONE OF THE ROTARY PRESS JB.

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WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

SINGLE LINE DIAGRAM – (1 OF 3)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 2	0.3

FQF-076R3 (211223)

ROTARY PRESS 1
SYSTEM

CABLE: SUPPLIED AND INSTALLED BY FOURNIER.
CABLE: SUPPLIED AND INSTALLED BY OTHERS.
ETHERNET CABLE: SUPPLIED AND INSTALLED BY OTHERS.

ENET — ENET → TO INTERNET SOURCE
ENET — ENET → MODBUS TCP COMMUNICATION TO SCADA

CONTROL PANEL (FLOOR–MOUNT)
60" X 36" X 12"
(1524mm X 914mm X 305mm)
STEEL GREY PAINT – TYPE 12

POWER (BY OTHERS) 120V, 15 AMP

FOURNIER

LCP–P3310

POWER ON WHITE
UPS POWER ON WHITE

* HMI = SCHNEIDER ELECTRIC HARMONY GTU, 10.4"

FAULT RED
RESET BLUE
MAINTENANCE RED
EMERGENCY STOP

LAPTOP SHELF

* PLC = SCHNEIDER ELECTRIC MODICON M580

UPS

12 COND + GND, SIGNALS (CONTROL, SAFETY)

ETHERNET COMMUNICATION (VFD CONTROL)
ENET — ENET — ENET — ENET — ENET — ENET — ENET

POWER (BY OTHERS) 600 VAC, 20AMP 3PH 60HZ

A/C

POWER PANEL (FLOOR–MOUNT)
60" X 36" X 12"
(1524mm X 914mm X 305mm)
STEEL GREY PAINT – TYPE 12

FOURNIER

CP–P3310

TK–P3311 RP–P3312

VFD–P33110 VFD–P33120

RUNNING GREEN / FAULT RED
ZL–P33110–1 ZL–P33110–2 ZL–P33120–1 ZL–P33120–2

OFF MAN AUTO / SPEED
HS–P33110 HC–P33110 HS–P33120 HC–P33120

* VFD = SCHNEIDER ELECTRIC ALTIVAR 930 X2

INSIDE PANEL
VFD–P33120
ROTARY PRESS
ALTIVAR 930
15 HP
(11.19 kW)

INSIDE PANEL
VFD–P33110
FLOCCULATOR
ALTIVAR 930
3 HP
(2.24 kW)

NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

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3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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Échelle / Scale:

WINNIPEG, MB
2 X ROTARY PRESS 3(4)–900/4000CVP

SINGLE LINE DIAGRAM – (2 OF 3)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 3	0.3

FQF-076R3 (211223)

ROTARY PRESS 2
SYSTEM

——— CABLE: SUPPLIED AND INSTALLED BY FOURNIER.
— — — CABLE: SUPPLIED AND INSTALLED BY OTHERS.
—ENET— ETHERNET CABLE: SUPPLIED AND INSTALLED BY OTHERS.

CONTROL PANEL (FLOOR–MOUNT)
60'' X 36'' X 12''
(1524mm X 914mm X 305mm)
STEEL GREY PAINT – TYPE 12

POWER
(BY OTHERS)
120V, 15 AMP

FOURNIER

LCP–P3320

POWER ON
WHITE

UPS POWER ON
WHITE

* HMI = SCHNEIDER ELECTRIC
HARMONY GTU, 10.4''

FAULT
RED

RESET
BLUE

MAINTENANCE
RED

EMERGENCY STOP

LAPTOP SHELF

* PLC = SCHNEIDER ELECTRIC
MODICON M580

UPS

ENET ——— ENET ——▷ MODBUS TCP COMMUNICATION
TO SCADA

12 COND + GND, SIGNALS (CONTROL, SAFETY)

ETHERNET COMMUNICATION (VFD CONTROL)
ENET ——— ENET ——— ENET ——— ENET ——— ENET ——— ENET ——— ENET

POWER
(BY OTHERS)
600 VAC, 20AMP
3PH 60HZ

A/C

POWER PANEL (FLOOR–MOUNT)
60'' X 36'' X 12''
(1524mm X 914mm X 305mm)
STEEL GREY PAINT – TYPE 12

FOURNIER

CP–P3320

TK–P3321

RP–P3322

VFD–P33210

VFD–P33220

RUNNING
GREEN

FAULT
RED

ZL–P33210–1

ZL–P33210–2

ZL–P33220–1

ZL–P33220–2

OFF
MAN
AUTO

SPEED

HS–P33210

HC–P33210

HS–P33220

HC–P33220

* VFD = SCHNEIDER ELECTRIC
ALTIVAR 930 X2

INSIDE PANEL

VFD–P33220
ROTARY PRESS
ALTIVAR 930
15 HP
(11.19 kW)

INSIDE PANEL

VFD–P33210
FLOCCULATOR
ALTIVAR 930
3 HP
(2.24 kW)

NOT TO BE USED FOR INSTALLATION

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WINNIPEG, MB
2 X ROTARY PRESS 3(4)–900/4000CVP

SINGLE LINE DIAGRAM – (3 OF 3)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 4	0.3

FQF-076R3 (211223)

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
FIT-P33*11	1	FLOWMETER 1", SUPPLY 24 VDC, 4-20MA HART, WITH LCD, CSA US APPROUVED	5WBB25-CPDADBJA0 DQA120AA1	END-5WBB25-24V	ENDRESS + HAUSER
FIT-P33*13	1	FLOWMETER 3", SUPPLY 24 VDC, 4-20MA HART, WITH LCD, CSA US APPROUVED	5WBB80-CPDADBJA0 DUA120AA1	END-5WBB80-24V	ENDRESS + HAUSER
LC302	1	LOAD CELL 5KLB, 3/4-16 UNF-2B, CFMUS & CE APPROVED	101NH-5KLB	IFI-02027-ANYLOAD	ANYLOAD
LC303	1	LOAD CELL 5KLB, 3/4-16 UNF-2B, CFMUS & CE APPROVED	101NH-5KLB	IFI-02027-ANYLOAD	ANYLOAD
LC304	1	LOAD CELL 5KLB, 3/4-16 UNF-2B, CFMUS & CE APPROVED	101NH-5KLB	IFI-02027-ANYLOAD	ANYLOAD
LC401	1	LOAD CELL 5KLB, 3/4-16 UNF-2B, CFMUS & CE APPROVED	101NH-5KLB	IFI-02027-ANYLOAD	ANYLOAD
LC402	1	LOAD CELL 5KLB, 3/4-16 UNF-2B, CFMUS & CE APPROVED	101NH-5KLB	IFI-02027-ANYLOAD	ANYLOAD
LC403	1	LOAD CELL 5KLB, 3/4-16 UNF-2B, CFMUS & CE APPROVED	101NH-5KLB	IFI-02027-ANYLOAD	ANYLOAD
PIT-P33*15	1	PRESSURE TRANSMITTER, 30 PSI, 4-20MA HART, WITH LCD, CSA US APPROUVED	PMC71B-CABADJH6A 3KFA1VXJD	END-PMC71B-24V	ENDRESS + HAUSER
W-YCP33124-C1	1	M12 CABLE, SAC-4P-10,0-PUR/M12FR, 90 DEG, FREE CABLE END, 10M, 22 AWG	1681389	IFI-01942	PHOENIX CONTACT
W-YCP33126-C1	1	M12 CABLE, SAC-4P-10,0-PUR/M12FR, 90 DEG, FREE CABLE END, 10M, 22 AWG	1681389	IFI-01942	PHOENIX CONTACT
W-YCP33128-C1	1	M12 CABLE, SAC-4P-10,0-PUR/M12FR, 90 DEG, FREE CABLE END, 10M, 22 AWG	1681389	IFI-01942	PHOENIX CONTACT
W-YCP33222-C1	1	M12 CABLE, SAC-4P-10,0-PUR/M12FR, 90 DEG, FREE CABLE END, 10M, 22 AWG	1681389	IFI-01942	PHOENIX CONTACT
W-YCP33224-C1	1	M12 CABLE, SAC-4P-10,0-PUR/M12FR, 90 DEG, FREE CABLE END, 10M, 22 AWG	1681389	IFI-01942	PHOENIX CONTACT
W-YCP33226-C1	1	M12 CABLE, SAC-4P-10,0-PUR/M12FR, 90 DEG, FREE CABLE END, 10M, 22 AWG	1681389	IFI-01942	PHOENIX CONTACT
YC-P33124	1	PLASTIC CAPACITIVE PROXIMITY SENSOR, M18, 4-WIRE DC, PNP, NON FLUSH MOUNT	XT218A1PCM12	IFI-02165	SCHNEIDER ELECTRIC
YC-P33126	1	PLASTIC CAPACITIVE PROXIMITY SENSOR, M18, 4-WIRE DC, PNP, NON FLUSH MOUNT	XT218A1PCM12	IFI-02165	SCHNEIDER ELECTRIC
YC-P33128	1	PLASTIC CAPACITIVE PROXIMITY SENSOR, M18, 4-WIRE DC, PNP, NON FLUSH MOUNT	XT218A1PCM12	IFI-02165	SCHNEIDER ELECTRIC
YC-P33222	1	PLASTIC CAPACITIVE PROXIMITY SENSOR, M18, 4-WIRE DC, PNP, NON FLUSH MOUNT	XT218A1PCM12	IFI-02165	SCHNEIDER ELECTRIC
YC-P33224	1	PLASTIC CAPACITIVE PROXIMITY SENSOR, M18, 4-WIRE DC, PNP, NON FLUSH MOUNT	XT218A1PCM12	IFI-02165	SCHNEIDER ELECTRIC
YC-P33226	1	PLASTIC CAPACITIVE PROXIMITY SENSOR, M18, 4-WIRE DC, PNP, NON FLUSH MOUNT	XT218A1PCM12	IFI-02165	SCHNEIDER ELECTRIC
YE301	1	UNION Y-SHAPED 1/4" X 1/4" X 1/4" TUBE	D3140-4	DOM-D3140-4	DOMINION FITTING
YE302	1	UNION Y-SHAPED 1/4" X 1/4" X 1/4" TUBE	D3140-4	DOM-D3140-4	DOMINION FITTING
YE401	1	UNION Y-SHAPED 1/4" X 1/4" X 1/4" TUBE	D3140-4	DOM-D3140-4	DOMINION FITTING
YE402	1	UNION Y-SHAPED 1/4" X 1/4" X 1/4" TUBE	D3140-4	DOM-D3140-4	DOMINION FITTING

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Sceau / Stamp

Créé par / Created by	D. MARTEL
Vérifié par / Checked by	G. ARCAND
Approuvé par / Approved by	M.-A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

LIST OF MATERIAL – EXTERNAL COMPONENTS

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 5	0.3

TAG	LOCALISATION	SHEET	REF.
AC101	POWER PANEL	111	2G
AI201	CONTROL PANEL	214	4H
AI201	CONTROL PANEL	214	8H
AI202	CONTROL PANEL	215	4H
AI202	CONTROL PANEL	215	8H
AO201	CONTROL PANEL	216	1H
AO201	CONTROL PANEL	216	5H
BH301	ROTARY PRESS 1 – JB	310	7G
BH302	ROTARY PRESS 1 – JB	310	3C
BH303	ROTARY PRESS 1 – JB	310	3E
BH304	ROTARY PRESS 1 – JB	310	3G
BH305	ROTARY PRESS 1 – JB	310	3E
BH306	ROTARY PRESS 1 – JB	310	3H
BH307	ROTARY PRESS 1 – JB	310	3E
BH308	ROTARY PRESS 1 – JB	310	3H
BH309	ROTARY PRESS 1 – JB	310	7F
BH401	ROTARY PRESS 2 – JB	410	7G
BH402	ROTARY PRESS 2 – JB	410	3C
BH403	ROTARY PRESS 2 – JB	410	3E
BH404	ROTARY PRESS 2 – JB	410	3G
BH405	ROTARY PRESS 2 – JB	410	3E
BH406	ROTARY PRESS 2 – JB	410	3H
BH407	ROTARY PRESS 2 – JB	410	3E
BH408	ROTARY PRESS 2 – JB	410	3H
BH409	ROTARY PRESS 2 – JB	410	7F
CB1–1	POWER PANEL	112	1H
CB1–2	CONTROL PANEL	211	1H
CB101	POWER PANEL	110	4C
CB102	POWER PANEL	111	1H
CB103	POWER PANEL	111	1G
CB2–1	POWER PANEL	112	1G
CB2–2	CONTROL PANEL	211	1F
CB201	CONTROL PANEL	210	1G
CB202	CONTROL PANEL	210	1E
CB203	CONTROL PANEL	210	1D
CB204	CONTROL PANEL	210	5H
CB205	CONTROL PANEL	210	5E
CB3–2	CONTROL PANEL	211	1E
CB4–2	CONTROL PANEL	211	1D
CB5–2	CONTROL PANEL	211	5H
CB6–2	CONTROL PANEL	211	5G
CB7–2	CONTROL PANEL	211	5G
CB8–2	CONTROL PANEL	211	5F
CB9–2	CONTROL PANEL	211	5F
CR201	CONTROL PANEL	219	3F
CR202	CONTROL PANEL	219	3E
CR203	CONTROL PANEL	219	3E
CR204	CONTROL PANEL	219	3D
CR205	CONTROL PANEL	219	3C
CR206	CONTROL PANEL	219	7H
CR207	CONTROL PANEL	219	7G
DA201	CONTROL PANEL	210	3D
DI201	CONTROL PANEL	217	4H
DO201	CONTROL PANEL	219	1H
ESR101	POWER PANEL	113	1A
ESR201	CONTROL PANEL	212	7H
FIT–P33*11	FIELD	214	2F
FIT–P33*13	FIELD	2	6H
FU101	POWER PANEL	110	4F
GND101	POWER PANEL	110	2G
GND102	POWER PANEL	110	4D
GND201	CONTROL PANEL	210	2G
GND202	CONTROL PANEL	210	3E
GND203	CONTROL PANEL	214	7B

TAG	LOCALISATION	SHEET	REF.
GND301	ROTARY PRESS 1 – JB	311	1G
GND401	ROTARY PRESS 2 – JB	411	1G
HC–P33*10	POWER PANEL	115	6B
HC–P33*20	POWER PANEL	115	2B
HMI101	POWER PANEL	115	3G
HMI102	POWER PANEL	115	7G
HS–P33*10	POWER PANEL	115	5H
HS–P33*20	POWER PANEL	115	1H
HSS–P33129	ROTARY PRESS 1 – JB	311	4H
HSS–P33229	ROTARY PRESS 2 – JB	411	4H
HUB101	POWER PANEL	112	2H
HUB201	CONTROL PANEL	211	2D
HUB202	CONTROL PANEL	211	2C
IP301	ROTARY PRESS 1 – JB	311	3G
IP401	ROTARY PRESS 2 – JB	411	3G
LC302	ROTARY PRESS 1	312	4F
LC303	ROTARY PRESS 1	312	4E
LC304	ROTARY PRESS 1	312	4D
LC401	ROTARY PRESS 2	412	4H
LC402	ROTARY PRESS 2	412	4F
LC403	ROTARY PRESS 2	412	4E
LCC302	ROTARY PRESS 1 – JB	312	2F
LCC303	ROTARY PRESS 1 – JB	312	2E
LCC304	ROTARY PRESS 1 – JB	312	2D
LCC401	ROTARY PRESS 2 – JB	412	2H
LCC402	ROTARY PRESS 2 – JB	412	2F
LCC403	ROTARY PRESS 2 – JB	412	2E
LF101A	POWER PANEL	110	5F
LF101B	POWER PANEL	110	5D
LF102A	POWER PANEL	110	6F
LF102B	POWER PANEL	110	6D
LT201	CONTROL PANEL	210	3F
LT202	CONTROL PANEL	210	7E
LT203	CONTROL PANEL	219	3G
LT204	CONTROL PANEL	219	3G
MCR201	CONTROL PANEL	212	6G
MOT101	FIELD	110	5C
MOT102	FIELD	110	6C
MS101	POWER PANEL	110	5G
MS102	POWER PANEL	110	6G
OI201	CONTROL PANEL	211	2E
PD101	POWER PANEL	110	2H
PIT–P33*15	FIELD	214	2H
PLC201	CONTROL PANEL	213	5H
PLCPS201	CONTROL PANEL	213	4H
PS101	POWER PANEL	111	2E
PS202	CONTROL PANEL	210	6D
PW101	POWER PANEL	110	3F
Q101	POWER PANEL	110	2H
RACK201	CONTROL PANEL	213	4G
REG301	ROTARY PRESS 1 – JB	310	7D
REG401	ROTARY PRESS 2 – JB	410	7D
S201	CONTROL PANEL	212	6D
SE301	ROTARY PRESS 1 – JB	310	2C
SE302	ROTARY PRESS 1 – JB	310	2B
SE303	ROTARY PRESS 1 – JB	310	2B
SE304	ROTARY PRESS 1 – JB	310	7D
SE401	ROTARY PRESS 2 – JB	410	2C
SE402	ROTARY PRESS 2 – JB	410	2B
SE403	ROTARY PRESS 2 – JB	410	2B
SE404	ROTARY PRESS 2 – JB	410	7D
SS101	POWER PANEL	111	2G
SS201	CONTROL PANEL	210	3E
T101	POWER PANEL	110	4D

TAG	LOCALISATION	SHEET	REF.
TE301	ROTARY PRESS 1 – JB	310	5E
TE302	ROTARY PRESS 1 – JB	310	6G
TE303	ROTARY PRESS 1 – JB	310	6F
TE401	ROTARY PRESS 2 – JB	410	5E
TE402	ROTARY PRESS 2 – JB	410	6G
TE403	ROTARY PRESS 2 – JB	410	6F
TSH101	POWER PANEL	112	8H
UPS201	CONTROL PANEL	210	5G
VFD–P33*10	POWER PANEL	115	7G
VFD–P33*20	POWER PANEL	115	3G
VT301	ROTARY PRESS 1 – JB	311	3E
VT401	ROTARY PRESS 2 – JB	411	3E
YC–P33124	ROTARY PRESS 1	311	8G
YC–P33126	ROTARY PRESS 1	311	8F
YC–P33128	ROTARY PRESS 1	311	8F
YC–P33222	ROTARY PRESS 2	411	8H
YC–P33224	ROTARY PRESS 2	411	8G
YC–P33226	ROTARY PRESS 2	411	8F
YE301	FIELD	310	4E
YE302	FIELD	310	4G
YE401	FIELD	410	4E
YE402	FIELD	410	4G
ZL–P33*10–1	POWER PANEL	115	6C
ZL–P33*10–2	POWER PANEL	115	6D
ZL–P33*20–1	POWER PANEL	115	2C
ZL–P33*20–2	POWER PANEL	115	2D
ZSC–P33*17	FIELD	217	2E
ZSC–P33*18	FIELD	217	2C
ZSO–P33*17	FIELD	217	2E
ZSO–P33*18	FIELD	217	2D

NOT TO BE USED FOR INSTALLATION
ISSUE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

Rev.	Description	Date	Dessiné par / Drawn by
0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
0.2	FOR APPROVAL – AS CUSTOMER'S COMMENTS (2)	07/02/2024	D. MARTEL
0.1	FOR APPROVAL – AS CUSTOMER'S COMMENTS (1)	18/01/2024	D. MARTEL
0.0	FOR APPROVAL	04/07/2023	D. MARTEL

FOURNIER
LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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Vérifié par / Checked by: G. ARCAND
Approuvé par / Approved by: M.–A. TURGEON
Date de création / Creation date: 16/06/2023
Échelle / Scale:

WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

LIST OF REFERENCES

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 6	0.3

* IMPORTANT – TYPICAL TAGS

NOTE 1 :
POWER PANEL DRAWINGS (SHEETS 100 TO 115) ARE TYPICAL & APPLICABLE FOR BOTH ROTARY PRESS SYSTEM.

REPLACE * IN TAGS WITH THE FOLLOWING WHEN APPLICABLE.
ROTARY PRESS SYSTEM 1 : 1
ROTARY PRESS SYSTEM 2 : 2

NOTE 2 :
CONTROL PANEL DRAWINGS (SHEETS 200 TO 220) ARE TYPICAL & APPLICABLE FOR BOTH ROTARY PRESS SYSTEM.

REPLACE * IN TAGS WITH THE FOLLOWING WHEN APPLICABLE.
ROTARY PRESS SYSTEM 1 : 1
ROTARY PRESS SYSTEM 2 : 2

NOTE 3 :
SOME EXTERNAL COMPONENTS (SHEET 4) ARE TYPICAL & APPLICABLE FOR BOTH ROTARY PRESS SYSTEM.

REPLACE * IN TAGS WITH THE FOLLOWING WHEN APPLICABLE.
ROTARY PRESS SYSTEM 1 : 1
ROTARY PRESS SYSTEM 2 : 2

* IMPORTANT – WIRING REQUIREMENTS

NOTE 4 :
CONDUCTORS NEED TO BE PROPERLY IDENTIFIED WITH APPROPRIATE TAPE OR MARKERS.

NOTE 5 :
CONDUCTORS NEED TO RESPECT THE FOLLOWING WIRING COLOR CODE.

* CUSTOM WIRING COLOR CODE

3 PHASES WIRING:

600 VAC – LINE 1	BLACK
600 VAC – LINE 2	BLACK
600 VAC – LINE 3	BLACK
GROUND	GREEN

GENERAL WIRING:

POWER – 120/240 VAC SUPPLY	BLACK
POWER – 120/240 VAC NEUTRAL	WHITE
POWER – 24 VDC SUPPLY (+)	BLUE
POWER – 24 VDC COMMON (–)	BROWN
DISCRETE CONTROL – AC	RED
DISCRETE CONTROL – DC	BLUE
INTRINSICALLY SAFE (IS)	IS (LIGHT) BLUE
PROTECTIVE EARTH (PE)	GREEN
SIGNAL GROUND / INSTRUMENTATION EARTH (IE)	GREEN/YELLOW

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USE REV 2.X
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WINNIPEG, MB
2 X ROTARY PRESS 3(4)–900/4000CVP

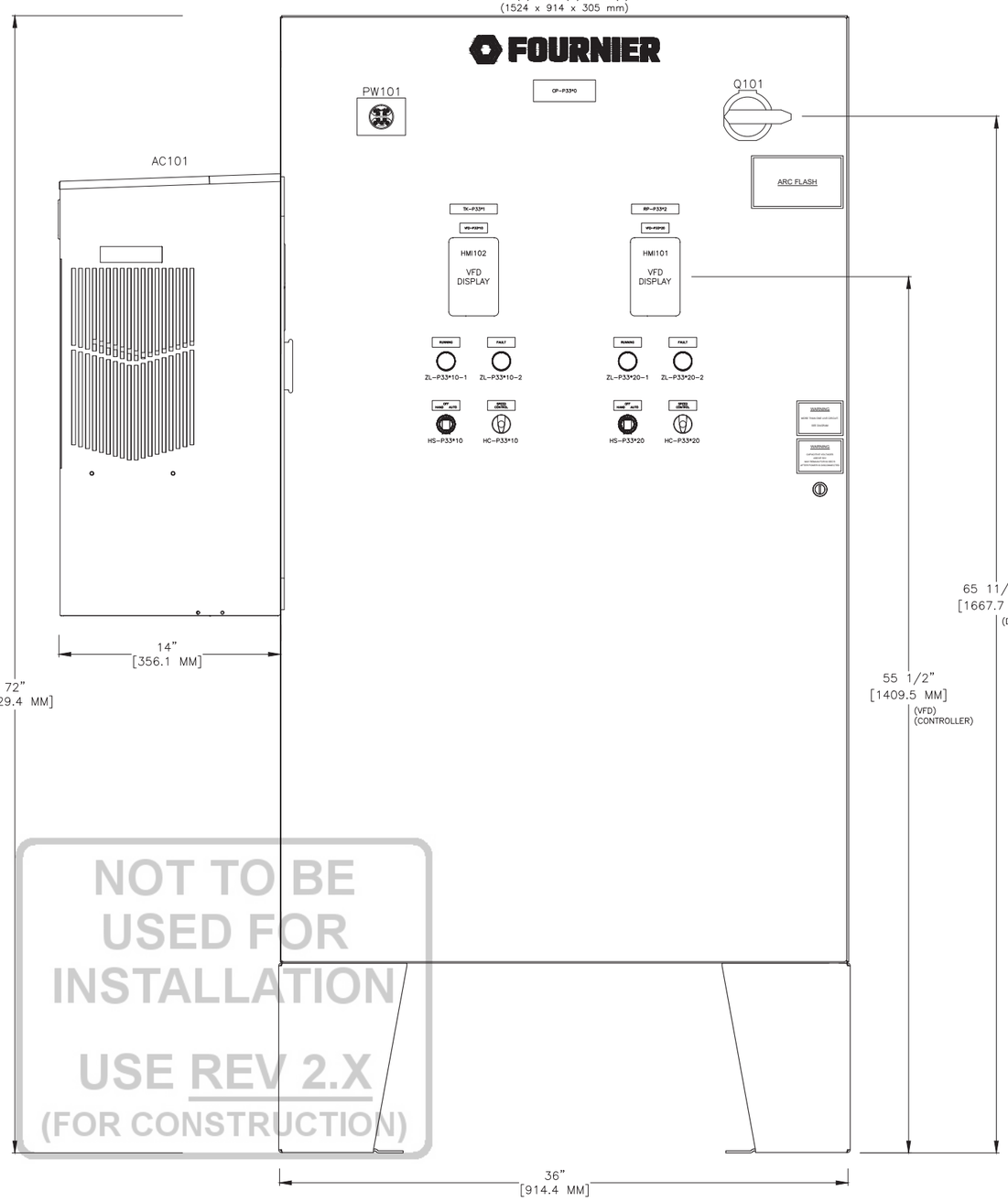
GENERAL NOTES & ASSEMBLY INSTRUCTIONS

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 7	0.3

FRONT VIEW

CP–33*0

60"(H) x 36"(W) x 12"(D)
(1524 x 914 x 305 mm)

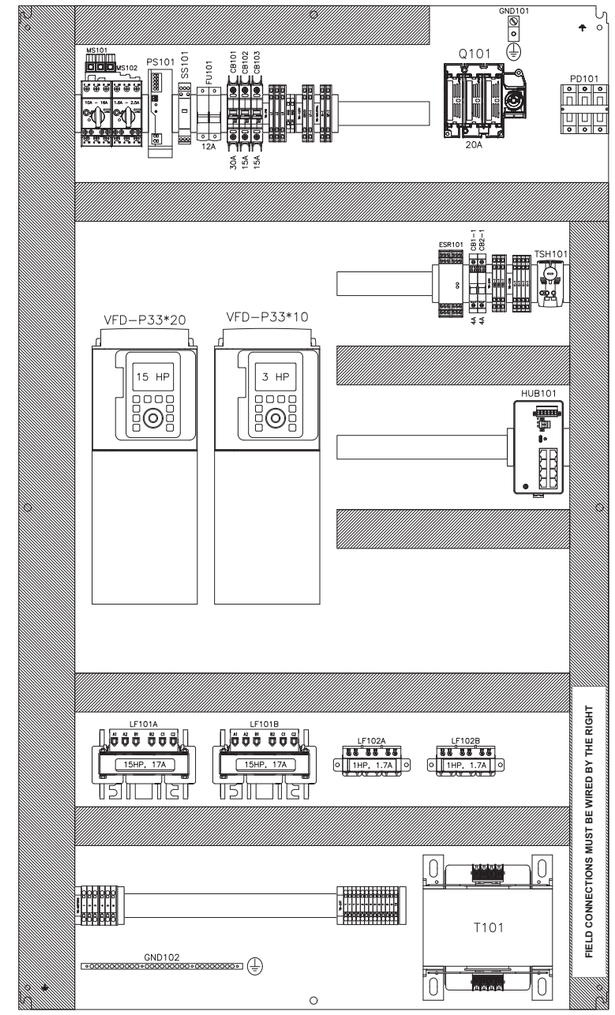


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(FOR CONSTRUCTION)

BACKPLATE

BP101



Notes générales / General notes

* IMPORTANT
FINAL DESIGN WILL BE ON
"FOR CONSTRUCTION" REVISION

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WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

POWER PANEL
GENERAL ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 100	0.3

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
AC101	1	AIR CONDITIONER 4000 BTU, 120V 60HZ, NEMA 12, 3R, 4	N280416G050	HOF-N280416G050	HOFFMAN
BP101	1	BACK PLATE, 60" X 36", GALVANIZED	CP6036G	HOF-CP6036G	HOFFMAN
CB1-1	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB101	1	CIRCUIT BREAKER, 1 POLE, 30A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C300		AB
CB102	1	CIRCUIT BREAKER, 1 POLE, 15A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C150	ALL-1489-M1C150	AB
CB103	1	CIRCUIT BREAKER, 1 POLE, 15A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C150	ALL-1489-M1C150	AB
CB2-1	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CP-33*0	1	ENCLOSURE, CONCEPT, 60" X 36" X 12", STEEL, TYPE 4/12/13	CSD603612		HOFFMAN
	1	CORROSION INHIBITOR, EMITTER FOR 10 CUBIC FOOT (12 PER PACKAGE)	AHCI10E	HOF-AHCI10E	HOFFMAN
	1	CORROSION INHIBITOR, EMITTER FOR 5 CUBIC FOOT (25 PER PACKAGE)	AHCI5E	HOF-AHCI5E	HOFFMAN
	1	DATA POCKET 12" X 12"	ADP2		HOFFMAN
	1	FLOOR STAND KIT, STEEL, 12" X 12", NEMA 4, 12	AFK1212		HOFFMAN
	1	STICKER : FOURNIER LOGO, 12", VINYL, BLUE & RED, ADHESIVE TYPE	LOGOF-12VBLE/R	LOGOF-12VBLE/R	FOURNIER
	1	STICKER : MORE THAN ONE LIVE CIRCUIT, WHITE ON RED, ADHESIVE TYPE	IFI-02218-1AN	IFI-02218-1AN	FOURNIER
	1	STICKER : CAPACITIVE VOLTAGES REMAIN, WHITE ON RED, ADHESIVE TYPE	IFI-02218-2AN	IFI-02218-2AN	FOURNIER
	1	STICKER : DANGER - ARC FLASH & SHOCK HAZARD, EN, ADHESIVE TYPE	IFI-02218-4AN	IFI-02218-4AN	FOURNIER
EB101	10	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
ESR101	1	SAFETY RELAY EXPANSION MODULE, 5 SPST-NO, 1 SPST-NC, 24 VDC	2963734	PHO-2963734	PHOENIX CONTACT
FU101	1	FUSE BLOCK, 2 POLE, CLASS CC	USCC2	FER-USCC2	FERRAZ SHAWMUT
	2	FUSE, CLASS CC, 12A	ATQR12		FERRAZ SHAWMUT
GND101	1	TERMINAL, ALUMINIUM, 2/0AWG, 1/4	LAMA2/0-14-QY	PAN-LAMA2/014-QY	PANDUIT
GND102	1	TERMINAL BAR, ALUMINIUM, #6-2/0 CU/AL, 9.25", 27 SCREW CONNECTIONS, 1/4	PK27GTA	SCH-PK27GTA	SCHNEIDER ELECTRIC
HC-P33*10	1	POTENTIOMETER OPERATOR, COMPLETE KIT, SINGLE TURN, 22.5MM, 10K OHM, BLACK	800FP-POT6		AB
HC-P33*20	1	POTENTIOMETER OPERATOR, COMPLETE KIT, SINGLE TURN, 22.5MM, 10K OHM, BLACK	800FP-POT6		AB
HMI101	1	ALTIVAR 630/930, DISPLAY TERMINAL MOUNTING KIT	VW3A1112		SCHNEIDER ELECTRIC
HMI102	1	ALTIVAR 630/930, DISPLAY TERMINAL MOUNTING KIT	VW3A1112		SCHNEIDER ELECTRIC
HS-P33*10	1	800F 3 POSITION SELECTOR SWITCH - PLASTIC, MAINTAINED, BLACK, STANDARD KNOB, STANDARD ORIENTATION	800FP-SM32		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	4	SCREW CONTACT BLOCK 1 N.O FOR 22.5MM OPERATOR	800F-X10	ALL-800FX10	AB
HS-P33*20	1	800F 3 POSITION SELECTOR SWITCH - PLASTIC, MAINTAINED, BLACK, STANDARD KNOB, STANDARD ORIENTATION	800FP-SM32		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	4	SCREW CONTACT BLOCK 1 N.O FOR 22.5MM OPERATOR	800F-X10	ALL-800FX10	AB
HUB101	1	INDUSTRIAL ETHERNET SWITCH, MANAGED, 8 PORTS, 10/100 MBPS, 24 VDC	MCSESM083F23F0		SCHNEIDER ELECTRIC
LF101A	1	LINE REACTOR, 575/600V, 3% IMPEDANCE, 15 HP, 17A	KDRB45L		TRANSFAB
LF101B	1	LINE REACTOR, 575/600V, 3% IMPEDANCE, 15 HP, 17A	KDRB45L		TRANSFAB
LF102A	1	LINE REACTOR, 575/600V, 3% IMPEDANCE, 1 HP, 1.7A	KDRMA45L1		TRANSFAB
LF102B	1	LINE REACTOR, 575/600V, 3% IMPEDANCE, 1 HP, 1.7A	KDRMA45L1		TRANSFAB
MS101	1	140MT, MOTOR PROTECTION CIRCUIT BREAKER, STD MAGNETIC TRIP, 10A TO 16A, FRAME C	140MT-C3E-C16		AB
	1	COMPACT BUSBAR FEEDER TERMINAL, FOR 140MT-C, 140MT-D, NOMINAL 64A, UL	140MT-C-WTEN		AB
	1	140MT, 2-PT, BUSBAR FOR -C,-D, 3PH, 45MM SPACING, NOMINAL 64A	140MT-C-W452		AB
MS102	1	140MT, MOTOR PROTECTION CIRCUIT BREAKER, STD MAGNETIC TRIP, 1.6A TO 2.5A, FRAME C	140MT-C3E-B25		AB
PD101	1	POWER DISTRIBUTION BLOCK, 175A, 600V, LINE : 1 X 2/0 TO #14AWG, LOAD 4 X #4 TO #14 AWG	1492-PD3141	ALL-1492PD3141	AB
	1	POWER BLOCK COVER FOR 1492-PD3141 & 1492-100X	1492-PBC1	ALL-1492-PBC1	AB
PS101	1	POWER SUPPLY, TRIO, 24-28 VDC, 5A, 100-240 VAC INPUT VOLTAGE	2903148		PHOENIX CONTACT
PW101	1	POWER WARNING ALERT, 40-750 VAC, 1PH OR 3PH	R-3W		GRACE ENGINEER
	1	POWER WARNING ALERT LABEL	R-3W-L	GRA-R3W-L	GRACE ENGINEER
Q101	1	RED/YELLOW OPERATING HANDLES UP TO 60A DISCONNECT SWITCHES	194R-PY	ALL-194R-PY	AB
	1	DISCONNECT SWITCH, 1-30A, 3P, FUSING TYPE: UL CLASS J/CSA HRCI-J	194R-J30-1753	ALL-194R-J30-1753	AB
	1	12" OPERATING SHAFT FOR DISCONNECT SWITCH 30A TO 60A	194R-S1	ALL-194R-S1	AB
	3	FUSE, CLASS J, 20A	AJT20	GOU-AJT20	FERRAZ SHAWMUT
SS101	1	SURGE SUPPRESSOR 120V 26A, FOR 3-CONDUCTOR SYSTEM (L1, N, PE), SCREW	2907918	PHO-2907918	PHOENIX CONTACT
T101	1	TRANSFORMER, 480-600/120-240V, 3000VA	SP3000ACP		HAMMOND
	2	FINGER GUARDS, FOR TRANSFORMER KHP-SP-NJ, (50-1500VA), ACP-MQMJ (50-3000VA)	SPFG1	HPS-SPFG1	HAMMOND
TB-120V	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	2	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
	2	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-24V	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	3	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-COM	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-EXT	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	1	PT4 PARTITION PLATE, GREY, (D-ST4)	3030420	PHO-3030420	PHOENIX CONTACT
	13	PT4, PUSH-IN TERMINAL, 1 LEVEL, 32A, GREY, 10-24 AWG	3211757	PHO-3211757	PHOENIX CONTACT
TB-MOTORS	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, LONG, HEIGHT-ADJUSTABLE, GRAY	0814788	PHO-0814788	PHOENIX CONTACT
	6	PT6, PUSH-IN TERMINAL, 1 LEVEL, 41A, GREY, 8-20 AWG	3211813	PHO-3211813	PHOENIX CONTACT
	2	PT6 PARTITION PLATE, GREY, (D-PT6)	3212044	PHO-3212044	PHOENIX CONTACT
TB-NEUTRAL	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	2	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	2	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-PW	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	3	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	3	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
	2	PT4-PE, PUSH-IN TERMINAL, 1 LEVEL, GND, YELLOW/GREEN, 10-24 AWG	3211766	PHO-3211766	PHOENIX CONTACT
	1	PT4 PARTITION PLATE, GREY, (D-ST4)	3030420	PHO-3030420	PHOENIX CONTACT
TSH101	1	THERMOSTAT, CONTROL COOLING (NO) EQUIPEMENTS, CELSIUS	SKT011419NO-C	HAM-SKT011419NOC	HAMMOND
VFD-P33*10	1	ALTIVAR 930, VFD, 600VAC, 3HP ND, 2HP HD, WITH HMI	ATV930U22S6X		SCHNEIDER ELECTRIC
VFD-P33*20	1	ALTIVAR 930, VFD, 600VAC, 20HP ND, 15HP HD, WITH HMI	ATV930D15S6X		SCHNEIDER ELECTRIC
ZL-P33*10-1	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, GREEN, IP66	800FP-P3		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	INTEGRATED LED MODULE, 24V AC/DC, GREEN	800F-N3G		AB
ZL-P33*10-2	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, RED, IP66	800FP-P4		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	INTEGRATED LED MODULE, 24V AC/DC, RED	800F-N3R		AB
ZL-P33*20-1	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, GREEN, IP66	800FP-P3		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	INTEGRATED LED MODULE, 24V AC/DC, GREEN	800F-N3G		AB
ZL-P33*20-2	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, RED, IP66	800FP-P4		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	INTEGRATED LED MODULE, 24V AC/DC, RED	800F-N3R		AB

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USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

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0.3	FOR APPROVAL - AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
0.2	FOR APPROVAL - AS CUSTOMER'S COMMENTS (2)	07/02/2024	D. MARTEL
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FOURNIER
LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

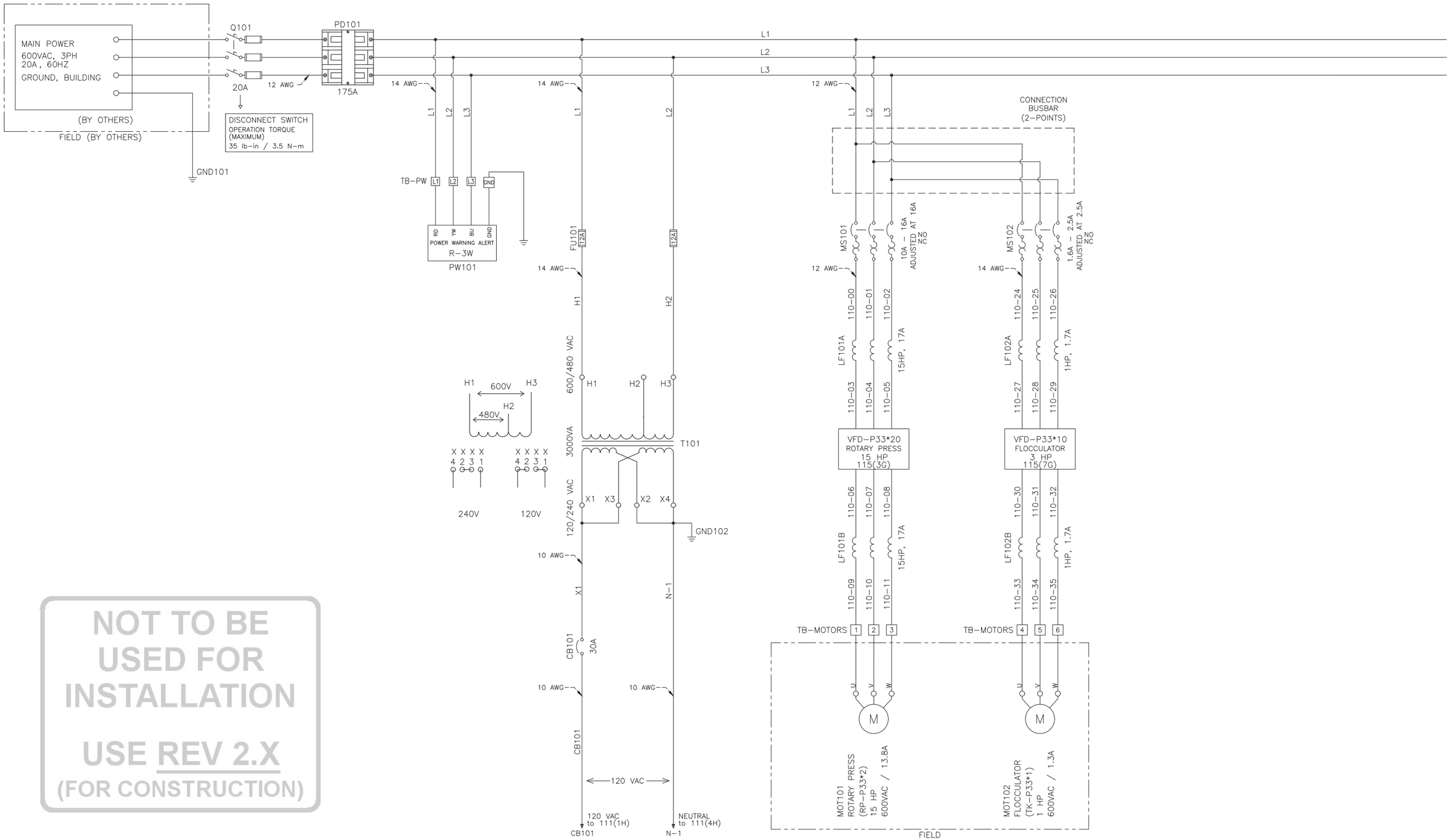
Sceau / Stamp

Créé par / Created by: D. MARTEL
Vérifié par / Checked by: G. ARCAND
Approuvé par / Approved by: M.-A. TURGEON
Date de création / Creation date: 16/06/2023
Échelle / Scale:

WINNIPEG, MB
2 X ROTARY PRESS 3(4)-900/4000CVP

POWER PANEL
LIST OF MATERIAL

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 101	0.3



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THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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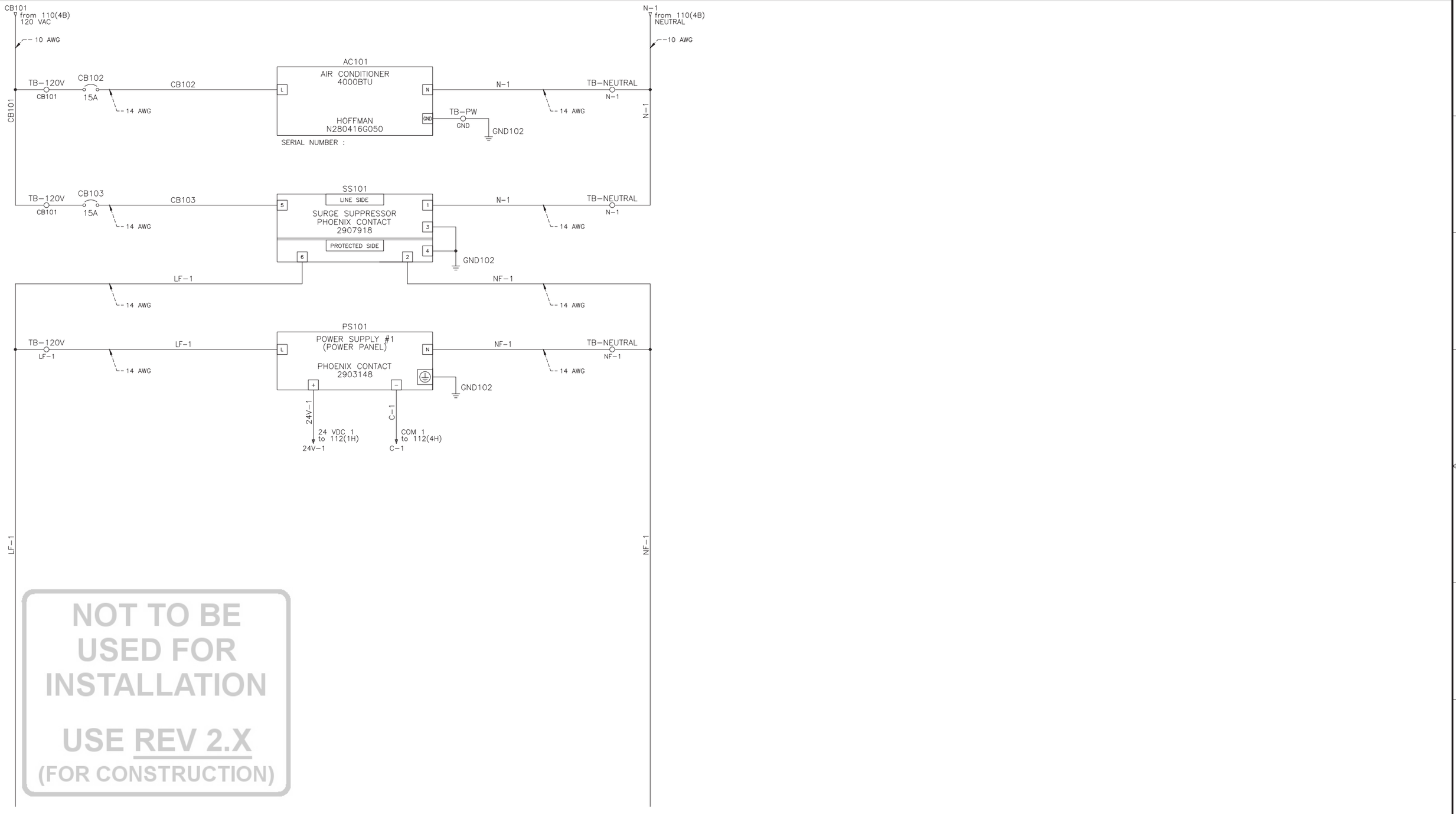
WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

POWER PANEL
ELECTRICAL ARRANGEMENT – 600 VAC

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 110	0.3

FQF-076R3 (211223)



NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:
BUILT-IN WITH 6.3A INPUT FUSE.

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0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
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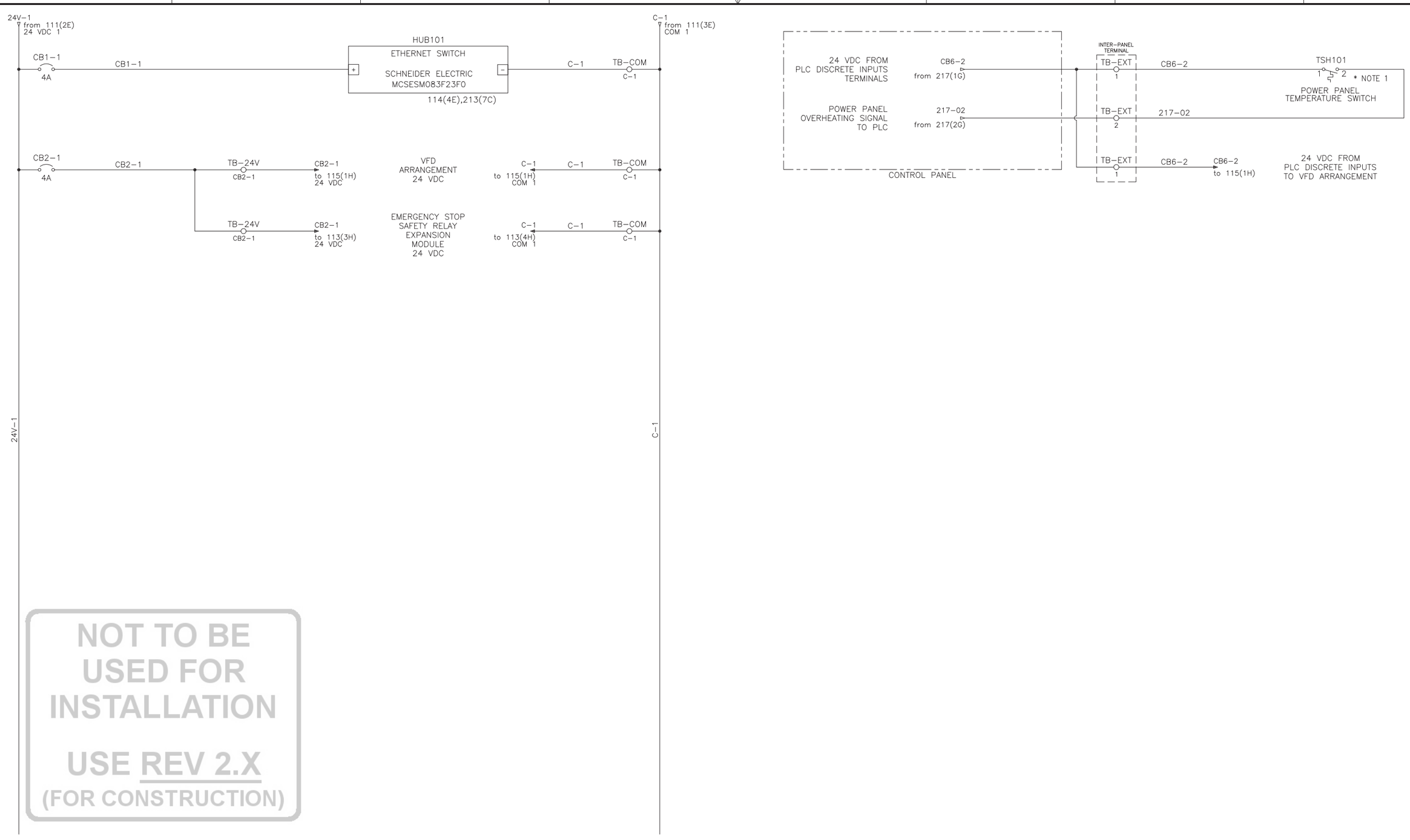
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Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

POWER PANEL
ELECTRICAL ARRANGEMENT – 120 VAC

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 111	0.3



NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:

TEMPERATURE SWITCH (TSH101)
ADJUSTED AT 45°C/113°F

Rev.	Description	Date	Dessiné par / Drawn by
0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
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0.0	FOR APPROVAL	04/07/2023	D. MARTEL

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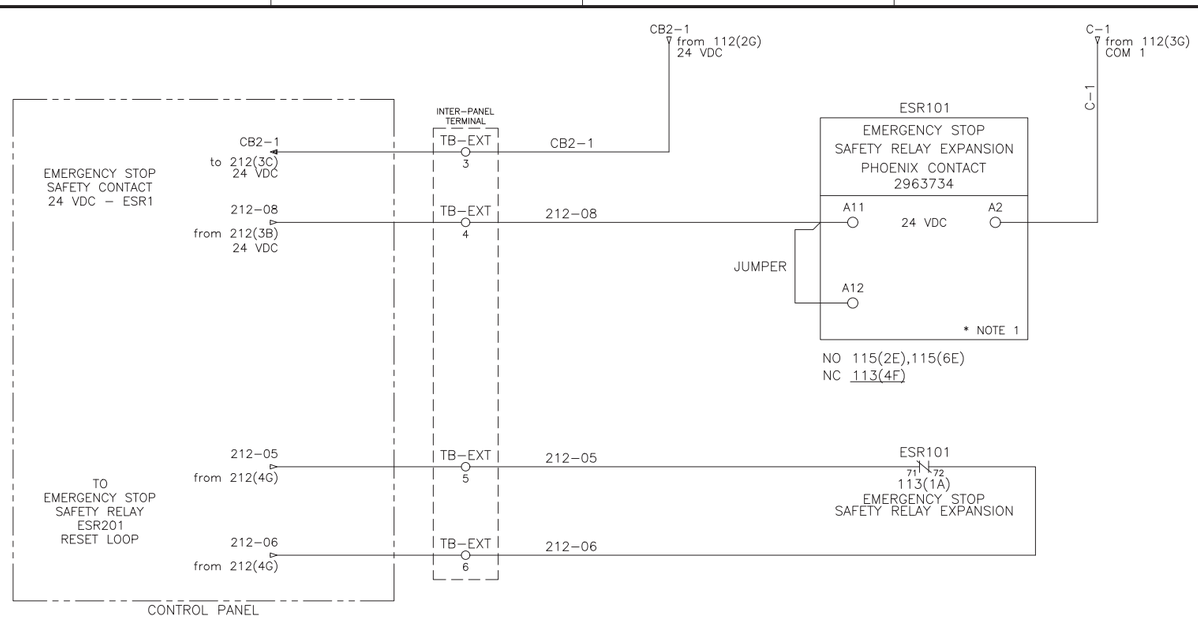
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Échelle / Scale	

WINNIPEG, MB
2 X ROTARY PRESS 3(4)-900/4000CVP

POWER PANEL
ELECTRICAL ARRANGEMENT – 24 VDC

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 112	0.3



NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:

PHOENIX CONTACT
2963734

CONTACT RATING
250V AC/DC, 6A

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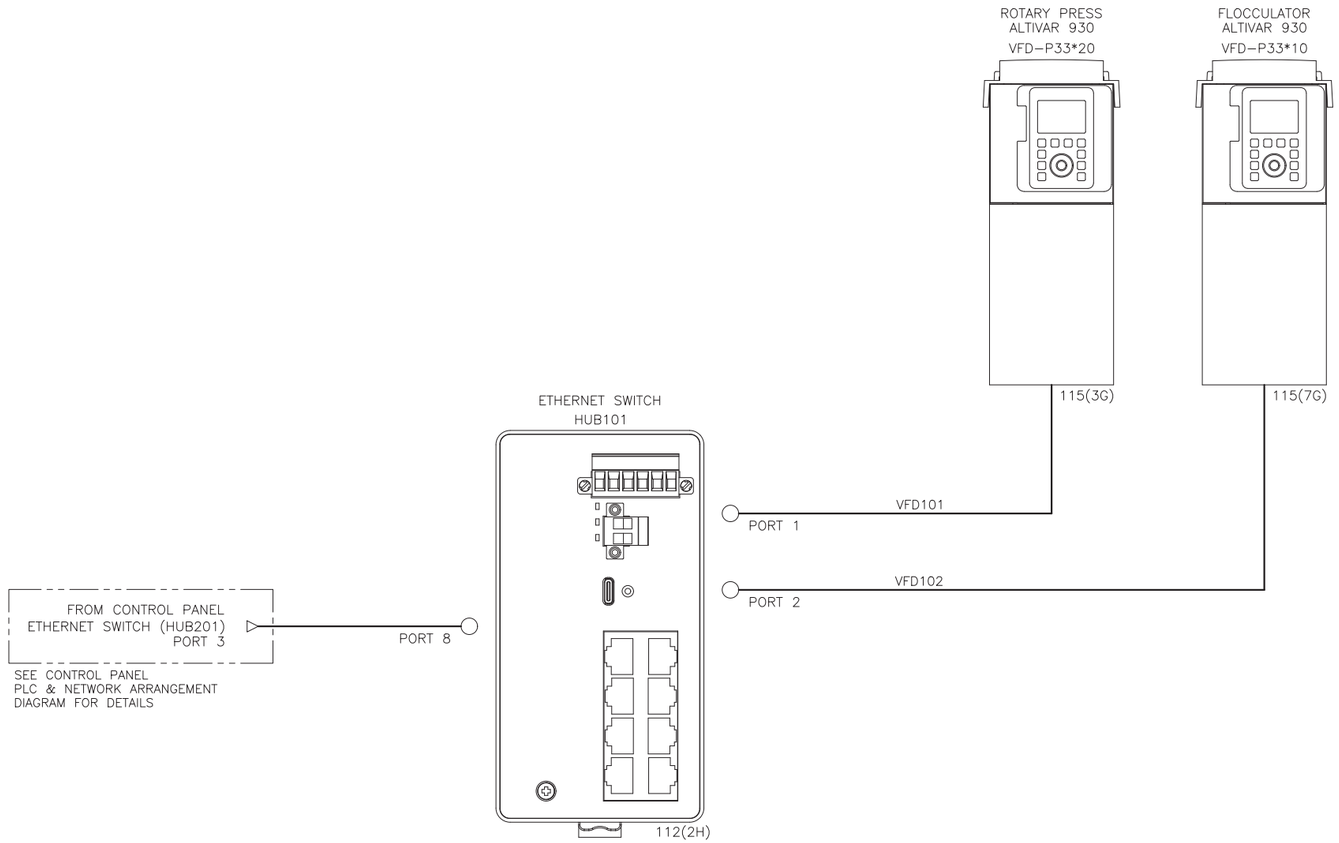
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WINNIPEG, MB
2 X ROTARY PRESS 3(4)-900/4000CVP

POWER PANEL
SAFETY – EMERGENCY STOP

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 113	0.3



ETHERNET SWITCH (HUB101) – ADDRESSING

PORT	DESCRIPTION	IP ADDRESS – RP1	IP ADDRESS – RP2
1	VFD – ROTARY PRESS	192.168.100.30	192.168.100.40
2	VFD – FLOCCULATOR	192.168.100.31	192.168.100.41
3	SPARE	–	–
4	SPARE	–	–
5	SPARE	–	–
6	SPARE	–	–
7	SPARE	–	–
8	CONTROL PANEL ETHERNET SWITCH (HUB201)	192.168.100.1	192.168.100.2
	LOCAL ETHERNET SWITCH (HUB101)	192.168.100.3	192.168.100.4

NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

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FOURNIER
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FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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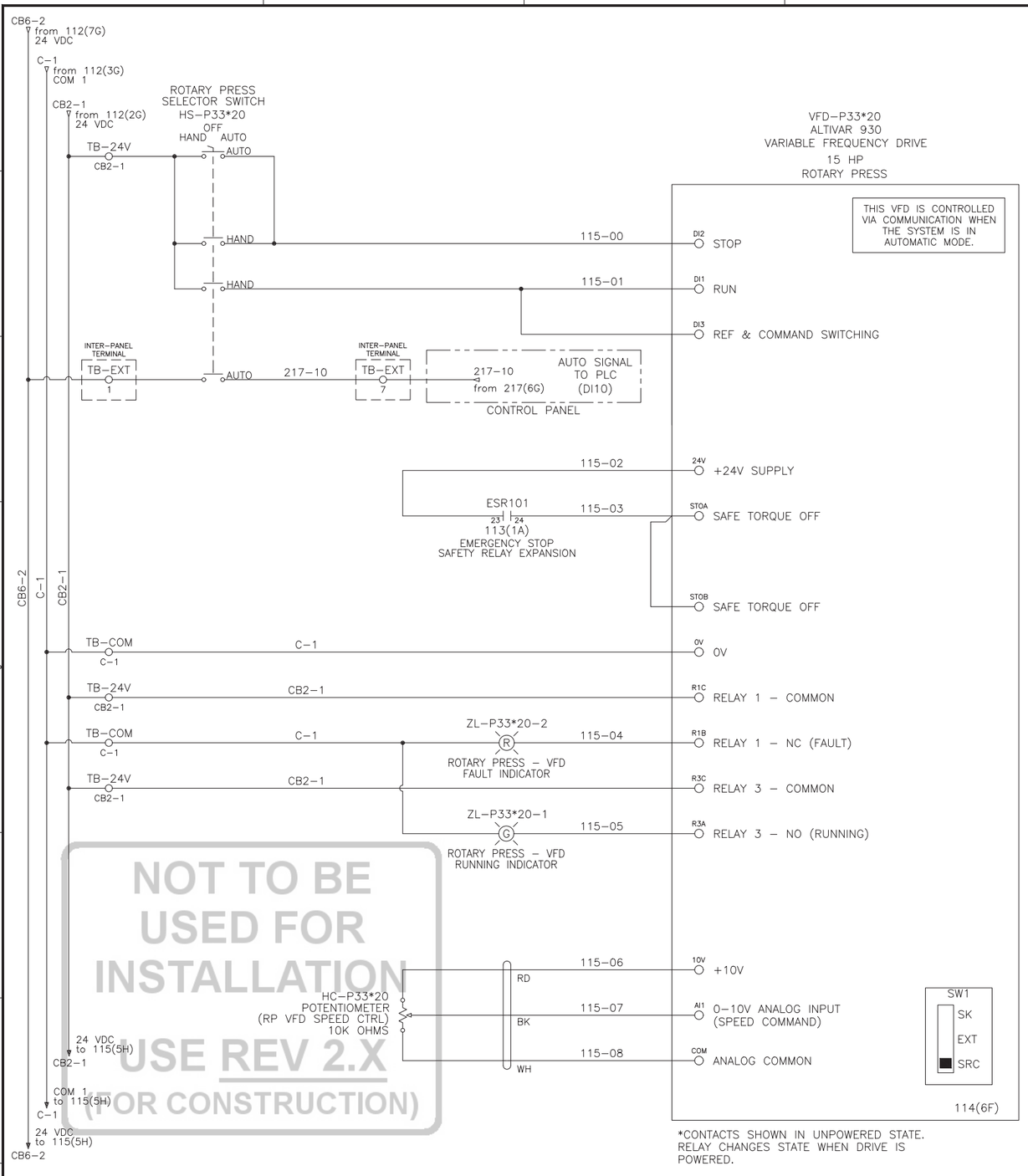
WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

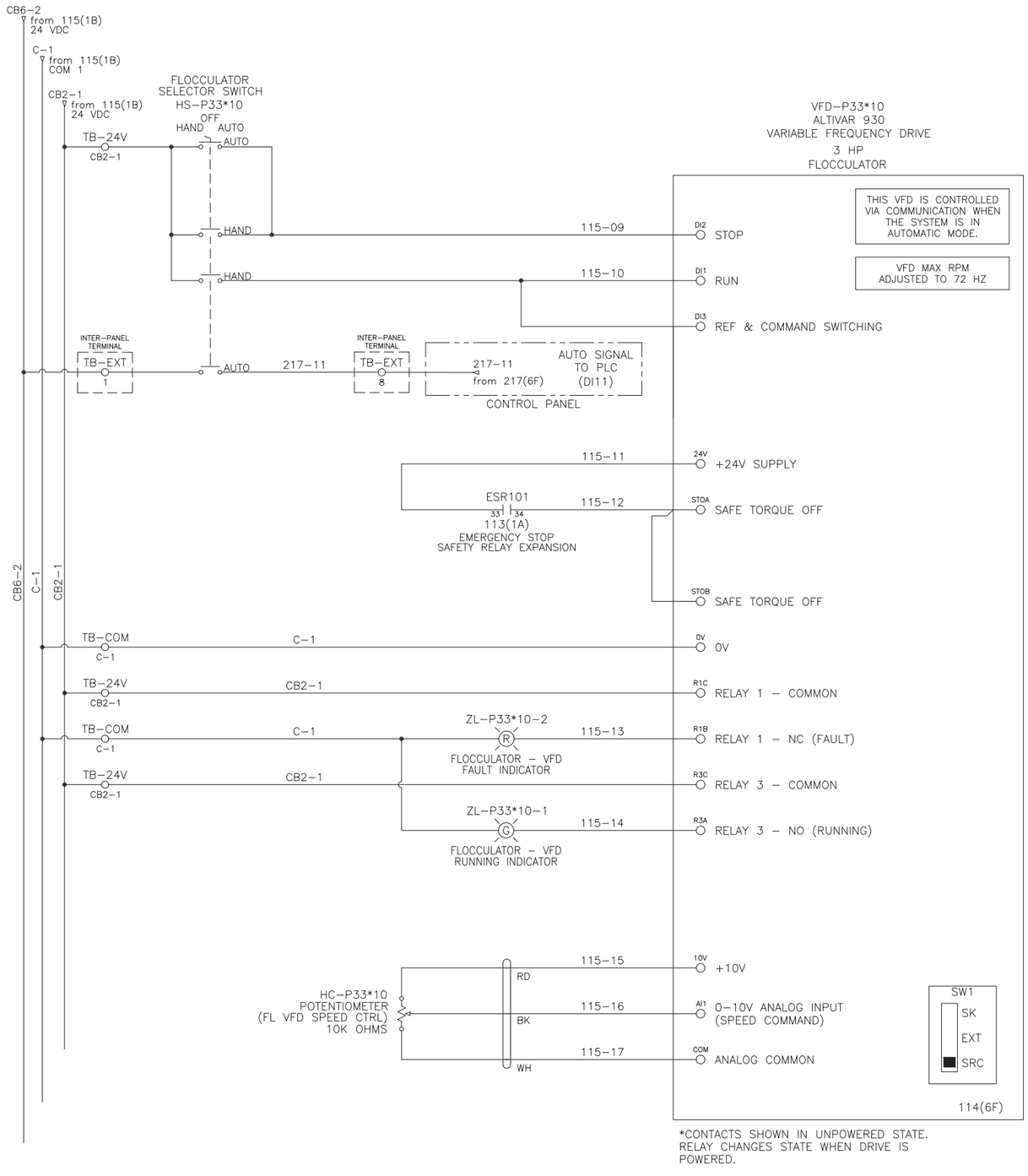
POWER PANEL
NETWORK ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 114	0.3

FQF-076R3 (211223)



*CONTACTS SHOWN IN UNPOWERED STATE. RELAY CHANGES STATE WHEN DRIVE IS POWERED.



*CONTACTS SHOWN IN UNPOWERED STATE. RELAY CHANGES STATE WHEN DRIVE IS POWERED.

NOT TO BE USED FOR INSTALLATION
USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

Rev.	Description	Date	Dessiné par / Drawn by
0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
0.2	FOR APPROVAL – AS CUSTOMER'S COMMENTS (2)	07/02/2024	D. MARTEL
0.1	FOR APPROVAL – AS CUSTOMER'S COMMENTS (1)	18/01/2024	D. MARTEL
0.0	FOR APPROVAL	04/07/2023	D. MARTEL

FOURNIER
LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

CE DESSIN ET TOUTES LES INFORMATIONS QU'IL CONTIENT SONT LA PROPRIÉTÉ EXCLUSIVE DE LES INDUSTRIES FOURNIER INC. IL EST STRICTEMENT INTERDIT DE COMMUNIQUER OU UTILISER SON CONTENU À D'AUTRES FINS QUE CELLES PERMISES ORIGINALEMENT OU POUVANT ÊTRE PRÉJUDICIABLES AUX INTÉRÊTS DE LES INDUSTRIES FOURNIER INC. TOUTE REPRODUCTION DE CE DESSIN EST INTERDITE ET IL DOIT ÊTRE RETOURNÉ SUR DEMANDE.

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Sceau / Stamp

Créé par / Created by	D. MARTEL
Vérifié par / Checked by	G. ARCAND
Approuvé par / Approved by	M.–A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

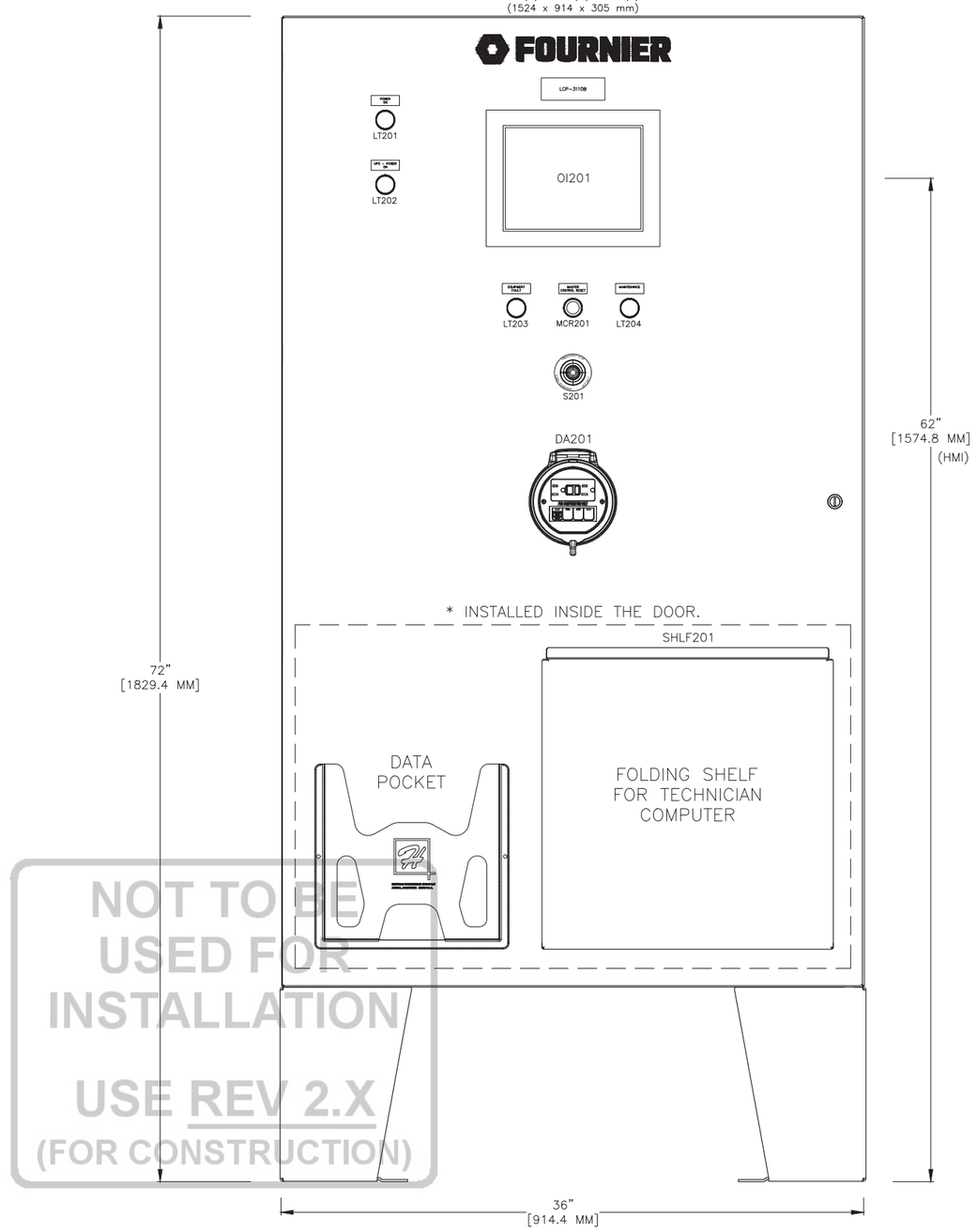
POWER PANEL
VFD – ROTARY PRESS & FLOCCULATOR

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 115	0.3

FRONT VIEW

LCP–33*0

60"(H) x 36"(W) x 12"(D)
(1524 x 914 x 305 mm)

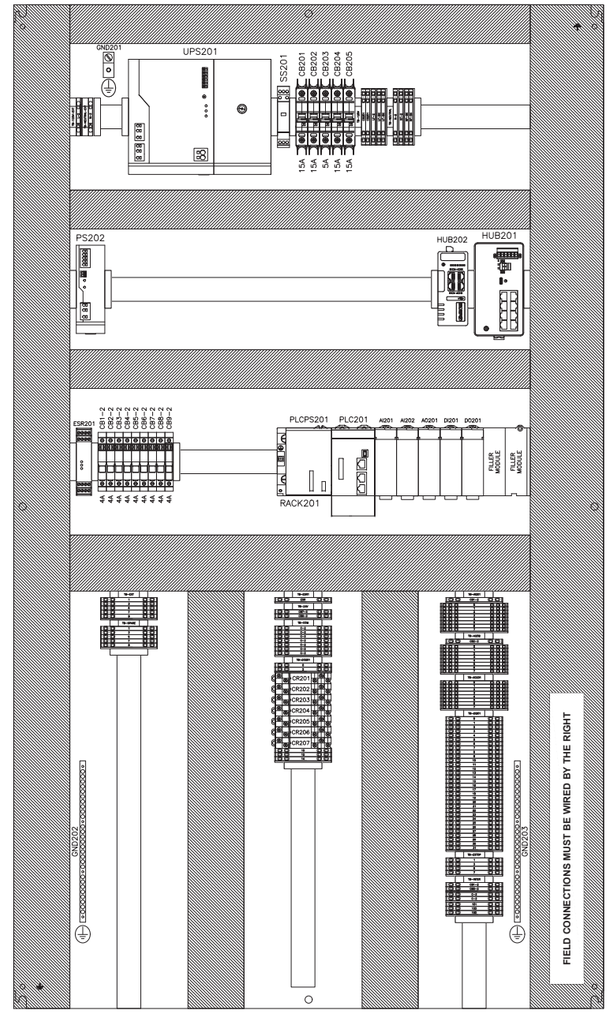


NOT TO BE
USED FOR
INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

BACKPLATE

BP201



Notes générales / General notes

* IMPORTANT
FINAL DESIGN WILL BE ON
"FOR CONSTRUCTION" REVISION

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0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
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Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

CONTROL PANEL
GENERAL ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 200	0.3

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
AI201	1	MODICON X80, ANALOG INPUT MODULE, 8-CH ISOLATED	BMX AMI 0810		SCHNEIDER ELECTRIC
AI202	1	MODICON X80, ANALOG INPUT MODULE, 8-CH ISOLATED	BMX AMI 0810		SCHNEIDER ELECTRIC
AO201	1	MODICON X80, ANALOG OUTPUT MODULE, 8-CH	BMX AMO 0802		SCHNEIDER ELECTRIC
BP201	1	BACK PLATE, 60" X 36", GALVANIZED	CP6036G	HOF-CP6036G	HOFFMAN
CB1-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB2-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB201	1	CIRCUIT BREAKER, 1 POLE, 15A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C150	ALL-1489-M1C150	AB
CB202	1	CIRCUIT BREAKER, 1 POLE, 15A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C150	ALL-1489-M1C150	AB
CB203	1	CIRCUIT BREAKER, 1 POLE, 5A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C050		AB
CB204	1	CIRCUIT BREAKER, 1 POLE, 15A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C150	ALL-1489-M1C150	AB
CB205	1	CIRCUIT BREAKER, 1 POLE, 15A, 277VAC, 48VDC, UL489/CSA 22.2, CURVE C	1489-M1C150	ALL-1489-M1C150	AB
CB3-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB4-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB5-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB6-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB7-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB8-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CB9-2	1	UT 6-TMC M, THERMOMAGNETIC BREAKER, 1P, 4A, MAX 240VAC, MAX 24VDC	0916606	PHO-0916606	PHOENIX CONTACT
CBL-2020	1	PRE-ASSEMBLY CABLE, ONE 28 WAY WITH CONNECTOR, ONE END FLYING LEADS, SHIELDED, 3M	BMX FTW 308S		SCHNEIDER ELECTRIC
CBL-2030	1	PRE-ASSEMBLY CABLE, ONE 28 WAY WITH CONNECTOR, ONE END FLYING LEADS, SHIELDED, 3M	BMX FTW 308S		SCHNEIDER ELECTRIC
CBL-2040	1	PRE-ASSEMBLY CABLE, ONE 20 WAY WITH CONNECTOR, ONE END FLYING LEADS, SHIELDED, 3M	BMX FTW 301S		SCHNEIDER ELECTRIC
CBL-2050	1	PRE-ASSEMBLY CABLE, ONE 40-WAY CONNECTOR, ONE END FLYING LEADS, 3M	BMX FCW 301		SCHNEIDER ELECTRIC
CBL-2060	1	PRE-ASSEMBLY CABLE, ONE 20 WAY WITH CONNECTOR, ONE END FLYING LEADS, 3M	BMX FTW 301		SCHNEIDER ELECTRIC
CR201	1	HK TYPE SLIM LINE RELAY, 16A, 1 POLE, 24 VDC, WITH SOCKET 700-HN221	700-HK36Z24	ALL-700HK36Z24	AB
	1	RELAY BASE, 5 PIN, SCREW, 16A	700-HN221	ALL-700HN221	AB
CR202	1	HK TYPE SLIM LINE RELAY, 16A, 1 POLE, 24 VDC, WITH SOCKET 700-HN221	700-HK36Z24	ALL-700HK36Z24	AB
	1	RELAY BASE, 5 PIN, SCREW, 16A	700-HN221	ALL-700HN221	AB
CR203	1	HK TYPE SLIM LINE RELAY, 16A, 1 POLE, 24 VDC, WITH SOCKET 700-HN221	700-HK36Z24	ALL-700HK36Z24	AB
	1	RELAY BASE, 5 PIN, SCREW, 16A	700-HN221	ALL-700HN221	AB
CR204	1	HK TYPE SLIM LINE RELAY, 16A, 1 POLE, 24 VDC, WITH SOCKET 700-HN221	700-HK36Z24	ALL-700HK36Z24	AB
	1	RELAY BASE, 5 PIN, SCREW, 16A	700-HN221	ALL-700HN221	AB
CR205	1	HK TYPE SLIM LINE RELAY, 16A, 1 POLE, 24 VDC, WITH SOCKET 700-HN221	700-HK36Z24	ALL-700HK36Z24	AB
	1	RELAY BASE, 5 PIN, SCREW, 16A	700-HN221	ALL-700HN221	AB
CR206	1	HK TYPE SLIM LINE RELAY, 16A, 1 POLE, 24 VDC, WITH SOCKET 700-HN221	700-HK36Z24	ALL-700HK36Z24	AB
	1	RELAY BASE, 5 PIN, SCREW, 16A	700-HN221	ALL-700HN221	AB
CR207	1	HK TYPE SLIM LINE RELAY, 16A, 1 POLE, 24 VDC, WITH SOCKET 700-HN221	700-HK36Z24	ALL-700HK36Z24	AB
	1	RELAY BASE, 5 PIN, SCREW, 16A	700-HN221	ALL-700HN221	AB
DA201	1	DATA ACCESS PORT, ELECTRICAL GFCI DUPLEX OUTLET 15A, 120VAC, RJ45 TO RJ45 MODULE, NEMA 4X	DAP4BC-G0-6	PAN-DAP4BC-G0-6	PANDUIT
DI201	1	MODICON X80, DISCRETE INPUT MODULE, 32-PT, 24 VDC INSULATED INPUTS	BMX DDI 3202K		SCHNEIDER ELECTRIC
DO201	1	MODICON X80, DISCRETE OUTPUT MODULE, 16 ISOLATED OUTPUTS	BMX DDO 1602		SCHNEIDER ELECTRIC
EB201	12	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
ESR201	1	MONITORING SAFETY RELAY, 3 SPST-NO, 1 SPST-NC, 24 VDC	2981059	PHO-2981059	PHOENIX CONTACT
GND201	1	TERMINAL, ALUMINIUM, 2AWG, 1/4	LAMA2-14-QY	PAN-LAMA2-14QY	PANDUIT
GND202	1	TERMINAL BAR, ALUMINIUM, #6-2/0 CU/AL, 9.25", 27 SCREW CONNECTIONS, 1/4	PK27GTA	SCH-PK27GTA	SCHNEIDER ELECTRIC
GND203	1	TERMINAL BAR, ALUMINIUM, #6-2/0 CU/AL, 9.25", 27 SCREW CONNECTIONS, 1/4	PK27GTA	SCH-PK27GTA	SCHNEIDER ELECTRIC
HUB201	1	INDUSTRIAL ETHERNET SWITCH, MANAGED, 8 PORTS, 10/100 MBPS, 24 VDC	MCSESM083F23F0		SCHNEIDER ELECTRIC
HUB202	1	INDUSTRIAL LAN ROUTER MODEL EWON COSY+, 4 PORTS, 24 VDC	EC71330	EWO-EC71330	EWON
LCP-33*0	1	ENCLOSURE, CONCEPT, 60" x 36" x 12", STEEL, TYPE 4/12/13	CSD603612		HOFFMAN
	1	CORROSION INHIBITOR, EMITTER FOR 10 CUBIC FOOT (12 PER PACKAGE)	AHCI10E	HOF-AHCI10E	HOFFMAN
	1	CORROSION INHIBITOR, EMITTER FOR 5 CUBIC FOOT (25 PER PACKAGE)	AHCI5E	HOF-AHCI5E	HOFFMAN
	1	DATA POCKET 12" X 12"	ADP2		HOFFMAN
	1	FLOOR STAND KIT, STEEL, 12" X 12", NEMA 4, 12	AFK1212		HOFFMAN
	2	PARFLEX, PNEUMATIC TUBING, POLYETHYLENE, 120 PSI MAX, 1/4" OUT DIAMETER, BLUE, 100' REEL	E-43-B-0100	PAR-E-43-0100	PARKER
LT201	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, CLEAR, IP66	800FP-P7		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
	1	INTEGRATED LED MODULE, 120 VAC, WHITE	800F-N5W	ALL-800F-N5W	AB
LT202	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, CLEAR, IP66	800FP-P7		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	INTEGRATED LED MODULE, 120 VAC, WHITE	800F-N5W	ALL-800F-N5W	AB
LT203	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, RED, IP66	800FP-P4		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	INTEGRATED LED MODULE, 24V AC/DC, RED	800F-N3R		AB
LT204	1	PLASTIC PILOT LIGHT, 22.5MM, FLUSH, RED, IP66	800FP-P4		AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	INTEGRATED LED MODULE, 24V AC/DC, RED	800F-N3R		AB
MCR201	1	PLASTIC ILLUMINATED PUSH BUTTON, 22.5MM, FLUSH, BLUE, MOMENTARY, IP66	800FP-LF6	ALL-800FP-LF6	AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	2	SCREW CONTACT BLOCK 1 N.O FOR 22.5MM OPERATOR	800F-X10	ALL-800FX10	AB
	1	INTEGRATED LED MODULE, 24V AC/DC, WHITE	800F-N3W	ALL-800F-N3W	AB
OI201	1	MAGELIS GTO, COLOR OPERATOR INTERFACE, TOUCH, 10.4", 24VDC, ETHERNET, 96MB	HMIGTO5310		SCHNEIDER ELECTRIC
	1	SD CARD, MIN 16GB	TS2GSDC	MEM-CARTESD	TRANSCEND
PLC201	1	M580 PROCESSOR MODULE, MODBUS/ETHERNET, 8MB MEMORY	BME P58 2020		SCHNEIDER ELECTRIC
PLCPS201	1	MODICON X80, POWER SUPPLY MODULE, 85-264 VAC, 36W	BMX CPS 3500		SCHNEIDER ELECTRIC
PS202	1	POWER SUPPLY, TRIO, 24-28 VDC, 10A, 100-240 VAC INPUT VOLTAGE	2903149	PHO-PS24V10A	PHOENIX CONTACT
RACK201	1	MODICON X80, RACK, 8 MODULE SLOTS	BMX XBP 0800		SCHNEIDER ELECTRIC
	2	MODICON X80, FILLER MODULE COVER	BMX XEM 010		SCHNEIDER ELECTRIC
S201	1	PLASTIC EMERGENCY STOP, 22.5MM, HEAD 40MM TWIST LOCK, RED, IP66	800FP-MT44	ALL-800FPMT44	AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	SCREW CONTACT BLOCK 1 N.C FOR 22.5MM OPERATOR	800F-X01	ALL-800FX01	AB
	1	UNIVERSAL E-STOP LEGEND PLATE, 22.5MM, 3 LANGUAGES, YELLOW WITH BLACK MARKING	800F-15YSM112	ALL-800F15YSM112	AB
SHLF201	1	FOLDING SHELF, 18" X 18"	AASHLF1818		HOFFMAN
SS201	1	SURGE SUPPRESSOR 120V 26A, FOR 3-CONDUCTOR SYSTEM (L1, N, PE), SCREW	2907918	PHO-2907918	PHOENIX CONTACT
TB-120V	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	5	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	3	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-120V-EXT	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	1	PT4, PUSH-IN TERMINAL, 1 LEVEL, 32A, GREY, 10-24 AWG	3211757	PHO-3211757	PHOENIX CONTACT
	1	PT4 PARTITION PLATE, GREY, (D-ST4)	3030420	PHO-3030420	PHOENIX CONTACT
TB-24V	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	2	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-AI201	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	1	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
	8	PT 2,5-3L, SPRING CAGE TERMINAL, 3 LEVELS, 20A, 12-26 AWG, GREY	3210499	PHO-3210499	PHOENIX CONTACT
	1	PT 2.5-3L, PARTITION PLATE, 3 LEVELS, GREY	3211647	PHO-3211647	PHOENIX CONTACT
TB-AI202	1	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
	8	PT 2,5-3L, SPRING CAGE TERMINAL, 3 LEVELS, 20A, 12-26 AWG, GREY	3210499	PHO-3210499	PHOENIX CONTACT
	1	PT 2.5-3L, PARTITION PLATE, 3 LEVELS, GREY	3211647	PHO-3211647	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, LONG, HEIGHT-ADJUSTABLE, GRAY	0814788	PHO-0814788	PHOENIX CONTACT
TB-AO201	8	PT 2,5-3L, SPRING CAGE TERMINAL, 3 LEVELS, 20A, 12-26 AWG, GREY	3210499	PHO-3210499	PHOENIX CONTACT
	1	PT 2.5-3L, PARTITION PLATE, 3 LEVELS, GREY	3211647	PHO-3211647	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, LONG, HEIGHT-ADJUSTABLE, GRAY	0814788	PHO-0814788	PHOENIX CONTACT
TB-COM	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	7	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-DI201	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	32	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT

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WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
LIST OF MATERIAL – (1 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 201	0.3

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
TB-DO201	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	5	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	2	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-ESR1	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	1	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-ESTOP	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-EXT	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	5	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-INTER	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	7	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	3	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-NEUTRAL	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	3	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-NEUTRAL-EXT	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	1	PT4, PUSH-IN TERMINAL, 1 LEVEL, 32A, GREY, 10-24 AWG	3211757	PHO-3211757	PHOENIX CONTACT
	1	PT4 PARTITION PLATE, GREY, (D-ST4)	3030420	PHO-3030420	PHOENIX CONTACT
TB-SPARE	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	5	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
UPS201	1	UPS, 120 VAC INPUT/OUTPUT, 750VA, 6, WITH INTEGRATED ENERGY STORAGE, 4 AH	2905908		PHOENIX CONTACT

NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

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0.0	FOR APPROVAL	04/07/2023	D. MARTEL

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LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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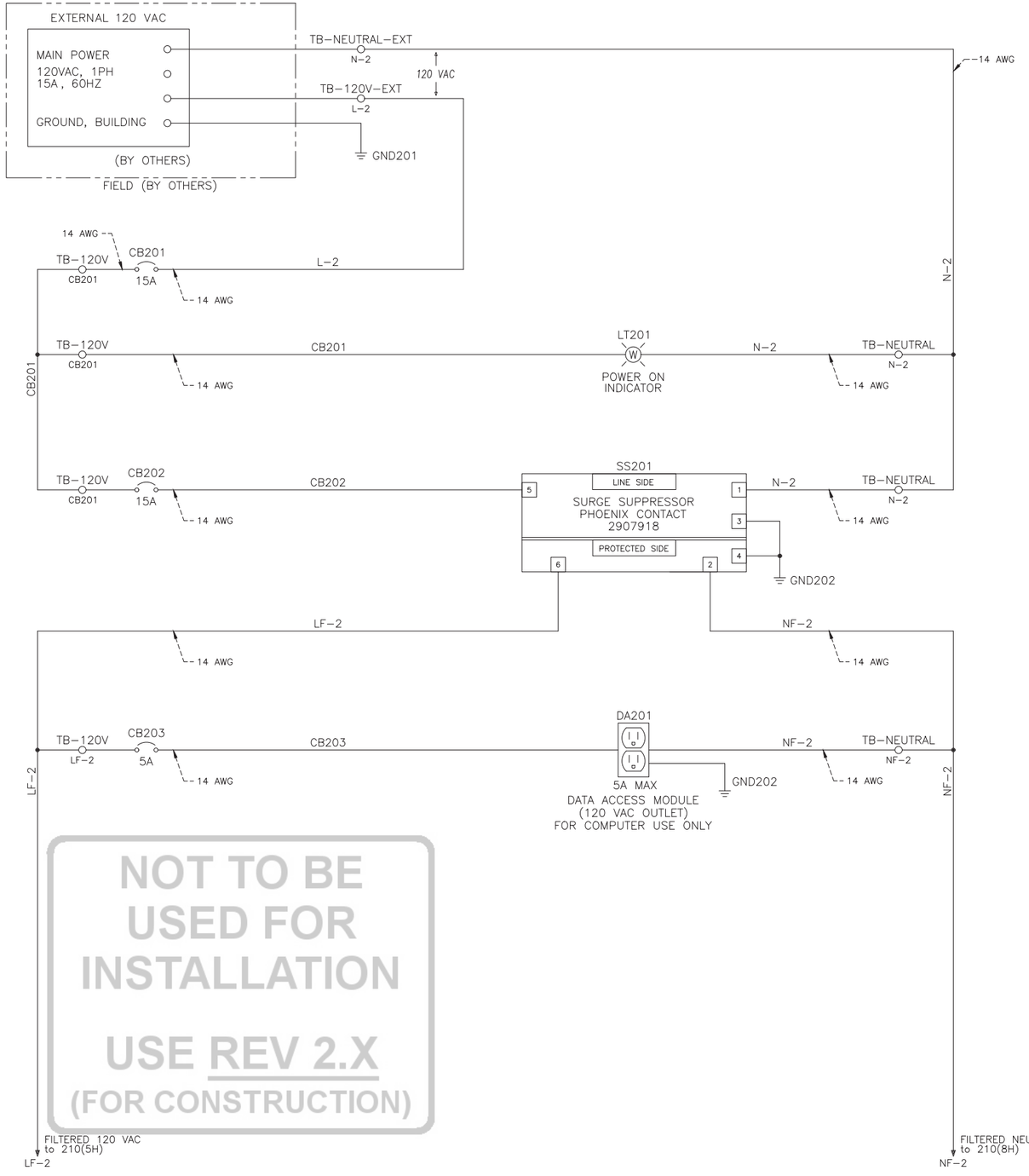
Créé par / Created by	D. MARTEL
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Approuvé par / Approved by	M.-A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

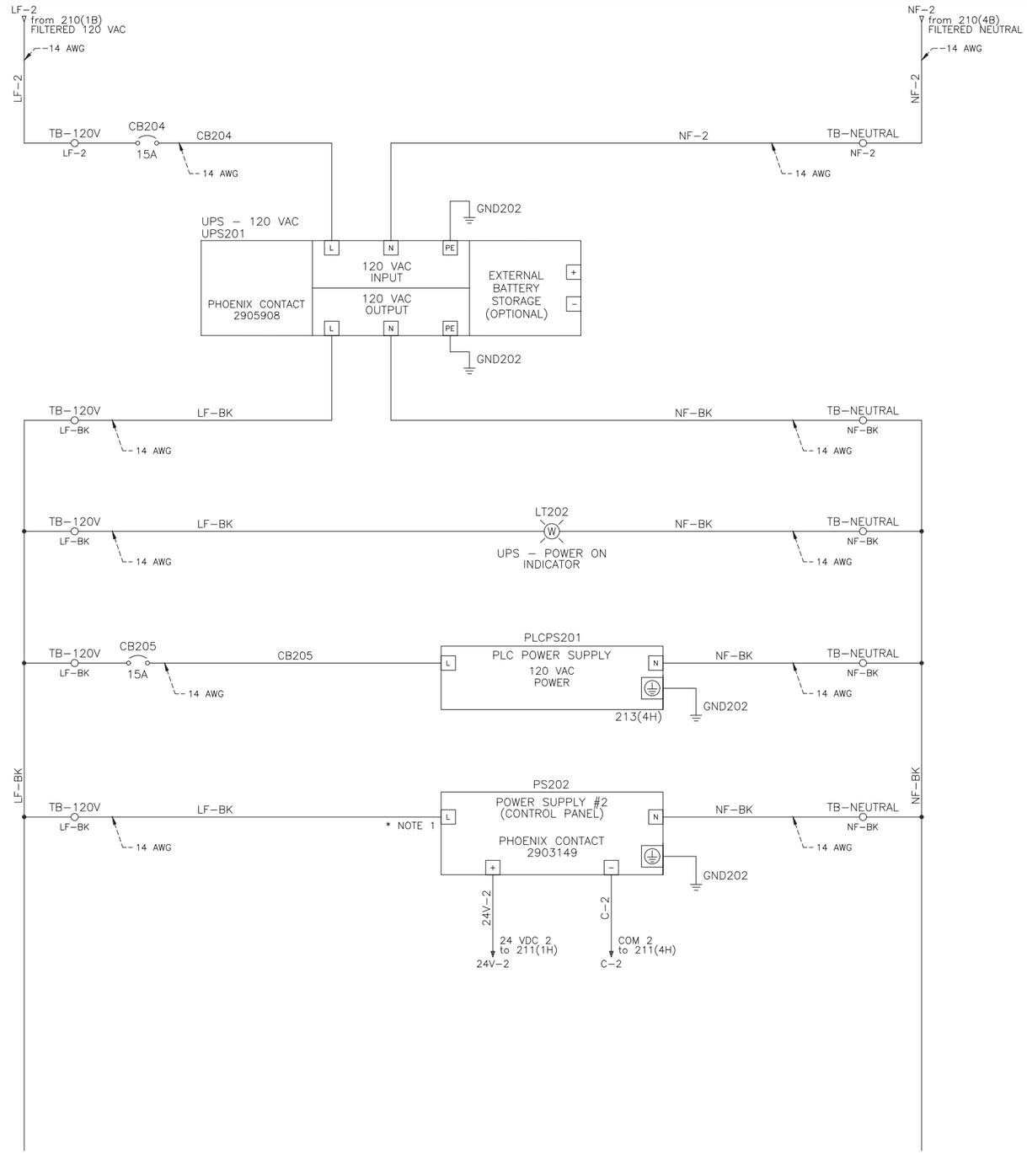
WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
LIST OF MATERIAL – (2 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 202	0.3





NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:
BUILT-IN WITH 6.3A INPUT FUSE.

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3787 BOUL. FRONTENAC OUEST
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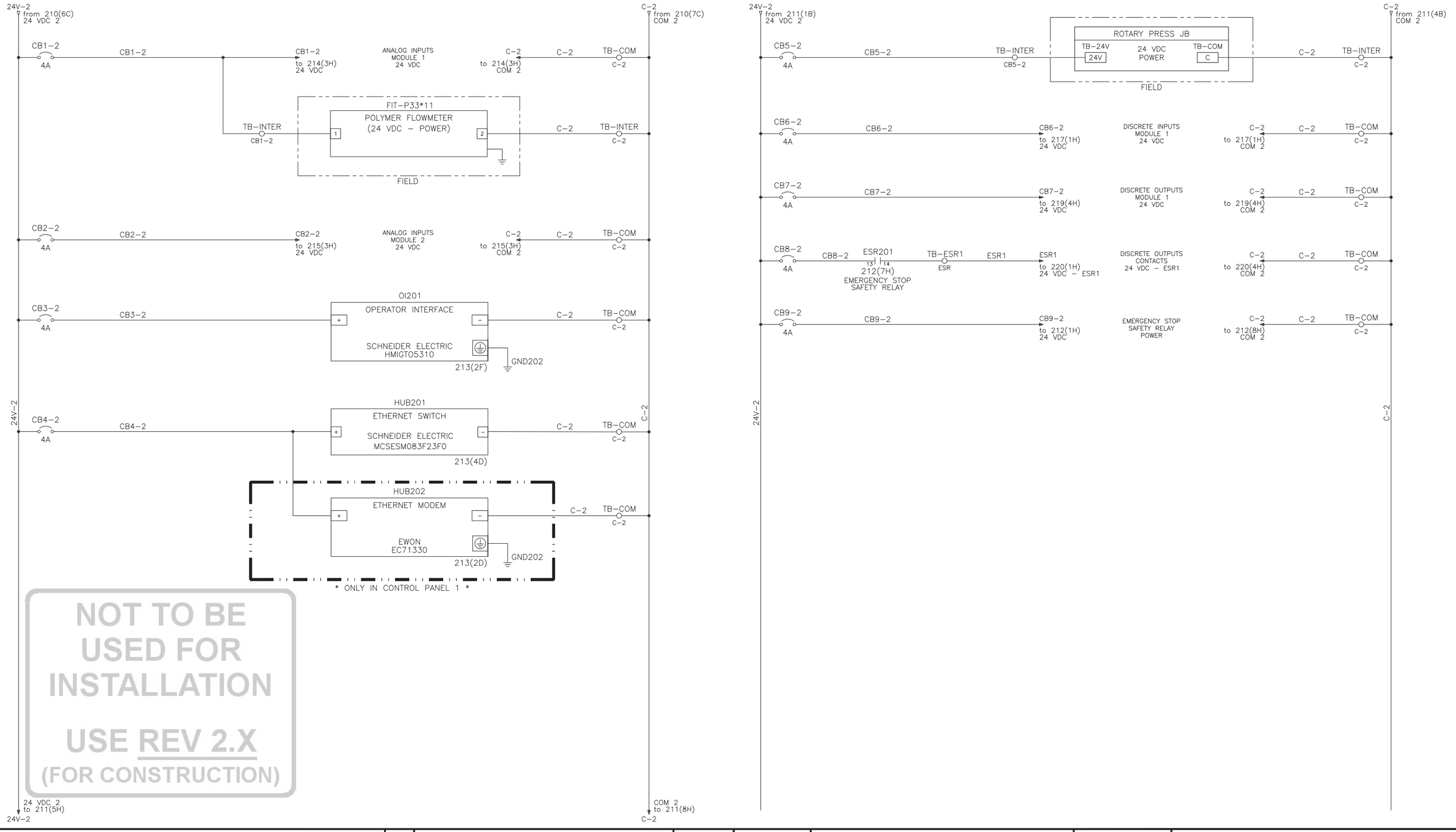
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Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB
2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
ELECTRICAL ARRANGEMENT – 120 VAC

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 210	0.3



Notes générales / General notes

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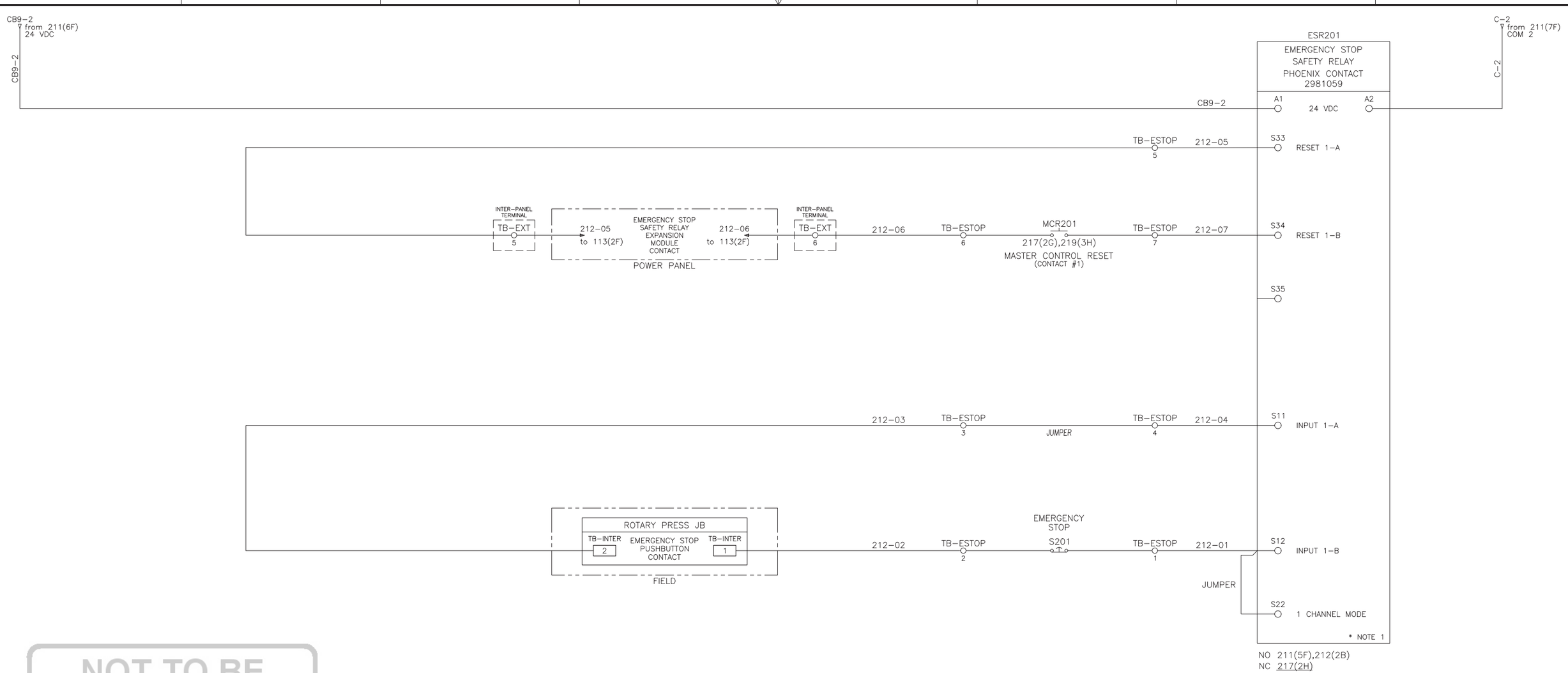
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Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
ELECTRICAL ARRANGEMENT – 24 VDC

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 211	0.3



NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:

PHOENIX CONTACT
2981059 & 2963734

CONTACT RATING
250V AC/DC, 6A

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WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
SAFETY ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 212	0.3

OPERATOR INTERFACE
OI201

211(2F)

RACK201

SCHNEIDER ELECTRIC BMX XBP 0800	PLCPS201	SLOT 0–1	SLOT 2	SLOT 3	SLOT 4	SLOT 5	SLOT 6	SLOT 7	SLOT 8
		PLC201	AI201	AI202	AO201	DI201	DO201		
	SCHNEIDER ELECTRIC BMX CPS 3500	SCHNEIDER ELECTRIC BME P58 2020 (01 / 02 / 03)	8–PT ANALOG INPUTS	8–PT ANALOG INPUTS	8–CH ANALOG OUTPUTS	32–PT DISCRETE INPUTS	16–PT DISCRETE OUTPUTS	FILLER MODULE	FILLER MODULE
			214(4H)	215(4H)	216(1H)	217(4H)	219(1H)		

210(6D)

DATA ACCESS MODULE
(ETHERNET PORT)
DA201

TECHNICIAN COMPUTER

TO ETHERNET COUPLER

210(3D)

ETHERNET SWITCH
HUB201

OI201 — PORT 1

PLC201 — PORT 2

DA201 — PORT 5

TO PLANT SCADA — PORT 8

PORT 4 — LOCAL PLC (HUB3001) ETHERNET PORT

SEE NETWORK ARRANGEMENT DIAGRAM FOR DETAILS.

FIELD – POLYMER SYSTEM PANEL

HUB202 — PORT 7

PORT 3

211(2E)

ETHERNET MODEM
HUB202

INTERNET SOURCE

211(2D)

NOT TO BE USED FOR INSTALLATION
USE REV 2.X
(FOR CONSTRUCTION)

DEVICES CONNECTED TO ETHERNET MODEM HUB202

PORT	DEVICE DESCRIPTION	IP ADDRESS
1	ETHERNET SWITCH (HUB201)	192.168.100.1
2	SPARE	–
3	SPARE	–
4	INTERNET SOURCE	–
	ETHERNET MODEM (HUB202)	192.168.100.25

* ONLY IN CONTROL PANEL 1 *

ETHERNET SWITCH (HUB201) – ADDRESSING

PORT	DEVICE DESCRIPTION	IP ADDRESS – RP1	IP ADDRESS – RP2
1	OPERATOR INTERFACE (OI201)	192.168.100.12	192.168.100.22
2	PLC (PLC201)	192.168.100.11	192.168.100.21
3	POWER PANEL SWITCH (HUB101)	192.168.100.3	192.168.100.4
4	POLYMER SYSTEM PLC (PLC3001)	192.168.100.5	192.168.100.5
5	DATA ACCESS MODULE (DA201)	192.168.100.13	192.168.100.23
6	SPARE	–	–
7	ETHERNET MODEM (HUB202)	192.168.100.25	–
8	TO PLANT SCADA	–	–
	LOCAL ETHERNET SWITCH (HUB201)	192.168.100.1	192.168.100.2

ETHERNET SWITCH
HUB101

PORT 8

CONNECTED DEVICES

VFD – ROTARY PRESS
VFD – FLOCCULATOR

SEE NETWORK ARRANGEMENT DIAGRAM FOR DETAILS.

112(2H)

POWER PANEL

Notes générales / General notes

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3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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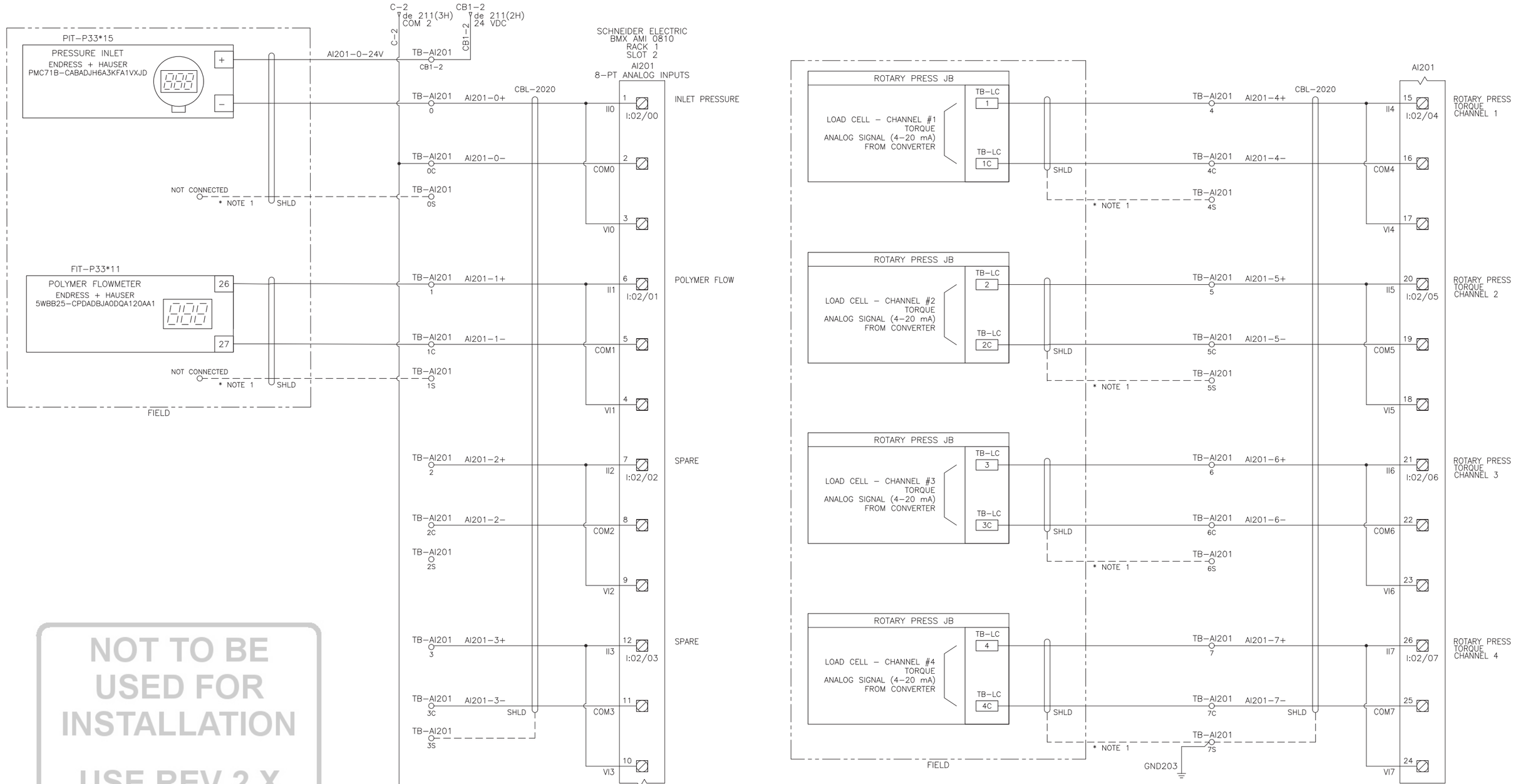
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Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB
2 X ROTARY PRESS 3(4)–900/4000CVP

CONTROL PANEL
PLC & NETWORK ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 213	0.3

FQF-076R3 (211223)



NOT TO BE USED FOR INSTALLATION

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Notes générales / General notes

NOTE 1:
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FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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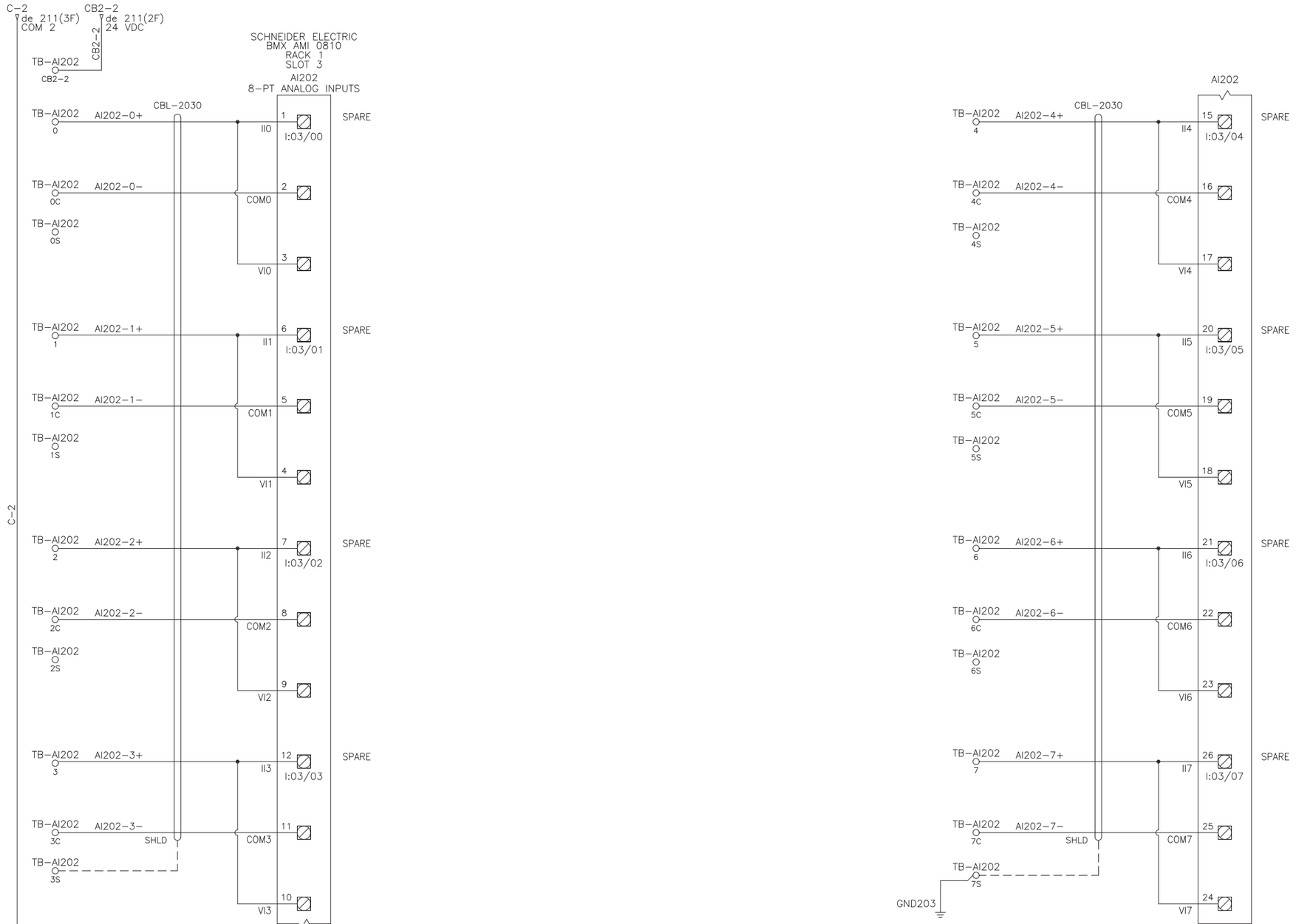
WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
ANALOG INPUTS – MODULE 1

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 214	0.3

FQF-076R3 (211223)



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3787 BOUL. FRONTENAC OUEST
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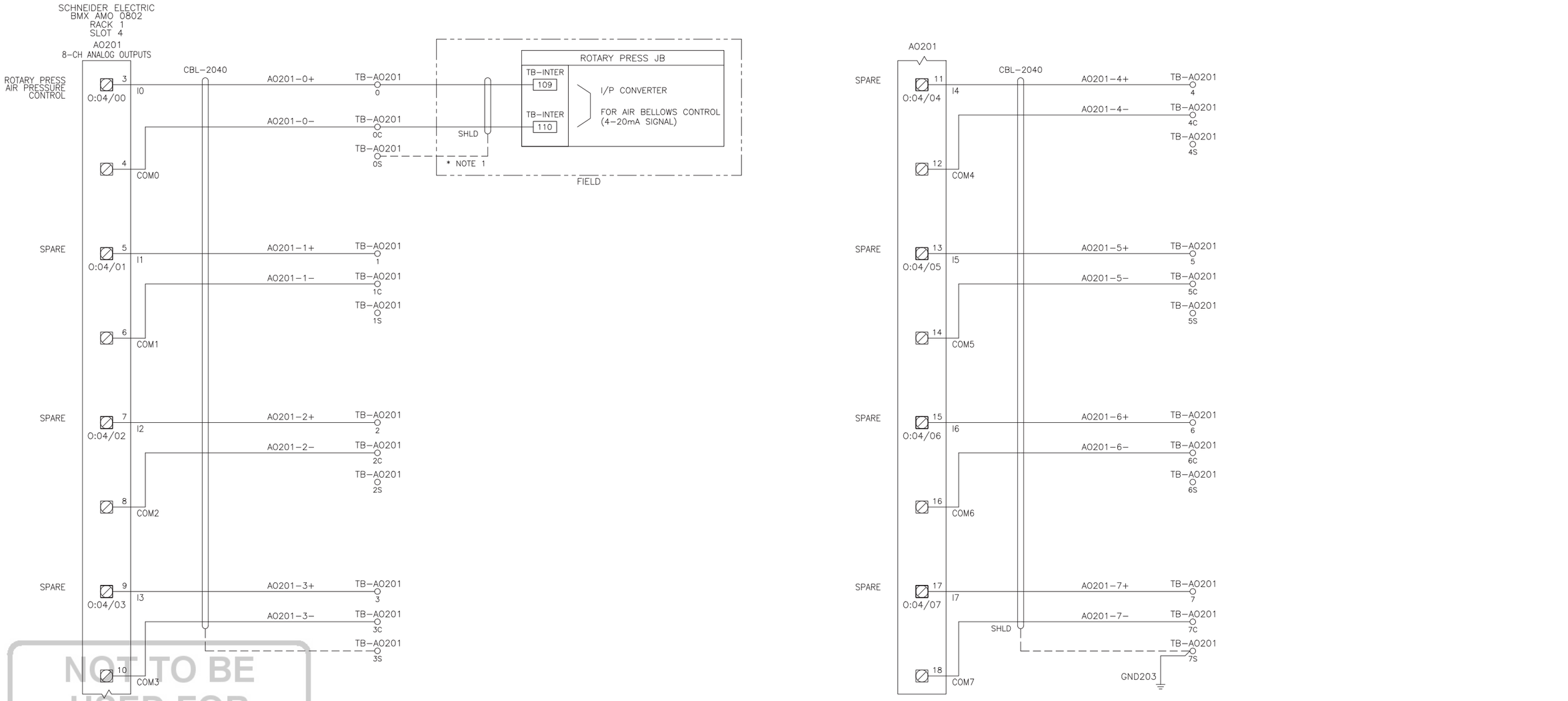
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Date de création / Creation date: 16/06/2023
Échelle / Scale:

WINNIPEG, MB
2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
ANALOG INPUTS – MODULE 2

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 215	0.3



NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:
CABLE SHIELDING MUST STAY UNCONNECTED ON FIELD SIDE.

Rev.	Description	Date	Dessiné par / Drawn by
0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
0.2	FOR APPROVAL – AS CUSTOMER'S COMMENTS (2)	07/02/2024	D. MARTEL
0.1	FOR APPROVAL – AS CUSTOMER'S COMMENTS (1)	18/01/2024	D. MARTEL
0.0	FOR APPROVAL	04/07/2023	D. MARTEL

FOURNIER
LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

CE DESSIN ET TOUTES LES INFORMATIONS QU'IL CONTIENT SONT LA PROPRIÉTÉ EXCLUSIVE DE LES INDUSTRIES FOURNIER INC.. IL EST STRICTEMENT INTERDIT DE COMMUNIQUER OU UTILISER SON CONTENU À D'AUTRES FINS QUE CELLES PERMISES ORIGINALEMENT OU POUVANT ÊTRE PRÉJUDICIABLES AUX INTÉRÊTS DE LES INDUSTRIES FOURNIER INC. TOUTE REPRODUCTION DE CE DESSIN EST INTERDITE ET IL DOIT ÊTRE RETOURNÉ SUR DEMANDE.

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Sceau / Stamp

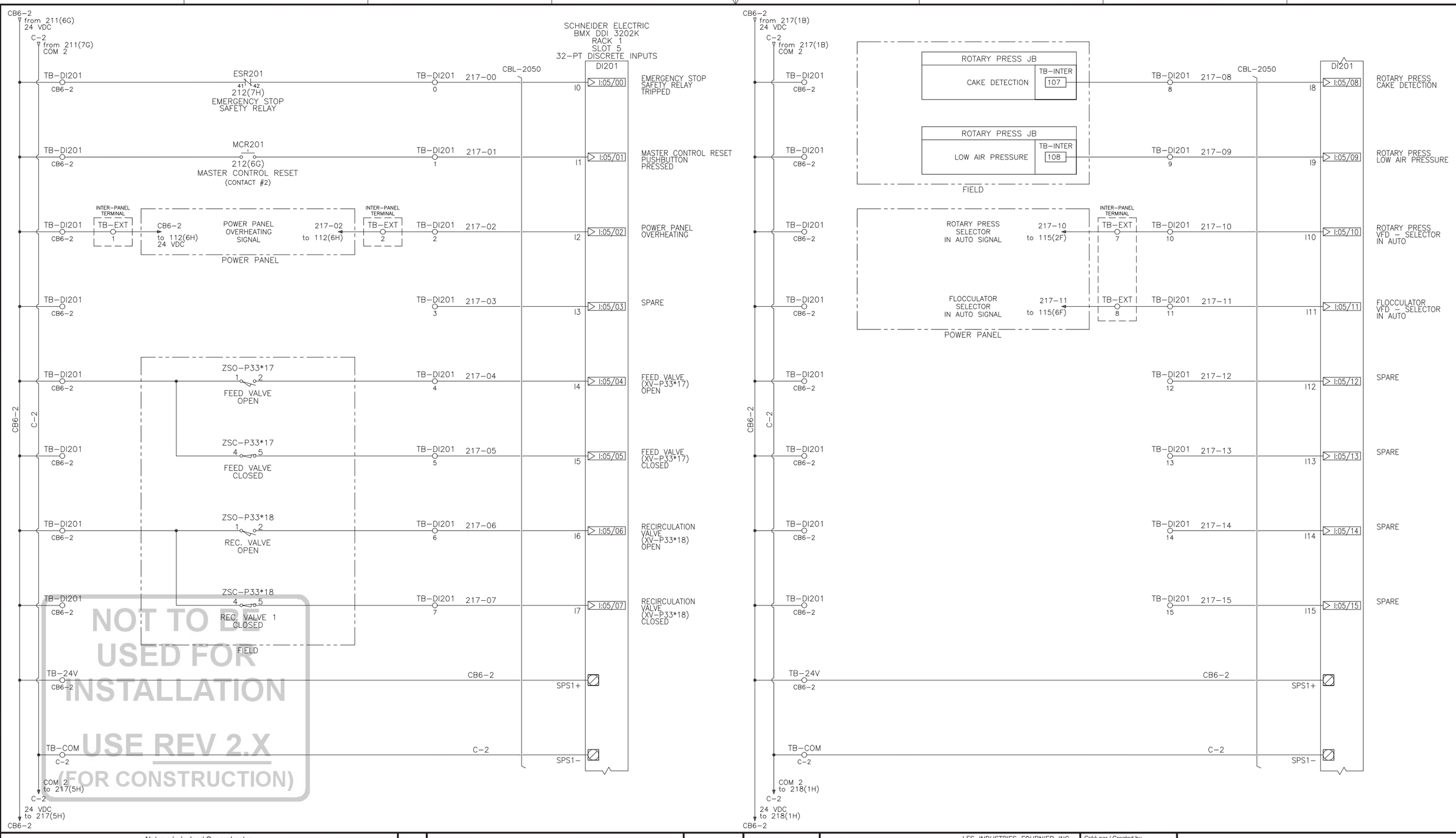
Créé par / Created by	D. MARTEL
Vérifié par / Checked by	G. ARCAND
Approuvé par / Approved by	M.-A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
ANALOG OUTPUTS – MODULE 1

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 216	0.3



NOT TO BE USED FOR INSTALLATION

USE REV 2.X (FOR CONSTRUCTION)

Notes générales / General notes

NOTE 1:

TEMPERATURE SWITCH (TSH101)
ADJUSTED AT 45°C/113°F

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Échelle / Scale	

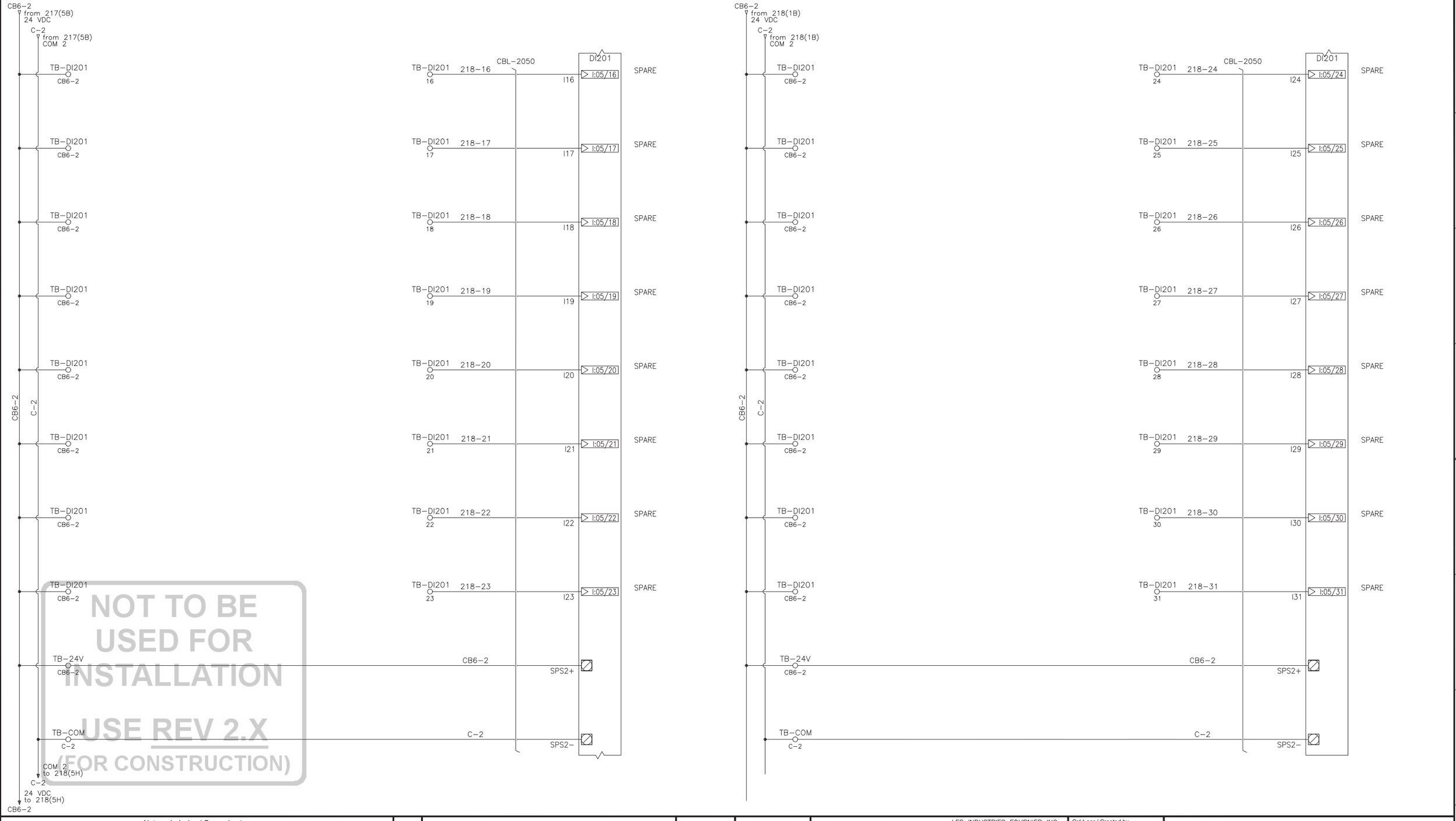
WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
DISCRETE INPUTS – MODULE 1 – (1 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 217	0.3

FQF-076R3 (211223)



NOT TO BE USED FOR INSTALLATION

USE REV 2.X
(FOR CONSTRUCTION)

Notes générales / General notes

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Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
DISCRETE INPUTS – MODULE 1 – (2 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 218	0.3

SCHNEIDER ELECTRIC
BMX DDO 1602
RACK 1
SLOT 6
16-PT DISCRETE OUTPUTS

DO201

CBL-2060

CB7-2
from 211(6G)
24 VDC

C-2
from 211(7G)
COM 2

MASTER CONTROL RESET
MCR201
212(6G)

MASTER CONTROL RESET LIGHT MODULE ACTIVATE COMMAND — 0:06/00 — Q0 — 219-00 — TB-DO201 0 — (B)

EQUIPMENT FAULT
LT203

GENERAL FAULT LIGHT MODULE ACTIVATE COMMAND — 0:06/01 — Q1 — 219-01 — TB-DO201 1 — (R)

MAINTENANCE WARNING
LT204

MAINTENANCE LIGHT MODULE ACTIVATE COMMAND — 0:06/02 — Q2 — 219-02 — TB-DO201 2 — (R)

ROTARY PRESS FEED/REC. VALVE (XV-P33*17/8) OPEN COMMAND — 0:06/03 — Q3 — 219-03 — CR201 (A1/A2) — ROTARY PRESS FEED/REC. VALVE OPEN COMMAND
CR201: NO 220(1H) / NC

ROTARY PRESS WASH VALVE 1 (XV-P33*21) OPEN COMMAND — 0:06/04 — Q4 — 219-04 — CR202 (A1/A2) — ROTARY PRESS WASH VALVE 1 OPEN COMMAND
CR202: NO 220(1G) / NC

ROTARY PRESS WASH VALVE 2 (XV-P33*23) OPEN COMMAND — 0:06/05 — Q5 — 219-05 — CR203 (A1/A2) — ROTARY PRESS WASH VALVE 2 OPEN COMMAND
CR203: NO 220(1G) / NC

CB7-2 / C-2

ROTARY PRESS WASH VALVE 3 (XV-P33*25) OPEN COMMAND — 0:06/06 — Q6 — 219-06 — CR204 (A1/A2) — ROTARY PRESS WASH VALVE 3 OPEN COMMAND
CR204: NO 220(1F) / NC

ROTARY PRESS WASH VALVE 4 (XV-P33*27) OPEN COMMAND — 0:06/07 — Q7 — 219-07 — CR205 (A1/A2) — ROTARY PRESS WASH VALVE 4 OPEN COMMAND
CR205: NO 220(1F) / NC

PPS1+ — CB7-2 — TB-24V CB7-2

PPS1- — C-2 — TB-COM C-2

COM 2 to 219(8H) C-2

24 VDC to 219(8H) CB7-2

SPARE — 0:06/08 — Q8 — 219-08 — CR206 (A1/A2) — SPARE
CR206: NO / NC

SPARE — 0:06/09 — Q9 — 219-09 — CR207 (A1/A2) — SPARE
CR207: NO / NC

SPARE — 0:06/10 — Q10 — 219-10 — TB-DO201 10

SPARE — 0:06/11 — Q11 — 219-11 — TB-DO201 11

SPARE — 0:06/12 — Q12 — 219-12 — TB-DO201 12

SPARE — 0:06/13 — Q13 — 219-13 — TB-DO201 13

SPARE — 0:06/14 — Q14 — 219-14 — TB-DO201 14

SPARE — 0:06/15 — Q15 — 219-15 — TB-DO201 15

PPS1+ — CB7-2 — TB-24V CB7-2

PPS1- — C-2 — TB-COM C-2

NOT TO BE USED FOR INSTALLATION
USE REV 2.X
(FOR CONSTRUCTION)

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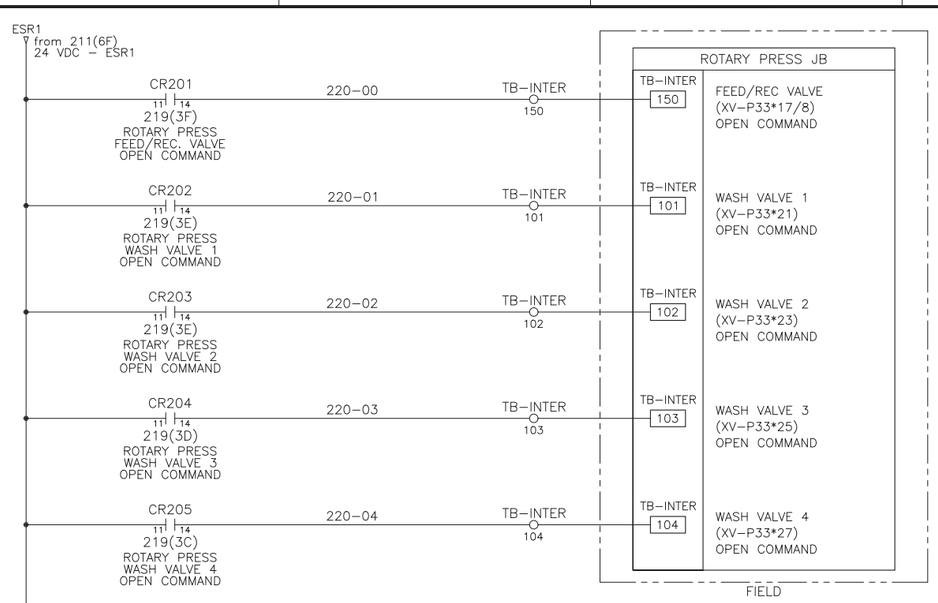
Sceau / Stamp

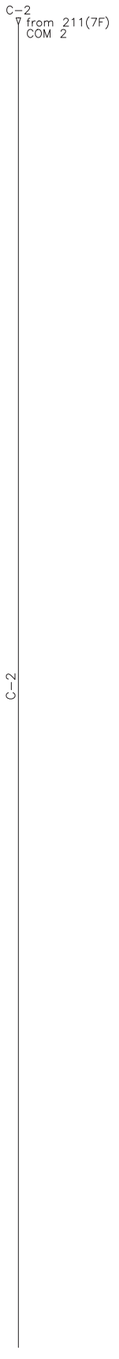
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Échelle / Scale	

WINNIPEG, MB
2 X ROTARY PRESS 3(4)-900/4000CVP

CONTROL PANEL
DISCRETE OUTPUTS – MODULE 1

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 219	0.3





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Échelle / Scale	

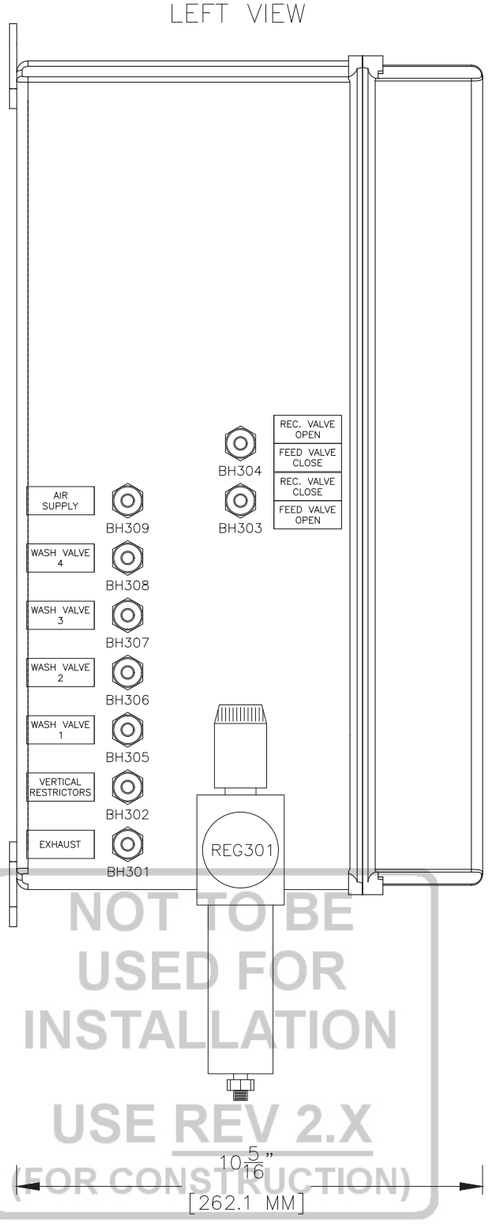
WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

CONTROL PANEL
DISCRETE OUTPUTS – CONTACTS

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 220	0.3

LEFT VIEW



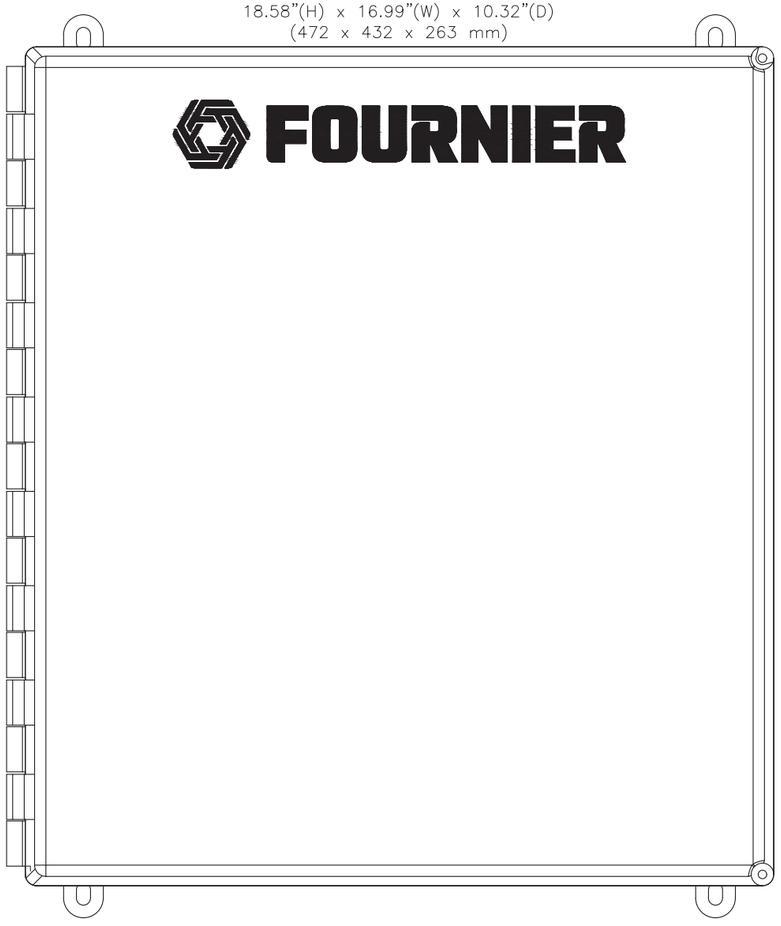
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$10\frac{5}{16}$"
[262.1 MM]

FRONT VIEW

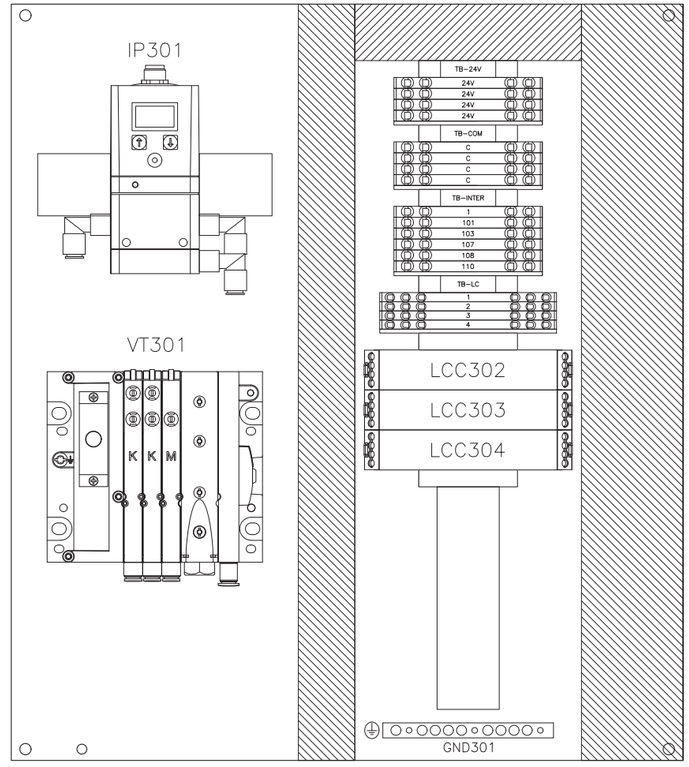
JB301

18.58"(H) x 16.99"(W) x 10.32"(D)
(472 x 432 x 263 mm)

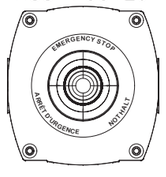


$18\frac{9}{16}$"
[471.9 MM]

BP301



HSS-P33129



LOCATED ON THE MOTOR
OF THE ROTARY PRESS

Notes générales / General notes

* IMPORTANT
FINAL DESIGN WILL BE ON
"FOR CONSTRUCTION" REVISION

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WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

ROTARY PRESS 1 – JB
PANEL ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 300	0.3

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
BH301	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : EXHAUST, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-EXHAUST	SUM-EXHAUST	FOURNIER
BH302	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : VERTICAL RESTRICTORS, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-VERTRESTRICT	SUM-VERTRESTRICT	FOURNIER
BH303	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : FEED VALVE - OPEN, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-FEEDVALOPEN	SUM-FEEDVALOPEN	FOURNIER
	1	DURABLACK : REC VALVE - CLOSE, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-RECVALCLOSE	SUM-RECVALVCLOSE	FOURNIER
BH304	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : FEED VALVE - CLOSE, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-FEEDVALCLOSE	SUM-FEEDVALCLOSE	FOURNIER
	1	DURABLACK : REC VALVE - OPEN, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-RECVALOPEN	SUM-RECVALVEOPEN	FOURNIER
BH305	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 1, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE1	SUM-WASHVALVE1	FOURNIER
	1	PUSH-TO-CONNECT PLUG FOR PNEUMATIC FITTING, 1\4", PLASTIC	SCO-P9-1/4	SCO-P9-1/4	FOURNIER
BH306	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 2, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE2	SUM-WASHVALVE2	FOURNIER
BH307	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 3, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE3	SUM-WASHVALVE3	FOURNIER
BH308	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 4, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE4	SUM-WASHVALVE4	FOURNIER
BH309	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : AIR SUPPLY, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-AIRSUPPLY	SUM-AIRSUPPLY	FOURNIER
	1	PUSH-TO-CONNECT PLUG FOR PNEUMATIC FITTING, 1\4", PLASTIC	SCO-P9-1/4	SCO-P9-1/4	FOURNIER
BP301	1	GALVANIZED BACK PLATE, 18'' X 16''	A18P16G	HOF-A18P16G	HOFFMAN
EB401	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
GND301	1	TERMINAL BAR, ALUMINIUM #6-2/0 CU/AL, 3.75", 9 SCREW CONNECTIONS, 1/4	PK9GTA	SCH-PK9GTA	SCHNEIDER ELECTRIC
HSS-P33129	1	ENCLOSURE 1-HOLE, 22.5MM, PLASTIC, NEMA 4X	800F-1PP	ALL-800F1PP	AB
	1	PLASTIC EMERGENCY STOP, 22.5MM, HEAD 40MM TWIST LOCK, RED, IP66	800FP-MT44	ALL-800FPMT44	AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	SCREW CONTACT BLOCK 1 N.C FOR 22.5MM OPERATOR	800F-X01	ALL-800FX01	AB
	1	UNIVERSAL E-STOP LEGEND PLATE, 22.5MM, 3 LANGUAGES, YELLOW WITH BLACK MARKING	800F-15YSM112	ALL-800F15YSM112	AB
	1	MOUNTING BRACKET FOR ENCLOSURE 800F-1PP OR 800H-1HZ4R	PRS0234	IFI-02112	FOURNIER
	1	LIQUID TIGHT CONNECTOR, SWIVEL STRAIGHT TO 90, FOR 3/8" CONDUIT, 1/2 NPT, PLASTIC	PS0389NGY	TEC-CCNY-375-8	HUBBELL
	12	LIQUID TIGHT CONDUIT, 3/8", IN FEET	FTPV3758C	TEC-FTPV375-8C	TECHSPAN
	1	REDUCING ADAPTER, M20 ISO TO 1/2" NPT THREAD	M20-50	ADP-500NPTM2050	THOMAS & BETTS
IP301	1	I/P CONVERTER, 0-87 PSI (6 BARS), 24VDC, 4-20MA, OUTPUT PNP	VPPE-3-1-1/8-6-420-E1	FES-13109707	FESTO
JB301	1	FIBERGLASS ENCLOSURE, 18'' X16'' X 10''	A181610CHSCFG	HOF-A181610CHSCFG	HOFFMAN
	1	CORROSION INHIBITOR, EMITTER FOR 5 CUBIC FOOT (25 PER PACKAGE)	AHCI5E	HOF-AHCI5E	HOFFMAN
	1	STICKER : FOURNIER LOGO, 10", VINYL, BLUE & RED, ADHESIVE TYPE	LOGOF-10VBLE/R	LOGOF-10VBLE/R	FOURNIER
LCC302	1	ACT20P-BRIDGE-S, MEASURING BRIDGE CONVERTER, RESISTANCE MEASURING, 0(4)-20mA	1067250000	WEI-1067250000	WEIDMULLER
LCC303	1	ACT20P-BRIDGE-S, MEASURING BRIDGE CONVERTER, RESISTANCE MEASURING, 0(4)-20mA	1067250000	WEI-1067250000	WEIDMULLER
LCC304	1	ACT20P-BRIDGE-S, MEASURING BRIDGE CONVERTER, RESISTANCE MEASURING, 0(4)-20mA	1067250000	WEI-1067250000	WEIDMULLER
REG301	1	FILTER REGULATOR, WITH AUTOMATIC DRAIN	MS4N-LFR-0.25-D7-CRV-AS	IFI-02067	FESTO
	1	NIPPLE 1/4'' TUBE (BRASS)	FAI-122-B	FAI-122-B	FAIRVIEW
	1	BULKHEAD 3/4" FOR UNION 1/4'' TUBE, BRASS	207ACBH-4	PAR-207ACBH-4	PARKER

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
SE301	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
SE302	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
SE303	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
SE304	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
TB-24V	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-COM	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-INTER	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	6	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-LC	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PT 2,5-3L, SPRING CAGE TERMINAL, 3 LEVELS, 20A, 12-26 AWG, GREY	3210499	PHO-3210499	PHOENIX CONTACT
	1	PT 2.5-3L, PARTITION PLATE, 3 LEVELS, GREY	3211647	PHO-3211647	PHOENIX CONTACT
TE301	1	UNION TEE 1/4" X 1/4" X 1/4" TUBE	D6064-4	DOM-D6064-4	DOMINION FITTING
TE302	1	UNION TEE 1/4" X 1/4" X 1/4" TUBE	D6064-4	DOM-D6064-4	DOMINION FITTING
TE303	1	UNION TEE 1/4" X 1/4" X 1/4" TUBE	D6064-4	DOM-D6064-4	DOMINION FITTING
VT301	1	VALVE TERMINALS, 1/4 PORTS, MODULES - K (2), M (1), 24VDC, 25PIN DSUB	34P-MS1-SGUGKLGAL-3AU-KKM+HDD	FES-13112521	FESTO
	2	PUSH-IN FITTING FOR MPA-L VALVE TERMINAL	QB-1/4-1/4-U-M	FES-533219	FESTO

NOT TO BE USED FOR INSPECTION
USE REV 2 Y
(FOR CONSTRUCTION)

Notes générales / General notes

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0.3	FOR APPROVAL - AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
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0.0	FOR APPROVAL	04/07/2023	D. MARTEL

FOURNIER
LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

CE DESSIN ET TOUTES LES INFORMATIONS QU'IL CONTIENT SONT LA PROPRIÉTÉ EXCLUSIVE DE LES INDUSTRIES FOURNIER INC. IL EST STRICTEMENT INTERDIT DE COMMUNIQUER OU UTILISER SON CONTENU À D'AUTRES FINS QUE CELLES PERMISES ORIGINALEMENT OU POUVANT ÊTRE PRÉJUDICIABLES AUX INTÉRÊTS DE LES INDUSTRIES FOURNIER INC. TOUTE REPRODUCTION DE CE DESSIN EST INTERDITE ET IL DOIT ÊTRE RETOURNÉ SUR DEMANDE.

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Sceau / Stamp

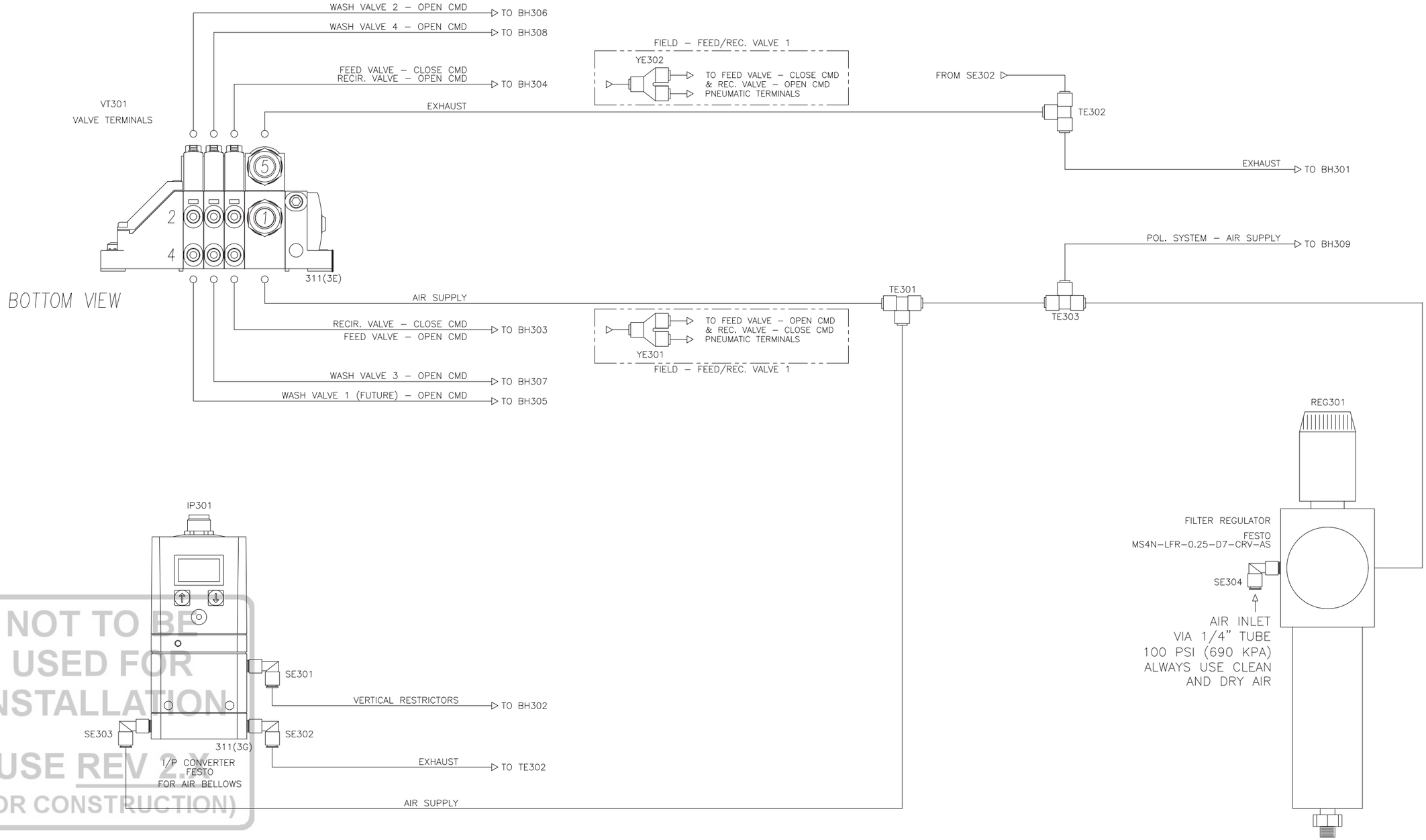
Créé par / Created by	D. MARTEL
Vérifié par / Checked by	G. ARCAND
Approuvé par / Approved by	M.-A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

ROTARY PRESS 1 - JB
LIST OF MATERIAL

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 301	0.3



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FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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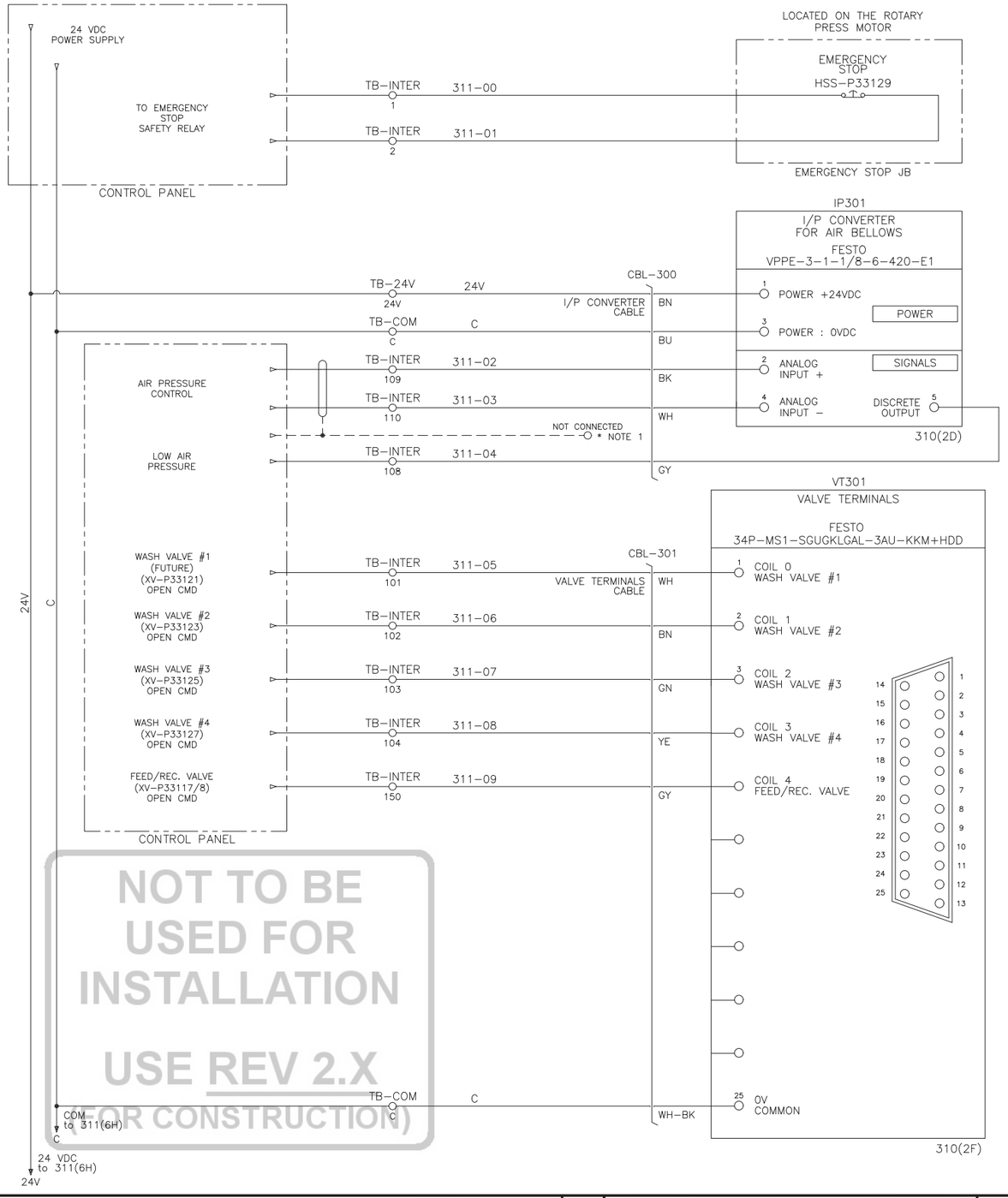
Sceau / Stamp

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Approuvé par / Approved by: M.–A. TURGEON
Date de création / Creation date: 16/06/2023
Échelle / Scale

WINNIPEG, MB
2 X ROTARY PRESS 3(4)–900/4000CVP

ROTARY PRESS 1 – JB
PNEUMATIC ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 310	0.3



Notes générales / General notes

NOTE 1:
CABLE SHIELDING MUST STAY UNCONNECTED ON THIS SIDE.

Rev.	Description	Date	Dessiné par / Drawn by
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0.0	FOR APPROVAL	04/07/2023	D. MARTEL

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FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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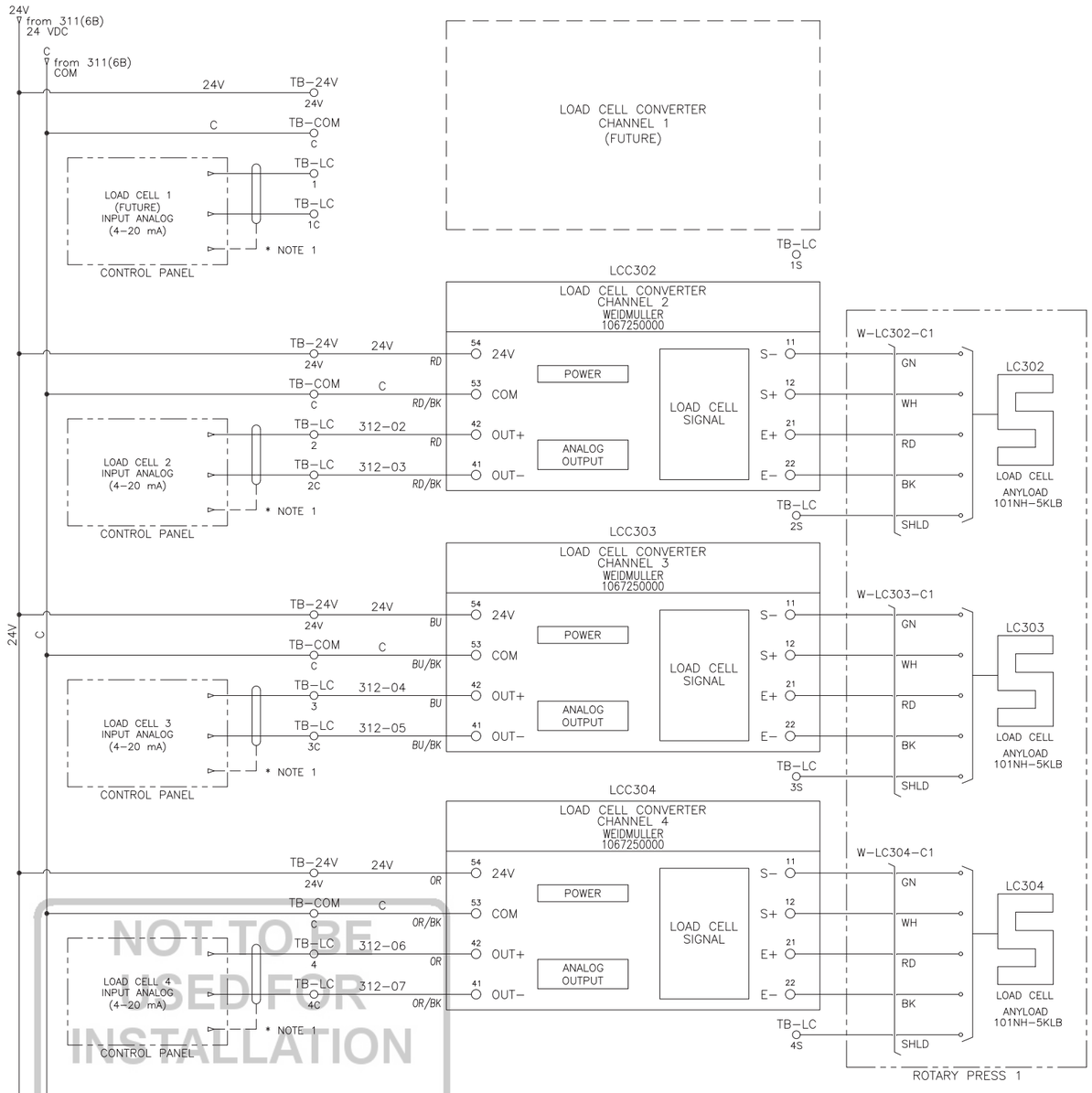
Sceau / Stamp

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Approuvé par / Approved by	M.–A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB
2 X ROTARY PRESS 3(4)–900/4000CVP

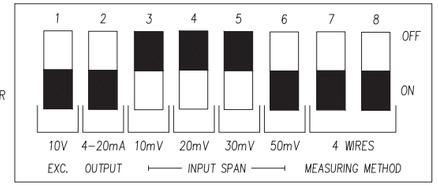
ROTARY PRESS 1 – JB
ELECTRICAL ARRANGEMENT – (1 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 311	0.3



NOT TO BE USED FOR INSTALLATION
USE REV 2.X
(FOR CONSTRUCTION)

DIP SWITCH POSITION ON LOAD CELL CONVERTER



EXCITATION = 10 VDC
LOAD CELL = 3 mV/V
SIGNAL = 0 – 30 mV
4 mA = 0 LBS
20 mA = 8333.33 LBS

* IMPORTANT *

LOAD CELL CABLES MUST REMAIN AT FULL LENGTH. PRECISION WILL BE ALTERED IF THEY ARE SHORTENED.

Notes générales / General notes

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FOURNIER
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FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

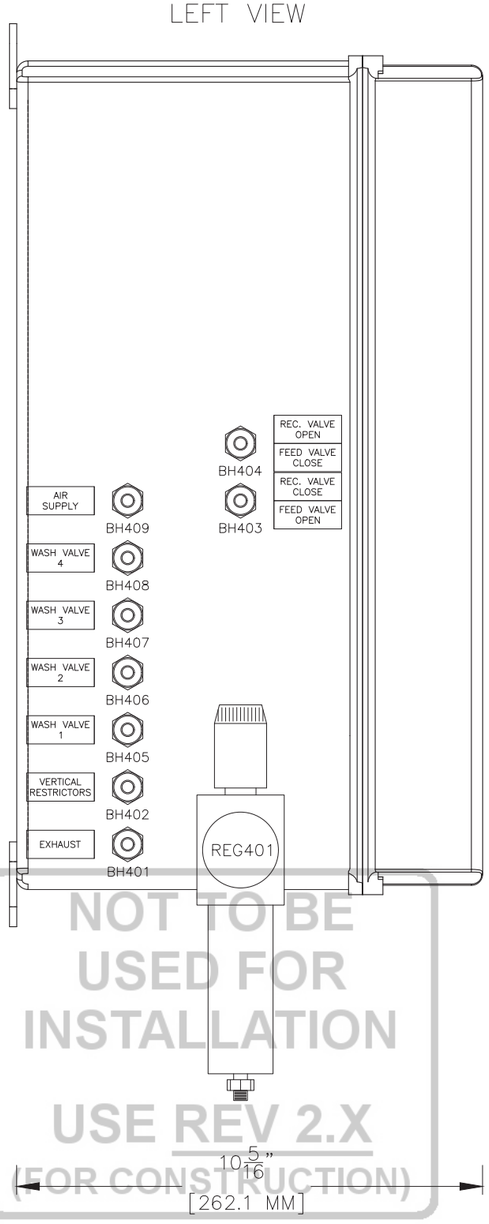
2 X ROTARY PRESS 3(4)–900/4000CVP

ROTARY PRESS 1 – JB
ELECTRICAL ARRANGEMENT – (2 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 312	0.3

FQF-076R3 (211223)

LEFT VIEW



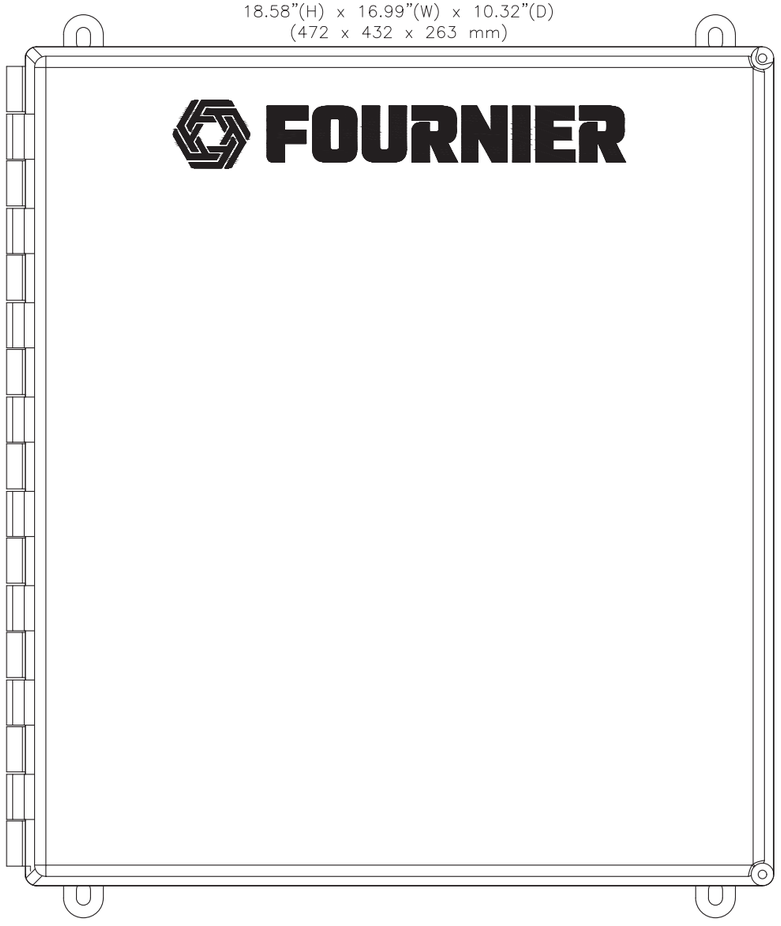
NOT TO BE USED FOR INSTALLATION
USE REV 2.X
(FOR CONSTRUCTION)

$10\frac{5}{16}$"
[262.1 MM]

FRONT VIEW

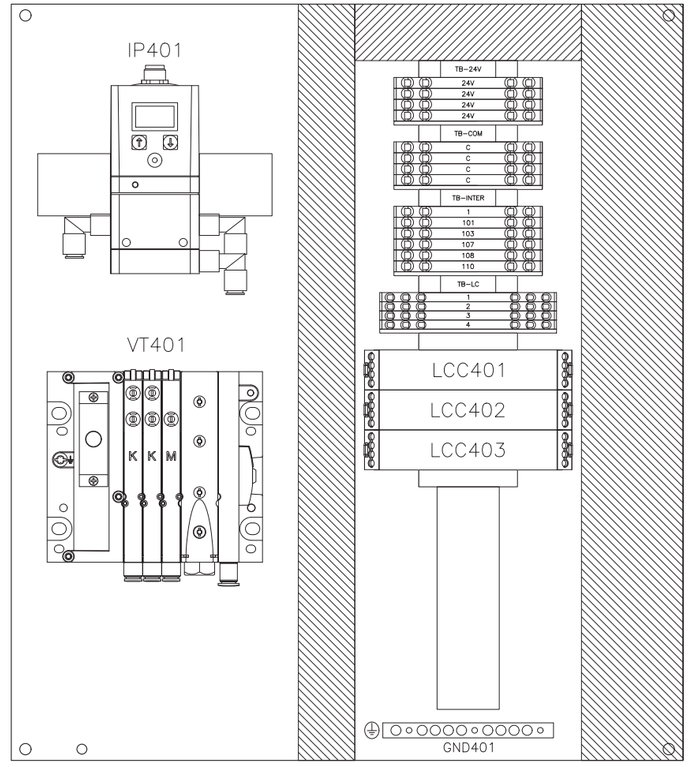
JB401

18.58"(H) x 16.99"(W) x 10.32"(D)
(472 x 432 x 263 mm)

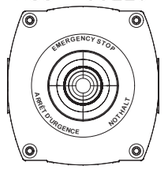


$18\frac{9}{16}$"
[471.9 MM]

BP401



HSS-P33229



LOCATED ON THE MOTOR
OF THE ROTARY PRESS

Notes générales / General notes

* IMPORTANT
FINAL DESIGN WILL BE ON
"FOR CONSTRUCTION" REVISION

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0.3	FOR APPROVAL – AS CUSTOMER'S COMMENTS (3)	26/02/2024	D. MARTEL
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FOURNIER
LES INDUSTRIES FOURNIER INC.
FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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Sceau / Stamp

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Vérifié par / Checked by	G. ARCAND
Approuvé par / Approved by	M.-A. TURGEON
Date de création / Creation date	16/06/2023
Échelle / Scale	

WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

ROTARY PRESS 2 – JB
PANEL ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 400	0.3

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
BH401	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : EXHAUST, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-EXHAUST	SUM-EXHAUST	FOURNIER
BH402	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : VERTICAL RESTRICTORS, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-VERTRESTRICT	SUM-VERTRESTRICT	FOURNIER
BH403	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : FEED VALVE - OPEN, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-FEEDVALOPEN	SUM-FEEDVALOPEN	FOURNIER
	1	DURABLACK : REC VALVE - CLOSE, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-RECVALCLOSE	SUM-RECVALVCLOSE	FOURNIER
BH404	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : FEED VALVE - CLOSE, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-FEEDVALCLOSE	SUM-FEEDVALCLOSE	FOURNIER
	1	DURABLACK : REC VALVE - OPEN, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-RECVALOPEN	SUM-RECVALVEOPEN	FOURNIER
BH405	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 1, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE1	SUM-WASHVALVE1	FOURNIER
BH406	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 2, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE2	SUM-WASHVALVE2	FOURNIER
BH407	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 3, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE3	SUM-WASHVALVE3	FOURNIER
BH408	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : WASH VALVE 4, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-WASHVALVE4	SUM-WASHVALVE4	FOURNIER
	1	PUSH-TO-CONNECT PLUG FOR PNEUMATIC FITTING, 1\4", PLASTIC	SCO-P9-1/4	SCO-P9-1/4	FOURNIER
BH409	1	BULKHEAD UNION, 1/4" TUBE, QBS-1/4T-U, METRIC THREAD	564750	FES-564750	FESTO
	1	SEALING RING, OL-M14, FOR BULKHEAD UNION, TUBE 1/4"	161183	FES-161183	FESTO
	1	DURABLACK : AIR SUPPLY, WHITE ON BLACK, 1 1/2" x 5/8" x 1/16", ADHESIVE TYPE	SUM-AIRSUPPLY	SUM-AIRSUPPLY	FOURNIER
	1	PUSH-TO-CONNECT PLUG FOR PNEUMATIC FITTING, 1\4", PLASTIC	SCO-P9-1/4	SCO-P9-1/4	FOURNIER
BP401	1	GALVANIZED BACK PLATE, 18'' X 16''	A18P16G	HOF-A18P16G	HOFFMAN
EB501	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
GND401	1	TERMINAL BAR, ALUMINIUM #6-2/0 CU/AL, 3.75", 9 SCREW CONNECTIONS, 1/4	PK9GTA	SCH-PK9GTA	SCHNEIDER ELECTRIC
HSS-P33229	1	ENCLOSURE 1-HOLE, 22.5MM, PLASTIC, NEMA 4X	800F-1PP	ALL-800F1PP	AB
	1	PLASTIC EMERGENCY STOP, 22.5MM, HEAD 40MM TWIST LOCK, RED, IP66	800FP-MT44	ALL-800FPMT44	AB
	1	METAL LATCH FOR 800F OPERATOR	800F-ALM	ALL-800FALM	AB
	1	SCREW CONTACT BLOCK 1 N.C FOR 22.5MM OPERATOR	800F-X01	ALL-800FX01	AB
	1	UNIVERSAL E-STOP LEGEND PLATE, 22.5MM, 3 LANGUAGES, YELLOW WITH BLACK MARKING	800F-15YSM112	ALL-800F15YSM112	AB
	1	MOUNTING BRACKET FOR ENCLOSURE 800F-1PP OR 800H-1HZ4R	IFI-02112	IFI-02112	FOURNIER
	1	LIQUID TIGHT CONNECTOR, SWIVEL STRAIGHT TO 90, FOR 3/8" CONDUIT, 1/2 NPT, PLASTIC	PS0389NGY	TEC-CCNY-375-8	HUBBELL
	12	LIQUID TIGHT CONDUIT, 3/8", IN FEET	FTPV3758C	TEC-FTPV375-8C	TECHSPAN
	1	REDUCING ADAPTER, M20 ISO TO 1/2" NPT THREAD	M20-50	ADP-500NPTM2050	THOMAS & BETTS
IP401	1	I/P CONVERTER, 0-87 PSI (6 BARS), 24VDC, 4-20MA, OUTPUT PNP	VPPE-3-1-1/8-6-420-E1	FES-13109707	FESTO
JB401	1	FIBERGLASS ENCLOSURE, 18'' X16'' X 10''	A181610CHSCFG	HOF-A181610CHSCFG	HOFFMAN
	1	CORROSION INHIBITOR, EMITTER FOR 5 CUBIC FOOT (25 PER PACKAGE)	AHCI5E	HOF-AHCI5E	HOFFMAN
	1	STICKER : FOURNIER LOGO, 10", VINYL, BLUE & RED, ADHESIVE TYPE	LOGOF-10VBLE/R	LOGOF-10VBLE/R	FOURNIER
LCC401	1	ACT20P-BRIDGE-S, MEASURING BRIDGE CONVERTER, RESISTANCE MEASURING, 0(4)-20mA	1067250000	WEI-1067250000	WEIDMULLER
LCC402	1	ACT20P-BRIDGE-S, MEASURING BRIDGE CONVERTER, RESISTANCE MEASURING, 0(4)-20mA	1067250000	WEI-1067250000	WEIDMULLER
LCC403	1	ACT20P-BRIDGE-S, MEASURING BRIDGE CONVERTER, RESISTANCE MEASURING, 0(4)-20mA	1067250000	WEI-1067250000	WEIDMULLER
REG401	1	FILTER REGULATOR, WITH AUTOMATIC DRAIN	MS4N-LFR-0.25-D7-CRV-AS	IFI-02067	FESTO
	1	NIPPLE 1/4'' TUBE (BRASS)	FAI-122-B	FAI-122-B	FAIRVIEW
	1	BULKHEAD 3/4" FOR UNION 1/4'' TUBE, BRASS	207ACBH-4	PAR-207ACBH-4	PARKER

TAG	QTY	DESCRIPTION	CAT. NO.	CAT. NO. (FOURNIER)	MANUFACTURER
SE401	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
SE402	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
SE403	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
SE404	1	SWIVEL ELBOW 90 1/4" TUBE 1/4" THREAD	D6069-4B	DOM-D6069-4B	DOMINION FITTING
TB-24V	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-COM	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-INTER	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	6	PTTB4, PUSH-IN TERMINAL, 2 LEVELS, 28A, GREY, 10-24 AWG	3211786	PHO-3211786	PHOENIX CONTACT
	1	PTTB4 PARTITION PLATE, GREY, (D-STTB4)	3030462	PHO-3030462	PHOENIX CONTACT
TB-LC	1	END BRACKET, CLIPFIX 35, GREY	3022218	PHO-3022218	PHOENIX CONTACT
	1	GROUP MARKER FOR END BRACKET CLIPFIX 35, HEIGHT-ADJUSTABLE, GRAY	0811969	PHO-0811969	PHOENIX CONTACT
	4	PT 2,5-3L, SPRING CAGE TERMINAL, 3 LEVELS, 20A, 12-26 AWG, GREY	3210499	PHO-3210499	PHOENIX CONTACT
	1	PT 2.5-3L, PARTITION PLATE, 3 LEVELS, GREY	3211647	PHO-3211647	PHOENIX CONTACT
TE401	1	UNION TEE 1/4" X 1/4" X 1/4" TUBE	D6064-4	DOM-D6064-4	DOMINION FITTING
TE402	1	UNION TEE 1/4" X 1/4" X 1/4" TUBE	D6064-4	DOM-D6064-4	DOMINION FITTING
TE403	1	UNION TEE 1/4" X 1/4" X 1/4" TUBE	D6064-4	DOM-D6064-4	DOMINION FITTING
VT401	1	VALVE TERMINALS, 1/4 PORTS, MODULES - K (2), M (1), 24VDC, 25PIN DSUB	34P-MS1-SGUGKLGAL-3AU-KKM+HDD	FES-13112521	FESTO
	2	PUSH-IN FITTING FOR MPA-L VALVE TERMINAL	QB-1/4-1/4-U-M	FES-533219	FESTO

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FOURNIER INDUSTRIES INC.
3787 BOUL. FRONTENAC OUEST
THETFORD MINES, QUÉBEC, CANADA, G6H 2B5

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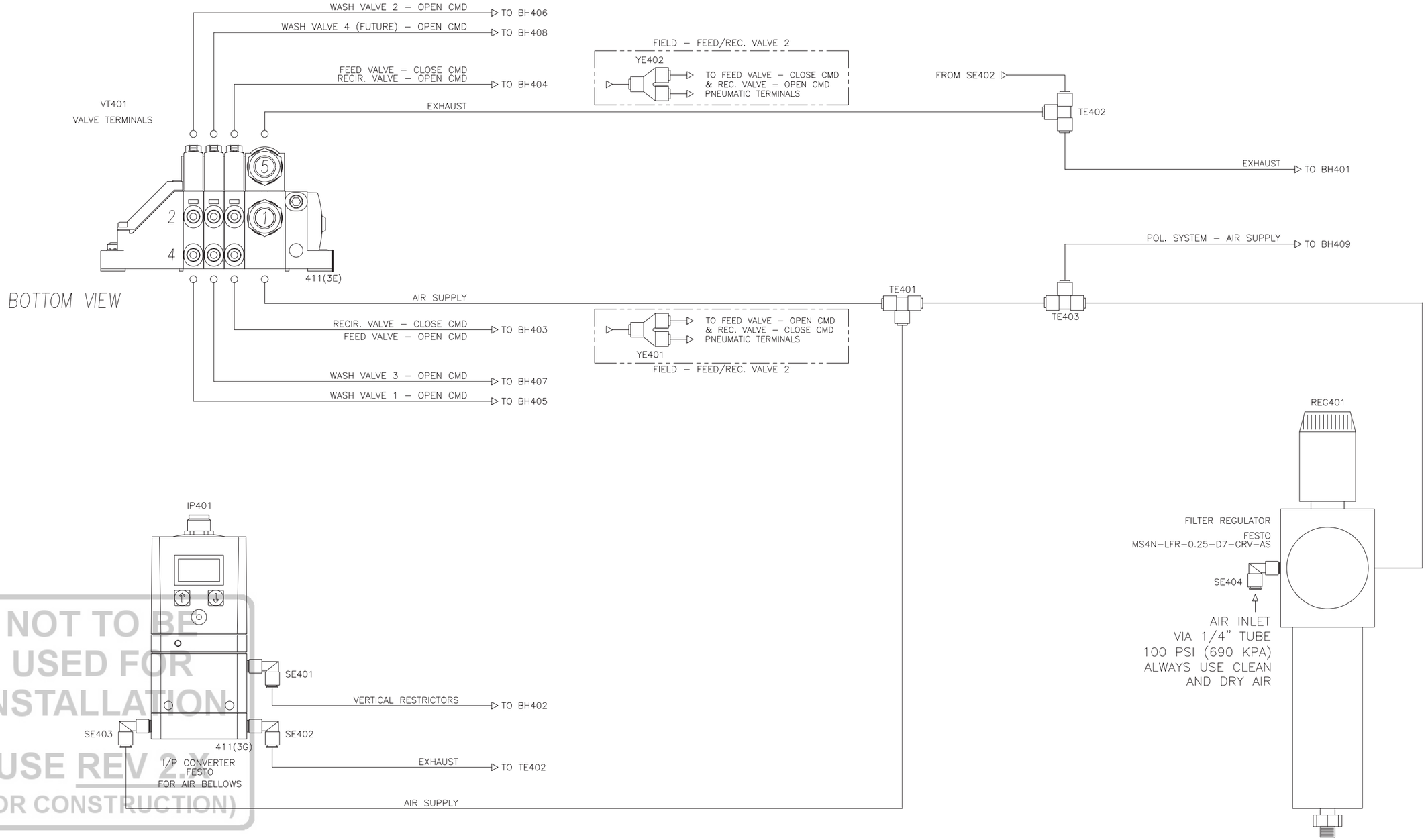
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WINNIPEG, MB

2 X ROTARY PRESS 3(4)-900/4000CVP

ROTARY PRESS 2 - JB
LIST OF MATERIAL

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D - 23-8460 - 401	0.3



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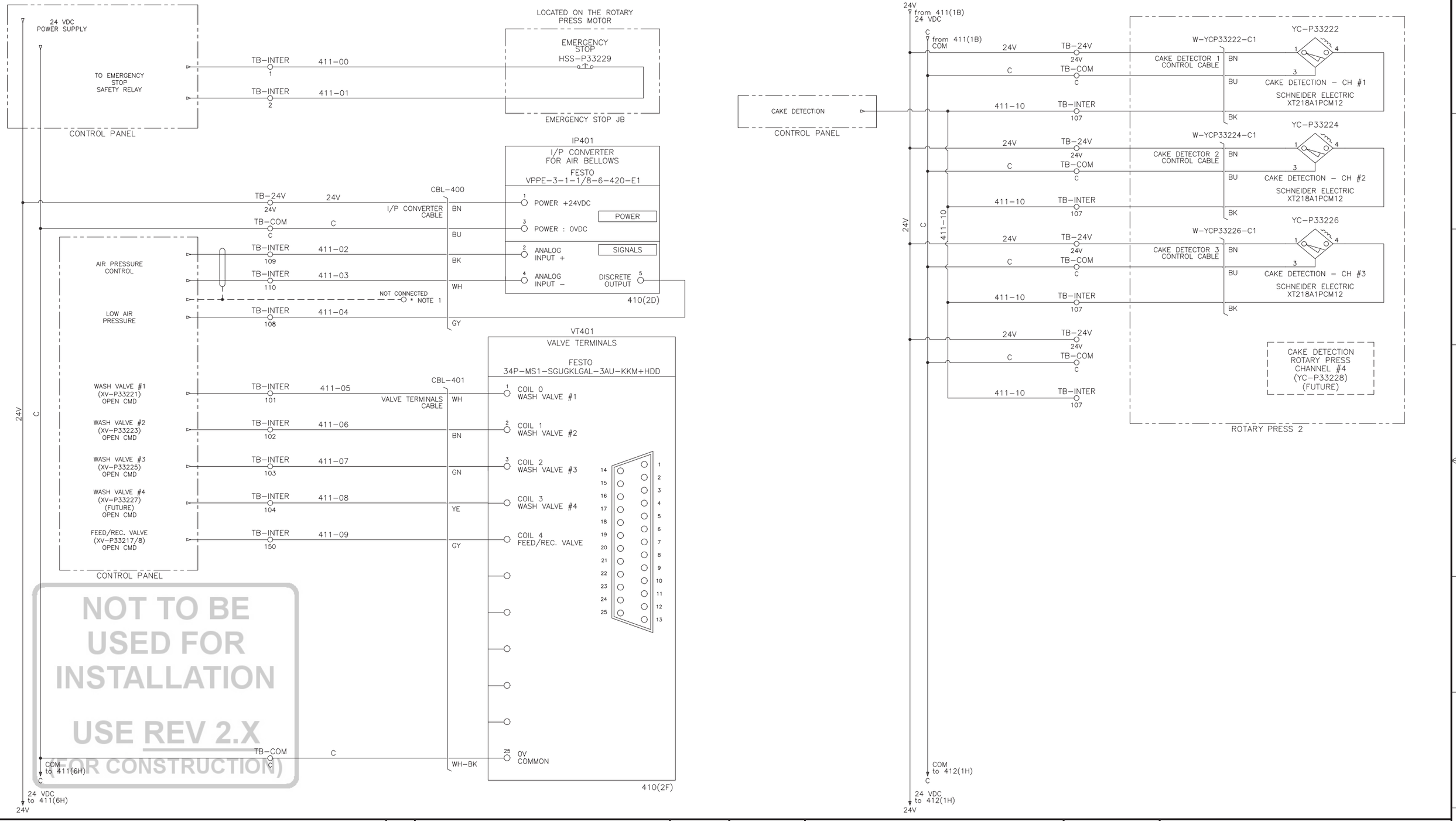
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ROTARY PRESS 2 – JB
PNEUMATIC ARRANGEMENT

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 410	0.3



Notes générales / General notes

NOTE 1:
CABLE SHIELDING MUST STAY UNCONNECTED ON THIS SIDE.

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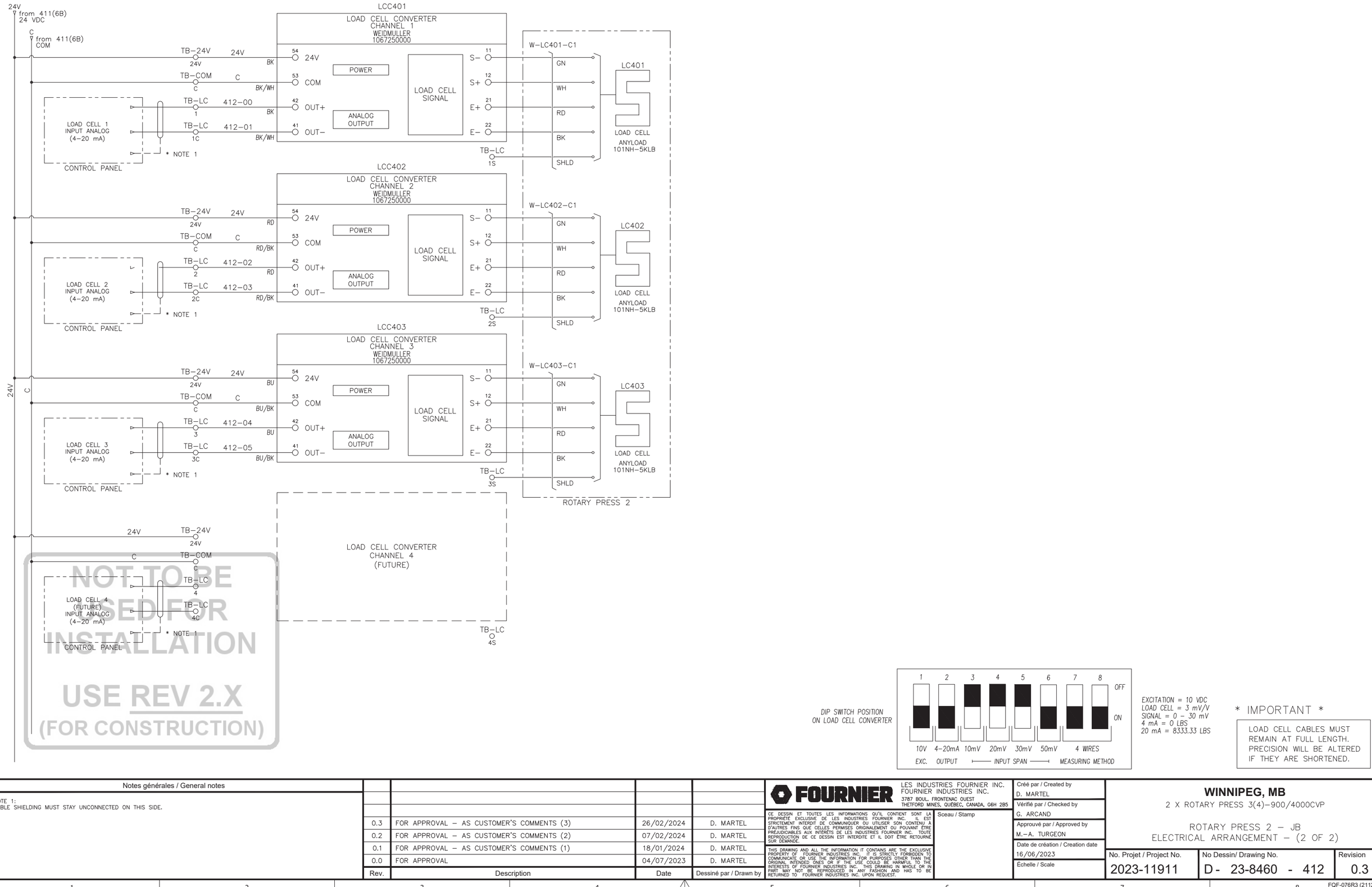
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ROTARY PRESS 2 – JB
ELECTRICAL ARRANGEMENT – (1 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 411	0.3

FQF-076R3 (211223)



DIP SWITCH POSITION
ON LOAD CELL CONVERTER

EXCITATION = 10 VDC
LOAD CELL = 3 mV/V
SIGNAL = 0 – 30 mV
4 mA = 0 LBS
20 mA = 8333.33 LBS

* IMPORTANT *

LOAD CELL CABLES MUST REMAIN AT FULL LENGTH. PRECISION WILL BE ALTERED IF THEY ARE SHORTENED.

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WINNIPEG, MB

2 X ROTARY PRESS 3(4)–900/4000CVP

ROTARY PRESS 2 – JB
ELECTRICAL ARRANGEMENT – (2 OF 2)

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 412	0.3

FQF-076R3 (211223)

GRAVOPLY
DIMENSION 1-3/4" X 5/8" X 1/16''
BLACK LETTER ON WHITE BACKGROUND
ADHESIVE TYPE
TEXT HEIGHT 1/8"

OFF HAND AUTO	x4
RUNNING	x4
FAULT	x4
SPEED CONTROL	x4
MASTER CONTROL RESET	x2
EQUIPMENT FAULT	x2
MAINTENANCE WARNING	x2
POWER ON	x3
UPS – POWER ON	x2
VFD-P33120	x1
VFD-P33110	x1
VFD-P33220	x1
VFD-P33210	x1

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(FOR CONSTRUCTION)

GRAVOPLY
DIMENSION 3" X 5/8" X 1/16''
BLACK LETTER ON WHITE BACKGROUND
ADHESIVE TYPE
TEXT HEIGHT 3/16"

RP-P3312	x1
TK-P3311	x1
RP-P3322	x1
TK-P3321	x1

GRAVOPLY
DIMENSION 100mm X 35mm X 3mm
BLACK LETTER ON WHITE BACKGROUND
ADHESIVE TYPE
TEXT HEIGHT 5mm

LCP-P3310	x1
LCP-P3320	x1
CP-P3310	x1
CP-P3320	x1

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MISC
LEGEND PLATES

No. Projet / Project No.	No Dessin/ Drawing No.	Revision
2023-11911	D- 23-8460 - 1000	0.3

FQF-076R3 (211223)

Section 3

Technical datasheets

Technical datasheets

#		Description
Anyload		
01	101NH-5KLB	S type Load cell, 5000lbs, CE
Endress & Hauser		
02	5WBB25-CPDADBJA0DQA120AA1	FLOWMETER 1", SUPPLY 24VDC 4-20MA HART, WITH LCD CSA US APPROUVED
03	5WBB80-CPDADBJA0DUA120AA1	FLOWMETER 3", SUPPLY 24VDC 4-20MA HART, WITH LCD CSA US APPROUVED
04	PMC71B-CABADJH6A3KFA1VXJD	PRESSION TRANSMITTER 30 PSI, 4-20MA HART WITH LCD CSA US APPROUVED
Festo		
05	MS4N-LFR-0-25-D7-CRV-AS	AIR FILTER REGULATOR
06	13117330 (NC) - 13117331 (NO)	OUTLET CONTROL VALVES TEFLON FUSED BALL Ø3" CLASS 125# FLANGED VALVE ONE VALVE NORMALLY OPENED, ONE VALVE NORMALLY
07	13117333	CHANNEL WASH WATER VALVE C.F.F. STAINLESS STEELS DFPD-20-RP-90-RS30-F04 Ø1", NPT
08	VPPE-3-1-18-6-420-E1	PRESSURE REGULATOR 0-87 PSI (6 BARS) 24VDC - INPUT 4 -20MA - OUTPUT PNP
09	34P-MS1-SGUGKLGAL-3AU-KKM+HDD	VALVES TERMINALS 24VDC, 25PIN DSUB, 1/4 PORTS, K(2) + M(1) MODULES
Hoffman		
10	N280416G050	AIR CONDITIONER 4000 BTU 115VAC INDOOR

Technical datasheets

#		Description
Nord Gear		
11	SK0282.1 AXFBH-80LP/4 M4 575V 361 RPM	GEARMOTOR 1 HP, 575V, M4, 361 RPM OIL SIGHT GLASS, MAGNETIC DRAIN PLUG PREMIUM EFFICIENCY
Phoenix Contact		
12	2905908	UPS, TRIO, 750 VA 120 VAC INPUT, 120 VAC 6A OUTPUT
Schneider electric		
13	XT218A1PCM12	PROXIMITY SENSOR CAPACITIVE PNP 24VDC 8 MM OF DETECTION WITH M12 CONNECTOR
14	MCSESM083F23F0	ETHERNET MANAGED SWITCH 24VDC 8 PORTS RJ45
15	HMIGTO5310	OPERATOR INTERFACE, MAGELIS GTO, 640 X 480 10.4 IN. TOUCH, COLOR, 24VDC
16	BME P58 2020	MODICON X80, PLC M580
17	BMX AMI 0810	MODICON X80, ANALOG INPUT MODULE 8PT
18	BMX AMO 0802	MODICON X80, ANALOG OUTPUT MODULE 8PT
19	BMX CPS 3500	MODICON X80, POWER SUPPLY 24VDC, 36W
20	BMX DDI 3202K	MODICON X80, 24VDC DISCRETE IN MODULE 32PT
21	BMX DDO 1602	MODICON X80, 24VDC DISCRETE OUT MODULE 16PT
22	BMX XBP 0800	MODICON X80, RACK, 8 SLOTS
23	TM251MESE	Modicon M251, PLC, 8 MB Memory 3 Ethernet ports, 24 VDC
24	TM3AQ4	Modicon TM3, Analog output module 4-PT, Current/voltage, 24 VDC
25	TM3DM8R	Modicon TM3, Discrete I/O module 4 x 24 VDC inputs, 4 x relay outputs
26	ATV930D15S6X	ATV930, 600V, 3PH, 20HP, 15HP HD

Technical datasheets

#		Description
27	ATV930U22S6X	ATV930, 600V, 3PH, 3HP, 2HP HD
Sew Eurodrive		
28	M5RSF60 (ratio 1098) 4 Channel	GEAR REDUCER GEAR RATIO 1098:1 POSITION M1 4 CHANNEL
Teco Westinghouse		
29	PDH01545C (15HP, 575V, 1800 RPM)	ELECTRICAL MOTOR 15 HP, 575 V, 254TC, 1800 RPM C-FLANGE, INVERTER DUTY 10:1 CLASS1, DIVISION 2, PREMIUM EFFICIENCY

Technical DataSheets

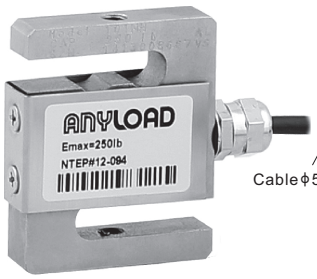
Description :
S type Load cell, 5000lbs, CE

Trade Name :
Anyload

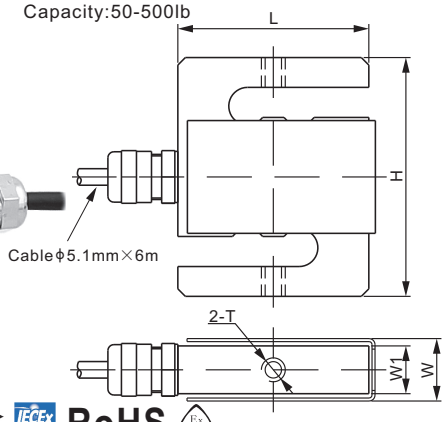
Model no :
101NH-5KLB

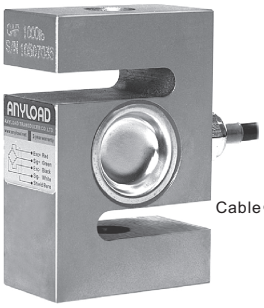
101NH

Alloy Steel

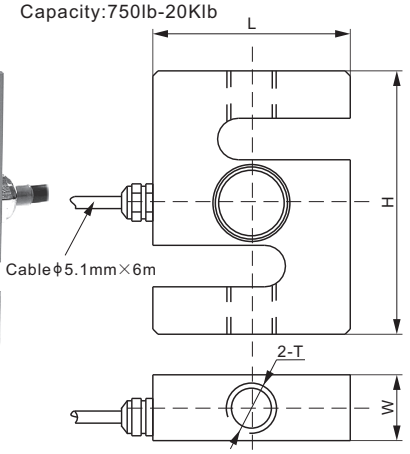


Capacity:50-500lb





Capacity:750lb-20Klb



RoHS

RATED CAPACITY	DIMENSIONS H	L	W	W1	T	Shipping Weight(kg)
lb/inches						
50–250	2.50	2.00	0.65	0.50	1/4–28 UNF–2B	0.6
500	3.00	2.00	0.89	0.75	1/2–20 UNF–2B	0.7
750–3,000	3.00	2.00	1.11	–	1/2–20 UNF–2B	0.9
5,000; 10,000	4.00	3.00	1.00	–	3/4–16 UNF–2B	1.5
15,000	5.50	4.00	1.25	–	1–14 UNS–2B	3.0
20,000	7.00	4.92	2.00	–	$1\frac{1}{4}$–12 UNF–2B	6.8

SPECIFICATIONS

Full Scale Output	3.0 mV/V ± 1%	**Recommended Excitation**	10V (15V Maximum)
Zero Balance	± 0.02 mV/V	**Insulation Resistance**	>2 [50V DC] GΩ
Non-linearity	< ± 0.017%	**Compensated Temperature Range**	-10°C to 50°C / 14°F to 122°F
Repeatability	< ± 0.017%	**Safe Overload**	150% of full scale
Hysteresis Error	< ± 0.017%	**Breaking Overload**	300% of full scale
Creep in 30 min.	< ± 0.023%	**Seal Type / IP Rating**	Cap.≤500lb:Environmentally Sealed / IP66
Input Resistance	350Ω ± 7		Cap.≥750lb:Environmentally Sealed / IP67
Output Resistance	350Ω ± 3	**Cable Color Code**	Exc+ Red Exc- Black
Element Material	Alloy Steel, Nickel Plated		Sig+ Green Sig- White Shield Bare

Rated Capacity	Width / Height	Part Number*	INTERCHANGEABLE REFERENCE						
			Coti-Global		Rice Lake		Vishay		
							Celtron	Revere	Sensortronics
			CGSB	CGSB-1	RL20000	RL20001	STC	363	60001
50lb	W:0.65" (H:2.5")	101NH-50lb	W:0.75"	W:0.75"	W:0.75"			(H:2.4?)	
100lb	W:0.65" (H:2.5")	101NH-100lb	W:0.75"	W:0.75"	W:0.75"			(H:2.4?)	
200lb	W:0.65" (H:2.5")	101NH-200lb	W:0.75"	W:0.75"	W:0.75"			(H:2.4?)	
250lb	W:0.65" (H:2.5") (L:2") (T: 1/4-28 UNF-2B)	101NH-250lb	W:0.75" (H:3") (T: 3/8-24 UNF-2B)	W:0.75"	W:0.75"	W: 0.75" (L: 3") (T: 3/8-24 UNF-2B)	W: 1.05" (H: 3") (T: 3/8-24 UNF-2B)	(H:2.4?)	W: 0.75" (H: 3") (T: 3/8-24 UNF-2B)
500lb	W:0.89" (H:3")	101NH-500lb	W:1.00"	W:1.00" (H:2.5")	W:1.00" (H:2.5")	W:1.00"	W:1.2"	W:0.9" (H:2.4")	W:1.00"
750lb	W:1.11" (H:3")	101NH-750lb	W:1.00"	W:1.00" (H:2.5")	W:1.00" (H:2.5")	W:1.00"	W:1.2"	W:0.9" (H:2.4")	W:1.00"
1Klb	W:1.11" (H:3")	101NH-1Klb	W:1.00"	W:1.00" (H:2.5")	W:1.00" (H:2.5")	W:1.00"	W:1.03"	W:0.9" (H:2.4")	W:1.00"
1.5Klb	W:1.11" (H:3")	101NH-1.5Klb	W:1.00"	W:1.00" (H:2.5")	W:1.00" (H:2.5")	W:1.00"	W:1.03"	W:0.9" (H:2.4")	W:1.00"
2Klb	W:1.11" (H:3")	101NH-2Klb	W:1.00"	W:1.00" (H:2.5")	W:1.25" (H:2.5")	W:1.00"	W:1.25"	W:1.15" (H:2.4")	W:1.00"
2.5Klb	W:1.11" (H:3") (L:2")	101NH-2.5Klb	W:1.00"	W:1.00" (H:2.5")	W:1.25" (H:2.5") (L:3")	W:1.25"	W:1.25"	W:1.15" (H:2.4")	W:1.25"
3Klb	W:1.11" (H:3") (L:2") (T: 1/2-20 UNF-2B)	101NH-3Klb	W:1.00"	W:1.0" (H:4.0") (L:3")	W:1.25" (H:4") (L:3")	W:1.25"	W:1.25"	W:1.15" (H:3.9") (T: 3/4-16 UNF-2B)	W:1.25"
5Klb	W:1" (H:4")	101NH-5Klb	(H:4.25?)		W:1.25"	W:1.25" (H:4.25")	W:1.25" (H:4.25")	W:1.15" (H:3.90")	W:1.25" (H:4.25")
10Klb	W:1" (H:4") (L:3")	101NH-10Klb	(H:4.75?)		W:1.25"	W:1.25" (H:4.75") (L:3.50")	W:1.25" (H:4.75") (L:3.50")	W:1.15" (H:3.90") (L:2.94")	W:1.25" (H:4.75") (L:3.50")
15Klb	W:1.25" (L:4") (T: 1-14 UNS-2B)	101NH-15Klb			W:1.5" (T:1-12 UNF)	W:1.50"	W:1.50"	W:1.65" (L:3.44")	W:1.50"
20Klb	W:2.0" (L:4.92")	101NH-20Klb	(L:5.00?)		W:2.25" (L:5.00")	W:2.25" (L:5.00")	W:2.19" (L:5.00")	W:1.88" (L:4.44")	W:2.25" (L:5.00")

100lb-500lb: NTEP 1:4 500 Class III, Single Cell; 1Klb-20Klb: NTEP 1:5 500 Class III, Single Cell

200kg-1.5t: OIML MAA C3, Y=17 000; 2t-10t: OIML MAA C4.5, Y=14 000

* ATEX, FM, IECEx approved versions carry the "-Ex" suffix.

© 2023 ANYLOAD V1 dimensions and specifications subject to change without notice

Technical DataSheets

Description :
FLOWMETER 1", SUPPLY 24VDC
4-20MA HART, WITH LCD
CSA US APPROUVED

Trade Name :
Endress & Hauser

Model no :
5WBB25-CPDADBJA0DQA120AA1

5WBB25-CPDADBJA0DQA120AA1

Proline Promag W 10 electromagnetic flowmeter

Flowmeter for basic water and wastewater applications with easy-to-use operation concept



More information and current pricing:
www.ca.endress.com/5WBB

Benefits:

- Reliable measurement at constant accuracy with 0 x DN inlet run without pressure loss
- Flexible engineering – sensor with fixed or lap-joint process connections
- Application fitness – EN ISO 12944 corrosion protection for underground or underwater installation
- Improved plant availability – sensor compliant with industry-specific requirements
- Optimum usability – operation with mobile devices and SmartBlue app or display with touch screen
- Simple, time-saving commissioning – guided parameterization in advance and in the field
- Integrated verification – Heartbeat Technology

Specs at a glance

- **Max. measurement error** Volume flow (standard): ±0.5 % o.r. ± 1 mm/s (0.04 in/s)
- **Measuring range** 9 dm³/min to 162 000 m³/h (2.5 gal/min to 100 000 gal/min)
- **Medium temperature range** Liner material hard rubber: 0 to +80 °C (+32 to +176 °F) Liner material polyurethane: –20 to +50 °C (–4 to +122 °F) Liner material PTFE: –20 to +90 °C (–4 to +160°F)
- **Max. process pressure** PN 40, Class 300, 20K
- **Wetted materials** Liner material hard rubber: 0 to +80 °C (+32 to +176 °F) Liner material polyurethane: –20 to +50 °C (–4 to +122

°F) Liner material PTFE: –20 to +90 °C (–4 to +160 °F) Electrodes: 1.4435 (316L); Alloy C22, 2.4602 (UNS N06022)

Field of application: Thanks to its international approvals (e.g. for drinking water), Promag W serves a wide variety of applications. It is available as both compact or remote version. With its straightforward hard- and software design, Promag W 10 simplifies every step in its life cycle from engineering to servicing at usual Endress+Hauser quality. Heartbeat Technology ensures measurement reliability and compliant verification.

Features and specifications

Liquids

Measuring principle

Electromagnetic

Product headline

Flowmeter for basic water and wastewater applications with easy-to-use operation concept.
Reliable measurement at constant accuracy with 0 x DN inlet run without pressure loss.
Suitable for elementary measurement tasks such as raw water intake.

Sensor features

Flexible engineering – sensor with fixed or lap-joint process connections. Application fitness – EN ISO 12944 corrosion protection for underground or underwater installation. Improved plant availability – sensor compliant with industry-specific requirements.
International drinking water approvals. Degree of protection IP68 (Type 6P enclosure). International drinking water approvals. Installation length: DVGW/ISO conform.

Liquids

Transmitter features

Optimum usability – operation with mobile devices and SmartBlue app or display with touch screen. Simple, time-saving commissioning – guided parameterization in advance and in the field. Integrated verification – Heartbeat Technology.
System integration with HART, Modbus RS485. Flexible operation with app and optional display.

Nominal diameter range

DN 25 to 2400 (1 to 90")

Wetted materials

Liner material hard rubber: 0 to +80 °C (+32 to +176 °F)
Liner material polyurethane: –20 to +50 °C (–4 to +122 °F)
Liner material PTFE: –20 to +90 °C (–4 to +160 °F)
Electrodes: 1.4435 (316L); Alloy C22, 2.4602 (UNS N06022)

Measured variables

Volume flow, conductivity, mass flow

Max. measurement error

Volume flow (standard): ±0.5 % o.r. ± 1 mm/s (0.04 in/s)

Measuring range

9 dm^3/min to 162 000 m^3/h (2.5 gal/min to 100 000 gal/min)

Max. process pressure

PN 40, Class 300, 20K

Medium temperature range

Liner material hard rubber: 0 to +80 °C (+32 to +176 °F)
Liner material polyurethane: –20 to +50 °C (–4 to +122 °F)
Liner material PTFE: –20 to +90 °C (–4 to +160°F)

Ambient temperature range

-40 to 60°C (-40 to 140°F)

Liquids

Sensor housing material
DN 25 to 300 (1 to 12"): AlSi10Mg, coated
DN 350 to 2000 (14 to 78"): Carbon steel with protective varnish

Transmitter housing material
Polycarbonat; AlSi10Mg, coated

Degree of protection
Compact version: IP66/67, type 4X enclosure
Sensor remote version (standard): IP66/67, type 4X enclosure
Sensor remote version (option): IP68, type 6P enclosure, with protective varnish according to EN ISO 12944 C5-M/Im1/Im2/Im3

Display/Operation
LCD display with touch & auto rotate

Outputs
4-20 mA HART (active/passive), Pulse/frequency/switch output
Modbus RS485, 4-20 mA

Digital communication
HART, MODBUS RS485

Power supply
DC 24 V
AC 100 to 230 V
AC 100 to 230 V / DC 24 V (non-hazardous area)

Hazardous area approvals
CSA, GP

Metrological approvals and certificates
Calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025)
Heartbeat Technology complies with the requirements for measurement traceability according to ISO 9001:2015 – Section 7.1.5.2 a (TÜV SÜD attestation)

Liquids

Pressure approvals and certificates
CRN, PED

Material certificates
3.1 material

Hygienic approvals and certificates
Drinking water approvals: ACS, KTW/W270, NSF 61, WRAS BS 6920

More information **www.ca.endress.com/5WBB**

Configuration summary

Mat. no.	Description Order code	Quantity	Unit
71430103	Promag W 10, 5WBB25, DN25 1" 5WBB25-CPDADBJA0DQA120AA1	1	ST

Details

Curr. output 1	Volume flow	
Current span	4...20 mA US	
4 mA value	0	USgal/min
20 mA value	18	USgal/min
Failsafe mode current output	Max.	
Damping output 1	1	s
Value 1 display	Volume flow	
Value 2 display	None	
Value 3 display	None	
Value 4 display	None	
Display damping	1	s
Totalizer 1		
Unit	USgal	
Operating mode totalizer	Net flow total	
Failure mode	Stop	
Totalizer 2		
Unit	USgal	
Operating mode totalizer	Forward flow total	
Failure mode	Stop	
Totalizer 3		
Unit	USgal	
Operating mode totalizer	Reverse flow total	
Failure mode	Stop	

010	Approval; Transmitter + Sensor:	CP	CSA C/US; GP
011	Design:	D	Lap joint flange
013	Functionality:	A	Standard transmitter
015	Power Supply:	D	24VDC
020	Output; Input:	B	4-20mA HART, pulse/freq./switch output
030	Display; Operation:	J	LCD, 2.40"; SmartBlue app
040	Housing:	A	Compact, alu, coated

045	Cable, Sensor Connection:	0	Not used
050	Electrical Connection:	D	Thread NPT1/2
060	Liner:	Q	PTFE 90oC
070	Process Connection:	A12	Cl.150, carbon steel, lap joint flange ASME B16.5
075	Electrodes:	0	1.4435/316L
080	Calibration Flow:	A	0.5%
480	Device Model:	A1	1

Description :
FLOWMETER 3", SUPPLY 24VDC
4-20MA HART, WITH LCD
CSA US APPROUVED

Trade Name :
Endress & Hauser

Model no :
5WBB80-CPDADBJA0DUA120AA1

5WBB80-CPDADBJA0DUA120AA1

Proline Promag W 10 electromagnetic flowmeter

Flowmeter for basic water and wastewater applications with easy-to-use operation concept



More information and current pricing:
www.ca.endress.com/5WBB

Benefits:

- Reliable measurement at constant accuracy with 0 x DN inlet run without pressure loss
- Flexible engineering – sensor with fixed or lap-joint process connections
- Application fitness – EN ISO 12944 corrosion protection for underground or underwater installation
- Improved plant availability – sensor compliant with industry-specific requirements
- Optimum usability – operation with mobile devices and SmartBlue app or display with touch screen
- Simple, time-saving commissioning – guided parameterization in advance and in the field
- Integrated verification – Heartbeat Technology

Specs at a glance

- **Max. measurement error** Volume flow (standard): ±0.5 % o.r. ± 1 mm/s (0.04 in/s)
- **Measuring range** 9 dm³/min to 162 000 m³/h (2.5 gal/min to 100 000 gal/min)
- **Medium temperature range** Liner material hard rubber: 0 to +80 °C (+32 to +176 °F) Liner material polyurethane: –20 to +50 °C (–4 to +122 °F) Liner material PTFE: –20 to +90 °C (–4 to +160°F)
- **Max. process pressure** PN 40, Class 300, 20K
- **Wetted materials** Liner material hard rubber: 0 to +80 °C (+32 to +176 °F) Liner material polyurethane: –20 to +50 °C (–4 to +122

°F) Liner material PTFE: –20 to +90 °C (–4 to +160 °F) Electrodes: 1.4435 (316L); Alloy C22, 2.4602 (UNS N06022)

Field of application: Thanks to its international approvals (e.g. for drinking water), Promag W serves a wide variety of applications. It is available as both compact or remote version. With its straightforward hard- and software design, Promag W 10 simplifies every step in its life cycle from engineering to servicing at usual Endress+Hauser quality. Heartbeat Technology ensures measurement reliability and compliant verification.

Features and specifications

Liquids

Measuring principle

Electromagnetic

Product headline

Flowmeter for basic water and wastewater applications with easy-to-use operation concept.
Reliable measurement at constant accuracy with 0 x DN inlet run without pressure loss.
Suitable for elementary measurement tasks such as raw water intake.

Sensor features

Flexible engineering – sensor with fixed or lap-joint process connections. Application fitness – EN ISO 12944 corrosion protection for underground or underwater installation. Improved plant availability – sensor compliant with industry-specific requirements.
International drinking water approvals. Degree of protection IP68 (Type 6P enclosure). International drinking water approvals. Installation length: DVGW/ISO conform.

Liquids

Transmitter features

Optimum usability – operation with mobile devices and SmartBlue app or display with touch screen. Simple, time-saving commissioning – guided parameterization in advance and in the field. Integrated verification – Heartbeat Technology.
System integration with HART, Modbus RS485. Flexible operation with app and optional display.

Nominal diameter range

DN 25 to 2400 (1 to 90")

Wetted materials

Liner material hard rubber: 0 to +80 °C (+32 to +176 °F)
Liner material polyurethane: –20 to +50 °C (–4 to +122 °F)
Liner material PTFE: –20 to +90 °C (–4 to +160 °F)
Electrodes: 1.4435 (316L); Alloy C22, 2.4602 (UNS N06022)

Measured variables

Volume flow, conductivity, mass flow

Max. measurement error

Volume flow (standard): ±0.5 % o.r. ± 1 mm/s (0.04 in/s)

Measuring range

9 dm^3/min to 162 000 m^3/h (2.5 gal/min to 100 000 gal/min)

Max. process pressure

PN 40, Class 300, 20K

Medium temperature range

Liner material hard rubber: 0 to +80 °C (+32 to +176 °F)
Liner material polyurethane: –20 to +50 °C (–4 to +122 °F)
Liner material PTFE: –20 to +90 °C (–4 to +160°F)

Ambient temperature range

-40 to 60°C (-40 to 140°F)

Liquids

Sensor housing material
DN 25 to 300 (1 to 12"): AlSi10Mg, coated
DN 350 to 2000 (14 to 78"): Carbon steel with protective varnish

Transmitter housing material
Polycarbonat; AlSi10Mg, coated

Degree of protection
Compact version: IP66/67, type 4X enclosure
Sensor remote version (standard): IP66/67, type 4X enclosure
Sensor remote version (option): IP68, type 6P enclosure, with protective varnish according to EN ISO 12944 C5-M/Im1/Im2/Im3

Display/Operation
LCD display with touch & auto rotate

Outputs
4-20 mA HART (active/passive), Pulse/frequency/switch output
Modbus RS485, 4-20 mA

Digital communication
HART, MODBUS RS485

Power supply
DC 24 V
AC 100 to 230 V
AC 100 to 230 V / DC 24 V (non-hazardous area)

Hazardous area approvals
CSA, GP

Metrological approvals and certificates
Calibration performed on accredited calibration facilities (acc. to ISO/IEC 17025)
Heartbeat Technology complies with the requirements for measurement traceability according to ISO 9001:2015 – Section 7.1.5.2 a (TÜV SÜD attestation)

Liquids

Pressure approvals and certificates
CRN, PED

Material certificates
3.1 material

Hygienic approvals and certificates
Drinking water approvals: ACS, KTW/W270, NSF 61, WRAS BS 6920

More information **www.ca.endress.com/5WBB**

Configuration summary

Mat. no.	Description Order code	Quantity	Unit
71430108	Promag W 10, 5WBB80, DN80 3" 5WBB80-CPDADBJA0DUA120AA1	1	ST

Details

Curr. output 1	Volume flow	
Current span	4...20 mA US	
4 mA value	0	USgal/min
20 mA value	200	USgal/min
Failsafe mode current output	Max.	
Damping output 1	1	s
Value 1 display	Volume flow	
Value 2 display	None	
Value 3 display	None	
Value 4 display	None	
Display damping	1	s
Totalizer 1		
Unit	USgal	
Operating mode totalizer	Net flow total	
Failure mode	Stop	
Totalizer 2		
Unit	USgal	
Operating mode totalizer	Forward flow total	
Failure mode	Stop	
Totalizer 3		
Unit	USgal	
Operating mode totalizer	Reverse flow total	
Failure mode	Stop	

010	Approval; Transmitter + Sensor:	CP	CSA C/US; GP
011	Design:	D	Lap joint flange
013	Functionality:	A	Standard transmitter
015	Power Supply:	D	24VDC
020	Output; Input:	B	4-20mA HART, pulse/freq./switch output
030	Display; Operation:	J	LCD, 2.40"; SmartBlue app
040	Housing:	A	Compact, alu, coated

045	Cable, Sensor Connection:	0	Not used
050	Electrical Connection:	D	Thread NPT1/2
060	Liner:	U	Polyurethane
070	Process Connection:	A12	Cl.150, carbon steel, lap joint flange ASME B16.5
075	Electrodes:	0	1.4435/316L
080	Calibration Flow:	A	0.5%
480	Device Model:	A1	1

Description :
PRESSION TRANSMITTER
30 PSI, 4-20MA HART WITH LCD
CSA US APPROUVED

Trade Name :
Endress & Hauser

Model no :
PMC71B-CABADJH6A3KFA1VXJD

PMC71B-CABADJH6A3KFA1VXJD

Cerabar PMC71B - pressure transmitter

Smart pressure transmitter which detects process anomalies like changes in the loop characteristics

F L E X



More information and current pricing:
www.ca.endress.com/PMC71B

Benefits:

- With Heartbeat Technology you are able to verify the health of the device while the process is running.
- Simple indication of device status - display changes from green to red when diagnostic messages occur
- Reduce systematic failures - error free SIL commissioning and instrument guided proof testing
- Wireless control of the device in hard to reach process areas with the SmartBlue App

Specs at a glance

- **Accuracy** Standard: up to 0.05 % Platinum: up to 0.025 %
- **Process temperature** -40°C...+150°C (-40°F...+302°F)
- **Pressure measuring range** 100 mbar...40 bar (1.5 psi...600 psi)
- **Main wetted parts** Ceraphire ceramic FKM, EPDM, HNBR, Perlast, Kalrez, Chemraz
- **Material process membrane** Ceramic

Field of application: This transmitter belongs to the new Cerabar generation. The device is robust and can be remotely controlled via app on a tablet using a secure Bluetooth connection. It allows condition based maintenance as well. The software is designed to simplify the handling. Intuitive wizards guide the user through setup, proof tests and verification of the device. Heartbeat Technology offers verification and monitoring functions to detect unwanted anomalies e.g. changes in loop characteristics.

Features and specifications

Continuous / Liquids

Measuring principle

Absolute and gauge pressure

Characteristic / Application

Premium accuracy pressure transmitter with dry ceramic cell.
Intuitive and clear wizards for commissioning, proof tests and verification.

Specialities

Heartbeat Technology,
Bluetooth® Operation and maintenance SmartBlue App,
LED Module,
RFID TAG for easy identification,
Plug and play functionalities,
HistoROM

Supply / Communication

Ex d, Ex e, non-Ex::
10.5...35V DC
Ex i: 10.5...30V DC

Accuracy

Standard:
up to 0.05 %
Platinum:
up to 0.025 %

Long term stability

0.05 % of URL/ year
0.08 % of URL/ 5 years
0.10 % of URL/ 10 years

Ambient temperature

-40°C...+85°C
(-40°F...+185°F)

Continuous / Liquids

Process temperature
-40°C...+150°C
(-40°F...+302°F)

Process pressure absolute / max. overpressure limit
60 bar (900 psi)

Pressure measuring range
100 mbar...40 bar
(1.5 psi...600 psi)

Main wetted parts
Ceraphire ceramic
FKM, EPDM, HNBR,
Perlast, Kalrez, Chemraz

Process connection
Thread:
G1/2...G2, R1/2, MNPT1/2...MNPT2, FNPT1/2
Flange:
DN25...DN80,
NPS 1"...4"

Max. measurement distance
400 m (1312 ft) H2O

Communication
4...20 mA HART

Certificates / Approvals
ATEX, IEC Ex, CSA C/US, NEPSI

Safety approvals
SIL

Design approvals
EN 10204-3.1

Continuous / Liquids

Drinking water approvals
NSF, KTW

Metrological approvals and certificates
MID

Options
Touch control display

Application limits
Measuring cell: ceramics
If pressurized, possibly use differential pressure measurement with two pressure transmitters (electronic dp). Observe ratio head pressure : hydrostatic pressure

Pressure

Measuring principle
Absolute and gauge pressure

Characteristic
Premium accuracy pressure transmitter with dry ceramic cell. Intuitive and clear wizards for commissioning, proof tests and verification.

Supply voltage
Ex d, Ex e, non-Ex:
10.5...35V DC
Ex i: 10.5...30V DC

Reference Accuracy
Standard:
up to 0.05 %
Platinum:
up to 0.025 %

Pressure

Long term stability
0.05 % of URL/ year
0.08 % of URL/ 5 years
0.10 % of URL/ 10 years

Process temperature
-40°C...+150°C
(-40°F...+302°F)

Ambient temperature
-40°C...+85°C
(-40°C...+185°F)

Measuring cell
100 mbar....40 bar
(1.5 psi...600 psi)

Smallest calibratable span
5 mbar (0.075 psi)

Vacuum resistance
0 mbar abs.

Max. Turn down
100:1

Max. overpressure limit
60 bar (900 psi)

Process connection
Thread:
G1/2...G2, R1/2, MNPT1/2...MNPT2, FNPT1/2
Flange:
DN25...DN80,
NPS 1"...4"

Material process membrane
Ceramic

Pressure

Material gasket
FKM, EPDM, HNBR, FFKM

Fill fluid
none, dry measuring cell

Material housing
Aluminium, 316L

Communication
4...20 mA HART

Certificates / Approvals
ATEX, IEC Ex, CSA C/US, NEPSI

Safety approvals
SIL

Design approvals
EN10204-3.1

Drinking water approvals
NSF, KTW

Specialities
Heartbeat Technology,
Bluetooth® Operation and maintenance SmartBlue App,
LED Module,
RFID TAG for easy identification,
Plug and play functionalities,
HistoROM

More information **www.ca.endress.com/PMC71B**

Configuration summary

Mat. no.	Description Order code	Quantity	Unit
71409434	Cerabar PMC71B PMC71B-CABADJH6A3KFA1VXJD	1	ST

010	Approval:	CA	CSA C/US General Purpose
020	Output:	BA	2-wire 4-20mA HART
030	Display; Operation:	D	Segment display w/o buttons + Bluetooth
040	Housing; Material:	J	Dual compartment; Alu, coated
050	Electrical Connection:	H	Thread NPT1/2, IP66/68 NEMA Type 4X/6P
055	Pressure Type:	6	Gauge
060	Application:	A	Standard
075	Sensor Range:	3K	2bar/200kPa/30psi
090	Calibration; Unit:	F	Sensor range; psi
105	Process Connection, Sealing Surface:	A1	Thread ASME B1.20.1, NPT
110	Process Connection:	VXJ	MNPT1/2 FNPT1/4, 316L
200	Seal:	D	FKM

Description :
AIR FILTER REGULATOR

Trade Name :
Festo

Model no :
MS4N-LFR-0-25-D7-CRV-AS

Filter Regulators MS4-LFR

Filter Regulators MS4N-LFR – Inch Series



A filter regulator combines a filter and a pressure regulator into a single unit. The sintered filter with water separator removes contamination, pipe sinter, rust and condensate from the compressed air. The pressure setting can be adjusted with the regulator.

- Pneumatic connection: ⅛ NPT, ¼ NPT, ⅜ NPT
- Filtration grade: 5 µm, 40 µm
- Supply pressure
  – for manual drain: 12 … 206 psi
  – for semiautomatic drain: 22 … 176 psi
  – for fully automatic drain: 29 … 176 psi
- Controlled pressure range: 4.4 … 176 psi
- Flow rate: 30.0 … 67.1 scfm

Product Range Overview

Type	Pneumatic connections		Pressure regulation range [psi]			Filtration grade [µm]		Bowl guard		Bowl drain			Pressure indicator					Pressure adjustment		Reverse flow
	Body thread	Port plate	4.4... 59	4.4 ... 103	7.4 ... 176	5	40	Plastic bowl guard	Metal bowl	Manual	Semiautomatic	Fully automatic	Cover plate (without pressure gauge)	Integrated MS pressure gauge	Adapter for pressure gauge ⅛ NPT	Adapter for pressure gauge ¼ NPT	Pressure sensor with display	Rotary knob, lockable	Rotary knob, long	Flow direction from right to left
MS4N		AG...	D5	D6	D7	C	E	R	U	M	H	V	VS	AG	A8	A4	AD...	AS	LD	Z
LFR	⅛ NPT, ¼ NPT	⅛ NPT, ¼ NPT, ⅜ NPT	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Features

- Good control characteristics with low hysteresis and primary pressure compensation
- High flow rates
- Directly actuated diaphragm regulator
- Three pressure regulation ranges
- Modular, in-line or panel mounting
- Lockable rotary knob
- Available with or without secondary venting
- Two pressure gauge connections for different fitting options
- Reverse flow option for exhausting from output 2 to output 1
- Optional pressure sensor with display and electric output

Contents

Technical Data → 120
Dimensional Drawings → 124
Ordering Data → 127
Accessories → 130
Replacement Parts → 140

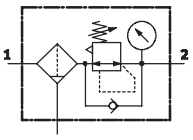
→ www.festo.com/catalog/ms4n-lfr

Filter Regulators MS4N-LFR – Inch Series

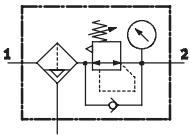
Technical Data

FESTO

ISO Symbol



Manual bowl drain



Semi or fully automatic bowl drain



General Technical Data				
Pneumatic connection 1, 2			1/8 NPT	1/4 NPT
Filtration grade		[µm]	5 (air purity class at the output 3.7.– to DIN ISO 8573-1)	
			40 (air purity class at the output 5.7.– to DIN ISO 8573-1)	
Supply pressure	M	[psi]	12 ... 206 (manual drain)	
	H	[psi]	22 ... 176 (semiautomatic drain)	
	V	[psi]	29 ... 176 (fully automatic drain)	
Pressure regulation range	D5	[psi]	4.4 ... 59	
	D6	[psi]	4.4 ... 103	
	D7	[psi]	7.4 ... 176 (4.4 ... 147 with variant pressure sensor AD...)	
Max. hysteresis		[psi]	3.7	

Standard Nominal Flow Rate qnN[1] [scfm]				
Pneumatic connection 1, 2			1/8 NPT	1/4 NPT
D5 – Pressure regulation range 4.4 ... 59 psi				
Filtration grade		5 µm	31.8[2]	63.5[2]
		40 µm	38.8[2]	67.1[2]
D6 – Pressure regulation range 4.4 ... 103 psi				
Filtration grade		5 µm	31.8	53.0
		40 µm	35.3	60.0
D7 – Pressure regulation range 7.4 ... 176 psi				
Filtration grade		5 µm	30.0	42.4
		40 µm	31.8	53.0

1) Measured at p1 = 147 psi and p2 = 88 psi, Δp = 15 psi
2) Measured at p1 = 147 psi and p2 = 44 psi, Δp = 15 psi

Filter Regulators MS4N-LFR – Inch Series

Technical Data

FESTO

Standard Flow Rate qn as a Function of Output Pressure p2

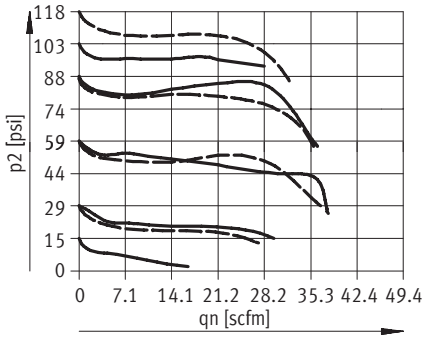
Pressure regulation range D6 or D7

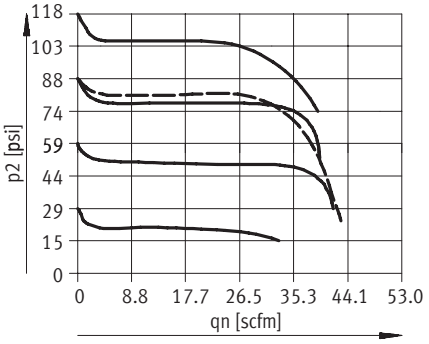
Filtration grade 5 µm

Filtration grade 40 µm

MS4N-LFR-⅛

Primary pressure p1 = 147 psi



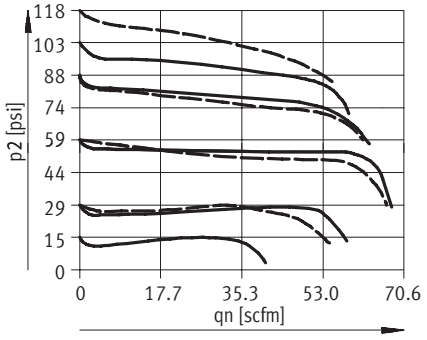


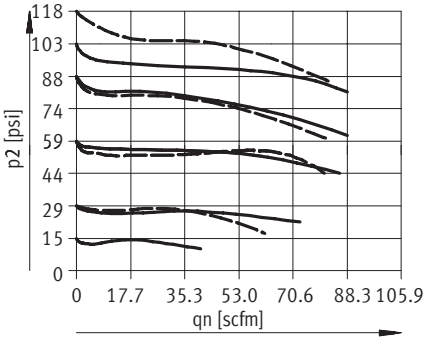
D6: 4.4 ... 103 psi

D7: 7.4 ... 176 psi

MS4N-LFR-¼

Primary pressure p1 = 147 psi



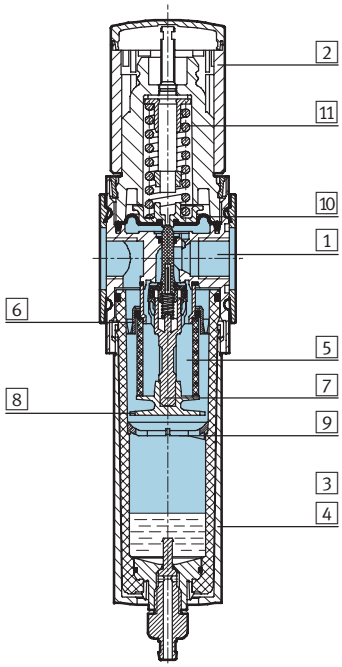


D6: 4.4 ... 103 psi

D7: 7.4 ... 176 psi

Materials

Sectional view



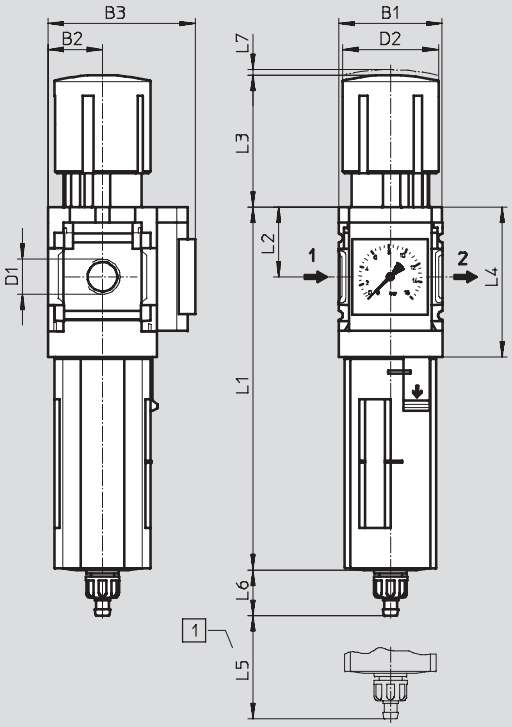
Filter regulator		
1	Body	Die-cast aluminum
2	Regulating knob	Polyamide/polyacetate
3	Plastic bowl guard	Polycarbonate/polyamide
4	Metal bowl	Aluminum
	Viewing window	Polyamide
5	Filter element	Polyethylene
6	Spin disk	Polyacetate
7	Filter holder	Polyacetate
8	Separating plate	Polyacetate
9	Stabilizing disk	Polyacetate
10	Diaphragm	Nitrile rubber
11	Spring	Steel
–	Seals	Nitrile rubber
	Note on materials	Free of copper and PTFE only with cover plate VS

Filter Regulators MS4N-LFR – Inch Series

Dimensional Drawings

Dimensions[1] – Standard Download CAD Data ➔ **www.festo.com/us/cad**

With pressure gauge, display unit [psi], rotary knob as standard, manual bowl drain



1 Installation dimensions

➔ Flow direction

Type	B1	B2	B3	D1	D2	L1 Bowl guard		L2	L3	L4	L5	L6 Bowl guard		L7
						Plastic	Metal					Plastic	Metal	
MS4N-LFR-⅛	1.57	0.83	2.24	⅛ NPT	1.46	5.54	6.23	1.06	2.01	2.30	0.98	0.70	0.70	0.08
MS4N-LFR-¼				¼ NPT										

1) Dimensions are in inches, unless otherwise noted.

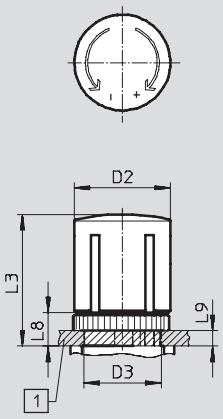
Filter Regulators MS4N-LFR – Inch Series

Dimensional Drawings

Dimensions[1] – Rotary Knob Download CAD Data ➔ **www.festo.com/us/cad**

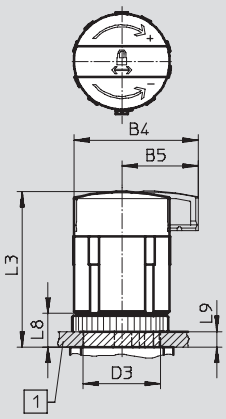
For installation into control panel

Standard

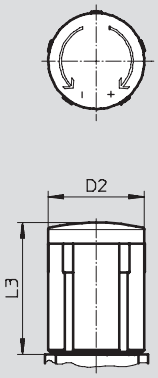


1 Max. control panel thickness

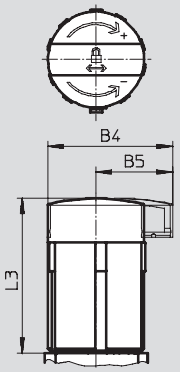
Standard, lockable AS



Long LD



Long, lockable LD-AS

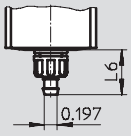


Type	B4	B5	D2	D3 +0.04	L3	L8	L9
MS4N-LFR-...	–	–	1.46	1.18	2.01	0.51	0.24
MS4N-LFR-...-AS	1.90	1.17			2.37		
MS4N-LFR-...-LD	–	–	1.46	–	2.01	–	–
MS4N-LFR-...-LD-AS	1.90	1.17			2.37		

1) Dimensions are in inches, unless otherwise noted.

Dimensions[1] – Bowl Drain Download CAD Data ➔ **www.festo.com/us/cad**

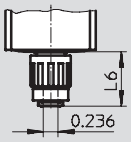
Manual M



Barbed fitting for plastic tubing
PCN-4

Type	L6
Plastic bowl guard	
MS4N-LFR-...-M	0.70
Metal bowl	
MS4N-LFR-...-M	0.70

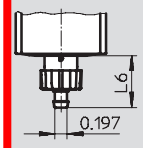
Semiautomatic H



QS fitting for plastic tubing
PUN-6/PAN-6

Type	L6
Plastic bowl guard	
MS4N-LFR-...-H	0.87
Metal bowl	
MS4N-LFR-...-H	0.87

Fully automatic V



Barbed fitting for plastic tubing
PCN-4

Type	L6
Plastic bowl guard	
MS4N-LFR-...-V	0.80
Metal bowl	
MS4N-LFR-...-V	0.80

1) Dimensions are in inches, unless otherwise noted.

Filter Regulators MS4N-LFR – Inch Series

Ordering Data – Configurable Products

FESTO

M **Mandatory Data** ➔

Part No.	Series	Size	Thread		Function		Connection size		Pressure regulation range		Filtration grade		Bowl
527694	MS	4	N		LFR		⅛, ¼, AQK, AQN, AQP		D5 D6 D7		E C		R U
Order example													
527694	**MS**	**4**	**N**	–	**LFR**	–	**AQK**	–	**D6**	–	**C**	–	**R**

Ordering Table

Grid dimension [mm]	40	Conditions	Code	Enter code
M Part No.	**527694**			
Series	Standard		**MS**	MS
Size	4		**4**	4
Thread	NPT thread		**N**	N
Function	Filter regulator		**-LFR**	-LFR
Connection size	Body thread ⅛ NPT		**-⅛**	
	Body thread ¼ NPT		**-¼**	
	Port plate ⅛ NPT (dimensions ➔ 135)		**-AQK**	
	Port plate ¼ NPT (dimensions ➔ 135)		**-AQN**	
	Port plate ⅜ NPT (dimensions ➔ 135)		**-AQP**	
Pressure regulation range	4.4 ... 59 psi		**-D5**	
	4.4 ... 103 psi		**-D6**	
	7.4 ... 176 psi		**-D7**	
Filtration grade	40 µm		**-E**	
	5 µm		**-C**	
Bowl	Plastic bowl with plastic bowl guard		**-R**	
↓	Metal bowl		**-U**	

Transfer order code

527694	**MS**	**4**	**N**	–	**LFR**	–		–		–		–	

Filter Regulators MS4N-LFR – Inch Series

Ordering Data – Configurable Products

FESTO

→ M	O Options							
Bowl drain	Pressure gauge alternatives	Alternative pressure gauge scale	Secondary venting	Rotary knob	Security	Type of mounting	Reverse flow direction
M H V	VS A8 A4 AD1 AD2 AD3 AD4	BAR MPA	OS	LD	AS	WR WP WPM WB WBM	Z
– M	– A8	–	–	– LD	– AS	– WPM	– Z

Ordering Table

Grid dimension [mm]		40	Conditions	Code	Enter code
↓ M	Bowl drain	Manual		-M	
		Semiautomatic (P1 max. 176 psi)		-H	
		Fully automatic (P1 max. 176 psi)		-V	
O	Pressure gauge alternatives	Cover plate		-VS	
		Adapter plate for EN pressure gauge ⅛, without pressure gauge		-A8	
		Adapter plate for EN pressure gauge ¼, without pressure gauge		-A4	
		Pressure sensor with display, M8 plug, 1 switching output PNP, 3-pin	1	-AD1	
		Pressure sensor with display, M8 plug, 1 switching output NPN, 3-pin	1	-AD2	
		Pressure sensor with display, M12 plug, 1 switching output PNP, 4-pin, analog output 4 ... 20 mA	1	-AD3	
		Pressure sensor with display, M12 plug, 1 switching output NPN, 4-pin, analog output 4 ... 20 mA	1	-AD4	
	Alternative pressure gauge scale	bar	2	-BAR	
		MPa	2	-MPA	
	Secondary venting	Without secondary venting		-OS	
	Rotary knob	Long rotary knob		-LD	
	Security	Lockable rotary knob		-AS	
	Type of mounting	Mounting bracket with knurled nut for regulator head (dimensions → 133)	3	-WR	
		Mounting bracket (dimensions → 136)	4	-WP	
		Mounting bracket (dimensions → 136)	4	-WPM	
		Mounting bracket (dimensions → 132)		-WB	
		Mounting bracket (dimensions → 132)		-WBM	
	Reverse flow direction	Flow direction from right to left		-Z	

1 **AD1 ... AD4** Measuring range max. 147 psi

2 **BAR, MPA** Not with pressure gauge alternatives VS, A8, A4, AD1, AD2, AD3, AD4

3 **WR** Not with long rotary knob LD

4 **WP, WPM** Only with port plate AQK, AQN or AQP

Transfer order code

–	531217	–	MS4N	–	LFR	–	1/4	–	D7	–	CRV	–	AS

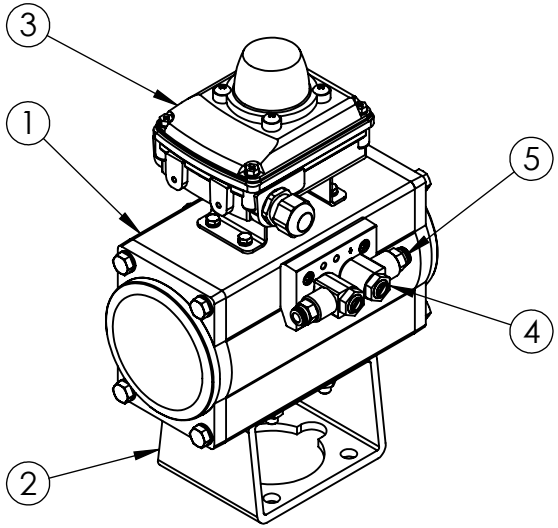
Description :
OUTLET CONTROL VALVES
TEFLON FUSED BALL
Ø3" CLASS 125# FLANGED VALVE
ONE VALVE NORMALLY OPENED, ONE VALVE NORMALLY CLOSED

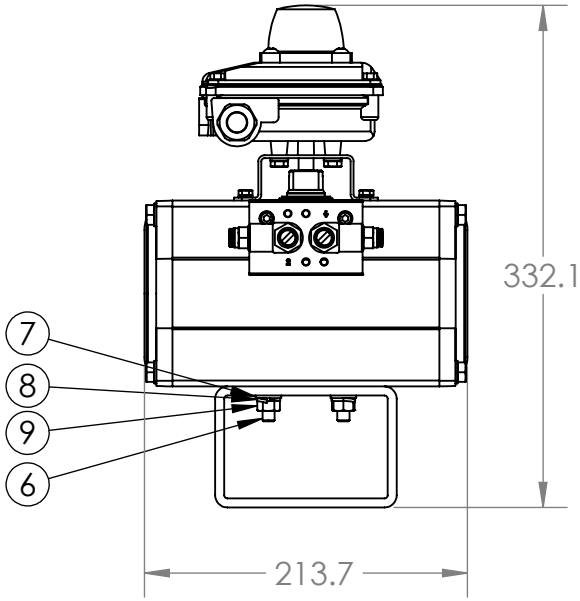
Trade Name :
Festo

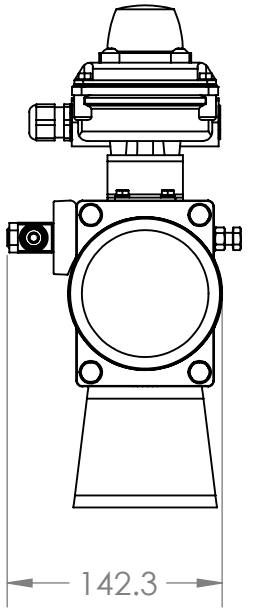
Model no :
13117330 (NC) - 13117331(NO)

ITEM NO.	PartNo	DESCRIPTION	QTY.
1	8048123	DFPD-120-RP-90-RD-F0507 - Double Acting Qtr Turn Actuator	1
2	194522	DR-MB-F10-F07 - ACTUATOR MNT ADAPTER	1
3	3482805	SRBC-CA3-YR90-MW-22A-1W-C2P20 - Sensor Box	1
4	151172	GRLA-1/4-B - One-way Flow control valve	2
5	533219	QB-1/4-1/4-U-M - Push-in Fitting	2
6	13051198	HSSS - M8X35	4
7	13063270	FLAT WASHER - M8	4
8	13063271	LOCK WASHER - M8	4
9	13063259	HEX NUT - M8	4

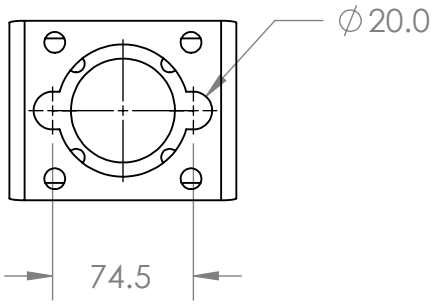
REV.	DESCRIPTION	DATE







ITEM 2



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	NAME	DATE
DRAWN	YUN	2016-10-03
ENG APPR.	MZA	2016-10-03

MATERIAL

FINISH

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DIMENSIONS ARE IN MILLIMETERS

TOLERANCES:
x = ±1
x.x = ±0.1
x.xx = ±0.01
ANGLES = ±1°

FESTO
5300 Explorer Drive, Mississauga ON L4W 5G4
TEL: (905) 624-9000 FAX: (905) 624-9001

FILE NAME: DFPD-120-SRBC-NC-CS (13117330, FOURNIER)

TITLE: DFPD-120-SRBC-NC-CS

DWG. NO. 13117330

REV

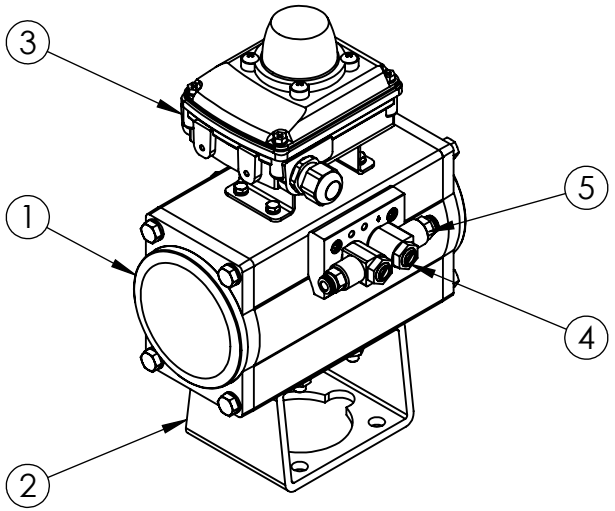
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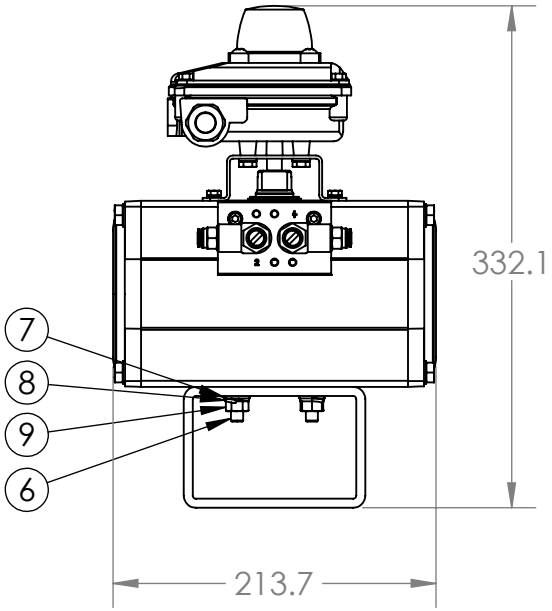
SHEET 1 OF 1

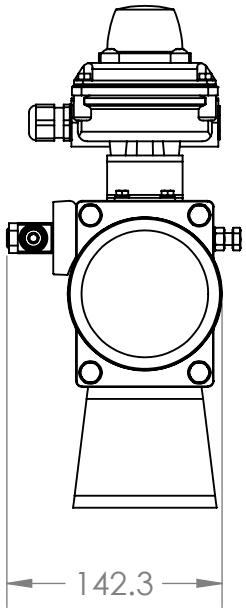
5 4 3 2 1

ITEM NO.	PartNo	DESCRIPTION	QTY.
1	8048123	DFPD-120-RP-90-RD-F0507 - Double Acting Qtr Turn Actuator	1
2	194522	DR-MB-F10-F07 - ACTUATOR MNT ADAPTER	1
3	3482805	SRBC-CA3-YR90-MW-22A-1W-C2P20 - Sensor Box	1
4	151172	GRLA-1/4-B - One-way Flow control valve	2
5	533219	QB-1/4-1/4-U-M - Push-in Fitting	2
6	13051198	HSSS - M8X35	4
7	13063270	FLAT WASHER - M8	4
8	13063271	LOCK WASHER - M8	4
9	13063259	HEX NUT - M8	4

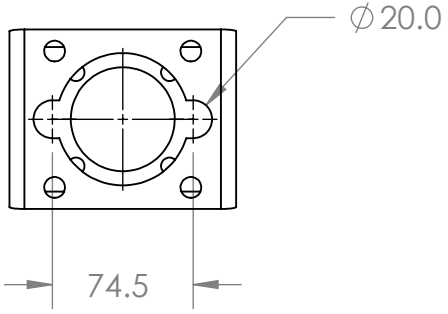
REV.	DESCRIPTION	DATE







ITEM 2



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ANGLES = ±1°

FESTO
5300 Explorer Drive, Mississauga ON L4W 5G4
TEL: (905) 624-9000 FAX: (905) 624-9001

FILE NAME: DFPD-120-SRBC-NO-CS (13117331, FOURNIER)

TITLE: DFPD-120-SRBC-NO-CS

DWG. NO. 13117331

REV

SCALE: 1:5

SHEET 1 OF 1

5 4 3 2 1

SERIES 4000



FLANGED BALL VALVES

AMERICAN VALVE®

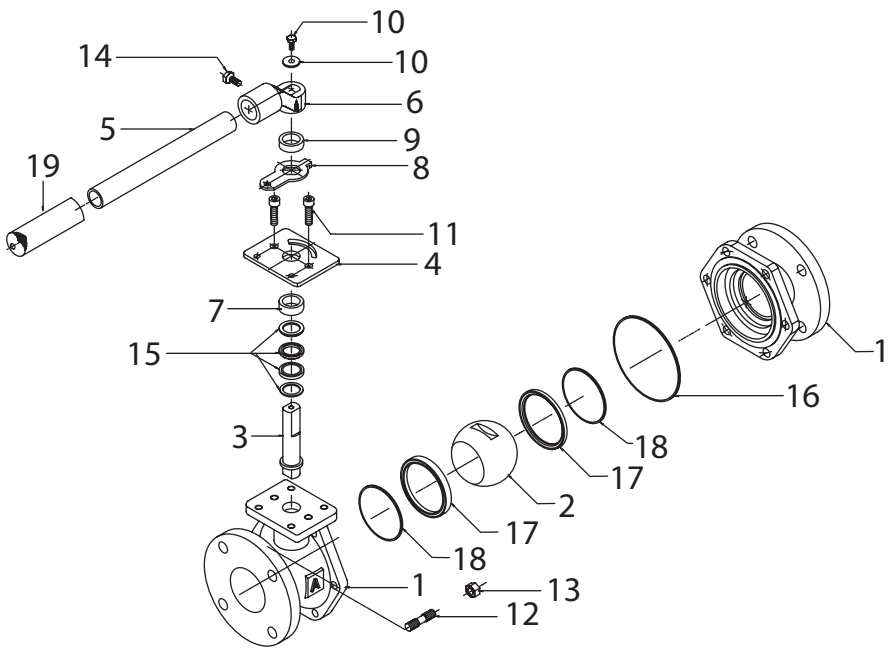
www.americanvalve.com

MODEL 4000

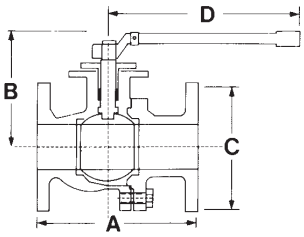
Cast Iron Flanged End Ball Valve



	Part	Material
1	Body	Cast Iron/A126 Class B
2	Ball	Cast Iron/Teflon® Fused
3	Stem	Stainless Steel
4	Gland Plate	Steel
5	Handle	Steel
6	Handle Bracket	Ductile Iron
7	Packing Follower	Stainless Steel
8	Stem Indicator	Steel
9	Spacer	Steel
10	Stem Stud/Washer	Carbon Steel
11	Gland Stud	Carbon Steel
12	Body Stud	Carbon Steel
13	Body Nut	Carbon Steel
14	Handle Bracket Bolt	Carbon Steel
15	Packing	PTFE (Chevron)
16	Body Gasket	PTFE
17	Seat Ring	RPTFE 15% GF
18	Back Seat Ring	RPTFE 15% GF
19	Handle Grip	Vinyl Rubber Foam



DIMENSIONS:	½	¾	1	1 ½	2	2 ½	3	4	6	8	10
A Face to Face	4 ¼	4 5/8	5	6 ½	7	7 ½	8	9	10 ½	11 ½	13
B Center of Port to Top	3 ½	3 ½	4	5	5 ½	7	7 ½	8 ½	13	13	15
C Flange Diameter	3 ½	3 5/8	4 ¼	5	6	7	7 ½	9	11	13 ½	16
D Center of Valve to Handle End	9	9	9	12	12	13 ½	13 ½	15 ½	30	30	33
E Port Diameter	½	¾	1	1 ½	2	2 ½	3	4	6	6	8
Bolt Holes	4	4	4	4	4	4	4	8	8	8	12
Weight lbs.	6	8	10	16	22	36	46	75	131	185	276
CV	26	50	100	260	500	750	1245	2500	5470	4150	6700



- A126 Class B Cast Iron Body with FDA food-grade epoxy powder coat.
- Teflon® Fused Solid Ball
- Blow-out Proof Stainless Steel Stem
- Reinforced Teflon® Seats
- Face to Face and Flanged Dimensions conform to ANSI Standard B16.10 which exactly match end to end dimensions of all cast iron gate valves and plug valves.
- Lockable in Full Open or Closed Positions
- Mounting Pad for Easy Actuation
- Adjustable Length/Removable Handles to fit into areas of limited space.
- Re-buildable
- Full Port through 6"

SPECIFICATIONS:

API 598
MSS SP-72
ASME B16.10
FED. SPEC. WW-V-35
AWWA C507-99 Proof of Design Test
Meets ANSI/NSF 61, Prop 65, AB1953

RATING:

125 psi WSP
200 psi WOG
353° F

This patented Cast Iron Ball Valve has been engineered to replace any IBBM Gate Valve, All Iron Gate Valve, or Plug Valve.

Teflon® is a registered trademark of DuPont.

SAMPLE SPECIFICATION:

Ball valves shall be of the floating-ball design capable of providing bi-directional, tight shutoff in accordance with MSS SP-72. The valves shall be rated at 125# WSP/200# WOG. Bodies shall be of cast iron per ASTM A126 Class B, With ANSI Class 125 flat-face flanges. The interior and exterior of the body shall be epoxy-coated. The ball shall be PTFE infused cast iron, with a 304 stainless steel blowout-proof stem. The seats and body seals shall be PTFE. The stem seal shall be PTFE, externally adjustable chevron type. Valves shall be equipped with locking handles as standard. If service conditions require, valves may be equipped with 2" square operating nuts, manual gear operators, or pneumatic, electric, or hydraulic actuators. Valves shall be the Series 4000 as manufactured by American Valve, Inc. or as approved by the engineer.

4000 Series
vs. Gate, Plug, and Butterfly Valves



Advantages of 4000 Series
vs. Gate Valves

- Quarter turn provides instant shutoff.
- Full unobstructed opening provides superior flow rate.
- Easy to open and close, no cheater bar required.
- Positive shutoff- Exceeds Class VI.
- No bronze seat rings, bronze disc rings or bronze stems to wear out.
- Lighter than gate valves, making installation and handling easier.
- Handle shows whether open or closed.
- Ball wipes clean during opening and closing.
- No bronze parts enables use in all-iron gate valve applications.
- Compact design fits into areas of limited space.
- Throttling is permitted. Open and shut are not the only working positions.
- Low profile design enables easier storage and shipping.
- Can be locked in either open or closed position.
- Teflon® fused ball resists corrosion, in a wider range of applications
- Zero wear rate in the open position.
- Unique packaging prevents damage during shipping and facilities storage.
- Easy and inexpensive to rebuild/repair

Advantages of 4000 Series
vs. Butterfly Valves

- No disc in waterway to create turbulence.
- Same ANSI flanged dimensions as gate valves for easier retrofit.
- Teflon® seats, not Buna N or EPDM.
- More suitable for steam, petroleum, and corrosive applications.
- Main seating surface does not face upstream pressure in open position.
- Full opening provides superior flow characteristics.
- Teflon® packing instead of O-ring stem seals.
- Positive shutoff- exceeds Class VI.
- Blow out proof stainless steel stem.

Advantages of 4000 Series
vs. Plug Valves

- Full unobstructed flow.
- No exposed internal components to catch and retain debris.
- No lubrication required to ensure smooth operation and maintain seals.
- Lower torque for more efficient and cost effective automation.
- Positive shutoff- exceeds Class VI.

American Valve

Teflon® fused ball

Our Teflon® fused ball is more corrosion-resistant than balls made with unprotected metal surfaces. Refer to any manufacturer's chemical resistance guide for further information.

Our Teflon® fused ball inhibits the buildup of lime, calcium, sludge, etc. that accumulates on ball surfaces and thus prevents premature failure of the valve seats. Series 4000 valves with Teflon® fused balls can last up to ten times longer than valves made with unprotected ball surfaces.

The lubricity of our Teflon® fused ball allows for lower torque ratings in any application.

This feature eliminates ball pitting, prevents build-up, lowers torque, and stops premature valve failure.

Since the Teflon® is actually impregnated .008" into the solid metal, it can't wear, chip, or flake off.



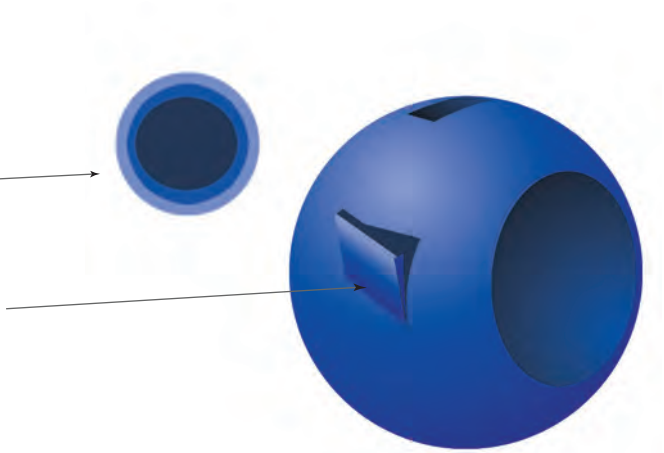
Teflon®
Only by DuPont

A Look Inside Our Ball

Teflon® surrounds the base material to form a fused bond to a depth of .008"

Additional .004" electrostatic coating for smoothness.

Together they produce the strength of steel with the corrosion resistance of Teflon®. Our patented process has gained the best of both worlds...Strength, Lubricity, and Bonding.



Teflon® is a registered trademark of DuPont.

Metallurgy
and Technical Info for 4000 Series

	Minimum Tensile Strength	Minimum Yield Point	Minimum Elongation
Grey Iron A126 Class B	31,000 psi	---	0.1%
Ductile Iron A536 Grade 65-45-12	65,000 psi	45,000 psi	12%
Carbon Steel A216 WCB	70,000 psi	30,000 psi	22%
304 Stainless Steel A-351 CF8	70,000 psi	28,000 psi	35%
316 Stainless Steel A-351 CF8M	70,000 psi	30,000 psi	30%

	GREY IRON	65-45-12 DUCTILE IRON	WCB	CF8	CF8M
Carbon % (max)	3.5	3.5	0.3	0.08	0.08
Manganese %	0 .5	0 .1	1 .0	1 .5	1.5
Phosphorous %	0.1	0.03	0.04	0.04	0.04
Sulfur %	0 .1	0 .005	0 .05	0 .04	0.04
Nickel %	0.02	0	0.5	8.0	9.0
Chromium %	0 .05	0 .025	0 .04	18-21	18-21
Molybdenum %	0.05	0.002	0.25	-	2-3
Silicon %	2 .1	3 .2	0 .3	2	2
Magnesium %	0.005	0.025	-	-	-

Model 4000 is made of cast iron (ASTM A126 Class B, standard grey iron). Model 4000D is made of ductile iron (ASTM 536, grade 65-45-12). Model 4001 is made of stainless steel (ASTM A351 CF8M).

It is useful to understand basic information about ferrous metals (cast irons, steels) and their relationships. 100% pure iron is never used as a cast metal because it is too soft and weak. When carbon is added, hardness and strength appear. When approximately 0.3% carbon is added, the resulting alloy is steel. Steel is a strong but difficult ferrous metal to manufacture from a production standpoint. Adding more carbon (up to about 2%) creates even more production problems. These “semi-steels” are seldom used.

When more carbon is added (between 2% and 3%), white iron is formed. White iron is true cast iron and is easy to produce. The problem with white iron is that it is very brittle because the carbon exists as iron carbide instead of pure carbon. Iron carbide (Fe3C) is a hard and brittle compound sometimes referred to as cementite. If white iron is subjected to a lengthy heat treatment, the Fe3C decomposes into iron and nodules of graphite. The end product is malleable iron.

When approximately 3.5% carbon is added, Fe3C exceeds its solubility in solid iron (the Fe3C is fully absorbed in the iron until there is no room left. The excess Fe3C is dispersed as graphite flakes). The result is grey iron. Grey iron (standard cast iron) delivers only moderate strength with almost no elongation because the excess Fe3C flakes act as stress raisers (they make cast iron easy to crack). Since grey iron is so economical to produce, its use has been widespread for centuries.

Cast Iron with spheroidal graphite (ductile iron) was first produced in 1948. Its chemical composition and percent of carbon is about the same as grey iron. The transformation to ductile iron occurs when molten grey iron is treated with magnesium. The insertion of magnesium into the pouring ladle (the process is called inoculation) transforms the Fe3C flakes into spheroids. These spheroids strengthen the metal by acting as crack arresters instead of crack facilitators. Ductile iron is sometimes referred to as spheroidal or nodular iron.

65-45-12 ductile iron is named for its physical properties (65,000 psi tensile strength, 45,000 psi yield, 12% elongation). Ductile iron chemically can be manufactured as Ferritic or Pearlitic. In Ferritic mixes, the graphite spheroids are in a matrix of pure iron. In Pearlitic mixes, the graphite spheroids are in a matrix of pure iron and cementite (Fe3C). The most common grade of ductile is Pearlitic-Ferritic, a combination of the two. American Valve’s 4000D uses a predominately Ferritic mix (9:1) to take advantage of its high impact resistance and added tensile strength (80,000 psi).

Except where API 800° F fire safe standards are required for petrochemical refineries, ***ductile iron is generally preferable to a carbon steel*** because WCB has a tendency to flake, whereas ductile iron powders when subjected to liquid erosion. Ductile iron also possesses 50% higher yield strength properties and is more cost effective. Ductile iron castings have a maximum temperature rating of 650 degrees F. Traditional glass reinforced PTFE seats begin to deform at 360 degrees F.

ASTM A536-70 (MIL SPEC D-4512) requires each casting to be marked by its foundry heat number. Each heat is chemically tested prior to magnesium inoculation and also afterwards. Chemical certification by heat number is available upon request.

Standard cast steel (carbon steel) uses the symbol WCB and is defined under ASTM A-216. It contains a maximum of 0.3% carbon. Stainless steel (ASTM A-351) has carbon levels even lower than WCB (0.08% maximum) making its production more costly. 304 Stainless Steel (CF8) adds 8% nickel, about 20% chromium, and a little more silicon. 316 stainless steel (CF8M) adds 2-3% molybdenum to the above. The addition of chromium, nickel and molybdenum enhances corrosion resistance, allowing CF8M to be utilized in a wide variety of chemical, petrochemical, and corrosive environments.

Operating Torques
for 4000 Series Ball Valve

Size	Torque (ft. lbs)
½"	10
¾"	10
1"	10
1 ½"	20
2"	35
2 ½"	48
3"	62
4"	130
6"	260
8"	360
10"	535

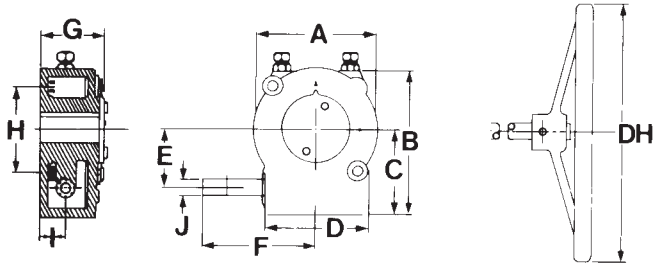
The actual amount of torque required to operate a valve is dependent upon many variables, such as line pressure, temperature, type of fluid, and frequency of operation. This table is based on average breakaway torque requirements for a valve handling a clean, particle-free liquid such as water. The following chart includes a safety allowance for service conditions. The torque figures listed should be further adjusted for dry or special service conditions. For fluids with high solids or abrasive content, consult factory for recommendations.

GEAR OPERATOR DIMENSIONS:

Size	A	B	C	D	E	F	G	H	I	J	DH	Ratio	TOFP*	WT
1 ½"- 2"	3 5/8	4 3/16	2 13/16	3	1 11/16	4 ½	1 ½	1 17/16	.67	.47	5	40:1	92	2
2 ½"- 4"	5 5/16	6 5/8	3 ¾	5 ¼	2 3/8	7 1/16	3	2 ¾	1.44	.59	7 ¾	45:1	367	6
6"-8"	7 3/8	8 ½	5 ¼	6 3/8	3 1/8	6 9/16	3 3/8	3 ½	1.57	.79	12 ¼	40:1	733	15
10"	7 3/8	8 ½	5 ¼	6 3/8	3 1/8	6 9/16	3 3/8	3 ½	1.57	.79	15 ½	40:1	733	15

* Torque Output Foot-Pounds

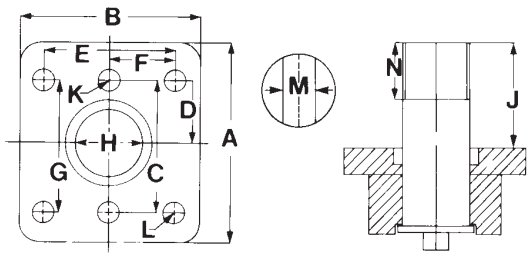
- Gives mechanical advantage for easier operation



MOUNTING PAD DIMENSIONS:

Size	A	B	C	D	E	F	G	H	J	K	L	M	N
½	2.370	1.750	1.565	.570	1.140	.570	1.140	.500	1.500	2pl M8	4pl 1/4unc	.310	1.100
¾	2.370	1.750	1.565	.570	1.140	.570	1.140	.500	1.500	2pl M8	4pl 1/4unc	.310	1.100
1	2.370	1.750	1.565	.570	1.140	.570	1.140	.500	1.500	2pl M8	4pl 1/4unc	.310	1.100
1 ½	3.620	2.745	2.310	.985	1.970	.985	1.970	.825	2.100	2pl M12	4pl M8	.470	1.495
2	3.620	2.745	2.310	.985	1.970	.985	1.970	.825	2.100	2pl M12	4pl M8	.470	1.495
2 ½	4.725	3.740	2.935	1.415	2.835	1.40	2.835	1.100	2.400	2pl 1/2unc	4pl 7/16unc	.665	1.810
3	4.725	3.740	2.935	1.415	2.835	1.40	2.835	1.100	2.400	2pl 1/2unc	4pl 7/16unc	.665	1.810
4	4.725	3.740	2.935	1.415	2.835	1.40	2.835	1.100	2.400	2pl 1/2unc	4pl 7/16unc	.665	1.810
6	5.160	4.725	3.465	1.730	3.465	1.730	3.465	1.775	2.750	6pl 1/2unc	6pl 1/2unc	1.060	2.205
8	5.160	4.725	3.465	1.730	3.465	1.730	3.465	1.775	2.700	6pl 1/2unc	6pl 1/2unc	1.060	2.205
10	5.160	4.725	3.465	1.730	3.465	1.730	3.465	1.775	2.650	6pl 1/2unc	6pl 1/2unc	1.060	2.205

Dimensions and weights are given as approximates; consult factory for details.



Quarter turn actuators DFPD

FESTO



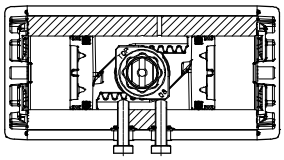
New

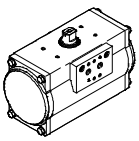
Quarter turn actuators DFPD

Key features

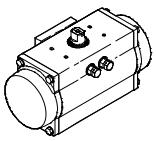
Function

The DFPD series features a rack and pinion combination with a constant torque characteristic across the entire swivel range. The torque range is from 10 to 480 Nm. Quarter turn actuators DFPD are suitable for automating butterfly valves, ball valves and air dampers. They are also suitable for water/wastewater, beverage, pharmaceutical and process automation. The modular and compact design of the DFPD allows various spring configurations as a suitable solution for different applications.





DFPD-...-D
double-acting



DFPD-...-S
single-acting

Types of connection

- Port pattern to NAMUR VDI/VDE 3845 for mounting solenoid valves, position sensors and positioners
- Standard connection to the process valve to ISO 5211

Variants

High temperature
DFPD-...-T4

- Seals made of FKM and plain bearings made of PPS
- For applications up to +150 °C
- II 2G c T3 X
  II 2D c 175°C X
  0°C <= Ta <= +150°C

Low temperature
DFPD-...-T6

- Seals made of FVMQ for applications down to −50 °C
- II 2G c T6 X
  II 2D c 85°C X
  −50°C <= Ta <= +60°C

Closes to the left and right
DFPD-...-R/L

- The modular system offers the option of closing to the left. This is done by turning the pistons

Spring configuration
DFPD-...-S

- The spring index can be adapted to the system's supply pressure in increments of 0.5 bar through free selection of the number of spring cartridges (4 to 12)

Epoxy coating
DFPD-...-EP

- Drive with epoxy coating

Stainless steel shaft
DFPD-...-R3

- With stainless steel shaft

NPT version
DFPD-...-N

- Pneumatic connections with NPT threads

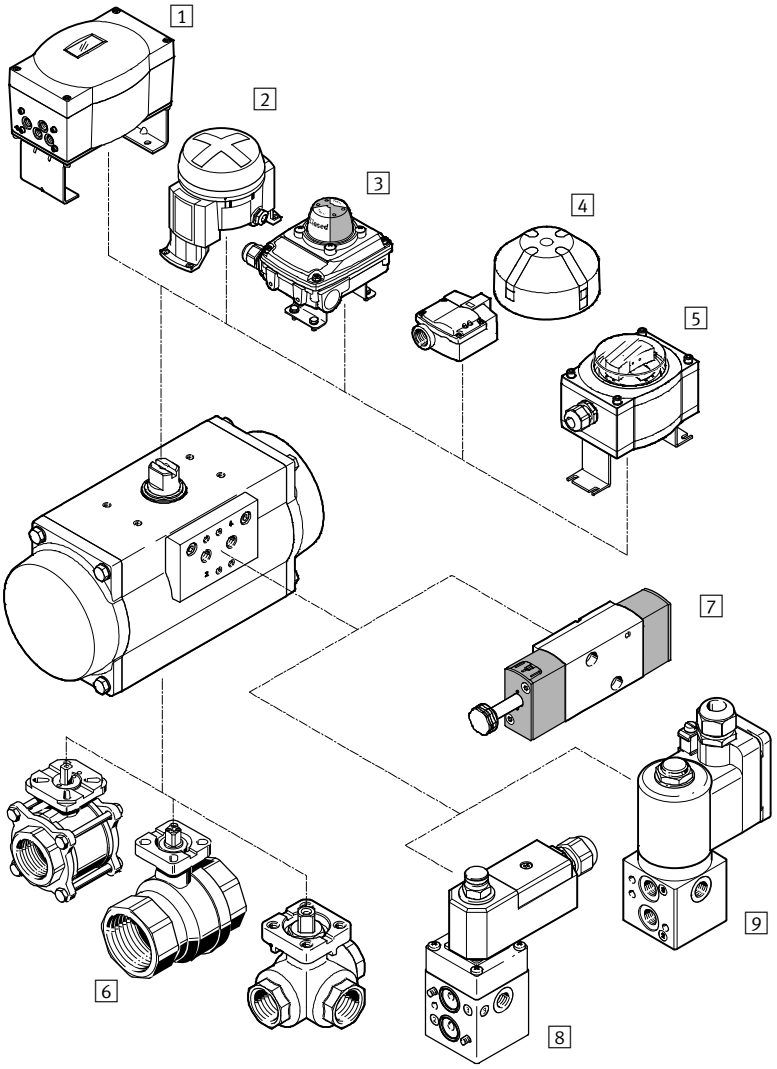
180° version
DFPD-...-180

- Sizes 40, 120, 240, 480 double-acting also available with 180° swivel angle

Size	Flange pattern	Shaft connection	Shaft connection depth [mm]	Pneumatic connection
10	F03	V9	10.7	G1/8
	F04			NPT1/8
20	F04	V11	13.2	G1/8
	F05			NPT1/8
40	F05, F07	V14	16.5	G1/8
				NPT1/8
80	F05, F07	V17	19.3	G1/8
				NPT1/8
120	F05, F07	V17	19.3	G1/4
				NPT1/4
160	F07, F10	V22	24.3	G1/4
				NPT1/4
240	F07, F10	V22	24.3	G1/4
				NPT1/4
300	F07, F10	V22	24.3	G1/4
				NPT1/4
480	F10, F12	V27	29.5	G1/4
				NPT1/4

Quarter turn actuators DFPD

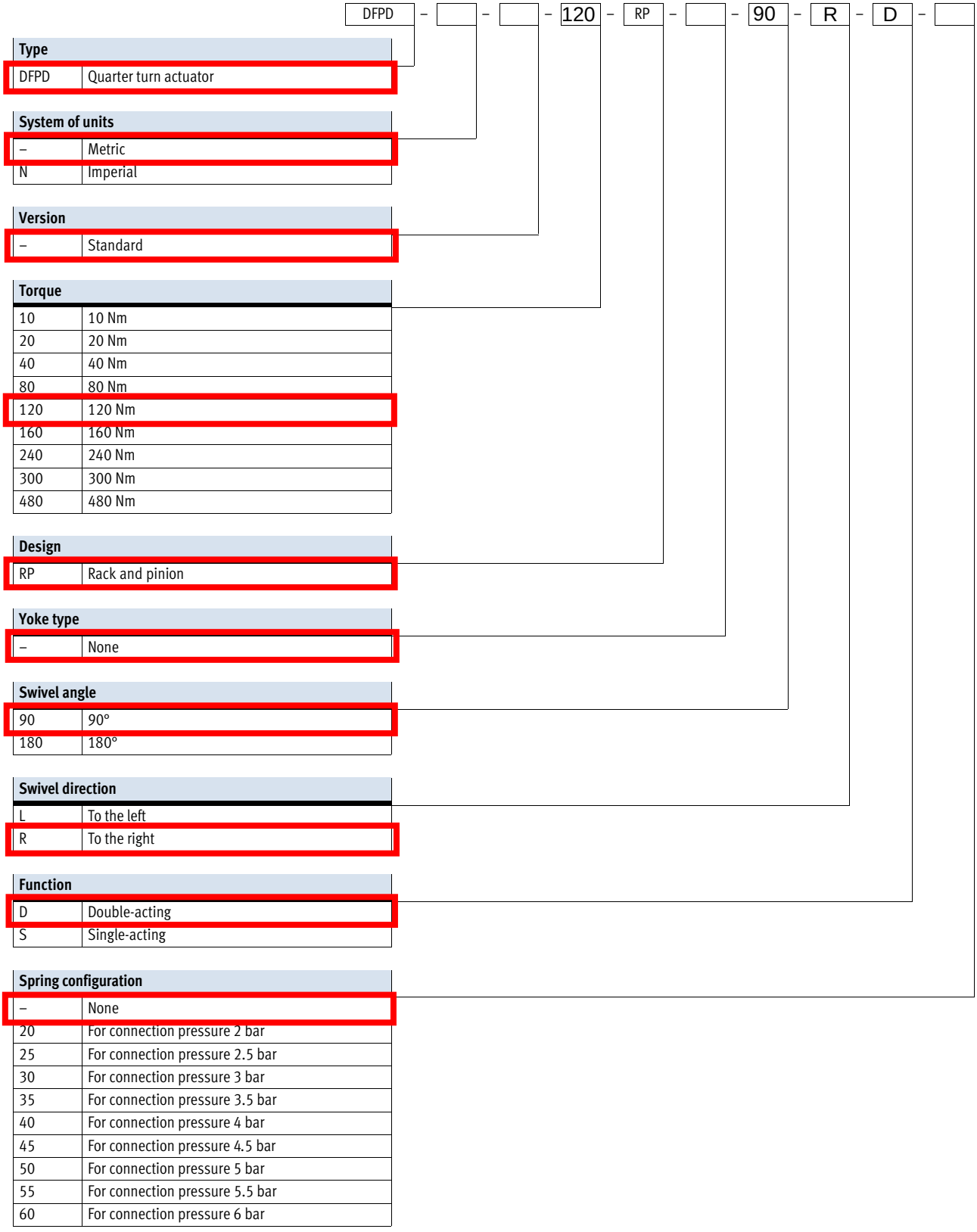
Peripherals overview



Mounting components and accessories		
	Brief description	**➔ Page/Internet**
1 Positioner CMSX	For controlling the position of quarter turn actuators in process automation systems	cmsx
2 Limit switch attachment DAPZ	Round design, variant AR, electrical, inductive or inductive and explosion-proof sensing	dapz
3 Limit switch attachment SRBC	For electrical position feedback and monitoring the position of process valves actuated using quarter turn actuators	srbc
4 Limit switch attachment SRBG	For electrical position feedback and monitoring the position of process valves actuated using quarter turn actuators	srbg
5 Sensor box SRAP	Analogue sensor box continuously senses the entire swivel range and reports this back to the controller	srap
6 Ball valve VAPB, VZBA	2-way brass or stainless steel, corrosion-resistant; 3-way stainless steel, corrosion-resistant	vapb
7 Solenoid valve VSNC	For single- and double-acting quarter turn actuators with a port pattern to VDI/VDE 3845	vsnc
8 Solenoid valve VOFC	Solenoid valve with solenoid coil, port pattern to Namur	vofc
9 Solenoid valve VOFD	Solenoid valve with solenoid coil, port pattern to Namur	vofd

Quarter turn actuators DFPD

Type codes



Type	
DFPD	Quarter turn actuator

System of units	
–	Metric
N	Imperial

Version	
–	Standard

Torque	
10	10 Nm
20	20 Nm
40	40 Nm
80	80 Nm
120	120 Nm
160	160 Nm
240	240 Nm
300	300 Nm
480	480 Nm

Design	
RP	Rack and pinion

Yoke type	
–	None

Swivel angle	
90	90°
180	180°

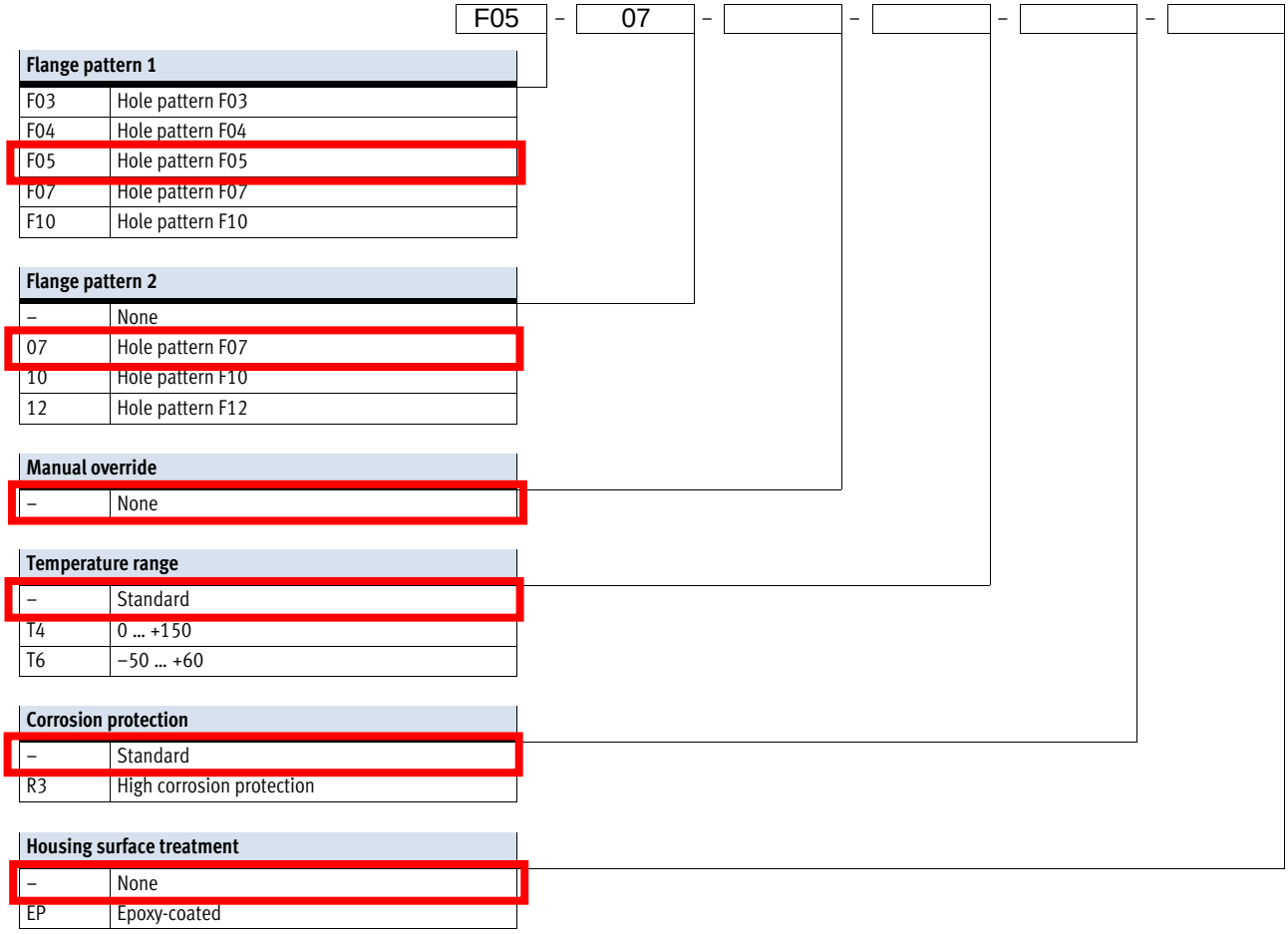
Swivel direction	
L	To the left
R	To the right

Function	
D	Double-acting
S	Single-acting

Spring configuration	
–	None
20	For connection pressure 2 bar
25	For connection pressure 2.5 bar
30	For connection pressure 3 bar
35	For connection pressure 3.5 bar
40	For connection pressure 4 bar
45	For connection pressure 4.5 bar
50	For connection pressure 5 bar
55	For connection pressure 5.5 bar
60	For connection pressure 6 bar

Quarter turn actuators DFPD

Type codes



Flange pattern 1	
F03	Hole pattern F03
F04	Hole pattern F04
F05	Hole pattern F05
F07	Hole pattern F07
F10	Hole pattern F10

Flange pattern 2	
–	None
07	Hole pattern F07
10	Hole pattern F10
12	Hole pattern F12

Manual override	
–	None

Temperature range	
–	Standard
T4	0 … +150
T6	–50 … +60

Corrosion protection	
–	Standard
R3	High corrosion protection

Housing surface treatment	
–	None
EP	Epoxy-coated

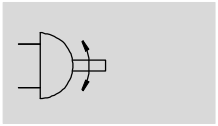
New

Quarter turn actuators DFPD, double-acting

Technical data

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Function



Swivel angel
0 ... 90°



Size
10 ... 480

Torque
10 ... 480 Nm

General technical data										
Size		10	20	40	80	120	160	240	300	480
Mode of operation		Double-acting								
Design		Rack and pinion								
Cushioning		No cushioning								
Mounting position		Any								
Pneumatic connection		G1/8				G1/4				
		NPT1/8				NPT1/4				
Connection to process valve as per standard		ISO 5211								
Valve connection conforms to standard		VDI/VDE 3845 (NAMUR)								
Connection for positioner and position sensor conforms to standard		VDI/VDE 3845 (NAMUR)								
Flange hole pattern		F03	F04	F04	F05	F05, F07		F07, F10		F10, F12
Swivel angle	[°]	90								
End-position adjusting range at 0°	[°]	–5 ... +5								
End-position adjusting range at 90°	[°]	–5 ... +5								
Position sensing		Visual								
Closing direction		Closes to the right								

Operating and environmental conditions		
Operating pressure	[bar]	2 ... 8
Nominal operating pressure	[bar]	5.5
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Pressure dew point 10°C below ambient temperature/temperature of medium
		Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature	[°C]	–20 ... +80
CE marking (see declaration of conformity) ➔ www.festo.com		To EC Machinery Directive
		To EU Explosion Protection Directive (ATEX)
ATEX category for gas		II 2G
Explosion ignition protection type for gas		c T4 X
ATEX category for dust		II 2D
Explosion ignition protection type for dust		c 105°C X
Explosion-proof temperature rating	[°C]	–20 <= Ta <= +80

Quarter turn actuators DFPD, double-acting

Technical data

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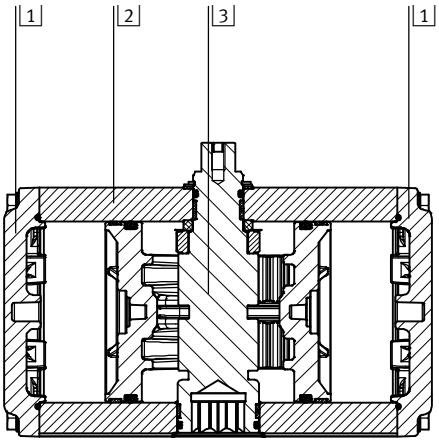
Theoretical torque [Nm] as a function of operating pressure											
	Operating pressure [bar]										
Size	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
10	3.7	4.7	5.6	6.6	7.5	8.4	9.4	**10.3**	11.2	13.1	15.0
20	7.3	9.1	11.0	12.8	14.6	16.4	18.3	**20.1**	21.9	25.6	29.2
40	13.9	17.4	20.9	24.4	27.9	31.3	34.8	**38.3**	41.8	48.7	55.7
80	30.0	37.5	44.9	52.4	59.9	67.4	74.9	**82.4**	89.9	104.9	119.9
120	42.7	53.4	64.0	74.7	85.4	96.1	106.7	**117.4**	128.1	149.4	170.8
160	58.5	73.2	87.8	102.5	117.1	131.7	146.4	**161.0**	175.6	204.9	234.2
240	85.2	106.5	127.8	149.1	170.4	191.7	213.0	**234.3**	255.6	298.2	340.8
300	109.8	137.2	164.7	192.1	219.6	247.0	274.5	**301.9**	329.3	384.2	439.1
480	172.4	215.5	258.5	301.6	344.7	387.8	430.9	**474.0**	517.1	603.3	689.5

Note

The operating torque of the drive must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.

Materials

Sectional view



Quarter turn actuators				Basic material number
1	Cap		Coated die-cast aluminium	EN AC-46100-D
2	Housing		Anodised wrought aluminium alloy	EN AW-6063-T6
3	Shaft		Nickel-plated steel	1.0715
		R3	High-alloy stainless steel	1.4305
–	Mounting plate		Anodised wrought aluminium alloy	EN AW-6063-T6
	Piston		Die-cast aluminium	EN AC-46100-D
	Seals		NBR	–
	Spring		Spring steel	–
	Bearing		POM	–
	Cam		Stainless steel casting	1.4308
			Steel	1.0765
	Screws		High-alloy stainless steel	1.4301
	Note on materials		RoHS-compliant	–

Air consumption [l/cycle] at 6 bar			
Type		Type	
DFPD-10-RP-90-D	0.54	DFPD-160-RP-90-D	10.80
DFPD-20-RP-90-D	1.21	DFPD-240-RP-90-D	15.60
DFPD-40-RP-90-D	2.47	DFPD-240-RP-180-D	28.20
DFPD-40-RP-180-D	4.80	DFPD-300-RP-90-D	26.40
DFPD-80-RP-90-D	5.3	DFPD-480-RP-90-D	40.20
DFPD-120-RP-90-D	7.80	DFPD-480-RP-180-D	66.60
DFPD-120-RP-180-D	14.40		

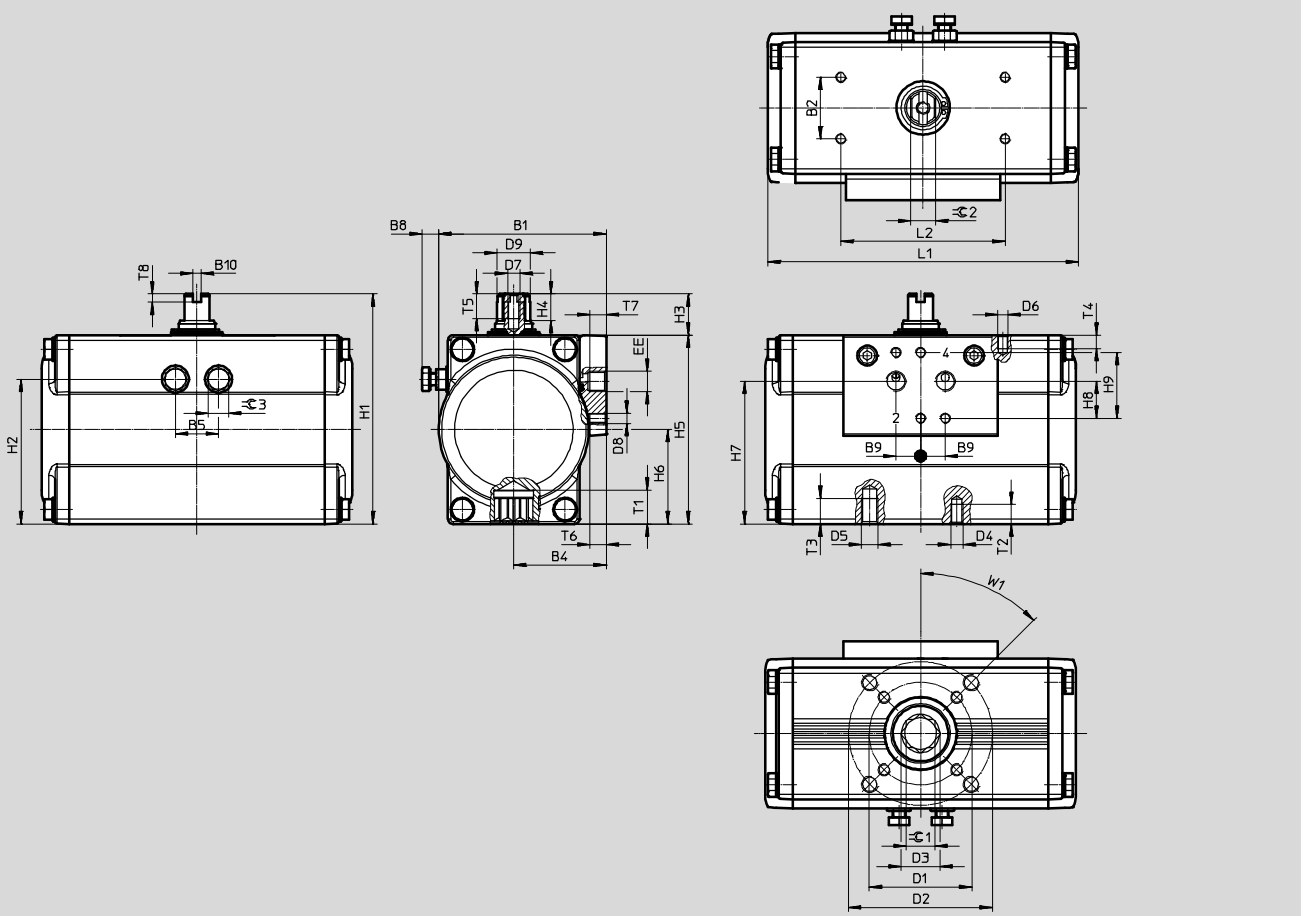
Quarter turn actuators DFPD, double-acting

Technical data

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Dimensions Download CAD data ➔ **www.festo.com**

Size 120 ... 480



Quarter turn actuators DFPD, double-acting

Technical data

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Type	B1	B2 ±0.1	B4	B5	B8 max.	B9	B10	D1 ∅ ±0.1	D2 ∅ ±0.1	D3 ∅	D4	D5	D6
DFPD-120	111.5	30	60.5	32	12.3	12	4	50	70	23.3	M6	M8	M5
DFPD-120-180										23.2			
DFPD-160	120		63.5	36	13.4			70	102	23.2	M8	M10	
DFPD-240	135.5		71.5	41	18.5					30			
DFPD-240-180										30.3			
DFPD-300	144		74.5	46	17					30			
DFPD-480	163		83	52	19.3			102	125	37.4	M10	M12	
DFPD-480-180													

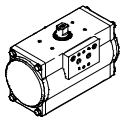
Type	D7	D8	D9 ∅ ±0.1	EE	H1	H2	H3 -0.5	H4 +0.1	H5	H6	H7 ±0.3	H8 ±0.1	H9
DFPD-120	M6	M5	22.5	G¼ or NPT¼	143	97.75	20	13	123	$61.5_{\pm 0.2}$	98.4	16	32
DFPD-120-180													
DFPD-160			25.5		154	106.25			134	$67_{\pm 0.2}$	109.4		
DFPD-240			31.8		180	120.5	30	19.5	150	$75_{\pm 0.2}$	120.2		
DFPD-240-180													
DFPD-300					192	131			162	$81_{\pm 0.3}$	132.1		
DFPD-480			38		214	149.5			184	$92_{\pm 0.4}$	152.5		
DFPD-480-180													

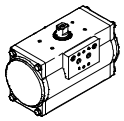
Type	L1	L2 ±0.1	T1 ±0.4	T2	T3	T4	T5	T6	T7	T8 +0.5	⌯ 1 H11	⌯ 2 h11	⌯ 3	W1
DFPD-120	213.7	80	19.3	9	12	8	14	8	12	4	17	15	13	45°
DFPD-120/180	326.8													
DFPD-160	230.9		24.3	12	15						22	19	16	
DFPD-240	257											22	18	
DFPD-240/180	395.5													
DFPD-300	334.4													
DFPD-480	374.2		29.5	15	18						27	27	21	
DFPD-480/180	550.3													

Quarter turn actuators DFPD, double-acting

Technical data

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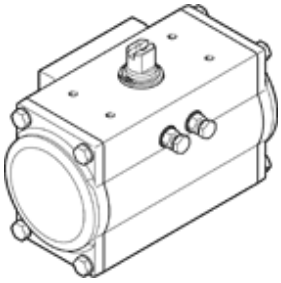
Ordering data				
Type	Size	Product weight [g]	Part No.	Type
	10	965	**8047613**	**DFPD-10-RP-90-RD-F03**
			8048010	**DFPD-10-RP-90-RD-F04**
	20	1275	**8047614**	**DFPD-20-RP-90-RD-F04**
			8048011	**DFPD-20-RP-90-RD-F05**
	40	1882	**8047615**	**DFPD-40-RP-90-RD-F0507**
	80	3308	**8047616**	**DFPD-80-RP-90-RD-F0507**
	120	4872	**8048123**	**DFPD-120-RP-90-RD-F0507**
	160	6082	**8048124**	**DFPD-160-RP-90-RD-F0710**
	240	8594	**8048125**	**DFPD-240-RP-90-RD-F0710**
	300	11224	**8048126**	**DFPD-300-RP-90-RD-F0710**
	480	16025	**8048127**	**DFPD-480-RP-90-RD-F1012**

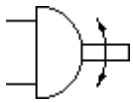
Ordering data				
Type	Size	Product weight [g]	Part No.	Type
Version R3-EP, epoxy-coated				
	10	965	**8047617**	**DFPD-10-RP-90-RD-F03-R3-EP**
			8048012	**DFPD-10-RP-90-RD-F04-R3-EP**
	20	1275	**8047618**	**DFPD-20-RP-90-RD-F04-R3-EP**
			8048013	**DFPD-20-RP-90-RD-F05-R3-EP**
	40	1882	**8047619**	**DFPD-40-RP-90-RD-F0507-R3-EP**
	80	3308	**8047620**	**DFPD-80-RP-90-RD-F0507-R3-EP**
	120	4872	**8048128**	**DFPD-120-RP-90-RD-F0507-R3-EP**
	160	6082	**8048129**	**DFPD-160-RP-90-RD-F0710-R3-EP**
	240	8594	**8048130**	**DFPD-240-RP-90-RD-F0710-R3-EP**
	300	11224	**8048131**	**DFPD-300-RP-90-RD-F0710-R3-EP**
	480	16025	**8048132**	**DFPD-480-RP-90-RD-F1012-R3-EP**

Semi-rotary actuator DFPD-120-RP-90-RD-F0507

Part number: 8048123

★ Core product range





General operating conditions

Data sheet

Data sheet

Feature	values
Shipping date	View
Size of actuator	120
Flange hole pattern	F0507
Swivel angle	90 deg
End-position adjustment range at 0°	-5 ... 5 deg
End-position adjustment range at 90°	-5 ... 5 deg
Shaft connection depth	19.3 mm
Fitting connection conforms to standard	ISO 5211
Cushioning	No cushioning
Assembly position	Any
Mode of operation	double-acting
Design structure	Rack and pinion
Position detection	Optical
Closing direction	right-closing
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)
Connection for positioner and position sensor conforms to standard	VDI/VDE 3845 size AA 1
Working pressure	2 ... 8 bar
Nominal working pressure	5.5 bar
ATEX category Gas	II 2G
Explosion ignition protection type Gas	c T4 X
ATEX category Dust	II 2D
Explosion ignition protection type Dust	c 105°C X
Explosion-proof ambient temperature	-20°C <= Ta <= +80°C
Ambient temperature	-20 ... 80 °C
Operating medium	Compressed air in accordance with ISO8573-1:2010 [7:4:4]
Note on operating and pilot medium	Pressure dew point 10°C below ambient temperature/temperature of medium Lubricated operation possible (subsequently required for further operation)
CE symbol (see declaration of conformity)	according to EU-Ex protection guideline (ATEX)
Torque at rated working pressure and 0° rotation angle	117.4 Nm
Torque at nominal operating pressure with 90° swivel angle	117.4 Nm
Note about the torque	The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.
Air consumption at 6 bar per cycle 0°-90°-0°	7.8 l
Product weight	4,872 g
Shaft connection	V17
Pneumatic connection	G1/4 NPT1/4-18
Materials note	Conforms to RoHS
Materials information for subbase	Wrought Aluminum alloy Anodized
Material number of sub-base	EN AW-6063-T6

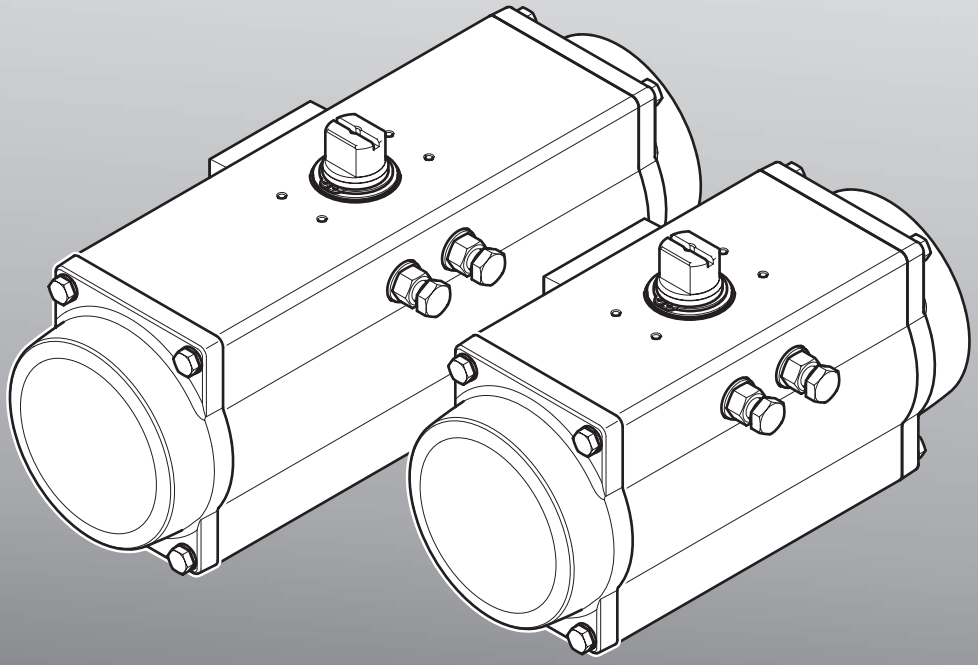
Feature	values
Materials information for cover	Aluminum die cast coated
Material number, cover	EN AC-46100-D
Materials information for seals	NBR
Materials information for spring	Spring steel
Materials information, housing	Wrought Aluminum alloy Anodized
Material number for housing	EN AW-6063-T6
Materials information for piston rod	Aluminum die cast
Material number of piston rod	EN AC-46100-D
Materials information for bearing	POM
Material information, cam	Stainless steel casting
Material number of cam	1.4308
Screw material data	High alloy steel, non-corrosive
Material number, screw	1.4301
Materials information for shaft	Steel Nickel plated
Material number for shaft	1.0715

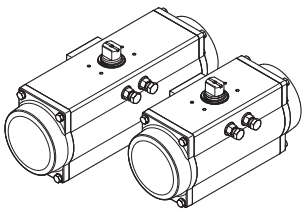
Quarter-turn actuator

DFPD

FESTO

Repair instructions (en)





DFPDb_en

1 Important information

1.1 About these repair instructions

This document contains important information about proper repair of the quarter-turn actuator type DFPD.

Before carrying out a repair, these repair instructions must be read in full and followed.

Other documentation for this product:

- **Operating instructions (➔ www.festo.com/sp)**
- **Spare parts documentation (➔ www.festo.com/spareparts)**

1.2 Symbols used

1.2.1 Danger categories

The following symbol identifies text passages which draw attention to specific hazards.



Warning

Marking of special information

The following symbols identify text passages which contain special information.



Note

1.2.2 Repair steps

Familiarise yourself with the meaning of the symbols before starting the repair work.



Warning
There is a risk of injury due to uncontrolled movements of components.



Reference arrow
Symbol indicating the individual components to be noted.



Linear movement arrow
Carry out a linear movement



Slow movement
Carry out the dismantling / assembly step slowly and carefully.



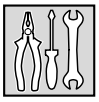
Reference to repair steps
Follow the given repair steps.



Attention
Pay particular attention to notes and information.



Visual inspection
Perform a visual inspection.



Tools

Use suitable tools.



Functional test / start-up

Follow the functional test / start-up information in the brief instructions (➔ www.festo.com).

1.2.3 Cleaning and greasing



Cleaning

The components must be thoroughly cleaned to remove all foreign particles, machining residues and old lubricants before they are greased.

Clean with a soft, lint-free cloth and non-abrasive cleaning agents. Check the compatibility of the cleaning agent with the materials to be cleaned.



Thin grease film outside

A film of grease covers the external surface so that the grease colour tarnishes the surface slightly.

Recommendation:

Apply the grease with a soft brush or similar.

1.3 Text designations used in these repair instructions

– General lists.

➔ Reference to further information

Underlined, blue text indicates a cross-reference or hyperlink that you can click on in the PDF.

1.4 Tools

Among other things, the following standard tools are required to repair the quarter-turn actuator:

– Spanner
– Retaining ring pliers for external retaining rings
– Torque wrench

2 General safety instructions and information

2.1 General safety instructions

Warning

Read and follow all safety instructions and information. Failure to comply with these safety instructions and information can result in serious injuries.

Note

To achieve ATEX conformity, the toothed discs must be replaced each time the corresponding screws or bolts are loosened. When screwing back in, observe the tightening torques given for the screws.

– The control block may only be repaired by authorised and trained personnel acting in accordance with the requirements in these repair instructions and the brief instructions for the device.

- Pay attention to cleanliness while repairing the quarter-turn actuator. Do not allow dirt particles to get into the quarter-turn actuator.
- A shutdown must be performed before any repair work is carried out.
- Before repairing the quarter-turn actuator, any attachments on it must be dismantled.
- The control block must be completely depressurised and de-energised, and reliably secured against unauthorised restarting before starting any repair work is started.
- Accidental switching on or concealed pressure can trigger unexpected movements during dismantling of the quarter-turn actuator. Therefore, completely vent the quarter-turn actuator before each repair.
- Use original spare parts only to repair the quarter-turn actuator.
- Wear the necessary personal protective equipment.
- In the event of damage to the quarter-turn actuator caused by
  - unauthorised manipulation,
  - non-intended use (misuse),
  - use of non-original spare parts

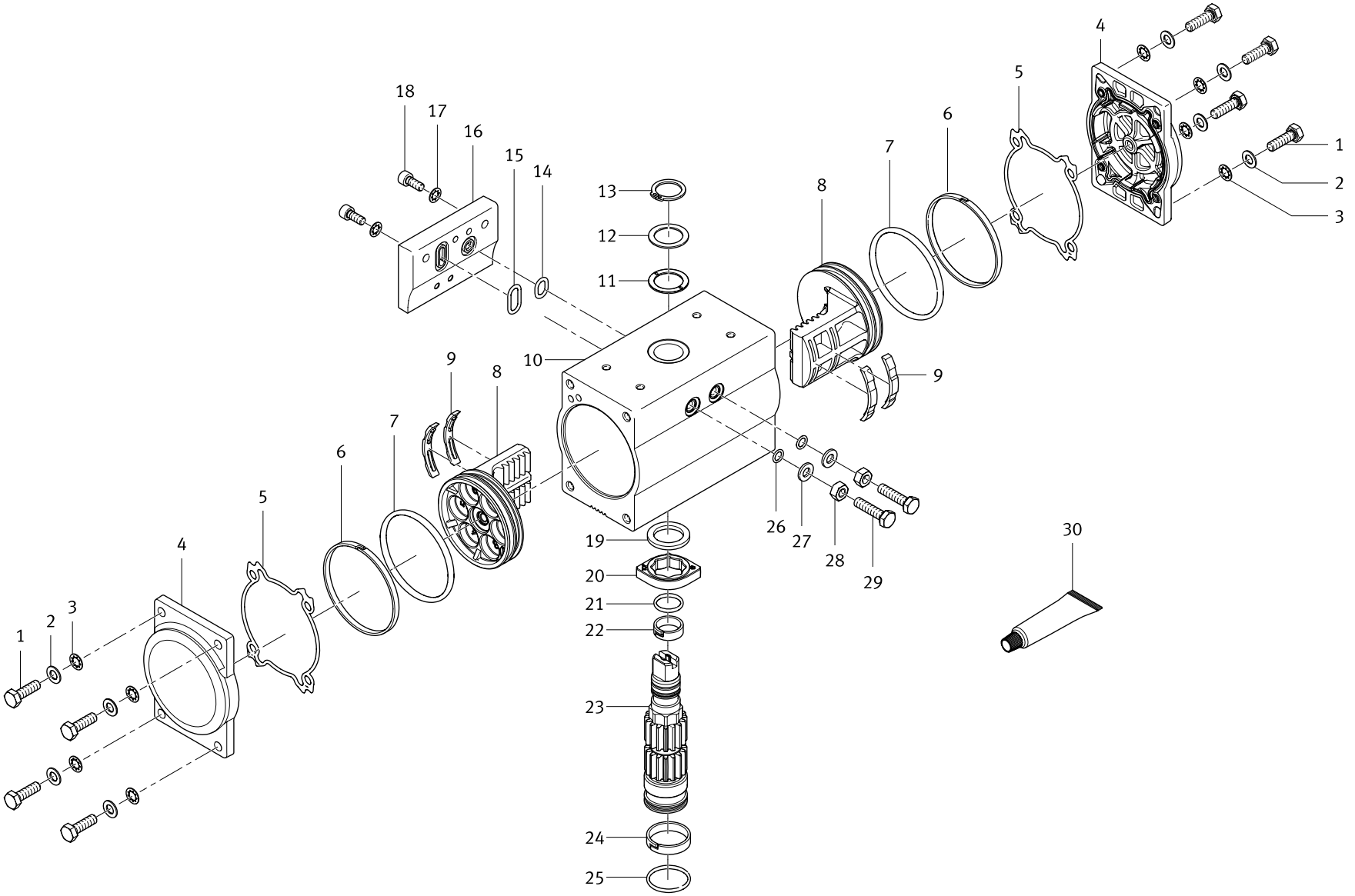
  all warranty and liability claims against the manufacturer expire.
- The technical documentation required for installation and start-up (functional test) of the quarter-turn actuator must be available.

2.2 General information

- Standard tools are needed to repair the quarter-turn actuator, which must be available in a service workshop (➔ Chapter 1.4 on page 6).
- Components and equipment replaced during repair must be disposed of in accordance with the relevant local environmental protection regulations.
- Where possible the repair should be carried out on a stable and flat work surface with space for small parts.
- The figures of the repair steps show size DFPD-300-...-D / S-...-60 (12 installed springs) by way of example. Individual minor differences between the quarter-turn actuator in hand and the illustrated example are possible.
- Depending on the temperature range (standard / T4 / T6), Festo recommends the following lubricants:
  - SYNTHY POLYMER 402/2 (standard variant)
  - HEVOLIT PE 280-1 FG (high-temperature variant T4)
  - RENOLIT SI 300 M (low-temperature variant T6)
- Individual components must be greased when installing the quarter-turn activator. The following table shows the recommended quantity of grease during the entire installation.

Size	Recommended quantity of grease for installation
DFPD-10	2 g
DFPD-20	3 g
DFPD-40	5 g
DFPD-80	7 g
DFPD-120	11 g
DFPD-160	15 g
DFPD-240	20 g
DFPD-300	30 g
DFPD-480	45 g
DFPD-700	55 g
DFPD-900	65 g
DFPD-1200	85 g
DFPD-2300	110 g

3.4 DFPD-40 / 80 / 120 / 160-...-D components list

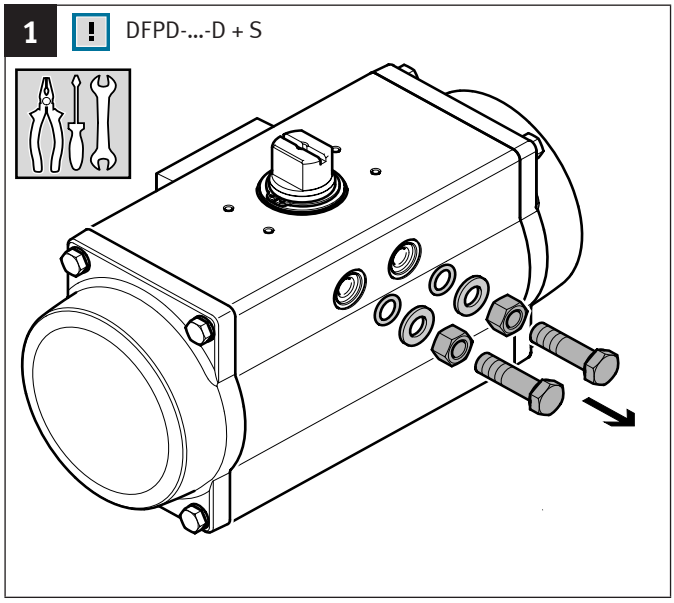


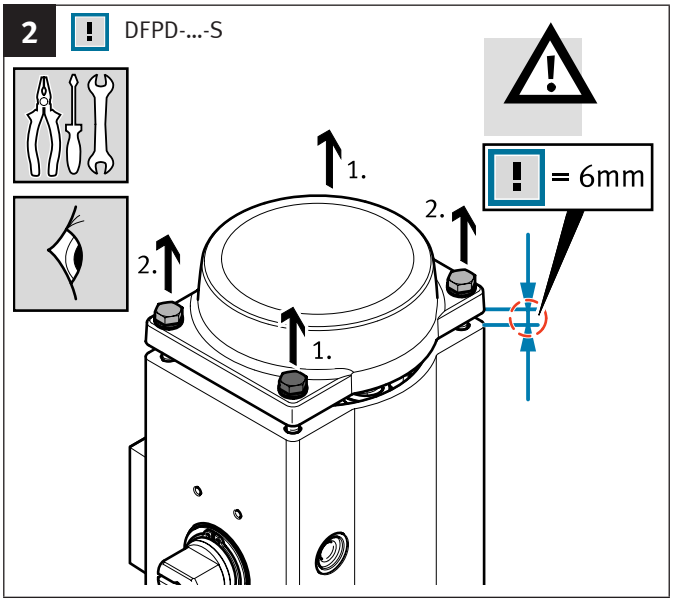
3.4.3 DFPD-120-...-D bill of materials

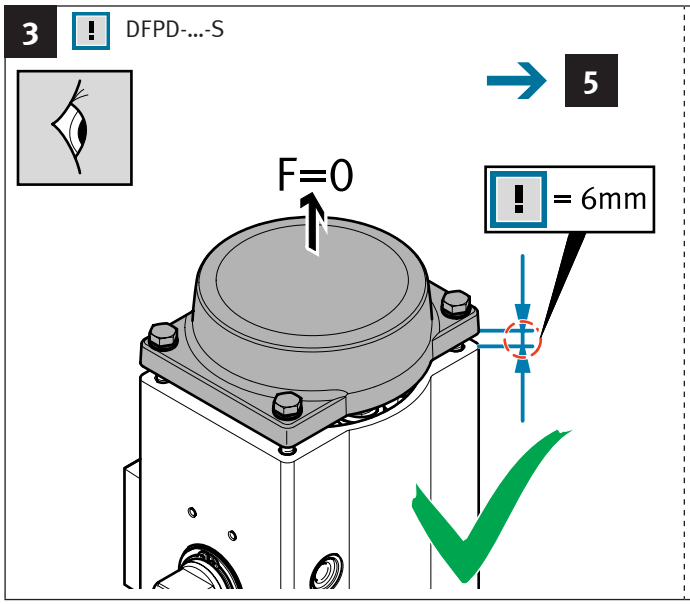
No.	Standard Designation, type	T4 Designation, type	T6 Designation, type
1	Hexagon head screw, ISO 4017-M8×25-A2-70	Hexagon head screw, ISO 4017-M8×25-A2-70	Hexagon head screw, ISO 4017-M8×25-A2-70
2	Ring, 8.3×15×1.5-1.4301	Ring, 8.3×15×1.5-1.4301	Ring, 8.3×15×1.5-1.4301
3	Toothed disc, DIN 6797-J-8,4-A2-70	Toothed disc, DIN 6797-J-8,4-A2-70	Toothed disc, DIN 6797-J-8,4-A2-70
4	End cap	End cap	End cap
5	Moulded seal	Moulded seal	Moulded seal
6	Sliding ring	Sliding ring	Sliding ring
7	O-ring, 80×4.5-N-NBR70	O-ring, I3601 B-80×4.5-N-FPM75	O-ring, 80×4.5-N-FVMQ70
8	Piston	Piston	Piston
9	Slide element	Slide element	Slide element
10	Housing	Housing	Housing
11	Sliding ring	Sliding ring	Sliding ring
12	Shim, DIN 988-25×35×1-A2	Shim, DIN 988-25×35×1-A2	Shim, DIN 988-25×35×1-A2
13	Retaining ring, DIN 471-25×1.2-A2	Retaining ring, DIN 471-25×1.2-A2	Retaining ring, DIN 471-25×1.2-A2
14	O-ring, I3601 B-16×2-N-NBR70	O-ring, I3601 B-16×2-N-FPM75	O-ring, 16×2-N-FVMQ70
15	O-ring, I3601 B-21×2-N-NBR70	O-ring, I3601 B-21×2-N-FPM75	O-ring, 21×2-N-FVMQ70
16	Mounting plate	Mounting plate	Mounting plate
17	Toothed disc, DIN 6797-J-5,1-A2-70	Toothed disc, DIN 6797-J-5,1-A2-70	Toothed disc, DIN 6797-J-5,1-A2-70
18	Socket head screw, DIN 912-M5×16-A2-70	Socket head screw, DIN 912-M5×16-A2-70	Socket head screw, DIN 912-M5×16-A2-70
19	Sliding ring	Sliding ring	Sliding ring
20	Cam	Cam	Cam
21	O-ring, I3601 B-20.24×2.62-N-NBR70	O-ring, I3601 B-20.24×2.62-N-FPM75	O-ring, 20.24×2.62-N-FVMQ70
22	Sliding ring	Sliding ring	Sliding ring
23	Shaft	Shaft	Shaft
24	Sliding ring	Sliding ring	Sliding ring
25	O-ring, I3601 B-36.14×2.62-N-NBR70	O-ring, I3601 B-36.14×2.62-N-FPM75	O-ring, 36.14×2.62-N-FVMQ70
26	O-ring, I3601 B-7.59×2.62-N-NBR70	O-ring, I3601 B-7.59×2.62-N-FPM75	O-ring, 7.59×2.62-N-FVMQ70
27	Ring, 8.2×16×1.5-1.4301	Ring, 8.2×16×1.5-1.4301	Ring, 8.2×16×1.5-1.4301
28	Hex nut, DIN 934-M8-A2-70	Hex nut, DIN 934-M8-A2-70	Hex nut, DIN 934-M8-A2-70
29	Regulating screw	Regulating screw	Regulating screw
30	Lubricant, SYNTHY POLYMER 402/2	Lubricant, HEVOLIT PE280-1 FG	Lubricant, ISOFLEX TOPAS NB5051

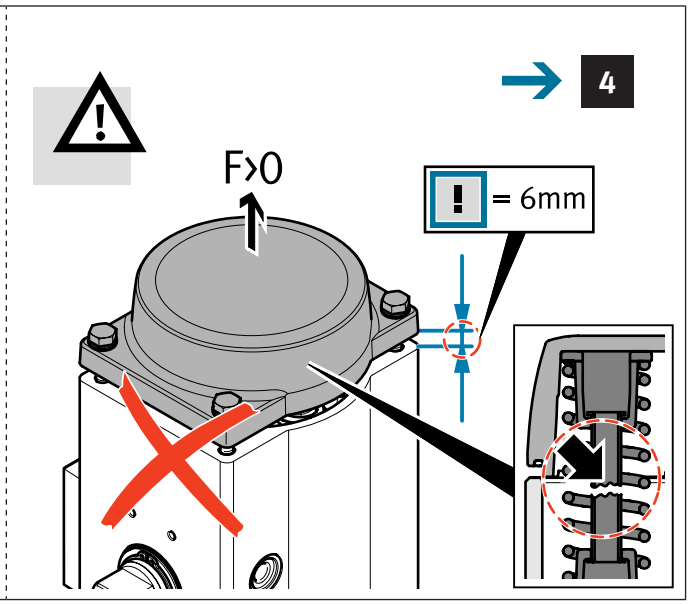
4 Repair steps

4.1 Dismantling

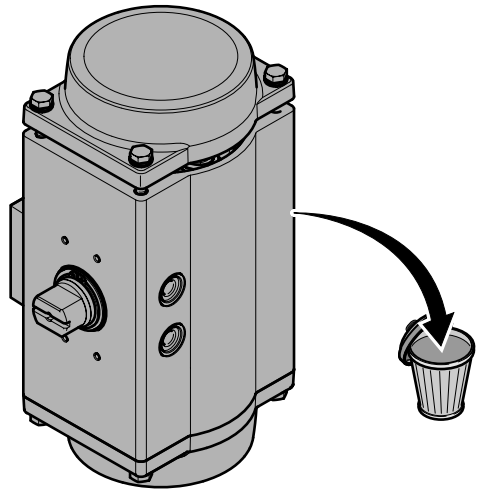




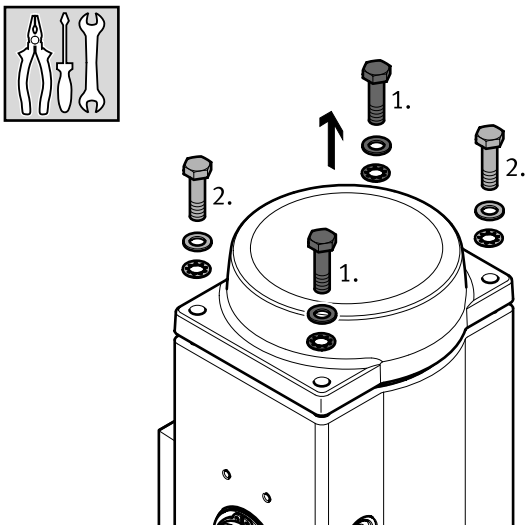




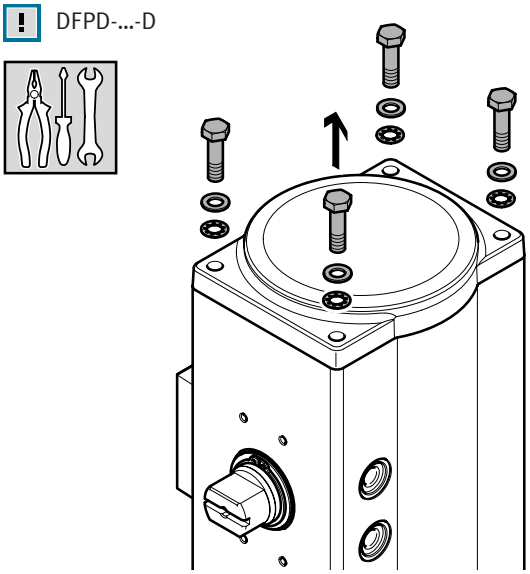
4 DFPD-...-S



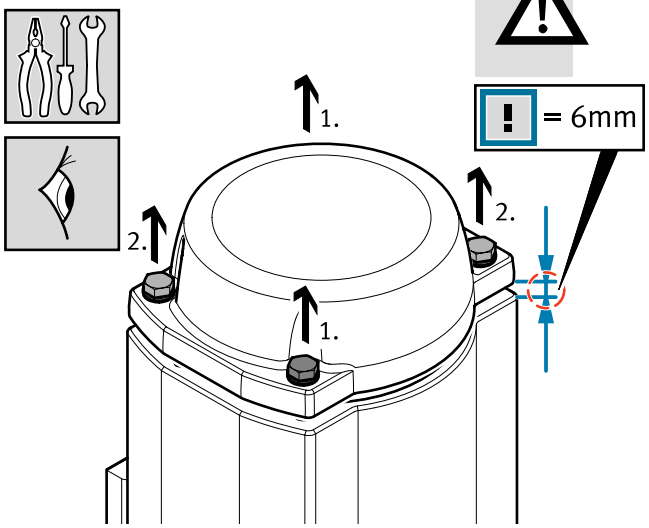
5 DFPD-...-S



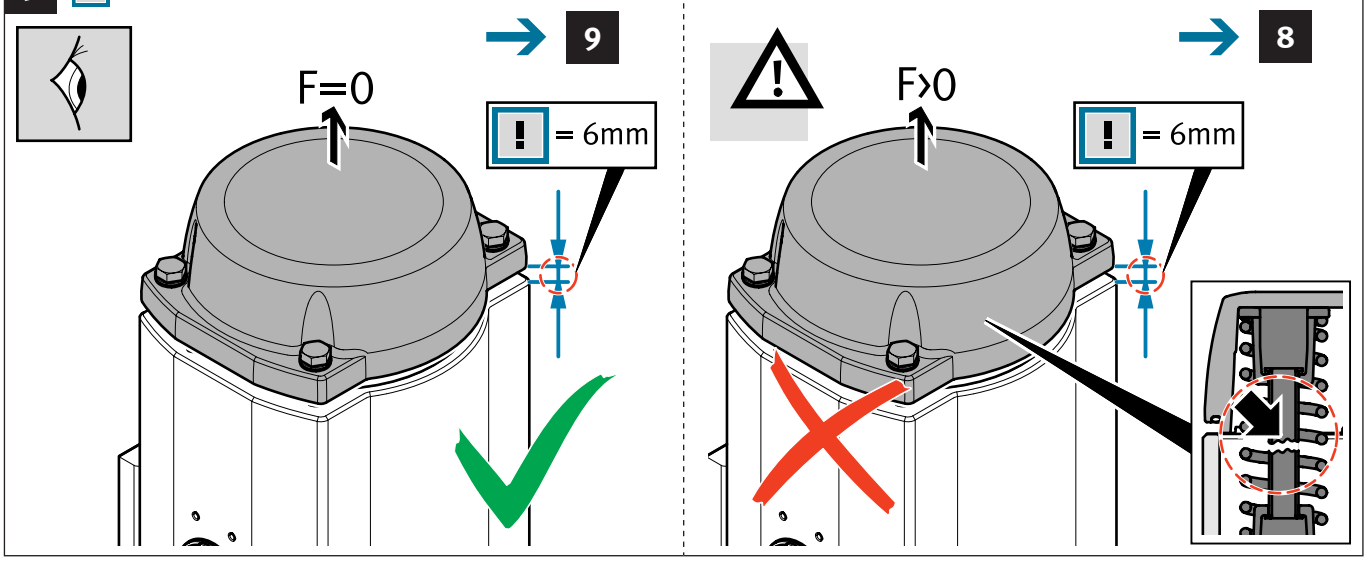
DFPD-...-D



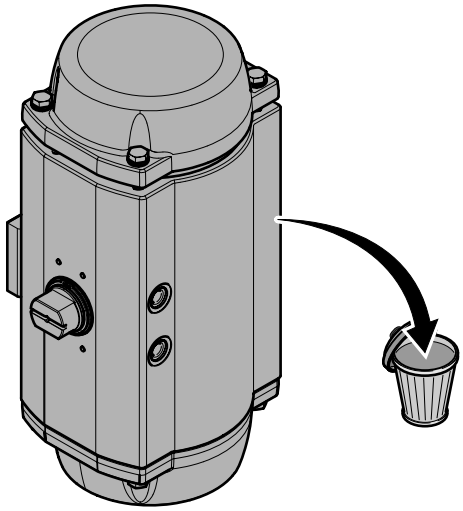
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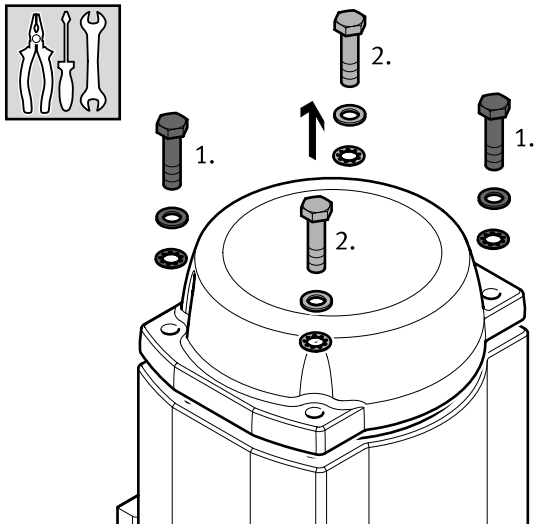
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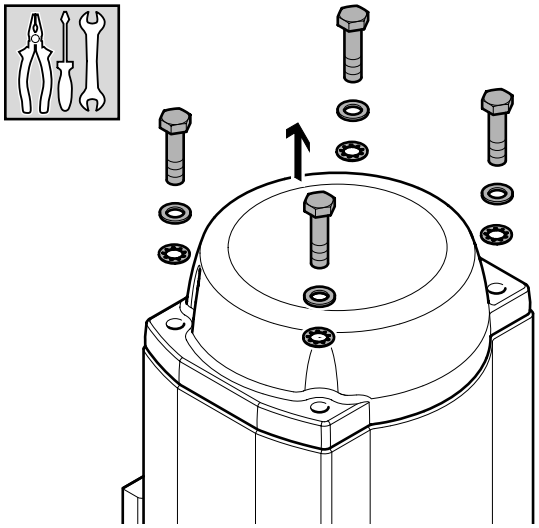
8 DFPD-700/900/1200/2300...-S



9 DFPD-700/900/1200/2300...-S

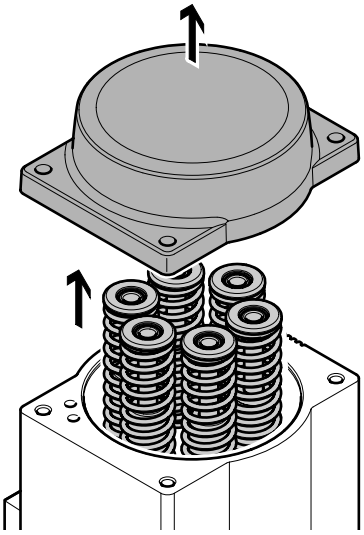


DFPD-700/900/1200/2300...-D

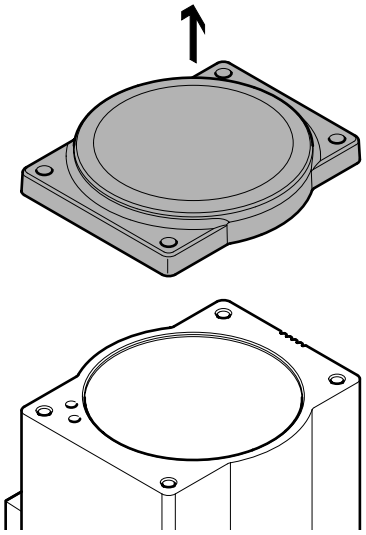


10a

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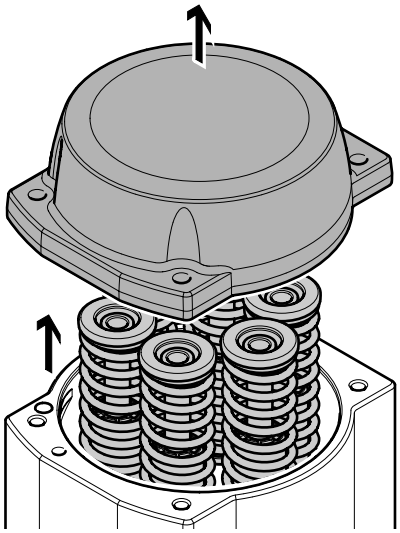


DFPD-...-D

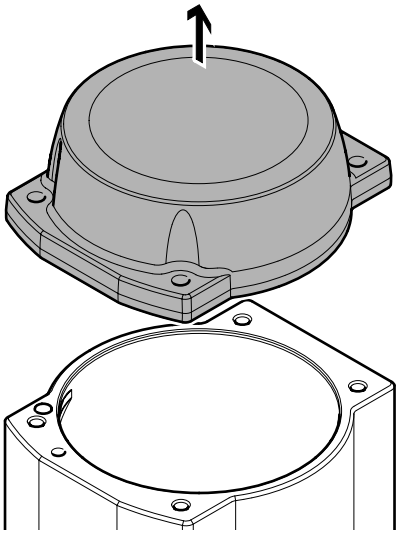


10b

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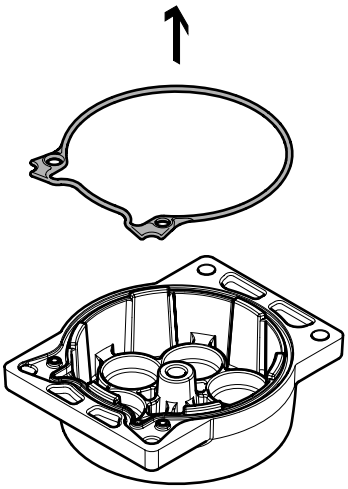


DFPD-700/900/1200/2300...-D

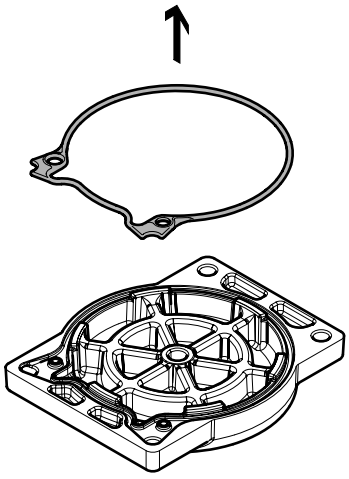


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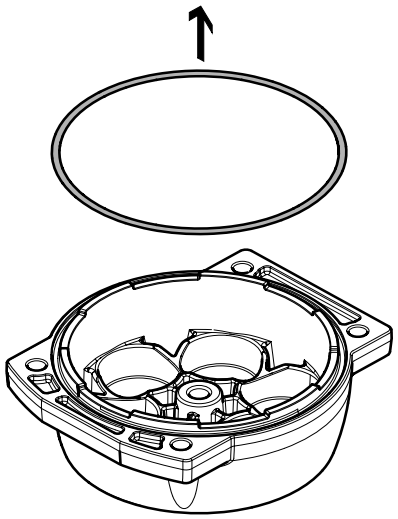
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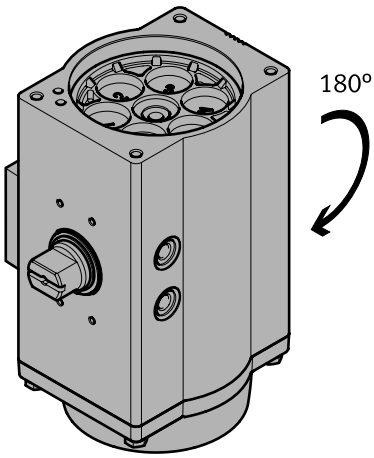
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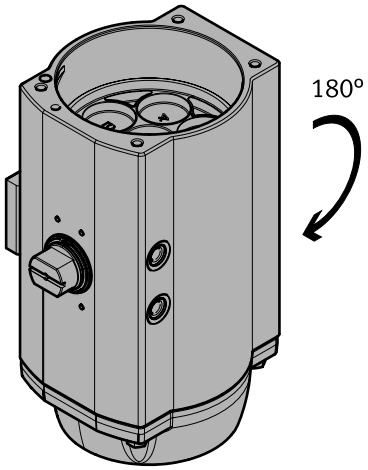
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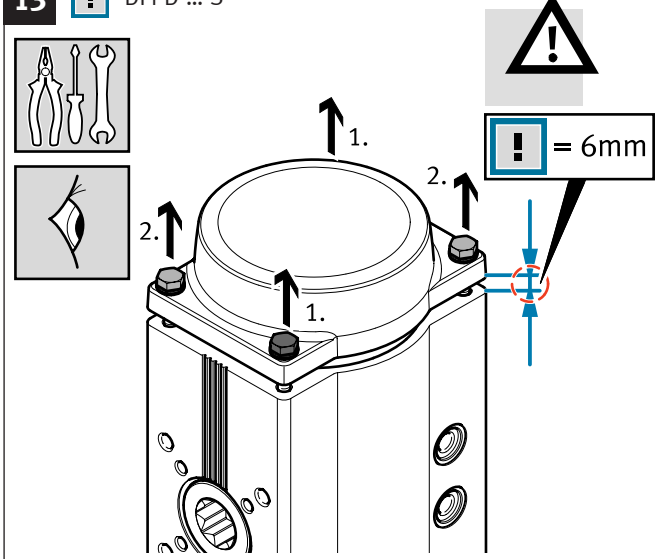
12 DFPD-...



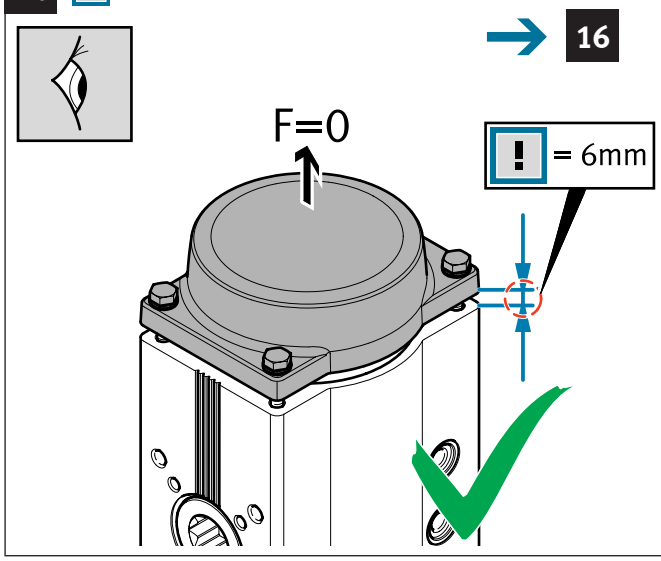
DFPD-700/900/1200/2300...

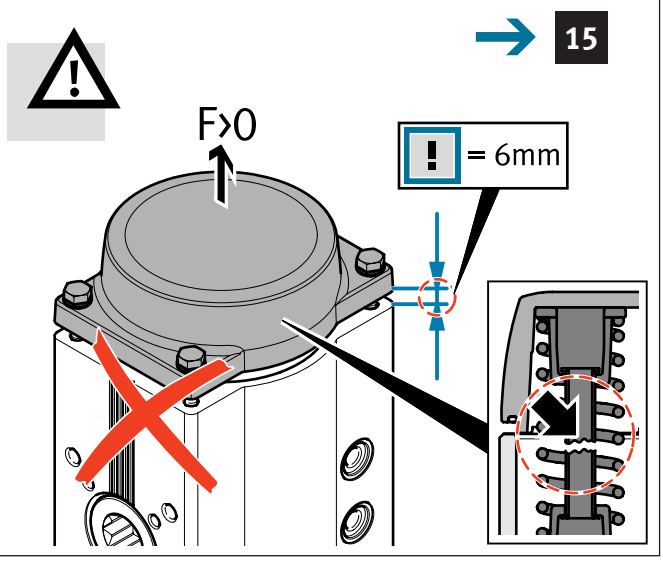


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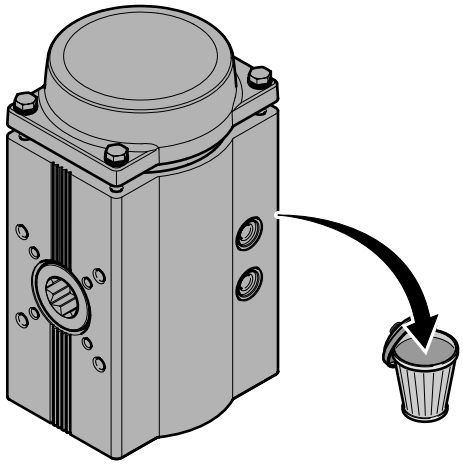


14 DFPD-...-S

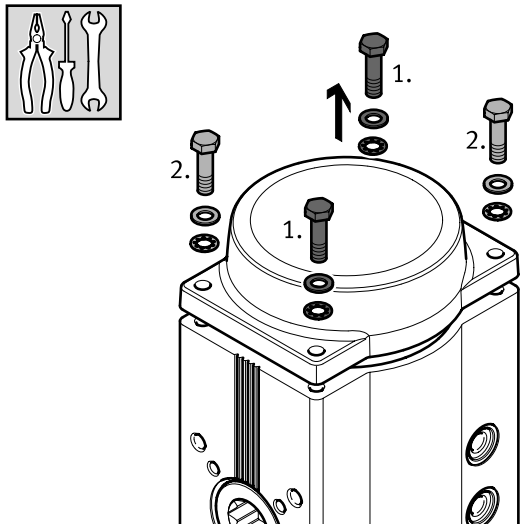




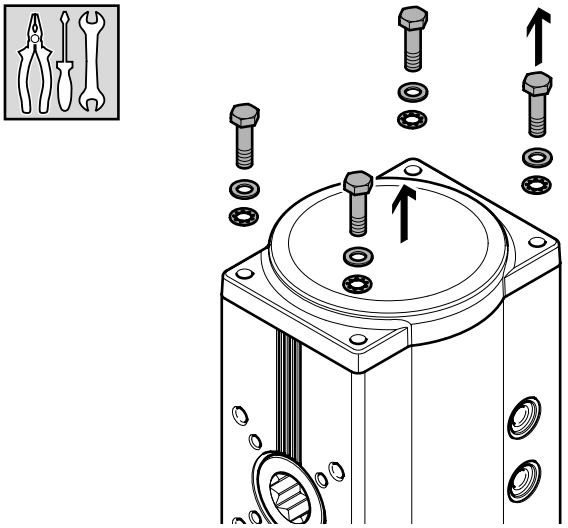
15 DFPD-...-S



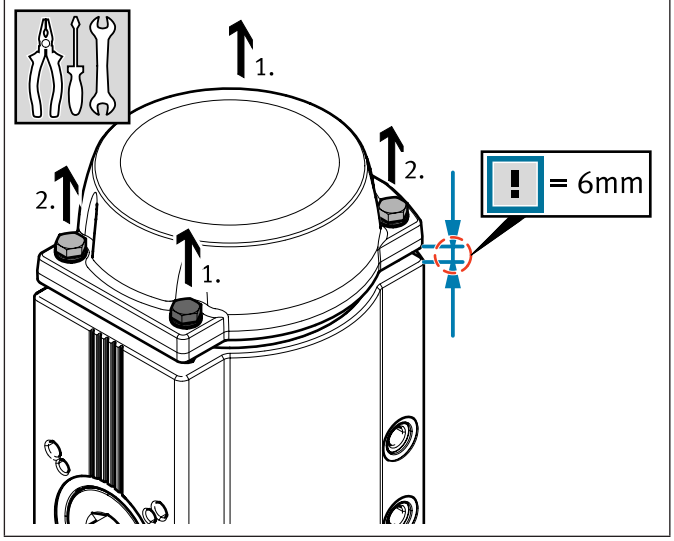
16 DFPD-...-S



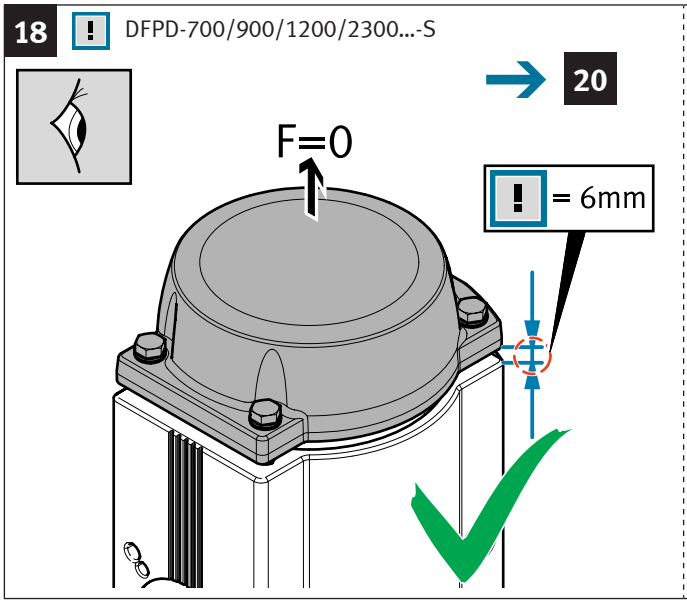
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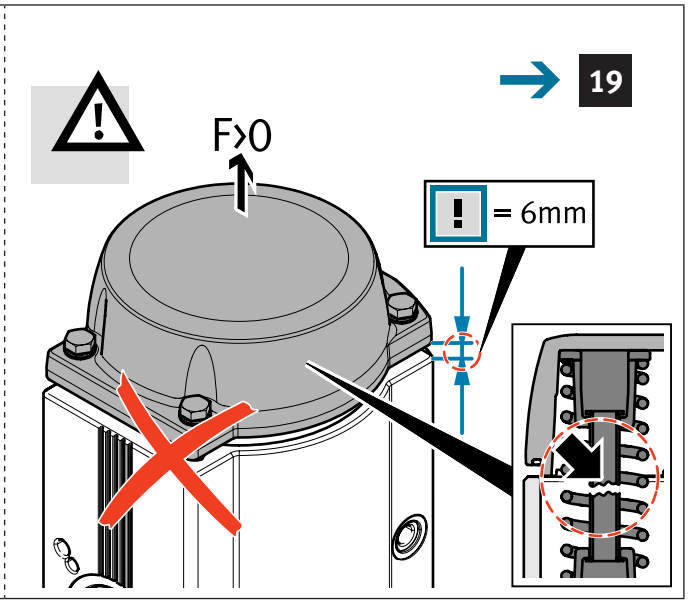


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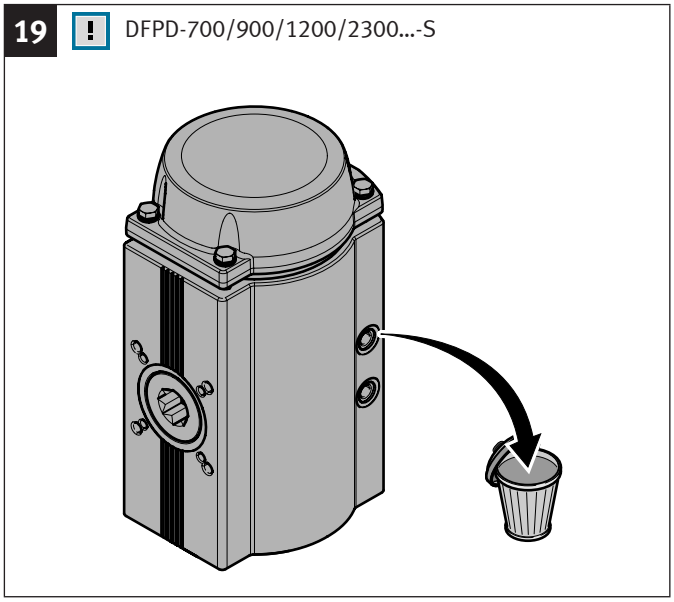


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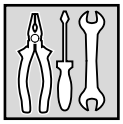


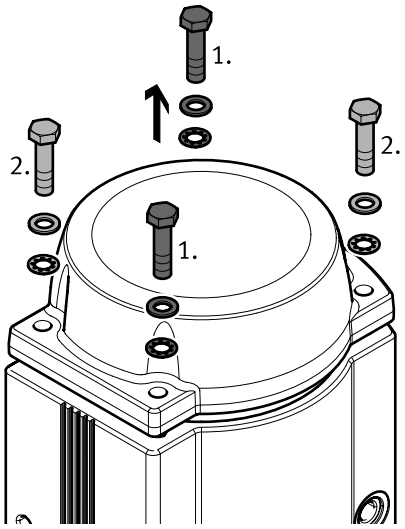


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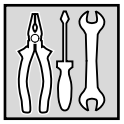


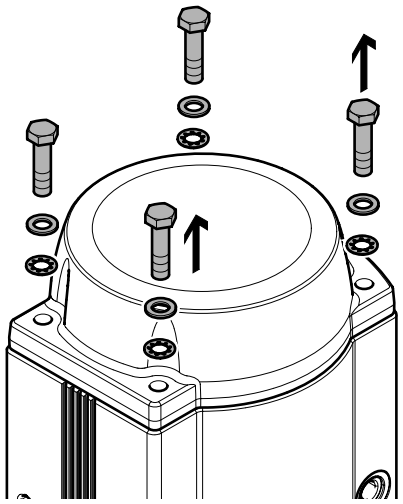
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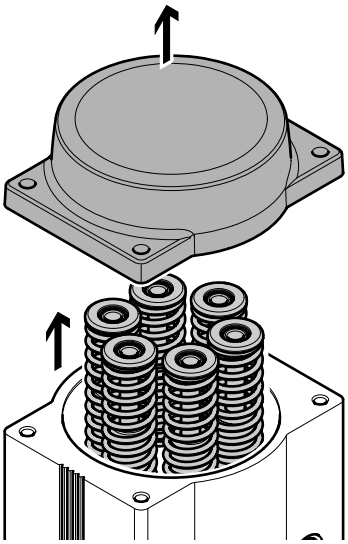


DFPD-700/900/1200/2300...-D

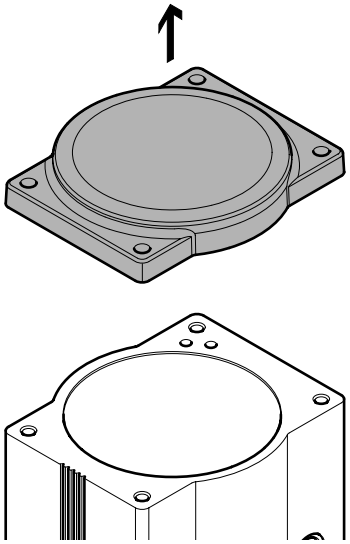




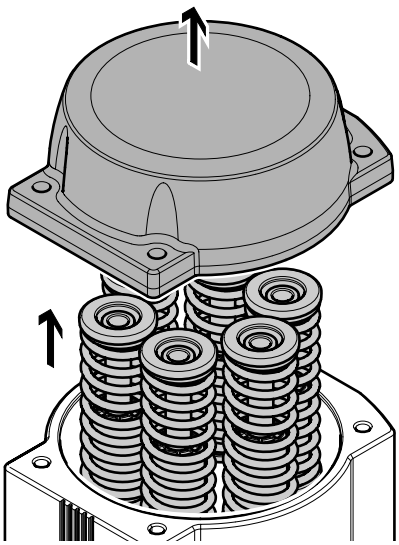
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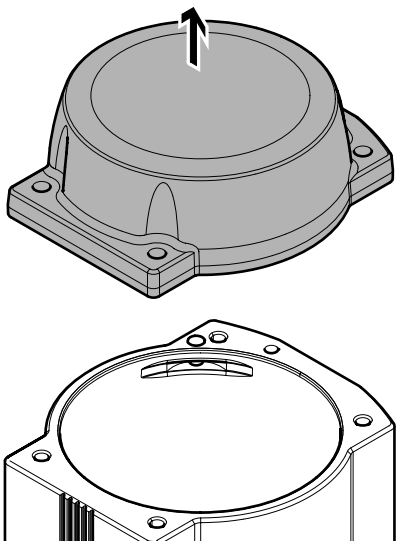
DFPD-...-D



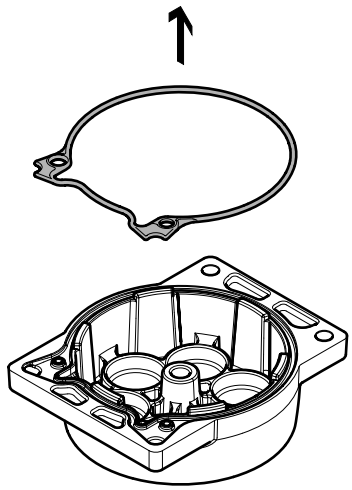
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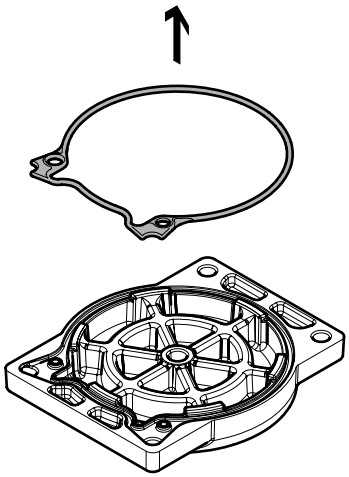
DFPD-700/900/1200/2300...-D



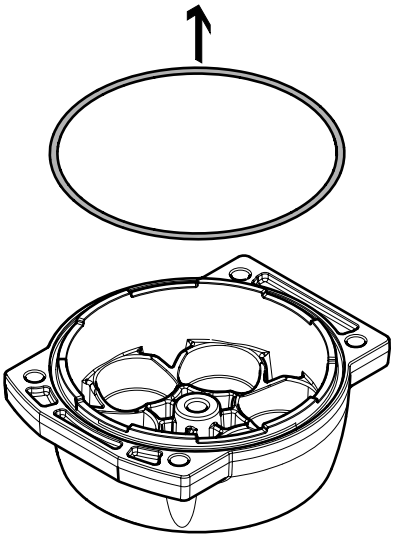
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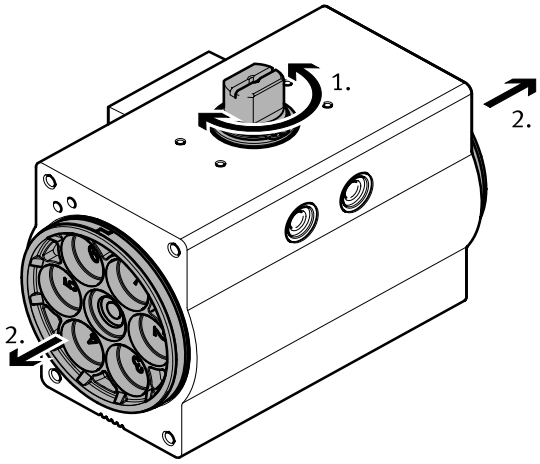
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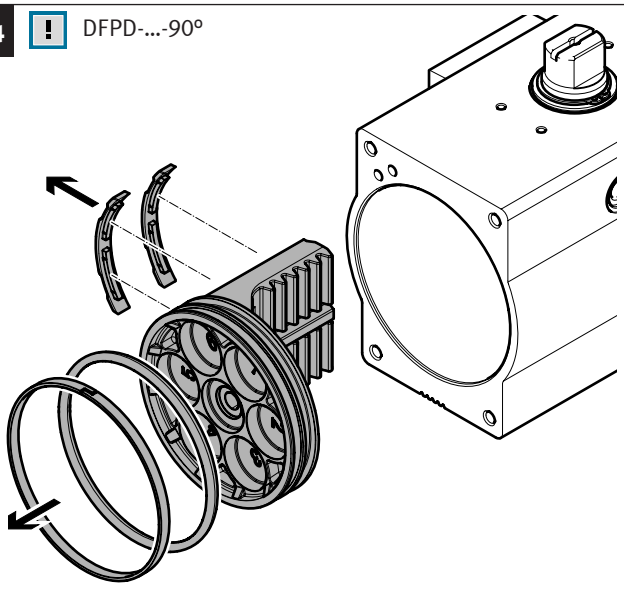
22b DFPD-700/900/1200/2300...-D+S



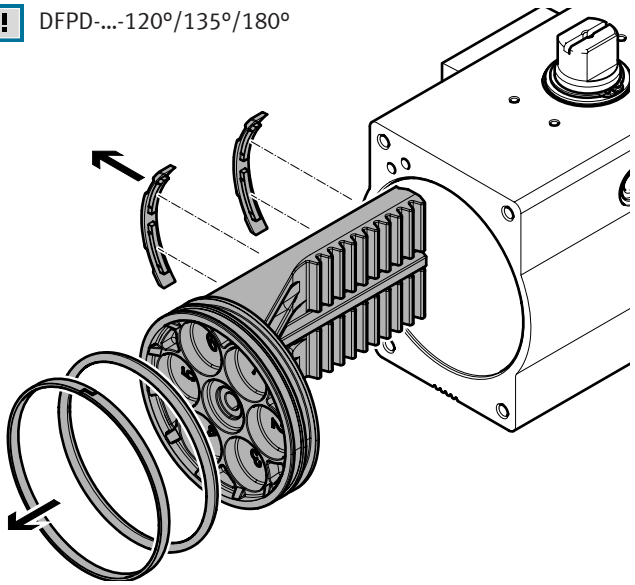
23 DFPD-...-D + S



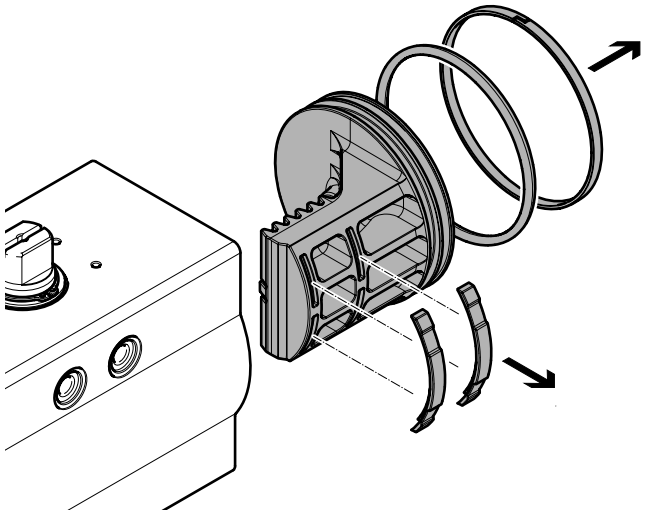
24 DFPD-...-90°



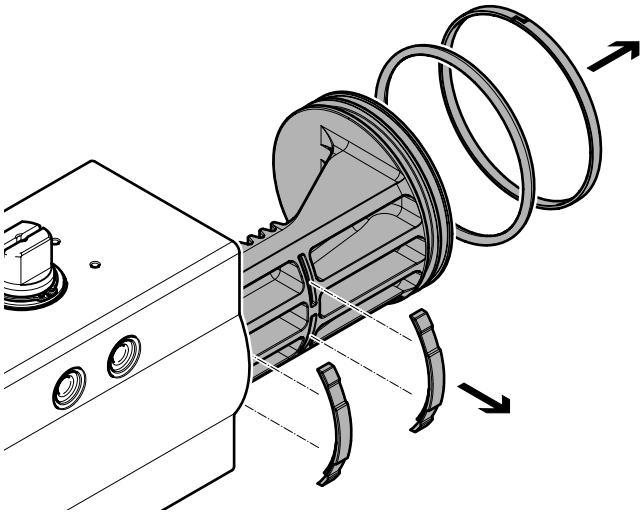
DFPD-...-120°/135°/180°



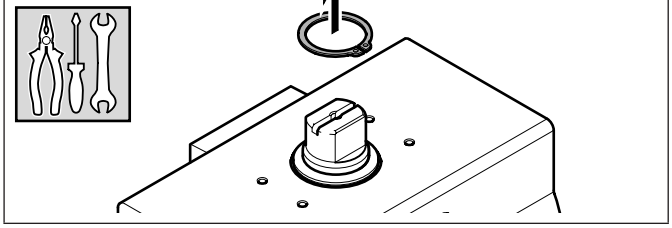
25 DFPD-...-90°



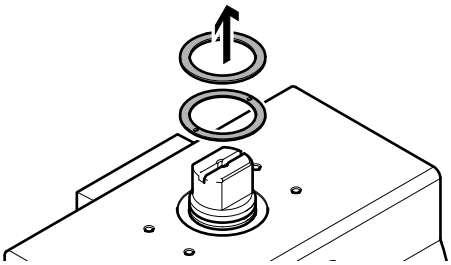
DFPD-...-120°/135°/180°



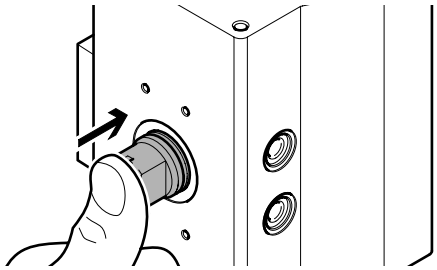
26



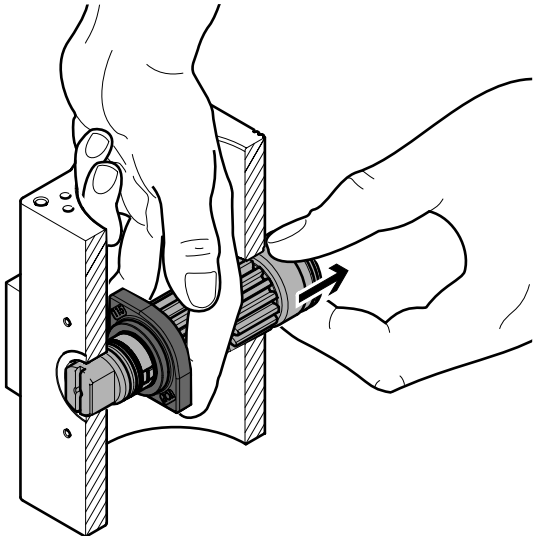
27



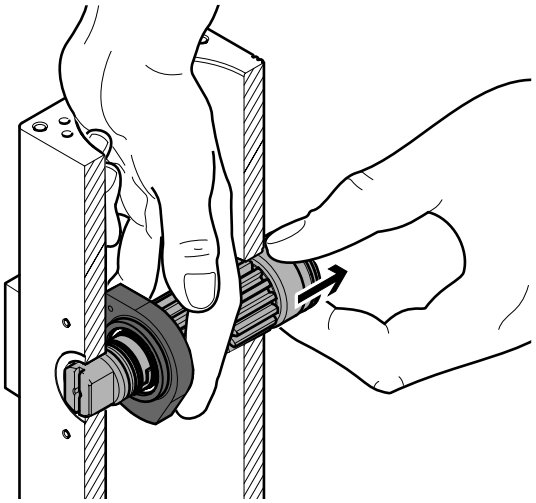
28



29a DFPD-...-90°

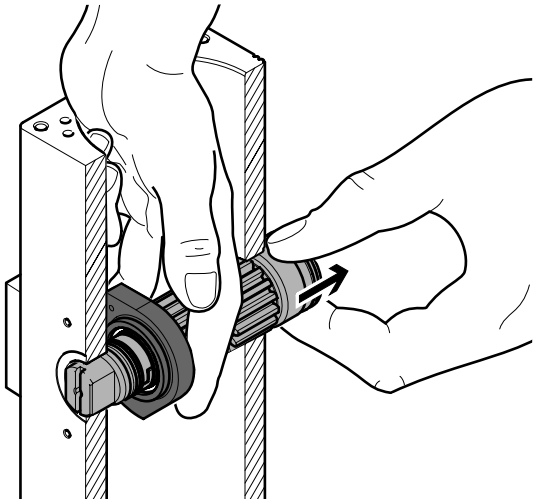


DFPD-...-120°

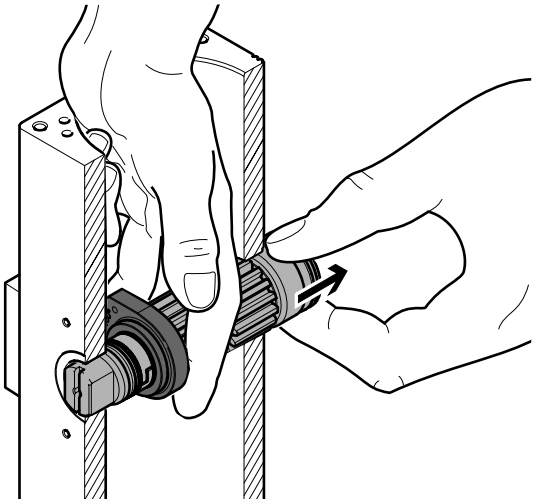


29b

DFPD-...-135°

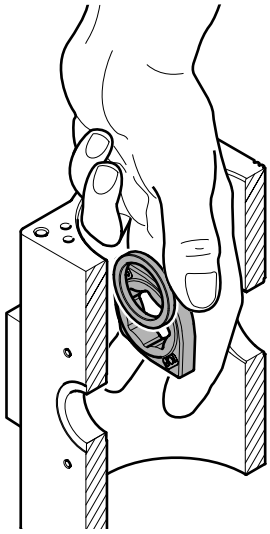


DFPD-...-180°

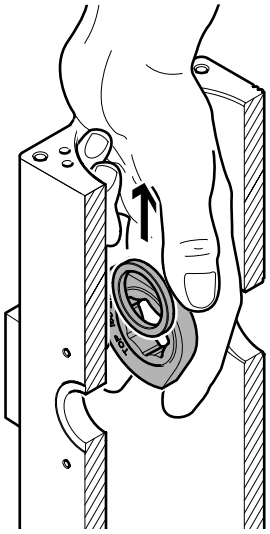


30a

DFPD-...-90°

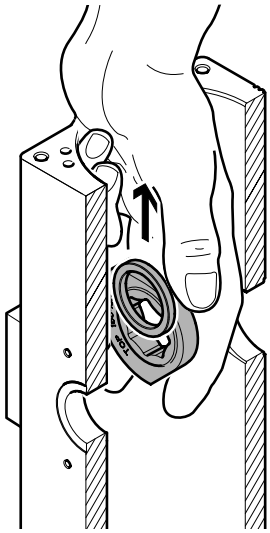


DFPD-...-120°

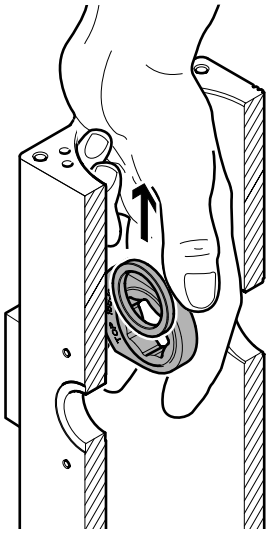


30b

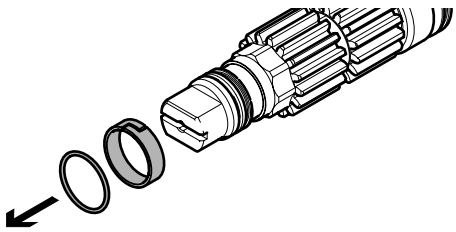
DFPD-...-135°



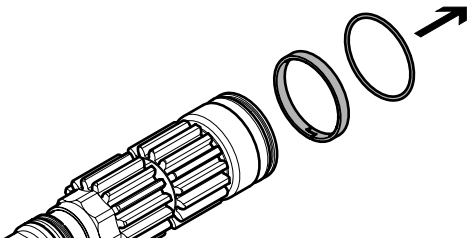
DFPD-...-180°



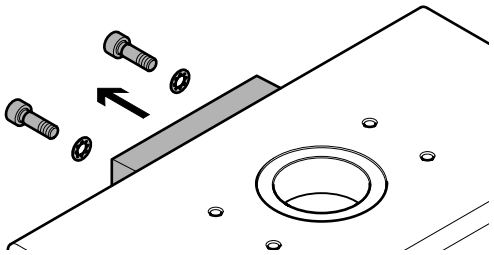
31



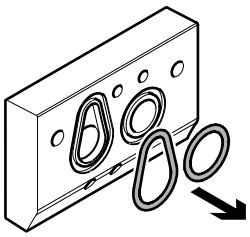
32



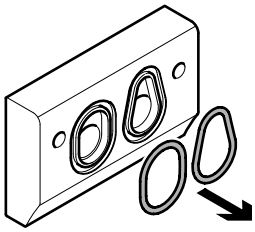
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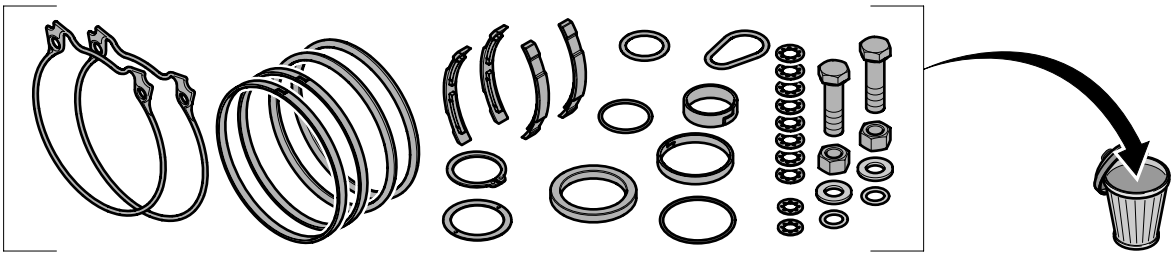
34a



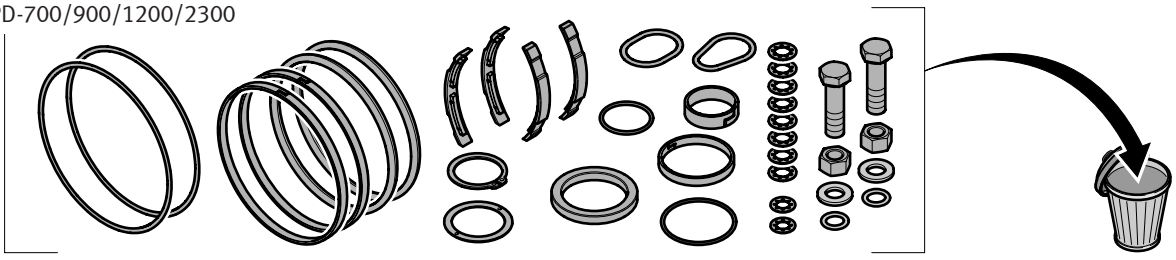
34b DFPD-700/900/1200/2300

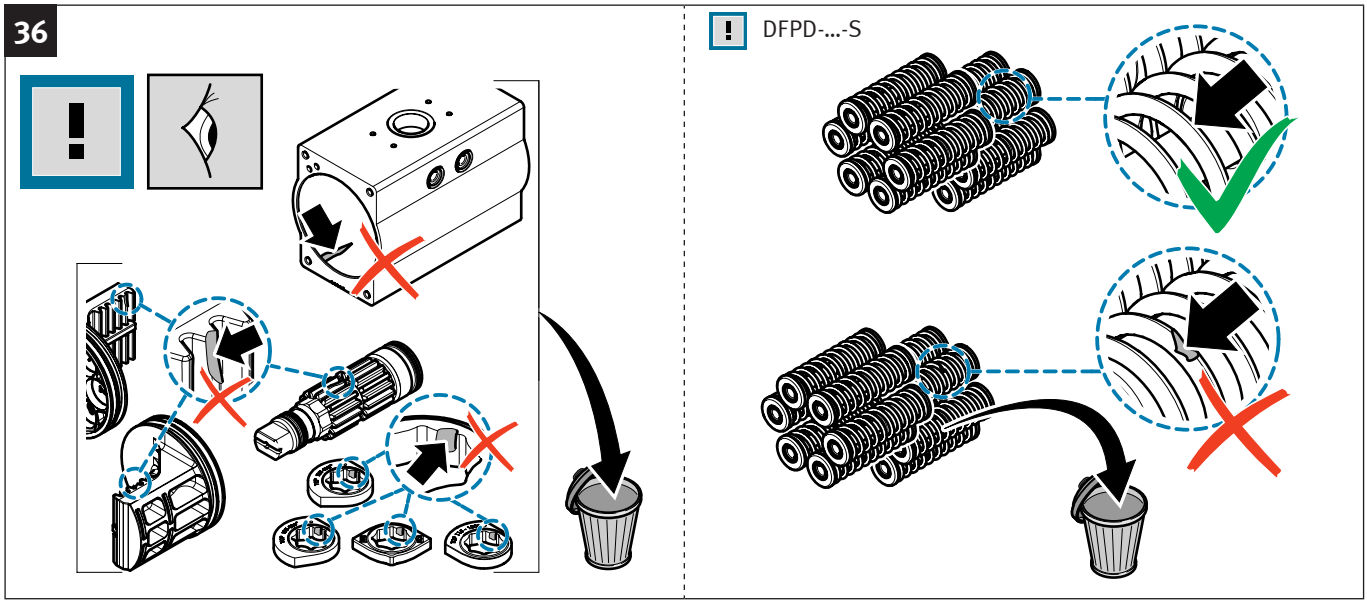


35a

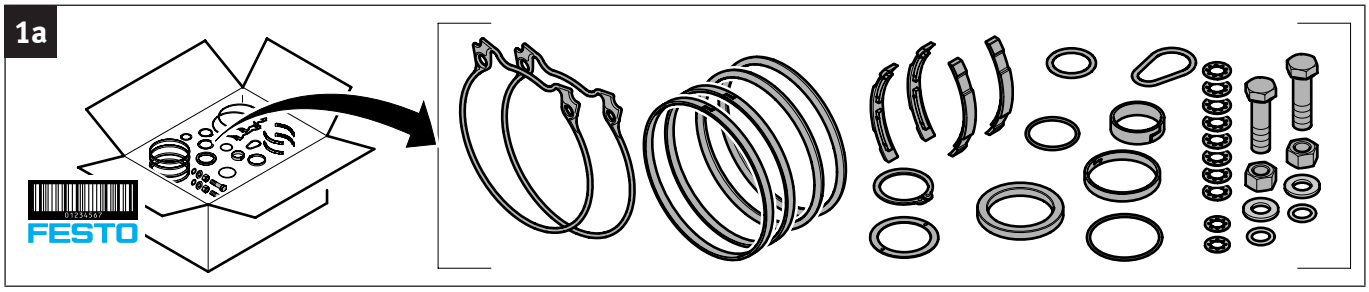


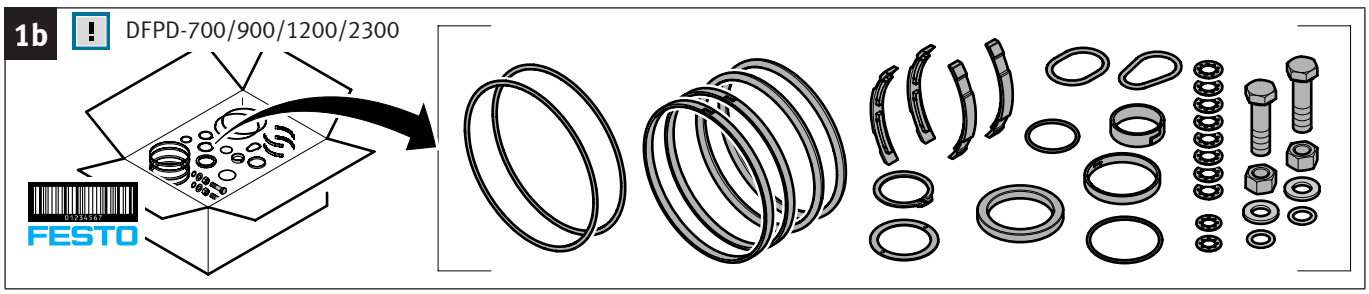
35b DFPD-700/900/1200/2300



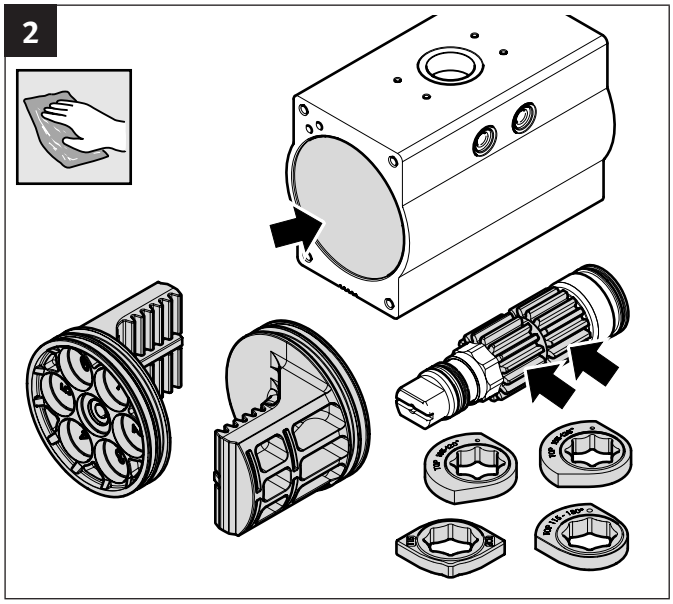


4.2 Assembly

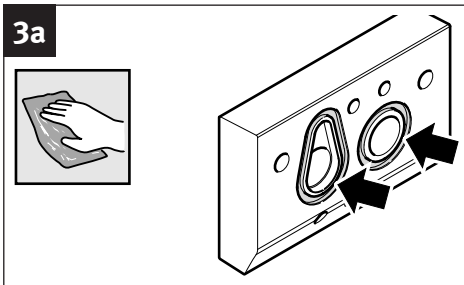




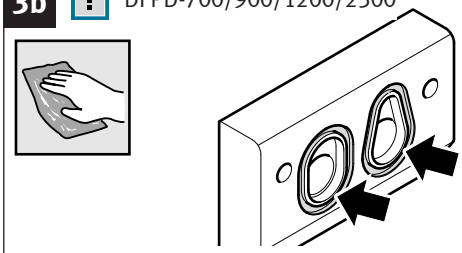
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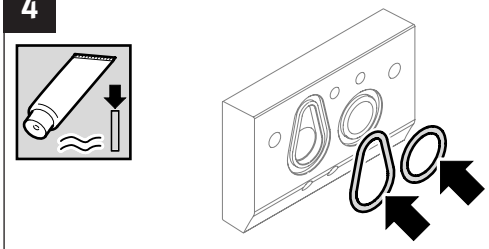
3a



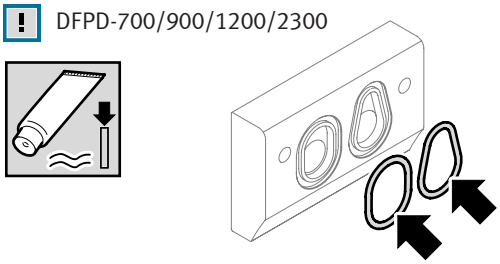
3b DFPD-700/900/1200/2300



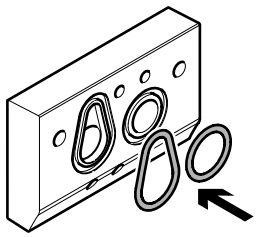
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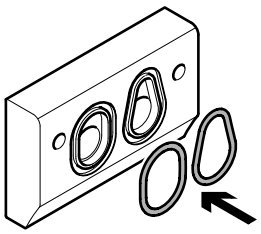
DFPD-700/900/1200/2300



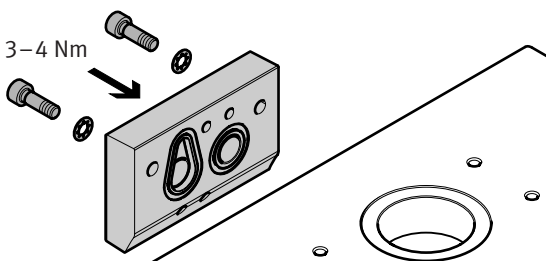
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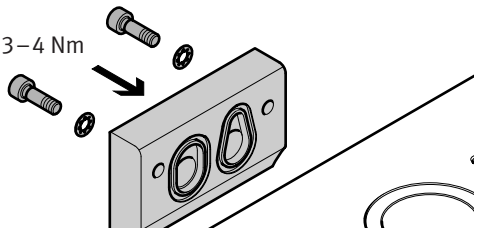
DFPD-700/900/1200/2300



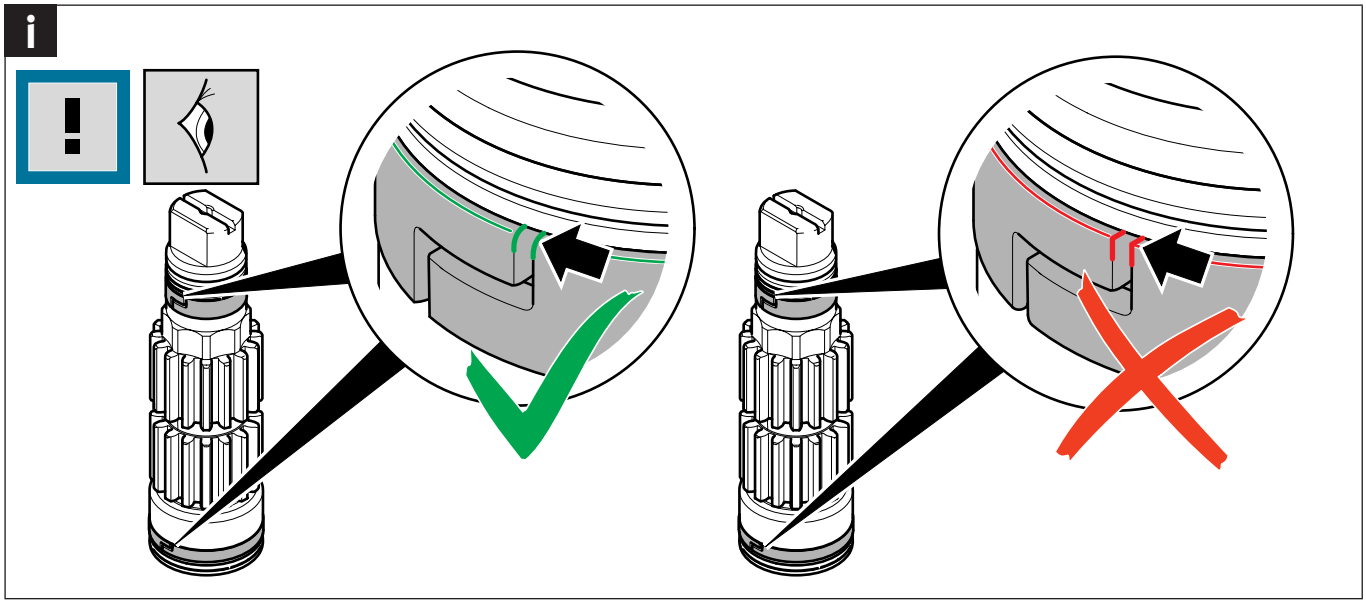
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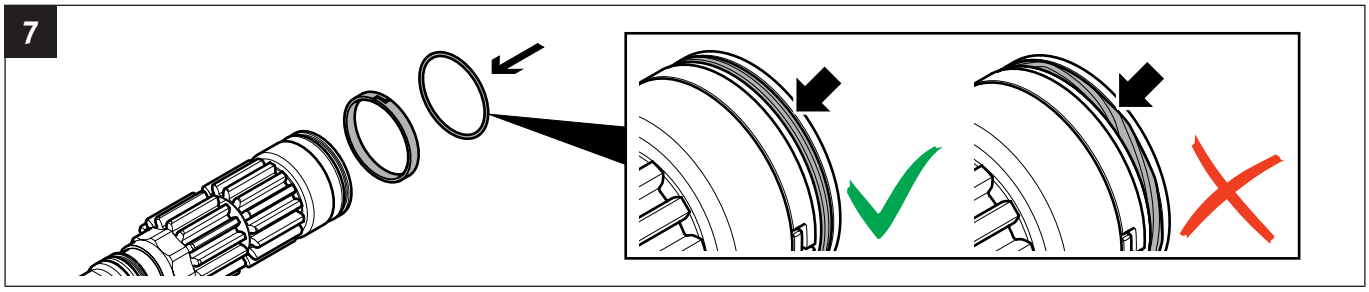
DFPD-700/900/1200/2300



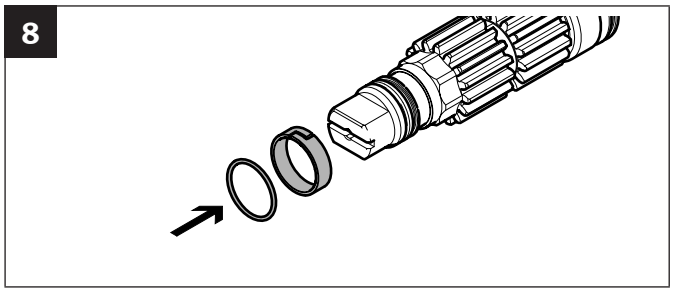
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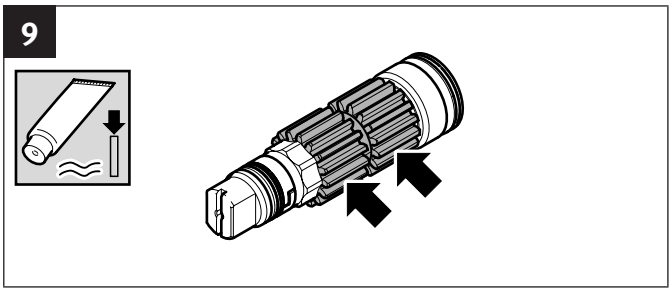
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8

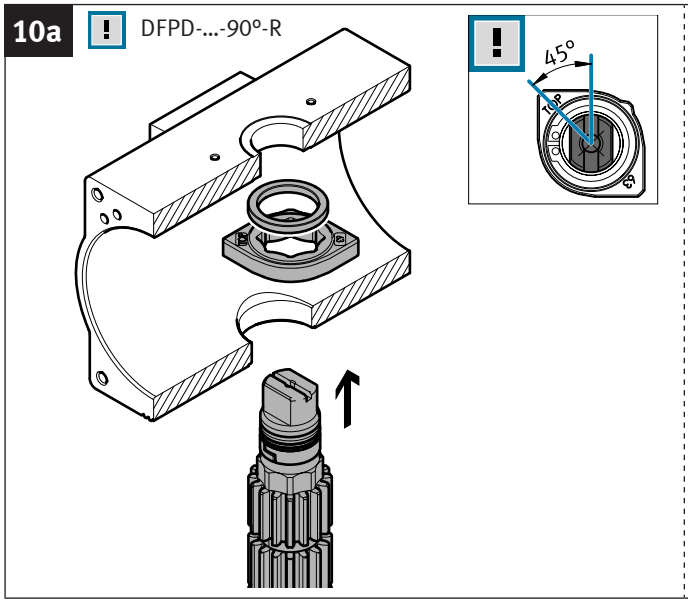


9

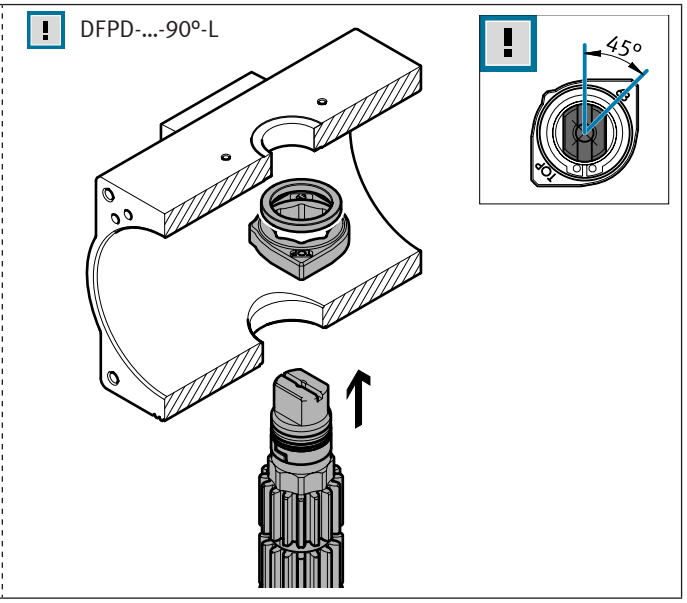


10a

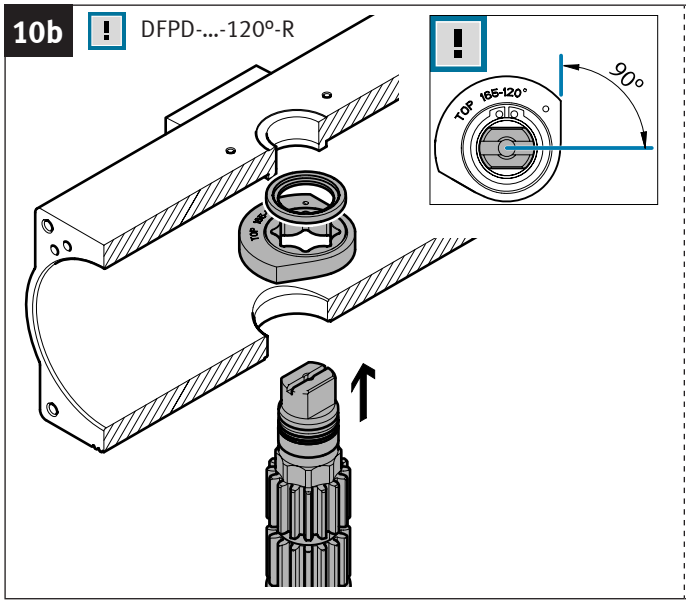
DFPD-...-90°-R



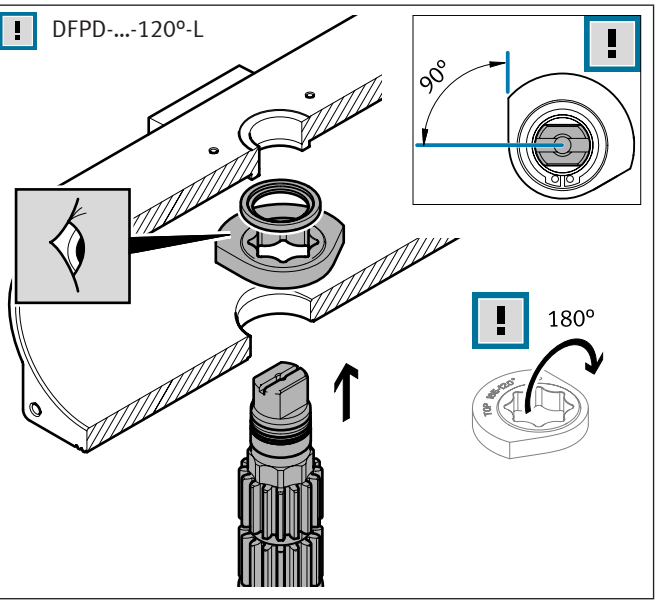
DFPD-...-90°-L



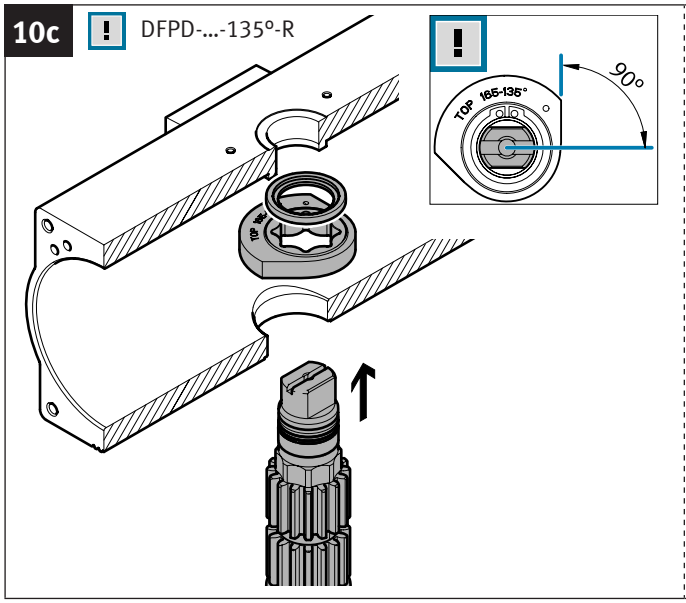
10b DFPD-...-120°-R



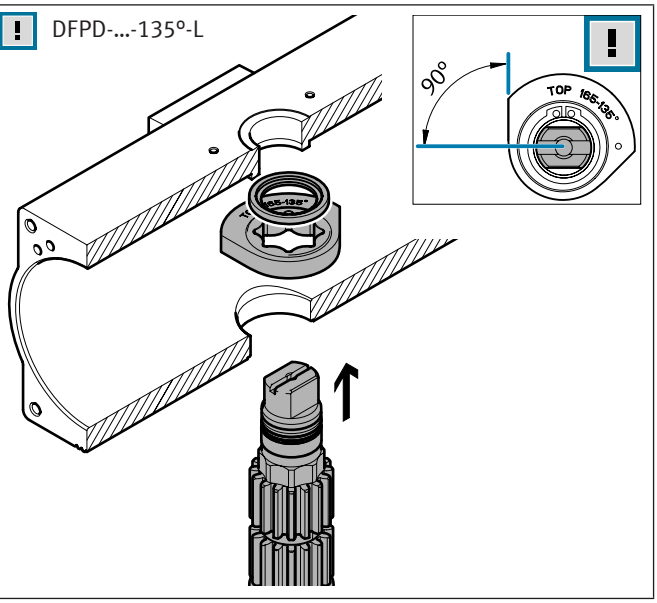
DFPD-...-120°-L



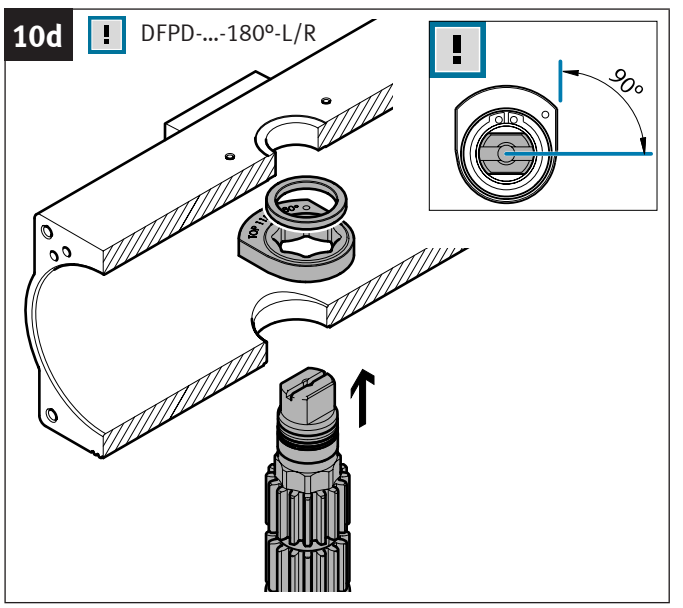
10c DFPD-...-135°-R



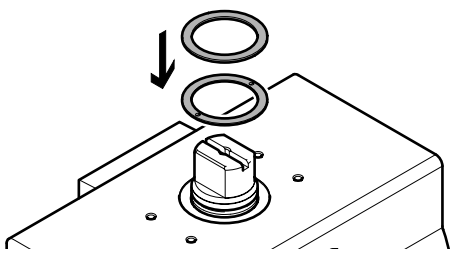
DFPD-...-135°-L



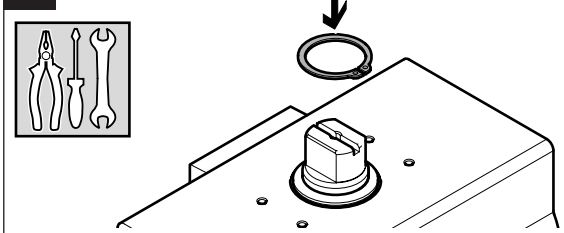
10d DFPD-...-180°-L/R



11

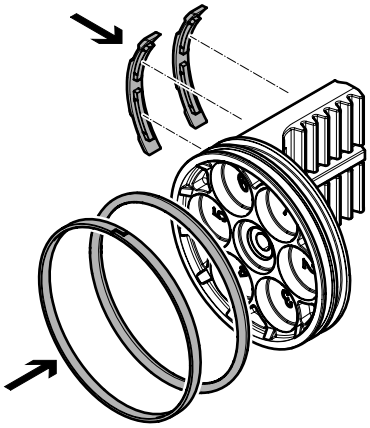


12

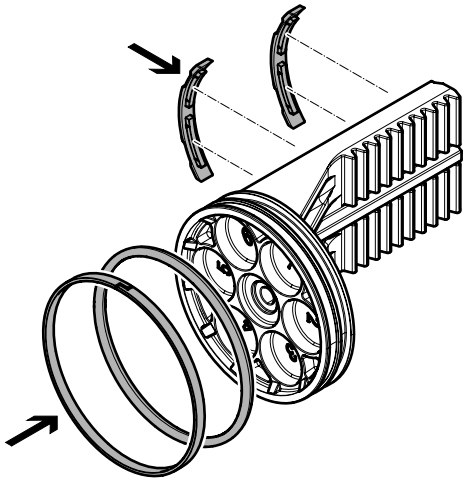


13

DFPD-...-90°

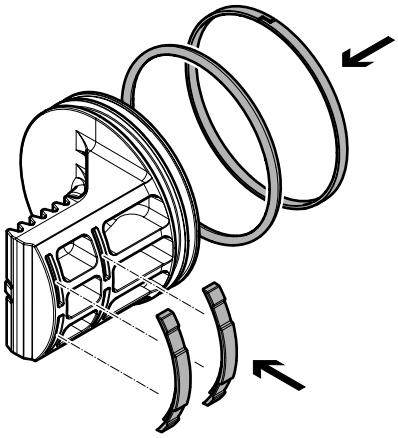


DFPD-...-120°/135°/180°

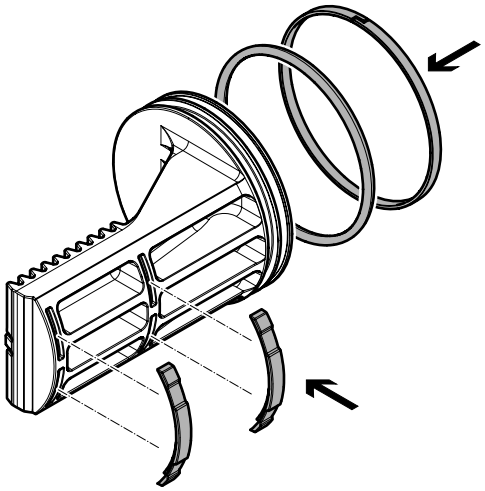


14

DFPD-...-90°

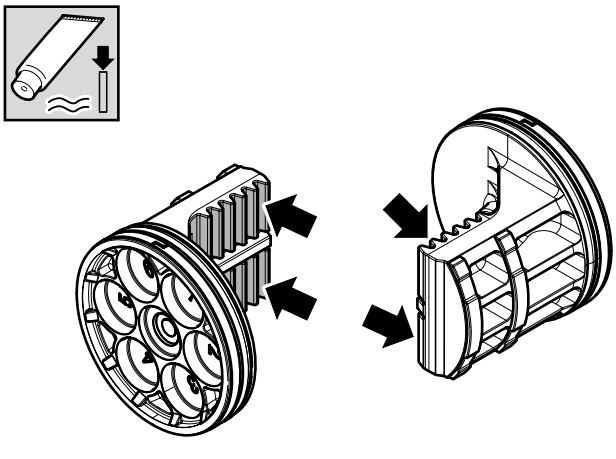


DFPD-...-120°/135°/180°

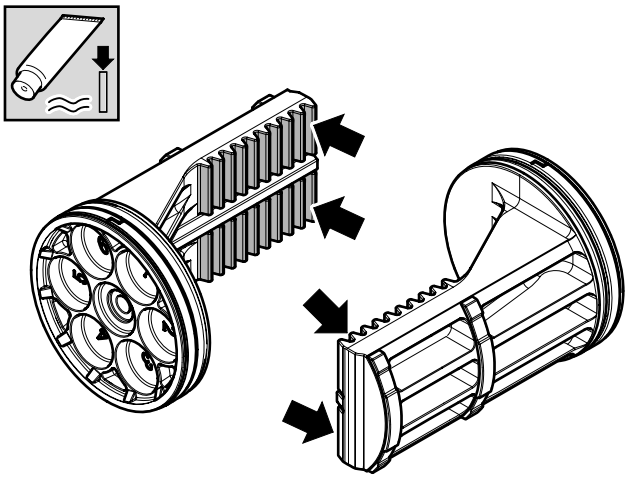


15

DFPD-...-90°

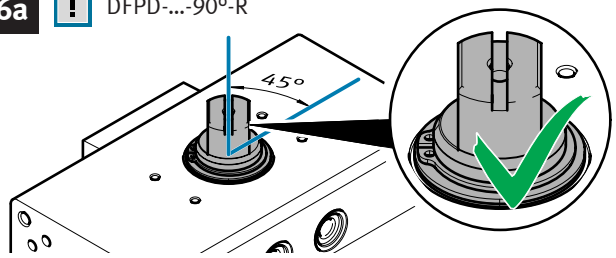


DFPD-...-120°/135°/180°

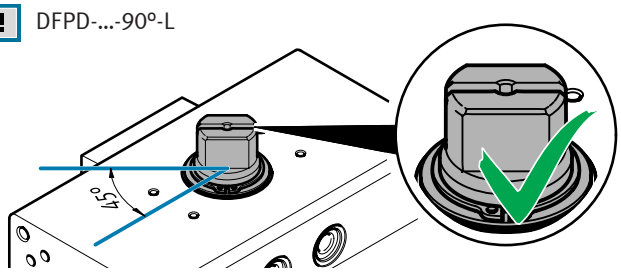


16a

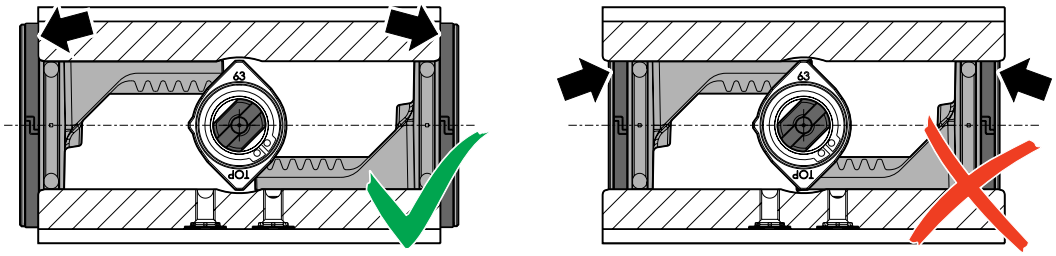
DFPD-...-90°-R



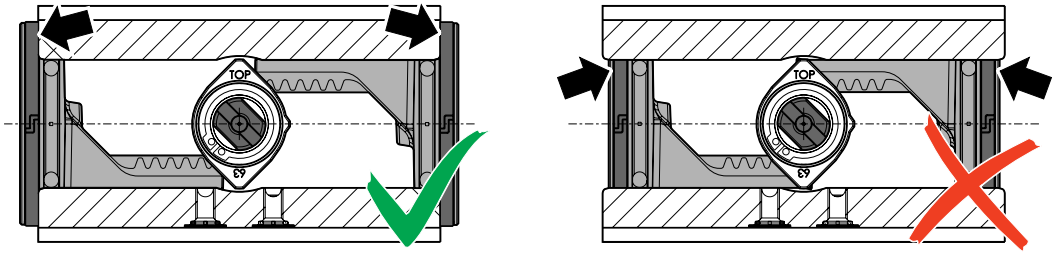
DFPD-...-90°-L



DFPD-...-90°-R

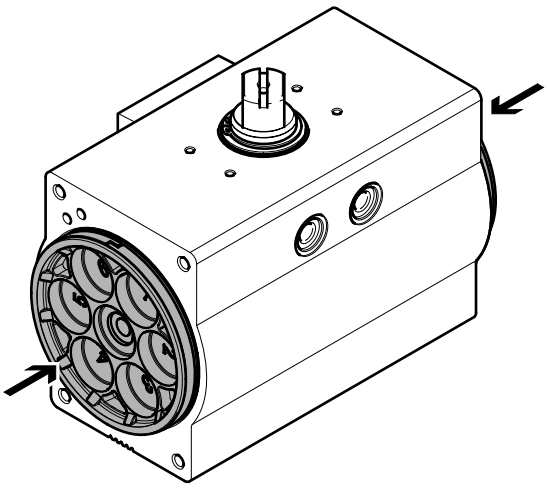


DFPD-...-90°-L

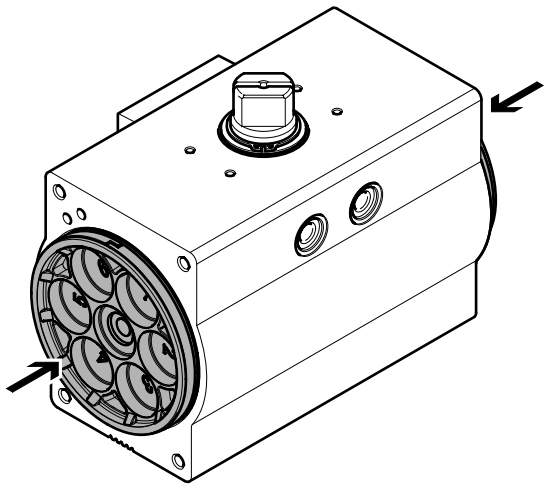


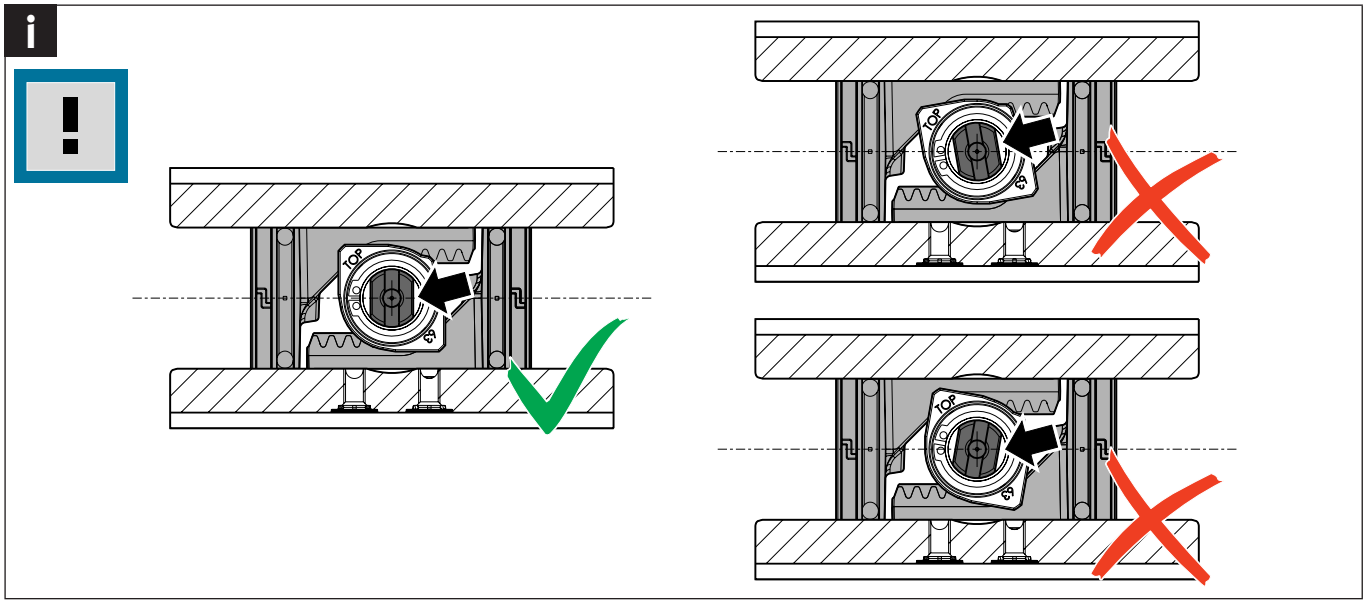
17a

DFPD-...-90°-R

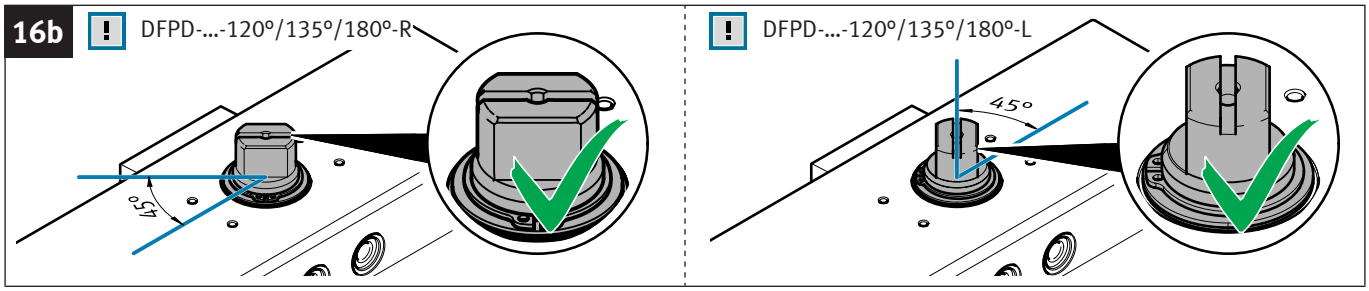


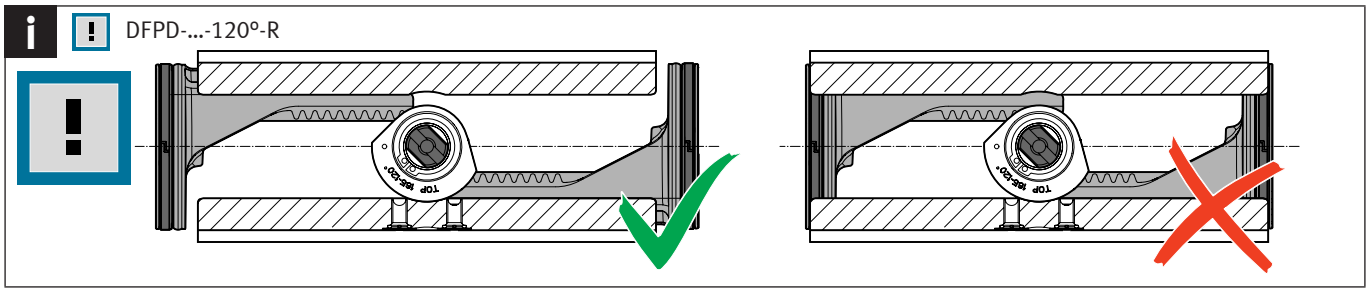
DFPD-...-90°-L

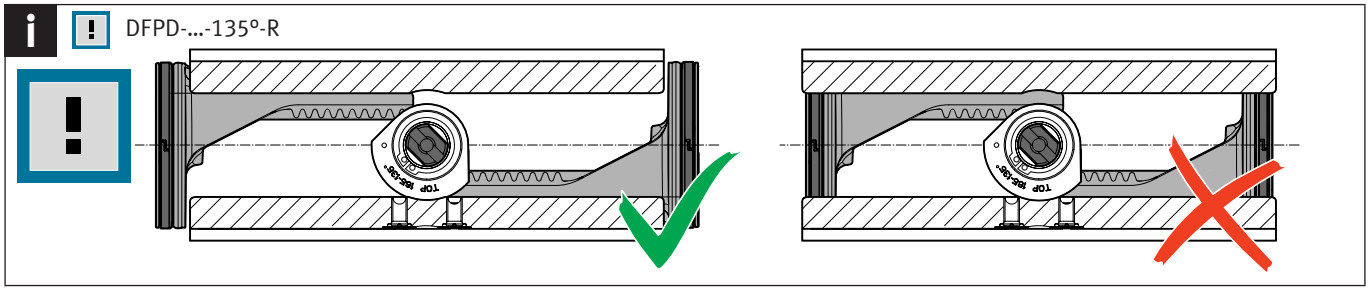


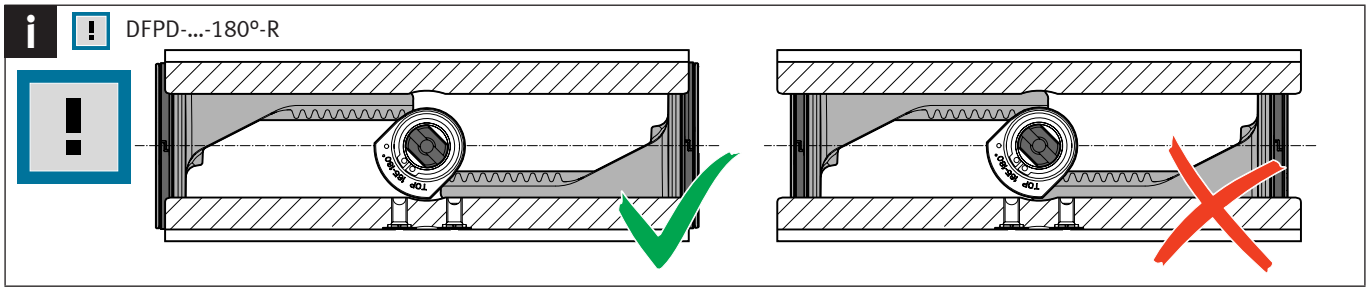

TOP
45°

16b

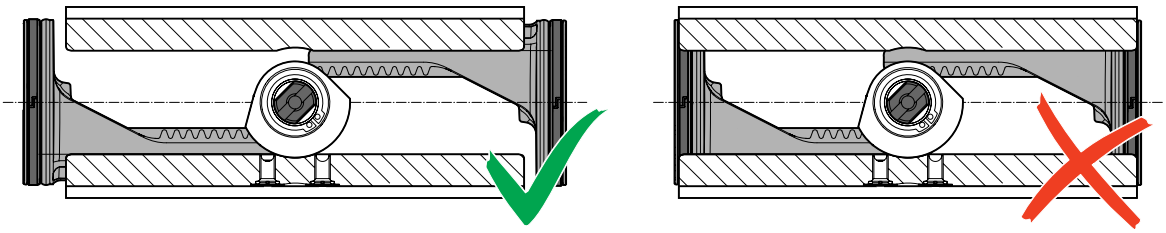

DFPD-...-120°/135°/180°-R
45°
DFPD-...-120°/135°/180°-L
45°


DFPD-...-120°-R

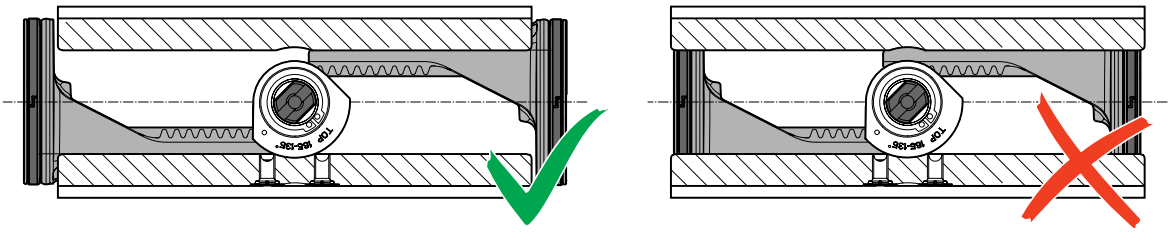

DFPD-...-135°-R


DFPD-...-180°-R

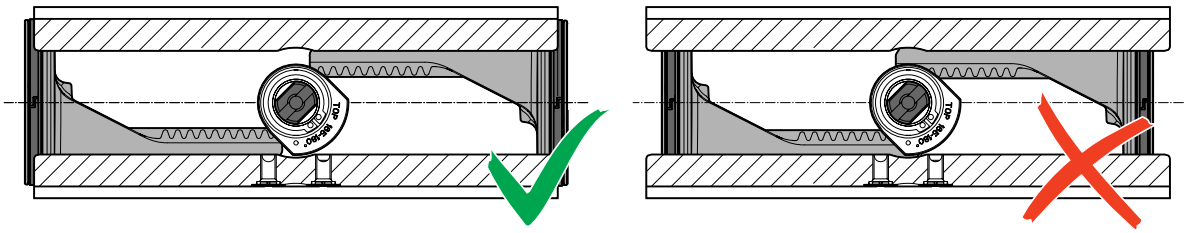
i DFPD-...-120°-L



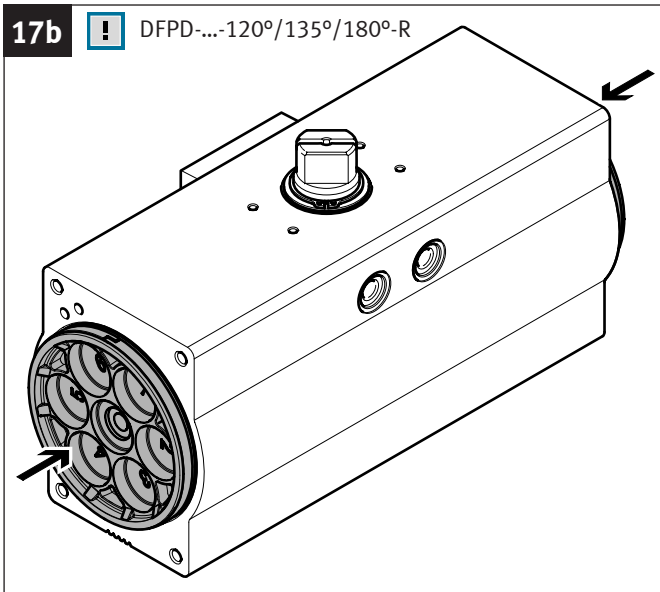
i DFPD-...-135°-L



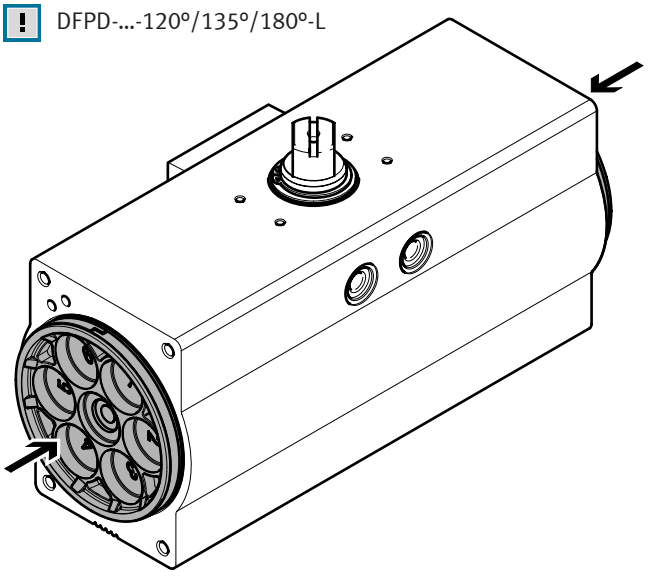
i DFPD-...-180°-L



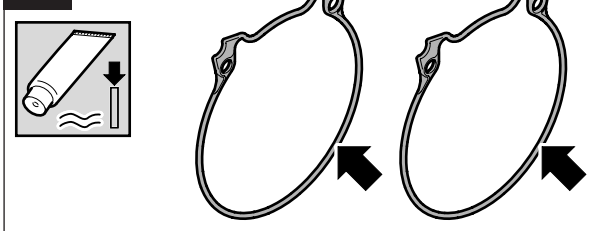
17b DFPD-...-120°/135°/180°-R



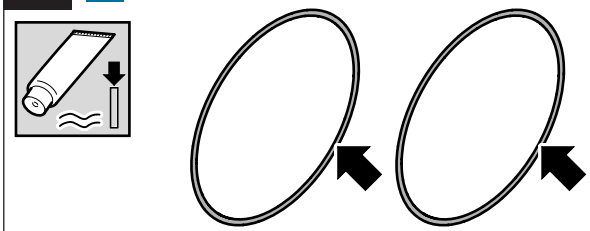
DFPD-...-120°/135°/180°-L



18a

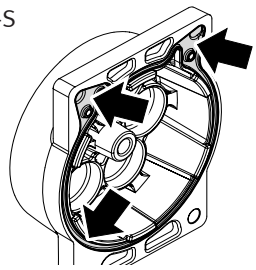


18b DFPD-700/900/1200/2300



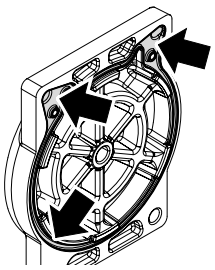
19a DFPD-...-S





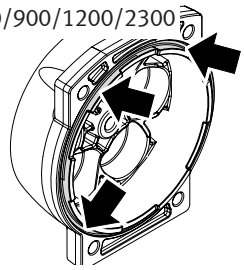
DFPD-...-D



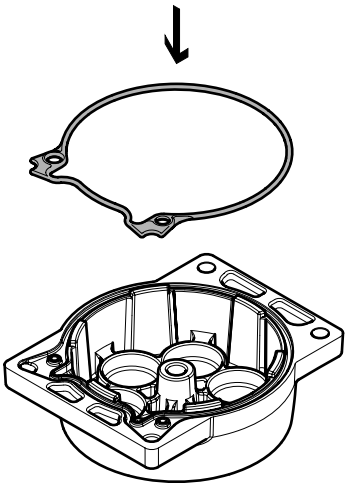


19b DFPD-700/900/1200/2300

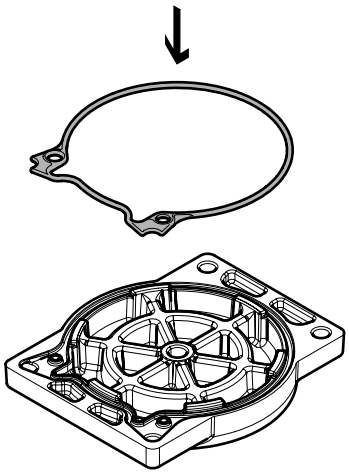




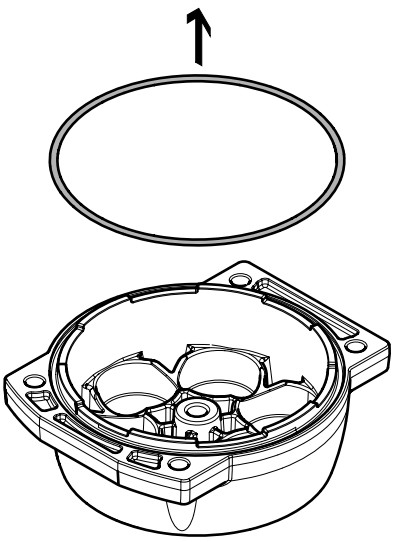
20a DFPD-...-S



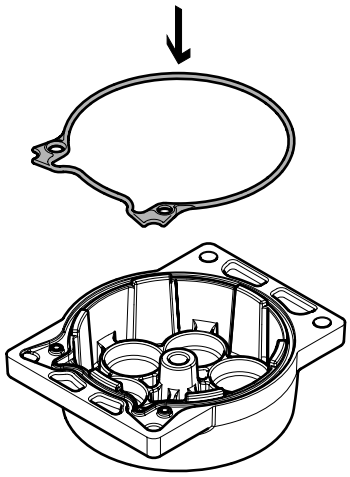
DFPD-...-D



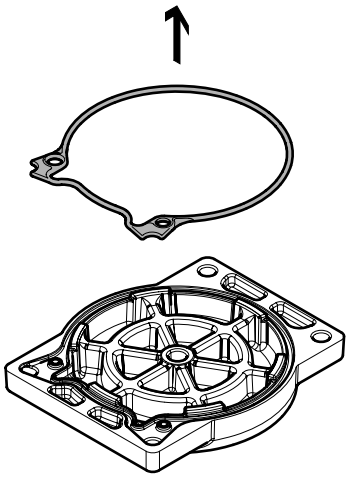
20b DFPD-700/900/1200/2300...-D+S



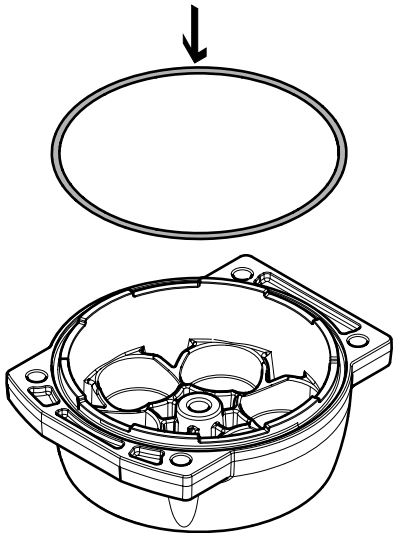
21a DFPD-...-S



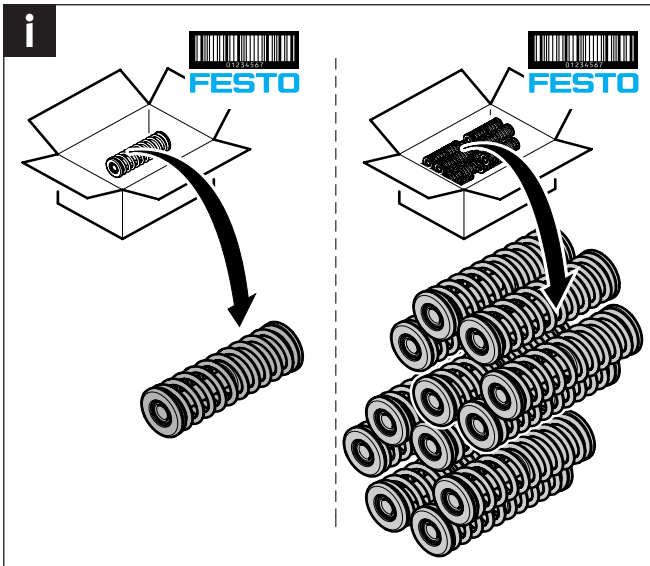
DFPD-...-D



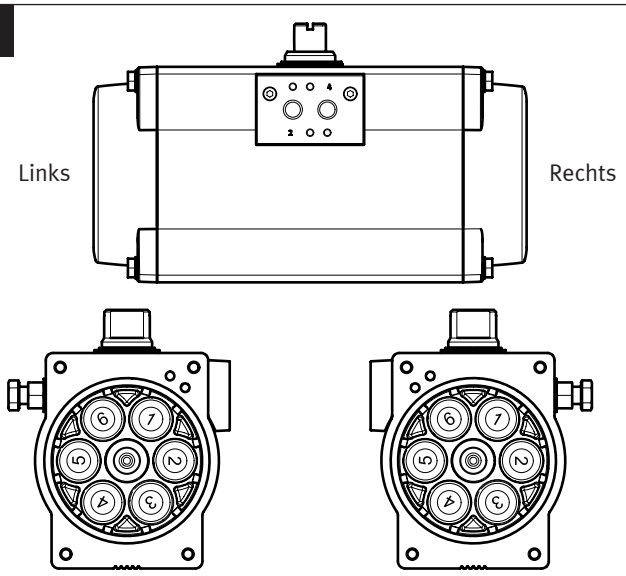
21b DFPD-700/900/1200/2300...-D+S



i



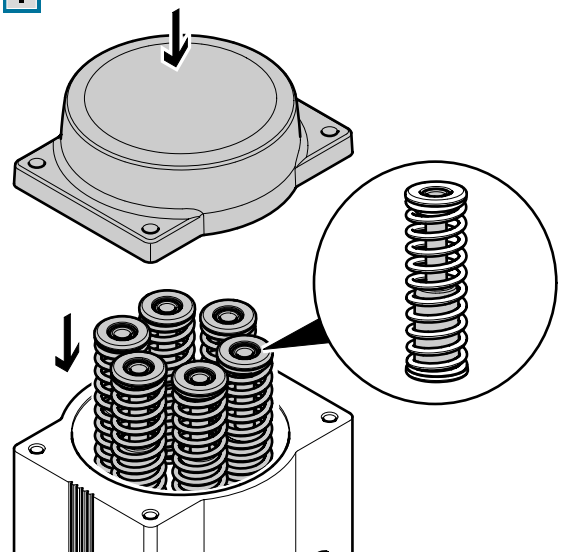
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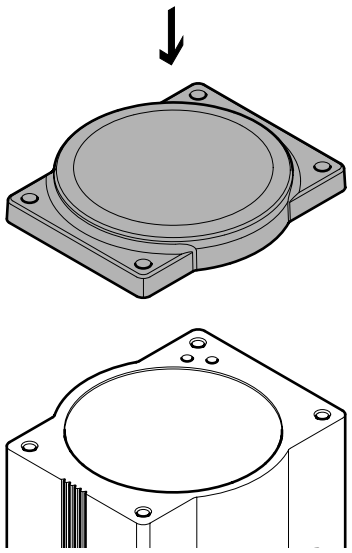
Type code	Positioning springs		Number of springs
	Left	Right	
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25	2-5	2-4-6	5
30	2-4-6	2-4-6	6
35	2-4-6	1-3-4-6	7
40	1-3-4-6	1-3-4-6	8
45	1-3-4-6	1-3-4-5-6	9
50	1-3-4-5-6	1-3-4-5-6	10
55	1-3-4-5-6	1-2-3-4-5-6	11
60	1-2-3-4-5-6	1-2-3-4-5-6	12

22a

DFPD-...-S

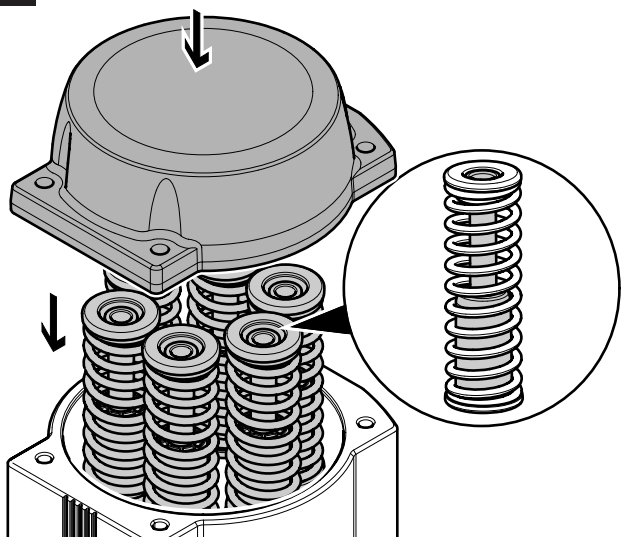


DFPD-...-D

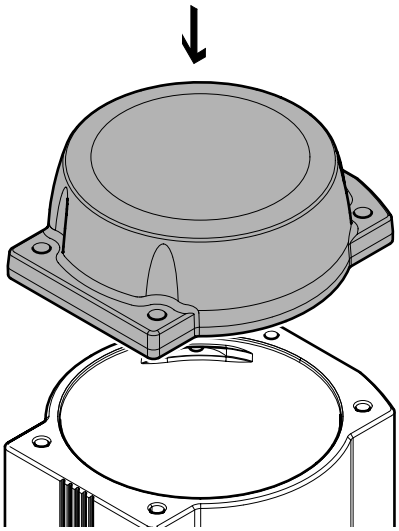


22b

DFPD-700/900/1200/2300...-S

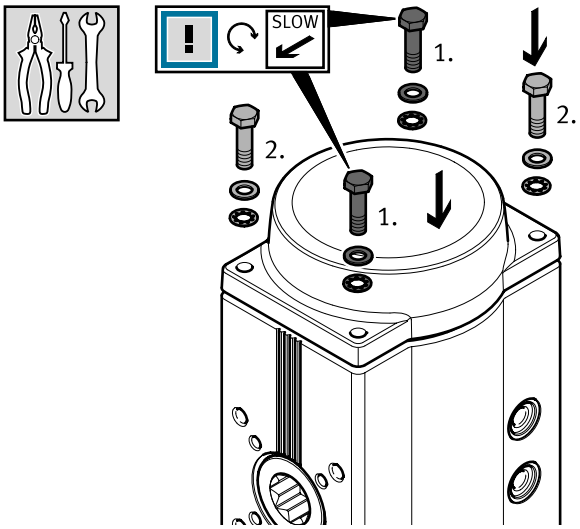


DFPD-700/900/1200/2300...-D

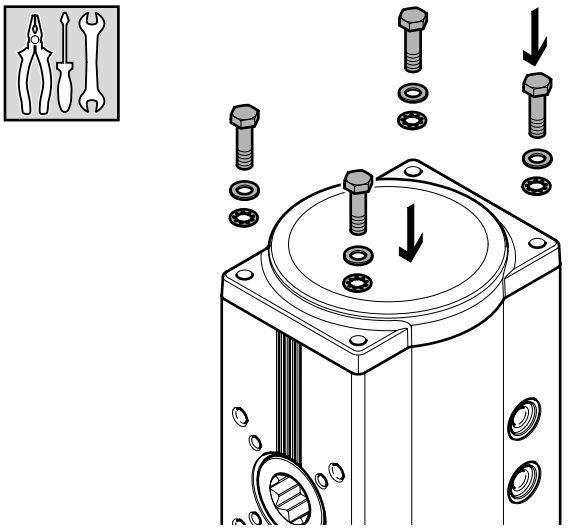


23a

DFPD-...-S

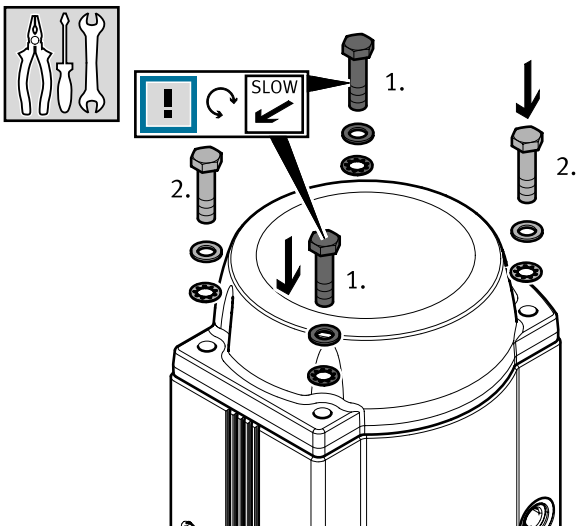


DFPD-...-D

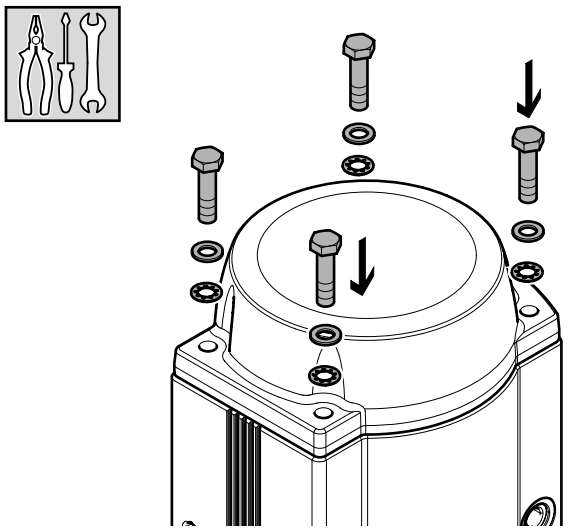


23b

DFPD-700/900/1200/2300...-S



DFPD-700/900/1200/2300...-D

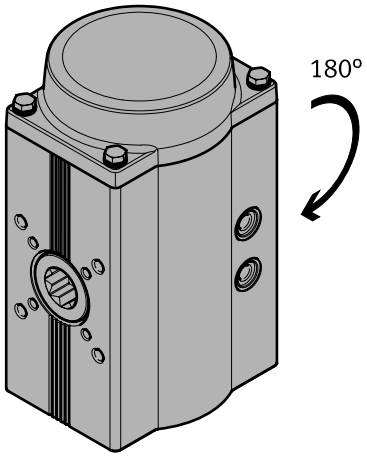


i

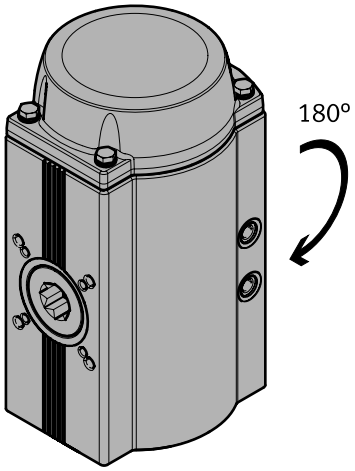
	Nm
DFPD-10	3–4 Nm
DFPD-20	3–4 Nm
DFPD-40	10–11 Nm
DFPD-80	10–11 Nm
DFPD-120	22–25 Nm
DFPD-160	22–25 Nm
DFPD-240	22–25 Nm
DFPD-300	38–43 Nm
DFPD-480	38–43 Nm
DFPD-700	38–43 Nm
DFPD-900	60–70 Nm
DFPD-1200	70–80 Nm
DFPD-2300	115–125 Nm

24

DFPD-...

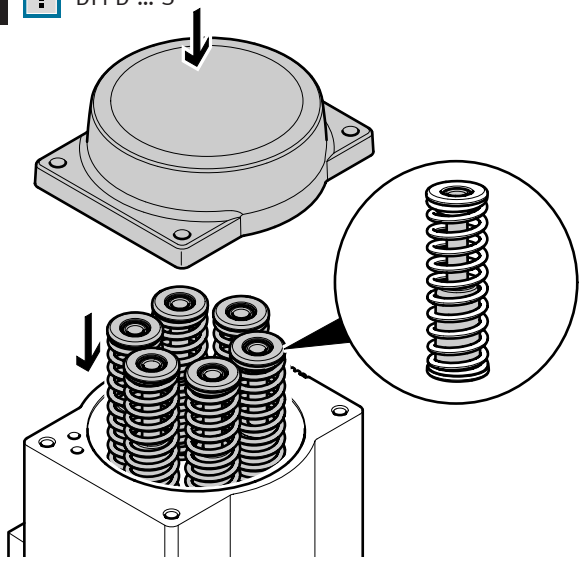


DFPD-700/900/1200/2300...

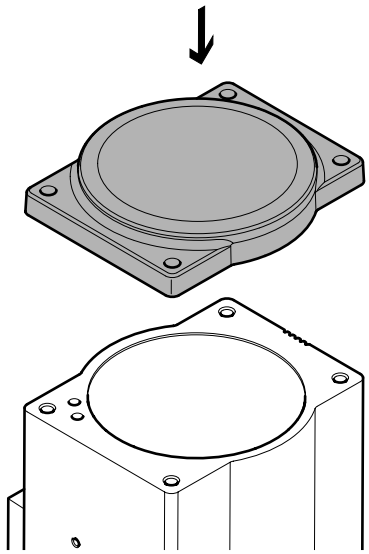


25a

DFPD-...-S

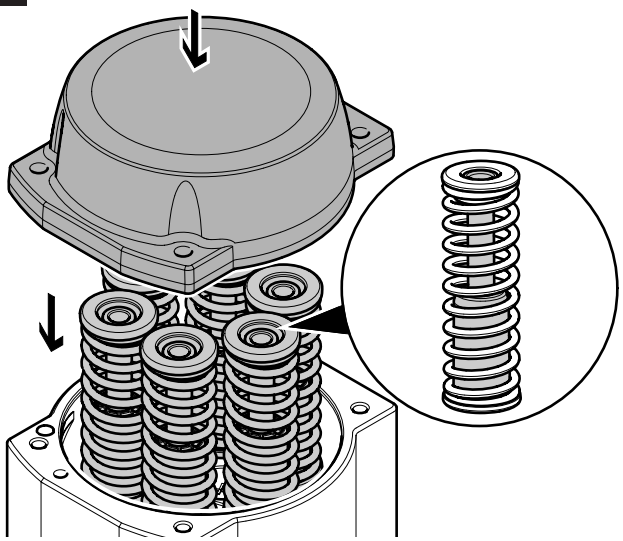


DFPD-...-D

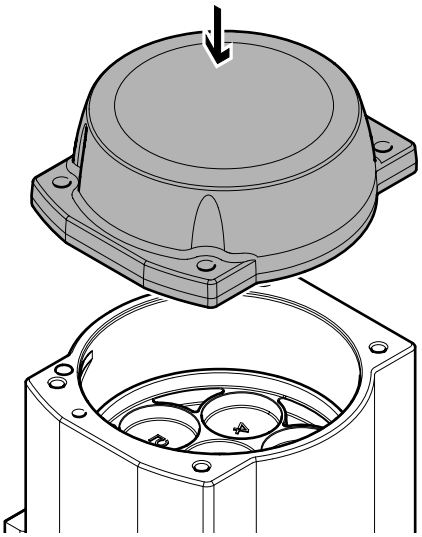


25b

DFPD-700/900/1200/2300...-S

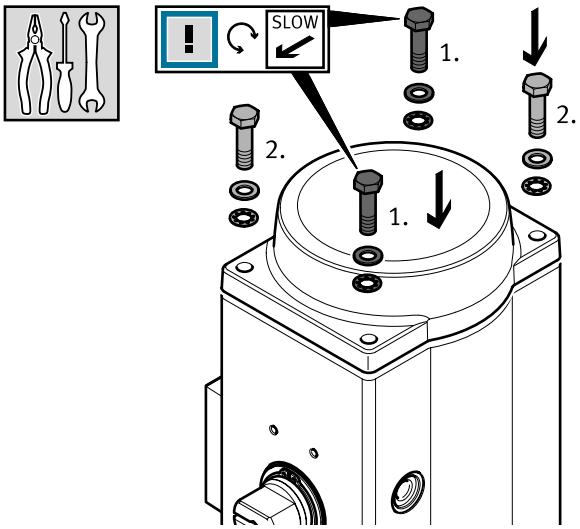


DFPD-700/900/1200/2300...-D

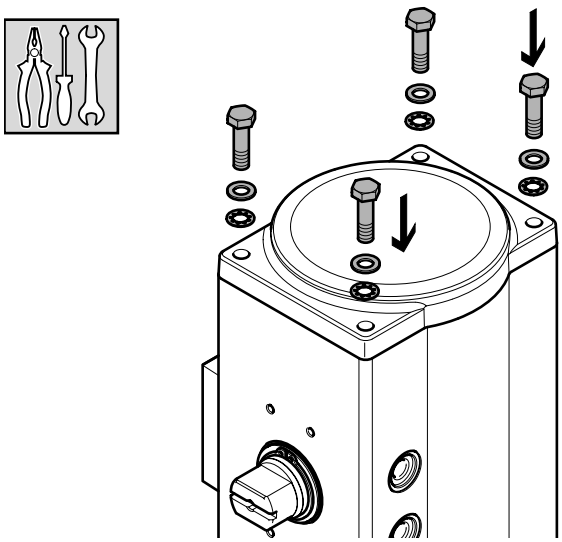


26a

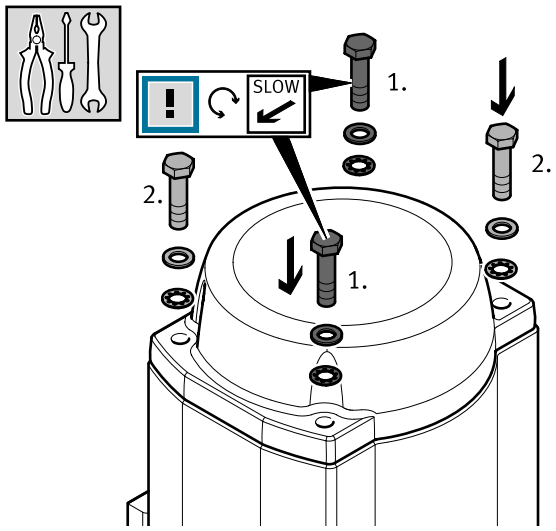
DFPD-...-S



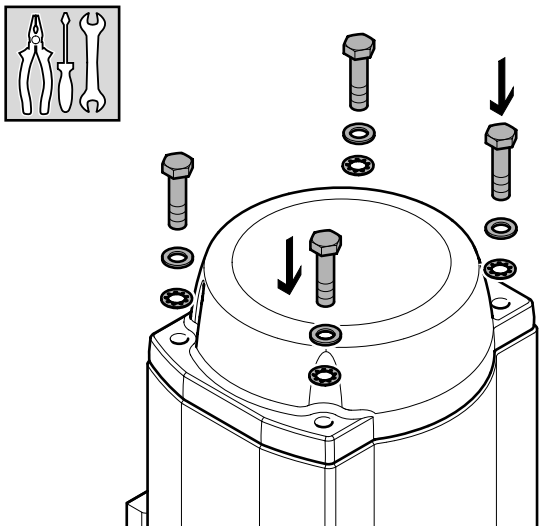
DFPD-...-D



26b DFPD-700/900/1200/2300...-S



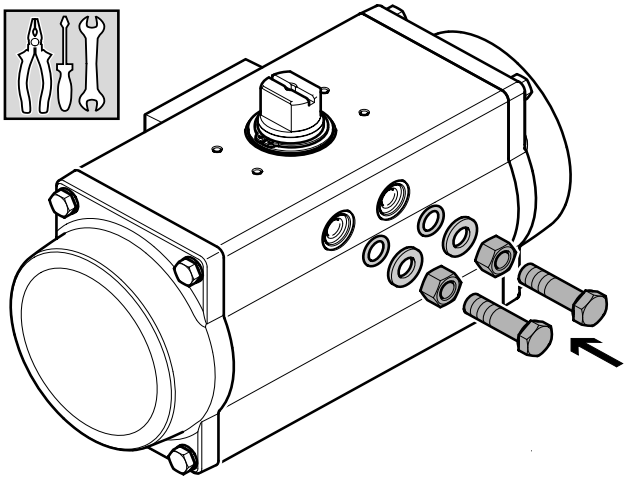
DFPD-700/900/1200/2300...-D



i

	Nm
DFPD-10	3–4 Nm
DFPD-20	3–4 Nm
DFPD-40	10–11 Nm
DFPD-80	10–11 Nm
DFPD-120	22–25 Nm
DFPD-160	22–25 Nm
DFPD-240	22–25 Nm
DFPD-300	38–43 Nm
DFPD-480	38–43 Nm
DFPD-700	38–43 Nm
DFPD-900	60–70 Nm
DFPD-1200	70–80 Nm
DFPD-2300	115–125 Nm

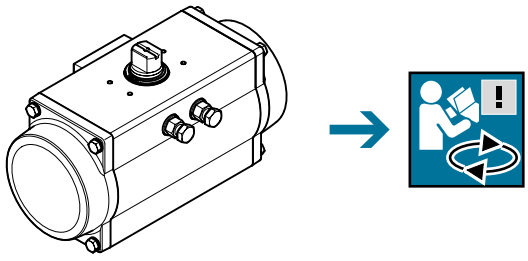
27



	Nm
DFPD-10	10–11 Nm
DFPD-20	10–11 Nm
DFPD-40	10–11 Nm
DFPD-80	22–25 Nm
DFPD-120	22–25 Nm
DFPD-160	38–43 Nm
DFPD-240	65–70 Nm
DFPD-300	65–70 Nm
DFPD-480	85–90 Nm
DFPD-700	85–90 Nm
DFPD-900	175–180 Nm
DFPD-1200	175–180 Nm
DFPD-2300	345–355 Nm

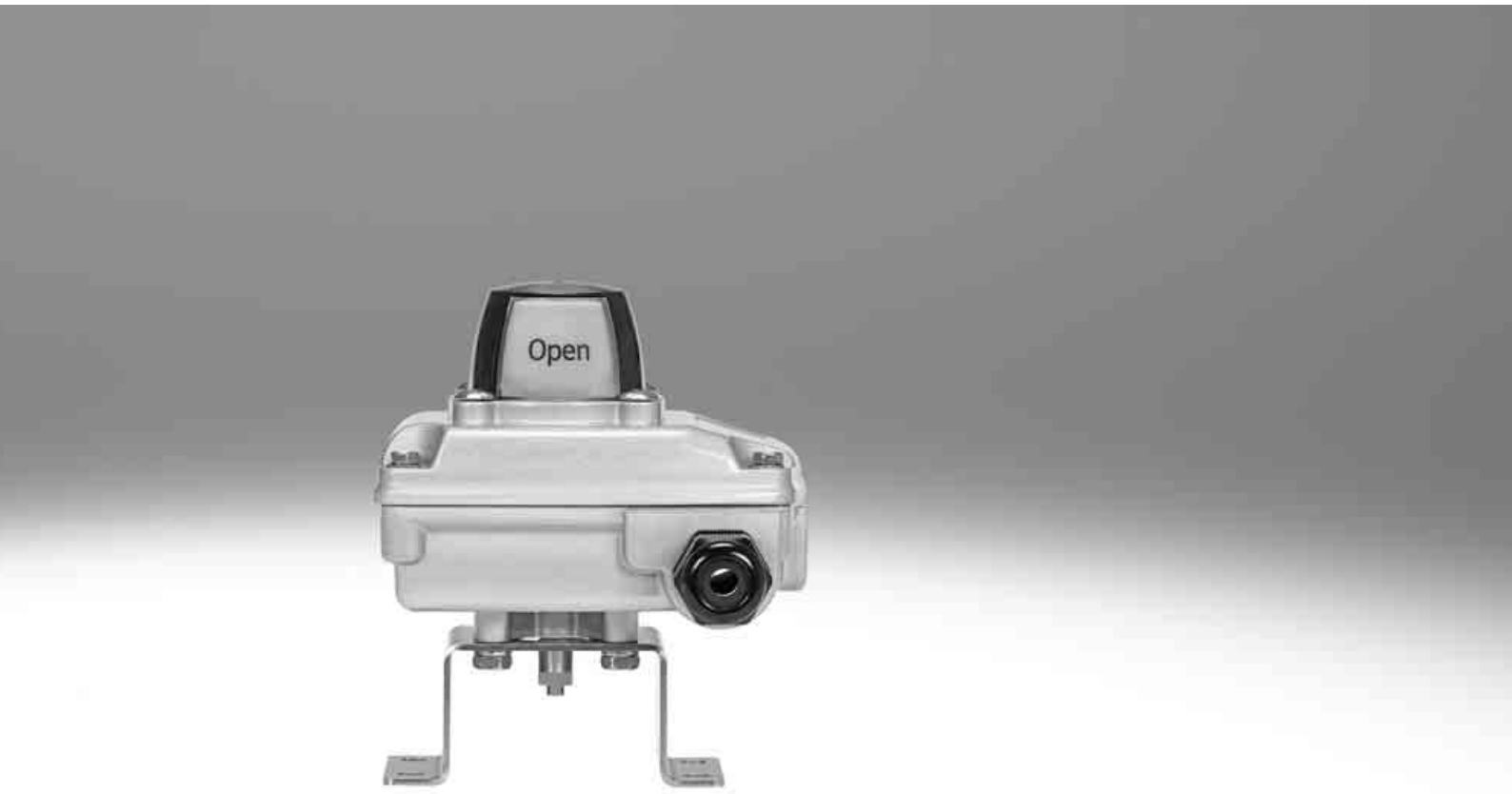
5 Start-up

1



Sensor boxes SRBC

FESTO



New

Sensor boxes SRBC

Key features and product range overview

FESTO

Function

Sensor boxes SRBC are used for electrical feedback and control of the position of process valves actuated using pneumatic quarter turn actuators. They can be mounted quickly and easily on quarter turn actuators with a hole pattern to VDI/VDE 3845 using mounting adapters. The sturdy design of the sensor box SRBC is ideal for the harsh conditions in process automation.

Innovative

- Pre-assembled mounting adapter for ease of installation
- The trip cams can be set easily without additional tools
- Sturdy, corrosion-resistant design, ideal for use in harsh operating conditions
- Clearly visible 3D position indicator allows rapid detection of the current position of the quarter turn actuator

Flexible

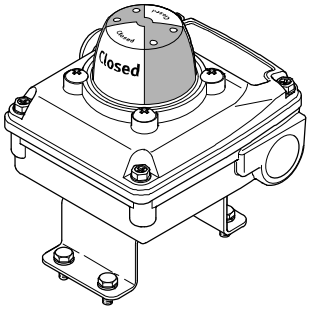
- Weather-tight housing for outdoor applications too
- Mechanical, inductive or magnetic switch variants for virtually all ranges of application
- Intrinsically safe variants for use in potentially explosive areas
- Two cable inputs for common power supply for the sensor box and solenoid valve as standard

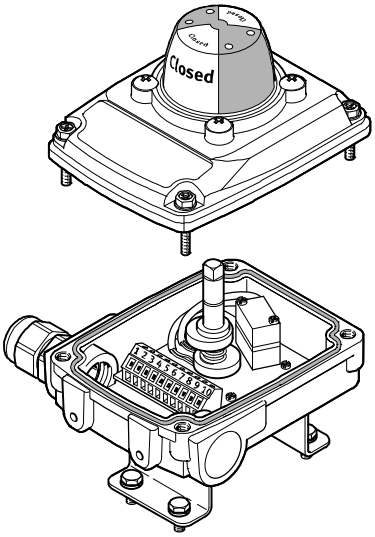
Design

- Sturdy aluminium housing with two cable inputs M20x1.5
- Captive stainless steel screws on the housing cover
- Pre-assembled stainless steel mounting adapter 80x30 H20 for ease of mounting on standard drives as per VDI/VDE 3845
- Cable connector and blanking plug included in the scope of delivery
- 3D OPEN/CLOSED position indicator
- Mechanical, inductive or magnetic switch variants
- Number of switches: 2
- IP67, NEMA 4/4x
- cCSAus Listed, General Purpose
- ATEX ia version
- SIL 2 to IEC 61508

SIL certified according IEC 61508

Product range overview





Measuring principle	Type	Operating voltage range	Switching output	Switching element function
Electromechanical	SRBC-...-MW-22A-1W-	0...250 V AC 0...30 V DC	Contacting	Toggle switch, single-pole (SPDT)
Magnetic reed	SRBC-...-R-2A-1W-	0...120 V AC 0...175 V DC	Contacting	Toggle switch, single-pole (SPDT)
Inductive	SRBC-...-N-20N-ZC-	8.2 V DC	NAMUR	N/C contact
Inductive	SRBC-...-N-20N-ZC-...-EX4	8.2 V DC	NAMUR	N/C contact
Inductive	SRBC-...-N-1-P-	10...30 V DC	PNP	N/O contact
Inductive	SRBC-...-N-1-N-	10...30 V DC	NPN	N/O contact
Inductive	SRBC-...-N-1-ZU-	5...60 V DC	Contactless, 2-wire	N/O contact

Sensor boxes SRBC

Type codes SRBC

FESTO

SRBC	–	C	–	A3	–	YR	–	90	–	N	–	1	–	N	–	C2	–	P20	–	

Type

SRBC	Limit switch attachment

Design

C	Sensor box

Mechanical interface

A3	Mounting adapter, hole pattern 30 x 80 mm, shaft height 20 mm

Display type

YR	Position indicator yellow/red

Measuring range

90	0 ... 90°

Sensor principle

N	Proximity sensors, inductive
R	Reed with contact
MW	Floating contact, changeover switch

Nominal operating voltage

2A	110 V AC, 50-60 Hz
20N	8.2 V DC, NAMUR
22A	250 V AC
1	24 V DC

Electrical output

N	NPN
P	PNP
1W	1-pin toggle switch
ZC	2-wire N/C contact
ZU	2-wire N/O contact

Electrical connection

C2	Screw terminal

Cable connector

P20	M20x1.5, polymer

EU certification

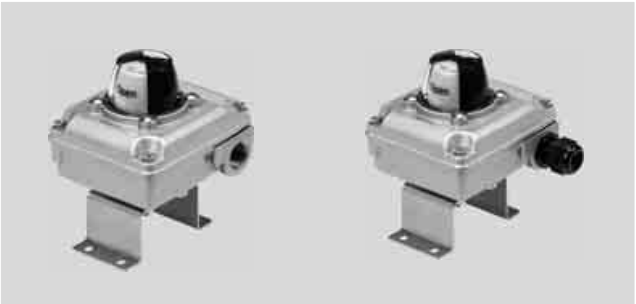
–	None
EX4	II2GD

New

Sensor boxes SRBC, electromechanical and magnetic reed

Technical data

- Measuring principle: electromagnetic or magnetic reed
- Switching element function: toggle switch, single-pole (SPDT)
- For DC and AC voltage
- Pre-assembled mounting adapter 80 x 30 H20
- Cable connector and blanking plug included in the scope of delivery



General technical data			
Type SRBC-...		-MW	-R
Setting range for angle detection	[°]	0 ... 90	
Based on standard		ISO 5211	
		VDI/VDE 3845	
		–	EN 60947-5-2
Type of mounting		On flange to ISO 5211	
		With mounting bracket	

Electrical characteristic data			
Type SRBC-...		-MW	-R
Measuring principle		Mechanical/electrical	Magnetic reed
Switching output		Contacting	
Switching element function		Toggle switch, single-pole	
Operating voltage range Alternating current AC	[V]	0 ... 250	0 ... 120
Max. output current AC	[mA]	3000 (at 250 V)	250 (at 120 V)
Operating voltage range Direct current DC	[V]	0 ... 30	0 ... 175
Max. output current DC	[mA]	3000 (at 30 V)	250 (at 175 V)

Electromechanical components			
Type SRBC-...		-MW	-R
Cable connector		M20x1.5	
Permissible cable diameter	[mm]	5 ... 13	
Electrical connection		10-pin	
		Screw terminal	
Nominal conductor cross section that can be connected	[mm^2]	0.25 ... 2.5	
Information on materials, cable connection		PA	
Information on materials, blanking plug		PA	

Sensor boxes SRBC, electromechanical and magnetic reed

Technical data

Operating and environmental conditions		
Ambient temperature	[°C]	–20 … +80
Storage temperature	[°C]	–20 … +80
Degree of protection		IP67
		NEMA 4/4X
Shock resistance		Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27
Vibration resistance		Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6
CE marking (see declaration of conformity)[1)]		To EU Low Voltage Directive
Approval certificate		c CSA us (OL)
Safety integrity level (SIL)		SIL 2

1) Additional information www.festo.com/sp ➔ Certificates.

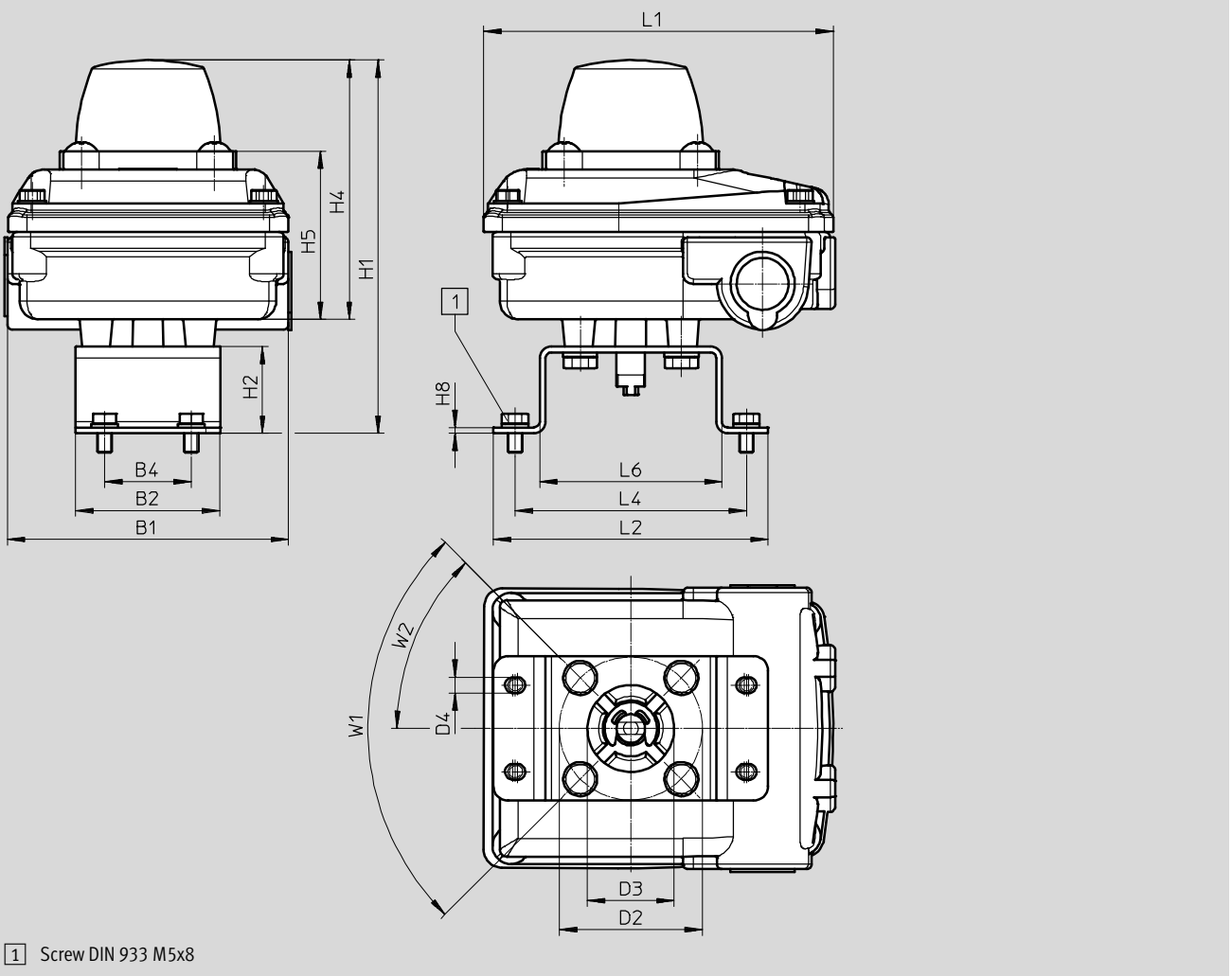
Materials	
Housing	Die-cast aluminium
Shaft	High-alloy stainless steel
Screws	High-alloy stainless steel
Seals	NBR
Pointer	PC
Note on materials	RoHS compliant
	Contains paint-wetting impairment substances

Sensor boxes SRBC, electromechanical and magnetic reed

Technical data

Dimensions Download CAD data ➔ **www.festo.com**

SRBC



1 Screw DIN 933 M5x8

Type	B1	B2	B4	D2 ∅	D3 ∅	D4 ∅	H1	H2	H4
With DARQ-K-X1-A1-F05-20-R1	98	50	30	50	30	5.5	129	30	90
With DARQ-K-X1-A1-F05-30-R1							139	40	

Type	H5	H8	L1	L2	L4	L6	W1	W2
With DARQ-K-X1-A1-F05-20-R1	58.2	2	120	95	80	63	90°	45°
With DARQ-K-X1-A1-F05-30-R1								

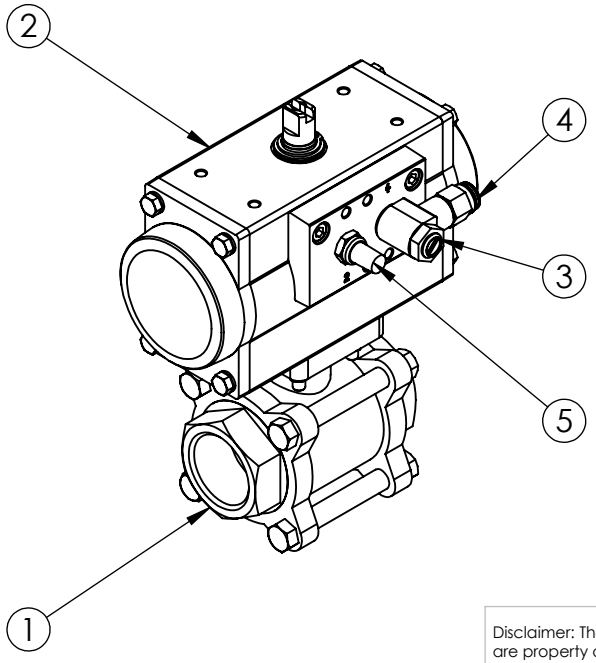
Description :
CHANNEL WASH WATER VALVE
C.F.F. STAINLESS STEELS
DFPD-20-RP-90-RS30-F04
Ø1", NPT

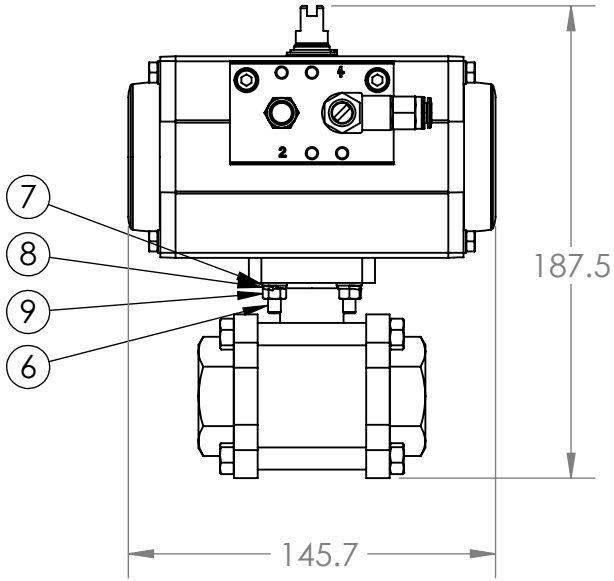
Trade Name :
Festo

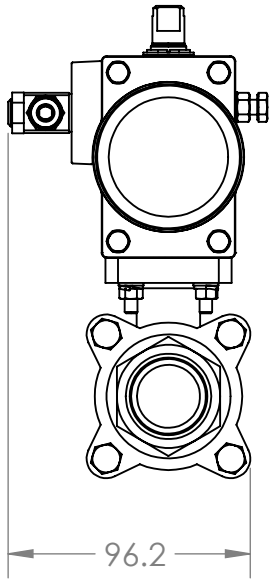
Model no :
13117333

ITEM NO.	PartNo	DESCRIPTION	QTY.
1	13055447	VAPB-1"-3PC-2WAY-NPT - Ball valve	1
2	8047621	DFPD-20-RP-90-RS30-F04 - Single Acting Quarter Turn Actuator	1
3	151165	GRLA-1/8-B - One-way Flow control valve	1
4	533216	QB-1/8-1/4-U-M - Push-in Fitting	1
5	1205860	AMTE-M-LH-G18 - Silencer	1
6	13063293	HSSS - M5X30	4
7	13063297	FLAT WASHER - M5	4
8	13063299	LOCK WASHER - M5	4
9	13063295	HEX NUT - M5	4

REV.	DESCRIPTION	DATE







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	NAME	DATE
DRAWN	YUN	2016-10-03
ENG APPR.	MZA	2016-10-03

MATERIAL

FINISH

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN MILLIMETERS

TOLERANCES:
x = ±1
x.x = ±0.1
x.xx = ±0.01
ANGLES = ±1°

FESTO
5300 Explorer Drive, Mississauga ON L4W 5G4
TEL: (905) 624-9000 FAX: (905) 624-9001

FILE NAME: VABP-1-DFPD-20-CS (13117333, FOURNIER)

TITLE:
VABP-1-DFPD-20-CS (13117333, FOURNIER)

DWG. NO. 13117333

REV

SCALE: 1:3

SHEET 1 OF 1

5 4 3 2 1

C.F.F. Stainless Steels Inc.

Your North American Stainless Steel Partner

SS-3DM 316 BALL VALVE



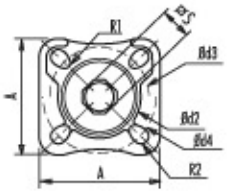
- Three Piece Body
- Full Port
- Screwed Socket-Weld or Butt-Weld Ends
- Blowout Proof Stem
- ISO 5211 Direct Mounting Pad
- Anti-Static Device
- Threads to ANSI B1.20.1 (NPT)



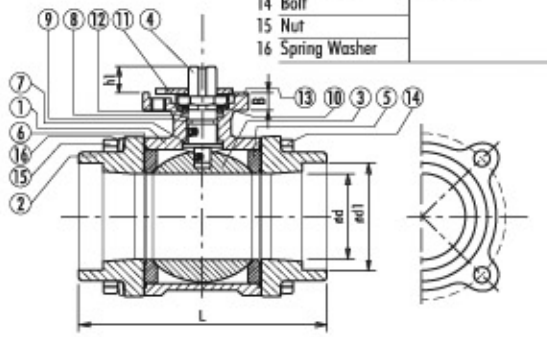
DIMENSIONS

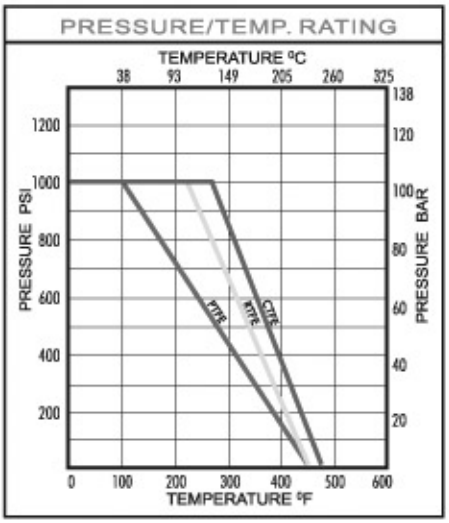
	NPS	d	L	ISO 5211	A	B	S	h1	d1	d2	d3	d4	R1	R2	Torque in-lb Action	Torque in-lb Breakaway	Weight LB
1000 WOG	¼	0.31	2.17	F03/F04	1.65	0.24	0.35	0.31	0.55	1.22	1.42	1.65	0.11	0.11	30	45	1.2
	⅜	0.39	2.36						0.69								
	½	0.59	2.95						0.87								
	¾	0.79	3.15					0.35	1.07						55	70	1.7
	1	0.98	3.54	F04/F05	1.97	0.3	0.43	0.39	1.36	1.4	1.65	1.97	0.11	0.14	65	80	2.3
	1¼	1.26	4.32					0.43	1.70						95	120	4
	1½	1.5	4.7	F05/F07	2.76	0.33	0.55	0.55	1.92	2.2	1.97	2.76	0.14	0.18	100	180	5.4
	2	1.97	5.51						2.41						140	250	8.6

Design and materials are subject to change without notice.



NAME/MATERIAL		Stainless Steel
1	Body	ASTM A351 CF8M/1.4408
2	Cap	
3	Ball	ASTM A351-CF8M/1.4408
4	Stem	ASTM A276-316
5	Ball Seat	PTFE/RTFE/CTFE
6	Gasket	
7	Thrust Washer	PTFE
8	Packing	
9	O Ring	VITON
10	Belleville Washer	50CrV4
11	Stopper (Lock Pad)	
12	Gland Ring	
13	Lock Device	AISI 304
14	Bolt	
15	Nut	
16	Spring Washer	





Hamilton, Ontario
1840 Burlington St. E.
Hamilton, ON L8H 3L4
Telephone: 905-549-2603
Toll Free: 1-800-263-4511
Fax: 905-549-2994

Kingston, Ontario
11 Harvey St.
Kingston, ON K7K 5C1
Telephone: 613-549-4442
Toll Free: 866-549-4442
Fax: 613-549-4462

Montreal, Quebec
4900 Chemin du Bois Franc
St. Laurent, Quebec
H4S 1A7
Telephone: 514-337-7700
Toll Free: 1-800-361-3379
Fax: 514-337-1595

Quarter turn actuators DFPD

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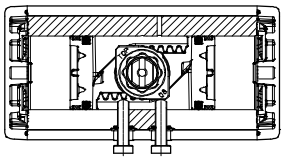
New

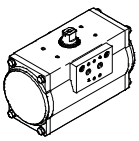
Quarter turn actuators DFPD

Key features

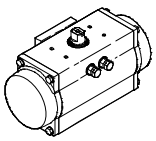
Function

The DFPD series features a rack and pinion combination with a constant torque characteristic across the entire swivel range. The torque range is from 10 to 480 Nm. Quarter turn actuators DFPD are suitable for automating butterfly valves, ball valves and air dampers. They are also suitable for water/wastewater, beverage, pharmaceutical and process automation. The modular and compact design of the DFPD allows various spring configurations as a suitable solution for different applications.





DFPD-...-D
double-acting



DFPD-...-S
single-acting

Types of connection

- Port pattern to NAMUR VDI/VDE 3845 for mounting solenoid valves, position sensors and positioners
- Standard connection to the process valve to ISO 5211

Variants

High temperature
DFPD-...-T4

- Seals made of FKM and plain bearings made of PPS
- For applications up to +150 °C
- II 2G c T3 X
  II 2D c 175°C X
  0°C <= Ta <= +150°C

Low temperature
DFPD-...-T6

- Seals made of FVMQ for applications down to −50 °C
- II 2G c T6 X
  II 2D c 85°C X
  −50°C <= Ta <= +60°C

Closes to the left and right
DFPD-...-R/L

- The modular system offers the option of closing to the left. This is done by turning the pistons

Spring configuration
DFPD-...-S

- The spring index can be adapted to the system's supply pressure in increments of 0.5 bar through free selection of the number of spring cartridges (4 to 12)

Epoxy coating
DFPD-...-EP

- Drive with epoxy coating

Stainless steel shaft
DFPD-...-R3

- With stainless steel shaft

NPT version
DFPD-...-N

- Pneumatic connections with NPT threads

180° version
DFPD-...-180

- Sizes 40, 120, 240, 480 double-acting also available with 180° swivel angle

Size	Flange pattern	Shaft connection	Shaft connection depth [mm]	Pneumatic connection
10	F03	V9	10.7	G1/8
	F04			NPT1/8
20	F04	V11	13.2	G1/8
	F05			NPT1/8
40	F05, F07	V14	16.5	G1/8
				NPT1/8
80	F05, F07	V17	19.3	G1/8
				NPT1/8
120	F05, F07	V17	19.3	G1/4
				NPT1/4
160	F07, F10	V22	24.3	G1/4
				NPT1/4
240	F07, F10	V22	24.3	G1/4
				NPT1/4
300	F07, F10	V22	24.3	G1/4
				NPT1/4
480	F10, F12	V27	29.5	G1/4
				NPT1/4

Quarter turn actuators DFPD

Type codes

DFPD – [ ] – [ ] – 20 – RP – [ ] – 90 – R – S – 30

Type	
DFPD	Quarter turn actuator

System of units	
–	Metric
N	Imperial

Version	
–	Standard

Torque	
10	10 Nm
20	20 Nm
40	40 Nm
80	80 Nm
120	120 Nm
160	160 Nm
240	240 Nm
300	300 Nm
480	480 Nm

Design	
RP	Rack and pinion

Yoke type	
–	None

Swivel angle	
90	90°
180	180°

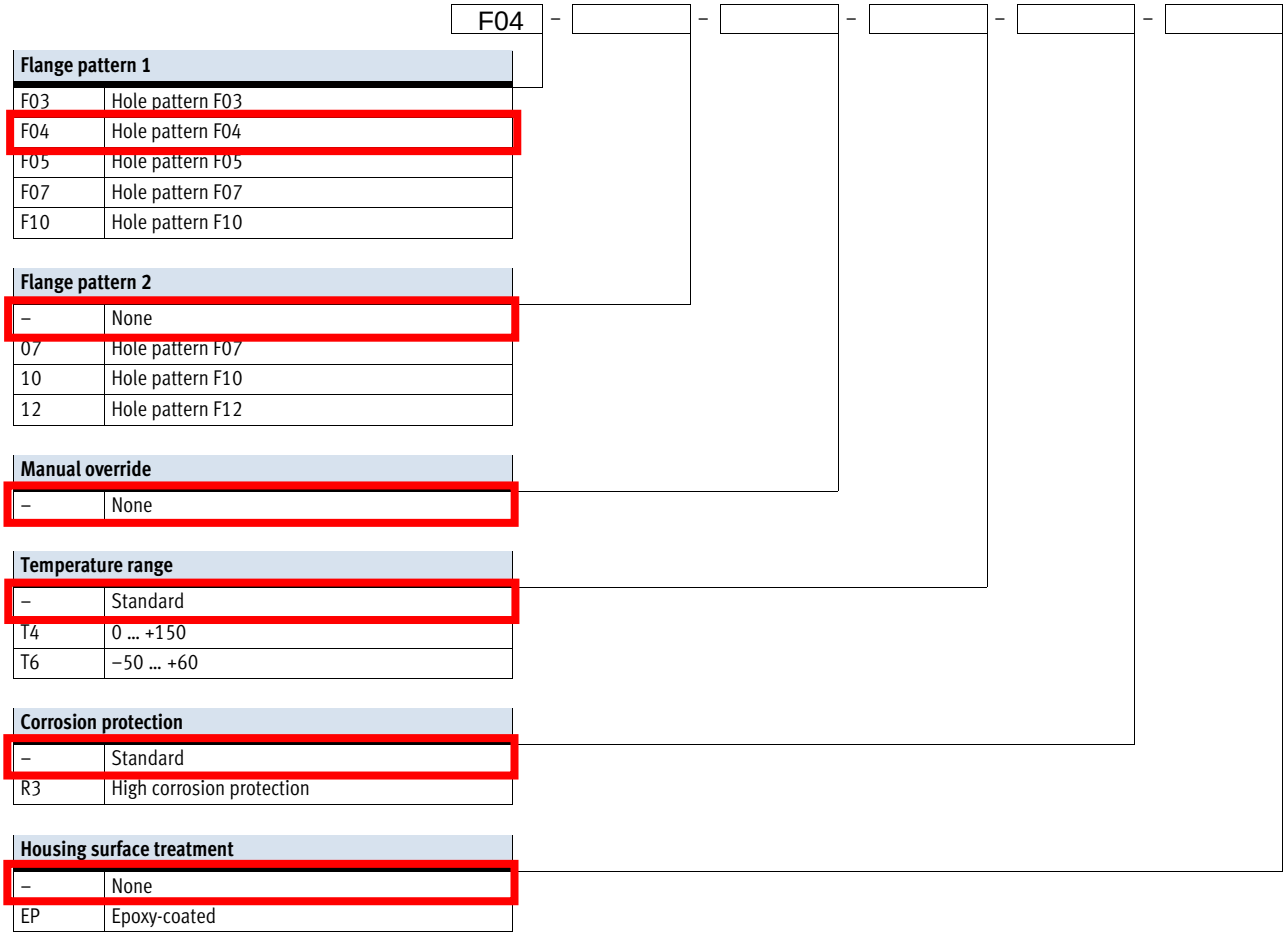
Swivel direction	
L	To the left
R	To the right

Function	
D	Double-acting
S	Single-acting

Spring configuration	
–	None
20	For connection pressure 2 bar
25	For connection pressure 2.5 bar
30	For connection pressure 3 bar
35	For connection pressure 3.5 bar
40	For connection pressure 4 bar
45	For connection pressure 4.5 bar
50	For connection pressure 5 bar
55	For connection pressure 5.5 bar
60	For connection pressure 6 bar

Quarter turn actuators DFPD

Type codes



Flange pattern 1	
F03	Hole pattern F03
F04	Hole pattern F04
F05	Hole pattern F05
F07	Hole pattern F07
F10	Hole pattern F10

Flange pattern 2	
–	None
07	Hole pattern F07
10	Hole pattern F10
12	Hole pattern F12

Manual override	
–	None

Temperature range	
–	Standard
T4	0 … +150
T6	–50 … +60

Corrosion protection	
–	Standard
R3	High corrosion protection

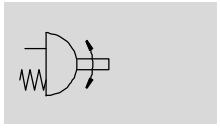
Housing surface treatment	
–	None
EP	Epoxy-coated

Quarter turn actuators DFPD, single-acting

Technical data

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Function



Swivel angel
0 ... 90°



Size
20 ... 480

Torque
7 ... 156 Nm

General technical data									
Size	20		40	80	120	160	240	300	480
Mode of operation	Single-acting								
Design	Rack and pinion								
Cushioning	No cushioning								
Mounting position	Any								
Pneumatic connection	G1/8				G1/4				
	NPT1/8				NPT1/4				
Connection to process valve as per standard	ISO 5211								
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)								
Connection for positioner and position sensor conforms to standard	VDI/VDE 3845 (NAMUR)								
Flange hole pattern	F04	F05	F05, F07			F07, F10			F10, F12
Swivel angle [°]	90								
End-position adjusting range at 0° [°]	−5 ... +5								
End-position adjusting range at 90° [°]	−5 ... +5								
Position sensing	Visual								
Closing direction	Closes to the right								

Quarter turn actuators DFPD, single-acting

Technical data

Operating and environmental conditions			
Variant		RS30	RS60
Operating pressure	[bar]	2 ... 8	
Nominal operating pressure	[bar]	3	6
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on operating/pilot medium		Pressure dew point 10°C below ambient temperature/temperature of medium	
		Lubricated operation possible (in which case lubricated operation will always be required)	
Ambient temperature	[°C]	–20 ... +80	
CE marking (see declaration of conformity) ➔ www.festo.com		To EC Machinery Directive	
		To EU Explosion Protection Directive (ATEX)	
ATEX category for gas		II 2G	
Explosion ignition protection type for gas		c T4 X	
ATEX category for dust		II 2D	
Explosion ignition protection type for dust		c 105°C X	
Explosion-proof temperature rating	[°C]	–20 <= Ta <= +80	

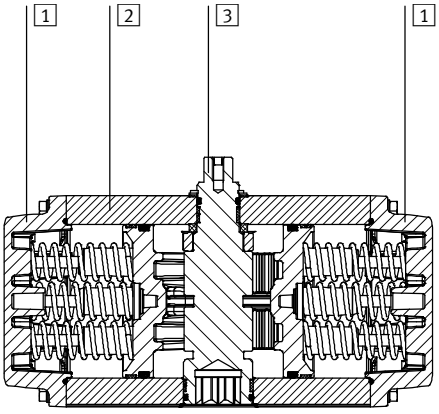
Quarter turn actuators DFPD, single-acting

Technical data

FESTO

Materials

Sectional view



Quarter turn actuators				Basic material number
1	Cap		Coated die-cast aluminium	EN AC-46100-D
2	Housing		Anodised wrought aluminium alloy	EN AW-6063-T6
3	Shaft		Nickel-plated steel	1.0715
		R3	High-alloy stainless steel	1.4305
–	Mounting plate		Anodised wrought aluminium alloy	EN AW-6063-T6
	Piston rod		Die-cast aluminium	EN AC-46100-D
	Seals		NBR	–
	Spring		Spring steel	–
	Bearing		POM	–
	Cam		Stainless steel casting	1.4308
	Screws		High-alloy stainless steel	1.4301
	Note on materials		RoHS-compliant	–

Air consumption [l/cycle] at 6 bar

Type	
DFPD-20-RP-90-S	0.60
DFPD-40-RP-90-S	1.80
DFPD-80-RP-90-S	3.60
DFPD-120-RP-90-S	5.40

Type	
DFPD-160-RP-90-S	7.20
DFPD-240-RP-90-S	10.20
DFPD-300-RP-90-S	13.20
DFPD-480-RP-90-S	21.00

Quarter turn actuators DFPD, single-acting

Technical data

FESTO

Theoretical torque [Nm] as a function of operating pressure [bar] and swivel angle [°]													
Spring configuration	Nominal swivel angle	Spring torque	Operating pressure [bar]										
	[°]	[Nm]	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
Size DFPD-20													
20	0	2.4	**4.9**	6.7	8.6	10.4	12.2	14.0	15.9	17.7	19.5	23.2	26.8
	90	4.8	**2.5**	4.4	6.2	8.0	9.9	11.7	13.5	15.3	17.2	20.8	24.5
25	0	3.0	4.3	**6.1**	8.0	9.8	11.6	13.4	15.3	17.1	18.9	22.6	26.2
	90	6.0	1.4	**3.2**	5.0	6.8	8.7	10.5	12.3	14.2	16.0	19.6	23.3
30	0	3.6		5.5	**7.4**	9.2	11.0	12.8	14.7	16.5	18.3	22.0	25.6
	90	7.1		2.0	**3.8**	5.7	7.5	9.3	11.1	13.0	14.8	18.4	22.1
35	0	4.2			6.8	**8.6**	10.4	12.2	14.1	15.9	17.7	21.4	25.0
	90	8.3			2.6	**4.5**	6.3	8.1	9.9	11.8	13.6	17.3	20.9
40	0	4.8				8.0	**9.8**	11.6	13.5	15.3	17.1	20.8	24.4
	90	9.5				3.3	**5.1**	6.9	8.8	10.6	12.4	16.1	19.7
45	0	5.4					9.2	**11.0**	12.9	14.7	16.5	20.2	23.8
	90	10.7					3.9	**5.7**	7.6	9.4	11.2	14.9	18.5
50	0	6.0						10.4	**12.3**	14.1	15.9	19.6	23.2
	90	11.9						4.5	**6.4**	8.2	10.0	13.7	17.3
55	0	6.6							11.7	**13.5**	15.3	19.0	22.6
	90	13.1							5.2	**7.0**	8.8	12.5	16.1
60	0	7.2								12.9	**14.7**	18.4	22.0
	90	14.3								5.8	**7.6**	11.3	15.0
Size DFPD-40													
20	0	4.6	**9.3**	12.8	16.3	19.8	23.3	26.7	30.2	33.7	37.2	44.1	51.1
	90	9.1	**4.8**	8.3	11.8	15.3	18.8	22.3	25.7	29.2	32.7	39.7	46.6
25	0	5.8	8.2	**11.7**	15.1	18.6	22.1	25.6	29.1	32.6	36.0	43.0	50.0
	90	11.4	2.6	**6.1**	9.5	13.0	16.5	20.0	23.5	27.0	30.4	37.4	44.4
30	0	6.9		10.5	**14.0**	17.5	21.0	24.4	27.9	31.4	34.9	41.8	48.8
	90	13.6		3.8	**7.3**	10.8	14.2	17.7	21.2	24.7	28.2	35.1	42.1
35	0	8.1			12.8	**16.3**	19.8	23.3	26.8	30.3	33.7	40.7	47.7
	90	15.9			5.0	**8.5**	12.0	15.4	18.9	22.4	25.9	32.9	39.8
40	0	9.2				15.2	**18.7**	22.1	25.6	29.1	32.6	39.5	46.5
	90	18.2				6.2	**9.7**	13.2	16.7	20.1	23.6	30.6	37.5
45	0	10.4					17.5	**21.0**	24.5	28.0	31.4	38.4	45.4
	90	20.4					7.4	**10.9**	14.4	17.9	21.4	28.3	35.3
50	0	11.5						19.8	**23.3**	26.8	30.3	37.2	44.2
	90	22.7						8.6	**12.1**	15.6	19.1	26.0	33.0
55	0	12.7							22.2	**25.7**	29.1	36.1	43.1
	90	25.0							9.8	**13.3**	16.8	23.8	30.7
60	0	13.8								24.5	**28.0**	34.9	41.9
	90	27.2								11.1	**14.5**	21.5	28.5

Note

The operating torque of the drive must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.

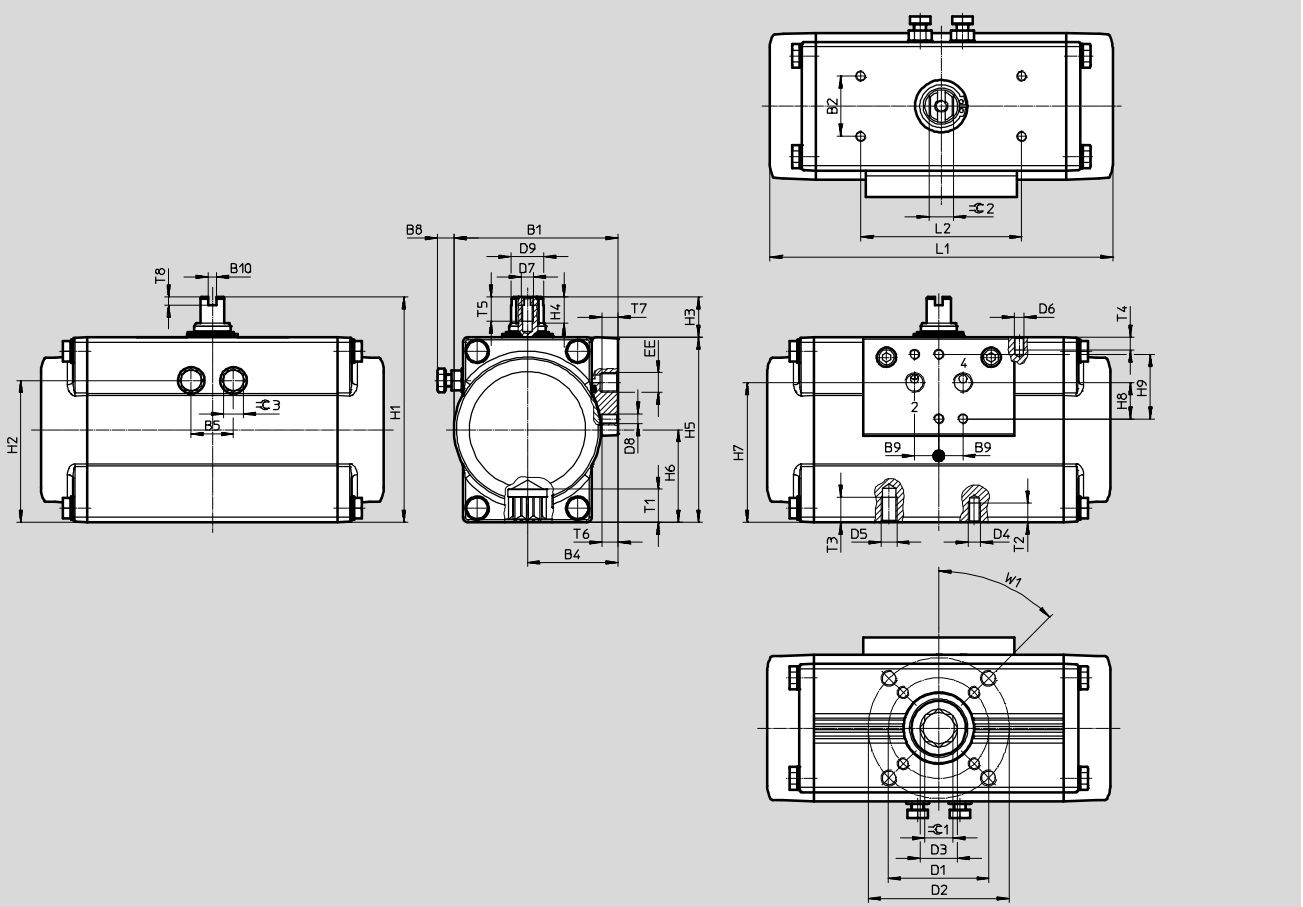
Quarter turn actuators DFPD, single-acting

Technical data

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Dimensions Download CAD data ➔ **www.festo.com**

Size 20 ... 80



Quarter turn actuators DFPD, single-acting

Technical data

Type [mm]	B1	B2 ±0.1	B4 ±0.4	B5	B8 max.	B9	B10	D1 ∅ ±0.1	D2 ∅ ±0.1	D3 ∅	D4	D5	D6
DFPD-20-F04	68.5	30	38.5	19	9.2	12	4	42	–	14.6	M5	–	M5
DFPD-20-F05								50			M6		
DFPD-40	81.5		45	21	8.2			50	70	18.7		M8	
DFPD-40-180											M6	M8	
DFPD-80	99		53	26	9				70	23.3			

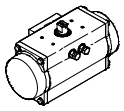
Type [mm]	D7	D8	D9 ∅ ±0.1	EE	H1	H2	H3 0.5	H4 +0.1	H5	H6 ±0.2	H7 ±0.3	H8 ±0.1	H9
DFPD-20-F04	M6	M5	12.7	G1/8 or NPT1/8	100	59.75	20	10	80	40	57.5	16	32
DFPD-20-F05													
DFPD-40			16.2		112	70.5		13	92	46	67.5		
DFPD-40-180													
DFPD-80			20.2		130	86		13	110	55	86.5		

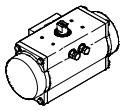
Type [mm]	L1	L2 ±0.1	T1 ±0.4	T2	T3	T4	T5	T6	T7	T8 +0.5	⫷ 1 H11	⫷ 2 h11	⫷ 3	W1
DFPD-20-F04	145.7	80	13.2	8	–	6	12	8	8	4	11	9	10	45°
DFPD-20-F05				9										
DFPD-40	170.4		16.5	9	12						14	12	10	
DFPD-40-180	–													
DFPD-80	223.1		19.3								17	15	13	

Quarter turn actuators DFPD, single-acting

Technical data

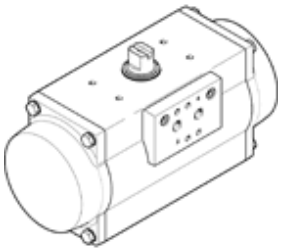
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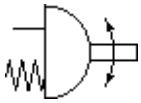
Ordering data				
Type	Size	Product weight [g]	Part No.	Type
	20	1371	**8047621**	**DFPD-20-RP-90-RS30-F04**
		1419	**8047622**	**DFPD-20-RP-90-RS60-F04**
		1371	**8048014**	**DFPD-20-RP-90-RS30-F05**
		1419	**8048015**	**DFPD-20-RP-90-RS60-F05**
	40	2087	**8047623**	**DFPD-40-RP-90-RS30-F0507**
		2180	**8047624**	**DFPD-40-RP-90-RS60-F0507**
	80	3746	**8047625**	**DFPD-80-RP-90-RS30-F0507**
		3960	**8047626**	**DFPD-80-RP-90-RS60-F0507**
	120	5422	**8048133**	**DFPD-120-RP-90-RS30-F0507**
		5736	**8048134**	**DFPD-120-RP-90-RS60-F0507**
	160	6767	**8048135**	**DFPD-160-RP-90-RS30-F0710**
		7179	**8048136**	**DFPD-160-RP-90-RS60-F0710**
	240	9442	**8048137**	**DFPD-240-RP-90-RS30-F0710**
		10036	**8048138**	**DFPD-240-RP-90-RS60-F0710**
	300	12052	**8048139**	**DFPD-300-RP-90-RS30-F0710**
		12880	**8048140**	**DFPD-300-RP-90-RS60-F0710**
	480	17261	**8048141**	**DFPD-480-RP-90-RS30-F1012**
		18485	**8048142**	**DFPD-480-RP-90-RS60-F1012**

Ordering data				
Type	Size	Product weight [g]	Part No.	Type
Version EP, epoxy-coated				
	20	1371	**8047627**	**DFPD-20-RP-90-RS30-F04-R3-EP**
		1419	**8047628**	**DFPD-20-RP-90-RS60-F04-R3-EP**
		1371	**8048016**	**DFPD-20-RP-90-RS30-F05-R3-EP**
		1419	**8048017**	**DFPD-20-RP-90-RS60-F05-R3-EP**
	40	2087	**8047629**	**DFPD-40-RP-90-RS30-F0507-R3-EP**
		2180	**8047630**	**DFPD-40-RP-90-RS60-F0507-R3-EP**
	80	3746	**8047631**	**DFPD-80-RP-90-RS30-F0507-R3-EP**
		3960	**8047632**	**DFPD-80-RP-90-RS60-F0507-R3-EP**
	120	5422	**8048143**	**DFPD-120-RP-90-RS30-F0507-R3-EP**
		5736	**8048144**	**DFPD-120-RP-90-RS60-F0507-R3-EP**
	160	6767	**8048145**	**DFPD-160-RP-90-RS30-F0710-R3-EP**
		7179	**8048146**	**DFPD-160-RP-90-RS60-F0710-R3-EP**
	240	9442	**8048147**	**DFPD-240-RP-90-RS30-F0710-R3-EP**
		10036	**8048148**	**DFPD-240-RP-90-RS60-F0710-R3-EP**
	300	12052	**8048149**	**DFPD-300-RP-90-RS30-F0710-R3-EP**
		12880	**8048150**	**DFPD-300-RP-90-RS60-F0710-R3-EP**
	480	17261	**8048151**	**DFPD-480-RP-90-RS30-F1012-R3-EP**
		18485	**8048152**	**DFPD-480-RP-90-RS60-F1012-R3-EP**

Semi-rotary actuator DFPD-20-RP-90-RS30-F04

Part number: 8047621





General operating conditions

Data sheet

Data sheet

Feature	values
Shipping date	View
Size of actuator	20
Flange hole pattern	F04 F05
Swivel angle	90 deg
End-position adjustment range at 0°	-5 ... 5 deg
End-position adjustment range at 90°	-5 ... 5 deg
Shaft connection depth	13.2 mm
Fitting connection conforms to standard	ISO 5211
Cushioning	No cushioning
Assembly position	Any
Mode of operation	single-acting
Design structure	Rack and pinion
Position detection	Optical
Closing direction	right-closing
Valve connection conforms to standard	VDI/VDE 3845 (NAMUR)
Connection for positioner and position sensor conforms to standard	VDI/VDE 3845 size AA 1
Working pressure	2 ... 8 bar
Nominal working pressure	3 bar
ATEX category Gas	II 2G
Explosion ignition protection type Gas	c T4 X
ATEX category Dust	II 2D
Explosion ignition protection type Dust	c 105°C X
Explosion-proof ambient temperature	-20°C <= Ta <= +80°C
Ambient temperature	-20 ... 80 °C
Operating medium	Compressed air in accordance with ISO8573-1:2010 [7:4:4]
Note on operating and pilot medium	Pressure dew point 10°C below ambient temperature/temperature of medium Lubricated operation possible (subsequently required for further operation)
CE symbol (see declaration of conformity)	according to EU-Ex protection guideline (ATEX)
Torque at rated working pressure and 0° rotation angle	16.5 Nm
Torque at nominal operating pressure with 90° swivel angle	13 Nm
Note about the torque	The operating torque of the actuator must not be higher than the maximum permissible torque listed in ISO 5211, with reference to the size of the mounting flange and of the coupling.
Spring return torque with 0° swivel angle	3.6 Nm
Spring return torque at 90°	7.1 Nm
Air consumption at 6 bar per cycle 0°-90°-0°	0.6 l
Product weight	1,371 g
Shaft connection	V11
Pneumatic connection	G1/8 NPT1/8-27
Materials note	Conforms to RoHS
Materials information for subbase	Wrought Aluminum alloy Anodized

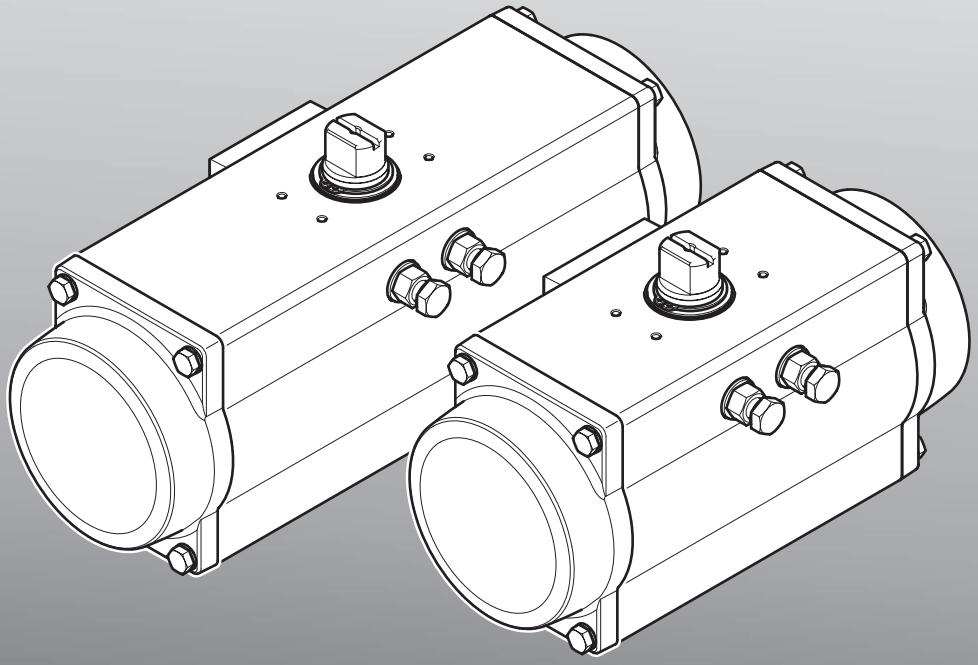
Feature	values
Material number of sub-base	EN AW-6063-T6
Materials information for cover	Aluminum die cast coated
Material number, cover	EN AC-46100-D
Materials information for seals	NBR
Materials information for spring	Spring steel
Materials information, housing	Wrought Aluminum alloy Anodized
Material number for housing	EN AW-6063-T6
Materials information for piston rod	Aluminum die cast
Material number of piston rod	EN AC-46100-D
Materials information for bearing	POM
Material information, cam	Stainless steel casting
Material number of cam	1.4308
Screw material data	High alloy steel, non-corrosive
Material number, screw	1.4301
Materials information for shaft	Steel Nickel plated
Material number for shaft	1.0715

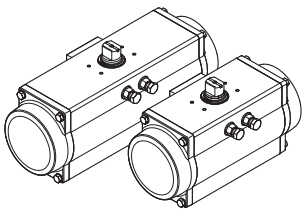
Quarter-turn actuator

DFPD

FESTO

Repair instructions (en)





DFPDb_en

1 Important information

1.1 About these repair instructions

This document contains important information about proper repair of the quarter-turn actuator type DFPD.

Before carrying out a repair, these repair instructions must be read in full and followed.

Other documentation for this product:

- **Operating instructions (➔ www.festo.com/sp)**
- **Spare parts documentation (➔ www.festo.com/spareparts)**

1.2 Symbols used

1.2.1 Danger categories

The following symbol identifies text passages which draw attention to specific hazards.



Warning

Marking of special information

The following symbols identify text passages which contain special information.



Note

1.2.2 Repair steps

Familiarise yourself with the meaning of the symbols before starting the repair work.



Warning
There is a risk of injury due to uncontrolled movements of components.



Reference arrow
Symbol indicating the individual components to be noted.



Linear movement arrow
Carry out a linear movement



Slow movement
Carry out the dismantling / assembly step slowly and carefully.



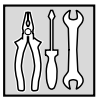
Reference to repair steps
Follow the given repair steps.



Attention
Pay particular attention to notes and information.



Visual inspection
Perform a visual inspection.



Tools

Use suitable tools.



Functional test / start-up

Follow the functional test / start-up information in the brief instructions (➔ www.festo.com).

1.2.3 Cleaning and greasing



Cleaning

The components must be thoroughly cleaned to remove all foreign particles, machining residues and old lubricants before they are greased.

Clean with a soft, lint-free cloth and non-abrasive cleaning agents. Check the compatibility of the cleaning agent with the materials to be cleaned.



Thin grease film outside

A film of grease covers the external surface so that the grease colour tarnishes the surface slightly.

Recommendation:

Apply the grease with a soft brush or similar.

1.3 Text designations used in these repair instructions

– General lists.

➔ Reference to further information

Underlined, blue text indicates a cross-reference or hyperlink that you can click on in the PDF.

1.4 Tools

Among other things, the following standard tools are required to repair the quarter-turn actuator:

– Spanner
– Retaining ring pliers for external retaining rings
– Torque wrench

2 General safety instructions and information

2.1 General safety instructions

Warning

Read and follow all safety instructions and information. Failure to comply with these safety instructions and information can result in serious injuries.

Note

To achieve ATEX conformity, the toothed discs must be replaced each time the corresponding screws or bolts are loosened. When screwing back in, observe the tightening torques given for the screws.

– The control block may only be repaired by authorised and trained personnel acting in accordance with the requirements in these repair instructions and the brief instructions for the device.

- Pay attention to cleanliness while repairing the quarter-turn actuator. Do not allow dirt particles to get into the quarter-turn actuator.
- A shutdown must be performed before any repair work is carried out.
- Before repairing the quarter-turn actuator, any attachments on it must be dismantled.
- The control block must be completely depressurised and de-energised, and reliably secured against unauthorised restarting before starting any repair work is started.
- Accidental switching on or concealed pressure can trigger unexpected movements during dismantling of the quarter-turn actuator. Therefore, completely vent the quarter-turn actuator before each repair.
- Use original spare parts only to repair the quarter-turn actuator.
- Wear the necessary personal protective equipment.
- In the event of damage to the quarter-turn actuator caused by
  - unauthorised manipulation,
  - non-intended use (misuse),
  - use of non-original spare parts

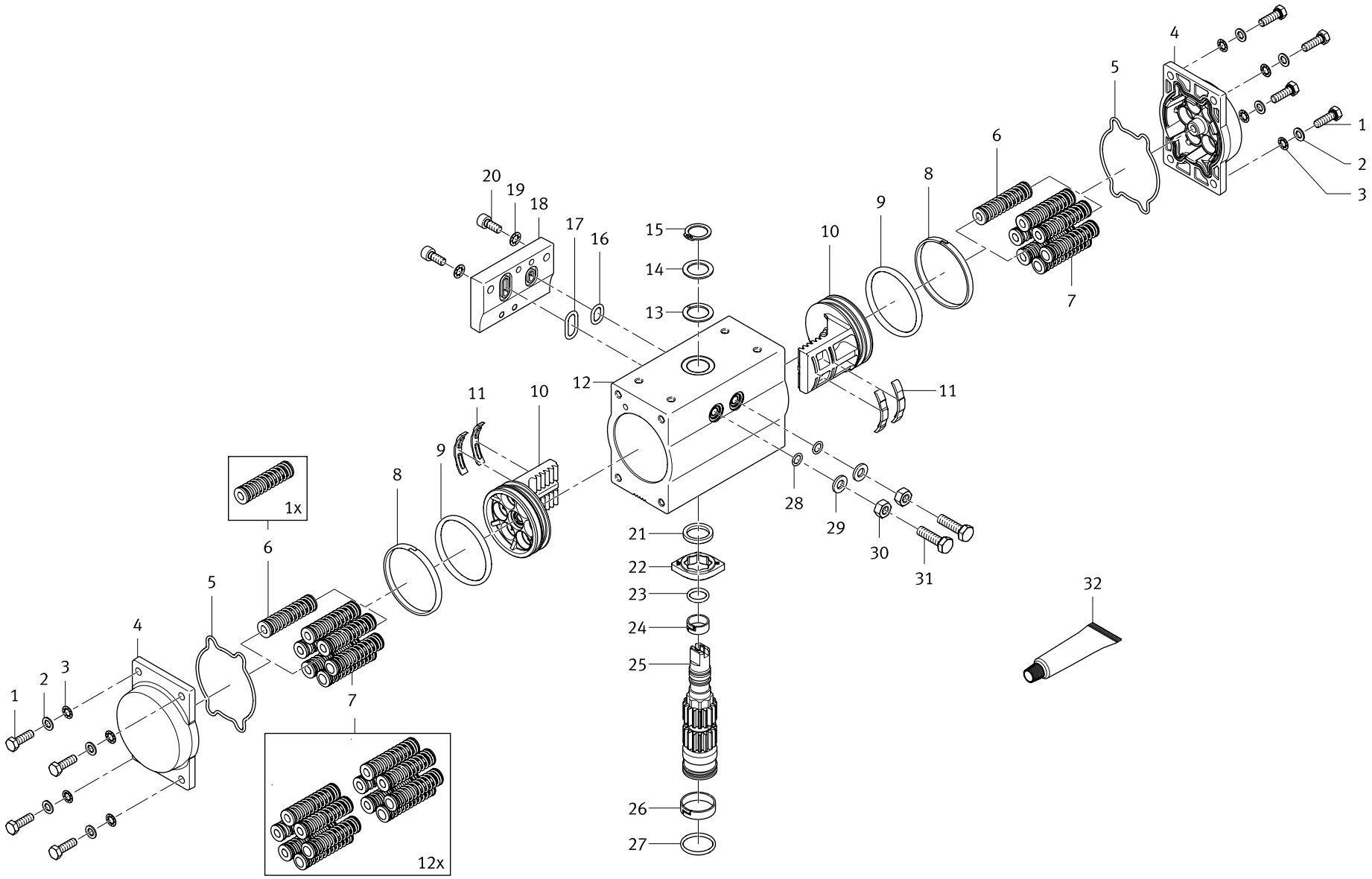
  all warranty and liability claims against the manufacturer expire.
- The technical documentation required for installation and start-up (functional test) of the quarter-turn actuator must be available.

2.2 General information

- Standard tools are needed to repair the quarter-turn actuator, which must be available in a service workshop (➔ Chapter 1.4 on page 6).
- Components and equipment replaced during repair must be disposed of in accordance with the relevant local environmental protection regulations.
- Where possible the repair should be carried out on a stable and flat work surface with space for small parts.
- The figures of the repair steps show size DFPD-300-...-D / S-...-60 (12 installed springs) by way of example. Individual minor differences between the quarter-turn actuator in hand and the illustrated example are possible.
- Depending on the temperature range (standard / T4 / T6), Festo recommends the following lubricants:
  - SYNTHY POLYMER 402/2 (standard variant)
  - HEVOLIT PE 280-1 FG (high-temperature variant T4)
  - RENOLIT SI 300 M (low-temperature variant T6)
- Individual components must be greased when installing the quarter-turn activator. The following table shows the recommended quantity of grease during the entire installation.

Size	Recommended quantity of grease for installation
DFPD-10	2 g
DFPD-20	3 g
DFPD-40	5 g
DFPD-80	7 g
DFPD-120	11 g
DFPD-160	15 g
DFPD-240	20 g
DFPD-300	30 g
DFPD-480	45 g
DFPD-700	55 g
DFPD-900	65 g
DFPD-1200	85 g
DFPD-2300	110 g

3.3 DFPD-20-...-S components list

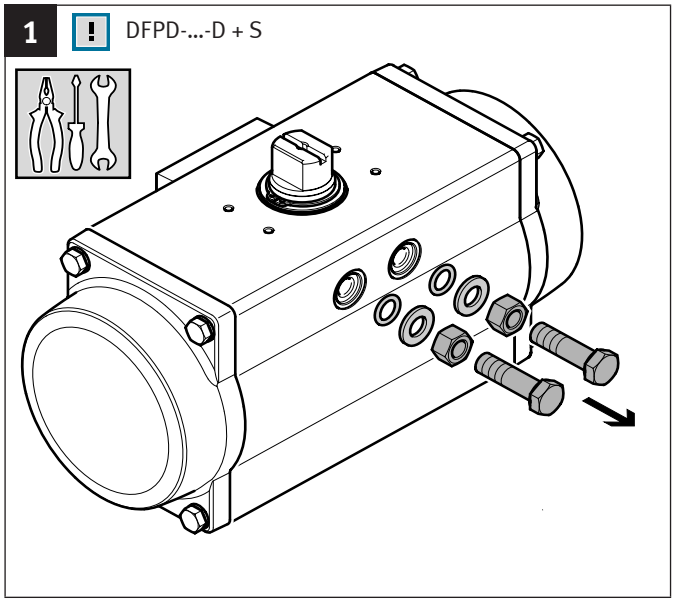


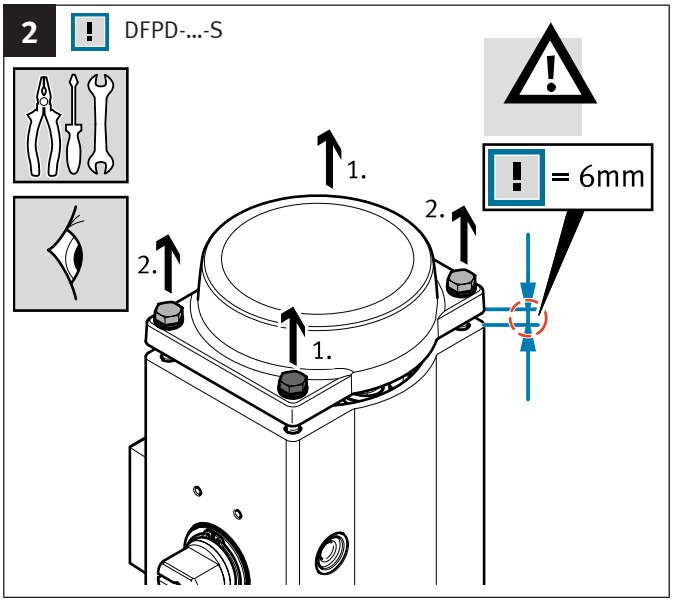
3.3.1 DFPD-20-...-S bill of materials

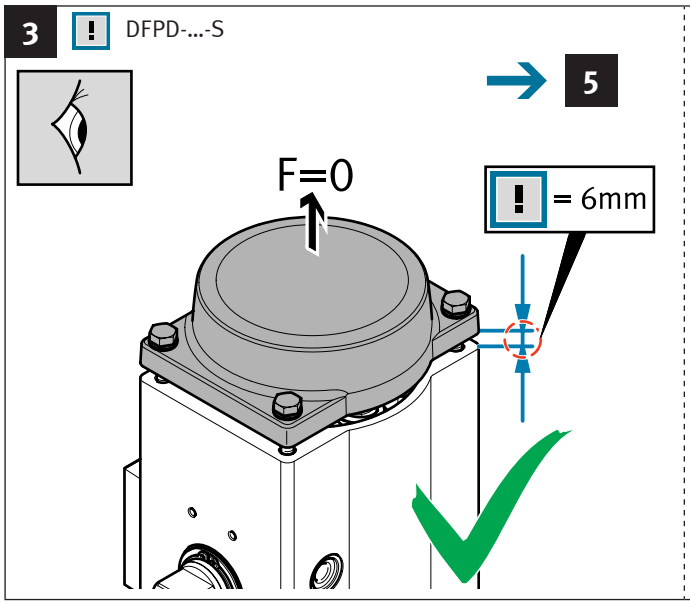
No.	Designation, type
1	Hexagon head screw, ISO 4017-M5×16-A2-70
2	Ring, 5.2×9×1-1.4301
3	Toothed disc, DIN 6797-J-5,3-A2-70
4	End cap
5	Moulded seal
6	Spring module
7	Spring module
8	Sliding ring
9	O-ring, 43×3.5-N-NBR70
10	Piston
11	Slide element
12	Housing
13	Sliding ring
14	Shim, DIN 988-14×20×1-A2
15	Retaining ring, DIN 471-14×1-A2
16	O-ring, I3601 B-9×2-N-NBR70
17	O-ring, I3601 B-13×2-N-NBR70
18	Mounting plate
19	Toothed disc, DIN 6797-J-5,1-A2-70
20	Socket head screw, DIN 912-M5×12-A2-70
21	Sliding ring
22	Cam
23	O-ring, I3601 B-11×2-N-NBR70
24	Sliding ring
25	Shaft
26	Sliding ring
27	O-ring, I3601 B-19×2-N-NBR70
28	O-ring, I3601 B-5.28×1.78-N-NBR70
29	Ring, 6.2×12×1.5-1.4301
30	Hex nut, DIN 934-M6-A2-70
31	Regulating screw
32	Lubricant, SYNTHY POLYMER 402/2

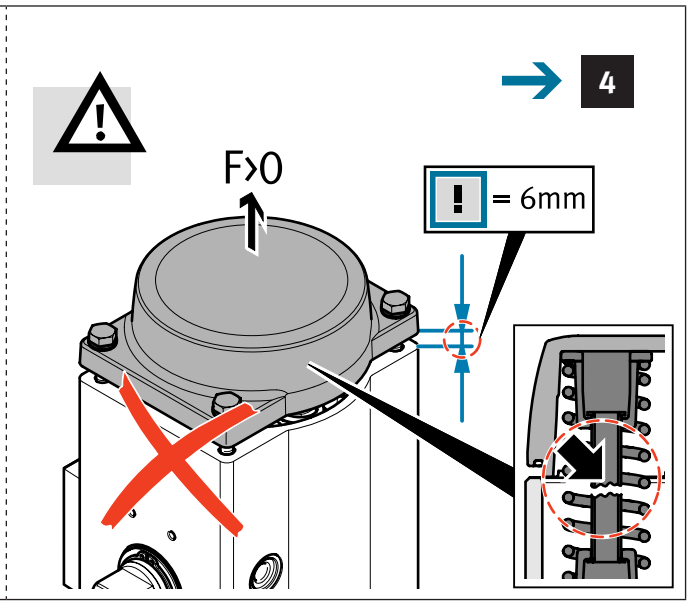
4 Repair steps

4.1 Dismantling

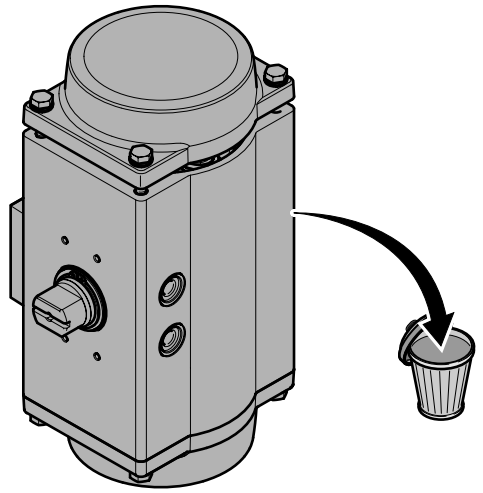




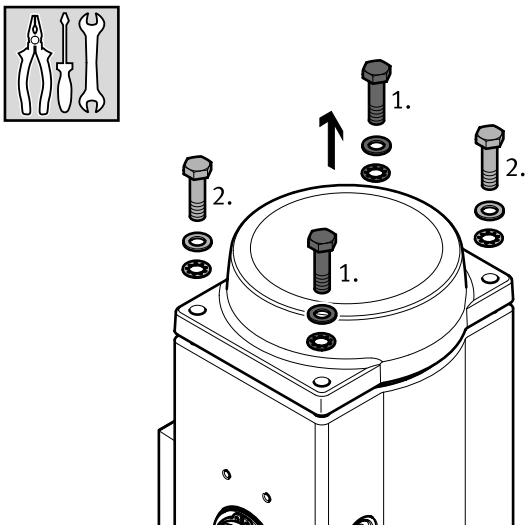




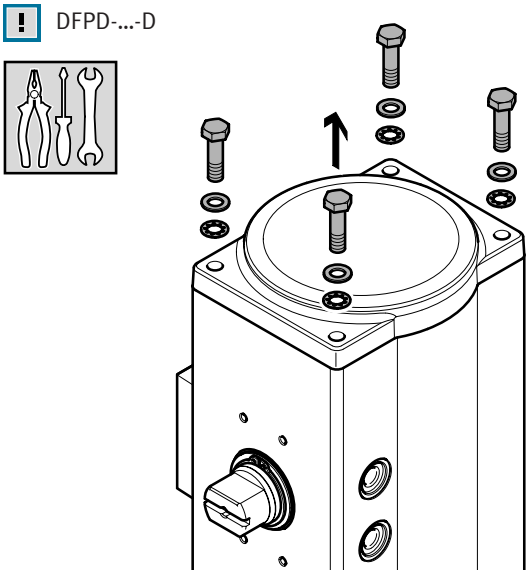
4 DFPD-...-S



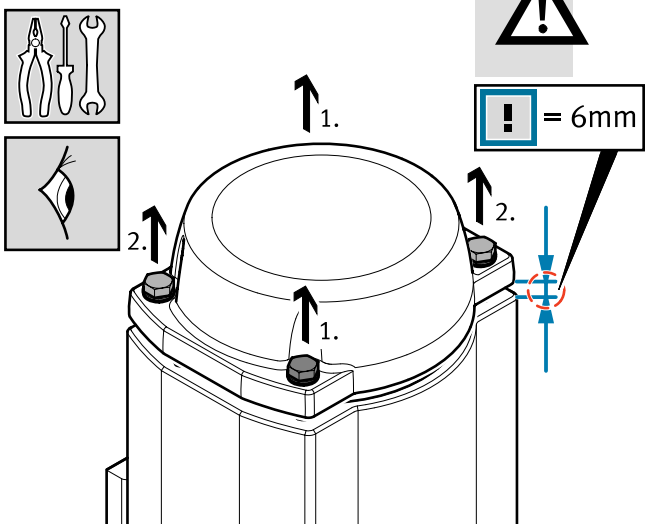
5 DFPD-...-S



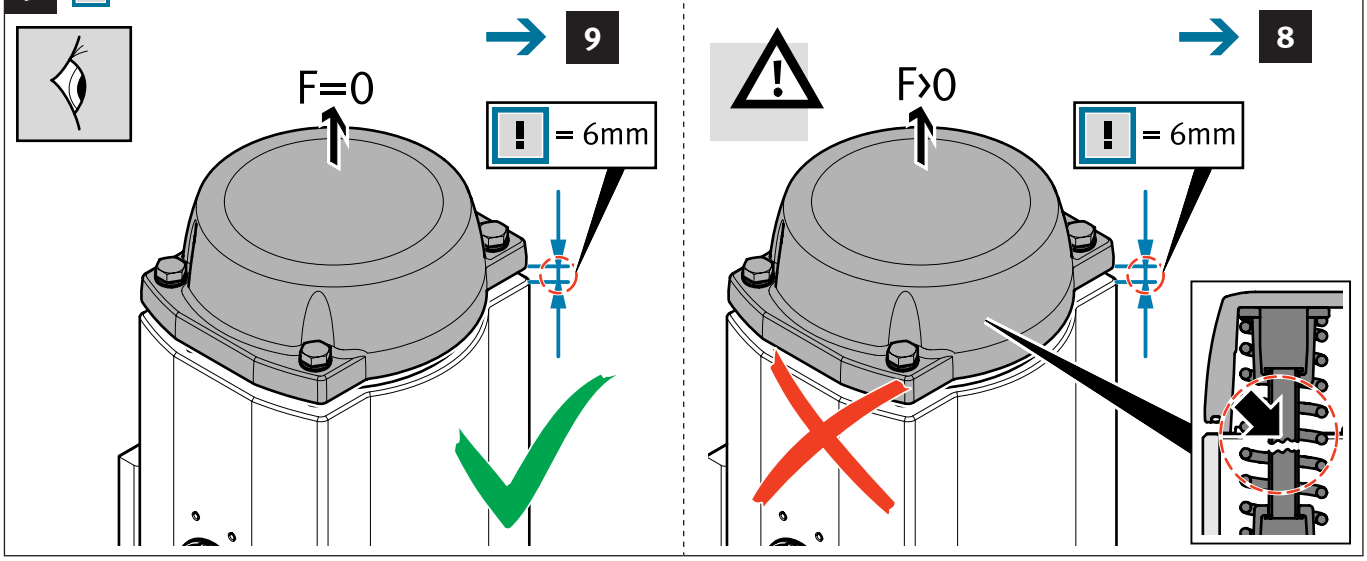
DFPD-...-D



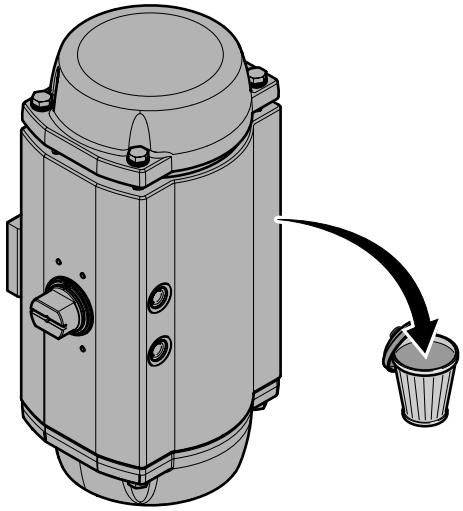
6 DFPD-700/900/1200/2300...-S



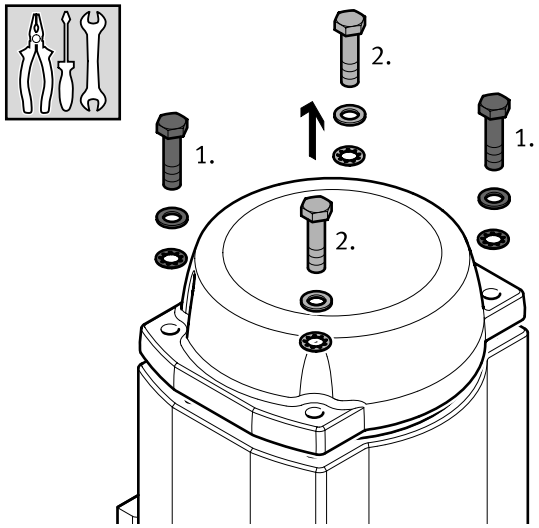
7 DFPD-700/900/1200/2300...-S



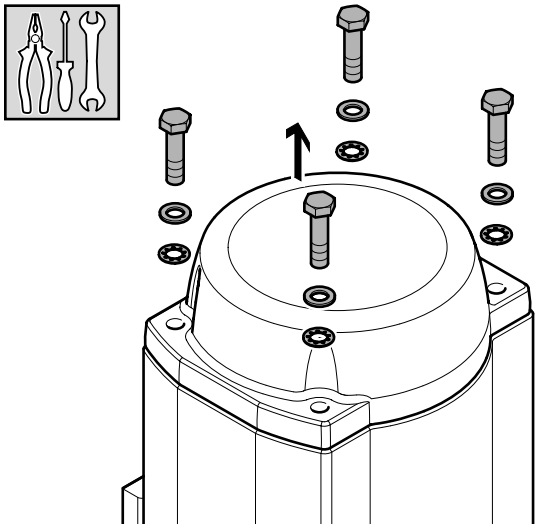
8 DFPD-700/900/1200/2300...-S



9 DFPD-700/900/1200/2300...-S

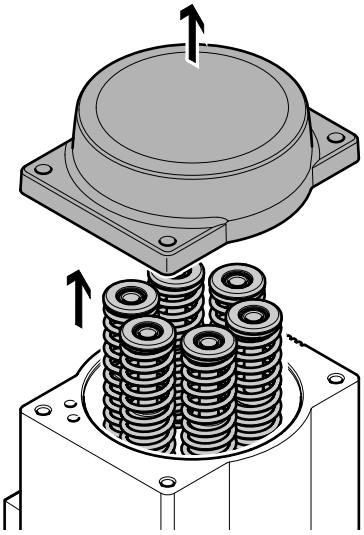


DFPD-700/900/1200/2300...-D

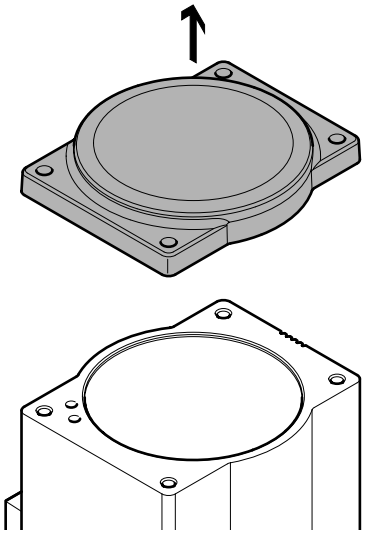


10a

DFPD-...-S

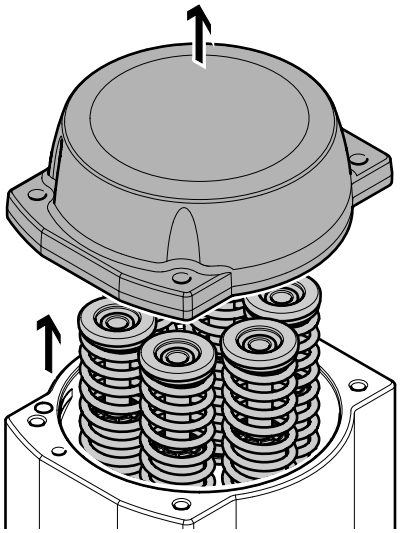


DFPD-...-D

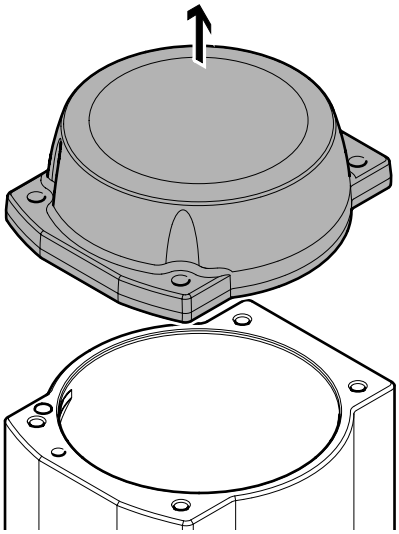


10b

DFPD-700/900/1200/2300...-S

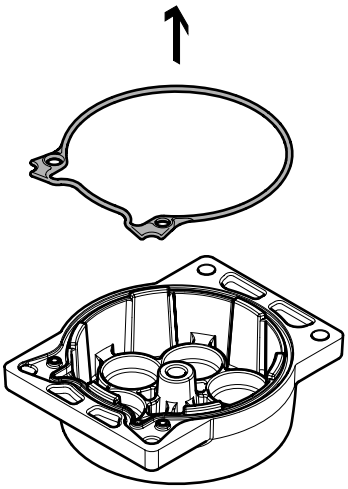


DFPD-700/900/1200/2300...-D

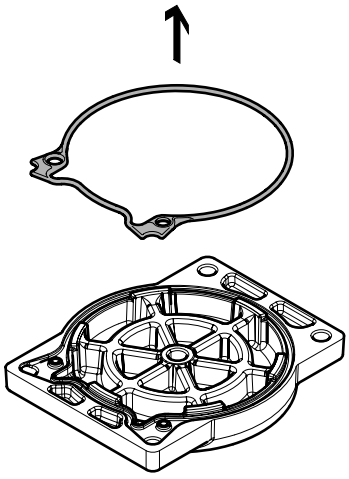


11a

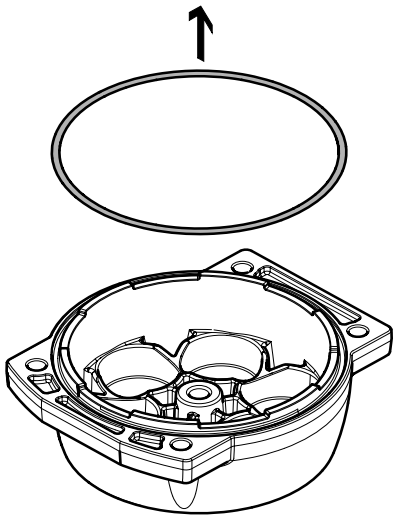
DFPD-...-S



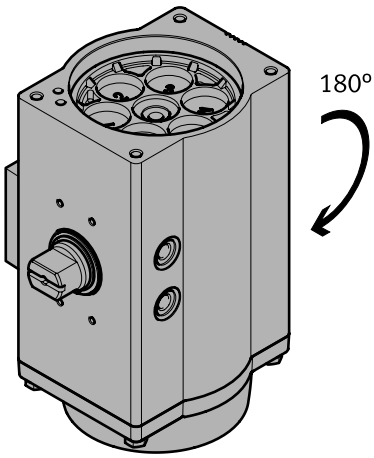
DFPD-...-D



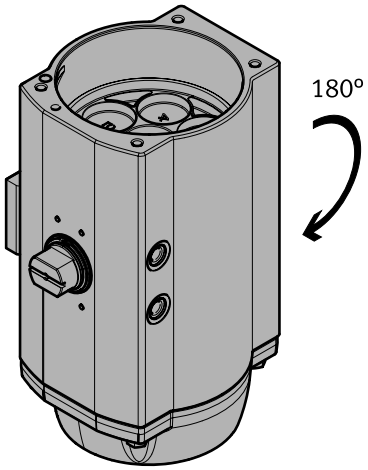
11b DFPD-700/900/1200/2300...-D+S



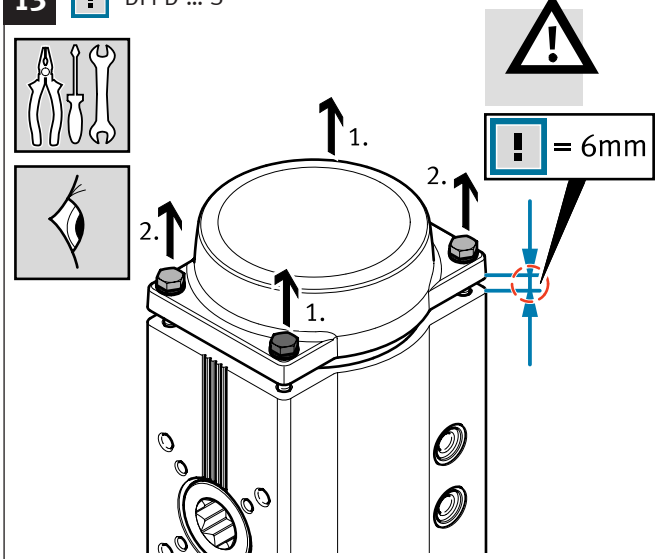
12 DFPD-...



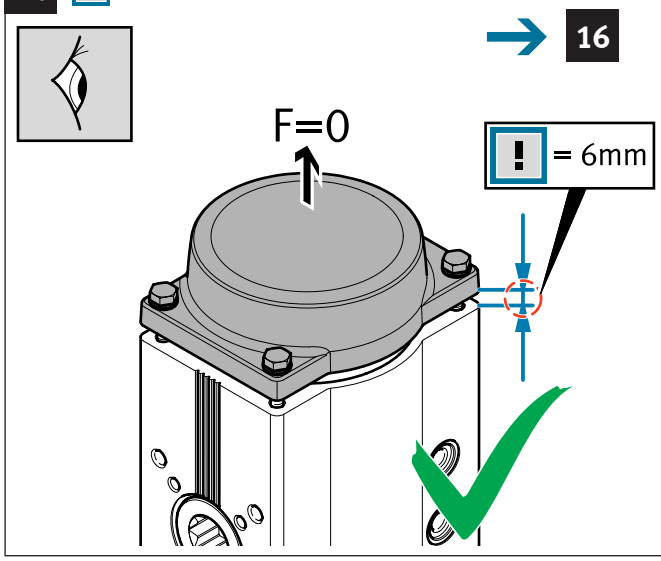
DFPD-700/900/1200/2300...

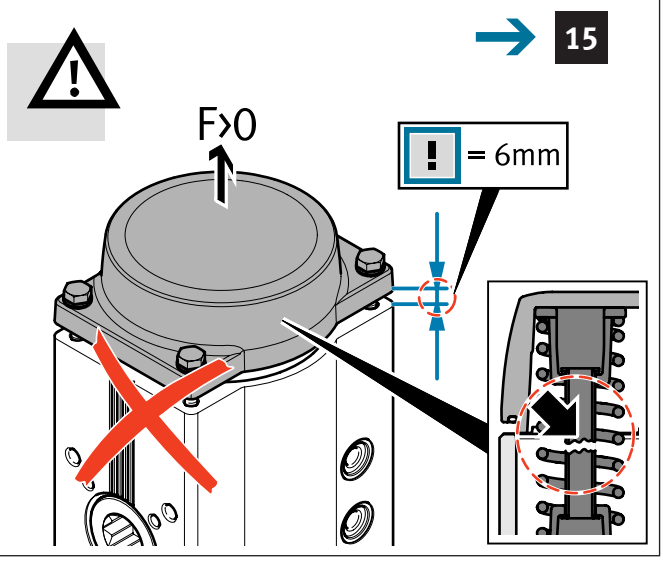


13 DFPD-...-S

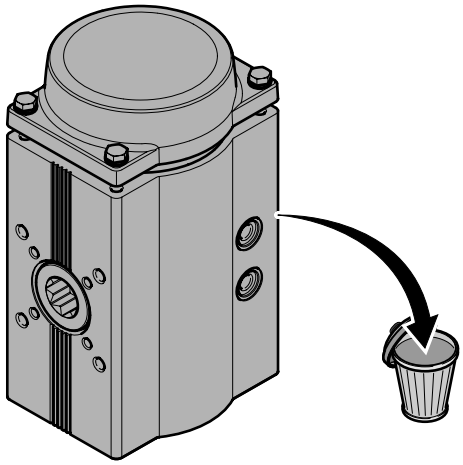


14 DFPD-...-S

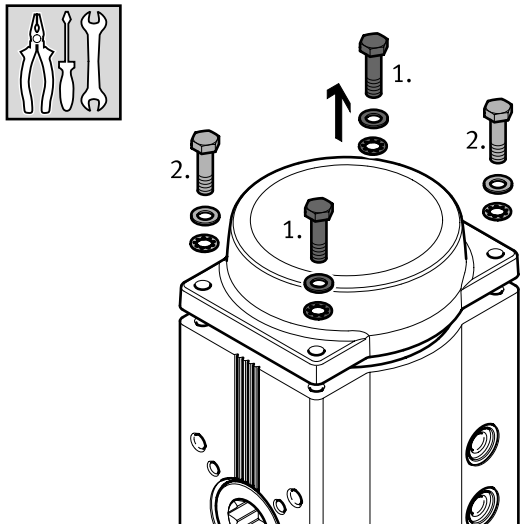




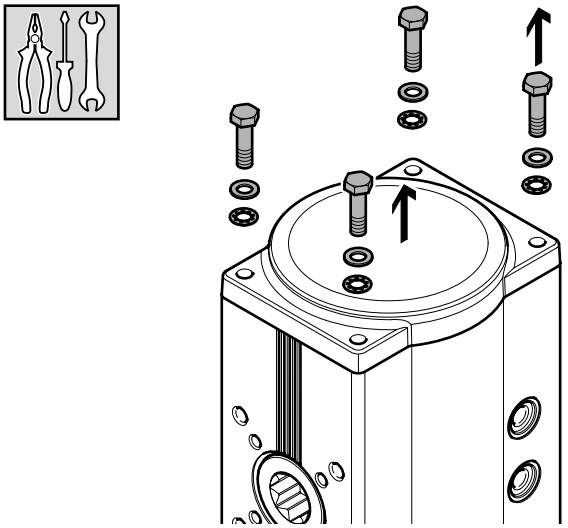
15 DFPD-...-S



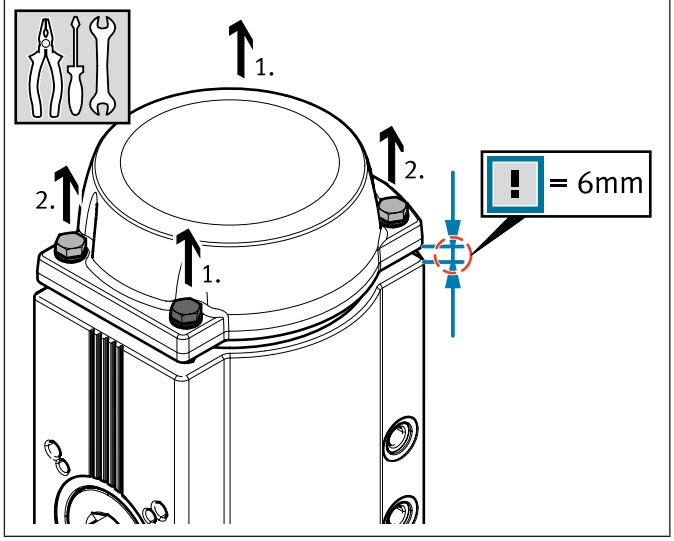
16 DFPD-...-S



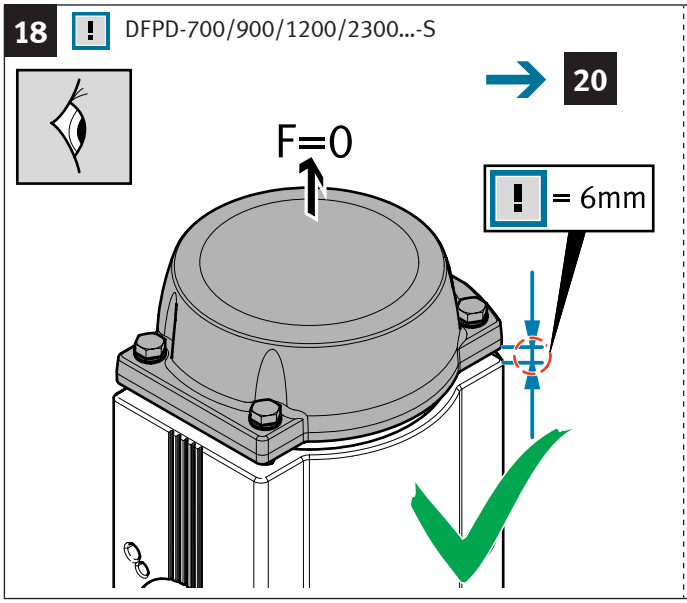
DFPD-...-D

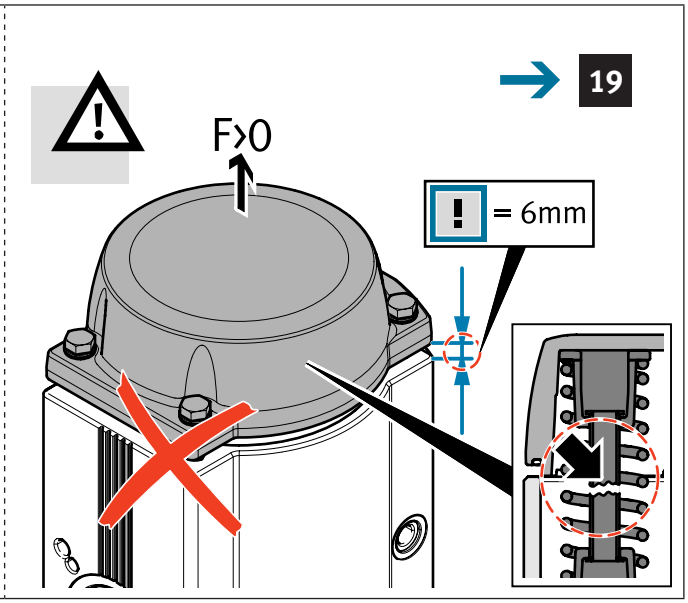


17 DFPD-700/900/1200/2300...-S

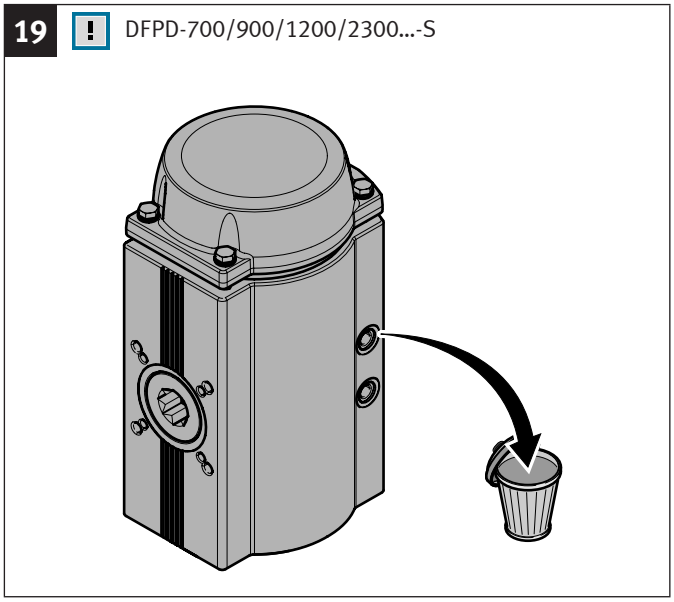


18 DFPD-700/900/1200/2300...-S

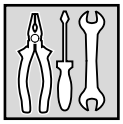


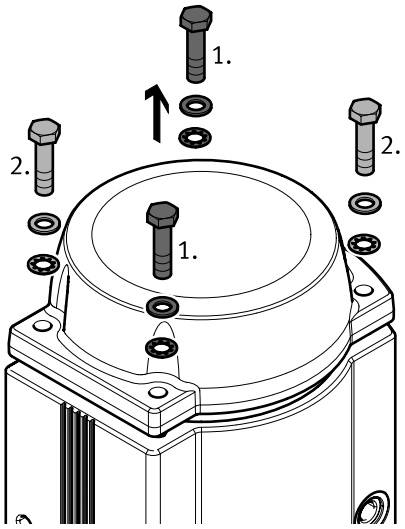


19 DFPD-700/900/1200/2300...-S

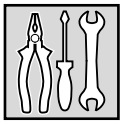


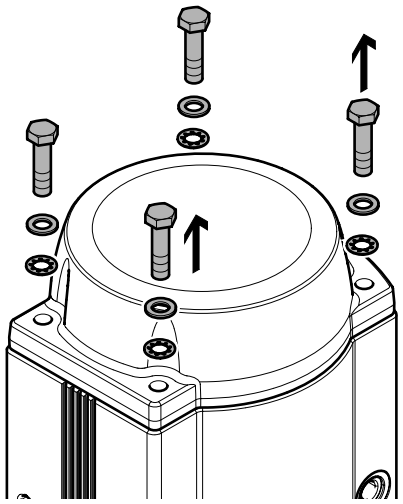
20 DFPD-700/900/1200/2300...-S



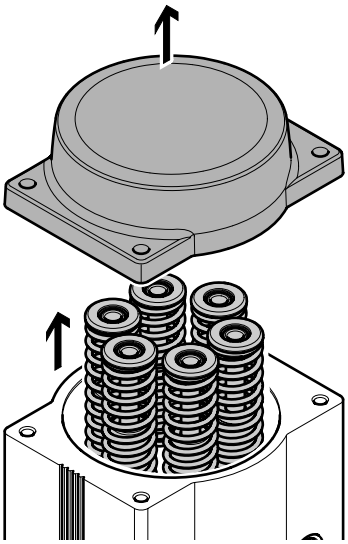


DFPD-700/900/1200/2300...-D

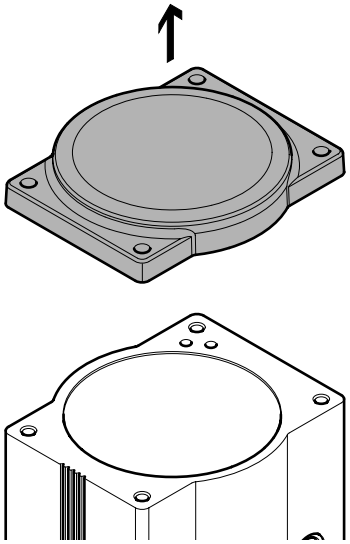




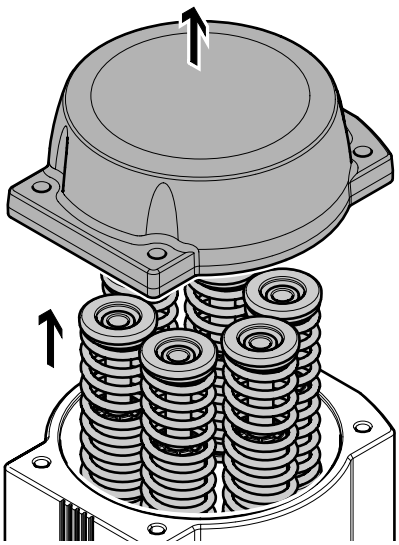
21a DFPD-...-S



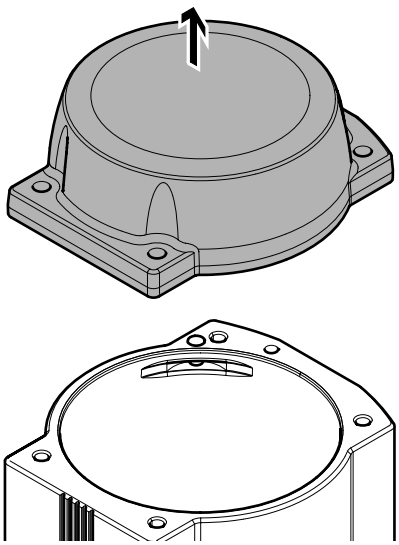
DFPD-...-D



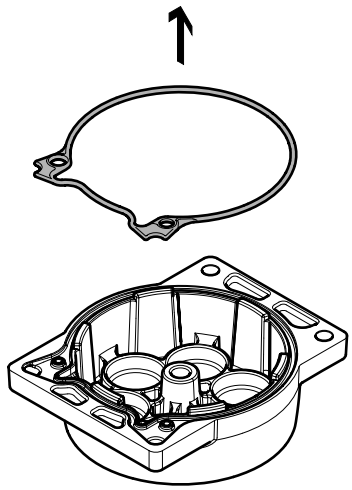
21b DFPD-700/900/1200/2300...-S



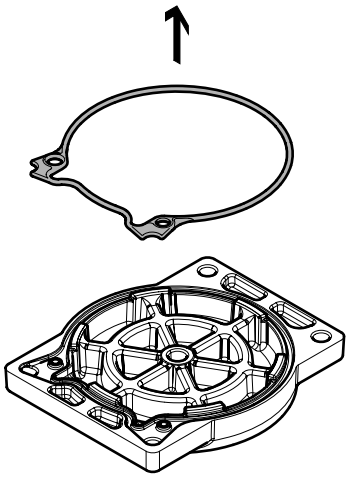
DFPD-700/900/1200/2300...-D



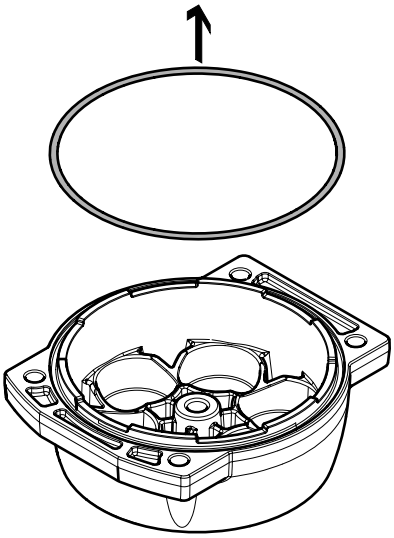
22a DFPD-...-S



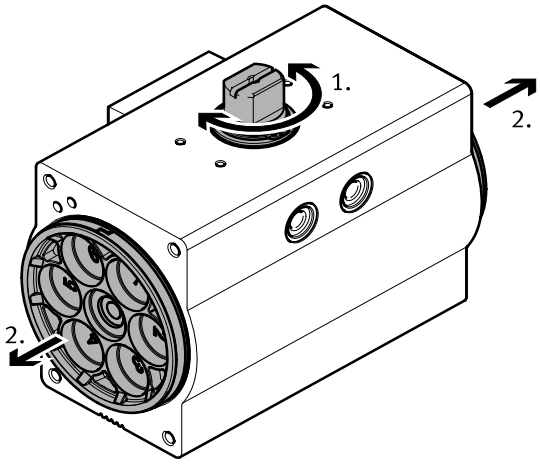
DFPD-...-D



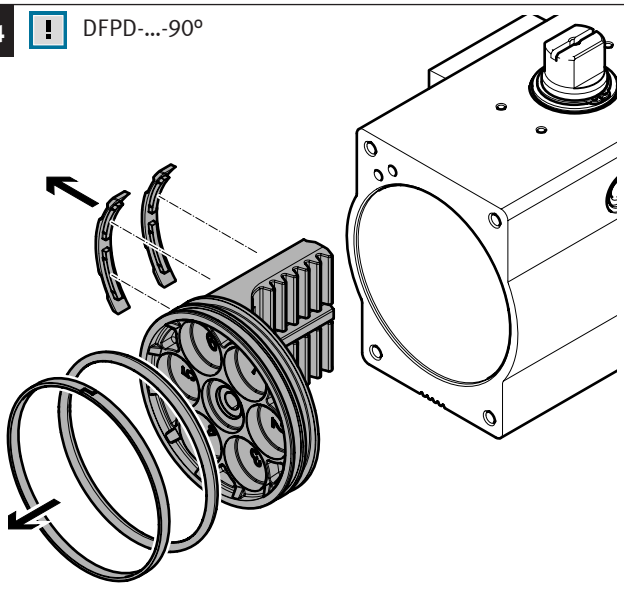
22b DFPD-700/900/1200/2300...-D+S



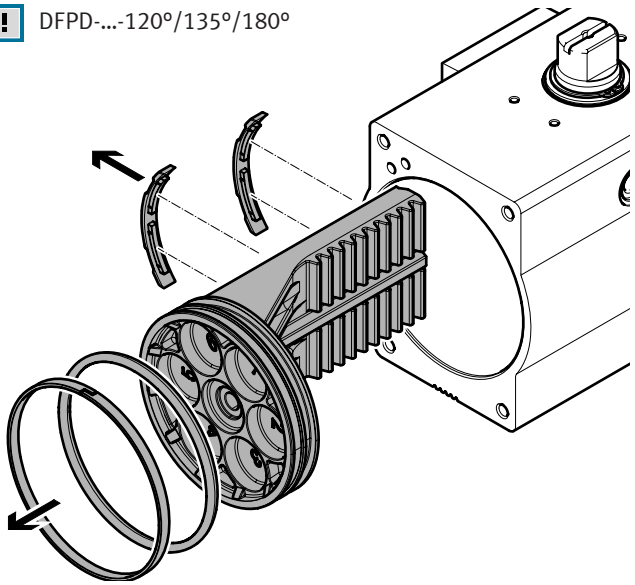
23 DFPD-...-D + S



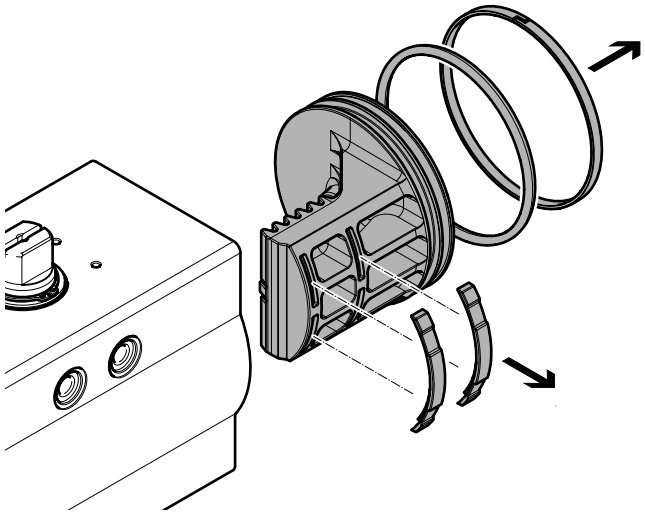
24 DFPD-...-90°



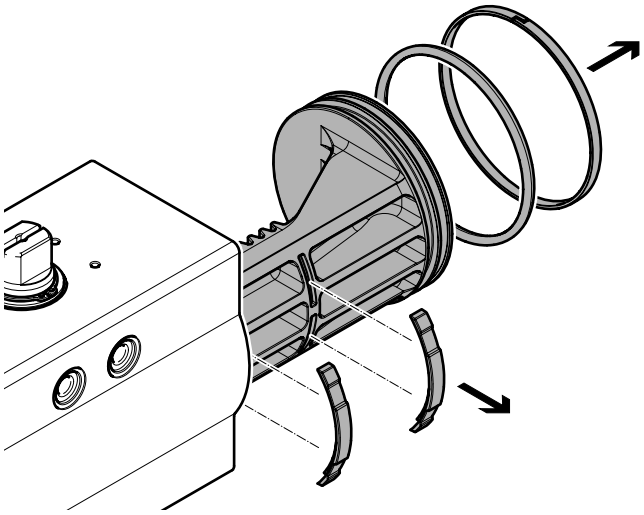
DFPD-...-120°/135°/180°



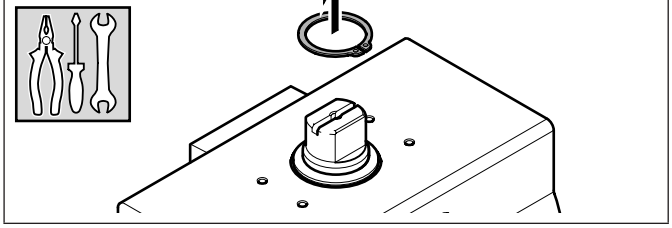
25 DFPD-...-90°



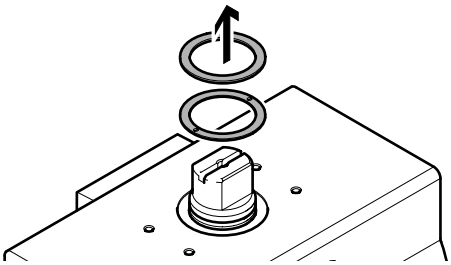
DFPD-...-120°/135°/180°



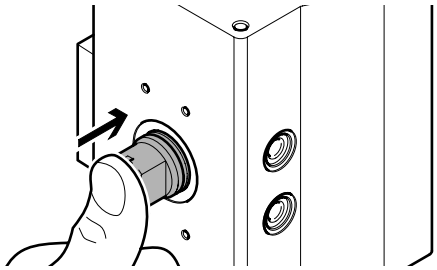
26



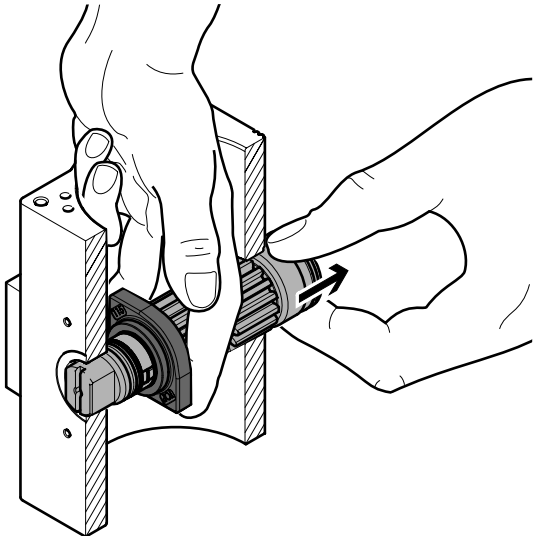
27



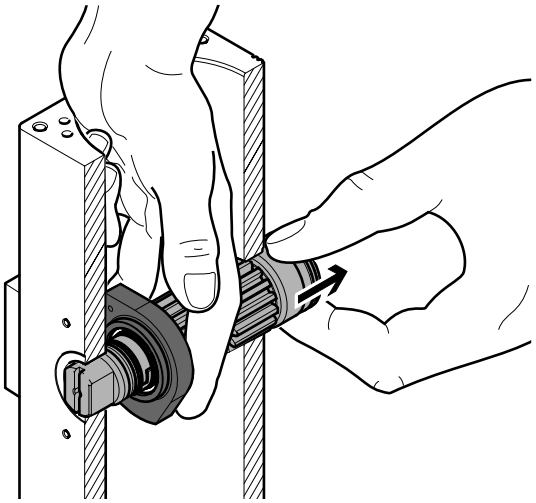
28



29a DFPD-...-90°

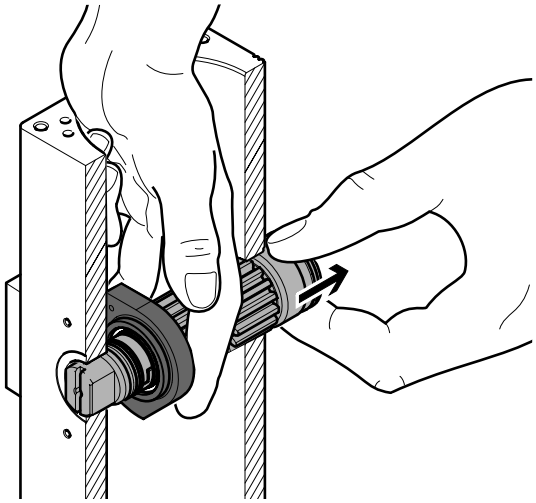


DFPD-...-120°

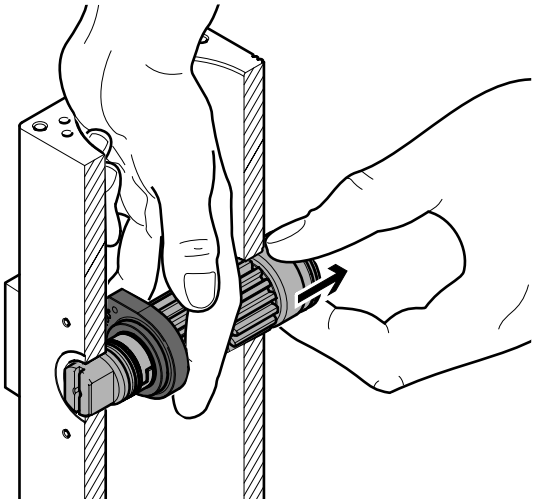


29b

DFPD-...-135°

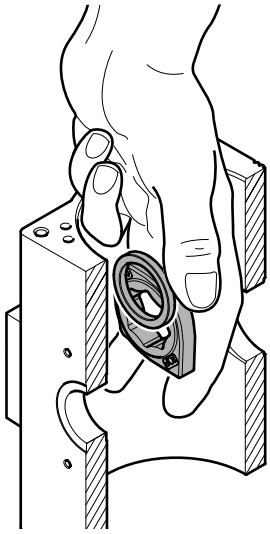


DFPD-...-180°

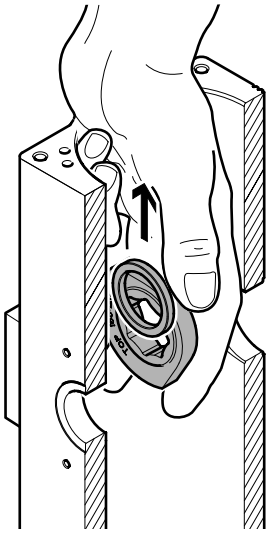


30a

DFPD-...-90°

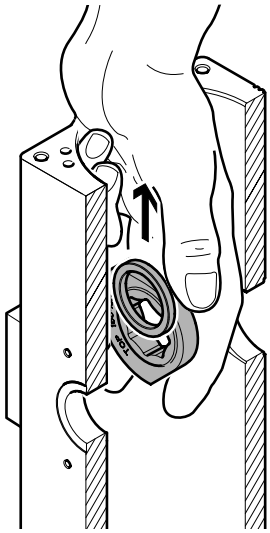


DFPD-...-120°

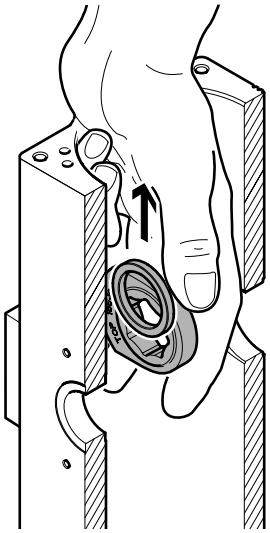


30b

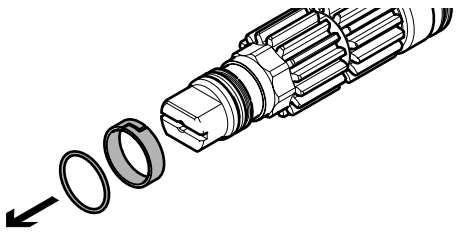
DFPD-...-135°



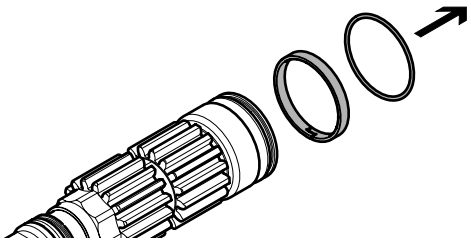
DFPD-...-180°



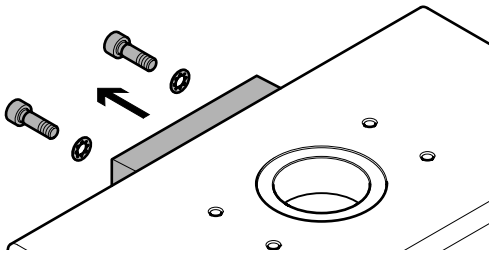
31



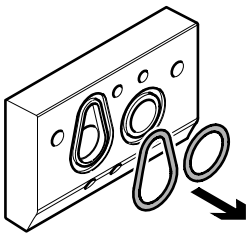
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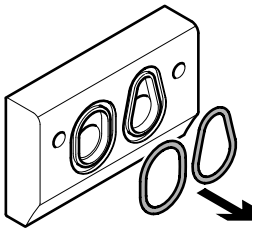
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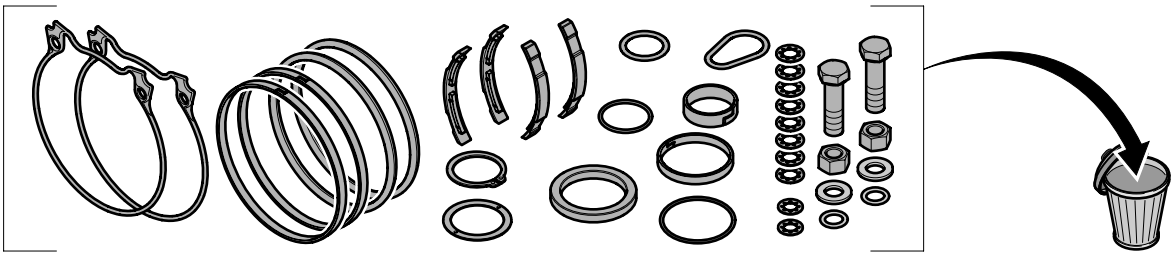
34a



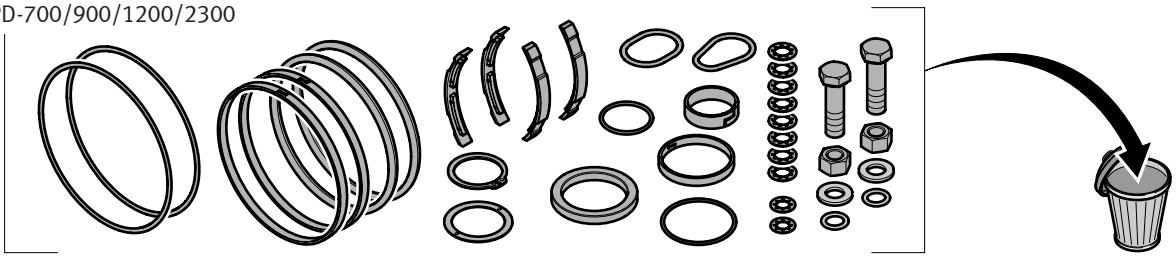
34b DFPD-700/900/1200/2300

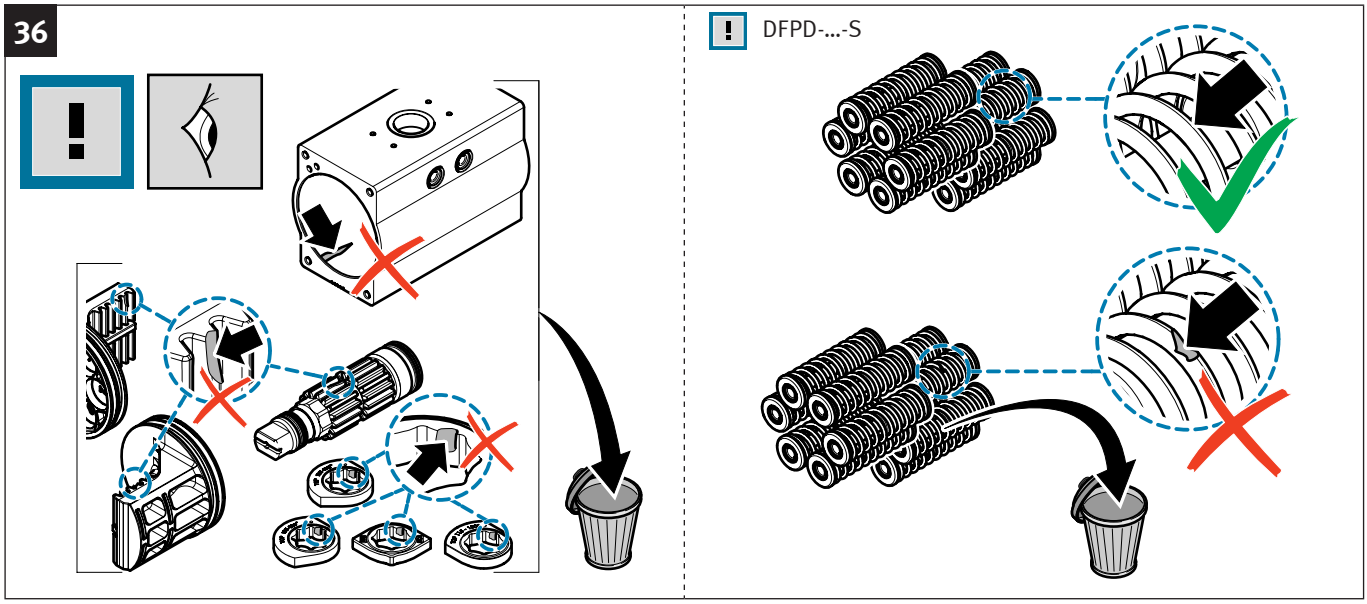


35a

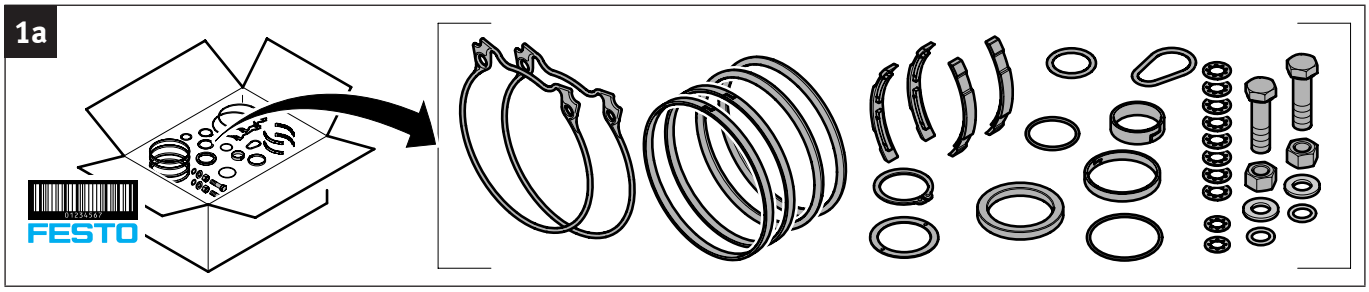


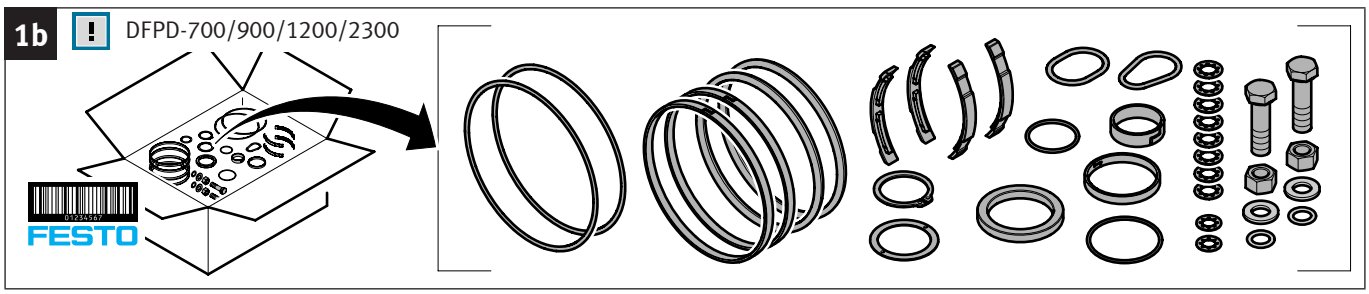
35b DFPD-700/900/1200/2300



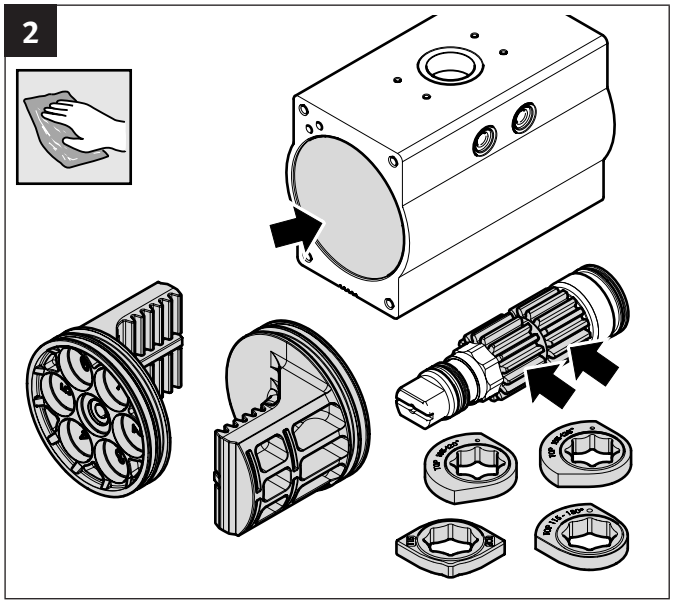


4.2 Assembly

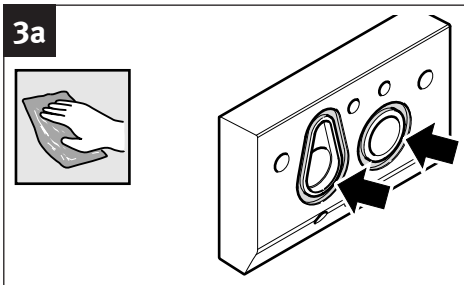




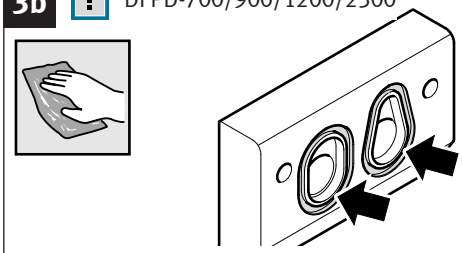
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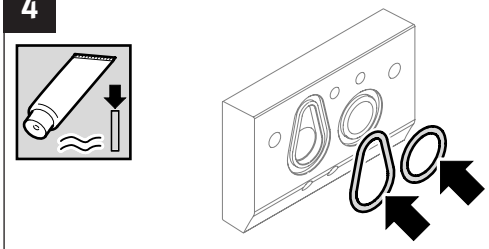
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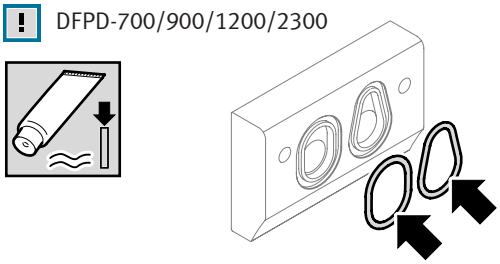
3b DFPD-700/900/1200/2300



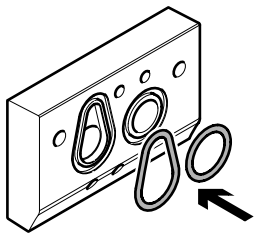
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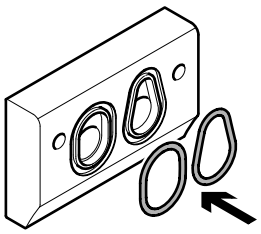
DFPD-700/900/1200/2300



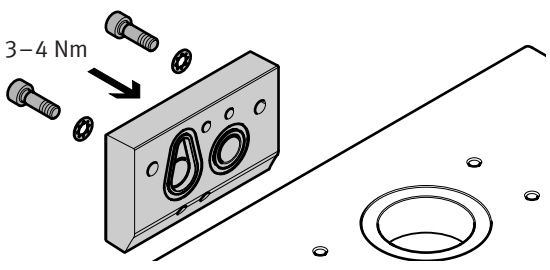
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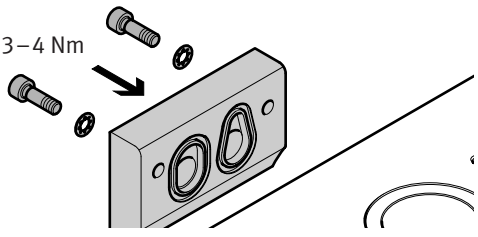
DFPD-700/900/1200/2300



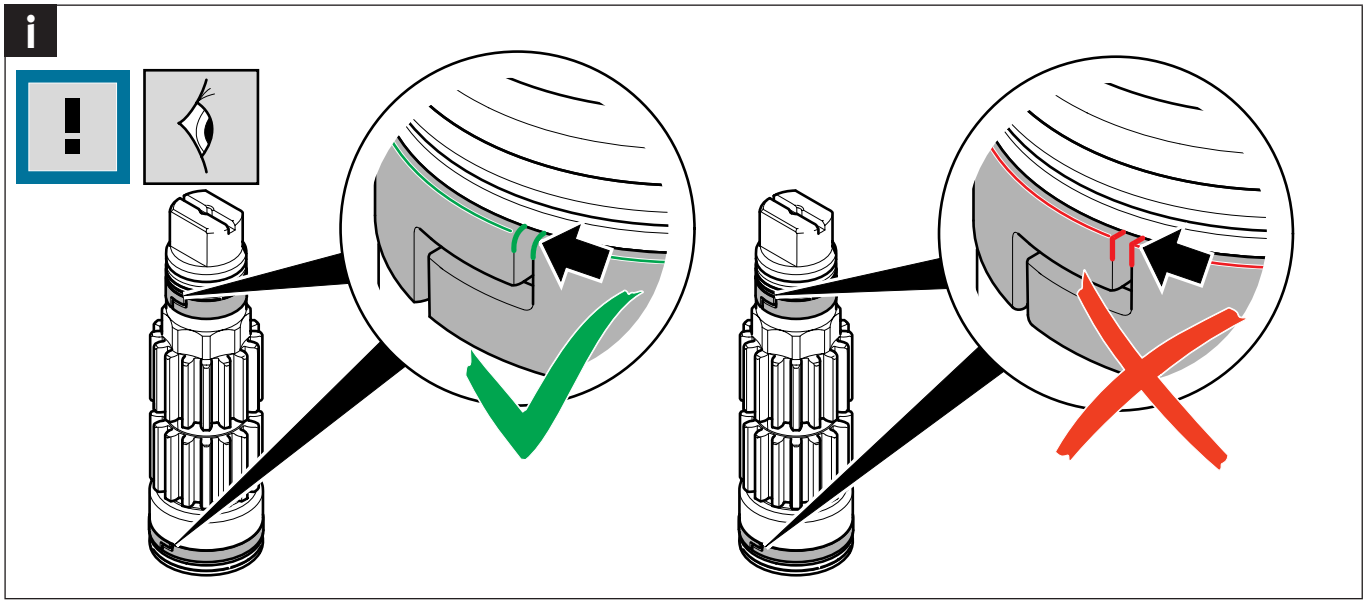
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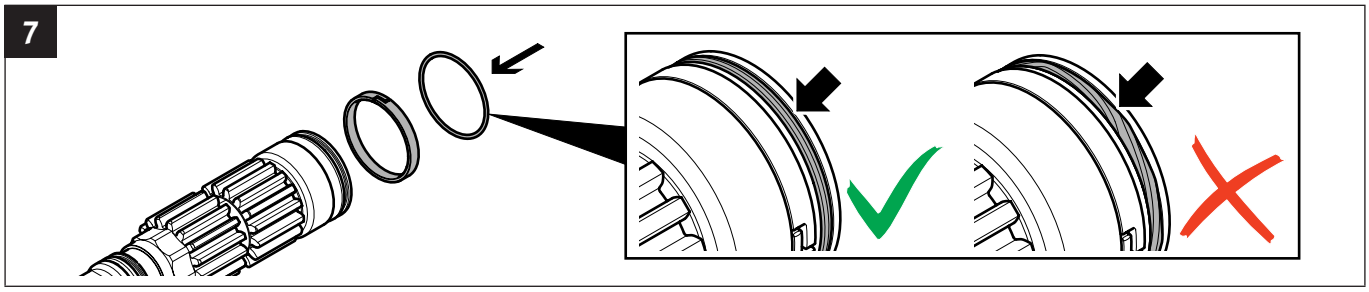
DFPD-700/900/1200/2300



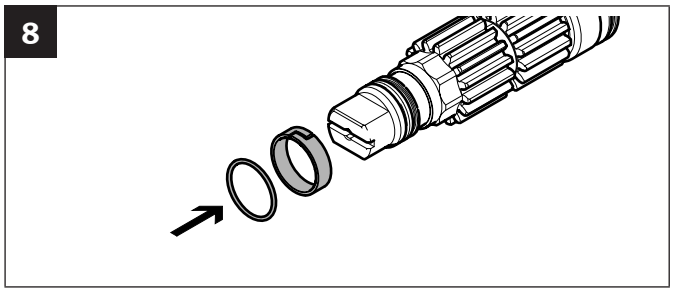
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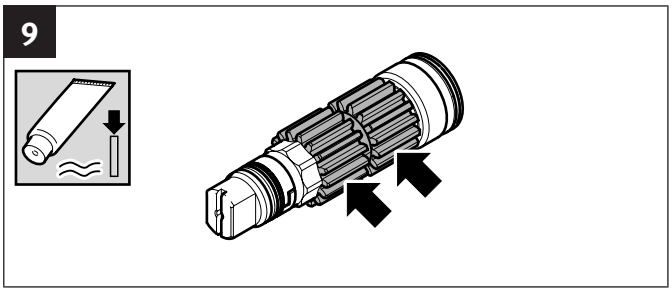
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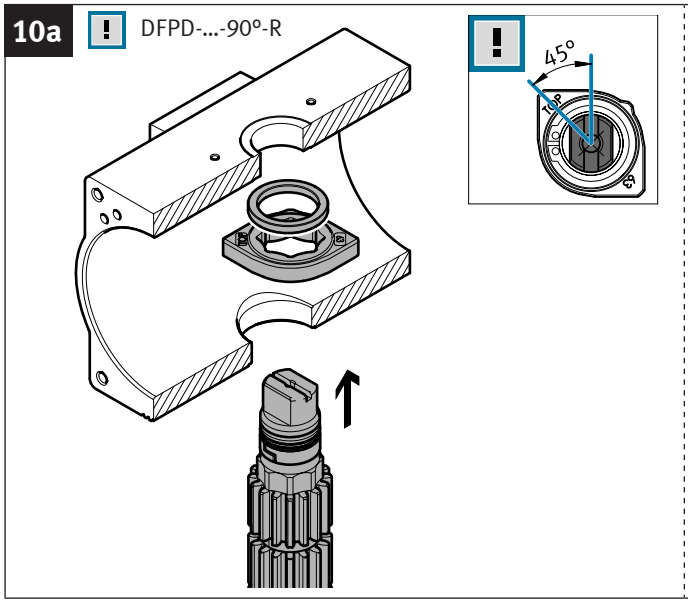


9

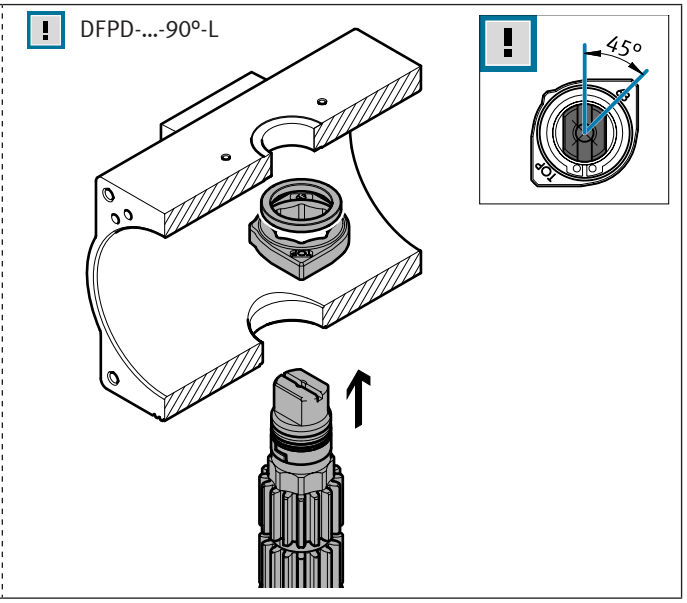


10a

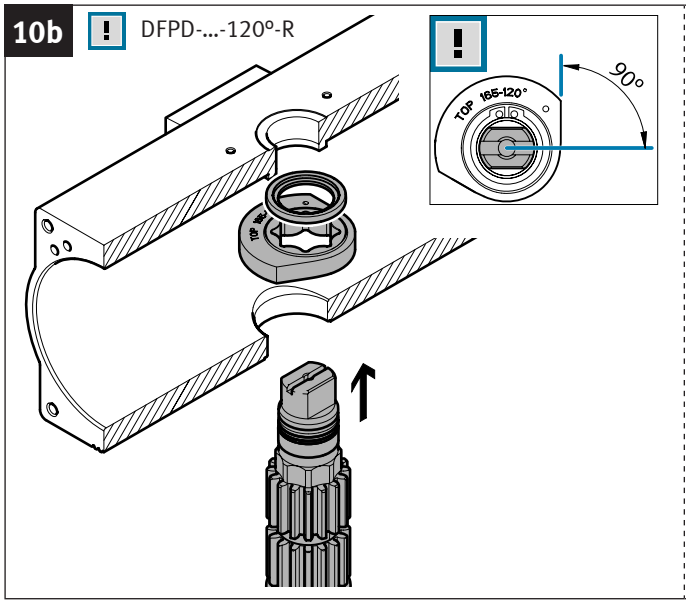
DFPD-...-90°-R



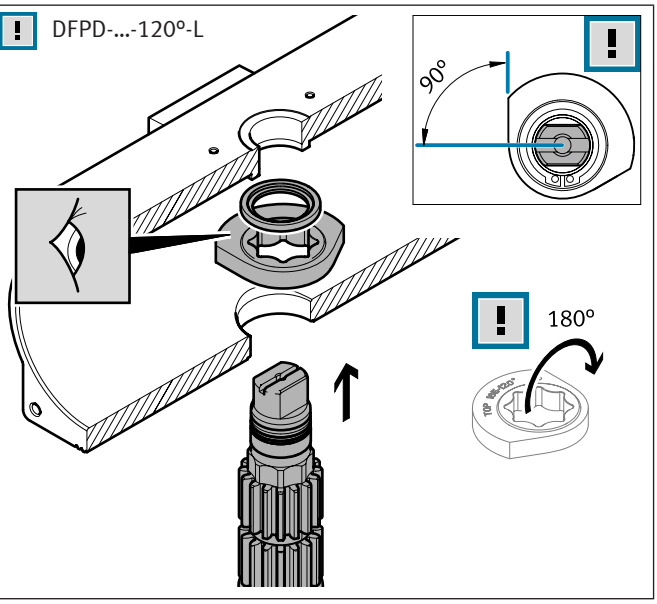
DFPD-...-90°-L



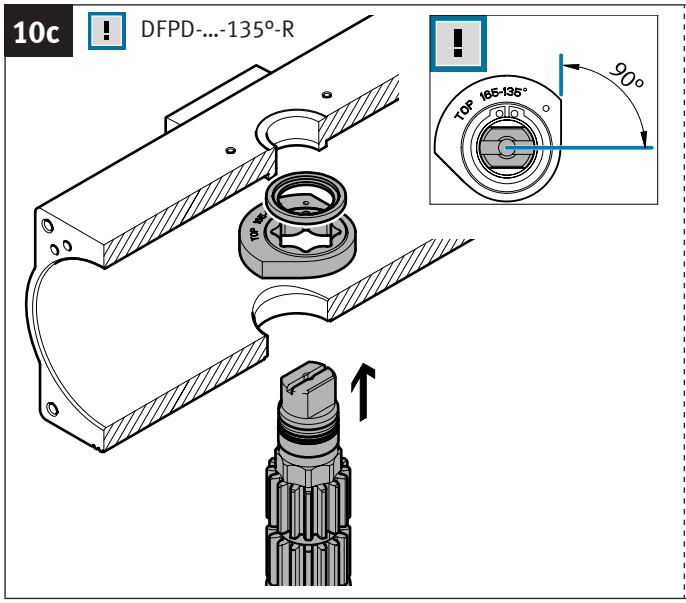
10b DFPD-...-120°-R



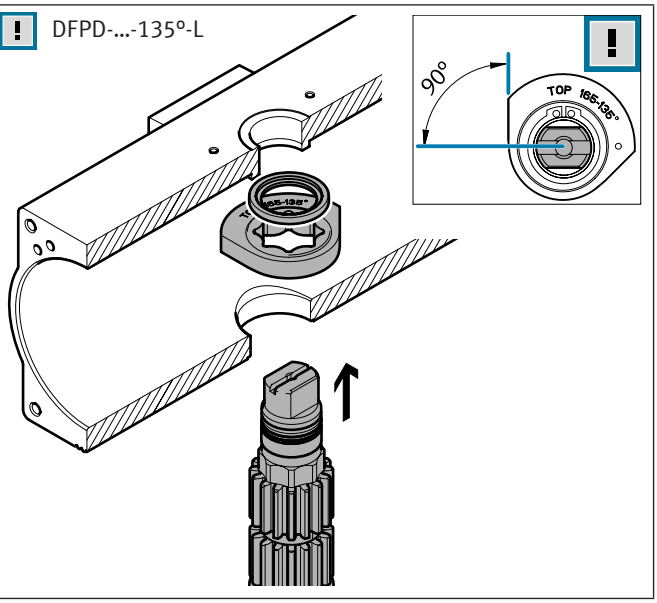
DFPD-...-120°-L



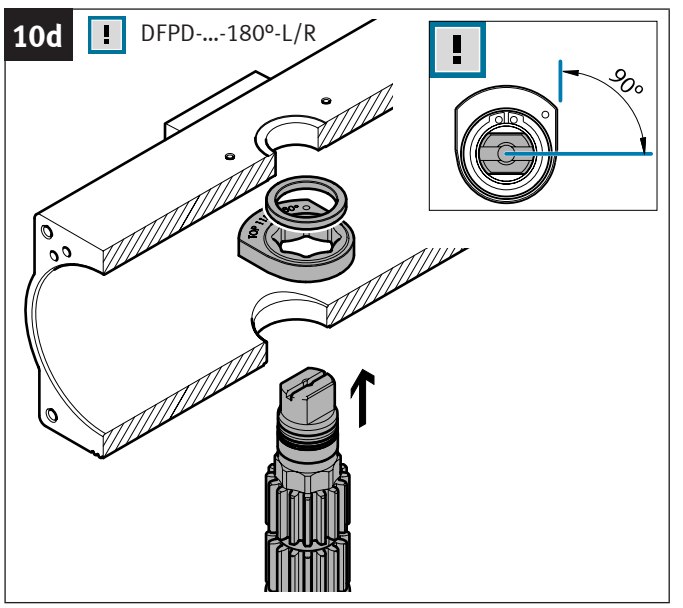
10c DFPD-...-135°-R



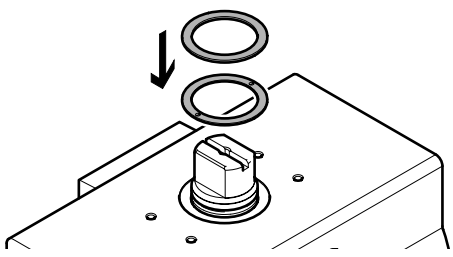
DFPD-...-135°-L



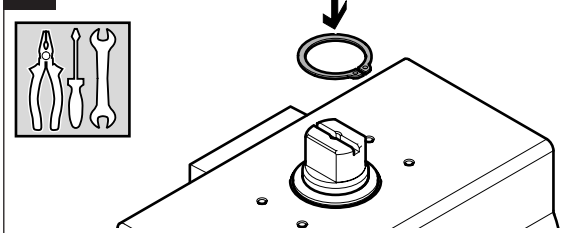
10d DFPD-...-180°-L/R



11

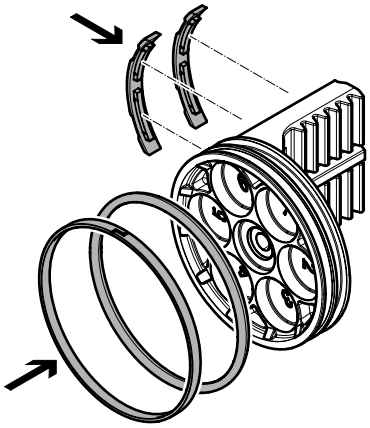


12

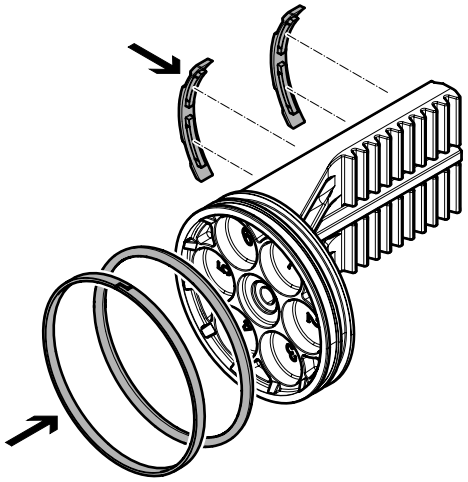


13

DFPD-...-90°

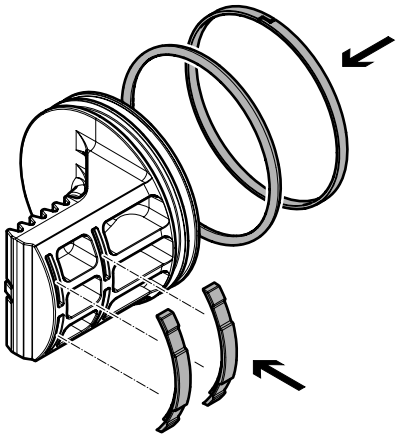


DFPD-...-120°/135°/180°

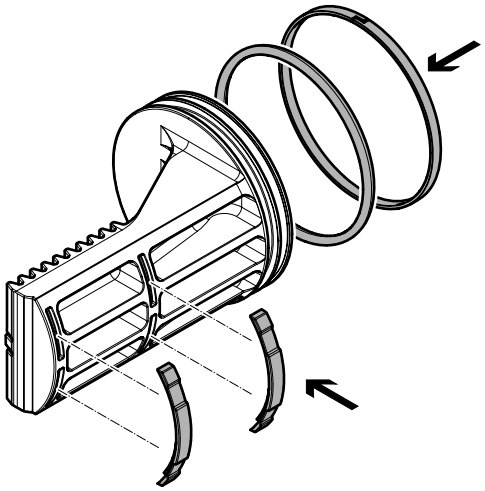


14

DFPD-...-90°

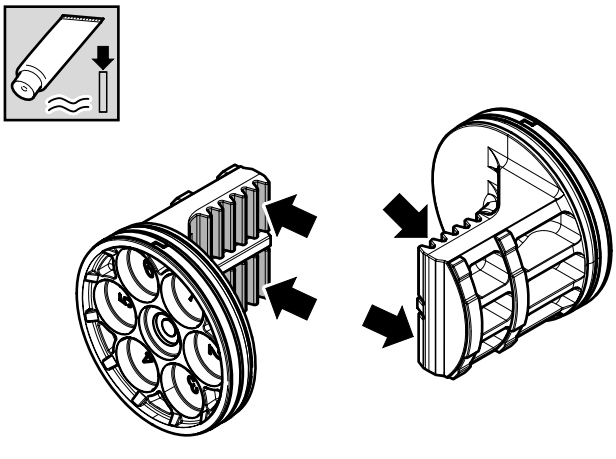


DFPD-...-120°/135°/180°

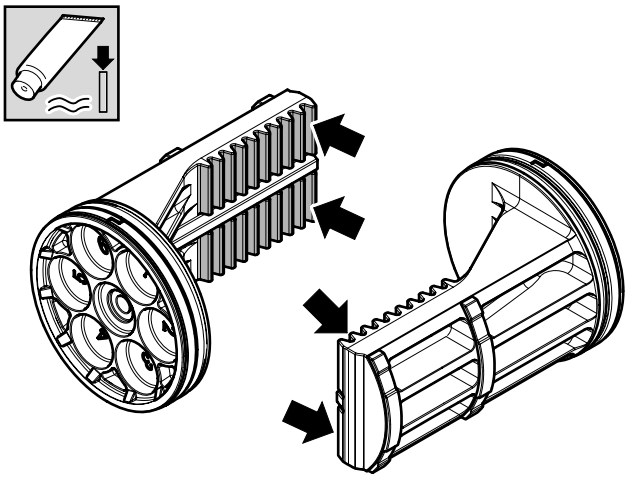


15

DFPD-...-90°

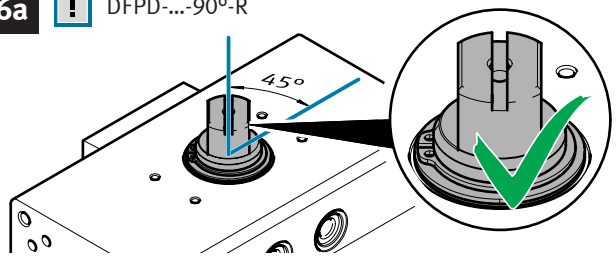


DFPD-...-120°/135°/180°

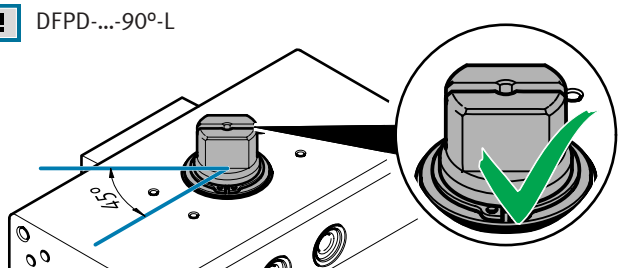


16a

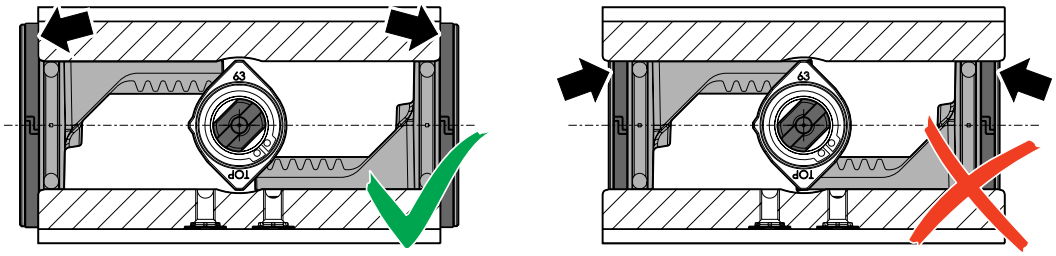
DFPD-...-90°-R



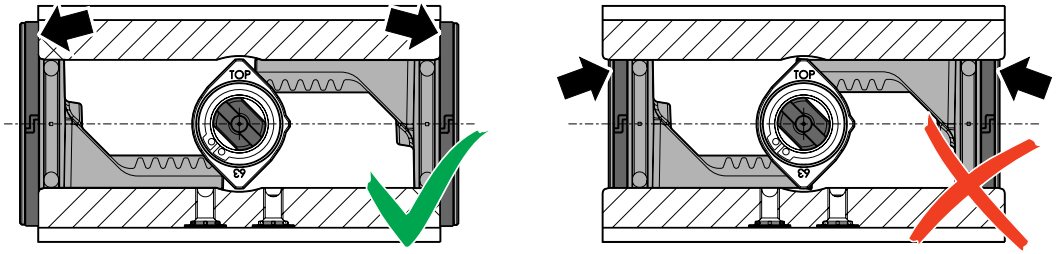
DFPD-...-90°-L



DFPD-...-90°-R

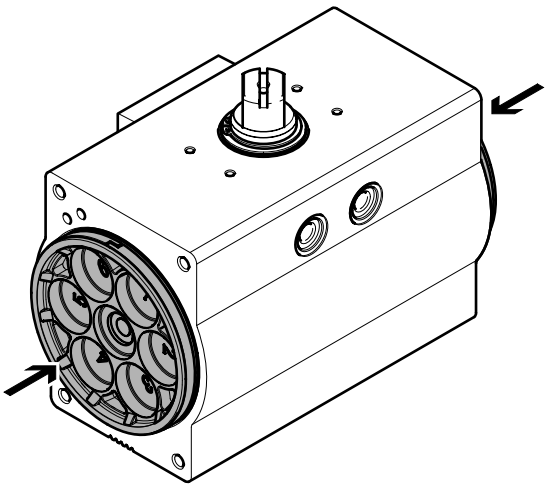


DFPD-...-90°-L

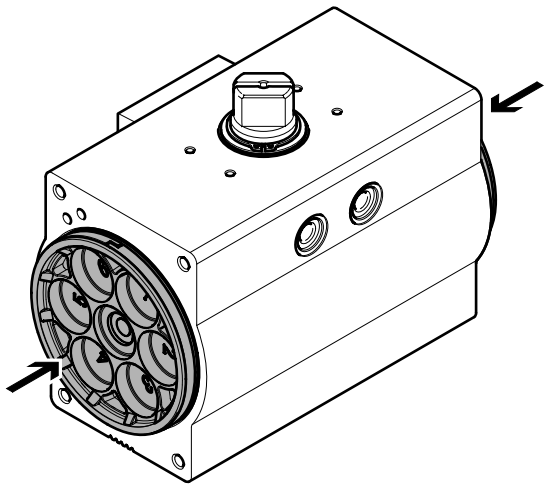


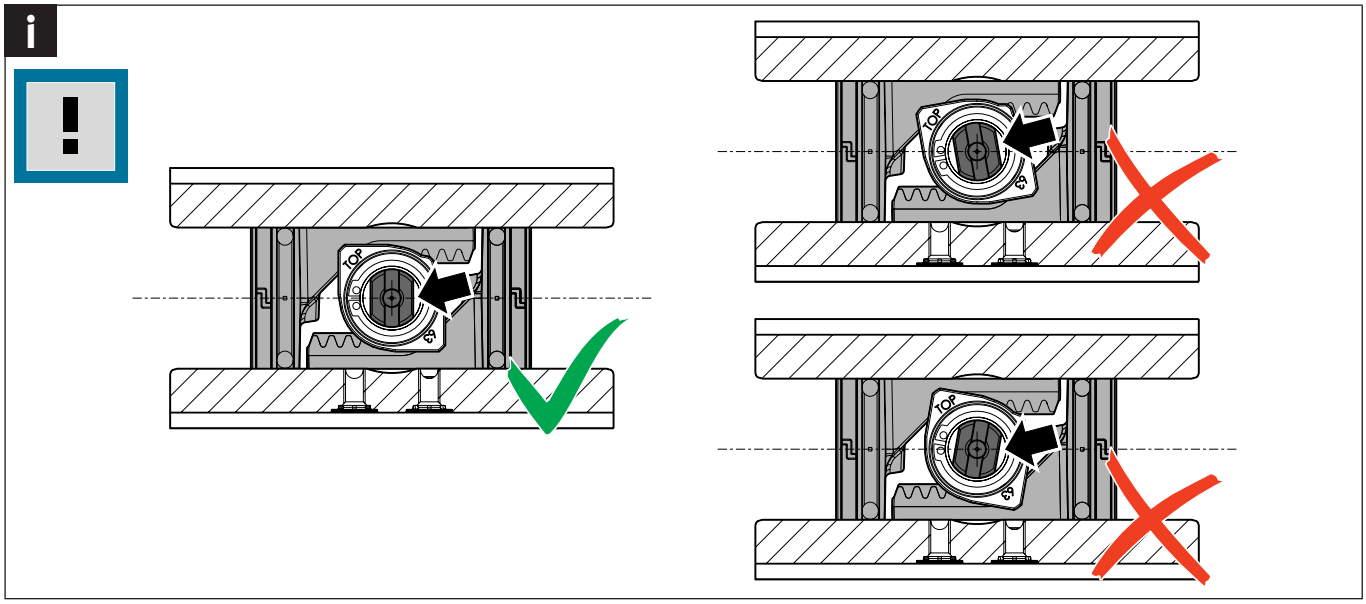
17a

DFPD-...-90°-R

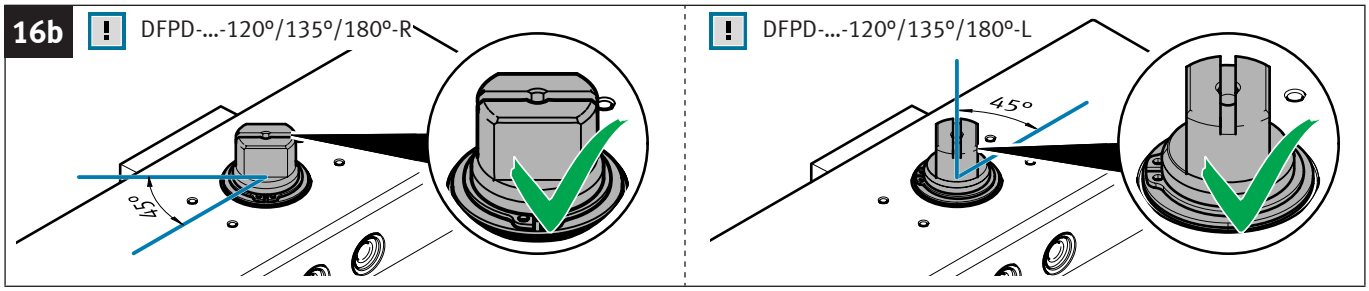


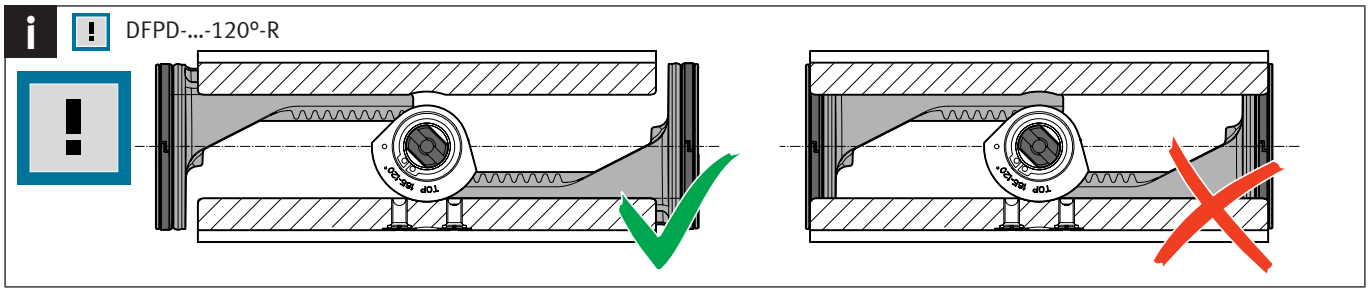
DFPD-...-90°-L

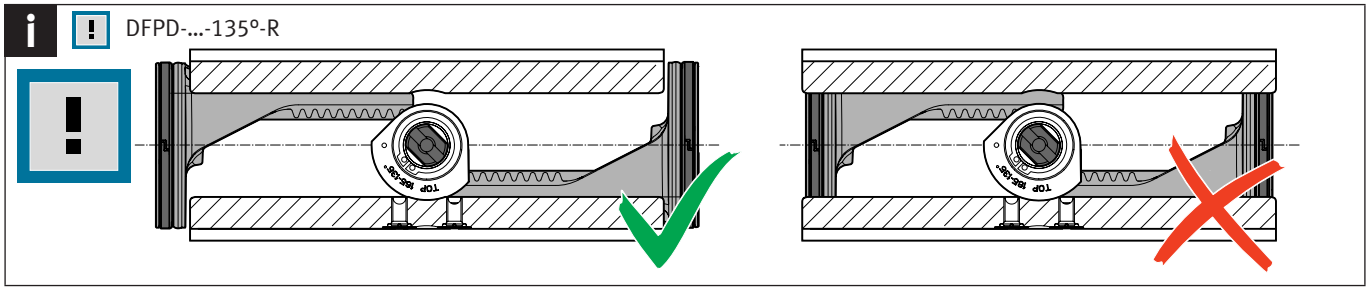


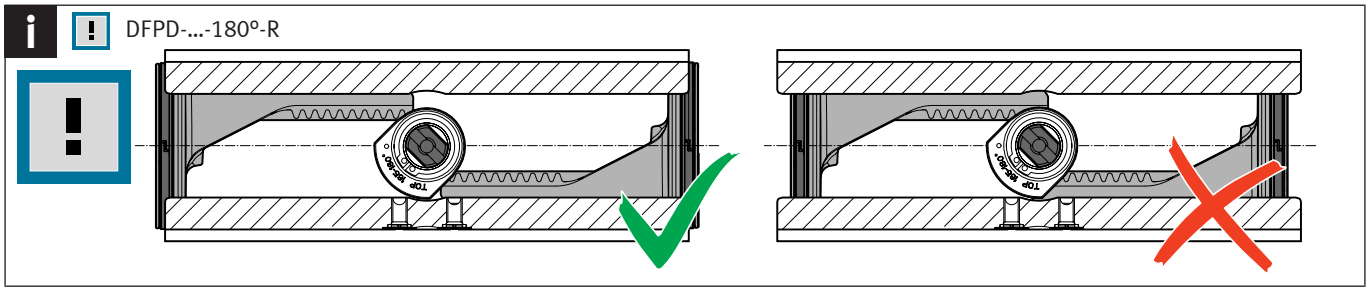

TOP
45°

16b

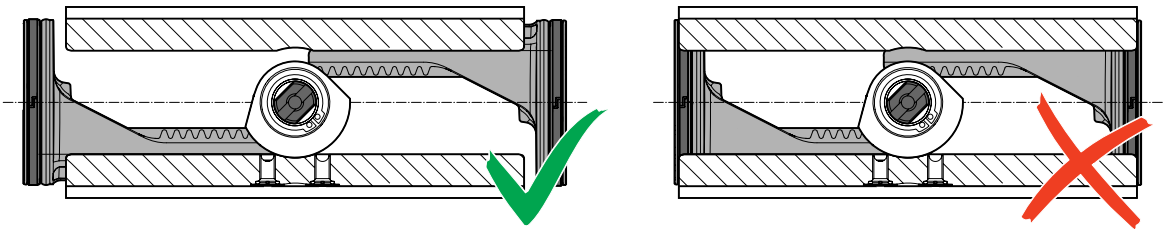

DFPD-...-120°/135°/180°-R
45°
DFPD-...-120°/135°/180°-L
45°


DFPD-...-120°-R

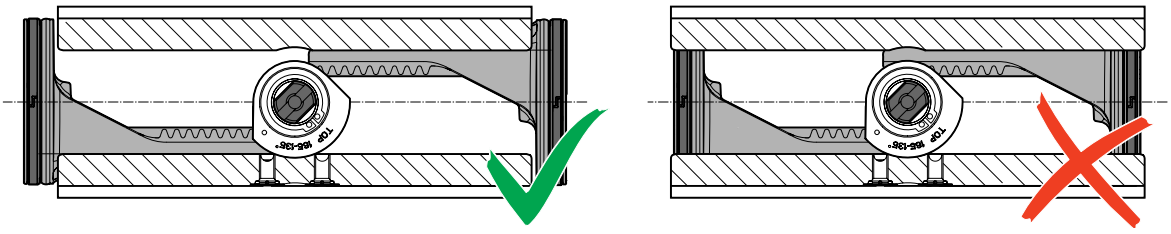

DFPD-...-135°-R


DFPD-...-180°-R

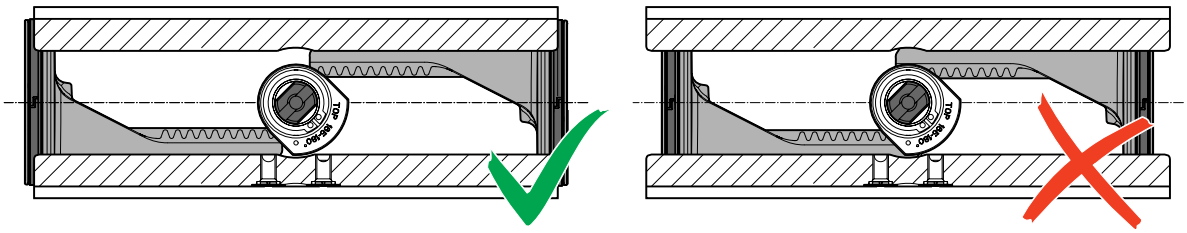
i DFPD-...-120°-L



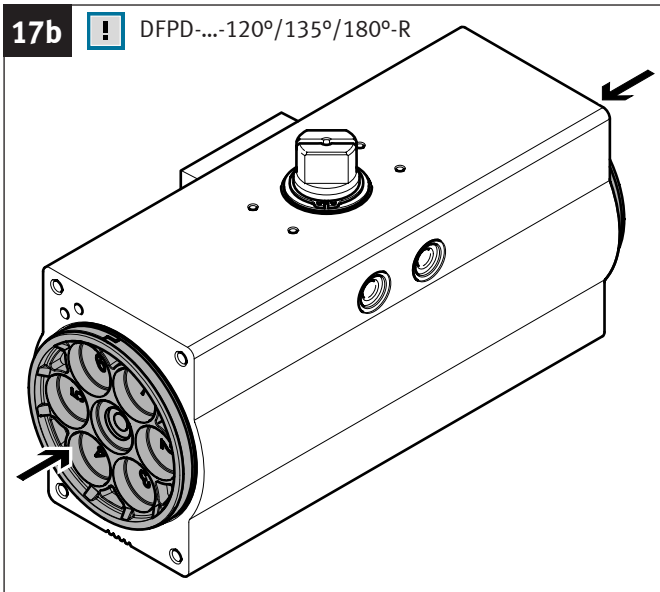
i DFPD-...-135°-L



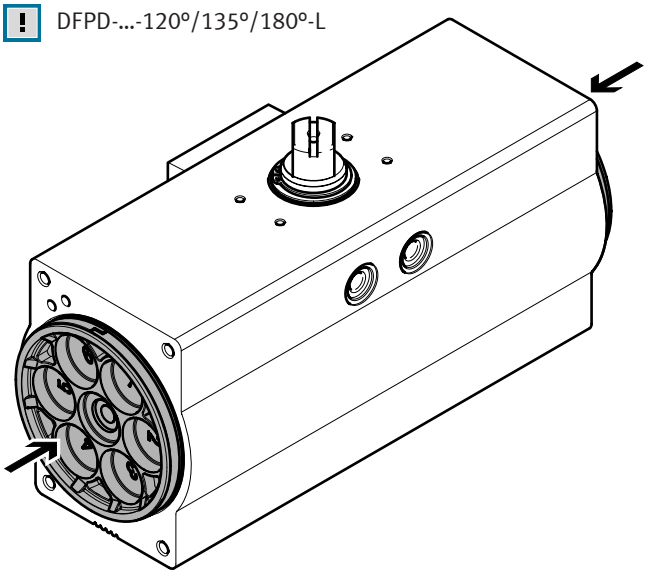
i DFPD-...-180°-L



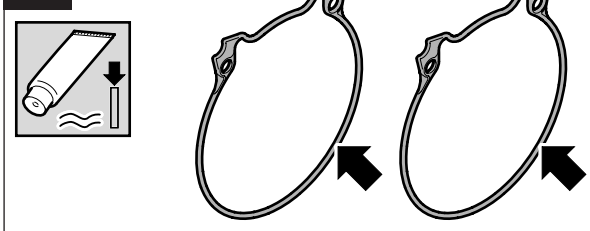
17b DFPD-...-120°/135°/180°-R



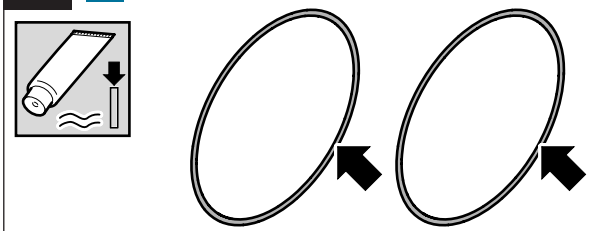
DFPD-...-120°/135°/180°-L



18a

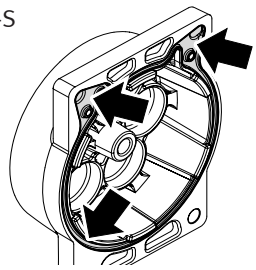


18b DFPD-700/900/1200/2300



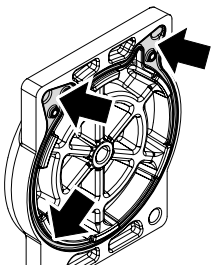
19a DFPD-...-S





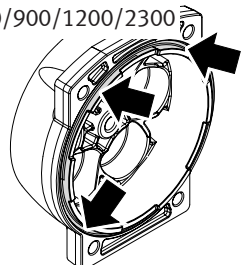
DFPD-...-D



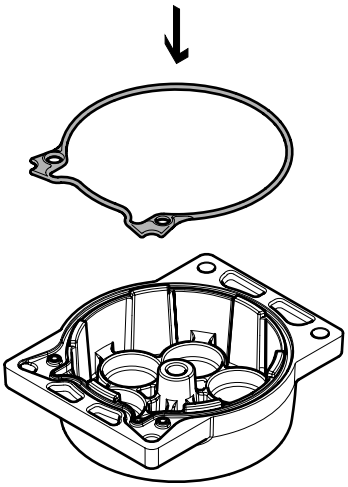


19b DFPD-700/900/1200/2300

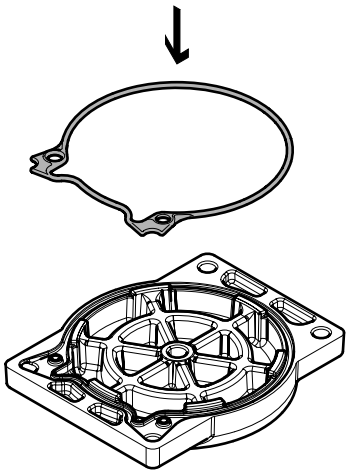




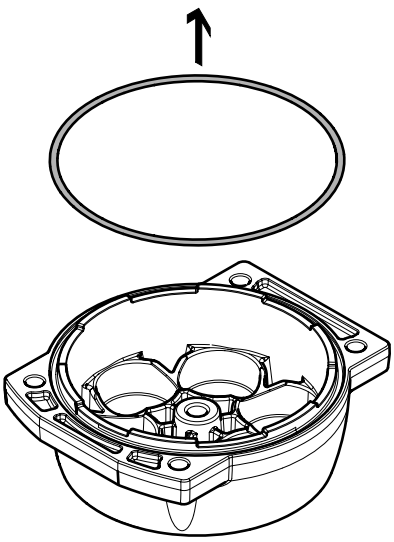
20a DFPD-...-S



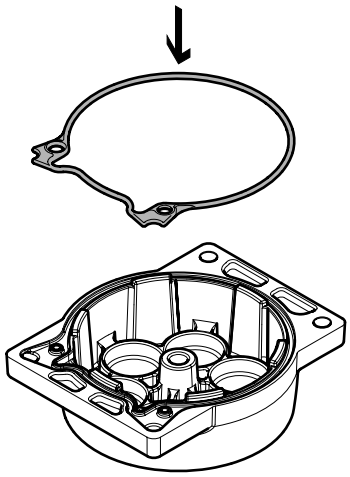
DFPD-...-D



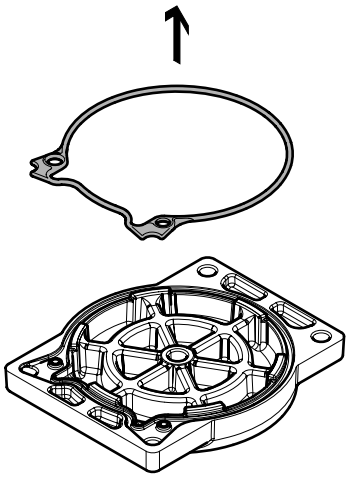
20b DFPD-700/900/1200/2300...-D+S



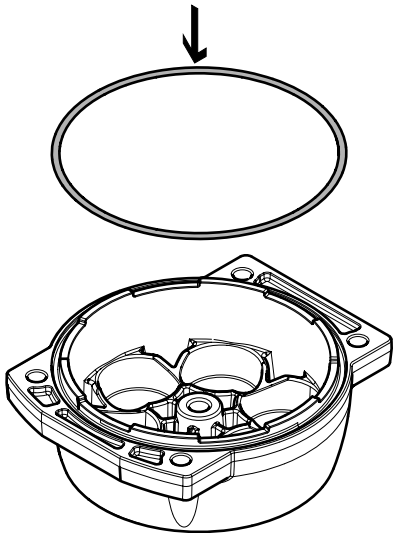
21a DFPD-...-S



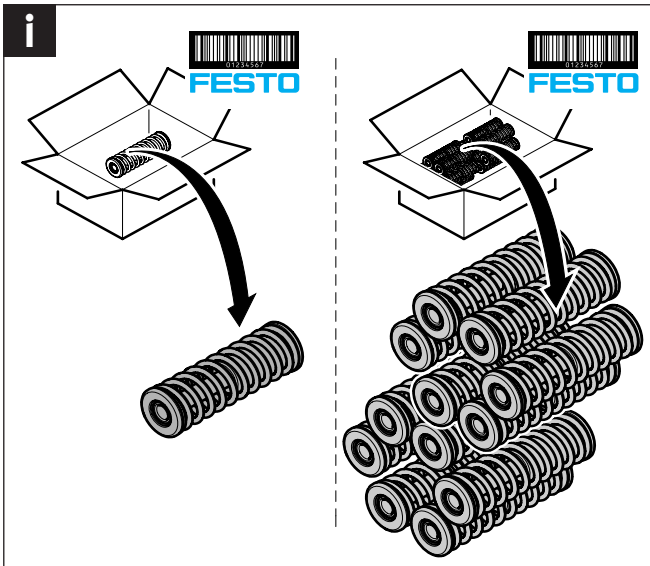
DFPD-...-D



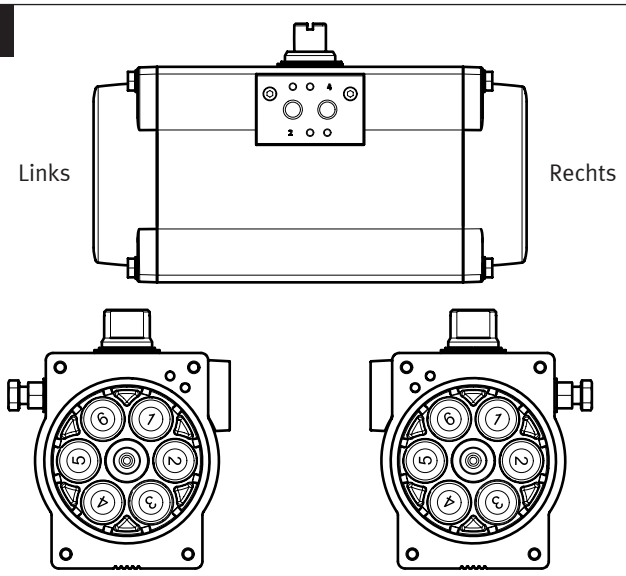
21b DFPD-700/900/1200/2300...-D+S



i



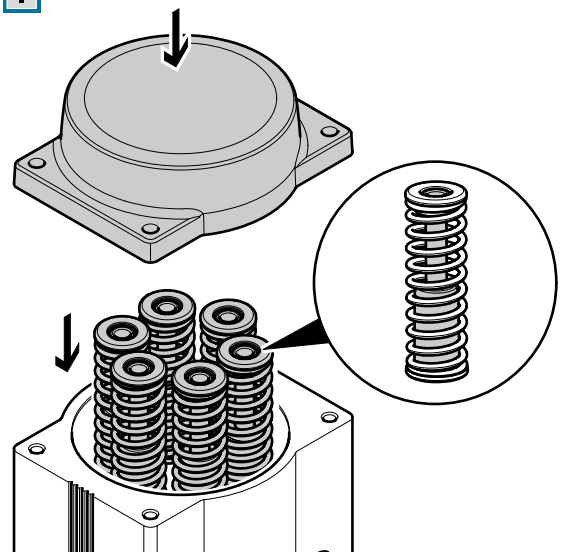
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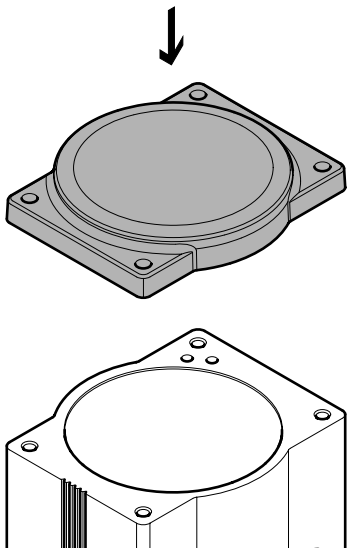
Type code	Positioning springs		Number of springs
	Left	Right	
20	2-5	2-5	4
25	2-5	2-4-6	5
30	2-4-6	2-4-6	6
35	2-4-6	1-3-4-6	7
40	1-3-4-6	1-3-4-6	8
45	1-3-4-6	1-3-4-5-6	9
50	1-3-4-5-6	1-3-4-5-6	10
55	1-3-4-5-6	1-2-3-4-5-6	11
60	1-2-3-4-5-6	1-2-3-4-5-6	12

22a

DFPD-...-S

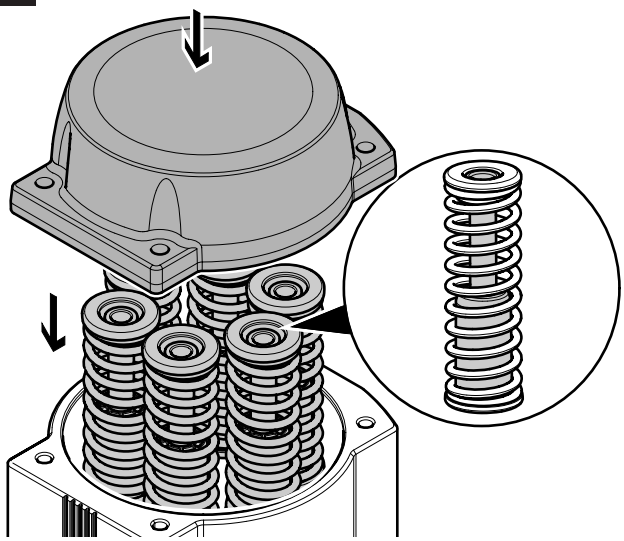


DFPD-...-D

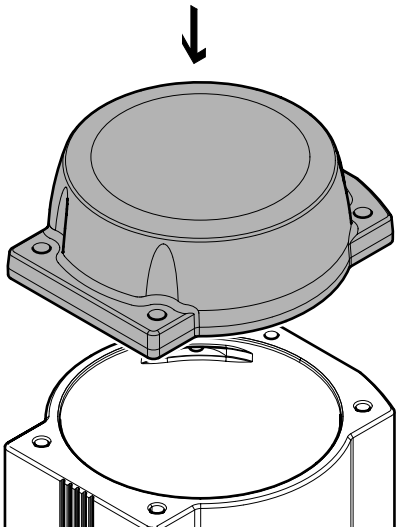


22b

DFPD-700/900/1200/2300...-S

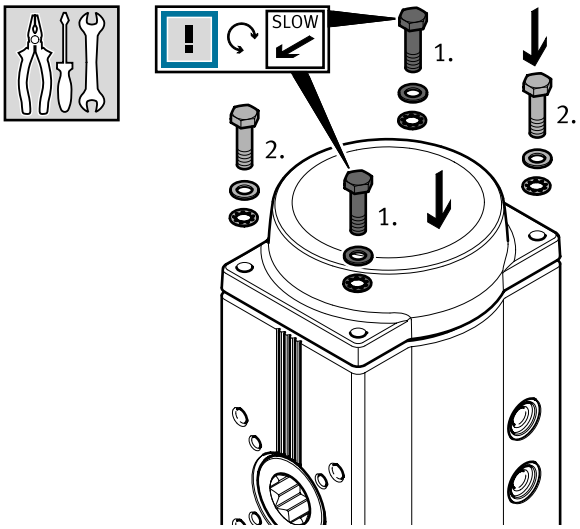


DFPD-700/900/1200/2300...-D

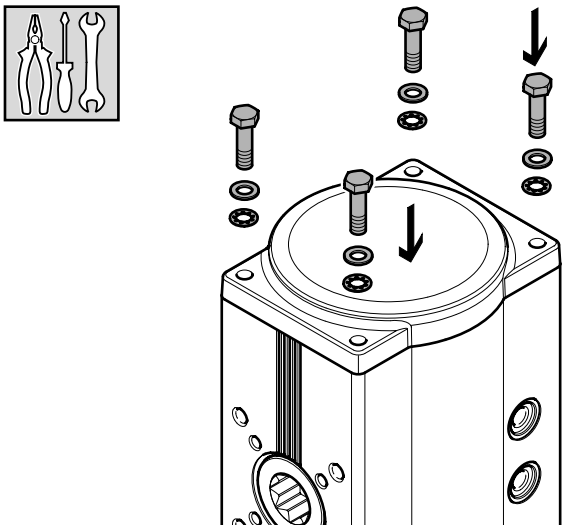


23a

DFPD-...-S

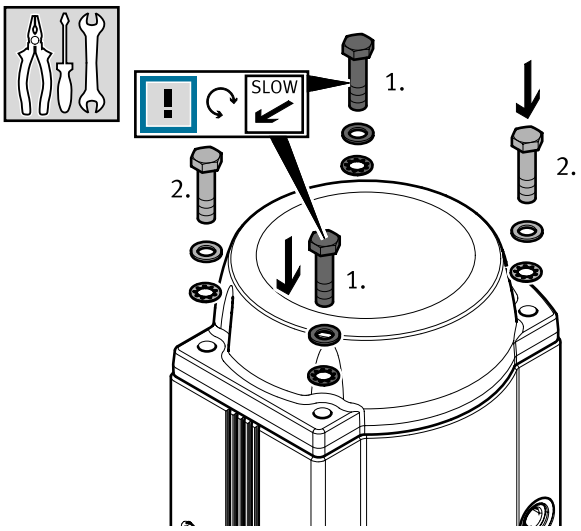


DFPD-...-D

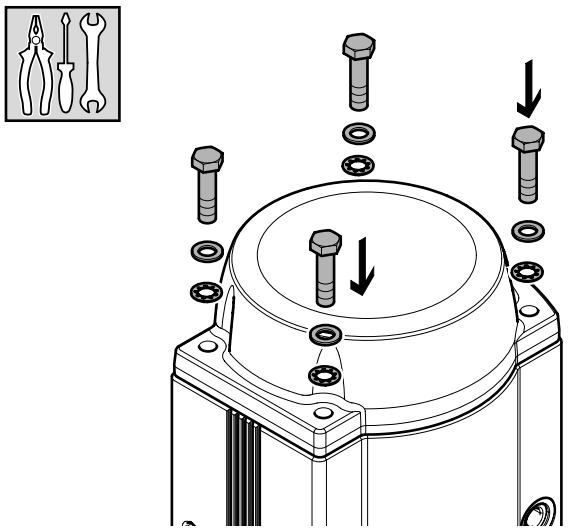


23b

DFPD-700/900/1200/2300...-S



DFPD-700/900/1200/2300...-D

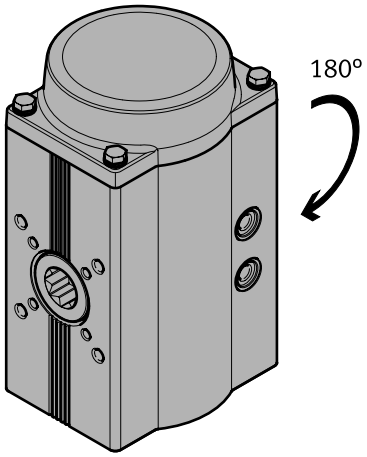


i

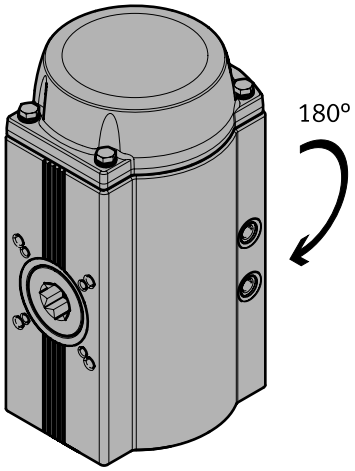
	Nm
DFPD-10	3–4 Nm
DFPD-20	3–4 Nm
DFPD-40	10–11 Nm
DFPD-80	10–11 Nm
DFPD-120	22–25 Nm
DFPD-160	22–25 Nm
DFPD-240	22–25 Nm
DFPD-300	38–43 Nm
DFPD-480	38–43 Nm
DFPD-700	38–43 Nm
DFPD-900	60–70 Nm
DFPD-1200	70–80 Nm
DFPD-2300	115–125 Nm

24

DFPD-...

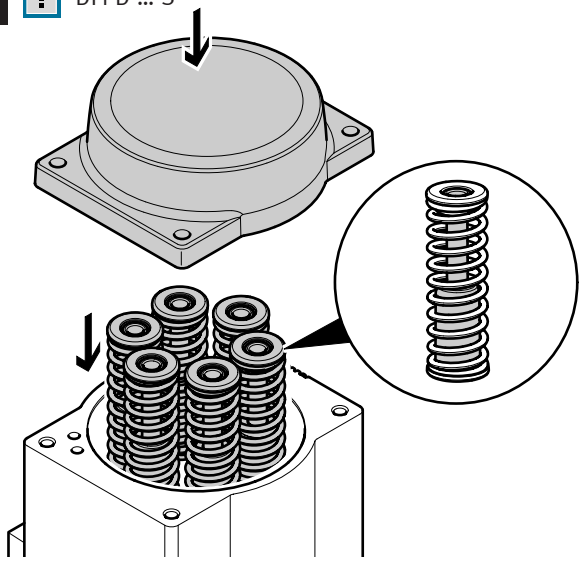


DFPD-700/900/1200/2300...

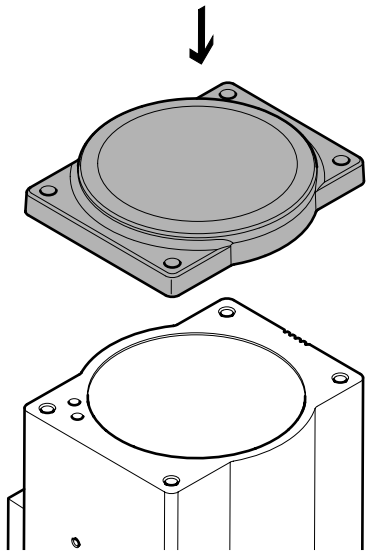


25a

DFPD-...-S

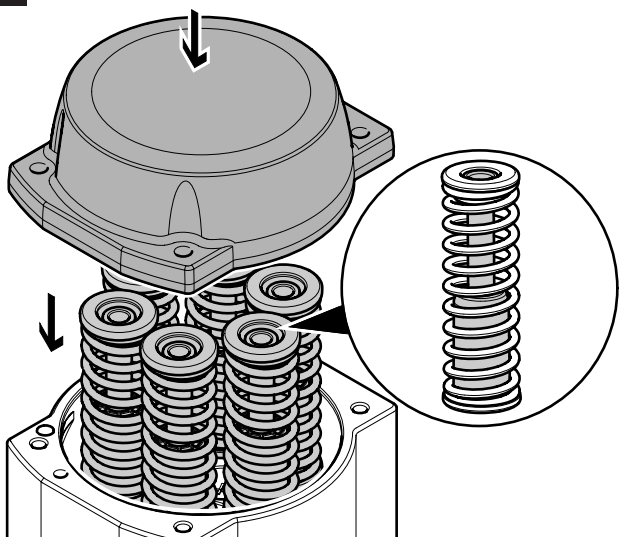


DFPD-...-D

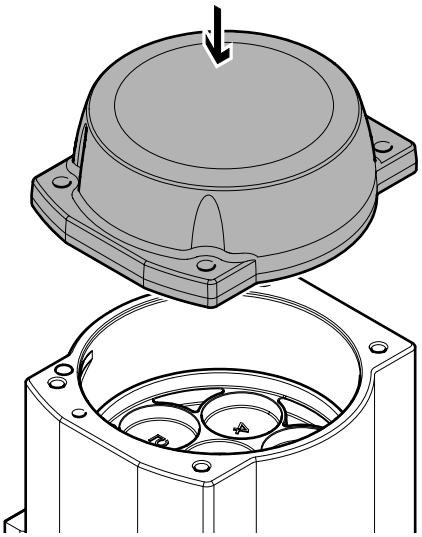


25b

DFPD-700/900/1200/2300...-S

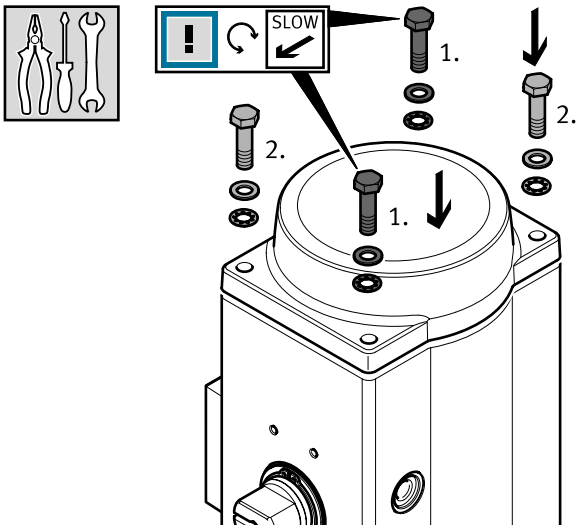


DFPD-700/900/1200/2300...-D

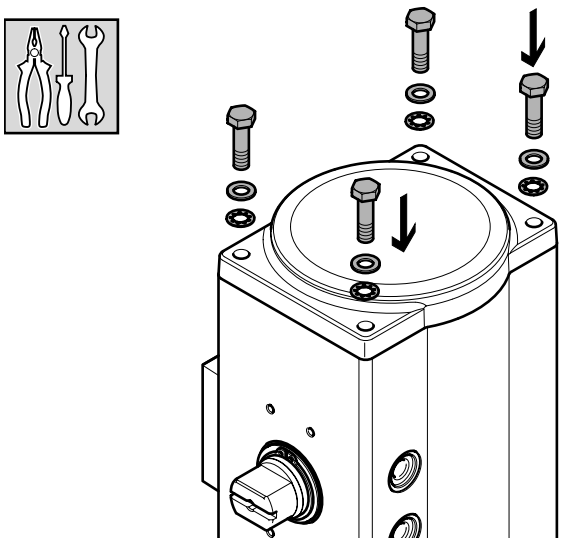


26a

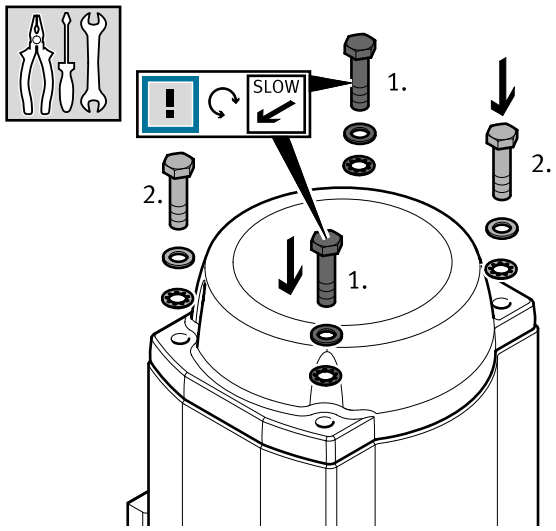
DFPD-...-S



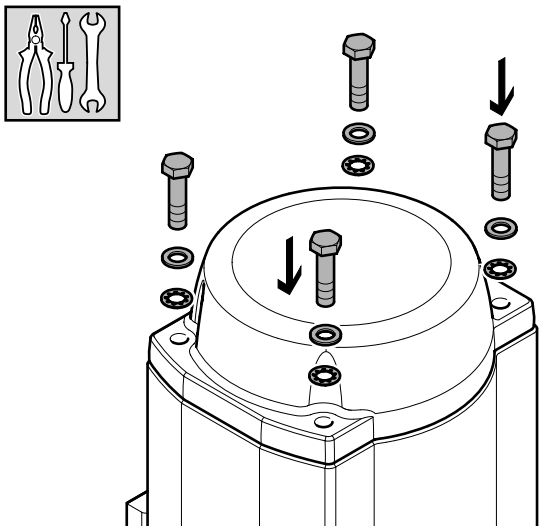
DFPD-...-D



26b DFPD-700/900/1200/2300...-S



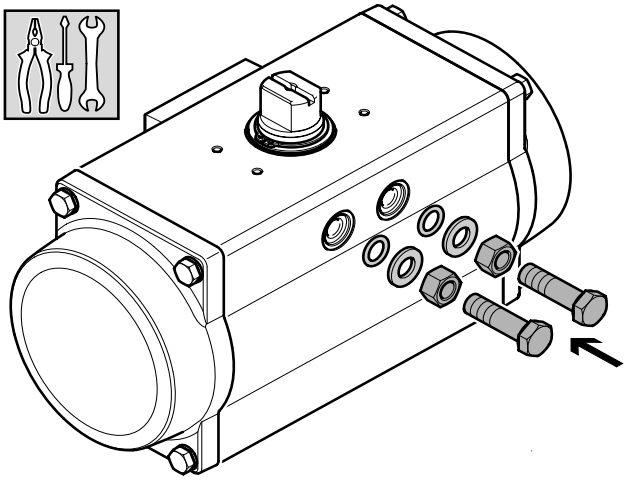
DFPD-700/900/1200/2300...-D



i

	Nm
DFPD-10	3–4 Nm
DFPD-20	3–4 Nm
DFPD-40	10–11 Nm
DFPD-80	10–11 Nm
DFPD-120	22–25 Nm
DFPD-160	22–25 Nm
DFPD-240	22–25 Nm
DFPD-300	38–43 Nm
DFPD-480	38–43 Nm
DFPD-700	38–43 Nm
DFPD-900	60–70 Nm
DFPD-1200	70–80 Nm
DFPD-2300	115–125 Nm

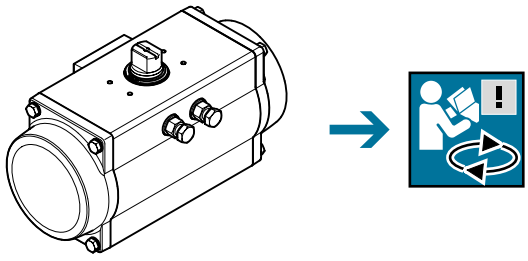
27



	Nm
DFPD-10	10–11 Nm
DFPD-20	10–11 Nm
DFPD-40	10–11 Nm
DFPD-80	22–25 Nm
DFPD-120	22–25 Nm
DFPD-160	38–43 Nm
DFPD-240	65–70 Nm
DFPD-300	65–70 Nm
DFPD-480	85–90 Nm
DFPD-700	85–90 Nm
DFPD-900	175–180 Nm
DFPD-1200	175–180 Nm
DFPD-2300	345–355 Nm

5 Start-up

1



Description :
PRESSURE REGULATOR
0-87 PSI (6 BARS)
24VDC - INPUT 4 -20MA - OUTPUT PNP

Trade Name :
Festo

Model no :
VPPE-3-1-18-6-420-E1

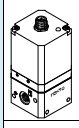
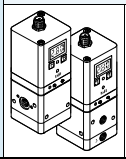
VPPE-3-1-1/8-6-420-E1

Proportional pressure regulators VPPE



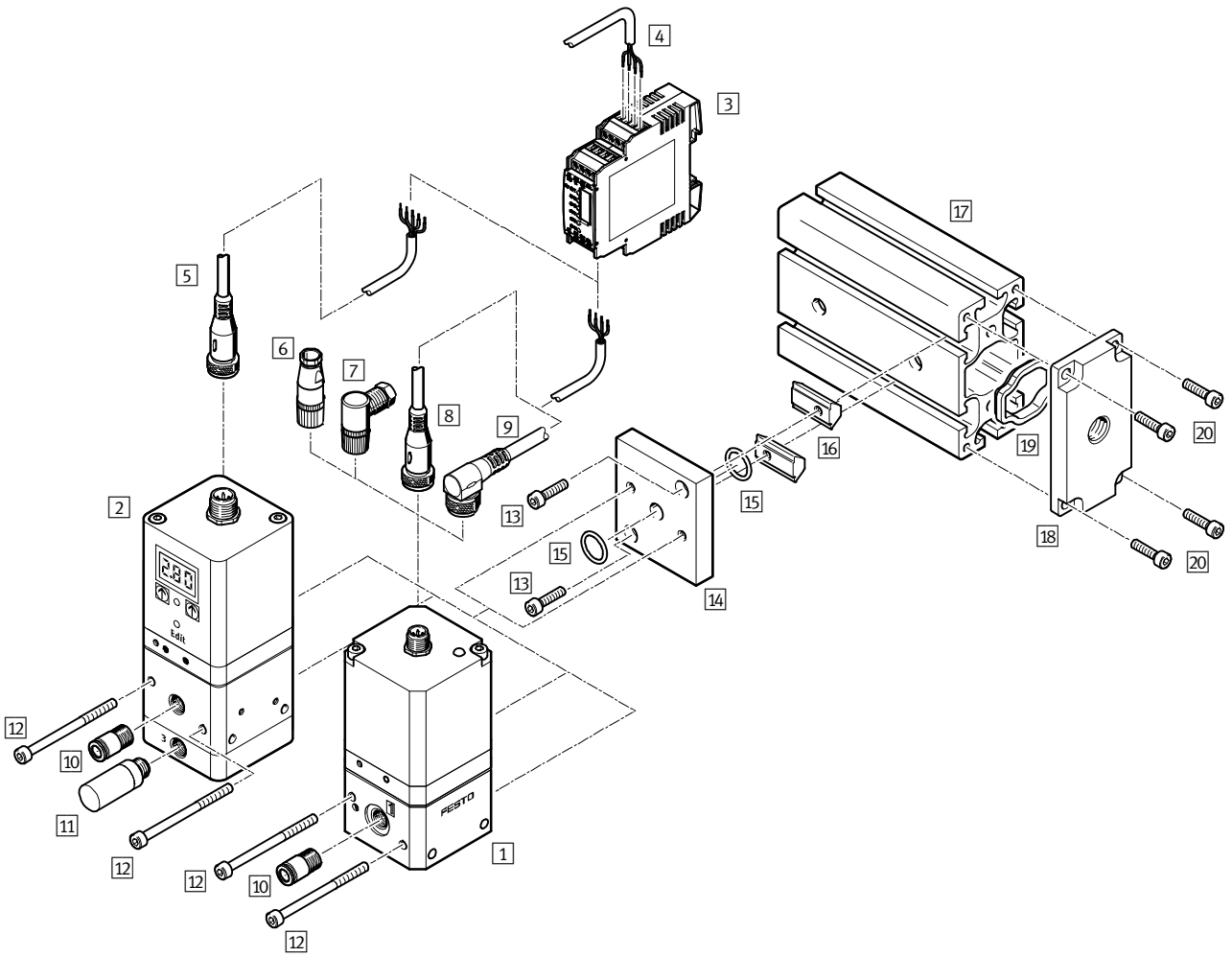
Proportional pressure regulators VPPE

Product range overview

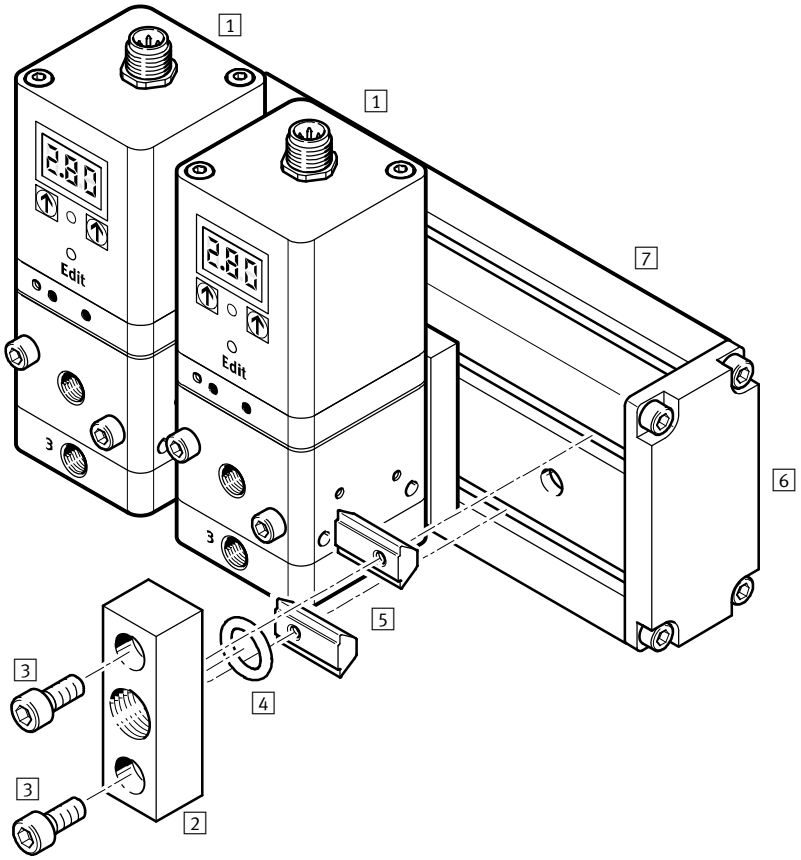
Function	Version	Pneumatic connection	Nominal size for pressurisation/ exhaust [mm]	Pressure regulation range [bar]	Setpoint input		➔ Page/ Internet
					Voltage type 0 ... 10 V	Current type 4 ... 20 mA	
Proportional pressure regulator	**Without display**						
		G1⁄8	5/2.5	0.15 ... 6	■	–	6
	With display						
		G1⁄8	5/2.5	0.02 ... 2	■	■	10
				0.06 ... 6			
				0.1 ... 10			

Proportional pressure regulators VPPE

Peripherals overview



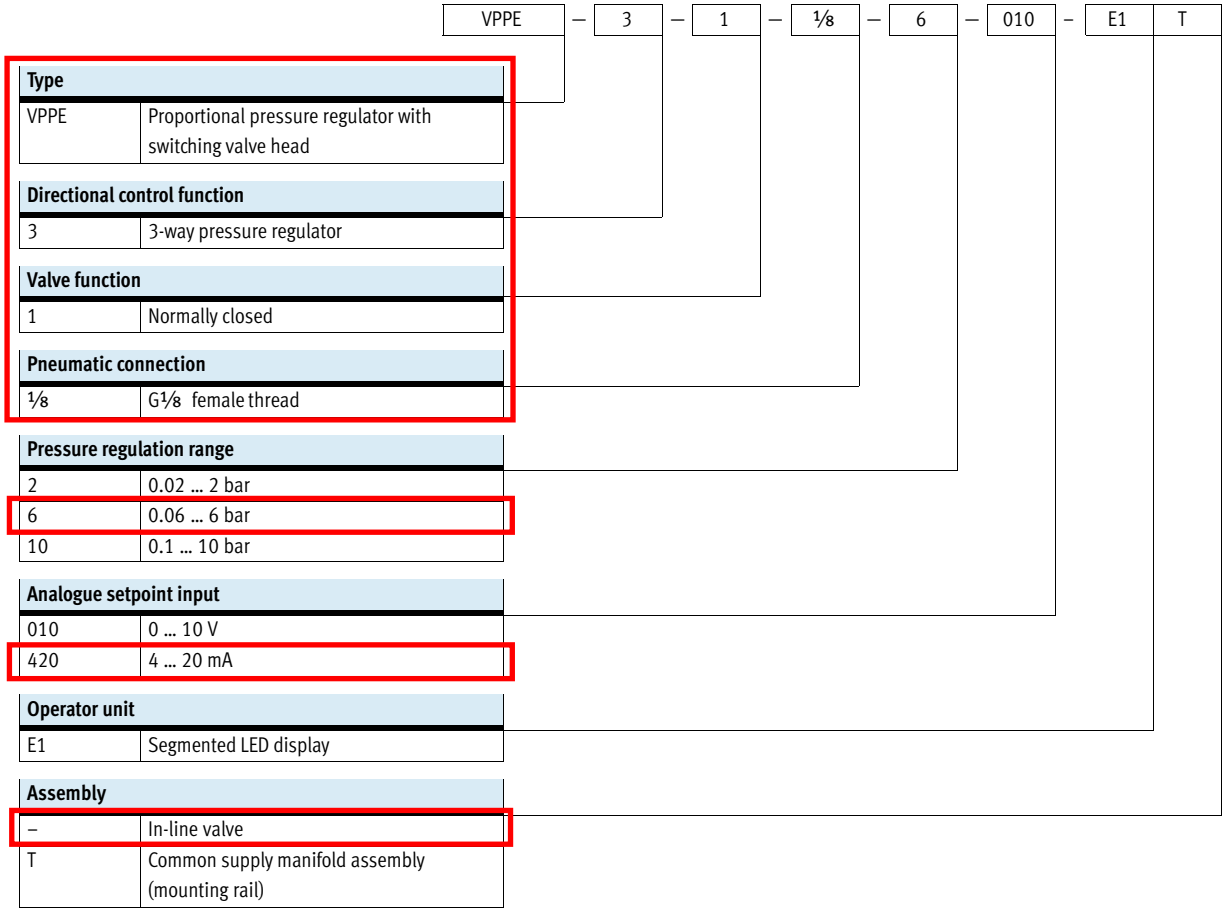
Accessories				
		Type	Brief description	➔ Page/Internet
1	Prop. pressure regulator	VPPE...	–	8
2	Prop. pressure regulator with display	VPPE ... E1	–	13
3	Setpoint module	MPZ	For generating 6+1 analogue voltage signals	8, 13
4	Digital input/output	–	For actuating the setpoint module	–
5	Connecting cable	SIM-M12-5GD-...-PU	With straight plug socket for actuating the VPPE...E1	13
6	Plug socket	SIE-GD	Straight plug socket for actuating the VPPE	8
7	Plug socket	SIE-WD-TR	Angled plug socket for actuating the VPPE	8
8	Connecting cable	SIM-M12-4GD-5PU	With straight plug socket for actuating the VPPE	8
9	Connecting cable	SIM-M12-4WD-5PU	With angled plug socket for actuating the VPPE	8
10	Push-in fitting	QS	For connecting compressed air tubing with standard O.D.	quick star
11	Silencer	U	For fitting in exhaust ports	u
12	Socket head screw M4x55	–	For screwing the VPPE to the mounting plate	15
13	Socket head screw M4x16	–	For screwing the mounting plate to the slot nut	15
14	Mounting plate (set)	VAME-P5-MK	For attaching the VPPE to the mounting rail (consists of mounting plate, slot nuts, screws and seals)	15
15	O-ring	–	For sealing	15
16	Slot nuts	–	For clamp fitting components on the mounting rail	15
17	Mounting rail	–	Standard mounting rail as central air supply	15
18	Compressed air supply plate (set)	VABF-P5-P3A3...	For supplying compressed air (consists of compressed air supply plate, screws and seal)	15
19	Seal	–	–	15
20	Socket head screw M5x12	–	For screwing a compressed air supply plate to the mounting rail	15



Accessories			
	Type	Brief description	→ Page/Internet
1 Prop. pressure regulator with display	VPPE ... E1	–	13
2 Additional power supply module (set)	VABF-P5-P1A3...	For supplying compressed air (consists of compressed air supply plate, screws and seal)	15
3 Socket head screw M6x20	–	For screwing a compressed air supply plate to the slot nut	15
4 O-ring	–	For sealing	15
5 Slot nuts	–	For clamp fitting components on the mounting rail	15
6 End plate (set)	VABE-P5-C	For sealing the mounting rail (consists of an end plate, screws and seal)	15
7 Mounting rail	IPM-PN-08-40x80-AL	Standard mounting rail as central air supply	15

Proportional pressure regulators VPPE with display

Type codes



Type	
VPPE	Proportional pressure regulator with switching valve head

Directional control function	
3	3-way pressure regulator

Valve function	
1	Normally closed

Pneumatic connection	
⅛	G⅛ female thread

Pressure regulation range	
2	0.02 ... 2 bar
6	0.06 ... 6 bar
10	0.1 ... 10 bar

Analogue setpoint input	
010	0 ... 10 V
420	4 ... 20 mA

Operator unit	
E1	Segmented LED display

Assembly	
–	In-line valve
T	Common supply manifold assembly (mounting rail)

Proportional pressure regulators VPPE with display

Technical data

FESTO

- Flow rate
  310 ... 1,250 l/min
- Voltage
  21.6 ... 26.4 V DC
- Pressure regulation range
  0.02 ... 2 bar
  0.06 ... 6 bar
  0.1 ... 10 bar

Variants
- Setpoint input as analogue voltage signal 0 ... 10 V
- Setpoint input as analogue current signal 4 ... 20 mA
- Assembly as in-line valve or on mounting rail
- 3-digit LED display

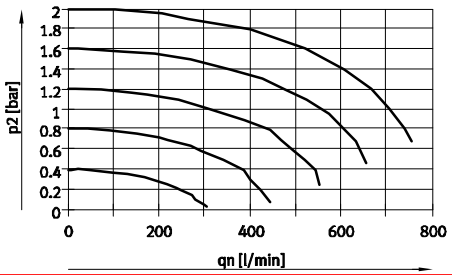


General technical data			
Pneumatic connection 1, 2, 3			G1⁄8
Design, valve function			Piloted diaphragm regulator, 3-way proportional pressure regulator
Sealing principle			Soft
Actuation type			Electric
Reset method			Mechanical spring
Type of control			Piloted via 2/2-way valves
Type of mounting			Via through-hole
Mounting position			Any, preferably vertical
Nominal size	Pressurisation	[mm]	5
	Exhaust	[mm]	2.5
Standard nominal flow rate		[l/min]	➔ Graphs
Product weight		[g]	390

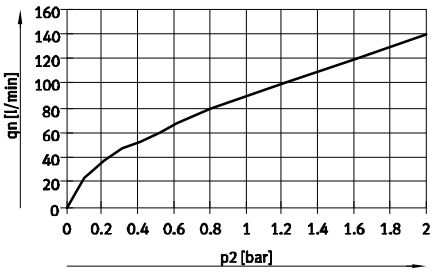
Flow rate qn as a function of output pressure p2

VPPE- ... -2- ...

qn 1 ⟶ 2

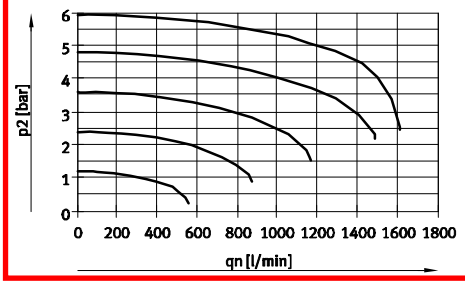


qn 2 ⟶ 3

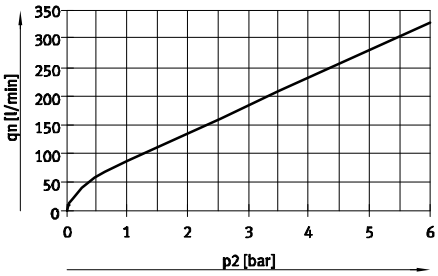


VPPE- ... -6- ...

qn 1 ⟶ 2

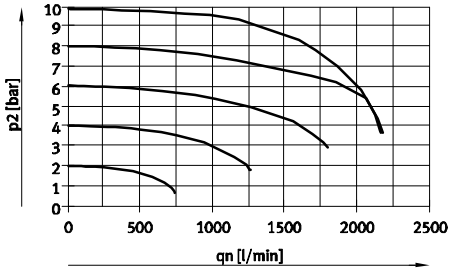


qn 2 ⟶ 3



VPPE- ... -10- ...

qn 1 ⟶ 2



qn 2 ⟶ 3



Proportional pressure regulators VPPE with display

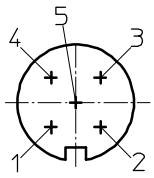
Technical data

Electrical data			
Electrical connection			Plug, round design, 5-pin, M12x1
Operating voltage range		[V DC]	21.6 … 26.4
Power supply indicator			LED
Residual ripple		[%]	10
Max. electrical power consumption		[W]	4.2
Analogue signal range	Voltage	[V DC]	0 … 10
Output/input	Current	[mA]	4 … 20
Protection against short circuit			For all electrical connections
Switching output			PNP
Protection against incorrect polarity			For all electrical connections
Protection class			IP65

Operating and environmental conditions				
Pressure regulation range	[bar]	0.02 … 2	0.06 … 6	0.1 … 10
Operating medium		Compressed air according to ISO 8573-1:2010 [7:4:4]		
		Inert gases		
Note on operating/pilot medium		Lubricated operation not possible		
Supply pressure 1[1)]	[bar]	3 … 4	6 … 8	6 … 11
Max. pressure hysteresis	[mbar]	20	30	50
FS (full scale) linearity error	[%]	± 1		
FS (full scale) repetition accuracy	[%]	0.5		
Temperature coefficient	[%/K]	0.04		
Duty cycle	[%]	100		
Ambient temperature	[°C]	0 … 60		
Temperature of medium	[°C]	10 … 50		
Corrosion resistance class	[CRC]	2[2)]		
CE marking (see declaration of conformity)		To EU EMC Directive[3)]		

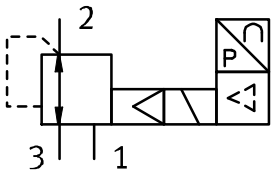
1) Supply pressure 1 should always be 1 bar greater than the maximum regulated output pressure.
2) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.
3) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: www.festo.com/sp ➔ User documentation.
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Pin allocation for VPPE with display, M12x1



1 Supply 21.6 … 26.4 V DC
2 Setpoint value (–)
3 GND (–)
4 Setpoint value (+) 0 … 10 V DC / 4 … 20 mA
5 Actual value output or switching output (can be chosen via the control panel)

Circuit symbol



Materials	
Housing	Anodised wrought aluminium alloy
Note on materials	RoHS-compliant

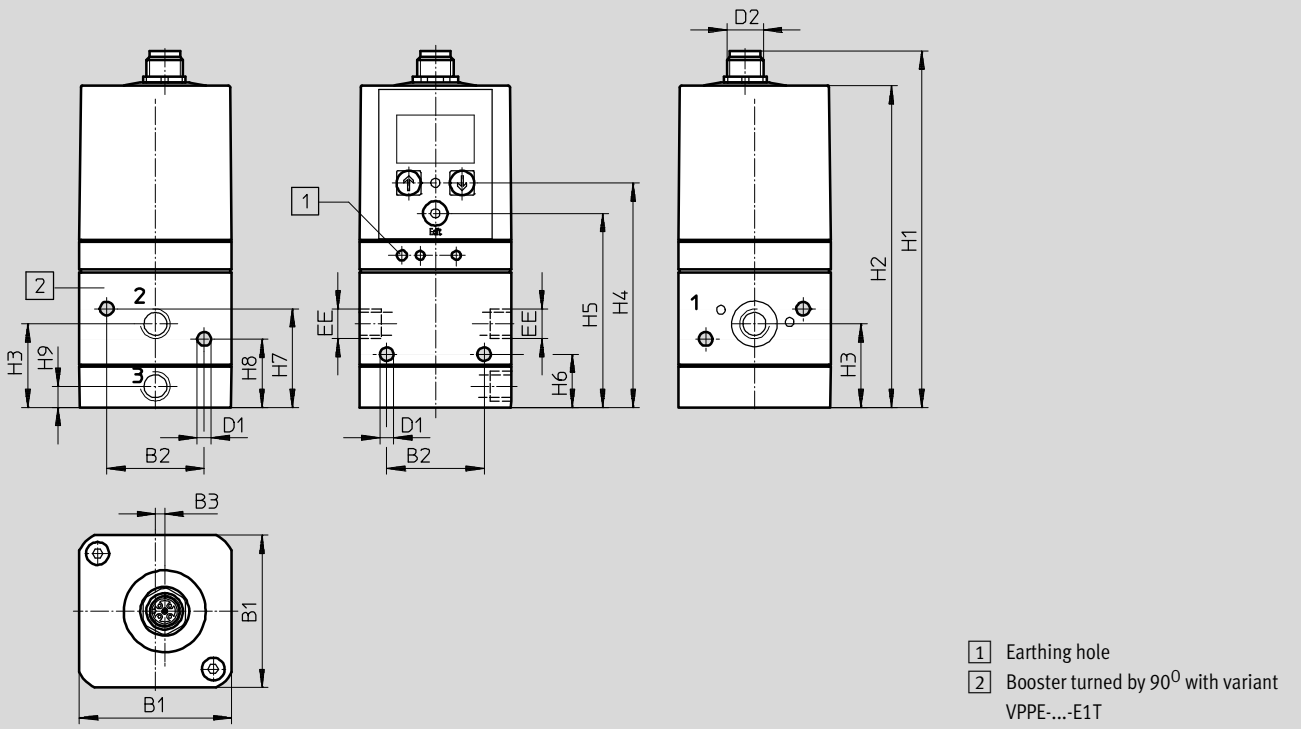
- Note

Output pressure remains unregulated if the power supply cable is interrupted.

Proportional pressure regulators VPPE with display

Technical data

Dimensions Download CAD data ➔ **www.festo.com**

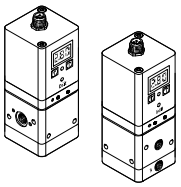
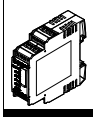


1 Earthing hole
2 Booster turned by 90° with variant VPPE-...-E1T

Type	B1	B2	B3	⌀ D1	D2	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9
VPPE-3-1⁄8- ... E1 ...	50	32	3.1	4.5	M12x1	G1⁄8	117.2	105.8	27.5	73.8	63.8	17.5	32.5	22.5	7

Proportional pressure regulators VPPE with display

Ordering data

Ordering data				
	Description		Part No.	Type
Proportional pressure regulator VPPE with display				
	Voltage type 0 ... 10 V			
	Pressure regulation range 0.02 ... 2 bar		**557771**	**VPPE-3-1-1/8-2-010-E1**
			557777	**VPPE-3-1-1/8-2-010-E1T**
	Pressure regulation range 0.06 ... 6 bar		**557772**	**VPPE-3-1-1/8-6-010-E1**
			567539	**VPPE-3-1-1/8-6-010-E1T**
	Pressure regulation range 0.1 ... 10 bar		**557773**	**VPPE-3-1-1/8-10-010-E1**
			557778	**VPPE-3-1-1/8-10-010-E1T**
	Current type 4 ... 20 mA			
	Pressure regulation range 0.02 ... 2 bar		**557774**	**VPPE-3-1-1/8-2-420-E1**
			557779	**VPPE-3-1-1/8-2-420-E1T**
	Pressure regulation range 0.06 ... 6 bar		**557775**	**VPPE-3-1-1/8-6-420-E1**
			567540	**VPPE-3-1-1/8-6-420-E1T**
	Pressure regulation range 0.1 ... 10 bar		**557776**	**VPPE-3-1-1/8-10-420-E1**
			557780	**VPPE-3-1-1/8-10-420-E1T**
Connecting cable				Technical data ➔ Internet: nebu
	• Straight socket, M12x1, 5-pin • Open end, 5-wire	2.5 m	**175715**	**SIM-M12-5GD-2,5-PU**
		5 m	**175716**	**SIM-M12-5GD-5-PU**
Setpoint module				Technical data ➔ Internet: mpz
	Setpoint module for generating 6 + 1 analogue voltage signals		**546224**	**MPZ-1-24DC-SGH-6-SW**

Mounting rail for proportional pressure regulators VPPE

Technical data

General

Design

Some selected types of the pressure regulator VPPE can be screwed to a mounting rail. This has the advantage that the mounting rail can be used to create a central compressed air supply.
The air can be fed into the mounting rail:

- at one end or
- at both ends through end plates,
- using an intermediate air supply module (in applications where an increased air rate is required).

The holes for the mounting rail must be drilled according to the assembly instructions. The pressure regulators VPPE are screwed to the mounting rail using the mounting plate. The end plates are screwed to the left and right end faces of the mounting rail. See the assembly instructions for further information:
➔ Internet: vppe

Compressed air supply on the mounting rail

When using the mounting rail as a central compressed air supply, make sure that the required compressed air supply is guaranteed. Bear in mind that an intermediate air supply module needs a valve position. The intermediate air supply module takes up one VPPE valve position.

Recommendation for compressed air supply

E.g. with tubing Ø 16 mm with simultaneous max. flow rate for all valves, the following applies:
Compressed air supply – number of valves:

- At one end – max. 5 valves
- At both ends – max. 10 valves
- With intermediate air supply module – max. 5 valves per module

Note

- Intermediate air supply modules must always be centred on the mounting rail.
- Multiple intermediate air supply modules must be evenly distributed.

Note

Only the following types of proportional pressure regulators VPPE can be mounted on mounting rails using a mounting plate:

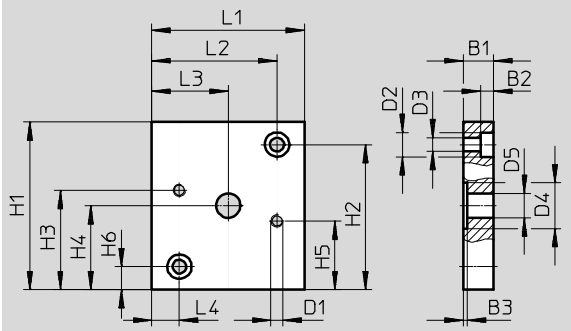
- Valve VPPE with LED display, VPPE-3-⅛-6-010
- Valve VPPE with display and top part rotated by 90°
  VPPE- ... –E1T

Further information on mounting proportional pressure regulators VPPE as well as intermediate air supply modules on mounting rails can be found in the assembly instructions:
➔ Internet: vppe

Mounting plate (set) materials	
Plate	Wrought aluminium alloy
Seals	Nitrile rubber
Screws	Steel
Note on materials	RoHS-compliant
Corrosion resistance class [CRC]	2[1)]

1) Corrosion resistance class 2 according to Festo standard 940 070
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

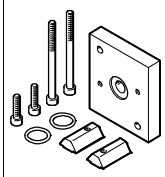
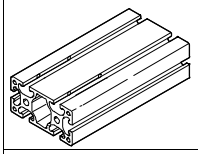
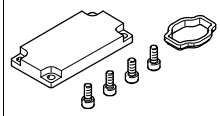
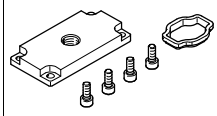
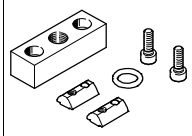
Dimensions – Mounting plate Download CAD data ➔ **www.festo.com**



Type	B1	B2	B3	D1	⌀ D2	⌀ D3	⌀ D4	⌀ D5	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4
VAME-P5-MK	10	4.6	1.3	M4	8	4.5	15	8	55	47.5	32.5	27.5	22.5	7.5	50	41	25	9

Mounting rail for proportional pressure regulators VPPE

Ordering data

Ordering data			
	Description	Part No.	Type
Mounting plate set			
	Set, consisting of: • 1x mounting plate, weight: 110 g • 2x socket head screws M4X55 • 2x socket head screws M4X16 • 2x slot nuts • 2x O-rings	**570966**	**VAME-P5-MK**
Profile column (mounting rail)			
	Made from aluminium, as central air supply, length: individually adaptable	**175964**	**HMBS-80/40- -**
End plate set (closed)			
	For sealing the mounting rail, consisting of: • 1x plate • 1x seal • 4x socket head screws M5x12	**8021858**	**VABE-P5-C**
Compressed air supply plate set			
	With connecting thread G¼, consisting of: • 1x plate with connecting thread G¼ • 1x seal • 4x socket head screws M5x12	**8021859**	**VABF-P5-P3A3-G14**
	With connecting thread G⅜, consisting of: • 1x plate with connecting thread G⅜ • 1x seal • 4x socket head screws M5x12	**8021860**	**VABF-P5-P3A3-G38**
	With connecting thread G½, consisting of: • 1x plate with connecting thread G½ • 1x seal • 4x socket head screws M5x12	**8021861**	**VABF-P5-P3A3-G12**
Additional power supply module set			
	Connection G¼, consisting of: • 1x plate with connecting thread G¼ • 1x O-ring • 2x slot nuts • 2x socket head screws M6x20	**8021862**	**VABF-P5-P1A3-G14**
	Connection G⅜, consisting of: • 1x plate with connecting thread G⅜ • 1x O-ring • 2x slot nuts • 2x socket head screws M6x20	**8021863**	**VABF-P5-P1A3-G38**

Description :
VALVES TERMINALS
24VDC, 25PIN DSUB, 1/4 PORTS, K(2) + M(1) MODULES

Trade Name :
Festo

Model no :
34P-MS1-SGUGKLGAL-3AU-KKM+HDD

Overview selected features Valve terminal MPA-L
34P-MS1-SGUGKLGAL-3AU-KKM+HDD
#569926

Basic configuration	
Feature	**Value**
Valve Terminal, pneumatic part	34P MPA-L Modular sub-base valves
Electrical connection	MS1 Multi-pin, Sub-D, 25-pin, 24 addresses, IP 40
Pressure supply connection	SG Thread G 1/4
Exhaust port	UG Thread G 1/4
Right-hand end plate	without supply ports 1, 3/5
Pilot air	Internal
Port 82/84 on right end plate	KLG 1/4", straight
Standard connection, 10 mm valve size	AL Push-in fitting 1/4"
Standard connection, 14 mm valve size	Push-in fitting 8 mm
Standard connection, 20 mm valve size	Push-in fitting 10 mm
Connection direction	Straight
Vertical pressure shut-off plates, global	Without
Manual override *	push-in/detenting
Clamp strap at working ports	Assembly direction from top
User's documentation	Without
Installation instructions	Without

Module 1	
Feature	**Value**
Type of module block	A Manifold block, 10 mm, 2 addresses

Module 2	
Feature	**Value**
Type of module block	A Manifold block, 10 mm, 2 addresses

Module 3	
Feature	**Value**
Type of module block	A Manifold block, 10 mm, 2 addresses

Module 4	
Feature	**Value**
Type of module block	U Compressed air supply port 1. Ports 3/5 combined

Position function 1	
Feature	**Value**
Position function	K 2x3/2-way valve, normally closed

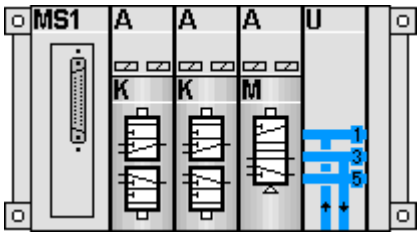
Position function 2	
Feature	**Value**
Position function	K 2x3/2-way valve, normally closed

Position function 3	
Feature	**Value**
Position function	M 5/2-way valve, single solenoid

Accessories for electrical connection technology	
Feature	**Value**
GL - cover cap for AIDA push-pull connection *	Without

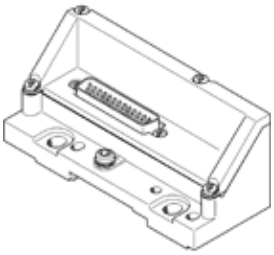
Accessories Pneumatic	
Feature	**Value**
Mounting accessories	H H-rail mounting
Connecting cable	DD Sub-D 25-pin, IP 40, 2.5 m

Feature	**Value**
Total of bit-oriented digital inputs	0
Total of word-oriented digital inputs	0
Total of configured digital inputs	0
Sum word-bit oriented DE	0
Total of bit-oriented digital outputs	0
Total of word-oriented digital outputs	0
Total of configured digital outputs	0
Total parameters	0



End plate
VMPAL-EPL-SD25-IP40

Part number: 560940



Data sheet

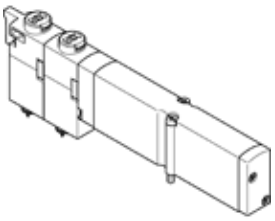
Feature	values
Operating pressure	-0.9 ... 10 bar
Pilot pressure	3 ... 8 bar
Corrosion resistance classification CRC	3
Ambient temperature	-5 ... 50 °C
Materials note	Conforms to RoHS

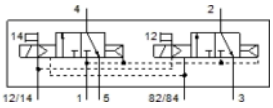
Solenoid valve
VMPA1-M1H-K-PI

Part number: 533347

FESTO

For valve terminal MPA-S.





Data sheet

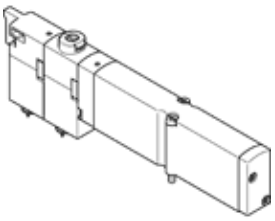
Feature	values
Valve function	2x3/2 closed, monostable
Type of actuation	electrical
Valve size	10 mm
Standard nominal flow rate	230 l/min
Operating pressure	3 ... 10 bar
Design structure	Piston slide
Type of reset	Air spring
Protection class	to IEC 60529 IP65
Authorisation	c UL us - Recognized (OL)
Sealing principle	soft
Assembly position	Any
Manual override	detenting Pushing
Type of piloting	Piloted
Flow direction	non reversible
Freedom from overlap	Yes
Note on forced dynamisation	Switching frequency at least once a week
Switching position indicator	Yes
Pilot pressure	3 ... 8 bar
Suitability for vacuum	No
Standard nominal flow rate with QS-6	230 l/min
Switching time off	20 ms
Switching time on	10 ms
Max. positive test pulse with logic 0	400 µs
Max. negative test pulse with logic 1	200 µs
Permissible voltage fluctuation	+/- 25 %
Operating medium	Compressed air in accordance with ISO8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation possible (subsequently required for further operation)
Vibration resistance	Transport application test at severity level 2 in accordance with FN 942017-4 and EN 60068-2-6
Shock resistance	Shock test SG2 to FN/EN
Corrosion resistance classification CRC	1
Storage temperature	-20 ... 40 °C
Medium temperature	-5 ... 50 °C
Ambient temperature	-5 ... 50 °C
Max. tightening torque, valve mounting	0.25 Nm
Product weight	56 g
Mounting type	with through hole
Materials note	Conforms to RoHS
Materials information for seals	NBR
Materials information, housing	Aluminium die cast

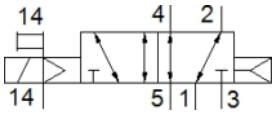
Solenoid valve
VMPA1-M1H-M-PI

Part number: 533342

FESTO

For valve terminal MPA-S.



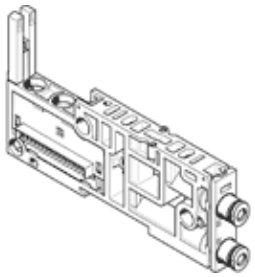


Data sheet

Feature	values
Valve function	5/2 monostable
Type of actuation	electrical
Valve size	10 mm
Standard nominal flow rate	360 l/min
Operating pressure	-0.9 ... 10 bar
Design structure	Piston slide
Type of reset	Air spring
Protection class	IP65 to IEC 60529
Authorisation	c UL us - Recognized (OL)
Sealing principle	soft
Assembly position	Any
Manual override	detenting Pushing
Type of piloting	Piloted
Flow direction	reversible
Freedom from overlap	Yes
Note on forced dynamisation	Switching frequency at least once a week
Switching position indicator	Yes
Pilot pressure	3 ... 8 bar
Suitability for vacuum	Yes
Standard nominal flow rate with QS-6	360 l/min
Switching time off	20 ms
Switching time on	10 ms
Max. positive test pulse with logic 0	400 µs
Max. negative test pulse with logic 1	200 µs
Permissible voltage fluctuation	+/- 25 %
Operating medium	Compressed air in accordance with ISO8573-1:2010 [7:4:4]
Note on operating and pilot medium	Lubricated operation possible (subsequently required for further operation)
Vibration resistance	Transport application test at severity level 2 in accordance with FN 942017-4 and EN 60068-2-6
Shock resistance	Shock test SG2 to FN/EN
Corrosion resistance classification CRC	1
Storage temperature	-20 ... 40 °C
Medium temperature	-5 ... 50 °C
Ambient temperature	-5 ... 50 °C
Max. tightening torque, valve mounting	0.25 Nm
Product weight	49 g
Mounting type	with through hole
Materials note	Conforms to RoHS
Materials information for seals	NBR
Materials information, housing	Aluminium die cast

Sub-base
VMPAL-AP-10-QS1/4"-1

Part number: 560999

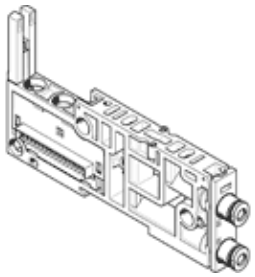


Data sheet

Feature	values
Width	10.7 mm
Length	107.3 mm
Grid dimension	10.7 mm
Max. number of valve positions	1
Operating pressure	-0.9 ... 10 bar
Pilot pressure	3 ... 8 bar
Corrosion resistance classification CRC	3
Ambient temperature	-5 ... 50 °C
Pneumatic connection, port 2	QS-10
Pneumatic connection, port 4	QS-10
Materials note	Conforms to RoHS
Materials information for sub-base	PA-reinforced

Sub-base
VMPAL-AP-10-QS1/4"-2

Part number: 561000

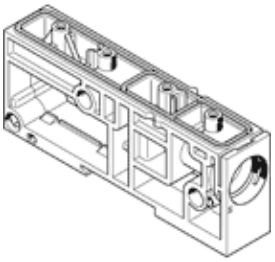


Data sheet

Feature	values
Width	10.7 mm
Length	107.3 mm
Grid dimension	10.7 mm
Max. number of valve positions	1
Operating pressure	-0.9 ... 10 bar
Pilot pressure	3 ... 8 bar
Corrosion resistance classification CRC	3
Ambient temperature	-5 ... 50 °C
Pneumatic connection, port 2	QS-10
Pneumatic connection, port 4	QS-10
Materials note	Conforms to RoHS
Materials information for sub-base	PA-reinforced

Power supply module
VMPAL-SP

Part number: 570774



Data sheet

Feature	values
Operating pressure	-0.9 ... 10 bar
Pilot pressure	3 ... 8 bar
Corrosion resistance classification CRC	3
Ambient temperature	-5 ... 50 °C
Pneumatic connection, port 1	QS-20
Materials note	Conforms to RoHS
Material information, power supply module	PA-reinforced

Description :
AIR CONDITIONER 4000 BTU 115VAC
INDOOR

Trade Name :
Hoffman

Model no :
N280416G050

N280446G050

SPECTRACOOL™ NARROW INDOOR/OUTDOOR



N43
11000 BTU/Hr.
3223 Watt

N36
6000/8000 BTU/Hr.
1758/2344 Watt

N28
4000 BTU/Hr.
1172 Watt

INDUSTRY STANDARDS

UL/cUL Listed; Type 12, 3R, 4; 4X optional; File No. SA6453

CE
IP 56 Internal Loop
IP 34 on External Loop
Telcordia GR-487 capable (Outdoor)

APPLICATION

- Industrial automation
- Waste water treatment systems
- Package handling equipment
- Security and defense systems

FEATURES

- Narrow design accommodates 12-in. (300-mm) deep cabinets
- Energy efficient reciprocating compressor on N28 models
- Energy efficient rotary compressor on N36 and N43 models
- R407c and R134a earth-friendly refrigerants
- Models for 115, 230 and 400/460 3-phase VAC power input
- UL Listed to save customers time and money with agency approvals
- Outdoor model operating temperature range from -40 F/-40 C to 131 F/55 C (125 F/52 C on N28 Series)
- Attractive industrial design with minimal use of visible fasteners
- Reliable mechanical thermostat on enclosure side of the unit; indoor Air Conditioner models include digital display on ambient side
- Galvanized sheet-metal cover for rugged factory and outdoor environments
- Easy-mount flanges for simple installation
- Cut-out adapter options for enclosures with GENESIS® air conditioners enable users to easily transition to the new unit
- Dust-resistant condenser coil allows the unit to be run filterless in most applications
- Cleanable, reusable aluminum mesh filter protects coils for maximum cooling performance
- Mounting hardware, gaskets and user manual furnished with the unit
- Every unit functionally tested before shipping
- Standard Indoor Air Conditioner models also include:
  - Active condensate management with heater strip
  - Power-off relay for door switch and other system requirements
  - Malfunction switch
- Standard Outdoor Air Conditioner models also include:
  - Telcordia GR-487 capable
  - Corrosion-resistant components
  - Malfunction switch
  - Compressor heater
  - Head pressure control
  - 1300 W enclosure heater

SPECIFICATIONS

- Nominal cooling capacity:
  N28 4000 BTU/Hr. (1172 W)
  N36 6000 & 8000 BTU/Hr. (1758 and 2344 W)
  N43 11000 BTU/Hr. (3223 W)
- Outdoor model operating temperature range from -40 F/-40 C to 131 F/55 C (125 F/52 C on N28 Series)

FINISH

- RAL 7035 light-gray, semi-textured powder-coat paint
- Other colors and textures available

NOTES

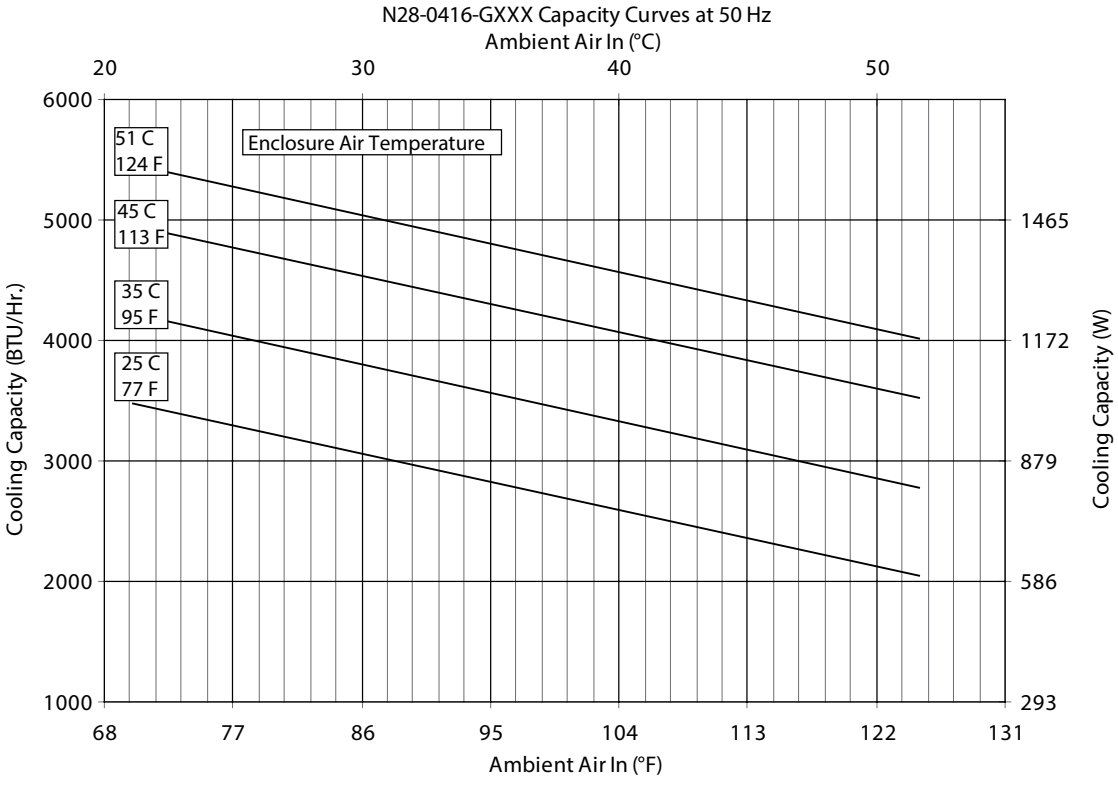
Visit www.PentairProtect.com to download 2D and 3D CAD drawings into the overall design of your electronic system.

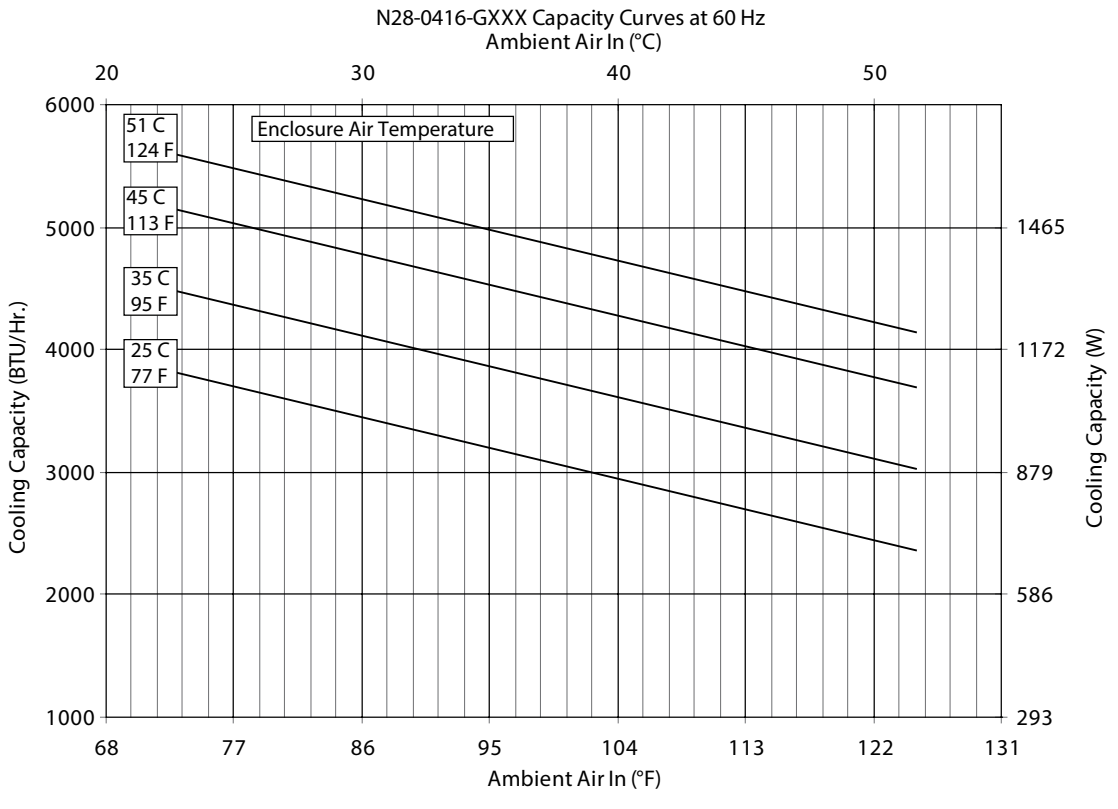
Performance Data **N28 4000 BTU/Hr. (1172 Watt)**

CATALOG NUMBER			
Indoor Model	N280416G050	N280426G050	N280446G050
Indoor Model Stainless Steel Type 4X	N280416G051	N280426G051	N280446G051
Indoor Model with Remote Access Control*	N280416G060	N280426G060	N280446G060
Outdoor Model without Heat Pkg.	N280416G100	N280426G100	N280446G100
Outdoor Model without Heat Pkg. Stainless Steel Type 4X	N280416G102	N280426G102	N280446G102
Outdoor Model with Heat Pkg.	N280416G150	N280426G150	—
Outdoor Model with Heat Pkg. Stainless Steel Type 4X	N280416G151	N280426G151	—
COOLING PERFORMANCE			
Nominal:			
BTUs/Hr.	**3800 / 4000**	**3800 / 4000**	**4000**
Watts	**1114 / 1172**	**1114 / 1172**	**1172**
At 125 F / 125 F (50 C / 50 C):			
BTU/Hr. (50 / 60 Hz)	3940 / 4104	4269 / 4703	4703
Watts (50 / 60 Hz)	1150 / 1000	1250 / 1378	1378
At 95 F / 95 F (35 C / 35 C):			
BTU/Hr. (50 /60 Hz)	3754 / 4011	3700 / 4291	4291
Watts (50 / 60 Hz)	1100 / 1175	1086 / 1257	1257
Refrigerant	R134a	R134a	R134a
Refrigerant Charge (ounces/grams)	10 / 283	11 / 312	11 / 312
Operating Temperature Range:			
Maximum (°F / °C)	125/52	125/52	125/52
Minimum (°F / °C)	-40/-40	-40/-40	-40/-40
Air Flow at 0 Static Pressure:			
Internal loop 50 Hz (CFM / M^3/Hr)	138 / 234	N/A	N/A
External loop 50 Hz (CFM / M^3/Hr)	268 / 455	N/A	N/A
Internal loop 60 Hz (CFM / M^3/Hr)	143 / 362	143 / 243	143 / 243
External loop 60 Hz (CFM / M^3/Hr)	288 / 728	288 / 489	288 / 489
Max. Heater W (Outdoor Models)	1300	1300	1300
ELECTRICAL DATA			
Rated Voltage	**110 / 115**	**230**	**460**
Frequency (Hz)	50 / 60	50 / 60	60
Operating Range	+/-10%	+/-10%	+/-10%
Max. Power Consumption (Watts at 50 / 60 Hz)	971 / 1116	975 / 1104	1104
Max. Nominal Current (Amps at 50 / 60 Hz)	10.6 / 10.0	4.9 / 5.0	2.5
Starting Current (Amps)	40	24.5	12.5
Agency Approvals		cUL Listed CE Others available upon request	
Power Input Description		Terminal Block	
ENCLOSURE PROTECTION			
UL Type		Type 12, 3R, 4 Standard Type 4X Stainless Steel Optional	
CONTROLLER			
Description		Basic Mechanical Thermostat	
Thermostat Location		Enclosure Side	
Factory Thermostat Setting (°F / °C)		80 / 27	
SOUND LEVEL			
At 1.5 Meters	64.4 dBA	65.5 dBA	65.5 dBA
UNIT CONSTRUCTION			
Material		Galvanized sheet metal standard Stainless steel optional	
Finish		RAL 7035 light-gray, semi-textured powder-coat paint standard Other colors available	
ACCESSORIES			
EASYSWAP Adaptor Plenum (GENESIS™ M33)		Enables SPECTRACOOL to be mounted to a GENESIS M33 air conditioner cutout Catalog Number PLM33N28	
UNIT DIMENSIONS			
Height (in / mm)		28 / 711.2	
Width (in / mm)		11.50 / 292.1	
Depth (in / mm)		14.00 / 355.6	
Weight (lb / kg)	84/38	84/38	92/41.7

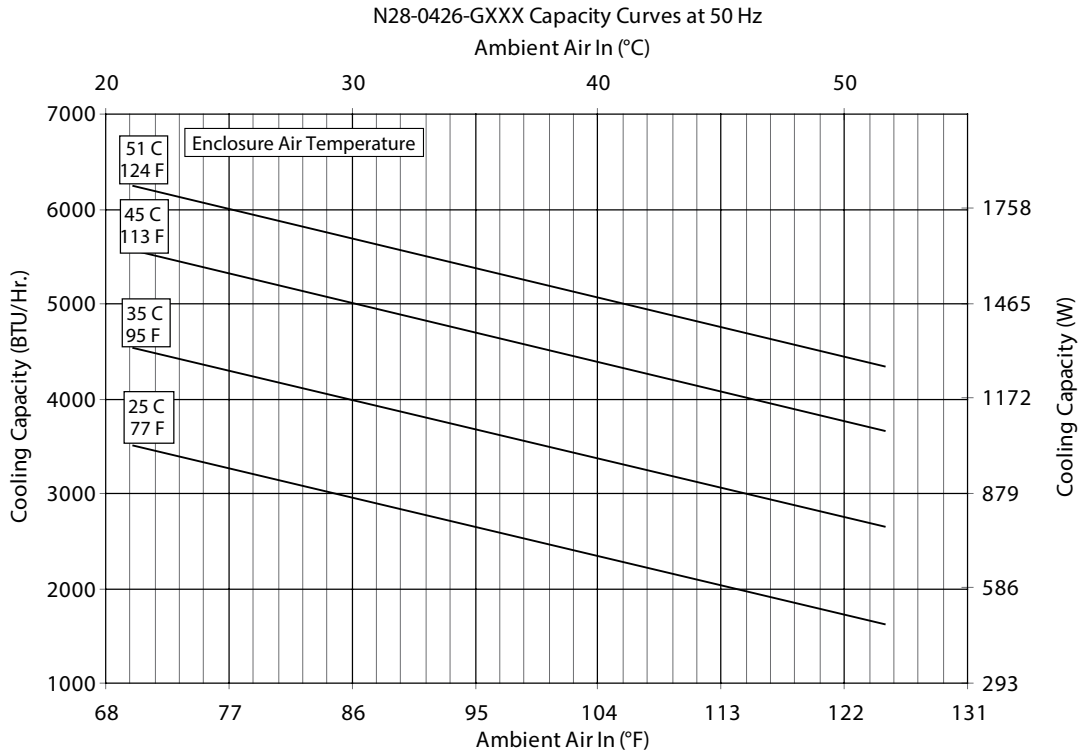
*Units with Remote Access Control utilize a digital controller and communicate via EtherNet/IP, Modbus TCP/IP and SNMP over ethernet or modbus RTU over USB.

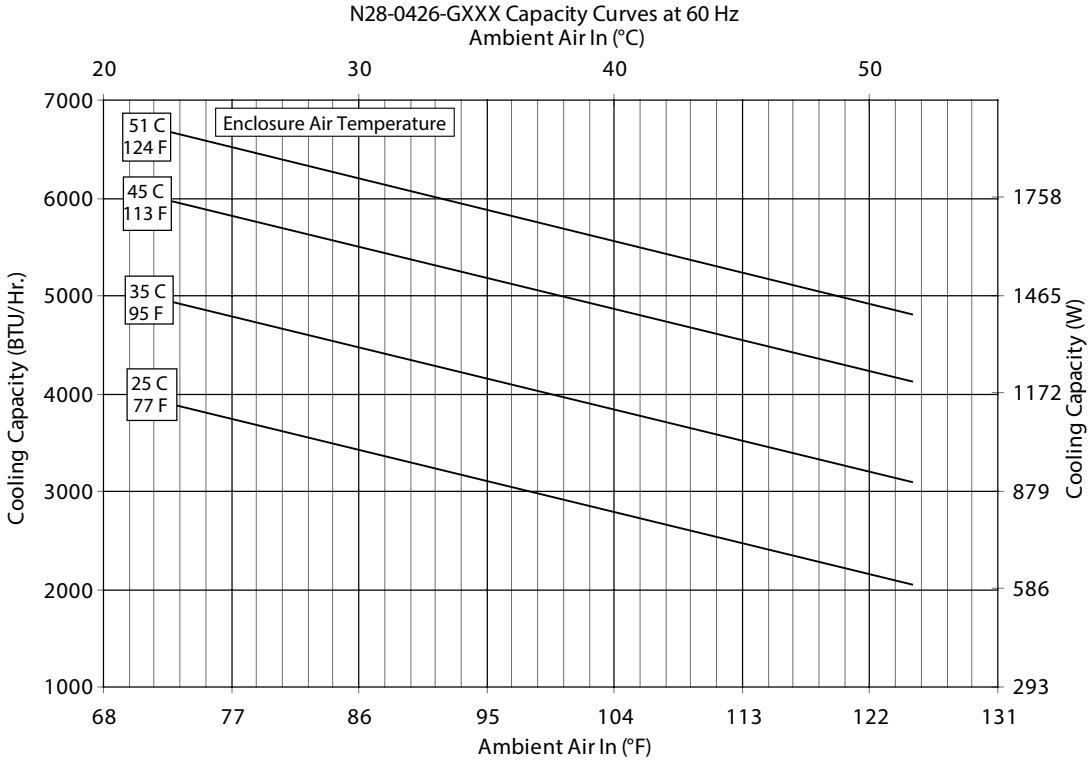
Performance Curves for N28 Models 4000 BTU/Hr. (1172 Watt)



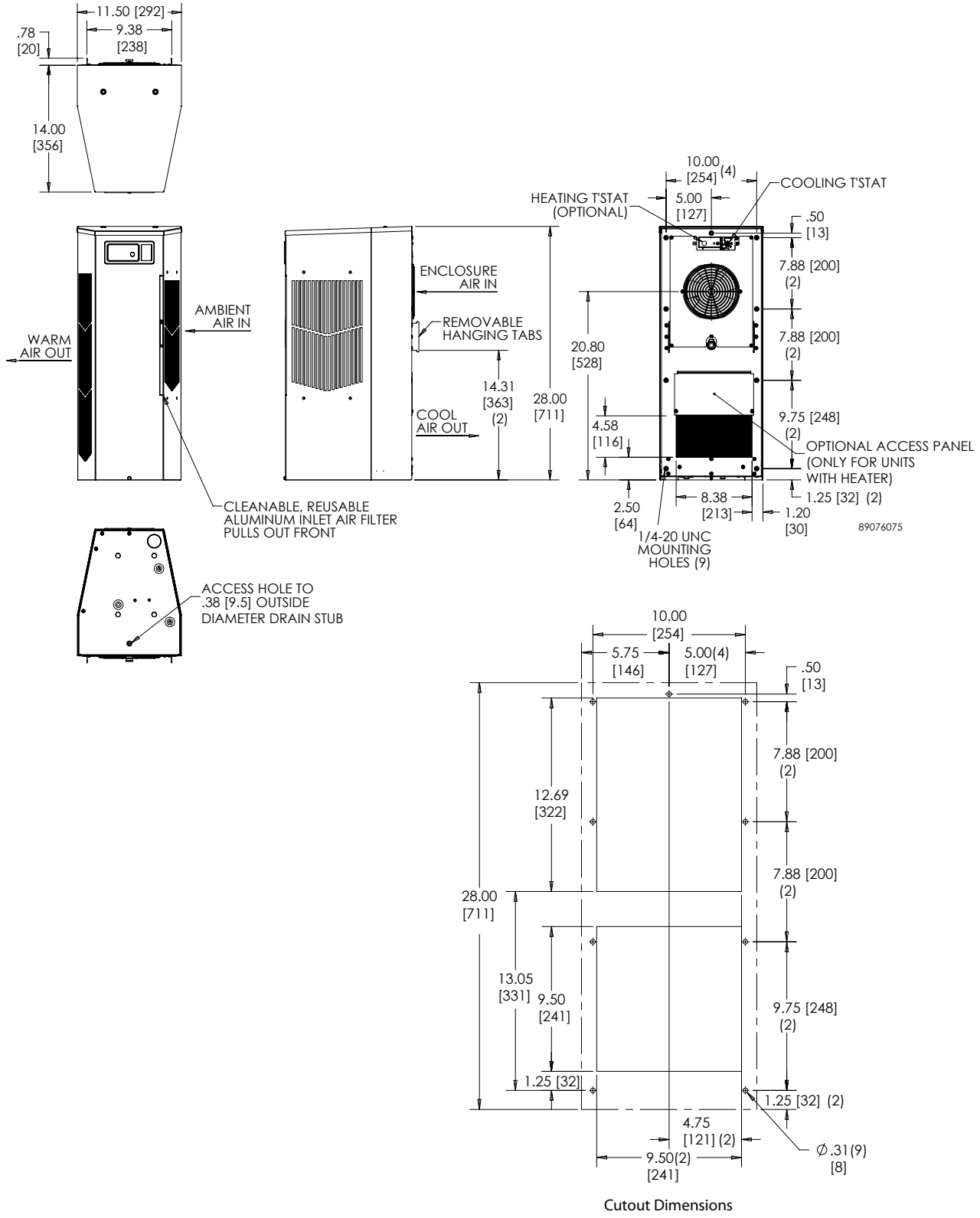


Performance Curves for N28 Models 4000 BTU/Hr. (1172 Watt)





N28 Models 4000 BTU/Hr. (1172 Watt)



Cutout Dimensions

Visit www.PentairProtect.com to download 2D and 3D CAD drawings into the overall design of your electronic system.

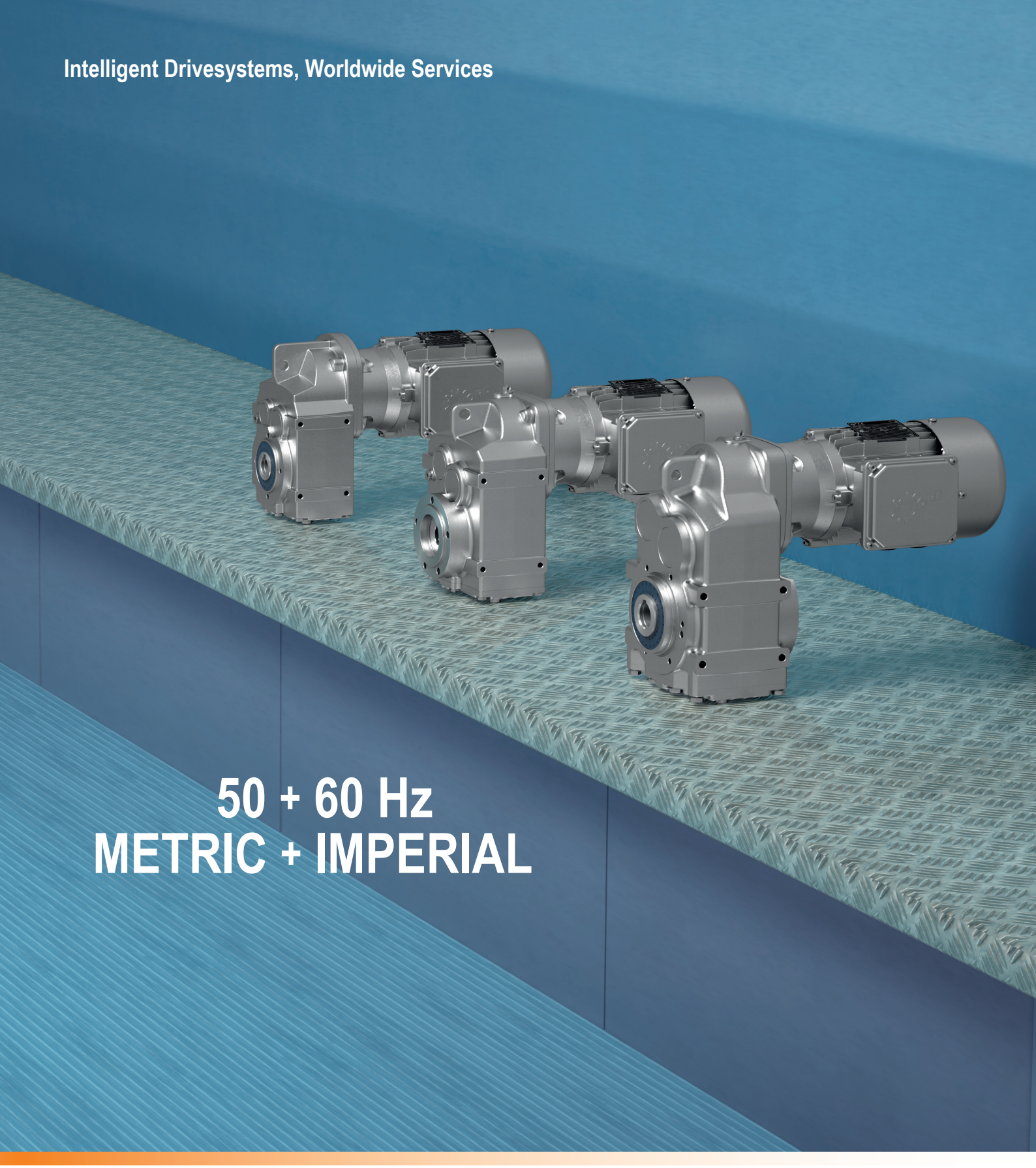
Technical DataSheets

Description :
GEARMOTOR 1 HP, 575V, M4, 361 RPM
OIL SIGHT GLASS, MAGNETIC DRAIN PLUG
PREMIUM EFFICIENCY

Trade Name :
Nord Gear

Model no :
SK0282.1 AXFBH-80LP/4 M4 575V 361 RPM

Intelligent Drivesystems, Worldwide Services



50 + 60 Hz
METRIC + IMPERIAL

EN-US

PRODUCT INFORMATION

Parallel shaft gear units

IE3

TI60-0009

NORD®
DRIVESYSTEMS

NORD GEAR LIMITED

Member of the NORD DRIVESYSTEMS Group

NORD Gear Limited / 41 West Drive / Brampton ON L6T 4A1

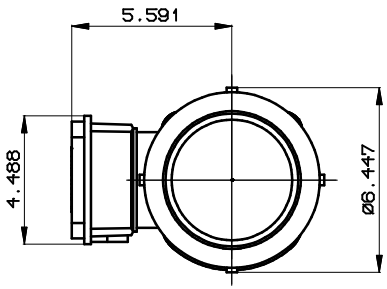
Les Industries Fournier Inc
3787 Frontenac Ouest
Thetford Mines Québec G6H 2B5

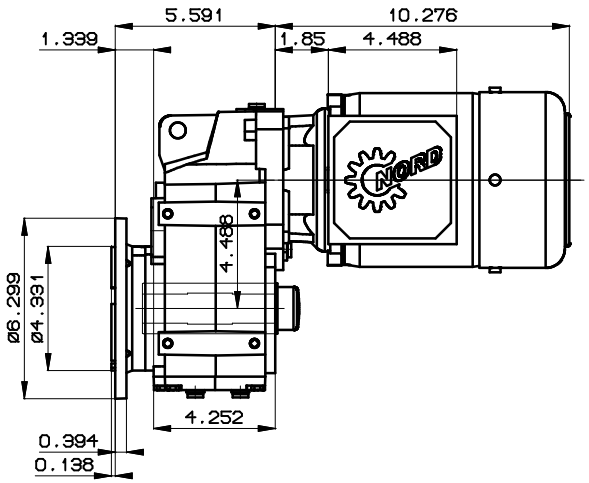
Technical Data Sheet

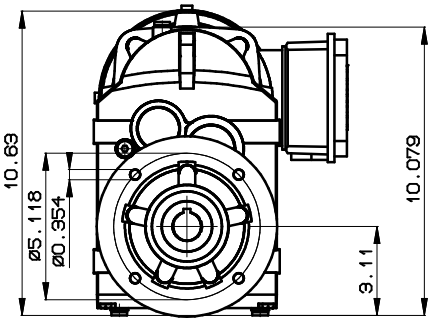
Number | Date	0202855976-100.0 | 07/05/2020
Reference no.	237636
Created by	Joel Beauseigle
Phone	+1-418-930-3204
Email	joel.beauseigle@nord.com
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Phone	+1-418-930-3204
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Website	www.nord.com

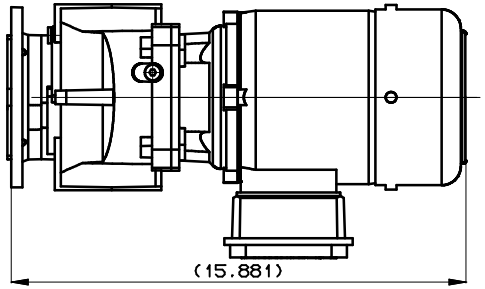
Description	Material
SK0282.1AXFBH-80LP/4 CUS TW	
Your MatNo.:	
Product Name	Shaft Mount Gearmotor
Motor Type	CUS
Motor Speed	1730 1/min
Motor Speed (2)	1730 rpm
Ratio	4.79
Output Speed	361.000 rpm
Service Factor	8.10
Nominal Output Torque (lb-in)	175.00
Max. Torque Capacity (lb-in)	1416.00
Motor Power (KW)	0.750
Motor Power (HP)	1.000
Voltage (V)	575
Frequency (Hz)	60
Efficiency Class	Premium EFF acc. to EISAct
Duty Cycle	S1
Motor Enclosure Type	IP55
Insulation Class	F
Environmental temp. motor	40°C
Rated Current Low Volt (A)	3.14
Rated Current High Volt (A)	1.57
Power Factor 1	0.70
Gearbox Mounting Position	M4
Housing Type	Hollow Shaft/Footed/B5 Flange
Housing Material	Aluminum
Output Shaft Dimensions	1.000"
Flange Diameter (in)	6,3
Flange Material	Aluminium
Breather	Non vented gearbox
Output Shaft Cover	Hollow Shaft Cover

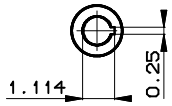
Description	Material
Oil Exp. Chamber/Oil Tank	.Oil Expansion Chamber
Fixing Element	Fixing Element Kit
Motor Temperature Protection	Thermostat
Motor Connection	Star; High Voltage
Terminal Box Position	1/I
Lubricant Type	VG220-SYN-PAO-EP
Lubricant Supplier	Mobil
Lubricant	SHC Gear 220
Quantity Lubricant(l)	1.330
Qty. lubricant (Qts)	1.410
Paint Option Old	Without paint
CE Logo	Yes
CCC Logo	No
Separate part	Fixing element
Separate part (2)	Oil Expansion Chamber
Separate part (3)	Cover
Conduit Hole Connection	18524250 M25x1.5/3/4" NPT

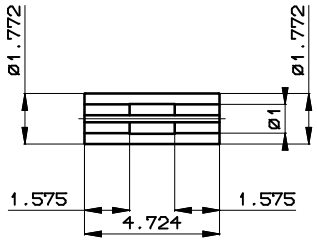












SK 0282.1AXFB – 80 LP TF

NORD

Nord Internet: http://www.nord.com

DRIVESYSTEMS

	Date	Name
Drawn	2020-05-08	Beauseigle

Technical changes reserved!
This drawing is created with NORDCAD 9.2.0 s

CLINCHER™ Ordering Guide



NORD DRIVESYSTEMS

	Gear Unit	Shaft/Mounting	Reducer Options	Motor/Input	Motor Options
SK	❶ 0282NB	❷ AXF	❸BHOSGMDP	- ❹ 80LP/4	
				see page 85	see page 300

❶ **Gear Unit**

0182NB	2382	1282/02	6382/22
0282NB	3382	2282/02	6382/32
1282	4382	3282/12	7382/22
1382NB	5382	4282/12	7382/32
2282	6382	5282/12	8382/22
3282	7382		8382/32
4282	8382		9382/42
5282	9382		9382/52
6282	10382.1		
7282	11382.1		
8282			
9282			

❷ **Shaft/Mounting**

VZ - Solid Shaft/B14 Flange	**VX -** Solid Shaft/Foot	**AZ** - Hollow Shaft/B14 Flange
VF - Solid Shaft/B5 Flange	**LX -** Double Solid Shaft/Foot	**AF** - Hollow Shaft/B5 Flange
SCP - Screw Conveyor Package		**AX** - Hollow Shaft/Foot

❸ **Reducer Options**

❒ **B -** Fixing Kit	❒ **LL -** Long Term Storage	❒ Cross Drilled Shaft
❒ **G -** Rubber Buffers	❒ **VL -** Heavy Duty Output Bearings	❒ **FKM -** Fluoro-rubber Seals
❒ **VG -** Heavy Duty Rubber Buffers	❒ **VL2 -** Spread Bearing Design	❒ **OSG -** Oil Sight Glass
❒ **H -** Hollow Shaft Cover	❒ **VL3 -** Oil Safe Spread Bearing Design	❒ **OA -** Oil Expansion Chamber
❒ **H66 -** IP66 Hollow Shaft Cover	❒ **VL4-** Drywell Drop Bearing Design	❒ **OC -** Oil Cooler
❒ **SH -** Shrink Disc & Cover	❒ **LX-** Double Solid Shaft	❒ **WC -** Water Cooling Cover
❒ **VSH -** Heavy Duty Shrink Disc & Cover	❒ **SM5 -** Stainless Steel Output Shaft	❒ **OT -** Oil Reservoir Tank
❒ **M -** GRIPMAXX™	❒ **SWA -** Special Hollow Shaft	❒ **MDP -** Magnetic Drain Plug
❒ **PR -** Flange Pilot Removal	❒ **SWV -** Special Solid Shaft	❒ **ADP -** Additional Drain Plug

❹

Input Shaft	NEMA Adapter	IEC	Integral 60 Min. Duty Motors		Integral Premium Efficent Motors		Scoop	Motor Platform	Servo Adapter (Keyed)
W	N56C	IEC 63	63S/4 - 0.16hp	100LA/4 - 5hp	80LP/4 - 1hp	225RP/4 - 40hp	S56	MKN056	SEP 100
	N140TC	IEC 71	63L/4 - 0.25hp	112M/4 - 5.4hp	90SP/4 - 1.5hp	225SP/4 - 50hp	S140T	MKN140	SEP 130
	N180TC	IEC 80	71S/4 - 0.33hp	132S/4 - 7.5hp	90LP/4 - 2hp	225MP/4 - 60hp	S180T	MKN180	SEP 165
	N210TC	IEC 90	71L/4 - 0.50hp	132M/4 - 10hp	100LP/4 - 3hp	250WP/4 - 75hp	S210T	MKN210	SEP 215
	N250TC	IEC 100	80S/4 - 0.75hp	160M/4 - 15hp	112MP/4 - 5hp	280SP/4 - 100hp	S250T	MKN250	SEP 300
	N280TC	IEC 112	80L/4 - 1hp	160L/4 - 20hp	132SP/4 - 7.5hp	280MP/4 - 125hp	S280T	MKN280	**Servo Adapter (Clamp)**
	N320TC	IEC 132	90S/4 - 1.5hp	180MX/4 - 25hp	132MP/4 - 10hp	315SP/4 - 150hp	S320T	MKN320	SEK 100
	N360TC	IEC 160	90L/4 - 2hp	180LX/4 - 30hp	160MP/4 - 15hp	315MP/4 - 175hp	S360T	MKN360	SEK 130
		IEC 180	100L/4 - 3hp	200LX/4 - 40hp	160LP/4 - 20hp	315RP/4 - 200hp			SEK 165
		IEC 200			180MP/4 - 25hp	315LP/4 - 250hp			SEK 215
		IEC 225			180LP/4 - 30hp				SEK 300
		IEC 250							
		IEC 280							
		IEC 315		Other Speeds Available		Other Speeds Available			

Product Specifications

Ratio

4.79 :1

see pages 101 - 149

— OR —

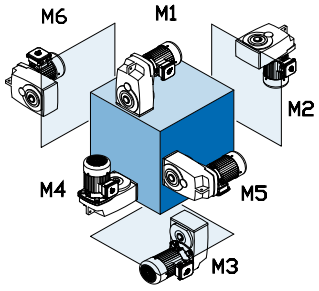
Output Speed

rpm

see pages 101 - 149

Mounting Position

- ❍ M1
- ❍ M2
- ❍ M3
- ❍ M4
- ❍ M5
- ❍ M6
- ❍ Special _____



Paint

- ❍ Standard Stainles Steel Paint
- ❍ NSD+ (gray)
- ❍ NSD+W (white)
- ❍ NSD-X3 (gray)
- ❍ NSD-X3W (white)
- ❍ Casting Primed
- ❍ Special _____

Lubricant

- ❍ Standard
- ❍ Synthetic
- ❍ Food Grade
- ❍ Other _____

Shaft Diameter (If required)

1.1875"

see pages 278 - 285

B5 Flange Diameter (If required)

6.3" (160 mm)

SCP Drive Shaft Diameter (If required)

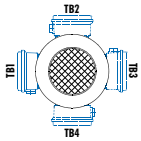
see page 83

Voltage & Frequency

Single Speed Motors	Two Speed Motors
❍ 230/460V-60Hz	❍ 460V-60Hz
❍ 208-230/460V-60Hz	❍ 230V-60Hz
❍ 575V-60Hz	❍ 575V-60Hz
❍ 400V-50Hz	❍ 400V-50Hz
❍ Other	❍ Other

Terminal Box Position

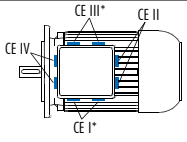
- ❍ TB1
- ❍ TB2
- ❍ TB3
- ❍ TB4



Conduit Entry Location

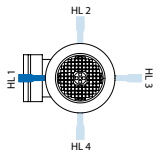
- ❍ CE I *
- ❍ CE II
- ❍ CE III *
- ❍ CE IV

*Brakemotor



Hand Release Position

- ❍ HL1
- ❍ HL2
- ❍ HL3
- ❍ HL4



HELICAL & BEVEL REDUCER LUBRICATION

1. Importance of proper lubrication

Proper gearbox lubrication is essential in order to reduce friction, heat, and component wear. Lubricants reduce heat and wear by inserting a protective "fluid boundary" between mating parts and preventing direct metal to metal contact. Lubricants also help prevent corrosion and oxidation, minimize foam, improve heat transfer, optimize reducer efficiency, absorb shock loads and reduce noise.

Most NORD reducers are shipped from the factory with a pre-determined oil fill level in accordance to the specified reducer size and mounting position.

2. Standard oil type

The following tables indicate the standard oil fill type used. Please see user manual U11000 for more specific information and for optional helical and bevel gear lubricants:

Serviceable Gear Units	
Helical In-line Clincher Parallel-Shaft Right-Angle Bevel NORDBLOC® Series In-line NORDBLOC®.1 Series In-line Standard Series In-line	Standard Oil Fill: ISO VG 220, Mineral Oil

IMPORTANT NOTE

For shipping purposes, the following large gear units are supplied without oil:
- Clincher™ Sizes SK10282, SK10382, SK11282 and SK12382
- Right-Angle Bevel Size SK9096.1

Maintenance-free / Lubricated For Life Gear Units	
Clincher™ sizes SK0182NB, SK0282NB & SK1382NB NORDBLOC® Sizes SK172, SK272, SK371F, SK372, SK373, SK320	Standard Oil Fill: ISO VG220 SHC/PAO Synthetic Oil

IMPORTANT NOTE

Maintenance-free units are supplied as sealed units with no vent-plug. Consult NORD prior to ordering if interested in ordering any of the above sizes as serviceable gear units.

IMPORTANT NOTE

Consult the sticker adjacent to the fill plug to determine the type of lubricant installed at the factory. Some units have special lubricants designed to operate in certain environments or intended to extend the service life or service temperature range of the lubricant. If in doubt about which lubricant is needed for a certain application, please contact NORD Gear.

3. Lubrication replacement

If the gear unit is filled with mineral oil, the lubricant should be replaced at least after every 10,000 operating hours or after every two years. If the gear unit is filled with synthetic oil, the lubricant should be replaced at least after every 20,000 operating hours or after every four years. Often gear reducers are exposed to extreme ambient conditions, hostile environments, wet conditions, or dirty and dusty operating areas. Especially in these situations, it is important to establish a condition-based oil service interval.

4. Oil viscosity

Viscosity, or the oil's resistance to shear under load, is often considered the single most important property of any gear oil.

- Often one will consider making a viscosity correction to the oil to improve the performance when operating the gear unit at low temperature or high temperature.
- In cases of extreme load conditions, gear pairs and antifriction bearings may be more susceptible to sliding or scuffing wear. In these operating conditions, it may also be beneficial to consider an increased lubrication viscosity and/or a lubrication with improved antiwear additive packages.

IMPORTANT NOTE

The user should consult with their primary lubrication supplier before considering changes in oil type or viscosity.

5. Maximum oil sump temperature limit

To prevent reducer overheating, the reducer's maximum oil sump temperature limit must not be exceeded for prolonged periods of operation (up to 3 hours continuous operation depending upon reducer size).

Oil Type	Maximum Oil Temperature Limit	
	NORD	AGMA 9005-D94
Mineral	80-85°C (176-185°F)	95°C (203°F)
Synthetic	105°C (220°F)	107°C (225°F)

IMPORTANT NOTE

Use caution when specifying gear reducers for high temperature service. If there is concern about exceeding the allowable safe operating temperatures, please consult NORD to discuss alternatives.

HELICAL & BEVEL REDUCER LUBRICATION

6. The importance of routine oil analysis

Routine oil analysis, sound lubrication practices, and good tracking of oil performance trends will help establish proper lubrication maintenance and change-out intervals. To maximize equipment reliability, NORD Gear generally recommends a condition-based lubrication maintenance program. One may take exceptions to this general recommendation on sealed-for-life or maintenance-free gear units or smaller and less costly gear units. In these instances, the replacement cost of the gear unit is often small compared to the costs associated with this type of oil analysis program.

STOP ***HARMFUL SITUATION*** **STOP**

NORD suggests replacing the gear oil if oil analysis indicates any of the following:

- Viscosity has changed by approximately 10% or more.
- Debris particles (silicon, dust, dirt or sand) exceed 25 ppm.
- Iron content exceeds 150-200 ppm.
- Water content is greater than 0.05% (500 ppm).
- The total acid number (TAN) tests indicate a significant level of oxidative break-down of the oil, and a critical reduction in performance; If the TAN number measured changes by more than 5% over the new oil, then an oil change would be recommended.

7. Mounting position and oil fill quantity

All NORD Gear reducers are shipped from the factory with a pre-determined oil fill level in accordance to the specified reducer size and mounting position. ***For additional information, please see the seperate mounting position diagrams and the corresponding oil fill quantity tables for the specified gear unit.***

The gearbox nametag will indicate the mounting position that was provided. ***For mounting orientations other than shown in the mounting position charts, please consult NORD Gear.***

STOP ***HARMFUL SITUATION*** **STOP**

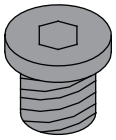
Actual oil volume can vary slightly depending upon the gear case size, mounting and ratio. Prior to commissioning the reducer, check the oil-fill level using the reducer's oil-level plug and drain or add additional oil as needed.

8. Oil plug locations

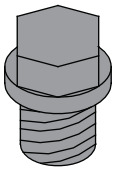
All gear units are assembled with the oil fill-level, oil-drain and vent plugs installed in their proper locations, according to the specified mounting position. All standard plugs are metric and utilize sealing gaskets between the head of the plug and the reducer housing.

9. Drain and fill-level plugs

All reducer drain plugs are metric socket head cap screws. For ease of draining the used oil from the gear reducer use the socket head screw located at the lowest part of the gearbox. For ease of identification, it is NORD's standard practice to provide a hex-head screw for the fill-level plug.



Drain Plug



Fill Level Plug

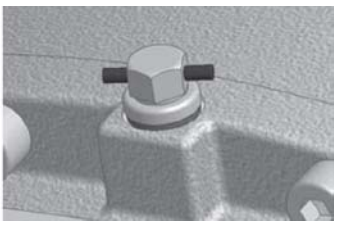
10. Vent plug locations

Reducer venting allows for air pressure differences that occur during operation, between the inner space of the reducer and the atmosphere, while ensuring leak-free operation. The AUTOVENT™ is standard on all helical-inline gear units.

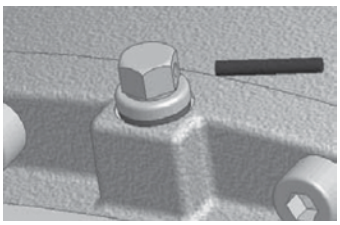


AUTOVENT™ - The AUTOVENT™ helps prevent bearing and gear damage by blocking entry of foreign material (water, dust, corrosives, etc.). The breather acts like a check valve that opens at approximately 2 psi during operation, closes tightly as the gearbox cools, and produces a slightly negative pressure. This option is perfect for humid conditions and wash-down environments, helping to maintain proper oil cleanliness, and reducing foaming and oxidation.

Open Vent - An optional open vent can be supplied on NORD reducers. The open vent will be closed upon delivery to prevent oil leakage. Before the reducer is put into operation the open vent should be activated by removing the sealing plug.



Sealed open vent



Activated open vent

Filtered Vent - NORD may offer an optional filtered vent, which allows gases to permeate, but does not allow dust and debris to pass through the vent.

HELICAL & BEVEL REDUCER LUBRICATION TYPES

Lubrication Tables – Helical and Bevel Gear Units

Standard Oil Lubricants

ISO Viscosity	Oil Type	Ambient Temperature Range	Manufacturer Brand / Type
VG220	MIN-EP	0 to 40 °C (32 to 104 °F)	Mobil / Spartan EP220 ♦ ❶
	PAO	-35 to 60 °C (-31 to 140 °F)	Mobil / SHC630 ♦ ❷
	FG	-5 to 40 °C (23 to 104 °F)	Shell / FM220 ♦

Optional Oil Lubricants

ISO Viscosity	Oil Type	Ambient Temperature Range	Manufacturer Brand / Type
VG460	PAO	-35 to 80 °C (-31 to 176 °F)	Mobil / SHC634
	FG-PAO	-40 to 80 °C (-40 to 176 °F)	Shell / Cassida GL460
VG220	FG-PAO	-40 to 60 °C (-40 to 140 °F)	Shell / Cassida GL220
VG150	PAO	-35 to 25 °C (-30 to 77 °F)	Mobil / SHC629
	FG-PAO	-45 to 25 °C (-49 to 77 °F)	Shell / Cassida GL220

Grease Options (applied to greased bearings and seal cavities)

NLGI Grade	Grease Type / Thickener	Ambient Temperature Range	Manufacturer Brand / Type
NLGI 2	Standard / Li-Complex	-30 to 60 °C (-22 to 140 °F)	Shell Albida EP 2 ♦ ❶
	High-Temperature / Polyurea	-25 to 80 °C (-13 to 176 °F)	Mobil Polyrex EP 2 ♦ ❷
	Food-Grade / Al-Complex	-25 to 40 °C (-13 to 104 °F)	Mobil Grease FM222 ♦

♦ Stocked Lubricants

❶ Standard product on serviceable gear units

❷ Standard product on maintenance free gear units

IMPORTANT NOTES

- The "Ambient Temperature" is intended to be an operation guideline based upon the typical properties of all the lubricant. The viscosity and other properties of the lubricant change based upon load, speed, ambient conditions, and reducer operating temperatures. The user should consult with their lubrication supplier & NORD gear before considering changes in oil type or viscosity.
- To prevent reducer overheating, observe the maximum operating oil temperature limits:
  Mineral Oil: 80-85 °C (176 – 180 °F).
  Synthetic Oil: 105 °C (225 °F).
- In the following instances, please consult NORD for specific recommendations:
  - √ Gear units will operate in high ambient temperature conditions exceeding 40 °C (104 °F).
  - √ Gear units will operate in cold ambient temperature conditions approaching 0 °C (32 °F) or lower.
  - √ Lower than an ISO VG100 viscosity oil is being considered for a cold-temperature service.
  - √ Fluid grease is required for lubricating the gear unit.
- Observe the general lubrication guidelines outlined in user manual U10750.

Oil Formulation Codes

MIN-EP - Mineral Oil with EP Additive
PAO-EP - Synthetic Polyalphaolefin Oil with EP Additive
PAO - Synthetic Polyalphaolefin Oil
PG - Synthetic Polyglycol Oil
FG - Food-Grade Oil
FG-PAO - Food-Grade, Synthetic Poyalphaolefin Oil
FG-PG - Food-Grade, Synthetic Polyglycol Oil

Lubrication Notes

- Avoid using (EP) gear oils in worm gears that contain sulfur-phosphorous chemistries, as these additives can react adversely with bronze worm gears and accelerate wear.
- Food grade lubricants must be in compliance with FDA 212 CFR 178.3570 and qualify as a NSF-H1 lubricant. Please consult with lubrication manufacturer for more information.
- When making a lubrication change, check with the lubrication supplier to assure compatibility and to obtain recommended cleaning or flushing procedures.
- Do not to mix different oils with different additive packages or different base oil formulation types. Polyglycol (PG) oils are not miscible with other oil types and should never be mixed with mineral oil or polyalphaolefin (PAO) synthetic oil.

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Toll Free in the United States: 888.314.6673

HELICAL & BEVEL REDUCER LUBRICATION TYPES

Oil Cross-reference Chart

ISO Viscosity	Oil Type	Ambient Temperature Range	Mobil	Shell	Castrol	FUCHS	KLÜBER LUBRICATION
VG460	MIN-EP	0 to 40 °C (32 to 104 °F)	Spartan EP460	Omala 460	Alpha SP460	Renolin EP460	Klüberoil GEM 1-460N
	PAO-EP	-20 to 80 °C (-4 to 176 °F)	Mobilgear SHC460	Omala HD460	Alphasyn EP460	Gearmaster SYN460/NA	Klübersynth EG 4-460
	PAO	-20 to 80 °C (-4 to 176 °F)	Mobil SHC634	Omala RL460	Alphasyn T460	Geralyn SF460	Klübersynth GEM 4-460N
	PG	-20 to 80 °C (-15 to 176 °F)	Mobil Glygoyle 460	Tivela S460	Alphasyn PG460	Renolin PG460	Klübersynth GH 6-460
	FG	0 to 40 °C (32 to 104 °F)	Mobil DTE FM460	Shell FM460	N/A	Geralyn AW 460	N/A
	FG-PAO	-20 to 80 °C (-4 to 176 °F)	Mobil Cibus SHC460	Cassida GL460	N/A	Geralyn SF460	Klüberoil 4 UH 1-460N
	FG-PG	-20 to 80 °C (-4 to 176 °F)	Mobil Glygoyle 460	Cassida WG460	N/A	N/A	Klübersynth UH1 6-460
VG220	MIN-EP	0 to 40 °C (32 to 104 °F)	Spartan EP220	Omala 220	Alpha SP220	Renolin EP220	Klüberoil GEM 1-220N
	PAO-EP	-30 to 60 °C (-22 to 140 °F)	Mobilgear SHC220	Omala HD220	Alphasyn EP220	Gearmaster SYN220/NA	Klübersynth EG 4-220
	PAO	-30 to 60 °C (-22 to 140 °F)	Mobil SHC630	Omala RL220	Alphasyn T220	Geralyn SF220	Klübersynth GEM 4-220N
	PG	-25 to 60 °C (-13 to 140 °F)	Mobil Glygoyle 220	Tivela S220	Alphasyn PG220	Renolin PG220	Klübersynth GH 6-220
	FG	0 to 40 °C (32 to 104 °F)	Mobil DTE FM 220	Shell FM220	N/A	Geralyn AW220	N/A
	FG-PAO	-25 to 60 °C (-13 to 140 °F)	Mobil Cibus SHC220	Cassida GL220	N/A	Geralyn SF220	Klüberoil 4 UH 1-220N
	FG-PG	-25 to 60 °C (-13 to 140 °F)	Mobil Glygoyle 220	Cassida WG220	N/A	N/A	Klübersynth UH1 6-220
VG150	MIN-EP	0 to 25 °C (32 to 77 °F)	Spartan EP150	Omala 150	Alpha SP150	Renolin EP150	Klüberoil GEM 1-150N
	PAO-EP	-30 to 25 °C (-22 to 77 °F)	Mobilgear SHC150	Omala HD150	Alphasyn EP150	Gearmaster SYN150/NA	Klübersynth EG 4-150
	PAO	-30 to 25 °C (-22 to 77 °F)	Mobil SHC629	Omala RL150	Alphasyn T150	Geralyn SF150	Klübersynth GEM 4-150N
	PG	-25 to 25 °C (-13 to 77 °F)	Mobil Glygoyle 150	Tivela S150	Alphasyn PG150	Renolin PG150	Klübersynth GH 6-150
	FG	0 to 25 °C (32 to 77 °F)	Mobil DTE FM 150	N/A	N/A	N/A	N/A
	FG-PAO	-25 to 25 °C (-13 to 77 °F)	N/A	Cassida GL150	N/A	Geralyn SF150	Klüberoil 4 UH 1-150N
	FG-PG	-25 to 25 °C (-13 to 77 °F)	Mobil Glygoyle 150	N/A	N/A	N/A	Klübersynth UH1 6-150

Low-end service temperature limit may vary for a specific lubricant; Please also see the important notes on Page 1.

7 Appendix

7.1 Versions and maintenance

Explanation of symbols for the following mounting position illustrations:



Venting



Oil level



Oil drain

Information

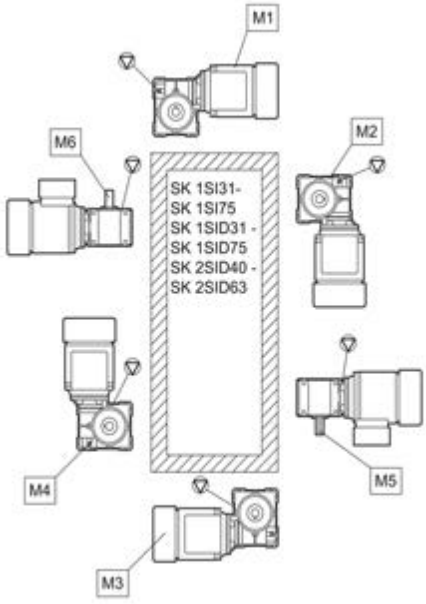
SK 320, SK 172, SK 272, SK 372 as well as SK 273 and SK 373, SK 01282 NB, SK 0282 NB, SK 1382 NB and UNIVERSAL / MINIBLOC gear units are lubricated for life. These gear units do not have an oil filler screw.

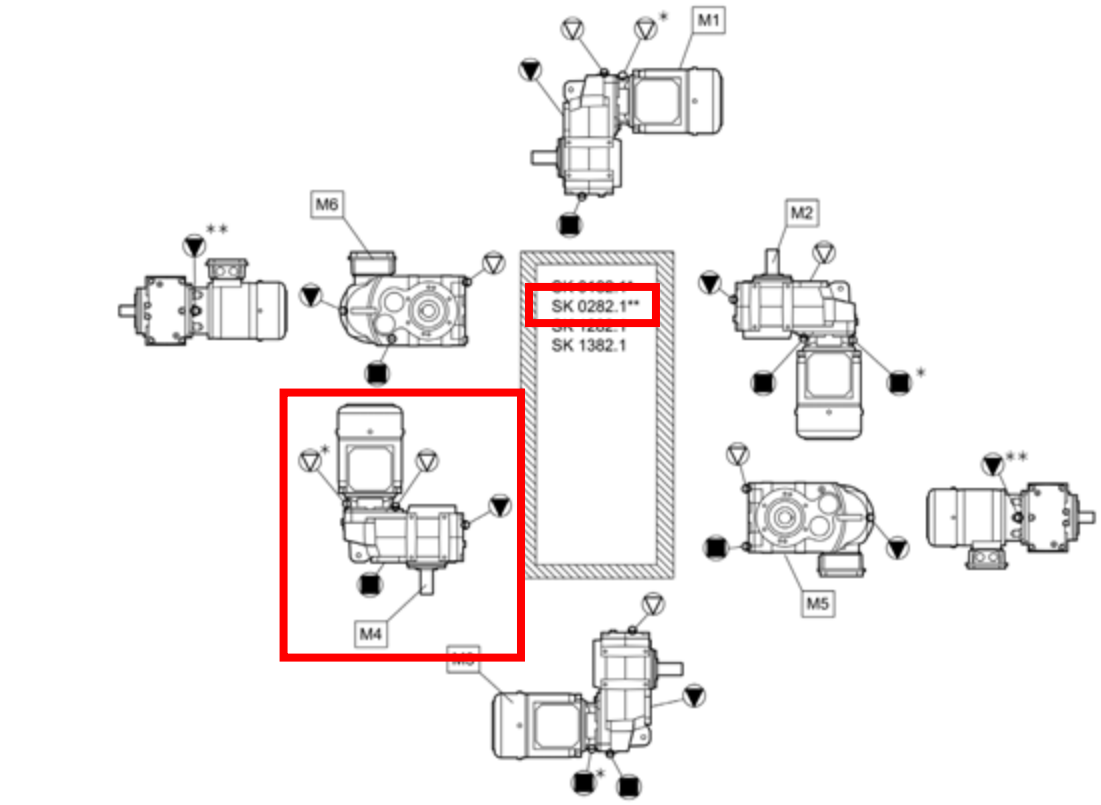
UNIVERSAL / MINIBLOC worm gear units

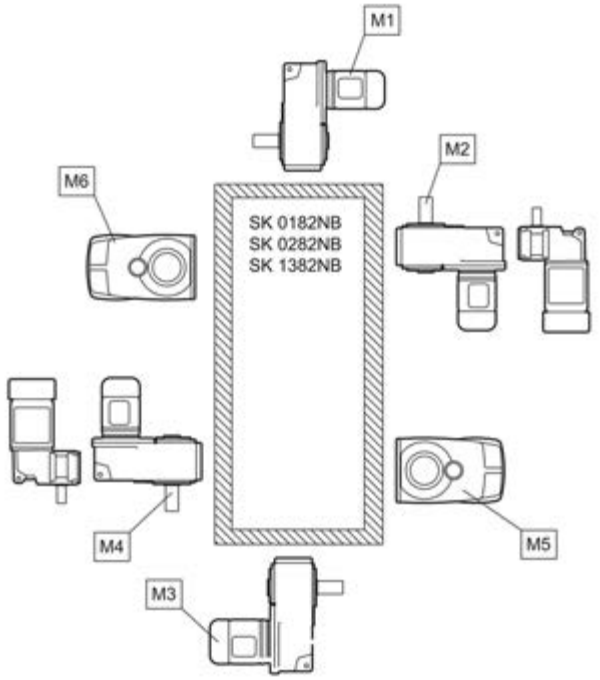
NORD UNIVERSAL / MINIBLOC worm gear units are suitable for all installation positions. They have an oil filling which is independent of the mounting position.

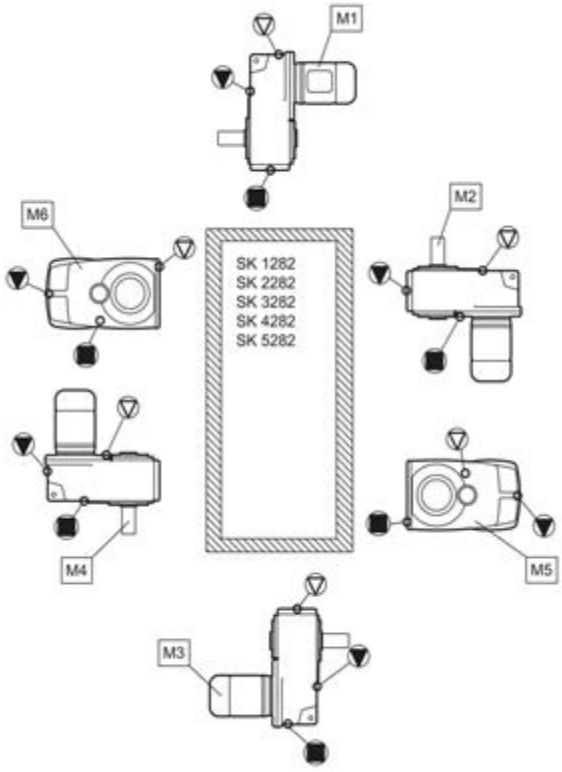
As an option, types SI and SMI can be equipped with a vent screw. Gear units with vents must be installed in the stated mounting position.

Types SI, SMI, S, SM and SU as 2-stage gear unit types and types SI, SMI as worm gear units for direct motor mounting have an oil filling which depends on the mounting position and must be installed in the stated position.




M1
M6
M2
SK 0282.1**
SK 1382.1
M4
M5


M1
M6
M2
SK 0182NB
SK 0282NB
SK 1382NB
M4
M5
M3


M1
M6
M2
SK 1282
SK 2282
SK 3282
SK 4282
SK 5282
M4
M5
M3

Parallel shaft gear units

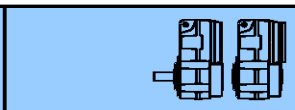
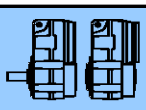
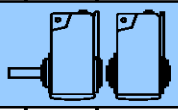
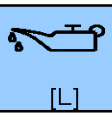
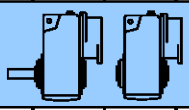
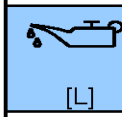
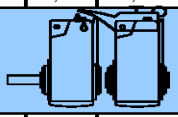
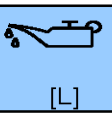
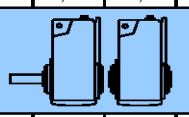
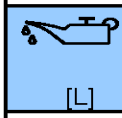
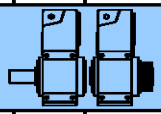
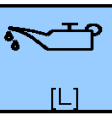
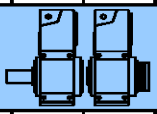
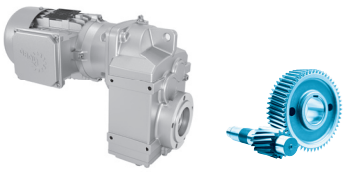
[L]							[L]						
	M1	**M2**	**M3**	**M4**	**M5**	**M6**		**M1**	**M2**	**M3**	**M4**	**M5**	**M6**
SK0182NB A	0,40	0,55	0,55	0,40	0,40	0,40							
SK0182.1 A	0,70	1,08	0,62	0,88	0,60	0,64							
SK0282.1 A	1,02	1,44	0,80	1,33	0,80	0,87							
SK1282.1 A	1,67	2,16	1,05	1,95	1,28	1,34							
SK1382.1 A	1,67	2,16	1,05	1,95	1,28	1,34							
SK0282NB A	0,70	1,10	0,80	1,10	0,90	0,90	**SK1382NB A**	1,40	2,30	2,20	2,20	2,00	2,00
 [L]							 [L]						
SK1282 A	0,95	1,30	0,90	1,30	1,00	1,00	**SK1382 A**	1,45	1,60	1,15	1,70	1,10	1,10
SK2282 A	1,70	2,30	1,70	2,20	1,90	1,90	**SK2382 A**	2,30	2,70	2,10	3,20	2,00	2,00
SK3282 A	2,80	4,00	3,30	3,80	3,00	3,00	**SK3382 A**	3,80	4,30	3,00	5,50	3,00	3,00
SK4282 A	4,20	5,40	4,40	5,00	4,20	4,20	**SK4382 A**	6,10	6,90	4,90	8,40	5,00	5,00
SK5282 A	7,50	8,80	7,50	8,80	7,20	7,20	**SK5382 A**	12,50	12,00	6,70	14,00	8,30	8,30
 [L]							 [L]						
SK6282 A	17,00	15,50	12,50	17,50	11,00	14,00	**SK6382 A**	16,00	13,00	10,00	18,00	14,00	12,50
SK7282 A	25,50	21,00	20,50	27,00	16,00	21,00	**SK7382 A**	22,00	21,00	16,00	25,00	23,00	22,00
SK8282 A	37,50	33,00	30,50	44,00	31,00	31,00	**SK8382 A**	34,50	32,50	25,00	38,00	35,00	30,00
SK9282 A	75,00	70,00	56,00	80,00	65,00	59,00	**SK9382 A**	74,00	70,00	43,00	75,00	65,00	60,00
 [L]							 [L]						
SK10282 A	90	90	40	90	60	82	**SK10382 A**	85	90	73	100	80	80
SK11282 A	165	160	145	195	100	140	**SK11382 A**	160	155	140	210	155	135
							SK12382 A	160	155	140	210	155	135
							SK10382.1 A	76,0	80,0	71,0	93,0	72,0	67,0
							SK11382.1 A	127	133	118	194	124	112

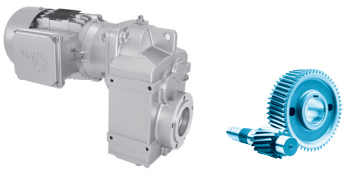
Table 10: Lubricant quantities for parallel shaft gear units



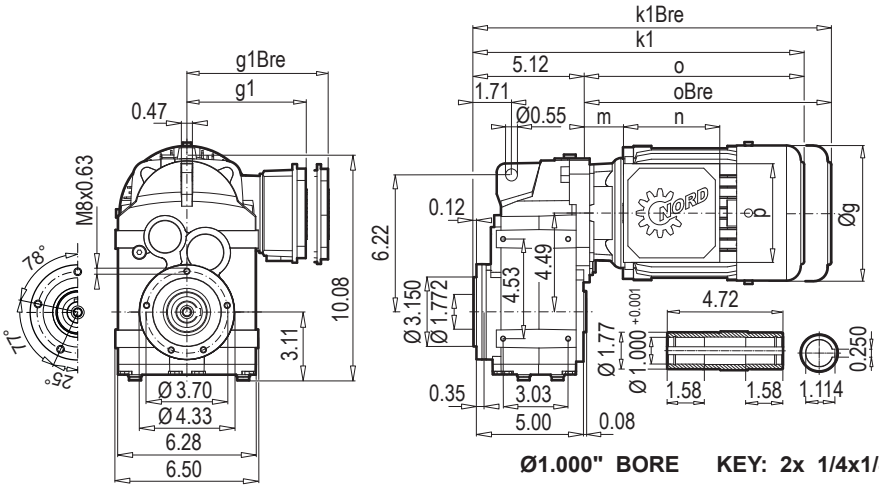
imperial 60 Hz
SK 0282.1

	i_{ges}	W n_2 [rpm]	W M_{2max} $f_B = 1$ [lb-in]	W P_{1max} $f_B \geq 1$ [hp]	W n_2 [rpm]	W M_{2max} $f_B = 1$ [lb-in]	W P_{1max} $f_B \geq 1$ [hp]	W n_2 [rpm]	W M_{2max} $f_B = 1$ [lb-in]	W P_{1max} $f_B \geq 1$ [hp]	NEMA f_B ⇨ 29-36 56C	NEMA 140TC	NEMA 180TC		
		n_1 = 1750 rpm			n_1 = 1150 rpm			n_1 = 875 rpm			NEMA				
SK 0282.1	**247.02**	**7.1**	1593	0.18	4.7	1593	0.12	3.5	1593	0.09	*	*			
	228.16	**7.7**	1770	0.22	5	1770	0.14	3.8	1770	0.11	*	*			
	201.65	**8.7**	1770	0.24	5.7	1770	0.16	4.3	1770	0.12	*	*			
W + NEMA	**190.64**	**9.2**	1770	0.26	6	1770	0.17	4.6	1770	0.13	*	*			
inch	**161.34**	**11**	1770	0.3	7.1	1770	0.2	5.4	1770	0.15	*	*			
⇨ 54-55	**140.98**	**12**	1770	0.35	8.2	1770	0.23	6.2	1770	0.17	*	*			
	126.98	**14**	1770	0.39	9.1	1770	0.25	6.9	1770	0.19	*	*			
	110.96	**16**	1770	0.44	10	1770	0.29	7.9	1770	0.22	*	*			
	103.89	**17**	1770	0.47	11	1770	0.31	8.4	1770	0.24	*	*			
	92.51	**19**	1770	0.53	12	1770	0.35	9.5	1770	0.27	*	*			
W + IEC	**75.69**	**23**	1770	0.65	15	1770	0.43	12	1770	0.32	*	*			
mm	**66.66**	**26**	1770	0.74	17	1770	0.48	13	1770	0.37	*	*			
⇨ 26-27	**53.03**	**33**	1593	0.83	22	1593	0.55	16	1593	0.42	*	*			
	43.78	**40**	1770	1.12	26	1770	0.74	20	1770	0.56		*			
	38.14	**46**	1770	1.29	30	1770	0.85	23	1770	0.64		*			
	33.44	**52**	1770	1.47	34	1770	0.97	26	1770	0.73		*			
	29.56	**59**	1770	1.66	39	1770	1.09	30	1770	0.83		*			
	26.32	**66**	1770	1.87	44	1770	1.23	33	1770	0.93		*			
	21.53	**81**	1770	*2*	53	1770	1.5	41	1770	1.14		*			
	18.96	**92**	1770	*2*	61	1770	*1.64*	46	1770	*1.25*		*			
	18.24	**96**	1770	*2*	63	1770	*1.64*	48	1770	*1.25*		*			
	16.12	**109**	1770	*2*	71	1770	*1.64*	54	1770	*1.25*		*			
	14.36	**122**	1770	*2*	80	1770	*1.64*	61	1770	*1.25*		*			
	12.78	**137**	1770	*2*	90	1770	*1.64*	68	1770	*1.25*		*			
	11.30	**155**	1770	*2*	102	1770	*1.64*	*77*	1770	*1.25*		*			
	10.06	**174**	1770	*2*	114	1770	*1.64*	*87*	1770	*1.25*		*			
	9.18	**191**	1770	*2*	126	1770	*1.64*	96	1770	*1.25*		*			
	8.24	**213**	1770	*2*	140	1770	*1.64*	106	1770	*1.25*		*			
	6.82	**257**	1770	*2*	169	1770	*1.64*	128	1770	*1.25*		*			
	6.43	**273**	1593	*2*	179	1593	*1.64*	136	1593	*1.25*		*			
	5.47	**320**	1416	*2*	210	1416	*1.64*	160	1416	*1.25*		*			
	4.79	**366**	1416	*2*	241	1416	*1.64*	183	1416	*1.25*		*			

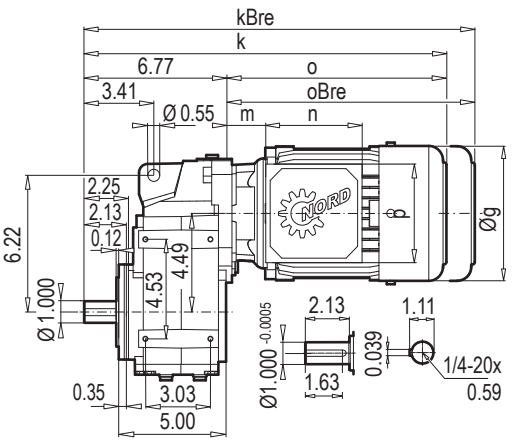
* Caution, do not exceed the maximum drive power P_{1max} according to the Type W column



SK 0282.1 AXZ

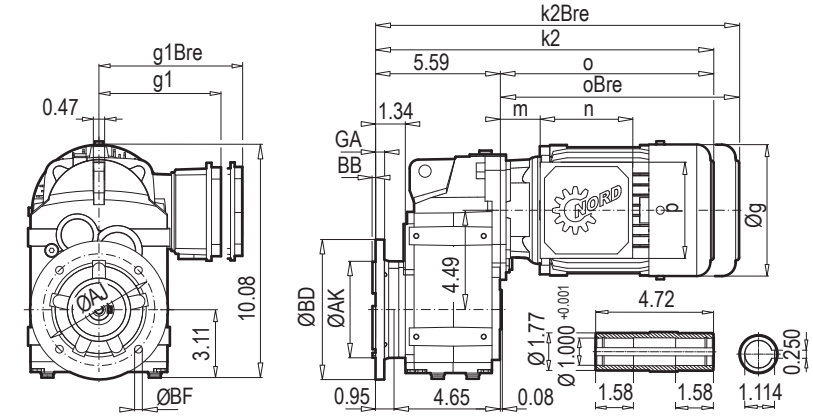


SK 0282.1 VXZ

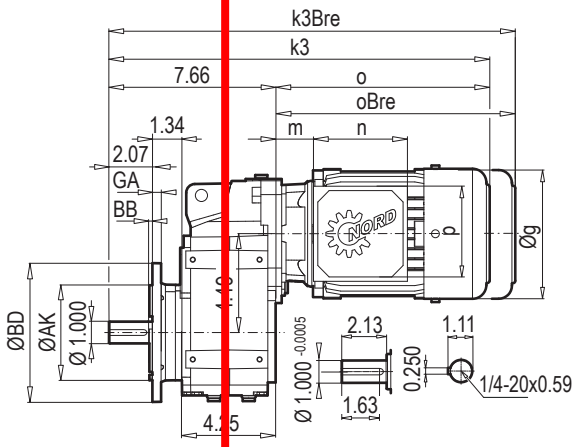


Ø1.000" BORE KEY: 2x 1/4x1/4x1.0“ B

SK 0282.1 AXF



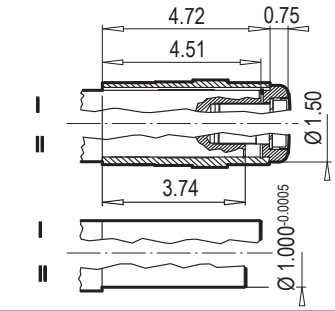
SK 0282.1 VXF



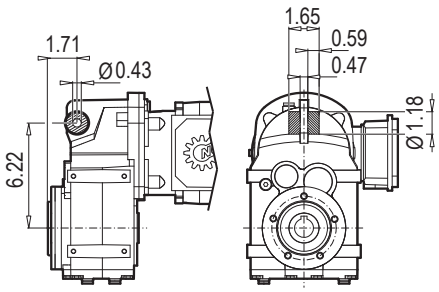
Ø1.000" BORE KEY: 2x 1/4x1/4x1.0“ B

BD (mm)	AK +/-	GA	AJ	BB	BF
6.30 (160)	4.331 +0.0005/-0.00004	0.39	5.118	0.14	4 x 0.35

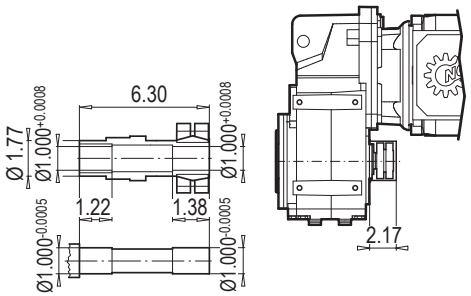
SK 0282.1 AXF**B** / AXZ**B**



SK 0282.1 AXZ**G** / VXZ**G**



SK 0282.1 AXZ**SH**

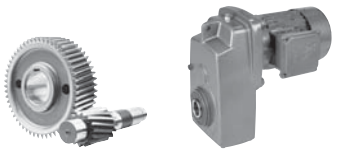


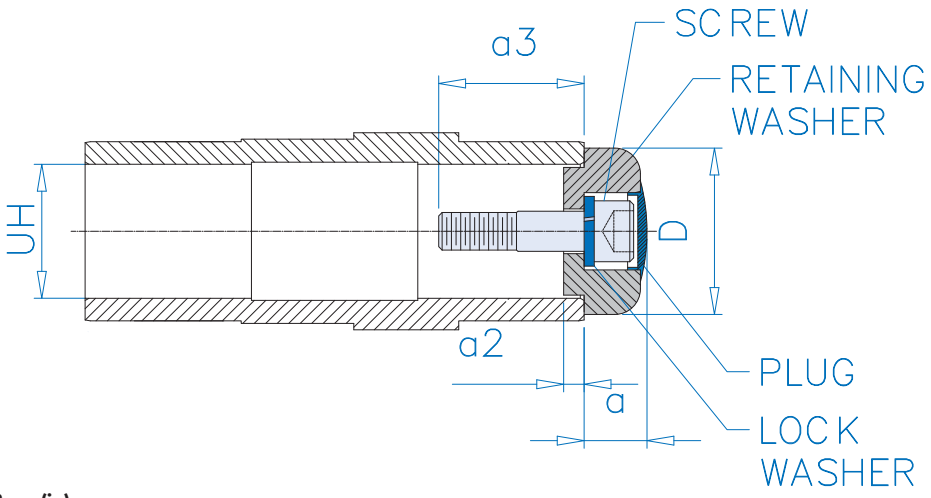
	63 SP/LP	71 SP/LP	80 SP/LP	90 SP/LP	
g	5.09	5.72	6.46	7.19	
g1 / g1Bre	4.51 / 4.84	4.86 / 5.24	5.59 / 5.59	5.79 / 5.79	
k / kBre	14.51 / 16.72	16.09 / 18.37	17.07 / 19.59	18.69 / 21.64	
k1 / k1Bre	12.84 / 15.04	14.41 / 16.69	15.39 / 17.91	17.01 / 19.96	
k2 / k2Bre	13.33 / 15.53	14.90 / 17.18	15.88 / 18.41	17.50 / 20.45	
k3 / k3Bre	15.40 / 17.61	16.98 / 19.26	17.94 / 20.48	19.55 / 22.51	
o / oBre	7.72 / 9.92	9.29 / 11.58	10.28 / 12.80	11.89 / 14.84	
m / mBre	0.63 / 0.87	1.65 / 1.89	1.85 / 1.97	2.05 / 2.17	
n / nBre	3.95 / 5.28	3.95 / 5.28	4.49 / 6.03	4.49 / 6.03	
p / pBre	3.95 / 3.51	3.95 / 3.51	4.49 / 4.25	4.49 / 4.25	

W ⇨📖 54

NEMA ⇨📖 55

Fixing Element Kit





Inch Shaft Hollow Bore (in)

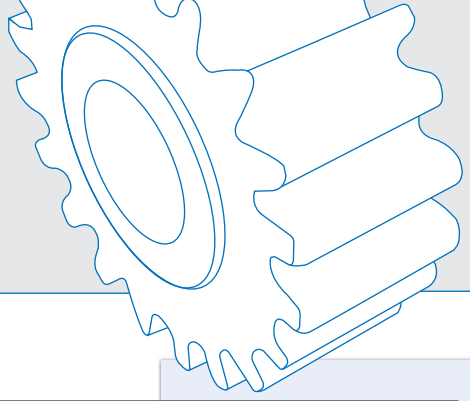
UH	D	a	a2	Screw ❶	a3 ❶	Screw ❷	a3 ❷	Screw ❸	a3 ❸
0.5000	0.984	0.565	0.110	10 - 32 x 5/8	0.499	-	-	-	-
0.7500	1.181	0.557	0.118	1/4 - 20 x 3/4	0.652	1/4 - 20 x 1	0.902		
1.0000	1.496	0.767	0.150	3/8 - 16 x 3/4	0.624	3/8 - 16 x 1-1/4	1.124	-	-
1.1875	1.575	0.769	0.150	7/16 - 14 x 2-1/16	2.016	-	-	-	-
1.2500	1.575	0.769	0.150	7/16 - 14 x 2-1/16	2.016	-	-	-	-
1.3750	1.772	0.946	0.197	5/8 - 11 x 1-1/2	1.461	5/8 - 11 x 2-1/4	2.211	5/8 - 11 x 1	0.961
1.4375	1.772	0.946	0.197	5/8 - 11 x 1-1/2	1.461	5/8 - 11 x 2-1/4	2.211	5/8 - 11 x 1	0.961
1.5000	1.772	0.946	0.197	5/8 - 11 x 1-1/2	1.461	5/8 - 11 x 2-1/4	2.211	5/8 - 11 x 1	0.961
1.6250	2.165	0.927	0.315	5/8 - 11 x 2	2.000	5/8 - 11 x 1-1/2	1.500	-	-
1.6875	2.165	0.927	0.315	5/8 - 11 x 2	2.000	5/8 - 11 x 1-1/2	1.500	-	-
1.9375	2.362	0.966	0.315	5/8 - 11 x 2-1/4	2.000	-	-	-	-
2.0000	2.559	0.971	0.315	5/8 - 11 x 2-1/4	2.250	-	-	-	-
2.0625	2.559	0.971	0.315	5/8 - 11 x 2-1/4	2.250	-	-	-	-
2.1875	2.559	0.971	0.315	5/8 - 11 x 2-1/4	2.250	-	-	-	-
2.3750	2.953	1.129	0.354	3/4 - 10 x 2-1/2	2.500	-	-	-	-
2.4375	2.953	1.129	0.354	3/4 - 10 x 2-1/2	2.500	-	-	-	-
2.7500	3.740	1.132	0.354	3/4 - 10 x 2-1/2	2.500	-	-	-	-
2.9375	3.740	1.132	0.354	3/4 - 10 x 2-1/2	2.500	-	-	-	-
3.1875	3.740	1.132	0.354	3/4 - 10 x 2-1/2	2.500	-	-	-	-
3.2500	4.106	1.132	0.354	3/4 - 10 x 2-1/2	2.500	-	-	-	-
3.4375	4.106	1.132	0.354	3/4 - 10 x 2-1/2	2.500	-	-	-	-
3.9375	4.724	1.299	0.394	7/8 - 9 x 3-1/2	3.500	-	-	-	-
4.0000	4.724	1.299	0.394	7/8 - 9 x 3-1/2	3.500	-	-	-	-
4.0625	4.724	1.299	0.394	7/8 - 9 x 3-1/2	3.500	-	-	-	-
4.4375	5.315	1.299	0.386	7/8 - 9 x 3-1/2	3.500	-	-	-	-
4.7500	5.906	1.299	0.394	7/8 - 9 x 3-1/2	3.500	-	-	-	-
4.9375	5.906	1.299	0.394	7/8 - 9 x 3-1/2	3.500	-	-	-	-

Metric Hollow Bore (mm)

UH	D	a	a2	Screw ❶	a3 ❶	Screw ❷	a3 ❷
25	38	19	3.8	M10 x 45	41.8	M10 x 30	26.8
30	40	19	3.8	M10 x 45	43.8	M10 x 30	28.8
35	45	23.5	5	M12 x 55	54	M12 x 35	34
40	55	23.7	8	M16 x 70	70	M16 x 45	45
50	65	24.7	8	M16 x 70	70	M16 x 45	45
60	75	29	9	M20 x 90	90	M20 x 55	55
70	95	29.3	9	M20 x 90	90	M20 x 55	55
80	102	29	9	M20 x 100	100	M20 x 55	55
100	120	34.5	10	M24 x 110	110	M24 x 65	65
120	150	34.5	10	M24 x 110	110	M24 x 65	65

❶, ❷, ❸ - Each fixing element kit may contain up to 3 different kinds of screws

High Performance Specifications



STANDARD EFFICIENCY MOTORS

Motor Type	Power P_N [HP]	Power P_N [kW]	Full Load n_N [rpm]	Torque T_N [lb-in]	Full Load Current - I_N 230 V [A]	460 V [A]	575 V [A]	Pf cos φ	Eff. η [%]	Starting Torque T_A/T_N	Breakdown Torque T_K/T_N	Starting Current I_A/I_N	Code letter	Inertia J_m [lb-ft²]
63 S/4	0.16	0.12	1700	5.93	0.88	0.44	0.37	0.66	52	2.7	3.5	2.5	F	0.0050
63 L/4	0.25	0.18	1680	9.03	1.12	0.56	0.46	0.71	57	2.3	2.5	2.7	E	0.0066
71 S/4	0.33	0.25	1710	12.39	1.56	0.78	0.66	0.64	63	2.4	2.7	3.1	G	0.015
71 L/4	0.5	0.37	1720	18.14	1.90	0.95	0.8	0.69	71	2.3	2.7	3.5	F	0.018
80 S/4	0.75	0.55	1710	27.17	2.70	1.35	1.12	0.71	72	2.2	2.3	3.5	F	0.030
80 L/4	1	0.75	1650	38.41	3.66	1.83	1.46	0.74	70	2.2	2.3	3.9	G	0.039
90 S/4	1.5	1.1	1660	56.02	4.84	2.42	1.94	0.78	73	2.5	2.8	4.9	G	0.056
90 L/4	2	1.5	1660	76.11	6.34	3.17	2.54	0.80	74	2.5	2.8	5.1	G	0.074
100 L/4	3	2.2	1705	108.86	9.0	4.50	3.63	0.81	76	2.3	2.6	4.9	G	0.107
100 LA/4 ✪	5	3.7	1725	181.43	15.2	7.62	6.10	0.75	81	2.7	3.1	5.1	G	0.178
132 S/4	7.5	5.5	1735	268.16	19.8	9.90	7.92	0.82	85	2.4	2.7	5.4	G	0.553
132 M/4	10	7.5	1735	365.51	25.8	12.9	10.3	0.84	87	2.9	3.2	6.3	H	0.752
160 M/4	15	11	1770	524.81	35.8	17.9	14.5	0.85	90.7	2.9	3.8	8.2	H	1.19
160 L/4	20	15	1760	720.39	48.4	24.2	19.3	0.87	89.4	2.9	3.9	8.5	K	1.59
180 MX/4	25	18.5	1760	885.00	59.0	29.5	23.6	0.87	90.5	3.4	4.3	8.8	J	1.90
180 LX/4	30	22	1765	1053.15	74.4	37.2	29.76	0.80	92.8	3.6	4.4	8.9	H	2.18

ENERGY EFFICIENT MOTORS

Motor Type	Power P_N [HP]	Power P_N [kW]	Full Load n_N [rpm]	Torque T_N [lb-in]	Full Load Current - I_N 230 V [A]	460 V [A]	575 V [A]	Pf cos φ	Eff. η [%]	Starting Torque T_A/T_N	Breakdown Torque T_K/T_N	Starting Current I_A/I_N	Code letter	Inertia J_m [lb-ft²]
80 LH/4	1	0.75	1750	36.20	3.88	1.94	1.5	0.59	82.5	4.6	4.3	6.0	L	0.05
90 SH/4	1.5	1.1	1740	53.45	4.3	2.15	1.75	0.76	84.0	3.5	3.8	6.3	J	0.08
90 LH/4	2	1.5	1745	72.66	6.3	3.15	2.45	0.71	84.0	4.3	4.5	6.7	K	0.09
100 LH/4	3	2.2	1765	105.32	8.6	4.3	3.4	0.73	87.5	3.6	4.7	7.9	L	0.18
112 MH/4	5	3.7	1770	177.00	14.4	7.2	5.6	0.74	87.5	4.0	4.8	8.1	L	0.30
132 SH/4	7.5	5.5	1780	261.08	20.9	10.5	8.3	0.74	89.5	4.3	4.6	8.2	L	0.75
132 MH/4	10	7.5	1770	358.43	27	13.5	10.8	0.78	89.5	3.2	4.0	7.4	J	0.84
160 MH/4	15	11	1770	525.25	26	18	14.4	0.84	91.7	3.2	3.8	8.7	K	1.59
160 LH/4	20	15	1775	714.20	48	24	19.2	0.84	92.6	3.5	4.2	8.8	L	2.18
180 MH/4	25	18.5	1780	877.92	60	30	24	0.84	92.4	3.5	3.6	8.5	K	3.08
180 LH/4	30	22	1780	1044.30	70	35	28	0.85	92.4	3.6	3.6	8.3	J	3.80

PREMIUM EFFICIENT MOTORS

Motor Type	Power P_N [HP]	Power P_N [kW]	Full Load n_N [rpm]	Torque T_N [lb-in]	Full Load Current - I_N 230 V [A]	460 V [A]	575 V [A]	Pf cos φ	Eff. η [%]	Starting Torque T_A/T_N	Breakdown Torque T_K/T_N	Starting Current I_A/I_N	Code letter	Inertia J_m [lb-ft²]
80 LP/4	1	0.75	1730	36.46	3.14	1.57	1.30	0.70	86.1	3.4	3.8	6.5	L	0.05
90 SP/4	1.5	1.1	1740	53.99	4.20	2.10	1.68	0.76	86.9	4.1	4.9	8.4	J	0.08
90 LP/4	2	1.5	1730	75.23	5.60	2.80	2.24	0.78	87.0	3.8	4.2	7.6	K	0.09
100 LP/4	3	2.2	1770	104.43	7.70	3.84	3.07	0.79	90.0	3.0	4.5	9.2	L	0.19
112 MP/4	5	3.7	1755	177.89	13.0	6.50	5.20	0.80	90.3	3.8	4.3	9.1	L	0.33
132 SP/4	7.5	5.5	1770	261.08	19.5	9.80	7.80	0.77	91.7	4.7	5.0	10.2	L	0.76
132 MP/4	10	7.5	1765	355.77	26.6	13.3	10.6	0.77	91.7	4.7	5.0	9.6	J	0.83
160 MP/4	15	11	1770	522.15	35.6	17.8	14.2	0.84	92.5	3.2	3.8	8.8	K	1.59
160 LP/4	20	15	1775	716.85	47.6	23.8	19.0	0.85	93.0	4.3	4.6	10.8	L	2.18
180 MP/4	25	18.5	1780	876.15	61	30.3	24.2	0.82	93.6	3.4	3.6	8.6	K	3.80
180 LP/4	30	22	1780	1035.45	70	34.8	27.8	0.85	93.6	3.3	3.4	8.8	J	3.80

Description :
UPS, TRIO, 750 VA
120 VAC INPUT, 120 VAC 6A OUTPUT

Trade Name :
Phoenix Contact

Model no :
2905908

TRIO-UPS-2G/1AC/1AC/120V/ 750VA

Uninterruptible power supply



Data sheet
107057_en_01

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1 Description

The TRIO-UPS-2G uninterruptible power supply (UPS) is used to ensure that power for critical electrical loads continues to be supplied in the event of disturbances in the power supply network, e.g., due to mains breakdown or failure.

In doing so, the UPS switches to battery operation without interruption so that connected loads continue to be consistently supplied.

When mains power is restored, the UPS automatically returns to normal operation. The connected loads are again supplied via the power supply network and the battery is charged.

The product described here is an uninterruptible power supply (UPS) with integrated energy storage (2x 4 Ah).

Features

- Offline UPS in line with UPS classification code according to IEC 62040-3: VFD-SS-311
- Waveform Type: pure sine
- Optimum use of the buffer time and preventive battery monitoring
- Maximum energy efficiency: 95 % efficiency for charged energy storage device
- Startup from energy storage possible without mains input
- USB interface for connection to higher-level controllers, such as industrial PCs
- Can be extended with external energy storage (1x 24 V, 4 Ah)

Technical data (short form)	
Nominal input voltage	120 V AC
Input voltage range	96 V AC ... 138 V AC
Frequency range	45 Hz ... 55 Hz / 55 Hz ... 65 Hz
Current consumption	6 A (max.)
Nominal output voltage (U_N)	120 V AC
Nominal output current (I_N)	6 A
Apparent power	750 VA
Active power	600 W
Buffer period	20 min. (100 W) 4 min. (300 W) 1 min. (600 W)
Efficiency (100 % load, with charged energy storage)	> 95 %
MTBF (IEC 61709, SN 29500)	> 206000 h (40 °C)
Ambient temperature (operation)	0 °C ... 40 °C
Dimensions W/H/D	210 mm / 170 mm / 136 mm
Weight	5.7 kg
Battery technology	Lead rechargeable battery module
Battery type	2x Panasonic UP-VW1220P1 / BB Battery HR4.2-12FR
Nominal voltage (Energy storage)	24 V DC
Capacitance	4 Ah
Battery fuse	40 A, 32 V
Can be extended with external battery	yes , 1x 24 V / 4 Ah

All technical specifications are nominal and refer to a room temperature of 25 °C and 70% relative humidity at 2000 m above sea level.

4 Technical data

Input data	
Nominal input voltage	120 V AC
Input voltage range	96 V AC ... 138 V AC
Frequency range	45 Hz ... 55 Hz / 55 Hz ... 65 Hz
Current consumption	6 A (max.)
Permissible backup fuse	B10 / B16 (Listed breaker)
Input connection data	
Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm² ... 4 mm²
Conductor cross section, flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG/kcmil	24 ... 12
Stripping length	10 mm
Output data	
Apparent power	750 VA
Nominal power (real power)	600 W
Power factor (cos phi)	0.8
Crest factor	2.8
Switch-over time	< 10 ms
Classification according to IEC 62040-3	VFD-SS-311
Output data (normal operation)	
Nominal output voltage (U_N)	120 V AC
Nominal output current (I_N)	6 A (750 VA)
Input fuse	10 A , 400 V , gRL
Overload capacity	in accordance with internal fuse
Efficiency (100 % load, with charged energy storage)	> 95 %
Output data (battery operation)	
Nominal output voltage (U_N)	120 V AC
Nominal output current (I_N)	6 A (750 VA)
Frequency (after automatic detection in mains operation)	50 Hz / 60 Hz
Form of output voltage	Pure sine
Overload capacity	125 % 5 s, then shuts down
Efficiency (100 % load)	~ 81 %
Output connection data	
Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm² ... 4 mm²
Conductor cross section, flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG/kcmil	24 ... 12
Stripping length	10 mm

Energy storage	
Battery technology	Lead rechargeable battery module
Battery type	2x Panasonic UP-VW1220P1 / BB Battery HR4.2-12FR
Capacitance	4 Ah
Battery fuse	40 A, 32 V
Charge current	0.7 A ... 1.1 A
Charging time	7 h
Service life	6 (20 °C)
Latest startup	6 Months (0 °C ... 20 °C) 6 Months ... 3 Months (20 °C ... 30 °C) 3 Months ... 1 Months (30 °C ... 40 °C)
Buffer time	100 W / 20 min. ; 300 W / 4 min. ; 600 W / 1 min.
Can be extended with external battery	yes , 1x 24 V / 4 Ah

Connection data for the external battery	
Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm² ... 10 mm²
Conductor cross section, flexible	0.2 mm² ... 6 mm²
Conductor cross section AWG/kcmil	24 ... 8
Stripping length	15 mm

Status and diagnostic indicator / signal output Alarm	
Switching output	Transistor output, active
Output voltage	24 V (SELV)
Continuous load current	≤ 20 mA
Status display	LED (red)

Status and diagnostic indicator / signal output Battery Mode	
Switching output	Transistor output, active
Output voltage	24 V (SELV)
Continuous load current	≤ 20 mA
Status display	LED (yellow)

Status and diagnostic indicator / signal output Ready	
Switching output	Transistor output, active
Output voltage	24 V (SELV)
Continuous load current	≤ 20 mA

Status and diagnostic indicator / signal output Battery Charge	
Status indication	LED (yellow)

Status and diagnostic indicators/signal outputs AC OK, $P>P_n$, Remote	
Status indication	LED (green)

Status and diagnostic indicator / signal output Service	
Status indication	LED (red)

Signal connection data	
Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm² ... 1.5 mm²
Conductor cross section, flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG/kcmil	24 ... 16
Stripping length	8 mm

Remote control (Remote)	Digital control input (configurable)
Low signal	Connection to SGnd with < 2.7 kΩ
High signal	Open (> 35 kΩ between Remote and SGnd)

Battery-operated start (bat. start)	Digital control input low-active
Low signal	Connection to SGnd with < 2.7 kΩ
High signal	Open (> 200 kΩ between Bat.-Start and SGnd)

Interfaces	
USB classification	MINI-USB type B
Maximum cable length	3 m

Device combinations	
UPS connection in parallel	no
UPS connection in series	no

General data	
Overvoltage category	II
MTBF	> 206000 h (40 °C)
Degree of protection	IP20
Protection class	I
Type of housing	DX51D+AZ (steel sheet / Galvalume)
Hood version	PC + ABS
Dimensions W/H/D (normal mounting position/delivered condition)	210 mm / 170 mm / 136 mm
Weight	5.7 kg

Ambient conditions	
Ambient temperature (operation)	0 °C ... 40 °C
Ambient temperature (storage/transport)	-15 °C ... 40 °C (with charged energy storage device)
Max. permissible relative humidity (operation)	≤ 95 % (25 °C, non-condensing)
Installation height	≤ 3000 m (> 2000 m, observe derating)
Vibration (operation)	5 Hz ... 100 Hz, 0.7g (EN 60068-2-6)
Shock	20g in all directions (EN 60068-2-27) 30g in each space direction with UWA 130
Degree of pollution	3
Climatic class	3K3 (in acc. with EN 60721)

Standards	
Uninterruptible power supply	EN 62040-1

Approvals	
UL approvals	UL/C-UL Recognized UL 1778



You will find the latest approvals for the item at phoenixcontact.net/products.

Electromagnetic compatibility / Conformance with EMC Directive 2014/30/EU		
Noise emission in accordance with EN 62040-2		
Conducted noise emission	EN 62040-02 (Class C2)	
Noise emission	EN 62040-02 (Class C2)	
Harmonic currents	EN 61000-3-2 (Class A)	

Immunity in accordance with EN 62040-2		
CE basic standard	**EN 62040-2 requirement**	**Tested**
Electrostatic discharge EN 61000-4-2		
Housing contact discharge	4 kV (Test Level 2)	6 kV (Test Level 3)
Housing air discharge	8 kV (Test Level 3)	8 kV (Test Level 3)
Comments	Criterion B	Criterion A
Electromagnetic HF field EN 61000-4-3		
Frequency range	80 MHz ... 1 GHz	80 MHz ... 3 GHz
Test field strength	10 V/m	10 V/m
Comments	Criterion A	Criterion A
Fast transients (burst) EN 61000-4-4		
Input	2 kV (Test Level 3 - asymmetrical)	2 kV (Test Level 3 - asymmetrical)
DC input	2 kV (Test Level 3 - asymmetrical)	2 kV (Test Level 3 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)	2 kV (Test Level 3 - asymmetrical)
Signal	2 kV (Test Level 3 - asymmetrical)	2 kV (Test Level 3 - asymmetrical)
Signal USB	2 kV	2 kV
Comments	Criterion B	Criterion A (B for USB)
Surge voltage load (surge) EN 61000-4-5		
Input	1 kV (Test Level 2 - symmetrical) 2 kV (Test Level 3 - asymmetrical)	1 kV (Test Level 2 - symmetrical) 2 kV (Test Level 3 - asymmetrical)
Output	1 kV (Test Level 2 - symmetrical) 2 kV (Test Level 3 - asymmetrical)	1 kV (Test Level 2 - symmetrical) 2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion B	Criterion A
Conducted interference EN 61000-4-6		
Frequency range	0.15 MHz ... 80 MHz	0.15 MHz ... 80 MHz
Voltage	10 V	10 V
Comments	Criterion A	Criterion A

Immunity in accordance with EN 62040-2		
CE basic standard	**EN 62040-2 requirement**	**Tested**
Power frequency magnetic field EN 61000-4-8		
Frequency	60 Hz	60 Hz
Test field strength	30 A/m	100 A/m
Comments	Criterion B	Criterion A

Key	
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Description :
PROXIMITY SENSOR
CAPACITIVE PNP 24VDC
8 MM OF DETECTION WITH M12 CONNECTOR

Trade Name :
Schneider electric

Model no :
XT218A1PCM12

Product datasheet
Characteristics

XT218A1PCM12
capacitive sensor - XT1 - cylindrical M18 - plastic - Sn 8 mm - 12..24 V DC



Main

Range of product	OsiSense XT
Sensor type	Capacitive proximity sensor
Product specific application	Detection of insulated or conductive materials
Sensor name	XT2
Sensor design	Cylindrical M18
Size	78 mm
Body type	Fixed
Detector flush mounting acceptance	Non flush mountable
Material	Plastic
Enclosure material	Plastic
Type of output signal	Discrete
Wiring technique	4-wire
[Sn] nominal sensing distance	8 mm
Discrete output function	1 NC + 1 NO
Output circuit type	DC
Discrete output type	PNP
Electrical connection	4 pins M12 male connector
[Us] rated supply voltage	12...24 V DC with reverse polarity protection
Delay response	< 15 ms
IP degree of protection	IP67 double insulation conforming to IEC 60529

Complementary

ISO thread	M18 x 1
Detection face	Frontal
[Sa] assured operating distance	0...5.8 mm
Adjustment zone	0...12 mm
Differential travel	< 1...20 % Sr
Repeat accuracy	< 5 % Sr
Status LED	1 LED (yellow) for output state indication
Supply voltage limits	10...30 V DC
Residual current	<= 100 mA (open state)
Protection type	Short-circuit protection
Switching frequency	<= 200 Hz
Voltage drop	< 2.5 V (closed)
Current consumption	< 25 mA
Delay first up	< 100 ms
Delay recovery	< 15 ms
Maximum switching current	400 mA
Marking	CE
Setting-up	Sensitivity by potentiometer
Threaded length	47 mm
Length	78 mm
Product weight	0.075 kg

Environment

standards	EN/IEC 60947-5-2

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein.
This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications.
It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof.
Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

product certifications	CULus
ambient air temperature for operation	-10...60 °C
vibration resistance	10 gn amplitude = 1 mm (10...55 Hz) conforming to IEC 60068-2-6
shock resistance	30 gn (duration = 11 ms) conforming to IEC 60068-2-27
resistance to electrostatic discharge	4 kV (contact) conforming to IEC 61000-4-2 8 kV (air) conforming to IEC 61000-4-2
resistance to electromagnetic fields	3 V/m conforming to IEC 61000-4-3
resistance to fast transients	2 kV conforming to IEC 61000-4-4

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS	Compliant - since 0918 - Schneider Electric declaration of conformity

Contractual warranty

Period	18 months

Technical DataSheets

Description :
ETHERNET MANAGED SWITCH 24VDC
8 PORTS RJ45

Trade Name :
Schneider electric

Model no :
MCSESM083F23F0

Product datasheet

MCSESM083F23F0

Specifications



network switch, Modicon Networking, managed, 8 ports for copper

MCSESM083F23F0

Main

Range Of Product	Modicon
Product Or Component Type	Ethernet TCP/IP managed switch
Concept	Transparent Ready
Communication Port Protocol	Ethernet TCP/IP SSH HTTP HTTPS SNMP RS232 SFTP SCP LLDP Telnet SNTP
Port Ethernet	10/100BASE-TX - 8 port(s) copper cable
Maximum Number Of Switches In Cascade	Unlimited
Cybersecurity	Port hardening IP-based port security MAC-based port security Port-based access control Role-based access control RADIUS assignment HTTPS DoS prevention VLAN-based ACL Audit trail SNMP logging Pre-login banner

Complementary

Integrated Connection Type	Shielded RJ45 copper cable
Transmission Support Medium	Twisted shielded pairs cable CAT 5E for copper cable
Maximum Cable Distance Between Devices	100 m copper cable
Ethernet Service	Configuration via web server VLAN Multicast filtering Data stream control IGMP Snooping SNMP-Traps and SYSLOG
Communication Service	TFTP Quality of Service (QoS) Port monitoring Port mirroring Address conflict detection
Diagnostics Run Time	Signal contact Self test MAC notification

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Maximum Number Of Switches In A Ring	50
Redundancy	HiPER ring RSTP Link aggregation Link backup Redundant network coupling MRP
[Us] Rated Supply Voltage	12...24 V
Supply Voltage Limits	9.6…32 V DC SELV
Power Consumption In W	6 W
Electrical Connection	Removable connector 6 ways power supply
Mounting Support	35 mm symmetrical DIN rail
Marking	CE CULus RCM
Function Available	Security status Alarms (Traps) System information Report
Local Signalling	1 dual colour LED (green/yellow) for P1 P2 power supplies 1 dual colour LED (green/red) for device status 1 dual colour LED (green/yellow) for memory key status 1 dual colour LED (green/yellow) for channel diagnostic
Alarm Output	1 voltfree contact 1 A
Alarm Function	Power supply fault Data link status Switch fault Temperature threshold Redundancy ring fault Incorrect configuration External memory removed
Ethernet Cabling System	TF switches
Width	73 mm
Height	142.8 mm
Depth	117.6 mm
Net Weight	0.42 kg

Environment

Ambient Air Temperature For Operation	0…60 °C
Relative Humidity	1…95 % non-condensing
Ip Degree Of Protection	IP30
Directives	2014/35/EU - low voltage directive 2014/30/EU - electromagnetic compatibility
Standards	UL 61010-2-201 EN/IEC 61131-2 EN/IEC 62368-1
Product Certifications	CE UL RCM DNV ATEX

Packing Units

Unit Type Of Package 1	PCE

Number Of Units In Package 1	1
Package 1 Height	13.400 cm
Package 1 Width	16.800 cm
Package 1 Length	24.000 cm
Package 1 Weight	669.000 g
Unit Type Of Package 2	S04
Number Of Units In Package 2	8
Package 2 Height	30.000 cm
Package 2 Width	40.000 cm
Package 2 Length	60.000 cm
Package 2 Weight	6.116 kg
Unit Type Of Package 3	P12
Number Of Units In Package 3	32
Package 3 Height	44.000 cm
Package 3 Width	80.000 cm
Package 3 Length	120.000 cm
Package 3 Weight	36.000 kg

Contractual warranty

Warranty	18 months

Sustainability

Green Premium^{TM} label is Schneider Electric's commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO_2 products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >



Transparency



RoHS/REACh

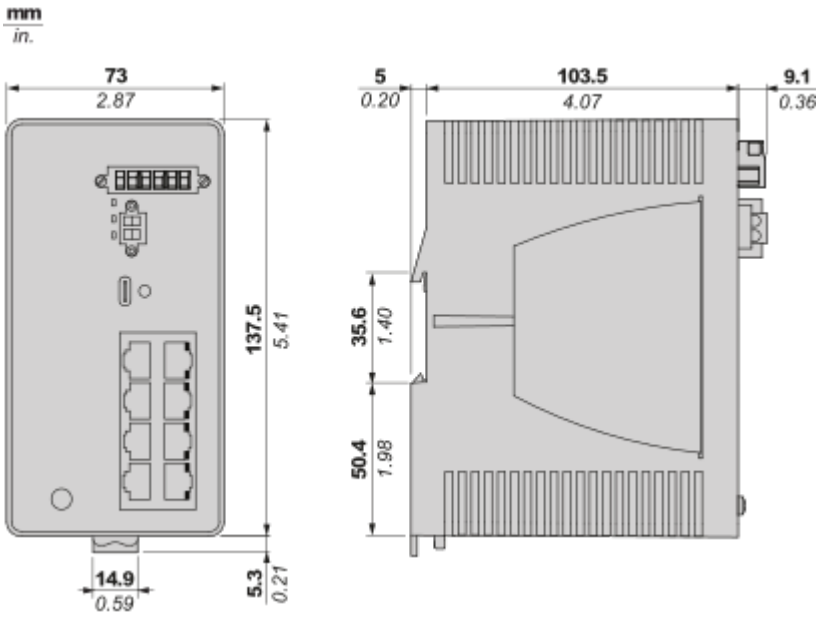
Well-being performance

Mercury Free	
Rohs Exemption Information	Yes

Certifications & Standards

Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

Dimensions


mm
in.
73
2.87
137.5
5.41
14.9
0.59
5.3
0.21
5
0.20
103.5
4.07
9.1
0.36
35.6
1.40
50.4
1.98

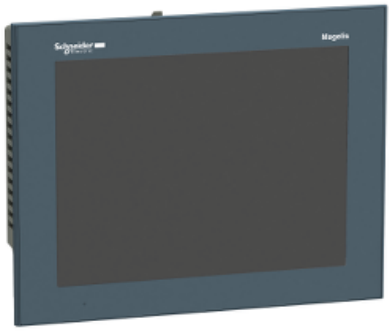
Description :
OPERATOR INTERFACE, MAGELIS GTO, 640 X 480
10.4 IN. TOUCH, COLOR, 24VDC

Trade Name :
Schneider electric

Model no :
HMIGTO5310

Product data sheet
Characteristics

HMIGTO5310
advanced touchscreen panel 640 x 480 pixels
VGA- 10.4" TFT - 96 MB



Main

Range of product	Magelis GTO
Product or component type	Advanced touchscreen panel
Display colour	65536 colours
Display size	10.4 inch
Supply	External source
Operating system	Magelis
Battery type	Lithium battery for internal RAM, autonomy: 100 days, charging time = 5 d, battery life = 10 yr

Complementary

Terminal type	Touchscreen display
Display type	Backlit colour TFT LCD
Display resolution	640 x 480 pixels VGA
Touch sensitive zone	1024 x 1024
Touch panel	Resistive film, 1000000 cycles
Backlight lifespan	50000 hours (white) at 25 °C
Brightness	16 levels - control by touch panel 16 levels - control by software
Character font	ASCII Chinese (simplified Chinese) Japanese (ANK, Kanji) Korean Taiwanese (traditional Chinese)
[Us] rated supply voltage	24 V DC
Supply voltage limits	19.2...28.8 V
Inrush current	<= 30 A
Power consumption in W	<= 17 W <= 12 W (when power is not supplied to external devices) <= 7 W (when backlight is OFF) <= 8 W (when backlight is dimmed)
Local signalling	Status LED (orange) flashing software starting up

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

	Status LED (green) steady offline Status LED (green) steady operating Status LED (red) steady power supply (ON) Status LED (clear) faded power supply (OFF) COM2 LED (yellow) steady data is being transmitted COM2 LED (yellow) faded no data transmission SD card LED (green) steady card is inserted SD card LED (green) faded card is not inserted or is not being accessed
Software designation	Vijeo Designer configuration software >= V6.1
Memory description	96 MB flash (EPROM)
Data backed up	512 kB internal RAM (SRAM)
Data storage equipment	SD card <= 32 GB SDHC card <= 32 GB
Downloadable protocols	Modbus Plus Schneider Electric Modicon FIPWAY Schneider Electric Modicon Modbus TCP Schneider Electric Modicon Modbus Schneider Electric Modicon Third party protocols Mitsubishi Melsec Third party protocols Omron Sysmac Third party protocols Rockwell Automation Allen-Bradley Third party protocols Siemens Simatic Uni-TE Schneider Electric Modicon
Integrated connection type	COM1 serial link SUB-D 9, interface: RS232C, transmission rate: 2400...115200 bps COM2 serial link RJ45, interface: RS485, transmission rate: 2400...115200 bps COM2 serial link RJ45, interface: RS485, transmission rate: 187.5 kbps compatible with Siemens MPI Ethernet RJ45, interface: 10BASE-T/100BASE-TX Ethernet RJ45, interface: IEEE 802.3 USB 2.0 type A USB 2.0 type mini B
Product mounting	Flush mounting
Fixing mode	By 4 screw clamps
Front material	PPT
Enclosure material	PPT
Type of cooling	Natural convection
Width	272.5 mm
Height	214.5 mm
Depth	57 mm
Product weight	2 kg

Environment

Standards	EN 61131-2 IEC 61000-6-2 UL 508
Product certifications	CE C-Tick cULus KCC
Ambient air temperature for operation	0...55 °C
Ambient air temperature for storage	-20...60 °C
Relative humidity	10...90 % without condensation
Operating altitude	< 2000 m
IP degree of protection	IP20 rear panel conforming to IEC 60529 IP65 front panel conforming to IEC 60529
NEMA degree of protection	NEMA 4X front panel (indoor use)
Shock resistance	147 m/s² 3 chocks in each direction X, Y and Z conforming to EN/IEC 61131-2
Vibration resistance	3.5 mm (f = 5...9 Hz) conforming to EN/IEC 61131-2 X, Y, Z directions for 10 cycles (approx. 100 min) 1 gn (f = 9...150 Hz) conforming to EN/IEC 61131-2 X, Y, Z directions for 10 cycles (approx. 100 min)
Resistance to electrostatic discharge	6 kV contact discharge conforming to IEC 61000-4-2 level 3

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1348 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACh	Reference contains SVHC above the threshold - Go to CaP for more details Go to CaP for more details
Product environmental profile	Available Product Environmental Profile
Product end of life instructions	Available End of Life Information

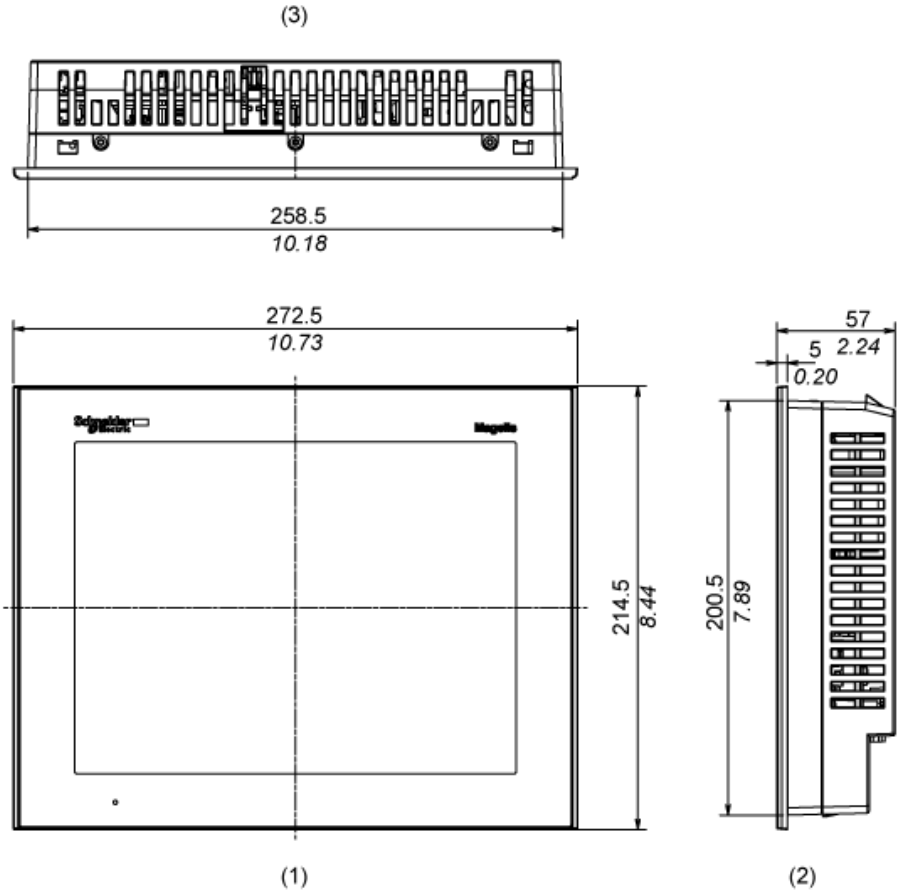
Contractual warranty

Warranty period	18 months

Dimensions

External Dimensions

mm
in.



1 Front
2 Right Side
3 Top

Description :
MODICON X80, PLC M580

Trade Name :
Schneider electric

Model no :
BME P58 2020

Product data sheet
Characteristics

BMEP582020
processor module M580 - Level 2 - Distributed



Main

Range of product	Modicon M580
Product or component type	Processor module
Supply	Internal power supply via rack

Complementary

Number of racks	4
Discrete I/O processor capacity	2048 I/O
Analogue I/O processor capacity	512 I/O
Number of application specific channel	72
Application specific I/O	Accurate time stamping Counter Serial link Motion control HART SSI encoder
Checks	Process control
Control channels	Programmable loops
Integrated connection type	USB type mini B 1 Ethernet TCP/IP service port 2 Ethernet TCP/IP device network
Number of distributed equipment	128
Communication module processor capacity	2 Ethernet communication module 8 AS-Interface module
Communication service	DIO scanner
Memory description	Expandable flash 4 GB data storage Integrated RAM 10 kB system memory Integrated RAM 8 MB program Integrated RAM 768 kB data
Application structure	1 cyclic/periodic master task 1 periodic fast task 64 event tasks 2 auxiliary tasks
Number of instructions per ms	7.5 Kinst/ms 65 % Boolean + 35 % fixed arithmetic

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

	10 Kinst/ms 100 % Boolean
Current consumption	270 mA 24 V DC
MTBF reliability	600000 H
Marking	CE
Status LED	1 LED green download in progress (DL) 1 LED red memory card or CPU flash fault (BACKUP) 1 LED green/red ETH MS (Ethernet port configuration status) 1 LED green/red Eth NS (Ethernet network status) 1 LED green processor running (RUN) 1 LED red I/O module fault (I/O) 1 LED red processor or system fault (ERR)
Product weight	1.87 lb(US) (0.849 kg)

Environment

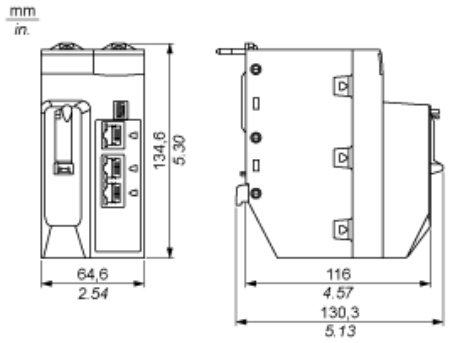
Vibration resistance	3 gn
Shock resistance	30 gn
Ambient air temperature for operation	32...140 °F (0...60 °C)
Ambient air temperature for storage	-40...185 °F (-40...85 °C)
Operating altitude	0...6561.68 ft (0...2000 m) 2000...5000 m (with derating factor)
Relative humidity	5...95 % 55 °C conforming to without condensation
IP degree of protection	IP20
Standards	EN/IEC 61131-2 EN/IEC 61010-2-201 UL 61010-2-201 CSA C22.2 No 61010-2-201
Product certifications	CE CSA UL RCM Merchant Navy EAC

Offer Sustainability

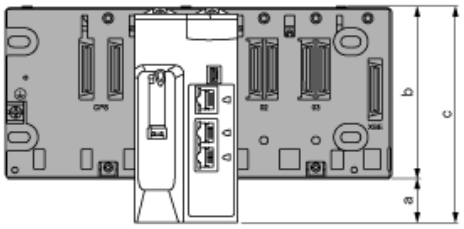
Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1623 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold
Product environmental profile	Available
Product end of life instructions	Available

BMEP582020

CPU MODULE ONLY

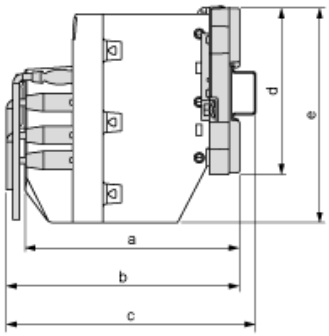


Modules Mounted on Racks



a: additional space below the rack to accommodate the height of the CPU. For an X Bus rack, the value is 30.9 mm (1.217 in.); for an Ethernet rack, the va
b: the height of the rack. For an X Bus rack, the height is 103.7 mm (4.083 in.); for an Ethernet rack, the height is 105.11 mm (4.138 in.).
c: the height of the main local rack, 134.6 mm (5.299 in.)

Modules and Cables Mounted in an Enclosure



a: enclosure depth: 135 mm (5.315 in.)
b: wiring + module depth: > 146 mm (5.748 in.)
c: wiring + module + DIN rail depth: > 156 mm (6.142 in.)
d: rack height: for an X Bus rack 103.7 mm (4.083 in.); for an Ethernet rack, 105.11 mm (4.138 in.)
e: module height: 134.6 mm (5.299 in.)

Description :
MODICON X80, ANALOG INPUT MODULE 8PT

Trade Name :
Schneider electric

Model no :
BMX AMI 0810

Chapter 5
BMX AMI 0810 Analog Input Module

Subject of this Chapter

This chapter presents the BMX AMI 0810 module, its characteristics, and explains how it is connected to the various sensors.

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Presentation	96
Characteristics	97
Functional Description	99
Wiring Precautions	106
Wiring Diagram	110
Use of the TELEFAST ABE-7CPA02/31/31E Wiring Accessory	112

Presentation

Function

The BMX AMI 0810 is a high density input analog module with 8 isolated channels.

This module is used in conjunction with sensors or transmitters; it performs monitoring, measurement, and continuous process control functions.

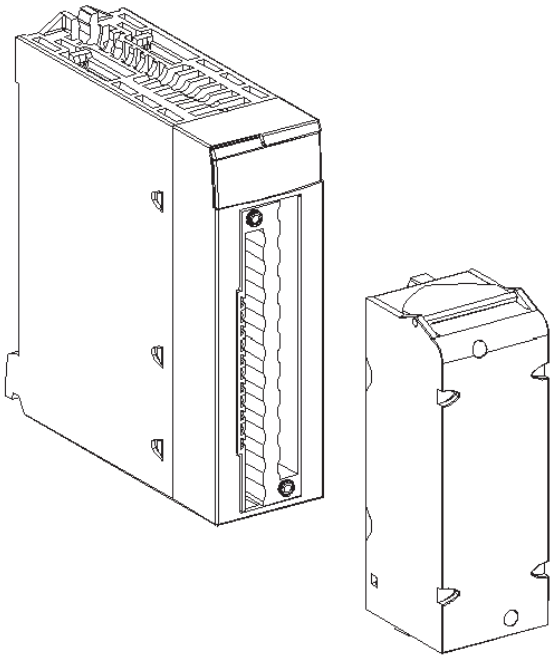
The BMX AMI 0810 module offers the following range for each input according to the selection made during configuration:

- Voltage +/-5 V/+/-10 V/0..5 V/0..10 V/1..5 V
- Current +/-20 mA/0..20 mA/4..20 mA

The module operates with voltage inputs. It includes eight read resistors connected to the terminal block to perform current inputs.

Illustration

The following graphic shows the BMX AMI 0810 analog input module:



NOTE: The terminal block is supplied separately.

Characteristics

General Characteristics

The general characteristics for the BMX AMI 0810 and BMX AMI 0810H *(see page 49)* modules are as follows:

Type of inputs		High level isolated fast inputs
Nature of inputs		Voltage / Current
Number of channels		8
Acquisition cycle time:		
• Fast (periodic acquisition for the declared channels used)		1 ms + 1 ms x number of channels used
• Default (periodic acquisition for all channels)		9 ms
Display resolution		16-bit
Digital filtering		First order
Isolation: • Between channels • Between channels and bus • Between channels and ground		 +/-300 VDC 1400 VDC 1400 VDC
Maximum overload authorized for inputs:		Voltage inputs: +/- 30 VDC Current inputs: +/- 30 mA Protected against accidental wiring: -19.2 to 30VDC **NOTE:** The **Protected for accidental wiring** function is not supported when the module works with any Telefast interface.
Power consumption (3.3 V)	**Typical**	0.32 W
	Maximum	0.48 W
Power consumption (24 V)	**Typical**	0.82 W
	Maximum	1.30 W

Measurement Range

The BMX AMI 0810 and BMX AMI 0810H *(see page 49)* analog inputs have the following measurement range characteristics:

Measurement range	**+/-10 V; +/-5 V; 0..10 V; 0..5 V; 1..5 V**	**+/-20 mA; 0..20 mA; 4..20 mA**
Maximum conversion value	+/-11.4 V	+/-30 mA
Conversion resolution	0.36 mV	1.4 µA
Input impedance	10 MΩ	Internal conversion resistor (250 Ω) + Internal protection resistor (see note)
Precision of the internal conversion resistor	-	0.1% - 15 ppm/°C
Measurement errors for standard module:		
• At 25°C • Maximum in the temperature range 0...60°C (32...140°F)	0.075% of FS (1) 0.1% of FS (1)	Typical 0.15% of FS (1)(2) 0.3% of FS (1)(2)
Measurement errors for Hardened module:		
• At 25°C • Maximum in the temperature range -25...70°C (-13...158°F)	0.075% of FS (1) 0.2% of FS (1)	Typical 0.15% of FS (1)(2) 0.55% of FS (1)(2)
Temperature drift	30 ppm/°C	50 ppm/°C
Monotonicity	Yes	Yes
Crosstalk between channels DC and AC 50/60Hz	> 80dB	> 80dB
Non-linearity	0.001%	0.001%
Repeatability @25°C of 10 min. stabilization time	0.005% of FS	0.007% of FS
Long term stability after 1000 hours	< 0.004% of FS	< 0.004% of FS
Legend: (1) FS: Full Scale (2) With conversion resistor error		

NOTE: The internal protection resistor has a typical impedance of 25 Ω (min 3.6 Ω and max 50 Ω),The precision of the protection resistor does not impact the measured value.

NOTE: If nothing is connected on a BMX AMI 0810 and BMX AMI 0810H *(see page 49)* analog module and if channels are configured (range 4..20 mA or 1..5 V), there is a detected I/O error as if a wire is broken.

Functional Description

Function

The BMX AMI 0810 is a high density input analog module with 8 isolated channels.

This module is used in conjunction with sensors or transmitters; it performs monitoring, measurement, and continuous process control functions.

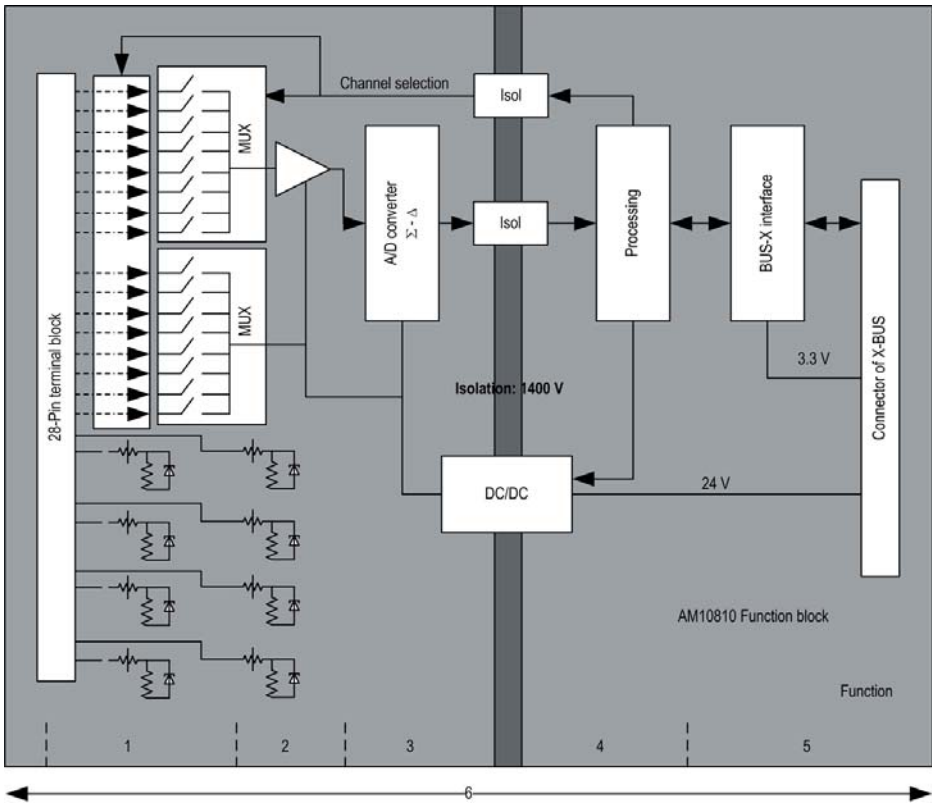
The BMX AMI 0810 module offers the following range for each input according to the selection made during configuration:

- +/-10 V
- 0..10 V
- 0..5 V / 0..20 mA
- 1..5 V / 4..20 mA
- +/-5 V / +/-20 mA

The module operates with voltage inputs. It includes eight read resistors connected to the terminal block to perform current inputs.

Illustration

The BMX AMI 0810 illustration:



Description:

No.	Process	Function
1	**Adapting the Inputs and Multiplexing**	• Physical connection to the process through a 28-pin screw terminal block • Protection of the module against overvoltages • Protection of the current reading resistors using limiters and resettable fuses • Input signal analog filtering • Scan input channels using static multiplexing through opto-switches, in order to provide the possibility of common mode voltage of +/- 300 Vdc
2	**Amplifying Input Signals**	• Gain selecting , based on characteristics of input signals, as defined during configuration (unipolar or bipolar range, in voltage or current) • Compensation of drift in amplifier device
3	**Converting**	• Conversion of analog Input signal into digital 24-bit signal using a ΣΔ converter
4	**Transforming incoming values into workable measurements for the user.**	• Takes into account recalibration and alignment coefficients to be applied to measurements and the module's self-calibration coefficients • (Numeric) filtering fo measurements, based on configuration parameters • Scaling of measurements, based on configuration parameters
5	**Communicating with the Application**	• Manages exchanges with CPU • Topological addressing • Receives configuration parameters from module and channels • Sends measured values, as well as module status, to application
6	**Module monitoring and sending error notification back to application.**	Conversion string test Testing for range overflow on channels Watchdog test

Measurement Timing

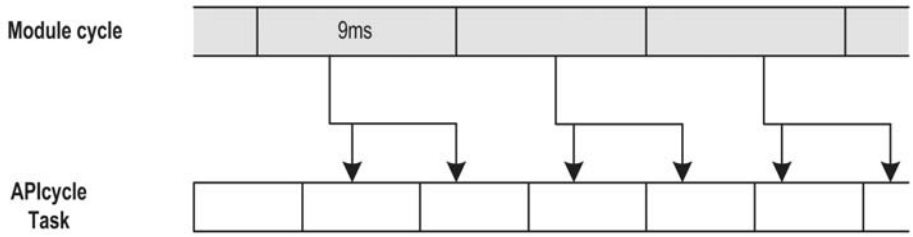
The timing of measurements is determined by the cycle selected during configuration (Normal or Fast Cycle):

- Normal Cycle means that the scan cycle duration is fixed.
- With the Fast Cycle, however, the system only scans the channels designated as being In Use. The scan cycle duration is therefore proportional to the number of channels In Use.

The cycle time values are based on the cycle selected:

Module	Normal Cycle	Fast Cycle
BMX AMI 0810	9 ms	1 ms + (1 ms x N) where N: number of channels in use.

NOTE: Module cycle is not synchronized with the PLC cycle. At the beginning of each PLC cycle, each channel value is taken into account. If the MAST/FAST task cycle time is less than the module's cycle time, some values will not have changed.



Overflow/Underflow Control

Module BMX AMI 0810 allows the user to select between 6 voltage or current ranges for each input.

This option for each channel have to be configured in configuration windows. Upper and lower tolerance detection are always active regardless of overflow/underflow control.

Depending on the range selected the module checks for overflow, it verifies that the measurement falls between a lower and an upper threshold:



Description:

Designation	Description
Nominal range	measurement range corresponding to the chosen range
Upper Tolerance Area	varies between the values included between the maximum value for the range (for instance: +10 V for the +/-10 V range) and the upper threshold
Lower Tolerance Area	varies between the values included between the minimum value for the range (for instance: -10 V for the +/-10 V range) and the lower threshold
Overflow Area	area located beyond the upper threshold
Underflow Area	area located below the lower threshold

The values of the thresholds are configurable independently from one another. They may assume integer values between the following limits:

Range	BMX AMI 0810 Range									
	Underflow Area		Lower Tolerance Area		Nominal Range		Upper Tolerance Area		Overflow Area	
Unipolar										
0...10 V	-1,500	-1,001	-1,000	-1	0	10,000	10,001	11,000	11,001	11,400
0...5 V / 0...20 mA	-5,000	-1,001	-1,000	-1	0	10,000	10,001	11,000	11,001	15,000
1...5 V / 4...20 mA	-4,000	-801	-800	-1	0	10,000	10,001	10,800	10,801	14,000
Bipolar										
+/- 10 V	-11,500	-11,001	-11,000	-10,001	-10,000	10,000	10,001	11,000	11,001	11,400
+/- 5 V, +/- 20 mA	-15,000	-11,001	-11,000	-10,001	-10,000	10,000	10,001	11,000	11,001	15,000
User										
+/- 10 V	-32,768				User-defined	User-defined				32,767
0...10 V	-32,768				User-defined	User-defined				32,767

Measurement Display

Measurements may be displayed using standardized display (in %, to two decimal places):

Type of Range	Display
Unipolar range 0...10 V, 0...5 V, 1...5 V, 0...20mA, 4...20mA	from 0 to 10,000 (0 % at +100.00 %)
Bipolar range +/- 10 V, +/- 5 mV +/- 20 mA	from -10,000 to 10,000 (-100.00 % at +100.00 %)

It is also possible to define the range of values within which measurements are expressed, by selecting:

- the lower threshold corresponding to the minimum value for the range: 0 % (or -100.00 %).
- the upper threshold corresponding to the maximum value for the range (+100.00 %).

The lower and upper thresholds must be integers between -32,768 and +32,767.

For example, imagine a conditioner providing pressure data on a 4-20 mA loop, with 4 mA corresponding to 3,200 millibar and 20 mA corresponding to 9,600 millibar. You have the option of choosing the User format, by setting the following lower and upper thresholds:

3,200 for 3,200 millibar as the lower threshold

9,600 for 9,600 millibar as the upper threshold

Values transmitted to the program vary between 3,200 (= 4 mA) and 9,600 (= 20 mA).

Measurement Filtering

The type of filtering performed by the system is called "first order filtering". The filtering coefficient can be modified from a programming console or via the program.

The mathematical formula used is as follows:

$$Meas_{f(n)} = \alpha \times Meas_{f(n-1)} + (1-\alpha) \times Val_{b(n)}$$

where:

α = efficiency of the filter

$Meas_{f(n)}$ = measurement filtered at moment n

$Meas_{f(n-1)}$ = measurement filtered at moment n-1

$Val_{b(n)}$ = gross value at moment n

You may configure the filtering value from 7 possibilities (from 0 to 6). This value may be changed even when the application is in RUN mode.

NOTE: Filtering may be accessed in Normal or Fast Cycle.

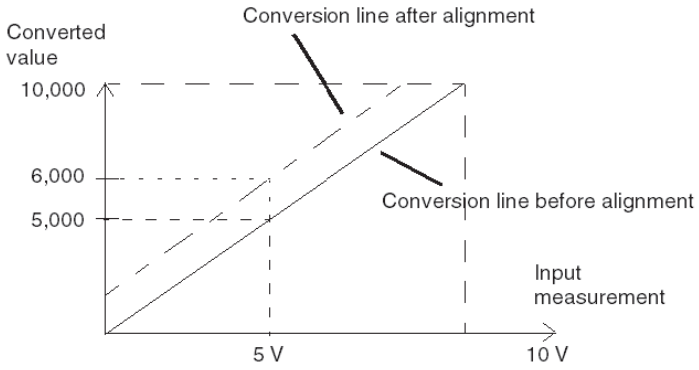
The filtering values depend on the T configuration cycle (where T = cycle time of 5 ms in standard mode):

Desired Efficiency	Required Value	Corresponding α	Filter Response Time at 63%	Cut-off Frequency (in Hz)
No filtering	0	0	0	0
Low filtering	1 2	0.750 0.875	4 x T 8 x T	0.040 / T 0.020 / T
Medium filtering	3 4	0.937 0.969	16 x T 32 x T	0.010 / T 0.005 / T
High filtering	5 6	0.984 0.992	64 x T 128 x T	0.0025 / T 0.0012 / T

Sensor Alignment

The process of "alignment" consists in eliminating a systematic offset observed with a given sensor, around a specific operating point. This operation compensates for an error linked to the process. Replacing a module does not therefore require a new alignment. However, replacing the sensor or changing the sensor's operating point does require a new alignment.

Conversion lines are as follows:



The alignment value is editable from a programming console, even if the program is in RUN Mode. For each input channel, you can:

- view and modify the desired measurement value
- save the alignment value
- determine whether the channel already has an alignment

The alignment offset may also be modified through programming.

Channel alignment is performed on the channel in standard operating mode, without any effect on the channel's operating modes.

The maximum offset between measured value and desired (aligned) value may not exceed +/- 1.500.

NOTE: To align several analog channels on the BMX ART/AMO/AMI/AMM modules, we recommand proceeding channel by channel. Test each channel after alignment before moving to the next channel in order to apply the parameters correctly.

Wiring Precautions

Introduction

In order to protect the signal from outside interference induced in series mode and interference in common mode, we recommend that you take the following precautions.

Cable Shielding

Connect the cable shielding to the grounding bar. Clamp the shielding to the grounding bar on the module side. Use the shielding connection kit BMXXSP•••• *(see page 45)* to connect the shielding.

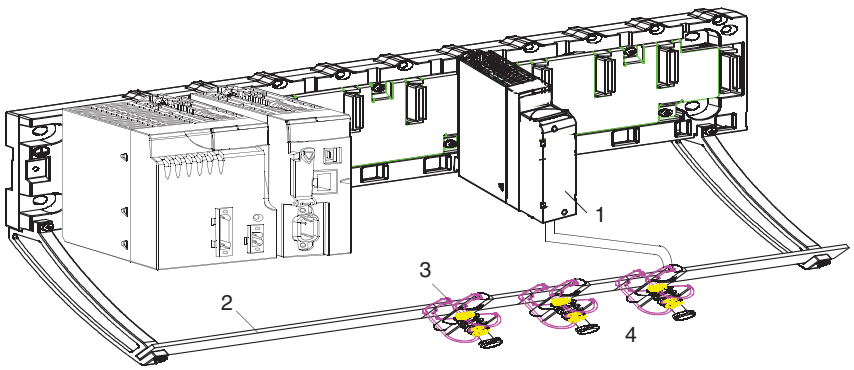
⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

While mounting / removing the modules:

- make sure that each terminal block is still connected to the shield bar and
- disconnect voltage supplying sensors and pre-actuators.

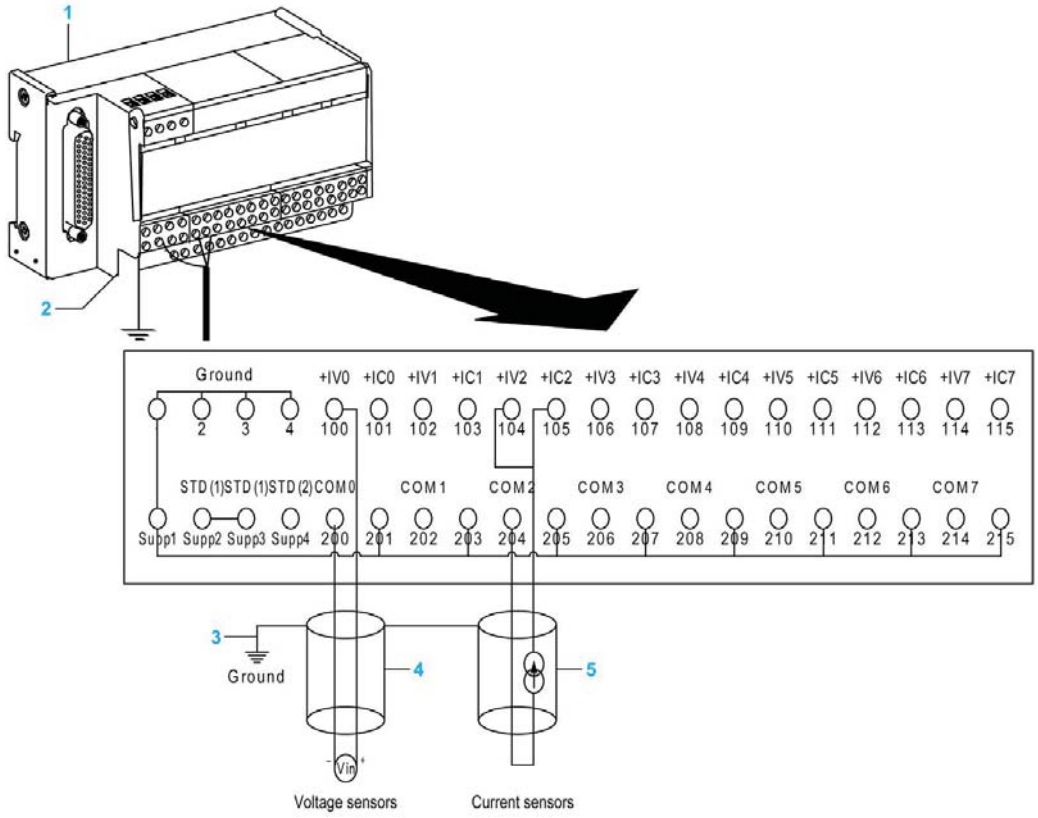
Failure to follow these instructions will result in death or serious injury.



1 BMX AMI 0810
2 Shield bar
3 Clamp
4 To sensors

Example of TELEFAST Connection

Connect the sensor cable shielding to the terminals provided and the whole assembly to the cabinet ground.



1 Telefast ABE-7CPA02
2 The grounding of cables is facilited using the ABE-7BV10 accessory
3 Shield wiring to the ground
4 To voltage sensors
5 To current sensors

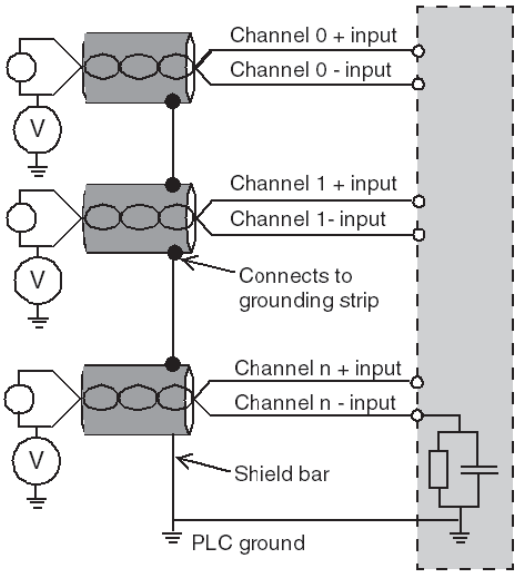
Reference of Sensors in Relation to the Ground

In order for the acquisition system to operate correctly, it is recommended to take in account the following precautions:

- sensors must be close together (a few meters)
- all sensors must be referenced to a single point, which is connected to the PLC's ground

Using the Sensors Referenced in Relation to the Ground

The sensors are connected as indicated in the following diagram:



If the sensors are referenced in relation to the ground, this may in some cases return a remote ground potential to the terminal block. It is therefore **essential** to follow the following rules:

- The potential must be less than the permitted low voltage: for example, 30 Vrms or 42.4 VDC.
- Setting a sensor point to a reference potential generates a leakage current. You must therefore check that all leakage currents generated do not disturb the system.

NOTE: Sensors and other peripherals may be connected to a grounding point some distance from the module. Such remote ground references may carry considerable potential differences with respect to local ground. Induced currents do not affect the measurement or integrity of the system.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK

Ensure that sensors and others peripherals are not exposed through grounding points to voltage potential greater than acceptable limits.

Failure to follow these instructions will result in death or serious injury.

Description :
MODICON X80, ANALOG OUTPUT MODULE 8PT

Trade Name :
Schneider electric

Model no :
BMX AMO 0802

BMX AMO 0802

Presentation

Function

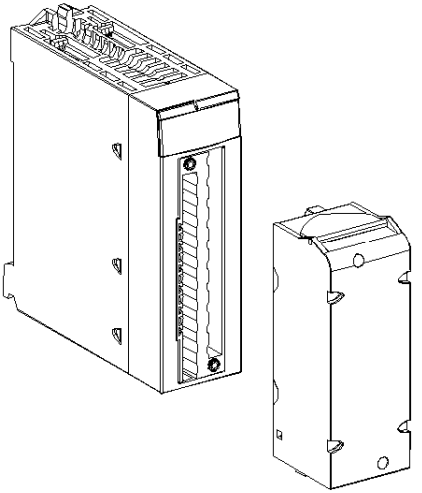
The BMX AMO 0802 is a high density output analog module fitted with 8 non-isolated channels. It offers the following current ranges for each output:

- 0..20 mA
- 4..20 mA

The range is selected during configuration.

Illustration

The following graphic shows the BMX AMO 0802 analog output module:



NOTE: The terminal block is supplied separately.

Characteristics

General Characteristics

The general characteristics for the BMX AMO 0802 and BMX AMO 0802H *(see page 35)* modules are as follows:

Type of outputs		Non-isolated high level outputs with common point
Nature of outputs		Current
Number of channels		8
Digital/Analog converter resolution		16 bits
Output refresh time		4 ms
Power supply for outputs		by the module
Types of protection		Outputs protected to short circuits and permanent overloads
Isolation:		
• Between channels		Non-isolated
• Between channels and bus		1400 VDC
• Between channels and ground		1400 VDC
Measurement error for standard module:		
• At 25° C (77° F)		0.10% of FS (1)
• Maximum in the temperature range 0..60° C (32..140° F)		0.25% of FS (1)
Measurement error for ruggedized:		
• At 25° C (77° F)		0.10% of FS (1)
• Maximum in the temperature range -25..70° C (-13..158° F)		0.45% of FS (1)
Temperature drift		45 ppm/° C
Monotonicity		Yes
Non linearity		0.1% of FS
AC output ripple		2 mV rms on 50 Ω
Power consumption (3.3 V)	**Typical**	0.35 W
	Maximum	0.48 W
Power consumption (24 V)	**Typical**	3.40 W
	Maximum	3.70 W
Legend		
(1) FS: Full Scale		

Current Output

The BMX AMO 0802 and BMX AMO 0802H *(see page 35)* current outputs have the following characteristics:

Nominal variation range	0..20 mA, 4..20 mA
Available maximum current	21 mA
Analog resolution	0.74 µA
Load impedance	350 Ω maximum
Detection type	Open circuit (1)
Legend (1) The open circuit detection is physically detected by the module if the target current value is different from 0 mA.	

Response time of Outputs

The maximum delay between transmission of the output value on the PLC bus and its effective positioning on the terminal block is less than 5 ms:

- Internal cycle time = 4 ms for the eight channels
- Digital/Analog conversion response time = 1 ms maximum for a 0-100% step.

NOTE: If nothing is connected on the BMX AMO 0802 analog module and the channels are configured in the range 4..20 mA, there is a detected I/O error as if a wire is broken.

For the 0..20 mA range, there is a detected I/O error as if a wire is broken only when the current is greater than 0 mA.

⚠ CAUTION

RISK OF INCORRECT DATA

If a signal wire is broken or disconnected, the last measured value is kept.

- Ensure that this does not cause a hazardous situation.
- Do not rely on the value reported. Check the input value at the sensor.

Failure to follow these instructions can result in injury or equipment damage.

Functional Description

Function

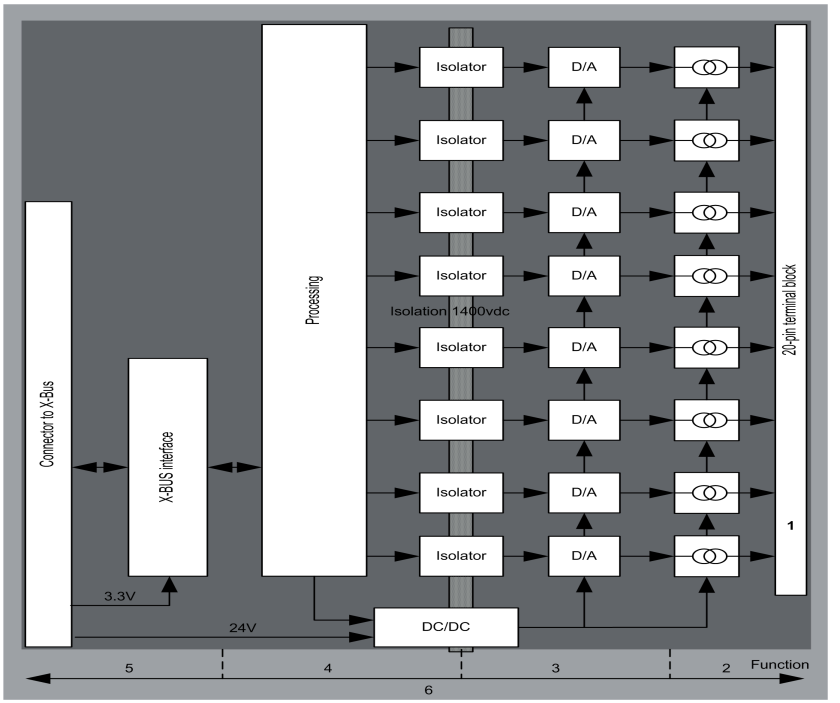
The BMX AMO 0802 is a high density output analog module fitted with 8 non-isolated channels. It offers the following current ranges for each output:

- 0..20 mA
- 4..20 mA

The range is selected during configuration.

Illustration

The BMX AMO 0802 module's illustration is as follows:



Description:

Address	Process	Characteristics
1	Adapting the outputs	• physical connection to the process through a 20-pin screw terminal block • protecting the module against voltage spikes
2	Adapting the signal to the Actuators	• the adaptation is performed on current via software configuration
3	Converting	• this conversion is performed on 15 bits with a polarity sign • reframing the data provided by the program is performed automatically and dynamically by the converter
4	Transforming application data into data directly usable by the digital/analog converter	• use of factory calibration parameters
5	Communicating with the Application	• manages exchanges with CPU • topological addressing • from the application, receiving the configuration parameters for the module and channels as well as numeric set points from the channels • sending module status back to application
6	Module monitoring and sending error notifications back to the application	• output power supply test • testing for range overflow on channels • testing for output open circuits and short-circuits • watchdog test • Programmable fallback capabilities

Writing Outputs

The application must provide the outputs with values in the standardized format: 0 to +10,000 in 0..20 mV and 4..20 mA ranges.

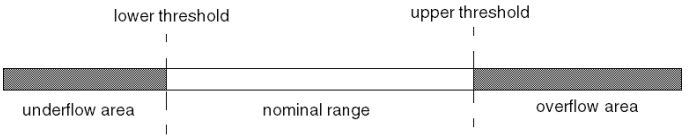
Digital/Analog Conversion

The digital/analog conversion is performed on: 15-bit in 0..20 mA and 4..20 mA ranges.

Overflow Control

Module BMX AMO 0802 only allows an overflow control on current ranges.

The measurement range is divided in three areas:



Description:

Designation	Description
Nominal range	measurement range corresponding to the chosen range
Overflow Area	area located beyond the upper threshold
Underflow Area	area located below the lower threshold

Overflow values for the various ranges are as follows:

Range	BMX AMO 0802					
	Underflow Area		Nominal Range		Overflow Area	
0..20mA	-2,000	-1,001	-1,000	10,300	10,301	10,500
4..20mA	-1,600	-801	-800	10,300	10,301	10,500

You may also choose the flag for an overflow of the range upper value, for an underflow of the range lower value, or for both.

NOTE: Range under/overflow detection is optional.

Fallback/Maintain or Reset Outputs to Zero

If an error is detected, and depending on its seriousness, the outputs:
- switch to Fallback/Maintain position individually or together,
- are forced to 0 mA.

Various Behaviors of Outputs:

Error	Behavior of Outputs
Task in STOP mode, or program missing	Fallback/Maintain (channel by channel)
Communication interruption	
Configuration Error	0 mA (all channels)
Internal Error in Module	
Output Value out-of-range (range under/overflow)	Saturated value (channel by channel)
Output open circuit	Maintain (channel by channel)
Module Hot swapping (processor in STOP mode)	0 mA (all channels)
Reloading Program	

Fallback or Maintain at current value is selected during the configuration of the module. The fallback value may be modified from the Debug in Unity Pro or through a program.

⚠ WARNING

UNEXPECTED EQUIPMENT OPERATION

The fallback position should not be used as the sole safety method. If an uncontrolled position can result in a hazard, an independent redundant system must be installed.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

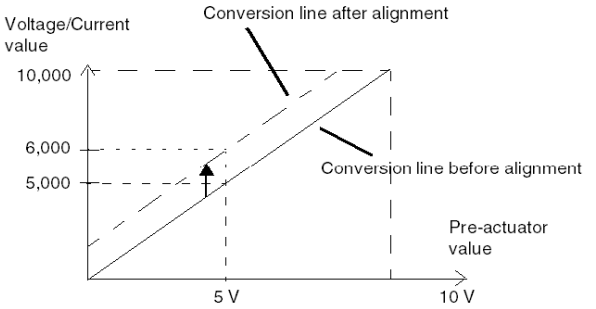
Behavior at Initial Power-Up and When Switched Off.

When the module is switched on or off, the outputs are set to 0 mA.

Actuator Alignment

The process of "alignment" consists in eliminating a systematic offset observed with a given actuator, around a specific operating point. This operation compensates for an error linked to the process. Therefore, replacing a module does not require a new alignment. However, replacing the actuator or changing the sensor's operating point does require a new alignment.

Conversion lines are as follows:



The alignment value is editable from a programming console, even if the program is in RUN Mode. For each output channel, you can:

- view and modify the initial output target value
- save the alignment value
- determine whether the channel already has an alignment

The maximum offset between the measured value and the corrected output value (aligned value) may not exceed +/- 1.500.

NOTE: To align several analog channels on the BMX AMO/AMI/AMM/ART modules, we recommend proceeding channel by channel. Test each channel after alignment before moving to the next channel in order to apply the parameters correctly.

Description :
MODICON X80, POWER SUPPLY 24VDC, 36W

Trade Name :
Schneider electric

Model no :
BMX CPS 3500

Product data sheet
Characteristics

BMXCPS3500
power supply module X80 - 100..240 V AC - 36 W



Main

Range of product	Modicon X80
Product or component type	Power supply module
Product compatibility	Not compatible with BMEXBP..02
Primary voltage	100...240 V
Supply circuit type	AC
Total useful secondary power	<= 36 W
Secondary power	15 W 3.3 V DC I/O module logic power supply 21.6 W 24 V DC sensor power supply 31.2 W 24 V DC I/O module power supply and processor

Complementary

Primary voltage limit	85...264 V
Network frequency	50/60 Hz
Network frequency limits	47...63 Hz
Apparent power	0.07 kVA
Power supply input current	0.52 A 240 V 1.04 A 115 V
Inrush current	<= 30 A 120 V <= 60 A 240 V
I²t on activation	<= 1 A².s 120 V <= 3 A².s 240 V
It on activation	<= 0.05 A.s 120 V <= 0.07 A.s 240 V
Protection type	Internal fuse not accessible primary circuit Overload protection secondary circuit Overvoltage protection secondary circuit Short-circuit protection secondary circuit
Current at secondary voltage	0.9 A 24 V DC sensor power supply 1.3 A 24 V DC I/O module power supply and processor 4.5 A 3.3 V DC I/O module logic power supply
Power dissipation in W	<= 8.5 W
Status LED	1 LED green rack voltage OK

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

	1 LED green sensor voltage
Control type	RESET push-button cold restart
Electrical connection	1 connector 2 pin(s) alarm relay 1 connector 5 pin(s) line supply, protective earth, 24 V DC input sensor
Insulation resistance	>= 100 MOhm primary/ground >= 100 MOhm primary/secondary
Product weight	0.36 kg

Environment

Immunity to microbreaks	<= 1 ms
Dielectric strength	1500 V primary/ground 1500 V primary/secondary I/O module logic power supply 1500 V primary/secondary I/O module power supply and processor 2300 V primary/secondary sensor power supply 500 V 24 V sensor output/ground
Vibration resistance	3 gn
Shock resistance	30 gn
IP degree of protection	IP20
Product certifications	CE CSA UL RCM Merchant Navy EAC
Standards	EN/IEC 61131-2 EN/IEC 61010-2-201 UL 61010-2-201 CSA C22.2 No 61010-2-201
Ambient air temperature for storage	-40...85 °C
Ambient air temperature for operation	0...60 °C
Relative humidity	5...95 % without condensation
Protective treatment	TC
Operating altitude	0...2000 m 2000...5000 m (with derating factor)

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 0722 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold
Product environmental profile	Available Product environmental
Product end of life instructions	Available End of life manual

Contractual warranty

Warranty period	18 months

Description :
MODICON X80, 24VDC DISCRETE IN MODULE 32PT

Trade Name :
Schneider electric

Model no :
BMX DDI 3202K

Product data sheet
Characteristics

BMXDDI3202K
discrete input module M340 - 32 inputs - 24 V DC positive



Main

Range of product	Modicon M340 automation platform
Product or component type	Discrete input module
Electrical connection	40-way connector
Discrete input number	32
Discrete input type	Isolated
Input type	Current sink (logic positive)
Discrete input voltage	24 V DC positive
Discrete input current	2.5 mA
Input compatibility	With 2-wire/3-wire proximity sensors conforming to IEC 60947-5-2

Complementary

Sensor power supply	19...30 V
Voltage state 1 guaranteed	>= 11 V
Current state 1 guaranteed	>= 2 mA
Voltage state 0 guaranteed	<= 5 V
Current state 0 guaranteed	<= 1.5 mA
Input impedance	9600 Ohm
Insulation resistance	> 10 MOhm 500 V DC
Power dissipation in W	<= 3.9 W
DC typical filtering time	4 ms
DC maximum filtering time	7 ms
Paralleling of inputs	No
Typical current consumption	140 mA 3.3 V DC
MTBF reliability	696320 H
Protection type	1 external fuse per group of channel 0.5 A fast blow Reverse polarity protection
Voltage detection threshold	> 18 V DC sensor OK < 14 V DC sensor fault
Status LED	1 LED red module I/O 1 LED red module error (ERR) 1 LED per channel green channel diagnostic 1 LED green module operating (RUN)
Product weight	0.112 kg

Environment

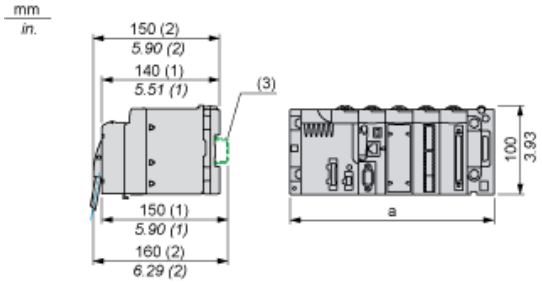
IP degree of protection	IP20
Standards	CSA 22-2 No 142 IEC 1131-2 IEC 664 NF C 63-850 UL 508 UL 746C
Dielectric strength	500 V DC 1 minute, between group of channels 1500 V AC at 50/60 Hz 1 minute, primary/secondary
Ambient air temperature for operation	0...60 °C
Relative humidity	10...95 % without condensation
Protective treatment	TC

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein.
This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications.
It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof.
Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

BMXDDI3202K

Modules Mounted on Racks

Dimensions

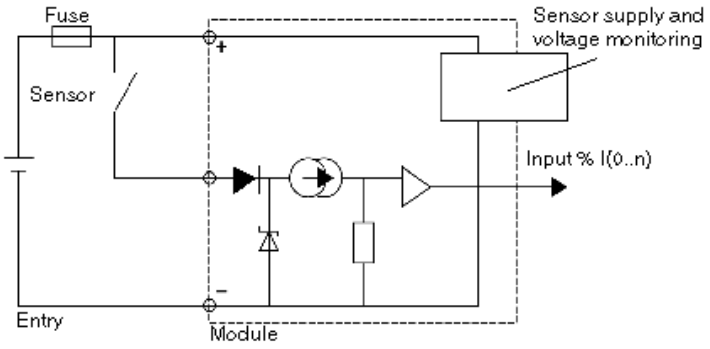


(1) With removable terminal block (cage, screw or spring).
(2) With FCN connector.
(3) On AM1 ED rail: 35 mm wide, 15 mm deep. Only possible with BMXXBP0400/0400H/0600/0600H/0800/0800H rack.

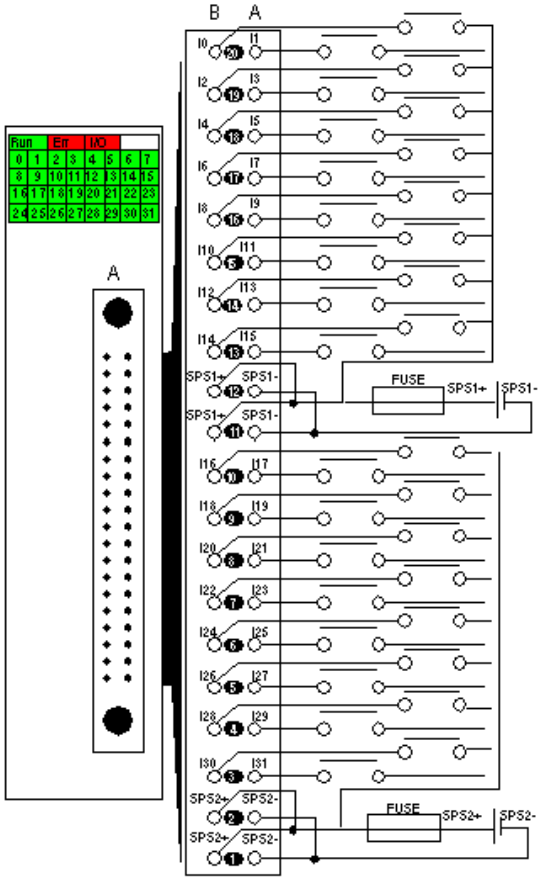
Rack references	a in mm	a in in.
BMXXBP0400 and BMXXBP0400H	242.4	09.54
BMXXBP0600 and BMXXBP0600H	307.6	12.11
BMXXBP0800 and BMXXBP0800H	372.8	14.68
BMXXBP1200 and BMXXBP1200H	503.2	19.81

Connecting the Module

Input Circuit Diagram



Module Connection



power 24 VDC supply
fuse fast blow fuse of 0.5 A for each 16-channel group
SPS sensor power supply

Description :
MODICON X80, 24VDC DISCRETE OUT MODULE 16PT

Trade Name :
Schneider electric

Model no :
BMX DDO 1602

Product data sheet
Characteristics

BMXDDO1602
discrete output module M340 - 16 outputs - solid state - 24 V DC positive



Main

Range of product	Modicon M340 automation platform
Product or component type	Discrete output module
Discrete output number	16 EN/IEC 61131-2
Discrete output type	Solid state
Discrete output voltage	24 V 19...30 V DC
Ambient air temperature for operation	0...60 °C
Protective treatment	TC

Complementary

Electrical connection	20-way connector
Discrete output logic	Positive
Discrete output current	0,5 A
Output compatibility	IEC 61131-2 type 3 DC input Not IEC 61131-2 DC input
Current per channel	≤ 0,625 A
Current per module	≤ 10 A
Leakage current	≤ 0,5 mA at state 0
[Ures] residual voltage	≤ 1,2 V at state 1
Insulation resistance	> 10 MOhm 500 V DC
Power dissipation in W	≤ 4 W
Response time on output	1,2 ms
Paralleling of outputs	Yes : 2 maximum
MTBF reliability	409413 h
Protection type	External short-circuit protection Overload protection Overvoltage protection Reverse polarity protection
Output overload protection	With current limiter With electronic circuit breaker 1.5 In < Id < 2 In
Output overvoltage protection	With transil diode
Output short-circuit protection	With 2 A external fuse
Reverse polarity protection	Reverse mounted diode
Voltage detection threshold	< 14 V DC preactuator fault > 18 V DC preactuator at state 0
Tungsten load	≤ 6 W
Switching frequency	0.5/II^2 Hz
Load impedance ohmic	≤ 48 Ohm
Status LED	1 LED green module operating (RUN) 1 LED red module error (ERR) 1 LED red module I/O 1 LED per channel green channel diagnostic
Product weight	0,12 kg

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Environment

IP degree of protection	IP20
Standards	CSA 22-2 No 142 IEC 1131-2 IEC 664 NF C 63-850 UL 508 UL 746C
Dielectric strength	1500 V AC 50/60 Hz 1 minute, output/ground 1500 V AC 50/60 Hz 1 minute, output/internal logic
Relative humidity	10...95 % without condensation
RoHS EUR conformity date	0722
RoHS EUR status	Compliant

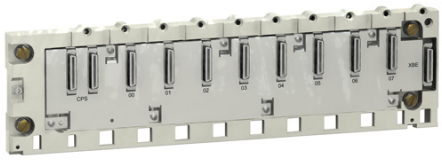
Description :
MODICON X80, RACK, 8 SLOTS

Trade Name :
Schneider electric

Model no :
BMX XBP 0800

Product data sheet
Characteristics

BMXXBP0800
rack M340 - 8 slots - panel, plate or DIN rail mounting



Main

Range of product	Modicon M340 automation platform
Product or component type	Rack
Number of slots	8
Product compatibility	BMXCPS power supply BMXP34 processor I/O module Specific application module
Ambient air temperature for operation	0...60 °C
Protective treatment	TC

Complementary

Electrical connection	1 connector (XBE) expansion module
Fixing mode	By 4 M6 screws plate By 4 screws 4,32...6,35 mm panel By clips 35 mm symmetrical DIN rail
Product weight	0,95 kg

Environment

IP degree of protection	IP20
Relative humidity	10...95 % without condensation
RoHS EUR conformity date	0722
RoHS EUR status	Compliant

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Description :
Modicon M251, PLC, 8 MB Memory
3 Ethernet ports, 24 VDC

Trade Name :
Schneider electric

Model no :
TM251MESE

Product datasheet

Specifications

TM251MESE



logic controller, Modicon M251, 2x Ethernet

TM251MESE

Main

Range Of Product	Modicon M251
Product Or Component Type	Logic controller
[Us] Rated Supply Voltage	24 V DC

Complementary

Maximum Number Of I/O Expansion Module	7 (local I/O-Architecture) 14 (remote I/O-Architecture)
Supply Voltage Limits	20.4…28.8 V
Inrush Current	50 A
Power Consumption In W	32.6…40.4 W (with max number of I/O expansion module)
Memory Capacity	64 MB for system memory RAM
Data Backed Up	128 MB built-in flash memory for backup of user programs
Data Storage Equipment	<= 16 GB SD card (optional)
Battery Type	BR2032 lithium non-rechargeable, battery life: 4 year(s)
Backup Time	2 years at 25 °C
Execution Time For 1 Kinstruction	0.3 ms for event and periodic task 0.7 ms for other instruction
Application Structure	4 cyclic master tasks 8 event tasks 3 cyclic master tasks + 1 freewheeling task 8 external event tasks
Realtime Clock	With
Clock Drift	<= 60 s/month at 25 °C
Integrated Connection Type	USB port with mini B USB 2.0 connector Non isolated serial link serial with RJ45 connector and RS232/RS485 interface Dual-port Ethernet 1 with RJ45 connector Ethernet port Ethernet 2 with RJ45 connector
Supply	(serial)serial link supply: 5 V, <200 mA
Transmission Rate	1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 15 m for RS485 1.2...115.2 kbit/s (115.2 kbit/s by default) for bus length of 3 m for RS232 480 Mbit/s for bus length of 3 m for USB
Communication Port Protocol	USB port: USB - SoMachine-Network Non isolated serial link: Modbus master/slave - RTU/ASCII or SoMachine-Network
Port Ethernet	Ethernet 1 marking 10BASE-T/100BASE-TX - 2 copper cable Ethernet 2 marking 10BASE-T/100BASE-TX - 1 copper cable
Web Services	Web server

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Communication Service	Downloading IEC VAR ACCESS Modbus TCP client Modbus TCP server Modbus TCP slave device Monitoring NGVL Programming Updating firmware SMS notifications DHCP client (Eth1) DHCP server (Eth2) Ethernet/IP originator (Eth2) Ethernet/IP target (Eth1, Eth2) Ethernet/IP scanner (Eth2) Modbus TCP I/O Scanner and Messaging (Eth2) FDR FTP client/server SNMP client/server SQL client Send and receive email from the controller based on TCP/UDP library Web server (WebVisu & XWeb system) OPC UA server DNS client
Maximum Number Of Connections	8 Modbus server 8 Modbus client 16 Ethernet/IP target 4 FTP server 10 web server 8 SoMachine protocol
Number Of Slave	16 EtherNet/IP: 64 Modbus TCP:
Cycle Time	10 ms 16 EtherNet/IP 64 ms 64 Modbus TCP
Local Signalling	1 LED (green) for PWR 1 LED (green) for RUN 1 LED (red) for module error (ERR) 1 LED (red) for I/O error (I/O) 1 LED (green) for SD card access (SD) 1 LED (red) for BAT 1 LED (green) for SL 1 LED (red) for bus fault on TM4 (TM4) 1 LED (green) for Ethernet activity (ETH1) 1 LED (green) for Ethernet activity (ETH2)
Electrical Connection	removable screw terminal blockpower supply (pitch 5.08 mm)
Insulation	Non-insulated between supply and internal logic Between supply and ground at 500 V AC
Marking	CE
Surge Withstand	1 kV shielded cable common mode conforming to IEC 61000-4-5 1 kV power lines common mode conforming to IEC 61000-4-5 0.5 kV power lines differential mode conforming to IEC 61000-4-5
Mounting Support	Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 plate or panel with fixing kit
Height	90 mm
Depth	95 mm
Width	54 mm
Net Weight	0.22 kg

Environment

Standards	ANSI/ISA 12-12-01 CSA C22.2 No 142 CSA C22.2 No 213 IEC 61131-2:2007 Marine specification (LR, ABS, DNV, GL) UL 508
Product Certifications	cULus CE UKCA DNV-GL ABS LR
Resistance To Electrostatic Discharge	8 kV in air conforming to IEC 61000-4-2 4 kV on contact conforming to IEC 61000-4-2
Resistance To Electromagnetic Fields	10 V/m 80 MHz...1 GHz conforming to IEC 61000-4-3 3 V/m 1.4 GHz...2 GHz conforming to IEC 61000-4-3 1 V/m 2 GHz...3 GHz conforming to IEC 61000-4-3
Resistance To Fast Transients	2 kV (power lines) conforming to IEC 61000-4-4 1 kV (Ethernet line) conforming to IEC 61000-4-4 1 kV (serial link) conforming to IEC 61000-4-4
Resistance To Conducted Disturbances	10 V 0.15...80 MHz conforming to IEC 61000-4-6 3 V 0.1...80 MHz conforming to Marine specification (LR, ABS, DNV, GL) 10 V spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz) conforming to Marine specification (LR, ABS, DNV, GL)
Electromagnetic Emission	Conducted emissions - test level: 120...69 dBµV/m QP (power lines) at 10…150 kHz conforming to IEC 55011 Conducted emissions - test level: 63 dBµV/m QP (power lines) at 1.5…30 MHz conforming to IEC 55011 Radiated emissions - test level: 40 dBµV/m QP class A (10 m) at 30…230 MHz conforming to IEC 55011 Conducted emissions - test level: 79...63 dBµV/m QP (power lines) at 150…1500 kHz conforming to IEC 55011 Radiated emissions - test level: 47 dBµV/m QP class A (10 m) at 230…1000 MHz conforming to IEC 55011
Immunity To Microbreaks	10 ms
Ambient Air Temperature For Operation	-10…35 °C (vertical installation) -10…55 °C (horizontal installation)
Ambient Air Temperature For Storage	-25…70 °C
Relative Humidity	10…95 %, without condensation (in operation) 10…95 %, without condensation (in storage)
Ip Degree Of Protection	IP20 with protective cover in place
Pollution Degree	2
Operating Altitude	0...2000 m
Storage Altitude	0…3000 m
Vibration Resistance	3.5 mm at 5…8.4 Hz on symmetrical rail 3 gn at 8.4…150 Hz on symmetrical rail 3.5 mm at 5…8.4 Hz on panel mounting 3 gn at 8.4…150 Hz on panel mounting
Shock Resistance	15 gn for 11 ms

Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	10.511 cm
Package 1 Width	11.725 cm
Package 1 Length	17.063 cm

Package 1 Weight	371.0 g
Unit Type Of Package 2	S03
Number Of Units In Package 2	10
Package 2 Height	30 cm
Package 2 Width	30 cm
Package 2 Length	40 cm
Package 2 Weight	4.651 kg
Unit Type Of Package 3	P06
Number Of Units In Package 3	80
Package 3 Height	75.0 cm
Package 3 Width	40.0 cm
Package 3 Length	80.0 cm
Package 3 Weight	48 kg

Sustainability

Green Premium^{TM} label is Schneider Electric's commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO_2 products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >



Transparency



RoHS/REACh

Well-being performance

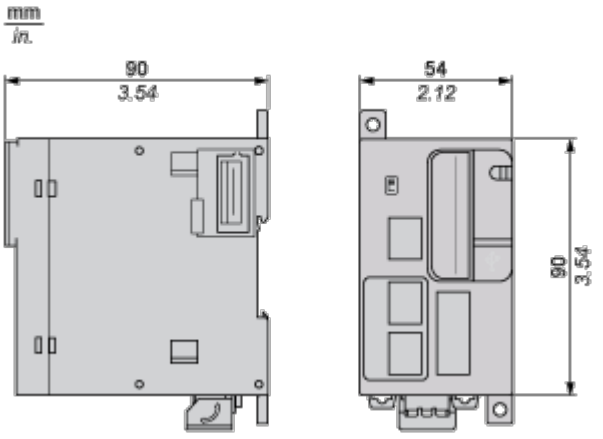
Mercury Free	
Rohs Exemption Information	Yes
Pvc Free	

Certifications & Standards

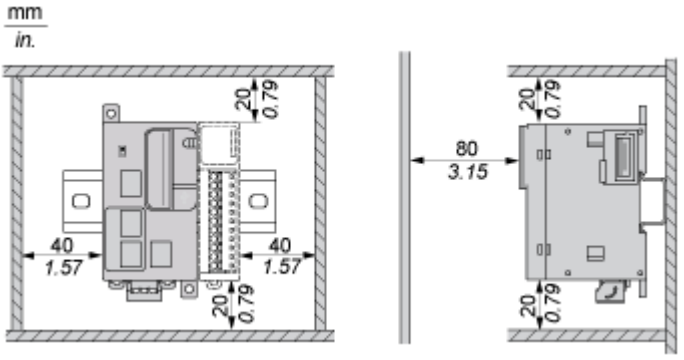
Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

Dimensions Drawings

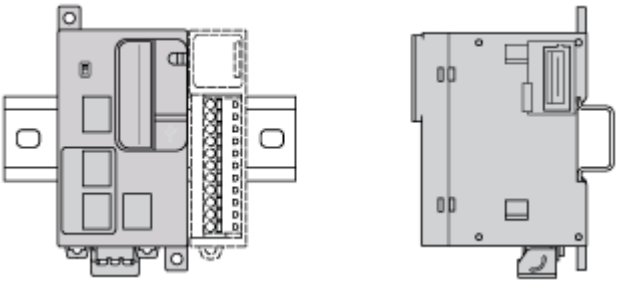
Dimensions



Clearance

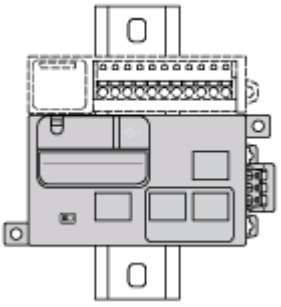


Mounting Position



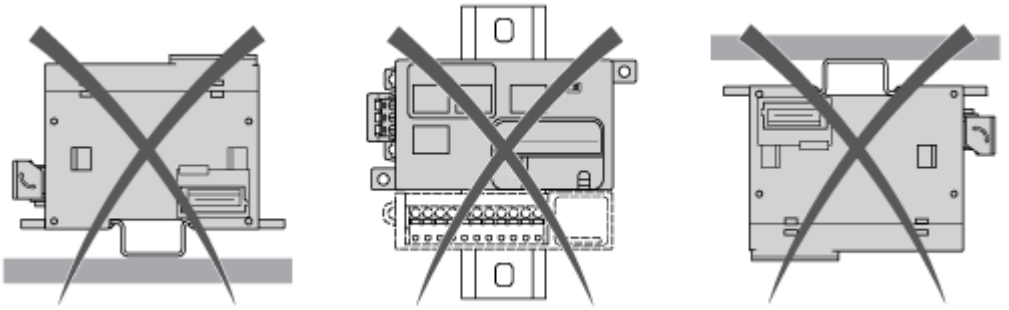
NOTE: Keep adequate spacing for proper ventilation and to maintain an ambient temperature between -10°C (14°F) and 55°C (131°F).

Acceptable Mounting

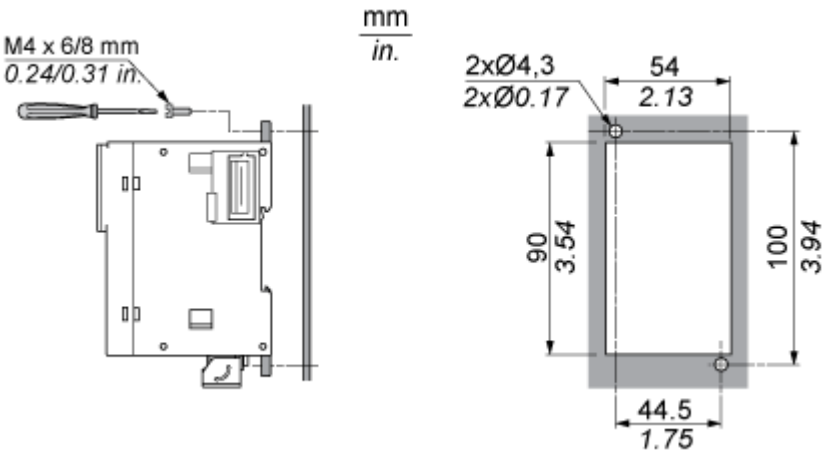


NOTE: Expansion modules must be mounted above the controller.

Incorrect Mounting



Direct Mounting on a Panel Surface



USB Connection to a PC



Ethernet Connection to a PC



Description :
Modicon TM3, Analog output module
4-PT, Current/voltage, 24 VDC

Trade Name :
Schneider electric

Model no :
TM3AQ4

Product data sheet

TM3AQ4

Specifications



Analog output module, Modicon TM3, 4 outputs (screw) 24 VDC

TM3AQ4

Main

Range of product	Modicon TM3
Product or component type	Analog output module
Range compatibility	Modicon M221 Modicon M241 Modicon M251 Modicon M262
Analogue output number	4
Analogue output type	Current: 4...20 mA Current: 0...20 mA Voltage: 0...10 V Voltage: - 10...10 V

Complementary

Analogue input resolution	12 bits 11 bits + sign
Analogue output resolution	11 bits + sign 12 bits
LSB value	2.44 mV 0...10 Vvoltage 4.88 mV - 10...10 Vvoltage 4.88 µA 0...20 mAcurrent 3.91 µA 4...20 mAcurrent
Load type	Resistive
Load impedance ohmic	1 kOhm voltage 300 Ohm current
Stabilisation time	1 ms
Conversion time	1 ms + 1 ms per channel + 1 controller cycle time
Absolute accuracy error	+/- 1 % of full scale +/- 0.2 % of full scale at 25 °C
Temperature drift	+/- 0.01 %FS/°C
Repeat accuracy	+/- 0.4 %FS
Non-linearity	+/- 0.2 %FS
Output ripple	20 mV
Cross talk	<= 1 LSB
[Us] rated supply voltage	24 V DC
Supply voltage limits	20.4…28.8 V
Type of cable	Twisted shielded pairs cable <30 m for output circuit
Current consumption	40 mA at 5 V DC via bus connector no load

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

	50 mA at 5 V DC via bus connector full load 50 mA at 24 V DC via external supply no load 125 mA at 24 V DC via external supply full load
Local signalling	1 LED (green) for PWR
Electrical connection	11 x 2.5 mm² removable screw terminal block with pitch 5.08 mm adjustment for outputs and supply
Insulation	Between output and supply at 1500 V AC Between output and internal logic at 500 V AC
Marking	CE
Surge withstand	1 kV power supply common mode conforming to EN/IEC 61000-4-5 0.5 kV power supply differential mode conforming to EN/IEC 61000-4-5 1 kV output common mode conforming to EN/IEC 61000-4-5
Mounting support	Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 plate or panel with fixing kit
Height	90 mm
Depth	70 mm
Width	23.6 mm
Net weight	0.115 kg

Environment

Standards	EN/IEC 61010-2-201 EN/IEC 61131-2
Resistance to electrostatic discharge	8 kV in air conforming to EN/IEC 61000-4-2 4 kV on contact conforming to EN/IEC 61000-4-2
Resistance to electromagnetic fields	10 V/m 80 MHz...1 GHz conforming to EN/IEC 61000-4-3 3 V/m 1.4 GHz...2 GHz conforming to EN/IEC 61000-4-3 1 V/m 2 GHz...3 GHz conforming to EN/IEC 61000-4-3
Resistance to magnetic fields	30 A/m conforming to EN/IEC 61000-4-8
Resistance to fast transients	1 kV (I/O) conforming to EN/IEC 61000-4-4
Resistance to conducted disturbances	10 V 0.15...80 MHz conforming to EN/IEC 61000-4-6 3 V spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz) conforming to Marine specification (LR, ABS, DNV, GL)
Electromagnetic emission	Radiated emissions - test level: 40 dBµV/m QP class A (10 m) at 30…230 MHz conforming to EN/IEC 55011 Radiated emissions - test level: 47 dBµV/m QP class A (10 m) at 230…1000 MHz conforming to EN/IEC 55011
Immunity to microbreaks	10 ms
Ambient air temperature for operation	-10…55 °C horizontal installation -10…35 °C vertical installation
Ambient air temperature for storage	-25…70 °C
Relative humidity	10…95 %, without condensation (in operation) 10…95 %, without condensation (in storage)
IP degree of protection	IP20
Pollution degree	2
Operating altitude	0...2000 m
Storage altitude	0…3000 m
Vibration resistance	3.5 mm at 5…8.4 Hz on DIN rail 3 gn at 8.4…150 Hz on DIN rail
Shock resistance	15 gn for 11 ms

Packing Units

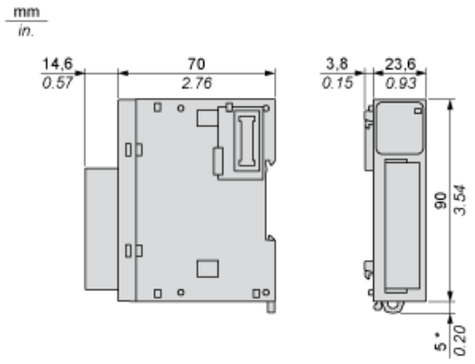
Unit Type of Package 1	Db
Number of Units in Package 1	1
Package 1 Height	7.422 cm

Package 1 Width	10.612 cm
Package 1 Length	12.908 cm
Package 1 Weight	220.0 g
Unit Type of Package 2	S04
Number of Units in Package 2	42
Package 2 Height	30.0 cm
Package 2 Width	40.0 cm
Package 2 Length	60.0 cm
Package 2 Weight	10.25 kg

Offer Sustainability

Sustainable offer status	Green Premium product
REACh Regulation	REACh Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Toxic heavy metal free	Yes
Mercury free	Yes
China RoHS Regulation	China RoHS declaration
RoHS exemption information	Yes
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
PVC free	Yes
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

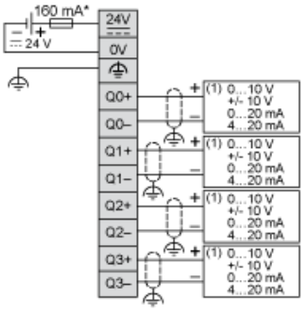
Dimensions



(*) 8.5 mm/0.33 in when the clamp is pulled out.

Analogue Output Module

Wiring Diagram (Current / Voltage)



(*) Type T fuse
(1) Voltage/current pre-actuator

Recommended replacement(s)

Description :
Modicon TM3, Discrete I/O module
4 x 24 VDC inputs, 4 x relay outputs

Trade Name :
Schneider electric

Model no :
TM3DM8R

Product datasheet

TM3DM8R

Specifications



discrete I/O module, Modicon TM3, 8 IO, 4 inputs, 4 relay outputs, screw, 24V DC

TM3DM8R

Main

Range Of Product	Modicon TM3
Product Or Component Type	Discrete I/O module
Range Compatibility	Modicon M241 Modicon M251 Modicon M221 Modicon M262
Discrete Input Number	4 for input conforming to IEC 61131-2 Type 1
Discrete Input Logic	Sink or source (positive/negative)
Discrete Input Voltage	24 V
Discrete Input Current	7 mA for input
Discrete Output Type	Relay normally open
Discrete Output Number	4
Discrete Output Logic	Positive or negative
Discrete Output Voltage	24 V DC for relay output 240 V AC for relay output
Discrete Output Current	2000 mA for relay output

Complementary

Discrete I/O Number	8
Current Consumption	5 mA at 5 V DC via bus connector (at state off) 0 mA at 24 V DC via bus connector (at state on) 0 mA at 24 V DC via bus connector (at state off) 25 mA at 5 V DC via bus connector (at state on)
Discrete Input Voltage Type	DC
Voltage State 1 Guaranteed	15...28.8 V for input
Current State 1 Guaranteed	>= 2.5 mA (input)
Voltage State 0 Guaranteed	0...5 V for input
Current State 0 Guaranteed	<= 1 mA (input)
Input Impedance	3.4 kOhm
Response Time	4 ms (turn-on) 4 ms (turn-off)
Maximum Current Per Output Common	7 A
Mechanical Durability	20000000 cycles
Minimum Load	10 mA at 5 V DC for relay output
Local Signalling	1 LED per channel (green) for I/O state

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Electrical Connection	11 x 2.5 mm² removable screw terminal block with pitch 5.08 mm adjustment for inputs and outputs
Maximum Cable Distance Between Devices	Unshielded cable: <30 m for regular input
Insulation	Between input and internal logic at 500 V AC Non-insulated between inputs Between input groups and output groups at 1500 V AC Between open contact at 750 V AC Between output and internal logic at 500 V AC Non-insulated between outputs
Marking	CE
Mounting Support	Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 plate or panel with fixing kit
Height	90 mm
Depth	84.6 mm
Width	27.4 mm
Net Weight	0.95 kg

Environment

Standards	IEC 61131-2
Product Certifications	cULus CE UKCA RCM EAC cULus HazLoc
Resistance To Electrostatic Discharge	8 kV in air conforming to IEC 61000-4-2 4 kV on contact conforming to IEC 61000-4-2
Resistance To Electromagnetic Fields	10 V/m 80 MHz...1 GHz conforming to IEC 61000-4-3 3 V/m 1.4 GHz...2 GHz conforming to IEC 61000-4-3 1 V/m 2 GHz...3 GHz conforming to IEC 61000-4-3
Resistance To Magnetic Fields	30 A/m 50/60 Hz conforming to IEC 61000-4-8
Resistance To Fast Transients	1 kV for I/O conforming to IEC 61000-4-4 2 kV for relay output conforming to IEC 61000-4-4
Surge Withstand	2 kV output common mode conforming to IEC 61000-4-5 1 kV input common mode conforming to IEC 61000-4-5
Resistance To Conducted Disturbances	10 V 0.15...80 MHz conforming to IEC 61000-4-6 3 V spot frequency (2, 3, 4, 6.2, 8.2, 12.6, 16.5, 18.8, 22, 25 MHz) conforming to Marine specification (LR, ABS, DNV, GL)
Electromagnetic Emission	Radiated emissions - test level: 40 dBµV/m QP class A (10 m) at 30…230 MHz conforming to IEC 55011 Radiated emissions - test level: 47 dBµV/m QP class A (10 m) at 230…1000 MHz conforming to IEC 55011
Ambient Air Temperature For Operation	-10…35 °C vertical installation -10…55 °C horizontal installation
Ambient Air Temperature For Storage	-25…70 °C
Relative Humidity	10…95 %, without condensation (in operation) 10…95 %, without condensation (in storage)
Ip Degree Of Protection	IP20 with protective cover in place
Pollution Degree	2
Operating Altitude	0...2000 m
Storage Altitude	0…3000 m

Vibration Resistance	3.5 mm at 5…8.4 Hz on DIN rail 3 gn at 8.4…150 Hz on DIN rail 3.5 mm at 5…8.4 Hz on panel 3 gn at 8.4…150 Hz on panel
Shock Resistance	15 gn for 11 ms

Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	7.5 cm
Package 1 Width	12.5 cm
Package 1 Length	10.5 cm
Package 1 Weight	230.0 g
Unit Type Of Package 2	S04
Number Of Units In Package 2	42
Package 2 Height	30 cm
Package 2 Width	40 cm
Package 2 Length	60 cm
Package 2 Weight	10.643 kg
Unit Type Of Package 3	P12
Number Of Units In Package 3	504
Package 3 Height	105 cm
Package 3 Width	120 cm
Package 3 Length	80 cm
Package 3 Weight	138 kg

Sustainability

Green Premium^{TM} label is Schneider Electric's commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO_2 products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >



Transparency



RoHS/REACh

Well-being performance

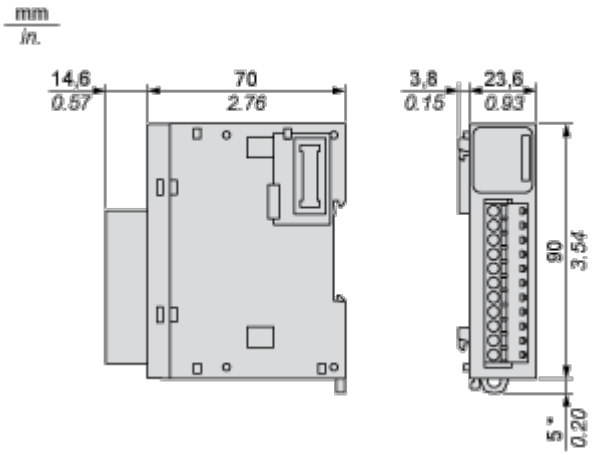
Reach Free Of Svhc	
Toxic Heavy Metal Free	
Mercury Free	
Rohs Exemption Information	Yes
Pvc Free	

Certifications & Standards

Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

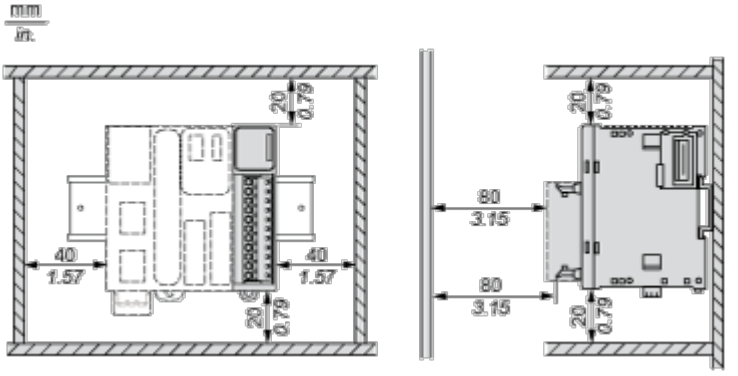
Dimensions Drawings

Dimensions

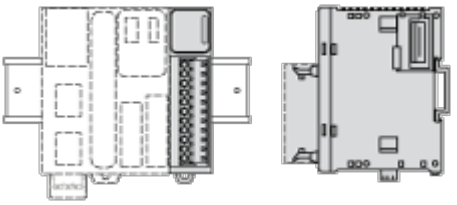


(*) 8.5 mm/0.33 in. when the clamp is pulled out.

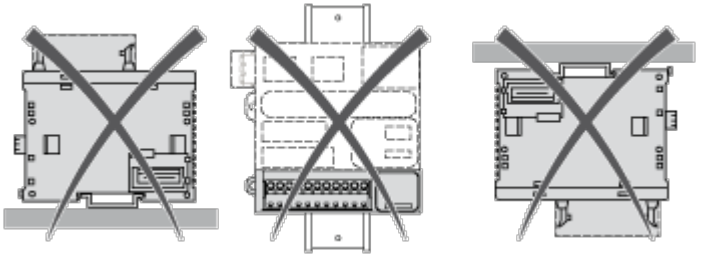
Spacing Requirements



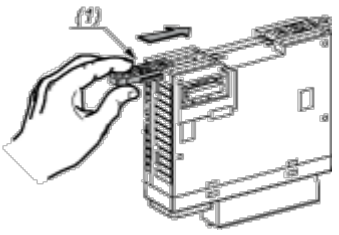
Mounting on a Rail



Incorrect Mounting

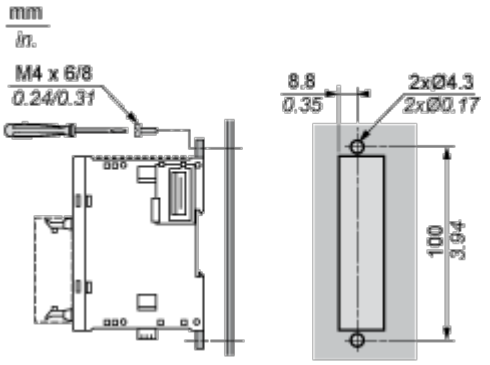


Mounting on a Panel Surface



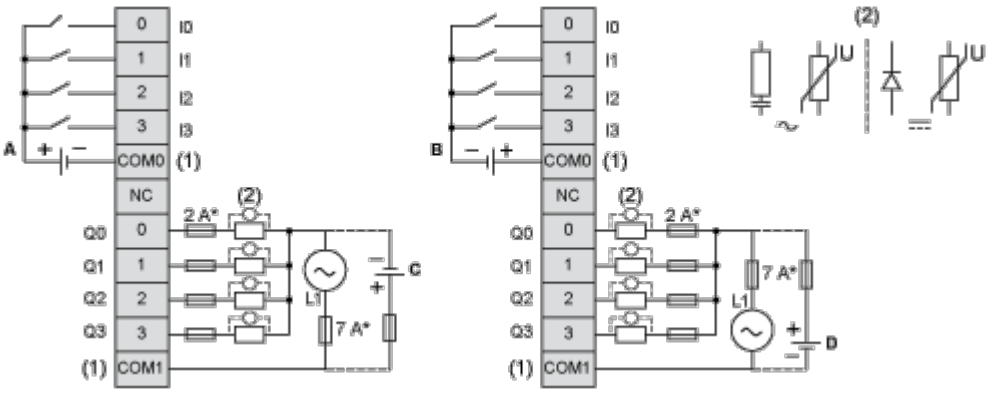
(1) Install a mounting strip

Mounting Hole Layout



Digital Mixed I/O Module (8-channel)

Wiring Diagram (Sink / Source)



(*) Type T fuse

(1) The COM0 and COM1 terminals are **not** connected internally.

(2) To improve the life time of the contacts, and to protect from potential inductive load damage, it is recommended to connect a free wheeling diode in parallel to each inductive DC load or an RC snubber in parallel of each inductive AC load.

(A) Sink wiring (positive logic)

(B) Source wiring (negative logic)

(C) Source wiring (positive logic)

(D) Sink wiring (negative logic)

Description :
ATV930, 600V, 3PH, 20HP, 15HP HD

Trade Name :
Schneider electric

Model no :
ATV930D15S6X

Product data sheet

ATV930D15S6X

Specifications



Variable speed drive, Altivar Process ATV900, ATV930, 20 HP, 600 V, IP21

ATV930D15S6X

Main

Range of product	Altivar Process ATV900
Device application	Industrial application
Product or component type	Variable speed drive
Product destination	Asynchronous motors Synchronous motors
Product specific application	Process for industrial
Variant	Standard version With braking chopper
Network number of phases	3 phases
Mounting mode	Wall mount
Communication port protocol	Modbus TCP Modbus serial EtherNet/IP
[Us] rated supply voltage	600 V - 15...10 %
Motor power hp	20.0 hp normal duty 15.0 hp heavy duty
Continuous output current	22 A 4 kHz normal duty 18 A 4 kHz heavy duty
EMC filter	Integrated With EMC plate option
IP degree of protection	IP21
Degree of protection	UL type 1
Option module	Slot A communication module Profibus DP V1 Slot A communication module PROFINET Slot A communication module DeviceNet Slot A communication module EtherCAT Slot A communication module CANopen daisy chain RJ45 Slot A communication module CANopen SUB-D 9 Slot A communication module CANopen screw terminals Slot A/slot B/slot C digital and analog I/O extension module Slot A/slot B/slot C output relay extension module Slot B 5/12 V digital encoder interface module Slot B analog encoder interface module Slot B resolver encoder interface module communication module Ethernet Powerlink
Discrete input logic	16 preset speeds
Asynchronous motor control profile	Optimized torque mode Constant torque standard Variable torque standard
Synchronous motor control profile	Permanent magnet motor Synchronous reluctance motor

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Maximum output frequency	599 Hz
Switching frequency	2...16 kHz adjustable 4...16 kHz with derating factor
Nominal switching frequency	4 kHz
Apparent power	20.4 kVA 600 V normal duty) 15.9 kVA 600 V heavy duty)
Maximum transient current	26.4 A 60 s normal duty) 27 A 60 s heavy duty)
Network frequency	50...60 Hz
Prospective line Isc	70 kA

Complementary

Discrete input number	10
Discrete input type	DI1...DI8 programmable, 24 V DC <= 30 V)3.5 kOhm DI7, DI8 programmable as pulse input 0…30 kHz, 24 V DC <= 30 V) STOA, STOB safe torque off, 24 V DC <= 30 V)> 2.2 kOhm
Discrete output number	2
Discrete output type	Logic output DQ+ 0…1 kHz <= 30 V DC 100 mA Programmable as pulse output DQ+ 0…30 kHz <= 30 V DC 20 mA Logic output DQ- 0…1 kHz <= 30 V DC 100 mA
Analogue input number	3
Analogue input type	AI1, AI2, AI3 software-configurable voltage 0...10 V DC 30 kOhm 12 bits AI1, AI2, AI3 software-configurable current 0...20 mA/4...20 mA 250 Ohm 12 bits
Analogue output number	2
Analogue output type	Software-configurable voltage AQ1, AQ2 0...10 V DC 470 Ohm 10 bits Software-configurable current AQ1, AQ2 0...20 mA 500 Ohm 10 bits
Relay output number	3
Relay output type	Configurable relay logic R1 fault relay NO/NC 100000 cycles Configurable relay logic R2 sequence relay NO 1000000 cycles Configurable relay logic R3 sequence relay NO 1000000 cycles
Maximum switching current	Relay output R1 resistive, cos phi = 1 3 A 250 V AC Relay output R1 resistive, cos phi = 1 3 A 30 V DC Relay output R1 inductive, cos phi = 0.4 7 ms 2 A 250 V AC Relay output R1 inductive, cos phi = 0.4 7 ms 2 A 30 V DC Relay output R2, R3 resistive, cos phi = 1 5 A 250 V AC Relay output R2, R3 resistive, cos phi = 1 5 A 30 V DC Relay output R2, R3 inductive, cos phi = 0.4 7 ms 2 A 250 V AC Relay output R2, R3 inductive, cos phi = 0.4 7 ms 2 A 30 V DC
Minimum switching current	Relay output R1, R2, R3 5 mA 24 V DC
Physical interface	Ethernet 2-wire RS 485
Connector type	2 RJ45 1 RJ45
Method of access	Slave Modbus TCP
Transmission rate	10, 100 Mbits 4.8 kbps 9600 bit/s 19200 bit/s
Transmission frame	RTU
Number of addresses	1…247
Data format	8 bits, configurable odd, even or no parity
Type of polarization	No impedance
4 quadrant operation possible	True
Acceleration and deceleration ramps	Linear adjustable separately from 0.01...9999 s S, U or customized
Motor slip compensation	Can be suppressed Adjustable Not available in permanent magnet motor law

	Automatic whatever the load
Braking to standstill	By DC injection
Brake chopper integrated	True
Maximum input current	19.6 A
Maximum output voltage	600.0 V
Relative symmetric network frequency tolerance	5 %
Base load current at high overload	18.0 A
Base load current at low overload	22.0 A
Power dissipation in W	Forced convection 192 W 600 V 4 kHz Natural convection 136 W 600 V 4 kHz
With safety function Safely Limited Speed (SLS)	True
With safety function Safe brake management (SBC/SBT)	True
With safety function Safe Operating Stop (SOS)	False
With safety function Safe Position (SP)	False
With safety function Safe programmable logic	False
With safety function Safe Speed Monitor (SSM)	False
With safety function Safe Stop 1 (SS1)	True
With sft fct Safe Stop 2 (SS2)	False
With safety function Safe torque off (STO)	True
With safety function Safely Limited Position (SLP)	False
With safety function Safe Direction (SDI)	False
Protection type	Thermal protection motor Safe torque off motor Motor phase break motor Thermal protection drive Safe torque off drive Overheating drive Overcurrent between output phases and earth drive Overload of output voltage drive Short-circuit protection drive Motor phase break drive Overvoltages on the DC bus drive Line supply overvoltage drive Line supply undervoltage drive Line supply phase loss drive Overspeed drive Break on the control circuit drive
Quantity per set	1
Width	6.73 in (171 mm)
Height	16.10 in (409 mm)
Depth	9.29 in (236 mm)
Product weight	12.13 lb(US) (5.5 kg)
Electrical connection	Control screw terminal 0.5...1.5 mm² AWG 20...AWG 16 Motor screw terminal 6...10 mm² AWG 10...AWG 8 Line side screw terminal 6 mm² AWG 10 DC bus screw terminal 6 mm² AWG 10 10/100 Mbit/s Ethernet IP/Modbus TCP

	4.8, 9.6, 19.2, 38.4 kbit/s Modbus serial
Exchange mode	Half duplex, full duplex, autonegotiation Ethernet IP/Modbus TCP 8 bits, configurable odd, even or no parity Modbus serial No impedance Modbus serial 1…247 Modbus serial
Supply	External supply for digital inputs 24 V DC 19…30 V), <1.25 mA overload and short-circuit protection Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <10 mA overload and short-circuit protection Internal supply for digital inputs and STO 24 V DC 21…27 V), <200 mA overload and short-circuit protection
Local signalling	Local diagnostic 3 LED mono/dual colour) Presence of voltage 1 LED red) Embedded communication status 3 LED dual colour) Communication module status 4 LED dual colour)
Input compatibility	DI1...DI8 discrete input level 1 PLC EN/IEC 61131-2 DI7, DI8 pulse input level 1 PLC IEC 65A-68 STOA, STOB discrete input level 1 PLC EN/IEC 61131-2 Positive logic (source) DI1...DI8), < 5 V, > 11 V Negative logic (sink) DI1...DI8), > 16 V, < 10 V Positive logic (source) DI7, DI8), < 0.6 V, > 2.5 V Positive logic (source) STOA, STOB), < 5 V, > 11 V
Sampling duration	2 ms +/- 0.5 ms DI1...DI8) - discrete input 5 ms +/- 1 ms DI7, DI8) - pulse input 1 ms +/- 1 ms AI1, AI2, AI3) - analog input 5 ms +/- 1 ms AQ1, AQ2) - analog output
Accuracy	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AQ1, AQ2 for a temperature variation 60 °C analog output
Linearity error	AI1, AI2, AI3 +/- 0.15 % of maximum value analog input AQ1, AQ2 +/- 0.2 % analog output
Refresh time	Relay output R1, R2, R3)5 ms +/- 0.5 ms)
Isolation	Between power and control terminals

Environment

Operating altitude	<= 1000 m without derating 1000...4800 m with current derating 1 % per 100 m
Operating position	Vertical +/- 10 degree
Product certifications	CSA UL TÜV
Marking	CE
Standards	UL 508C EN/IEC 61800-3 EN/IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1
Assembly style	Enclosed
Electromagnetic compatibility	Electrostatic discharge immunity test level 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3 Electrical fast transient/burst immunity test level 4 IEC 61000-4-4 1.2/50 µs - 8/20 µs surge immunity test level 3 IEC 61000-4-5 Conducted radio-frequency immunity test level 3 IEC 61000-4-6
Environmental class (during operation)	Class 3C3 according to IEC 60721-3-3 Class 3S3 according to IEC 60721-3-3
Maximum acceleration under shock impact (during operation)	150 m/s² at 11 ms
Maximum acceleration under vibrational stress (during operation)	10 m/s² at 13...200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 2...13 Hz

Permitted relative humidity (during operation)	Class 3K5 according to EN 60721-3
Volume of cooling air	27210.21 Gal/hr(US) (103 m3/h)
Overvoltage category	III
Regulation loop	Adjustable PID regulator
Insulation resistance	> 1 MOhm 500 V DC for 1 minute to earth
Noise level	56 dB 86/188/EEC
Vibration resistance	1.5 mm peak to peak 2…13 Hz)IEC 60068-2-6 1 gn 13…200 Hz)IEC 60068-2-6
Shock resistance	15 gn 11 ms IEC 60068-2-27
Environmental characteristic	Chemical pollution resistance class 3C3 EN/IEC 60721-3-3 Dust pollution resistance class 3S3 EN/IEC 60721-3-3
Relative humidity	5…95 % without condensation IEC 60068-2-3
Ambient air temperature for operation	5…122 °F (-15…50 °C) without derating) 122…140 °F (50…60 °C) with derating factor) 56 dB
Pollution degree	2
Ambient air transport temperature	-40…158 °F (-40…70 °C)
Ambient air temperature for storage	-40…158 °F (-40…70 °C)

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	13.39 in (34.0 cm)
Package 1 Width	8.66 in (22.0 cm)
Package 1 Length	22.83 in (58.0 cm)
Package 1 Weight	19.40 lb(US) (8.8 kg)

Offer Sustainability

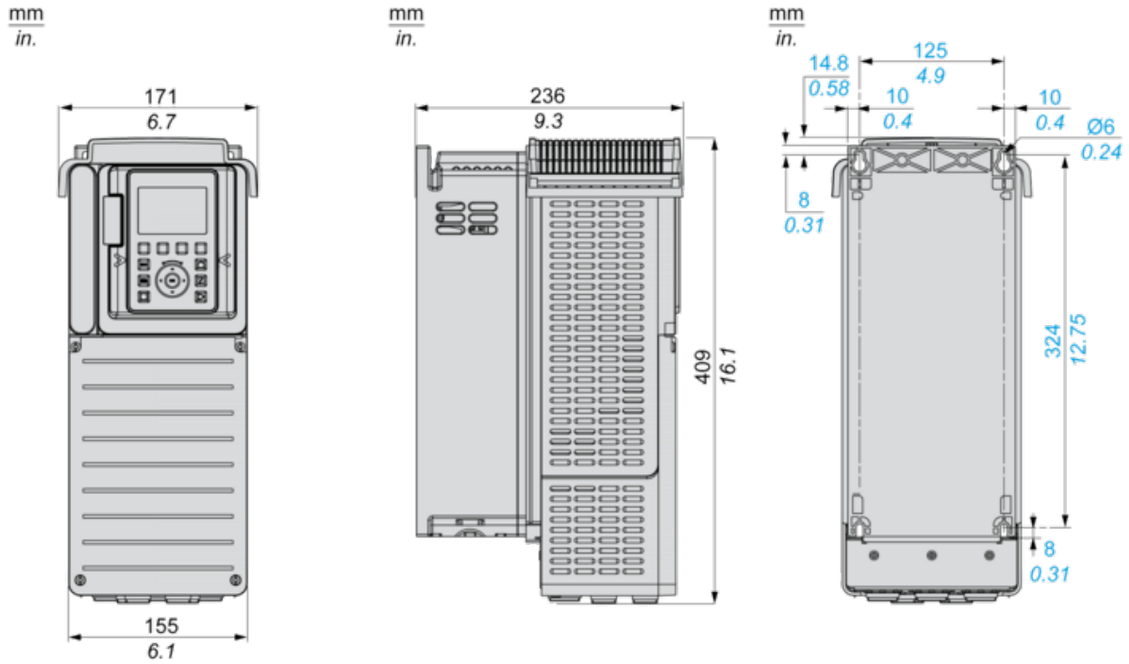
Sustainable offer status	Green Premium product
REACh Regulation	REACh Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Mercury free	Yes
China RoHS Regulation	China RoHS declaration
RoHS exemption information	Yes
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Upgradeability	Upgraded components available

Product data sheet ATV930D15S6X

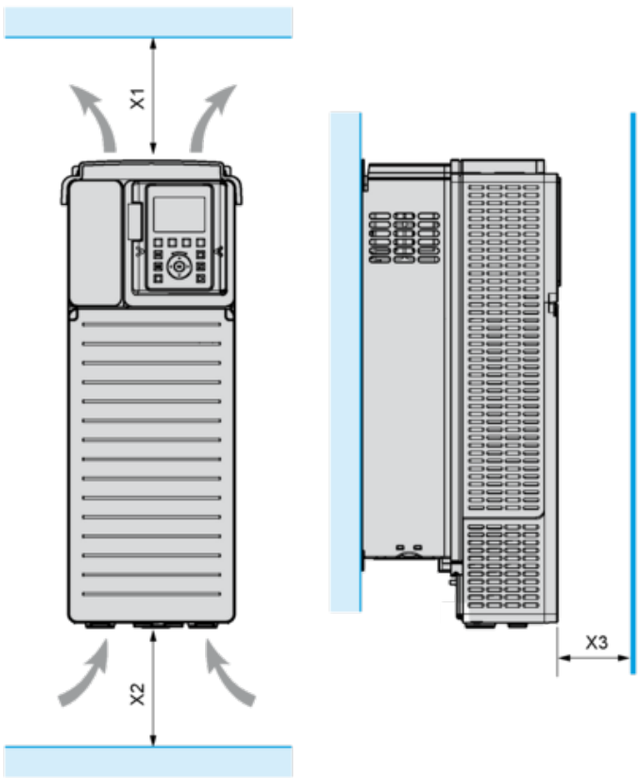
Dimensions Drawings

Dimensions

Front, Left and Rear View



Clearances

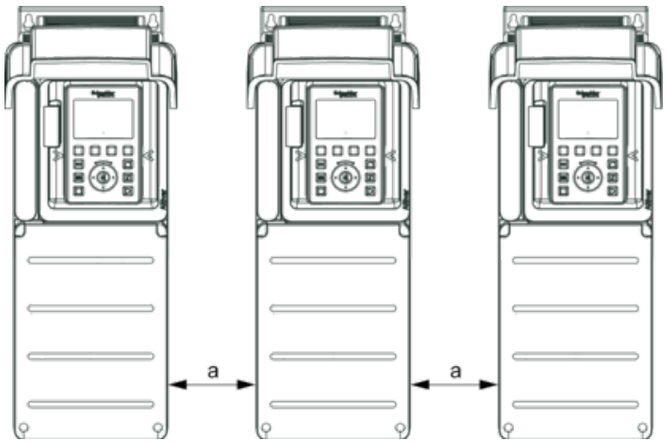


X1	X2	X3
≥ 100 mm (3.94 in.)	≥ 100 mm (3.94 in.)	≥ 10 mm (0.39 in.)

- Mount the device in a vertical position (±10°). This is required for cooling the device.
- Do not mount the device close to heat sources.
- Leave sufficient free space so that the air required for cooling purposes can circulate from the bottom to the top of the drive.

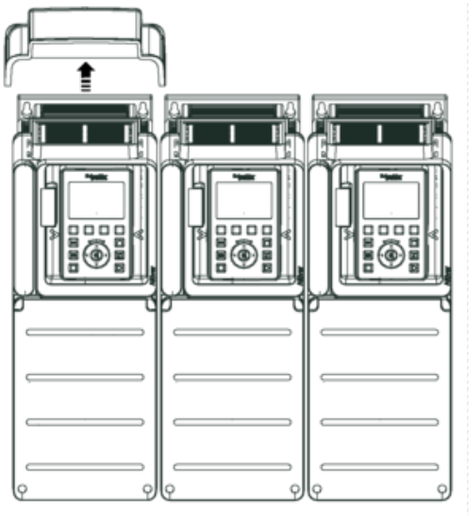
Mounting Types

Mounting Type A: Individual IP21

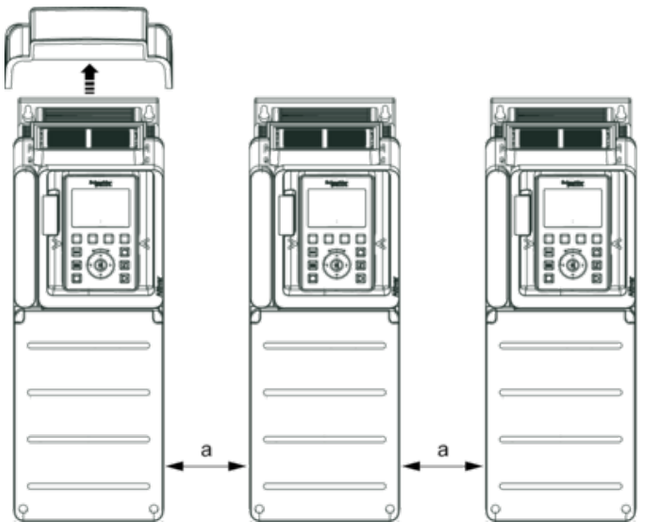


a ≥ 100 mm (3.94 in.)

Mounting Type B: Side by Side IP20



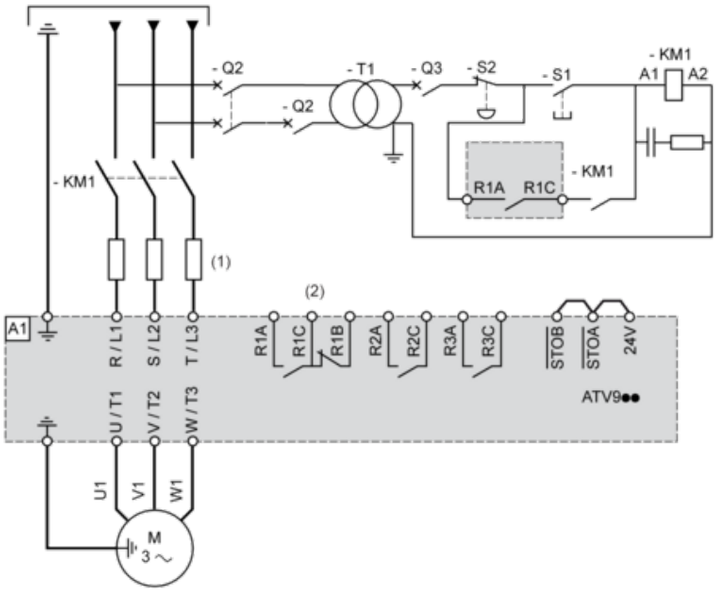
Mounting Type C: Individual IP20



a ≥ 0

Three-Phase Power Supply with Upstream Breaking via Line Contactor

Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1



(1) Line choke if used

(2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.

A1 : Drive

KM1 : Line Contactor

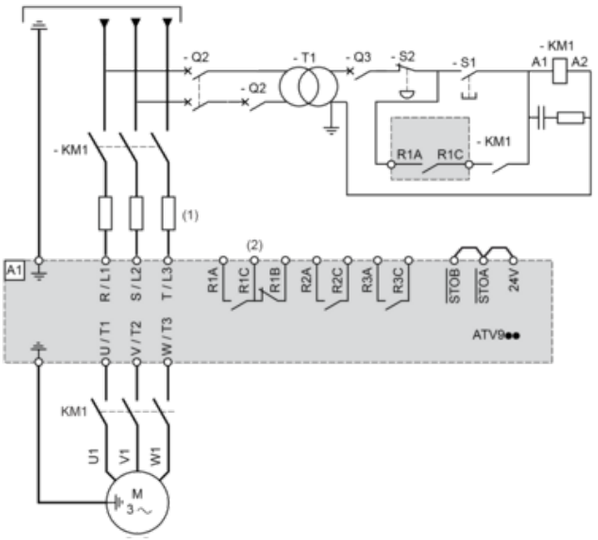
Q2, Q3 : Circuit breakers

S1, S2 : Pushbuttons

T1 : Transformer for control part

Three-Phase Power Supply with Downstream Breaking via Contactor

Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1



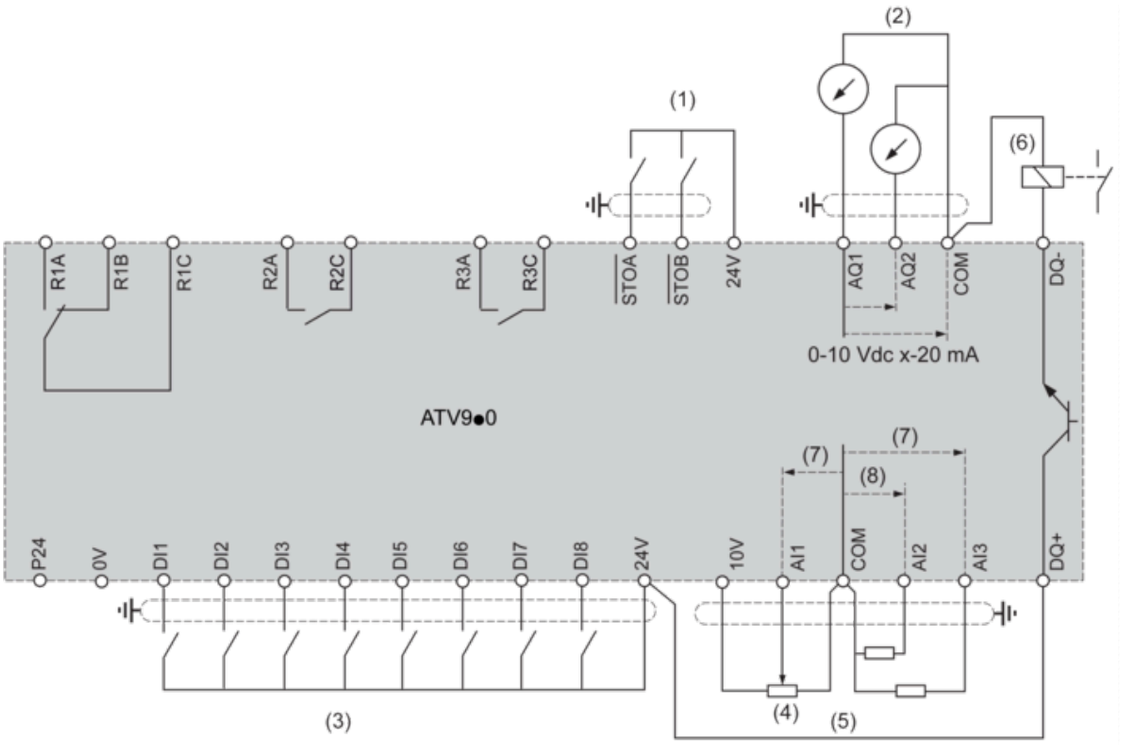
(1) Line choke if used

(2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.

A1 : Drive

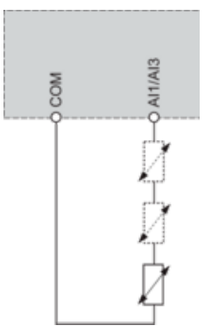
KM1 : Contactor

Control Block Wiring Diagram



(1) Safe Torque Off
(2) Analog Output
(3) Digital Input
(4) Reference potentiometer
(5) Analog Input
(6) Digital Output
(7) 0-10 Vdc, x-20 mA
(8) 0-10 Vdc, -10 Vdc...+10 Vdc
R1A, R1B, R1C : Fault relay
R2A, R2C : Sequence relay
R3A, R3C : Sequence relay

Sensor Connection



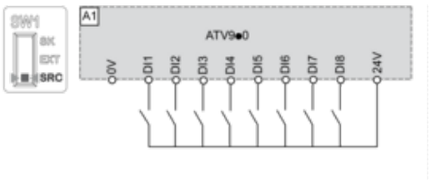
It is possible to connect either 1 or 3 sensors on terminals AI1 or AI3

Sink / Source Switch Configuration

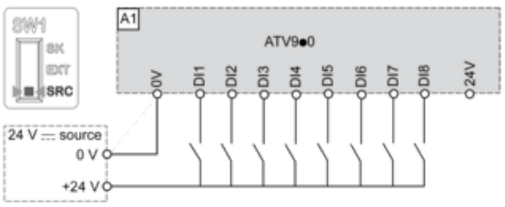
The switch is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs.

- Set the switch to Source (factory setting) if using PLC outputs with PNP transistors.
- Set the switch to Ext if using PLC outputs with NPN transistors.

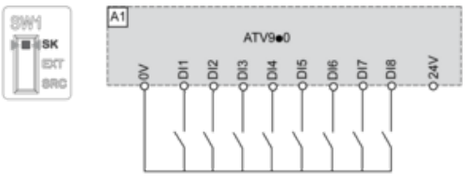
Switch Set to SRC (Source) Position Using the Output Power Supply for the Digital Inputs



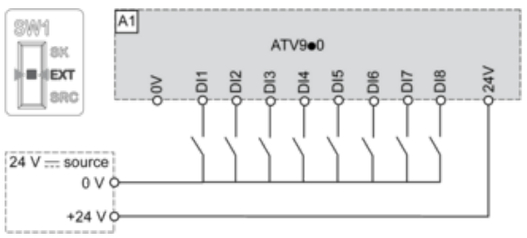
Switch Set to SRC (Source) Position and Use of an External Power Supply for the DIs



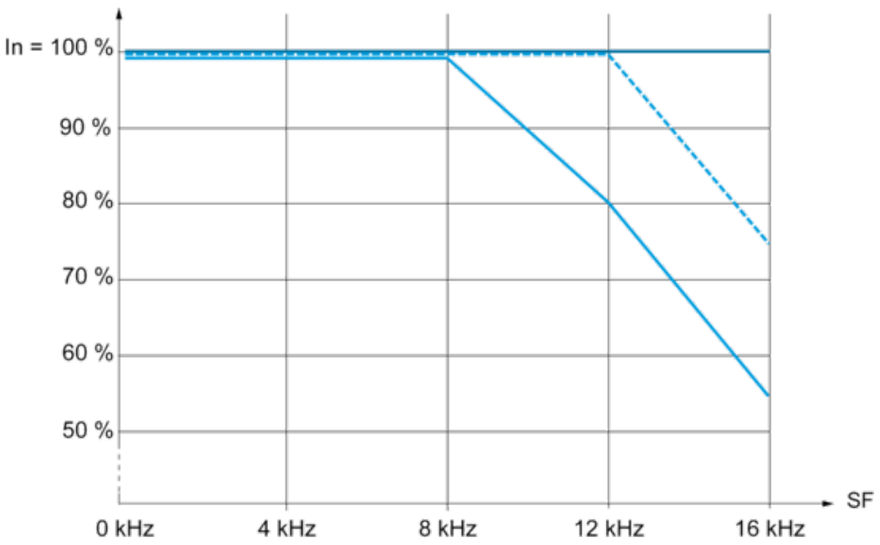
Switch Set to SK (Sink) Position Using the Output Power Supply for the Digital Inputs



Switch Set to EXT Position Using an External Power Supply for the DIs



Derating Curves



40 °C (104 °F) - Mounting type A, B and C
50 °C (122 °F) - Mounting type A, B and C
60 °C (140 °F) - Mounting type B and C

In : Nominal Drive Current

SF : Switching Frequency

Recommended replacement(s)

Technical DataSheets

Description :
ATV930, 600V, 3PH, 3HP, 2HP HD

Trade Name :
Schneider electric

Model no :
ATV930U22S6X

Product data sheet

ATV930U22S6X

Specifications



variable speed drive, Altivar Process ATV900, ATV930, 3hp, 600V, IP21

ATV930U22S6X

Main

Range Of Produc	Altivar Process ATV900
Device Application	Industrial application
Product Or Component Type	Variable speed drive
Product Destination	Synchronous motors Asynchronous motors
Product Specific Application	Process for industrial
Variant	Standard version With braking chopper
Network Number Of Phases	3 phases
Mounting Mode	Wall mount
Communication Port Protocol	Modbus TCP EtherNet/IP Modbus serial
[Us] Rated Supply Voltage	600 V - 15...10 %
Continuous Output Current	4.2 A 4 kHz normal duty 3.1 A 4 kHz heavy duty
Emc Filter	Integrated With EMC plate option
Ip Degree Of Protection	IP21
Degree Of Protection	UL type 1
Option Module	Slot A communication module Profibus DP V1 Slot A communication module PROFINET Slot A communication module DeviceNet Slot A communication module EtherCAT Slot A communication module CANopen daisy chain RJ45 Slot A communication module CANopen SUB-D 9 Slot A communication module CANopen screw terminals Slot A/slot B/slot C digital and analog I/O extension module Slot A/slot B/slot C output relay extension module Slot B 5/12 V digital encoder interface module Slot B analog encoder interface module Slot B resolver encoder interface module communication module Ethernet Powerlink
Discrete Input Logic	16 preset speeds
Asynchronous Motor Control Profile	Variable torque standard Constant torque standard Optimized torque mode
Synchronous Motor Control Profile	Permanent magnet motor Synchronous reluctance motor
Maximum Output Frequency	599 Hz
Switching Frequency	2...16 kHz adjustable 4...16 kHz with derating factor

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Nominal Switching Frequency	4 kHz
Apparent Power	3 kVA 600 V normal duty) 2.2 kVA 600 V heavy duty)
Maximum Transient Current	5.04 A 60 s normal duty) 4.7 A 60 s heavy duty)
Network Frequency	50...60 Hz
Prospective Line Isc	70 kA

Complementary

Discrete Input Number	10
Discrete Input Type	DI1...DI8 programmable, 24 V DC <= 30 V)3.5 kOhm DI7, DI8 programmable as pulse input 0…30 kHz, 24 V DC <= 30 V) STOA, STOB safe torque off, 24 V DC <= 30 V)> 2.2 kOhm
Discrete Output Number	2
Discrete Output Type	Logic output DQ+ 0…1 kHz <= 30 V DC 100 mA Programmable as pulse output DQ+ 0…30 kHz <= 30 V DC 20 mA Logic output DQ- 0…1 kHz <= 30 V DC 100 mA
Analogue Input Number	3
Analogue Input Type	AI1, AI2, AI3 software-configurable voltage 0...10 V DC 30 kOhm 12 bits AI1, AI2, AI3 software-configurable current 0...20 mA/4...20 mA 250 Ohm 12 bits
Analogue Output Number	2
Analogue Output Type	Software-configurable voltage AQ1, AQ2 0...10 V DC 470 Ohm 10 bits Software-configurable current AQ1, AQ2 0...20 mA 500 Ohm 10 bits
Relay Output Number	3
Relay Output Type	Configurable relay logic R1 fault relay NO/NC 100000 cycles Configurable relay logic R2 sequence relay NO 1000000 cycles Configurable relay logic R3 sequence relay NO 1000000 cycles
Maximum Switching Current	Relay output R1 resistive, cos phi = 1 3 A 250 V AC Relay output R1 resistive, cos phi = 1 3 A 30 V DC Relay output R1 inductive, cos phi = 0.4 7 ms 2 A 250 V AC Relay output R1 inductive, cos phi = 0.4 7 ms 2 A 30 V DC Relay output R2, R3 resistive, cos phi = 1 5 A 250 V AC Relay output R2, R3 resistive, cos phi = 1 5 A 30 V DC Relay output R2, R3 inductive, cos phi = 0.4 7 ms 2 A 250 V AC Relay output R2, R3 inductive, cos phi = 0.4 7 ms 2 A 30 V DC
Minimum Switching Current	Relay output R1, R2, R3 5 mA 24 V DC
Physical Interface	Ethernet 2-wire RS 485
Connector Type	2 RJ45 1 RJ45
Method Of Access	Slave Modbus TCP
Transmission Rate	10, 100 Mbits 4.8 kbps 9600 bit/s 19200 bit/s
Transmission Frame	RTU
Number Of Addresses	1…247
Data Format	8 bits, configurable odd, even or no parity
Type Of Polarization	No impedance
4 Quadrant Operation Possible	True
Acceleration And Deceleration Ramps	Linear adjustable separately from 0.01...9999 s S, U or customized

Motor Slip Compensation	Can be suppressed Adjustable Not available in permanent magnet motor law Automatic whatever the load
Braking To Standstill	By DC injection
Brake Chopper Integrated	True
Maximum Input Current	2.9 A
Maximum Output Voltage	600.0 V
Relative Symmetric Network Frequency Tolerance	5 %
Base Load Current At High Overload	3.1 A
Base Load Current At Low Overload	4.2 A
Power Dissipation In W	Forced convection 31 W 600 V 4 kHz Natural convection 82 W 600 V 4 kHz
With Safety Function Safely Limited Speed (Sls)	True
With Safety Function Safe Brake Management (Sbc/Sbt)	True
With Safety Function Safe Operating Stop (Sos)	False
With Safety Function Safe Position (Sp)	False
With Safety Function Safe Programmable Logic	False
With Safety Function Safe Speed Monitor (Ssm)	False
With Safety Function Safe Stop 1 (Ss1)	True
With Sft Fct Safe Stop 2 (Ss2)	False
With Safety Function Safe Torque Off (Sto)	True
With Safety Function Safely Limited Position (Slp)	False
With Safety Function Safe Direction (Sdi)	False
Protection Type	Thermal protection motor Safe torque off motor Motor phase break motor Thermal protection drive Safe torque off drive Overheating drive Overcurrent between output phases and earth drive Overload of output voltage drive Short-circuit protection drive Motor phase break drive Overvoltages on the DC bus drive Line supply overvoltage drive Line supply undervoltage drive Line supply phase loss drive Overspeed drive Break on the control circuit drive
Quantity Per Set	1
Width	6.73 in (171 mm)
Height	16.10 in (409 mm)
Depth	9.29 in (236 mm)
Net Weight	12.13 lb(US) (5.5 kg)
Electrical Connection	Control screw terminal 0.5...1.5 mm² AWG 20...AWG 16 Motor screw terminal 6...10 mm² AWG 10...AWG 8 Line side screw terminal 6 mm² AWG 10 DC bus screw terminal 6 mm² AWG 10

Transmission Rate	10/100 Mbit/s Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s Modbus serial
Exchange Mode	Half duplex, full duplex, autonegotiation Ethernet IP/Modbus TCP
Data Format	8 bits, configurable odd, even or no parity Modbus serial
Type Of Polarization	No impedance Modbus serial
Number Of Addresses	1…247 Modbus serial
Supply	External supply for digital inputs 24 V DC 19…30 V), <1.25 mA overload and short-circuit protection Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <10 mA overload and short-circuit protection Internal supply for digital inputs and STO 24 V DC 21…27 V), <200 mA overload and short-circuit protection
Local Signalling	Local diagnostic 3 LED mono/dual colour) Presence of voltage 1 LED red) Embedded communication status 3 LED dual colour) Communication module status 4 LED dual colour)
Input Compatibility	DI1...DI8 discrete input level 1 PLC IEC 61131-2 DI7, DI8 pulse input level 1 PLC IEC 65A-68 STOA, STOB discrete input level 1 PLC IEC 61131-2
Discrete Input Logic	Positive logic (source) DI1...DI8), < 5 V, > 11 V Negative logic (sink) DI1...DI8), > 16 V, < 10 V Positive logic (source) DI7, DI8), < 0.6 V, > 2.5 V Positive logic (source) STOA, STOB), < 5 V, > 11 V
Sampling Duration	2 ms +/- 0.5 ms DI1...DI8) - discrete input 5 ms +/- 1 ms DI7, DI8) - pulse input 1 ms +/- 1 ms AI1, AI2, AI3) - analog input 5 ms +/- 1 ms AQ1, AQ2) - analog output
Accuracy	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AQ1, AQ2 for a temperature variation 60 °C analog output
Linearity Error	AI1, AI2, AI3 +/- 0.15 % of maximum value analog input AQ1, AQ2 +/- 0.2 % analog output
Refresh Time	Relay output R1, R2, R3)5 ms +/- 0.5 ms)
Isolation	Between power and control terminals

Environment

Operating Altitude	<= 1000 m without derating 1000...4800 m with current derating 1 % per 100 m
Operating Position	Vertical +/- 10 degree
Product Certifications	TÜV CSA UL
Standards	UL 508C IEC 61800-3 IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1
Assembly Style	Enclosed
Electromagnetic Compatibility	Electrostatic discharge immunity test level 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3 Electrical fast transient/burst immunity test level 4 IEC 61000-4-4 1.2/50 µs - 8/20 µs surge immunity test level 3 IEC 61000-4-5 Conducted radio-frequency immunity test level 3 IEC 61000-4-6
Environmental Class (During Operation)	Class 3C3 according to IEC 60721-3-3 Class 3S3 according to IEC 60721-3-3
Maximum Acceleration Under Shock Impact (During Operation)	150 m/s² at 11 ms

Maximum Acceleration Under Vibrational Stress (During Operation)	10 m/s² at 13...200 Hz
Maximum Deflection Under Vibratory Load (During Operation)	1.5 mm at 2...13 Hz
Permitted Relative Humidity (During Operation)	Class 3K5 according to EN 60721-3
Volume Of Cooling Air	27210.21 Gal/hr(US) (103 m3/h)
Overvoltage Category	III
Regulation Loop	Adjustable PID regulator
Insulation Resistance	> 1 MOhm 500 V DC for 1 minute to earth
Noise Level	56 dB 86/188/EEC
Vibration Resistance	1.5 mm peak to peak 2…13 Hz)IEC 60068-2-6 1 gn 13…200 Hz)IEC 60068-2-6
Shock Resistance	15 gn 11 ms IEC 60068-2-27
Environmental Characteristic	Chemical pollution resistance class 3C3 IEC 60721-3-3 Dust pollution resistance class 3S3 IEC 60721-3-3
Relative Humidity	5…95 % without condensation IEC 60068-2-3
Ambient Air Temperature For Operation	5…122 °F (-15…50 °C) without derating) 122…140 °F (50…60 °C) with derating factor)
Noise Level	56 dB
Pollution Degree	2
Ambient Air Transport Temperature	-40…158 °F (-40…70 °C)
Ambient Air Temperature For Storage	-40…158 °F (-40…70 °C)

Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	13.39 in (34.0 cm)
Package 1 Width	8.66 in (22.0 cm)
Package 1 Length	22.83 in (58.0 cm)
Package 1 Weight	19.40 lb(US) (8.8 kg)

Sustainability

Green Premium™ label is Schneider Electric's commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO_2 products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >



Transparency



RoHS/REACh

Resource performance

Upgraded Components Available

Well-being performance

Mercury Free

Rohs Exemption Information	Yes

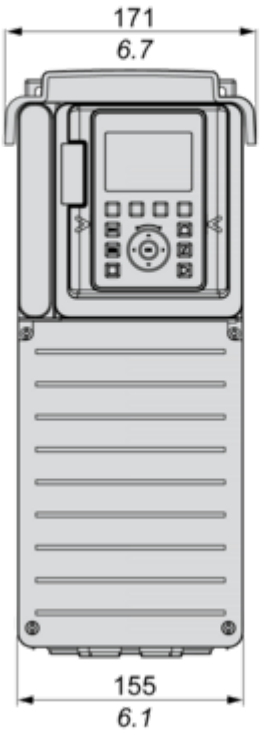
Certifications & Standards

Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

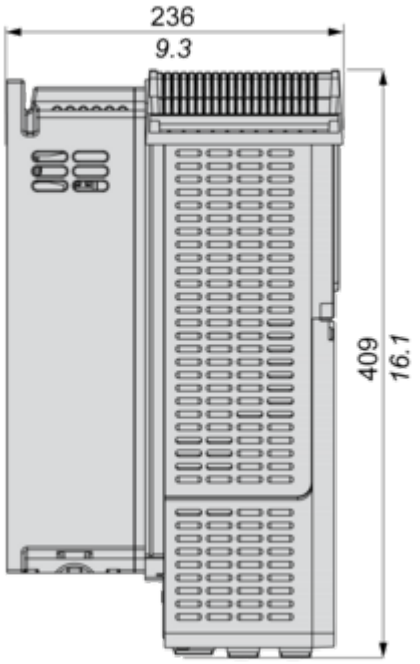
Dimensions

Front, Left and Rear View

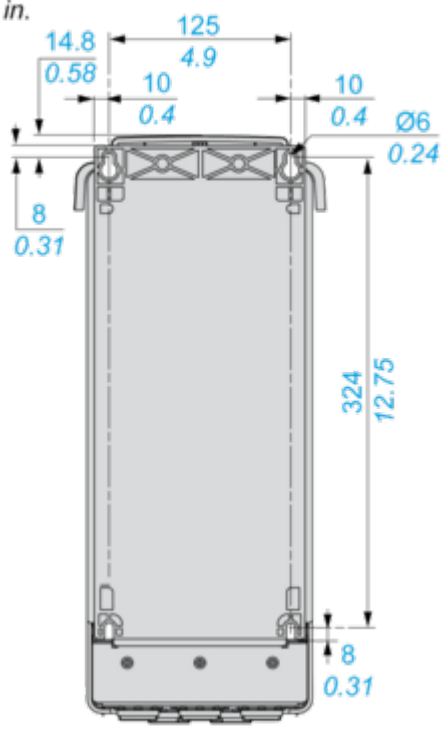
mm
in.



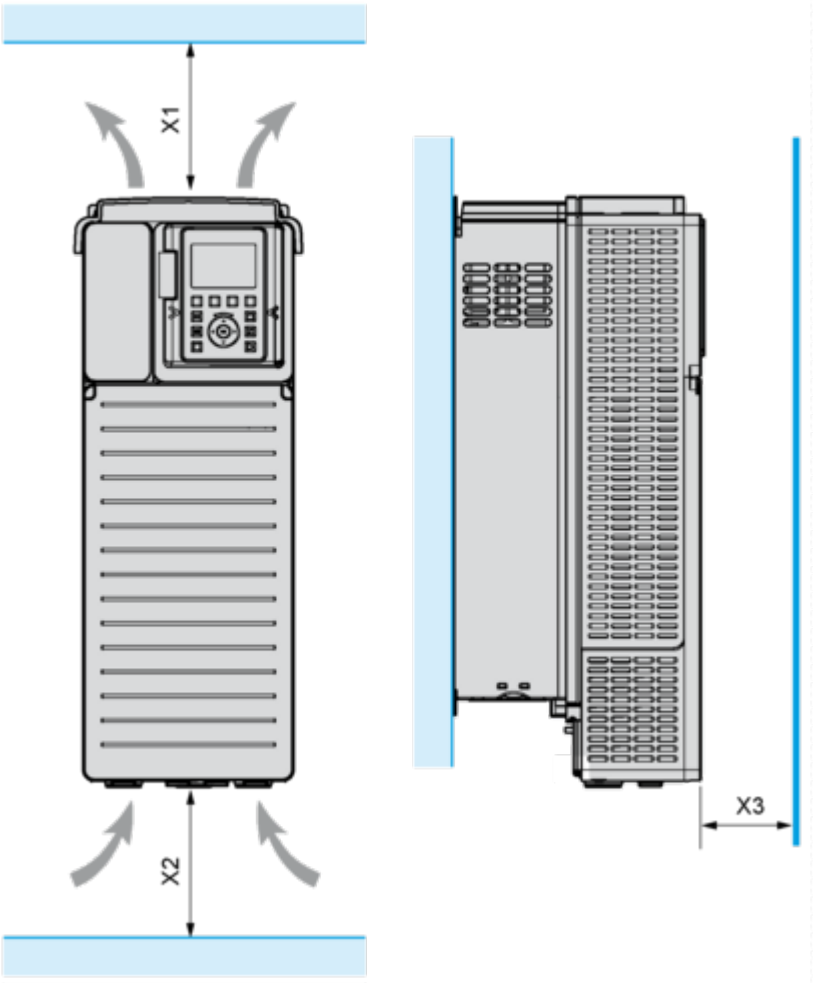
mm
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mm
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Clearances

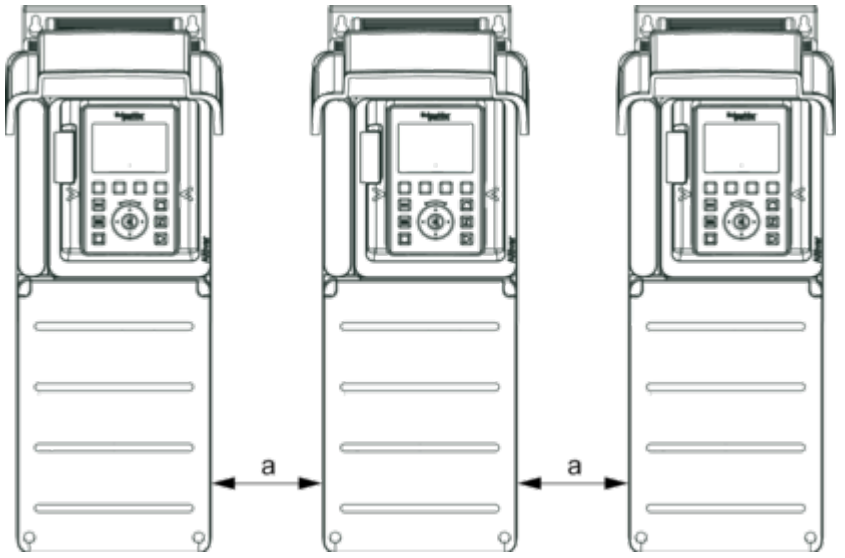


X1	X2	X3
≥ 100 mm (3.94 in.)	≥ 100 mm (3.94 in.)	≥ 10 mm (0.39 in.)

- Mount the device in a vertical position (±10°). This is required for cooling the device.
- Do not mount the device close to heat sources.
- Leave sufficient free space so that the air required for cooling purposes can circulate from the bottom to the top of the drive.

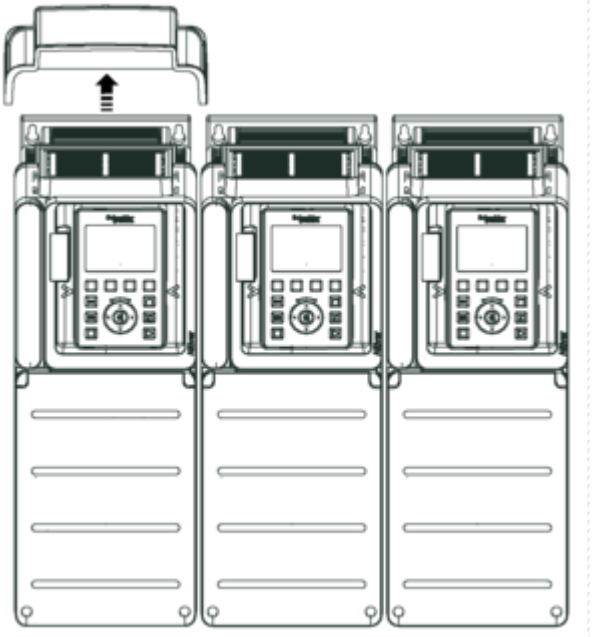
Mounting Types

Mounting Type A: Individual IP21

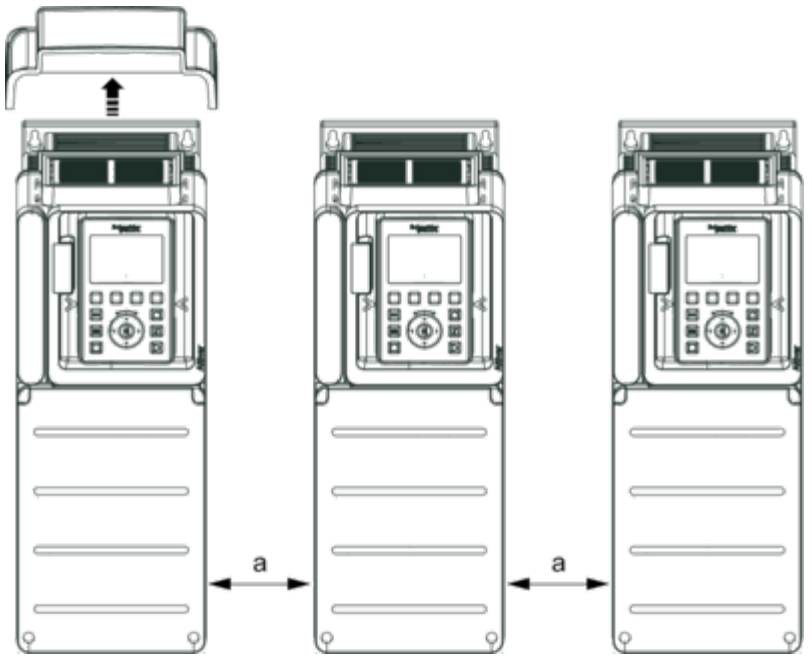


a ≥ 100 mm (3.94 in.)

Mounting Type B: Side by Side IP20



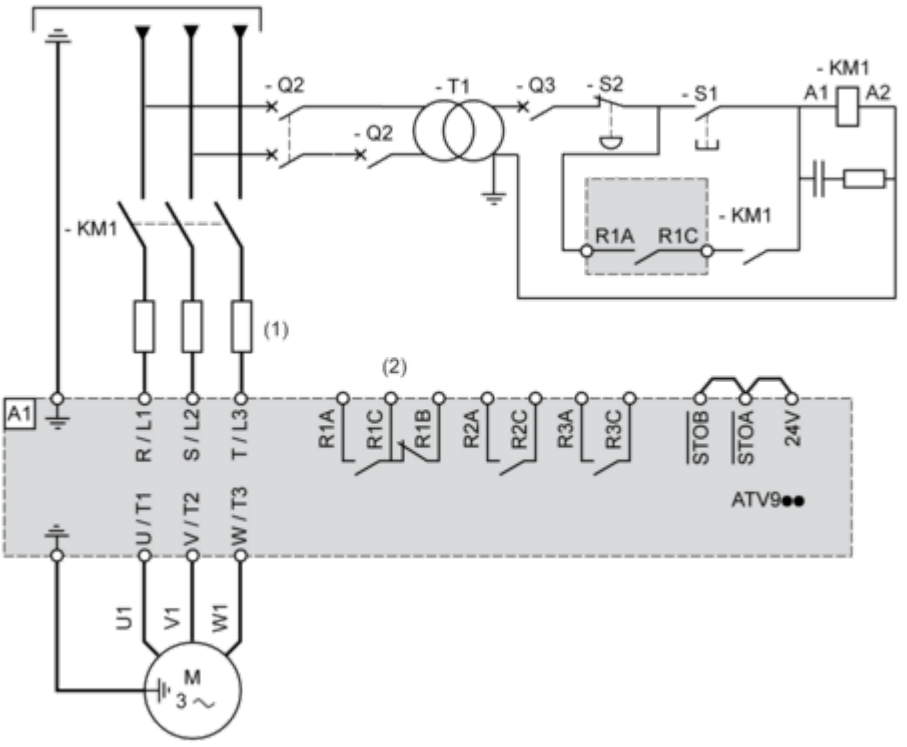
Mounting Type C: Individual IP20



a ≥ 0

Three-Phase Power Supply with Upstream Breaking via Line Contactor

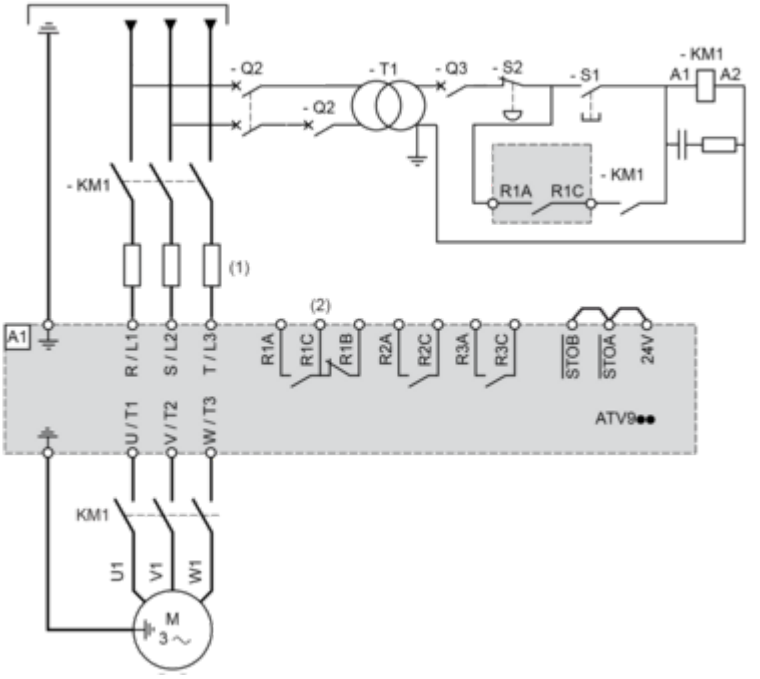
Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1



(1) Line choke if used
(2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.
A1 : Drive
KM1 : Line Contactor
Q2, Q3 : Circuit breakers
S1, S2 : Pushbuttons
T1 : Transformer for control part

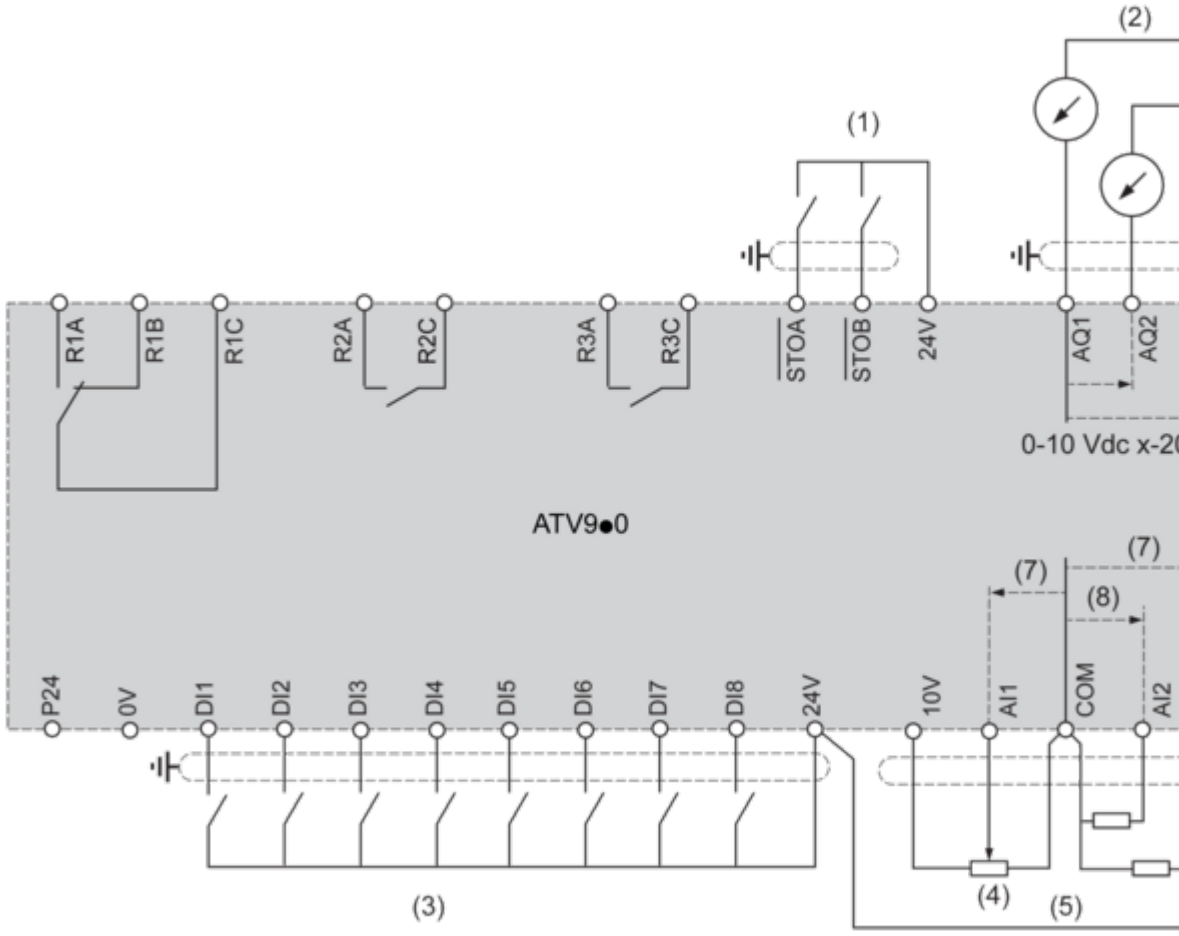
Three-Phase Power Supply with Downstream Breaking via Contactor

Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1



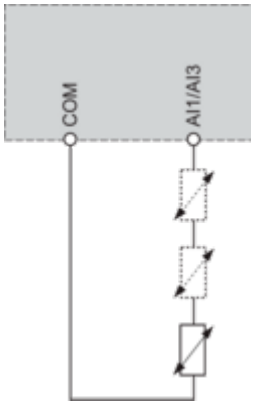
(1) Line choke if used
(2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.
A1 : Drive
KM1 : Contactor

Control Block Wiring Diagram



(1) Safe Torque Off
(2) Analog Output
(3) Digital Input
(4) Reference potentiometer
(5) Analog Input
(6) Digital Output
(7) 0-10 Vdc, x-20 mA
(8) 0-10 Vdc, -10 Vdc...+10 Vdc
R1A, R1B, R1C : Fault relay
R2A, R2C : Sequence relay
R3A, R3C : Sequence relay

Sensor Connection



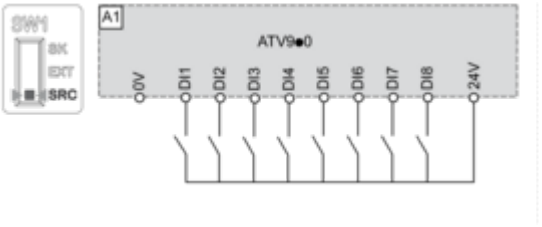
It is possible to connect either 1 or 3 sensors on terminals AI1 or AI3

Sink / Source Switch Configuration

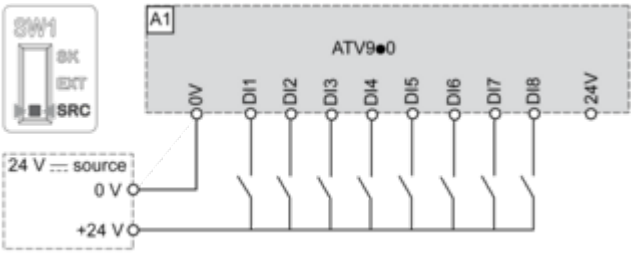
The switch is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs.

- Set the switch to Source (factory setting) if using PLC outputs with PNP transistors.
- Set the switch to Ext if using PLC outputs with NPN transistors.

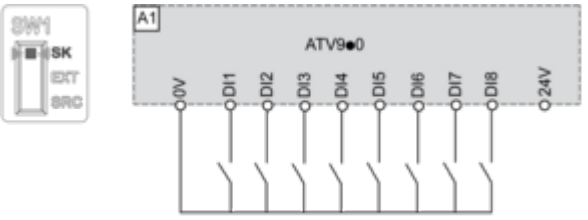
Switch Set to SRC (Source) Position Using the Output Power Supply for the Digital Inputs



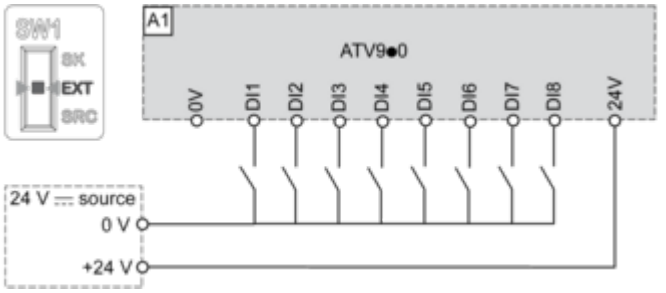
Switch Set to SRC (Source) Position and Use of an External Power Supply for the DIs



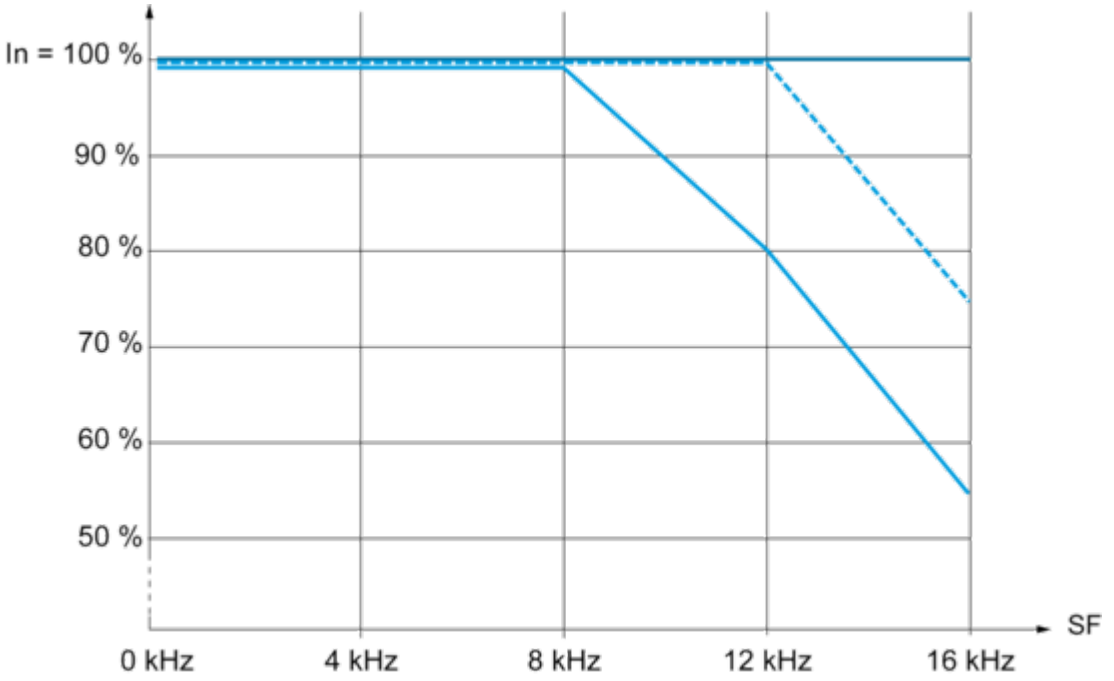
Switch Set to SK (Sink) Position Using the Output Power Supply for the Digital Inputs



Switch Set to EXT Position Using an External Power Supply for the DIs



Derating Curves



40 °C (104 °F) - Mounting type A, B and C
50 °C (122 °F) - Mounting type A, B and C
60 °C (140 °F) - Mounting type B and C
In : Nominal Drive Current
SF : Switching Frequency

Description :
GEAR REDUCER
GEAR RATIO 1098:1
POSITION M1
4 CHANNEL

Trade Name :
Sew Eurodrive

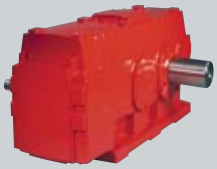
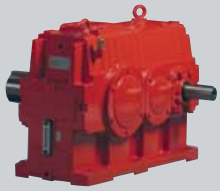
Model no :
M5RSF60 (ratio 1098) 4 Channel

SEW EURODRIVE

Industrial Gear Units – M... Series
Industriegetriebe – Baureihe M...

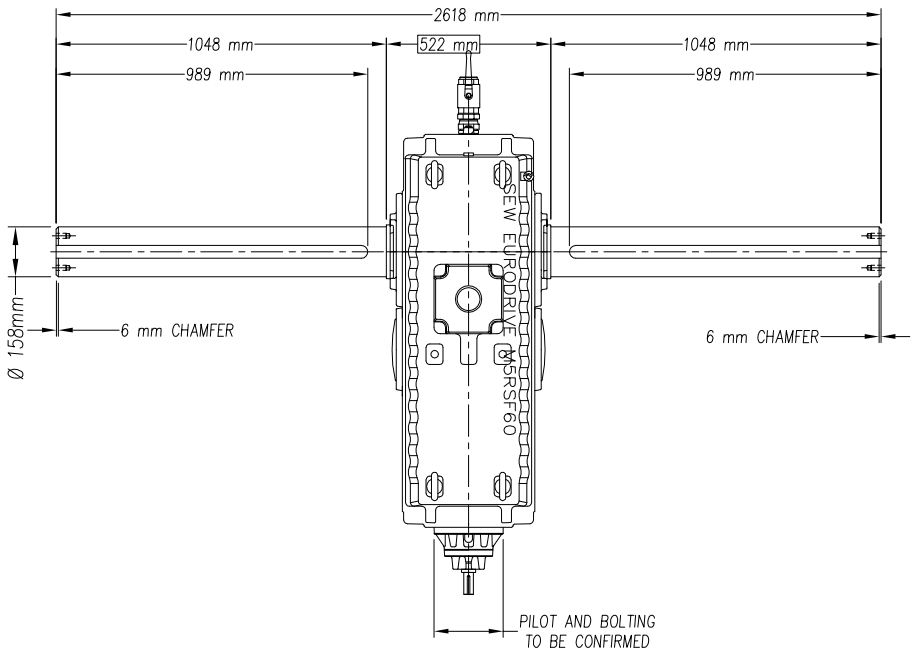
Edition
03/2003

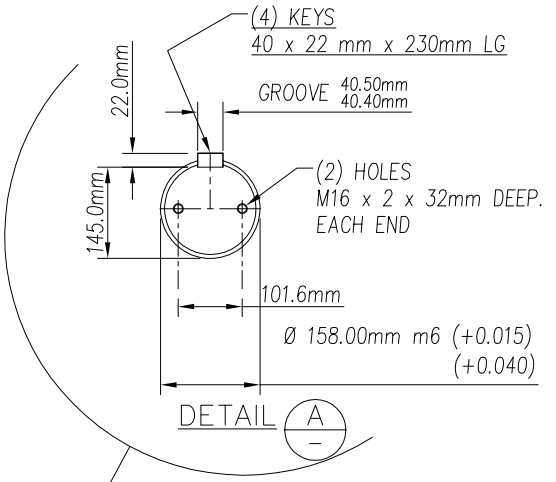


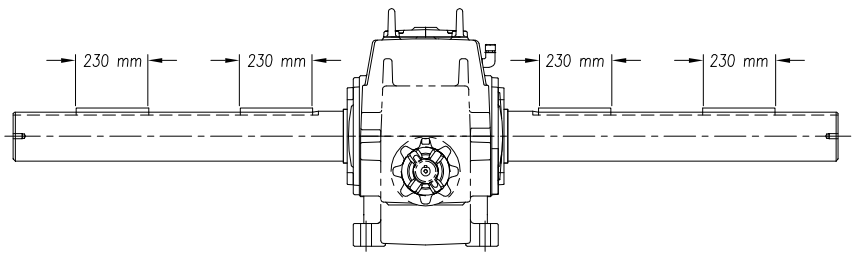



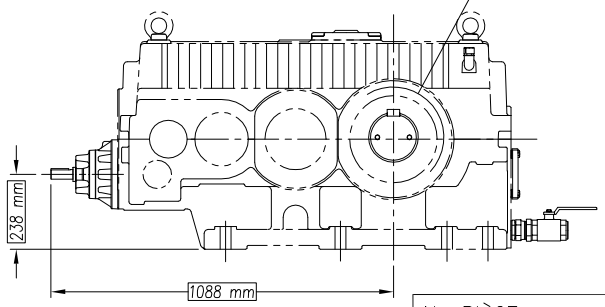

Catalog
1121 4805 / EN/DE

LISTE DE MATÉRIEL/MATERIAL LIST						C- C-30635	00
ARTICLE ITEM	REPÈRE REF.	NOMBRE QTY	DÉSIGNATION/DESIGNATION		MAT.	DIM.	REMARQUES/NOTES









No PIÈCE:
PART No.: **IFI-02050**

SCEAU/STAMP

APP.

PROJECTION TROISIEME ANGLE
THIRD ANGLE PROJECTION

Tolérances sauf indications contraires
Tolerances except were indicated otherwise

SYSTÈME IMPÉRIAL/IMPERIAL SYSTEM

	0 - 36"	36" +
FRACTION	± 1/16"	± 1/8"
2 PLACES .XX	± .010"	—
3 PLACES .XXX	± .005"	—

SYSTÈME MÉTRIQUE/METRIC SYSTEM

	0 - 1000mm	1000mm +
ENTIER/INTEGER	± 1 mm	± 2mm
2 PLACES .XX	± .25 mm	—
3 PLACES .XXX	± .125 mm	—

ÉTAT DE SURFACE/SURFACE FINISH 125
SOUDURE/WELD
ANGLES ± 1/2"

fournier

ROTARY PRESS Ø 900 mm.
Model # 4-900/4000CV
GEAR REDUCER "SEW EURODRIVE" # M5RSF60
SHAFT DIMENSIONS

Echelle/Scale	Des./By: E. GAMACHE	Dossier/File	Pièce no/Part no.	REV.
1 : 10	Ver.:		C- C-30635	00
Date 09/08/2010	App.:			

No	DESCRIPTION	DATE	PAR/BY
3			
2			
1			

REVISIONS

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M

OPTIMIZED FOR HEAVY DUTY APPLICATIONS

Market Conformity

The M Series of industrial gear units meets even the highest demands on quality, reliability and performance. The optimized product range made of high-quality material with high thermal limit rating permits transmission of highest power at very small outer dimensions. This means increased safety with drive applications that have been operated with conventional gear units so far or economical advantages for new applications. The standard program comprises horizontal and genuine vertical gear units. This ensures an application-conform gear unit selection.

M stands for modular – and the series is based on this idea both in terms of design and economy. Customization to the required characteristics of the drive and the machine design is made easier by simply adding options and mounting parts. Supported by progressive CAD and CAM technology, the gear units are produced upon receipt of an order. A modification of the output shaft or a drywell can be realized without affecting the delivery time.

Reliability

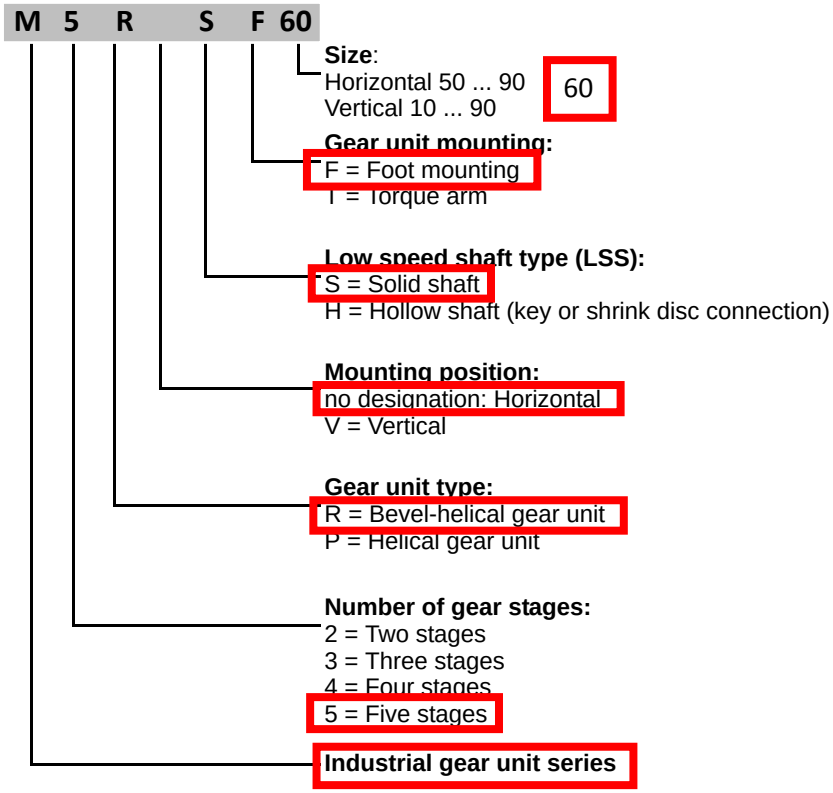
In compliance with the project planning regulations, the M Series ensures long service life with optimum lubrication and sealing characteristics.
Combined with the experience of the SEW consulting engineers, the manufacturing process with its strict quality guidelines and testing programs guarantees the reliability of the M Series industrial gear units.

User-friendliness

The design features and the wide range of options make the M Series especially user-friendly . Especially important are easy mounting and installation as well as easy maintenance which is also ensured by the horizontal housing separation.
Modern industrial design, gear unit sizes with optimum steps and integrated accessories make for economical use of the available space.

3.3 Unit designation / nameplates

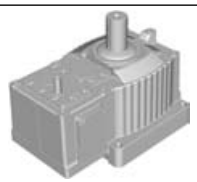
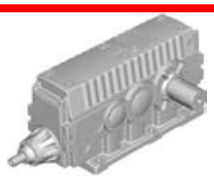
Sample unit designation



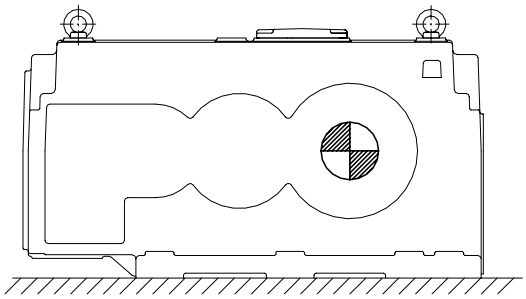
M 3 P S F 50

Series Serie	Number of stages Anzahl Getriebe-stufen	Gear Unit design Getriebeausführung	LSS type LSS Typ	Attachment Einbauweise	Size Größe
M	**2 - 3 - 4 - 5**	Helical Gear Unit (**P**arallel Shafts) Stirnradgetriebe	**S** Solid Shaft Vollwelle 	**F** Foot Fuß	**50 - 60 - 70 - 80 - 90**
		P Horizontal LSS  **PV** Vertical LSS Vertikal LSS 			
		Bevel Helical Gear Unit (**R**ight-Angle Shafts) Kegelstirnradgetriebe	**H** Hollow Shaft Hohlwelle 	**T** Torque Arm Mounting Bracket Befestigung für Drehmomen-tenstütze	
		R Horizontal LSS  **RV** Vertical LSS Vertikal LSS 			

Number of stages Anzahl Getriebestufen			2
Helical Gear Units Stirnradgetriebe	Horizontal LSS	Solid LSS Vollwelle LSS	 **M2PSF** Page / Seite Technical Data Technische Daten 2.1- Dimensions Abmessungen 3.1-
		Hollow LSS Hohlwelle LSS	 **M2PHF M2PHT** Page / Seite Technical Data Technische Daten 2.1- Dimensions Abmessungen 3.1-
	Vertical LSS Vertikal LSS	Solid LSS Vollwelle LSS	 **M2PVSF** Page / Seite Technical Data Technische Daten 2.8- Dimensions Abmessungen 3.13-
		Hollow LSS Hohlwelle LSS	 **M2PVHF** Page / Seite Technical Data Technische Daten 2.8- Dimensions Abmessungen 3.13-
Bevel Helical Gear Units Kegelstirnradgetriebe	Horizontal LSS	Solid LSS Vollwelle LSS	
		Hollow LSS Hohlwelle LSS	
	Vertical LSS Vertikal LSS	Solid LSS Vollwelle LSS	
		Hollow LSS Hohlwelle LSS	
Ratio range i_N Übersetzungsbereich i_N			**6.3 … 18**

3	4	5
 **M3PSF** Page / Seite Technical Data / Technische Daten 2.1- Dimensions / Abmessungen 3.3-	 **M4PSF** Page / Seite Technical Data / Technische Daten 2.1- Dimensions / Abmessungen 3.5-	
 **M3PHF M3PHT** Page / Seite Technical Data / Technische Daten 2.1- Dimensions / Abmessungen 3.3-	 **M4PHF M4PHT** Page / Seite Technical Data / Technische Daten 2.1- Dimensions / Abmessungen 3.5-	
 **M3PVSF** Page / Seite Technical Data / Technische Daten 2.8- Dimensions / Abmessungen 3.17-	 **M4PVSF** Page / Seite Technical Data / Technische Daten 2.8- Dimensions / Abmessungen 3.21-	
 **M3PVHF** Page / Seite Technical Data / Technische Daten 2.8- Dimensions / Abmessungen 3.17-	 **M4PVHF** Page / Seite Technical Data / Technische Daten 2.8- Dimensions / Abmessungen 3.21-	
 **M3RSF** Page / Seite Technical Data / Technische Daten 2.5- Dimensions / Abmessungen 3.7-	 **M4RSF** Page / Seite Technical Data / Technische Daten 2.5- Dimensions / Abmessungen 3.9-	 **M5RSF** Page / Seite Technical Data / Technische Daten 2.5- Dimensions / Abmessungen 3.11-
 **M3RHF M3RHT** Page / Seite Technical Data / Technische Daten 2.5- Dimensions / Abmessungen 3.7-	 **M4RHF M4RHT** Page / Seite Technical Data / Technische Daten 2.5- Dimensions / Abmessungen 3.9-	 **M5RHF M5RHT** Page / Seite Technical Data / Technische Daten 2.5- Dimensions / Abmessungen 3.11-
 **M3RVSF** Page / Seite Technical Data / Technische Daten 2.11- Dimensions / Abmessungen 3.25-	 **M4RVSF** Page / Seite Technical Data / Technische Daten 2.11- Dimensions / Abmessungen 3.29-	
 **M3RVHF** Page / Seite Technical Data / Technische Daten 2.11- Dimensions / Abmessungen 3.25-	 **M4RVHF** Page / Seite Technical Data / Technische Daten 2.11- Dimensions / Abmessungen 3.29-	
14 ... 80 **14 ... 90**	**90 ... 400**	**355 ... 1800**

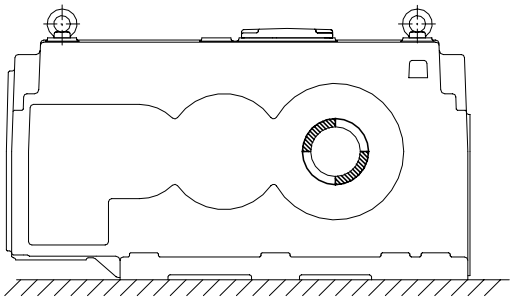
Horizontal LSS — Horizontale LSS



M..SF 50-90

Solid LSS / Vollwelle LSS (S)

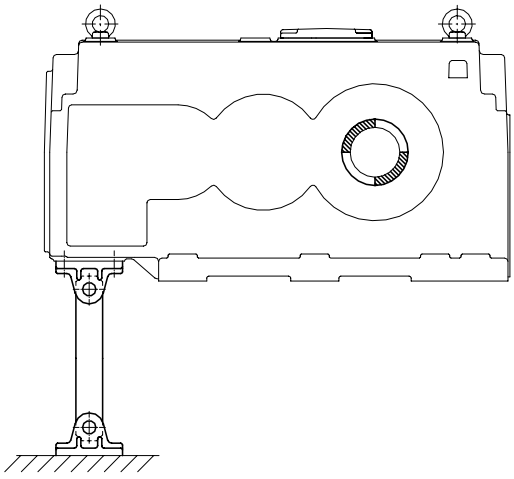
Foot Mounting / Fußmontage (F)



M..HF 50-90

Hollow LSS / Hohlwelle LSS (H)

Foot Mounting / Fußmontage (F)



M..HT 50-90

Hollow LSS / Hohlwelle LSS (H)

Torque Arm Mounting Bracket / Befestigung für Drehmomentenstütze (T)

Torque Arm / Drehmomentenstange

Size Größe	n_1 min^{-1}	Nominal Mechanical Power Ratings P_{N1} in kW — Mechanische Nennleistungen P_{N1} in kW															
		Nominal Ratio i_N — Nennübersetzung i_N															
M3R..		**14**	**16**	**18**	**20**	**22.5**	**25**	**28**	**31.5**	**35.5**	**40**	**45**	**50**	**56**	**63**	**71**	**80**
	1800	376	376	376	324	303	288	259	238+	201+	177+	158+	136+	122+	108+	85.1+	76.0+
50	1500	331	331	331	272	254+	242+	218+	201+	168+	148+	132+	115+	103+	92.1+	71.7+	64.0+
	1200	283+	283+	279	220+	204+	196+	176+	162+	135+	119+	106+	93.0+	83.0+	74.6+	58.1+	51.8+
	1000	249+	249+	234	185*	171+	165+	148+	137+	113+	99.5+	89.3+	78.3+	69.9+	62.8+	48.9+	43.7+
	1800	542	542	514	514	470	418	368	331	302+	272+	248+	223+	199+	152+	137+	119+
60	1500	467	467	453	437	395	352	309+	278+	254+	229+	209+	188+	167+	134+	115+	100+
	1200	376	376	376	353+	320+	284+	250+	225+	206+	185+	169+	152+	135+	115+	92.4+	81.1+
	1000	315	315	315	297+	269+	239+	211+	189+	173+	156+	142+	128+	114+	101+	77.5+	68.3+
	1800	815*	815*	807*	751*	680*	609*	554*	505*	459*	410	372+	320+	294+	263+	234+	174+
70	1500	718	718	711	661	599	511	466	424+	404+	360+	316+	269+	247+	221+	197+	147+
	1200	583	583	583	564	509	414+	377+	343+	326+	294+	254+	218+	200+	179+	159+	119+
	1000	485	485	485	478+	433+	348+	317+	289+	273+	246+	212+	183+	168+	151+	134+	100+
	1800	936*	936*	935*	912*	861*	774*	651*	617*	559*	501*	452	411	366+	306+	274+	232+
80	1500	824	824	823	803	723	650	546	519	468+	421+	380+	346+	308+	258+	231+	195+
	1200	705	705	704	687	585	526	440+	420+	377+	341+	308+	280+	249+	209+	187+	158+
	1000	600+	600+	600+	600+	492+	442+	368+	353+	315+	287+	259+	236+	210+	176+	157+	133+
	1800	-	-	-	-	-	-	-	-	-	-	-	516*	462+	394+	333+	315+
90	1500	1099*	1099*	1086*	1015*	953*	866*	759*	678*	626*	562*	499*	434+	386+	332+	281+	265+
	1200	887	887	887	868	770	700	613+	548+	506+	454+	404+	350+	310+	268+	228+	214+
	1000	744	744	744	744	647	588+	516+	461+	426+	382+	339+	294+	259+	226+	192+	180+

M4R..		**90**	**100**	**112**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
	1800	97.8+	84.0+	75.1+	66.5+	60.5+	55.6+	50.2+	46.1+	40.1+	33.5+	30.3+	27.7+
50	1500	82.1+	70.7+	63.3+	56.8+	52.3+	48.1+	43.3+	39.8+	33.6+	29.0+	26.1+	23.9+
	1200	66.0+	57.9+	52.7+	47.5+	43.7+	38.9+	35.6+	32.0+	27.2+	24.2+	21.8+	19.6+
	1000	55.1+	50.0+	45.5+	41.0+	37.5+	32.6+	29.7+	26.7+	22.8+	20.7+	18.3+	16.3+
	1800	136+	124+	116+	103+	83.5+	83.5+	78.3+	69.6+	58.6+	53.9+	40.6+	36.5+
60	1500	115+	104+	97.7+	88.1+	69.8+	69.8+	67.7+	58.4+	50.7+	46.5+	35.1+	31.6+
	1200	93.2+	84.3+	78.9+	73.7+	56.1+	56.1+	56.1+	47.1+	42.3+	38.7+	29.3+	26.3+
	1000	79.8+	70.7+	66.2+	63.6+	46.8+	46.8+	46.8+	39.6+	35.8+	32.3+	25.3+	22.7+
	1800	207+	191+	172+	150+	137+	120+	107+	95.2+	85.2+	77.3+	70.6+	64.0+
70	1500	180+	159+	143+	125+	114+	100+	89.6+	79.4+	71.0+	66.8+	61.0+	54.1+
	1200	144+	128+	115+	100+	91.6+	80.3+	71.7+	63.6+	56.9+	54.7+	48.9+	43.3+
	1000	120+	106+	95.8+	83.6+	76.4+	66.9+	59.8+	53.0+	47.5+	45.6+	40.8+	36.1+
	1800	238+	238+	217+	195+	176+	158+	147+	118+	107+	93.2+	82.2+	74.5+
80	1500	208+	203+	183+	166+	152+	132+	124+	102+	92.3+	77.8+	70.9+	64.2+
	1200	167+	167+	152+	135+	124+	106+	100+	85.0+	77.1+	62.3+	59.1+	53.6+
	1000	140+	140+	131+	113+	104+	89.2+	84.0+	73.4+	65.1+	51.9+	51.0+	45.3+
	1800	345	284+	255+	255+	244+	221+	196+	157+	144+	118+	119+	108+
90	1500	304+	238+	214+	214+	211+	185+	164+	136+	124+	102+	102+	92.8+
	1200	248+	191+	172+	172+	170+	150+	133+	113+	103+	84.5+	83.9+	74.3+
	1000	208+	160+	143+	143+	142+	126+	111+	97.7+	88.7+	70.5+	70.0+	62.0+

M5R..		**355**	**400**	**450**	**500**	**560**	**630**	**710**	**800**	**900**	**1000**	**1120**	**1250**	**1400**	**1600**	**1800**
	1800	27.5+	24.0+	21.7+	19.1+	17.3+	14.9+	13.5+	11.9+	10.7+	9.62+	8.44+	7.60+	6.79+	5.87+	4.95+
50	1500	22.9+	20.0+	18.1+	15.9+	14.5+	12.5+	11.3+	9.90+	8.92+	8.03+	7.04+	6.34+	5.67+	4.90+	4.13+
	1200	18.4+	16.0+	14.5+	12.8+	11.6+	9.98+	9.04+	7.93+	7.14+	6.43+	5.64+	5.07+	4.54+	3.96+	3.34+
	1000	15.3+	13.4+	12.1+	10.7+	9.65+	8.32+	7.54+	6.61+	5.96+	5.36+	4.70+	4.25+	3.85+	3.31+	2.78+
	1800	39.9+	36.2+	32.5+	29.2+	25.3+	22.8+	20.4+	18.5+	16.4+	14.4+	13.0+	11.6+	10.2+	9.16+	7.59+
60	1500	33.5+	30.2+	27.1+	24.4+	21.1+	19.0+	17.0+	15.4+	13.7+	12.0+	10.8+	9.68+	8.48+	7.64+	6.33+
	1200	26.8+	24.2+	21.7+	19.5+	16.9+	15.2+	13.7+	12.4+	11.0+	9.62+	8.66+	7.75+	6.80+	6.18+	5.19+
	1000	22.4+	20.2+	18.1+	16.3+	14.1+	12.7+	11.4+	10.3+	9.16+	8.02+	7.23+	6.48+	5.77+	5.26+	4.33+
	1800	55.0+	48.3+	43.5+	39.3+	35.0+	31.6+	28.1+	26.9+	23.5+	21.3+	18.5+	16.7+	14.9+	13.2+	10.2+
70	1500	45.9+	40.3+	36.3+	32.8+	29.2+	26.3+	23.4+	22.5+	19.6+	17.8+	15.5+	13.9+	12.5+	11.0+	8.46+
	1200	36.7+	32.3+	29.0+	26.3+	23.4+	21.1+	18.7+	18.0+	15.7+	14.2+	12.4+	11.1+	9.97+	8.93+	6.77+
	1000	30.6+	26.9+	24.2+	21.9+	19.5+	17.6+	15.6+	15.0+	13.1+	11.9+	10.3+	9.34+	8.47+	7.61+	5.64+
	1800	66.8+	66.8+	62.1+	56.2+	49.9+	43.3+	38.5+	33.4+	29.9+	27.3+	25.0+	21.3+	18.9+	15.4+	14.9+
80	1500	55.9+	55.9+	51.8+	46.9+	41.7+	36.1+	32.0+	27.8+	25.0+	22.7+	20.8+	17.7+	15.7+	12.9+	12.4+
	1200	44.8+	44.8+	41.5+	37.5+	33.4+	28.8+	25.6+	22.3+	20.0+	18.2+	16.7+	14.2+	12.6+	10.3+	9.94+
	1000	37.5+	37.5+	34.6+	31.3+	27.8+	24.0+	21.4+	18.6+	16.7+	15.2+	13.9+	11.9+	10.7+	8.59+	8.28+
	1800	98.2+	94.8+	66.8+	66.8+	66.8+	59.7+	52.1+	46.1+	41.5+	37.0+	32.8+	28.6+	25.4+	20.1+	18.0+
90	1500	82.1+	79.1+	55.9+	55.9+	55.7+	49.8+	43.5+	38.5+	34.6+	30.9+	27.3+	23.8+	21.2+	16.8+	15.0+
	1200	66.0+	63.3+	44.8+	44.8+	44.6+	39.9+	34.8+	30.8+	27.7+	24.7+	21.9+	19.1+	17.0+	13.6+	12.3+
	1000	55.1+	52.8+	37.5+	37.5+	37.2+	33.2+	29.0+	25.7+	23.1+	20.6+	18.3+	16.0+	14.4+	11.6+	10.5+

*) Pressure lubrication is required / Druckschmierung erforderlich

+) Bath lubrication is possible / Badschmierung möglich

13.0 kW=17.43hp

Power ratings: The ratings are nominal, service factor F_S = 1.0. Selection of gear unit: see page 1.11-.
Lubrication: Splash lubrication is used, unless otherwise indicated. Pressure lubrication is highly recommended when the mechanical power rating P_{K1} is higher than 500 kW.
Cooling: Additional cooling is required, when the mechanical power rating P_{K1} is higher than the thermal rating P_T.

Leistungen: Die Leistungswerte sind Nennleistungen. Bei Wahl des Zahnradgetriebes: siehe 1.11-.
Schmierung: Tauchschmierung standard, wenn nicht besonders gekennzeichnet. Druckschmierung wird bevorzugt, wenn die mechanische Leistung P_{K1} größer als 500 kW ist.
Kühlung: Zusatzkühlung wird benötigt, wenn die mechanische Leistung P_{K1} größer als die thermische Grenzleistung P_T ist.

Manufacturer reserves the right to alteration. *Recht auf Änderungen vorbehalten.*

Exact Ratios i_{ex} — Exakte Übersetzungen i_{ex}

Nominal Ratio i_N — Nennübersetzung i_N

Size / Größe	M3R.. 14	16	18	20	22.5	25	28	31.5	35.5	40	45	50	56	63	71	80
50	13,730	15,508	17,666	20,118	23,076	25,647	28,707	31,316	35,260	38,773	43,776	50,191	56,667	63,445	71,952	81,177
60	14,203	16,042	17,800	19,972	22,196	25,114	28,725	32,152	35,398	39,562	43,503	48,67	55,102	61,944	69,885	80,439
70	14,069	15,800	17,609	20,217	22,612	25,528	28,149	31,047	35,342	39,381	44,586	50,311	55,102	61,944	69,885	80,439
80	14,279	16,213	18,347	20,480	23,111	25,848	29,691	32,741	36,111	40,806	45,469	50,298	56,945	62,149	69,866	78,824
90	14,216	16,150	18,063	20,168	23,121	25,554	29,354	33,065	35,957	40,36	45,741	49,653	56,945	63,953	71,752	81,111

Size / Größe	M4R.. 90	100	112	125	140	160	180	200	225	250	280	315
50	88,583	97,191	109,38	124,60	137,98	153,33	174,70	194,13	217,29	247,44	280,37	313,82
60	91,441	101,44	108,69	122,76	135,92	153,52	170,61	190,96	219,58	244,02	280,87	320,55
70	87,909	99,254	110,31	126,65	138,49	158,31	177,20	200,07	223,83	252,58	282,59	319,05
80	89,899	102,08	114,26	128,30	143,60	159,71	179,50	202,57	228,70	258,44	279,26	315,56
90	89,457	99,981	110,6	123,06	137,63	153,68	173,98	199,45	223,14	250,61	283,01	318,79

Size / Größe	M5R.. 355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800
50	340,73	390,00	431,59	490,44	541,53	628,75	694,25	792,23	880,47	978,58	1116,7	1240,9	1388,9	1581,7	1793,7
60	352,66	391,26	436,87	485,53	560,89	623,37	696,04	768,54	866,45	988,78	1098,9	1230,0	1403,6	1559,8	1795,4
70	348,13	396,59	440,76	487,76	548,90	608,45	684,72	772,66	887,12	977,10	1125,1	1250,3	1398,8	1579,3	1817,8
80	357,23	406,96	452,29	500,52	563,26	633,95	713,42	805,07	898,69	1005,5	1122,4	1266,6	1430,0	1615,9	1763,6
90	351,07	390,18	440,83	492,22	554,93	621,14	694,70	775,68	862,02	979,14	1093,3	1253,3	1411,8	1585,6	1773,9

Nominal Output Torque M_{N2} in kNm *) — Nennmoment M_{N2} in kNm *)

Nominal Ratio i_N — Nennübersetzung i_N

Size / Größe	M3R.. 14	16	18	20	22.5	25	28	31.5	35.5	40	45	50	56	63	71	80
50	31,2	35,3	37,8	34	35,9	38,6	38,8	39	36,4	35,2	35,7	35,8	36,1	36,4	32,1	32,3
60	40,9	46,2	51,2	54,1	54,4	54,8	55,2	55,6	55,9	56,2	56,5	56,9	57,3	57	49,4	50,1
70	62,3	70	78	88,1	89,2	81	81,4	81,8	88	88,5	86,4	84,1	84,6	85,1	85,4	73,5
80	78,1	88,7	100	112	104	104	99,7	105	104	107	107	108	109	99,5	100	95,7
90	96,5	110	123	137	136	137	138	139	140	141	142	133	135	132	126	133

Size / Größe	M4R.. 90	100	112	125	140	160	180	200	225	250	280	315
50	43,8	43,7	44,7	45,9	46,4	44,9	46,5	46,5	44,5	46	46	46
60	65,5	64,4	64,6	70,1	57,2	64,6	71,7	67,8	70,6	70,7	63,8	65,4
70	94,7	94,9	94,9	95	95	95,1	95,2	95,2	95,3	103	103	104
80	113	128	135	130	134	128	135	133	134	120	128	128
90	167	143	142	158	175	173	173	175	178	159	178	177

Size / Größe	M5R.. 355	400	450	500	560	630	710	800	900	1000	1120	1250	1400	1600	1800
50	46,3	46,4	46,4	46,4	46,4	46,5	46,5	46,5	46,6	46,6	46,6	46,8	47,5	46,5	44,3
60	70,1	70,2	70,2	70,3	70,3	70,4	70,4	70,4	70,5	70,5	70,5	70,8	72	72,9	69
70	94,7	94,8	94,8	94,9	94,9	95	95,1	103	103	103	103	104	105	107	91,1
80	119	135	139	139	139	135	135	133	133	135	139	134	136	123	130
90	172	183	147	164	183	183	179	177	177	179	177	178	181	164	165

Maximum torque M_{K2max} is 2 x M_{N2} / Maximaldrehmoment M_{K2max} ist 2 x M_{N2}

*) Calculated with n_1=1000 1/min / Berechnet mit n_1=1000 1/min

70.5 kN*m=51988lbs*ft or 623977lbs*in

Thermal Ratings P_{TH} in kW *) — Wärmegrenzleistungen P_{TH} in kW *)

Nominal Ratio i_N / Ambient Air Temperature — Nennübersetzung i_N / Umgebungstemperatur

Size / Größe	Fan pcs / Lüfter St	M3R.. i_N = 14 ... 45				i_N = 50 ... 80				M4R.. i_N = 90 ... 315				M5R.. i_N = 355 ... 1800			
		20 C°	30 C°	40 C°	50 C°	20 C°	30 C°	40 C°	50 C°	20 C°	30 C°	40 C°	50 C°	20 C°	30 C°	40 C°	50 C°
50	-	131	100	69	38	147	116	85	54	91	70	49	28	65	48	31	14
	1	242	194	146	98	257	210	162	114	-	-	-	-	-	-	-	-
60	-	160	123	85	47	180	142	104	66	113	87	61	35	81	60	39	18
	1	296	237	179	120	316	257	198	139	-	-	-	-	-	-	-	-
70	-	194	148	102	56	218	172	126	80	149	115	80	46	106	78	51	23
	1	358	287	216	145	382	311	240	168	-	-	-	-	-	-	-	-
80	-	228	174	120	66	256	202	148	94	172	132	92	53	122	90	59	27
	1	421	337	254	170	449	365	281	198	-	-	-	-	-	-	-	-
90	-	270	206	142	79	303	239	175	111	208	160	112	64	148	109	71	33
	1	499	400	301	202	532	433	333	234	-	-	-	-	-	-	-	-

*) Calculated with n_1=1500 1/min / Berechnet mit n_1=1500 1/min

Dimensions / Abmessungen
M3R.. 3.7-
M4R.. 3.9-
M5R.. 3.11-

Manufacturer reserves the right to alteration. *Recht auf Änderungen vorbehalten.*

Size Größe	Allowed Rotational Speed $n1_{max}$ in r/min *) Zulässige Drehzahlen $n1_{max}$ in r/min *)															
	Nominal Ratio i_N Nennübersetzung i_N															
M3R..	**14**	**16**	**18**	**20**	**22.5**	**25**	**28**	**31.5**	**35.5**	**40**	**45**	**50**	**56**	**63**	**71**	**80**
50	2059	2059	2059	2059	2297	2297	2297	2297	2297	2474	2474	2474	2474	3000	3000	3000
60	1845	1845	1845	1845	1845	2010	2010	2010	2010	2010	2144	2419	2144	2680	2680	2680
70	1517	1517	1517	1517	1694	1787	1787	1787	1787	2010	2010	2010	2010	2474	2474	2474
80	1517	1517	1517	1517	1517	1694	1787	1787	1787	1787	2010	2010	2010	2010	2474	2474
90	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340	1462	1462	1462	2010	2010

M4R..	**90**	**100**	**112**	**125**	**140**	**160**	**180**	**200**	**225**	**250**	**280**	**315**
50	2924	2924	2924	2924	3000	3000	3000	3000	3000	3000	3000	3000
60	2924	2924	2924	2924	3000	3000	3000	3000	3000	3000	3000	3000
70	2297	2297	2297	2297	2474	2474	2474	2474	2474	2474	3000	3000
80	2297	2297	2297	2297	2297	2474	2474	2474	2474	2474	3000	3000
90	2010	2010	2144	2144	2144	2144	2144	2144	2144	2144	2680	2680

M5R..	**355**	**400**	**450**	**500**	**560**	**630**	**710**	**800**	**900**	**1000**	**1120**	**1250**	**1400**	**1600**	**1800**
50	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
60	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
70	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
80	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
90	2924	2924	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000

*) With splash lubrication / Mit Tauchschmierung

Dimensions / Abmessungen
M3R.. 3.7-
M4R.. 3.9-
M5R.. 3.11-

Continuous allowed External Loads F_R, F_A

Helical and Bevel Helical Gear Units, M.P.. 50-90 and M.R.. 50-90

Low speed shaft (LSS) end

1. Determining the allowed radial force F_R

$$F_R = \frac{F_{RN}}{F_S} \cdot K_Y$$

F_R = the allowed actual radial force.

F_{RN} = the allowed nominal radial force in the middle of the shaft end.

F_S = service factor (see Gear Unit selection, page 1.11)

K_Y = the effect of the radial force location.

2. Gear Units with Horizontal Solid LSS (Types: M.PS, M.RS)

2.1 Radial external forces

Zulässige kontinuierliche Außenlasten F_R, F_A

Stirnrad und Kegelstirnradgetriebe, M.P.. 50-90 und M.R.. 50-90

Abtriebswellenende (LSS)

1. Bestimmung der zulässigen Radialkraft F_R

F_R = zulässige tatsächliche Radialkraft

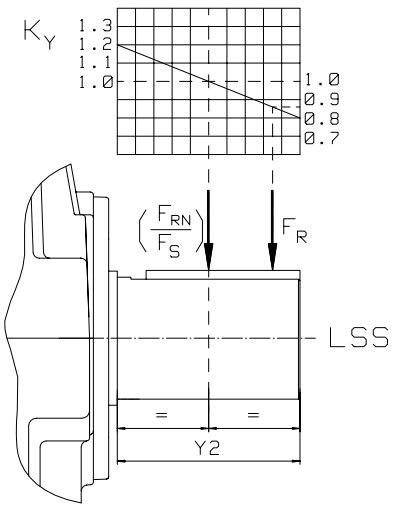
F_{RN} = zulässige nominelle Radialkraft in der Mitte des Wellenendes.

F_S = Anwendungsfaktor (siehe Auswahl des Getriebes, Seite 1.11)

K_Y = Einfluss der Lage der Radialkraft.

2. Getriebe mit horizontaler Vollwelle LSS (Typen: M.PS, M.RS)

2.1 Äussere Radialkraft



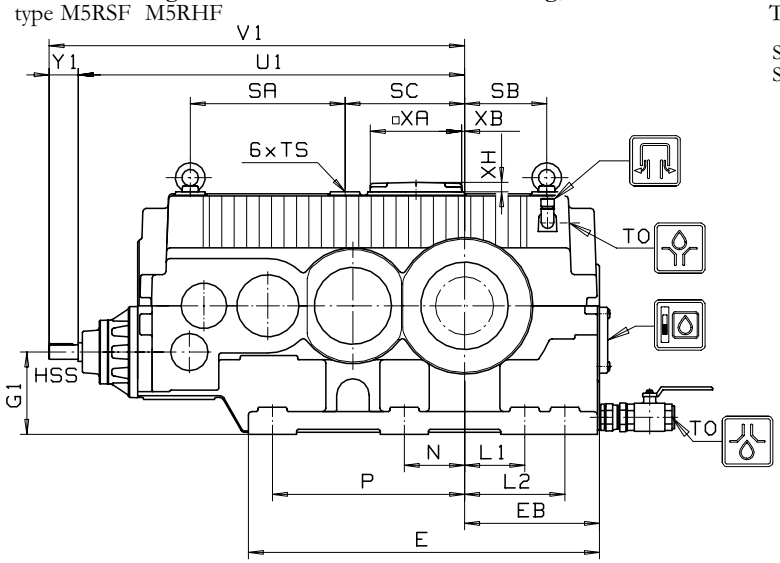
Picture 1: The effect of the radial force location.

Bild 1: Einfluss der Lage der Radialkraft.

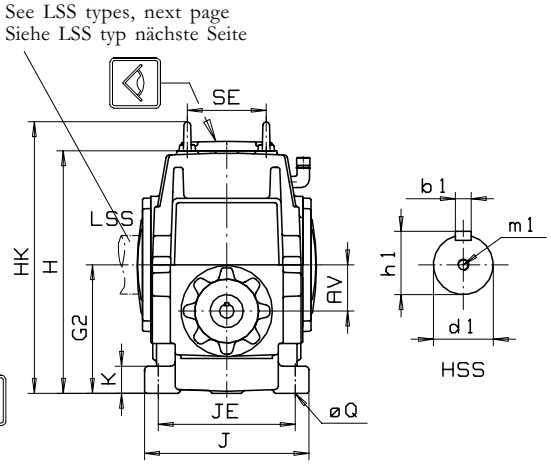
Gear Unit Dimensions, type M5RSF M5RHF M5RHT

Getriebeabmessungen, Typ M5RSF M5RHF M5RHT

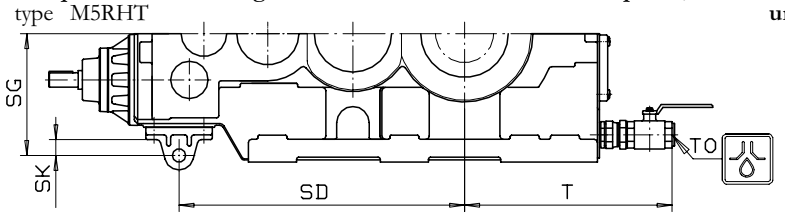
Foot Mounting Face machined for foot mounting, type M5RSF M5RHF



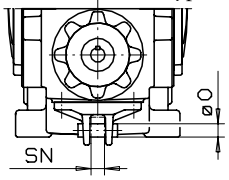
Bearbeitete Fußfläche für Fußausführung, Typ M5RSF M5RHF



Torque Arm Mounting Bracket with unmachined foot plane, type M5RHT



Befestigung für Drehmomentenstütze mit unbearbeiteter Fußfläche, Typ M5RHT



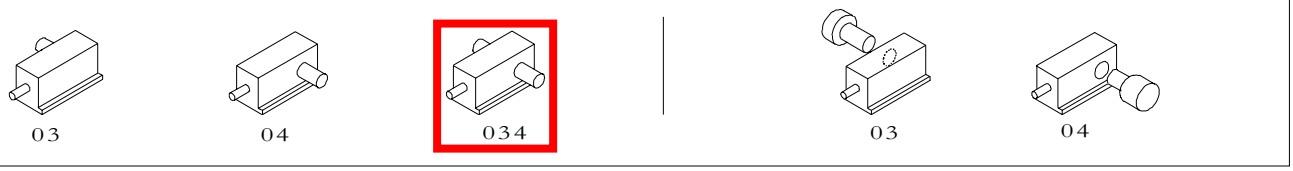
Technical Data page 2.5-
Technische Daten Seite 2.5-

Size Größe	Housing Dimensions in mm / Gehäuseabmessungen in mm																		Foot Mounting Fußausführung Type/Typ M5RSF M5RHF					
	AV	E	EB	G1	G2	H	HK	J	K	SA	SB	SC	SE	TS	TO	T	XA	XB	XH	JE	L1	L2	N	P	Q
50	111.6	846	325	198.4	310	585	656	396	65	373	198	288	188	M20x35	R1½	500	220	7	30	330	148	245	145	463	28
60	111.6	974	373	238.4	350	665	755	460	73	420	245	325	216	M24x42	R1½	548	220	40	30	378	170	300	168	533	35
70	148.7	1135	427	251.3	400	760	850	506	82	475	292	418	250	M24x42	R1½	602	260	92	30	416	194	322	190	633	35
80	148.7	1230	470	291.3	440	835	944	552	90	541	328	395	280	M30x53	R1½	645	260	62	30	454	209	369	209	666	42
90	151.4	1324	512	328.6	480	910	1019	584	97	531	361	525	305	M30x53	R1½	687	260	192	30	480	228	418	228	719	42

Size Größe	HSS Dimensions in mm / HSS Abmessungen in mm													Torque Arm Mounting Bracket Befestigung für Drehmomentenstütze Type/Typ M5RHT					Weight Gewicht	Oil Capacity/Ölmenge Splash lubrication Tauchschmierung	Pressure lubrication Druckschmierung
		i_N = 355 ... 900						i_N = 1000 ... 1800													
	U1	Y1	V1	d1	b1	h1	m1	Y1	V1	d1	b1	h1	m1	O	SD	SG	SK	SN	kg	l	l
50	931	70	1001	35k6	10h9	38	M12	70	1001	30k6	8h9	33	M10	32	693	294	38	32	900	57	57
60	1018	70	1088	35k6	10h9	38	M12	70	1088	30k6	8h9	33	M10	45	775	308	52	45	1295	83	83
70	1198	95	1293	45k6	14h9	48.5	M16	70	1268	35k6	10h9	38	M12	45	928	380	52	45	1820	125	125
80	1248	95	1343	45k6	14h9	48.5	M16	70	1318	35k6	10h9	38	M12	45	978	380	52	45	2270	160	160
90	1377	95	1472	45k6	14h9	48.5	M16	70	1447	35k6	10h9	38	M12	45	1107	389	52	45	2980	208	208

Shaft Positions

Wellenlagen

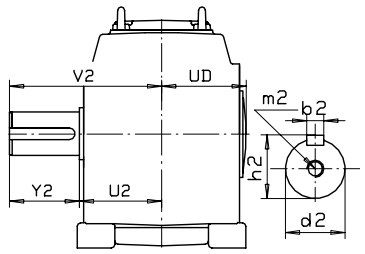


Manufacturer reserves the right to alteration.

Recht auf Änderungen vorbehalten.

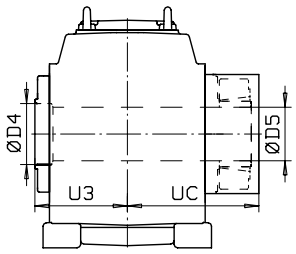
LSS types / LSS Typen

Type/Typ
M5RSF



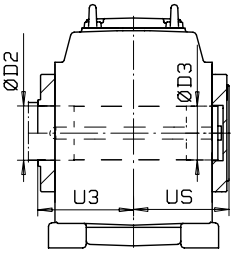
Solid Shaft
Vollwelle

Type/Typ
M5RHF, M5RHT



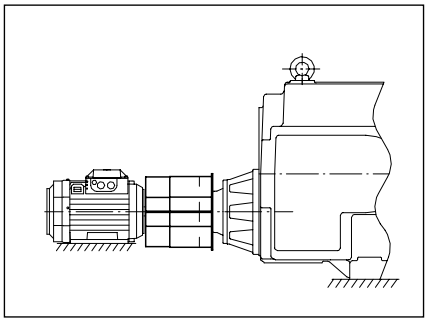
Hollow Shaft, Shrink Disk, page 4.3-
Hohlwelle, Schrumpfscheibe, Seite 4.3-

Type/Typ
M5RHF, M5RHT

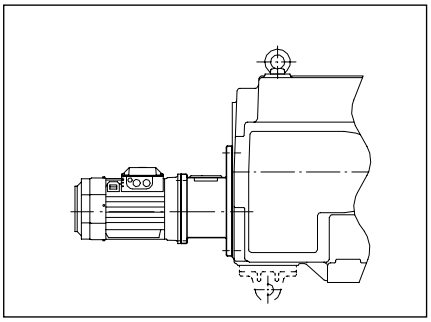


Hollow Shaft, Key Connection, page 4.7-
Hohlwelle, Paßfederverbindung, Seite 4.7-

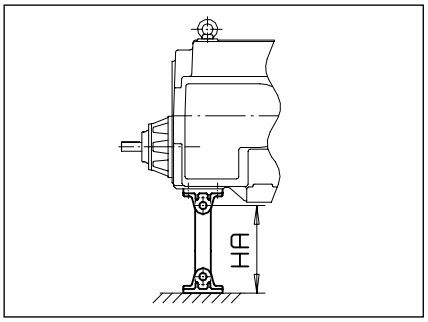
Common Accessories, see section 4 / Allgemeine Ausrüstungsoptionen, siehe Teil 4



Coupling Guard, page 4.23
Kupplungschutz, Seite 4.23



Motor Flange, page 4.24
Motorflansch, Seite 4.24



Torque Arm, page 4.23
Drehmomentenstange, Seite 4.23

Size / Größe	LSS Dimensions in mm / LSS Abmessungen in mm															Common Accessories / Allgemeine Ausrüstungsoptionen	
	Solid Shaft / Vollwelle								Hollow Shaft / Hohlwelle								
	d2	b2	h2	m2	Y2	U2	V2	UD	U3	UC	D4	D5	US	D2	D3	HAmin	HAmax
50	140m6	36h9	148	M30	200	232	432	216	228	336	155	154	232	150	149	125	950
60	160m6	40h9	169	M30	240	261	501	245	255	386	180	179	259	170	169	175	1070
70	180m6	45h9	190	M30	240	281	521	274	284	422	190	189	288	190	189	175	1070
80	200m6	45h9	210	+)	280	315	595	290	302	453	210	209	306	210	209	175	1070
90	220m6	50h9	231	+)	280	337	617	314	324	501	250	249	328	240	239	175	1070

In case of Through going LSS, same dimensions apply. +) M20,2x180° distance/Distanz 0.6xd2
Gleiche Abmessungen für Abtriebswelle beidseitig.

Other available Accessories, see section 4 / Weitere verfügbare Ausrüstungsoptionen, siehe Teil 4

Lubrication / Schmierung	Page / Seite
Lubrication Unit / Schmiereinheit	4.13
Shaft End Pump / Wellenendenpumpe	4.17
Central Lubrication System connections / Ausrüstung für Zentrales Schmiersystem	4.18
Oil Heating System / Ölheizung	4.19

Coupled Equipment / Anschlußelemente	Page / Seite
Couplings / Kupplungen	*)
Back Stop / Rücklaufsperre	4.25
Belt Drive / Keilriemenantrieb	4.24

See also modifications, page 4.27 ... 4.28
Siehe auch Modifikationen, Seite 4.27 ... 4.28

1) Standard Solution for this Gear Unit type
***)** Contact SEW-EURODRIVE

1) Standard in diesem Getriebetyp
***)** Sprechen Sie SEW-EURODRIVE an

Optional Seal Arrangements / Dichtungssysteme		
Lip Seal on HSS and LSS / Radialwellendichtring für HSS und LSS	1)	4.22

3.4 Mounting positions, shaft positions and directions of rotation

The shaft positions (0, 1, 2, 3, 4) and directions of rotation shown in the following figures apply to output shafts (LSS) of the types **solid shaft and hollow shaft**. For other shaft positions or gear units with backstop, contact SEW-EURODRIVE.

The following mounting positions (for a detailed overview, see → Sec. "Mounting Positions") and shaft positions (0, 1, 2, 3, 4) are possible:

Mounting position, shaft positions M.P..

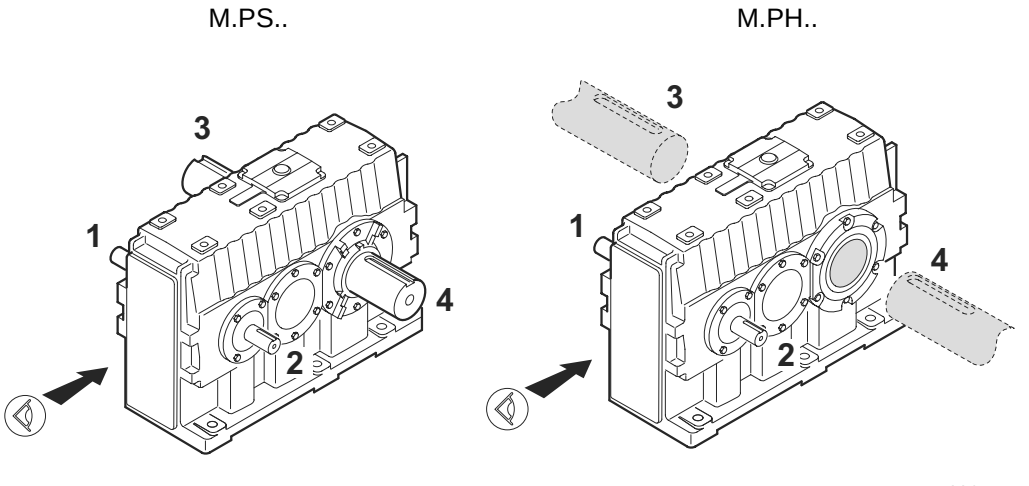


Figure 11: Mounting positions and shaft positions M.P..

Mounting position, shaft positions M.R..

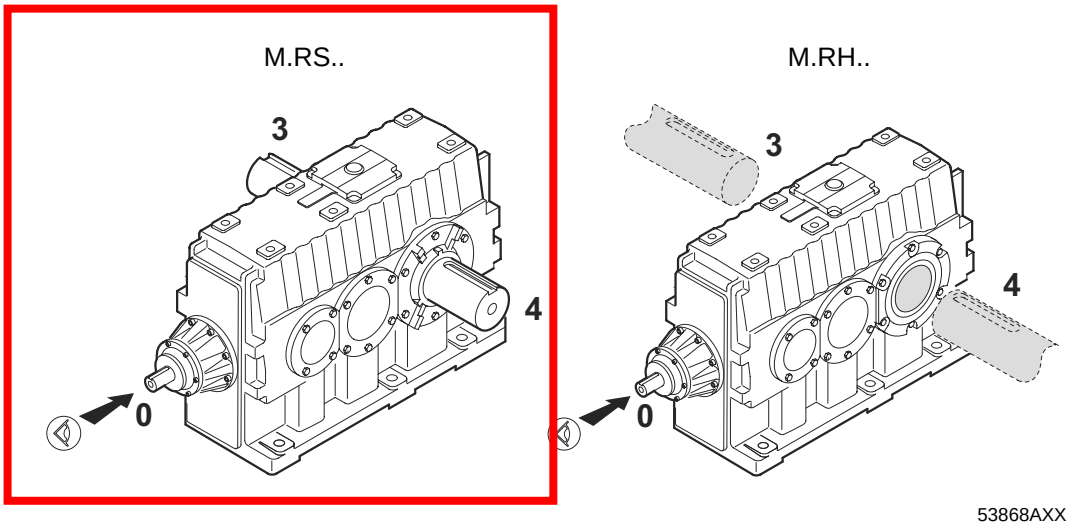


Figure 12: Mounting positions and shaft positions M.R..

3.2 Basic design of the M..R.. series

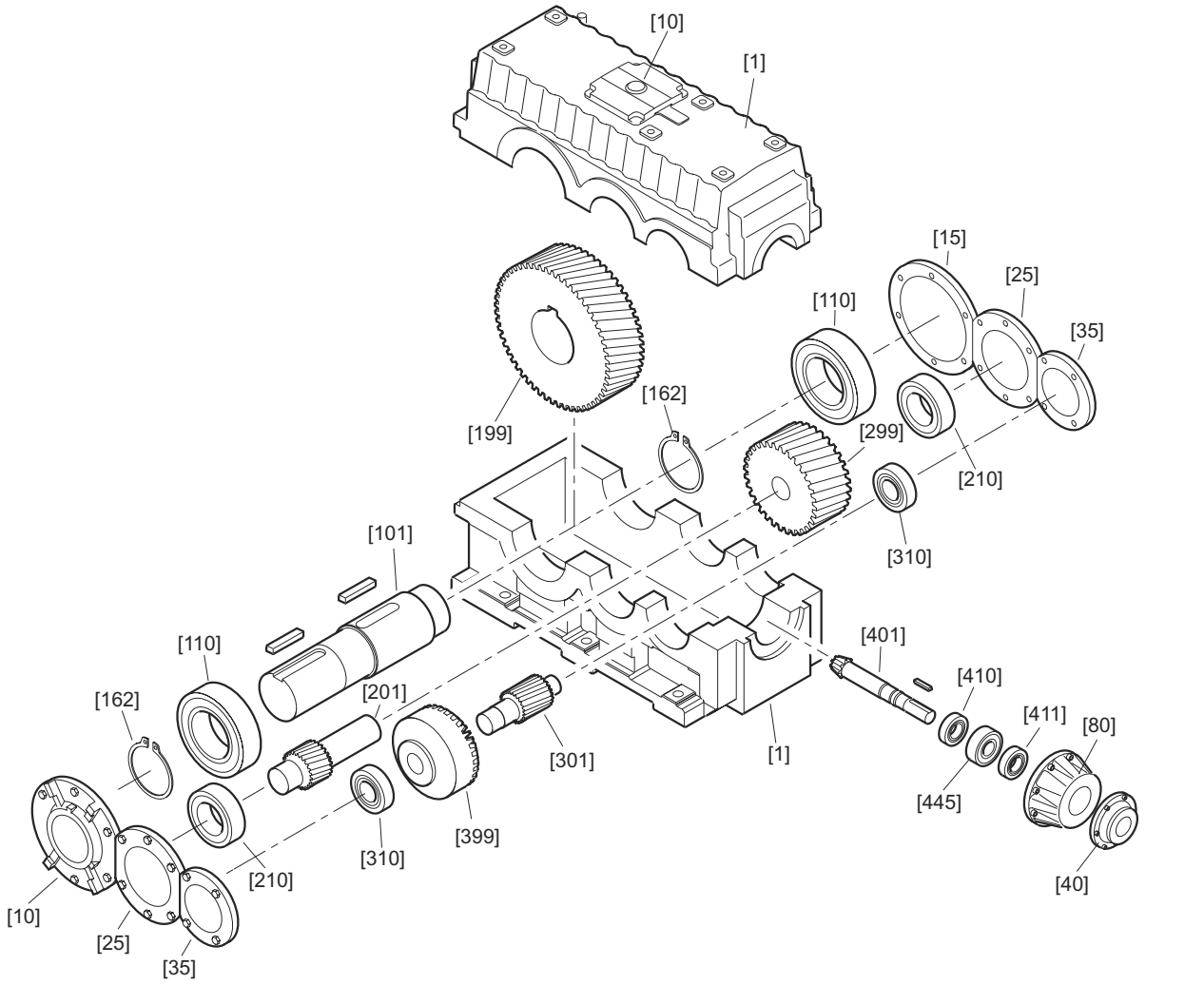


Figure 9: Basic design of the M..R.. series

[1]	Housing	[40]	Cover	[199]	Gear wheel	[399]	Bevel wheel
[10]	Cover	[70]	Inspection cover	[201]	Pinion	[401]	Bevel pinion
[15]	Cover	[100]	LSS shaft	[210]	Bearing	[410]	Bearing
[25]	Cover	[110]	Bearing	[299]	Gear wheel	[411]	Bearing
[35]	Cover	[162]	Retaining ring	[301]	Pinion	[449]	Bushing

8 Inspection and Maintenance

8.1 Inspection and maintenance intervals

Interval	What to do?
• Daily	• Check the housing temperature: – with mineral oil: max 90 °C – with synthetic oil: max. 100 °C • Check gear unit noise • Check the gear unit for signs of leakage
• After 500 - 800 hours of operation	• First oil change after initial startup
• After 500 hours of operation	• Check the oil level, refill oil (→ Sec. "Nameplate") if necessary
• Every 3000 hours of operation, at least every 6 months	• Check the oil: If the gear unit is operated outdoors or in humid conditions, check the water content of the oil. The water content must not exceed 0.03 % (300 ppm). • Regrease labyrinth seals. Option for gear unit. Standard gear unit supplied without grease nipple. Use about 30 g grease per grease nipple. • Clean the breather plug
• Depending on the operating conditions, at the latest every 12 months	• Change the mineral oil (→ Sec. "Inspection and maintenance of the gear unit") • Check whether retaining screws are tightly secured • Check contamination and condition of the oil/air cooling system • Check the condition of the oil/water cooling system • Clean oil filter, replace filter element if necessary
• Depending on the operating conditions, at the latest every 3 years	• Change synthetic oil (→ Sec. "Inspection and maintenance of the gear unit")

• Varying (depending on external factors)	• Repair or renew the surface/anticorrosion coating
	• Clean the gearcase surface and fan
	• Check the oil heater:
	  • Are all connection cables and terminals tightened securely and free from corrosion?
	  • Clean incrusted elements (such as the heating element) and replace, if required (→ Sec. "Inspection and maintenance of the gear unit")

8.3 Inspection and maintenance of the gear unit



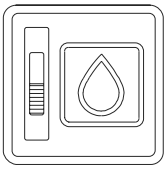
- **Do not mix different synthetic lubricants and do not mix synthetic with mineral lubricants!**
- **For positions of the oil level plug, the drain plug, the breather plug and the oil sight glass, refer to Sec. "Mounting Positions."**

Checking the oil level

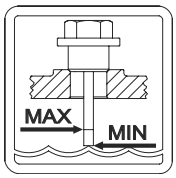


1. **Disconnect the motor from voltage supply and secure it to prevent unintentional restart!**

   Wait until the gear unit has cooled off – Danger of burns!



2. For gear units with oil level glass: Visually check correct oil level (= middle of oil sight glass)



3. For gear units with oil dipstick (option):
   - Unscrew the oil dipstick and remove it. Clean the dipstick and re-insert it into the gear unit (do **not** screw in tightly!).
   - Remove dipstick again and check oil level. Correct if necessary: the oil level is correct when it is between the oil level mark (= maximum oil level) and the end of the dipstick (= minimum oil level)

Checking the oil



1. **Disconnect the motor from voltage supply and secure it to prevent unintentional restart!**

   Wait until the gear unit has cooled off – Danger of burns!
2. Remove some oil from the oil drain plug
3. Check the oil consistency
   - Viscosity
   - If you can see that the oil is heavily contaminated, we recommend to change the oil disregarding the service intervals specified in Sec. "Service and maintenance intervals."

Changing the oil

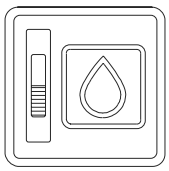
When changing the oil, clean the gearcase thoroughly to remove oil residues and abrasion. Use the same oil grade as for the operation of the gear unit.



1. **Disconnect the motor from voltage supply and secure it to prevent unintentional restart!**

   Wait until the gear unit has cooled off – Danger of burns! If your gear unit is equipped with an oil expansion tank, let the gear unit cool off until it reaches ambient temperature. The reason is that there might still be oil in the oil expansion tank which might leak through the oil filling hole!

   Note: The gear unit must still be warm because the high viscosity of cold oil will make it more difficult to drain the oil correctly.
2. Place a container under the oil drain plug.
3. Remove oil filling plug, breather plug and oil drain plugs. When using a steel oil expansion tank, also remove the air outlet screw on the air expansion tank. To drain the oil completely, blow air through the breather into the oil expansion tank. As a result, the rubber membrane lowers and forces the remaining oil out. The lowering membrane compensates the pressure, which facilitates filling the new oil.
4. Drain the oil completely.
5. Reinstall the oil drain plugs.



6. Use a funnel to fill the oil (filter mesh max. 25 µm). Fill new oil of the same type as the old oil via the oil filling plug (if you want to change the oil type, contact our customer service first).
   - Fill the oil according to the volume specified on the nameplate (→ Sec. "Nameplate"). The oil volume specified on the nameplate is an approximate value. **The marks on the oil level glass (option: oil dipstick) are decisive for the oil level.**
   - Check whether the oil level is correct using the oil dipstick.
7. Reinstall the oil filling plug. If your gear unit is equipped with a steel oil expansion tank, also screw in the air outlet screw.
8. Mount the breather plug.
9. Clean the oil filter, replace the filter element if necessary (when using an external oil/air or oil/water cooling system).



If you remove the housing cover, you must apply new sealing compound to the sealing surface. Else, the tightness of the gear unit is not guaranteed! Contact SEW-EURODRIVE in this case!

Cleaning the oil heater

Incrustation on the oil heater caused by oil must be removed. Remove the oil heater for this purpose.



The oil heater must be deactivated before draining the oil. The reason is that the hot oil heater might ignite the evaporating oil.

8.3 Inspection and maintenance of the gear unit



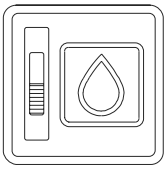
- **Do not mix different synthetic lubricants and do not mix synthetic with mineral lubricants!**
- **For positions of the oil level plug, the drain plug, the breather plug and the oil sight glass, refer to Sec. "Mounting Positions."**

Checking the oil level

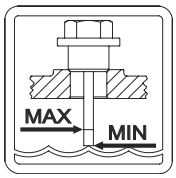


1. **Disconnect the motor from voltage supply and secure it to prevent unintentional restart!**

   Wait until the gear unit has cooled off – Danger of burns!



2. For gear units with oil level glass: Visually check correct oil level (= middle of oil sight glass)



3. For gear units with oil dipstick (option):
   - Unscrew the oil dipstick and remove it. Clean the dipstick and re-insert it into the gear unit (do **not** screw in tightly!).
   - Remove dipstick again and check oil level. Correct if necessary: the oil level is correct when it is between the oil level mark (= maximum oil level) and the end of the dipstick (= minimum oil level)

Checking the oil



1. **Disconnect the motor from voltage supply and secure it to prevent unintentional restart!**

   Wait until the gear unit has cooled off – Danger of burns!
2. Remove some oil from the oil drain plug
3. Check the oil consistency
   - Viscosity
   - If you can see that the oil is heavily contaminated, we recommend to change the oil disregarding the service intervals specified in Sec. "Service and maintenance intervals."

Changing the oil

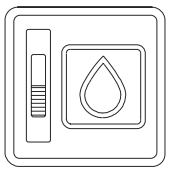
When changing the oil, clean the gearcase thoroughly to remove oil residues and abrasion. Use the same oil grade as for the operation of the gear unit.



1. **Disconnect the motor from voltage supply and secure it to prevent unintentional restart!**

   Wait until the gear unit has cooled off – Danger of burns! If your gear unit is equipped with an oil expansion tank, let the gear unit cool off until it reaches ambient temperature. The reason is that there might still be oil in the oil expansion tank which might leak through the oil filling hole!

   Note: The gear unit must still be warm because the high viscosity of cold oil will make it more difficult to drain the oil correctly.
2. Place a container under the oil drain plug.
3. Remove oil filling plug, breather plug and oil drain plugs. When using a steel oil expansion tank, also remove the air outlet screw on the air expansion tank. To drain the oil completely, blow air through the breather into the oil expansion tank. As a result, the rubber membrane lowers and forces the remaining oil out. The lowering membrane compensates the pressure, which facilitates filling the new oil.
4. Drain the oil completely.
5. Reinstall the oil drain plugs.



6. Use a funnel to fill the oil (filter mesh max. 25 µm). Fill new oil of the same type as the old oil via the oil filling plug (if you want to change the oil type, contact our customer service first).
   - Fill the oil according to the volume specified on the nameplate (→ Sec. "Nameplate"). The oil volume specified on the nameplate is an approximate value. **The marks on the oil level glass (option: oil dipstick) are decisive for the oil level.**
   - Check whether the oil level is correct using the oil dipstick.
7. Reinstall the oil filling plug. If your gear unit is equipped with a steel oil expansion tank, also screw in the air outlet screw.
8. Mount the breather plug.
9. Clean the oil filter, replace the filter element if necessary (when using an external oil/air or oil/water cooling system).



If you remove the housing cover, you must apply new sealing compound to the sealing surface. Else, the tightness of the gear unit is not guaranteed! Contact SEW-EURODRIVE in this case!

Cleaning the oil heater

Incrustation on the oil heater caused by oil must be removed. Remove the oil heater for this purpose.



The oil heater must be deactivated before draining the oil. The reason is that the hot oil heater might ignite the evaporating oil.

10 Symbols and Mounting Positions

10.1 Symbols used

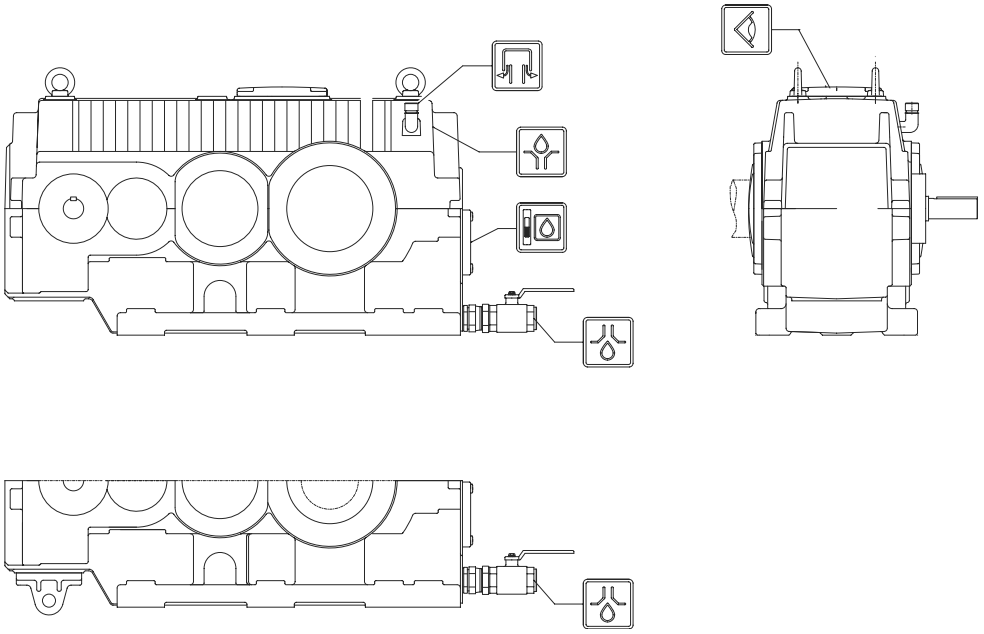
The following table shows which symbols are used in the subsequent figures and what they mean.

Symbol	Meaning
	Breather plug
	Inspection opening
	Oil filling plug
	Oil drain plug/oil drain valve
	Oil level glass

The positions of the elements are exemplary and cover most of the cases. For exact positions, please refer to the corresponding dimension drawing.

10.2 Symbols and Mounting Positions of M.P.. gear units

Mounting position M.P..

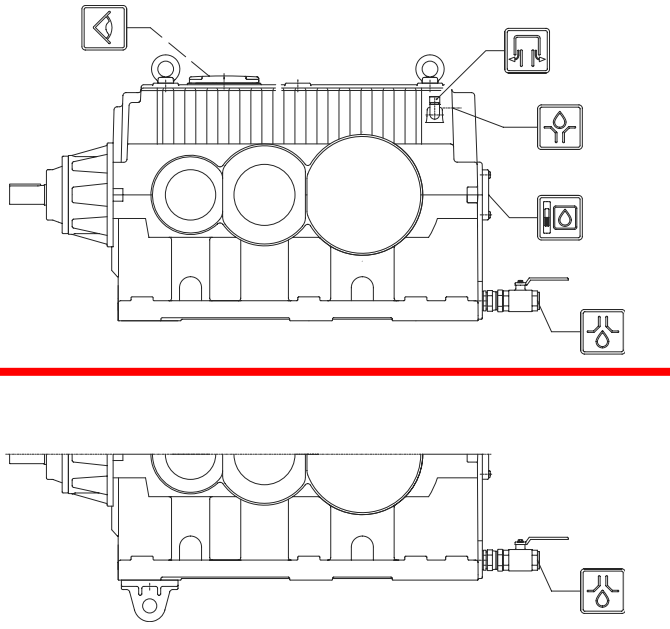


53520AXX

Figure 74: Mounting positions of M.P.. gear units

10.3 Symbols and mounting positions of M.R.. gear units

Mounting position M.R..



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Figure 75: Mounting positions of M.R.. gear units

11 Lubricants

11.1 Guideline for oil and grease selection

Lubricating oils

This instruction applies to the following conditions:

- Ambient temperature in the range of -30 °C…+40 °C
- Actual max. pitch line velocity less than 35 m/s
- All lubricating methods with oil: splash, bath and pressure lubrication

In addition to the required viscosity class ISO VG, the oil must contain anti-wear, anti-rust, anti-oxidant and antifoam additives. The FZG stage should be at least 12 according to DIN 51354.

The oil must also contain EP additivies. If synthetic oils are selected due to operating temperatures or oil change intervals, SEW-EURODRIVE recommends polyalfaolefin based (PAO) oil.

Mineral oils

Lubricating oil standards

Lubricating oils are grouped in ISO VG viscosity classes according to standards ISO 3448 and DIN 51519.

ISO VG class	ISO 6743-6 designation	DIN 51517-3 designation	AGMA 9005-D94 designation
150	ISO-L-CKC 150	DIN 51517 CLP 150	AGMA 4 EP
220	ISO-L-CKC 220	DIN 51517 CLP 220	AGMA 5 EP
320	ISO-L-CKC 320	DIN 51517 CLP 320	AGMA 6 EP
460	ISO-L-CKC 460	DIN 51517 CLP 460	AGMA 7 EP
680	ISO-L-CKC 680	DIN 51517 CLP 680	AGMA 8 EP

Containing EP additives

Selection of viscosity class ISO VG (40 °C)

The maximum operating temperature of mineral oil is 80 °C. Table 1 indicates the required ISO VG class of the oil and the max. lubricating temperature T_L of the oil.

Selection of the lubricating oil

Mineral oil (→ Tabel in sec. "Overview of lubricants for M.. industrial gear units/Mineral lubricants")

When the gear unit is located outdoors, use an oil heater in the following cases:

- With splash or bath lubrication when the starting temperature is less than the pour point of the oil
- With pressure lubrication when the starting oil viscosity is greater than 2000 cSt.

Slow speed gear units

When the pitch line velocity of the slowest stage is under 1 m/s (n_2 < 15 1/min), the gear unit operates in boundary lubrication area.

It is recommended to use:

- mineral oils with EP- and anti-wear additives
- running viscosity should be ≥ 100 cSt
- the cleanliness of the oil and the oil sump must be ensured.

Oil selection, ISO VG (40 °C) class

Number of stages in the gear unit	Splash or bath lubrication[1] ISO VG (40 °C)/T_L	Pres. lubrication NO ext. cooler[1] ISO VG (40 °C)/T_L	Pres. lubrication ext. cooler, spray dose, splash or bath lubrication[2] ISO VG (40 °C)/T_L	Pres. lubrication ext. cooler, oil led to gearmeshes and bearings[3] ISO VG (40 °C)/T_L	Note
2	320/90	320/90	220/70	220/60	Synthetic oil
2	320/80	320/80	220/70	220/60	Mineral oil
3	460/80	460/80	320/70	320/60	Mineral oil Synthetic oil
4	460/70	460/70	460/70	320/60	ONLY mineral oil
5	460/70	460/70	460/70	320/60	ONLY mineral oil

1 The oil temperature T_L is measured from the oil surface)

2 The oil temperature going into the gear unit is different that lubricates the gearmeshes and bearings. NO direct piping to the gearmeshes and bearings is made. The oil temperature when going into the gear unit is set in the range of 45 °C …55 °C

3 The oil is led directly to the gearmeshes and bearings via direct piping. The oil temperature when going into the gear unit is set in the range of 45 °C … 55 °C

T_L = Max. lubricating temperature of the oil which lubricates the gearmeshes and bearings (Celcius)

ISO VG class	AGMA number	Company	Oil	Viscosity cSt / 40 °C	Pour point °C
320	6EP	Aral	Degol BG320	320	–18
		BP	Energol GR-XP320	305	–24
		Castrol	Alpha SP320	320	–21
		Castrol	Alphamax 320	320	–18
		Chevron	Industrial Oil EP320	320	–9
		Dea	Falcon CLP320	320	–18
		Esso	Spartan EP320	332	–27
		Exxon	Spartan EP320	332	–27
		Fuchs	Renolin CLP320 Plus	323	–21
		Gulf	Gulf EP Lubricant HD320	300	–12
		Klüber	Klüberoil GEM 1-320	320	–15
		Kuwait	Q8 Goya 320	320	–18
		Mobil	Mobilgear 632	304	–18
		Mobil	Mobilgear XMP 320	320	–18
		Molub-Alloy	MA-90 / 320	320	–15
		Neste	Vaihteisto 320 EP	305	–24
		Nynäs	Nynäs GL 320	320	–12
		Optimol	Optigear BM320	338	–15
		Petro Canada	Ultima EP320	320	–21
		Shell	Omala Oil F320	320	–18
		Texaco	Meropa 320	304	–18
		Total	Carter EP320	320	–12
		Tribol	Tribol 1100 / 320	317	–23
460	7EP	Aral	Degol BG460	460	–18
		BP	Energol GR-XP460	450	–15
		Castrol	Alpha SP460	460	–6
		Castrol	Alphamax 460	460	–15
		Chevron	Industrial Oil EP460	460	–15
		Dea	Falcon CLP460	460	–15
		Esso	Spartan EP460	459	–18
		Exxon	Spartan EP460	459	–18
		Fuchs	Renolin CLP460 Plus	458	–12
		Gulf	Gulf EP Lubricant HD460	480	–15
		Klüber	Klüberoil GEM 1-460	480	–15
		Kuwait	Q8 Goya 460	460	–15
		Mobil	Mobilgear 634	437	–6
		Mobil	Mobilgear XMP 460	460	–12
		Molub-Alloy	MA-140 / 460	460	–15
		Neste	Vaihteisto 460 EP	450	–15
		Optimol	Optigear BM460	490	–12
		Petro Canada	Ultima EP460	452	–15
		Shell	Omala Oil F460	460	–15
		Texaco	Meropa 460	437	–15
		Total	Carter EP460	460	–12
		Tribol	Tribol 1100 / 460	464	–21

11.4 Lubricant fill quantities

The specified fill quantities are guide values. The precise values vary depending on the gear ratio.

M.P..

Gear unit size M.P..	Lubrication type	Oil volume [l]		
		Two stages M2P..	Three stages M3P..	Four stages M4P..
50	Splash Pressure	44 38	57 32	57 57
60	Splash Pressure	48 41	83 50	83 83
70	Splash Pressure	74 64	125 73	125 125
80	Splash Pressure	89 79	160 97	160 160
90	Splash Pressure	118 105	208 123	208 208

M.R..

Gear unit size M.R..	Lubrication type	Oil volume [l]		
		Three stages M3R..	Four stages M4R..	Five stages M5R..
50	Splash Pressure	62 38	58 36	57 35
60	Splash Pressure	92 41	85 38	83 37
70	Splash Pressure	144 64	128 57	125 56
80	Splash Pressure	185 79	164 70	160 68
90	Splash Pressure	227 105	213 99	208 96



When using pressure lubrication, it is essential to observe the specifications on the nameplate and in the order-specific documentation!

Description :
ELECTRICAL MOTOR 15 HP, 575 V, 254TC, 1800 RPM
C-FLANGE, INVERTER DUTY 10:1
CLASS1, DIVISION 2, PREMIUM EFFICIENCY

Trade Name :
Teco Westinghouse

Model no :
PDH01545C (15HP, 575V, 1800 RPM)

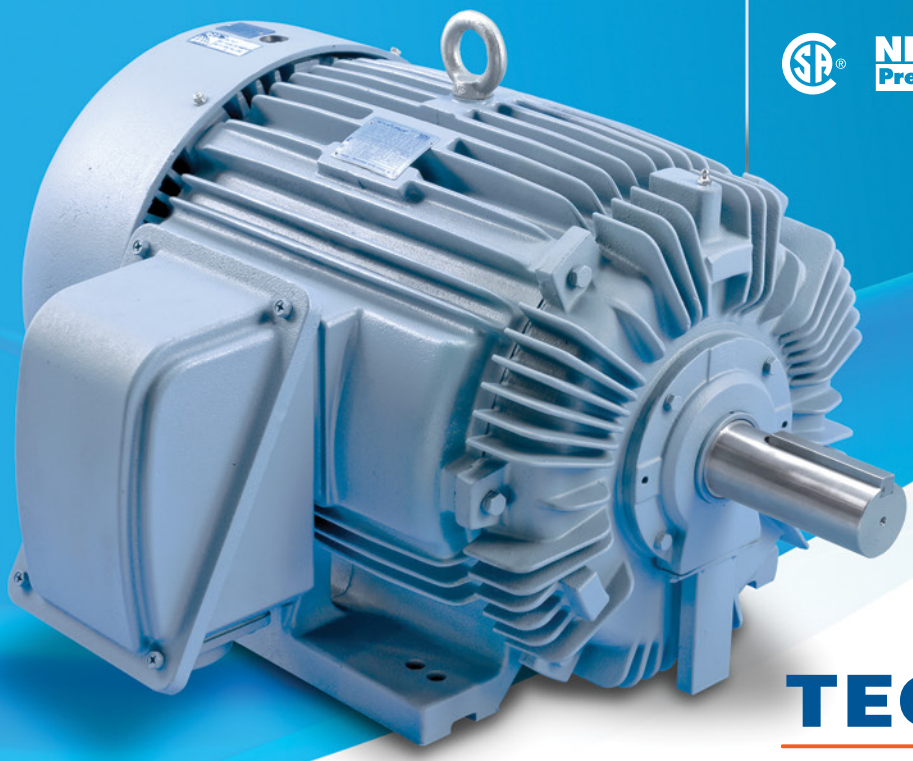
MOTOR PRODUCTS



OPTIM® TEFC

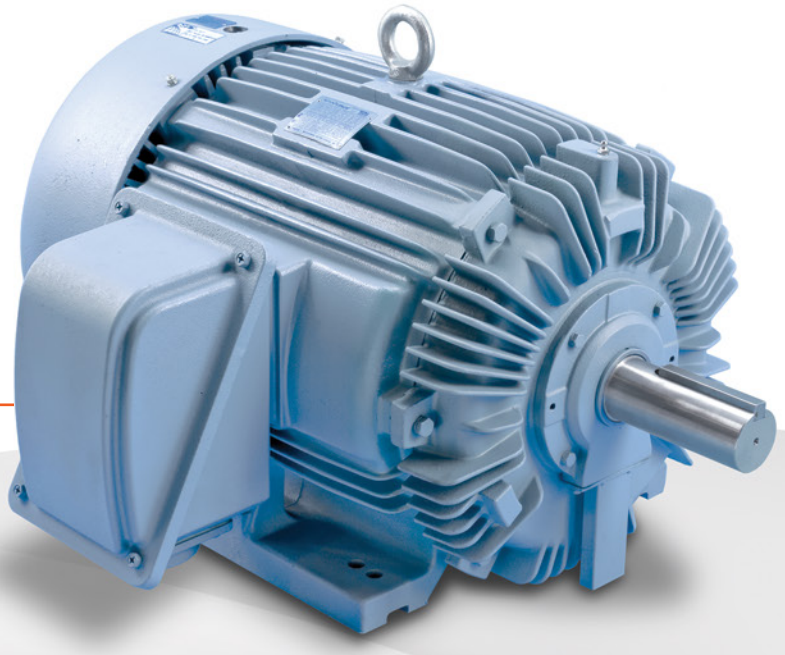
PREMIUM EFFICIENCY
TEFC SEVERE DUTY

NEMA Premium



TECO Westinghouse
MOTORS (CANADA) INC.

OPTIM® TEFC



PREMIUM EFFICIENCY
TEFC SEVERE DUTY

The OPTIM® TEFC is a state-of-the-art machine designed to meet the diverse requirements of the modern industrial world. Backed by a three-year warranty, this unit offers premium efficiency ratings that deliver significant life-cycle savings.

Couple your OPTIM® TEFC with our TECO VFD's for energy savings & speed control. TECO-Westinghouse offers a variety of industrial and commercial drive solutions.

PRODUCT FEATURES

- Available from 1-800HP; 2, 4, 6 & 8 Pole
- Totally Enclosed Fan Cooled IP54 Design, IP55 for 5000 Frames and Larger
- NEMA Premium Efficiency
- AC, Three Phase, 60 Hz, 230/460V (Usable on 208V); 460V or 575V. 50 Hz and Other Voltages Under 600V Are Available Upon Request
- Cast-Iron Frame and End Brackets
- Cast-Iron Conduit Box up to 449T Frames; Fabricated Steel Conduit Box 5000 Frames and Larger, Gasketed, F1 Mounting
- Shielded Bearings Frames 140T-280T and Open Bearings with Regreaseable Provisions Frames 280TS, 320T and Larger
- Polyrex EM Grease in All Regreaseable Bearings, Multemp SRL Grease in Sealed Bearings
- Winding RTD's, Space Heaters and Provisions for Bearing RTD's Standard 5000 Frames and Larger
- Dual Drilled Feet for Longer Frames (i.e. 145T also Drilled for 143T) 449T and Below
- -40°C to 40°C Ambient
- CSA Certified for Class I, Division 2, Groups B, C & D (Class I, Zone 2, Groups IIB+H2, IIB and IIA)
- CSA Certified Class II, Division 2 (Class II, Zone 22) available for 440 Frames and larger upon request
- *HPE™ High Pulse Endurance Spike Resistant Wire
- *Meets NEMA MG1 Part 31.4.4.2
- *Speed Ranges up to 10:1 CT, and 20:1 VT. Refer to data sheet for rating specific turn down ratios
- Modifications Available Through Our Kwikmod Program (Contact Your Nearest TWMI Representative for Pricing and Delivery)

* Precautions should be taken to eliminate or reduce voltage spikes and shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG1, Part 31.4.4.

WEST
1-800-661-4023

TECO Westinghouse
MOTORS (CANADA) INC.

EAST
1-800-268-4770

tecowestinghouse.ca

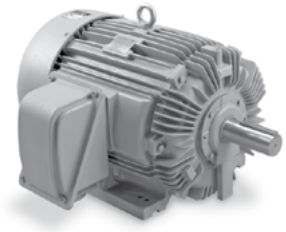
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OPTIM® TEFC

FEATURES

MODEL: *OPTIM® TEFC*
TYPE: *AEHH8N, AEHE*

Effective 09-22-14
Supercedes All Previous



APPLICATIONS

- Fans & Blowers
- Crushers
- Mixers
- Pumps
- Compressor
- Conveyors

PRODUCT OVERVIEW

- 1-800HP
- Totally Enclosed Fan Cooled IP54 Design, IP55 for 5000 Frames and Larger
- 60Hz, 230/460V (Usable on 208V), 460V or 575V
- Horizontal F1 Mount
- 3600, 1800, 1200 & 900 RPM
- *NEMA Premium Efficiency

DESIGN FEATURES

- 1.15 S.F. Sine Wave Power; 1.0 S.F. VFD Power
- Class F Insulation
- Class B Temperature Rise
- Max Elevation 3300ft
- Continuous Duty
- NEMA Design B or C
- 40˚C Ambient

MECHANICAL FEATURES

- Oversized, Double Shielded Vacuum Degassed Ball Bearings Frames 140T-280T and Open Bearings with Regreaseable Provisions Frames 280TS, 320T and Larger
- Polyrex EM Grease in all Regreaseable Bearings, Multemp SRL Grease in Sealed Bearings
- Dynamically Balanced Die-Cast Aluminum Rotor up to 449T Frames; Copper/Copper Alloy 5000 and Larger
- Cast-Iron Frame and End Brackets
- Cast-Iron Conduit Box up to 449T Frames; Fabricated Steel Conduit Box 5000 Frames and Larger, Gasketed, F1 Mounting
- Non-Sparking Plastic Fan up to 449T 4,6 & 8 Pole Motors; Bronze Fan 440TS 2 Pole Motors; Aluminum Fan 5000 Frames and Larger
- Number of Leads 230/460V: 9 Leads 1-5HP; 12 Leads 7.5-125HP; 6 Leads 150 and Above
- Number of Leads 575V: 3 Leads up to 449T; 6 Leads 5000 Frames and Larger
- Solderless Lug Terminals on All Leads
- Grounding Terminal Inside Main Terminal Box, Additional Grounding Terminal on Frame for 5000 Frames and Larger
- Interchangeable F1 and F2 mounting up to 449T
- Dual Drilled Feet for Longer Frames (i.e. 145T also Drilled for 143T) 449T and Below
- Paint System: Phenolic Rust Proof Base with Lacquer Top Coat
- Stainless Steel Nameplate
- Insulated NDE Bearing Standard for 600HP and larger 2 Pole motors
- Rubber Flinger on DE up to 280T; Steel Flinger on Both Ends 280TS and Larger
- **HPE™ High Pulse Endurance Spike Resistant Wire
- 2 Dips Phenolic Alkyd Resin Varnish 140T-440T, 2 Dips Epoxy Resin 5000 Frames and Larger; Spray Enamel Top Coat on all Frames
- Bi-Directional Rotation Except 3600RPM Motors 5000 Frames and Larger Which are CW From NDE
- Winding RTD's, Space Heaters and Provisions for Bearing RTD's Standard 5000 Frames and Larger

OTHER FEATURES

- *CSA Certified for Class I, Division II, Groups B, C and D and Class I, Zone 2, Groups IIB+H2, IIB and IIA
- **Inverter Duty Speed Range 10:1 CT and 20:1 VT up to 300HP; 3:1 CT and 20:1 VT 301-500HP
- **Meets NEMA MG1 Part 31.4.4.2
- ABS Type Certified (5000 Frames and Larger)

* Applies to 1-500HP Only
** Precautions should be taken to eliminate or reduce voltage spikes and shaft currents that may be imposed on the motor by the VFD as stated per NEMA MG1, Part 31.4.4.

TECO Westinghouse MOTORS (CANADA) INC.	
	Date: September 14, 2018

Technical Documentation

PDH0154C

Optim TEFC | AEHH8N

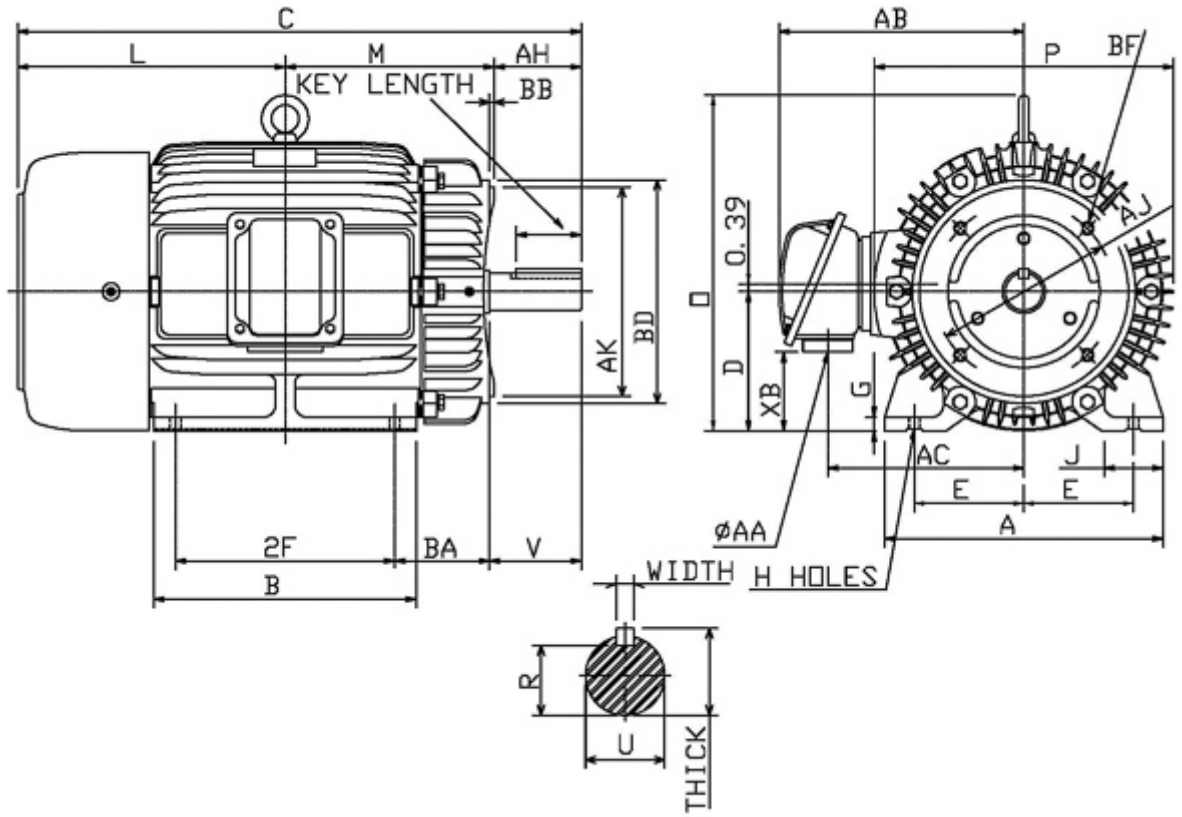
Date: September 14, 2018

TECO Westinghouse
MOTORS (CANADA) INC.

Date: January 17, 2019

Dimensional Drawing

Catalogue	Model	HP	Pole	kW	Rating	Voltage	Hz	RPM
PDH01545C	AEHH8N	15	4	11	Continuous	575 V	60	1800



Frame Size	Mounting					A	B	C	CD	D
	E	2F	2F2	H	BA					
254TC	5	8.25		0.53	4.25	11.8	9.85	23.7		6.25

G	J	K	L	M	O	P	T	Key			Keyseat
								Width	Thick	Length	R
0.65	1.95		11.33	8.06	12.83	13.15	1.97	0.375	0.375	2.91	1.416

Terminal Housing				Aux Box		C/D Flange					
AA	AB	AC	XB	AE	AX	BB	AH	AK	BD	AJ	BF
1.25 NPT	11.3	8.86	3.22			0.25	3.75	8.5	9.92	7.25	1/2-13UNC

Shaft Extension			Bearings		Approx. Weight Lbs	SPL dBA/3ft	Ins. Class	S.F.	Drive Method	Dimensions
N-W	U	V	DE	NDE						
4	1.625	3.9	6309ZZ	6307ZZ	312	64	F	1.15	Direct Coupling / Belt Drive	Inches

TECO Westinghouse MOTORS (CANADA) INC.	
	Date: January 17, 2019

Technical Data Sheet

Motor Type: AEHH8N	Catalogue No: PDH01545C

Nameplate Information

HP	Pole	RPM	Frame	Voltage	Hz	Phase
15	4	1765	254TC	575	60	3
Enclosure	Ins. Class	Service Factor	Time Rating	NEMA Design	Rated Amb.	Rated Altitude
TEFC	F	1.15	Continuous	B	-40 to 40 °C	<3300 ft

Typical Performance

Efficiency (%)				Power Factor (%)		
Full Load		3/4 Load	1/2 Load	Full Load	3/4 Load	1/2 Load
Nom.	Min.					
92.4	91.0	93.0	92.4	88.0	85.0	77.0

Torque				Current (A)		
Full Load (lb-ft)	Locked Rotor (% FLT)	Pull Up (% FLT)	Break Down (% FLT)	No Load	Full Load	Locked Rotor
44.62	245	180	270	4.8	13.8	93

NEMA KVA Code	Inertia (WR^2)			Safe Stall Time (s)		Noise Level Sound Press. dB(A)
	Rotor ($lb\text{-}ft^2$)	NEMA Load ($lb\text{-}ft^2$)	Max. Allowable ($lb\text{-}ft^2$)	Cold	Hot	
G	2.179	75.0	220.0	32	22	64

VFD Duty Information

Speed Range			VFD		S.F.
Constant Torque	Variable Torque	Constant Power	Carrier	Type	
6-60Hz	3-60Hz	60-120Hz	≤ 5 kHz	VPWM or CPWM	1.0 Only

Additional Information

Bearings		Approx. Weight
DE	NDE	lbs
6309ZZ	6307ZZ	312

Hazardous Locations Information

CSA Certified	
Class I, Div 2, Groups B, C & D Class I, Zone 2, Groups IIB+H2, IIB & IIA	
Temp Code (Sinewave / VFD)	T3C / T3B

TECO Westinghouse MOTORS (CANADA) INC.	
	Date: January 17, 2019

Nameplate Drawing

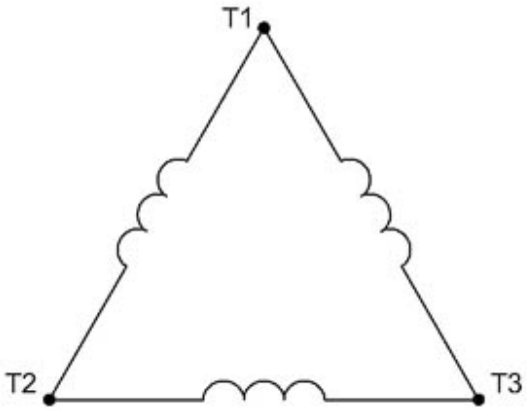
Optim TEFC

TYPE	AEHH8N	CAT. NO.	PDH01545C		
OUTPUT	15 HP 11 kW	FRAME	254TC	TEFC	
R.P.M.	1765	POLE	4	INS.	F
VOLTS	575	PHASE	3	Hz	60
AMPS	13.8	CODE	G	S.F.	1.15
AMBIENT	40 °C	NOM. EFF. 92.4		MIN. EFF. 91.0	
BEARINGS	6309ZZ / 6307ZZ			RATING Cont.	

SER. NO.	TBD	DESIGN	B	WT. 312 LBS

PWM VFD DUTY	VT	CT	CP	S.F.
	3-60Hz	6-60Hz	60-120Hz	1.0 Only

Connection Diagram



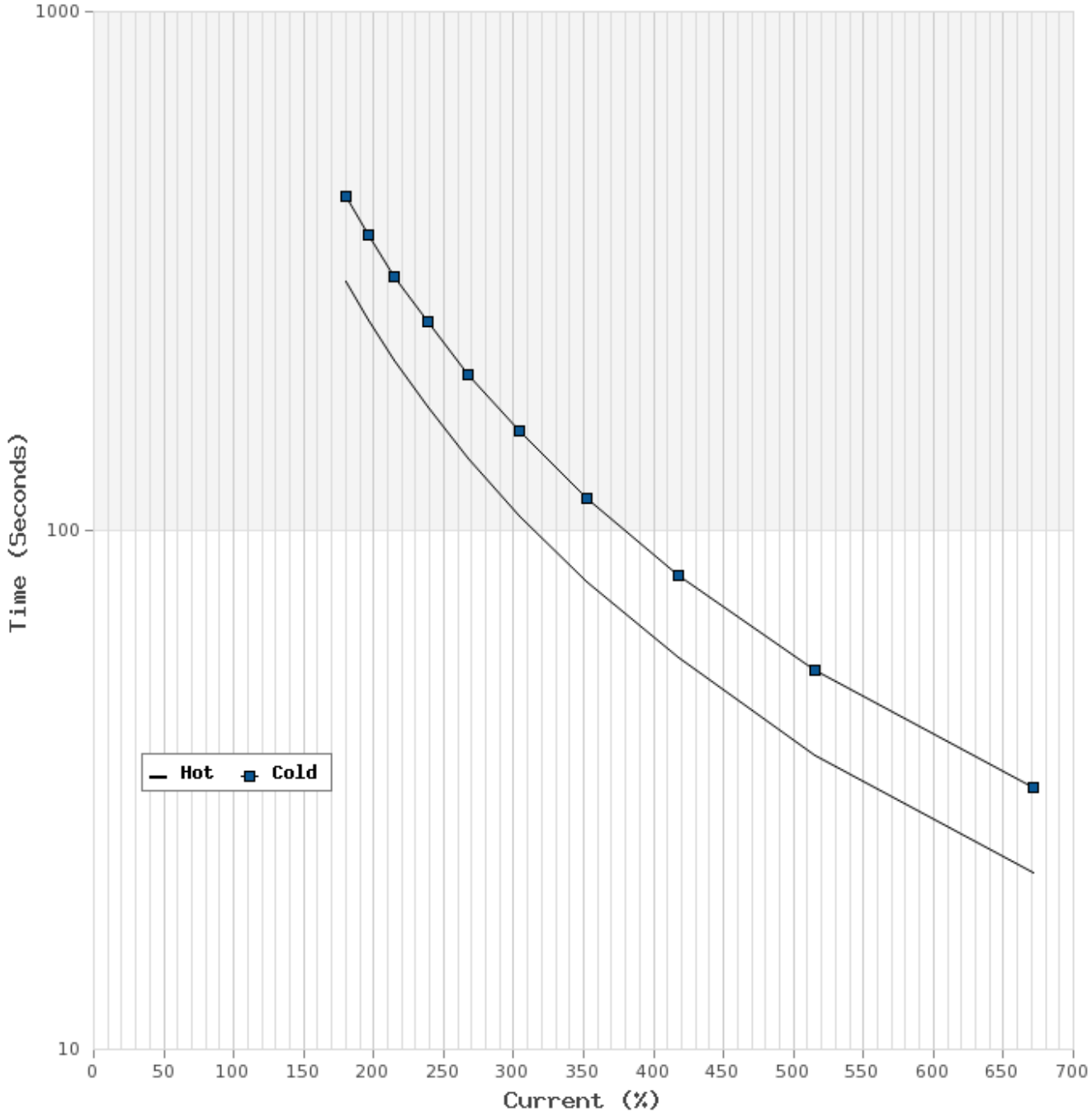
3 LEAD SINGLE VOLTAGE DELTA					
VOLTAGE	CONN.	L1	L2	L3	
-	DELTA	1	2	3	

WD_3D

TECO Westinghouse MOTORS (CANADA) INC.	
	Date: January 17, 2019

Thermal Limit Curves

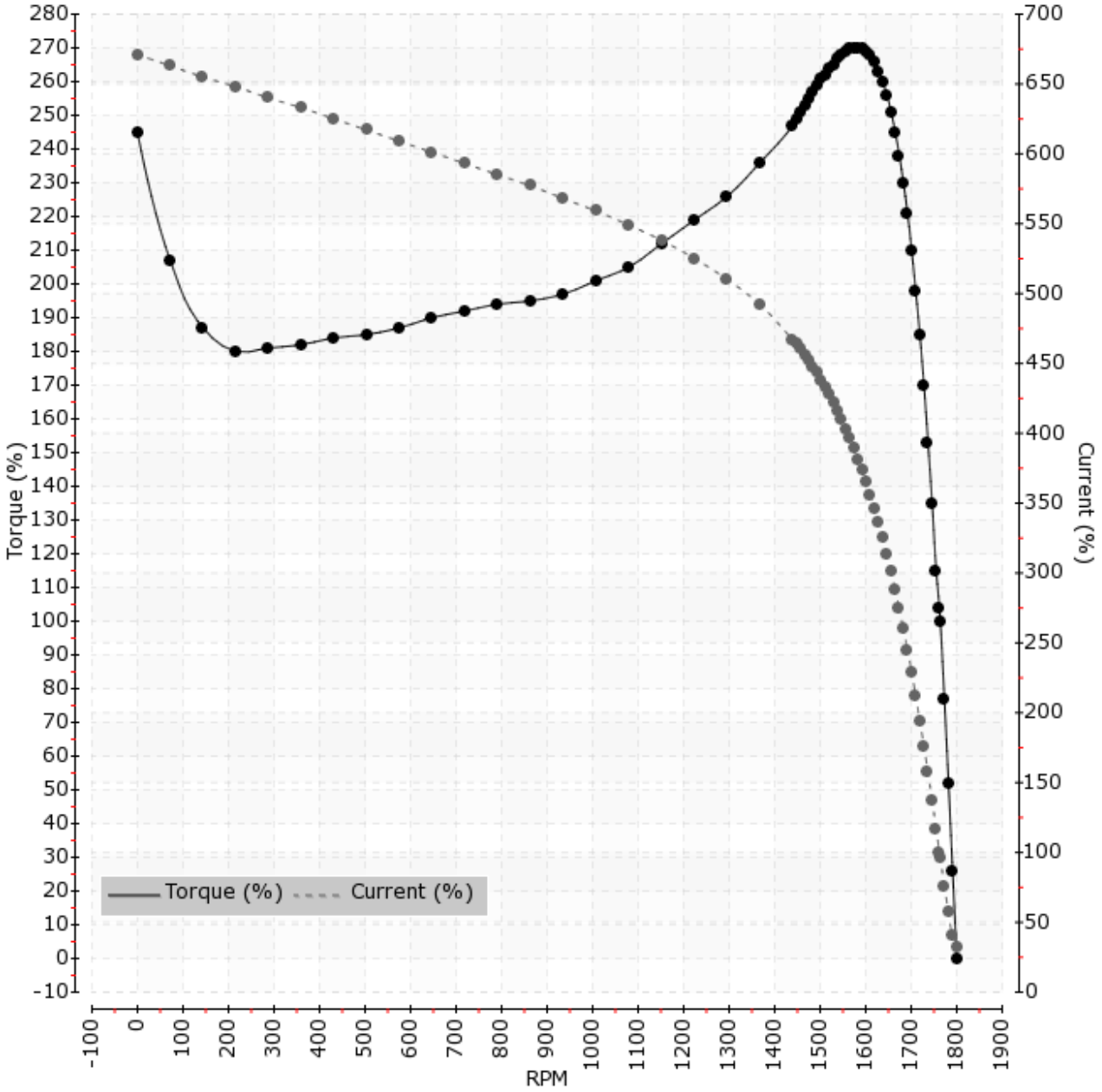
Motor Type: AEHH8N		Catalogue No: PDH01545C		Family: Optim TEFC	
HP	15	Safe Stall Time		Full Load A	0.0 / 13.8 A
Voltage	0 / 575V 60Hz	Hot	22 s	Locked Rotor A	673 %
RPM	1800	Cold	32 s	Locked Rotor A	0.0 / 93 A



TECO Westinghouse MOTORS (CANADA) INC.	
	Date: January 17, 2019

T-N and I-N Curves

Motor Type: AEHH8N		Catalogue No: PDH01545C		Family: Optim TEFC	
HP	15	Full Load T	44.62 lb-ft	Full Load A	13.8 A
Voltage	575V 60Hz	Locked Rotor T	245 %	Locked Rotor A	93.0 A
RPM	1800	Pull Up T	180 %	Break Down T	270 %



STANDARD WARRANTY FOR STOCK MOTORS

All TECO–Westinghouse brand stock motors sold by TECO–Westinghouse Motors (Canada) Inc. are warranted to be free of defects in material and workmanship for a period of 36 months from the date of sale (Advantage Plus 5 Year Warranty - IEEE 841 only).

This warranty is conditioned upon the installation, operation, and maintenance of the motors in accordance with TECO–Westinghouse Motors (Canada) Inc. recommendations or standard industry practice and the motors have at all times been operating or used under normal operating conditions for which they were designed.

TECO–Westinghouse Motors (Canada) Inc. shall, at its sole option and expense, either repair or replace, F.O.B. TWMI warehouse, any such motor or part which is defective within the warranty period.

In the event of a warranty claim, TECO–Westinghouse Motors (Canada) Inc. must be notified promptly following any motor failure. The motor shall be sent to a TECO–Westinghouse Motors (Canada) Inc. authorized service center for diagnosis on the cause of failure. If the failure is due to defective material and/or workmanship, TECO–Westinghouse Motors (Canada) Inc. will replace or repair the defective motor or part.

The repair or replacement of defective material and workmanship shall constitute complete fulfillment of TECO–Westinghouse Motors (Canada) Inc. warranty liability whether the warranty claims are based on contract, tort (including negligence and strict liability), or otherwise.

THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, AND ALL WARRANTIES ARISING FROM COURSE OF DEALING AND USAGE OF TRADE. UNDER NO CIRCUMSTANCES, SHALL TECO-WESTINGHOUSE MOTORS (CANADA) INC. BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING FREIGHT.

ONLINE WARRANTY INSTRUCTIONS ARE AVAILABLE AT:

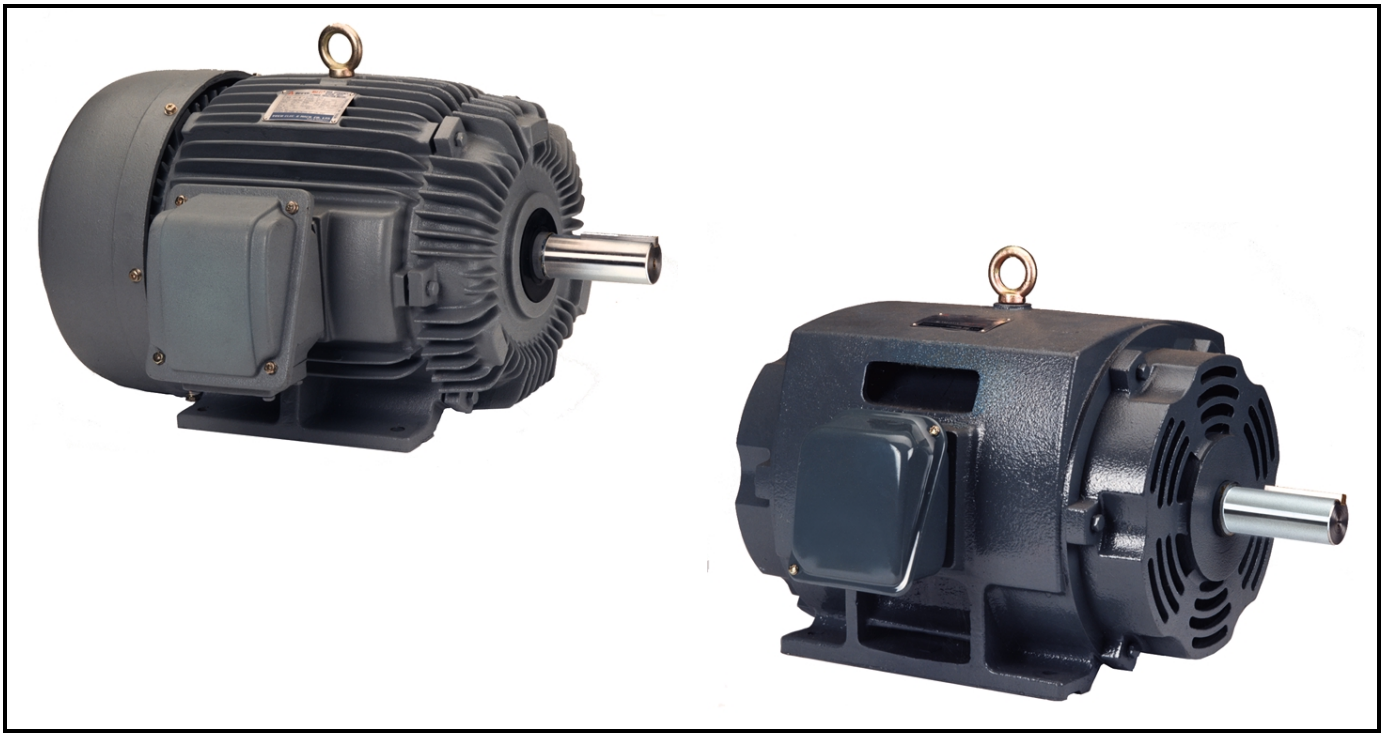
www.tecowestinghouse.ca/support/warranty

TECO Westinghouse

MOTORS (CANADA) INC.

INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR THREE PHASE INDUCTION MOTORS

Frames 143T - 449T



18060 -109 Ave Edmonton, AB T5S 2K2
Phone: 800-661-4023 780-444-8933 Fax: 888-873-8964

RECEIVING

1. Check nameplate data.
2. Check whether any damage has occurred during transportation.
3. After removal of shaft clamp, turn shaft by hand to check that it turns freely.
4. If motor is to be reshipped (alone or installed to another piece of equipment) the shaft must again be clamped to prevent axial movement.
   Note: Remove the bearing clamp before turning the shaft on 284T-449T frame motors.

WARNING
THE FOLLOWING SAFETY PRECAUTIONS MUST BE OBSERVED:

1. Electric rotating machinery and high voltage can cause serious or fatal injury if improperly installed, operated or maintained. Responsible personnel should be familiarized with NEMA MG2; Safety Standards for Construction and Guide Selection. Installation and Use of Electric Motors and Generators; National Electric Code and all local safety requirements.
2. When servicing, all power sources to the motor and to the accessory devices should be de-energized and disconnected and all rotating parts should be at standstill.
3. Lifting means, when supplied, are intended for lifting the motor only. When two lifting devices are supplied with the motor a dual chain must be used.
4. Suitable protection must be used when working near machinery with high noise levels.
5. Safeguard or protective devices must not be by-passed or rendered inoperative.
6. The frame of this machine must be grounded in accordance with the National Electric Code and applicable local codes.
7. A suitable enclosure should be provided to prevent access to the motor by other than authorized personnel. Extra caution should be observed around motors that are automatically or have automatic re-setting relays as they may restart unexpectedly.
8. Shaft key must be fully captive or removed before motor is started.
9. Provide proper safeguards for personnel against possible failure of motor-mounted brake, particularly on applications involving overhauling loads.
10. Explosion proof motors are constructed to comply with the label service procedure manual, repair of these motors must be made by TECO-Westinghouse or CSA/UL Listed service center in order to maintain CSA/UL Listing.

LOCATION

1. Drip-proof motors are intended for use where atmosphere is relatively clean, dry, well ventilated and non-corrosive.
2. Totally enclosed motors may be installed where dirt, moisture, or dust are present and in outdoor locations.
3. Explosion-proof motors are built for use in hazardous locations as indicated by Underwriters label on the motor.
4. Chemical duty enclosed motors are designed for installation in high corrosion or excessive moisture locations.
   Note: in all cases, no surrounding structure should obstruct normal flow or ventilating air through or over the motor.

MOUNTING

1. Mount motor securely on a firm, flat base. All ball bearing normal thrust motors up to and including 256T frame size may be side-wall or ceiling mounted; all others check nearest TECO-Westinghouse office for mounting recommendations.
2. Align motor accurately, using a flexible coupling if possible. For drive recommendations, consult with drive or equipment manufacturer, or TECO-Westinghouse.
3. Mounting bolts must be carefully tightened to prevent changes in alignment and possible damage to the equipment. The recommended tightening torque s for medium carbon steel bolts, identified by three radial lines at 120 degrees on the head, are:

Bolt Size	Recommended Torque (Ft-lb.)	
	Minimum	Maximum
2/8	25	37
1/2	60	90
5/8	120	180
3/4	210	320

4. V-belts Sheave Pitch Diameters should not be less than those shown in Table 1 (NEMA recommended values)
5. Tighten belts only enough to prevent slippage. Belt speed should not exceed 5000 ft. per min.

TABLE 1. V-Belt Sheave Pitch Diameters (MG1-14.42)

Frame Number	Horsepower at Synchronous Speed, RPM				V-Belt Sheave			
					Conventional A, B, C, D AND E		Narrow 3V, 5V, AND 8V	
	3600	1800	1200	900	Minimum Pitch Diameter Inches	*Maximum Width Inches	Minimum Outside Diameter Inches	**Maximum Width Inches
143T	1.5	1	.75	.5	2.2	4.25	2.2	2.25
145T	2-3	1.5-2	1	.75	2.4	4.25	2.4	2.25
182T	3	3	1.5	1	2.4	5.25	2.4	2.75
182T	5				2.6	5.25	2.4	2.75
184T			2	1.5	2.4	5.25	2.4	2.75
184T	5				2.6	5.25	2.4	2.75
184T	7.5	5			3.0	5.25	3.0	2.75
213T	7.5-10	7.5	3	2	3.0	6.5	3.0	3.375
215T	10		5	3	3.0	6.5	3.0	3.375
215T	15	10			3.8	6.5	3.8	3.375
254T	15		7.5	5	3.8	7.75	3.8	4
254T	20	15			4.4	7.75	4.4	4
256T	20-25		10	7.5	4.4	7.75	4.4	4
256T		20			4.6	7.75	4.4	4
284T			15	10	4.6	9	4.4	4.625
284T		25			5.0	9	4.4	4.625
286T		30	20	15	5.4	9	5.2	4.625

TABLE 1. V-Belt Sheave Pitch Diameters (MG1-14.42)

Frame Number	Horsepower at Synchronous Speed, RPM				V-Belt Sheave			
					Conventional A, B, C, D AND E		Narrow 3V, 5V, AND 8V	
	3600	1800	1200	900	Minimum Pitch Diameter Inches	*Maximum Width Inches	Minimum Outside Diameter Inches	**Maximum Width Inches
324T		40	25	20	6.0	10.25	6.0	5.25
326T		50	30	25	6.8	10.25	6.8	5.25
364T			40	30	6.8	11.5	6.8	5
364T		60			7.4	11.5	7.4	5.785
365T			50	40	8.2	11.5	8.2	5.785
365T		75			9.0	11.5	8.6	5.785
404T			60		9.0	14.25	8.0	7.25
404T				50	9.0	14.25	8.4	7.25
404T		100			10.0	14.25	8.6	7.25
405T			75	60	10.0	14.25	10.0	7.25
405T		100			10.0	14.25	8.6	7.25
405T		125			11.5	14.25	10.5	7.25
444T			100		11.0	16.75	10.0	8.5
444T				75	10.5	16.75	9.5	8.5
444T		125			11.0	16.75	9.5	8.5
444T		150				16.75	10.5	8.5
445T			125		12.5	16.75	12.0	8.5
445T				100	12.5	16.75	12.0	8.5
445T		150				16.75	10.5	8.5

*Max. Sheave width = 2(N-W) - .25

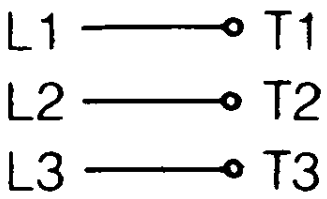
**Max Sheave width = N-W

***Sheave ratios grater than 5:1 and center-to-center distance less than the diameter of the large sheave should be referred to TECO-Westinghouse.

POWER SUPPLY & CONNECTIONS

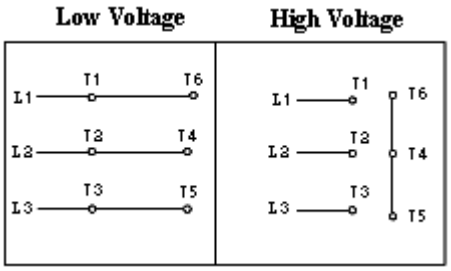
1. Wiring of motor and control, overload protection and grounding should be in accordance with National Electrical Code and all local safety requirements.
2. Nameplate voltage and frequency should agree with power supply. Motor will operate satisfactorily on line voltage within –10% of nameplate voltage; or frequency with –5% and with a combined variation not to exceed –10%. 230-volt motors can be used on 208-volt network systems, but with slightly modified performance characteristics as shown on the nameplate.
3. Dual voltage and single voltage motors can be connected for the desired voltage by following connection diagram shown on the nameplate or inside of the conduit box.
4. All Explosion Proof motors have Temperature Limiting Devices in the motor enclosure to prevent excessive external surface temperature of the motor in accordance with CSA/UL standards. Terminals of thermal protectors (P1 & P2) should be connected to the motor control equipment, according to the connection diagram inside of the conduit box.
5. Standard connection diagram for three phase, not thermally protected, dual rotation motors are shown in diagrams A through E.
   (Note: To change rotation, interchange any two line leads)

A. 3 Lead, Single Voltage

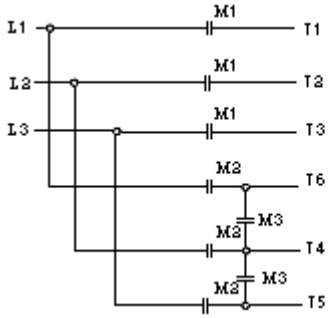


B. 6 Lead, Dual Voltage & Voltage Ration 1 to 3

B-1 Across the Line Start & Run



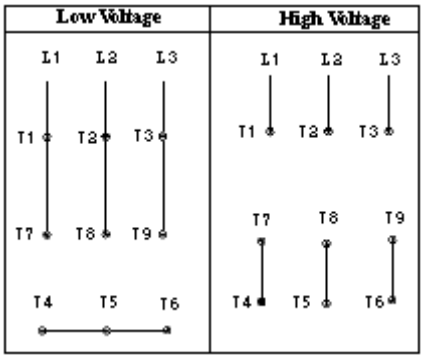
B-2 Wye Start & Delta Run
(Low Voltage only)



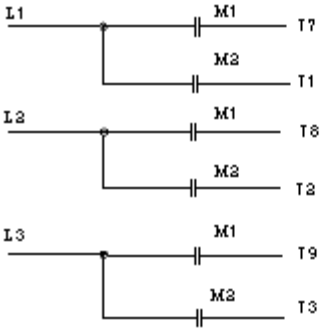
	START	RUN
M1	CLOSE	CLOSE
M2	OPEN	CLOSE
M3	CLOSE	OPEN

C. 9 Leads; Dual Voltage & Voltage Ratio 1 to 2, Wye Connected

C-1 Across the Line Start & Run



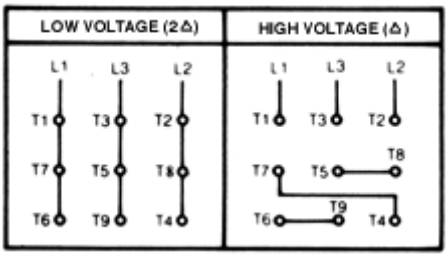
C-2 Part Winding Start
(Low Voltage only)



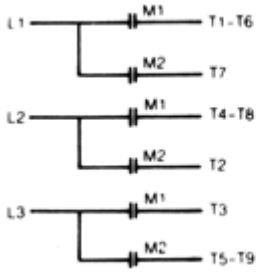
	START	RUN
M1	CLOSE	CLOSE
M2	OPEN	CLOSE
Tie Together	(T4-T5-T6)	

D. 9 Leads; Dual Voltage & Voltage Ration 1 to 2, Delta Connected

D-1 Across the Line Start & Run



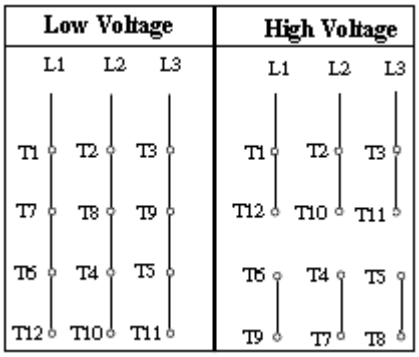
D-2 Part Winding Start
(Low Voltage only)



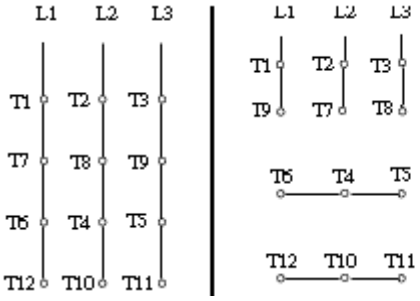
	START	RUN
M1	CLOSE	CLOSE
M2	OPEN	CLOSE

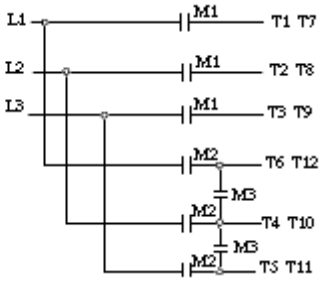
E. 12 Leads, Dual Voltage

E-1 Across the Line Start & Run



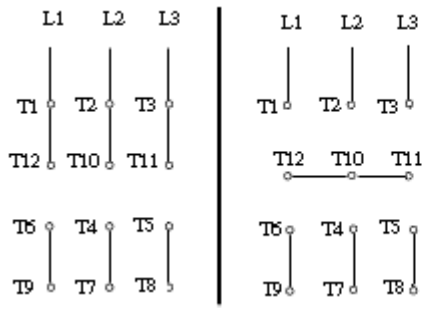
E-2-1 Wye Start & Delta Run (Low Voltage only)

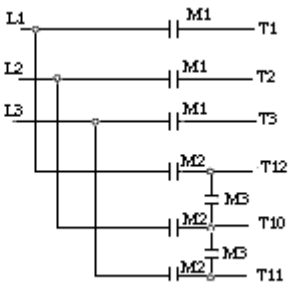




	START	RUN
M1	CLOSE	CLOSE
M2	OPEN	CLOSE
M3	CLOSE	OPEN

E-2-2 Wye Start & Delta Run (High Voltage only)

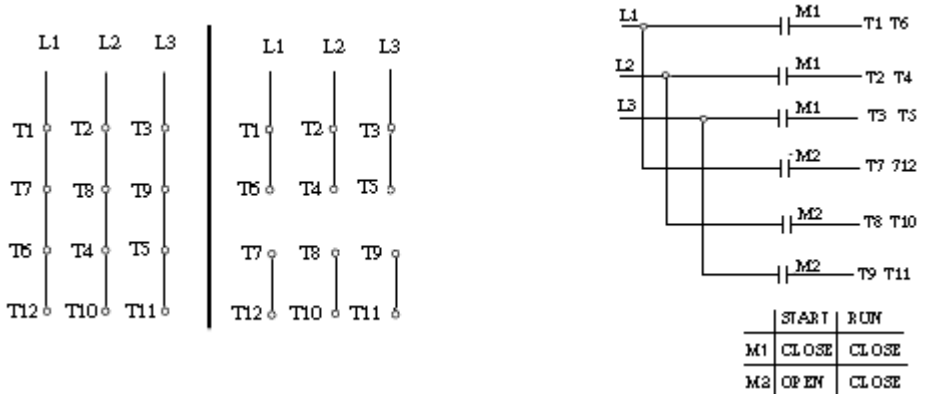




	START	RUN
M1	CLOSE	CLOSE
M2	OPEN	CLOSE
M3	CLOSE	OPEN

Tie Together (T4-T7); (T5-T8); (T6-T9)

E-3 Part Winding Start (Low Voltage only)



*Important: For Part Winding Start, M2 contactor should be closed within two (2) seconds after M1 contactor is closed.
Only 4 pole and above (e.g., 6P, 8P) motors are satisfactory for Part Winding Start at low voltage.

START UP

1. Disconnect load and start motor. Check direction of rotation. If rotation must be changed, ALLOW THE MOTOR TO STOP COMPLETLEY. Interchange any two leads of a three-phase motor.
2. Connect load. The motor should start quickly and run smoothly. If no, shut power off at once. Recheck the assembly including all connections before restarting.
3. If excessive vibration is noted, check for loose mounting bolts too flexible motor support structure or transmitted vibration from adjacent machinery. Periodic vibration checks should be made; foundations often settle.
4. Operate under load for short period of time and check operating current against nameplate.

TESTING

If the motor has been in storage for an extensive period or has been subjected to adverse moisture conditions, it is best to check the insulation resistance of the stator winding with a megometer. Depending on the length and conditions of storage it may be necessary to regrease or change rusted bearings.
If the resistance is lower than one megohm the windings should be dried in one of the following two ways:

1. Bake in oven at temperatures not exceeding 90ºC (194ºF) until insulation resistance becomes constant.
2. With rotor locked, apply low voltage and gradually increase the current through windings until temperature measured with a thermometer reaches 90ºC (194ºF). Do not exceed this temperature.

MAINTENANCE

INSPECTION

Inspect motor at regular intervals. Keep motor clean and ventilation openings clear.

LUBRICATION

1. Frame 143T-256T: Double shielded and pre-lubricated ball-bearing motors without grease fittings and don't need relubrication, except on Advantage Plus products which have regreasable features.
2. Frames 280TS, 320-449T(TS): Motors having grease fittings and grease discharge devices at brackets. Motors are shipped with grease for initial running. It is necessary to relubricate anti-friction bearing motors periodically, depending on size and type of service. See Table 2 to provide maximum bearing life. Excessive or too frequent lubrication may damage the motor.

TABLE 2

Horsepower	Standard Conditions	Severe Conditions	Extreme Conditions
1 Thru 30 Hp, 1800 rpm and below	7 years	3 years	180 days
40 Thru 75 Hp, 1800 rpm and below	210 days	70 days	30 days
100 Thru 150 Hp, 1800 rpm and below	90 days	30 days	15 days
1 Thru 20 Hp, 3600 rpm	5 years	2 years	90 days
25 Thru 75 Hp, 3600 rpm	180 days	60 days	30 days
100 Thru 150 Hp, 3600 rpm	90 days	30 days	15 days

Note:

A. Standard conditions: 8 hours operation per day, normal or light loading, clear and 40ºC ambient conditions.
B. Severe conditions: 24-hour operation per day or light shock loading, vibration or in dirty or dusty conditions.
C. Extreme conditions: With heavy shock loading or vibration or dusty conditions.
D. For double shielded bearings, above data (lubrication frequency) means that the bearing must be replaced.

3. Be sure fittings are clean and free from dirt. Using a low-pressure grease gun, pump in the recommended grease until new grease appears at grease discharge hole.
4. Use ExxonMobil Polyrex EM grease or equivalent polyurea based grease unless special grease is specified on the nameplate.
5. If relubrication is to be performed with the motor running, stay clear of rotating parts. After regreasing, allow the motor to run for ten to thirty minutes.

RENEWAL PARTS

1. Use only genuine TECO-Westinghouse renewal parts or as recommended by TECO-Westinghouse.
2. When you order renewal parts please specify complete information to TECO-Westinghouse office/agent such as type, frame no., poles, horsepower, voltage, series no., quantity, etc.

FOR FURTHER INFORMATION PLEASE CONTACT

TECO-WESTINGHOUSE MOTORS (CANADA) INC.

Section 4

Other Documents

Other Documents

#	Description
01	Spare parts
02	Spare parts Polymer systems
03	Special maintenance tools

Description :
Spare parts

CVP PRESS 3-900/3000 CVP

LIST OF RECOMMENDED SPARE PARTS

Rotary Press spare parts :

Part No	Art.	Qty	Description
IFI-01376	25B	3	Right scraper blade
IFI-01377	25C	3	Left scraper blade
IFI-02430	21	3	Deflector
IFI-02280-V21	18	6	Seals (3x right & 3x left)

Floculator spare parts :

Part No	Art.	Qty	Description
IFI-00690	18	2	Shaft seal type LUP, Manville#8989 LUP
IFI-00691	19	1	Shaft seal type LDS, Manville#15025 LDS

March 2022

Description :
Spare parts Polymer systems

LIQUID POLYMER SYSTEM MODEL :

POLYSYS-1/2-120V

LIST OF SPARE PARTS SUPPLIED WITH CONTRACT

Liquid Polymer System Spare parts :

Part No	Art.	Qty	Description	
0M3.2200.PFP	318	1	QDos30 ReNu SANTOPRENE PUMP HEAD	***

***Pump head replacement will occur every 6 to 18 months depending on use. The pump is equiped with a head leak detector to stop the pump & tell when its time to replace the head. Refer to pump operating & maintenance manual for futher details & explanations.

March 2022

Description :
Special maintenance tools

CVP ROTARY PRESS

List of special maintenance tools

Part No.	Description	Qty	Notes
IFI-01856	Lifting device (50 mm channel) c/w (2) Hexagonal bolts M20 x 2,5 x 130 mm	1	
IFI-01975	Cover supports for changing seals c/w (2) Hex. bolts M10 x 1,5 – 45 mm inox. 316	1	
IFI-01999	Shaft extension device (Seal change end shaft) Stainless tubing	1	
SPA-026-003	Eye bolt M12 x 1,75 x 20.5 mm (Lifting wheel device)	2	
SPA-026-002	Eye bolt M10 x 1,5 x 17 mm (Lifting housing device)	3	
IFI-02063	Micrometer torque wrench	1	
IFI-02064	Cover torque bit (Long. hex. socket 3/8 Dr 8 mm)	1	

March 2022

CONTROL NARRATIVE FOR ROTARY PRESS SYSTEM



Fournier Industries Inc.
3787, Frontenac Blvd. West,
Thetford Mines (Quebec)
Canada, G6H 2B5
www.fournierindustries.com

Rev. 2
2024-March
Jonathan Guérard

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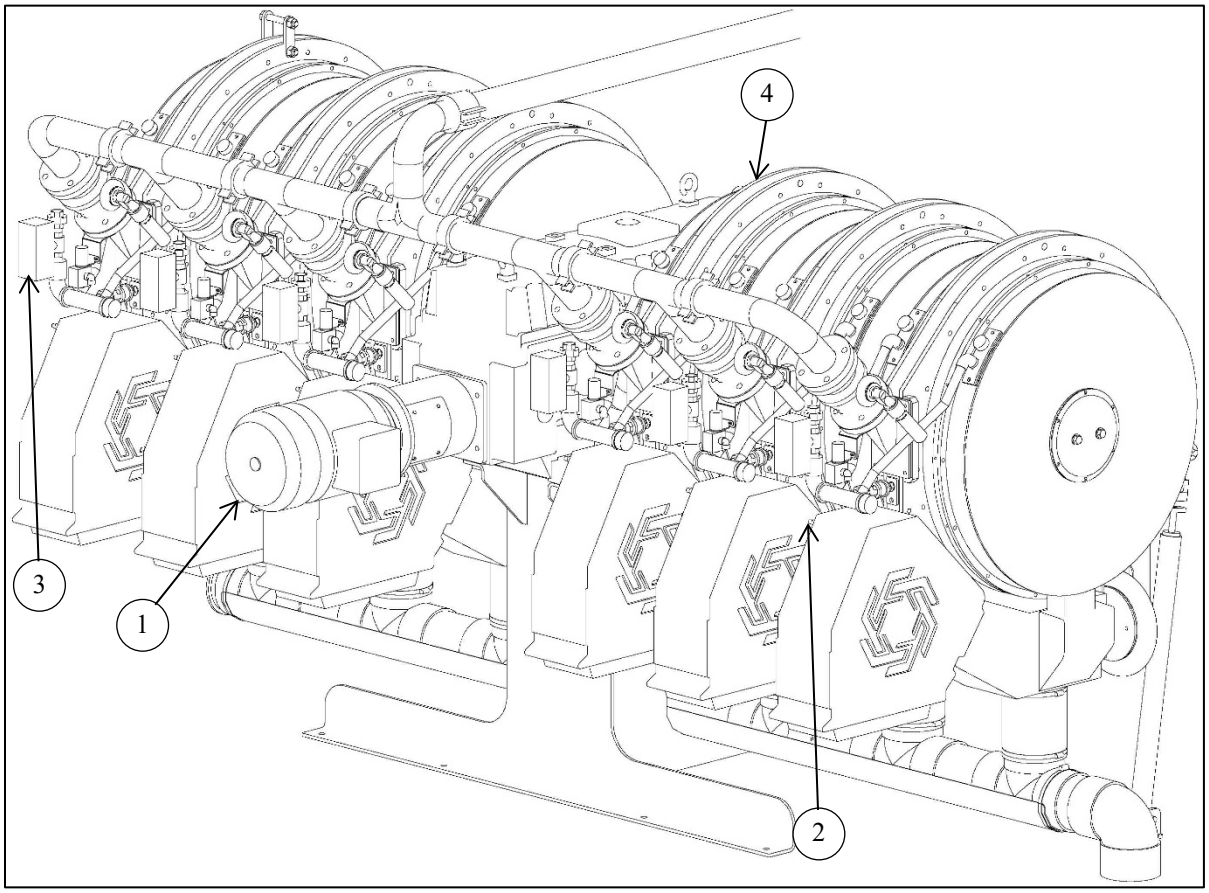
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Final details to be incorporated during the commissioning stage.

2 DESCRIPTION OF THE FUNCTIONS

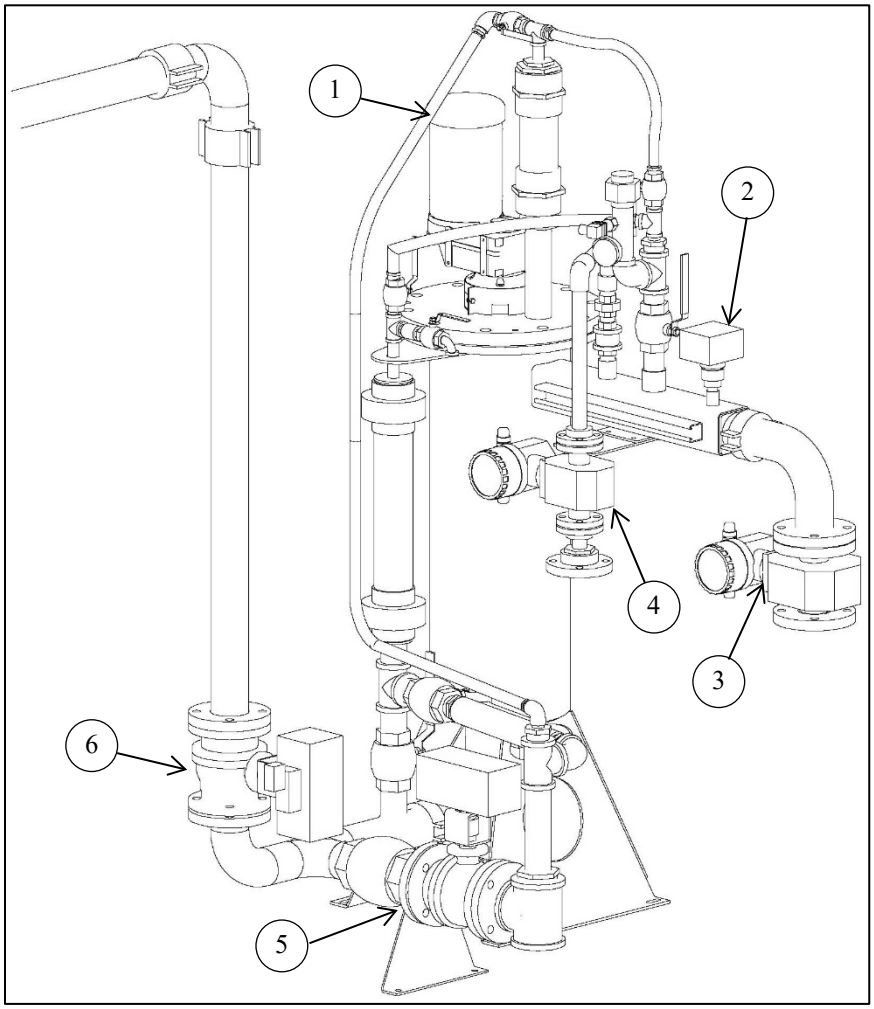
2.1 EQUIPMENT AND CONTROL INSTRUMENTS

Rotary press:



1	Rotary press motor **[MPR101]**
2	Cake detection (one on each cake chute) **[YI10x]**
3	Wash valve (one on each channel) **[FV11x]**
4	Electro-pneumatic (I/P) transducer for outlet pressure control (4-20mA). Located in the rotary press junction box behind the gear box **[IP10x]**

Flocculator:



1	Flocculator motor **[MFL101]**
2	Inlet pressure sensor (4-20mA) **[PIT101]**
3	Sludge flowmeter (4-20 mA) **[FIT101]**
4	Polymer flowmeter (4-20 mA) **[FIT102]**
5	Recirculation valve **[FV102]**
6	Feed valve **[FV101]**

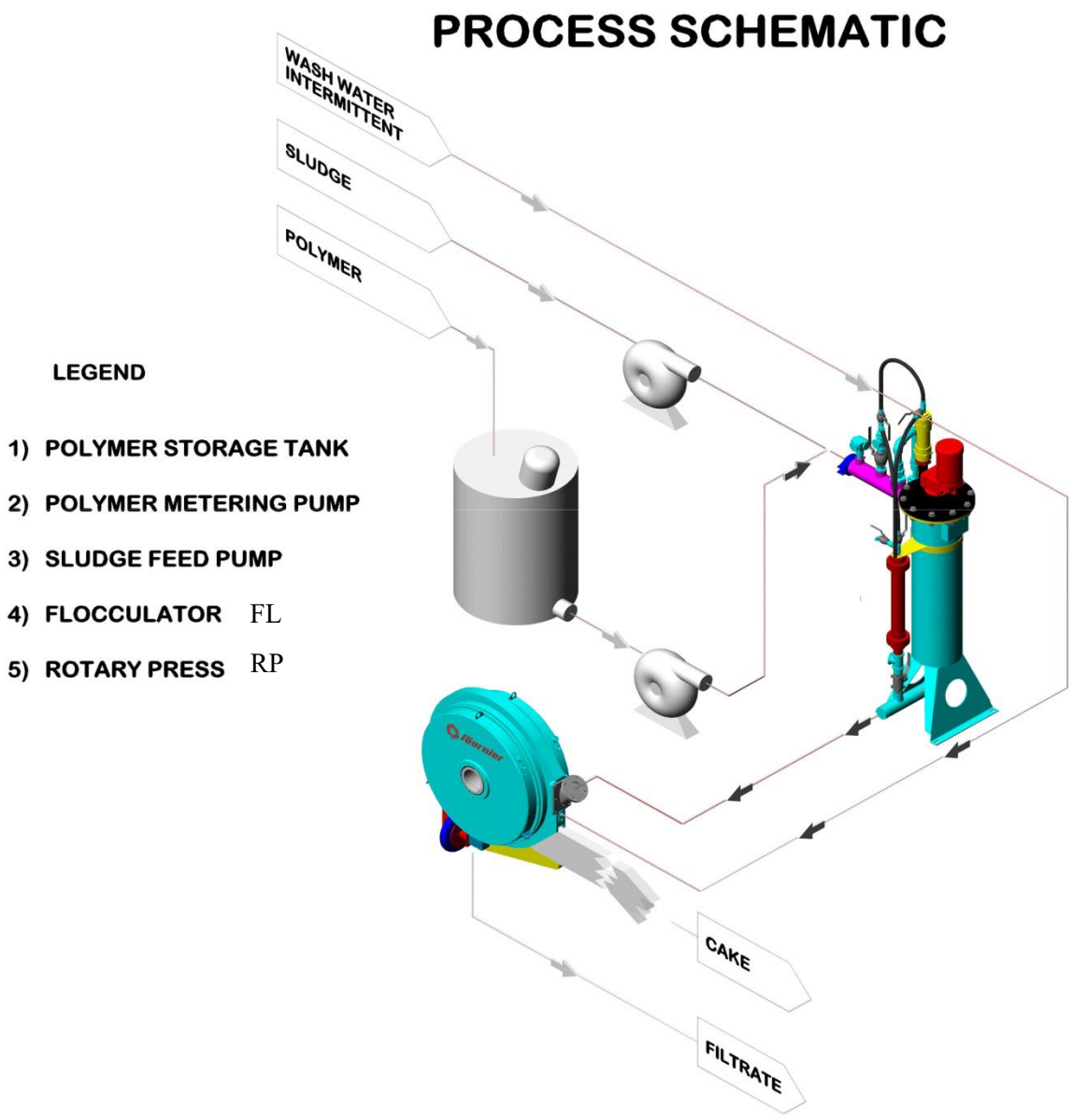
Ancillary equipment:

-Sludge pump **[SP101]**

-Sludge valve **[FV103]**

-Polymer feeding system **[PP101]**

2.2 PROCESS SCHEMATIC



2.3 DESCRIPTION OF AUTOMATIC CYCLES

The automatic cycles are used for the normal operation of the rotary press and its related devices. Three (3) cycles are used:

1- Recirculation
2- Dewatering
3- Channel wash

The following conditions must be respected to enable the operation of the system in automatic mode.

A- All the “OFF/MAN/AUTO” selectors must be in "auto" position.
B- Polymer must be present into the polymer tank and the sludge must be over the minimum level prior to start a cycle.
C- There is no alarm on the system.

A- Selectors

All the selectors of the equipment must be in AUTO position prior to start an automatic cycle. If not, the automatic cycle will not start.

B- Polymer and sludge level

Polymer must be present in the polymer tank before starting the dewatering system. Check the tank and the polymer make-up system (if there is enough polymer in the bin) at regular interval to make sure that there is no problem with these equipment.

C- No alarm must be on and the system should be acknowledged

For the start of an automatic cycle, no alarm must be present and the system must be acknowledged. While an automatic cycle is running, if an alarm occurs or a selector is placed to MAN/OFF position, all the dewatering system is stopped. Rotary press, flocculator, sludge pump, polymer pump (or polymer feeding system) and conveyors will stop and the recirculation and feed valves will return to their initial position).

The system will not restart automatically after an alarm. The operator has to restart the system. He must be sure to solve the cause of the alarm and also be sure that the alarm is acknowledged.

(See section 5 for the list of all the alarms in the system.)

D- 2 Rotary Presses (duty/standby)

The presses operate on a duty/standby control configuration. The duty press is selected by the SCADA. In local automatic mode the starting and stopping of each press is initiated by the SCADA. The standby press will automatically start if the duty press is not ready or the associated bin is faulted, not in place or full.

RECIRCULATION CYCLE

The Recirculation mode consists of recirculating the sludge and polymer through the flocculator and back to the tank or to the drain. The Recirculation cycle commands the following equipment:

- Flocculator **[FL101]** (run at a fixed speed setpoint)
- Sludge pump **[SP101]** (control by the SCADA)
- Sludge valve **[FV103]** (opening controlled by the Flow control PID)
- Polymer feeding system **[PP101]** (opening and speed controlled by the polymer flow PID)
- Recirculation and feed valves (recirculation valve open **[ZSO102]** and feed valve closed **[ZSC101]**)

The recirculation cycle can be used when it's necessary before the dewatering cycle. The operator can verify the quality of the floc in the sampler, while the timer is not done (30 min), to make sure that it will run properly. (Always be sure you have a good floc before feeding the press.)

In local automatic mode, the recirculation cycle will start automatically after an enable command from the SCADA and will run for a preset time (adjustable on screen) before switching automatically in dewatering cycle.

Basic steps to start the recirculation cycle

Preconditions

- No alarm on the following equipment:
  - Sludge pump **[SP101]**
  - Sludge valve **[FV103]**
  - Polymer system **[PP101]**
  - Polymer tank low low level
  - Flocculator **[FL101]**
  - Feed valves **[FV101]**
  - Recirculation valve **[FV102]**
  - Emergency stop **[HSS101] & [HSS111]**
- Following equipment are in auto:
  - Sludge pump **[SP101]**
  - Sludge valve **[FV103]**
  - Polymer pump **[PP101]**
  - Flocculator **[FL101]**
  - Feed valves **[FV101]**
  - Recirculation valve **[FV102]**

Density transmitter ?
for auto re circulation

Step 1

From the page **MAIN MENU** go to **PARAMETERS TABLE**.

Step 2

Adjust the operation setpoint to the desired value. To do this, press on the set point box of the desired parameter to change.

1. Polymer ratio (0-100%) in Polymer section
2. Sludge flow (0-0.360 MLd) in Sludge section
3. Flocculator speed (25-450 RPM) in Flocculator section

Step 3

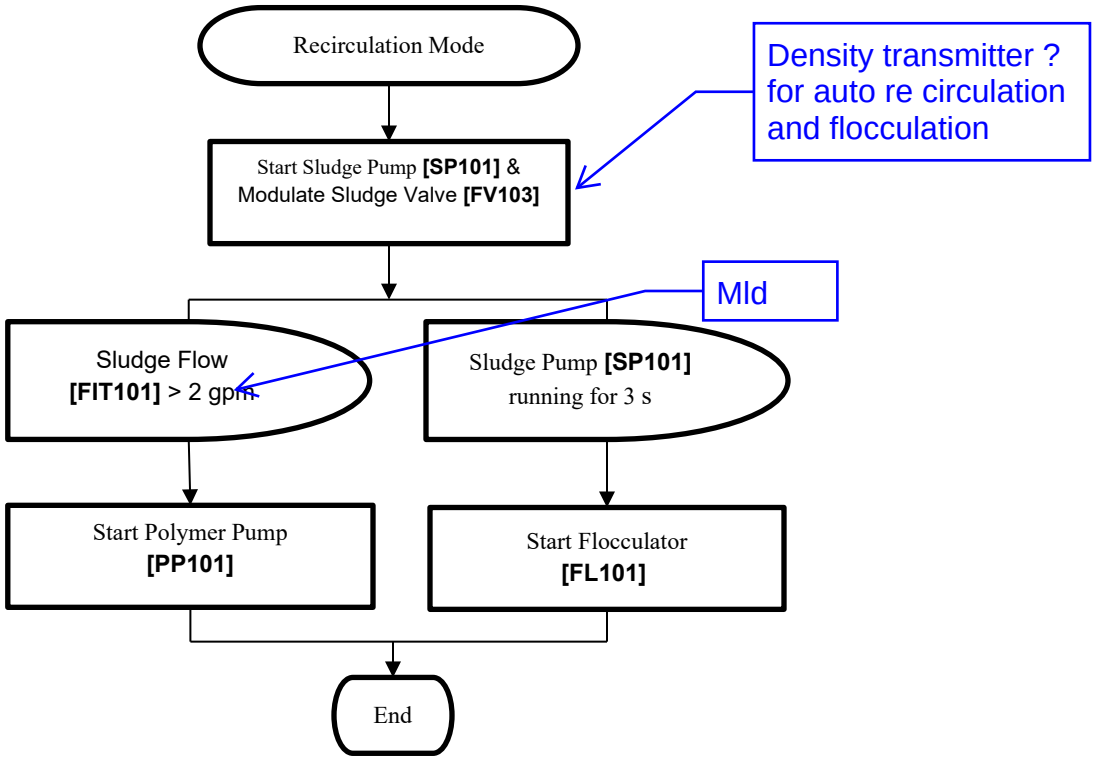
Make sure that all the equipment are in AUTO and no alarm is active.

Step 4

From the page **MAIN MENU**, go to the page **PARAMETERS TABLE.** Then, press on RECIRCULATION to start the cycle The cycle is running as long as the dewatering cycle is not started by pressing the DEWATERING push button. While this cycle is running, the operator can:

1. Stop the cycle by pressing RECIRCULATION button again
2. Modify each operation setpoints

When running, the recirculation cycle commands the following equipment:



DEWATERING CYCLE

The Dewatering mode consists of feeding the sludge and polymer through the flocculator and to the rotary press. The sludge is dewatered inside each channel and cake comes out of the channels. The cake usually falls into a conveyor that will bring it to a cake bin or truck. The Dewatering cycle commands the following equipment:

- Rotary press **[PR101]** (run at a fixed speed setpoint)
- Flocculator **[FL101]** (run at a fixed speed setpoint)
- Outlet pressure restriction **[IP10x]** (An electro-pneumatic transducer (I/P) is used to apply air pressure to the vertical restrictor at the outlet of each channel at a fixed setpoint)
- Sludge pump **[SP101]** (control by the SCADA)
- Sludge valve **[FV103]** (opening controlled by the flow and pressure control PIDs)
- Polymer feeding system **[PP101]** (opening and speed controlled by the polymer flow PID)
- Recirculation and feed valves (recirculation valve closed **[ZSC102]** and feed valve open **[ZSO101]**)

In local automatic mode, the dewatering cycle will start automatically after the recirculation cycle (initiated by the SCADA) and will run for a preset time (adjustable on screen) before switching to pressure control.

Basic steps to start the dewatering cycle

Preconditions

- No alarm on the following equipment:
  - Sludge pump **[SP101]**
  - Sludge valve **[FV103]**
  - Polymer system **[PP101]**
  - Polymer tank low low level
  - Flocculator **[FL101]**
  - Feed valves **[FV101]**
  - Recirculation valve **[FV102]**
  - Rotary press **[PR101]**
  - Emergency stop **[HSS101] & [HSS111]**
- Following equipment are in auto:
  - Sludge pump **[SP101]**
  - Sludge valve **[FV103]**
  - Polymer system **[PP101]**
  - Flocculator **[FL101]**
  - Feed valves **[FV101]**
  - Recirculation valve **[FV102]**
  - Rotary press **[PR101]**
- System not in Channel wash mode

Step 1

From the page **MAIN MENU**, go to **PARAMETERS TABLE**.

Step 2

Adjust the operation setpoint to the desired value. To do this, press on the setpoint box of the desired parameter to change.

1- Inlet pressure (0-50 KPA)
2- Sludge flow or (0-0.360 MLd)
3- Polymer ratio (0-100%)

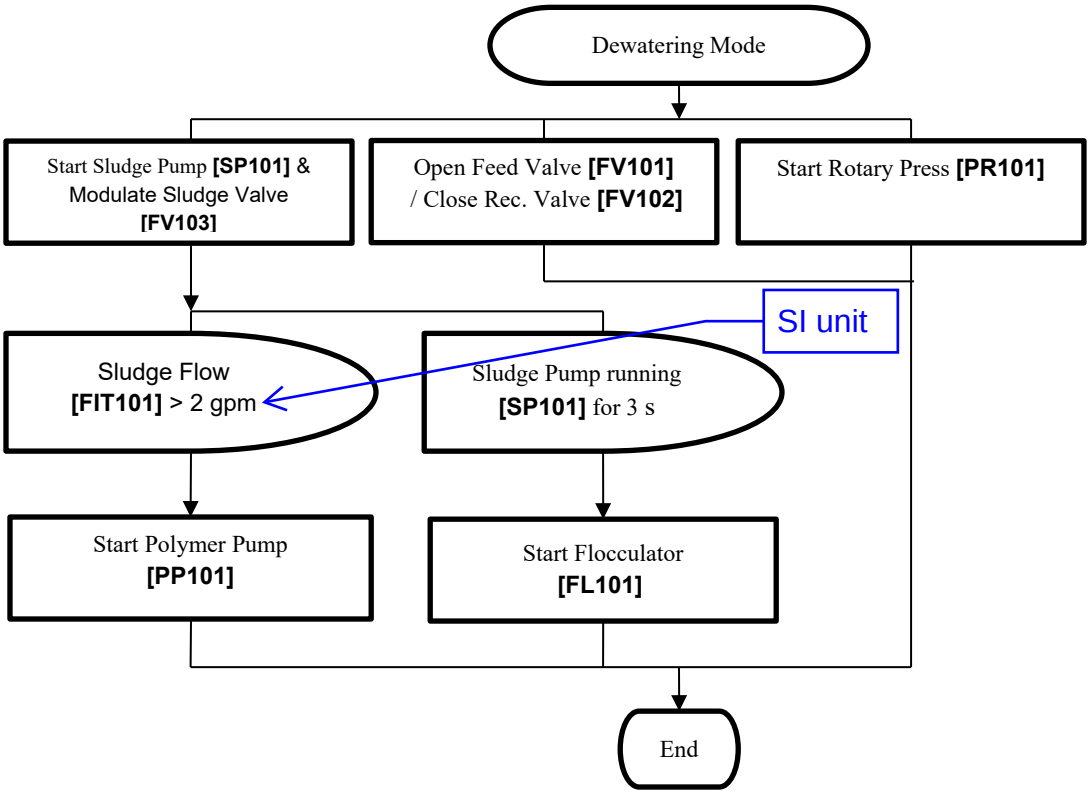
4- Outlet pressure (0-600 KPA)
5- Rotary press speed (0.2-2.5 RPM)
6- Flocculator speed (25-450 RPM)

Step 3
Make sure that all the equipment are in AUTO and no alarm is active.

Step 4
From the page **MAIN MENU** go to the page **PARAMETERS TABLE.** Then, press on DEWATERING to start the cycle. During this cycle, the operator can:

1. Stop the cycle by pressing the DEWATERING button again
2. Modify each operation setpoints

When running, the dewatering cycle commands the following equipment:



While the dewatering cycle is running, the operator can adjust all the parameters (setpoints) to have an optimal production and quality (filtrate and cake (dryness)) of the rotary press.

CHANNEL WASH CYCLE WHEN STOPPED

The channel wash cycle is used, when necessary, to wash the filtering screens and the exterior of the wheels of the rotary press. The frequency of wash cycles is determined by the operator according to the nature of the sludge and the number of hours of operation. **However a minimum of five (5) minutes per twenty-four (24) hours of operation is required.**

The channel wash cycle is used, when necessary, to wash the filtering screens and the exterior of the wheels of the rotary press. The frequency of wash cycles is determined by the operator according to the nature of the sludge and the number of hours of operation. This cycle is initiated by the operator, usually at the end of the day, by pressing a button on the operator interface. The channel wash cycle commands the following equipment:

-Rotary press **[PR101]** (run at a fixed speed setpoint)

-Opening/closing **[FV11x]** of the wash valve of each channel

In order to start the Channel wash cycle, those equipment must be in auto and no alarms must be active.

The channels are normally washed all at the same time but they can be washed separately, two by two, three by three or four by four depending on the water pressure available (the channel wash mode is accessible to the operator on the operator interface). If another channel wash mode is selected than all channels at the same time, it is important that the wash cycle alternates between the channels every 1 minute. This prevents the channels to run dry, what could damage them.

Basic steps to start the channel wash cycle

Preconditions

- No alarm on the following equipment:
  - Rotary press **[PR101]**
  - Emergency stop **[HSS101]**
- Following equipment are in auto:
  - Rotary press **[PR101]**
  - Wash valves **[FV11x]**
- System not in Dewatering mode

Step 1

From the page **MAIN MENU**, go to **SERVICE**.
Adjust the Rotary press speed set point (0.2-2.5 RPM) to the desired value.
Set the number of channels washed at the same time. (Only on rotary press with two (2) or more channels) 1x1, 2x2, 3x3, 4x4 or ALL

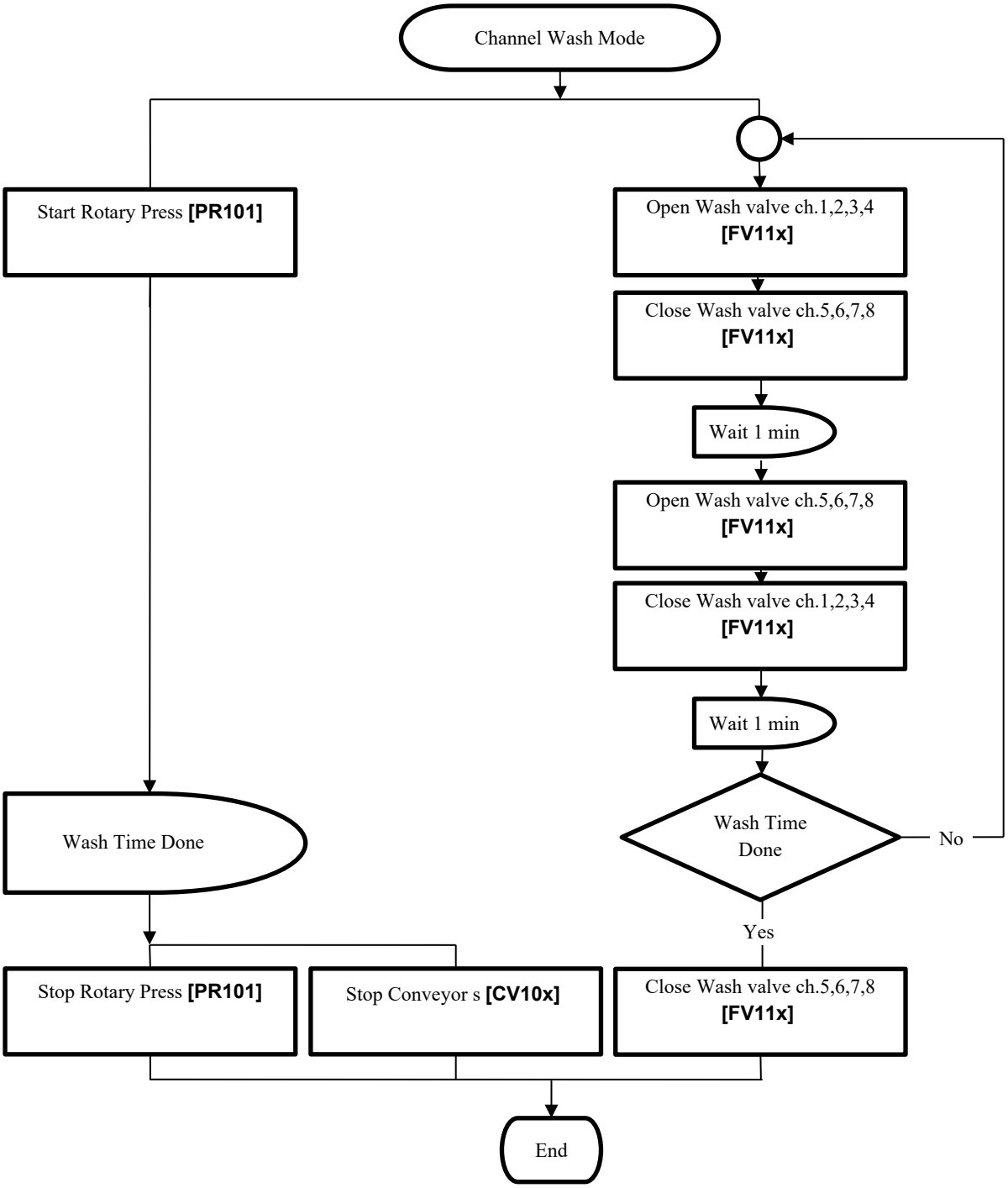
Step 2

From the page **MAIN MENU**, go to **PARAMETERS TABLE**.
Adjust the **channel wash time** setpoint (1-30 min) to the desired value.

Step 3

From the page **PARAMETERS TABLE**, press on CHANNEL WASH to start the cycle. The cycle is running as long as the timer is not done.

When running, the channel wash cycle commands the following equipment (example for 4x4 selection):

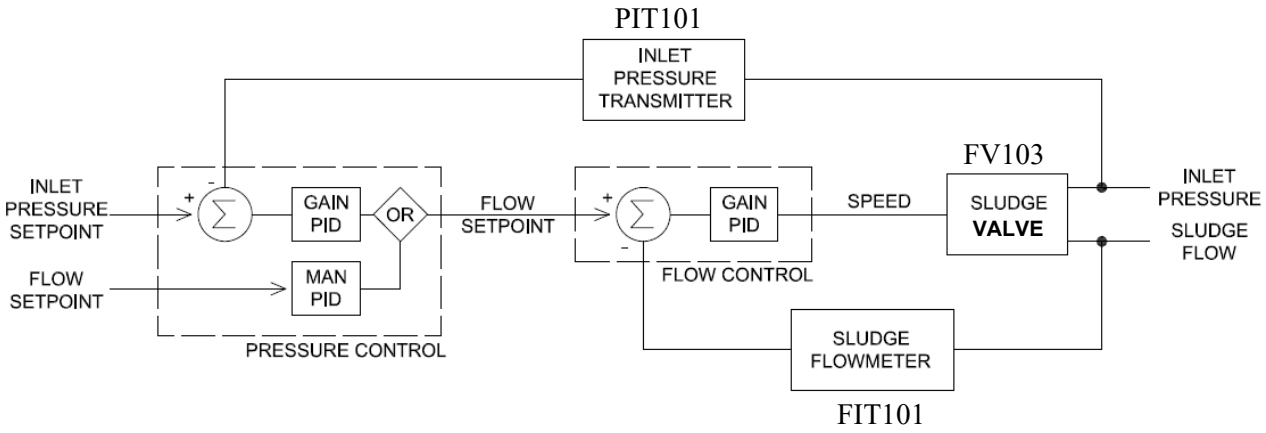


While the channel wash cycle is running, the system can be stopped by pressing CHANNEL WASH in the **Mode** page. Otherwise, the cycle is stopped at the end of the timer.

Flow control (PID):
A sludge flow setpoint is entered at the operator interface and the sludge valve opening is adjusted to maintain the set sludge flow.

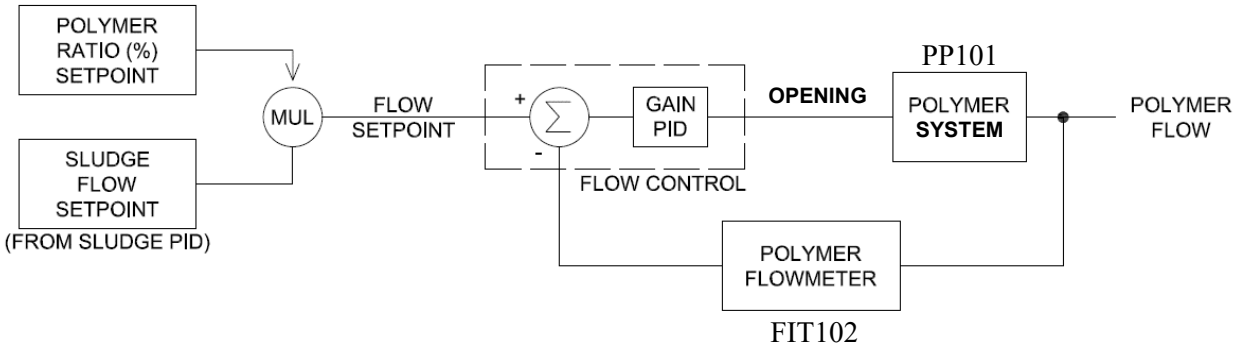
Pressure control (PID):
An inlet pressure setpoint is entered at the operator interface and the sludge valve opening is adjusted to maintain the pressure at the inlet of the flocculator to the set pressure.

In the Recirculation cycle, the flow control is used. The flow control is also used when the Dewatering cycle is started, when there is no cake at the outlet or to be sure to not push too hard at the outlet. After few minutes or when there is a cake at the outlet, the operator should set the system to pressure control (push button on the operator interface).



Polymer ratio (PID):

The polymer flow is calculated by multiplying ratio (%) setpoint by the sludge flow setpoint (from the sludge PID loop). A polymer ratio setpoint is entered at the operator interface and the polymer feeding system valve opening is adjusted to maintain the set polymer ratio.



2.4 DESCRIPTION OF TYPICAL ALARMS AND TROUBLESHOOTING GUIDE

MESSAGE	POSSIBLE CAUSE	ACTION TO TAKE
EMERGENCY STOP	AT LEAST ONE OF THE EMERGENCY BUTTON IS PRESSED	- CHECK E-STOP ON CONTROL PANEL - CHECK E-STOP NEAR THE PRESS - PUSH THE MASTER CONTROL RESET
PCS SYSTEM – COMMUNICATION FAULT	MODBUS COMMUNICATION LOST	- CHECK ETHERNET SWITCH - VERIFY THE ETHERNET CABLE
CONTROL PANEL - OVERTEMP	THE TEMPERATURE INSIDE THE CONTROL PANEL EXCEEDS 100 DEGREES F	- CHECK YOUR AIR CONDITIONNING
HIGH INLET PRESSURE	THE INLET PRESSURE EXCEEDS 12 PSI (ONE OF THE CHANNEL MIGHT BE STUCK)	- RUN A CHANNEL WASH - RUN A MANIFOLD WASH
HIGH HIGH INLET PRESSURE	THE INLET PRESSURE EXCEEDS 30 PSI IN MANUAL MODE	- CHECK YOUR VALVES POSITION - RUN A CHANNEL WASH - RUN A MANIFOLD WASH
HIGH TORQUE - CHANNEL X	TORQUE EXCEEDS 4000 LBS	- RUN A CHANNEL WASH - RUN A MANIFOLD WASH
"EQUIPMENT" - DID NOT START	PLC DOESN'T RECEIVE THE FEEDBACK FROM THE EQUIPMENT	- START THE EQUIPEMENT MANUALLY - CHECK THE STATE OF YOUR VFD - CHECK THE STATE OF YOUR CONTACTOR
"EQUIPMENT" - FAULT	VFD OR SYSTEM FAULTED	- POWER CYCLE YOUR VFD - RESET ALARMS ON OTHER EQUIPEMENT - START THE EQUIPEMENT MANUALLY
"EQUIPMENT" - VFD COMMUNICATION FAULT	ETHERNET COMMUNICATION LOST	- POWER CYCLE YOUR VFD - CHECK ETHERNET SWITCH - VERIFY THE ETHERNET CABLE
FEED / RECIRULATION VALVE - POSITION FAULT	THE VALVE IS NOT IN THE WANTED POSITION	- ACTIVATE YOUR VALVE MANUALLY - LOOK AT YOUR VALVE IF IT TURNS COMPLETELY - MAKE SURE THE AIR PRESSURE IS AT LEAST 80 PSI - OPEN THE COVER AND CHECK THE CAM SWITCHES
"EQUIPMENT" LOW FLOW	THE PUMP IS RUNNING OVER 90% BUT THE FLOW STAYS LOW	- CHECK YOUR FEED FLUID - START THE PUMP MANUALLY AND CHECK IF YOUR MOTOR/PUMP IS RUNNING - PRIME YOUR PUMP
HIGH SLUDGE FLOW	THE SLUDGE FLOW EXCEED YOUR SETPOINT	- VERIFY IF IT'S NOT FLUSHING - INCREASE YOUR SETPOINT
"EQUIPMENT" - OVERLOAD	MOTOR HAS REACHED HIGH CURRENT	- RESET THE OVERLOAD IN THE CONTROL CABINET AND START THE PUMP MANUALLY - CHECK YOUR MOTOR - CHECK IF SOMETHING IMPEDE YOUR MOTOR
CAKE DETECTION	IN DEWATERING OR IN CHANNEL WASH, ONE OF THE CAKE SENSORS IS SENSING SOMETHING	- LOOK AT ALL YOUR SENSORS TO SEE WICH ONE IS SENSING - CLEAN IT BEFORE RESTARTING
LOW AIR PRESSURE	THE ELECTROPNEUMATIC TRANSDUCER CANNOT SUPPLY THE WANTED PRESSURE	- CHECK COMPRESSOR AND AIR PRESSURE GAUGE - CHECK I/P (SAME PRESSURE COMPARE TO THE HMI?)
LOW WASH WATER PRESSURE	GET LOW PRESSURE DURING CHANNEL WASH	- CLEAN LESS CHANNEL AT A TIME - BOOST YOUR WATER PRESSURE

Alarms details:

MESSAGE	CONDITION
EMERGENCY STOP	The signal from the safety relay **[HSS101]** is activated.
CONTROL PANEL – OVERTEMP	The signal from the thermostat **[TSH101]** is activated.
HIGH INLET PRESSURE	The inlet pressure **[PIT101]** exceeds 12 psi / 80 kPa for 3 s.
HIGH HIGH INLET PRESSURE	The inlet pressure **[PIT101]** exceeds 30 psi / 200 kPa while the sludge pump is running in manual mode.
HIGH TORQUE - CHANNEL X	The torque **[WT10x]** exceeds 4000 lbs / 1800 kg for 2 s or 4500 lbs / 2000 kg.
"EQUIPMENT'' - DID NOT START	The running signal is not sensed after 7 s of trying to start the equipment.
"EQUIPMENT'' - FAULT	The fault signal is sensed.
"EQUIPMENT'' - VFD COMMUNICATION FAULT	The communication with the VFD is interrupted.
FEED / RECIRULATION - POSITION FAULT	The feedback is not sensed after 15 s of trying to change of position.
SLUDGE PUMP LOW FLOW	The speed of the pump is above 90 % and the flow **[FIT101]** is less than 10 gpm / 2.2 m^3/h for 15 s.
POLYMER PUMP LOW FLOW	The speed of the pump is above 90 % and the flow **[FIT102]** is less than 1 gpm / 0.2 m^3/h for 15 s.
HIGH SLUDGE FLOW	The sludge flow **[FIT101]** is higher than 200 gpm / 45 m^3/h for 5 s. (Flow setpoint adjustable on HMI)
"EQUIPMENT" - OVERLOAD	The overload signal is sensed.
CAKE DETECTION	At least one sensor sensed cake for 2 s.
LOW AIR PRESSURE	When the press is in operation and the air pressure signal is lost for 45 s. When the press is not in operation and the air pressure signal is lost for 300 s.
LOW WASH WATER PRESSURE	When the press is in channel wash mode and the water pressure signal is lost for 10 s. (Optional)

2.5 DESCRIPTION OF MANUAL CONTROL (MAINTENANCE PURPOSE)

Every motor has its own selector switch (man-off-auto) on the operator interface what allows the operator to run each motor separately. Every valve can also be operated separately. Though, the flocculator's selector must not be in the auto position to operate the feed and recirculation valves manually and the rotary press's selector must not be in the auto position to operate the wash valves manually.

The electro-pneumatic transducer (I/P) is used to apply air pressure to the vertical restrictor at the outlet of each channel. The pressure setpoint is accessible to the operator on the operator interface

Rotary press:

The rotary press motor has its own "man-off-auto" selector switch on the operator interface that allows the operation for maintenance purpose. A separate speed setpoint is used while the operation is in "man". Wash valves individual operation can also be done while the rotary press "man-off-auto" switch is in "off" or "man" position as each valve has its own "on-off" switch.

Flocculator:

The flocculator motor has its own "man-off-auto" selector switch on the operator interface that allows the operation for maintenance purpose. A separate speed setpoint is used while the operation is in "man". The recirculation and feed valves can also be operated separately using the "on-off" valve while the flocculator "man-off-auto" selector switch is in "off" or "man" position.

Ancillary equipment:

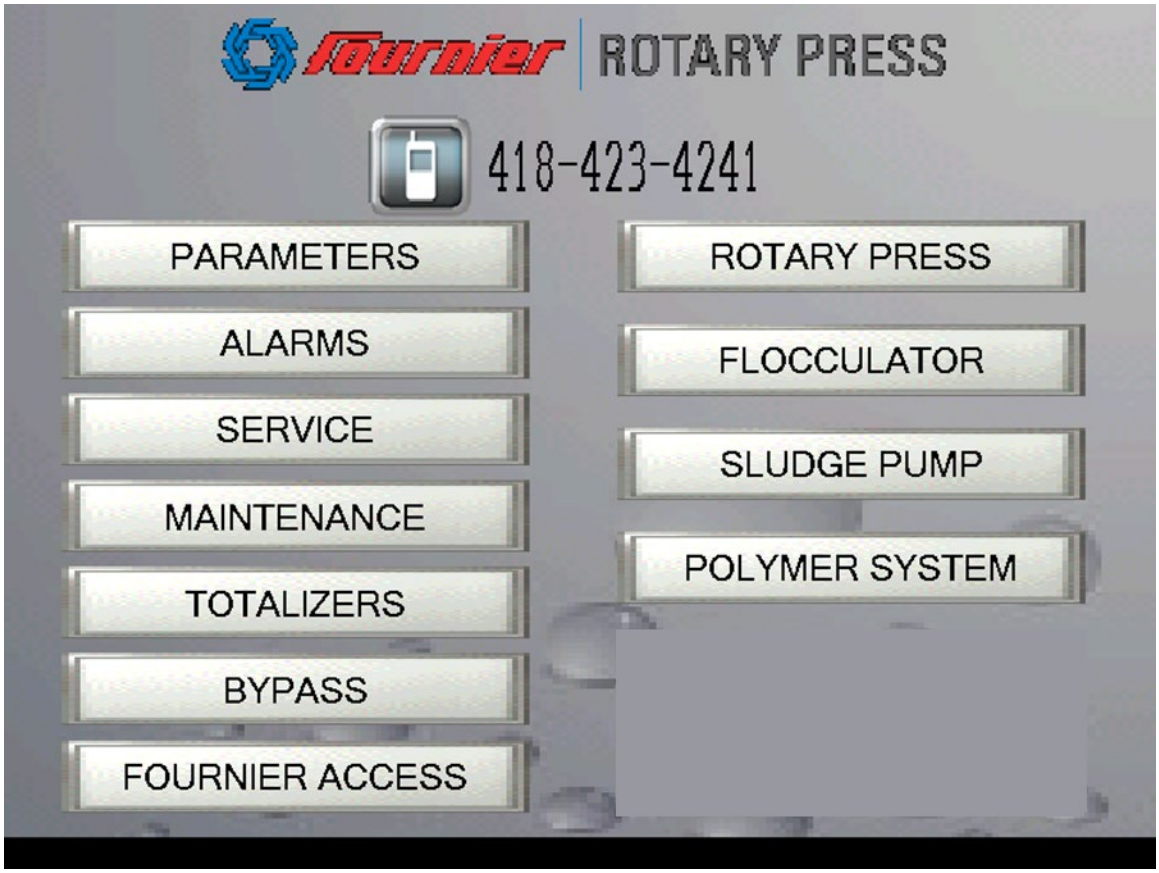
Every motor that is controlled by the Fournier control panel has its own "man-off-auto" selector switch on the operator interface that allows the operation for maintenance purpose. A separate speed setpoint is used while the operation is in "man" on VFD driven motors. The sludge pump **[SP101]** needs to be interlocked with the "**HIGH HIGH INLET PRESSURE**" alarm.

2.6 DESCRIPTION OF TYPICAL PAGES IN THE OPERATOR INTERFACE



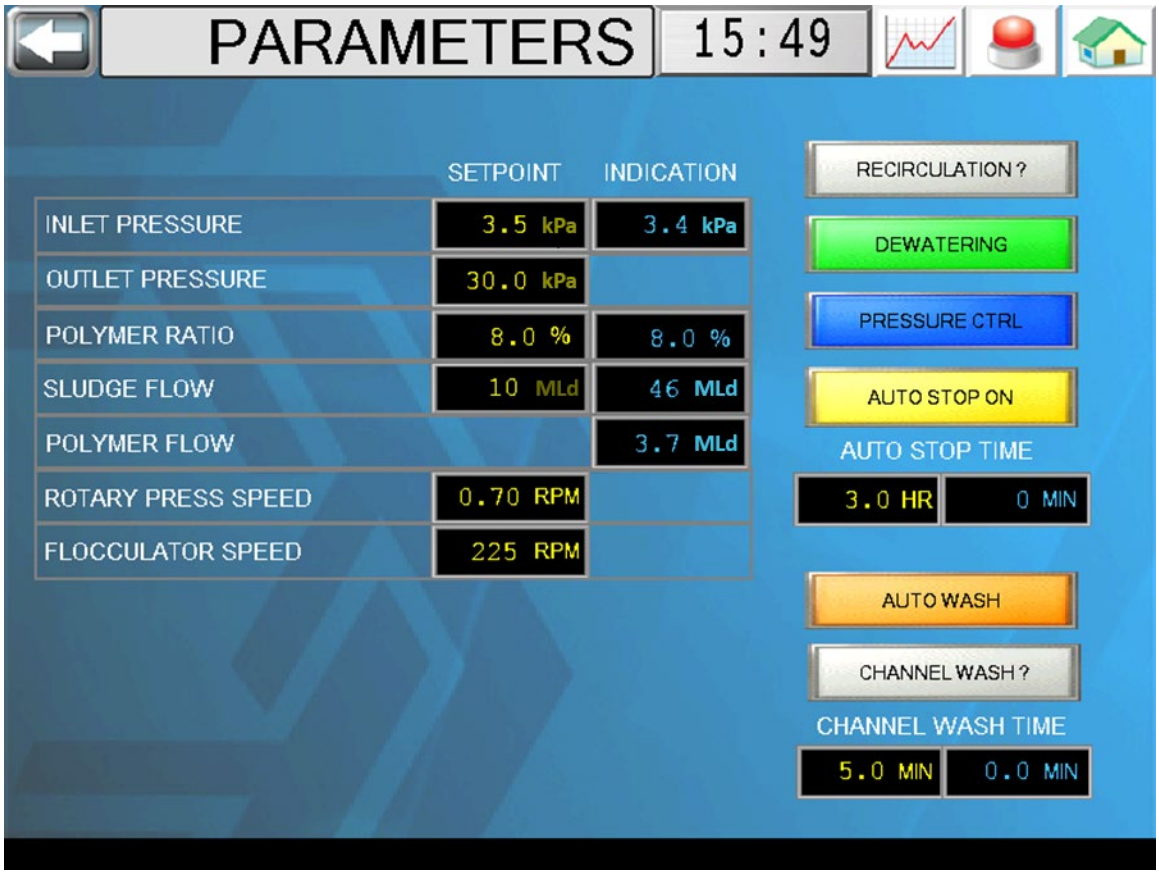
Shortcuts

If you want to go to this page :	Press on :
Main menu	
Parameters	
Panel settings	
Alarm History	
Previous page	

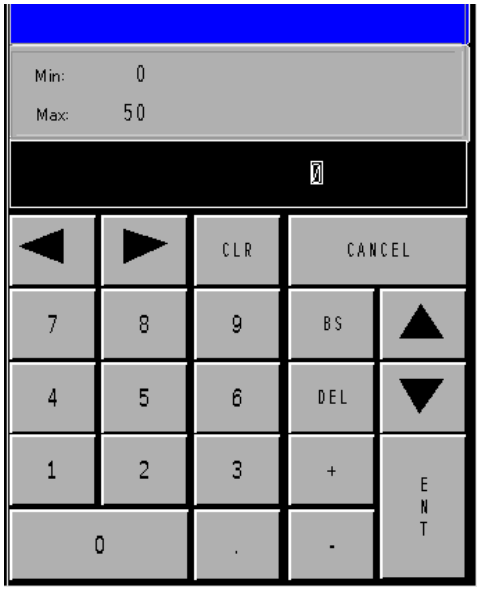


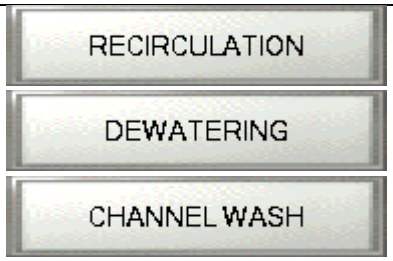
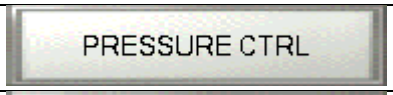
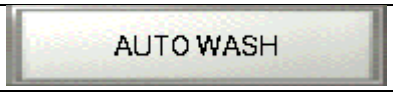
NOTE : Typical page for main menu

If you want to :	Press on:
- Change/adjust automatic parameters - Start the recirculation, dewatering, or the channel wash cycle.	PARAMETERS
See or operate a motor or valves manually For example : ROTARY PRESS	ROTARY PRESS
- See or reset the totalizer of sludge or polymer	TOTALIZERS
- Change the channel wash mode, turn one or more channel ON/OFF or activate the wetting cycle	SERVICE
- Acknowledge or see the alarms	ALARMS
- See when and what is the future maintenance Note : Maintenance is required if the button is blinking	MAINTENANCE



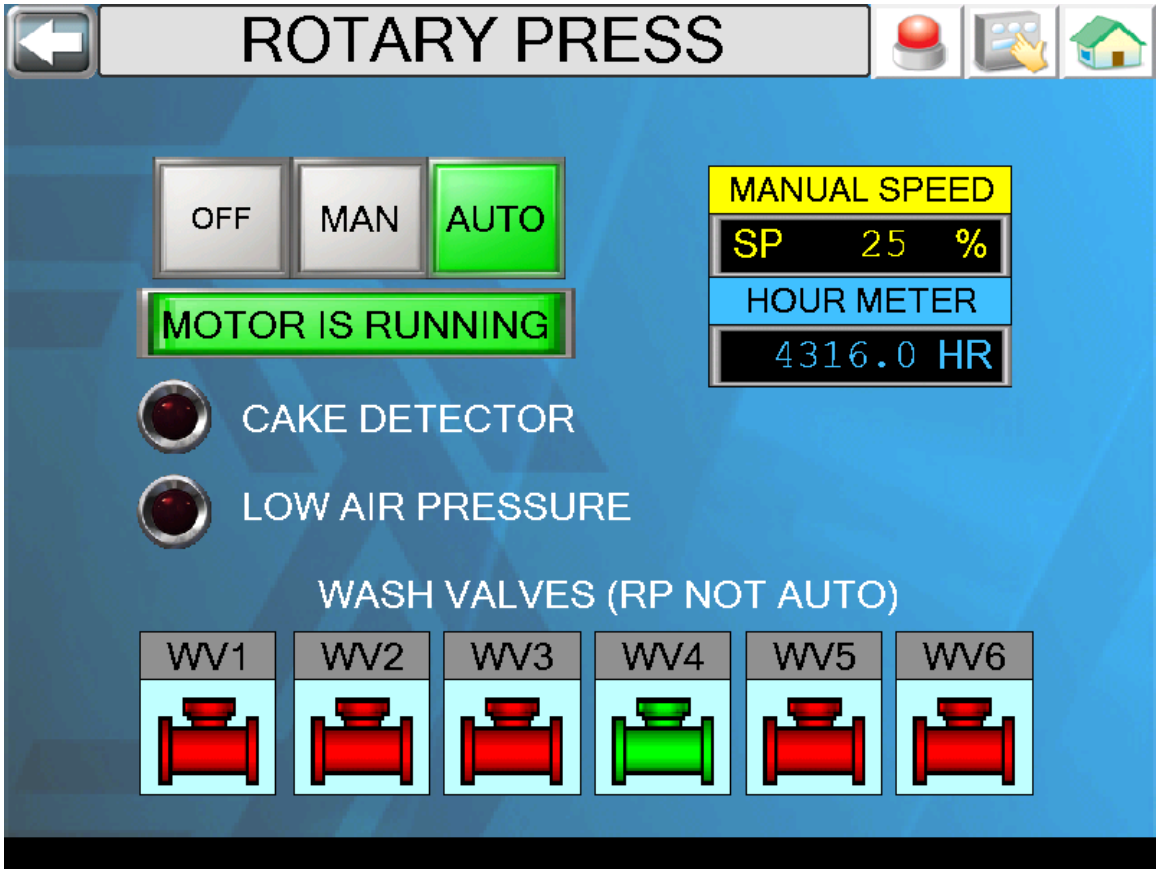
When a "Setpoint box" is pressed, this popup window opens



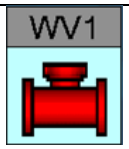
If you want to :	Press on :
- Start or stop the desired cycle	
- Transfer from flow control to pressure control	
- Stop the dewatering process after the preset time Note : Only in dewatering.	
-Start wash cycle after an auto stop Note : Only in dewatering and auto stop.	

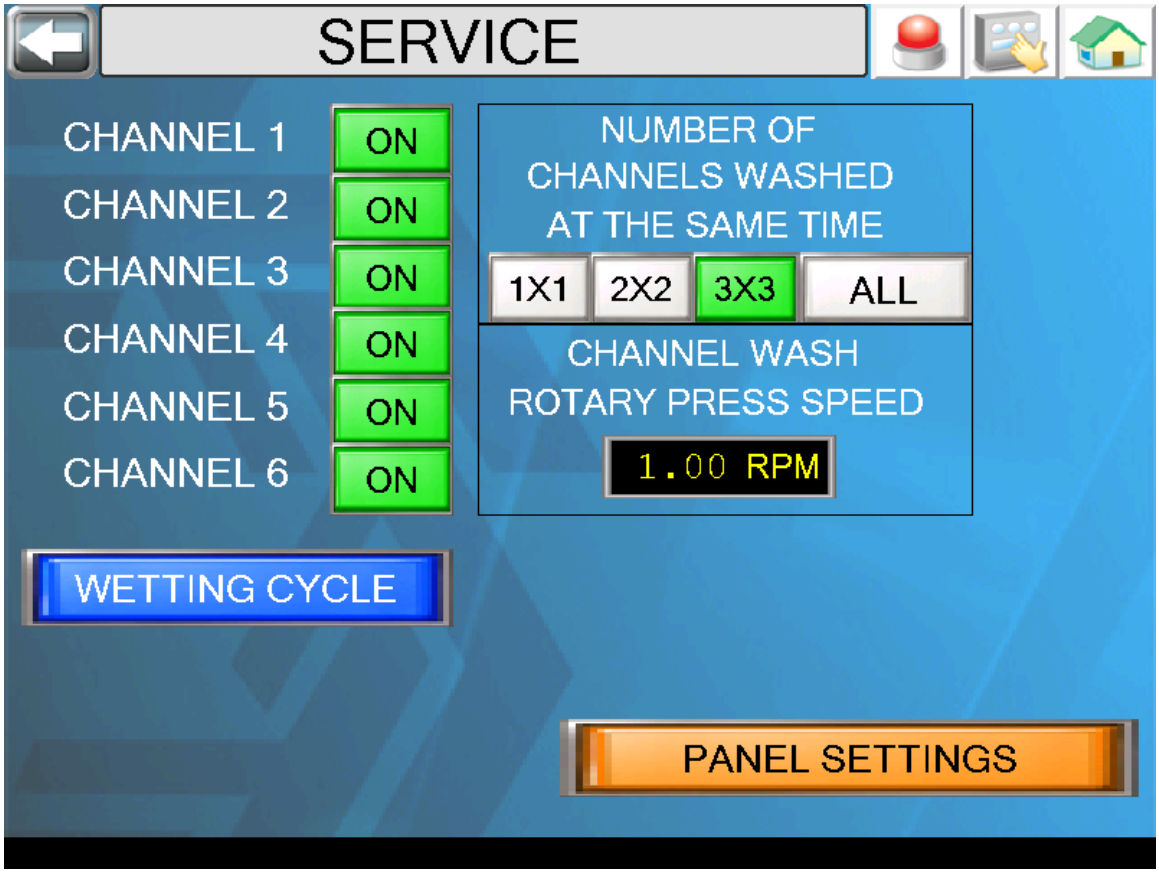
The operator can adjust the process with these parameters. The parameters that can be changed are yellow, and the process indications are blue. In the "Numeric Entry" popup window, the minimum and the maximum values that are accepted are shown. Also, you have the current value.

Note: There is two (2) types of control for pacing the speed of the sludge pump. At the beginning, when there is no cake at the outlet or to be sure to not push too hard at the outlet, the sludge flow control is used (the speed of the sludge pump is controlled to maintain the sludge flow setpoint). After few minutes or when there is a cake at the outlet, the operator should set the system to pressure control (the speed of the sludge pump is controlled to maintain the inlet pressure setpoint).



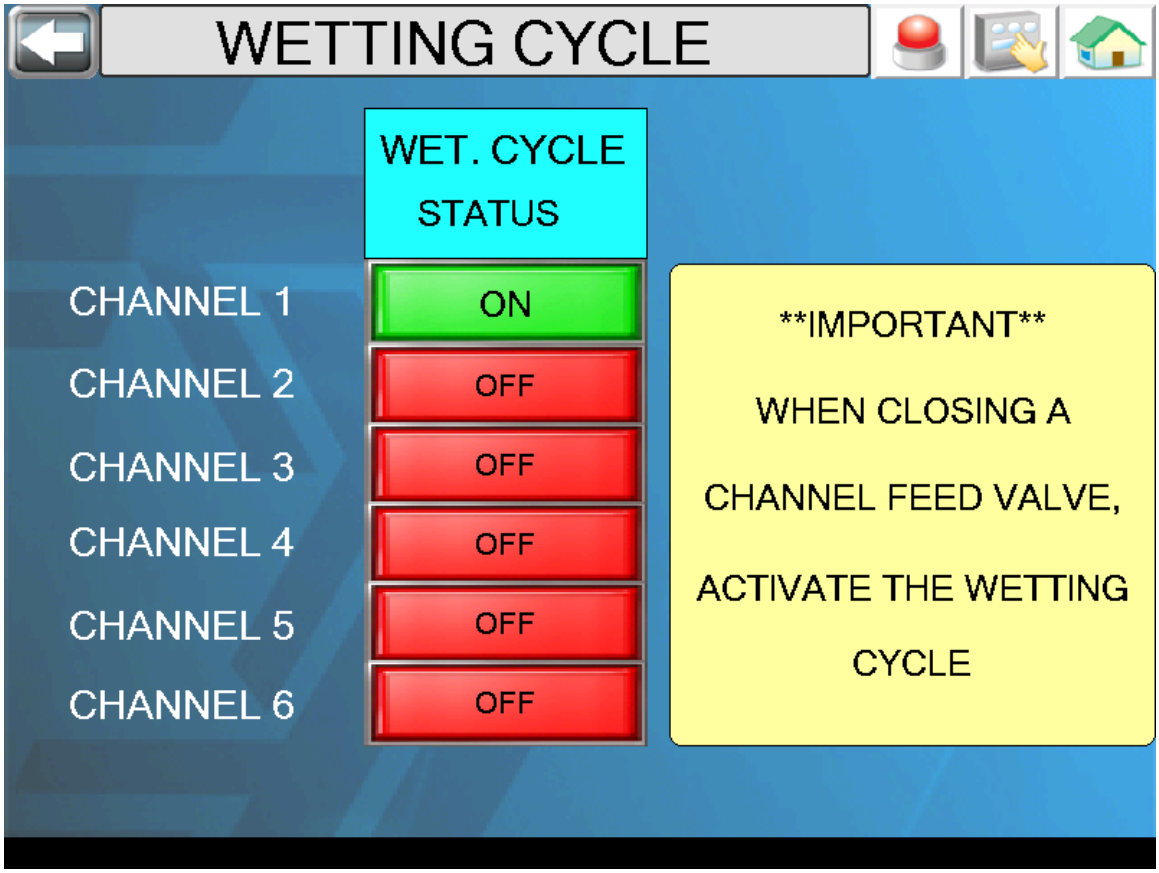
NOTE : Typical page for motor control

If you want to :	Press :
- Start the rotary press in manual	
- Turn OFF the rotary press	
- Set the rotary press to the AUTOMATIC mode	
- Change the manual speed setpoint	
- Control a valve manually Note : the motor must not be in auto mode	

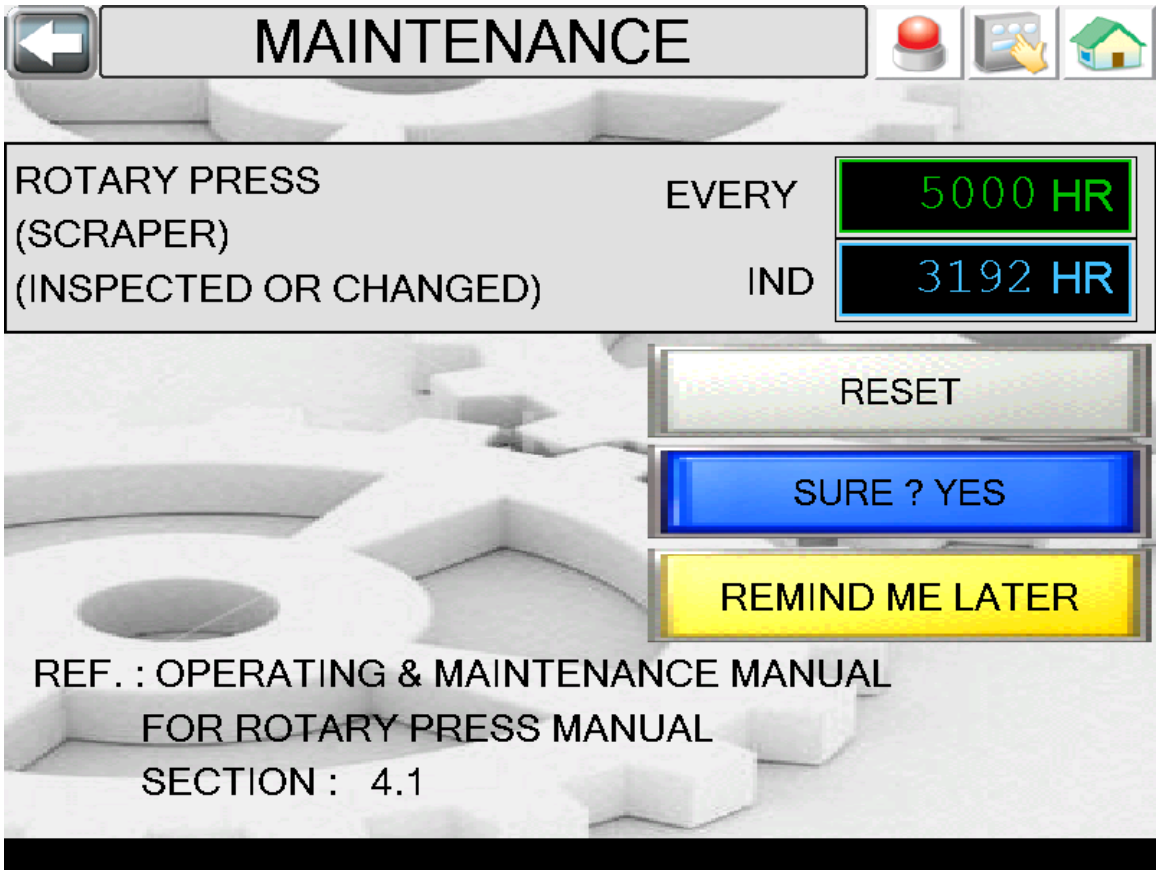


NOTE : Typical page for service

If you want to :	Press :
- Enable/disable all the functions of a channel	ON or OFF
- Change the number of channels washed at the same time	1X1 2X2 3X3 ALL
- Increase/ decrease the rotary press speed in channel wash mode	1.00 RPM



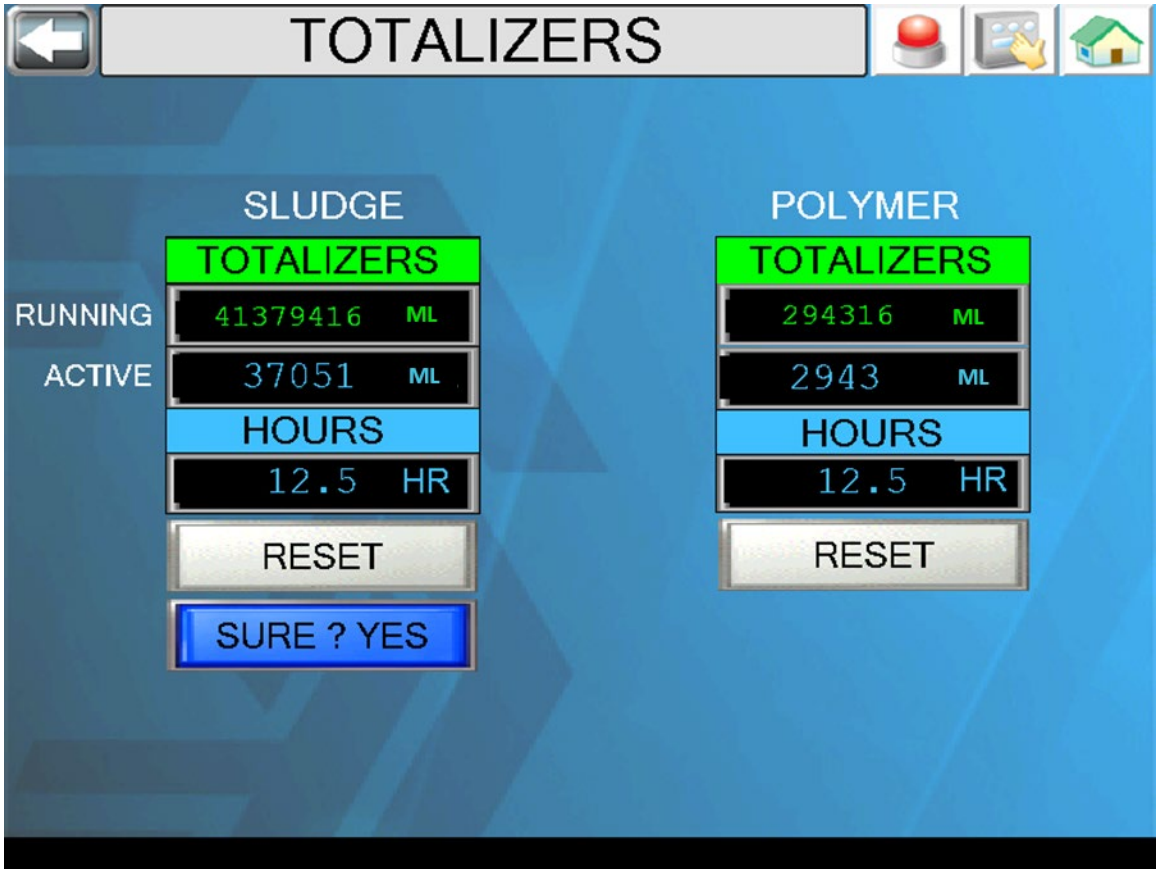
If you want to :	Press :
- Enable/disable the wetting cycle on a channel	ON or OFF



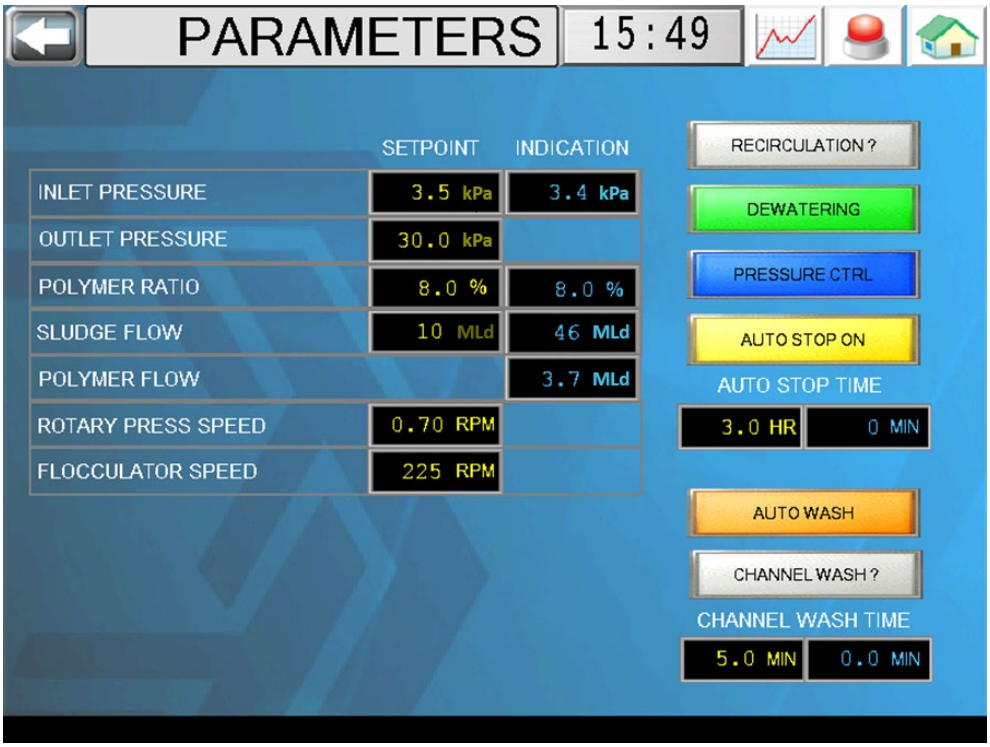
NOTE : Typical page for maintenance

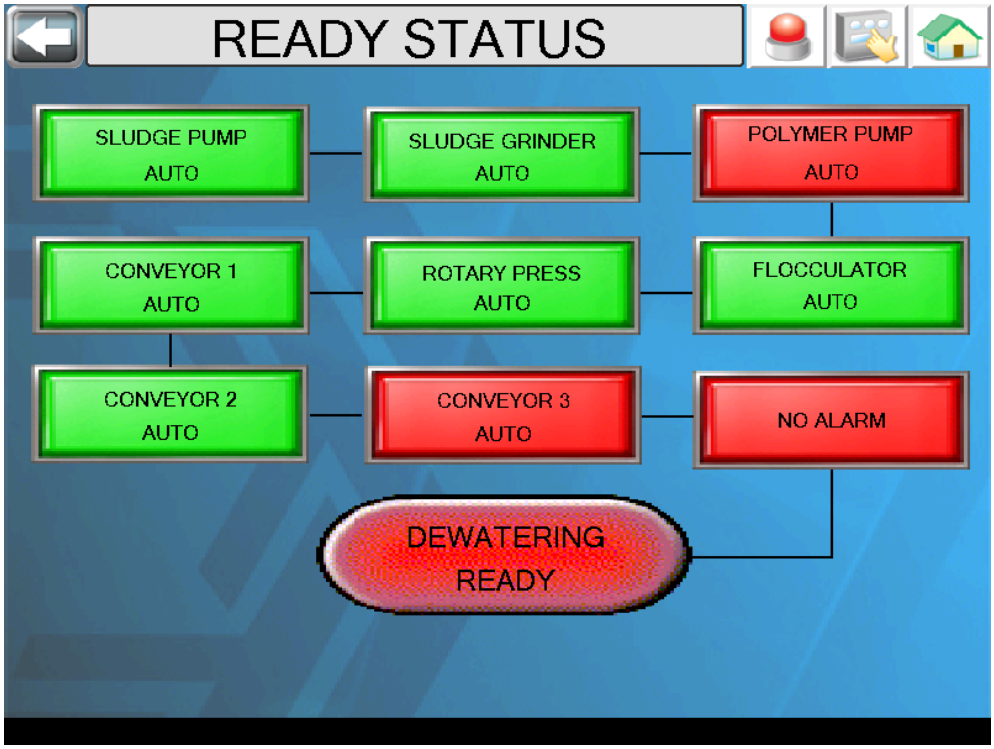
If you want to :	Press :
- Postpone this maintenance and be reminded later	
- Reset the timer, because the maintenance is done. Note : You have 10 seconds to confirm that you want to reset the meter by pressing on the "SURE ? YES" button	 

Note : To know the maintenance schedule, refer to the “Operating & Maintenance Manual for Rotary Press”.

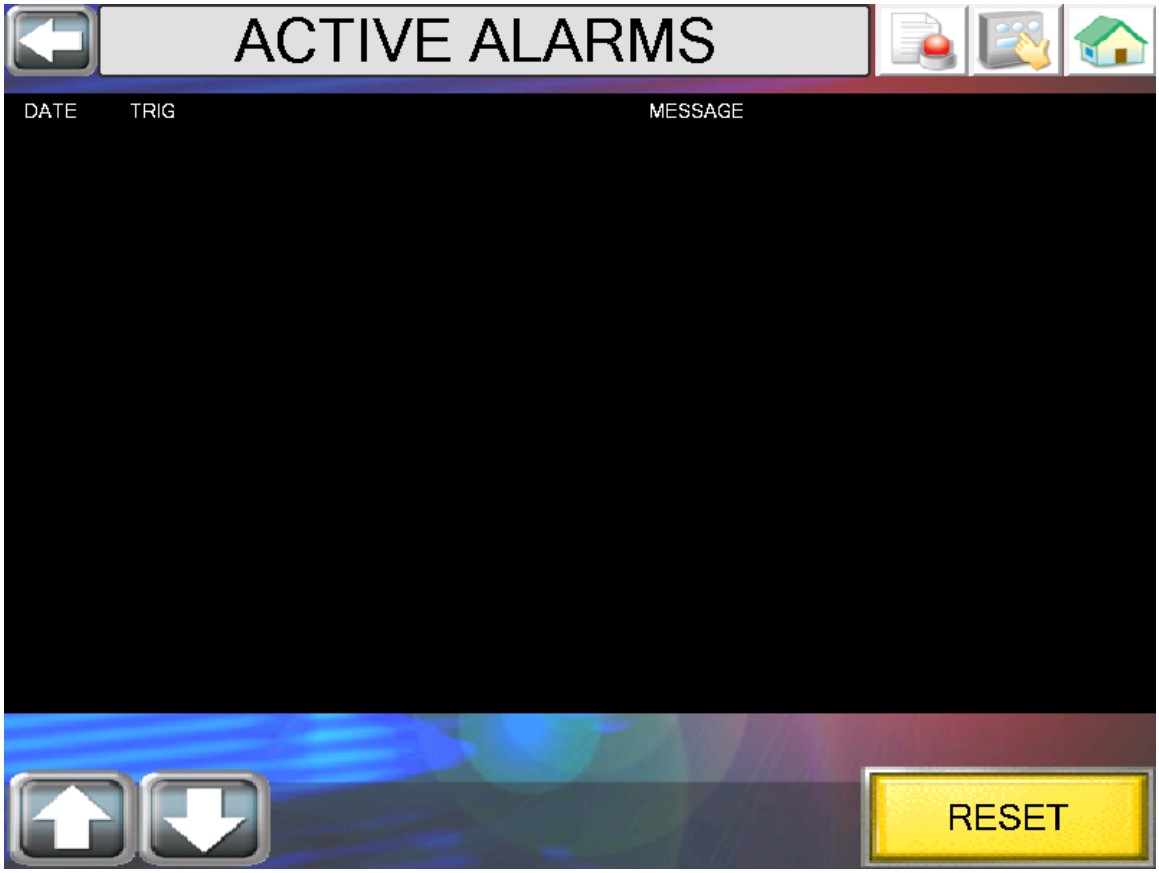


If you want to :	Press :
- Reset the totalizer value Note : You have 10 seconds to confirm that you want to reset the meter by pressing on the "SURE ? YES" button	RESET AND SURE ? YES





NOTE : Typical page for ready status
* This page will appear if a condition is missing to start the system



Press  to clear the unactive alarms.