

**APPENDIX E**

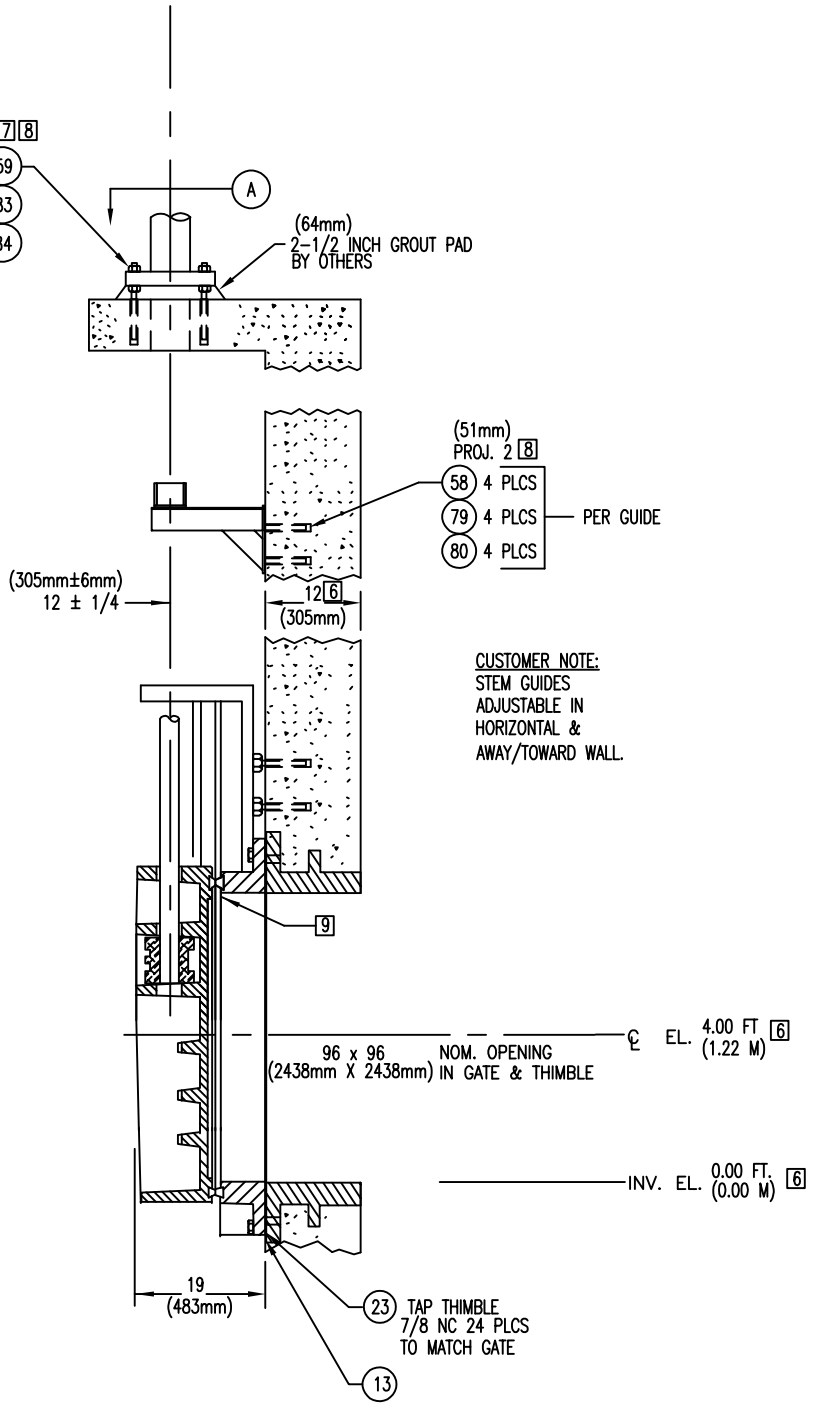
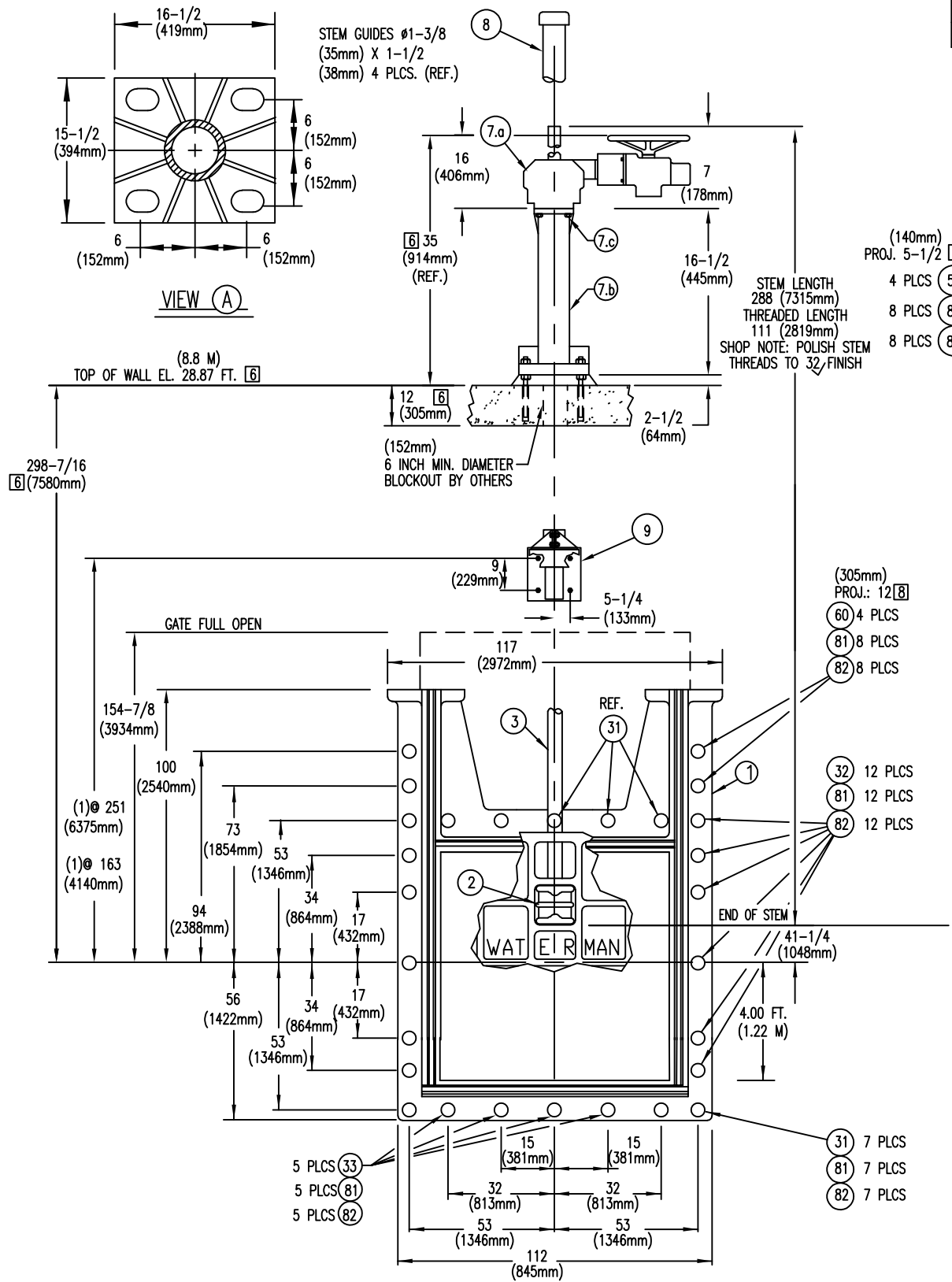
**CITY SUPPLIED SHOP DRAWINGS**

EMBEDDED DEPTH FOR ALL THREADED STUDS			
DIAMETER	EMBEDDED DEPTH	HOLE DEPTH	HOLE DIA.
3/4 (19mm)	6-3/4 (171mm)	7 (179mm)	7/8 (22mm)
7/8 (22mm)	7-7/8 (200mm)	8-1/8 (206mm)	1 (25mm)
1-1/4 (32mm)	11-1/4 (286mm)	11-1/2 (292mm)	1-3/8 (35mm)

**NOTE:**

- MATERIAL CERTS
- OPERATION & LEAK TEST REQUIRED

MATERIAL KEY	FINISH KEY	PAINT KEY
1. CAST IRON:ASTM A-126 CL. B 4. MANG. BRZ.:ASTM B-584 AL. C86500 5. NAVAL BRONZE: ASTM B-21 ALLOY 482 6. STRUCTURAL STEEL:ASTM A-36 9A. STN STL SHAPES:ASTM A-276 TY.304/304L D/C 9B. STN STL SHAPES:ASTM A-276 TY.316/316L D/C 11. STL PIPE:ASTM A-53 TY. E GR. A 13. NEOPRENE RUBBER:ASTM D-2000 14. CLEAR PLASTIC BUTYRATE PIPE:ASTM D-707 15A. STN STL HDW:ASTM F-593C/D & 594 GRP 1 (TY 304) 15B. STN STL HDW:ASTM F-593G/H & 594 GRP 2 (TY 316)	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY  26. PHOSPHOR BRZ.:ASTM B-139 AL. 510 99. BUTYL RUBBER MASTIC	6E BLAST CLEAN PER SSPC-SP10 (2) CTS (6 MILS/CT) POLYAMIDE EPOXY PAINT & (1) CT (4 MILS/CT) POLYURETHANE ENAMEL (TDTF-16 MILS MIN.) COLOR: GRAY [6]  6H BLAST CLEAN PER SSPC-SP6 (2) CTS (6 MILS/CT) POLYAMIDE EPOXY PAINT & (1) CT (4 MILS/CT) POLYURETHANE ENAMEL (TDTF-16 MILS MIN.) COLOR: GRAY [6]  6T VENDOR SHOP COAT



ITEM DESCRIPTION	MATERIAL KEY	FINISH KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1. SLUICE GATE ASSEMBLY	-	-	96 x 96 S-5000-F (REF. 100106)	1	1
a) FRAME	1	6E	W-5226-01-01 (REF. 103484)	1	1
b) COVER	1	6E	W-5225-01-01 (REF. 103483)	1	1
c) SEAT	5	1,3	REF. 100077	A/R	A/R
d) GUIDE RAIL	1	6E	CAST INTEGRAL WITH FRAME SYSTEM B (REF. 100067)	1	1
e) SIDE WEDGE ASSEMBLY	-	-	W-3026 L (REF. 110602) & 3030 R (REF. 110608)	6 EA	6 EA
COVER WEDGES	4	1,3	W-5004 L&R (REF. 100065)	6 EA	6 EA
FRAME WEDGES	1,4	1,3,6E	-	A/R	A/R
ASSEMBLY / ADJUSTING HARDWARE	15A	2	REF. 100074	6	6
f) TOP WEDGE ASSEMBLY	-	-	W-5006 (REF. 100069)	6	6
WEDGES	4	1,3	W-5007 (REF. 100070)	6	6
BRACKETS	4	1,3	REF. 100075	6	6
ASSEMBLY / ADJUSTING HARDWARE	15A	2	W-5006 (REF. 100069)	A/R	A/R
f) BOTTOM WEDGE ASSEMBLY	-	-	W-5008 (REF. 100071)	6	6
WEDGES	4	1,3	-	6	6
BRACKETS	4	1,3	-	6	6
ASSEMBLY / ADJUSTING HARDWARE	15A	2	-	A/R	A/R
2. THRUST NUT	4	2,3	W-5350 (3-1/2 DIA., 2 TPI [5] LH) (REF. 101230)	1	1
3. STEM ( RISING )	9A	2,3	3-1/2 DIA., 2 TPI, LH [5] (REF. 108145-1)	1	1
7. LIFT ASSEMBLY	-	-	-	1	1
a) ELECTRIC MOTOR OPERATOR	-	6T	ROTORK MODEL IQ370 FA25 B4 WIB11FA306-1	1	1
b) PEDESTAL	6,11	6H	REF. 102809-5	1	1
c) HEX HEAD BOLT & WASHER	15A	2	3/4 NC X 2 LG	8/8	8/8
8. STEM COVER	14,35A	2	REF. 105093 (5 in.) 102 LG.	1	1
10. STEM GUIDE (LZ BRONZE BUSHED)	1,9C,26	6E	TYPE K-2D (REF. 107626)	2	2
13. GASKET	99	2	TUBE TYPE	1	1
23. THIMBLE (PAINT INSIDE ONLY)	1	6E	96 X 96 TYPE F-SS X 12 LG. (REF. RB-16-0359)	1	1
31. ALL THREADED STUD	9B	2,3	7/8 NC X 5 LG.	7	7
32. ALL THREADED STUD	9B	2,3	7/8 NC X 13-1/2 LG	12	12
33. ALL THREADED STUD	9B	2,3	7/8 NC X 10 LG	5	5
58. ALL THREADED STUD [8]	9B	2,3	3/4 NC X 9 LG.	8	8
59. ALL THREADED STUD [8]	9B	2,3	1-1/4 NC X 17 LG.	4	4
60. ALL THREADED STUD [8]	9B	2,3	7/8 NC X 21 LG.	4	4
79. HEX NUT	15B	2	3/4 NC	8	8
80. WASHER	316 SS	2	3/4 DIA.	8	8
81. HEX NUT	15B	2	7/8 NC	32	32
82. WASHER	315 SS	2	7/8 DIA.	32	32
83. HEX NUT	15B	2	1-1/4 NC	8	8
84. WASHER	316 SS	2	1-1/4 DIA.	8	8

**NOTES: UNLESS OTHERWISE SPECIFIED.**

- (GATE CAPACITY) MAXIMUM SEATING HEAD = 65 FT. (19.81 M); MAXIMUM UNSEATING HEAD = 21 FT. (6.4 M)
- OPERATING HEAD FROM GATE CENTER LINE: MAXIMUM SEATING HEAD = 28.87 FT. (8.8 M); MAXIMUM UNSEATING HEAD = 13.12 FT. (4.0 M) [6]
- LIFT CAPACITY= 52,158 LBS. @ 13 IN/MIN. (1450 FT. LBS; 26 RPM)
- TURN HANDWHEEL CCW TO OPEN (RAISE) GATE.
- 29" STUB ACME THREADS. (1/2 PITCH, 1/2 LEAD, SL)
- CONTRACTOR TO VERIFY OR SUPPLY.
- DIMENSION INCLUDES GROUT PAD THICKNESS.
- CONTRACTOR TO PROVIDE HILTI HIT-RE 500 V3 (WET OR DRY CONDITIONS), HILTI HY-200 (DRY CONDITIONS ONLY); OR EQUAL EPOXY FOR ANCHORS.
- IMPACT INTO DOVETAIL GROOVE/MACHINE FLAT TO .002 T.I.R. WITH A #3-FINISH OR BETTER
- DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETERS IN PARENTHESIS, UNLESS OTHERWISE NOTED OR SHOWN.

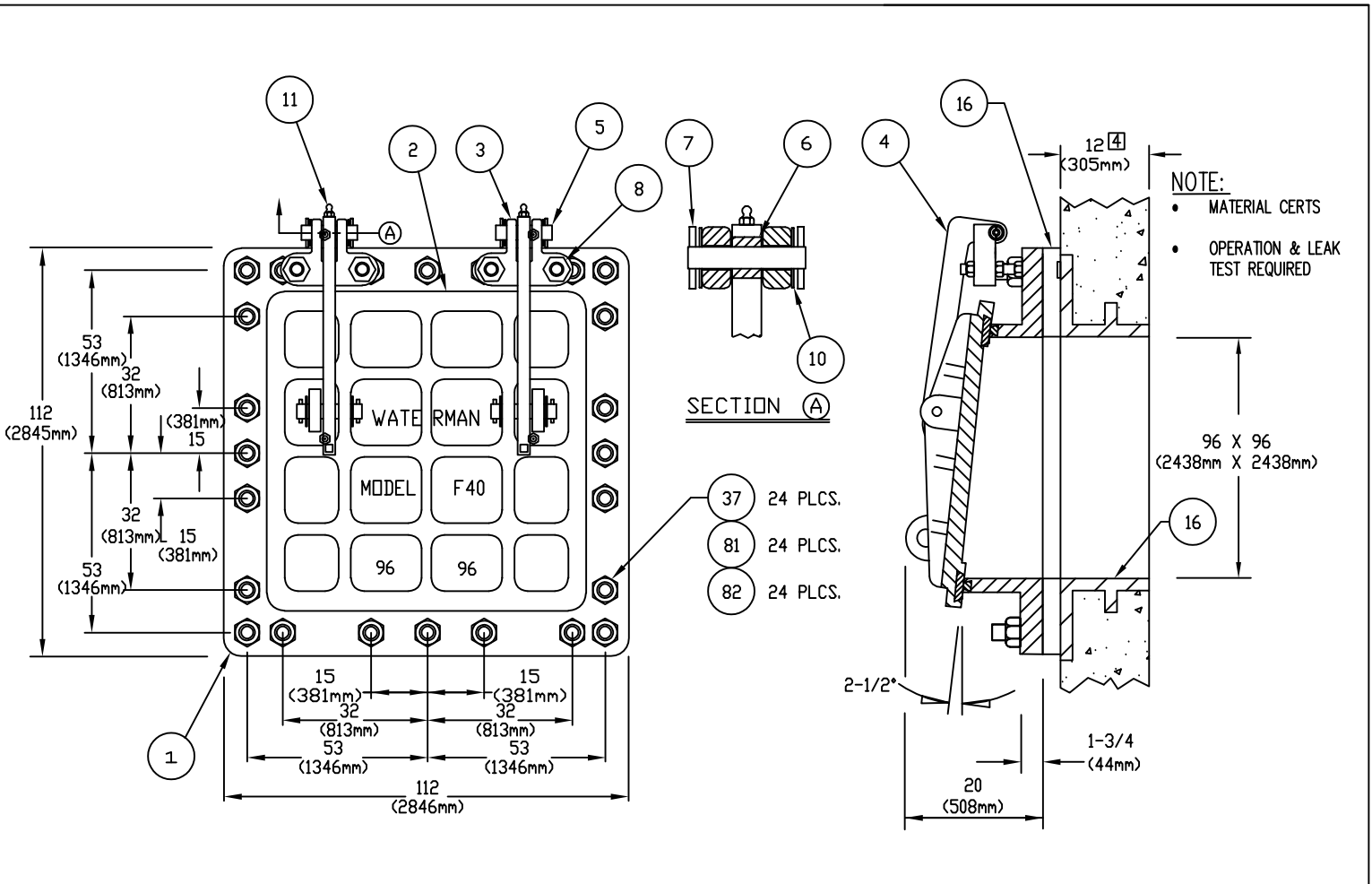


(2438mm X 2438mm)  
96 X 96 WATERMAN MODEL  
S-5000-F  
SLUICE GATE

FOR: POWER & MINE SUPPLY CO. LTD  
75 MERIDIAN DRIVE, UNIT 4  
WINNIPEG, MANITOBA R2R 2V9  
CANADA  
PO: P089046  
  
REF: RUBY OUTFALL GATE CHAMBER UPGRADE  
WINNIPEG, MB, CANADA

REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER		
			ME27232	ROGER VALDEZ		
REV. NO.	DATE	BY	QUOTE NO.	DRAWN BY	CHK'D BY	ENGINEER
			WQ16-E-27232	MH	REM	REM
REV. NO.	DATE	BY	QUOTE ITEM NO.	SHEET	1 OF 1	
			1			
REV. NO.	DATE	BY	SCALE	DATE		
			NTS	JULY 13, 2016		
REV. NO.	DATE	BY	DRAWING NO.			
			RB-16-0357			

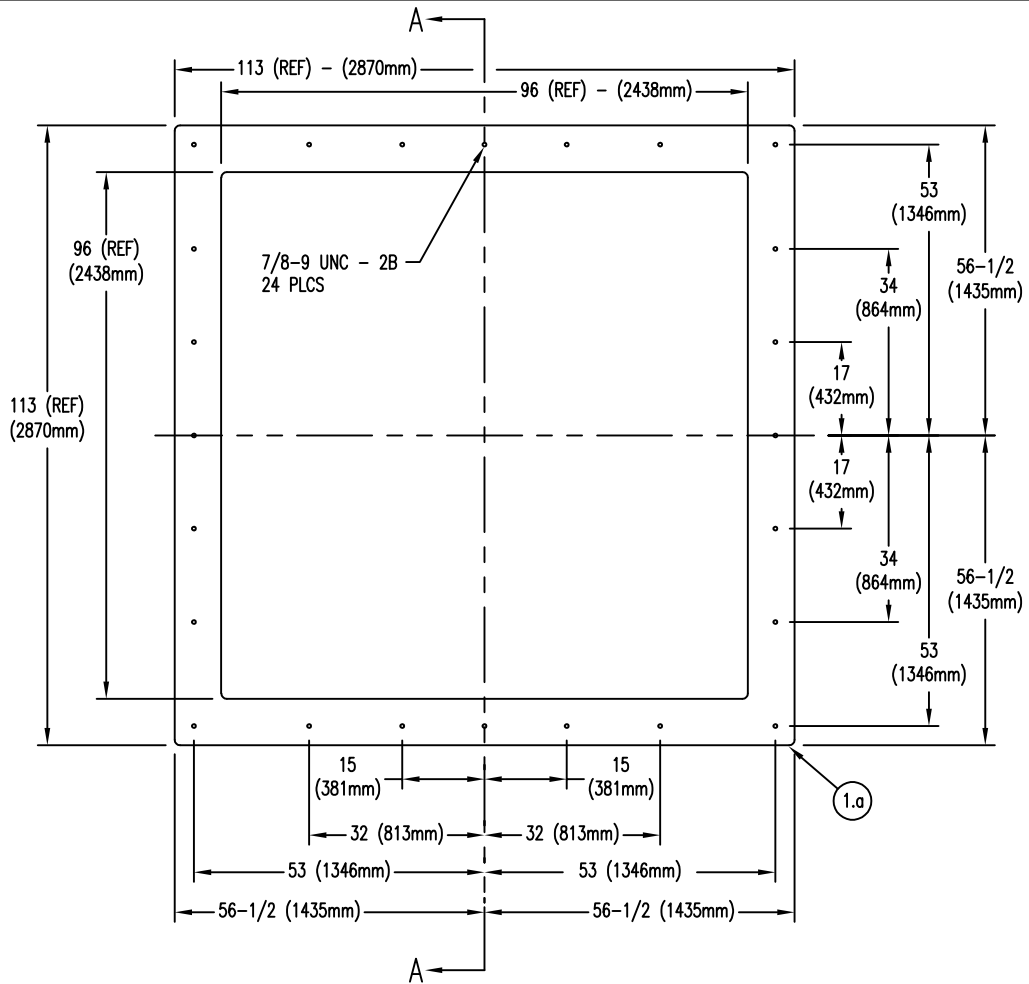
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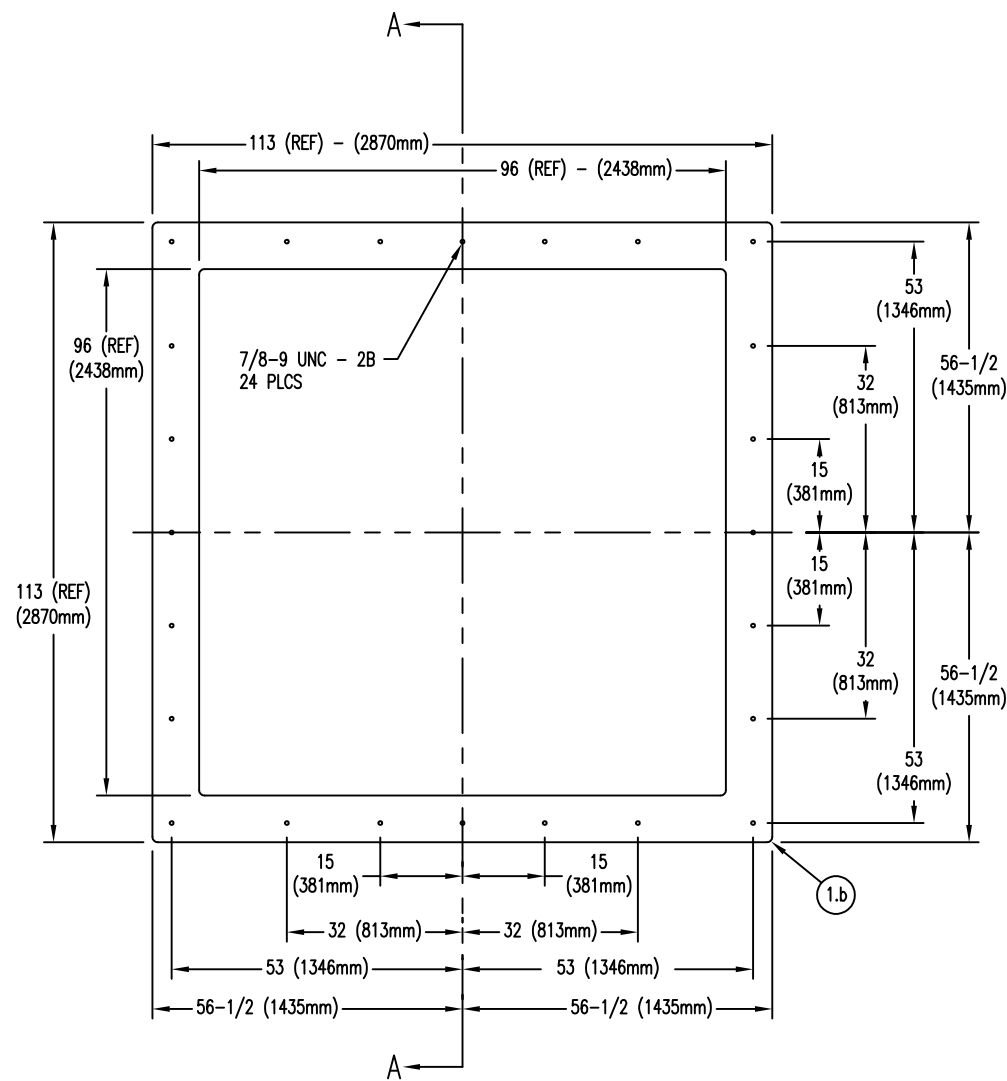
DESCRIPTION	PART #/ SIZE	MATERIAL	FIN	QTY	TOT	FINISH KEY
1. FRAME SEAT (MACHINE)	W-1763	CAST IRON ASTM A-126 CL. B	6E	1	1	1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE ASTM A-123 5. GALVANIZE ASTM A-153 6E BLAST CLEAN PER SSPC-SP10 (2) CTS (6 MILS/CT) POLYAMIDE EPOXY PAINT & (1) CT (4 MILS/CT) POLYURETHANE ENAMEL (TDFT-16 MILS MIN.) COLOR: GRAY [6]
2. COVER SEAT (NEOPRENE)	W-1762	CAST IRON ASTM A-126 CL. B NEOPRENE RUBBER: ASTM D-2000	6E	1	1	
3. PIVOT LUG	W-1270 (REF. 101398)	DUCTILE IRON ASTM A-536 GR. 65-45-12	3	1	1	
4. HINGE LINK	2 PLATE (REF. 101720)	STN STL PLATE: ASTM A-240 TY.316/316L D/C	2,3,6E	2	2	
5. HINGE PIN	2 DIA X 9-1/2 LG (REF. 101673-11)	STN STL SHAPES: ASTM A-276 TY.316/316L D/C	2	4	4	
6. BUSHING	2 I.D. X 2.375 O.D. X 2 LG (REF. 101673-11)	COMMERCIAL BRONZE	2	4	4	NOTES: 1. ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED. 2. DESIGNED FOR 20 FT (6.1 M) SEATING HEAD. [4] CONTRACTOR TO VERIFY OR SUPPLY. [5] CONTRACTOR TO PROVIDE HILTI HIT-RE 500 V3 (WET OR DRY CONDITIONS) OR HILTI HY-200 (DRY CONDITIONS ONLY); OR EQUAL, EPOXY FOR ANCHORS. 6. DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETERS IN PARENTHESIS, UNLESS OTHERWISE NOTED OR SHOWN.
7. SPRING PIN	3/8 DIA X 3 LG	STN STL HDW: ASTM F-593C/D & 594 GRP 1 (TY 304)	2	8	8	
8. HINGE STUD & NUTS	2-1/2 NC X 12 LG 2-1/2 NC	STN STL HDW: ASTM F-593C/D & 594 GRP 1 (TY 304) STN STL HDW: ASTM F-593C/D & 594 GRP 1 (TY 304)	2,3 2	4 12	4 12	
10. WASHER	2 DIA	COMMERCIAL BRONZE	2	8	8	
11. GREASE ZERK	1/4-28NF STGHT ZERK		2	4	4	
16. GASKET	TUBE TYPE	BUTYL RUBBER MASTIC	2	1	1	
23. THIMBLE (PAINT NON MATING SURFACES)	TYPE F-SS X 12 LG (REF. RB-16-0359)	CAST IRON ASTM A-126 CL. B	2,3,6E	1	1	
37. ALL THREADED STUD	7/8 NC X 5 LG	STN STL SHAPES: ASTM A-276 TY.304/304L D/C	2,3	24	24	
81. HEX HEAD BOLT	7/8 NC	STN STL HDW: ASTM F-593C/D & 594 GRP 1 (TY 304)	2	24	24	
82. WASHER	7/8 DIA.	STN. STL. 304	2	24	24	

(1) GATE REQ'D @ [1]	REV. NO.	DATE	BY
REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WATERMAN INDUSTRIES AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF WATERMAN INDUSTRIES ©	REV. NO.	DATE	BY

<b>96 X 96 WATERMAN MODEL F40-F CAST IRON DRAINAGE GATE</b>  	FOR: POWER & MINE SUPPLY CO. LTD 75 MERIDIAN DRIVE, UNIT 4 WINNIPEG, MANITOBA R2R 2V9 CANADA	JOB NO. ME27232	PROJECT MANAGER ROGER VALDEZ		
	PD: P089046	QUOTE NO. WQ16-E-27232	DRAWN BY   CHK'D BY   ENG BY MH   REM   REM		
	REF: RUBY OUTFALL GATE CHAMBER UPGRADE WINNIPEG, MB, CANADA	QUOTE ITEM NO. 2	SHEET 1 OF 1		
	ENG:	SCALE NTS	DATE JULY 13, 2016		
		DRAWING NO. RA-16-0358			

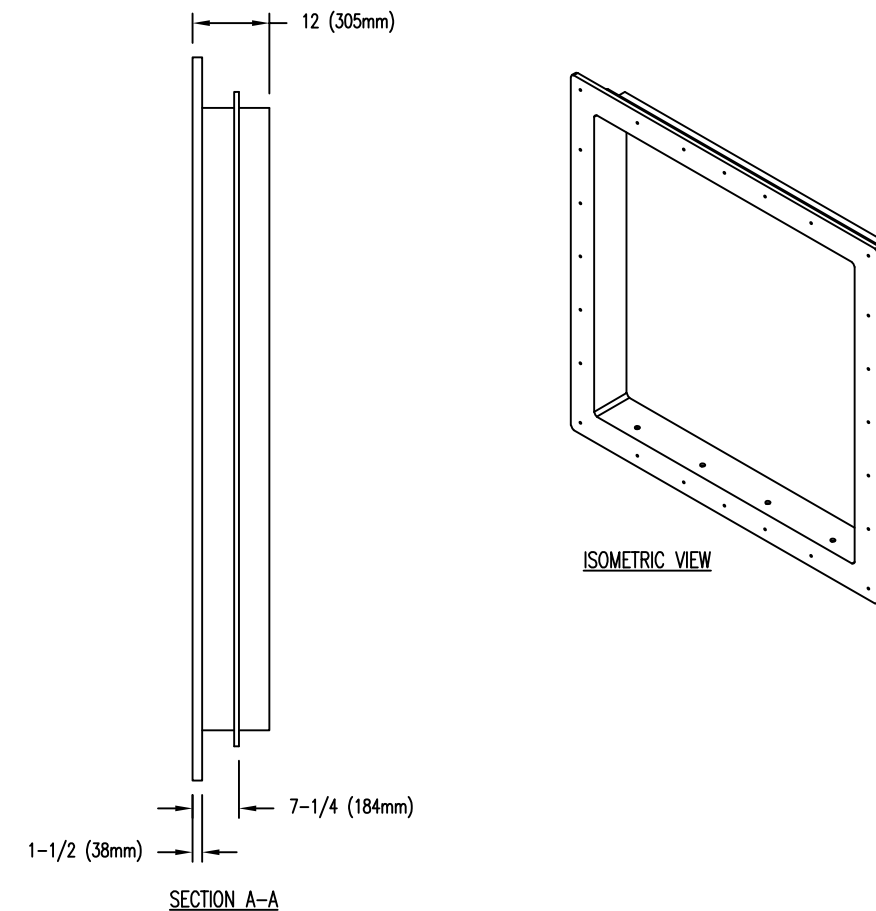


ITEM (1.a)  
96 X 96 S-5000-F SLUICE GATE  
REF: RB-16-0359



ITEM (1.b)  
96 X 96 F-40 FLAP GATE  
REF: RB-16-0358

MATERIAL KEY		FINISH KEY		PAINT KEY	
1. CAST IRON:ASTM A-126 CL. B		1. AS CAST 2. MILL 3. MACHINED 4. GALVANIZE-ASTM A-123 5. GALVANIZE-ASTM A-153 6. SEE PAINT KEY 7. ZINC PLATED		6E BLAST CLEAN PER SSPC-SP10 (2) CTS (6 MILS/CT) POLYAMIDE EPOXY PAINT & (1) CT (4 MILS/CT) POLYURETHANE ENAMEL (TDFT-16 MILS MIN.) COLOR: GRAY [6]	
ITEM DESCRIPTION	MATERIAL KEY	FINISH KEY	PART NO. OR SIZE (FOR WATERMAN USE ONLY)	QTY/ GATE	TOTAL QTY
1. THIMBLE - 96 X 96 F-SS X 12 LG	-	-	REF. 110972	1	2
a) THIMBLE (PAINT INSIDE ONLY)	1	6E	W-5471-2212-01 (REF. RB-16-0357) (REF. 110975)	1	
b) THIMBLE (PAINT INSIDE ONLY)	1	6E	W-5471-2212-01 (REF. RB-16-0358) (REF. 110975)	1	



NOTES: UNLESS OTHERWISE SPECIFIED.  
1. DIMENSIONS ARE SHOWN IN INCHES WITH MILLIMETERS IN PARENTHESIS, UNLESS OTHERWISE NOTED OR SHOWN.  
2.  
3.  
4.  
5.  
[6] CONTRACTOR TO VERIFY OR SUPPLY.

(2) THIMBLES REQ'D @ [6]

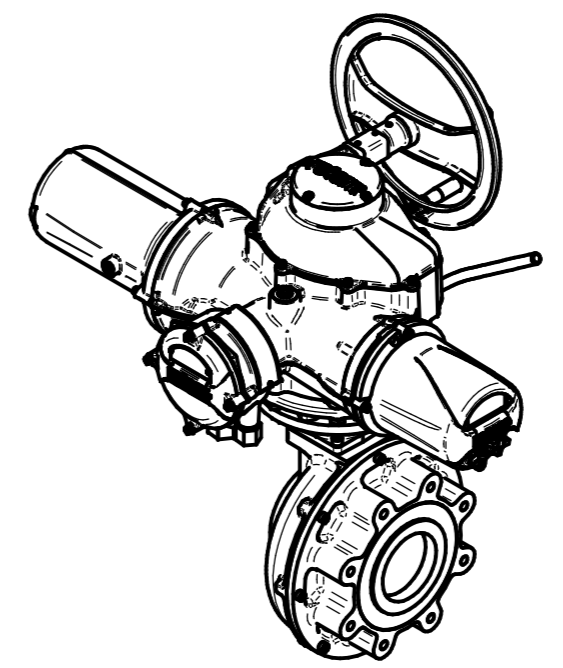
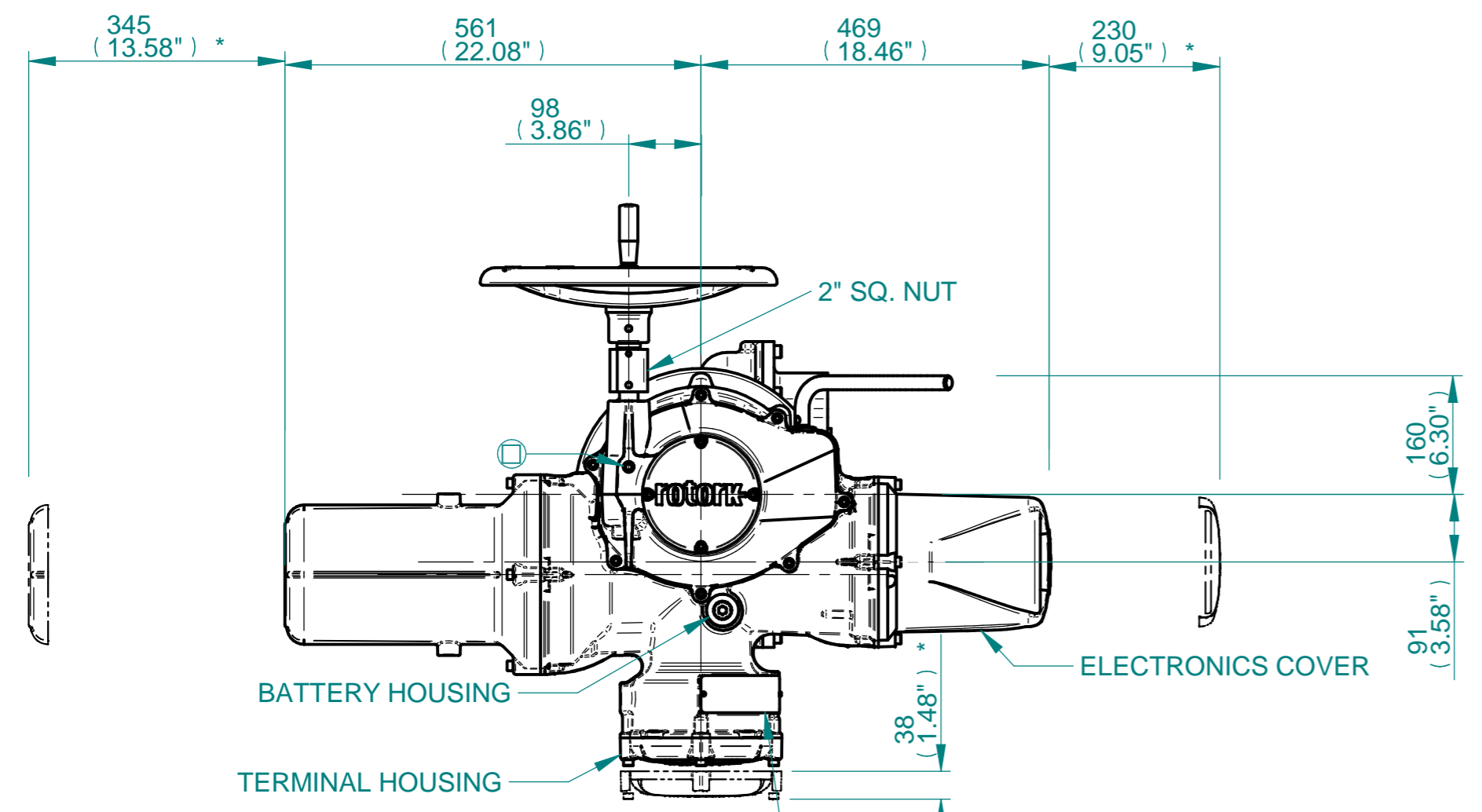
REV. NO.	DATE	BY	JOB NO.	PROJECT MANAGER		
			ME27232	ROGER VALDEZ		
REV. NO.	DATE	BY	QUOTE NO.	DRAWN BY	CHK'D BY	ENGINEER
			WQ16-E-27232	REM	MDH	REM
REV. NO.	DATE	BY	QUOTE ITEM NO.	SHEET	1 OF 1	
			1A & 2A			
REV. NO.	DATE	BY	SCALE	DATE		
			NTS	JUNE 27, 2016		
REV. NO.	DATE	BY	DRAWING NO.			
	JULY 18, 2016	REM	RB-16-0359			



(2438mm) (2438mm) (305mm)  
96 X 96 F-SS X 12 LG  
WATERMAN  
THIMBLE

FOR: POWER & MINE SUPPLY CO LTD.  
75 MERIDIAN DRIVE, UNIT 4  
WINNIPEG, MANITOBA R2R 2V9  
CANADA  
PO: P089046  
REF: RUBY OUTFALL GATE CHAMBER UPGRADE  
WINNIPEG, MB, CAN  
ENG:

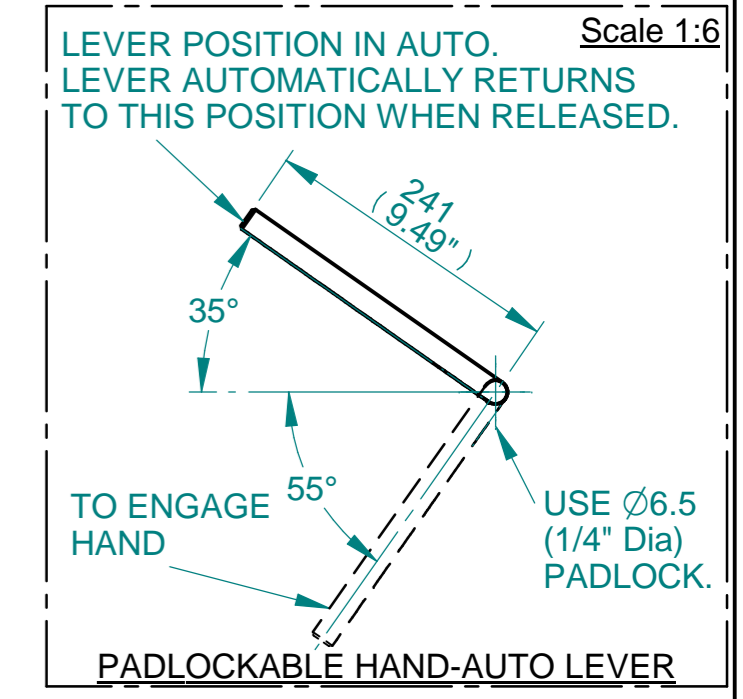
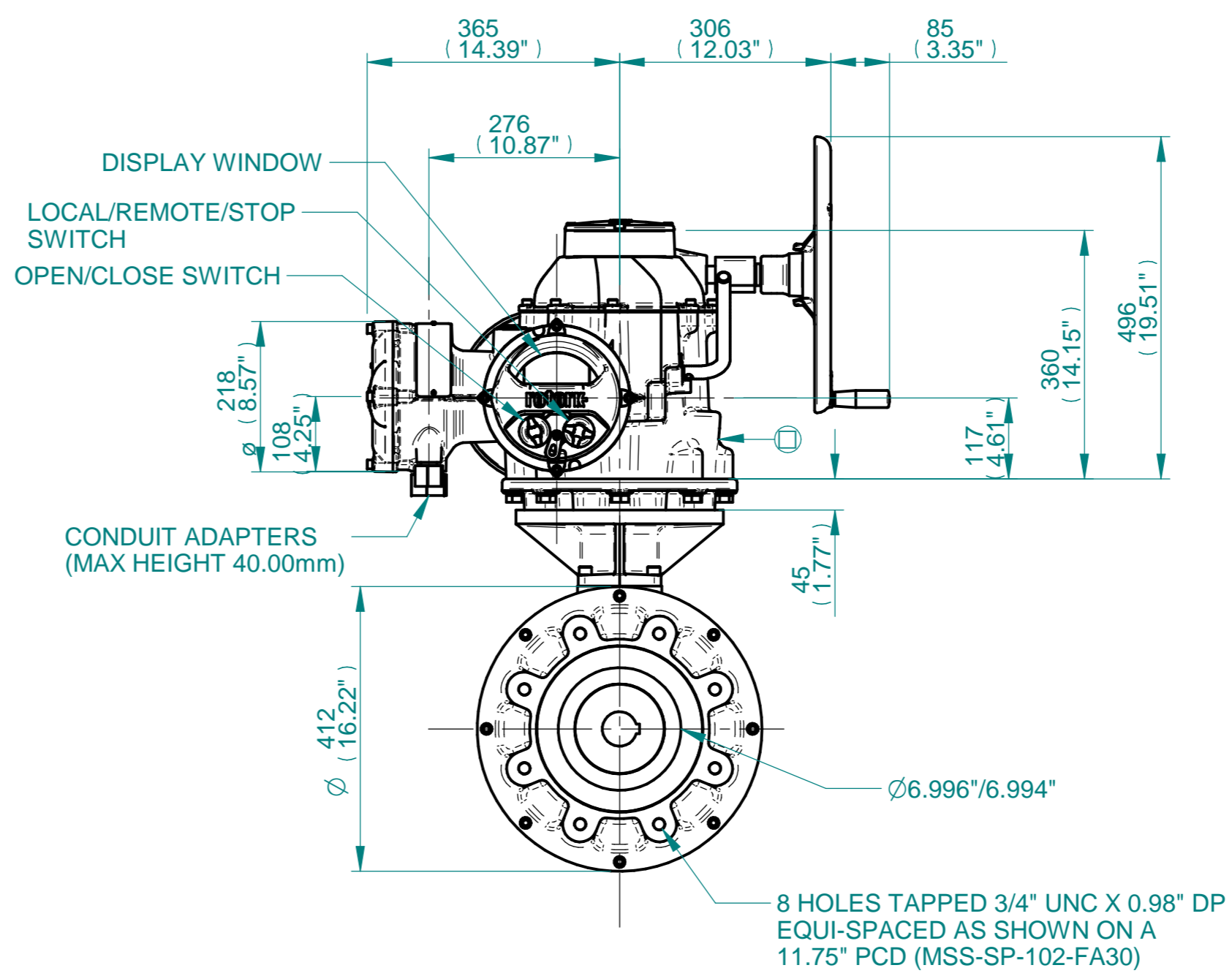
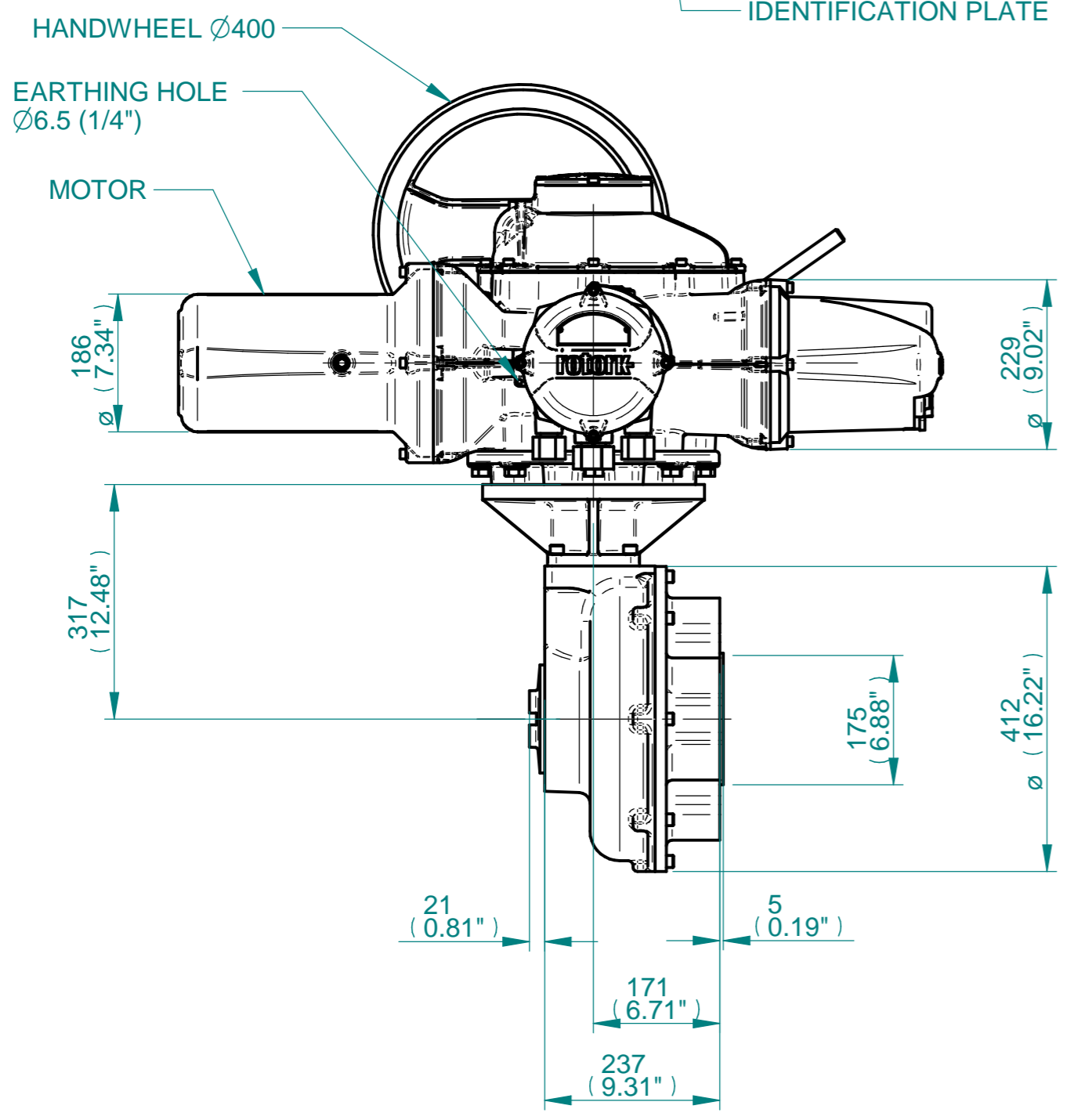
H  
G  
F  
E  
D  
C  
B  
A



**NOTES:**  
 :DIMENSIONS WITH "\*" INDICATE COVER REMOVAL ALLOWANCE  
 :NETT WEIGHT = 271kg/595lbs  
 : = OIL FILLER/DRAIN PLUG  
 :THE INTERFACE PROVIDED FOR MOUNTING THE ACTUATOR OR SECOND STAGE GEARBOX ONTO THE VALVE SHOULD CONFORM TO GOOD ENGINEERING PRACTICES, ENSURING ADEQUATELY TOLERANCED LIMITS FOR PARALLELISM, PERPENDICULARITY AND CONCENTRICITY.  
 :ROTORK CANNOT BE HELD LIABLE FOR DAMAGE TO OUR EQUIPMENT CAUSED BY EXCESSIVE LOADING FROM COVER TUBES. (SEE ALSO E156E)

**CONDUIT ENTRIES**

	Hole 1	Hole 2	Hole 3
Size	1"NPT	1 1/2"NPT	1"NPT
Plugged	1"NPT	1 1/2"NPT	1"NPT
Gland	No Gland	No Gland	No Gland



Valve Tag Numbers  
S-5000

**rotork**  
 www.rotork.com  
 Rotork West Coast Factory Store  
 2180 S. McDowell Blvd., Suite B  
 Petaluma, CA 94954  
 Telephone (707)769-4880

Title		CERTIFIED DATA							
IQ70-FA25B4,WTC,SHW W/2" SQ. NUT, LONG_ECVR ,IB11,(Proj.A),FA30, Ratio 6:1 Installation Details		Customer	GNI WATERMAN INDUSTRIES LLC.		Rated Torque	2422lbsft/3283Nm	Elec. Supply	575-3-60	
Drawn	WMH	Checked	RAR	Date	05-JUL-16	Nominal HP	8.27hp	Wiring Diagram	100B0000
Ref	BHO	Project Ref	ME272327/RUBY OUTFALL WINNIPEG, MB	Order No	P000059480	Enclosure	IP68 CSA	Average Load	10.44amps
		Item No	N	Op. Time/Speed	404 secs.	Nett Weight	271kg/595lbs	Paint	00-A-05

Issue	Description
1	First Issue

Scale: 1:8

THIRD ANGLE PROJECTION

Drawing Number	Issue No	Sheet No
C1926501	1	1 of 1

1 2 3 4 5 6 7 8 9 10 11 12



# Rotork Scope Document



C19265

Date:

7/8/2016

LINE ITEM	UNIT QTY.	CUSTOMER PART No.	ACTUATOR MODEL No.	SERVICE	WIRING DIAGRAM	TAG(S)
1	1		IQ70FA25B4	Isolating	100B0000	S-5000



# IQ Electric Motor Actuator Data Sheet



Job Number	C19265	Line:	1
Contract Eng.:		Date:	7/8/2016
Project:	ME272327 / RUBY OUTFALL Winnipeg, MB		
Consultant:			
MOV Tag No.'s:	S-5000		
Shop Drawing:	C1926501		

## CUSTOMER DATA

Name:	GNI WATERMAN INDUSTRIES LLC.
P.O. No.:	P000059480
P.O. Item:	N
Cust. Part Number:	

## VALVE DATA

Make:	
Size:	
Type:	
Class:	

## ACTUATOR DATA

Model No.:	IQ70FA25B4
Base:	FA25
Actuator/Gear Weight:	595 lbs
Enclosure:	CSA 4
Rated Torque:	475 lbft
Stall Torque Range:	665 - 1140 lbft
Wiring Diagram:	100B0000
Operating Time:	404 sec

Handwheel Type:	30:1 SIDE
Paint Spec.:	Polyester Powder Coating
Conduit 1 & 3:	ASA 1.0"
Conduit 2:	ASA 1.5"
Conduit 4:	None
Lubrication:	SAE80EP
Operating Temp.:	-30C TO +70C

## MOTOR DATA

Locked Rotor Amps:	85
Rated Load Amps:	24
*Nominal Load Amps:	10.44 A
*Nom. Motor HP:	8.27

Supply V/Ph/Hz:	575V / 3Ph / 60Hz
Insulation Class/Duty:	F / 15 min
Service Factor	1
Type:	Totally Enclosed Non-Ventilated

\*Nominal HP and Run Load Amps are at 1/3 full rated torque output.

## SECONDARY GEARBOX DATA

Model Number/Size:	IB11
Ratio:	6:1
Combined Torque:	2422 lbft

Make:	EXS
Lubrication:	Grease
Gearbox Base:	FA30

# Document Title: STANDARD IQ REMOTE CONTROL CIRCUITRY (24VDC)

THE BLUETOOTH® SETTING TOOL ENABLES ALL CONFIGURABLE ACTUATOR SETTINGS TO BE MADE.

BEFORE PUTTING THE ACTUATOR INTO SERVICE, IT MUST BE INSTALLED AND COMMISSIONED IN ACCORDANCE WITH PUBLICATION PUB002-039 INSTALLATION AND MAINTENANCE INSTRUCTIONS.  
UNLESS SPECIFIED WITH ORDER, THE ACTUATOR IS DESPATCHED WITH DEFAULT SETTINGS AS LISTED IN PUBLICATION PUB002-040.

FOR IQ CONTROL AND MONITORING FACILITIES, REFER TO PUBLICATION PUB002-041.

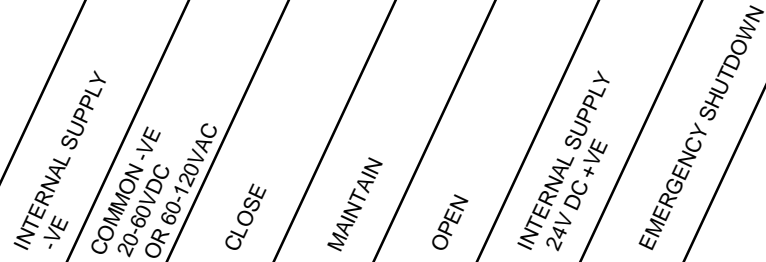
**NOTE:**  
ACTUATOR REMOTE CONTROL SIGNALS MAY BE INTERNALLY OR EXTERNALLY SUPPLIED.

**INTERNALLY SUPPLIED:**  
# FIT LINK '#' AS SHOWN AND CONNECT REMOTE CONTROL CONTACTS TO INTERNAL SUPPLY ON TERMINAL 5.

**EXTERNALLY SUPPLIED:**  
CONNECT CONTROL CONTACTS TO EXTERNAL SUPPLY LIVE/+VE. CONNECT SUPPLY ZERO/-VE TO TERMINAL 36 & 31 FOR SUPPLIES 20-60VDC OR 60-120VAC

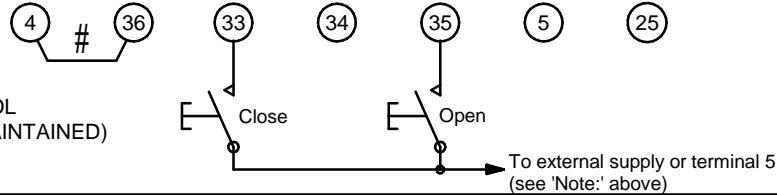
FOR CONTROL FORMS D & E, LINK '#' MUST BE FITTED. CONNECT ZERO/-VE AS INDICATED ABOVE.

CUSTOMER CONNECTION FOR REMOTE CONTROL



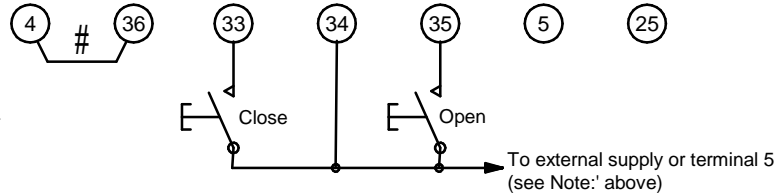
## FORM A

OPEN/CLOSE PUSH TO RUN CONTROL  
(LOCAL CONTROL REMAINS SELF MAINTAINED)



## FORM B

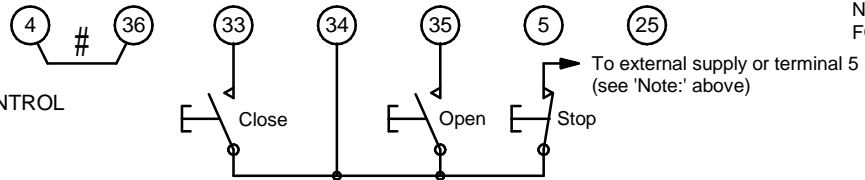
OPEN/CLOSE MAINTAINED CONTROL  
WITH MID TRAVEL REVERSAL



NOT APPLICABLE FOR IQM/IQML

## FORM C

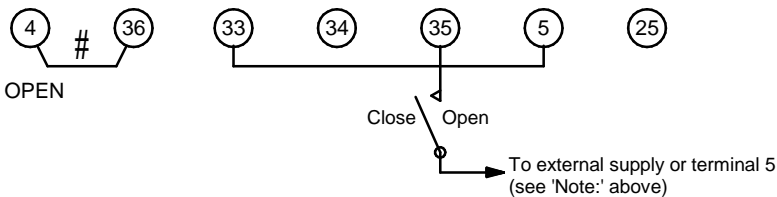
OPEN/STOP/CLOSE MAINTAINED CONTROL



NOT APPLICABLE FOR IQM/IQML

## FORM D

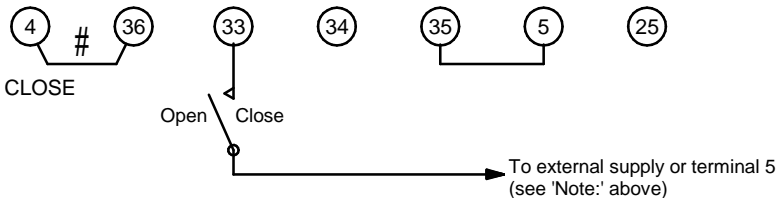
TWO WIRE CONTROL, ENERGISE TO OPEN  
DE-ENERGISE TO CLOSE.  
(CONFIGURE FOR OPEN PRIORITY)  
CUSTOMER TO LINK 5 - 33



NOT APPLICABLE FOR IQM/IQML

## FORM E

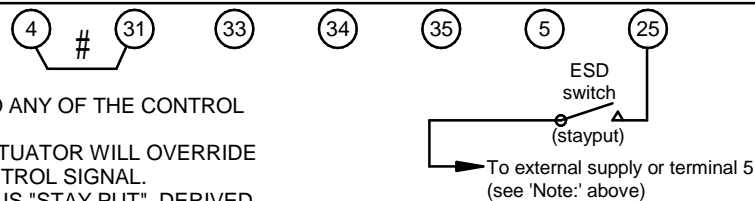
TWO WIRE CONTROL, ENERGISE TO CLOSE  
DE-ENERGISE TO OPEN  
(CONFIGURE FOR CLOSE PRIORITY)  
CUSTOMER TO LINK 5 - 35



NOT APPLICABLE FOR IQM/IQML

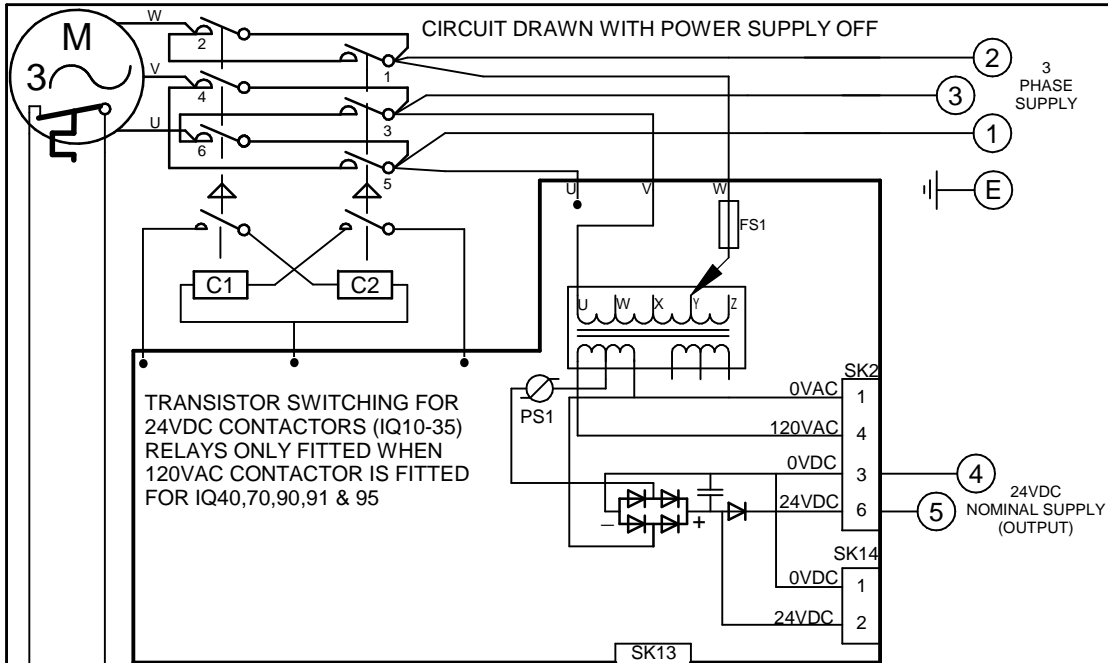
## FORM F

EMERGENCY SHUT-DOWN CIRCUIT.  
THE ESD CIRCUIT CAN BE ADDED TO ANY OF THE CONTROL CIRCUITS SHOWN ABOVE.  
AN ESD SIGNAL APPLIED TO THE ACTUATOR WILL OVERRIDE ANY EXISTING OPEN OR CLOSE CONTROL SIGNAL.  
THE DEFAULT ESD CONFIGURATION IS "STAY PUT", DERIVED FROM A N/O CONTACT (SIGNAL APPLIED).  
FOR OTHER CONFIGURABLE ESD SETTING OPTIONS, REFER TO PUBLICATION PUB002-040 INSTALLATION AND MAINTENANCE INSTRUCTIONS.



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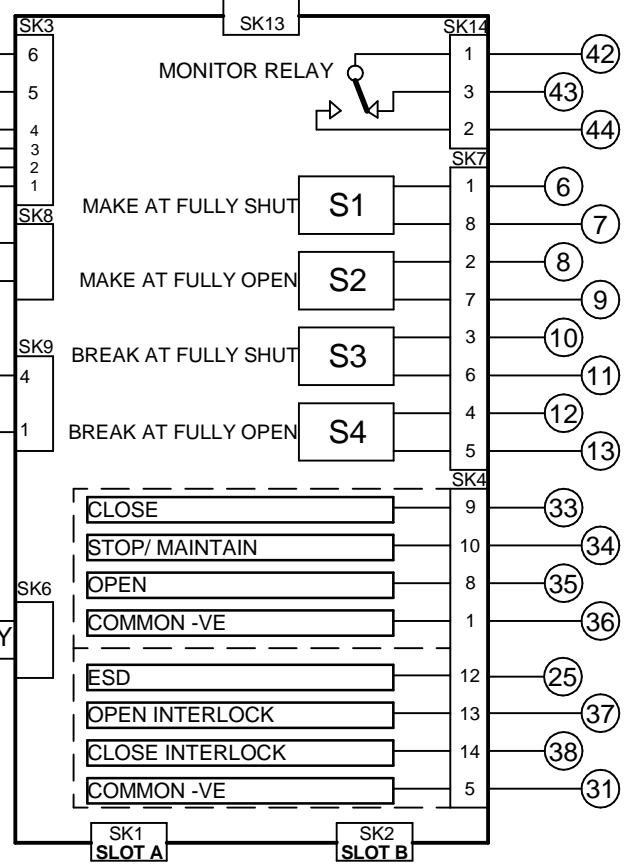
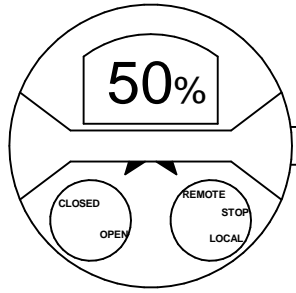
FOR TYPICAL REMOTE CONTROL DETAILS, SEE DOCUMENT **RWS100**

TRANSFORMER TAPPING OPTIONS	
Tap	Nominal 50/60Hz
TYPE 1	
W	220/230
X	380/400
Y	400,415/420
Z	440/460
FUZE FS1=250mA ANTI-SURGE	
TYPE 2	
W	346/380
X	480/500
Y	240/240
Z	550/575
FUZE FS1=250mA ANTI-SURGE	
TYPE 3	
X	660/660-690
Y	690/-
FUZE FS1=150mA ANTI-SURGE	

REFER TO SHEET 2 FOR NOTES & OPTION PCB'S IF FITTED



FS2 (IF FITTED) 100mA



Iss	Date	Chkd	Revision Details
5	090113	PMJ	Re-track of the 24V DC pin of SK14 to behind the diode.
6	060614	PMJ	400v added to type 1 tapping Y. Note added to sheet 2 note 1.

**www.rotork.com**

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IQ BASIC DIAGRAM

Drawn by: PMJ  
Date : 160512  
Base WD: 100B0000  
Job No : --  
MI No : --

Circuit Diagram Number		Issue No	Sheet
<b>100B0000</b>		<b>6</b>	<b>1</b>
B1	C1	B2	C2

# NO OPTIONS FITTED

## NOTES

### 1.FUSES:

- PS1 is a self-resetting fuse.
- Refer to publication PUB002-039 for approved fuses FS1 and FS2.
- Actuator rated voltage specified on nameplate. Voltage tolerance +/-10%, applies for rated torque performance; duty cycle is not guaranteed.

### 2.REMOTE CONTROL:

- For typical remote control circuits refer to:
  - RWS indicated or PUB002-041.
- For DC and AC control, connect -ve/0V to terminal 36.
- (For negative switch / positive common, refer to RWS indicated).
- Control signal threshold voltages:
  - DC: "on"  $\geq 16\text{Vdc}$  / "off"  $\leq 8\text{Vdc}$ , max 60Vdc.
  - AC: "on"  $\geq 60\text{Vac}$  / "off"  $\leq 40\text{Vac}$ , max 120Vac.
- Control signal duration to be 300ms minimum.
- Maximum current drawn from remote control signals is:
  - 8mA at 24Vdc or 12mA at 120Vac.
- Supply provided on terminals 4 & 5:
  - Intended for remote control.
  - Max external load 5W at 24Vdc / 5VA at 120Vac

### 3.INDICATION:

- For typical position, status and alarm indication see PUB002-041.
  - “S” contacts are user configurable and are shown in their default setting.
  - Refer to PUB002-040 for functions and configuration instructions.
  - Monitor Relay indicates actuator availability for remote control (shown “unavailable”). It can be configured to exclude local/remote selection.
  - Refer to PUB002-040 for monitored functions and configuration instructions.
  - Voltage applied to indication contacts must not exceed 150Vac
  - Individual Switch current must not exceed 3.5A inductive, 5A resistive and no more than 8A in total for all 4 contacts.
- ### 4.BATTERY:
- Battery maintains local and remote “S” contact indication only.
  - Refer to installation manual for approved replacement battery types.

See Sheet 1 for all Revision details/information

Circuit Diagram Number	Issue No	Sheet
100B0000	6	2 of 2