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Email: Travis@BPLSales.ca

## REQUEST FOR EQUALS

Sent to: Cantec Engineering

Date: 2-Jun-15  
Page: 1 of 1

Attn: Janet Loesel Sitar  
From: Michael Miller  
204-791-2694

Closing Date: 17-Jul-15

Job Name: Transportation Management Center - 821 Elgin

Fax Number \_\_\_\_\_

Your consideration is requested that the following materials be considered as equal to those specified.

Item	Div./Section	Specified Description	Equal Description
Exhaust Fan Motorized Damper GRDs HRV RTU		Greenheck Tamco/Belimo Price NuAir Carrier	Twin City Fan Alumavent/Belimo Titus Aeromatic Aldes JCI/York
If Any Additional Product Information is Required Before Equals Can Be Granted, Please Let Us Know.			

Thank You!

# SUBMITTAL

Job Name: Transportation Management



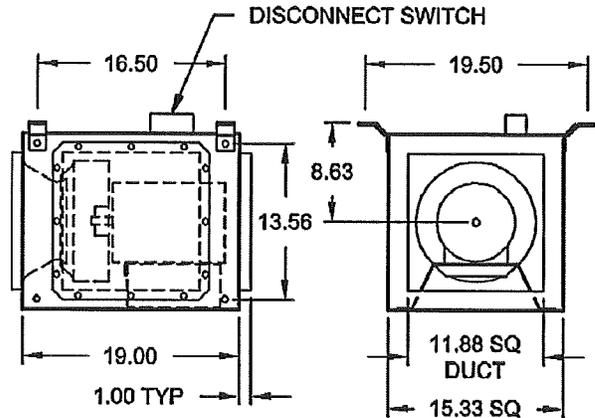
Tag: EF-5  
 Customer: BPL SALES LIMITED  
 Job ID: 013  
 Date: July 16, 2015

SIDE DISCHARGE

## DSI - Square Inline Centrifugal Fan, Direct Drive

### Construction Features

- Heavy-gauge galvanized steel housing.
- Backward inclined, non-overloading, aluminum wheel statically and dynamically balanced.
- Removable side panels provide access to power assembly without removal of duct connections.
- Galvanized steel mounting brackets for easy mounting in horizontal or vertical position.
- Disconnect switch is mounted to the side panel of unit.



Description	Qty	Model	Size	Wt (lb)
	1	DSI	080AE	60

Approximate weight each, includes fan, motor and accessories.

Performance	CFM	SP (in WC)	RPM	Oper. BHP
	200	0.200	890	0.01

Temperature: 70 °F Altitude: 0 ft

Motor Data	HP	RPM	Volt/Ph/Hz	Encl.
	1/4	1,750	115V/1/60	ECM

Efficiency: Standard

DAMPER SIZE	12.00 X 12.00
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D4210D DSI 080

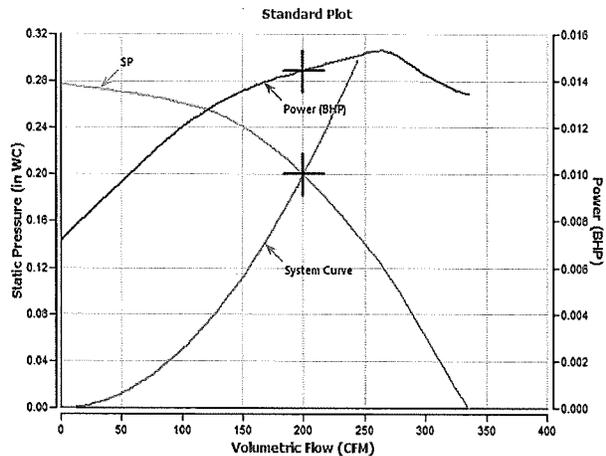


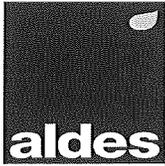
Sound Data	Octave Bands	1	2	3	4	5	6	7	8	LwA	dBA	Sones
	Level at Inlet	54	56	57	55	52	45	39	36			

LwA: The overall (single value) fan sound power level in dB re.  $10^{-12}$  Watts, 'A' weighted.  
 dBA: Estimated sound pressure level (re:0.0002 microbar) based on a single ducted installation at 5 ft., using a directivity factor of 1.

### Accessories Included

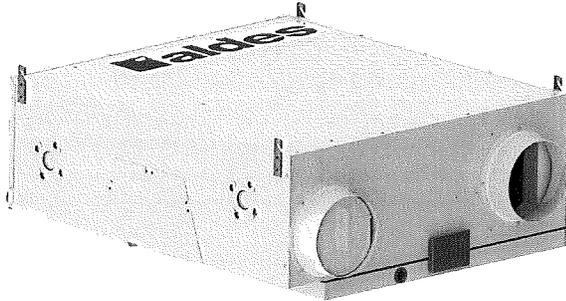
- 0-10 VDC Lead, Factory Installed
- Disc Switch-Unfused (NEMA 1), Shipped Loose
- Speed Controller, Motor Mounted Dial, Factory Installed





AEROMATIC™ SERIES STANDARD RESIDENTIAL  
**H130-HR**  
Heat Recovery Ventilator

PRODUCT  
SPECIFICATIONS  
& TECHNICAL  
DATA



#### PRODUCT DESCRIPTION

Compact size, large performance – the Aeromatic™ Series H130-HR heat recovery ventilator produces approximately 121 CFM at 0.20 in.w.g (ESP) and recovers heat through its high-efficiency polypropylene core. The H130-HR has been thoughtfully engineered for simple installation in apartments, condos, and other multi-dwelling applications. At a mere 9-1/4" tall, the unit fits easily into low spaces.

The H130-HR has two exclusive features. EvacMAX™ provides on-demand boost for maximum ventilation. With FLEXControl, airflow circuits can be calibrated electronically, eliminating the need for resistance-inducing balancing dampers and improving overall efficiency.

#### KEY FEATURES

- Electronically and independently adjustable supply and exhaust blowers (FLEXControl)
- Forward-inclined impellers on totally enclosed motors
- Horizontal configuration for flexible installation
- Easy access to core and filters for cleaning
- Extremely durable core
- Multiple low-voltage controller options

#### WARRANTY

Core Assembly: Limited lifetime warranty  
All Other Covered Components: Limited 5-year warranty

#### APPROVALS

- Meets Standards:
- C22.2 no113 and UL 1812



#### CASING

Material: Pre-painted 24-gauge galvanized steel  
Drain Connection: Ø 3/8" (Ø 10 mm)  
Duct Diameter: Ø 5" (Ø 127 mm)  
Insulation: 1" (25 mm) Fiberglass with FSK and polystyrene  
Width: 24-1/8" (613 mm)  
Height: 9-1/4" (235 mm)  
Depth: 22-1/4" (565 mm)  
Weight: 35 lbs (16 kg); Shipping Weight: 41 lbs (19 kg)  
Supply Damper: Motorized; Exhaust Damper: Gravity

#### MOUNTING

- Suspended from the ceiling by chains with vibration-isolating springs
- In the ceiling with an access panel

#### RECOVERY CORE

Material: Polypropylene

#### BLOWERS

Quantity: 2  
Type: Motorized impellers (forward-inclined)

#### ELECTRICAL REQUIREMENTS

120 VAC, 60 Hz, 1.6 A, 180 W  
Cord Set: 27" (686 mm) with ground

#### CONTROLS

- Low voltage dry contact (24VAC) for:
- LCD Electronic Multifunction Control (P/N: 611227)
  - Mode Control (Recirculation) (P/N: 611230)
  - Humidity Control (P/N: 611224)
  - Speed Control (Low/Intermittent/High) (P/N: 611229)
  - 20/40/60 Minute Timer (P/N: 611228)

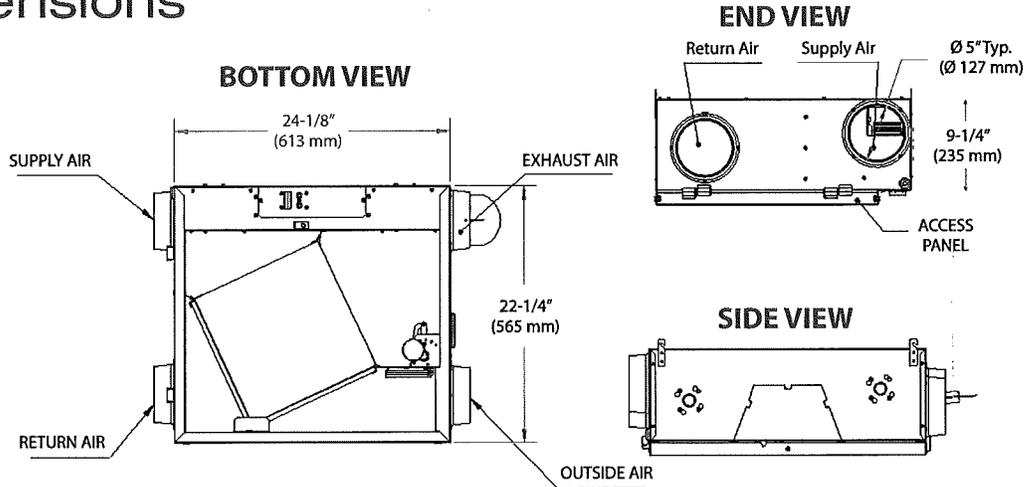
#### FROST CONTROL

- Automatic timed recirculation
- Cycles controlled by a temperature sensor when the outdoor temperature drops below 23°F (-5°C)

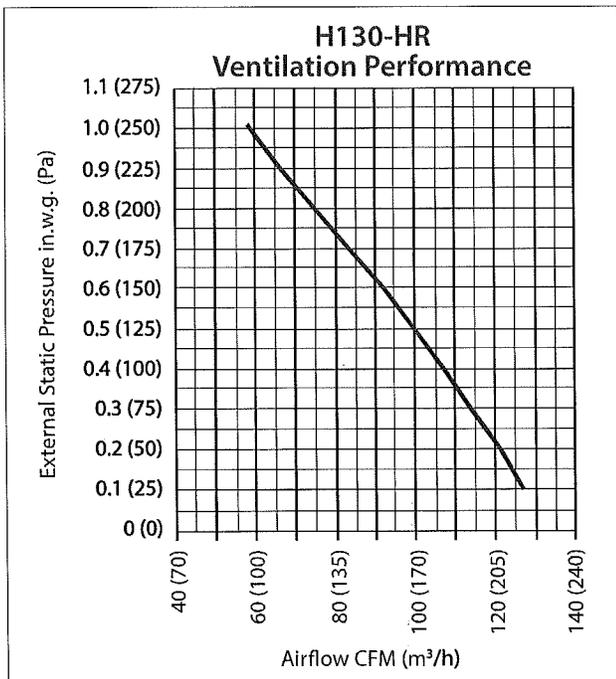
#### FILTERS

Quantity: 2  
Type: Washable Foam 20 ppi (P/N: 612405)  
Optional: Aluminum (P/N: 612404), Carbon (P/N: 612406), or High Efficiency/MERV13 Equivalent (P/N: 612407)

# Dimensions



# Performance



**Recovery Performance**

Supply Temperature		Net Airflow		Power Consumed (W)	Sensible Recovery Efficiency	Apparent Sensible Effectiveness
°F	°C	CFM	L/s			
32	0	57	27	66	67%	78%
32	0	67	32	74	66%	77%
32	0	104	49	146	60%	71%
-13	-25	64	30	73	55%	75%

<b>Project:</b>		<b>Architect:</b>	
<b>Location:</b>		<b>Engineer:</b>	
<b>Model #:</b>		<b>Contractor:</b>	
<b>Quantity:</b>		<b>Comments:</b>	
<b>Submitted By:</b>			
<b>Date:</b>			

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## Single Package R-410A Air Conditioner

 Project Name: **Transportation Management**

 Unit Model #: **ZXG06T2B1AA1B111A2**

 Quantity: **1**

 System: **ZXG06T2B1AA1B111A2**

### Cooling Performance

Total capacity	65.3 MBH
Sensible capacity	46.2 MBH
Refrigerant type	R-410A
Seasonal Efficiency (at ARI)	13.00 SEER
Efficiency (at ARI)	11.00 EER
Ambient DB temp.	95.0 °F
Entering DB temp.	80.0 °F
Entering WB temp.	67.0 °F
Leaving DB temp.	58.6 °F
Leaving WB temp.	56.6 °F
Power input (w/o blower)	4.56 kW
Sound power	80 dB(A)

### Gas Heating Performance

Entering DB temp.	60 °F
Heating output capacity (Max)	116 MBH
Supply air	2000 CFM
Heating input capacity (Max)	145 MBH
Leaving DB temp.	113.7 °F
Air temp. rise	53.7 °F
SSE	80.0 %
Stages	2

### Supply Air Blower Performance

Supply air	2000 CFM
Ext. static pressure	0.5 IWG
Unit static resistance	0.13 IWG
Blower speed	1345 RPM
Max BHP of Motor (including service factor)	2.40 HP
Duct location	Bottom
Actual required BHP	1.37 HP
Power input	1.26 kW
Elevation	784 ft.
Drive type	BELT

### Electrical Data

Power supply	230-3-60
Unit min circuit ampacity	27 Amps
Unit min over-current protection	30 Amps
Unit max over-current protection	40 Amps

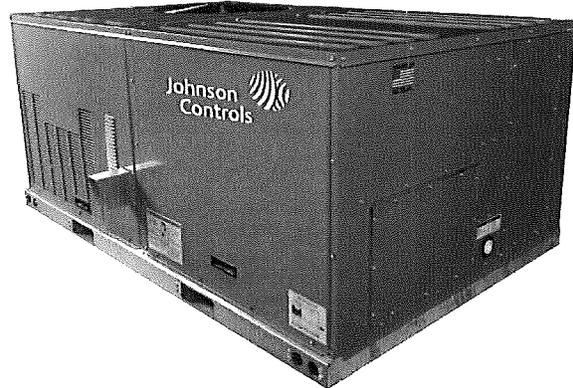
### Dimensions & Weight

Hgt	33 in.	Len	74 in.	Wth	49 in.
Weight with factory installed options	594 lbs.				

### Clearances

Right	18 in.	Front	36 in.	Back	36 in.
Top	72 in.	Bottom	1 in.	Left	12 in.

Note: Please refer to the tech guide for listed maximum static pressures



### 5 Ton

- All units are manufactured at an ISO 9001 registered facility and each rooftop is completely computer-run tested prior to shipment.

### Unit Features

- Unit Cabinet Constructed of Powder Painted Steel, Certified At 1000 Hours Salt Spray Test (ASTM B-117 Standards)
- Either supply and/or return can be field converted from vertical to horizontal configuration without cutting panels.
- Full perimeter base rails with built in rigging capabilities
- Scroll Compressors
- Solid Core Liquid Line Filter Driers
- Microchannel Condenser Coil
- 145 MBH Two Stage Input High Heat Stainless Steel Gas
- Medium Static Belt Drive Blower
- Unit Ships with 2" Throwaway Filters with a Standard Filter Rack that will Accept up to 4" Filters
- Replacement Filters: 2 - (16" x 25"). Unit accepts 2" wide filter.
- Single Point Power Connection
- Short Circuit Current: 5kA RMS Symmetrical

### Standard Unit Controller: Simplicity SE Control Board

- An Integrated Low-Ambient Control, Anti-Short Cycle Protection, Lead-Lag, Fan On and Fan off Delays, Low Voltage Protection, On-Board Diagnostic and Fault Code Display. Allows all units to operate in the cooling mode down to 0 °F outdoor ambient without additional components or intervention.
- Safety Monitoring - Monitors the high and low-pressure switches, the freestats, the gas valve, if applicable, and the temperature limit switch on gas and electric heat units. The unit control board will alarm on ignition failures, safety lockouts and repeated limit switch trips.

### BAS Controller

- Simplicity SE Controller with Discharge Air, Return Air, and Outside Air Sensor

### Warranty

- One (1) Year Limited Warranty on the Complete Unit
- Five (5) Year Warranty - Compressors
- Fifteen (15) Year Warranty - Stainless Steel Tubular Heat Exchangers



# Series 12R

Single Package R-410A Air Conditioner

Project Name: **Transportation Management**

Unit Model #: **ZXG06T2B1AA1B111A2**

Quantity: **1**

System: **ZXG06T2B1AA1B111A2**

## Factory Installed Options

### ZXG06T2B1AA1B111A2

<b>Product Category:</b>	<b>ZX</b>	Johnson Controls Series 12R Single Packaged R-410A Air Conditioner
<b>Heat Type:</b>	<b>G</b>	Gas Heat
<b>Nominal Cooling Capacity:</b>	<b>06</b>	5 Ton 11.0 EER / 13.0 SEER Single Stage Cooling
<b>Heat Size:</b>	<b>T</b>	145 MBH Two Stage Input High Heat Stainless Steel Gas
<b>Voltage:</b>	<b>2</b>	208/230-3-60
<b>Airflow:</b>	<b>B</b>	Medium Static Belt Drive Blower
<b>Airflow Options:</b>	<b>1</b>	
<b>Coil Options:</b>	<b>A</b>	Copper Tube/Aluminum Fin Indoor Coil Microchannel Condenser Coil
<b>Controls:</b>	<b>A</b>	Simplicity® SE Controller with Discharge Air, Return Air, and Outside Air Sensor
<b>Sensor Options:</b>	<b>1</b>	
<b>Economizer / Damper:</b>	<b>B</b>	Dry Bulb Economizer (Downflow only) (with Barometric Relief)
<b>Convenience Outlet:</b>	<b>1</b>	
<b>Electrical Options:</b>	<b>1</b>	
<b>Cabinet Options:</b>	<b>1</b>	
<b>Special Options:</b>	<b>A</b>	
<b>Product Generation:</b>	<b>2</b>	

## Field Installed Accessories

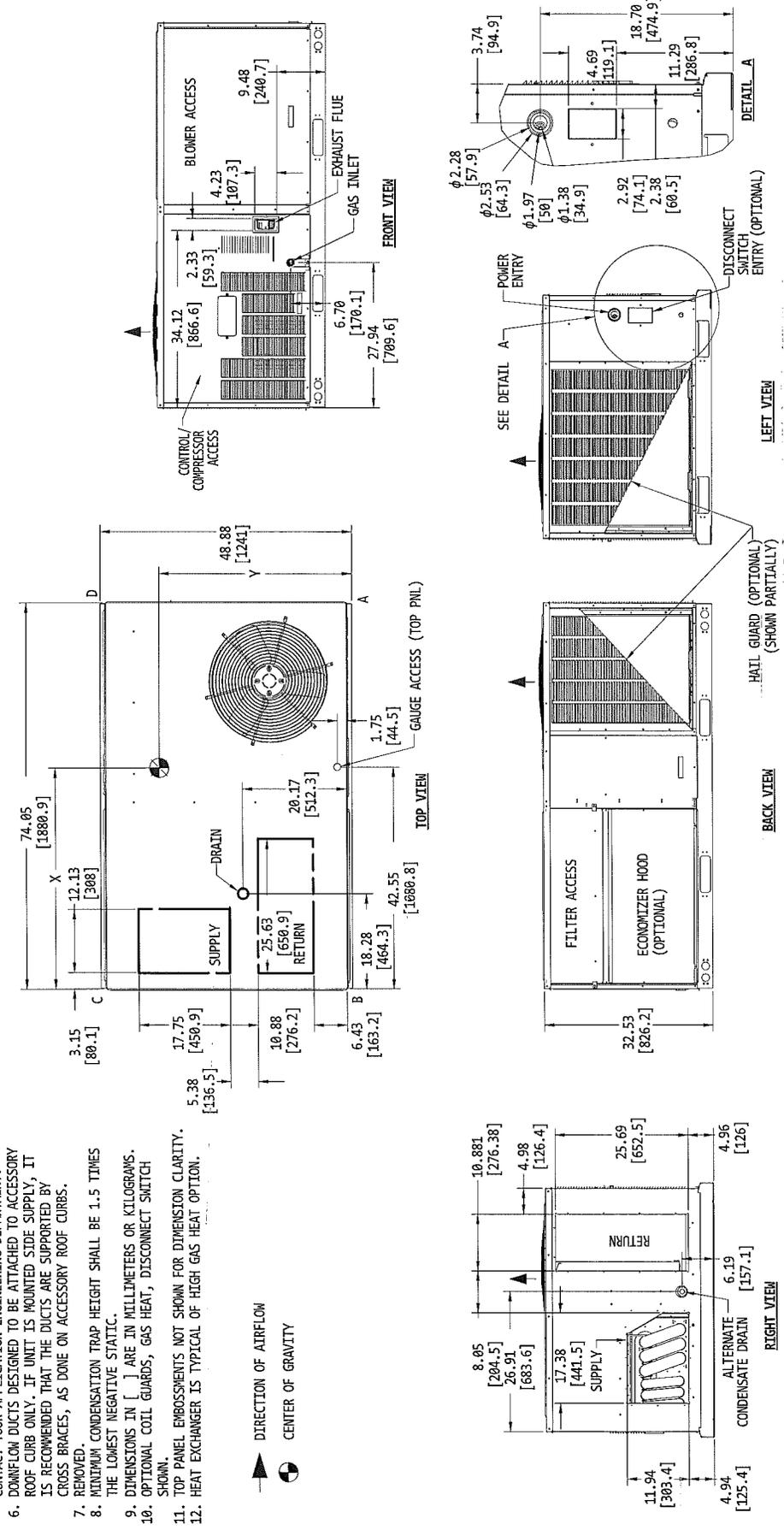
- 1RC0458 - Curb Rigid 24" Small Footprint (135.0 lbs)
- 2EP07700424 - JCI Branded, 2 Heat / 2 Cool, Electronic 7 Day Programmable, T600MSP-3 (2.0 lbs)
- 2PM04700224 - Phase Monitor Kit (1.0 lbs)

Project Name: **Transportation Management**  
 Unit Model #: **ZXG06T2B1AA1B111A2**  
 System: **ZXG06T2B1AA1B111A2**

### Consolidated Drawing

TONNAGE	OPERATING WEIGHT (LBS) (BASE UNIT)			CENTER OF GRAVITY LOCATION (BASE UNIT)				4 POINT CORNER LOADS (LBS) (BASE UNIT)							
	U	N	I	X	Y	A	B	C	D						
3	ZX	469	[212.7]	36	[900]	24	[600]	117	[53.1]	111	[90.3]	117	[53.1]	123	[58.8]
4	ZX	498	[225.9]	36	[900]	24	[600]	126	[54.4]	120	[54.4]	123	[55.8]	129	[58.5]
5	ZX	530	[240.4]	36	[900]	24	[600]	133	[60.3]	127	[57.6]	132	[59.8]	139	[63.1]
3	ZV	481	[218.2]	36	[900]	24	[600]	122	[55.3]	114	[51.7]	118	[53.5]	127	[57.6]

- NOTES:
- FOR OUTDOOR USE ONLY.
  - WEIGHTS SHOWN ARE FOR COOLING ONLY UNITS.
  - RECOMMENDED MIN. CLEARANCES:  
 RIGHT SIDE: 18 [450] W/SIDE CONDENSATE DRAIN: 24 [600]  
 LEFT SIDE: 12 [300] W/PIGTAIL: 18 [450]  
 FRONT: 36 [900]  
 REAR: 18 [450]  
 TOP: 72 [1800]  
 BOTTOM: 0 [0]
  - REMOVED.
  - FOR SMALLER SERVICE AND OPERATIONAL CLEARANCES CONTACT YOUR APPLICATION ENGINEERING DEPARTMENT.
  - DOWNFLOW DUCTS DESIGNED TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY. IF UNIT IS MOUNTED SIDE SUPPLY, IT IS RECOMMENDED THAT THE DUCTS ARE SUPPORTED BY CROSS BRACES, AS DONE ON ACCESSORY ROOF CURBS.
  - REMOVED.
  - MINIMUM CONDENSATION TRAP HEIGHT SHALL BE 1.5 TIMES THE LOWEST NEGATIVE STATIC.
  - DIMENSIONS IN [ ] ARE IN MILLIMETERS OR KILOGRAMS.
  - OPTIONAL COIL GUARDS, GAS HEAT, DISCONNECT SWITCH SHOWN.
  - TOP PANEL EMBOSSEMENTS NOT SHOWN FOR DIMENSION CLARITY.
  - HEAT EXCHANGER IS TYPICAL OF HIGH GAS HEAT OPTION.



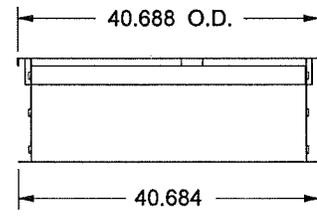
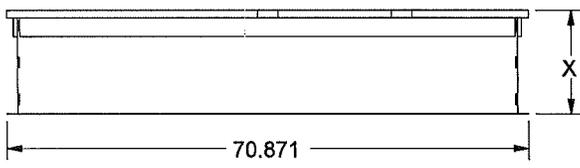
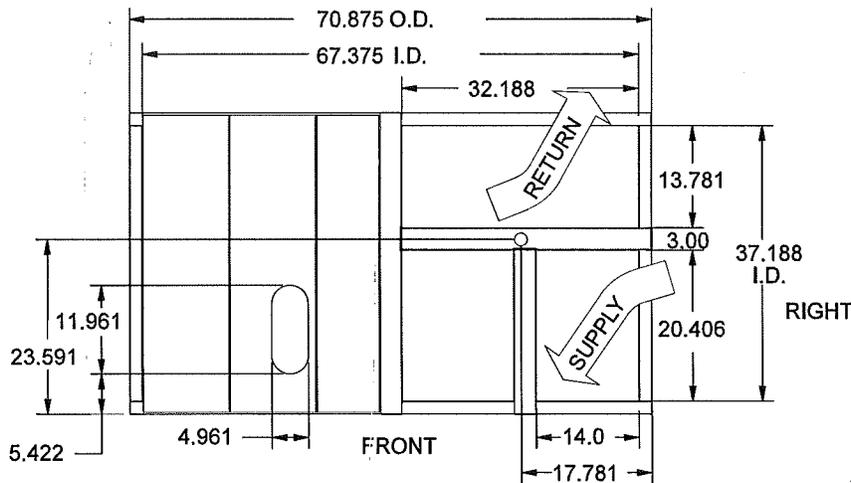
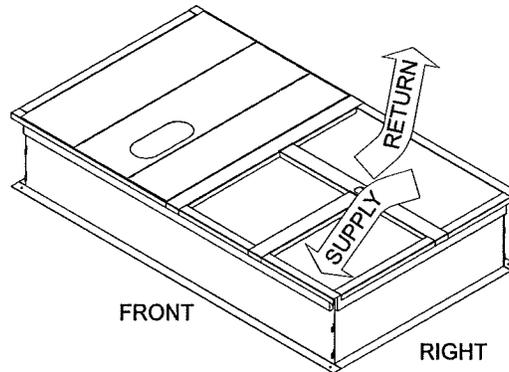
Project Name: **Transportation Management**

Unit Model #: **ZXG06T2B1AA1B111A2**

Quantity: **1**

System: **ZXG06T2B1AA1B111A2**

1RC0458 Roof Curb



1RC0456 X= 14" Height  
1RC0458 X= 24" Height

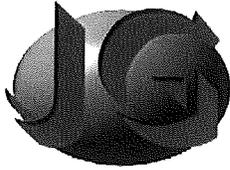
**Notes:**

1. Sides, ends and cross support are 18-G90. Deck pans, R/A & S/A supports are 20-G90.
2. Full perimeter wood nailer.
3. Insulated deck pans.

**Unit Models used with 1RC0456, 1RC0458 Roof Curb**

ZX04	ZY04
ZX05	ZY05
ZX06	ZY06
ZX07	





# JONES GOODRIDGE

## REQUEST FOR ACCEPTED PRODUCT EQUIVALENTS

**To:** Can Tec Engineering and Drafting **Date:** July 10, 2015  
**Attention:** Janet Loesel Sitar **Via:** e-mail: X FAX:  
**Project:** Transportation Management Centre, Renovations, 821 Elgin Avenue, Winnipeg, Manitoba  
**Close Date:** July 17, 2015  
**Request By:** Travis Jones **E-mail:** [trav@jonesgoodridge.ca](mailto:trav@jonesgoodridge.ca)

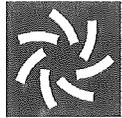
Your consideration is requested of the above project that the following manufacturers be considered as equals to those specified:

Spec. Section	Clause	Specified Product	Proposed Product	Accepted
Drawing M1.1	WC-1	American Standard 215AA.004.020 Water Closets	Contrac Crista <u>4722BHV/4721BFV</u> Water Closets	
		McGuire LFH172BV Closet Supplies	Brasscraft <u>KTSCS40BX C; 1-12DL C</u> Closet Supplies	
	WD-2	American Standard 2462.016.020 Water Closets	Contrac Cleo <u>5722BOY/5721BOY</u> Water Closets	
		McGuire LFH172BV Closet Supplies	Brasscraft <u>KTSCS40BX C; 1-12DL C</u> Closet Supplies	
	U-1	American Standard 6590.501.020 Urinals	Contrac Carlo <u>4810BHX</u> Urinals	
		Sloan 186-1 Flush Valves	Delta Commercial <u>81T231</u> Flush Valves	
	LAV-1	American Standard 9494.001.020 Lavatories	Contrac Catalina <u>4140BGW</u> Lavatories	
		American Standard 2175.565.020 Faucets and Trim	Delta Commercial <u>22C121</u> Faucets and Trim	
		McGuire 155WC Offset Strainer	Delta Commercial <u>33T290</u> Offset Strainer	
		McGuire LFH170BV Faucet Supplies	Brasscraft <u>KTSCS40BX C; 1-12A C</u> Faucet Supplies	
		McGuire 8872C P-Traps	Delta Commercial <u>33T311</u> P-Traps	
		American Standard 8344.012.002 Mop Sink Faucets	Delta Commercial <u>28C8183</u> Mop Sink Faucets	
		Fiat 832-AA Hose and Hangers	Delta Commercial <u>28T911</u> Hose and Hangers	
		Fiat 889CC Mop Hanger	Delta Commercial <u>28T910</u> Mop Hanger	
	SH-1	Fiat A6036.01F Shower Stall	Maax 60NHS <u>105083</u> Shower Stalls	
		American Standard T385.500.002; R120SS; 1662.551.002; 1660.400.002 Shower Valves and Trim	Delta Commercial <u>T13H333; R10700UNWS; U4900-PK</u> Shower Valves and Trim	

	SH-2	Fiat S135 Shower Stall	Maax Outlook BFS-36F 105087 Shower Stall	
		Fiat 180AA Shower Valves	Delta Commercial T13H153-20; R10000-UNWS; U4900-PK Shower Valves and Trim	
	DF-1	Elkay LVRCGRN8WSK Water Coolers	Franke Commercial KEP8AC-SBF-STN Water Coolers	
		McGuire LFHST11LK Drinking Fountain Stop	Brasscraft KTSR15X C Drinking Fountain Stop	

We look forward to your reply via e-mail or facsimile. Thank-you in advance for your consideration!





# COOK



MARK: EF-5

PROJECT: TRANSPORTATION MANAGEMENT

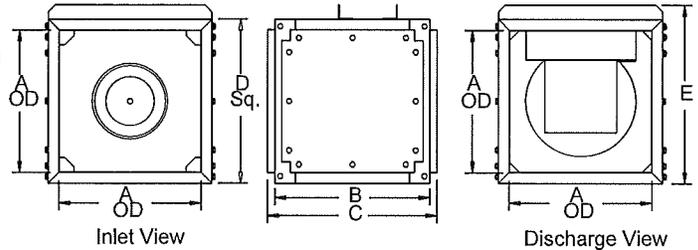
DATE: 06/07/2015

## SQND-EC

Centrifugal Square Inline  
Direct Drive  
Electronically Commutated Vari-Flow® Motor

### STANDARD CONSTRUCTION FEATURES:

All aluminum wheel - Galvanized steel housing - Three removable access doors - Closed cell neoprene gasketing - Inlet and discharge duct collars - Universal mounting feet - Permanently lubricated electronically commutated motor - Transit tested packaging.



### Performance

Qty	Catalog Number	Flow (CFM)	SP (inwc)	Fan RPM	Input Watts	FEG	Speed Control
1	90SQN17DEC	200	.200	1012	26	n/a(<1HP)	ECM

Altitude (ft): 700 Temperature (F): 70

### Motor Information

HP	RPM	Volts/Ph/Hz	Enclosure
1/4	1725	115/1/60	TENV -EC

### Dimensions (inches)

A	12
B	15
C	17
D Sq.	14
E	15-9/16

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	98	Unit	95
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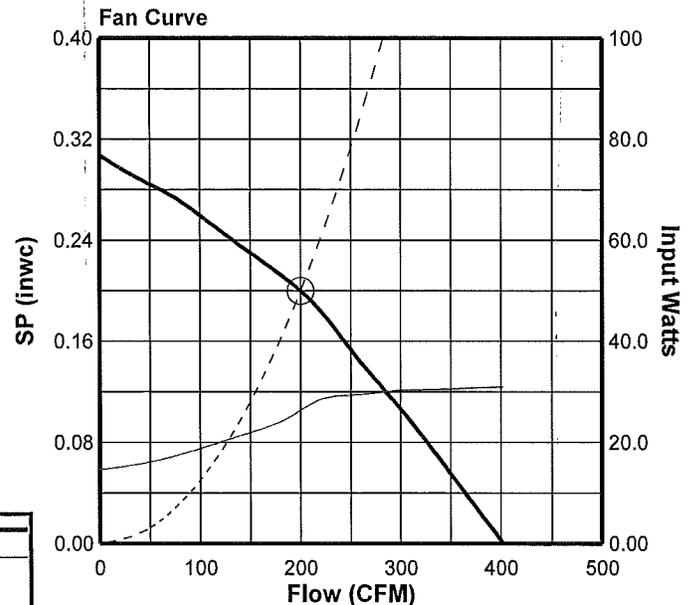
\*\*\*Includes fan, motor & accessories.

### Sound Data Sound Power by Octave Band

	1	2	3	4	5	6	7	8	LwA	dBA	Sones
Inlet	55	57	58	53	46	41	37	36	54	43	3.1
Outlet	73	63	59	55	49	44	38	38	57	46	4.3

### Accessories:

MOTOR MOUNTED SPEED CONTROL

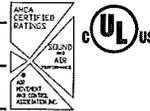




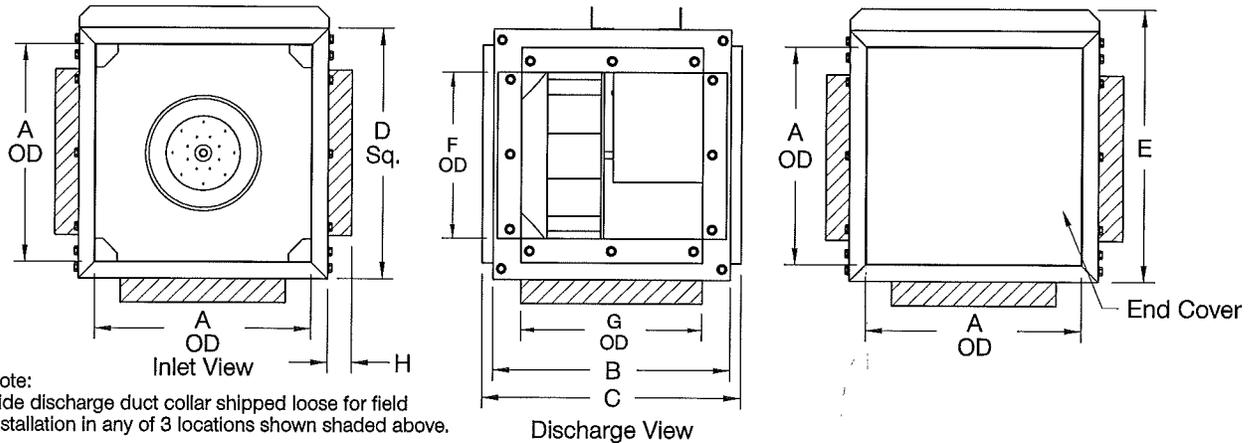
# COOK

# SQN-D

DATE: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_



**Centrifugal Square Inline  
 Side Discharge  
 Direct Drive**



**DIMENSION DATA**

Size	A	B	C	D Sq.	E	F	G	H	Housing Gauge	Ship Wt.
70	10	12	14	12	13-9/16	6-15/16	6-1/8	1	18	70
90	12	15	17	14	15-9/16	8-15/16	9-1/8	1	18	90
100	12	20	22	14	15-9/16	8-15/16	14-1/8	1	18	100
120	16	20	22	18-7/16	20	12-9/16	14-1/8	1	18	125
135	18	20-1/4	22-1/4	20-3/4	22-5/16	13-1/8	14-1/4	1	18	150
150	20	21-7/8	23-7/8	23	25-1/16	16-1/8	15-15/16	1	18	175
165	22	25	27	25-5/16	27-3/8	18-1/8	19-1/8	1	18	200

ALL DIMENSIONS IN INCHES. WEIGHTS IN LBS., INCLUDING MOTOR.

**STANDARD CONSTRUCTION FEATURES:**

All aluminum wheel - Galvanized steel housing  
 - Three removable access doors - Closed cell neoprene gasketing - Inlet and discharge duct collars - Universal mounting feet - Permanently lubricated motor - Transit tested packaging.

**ACCESSORIES**

- SIDE DISCHARGE PACKAGE
- DUAL SIDE DISCHARGE PACKAGE
- DISCONNECT SWITCH
- INSULATED HOUSING
- INLET/OUTLET FLEX DUCT CONNECTOR
- INLET GUARD
- OUTLET GUARD
- FLANGED INLET/FLANGED OUTLET
- INLET/OUTLET COMPANION FLANGE
- GRAVITY BACKDRAFT DAMPER
- MOTORIZED BACKDRAFT DAMPER
- CEILING MOUNTED RUBBER IN SHEAR ISOLATORS
- FLOOR MOUNTED RUBBER IN SHEAR ISOLATORS
- CEILING MOUNTED SPRING ISOLATORS
- FLOOR MOUNTED SPRING ISOLATORS
- LORENIZED COATING

QTY	MARK	CATALOG NUMBER	FAN INFORMATION			MOTOR INFORMATION					ACCESSORIES						
			CFM	SP	RPM	HP	VOLTS	HZ	PH	TYPE							



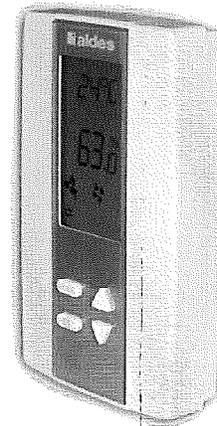
**Model**  
611227

### Description

The Electronic Humidistat with LCD is used with HRV / ERV systems or with air exchanger/extractor units.

### Features

- Built-in temperature and humidity sensor
- Displays setpoint, actual relative humidity, actual ambient temperature and operation mode
- Adjust setpoint and ventilator speed
- Select operation mode
- Select temperature unit display in °C or °F

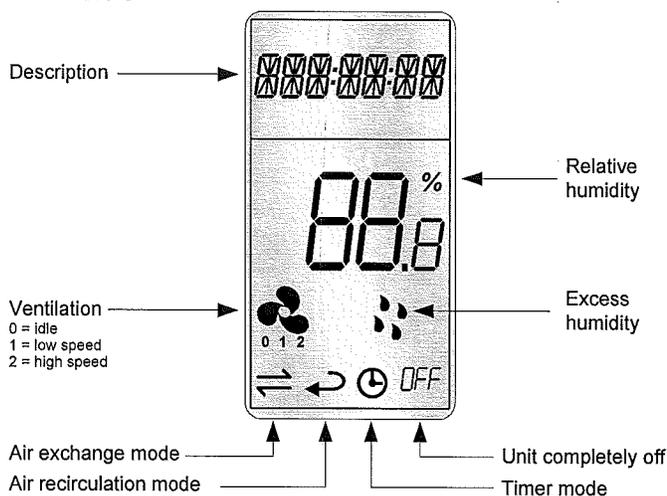


611227

### Technical Specifications

Description	611227
Power:	22 to 26 Vac 50/60 Hz
Humidity precision:	+/- 3 % between 20 and 80 % RH
Humidity setpoint range:	10 to 90 % RH
Humidity display range:	0 to 100 % RH
Temperature precision:	± 0.4 °C between 20 and 40°C [68 to 104°F]
Temperature display range:	0 to 50 °C [32 °F to 122 °F]
Operating temperature:	0 to 50 °C [32 °F to 122 °F], 0-95 %RH
Storage temperature:	-20 to 50 °C [-4 °F to 122 °F], 0-95 %RH
Dimensions	<p>A = 2.85" (73mm) B = 4.85" (123mm) C = 1.00" (25mm) D = 2.36" (60mm) E = 3.27" (83mm)</p>

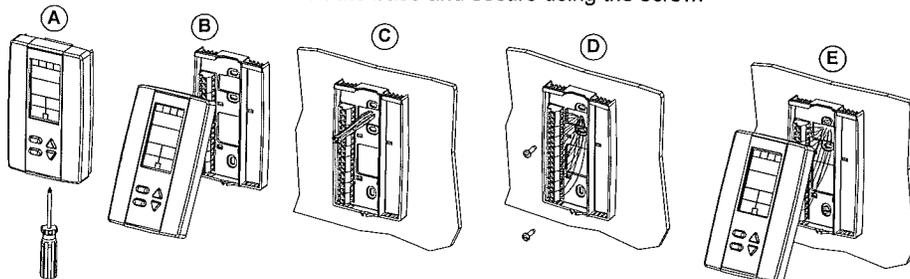
### Interface



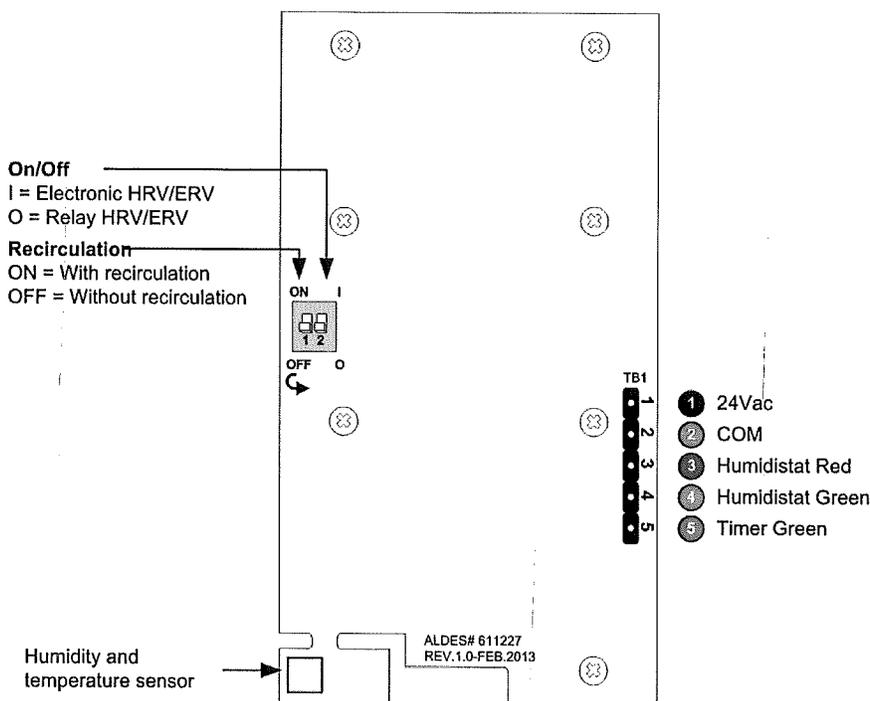
### Mounting Instructions

**⚠ CAUTION: Remove power to avoid a risk of malfunction.**

- Remove the captive screw that's holding the base and the front cover of the unit together.
- Lift the front cover of the unit to separate it from the base.
- Pull all wires through the holes in the base.
- Secure the base to the wall using wall anchors and screws (supplied). Make the appropriate connections.
- Mount the control module on the base and secure using the screw.



### Connections

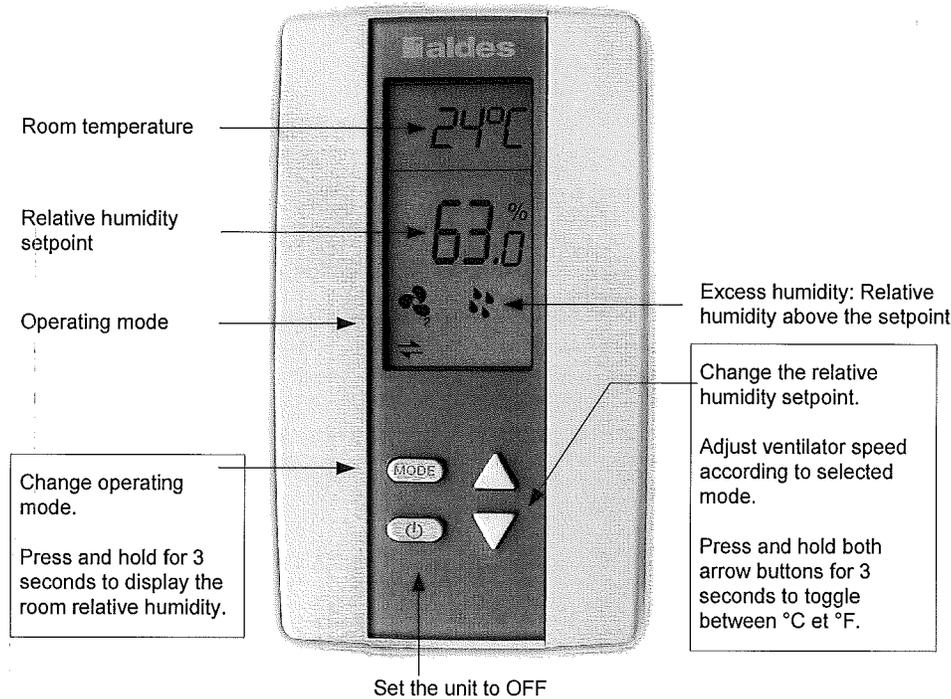


<p>ON I</p> <p>OFF O</p> <p><b>With recirculation</b></p> <p>7200 – 7210 – 7240 – 7260 – 7290 – 7292 – 7295 S/E/P1100(A)* – S/E/P700(A)* 8230(5) – 8260(5) H95 – H/E110 – E130-HR – H/E150 – H/E190 – H/E215 H/E240-Ri – H/E650(A)-Ri – H/E1100(A)-Ri H/E1600(A)-Ri</p>	<p>ON I</p> <p>OFF O</p> <p><b>Electronic HRV/ERV</b></p> <p>7240 – 7250 – 7260 – 7261 – 7290 – 7292 – 7295 S/E/P700(P/A) - S/E/P1100(P/A) H95 – H/E110 – H/E130 – H/E150 – H/E190 – H/E215 – H/E240 H/E650(A)-Ri/Fi(P) – H/E1100(A)-Ri/Fi(P) – H/E1600(A)-Ri/Fi</p>
<p>ON I</p> <p>OFF O</p> <p><b>Without recirculation</b></p> <p>7250 – 7261 S/E/P1100(P/A)** – S/E/P700(P/A)** 8230 – 8260 H110 H/E650(A)-Fi(P) – H/E1100(A)-Fi(P) – H/E1600(A)-Fi(P)</p>	<p>ON I</p> <p>OFF O</p> <p><b>Relay HRV/ERV</b></p> <p>7200 – 7210 8220 – 8230 – 8260</p>

\* with recirculation

\*\* without recirculation

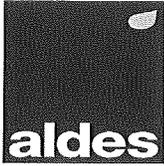
### Operation Mode



- Displays the « Excess Humidity » icon if the humidity level is above the setpoint. The unit will evacuate the excess humidity to the outside at high speed until the humidity level drops below the setpoint. If the operation mode is « OFF » the excess humidity will not be evacuated from the building.
- After 5 seconds without pressing a button, the display returns to normal.

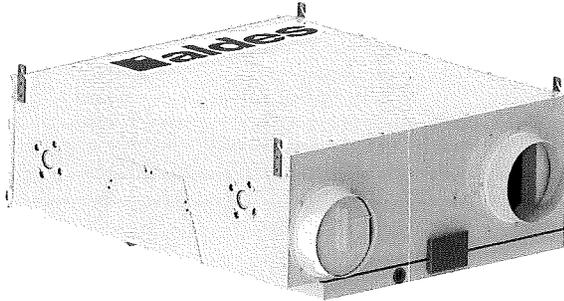
Mode	Speed	Description	ON I		ON I		ON I		ON I	
			OFF O	ON   ON	OFF O	OFF   ON	OFF O	ON   OFF	OFF O	OFF   OFF
OFF	-	Unit stops completely. Remains idle regardless of the humidity level.	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a
↕	0	Remains idle until the humidity goes above the setpoint.	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a
	1	Continuously exchanges air with the outside at low speed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	2	Continuously exchanges air with the outside at high speed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
↻	1	Recirculates interior air at low speed.	Yes	Yes	n/a	n/a	Yes	Yes	n/a	n/a
	2	Recirculates interior air at high speed.	Yes	Yes	n/a	n/a	Yes	Yes	n/a	n/a
⌚	1	Exchanges air with the outside at low speed for 20 minutes. Then remains idle for 40 minutes.	Yes	Yes	Yes	Yes	n/a	n/a	n/a	n/a
↻⌚	1	Continuously exchanges air with the outside at low speed for 20 minutes. Then recirculates interior air at low speed for 40 minutes.	Yes	Yes	Yes	Yes	n/a	n/a	Yes	n/a





# AEROMATIC™ SERIES STANDARD RESIDENTIAL H130-HR Heat Recovery Ventilator

PRODUCT  
SPECIFICATIONS  
& TECHNICAL  
DATA



## PRODUCT DESCRIPTION

Compact size, large performance – the Aeromatic™ Series H130-HR heat recovery ventilator produces approximately 121 CFM at 0.20 in.w.g (ESP) and recovers heat through its high-efficiency polypropylene core. The H130-HR has been thoughtfully engineered for simple installation in apartments, condos, and other multi-dwelling applications. At a mere 9-1/4" tall, the unit fits easily into low spaces.

The H130-HR has two exclusive features. EvacMAX™ provides on-demand boost for maximum ventilation. With FLEXControl, airflow circuits can be calibrated electronically, eliminating the need for resistance-inducing balancing dampers and improving overall efficiency.

## KEY FEATURES

- Electronically and independently adjustable supply and exhaust blowers (FLEXControl)
- Forward-inclined impellers on totally enclosed motors
- Horizontal configuration for flexible installation
- Easy access to core and filters for cleaning
- Extremely durable core
- Multiple low-voltage controller options

## WARRANTY

Core Assembly: Limited lifetime warranty  
All Other Covered Components: Limited 5-year warranty

## APPROVALS

- Meets Standards:
- C22.2 no113 and UL 1812



## CASING

Material: Pre-painted 24-gauge galvanized steel  
Drain Connection: Ø 3/8" (Ø 10 mm)  
Duct Diameter: Ø 5" (Ø 127 mm)  
Insulation: 1" (25 mm) Fiberglass with FSK and polystyrene  
Width: 24-1/8" (613 mm)  
Height: 9-1/4" (235 mm)  
Depth: 22-1/4" (565 mm)  
Weight: 35 lbs (16 kg); Shipping Weight: 41 lbs (19 kg)  
Supply Damper: Motorized; Exhaust Damper: Gravity

## MOUNTING

- Suspended from the ceiling by chains with vibration-isolating springs
- In the ceiling with an access panel

## RECOVERY CORE

Material: Polypropylene

## BLOWERS

Quantity: 2  
Type: Motorized impellers (forward-inclined)

## ELECTRICAL REQUIREMENTS

120 VAC, 60 Hz, 1.6 A, 180 W  
Cord Set: 27" (686 mm) with ground

## CONTROLS

- Low voltage dry contact (24VAC) for:
- LCD Electronic Multifunction Control (P/N: 611227)
  - Mode Control (Recirculation) (P/N: 611230)
  - Humidity Control (P/N: 611224)
  - Speed Control (Low/Intermittent/High) (P/N: 611229)
  - 20/40/60 Minute Timer (P/N: 611228)

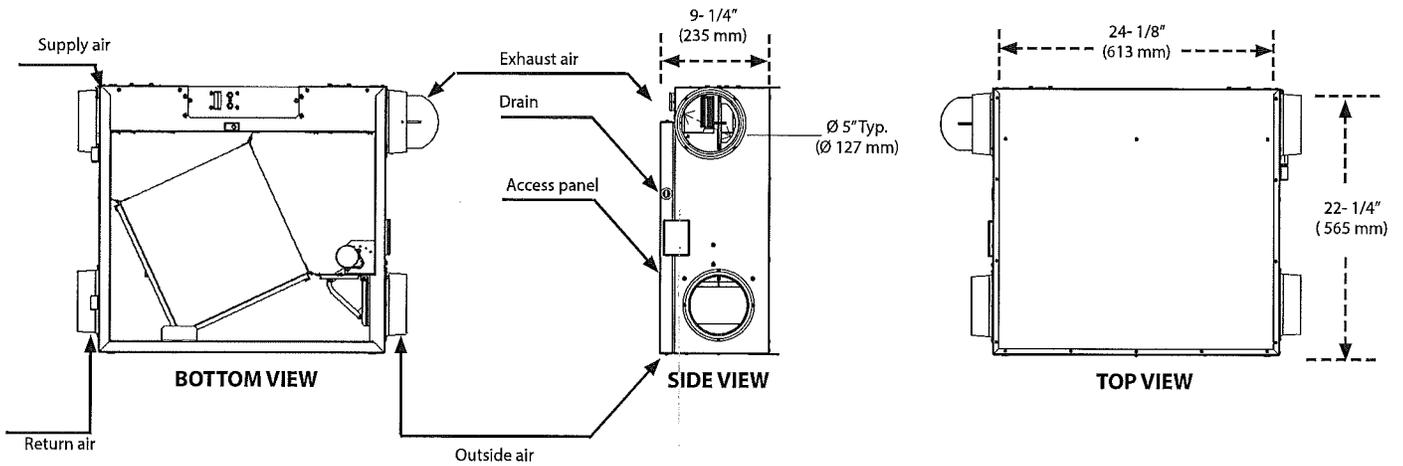
## FROST CONTROL

- Automatic timed recirculation
- Cycles controlled by a temperature sensor when the outdoor temperature drops below 23°F (-5°C)

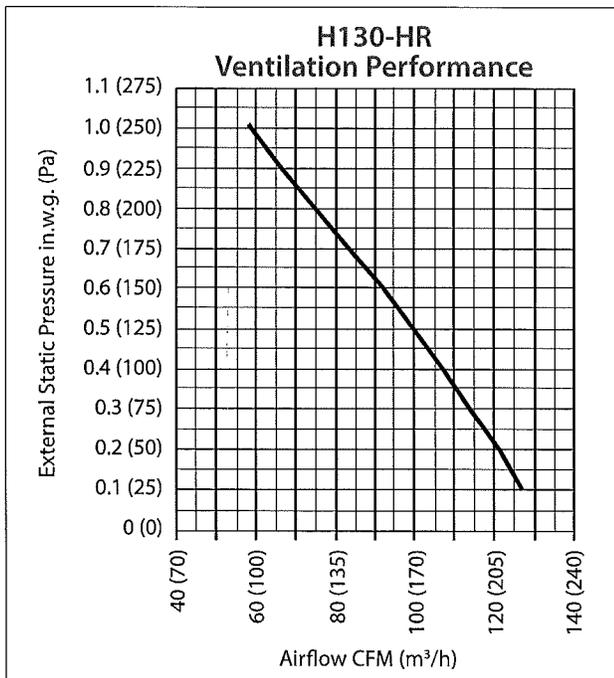
## FILTERS

Quantity: 2  
Type: Washable Foam 20 ppi (P/N: 612405)  
Optional: Aluminum (P/N: 612404), Carbon (P/N: 612406), or High Efficiency/MERV13 Equivalent (P/N: 612407)

# Dimensions



# Performance



Recovery Performance						
Supply Temperature		Net Airflow		Power Consumed (W)	Sensible Recovery Efficiency	Apparent Sensible Effectiveness
°F	°C	CFM	L/s			
32	0	57	27	66	67%	78%
32	0	67	32	74	66%	77%
32	0	104	49	146	60%	71%
-13	-25	71	34	112	60%	73%

<b>Project:</b>		<b>Architect:</b>	
<b>Location:</b>		<b>Engineer:</b>	
<b>Model #:</b>		<b>Contractor:</b>	
<b>Quantity:</b>		<b>Comments:</b>	
<b>Submitted By:</b>			
<b>Date:</b>			

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**TRANE**

## Submittal

**Prepared For:**  
Janet

**Date:** July 10, 2015

**Job Name:**  
Traffic Management Center

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Trane Canada ULC is pleased to provide the enclosed submittal for your review and approval.

**Product Summary**

Qty	Product
1	3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

---

**Connor A Tant**  
Trane  
109 Hodsman Road  
Regina, SK S4N 5W5  
Phone: (306) 525-0745  
Cell: (306) 209-4108  
Fax: (306) 525-0746

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    3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop..... 16

**Tag Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop (Qty: 1)**

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1	1	5 Ton R410A PKGD Unitary Gas/Electric	YSC060E3RZA--D000000000000000000000000000000000000

**Product Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**

**Item: A1 Qty: 1 Tag(s): RTU-1**

- DX cooling, gas heat
- Standard efficiency
- Convertible configuration
- 5 Ton
- Major design sequence
- 208-230/60/3
- Microprocessor controls 3ph
- High gas heat stainless steel heat exchanger
- Economizer Dry Bulb 0-100% with Barometric Relief
- Roof curb (Fld)

**Performance Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**

Tags	RTU-1
Design Airflow (cfm)	2000
Airflow Application	Downflow
Cooling Entering DB (F)	80.00
Cooling Entering WB (F)	67.00
Ent Air Relative Humidity (%)	51.08
Ambient Temp (F)	95.00
Evap Coil Leaving Air Temp (DB) (F)	57.73
Evap Coil Leaving Air Temp (WB) (F)	56.93
Cooling Leaving Unit DB (F)	59.65
Cooling Leaving Unit WB (F)	57.67
Gross Total Capacity (MBh)	62.27
Gross Sensible Capacity (MBh)	48.11
Gross Latent Capacity (MBh)	14.16
Net Total Capacity (MBh)	58.89
Net Sensible Capacity (MBh)	44.73
Net Sensible Heat Ratio (Number)	0.76
Heating EAT (F)	65.00
Heating LAT (F)	113.40
Heating Delta T (F)	48.40
Input Heating Capacity (MBh)	130.00
Output Heating Capacity (MBh)	104.00
Output Heating Cap. w/Fan (MBh)	107.38
Design ESP (in H2O)	0.750
Component SP (in H2O)	0.180
Field supplied drive kit required	None
Indoor mtr operating power (bhp)	1.04
Indoor RPM (rpm)	1103
Indoor Motor Power (kW)	0.77
Outdoor Motor Power (kW)	0.40
Compressor Power (kW)	4.34
System Power (kW)	5.51
SEER @ AHRI (btuh/watt)	13.00
MCA (A)	27.40
MOP (A)	40.00
Compressor 1 RLA (A)	15.90
Compressor 2 RLA (A)	0.00
Evaporator fan FLA (A)	5.00
Condenser fan FLA (A)	2.50

Tags	RTU-1
Evaporator face area (sq ft)	7.71
Evaporator rows (Each)	4.00
Evaporator fin spacing (Per Foot)	192
Evaporator face velocity (ft/min)	259
Min. unit operating weight (lb)	613.0
Max. unit operating weight (lb)	824.0
Fan motor heat (MBh)	3.38
Dew Point (F)	56.41
Rated capacity (AHRI) (MBh)	60.00
Exhaust fan power (kW)	0.65
Refrig charge (HFC-410A) - ckt 1 (lb)	9.4
ASHRAE 90.1	Yes
Saturated Suction Temp Circuit 1 (F)	52.21
Saturated Discharge Temp Circuit 1 (F)	121.07
Total Static Pressure (in H2O)	0.930

**Mechanical Specifications - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop****Item: A1 Qty: 1 Tag(s): RTU-1****General**

The units shall be convertible airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for units with microprocessor controls. Operating range for units with electromechanical controls shall be between 115°F and 40°F. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation, and control sequence before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

**Casing**

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 672 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. Service panels shall have lifting handles and be removed and reinstalled by removing two fasteners while providing a water and air tight seal. All exposed vertical panels and top covers in the indoor air section shall be insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material. The base of the unit shall be insulated with 1/8 inch, foil-faced, closed-cell insulation. All insulation edges shall be either captured or sealed. The unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8 inch high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting, with forklift capabilities on three sides of the unit.

**Unit Top**

The top cover shall be one piece construction or, where seams exist, it shall be double-hemmed and gasket-sealed. The ribbed top adds extra strength and enhances water removal from unit top.

**Filters**

Throwaway filters shall be standard on all units. Optional 2-inch MERV 8 and MERV 13 filters shall also be available.

**Compressors**

All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors.

Dual compressors are outstanding for humidity control, light load cooling conditions and system back-up applications. Dual compressors are available on 7½-10 ton models and allow for efficient cooling utilizing 3-stages of compressor operation for all high efficiency models.

**Notes:**

Crankcase heaters are optional on YSC (036, 048, 060, 072, 090, 102, 120); standard on YHC (036, 048, 060, 072, 092, 102, 120).

**Indoor Fan**

The following units shall be equipped with a direct drive plenum fan design (T/YSC120E, T/YHC092,102, 120E). Plenum fan design shall include a backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor. All plenum fan designs will have a variable speed adjustment potentiometer located in the control box. 3-5 ton units (standard efficiency 3-phase or high efficiency 3-phase with optional motor) are belt driven, FC centrifugal fans with adjustable motor sheaves. 3-5 ton units (1-phase or high efficiency 3-phase) have multispeed, direct drive motors. All 6-8½ ton units (standard efficiency) shall have belt drive motors with an adjustable idler-arm assembly for quick-adjustment to fan belts and motor sheaves. All motors shall be thermally protected. All 10 tons and 7½-8½ (high efficiency) have variable speed direct drive motors. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

**Outdoor Fans**

The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor shall be permanently lubricated and shall have built-in thermal overload protection.

**Evaporator and Condenser Coils**

Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. The microchannel type condenser coil is standard for the T/YSC 10 ton models and 7½ ton high efficiency models. The microchannel type condenser coil is not offered on the 7½ ton dehumidification model. Due to flat streamlined tubes with

small ports, and metallurgical tube-to-fin bond, microchannel coil has better heat transfer performance. Microchannel condenser coil can reduce system refrigerant charge by up to 50% because of smaller internal volume, which leads to better compressor reliability. Compact all-aluminum microchannel coils also help to reduce the unit weight. All-aluminum construction improves re-cyclability. Galvanic corrosion is also minimized due to all aluminum construction. Strong aluminum brazed structure provides better fin protection. In addition, flat streamlined tubes also make microchannel coils more dust resistant and easier to clean. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 600 psig. The assembled unit shall be leak tested to 465 psig. The condenser coil shall have a patent pending 1+1+1 hybrid coil designed with slight gaps for ease of cleaning. A removable, reversible, double-sloped condensate drain pan with through the base condensate drain is standard.

### **Controls**

Unit shall be completely factory-wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device. A choice of microprocessor or electromechanical controls shall be available. Microprocessor controls provide for all 24V control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection. 24-volt electromechanical control circuit shall include control transformer and contactor

### **High Pressure Control**

All units include High Pressure Cutout as standard.

### **Phase monitor**

Phase monitor shall provide 100% protection for motors and compressors against problems caused by phase loss, phase imbalance, and phase reversal. Phase monitor is equipped with an LED that provides an ON or FAULT indicator. There are no field adjustments. The module will automatically reset from a fault condition.

### **Refrigerant Circuits**

Each refrigerant circuit offer thermal expansion valve as standard. Service pressure ports, and refrigerant line filter driers are factory-installed as standard. An area shall be provided for replacement suction line driers.

### **Gas Heating Section**

The heating section shall have a progressive tubular heat exchanger design using stainless steel burners and corrosion resistant steel throughout. An induced draft combustion blower shall be used to pull the combustion products through the firing tubes. The heater shall use a direct spark ignition (DSI) system. On initial call for heat, the combustion blower shall purge the heat exchanger for 20 seconds before ignition. After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat/zone sensor. Units shall be suitable for use with natural gas or propane (field-installed kit) and also comply with the California requirement for low NOx emissions (Gas/Electric Only).

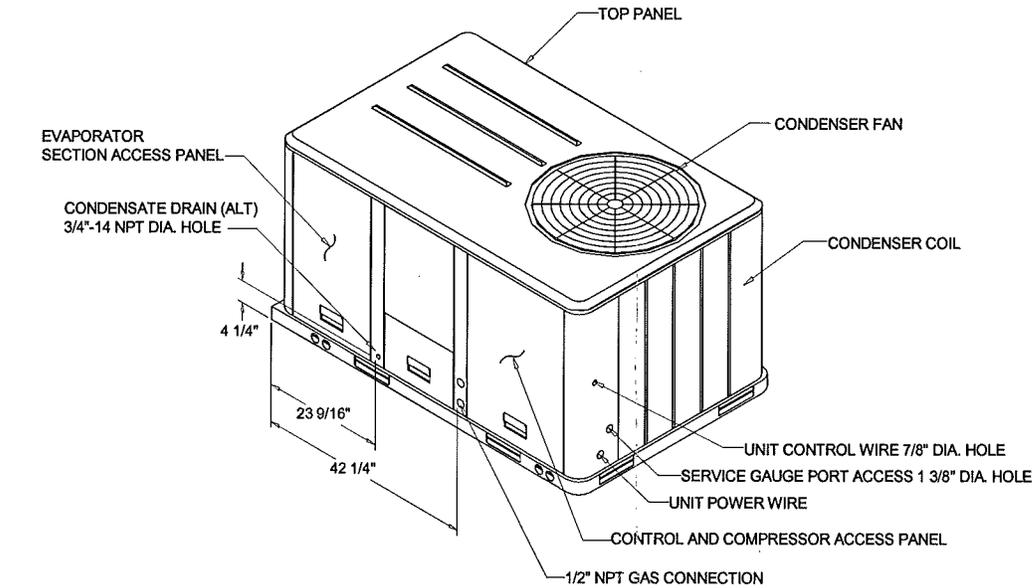
### **Economizer**

This accessory shall be available with or without barometric relief. The assembly includes fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control. The barometric relief shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment off cycle. Optional solid state or differential enthalpy control shall be available for either factory or field installation. The economizer arrives in the shipping position and shall be moved to the operating position by the installing contractor.

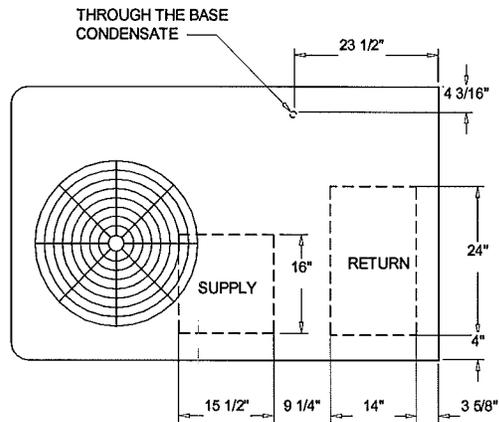
### **Accessory - Roof Curb**

The roof curb shall be designed to mate with the unit's downflow supply and return and provide support and a water tight installation when installed properly. The roof curb design shall allow field fabricated rectangular supply/return ductwork to be connected directly to the curb. Curb design shall comply with NRCA requirements. Curb shall be shipped knocked down for field assembly and shall include wood nailer strips.

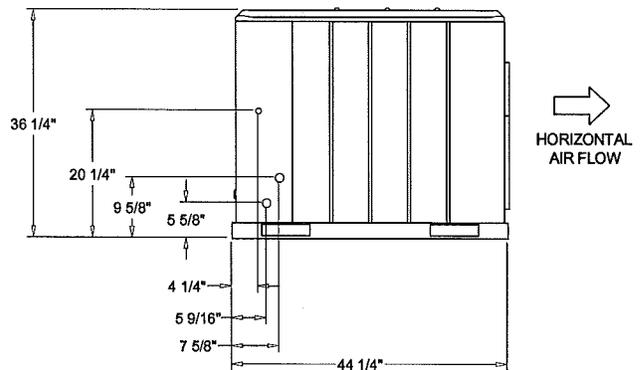
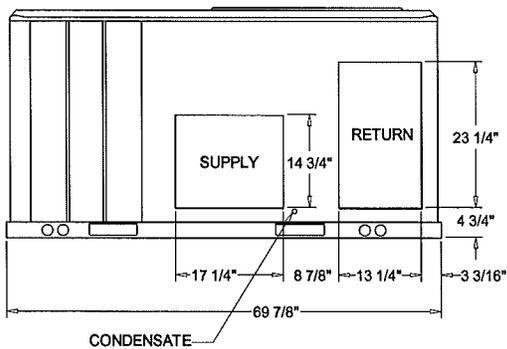
**Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**  
**Item: A1 Qty: 1 Tag(s): RTU-1**



- NOTES:**
1. THRU -THE -BASE GAS AND ELECTRICAL IS NOT STANDARD ON ALL UNITS.
  2. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

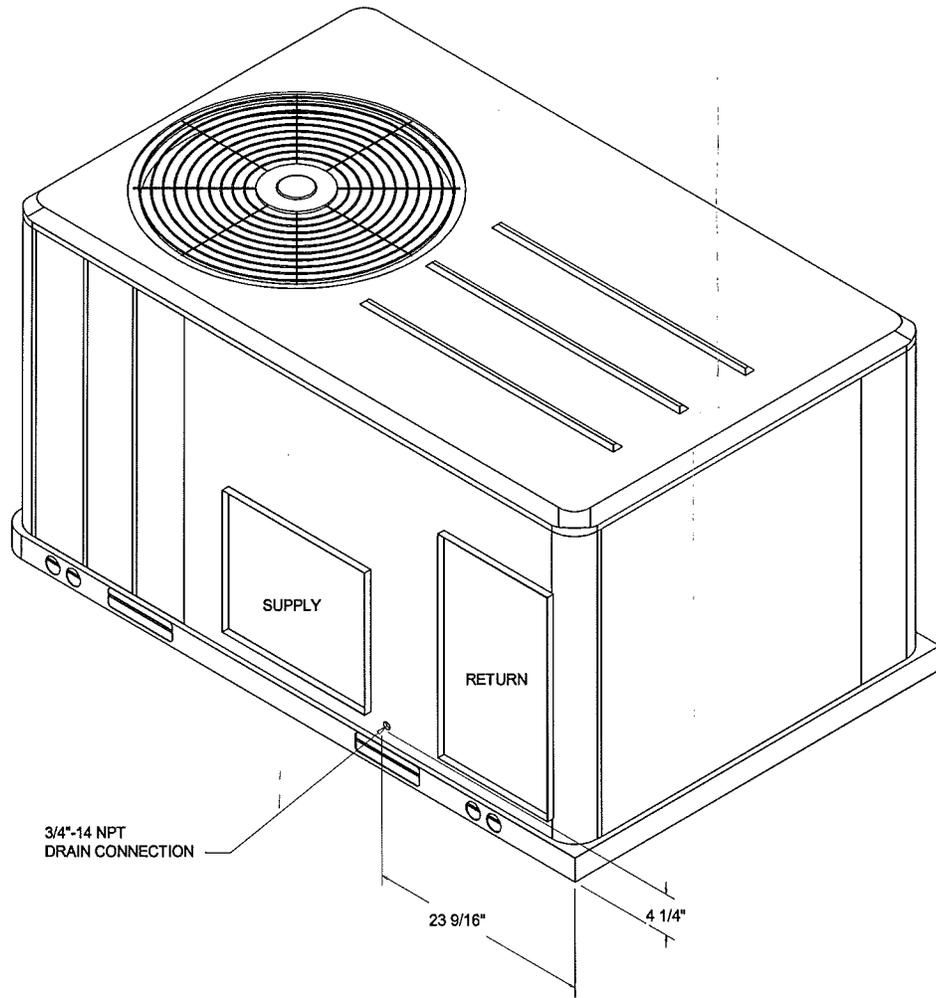


**PLAN VIEW UNIT**  
**DIMENSION DRAWING**



**PACKAGED GAS / ELECTRICAL**  
**DIMENSION DRAWING**

**Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**  
**Item: A1 Qty: 1 Tag(s): RTU-1**



ISOMETRIC-PACKAGED COOLING

**Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**  
**Item: A1 Qty: 1 Tag(s): RTU-1**

**ELECTRICAL / GENERAL DATA**

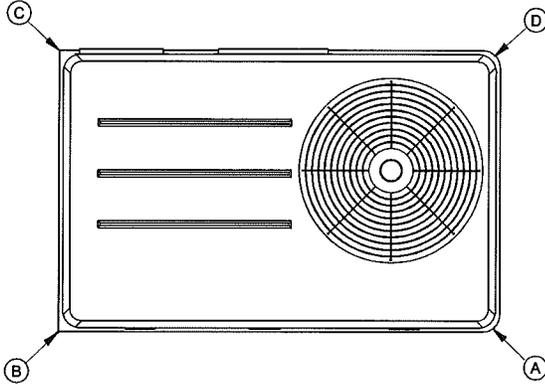
<b>GENERAL</b> <sup>(2)(4)(6)</sup> Model: YSC060F      Oversized Motor Unit Operating Voltage: 187-253      MCA: N/A Unit Primary Voltage: 208      MFS: N/A Unit Secondary Voltage: 230      MCB: N/A Unit Hertz: 60 Unit Phase: 3 SEER Standard Motor MCA: 27.4      MCA: N/A MFS: 40.0      MFS: N/A MCB: 40.0      MCB: N/A Field Installed Oversized Motor		<b>HEATING PERFORMANCE</b> HEATING - GENERAL DATA Heating Model: High Heating Input (BTU): 130,000 Heating Output (BTU): 104,000 No. Burners: 3 No. Stages: 1 Gas Inlet Pressure Natural Gas (Min/Mix): 4.5/14.0 LP (Min/Max): 11.0/14.0 Gas Pipe Connection Size: 1/2"	
<b>INDOOR MOTOR</b> Standard Motor      Oversized Motor      Field Installed Oversized Motor Number: 1      Number: N/A      Number: N/A Horsepower: 1.0      Horsepower: N/A      Horsepower: N/A Motor Speed (RPM): -      Motor Speed (RPM): N/A      Motor Speed (RPM): N/A Phase: 3      Phase: N/A      Phase: N/A Full Load Amps: 5.0      Full Load Amps: N/A      Full Load Amps: N/A Locked Rotor Amps: 32.2      Locked Rotor Amps: N/A      Locked Rotor Amps: N/A			
<b>COMPRESSOR</b> Circuit 1/2 Number: 1 Horsepower: 4.3 Phase: 3 Rated Load Amps: 15.9 Locked Rotor Amps: 110.0		<b>OUTDOOR MOTOR</b> Number: 1 Horsepower: 0.40 Motor Speed (RPM): 1075 Phase: 1 Full Load Amps: 2.5 Locked Rotor Amps: 6.6	
<b>POWER EXHAUST ACCESSORY</b> <sup>(3)</sup> (Field Installed Power Exhaust) Phase: N/A Horsepower: N/A Motor Speed (RPM): N/A Full Load Amps: N/A Locked Rotor Amps: N/A	<b>FILTERS</b> Type: Throwaway Furnished: Yes Number: 2 Recommended: 20"x30"x2"		<b>REFRIGERANT</b> <sup>(2)</sup> Type: R-410 Factory Charge Circuit #1: 9.5 Circuit #2: N/A

**NOTES:**

1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at AHRI conditions and in accordance with DOE test procedures.

**Weight, Clearance & Rigging Diagram - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**  
 Item: A1 Qty: 1 Tag(s): RTU-1

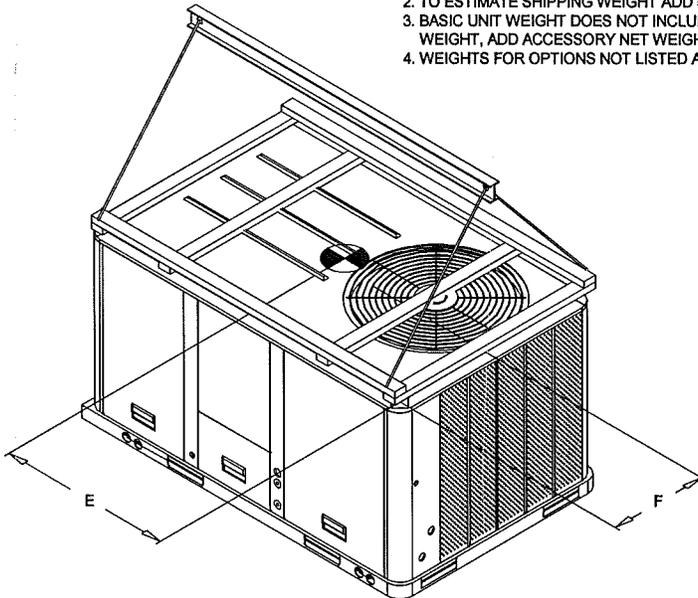
**INSTALLED ACCESSORIES NET WEIGHT DATA**



**PACKAGED GAS / ELECTRICAL**  
 CORNER WEIGHT

ACCESSORY		WEIGHTS			
ECONOMIZER		26.0 lb			
MOTORIZED OUTSIDE AIR DAMPER					
MANUAL OUTSIDE AIR DAMPER					
BAROMETRIC RELIEF					
OVERSIZED MOTOR					
BELT DRIVE MOTOR					
POWER EXHAUST					
THROUGH THE BASE ELECTRICAL/GAS (FIOPS)					
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)					
UNIT MOUNTED DISCONNECT (FIOPS)					
POWERED CONVENIENCE OUTLET (FIOPS)					
HINGED DOORS (FIOPS)					
HAIL GUARD					
SMOKE DETECTOR, SUPPLY / RETURN					
NOVAR CONTROL					
STAINLESS STEEL HEAT EXCHANGER		4.0 lb			
REHEAT					
ROOF CURB		61.0 lb			
BASIC UNIT WEIGHTS		CORNER WEIGHTS		CENTER OF GRAVITY	
SHIPPING	NET	(A)	(C)	(E) LENGHT	(F) WIDTH
688.0 lb	613.0 lb	(B) 190.0 lb	(D) 110.0 lb	31"	19"

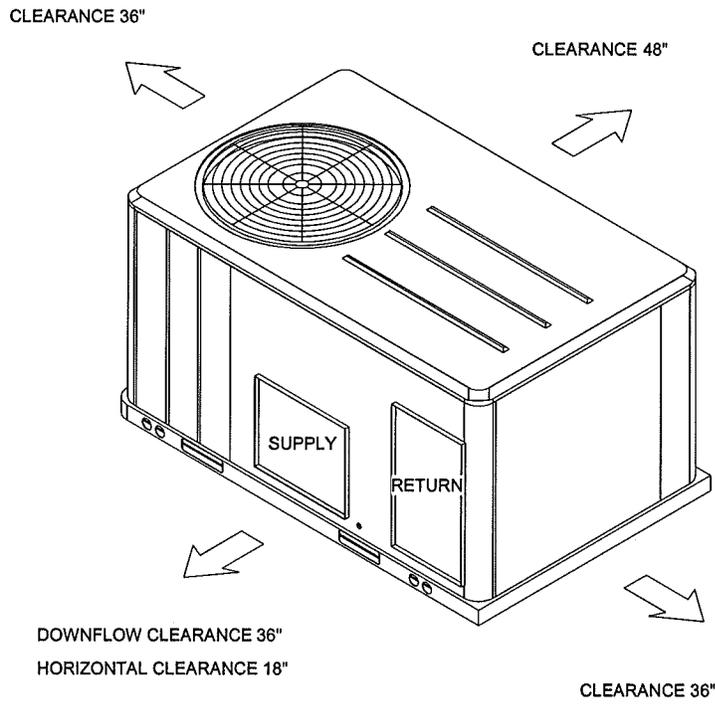
- NOTE:
1. CORNER WEIGHTS ARE GIVEN FOR INFORMATION ONLY.
  2. TO ESTIMATE SHIPPING WEIGHT ADD 5 LBS TO NET WEIGHT.
  3. BASIC UNIT WEIGHT DOES NOT INCLUDE ACCESSORY WEIGHT. TO OBTAIN TOTAL WEIGHT, ADD ACCESSORY NET WEIGHT TO BASIC UNIT WEIGHT.
  4. WEIGHTS FOR OPTIONS NOT LISTED ARE <5 LBS.



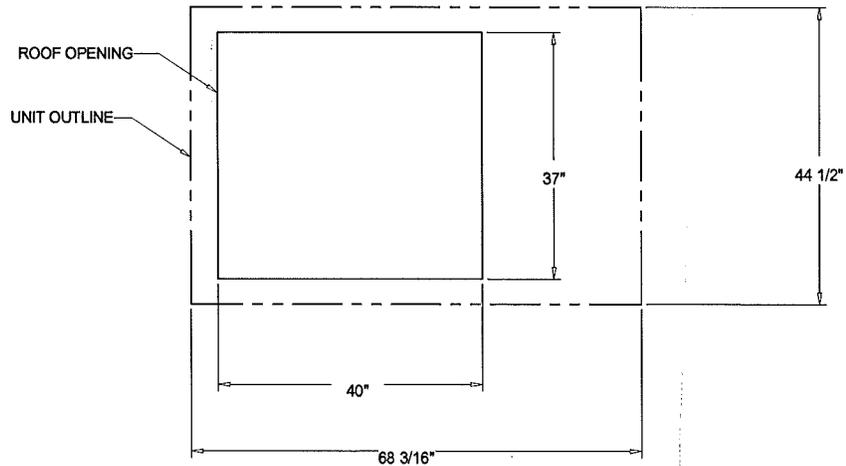
**PACKAGED GAS / ELECTRICAL**  
 RIGGING AND CENTER OF GRAVITY

**Weight, Clearance & Rigging Diagram - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**  
Item: A1 Qty: 1 Tag(s): RTU-1

CLEARANCE FROM TOP OF UNIT 72"

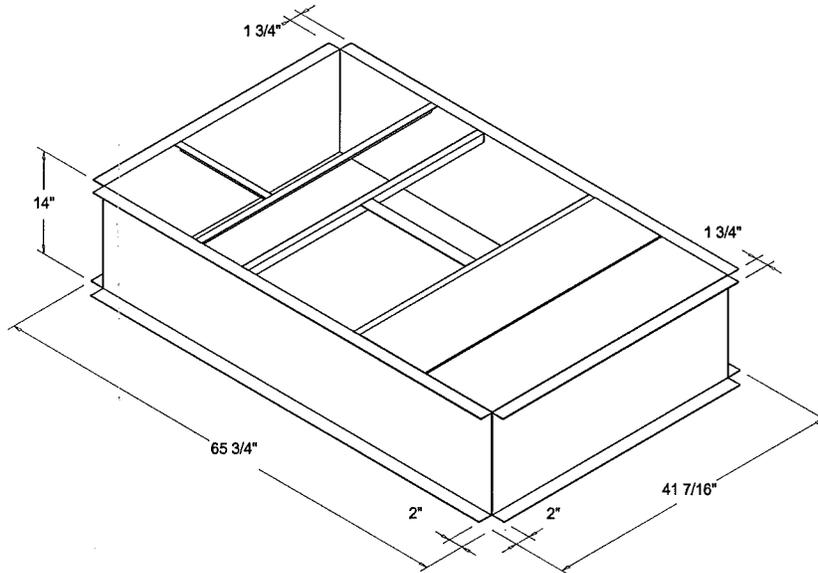


PACKAGED GAS / ELECTRIC  
CLEARANCE

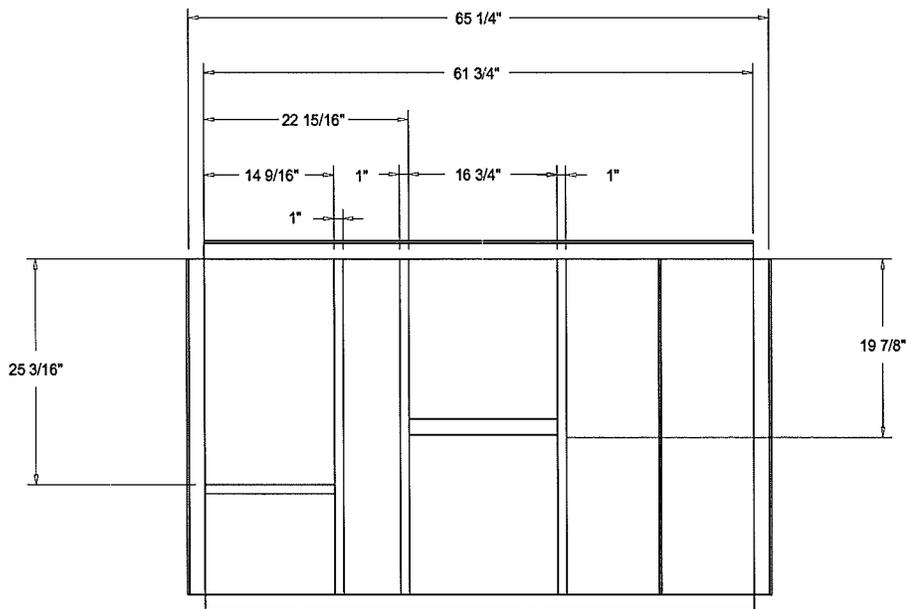


PACKAGED GAS / ELECTRIC  
DOWNFLOW TYPICAL ROOF OPENING

Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop  
Item: A1 Qty: 1 Tag(s): RTU-1



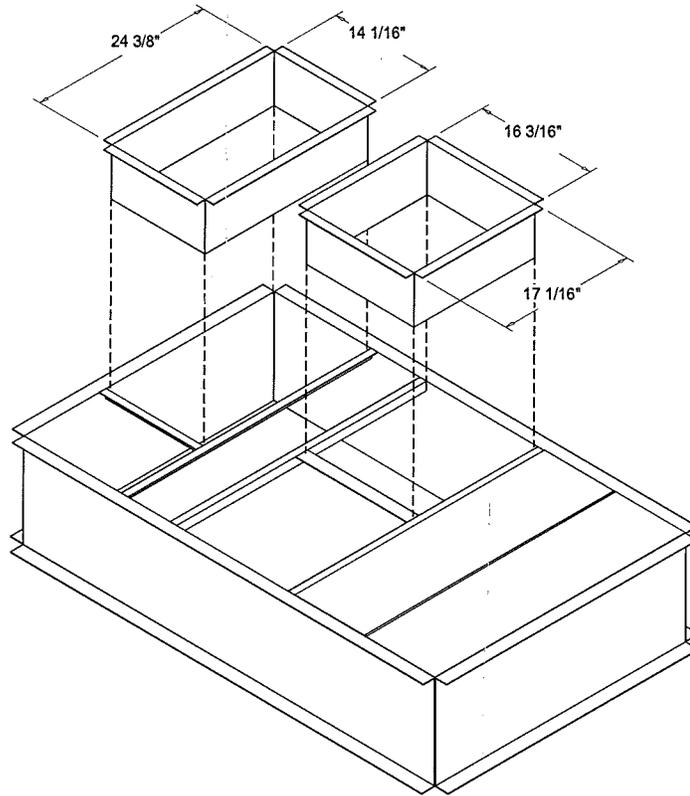
GAS / ELECTRICAL ISOMETRIC ROOF TOP CURB  
ACCESSORY



GAS / ELECTRICAL TOP VIEW ROOF TOP CURB  
ACCESSORY

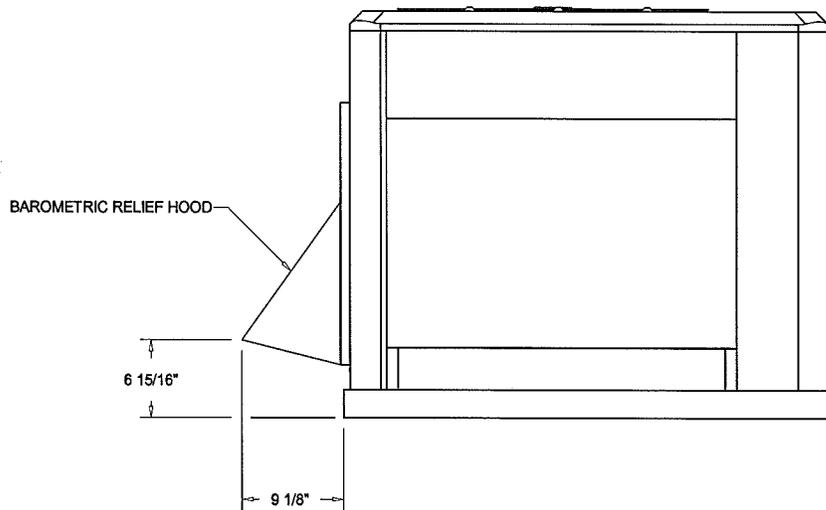
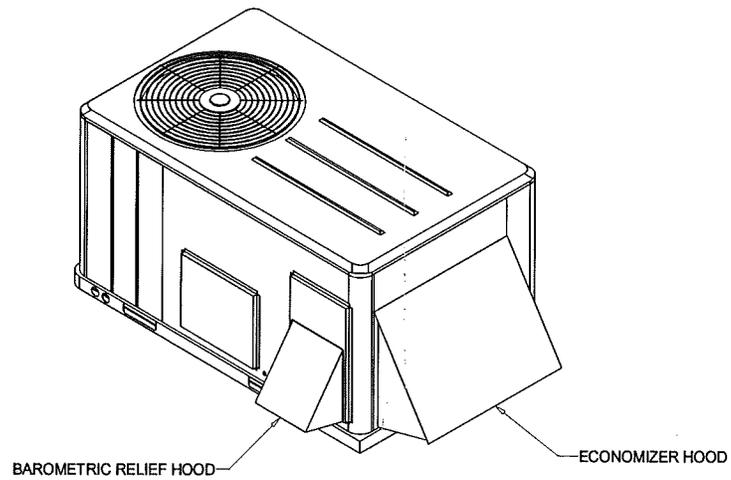
Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop  
Item: A1 Qty: 1 Tag(s): RTU-1

Downflow Duct Connections - Field Fabricated  
All Flanges - 1 1/4"



DUCT CONNECTIONS  
ACCESSORY

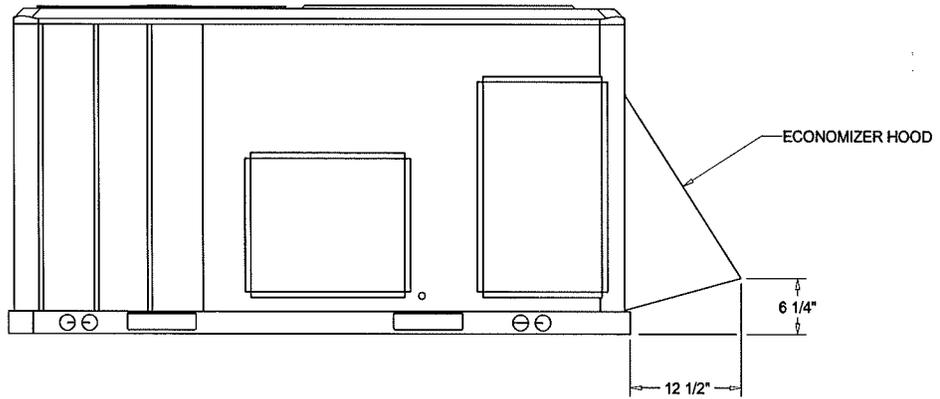
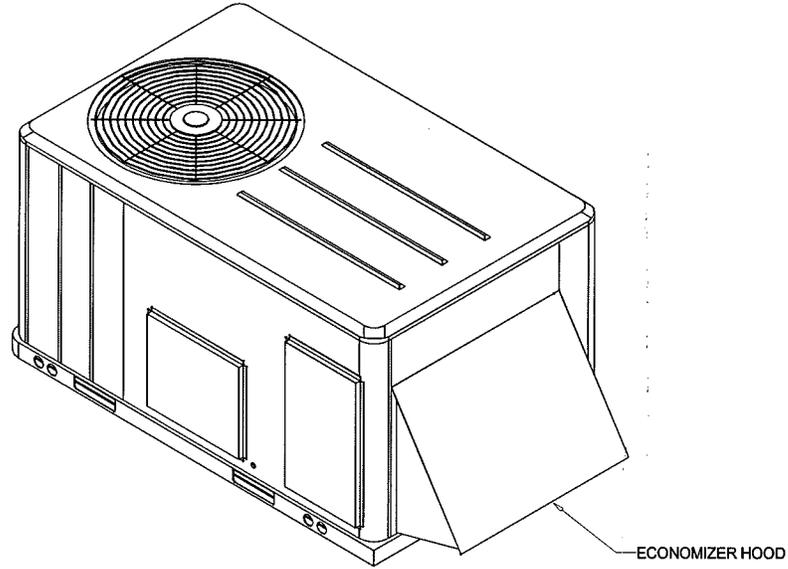
Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop  
Item: A1 Qty: 1 Tag(s): RTU-1



ACCESSORY - BAROMETRIC RELIEF DAMPER HOOD

Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A1 Qty: 1 Tag(s): RTU-1



ACCESSORY - ECONOMIZER HOOD

**Field Installed Options - Part/Order Number Summary**

This is a report to help you locate field installed options that arrive at the jobsite. This report provides part or order numbers for each field installed option, and references it to a specific product tag. It is NOT intended as a bill of material for the job.

**Product Family - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop**

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1	1	5 Ton R410A PKGD Unitary Gas/Electric	YSC060E3RZA--D 0000000000000000 000000000000

Field Installed Option Description	Part/Ordering Number
Roof curb	BAYCURB042A



# STERLING MODEL "GG" LOW PROFILE TUBULAR DESIGN GAS FIRED UNIT HEATER



GG-7

## DESCRIPTION

The Sterling Model "GG" Low Profile gas-fired unit heater is a highly efficient, extremely versatile product. These propeller units combine the latest tubular heat exchanger technology with a unique single-orifice burner system. Units are available in sizes ranging from 30 to 120 MBH in a compact, low profile design.

## RESIDENTIAL AND COMMERCIAL CERTIFICATIONS

The Sterling Model "GG" unit heater conforms with the latest ETL certification standards. Design certified under ANSI Z83.8 for Industrial/Commercial use and the more demanding requirements of CSA .10.96 U.S. (2nd ed.) "Unit Heaters for Residential Installation", make this low profile unit heater the ideal selection.

## TUBULAR HEAT EXCHANGER

The Sterling tubular heat exchanger has been designed to provide maximum and uniform heat transfer. The low pressure drop associated with the design enables heated air to be evenly distributed to the conditioned space. The curved, non-welded serpentine design experiences low thermal stress making it highly durable for significantly longer service life.

## SINGLE ORIFICE BURNER

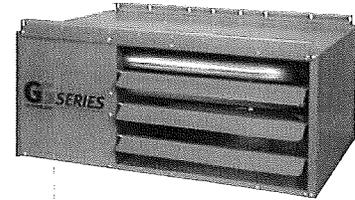
Sterling Model "GG" units are built with a proprietary, single orifice burner system: one burner to service and one orifice to change for gas conversion. The stainless steel burner box provides even heat distribution to all heat exchanger tubes.

## DIRECT SPARK IGNITION SYSTEM

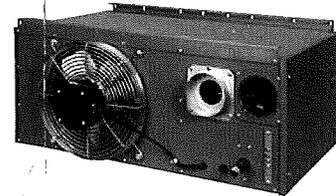
Sterling Model "GG" units utilize a direct spark pilotless ignition of the burner, providing fast heat delivery. This highly reliable and efficient ignition system incorporates an integrated electronic control board to regulate the system sequence of operation, including an onboard LED indicator for simple troubleshooting.

## DUAL VENTING

Sterling "GG" units are agency certified for both standard and separated combustion venting. Units are shipped to accommodate either category I or category III horizontal or vertical venting. With the addition of a Sterling concentric vent kit, the unit can be installed as a separated combustion unit.



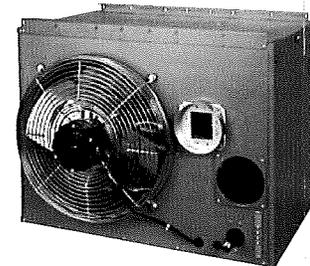
Model GG045



Model GG045



Model GG120



Model GG120



HVAC PRODUCTS

260 North Elm St., Westfield, MA 01085

(413) 564-5540 Fax: (413) 562-5311

www.sterlinghvac.com



09/2014

PROJECT: \_\_\_\_\_

UNIT TAG: \_\_\_\_\_

# GG LOW PROFILE TUBULAR DESIGN PERFORMANCE AND DIMENSIONAL DATA



Intertek

Unit Size	30	45	60	75	90	105	120
<b>PERFORMANCE DATA†</b>							
Input - BTU/Hr. (kW)	30,000 (8.8)	45,000 (13.2)	60,000 (17.6)	75,000 (22.0)	90,000 (26.4)	105,000 (30.8)	120,000 (35.2)
Output - BTU/Hr. (kW)	24,900 (7.2)	37,350 (10.9)	49,800 (14.5)	61,500 (18.0)	73,800 (21.6)	86,100 (25.2)	98,400 (28.8)
Thermal Efficiency (%)	83	83	83	82	82	82	82
Free Air Delivery - CFM (cu. m/s)	370 (.175)	550 (.260)	740 (.349)	920 (.434)	1,100 (.519)	1,300 (.614)	1,475 (.696)
Air Temperature Rise - Deg. F (Deg. C)	60 (15)	60 (15)	60 (15)	60 (15)	60 (15)	60 (15)	60 (15)
Full Load Amps at 120V	3.0	3.0	4.1	4.1	6.4	6.4	6.4
Maximum Circuit Ampacity	3.5	3.5	4.8	4.8	7.5	7.5	7.5
<b>MOTOR DATA:</b>							
Motor HP	1/20	1/20	1/12	1/12	1/10	1/10	1/10
Motor (kW)	(0.04)	(0.04)	(0.06)	(0.06)	(0.075)	(0.075)	(0.075)
Motor Type ODP††	SP	SP	SP	SP	SP	SP	SP
R.P.M.	1650	1650	1050	1050	1050	1050	1050
Motor Amps @ 115V	1.9	1.9	2.6	2.6	4.2	4.2	4.2
<b>DIMENSIONAL DATA - inches (mm)</b>							
"A" Jacket Height	12-3/8 (314)	12-3/8 (314)	15-7/8 (403)	15-7/8 (403)	22-5/8 (574)	22-5/8 (574)	22-5/8 (574)
"B" Overall Height	13-1/4 (337)	13-1/4 (337)	16-13/16 (427)	16-13/16 (427)	23-9/16 (598)	23-9/16 (598)	23-9/16 (598)
"C" Overall Depth	25-7/8 (632)	25-7/8 (632)	26-3/16 (665)	26-3/16 (665)	26-3/8 (670)	26-3/8 (670)	26-3/8 (670)
"D1" Center Line Height of Flue*	8-1/2 (216)	8-1/2 (216)	10-3/8 (263)	10-3/8 (263)	13-5/8 (346)	13-5/8 (346)	13-5/8 (346)
"D2" Center Line Height of Air Intake	8-1/2 (216)	8-1/2 (216)	8 (203)	8 (203)	8-5/8 (219)	8-5/8 (219)	8-5/8 (219)
"E" Fan Diameter	10 (254)	10 (254)	14 (356)	14 (356)	16 (406)	16 (406)	16 (406)
"F" Discharge Opening Height	10-13/16 (275)	10-13/16 (275)	14-7/16 (367)	14-7/16 (367)	21-3/16 (538)	21-3/16 (538)	21-3/16 (538)
"G" Vent Connection Diameter	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)
"H1" Center Line of Flue Connection From Side	7-1/4 (184)	7-1/4 (184)	7-1/4 (184)	7-1/4 (184)	7-3/4 (197)	7-3/4 (197)	7-1/4 (184)
"H2" Center Line of Air Intake From Side	2-3/4 (70)	2-3/4 (70)	2-3/4 (70)	2-3/4 (70)	3-1/2 (89)	3-1/2 (89)	3-1/2 (89)
<b>Vent Size Requirements - Standard Combustion</b>							
Category III Horizontal	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)
Category I & III Vertical	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)	4 (102)
<b>Vent Size Requirements - Separated Combustion</b>							
Exhaust Diameter**	4 (102)	4 (102)	4 (102)	4 (102)	5 (127)	5 (127)	5 (127)
Intake Air Diameter	4 (102)	4 (102)	4 (102)	4 (102)	5 (127)	5 (127)	5 (127)
<b>Unit Weight - lbs.</b>							
(kgs)	60 (27)	65 (29)	80 (36)	85 (39)	95 (43)	105 (48)	110 (50)
<b>Shipping Weight - lbs.</b>							
(kgs)	70 (32)	75 (34)	90 (41)	95 (43)	110 (50)	115 (52)	120 (54)

\*For all installations, the flue collar is included with the unit and should be field installed per the instructions included with the unit.

\*\*4-5" reducer supplied where required.

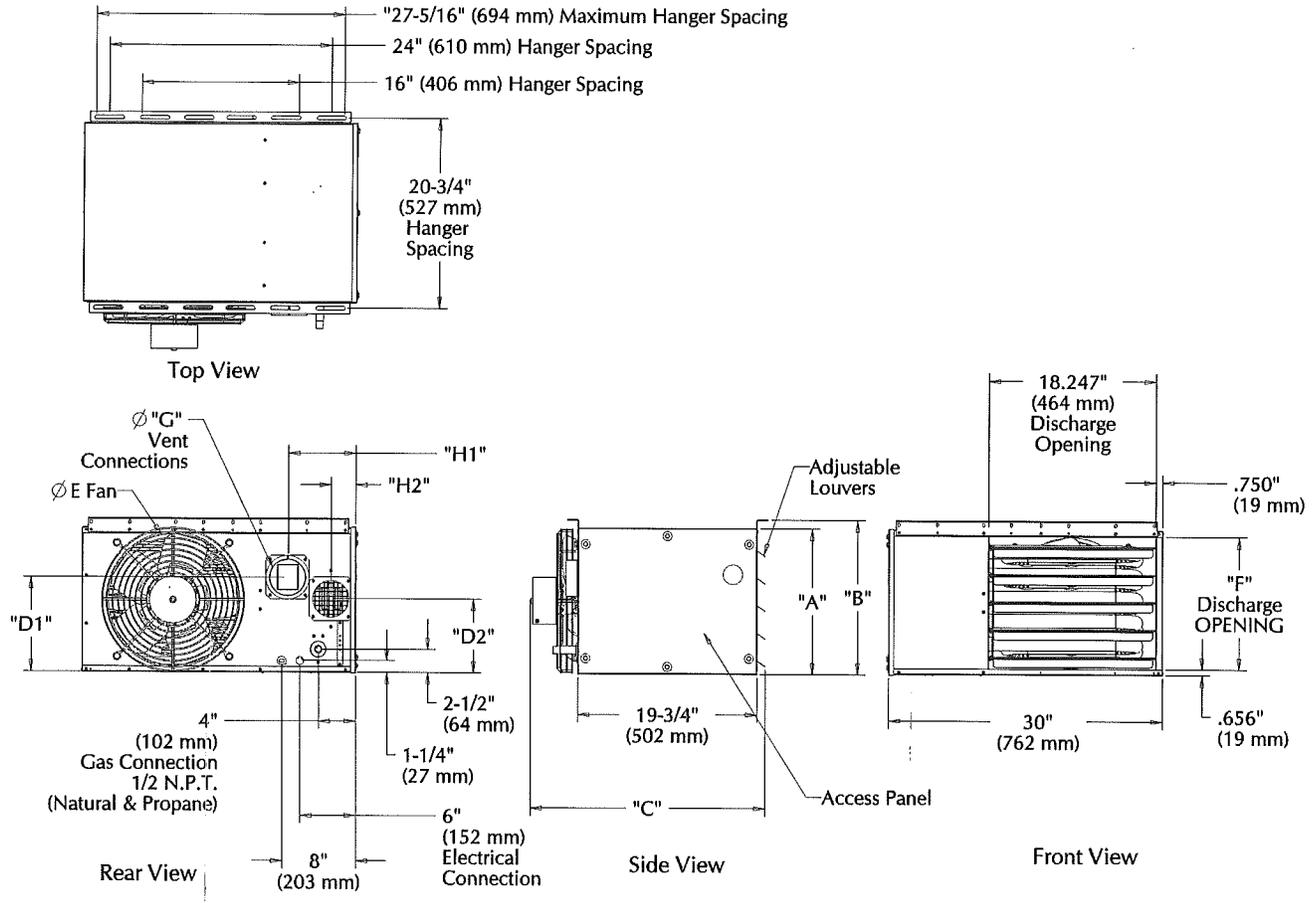
† Ratings shown are for unit installations at elevations between 0 and 2,000 feet (0 to 610m). For unit installations in U.S.A. above 2,000 feet (610m), the unit input must be derated 4% for each 1,000 feet (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (NFPA No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 feet (610m) are to be ignored. At altitudes of 2,000 feet to 4,500 feet (610 to 1372m), the unit must be derated and be so marked in accordance with the ETL certification. See unit installation manual for field deration information.

†† LEGEND: ODP = OPEN DRIP PROOF      SP = SHADED POLE

# GG LOW PROFILE TUBULAR DESIGN

## DIMENSIONAL DATA



D8597

DIMENSIONS .XXX STANDARD UNITS  
 DIMENSIONS IN PARENTHESIS (XXX) MILLIMETERS

# **STERLING MODEL "GG" LOW PROFILE TUBULAR DESIGN GAS FIRED UNIT HEATER**

---

## **STANDARD FEATURES**

- Up to 82%+ Thermal Efficiency
- Redundant Single Stage Gas Valve
- Residential Certification
- 20GA Aluminized Heat Exchanger
- 120/24V Control Transformer
- 115/1/60 Fan Motor with Internal Overload Protection
- Power Vented
- Direct Spark Ignition
- 20GA Baked Enamel Cabinet
- 10 Year Heat Exchanger Warranty
- OSHA Fan Guard
- Right Hand Control Access
  - Field Convertible to Left Hand
- High Limit Switch
- Air Pressure Switch
- Natural or Propane Gas
- Gas Conversion Kit Included
- Field Convertible to Separated Combustion
- Easy Access Control Panel
- 321 Stainless Steel Burner Box

## **OPTIONAL EQUIPMENT**

- 409 Stainless Steel Heat Exchanger
- Two Stage Gas Control (Sizes 60-120 Only)
- Supply Voltage (Field Mounted Transformers):
  - 208/1/60
  - 230/1/60
  - 208/3/60
  - 230/3/60
  - 460/3/60
  - 575/3/60
- Totally Enclosed Motors (Sizes 60-120 Only)
- Stainless Steel Flue Collector
- Pressure Regulator
- Single & Two Stage Mercury Free Thermostats
- Line Volt Thermostat
- Locking Thermostat Cover
- 24V SPST Relay
- Vent Caps
- Combustion Air Inlet Kits  
(For All Separated Combustion Installations)







543 Garwood Avenue.  
Winnipeg, MB  
R3L 2R2  
Ph: (204) 694-9790  
Fax: (204)-958-6807  
Email: Travis@BPLSales.ca

## REQUEST FOR EQUALS

Sent to: Cantec Engineering

Date: 2-Jun-15  
Page: 1 of 1

Attn: Janet Loesel Sitar  
From: Michael Miller  
204-791-2694

Closing Date: 17-Jul-15

Job Name: Transportation Management Center - 821 Elgin

Fax Number \_\_\_\_\_

Your consideration is requested that the following materials be considered as equal to those specified.

Item	Div./Section	Specified Description	Equal Description
Exhaust Fan Motorized Damper GRDs HRV RTU		Greenheck Tamco/Belimo Price NuAir Carrier	Twin City Fan Alumavent/Belimo Titus Aeromatic Aldes JCI/York
If Any Additional Product Information is Required Before Equals Can Be Granted, Please Let Us Know.			

Thank You!

# SUBMITTAL

Job Name: Transportation Management



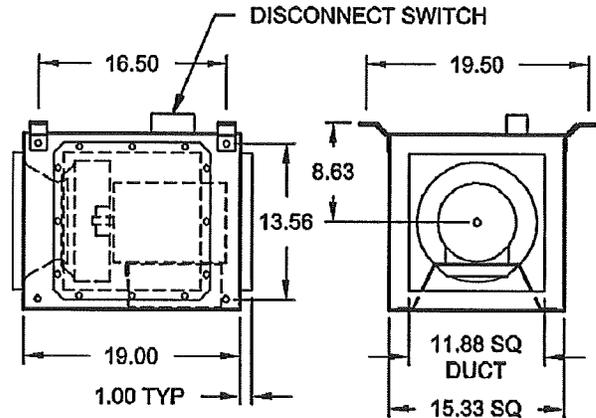
Tag: EF-5  
 Customer: BPL SALES LIMITED  
 Job ID: 013  
 Date: July 16, 2015

SIDE DISCHARGE

## DSI - Square Inline Centrifugal Fan, Direct Drive

### Construction Features

- Heavy-gauge galvanized steel housing.
- Backward inclined, non-overloading, aluminum wheel statically and dynamically balanced.
- Removable side panels provide access to power assembly without removal of duct connections.
- Galvanized steel mounting brackets for easy mounting in horizontal or vertical position.
- Disconnect switch is mounted to the side panel of unit.



Description	Qty	Model	Size	Wt (lb)
	1	DSI	080AE	60

Approximate weight each, includes fan, motor and accessories.

Performance	CFM	SP (in WC)	RPM	Oper. BHP
	200	0.200	890	0.01

Temperature: 70 °F Altitude: 0 ft

Motor Data	HP	RPM	Volt/Ph/Hz	Encl
	1/4	1,750	115V/1/60	ECM

Efficiency: Standard

DAMPER SIZE	12.00 X 12.00
-------------	---------------

D4210D DSI 080

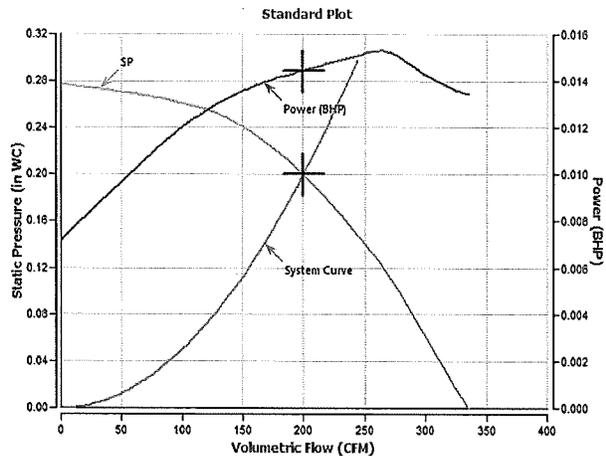


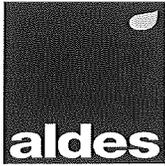
Sound Data	Octave Bands	1	2	3	4	5	6	7	8	LwA	dBA	Sones
	Level at Inlet	54	56	57	55	52	45	39	36			

LwA: The overall (single value) fan sound power level in dB re. 10<sup>-12</sup> Watts, 'A' weighted.  
 dBA: Estimated sound pressure level (re:0.0002 microbar) based on a single ducted installation at 5 ft., using a directivity factor of 1.

### Accessories Included

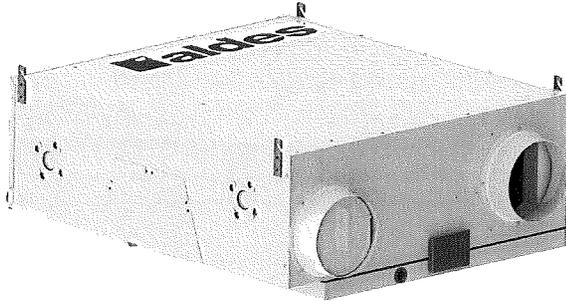
- 0-10 VDC Lead, Factory Installed
- Disc Switch-Unfused (NEMA 1), Shipped Loose
- Speed Controller, Motor Mounted Dial, Factory Installed





AEROMATIC™ SERIES STANDARD RESIDENTIAL  
**H130-HR**  
Heat Recovery Ventilator

PRODUCT  
SPECIFICATIONS  
& TECHNICAL  
DATA



#### PRODUCT DESCRIPTION

Compact size, large performance – the Aeromatic™ Series H130-HR heat recovery ventilator produces approximately 121 CFM at 0.20 in.w.g (ESP) and recovers heat through its high-efficiency polypropylene core. The H130-HR has been thoughtfully engineered for simple installation in apartments, condos, and other multi-dwelling applications. At a mere 9-1/4" tall, the unit fits easily into low spaces.

The H130-HR has two exclusive features. EvacMAX™ provides on-demand boost for maximum ventilation. With FLEXControl, airflow circuits can be calibrated electronically, eliminating the need for resistance-inducing balancing dampers and improving overall efficiency.

#### KEY FEATURES

- Electronically and independently adjustable supply and exhaust blowers (FLEXControl)
- Forward-inclined impellers on totally enclosed motors
- Horizontal configuration for flexible installation
- Easy access to core and filters for cleaning
- Extremely durable core
- Multiple low-voltage controller options

#### WARRANTY

Core Assembly: Limited lifetime warranty  
All Other Covered Components: Limited 5-year warranty

#### APPROVALS

- Meets Standards:
- C22.2 no113 and UL 1812



#### CASING

Material: Pre-painted 24-gauge galvanized steel  
Drain Connection: Ø 3/8" (Ø 10 mm)  
Duct Diameter: Ø 5" (Ø 127 mm)  
Insulation: 1" (25 mm) Fiberglass with FSK and polystyrene  
Width: 24-1/8" (613 mm)  
Height: 9-1/4" (235 mm)  
Depth: 22-1/4" (565 mm)  
Weight: 35 lbs (16 kg); Shipping Weight: 41 lbs (19 kg)  
Supply Damper: Motorized; Exhaust Damper: Gravity

#### MOUNTING

- Suspended from the ceiling by chains with vibration-isolating springs
- In the ceiling with an access panel

#### RECOVERY CORE

Material: Polypropylene

#### BLOWERS

Quantity: 2  
Type: Motorized impellers (forward-inclined)

#### ELECTRICAL REQUIREMENTS

120 VAC, 60 Hz, 1.6 A, 180 W  
Cord Set: 27" (686 mm) with ground

#### CONTROLS

- Low voltage dry contact (24VAC) for:
- LCD Electronic Multifunction Control (P/N: 611227)
  - Mode Control (Recirculation) (P/N: 611230)
  - Humidity Control (P/N: 611224)
  - Speed Control (Low/Intermittent/High) (P/N: 611229)
  - 20/40/60 Minute Timer (P/N: 611228)

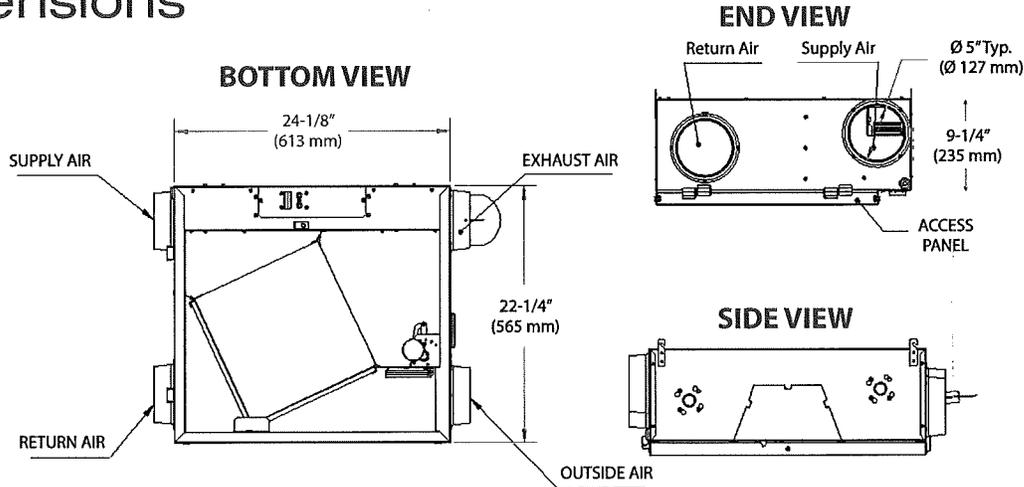
#### FROST CONTROL

- Automatic timed recirculation
- Cycles controlled by a temperature sensor when the outdoor temperature drops below 23°F (-5°C)

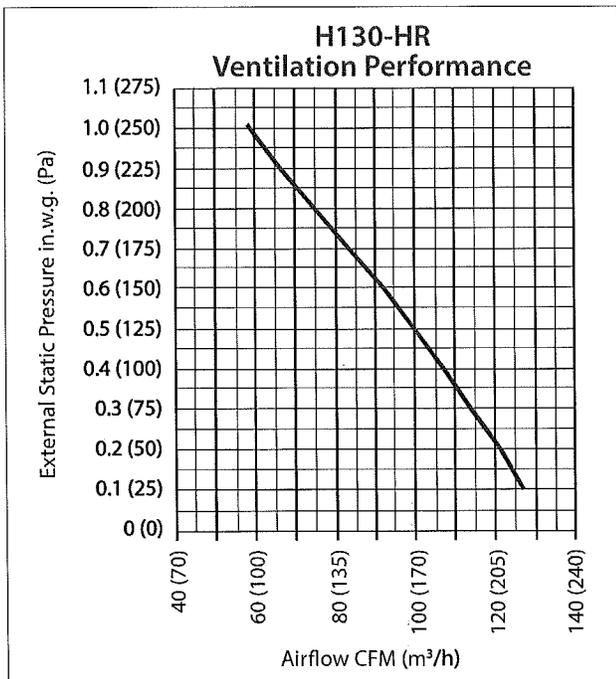
#### FILTERS

Quantity: 2  
Type: Washable Foam 20 ppi (P/N: 612405)  
Optional: Aluminum (P/N: 612404), Carbon (P/N: 612406), or High Efficiency/MERV13 Equivalent (P/N: 612407)

# Dimensions



# Performance



Recovery Performance						
Supply Temperature		Net Airflow		Power Consumed (W)	Sensible Recovery Efficiency	Apparent Sensible Effectiveness
°F	°C	CFM	L/s			
32	0	57	27	66	67%	78%
32	0	67	32	74	66%	77%
32	0	104	49	146	60%	71%
-13	-25	64	30	73	55%	75%

<b>Project:</b>		<b>Architect:</b>	
<b>Location:</b>		<b>Engineer:</b>	
<b>Model #:</b>		<b>Contractor:</b>	
<b>Quantity:</b>		<b>Comments:</b>	
<b>Submitted By:</b>			
<b>Date:</b>			

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## Single Package R-410A Air Conditioner

 Project Name: **Transportation Management**

 Unit Model #: **ZXG06T2B1AA1B111A2**

 Quantity: **1**

 System: **ZXG06T2B1AA1B111A2**

### Cooling Performance

Total capacity	65.3 MBH
Sensible capacity	46.2 MBH
Refrigerant type	R-410A
Seasonal Efficiency (at ARI)	13.00 SEER
Efficiency (at ARI)	11.00 EER
Ambient DB temp.	95.0 °F
Entering DB temp.	80.0 °F
Entering WB temp.	67.0 °F
Leaving DB temp.	58.6 °F
Leaving WB temp.	56.6 °F
Power input (w/o blower)	4.56 kW
Sound power	80 dB(A)

### Gas Heating Performance

Entering DB temp.	60 °F
Heating output capacity (Max)	116 MBH
Supply air	2000 CFM
Heating input capacity (Max)	145 MBH
Leaving DB temp.	113.7 °F
Air temp. rise	53.7 °F
SSE	80.0 %
Stages	2

### Supply Air Blower Performance

Supply air	2000 CFM
Ext. static pressure	0.5 IWG
Unit static resistance	0.13 IWG
Blower speed	1345 RPM
Max BHP of Motor (including service factor)	2.40 HP
Duct location	Bottom
Actual required BHP	1.37 HP
Power input	1.26 kW
Elevation	784 ft.
Drive type	BELT

### Electrical Data

Power supply	230-3-60
Unit min circuit ampacity	27 Amps
Unit min over-current protection	30 Amps
Unit max over-current protection	40 Amps

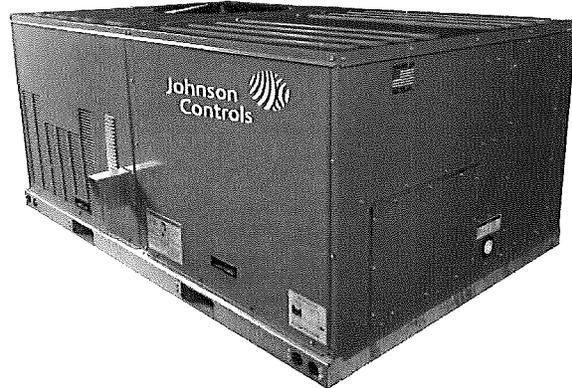
### Dimensions & Weight

Hgt	33 in.	Len	74 in.	Wth	49 in.	
Weight with factory installed options						594 lbs.

### Clearances

Right	18 in.	Front	36 in.	Back	36 in.
Top	72 in.	Bottom	1 in.	Left	12 in.

Note: Please refer to the tech guide for listed maximum static pressures



### 5 Ton

- All units are manufactured at an ISO 9001 registered facility and each rooftop is completely computer-run tested prior to shipment.

### Unit Features

- Unit Cabinet Constructed of Powder Painted Steel, Certified At 1000 Hours Salt Spray Test (ASTM B-117 Standards)
- Either supply and/or return can be field converted from vertical to horizontal configuration without cutting panels.
- Full perimeter base rails with built in rigging capabilities
- Scroll Compressors
- Solid Core Liquid Line Filter Driers
- Microchannel Condenser Coil
- 145 MBH Two Stage Input High Heat Stainless Steel Gas
- Medium Static Belt Drive Blower
- Unit Ships with 2" Throwaway Filters with a Standard Filter Rack that will Accept up to 4" Filters
- Replacement Filters: 2 - (16" x 25"). Unit accepts 2" wide filter.
- Single Point Power Connection
- Short Circuit Current: 5kA RMS Symmetrical

### Standard Unit Controller: Simplicity SE Control Board

- An Integrated Low-Ambient Control, Anti-Short Cycle Protection, Lead-Lag, Fan On and Fan off Delays, Low Voltage Protection, On-Board Diagnostic and Fault Code Display. Allows all units to operate in the cooling mode down to 0 °F outdoor ambient without additional components or intervention.
- Safety Monitoring - Monitors the high and low-pressure switches, the freestats, the gas valve, if applicable, and the temperature limit switch on gas and electric heat units. The unit control board will alarm on ignition failures, safety lockouts and repeated limit switch trips.

### BAS Controller

- Simplicity SE Controller with Discharge Air, Return Air, and Outside Air Sensor

### Warranty

- One (1) Year Limited Warranty on the Complete Unit
- Five (5) Year Warranty - Compressors
- Fifteen (15) Year Warranty - Stainless Steel Tubular Heat Exchangers



# Series 12R

Single Package R-410A Air Conditioner

Project Name: **Transportation Management**

Unit Model #: **ZXG06T2B1AA1B111A2**

Quantity: **1**

System: **ZXG06T2B1AA1B111A2**

## Factory Installed Options

### ZXG06T2B1AA1B111A2

<b>Product Category:</b>	<b>ZX</b>	Johnson Controls Series 12R Single Packaged R-410A Air Conditioner
<b>Heat Type:</b>	<b>G</b>	Gas Heat
<b>Nominal Cooling Capacity:</b>	<b>06</b>	5 Ton 11.0 EER / 13.0 SEER Single Stage Cooling
<b>Heat Size:</b>	<b>T</b>	145 MBH Two Stage Input High Heat Stainless Steel Gas
<b>Voltage:</b>	<b>2</b>	208/230-3-60
<b>Airflow:</b>	<b>B</b>	Medium Static Belt Drive Blower
<b>Airflow Options:</b>	<b>1</b>	
<b>Coil Options:</b>	<b>A</b>	Copper Tube/Aluminum Fin Indoor Coil Microchannel Condenser Coil
<b>Controls:</b>	<b>A</b>	Simplicity® SE Controller with Discharge Air, Return Air, and Outside Air Sensor
<b>Sensor Options:</b>	<b>1</b>	
<b>Economizer / Damper:</b>	<b>B</b>	Dry Bulb Economizer (Downflow only) (with Barometric Relief)
<b>Convenience Outlet:</b>	<b>1</b>	
<b>Electrical Options:</b>	<b>1</b>	
<b>Cabinet Options:</b>	<b>1</b>	
<b>Special Options:</b>	<b>A</b>	
<b>Product Generation:</b>	<b>2</b>	

## Field Installed Accessories

- 1RC0458 - Curb Rigid 24" Small Footprint (135.0 lbs)
- 2EP07700424 - JCI Branded, 2 Heat / 2 Cool, Electronic 7 Day Programmable, T600MSP-3 (2.0 lbs)
- 2PM04700224 - Phase Monitor Kit (1.0 lbs)

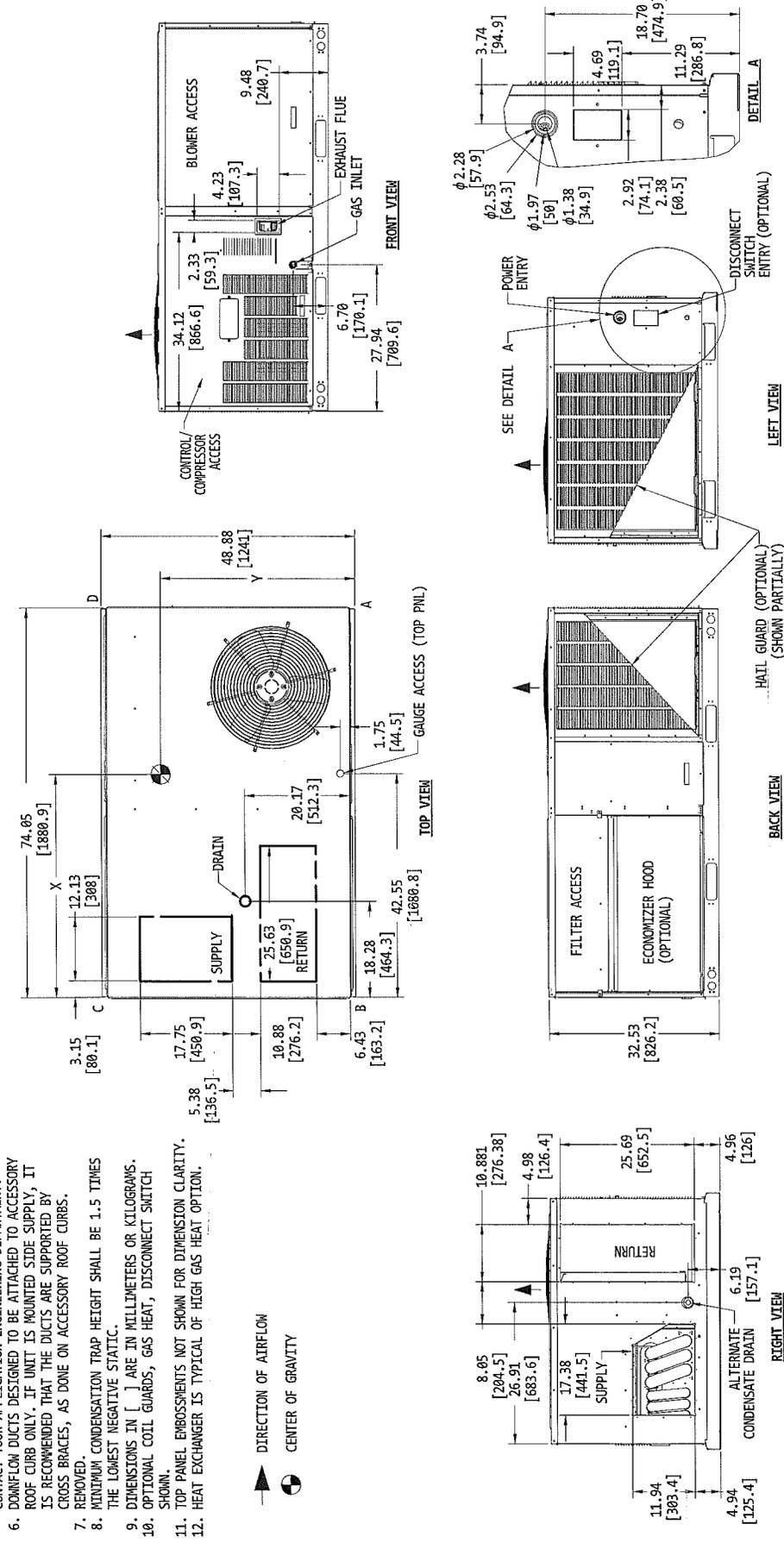
Project Name: **Transportation Management**  
 Unit Model #: **ZXG06T2B1AA1B111A2**  
 System: **ZXG06T2B1AA1B111A2**

**Consolidated Drawing**

TONNAGE	OPERATING WEIGHT (LBS) (BASE UNIT)				4 POINT CORNER LOADS (LBS) (BASE UNIT)										
	U	N	I	T	X	Y	A	B	C	D					
3	ZX	469	[212.7]	36	[900]	24	[600]	117	[53.1]	111	[50.3]	117	[53.1]	123	[55.8]
4	ZX	498	[225.9]	36	[900]	24	[600]	126	[54.4]	120	[54.4]	123	[55.8]	129	[58.5]
5	ZX	530	[240.4]	36	[900]	24	[600]	133	[60.3]	127	[57.6]	132	[59.8]	139	[63.1]
3	ZV	481	[218.2]	36	[900]	24	[600]	122	[55.3]	114	[51.7]	118	[53.5]	127	[57.6]

**NOTES:**

- FOR OUTDOOR USE ONLY.
- WEIGHTS SHOWN ARE FOR COOLING ONLY UNITS.
- RECOMMENDED MIN. CLEARANCES:  
 RIGHT SIDE: 18 [450] W/SIDE CONDENSATE DRAIN: 24 [600]  
 LEFT SIDE: 12 [300] W/PIGTAIL: 18 [450]  
 FRONT: 36 [900]  
 REAR: 18 [450]  
 TOP: 72 [1800]  
 BOTTOM: 0 [0]
- REMOVED.
- FOR SMALLER SERVICE AND OPERATIONAL CLEARANCES CONTACT YOUR APPLICATION ENGINEERING DEPARTMENT.
- DOWNFLOW DUCTS DESIGNED TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY. IF UNIT IS MOUNTED SIDE SUPPLY, IT IS RECOMMENDED THAT THE DUCTS ARE SUPPORTED BY CROSS BRACES, AS DONE ON ACCESSORY ROOF CURBS.
- REMOVED.
- MINIMUM CONDENSATION TRAP HEIGHT SHALL BE 1.5 TIMES THE LOWEST NEGATIVE STATIC.
- DIMENSIONS IN [ ] ARE IN MILLIMETERS OR KILOGRAMS.
- OPTIONAL COIL GUARDS, GAS HEAT, DISCONNECT SWITCH SHOWN.
- TOP PANEL EMBOSSMENTS NOT SHOWN FOR DIMENSION CLARITY.
- HEAT EXCHANGER IS TYPICAL OF HIGH GAS HEAT OPTION.



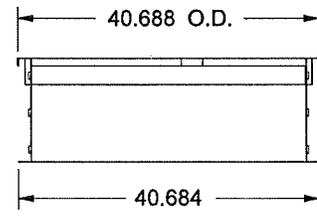
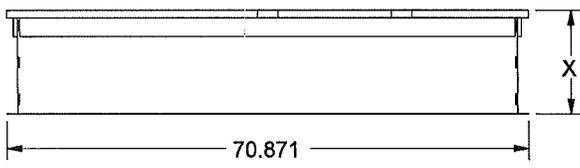
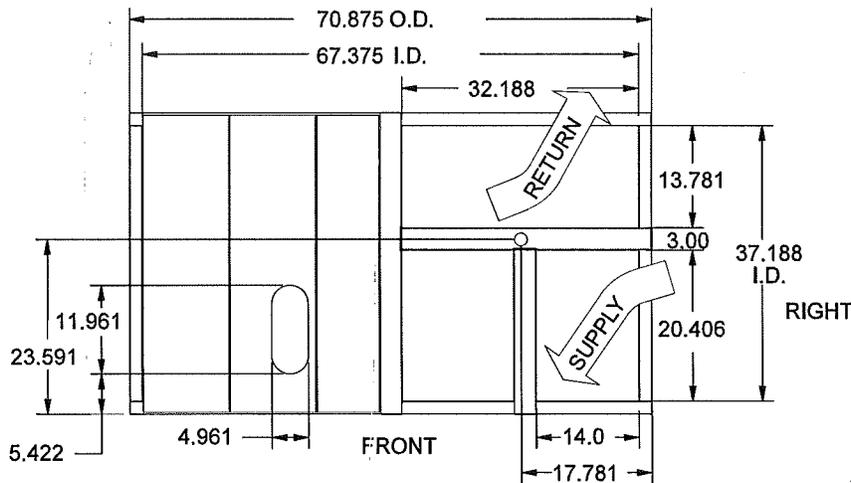
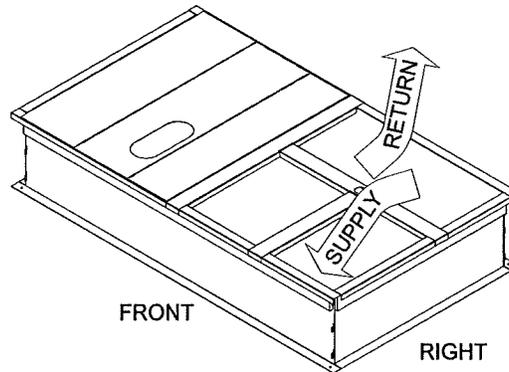
Project Name: Transportation Management

Unit Model #: ZXG06T2B1AA1B111A2

Quantity: 1

System: ZXG06T2B1AA1B111A2

1RC0458 Roof Curb



1RC0456 X= 14" Height  
1RC0458 X= 24" Height

**Notes:**

1. Sides, ends and cross support are 18-G90. Deck pans, R/A & S/A supports are 20-G90.
2. Full perimeter wood nailer.
3. Insulated deck pans.

**Unit Models used with 1RC0456, 1RC0458 Roof Curb**

ZX04	ZY04
ZX05	ZY05
ZX06	ZY06
ZX07	

**Product Data Sheet**

Edition 01.2012/v1  
 CSC Master Format™ 09 67 00  
 Sikafloor® 261<sup>CA</sup> - System 1

**APPROVED:**

By: Arlyn Recones

For: NCA Inc.

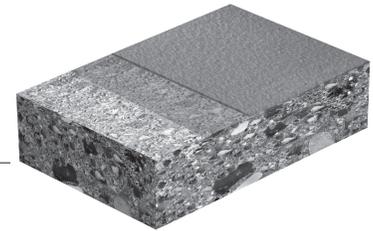
Date: July 16, 2015

# Sikafloor® 261<sup>CA</sup> - System 1

## Smooth Finish Coating (20 - 30 mils)

**Description** At the leading edge of technology, Sikafloor® 261<sup>CA</sup> - System 1 is a two-component, solvent and silicone-free, low-viscosity, self-priming, glossy, epoxy resin used to create a smooth coating. It can be used as a high build floor, wall and ceiling coating system to produce an aesthetic solid coloured finish. It can be top coated with Sikafloor® Polythane UV.

- Where to Use**
- Clean rooms and sanitary areas.
  - Commercial and industrial facilities.
  - Food service areas.
  - Institutional and recreational facilities.
  - Light to medium duty manufacturing areas.
  - Processing and warehousing.
  - Retail stores.
  - Theaters.
  - Aircraft hangars.



Smooth Finish Coating

- Advantages**
- Good mechanical and chemical resistance.
  - Glossy aesthetic finish.
  - Durable, impermeable and seamless.
  - Easily cleaned and maintained.
  - Does not support growth of bacteria or fungus.
  - Neutral odour.
  - Unlimited colours, no minimum required.
  - Achieves high performance ratings according to ASTM G21 resistance to fungi and ASTM D3273 resistance to mold growth (special order grade).
  - Canadian Food Inspection Agency acceptance/USDA acceptance.

**Technical Data**

<b>Packaging</b>	10 L and 30 L (2.6 and 7.9 US gal.) units		
<b>Colour</b>	Refer to the Industrial Flooring and Coatings colour card.		
	RAL 7038 Agate Grey	RAL 5007 Brilliant Blue	
	RAL 7030 Stone Grey	RAL 6028 Pine Green	
	RAL 1001 Beige	RAL 7012 Basalt Grey	
	RAL 1018 Zinc Yellow	RAL 9003 Signal White	
	RAL 3010 Brick		
	<i>Custom colours available upon request. Refer to current price list for availability.</i>		
<b>Yield</b>			
<b>Floor</b>	Prime coat	5 - 8 m <sup>2</sup> /L (200 - 325 ft <sup>2</sup> /US gal.) (5 - 8 mils w.f.t.)	
	Wear coat	1.6 - 3.3 m <sup>2</sup> /L (65 - 135 ft <sup>2</sup> /US gal.) (12 - 25 mils w.f.t.)	
	Refresher coat	Apply at the same rate as wear coat	
<b>Wall and ceiling</b>	Prime coat:	8 m <sup>2</sup> /L (325 ft <sup>2</sup> /US gal.) (5 mils w.f.t.)	
	Finish coat	2 x 8 m <sup>2</sup> /L (325 ft <sup>2</sup> /US gal./coat) (2 x 5 mils w.f.t.)	
	(Addition of Extender T will allow a heavier coat application. Contact Sika Technical Services for additional information.)		
<b>Shelf Life</b>	2 years in original unopened packaging. Store dry between 5 and 32°C (41 and 89°F). Condition at 18 to 30°C (65 to 86°F) before using.		
<b>Mix Ratio</b>	A:B = 2:1 by volume		
<b>Service Temperature</b>	Min.	0°C (32°F)	
	Max.	50°C (122°F)	
	<b>10°C (50°F)</b>	<b>20°C (68°F)</b>	<b>30°C (86°F)</b>
<b>Pot Life, 250 g (8.8 oz) (min)</b>	60	40	15
<b>Open Time on Substrate (min)</b>	80	50	35
<b>Waiting Time Between Coats (hrs) (min./max.)</b>	30/72	8/48	6/24
<b>Curing Time (days)</b>			
Foot traffic	2	1	18 hrs
Light traffic	4	2	2
Normal traffic/Chem. exp.	10	7	5
<b>Properties at 23°C (73°F) and 50% R.H.</b>			
<b>Specific Gravity ASTM D1475</b>	A:	1.52 (12.6)	
	B:	1.01 (8.39)	
	A+B:	1.40 (11.6)	
<b>Viscosity</b>	A+B:	550 cps	
<b>Compressive Strength ASTM D695</b>	56 MPa (8122 psi)		
<b>Tensile Strength ASTM D638</b>	7.4 MPa (1073 psi)		
<b>% Elongation</b>	22.4%		
<b>Bond Strength ASTM D4541</b>	> 2 MPa (290 psi) (substrate failure)		
<b>Thermal Compatibility ASTM C884</b>	Passes		
<b>Hardness, Shore D ASTM D2240</b>	76		



<b>Indentation MIL-PRF-24613</b>	8.82% (returns to profile)
<b>Impact Resistance ASTM D2794</b>	5.88 joules (4.33 ft lb <sub>i</sub> )
<b>Abrasion Resistance ASTM D4060</b>	
CS17/1000 cycles/1000 g (2.2 lb)	0.11 g (0.0038 oz)
<b>Coefficient of Friction ASTM D1894-61T</b>	Steel 0.20
	Rubber 0.55
<b>Flammability ASTM D635</b>	35 mm (1.37 in)
<b>Coefficient of Thermal Expansion ASTM D696</b>	1.27 x 10 <sup>-4</sup> mm/mm/°C (0.70 x 10 <sup>-4</sup> in/in/°F)
<b>Water Absorption ASTM D570</b>	0.3%
<b>Resistance to Fungi Growth ASTM G21</b>	Rated 1 (traces of growth)
<b>Resistance to Mold Growth ASTM D3273</b>	Rated 10 (highest resistance)
<i>Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.</i>	

## How to Use

### Surface Preparation

The concrete surface must be clean and sound. Remove any dust, laitance, grease, oil, dirt, curing agents, impregnations, wax, foreign matter, coatings and detritus from the surface by appropriate mechanical means, in order to achieve a profile equivalent to ICRI-CSP 3-4 for floors and ICRI-CSP 1-3 for walls. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and at least 1.5 MPa (218 psi) in tension at the time of application of Sikafloor® 261<sup>CA</sup>.

### Mixing

Pre-mix each component separately. Empty component B in the correct mix ratio to component A. Mix the combined components for at least 3 minutes, using a low-speed drill (300 - 450 rpm) to minimize entrapping air. Use an Exomixer type mixing paddle (recommended model) suited to the volume of the mixing container. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once, to ensure complete mixing. When completely mixed, Sikafloor® 261<sup>CA</sup> should be uniform in colour and consistency. Mix only that quantity which can be used within its pot life.

### Application

**Floor - Prime Coat:** Apply the Sikafloor® 261<sup>CA</sup> as a prime coat onto the substrate using a brush, roller or squeegee, at a uniform coverage without puddling.  
**Wear Coat:** Once the prime coat is tack free, apply the wear coat using a squeegee or roller and backroll to achieve even coverage. If time between coats exceeds 48 hours at 22°C (71°F), abrade surface and wipe clean with a solvent-dampened cloth.  
**Wall/Ceiling - Prime Coat:** Apply the prime coat onto the substrate using a brush, or roller, at a uniform coverage.  
**Finish Coat:** Once the prime coat is tack-free, apply the finish coats using a roller. If time between coats exceeds 48 hours at 22°C (71°F), abrade surface and wipe clean with a solvent-dampened cloth.

### Clean Up

Clean all tools and equipment with Sika® Equipment Cleaner. Once hardened, product can only be removed mechanically. Wash soiled hands and skin thoroughly in hot soapy water or use Sika® Hand Cleaner towels.

### Limitations

- Minimum/Maximum substrate temperature 10°C/30°C (50°F/86°F).
- Maximum relative humidity during application and cure: 85%.
- Substrate temperature must be 3°C (5.5°F) above the measured dew point.
- Moisture content of the substrate must be < 4% when coating is applied or use Sikafloor® 81 EpoCem<sup>CA</sup>.
- Do not apply to porous surfaces where moisture vapour transmission will occur during application.
- Not suitable for use on exterior, slab-on-grade concrete substrates.
- Protect from dampness, condensation and water contact during the initial 24 hour cure period.
- Surface may discolour in areas exposed to constant ultraviolet light.
- Do not hand-mix Sikafloor® materials; mechanical-mix only.

### Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the **most recent Material Safety Data Sheet** containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN  
FOR INDUSTRIAL USE ONLY

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under [www.sika.ca](http://www.sika.ca).

#### Sika Canada Inc.

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Fax: 780-483-1580

**1-800-933-SIKA**  
[www.sika.ca](http://www.sika.ca)

An ISO 9001 certified company  
Pointe-Claire : ISO 14001 certified EMS



## REQUEST FOR EQUAL FORM

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**Project Name:** Transportation Management Centre

**Project Address:** 821 Elgin Avenue

Winnipeg, MB

**Project Number:** MBwi- 25580

**Section Number:** 87100

**Specified Prod.:** LCN 9500 series

**Date:** July

**Manufacturer's** Horton Automatics

**Name & Address:** 4242 Baldwin Blvd

Corpus Christi, Texas

78405, USA

**Model Number:** series 4100

**Vendor's Name &** Ambassador Sales

**Address:** 1149 Manahan Avenue

Winnipeg, MB R3T 6B7

**Business Type:** Supplier

**Contact Name:** Sarah Panasiuk

**Telephone:** 204-253-7170

**Email:** sarah@ambassadorsales.ca

**Product** Horton Automatics series 4100 swing door operator is ULC approved and  
**Description:** meet or exceeds the ANSI A156.19 requirements for low energy power  
operated doors.

**Special Features:** time out  
Push N Go (selectable)  
adjustable time delay  
adjustable open and closing speeds  
4 piece spiraling spring - if one band fails the unit will still be functional

**Warranty:** 1 year, or as specified in contract documents



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 Corpus Christi, Texas  
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 Fax: 800-531-3108, 361-888-6510  
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## ARCHITECTURAL SPECS

### SWING DOORS & OPERATORS – LOW ENERGY

**HD-Swing® Series 4100LE** **B10.1**  
**Heavy Duty Low Energy Swing Door Operator**  
**Surface Applied** Page 1 of 6, June 10

**DIVISION 08 - OPENINGS**  
**SECTION 08 71 13 POWER DOOR OPERATORS**

APPROVED: By: Arlyn Recones  
 For: NCA Inc.  
 Date: July 16, 2015

Specifier Note: Coordinate and edit articles and paragraphs below to suit project requirements. Add section numbers and titles per CSI "MasterFormat" and specifier's practice. Consult with manufacturer regarding performance requirements for units applicable to project, as well as, related equipment and accessories required.

**PART I – GENERAL**

**1.01 SUMMARY**

- A. WORK INCLUDED: Furnish exterior and interior power door operators with visible mounting, as specified, that has been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure. Automatic door operators shall be configured as follows:
  1. Single doors: Outswing or Inswing.
  2. Simultaneous pairs: Outswing or Inswing.
  3. Double Egress: Outswing and Inswing.
- B. RELATED WORK:
  1. Division 8 Section "Aluminum-Framed Entrances and Storefronts" for entrances furnished separately.
  2. Division 8 Section "Door Hardware" for hardware to the extent not specified in this Section.
  3. Division 16 Sections for electrical connections including conduit and wiring for power door operators.

**1.02 REFERENCES**

- A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA) 101: Appendix Dissimilar Materials.
- B. AMERICAN ASSOCIATION OF AUTOMATIC DOOR MANUFACTURERS (AAADM).
- C. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
  1. ANSI A156.19: For Power Assist and Low Energy Power Operated Doors
  2. ANSI.117.1: Accessible and Usable Buildings and Facilities
- D. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) B221: Aluminum-Alloy Extruded Bars, Rods, Shapes and Tubes.
- E. AMERICANS WITH DISABILITIES ACT (ADA) 1990
- F. BUILDING OFFICIALS AND CODE ADMINISTRATORS INTERNATIONAL (BOCA)
- G. INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS / UNIFORM BUILDING CODE (ICBO/UBC)
- H. INTERNATIONAL CODE COUNCIL / INTERNATIONAL BUILDING CODE (ICC/IBC)
- I. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101:
  1. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.
  2. NFPA 70: National Electrical Code (NEC).
- J. THE ALUMINUM ASSOCIATION (AA) Aluminum Finishes Manual.
- K. UNDERWRITERS LABORATORY, INC. (USA & CANADA) UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.



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## ARCHITECTURAL SPECS

### SWING DOORS & OPERATORS – LOW ENERGY

**HD-Swing® Series 4100LE**  
Heavy Duty Low Energy Swing Door Operator  
Surface Applied

**B10.2**

Page 2 of 6, June 10

#### 1.03 SUBMITTALS

- A. **PRODUCT DATA:** Submit manufacturer's complete product and installation data.
- B. **SHOP DRAWINGS:** Submit drawings showing layout, profiles, product components including anchorage, accessories, finish and glazing details (where required).
- C. **CLOSEOUT SUBMITTALS:** Submit the following:
  - 1. Owner's Manual.
  - 2. Warranty document as specified herein.
  - 3. AAADM inspection compliance form completed and signed by certified AAADM inspector prior to doors being placed in operation as proof of compliance with ANSI A156.19.

#### 1.04 QUALITY ASSURANCE AND PERFORMANCE REQUIREMENTS

- A. **INSTALLERS QUALIFICATIONS:** Installer shall be factory trained, certified by AAADM, and experienced to perform work of this section.
- B. **MANUFACTURER'S QUALIFICATIONS:** Manufacturer to have minimum (5) five years successful experience in the fabrication of automatic doors of the type required for this project. Manufacturer capable of providing field service representation during installation, approving acceptable installer and approving application method.
- C. **CERTIFICATIONS:** Automatic sliding door systems and options shall be factory certified to meet performance design criteria in accordance with the following standards:
  - 1. ADA 1990: Americans With Disabilities Act
  - 2. ANSI A156.19: For Power Assist and Low Energy Power Operated Doors
  - 3. ANSI.117.1: Accessible and Usable Buildings and Facilities
  - 4. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.
  - 5. UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.
  - 6. BOCA: Means of Egress, Power Operated Doors
  - 7. ICBO/UBC: Egress Through Lobbies
  - 8. ICC/IBC: Egress Section
- D. **SOURCE LIMITATIONS:** Obtain automatic door operators through one source from a single manufacturer.
- E. **PRODUCT OPTIONS:** Drawings indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."
- F. **POWER OPERATED DOOR STANDARD:** ANSI/BHMA A156.19.
- G. **OPERATION:** Automatic and/or Manual:
  - 1. Automatic: Pushbutton/Push Plate switch actuates door open; door closes after time delay expires. Opening and closing force, measured 1" (25.4 mm) out from the lock stile of the door, not to exceed 15 pounds (67 N) of force to stop the door when operating in either direction. Operator to include the following variable adjustments so as to comply with ANSI Standard A156.19: Opening speed – 4 1/2 to 6 seconds; Closing speed – 4 1/2 to 6 seconds.
  - 2. Manual: Push-N-Go™: Manually pushing door activates automatic opening cycle; door closes after time delay expires (approximately 30% less than after pushbutton actuation).
- H. **ELECTRICAL COMPONENTS, DEVICES AND ACCESSORIES:** Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.



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## ARCHITECTURAL SPECS

### SWING DOORS & OPERATORS – LOW ENERGY

**HD-Swing® Series 4100LE**  
Heavy Duty Low Energy Swing Door Operator  
Surface Applied

**B10.3**

Page 3 of 6, June 10

- I. OPERATING RANGE: -30° F to 130° F (-34° C to 54° C)
- J. OPENING FORCE REQUIREMENTS FOR EGRESS DOORS: In the event power failure to the operator, swinging automatic entrance doors shall open with a manual force, not to exceed 30 lbf (133 N) applied at 1" (25 mm) from the latch edge of the door.
- K. DOOR ENERGY: The kinetic energy of a door in motion shall not exceed 1.25 lbd-ft (1.69 Nm).
- L. CLOSING TIME:
  - 1. Doors shall be field adjusted to close from 90 degrees to 10 degrees in 3 seconds or longer.
  - 2. Doors shall be field adjusted to close from 10 degrees to fully closed in not less than 1.5 seconds.

#### 1.05 WARRANTIES

- A. MANUFACTURER'S WARRANTY: Units to be warranted against defect in material and workmanship for a period of one year from the Date of Substantial Completion. Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under Contract Documents.
- B. DISTRIBUTOR'S WARRANTY: One year warranty: Labor & transportation charges for defective parts replacement.

#### 1.06 PROJECT CONDITIONS

FIELD MEASUREMENTS: Verify actual dimensions/openings by field measurements before fabrication and record on shop drawings. Coordinate with fabrication and construction schedule to avoid construction delays.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. ORDERING AND DELIVERY: Comply with factory's ordering instructions and lead time requirements. Delivery shall be in factory's original, unopened, undamaged containers with identification labels intact.
- B. STORAGE AND PROTECTION: Provide protection from exposure to harmful weather conditions and vandalism.

### PART II - PRODUCTS

#### 2.01 MANUFACTURER

HORTON AUTOMATICS, a division of Overhead Door Corporation, shall manufacture automatic swing door(s) of type(s) and size(s) specified on plans and door schedule.

#### 2.02 EQUIPMENT

- A. MANUFACTURED DOOR UNITS: HD-SWING® Series 4100LE: Surface Applied Operator with connecting arms and linkage shall provide positive control of door through entire swing; units shall permit use of butt hung and center pivot doors.
  - 1. Mounting: The operator header shall be mounted to the surface of the existing door frame or wall.
  - 2. Door Arms: Connecting hardware shall be a double arm arrangement that can either push the door or pull the door open to suit the job condition. When the operator mounting is on the pull side and adjacent wall is within 4" (102 mm) of the door frame, specify a parallel arm.
  - 3. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.



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## ARCHITECTURAL SPECS

### SWING DOORS & OPERATORS – LOW ENERGY

**HD-Swing® Series 4100LE**  
**Heavy Duty Low Energy Swing Door Operator**  
**Surface Applied**

**B10.4**

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- B. HD-SWING® HEADER CASE: Shall be available in the following configurations:
1. Side Access: Shall be extruded aluminum case 6" x 6" (152 mm x 152 mm)
  2. Bottom Access: Shall be extruded aluminum case 4 1/2" x 6" (114 mm x 152 mm). This configuration will allow for bottom of header to be flush with ceiling.
- B. OPERATOR: The Electric Operating Mechanism shall be Series 4000LE: Operator shall be isolation mounted and concealed in an extruded aluminum case for smooth and quiet operation. Maximum current draw shall not exceed 3.15 amps.
1. Opening Action: Shall be accomplished by a 1/8 HP D.C. permanent magnet motor working through reduction gears to the output shaft. Gear train bearings shall be sealed ball bearing types.
  2. Field Adjustable Spring Closing Action: shall be accomplished by a maximum-duty Quadracoil™ spring (four independent coil springs separated by teflon discs and enclosed in an external spring box) with a lifetime warranty. The spring shall be adjustable, without removing the operator from the header, to accommodate a wide range of field conditions.
  3. Independent Adjustable Closing and Latching Speed Control: The operator shall employ a rheostat module to allow for independent field adjustment of closing and latching speeds using the motor as a dynamic brake.
  4. Field Adjustable Open Stop: The operator shall provide a field adjustable open stop to accommodate opening angles from 80 to 135 degrees without the need for additional components.
  5. Consistent Cycle: The operator shall deliver an even, consistent open force across the entire transition from door fully closed to door open check. Additionally, the range of the force shall be field adjustable to accommodate a wide range of on-site conditions.
  6. Manual Use: The operator shall function as a manual door closer in the direction of swing with or without electrical power. The operator shall deliver an even, consistent open force across the entire transition from door fully closed to door fully open.
  7. Controller Protection: The controller shall incorporate the following features to ensure trouble free operation:
    - a. Automatic Reset upon power up.
    - b. Main fuse protection.
    - c. Electronic surge protection.
    - d. Internal power supply protection.
    - e. Resettable sensor supply fuse protection.
  8. Push Button Interface: The controller shall have push button switches with to allow for selection or change of the following parameters: carpet or timer logic, single or dual door, activation options, normal back check or large back check, push-to-open assist on/off.
  9. Soft Start/Stop: A "soft-start" "soft-stop" motor driving circuit shall be provided for smooth normal opening and recycling.
  10. Control Switch: Automatic door operators shall be equipped with a three position function switch to control the operation of the door. Control switch shall provide three modes of operation, Automatic, Off, and Hold-Open.
  11. Master Control: Shall incorporate the following features:
    - a. Adjustable time delay of 2 to 30 seconds (ANSI A156.19 requirement is 5 second minimum time delay).
    - b. Infinite adjustment to opening and open check speeds including adjusting the opening force without affecting the opening speed.
    - c. Immediate reversal of door motion without undue strain on the drive train. This will be accomplished by supplying stepped voltage to the motor. The door shall reverse when closing if an object stops the door.
    - d. Motor Protection Circuit: A locked door motor protection circuit will be supplied that will shut off current to the motor when the door is inadvertently locked or otherwise prevented from opening.

### 2.03 RELATED EQUIPMENT



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## ARCHITECTURAL SPECS

### SWING DOORS & OPERATORS – LOW ENERGY

**HD-Swing® Series 4100LE**

**B10.5**

**Heavy Duty Low Energy Swing Door Operator  
Surface Applied**

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ACTIVATING DEVICE: Shall be located on each side of the opening as per ANSI Safety Standard A117 and shall be hardwired to door operator controls. Optional wireless radio control. Activating device shall be momentary contact microswitch assembly in one of the following configurations:

- A. PUSHBUTTON: 1" diameter (25 mm) round, red pushbutton switch. Face plates shall be engraved with the international symbol for accessibility and "Press To Open". Jamb or wall mounted.
- B. PUSH PLATE: 6" diameter (152 mm) round or 4 ½" (114 mm) square, stainless steel switch. Wall mounted. Optional engravings shall be:
  - 1. International symbol for accessibility and "Press To Open".
  - 2. International symbol for accessibility only.
  - 3. "Press To Open" only.
  - 4. Plain - No engraving

#### 2.04 RELATED WORK REQUIREMENTS

ELECTRICAL: To be provided under Division 16: 120 or 220 VAC, 60 cycle, 1 phase, 10 amps for doors with operators in pairs, 5 amps for single doors. Non-North American voltages can be 240 VAC (operator must have 240 volt power supply)

#### 2.05 MATERIALS, FINISHES AND FABRICATION

- A. EXTRUDED ALUMINUM: ASTM B221, 6063-T5 alloy and temper, anodized: Structural Header Sections: Minimum 1/8" (3 mm) thickness.
- B. FINISHES (for all exposed aluminum surfaces): Shall be one of the following:
  - 1. 204-R1 Clear: Arch. Class 2 Clear Anodized Coating, AA-MI2C22A31.
  - 2. 313-R1 Dark Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
  - 3. 312-R1 Light Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
  - 4. 315-R1 Black: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
  - 5. Special Paint Coating: Color as selected.
  - 6. Clad with stainless steel or muntz metal (brass alloy): #7 mirror finish or #4 brushed finish.
- C. OPERATOR CONSTRUCTION: Electromechanical.

### PART III - EXECUTION

#### 3.01 EXAMINATION

SITE VERIFICATION OF CONDITIONS: Installer must verify that base conditions previously installed under other sections are acceptable for product installation according to with manufacturer's instructions. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of work. Do not start work until all negative conditions are corrected in a manner acceptable to the installer and manufacturer.

#### 3.02 INSTALLATION



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## ARCHITECTURAL SPECS

### SWING DOORS & OPERATORS – LOW ENERGY

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Heavy Duty Low Energy Swing Door Operator  
Surface Applied

**B10.6**

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- A. **GENERAL:** Installer shall be factory trained, certified by AAADM, and experienced to perform work of this section. Install door units plumb, level and true to line, without warp or rack of frames or sash with manufacturer's prescribed tolerances. Provide support and anchor in place.
- B. **DISSIMILAR MATERIALS:** Comply with AAMA 101, Appendix Dissimilar Materials by separating aluminum materials and other corrodible surfaces from sources of corrosion or electrolytic action contact points.
- C. **WEATHER-TIGHT CONSTRUCTION:** Install header and framing members in a bed of sealant or with joint filler or gaskets. Coordinate installation with wall flashings and other components of construction.
- D. **ELECTRICAL:** General or electrical contractor to install all wiring to operator on a separate circuit breaker routed into header.

### 3.03 CLEANING, ADJUSTMENT AND PROTECTION

- A. **CLEANING:** After installation, installer to take following steps:
  - 1. Remove temporary coverings and protection of adjacent work areas.
  - 2. Remove construction debris from construction site and legally dispose of debris.
  - 3. Repair or replace damaged installed products.
  - 4. Clean product surfaces and lubricate operating equipment for optimum condition and safety.
- B. **ADJUSTMENT:** AAADM certified technician shall inspect and adjust installation to assure compliance with ANSI A156.19.
- C. **ADVISE CONTRACTOR:** Of precautions required through the remainder of the construction period, to ensure that doors will be without damage or deterioration (other than normal weathering) at the time of acceptance.
- D. **FIELD QUALITY CONTROL:** Testing Services: Factory Trained Installer shall test and inspect each swinging automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

*Note: Horton Automatics reserves the right to make product improvements and change specifications without notice.*

**END OF SECTION**