

## Dena Zwarich

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**From:** Matt Morris <matt@morriseng.ca>  
**Sent:** Friday, September 4, 2020 12:10 PM  
**To:** gaines@bellnet.ca  
**Cc:** Keith Oster; Annie Griffiths  
**Subject:** FW: Carleton Place Arena - RTU Shop Drawings  
**Attachments:** 1 - CP Arena - RTU1,RTU2-3,CU1 - submittal for review - Aug 11, 2020.pdf

**Importance:** High

<b>SUBMITTAL / SHOP DRAWING REVIEW</b>	
This submittal/shop drawing review is for general conformance with drawings and specifications only. Contractor is completely responsible for all dimensions, details, quantities, supply, installation and construction. This review does not in any way relieve the Contractor of responsibility for compliance with the Contract Documents.	
Client:	Larry Gaines Architect
Project:	Carleton Place Arena
Submittal:	HVAC
Notes:	<b>ROOFTOP HVAC UNITS:</b> - <i>Alternate product</i> - <i>No comment</i>  <b>CONDENSING UNIT:</b> - <i>Alternate product</i> - <i>Contractor shall verify that unit and coil are compatible with existing furnace.</i>
<b>MORRIS ENGINEERING LTD.</b> 68 William Street, Suite 200, Brockville, Ontario (613)499-2077	

Thanks,

Matt

**Matt Morris P.Eng.**  
**MORRIS Engineering Ltd.**  
68 William Street, Suite 206  
Brockville, ON

# SUBMITTAL

Job: Carleton Place Arena

Spec Section No:

Submittal No: 1

Revision No: 0

Sent Date: August 11, 2020

Spec Section Title:

Submittal Title:

Contractor:

Climate Works

Contractor's Stamp



Reviewed  
2020-08-11 10:24:16 AM

Architect:

Architect's Stamp

Engineer:

Engineer's Stamp



# Project Submittal

**Project Name:** Carleton Place Arena  
**Project Number:** 14197  
**Project Location:**  
75 Neelin street  
Carleton Place, Ontario CA

**Date:** 8/10/2020  
**Quote:** 7076  
**Roof Top Units:** 3  
**Split Systems:** 1

**Customer:** Zone Comm Eastern Canada  
**Engineer:** Morris Engineering Ltd

## Table of Contents

Tag	Qty	Model	Description
<u>RTU-1</u>	1	KGB036S4D	KGB036S4D-Y 3T CONF S=14.0
<u>RTU-2,3</u>	2	KGB060S4D	KGB060S4D-Y 5T CONF S=14.0
<u>CU-1</u>	1	13J43	XC16S060-230 Condenser/5Ton/230-2
	1	16F47	C35-60D-2-1 COIL/5 Ton/Uncased



# Project Submittal

Tag: RTU-1  
 Model: KGB036S4D - KGB036S4D-Y 3T CONF S=14.0

UNIT OVERVIEW								
Voltage	SEER EER	MCA/MOCP (amp)	Gross Cooling Ttl/Sens (MBH)	Net Cooling Ttl/Sens (MBH)	Supply Air Flow (cfm)	ESP/TSP (in.WC)	EAT DB/WB (°F)	LAT DB/WB (°F)
208V 3Ph 60Hz	14 12.3	17 / 25	39.7 / 31.2	38.1 / 29.7	1,359	0.80 / 0.90	80.0 / 67.0	58.4 / 57.7

COOLING			
Cooling Performance		Temperatures (DB/WB °F)	
Gross Cooling (Ttl/Sens)	39.7 / 31.2 MBH	Ambient	95.0
Net Cooling (Ttl/Sens)	38.1 / 29.7 MBH	Entering	80.0
Coil Moisture Removal	8.00 lb/hr	Leaving – (Coil)	58.4
System Moisture Removal	8.00 lb/hr	Leaving – (Unit)	59.5
			57.7
			58.1

ARI Performance		Compressors		Refrigerant		Condensate Drain	
ARI Cooling	37.3 / 36.0 MBH	Cooling Stages	1	Type	R-410A	Qty	1
ARI Power	2.9 kW	Compressor Qty	1	Charge	5 LBS. 9 OZ.	Size	1 in.
		Compressor RLA	8.7 amp			Pipe Thread	npt

HEATING						
Heating Performance		Temperatures (DB/WB °F)		Specifications		
Output (High/Low)	86.0 / 65.0 MBH	Ambient	0.0	0.0	Heat Stages	2
Input (High/Low)	108.0 / 81.0 MBH	Entering			Thermal Efficiency	80.0%
		Leaving	56.9		Gas Line Size	0.5 in.
		Heat Rise	56.9		Gas Pressure	7 in.WC

SUPPLY FAN					
Air Flow (cfm)	Supply Fan		Air Resistance (in.WC)		
Supply	1,359	Nominal Power	0.50 hp	Total	0.90
Outdoor		Required Power	0.50 hp	Ext Supply	0.80
		Drive Type	CAV Direct Drive		
	0	Speed	3		
		Motor Torque			

AIR RESISTANCE - OPTIONS/ACCESSORIES (in.WC)							
Wet Coil	Humiditrol	Heat	Economizer	Filters	Diffuser	Exhaust	ERW
0.04	0.00	0.02	0.04	0.00		0.00	0.00

ELECTRICAL			
Voltage	208V / 3Ph / 60Hz	Compressor RLA	8.7 amp
MCA	17 amp	Cooling FLA Total	13.5 amp
MOCP	25 amp	Condenser FLA	1.7 amp
Condenser Power	0.25 kW	Supply Fan FLA	3.1 amp
Oper Range-Nom Volt	+/- 10%		

ADDITIONAL DATA			
Cabinet	83.25 in. x 47.00 in. x 36.38 in.	Downflow Supply	18.0 in. x 20.0 in.
Filters	(4) 16.0 in. x 20.0 in. x 2.0 in.	Downflow Return	11.0 in. x 29.0 in.
Total Weight	774 lb	Sound Rating	74 dBA



# Project Submittal

## Factory Installed Options

Single Enthalpy Economizer  
 Standard Cap, Std Packaging  
 Unit Orientation Downflow  
 CAV Direct Drive  
 208/220/230/240V 3Phase  
 Supply Motor - 0.50 Hp - Direct Drive  
 108K S.S. (Dual Stage)  
 BACnet Module (Fac)  
 Environ Coil System Factory Installed  
 2" MERV4 - Std. Filter Factory Installed

## Field Installed Accessories

Catalog Number	Qty	Description
79W87	1	Power Exhaust Fan Field Installed
19D42	1	Barometric Relief Dampers (for PE Kit) Field Installed
11F52	1	18" Downflow - Hybrid Curb Field Installed
76W26	1	PVC Drain Trap Field Installed
97W24	1	Bacnet Sensor Without Display Field Installed
14D89	1	Low Ambient Control Kit Field Installed
87N54	1	CO2 Sensors - Duct-mount, black plastic case, no display, rated for plenum mounting Field Installed
85L43	1	CO2 Sensor Duct Mounting Kit Field Installed
X6523	4	CRP WIND SEISMIC RESTR BRKTS

## Product Features

### Cabinet

Durable Outdoor Enamel Paint Finish  
 Totally Enclosed Outdoor Fan Motor  
 PVC Coated Fan Guard  
 Corrosion-Resistant Removable, Reversible Drain Pan  
 Isolated Compressor Compartment

### Cooling System

Scroll Compressor  
 Expansion Valves  
 High Capacity Driers  
 Crankcase Heater  
 System can operate from 30°F to 125°F without any additional controls  
 Pre-charged Refrigeration System  
 Internal Pressure Relief Valve

### Heating System

Redundant Automatic Gas Valve with Manual Shut-off  
 Electronic Flame Sensor  
 Direct Spark Ignition  
 AGA-CGA Certified  
 If configured for room sensor control, additional staging may be possible. Refer to performance tables within the EHB

### Control System

Fan and Limit Controls  
 Overload Protection

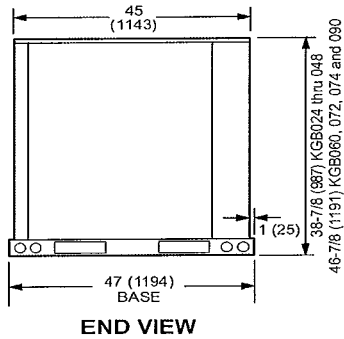
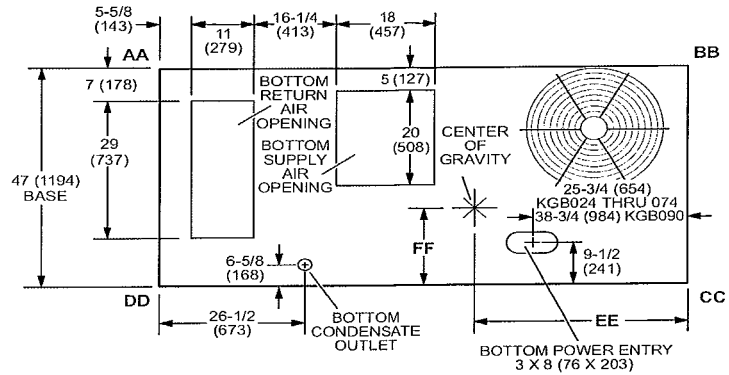
### Warranty

Limited warranty on stainless steel heat exchanger of 15 years  
 Limited warranty on compressor of 5 years  
 Limited warranty on Environ Coil System of 3 years  
 Limited warranty on all other components of 1 year  
 See Limited Warranty Certificate included with unit for details

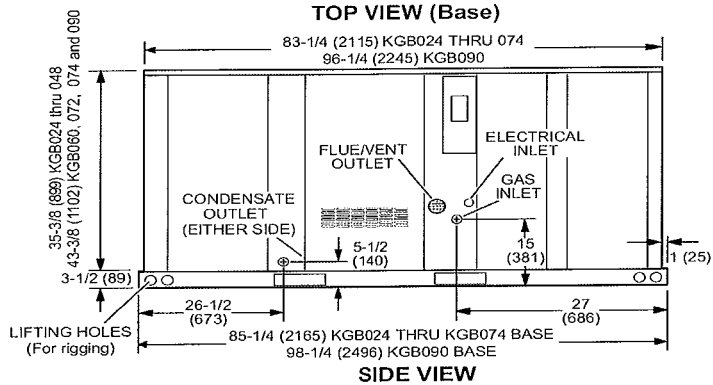


# Project Submittal

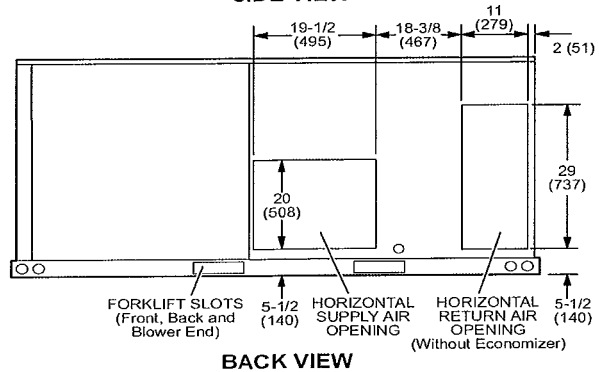
Corner Weights (lb)								Center of Gravity (in.)			
AA		BB		CC		DD		EE		FF	
Base	Max	Base	Max	Base	Max	Base	Max	Base	Max	Base	Max
112	142	130	141	168	190	145	228	39.50	45.00	20.50	20.00



END VIEW



SIDE VIEW

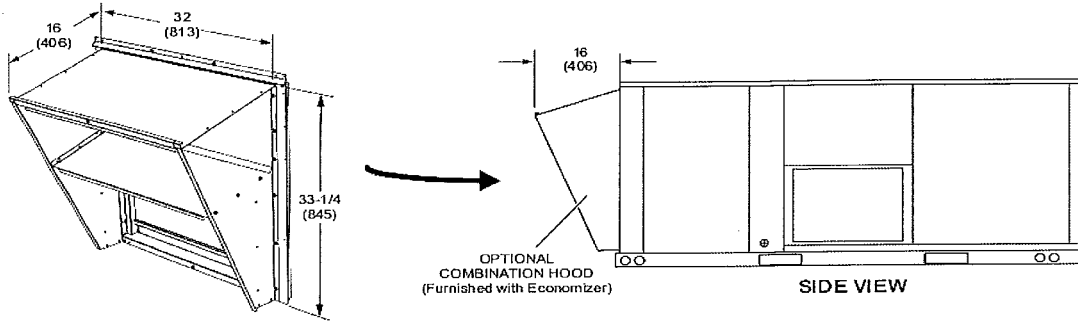


BACK VIEW

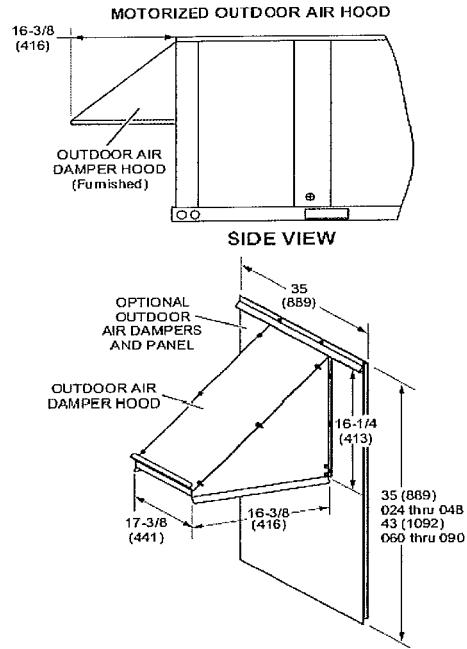
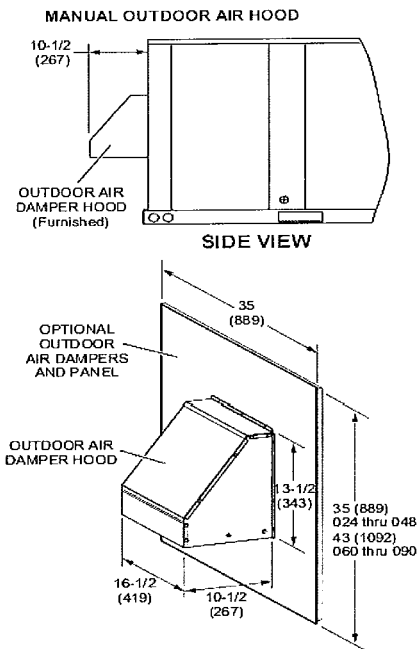


# Project Submittal

## COMBINATION OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS (Furnished With Economizer for Downflow Applications)



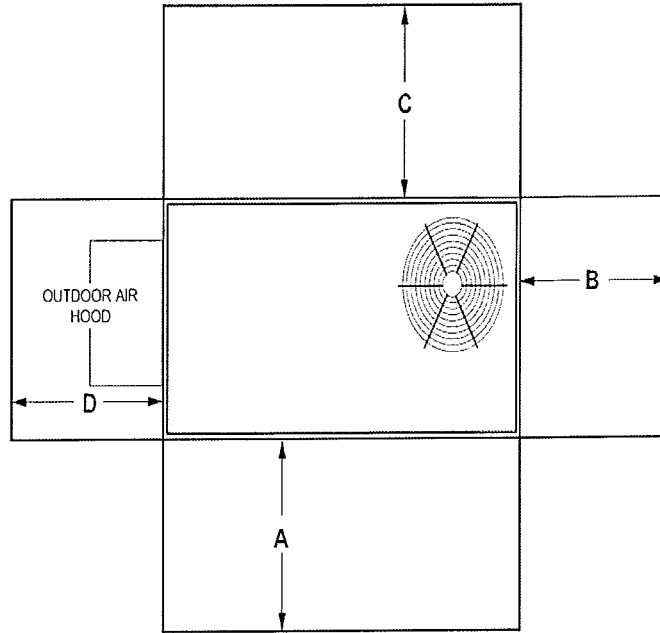
## OUTDOOR AIR DAMPER HOOD DETAIL (Downflow or Horizontal Applications)





# Project Submittal

## UNIT CLEARANCES



¹ Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	48	1219	36	914	36	914	36	914	Unobstructed
Clearance to Combustibles	36	914	1	25	1	25	1	25	
Minimum Operation Clearance	36	914	36	914	36	914	36	914	

NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

¹ Service Clearance - Required for removal of serviceable parts.

Clearance to Combustibles - Required clearance to combustible material.

Minimum Operation Clearance - Required clearance for proper unit operation.





# Project Submittal

Tag: RTU-2,3  
 Model: KGB060S4D - KGB060S4D-Y 5T CONF S=14.0

UNIT OVERVIEW								
Voltage	SEER EER	MCA/MOCP (amp)	Gross Cooling Ttl/Sens (MBH)	Net Cooling Ttl/Sens (MBH)	Supply Air Flow (cfm)	ESP/TSP (in.WC)	EAT DB/WB (°F)	LAT DB/WB (°F)
208V 3Ph 60Hz	14 11.8	28 / 40	48.0 / 18.7	45.6 / 16.3		0.60 / 0.80	80.0 / 67.0	71.0 / 59.4

COOLING			
Cooling Performance		Temperatures (DB/WB °F)	
Gross Cooling (Ttl/Sens)	48.0 / 18.7 MBH	Ambient	95.0
Net Cooling (Ttl/Sens)	45.6 / 16.3 MBH	Entering	80.0
Coil Moisture Removal	27.60 lb/hr	Leaving – (Coil)	71.0
System Moisture Removal	27.60 lb/hr	Leaving – (Unit)	72.1

ARI Performance		Compressors		Refrigerant		Condensate Drain	
ARI Cooling	61.9 / 59.5 MBH	Cooling Stages	1	Type	R-410A	Qty	1
ARI Power	5.0 kW	Compressor Qty	1	Charge	8 LBS. 0 OZ.	Size	1 in.
		Compressor RLA	16 amp			Pipe Thread	npt

HEATING						
Heating Performance		Temperatures (DB/WB °F)		Specifications		
Output (High/Low)	120.0 / 90.0 MBH	Ambient	0.0	0.0	Heat Stages	2
Input (High/Low)	150.0 / 113.0 MBH	Entering			Thermal Efficiency	80.0%
		Leaving	55.6		Gas Line Size	0.5 in.
		Heat Rise	55.6		Gas Pressure	7 in.WC

SUPPLY FAN					
Air Flow (cfm)		Supply Fan		Air Resistance (in.WC)	
Supply		Nominal Power	0.75 hp	Total	0.80
Outdoor		Required Power	0.75 hp	Ext Supply	0.60
	0	Drive Type	CAV Direct Drive		
		Speed	0		
		Motor Torque			

AIR RESISTANCE - OPTIONS/ACCESSORIES (in.WC)							
Wet Coil	Humiditrol	Heat	Economizer	Filters	Diffuser	Exhaust	ERW
0.09	0.00	0.06	0.05	0.00		0.00	0.00

ELECTRICAL			
Voltage	208V / 3Ph / 60Hz	Compressor RLA	16.0 amp
MCA	28 amp	Cooling FLA Total	21.9 amp
MOCP	40 amp	Condenser FLA	1.6 amp
Condenser Power	0.37 kW	Supply Fan FLA	4.2 amp
Oper Range-Nom Volt	+/- 10%		

ADDITIONAL DATA			
Cabinet	83.25 in. x 47.00 in. x 43.38 in.	Downflow Supply	18.0 in. x 20.0 in.
Filters	(4) 20.0 in. x 20.0 in. x 2.0 in.	Downflow Return	11.0 in. x 29.0 in.
Total Weight	879 lb	Sound Rating	79 dBA



# Project Submittal

## Factory Installed Options

- Single Enthalpy Economizer
- Standard Cap, Std Packaging
- Unit Orientation Downflow
- CAV Direct Drive
- 208/220/230/240V 3Phase
- Supply Motor - 0.75 Hp - Direct Drive
- 150K S.S. (Dual Stage)
- BACnet Module (Fac)
- Environ Coil System Factory Installed
- 2" MERV4 - Std. Filter Factory Installed

## Field Installed Accessories

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85L43	2	CO2 Sensor Duct Mounting Kit Field Installed
X6523	8	CRP WIND SEISMIC RESTR BRKTS

## Product Features

### Cabinet

- Durable Outdoor Enamel Paint Finish
- Totally Enclosed Outdoor Fan Motor
- PVC Coated Fan Guard
- Corrosion-Resistant Removable, Reversible Drain Pan
- Isolated Compressor Compartment

### Cooling System

- Scroll Compressor
- Expansion Valves
- High Capacity Driers
- Crankcase Heater
- System can operate from 30°F to 125°F without any additional controls
- Pre-charged Refrigeration System
- Internal Pressure Relief Valve

### Heating System

- Redundant Automatic Gas Valve with Manual Shut-off
- Electronic Flame Sensor
- Direct Spark Ignition
- AGA-CGA Certified
- If configured for room sensor control, additional staging may be possible. Refer to performance tables within the EHB

### Control System

- Fan and Limit Controls
- Overload Protection

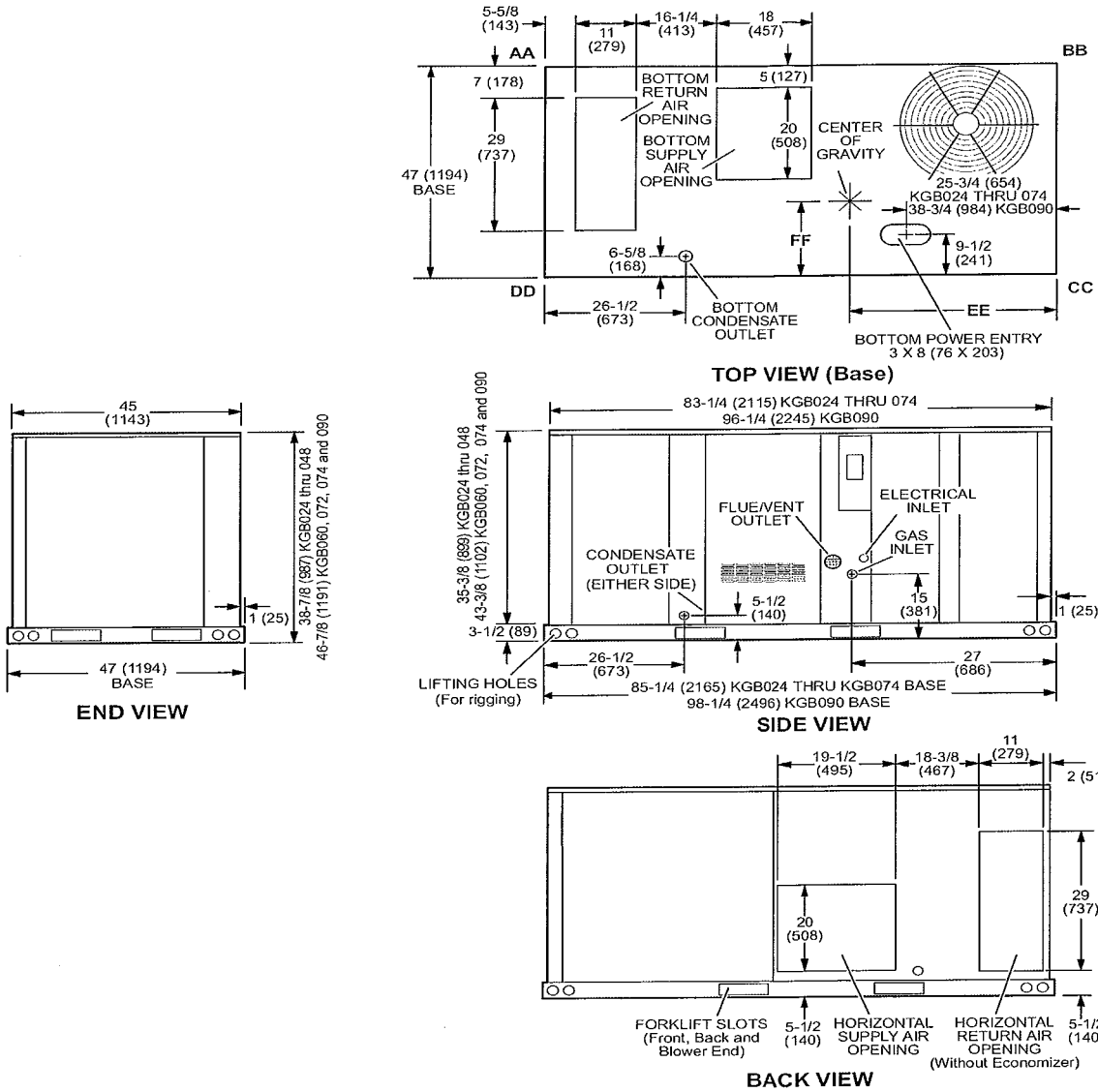
### Warranty

- Limited warranty on stainless steel heat exchanger of 15 years
- Limited warranty on compressor of 5 years
- Limited warranty on Environ Coil System of 3 years
- Limited warranty on all other components of 1 year
- See Limited Warranty Certificate included with unit for details



# Project Submittal

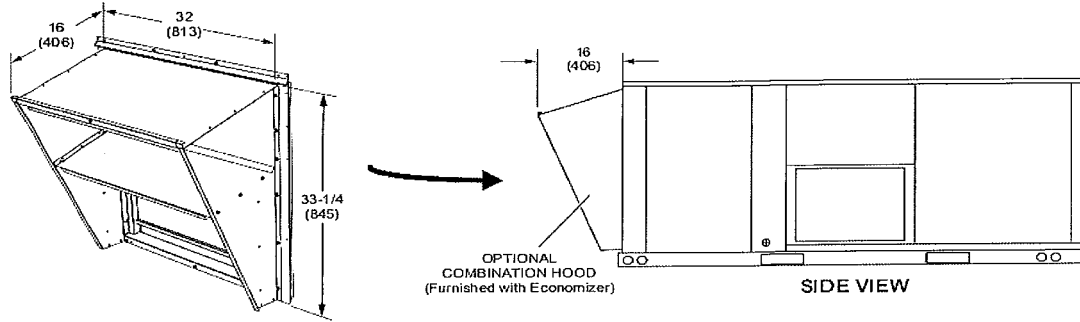
Corner Weights (lb)								Center of Gravity (in.)			
AA		BB		CC		DD		EE		FF	
Base	Max	Base	Max	Base	Max	Base	Max	Base	Max	Base	Max
130	162	147	167	198	226	175	257	40.00	44.00	20.00	20.00



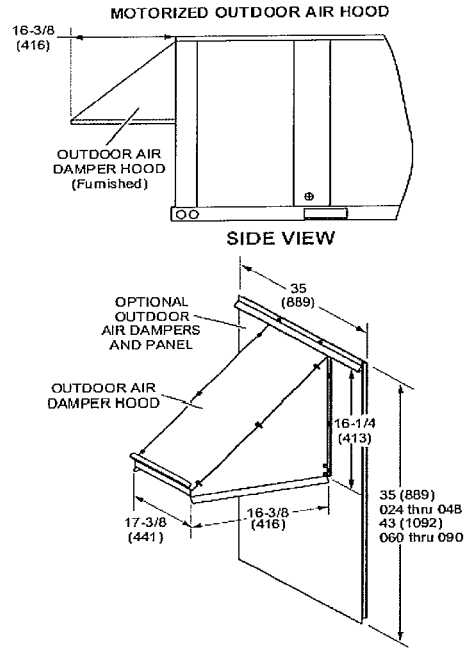
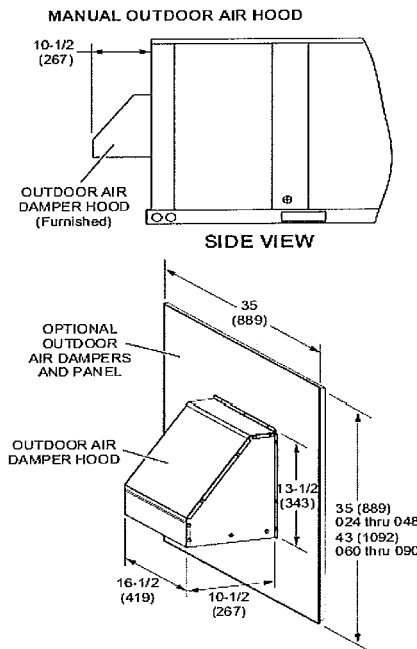


# Project Submittal

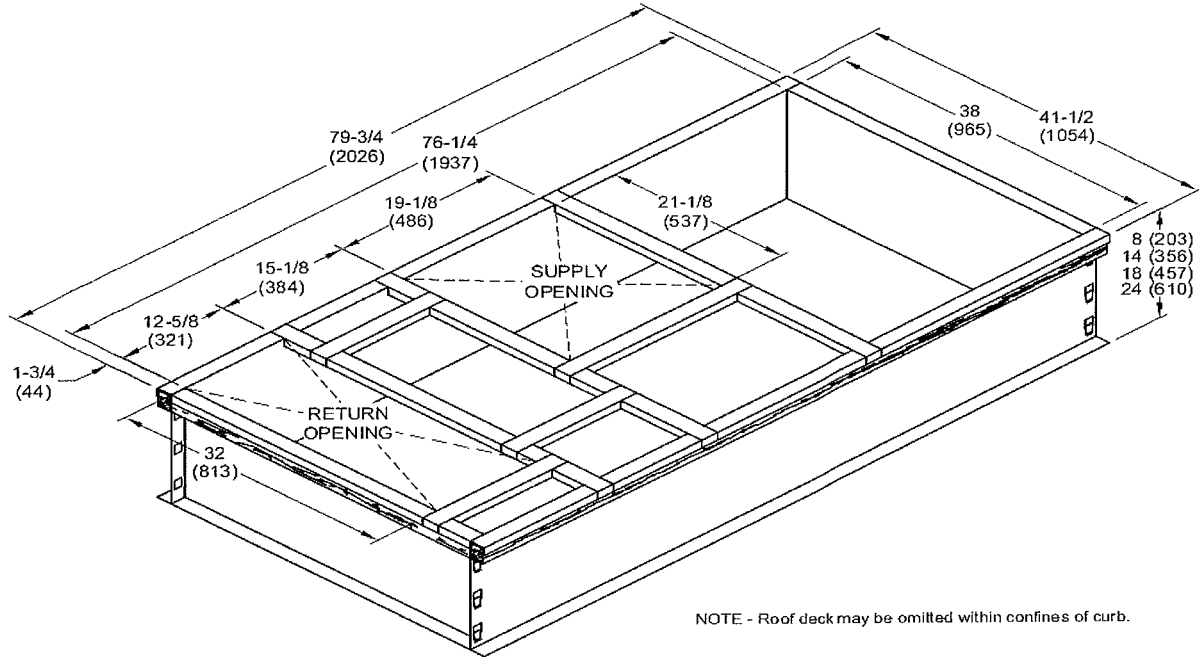
## COMBINATION OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER AND BAROMETRIC RELIEF DAMPERS (Furnished With Economizer for Downflow Applications)



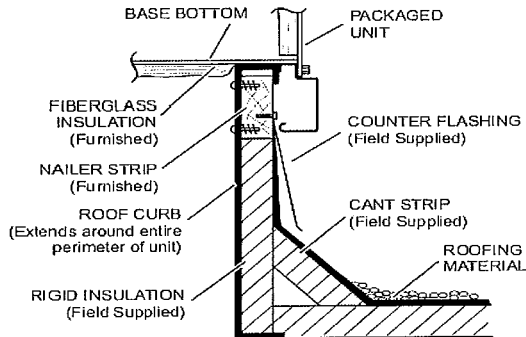
## OUTDOOR AIR DAMPER HOOD DETAIL (Downflow or Horizontal Applications)



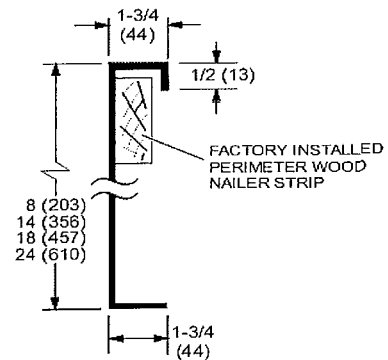
## HYBRID ROOF CURBS - DOUBLE DUCT OPENING



### TYPICAL FLASHING DETAIL FOR ROOF CURB



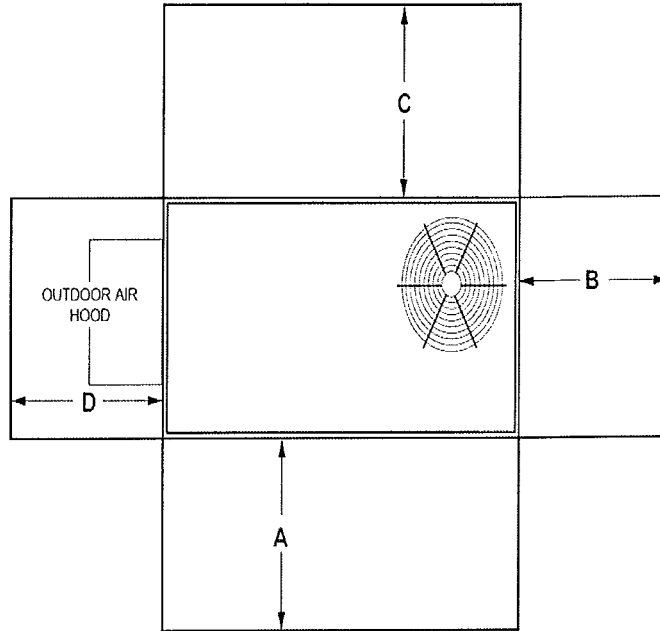
### DETAIL ROOF CURB





# Project Submittal

## UNIT CLEARANCES



¹ Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	48	1219	36	914	36	914	36	914	Unobstructed
Clearance to Combustibles	36	914	1	25	1	25	1	25	
Minimum Operation Clearance	36	914	36	914	36	914	36	914	

NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

¹ Service Clearance - Required for removal of serviceable parts.

Clearance to Combustibles - Required clearance to combustible material.

Minimum Operation Clearance - Required clearance for proper unit operation.



# Project Submittal

Tag: CU-1  
 Condenser: XC16S060-230

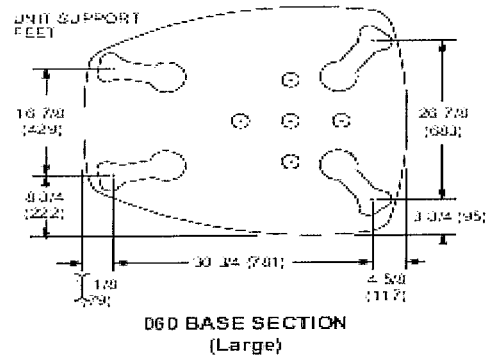
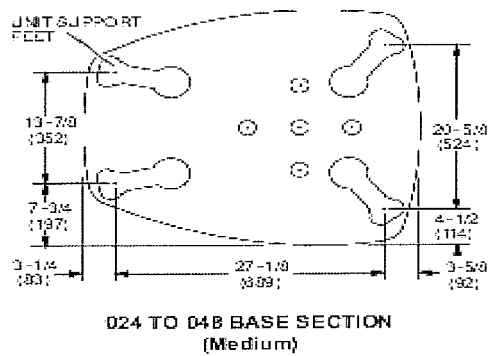
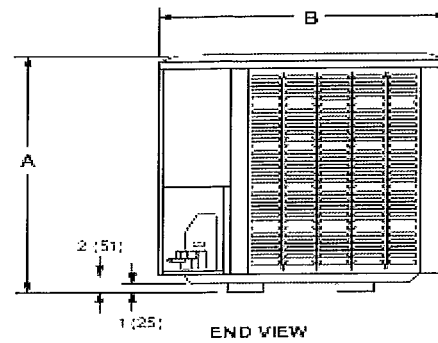
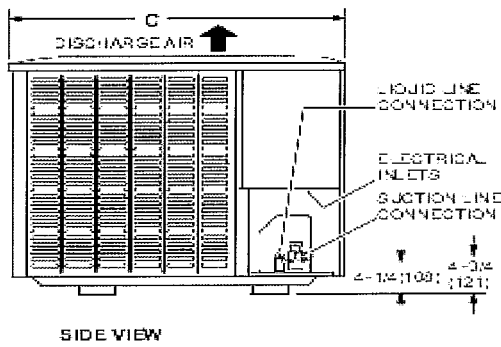
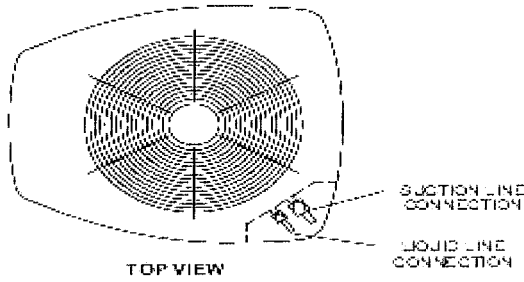
Condenser			
Voltage	208V / 1Ph / 60Hz	Dimensions	39.50 in. x 35.50 in. x 45.00 in.
Tons	5.0	Total Weight	332 lb
MCA / MOCP	35.60 / 60.00 amp		
Condenser Oper Range-Nom Volt	+/- 10%		
Compressors		Refrigerant	
Cooling Stages	Two	Type	R-410A
Compressor Qty	1	Cond Suction Line	1 1/8
		Cond Liquid Line	3/8

## Field Installed Accessories

Catalog Number	Qty	Description
12U67	1	iComfort S30 Field Installed
93G35	1	Freezestat 3/8 Field Installed
88M91	1	Compressor Hard Start Kit Field Installed
COMSD	1	Cat#91m02



# Project Submittal



Model	A		B		C	
	in.	mm	in.	mm	in.	mm
024	45	1143	30-1/2	775	35	889
035	31	787	30-1/2	775	35	889
045	39	991	30-1/2	775	35	889
060	45	1143	35-1/2	902	39-1/2	1003





## iComfort<sup>®</sup> S30 Smart Thermostat

Color Touchscreen Programmable  
Wi-Fi Communicating Thermostat

(12U67)

