

GENSCO

August 28, 2009

HVAC Incorporated
5188 SE International Way
Milwaukie, OR 97222

Re Morgan Distributing, Inc - Submittals

Dear Sirs,

We propose to furnish the following equipment for the above referenced project

TAG RTU-1

One - Trane YCD150E4HCB (R410A) 11 EER packaged gas electric rooftop unit with factory installed micro processor controls, dry bulb economizer, belt drive supply fan motor and crankcase heaters
Trane power exhaust and MicroMetl standard 14" KD roof curb with hold down clips to be field installed Unit to be 460/3/60

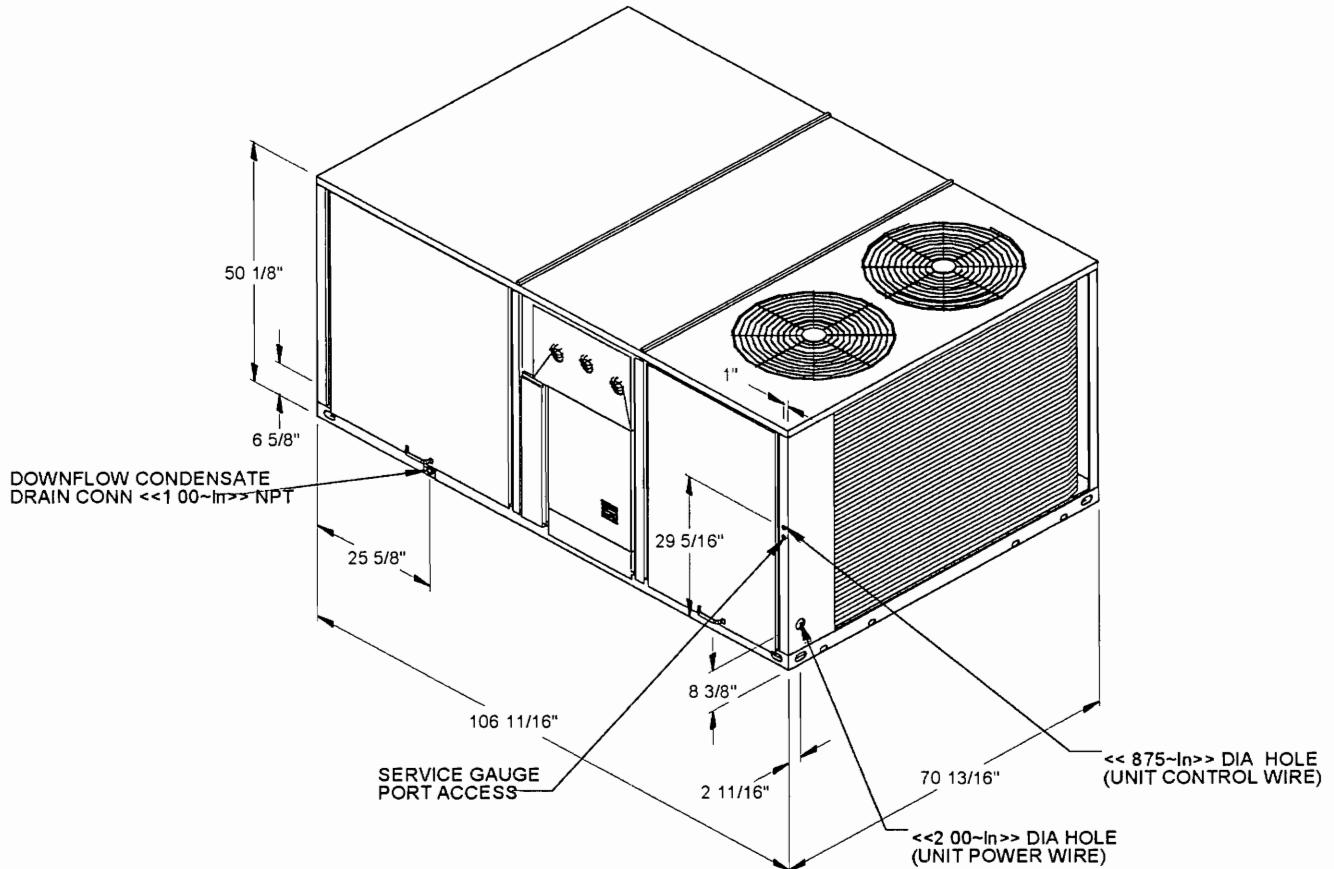
TAG RTU-2, RTU-3, RTU-5

Three - Trane YSC092E4EMA001S (R410A) 11 2 EER packaged gas electric rooftop units with factory installed electro mechanical controls, dry bulb economizers, barometric relief dampers, belt drive supply fan motors and crankcase heaters MicroMetl standard 14" KD roof curbs with hold down clips to be field installed.
Units to be 460/3/60

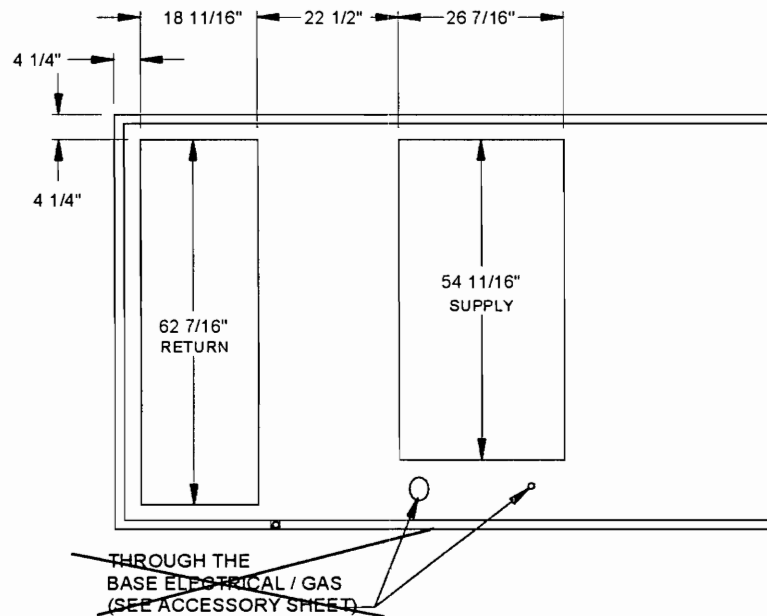
09-157197-20

Morgan Distributing, Inc.**ELECTRICAL DATA SHEET**

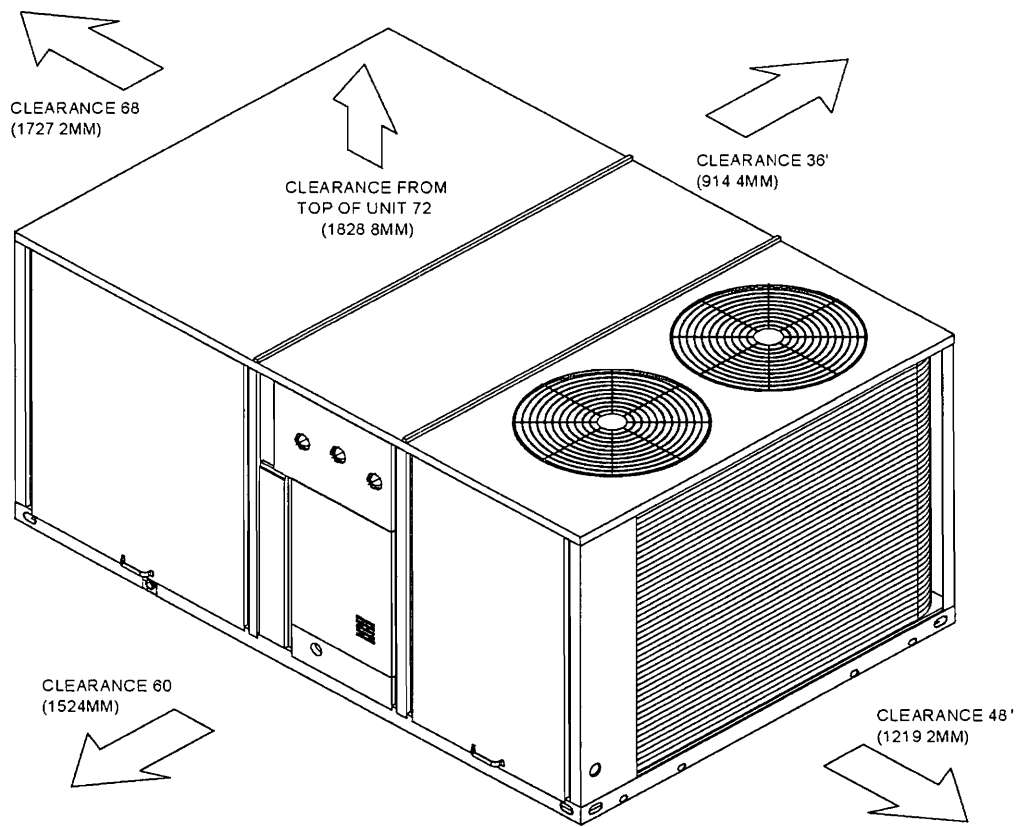
TAG	RTU-1	RTU-2,3,5	RTU-4	RTU-6,7	RTU-1 M
MODEL	YCD150E4	YSC092E4E	YSC060E4E	YSC036E4E	4TCC3024A1
VOLTAGE	460/3/60	460/3/60	460/3/60	460/3/60	208/230/1/60
COMPRESSOR					
QTY	2	2	1	1	1
FLA	10.6/10.6	7.1/7.1	9.6	5.1	8.3
LRA	75/75	46/46	62	35	57.8
EVAP FAN MOTOR					
HP	5	2	1	1	0.25
FLA	7.6	3.1	2.5	2.5	1.4
LRA	54.9	24	16.1	16.1	2.8
COND FAN MOTOR					
QTY	2	1	1	1	1
FLA	1.6/1.6	2.5	1.3	1.2	0.54
LRA	3.8/3.8	5.8	2.8	2.5	0.95
POWER EXHAUST					HEATER
FLA	3.2	N/A	N/A	N/A	10 kW
UNIT MCA	35	21.5	15.5	10.1	54
UNIT MFA	40	25	25	15	60



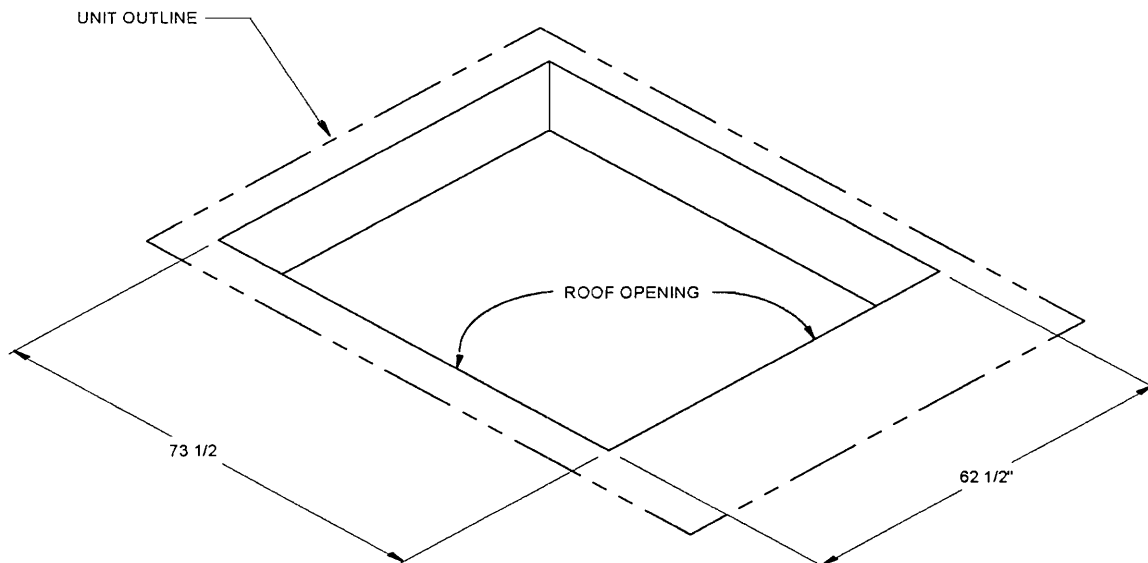
DOWNFLOW ISOMETRIC-PACKAGED GAS/ELECTRIC



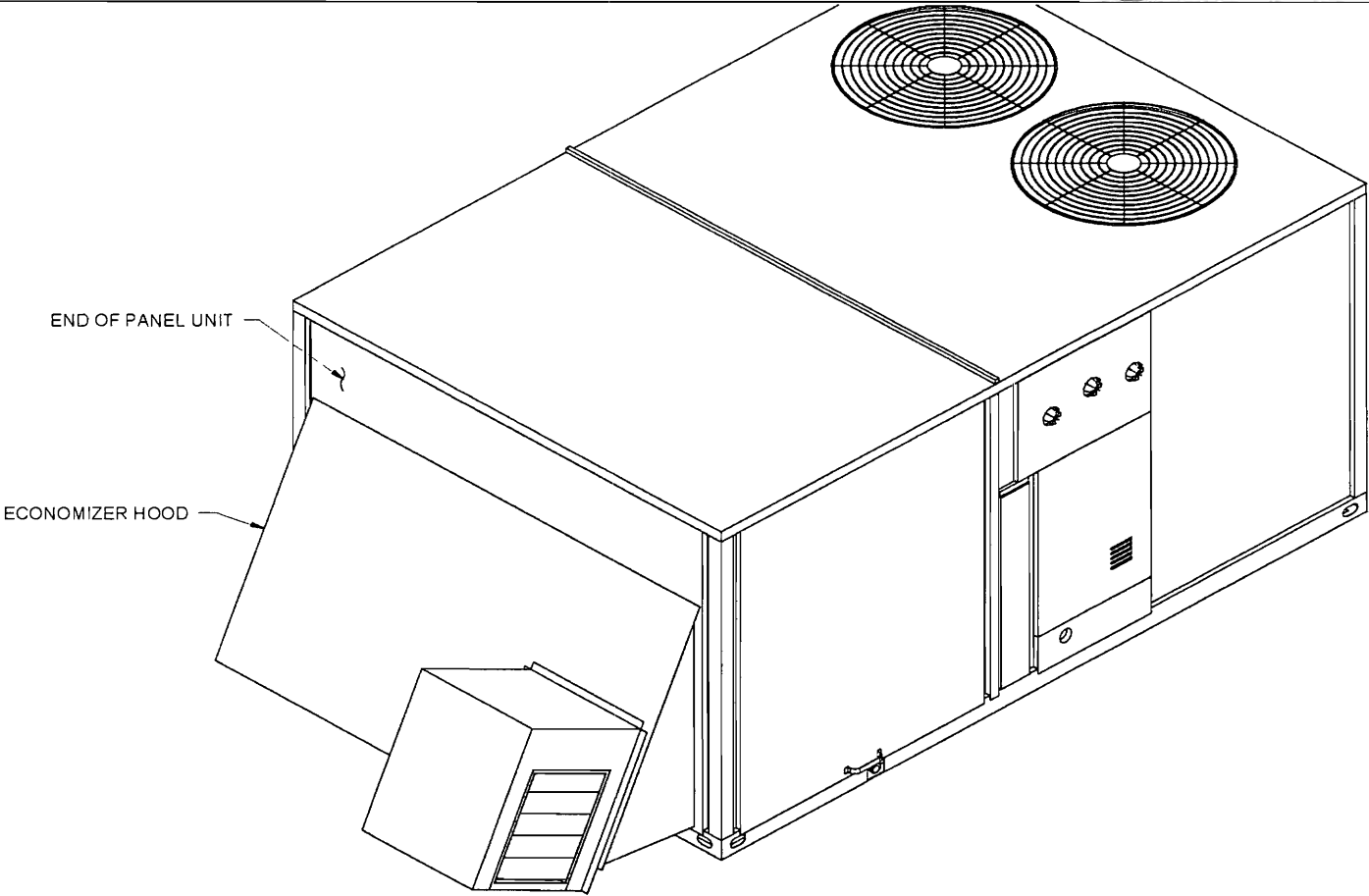
DOWNFLOW-PENATRATION



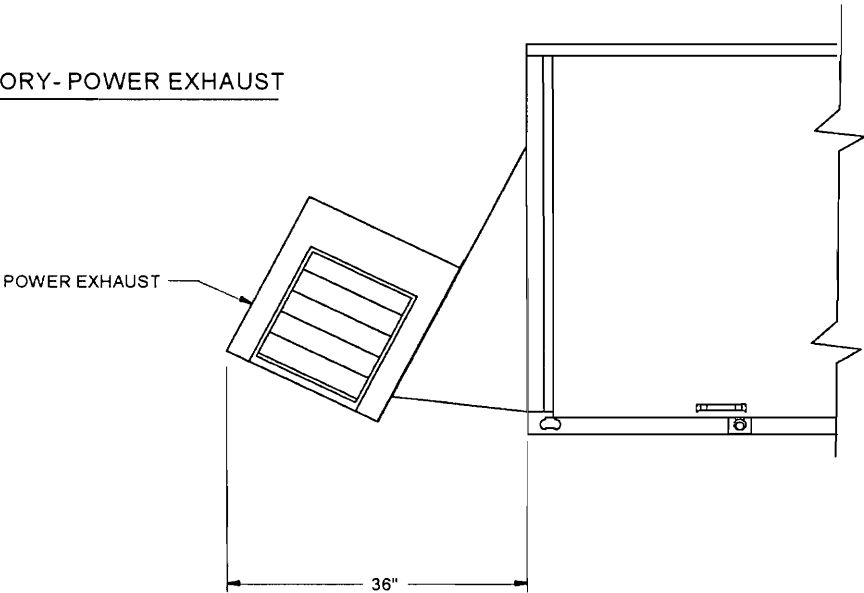
DOWNFLOW-PACKAGED GAS/ELECTRIC CLEARANCE



DOWNFLOW-PACKAGED GAS/ELECTRIC ROOF OPENING CLEARANCE



DOWNFLOW ACCESSORY- POWER EXHAUST



FRONT OF POWER EXHAUST



MicroMetl

**Knocked-down Roofcurbs for
Trane YCD, TCD 121C, 151C, 180B, 210C, YCD
150D, WCD 150B, 180B Units**

Part Number

0592-Series

FORM NO. 2951-2P

DATE: 3/04

SUBMITTED TO _____
COMPANY _____
DRAWN BY **M HARGIS**
JOB NAME _____
EQUIPMENT _____
NOTES _____

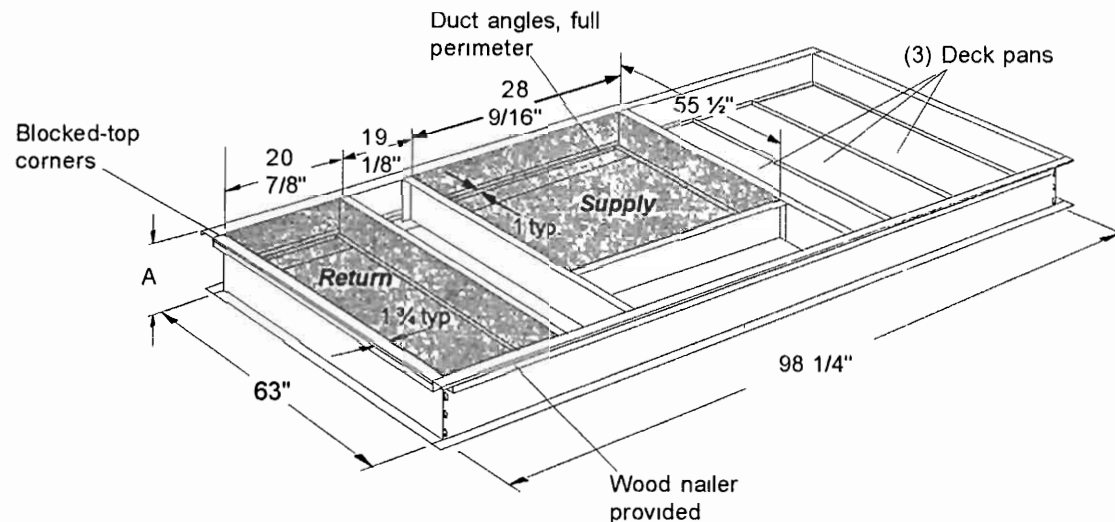
TAG RTU-1 YCD150E4HCB

FEATURES

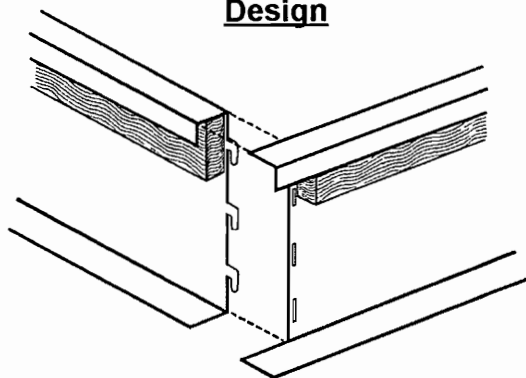
- *Roofcurb sides and ends are 16ga galvanized steel (058 min)
- *Gasketing package provided
- *Full perimeter wood nailer
- *Ships knocked down

NOTES:

- 1) Adjustable pitch/adjustable height curbs and taller curbs are available
- 2) Roofcurbs are marked with the Trane part number



**MicroMetl
Design**



BAYCURB026B SIZE

Curb No	A
0592-014A	14"
0592-008A	8"
0592-018A	18"
0592-024A	24"

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3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Job Information

HVAC INC - MORGAN DISTRIBUTING, INC



Tag	RTU-2, RTU-3, RTU-5	Model number	YSC092
Quantity	3		

Unit Information

Tonnage	7 5 Ton	Unit function	DX cooling, gas heat
Min unit operating weight	1066 0 lb	Max unit operating weight	1428 0 lb
Design Airflow	3000 cfm		

Cooling Information

Gross Total Capacity	93 99 MBh	Gross Sensible Capacity	69 14 MBh
Gross Latent Capacity	24 85 MBh	Net Total Capacity	90 94 MBh
Net Sensible Capacity	66 08 MBh	Net Sensible Heat Ratio	0 73 Number
Cooling Entering DB	80 00 F	Cooling Entering WB	67 00 F
Cooling Leaving Unit DB	59 60 F	Cooling Leaving Unit WB	57 23 F
Ambient Temp	95 00 F		

Heating Information

Heating capacity	Medium gas heat 3ph	Input Heating Capacity	150 00 MBh
Output Heating Capacity	121 50 MBh	Heating EAT	70 00 F
Heating LAT	107 80 F	Heating Delta T	37 80 F

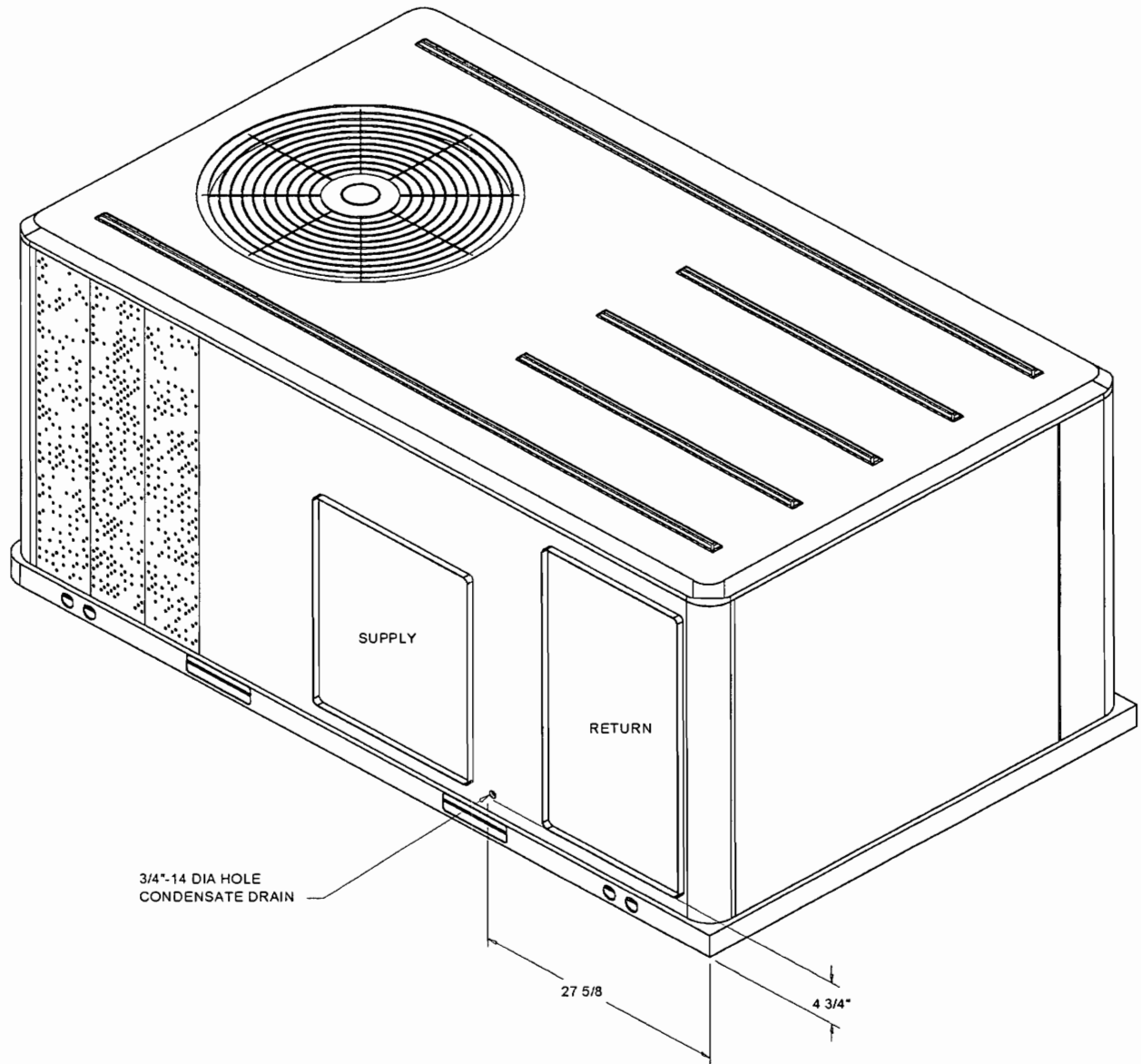
Motor/Electrical Information

Voltage	460/60/3	Design ESP	0 60 in H2O
Indoor Motor Power	0 95 kW	Indoor mtr operating power	1 28 bhp
Indoor RPM	802 rpm	Outdoor Motor Power	0 69 kW
Compressor Power	6 32 kW	System Power	7 97 kW
		SEER/EER @ ARI	11 20 btuh/watt
MCA	21 50 A	MOP	25 00 A
Compressor 1 RLA	7 10 A	Evaporator fan FLA	3 10 A
Condenser fan FLA	2 50 A		

* Electrical values provided are estimated only and are subject to change without notice and may differ from nameplate values

Field installed low or high static drive kits may be needed Please check the fan performance tables in the product catalog for application ranges

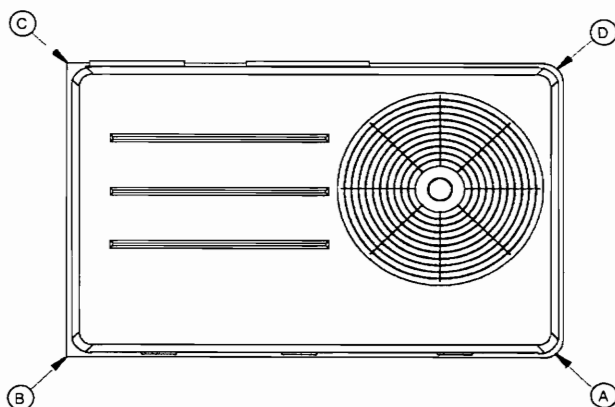
8/28/2009



ISOMETRIC-PACKAGED COOLING



INSTALLED ACCESSORIES NET WEIGHT DATA

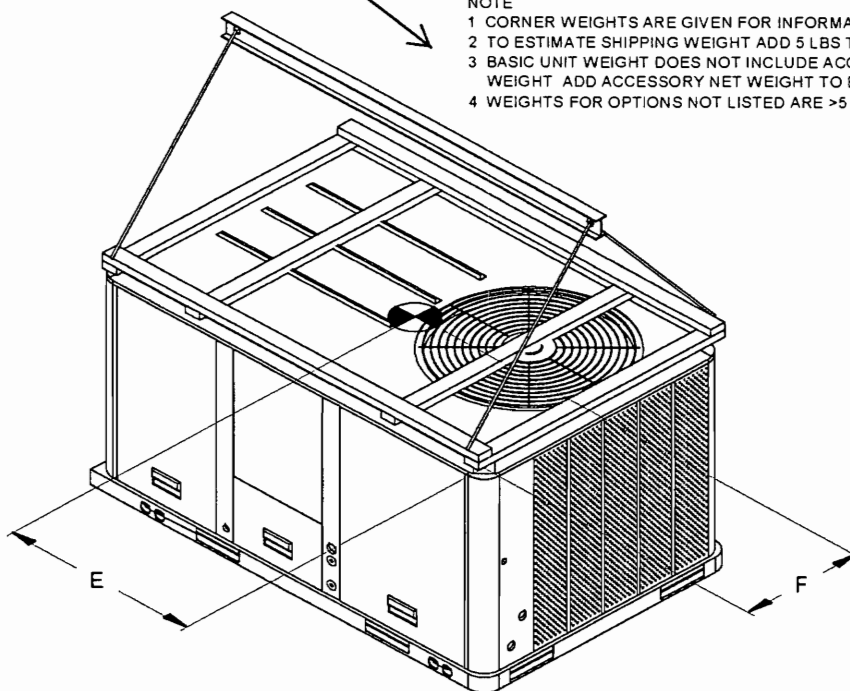


CORNER WEIGHT

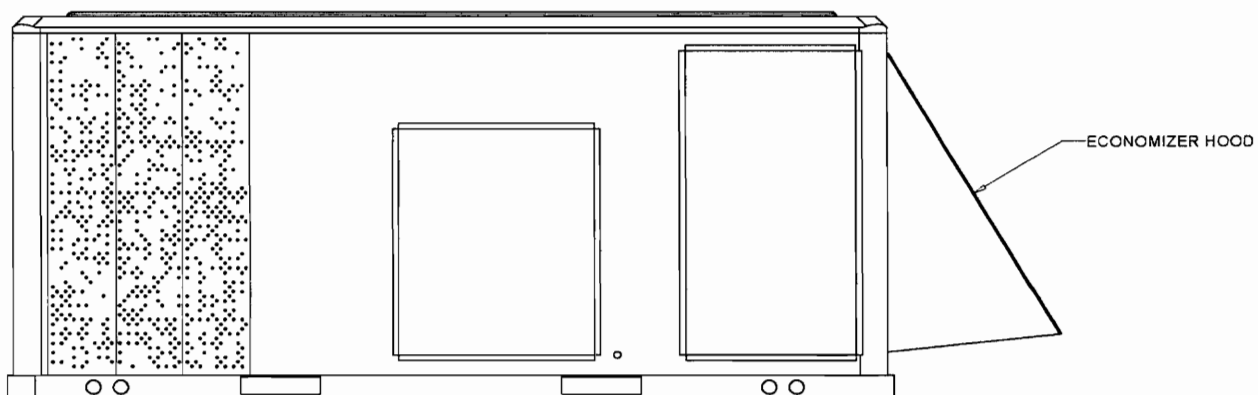
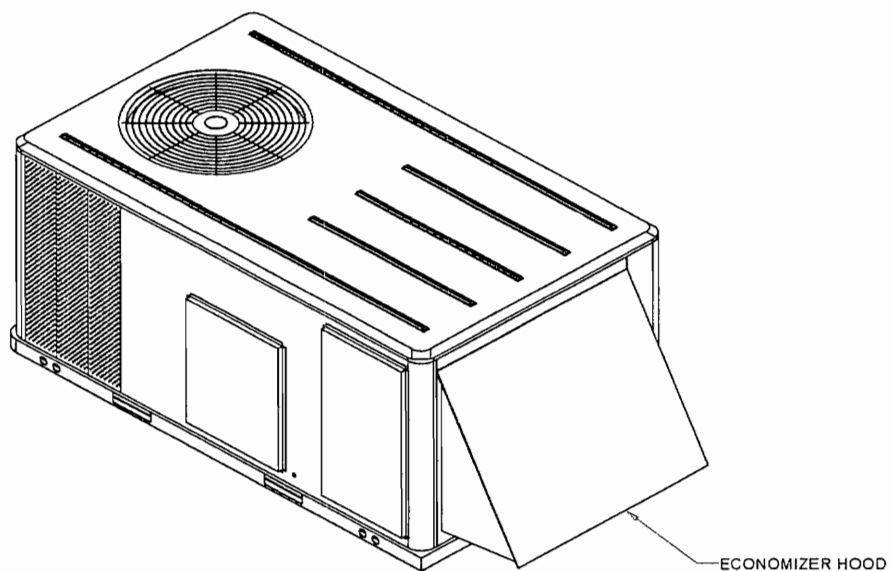
ACCESSORY				WEIGHTS			
ECONOMIZER				36 0 lb			
MOTORIZED OUTSIDE AIR DAMPER							
MANUAL OUTSIDE AIR DAMPER							
BAROMETRIC RELIEF				10 0 lb			
OVERSIZED MOTOR							
BELT DRIVE MOTOR				N/A			
POWER EXHAUST							
THROUGHT THE BASE ELECTRICAL (FIOPS)				N/A			
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)				N/A			
UNIT MOUNTED DISCONNECT (FIOPS)				N/A			
POWERED CONVENIENCE OUTLET (FIOPS)				N/A			
HINGED DOORS (FIOPS)							
HAIL GUARD				N/A			
SMOKE DETECTOR SUPPLY / RETURN				N/A			
NOVAR CONTROL				N/A			
STAINLESS STEEL HEAT EXCHANGER				N/A			
ROOF CURB				115 0 lb			
BASIC UNIT WEIGHTS		CORNER WEIGHTS			CENTER OF GRAVITY		
SHIPPING	NET	(A)	370 0 lb	(C)	265 0 lb	(E) LENGHT	(F) WIDTH
1059 0 lb	916 0 lb	(B)	160 0 lb	(D)	121 0 lb	41	22"

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



RIGGING AND CENTER OF GRAVITY



ACCESSORY - ECONOMIZER HOOD

SUBMITTAL**MicroMetl**

FORM NO. 3262-1P

DATE: 10 / 03

SUBMITTED TO _____
COMPANY _____
DRAWN BY **M. HARGIS** _____
JOB NAME _____
EQUIPMENT _____
NOTES _____

**Unit Hold-Down Brackets for Trane and
American Standard YSC, YHC, TSC, THC,
WSC, 036-120**

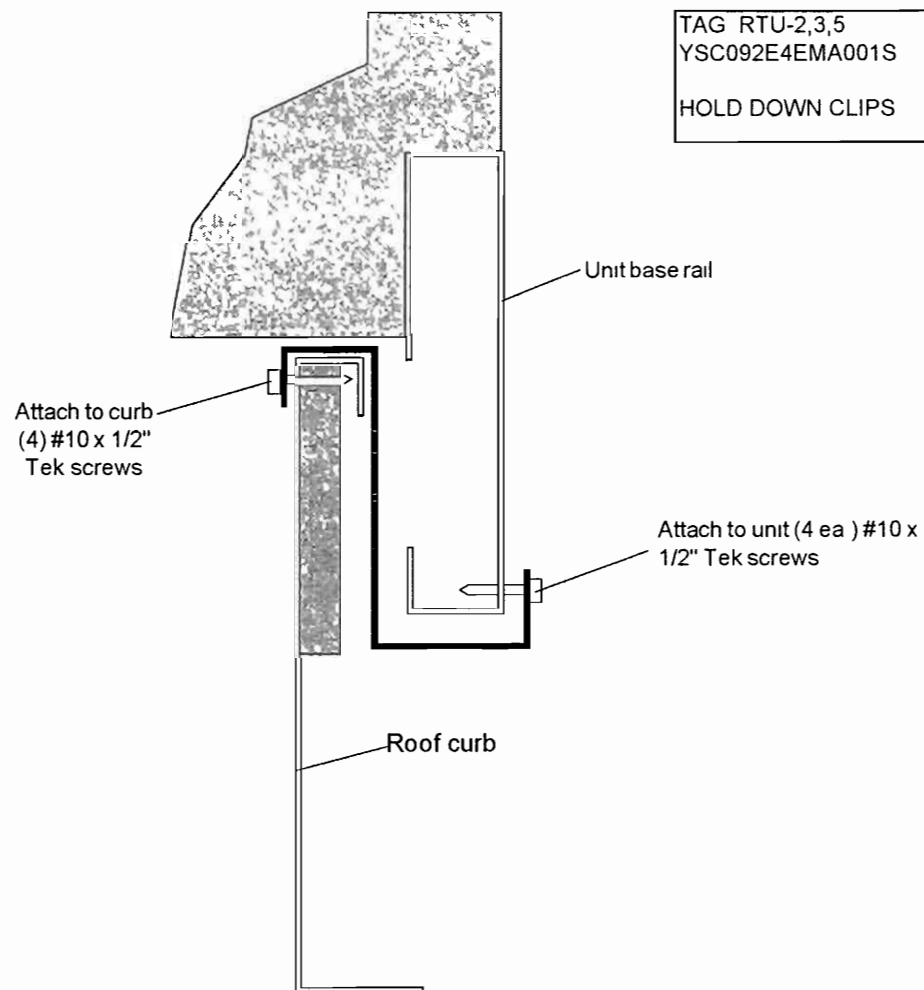
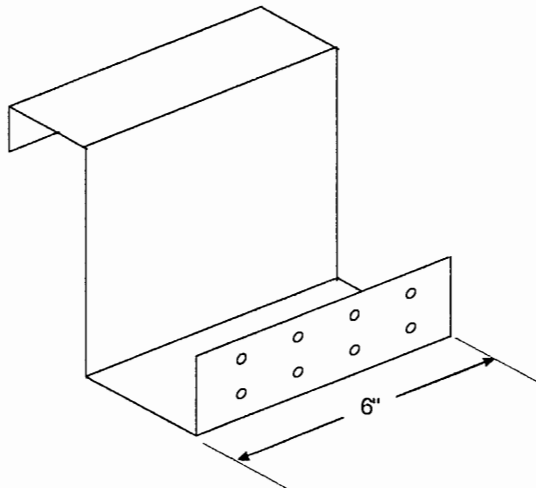
Part Number

MH-PRC-HOLD

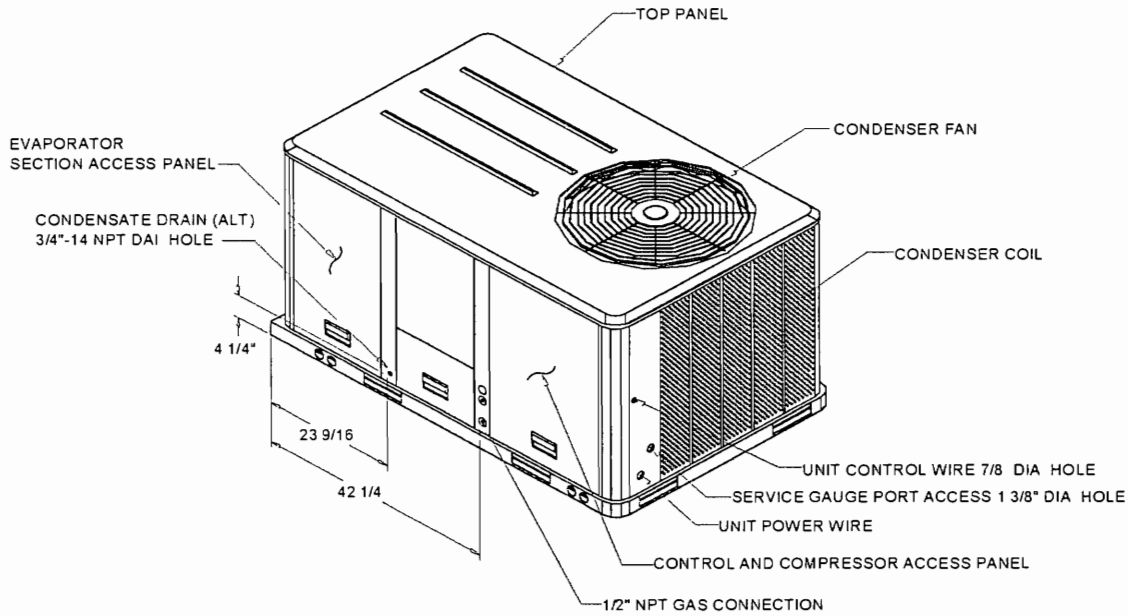
TAG RTU-2,3,5
YSC092E4EMA001S
HOLD DOWN CLIPS

FEATURES.

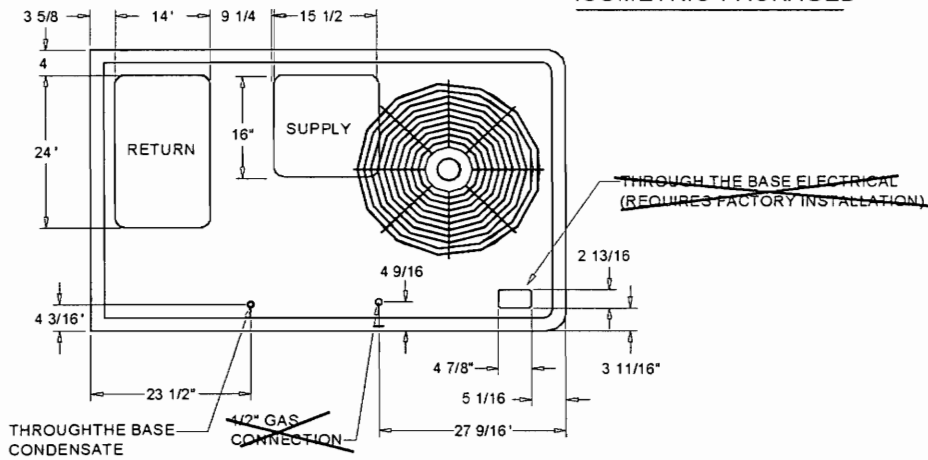
- Manufactured from 16 ga galvanized steel
- Package includes four (4) hold-down brackets thirtytwo (32) #10 x 1/2" tek screws eight (8) per bracket



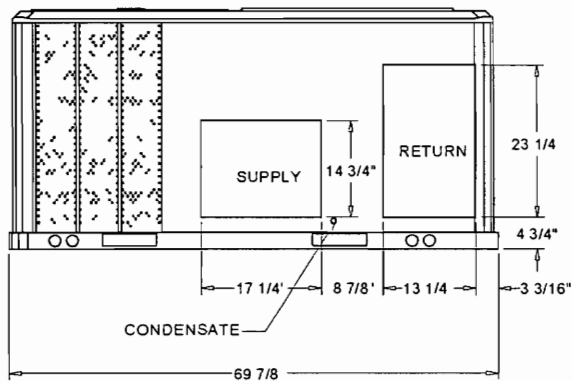
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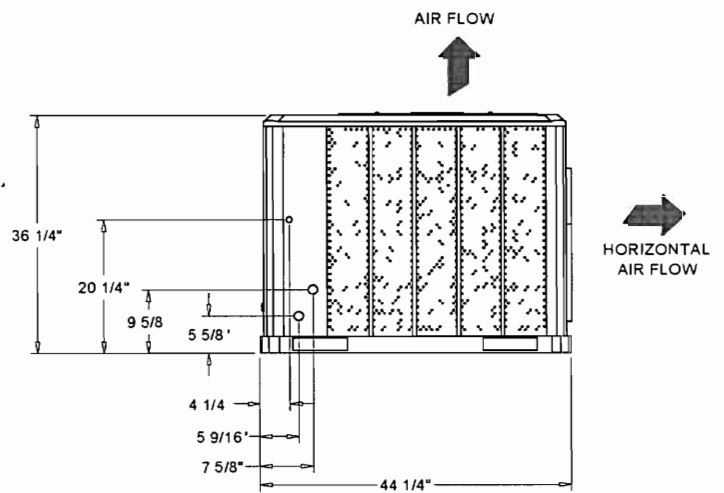
ISOMETRIC-PACKAGED



DOWNFLOW-PENETRATION



HORIZONTAL-PENETRATION



RIGHT-PACKAGED



ELECTRICAL / GENERAL DATA

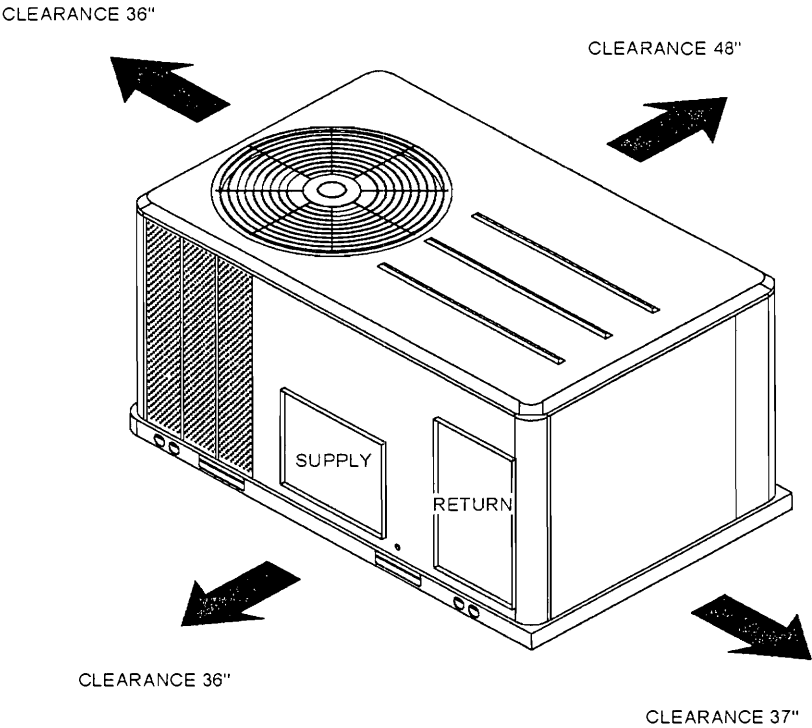
GENERAL (2)(4)(6) Model YSC060E Oversized Motor Unit Operating Voltage 414-506 MCA N/A Unit Primary Voltage 460 MFS N/A Unit Secondary Voltage -- MCB N/A Unit Hertz 60 Unit Phase 3 SEER 13.0 Standard Motor MCA 15.5 MFS 25.0 MCB 25.0				HEATING PERFORMANCE HEATING - GENERAL DATA Heating Model Medium Heating Input (Btu) 80 000 Heating Output (Btu) 64 000 No. Burners 2 No. Stages 1 Gas Inlet Pressure Natural Gas (Min/Max) 4.5/10.5 LP (Min/Max) 10.0/13.0 Gas Pipe Connection Size 1 / 2	
INDOOR MOTOR Standard Motor Number 1 Horsepower 1.0 Motor Speed (RPM) -- Phase 3 Full Load Amps 2.5 Locked Rotor Amps 16.1				Oversized Motor Number N/A Horsepower N/A Motor Speed (RPM) N/A Phase N/A Full Load Amps N/A Locked Rotor Amps N/A	
COMPRESSOR Circuit 1/2 Number 1 Horsepower 4.3 Phase 3 Rated Load Amps 9.6 Locked Rotor Amps 62.0				OUTDOOR MOTOR Number 1 Horsepower 0.40 Motor Speed (RRM) 1075 Phase 1 Full Load Amps 1.0 Locked Rotor Amps 2.8	
POWER EXHAUST ACCESSORY (3) (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		FILTERS Type Furnished Yes Number 2 Recommended 20"x30"x1"		REFRIGERANT (2) Type R-410 Factory Charge Circuit #1 9.4 Circuit #2 N/A	

NOTES

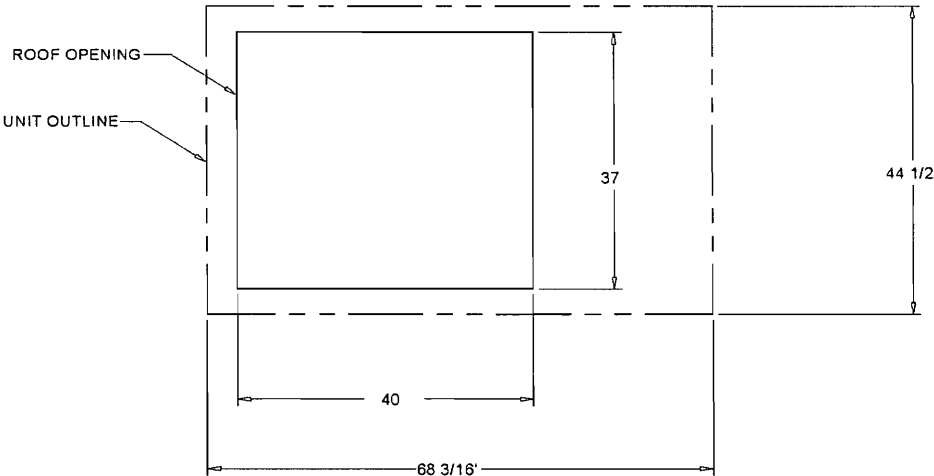
- 1 Maximum (HACR) Circuit Breaker sizing is for installations in the United States only
- 2 Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
- 3 Value does not include Power Exhaust Accessory
- 4 Value includes oversized motor
- 5 Value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



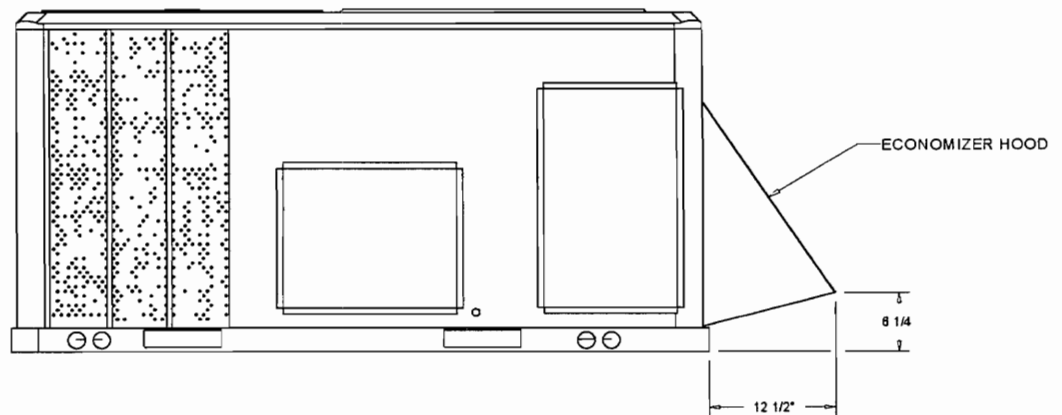
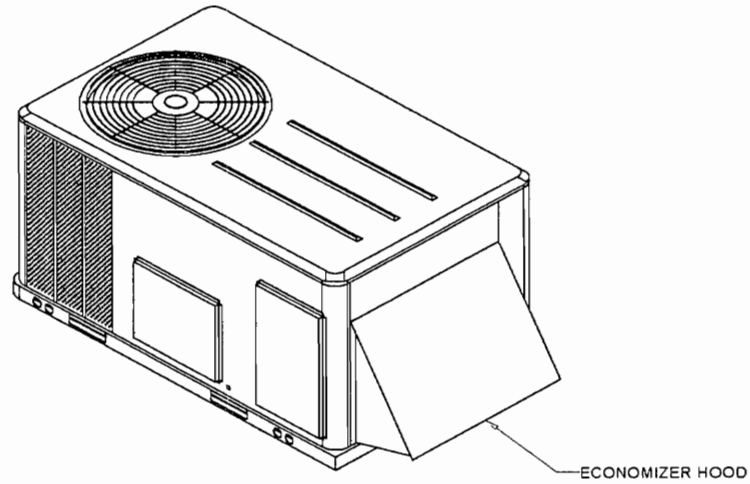
CLEARANCE FROM TOP OF UNIT 72



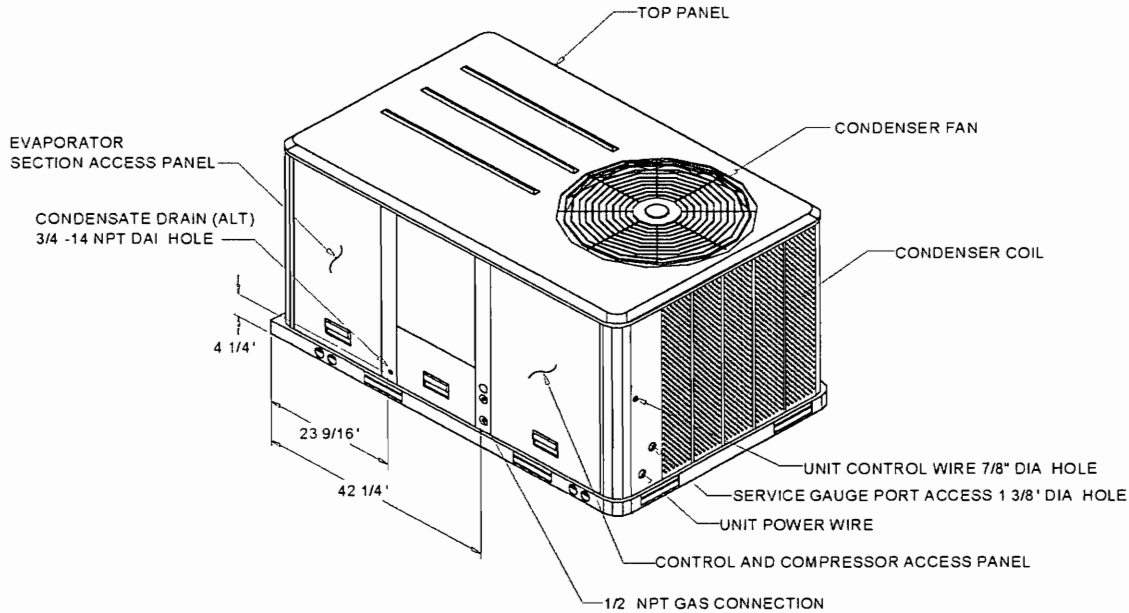
PACKAGED COOLING CLEARANCE



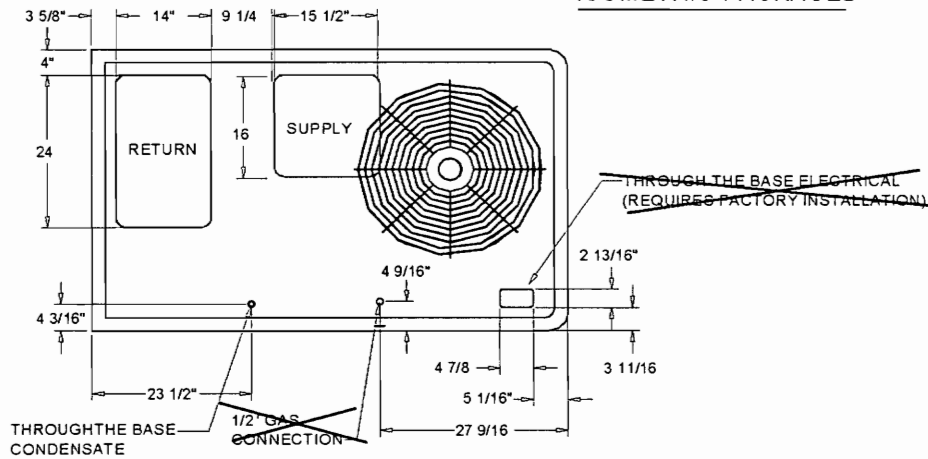
DOWNFLOW-ROOF OPENING



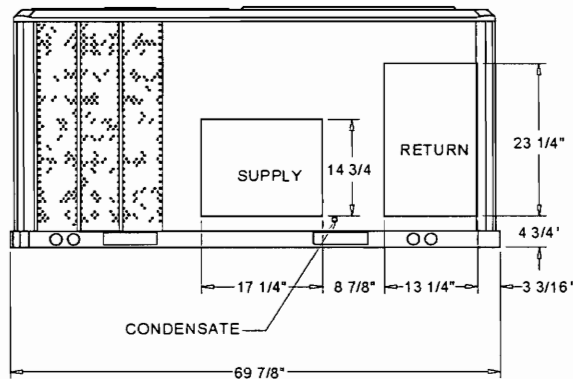
ACCESSORY - ECONOMIZER HOOD



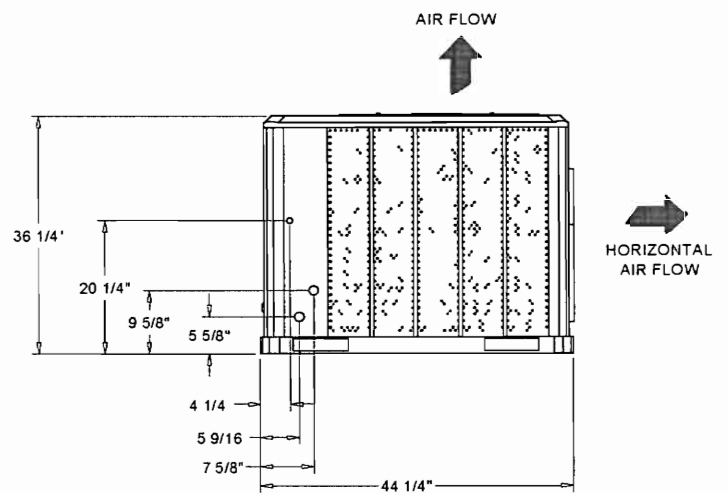
ISOMETRIC-PACKAGED



DOWNFLOW-PENETRATION



HORIZONTAL-PENETRATION



RIGHT-PACKAGED

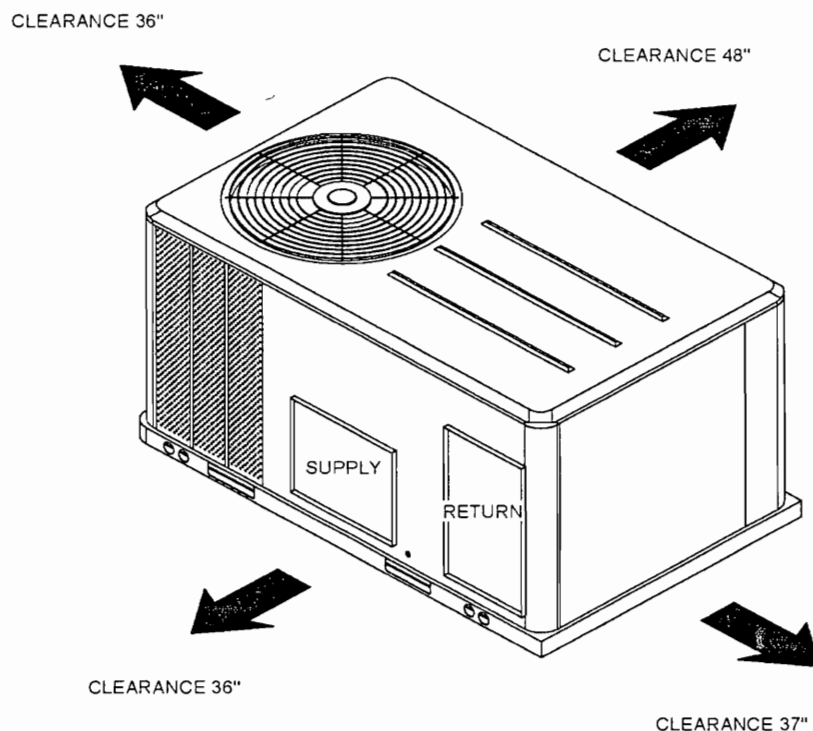


ELECTRICAL / GENERAL DATA

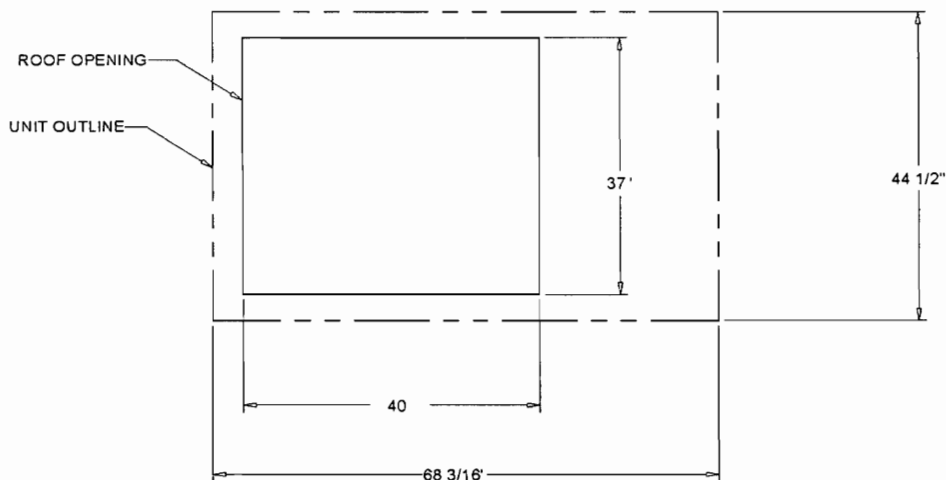
GENERAL ⁽²⁾⁽⁴⁾⁽⁶⁾ Model YSC036E Oversized Motor Unit Operating Voltage 414-506 MCA N/A Unit Primary Voltage 460 MFS N/A Unit Secondary Voltage - MCB N/A Unit Hertz 60 Unit Phase 3 SEER 13.0 Standard Motor MCA 10.1 MFS 15.0 MCB 15.0			HEATING PERFORMANCE HEATING - GENERAL DATA Heating Model Medium Heating Input (Btu) 80 000 Heating Output (Btu) 64 000 No. Burners 2 No. Stages 1 Gas Inlet Pressure Natural Gas (Min/Mix) 4.5/10.5 LP (Min/Max) 10.0/13.0 Gas Pipe Connection Size 1 / 2		
INDOOR MOTOR Standard Motor Number 1 Horsepower 1.0 Motor Speed (RPM) - Phase 3 Full Load Amps 2.5 Locked Rotor Amps 16.1			Oversized Motor Number N/A Horsepower N/A Motor Speed (RPM) N/A Phase N/A Full Load Amps N/A Locked Rotor Amps N/A		
COMPRESSOR Circuit 1/2 Number 1 Horsepower 2.7 Phase 3 Rated Load Amps 5.1 Locked Rotor Amps 35.0			OUTDOOR MOTOR Number 1 Horsepower 0.33 Motor Speed (RRM) 1075 Phase 1 Full Load Amps 1.2 Locked Rotor Amps 2.5		
POWER EXHAUST ACCESSORY ⁽³⁾ (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		FILTERS Type Furnished Yes Number 2 Recommended 20"x30"x1"		REFRIGERANT ⁽²⁾ Type R-410 Factory Charge Circuit #1 6.3 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 ARI conditions and in accordance with DOE test procedures



PACKAGED COOLING CLEARANCE



DOWNFLOW-ROOF OPENING

SUBMITTAL**MicroMetl****Knocked Down Roof Curbs For Trane Precedent
YSC, YHC, TSC, THC, WSC, WHC 036-060**

Part Number

0572 Series

FORM NO. 2834-4P

DATE: 3/04

SUBMITTED TO: _____
COMPANY: _____
DRAWN BY: M HARGIS
JOB NAME: _____
EQUIPMENT: _____
NOTES: _____

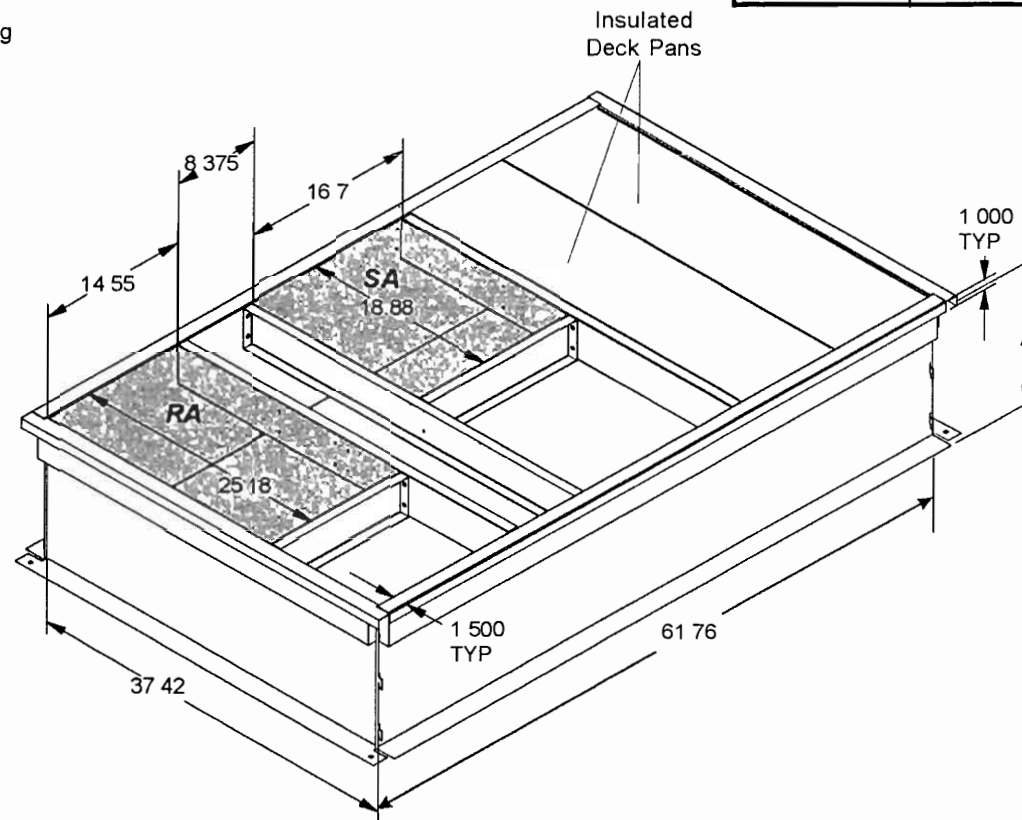
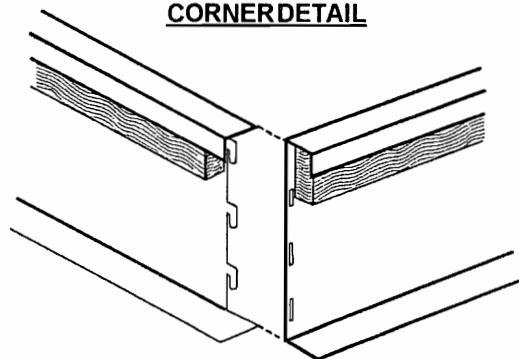
TRANE CURB NO: BAYCURB042A

TAG RTU-4
YSC060E4EMA006M
TAG RTU-6, RTU-7
YSC036E4EMA001Q

	A
0572-008A	8"
0572-014A	14"
0572-018A	18"
0572-024A	24"

FEATURES

- 1 Curb is shipped knocked-down and designed with Microlok corners for easy assembly
- 2 Curb includes wood nailer, assembly hardware and gasketing package
- 3 Deck pans are insulated with 1" - 1 5 lb density insulation
- 4 Curb is constructed of heavy gage galvanized steel
- 5 Adjustable pitch, adjustable height curbs are available

CORNERDETAIL

THIS DOCUMENT IS THE PROPERTY OF MICROMETL CORPORATION AND IS DELIVERED UPON THE EXPRESS CONDITION THAT THE CONTENTS WILL NOT BE DISCLOSED OR USED WITHOUT MICROMETL'S WRITTEN CONSENT

SUBMITTAL DATA: MS-A12WA & MU-A12WA

12,000 Btu/h WALL-MOUNTED AIR-CONDITIONING SYSTEM

Job Name **MORGAN DISTRIBUTING, INC**

Location

Date

Purchaser

Engineer

Submitted to **HVAC INCORPORATED**

For ☐ Reference ☐ Approval ☐ Construction

Unit Designation

Schedule No **AC-1 / FC-1**
GENERAL FEATURES

- Limited warranty one year on parts and defects and six years on compressor
- Compact side discharge outdoor unit
- Zone control
- Wireless remote controller
- Automatic fan speed control
- Quiet operation – both indoor and outdoor units
- Auto restart following a power outage
- Self check function – onboard diagnostics
- Advanced microprocessor control

Rated capacity 12,000 Btu/h
SEER 13.0
Total input 690

Power supply 115V, 1 phase, 60 Hz

Voltage

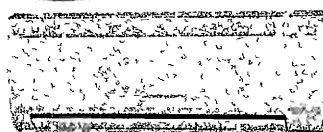
Indoor - Outdoor L1-N 115V, 1 Phase, 60 Hz
Indoor - Outdoor 2-N 115V, 1 Phase, 60 Hz
Indoor - Remote Controller wireless

Indoor unit

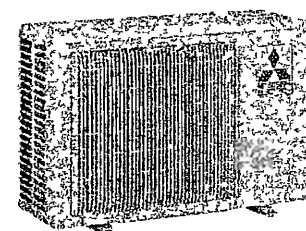
MCA 12 A
Fan motor 0.95 FLA
Airflow (Low-Medium-High) 222-286-406 Dry CFM
198-254-363 Wet CFM
Sound level (Lo-M1-M2-Hi) 33-38-45 dB(A)

DIMENSIONS	INCHES	MM
W	30-11/16	780
D	8-1/4	210
H	11-3/4	299

Weight (lbs/Kg) 23 / 10
Field drain pipe size I D (inches/mm) 1/2 / 12.7


Remote
Controller


Indoor Unit MS-A12WA



Outdoor Unit MU-A12WA

Outdoor Unit

Compressor Rotary
R L A 10.82
L R A 56
MCA 16
Breaker size 20 A
Fan motor FLA
Sound level 52 dB(A)

DIMENSIONS	INCHES	MM
W	31-1/2	800
D	11-1/4	286
H	21-5/8	550

Weight (lbs/Kg) 96 / 44
Refrigerant type R410A
Refrigerant pipe size O D (inches/mm)
liquid side 1/4 / 6.35
gas side 1/2 / 12.7

Max refrigerant pipe length (ft/m) 65 / 20
Max refrigerant pipe height difference (ft/m) 35 / 11
Connection method flared

NOTES Test conditions based on ARI 210
Rating conditions (cooling) indoor DB 80°F, WB 67°F
outdoor DB 95°F, WB 75°F

Operating range

		Indoor intake air temp	Outdoor intake air temp
Cooling	Maximum	95°FDB 71°FWB	115°FDB
	Minimum	67°FDB 57°FWB	67°FWB

Low ambient operation to 10°FDB is possible by installing a Low Ambient Head Controller, Part No. ICM326HM1



Notes

1.5-5 ton Pkgd. Cooling Rooftop Convert. R-410A

Job Information

HVAC INC - MORGAN DISTRIBUTING INC			 TRANE®
Tag	RTU-1 M	Refrigerant	R-410A pkg cooling 13 SEER
Model number	4TCC3024A1000A	Cooling Capacity	2 Tons, 13 SEER
Quantity	1	Electrical characteristics	208-230/1/60

Unit Information

ARI Capacity	23000 00 Btu/hr	SEER @ ARI	13 00 btuh/watt
Design Airflow	800 cfm	Field applied voltage	230 Volt
Design net total capacity	23400 00 Btu/hr	Design net sensible capacity	17200 00 Btu/hr
Design net latent capacity	6200 00 Btu/hr	Cooling LDB	60 00 F
Cooling EDB	80 00 F	Cooling LWB	57 00 F
Cooling EWB	67 00 F	Electnc heat capacity @ 460 volts	34100 00 Btu/hr
Design heating capacity	31318 00 Btu/hr	Heating LDB	101 00 F

Cooling Information

Low speed cooling airflow	Low speed cooling TESP
Low speed net total capacity	Low speed net sensible capacity
High speed cooling airflow	High speed cooling TESP
High speed net total capacity	High speed net sensible capacity
Medium speed cooling airflow	Medium speed cooling TESP
Medium speed net total capacity	Medium speed net sensible capacity

Heating Information

Low speed heating airflow	Low speed heating TESP
Low speed heating leaving temperature	High speed heating leaving temperature
High speed heating airflow	High speed heating TESP
Med / med-low speed heating Airflow	Med / med-low spd htg TESP
Med low spd heating leaving temperature	Med-high spd heating TESP
Med-high speed heating airflow	Med-high speed heating lvg temperature



ELECTRICAL / GENERAL DATA

POWER CONNECTION Model 4TCC3024A1 Voltage Range 208-230/1/60 Min Circuit Ampacity 13 6 Max Circuit Breaker 20 0 Prot Rtg Recmd 20 0 EER/SEER 11 0/13 0 Noise Rating # 76 0		COMPRESSOR Number 1 Phase 1 Rated Load Amps 8 3 Locked Rotor Amps 57 8	
OUTDOOR MOTOR Number 1 Horsepower 08 Phase 1 Full Load Amps 0 54 Locked Rotor Amps 0 95	INDOOR MOTOR Number 1 Horsepower 25 Motor Speed (RPM) 825 Phase 1 Full Load Amps 1 4 Locked Rotor Amps 2 8	REFRIGERANT Type R-410A Factory Charge 5 8 Circuit #1	
HEATER Model BAYHTRV110 Voltage 208 240 Phase 1 Heater Capacity (Kw) 7 50/10 0 Heater (Btu) 25600/34100 # of Stages 1 Stage # 1 7 50/10 0 Stage # 2 N/A MCA 45 0/52 0 MBS 45 0/60 0		SINGLE CIRCUIT POWER AMPACITY AND OVER CURRENT PROTECTION Single Power Entry Kit Minimum Circuit Ampacity 54 0 Maximum Over-Current Device 60 0 1 Single Circuit Power fuses are supplied if required for unit and / or heater 2 Wiring requirements if unit and electric heaters are operated from a single circuit using a single power entry kit	

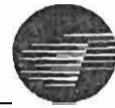
NOTES

UNIT ONLY

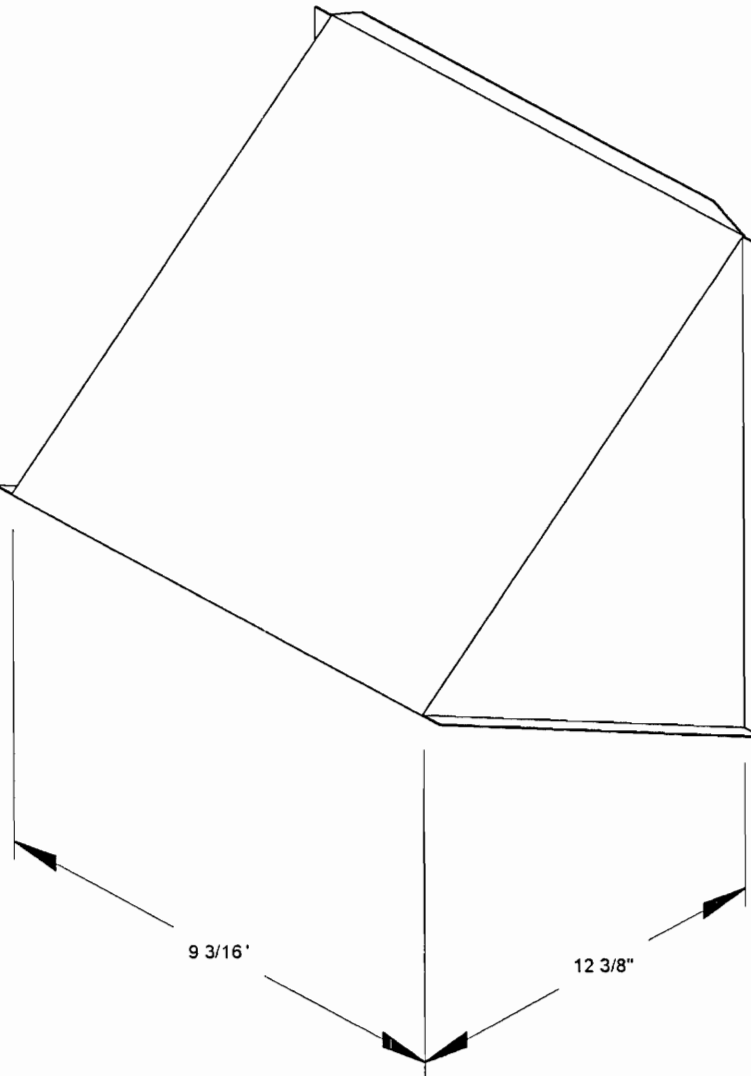
- 1 Rated in accordance with A R I Standard 210/240
- 2 Rated in accordance with D O E test procedure
- 3 Rated in accordance with A R I Standard 270

ELECTRIC HEATER ACCESSORY ONLY

- 4 Any power supply and circuits must be wired and protected in accordance with local electrical codes
- 5 The MCA values listed are for electric heater only
- 6 The MCA values listed are for electric heater only
- 7 Field wire must be rated at least 75 C
- 8 The HACR circuit breaker is for U S A installations only
- 9 For Canada installations reference only



OUTSIDE AIR
DAMPER HOOD



MANUAL OUTSIDE AIR- HOOD

SUBMITTAL**MicroMetl**

FORM NO. 4344-1P

DATE 6/06

SUBMITTED TO _____

COMPANY _____

DRAWN BY **E. SALAZAR**

JOB NAME _____

EQUIPMENT _____

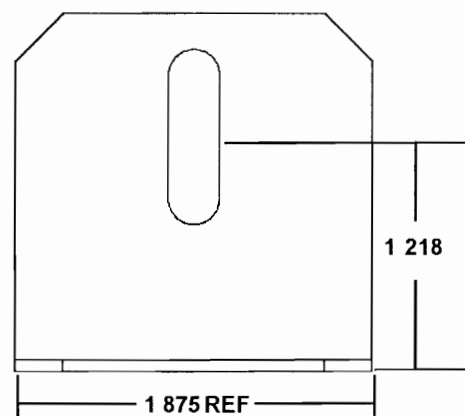
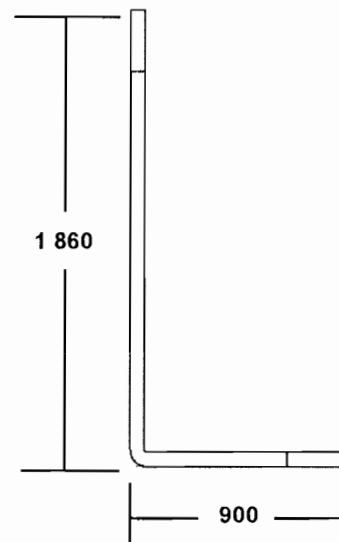
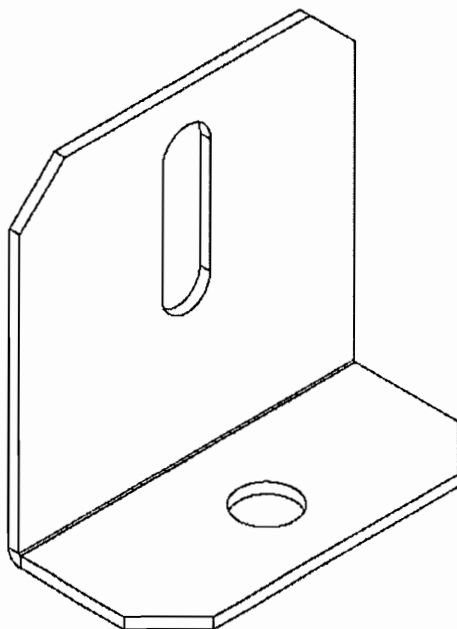
NOTES _____

Slab Hold Downs for Trane I2:
2/4 YC, WC 3018-3036,
WC 3042-3060, 4 TC*3042-3060

Part Number

ECMT-SLAB-TD

TAG RTU-1 M 4TCC3024A1000A
MAINTENANCE BUILDING
HOLD DOWN CLIPS



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