

City of Portland, Maine - Building or Use Permit Application
 389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 10-1287	Issue Date:	CBI: 034 D007001
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Location of Construction: 87 Marginal Way	Owner Name: 87 Marginal Way Llc	Owner Address: 1735 Market St Ste A-400	Phone:
Business Name: Trader Joe's	Contractor Name: HVAC Services, Inc.	Contractor Address: 73 Bradley Drive Westbrook	Phone: 2078544822
Lender/Buyer's Name	Phone:	Permit Type: HVAC	Zone: B-7

Past Use: Commercial / Retail : (Wild Oats)	Proposed Use: Commercial / Retail: (Trader Joe's) Install natural gas Trane roof top unit.	Permit Fee: \$630.00	Cost of Work: \$60,920.00	CEO District: 1
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Proposed Project Description:
Install natural gas Trane roof top unit.

FIRE DEPT: <i>[Signature]</i> Signature:	INSPECTION: Use Group: <u>V</u> Type: <u>H/HA</u> <i>State Gas Regs</i> Signature:
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PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)
 Action Approved Approved w/Conditions Denied
 Signature: _____ Date: _____

Permit Taken By: gg	Date Applied For: 10/13/2010	Zoning Approval
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- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
- Building permits do not include plumbing, septic or electrical work.
- Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.

Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>10/18/10</i>	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: _____
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PERMIT ISSUED

NOV - 5 2010

City of Portland

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.



FILL IN AND SIGN WITH INK 10 1287

APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT

PERMIT ISSUED

NOV - 5 - 2010

034 D 007 City of Portland

To the INSPECTOR OF BUILDINGS, PORTLAND, ME.

The undersigned hereby applies for a permit to install the following heating, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

Location / CBL _____ Use of Building _____ Date _____

Name and address of owner of appliance TRADER JOES

87 Marginal Way Portland Me

Installer's name and address TRAC SERVICES LLC

73 Bradley Drive Westbrook, ME

Telephone 207-854-4822

Location of appliance:

- Basement
- Floor
- Attic
- Roof

Type of Fuel:

- Gas
- Oil
- Solid

Appliance Name: TRANE RTV, Multis, Cambridge

U.L. Approved Yes No

Will appliance be installed in accordance with the manufacture's installation instructions? Yes No

IF NO Explain: _____

PERMIT ISSUED

OCT 13 2010

The Type of License of Installer:

- Master Plumber # _____ City of Portland
- Solid Fuel # _____
- Oil # _____
- Gas # PNT-1138
- Other _____

Type of Chimney:

- Masonry Lined
- Factory built _____

- Metal
- Factory Built U.L. Listing # _____

- Direct Vent
- Type TRANE MULTIS U.L. L2FE.SA7928
L2FE.SA33214

Type of Fuel Tank

- Oil Natural
- Gas ROOF TOP UNIT

Size of Tank _____

Number of Tanks _____

Distance from Tank to Center of Phase _____ feet.

Cost of Work: \$ 60,920⁻

Permit Fee: \$ 630.00

Approved

Approved with Conditions

Fire: _____

Ele.: _____

Bldg.: _____

See attached letter or requirement

Inspector's Signature _____

Date Approved _____

Signature of Installer

Atuple Nizoz



APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT

PERMIT ISSUED

NOV - 5, 2010

City of Portland

To the INSPECTOR OF BUILDINGS, PORTLAND, ME

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Installer's name and address HVAC SERVICES INC.

73 Bradley Drive Westbrook, ME Telephone 207-854-4822

Location of appliance:

- Basement
- Floor
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Type of Fuel:

- Gas
- Oil
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Appliance Name: TRANE RTV, Multicoils, Cambridge

U.L. Approved Yes No

Will appliance be installed in accordance with the manufacturer's installation instructions? Yes No

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The Type of License of Installer:

- Master Plumber # _____
- Solid Fuel # _____
- Oil # _____
- Gas # PNT-1138
- Other _____

Type of Chimney:

- Masonry Lined
Factory built _____
- Metal
Factory Built U.L. Listing # _____
- Direct Vent
Type TRANE MULTICOILS U.L. # L2FE.SA7928
L2FE.SA33214

Type of Fuel Tank

- Oil
- Gas Natlan L

Size of Tank _____

Number of Tanks _____

Distance from Tank to Center of Floor _____ feet.

Cost of Work: \$ 12,920

Permit Fee: \$ 620.00

Approved

Fire: _____

Elec.: _____

Bldg.: _____

Approved with Conditions

- See attached letter or requirement

Inspector's Signature

Date Approved

Signature of Installer

Patricia Wilson

White - Inspection

Yellow - File

Pink - Applicant's

Gold - Assessor's Copy



CITY OF PORTLAND, MAINE
 Department of Building Inspections

Original Receipt

DATE Oct 13 2010

Received of James J. Smith

Location 1277 Broadway

Cost of Occupancy \$ _____ Bulkhead Fee: _____

Permit Fee \$ _____ Site Fee _____

Certificate of Occupancy Fee: _____

Taxes: _____

Bulkhead (1) _____ Bulkhead (2) _____ Site Plan (1/2) _____

Other NAC

CR. 011D009

Check # 28863 Total Collected \$ 6300.00

No work is to be started until permit issued.
 Please keep original receipt for your records.

Taken by: J. Smith

WHITE - Applicant's Copy
 YELLOW - Official Copy
 GREEN - Permit Copy



TRANE

Submittal

Prepared For:
All Bidders

Date: July 08, 2010

Customer P.O. Number:
Customer Project Number:

Sold To:

Job Number:
Job Name:
HVAC Services - Steve - Trader Joe's

Trane U.S. Inc. is pleased to provide the enclosed submittal for your review and approval.

Product Summary

Qty	Product
1	10 Ton R410A PKGD Unitary Gas/Electric Rooftop Trane Rooftop Model Number YHC120E3RHA--D000C2A001C0 DX cooling, gas heat High efficiency Convertible configuration 10 Ton Major design sequence 208-230/60/3 Microprocessor controls 3ph High gas heat 3ph Economizer Dry Bulb 0-100% with Barometric Relief Through the base gas & electrical 3ph Circuit breaker Unpowered convenience outlet 3ph Froststat 3ph Return/supply air smoke detector 3ph

The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

Dan Broderick
Trane
30 Thomas Drive
Westbrook, ME 04092-3824
Phone: (207) 828-1777
Fax: (207) 828-1511

Mechanical Specifications - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A1 Qty: 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 UL listed and labeled, classified in accordance to UL 1995/CAN/GSA No. 236-M90 for Central Cooling Air Conditioners. Canadian units shall be CSA Certified.

Casing

Unit casing shall be constructed of zinc coated, heavy gauge, and 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. 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. 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" 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.

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. Crankcase heaters shall be included.

Refrigerant Circuits

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

Evaporator and Condenser Coils

Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested at 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 provision for through the base condensate drain is standard.

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.

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 volt 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.

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.

Powered or Unpowered Convenience Outlet

This is a GFCI, 120v/15amp, 2 plug, convenience outlet, either powered or unpowered. When the convenience outlet is powered, a service receptacle disconnect will be available. The convenience outlet is powered from the line side of the

disconnect or circuit breaker, and therefore will not be affected by the position of the disconnect or circuit breaker. This option can only be ordered when the Through the Base Electrical with either the Disconnect Switch or Circuit Breaker option is ordered.

Supply and/or Return Air Smoke Detector

Smoke detector shall be factory installed photoelectric smoke detector mounted in the return air section (with or without the economizer or motorized damper option), AND/OR in the supply air fan compartment. The detector will be wired for continuous power whenever the unit is energized. Upon detection of smoke, the detector will shut down all unit operations. Local codes may dictate the location of detectors. Note: Due to the shipping position of the economizer or motorized damper, the return air smoke detector will not be completely factory installed. The wiring harness for the detector will be routed and tied off in the fan compartment for shipping. The smoke detector and barometric damper hood will also be installed in a shipping position in the fan compartment.

Through the Base Electrical Access

An electrical service entrance shall be provided allowing electrical access for both control and main power connections inside the curb and through the base of the unit. Option will allow for field installation of liquid-tight conduit and an external field-installed disconnect switch.

Through the Base Electrical with Circuit Breaker

This option is a thermal magnetic, molded case, HACR Circuit Breaker with provisions for through the base electrical connections. The circuit breaker will be installed in a water tight enclosure in the unit with access through a swinging door. Wiring will be provided from the switch to the unit high voltage terminal block. The circuit breaker will provide overcurrent protection, be sized per NEC and UL guidelines, and be agency recognized by UL/CSA.

Through the Base Gas Piping

The unit shall include a standard through the base gas provision. This option shall have all piping necessary including, black steel, manual gas shut-off valve, elbows, and union. The manual shutoff valve shall include a 1/8" NPT pressure tap. This assembly will require minor field labor to install.

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.

Froststat

This option is to be utilized as a safety device. The Froststat opens when temperatures on the evaporator coil fall below 10°F. The temperature will need to rise to 50°F before closing. This option should be utilized in low airflow or high outside air applications. (Cooling with Electric Heat Only.)

Gas Heating Section

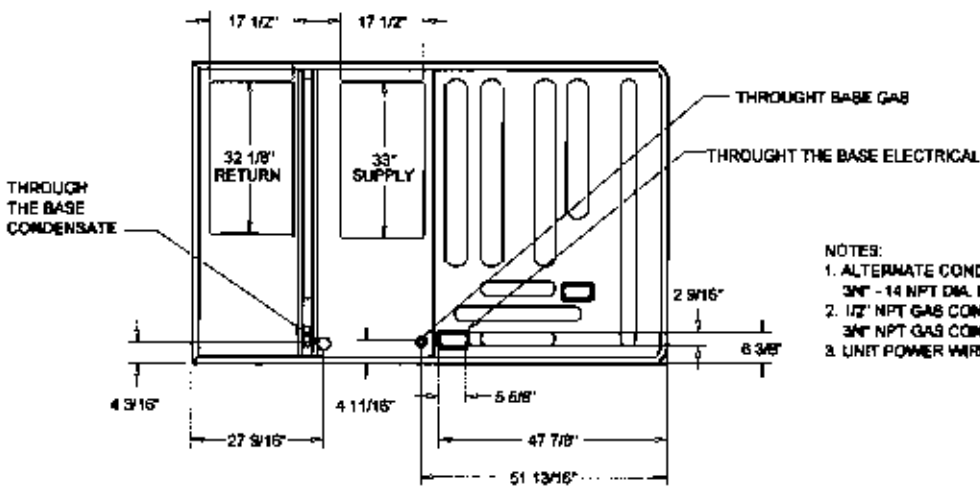
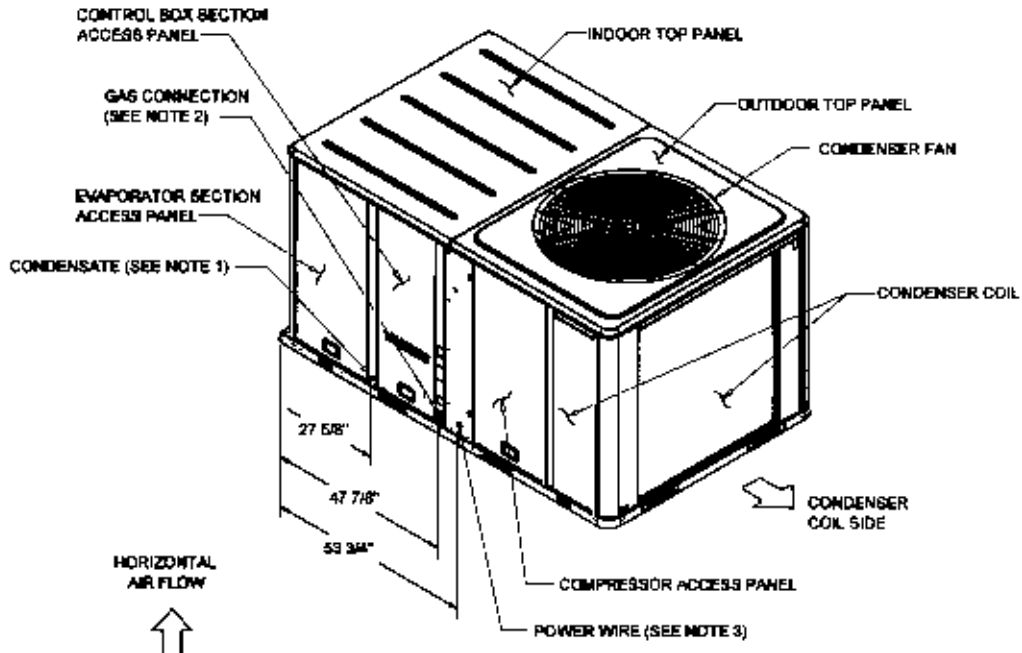
The heating section shall have a progressive tubular heat exchanger design using stainless steel burners and corrosion resistant steel throughout. An induced draft combustion blower shall be used to pull the combustion products through the firing tubes. The heater shall use a direct spark ignition (DSI) 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).

Indoor Fan

All indoor motors on 7.5 ton high efficiency, 8.5 ton high efficiency, and 10 ton standard and high efficiency units shall be direct drive type. All other ID fan motor shall be Belt Drive and thermally protected. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

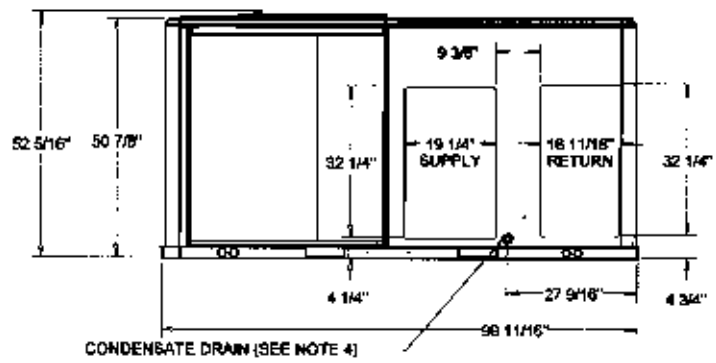
Plenum Fan

The following unit shall be equipped with a direct drive plenum fan design (all 10 tons and 7.5-8.5 ton high efficiency units). 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.

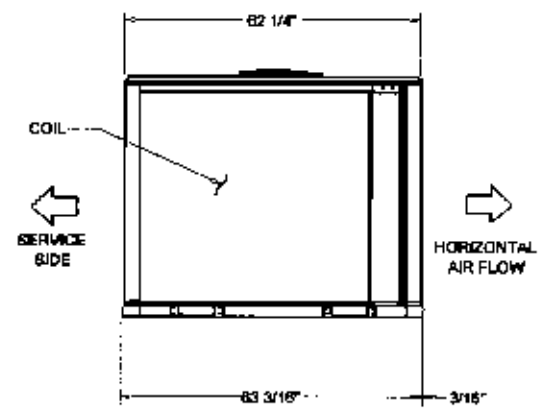


- NOTES:
1. ALTERNATE CONDENSATE DRAIN CONNECTION
3/4" - 1/4 NPT DIA. HOLE
 2. 1/2" NPT GAS CONNECTION (80 mch, 120 mch);
3/4" NPT GAS CONNECTION (150mch, 200mch, 250mch)
 3. UNIT POWER WIRE 1 3/8" DIA. HOLE

BOTTOM OF UNIT
DOWN FLOW



HORIZONTAL FLOW SIDE
DIMENSION DRAWING



CONDENSER COIL SIDE
DIMENSION DRAWING

Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A1 Qty: 1

ELECTRICAL / GENERAL DATA

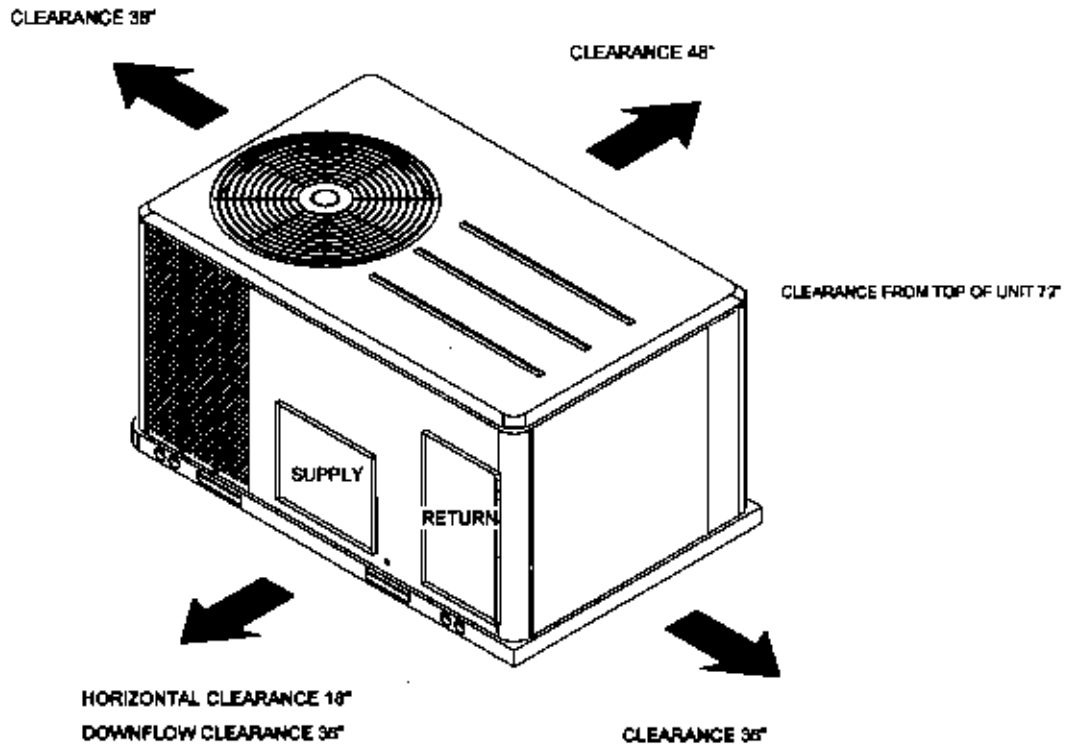
GENERAL ⁽¹⁾⁽⁴⁾⁽⁵⁾ Model: YHC120E Unit Operating Voltage: 187-253 Unit Primary Voltage: 208 Unit Secondary Voltage: 230 Unit Hertz: 60 Unit Phase: 3 EER: 12.5 Standard Motor MCA: 90.3 MFS: 80.0 MICB: 80.0		Oversized Motor MCA: MFS: MICB: Field Installed Oversized Motor MCA: MFS: MICB:		HEATING PERFORMANCE HEATING - GENERAL DATA Heating Model: High Heating Input (Btu): 750,000/75,000 Heating Output (Btu): 200,000/40,000 No. Burners: 5 No. Stages: 2 Gas Inlet Pressure Natural Gas (Min/Mix): 4.5/14 LP (Min/Mix): 10.0/4.0 Gas Pipe Connection Size: 3/4"													
INDOOR MOTOR Standard Motor Number: 1 Horsepower: 3.8 Motor Speed (RPM): - Phase: 3 Full Load Amps: 8.5 - 8.5 Locked Rotor Amps: ..						Oversized Motor Number: Horsepower: Motor Speed (RPM): Phase: Full Load Amps: Locked Rotor Amps:						Field Installed Oversized Motor Number: Horsepower: Motor Speed (RPM): Phase: Full Load Amps: Locked Rotor Amps:					
COMPRESSOR Circuit 1/2 Number: 2 Horsepower: 4.9 / 3.3 Phase: 3 Rated Load Amps: 20.5 / 13.5 Locked Rotor Amps: 173.0 / 77.0			OUTDOOR MOTOR Number: 1 Horsepower: 0.75 Motor Speed (RPM): 1100 Phase: 3 Full Load Amps: 2.7 Locked Rotor Amps: 9.8														
POWER EXHAUST ACCESSORY ⁽⁶⁾ (Field Installed Power Exhaust) Phase: Horsepower: Motor Speed (RPM): Full Load Amps: Locked Rotor Amps:		FILTERS Type: Triowall Furnished: Yes Number: 3 / 2 Recommended: 20"x25"x2" 20"x30"x2"		REFRIGERANT ⁽²⁾ Type: R-410 Factory Charge Circuit #1: 12.8 lb Circuit #2: 11.8 lb													

NOTES:

1. Minimum (MACR) Circuit Breaker rating 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 read at ARI conditions and in accordance with DOE test procedure.

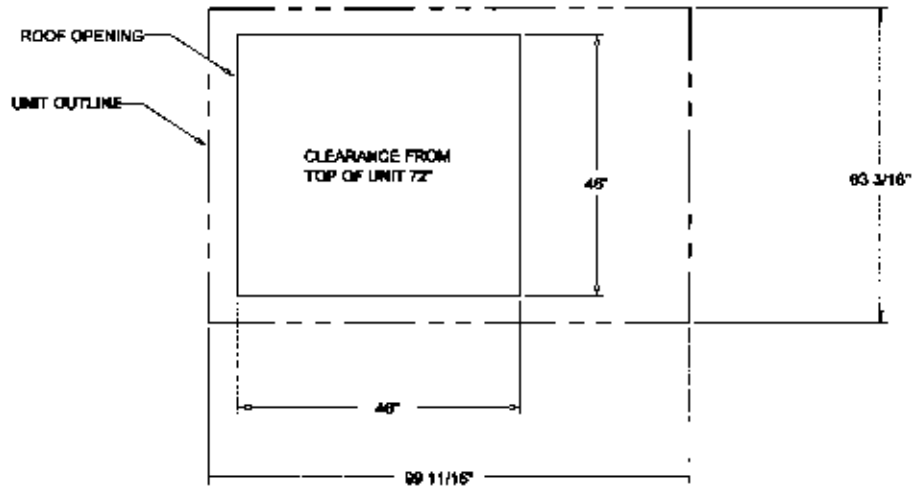
Weight, Clearance & Rigging Diagram - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A1 Qty: 1



PACKAGED GAS / ELECTRICAL

HORIZONTAL FLOW CLEARANCE

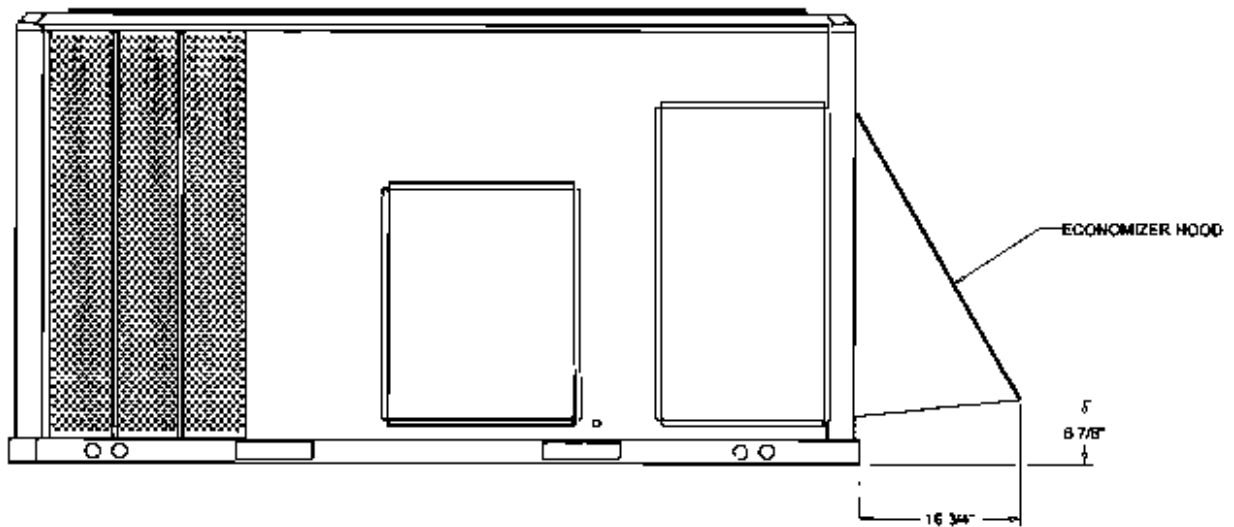
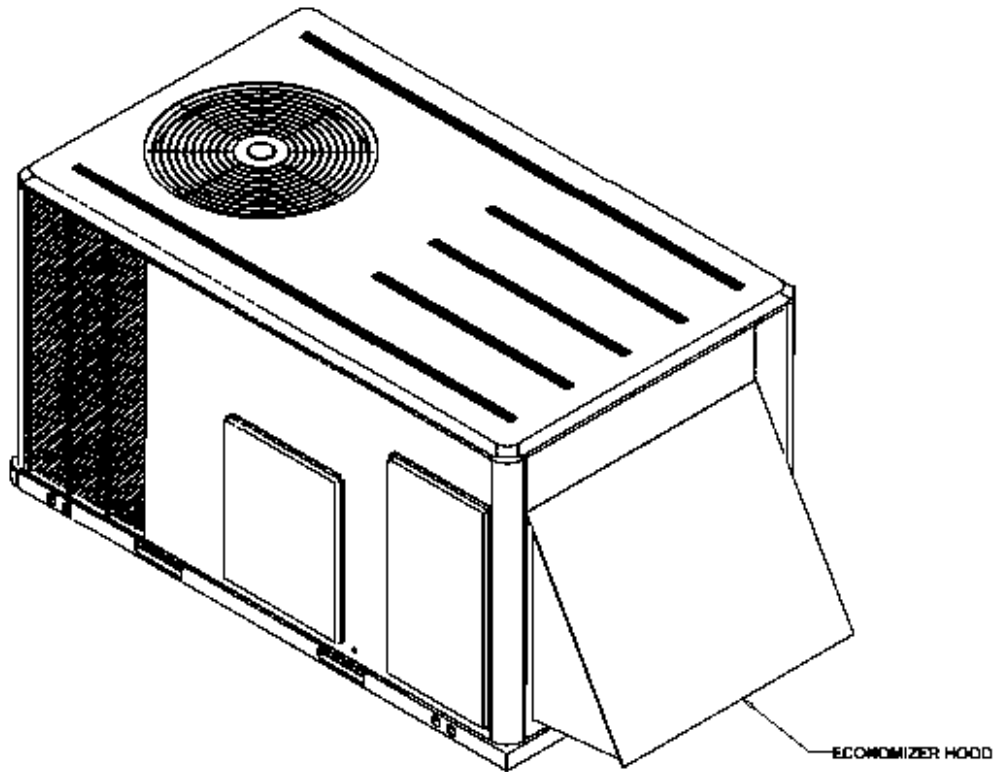


PACKAGED GAS / ELECTRICAL

DOWNFLOW CLEARANCE

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

Item: A1 Qty: 1

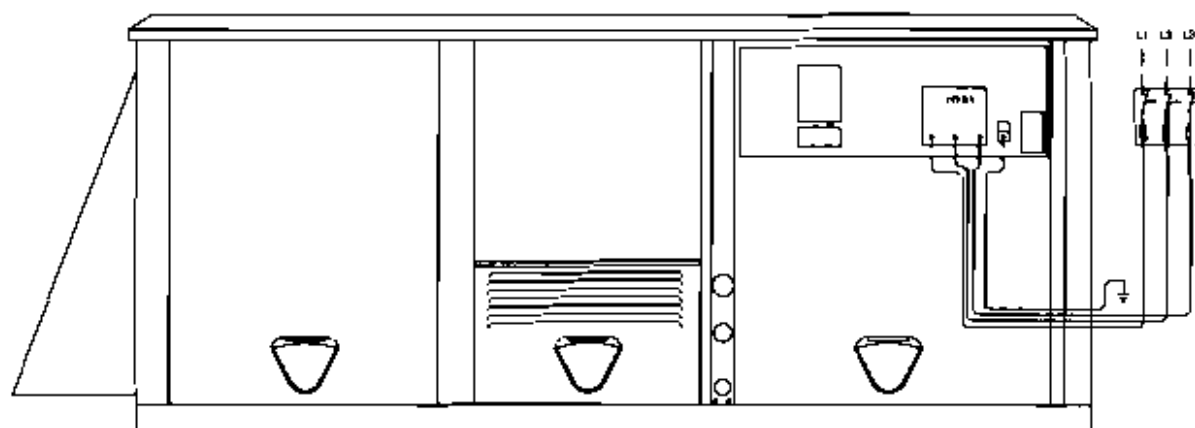


ECONOMIZER HOOD
ACCESSORY

Field Wiring - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A1 Qty: 1

7



ZONE SENSOR WIRE TABLE

WIRE SIZE	MAXIMUM WIRE LENGTH
22 GAUGE	1800'
20 GAUGE	3000'
18 GAUGE	4500'
16 GAUGE	7200'
14 GAUGE	11700'

NOTE:

1. All wiring and devices shown shall be to be supplied and installed by the customer in accordance with national and local electrical codes.
2. Low voltage control wiring shall not be run in conduit with power wiring.
3. Cut wire jumper adjacent to the terminal 1 on zone sensor.
4. Refer to zone sensor retailer's guide for zone sensor switch configuration.



PROJECT: Trader Joe's - Portland, ME
LOCATION: Portland
REFERENCE: Vestibule
DATE: 05/13/10
QUOTE #: Q-11355-w

Equipment Description

Direct gas-fired heater CSA certified to meet ANSI Z83.4/C9A3.7

Unit

Qty	Model	Configuration	Weight (each)
1	M110	Roof Top - Down Blast	800 lbs.



Ratings

Airflow		Heating Capacity		Temperature	
Design	TESP*	Input	Output	Rise	Inlet
2,500 CFM	0.95"WC	278 MBH	256 MBH	100°F	-3°F

* Includes allowance for 0.700"WC external static pressure by others

Standard Features

- Gas valve leak test switches
- Entering air thermostat / Low temperature cutout
- Service convenience switches
- Inlet bird screen
- External profile adjustment with pressure gauge
- Galvanized finish
- Faced NFPA 90A 1" thick insulation in unit cabinet
- Closed cell 1/4" thick rubber insulation in unit base
- Full 2 year parts warranty / 5 year burner warranty

Gas Information

Supply	Max Pressure	Inlet Size
Natural Gas	2 psi	3/4" NPT

- Cambridge Engineering 6" stainless steel burner
- High pressure regulator provided
- Maxitrol 14 gas controls
- Discharge temperature dial in remote control station

Selected Options

- Single rainhood
- V-bank filter section with 2" throwaway pleated filters
- Two position motorized inlet damper
- 24" mounting curb with duct supports

Electric Information

Supply	HP	FLA
208V/3PH/60HZ	2	9

- Integral disconnect switch with line fusing
- EPACT efficiency ODP motor with adjustable sheaves
- Integral motor starter with thermal overloads
- Smoke detector interlock
- Remote control station including:
 - Electronic setback thermostat

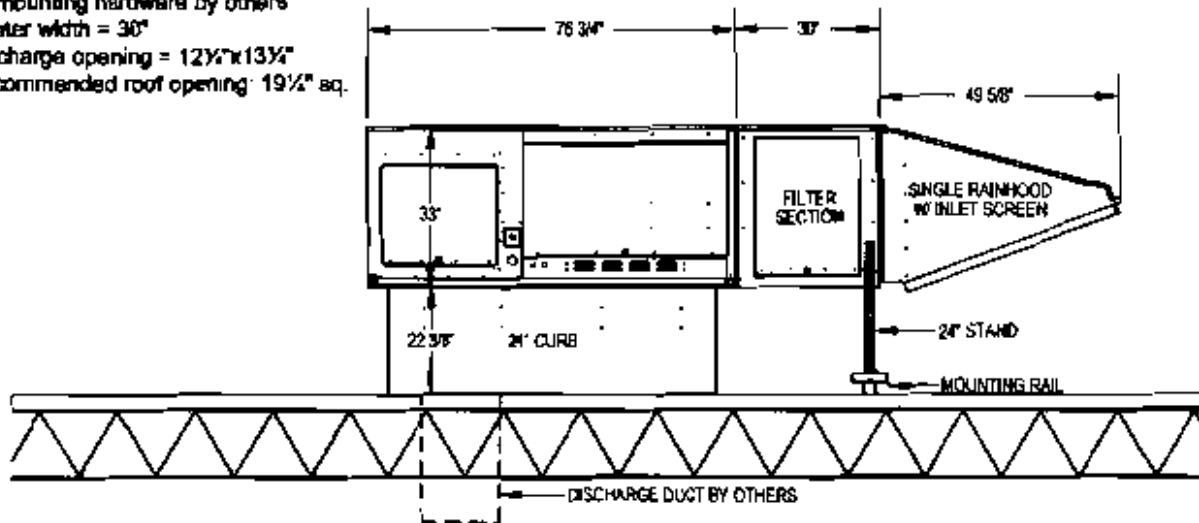


Model M110 Makeup Air Heater
Outdoor Roof Top - Down Blast Configuration

PROJECT: Trader Joe's - Portland, ME
LOCATION: Portland
REFERENCE: Vestibule
DATE: 05/13/10
QUOTE #: Q-11355-w

NOTES:

- All mounting hardware by others
- Heater width = 30"
- Discharge opening = 12 3/4" x 13 3/4"
- Recommended roof opening: 19 1/2" sq.



Gas Information

Supply	Max Pressure	Inlet Size
Natural Gas	2 psi	3/4" NPT

- Cambridge Engineering 6" stainless steel burner
- High pressure regulator provided
- Maxtrol 14 gas controls
- Discharge temperature dial in remote control station

Electric Information

Supply	F.P.	FLA
208V/3PH/60HZ	2	9

- Integral disconnect switch with line fusing
- EPACT efficiency ODP motor with adjustable sheaves
- Integral motor starter with thermal overloads
- Smoke detector interlock
- Remote control station including:
 - Electronic setback thermostat

Unit Specifications

Qty	Airflow	TTSP*	Input	Output	Weight (ea.)
1	2,500 CFM	0.85"WC	278 MBH	256 MBH	800 lbs.

* Includes allowance for 0.700"WC external static pressure by others

- Galvanized finish
- Externally adjustable profile damper with integral pressure gauge
- 2" throwaway pleated filters
- Faced NFPA 90A 1" thick insulation in unit cabinet
- Closed cell 1/2" thick rubber insulation in unit base
- Full 2 year parts warranty / 5 year burner warranty





Des Champs Products

Submittal Data

Air-to-Air Energy Saving Systems

ORDER NAME: TRADER JOE'S

ORDER NUMBER: 70040

ENGINEERED BY: HIPES

DATE: JUNE 3, 2010

Submittal Revision History

70040 Trader Joe's
Engineered by: Hipes

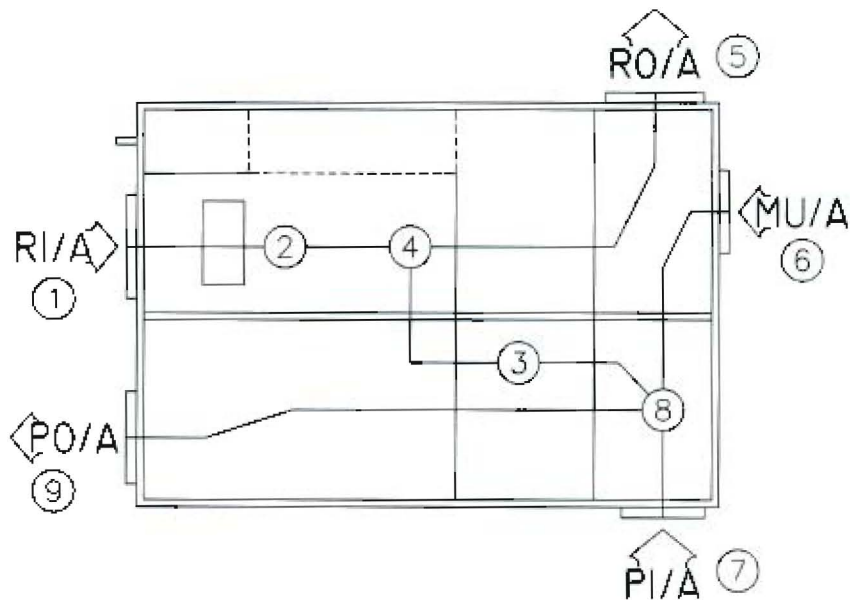
Rev	Page	Description	By	Date
-	All	Initial release	Hipes	6/3/10
A	6-8	Changed gas heat safeties to new standard.	Hipes	7/12/10



Unit Performance

ORDER NUMBER: 70040

General	Unit Tag	None	
	Unit Type	Desiccant Dehumidifier	
	Model Number	A10G	
Fan Data	Type	Process	Reactivation
	Airflow (SCFM)	2500	752
	External Static Pressure (in WG)	1.5	1
	Motor Horsepower (HP)	3	2



Operating Point	Summer (0 CFM OA)		
	DB (°F)	Gr/Lbs	SCFM
1	88	98	600
2			600
3	207	100	100
4	244	134	700
5	120	229	700
6	-	-	0
7	68	52	2,500
8	96	14	2,500
9	98	14	2,500



Unit Specifications

ORDER NUMBER: 70040

GENERAL NOTES

- Unit is rated at 0 feet above sea level.
- Input Power: 208 Volts / 60 Hertz / 3 Phase
- Unit to be constructed for indoor use.

UNIT CASING

- Single wall casing consisting of 0.080" aluminium panels.
- 14 gauge all-welded aluminized steel interior floor with upturned edges around perimeter and openings.
- 1" fiberglass ductboard to be mechanically secured to all walls and under floor with no exposed edges.
- 2" fiberglass ductboard to be mechanically secured to roof with no exposed edges.
- Roof panels shall be formed with a standing seam and cap to prevent water leakage.

BASE FRAME

- Bolted formed channel construction using 14 gauge galvanized steel around the base perimeter.
- Entire base frame (including interior supports) to be made from galvanized steel.

DESICCANT DEHUMIDIFIER SECTION

- Non-cyclic sorption type with a single desiccant rotary structure designed for continuous operation.
- Construction arrangement shall provide counter flow of process and reactivation streams with full-face pressure seals to prevent cross leakage with static pressures up to 8 inches of water column.
- Rotary structure shall consist of 100% inert silicates impregnated with an inorganic, non-granular, crystalline desiccant which transfer water in vapor phase or of a non-crystalline form of silicon dioxide (silica gel). The design shall assure laminar airflow through the structure for minimum pressure loss.

FANS (PROCESS AND REACTIVATION)

- Direct-drive airfoil plenum fans.
- High efficiency TEFC motors with 1.15 service factor.

FILTERS

- Process air bank consisting of 2", 30" pleated filters. The bank will utilize: one (1) 24 x 24, one (1) 20 x 20, and two (2) 16 x 20 filters.
- Reactivation air bank consisting of 2", 30" pleated filters. The bank will utilize: one (1) 20 x 20 filter.

GAS HEAT (REACTIVATION)

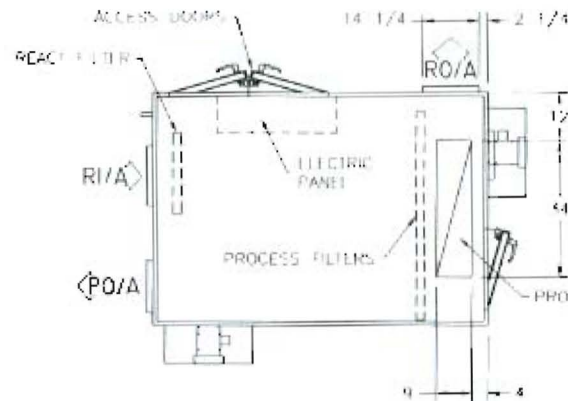
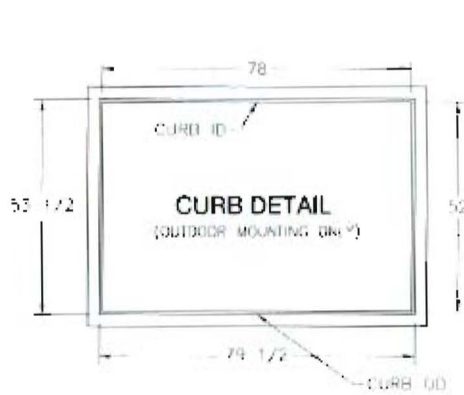
- Direct gas-fired type with stainless steel burners and modulating control.
- Gas heater capable of 50 to 200 MBH output with Natural Gas at a inlet pressure of 7-14 in WC.
- Burner shall not produce any measurable carbon monoxide in the airstream.
- Gas train shall be designed to meet ANSI requirements.

DAMPERS AND LOUVERS

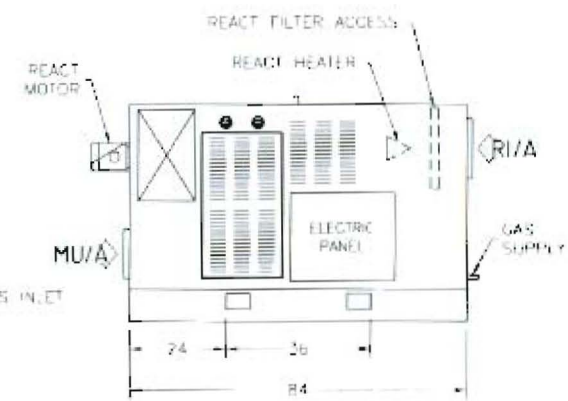
- Optional make-up air balancing damper shall be constructed with heavy gauge galvanized steel frame and galvanized steel blades with oil bushings.
- Damper shall be oppsed blade type and will include a manual operate with locking quadrant.
- On indoor mounted units, duct connections shall be provided for outside air intake of reactivation, and make-up air.

MISCELLANEOUS

- Factory-mounted electro-mechanical controls with a single point power connection.
- Unit wiring is plenum rated and will be installed in liquid-tight conduit.
- Remote humidistat provided by Munters for field mounting by others.

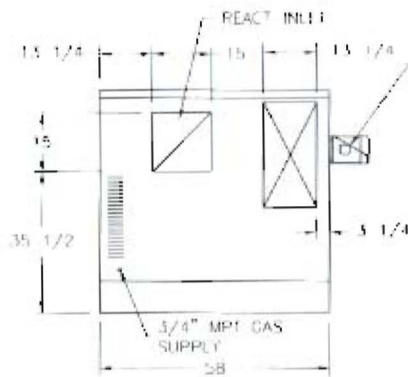


PLAN VIEW



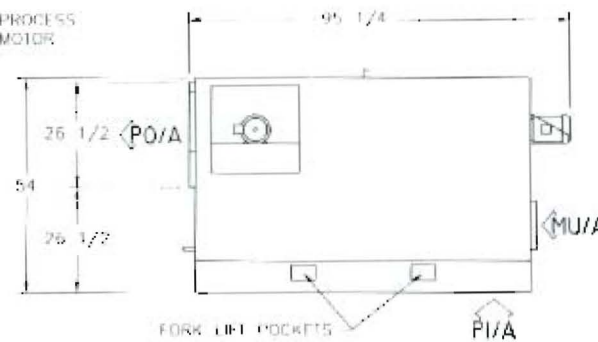
ELEVATION VIEW

FARSIDE VIEW



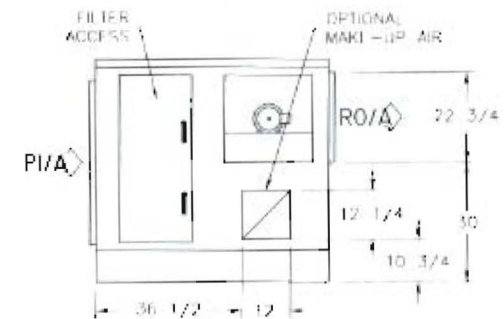
END VIEW

LEFT END



ELEVATION VIEW

NEARSIDE VIEW



END VIEW

RIGHT END

NOTES:

1. MINIMUM 4" (102.4mm) CLEARANCE REQUIRED FOR SERVICE ACCESS (COILS MAY REQUIRE MORE ACCESS FOR REMOVAL)
2. WEATHER HOODS (REQUIRED ON OUTDOOR UNITS) MAY BE SHIPPED IN PIECES FOR ASSEMBLY AND INSTALLATION BY OTHERS.
3. ATTENUATION OF FAN SOUND POWER LEVELS, IF REQUIRED, IS BY OTHERS.
4. UNIT SHOWN WITH GAS REACTIVATION. ELECTRIC REACTIVATION ALSO AVAILABLE.

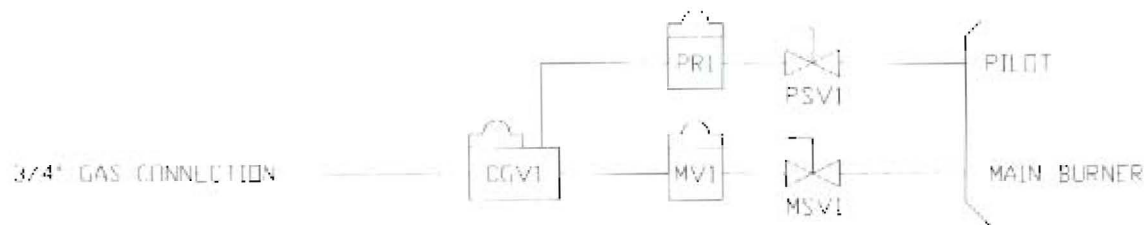
AIR FLOW KEY:
 P/I/A PROCESS INLET AIR
 P/O/A PROCESS OUTLET AIR
 R/I/A REACT INLET AIR
 R/O/A REACT OUTLET AIR
 MU/A MAKE UP AIR

UNIT TAG: NONE
 ITEM #: D05025-0001
 S/O NUMBER 80065
 UNIT QUANTITY: 1 TOTAL
 EST. UNIT WEIGHT: 1,400 LBS

ORDER NO 70040			
APPROVALS		ORDER NAME: TRADER JOE'S	
DATE	6/23/10	UNIT TYPE	DESICCANT DEHUMIDIFIER
DRAWN	H.P.F.S.	TITLE	MECHANICAL LAYOUT
CHKD		S/O	AWG NO: 70040 M AA01
APPRO		A	
SHEET 1 OF 1	SCALE: NTS	MODEL	AT0G

GAS HEATING COMPONENTS

- CGV - COMBINATION GAS VALVE
- MV - MODULATING GAS VALVE
- PR - PILOT REGULATOR VALVE
- MSV - MAIN SHUT OFF VALVE
- PSV - PILOT SHUT OFF VALVE



ORDER NO. 70040		 Munters	
		ORDER NAME: TRADER JOE'S	
APPROVALS	DATE	UNIT TYPE	DESICCANT DEHUMIDIFIER
DRAWN: HPLS	6/3/10	FILE	GAS TRAIN PIPING
CHKD		SIZE	INCH
APRD		SIZE	A
SHEET 1 OF 2		SCALE	NTS
		WORK NO	70040 M-AA02
		WORK	A106

UNIT TAG: NONE
 EM # 005025 0001
 S/O NUMBER: 80065
 UNIT QUANTITY: 1 TOTAL

NOTE: THIS DRAWING IS FOR REFERENCE ONLY.

ORDER NUMBER
70040

Munters

ORDER NAME: TRADER JOE'S

TYPE: DESICCANT DEHUMIDIFIER
TITLE: ELECTRICAL SCHEMATIC
SIZE: A
MODEL: A10G

DRAWN: HIPES
DATE: 6/3/10
SCALE: NTS
DRAWING NUMBER: 70040-E-AA01

NOTES:

- SEE MCDLA FILES FOR COMPLETE LIST OF MATERIALS
- THIS DRAWING REPRESENTS THE FOLLOWING SHOP ORDER NUMBER(S)
80065 (DDS025-0001)
- FUSE TYPE KEY:
TYPE 1: CLASS CC FOR MOTOR PROTECTION, 600V, 200KA INTERRUPT RATING
TYPE 2: CLASS CC FOR CONTROL TRANSFORMER PROTECTION, 600V, 200KA INTERRUPT RATING
TYPE 3: CLASS CC FOR GENERAL PURPOSE PROTECTION, 600V, 200KA INTERRUPT RATING
TYPE 4: CLASS J FOR GENERAL PURPOSE PROTECTION, 600V, 300KA INTERRUPT RATING, REDUCED DIMENSION
TYPE 5: CLASS RK1 FOR GENERAL PURPOSE PROTECTION, 250V, 300KA INTERRUPT RATING
TYPE 6: CLASS RK1 FOR GENERAL PURPOSE PROTECTION, 600V, 300KA INTERRUPT RATING
TYPE 7: CLASS J FOR GENERAL PURPOSE PROTECTION, 600V, 300KA INTERRUPT RATING, FINGER SAFE
TYPE 8: CLASS T FOR GENERAL PURPOSE PROTECTION, 600V, 200KA INTERRUPT RATING

- MOUNT LIMIT SWITCH (LS1) NEXT TO THE OUTER RIM OF THE DESICCANT WHEEL. SET SWITCH TO CLOSE WHEN TARGET PASSES DUE TO ROTATION OF WHEEL.
- MOUNT HUMIDISTAT (HM1) IN THE SPACE TO BE CONTROLLED. WIRED DEVICE BACK TO UNIT AS SHOWN.
- SET TEMPERATURE CONTROLLER (TC1) FOR 120°F. SET CONTROLLER AS FOLLOWS: MIN OUT = 0, TR = 20°F, INTEGRATION = SLOW, AND OPERATION TO REVERSE.
- MOUNT TEMPERATURE SENSOR (SEN1) IN THE REACTIVATION FAN OUTLET.
- SMOKE DETECTOR AND POWER MONITOR INTERLOCKS ARE OPTIONAL. IF REQUIRED, REMOVE FACTORY JUMPERS.
- MOUNT AIR PRESSURE SWITCH (APS1) ACROSS THE REACT SIDE OF THE WHEEL. SET SWITCH TO CLOSE AT 1.25 IN WC ON A RISE IN PRESSURE DIFFERENTIAL.
- MOUNT AIR PRESSURE SWITCH (APS2) ACROSS THE REACT BURNER. SET THE SWITCH TO OPEN AT 0.8 IN WC ON A RISE IN DIFFERENTIAL PRESSURE.
- MOUNT BULB OF REACT OVERHEAT THERMOSTAT (HT1) IN THE INLET FACE OF THE REACT SIDE OF THE WHEEL. SET SWITCH TO OPEN AT 300°F ON A RISE IN TEMPERATURE.
- MOUNT TIP OF FLAME-ROLL OUT THERMOSTAT (HT2) ABOVE THE GAS BURNER. SET SWITCH TO OPEN AT 200°F ON A RISE IN TEMPERATURE. THERMOSTAT IS MANUAL RESET.

- SET ON-DELAY TIMER (TR1) FOR 10 MINUTES.
- SET OFF-DELAY TIMER (TR4) FOR 6 MINUTES.
- SET ON-DELAY TIMER (TR2) FOR 20 SECONDS.

ALL WIRING TO BE INSTALLED IN LIQUID-TIGHT CONDUIT.

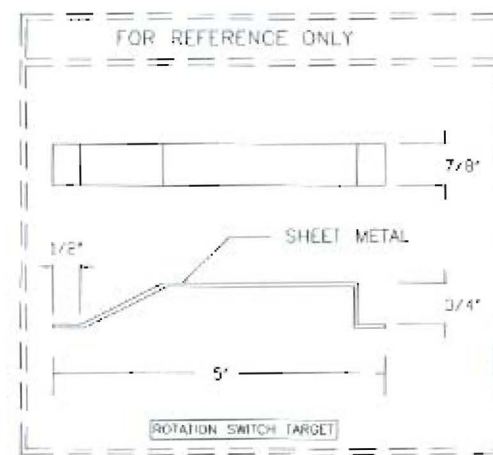


WARNING
HAZARDOUS VOLTAGE

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

ALL FIELD WIRING MUST BE IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL ELECTRICAL CODES.

APS	AIR PRESSURE SWITCH
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CON	CONTACTOR
CR	CONTROL RELAY
CSR	CURRENT SENSOR RELAY
DDC	DIRECT DIGITAL CONTROLLER
DF	DISCONNECT FUSE
DLS	DOOR LIMIT SWITCH
DM	DAMPER ACTUATOR
DS	DISCONNECT SWITCH
ES	END SWITCH
F	FUSE
FS	FLOW SWITCH
FTS	FLOAT SWITCH
H	HUMIDISTAT
HC	HUMIDITY CONTROLLER
LCD	DISPLAY MODULE
LS	LIMIT SWITCH
LT	PILOT LIGHT
M	MOTOR CONTROLLER
OL	OVERLOAD RELAY
PDB	POWER DISTRIBUTION BLOCK
PKS	PARK SWITCH
PMP	PUMP
PPR	POWER PROTECTION RELAY
PR	POWER RELAY
PS	PRESSURE SWITCH
PWR	POWER SUPPLY
R	RESISTOR
REC	RECEPTACLE
S	SWITCH
SC	STEP CONTROLLER
SCR	SCR CONTROL MODULE
SD	SMOKE DETECTOR
SEN	SENSOR
SSM	SOLID STATE MODULE
SSR	SOLID STATE RELAY
T	THERMOSTAT
TB	TERMINAL BLOCK
TC	TEMPERATURE CONTROLLER
TOR	TIME DELAY RELAY
TRF	TRANSFORMER
VFD	VARIABLE FREQUENCY DRIVE
VM	VALVE ACTUATOR
VPL	VAPOR PROOF LIGHT
XP	EXPANSION MODULE
XT	EXTENSION MODULE



	FACTORY WIRING
	FIELD WIRING
	UNIT PANNEL TERM. P1
	REMOTE TERM. P1
	SIGNAL PANNEL TERM. P1

ORDER NUMBER
70040

Munters

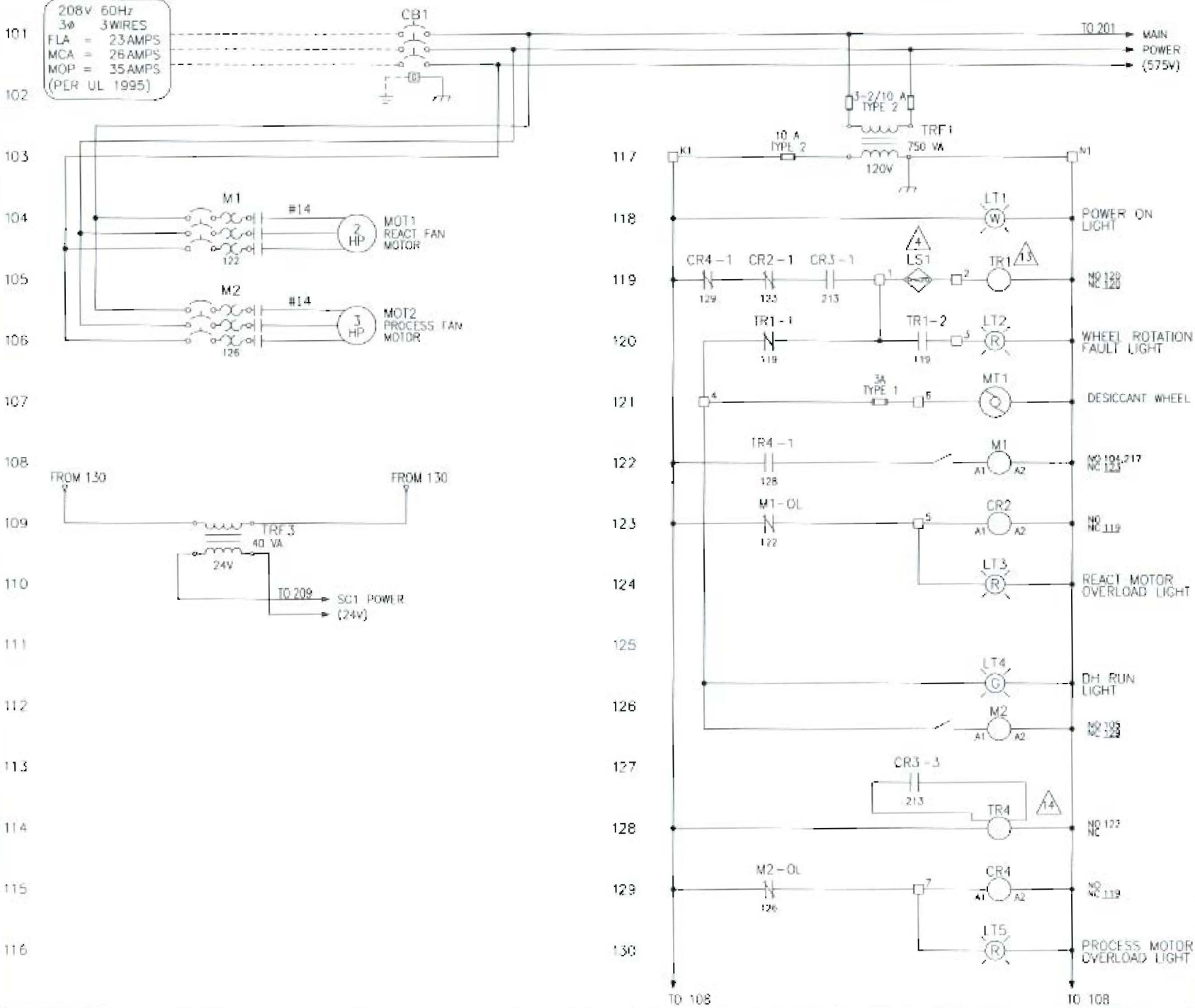
SIZE A
MODEL A10G

ORDER NAME
TRADER JOE'S

TYPE
DESICCANT DEHUMIDIFIER

DRAWN: HIPFS
DATE: 6/3/10
SCALE: NTS
DRAWING NUMBER: 70040-E-M01

208V 60Hz
3φ 3WIRES
FLA = 23AMPS
MCA = 26AMPS
MOP = 35AMPS
(PER UL 1995)



ORDER NUMBER
70040



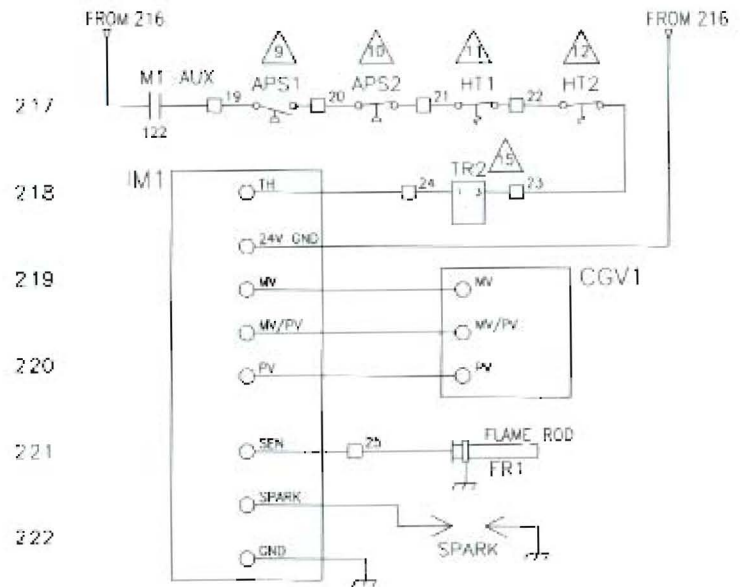
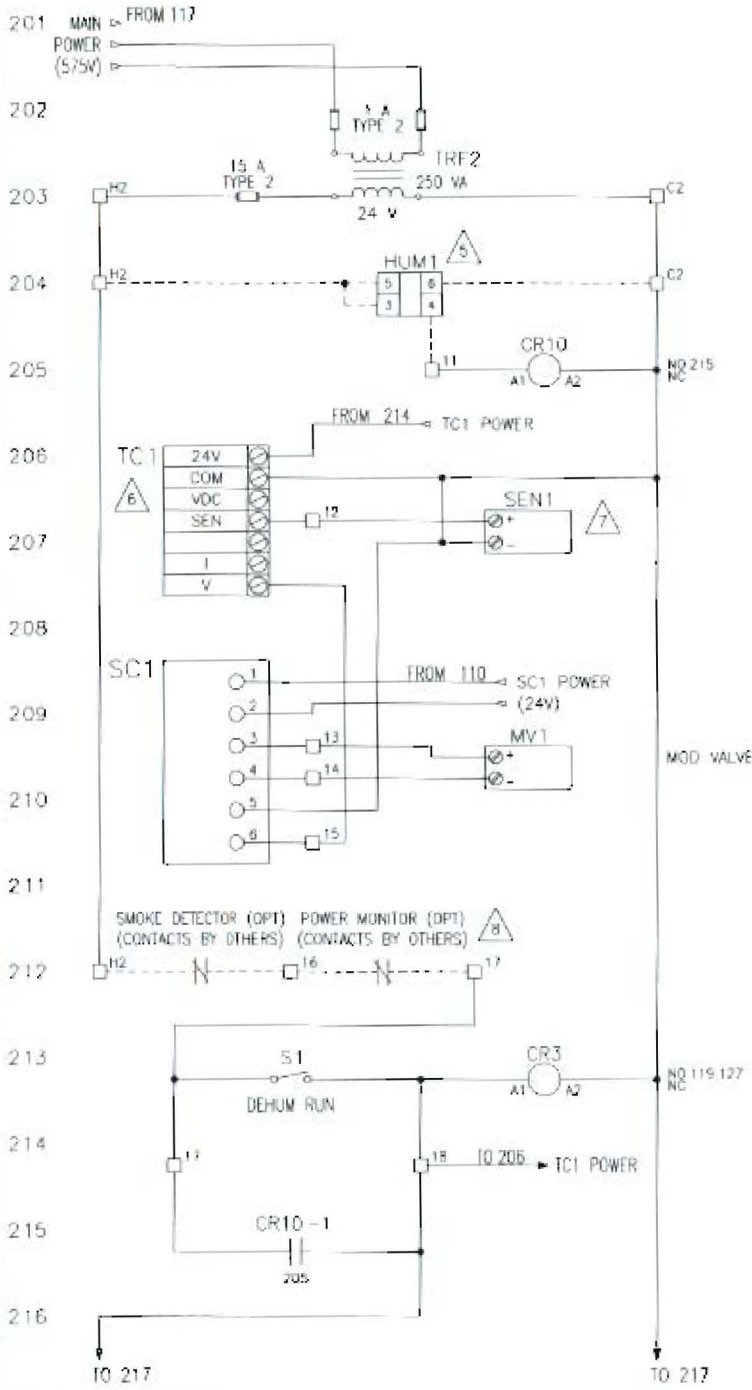
SIZE A
MODEL A10G

ORDER NAME
TRADER JOE'S

TYPE
DESICCANT DEHUMIDIFIER

TITLE
ELECTRICAL SCHEMATIC

DRAWN: HIPES
DATE: 6/3/10
SCALE: NTS
DRAWING NUMBER: 70040-E-A01



217
218
219
220
221
222
223
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225
226
227
228
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230

Unit Control Sequence

Job Number: 70040 Engineered by: Hipes
Job Name: Trader Joe's
Unit Tag(s): None
Item Number(s): DDS025-0001
S/O Number(s): 80065

Unit Operation

The Munters unit is an environmental control system designed specifically for the unique dehumidification of facilities. With the main disconnect turned on, and the Auto-Manual switch at the electrical panel turned to the Auto position, the unit will energize in response to a signal from a space mounted humidistat. If the humidity level in the space exceeds the control set point, then the dehumidifier is energized.

The dehumidifier consists of a Honeycombe desiccant wheel, a wheel drive motor, a process air circuit, and a reactivation air circuit. On a call for dehumidification, the desiccant wheel drive motor is energized to rotate the wheel through the process and reactivation air streams at a rate of 8 RPH. The supply fan is energized to draw a blend of outside air and/or return air from the space through the desiccant wheel. The desiccant draws water vapor from this air stream which is then returned to the space through the process blower. The reactivation air fan and heater are energized to draw heated outside air through the wheel. The air is heated by the direct-fired gas burner and this heated air drives the moisture from the desiccant and is discharged to the atmosphere.

The dehumidification process is continuous as the desiccant wheel rotates through the process and reactivation air streams. When the space humidity returns to its control set point, the dehumidifier is de-energized.

The New York Blower Company

Fan-to-Size

Fan Selection Data

Project:	
Location:	
Contact:	

Fan Tagging: Supply Fan

Fan Design

Product:	OEM Wheels	Arrangement:	[not specified]
Size/Model:	13	Drive type:	Direct
Wheel Type:	Acoustafoil	AMCA Performance Class:	2
Wheel Material:	Aluminum		
Wheel Width:	90.0 %	Wheel Diameter:	100.0 %

The fan housing width (M) for this narrow-width fan will be 0.0 inches. This measurement is the same as that of our standard fan housing.

Operating Conditions

Volume Flow Rate:	2,500 CFM	Fan Speed:	3427 rpm
Fan Static Pressure:	4.62 in wg	Fan Input Power:	2.89 bhp
Altitude (above mean sea level):	0 ft	Operating Temperature:	70 Deg F
Operating Inlet Airstream Density:	0.0750 lb/ft3		
Maximum Operating Temperature:	70 Deg F	Maximum Safe Operating Speed:	4330 rpm

Operating cost is \$412.75 for 1,778. hours with a 93% efficient motor when energy unit cost per kW-hr is 0.10

Sound Power Level Ratings Levels expressed in dB (power levels reference 10⁻¹² watts)

No sound data available for this fan type/size/wheel.

Your Representative:
 Southeastern Eng Sales Inc
 1001 Port Walthall Drive
 Colonial Heights, VA 23834
 Phone: (804) 526-2984
 Fax: (804) 526-8370
 E-Mail: seeng@earthlink.net

The New York Blower Company

Fan-to-Size

Volume Flow Rate: 2,500 CFM

Fan Static Press.: 4.62 in wg

Speed: 3427 rpm

Power: 2.89 bhp

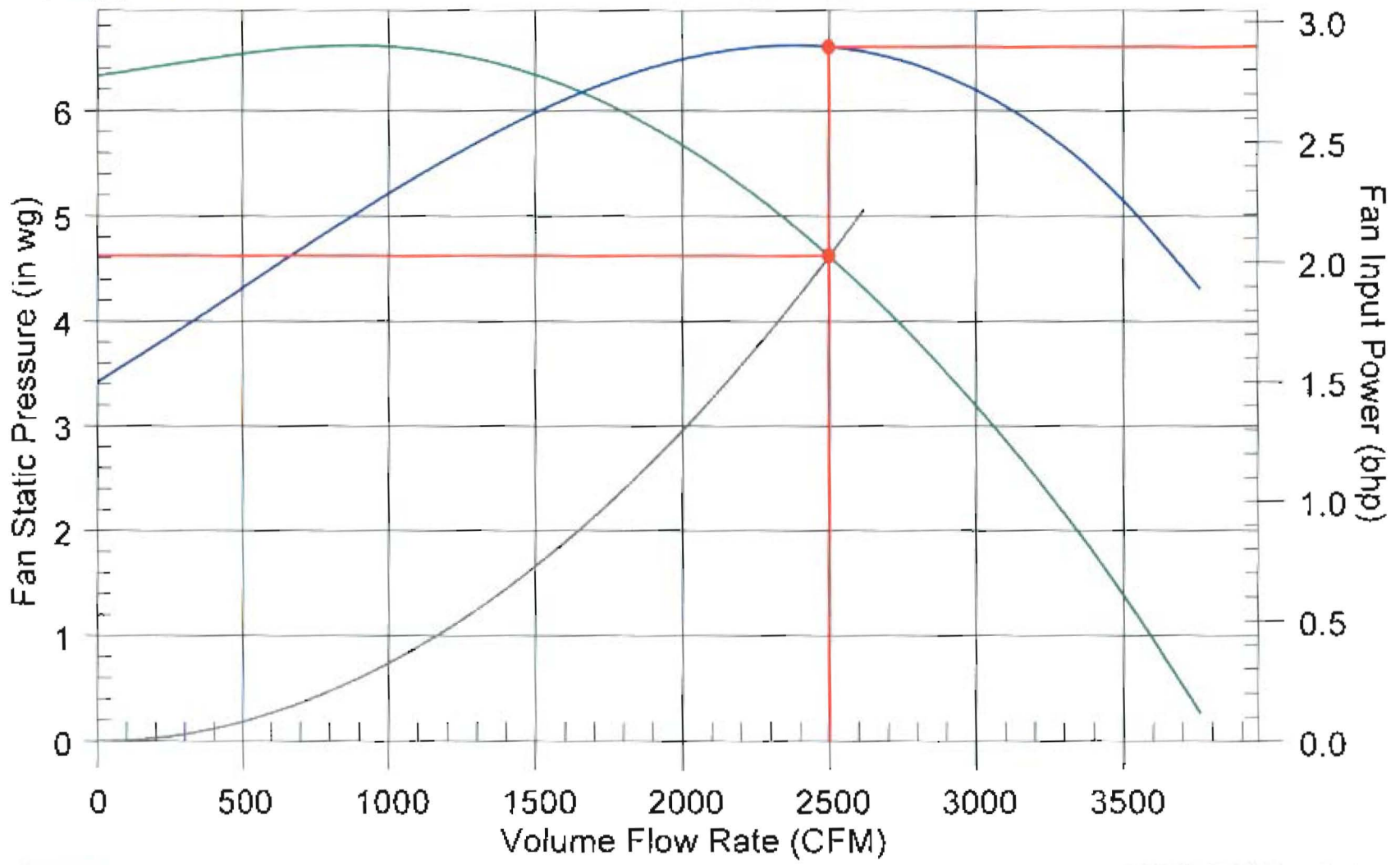
Temp.: 70 Deg F

Altitude: 0 ft

Density: 0.0750 lb/ft³

OEM Wheels
13 Acoustafoil, 90.0% Width
Class: 2

Tag: Supply Fan



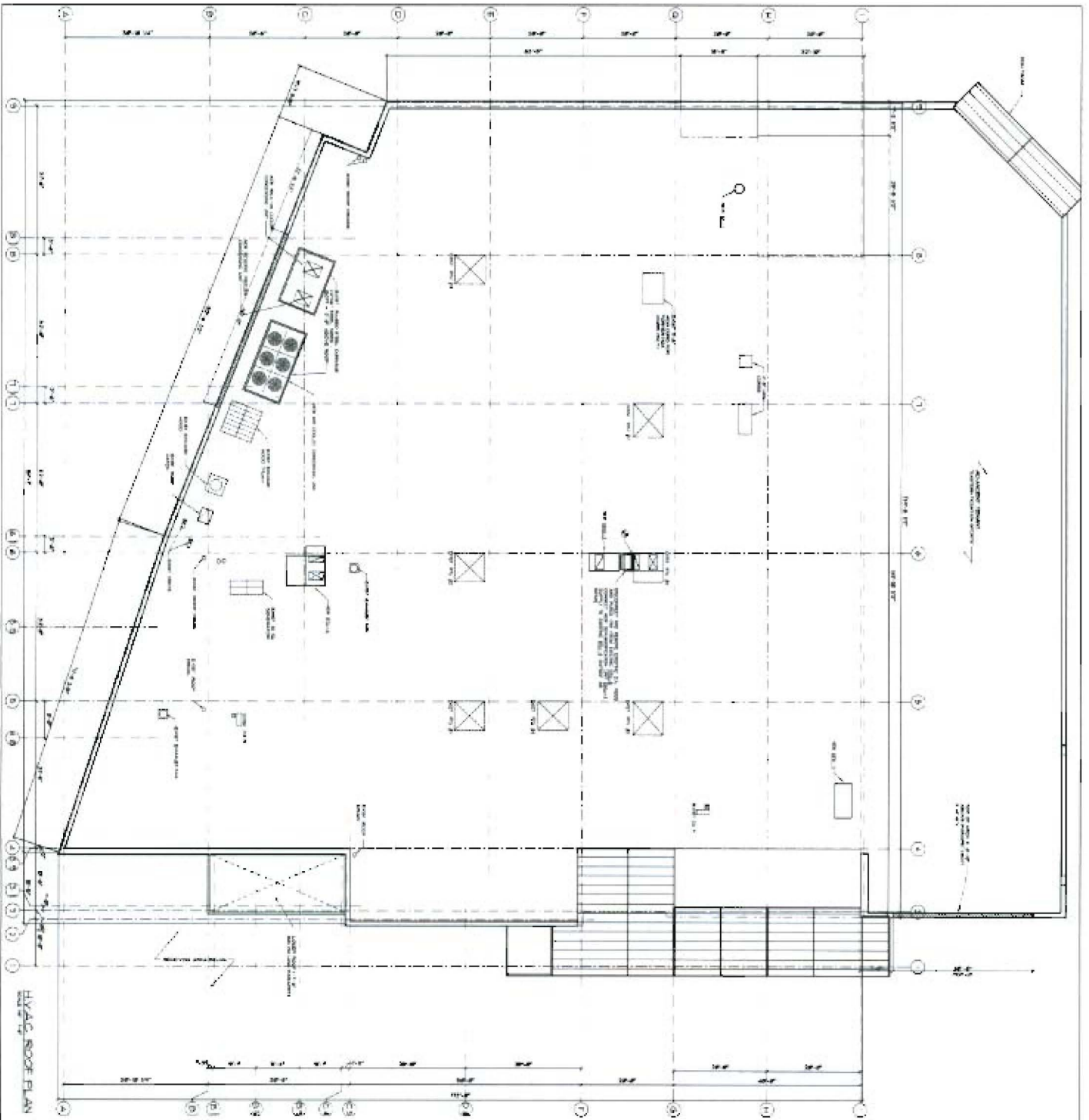
Customer:
Des Champs Technologies

[v1.74.60 -- January 2007] Date Printed: 12/14/09
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Your Sales Representative:
Southeastern Eng Sales Inc
Phone: (804) 526-2984

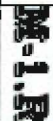
Version: 1.74.60 (January 2007)
Part Number: 70040 Trader Joe's, Rev A

Printed: 12/14/2009 PDF. Calc Mode: 1





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 TEL: 503.281.1111
 WWW.PHILLIPSANDSMITH.COM



TRADER JOE'S
 87 MARSHAL WAY
 PORTLAND, OR 97201
 10/1/2010
 HVAC ROOF PLAN

NO.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED FOR PERMIT	10/1/2010		
2	ISSUED FOR CONSTRUCTION	10/1/2010		
3	ISSUED FOR AS-BUILT	10/1/2010		
4	ISSUED FOR RECORD	10/1/2010		
5	ISSUED FOR ARCHIVE	10/1/2010		
6	ISSUED FOR CLOSURE	10/1/2010		
7	ISSUED FOR DESTRUCTION	10/1/2010		
8	ISSUED FOR REPAIR	10/1/2010		
9	ISSUED FOR RENOVATION	10/1/2010		
10	ISSUED FOR ADDITION	10/1/2010		
11	ISSUED FOR REMOVAL	10/1/2010		



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 Architects
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 SUITE 200
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 WWW.JEFFREYTAYLORARCHITECTS.COM

