Effective: September 2015
Supercedes: HY25-1890-M1/US June 2015

Parker Thermal Mass Dryer

Models PTM200 - PTM1000

PTM User Guide Rev D

ENGINEERING YOUR SUCCESS.

Contents

1. Transport / Inspection

Before unpacking/uncrating your new dryer, inspect the carton/crate for damage. Note any damage on the freight bill. File notice of concealed damage if:

(a) there are any dents in the cabinets
(b) there is any sign of oil on the skid or floor
(c) the refrigerant gauge shows NO pressure
(Upper right side – look for hole in packing)

File these claims with the carrier immediately!

Otherwise, proceed with unpacking/uncrating the unit.

1.1 Environmental & Location Considerations

CAUTION

Following these guidelines will help insure that your new dryer will provide safe and reliable service.

- Unless supplied for special conditions, all PTM dryers must be located indoors in an area with an ambient temperature between 41 - 100ºF (5-38ºC) and free from explosive and corrosive fumes. Three (3) feet (92cm) of space must be allowed between all open grills, walls, or other objects.

  If the dryer is installed in a confined area, an exhaust system must be provided to eliminate re-circulation of hot atmospheric air.

- With air cooled dryers, high ambient temperatures affect the outlet dewpoint of the dryer. The unit must not operate in an ambient of over 115ºF (46ºC). If ambient temperature conditions are over 100ºF (38ºC), water cooled dryers are generally recommended.

- Unit must be installed indoors.

- **Watercooled units** - A water strainer should be installed in the water inlet circuit to protect the heat exchanger from partial or complete blockage with a 16 - 20 mesh minimum, 20 - 40 mesh is a better choice.

- **Watercooled units** - The water media pH value should be maintained at 7.4 (not less than 7.0 and no higher than 8.0) for proper heat exchanger life expectancy.

2. Dryer Installation IMPORTANT

CAUTION

- NEVER work on unit under pressure
- NEVER work on unit when power is connected
- DO NOT over pressurize unit.
- DO NOT pass air through the unit until it has been stabilized (operating about 15-20 minutes)

2.1 Plumbing the Air Lines

The dryers are shipped ready to run. All connections are made to the outside of the cabinet.

- Air piping must be supported independently of the dryer.
- A properly sized Parker Airtek pre-filter must be installed ahead of the dryer to maintain optimal performance and warranty validation. It should be installed as close to the dryer as possible. Any piping between the pre-filter and inlet of the dryer must be stainless steel, copper, galvanized, aluminum or other non-corroding material.
- Direction of the air flow must be observed for proper installation.
- Install a bypass line and gate valves to permit isolation of the dryer from the air system. This is done to provide easy service and/or removal of the dryer without interruption of air to the system.
- Make the connection to the draining system, avoiding connection in a closed circuit shared by other pressurized discharge lines. Check the correct flow of condensate discharges. Dispose of all condensate in conformity with current local environment regulations.

2.2 Electrical Connections

To be performed by a qualified person only. Risk of serious injury or death. Observe Lock out/Tag Out Procedure: Disconnect, lock out and tag all power at source prior to attempting repairs or adjustments to rotating machinery and prior to handling any ungrounded conductors.

Provide breach and short circuit protection as well as disconnect means per local and national codes.

Before connecting electrical power to the dryer check for correct voltage at the connection box. Panel Removal: To remove front or side panels, remove screws and lift panel up, then pull out the bottom.

All units must be externally grounded to protect against severe electrical shock.

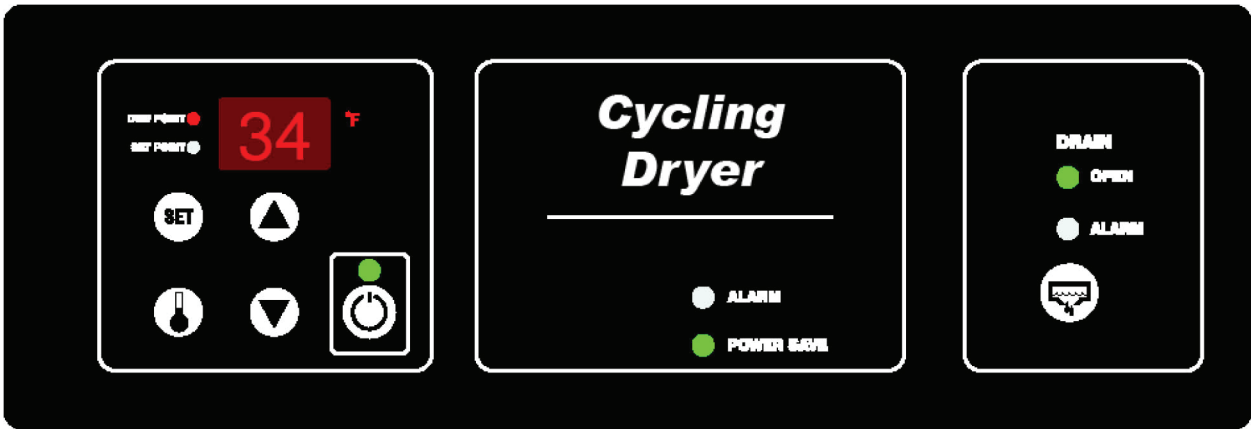
1. Remove electric box cover from inside unit.
2. Locate the wires.
3. Locate hole on side of box, place and tighten connector, run wires through connector.
4. Make sure no bare wire is exposed; replace box cover and screw closed.
5. Line input wiring connections are made to line side on compressor contactor
6. Should the compressor not start, see start up procedure.

Wire the dryer separately from the air compressor. The dryer must not cycle with the air compressor.

Crankcase heaters are pre-wired from the factory to the line side of the compressor contactor. When power is applied to the dryer, the heater will energize. Heater must be energized for 8 hours prior to start–up and after prolonged shut down. The power must be left on at all times except when servicing.

3. Controls

3.1 Controller



(1) Digital Controller and Display. The controller has two temperature sensors. The thermal mass fluid temperature, and dewpoint temperature. The default setting for the controller display is the current dewpoint. When the SET button is depressed, the unit displays the dryer dewpoint setting. The factory dewpoint setting is 39°F. It is adjustable from 36°F to 50°F in 1° steps or 1°C to 10°C in 1/2°C steps. (°C) LED indicates the display is in Celsius. (°F) LED- indicates the temperature display in Fahrenheit. Dewpoint LED – indicates dewpoint temperature being measured by the system. SET POINT LED – INDICATES that the display is in programming mode during which the set point can be changed and stored. The dewpoint display also displays diagnostic alarms / shutdown codes if they occur (See Diagnostic Codes).

(2) ON/OFF & RESET button. When LED is on, this indicates the unit is operating. This button is also used to reset alarms.

(3) Up and Down Arrows. These are used to adjust the set point values. The set point will change once for each time pressed. If the button is pressed and held, the set point will change one step per second. These buttons are also used to reset the maintenance “Sr” indicator when pressed simultaneously.

(4) Set Button. Toggles between Dewpoint Display, Set Point mode and drain time mode (no LED). During the Set Point Display mode, you can use the up/down arrows to Raise or Lower the dewpoint setting which is then stored in non-volatile memory when the mode is set back to dewpoint. When the SET button is depressed twice, it will display a number between 1 and 60 which represent minutes between the drain solenoid energizing.

If no keys are pressed within 15 seconds, the mode automatically reverts back to Dewpoint. This button is also used to select the temperature scale that the unit will operate in by pressing and holding for 5 seconds. (The unit will toggle between ºF and ºC)

(5)  When pressed, the display will show the thermal mass fluid temperature. When the fluid temperature falls to 36˚F (1.5˚C), the refrigeration compressor will cycle off.

(6) Power Saver LED. Illuminates when dryer has cycled off indicating you are saving energy.

(7) Alarm LED. Indicates a problem with the dryer. The display will then flash an alarm code indicating what caused the alarm. The alarm also has dry contacts for remote annunciation.

(8) Drain Control. The control panel will operate on either a “Level sensor” or “Timed” interval. Dryers 200 to 325 SCFM have a timed drain with a factory setting of 5 minutes, 400 SCFM and larger are equipped with a Level sensor, and will respond to the sensor signal on demand to operate the drain. The drain valve will also operate automatically every 30 minutes (independent to the sensor signal) if the board has not received a signal from the sensor within that time (back-up drain). The timed interval setting can be adjusted down to 1 minute or raised up to 60 minutes as desired. To adjust the drain. “Timed Interval” setting press the SET Button twice. The value displayed will be the timed Interval setting in minutes. Use the UP or DOWN Arrow to change the set point. Press the set button again to set/exit and return to dewpoint display.

(9) Drain Open LED. Indicates that the drain valve is open.

(10) Drain Alarm LED. Indicates the drain valve is not draining. Upon alarming, the controller will pulse fire the drain solenoid in an attempt to unplug itself. After 5 minutes the valve will open on a 5 minute back-up drain interval and the display will flash “dr” until it is reset.

(11)  Drain test button. This button also resets the Drain alarm.

4. Start Up Procedures

CAUTION

There should be NO air flow through the dryer before or during start-up. It is recommended that the dryer be installed with bypass piping to better service the unit. Inlet & outlet valves to the dryer should be closed with the by-pass valve open.

1. After electrical connection (Section 2), apply power.

IMPORTANT

2. Leave power on for 8 hours before attempting to start. This allows the crank case heater time to warm the refrigerant compressor oil and dissipate any refrigerant migration that can occur during storage.

3. Verify suction pressure gauge reads above 80 psi (bar). If it is less, the dryer has a refrigerant leak, (see "A3" in trouble shooting section). This may be the result of shipping damage – see section 1.0.

4. Switch unit on. ON/Off indicator will light green when unit is running.

IMPORTANT

Do not pass air through the dryer until it stabilizes and cycles off (Typically 15-25 minutes).

5. Once the dryer cycles off, you can now introduce compressed air to the dryer.

6. SLOWLY pressurize the dryer. Once completed slowly open the outlet valve, then close the bypass valve. The dryer is now on line.

7. Clean the condensate drain Y-Strainer after the first 8 hours of operation. (See section 5.0 Routine Maintenance)

IMPORTANT

8. Restart dryer using this procedure after maintenance, power outage or prolonged periods of shutdown.

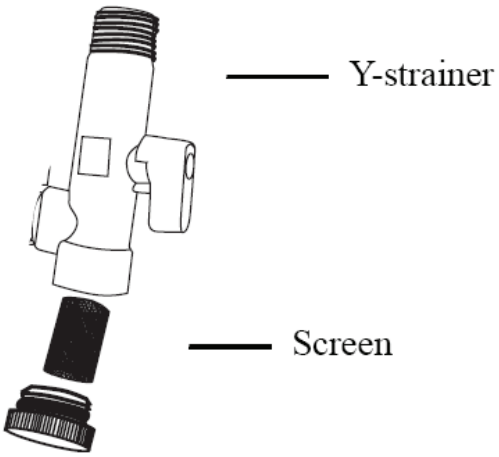
4.1 When Operating Dryer

1. Turn dryer On and Off at control panel only.
2. Keep power to unit at all times except when servicing.
3. Start dryer prior to allowing air flow through unit.
4. Clean condenser when necessary.
5. Maintain ambient temperature between 41-100ºF (5-38ºC)
6. Keep inlet temperature under 101ºF (38ºC)
7. Check and clean Y-strainer regularly.
8. NEVER allow dryer to cycle ON/OFF with air compressor.

5. Routine Maintenance

The air cooled condenser must be kept clean. Inspect on a regular basis for dirt or debris that might accumulate. Remove any debris immediately.

The Y-strainer should be checked weekly.



6. Maintenance Schedule

The maintenance chart below indicates the components that should be checked while performing routine maintenance on the dryer. The chart also indicates how often a specific check should be performed.

Description of Service Required		Service recommended every:			
Component	**Operation**	**Day**	**Week**	**Month**	**Year**
Dryer	Check control panel indicators	✓			
Dryer	Visually inspect dryer	✓			
Dryer	Drain line Y Strainer		✓		
Dryer	Clean condensing coil fins (air cooled units only)			✓	
Dryer	Cooling water Y Strainer (watercooled units only)			✓	
Dryer	Compressor oil level sight glass (200 to 1000 SCFM)			✓	
Filtration	Depressurized dryer. Replace pre and after filter elements				🔧
Dryer	Check for refrigerant leaks				✓
Dryer	Depressurized dryer. Complete drain maintenance				🔧
Filtration	Replace pre-filter element				🔧
Dryer	SR indicator				✓

✓ Check 🔧 Replace

6.1 Maintenance Procedures

Before performing any maintenance on the machine ensure that air pressure is vented from the system. Also make sure that personnel performing the maintenance have read the maintenance section of the manual.

Some of the maintenance tasks will require the refrigeration system to run, but when not required, turn the unit off before proceeding. Refer to lock-out/tag-out procedures.

Upon completion of the maintenance tasks be sure that the machine has been properly reassembled prior to restarting and reintroducing air.

7. List of Alarms / Warnings

ALARM	CODE	CONDITION	TIME-OUT	SHUT-DOWN	RESET	OFF STATE
LOW EVAPORATOR TEMPERATURE	A1	Dewpoint <= 33˚F (2˚C)	2 minutes	YES	AUTO	RESETS
DRYER OVERLOAD	A2	Dewpoint is 30 degrees above the set point.	40 minutes	YES	AUTO	RESETS
LOW REFRIGERANT PRESSURE	A3	Suction Pressure switch is open while compressor is on	1 seconds	YES	MANUAL	RESETS
HIGH REFRIGERANT PRESSURE	A4	Discharge Pressure switch is open while compressor is on	none	YES	MANUAL	RESETS
LOW COOLANT TEMPERATURE	A5	Glycol Temp < 32˚F (0°C)	2 minutes	YES	MANUAL	RESETS
DRAIN FAULT	dr	Drain switch is closed for too long	15 seconds	NO	MANUAL	ENABLED
SENSOR FAULT OPEN DEWPOINT SENSOR	F0	Dewpoint Sensor is open (or greater than 200˚F (93.33˚C)	1 second	YES	MANUAL	RESETS
SENSOR FAULT SHORTED DEWPOINT SENSOR	F1	Dewpoint Sensor is shorted (or less than 4˚F (-15.55˚C)	1 second	YES	MANUAL	RESETS
SENSOR FAULT OPEN GLYCOL/WATER SENSOR	F2	Glycol Temp Sensor is open	1 second	YES	MANUAL	RESETS
SENSOR FAULT SHORTED GLYCOL/ WATER SENSOR	F3	Glycol Temp Sensor is shorted	1 second	YES	MANUAL	RESETS
HIGH DEWPOINT TEMPERATURE	Hd	Dewpoint is 15 degrees above the set point	none	NO	AUTO	ENABLED
COMPRESSOR PROTECTION	CP	Excessive cycling	none	NO	MANUAL	RESETS
SERVICE	Sr	Service Interval Perform Maintenance	360 days	NO	MANUAL	ENABLED

8. Troubleshooting / Service

Fault Code	Description	Cause	Remedy
A1	Low dewpoint temperature	1) Ambient temperature is below 35°F (.6°C) 2) Inlet air temperature is below 35°F (1.6°C) 3) Water / glycol too cold	1) Install dryer in warmer area 2) Raise inlet temperature. 3) see “A5” Fault code
A2	Dryer Overload	Excessive thermal load on dryer	Reduce compressed air quantity and/or inlet temperature
A3	Low refrigerant pressure	1) Refrigerant leak 2) Low pressure switch defective 3) Water/glycol pump stopped/defective	1) Locate leak. Repair & recharge. 2) Replace 3) Check pump, wiring. Replace if defective
A4	High refrigerant discharge	1) Condenser dirty / blocked 2) Fan pressure switch defective 3) Fan motor does not work/defective 4) Ambient temperature above 115°F (46°C) 5) High pressure switch defective	1) Clean condenser 2) Replace 3) Replace motor 4) Improve room ventilation 5) Replace
A5	Water/glycol below 30*F	1) Compressor contactor welded closed 2) Control board defective	1) Replace 2) Replace
**CP	Compressor protection	1) Leak in water/glycol loop 2) Excessive inlet temperature	1) Repair leak and refill tank with 30% water/glycol mixture 2) Reduce temperature. Inspect aftercooler upstream.
dr	Drain not working	1) Valve strainer clogged 2) Drain valve clogged 3) Solenoid defective 4) Drain sensor defective	1) Clean 2) Dis-assemble and clean. 3) Replace 4) Replace
F0	Open dewpoint sensor	1) Loose connection 2) Break in sensor line	1) Check connections / tighten 2) Replace sensor
F1	Short in dew-point sensor	1) Defective sensor 2) Sensor expose to 4°F (-14.5°C) or less	1) Replace 2) Increase temperature
F2	Open water/gly-col temperature sensor	1) Loose connection 2) Break in sensor line	1) Check connections / tighten 2) Replace sensor
F3	Short in water/ glycol sensor	1) Defective sensor 2) Sensor expose to 4°F (-14.5°C) or less	1) Replace 2) Increase temperature.

Sr	Service/Maintenance reminder	1 year timer has elapsed	See maintenance sect. in manual & reset by pressing up/down arrows at the same time
Hd	High dewpoint	1) Excessive thermal load. 2) Compressor stopped 3) Control board defective	1) Reduce inlet and/or ambient temperature and/or inlet flow 2) Check circuit for loose connection / open 3) Replace
**The refrigerant compressor has exceeded the maximum allowable starts per hour. If the number of starts/hr. is exceeded, the “CP” warning will flash on the display. The dryer will automatically increase the dewpoint setting to 50°F (10°C) from its current setting to reduce the number of starts/hr. below the maximum.			

CAUTION

It is not advisable to tamper with the other adjustments unless you are familiar with refrigeration. The controls interact with each other and, although the effect of an adjustment may not be immediately obvious, it will affect the dryer’s performance.

CAUTION

8.1 Refrigerant Charging Procedure

- Charge liquid refrigerant only. Do not use vapor.
- The dryer needs to be pulled into a vacuum (500 micron minimum).
- Charge refrigerant into the high side schraeder port located at the bottom of the condenser.
- The full charge may not be accepted. If this occurs, the dryer can be started and the remainder of the charge should be slowly metered into the refrigeration service valve (suction side) located under the expansion valve.

8.2 Torque Values

Model	Suction Rotolock	Discharge Rotolock	All Flare Nuts & Caps (Except Refrigeration Receiver on Water-Cooled units)	Pressure Switches	Flare Nuts for Refrigeration Receiver on Water-Cooled units
	*Torque	*Torque	*Torque	*Torque	*Torque
PTM0200-A2	N/A	N/A	9 ft/lbs	10 ft/lbs	20 ft/lbs
PTM0250-A2 /W2 PTM0325-A2 /W2	66 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs	20 ft/lbs
PTM0250-A3 /A4/ A5/W3/W4/W5 PTM0325-A3 /A4/ A5/W3/W4/W5	59 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs	20 ft/lbs
PTM0400-A3 /A4 / A5/W3/W4/W5	59 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs	20 ft/lbs
PTM0500-A3 /A4/ A5/W3/W4/W5	59 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs	20 ft/lbs
PTM0700-A3 /A4/ A5/W3/W4/W5 PTM0850-A3 /A4/ A5/W3/W4/W5	66 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs	20 ft/lbs
PTM1000-A3 /A4/ A5/W3/W4/W5	81 ft/lbs	66 ft/lbs	9 ft/lbs	10 ft/lbs	20 ft/lbs

Note: If using Crows Foot adapters, the torque valves must be re-calculated based on the specific adapter being used.

9. Technical Data

TECHNICAL DATA		Air-Cooled Units								
Model	Electrical	Compressor		Fan motor			Pump		Dryer	
	V / Ph / Hz	RLA	LRA	Qty	FLA	HP	FLA	HP	MCA	Max Fuse
PTM200	230/1/60	8.5	47	1	1	1/6	1.2	1/15	12.2	20
PTM250	230/1/60	12.1	49	1	1.2	1/5	1.2	1/15	17.0	25
	230/3/60	7.9	38	1	1.2	1/5	1.2	1/15	11.6	15
	460/3/60	4.3	16	1	0.6	1/5	1.2	1/15	6.6	10
	575/3/60	4.3	16	1	0.6	1/5	1.2	1/15	5.2	10
PTM325	230/1/60	12.1	49	1	1.2	1/5	1.2	1/15	17.0	25
	230/3/60	7.9	38	1	1.2	1/5	1.2	1/15	11.6	15
	460/3/60	4.3	16	1	0.6	1/5	1.2	1/15	6.6	10
	575/3/60	4.3	16	1	0.6	1/5	1.2	1/15	5.2	10
PTM400	230/3/60	7.9	38	1	1.2	1/5	1.2	1/15	11.6	15
	460/3/60	4.3	16	1	0.6	1/5	1.2	1/15	6.6	10
	575/3/60	4.3	16	1	0.6	1/5	1.2	1/15	6.6	10
PTM500	230/3/60	11.4	57	1	1.2	1/5	1.2	1/15	16.1	25
	460/3/60	5.4	23	1	0.6	1/5	1.2	1/15	7.9	10
	575/3/60	5.4	23	1	0.6	1/5	1.2	1/15	6.3	10
PTM700	230/3/60	15.7	98	1	3	1/2	1.2	1/15	23.2	35
	460/3/60	7.1	38	1	1.5	1/2	1.2	1/15	11.0	15
	575/3/60	7.1	38	1	1.5	1/2	1.2	1/15	8.8	15
PTM850	230/3/60	15.7	98	1	3	1/2	1.2	1/15	23.2	35
	460/3/60	7.1	38	1	1.5	1/2	1.2	1/15	11.0	15
	575/3/60	7.1	38	1	1.5	1/2	1.2	1/15	8.8	15
PTM1000	230/3/60	17.9	115	2	1.2	1/5	2.1	1/6	25.3	40
	460/3/60	8.6	47	2	0.6	1/5	2.1	1/6	12.5	20
	575/3/60	8.6	47	2	0.6	1/5	2.1	1/6	10.0	15

Settings	Fan 1	Fan 2	High pressure switch	Low pressure switch
PTM200-PTM850	ON: 268 psig (18.5 barg) OFF: 207 psig (14.3 barg)	-	405 psig (28 bar) reset: 305 psig (21 bar)	35 - 60 psig 2.4 - 4 Barg
PTM1000	ON: 230 psig (16 barg) OFF: 190 psig (13 barg)	ON: 268 psig (18.5 barg) OFF: 207 psig (14.3 barg)		

Model	Refrigerant		Water/ glycol capacity	Ambient temperature*	Air inlet temperature*	Max working pressure	Connections	Drain	Sound
	R404A						Air in/out	Drain	dBA
	(oz)	(kg)	Gal.	Min. / Max	Min. / Max	Min / Max	FNPT	FNPT	
PTM200	See serial number label on dryer for charge amount.		6	41-115°F (5-45°C)	41-140°F (5- 60°C)	60-200 psig (4-14 barg)	2”	1/4”	80
PTM250			8						
PTM325			8						
PTM400			10						
PTM500			10						
PTM700			19				3”		
PTM850			19						
PTM1000			21						

*Dryer capacity decreases as ambient and/or inlet temperature increases above 100°F (38°C). See DRYER CORRECTION FACTORS.

Water-Cooled Units							
Model	Electrical	Compressor		Pump 120v		Dryer	
	V/Ph/Hz	RLA	LRA	FLA	HP	MCA	Max. Fuse
PTM250	230/1/60	12.1	49	1.2	1/15	15.8	25
	230/3/60	7.9	38	1.2	1/15	10.4	15
	460/3/60	4.3	16	1.2	1/15	6.0	10
	575/3/60	4.3	16	1.2	1/15	4.8	10
PTM325	230/1/60	12.1	49	1.2	1/15	15.8	25
	230/3/60	7.9	38	1.2	1/15	10.4	15
	460/3/60	4.3	16	1.2	1/15	6.0	10
	575/3/60	4.3	16	1.2	1/15	4.8	10
PTM400	230/3/60	7.9	38	1.2	1/15	10.4	15
	460/3/60	4.3	16	1.2	1/15	6.0	10
	575/3/60	4.3	16	1.2	1/15	4.8	10
PTM500	230/3/60	11.4	57	1.2	1/15	14.9	25
	460/3/60	5.4	23	1.2	1/15	7.3	10
	575/3/60	5.4	23	1.2	1/15	5.8	10
PTM700	230/3/60	15.7	98	1.2	1/15	20.2	35
	460/3/60	7.1	38	1.2	1/15	9.5	15
	575/3/60	7.1	38	1.2	1/15	7.6	10
PTM850	230/3/60	15.7	98	1.2	1/15	20.2	35
	460/3/60	7.1	38	1.2	1/15	9.5	15
	575/3/60	7.1	38	1.2	1/15	7.6	10
PTM1000	230/3/60	17.9	115	2.1	1/6	23.1	40
	460/3/60	8.6	47	2.1	1/6	11.5	20
	575/3/60	8.6	47	2.1	1/6	9.2	15

Settings	High pressure switch	Low pressure switch
PTM200-PTM850	405 psig (28 bar) reset: 305 psig (21 bar)	35 - 60 psig (2.4 - 4 Barg)
PTM1000		

Model	Refrigerant		Water/glycol capacity	Ambient temperature*	Air inlet temperature*	Water temperature*	Max. working pressure	Connections		Drain	Sound
	R404A							Air in/out	Water in/out	Drain	
	(oz)	(kg)	Gal.	Min. / Max.	Min. / Max.	Min. / Max.	Min. / Max.	FNPT	FNPT	FNPT	dBA
PTM250	See serial number label on dryer for charge amount.		8	41-115°F (5-45°C)	41-140°F (5-60°C)	50-95°F (10-35°C)	60-200 psig (4-13.8 barg)	2"	1/2"	1/4"	80
PTM325			8								
PTM400			10								
PTM500			10								
PTM700			19					3"			
PTM850			19								
PTM1000			21								

*Dryer capacity decreases as water temperature increases above 85°F (29.5°C) and or inlet temperature increases above 100°F (38°C). See DRYER CORRECTION FACTORS.

10. Spare Parts List

Item #	Replacement parts	MODEL							
		PTM200 (DWG # AD11525)	PTM250 (DWG # AD11524)	PTM325 (DWG # AD11523)	PTM400 (DWG # AD11522)	PTM500 (DWG # AD11521)	PTM700 (DWG # AD11520)	PTM850 (DWG # AD11519)	PTM1000 (DWG # AD11518)
	Refrigerant Compressor								
1A	230V/1PH/60Hz	DP14231-1-C	DP14245-2-C		n/a				
1B	230V/3PH/60Hz	n/a	DP14245-3-C			DP16211-3	DP14341-3-C		DP14371-3-C
1C	460V-3PH-60Hz	n/a	DP14245-4-C			398H147601	DP14341-4-C		DP14371-4-C
	Fan motor								
2A	230V/1PH/60Hz	DP14231-2-M	DP14245-2-M				DP18184-2-M		DP14245-2-M
2B	460V/1PH/60Hz	n/a	DP18105-4				DP18184		DP18105-4
3	**Fan blade**	DP18182-B	DP18172-B				DP18158-B		DP18172-B
	Refrigerant condenser								
4A	Air-cooled	DP14231-CD	DP14245-CD			DP14295-C	DP14313-CD		DP14371-CD
4B	Water-cooled	n/a	XF2350-PL						
5	**Water regulating valve**	n/a	DP38100		DP38105				
6	**Water-air/separator/air-air exchanger**	XF0325 TMC-F	XF0325-TMC-F		XF0500-TMC-F		*XF1000-TMC-F		
7	**Coolant-to-refrigerant exchanger**	XF2350-PL	XF2450-PL			XF2550-PL			
8	**Expansion valve**	DP34181-404	DP34182-404-1			DP34183-404	DP34185-404		
9	**Refrigerant filter**	DP28125					DP28137		
10	**Circulation pump**	DP7000-P							DP7000-P2
11	**Fan #1 pressure switch (230v)**	DP40080							DP40081
11A	****Fan #1 pressure switch (460v/575v)**	DP40106							
12	**Fan #2 pressure switch (230v)**	-							DP40080
12A	****Fan #2 pressure switch (460v/575v)**	-							DP40106
13	**High refrigerant pressure switch**	DP40051							
14	**Low refrigerant pressure switch**	DP40026							
15	**Refrigerant gauge**	DP42107							
16	**Coolant Storage Tank**	DP7000-10-M					*DP7000-22-M1		
18	**Electronic controller**	DP5050-PCD-TM							
19	**Thermal mass temperature probe**	DP5060-M							
20	**Dew point temperature probe**	DP5060-DP-10							
21	**Demand drain level sensor**	n/a			DP7000-LS1-A				
22	**Drain solenoid valve**	TP8002-1							
23	**Valve strainer screen**	KP5025-S							
24	**Compressor contactor**	ES5035							
25	**Transformer**	ET0250					ET0250(AC)/ET0350(WC)		*ET0350
25A	**230/1 & 3 Fuse - Primary (Ctrl.Transformer)**	EF0300-1-TD							
25B	**230/1 & 3 Fuse - Secondary (Ctrl.Transformer)**	EF0300-1-TD							EF0350-1-TD
25C	**460/3 Fuse - Primary (Ctrl.Transformer)**	N/A	EF0150-G						
25D	**460/3 Fuse - Secondary (Ctrl.Transformer)**	N/A	EF0300-1-TD						EF0350-1-TD
25E	**Transformer for 575v.units (2 per unit)**	n/a	ET1000-D				ET1500-D		

* Consult Factory to verify your model uses these components if your serial # starts with 13 or less.

** DP 40106 phased in during 2016. Units shipped early 2016 and older will need the following: Fan #1: DP40080 & Fan #2: DP40081. DP40106 is mounted directly on the top of electrical box, the others are not.

10. Spare Parts List (cont')

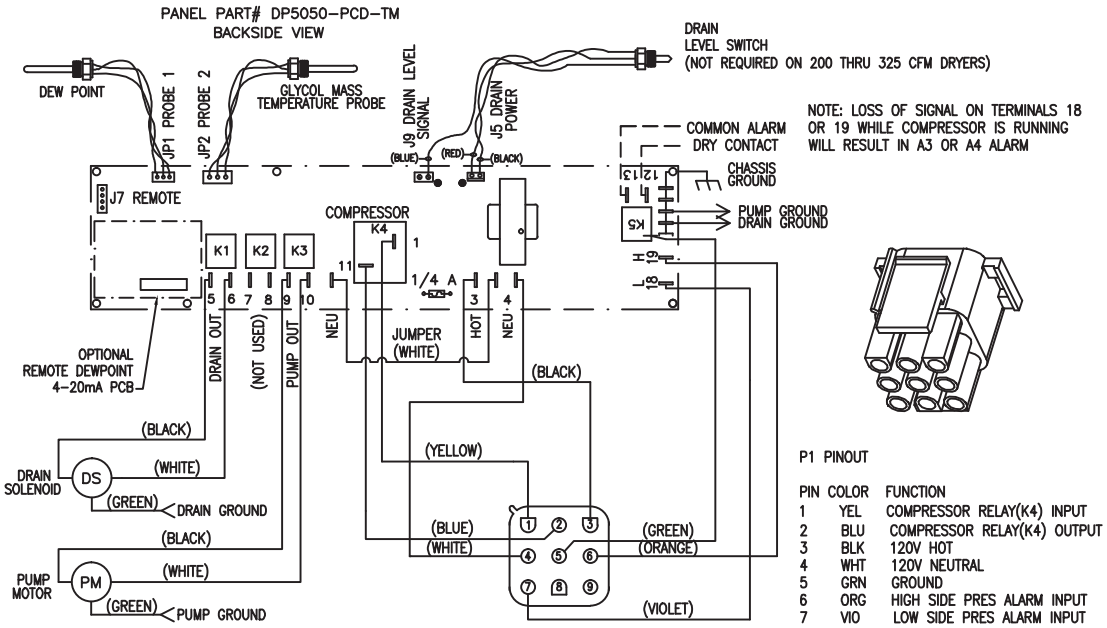
Item #	Replacement parts	MODEL							
		PTM200 (DWG # AD11525)	PTM250 (DWG # AD11524)	PTM325 (DWG # AD11523)	PTM400 (DWG # AD11522)	PTM500 (DWG # AD11521)	PTM700 (DWG # AD11520)	PTM850 (DWG # AD11519)	PTM1000 (DWG # AD11518)
	Cabinet panels								
26	Front panel	DP0325-CAB-FP2			DP0500-CAB-FP2		*DP1000-CAB-FP3		
27	Left panel	DP0325-CAB-LP2			DP0500-CAB-LP2		*DP1000-CAB-LP3		
28	Right panel	DP0325-CAB-RP2			DP0500-CAB-RP2		*DP1000-CAB-RP5		
29	Top panel	DP0325-CAB-TP1			DP0500-CAB-TP1		*DP1000-CAB-TP3		

11. Recommended Filters

MODEL	Recommended Pre-Filter	Replacement Element (Pre-Filter)	Recommended After-Filter	Replacement Element (After-Filter)
PTM200	**AOP040HNFI**	**P040AO**	**AAP040HNFI**	**P040AA**
PTM250	**AOP040HNFI**	**P040AO**	**AAP040HNFI**	**P040AA**
PTM325	**AOP040HNFI**	**P040AO**	**AAP040HNFI**	**P040AA**
PTM400	**AOP040HNFI**	**P040AO**	**AAP040HNFI**	**P040AA**
PTM500	**AOP045INFI**	**P045AO**	**AAP045INFI**	**P045AA**
PTM700	**AOP055JNFI**	**P055AO**	**AAP055JNFI**	**P055AA**
PTM850	**AOP055JNFI**	**P055AO**	**AAP055JNFI**	**P055AA**
PTM1000	**AOP055JNFI**	**P055AO**	**AAP055JNFI**	**P055AA**

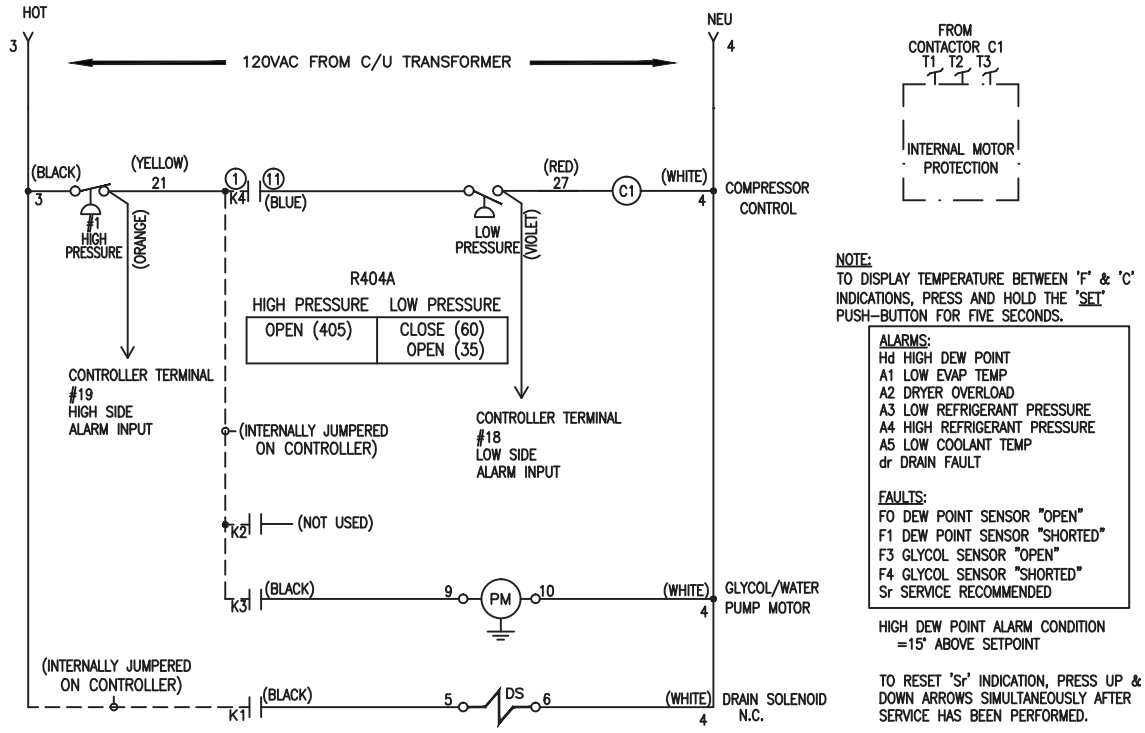
12. Associated Drawings

CONTROL PANEL WIRING
200–1000 SCFM



PLUG P1
TO CONDENSING UNIT

CONTROL SCHEMATIC



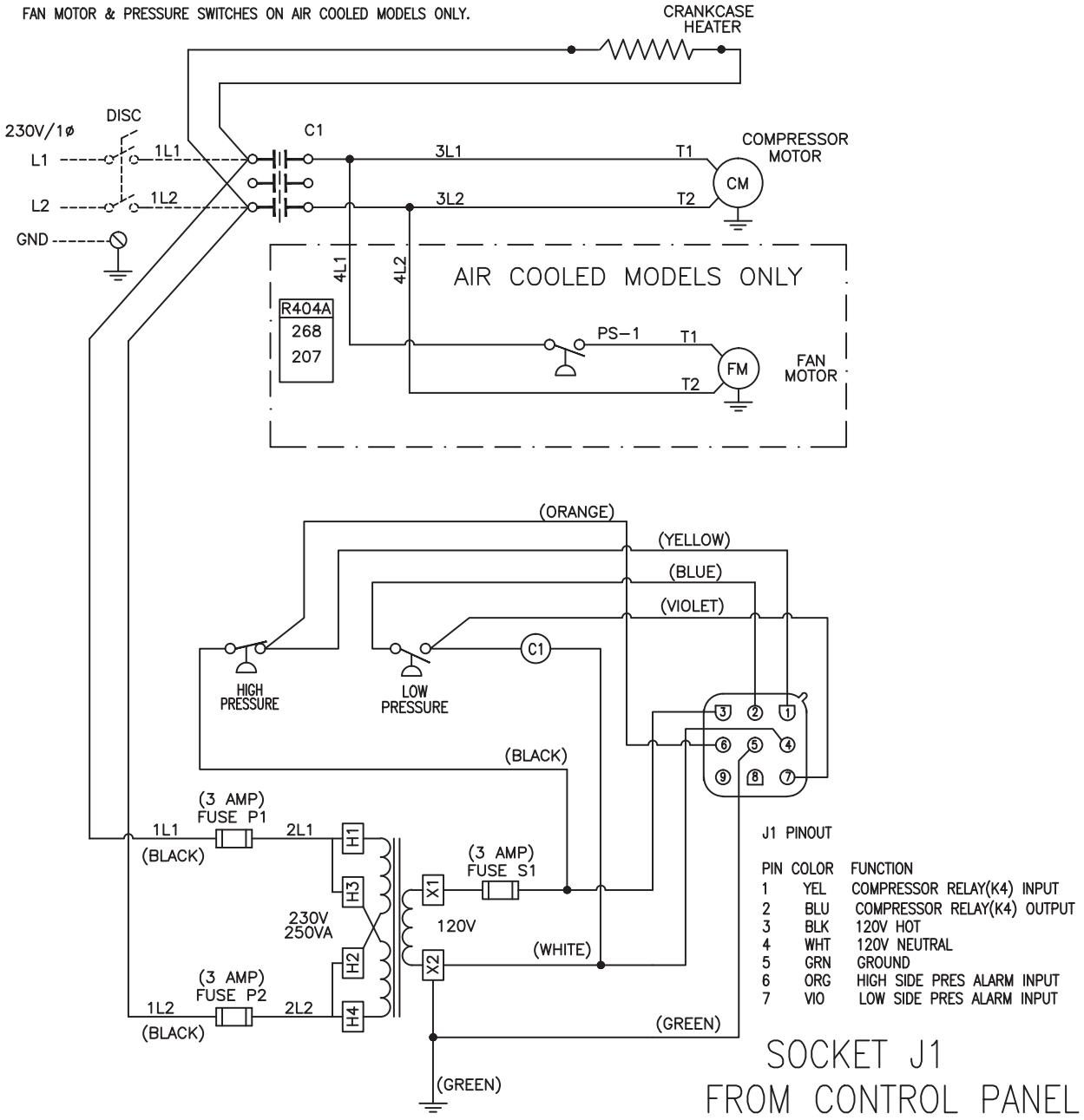
REF: ADE11249 REV F.

CONDENSING UNIT
230V SINGLE PHASE
200 THRU 850 SCFM

CUSTOMER TO PROVIDE BREACH & SHORT CIRCUIT PROTECTION AND DISCONNECTION MEANS PER LOCAL & NATIONAL CODES.

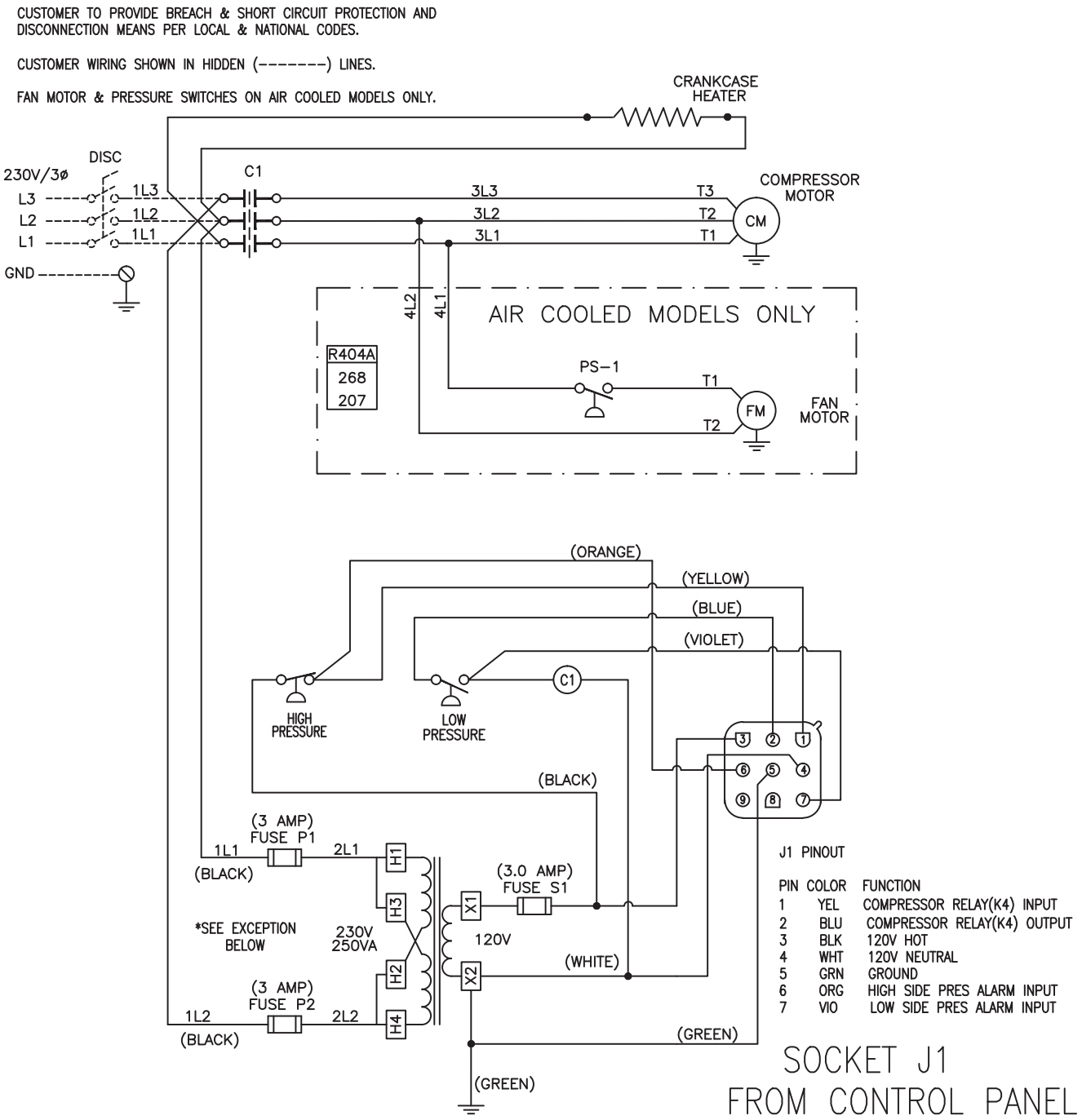
CUSTOMER WIRING SHOWN IN HIDDEN (--------) LINES.

FAN MOTOR & PRESSURE SWITCHES ON AIR COOLED MODELS ONLY.



REF: ADE11249 REV F.

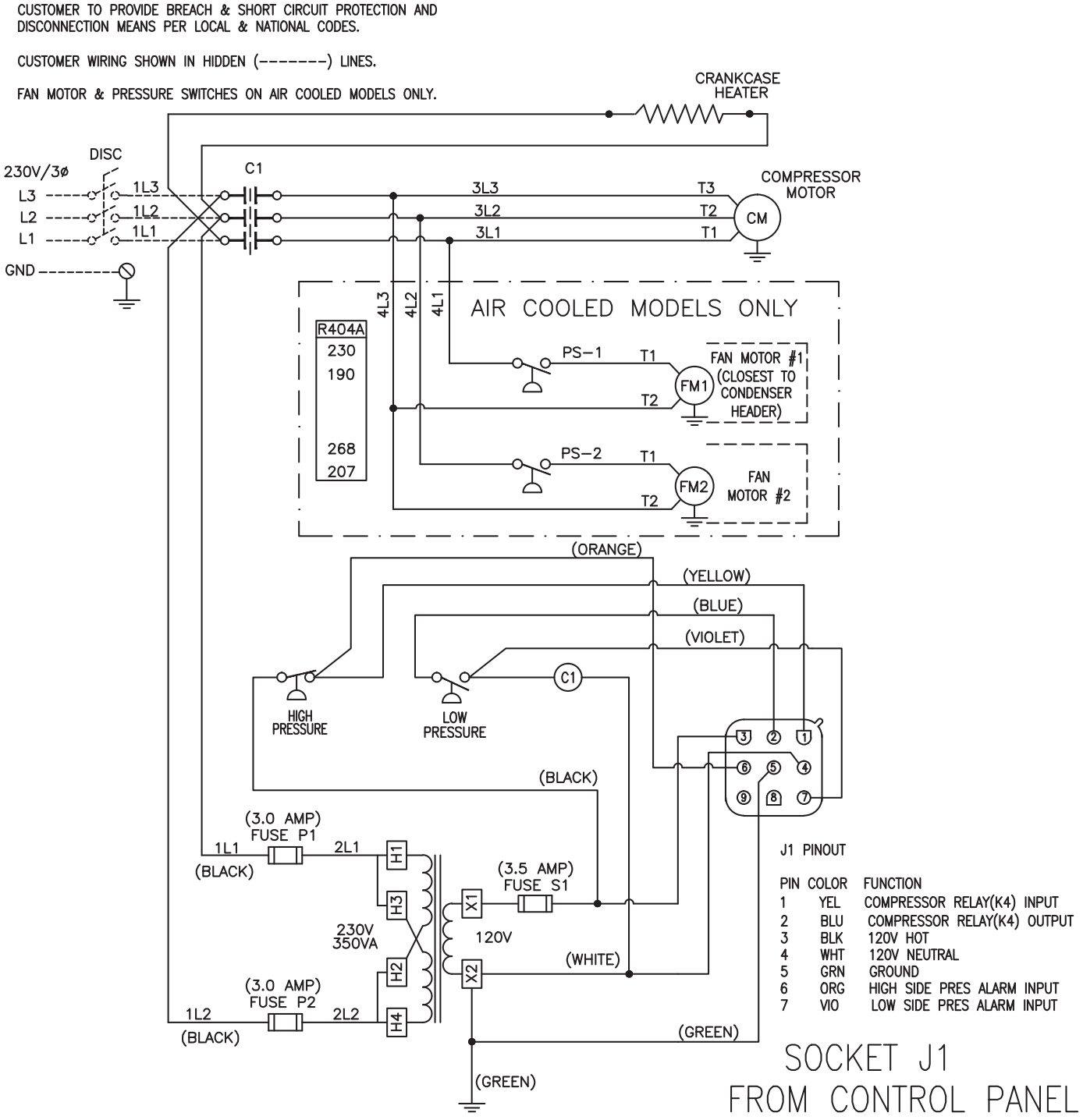
CONDENSING UNIT
230V 3 PHASE
250 THRU 850 SCFM



700-850 SCFM WATERCOOLED
USE 350VA TRANSFORMER & 3.5 AMP S1 FUSE

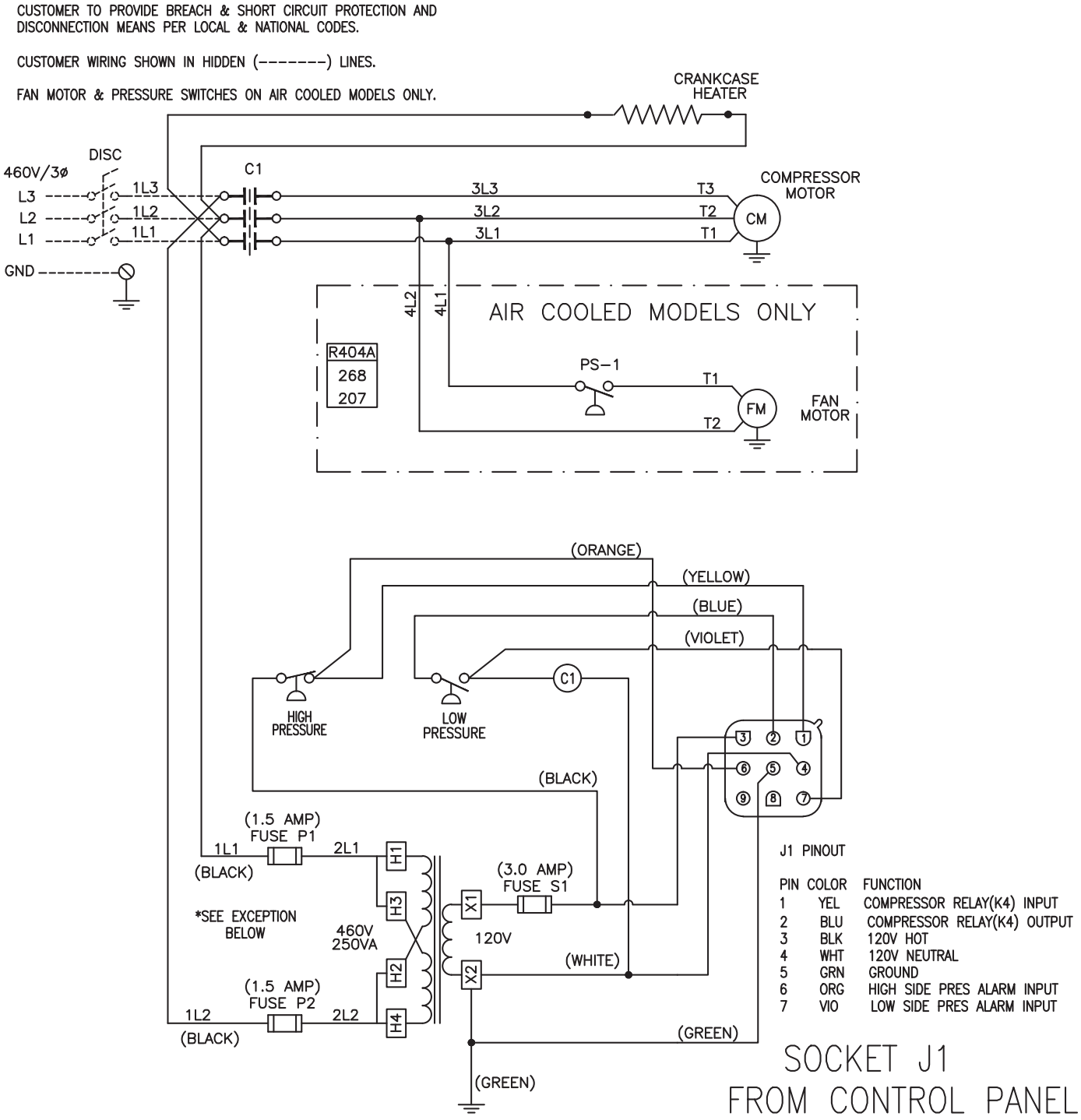
REF: ADE11249 REV F.

CONDENSING UNIT
230V 3 PHASE
1000 SCFM



REF: ADE11249 REV F.

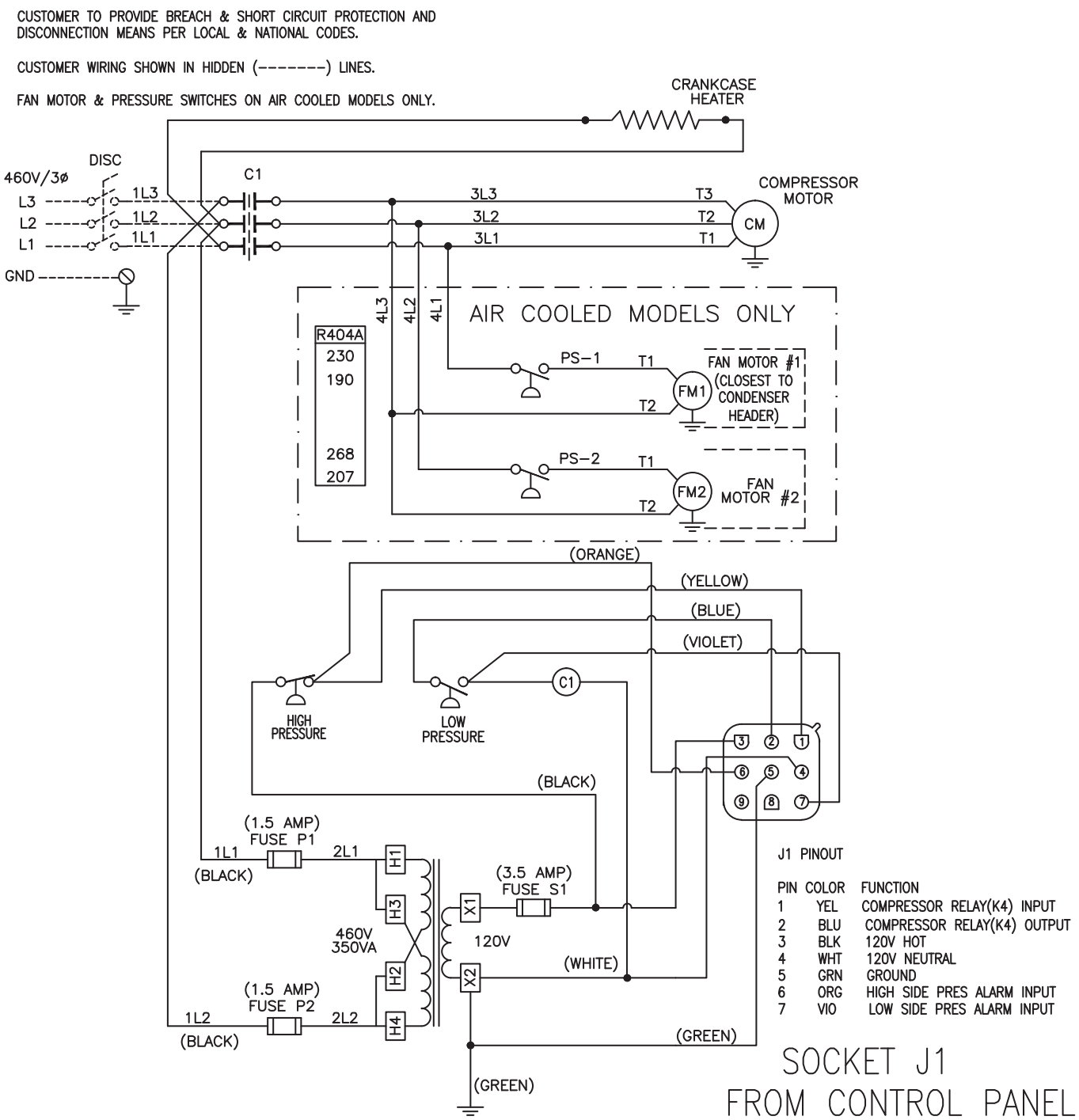
CONDENSING UNIT
460V 3 PHASE
250 THRU 850 SCFM



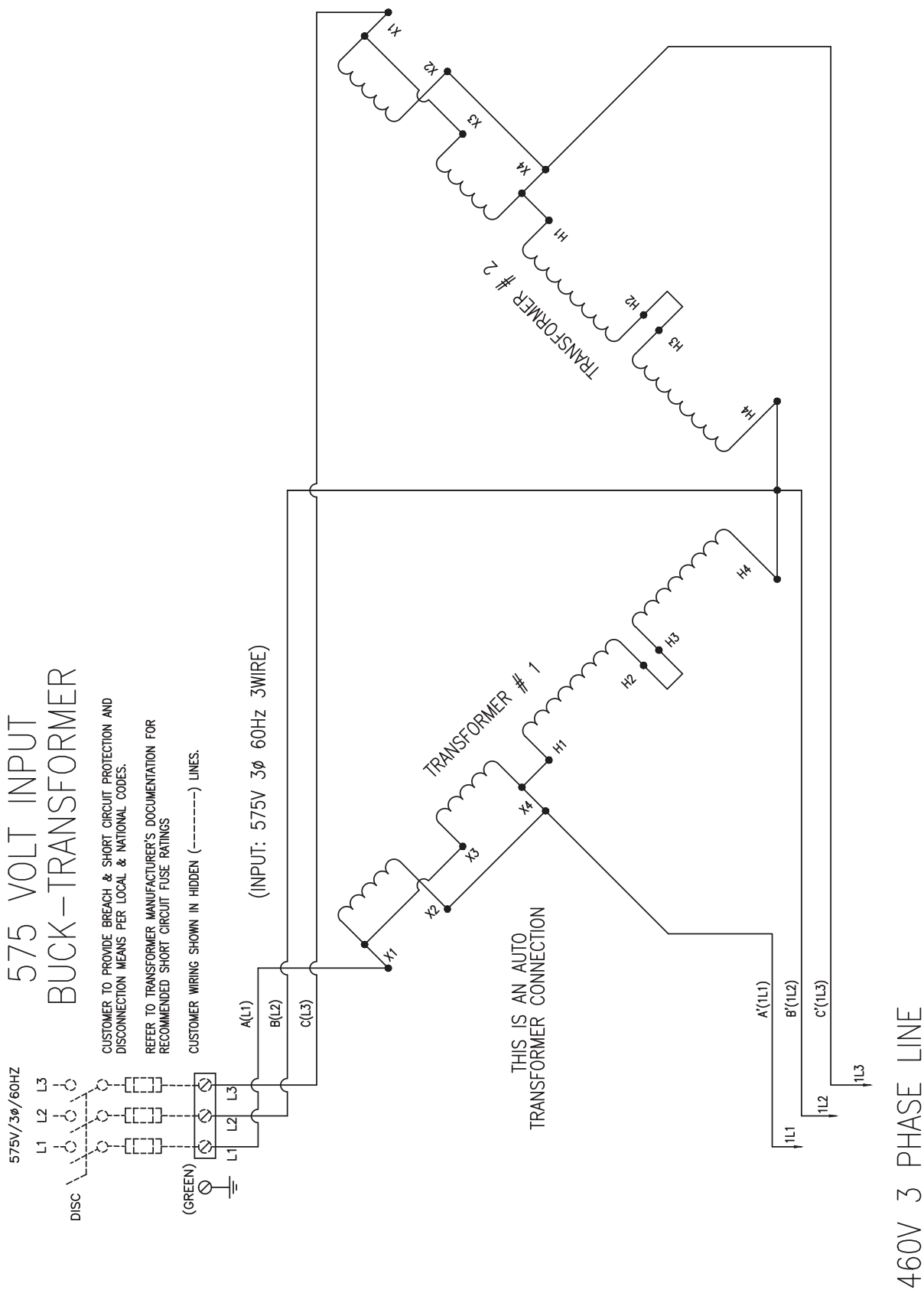
700-850 SCFM WATERCOOLED
USE 350VA TRANSFORMER & 3.5 AMP S1 FUSE

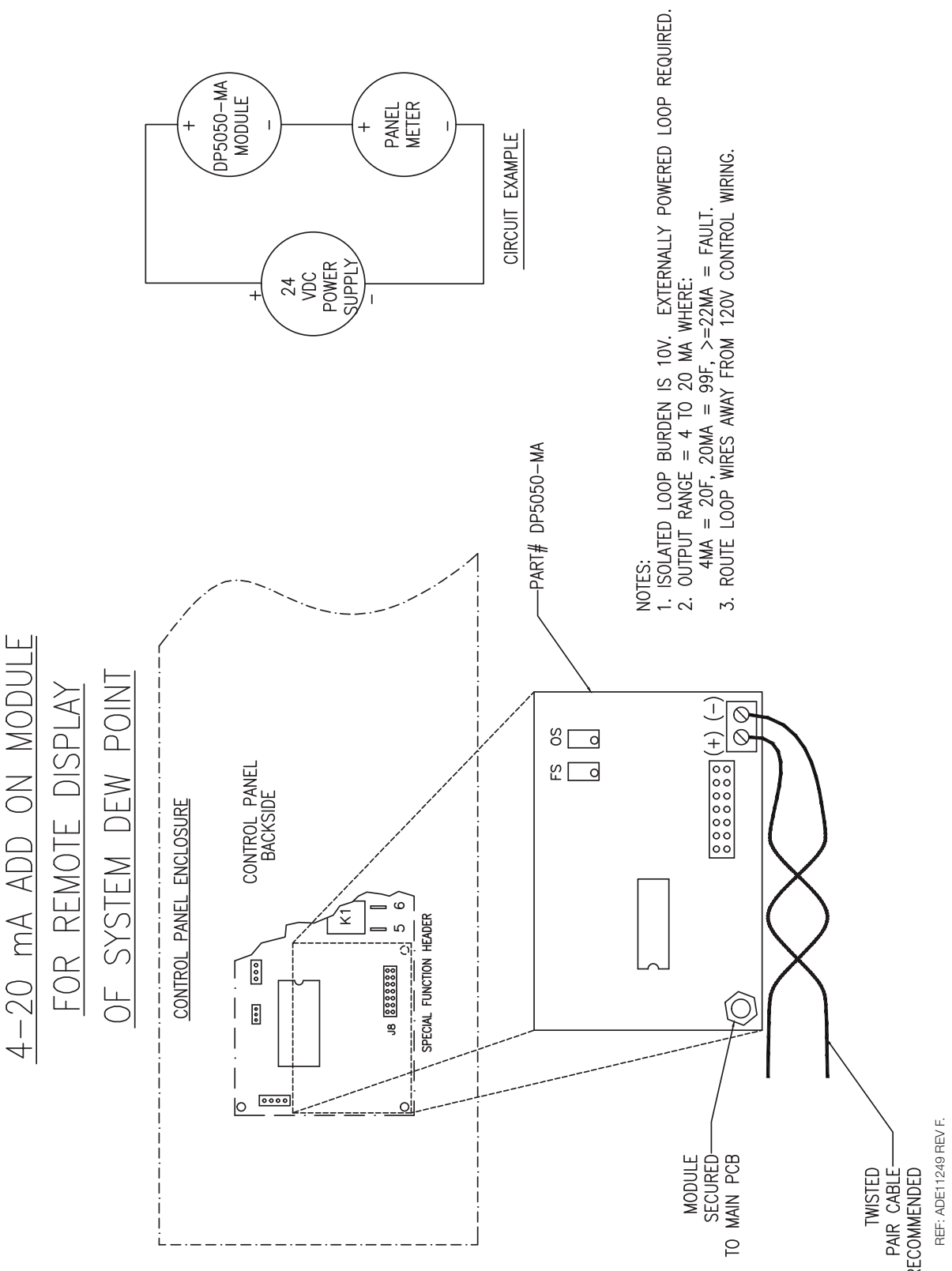
REF: ADE11249 REV F.

CONDENSING UNIT
460V 3 PHASE
1000 SCFM



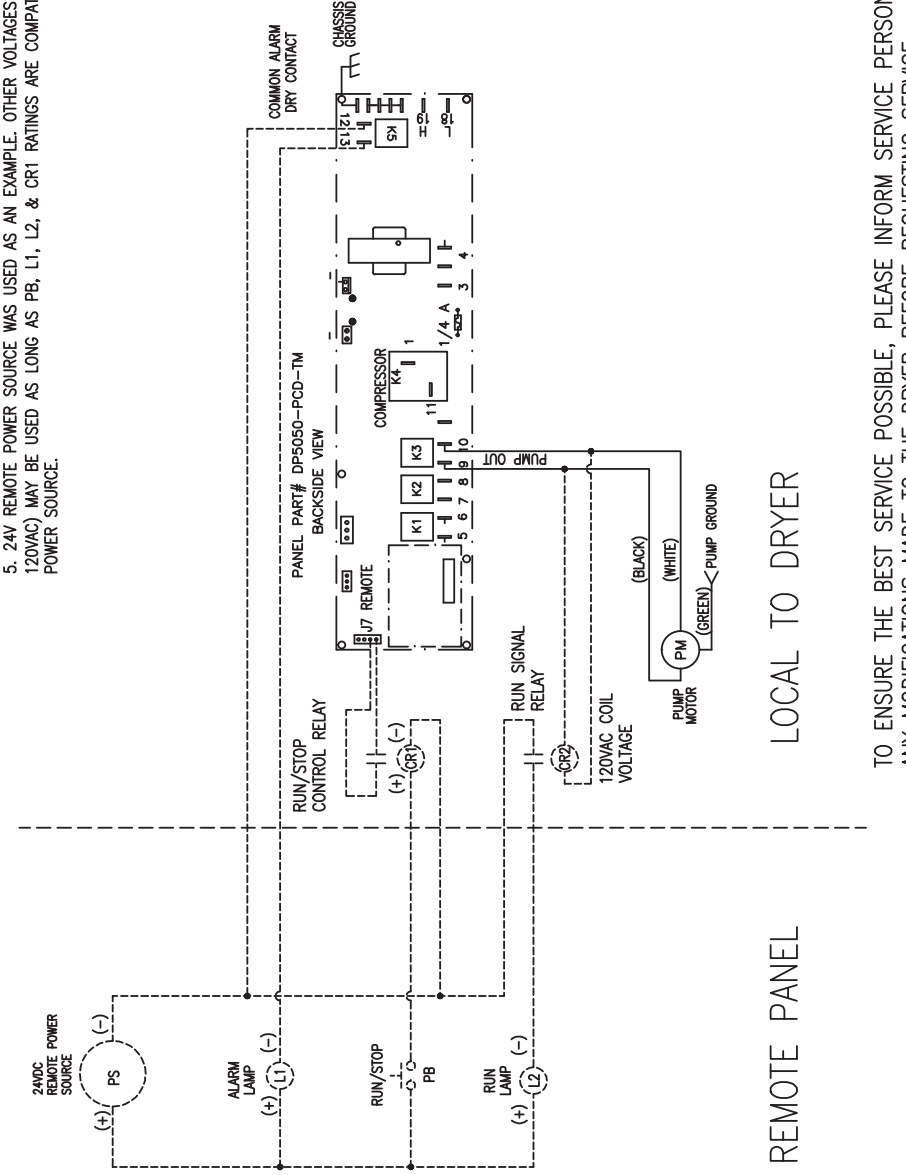
REF: ADE11249 REV F.


575 VOLT INPUT
BUCK–TRANSFORMER
CUSTOMER TO PROVIDE BREACH & SHORT CIRCUIT PROTECTION AND DISCONNECTION MEANS PER LOCAL & NATIONAL CODES.
REFER TO TRANSFORMER MANUFACTURER'S DOCUMENTATION FOR RECOMMENDED SHORT CIRCUIT FUSE RATINGS
CUSTOMER WIRING SHOWN IN HIDDEN (- - - - - - -) LINES.
575V/3ø/60HZ
L1 L2 L3
DISC
(GREEN)
L1 L2 L3
A(L1)
B(L2)
C(L3)
(INPUT: 575V 3ø 60Hz 3WIRE)
TRANSFORMER # 1
TRANSFORMER # 2
X1
X2
X3
X4
H1
H2
H3
H4
THIS IS AN AUTO
TRANSFORMER CONNECTION
A'(1L1)
B'(1L2)
C'(1L3)
1L1
1L2
1L3
460V 3 PHASE LINE
INPUT TO DRYER
REF: ADE11249 REV F.

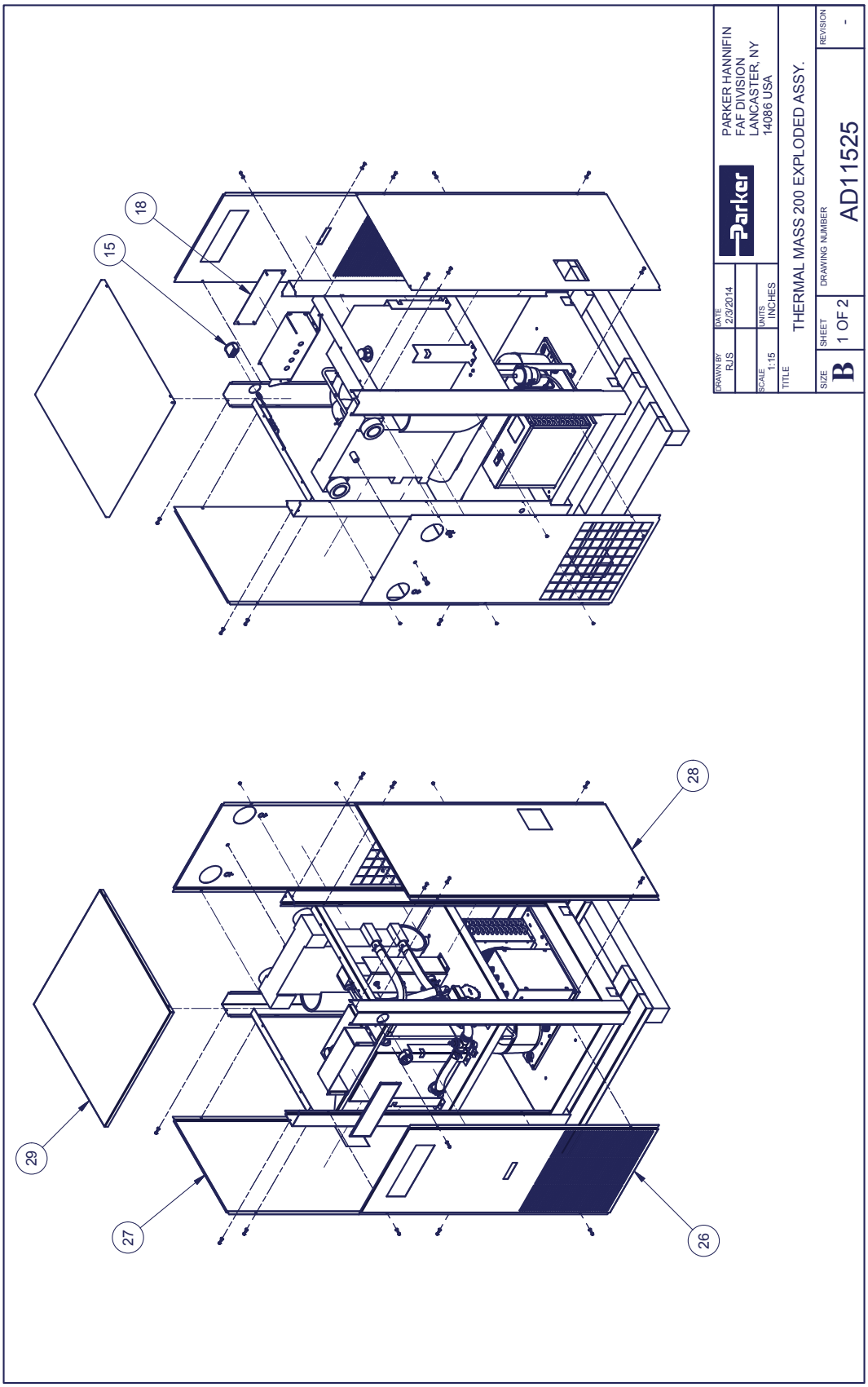

4–20 mA ADD ON MODULE
FOR REMOTE DISPLAY
OF SYSTEM DEW POINT
CONTROL PANEL ENCLOSURE
CONTROL PANEL BACKSIDE
K1
5 6
J8
SPECIAL FUNCTION HEADER
PART# DP5050–MA
FS OS
(+) (–)
MODULE SECURED TO MAIN PCB
TWISTED PAIR CABLE RECOMMENDED
REF: ADE11249 REV F.
NOTES:
1. ISOLATED LOOP BURDEN IS 10V. EXTERNALLY POWERED LOOP REQUIRED.
2. OUTPUT RANGE = 4 TO 20 MA WHERE:
4MA = 20F, 20MA = 99F, >=22MA = FAULT.
3. ROUTE LOOP WIRES AWAY FROM 120V CONTROL WIRING.
CIRCUIT EXAMPLE
24 VDC POWER SUPPLY
DP5050–MA MODULE
PANEL METER

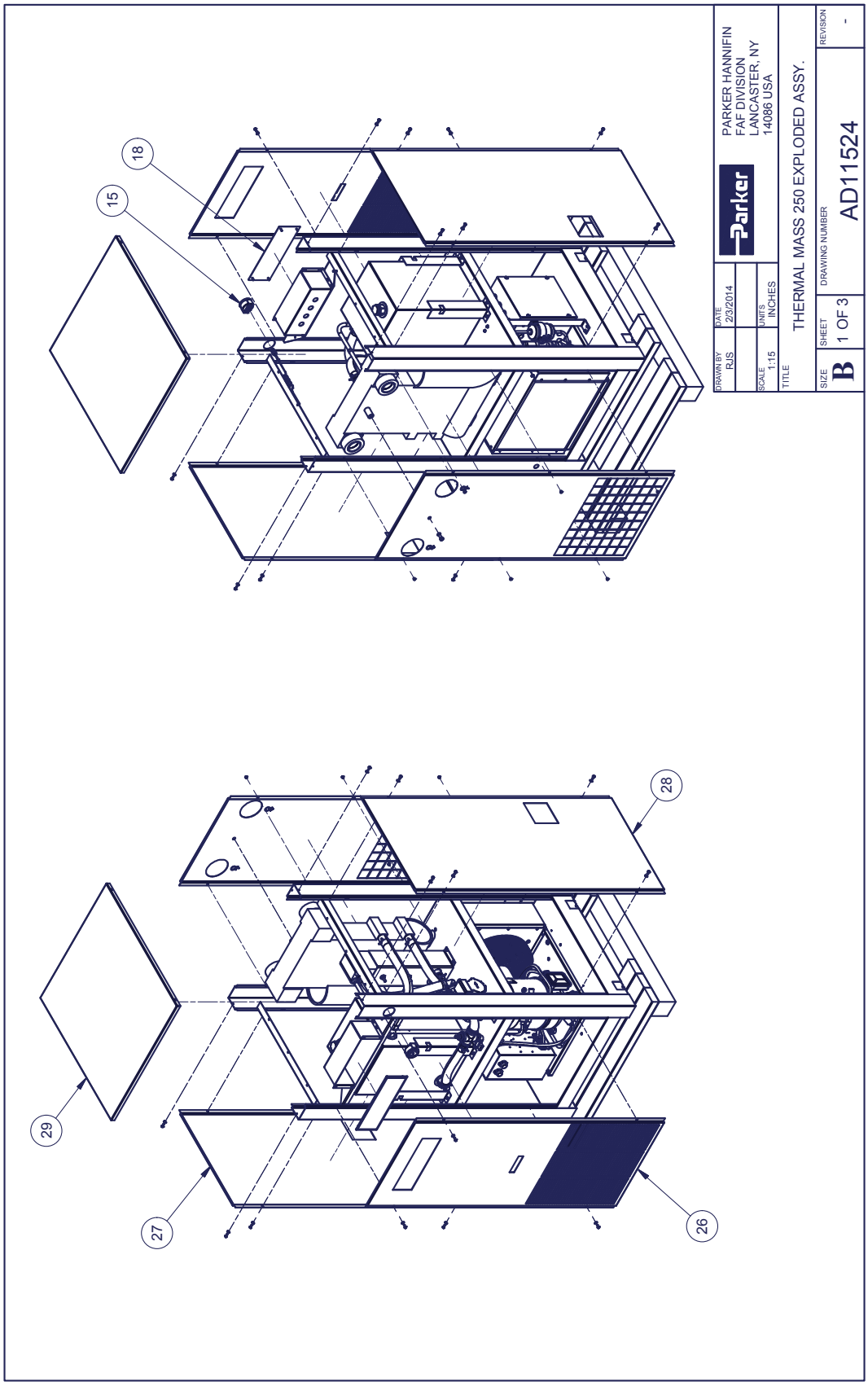
REMOTE RUN/STOP CONTROL WIRING OPTION
ALL MODELS

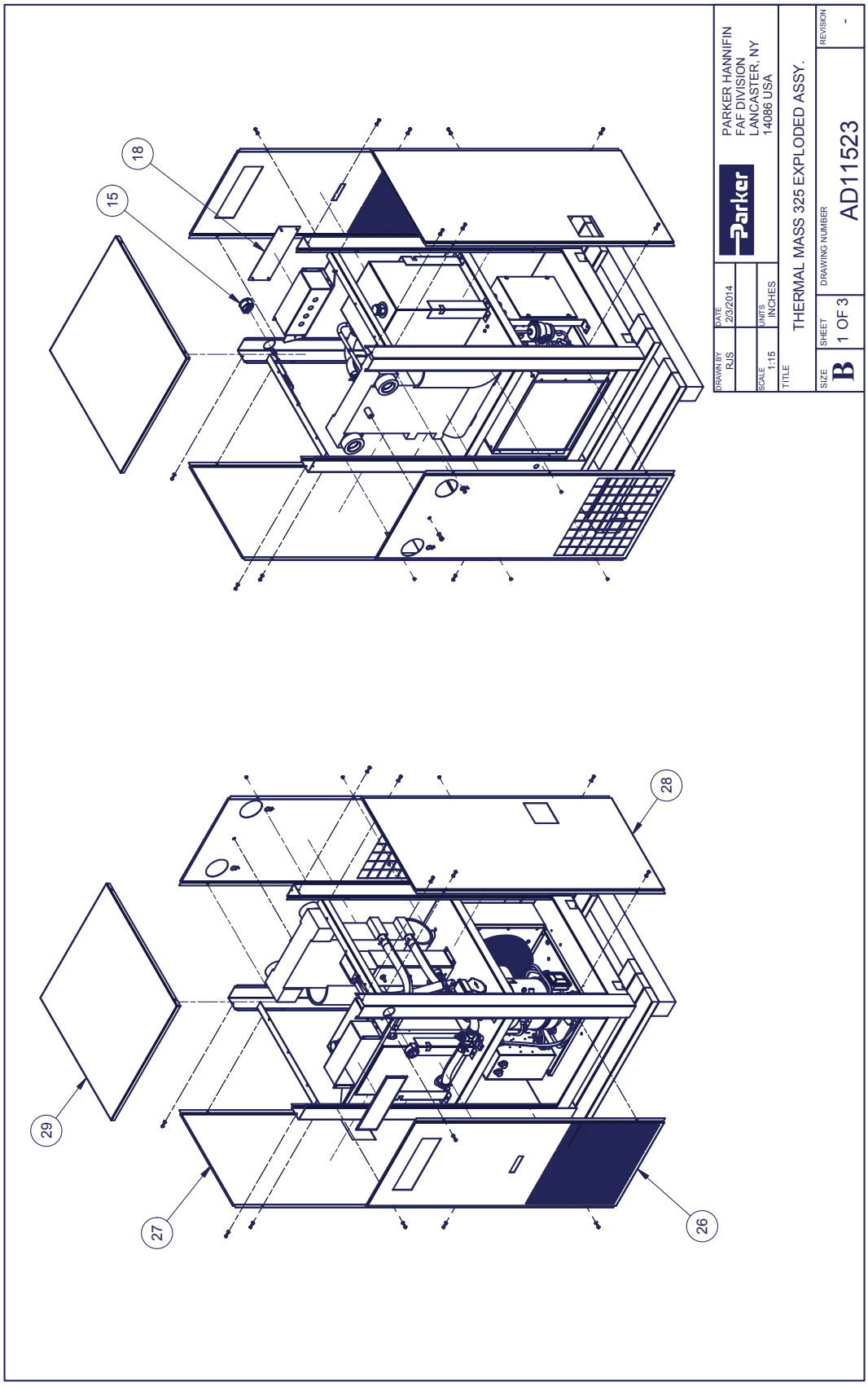
NOTES:
1. DO NOT RUN AIR THRU THE DRYER UNLESS IT IS RUNNING. IT IS ADVISABLE TO TURN THE AIR COMPRESSOR OFF BEFORE OR AT THE SAME TIME AS TURNING OFF THE DRYER.
2. TURN DRYER ON 30 MINUTES BEFORE TURNING ON THE AIR COMPRESSOR.
3. ALL MODIFICATIONS ARE TO BE DONE BY QUALIFIED PERSONNEL. IMPROPER MODIFICATIONS MAY VOID EQUIPMENT WARRANTY.
4. COIL VOLTAGE FOR CR2 MUST BE 120VAC.
5. 24V REMOTE POWER SOURCE WAS USED AS AN EXAMPLE. OTHER VOLTAGES (NOT TO EXCEED 120VAC) MAY BE USED AS LONG AS PB, L1, L2, & CR1 RATINGS ARE COMPATIBLE WITH REMOTE POWER SOURCE.

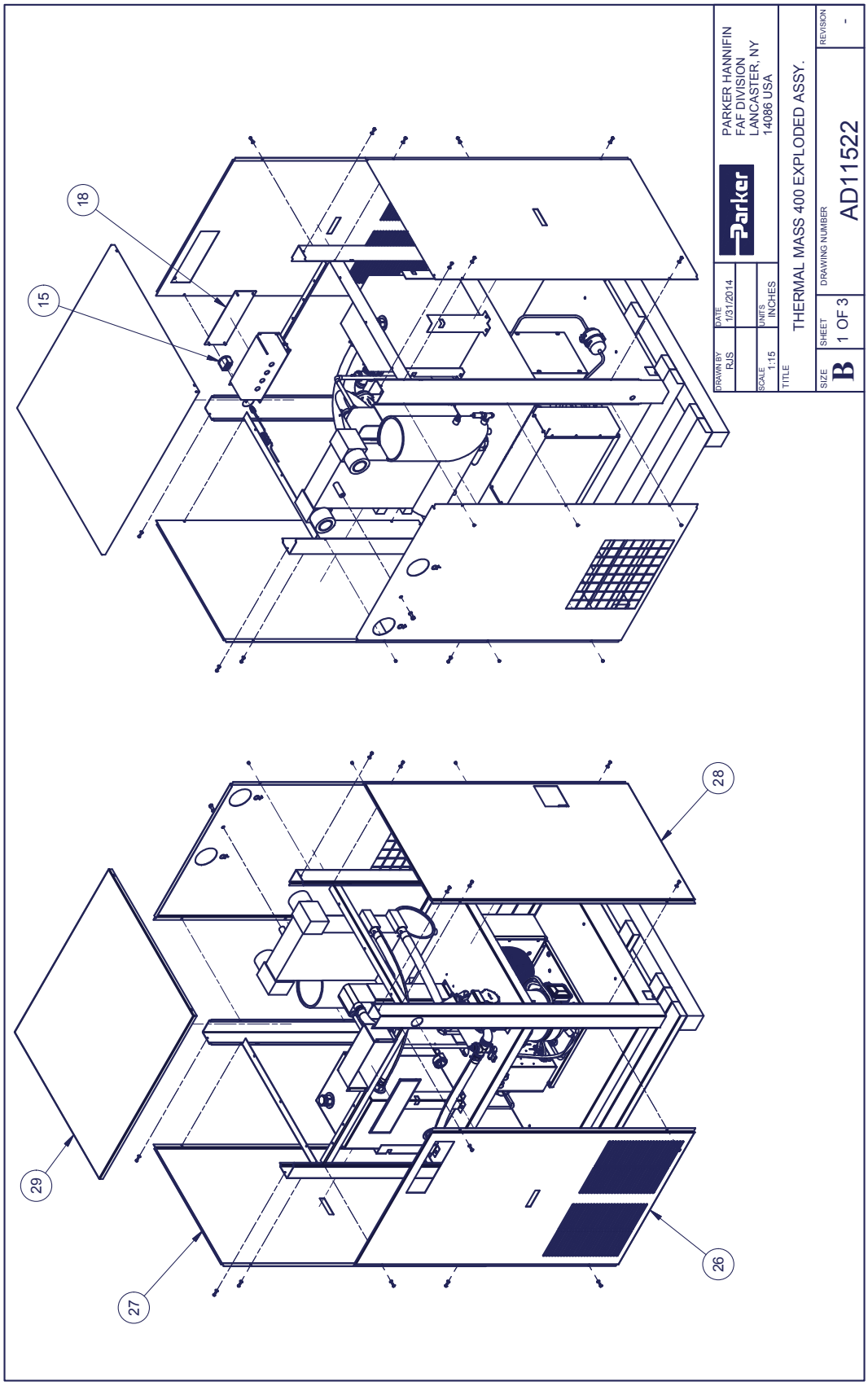


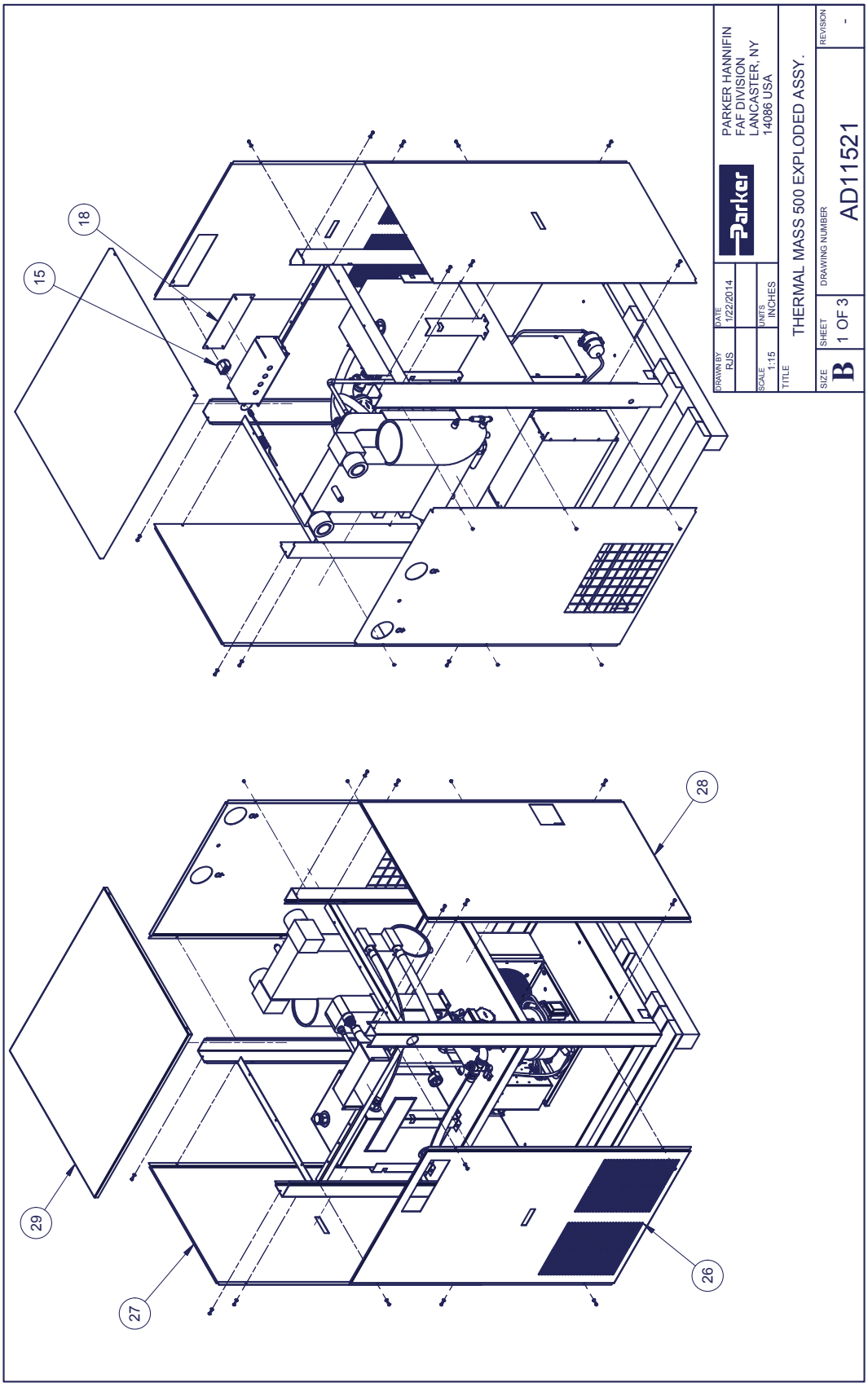
13. Exploded Views

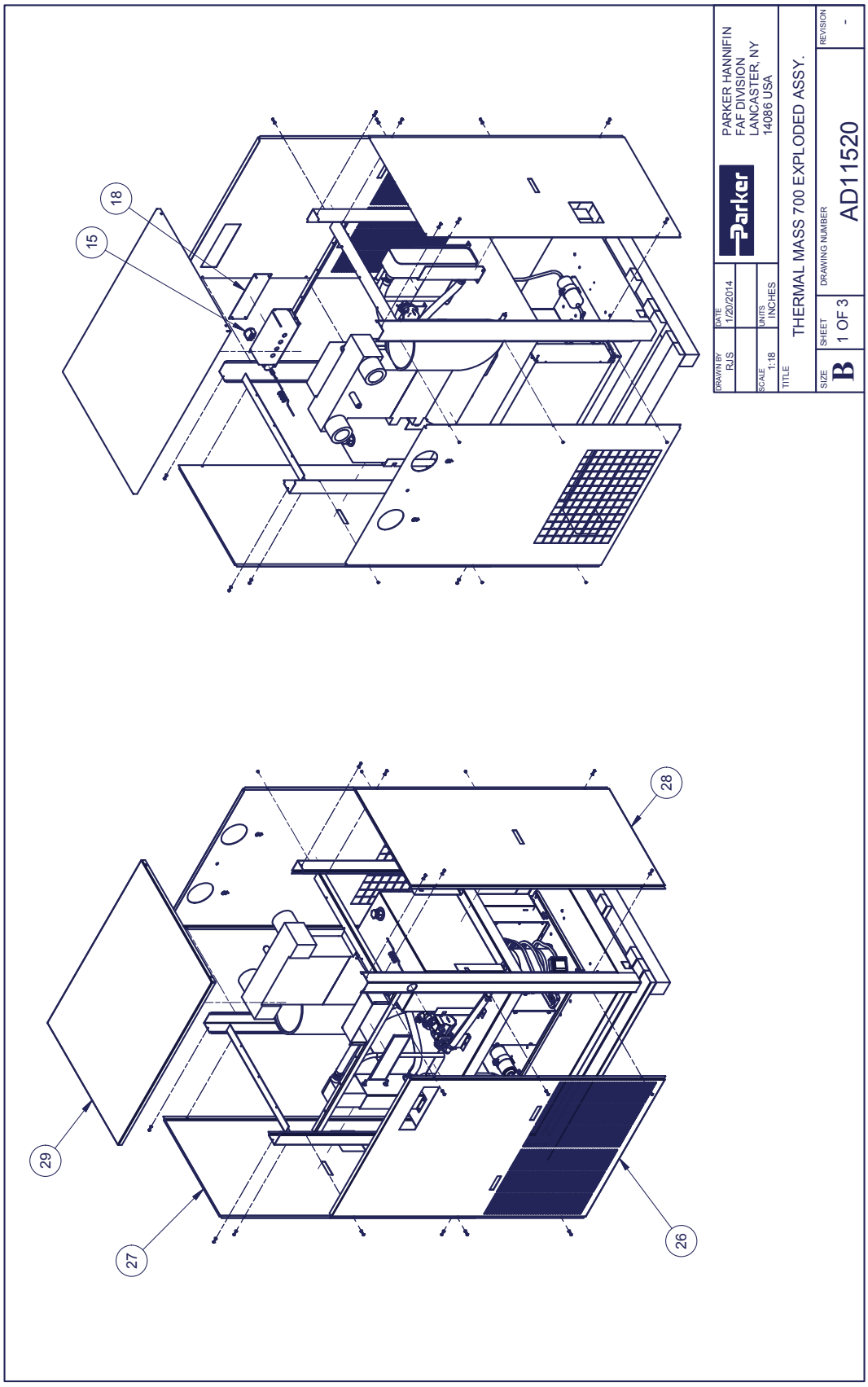


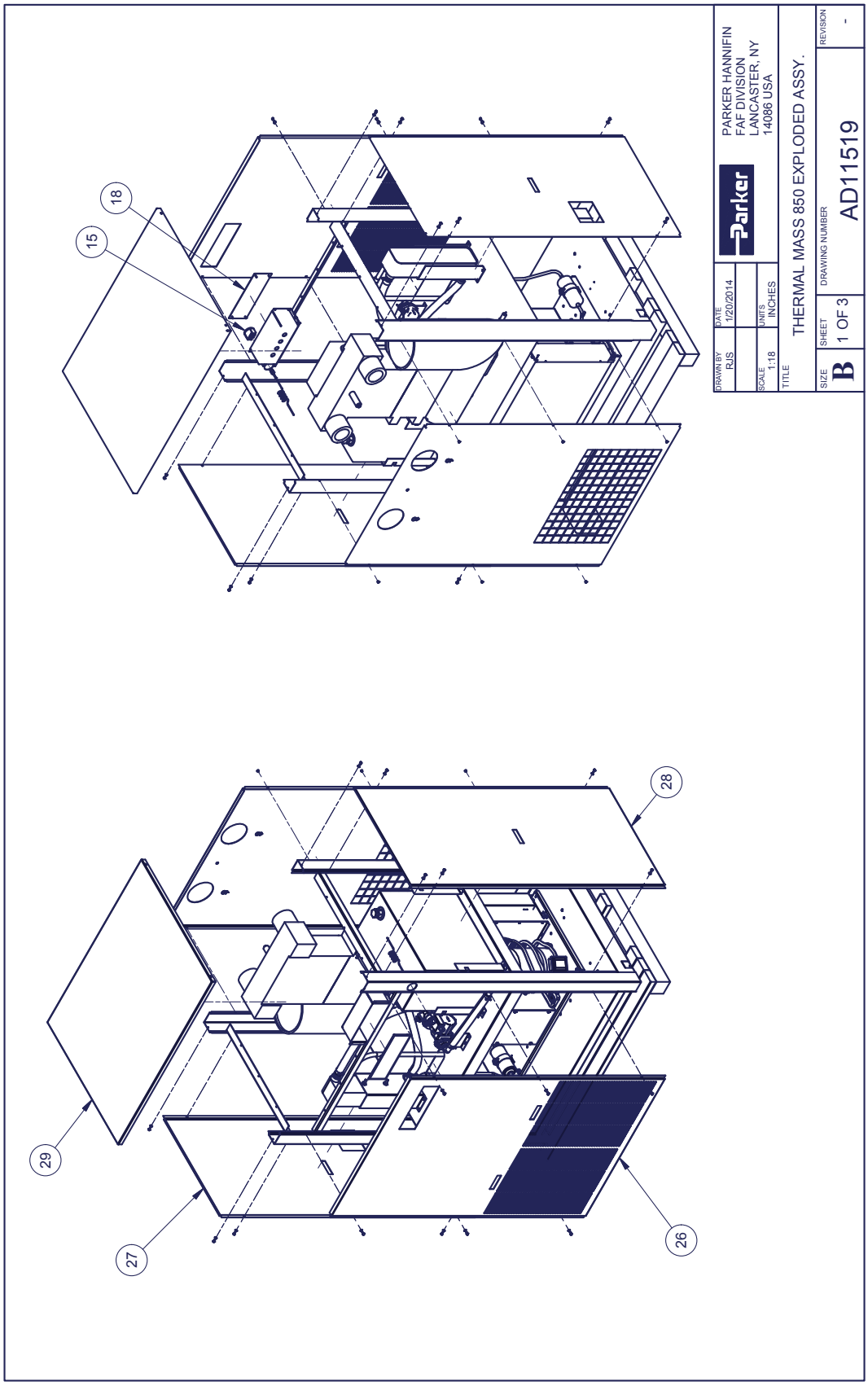

18
15
28
29
27
26
PARKER HANNIFIN
FAF DIVISION
LANCASTER, NY
14086 USA
THERMAL MASS 250 EXPLODED ASSY.
DRAWN BY RJS
DATE 2/3/2014
SCALE 1:15
UNITS INCHES
SIZE B
SHEET 1 OF 3
DRAWING NUMBER AD11524
REVISION -

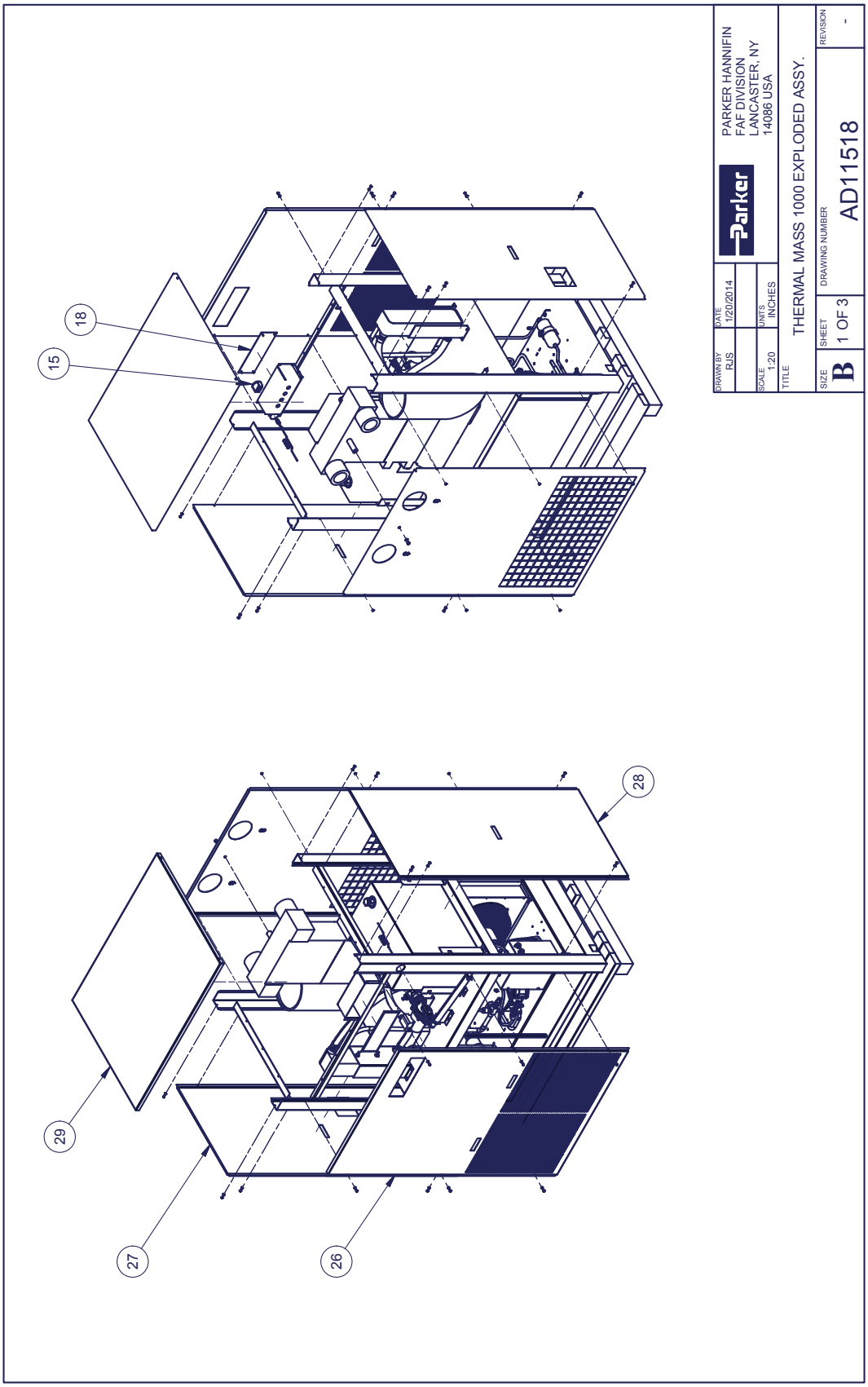

18
15
28
29
27
26
PARKER HANNIFIN
FAF DIVISION
LANCASTER, NY
14086 USA
DRAWN BY
RJS
DATE
2/3/2014
SCALE
1:15
UNITS
INCHES
TITLE
THERMAL MASS 325 EXPLODED ASSY.
SIZE
B
SHEET
1 OF 3
DRAWING NUMBER
AD11523
REVISION
-


18
15
28
29
27
26
PARKER HANNIFIN
FAF DIVISION
LANCASTER, NY
14086 USA
Parker
DRAWN BY
RJS
DATE
1/31/2014
SCALE
1:15
UNITS
INCHES
TITLE
THERMAL MASS 400 EXPLODED ASSY.
SIZE
B
SHEET
1 OF 3
DRAWING NUMBER
AD11522
REVISION
-


18
15
28
29
27
26
PARKER HANNIFIN
FAF DIVISION
LANCASTER, NY
14086 USA
DRAWN BY
RJS
DATE
1/22/2014
SCALE
1:15
UNITS
INCHES
TITLE
THERMAL MASS 500 EXPLODED ASSY.
SIZE
B
SHEET
1 OF 3
DRAWING NUMBER
AD11521
REVISION
-


18
15
28
29
27
26
PARKER HANNIFIN
FAF DIVISION
LANCASTER, NY
14086 USA
DRAWN BY RJS
DATE 1/20/2014
SCALE 1:18
UNITS INCHES
TITLE
THERMAL MASS 700 EXPLODED ASSY.
SIZE B
SHEET 1 OF 3
DRAWING NUMBER AD11520
REVISION -


18
15
28
29
27
26
PARKER HANNIFIN
FAF DIVISION
LANCASTER, NY
14086 USA
THERMAL MASS 850 EXPLODED ASSY.
DRAWN BY RJS
DATE 1/20/2014
SCALE 1:18
UNITS INCHES
SIZE B
SHEET 1 OF 3
DRAWING NUMBER AD11519
REVISION -


18
15
28
29
27
26
PARKER HANNIFIN
FAF DIVISION
LANCASTER, NY
14086 USA
THERMAL MASS 1000 EXPLODED ASSY.
DRAWN BY RJS
DATE 1/20/2014
SCALE 1:20
UNITS INCHES
SIZE B
SHEET 1 OF 3
DRAWING NUMBER AD11518
REVISION -

14. Warranty

WARRANTY REGISTRATION

IMPORTANT! Mail or Fax (716-685-1010) Today!

Fold and Seal and your Service Warranty will be registered immediately.
We are here to help. For more information on service or installation call the Service Department at 1-855-587-9323.

Email to: fafwarranty@parker.com

Model # _____ Serial # _____

Company _____

Address _____

City _____ State/Province _____ Zip _____

Telephone _____ Contact _____

Title _____ Department _____

Date Purchased _____ Date installed _____

Purchased From _____

COMMENTS

Please indicate a response on a scale of
(1) being the lowest to (5) being the highest

_____
Condition of Arrival

_____
Ease of Installation

_____
Ease of Start-Up

_____
Product Quality

_____
Technical Assistance

_____
Clarity of Instruction/Warranty Manual

FINAL OPERATION CHECK LIST

Inlet air temperature is _____

Inlet PSIG is _____

The dew point temperature controller reads between

_____ and _____

Air compressor HP _____, or Max SCFM is _____

Is the dryer a minimum of 3' from any structure on all sides?

Yes No

The Y strainer for drains has been cleaned after first 8 hours of operation Yes No

What are your thoughts on the operation of the dryer?

_____

_____

Why did you choose this manufacturer?

_____

_____

What could we do better?

_____

_____

Worldwide Filtration Manufacturing Locations

North America

Compressed Air Treatment

Gas Separation & Filtration Division
Airtek/Finite/domnick hunter/Zander
Lancaster, NY
716 686 6400
www.parker.com/faf

Balston
Haverhill, MA
978 858 0505
www.parker.com/balston

Engine Filtration

Racor
Modesto, CA
209 521 7860
www.parker.com/racor

Holly Springs, MS
662 252 2656
www.parker.com/racor

Hydraulic Filtration

Hydraulic & Fuel Filtration
Metamora, OH
419 644 4311
www.parker.com/hydraulicfilter

Laval, QC Canada
450 629 9594
www.parkerfarr.com

Velcon
Colorado Springs, CO
719 531 5855
www.velcon.com

Process Filtration

domnick hunter Process Filtration
SciLog
Oxnard, CA
805 604 3400
www.parker.com/processfiltration

Water Purification

Village Marine, Sea Recovery,
Horizon Reverse Osmosis
Carson, CA
310 637 3400
www.parker.com/watermakers

Europe

Compressed Air Treatment

domnick hunter Filtration & Separation
Gateshead, England
+44 (0) 191 402 9000
www.parker.com/dhfns

Parker Gas Separations
Etten-Leur, Netherlands
+31 76 508 5300
www.parker.com/dhfns

Hiross Zander
Essen, Germany
+49 2054 9340
www.parker.com/hzfd

Padova, Italy
+39 049 9712 111
www.parker.com/hzfd

Engine Filtration & Water Purification

Racor
Dewsbury, England
+44 (0) 1924 487 000
www.parker.com/rfde

Racor Research & Development
Stuttgart, Germany
+49 (0)711 7071 290-10

Hydraulic Filtration

Hydraulic Filter
Arnhem, Holland
+31 26 3760376
www.parker.com/hfde

Urjala, Finland
+358 20 753 2500

Condition Monitoring
Parker Kittiwake
West Sussex, England
+44 (0) 1903 731 470
www.kittiwake.com

Process Filtration

domnick hunter Process Filtration
Parker Twin Filter BV
Birtley, England
+44 (0) 191 410 5121
www.parker.com/processfiltration

Asia Pacific

Australia
Castle Hill, Australia
+61 2 9634 7777
www.parker.com/australia

China
Shanghai, China
+86 21 5031 2525
www.parker.com/china

India
Chennai, India
+91 22 4391 0700
www.parker.com/india

Parker Fowler
Bangalore, India
+91 80 2783 6794
www.johnfowlerindia.com

Japan
Tokyo, Japan
+81 45 870 1522
www.parker.com/japan

Korea
Hwaseon-City
+82 31 359 0852
www.parker.com/korea

Singapore
Jurong Town, Singapore
+65 6887 6300
www.parker.com/singapore

Thailand
Bangkok, Thailand
+66 2186 7000
www.parker.com/thailand

Latin America

Parker Comercio Ltda.
Filtration Division
Sao Paulo, Brazil
+55 12 4009 3500
www.parker.com/br

Pan American Division
Miami, FL
305 470 8800
www.parker.com/panam

Africa

Aeroport Kempton Park, South Africa
+27 11 9610700
www.parker.com/africa

Publication: PTM User Guide Rev D

Parker Hannifin Corporation
Gas Separation & Filtration Division
4087 Walden Avenue
Lancaster, NY 14086
phone 800 343 4048
www.parker.com