Effective: September 2015

Supercedes: HY25-1890-M1/US June 2015



Parker Non-Cycling Refrigerated Dryer Models PNC200 - PNC1200

User Guide Rev. E



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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

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

Unless supplied for special conditions, air cooled dryers must be located in an area with an ambient temperature between 41 - 100°F (5-38°C) and free from explosive and corrosive fumes. Three (3) feet (92cm) of space must be allowed between all open grills.



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 115°F (46°C). If ambient temperature conditions are over 100°F (38°C), dryer capacity will be reduced. To get dryer capacity at elevated ambient temperature use the correction factors.
- Unit must be installed indoors.

2. Dryer Installation

- 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 5 minutes)

CAUTION

2.1 Plumbing the Air Lines

The dryers are shipped ready to run.

- Air piping must be supported independently of the dryer.
- A properly sized Parker pre-filter is recommended 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. A union between the pre-filter and the dryer is recommended for ease of assembly and change-out of filter element. Please refer to section 10.1 for proper pre-filter selection.
- 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.
- Set drain time intervals to ensure complete condensate removal from dryer.

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.

- Remove electric box cover from inside unit.
- 2. Locate the wires.
- 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 - Standard on all models



- Dryer ON/OFF Switch
- Dryer POWER Light
- HIGH REFRIGERANT PRESSURE ALARM
- LOW REFRIGERANT PRESSURE ALARM
- DEWPOINT TEMPERATURE INDICATOR
- Adjustable time drain module mounted directly on drain solenoid
- Refrigerant Suction Guage



4. Start Up Procedures

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

- Leave power on for 8 hours before attempting to start (POWER light on). This allows the
 crankcase heater time to warm the refrigerant compressor oil and dissipate any refrigerant
 migration that can occur during storage. Failure can result in damage to the compressor
 and will void the warranty.
- 3. Verify suction pressure gauge reads above 80 psi (5.5 bar). If it is less, the dryer may have a refrigerant leak. This may be the result of shipping damage see section 1.0.

IMPORTANT

- 4. Switch unit on. ON/OFF indicator will light.
- 5. Do not pass air through the dryer until it stabilizes (Typically 5 minutes).
- 6. Once the dryer stabilizes, you can now introduce compressed air to the dryer. 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 strainer after the first 8 hours of operation. (See section 5.0 Routine Maintenance)
- 8. Restart dryer using this procedure after maintenance, power outage or prolonged periods of shutdown.

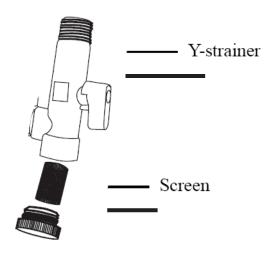
4.1 When Operating Dryer



- 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 41-100°F (5-38°C)
- 6. Keep inlet temperature under 101°F (38°C)
- 7. Check and clean condensate drain strainer regularly.

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 strainer should be checked weekly.



Pre-filtration per installation instructions:

- Parker pre-filter should be installed directly upstream from the dryer.
- The pre-filter should be changed every 6-12 months to prevent dryer fouling and prevent damage.

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.

Des	cription of Service Required	Service recommended every:					
Component	Operation	Day	Week	Month	Year		
Dryer	Check control panel indicators	1					
Dryer	Visually inspect dryer	1					
Dryer	Inspect drain line strainer screen						
Dryer Clean condensing coil fins (air cooled units only)				⋄			
Dryer Compressor oil level sight glass (250 to 1200 SCFM)				*			
Filtration	Depressurized dryer. Replace pre and after filter elements				1		
Dryer Check for refrigerant leaks					*		
Dryer	Depressurized dryer. Complete drain maintenance				*		



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.

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. Troubleshooting / Service

Description	Cause	Remedy
Low refrigerant pressure alarm	Nefrigerant leak Low pressure switch defective Ambient below 41°F	1) Locate leak. Repair & recharge. 2) Replace 3) Increase ambient temperature
High refrigerant discharge alarm	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 6) Expansion valve defective 7) Overcapacity/excessive thermal load	1) Clean condenser 2) Replace 3) Replace motor 4) Improve room ventilation 5) Replace 6) Replace 7) Reduce thermal load
Moisure downstream of dryer	1) Dryer is off 2) Time drain not working and/or plugged 2a) Drain time settings need adjustment 3) Excessive thermal load 4) Compressor does not run/defective 5) Bypass around dryer is open	1) Check for proper voltage. Turn dryer on. Check fuses and replace if necessary 2) Clean strainer 3) Reduce load 4) Check wiring, voltage. Replace if necessary 5) Close bypass
High Dewpoint	Excessive thermal load Compressor stopped Dryer off	Reduce inlet and/or ambient termperature and/or inlet flow Check circuit for loose connection / open Check electrical circuit

Adjustments should only be made under the guidance of a certified refrigeration technician. 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.

7.1 Refrigerant Charging Procedure



- Charge liquid refrigerant only. Do not use vapor.
- The dryer needs to be pulled into a vacuum (500 micron minimum) for 30 minutes.
- Charge **liquid** refrigerant into the high side refrigeration access valve located in the line on the outlet 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 metered into the compressor suction service valve.

7.2 Torque Values

Model	Suction Rotolock	Discharge Rotolock	All Flare Nuts & Caps	Pressure Switches
	*Torque	*Torque	*Torque	*Torque
PNC0200-A2	N/A	N/A	9 ft/lbs	10 ft/lbs
PNC0250-A2 PNC0325-A2	56 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs
PNC0250-A3 /A4/A5 PNC0325-A3 /A4/ A5 PNC0400-A3 / A4/A5	59 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs
PNC0500-A3 /A4/A5	59 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs
PNC0700-A3 /A4/ A5 PNC0850-A3 / A4/A5	66 ft/lbs	59 ft/lbs	9 ft/lbs	10 ft/lbs
PNC1050-A3 /A4/ A5 PNC1200-A3 / A4/A5	81 ft/lbs	66 ft/lbs	9 ft/lbs	10 ft/lbs

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

8. Technical Data

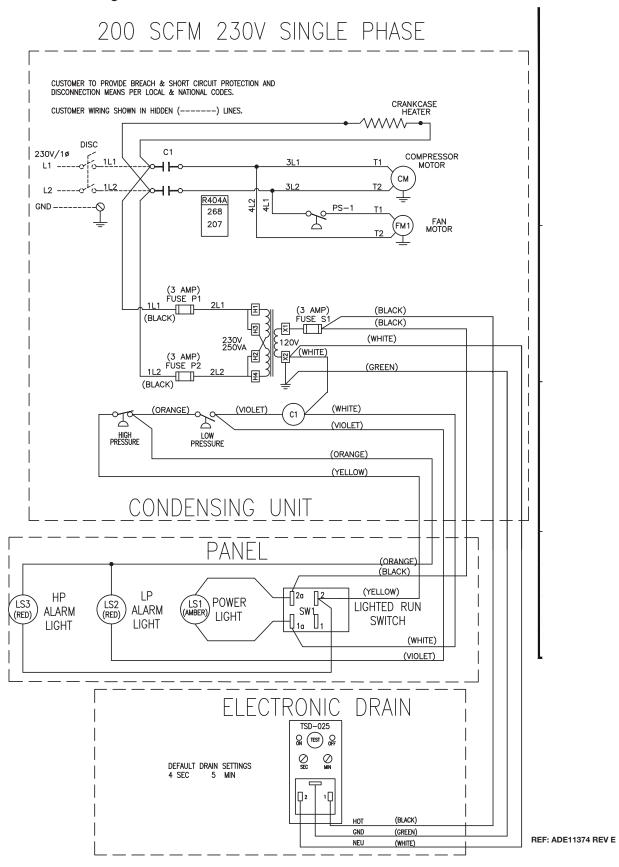
TECHNICAL									
Madal	Electrical	Compressor		Fan motor			Dryer		
Model	V / Ph / Hz	RLA	LRA	Qty	FLA	HP	MCA	Max Fuse	
PNC200	230/1/60	8.5	47	1	1	1/6	12.2	20	
	230/1/60	12.1	49	1	1.2	1/5	17.0	25	
DNOOFO	230/3/60	7.9	38	1	1.2	1/5	11.6	15	
PNC250	460/3/60	4.3	16	1	0.6	1/5	6.6	10	
	575/3/60	4.3	16	1	0.6	1/5	5.2	10	
	230/1/60	12.1	49	1	1.2	1/5	17.0	25	
DNOOOE	230/3/60	7.9	38	1	1.2	1/5	11.6	15	
PNC325	460/3/60	4.3	16	1	0.6	1/5	6.6	10	
	575/3/60	4.3	16	1	0.6	1/5	5.2	10	
	230/3/60	7.9	38	1	1.2	1/5	11.6	15	
PNC400	460/3/60	4.3	16	1	0.6	1/5	6.6	10	
	575/3/60	4.3	16	1	0.6	1/5	5.2	10	
	230/3/60	11.4	57	1	1.2	1/5	16.1	25	
PNC500	460/3/60	5.4	23	1	0.6	1/5	7.9	10	
	575/3/60	5.4	23	1	0.6	1/5	6.3	10	
	230/3/60	15.7	98	1	3	1/2	23.2	35	
PNC700	460/3/60	7.1	38	1	1.5	1/2	11.0	15	
	575/3/60	7.1	38	1	1.5	1/2	8.8	15	
	230/3/60	15.7	98	1	3	1/2	23.2	35	
PNC850	460/3/60	7.1	38	1	1.5	1/2	11.0	15	
	575/3/60	7.1	38	1	1.5	1/2	8.8	15	
	230/3/60	17.9	115	2	1.2	1/5	25.3	40	
PNC1050	460/3/60	8.6	47	2	0.6	1/5	12.5	20	
	575/3/60	8.6	47	2	0.6	1/5	10.0	15	
	230/3/60	17.9	115	2	1.2	1/5	25.3	40	
PNC1200	460/3/60	8.6	47	2	0.6	1/5	12.5	20	
	575/3/60	8.6	47	2	0.6	1/5	10.0	15	

Settings	Fan 1	Fan 2	High pressure switch	Low pressure switch	
PNC200 - PNC850 ON: 268 psig (18.5 barg) OFF: 207 psig (14.3 barg)		-	425 psig (29 barg) reset: 339 psig (21 barg)	35 - 60 psig	
PNC1050 - PNC1200	ON: 230 psig (16 barg) OFF: 190 psig (13 barg)	ON: 268 psig (18.5 barg) OFF: 207 psig (14.3 barg)		2.4 - 4 Barg	

10. Recommended Filters

MODEL	Recommended Pre-Filter	Replacement Element (Pre-Filter)	Recommended After-Filter	Replacement Element (After-Filter)
PNC200	AOP040HNFI	P040AO	AAP040HNFI	P040AA
PNC250	AOP040HNFI	P040AO	AAP040HNFI	P040AA
PNC325	AOP040HNFI	P040AO	AAP040HNFI	P040AA
PNC400	AOP040HNFI	P040AO	AAP040HNFI	P040AA
PNC500	AOP04 5INFI	P045AO	AAP045INFI	P045AA
PNC700	AOP055JNFI	P055AO	AAP055JNFI	P055AA
PNC850	AOP055JNFI	P055AO	AAP055JNFI	P055AA
PNC1050	AOP055JNFI	P055AO	AAP055JNFI	P055AA
PNC1200	AOP055JNFI	P055AO	AAP055JNFI	P055AA

11. Associated Drawings

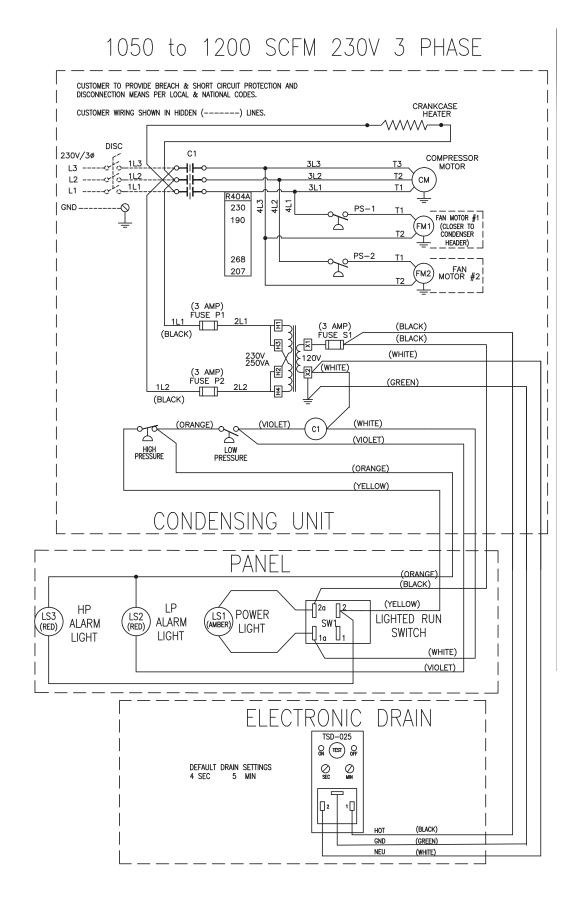


250 THRU 850 SCFM 230V 3 PHASE CUSTOMER TO PROVIDE BREACH & SHORT CIRCUIT PROTECTION AND DISCONNECTION MEANS PER LOCAL & NATIONAL CODES. CRANKCASE HEATER CUSTOMER WIRING SHOWN IN HIDDEN (-----) LINES. DISC C1 230V/3ø COMPRESSOR MOTOR L2 ----- 0_1L2 L1 ----- 0_1L1 3L2 T2 3L1 R404A 4L1 268 FAN MOTOR 207 (3 AMP) FUSE P1 (3 AMP) FUSE S1 (BLACK) (BLACK) (BLACK) (WHITE) -120V (WHITE) 围 (3 AMP) FUSE P2 (GREEN) (BLACK) (WHITE) C1 (VIOLET) HIGH PRESSURE LOW PRESSURE (ORANGE) (YELLOW) CONDENSING UNIT PANEI (ORANGE) (YELLOW) LP HP (LS1) POWER LS3 (RED) LIGHTED RUN ALARM SW1 1 ALARM LIGHT **SWITCH** LIGHT LIGHT (WHITE) ELECTRONIC DRAIN DEFAULT DRAIN SETTINGS MODEL TSD-025 250 ON TEST OFF 325 400 500 2 700 (BLACK) HOT 850 5 GND (GREEN)

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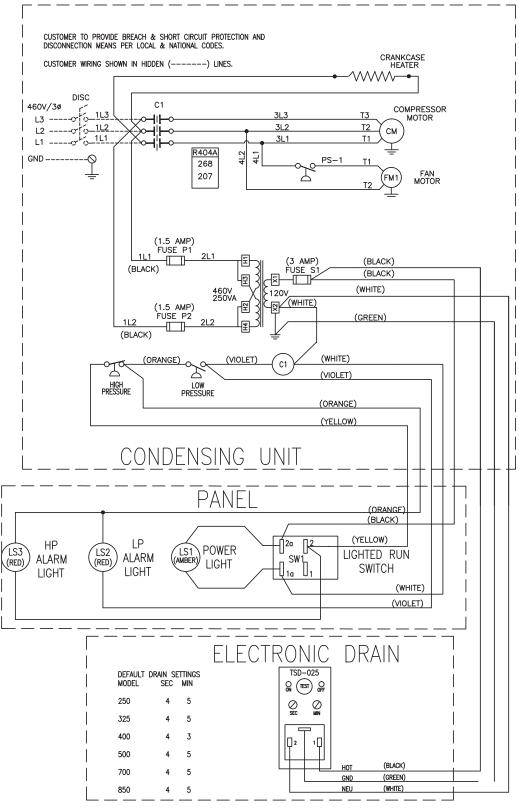
NEU

(WHITE)



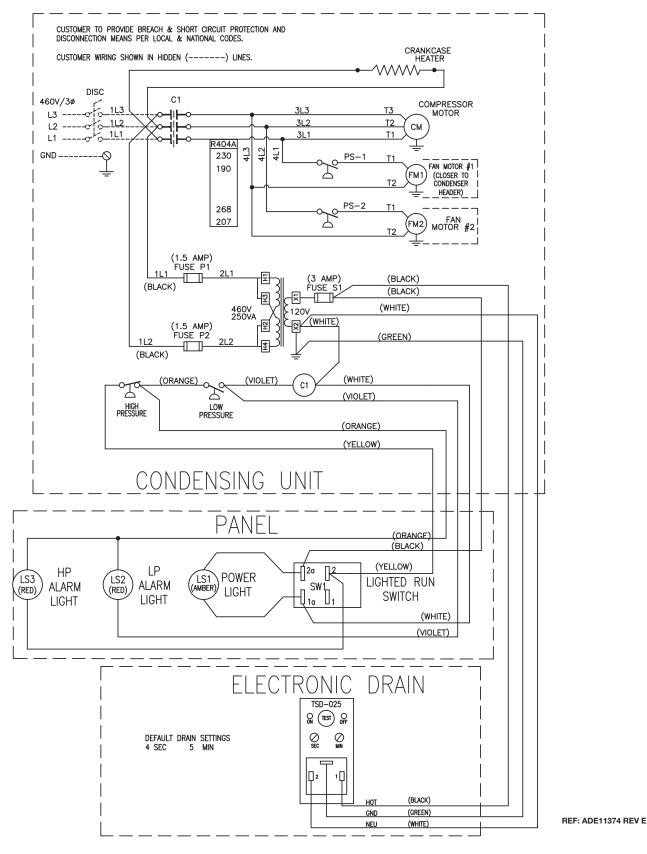
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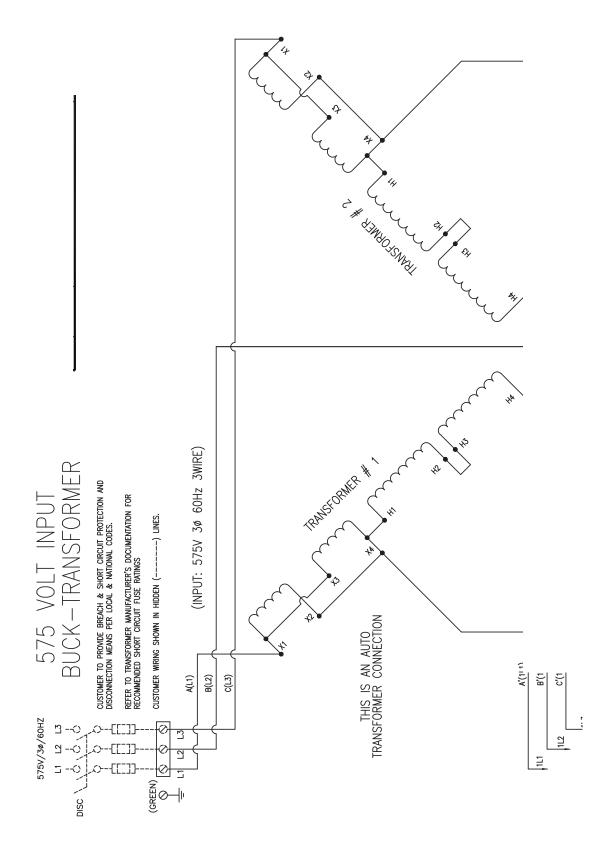
250 THRU 850 SCFM 460V 3 PHASE



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1050 to 1200 SCFM 460V 3 PHASE





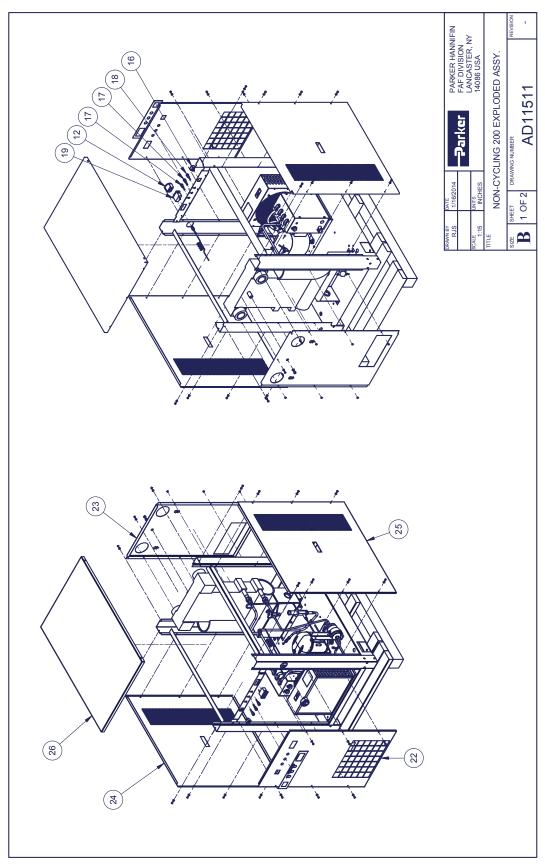
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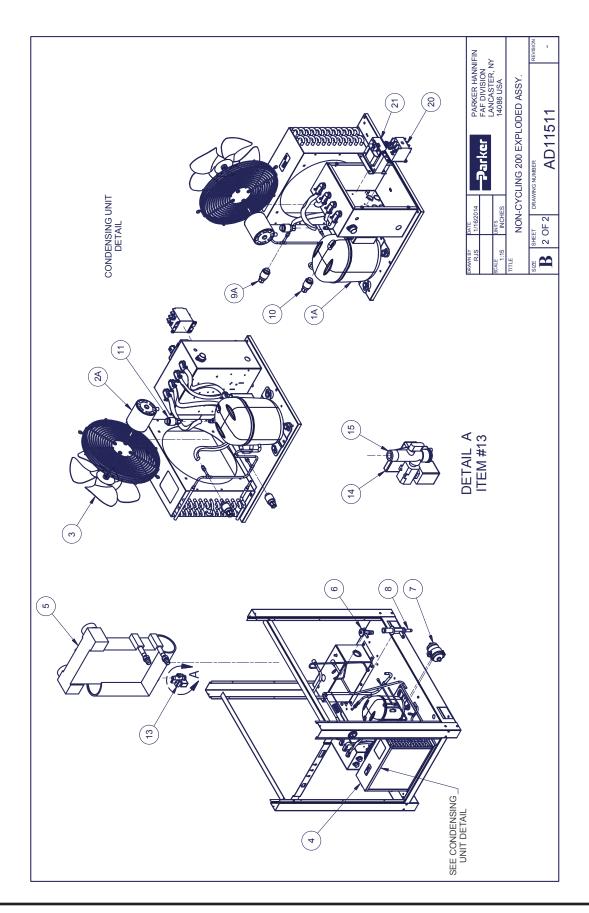
9. Spare Parts List

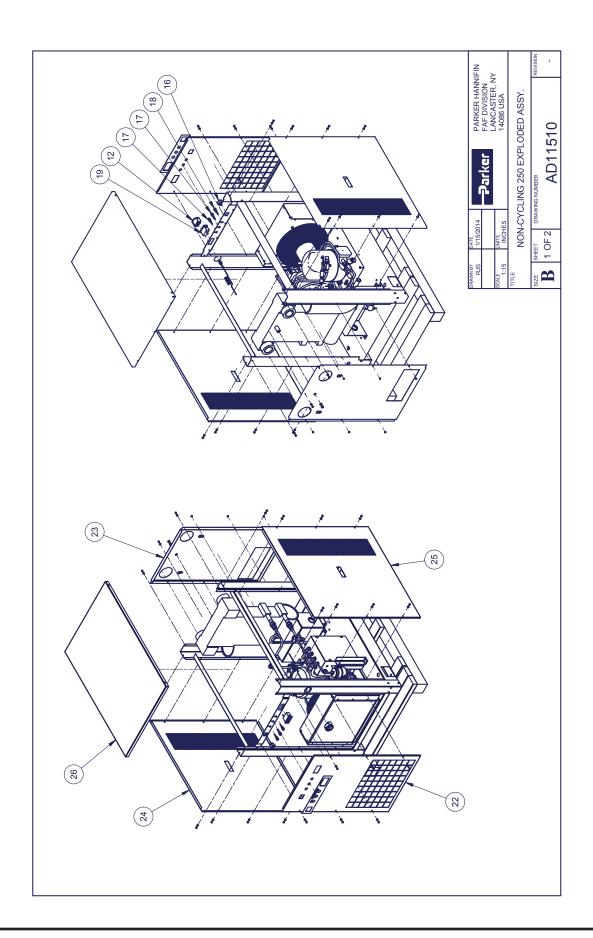
	·	MODEL								
Item #	Replacement parts	PNC200 (DWG. # AD11511)	PNC250 (DWG. # AD11510)	PNC325 (DWG. # AD11509)	PNC400 (DWG. # AD11508)	PNC500 (DWG. # AD11507)	PNC700 (DWG. # AD11506)	PNC850 (DWG. # AD11505)	PNC1050 (DWG. # AD11504)	PNC1200 (DWG. # AD11503)
	Refrigerant Compressor									
1A	230V/1PH/60Hz	DP14231-1-C	DP1424	45-2-C			n/	a		
1B	230V/3PH/60Hz	n/a	Г	P14245-3-C		DP16211-3	DP143	41-3-C	DP143	371-3-C
1C	460V/3PH/60Hz	n/a	[)P14245-4-C		DP16211-4	DP143	41-4-C	DP143	371-4-C
	Fan motor						,			
2A	230V/1PH/60Hz	DP14231-2-M			245-2-M			84-2-M		245-2-M
2B	460V/1PH/60Hz	n/a		DP1	8105-4		DP18	3184	DP18	3105-4
3	Fan blade	DP18182-B				DP181				
4	Refrigerant condenser	DP14231-CD		DP14245-CD		DP14295-C	DP143	13-CD	DP14	371-CD
5	Evaporator/separator/air- air exchanger		XF0325-NC			XF0500- NCR-F			0-NCR-F	
6	Expansion valve	DP34181-404		P34182-404-	1	DP34183-404			185-404	
7	Refrigerant filter			DP28125					28135	
8	Hot gas bypass valve Fan #1 pressure switch			P36062-4			L	DP3	6062-2	
9	(230v)				DP40080				DP4	10081
9A	**Fan #1 pressure switch (460v/575v)					DP40106				
9B	Fan #2 pressure switch (230v)				n/a				DP4	.0080
9C	**Fan #2 pressure switch (460v/575v)		n/a DP40106					10106		
10	High refrigerant pressure switch	DP40133								
11	Low refrigerant pressure switch		DP40026							
12	Refrigerant gauge		DP42107							
13	Timed drain assembly					TDS-025				
14	Drain solenoid valve					TP8002-1				
15	Valve strainer screen					KP5025-S				
16	on/off rocker switch					EX0040-1				
17	Red alarm light					EL1012				
18 19	Amber power light Dewpoint indicator					EL1011 398H354317				
20	Compressor contactor					ES5035				
21	Transformer					ET0250				
21A	230/1 & 3 Fuse - Primary (Ctrl.Transformer)				E	F0300-1-TD				
21B	230/1 & 3 Fuse - Secondary (Ctrl.Transformer)				E	F0300-1-TD				
21C	460/3 Fuse - Primary (Ctrl.Transformer)	N/A EF0150-G								
21D	460/3 Fuse - Secondary (Ctrl.Transformer)	N/A EF0300-1-TD								
	Cabinet panels									
22	Front panel	DP0325-NC- CAB-700-REV	1 DP0325-NC-CAB-800-REV 1 DP1000-NC-CAB-700							
23	Back panel		DP0325-NC-CAB-500-REV DP1000-NC-CAB-500 CAB-500-REV DP1000-NC-CAB-500							
24	Left panel	DP0325-NC-CAB-600-REV DP-1000-NC-CAB-900 DP-1000-NC-CAB				IC-CAB-800				
25	Right panel	DP0325-NC-CAB-600-REV DP1000-NC-CAB-600								
26	Top panel		DP0325-NC-CAB-400-REV DP1000-NC-CAB-400							

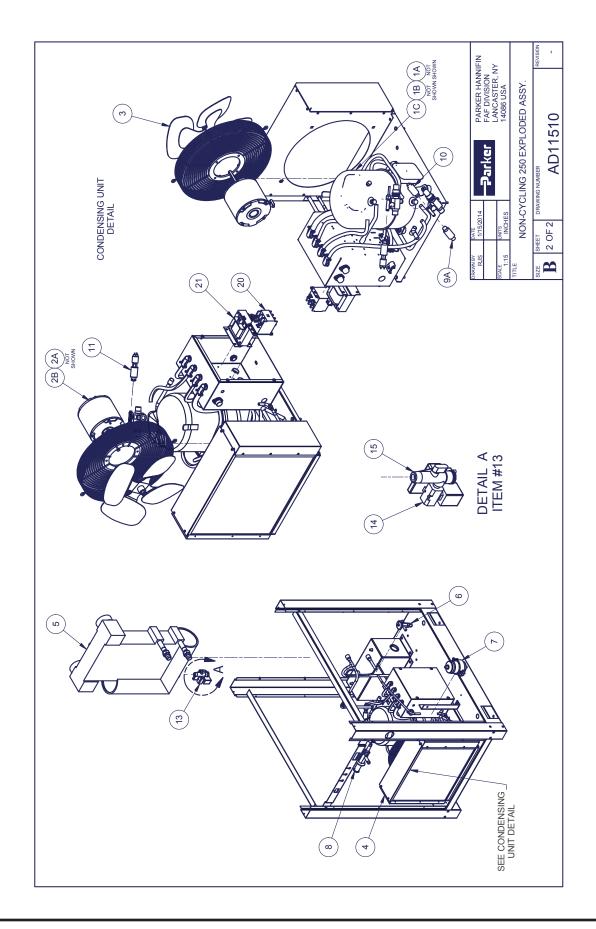
^{**} DP 40106 phased in during 2016. Units shipped early 2016 and older will need the following: Fan #1: DP40080 & Fan #2: DP40081. DP40106 is mounted directly on the top of electrical box, the others are not.

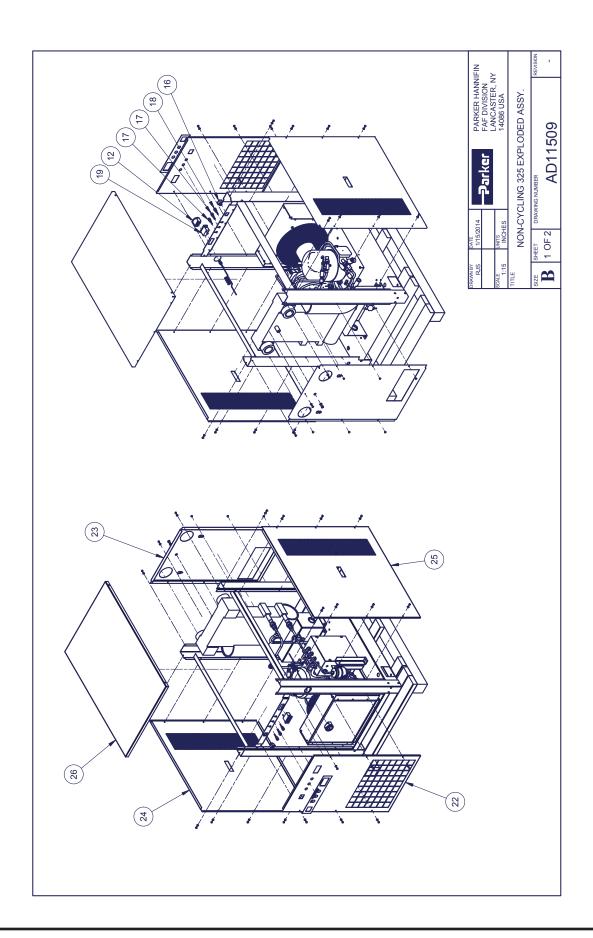
12. Exploded Views

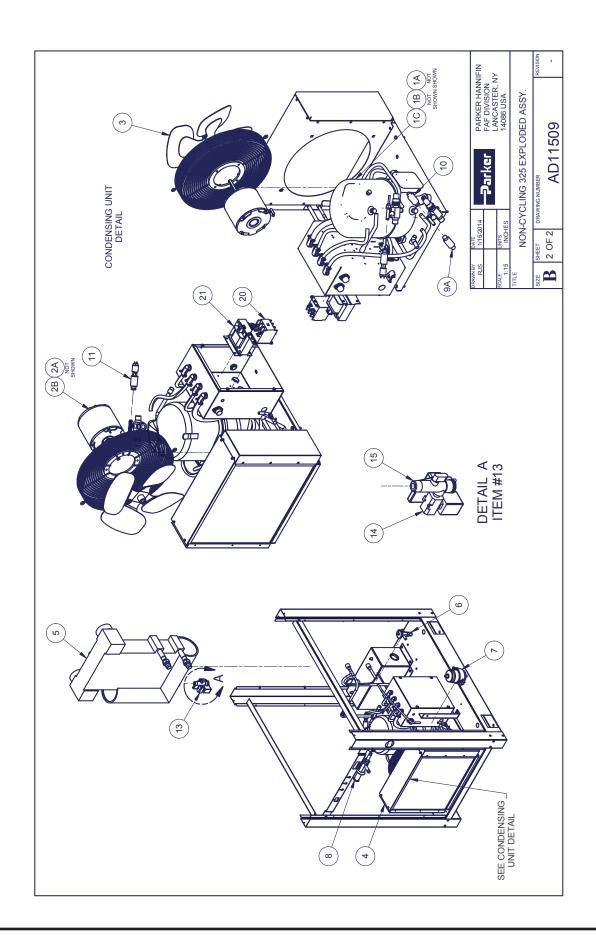


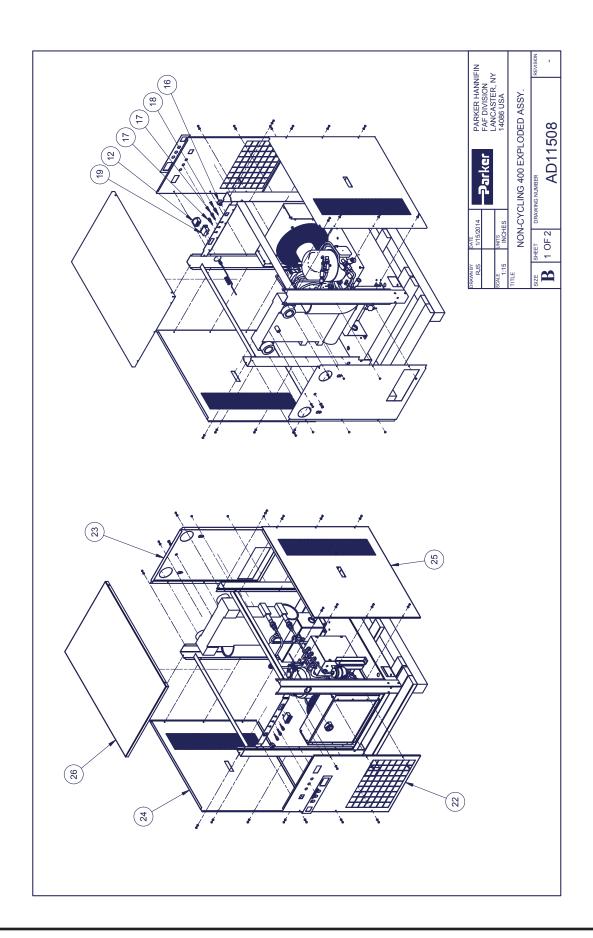


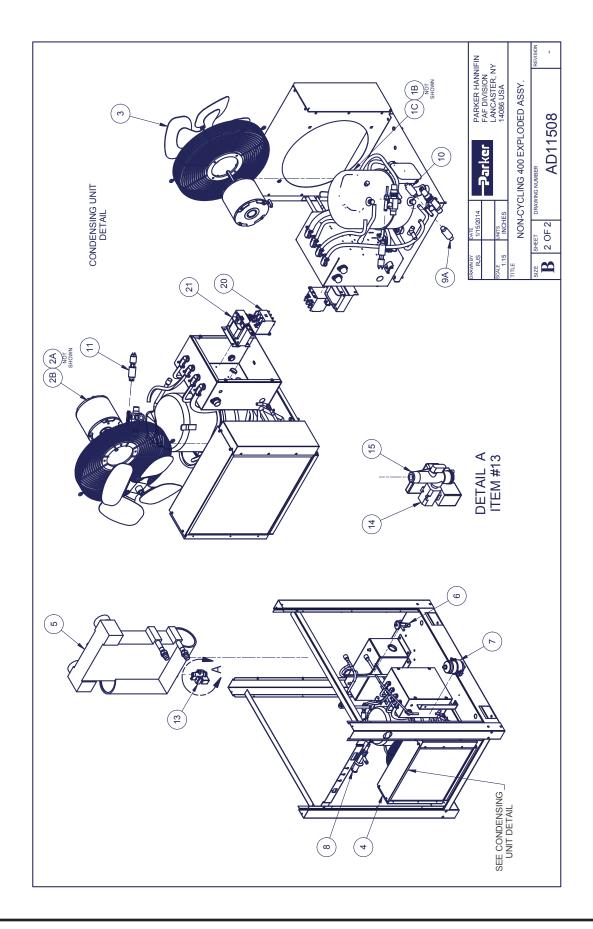


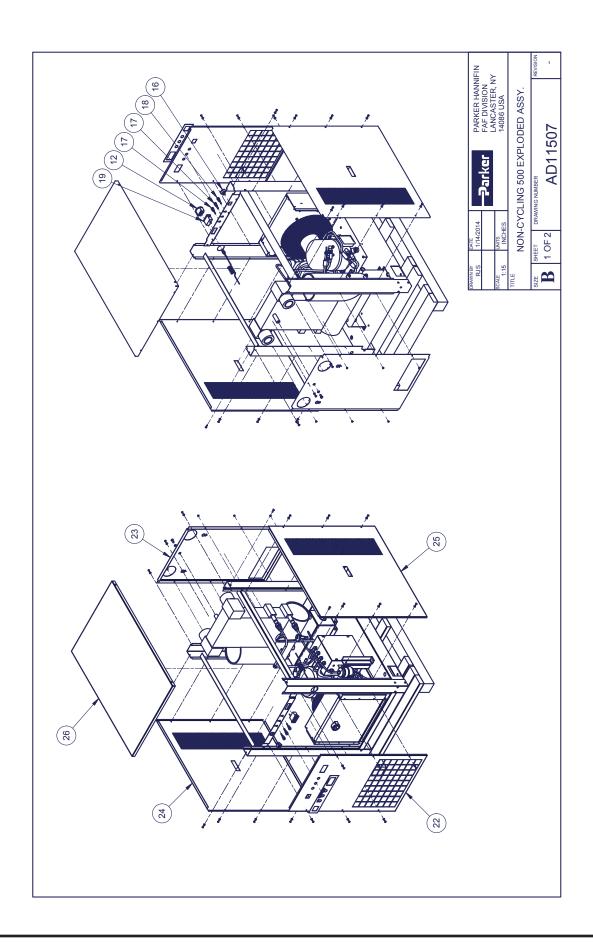


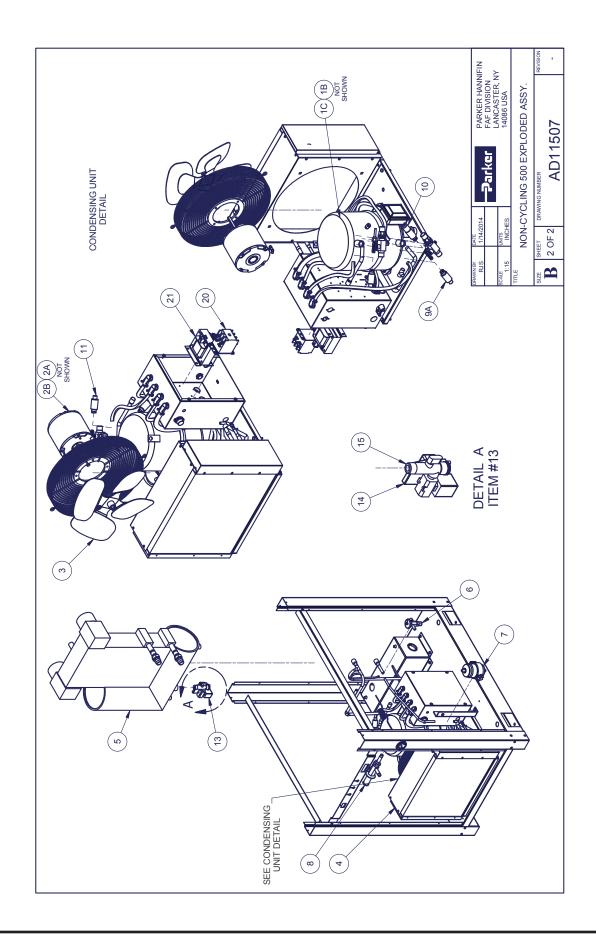


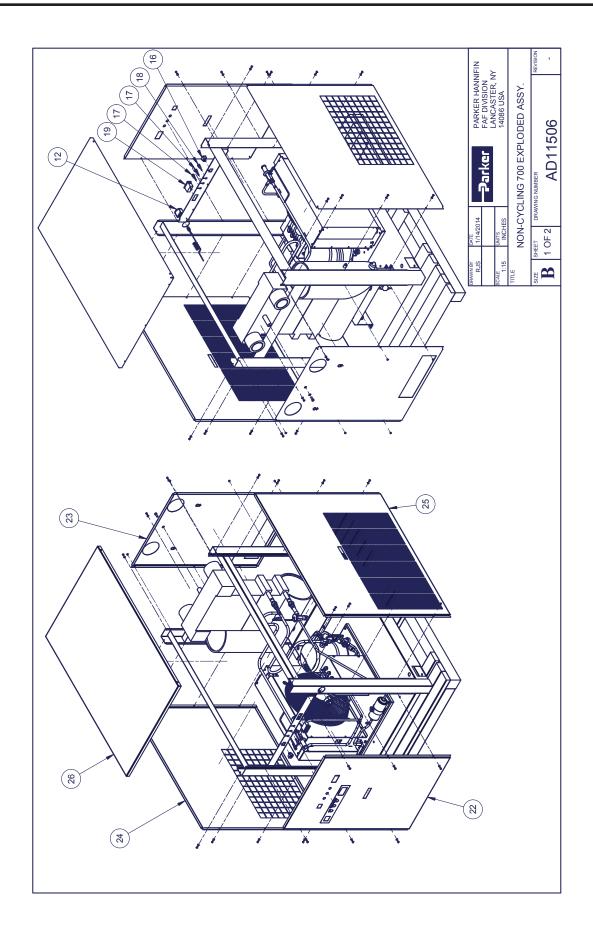


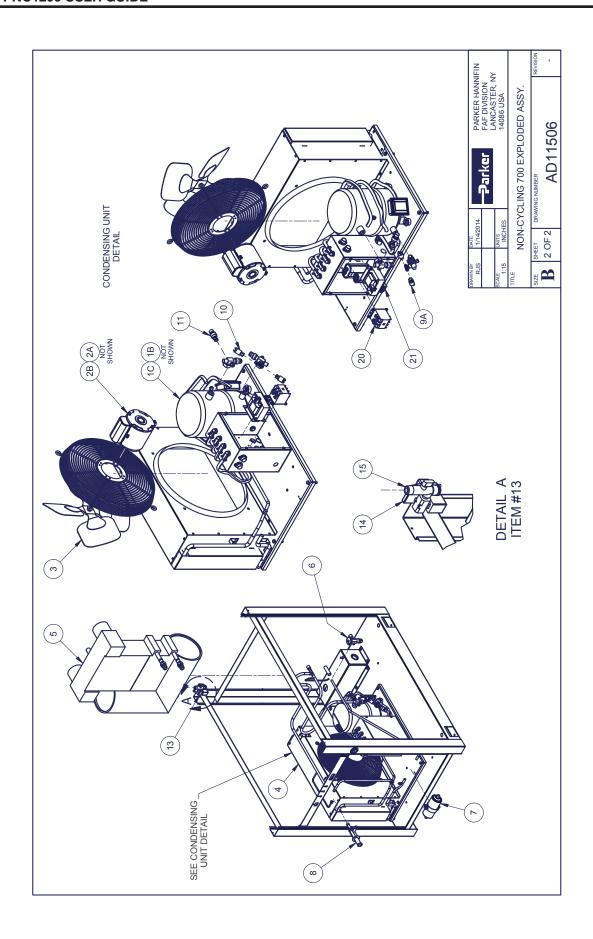


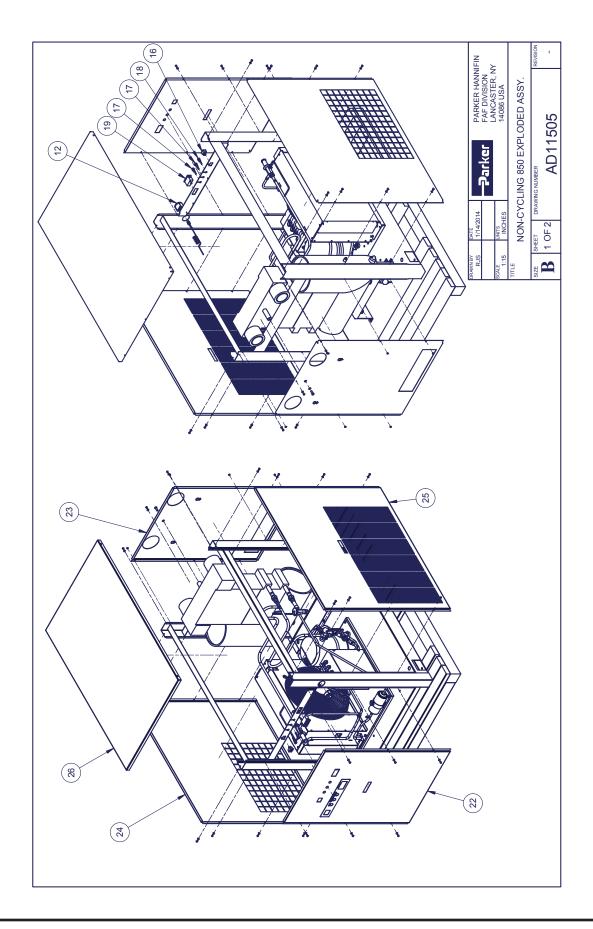


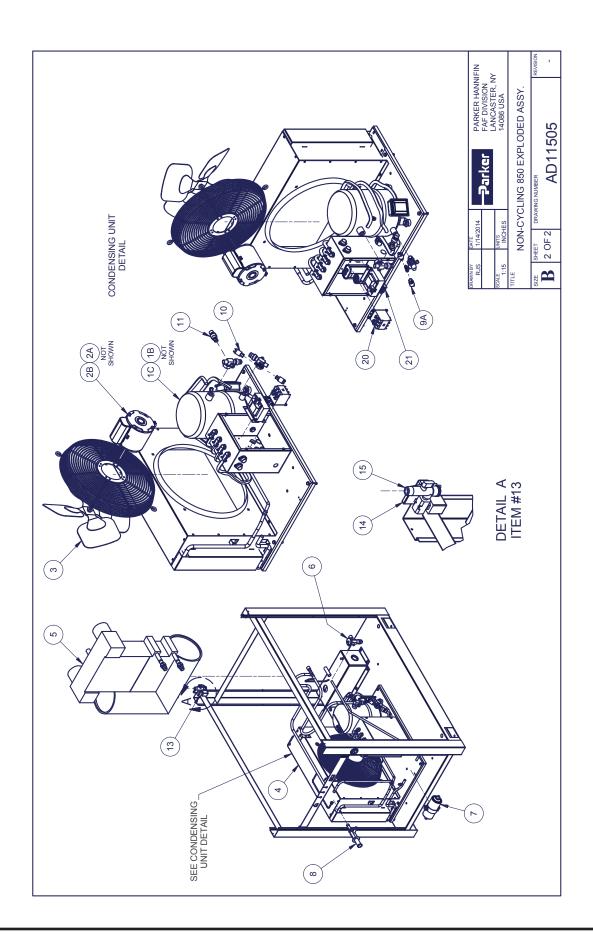


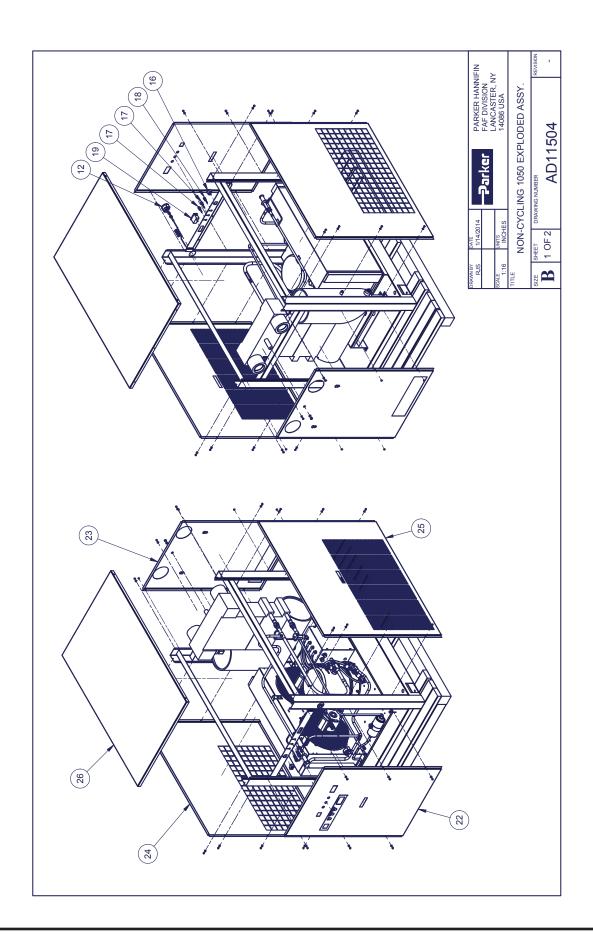


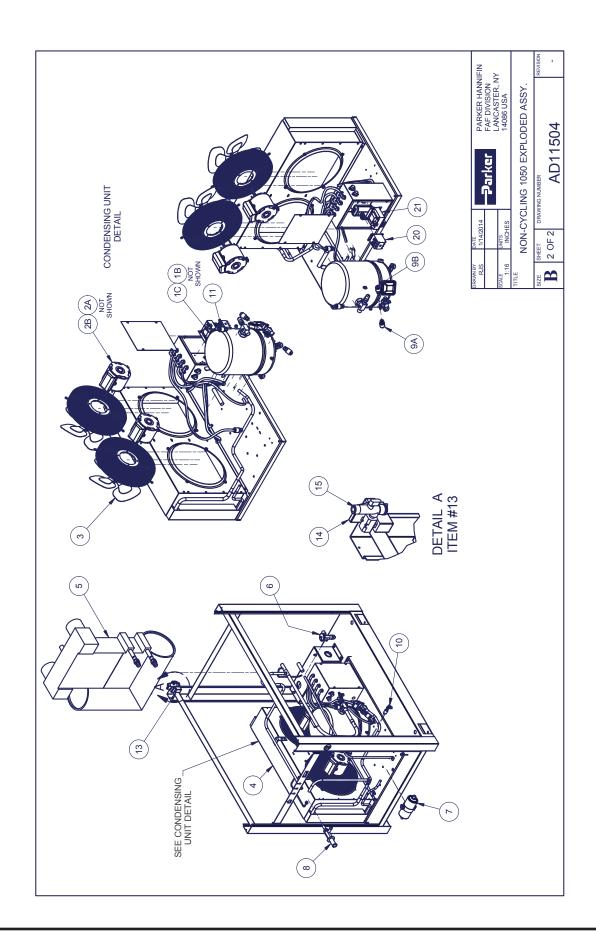


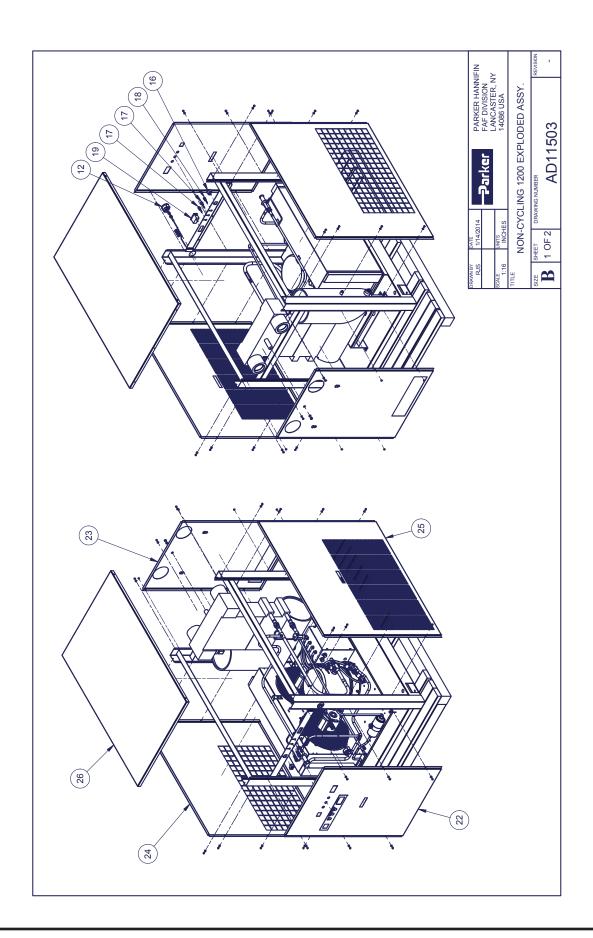


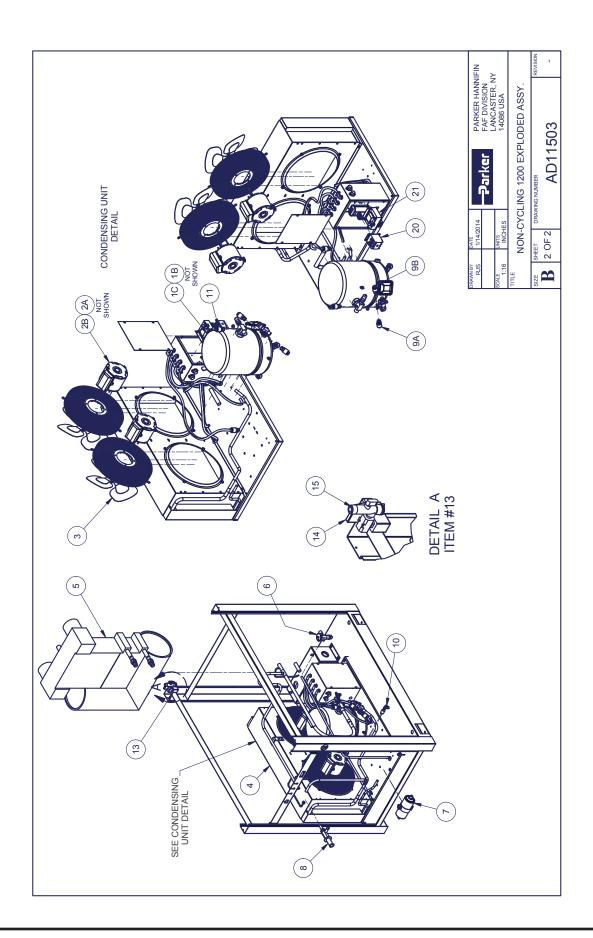












13. Warranty Registration



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	FINAL OPERATION CHECK LIST
Please indicate a response on a scale of [1] being the lowest to (5) being the highest	Inlet air temperature is
Condition of Arrival	Inlet PSIG is
Ease of Installation	The dew point temperature controller reads between
Ease of Start-Up	and
Product Quality	Air compressor HP, or Max SCFM is Is the dryer a minimum of 3' from any structure on all sides?
Technical Assistance	Yes No
Clarity of Instruction/Warranty Manual	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

Industrial Gas Filtration and Generation Division

Lancaster, NY 716 686 6400 www.parker.com/igfg

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Engine Filtration & Water Purification

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