DUSTHOG Plug & Play Fume & Dust Collector Owner's Manual

Model PNP

Parker

ENGINEERING YOUR SUCCESS.

Page intentionally left blank

KNOW YOUR EQUIPMENT

READ THIS MANUAL FIRST.

Your DUSTHOG® PNP system should provide many years of trouble-free service. This manual will help you understand the operation of your PNP unit. It will also help you understand how to maintain it in order to achieve top performance. For quick future reference, fill in the system and filter information in the spaces below. Should you need assistance, call the Parker customer service number shown below. To expedite your service, have the following information available when contacting Parker.

Unit Order #: _____

Unit Model #: _____

Unit Serial #:_____

System Accessories:

_____

_____

_____

Installation Date: _____

Parker Hannifin Customer Service

1-800-343-4048

Table of Contents

1.0 Important Notice 1
2.0 Introduction 1
2.1 DUSTHOG Nomenclature 1
2.2 Equipment Description 2
2.3 Principal of Operation 2
3.0 Installation 4
3.1 Inspection and Off Loading 4
3.2 Installation Preparation and Planning 6
3.3 Mechanical Installation 6
Compressed Air Connection 6
Fire Suppression System 6
Inlet Ducting Connection 6
Drawer Liner Installation 8
After-Filter Installation/Replacement 8
3.4 Electrical Connection 8
Electrical Supply Power 10
Electrical Touchscreen Controls 10
Remote Controls Panel 10
Process Control 11
Step-Down Transformer Package 11
4.0 Unit Operation 11
4.1 Start-up 11
4.2 System Operation 12
Airflow Adjustment Using Manual Speed Control 12
Airflow Adjustment Using Auto-Flow Control 12
Filter Pulse Cleaning System Operation 12
4.3 Touchscreen Operation 13
Start-up and Home Screen 13
Standard Format 13
Basic Screens 13
Auto-Flow Screen 15
After-Filter 15
Customer Settings 16
5.0 Service 18
5.1 General Maintenance Guidelines 18
5.2 Primary Filter Installation / Replacement 18
5.3 Cleanout of Spark Arrestor 18
5.4 Emptying Dust Drawer 19
6.0 Troubleshooting Guide 20
7.0 Replacement Parts 22
8.0 Appendix - Wiring Diagrams 24

SAFETY PRECAUTIONS

We have provided many important safety messages in this manual and on the DUSTHOG PNP Fume & Dust Collector. Always read and obey all safety messages.

This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others. All safety messages will follow the safety alert symbol and the word “DANGER”, “WARNING”, or “CAUTION”. These words mean:

⚠ DANGER — Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING — Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION — Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION — CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING

To reduce the risk of fire, electric shock, or injury when using your air cleaner, follow these basic precautions:

- Wear protective clothing and safety glasses when handling collector components or servicing the unit.
- Use proper lifting and rigging equipment to install your dust collector (or unit)
- Disconnect power before servicing.
- Replace all access panels before operating.
- Do not operate the unit with component doors open.
- Electrical connections should only be made by qualified personnel and be in accordance with local and national codes and regulations.
- Do not use in explosive atmospheres.
- Do not collect emissions which are explosive.
- Keep flammable materials and vapors, such as gasoline, away from unit.
- The unit should be inspected frequently and contaminants removed to prevent excessive accumulation which may result in flash-over or fire damage.
- Operate only in a safe and serviceable condition.
- Operating temperature to the air stream should not exceed 120° F (49° C).

COMBUSTIBLE DUST HAZARDS –
SMOG-HOG® and DUST-HOG® Pollution Control Systems

Pursuant to National Fire Protection Agency (NFPA) Standards, the owner/user is required to test their dust mixtures to evaluate and understand potential combustion or deflagration hazards that may exist. In addition, NFPA standards require the owner/user to perform and have record of a Dust Hazard Analysis (DHA) if there is potentially a combustible material involved within or exposed to the process.

The DHA serves as a systematic review of the process to:
1) Identify where fires and explosions can occur;
2) Identify the potential causes and consequences, and;
3) Determine if existing and proposed safeguards are sufficient.

It is the responsibility of the owner/user to evaluate, interpret and document any associated risk in their process including adherence and compliance to any and all applicable local, state and federal codes, standards, laws and regulations.

It is the sole responsibility of the equipment owner/user of record to coordinate and perform sample material collection and combustion/explosivity testing of any and all dust and material that will be extracted and filtered by the Air Pollution Control (APC) filtration equipment and to notify Parker of the results prior to any discussion involving equipment specification and solution recommendation. It is recommended to utilize a Certified Industrial Hygienist (CIH) or certified safety expert that is properly trained, licensed and approved and to use a licensed and approved dust testing facility for proper dust and material analysis, testing protocol and reporting procedures. A sample of testing facilities and list of Industrial Hygiene (CIH) and other occupational and environmental health and safety (OEHS) consultants can be located through AIHA (American Industrial Hygiene Association) website.

To minimize the risk of fire or explosion, user must ensure proper installation, operation and maintenance of Parker equipment. Since application, installation, operation and maintenance are beyond the control of Parker, Parker disclaims any liability or responsibility for damage from fires or explosions regardless of origin. Parker recommends that all APC dust collection equipment, installation and application conform to any and all applicable local, state and federal standards, codes, laws and regulations including the addition of appropriate fire or explosion protection systems including but not limited to venting, mitigation, suppression and isolation when and where required. Installation of Parker equipment should be by a licensed contractor that is also experienced in potential fire and explosion hazards and adheres to related local, state and federal codes, standards, laws and regulations. Parker is not an expert nor certified design consultant in relation to spark, fire or explosion mitigation including but not limited to detection, mitigation, suppression and isolation pf combustible dusts and materials. Therefore, Parker recommends that any industrial air filtration system recommendation, design or solution be reviewed, approved, stamped and signed by an industry expert consultant in air filtration systems, combustible dust/materials or certified safety expert such as a Certified Industrial Hygienist (CIH) or a Certified Professional Engineer (PE) who is a licensed and certified expert with industrial filtration system design and application including adherence and compliance to any and all applicable local, state and federal codes, standards, laws and regulations.

Pursuant to Parker's Offer of Sale (terms and conditions) and by accepting the purchased equipment, Buyer and owner/user agree to defend, indemnify, and hold harmless Parker, its successors, assignees, suppliers, shareholders, directors, officers, employees, agents, and affiliated companies from all losses, costs, damages, demands, claims, liabilities, fines, penalties or any other expenses (including attorneys' fees, court costs, and expert fees) (collectively "losses"), caused or contributed to in any way by Buyer or owner/user's failure to follow these instructions and/or failure to properly install, apply, operate, or maintain the equipment purchased from or supplied by Parker, or losses caused or contributed to in any way by Buyer's and owner/user's failure to provide accurate information, specifications or dust explosivity values.

Page intentionally left blank

1. Important Notice

This manual contains important safety information and precautionary measures. It is impossible to list all potential hazards associated with every collection system in each application. Proper use of the equipment should be discussed with Parker Hannifin, Inc. or your local Parker representative. Operating personnel should be aware of, and adhere to, the most stringent safety procedures

⚠ DANGER

- Do not collect explosive dusts or fume.
- Avoid mixing combustible materials such as aluminum, paper, wood or other organic dusts with dusts generated from grinding metals. A fire hazard could develop from sparks entering the dust collector.
- When collecting emissions from spark-producing processes, care must be taken to reduce any potential fire hazards.
  System design should include methods to prevent sparks from entering the dust collector.
  Dust collectors do not contain fire-extinguishing equipment.
- Your dust collector was selected for a particular application. Consult Parker prior to making any application or system changes.

2. Introduction

Thank you for selecting DUSTHOG fume/dust collection equipment to assist you in your commitment to a clean and safe environment. We trust that in purchasing our product, you have recognized our commitment to continually offer air cleaning equipment engineered to each collection need and manufactured to the highest standards. If at any time you have a question about dust collection, please do not hesitate to call your local Parker representative.

2.1 DUSTHOG Nomenclature

DUSTHOG air filtration systems are available in a variety of configurations and sizes. Codes shown below identify characteristics which might be built into a given unit. Blower quantity will be the other significant factor in unit configuration.

PNP-XX
- Quantity of filters deep
- Quantity of filters wide

Models: PNP-12, PNP-22, PNP-32

The PNP is a free standing, self contained, fume/dust filtering unit with a dust cabinet and a removable, easy-empty dust collection bin, primary filter cabinet, compressed air pulse cleaning system, blower cabinet, and controls. Optional after filters are available for final stage filtration.

The purpose of this manual is to provide the proper installation, operation, and general maintenance guidelines for the PNP. As you review this manual, refer to Figure 1 for assistance in identifying components of the dust collector.

The PNP dust collector has been designed to provide you with exceptional fume/dust collection capabilities and reliable, long-term field operation. We suggest that you thoroughly review this manual prior to installation and startup of your system.

If your PNP has optional equipment included as part of your order, specific operations and maintenance manuals for these accessory systems may be included. If applicable, site specific installation and other drawings will also be included.

If you require assistance in the installation, startup, operation, maintenance or troubleshooting of your air cleaning equipment, contact your local Parker sales representative.

2.2 Equipment Description

This section will briefly describe each component in the PNP and its role in the system's operation.

Dust Drawer

Most units will include a dust drawer where all collected fume or dust will fall into during filter cleaning. Angled flanges will direct dust that is blown off of the primary filters into a dust bin. Behind the lowest door on each cabinet, one 20 gallon bin will be housed behind each door of the cabinet (drawer quantity dependent on unit size). They can be accessed and maneuvered to a disposal site where an easy-empty design allows for disposal or recycling of collected material.

Filter Cabinet

The filter cabinet consists of the primary cartridge filters which are accessed through a hinged door on the front of the module. The filters are moved in and out of the cabinet and sealed to the tubesheet with a cambar mechanism.

The PNP comes standard with ProTura DH nanofiber technology cartridge filters. Additional media options and filter configurations are available and may have been specified for your application.

Pulse Cleaning System/Blower Cabinet

The compressed air pulse cleaning system is used to dislodge collected contaminates from the filters with bursts of air directed through cleaning nozzles. One filter is cleaned at a given time by controlling the solenoids on the manifold with the cleaning system programmed into the touch screen display. The controls for the cleaning system and all other electronics are housed in this cabinet. The compressed air supply connection is located on the rear of the cabinet.

The system control panel is located at the front of the module on a tool operated, hinged access panel. The supply power for the system is located at the rear of the cabinet.

The blower(s) is also located within this module immediately above the pulse cleaning system. The blower is an Electronically Commutated (EC) motorized impeller assembly. Depending on airflow requirements, there may be several blowers in this compartment installed in parallel.

2.3 Principal of Operation

The purpose of the PNP is to collect fugitive dust generated by various industrial processes during operation. The collected fume or dust is pulsed off of the primary filters directly back into the unit dust drawer. The dust bin can be emptied directly into a drum or container of the customers choice for recycling or disposal.

Differential Pressure

Differential pressure, also referred to as pressure drop (ΔP), is an indication of the resistance to airflow across the filter elements. Differential pressure is commonly measured in inches of water column (W.C.). It is normal for the differential pressure to increase as the collector operates. Any sudden increase or decrease in differential pressure may indicate a problem in the collector (blinded filters, leaks or other cause) that requires immediate attention. See troubleshooting guide in section 6 for assistance.

The operating differential pressure displayed on the unit will typically run between 0.5 to 3.0 in. W.C. (124.4 to 746.5 Pa) for a primary cartridge. The expected pressure range for the after-filters is 0.5 to 3.0 in. W.C. (124.4 to 746.5 Pa).

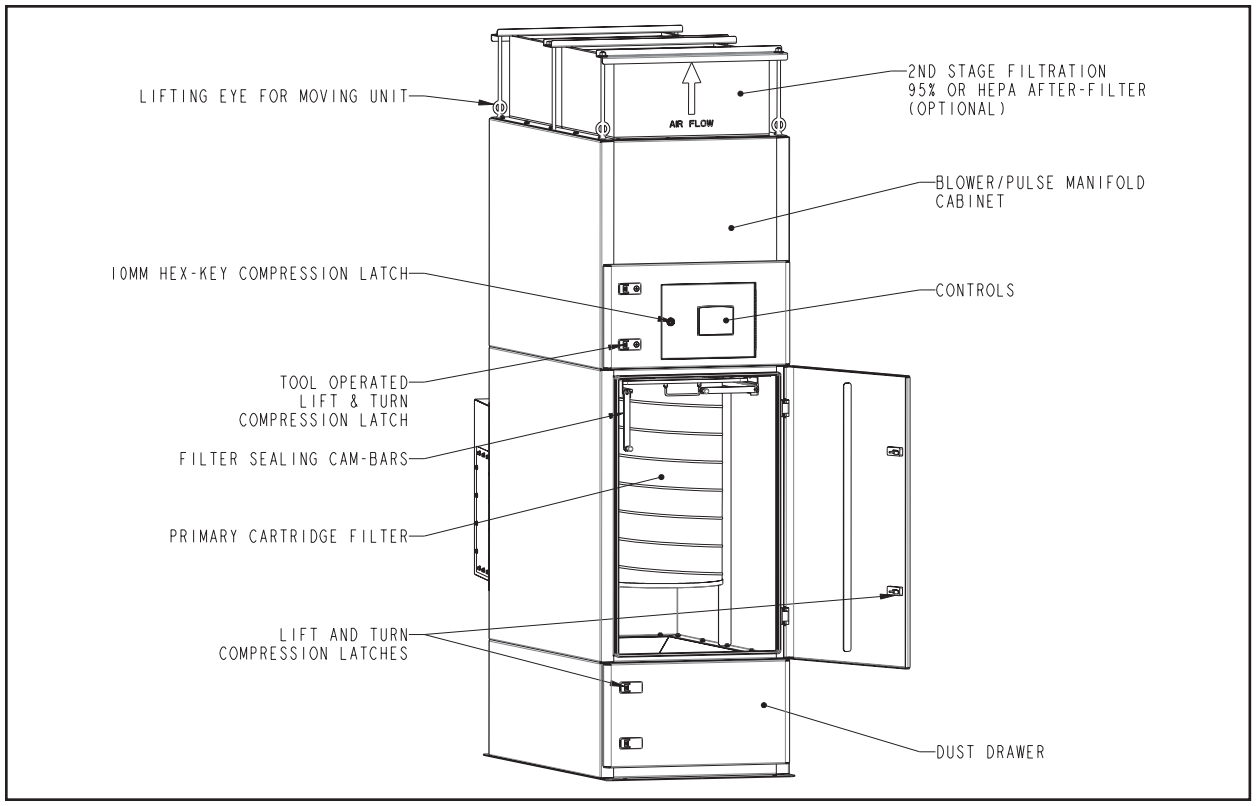


Figure 1A
PNP Equipment Description

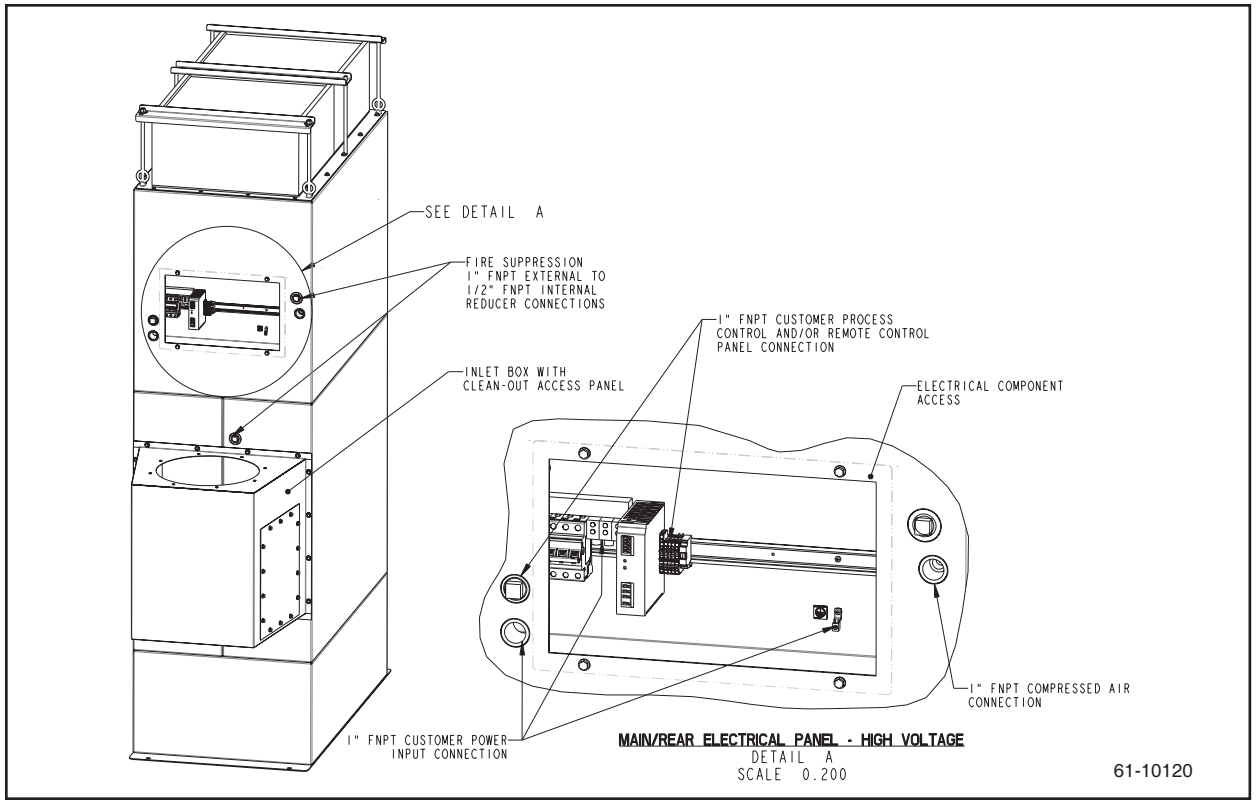


Figure 1B
PNP Equipment Description

3. Installation

3.1 Inspection and Off Loading

As soon as your equipment arrives, carefully inspect the items to ensure they are in good condition and that all items listed on the packing list have been received. Even though the items are carefully loaded and tied down at the time of shipment, it is possible for them to be damaged in transit.

Report any damage(s) and/or shortage(s) immediately. It becomes increasingly difficult for either the carrier or the supplier to assume responsibility for any damages after too much time has transpired. Check all loads separately.

The following steps should be taken immediately upon receipt of your shipment, which will assure and expedite claim payments and replacement of missing or damaged items.

1. Begin your inspection of the shipment BEFORE it is unloaded.
2. Check for damage to any exposed items, particularly at the tie-down locations.
3. Photograph any damage. Do this BEFORE the equipment is unloaded.
4. Check Bill of Lading quantities and description. Note any discrepancies on all copies of the Bill of Lading and have them acknowledged (the carrier should sign). Damage description should also be written directly on, or attached to, the Bill of Lading, and should also be signed by the driver.

Contact the insurance company and the shipper at once so that damages and/or shortages can be corrected and a claim can be filed without delay.

⚠ DANGER

TIP OVER HAZARD

Lift the PNP unit and components by the packing skids or on the lifting eyes located on the top of the unit in each corner.

3.2 Installation, Preparation, and Planning

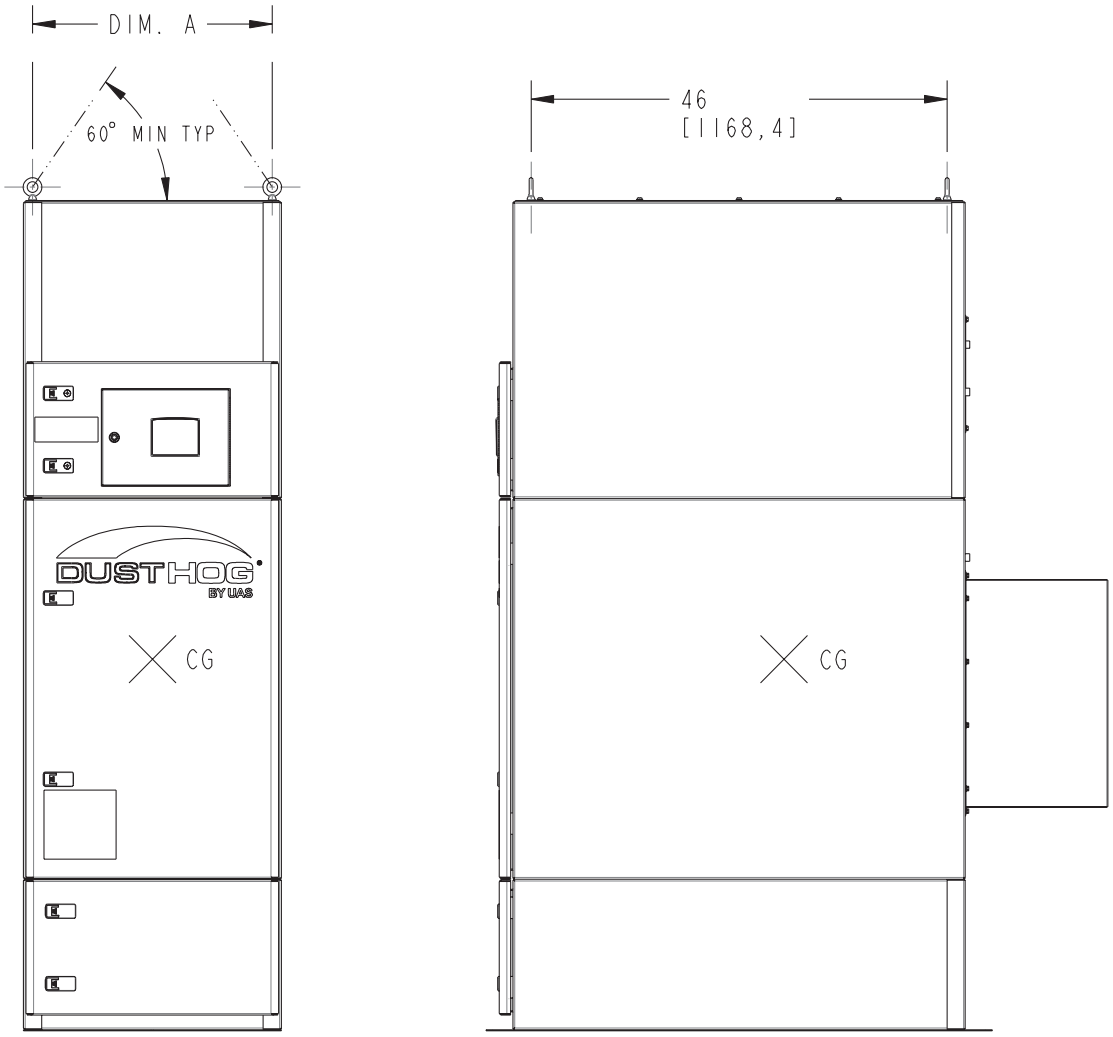
Prior to the actual installation of the PNP, the location should be readied. This would include having an adequate laydown area for all components, and access for the crane, forklifts and other machinery. The unit will come mostly pre-assembled. The majority of installation will be ducting, mounting, or securing the unit. An electrical source, lighting and other equipment should be readily available to aid in the installation.

In most cases engineering drawings of your specific equipment and options will be provided. These and all available documentation for your system should be thoroughly reviewed prior to beginning any installation work. This includes the unit and electrical controls. Ensure to leave an appropriate amount of room around your unit to allow for maintenance and servicing. A minimum of 2-1/2 feet (0.76 m) of clearance is recommended for service in front of the filter access door and 3 feet (1 m) for the rear electrical access per NEC.

Ensure there is adequate access to the electrical components with ducting installed.

Ensure to position the unit so that the clean air discharge is directed into an open area free of obstructions and with consideration for personnel safety.

NOTES:
1. USE APPROPRIATE LIFT STRAPS AND EQUIPMENT TO MANEUVER UNIT.
2. ALWAYS USE ALL FOUR LIFTING LUGS WITH STRAP ANGLE GREATER THAN 60° FROM HORIZONTAL.
3. UNIT WIEGHTS INCLUDING PROVIDED FILTERS ARE APPROXIMATE AND EXCLUDE OPTIONS/ACCESSORIES.
4. UNIT WEIGHTS AND ASSOCIATED CENTER OF GRAVITY (CG) WILL CHANGE WITH THE ADDITION OF OPTIONS AND ACCESSORIES. YOU MUST TAKE CHANGES TO THESE FACTORS INTO CONSIDERATION WHEN MANEUVERING UNIT.



UNIT SIZE	WEIGHT AS SHOWN	DIM. A
PNP-12 (SHOWN)	1,060 LBS (481 KG)	26.5" (673 mm)
PNP-22	1,720 LBS (780 KG)	55.0" (1397 mm)
PNP-32	2,880 LBS (1306 KG)	83.5" (2121 mm)

61-10121

Figure 2
PNP Weights and Lifting Info

3.3 Mechanical Installation

⚠ DANGER

CRUSH HAZARD

Use adequate safety measures when lifting and assembling any heavy components.
Consult your plant safety personnel for recommendations.

Connect lifting slings and spreader bars to lifting lugs with clevis pins. Use spreader bars to distribute the load evenly. Location must be clear of all obstructions, such as utility lines or roof overhangs.

All units are supplied with a dust drawer base that must be secured to the floor using the base plate mounting holes. An inlet box will be factory installed. The inlet is a round collar mounted on the vertical surface of the rear inlet box. Be sure to use a proper sealant or gasket when installing any inlet collars to prevent leaks. Inlet collars are mounted with 1/4-20 hardware utilizing the existing nut inserts in the top of the inlet box.

All other transitions, ducting or plenums required for unit set-up and operation are customer sourced. Unit should ALWAYS be secured to the floor when installed in this configuration.

3.3.1 Compressed Air Connection

⚠ CAUTION

Shut off, lock out, and slowly release the pressure in the compressed air piping and/or the PNP compressed air manifold, and verify that the pressure has been released by observing a pressure gauge, known to be in good working order.

Liquid water and oil must not be allowed to enter the compressed air manifold on the PNP unit from the factory compressed air line. To ensure a liquid-free compressed air supply, Parker recommends installing a point of use coalescing filter with an automatic drain port prior to the unit.
Consult your local Parker representative for information regarding coalescing filters

The PNP unit has a 1” FNPT compressed air connection on the rear of the unit. Clean, dry compressed air at an inlet pressure of 90-110 PSIG (6.2-7.2 barg) is required to operate the pulse cleaning system. A shut-off/lock-out valve, a pressure gauge, and a pressure regulator, if needed, should be installed downstream of the coalescing filter, and connected to the compressed air connection on the rear of the PNP unit.

3.3.2 Fire Suppression System

Fire suppression connections are built into the dirty and clean air cabinets. They will come plugged from the factory and are meant to serve as a means for the customer to add a fire suppression system if they deem it necessary. See Figure 1B for basic locations and size of connections. Consult applicable fire codes for proper selection, sizing and operation of a fire suppression system.

3.3.3 Inlet Ducting Connection System

The connection of the ducting into the unit, by means of the inlet box that will come installed on most units, is recommended to be done by an experienced installer. All components connecting to the inlet box are to be sourced by the customer.

Be sure to install the ducting in a manner that will still allow the removal of the electrical access panel (shown in Figure 1B) so minimal access can be gained. For example, if a circuit breaker needs to be switched or reset.

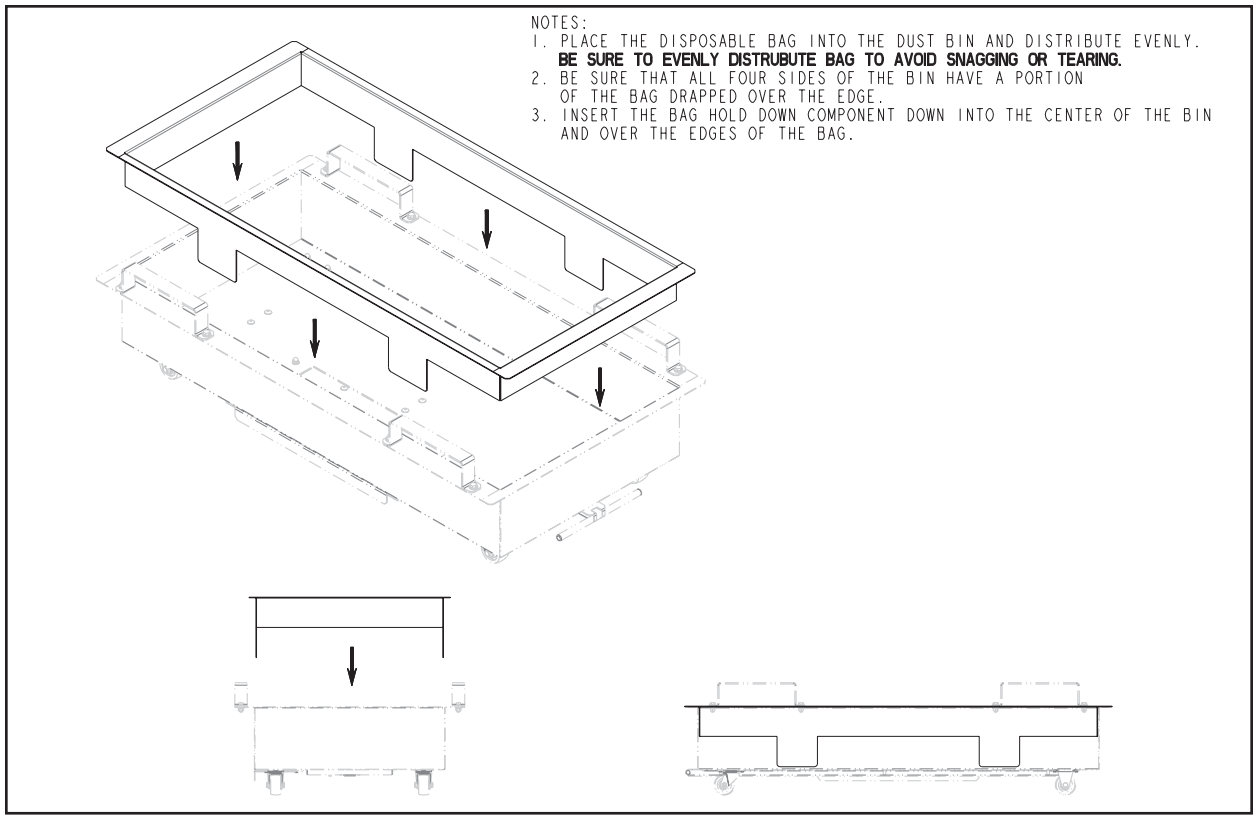


Figure 3
Drawer Liner Replacement

3.3.4 Drawer Liner Installation

Your unit may have been purchased with an optional drawer liner. If this is the case ensure that the bag and hold-down bracket is installed correctly and is secured to the drawer. The bag should be set in the drawer and spread out evenly. The hold-down bracket is set on top carefully, as to not rip the bag, and lowered into place.

3.3.5 After-Filter Installation/Replacement

If an after-filter option is selected by the customer, those filters will be shipped separate of the unit to be mounted following unit installation at the customer facility.

Proper removal and installation of each filter type is shown in Figure 4.

Center the filters atop the unit when viewed from the front, the two after-filters will be butted against each other in the center of the unit (looking at it from the side) from front to back just as with the internal filters. Reference balloon #4 in Figure 4.

The hold-down brackets are to be placed on top of the filters as shown and secured down with all-thread rods, washers and nuts. Tighten nuts using hand tools and be sure not to over compress the gasket on the bottom side of the after-filter. Minimal torque should be applied, just enough to cinch down each bracket so it can't slide around on top the filter(s). The gasket on the filter should be compressed by 30-50%. A center bracket is also supplied that runs in the same direction, it is placed immediately over the seam where the two filters are butted together. Reference balloon #5 in Figure 4.

Larger size unit after-filter setups will be installed in an identical fashion. The filters will always be installed in-line, directly over the perforated square cutouts on the top panel.

If a housed after-filter option is selected, the install will be similar except there will be a cabinet to insert the filters into. They will rest on cam bars the same style as the ones used in the primary filter cabinet. When the filters are inserted and pushed all the way back into the cabinet the cams can be rotated upward to seal the filters. Reference balloon #6 in Figure 4B.

3.4 Electrical Connection

The PNP customer electrical connections are located on the rear of the unit as shown in Figures 1B. The supply voltage and FLA will be noted on the nameplate. The blower and pulse cleaning system controls are factory pre-wired for operation. The touchscreen controls are also pre-wired for the integral option, but require field wiring and connections for the remote display enclosure option.
Wiring diagrams for the various PNP controls, blower arrangement and supply voltage options are available within the appendix of this manual. Note that the PNP does not contain the main disconnect or fuses for the supply power. Electrical installation should be completed by a qualified professional and done in accordance with all applicable codes and regulations.

Unit is available in the voltages shown below:

VOLT	PH	BLOWER QTY.	HZ	RPM	FLA	XFMR
380	3	1	50-60	4,200	6.7	---
480	3	1	50-60	4,200	5.5	---
575	3	1	50-60	4,200	11.4	5kVA
380	3	2	50-60	4,200	12.9	---
480	3	2	50-60	4,200	10.5	---
575	3	2	50-60	4,200	21.8	10kVA
380	3	3	50-60	4,200	19.1	---
480	3	3	50-60	4,200	15.5	---
575	3	3	50-60	4,200	32.2	15kVA
380	3	4	50-60	4,200	25.3	---
480	3	4	50-60	4,200	20.5	---
575	3	4	50-60	4,200	42.5	30kVA

TABLE 1
PNP Voltage and Full Load Amps

Power cord and connection into unit will be supplied by the customer.

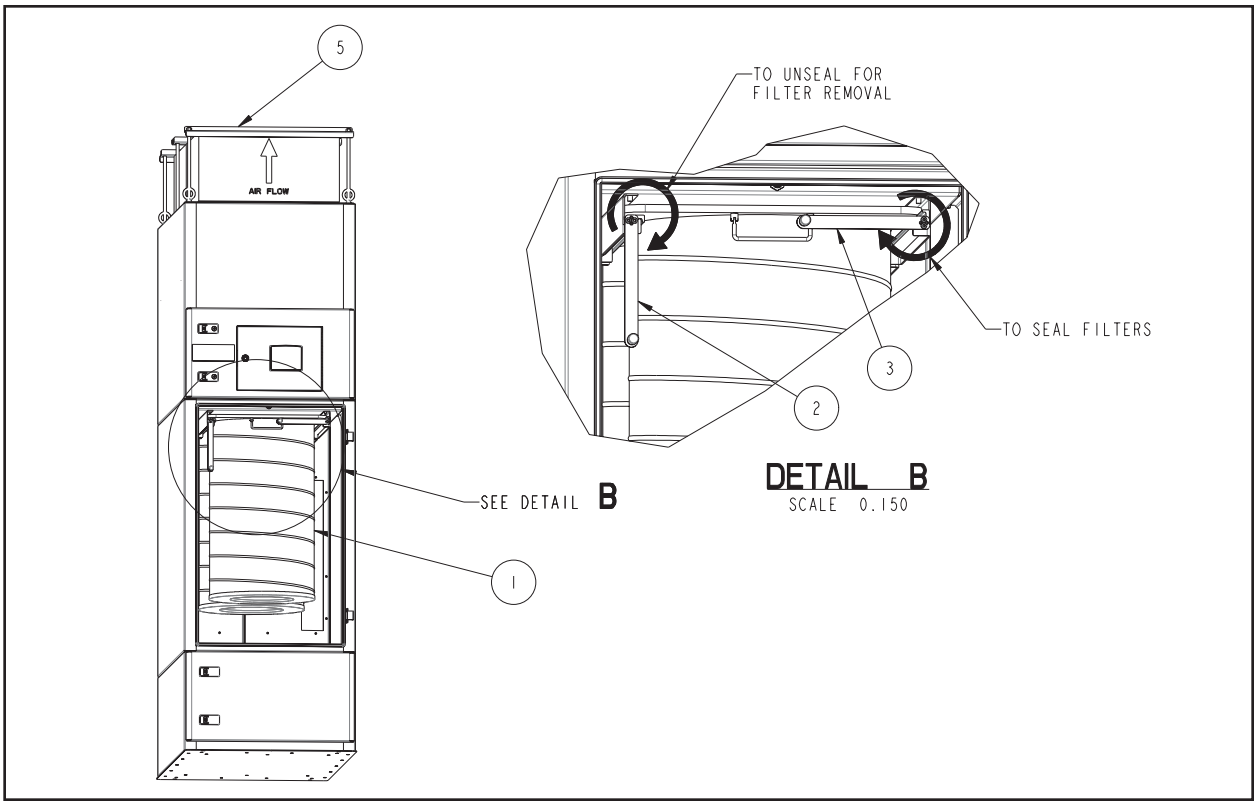


Figure 4A
PNP Primary Filter Removal & Installation

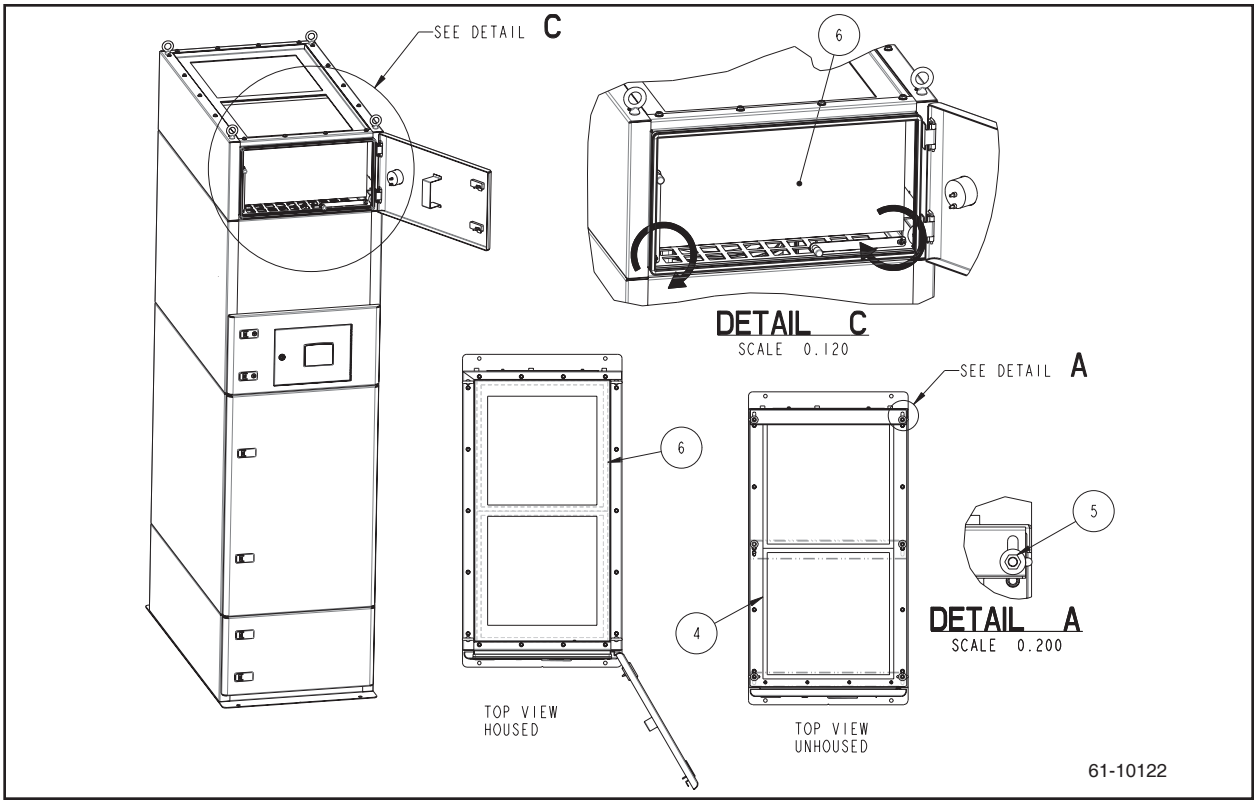


Figure 4B
After-Filter Removal and Installation

3.4.1 Electrical Supply Power

The main power supply is connected to the PNP unit through a 1˝ FNPT coupling located on the rear of the unit shown in Figure 1B. After feeding wires through the coupling, terminations are made on the main bus bar terminal for each phase and frame ground connection. The rear electrical panel also contains the unit circuit breakers and DC power supply for the controls components. Utilize Table 1 for wire, fuse and disconnect sizing for your respective product model. A second plugged 1˝ FNPT coupling is also located on the rear of the cabinet for low optional voltage connections using the process control feature to automate operation. Ensure that the rear electrical panel cover is in place and secured prior to operating the unit. Refer to the electrical wiring diagrams in Table 2 for additional wiring information.

Note: When making the main power connections to the unit, fan rotation check is not required. The blower will automatically turn in the correct direction.

Description of Wire Diagram	Appendix
Transformer 575:480	A1
One Blower & Controls	A2
Two Blower & Controls	A3
Three Blower & Controls	A4
Four Blower & Controls	A5
Remote Panel Controls	A6
One Blower & Remote Controls	A7
Two Blower & Remote Controls	A8
Three Blower & Remote Controls	A9
Four Blower & Remote Controls	A10

TABLE 2
Wire Diagrams

3.4.2 Electrical Touchscreen Controls

The main control panel for the PNP unit is a touchscreen interface located integrally on the front of the unit or remotely in an auxiliary enclosure (refer to section 3.4.3) that operates the blower and filter pulse cleaning system. Both the touchscreen control panel and filter pulse cleaning valves are powered by 24V DC. Refer to Section 4 of this manual for operation of the touchscreen. All wiring in the touchscreen controls panel is pre-wired at the factory and there are no customer connections at this panel. The panel door should remain closed and locked during operation.

3.4.3 Remote Controls Panel

The PNP unit is available with a remote controls panel that allows touchscreen controls to be located within 100 ft. (30.5 m) from the PNP unit location. The controls are provided in a NEMA 4X enclosure for mounting. The remote display panel will come pre-wired with two cables, one is the 24 VDC power supply, along with control cables and the other is a communications cable that must be connected to the PNP unit upon installation. Note that these wires are low voltage and should not be run next to high voltage wires. These wires should be cut to final length at installation.

3.4.4 Process Control

The customer has the option to control the PNP ON-OFF operation with a dust/fume generating equipment or process. This will allow the operator to control the PNP with a “Dry-Contact” off another piece of equipment. Refer to the wiring diagrams in the appendix for wiring of this option and to Section 4 for process control set up on the touchscreen.

Wiring will be terminated to the terminal blocks located in the rear electrical panel in Figure 1B. When the machine dry contact is closed, the PNP blower will be on and when the contact is open, the PNP unit blower will shut down.

Note: A relay coil cannot be connected to the PNP and will not work for this type of electrical circuit.

3.4.5 Step-Down Transformer Package

An auxiliary 575V step down transformer is an available option for the PNP. This transformer ships loose and requires field installation by a qualified individual. Refer to Appendix page A1 for additional details including primary and secondary transformer full load amps (FLA) for sizing fuses, electrical wire and main disconnect.

Note: The transformer cannot be attached to the PNP, the PNP structure will not support the weight of this device.

4. Unit Operation

4.1 Start-Up

Before system start-up, verify that the installation is complete per Section 3 of this manual. The following are the basic steps to walk you through as you are starting up.

1. Open the PNP filter access doors and verify that the filters are in place and properly sealed.
2. Open the dust drawer access door and verify that the dust drawer is in place.
3. Close and latch all access doors and electrical enclosures on the dust collector.
4. Ensure that the main power is connected and turned on.
5. Ensure that the compressed air is connected and turned on.
6. Follow Section 4.3 for setting changes on the touchscreen to target the desired airflow volume. Adjust the blower speed to the RPM % that will provide the targeted airflow. For assistance in determining the target RPM, contact your local representative. When using the Auto Flow option, follow the Auto Flow Settings in Section 4.
7. Using the customer service menu in the touchscreen, you can test each pulse valve to verify operation. Refer to Section 4 for this procedure. Adjust any of the optional pulse cleaning settings such as cleaning mode or downtime cleaning settings as necessary in the customer service menu.
8. Press the blower power button on the Home screen to begin operation. Note that if the dust collector is connected to a process, other equipment will need to be engaged as well.
9. Verify performance of the dust collection system by measuring airflow or evaluating capture at each collection point. It is recommended to record baseline performance parameters so in case of an upset condition or system changes, the system can be reset. The recorded data should include the static pressure at each collection hood, system amperage draw, and filter pressure drop at a minimum and any other key pieces of data critical to your process.

4.2 System Operation

As the PNP collects contaminate, the filter will build up a dust cake on the outside surface causing the filter pressure drop to rise. As the pressure rises, the filters will need to be cleaned or blower RPM increased in order to maintain the desired airflow. When the filters are cleaned, the dislodged contaminant will drop to the bottom of the dust collector and collect within the dust drawer where it can be removed and disposed of. When the system can no longer generate the airflow required to capture or convey the collected contaminate, the filters will need to be changed.

4.2.1 Airflow Adjustment Using Manual Speed Control

The PNP features an Electronically Commutated (EC) blower that is equipped with airflow adjustment using the blower RPM. To adjust the airflow, the RPM can be adjusted from 20% to 100% of the blower rated RPM. As filter pressure builds, it may be necessary to increase the RPM to maintain proper capture and transport velocity within the hood and duct system. The adjustment of the RPM is done in the Blower display screen.

4.2.2 Airflow Adjustment Using Auto-Flow Control

With the Auto-Flow feature, the PNP will automatically adjust the RPM of the blower to maintain the airflow set-point. When the system can no longer maintain airflow, a warning will be provided on the touchscreen. In the event of a warning or failure on the touchscreen, refer to the troubleshooting section of this manual to help determine the cause and associated solution.

4.2.3 Filter Pulse Cleaning System Operation

The PNP has three configurations that can be configured to clean the filters:

1. **ON-DEMAND** – On-demand pulse cleaning system operates on high and low set points. When filter pressure loss reaches the high set point the cleaning sequence(s) is initiated until the low set-point has been achieved. The high and low set-point ranges can be adjusted to minimize the required cleaning sequences to maintain airflow. On-demand is an energy efficient way to clean filters as it will only consume enough compressed air to clean the filters as required to maintain airflow.
2. **CONTINUOUS** – This cleaning option will pulse clean the filters continuously at a defined time interval. The time delay is a setting within the pulse cleaning controls that can be adjusted.
3. **DOWN-TIME** – This type of cleaning is used in addition to the on-demand or continuous cleaning options.

- Downtime cleaning will initiate a set number of pulse cleaning cycles when the blower is powered off.
- Filter cleaning is more effective when air is not moving through them so downtime is an effective way to extend filter life and minimize compressed air consumption

Figure 5

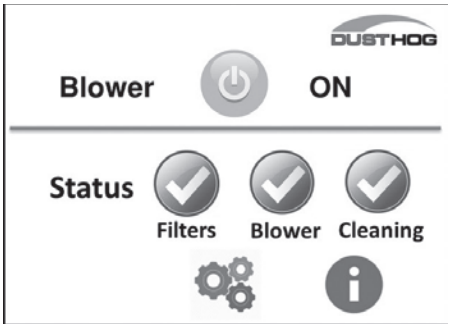


Figure 6

ICON	DESCRIPTION	Color
	The Home icon will take you to the home screen.	Blue
	The Settings icon will take you to the customer settings screen.	Blue
	The Information icon will take you to the customer service contact screen.	Blue
	Blower is ON	Green
	Blower is in STANDBY mode and is OFF	Blue
	Status = GOOD Normal operating condition	Green
	Status = WARNING Operating outside normal ranges	Yellow
	Status = FAULT Fault condition that needs attention	Red
	Decrease Speed or Airflow	Blue
	Increase Speed or Airflow	Blue

TABLE 3
Icon Key

4.3 Touchscreen Operation

4.3.1 Start-Up and Home Screen

The display will turn on automatically when the system is powered up. The first screen will display as shown below, see Figure 5. This screen will also act as a screen saver when the blower is not operating. After 2-3 minutes of non-use the display will change to this screen. When you want to use the unit, just tap the screen with your finger and it will change to the main display screen shown in Figure 6.
The home display screen shown in Figure 6 will be displayed during operation. This will act as your status screen and be your gateway to other screens. The screens are broken up in groups:

Basic – These are your status screens for filters, blower and cleaning.

Customer settings – These screens are for the customer to make setting changes to the unit.

Optional screens – These screens are based on customer selected options like Auto-Flow, After Filter monitoring or unique screens required for a special application. These screens are based on customer order and loaded at the factory.

4.3.2 Standard Format

The icon key, Table 3, outlines the various icons that are used on the screen for various reasons and may indicate status or conditions. The Home, Settings, and Information icons are shown at the bottom of most screens and will take you directly to their associated screens. The Status indicator icons are also buttons that will take you to their associated basic screens as outlined in section 4.3.3.

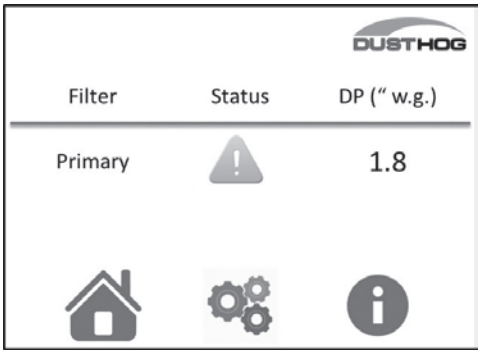


Figure 7 - Filter Screen

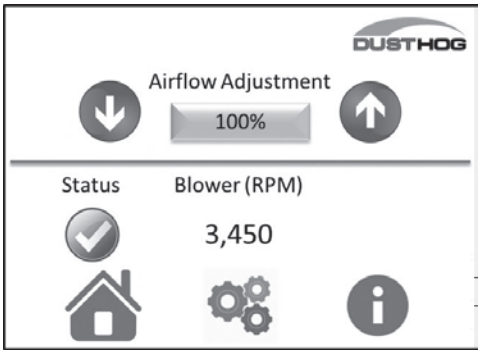


Figure 8 - Blower Screen

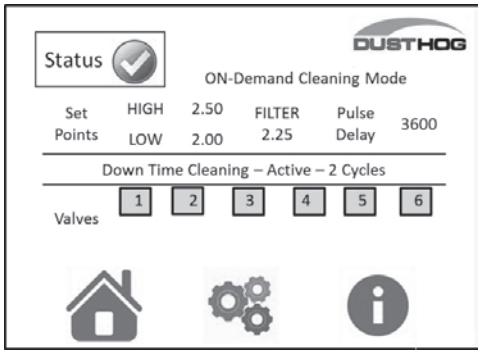


Figure 9 - Cleaning Screen

Figure 10 - Information Screen

4.3.3 Basic Screens

Filter Screen

The Filter screen can be displayed by the operator by selecting the filter status icon on the Home screen shown in Figure 6. The Filter screen will then be displayed with all available filters. This screen will display the differential pressure across the filter during operation.

Blower Screen

The standard blower screen will display the status of the blower. If your equipment is equipped with the Auto-Flow option and it is activated, the Blower screen will look different than that shown in Figure 8. Refer to section 4.3.4 for additional details. The only time the blower will shut down is when the blower has an internal fault. Such faults as: Low line voltage, phase to phase issues, ground issues, temperature issues, or for a catastrophic failure. If the blower shuts down refer to Section 6 for troubleshooting.

On the blower screen you are able to adjust the speed of the blower using one of two different ways. The first adjustment can be done using the up/down arrows. This adjustment will achieve a change of +/- 1%. This will increase or decrease the airflow adjustment by 1% for each touch of the up or down arrows.

The second method of airflow adjustment is to touch the box that shows the percentage of the airflow. A number pad will be shown in a pop up screen. You can enter any number between 20 and 100 this will correspond to the percentage of blower capability. The blower is capable of 4,200 RPM at 100%, 3150 RPM for 75%, 2100 RPM for 50%, and 1050 RPM for 20%. These numbers are only an approximate of the actual that could be displayed. There is a minimum set point for speed which is 20% for the purposes of the blower design. The PNP may have multiple blowers incorporated within the system for the designed performance of the unit depending on the customer application. All of these blowers will respond as one blower with our controller.

Cleaning Screen

The cleaning screen will show the current settings of the cleaning system as well as current operating values related to the cleaning system. To make adjustments to the cleaning system, refer to section 4.3.6.

Information Screen

The information screen will provide a phone number for customer service. There is also a link to our website that can be used to locate your nearest representative. You are also able to see any pending alarms and the alarm history for your system using the buttons provided.

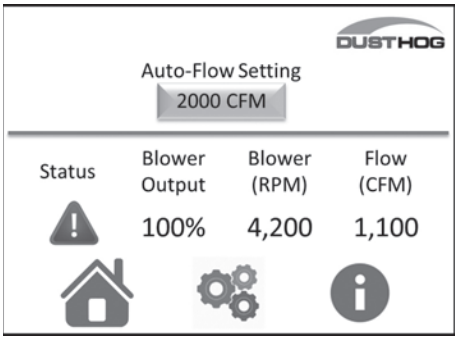


Figure 11 - Auto-Flow screen

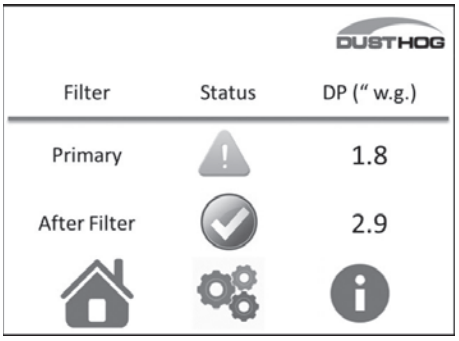


Figure 12 - After-Filter Screen

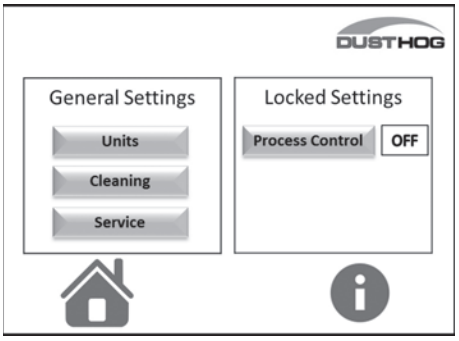


Figure 13 -
Customer Settings Screen

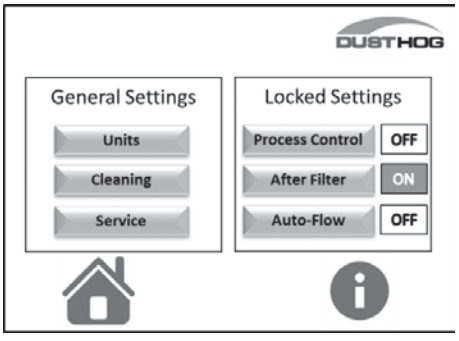


Figure 14

4.3.4 Auto-Flow screen

When Auto-Flow is installed and activated the blower screen will look like Figure 11. Refer to section 4.3.6 to activate the Auto-Flow option and to make adjustments to your flow target. The Auto-Flow blower screen will show the target flow, the actual flow, the blower speed, and the % of total speed available. The screen will also show blower status.
If there is a warning or fault, refer to the troubleshooting section for guidance.

4.3.5 After-Filter

When the screen is active you will see the differential pressure across the filter. The system will monitor this pressure and give warnings and faults as the differential pressure changes. The after-filter does not get cleaned by the system and has a finite life based on the pressure drop across the filter. When the pressure drop increases to a point that the filter can no longer provide proper airflow, the fault symbol will appear. The customer will need to replace the filter at that time.

4.3.6 Customer Settings

The standard customer settings screen shown in Figure 13 will allow the operator to make General Setting changes without a password. The Locked Settings will require a password to be entered. The password is 4440.

The General Settings selection will allow the operator to change the units, the cleaning settings, and check service of the major components (blower and pulse valves). These settings are not password protected. To select one of the items just touch the box with the item you want to make a change to.

The Locked Settings selection will allow the operator to select options of the system. One option is Process Control. With Process Control the operator can allow another device (CNC machine center, plasma table, or weld machine) to turn the PNP on when the primary device is in operation. When this option is selected the Blower Power button in Figure 6, will put the unit in standby when touched by the operator. When this setting is selected the indicator to the right side will change from OFF to ON and turn green.

When After-Filter and/or Auto-Flow options are ordered, they will appear on the Customer Settings screen as shown on Figure 14.

When the units selection is made on the Customer Settings screen, you will see the screen as shown on Figure 15.

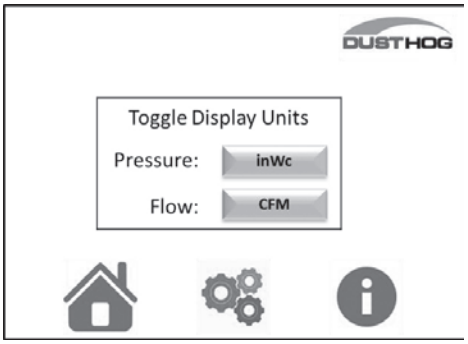


Figure 15

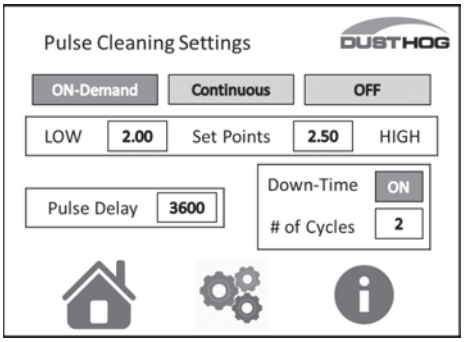


Figure 16

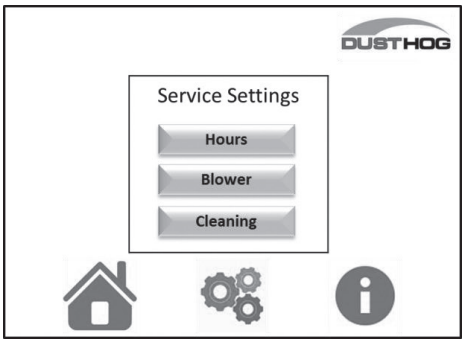


Figure 17

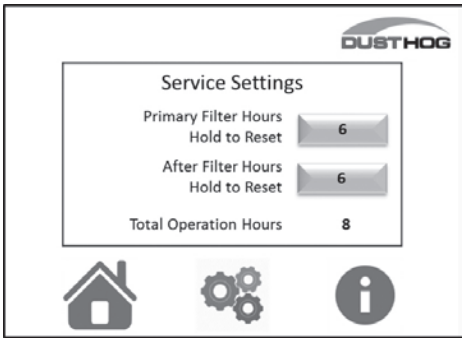


Figure 18

The pulse cleaning settings can be adjusted by selecting the Cleaning button on the Customer Settings screen. Figure 16 shows the Pulse Cleaning Settings screen. The cleaning modes and various pulse settings can be updated on this screen. Depending on the selections, items may appear or disappear based upon their relevance.

The On-Demand cleaning mode is the more desirable of the two modes. This mode will allow the PNP to monitor the performance of the primary filter. When the primary filter reaches the high set point the cleaning system will activate automatically and pulse each filter one at a time until the low set point is reached. The program will remember the last filter pulsed and start the next cycle when the high set point is reached again. This will give the filters the best cleaning performance possible. The high factory default setting will be 2.25, and the low value will be 2.00. As the primary filters age the high and low set points will need to be adjusted over time by the operator to give the primary filters the best performance.

The Continuous cleaning mode is only desirable when the process dust is very heavy and will plug the primary filters often. With this mode of cleaning the pulse valves will continuously fire as long as the blower is in operation.

The last mode is Down-Time cleaning. This cleaning mode can be used in conjunction with all previous modes.

The selection of this mode is for cleaning the filters after the blower is turned OFF. The unit will wait until the blower is turned off and then delay the amount of the setting of the Pulse Delay. The Pulse Delay is set to 10 seconds from the factory. It will then pulse each filter for cleaning. The number of cycles is selectable by the operator, but is set to 2 as default. Down-Time Cleaning is factory set to ON, but if no Down-Time cleaning is desired then select the number of cycles at 0.

The Pulse Delay is the amount of time in seconds between the pulsing of each valve. If your compressed air system is not able to completely fill the air tank built into the PNP fully before the next pulse, then the operator will need to increase the delay time between each pulse.

The operator can select the Service settings shown here. Each of the selection will allow the operator to see the health of the unit.

The Service hours will allow the operator to see how long the Primary filter and the after filter have been in service. These hours are reset table by holding touching the specific button and holding it until the number resets to 0.
The operator can also see the total number of hours the PNP has been in service since being built at the factory. During factory testing the units are quality checked and may show a low amount of hours such as 1 or 2 from this test.

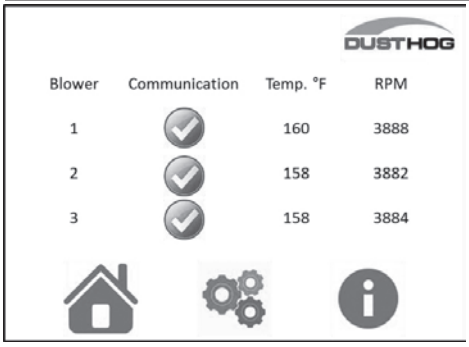


Figure 19

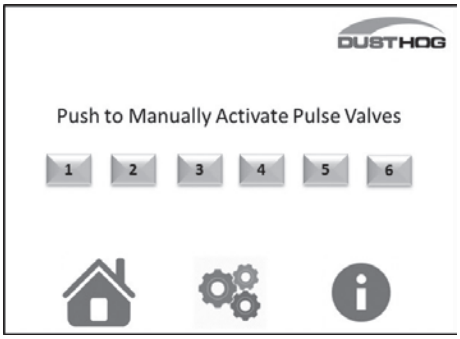


Figure 20

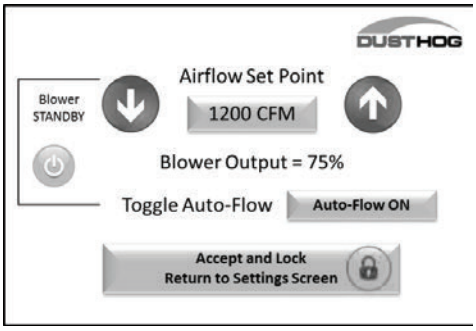


Figure 21

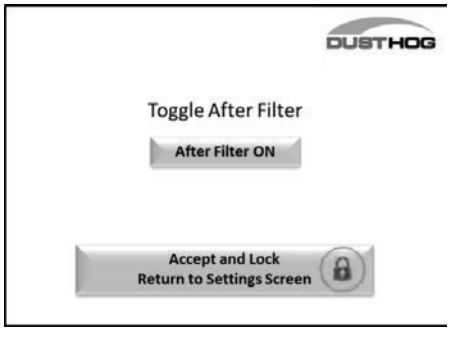


Figure 22

The blower service screen will show all of the connected blowers in the system. The display will show the communication of the blower. The communication is setup at the factory and will not need any service in the field. This is only an indication of the unit for troubleshooting purposes. The display screen will show the motor temperature and the blower operating RPM.

The cleaning service screen is accessed when the Cleaning button is pressed on the service settings screen. Each valve can be tested on this screen by pressing the appropriate number button for a given valve. This test is available with the blower on or off. For safe execution of testing the valves ensure that the doors of the unit are all closed and latched.

The Auto-Flow Settings screen can be selected in the Locked Settings group on the Customer settings screen. The Auto-Flow is an option that is selected at order time and loaded into the PNP at the factory. The Auto-Flow Settings will allow the unit to maintain a precise operating point based on a desired air volume. The operator will select an air volume setting in the airflow set point box using the up/down arrows or the selection box.
The operator can test the air flow using the Blower Standby button on the left side of the screen. If the screen is changed the blower will shut off. Once the operator has found the air flow setting that gives their unit the best performance they can touch the Auto-Flow ON and then accept and lock the settings by touching the lock button at the bottom of the screen.

The After-Filter setup screen can be selected in the Locked Settings group on the customer settings screen. The After-Filter is an option that is selected at the order time and loaded into the PNP at the factory.

The After-Filter can be monitored by the unit using its controller to monitor the health of this filter.

The operator can select the monitoring on this screen by touching the After-Filter ON box and then locking the settings by touching the Accept and Lock box.

5. Service

Before servicing equipment:

- Wear appropriate protective equipment when servicing dust collector.
- Disconnect and lockout electrical power to the unit.
- Shut off and lock out compressed air supply to the unit. Relieve the pressure inside the unit, and verify with a pressure gauge known to be in working order.

Table 4 - Maintenance Schedule

Task	Maintenance Interval
Check Dust Bin Level	Weekly (increased frequency may be necessary)
Check For Accumulated Material	Monthly (or when filters are replaced or bin emptied)
Verify Pulse Valve Functionality	Quarterly

*Add to this list and adjust the maintenance interval as necessary based on application.

5.1 General Maintenance Guidelines

Proper maintenance of the PNP is essential for the unit to provide excellent dust/fume collection capabilities and long-term service. By keeping the unit well-maintained, you will also reduce operating and parts replacement costs. A scheduled preventive maintenance program, specifically designed for the PNP and its associated components, is the best possible method to assure the unit stays in proper working order.

Refer to Section 6 for troubleshooting guide to correct any problems that may occur with your dust collection unit. If the problem or condition continues, contact Parker customer service for assistance.

5.2 Primary Filter Installation/Replacement

⚠ CAUTION

Always wear proper PPE including goggles, dust mask and work gloves when installing or replacing filter elements. Dust accumulated on the filter elements can result in irritation of the lungs, skin, and / or eyes.

When the primary filters reach the point of not being able to maintain proper unit function they must be replaced. Remove used filter elements from the collector and dispose of properly, in accordance with local codes and regulations. Be sure there is no excessive dust or residue build-up inside the primary filter cabinet. Contaminant can accumulate in various locations including, but not limited to, the tubesheet, dust drawer ledges, dust drawer (outside dust bin), pulse cabinet, and tops of filters. Clean as necessary. Inspect all filter sealing cam bars and filter support parts for unusual signs of wear or failure. Checking of all gaskets and seals is recommended at this time, as well as replacement if necessary.

The surface of the filter element can be damaged as a result of improper moving or handling, care must be taken to prevent any damage to the filter media.

Inspect filters to verify there is no damage and all packing materials have been removed. The number of filters required is determined by the unit size as stated in the nomenclature section. The same quantity is required for both the primary cartridge filters and after-filters. Reference balloon #1 in Figure 4.

Slide the filter assembly onto the cam-bar and into the cabinet while the cam-bar is in the lowered position (both handles down) until the filter bottoms out on a stop. Reference balloon #2 in Figure 4.

Rotate the cam-bars upward as illustrated to push the filter up and seal it against the tube sheet. Reference balloon #3 in Figure 4.

5.3 Cleanout Of Spark Arrester

If utilized, a spark arrester should be cleaned out as necessary to maintain proper flow and unit function. When utilizing in-line duct spark arrestors, refer to the manufacturer's recommended maintenance and service procedures.

5.4 Emptying Dust Drawer

⚠ CAUTION

Do not let the collected dust reach the top or overflow the dust collection bin.

Empty the dust drawer as needed. The required frequency of this action will be dictated by the load rate and operation. Refer to Figure 23.

1. The bin that contains all of the contaminant can be accessed by opening the lowest door on the unit.
2. The ramp is held up magnetically and can be pulled down and set into place by hand using the hand-slot in the center of the ramp. Use caution when grabbing other areas that could contain sharp edges or burrs.
3. The bin is on casters for easy maneuverability.
4. An extending handle is mounted on the bottom side of the bin, which should be slid outward and can pivoted upward for a more ergonomic and convenient removal of the bin from the dust drawer.
5. Once removed from the cabinet the bin can be lifted with a lift/fork truck using the specifically designed fork slots.
6. The slide gate can be opened by pulling it outward using the flange grip. NOTE that the slide gate will not slide all the way out of the track.

The waste can be emptied into a dumpster, drum, or any desired disposal container. When closing the slide gate be sure to clear any debris from the track before sliding it back into place. This will help prevent jamming or future problems with functionality. Be sure at this time to also check dust is not accumulating in any location that could cause malfunction or a safety concern including, but not limited to, the motor/ pulse manifold cabinet, filter header plate, and tube sheet panel. Be sure to dispose of, or recycle, any waste properly. Dispose of waste in accordance with applicable local, state and federal regulations.

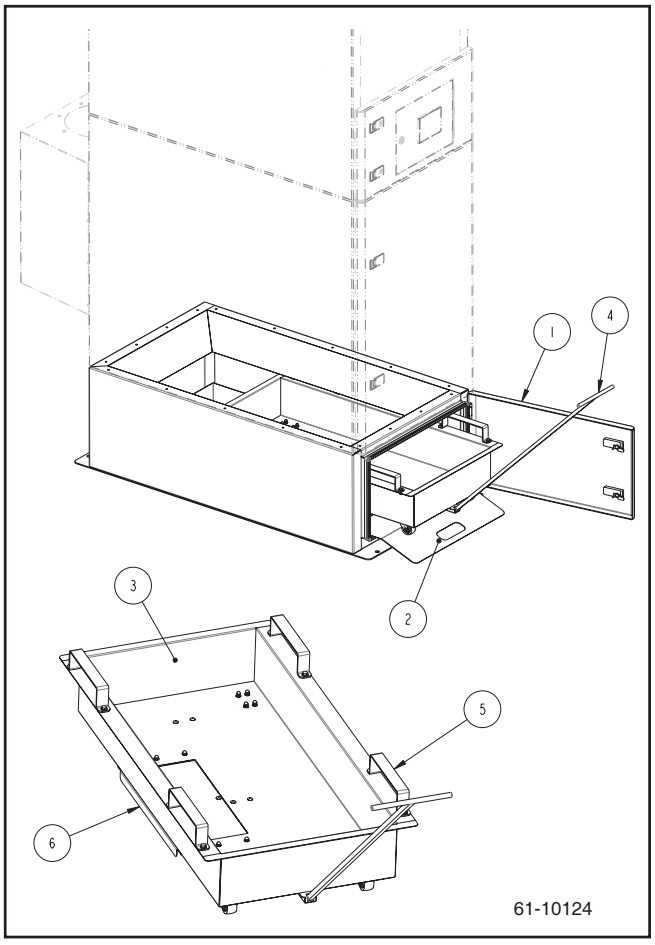


Figure 23 - Dust Drawer Detail

6. Troubleshooting Guide

Use the troubleshooting guide to correct any problems that occur with your dust/fume collection unit. If the problem or condition continues, contact the Parker customer service office at 1-800-343-4048.

All electrical/mechanical troubleshooting should be performed by a qualified electrician/maintenance individual familiar with Parker equipment.

Prior to troubleshooting any equipment, read the Installation and Operation Manuals for each piece of equipment to be serviced.

Problem	Possible Causes	Recommended Solutions
Lack of Air Flow	Restriction at the outlet of unit	Be sure there are no obstructions in close proximity to the outlet at the top of the unit
	Inaccurate dP readings, leading to possible auto-flow malfunction	Check for misaligned filters, leaks in ducting, leaks in plumbing, filter failure, or transducer and connection failures
	Blinded filters	Replace filter(s)
	Leaking gaskets	Check for damaged gaskets and replace if necessary, careful adjustment of latch paws may be necessary if leak persists
	Restriction or blockage in inlet ducting	Verify all dampers are open, duct is unobstructed
	Pulse cleaning system problems	See section below
System Power Disruption	Tripped circuit breaker	Open rear panel on unit and switch breaker if necessary
	Loose or disconnected wires	Investigate wiring in the rear panel
	Disconnect is switched to OFF position	Switch disconnect to ON position
	Improper source power	Refer to data plate to verify required input power
Pulse Cleaning System Ineffective	Compressed air supply inadequate	Always begin diagnosing cleaning system issues by utilizing the touch screen controls. Check incoming compressed air for proper pressure (90-110 PSIG [6.4-7.2 BAR]), pulse flow (1.47 SCF standard cubic feet [41.6 liters] per pulse) and pulse duration (100 milli-seconds), correct any problems
	Set points incorrect	Confirm all program inputs are suitable for the application
	Solenoid not firing properly	Check wiring going to solenoids, nozzle blockage and position, the manifold is properly drained and clean, no leaks
Screen Displayed Warning	**Possible Causes**	**Recommended Solutions**
Filter Caution (Yellow)	Filters approaching end of life	Replace filter(s) soon, ensure proper pulse cleaning operation, increase down-time cleaning cycles
	Restriction in dP readings	Check for kinked tubing, obstructed pressure taps
Filter Warning (Red)	Filters have surpassed max life	Replace filter(s)
	Blinded filters	Clean filter(s) Replace filter(s)
	Pressure taps obstructed	Check and clear pressure taps in the unit
	Pressure tubing is kinked or plugged	Check and clear all tubing in the unit
Blower Warning* (Red)	Improper source power	Refer to data plate to verify required input power
	Phase loss	Check for loose/disconnected wires, shorts, or tripped circuit breakers
	Motor over-temperature	Shut system off (if not already) and allow motor to cool. If issue repeats, contact a UAS rep
	Auto-flow set point cannot be reached	Verify auto-flow value is set properly, check filter(s) for replacement
	Total system static pressure exceeds blower capability	Reduce static pressure in system Refer to "Lack of air flow" section above
	Other	Contact a UAS representative for assistance

*Always refer initially to the fault screen displayed on the unit

Page intentionally left blank

7. Replacement Parts

To order replacement parts, refer to Figure 24. Order through your local Parker representative or contact Parker Hannifin at 1-800-343-4048. Please have the unit model number, serial number (from component access door) and part numbers available when ordering.

ITEM #	PART #	PART DESCRIPTION
1	02-11266	LEFT SIDE FILTER SEALING CAM
2	02-11267	RIGHT SIDE FILTER SEALING CAM
3	02-11407	DUST COLLECTION BIN
10	32-10068	MOTORIZED IMPELLER, 3.9KW, 380-480V
4	33-10125	PRIMARY, PROTURA DH, STANDARD PLEAT SPACING, OUTER LINER
4	33-10135	PRIMARY, PROTURA DH, STANDARD PLEAT SPACING, NO OUTER LINER
4	33-10136	PRIMARY, PROTURA DH, WIDE PLEAT SPACING, NO OUTER LINER
4	33-10137	PRIMARY, SPUNBOND POLYESTER
4	33-10138	PRIMARY, SPUNBOND POLYESTER W/ ePTFE MEMBRANE
5	33-10134	AFTER-FILTER, 95% @ 0.3 µm
5	33-10082-0002	AFTER-FILTER, HEPA, 99.97% @ 0.3 µm
6	39-10008-0006	CONTROLS PANEL LATCH, 10mm HEX
7	39-10058	FLUSH MOUNT FILTER CABINET LATCH
8	39-10059	FLUSH MOUNT MOTOR CABINET LATCH, TOOL OPERATED
11	42-0168	FILTER CABINET GASKET
NOT SHOWN	42-0122	SILICONE SEALANT
NOT SHOWN	20-10413	PRESSURE TRANSDUCER 0-10"
NOT SHOWN	07-001728	PRESSURE TRANSDUCER 0-15"
12	07-001729	PRESSURE TRANSDUCER 0-5"
13	38-10145	BULKHEAD FITTING, 5/16 OD TUBING
14	38-001725	BULKHEAD FITTING, 1/8" NPT
15	07-0142	BULKHEAD FILTER, 1/8" NPT
NOT SHOWN	20-1280	FLEX TUBING, CLEAR, 3/16 X 5/16
NOT SHOWN	39-0258-02	HINGE PIN E-CLIP
NOT SHOWN	39-0258-04	DOOR HINGE PIN
9	20-001643	TOUCH SCREEN DISPLAY
16	07-10023	MANIFOLD PULSE (DIAPHRAGM) VALVE
NOT SHOWN	07-10003-0001	PULSE (DIAPHRAGM) VALVE REPAIR KIT
17	19-10016-0001	PULSE NOZZLE
18	03-10816	AFTER FILTER BRACKET KIT, PNP-12
18	03-10817	AFTER FILTER BRACKET KIT, PNP-22
18	03-10818	AFTER FILTER BRACKET KIT, PNP-32
19	39-10067, 30-0031	DUST DRAWER RAMP MAGNET & SCREW
20	03-10815	INLET BOX KIT

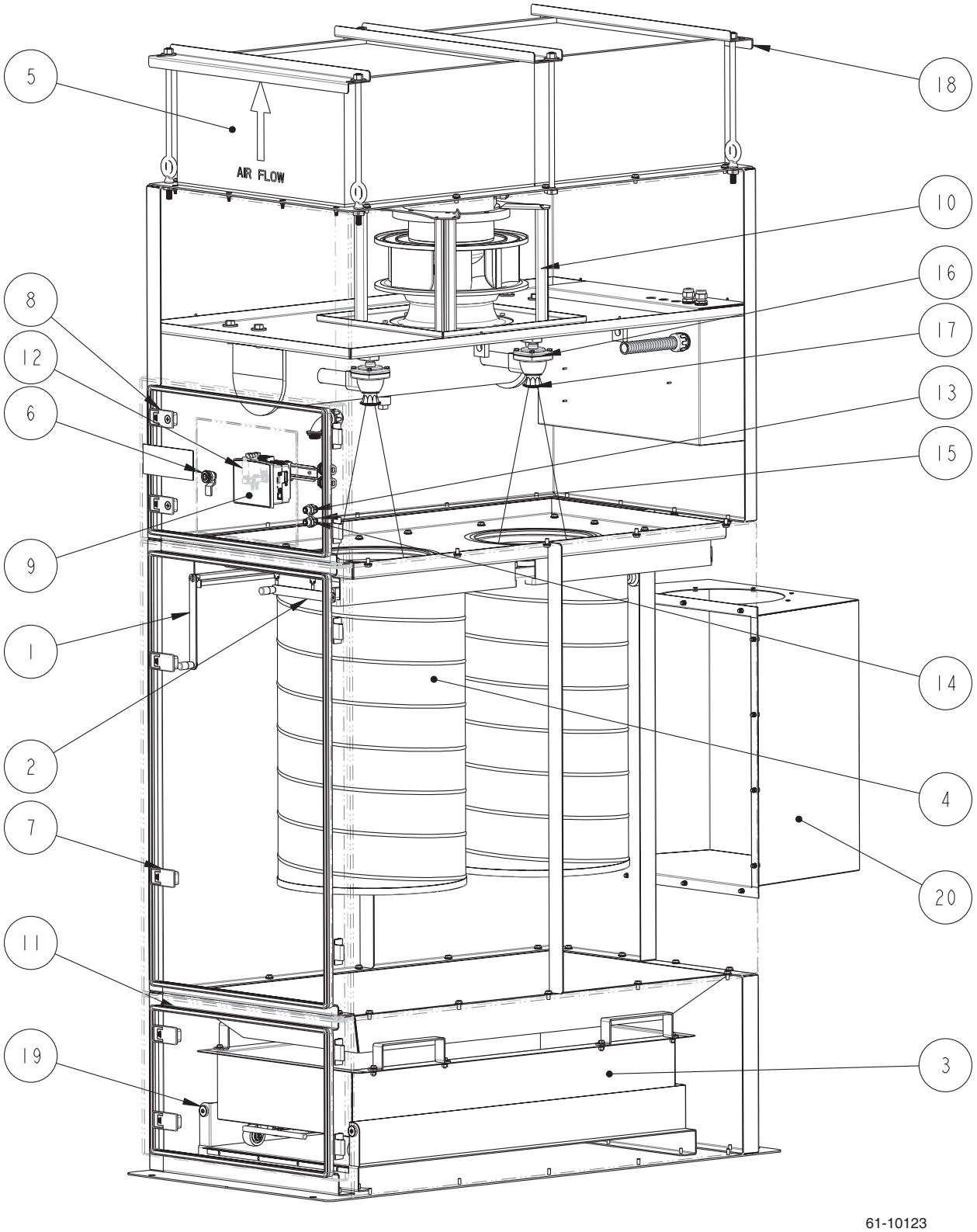
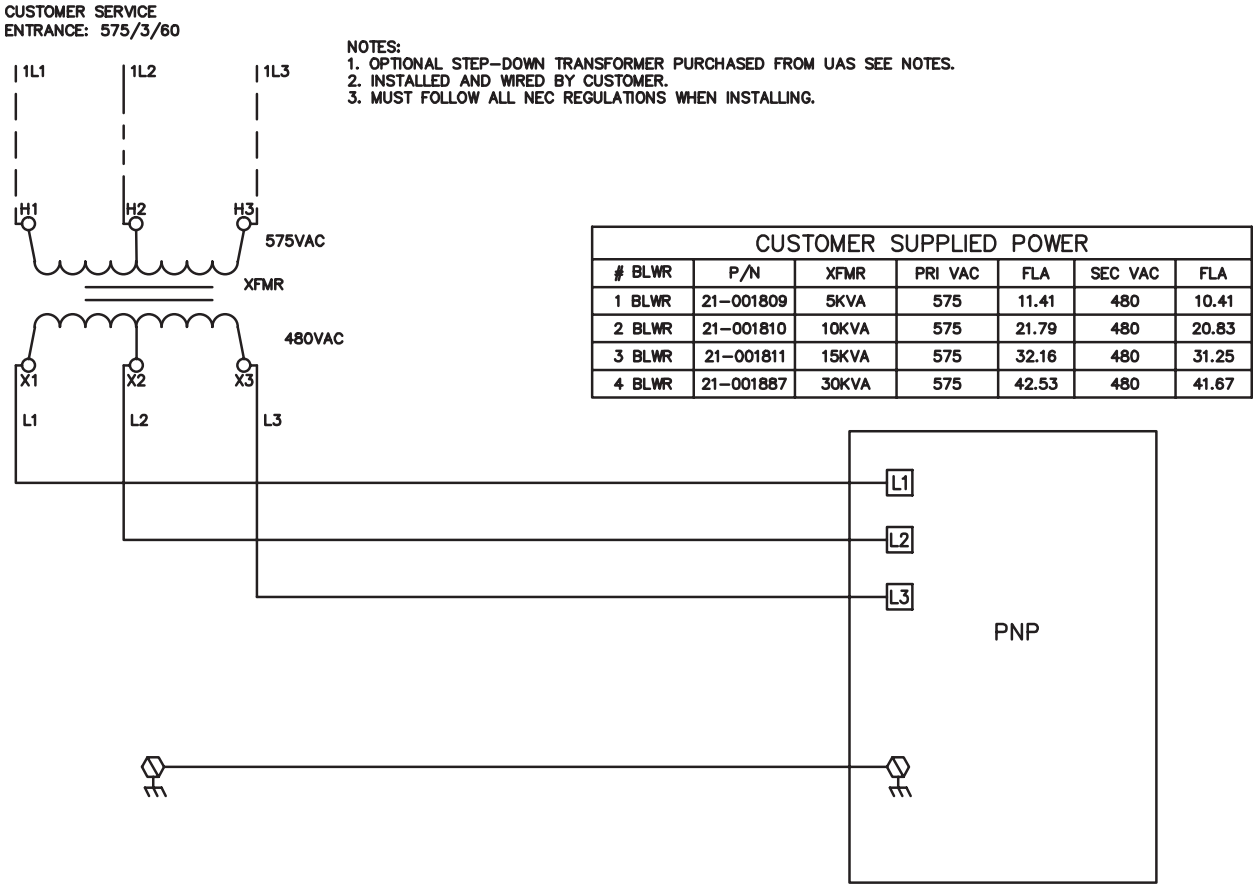


Figure 24
PNP Replacement Parts

8. Appendix - Wiring Diagrams

A1-Transformer 575:480

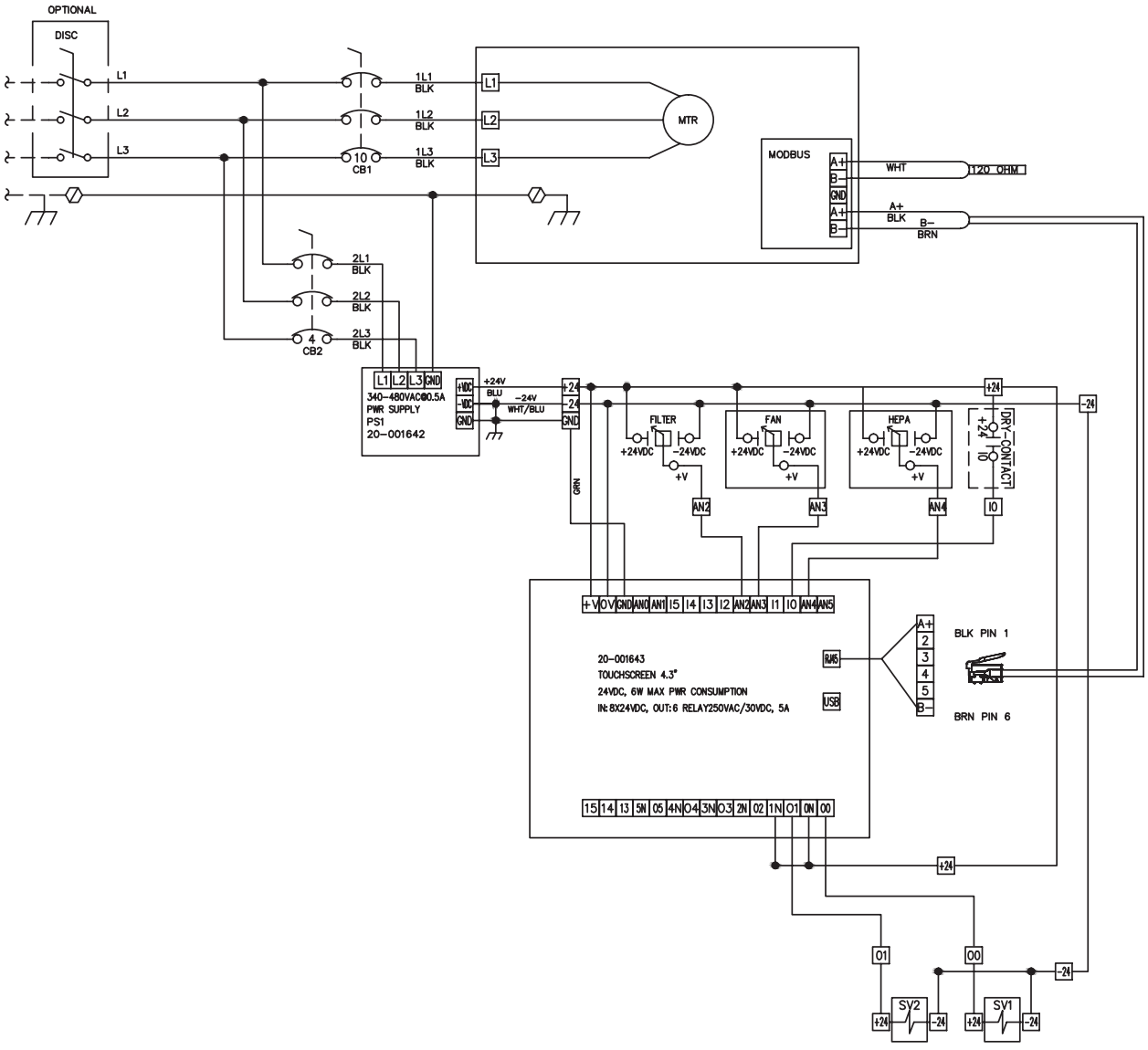


NOTES:
1. OPTIONAL STEP-DOWN TRANSFORMER PURCHASED FROM UAS SEE NOTES.
2. INSTALLED AND WIRED BY CUSTOMER.
3. MUST FOLLOW ALL NEC REGULATIONS WHEN INSTALLING.

CUSTOMER SUPPLIED POWER						
# BLWR	P/N	XFMR	PRI VAC	FLA	SEC VAC	FLA
1 BLWR	21-001809	5KVA	575	11.41	480	10.41
2 BLWR	21-001810	10KVA	575	21.79	480	20.83
3 BLWR	21-001811	15KVA	575	32.16	480	31.25
4 BLWR	21-001887	30KVA	575	42.53	480	41.67

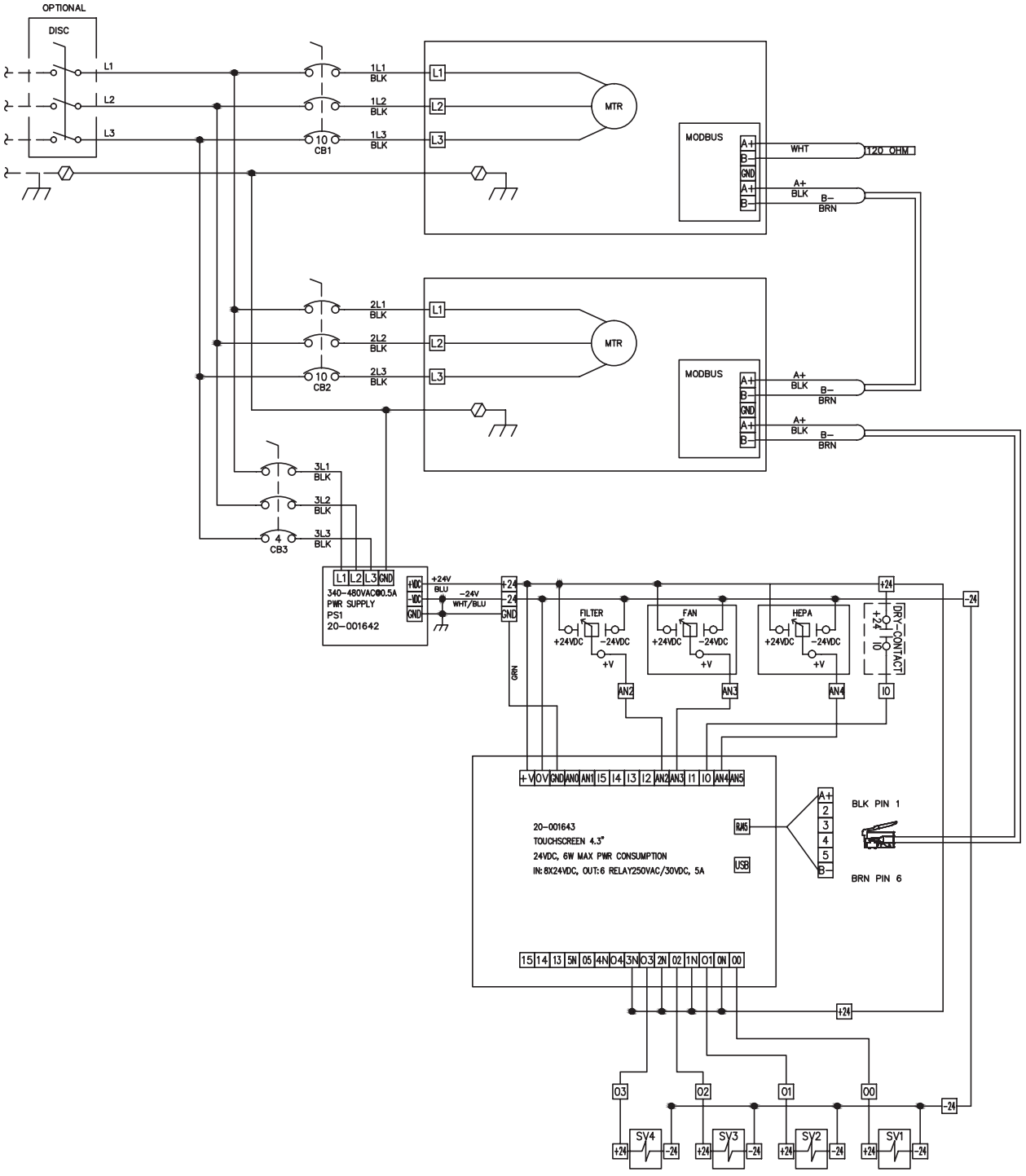
04-001886

A2-One Blower & Controls



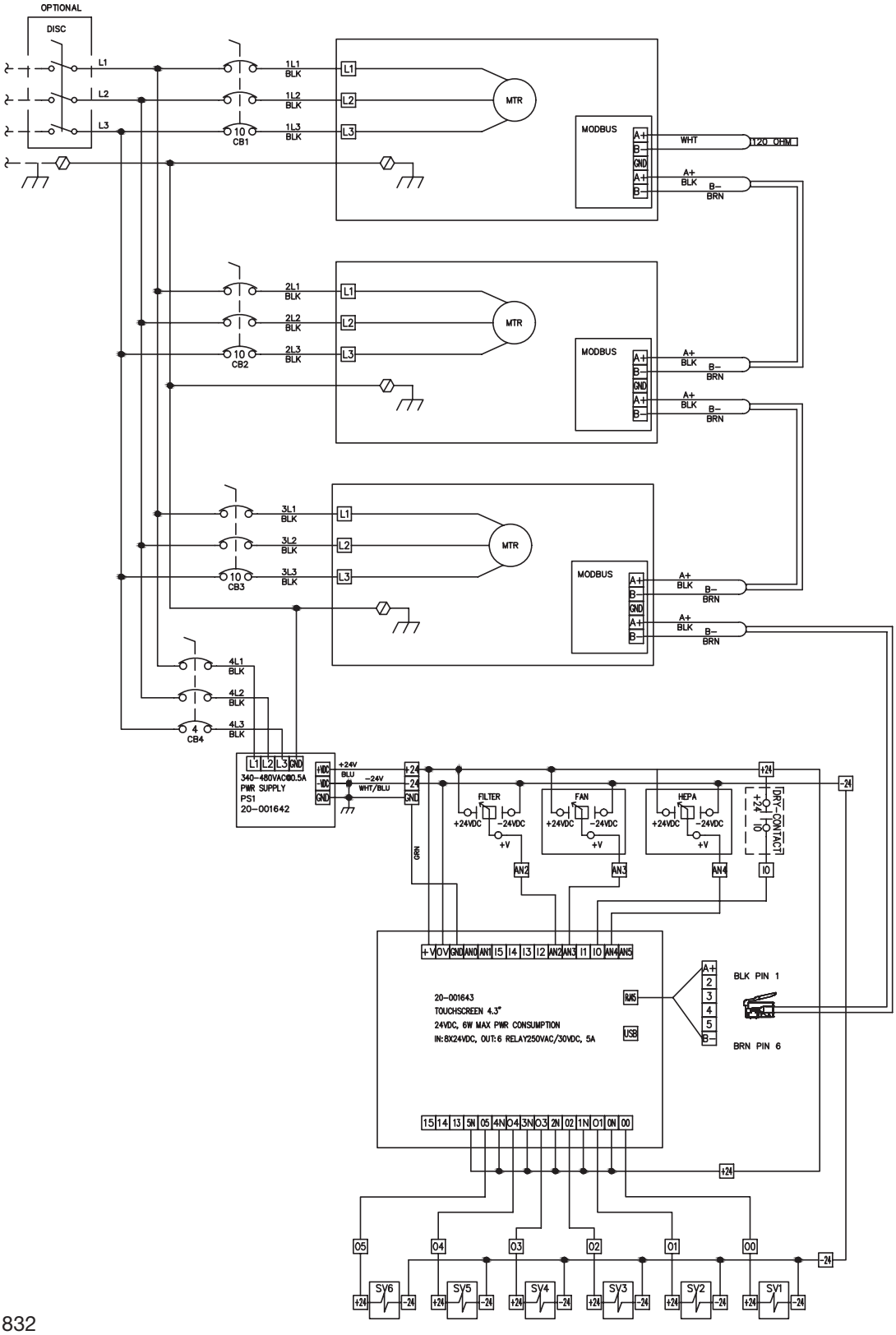
04-001830

A3-Two Blower & Controls



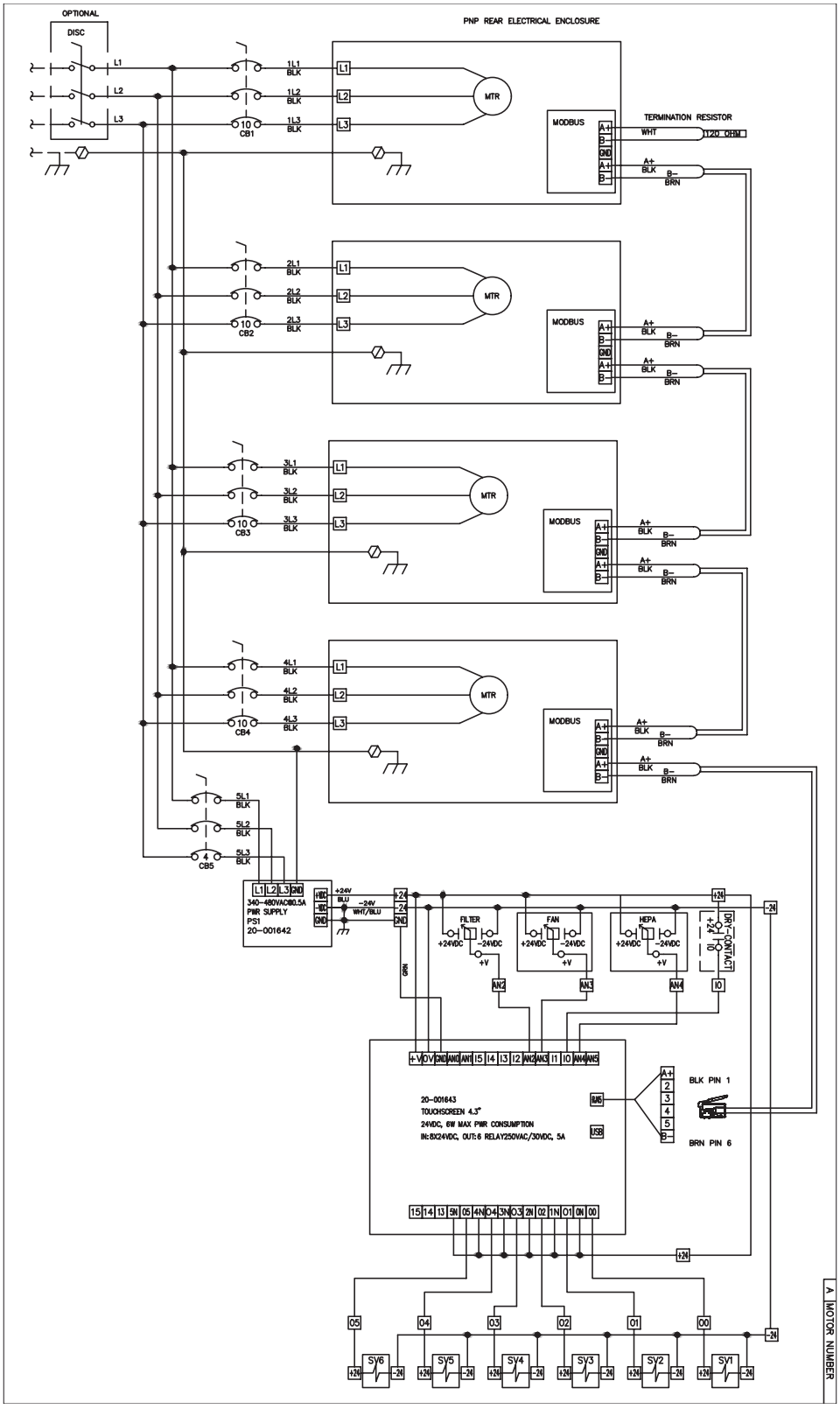
04-001831

A4-Three Blower & Controls



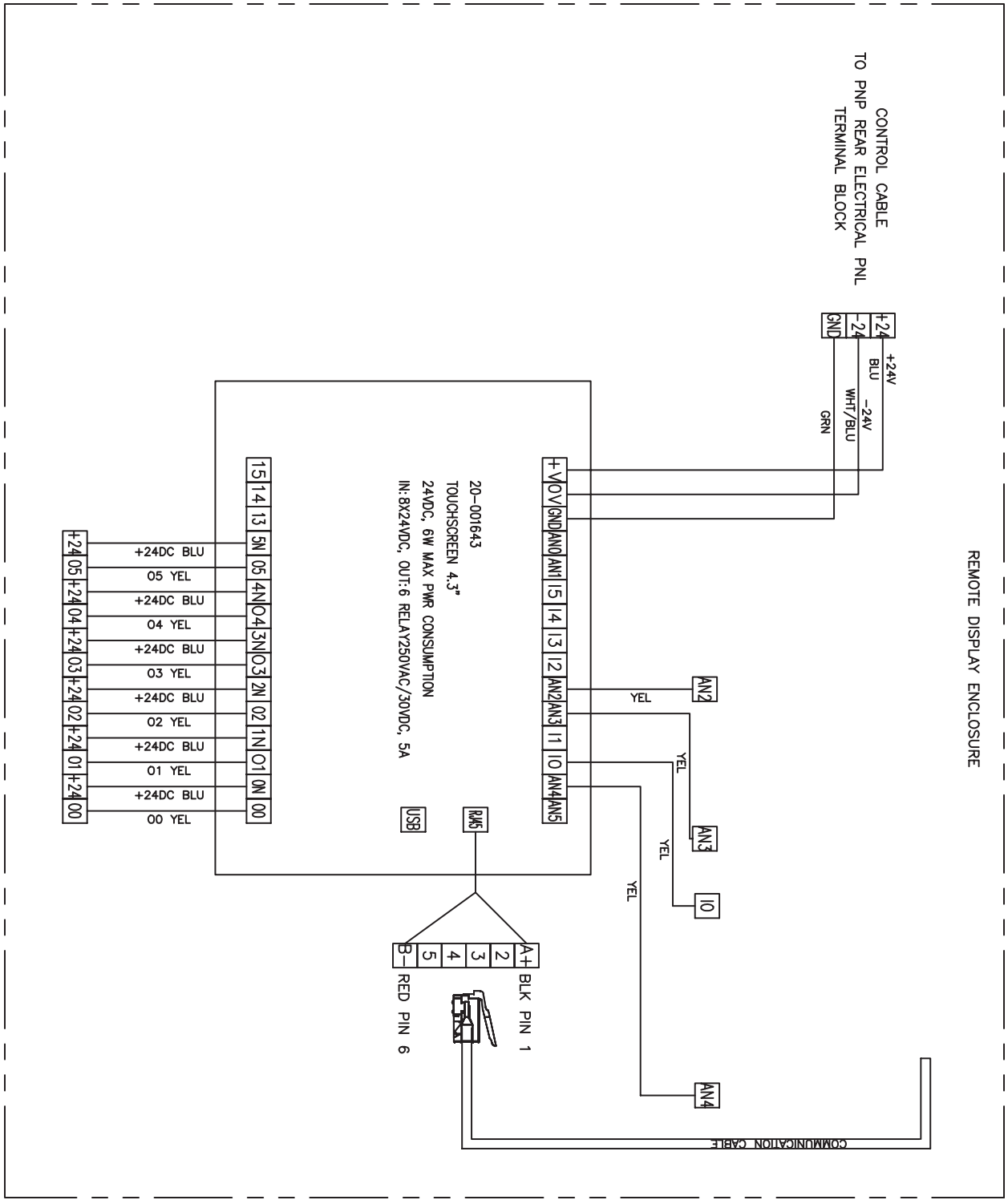
04-001832

A5-Four Blower & Controls



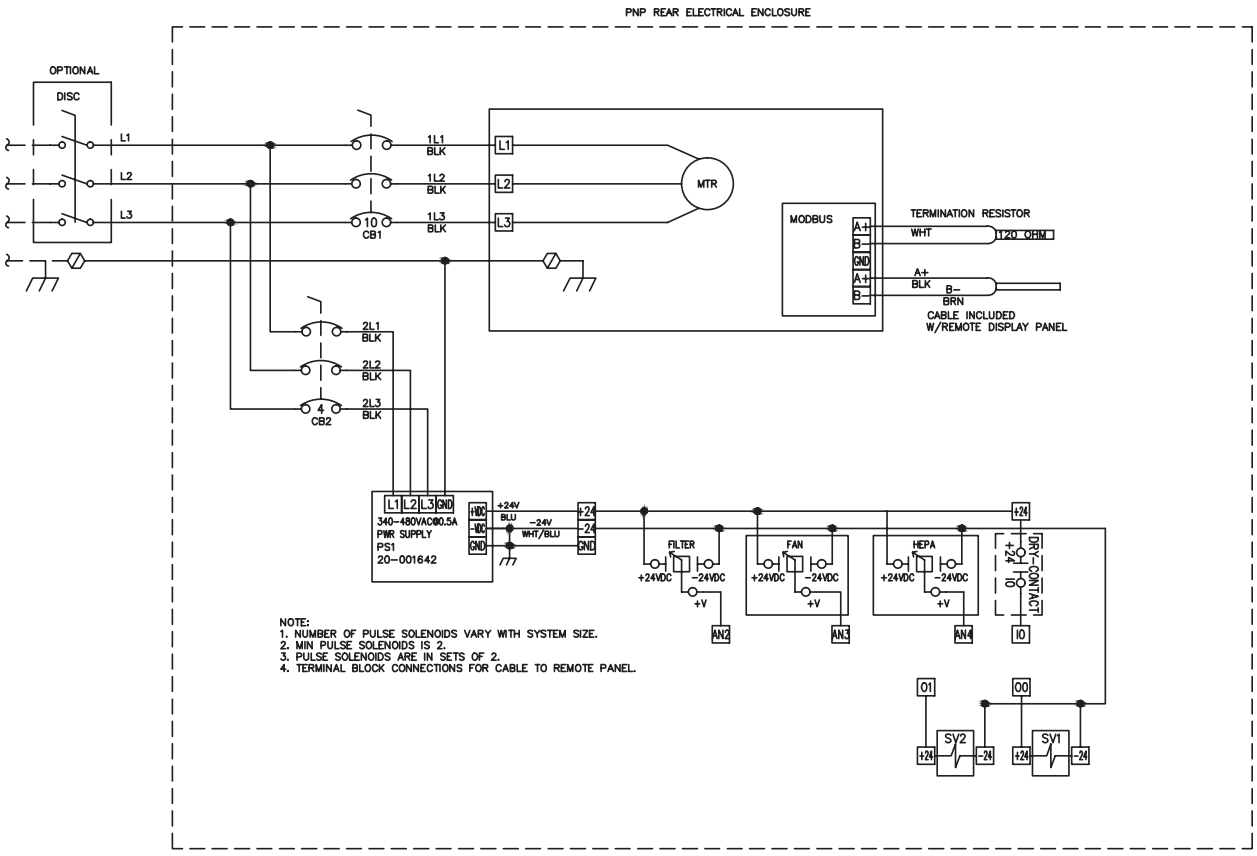
04-001881

A6-Remote Panel Controls



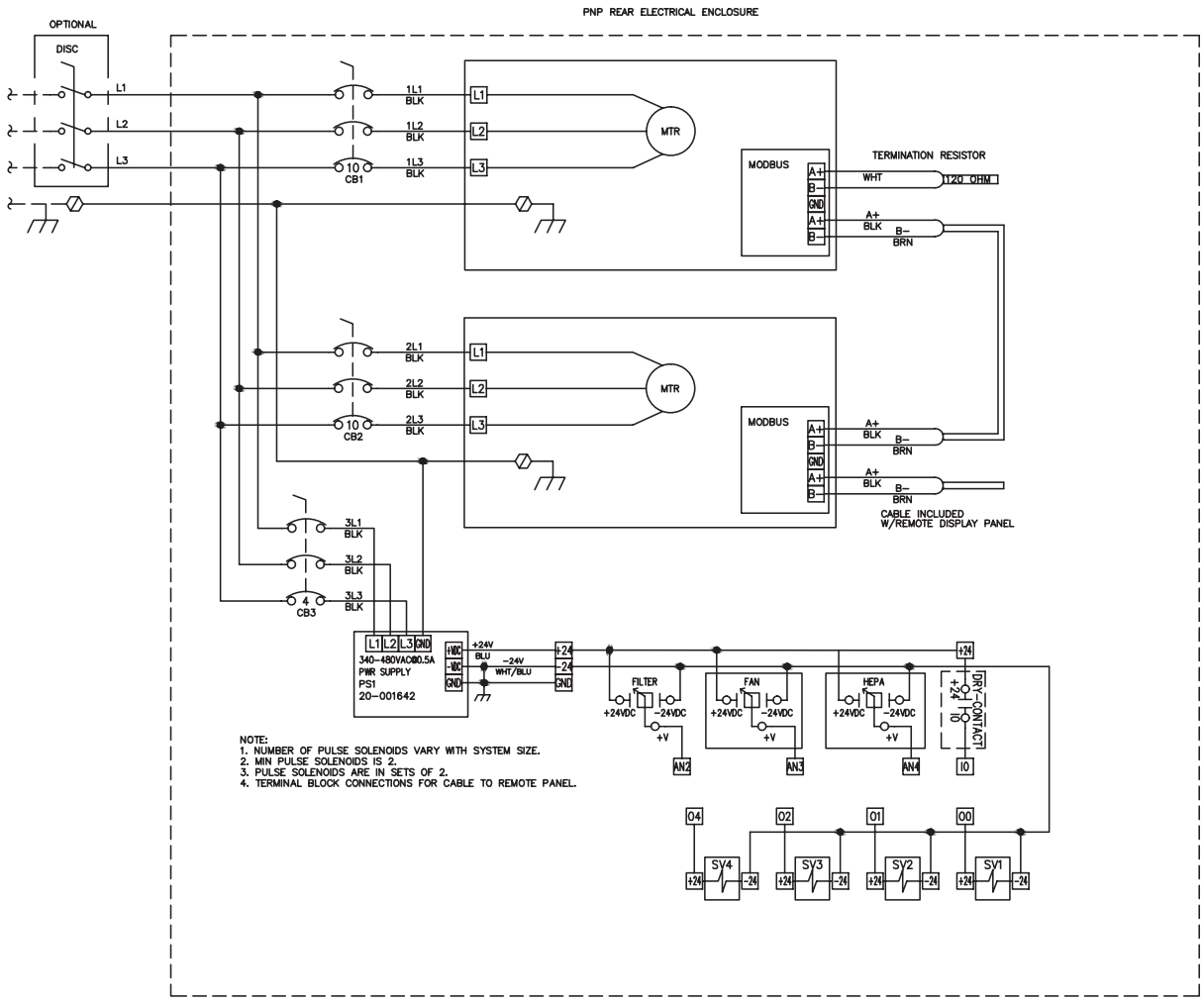
04-001868

A7-One Blower & Remote Controls



04-001833

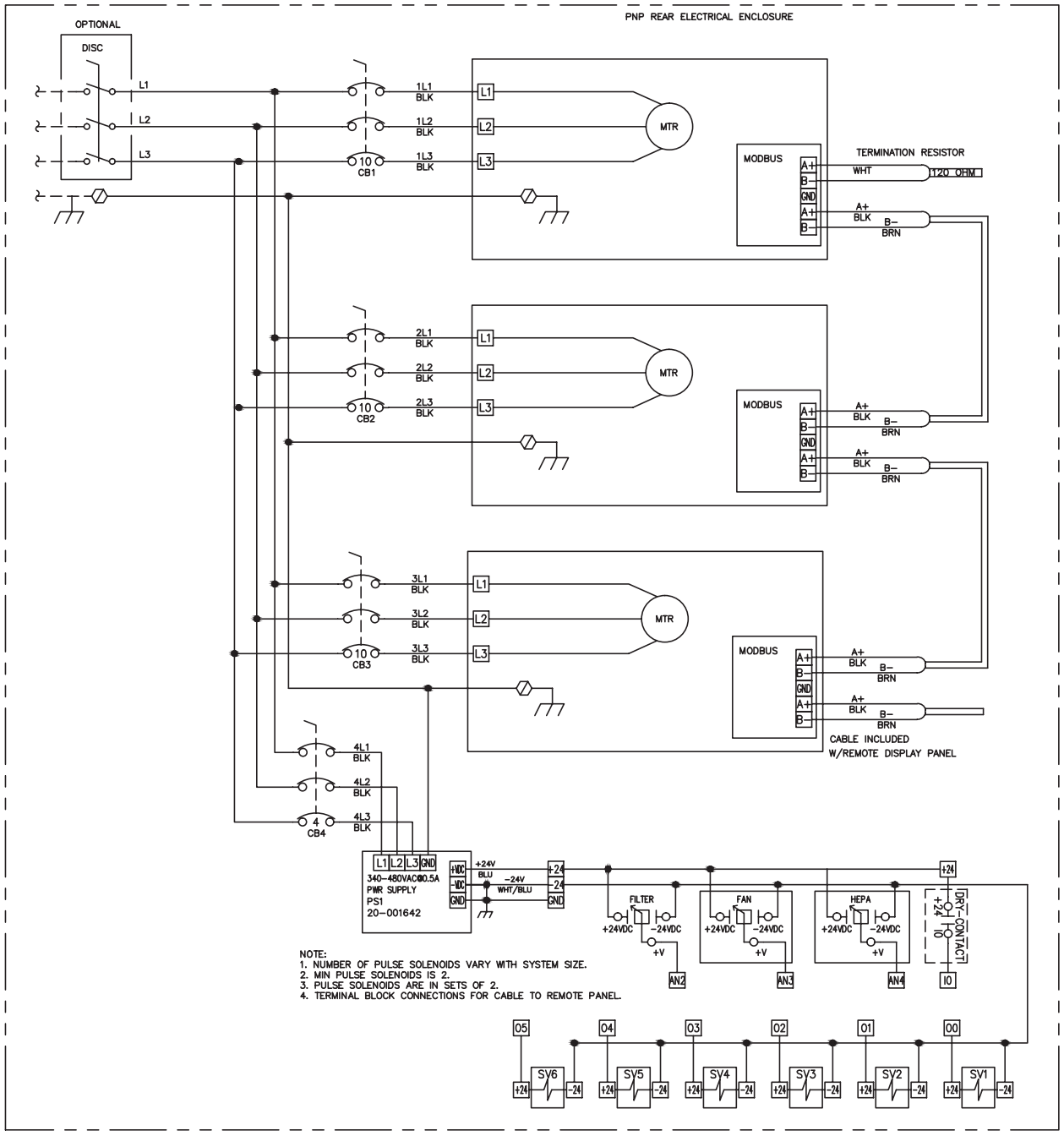
A8-Two Blower & Remote Controls



04-001834

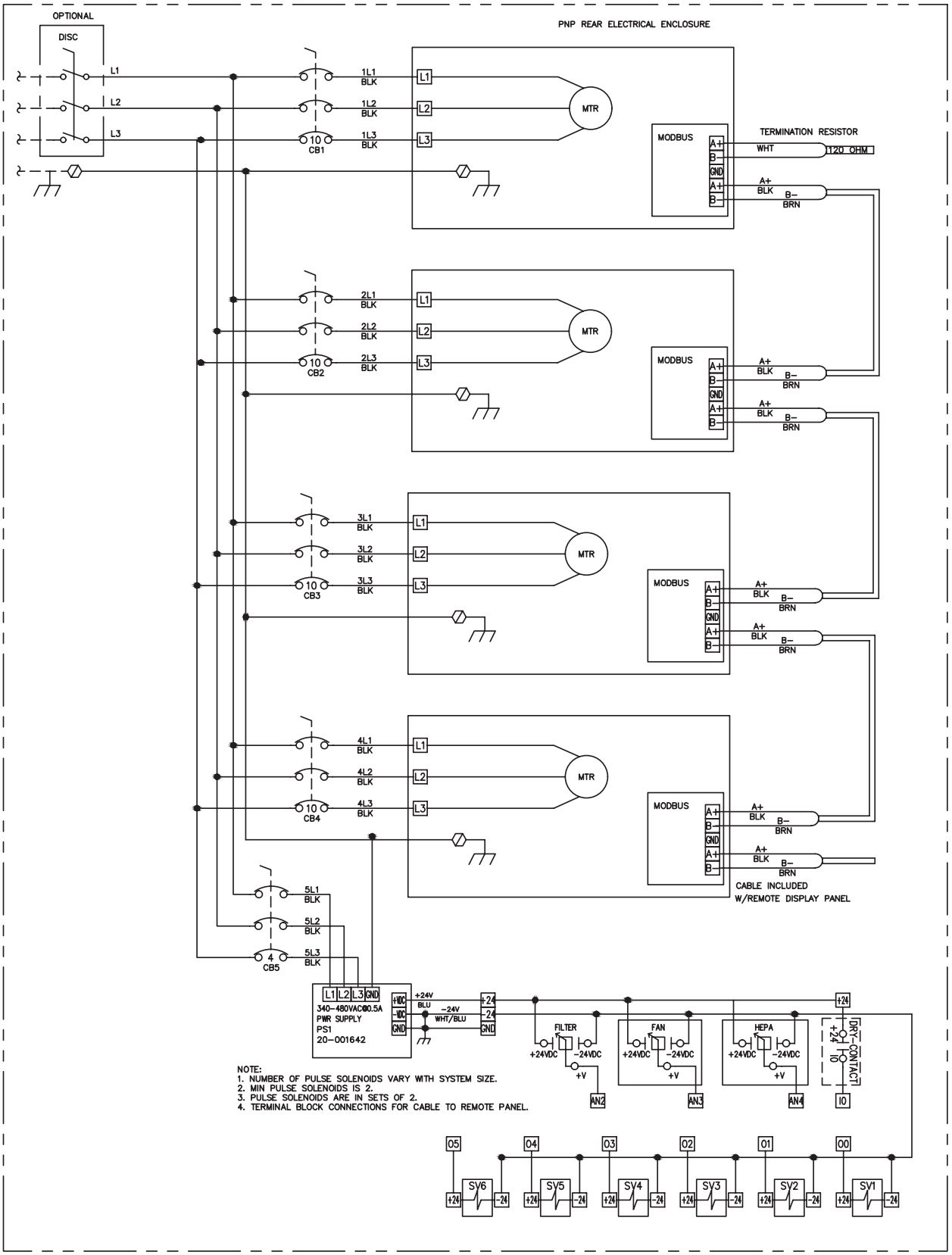
A8

A9-Three Blower & Remote Controls



04-001863

A10-Four Blower & Remote Controls



04-001864

Product Warranty –
SMOG-HOG® and DUST-HOG® Pollution Control Systems

1. Subject to the terms and conditions hereof, Parker-Hannifin Corporation (PARKER) warrants that major structural components on MCB, PNP, SDC, SFC, and SHM series will be free from defects in materials and workmanship for ten (10) years from the date of shipment from Parker. Subject to the terms and conditions hereof, warrants to the original Buyer of any Parker product (PRODUCT) installed and used as recommended by PARKER in normal service, that if the PRODUCT fails or is materially defective within twenty-four (24) months from date of installation or thirty (30) months from the date of shipment (whichever is earlier), of such PRODUCT, then PARKER, at PARKER'S sole option, will replace the PRODUCT with the same or equivalent PRODUCT, repair the PRODUCT or refund the original purchase price for the PRODUCT. Such replacement, repair of payment by PARKER shall be in complete satisfaction of any and all liability of PARKER and its agents with respect to such PRODUCT. Excluded from any Parker warranty are hose, electrical motors or consumable products such as flexible hose, belts, filter cartridges, filter media, ESP cells, electrical components, gasketing, or any component defined by PARKER as a consumable item.

2. Parker IGFG's warranty policy covers defects that are due to manufacturing quality. Equipment must be installed, commissioned and maintained in accordance with Parker IGFG recommendations as documented in the specific user manual related to your dust or wet collector product. This warranty does not cover defects due to poor environmental conditions, improper installation, or wear and tear items. This warranty shall be void in case of:

a) Any buyer's modifications not explicitly approved by Parker IGFG Division,
b) Misuse or failure in maintenance - not in accordance with Parker's product recommendations,
c) Use of unauthorized or non-genuine Parker replacement parts,
d) Damage caused by corrosion, abrasion, abnormal use or misuse, misapplication, or normal wear and tear,
e) Equipment not properly installed, operated and maintained under normal conditions and recommended applications.

As Buyers exclusive remedy for any defects in the equipment, Parker will exchange or repair any defective parts during the warranty period, provided such parts are returned, prepaid, to Parker factory. The obligation of Parker is limited to furnishing replacement parts EXW Parker factory or making repairs at Parker factory of any parts that are determined, upon inspection by Parker, to be defective. In no event will Parker be responsible for labor or transportation charges for the removal, reshipment or reinstallation of the parts. Replacement parts will be provided via INCOTERMS EXW from Parker's Lancaster NY location. Parker makes no warranty as to goods manufactured or supplied by others.

3. THE FOREGOING IS THE ONLY WARRANTY, GUARANTEE OR REPRESENTATION OF ANY KIND MADE WITH RESPECT TO THE SUBJECT PARKER PRODUCTS. NO IMPLIED WARRANTY, INCLUDING ANY IMPLIED WARRANTY OF NONINFRINGEMENT, DESIGN, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, APPLIES TO THE PRODUCT, AND NO OTHER EXPRESS WARRANTY OR GUARANTY, EXCEPT AS MENTIONED ABOVE, GIVEN BY ANY PERSON, FIRM OR CORPORATION WITH RESPECT TO THE PRODUCT SHALL BIND PARKER. PARKER SHALL NOT BE LIABLE FOR LOSS OF REVENUES OR PROFITS, EXPENSE FOR SUBSTITUTE EQUIPMENT OR SERVICE, STORAGE CHARGES, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY THE USE, MISUSE OR INABILITY TO USE THE PRODUCT REGARDLESS OF THE LEGAL THEORY ON WHICH THE CLAIM IS BASED, AND EVEN IF PARKER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. NOR SHALL RECOVERY OF ANY KIND AGAINST PARKER BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT SOLD BY PARKER AND CAUSING THE ALLEGED DAMAGE. WITHOUT LIMITING THE FOREGOING, YOU ASSUME ALL RISK AND LIABILITY FOR LOSS, DAMAGE OR INJURY TO YOU AND YOUR PROPERTY AND TO OTHERS AND THEIR PROPERTY ARISING OUT OF USE, MISUSE OR INABILITY TO USE THE PRODUCT NOT CAUSED DIRECTLY BY THE NEGLIGENCE OF PARKER. THIS LIMITED WARRANTY IS GIVEN ONLY WITH RESPECT TO A PRODUCT PURCHASED FROM PARKER OR AN AUTHORIZED PARKER DISTRIBUTOR.

4. IN NO EVENT IS PARKER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, NONCOMPLETION OF SERVICES, USE, LOSS OF USE OF, OR INABILITY TO USE THE PRODUCT OR ANY PART THEREOF, LOSS OF DATA, IDENTITY, PRIVACY, OR CONFIDENTIALITY, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT PARKER'S WRITTEN CONSENT, WETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL PARKER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCT.

5. Defective PRODUCTS must be documented via PARKER support "Case Number" within thirty (30) days after the date of the alleged failure or defect and within the warranty period by contacting Parker Technical Support via email or phone:

smoghog@parker.com or dusthog@parker.com
800-343-4048, option 2

The claim must specify in reasonable detail:
1) Product Serial Number or Parker Sales Order # and approximate Date of Purchase;
2) Where or from whom the product was originally purchased;
3) Description of problem symptom;
4) Description of troubleshooting effort details;
5) Description of physical location and/or environment details. The Buyer shall cooperate with PARKER in its investigation and provide full information and documentation concerning the PRODUCT and its usage.

Upon receipt of the claim, Parker IGFG will review and determine if the parts replaced need to be returned for quality evaluation and root cause investigation. If a part is required to be returned, Parker IGFG will issue a Return Material Authorization (RMA) to Return via email. Parts should be returned to Parker IGFG, freight collect, within 45 days accompanied by the RMA packing slip placed on the package. If the repaired part does not need to be returned you will be advised to field scrap it and the claim will be processed. Proof of the defect (written description and pictures of the parts units in question) is required.

NOTE: ANY PART NOT RETURNED WITHIN THE REQUIRED 45 DAYS WILL NOT BE REIMBURSED ON THE CLAIM.

On claims that require repaired parts return, the claim will be processed after the part has been evaluated by the Parker IGFG Quality Department for verification of failure mode. The claims will be paid in the form of a credit to the customer's account. Parker reserves the right to withdraw any quotation or proposal or reject any purchase order without liability.

Page intentionally left blank

Worldwide Filtration Manufacturing Locations

North America

Compressed Air Treatment

Industrial Gas Filtration and Generation Division
Lancaster, NY
716 686 6400
www.parker.com/igfg

Haverhill, MA
978 858 0505
www.parker.com/igfg

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

© 2020 Parker Hannifin Corporation. Product names are trademarks or registered trademarks of their respective companies

IOM_PKR_PNP_122020
P/N 44-10637 Rev-

Parker Hannifin Corporation
Industrial Gas Filtration
and Generation Division
4087 Walden Avenue
Lancaster, NY 14086
phone 800 343 4048
www.parker.com/igfg

MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = ISO 14001