



# SMOG-HOG<sup>®</sup> Media Mist Collector Owner's Manual

Models SHM-C & SHM-F



ENGINEERING **YOUR** SUCCESS.

# KNOW YOUR EQUIPMENT

READ THIS MANUAL FIRST.

Your SMOG-HOG® SHM should provide many years of trouble-free service. This manual will help you understand the operation of your SHM unit. It will also help you understand how to maintain it in order to achieve top performance. For quick future reference, fill in the unit 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.

Parker Order #: \_\_\_\_\_

Unit Model #: \_\_\_\_\_

Unit Serial #: \_\_\_\_\_

System Accessories:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Installation Date: \_\_\_\_\_

**Parker Hannifin Customer Service**

**1-800-343-4048**

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## SAFETY PRECAUTIONS

We have provided many important safety messages in this manual. 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:



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



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



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



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

## IMPORTANT SAFETY INSTRUCTIONS



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

- Use proper lifting and rigging equipment to install your air cleaner.
- The air cleaner should be properly grounded.
- Disconnect power before servicing.
- Replace all access panels before operating.
- 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 unless the air cleaner is equipped with the appropriate accessories.
- Keep flammable materials and vapors, such as gasoline, away from air cleaner.
- The unit should be inspected frequently and dirt removed to prevent excessive accumulation which may result in flash-over or fire damage.
- Operate only in a safe and serviceable condition.
- Do not allow any individual to put lit cigarettes or any burning objects into the hood or ducting of any dust control system.

## Part Number Configurator

Model	Modules Wide	Modules Deep	Filter Media	Power Supply	Controls	Afterfilter	Pump	Part Number
<b>SHM</b>	<b>3</b>	<b>2</b>	<b>C</b>	<b>4</b>	<b>L</b>	<b>H</b>	<b>P</b>	<b>SHM-32C4LHP</b>
SHM	1 = 1	1 = 1	C = PEACH	2 = 230V/3PH/60HZ	L = Local	H = HEPA	N = None	
	2 = 2	2 = 2	F = Fiber-glass Bag	4 = 460V/3PH/60HZ	R = Remote	M = 95% Micro-guard	P = with Pump installed	
	3 = 3							

- All models include floor extension legs

## Accessories Ordered Separately

Slip Inlet Collar Kit (6") each	03-10812
Slip Inlet Collar Kit (8") each	03-10813
Slip Inlet Collar Kit (10") each	03-10814

# **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 of 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.

# 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. Operating personnel should be aware of, and adhere to, the most stringent safety procedures.

# 2. Introduction

Thank you for selecting Parker oil mist 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 offering air cleaning equipment which is engineered to each oil mist collection need and manufactured to the highest standards. If at any time you have a question about oil mist collection, please do not hesitate to call Parker customer service.

The purpose of this manual is to provide the proper operating and maintenance guidelines for the SHM system supplied by Parker. As you review this manual, refer to Figure 1 for assistance in identifying oil mist collector parts.

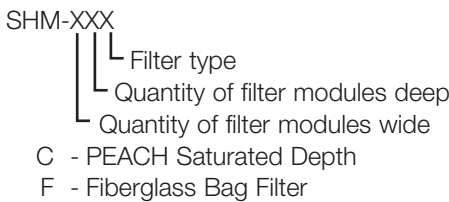
The SHM oil mist collector has been designed to provide you with exceptional oil mist collection capabilities and reliable, long term field operation. We suggest that you thoroughly review this manual prior to installation and startup of your system.

If your SHM has optional equipment included as part of your order, specific operations and maintenance manuals for these accessory systems will 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.

## 2.1 SMOG-HOG Nomenclature

SMOG-HOG oil mist air cleaners are available in a variety of configurations and sizes. The model string for each given unit represents the base configuration. The model number completely identifies the design and can be found on the unit nameplate. SHM models are defined according to descriptions listed below (see bold):



**Models SHM-11C, SHM-12C, SHM-21C, SHM-31C, SHM-22C, & SHM-32C**

**Models SHM-11F, SHM-12F, SHM-21F, SHM-31F, SHM-22F, SHM-32F**

The SMOG-HOG is a free standing, self contained, multistage, oil mist filtering unit with inlet sump or direct mount flange, mechanical prefilter, primary filter, blower cabinet, and controls. Optional after filters are available for third stage filtration.

## 2.2 Equipment Description

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

### Inlet Sump

Most units will include an inlet sump with multiple 10" inlets where all incoming dirty air will enter. The sump provides an expanded volume allowing contaminant to drop out of the airstream reducing loading on the filters. A 1-1/2" FNPT coupling is included at the peak of a sloped bottom allowing the collected contaminant to be reclaimed or drained.

### Filter Cabinet

Each unit has a filter access door that provides access to both the prefilter and primary filter for service and replacement. The mesh prefilter rests on tracks near the bottom of the cabinet. The PEACH coalescing filter option is mounted on a removable cassette secured by a cam bar mechanism. The fiberglass bag option uses a hanging rod system.

### Filter Elements

- Stage 1: Mist-Stop fine fiber aluminum mesh
- Stage 2: Primary coalescer featuring PEACH Saturated Depth Coalescing Technology - or - fiberglass bag
- Stage 3: HEPA or 95% filter

### Blower Cabinet

Most units will have a blower cabinet where the motorized impeller style blower is housed.

## 2.3 Principle Operation

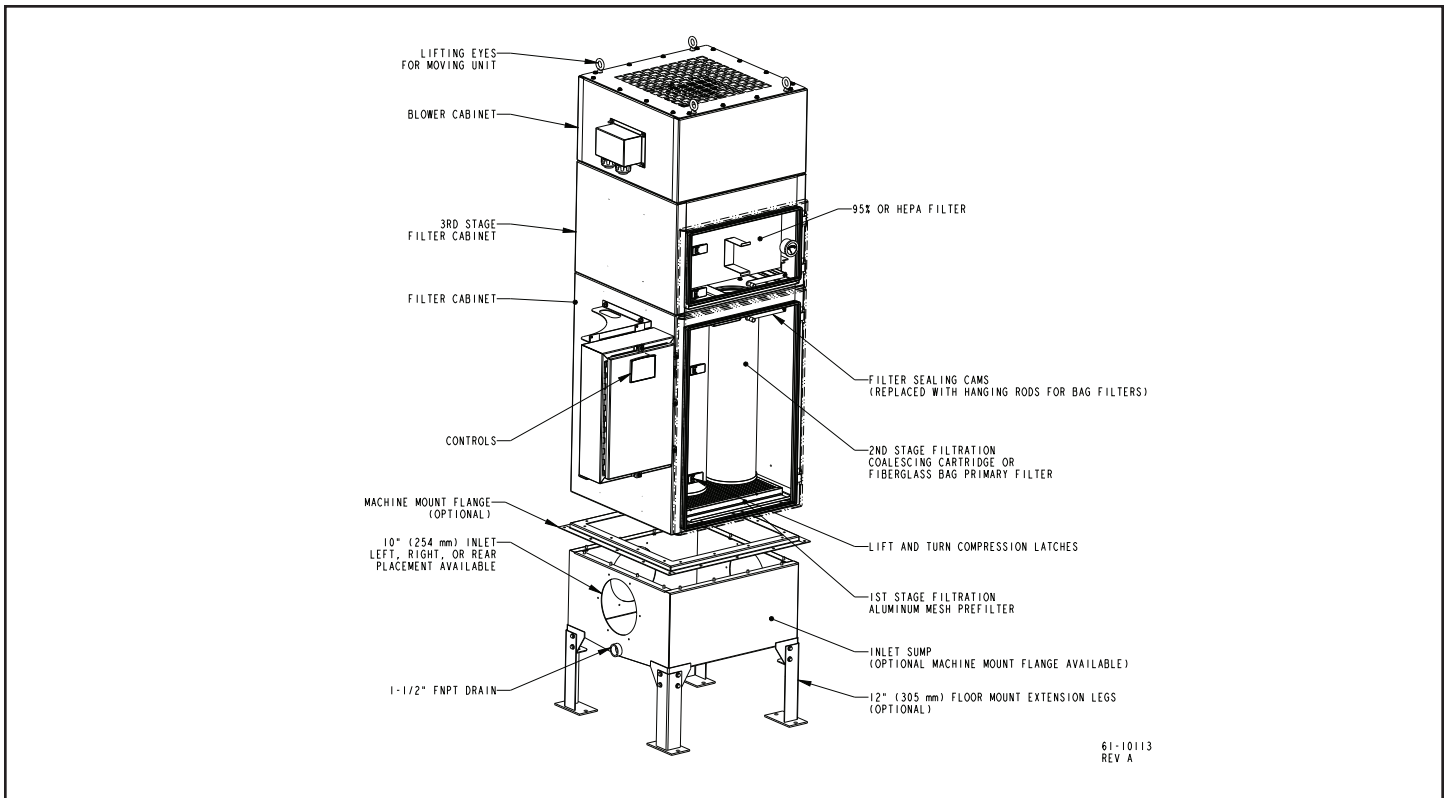
The purpose of the SHM is to collect fugitive mist generated by various industrial processes during operation. The collected contaminate is drained off of the coalescing filters into the sump below or directly back into the machine. The sump is attached to a drain system of the customers choice for recycling or disposal, or emptied manually at regular intervals.

CAUTION
Do not let the oil level in the sump reach the height of the air inlet opening.

### Differential Pressure

Differential pressure, also referred to as pressure drop ( $\Delta P$ ), is an indication of the resistance to airflow across the filter elements. Differential pressure is commonly measured in inches of water column (W.C.) or Pascals (Pa). 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 trouble shooting guide in Section 6 for assistance.

The operating differential pressure displayed on the unit will typically run between 0.5 to 4 in. W.C. (124 to 995 Pa) for a Fiberglass Bag filter, and between 0.75 to 4 in. W.C. (187 to 995 Pa) for a Coalescing Cartridge filter. The expected pressure range for the after-filters is 0.5 to 3.0 in. W.C. (124 to 746 Pa).



**FIGURE 1**  
SHM Equipment Description

## 3. Installation

### 3.1 Inspection and Offloading

As soon as your equipment arrives, it should be carefully inspected to make certain that it is 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 or become dislodged 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 elapsed. Check all loads separately.

The following steps should be taken immediately upon receipt of your shipment; this 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 SHM unit and components by the packing skids or on the lifting eyes located on the top of the unit in each corner. Do not lift the unit by placing lift truck forks through the legs on the underside of the unit.

### 3.2 Installation Preparation and Planning

Prior to the actual installation of the SHM, the location should be readied. This would include having an adequate lay-down area for all components, and access for the crane, forklifts and other machinery. The unit will come pre-assembled. The majority of installation will be electrical hook-up, 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 3 feet of clearance is recommended for service in front of the filter access door.



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

### 3.3 Discharge Component Installation

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.

### 3.4 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.**

Units with **sumps** utilize 10" inlets and optional collar flange(s) that come mounted to the unit. They can be rearranged and mounted however desired based on application needs. Be sure to use a polyurethane sealant or gasket to prevent leaks. It is recommended to use ducting that is liquid tight to prevent leaks.

All other transitions, ducting or plenums required for unit set-up and operation are not included with the equipment.

**C A U T I O N**

**Unit should always be secured to the floor when installed in this configuration.**

Secure the unit at all four corners using the standard unit feet or extension leg foot pads. At least one of the two holes per foot pad on the extension legs should be secured. See Figure 1 for reference.

**C A U T I O N**

**The SMOG-HOG should not be used for support of personnel or material. Check with local building code/structural engineer to ensure proper installation and mounting method.**

### 3.5 Electrical Connection

The SHM is available with various controls configurations. Refer to the section headings below and follow the section instructions that best align with your specific unit. Multiple sections may apply to the same unit. Electrical connections are in the control panel that is mounted on the side of the collector.

The supply voltage and FLA will be noted on the nameplate. The blower 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 SHM controls, blower arrangement and supply voltage options are available within the appendix of this manual. Note that the SHM 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.

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

Unit is available in the voltages shown below:

VOLT	PH	#BLWR	HZ	RPM	FLA
230	3	1	50-60	3370	5.7
480	3	1	50-60	4200	5.5
230	3	2	50-60	3370	11.5
480	3	2	50-60	4200	11.0
230	3	3	50-60	3370	16.4
480	3	3	50-60	4200	15.5

575VAC input requires a step down transformer from 575VAC to 460VAC and is not supplied with the unit.

**TABLE 1  
SHM Voltage and Full Load Amps**

Note: When making the main power connections to the unit, fan rotation check is not required.

#### 3.5.1 Electrical Touchscreen Controls

The main control panel for the SHM unit is a touchscreen interface located in the side box on the unit or remotely in an auxiliary enclosure (refer to section 3.5.4) that operates the blower.

The touchscreen control panel is 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.

Description of Wire Diagram	Appendix	Page
One, Two or Three Blowers and Controls	A1	18-19
One, Two or Three Blowers and Remote Controls	A2	20-21
Remote Panel Cotrols	A3	22
575:480 Transformer	A4	23

TABLE 2  
Wire Diagrams

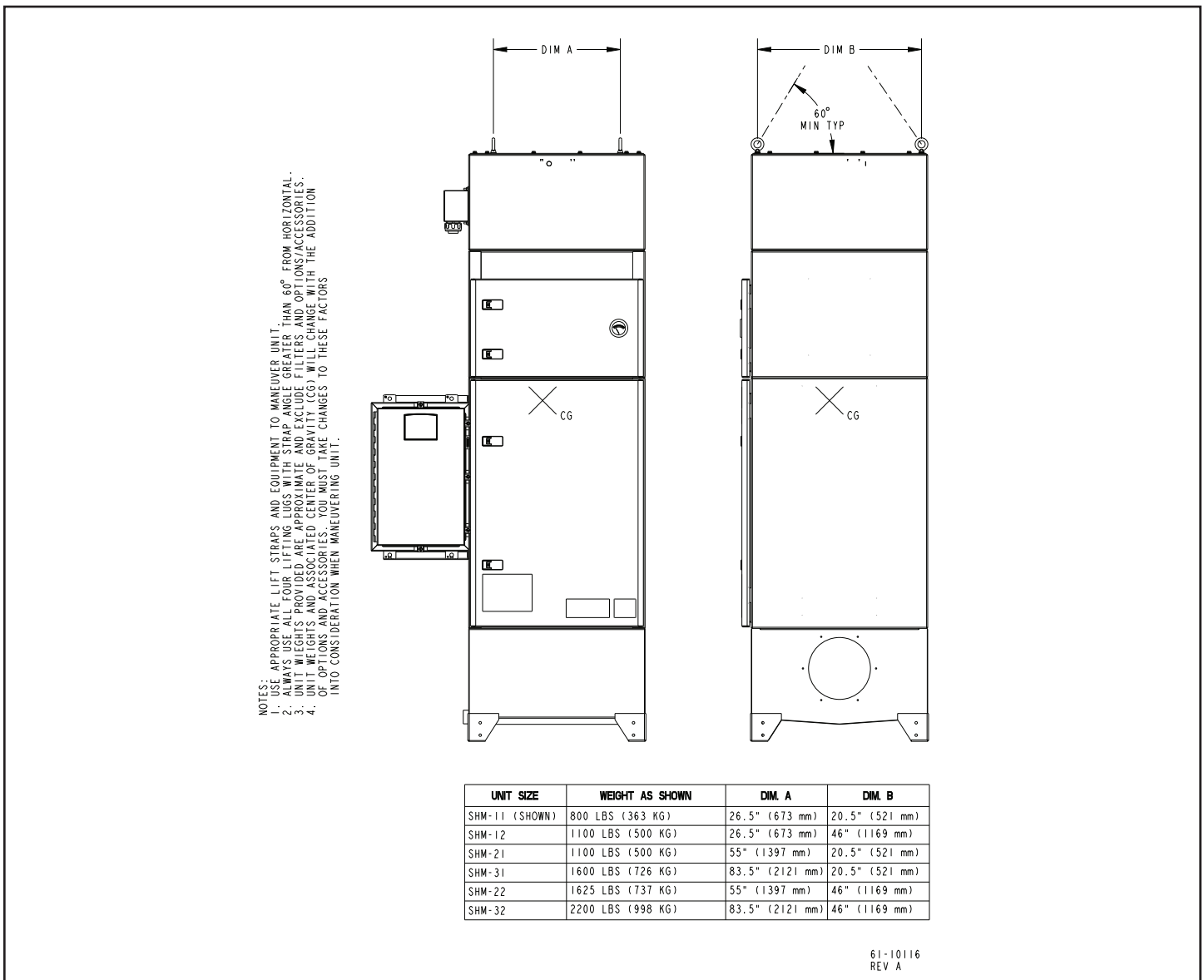


FIGURE 2  
SHM Weights and Lifting Info

### 3.5.2 Electrical Remote Panel Controls

The touchscreen can be remotely mounted. The control panel on the unit must remain at the unit. The max distance is 65 FT (20m). The controls are provided in a NEMA 4X enclosure for mounting.

Touchscreen Controls – The remote touchscreen controls enclosure will contain the touchscreen and terminal blocks for the wire connections. There are two cables connected to the remote enclosure that are 65 FT each. One is the 24 VDC power supply and control cable, and the other is a communication cable. These wires will need to be connected to the side electrical panel of the SHM unit by the customer at the time of installation. The first wire is the low voltage controls wire that will connect to the terminal blocks on the side of the SHM unit on +24VDC, -24VDC, AN2, AN3, IO, O0, O5, GRD. Use the wire diagram on page A6 for wire colors and terminal location for landing. The second wire is a communication wire that connects between the Unitronics EX-A2X located in the side electrical panel and the Unitronics Touch Screen located in the remote box.

### 3.5.3 Machine Interlock Dry Contact

The customer has the option to control the SHM On/Off operation with the oil mist generating equipment or process. This will allow the operator to control the SHM 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 Machine Interlock set up on the touchscreen.

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

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

## 3.6 Filter Installation

The primary filter elements are shipped already installed in the SHM unit. If an after-filter option is selected by the customer, those filters will also be shipped already installed in the SHM unit. Filters may be removed from the filter cabinets by the customer when delivered to lessen weight, protect them from damage, and ease unit installation.

Proper removal and installation of each filter type is shown in figures 3A & 3B.

### 3.6.1 Installation Procedure for After-Filters

#### 3.6.1.1 Enclosure

After-filters are housed in the upper filter cabinet. The box-shaped after-filter slides into the cabinet door on the cam-bars. Be sure the filter(s) is pushed all the way to the back of the cabinet where it will bottom out on a stop. Rotate the cam-bars upward as illustrated in figure 5B. This will seal the filter's top mounted gasket onto the cabinet's upper tube sheet.

## 3.7 Drains

All SHM units are supplied with 1-1/2" FPT drain connections. Use a 1-1/2" drain trap or similar to prevent air from being sucked up through the drain when unit is running.

NOTES: Main drain line should be sufficiently sloped and vented. All plumbing should conform with all state and local codes.

# CAUTION

**Appropriate design criteria as provided by a plumbing/mechanical contractor should be utilized to ensure proper control of drainage from the SHM Unit.**

## 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 SHM filter access doors and verify that the filters are in place and properly sealed.
2. Close and latch all access doors and electrical enclosures on the unit.
3. Ensure that the main power is connected and turned on.
4. Ensure that all circuit breakers are switched on.
5. 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.
6. Press the blower power button on the Home screen to begin operation. Note that if the oil mist collector is connected to a process, other equipment will need to be engaged as well.
7. Verify performance of the system by measuring airflow or evaluating capture at each collection point. It is recommended to record baseline performance parameters so the system can be reset in case of an upset condition or system change. The recorded data should include:
  - the static pressure at each collection hood
  - system amperage draw and filter pressure drop at a minimum
  - any other key pieces of data critical to your process.
8. To optimize system performance and extend filter life, run the unit at the minimum airflow required to control the process.

### 4.2 System Operation

As the SHM collects contaminate, a layer builds up on the outside surface, causing an increased pressure drop through the filters. As the differential pressure rises, the blower RPM will need to be increased in order to maintain the desired airflow. When the filters are saturated, the contaminant drips to the bottom of the unit and collects within the oil sump where it can be drained and disposed of. When the system can no longer generate the airflow required to capture or convey the collected contaminate, the filters must be replaced.

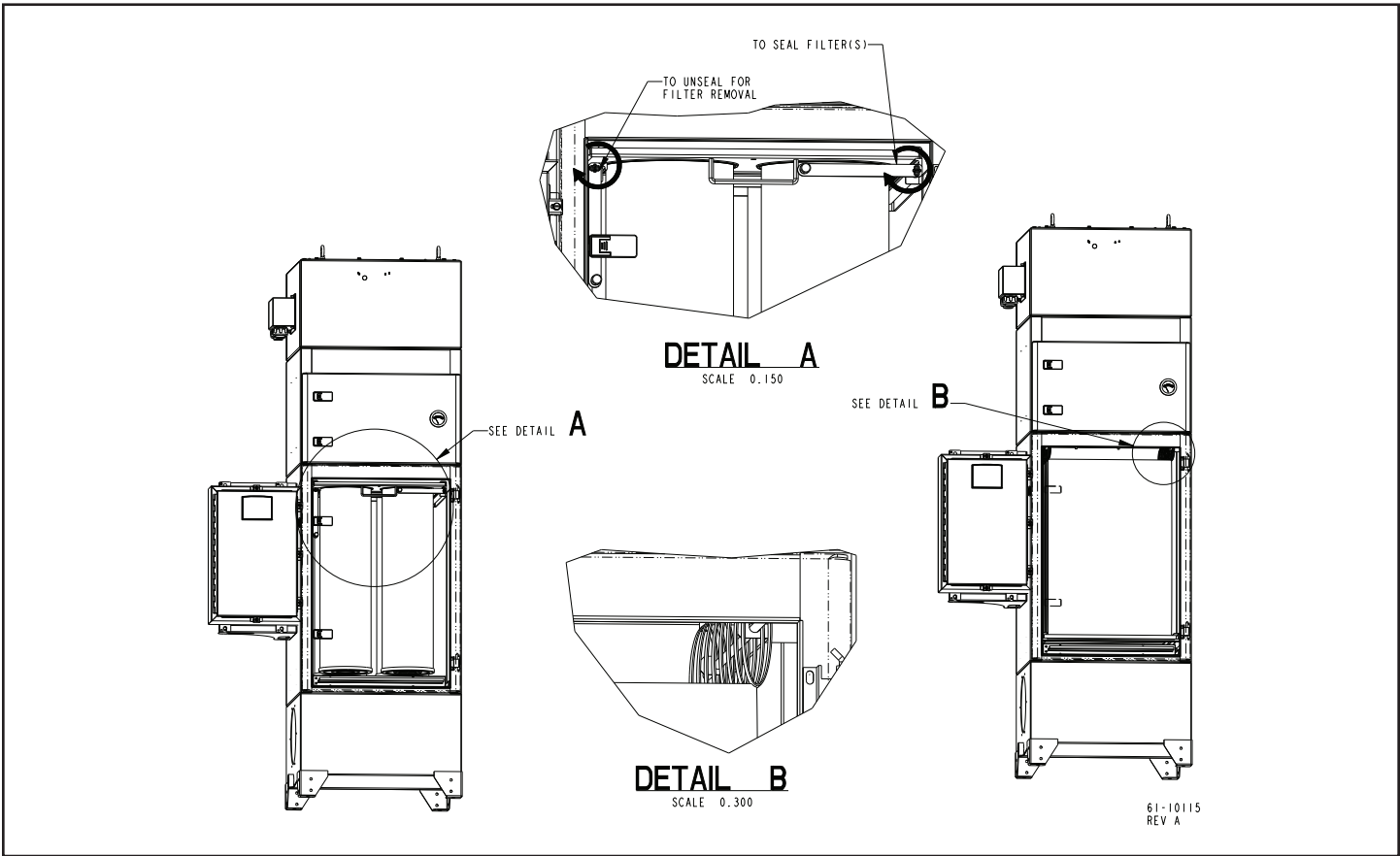


FIGURE 3A  
SHM Filter Removal & Installation

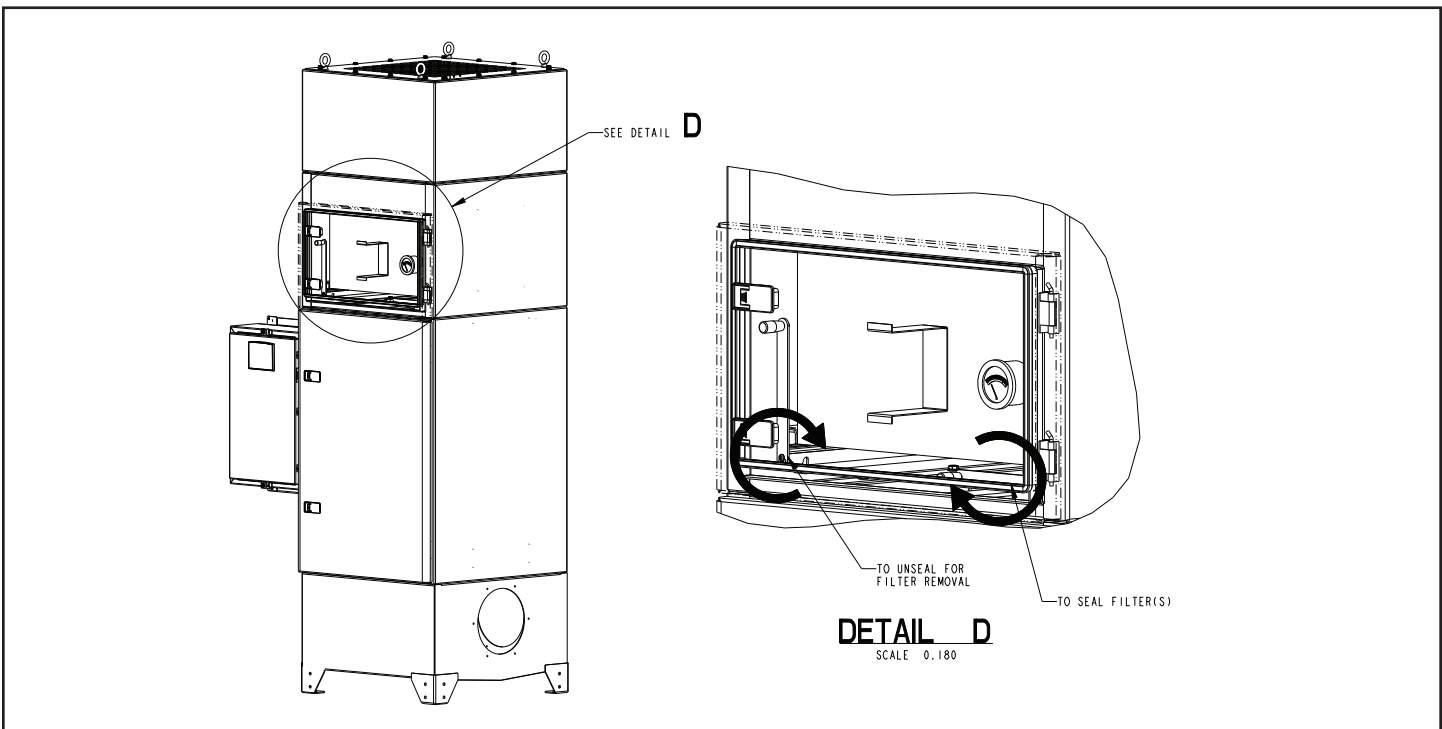


FIGURE 3B  
SHM Filter Removal & Installation

#### 4.2.1 Airflow Adjustment Using Manual Speed Control

The SHM features an Electronically Commutated (EC blower) that is equipped with airflow adjustment using the blower RPM. To adjust the airflow, the blower speed (RPM) percentage can be adjusted from 20 to 100%. 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 SHM 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.

### 4.3 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 4. 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 4.



Figure 4

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 and blower.

**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, unique screens required for a special application. These screens are based on customer order and loaded at the factory.

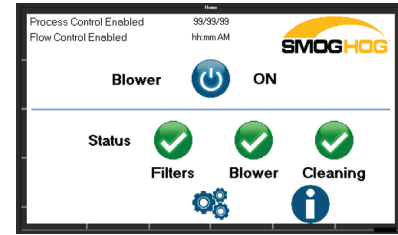


Figure 6

#### 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.

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

### 4.3.3 Basic Screens

#### Filter Screen:

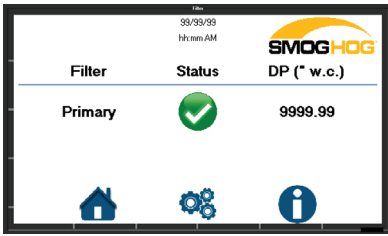


Figure 7

The Filter screen can be displayed by the operator by selecting the filter status icon on the Home screen shown in Figure 7. This screen will display the differential pressure across the filter during operation.

#### Blower Screen:

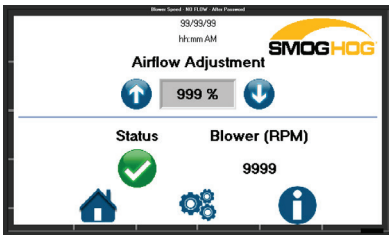


Figure 8

The standard blower screen will display the status of the blower. With Auto-Flow 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 methods. 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 number are approximate and may display slightly differently on any given unit. There is a minimum set point for speed which is 20% for the purposes of the blower design. The SHM may have multiple blowers incorporated within the system to support performance of the unit depending on the customer application. All of these blowers will respond in unison with the SHM's controller.

#### Information Screen:



Figure 9

The information screen will provide a phone number for customer service. There is also a web address for our website that can be used to locate your nearest representative.

### 4.3.4 Auto-Flow Screen

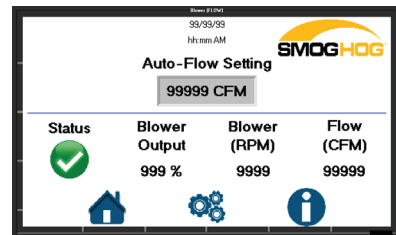


Figure 10

When Auto-Flow is activated and activated the blower screen will look like Figure 10. Refer to section 4.3.6 to activate Auto-Flow and 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 Customer Settings

The standard customer settings screen shown in Figure 11 will allow the operator to make General Settings changes without a password. The Locked Settings will require a password to be entered. The default password is 4440.

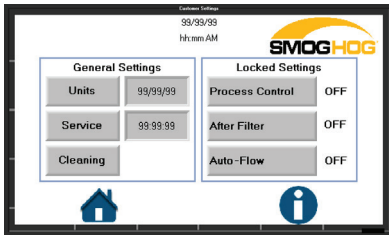


Figure 11

The General Settings selection will allow the operator to change the units and check service of the major components like the blower. 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 too.

The Locked Settings selection will allow the operator to select options of the system. One option is Machine Interlock. With Machine Interlock the operator can allow another device (CNC machine center, plasma table, or weld machine) to turn the SHM on when the primary device is in operation. When this option is selected (see Figure 19) 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.

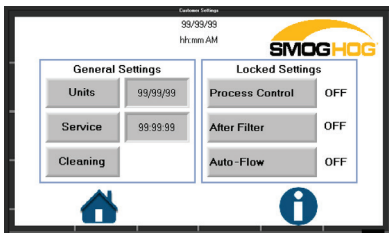


Figure 12

Auto-Flow will appear on the Customer Settings screen as shown on Figure 12.

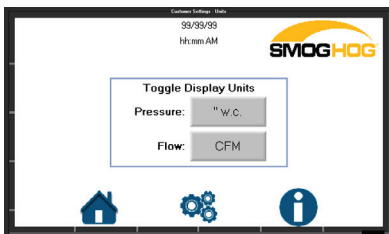


Figure 13

When the units selection is made on the Customer Settings screen, you will see the screen as shown on Figure 13.

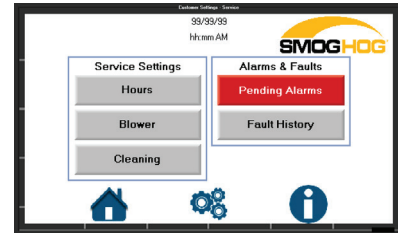


Figure 14

The operator can select the Service settings shown here. Each of the selection will allow the operator to see the health of the unit. You are also able to see any pending alarms and the alarm history for your system using the buttons provided.

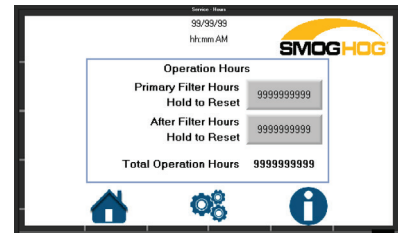


Figure 15

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 resettable by holding the specific button and holding it until the number resets to 0. The operator can also see the total number of hours the SHM 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.

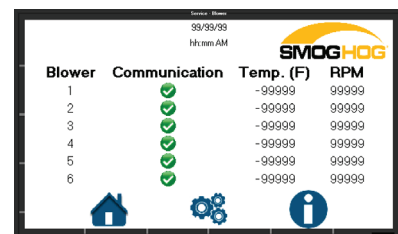


Figure 16

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.

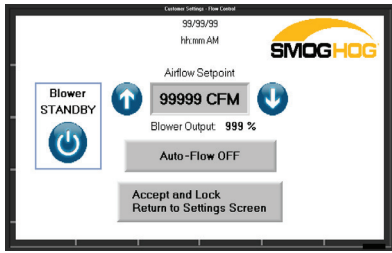


Figure 17

The Auto-Flow Settings screen can be selected in the Locked Settings group on the Customer settings screen. 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. 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.



Figure 18

The After-Filter option can be enabled, but does NOT give an accurate pressure reading for the After Filters. This setting, although able to be turned on, is NOT FUNCTIONAL on the SHM units. The after-filter differential pressure is monitored by a mechanical pressure gauge located on the right side of the after-filter access door. When the pressure gauge reading reaches 4 inches (inWG), the after-filter should be inspected and replaced.

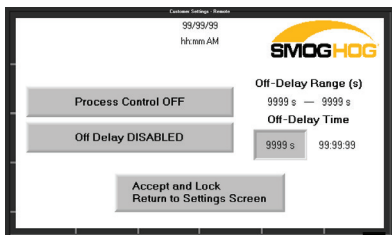


Figure 19

“Process Control ON”, the unit will turn on an off via a dry contact (by others) between wires 13 and 14.  
 “Process control OFF”, the unit will operate using the touch screen only.  
 Off Delay Enabled, will allow the unit to run for a set time (in seconds) after the unit is turned off.  
 Off Delay DISABLED, the unit will turn On/Off when the button on the touchscreen is pressed.

## 5. Service

### ! DANGER

Before servicing equipment:

- Wear appropriate protective equipment when servicing oil mist collector.
- Disconnect and lockout electrical power to the unit and control panel.

### 5.1 General Maintenance Guidelines

Proper maintenance of the SHM is essential for the unit to provide excellent oil mist 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 SHM and its associated components, is the best possible method to ensure the unit stays in proper working order.

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

### 5.2 Filter Service

Automatic filter replacement warnings should display on units so equipped.

When the primary filters reach the point of not being able to maintain proper unit function they must be replaced.

To order filters, contact your Parker sales representative. Identify your filter part number from your sales order, your unit nameplate, or the inside cover of this manual.

The aluminum mesh pre-filter can be washed and rinsed with a moderately powerful spray from a power-washer or hose. This filter can be replaced if contaminants become impossible to remove or due to excessive wear.

### CAUTION

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



Remove used filter elements from the collector and dispose of properly, in accordance with governing restrictions. Be sure there is no excess oil or residue build-up inside the primary filter cabinet. Clean or rinse as necessary. Inspect all filter sealing cam bars and filter support parts for unusual signs of wear or failure. Checking 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 each filter element for damage from shipping, storage or handling. Do not use damaged elements, they may leak or fail prematurely.

Review installation procedures for filter elements before beginning the installation procedures and accessing the oil mist collector. Follow the proper lockout, tagout procedures.

### 5.2.1 Installation procedure for PEACH saturated depth filter elements

Inspect filters to verify there is no damage and all packing materials have been removed. A supportive piece of foam may be inside the filter tube and should be removed before operation. Be careful upon removal not to pull too aggressively to dislodge the inner-most end cap .

Set the header on the floor and place a cartridge in the center of each hole. Lift the header plate up until the top flange of each cartridge rests on the plate. Slide the filter assembly onto the cam-bar and into the cabinet while the cam-bar is in the lowered position (Balloon #1 and #2 in figure 20) (both handles down) until the filter bottoms out on a stop. Once the entire cassette is inserted into the cabinet verify that each filter is sitting straight and fully seated in each header plate hole.

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

Task	Maintenance Interval
Check Sump Level, Verify Proper Drainage	Weekly (increased frequency may be necessary)
Check For Accumulated Material	Monthly (or when filters are replaced or bin emptied)

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

**TABLE 4  
Maintenance Schedule**

## 5.2.2 Installation Procedure for Pre-filter & Bag Filter

The pre-filter and primary bag filter must be slid into and out of their respective tracks in a delicate and uniform fashion to avoid damage to the filter or jamming inside the tracks.

Be sure the bag filter is slid into place prior to hanging the individual bags/loops.

For units that are two filters deep, be sure to push the first filter all way toward the back of the primary filter cabinet until it contacts the stop. Reference Balloon #4 in figure on page 17.

The hanging rod is to be inserted through each filter loop and hung from a bracket on each side of the primary filter cabinet. Work from the back of the cabinet toward the front.

Center the filter on each rod, and each rod on its respective bracket.

Verify all bags are hung and supported properly before securely closing and locking each door/latch. Reference Balloon 10 in figure on page 17.

## 5.3 Contaminant Removal

Drain the sump regularly. The required frequency of this action will be dictated by the load rate and operation.

Be sure oil is not accumulating in any location that could cause malfunction or a safety concern including, but not limited to, the motor cabinet, filter header plate, and tube sheet panel.

Be sure to dispose of, or recycle, any waste oil properly.

Dispose of waste in accordance with applicable local, state, and federal regulations.

Replacement Filter Quantities							
Filter Type	Part #	SHM-11	SHM-12	SHM-21	SHM-31	SHM-22	SHM-32
Aluminum Mesh Pre-Filter	33-10117	1	2	2	3	4	6
Coalescing Primary Filter	33-10128	4	8	8	12	16	24
Fiberglass Bag Primary Filter	33-0221	1	2	2	3	4	6
95% O/M for Enclosed Cabinet	33-10131	1	2	2	2	4	6
HEPA for Enclosed Cabinet	33-10132	1	2	2	2	4	6

**TABLE 5**  
Replacement Filter Quantities




## 6. Troubleshooting Guide

Use the troubleshooting guide to correct any problems that occur with your oil mist collection unit. If the problem or condition continues, contact the Parker customer service.

### **WARNING**

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	Clean cartridge filters with a hose or other low pressure water source 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
System Off	Tripped circuit breaker	Open side panel on unit and switch breaker if necessary
	Loose or disconnected wires	Investigate wiring in the side panel
	Disconnect is switched to OFF position	Switch disconnect to ON position
	Improper source power	Refer to data plate to verify required input power
<b>Screen Displayed Warning</b>	<b>Possible Causes</b>	<b>Recommended Solutions</b>
Filter Caution (Yellow) 	Filter is approaching max life	Replace filter(s) soon
	Restriction in dP readings	Check for kinked tubing, obstructed pressure taps
Filter Warning (Red) 	Filter has surpassed max life	Replace filter(s)
	Blinded filters	Clean cartridge filters with a hose or other low pressure water source 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-temp.	Shut system off (if not already) and allow motor to cool. If issue repeats, contact a Parker 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 Parker representative for assistance

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

---

## 7. Replacement Parts

To order replacement parts, refer to Figure 20. Order through your local Parker representative or contact Parker 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 DEEP MODELS
2	02-11267	RIGHT SIDE FILTER SEALING CAM, 2 DEEP MODELS
1	02-11328	LEFT SIDE FILTER SEALING CAM, 1 DEEP MODELS
2	02-11329	RIGHT SIDE FILTER SEALING CAM, 1 DEEP MODELS
NOT SHOWN	02-11338	LEFT SIDE FILTER SEALING CAM, AFTER-FILTER CABINET, 1 DEEP MODELS
NOT SHOWN	02-11339	RIGHT SIDE FILTER SEALING CAM, AFTER-FILTER CABINET, 1 DEEP MODELS
NOT SHOWN	02-11378	LEFT SIDE FILTER SEALING CAM, AFTER-FILTER CABINET 2 DEEP MODELS
NOT SHOWN	02-11379	RIGHT SIDE FILTER SEALING CAM, AFTER-FILTER CABINET 2 DEEP MODELS
NOT SHOWN	32-10079	MOTORIZED IMPELLER, 3.9KW, 380-480V
4	33-0221	FIBERGLASS BAG FILTER
5	33-10117	ALUMINUM MESH PRE-FILTER
6	33-10128	COALESCING CARTRIDGE FILTER, 9" OD, PEACH MEDIA, 33" LENGTH
3	33-10129	CABINET AFTER-FILTER, MICROGUARD O/M, 95% @ 0.3 µm
3	33-10132	CABINET AFTER-FILTER, HEPA, 99.97% @ 0.3 µm
8	39-10058	FLUSH MOUNT FILTER CABINET LATCH
NOT SHOWN	42-0168	FILTER CABINET GASKET
NOT SHOWN	42-1549	SEALANT
NOT SHOWN	07-001728	PRESSURE TRANSDUCER
NOT SHOWN	38-10145	BULKHEAD FITTING, 5/16 OD TUBING
NOT SHOWN	20-1280	FLEX TUBING, CLEAR, 3/16 X 5/16
9	10-13852	CARTRIDGE FILTER HEADER PLATE
10	10-2589	BAG FILTER SUPPORT ROD
11	39-0258-04	FILTER CABINET DOOR HINGE PIN
12	20-001643	TOUCH SCREEN DISPLAY

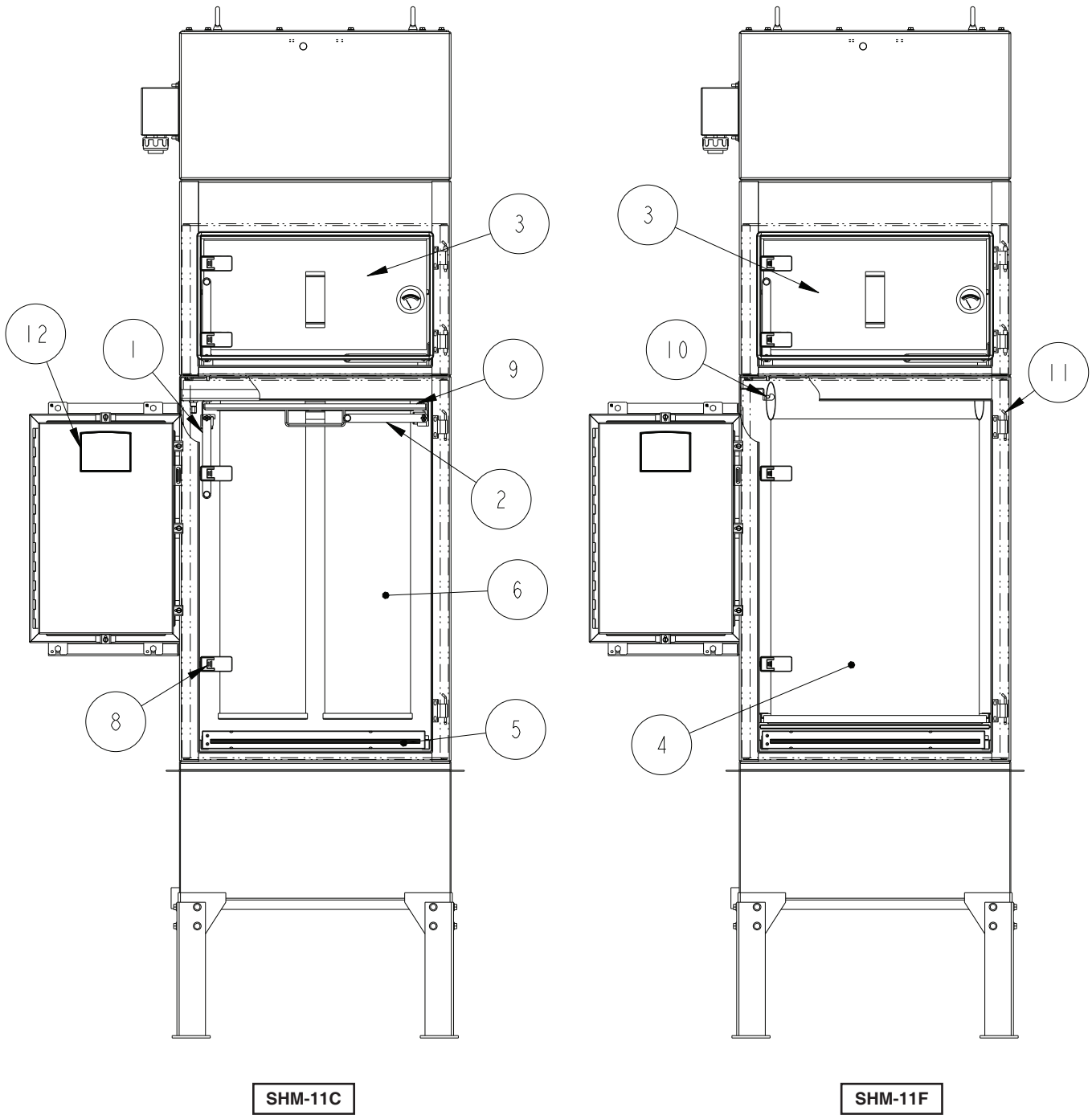
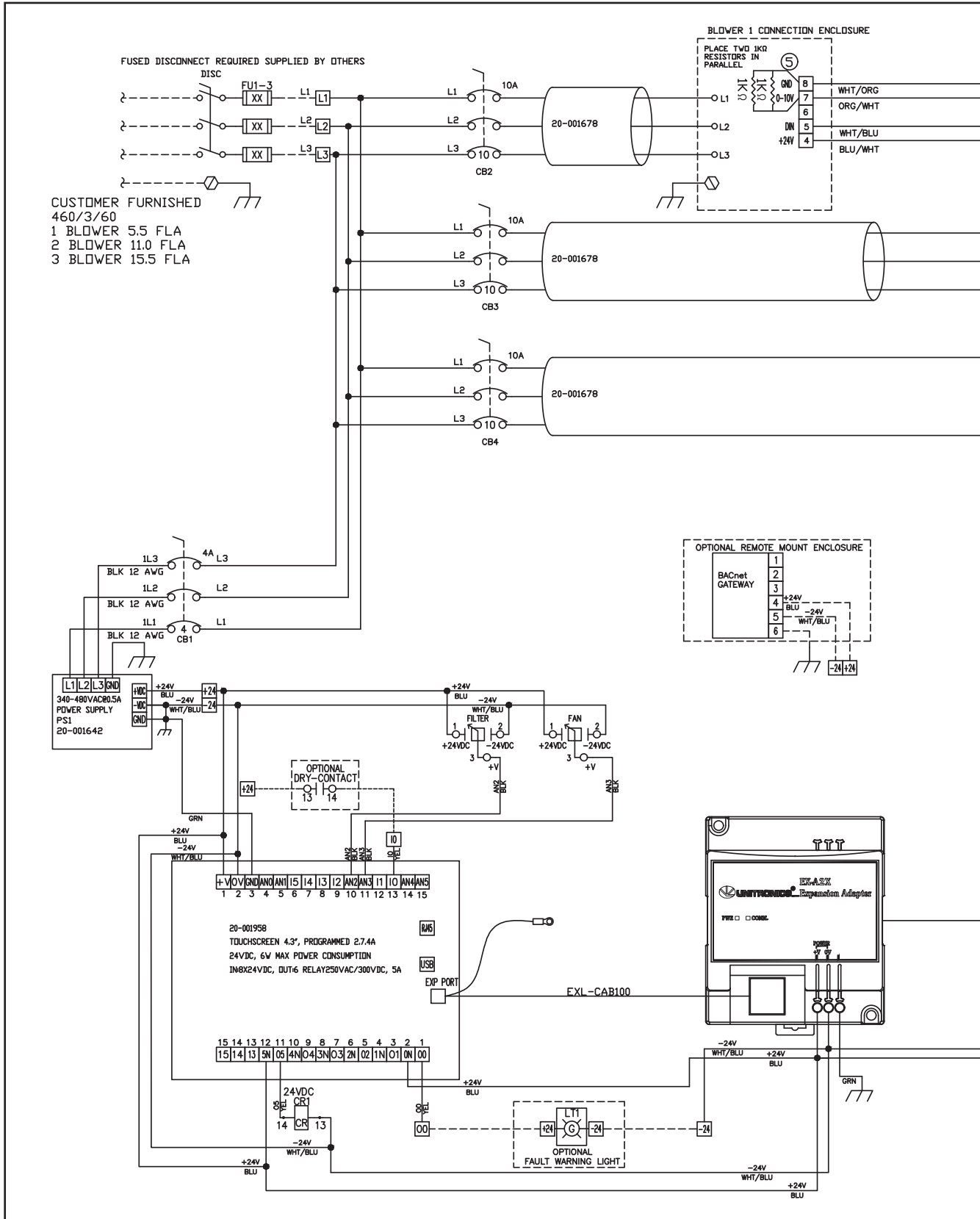


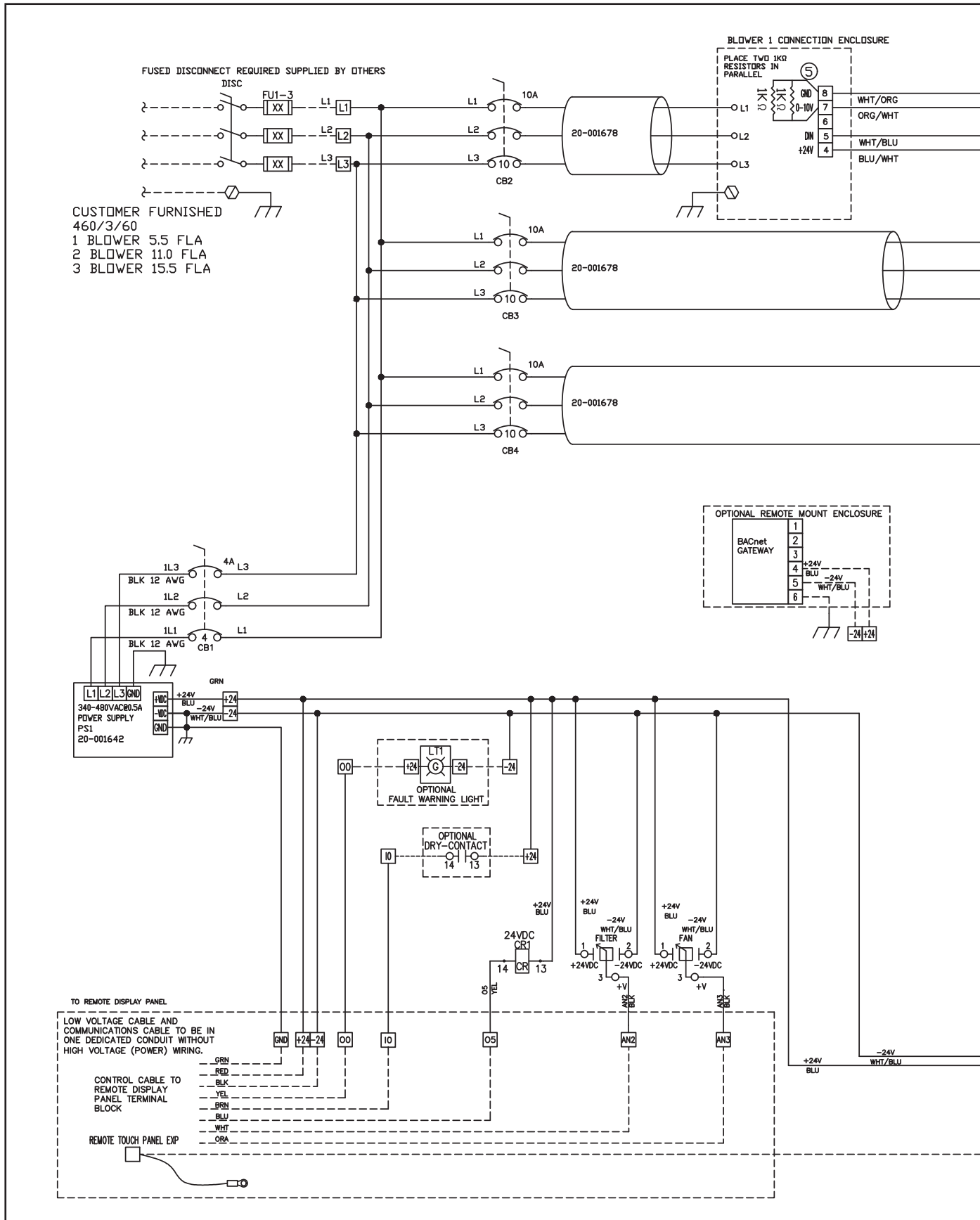
Figure 20  
SHM Replacement Parts

WIRING DIAGRAMS

ONE, TWO OR THREE BLOWERS AND CONTROLS





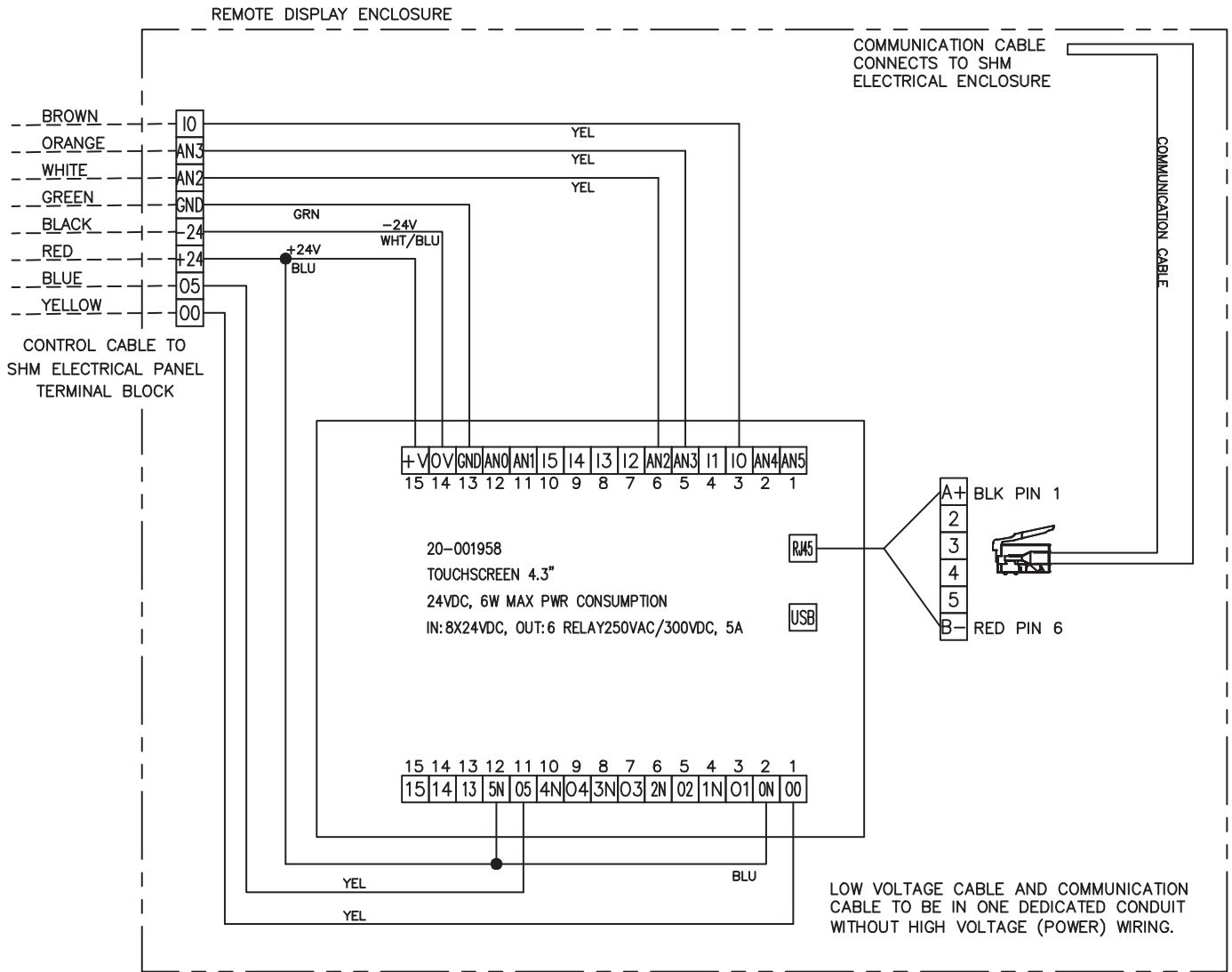






APPENDIX A3

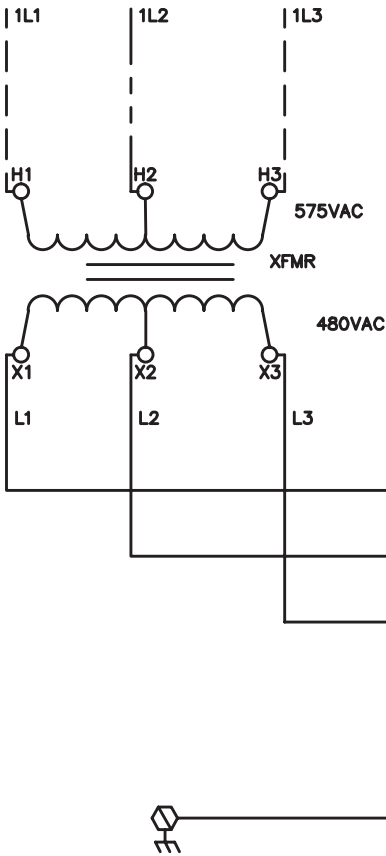
REMOTE PANEL CONTROLS



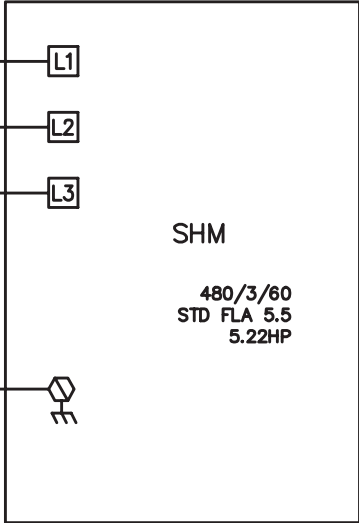
02-11543-XX

CUSTOMER SERVICE  
ENTRANCE: 575/3/60

- 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	8.69	480	10.41
2 BLWR	21-001810	10KVA	575	17.39	480	20.83
3 BLWR	21-001811	15KVA	575	20.08	480	31.25



# Product Warranty –

SMOG-HOG<sup>®</sup> and DUST-HOG<sup>®</sup> Pollution Control Systems

## Parker Industrial Gas Filtration and Generation (IGFG) Division

### PRODUCT WARRANTY – SMOGHOG and DUSTHOG 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 or 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, NON-COMPLETION 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, WHETHER 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.





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**Engine Mobile Aftermarket Division**  
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**Engine Mobile Original Equipment Division**  
Modesto, California  
209 521 7860

**HVAC Filtration Division**  
Jeffersonville, Indiana  
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**Hydraulic & Fuel Filtration Division**  
Metamora, Ohio  
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P/N: 44-10624



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State of California ONLY  
**WARNING:** Proposition 65  
The products described herein can expose you to chemicals known to the State of California to cause cancer or reproductive harm.  
For more information: [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)