

IndustriFume™

Operating Instructions



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2.1 Shipping Receiving, and Inspection

- Upon receipt of the IndustriFume unit, remove the master packing list from the unit and reconcile it with the total shipment. Report any discrepancies to Abicor Binzel as soon as possible.
- Abicor Binzel's IndustriFume units are shipped via freight and generally arrive on a flat bed trailer. The main units are partially crated, on a pallet, and are shipped lying on their sides.
- Remove the packaging from the unit; then remove the unit from the pallet.
- Carefully inspect the unit and any other items shipped with the unit for any damage that may have been incurred during shipping. If damage is found, report it to the shipping company and Abicor Binzel immediately.
- Accessories may be packaged and shipped on a separate pallet depending on the order.

2.2 Before Installation Begins

- Prior to using your IndustriFume, it must be fully assembled and placed in its final operating location.
- Adequate electrical and compressed air must also be connected to the IndustriFume. These connections are defined in "Electrical Connections" and "Compressed Air Connections" sections of this manual.
- During installation, always be careful. The IndustriFume is a top heavy unit and may require experienced personal to move and set up.
- For functionality and safety, Abicor Binzel does not recommend modifying the IndustriFume unit in any way. Never allow the unit to intake any flammable or explosive gasses.

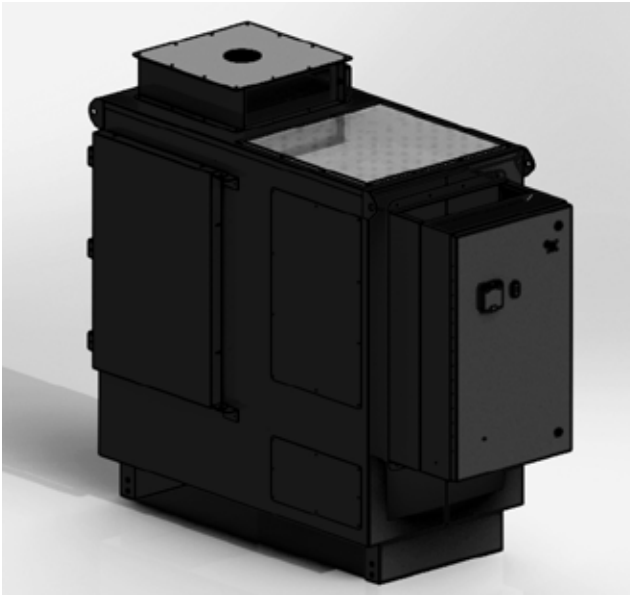
IndustriFume Description

3.1 Disclaimer:

The IndustriFume is designed to accumulate smoke residue/particles and other by-products of the manufacturing process. The nature of these accumulations may be flammable. Operating the IndustriFume with these materials could result in a fire inside the unit. The IndustriFume is not recommended for use with highly combustible materials or explosive materials or particles.

3.2 The IndustriFume consists of:

- IndustriFume Motor Housing / Blower System
- One Cartridge Filter
- Online Automatic Pulse Filter Cleaning System
- A large opening door provides easy access to the internal cartridge filter, and bolt-on access panels allow access to the motor compartment and valve compartment for maintenance.
- The unit is equipped with a single, 5-inch diameter opening for customer supplied ducting. Depending on wire type and amperage the IndustriFume can be ducted to four to six Binzel high flow fume guns at ~70cfm at the nozzle.



4.1 General Specifications

Filter Cartridge	MERV15 Nanofiber Filter E11 PTFE 100% Spun-Bond Polyester Filter
Filter Area	273 ft ² - 275 ft ² (Depending on Filter Option)
Motor	28 HP
Open Flow	740 CFM/1207 m ³ /h
Operational Airflow	450 CFM @ 110" H ₂ O
Electrical Requirements	208V/230V, 460V, or 575V 3-phase
Compressed Air Requirements	70-90 PSI
Sound Level *	75 dBA @ 5'
Weight *	1166 lbs
Dimensions	62"H x 31"W x 71"D
Note:	Values vary depending on configuration, application, options, and accessories chosen
Note:	Specifications are subject to change without prior notice.

4.2 Standard Features

Electrical	NEMA 12 electrical enclosure with integrated disconnect switch, motor starter, overload, and start/stop button
Motor Speed Control	Soft Start for reduced initial amperage spikes.
Heavy Duty Construction	Fully-welded 10 & 12 gauge steel w/ powder-coat paint finish
Inlet	5" opening to allow for easy ducting
Vacuum	Corrosion-resistant aluminum blower housing, impeller and cover; permanently sealed ball bearings, thermal overload protection
Spark Protection	Built-in metal mesh filter
Cleaning	Pulsing / Automatic filter cleaning
Silencing	Built-in acoustical lining (noise level varies based on unit, options chosen and application)
Pulse-Air Reservoir	0.25" Industrial Quick Connect; 1.0ft ³ valve pulse at 70-90 PSI
AutoPulse™ Controller	Programmable pulse controller with filter differential readout.
Economizer™ Shunt	Automatic starting and stopping of the motor/blower based on demand (Qty: 1 Included)
Sleep Mode	Reduce energy usage and maintain blower rotation during intermittent operations
Blower Speed	Manage blower and airflow speed for reduced dust impaction and improved cleaning cycles.
Note:	Specifications are subject to change without prior notice.

Installation

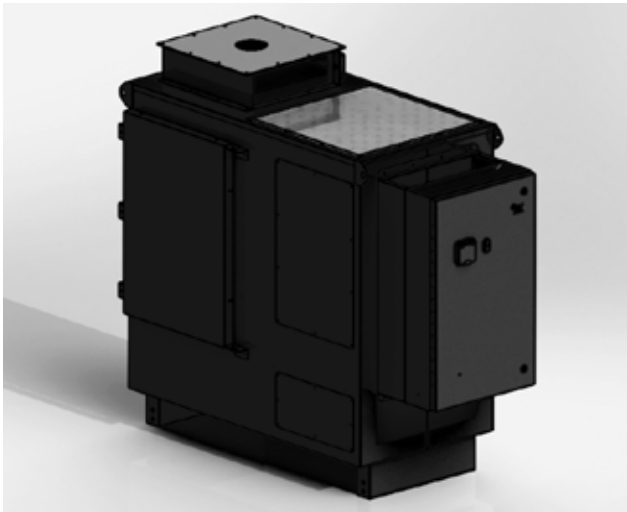
5.1 Assembly

The IndustriFume requires some minor assembly:

- A standard unit will come with an exhaust cover pre-installed.
- Power & compressed air connections must be made
- Fume inlet port configuration may need exchanged for the ducted plenum plate.

5.2 General Installation Guidelines:

Abicor Binzel's IndustriFume units are shipped via freight and generally arrive on a flat bed trailer. The units are typically crated, on a pallet. Use a fork lift truck, driven by a qualified individual, to remove the crate / pallet from the truck. Occasionally, fork extensions are helpful.



- Once the IndustriFume is inside the facility and ready to be uncrated, please proceed cautiously. Banding straps and plastic wrap must be removed.
- IndustriFume units are heavy and tend to be top heavy. The motor and the majority of the metal are located on the motor/valve side of the unit. Please see the "Unit Weight" section for proper weights.
- There are (4) steel plate eyelets vertical at the top of unit. These are the lifting lugs.
- There are (8) floor mounting holes on the bottom flange of the unit

5.3 Tools Needed for Installation

The Following tool lists are given as a general outline. Additional tools may be used or substituted based on availability. The required tool list is given as a bare minimum required to assembling the IndustriFume. Powered tools are recommended.

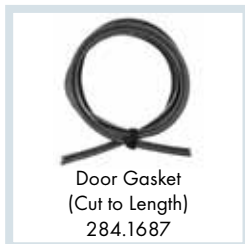
5.4 Required Tools:



5.5 Optional Parts:



5.6 Typical Replacement Parts:



Warnings & Labels



HIGH VOLTAGE: The voltage of the IndustriFume is dangerous once connected to a power supply. Incorrect installation may cause damage to the equipment, serious injury, or death. Consequently, it is essential to comply with instructions in this manual, local and national safety rules, and follow all safety procedures including proper lock out and tag out procedures.

Hazardous Voltage: The Variable Frequency Drive (VFD) uses large capacitors which can hold a charge long after the power disconnect has been used to disconnect power from the unit. Do not service the panel until the VFD has fully discharged.

GROUND CONNECTION: Proper grounding of the equipment and electrical panel is essential. Do not attempt to operate the equipment without electrically grounding the panel. The connection to the earth ground must be proper and provide a low impedance path to the earth to prevent hazardous voltages from appearing on equipment

COMPRESSED AIR: Compressed air is used in the operation of this unit. Follow proper lock out / tag out procedures prior to servicing the unit. This includes draining the compressed air reservoir inside the unit. Failing to do so can lead to injury or hearing loss. Look out – drain tank – do not service while pressurized.

6 There are various ways to move the IndustriFume main unit:

- If the IndustriFume unit has NOT been uncrated or is still on the pallet, then it can easily be moved by using a fork lift truck. Place the forks under the pallet's main beams and simply lift the unit. Keep in mind, the motor side of the unit is heavier and forks may need to be shifted toward the motor end.
- If the IndustriFume unit has been uncrated, then it can easily be moved by using a fork lift truck. If necessary, the unit may be craned into position utilizing the lifting lugs on the top corners of the unit. Make sure not to scratch or damage the unit.



Compressed Air Connection

7 In order for the automatic pulse filter cleaning system to operate, the IndustriFume requires a compressed air connection to be made.

- This IndustriFume compressed air inlet supply is a 0.25" industrial quick connect fitting.
- Use a regulator to adjust the pressure between 70 - 90 PSI.
- A dryer may be needed to condition the air before entering the IndustriFume.
- 1.0 ft³ Valve Pulse at 70 - 90 psi
- 5/8" Minimum compressed air supply line required; 1" Recommended

7.1 Air Regulator

The compressed air for the IndustriFume must be regulated at 70 to 90 PSI. A Regulator is used to allow the high-pressure air supply lines or tanks to be reduced to safe and usable pressure for pulsing the unit. If the pressure is too low, the valves may not properly clean the filters. If the pressure is too high, it may damage the valves.

Note: Do not operate the IndustriFume for an extended period of time without an appropriate compressed air supply. Doing so will greatly diminish the life of the filter cartridges.

7.2 Air Filter

The compressed air for the IndustriFume must be clean. Dirty air entering the system can cause damage to pneumatic components. The air should be filtered to remove all contaminants from the compressed air supply system prior to entering the IndustriFume.

7.3 Dry Air

The air supply to the IndustriFume must be dry or drained. Water carried with air into the IndustriFume can wash away lubricating oil. This can result in excessive wear to pneumatic components and higher maintenance expenses. Without adequate lubrication, pneumatic components can run sluggishly and inefficiently and be prone to air leakage. Water in the supply line must be removed using a dryer or water drain trap.

7.4 Shut Off Valve

Each unit must be fitted with a shut off valve capable of being locked out with blow off capability. Safety procedures such as lock out / tag out procedures must be followed with pneumatic as well as electrical systems. This means, the valve must be a 2-way valve which will exhaust the air from the IndustriFume when the shut off valve has been locked out. The exhaust port should be fitted with a pneumatic muffler to reduce noise if above unacceptable levels.

Electrical Connections

8 The IndustriFume can be set up to operate on various power sources. Please see the following electrical chart based on the specified power. To ensure proper operation, a professional electrician should perform power connections. Any damage incurred from improper electrical power connection will void the warranty of the IndustriFume.

The incoming power must be brought into the unit through a conduit connection in the electrical box. A hole must be drilled for the installation of the electrical conduit connector.

Once power is brought into the IndustriFume unit:

- First make the ground connection to the grounding studs in the electrical panel.
- The incoming power wires must be terminated on the incoming side of the power disconnect switch / emergency shut off switch (L1, L2, L3).
- Primary branch circuit protection must be provided by the end user. Please see the following chart for recommended breaker size.
- A wiring diagram for the IndustriFume is provided in the Electrical Panel
- The full load amperage varies depending on the unit configuration. Please see the following chart for motor and unit full load amperage ratings (FLA).

IndustiFume Electrical Information							
30 HP, Three Phase							
Motor Voltage (V)	Motor FLA (A)	Unit FLA (A)	Disconnect Size (A)	Incoming Power Wire (Ga)	Incoming Power Cable (SO)	Overload Setting (A)	Recommended Breaker (A)
208	88	89.7	125	2	N/A	110	150
230	80	81.6	125	2	N/A	100	125
460	40	40.8	60	6	2	50	60
575	29	29.8	60	8	4	36.3	50

8.1 Power Disconnect Switch/Emergency Shut Off Switch

This switch controls the main power to the IndustriFume.

- When the switch is in the "0" or "OFF" position, the main power to the unit is disconnected.
- When in the "1" or "ON" position, main power is reaching the unit and it can be started.
- Under normal operating conditions, the unit will not start when the green "START" push button is depressed if the disconnect is in the "0" or "OFF" position.
- This switch also provides a means to lock out the switch using a small padlock thus preventing accidental power up.
- This is an interlocking disconnect; meaning, the door to the electrical box will not open if the switch is in the "ON" position.

When dial is in:

"0" position – all main power to the unit is OFF

"1" position – the unit is powered up and ready for operation, the unit is ON



CAUTION: Prior to performing maintenance always use a meter to confirm the power source is locked out.

Electrical Connections

8.2 Interlock Activate/Deactivate

- The safety circuit is set up so that the drive will not activate without the internal interlock being activated. The "Green" double push button releases the drive interlock and allows the drive to operate.
- The interlock resets on power loss and must be reactivated when power is reconnected.
- The interlock can be deactivated by turning the disconnect to "0" or "OFF" position. The safety circuit is set up so that the drive will not activate without the internal interlock being activated.

8.3 Breakers

- Multiple breakers are located in the electrical box.
- Breakers showing GREEN are 'safe' or tripped and will not allow current through the breaker.
- Breakers showing RED are 'hot' and will allow current through the breaker.



8.4 Key Latch

- The key latch is a cam style latch that rotates clockwise to unlock the electrical box, and counter clockwise to lock the electrical box.
- Simply insert the key into the key hole, and press down firmly while the key is rotated.
- When closing the electrical box, the gasket will need to be compressed. This may require additional force in closing the electrical box.
- Keep in mind, the electrical box also has an interlocking disconnect / emergency shut off switch. If this switch is not deactivated, the door will not open even if the key latch is unlocked.



IndustriFume Features

9.1 Soft Start

Soft Start allows the motor to ramp up to speed rather than across the line starting contractors. This eliminates starting amperage spikes as well as inertial effects of the blower. In Non Soft Start systems , these spikes can be as high as eight times the full load amps.

9.2 Economizer™

The Economizer™ is a shunt, standard on the IndustriFume. When the unit is in automatic mode, the Economizer™ will start the unit automatically when the user begins welding. When the user has stopped welding, the unit will shut the unit down automatically. Fifteen minutes after the end of the welding arc, unit will go into Sleep mode. If the user begins welding within that fifteen minutes time frame, the timer will be reset and recommence when the welding ends again.

9.3 Sleep Function

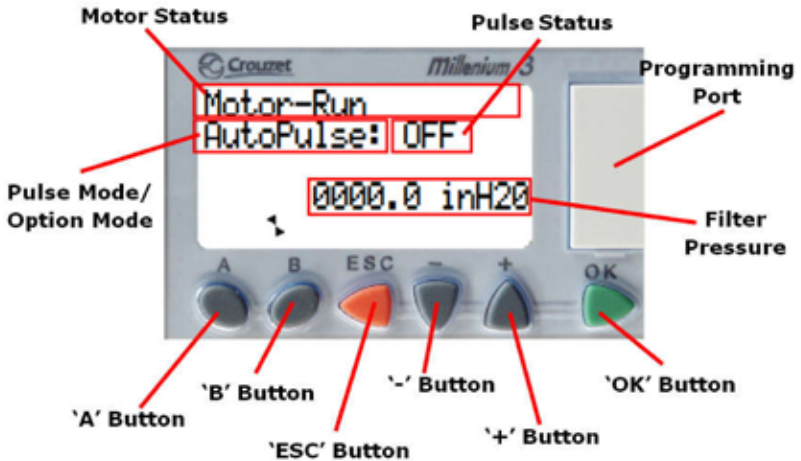
The sleep function can be set as described in the Option Mode. The sleep function is set to last 5 minutes by default. When the fifteen minutes Economizer™ timer ends, sleep mode is activated. During this time, Soft Start allows the motor to ramp up to speed rather than across the line starting contractors. This eliminates starting amperage spikes as well as inertial effects of the blower. In Non Soft Start systems , these spikes can be as high as eight times the full load amps.

9.4 Reduced Noise

Noise is created inside a unit by moving parts such as the blower wheel and moving fluids such as the air through the unit. With the IndustriFume, the air flow is managed through the blower control. By managing the airflow, the noise due to moving parts and moving air is reduced.

Measurements have shown that the noise level with clean filters can be dropped from 74 dB to 61 dB. This is a reduction of more than half the noise.

The IndustriFume is controlled by an AutoPulse Controller™. This controller manages the cleaning cycles of the filters, motor start / stop controls, the Economizer™, and some other feature controls. Not all options are present on every machine.



System Controller

10.1 Filter Cleaning Controls

The Clean Air AutoPulse Controller™ is connected to a differential pressure sensor which measures the pressure drop across the filters. This pressure drop is displayed in the lower right of the front display on the controller. The controller can be manipulated using the buttons below the front display.

The Pulse time on the valve is set internally and cannot be changed. The valve will open and pulse for 0.2 seconds. There are 4 different pulse modes available: AutoPulse, TimedPulse, CountPulse, and Manual Pulse.

Motor status is indicated at the top of the Display. This displays the contact status for activating and holding in the motor contactor. When the controller is running, an indicator icon will be displayed. This indicator resembles a pair of small rotating triangles. Additionally, input and output contacts can be checked by holding down the 'ESC' key. The display will change to show the appropriate input and output contacts. Once power to the system is turned on, the controller will start up in AutoPulse Mode. Several Manual and Option modes are available as well which are shown below.

- The controller will always restart into automatic mode when power is cycled regardless of the mode before the power was shut off/
- To change modes, hold the 'B' button while pressing the '+' or '-' Button.

10.2 AutoPulse Mode

This mode is set up to automatically control the pulsing depending upon how much dirt is entrenched upon the filters. This is determined by a differential pressure sensor measuring the pressure loss across the cartridge filters. This mode is automatically activated when entering the mode.

The controller will pulse when the unit has shut down if the "Shut Down Pulse Limit" (Shutdown delP) is reached while the unit is running. During a shut down pulse, the controller will pulse the valve for the specified number of cycles or "Shut Down Pulse Cycles" (ShutDown Pls #). If the controller is going to perform a shut down pulse, the display will read "On Stop" after "Automatic Mode:"

The controller will pulse while the unit is running if the "Run Pulse Limit" (Run Pls delP) is reached while the unit is running. During a running pulse, the valve will continue to pulse until the pressure differential has dropped below the "Run Pulse Limit" setting. If the controller is performing a running pulse, the display will read "RunPulse" after "Automatic Mode:." If the controller performs a running pulse, it will also perform a shutdown pulse.

If the "Alarm Limit" (Alarm delP) is reached while the unit is running, the controller's front display will begin to flash. This indicates that the filters are significantly clogged and may need to be changed.

10.3 TimedPulse Mode

This mode will pulse the valve until the timer has expired. The Timer is in minutes.

To change the timer, press the 'OK' button. The number of minutes will begin to flash. Use the '+' and '-' buttons to increase and decrease the pulsing time respectively. Press the 'OK' button again to set the new time. Press the 'A' button to begin pulsing. The pulsing can be stopped by pressing the 'B' Button.

System Controller

10.4 CountPulse Mode

This mode will pulse the valve for a set number of cycles. The counter denotes the number of cycles.

To change the counter, press the 'OK' button. The number of cycles will begin to flash. Use the '+' and '-' buttons to increase and decrease the amount of cycles respectively. Press the 'OK' button again to set the counter value. Press the 'A' button to begin pulsing. The pulsing can be stopped by pressing the 'B' Button. When the controller begins pulsing, a new line will appear on the controller above the counter set line. This indicates what cycle the controller is on.

10.5 Manual Pulse Mode

This mode will pulse the valve upon command.

Press the 'A' button to pulse the valve one time. There is no delay using this method; however, each pulse is still only 0.2 seconds.

10.6 Option Mode: ShutDown Pulse Cycles

"Shut Down Pulse Cycles" - This option sets the number of pulses performed during the shutdown sequence in Automatic Mode (see 10.2 Auto Pulse Mode). This pulsing state is referred to as the offline cleaning cycle. To change the counter, press the 'OK' button. The number of cycles will begin to flash. Use the '+' and '-' buttons to increase and decrease the amount of cycles respectively. Press the 'OK' button again to set the counter value.

10.7 Option Mode: ShutDown Pulse Limit

"Shut Down Pulse Limit" - This option sets the pressure differential at which the shut down pulse sequence will be activated in Automatic Mode (see 10.2 Auto Pulse Mode). This pulsing state is referred to as the Offline Cleaning Cycle. To change the value, press the 'OK' button. The pressure differential value "delP" will begin to flash. Use the '+' and '-' buttons to increase and decrease the amount of cycles respectively. Press the 'OK' button again to set the counter value.

10.8 Option Mode: Run Pulse Limit

“Run Pulse Limit” - This option sets the pressure differential at which the running pulse sequence will be activated in Automatic Mode (see 10.2 Auto Pulse Mode). This pulsing state is referred to as the online cleaning cycle. To change the value, press the ‘OK’ button. The pressure differential value “delP” will begin to flash. Use the ‘+’ and ‘-’ buttons to increase and decrease the pressure setting respectively. Press the ‘OK’ button again to set the counter value.

10.9 Option Mode: Alarm Limit

“Alarm Limit” - This option sets the pressure differential at which the filter cleaning alarm will be activated in Automatic Mode (see 10.2 Auto Pulse Mode). To change the value, press the ‘OK’ button. The pressure differential “delP” value will begin to flash. Use the ‘+’ and ‘-’ buttons to increase and decrease the pressure setting respectively. Press the ‘OK’ button again to set the counter value.

10.10 Option Mode: Sleep Time

“Sleep Time” - This option sets the length of time(min) for the sleep function of the Economizer™. To change the value, press the ‘OK’ button. The time setting will begin to flash. Use the ‘+’ and ‘-’ buttons to increase and decrease the time setting respectively. Press the ‘OK’ button again to set the counter value.

10.11 Option Defaults

The IndustriFume will arrive preprogrammed with no necessary adjustments needed. The Option Modes allow for the changing of some variables, which may extend filter life or increase performance on non-standard applications.

If the settings are changed, the defaults are as follows:

- Option Mode: ShutDown Pls #: 05
- Option Mode: Shutdwn delP: 3.0
- Option Mode: Run Pls delP: 7.0
- Option Mode: Alarm delP: 9.9
- Option Mode: Sleep Time: 05

Procedures

12.1 Startup Procedures

- The IndustriFume power must first be turned on by rotating the Power Disconnect / Emergency Shut Off switch to the 'ON' position.
- The unit can then be started by simply depressing the green "RUN" button.
- The blower will start immediately, but may take a minute or two to reach full speed.
- The automatic pulse cleaning system will automatically turn on in the AutoPulse Mode.

12.2 Shutdown Procedures

Proper IndustriFume shutdown is one of the key factors to achieving maximum filter cartridge life. To properly shutdown the IndustriFume, simply press the RED double push button. After approximately 1 minute, the IndustriFume will begin to cycle through its offline cleaning process. If the default settings are being used, this will take about 3 to 4 minutes. However, if the default settings are not being used, this off line cleaning cycle could take upwards of 10 minutes. Always wait for the cleaning process to finish before disengaging the Power Disconnect / Emergency Shut Off switch.

- The IndustriFume can be shutdown easily by pressing the Red double push button.
- The blower will not stop immediately, and may take several minutes to fully stop.
- The automatic cleaning system will continue to operate once the mode switch is changed AND the blower has stopped.
- This is normal and desirable; the off line cleaning is the most efficient cleaning method.
- Do NOT use the Power Disconnect / Emergency Shut Off switch to deactivate the unit unless it is an emergency situation.

Note: Do NOT shut down the IndustriFume by disengaging the Power Disconnect/ Emergency Shut Off unless it is an emergency situation. If the IndustriFume is shut down in this manner, it will NOT perform offline cleaning and will diminish the life of the filter cartridges.

13.1 Catch Basin Maintenance

The catch basin is located in the filter compartment below the filters. As the self cleaning cycle is activated, dust will be blown from the filters and accumulate in this retention area.

The catch basin should be inspected and cleaned periodically as it will acquire dust and debris and will require being emptied regularly. The waste should be disposed of in accordance with local regulations.

The inspection and cleaning interval depends on the amount of particulate generated by the specific application. Variables can greatly influence the amount of particulate being deposited on the filters and, in turn, affects the amount of accumulation inside the catch basin. Initially, it is recommended that inspection of this area be performed every four to six weeks on each machine. This will give you an idea of how much particulate is being accumulated and how often it should be cleaned. For reference, most educational facilities empty their catch basins every three months to a year.

- To check and empty the catch basin, simply use lever handles to open the filter door.
- Swing the filter door open.
- In the bottom of the filter compartment is the catch basin. It is located below the filters and below the filter door.
- Simply clean this area using proper vacuum systems to remove the accumulated dust



Maintenance

13.2 Cartridge Filter Maintenance

Filter Maintenance:

It is important to keep the filters clean and replaced on the proper interval for the proper operation of the IndustriFume. The point when the filters must be changed depends upon the specific application, welding frequency, the type of particulate that is being removed, the type of filters being used, and the type of welding being performed all effect the filter replacement interval.

Due to these factors, the customer must monitor and document the system airflow readings for a period of time. The information collected will help determine the most appropriate time to change filters. This process will ensure that the system runs at maximum efficiency while minimizing filter replacement costs.

The easy access system of the IndustriFume helps with faster filter replacement and reduced maintenance.



13.3 Where to Start

Start by making copies of the attached log sheet (Appendix A, pg.35). This log sheet should be filled out for each IndustriFume you have in your system. Make sure that the smoke / particulate is being removed through the intakes spark baffles. This can be done by a simple visual check during normal operation. There should be a reduced level of visible smoke when the unit is in operation.

Replacement filter cartridges are available from Abicor Binzel

How to Determine the Filter Change Interval:

At this point, take note and document the pressure differential readings displayed on the controller. It may be easier to raise the plastic flip lid cover to access the display.

The controller will allow the pressure differential to build to 3.0 in. H₂O (inches of water column). This means the unit will automatically pulse the next time unit is stopped. This value may be different if the options on the controller have been changed.

The controller will allow the pressure differential to build to 7.0 in. H₂O. At this point it will automatically pulse while the unit is running until the pressure drops below 7.0 in. H₂O. This value may be different if the options on the controller have been changed.

When the unit begins pulsing, it does not mean that the filters are no longer usable. This pulsing is simply the cleaning cycle which extends the filter life and reduces operating costs.

Your actual controller settings will be determined by your experience and set up. Over time, the filters will clog to a point where the pulsing will not reduce the pressure differential to an acceptable level. This is the point when the filters should be changed.

Maintenance

- The base line reading is a reference point of the reading with clean filters.
- Initially, you should take readings on a weekly basis, or at any point where the smoke plume is visibly not being removed from the work area. This data will be used to predict the time to change the filters, or adjust the preset levels. Remember, no two applications are exactly alike. Due to this, your own experience will be needed to optimize filtration, and minimize filter replacement costs.
- If the unit begins auto pulsing at 7.0 in. H₂O and the smoke is still being drawn in at an acceptable level, the setting could be increased to a higher number. The correct number is based on trial and error.
- The process for determining your specific filter change interval is based on many variables. Please feel free to establish a filter change interval that meets your application and desired performance results. By properly monitoring the filters you will reduce filter costs and improve the efficiency of the units.
- Proper filter cartridge replacement is important to optimal performance of the IndustriFume.

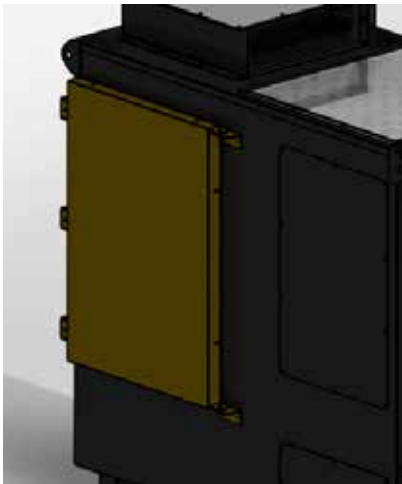
What determines the maximum acceptable pressure differential reading?

- The answer is a reading slightly less than the point where the unit stops drawing in an acceptable level of smoke plume.
- If the unit still draws acceptably at 7.0 in. H₂O, then the controller can be set to begin the auto pulse cycle at a higher level. Please see the controller programming instructions for this procedure.
- If the unit stops draws acceptably at 5.0 in. H₂O, then the controller can be set to begin the auto pulse cycle at a lower level. Please see the controller programming instructions for this procedure.

13.4 How to Replace Filters

- 1) Press the red 'STOP' double push button and allow blower to spin down. This may take several minutes.
- 2) Rotate the Disconnect Switch / Emergency Stop Switch to the '0' or 'OFF' position. This will disconnect power to the unit to prevent the unit from being started during the filter change. Please follow all lock out - tag out procedures.
- 3) Shut off the compressed air supply to the IndustriFume.
- 4) Open the filter door by simply releasing the lever handles. Swing the door open to allow access to the filter compartment and reveal the cartridge filter.
- 5) Release the filter by loosening the filter clamp at the top of the filter. This is done by rotating the metal T-handle clockwise when viewed from below. As the clamp spins, it will release pressure from the filter. Make sure to create a gap between the filter cap and the end of the clamp.
- 6) Once the clamp has been loosened, the filter can be accessed.
- 7) Remove and set aside the filter cap. Do not discard it.
- 8) Slide a large plastic bag over the top of the filter cartridge, and slide the bag over the filter to the bottom of the filter cartridge.

Note: It is important to ensure that the filter gaskets seal correctly for proper operation of the IndustriFume. This will ensure that you do not lose vacuum pressure or get particulate past the filter compartment. The easy filter clamping system of the IndustriFume helps with faster filter replacement and maintenance.



Maintenance

13.4 How to Replace Filters (cont.)

- 9) Remove the filter in the bag and tie the end of the bag closed.
- 10) Cover the filter duct and ring to avoid dirt or dust entering the clean air duct. Make sure to cover the entire duct and filter ring. A plastic bag can be used.
- 11) Clean the filter cap. This can be done by simply blowing them off with a compressed air nozzle or wiping them clean with a dry cloth.
- 12) Some excess dust and debris may need to be removed while the filters have been removed from the unit. This can be done by sweeping the dust or proper vacuum system.
- 13) Remove the covering from the first filter duct.
- 14) Place the new filter onto the filter ring with the gasket seal end up. The end with no sealing gasket must be down. Make sure the filter is properly seated.
- 15) Replace the filter cap on the top of the filter. The sealing gasket on the filter must be up. There are (4) tabs on the outside of the cap which must point downward to capture the top of the filter.
- 16) Tighten the filter cartridge with the filter clamping mechanism. To avoid the air leakage, make sure that the round sealing gaskets on both the filter and the filter cap are compressed at least by 0.25" by tightening T-handle at the top of the filter cartridge. This is done by rotating the metal T-handle counter-clockwise when viewed from below. Do not over compress the gaskets.



13.4 How to Replace Filters (cont.)

- 17) Close and secure the filter door. Use the lever handles to clamp the door shut.
- 18) Rotate the Emergency Stop / Disconnect to the '1' or 'ON' position. This will restore power to the unit.
- 19) Press the green 'START' button and allow blower to spin up. Some dust or debris may have fallen into the filter ducts; this dust would then be blown out when the unit begins to run.



Maintenance

13.5 Appendix A: Filter Maintenance Log Sheet

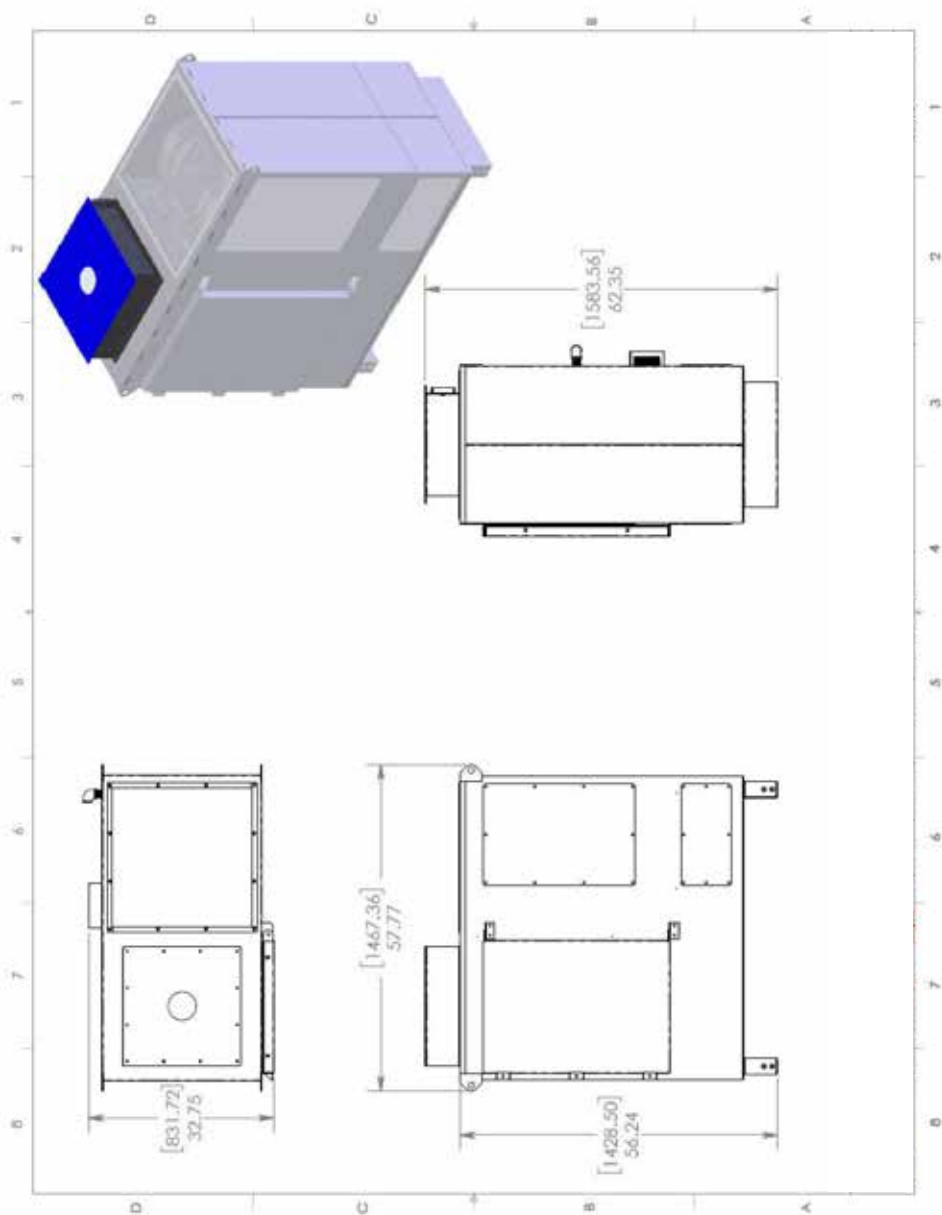
Filter Maintenance Log Sheet					
Filter Type	Inspection Method	Inspection Date	Result / Reading	Unit Performance at Time of Inspection	Action Taken
Metal Mesh	Visual				
Reverse Flow	Visual				
Cartridge	Controller Reading				

13.6 Appendix B: Dimensional Drawings

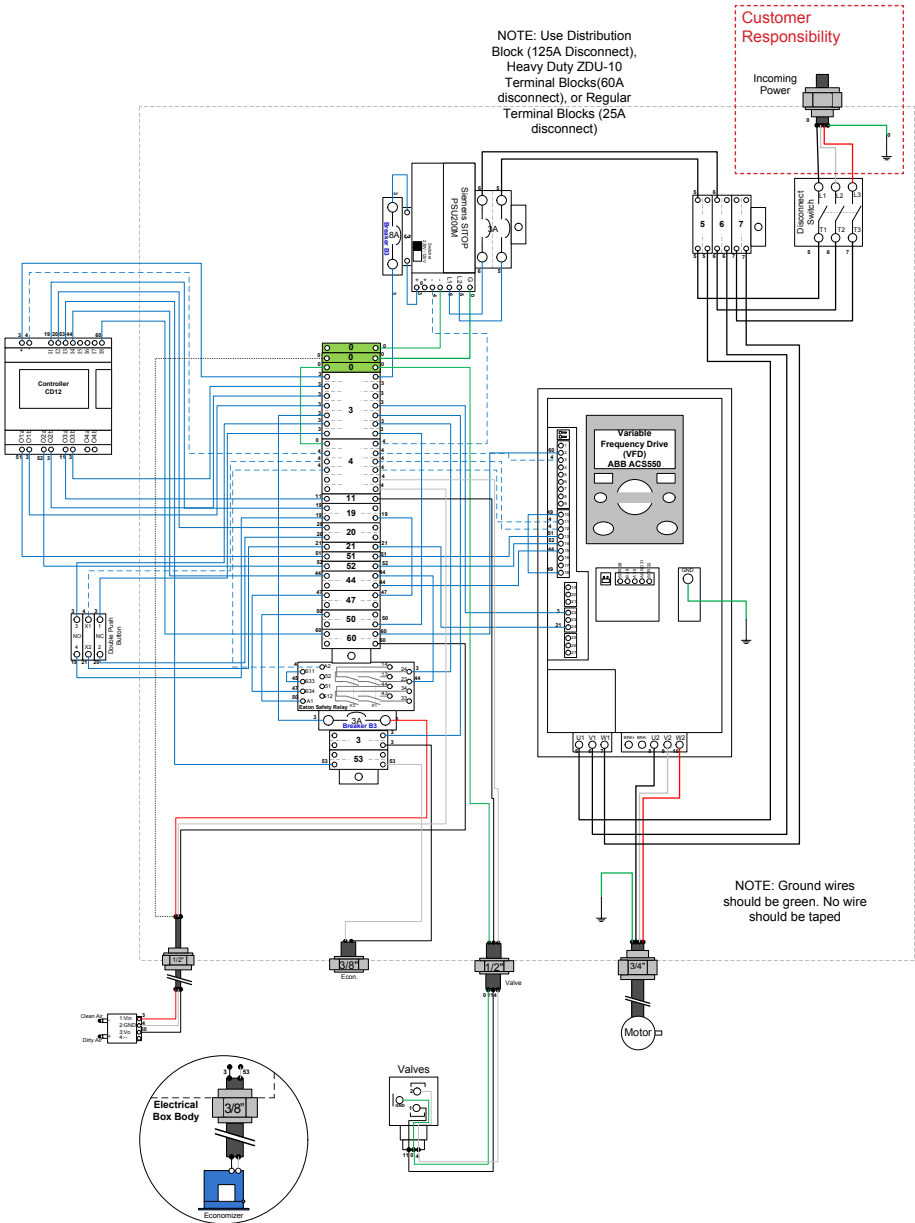
Notes concerning the dimensional drawings:

- The secondary IndustriFume unit can be placed to the right or left of the main unit for a side-by-side configuration.
- The secondary IndustriFume unit can be placed to the back of the main unit for a back-to-back configuration.
- Weights of the assemblies vary based on configuration, options, and application set up. Please see the “Unit Weight” section for more information.
- The electrical and compressed air connections are located at the top of the unit. Please see the “Air and Electrical Connections Diagram” section for more information.

13.6 Appendix B: Dimensional Drawings (cont.)



13.7 Appendix C: Wiring Diagrams (May 2019)



NOTE: Use Distribution Block (125A Disconnect), Heavy Duty ZDU-10 Terminal Blocks(60A disconnect), or Regular Terminal Blocks (25A disconnect)

Customer Responsibility

NOTE: Ground wires should be green. No wire should be taped

Detail A: Economizer Field Wiring (SOOW Cable to Bottom of the Electrical Box)

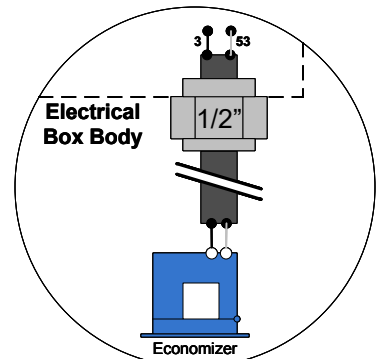
Notes concerning the above wire diagram can be found on page 36

Maintenance

13.7 Appendix C: Wiring Diagrams (May 2019) cont.

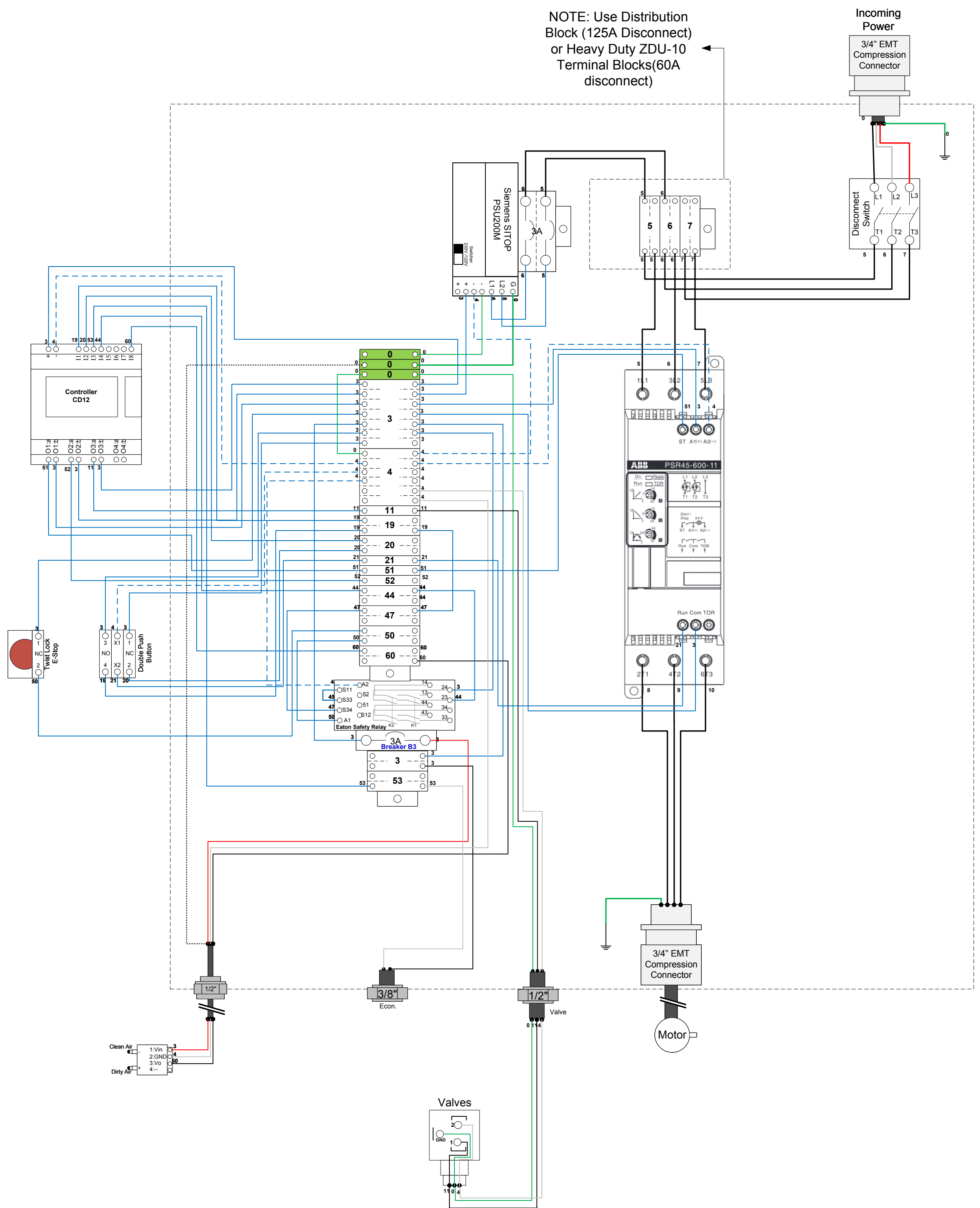
Notes concerning the wiring diagram:

- Power is brought into the electrical box as 460 / 230 / 208 Volt AC three phase. Power is then branched to 24V DC for the controller, valves, and air sensors.
- Breakers are marked on the electrical diagram. There are:
 - (1) on the power supply primary coils.
 - (2) on the terminal strip for the differential pressure sensor
- Wire numbers have been added to the wiring diagram to aid in both the diagnostic issues as well as the maintenance and service issues while in the field.
- The wire numbers will be shown in small Black numbers at each end of the wire. The wires are be numbered by the 'node', meaning that several wires connecting into one point will have the same number. Labels are placed on the terminal blocks as well as the wires.
- Wiring for Remote Start / Stop buttons, Remote Safety buttons, and the Economizer™ Shunt are shown on the wiring diagram.
- Multiple electrical options / accessories are available for the IndustriFume. If an electrical option has been added, then see the 'IndustriFume Users Manual' for additional information.
- Wiring Diagram is usually located in the electrical panel



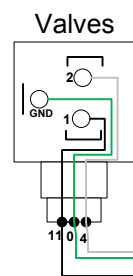
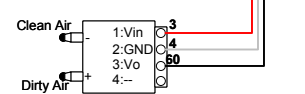
Detail A: Economizer Field Wiring
(SOOW Cable to Bottom of the Electrical Box)

NOTE: Use Distribution Block (125A Disconnect) or Heavy Duty ZDU-10 Terminal Blocks(60A disconnect)



Wire Number Index

- 0: Ground
- 3: +24VDC
- 4: -24 VDC
- 5: 3 Phase, Phase 1, Switched
- 6: 3 Phase, Phase 2, Switched
- 7: 3 Phase, Phase 3, Switched
- 8: Motor Power, Ph.1, Var. Freq
- 9: Motor Power, Ph.1, Var. Freq
- 10: Motor Power, Ph.1, Var. Freq
- 11: Valve #1 Signal, +24VDC
- 19: Green Double Push Button
- 20: Red Double Push Button
- 21: Center Light Double Push Button
- 44: Safety Interlock Signal
- 47: Safety Interlock Common
- 50: E-Stop
- 51: VFD DI1, Run Signal
- 52: VFD DI2, Jog Signal
- 53: Economizer Signal
- 60: Filter Pressure Sensor Signal



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DESCRIPTION:		Schematic Number:			
		HiVac, Basic+VFD v3			
FILENAME:		Z:\ENGINEERING\ELECTRICAL\ELECTRICAL DIAGRAMS\CURRENT\HIVAC\HIVAC V3.3-SOFTSTART.VSD			
STATION:	SHEET SIZE:	SCALE:	DRAWN BY:	DRAWN DATE:	PAGE:
Electrical	C	N.T.S.	KELVIN	June 2, 2021	6 OF 10

Warranty

14 Warranty Information

Twelve Month Limited Warranty

ABICOR BINZEL warrants to the original purchaser that the major structural components of the collector will be free from defects in the materials and workmanship for twelve (12) months from the date of shipment if properly installed, maintained and operated under prescribed conditions.

ABICOR BINZEL warrants all non-major structural components and any non-ABICOR BINZEL manufactured components included with the purchase order to ABICOR BINZEL for a period of twelve (12) months. ABICOR BINZEL does not warrant damages which are due to corrosion, abrasion, normal wear and tear, product modification or product misapplication.

No warranty on consumables including filters; no warranty on labor. All parts deemed defective must be returned to ABICOR BINZEL for inspection to determine if warranty applies. After ABICOR BINZEL has been given adequate opportunity to remedy any defects in the material or workmanship, ABICOR BINZEL retains the sole option to accept return of the goods, with freight paid by the purchaser, and to refund the purchase price for the goods after confirming the goods are returned undamaged and in usable condition. Such a refund will be the full extent of ABICOR BINZEL's liability. ABICOR BINZEL shall not be liable for any other costs, expenses or damages, whether direct, indirect, special, incidental, consequential or otherwise.

The terms of this warranty may be modified only by a special warranty document signed by the ABICOR BINZEL President. There exists no other representations, warranties or guarantees except as stated in this manual. All other warranties including merchantability and fitness for a particular purpose, whether express or implied, are hereby expressly excluded and disclaimed.

**FAILURE TO USE GENUINE ABICOR BINZEL REPLACEMENT PARTS
WILL VOID THIS WARRANTY.**

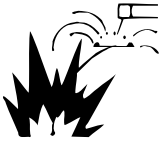
! Danger

• Read and follow the manufacturer's instructions, employer's safety practices and Material Safety Data Sheets (MSDSs).

• Only qualified personnel should install, use or service this material and/or equipment.



ELECTRIC SHOCK can kill.
 • Always wear dry insulating gloves.
 • Do not touch live electrical parts.
 • Always disconnect power source before hooking up or changing electrodes, nozzles and other parts.



WELDING SPARKS can cause fire or explosion

- Do not weld near flammable material
- Do not weld on closed containers.
- Remove combustibles from the work area and/or provide a fire watch
- Avoid oily or greasy clothing as a spark may ignite them.



FUMES AND GASES can be hazardous to your health.

- Keep your head out of the fumes.
- Use enough ventilation or exhaust at the arc to keep fumes and gases from your breathing zone, and the general area.
- Fumes from welding and cutting can deplete air quality, causing injury or death. Always wear an air supplied respirator in confined areas or if breathing air is not safe.



ARC RAYS can injure eyes and burn skin.

- Always wear correct eye, ear and body protection.
- Always wear a welding helmet with the proper grade filter lens. Protect yourself and others from spatter arc flash rays by using protective screens, barriers and welding curtains.
- Always wear protective gloves and clothing to cover exposed skin. This will aid in the prevention of arc and spatter burns.



LOUD NOISE can damage hearing.

- Always wear protective hearing devices to ensure protection when noise levels exceed OSHA standards.

Do Not Remove This Label.

ID 123-4567C1

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Read American National Standard Z49.1, "Safety in Welding, Cutting and Allied Processes" available from the American Welding Society, 8669 NW 36 St #130, Miami, FL 33166; OSHA Safety and Health Standards, available from U.S. Government Printing Office, Washington, DC 20402



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