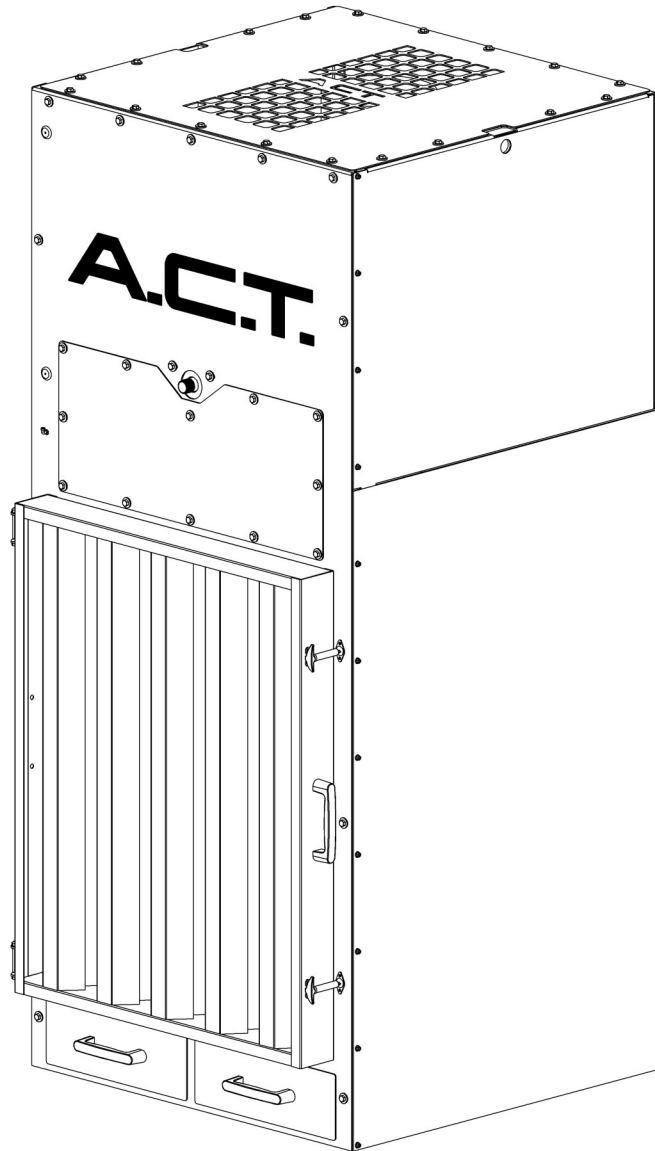




ACTion Booth Dust Collector

Installation and Operation Manual



CAUTION!

Accidents happen, be careful and always follow all local and federal regulations!

Fires and explosions do occur in dust collectors. Many items in a dust form can become very flammable and/or explosive. It is very important that when installing a dust collector to check with and abide by all local and federal regulations. Precautions such as spark traps, detectors, and extinguishers are always recommended when sparks or explosive danger is present. Never throw any burning objects into the duct work or dust collector. There is no way to guarantee 100% prevention of fires. However, the methods mentioned above will greatly reduce your risk. ACT Dust Collectors will not be responsible in any way for any loss or damage associated with fires or explosions in your dust collector.

If your dust collector came with explosion vents or if explosive dusts are present, it is the owner's/operator's responsibility for full compliance with all authorities having jurisdiction. It is recommended that the NFPA codes be studied and applied, including, but not limited to 68, 69 and 654. Included in the NFPA standards is the issue of isolating your dust collector. Please contact us or an expert in the area regarding isolation of your dust collector in the event of an explosion. Unless a Kst test was performed, and we were provided with the results, the size of the explosion vents may be inaccurate and you may not be in compliance. It is the owner/operators responsibility to verify the Kst and Pmax values. We recommend that your process be evaluated regularly to make sure that you remain in compliance and the vent area is sufficient. ACT Dust Collectors will not be responsible for ANY loss whatsoever resulting from an explosion associated with an ACT dust collector.

Dust collectors are tall and top heavy. Always be careful when handling them. Make sure your equipment is capable of making the lifts and moves you are trying to make. Be sure the foundation for the dust collector is proper and secure.

All plumbing and electrical should be performed by certified professionals and meet all codes and regulations.

Never open any doors or access panels while the machine is in operation.

Always shut down the unit prior to service and lock out all disconnects.

Always wear proper safety equipment when working on or around your dust collector and follow all local and federal codes.

Product Datasheet

Dust Collector

Model: _____ Serial Number: _____

Filters: _____ Ship Date: _____

Option/Accessories: _____

Fan Blower

Manufacturer/Model: _____ Serial Number _____

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Introduction

Thank you for your purchase of an ACT dust collector. Our goal is to provide you with a product of best quality, service, and pricing in the industry.

This manual is to provide general instructions in assisting you with your installation, operation, and maintenance of your equipment. It is the user's responsibility to ensure that the equipment is correctly installed and operated. It is also the user's responsibility to ensure and provide qualified personnel for the installation, operation, and maintenance of the equipment and to adhere to all applicable federal and local building and safety codes and regulations.

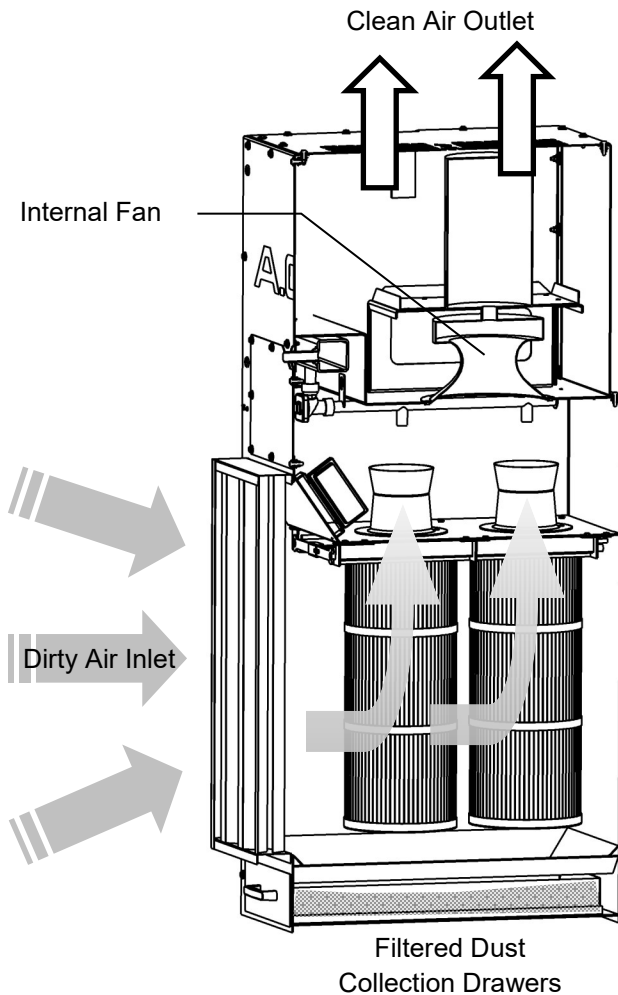
Any special instructions and certified drawings accompanying this equipment shall supersede this manual.

Keep this manual along with any special instructions and drawings necessary for assembly, operation, and maintenance with the equipment.

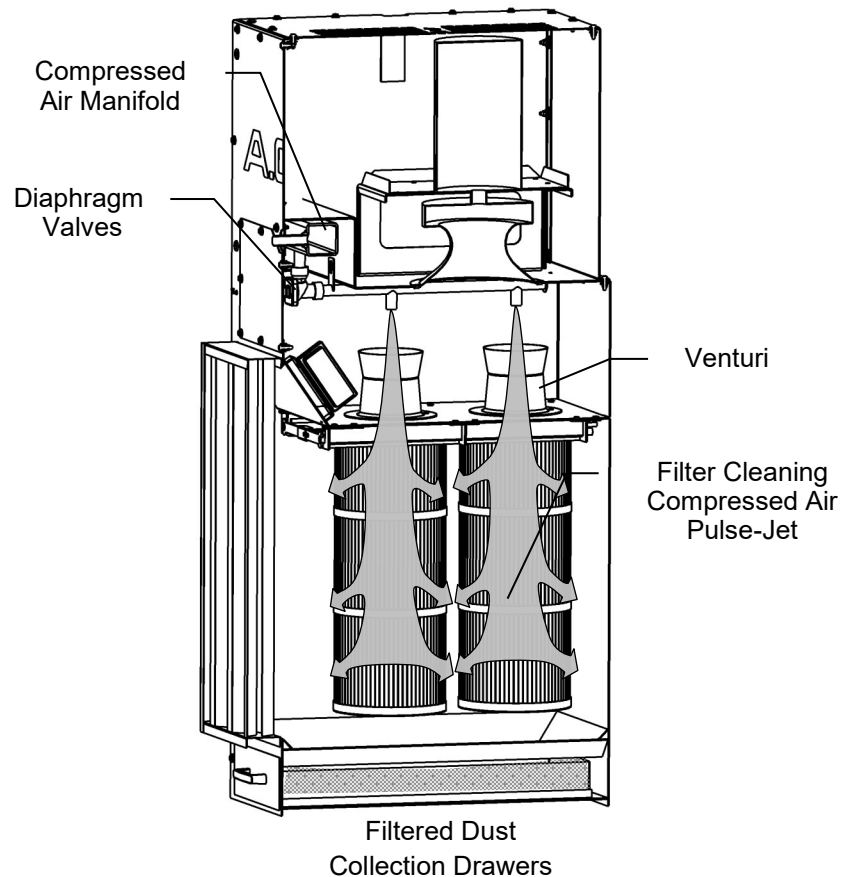
Operation Principle

The ACTion Booth dust collector is an air cleaning device that removes the particulates from dust-laden air and allows clean air to be exhausted. As dirty air enters through the dirty air inlet, the dust is collected on the cartridge filters, allowing clean air to be passed through the filters and then exhausted.

To remove excess dust buildup on the filters, a timer board is used to sequentially open the diaphragm valves and release a pulse of compressed air. This venturi-assisted pressure pulse releases the accumulated dusts on the filters, allowing the particulate to drop down into the drawers.



Dust Filtration Process



Pulse-Jet Cleaning Process

Shipping and Receiving

All products from ACT Dust Collectors are carefully inspected for quality and order completion prior to shipment.

Prior to unloading, inspect all components for any shipping damage and missing parts. Report and file a claim immediately with the carrier for any damage or missing items. Once filed, contact your ACT Dust Collectors representative to notify them of your issue(s).

Any repairs to components with minor damage from transit must be approved in writing by the manufacturer.

Handling

Handling should be performed by trained, able, and qualified personnel and be consistent with safe handling practices outlined by OSHA and local codes.

Review this manual and any additionally supplied certified drawing(s) to familiarize yourself with the lift points of each of the components.

Verify the integrity and lift capacity of all handling equipment/components.

When handling the housing, utilize a spreader bar to prevent any deformation during lifting.

All lifting points are to be used.

Table 1 - Recommended SAE Torque Table

Bolt Size	SAE Grade 5 Torque (ft-lb), dry
1/4-20	8.4
5/16-18	17.4
3/8-16	31
7/16-14	49
1/2-13	75
5/8-11	150
3/4-10	267

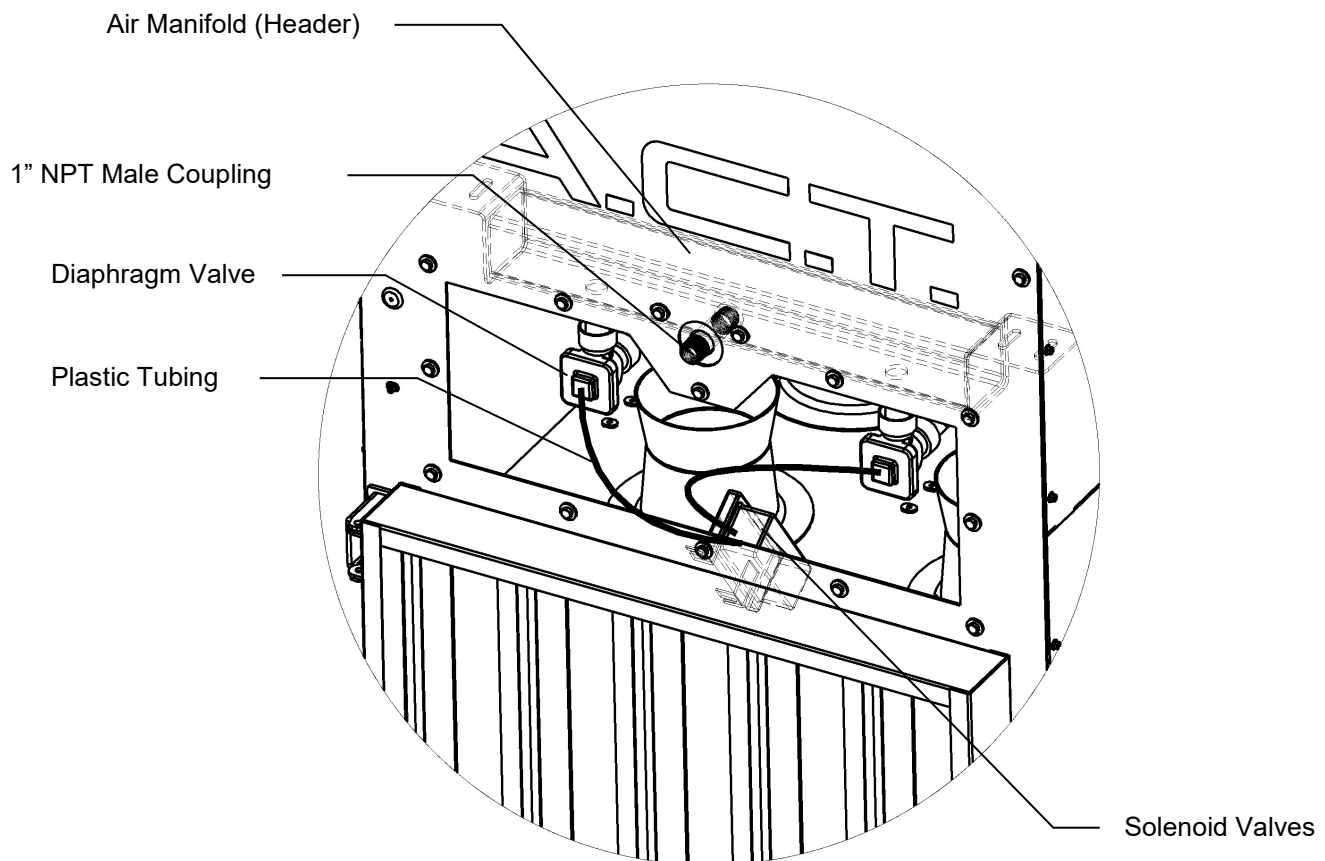
Compressed Air

The supplied compressed air must be clean, dry, and oil-free. Set the compressed air pressure levels to 80-90 psi. Do NOT exceed 100 psi as damage may occur to the components.

Prior to installation, purge the compressed air lines of any dirt or buildup.

1. Install the compressed air pipe to the 1" NPT Male Coupling. Use thread sealant tape or compound on all connections.

2. A drip tee or ball valve installed on the bottom of the manifold is recommended to allow for the draining of any water buildup.
3. It is also recommended to install a shut-off valve, pressure regulator, safety exhaust valve, and filter close to the collector.



Electrical

All wiring should be done by a certified electrician and in accordance with all local and federal codes. Refer to the job specific electrical drawing(s) located in the panel and manual binder for detailed instructions. Fan and timing board/solenoid wiring are to be in separate conduits.

1. Fan

- Verify fan rotation by observing from the motor end. Another indication is poor fan performance or a lack of air movement.

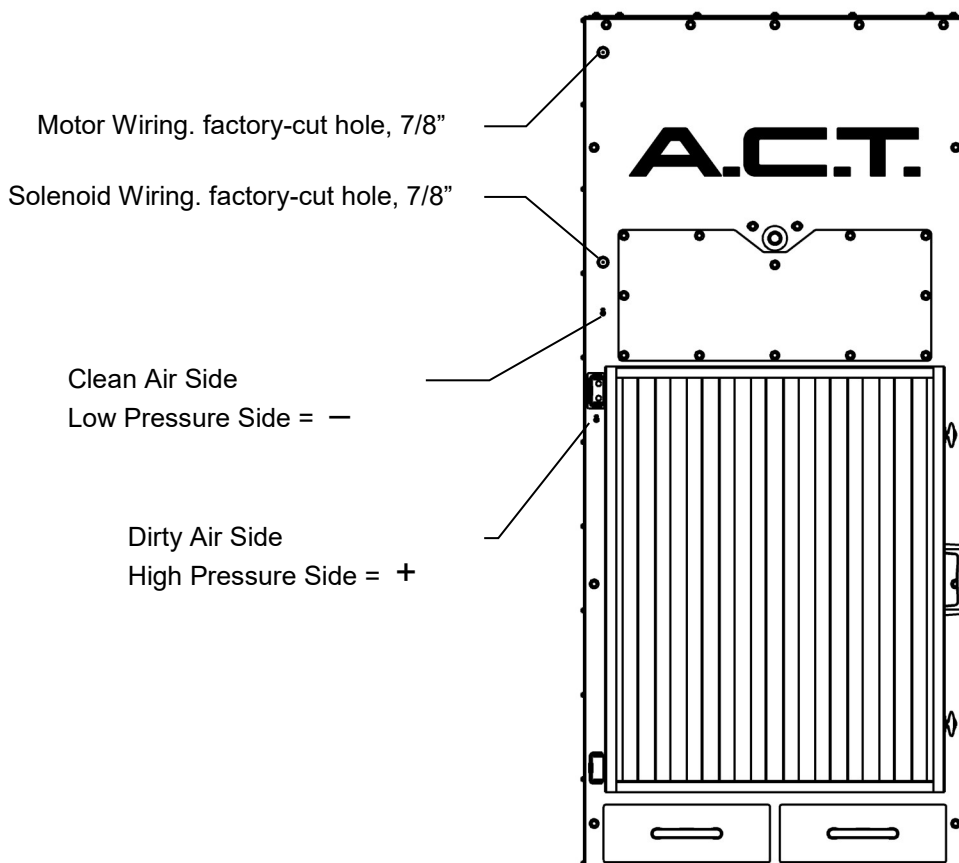
2. Timer Board

BASIC TIMER BOARD (DCT504A)

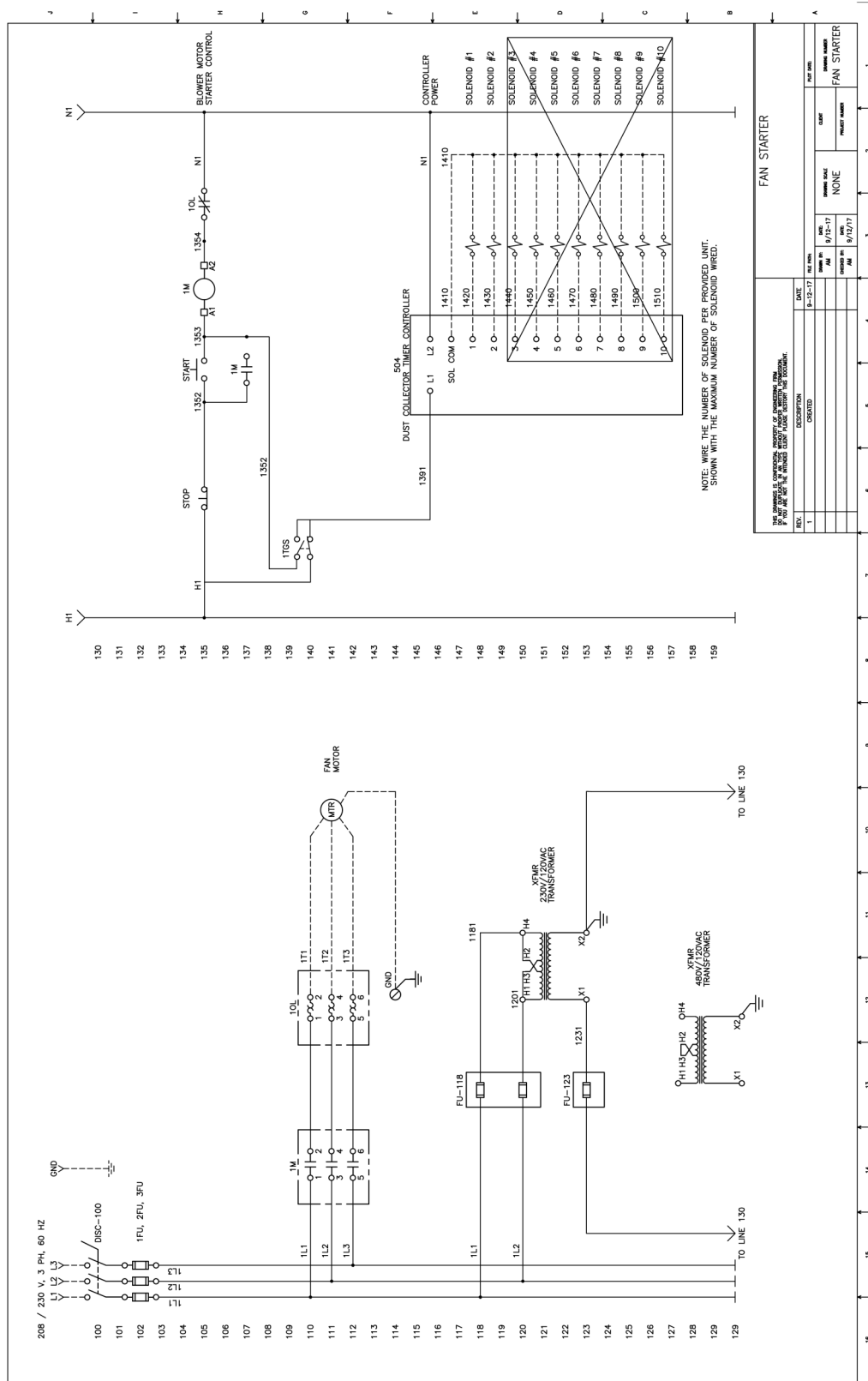
- Locate the timer board as close to the dust collector as possible
- To wire the timer board, please refer to the wiring diagram on page 9.
- It is recommended to set the "TIME OFF" to 10s and "TIME ON" to 100ms. The jumper should also be connected to the second set of pins.

DIGITAL TIMER BOARD

- Locate the timer board as close to the dust collector as possible.
- To wire the timer board, please refer to the wiring diagram located inside the timer board enclosure.
- Once the timer board has been installed, the pressure gauge must be connected to the dust collector using customer supplied 1/4" tubing (see figure below for low and high pressure ports). If the dust collector is installed outside, the tubing should UV resistant.
- **IMPORTANT:** Prior to operating the dust collector or adjusting the settings, ensure that the down time clean feature has been properly wired. This feature will allow the dust collector to clean itself during shut down, which will aid in prolonging the life of the filters.



Basic Timer Board Wiring



Digital Timer Board Programming

Familiarize yourself with the timer board manual before programming the timer board.

The table below summarizes the recommended settings. Consult with ACT Dust Collectors for specific applications.

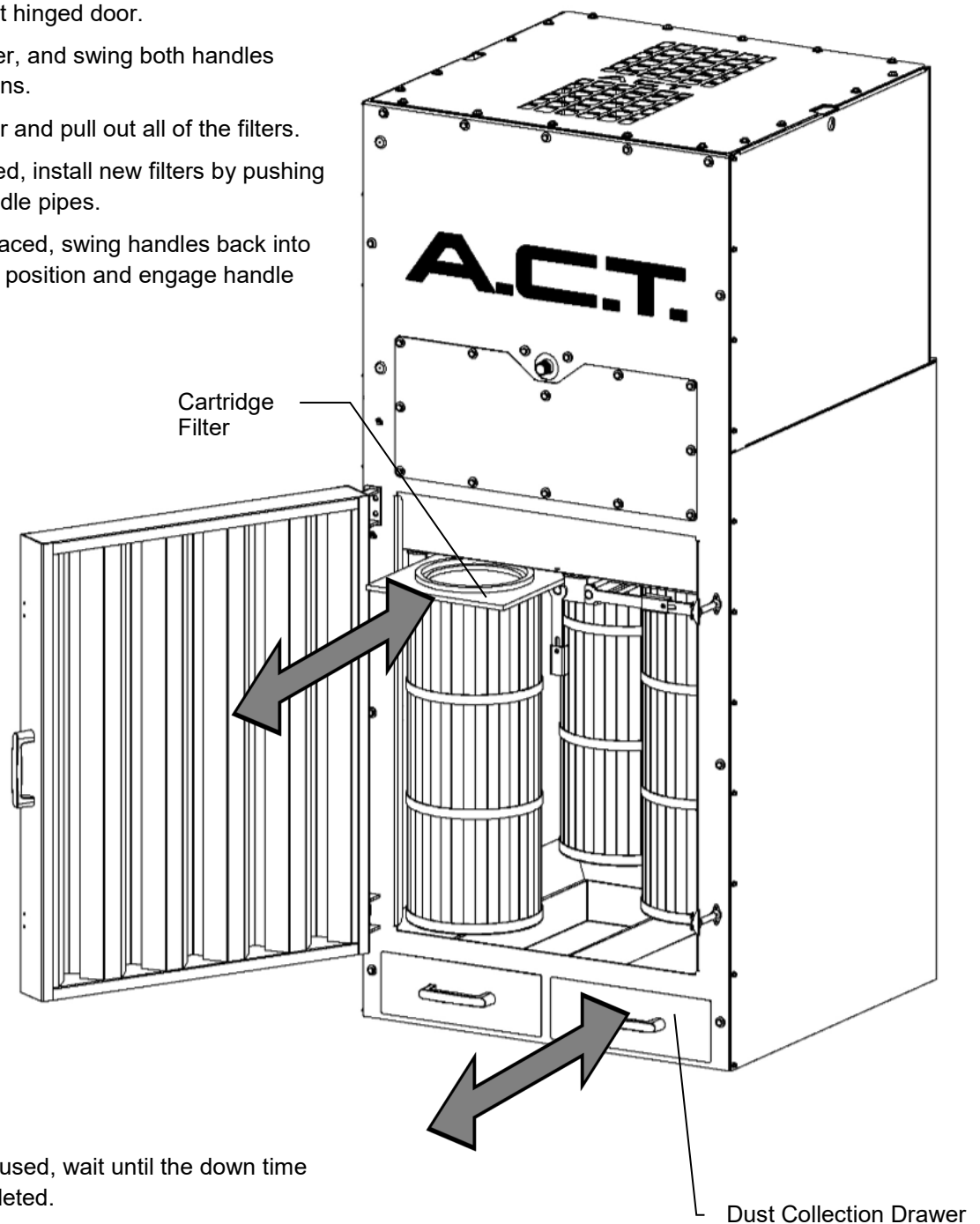
Table – Recommended Timer Board Settings

Feature	Settings
Process	Current pressure drop
Last Output	The highest output terminal value that has a wire installed in it. Terminal outputs have a range from 1-22 and are found near the bottom of the timer board.
Time Off	10
Time On	100
High Limit	1.00" above initial pressure drop (Contact Manufacturer for Questions)
Low Limit	Starting value of 1" below high limit value
High Alarm	10 (Unless alarm is installed - Consult Manufacturing)
Low Alarm	0 (Unless alarm is installed - Consult Manufacturing)
Cycle Delay	0
Down Time Cycles	10
Auto Alarm Reset	Unless notified, leave at factory setting of 5.

Maintenance

Cartridge Filter Replacement

1. Turn off the fan and, if used, wait until the down time cleaning cycle is completed.
2. Lock out/ tag out power to the collector and fan.
3. Open the collector front hinged door.
4. Disengage handle slider, and swing both handles down to vertical positions.
5. Reach into the collector and pull out all of the filters.
6. Once filters are removed, install new filters by pushing them in along cam handle pipes.
7. Once all filters are replaced, swing handles back into their original horizontal position and engage handle slider.



Dust Removal

1. Turn off the fan and, if used, wait until the down time cleaning cycle is completed.
2. Pull out lower dust collection drawer and empty. Replace into position.

Booth Enclosure Assembly

Troubleshooting

Problem	Probable Cause	Solution
Poor performance - not enough suction or air movement	Fan rotation in wrong direction	Rewire three phase wires to change fan rotation
	Filters at end of life	Replace filters
	System design	Verify fan performance to fan curve with airflow, static pressure, and horsepower readings
		Re-evaluate system design to verify that the fan is properly sized for the application or nothing has changed since product selection (i.e. added a new weld station)
	Obstruction in airstream	Remove obstruction
	Not enough compressed air	Verify that the pressure is high enough for effective cleaning (set to 90-100 psi)
High differential pressure	Dirty filters	Activate down-time cleaning by reducing the "high limit" or manually pulse by following the instructions in timer board manual.
		Replace filters near end of life
	Not enough compressed air	Verify that the pressure is high enough for effective cleaning (set to 80-90 psi)
	Defective cleaning system	Verify solenoids, diaphragm valves, and timer board are functioning and properly wired.
Motor over-amping	Fan design	Overloading radial-bladed fans may require a damper to reduce horsepower requirements
	Electrical	Verify correct motor supply voltage
	Fan/motor sized incorrectly	Confirm system requirements with airflow measurements
		Replace fan with larger unit

Troubleshooting Continued

Problem	Cause	Solution
Zero differential pressure reading	Wrong pressure high/low pressure tubing connection	Swap the connections of the pressure reading plastic tubing on the side of the collector
	Pressure reading tubing kink or leakage	Inspect tubing for kinks or leakage
	Filters/Bypass	Verify filters are installed and that there is no bypass of dust
	Defective timer board	Replace board. (1-800-422-1316)
Cleaning system not pulsing	Solenoid	Listen for clicking noise to verify solenoids are opening/closing. Replace if defective.
		If located in frigid outdoors temperatures, a solenoid heater may be required
	Diaphragm Valve	Replace worn diaphragms. (1-800-422-1316)
	Timer board	Manually pulse by following instructions in timer board manual. Verify it is correctly installed.
		Defective. Replace board. (1-800-422-1316)
No down-time cleaning	Timer board	Verify settings on timer board
	Electrical	Call A.C.T. to verify electrical drawings and specifications. (1-800-422-1316)
Dust discharging from outlet	Filter damage	Inspect filters for tears along filter media and gaskets.
	Filters installed incorrectly	Verify that the filters are installed correctly with gasket sealed tightly against tubesheet.

Warranty

Air Cleaning Technology, Inc. warrants the equipment to be free from defects in materials and workmanship for a period of 10 years from the date of purchase. This warranty does not cover any damage due to normal wear and tear including, but not limited to, corrosion, abrasion, elements, and modifications. This warranty covers parts only. This warranty covers only the parts manufactured exclusively for Air Cleaning Technology, Inc. All other parts will be covered by individual manufacturer's warranty.

**For Questions and Replacement Parts
Call Toll-Free 800-422-1316**



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