

CMAXX

DUST & FUME COLLECTION SYSTEM

Installation, Operation, & Maintenance Manual

v e r s i o n - B 1 8



7320 West Market St. Mercer, PA 16137

800.918.3013 | imperialsystemsinc.com

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1. Introduction And Warranty

1.1 Introduction

Congratulations on your purchase of an Imperial Systems, Inc. product. This product has been designed and manufactured to the strictest specifications. It is our utmost desire that you achieve success and are rewarded with years of service from your equipment purchase.

Carefully examine your equipment upon receipt.

Report any damage immediately to the freight carrier and register any claim. Should any material or manufacturing defects be discovered, report your findings to our service department along with the model, serial number, and date of purchase. We want to make sure that you are satisfied with the equipment. As always, we welcome input on how our products can be improved to serve you better.

Read and understand this manual before using your equipment. Follow all safety instructions. Keep this manual in an accessible at all times.

Information provided in this manual is current as of the issue date. Imperial Systems, Inc. reserves the right to make design changes without further notice or liability. Equipment modifications from original design and specifications are prohibited. Modifications may compromise safe operation of the machine, subjecting users to serious injury or death, and may void any remaining warranty.

This Operator's Manual does not replace, nor does its use release the owner from observing all safety codes and operating limitations, as well as any applicable federal, state, provincial, or local regulations.

1.2 Serial Number

The serial number plate is located in the lower left corner of the door below the CMAXX sticker.

For future reference, write your serial number in the space below: _____

The image shows a shield-shaped serial number plate for Imperial Systems CMAXX equipment. At the top, it says "BUILT WITH PRIDE IN" above "MERCER, PA, USA". Below this is the large "CMAXX" logo. The plate contains several fields for recording information: MODEL, JOB NO., SERIAL NO., DATE OF ORDER, CUSTOMER, FILTERS, A.T.C. RATIO, KST VALUE, and DUST TYPE. At the bottom, it features the Imperial Systems logo and the website "www.imperialsystemsinc.com" with the phone number "800.918.3013". A disclaimer states: "ONLY DELTA MAXX FILTERS NON-FACTORY FILTERS VOIDS WARRANTY".

Model – Model of dust collector that you have. The number in the model name represents the quantity of filters in the unit.

Job Number – Sales order number that the unit was sold under.

Serial Number – Serial number of the unit.

Date of Order – Date that the job was entered.

Customer – Customer that unit was sold to.

Filters - Part number for filters that were ordered with the unit.

A.T.C. Ratio – Air to cloth ratio that the unit was designed to operate at.

KST Value - KST Value is the explosive value of the dust being collected. The higher the value the more explosive the dust is.

Dust Type – Description of dust that collector was designed to filter.

15 YEAR LIMITED

INDUSTRY LEADING WARRANTY

Imperial Systems, Inc. warrants to the original purchaser that the major structural components of the dust collector will be free from defects in materials and workmanship for Fifteen (15) years from the date of shipment, if properly installed, maintained and operated under normal conditions. Imperial Systems, Inc. warrants all other Imperial Systems, Inc. - built components and accessories including Imperial Systems, Inc. airlocks, fans, cyclones, dampers and valves housings for Twelve (12) months. Imperial Systems, Inc. warrants filters to be free from defects in materials and workmanship for twelve (12) months from date of shipment. Imperial Systems, Inc. does not warrant damages which are due to corrosion, abrasion, normal wear and tear, product modification or product misapplication. Imperial Systems, Inc. also makes no warranty whatsoever as to any goods manufactured or supplied by others, including, but not limited to, electric motors and control components. After Imperial Systems, Inc. has been given adequate opportunity to remedy any defects in material or workmanship, Imperial Systems, Inc. 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 Imperial Systems, Inc. liability. Imperial Systems, Inc. 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 President of Imperial Systems, Inc. There exist no other representations, warranties or guarantees except as stated in this paragraph. All other warranties, including merchantability and fitness for a particular purpose, whether express or implied, are hereby expressly excluded and disclaimed.

Jeremiah Wann
President

**FAILURE TO USE GENUINE IMPERIAL
SYSTEMS, INC. REPLACEMENT PARTS
& FILTERS WILL VOID THIS WARRANTY.**

1.4 IDA In-Line Deflagration Arrester Certification

The IDA certification is optional. Contact Imperial Systems to verify if your CMAXX is equipped with the IDA certification.

The CMAXX using the Proprietary DELTAMAXX IDA Filters is proven to completely isolate flame transmission and stop combustion from passing through the filters. With IDA you can safely return air back into the workplace. This flame and deflagration isolation meets at least one of the required methods required by NFPA. Third party test results are available upon request. To maintain IDA certification on collector, you must:

- Provide a dust sample for KST testing or provide a copy of a completed KST test.
- Dust cannot exceed a rating of 200 KST.
- Use Certified DELTAMAX IDA Filters.
- Differential pressure cannot exceed 5 Inches of Water Column.
- Install a broken bag detector in return air duct.
- Install a burst indicator on pressure relief panel.
- Ground the Dust Collector



In the event of a deflagration the following must be performed before the unit is returned to service.

1. Inspect unit for any deformation, or stress cracks.
2. Inspect tube sheet to verify there is no deforming, and filters will seal against it properly.

3. Inspect door hardware for proper function, verify there is no deformation or stress cracks in latch mechanism.
 4. Inspect lift rails for proper function.
 5. Replace filters with Certified DELTAMAXX IDA Filters. Filters can only be purchased from Imperial Systems.
 6. Replace pressure relief panel and burst indicator.
 7. Replace door gasket.
 8. Replace explosion vent braces.
- Imperial Systems does offer an inspection service to verify your collector is operational. Please contact your sales representative for current pricing.

1.5 Fire Protection And Safety Equipment

The customer assumes the responsibility to contact their insurance company and or AHJ (Authority having Jurisdiction) to see what is required to meet the needs of fire protection, explosion ventilation, deflagration, isolation and any other related equipment.

It is the customer's responsibilities to relay this information to Imperial Systems so that we can properly select and size the necessary equipment to meet their requirements.

The customer should adhere to any and all NFPA, OSHA, federal, state, codes, rules, and regulations.

2. Safety

2.1 Safety Alert Symbol And Signal Words

You must read, understand and follow the instructions given by the operating unit manufacturers, as well as the instructions in this manual.

The safety information in this manual is denoted by the safety alert symbol:



This symbol means ATTENTION! BECOME ALERT!

YOUR SAFETY IS INVOLVED!

The level of risk is indicated by the following signal words:



DANGER

DANGER - Indicates a hazardous situation, which, if not avoided, **WILL** result in death or serious injury.



WARNING

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



CAUTION

CAUTION - Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.



NOTICE

NOTICE - Indicates a situation that could result in damage to the equipment or other property.

2.2 Operational Hazards



WARNING

**Prevent serious injury or death.
Read and understand this manual before
operating equipment.**



WARNING

**Prevent serious injury or death
from moving parts.**

Moving parts can crush and dismember.

**Do not operate without guards
and shields in place.**

**Disconnect and lockout power source
before adjusting or servicing.**

Carefully read all safety messages in this manual and on equipment safety signs. Keep safety signs in good condition and replace missing or damaged safety signs.

New equipment components and repair parts must include the current safety decal.

Learn how to properly operate equipment. **NEVER** operate or work around this equipment without proper instruction, while fatigued or under the influence of alcohol, prescription or non-prescription medication or if feeling ill.

Keep your equipment in proper working condition. Know the regulations and laws that apply to you and your industry. This manual is not to replace any regulations or laws. Additional information may be found at: www.nfpa.org or www.osha.gov.

If you do not understand any part of this manual, contact Imperial Systems, Inc. at 724-662-2801.

2.2.1 Prepare For Emergencies

Be prepared in case of emergencies.

Keep a fire extinguisher and first aid kit close to the machine.

Keep emergency phone numbers close to your phone.

Know your address so emergency services can locate you if an emergency arises.

2.2.2 Replace Safety Signs

Replace missing or damaged safety signs.

Safety sign locations are identified in Section 3 of this manual.

Replacement safety signs are available from Imperial Systems, Inc.

2.3 Maintenance Hazards

Before servicing, disconnect and lockout power source. Read and understand this manual. If you do not understand any part of the manual, contact Imperial Systems, Inc. at 724-662-2801.

Always wear face and/or eye protection, safety shoes, and other protective equipment appropriate for the job.

Do not make unauthorized modifications. Contact Imperial Systems, Inc. at 724-662-2801 before you weld, cut/drill holes, or make any other modifications.

Always use Imperial Systems, Inc. replacement parts.

**WARNING**

Entanglement hazard.

Keep clear of moving components.

Wear proper protective equipment appropriate for the job.

2.4 Hazards From Modifying Equipment

Do not make any alterations to your equipment. Altering may cause your equipment to be unsafe and may void the manufacturers' warranty.

2.5 Pressurized Air Hazards

Compressed air can cause serious injury or death.

**WARNING**

Do not use compressed air for any other purpose than that for which it is provided.

Never direct a stream of compressed air towards your body or the body of another person.

Before using, check all components for damage or wear. Make sure connections are tight and hoses are in good condition.

2.6 Safety Warning Labels


**WARNING**

To protect you and others against death or serious injury, all labels shown must be on machine and must be legible.

If any of these labels are missing or cannot be read, contact Imperial Systems, Inc. for replacement labels.

**WARNING**

Disconnect and lockout power source before performing inspections, service or maintenance.

**WARNING**

Keep clear of moving components.

Moving parts can crush and cut.

Follow lockout procedure before servicing.

3. Safety Labels



4. UNLOADING EQUIPMENT

4.1 RECOMMENDED TOOLS AND EQUIPMENT

- Screw Pin Clevis
- Crane or Forklift
- Drift Pins
- Drill and Drill Bits
- Wrenches
- Large Crescent Wrench
- Lifting Slings and Chains
- Pipe Sealant
- Pipe Wrenches
- Screwdrivers
- Socket Wrenches
- Spreader Bar
- Impact Wrench
- Impact Sockets

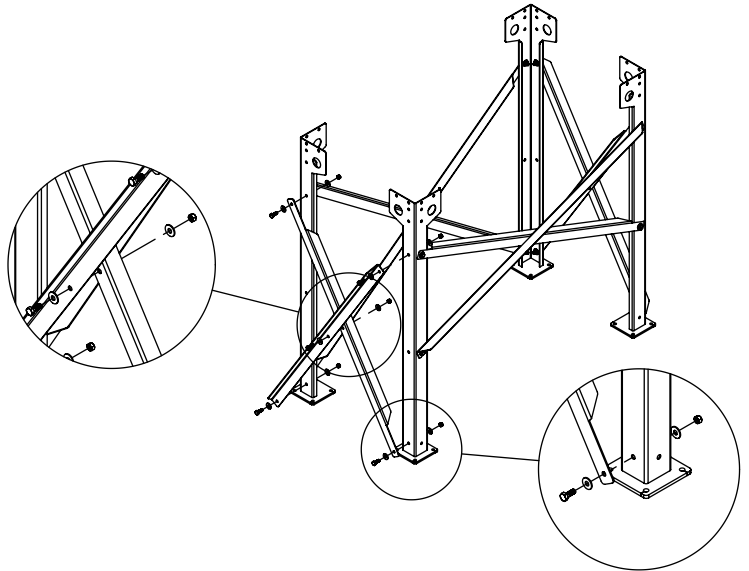
4.2 RIGGING INSTRUCTIONS

1. Use all lifting points provided on the unit.
2. Use screw pin clevises, not hooks on lifting slings.
3. Use spreader bars to prevent damage to the unit's frame.
4. Refer to certified drawings for the weight and dimensions of the unit, subassemblies, and accessories to ensure adequate crane capacity.
5. Only qualified personnel should be allowed to lift or rig the equipment.
6. Refer to applicable OSHA regulations and local codes when using cranes, forklifts, and other lifting equipment.
7. Lift the unit and accessories separately, and assemble after the unit is in place.
8. Use drift pins to align holes during assembly.

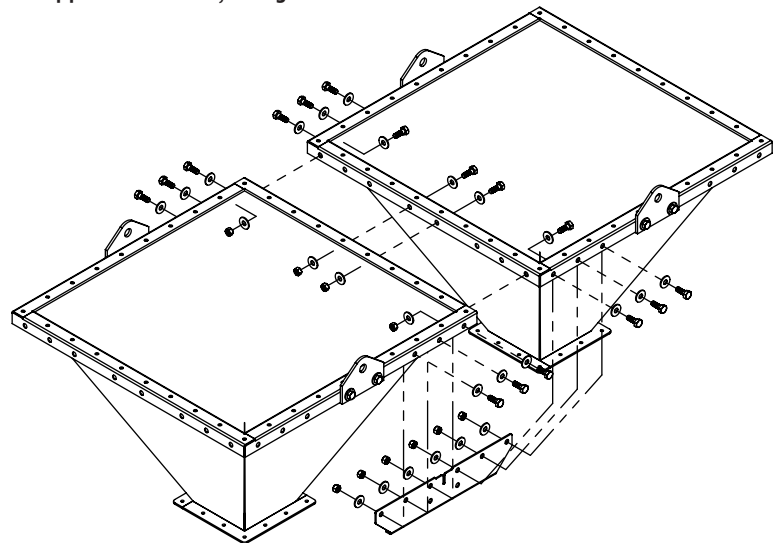
5. ASSEMBLY & INSTALLATION

5.1 ASSEMBLY

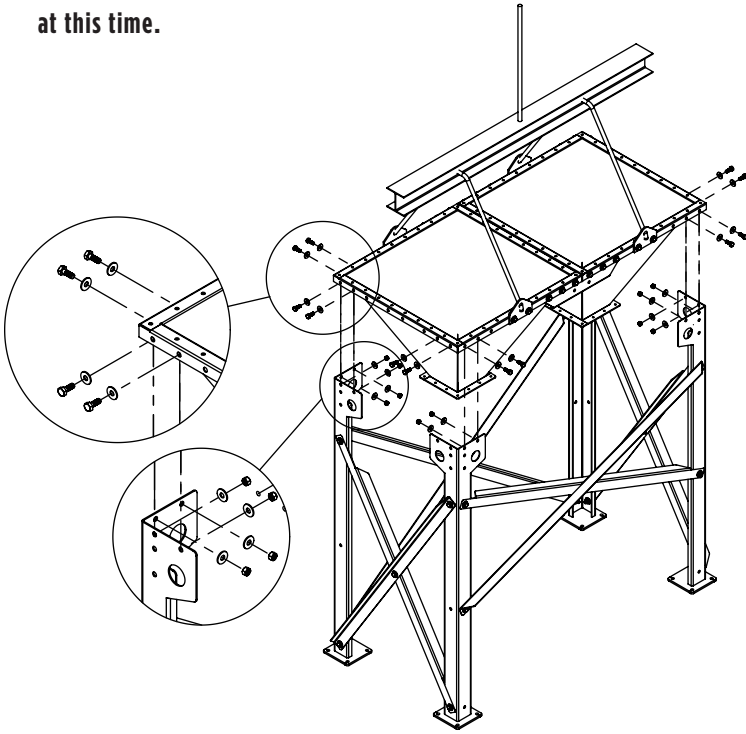
1. Locate and assemble the support structure according to the assembly drawing that came with your CMAXX. Leave all of the hardware loose at this time.



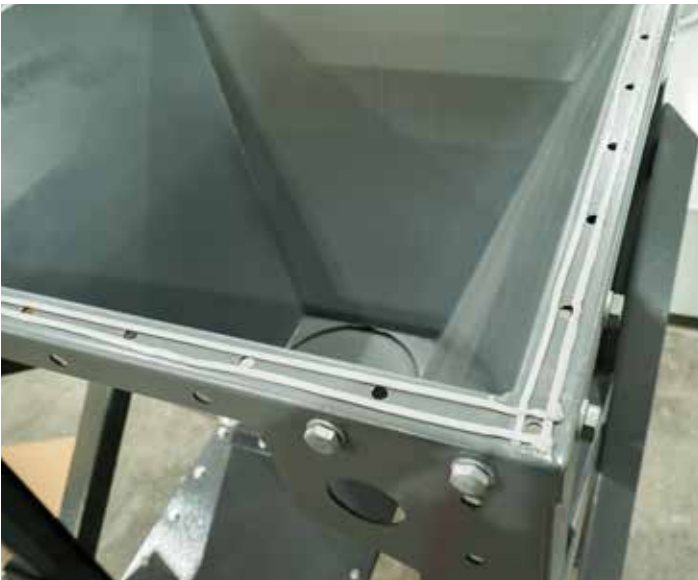
2. If your CMAXX is equipped with multiple hoppers orientate the hoppers per the assembly drawing ensuring that the alignment stickers are in the proper location. bolt the hoppers together using supplied hardware, and gusset brackets.



3. Bolt on the temporary lifting lugs to the hoppers to assist in lifting the hoppers onto the structure. Lift hoppers onto support structure and fasten to the structure using the supplied hardware. Use alignment pins as necessary to align holes. Leave all hardware loose at this time.





4. Remove the temporary lifting lugs from the hoppers, and apply 2 rows of sealant on the hopper flange surface. (See following graphic.)



5. Properly rig the body of the CMAXX and lift into place over the hoppers using alignment pin bars to align the hopper flange holes to the holes in the base of the CMAXX body. The arrows on the alignment stickers should be aligned to each other.

6. Once all of the hardware is installed in the base flange of the CMAXX and properly tightened, proceed with tightening all of the support structure hardware.

SERIAL NO: <input type="text"/>			<input type="text"/> OF <input type="text"/>	
<small>ALL HOPPERS HAVE BEEN FACTORY FIT TO THE BODY OF THE COLLECTOR</small>			<small>MATCH THE NUMBER OF THE CORRESPONDING BODY TO THE HOPPER NUMBER</small>	

SERIAL NO: <input type="text"/>			<input type="text"/> OF <input type="text"/>	
<small>ALL HOPPERS HAVE BEEN FACTORY FIT TO THE BODY OF THE COLLECTOR</small>			<small>MATCH THE NUMBER OF THE CORRESPONDING HOPPER TO THE BODY NUMBER</small>	

7. Securely anchor the CMAXX structure to the foundation using the holes in the foot pads.



5.2 COMPRESSED AIR INSTALLATION

- Remove the pipe plug from the end of the air header tank and connect the compressed air supply line. Supply line must be minimum 1 in. diameter. Use pipe sealant or thread sealing tape on all compressed air connections.
- Install a customer supplied regulator with gauge, filter, and automatic condensate valve in the compressed air supply line.

CMAXX DIAPHRAGM VALVE AIR CONSUMPTION @ 80 PSI							
		1" Diaphragm Valve			1.5" Diaphragm Valve		
On Time (msec)		100	150	200	100	150	200
Off Time (sec)	5	31.2	62.4	96.0	33.6	66.0	102.0
	10	15.6	31.2	48.0	16.8	33.0	51.0
	15	10.4	20.8	32.0	11.2	22.0	34.0
	20	7.8	15.6	24.0	8.4	16.5	25.5
	25	6.2	12.5	19.2	6.7	13.2	20.4
	30	5.2	10.4	16.0	5.6	11.0	17.0
	35	4.5	8.9	13.7	4.8	9.4	14.6
	40	3.9	7.8	12.0	4.2	8.3	12.8
	45	3.5	6.9	10.7	3.7	7.3	11.3
	50	3.1	6.2	9.6	3.4	6.6	10.2
	55	2.8	5.7	8.7	3.1	6.0	9.3
	60	2.6	5.2	8	2.8	5.5	8.5

Note: All compressed air components must be sized to meet maximum system requirements per the chart below at 80 PSI. See specification drawing shipped with the unit.

5.3 ELECTRICAL

5.3.1 Power Requirements

The controller has a “universal” power supply that will allow operation on 120 VAC to 240 VAC power lines. The input voltage must be between 85 VAC and 270VAC either 50 or 60 Hz. No circuit changes are required when switching between these voltages. The solenoid loads, however, must be sized to accommodate the line voltage selected.

5.3.2 DCT1000 Terminal Connections

The line and solenoid connections are located at the lower edge of the board below the plastic guard. The terminal block is a “Euro” style connector system that clamps the wire within the connector body. The connector will accept wire sizes from 14 to 22 AWG. The wire should be stripped to no more than 0.25 inches to avoid shorts or expose line voltages creating a potential safety hazard.

To assist you in determining the proper wire gauge required, a strip gauge is provided at the lower right corner of the board. The connector system used on the DCT1000 is specified for single connection but you can piggyback to a single lug provided that local codes allow for this and good workmanship practices are followed.



NOTICE

Do not increase supply pressure above 100 PSI. Component damage can result.

- The compressed air supply must be oil and moisture free. Contamination in compressed air used to clean filters will result in poor cleaning, reduced filter life, cleaning valve failure, and poor collector performance.
- Purge compressed air lines to remove debris before connecting to the units compressed air manifold.
- Turn off compressed air supply and bleed lines before performing service or maintenance work.



NOTICE

Do not run control wires, communication cables, or other class 2 wiring in the same conduit as power leads.

The system may malfunction if class 2 wiring is run together with power conductors.

To power up the master controller and the channel expander, connect line power to L1 and L2 (see Dimensional Specifications, Figure 1).

Connect the solenoids between the selected output and the solenoid common. Solenoid common and L2 are internally connected.

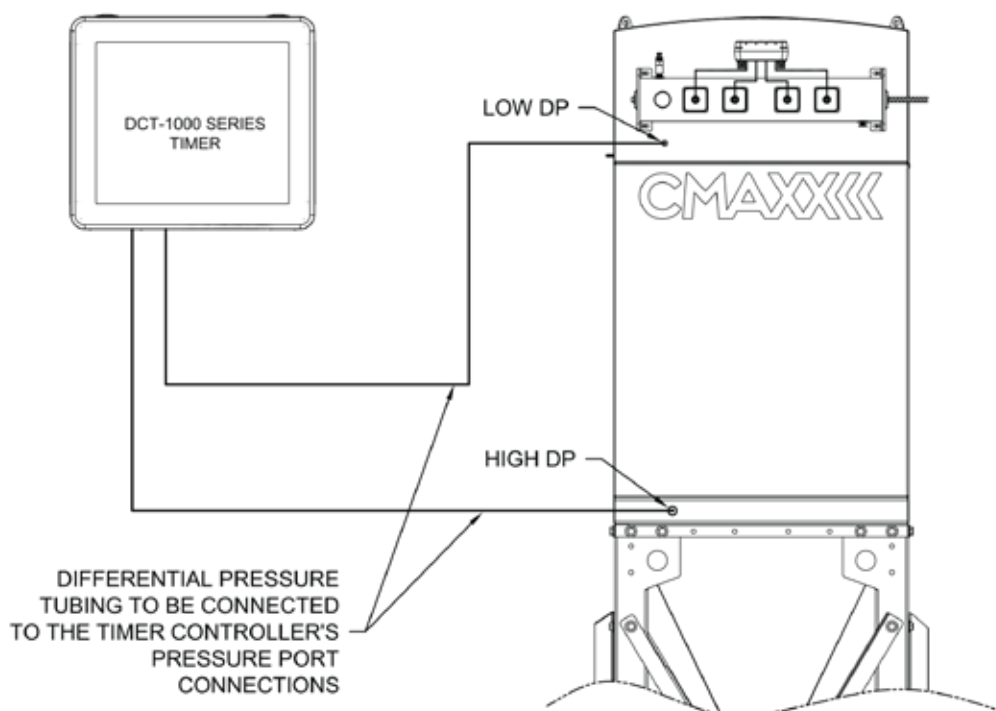
Switches connected to the control inputs at the top of the board must be isolated contacts connected only to the relevant terminal and to the common terminals. The following subparagraphs describe the external switch connections. Refer to figure 2 for switch connection illustration.

Note: Supply voltage to the timer controller must match the rated voltage of the pilot valve solenoids.

5.4 DIFFERENTIAL PRESSURE KIT INSTALLATION

There are high and low pressure ports on the CMAXX that need connected to the pressure transmitter on the timer control board via 1/4" OD tubing.

The low-pressure port (-) is located in the clean air side of the dust collector near the air header tank (A – arrow in the below diagram), and the high-pressure port (+) is located in the base frame of the CMAXX (B-arrow in the below diagram).



Instructions:

1. Thread a push connect fitting into both 1/8" NPT differential pressure ports on the CMAXX. (there are both straight and 90 degree fittings supplied so that you can use the fitting that will work best in your application)
2. Thread the push connect fittings into the 1/8" NPT ports on the bottom of the timer controller. (typically, the straight fittings work best on the control panel)
3. The differential pressure kit comes with a 100' roll of silver tubing. this tubing will be used to connect the high-pressure port on the CMAXX to the (+) pressure port on the timer controller, and the low-pressure port on the CMAXX to the (-) pressure port on the timer controller.
4. To connect the tubing into the push to connect fitting cut the end of the tubing square and firmly push the tubing into the fitting until it fully clicks into place.
5. When running the tubing between the CMAXX and timer controller do not kink the tube or clamp so tight that it crushes it. If your installation requires the timer controller to be located further away from the CMAXX than 50' an additional differential pressure tubing kit can be purchased.

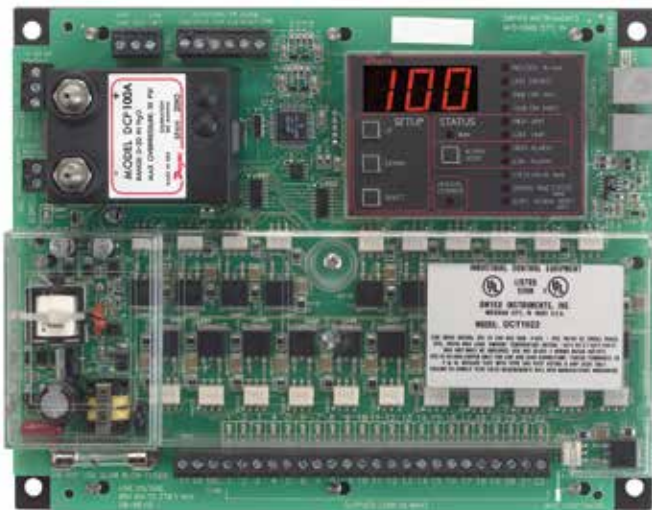


6. DCT1000 CONTROLLER TIMER

The DCT1000 Dust Collector Timer Controller was designed to be used with pulse-jet type dust collectors for on-demand or continuous cleaning applications. Continuous cleaning applications do not require external inputs and can be used for time based “on-demand” cleaning through use of the cycle delay feature.

For on-demand applications, the plug-in pressure modules (DCP100A) can be used to take full advantage of all the features the DCT1000 offers, or an external pressure switch can be used for High/Low limit control.

The Dwyer DCT1000 was designed so that it is easy to use, thus allowing for a quick and easy start up for your dust control applications.



6.1 PROGRAMMING MASTER CONTROLLER

The menu item that you are currently accessing is indicated by the illumination of an LED. To change menu items push the “select”, push “UP” to increase a value or push “DOWN” to decrease a value. The master controller is equipped with an on board display and programming information center. The controller will power-up with the process indicator illuminated. If a pressure module is installed, the display will indicate the measured pressure in inches of water (w.c.); otherwise it will normally be blank.

6.1.1 Last Output

The Last Output Setup selects the last channel to be activated. When first selected, the display will flash the last output available in the system. With single board installations, this will be the number of channels installed, typically 6, 10 or 22. This value becomes more

important when multiple modules are installed. The last out-put value flashed will be the sum of all channels available in the system.

After the last available channel indication has completed, the currently programmed last channel value is displayed. This value maybe changed using the “UP” and “DOWN” buttons. The minimum value is one while the maximum value is the maximum number of installed channels, including all expansion modules. The default value is the maximum number of channels. Pressing “SELECT” will change the setup mode to Time Off Setup.

6.1.2 Time Off (sec)

Time Off Setup defines the period of time between solenoid activations when no channels are enabled. This may be set between one second and 255 seconds. The factory default is 10 seconds. The display will show the current time off setting when the time off setup mode is entered. The value may be changed using the Up and Down buttons. Pressing both “UP” and “DOWN” simultaneously and holding for approximately four seconds will restore the default value of 10.

6.1.3 Time On (msec)

Time On Setup sets the solenoid on time. The display will indicate the currently programmed time on setting. This is measured in milliseconds. Using the “UP” and “DOWN” buttons, the value may be changed. The value may be set between 10 msec and 600 msec in 10 msec increments. Pressing the “UP” and “DOWN” buttons simultaneously for approximately four seconds will restore the factory default value of 100 msec. Pressing the “SELECT” button will advance the setup mode to the High Limit setup if the pressure module is installed. With no pressure module, it will step to Cycle Delay Setup.

6.1.4 High Limit (Only With DCP Connected)

The High Limit Setup, available only with a pressure module installed, sets the pressure at which the cleaning cycle will begin. This value may be between zero and the pressure module full scale pressure. Normally, the High Limit should be above the Low Limit. If, however, the High Limit pressure is set below the Low Limit, the cleaning cycle will begin when the High Limit is exceeded and stop when the pressure falls below the High Limit. The Low Limit in this case will have no effect. Pressing “SELECT” will change the system to the Low Limit Setup mode.

6.1.5 Low Limit (Only With DCP Installed)

The operation of the Low Limit, available only with a pressure module installed, is identical to the High Limit except this value sets the pressure where the cleaning cycle will end. The upper setable value is the calibration pressure of the pressure module and the lower limit is zero. Pressing “SELECT” will change the system to the High Alarm Setup mode.

6.1.6 High Alarm (Only With DCP Installed)

The operation of the High Alarm Setup is identical to the High and Low Limit Setup and is only available when a pressure module is installed. The High Alarm default is 0. The upper setable value is the full scale pressure of the pressure module and the lower limit is zero. Pressing “SELECT” will change the system to the Low Alarm Setup mode.

6.1.7 Low Alarm (Only With DCP Installed)

The operation of the Low Alarm Setup is identical to the High and Low Limit Setup. The Low Alarm default is “0”. The upper setable value is the full scale pressure of the pressure module and the lower limit is zero. Pressing “SELECT” will change the system to the Cycle Delay Setup mode.

6.1.8 Cycle Delay (min)

The cycle delay inserts a delay time between the end of the last channel and the beginning of the first channel. This may be set to between zero and 255 minutes. The factory default is zero. Setting the value to zero will disable the delay. Pressing “SELECT” will change the system to the Down Time Cycles Setup mode.

6.1.9 Down Time Cycles (min)

The Down Time Cycles Setup will select a value between zero and 255 minutes. The factory default is one minute. Selecting zero will disable the operation. When the Down Time Cycles is activated by shorting the down time cycles input to the common terminal, the system will enter a forced cleaning mode for the programmed duration. NOTE: The cycle delay, if one is programmed, will not be inserted in the timing cycle. Pressing “SELECT” will change the system to the Auto Alarm Reset Setup mode, if a pressure module is installed, or to Process when no pressure module is available.

6.1.10 Auto Alarm Reset (sec) (Only With DCP Installed)

The Auto Alarm Reset Setup, available only when a pressure module is installed, allows the auto alarm reset time to be selected. This value may be set between zero and 255 seconds. The factory default value is five seconds. When the auto alarm reset is enabled by shorting the auto alarm reset terminal to a common terminal, the alarm will be reset after the pressure returns to the normal range and the timeout has expired. Pressing “SELECT” will change the system to Process mode.

6.2 MAINTENANCE SUPPORT AND DIAGNOSTICS

We have also included a number of features that will aid maintenance personnel in diagnosing problems or verifying that the system is operating.

7. STARTUP

1. Check all hardware to make sure it is tight, and all duct connections are sealed properly.

2. Check that filters are installed properly and that all lift rails are in up position.

3. Check that compressed air is on and regulated to 80 PSI (Recommend using a minimum of 1 in. diameter pipe to plumb the compressed air to the CMAXX).

4. Check that timer controller is on and properly programmed. See section 6 for programming instructions. The following settings work well in most applications.

- Last output: This number needs to match number of diaphragm valves on CMAXX.
- Time Off: 10 Seconds.
- Time On: 150 Milliseconds.
- High Limit: 3.0 INWC.
- Low Limit: 2 INWC.
- High Alarm: 6.0 INWC.
- Low Alarm: 0.0 INWC.
- Cycle Delay: 0 Minutes.
- Down Time Cycles: 5 Minutes.
- Auto Alarm Reset: 5 Seconds.

5. Set timer controller to continuous and verify that diaphragm valves pulse properly. You should hear a short pulse of air every 10 seconds in the dust collector.

6. Set timer controller to on demand for normal operation.

7. Verify that pressure ports on body of CMAXX are plumbed to timer controller.

8. If using a drum kit with slide gate, make sure slide gate is open and drum is connected and sealed. Hopper on CMAXX is not intended to store material in it.

9. Set fan outlet damper to 75% open.

10. Bump start fan and verify wheel is rotating in proper direction.

11. Start fan and allow to reach full operating speed. Check AMP draw. Fan should be operating below full load amp rating on motor name plate. If operating above full load amps, gradually close fan outlet damper until amps drop below full load amps value.

12. It is recommended that air readings are taken at startup and the fan outlet damper adjusted to match rated CFM of your dust collector. A dust collector operating above the design CFM will experience reduced filter life.

13. Imperial Systems, Inc. does offer a system startup service. Please contact your sales representative for current pricing for this service.



NOTICE

Operating dust collector above the design CFM will reduce filter life.

8. MAINTENANCE

8.1 FILTER HANDLING AND REPLACEMENT



NOTICE

Improper handling of a filter can ruin the filter

Filter Handling: Any rough handling of the paper media may result in a ruined filter. This includes bumping, dropping, denting, abrading, and/or sliding. Only handle filters by the top and/or bottom steel pan. Handling paper media can result in tearing the filter media, resulting in dust leaking through the media.

Filter Removal:

1. Lift cam lever and lock lever in extended position.



2. Using lever in extended position lower filter lift rail assembly. Repeat this on both sides of filter.



3. Once both lift rails are lowered, filter can then be removed from unit by pulling filter out by top pan. Handling filter by paper filter media can permanently damage filter.



4. Once all filters are removed from the row, new ones can be reinserted using the opposite procedure.

8.2 SAFETY VALVE MAINTENANCE

If a valve is discovered to be leaking it can be cleared by manually operating the valve to a pressure that will cause it to operate. Please note that valves with metal-to-metal seats are not absolutely “bubble tight” and they will allow a pressure loss over a period of time. If a valve has a leak it should be replaced, as leaks are self-propagating. Safety relief valves must be inspected and tested for operation periodically. It is the user's responsibility to determine the frequency of inspection as he is the only party familiar with the operating conditions and the relative hazards of an inoperative valve. It is recommended that at the very least each valve should be inspected semi-annually. Local ordinances may require more frequent inspection. Testing should be done by operating the valve either through the use of the operating device on the valve or if it doesn't have an operating device it should be connected to a source of pressure that will cause it to operate.

Valves that are capacity certified by the ASME are factory sealed. Tampering, altering, or adjustment of these valves voids any warranty and liability of the manufacturer. Repairs or resetting will be made only by the factory. Please contact the factory prior to returning any valve for service and securely package valves for shipping.

CMAXX SPARE PARTS

CMAXX CARTRIDGE FILTERS - DELTAMAXX Nanofiber		
Part #	Description	
460010.013	350 ft² Nanofiber Filter	
460010.002	350 ft² Fire Retardant Nanofiber Filter	
460010.042	350 ft²Fire Retardant Nanofiber Filter With Ground Wire	
460010.026	350 ft² Fire Retardant Nanofiber Filter IDA Certified	
460010.043	350 ft² Fire Retardant Nanofiber Filter IDA Certified With Ground Wire	
460010.016	275 ft² Fire Retardant Nanofiber Filter	
DELTAMAXX Spunbond Polyester		
Part #	Description	
460010.006	225 ft² Spunbond Polyester	
460010.017	225 ft² Spunbond Polyester With Conductive Grid	
460010.018	225 ft² Spunbond Polyester With PTFE Membrane	
460011	225 ft² Spunbond Polyester Hydrophobic and Oleophobic	
460010.157	225 ft² Spunbond Polyester Hydrophobic and Oleophobic High Temp	
460013	185 ft² Spunbond Polyester	
460015	185 ft² Spunbond Polyester Hydrophobic and Oleophobic	
460016	185 ft² Spunbond Polyester With PTFE Membrane	
460026	300 ft² Spunbond Polyester	
Overbags		
Part #	Description	
460022	50" Overbag	
After Filters		
Part #	Description	
460023	24 x 24x x2 Panel Pre-Filter	
460024	24 x 24 x 12 Panel Hepa Filter	
After Filter Gauge and Pneumatics		
Part #	Description	
430008.001	MagnaHelic Gauge 0-10" WC	
430008.005	Guage Mount	
460021	MagnaHelic Gauge Filter	
420016	100' 1/4" silver Poly Tubing	
660001.007	Differential Pressure Tubing Kit	
430008	2-1/2" Pressure Gauge,Header Tank	
Complete Timer Controller		
Part #	Description	Compatability
430042	6 Channel Timer Control Nema 4x with DP Module	CM002 - CM012
430042.001	10 Channel Timer Control Nema 4x with DP Module	Up to a CM020
430042.010	22 Channel Timer Control Nema 4x with DP Module	Up to a CM048 larger sizes consult Imperial
Replacement Timer Boards		
Part #	Description	Compatability
430042.014	6 Channel Timer Board with pressure module	CM002 - CM012
Contact Factory	10 Channel Timer Board with pressure module	Up to a CM020
Contact Factory	22 Channel Timer Board with pressure module	Up to a CM048 larger sizes consult Imperial
Contact Factory	DP Module DCP100 10 W.G.	All that have these Timer Boards

Hardware		
Part #	Description	
Contact Factory	Positive Pressure Drum Kit w/ Manual Slide Gate	
430054	55 Gallon Drum w/Lid	
Contact Factory	Drum Cover Lid w/ 10" Opening	
420041	Hose Clamp for 10" Flex Hose	
430055.002	Flex Hose Med Duty Clear- 10" - Per Foot	
Contact Factory	10" Manual Slide Gate	
430054.002	Drum Ring / Lever Lock	
Diaphram Valves		
Part #	Description	Compatability
430035.001	1" Goyen Diaphragm Valve	CM002-006
430035.002	1.5" Goyen Diaphragm Valve	CM008 and up
430106.001	1" Goyen Diaphragm Valve Repair Kit Standard	CM002-006
430106.014	1" Goyen Diaphragm Valve Repair Kit Viton high temp	CM002-006
430106	1.5" Goyen Diaphragm Valve Repair Kit Standard	CM008 and up
430106.013	1.5" Goyen Diaphragm Valve	CM008 and up
430106.001	1.5" Goyen Diaphragm Valve Repair Kit Standard high temp	CM008 and up
430035.006	1" Autel Diaphragm Valve	CM002-006
430035.007	1.5" Autel Diaphragm Valve	CM008 and up
430106.009	1" Autel Diaphragm Valve Repair Kit Standard	CM002-006
430106.011	1" Autel Diaphragm Valve Repair Kit Viton high temp	CM002-006
430106.010	1.5" Autel Diaphragm Valve Repair Kit Standard	CM008 and up
430106.012	1.5" Autel Diaphragm Valve Repair Kit Standard high temp	CM008 and up
Pilot Solenoid Valve		
Part #	Description	
430106.003	Standard replacement Pilot Solenoid Valve	
Contact Factory	Viton high temp replacement Pilot Solenoid Valve	
430106.002	Standard Pilot Solenoid Valve Repair Kit	
Contact Factory	Viton high temp Pilot Solenoid Valve Repair Kit	
Dust Collector Hardware		
Part #	Description	
430057	Rope Caulk 100' Roll	
996013.010	Imperial Grey CMAXX Touch Up Paint (Spray Can)	
Contact Factory	Imperial Blue Header Tank Touch Up Paint (Spray Can)	
510019	Cartridge Removal Tool 3 Deep, 4-8ft	
510019	Cartridge Removal Tool 4 Deep, 4-8ft	
510020	Cartridge Removal Tool 6 Deep, 6-12ft	
Explosion Vents and Fire Protection		
Part #	Description	
430023.022	Explosion Vent, 36 x 44	
430023.010	Burst Indicator lead Cable	
430048.001	Sprinkler Vertical Mounted 215 Degrees F	
430048	Sprinkler Side Wall Mounted 215 Degrees F	
Additoinal Optional Items		
Part #	Description	Compatability
Contact Factory	Particulate Monitor to detect brocken filters	Multiple Options
Contact Factory	Dust Level Sensor	Multiple Options

9. TROUBLESHOOTING

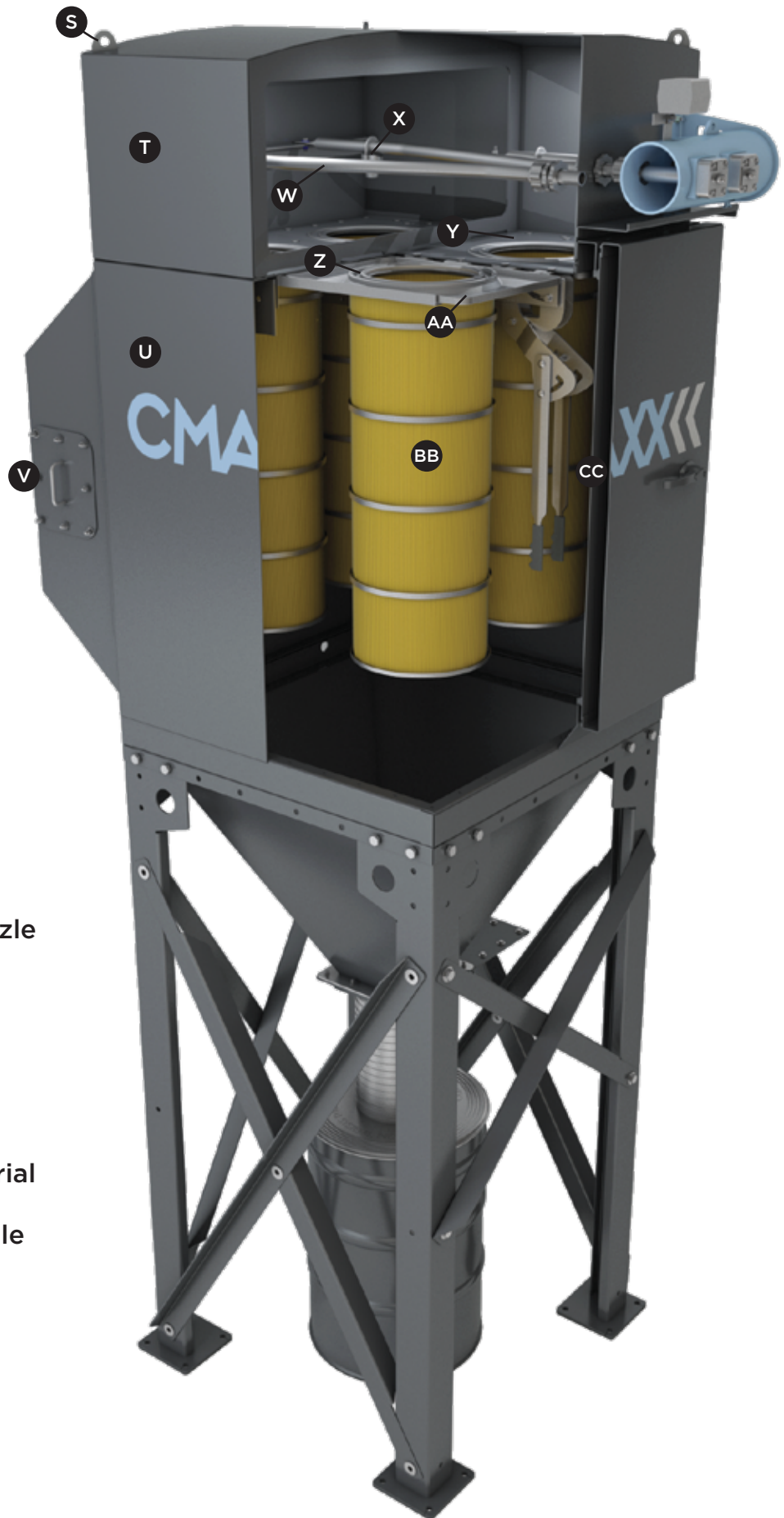
PROBLEM	PROBABLE CAUSE	SOLUTION
Blower fan motor does not start	Improper motor wire size.	Rewire using the correct wire gauges as specified by national and local codes.
	Motor not wired properly.	See motor manufacturers wiring diagram. Check and correct motor wiring for the supply voltage present. Follow wiring diagram and the National Electric Code.
	Motor not wired for available voltage.	Correct the wiring for the supply voltage.
	Input circuit down.	Check power supply to motor circuit on all leads.
	Electrical supply circuit down	Check the power supply circuit for proper voltage. Check for any fuse or circuit breaker fault. Replace as necessary.
Blower fan motor starts, but does not stay running.	Incorrect motor-starter installed.	Check for the proper motor starter and replace if necessary.
	Blower fan damper control not adjusted properly.	Check airflow in duct. adjust damper control until proper airflow is achieved and the blower motor's amp draw is within the manufacturers rated amps.
	Electrical circuit overload.	Check that power supply circuit has sufficient power to run all the equipment.
Clean air outlet discharging dust.	Filter cartridges not installed properly.	See filter installation.
	Filter cartridge damage, dents in the end caps, gasket damage or holes in pleated media.	Replace filters as necessary. Use only genuine DeltaMAXX replacement filters.
Insufficient airflow.	Fan rotation backwards.	Compare rotation to the blower manufacturers rotation arrow.
	Access doors open or not closed tight.	Check that all access doors are in place and secured. Check that the hopper discharge opening is sealed and the optional attachments are installed correctly.
	Exhaust fan exhaust area restricted.	Check fan exhaust areafor obstructions remove material or debris. Adjust fan outlet damper, if equipped.
	Filter cartridges need replacement.	Replace filters as necessary. Use only genuine Imperial DeltaMAXX replacement filters.
	Lack of Compressed air.	Check that a minimum of 75-psig is available. See compressed air installation.
	Pulse cleaning not energized.	Use a voltmeter to check supply voltage to the timer board. Check and replace the fuse on the timer board if necessary.
	Dust storage area overflowed or plugged	Clean out dust storage area.
	Pulse valves leaking compressed air.	Lock out all electrical power to the unit and bleed the compressed air supply. Check for debris, valve wear, or diaphragm failure by removing the diaphragm cover on the pulse valves. Check for solenoid leaks or damage. Check for leaks in the tubing from the pulse valve to the solenoid valves. Replace as necessary.
	Solid state timer failure.	Using a voltmeter, check supply voltage to the timer board. Check and replace the fuse on the timer board if necessary. If the fuse is good and input power is present, but output voltage to the solenoid valves is not, rplace the timer board.

PROBLEM	PROBABLE CAUSE	SOLUTION
Insufficient airflow.	Display on Delta P dosent return to zero when at rest.	Recalibrate DCP pressure module with pressure tubing attached as described in timer controller installation.
On Demand pressure cleaning does not start.	High setpoint not adjusted for system conditions.	Check tubing for kinks, breaks, contamination, or loose connections.
	Pressure tubing disconnected or plugged.	Remove jumper wire on solid state timer board bypass terminal.
Pulse Cleaning never stops.	Bypass terminals on the timer board jumpered.	Remove jumper wire on solid state timer board bypass terminal.
	High or low setpoint not adjusted for system conditions.	Adjust setpoint to current conditions.
	Pressure tubing dissnected or plugged.	Check tubing for kinks, breaks, contamination, or loose connections.
Alarm light is on	Alarm setpoint too low.	Adjust to a higher value.
	Excess pressure drop.	Check cleaning system and compressed air supply. Replace filter cartridges if filters do not clean down
	Pressure tubing dissnected or plugged.	Check tubing for kinks, breaks, contamination, or loose connections.
Cleaning output lights flash but system is not functioning.	Improper wiring.	Check wiring between the timer control board and the solenoid valve coils.
	Defective solenoids.	Check all solenoid coils for proper operation.
	Timer board not powered.	Check power light on timer board's LED display. If not illuminated, check the fuse on the timer board. Replace as necessary.
	Timer board defective.	If LED is illuminated, observe the output display. Install a temporary jumper across the man override terminal to the COM terminal. Output LED's should flash in sequence. Check output using a multimeter measure from SOL COM to a solenoid output. The needle will deflect when the LED flashes for that output if voltage is present at output terminals during flash, replace board if necessary.
Low Alarm light flashing	Not set to zero during setup	Set Low Alarm setting to 0.0 INWC then hit reset to enable it.

10. QUICK REFERENCE GUIDE

- A. Silencer
- B. Fan
- C. Solenoid Enclosure
- D. Pressure Relief Valve
- E. Pressure Gauge
- F. Diaphragm Valve
- G. Compressed Air Fitting
- H. Differential Low Pressure Port
- I. Differential High Pressure Port
- J. Filter Removal Tool
- K. Door Handle
- L. Hopper
- M. Manual Slide Gate
- N. Flex Hose
- O. Collection Drum Kit
- P. Header Tank
- Q. Serial Tag
- R. Dirty Air Inlet

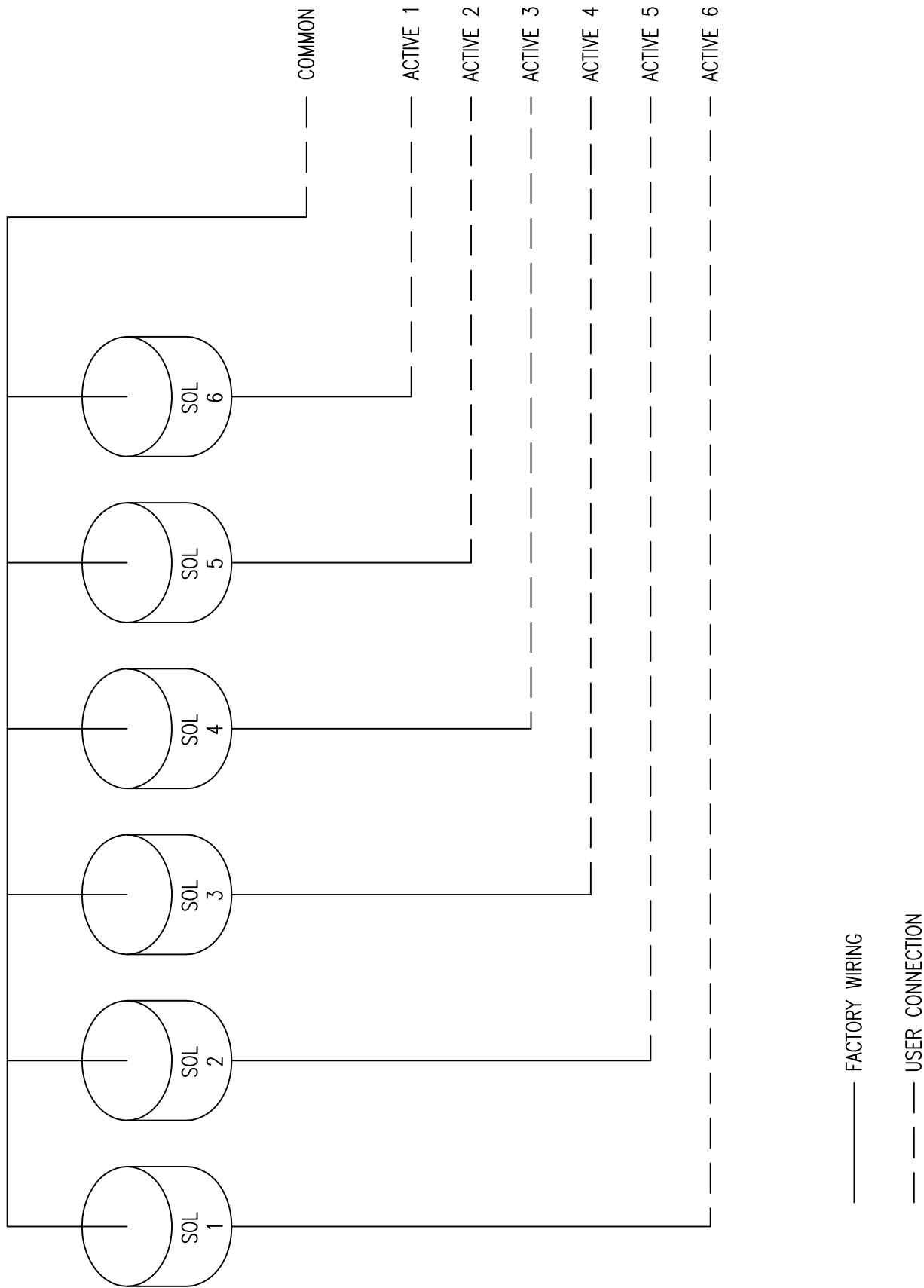


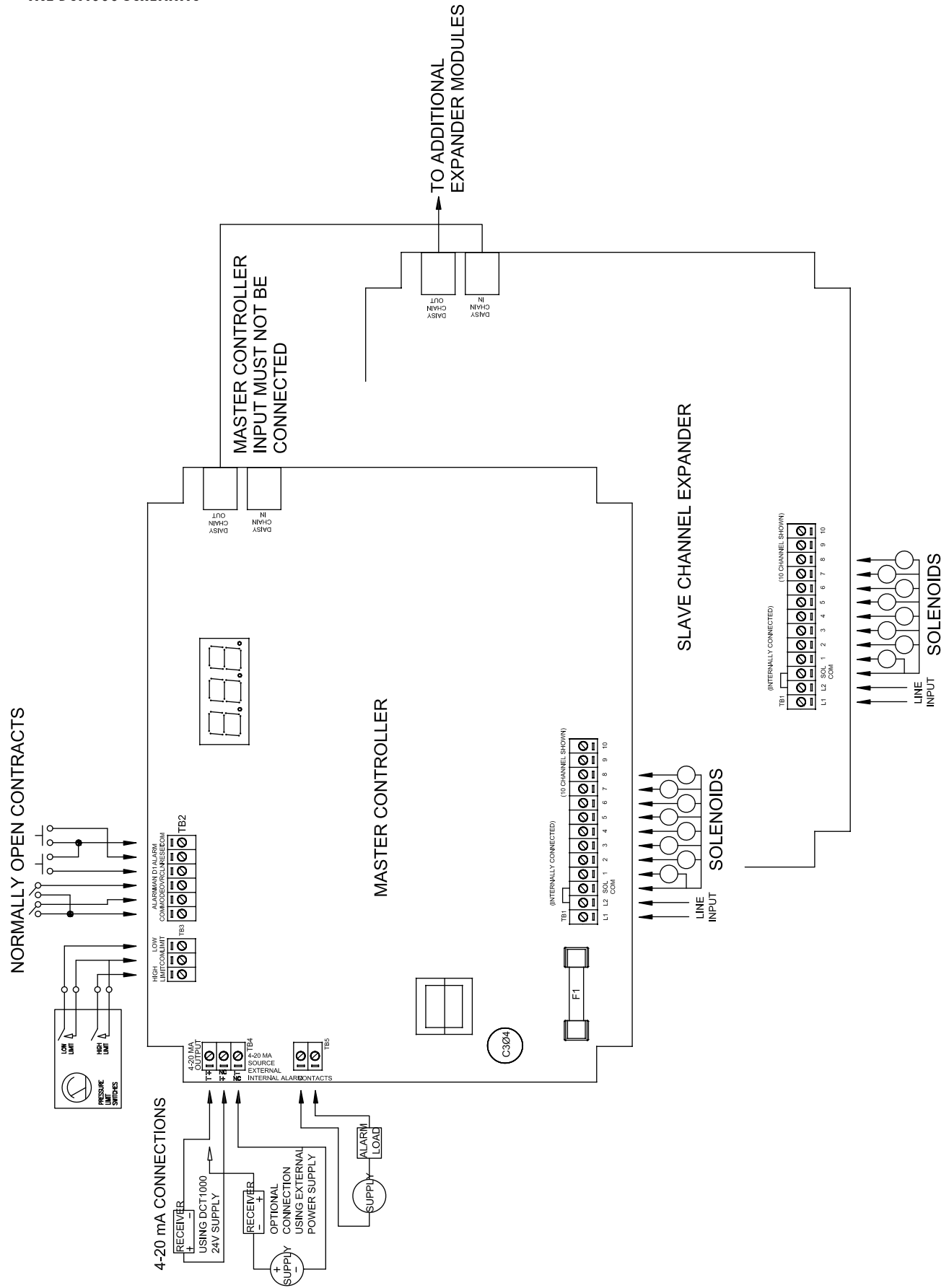


- S. Lifting Lug
- T. Clean Air Plenum
- U. Dirty Air Plenum
- V. Access Door
- W. Filter Pulse Pipe
- X. Filter Cleaning Nozzle
- Y. Tube Sheet
- Z. Filter Gasket
- AA. Filter Pan
- BB. Pleated Filter Material
- CC. Filter Lift Rail Handle

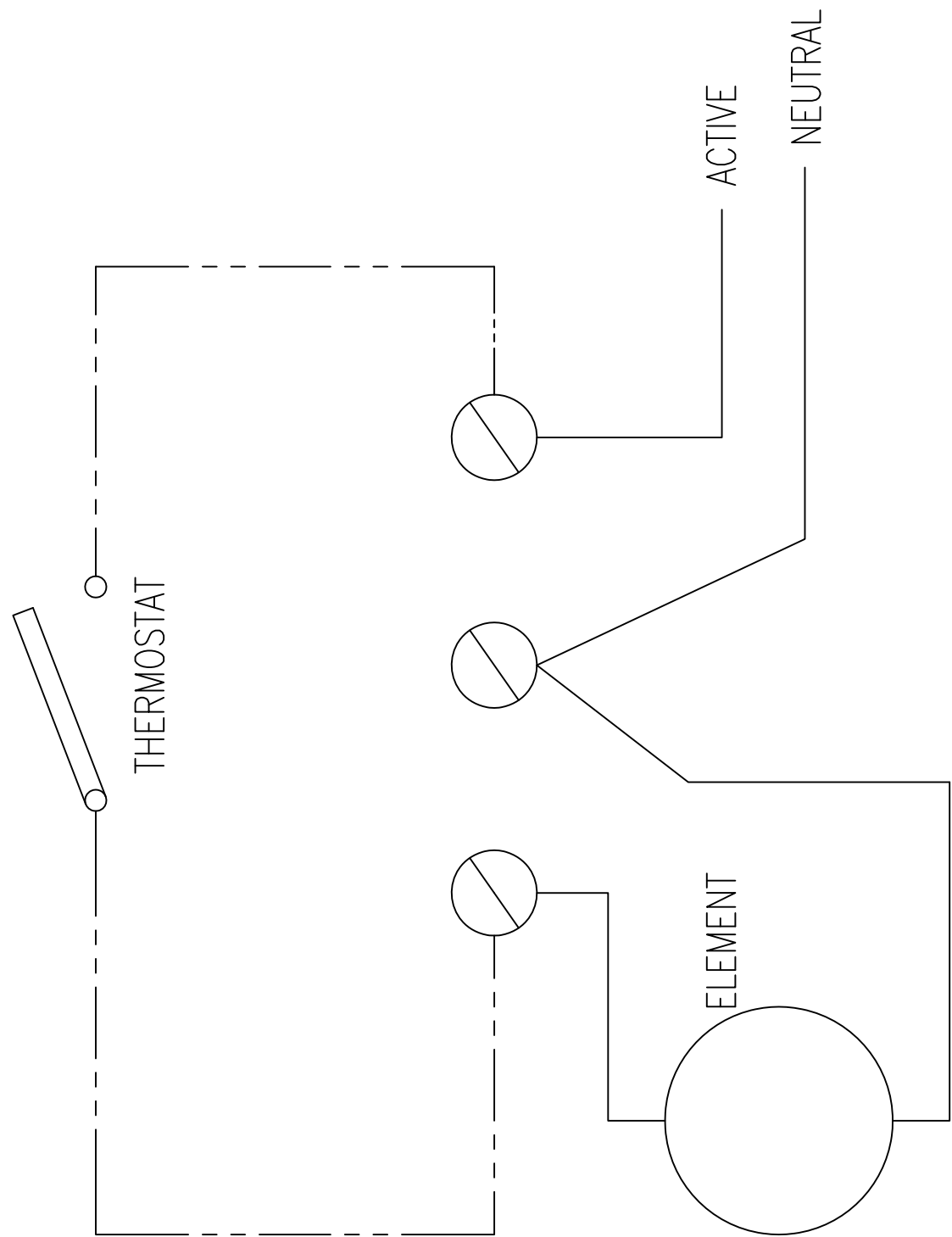
11. ELECTRICAL

11.1 SOLENOID SCHEMATIC

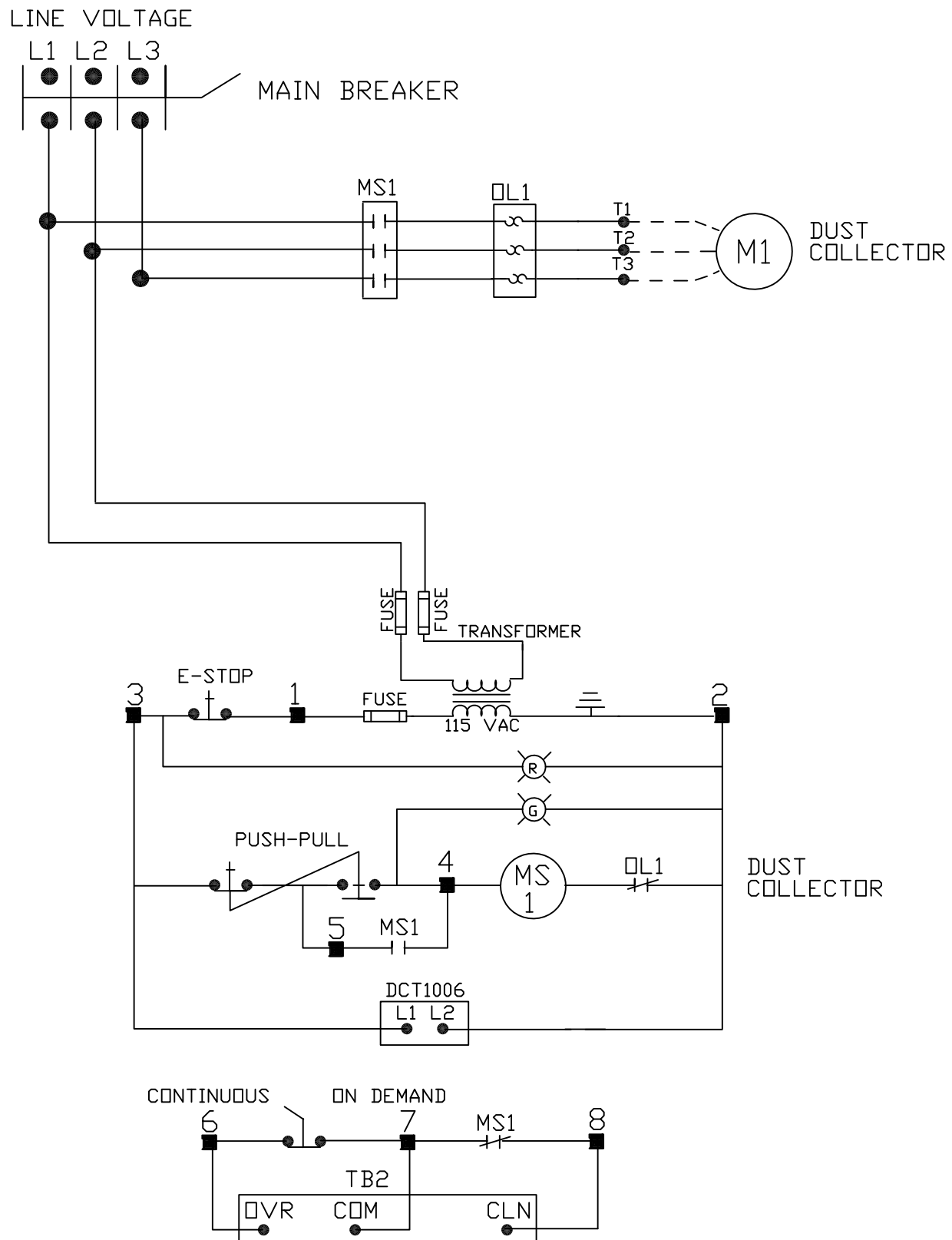




11.3 SOLENOID HEATER SCHEMATIC (OPTIONAL)



11.4 INTEGRATED CONTROLS WIRING DIAGRAM





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