

**TITAN**

**MADE IN AMERICA  
SINCE 1953**

# **Operating Instructions For CDC5000 thru CDC22000 Cartridge Dust Collector**



Titan Abrasive

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**TITAN**

**\*\* Order Parts Online \*\***

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## **Operating Instructions For Cartridge Dust Collectors**



**CDC5000 – CDC11000**



**CDC12000 – CDC22000**

**Titan Abrasive**

**PO Box 750**

**Montgomeryville, PA 18936**



### **APPLICATION OF DUST CONTROL EQUIPMENT:**

- Special care must be taken in the use of dust collection equipment when combustible equipment, such as buffing lint paper, wood dust, aluminum, and magnesium are present. These materials may present a fire or explosion hazard. A user of Titan equipment should consult and must comply with all National and Local Fire codes and or other appropriate codes when determining the location and operation of dust collection equipment.
- Under no conditions should anyone, including the machine operator, be allowed to put burning objects including cigarettes into the hood or ducting of any dust control system.
- Avoid mixing combustible materials with dust generated from grinding of ferrous metals due to the potential fire hazard caused by sparks being pulled into the dust collections equipment.
- When collection equipment is used to collect flammable or explosive dusts, the dust collection equipment should be located outside the building. Also, an installer of fire extinguishing equipment, familiar with this type of fire hazard and local fire codes, should be consulted for recommendations and installation of the proper fire extinguishing equipment. Titan Dust Collectors do NOT contain fire extinguishing equipment.
- Explosion relief vents are required on some applications. Consult with an insurance underwriter or a NFPA Manual to determine proper vent sizing requirements. Vents installed on dust collection equipment within a building must relieve to the outside of the building to minimize chances of a secondary explosion. Consult the proper authority to determine proper method of venting the dust collection equipment. Titan Dust Collection equipment does NOT contain explosion relief vents, except on special order.

## **IMPORTANT WARNING**

**SILICA SAND IS NOT TO BE USED IN ANY TITAN BLAST EQUIPMENT.**

### **Safety Precautions**



#### **WARNING**



Read this manual completely before installing and operating the Titan Cartridge Dust Collector.

Never attempt to service your Titan Cartridge Dust Collector with Room or Collector running.

For maximum safety, never install, remove or modify any part of the main electrical and air supply of the Titan Cartridge Dust Collector (including replacement of cartridges) without first shutting off or disconnecting both.

Dust removal from Cartridge Collector Hopper by slide gate should only be attempted when room and collector are off (not in service).

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## Introduction

### 1.1 Contents of this Manual

This manual covers the operation and maintenance of the Titan Abrasive Cartridge Dust Collector.

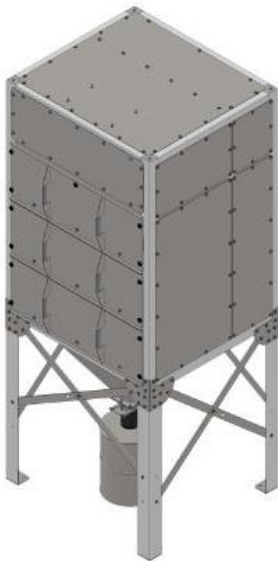
- CDC5000 thru CDC18000

Read this manual carefully and keep it handy for future reference.

The Titan cartridge filter dust collector is used for the collection of airborne dust and particulate. The collector provides highly efficient, continuous, on-line dust collection.

**The Titan filter Cartridges are the heart of the Cartridge Dust Collector. These filter Cartridges help ensure that only clean air is returned to the plant environment.**

Order parts online 24/7 at [www.titanabrasive.com](http://www.titanabrasive.com). Technical and field support is always available from Titan Abrasive. If you have any questions regarding the operation or maintenance of your Titan Abrasive equipment please contact Titan at (215) 310-5055 or email: [support@titanabrasive.com](mailto:support@titanabrasive.com)



CDC5000 (shown)

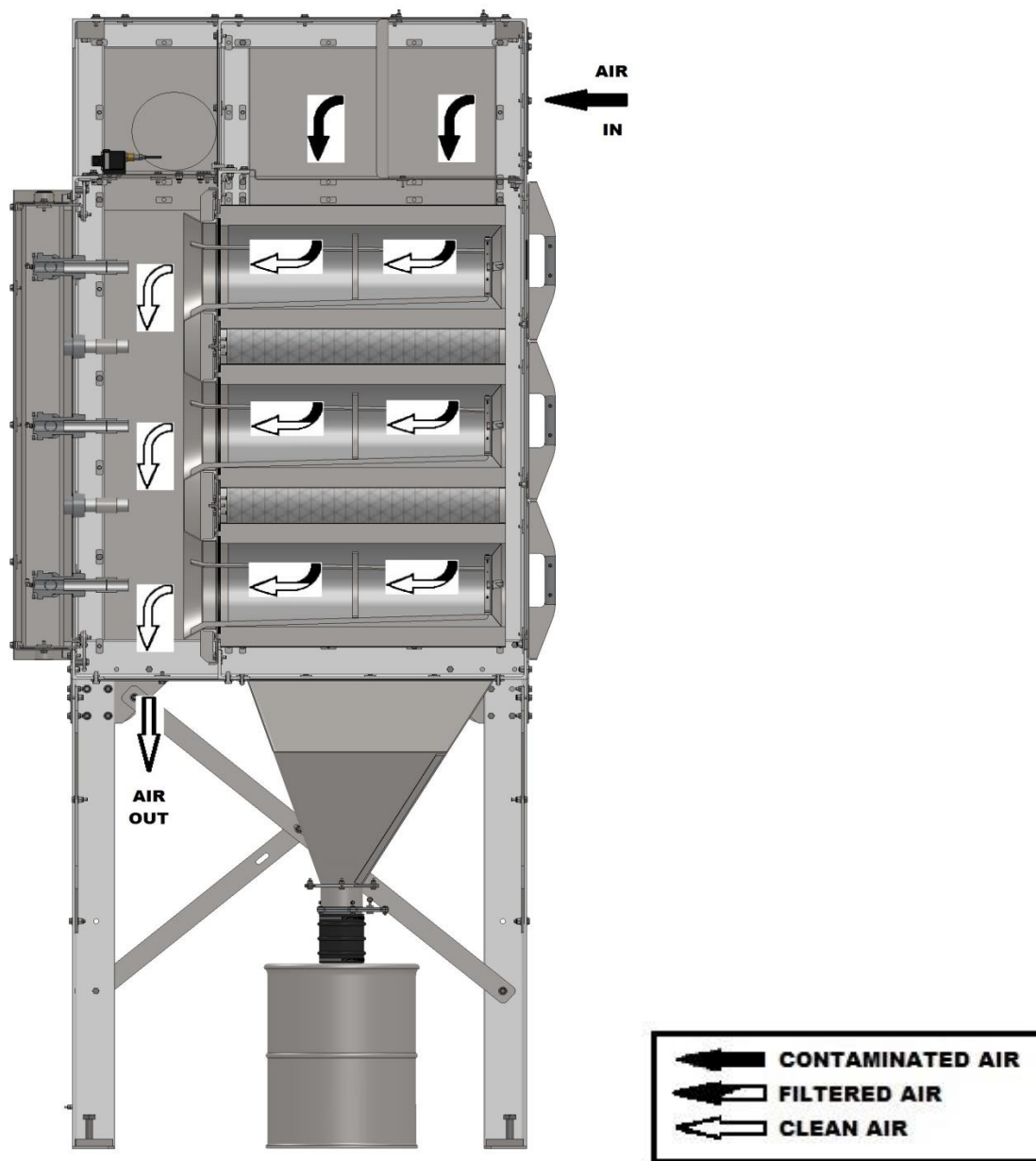


Titan – Filter Cartridge

### Cartridge Dust collector

## 1.2 Normal Operation

During normal operation, contaminated air enters the dust collector through the front inlet and through the filter cartridges. Dust is collected on the outside surface of the filter cartridges. The clean, filtered air flows through the center of the filter cartridges into the clean air plenum, where it exits through the bottom outlet and to the remote blower. (See figure 1)



**Figure 1**

### **1.3 Cartridge Filter Cleaning**

Filter Cartridges are cleaned automatically and sequentially. The Filter Cartridge pulse cleaning system, cleans one Filter Cartridge at a time.

The Pulse cleaning system is controlled by a standard solid state timer or an optional (energy efficient) Photohelic Gauge Package (see Section 3 for more information on Photohelic Gauge Package). The controls signal the individual pulse valves pneumatically, which send a pulse of compressed air through each cartridge filter. This clean air side pulse removes dust from the dirty side of each cartridge. The dust collects in the hopper, and when the slide gate is opened the dust falls into the dust drum.

### **1.4 Additional Information**

**1.5    NOTES:**

Cartridge Dust Collector

2.1 Description

Cartridge Dust Collector is illustrated in *Figure 2* and the parts list is provided in *Table 2*. Reference numbers in *Figure 2* correspond to the numbered items in *Table 2*.

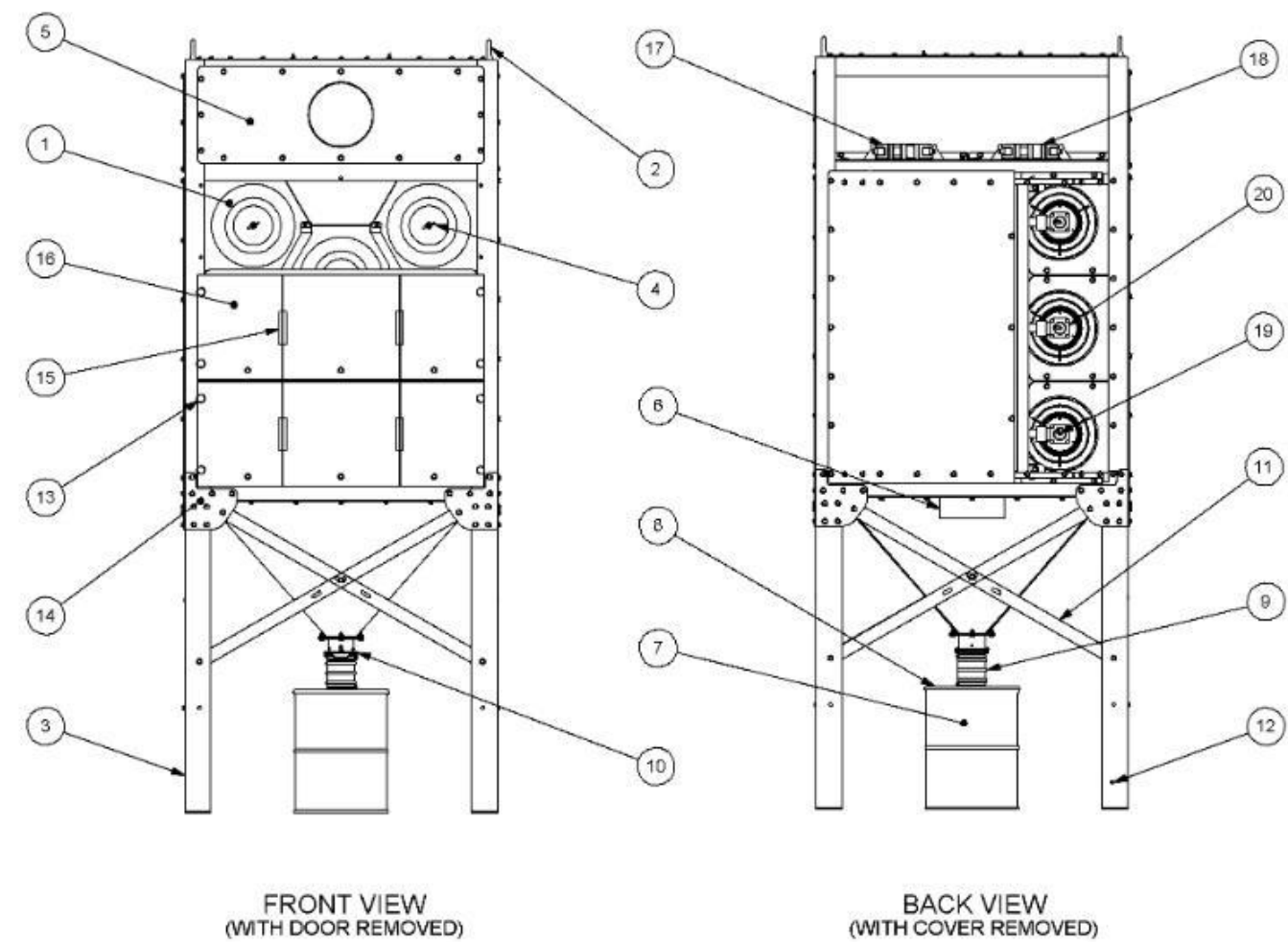


Figure 2

**Table 2 - Part List for the TITAN Cartridge Dust Collector**

| <b>Ref.</b> | <b>Part Number</b>     | <b>Description</b>                                                 |
|-------------|------------------------|--------------------------------------------------------------------|
| 1           | DCF-NFB                | TITAN CDC FILTER CARTRIDGE                                         |
| 2           | LVL-CDC                | LEVELING BOLT KIT (for 4 legs)                                     |
| 3           | L10-CDC<br>L55-CDC     | LEG ASSEMBLY for Drum 10 Gallon<br>LEG ASSEMBLY for Drum 55 Gallon |
| 4           | WNK-CDC                | WING NUT KIT (qty. 8)                                              |
| 5           | IP10-CDC               | INLET PLATE                                                        |
| 6           | OP10-CDC               | OUTLET PLATE                                                       |
| 7           | DRUM-10                | DRUM 10 GALLON                                                     |
| 8           | LID-10                 | LID for Drum 10 Gallon                                             |
| 9           | HASD-CDC               | HOSE KIT for Slide Gate to Drum                                    |
| 10          | SG4-CDC                | SLIDE GATE ASSEMBLY                                                |
| 11          | CB-CDC                 | CROSS BAR                                                          |
| 12          | GND-CDC                | GROUNDING ASSEMBLY                                                 |
| 13          | DRKIT-CDC              | DOOR KNOB & GASKET KIT                                             |
| 14          | HRDKIT-CDC             | COLLECTOR HARDWARE KIT                                             |
| 15          | DH-CDC                 | DOOR HANDLE (one complete handle)                                  |
| 16          | LDOOR-CDC<br>TDOOR-CDC | LOWER DOOR<br>TOP DOOR                                             |
| 17          | CNTM-CDC               | BLOW DOWN CONTROL - Master                                         |
| 18          | CNTS-CDC               | BLOW DOWN CONTROL – Slave                                          |
| 19          | TCK-CDC                | TUBING & CONNECTOR KIT                                             |
| 20          | PV-1                   | PULSE VALVE                                                        |

**Note:** Recommended Spare Parts (Section 5)

Individual Components Parts (Section 6)

## **2.2 Principles of Operation**

Titan Cartridge Dust Collectors start operating when a remote Blower Fan starts rotation – the resulting air flow pulls air/dust out of the Room, thru Duct Work and into the Dirty Side of Collector thru the collector Inlet. Air moves thru filter Media – depositing Dust particles on Dirty Side of Cartridges. The now Clean air moves thru the Clean Side of the Collector and Exits thru the Collector Outlet, then continues thru the Outlet Duct Work and the clean air finally exits the system thru the Blower Fan.

A Reverse Pulse Blow down is controlled by a solid state timer assembly to maintain proper Air Flow through the system. When Blow down occurs – Dust Particles are separated from the Dirty Side of the Cartridges and fall into the Hopper, where a Slide Gate can be manually actuated to collect the Dust in the Dust Drum.

## **2.3 Set-Up**

### **Inspection**

The Titan Collector is normally shipped by flat bed truck and should be checked for any damage that may have occurred en route. Any damage should be noted and the carrier notified immediately.

### **Ship Loose Items**

Items shipped loose with the Titan Cartridge Dust Collector include:

- Hopper
- Legs and Crossbracing
- Drum / Lid & Hose Assembly
- Blower (Fan, Wheel, Housing, & Motor)
- Collector Hardware
- Cartridges/Wingnuts

### **Equipment/Tools Required**

The following is a list of typical equipment/tools required to install and assemble your Titan Cartridge Dust Collector.

- Crane/Lift Truck
- Slings/Spreader Bars/Clevis Pins
- Drift Pins
- Screwdrivers
- Pipe Wrenches
- Socket Wrenches
- Large Crescent Wrench
- Drill and Drill Bits
- Pipe Sealant
- Safety Glasses and Hard Hat

### **Pre-Installation**

The dust collector is usually mounted on a reinforced concrete foundation. However, roof mounting is also possible. When calculating for foundation or roof mounting, the weight of the dust collector plus the material being collected, and all auxiliary equipment must be considered together with wind, seismic, and other live loads. See the Specification Sheet (Section 8) for the dust collector weight.



**Location must be clear of all obstructions such as utility lines or roof overhang (see Specification Sheet). A Crane or Lift Truck must be used to move the collector into position.**

To avoid delay, install foundation in the proper location. Pay particular attention to the anchor bolt location. Anchor bolts must extend at least 1–3/4" above foundation – see Section 6.6. The collector should be located with consideration for emptying hopper/drum area, filter replacement, shortest runs of inlet and outlet duct work, electrical and compressed air connections, and convenience of maintenance. In case of hazardous dust collection, consult with local authorities for the proper location of the dust collector.

### **Assembly of Standard Equipment**

#### **NOTE**

**A crane or lift truck is recommended for unloading, assembly, and installation of the dust collector.**



- **Distribute loads equally.**
- **Use clevises, not hooks on lifting sling.**
- **Use spreader bars on lifting sling.**

## **Assembly of Standard Equipment Cont.**

Remove all crating and shrink wrap from the unit. Remove all miscellaneous connecting hardware (Screws, Plates, etc.). Check the parts received against the packing slips. If there are parts missing, the carrier and Titan should be notified immediately.

### **Collector Door Removal**

1. Removal procedure for Collector Doors is as follows – Always start from the **top** down - First, remove the upper door (note – this is the only door with top center hole and knob). Second, remove the middle door's (CDC5000-8000 & CDC12000-16000 have 1 – per section & CDC9000-11000 & CDC1700-22000 have 2 – per section (note – these doors have smaller gap between the inside shed plate and the inside of the door plate – and have “no” hole or knob at top center). Third, remove the lower door (note – this door has a larger gap between the inside shed plate and the inside of the door panel – 3/8”- also has one continuous spacer plate inside the opening). Safely store all doors, knobs and washers for later installation. For installation of doors see section 2.4.

### **Leg Installation**

The position of the legs and crossbracing for each collector size are shown in Figure 3.

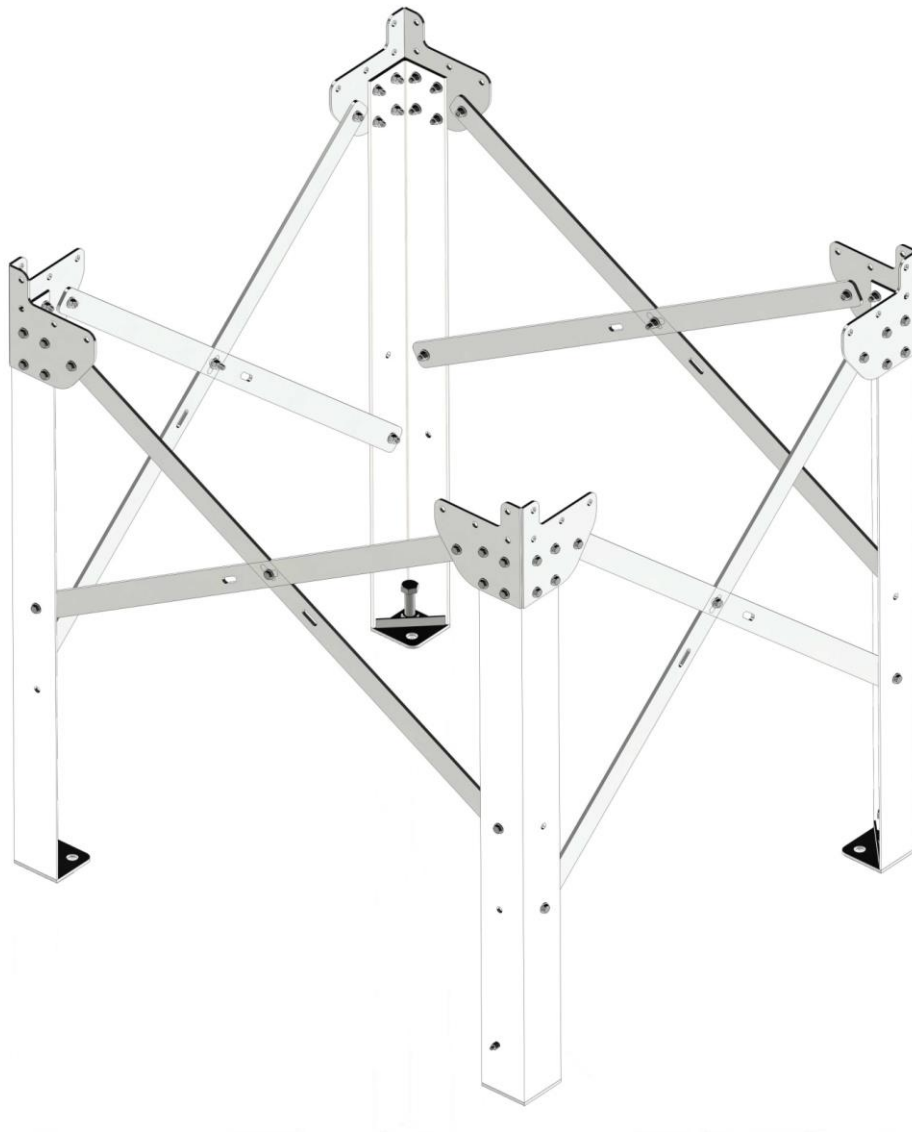
1. Stand the leg set up and position crossbar inside plates as shown in Figure 3.
2. Lift the collector (frame) assembly into position over the leg set and lower into position carefully.
3. Use a set of drift pins to align the holes in the collector and legs, and attach the legs with the 3/8” bolts, washers and nuts. **Do not tighten hardware at this time.**
4. Use a set of drift pins to align the holes in the cross braces to the rear side of the leg set. Attach the cross braces with 3/8” bolts, washers and nuts. **Do not tighten hardware at this time.**
5. Recheck the position of the leg sets and crossbracing against Figure 3.
6. Lift the assembled collector onto the foundation anchor bolts. Fasten each leg pad to the anchor bolts with flat washers, lock washers, and nuts (provided by customer). **Do not tighten hardware at this time.**
7. Level the collector while it is still being supported by the crane. Tighten all hardware on legs, crossbracing, and foundation anchors.

### **Leg Installation Cont.**

8. Before disconnecting the crane, recheck all of the hardware to make sure it is securely tightened. After checking hardware, disconnect the collector from the crane (refer back to Figure 2 for Typical Installation).



**Make sure all leg bolts are securely tightened.**



**Figure 3**

### **Hopper Installation**

1. Stand the hopper up on the discharge end (hopper outlet / Slide Gate).
2. Lift the hopper up into bolting position. Position the hopper under collector-inside leg assembly. Start with corner bolts and washers - only thread bolts in half way until all hopper bolts are started.
3. A set of drift pins will be helpful in pre-locating the holes for assembly.
4. Then install bolts and washers – all 4 sides. Tighten all hardware securely

### **Inlet and Outlet Plate Installation**

1. On CDC5000-8000 and CDC9000-11000 models the Inlet Plate is Factory Installed, On CDC12000-CDC16000 and CDC17000-22000 the Inlet Plate is shipped separate. (Install Inlet Plate across the upper front of collector – with the angled section facing upward – install outer upper corner bolts and washers first and check and adjust as other hardware is installed). Install Blast Plate to bottom of round flanged area and install duct adapter to top of round flanged area.
2. On all models the Outlet Plate(s) need to be installed, on CDC5000-8000 and CDC9000-11000 models – a single plate is bolted to the bottom of the frame in back of the hopper, with the hose cuff facing down. On CDC12000-16000 and CDC17000-22000 models a full flow duct section is bolted to the bottom of the frame in back of the hopper (for this arrangement the back leg braces are removed and the full flow duct section is bolted to the legs using the same holes).

## **Blower Fan Mounting Instruction**

The Blower Assembly is designed to mount “separately” near your cartridges dust collector. Position the Blower Assembly in a configuration / position that requires the shortest duct work run with the least amount of 90 degree turns. The Blower Assembly is specified /sized when placing the order.

A Motor Starter is **required** for Blower Assembly and can be sourced separately or purchased from TITAN as an option. See Section 3.1.

A Damper / Butterfly Valve is recommended – but not supplied.

### **NOTE**

#### **When installing your blower:**

- **Use proper equipment and safety guidelines when lifting and installing.**
- **Rotate the fan wheel before and after installation of the Blower Assembly to assure proper clearance.**
- **Wiring of this motor to its source must be done by a qualified electrician – Information on motor tag.**
- **Rotation of the fan wheel is correct, check sticker.**
- **If you experience difficulty when installing your blower, contact TITAN for assistance.**

## **Electrical Installation**

### **NOTE**

**All electrical work must be done by a qualified electrician according to local codes.**

## **Blower Motor**

If supplied, mount the motor starter box near the blower motor at a location convenient for accessibility and maintenance.

Make proper connections to fan motor, motor starter box, and main electrical enclosure. All electrical apparatus should be properly sized for the required voltage.

Start fan motor and check for proper rotation. Fan should rotate in the direction shown on the rotation sticker on the fan housing. Proper fan rotation is extremely important. Even if the fan is running in the wrong direction, it will deliver approximately 40% of its rated air volume. Lock out all electrical input power and interchange any two wire leads (3 phase only) at either the motor or optional motor starter to correct fan rotation.



### **CAUTION**



**Disconnect all electrical power before servicing any electrical component.**

## **Solid State Timer**

The timer cycle is continuous unless a Photohelic pressure switch is installed and wired correctly. Wiring for the solid state control timer to plant power is by customer unless TITAN installation is purchased. See Figure below for installation and wiring location for the solid state control timer and Section 3.3 for installation and wiring location for the Photohelic pressure switch.

Input Operating Voltage: 90-240 VAC/50-60 Hz/1ph

An optional: 24 VAC/VDC unit is available – check with TITAN for pricing.

### **NOTE**

**Do not adjust ON time unless the proper test equipment is used.  
Too much or too little ON time can cause shortened cartridge life.  
Consult TITAN before any changes are made to factory settings.**

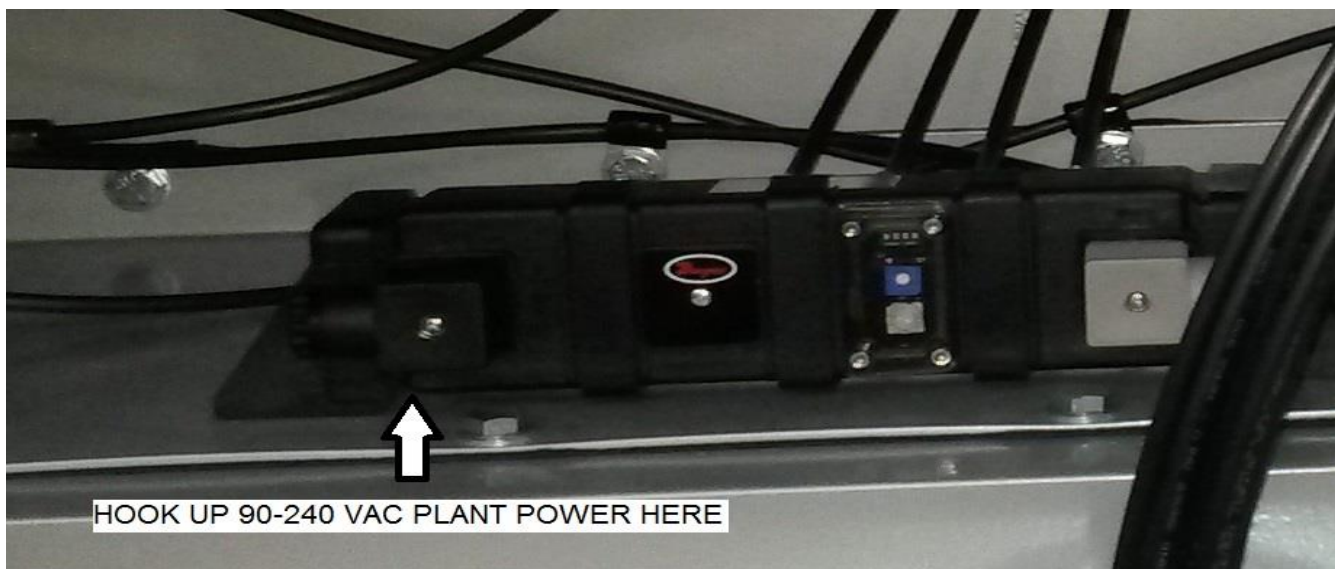
On time: Adjustable 150 msec. to 700 msec, **factory set at 300 seconds.**

Off time: Adjustable 4 to 210 seconds, **factory set at 210 seconds.**

Operating Temperature Range: 14° to 140° F (-10° to 60° C).

Power Consumption: 25 VA.

Enclosure Rating: NEMA 4X (IP65)



## **Installation – Compressed Air Supply**

### **NOTE**

- **It is important that the compressed air supply be both oil and moisture free. Contamination in the compressed air used to clean cartridges will result in poor cleaning or cleaning valve failure and poor collector performance.**
- **Purge compressed air lines to remove debris before connecting to the dust collector compressed air manifold.**



### **CAUTION**



**Shut off and bleed off compressed air supply before doing any service work.**

A 1" N.P.T. supply is required and a coupling is supplied top and bottom on manifold. Connect the compressed air supply line to one end and plug the other. From factory the manifold is set up with a plug top and ready to connect bottom, if top connect is required, just move plug to bottom and connect air supply line to top. Use thread-sealing tape or pipe sealant on all compressed air connections. An air shut-off valve, relieving-type regulator with gauge, filter, and automatic condensate valve (supplied by customer) should be installed in the compressed air supply line. Locate these components for convenient service, start-up and shutdown of the dust collector.

Be sure that all compressed air components are adequately sized to meet the maximum system requirements of 1.1 scf per pulse at 90 psig supply pressure.

## **2.4 Operation**

### **Pre Start-Up Check**



#### **CAUTION**



**Check to be sure the blower fan exhaust is free of debris before starting.**

### **Cartridge Installation / Check**

#### **NOTE**

- **The cartridge gasket end of all the cartridges must be inserted first, facing inward toward the clean air section or leakage will occur.**
- **Wing Nuts must be securely tightened. Lack of compression of the cartridge gaskets can cause leakage.**

- 1.1. Slide the new Titan cartridge onto each suspension yoke.
- 1.2. Install the cartridge by rotating the Wing Nut clockwise onto the suspension yoke threads. Tighten securely by hand.

### **Collector Door Installation**

2. Installation procedure for Collector Doors is as follows – Always install doors from the **bottom** up - First, install lower door (this door has a larger gap between the inside shed plate and the inside of the door panel – 3/8" - also has one continuous spacer plate inside the opening). Second, install the middle door's (CDC5000-8000 & CDC12000-16000 have 1 – per section & CDC9000-11000 & CDC1700-22000 have 2 – per section (smaller gap between the inside shed plate and the inside of the door plate – and has "no" hole or knob at top center). Third, install the upper door (smaller gap and top center hole and knob). See section 2.3 for door Removal.

### **Collector Door Installation Cont.**

3. Turn on the compressed air supply to the dust collector compressed air manifold. Adjust to 90 psig of pressure with the compressed air regulator. Pressure of 90 psig is the most typical setting for satisfactory cleaning performance. (See Section 4.1 Routine Maintenance). The lower the compressed air setting, the less the pulse valve air consumption will be. Adjust the Photohelic low setpoint to 2 inches and the high setpoint to 4 inches. (If applicable)

#### **NOTE**

**Make sure the hopper discharge opening is air tight (not open to atmosphere). Too much airflow to the blower fan will cause electrical failure.**

4. Turn on the fan motor and check fan rotation by looking down from the top of the fan motor and reference the rotation direction sticker on the fan housing.



#### **CAUTION**



**Stand clear of fan exhaust area when blower is running, as debris can be exhausted and cause injury.**

5. Adjust the control damper on the fan exhaust for desired system airflow (customer supplied).

#### **NOTE**

**Too much airflow can cause electrical system failure and result in eventual blower motor failure.**

## 2.5 Troubleshooting

Use the following procedure to troubleshoot the Cartridge Dust Collector

| <b>Trouble</b>                                          | <b>Possible Cause</b>                                                                                                                                                                                                                            | <b>Remedy</b>                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System will not start.                                  | <ol style="list-style-type: none"> <li>1. Power off.</li> <li>2. Blown main power supply fuse(s).</li> <li>3. Blown motor branch power supply fuse(s).</li> <li>4. Blown control circuit fuse(s).</li> <li>5. Tripped overload relay.</li> </ol> | <ol style="list-style-type: none"> <li>1. Close main electric disconnect.</li> <li>2. Check/replace bad fuse(s).</li> <li>3. Check/replace bad fuse(s).</li> <li>4. Check/replace bad fuse(s).</li> <li>5. Reset overload relay and check that the relay trip current for the overload is properly adjusted per the manufacturer's instructions.</li> </ol>                                           |
| System will start, but fan motor will not start.        | <ol style="list-style-type: none"> <li>1. Optional fan motor disconnect open.</li> </ol>                                                                                                                                                         | <ol style="list-style-type: none"> <li>1. Close optional fan motor disconnect.</li> </ol>                                                                                                                                                                                                                                                                                                             |
| System and fan motor will start, but system shuts down. | <ol style="list-style-type: none"> <li>1. Tripped overload relay.</li> <li>2. Fan moving too much air.</li> </ol>                                                                                                                                | <ol style="list-style-type: none"> <li>1. Reset overload relay and check per Section above #5.</li> <li>2a. Check for an airtight seal of the drum cover to the drum and at the filter access doors. If the drum is removed, the slide gate must be closed.</li> <li>2b. check dust hose from reclaimer to dust collector for holes and leaks. If leaks are found, repair or replace hose.</li> </ol> |
| Material discharge out of clean air outlet.             | <ol style="list-style-type: none"> <li>1. Cartridge Filter improperly installed.</li> <li>2. Cartridge filter damage, dent in the end cap, gasket damage or missing or holes in pleated media.</li> </ol>                                        | <ol style="list-style-type: none"> <li>1. Check that Filter cartridge gaskets are correctly sealed by either removing Door(s) or either side front lower covers.</li> <li>2. Replace the Cartridge filter. Use ONLY TITAN Cartridge Filters (see Section 2, Section 5 or Section 6 for Cartridge Filter Part Number). Install Cartridge per Section 4 in this Manual.</li> </ol>                      |

| <b>Trouble</b>       | <b>Possible Cause</b>                                                                                                                                                                                                                                                                                                                                                | <b>Remedy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Insufficient airflow | <p>1. Fan rotation backwards.</p> <p>2. Collector openings not tight or closed.</p> <p>3. Fan exhaust area is restricted.</p> <p>4. Cartridges plugged with particulate.</p> <p>    a. Lack of compressed air.</p> <p>    b. Pulse cleaning not energized.</p> <p>    c. Dust storage area is too full or plugged.</p> <p>    d. Cartridges need to be replaced.</p> | <p>1. Check fan rotation. The fan rotations should be (same as rotation sticker on fan housing) looking down at the top of the blower fan motor. See Section 2.3 Set-up located in this manual.</p> <p>2. Make sure all access covers are tightened securely. Also check hopper outlet area. See Section 2.3 Start-Up.</p> <p>3. Check fan exhaust area for blockage. Remove material or debris that is blocking the fan exhaust area or adjust flow control damper on fan.</p> <p>4a. Check compressed air supply for 90 psig minimum. Increase pressure as described in Section 4.1 Routine Maintenance in this manual.</p> <p>4b. Check the Photohelic Gauge setpoints. (if applicable) Check supply voltage to the control timer with a volt ohm meter. See Section 3.3 Photohelic Gauge Installation.</p> <p>4c. Clean out dust storage area as described in the Section 4 Dust Removal in this manual.</p> <p>4d. Remove and replace using only Titan Cartridges (See Section 4 in this manual and the Replacement Parts List Section 6.5)</p> |

| <b>Trouble</b> | <b>Possible Cause</b>                                                                                                                                                                                                         | <b>Remedy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <p>5. Pulse valves are not functioning.</p> <p>a. Pulse valves are leaking compressed air.</p> <p>b. Pulse solid state control timer has failed.</p> <p>c. Pulse control timer and Photohelic gauge are out of adjustment</p> | <p>5a. Lock out all electrical power to the dust collector and bleed off the compressed air supply. Check for debris, valve wear or diaphragm failure by removing the cover on back of the pulse valves. Also check for solenoid leakage and /or damage. If pulse valves or solenoid valves and solenoid tubing are damaged replace part(s) (refer to Replacement Parts List).</p> <p>5b. check supply voltage to the control timer with a volt ohm meter. If the red indication light is not on and input power to the control timer is okay, but there is not any output voltage to the solenoid pulse control valves, replace the pulse control timer (reference Replacement Parts List, Section 6.7.</p> <p>5c. Refer to the Section 2.3 Electrical Installation located in this manual for hook up and timer adjustment and Section 3.3 for Photohelic Gauge adjustment.</p> |

## CDC Optional Equipment

### 3.1 Motor Starter / Start–Stop Station for Blower Fan

The optional Motor Starter Assembly is sized to the specific Blower Assembly & Customer Plant power requirements per order. The optional Motor Starter Assembly is mounted “separately” near your blower Assembly.

The optional Motor Starter Assembly includes a Start-Stop Station to properly operate your Blower Assembly

#### NOTE

##### **When installing your Motor Starter / Start-Stop Station:**

- **Use proper equipment and safety guidelines when installing / mounting and hooking up.**
- **Make sure “only” proper type and size wiring is used.**
- **Before mounting Motor Starter – Check Local, State and National Codes**
- **Wiring of this Motor Starter to its source must be done by a qualified electrician – Check Local, State and National Codes.**
- **If you experience difficulty when installing your Motor Starter, contact TITAN for assistance.**

### **3.2 Extended Leg & 55 Gallon Drum Assembly**

#### **55 – Gallon Leg & Drum Lid Assembly**

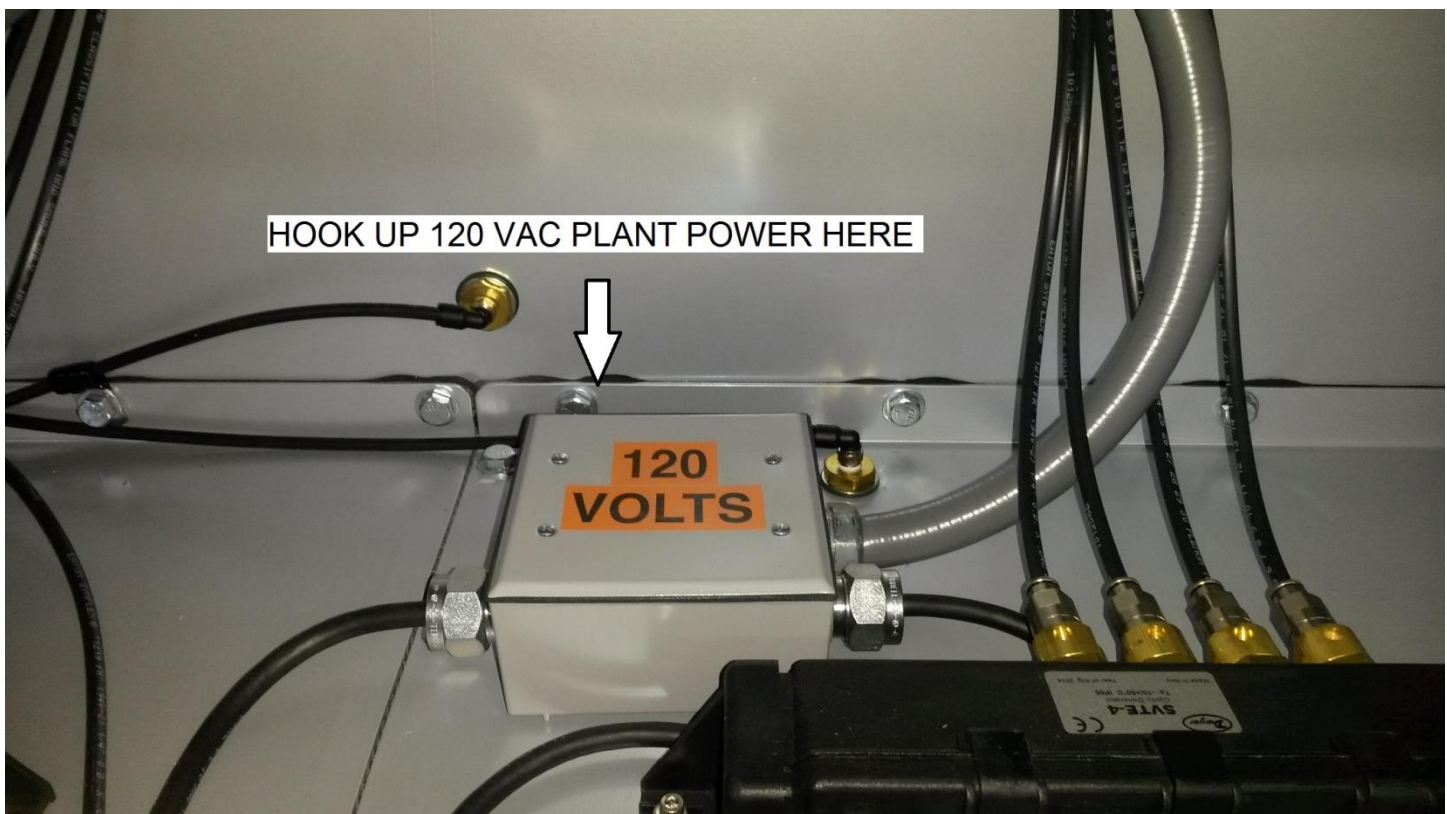
The 55-gallon leg & drum lid assemblies are designed to fit a standard 55-gallon drum that measures approximately 24" diameter x 33" tall. The 55-gallon drums are "not" supplied by Titan (Customer Supplied). The flexible hose attachment allows for easy drum installation and removal. A Pallet under the drum will allow heavier material to be removed easily by a lift truck (Customer Supplied) – the assembly allows for the height of a standard skid or about 5".

1. Set up leg assembly, reference section 2.3 (for both initial setup with Extended Leg or swapping out Standard Leg Assembly for Extended Leg). Initial setup follow same process as 2.3. For swapping with Standard Leg Assembly first remove Drum and Slide Gate Assembly. Loosen all required hardware on connecting plates. Remove Hopper and lift frame with lift truck or lift from above with crane and leave Hopper intact. Remove Standard Leg Assembly and set Extended Leg Assembly in its place, lower frame assembly and secure leg connecting hardware. Attach 55 Drum Lid Assembly.
2. Fasten the Drum Lid Assembly to Slide Gate Assembly on hopper using 4" Hose and Clamp.
3. Attach Drum Lid Assembly to 55-Gallon Drum. If Latch is included, use it to hold the Lid Assembly to Drum.

### **3.3 Photohelic Gauge Assembly**

The optional Photohelic Gauge Assembly is an upgrade to the standard solid state timer controls for the reverse pulse cleaning circuit of your Cartridge Dust Collector. The optional Photohelic Gauge Assembly requires 120 VAC/50-60 Hz/1ph plant power, See figure below for hook up connection.

1. Zero and maintain Photohelic Gauge per operating and maintenance instructions provided by the manufacturer of the Photohelic gauge.
2. A Photohelic Gauge Assembly is used as an internal control switch to the solid state timer, the valves will pulse only when the differential pressure reaches the high set point and will continue the pulse sequence until the low pressure set point is reached. (This is the most efficient way to control pulse cleaning)
3. If the dirty side sensor port (to the Photohelic Gauge Assembly) is plugged, a purge button (black palm button) can be pushed to clear the plugged port at any time.



### **3.4 NOTES:**

## Cartridge Dust Collector

### 4.1 Routine Maintenance

Compressed air is recommended to be set at 80-90 psig. The control timer is factory set to clean one cartridge every 210 seconds.

#### NOTE

- **Do not increase compressed air pressure beyond 100 psig as component damage may result.**
- **Do not increase or decrease the pulse ON TIME on the solid state control time. Longer or shorter pulse ON times do not aid in cleaning of cartridges, they just waste compressed air and cause shortened cartridge life.**

Pulse ON TIME can be checked or adjusted by contacting TITAN and scheduling a service call. Titan does not recommend adjustment of this timer.

The preferred method of controlling cartridge pulse cleaning is with the pressure switch control (Photohelic gauge). This controls the solid state control timer to only pulse at the desired high and low  $\Delta P$  set points. The pulse cycle starts when the filter  $\Delta P$  reaches the high set point and continues until the low  $\Delta P$  set point is reached, at which time the pulse cycle stops. This method of using the Photohelic gauge can save additional compressed air and aid in longer filter life, especially when the dust collector is not collecting dust and contaminants.

#### NOTE

**Check the fan motor amperage draw against the motor manufacturer's nameplate amperage rating. Over amperage of manufacturer's recommended rating of motor will cause damage.**

### **4.1.1 Operating Checks**

Monitor exhaust. Exhaust should remain visually clean. If a leak develops, it will be first noticed as a visible puff of dust immediately after a cleaning pulse.

Monitor cartridge pressure drop. Equilibrium pressure drop (stabilized  $\Delta P$ ) is generally 3-4 inches water gauge on a Magnehelic or Photohelic for seasoned filters, but 1 to 6 inches water gauge is considered normal.

#### **NOTE**

**At initial start-up with any new cartridges, the fan motor may overload because of airflow higher than design level. If this happens, partially close a volume control damper and check blower fan motor amperage draw.**

#### **Service**



- **Disconnect electrical power before servicing any electrical components.**
- **Shut off and bleed compressed air supply before servicing any compressed air components.**
- **No Welding should be performed inside unit without fire protection.**

### **4.1.2 Cartridge Removal**

1. See section 4.2 for door removal procedure.
2. When changing the cartridges, start at the top of the unit first so that the dust that falls down into the hopper area does not have open access ports below.
3. Remove the cartridge securing wing nut by rotating counterclockwise by hand. Set wing nuts aside.
4. Move the cartridge to break the gasket seal between the cartridge and the cartridge rack sealing surface. Rotate the cartridge slowly 1/2 turn to dump any loose dust off the top of the cartridge. Slide the cartridge along the suspension yoke, and out of the front of the collector access door opening.
5. Check for an accumulation of dust in the storage area. If cleaning is required, see Section 4.1.4 Dust Removal.

#### **NOTE**

- **Do not drop or tap the cartridge on the floor or any other hard surface. Damage to the cartridge will occur, resulting in leakage.**
- **It is necessary to clean the dust off of the cartridge rack all around the opening and off each cartridge end cap and the access cover to ensure a positive seal of the cartridge gasket.**

### **4.1.3**

### **Cartridge Installation**

#### **NOTE**

- **The cartridge gasket end of all the cartridges must be inserted first, facing inward toward the clean air section or leakage will occur.**
- **Wing Nuts must be securely tightened. Lack of compression of the cartridge gaskets can cause leakage.**

1. Slide the new Titan cartridge onto each suspension yoke.
2. Reinstall the cartridge by rotating the Wing Nut clockwise onto the suspension yoke threads. Tighten securely by hand.
3. The cartridge dust collector is now ready to start up. Reinstall and secure doors, see section 2.4 for door installation procedure.

#### **4.1.4 Dust Removal (10-Gallon and 55-Gallon Drum)**

##### **NOTE**

**Do not let the dust storage containers overfill. It can cause poor collector performance and create an extensive clean up due to overflow of dust when removing the container. In addition, it can cause dust to accumulate in the collector hopper, which should never happen.**

1. Turn off the dust collector and empty as necessary. Both the 10-gallon and the 55-gallon drum are to be emptied when the drum is 2/3 full.
2. The hopper has a slide gate attached, close the slide gate before servicing the drum. Remove and empty the drum. Reinstall the drum and open the gate. Ensure that the drum cover and drum make an airtight seal. The collector fan does not have to be shut off if this procedure is followed.

#### **Original Equipment Cartridge**

##### **(See Replacement Parts List – Section 6)**

The Titan cartridge is the only replacement cartridge that will provide the high level of performance that you expect from your investment in the dust collector.

#### **4.1.5**

### **Compressed Air Components**



**CAUTION**



- **Compressed air can be dangerous.**
- **Before attempting service, shut off plant air supply to dust collector, and depressurize air manifold.**
- **Do not operate dust collector with inspection or access doors removed.**

1. Periodically check the compressed air components and service them by installing new compressed air filters and draining any moisture off by following manufacturer's instructions.
2. Check the dust collector compressed air manifold for contamination, oil and/or water. Clean or drain if necessary.
3. With the compressed air supply turned on, check the cleaning valves, solenoid valves, and tubing for any leakage. Replace any components that are leaking compressed air (reference the Replacement Parts List - section 6).

Some components listed above are located inside the collector and can be accessed by removing the back covers.

**4.2 NOTES:**

**RECOMMENDED SPARE PARTS FOR TITAN CARTRIDGE DUST COLLECTOR**

| <b><u>Quantity</u></b> | <b><u>Part Number</u></b> | <b><u>Description</u></b>     |
|------------------------|---------------------------|-------------------------------|
| 2-22                   | DCF-NFB                   | TITAN CDC FILTER CARTRIDGE    |
| 2                      | WN1213                    | WING NUT (Cartridge Securing) |
| 1                      | DRKIT-CDC                 | DOOR KNOB & GASKET KIT        |
| 1                      | HASD-CDC                  | HOSE KIT - Slide Gate to Drum |
| 1                      | PV-1                      | PULSE VALVE                   |
| 2                      | PV-R                      | PULSE VALVE REPAIR KIT        |
| 1                      | HRDKIT-CDC                | COLLECTOR HARDWARE KIT        |
| 1                      | NZL-CDC                   | NOZZLE FOR PULSE VALVE        |
| 1                      | TCK-CDC                   | TUBING & CONNECTOR KIT        |

6

Individual Components Parts

| Title                                                    | Page   |
|----------------------------------------------------------|--------|
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| 6.2 Door Assembly and Door Parts                         | Pg. 42 |
| 6.3 Optional Cartridge Dust Collector Assembly and Parts | Pg. 42 |
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| 6.8 Dust Containment Components                          | Pg. 45 |

| INDIVIDUAL COMPONENTS | PARTS |
|-----------------------|-------|
|-----------------------|-------|



Pulse Valve

6.1 Pulse Valve & Repair Kit

| Part Number | Description            |
|-------------|------------------------|
| PV-1        | PULSE VALVE (complete) |
| PV-R        | PULSE VALVE REPAIR KIT |

**INDIVIDUAL COMPONENTS****PARTS****6.2 Door Assembly and Door Parts**

| <b>Part Number</b> | <b>Description</b>                  |
|--------------------|-------------------------------------|
| TDA-CDC            | TOP DOOR ASSEMBLY                   |
| LDA-CDC            | LOWER DOOR ASSEMBLY                 |
| DH-CDC             | DOOR HANDLE ASSEMBLY – (2) per door |
| DRKIT-CDC          | DOOR KNOB & GASKET ASSEMBLY         |

**6.3 Optional Cartridge Dust Collector Assembly and Parts**

| <b>Part Number</b> | <b>Description</b>                         |
|--------------------|--------------------------------------------|
| PHLC-CDC           | PHOTOHELIC CONTROL ASSEMBLY                |
| LG55-CDC           | EXTENDED LEG ASSEMBLY – for 55 Gallon Drum |

| INDIVIDUAL COMPONENTS | PARTS |
|-----------------------|-------|
|-----------------------|-------|

6.4 Cover Parts - Cartridge Dust Collector



| Part Number | Description                   |
|-------------|-------------------------------|
| CBK-CDC     | COLLECTOR BOLT KIT (covers)   |
| CGK-CDC     | COLLECTOR GASKET KIT (covers) |

6.5 Cartridge Filter and Hardware



| Part Number | Description                       |
|-------------|-----------------------------------|
| DCF-NFB     | TITAN CDC FILTER CARTRIDGE        |
| WN1213      | WING NUT KIT (cartridge securing) |

**INDIVIDUAL COMPONENTS****PARTS****6.6 Lifting, Leveling & Lagging**

| Part Number | Description       |
|-------------|-------------------|
| EYE-CDC     | LIFTING EYE KIT   |
| LVL-CDC     | LEVELING BOLT KIT |
| AHR-CDC     | ANCHOR STUD KIT   |
| LAK-CDC     | L – ANCHOR KIT    |

**6.7 Blowdown Control Components**

| Part Number | Description                                              |
|-------------|----------------------------------------------------------|
| MCU-CDC     | PULSE TIMER CONTROL UNIT - MASTER                        |
| SCU-CDC     | PULSE CONTROL UNIT - SLAVE                               |
| NOZ-CDC     | NOZZLE ASSEMBLY KIT (one complete nozzle w/1/2" orifice) |
| OP12-NOZ    | ORIFICE PLATE 1/2" – for nozzle                          |
| TCK-CDC     | TUBING & CONNECTOR KIT                                   |

|                       |       |
|-----------------------|-------|
| INDIVIDUAL COMPONENTS | PARTS |
|-----------------------|-------|

6.8 Dust Containment Components



| Part Number | Description                       |
|-------------|-----------------------------------|
| DRUM-10     | DRUM 10 GALLON                    |
| LID-10      | LID for Drum 10 Gallon            |
| DL10        | DRUM / LID 10 GALLON KIT          |
| HASD-CDC    | HOSE KIT - Slide Gate to Drum Lid |
| SG4-CDC     | SLIDE GATE ASSEMBLY               |
| LEG-55      | LEG ASSEMBLY for DRUM 55 GALLON   |
| LID-55      | LID for Drum 55 GALLON            |

**Warranty****LIMITED WARRANTY**

Titan Abrasive Systems, LLC ("Titan") warrants all parts and equipment against defect in material and workmanship to the original purchaser for a period of **three (3)** years after shipment. Upon prompt notification by the buyer, to Titan, components that are determined by Titan to be defective will be repaired or replaced at no additional charge.

**LIMITATIONS:**

1. This warranty does not apply to normal wear items such as nozzles, blast hose, and re-claimers or to other components that are exposed to direct contact with blast media.
2. The buyer must follow all recommended maintenance schedules; see Operating Instructions & Maintenance Manual.
3. Does not apply to misapplication of product.
4. Unauthorized service, repair, improper installation, improper operation, improper maintenance, alterations, misuse, neglect, accident or excessive ambient conditions will void the warranty.
5. **If genuine Titan replacement parts are not used the warranty is void.**
6. Returned Materials Authorization (RMA) form must be completed and accompany all returned materials. Returns will not be recognized without prior authorization and RMA number.
7. Associated installation costs are excluded.
8. Freight cost for materials returned to Titan are to be assumed by the buyer unless the parts are determined defective by Titan.
9. Parts not supplied by Titan are not covered. Commercial components are warranted under terms of the original manufacturer.

Customer Acceptance:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print Name: \_\_\_\_\_ Company Name: \_\_\_\_\_

## Specification Sheets and Charts

### 8.1 CDC 5000-8000 SPEC. SHEET

1. **P/N:** CDC 5000 -8000
2. **MAXIMUM TEMPERATURE:** 180 degrees F (82.22 degrees C)
3. **DIMENSIONS - STANDARD LEGS - NOMINAL:** 4' (48") WIDTH x 4'-3" (51") DEPTH x 9'-9" (117") HEIGHT
4. **DIMENSIONS - STANDARD LEGS – CLEARANCE:** 4'-1" (49") WIDTH x 4'-5" (53") DEPTH x 9'-9" (117") HEIGHT
5. **DIMENSIONS - EXTENDED LEGS - NOMINAL:** 4' (48") WIDTH x 4'-3" (51") DEPTH x 10'-7" (139") HEIGHT
6. **DIMENSIONS - EXTENDED LEGS – CLEARANCE:** 4'-1" (49") WIDTH x 4'-5" (53") DEPTH x 10'-7" (139") HEIGHT
7. **DIMENSIONS WORK AREA CLEARANCE\*:** 10' (120") WIDTH x 6'-7" (79") DEPTH x 13' (156") HEIGHT FOR STANDARD LEGS, 14' (168") HEIGHT FOR EXTENDED LEGS
8. **DIMENSIONS – ANCHOR BOLT PATTERN:** 42 1/8" WIDTH x 37 1/8" DEPTH
9. **GROUNDING LOCATION:** (ONE) 1/4" Bolt (male thread) on one leg
10. **ELECTRICAL:** 120V / 60HZ / 1PH – 15AMP min. connection for cartridge cleaning controls
11. **AIR CONNECTION:** (ONE) 1" N.P.T. 90 P.S.I. minimum for cartridge cleaning
12. **WEIGHT – SHIPPING:** 1,650 lbs (Approx.)
13. **WEIGHT – ASSEMBLED/FINISHED:** 1,510 lbs
14. **CARTRIDGE DATA AND LIMITS:**
  - A. **MEDIA TYPE:** ProTura Nanofiber Technology
  - B. **NUMBER OF CARTRIDGES:** 8 (DCF-NFB)
  - C. **FILTER MEDIA AREA:** 1888 sq. ft.
  - D. **PERMEABILITY:** 20 cfm / sq. ft. @ 0.5 w.g. per cartridge –  $236 \times 8 = 1,888$  sq. ft.
    - $1888 \text{ sq. ft.} \times 20 \text{ cfm} = 37,760 \text{ cfm @ } 0.5 \text{ w.g.}$
    - $= 18,880 \text{ cfm @ } 1.0 \text{ w.g.}$
    - $= 14,160 \text{ cfm @ } 1.5 \text{ w.g.}$
    - $= 9,440 \text{ cfm @ } 2.0 \text{ w.g.}$
    - $= 5,100 \text{ cfm @ } 2.5 \text{ w.g.}$
  - E. **SURFACE AREA:** 58.40 sq. ft. Top surface area = 32.3 % of filter area is surface area
  - F. **MINIMUM EFFICIENCY REPORT VALUE:** MERV 15 @ 7200 cfm

\*= These dimensions are optimal @ 3' access per sides and 3' top. The front door area of collector "MUST" remain clear of any obstruction to maintain cartridges and back of collector to remain clear of any obstruction for maintaining / adjusting cartridge cleaning (blowdown) controls.

## **8.2 CDC 12000-16000 SPEC. SHEET**

1. **P/N:** CDC 12000 -16000
2. **MAXIMUM TEMPERATURE:** 180 degrees F (82.22 degrees C)
3. **DIMENSIONS - STANDARD LEGS - NOMINAL:** 8' (96") WIDTH x 4'-3" (51") DEPTH x 9'-9" (117") HEIGHT
4. **DIMENSIONS - STANDARD LEGS – CLEARANCE:** 8'-1" (97") WIDTH x 4'-5" (53") DEPTH x 9'-9" (117") HEIGHT
5. **DIMENSIONS - EXTENDED LEGS - NOMINAL:** 8' (96") WIDTH x 4'-3" (51") DEPTH x 10'-7" (139") HEIGHT
6. **DIMENSIONS - EXTENDED LEGS – CLEARANCE:** 8'-2" (97") WIDTH x 4'-5" (53") DEPTH x 10'-7" (139") HEIGHT
7. **DIMENSIONS WORK AREA CLEARANCE\*:** 14' (168") WIDTH x 10'-6" (126") DEPTH x 13' (156") HEIGHT FOR STANDARD LEGS, 14' (168") HEIGHT FOR EXTENDED LEGS
8. **DIMENSIONS – ANCHOR BOLT PATTERN:** 42 1/8" WIDTH x 37 1/8" DEPTH (per section)
9. **GROUNDING LOCATION:** (TWO) 1/4" Bolt (male thread) on one leg
10. **ELECTRICAL:** (TWO) 120V / 60HZ / 1PH – 15AMP min. connection for cartridge cleaning controls
11. **AIR CONNECTION:** (TWO) 1" N.P.T. 90 P.S.I. minimum for cartridge cleaning
12. **WEIGHT – SHIPPING:** 1,650 lbs per section / 3,300 lbs total
13. **WEIGHT – ASSEMBLED/FINISHED:** 1,510 lbs
14. **CARTRIDGE DATA AND LIMITS:**

A. **MEDIA TYPE:** ProTura Nanofiber Technology

B. **NUMBER OF CARTRIDGES:** 8 per section / 16 total (DCF-NFB)

C. **FILTER MEDIA AREA:** 1888 sq. ft. per section / 3,776 sq. ft. total

D. **PERMEABILITY:** 20 cfm / sq. ft. @ 0.5 w.g. per cartridge –  $236 \times 8 = 1,888$  sq. ft.

$1888 \text{ sq. ft.} \times 20 \text{ cfm} = 37,760 \text{ cfm @ } 0.5 \text{ w.g. per section / } 75,520 \text{ cfm total}$

$= 18,880 \text{ cfm @ } 1.0 \text{ w.g. per section / } 37,760 \text{ cfm total}$

$= 14,160 \text{ cfm @ } 1.5 \text{ w.g. per section / } 28,320 \text{ cfm total}$

$= 9,440 \text{ cfm @ } 2.0 \text{ w.g. per section / } 18,880 \text{ cfm total}$

$= 5,100 \text{ cfm @ } 2.5 \text{ w.g. per section / } 10,200 \text{ cfm total}$

E. **SURFACE AREA:** 58.40 sq. ft. Top surface area per section / 116.80 sq. ft. Top surface area total = 32.3 % of filter area is surface area

F. **MINIMUM EFFICIENCY REPORT VALUE:** MERV 15 @ 8,000 cfm per section / 16,000 cfm total

\*= These dimensions are optimal @ 3' access per sides and 3' top. The front door area of collector "MUST" remain clear of any obstruction to maintain cartridges and back of collector to remain clear of any obstruction for maintaining / adjusting cartridge cleaning (blowdown) controls.