

Central Vacuum Dust Collector FDC Series

Models: FDC-15-ST, -20-ST, -25-ST, -30-ST, -40-ST



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1.0 SPECIFICATIONS

NOVATEC FDC Series vacuum dust collectors are vessels for the receipt of fines and dust carried past the destination receiver by a vacuum loading system consisting of a central vacuum pump, a control system and interconnected vacuum tubing.

Each unit is designed to operate within a specifically pre-engineered central vacuum system and must be matched to the line size of the system (tubing diameter) and control voltage.

Each vacuum dust collector is a component in a central system that relies on a range of other equipment for its operation. These components are purchased separately.

- control system
- vacuum breaker, or "T" valve
- vacuum receiver
- tubing, bends, couplers and flex hose of the correct diameter for the vacuum system
- tubing, bends, couplers and flex hose of the correct diameter for material conveying

Models:

- ST – with clear collection pan
- D - Drum Dump Discharge

NOVATEC FDC Series vacuum dust collectors are designed to receive free flowing dust, fines and powders. FDC collectors are equipped with high capacity filter cartridges and a blow back system designed to extend the operational life of the filter cartridges and keep all dust and fines within the collector chamber.

2.0 UNPACKING AND INSPECTION

After receipt of the unit, completely inspect it for damage. Although the units are packaged securely, vibration and mishandling during transit can cause damage.

Since receivers are part of a system and do not operate alone, examine all cartons and shipping containers carefully for accessories, wiring and spare parts that may have been included in the shipment. Check inside chambers for parts and shipping materials.

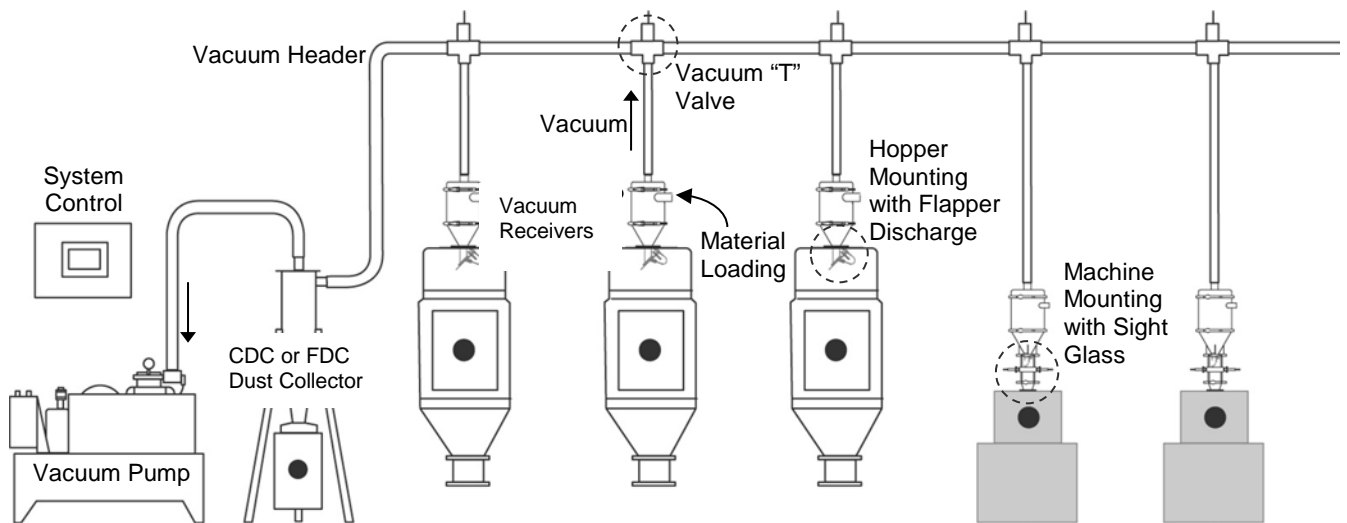
3.0 PRINCIPLE OF OPERATION - VACUUM SYSTEMS

NOVATEC central vacuum conveying systems utilize a powerful vacuum pump to create vacuum conveying power for a number of receivers. Receivers are interconnected with the vacuum pump via tubing and a control system. Each receiver in the system has the ability to use the central pump for vacuum conveying power within a sequencing arrangement...one receiver at a time. The selected conveying control system in use determines the sequence of operation and triggers vacuum isolation valves, known as vacuum breaker or “T” valves, located near each receiver, one at a time, to allow vacuum to flow to each receiver with a demand for a set period of time. After that receiver loads, the vacuum signal is passed onto another receiver with vacuum demand, allowing it to load.

Vacuum systems typically employ a central dust collector, located near the vacuum pump. The dust collector allows material fines and dust that are carried through from each receiver to be trapped, before they are allowed to enter the pump. VR receivers are typically equipped with only screen filters, freely allowing dust and fines to pass through and be trapped by the central dust collector. In this regard, users find efficiency in two ways:

1. The conveyed materials are somewhat ‘stripped’ of dust and fines by the vacuum system. These fines typically provide little value and/or actually detract from the molding process.
2. The maintenance required for the filter medium is greatly reduced and is more conveniently located at floor level, near the pump.

Filter Dust Collectors can be used in lieu of, or in conjunction with Cyclone Dust Collectors when extremely dust materials are being conveyed.



4.0 VACUUM DUST COLLECTOR INSTALLATION

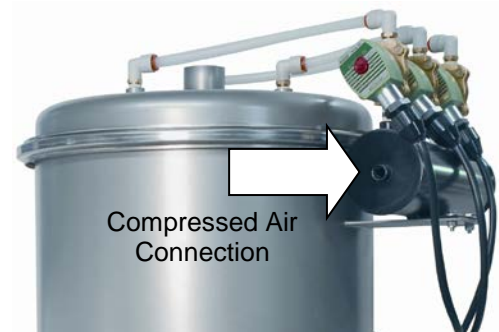
Mount the FDC near its dedicated central vacuum pump, positioning it so that the material inlet is directed towards the vacuum line.

Vacuum lines should be installed horizontal and/or vertical, using a 90 degree short radius bend for directional changes, and it should be as direct as possible. All connections must be vacuum tight. Rigid conveying tubing should be properly supported by the installer to provide a safe and secure installation. Use flexible material handling hose to connect the vacuum manifold to the FDC inlet if desired. The flexible hose should be only as long as needed, since excess hose will reduce loader efficiency and is prone to rapid wear.

CAUTION: NEVER USE THE NOVATEC FDC FOR PRESSURE APPLICATIONS. POSITIVE PRESSURE APPLIED TO THE FDC INLET MAY RESULT IN SEVERE EQUIPMENT DAMAGE OR PERSONAL INJURY.

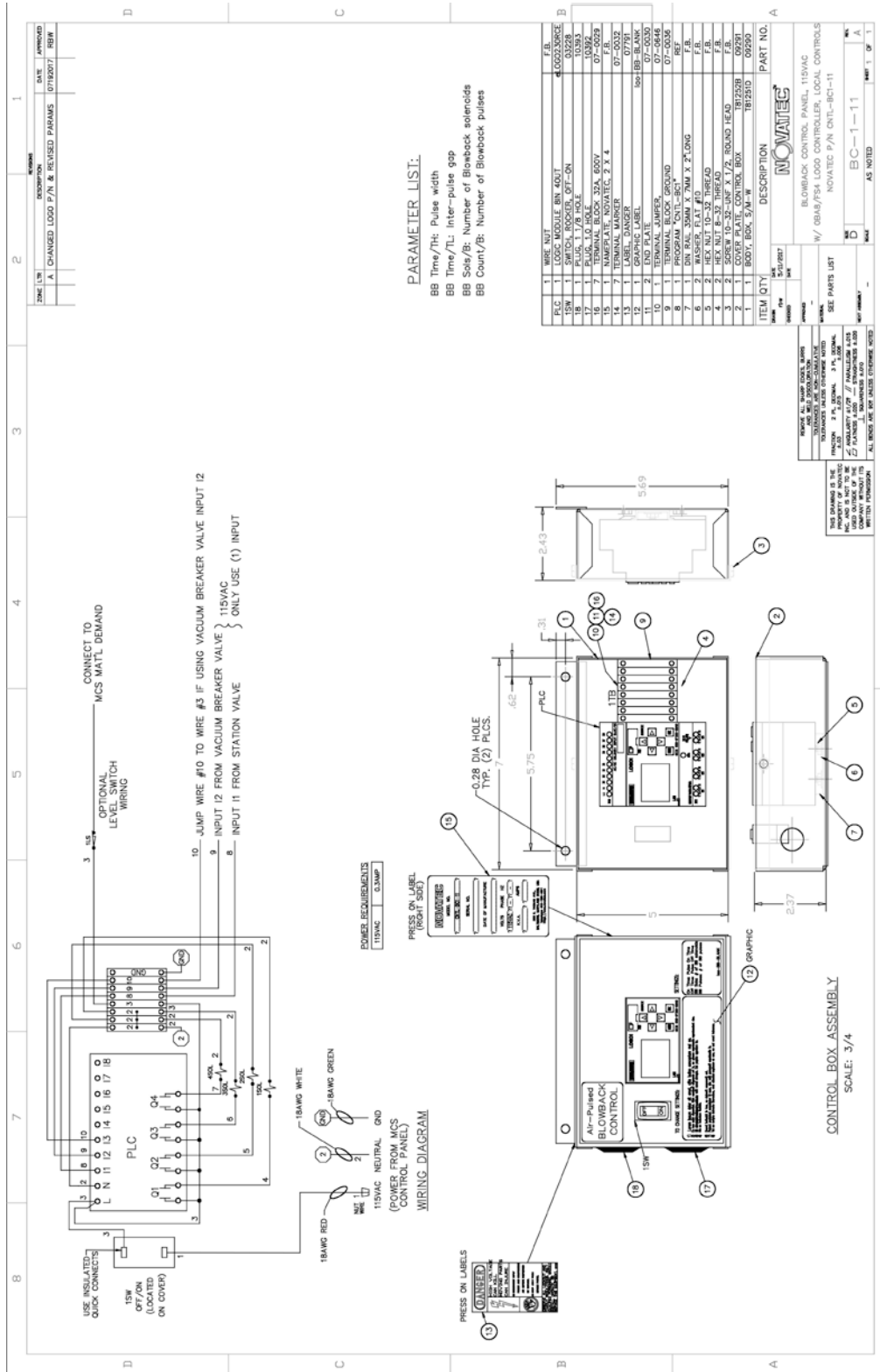
5.0 FDC SERIES RECEIVER COMPRESSED AIR INSTALLATION

FDC series dust collectors include an on-board compressed air filter blowback system consisting of an accumulator, solenoids, and cartridge filters inside the unit. Connect a clean, dry compressed air supply line to the accumulator tank. The minimum requirement for effective filter cleaning is 80 PSI. Do not exceed 125 psi. A flexible connection is often desired for this connection since movement of the accumulator section is often required for effective cleaning and maintenance of the filters. Utilizing a non-restricting quick disconnect will allow full removal of the receiver if necessary.



6.0 ELECTRICAL INSTALLATION

6.1 Electrical Diagram – Blowback Control 115 VAC



6.2 INSTALLATION FOR 115 VAC

WARNING: IMPORTANT INFORMATION

Danger! Disconnect all voltage before inspecting or servicing the BLOWBACK CONTROLLER. Only properly trained, qualified technicians should operate or service the BLOWBACK CONTROLLER.

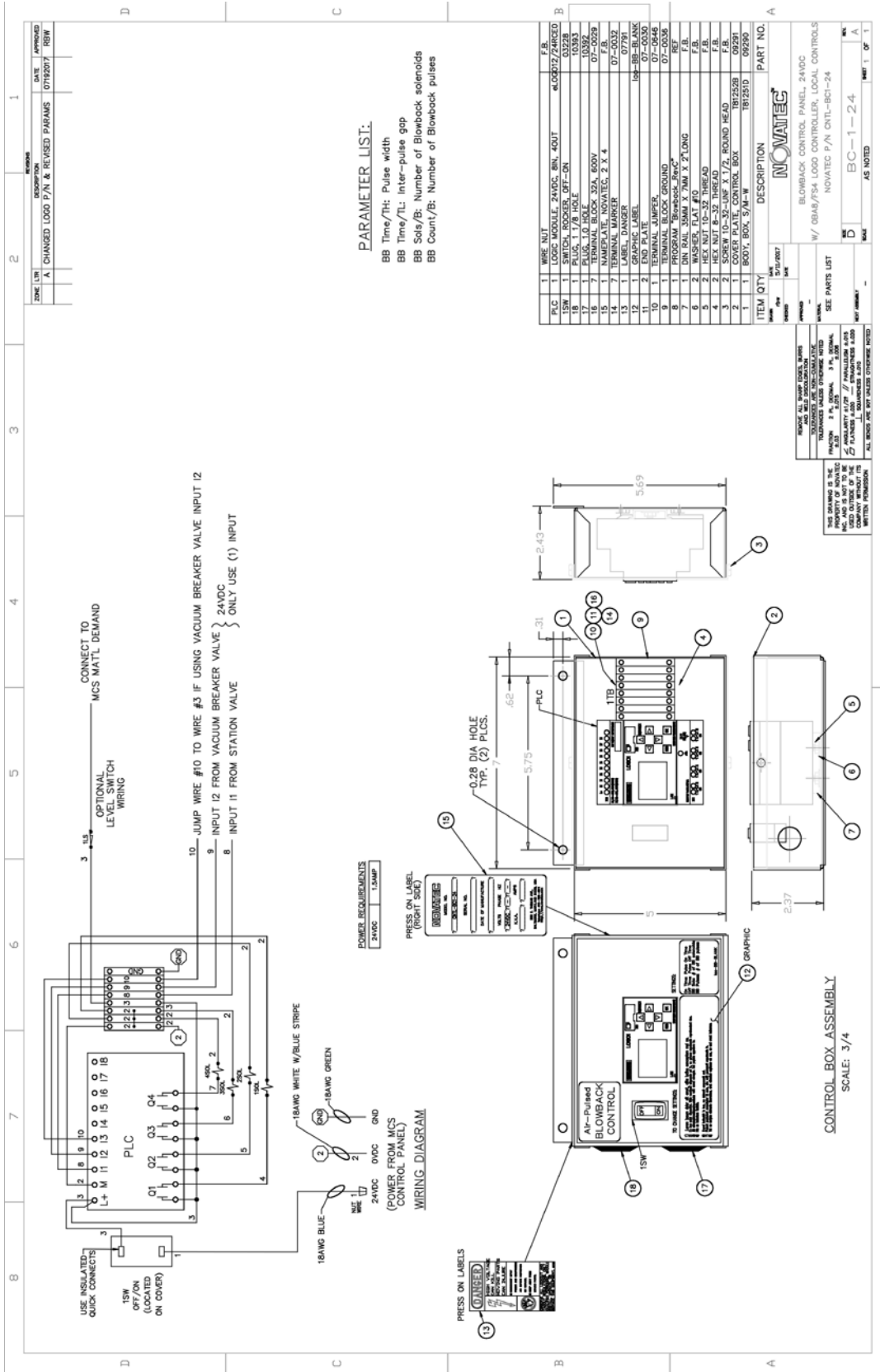
Dangerous Voltage! Do not put your finger or any object in the program SD card slot. If the power supply is not connected properly, the slot for the SD card may carry voltage. The SD card cover must be in place at all times. NOTE: the SD card is optional and is not needed for normal operation.

All national and local electrical, building, and safety codes need to be followed. Proper grounding of all equipment is important. Check the electrical wiring schematic for wiring numbers and details.

Wiring for 115 VAC

1. Mount the LOGO control box in a secure location.
1. Remove screws (item number 3 in drawing BC-1-11) allowing the cover plate to be removed.
3. Remove the cover plate (item number 2 in drawing).
4. Connect wire nut (wire number 1 in drawing) to the 115 VAC hot power supply located inside the main MCS control panel.
Note: There are two wires numbered 2. One is for connecting to the 115 VAC neutral in the main MCS control panel and the other one is for connecting to the blowback solenoid valve.
5. Connect wire nut (wire number 2 in drawing) to the neutral conductor located inside the main MCS control panel.
6. Connect wire nut (wire number 2 in drawing) to the blowback solenoids located at the FDC.
7. Connect wire nut (wire number 4,5 and 6 in drawing) to the blowback solenoids 1,2 and 3 respectively, located at the FDC.
8. Connect wire nut (wire number 9 in drawing) to the 115 VAC hot vacuum breaker valve output for the pump system with the FDC installed.

6.3 Electrical Diagram – Blowback Control 24 VDC



6.4 INSTALLATION FOR 24 VDC

WARNING: IMPORTANT INFORMATION

Danger! Disconnect all voltage before inspecting or servicing the BLOWBACK CONTROLLER. Only properly trained, qualified technicians should operate or service the BLOWBACK CONTROLLER.

Dangerous Voltage! Do not put your finger or any object in the program SD card slot. If the power supply is not connected properly, the slot for the SD card may carry voltage. The SD card cover must be in place at all times. NOTE: the SD card is optional and is not needed for normal operation.

All national and local electrical, building, and safety codes need to be followed. Proper grounding of all equipment is important. Check the electrical wiring schematic for wiring numbers and details.

Wiring for 24 VDC

1. Mount the LOGO control box in a secure location.
2. Remove screws (item number 3 in drawing BC-1-24) allowing the cover plate to be removed.
3. Remove the cover plate (item number 2 in drawing).
4. Connect wire nut (wire number 1 in drawing) to the 24 VDC hot power supply located inside the main MCS control panel.

Note: There are two wires numbered 2. One is for connecting to the 0VDC in the main MCS control panel and the other one is for connecting to the blowback solenoid valve.

5. Connect wire nut (wire number 2 in drawing) to the neutral conductor located inside the main MCS control panel.
6. Connect wire nut (wire number 2 in drawing) to the blowback solenoids located at the FDC.
7. Connect wire nut (wire number 4,5 and 6 in drawing) to the blowback solenoids 1,2 and 3 respectively, located at the FDC.
8. Connect wire nut (wire number 9 in drawing) to the 115 VAC hot vacuum breaker valve output for the pump system with the FDC installed.

7.0 OPERATION

7.1 Control Description

NOVATEC BLOWBACK CONTROLLERS are designed to control the blowback solenoid of the FDC. Compressed air from the blowback solenoid pulses the cartridge filters sequentially to remove fines and dust.

The blowback controller is used along with the main MCS panel (Material Conveying Panel). The MCS supplies power to the blowback controller as well as a blowback actuating signal that is wired in parallel to the pump 'vacuum breaker' valve.

When the MCS energizes the vacuum breaker valve the blowback controller pulses the blowback solenoid for a preset number of times. The control is equipped with a small LCD screen that displays operating and programming prompts, plus pushbuttons to aid in selecting parameters and making changes.



7.2 Preset Controller Values

The BC-1 controller is preset at the factory with the following values.

FUNCTION	TIMER	FACTORY SETTING
Pulse On-Time	BB/Pis	0.5 Seconds
Pulse Off-Time	BB/Gap	1 Seconds
Number of Pulses	BB/Cnt	3 Counts
BB Solenoids in Use	BB/Sols/B	1

7.3 Changing Control Parameters

Instructions are listed on the control face for ease of use.

1. Press ▼, ESC key and use ▲/▼ to select "Program" then press OK.
2. Select "Set Parameter" then press OK.
3. Select parameter to change and press OK.
4. Select proper sub-parameter if necessary, then press OK.
5. Select desired digit to change using ►/◀.
6. Press ▲/▼ to increase or decrease value, then press OK.
7. Press ESC 4 times to exit, then ▲ to display home screen.

Pulse On-Time: BB/Pis
 Pulse Off-Time: BB/Gap
 Number of Pulses: BB/Cnt
 BB Solenoids in Use: BB/Sols/B

Using the instruction on the controller under **TO CHANGE SETTINGS:**

Adjust the number of blowback pulses by changing the BB/Cnt parameter values in the "Settings" menu of the controller to achieve the desired blowback pulsing for the filter. When the vacuum breaker valve signal is energized to the LOGO unit and the OFF/ON switch is in the ON position, the blowback solenoid will be energized for the number of pulses set in the BB/Cnt parameter value. If the vacuum breaker valve de-energizes before the blowback cycle is complete, the blowback pulsing will stop immediately. The BB/Gap timer controls the OFF time between pulses and the BB/Pis timer control the ON time of the pulse, these timers are set at 1.0 and 0.5 seconds respectively and should not require further adjustment.

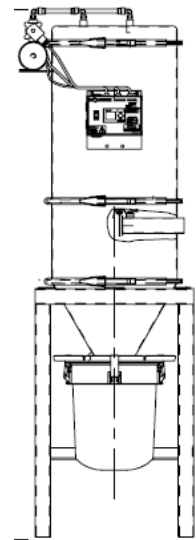
8.0 INITIAL START UP

FDC CENTRAL VACUUM DUST COLLECTOR:

The number of blowback pulses needed to clean the filter cartridges depends upon the material being conveyed. Free-flowing, unblended powder will require minimal filter cleaning while heavily loaded, blended powders may necessitate the maximum filter cleaning sequence to keep the cartridges free of accumulation and allow longer operational life between manual cleanings and/or replacement. Refer to the instructions for the filter-cleaning blowback control later in this document for adjustment instructions. Adjust the pulse cycle so the filters remain clean. A mid-range setting is suggested as a starting point.

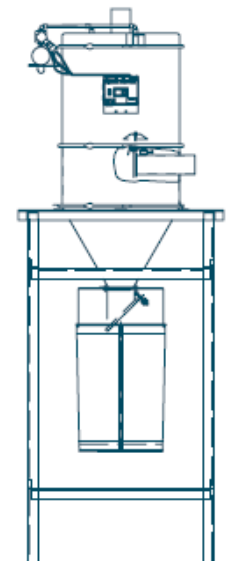
8.1 Canister Fill Applications:

For optimum filter operation, be sure the system pump utilization allows for periodic vacuum break cycles. The pulse blowback for filter cleaning is enabled by the central control's vacuum break signal. The FDC canister should be emptied before it's completely full to prevent excessive dust discharge to the surrounding area. FDC series dust collectors include an extended body to house the cartridge filters. Loaded material should not be allowed to be filled up into this extended hopper area. It is intended only as a housing for the filter cartridges, not a high capacity hopper for collecting loaded material. **Do not allow the FDC canister to overflow.**



8.2 For Drum Dump Applications:

For optimum filter operation, be sure the system pump utilization allows for periodic vacuum break cycles. The pulse blowback for filter cleaning is enabled by the central control's vacuum break signal. During this filter cleaning, the discharge opens to allow collected dust and fines to exist the collector. The FDC should discharge before the lower vacuum chamber is completely full. FDC series dust collectors include an extended body to house the cartridge filters. Loaded material should not be allowed to be filled up into this extended hopper area. It is intended only as a housing for the filter cartridges, not a high capacity hopper for collecting loaded material. **Do not allow the FDC chamber to overflow. If this occurs, your pump utilization is too high and must be reduced.**



Note that during the blowback / discharge cycle, the check valve inside the FDC housing should swing shut by gravity, preventing blowback air from flowing down through the conveying line and possibly ejecting dust into the atmosphere at the receiver, feed tube or take off box. If dusting is experienced out of the material conveying line, increase the empty frequency to prevent the check valve from becoming jammed with loaded material, which can prevent it from closing, when vacuum is removed.

9.0 MAINTENANCE

9.1 Cartridge Filter Cleaning

FDC Series dust collectors are typically used for trapping fines and dust carried through the vacuum receiver before they enter the pump safety filter. For this task, they are equipped with higher capacity cartridge filters. The amount of dust within the conveyed materials will determine the frequency of necessary manual filter cleaning.

NOTE: Although the blowback system of the FDC will extend the operational life of the filter media, it cannot be relied upon alone. Frequent checks of the filter accompanied by thorough manual cleanings are required, in addition to cleanings during material changes to prevent cross contamination.

CAUTION: Be sure to turn off the pump at the central control and/or disconnect electrical power and compressed air supplies before any type of maintenance. Pumps may be automatically energized to operate with no warning, startling the maintenance worker.

The cartridge filters may be removed for inspection and cleaning by unclamping the ring clamp of the lid, directly below the vacuum connection. If necessary, disconnect the vacuum line. Carefully remove the lid and expose the cartridge filter mounting plate directly below the lid. The cartridge filter mounting plate, with the cartridge filters installed below it may now be carefully removed for inspection and cleaning.

If only light cleaning of the cartridge filters is required, the filters may remain installed onto the filter plate and cleaned in place. However, full removal and thorough cleaning of each cartridge is highly recommended. Vacuum clean the outside of the filters to remove collected resin debris, dust and fines. If compressed air is used, be sure to wear goggles and blow from the inside of each filter down through and out of the filter media. Never bang a filter against a hard surface to dis-lodge debris. Distortion of the media or sealing ring(s) can result.

Once clean, thoroughly inspect the filter for severe wear, holes, tears and material abrasion. Any break in the filter media indicates the need for new filter cartridge. Do not attempt to repair the media. Remember that these filters assure that fines and dust are trapped before they reach the pump safety filter. In addition, examine the sealing ring around the top of each filter cartridge. This seal provides the vacuum seal between the cartridge filter and the filter mounting plate and must be fully intact. Replace the cartridge if this seal is not perfect. Damaged seals will reduce system conveying efficiency and starve the end process.



9.2 Washing Filter Cartridges

Polyester filter cartridges, supplied as standard with all NOVATEC FDC receivers are also washable to extend their life. Use one of the procedures outlined below. This cleaning procedure enables soiled filter cartridges to be put back into operation at lower pressure differentials. Cartridges may be washed several times to extend their operational life, but use caution to avoid letting high pressure water puncture filter media that may already be weakened by prolonged exposure to abrasive materials during vacuum loading:

POLYESTER FILTER CARTRIDGES WASHING, VARIANT A:

Wash with a commercial high-pressure cleaner, in compliance with the following conditions:

- Pressure: Temperature: max. 212°F (100°C)
- Cleaning agent: Maximum pH 5 - 7
- Cleaning Procedure: 8 to 10 pleats can be cleaned at a time, moving slowly from top to bottom, holding the nozzle approximately 12 in. (30cm) away from the filter. Water collecting inside the filter at the bottom can be drained out by tilting the cartridge.

POLYESTER FILTER CARTRIDGES WASHING, VARIANT B:

- Wash with a jet attachment from a conventional water hose.
- Cleaning procedure: Hold the hose at a distance of at least 2 inches (5 cm) from the surface of the cartridge, and use the jet to spray out each pleat from top to bottom.

9.3 Drying The Cartridge

The cartridge must be thoroughly dried in order to ensure trouble free operation after they have been cleaned. Choose:

- Dry at room temperature for a period of not less than 1 week.
- Dry in an oven at temperatures of max. 212°F (100°C) over a period of 12 hours.

Once each cartridge is cleaned, dried and inspected, it may be re-installed onto the filter mounting plate in the same fashion it was removed. Examine the filter mounting plate to be sure it is intact and its perimeter seal is smooth and clean since it will form a vacuum tight seal between the receiver lid, the filter mounting plate and the receiver body. Replace the seal if it is not in perfect shape.

Once filter cartridges are mounted to the filter mounting plate, reinstall it by placing it on the flat rim of the receiver body with the cartridges down inside the body. At this point, **it is critical that each cartridge filter is located directly below one of the FDC lid's blowback nozzles that will clean it during the blowback sequence.** By viewing the receiver lid and the blowback nozzles on the underside of it, the filter plate may be rotated into proper position prior to placing the lid down on it and centering the filter plate between the two. Each blow down jet on the lid must be centered over a cartridge filter for effective blowback action. Replace the clamp and tighten. With newly installed filter plate seals, the clamp may need to be adjusted to provide a vacuum-tight and mechanically firm seal.

10.0 WARRANTY

NOVATEC, INC. offers COMPREHENSIVE PRODUCT WARRANTIES on all of our plastics auxiliary equipment. We warrant each NOVATEC manufactured product to be free from defects in materials and workmanship, under normal use and service for the periods listed under "**Warranty Periods**". The obligation of Novatec, under this warranty, is limited to repairing or furnishing, without charge, a similar part to replace any part which fails under normal use due to a material or workmanship defect, within its respective warranty period. It is the purchaser's responsibility to provide Novatec with immediate written notice of any such suspected defect. Warranted replacement parts are billed and shipped freight pre-paid. The purchaser must return the suspect defective part, freight prepaid and with identifying documentation to receive full credit for the part returned. Novatec shall not be held liable for damages or delay caused by defects. No allowance will be made for repairs or alterations without the written consent or approval of Novatec.

The provisions in equipment specifications are descriptive, unless expressly stated as warranties. The liability of Novatec to the purchaser, except as to title, arising out of the supplying of the said equipment, or its use, whether based upon warranty, contract or negligence, shall not in any case exceed the cost of correcting defects in the equipment as herein provided. All such liability shall terminate upon the expiration of said warranty periods. Novatec shall not in any event be held liable for any special, indirect or consequential damages. Commodities not manufactured by Novatec are warranted and guaranteed to Novatec by the original manufacturer and then only to the extent that Novatec is able to enforce such warranty or guaranty. Novatec, Inc. has not authorized anyone to make any warranty or representation other than the warranty contained here. Non-payment of invoice beyond 90 days will invalidate the warranty. A renewed warranty can be purchased directly from Novatec.

Please note that we always strive to satisfy our customers in whatever manner is deemed most expedient to overcome any issues in connection with our equipment.

Warranty Periods:

Note: All warranty periods commence with the shipment of the equipment to the customer.

5-Year (Except 1-Year on Non-Novatec Buy-Out Items)

Resin Drying to Include

NovaWheel™ Dryers *
 Dual Bed Dryers
 NovaDrier *
 NDM-5 Membrane Dryer
 Gas-Fired Process Heaters
 Gas-Fired Regeneration Heaters
 Drying Hoppers
 Central Drying Hopper Assemblies
 Heater/Blower Units and Hot-Air Dryer
 Silo Dehumidifiers
 NovaVac Dryers *
 Nitrogen NovaDriers (Nitro)
 DryTemp Plus

Central System Controls to Include

FlexTouch™ Series Controls
 FlexXpand™ Series Controls
 OptiFlex™ Series Controls
 PLC Communications Modules
 Greenboard Communications Modules
 LOGO! Mini PLC
 MCS-600 Series Controls – (Distributed I/O)
 MCS-400 Series Controls
 CL Silo Manager

Moisture Measurement Equipment to Include

MoistureMaster®

PET Resin Crystallizers

Resin Blending and Feeding to Include

WSB Blenders, MaxiBatch & Feeders *
 Gaylord Sweeper Systems

Downstream Extrusion Equipment to Include

C and NC Bessemer Series Cutters
 NPS Bessemer Series Pullers
 NPC Mini Puller/Cutter
 All NS Series Servo Saws
 All Cooling and Vacuum Tanks Manufactured by Novatec

Resin Conveying and Systems Components to Include

GSL Series Vacuum Loaders
 GlassVu Loaders, Receivers and Hoppers
 VL/VLP Series Loaders
 VRH, VR, VR-FL & VRP Series Receivers
 Compressed Air Loaders
 AL-B Barrel Loader
 Cyclone Dust Collectors
 Conveying System Accessories
 Surge Bins
 Valves and Accessories
 Electronic Metal Separators
 Quick Select Manifolds
 Tilt Tables
 Filter Dust Collectors
 Drawer Magnets
 Velocity Control Valves

3-Year

Resin Conveying System Components to Include

** VPDB Vacuum Positive Displacement Pumps
 ** SVP Vacuum Pumps
 ** MVP Vacuum Pumps
 ** Railcar Unloading Systems

****5-Year Extended Warranty** - When a MachineSense® data plan is activated for products with **, Novatec automatically extends the warranty to 5 years. The data plan must be activated within 60 days after product shipment, and remain active through the warranty period to maintain extended warranty eligibility. The first 6-months of data plan usage is free from Novatec.

1-Year

Infrared Dryers
 UltraVac Vacuum Pumps

Vacuum Regenerative Blower Pumps
 Custom Equipment of any kind unless otherwise specified

Exclusions:

Routine maintenance/replacement parts are excluded from the warranty. These include, but are not limited to: hoses, desiccant, filters, filter elements, wiper seals, gaskets, dew point sensors, infrared lamps, motors, internal solenoids, fuses and motor brushes. Use with abrasive materials will void the warranty of any standard product. Wear resistant options may be available to extend usable service life with abrasive materials. Novatec reserves the right to limit the warranty if the customer installs replacement parts that do not meet the specifications of the original parts supplied by Novatec.

***Specific Exclusions:**

1. NovaDrier and NovaDrier Nitrogen (NITRO) warranty is void if coalescing filters are not replaced on a 6-month or yearly basis (per instruction manual) and/or membrane has been exposed to ozone.
2. NovaVac Dryer -The ability of the canisters to hold vacuum will be compromised if the vacuum seal edge is damaged from mishandling. We do not warranty canisters damaged from improper handling. We do, however, warranty the seals.
3. LOAD CELLS on our WSB's are covered by Novatec standard warranty as long as they have not been damaged from improper handling.
4. Desiccant Wheel Warranty will be void if the wheel has been exposed to plasticizer, dust or other contaminants as a result of negligence on the part of the processor.

This warranty shall not apply to equipment:

1. Repaired or altered without written approval of NOVATEC unless such repair or alteration was, in our judgment, not responsible for the failure
2. Which has been subject to misuse, negligence, accident or incorrect wiring by others
3. Warranty is void if processing rates exceed manufacturer-recommended levels or if damage is caused by ineffective power isolation and/or power spikes/sags or incorrect installation.

NOTE: All conditions and content of this warranty are subject to changes without notice.

APPENDIX 1 -VACUUM CONVEYING SYSTEM TROUBLESHOOTING

PROBLEM: POOR OR NO CONVEYING:

1. VACUUM T VALVE OPERATION

Each vacuum receiver in the conveying system is coupled to a vacuum “T” valve that isolates the vacuum conveying power of the pump to one receiver at a time for conveying. Each T valve in the system must close off air flow when it is NOT in operation, allowing other receivers to receive full vacuum. One ‘stuck’ valve can ruin the vacuum supply for the entire system. Check that each valve operates in response to its receiver’s turn in the vacuum system. Each valve should open for loading and close when loading is complete. The extended shaft of the valve’s cylinder is a good indication of valve operation.

Rule of thumb: If only one receiver in the system is conveying correctly, it is probably that receiver’s T valve that is not closing properly.

2. RECEIVER DISCHARGE FLAPPER STUCK OPEN

The flapper valve at the base of the receiver provides three critical functions:

- Seal off the base of the receiver, creating a sealed vacuum chamber and allowing it to load,
- Open reliably to allow material to empty out and
- Signal the conveying control system of the need for more material (when it swings shut, by its own weight).

If the flapper valve is stuck open or does not fully close, conveying cannot take place. A problem receiver can be easily checked for proper, free movement of its flapper valve:

- If conveying is not triggered when the flapper is closed, there is an issue with the electrical demand switch.
- If the flapper does not swing nearly shut by its own weight, there is a pivot point (hinge) or counterweight issue.
- If the flapper is ‘stuck’ in the open position, there is a material contamination issue with the pivot point (hinge) of the valve and it must be cleaned and examined for wear. Contamination of the hinge is typically caused by material, finding its way into the pivot point, but in older receivers, may also be a metal burr that has formed from age.

3. INLET CHECK VALVE STUCK OPEN

Many receivers are equipped with swinging check valves on their material inlets. Check valves provide a variety of useful functions for system operation and are pushed open when material is conveyed into the receiver. But on systems that convey material from one source to multiple receivers, each check valve in the system must seal to allow the one receiver being loaded to receive the full vacuum force from the conveying pump. A check valve that is stuck open, either by hinge wear or a trapped pellet, will leak valuable vacuum air, decreasing vacuum capability at other receivers or even preventing conveying throughout the system.

Rule of thumb: On systems that convey material from one source to multiple receivers via a common material line; If only one receiver in the system conveys correctly, it is probably that receiver’s check valve that is not closing properly.

4. CONVEYING CONTROLS NOT PROPERLY (RE) PROGRAMMED

Central material conveying systems that include a network of pumps, receivers and material sources provide high efficiency and a multitude of flexibility. But often, new requirements are not completely programmed after material or system configuration changes. Items to check:

- Is the new material source further away than the previous source? More conveying time and/or purge time might be required to accommodate this difference in distance.
- Is the new material as free-flowing as the last material? Does the material have a tendency to clog the conveying lines, or simply convey slower due to weight or shape? Changes to load/purge times as well as material pick-up tube changes may be required.
- Has the receiver been assigned to the proper vacuum pump? The proper material valve?
- Has system piping and or wiring been modified to accommodate this new configuration for conveying?

5. CONFIRM PROPER VACUUM BREAKER VALVE OPERATION

Located on the central vacuum pump of the system, the vacuum breaker valve allows ambient air to be drawn into the pump when the conveying system is NOT conveying. This function prevents rapid re-starts and stops of the pump during the “seek” time of the loading control, cools the pump and prevents the over loads in the pump starter from over heating. But the pneumatically-operated breaker valve must close and seal when the vacuum system is conveying material, directing all vacuum force to the job of conveying. Check the following:

- The valve is connected to a reliable source of clean compressed air, which is turned on. Air pressure should be 85-120 psi.
- The valve must not be leaking vacuum air. Often a sucking sound can be heard, indicating the valve is not sealing properly.
- View the level of vacuum created by the pump on its vacuum gage while attempting to convey material: Although the reading on this gauge will vary greatly depending upon your system configuration, it is a valuable tool for assessing system operation and discovering faults. Vacuum levels below 6” indicate a breaker valve fault or other problems in the vacuum system.

6. CHECK THE SOURCE OF YOUR MATERIAL

Easily overlooked, the source of your material may be either empty or the wrong tubing or valve connections have been made.

Common gaylord box issues are:

- Rat-holing: The feed tube has sucked up all the free-flowing material around its pick-up end and the material must now be stirred to allow material to flow into the feed tube again. A Gaylord tilter may be helpful in this situation.
- Bag liner line plugging: The feed tube has sucked in the thin film lining of the gaylord, blocking off material flow to the receiver.
- Feed tube fell out of the box: By weight of its own hose, or by vibration of the flex hose while conveying.
- Out of material: Time to move in a new gaylord.

Common material selection issues:

- Conveying line connected to the wrong source of material:
- Wrong purge valve selected: If a purge valve is used at the material source, it must be programmed by the system control to operate in conjunction with a specific receiver. Material changes require making a new valve selection at the system control.
- Purge valve is not operating: If a purge valve is used at the material source, it must be energized to allow material loading (and de-energized for purging). A fault at this valve, IE: lost compressed air connection, an open purge valve access door or a material jammed purge valve will prevent material movement.

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7. FEED TUBE / TAKE-AWAY BOX AIR SETTINGS

The conveying of material by air cannot be accomplished without air movement. Regardless of the type of pickup device being used; purge valve, wand, take-off box, etc.... these devices must be adjusted to allow the introduction of material and air, in a mixture suitable for conveying the specific material the distance required.