



An Oshkosh Corporation Company

PJ Series Central Dust Collector MAINTENANCE & OPERATION

OPERATION

The CON-E-CO Pulse Jet Series Dust Collectors are designed for continuous operation and cleaning. Contaminated air enters the dust collector, either through the collection hopper or the built in side plenum.

INTAKE AIR

Contaminated air enters the dust collector through the lower dust collection hopper. In this chamber, many of the heavy dust particles settle out of the air stream into the hopper bottom due to a reduction of air velocity.

If an intake duct connects to the top or side of the dust collector the dust laden air is connecting to the internal side plenum. From here the dusty air flows down into the hopper before turning and flowing up into the bag chamber.

BAG CHAMBER

Contaminated air enters from the bottom of the bag chamber and flows from the outside toward the inside of the bags, leaving dust particles on the outside of the bags. Clean air exits through the top where it is discharged by the blower.

BAG CLEANING

Cleaning of the bags is done one row at a time. Pulse jet valves are mounted on a manifold inside the bag house and control air to the blowpipes located above the rows of bags. Holes in the blowpipes centered over each bag opening direct air downward through a venturi into the bags.

Cleaning of the bags is accomplished by a jet of air directed downward through a venturi into the bags. The jet of air is short duration, high velocity and directs enough air volume to reverse the flow of air for a very short time to dislodge the dust from the outside of the bag.

AIR PRESSURE

Air pressure at the manifold (located inside the baghouse) should be maintained at 90 to 100 psi.

Less than 90 psi will reduce cleaning efficiency: Greater than 100 psi will cause excessive bag wear.



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237 N. 13TH ST - PO Box 430 - Blair, NE 68008

Phone: 800-656-2651 Fax: 402-426-4181 Service/Parts Fax: (402)-533-9292

E-MAIL: parts@con-e-co.com WEBSITE: www.con-e-co.com

CONTROL

The pulse jet valves are controlled by an adjustable solid state timer board. (See timer instruction for technical and programming instructions) This timer board controls several functions as described below:

ON TIME Pulse duration: Time that a pulse jet valve is open
ON TIME less than 50 milliseconds will result in ineffective bag cleaning
ON TIME greater than 300 milliseconds will result in excessive air usage

OFF TIME Time between pulses:
Reducing the "OFF TIME" will keep the bags cleaner and decrease bag life.
Increasing the "OFF TIME" will allow more dust cake and increase bag life
The best way to obtain optimum performance is to measure the partial vacuum above the bags, maintaining negative pressure of 4" to 7" of water.

INITIAL SETTINGS

The dust collector timer control should initially be set as shown below. These settings should give the best balance of cleaning efficiency, air efficiency, and bag life for most common applications.

ON TIME	150 milliseconds
OFF TIME	30 seconds

MAGNEHELIC GAUGE

The control panel is equipped with a magnehelic gauge which measures the partial vacuum above the bags in the baghouse. High readings indicate high resistance to air flow through the bags (dust covered bags). Low readings indicate low resistance to air flow (clean bags).

It should be noted that the bags will require several weeks to establish a nominal operating pressure. This is because it takes time for the filter media to establish a small even coating on the bag skin to reach maximum operating effectiveness

FIELD OPERATION

Recommended operation of a PJ Series Central Dust Collector is as follow:

Blower Operation: The blower of the dust collector should be on whenever the mixer is being loaded or when loading silos/bins with central dust collector. It is not recommended that the blower is switched off after every load, if continuous loading is expected. Frequently starting and stopping of blower will cause increased wear and premature failure.

Pulse (Cleaning) Operation: The cleaning cycle of the dust collector should be activated whenever plant power is turned on. It is recommended that the cleaning operation of the bags continues for 5-10 minutes after the blower has turned off, this will allow for more efficient clean of the bags.

Discharge of Waste Material (Reclaiming): The frequency in which the reclaim hopper needs to be emptied is determined on a case by case basis. The larger the volume of concrete produced by the plant the more often it needs to be emptied. Upon initial use of the dust collector the hopper should be emptied daily to determine the amount of material being generated and it is recommended that you should reclaim no more than 200-300 lbs at a time. If you reclaiming more than this amount the frequency needs to be increased.

With a reclaim system that blows the material into a silo a weight of material being reclaimed will not be able to be determined. In this case after a day of normal production, remove inspection hatch on hopper of collector and see if hopper is empty.



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If not adjustments will need to be reclaim more frequently. Consult factory on recommendations of appropriate changes to timer settings that need to be made.

FIELD MAINTENANCE

DAILY

- Observe dust collector operation for leaks and dust escaping from pickup point.
- Inspect reclaim system for proper operation.
- Inspect all guards to assure they are in place.
- Observe and record Magnehelic Gauge reading.

WEEKLY

- Check blower from any vibration.
- Observe operation of pulse jet valves for proper operation.

MONTHLY

- Inspect interior of collector and bags for any leaks, build up and plugging.
- Inspect ducting for any leaks, build up and plugging.

FIELD ADJUSTMENT

Best performance of the dust collector is obtained by observing the magnehelic gauge on a timely basis (frequently at first and, as a steady state condition is established, a daily basis).

Adjustment should be made to the timer with the following considerations:

- * Since the dust collector is more or less continuously cleaned (one row out of 8 at every 30 seconds) there should not be a big change in the magnehelic gauge reading after a pulse.
- * If blower is turned off for a period of time and restarted, there should be a noticeable drop in gauge reading compared to normal. High drop in gauge reading indicates the bags were too dust covered. Low drop in gauge reading indicates the bags are being over cleaned.
- * Obtaining the best performance is best done by adjusting OFF TIME. Increase OFF TIME to decrease cleaning cycles and save compressor air.

SPARE PARTS

Parts should be ordered from Manufacturer to insure compatibility. If parts are needed, obtain serial number from the name plate and call the factory. A complete detailed record of the vent is on file at CON-E-CO.

SAFETY INFORMATION

CON-E-CO dust collectors, like other industrial equipment, must be operated and maintained in accordance with our instructions and sound engineering practices. The user of this equipment must always be aware of the physical and chemical properties of the dust particles being collected. Materials or processes presenting such hazards must be identified by the user.



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