

# CON-E-CO.®

An Oshkosh Corporation Company

## SITE - PREP

## LO PRO MODEL 12HP



SOLID PRODUCTS. SOLID PERFORMANCE.

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## FOOTING RECOMMENDATIONS

Adequate footings must be provided prior to set-up of plant. See plant assembly drawing, for column loadings, obtain a soil test and consult a professional Engineer for foundation design.

### **IMPORTANT:**

**BECAUSE OF THE RELATIVELY LARGE LOADS IMPOSED ON THE FOOTINGS, THE ALLOWABLE BEARING PRESSURE OF ALL UNDERLYING SOIL SHOULD BE DETERMINED AND OR CONFIRMED PRIOR TO AN APPROPRIATE FOOTING DESIGN. DUE CONSIDERATION FOR SETTLEMENT SHOULD BE INVESTIGATED INCLUDING THE POSSIBILITY OF A SOFT COMPRESSIBLE LAYER OF SOIL BENEATH THE TOP LAYER OF SOIL, AND ANY OTHER SOIL CHARACTERISTICS THAT MIGHT CAUSE EXCESSIVE SETTLEMENT. EXCESSIVE SETTLING OR THE LACK OF ADEQUATE UPLIFT RESTRAINT COULD CAUSE A DANGEROUS CATASTROPHE WITH COSTLY STRUCTURAL DAMAGE.**

The customer is required to furnish steel leveling plates of no less than 3/4" x 10" x 10" material for each column required. If plant is to be permanently located CON-E-CO recommends installation of additional footings and piers to accommodate future expansion of bins.

**NOTE:** *Portable footings may be used, if a reputable professional engineer is consulted for design of the portable footings.*



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## **SPECIAL BRACING REQUIREMENTS**

CON-E-CO structural supports, are designed for normal wind and adequate foundations. It may be necessary in some locations to provide additional bracing in order to comply with the design criteria of local codes for hurricane force winds or seismic loadings.

## **CHARGING RAMPS AND BUILDING**

Charging ramps and buildings should be free standing and not dependent on the plant for structural support. CON-E-CO assumes no responsibility for damage to a plant caused by a charging ramp or building.

## **WATER REQUIREMENTS**

The plant water may be obtained from city systems, well or surge tank. A minimum flow rate of approximately 100 to 150 GPM is advisable in order to maintain batching speed. CON-E-CO water meter will operate with much lower flow rates if required, approximately 30 GPM for 2" meter or 50 GPM for 3" meter. CON-E-CO recommends that a maximum pressure of 150 PSI not be exceeded. (The CON-E-CO water meter will handle water at temperatures ranging from 32 degrees F to 200 degrees F.) See Page 2 showing waterline location. (Location shown will work with or without CON-E-CO furnished water pump.)

## **GENERAL NOTES**

CON-E-CO Structures are all designed to be mounted on level, rigid foundations. All foundations, permanent or temporary, must not allow more than 1/2" differential settlement or uplift between columns during or after repeated wind and/or live loads. Foundation loads are shown from specific plant configurations in site preparation drawings supplied by CON-E-CO. Added accessories such as cement silos, water tanks, conveyors, and dust control systems which are not shown on the plant's site preparation drawing cause higher stresses on the plant and larger foundation loads and/or uplifts. Consult CON-E-CO before adding anything to a plant not shown on its site preparation drawing.



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SPECIFICATIONS FOR MODEL 28-46 CEMENT BATCHER VENT

MODEL 28-46 SPECIFICATIONS

TOTAL CLOTH AREA	46 SQ. FT.
NUMBER OF BAGS	28
HOUSING HEIGHT	1'-10"
HOUSING WIDTH & LENGTH	1'-8 1/2" X 3'-11 1/2"
BAG CLEANING METHOD	REVERSE AIR FLOW (From batcher filling and emptying)
MAXIMUM OPERATING TEMPERATURE	170 DEGREES F
DISCHARGE AREA	.42 SQ FT <sup>2</sup> (60 SQ IN)
CFM/FT <sup>2</sup> THROUGH BAGS	5
CAPACITY	230 CFM
AIRSPEED OUT OF DEVICE	548 FT / MIN
DIRECTION OF AIR DISCHARGE	DOWN
DISCHARGE SHAPE	1-11/16" X 35 1/2" SLOT
NORMAL OPERATING TEMP & PRESSURE	AMBIENT
OUTLET MOISTURE CONTENT	IDEALLY ZERO

BAG SPECIFICATIONS

BAG DIAMETER	4-1/2" DIA.
BAG LENGTH	16"
CONSTRUCTION	3 X 1 TWILL
FIBER	SEAMLESS POLYESTER
FINISH	GREIGE
WEIGHT	7.1 OZ./SQ. YD.
THICKNESS	0.019"
MULLEN BURST	275 PSI (Min)
PERMEABILITY RANGE (0.5" WATER)	30-55 CFM/SQ. FT.
BAG EFFICIENCY	99.9% (*)

BATCHER VENT

LB / HR  
GR / FT<sup>3</sup>

INTO BAGS

.00144 LB/YD<sup>3</sup> \*      YD<sup>3</sup>/HR  
.648 GR HR/LB FT<sup>3</sup> \*      LB/HR

OUT OF BAGS

FOR ALL OUT OF BAGS VALUES, MULTIPLY THE INTO BAGS VALUES BY 0.001.

\* BASED ON TESTS BY THE UNIVERSITY OF TENNESSEE



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# CON-E-CO.

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## BV Series Batcher Vent      MAINTENANCE & OPERATION

### OPERATION

The CON-E-CO BV Series Batcher Vents are designed for efficient operation and cleaning. The contaminated air enters the dust collector through its bottom flanged opening at the top of the weigh batcher. In the weigh batcher, many of the heavy dust particles settle out of the air stream due to a reduction of air velocity. From the weigh batcher, the dust laden air flows up through the inside of the filter bags where the dust particles are trapped by the filter bags thus allowing the clean air to pass through the bags into the clean air chamber. From there, the air flows through the exhaust opening and into the atmosphere.

### BAG CLEANING

A vacuum is created inside the weigh batcher as the batcher is emptied. This vacuum reverses the air through the bags and pulls collected material from the bags back down inside the weigh batcher.

Examine the bags each week to check for excessive build up on the inside of the bags. The best efficiency and longest bag life is obtained by cleaning the bags as often as necessary. A thin even coating of material should coat the inside of the filter bags for the most effective filtration. The dust cakes on the inside of the bags to help filter the fine particles; so if bags are cleaned too often, part of their cleaning efficiency is lost.

### MAINTENANCE

The filter bags can be removed and inspected for tears and thin places. Laundering, mending or repair of the seamless bags is not recommended. The bags are made of seamless woven polyester fabric and if laundered shrinking may take place. Replacement bags are available from CON-E-CO.

### 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

This CON-E-CO dust collector, 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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# CON-E-CO®

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## SPECIFICATIONS FOR MODEL PJC-300S CARTRIDGE DUST CONTROL

### MODEL CON-E-CO-PJC-300S

NUMBER OF CARTRIDGES	8
NOMINAL CARTRIDGE DIAMETER	8"
NOMINAL CARTRIDGE LENGTH	40"
TOTAL FILTRATION AREA	304 SQ. FT.
MIN. DESIGN EFFICIENCY OF DUST COLLECTOR	99.9%
AIR TO CLOTH RATIO	5.0 TO 1.0 (CEMENT)
CAPACITY FOR CEMENT	1,500 C.F.M.(RECOMMENDED MAXIMUM)
CAPACITY FOR FYLASH	1000 C.F.M. (RECOMMENDED MAXIMUM)
DISCHARGE AREA	.67 SQ. FT.
DISCHARGE VELOCITY @1500 C.F.M.	38 FT. / SEC.
DIRECTION OF AIR DISCHARGE	DOWN WARD
DISCHARGE SHAPE	(2) 11/16 X 48" SLOTS (2) 5/8 x 30" SLOTS
NORMAL OPERATING DISCHARGE TEMP & PRESSURE	AMBIENT
OUTLET MOISTURE CONTENT	IDEALLY ZERO
CLEANING MECHANISM	PULSE JET
FREQUENCY OF CLEANING	VARIABLE

### CARTRIDGE SPECIFICATIONS

CARTRIDGE DIAMETER	7 7/8" O.D.
CARTRIDGE LENGTH	39 1/4"
CONSTRUCTION	PLEATED
FIBER	SPUN BONDED POLYESTER
WEIGHT	8 OZ / SQ. YD.
PERMEABILITY (.5" WATER)	24 CFM/SQ FT

### DISCHARGE INTO BAGS

#### CEMENT SILO

LB / HR  
GR / FT<sup>3</sup>

#### INTO BAGS

.177 LB/YD<sup>3</sup>\* \_\_ YD<sup>3</sup>/HR  
.078 GR HR/LB FT<sup>3</sup>\* \_\_ LB/HR

#### FLYASH SILO

LB / HR  
GR / FT<sup>3</sup>

#### INTO BAGS

.115 LB/YD<sup>3</sup>\* \_\_ YD<sup>3</sup>/HR  
.117 GR HR/LB FT<sup>3</sup>\* \_\_ LB/HR

### OUT OF BAGS

FOR ALL OUT OF BAGS VALUES, MULTIPLY THE INTO BAGS VALUES BY .001



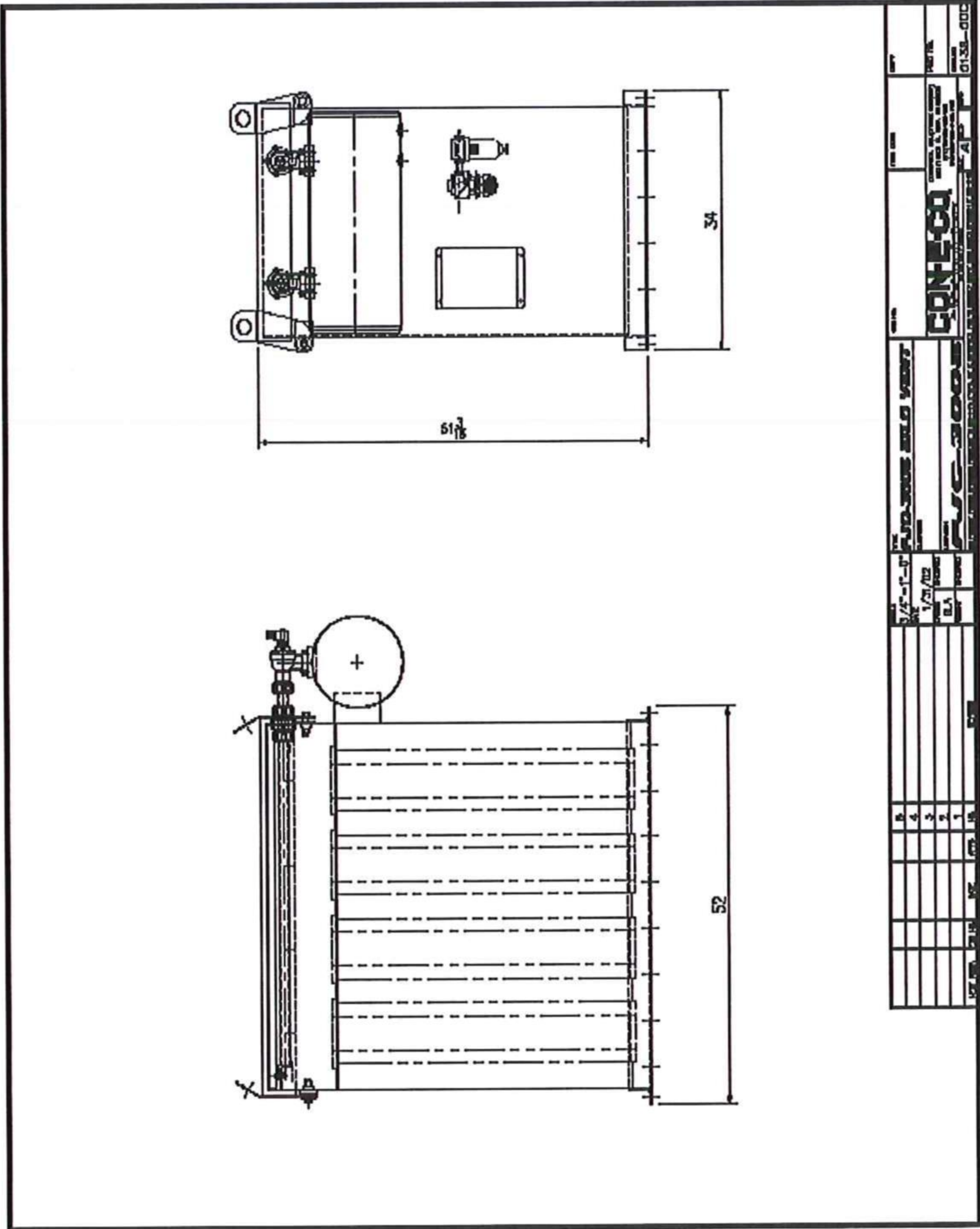
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**PJC Series Silo Filter Vent                      MAINTENANCE & OPERATION**

**OPERATION**

The CON-E-CO Pulse Jet Cartridge Series Silo Filter Vents are designed for continuous operation and cleaning.

**CARTRIDGE CHAMBER**

Contaminated air enters from the bottom of the cartridge chamber and flows from the outside toward the inside of the cartridges, leaving dust particles on the outside of the cartridges. Clean air exits through the top.

**CARTRIDGE CLEANING**

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

Cleaning of the cartridges is accomplished by a jet of air directed downward into the cartridges. 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 cartridge.

**AIR PRESSURE**

Air pressure at the manifold (located on the filter vent) should be maintained at 90 to 100 psi. Less than 90 psi will reduce cleaning efficiency: Greater than 100 psi will cause excessive cartridge wear.

**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 100 milliseconds will result in ineffective bag cleaning  
ON TIME greater than 200 milliseconds will result in excessive air usage
- OFF TIME           Time between pulses:  
Reducing the "OFF TIME" will keep the cartridge cleaner and decrease cartridge life.  
Increasing the "OFF TIME" will allow more dust cake and increase cartridge life.

**INITIAL SETTINGS**

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

ON TIME	150 milliseconds
OFF TIME	30 seconds



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## FIELD OPERATION

Recommended operation of a PJC Series Silo Filter Vent

**Pulse (Cleaning) Operation:** The cleaning cycle of the filter vent should be activated whenever material is being loaded into silo/bin. Cleaning operation should continue for approximately five to ten minutes after loading operation has finished.

**Blower Operation (if equipped):** If the silo filter vent is equipped with a blower the blower will need to be activated during loading operation. Blower can be turned off once loading has been completed. To load a silo/bin with a blower on the filter vent the blower does not need to be activated to load but it will increase the speed at which loading takes place.

## FILTER CARTRIDGE MAINTENANCE

The filter vent cartridges should be removed and inspected for tears or excessive buildup of material.

A visual inspection of the discharge air from the silo vent at the time a cement or flyash truck is unloading should be made on a daily basis. If it appears that dust is escaping the filter cartridges they should be removed for a visual inspection.

**Filter vent equipped with a magnehelic gauge:** A silo filter vent may be equipped with an optional magnehelic gauge to measure resistance to air flow through the cartridge filter media. If the filter vent is equipped with a magnehelic gauge the normal pressure should be observed and recorded at the time that a load of cement is being delivered. Normal pressure will vary between delivery trucks because the CFM of the blowers may differ. Therefore gauge pressure for a given blower CFM needs to be recorded. After several recordings from trucks of a given CFM, a normal pressure will be determined. After the normal pressure is determined, the gauge pressure should be checked (at the time a truck is unloading) on a weekly basis to determine if the pressure is abnormally high or low (2 inches of water above or below the established normal pressure).

If the magnehelic gauge indicates a pressure out of the normal range as described above, the filter cartridges should be removed for a visual inspection.

Regular inspection of the filter vent should be at a maximum of six month interval. General inspection of wiring, condition of door gaskets and caulked connections should be made. Also the filter cartridges should be removed for a visual inspection at this time.

## 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

This CON-E-CO dust collector, 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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## SPECIFICATIONS FOR MODEL PJ-980D DUST COLLECTION SYSTEM

### MODEL CON-E-CO PJ-980D

NUMBER OF BAGS	66
NOMINAL BAG DIAMETER	6"
NOMINAL BAG LENGTH	120"
TOTAL FILTRATION AREA	980 SQ. FT.
MIN. DESIGN EFFICIENCY OF DUST COLLECTOR	99.9%
AIR TO CLOTH RATIO	6.0 TO 1.0
BLOWER HP	15 HP
STATIC PRESSURE DROP	9" (INCHES OF WATER)
BLOWER AIR FLOW	5880 C.F.M.
DISCHARGE VELOCITY	60.7 FT. / SEC.
DISCHARGE AREA	1.60 SQ. FT.
DIRECTION OF AIR DISCHARGE	HORIZONTAL
DISCHARGE SHAPE	11 1/2" X 20" RECTANGLE
NORMAL OPERATING DISCHARGE TEMP & PRESSURE	AMBIENT
OUTLET MOISTURE CONTENT	IDEALLY ZERO
CLEANING MECHANISM	PULSE JET
FREQUENCY OF CLEANING	VARIABLE

### BAG SPECIFICATIONS

BAG DIAMETER	5.93"
BAG LENGTH	121"
CONSTRUCTION	SEAMED
FIBER	POLYESTER FELT
FINISH	SINGED
WEIGHT	16 OZ / SQ. YD.
PERMEABILITY (.5" WATER)	20-30 CFM
FIBER SIZE	2.5 DENIER AVERAGE

### BATCH PLANT DUST EMISSIONS CALCULATIONS INTO BAGS

#### CEMENT SILO

LB / HR  
GR / FT<sup>3</sup>

#### INTO BAGS

.177 LB/YD<sup>3</sup> \* \_\_\_ YD<sup>3</sup>/HR  
.020 GR HR/LB FT<sup>3</sup> \* \_\_\_ LB/HR

#### FLYASH SILO

LB / HR  
GR / FT<sup>3</sup>

#### INTO BAGS

.115 LB/YD<sup>3</sup> \* \_\_\_ YD<sup>3</sup>/HR  
.020 GR HR/LB FT<sup>3</sup> \* \_\_\_ LB/HR

#### CENTRAL MIX

LB / HR  
GR / FT<sup>3</sup>

.153 LB/YD<sup>3</sup> \* \_\_\_ YD<sup>3</sup>/HR  
.020 GR HR/LB FT<sup>3</sup> \* \_\_\_ LB/HR

#### TRUCK MIX

LB / HR  
GR / FT<sup>3</sup>

.281 LB/YD<sup>3</sup> \* \_\_\_ YD<sup>3</sup>/HR  
.020 GR HR/LB FT<sup>3</sup> \* \_\_\_ LB/HR

#### OUT OF BAGS

FOR ALL OUT OF BAGS VALUES, MULTIPLY THE INTO BAGS VALUES BY .001.

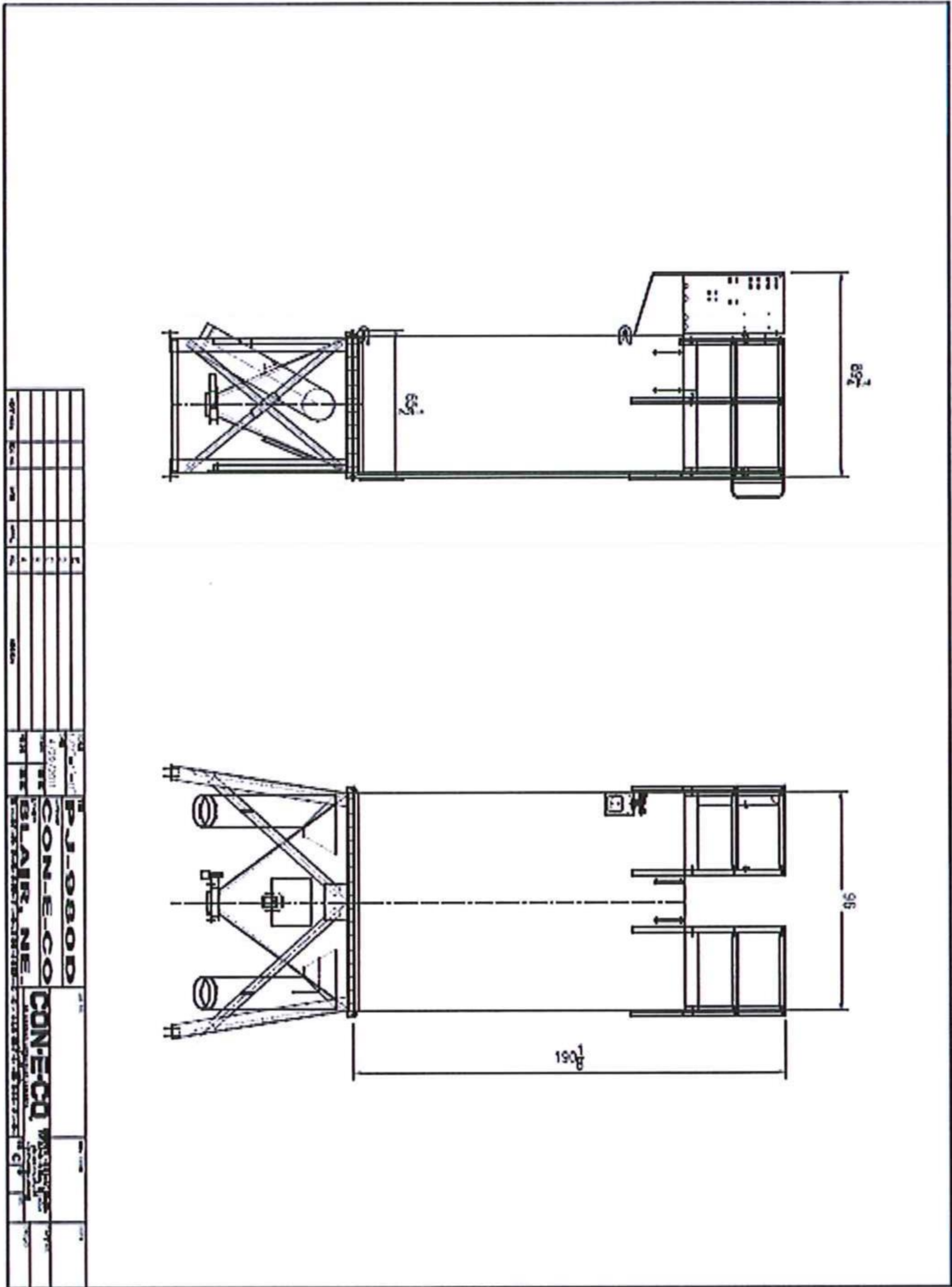


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# CON-E-CO.

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## PJ Series Silo Filter Vent

## MAINTENANCE & OPERATION

### OPERATION

The CON-E-CO Pulse Jet Series Silo Filter Vents are designed for continuous operation and cleaning.

### 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.

### BAG CLEANING

Cleaning of the bags is done one row at a time. Pulse jet valves are mounted on a manifold on the filter vent 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 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 on the filter vent) 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

### 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 100 milliseconds will result in ineffective bag cleaning  
ON TIME greater than 200 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

### INITIAL SETTINGS

The filter vent 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



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## **FIELD OPERATION**

Recommended operation of a PJC Series Silo Filter Vent

**Pulse (Cleaning) Operation:** The cleaning cycle of the filter vent should be activated whenever material is being loaded into silo/bin. Cleaning operation should continue for approximately five to ten minutes after loading operation has finished.

**Blower Operation (if equipped):** If the silo filter vent is equipped with a blower the blower will need to be activated when loading operation is taking place. Blower can be turned off once loading has completed. To load a silo/bin with a blower on the filter vent the blower does not need to be activated to load but it will increase the speed at which loading takes place.

## **FILTER BAG MAINTENANCE**

The bag should be removed and inspected for tears or excessive buildup of cement or flyash.

A visual inspection of the discharge air from the silo vent at the time a cement or flyash truck is unloading should be made on a daily basis. If it appears that dust is escaping the filter bags they should be removed for a visual inspection.

**Filter vent equipped with a magnehelic gauge:** A silo filter vent may be equipped with an optional magnehelic gauge to measure resistance to air flow through the bags. If the filter vent is equipped with a magnehelic gauge the normal pressure should be observed and recorded at the time that a load of cement is being delivered. Normal pressure will vary between delivery trucks because the CFM of the blowers may differ. Therefore gauge pressure for a given blower CFM needs to be recorded. After several recordings from trucks of a given CFM a normal pressure will be determined. After the normal pressure is determined, the gauge pressure should be checked (at the time a truck is unloading) on a weekly basis to determine if the pressure is abnormally high or low (2 inches of water above or below the established normal pressure).

If the magnehelic gauge indicates a pressure out of the normal range as described above, the bags should be removed for a visual inspection.

Regular inspection of the filter vent should be at a maximum of six month interval. General inspection of wiring, condition of door gaskets and caulked connections should be made. Also the bags should be removed for a visual inspection at this time.

## **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**

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# ELECTRICAL REQUIREMENTS

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It is very important to keep your electric utility company coordinated with your power requirements. The equipment listed below should be combined with other site loads such as area lighting, charging equipment, office HVAC, mixers, etc. If you are using an on site generator, we would be happy to coordinate a more detailed analysis of voltage stabilization and locked rotor amps with the company you select to supply the generator. Transformer sizes listed below assume a 96% eff., an impedance of .035 to calculate voltage drop, the largest motor is Code G, and show standard available size 3 phase transformers.

## Setup for **460 Volt operation.**

<b>CONCRETE BATCH PLANT</b>						Wire Size	
	HP	FLA	CB	Str	Heater	Min	Normal
15 KVA Transformer		32.61					
Cement 1 Feed A	15.00	21.00	45	#2	B32	10	4
Cement 1 Feed B	15.00	21.00	45	#2	B32	10	4
Cement Batcher	20.00	27.00	60	#2	B40	8	8
Agg Incline Conv.	20.00	27.00	60	#2	B40	8	8
Agg Batcher Belt	15.00	21.00	45	#2	B32	10	4
L. P. Blower	4.50	5.50	15	#0	B8.20	14	10
Air Compressor	15.00	21.00	45	#2	B32	10	4
Water Pump	15.00	21.00	45	#2	B32	10	4
Baghouse Blower	15.00	21.00	45	#2	B32	10	4
If not all motors run concurrently, *Amps not included in total.							
Total Connected	134.50	218.11					
+25% of Largest Motor	20.00	8.15				Actual	
Running Design Load		<b>226.26</b>	Running Design			180.27	KVA
+5 x Largest Motor		163.04					
Starting Design Load		389.30	Starting Design			310.17	KVA
225 KVA Transf. Volt Drop=	5.03%	Starting, and			2.92%	when running.	
300 KVA Transf. Volt Drop=	3.77%	Starting, and			2.19%	when running.	