

HONEYVILLE EFM SERIES

Reverse Air Jet Continuous Cleaning
Filter System

Models

EFM40

EFM80

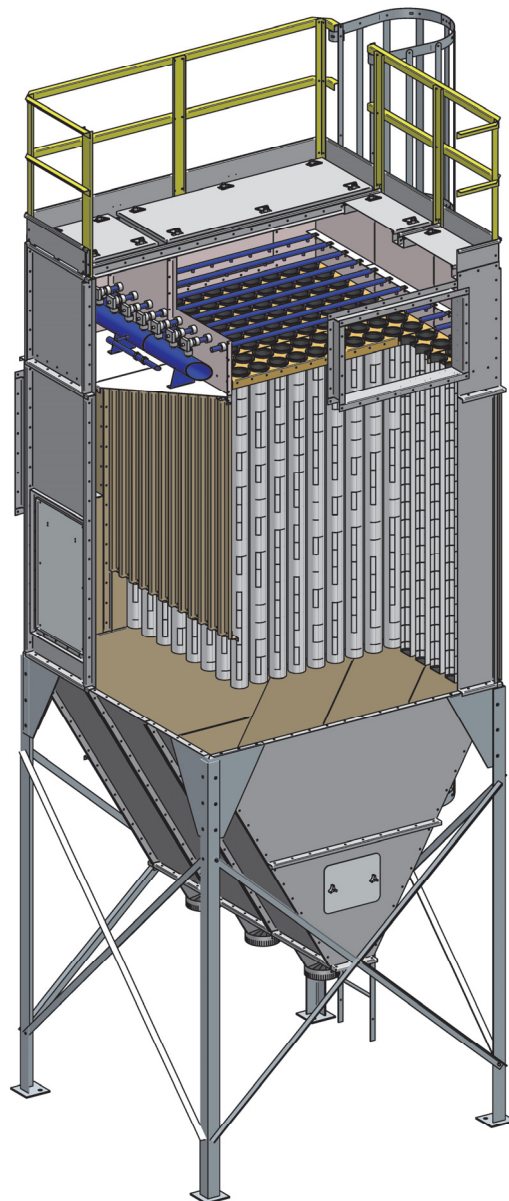
EFM120

EFM160

EFM200

EFM240

EFM280



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HONEYVILLE EFM SERIES

Customer Name	
Model Number	
Serial Number	
Date of Purchase	

HONEYVILLE EFM SERIES

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HONEYVILLE EFM SERIES

FILTER DESCRIPTION

HONEYVILLE EFM MODULAR FILTERS are designed for heavy duty load applications with dust conditions either as an after filter or a primary baghouse filter. The filter utilizes pulse-jet cleaning of the bags and also provides NO-TOOL top bag removal for inspection or service.

THE EFM FILTER will effectively capture dust from materials such as grain, feed, sugar, minerals, cement products, plastics, flyash, rubber, and all types of wood waste.

THE EFM FILTER OPERATES AS FOLLOWS: Dust laden air enters the filter at a high side entry. Large particles will drop directly into the hopper due to the velocity drop upon entry. Small dust particles pass laterally into the bag area through a baffle system designed to trap particles as the turn is made. Dust is retained on the exterior of the bags while the clean air flows upward through the bags and exits via the open top of the bags into the clean air plenum. This air may be vented outside or inside a building.

BAG CLEANING IS CONTROLLED BY AN ELECTRONIC TIMER. Upon activation by the timer, a diaphragm valve discharges the volume of the supply manifold for an adjustable period of time. Compressed air exits the manifold and travels into one of several pulse pipes that have air nozzles located directly above each bag. As the compressed air enters the bag, filtration is momentarily stopped. The compressed air bubble travels down the length of each bag moving the fabric and dust away from the cage. When the bag reaches its elastic limit, movement is stopped while the dust continues to move away from the bag surface and is discharged into the base of the filter.

EFM FILTERS HAVE MINIMAL MOVING PARTS thus operating with a minimal amount of maintenance. The timer control is completely adjustable in regards to cycle and pulse duration to minimize compressed air usage. Clean, dry air at 90 PSI must be supplied. All units are equipped with a magnahelic gauge providing a constant reading of resistance due to dust build up on the filter bags.

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Please read this document carefully before starting work.

The EFM filter is a unit designed for filtering dust laden air. It is self-cleaning and employs an innovative, simple cleaning system which will maintain the porosity of the felt media.

The EFM is shipped in a number of large sections for field bolting together. If any shortage of parts or damage is observed, please report this to Honeyville Metal immediately.

If the filter is not going to be erected immediately, the felt filter tubes and the wire cages should be stored in a DRY, RODENT-PROOF area.

FOUNDATION PREPARATION

The EFM filter is normally mounted on a reinforced concrete slab or on reinforced concrete pier type footers. However, roof mounting is also possible. The supporting structure should be as level as possible in order to minimize shimming and assure a plumb filter assembly. If an anchor bolt system is planned to be used to anchor the unit, use (4) 3/4" x 6" wedge anchors for EFM40 through EFM80 and (4) 7/8" x 7" or 8" wedge anchors for filters larger than an EFM80.

HELPFUL HINTS

- 1) Use a drift pin (tapered pin) to align holes. Re-drilling what appear to be misaligned holes can cause holes to be misaligned in subsequent assembly work.
- 2) The filter inlet hole is always the lower one of the two top holes on the filter. The inlet should allow air to blow directly into the bag house chamber. The filter outlet is always the higher one of the two top holes on the filter. The outlet should allow air to escape from the clean air chamber which is above the bag house area.
- 3) The recommended location for installing DNC timer control in box provided would be on ground level at about eye height for ease of adjustment. We also recommend placement of box indoors and near 110 volt power source.
- 4) Do not mount controls in high vibration areas without shock mounts.
- 5) Do not mount controls in areas of high dust or corrosive atmospheres without a protective cover.
- 6) Do not use a converter or an inverter for the power source.
- 7) Do not mount control in high transient voltage areas without an isolation transformer.
- 8) Do not leave control box door open.
- 9) Do not allow a local repair shop to repair the controls as we employ some very sophisticated components that could be further damaged. For service contact us directly at 800-593-8377.

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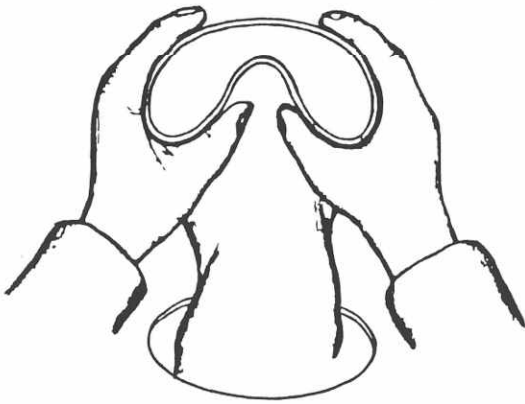
ASSEMBLY

- 1) The supporting structural steel and hopper bottom should be set first on the filter site, and secured with sufficient anchor bolts. See the FOUNDATION PREPARATION section for anchor size.
- 2) Apply two beads of silicone caulking to top flange of the hopper bottom. Apply one bead on each side of bolt line.
- 3) Place the upper body section, properly oriented for air inlet and outlet, onto the hopper flange by lifting the body by the lifting lugs that are attached to the roof of the body. Bolt together with 3/8" bolts. Exercise care in lifting so not to strain or warp the upper body section. **Safety First.** Do not slide the top section into place, but lower to minimize wiping away of caulking.
- 4) Safety rail for the top of unit may now be assembled on EFM filter. Railing may be preassembled on the ground before lifting the body into place, if care is exercised so as not to tangle the crane lifting straps or chains in the rails while lifting.
- 5) The ladder and safety cage may now be assembled onto the side of the filter unit. (O.S.H.A.) requires the ladder to be anchored to the ground and the safety cage to be no lower than 7'-0" but no higher than 8'-0" from the ground level.
- 6) Mount the electronic air control on the inside of the building wall as close to the filter unit as possible or adjacent to the electric starters that control the fans and all other dust collection related controls.
- 7) The filter bags and wire cages can be installed at this time. See Page 5 for filter bag installation detail.
- 8) Fire Gate: Install Fire Gate with pulley towards inside of filter; anchor Fuse Link to opposite side of filter, making sure there is sufficient, unobstructed, cable for the gate to fully close. See Page 6 for detail.

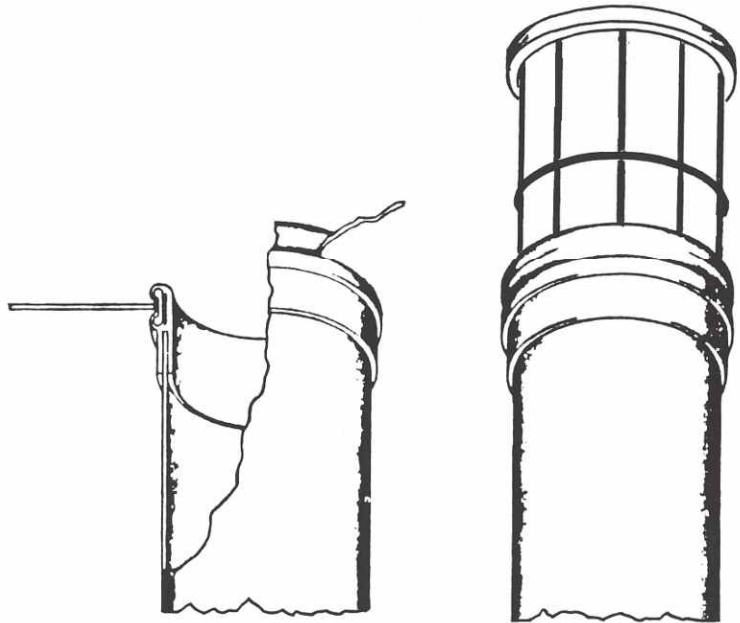
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FILTER BAG INSTALLATION

1.



2.



To install the filter bags and wire cages simply open the lids on top of the filter unit and remove the air pulse pipes and stand on the cell plate in the clean air chamber. There will be sufficient room to install the bags and wire cages.

- 1) Insert the lower (closed) end of the bag through the cell plate. The best method for inserting the bag cuff into the cell plate is to form the bag cuff into a "U" shape. Center the cuff groove in the cell plate, and carefully snap the bag cuff into its sealed position. Caution must be exercised and each bag checked carefully to insure that the filter bag cuff groove is properly seated in the cell plate.
- 2) Insert the wire frame into each bag by sliding each cage downward until the bottom edge of the upper lip is fully covering the bag cuff and resting firmly on the filter cell plate.
- 3) When all the bags and wire cages are installed, remount the air pulse pipes in the exact positions that they were in and close the top lids. The filter is now ready for the initial operation start-up.

EFM Filter Bags & Cages

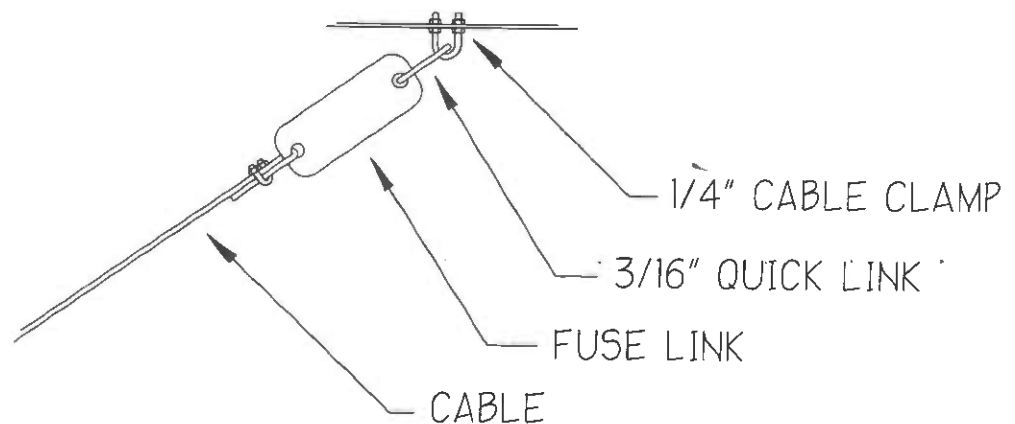
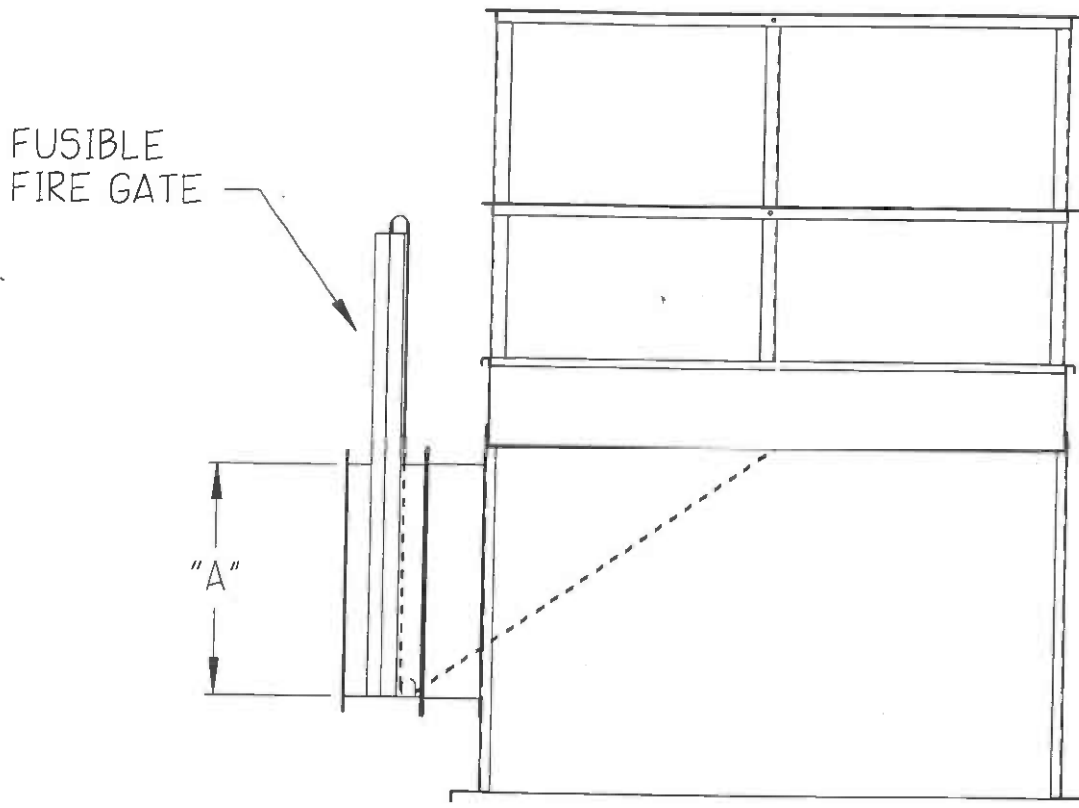
Honeyville

Part No.	Description
FLBG1005	4-5/8" x 8' 16oz PE Felt Mirror Finish Microseal Bag
FLWC1002	96" Wire Cage

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FIRE GATE INSTALLATION

Install the Fire Gate with the pulley towards the inside of the filter, anchor Fuse Link inside the filter, and making sure that there is sufficient, unobstructed, cable for the gate to fully close (a minimum of $1\frac{1}{2}$ times "A") .



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OPERATION

Before operating the EFM filter, a final check of the filter bag seating should be made. Also check to make certain that the top access doors are properly tightened.

WARNING: If the filter is operated without tightening the access doors, the doors may blow off of the filter and cause severe injury!

If all electrical and air controls are properly hooked-up and are "on", turn on the main system fan to allow dust laden air to enter the filter.

Generally it is better to "warm up" the filter with air only (no dust) for 10 minutes before turning on your process equipment, which produces dust. This will reduce condensation problems with dust caking on cool surfaces. Dust seepage through the filter bags may occur when first started with new felt bags. Seepage, if it occurs, will stop after several hours of operation.

After shut down the first day, check again the seating of the filter bags to ascertain if any leakage is occurring at that point. It is recommended that the EFM filter be allowed to "purge clean" at the end of each day of operation and over the lunch hour if a shut-down occurs. This may be accomplished by allowing the complete system to run for about 20 minutes after the last dust creating machines have been shut off.

WARNING: Internal atmosphere pressure is very dangerous. Before attempting service or internal inspection, disconnect and lockout electric power. Keep hands clear of inlets and outlets.

SERVICE

The filter bag is the heart of the system. Care should be exercised in keeping them from getting moist or exposed to certain harmful chemical vapors.

If the system is properly sized for your air and dust load, little routine maintenance is required. As time goes by, dry cleaning or replacement of the bags may be deemed necessary. This may occur after a year or a number of years. Occasional removal of a bag should be done to note its condition. Certainly every four months of operation would not be excessive for routine inspection.

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AIR REQUIREMENTS

The air supply needs to be regulated to 90 PSI, and an in-line air drier is recommended. Also a trap is recommended in the air line inside the building before the drier if possible to help trap moisture condensation. A small valve cock to drain water should be installed at the low point of the trap.

STANDARD SPECIFICATION TABLE					
Filter Size	Cloth Area Sq. Ft.	No. of Bags	Bag Length	8:1 Ratio C.F.M.	Reverse Jet C.F.M.
EFM40	387	40	8'	3,096	10
EFM80	774	80	8'	6,192	20
EFM120	1,161	120	8'	9,288	30
EFM160	1,548	160	8'	12,384	40
EFM200	1,935	200	8'	15,480	50
EFM240	2,322	240	8'	18,576	60
EFM280	2,709	280	8'	21,672	70

TIMER ADJUSTMENT

- 1) The timer is preset prior to delivery but can be adjusted to the desired cleaning schedule. The preset cleaning schedule is listed in the chart below:

Filter Size	Time between Pulses	Length of each Pulse
EFM40	45 seconds	0.3 seconds
EFM80	22½ seconds	0.3 seconds
EFM120	15 seconds	0.3 seconds
EFM160	12 seconds	0.3 seconds
EFM200	9 seconds	0.3 seconds
EFM240	7½ seconds	0.3 seconds
EFM280	6½ seconds	0.3 seconds

- 2) Conduits should enter the bottom of the box (or the side), never the top.

HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP WITH AC POWER

A consistent 110 to 120 volt AC power supply is required for the Control Panel (see chart below for Model). Attach the black lead to terminal L1 and the white lead to terminal L2. If the 3 Amp fuse needs to be replaced at any time be sure to replace it with a 3 Amp, 250 volt, 312 fuse.

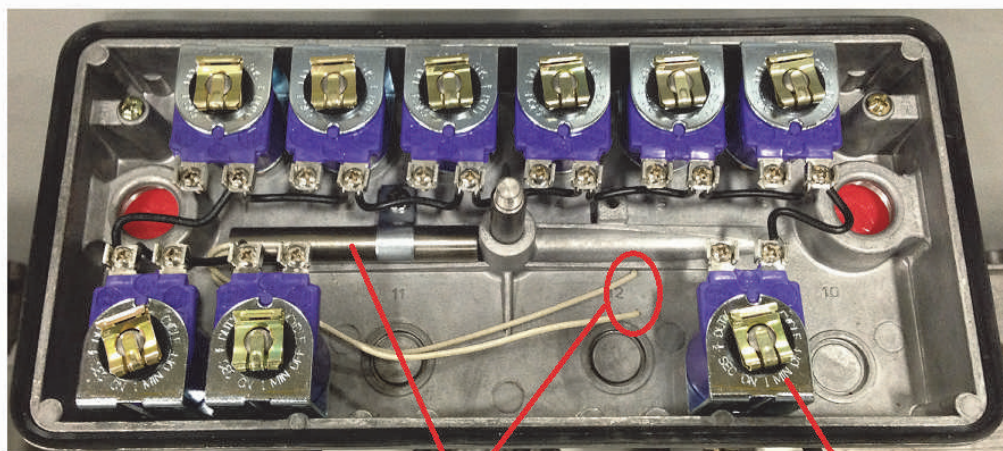
A conduit with color keyed 16 gauge wires (see chart below for quantity of wires required) should be run from the Control Panel to the Multi Valve Solenoid Enclosure (see chart below for Model), which is mounted in the top chamber near the air manifold tube. The Solenoid Common terminal, 3rd from the left in the control panel, needs to be attached to the common side on one valve. Note that all commons are tied together with jumpers. Solenoid numbers are stamped on the outside of the enclosure, on the bottom side.

NOTE: A heating element w/ thermostat has been installed in the solenoid enclosure to prevent freezing. Power (110 volt) must be connected the heating element as shown in the picture below.

NOTE: For maximum cleaning of the bags we recommend hook-up to alternate rows. See Pages 15 & 16 for a chart listing the proper terminal and solenoid sequence.

Filter Model	Ametek NCC Control Panel	Goyen Multi Valve Enclosure w/ RCA3D2 Pilot Solenoid Valves			# of 16 Ga. Wires Needed In Conduit
		#1	#2	#3	
EFM40	DNC-T2006-020	RCA3-5V4000*331	n/a	n/a	5
EFM80	DNC-T2010-020	RCA3-8V8000*331	n/a	n/a	9
EFM120	DNC-T2020-020	RCA3-12V12000*331	n/a	n/a	13
EFM160	DNC-T2020-020	RCA3-8V8000*331	RCA3-8V8000*331	n/a	17
EFM200	DNC-T2020-020	RCA3-12V12000*331	RCA3-8V8000*331	n/a	21
EFM240	DNC-T2032-020	RCA3-12V12000*331	RCA3-12V12000*331	n/a	25
EFM280	DNC-T2020-020	RCA3-12V12000*331	RCA3-8V8000*331	RCA3-8V8000*331	29

Goyen Multi Valve Enclosure w/ RCA3D2 Pilot Solenoid Valves
(Cover removed for photo)



Heating Element w/Thermostat
These two wires should be
connected to 110 volt power

RCA3D2 Pilot Solenoid Valve

HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP WITH AC POWER: CONTROL PANEL

AC Input, Pulse Cleaning of Bag House Dust Collectors

Models DNC-T2003 through DNC-T2032

FEATURES

- **Universal voltage input:** 95 to 265 VAC 50/60 Hz
- **One SKU:** covers all voltages and time ranges required in your application
- **Advanced surface mount component technology:** extremely reliable and trouble free operation
- **Digital microprocessor controlled circuitry:** for precise pulse timing
- **Non-volatile memory:** for retaining programmed settings
- **3-digit, 7-segment numeric display:** for ease of viewing controller operation
- **Easily programmable:** on/off times and last output used via keypad
- **Small footprint:** same size for 3, 6 and 10 output control
- **Time ranges for all applications:** On time: 50 ms to 600 sec; Off time: 1 to 999 sec
- **2 modes of operation:** can be operated continuously or on demand via external pressure switch
- **Finger safe terminations:** reliable electrical connections and increases safety
- **RoHS construction:** suited for global applications
- **Supplied on metal chassis:** for mounting directly in a NEMA 4 box
- **Retrofit models available:** for direct drop in replacement of former product
-  **File #E65038**

Operating Logic: The DNC-T2003 through DNC-T2032 controls are output sequencers with an adjustable ON TIME, OFF TIME, and LAST OUTPUT. Upon application of power to the L1 and L2 terminals with the high pressure switch contacts closed, the OFF TIME is initiated. At the end of the preset OFF TIME, output 1 will turn on for the preset ON TIME. The control will cycle through all selected outputs until the high and low pressure switch contacts are opened. If the pressure switch contacts open during the ON TIME, the output will complete the active ON cycle. The next time the high pressure switch is closed the next output in

the sequence is fired. Pressure monitoring with no hysteresis is achieved by using only a high pressure switch. Placing a jumper across the high pressure input forces the control to run continuously.

Note: Controls are shipped with jumper across pressure switch terminals

Programming: Programming is accomplished using 3 buttons: down, up, and select.

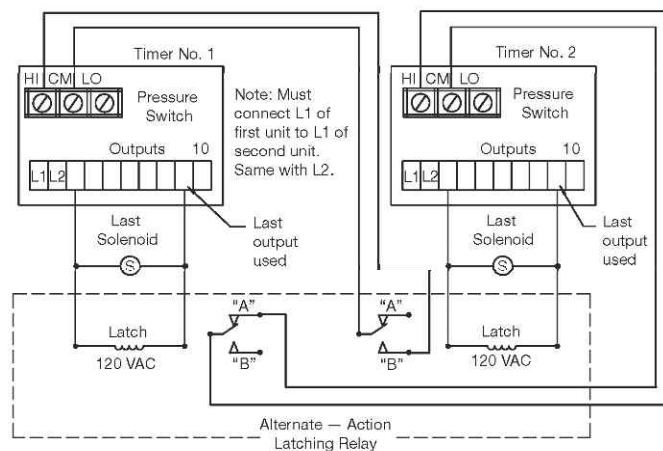
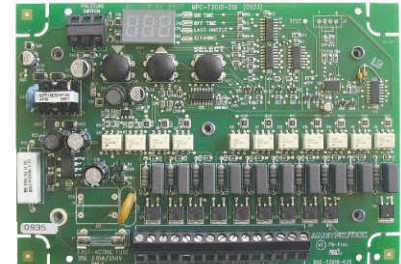
Down: Decrements the active parameter

Up: Increments the active parameter

Select: Toggles amongst the adjustable parameters: on time, off time, and last output

Programming Mode Timeout: 60 seconds

Test & Default Modes: Test mode is entered by pressing and holding the select button for 3 seconds while the unit is in the normal operating mode. Once in test mode, the display will show tSt. Pressing the up or down arrow buttons toggles amongst outputs, and pressing select pulses the selected output for the preset ON TIME. Pressing the select button while the display shows tSt will change the display to dFt. While the display shows dFt, the up and down arrows toggle amongst y, n, and dFt. Pressing select when the message is y will set all adjustable parameters to the factory defaults. At any time in test and default modes, pressing and holding the select button for 1.5 seconds will revert the controller back to the normal operating mode.



HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP WITH AC POWER: CONTROL PANEL

SPECIFICATIONS

INPUT

Input Voltage: 95 to 265 VAC 50/60 Hz

Power Consumption: 6.30 VA max plus load

Circuit Protection: 3.15 A fast-acting fuse and 72 J metal-oxide varistor at input

OUTPUT

Output: Solid state, 150 VA max

Off State Leakage: 1.5 mA max

On State Voltage Drop: 1.5 V max

ENVIRONMENTAL

Operating Temperature: -40° to 150°F (-40 to 66°C) Conformally coated with RTV to protect against moisture, corrosion, and vibration

DISPLAY

Display: 3 digit, 7 segment, green LED

Indicator LEDs: 5 green SMT (power, cleaning, on time, off time, last output)

TIME DELAY

On Time: 50 ms to 600 sec

Off Time: 1 to 999 sec

Resolution: 10 ms (50 ms to 10 sec), 100 ms (10 sec to 100 sec), 1 sec (100 sec to 600 sec)

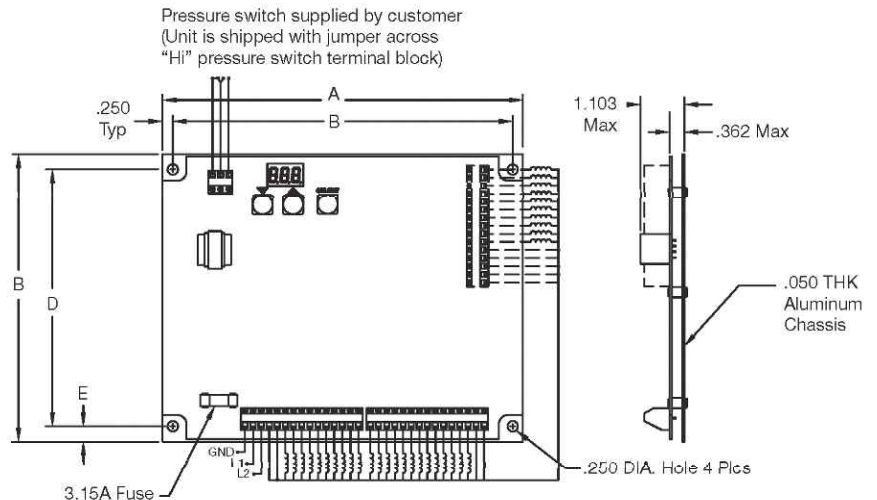
Accuracy and Repeatability: ±3% over temperature and voltage range

Default Settings:

On Time: 50 ms

Off Time: 15 sec

Last Output: Max. no. of outputs



Caution:

1. Do not mount controls in high vibration areas without shock mounts.
2. Do not mount controls in areas of high dust or corrosive atmospheres without a protective enclosure.
3. Do not use a converter or inverter for the power source.
4. Do not mount control in high transient voltage areas without an isolation transformer.
5. Do not leave control box open.
6. Do not allow a local repair shop to repair the controls, as we employ some very sophisticated components that could be further damaged. For service, call AMETEK National Controls Corp directly: 800-323-2593.

HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP WITH DC POWER

A consistent 12 volt or 24 volt DC power supply is required for the Control Panel (see chart below for Model). Attach the black lead to terminal L1 and the white lead to terminal L2. If the 3 Amp fuse needs to be replaced at any time be sure to replace it with a 3 Amp, 250 volt, 312 fuse.

A conduit with color keyed 16 gauge wires (see chart below for quantity of wires required) should be run from the Control Panel to the Multi Valve Solenoid Enclosure (see chart below for Model), which is mounted in the top chamber near the air manifold tube. The Solenoid Common terminal, 3rd from the left in the control panel, needs to be attached to the common side on one valve. Note that all commons are tied together with jumpers. Solenoid numbers are stamped on the outside of the enclosure, on the bottom side.

NOTE: A heating element and thermostat have been installed in the solenoid enclosure to prevent freezing. 12 Volt DC or 24 Volt DC power must be connected to terminal 3 and the Neutral to terminal 1 on the heater terminal block as shown in the images below.

NOTE: For maximum cleaning of the bags we recommend hook-up to alternate rows. See Pages 15 & 16 for a chart listing the proper terminal and solenoid sequence.

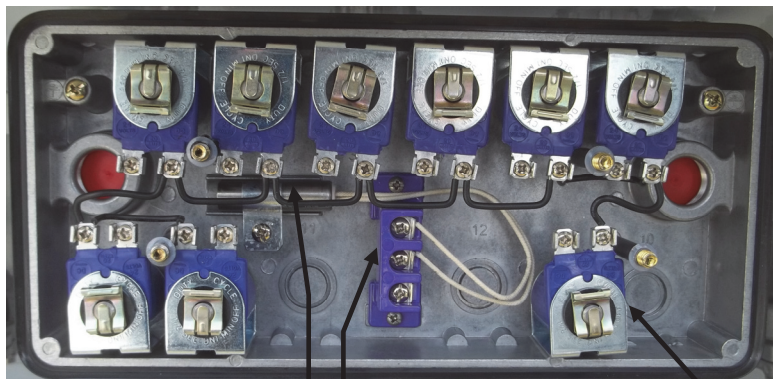
Filter Model	Ametek NCC Control Panel	Goyen Multi Valve Enclosure w/ RCA3D2 Pilot Solenoid Valves			# of 16 Ga. Wires Needed In Conduit
		#1	#2	#3	
EFM40	DNC-T2010-ADC	RCA3-5V4000* XXX	n/a	n/a	5
EFM80	DNC-T2010-ADC	RCA3-8V8000* XXX	n/a	n/a	9
EFM120	TBD	RCA3-12V12000* XXX	n/a	n/a	13
EFM160	TBD	RCA3-8V8000* XXX	RCA3-8V8000* XXX	n/a	17
EFM200	TBD	RCA3-12V12000* XXX	RCA3-8V8000* XXX	n/a	21
EFM240	TBD	RCA3-12V12000* XXX	RCA3-12V12000* XXX	n/a	25
EFM280	TBD	RCA3-12V12000* XXX	RCA3-8V8000* XXX	RCA3-8V8000* XXX	29

For 12 Volt DC **XXX** = 338

For 24 Volt DC **XXX** = 336

Goyen Multi Valve Enclosure w/ RCA3D2 Pilot Solenoid Valves

(Cover removed for photo)

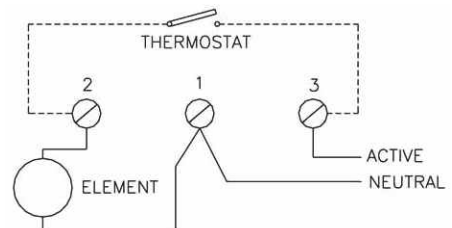


Heating Element

Wiring Terminal Block

RCA3D2 Pilot Solenoid Valve

Wiring Terminal Block Connections for Heater



HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP WITH DC POWER: CONTROL PANEL

DC Input, Pulse Cleaning of Bag House Dust Collectors

Model DNC-T2010-ADC

FEATURES

- *Field selectable from 2 to 10 outputs*
- *Solid state timing and switching logic*
- *300% overrated solid state switch*
- *Pressure switch control option on board*
- *12 to 24 VDC input voltage*
- *Adjustable ON and OFF times*
- *High quality locking bushing potentiometers for timing adjustment*
- *Very low power consumption*
- *Conformally coated for protection against vibration, humidity, and contamination*
- *LEDs show compartment being cleaned*
- *Metal chassis provided for mounting directly into NEMA 4 enclosure*

Operating Logic: The control can function in 2 modes.

In Continuous Mode, the pressure switch terminals are shorted. Upon application of output voltage, the control activates output #1 after the preset off time. It will continue to activate outputs sequentially until input voltage is removed.

In On Demand Mode, the pressure switch terminals are connected to an isolated set of contacts of a differential pressure switch. The control will activate the outputs sequentially whenever the pressure switch contacts are closed. When the pressure switch contacts open, the output sequencing stops. Re-closing of the contacts will cause the control to resume activating the outputs. Program wire allows the user to select the maximum number of outputs to be activated.

Note: Controls are shipped with jumper across pressure switch terminals.

SPECIFICATIONS

TIME SETTING RANGES

ON-Time: Adjustable from 20 to 200 ms

OFF-Time: Adjustable from 1.5 to 60 sec.

Repeatability: $\pm 3\%$ over temperature and voltage ranges

INPUT

Operating Voltage: 10.0 to 29.0 VDC (unfiltered supply voltage must be full-wave rectified)

Power Consumption Voltage During Off Time: 1.5 W at 12 VDC, 4.2 W at 24 VDC

OUTPUT

Type: Solid state switch

Load Per Output: 3 A max. at 1.5 V less than input voltage

PROTECTION

Transient Input Voltage: Metal oxide varistor plus large filter capacity

Transient Output Voltage: Solid state switch rated at 10 A to 60 V fly-back diode protected

Short Circuit Protection: 3 A fuse for circuit, reverse polarity protected

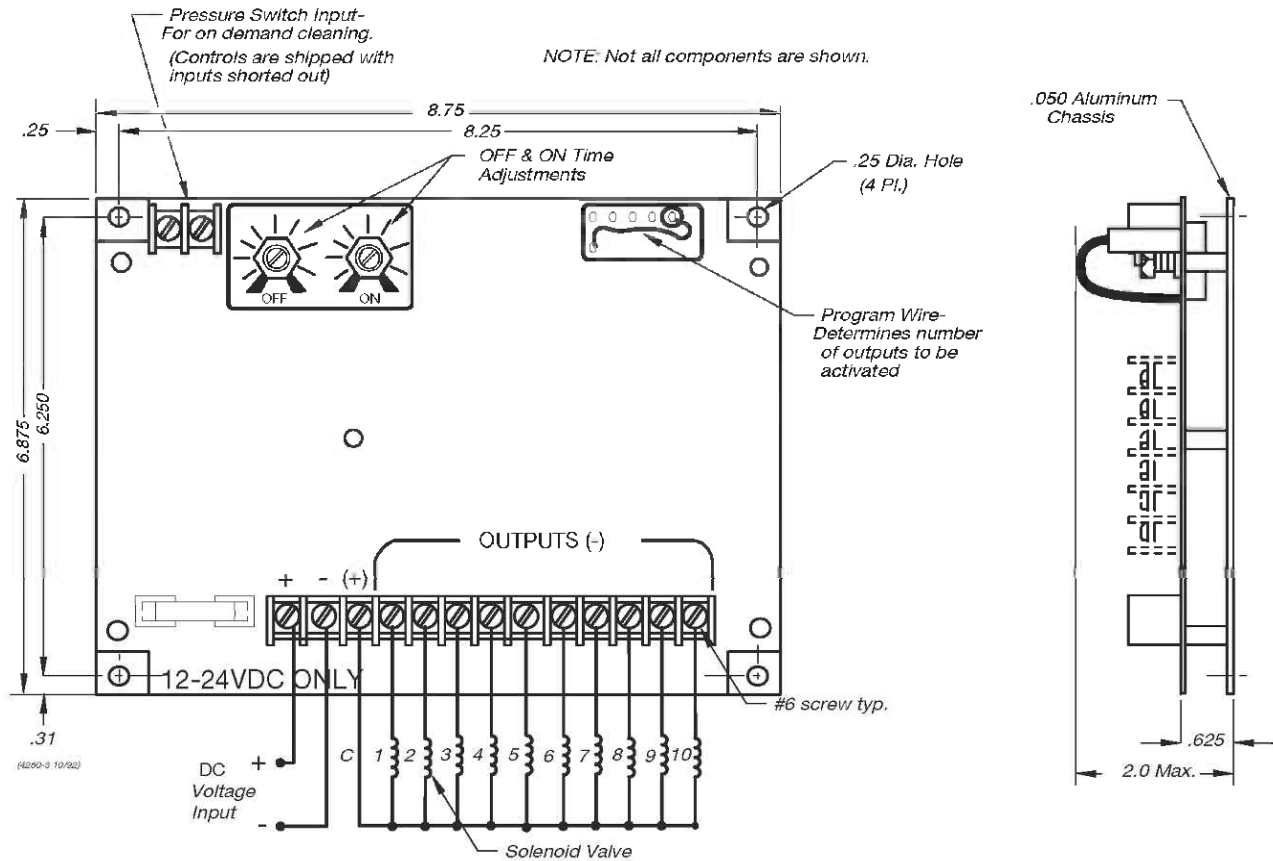
ENVIRONMENTAL

Operating Temperature: -40°F to 150°F (-40°C to 65°C)

Storage Temperature: -40°F to 185°F (-40°C to 85°C)

HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP WITH DC POWER: CONTROL PANEL



Caution:

7. Do not mount controls in high vibration areas without shock mounts.
8. Do not mount controls in areas of high dust or corrosive atmospheres without a protective enclosure.
9. Do not use a converter or inverter for the power source.
10. Do not mount control in high transient voltage areas without an isolation transformer.
11. Do not leave control box open.
12. Do not allow a local repair shop to repair the controls, as we employ some very sophisticated components that could be further damaged. For service, call AMETEK National Controls Corp directly: 800-323-2593.

HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP (AC & DC): TERMINAL & SOLENOID SEQUENCE

EFM40		
Control Terminal #	Enclosure 1 Solenoid #	Enclosure 2 Solenoid #
1	1	n/a
2	3	
3	2	
4	4	

EFM80		
Control Terminal #	Enclosure 1 Solenoid #	Enclosure 2 Solenoid #
1	1	n/a
2	3	
3	5	
4	7	
5	2	
6	4	
7	6	
8	8	

EFM120		
Control Terminal #	Enclosure 1 Solenoid #	Enclosure 2 Solenoid #
1	1	n/a
2	3	
3	5	
4	7	
5	9	
6	11	
7	2	
8	4	
9	6	
10	8	
11	10	
12	12	

EFM160		
Control Terminal #	Enclosure 1 Solenoid #	Enclosure 2 Solenoid #
1	1	
2	3	
3	5	
4	7	
5		1
6		3
7		5
8		7
9	2	
10	4	
11	6	
12	8	
13		2
14		4
15		6
16		8

EFM200		
Control Terminal #	Enclosure 1 Solenoid #	Enclosure 2 Solenoid #
1	1	
2	3	
3	5	
4	7	
5	9	
6	11	
7		1
8		3
9		5
10		7
11	2	
12	4	
13	6	
14	8	
15	10	
16	12	
17		2
18		4
19		6
20		8

EFM240		
Control Terminal #	Enclosure 1 Solenoid #	Enclosure 2 Solenoid #
1	1	
2	3	
3	5	
4	7	
5	9	
6	11	
7		1
8		3
9		5
10		7
11		9
12		11
13	2	
14	4	
15	6	
16	8	
17	10	
18	12	
19		2
20		4
21		6
22		8
23		10
24		12

HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP (AC & DC): TERMINAL & SOLENOID SEQUENCE

EFM280			
Control Terminal #	Enclosure 1 Solenoid #	Enclosure 2 Solenoid #	Enclosure 3 Solenoid #
1	1		
2	3		
3	5		
4	7		
5	9		
6	11		
7		1	
8		3	
9		5	
10		7	
11			1
12			3
13			5
14			7
15	2		
16	4		
17	6		
18	8		
19	10		
20	12		
21		2	
22		4	
23		6	
24		8	
25			2
26			4
27			6
28			8

HONEYVILLE EFM SERIES

ELECTRICAL HOOK-UP (AC & DC): MULTI VALVE ENCLOSURES

Technical Specification NEMA4/Raintight/
ATEX II 3 D G Diecast Pilot Valve
Enclosures (5, 8, 12 valve)

Diecast aluminium enclosures for Goyen
RCA3D pilot valves, available optionally
with anti-condensation heater.



3-5V Enclosure



3-8V Enclosure



3-12V Enclosure

Suitable for

ATEX Category Ex II 3 GD and Ex II 2D
IP64 and all other non-hazardous
applications, for piloting Goyen
diaphragm valves.

Installation

Ensure device is disconnected from
power before opening the enclosure.
These enclosures are all finished
with the common solenoid terminals
pre-wired.

For reliable operation, ensure supply
voltage is within -10% and +15% of
rated solenoid voltage.

To guarantee NEMA4 performance
ensure gasket is in place when
attaching lid to enclosure base.
Replace components within 1 million
cycles (refer to Spare Parts).

Construction

Body: Aluminium (diecast)

Pilot Body: Aluminium (diecast)

Ferrule: 302 SS

Armature: 430FR SS

Seals: Nitrile

Screws: 302 SS

Clip: Mild steel (plated)

Pilot Valve Thread Type: PA-6

Conduit Entry Thread Type: PA-6

Operation

Recommended
on time range: 50-500ms

Recommended time
between pulses: 1 minute or greater

Options

None

Product Performance

Flow	Maximum Working Pressure	Minimum Working Pressure	Temperature Min	Temperature Max	Fluid Media
0.32 Cv	860 kPa	0 kPa	-40°C	82°C	Air or
0.27 Kv	125 psi	0 psi	-40°F	180°F	inert gas

Refer to Q Series Solenoid product specification for electrical performance details.

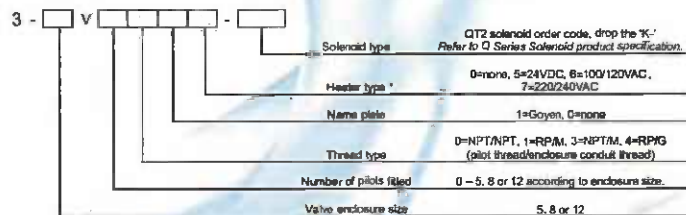
Approvals

- C-Tick
- EMC (89/336/CE)

Spare Parts

K0380	Nitrile replacement seal, armature, spring & ferrule kit.
K0384	As above in viton.
RCA3D0-***	Replacement pilot assemblies.
RCA3D1-***	Refer to RCA3D Remote Pilot product data sheet.

Order Code



Example: 3 8V6010 330

8 valve enclosure, fitted with 6 pilots, with NPT pilot and conduit thread type, Goyen name plate, no heater element and 220/240VAC 50/60Hz solenoids.

Note that enclosures are pre-wired with QT2 type solenoids only.

* = heaters currently not available in 3-5V5 and 3-12V12 enclosures.

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TS Nema4 Encs 08/10

Goyen Controls Co Pty Ltd reserves the right to change product designs and specifications without notice.

HONEYVILLE EFM SERIES

REPLACEMENT PARTS: ENCLOSURES & CONTROL PANELS

Honeyville

Part No. Description

AC Power

FLGP1104	RCA3-5V4000*331 NEMA 4 Multi Valve Enclosure
FLGP1108	RCA3-8V8000*331 NEMA 4 Multi Valve Enclosure
FLGP1112	RCA3-12V12000*331 NEMA 4 Multi Valve Enclosure
FLHW1085	DNC-T2006-020 Control Panel
FLHW1083	DNC-T2010-020 Control Panel
FLHW1084	DNC-T2020-020 Control Panel
FLHW1086	DNC-T2032-020 Control Panel

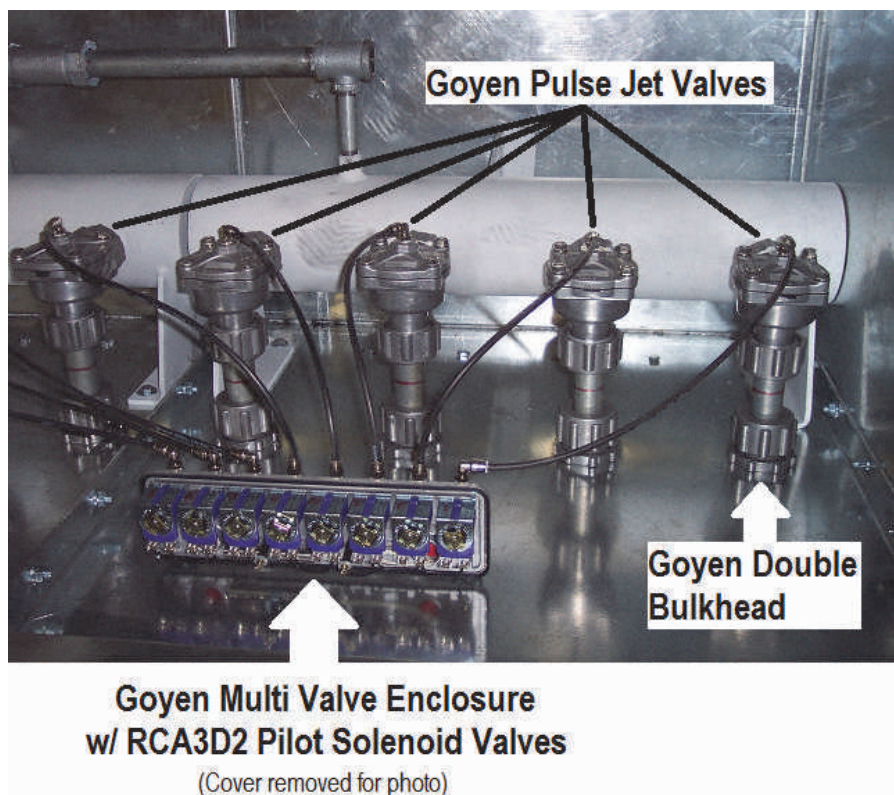
12V DC Power

FLGP1204	RCA3-5V4000*338 NEMA 4 Multi Valve Enclosure
FLGP1208	RCA3-8V8000*338 NEMA 4 Multi Valve Enclosure
FLGP1212	RCA3-12V12000*338 NEMA 4 Multi Valve Enclosure
FLHW1013	DNC-T2010-ADC Dust Control Board

24V DC Power

FLGP1304	RCA3-5V4000*336 NEMA 4 Multi Valve Enclosure
FLGP1308	RCA3-8V8000*336 NEMA 4 Multi Valve Enclosure
FLGP1312	RCA3-12V12000*336 NEMA 4 Multi Valve Enclosure
FLHW1013	DNC-T2010-ADC Dust Control Board

EFM Upper Chamber Area



HONEYVILLE EFM SERIES

REPLACEMENT PARTS: GOYEN BULKHEAD & VALVES

Item Honeyville

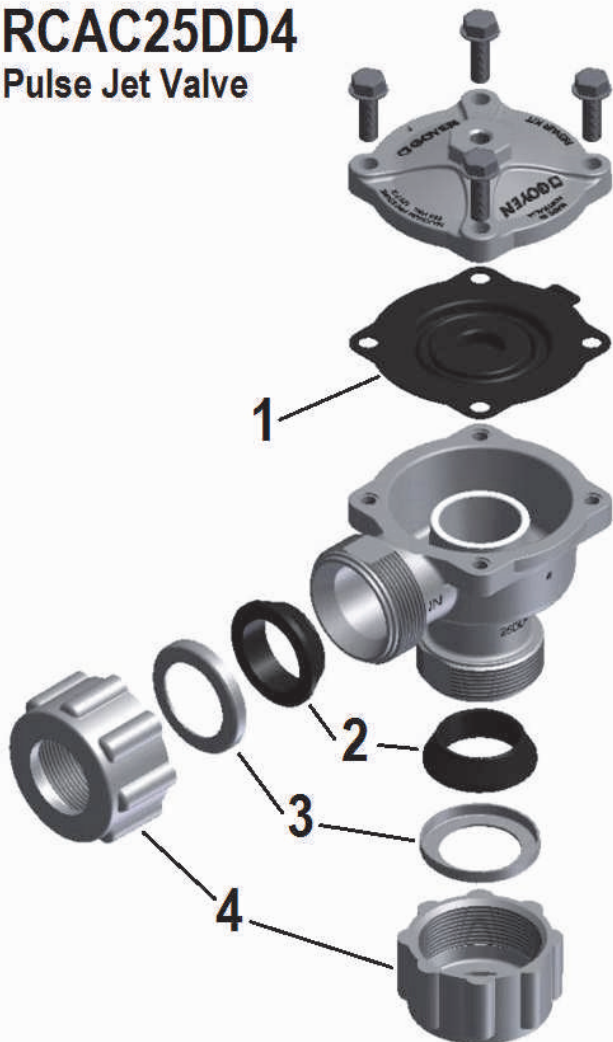
No.	Part No.	Description
1	FLGP1043	K2546 Repair Kit
2	FLGP1011	609406 Compression Seal Buna-N 250
3	FLGP1012	609405 Compression Seal Retainer
4	FLGP1013	609404 Compression Nut
	FLGP1041	RCAC25DD4002 1" Pulse Jet Valve
	FLGP1010	BH25DD 1" Double Bulkhead
	FLGP1001	RCA3D2 Solenoid Valve Less Coil
	FLGP1002	K0380 Repair Kit for RCA3 Solenoid Valve

Note: Items 2, 3, & 4 are interchangeable between the Valve & Bulkhead

Goyen BH25DD Double Bulkhead



RCAC25DD4
Pulse Jet Valve



Goyen RCA3D2 Solenoid Valve



Goyen K0380 Repair Kit



HONEYVILLE EFM SERIES

MAGNEHELIC DIFFERENTIAL GAUGE PARTS LIST

Quantity	Unit of Measure	Honeyville Part No.	Description
1	Each	FLHW1003	2010 Magnehelic Gauge
1	Each	FLBR1001	Magnehelic Gauge Bracket
80	Feet	CSTB1002	1/4" Black Poly Flo Tubing
5	Each	FLGB1000	Grommet Bracket for 1/4" Hose
9	Each	FLHW1022	230 Rubber Grommet
2	Each	HWHF1002	1169X4S 1/8" NPT x 1/4"OD Hose 90° Swivel Elbow
2	Each	HWHF1001	1168X4 1/8" NPT x 1/4"OD Hose Straight Adapter
1	Each	FLHW1080	75048496 1/8" Polyethylene Exhaust Muffler

Magnehelic Gauge

1. Most filters are designed to operate at a differential pressure of 0.125 to 8.000 inches of water. When starting a new filter the differential pressure may be less than 0.125 inches of water until a mat of dust begins to build on the fabric. Once the filter reaches equilibrium pressure, the magnehelic gauge becomes an indicator of the entire systems operation. So long as the gauge reads between 0.125 and 3.000 inches of water, the system will be delivering design volume flow.
2. If the filter's differential pressure exceeds 5.000 inches of water, check for the following conditions:
 - a. Low air pressure for pulse cleaning
 - i. Check the pressure gauge. The supplied pressure should be 90 PSI (see Page 8).
 - b. Clogged or deteriorated Magnehelic gauge line
 - i. Clean or replace lines. If installation is several years old replacement of lines may be necessary.
 - ii. Check internal filter on differential pressure port on filter housing. Replace if blocked.
 - c. Bad Magnehelic gauge
 - i. Normally the gauge will fluctuate during cleaning pulse. If the needle does not move, replace the gauge.
 - d. Bags blinding
 - i. Inspect bag dust cake. If necessary, run the filter with the main fan off and without a dust load for 15 to 30 minutes until the dust cake is removed.
 - e. Cleaning mechanism malfunction
 - i. Listen to the filter for the distinct cleaning pulse. If no pulse is heard, contact Honeyville Metal.
 - f. If no other malfunctions are found, the excessive pressure may indicate that the filter bags should be cleaned or replaced. Normally the bags should not require attention until after many years of operation.
3. If the filter's differential pressure falls below 0.125 inches of water, check for the following conditions:
 - a. Check items 2b and 2c listed above. Verify that the lines to the magnehelic gauge are properly connected.
 - b. Check for holes in the bags. If found, replace the worn bags.

HONEYVILLE EFM SERIES



INSTALLATION AND MAINTENANCE INSTRUCTIONS

Explosion Vents

06-308-1

WARNING

- Read these instructions carefully and completely before attempting to unpack, install or service the explosion vent.
- Handle the explosion vent with extreme care. DO NOT bend, poke, or in any way distort the explosion vent.
- Do not locate vent assembly where personnel are exposed to the vent or the area above or in front of the vent, as they may be injured by the release of pressure, flame, noise, particles, and/or process material.
- Locate the explosion vent so that the discharge does not ignite other combustibles, resulting in an ensuing fire or secondary explosion.
- Interfacing equipment and/or machinery must also be protected.
- Flow arrows on round explosion vent tags, or explosion vent tag for square and rectangular vents must be directed to the atmospheric side of the process. Provisions shall be made to prevent personnel from standing or walking on vents, as they risk falling through.
- The vent opening is to be left free and clear. Nothing, i.e. goods or products, is allowed to obstruct the vent area as this will decrease vent efficiency.
- Install the enclosed DANGER sign in a conspicuous location near the zone of potential danger.

GENERAL

An explosion vent is a pressure relief device, designed to give an instantaneous opening at a predetermined pressure. Its purpose is to protect the equipment from excessive pressures caused by dust or gas deflagrations.

INSPECTION/PREPARATION

WARNING: Always handle the explosion vent with extreme caution. Handle the explosion vent by its edges only. Damage to the functional area (center) or seat area of the explosion vent may adversely affect the performance of the explosion vent. Read the explosion vent tag completely before installing to confirm that the size and type are correct for your system.

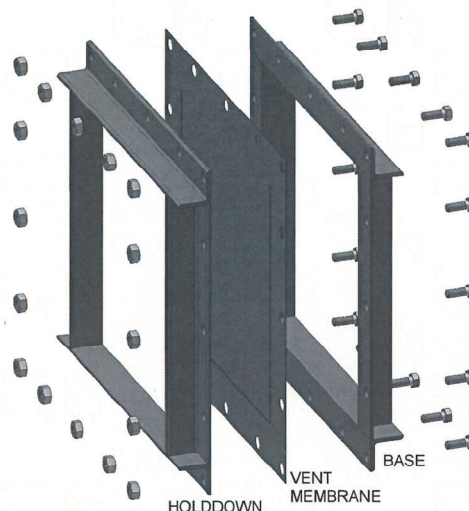
1. Carefully remove the explosion vent from its packaging container.
2. Inspect the explosion vent for damage.
3. If foreign material is present, carefully clean the explosion vent with a solvent that is compatible with your media.
4. Two personnel are recommended for handling of all vents larger than 24" x 30" (600 x 1000 mm) (rectangular) and 30" (800 mm) (round) or larger.
5. CV-SF vents require vent frames with back-up bars to properly function (consult Fike for design requirements).

INSTALLATION - OPEN DISCHARGE

WARNING: The vent opening should be left free and clear. Do not insulate any part of the explosion vent or frame without consulting Fike.

IMPORTANT: When explosion vents are installed horizontally, the use of drainage/weep holes in the holddown frame is required.

1. Use base/inlet of explosion vent frame as a template to indicate placement of explosion vent on the vessel or duct to be protected.



2. Cut the vessel or duct opening to the marked size. The marked size should match the size identified on the vent tag.
3. Weld or bolt the inlet angle frame to the vessel or duct.

IMPORTANT: The explosion vent frame must be installed such that the seat area is flat and bolt holes remain perpendicular (square and rectangular vent frames) or circular (round vent frames).

4. If sealing is a particular concern due to the nature of the process, apply a process compatible silicone sealant or gasket to provide seal between explosion vent and inlet frame.
5. If using a gasket, select a gasket material that is compatible with the process, with a suggested thickness of 1/8" (3.2 mm) maximum. The gasket is to have the same inside diameter and outside diameter as the explosion vent frame.
6. Install the explosion vent and outlet flange aligning the bolt holes. DO NOT force the explosion vent hole alignment.
7. Apply light oil to the threads and install the nuts and bolts hand tight.
8. Torque each bolt to the value identified on the explosion vent tag.

CAUTION: The torque values should not be exceeded as this may cause failure of the bolt and/or damage to the vent.

INSTALLATION - WITH FLAMQUENCH II SQ (FQIISQ)

For additional information, refer to FQIISQ installation instructions, E06-085.

WARNING: The vent opening should be left free and clear. Do not insulate any part of the explosion vent or frame without consulting Fike.

1. Use base/inlet of explosion vent frame as a template to indicate placement of explosion vent on the vessel or duct to be protected.

HONEYVILLE EFM SERIES

2. Cut the vessel or duct opening to the marked size. The marked size should match the size identified on the vent tag.

IMPORTANT: The FQIISQ uses an alignment hole feature to ensure proper orientation of the hinge of the explosion vent. The alignment hole must be included on the mounting frame so the explosion vent and FQIISQ can be mounted in only the prescribed orientation. Consult factory for FQIISQ bolting pattern.

3. Weld or bolt the inlet angle frame to the vessel or duct.

IMPORTANT: The explosion vent frame must be installed such that the seat area is flat and bolt holes remain perpendicular (square and rectangular vent frames).

4. Install gaskets on both sides of the explosion vent. Select a gasket material that is compatible with the process, with a suggested thickness of 1/16" (1.5 mm) maximum. The gasket is to have the same inside diameter and outside diameter as the explosion vent frame.
5. Install the explosion vent and outlet flange aligning the bolt holes. DO NOT force the explosion vent hole alignment.
6. Apply light oil to the threads and install the nuts and bolts hand tight.
7. Torque each bolt to the value identified on the explosion vent tag.

CAUTION: The torque values should not be exceeded as this may cause failure of the bolt and/or damage to the vent.

BURST INDICATOR

The explosion vents can have as an option an integrated electric burst indicator designed for intrinsically safe service. Refer to Burst Indicator Instructions / Drawing for electrical and dimensional specifications.

CAUTION: Unacceptably high voltage or currents will permanently damage the electrical system and the use of a non approved intrinsically safe power supply may even be the eventual ignition source of a dust or gas explosion. All burst indicators must be installed in an intrinsically safe circuit which conforms to the applicable national standard.

WARNING: Do not bend the electrical cable at any angle at a distance of less than 8 inch (20cm) from the mechanical bracing part and do not lift the explosion vent by the electrical cable, as this may damage the electrical circuit.

WARNING: The maximum torque values as mentioned on the nameplate must not be exceeded as this will permanently damage the electrical circuit.

MAINTENANCE

The explosion vent is maintenance-free due to its basic design and concept. Periodic visual inspections should be performed in accordance to the operating parameters and severity of service. All operational system parameters should be observed as a standard maintenance practice. The explosion vent must be replaced if they appear damaged, corroded, or leaking.

NOTE: Severe service is defined as rapid changes in pressure, high pressure, high temperature, or corrosive process.



HONEYVILLE EFM SERIES

FIKE WARRANTY INFORMATION

LIMITED WARRANTY

1. Because of the many and varied circumstances and extreme conditions under which Fike's products are used, and because Fike has no control over this actual use, Fike makes no warranties which extend beyond the express provisions herein. **FIKE MAKES NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS.** Fike makes no express warranties beyond the following provisions, which only apply to the original purchaser.
2. Fike only warrants to the original purchaser as follows: When the products and their component parts are properly installed and maintained, and if the product has not been modified or tampered with, then only the products actually manufactured by Fike shall be free from defects in material and workmanship only for a period of one year from shipment by Fike for all products except certain qualified Fike Fire Suppression Systems which shall be free of said defects for a period of sixty (60) months (see additional details for qualifications). The original manufacturers' warranties apply to products and components not manufactured by Fike.

NON-ASSIGNABILITY OF WARRANTY

3. The warranty as set forth in these terms and conditions may not be assigned, transferred, sold, or alienated in any other way and extends only to the original purchaser.

PURCHASER'S EXCLUSIVE REMEDY

4. The original purchaser's sole and exclusive remedy, unless varied by written agreement with Fike, is that Fike will, at Fike's option, repair or replace any defective part which is returned to Fike within ninety (90) days of discovery of the defect.

DISCLAIMER OF CONSEQUENTIAL DAMAGES

5. In no event shall Fike be liable for consequential damages, including but not limited to damages for loss of use, damages for lost profits, and damages for resulting harm other than the Fike assemblies and their component parts.

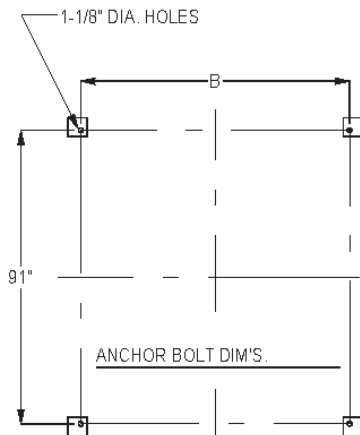
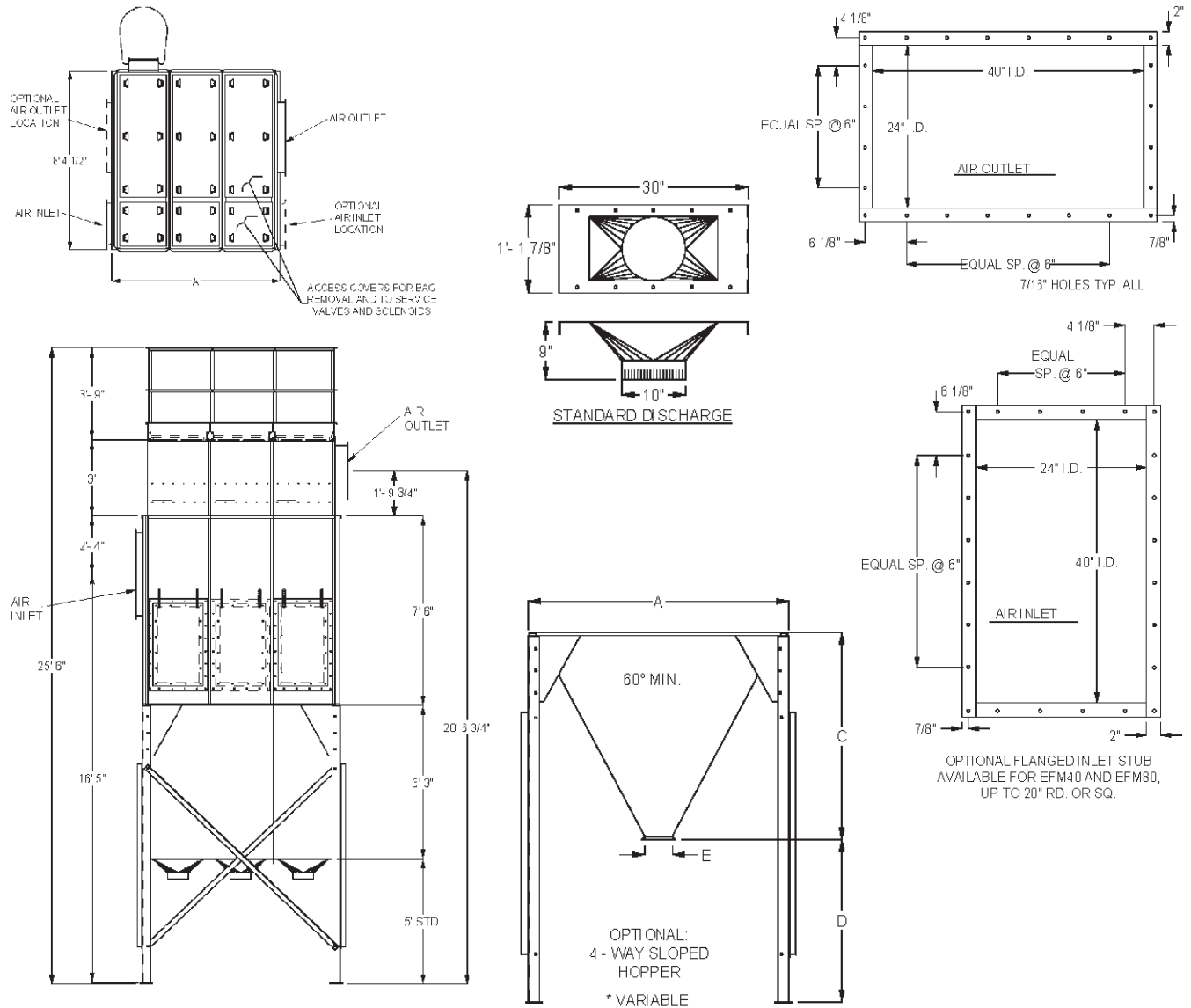


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HONEYVILLE EFM SERIES

FILTER INFORMATION AND DIMENSIONS



EFM FILTER GENERAL INFORMATION										
Model	No. Of Bags	No. Of Valves	Sq. Ft. Of Cloth	Comp. Air SCFM	Foot Plate	General Dimensions (Inches)				
						A	B	C	D	E
EFM40	40	4	387	10	6 x 6	34½	28	76	54	10
EFM80	80	8	774	20	6 x 6	64½	58	76	54	10
EFM120	120	12	1,161	30	6 x 6	94½	88	76	60	12
EFM160	160	16	1,548	40	6 x 6	124½	118	96	66	16
EFM200	200	20	1,935	50	8 x 8	154½	148	116	66	16
EFM240	240	24	2,322	60	8 x 8	184½	178	-	-	-
EFM280	280	28	2,709	70	8 x 8	214½	208	-	-	-
EFM320	320	32	3,096	80	8 x 8	244½	238	-	-	-
EFM360	360	36	3,483	90	8 x 8	277½	268	-	-	-
EFM400	400	40	3,870	100	8 x 8	304½	298	-	-	-

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HONEYVILLE METAL WARRANTY

The full extent of the warranty supplied by Honeyville Metal, Inc. ("HMI") is to correct any defects in material and/or workmanship on the products manufactured only by HMI. Any unauthorized modification to the equipment voids this warranty. This warranty period extends for **one year** from the date the product arrives on the site where installation will take place. HMI retains the right to review and/or adjust the time period for those products that may be held in inventory at a dealer's warehouse. HMI retains the final authority on determining if a product is within the warranty period and if full replacement of that product is required to retain the integrity of our products reputation and meet the customer's expectations. HMI will not furnish labor for replacement of any defective product or components of a product. Any product that is determined defective by both HMI and the end user who purchased the product may not be returned to HMI without the receipt of a Return Merchandise Authorization ("RMA") from our office. Returned merchandise must be shipped prepaid, unless instructed otherwise, and clearly marked with the RMA number provided by HMI. This warranty supplied by HMI excludes damage to products while in transit to the destination on all public forms of transportation except the trucking equipment owned and operated by HMI. This warranty does not cover performance guarantees on products, only defects in material and/or workmanship as prior statement. HMI does honor vendor warranties that extend beyond the one year period and will pass warranty coverage on to the purchaser of that vendor product.

HONEYVILLE EFM SERIES

HONEYVILLE CERTIFICATE OF QUALITY

Every effort has been made to make this equipment the best value you can obtain for your money. All the components have been inspected and assembled. The complete system has been tested to insure proper operation. We sincerely hope this equipment and our efforts meet with your approval. The full extent of the Honeyville Metal, Inc. warranty is to correct any defects in material or workmanship in those products manufactured by Honeyville Metal, Inc. Motors and drives, and all electrical and air control parts carry a one-year warranty.

READ INSTRUCTIONS CAREFULLY BEFORE OPERATING!

THIS UNIT WAS FINAL INSPECTED AND PACKED BY _____

Honeyville Metal, Inc.

4200 S 900 W

Topeka, IN 46571

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F (260) 593-2486

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