

## CentriFeeder MCV



The CentriFeeder MCV is an compact, precision feeder that is designed to measure and control the flow and total of any granular, free-flowing solid. The MCV operates over a very broad flow range and can control flows down to 12.5 lb/hr with batches as small as 30 grams. The feeder will retain its accuracy over the entire flow range of the feeder which can have a turndown ratio as high as 13:1. The CentriFeeder MCV works by measuring the flow rate of product that passes through it and then controls that flow rate by modulating an integral slide gate so that the stream of product exiting the feeder is a steady, controlled stream of product that is controlled to a set-point for either flow rate or flow rate and total.

### CENTRIFEEEDER MCV: FEATURES AND BENEFITS

- **Types of Operation:** Can control flow rate for continuous flows and blending and can control total throughput for batching or filling
- **Extreme Accuracy:** The CentriFeeder MCV is extremely accurate and can, for some products, retain this stated accuracy over the entire range of the feeder
- **Rugged Construction:** Made of Rugged Aluminum and Stainless Steel, the MCV feeder's design life exceeds over one million valve cycles
- **Perfect for Delicate Products:** Utilizing a product's natural tendency to bridge, the Virtual Flow Stop ensures that flow stops without shutting the valve completely which both minimizes wear of the valve itself and limits damage to the product caused by crushing.
- **Adaptability:** The CentriFeeder MCV can be used as a standalone unit or can be used in concert for multi-product blending or batching
- **Response Time:** Responds to flow changes within 100 ms and will typically be within +/- 1.0% of the flow set-point after 1 second of runtime
- **Compact Design:** With a vertical height under 27" and a width that is less than 9", the MCV has a very compact design that can be mounted almost anywhere. The MCV is designed to be installed as an individual unit or stacked for multiple ingredient blending
- **Extremely Low Flows:** The CentriFeeder MCV can control flows from 12.5 lb/hr (5.7 kg/hr) up to 16,000 lb/hr (7257 kg/hr) or higher



## FLOW RATE CONTROL: CONTINUOUS FLOWS

The CentriFeeder MCV can be used for continuous flow control as well as for blending applications. By modulating the integral control valve within the CentriFeeder MCV the selected flow rate will be maintained. Depending on the size of the MCV unit selected, flow rates can be controlled down to 250 lb/hr. For lower flow rates, the CentriFeeder MCV can also be run in Pulse Mode in which the valve will pulse product by continually opening then closing the integral slide gate in order to maintain even lower flow rates. Using the Pulse Mode, the CentriFeeder MCV can maintain flow rates down to 12.5 lb/hr. Contact Eastern Instruments for more information on the MCV's Pulse Mode.

Feeder Size	Min Volumetric Flow Rate	Max Volumetric Flow Rate	Min Flow Rate*	Max Flow Rate*	Typical Accuracy**
MCV - 1.5	0.13 ft <sup>3</sup> /min (0.004 m <sup>3</sup> /min)	1.81 ft <sup>3</sup> /min (0.05 m <sup>3</sup> /min)	280 lb/hr (127 kg/hr)	3800 lb/hr (1724 kg/hr)	+/- 0.25%
MCV - 3.0	0.29 ft <sup>3</sup> /min (0.008 m <sup>3</sup> /min)	3.81 ft <sup>3</sup> /min (0.11 m <sup>3</sup> /min)	600 lb/hr (272 kg/hr)	8000 lb/hr (3629 kg/hr)	+/- 0.25%
MCV - 6.0	0.57 ft <sup>3</sup> /min (0.016 m <sup>3</sup> /min)	7.61 ft <sup>3</sup> /min (0.21 m <sup>3</sup> /min)	1200 lb/hr (544 kg/hr)	16000 lb/hr (7257 kg/hr)	+/- 0.25%

## TOTAL CONTROL: BATCHING AND FILLING

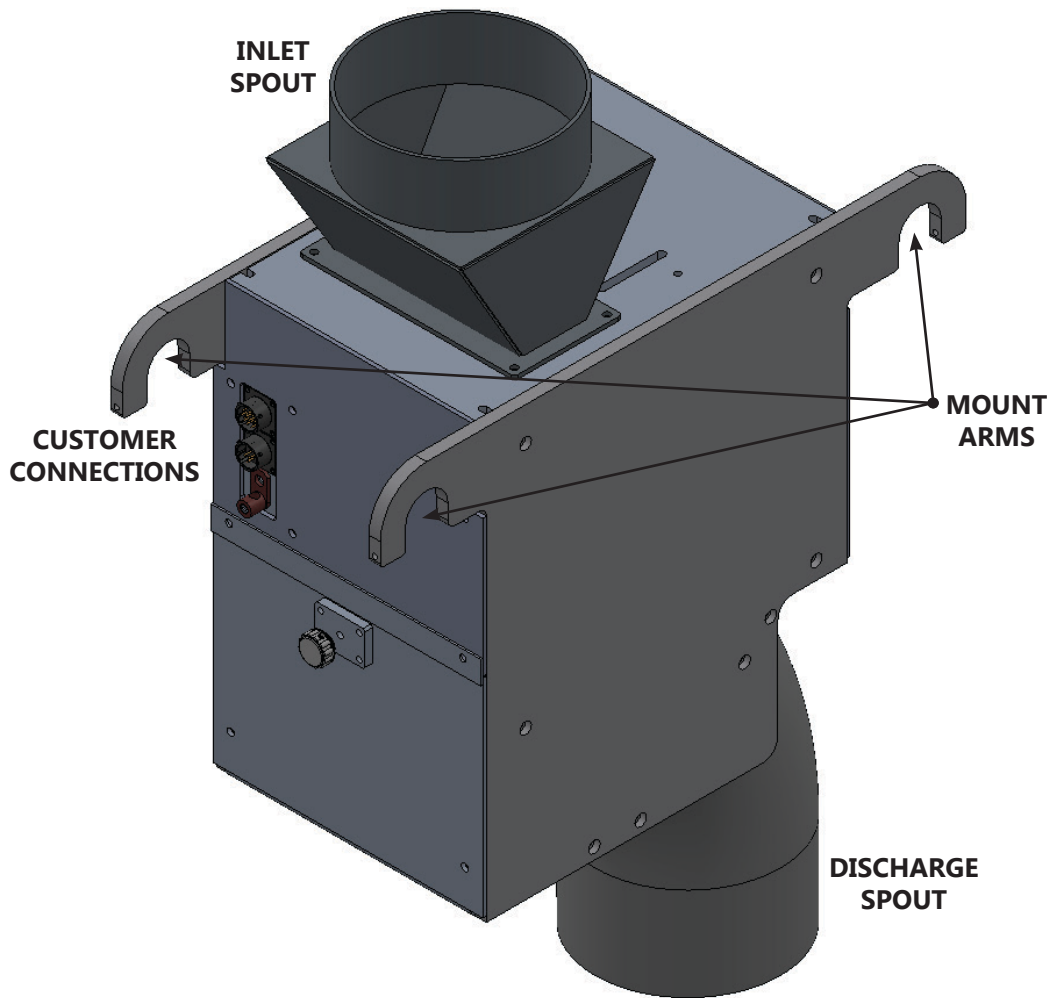
For batching, filling or other non-continuous blending applications, the CentriFeeder MCV can be used to control based on the total amount of product passing through the feeder. After entering a setpoint for the fill/batch total, the CentriFeeder MCV will discharge the desired amount of product at a controlled flow rate. The feeder will then, close its Integrated Control Valve and the product flow will stop.

Feeder Size	Min Batch Size*	Min Target Time	Min Volumetric Flow Rate	Max Volumetric Flow Rate	Accuracy: Min to Max Flow Mapped Product
MCV - 1.5	157.5 g	10 s	0.13 ft <sup>3</sup> /min (0.004 m <sup>3</sup> /min)	1.81 ft <sup>3</sup> /min (0.05 m <sup>3</sup> /min)	+/- 0.25%
MCV - 3.0	330.7 g	10 s	0.29 ft <sup>3</sup> /min (0.008 m <sup>3</sup> /min)	3.81 ft <sup>3</sup> /min (0.11 m <sup>3</sup> /min)	+/- 0.25%
MCV - 6.0	661.5 g	10 s	0.57 ft <sup>3</sup> /min (0.016 m <sup>3</sup> /min)	7.61 ft <sup>3</sup> /min (0.21 m <sup>3</sup> /min)	+/- 0.25%

\* Based on 35 lb/ft<sup>3</sup> Plastic Pellets with a nominal particle size of 0.15 in

\*\* Typical Accuracy is for mapped products

# CentriFeeder MCV Specification Drawing



Specifications and Dimensions for the CentriFeeder MCV						
Feeder Size	Height	Width	Depth	Inlet Size	Discharge Size	Mount Arm Pipe Size
MCV - 1.5	21.75 in (552 mm)	6.75 in (171 mm)	19.00 in (483 mm)	2.5" OD	2.5" OD	1" Schedule 40 Pipe
MCV - 3.0	23.50 in (597 mm)	6.75 in (171 mm)	19.00 in (483 mm)	4" OD	4" OD	1" Schedule 40 Pipe
MCV - 6.0	27.25 in (692 mm)	8.75 in (222 mm)	19.00 in (483 mm)	6" OD	6" OD	1" Schedule 40 Pipe