



Metalfab, Inc.

“Better-Weigh®” Batch/Continuous Weigh Feeders

MetaTech™ Volumetric Feeders

Volumetric Belt Feeders



Metalfab Dry Solids Feeders...

One for Virtually Any Application from A to Z and Everything in Between

Whether it's the need for a feed rate of 0.05 cubic feet per hour, 18,000 cubic feet per hour, or accuracy of 0.25%-0.50%, Metalfab has you covered with a comprehensive lineup of gravimetric and volumetric screw feeders and belt feeders to meet virtually any need.

From our "Better-Weigh®" Batch/Continuous Weigh Feeder to our breakthrough MetaTech™ Volumetric Feeder with only two moving parts, or our Volumetric Belt Feeder, Metalfab's 30 plus years of engineering and manufacturing expertise continue to deliver the most rugged, highly accurate, and technically advanced feeding equipment available.

Thousands of Metalfab feeders have stood the test of time, successfully and accurately metering dry solid materials from acetate to zirconite and everything in between.

Metalfab "Better-Weigh®" Batch/Continuous Weigh Feeders...

offer a window into your process. With gravimetric feeding, dry bulk material is fed into your process on a constant weight per unit of time ratio. Consistent monitoring and control are possible since weight is a variable that can be measured precisely. Metalfab's "Better-Weigh®" controller monitors this feeding process on a batch or continuous basis providing the feedback loop needed for highly accurate material metering.

Metalfab MetaTech™ Volumetric Feeders...

represent the simplest, most economical feeding solution available. Dry bulk material is constantly discharged into process on a unit of time basis. With volumetric feeding, your material is continuously moved through the feeder and into your process via Metalfab's unique agitator/conditioner screw that maintains a constant bulk density. This constant bulk density, along with a consistent volume discharge by the feeder, allows metering with an accuracy of ±1-1.5%.

Standard "Better-Weigh®" and MetaTech™ Drives...

are AC inverter duty gear motors, rated IP-65 with 20:1 turndown ratio for accuracy and a wide range of speed. 230, 380, 460, and 575 VAC models are available with gear ratios from 17:1 through 75:1 for those extra challenging applications. The gear motor is also available with an integral inverter to reduce installation (wiring) cost and complexity.



Metalfab “Better-Weigh®” Continuous Weigh Feeders



Overview

“Better-Weigh®” Batch/Continuous Weigh Feeders are designed to provide feeding in either batch or continuous mode depending upon the arrangement of the feeder’s control electronics.

In batch mode, the batch controller is used to control the fast (bulk) and slow (dribble) speeds of the feeder. Accuracies of $\pm 0.5\%$ can be easily achieved in 2 lb. or less batches, and $\pm 0.25\%$ with 3 lb. or greater batches with time spans of 30 to 90 seconds. In continuous mode, the feeder’s electronic controller is used to constantly monitor loss-of-weight of material per time in order to maintain a continuous loss-of-weight with an accuracy of $\pm 0.25\%$ to 0.50% .

Features/Benefits

- **Accuracy**— $\pm 0.25\%$ to 0.50%
- Platform or lever balance scale, sealed tactile keyboard, 7 digit numerical keyboard, automatic manual batching, 2 or 5 cu. ft. hopper. Sanitary construction available.

...for Highly Accurate,
Gravimetric Feeding of
Dry Bulk Materials in Batch
or Continuous Operation

Operating Characteristics

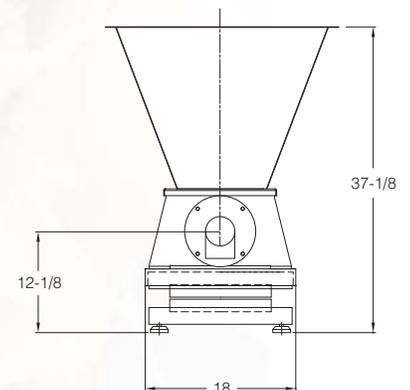
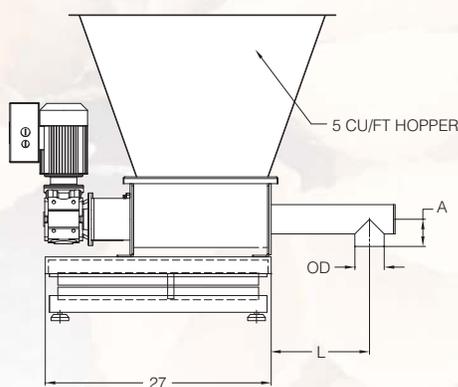
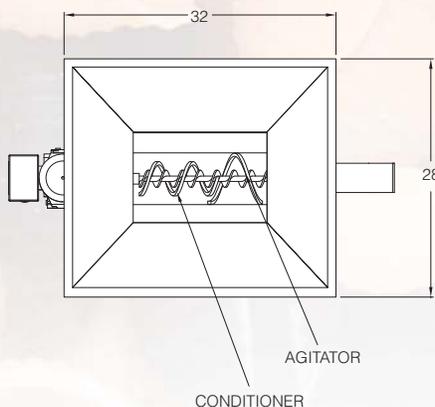
- Handles powders, pellets, flakes, and other dry materials where it is necessary to determine actual feed rates on a loss-of-weight basis

Specifications

Construction

304 or 316 stainless steel

Model	Feed Rate (cu ft/hr) Max.	L	A	OD	HP
BWP/L-3/4	1	8"	2"	1"	3/4
BWP/L-1	3	8"	2-3/4"	1-1/2"	3/4
BWP/L-1-1/2	8	8"	2-3/4"	2"	3/4
BWP/L-2	20	8"	3"	2-1/2"	3/4
BWP/L-3	60	12"	3-1/4"	3-1/2"	1
BWP/L-4	175	14"	3-3/4"	4-1/2"	1
BWP/L-6	550	21"	4-3/4"	6-5/8"	1



See back cover for available options and other Metalfab upstream/downstream equipment.

“Better-Weigh®” Feeder Controls



...for Gain, Loss or Continuous Weighing Applications

Overview

Metalfab “Better-Weigh®” Feeder Controls are available with a “Gain in Weight” mode for applications where a product is being fed into a scale system such as a container sitting on a floor/bench scale or weigh hopper on load cells. In this mode, the controller can verify the zero setting between weighments, auto-tare the weight of a container, verify the container is in position by referencing the container weight setting, or a band value plus or minus to confirm an empty container is in place prior to start of feeding.

A “Loss-in-Weight” mode can be provided for applications where the feeding device is on load cells or a scale system of some type. This mode is used when one or more products need to feed into a process simultaneously, allowing all feeders to dispense product at the same time.

A “Continuous Weighing” mode is provided to continually feed product at a preset rate on a per-second, per-minute, or per-hour basis. Refilling of the feeder can be automatic through input of minimum and maximum weight values to the controller.

Features/Benefits

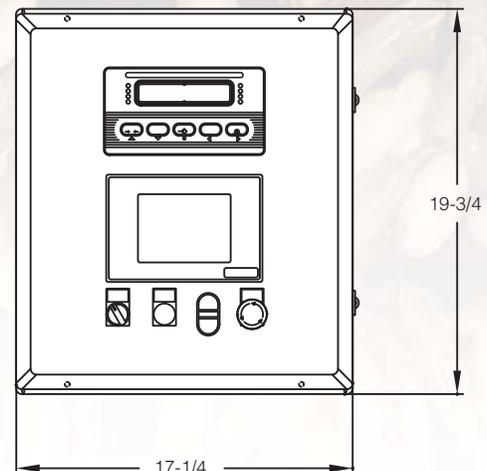
- Automatic batching or continuous feed rate control
- Automatic feed rate optimization for fast and slow speed settings as well as dribble point determination are performed automatically
- Automatic pre-act (material in suspension compensation) adjustment
- Automatic JOG feature to bring batch into tolerance
- Analog output to represent weight or feed rate as standard
- Additional Analog outputs available for weight or feed rate as needed
- Batch history (or rate logging) to archive the previous 200 records. Rate logging can be set for time intervals as needed.
- System alarm output
- Security includes two levels of password protection
- Tolerance checking with different parameters for under and over tolerance settings
- Remote start and stop contacts provided
- Can “Abort” or “Resume” a batch after E-stop

- Standard unit includes 12 outputs and 12 inputs to control equipment. Some are preprogrammed for specific applications.
- Analog input options available for remote entry of batch size or feed rate from remote PLC or DCS
- Communication options include but are not limited to: Ethernet I/P, Device Net, DH Plus, DH-485, DF1 Half, and DF1 Full Duplex

Please Note: Custom programming can be provided to control additional upstream or downstream equipment as needed.

Specifications

Enclosure	NEMA 4X
Display Type	5.7" 16 shades of gray (touch screen)
Visual Display	4.72" x 3.5" (119.4 x 88.9 mm) touch screen 6-7 segment 0.8" digits weight display
Screen Pixels	320 x 240
Power	120 VAC @ 2 Amp 1 ph 50/60 Hz (does not include product feeder) Typical consumption 0.30 Amp @ 120 VAC (36 W)
Operating Temperature	32 to 113°F (0 to 45°C)



See back cover for available options and other Metalfab upstream/downstream equipment.

Metalfab MetaTech™ Volumetric Feeders

...for Simple, Economical, and Highly Reliable Feeding of Dry Bulk Materials



Features/Benefits

- **New—Only 2 Moving Parts (Drive and Screw)**—Ensures reliable, long lasting performance with minimal process downtime
- **New—O-Ring Sealed Inline Drive**—Ensures dust-free operation and makes screw shaft alignment easy after change out or cleaning
- **Teflon® Rear Seal Standard**—For years of maintenance-free service. Also available with cinch seal
- **Unique Agitator/Conditioner Screw**—Maintains consistent product density completely filling the feed screw for highly accurate (± 1 to $1\frac{1}{2}\%$) feeding

Overview

Metalfab's ruggedly built MetaTech Feeder features a compact, space-saving design, low maintenance direct drive, and new Delrin® bushing for highly accurate and dependable metering of powders, pellets, flakes, and agglomerates.

- **Interchangeable Screw/Tube Combinations**—Available in $\frac{3}{4}$ " to 6" sizes and permit feed rates from 550 cu. ft./hr.
- **Wide Range of Models**—Includes space-saving mini, sanitary, and combination feeder/conveyor units

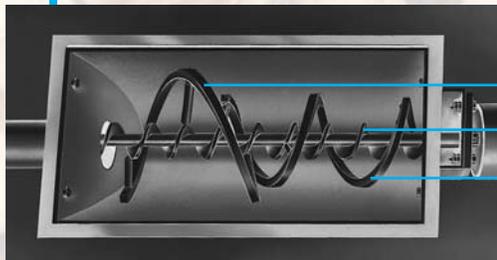
Operating Characteristics

- Provides highly accurate, dependable metering of powders, pellets, flakes, and agglomerates
- Ruggedly built for continuous, long-lasting performance

Specifications

Construction

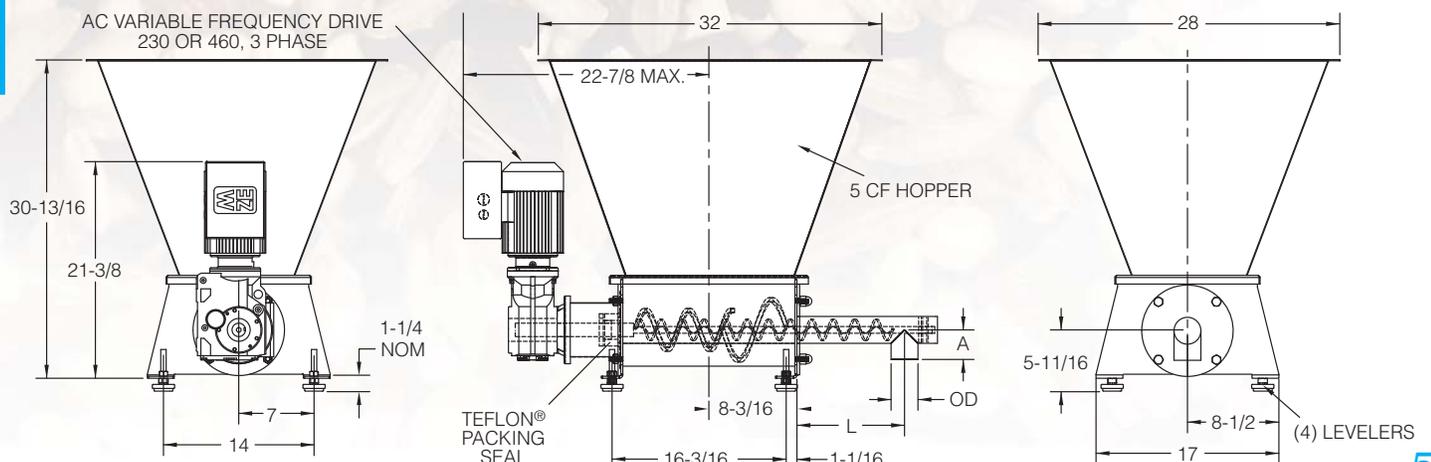
- All metal contact parts are available in a choice of carbon steel, epoxy coated carbon steel, 304 stainless steel or 316 stainless steel. Carbon steel exterior primed and painted blue enamel. Stainless steel units provided with 2B mill finish.
- Drive Motor—HP varies depending upon material and feed requirements



Agitator Screw
Metering Screw
Conditioner Screw

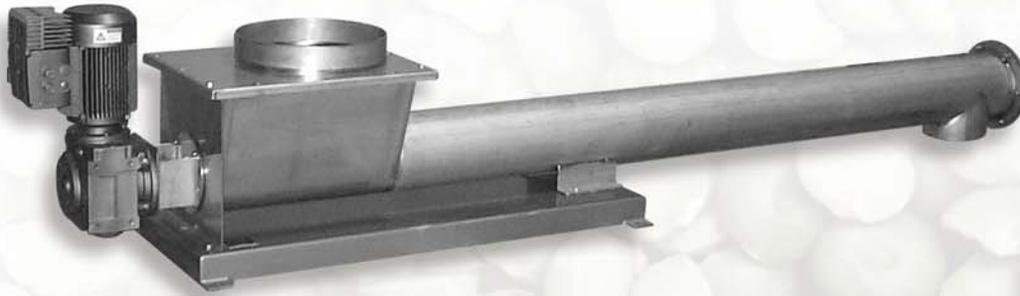
All Metalfab Volumetric Screw Feeders feature Metalfab's rugged design and unique agitator/conditioner screw. In operation, the agitator/conditioner screw begins to move materials forward in the feeder's trough. Since the agitator/conditioner screws are larger in diameter than the metering (feeding) screw and of wire configuration, they carry a greater capacity than the metering screw, allowing material to flow through and around it. This 360° influence of material forces entrained air up and out of the metering area and force feeds material into the flights of the metering screw to ensure they are completely full with uniformly dense material.

Model	Feed Rate Max.	L	A	OD	HP
MT-3/4	1	8"	2"	1"	3/4
MT-1	3	8"	2-3/4"	1-1/2"	3/4
MT-1-1/2	8	8"	2-3/4"	2"	3/4
MT-2	20	8"	3"	2-1/2"	3/4
MT-3	60	12"	3-1/4"	3-1/2"	1
MT-4	175	14"	3-3/4"	4-1/2"	1
MT-6	550	21"	4-3/4"	6-5/8"	1



See back cover for available options and other Metalfab upstream/downstream equipment.

MTL Screw Feeder



Overview

Metalfab's highly accurate, dependable Model MTL Volumetric Screw Feeder has only five moving parts—drive, coupling, two bearings, and a screw. The combination of a large inlet and a V-shaped trough help ensure complete filling of screw flights and provides feed accuracies of ± 1 to $1\text{-}1/2\%$. When a Metalfab Posibin™ or Bin Activator is used to supply the feeder even greater accuracies may be obtained.

A Bin Activator is recommended when feed rates are more than 100 cu. ft./hr. or non-free flowing materials need to be metered. Flight-type screws with through shafts are standard. Oversize ball bearings which are sealed and provided with grease fittings support the shaft. Operating noise levels are within OSHA requirements. All moving parts are guarded and the screw section is totally enclosed.

Features/Benefits

- **Accuracy**— ± 1 to $1\text{-}1/2\%$ (one minute samples)
- **Screw Sizes**—6" to 20" diameter
- **Inlet to Outlet**—3' to 12'
- **Feed Rates**—55 to 18,000 cu. ft./hr.

Operating Characteristics

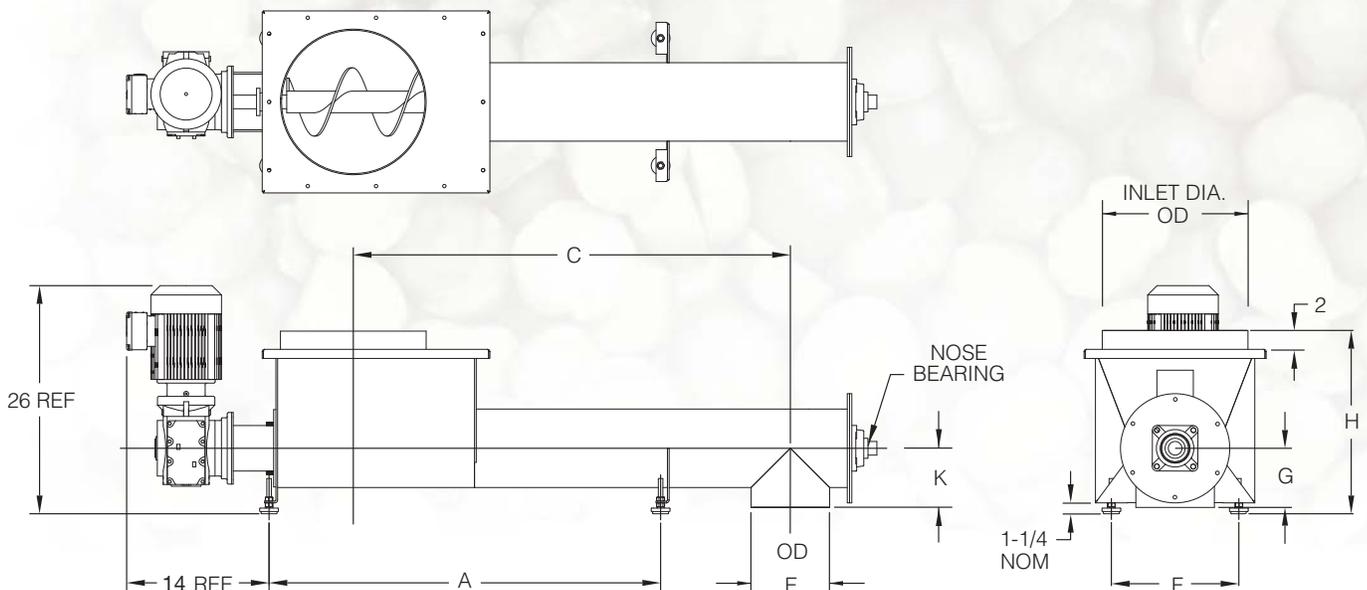
- Provides precise metering of dry materials in the chemical, food, plastics, pharmaceutical, and foundry industries
- Can also be used as a short distance conveyor with centerline of inlet to outlet dimensions of 35" to 144" depending on screw size

Specifications

Construction

- Carbon steel, carbon steel with epoxy, 304 or 316 stainless steel

Model	Feed Rate (cu ft/hr) Max.	A	C		E	F	G	H	K	HP
			(min)	(max)						
MTL-6	550	40	35	110	6-5/8	13	9	20	5-1/2	1-1/2
MTL-8	1,100	42	48	120	8-5/8	16	9	21	6-1/2	2-3
MTL-10	2,200	48	50	120	11-3/8	21	10	21	8	3-5
MTL-12	3,800	62	54	144	14	24	11	22	9	3-5
MTL-16	9,000	72	70	144	18	26	13	26	11	3-5
MTL-20	18,000	84	90	144	22	30	15	28	13	5-7



See back cover for available options and other Metalfab upstream/downstream equipment.

Metalfab MTS Sanitary Screw Feeder



Overview

Metalfab's MTS Sanitary Feeder offers the simplicity of the standard Metalfab feeder line while satisfying the most stringent sanitary processing requirements necessary for the metering of such critical materials as pharmaceuticals and food. All contact surfaces are of 304 or 316 stainless steel and polished to a #4 finish. All welds are continuous and ground smooth to prevent product buildup and adherence. Gasketing is food grade white neoprene and a rear Teflon® packing gland is standard. Extra clearances are provided beneath the unit for ease of cleaning. For ease of cleaning, the MTS can be disassembled without the use of a tool.

Features/Benefits

- **Accuracy**— ± 1 to 1-1/2% (one minute samples)
- **Screw Sizes**—3/4" to 6" diameter
- **Feed Rates**—0.5 to 550 cu. ft./hr.

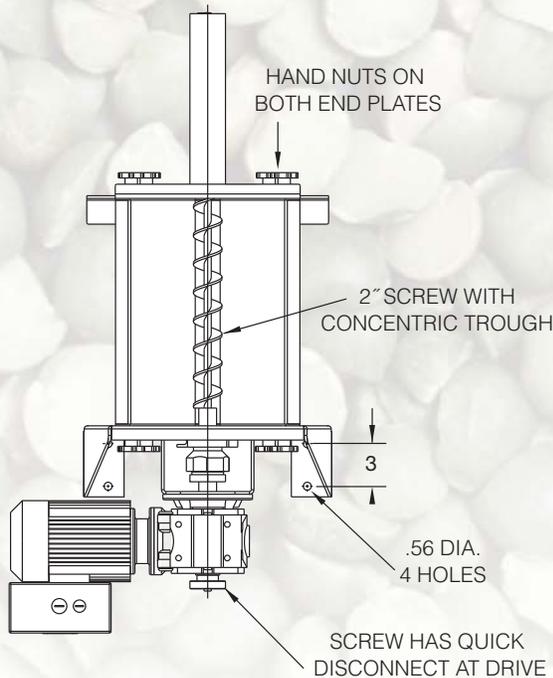
Operating Characteristics

- Provides highly accurate metering of foods and pharmaceuticals such as flour, cocoa, pet foods, etc.

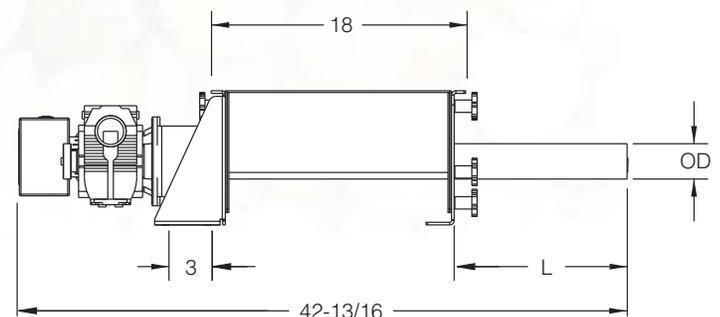
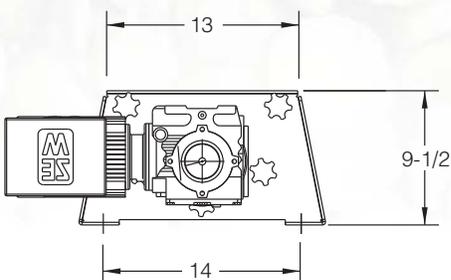
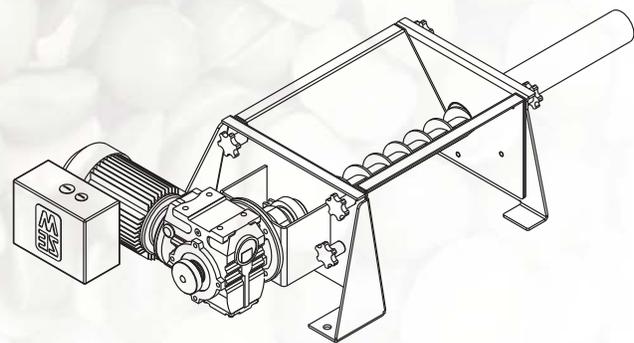
Specifications

Construction

- Contact surface 304 or 316 stainless steel polished to #4 finish. All welds continuous and ground. Food grade white neoprene gasketing. Motor is white epoxy and rated IP-65 for washdown service.

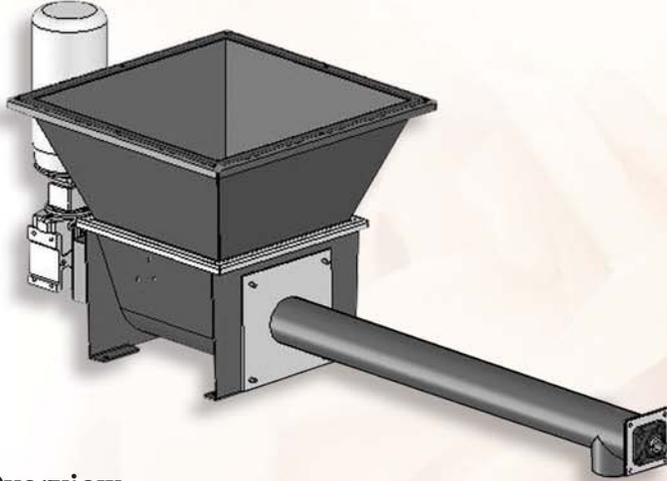


Model	Feed Rate Max.	L	A	HP
MTS-3/4	1	8"	2"	3/4
MTS-1	3	8"	2-3/4"	3/4
MTS-1-1/2	8	8"	2-3/4"	3/4
MTS-2	20	8"	3"	3/4
MTS-3	60	12"	3-1/4"	1
MTS-4	175	14"	3-3/4"	1
MTS-6	550	21"	4-3/4"	1



See back cover for available options and other Metalfab upstream/downstream equipment.

MTP for Difficult Materials



Overview

Metalfab's MTP Volumetric Screw Feeder provides all of the features available with the standard Metalfab feeders but is designed for the handling of more difficult to feed materials. To solve these problems, the MTP has been designed with greater clearances and larger agitator/conditioner screws (including one for the 6" size).

Features/Benefits

- **Accuracy**— ± 1 to 1-1/2% (one minute samples)
- **Screw Sizes**—3", 4", 6" diameter; agitator/conditioning screws 8" and 10"
- **Feed Rates**—60, 175 or 550 cu. ft./hr. max.

Operating Characteristics

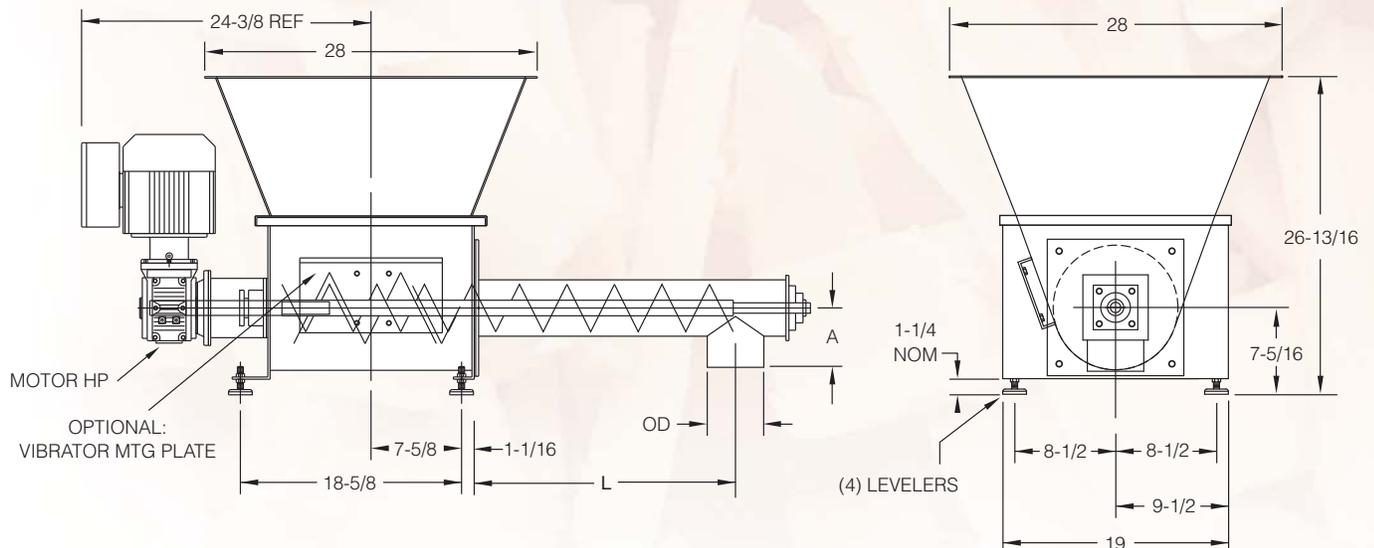
- Handles difficult to meter materials such as film scrap, wood chips, filter cake, asbestos, fibrous products, and other materials which present vexing problems in attempting to fill the flights of the metering screw

Specifications

Construction

- Carbon steel, carbon steel with special coatings, 304 or 316 stainless steel

Model	Feed Rate (cu ft/hr) Min.-Max.	Screw Dia.	A	L	OD	HP
MTP-3	6-60	3	3-3/4"	12"	3-1/2"	1
MTP-4	15-170	4	4-1/2"	14"	5"	1
MTP-6	30-550	6	5"	21"	7"	1-1/2



MTM “Mini” Volumetric Screw Feeder



Overview

Designed for small feed rate and laboratory applications, Metalfab's MTM "Mini" Feeders provide dependable, highly accurate feeding of a wide variety of dry solid materials from an extremely small base of only 14-1/4" x 17". An optional 1-1/2 cu. ft. hopper with sharply sloped sides and large rectangular outlet is available to provide capacity for most surge conditions. The hopper is removable and can be replaced with up to a 6" diameter inlet trough cover. The unit can then be preceded by a Metalfab Bin Activator or Posibin™.

Features/Benefits

- **Accuracy**—±1 to 1-1/2% (one minute samples)
- **Screw Sizes**—1/2", 3/4", 1", and 1-1/2"
- **Feed Rates**—0.3, 1, 3, and 8 cu. ft./hr. maximum

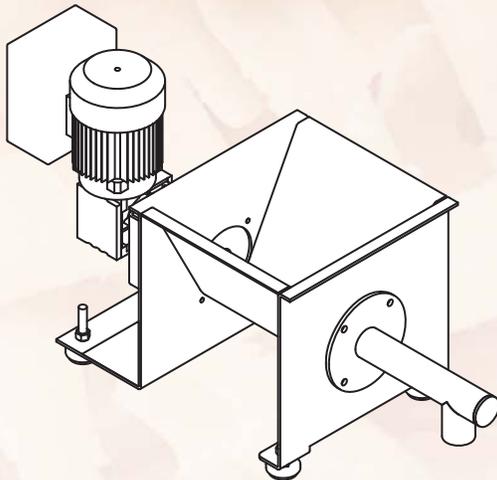
Operating Characteristics

- Dependable, accurate metering of a wide variety of dry solid materials on an extremely small footprint
- Rugged design

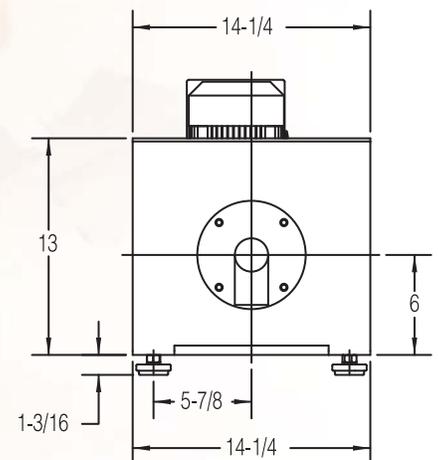
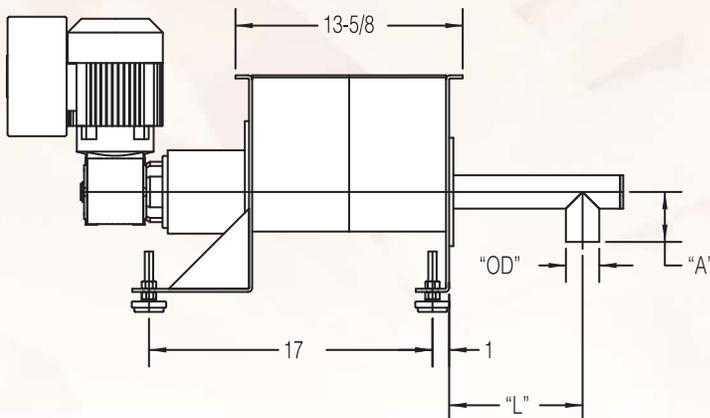
Specifications

Construction

- Carbon steel, carbon steel epoxy coated, 304 or 316 stainless steel. Other materials available.

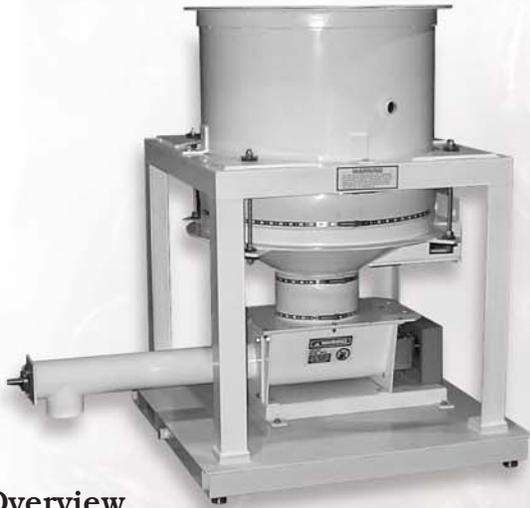


Model	Feed Rate (cu ft/hr) Min.-Max.	Screw Dia.	A	L	OD	HP
MT Mini 1/2	0.03-0.3	1/2"	1-1/2"	8"	1"	1/2
MT Mini 3/4	0.05-1	3/4"	2"	8"	1-1/4"	3/4
MT Mini 1	0.15-3	1"	2"	8"	1-1/2"	3/4
MT Mini 1-1/2	0.4-8	1-1/2"	3"	8"	2"	3/4



See back cover for available options and other Metalfab upstream/downstream equipment.

MAP Screw Feeder



Overview

Metfab's new M.A.P. (Maximum Application Performer) Feeder combines the proficiency of Metfab's unique agitator/conditioner screw (with 360° influencing capability) with the precision of Metfab's vibration-controlled hoppers to accurately meter the most difficult dry solid particles.

Features/Benefits

- **Only 5 Moving Parts**—ensures reliable, long-lasting performance with virtually no downtime for repair or replacement
- **Unique Agitator/Conditioner Screw**—completely fills the feed screw for high accuracy of ± 1 to 1-1/2%
- **Interchangeable Screw/Tube Combinations**—available in 1" to 6" sizes and permit feed rates from 0.15 to 550 cu. ft./hr.

Operating Characteristics

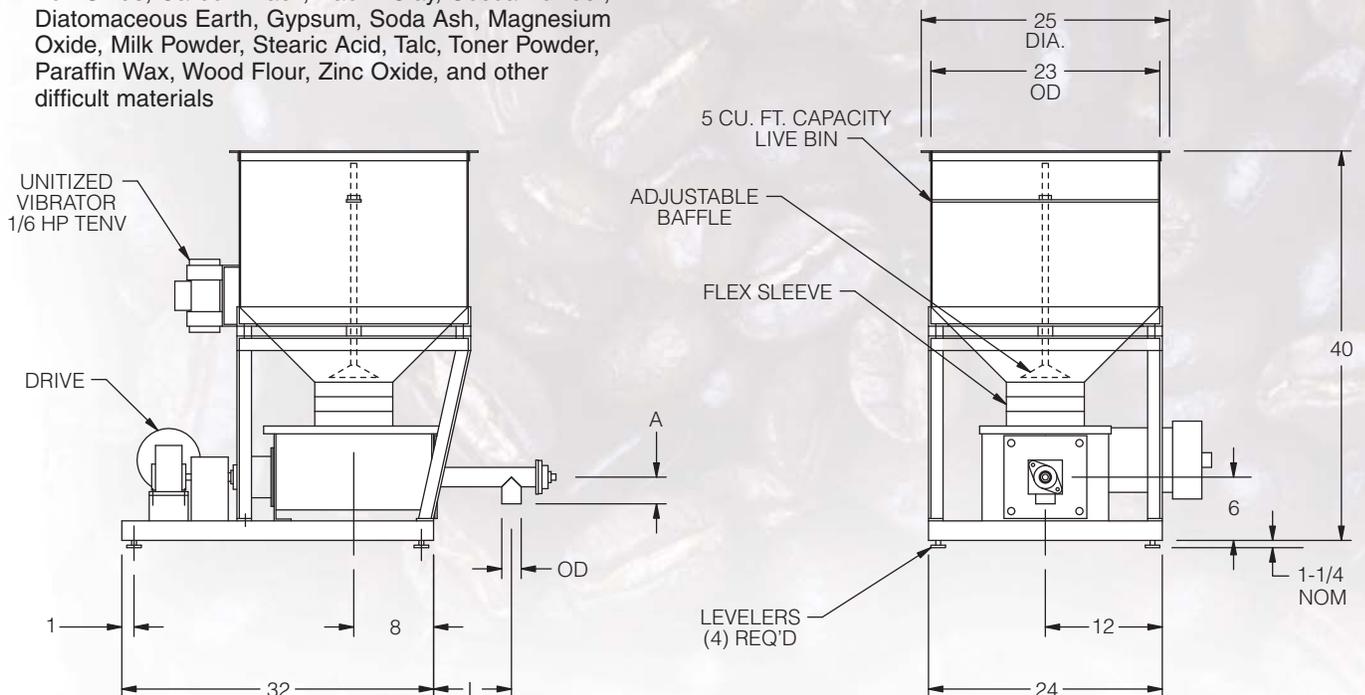
- Provides highly accurate metering of Titanium Dioxide, Iron Oxide, Carbon Black, Kaolin Clay, Cocoa Powder, Diatomaceous Earth, Gypsum, Soda Ash, Magnesium Oxide, Milk Powder, Stearic Acid, Talc, Toner Powder, Paraffin Wax, Wood Flour, Zinc Oxide, and other difficult materials

Specifications

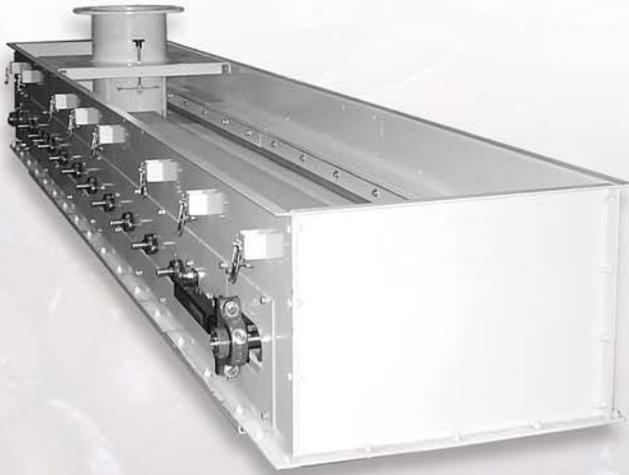
Construction

- Carbon steel, carbon steel epoxy coated, 304 or 316 stainless steel. Other materials available.

Model	Feed Rate (cu ft/hr) Min.-Max.	OD	L	A	HP
MAP 5-1	3	1-1/2"	8"	2-3/4"	3/4
MAP 5-1-1/2	8	2"	8"	2-3/4"	3/4
MAP 5-2	20	2-1/2"	8"	2-3/4"	3/4
MAP 5-3	60	3-1/2"	12"	3-1/4"	1
MAP 5-4	175	4-1/2"	14"	3-3/4"	1
MAP 5-6	550	6-5/8"	21"	4-3/4"	1



APB Volumetric Belt Feeders



...for Highly Accurate Metering of Powders, Pellets, and Agglomerates

MetalFab's APB Volumetric Belt Feeder features a ruggedly built, sliding belt assembly designed for highly accurate metering of all types of powders, pellets, and agglomerates. It is exceptionally well suited for feeding of abrasive materials and materials that have a tendency to smear or compress when being fed by a volumetric screw feeder. The APB is also ideal for the high volume requirements of the chemical and food industries.

Features/Benefits

- **Accuracy**— ± 1 to 1-1/2%
- **Belt Widths/Lengths**—12", 24", 36" or 48" widths and 36", 72", 108", and 144" lengths, respectively
- **Feed Rates**—up to 4800 cu. ft./hr.
- **Belt Materials**—neoprene (standard); HYCAR®, Nordel®, and Viton® also available
- **Bearings**—sealed and located outboard to prevent contamination; all units equipped with skirtboards and adjustable belt tensioners
- **Belt Scrapers**—to prevent material buildup on belt surface and ensure complete discharge of material from the belt (standard)

Operating Characteristics

- Provides highly accurate metering of all types of powders, pellets, and agglomerates
- Rugged design

Specifications

Construction

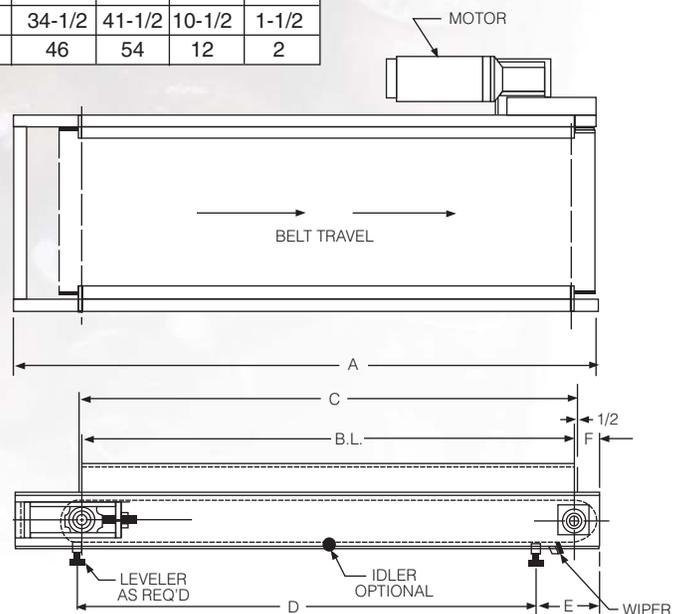
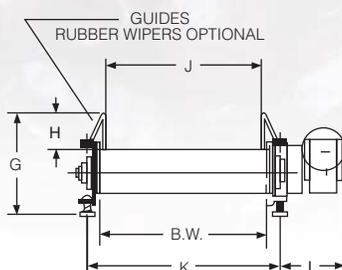
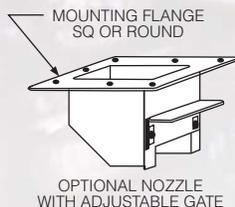
- Carbon steel, carbon steel epoxy coated, 304 or 316 stainless steel

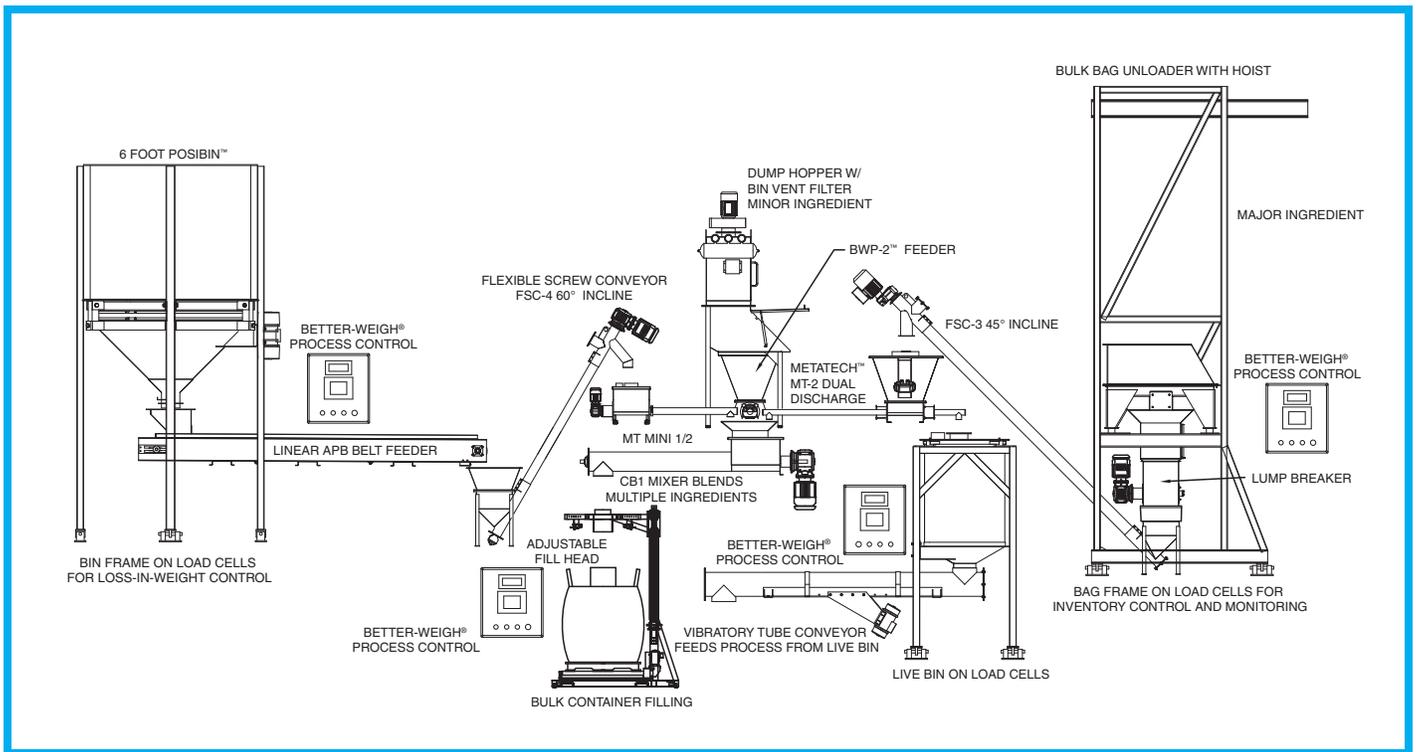
Drive

- Available constant speed motors, AC motors with variable frequency control, and explosion-proof motors. Dust-tight enclosures and extended belt lengths available.

Model	Feed Rate (cu ft/hr) Max.
APB1-3	400
APB2-6	1200
APB3-9	2400
APB4-12	4600

Model	B.W.	B.L.	A	C	D	E	F	G	H	J	K	L	HP
APB1-3	12	36	45	37	33	6	3	11	4	11	14	7	1/3
APB2-6	24	72	85	73	68	9	3-1/2	15	6	22-1/2	28	9-1/4	1
APB3-9	36	108	121-1/2	109	104	9	4-1/2	17	6	34-1/2	41-1/2	10-1/2	1-1/2
APB4-12	48	144	160	145	139	10	7	25	8	46	54	12	2





Integrated Solutions for a Wide Range of Storage, Conveying, Feeding, Processing, Blending, and Filling Applications

Looking for a dedicated system to handle batching operations or a complete system designed to regulate flow or meter discharge of product into a continuous process? Metalfab has the engineering experience and upstream/downstream equipment to meet most dry bulk material handling applications.

Should continuous feeding by volume be a requirement, a Metalfab Posibin™, Bin Activator, or Bulk Bag Unloader can be positioned upstream for trouble-free discharge of product into any Metalfab screw feeder. Hoppers on the feeders can be sized to handle product discharge without interruption of product feed.

Should feeding by weight be a requirement, a Metalfab "Better-Weigh®" Gain-in-Weight/Loss-in-Weight Feeder can be paired with a controller that provides automatic feeding of product in batch and continuous mode. These sophisticated controls feature our easy-to-use touch screen with graphic display, automated feed rate optimization and discharge with batch histories, and multiple security levels with alarm/warning system.

A Metalfab Convey-All™ Flexible Screw Conveyor and CB1 Continuous Mixer can then be positioned downstream of the feeder's discharge outlet to move product into a process stream, storage container, or bulk bag drum filling equipment.

Whatever the dry bulk material handling requirement might be, Metalfab offers a wide range of equipment that can be incorporated into a complete system or subsystem to meet exact customer needs.

*For more information and a quotation on any Metalfab Feeder or Integrated System call **800-764-2999**, in NJ **973-764-2000**, FAX: **973-764-0272**, or e-mail: sales@metalfabinc.com.*

Visit our web site at www.metalfabinc.com for PDF downloads of literature and/or PDF/CAD drawings or write:

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