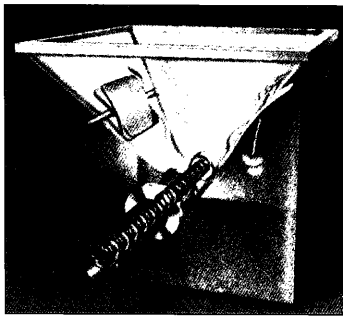


Tecweigh Volumetric Feeders: The Inside Story

The continuous motion of the external agitation system eliminates degrading, ratholing, bridging, and compacting in even the most difficult-to-handle material. The result: a precise measure of your product moves evenly and efficiently with each flight of the auger to allow accuracy formerly only available gravimetrically.

Tecweigh Feeders are flexible enough to accommodate a wide variety of dry materials from fine powders to large pellets. Three different sizes can move from .003 cu. ft./hour to more than 900 cu. ft./hour. And each is built to give you years of consistent performance with a lot less downtime.

Best of all, Tecweigh Feeders fit easily into your existing weighing system.



We want you to be completely satisfied throughout the planning, installation and operation of your Volumetric Feeder system.

Our representatives have a professional background in dry materials handling. We take a close look at your entire system upstream and downstream before helping you select the most efficient Tecweigh Feeder for your application. Then, if required, we'll send samples of your product to our central facility for extensive testing to make sure our feeder will do the best possible job for you.

Tecweigh Weighing Systems offer special options such as custom controls, extension hoppers, special augers, side discharge nozzles, spreader attachments, batching systems and loss-in-weight units to customize your system and meet your specific needs.

Tecweigh Features

Flex-Feed™ Hopper

- Polyurethane is stronger, more resilient and more abrasion resistant than vinyl
- Available in chem-resist, antistatic, food and dairy grades
- No cracks or ledgers to collect material
- Interlocks with cabinet for an airtight seal
- Unique feed tube seal allows for quick release

Sealed Drive Train and Cabinet

- Protects inner workings from water, dust, and dry materials
- Keeps parts clean and in working order
- Can be "hosed down" without risk

Flexible Roller Chain Drive

- Automatic chain tensioner means you never have to adjust new chains as they stretch

State-Of-The-Art Controls

- DC motor with SCR control gives you easy speed adjustment
- 40:1 turndown allows greater speed range
- Durable digital speed potentiometer
- High-quality NEMA 4 or 4X enclosure

Stainless Steel Paddles

- Adjustable amplitude accommodates various materials and minimizes hopper wear
- Sealed roller bearings on paddle shafts minimize power required for continuous motion

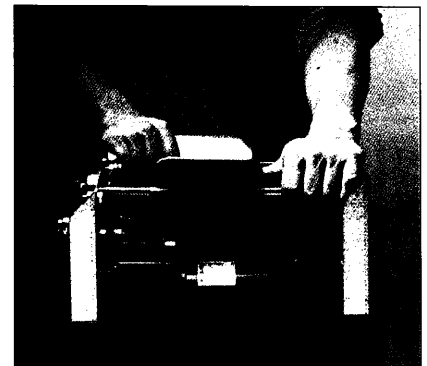
Patented Design

- Patented "bayonet mount" (#5, 110, 015) allows quick auger changes
- Patented dairy bearing flange (#5, 263, 572)
- Patent pending on "cartridge style" bearing flange, allows quick replacement of drive bearings and seals



Removable Drive Chassis

Lifts out completely for easy inspection and repair. In fact, the entire feeder unit can be disassembled without tools in just 15 seconds.



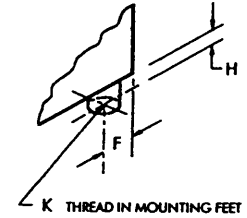
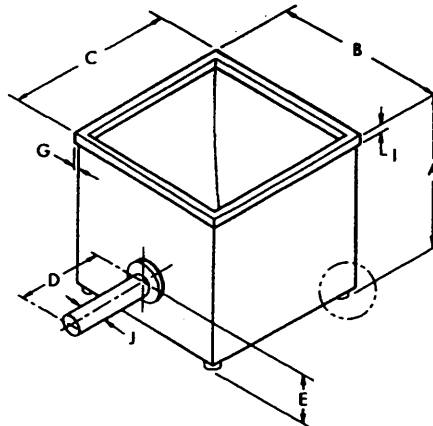
Tecweigh Features *(continued)*

Controls

Standard: Variable speed control with 0-90 VDC motor; SCR; Digital speed potentiometer; On/off switch with run light in detached NEMA 4 enclosure.

Options

Available: Remote speed signal source (4-20 Ma or 0-10 volt); Independent paddle speed control; Two-speed arrangement for batching; Remote on/off; Batch timer; Tach feedback; 4-20 Ma speed output signal; Loss-in-weight control; Auto batching.



Every Tecweigh® Volumetric Feeder is covered by a full 1-year warranty on all mechanical parts. The Flex-Feed Hopper carries a 5-year wear guarantee.

Dimensional Data (Inches)											
Model	A	B	C	D	E	F	G	H	I	J (MAX)	K
5	12.38	14.5	14.5	6	4.44	1.00	.25	.38	.50	1.50	3/8-16
12	18.00	23.0	23.0	8	4.94	1.19	.31	.62	.88	3.50	1/2-13
28	25.00	30.0	30.0	8	7.81	1.00	.50	.62	1.00	6.62	1/2-13

Technical Data				
Model	Standard Motor H.P.+	Maximum Rate Capacity (Cu. ft. Per. Hr.)	Unit Weight* (Lbs.)	Helix Sizes Available
5	1/8	7.0	50	1/4" - 1 1/4"
12	1/4	100.0	150	1 1/2" - 3"
28	3/4	900.0	350	4" - 6"

+Larger H.P. motors available per application.
 *Weight given for single drive and standard motor. Dual drive and special motor will increase weight.

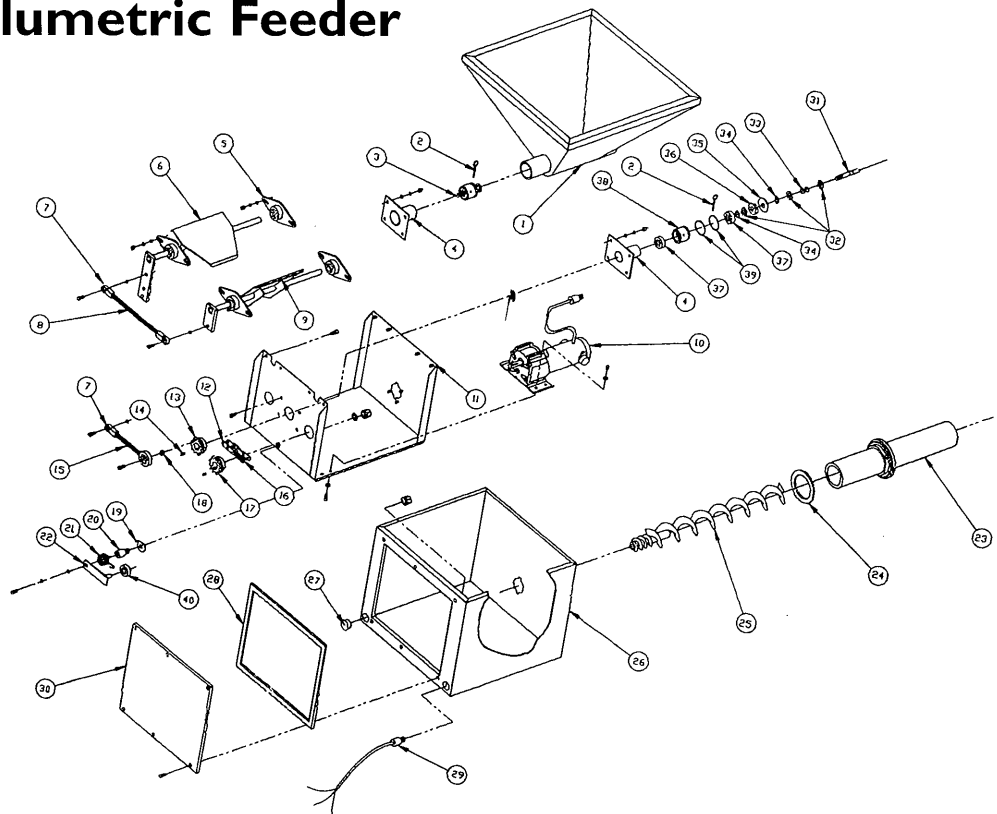
Materials of Construction			
Component	"E" Series	"CR" Series	"S" Series*
Cabinet	Mild steel Coated With Oven Baked TGIC Polyester	304 S.S. #4 Finish	304 S.S. #4 Finish
Chassis	Galvanized M.S.	Galvanized M.S.	304 S.S. #4 Finish
Helix	304 S.S. Wire Brushed	304 S.S. Wire Brushed	316 S.S. #4 Finish
Tube	304 S.S. Wire Brushed	304 S.S. Wire Brushed	316 S.S. #4 Finish

*Unit available with USDA Dairy Rating

Exploded View Assemblies & Parts Lists

1	Flexible Hopper, Food Grade	102482	1	24	Feed Tube Gasket	002574	1
1	Flexible Hopper, Industrial Grade	102483	1	25	Auger	Varies	1
1	Flexible Hopper, Chemical Resistant	102373	1	26	E5 Painted Cabinet	20187601	1
2	Pin, Quick Release	104517	1	26	E5 Painted Cabinet With Latch Package	20187601	1
3	Bearing Flange Drive Assembly	20505200	1	26	E5 Painted Cabinet With Bolt Package	20195801	1
4	Bearing Flange Weldment	00258700	1	26	CR5 Cabinet	20194400	1
5	Paddle Bearing, Pillow Block	002557	2	26	CR5 Cabinet With Latch Package	20194400	1
6	Left Paddle Assembly	20250000	1	26	CR5 Cabinet With Bolt Package	20280903	1
7	Rod End Bearing	002582	3	26	S5 Cabinet	20194500	1
8	Upper Drive Rod	00275701	1	26	S5 Cabinet With Latch Package	20194500	1
9	Right Paddle Assembly	20249900	1	26	S5 Cabinet With Bolt Package	20280903	1
10	Motor/Varies With Job	Varies	1	27	Hole Plug, 3/4"	104192	1
11	Chassis E/CR5 Single Drive	20186800	1	28	Rubber Door Gasket	200219	3.5ft
11	Chassis S5 Single Drive	20186900	1	29	Liquid Tight Cord Connector	101179	1
12	#40 Roller Chain	002308	16 in	30	E5 Painted Gear Train Door	20195801	1
13	Auger Sprocket	20214000	1	30	S/CR5 Gear Train Door	20196000	1
14	3/16 x 3/16 x 7/8 SQ Key	002088	2	31	Bearing Flange Shaft	20282101	1
15	Heavy Duty Rod End Bearing	20438900	1	32	Spring Protector Spacer	20269501	3
16	Master Connecting Link	002309	1	33	Spring, Compression, .720D.063W1	103393	1
17	Motor Sprocket	002301	1	34	E-Retaining Ring	103014	2
18	Crank Bearing Spacer	20104200	1	35	Drive Shaft Seal	20235500	1
19	Chain Tensioner Plate	20022800	1	36	Oil Seal	002057	1
20	Spring Post	00249500	1	37	Ball Bearing	104070	2
21	Torsional Spring	002571	1	38	Cartridge Style Bearing Flange Housing	20197701	1
22	Chain Tensioner Bar	00276800	1	39	O-Ring	104083	2
23	Feed Tube	Varies	1	40	Ball Bearing	104070	1

5 Series Volumetric Feeder Single Drive



Tecweigh Loss-In-Weight Feeders: A Perfect Fit

Most Loss-In-Weight feeders are made up of similar components: the refill bin, the extension hopper, the volumetric feeder, a sensitive scale and an automatic rate controller.

But the secret to a really good Loss-In-Weight system is in the engineering. That's where Tecweigh stands alone.

We begin with excellence in the individual components—the proven design of the Tecweigh Volumetric Feeder, the pinpoint accuracy of a high-quality scale and the unique technology of a fully automatic rate controller that ignores ambient vibration.

But the secret to your success is how we put these components

together – and how they integrate into your system to best accomplish your objectives.

Our materials handling professionals work closely with you from planning through installation to ensure the right components for your application. Every Tecweigh Loss-in-Weight Feeder is custom-engineered—then tested and documented for optimum performance. Then, after it's up and running, your system can be fine-tuned and calibrated until it's operating at peak efficiency.

The partnership-style customer service that stands behind every Tecweigh feeder system guarantees a perfect fit—you simply won't find a better Loss-In-Weight system.

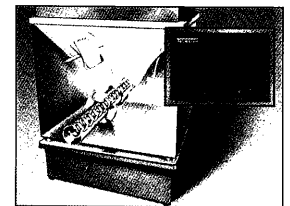
The Accuracy You Need - The Economy You Want

Tecweigh puts together the very best Loss-In-Weight components available – then prices them competitively.

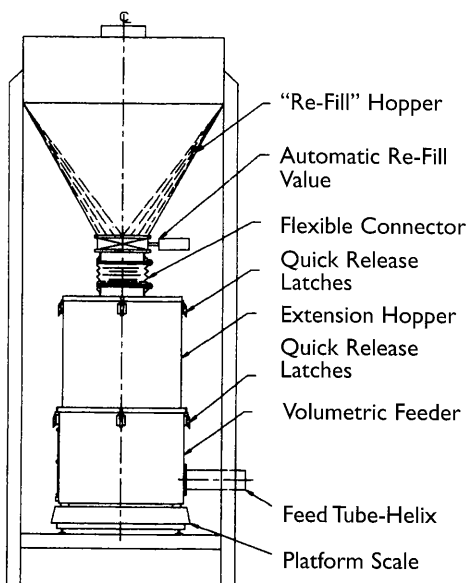
The flexible-walled, soft-sided Volumetric Feeder provides even, consistent flow for your product. The super sensitive, microprocessor controller offers carefully metered feed rates in any of the three modes (Gravimetric, Volumetric or Batching) – plus multiple levels of security, an easy-to-read backlit LCD display and complete freedom from mechanical vibration dampening devices, no matter

what the level of ambient noise.

The Tecweigh Loss-In-Weight Feeder system also lets you select automatic or manual refill, lets you set the rate with automatic PID adjustment and lets you choose whether or not to download processing data into your own computer system.



A Typical Tecweigh Loss-In-Weight Feeder System



Tecweigh Rate Controller

- Easy-to-read, 80-character backlit LCD display shows rate, current weight, batch weight, and totalized data
- Allows you to select automatic or manual refill
- Automatically determines the correct PID values or you can enter your desired PID values manually
- Unique, new vibration-quelling technology eliminates the need for external dampening devices
- 1,000,000 counts of resolution allows the system to "see" and adjust to even the most minute weight changes
- Secure memory module prevents accidental loss of operating data
- Multiple levels of security let you select functions and parameters accessed by personnel
- Lets you choose from a wide selection of alarms for rate, batch and shut down
- Bi-directional RS-232 part allows you to download data into your own computer system

Tecweigh Volumetric Feeder

- Stainless steel paddles continuously massage the flexible polyurethane hopper to prevent degrading, ratholing, bridging and compaction in even the most challenging dry materials
- Three sizes can easily move from .0003 cu. ft./hr. to more than 900 cu. ft./hr.
- Sealed drive train and cabinet protects inner workings and can be hosed down without risk
- Flexible roller chain drive auto adjusts to compensate for new chain stretch
- Removable drive chassis makes it easy for you to do inspections and repairs

Tecweigh Platform Scale

- Rugged, industrial construction
- Precision weighing, even with uneven load distribution
- Weigh-Bar load cells are sealed against dirt and water
- Overload stops prevent load cell damage
- Your choice of materials and finishes

Tecweigh® WF-18 Weigh Belt Feeder

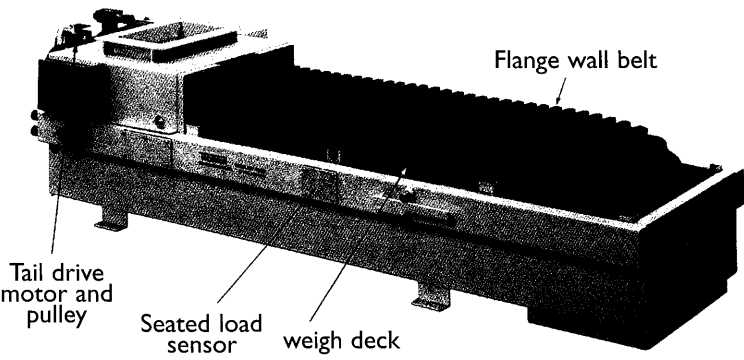
We've taken the time to design a simpler system - eliminating opportunities for breakdown and inefficiency. Smooth slider rods on the conveyor bed allow the belt to pass easily, cutting friction and scale disturbance. Food-grade belts help you maintain sanitary conditions and product integrity.

Material build-up areas have been virtually eliminated. The sides and back of the frame are skirted to prevent spillage, and allow for concentrated loading. But access is quick and easy, and that makes washdowns easy too.

For low capacity applications (under 100 lbs/hr up to 1500 lbs/hr) TECWEIGH® has designed the new WF-18LC. This low-capacity model features the same rugged construction as the standard model, with load cells that provide more precision for low capacity measurement.

Whichever model you choose, you can count on the best measurement technology for your application - backed by our five year warranty. What's more, you can count on TECWEIGH® to provide all the technical help you need.

Weigh the advantages for yourself. You can see why more and more people are choosing TECWEIGH® as their way.



Model WF	10/11	14/15	16/17
Weigh Idlers	single/dual	single/dual	single/dual
Belt Width	18" - 36"	18" - 42"	24" - 48"
Capacity	5-30TPH	20-100TPH	80-500TPH
Belt Length	6' - 20'	8' - 24'	8' - 30'

Vibratory Feeders For Bulk Materials



Rugged, Reliable, Efficient Feeding For Bulk Materials

With over three decades of solid development work behind them, ParaMount II feeders by General Kinematics offer an unequalled record of dependability anti-performance in the controlled feeding of bulk materials.

Designed to operate at subresonant natural frequency, our feeders are ideally suited for a wide range of bulk material handling applications in mining, power generation and process industries. Installed units are handling ores, coal, aggregate, sand, powders, grain and difficult to handle materials such as lignite coal.

Sub-resonant, two mass drive system

Para-Mount II feeders in either fixed or Variable Force configurations

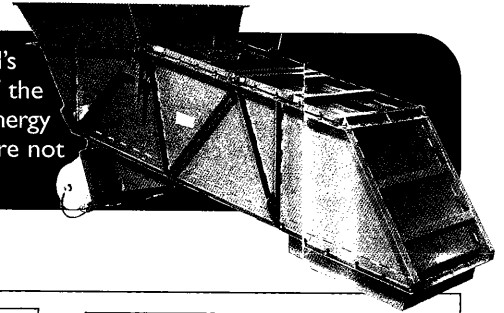
utilize the principle of sub-resonant magnification of a small exciting force acting upon a two-mass natural frequency coil spring system. The first mass, consisting of the motor and exciter frame, is separated by precision engineered steel coil springs from the second mass, the material carrying deck assembly.

The small force needed to excite the system is efficiently produced by counterweighted wheels mounted on a totally enclosed vibration design motor with double extended shafts. Centrifugal force produces the desired motion which is amplified by the coil springs and transmitted directly to the deck assembly, resulting in highly efficient straight-line feed of material.

Vibratory Feeders For Bulk Materials *(continued)*

Inherently Energy-Saving and Cost-Efficient

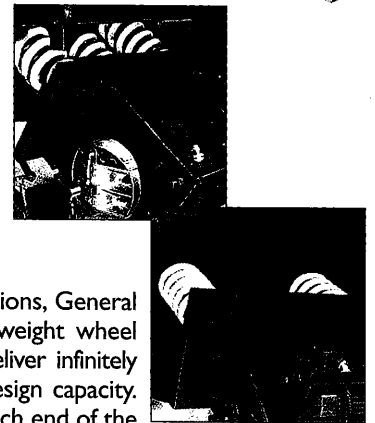
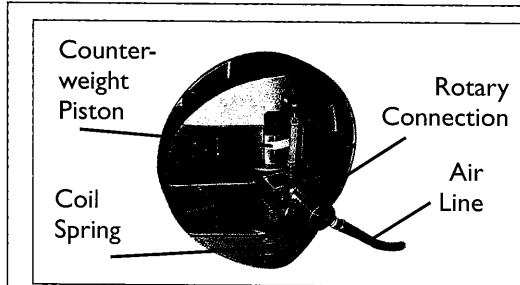
Economical power requirements and low operating costs are achieved by Para-Mount II's natural frequency, two-mass drive system which is tuned to maintain drive frequency of the spring and deck mass. Only small amounts of energy are needed to maintain the natural energy stored and released by the spring system. Equally important, General Kinematics feeders are not subject to the high stress and wear forces associated with brute force designs.



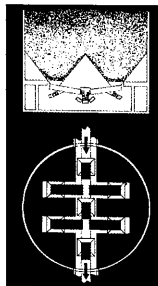
Smooth Operation Under Varying Headloads

Feed rate is varied by adjusting counterweight effect, rather than motor operating frequency. Subresonant design provides an automatic increase of the exciter force which compensates for increasing material weight or flow resistance. This ParaMount II antidamping characteristic results in accurate control of volumetric feed rate regardless of material load variations. Additionally, ParaMount II saves headroom, and permits the use of large feed openings to prevent bridging, eliminating the need for bin vibrators and other auxiliary flow devices.

Variable Force (VF) Wheel

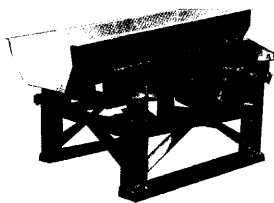


Proven in thousands of demanding feeding applications, General Kinematics' exclusive Variable Force (VF) counterweight wheel design enables ParaMount II feeders to smoothly deliver infinitely variable feed rates - from minimum to 100% of design capacity. Today's enhanced VF wheel design is mounted on each end of the extended motor shaft. It incorporates a spring loaded counterweight piston which moves within a rugged chrome plated cylinder. Acting on the face of the piston, variable pneumatic or hydraulic pressure instantaneously positions the counterweights in relation to the center of rotation, varying centrifugal force, and altering vibratory amplitude and feed rate. Because the motor operates at full RPM and constant feed rate is easily adjusted from minimum to maximum. Finite adjustments can be remotely controlled via computer, load cell, belt scale or other automated or manual process signals. The VF wheel can also be mounted to provide maximum or minimum feed if control pressure is deactivated.

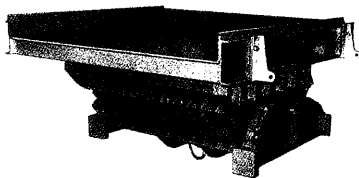


Section View of Typical Window Install

Typical 70" diameter silo with 7-point draw-off.



This base mounted feeder in a process application has a large volume replaceable deck to contain batch loads of material and meter it at a uniform rate.



Heavily reinforced 96" wide x 15'-0" long feeder uses VF Variable Force control to maximize coal crusher performance by adjusting feed rate in accordance with feed back signal from computer monitoring crusher.

Wide Range Of Applications

Proven performance and maintenance free operation make Para-Mount II the first choice in feeders for the most demanding applications including public utilities, mining, metals production, food processing, cement and other industries. Here's what makes Para-Mount II perform.

- Two-mass, sub-resonant natural frequency self-compensating design automatically adjusts to material head load and weight changes, maintaining constant feed rate regardless of load.
- Exclusive Variable Force (VF) control allows infinitely variable feed with precise proportional feed adjustment. With VF control feeders, can be declined as much as 15° and still provide stable flow control.
- The ability to operate under lane head loads allows full size hopper openings. This eliminates material bridging and plugging, and the need for separate vibrating hoppers or other flow enhancing equipment.
- Fully enclosed motors (explosion proof available) and other drive components are fully accessible for easy service.
- Low frequency and longer stroke, in combination with specially designed low stress steel coil springs, uniformly distribute forces and keep power requirements to a minimum.
- "UVF" control provides smooth stop-and-resume feed, even at minimum rates. Responds accurately to feed-back signals from scales, load cells or computers.

Selection & Specifications

Typical arrangement consists of a hopper with a feeder suspended below to feed a conveyor, scale or processing unit (Fig. A).

Vertical hopper opening as well as hopper bin slopes are dictated by material characteristics and size. In determining the hopper opening, consider the largest particle size as well as the bridging characteristics of the material. The projected vertical opening should be 2 or 3 times the largest material size. Materials with high bridging characteristics require adequate openings to assure flowability.

Horizontal opening is determined by particle size and capacity requirements (Fig. B). The minimum opening should be approximately 1-1/2 times the largest lump size.

The maximum size opening is determined by the volumetric capacity, consistent with feeder length. It is desirable to include a slide plate or gate to permit field adjustments.

Capacity requirements determine the feeder pan dimensions and slope (Fig. C). Feeder volumetric capacity may be determined by the formula.

$$A \times V = Q$$

Q = cu. fpm

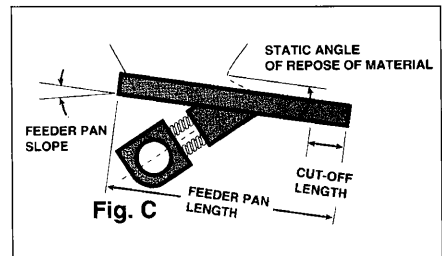
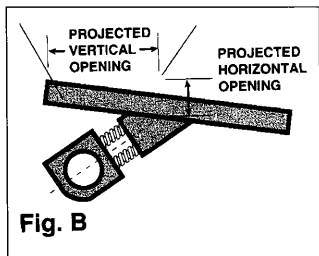
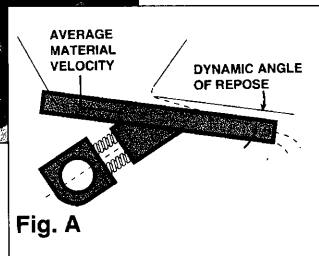
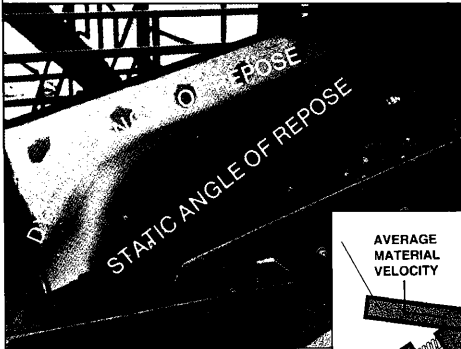
A = projected horizontal area

V = average velocity of material flow through opening

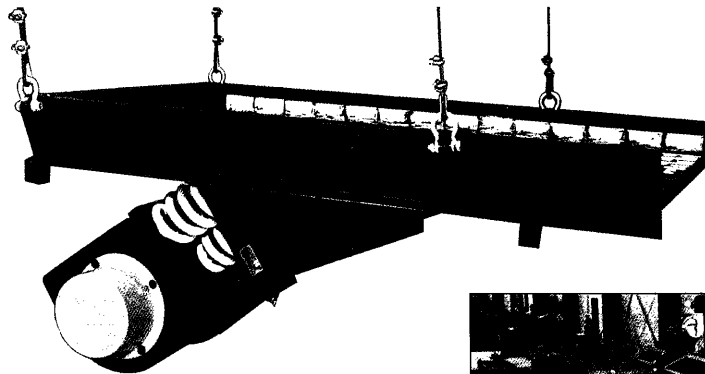
The projected horizontal area is a function of the projected horizontal opening and feeder pan width. The average material velocity will vary with material flow characteristics, coefficient of friction feeder pan slope, length and vibration intensity. Material velocities will range from 50 to 80 fpm with pan slopes from 0 to 15°.

Feeder pan trough length is determined by material angle of repose and pan slope. The feeder pan must be of sufficient length to assure 100% material shut off when the feeder is at rest. A line drawn from the maximum opening at the material angle of repose should intersect the trough, with sufficient length to allow for variations in material characteristics.

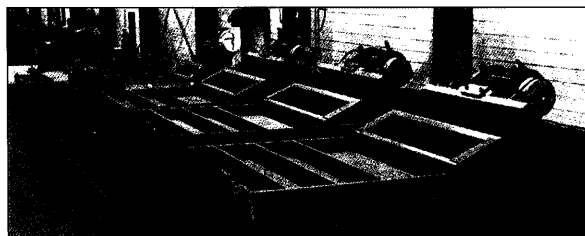
The Feeder Capacity Chart shown is a guide for determining the recommended trough width based on known bulk density and desired capacity. Draw a line from the proper value on each side of the graph. Their point of intersection will indicate the suggested width. Remember this is only a guide, since feed rates vary with material characteristics such as particle size distribution, moisture content, bulk density and angle of repose.



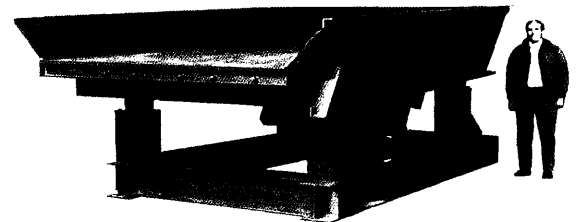
Wide Range Of Applications



The deck of this 36" wide x 8' - 0" long Para-Mount II Weeder is lined with high-density ceramic to resist abrasion while handling coke in a steel mill application.



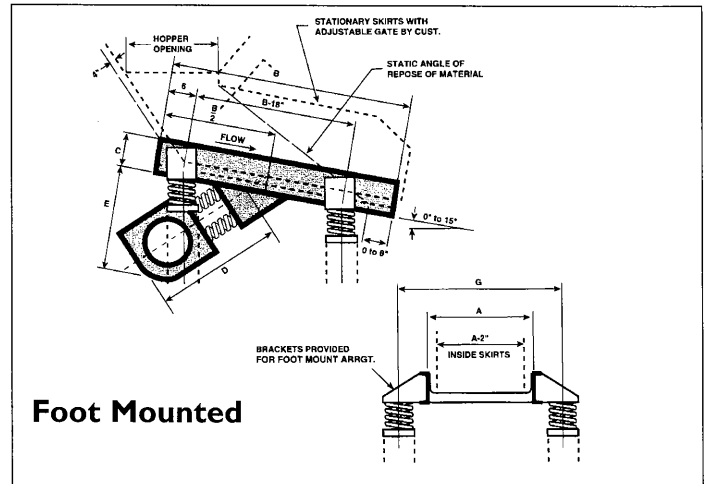
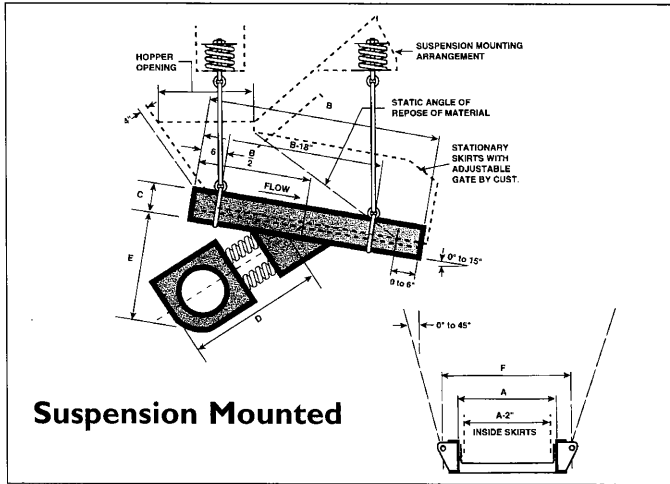
Series of enclosed feeders during testing and final inspection prior to shipment.



This 96' flared to 120" wide x 15' 0" long base mounted feeder handles municipal solid waste at a mass burn incinerator. Deck has replaceable wearliners.

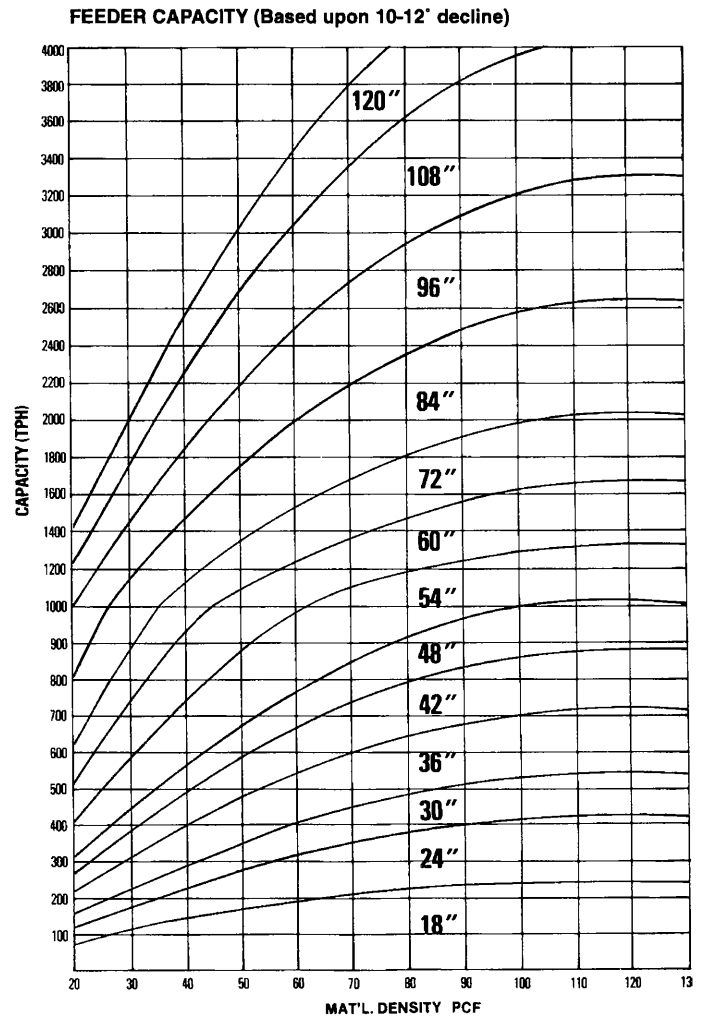
SECTION 5 • FEEDERS & FLOW CONTROL

Selection & Specifications (continued)



FEEDER MODEL NUMBER	HP	WEIGHT POUNDS	DIMENSIONS, INCHES*					
			A	B	C	D	E	F
FRC & ARC**								
MODEL A'-B'								
18-5	3/4	900	18	60	9	32	24	45
18-6	3/4	950	18	72	9	32	24	45
18-7	3/4	1000	18	84	9	32	24	45
18-8	3/4	1050	18	96	9	32	24	45
24-5	1	1400	24	60	9	33	30	42
24-6	1	1400	24	72	9	33	30	42
24-7	1	1450	24	84	9	33	30	42
24-8	1	1500	24	96	9	33	30	42
30-5	1	1450	30	60	9	33	36	48
30-6	1	1450	30	72	9	33	36	48
30-7	2	1700	30	84	9	33	36	48
30-8	2	1750	30	96	9	33	36	48
36-5	2	1850	36	60	10	33	42	54
36-6	2	1900	36	72	10	33	42	54
36-7	2	1950	36	84	10	33	42	54
36-8	2	2000	36	96	10	33	42	54
42-6	2	1950	42	72	10	33	48	60
42-7	2	2000	42	84	10	33	48	60
42-8	3	2500	42	96	10	36	48	60
48-6	3	2500	48	72	12	35	55	68
48-7	3	2600	48	84	12	35	55	68
48-8	3	2700	48	96	12	35	55	68
48-9	3	2800	48	108	12	35	55	68
60-7	5	4100	60	84	15	34	68	80
60-8	5	4200	60	96	15	34	68	80
60-9	5	5300	60	108	15	34	68	80
60-10	5	5400	60	120	15	34	68	80
72-8	5	5400	72	96	15	34	80	90
72-9	5	5500	72	108	15	34	80	90
72-10	5	5600	72	120	15	34	80	90
84-10	10	6800	84	120	15	34	92	104
84-11	10	7000	84	132	15	34	92	104
84-12	10	7200	84	144	15	34	92	104
96-10	10	7200	96	120	15	34	104	116
96-12	10	7600	96	144	15	34	104	116
96-14	10	8000	96	168	15	34	104	116

*For installation purpose, request certified dimensions.
 **FRC = Fixed Rate ARC = Adjustable Rate



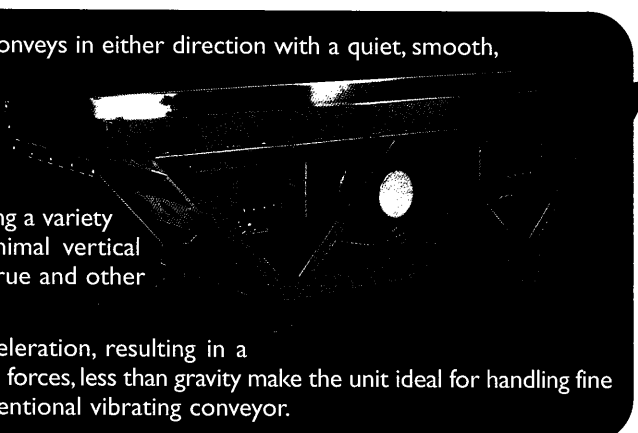
Two-Way Conveyors

A new innovative vibrating equipment design from General Kinematics conveys in either direction with a quiet, smooth, horizontal motion without dusting or damage to friable materials.

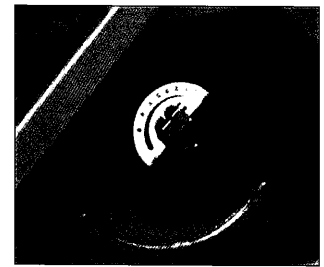
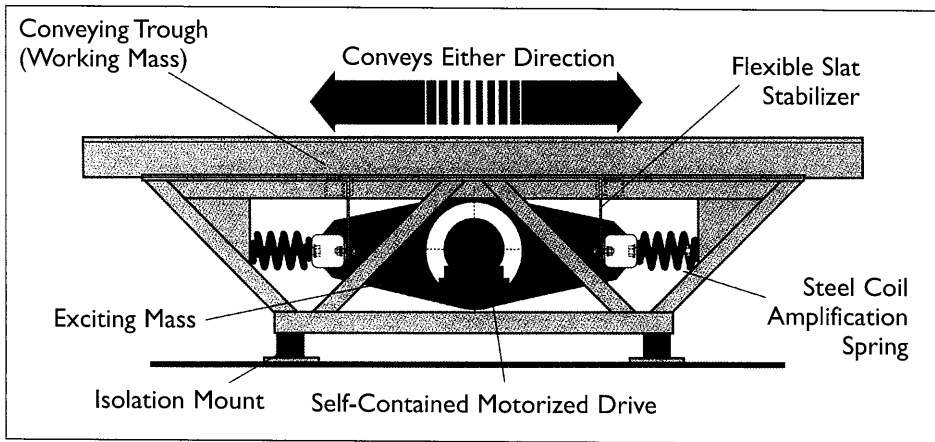
Direction of material flow is easily and immediately reversible at the touch of a button controlling the rotational direction of a single, low horsepower, self-contained drive.

Smooth, horizontal material flow makes a TWO-WAY unit ideal for moving a variety of bulk materials including powders, chemicals or food products. Minimal vertical acceleration force also permits the noise-free movement of castings, sprue and other metallic parts with reduced trough wear.

Conveying motion is essentially horizontal, with minimum vertical acceleration, resulting in a gentle, noise-free "shuffling" material movement without bouncing. Vertical forces, less than gravity make the unit ideal for handling fine materials which would tend to aerate and be difficult to handle in a conventional vibrating conveyor.



Advanced Design Horizontal Conveying Motion



Unit is a two-mass, sub-resonant natural frequency design, applying a small exciting force to a coil spring amplification system. This force is developed by a single low horsepower, vibratory service, motor with counterweights on each of its double extended shafts.

The new TWO-WAY Conveyor uses a simple, dependable design with a self-contained motorized drive, a coil spring amplification system and strategically positioned flexible slat stabilizer legs. Noisy gears, drive belts, and other maintenance prone machinery is eliminated. Unit is inherently self-balancing and fully isolated to minimize vibration transferred to supporting structures.

Conveyors can be provided to operate at various frequencies and trough amplitudes to suit specific application requirements.

Troughs can be constructed of a variety of materials and configurations including dust-right sanitary construction.

From original concept through design and manufacturing, General Kinematics is uniquely positioned to fully coordinate

every phase of equipment production. Years of engineering and field experience, combined with dedicated in-house engineering teams, working with advanced computerized CAD stations, enable General Kinematics to consistently develop highly efficient, innovative solutions for your specific material handling and processing needs.

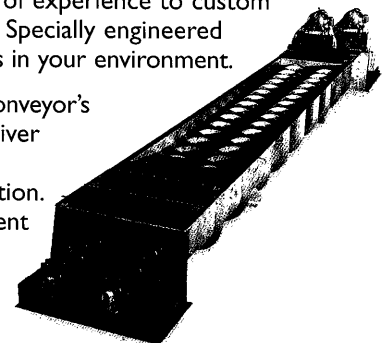
It's not just a vibrating machine we put in your plant, but our reputation as well.

Screw Conveyors



Thomas Conveyor puts to work our decades of experience to custom design systems to meet your individual needs. Specially engineered features increase the reliability of our machines in your environment.

No other company comes close to Thomas Conveyor's engineering and design capabilities. We can deliver equipment that has been custom designed if necessary, to fit perfectly your specific application. Through our computer-aided design department and real-life experience, we utilize the latest technology and practical design sense to find effective solutions for your plant.

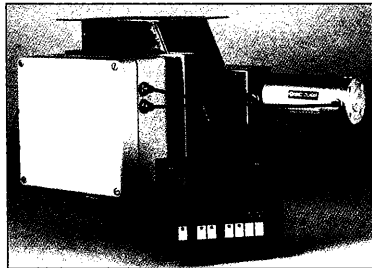


Flo-Commander - Flow Control Feeder With Doppler Radar Technology

An Accurate Flow Controller and Flow Monitor In One Easy-To-Use Package

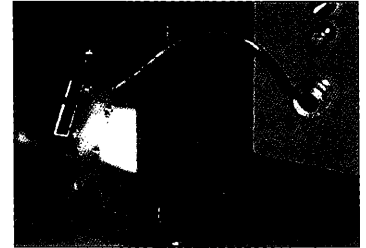
Bindicator's New Flo-Commander is a simple and unique product for controlling and monitoring the discharge of bulk powders and granulars up to 1/2" (12mm) in size. It regulates a precise flow from any size storage container.

The **Flo-Commander** discharges a constant amount of product equal to the flow rate set-point and provides a feedback of the actual flow. And with DSP Digital Signal Processing that "learns" about your particular flow requirements during the initial calibration, the Flo-Commander won't require constant adjustment or attention like the feeders you've used in the past.



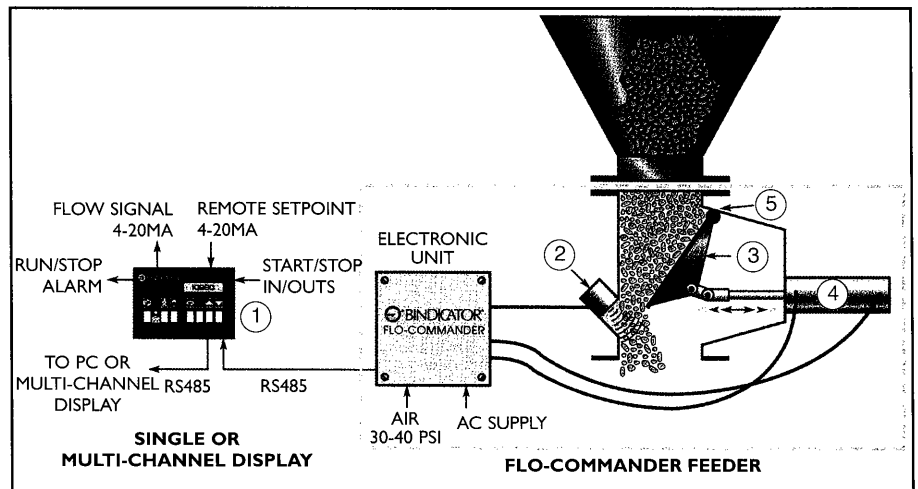
Try the **Flo-Commander** on a demanding flow application, or replace that old flow control system that is slowly eating up your precious time and resources. We are confident that you will be 100% satisfied with your decision.

Measures velocity, has no moving parts to wear or fail. Non-contact, non-intrusive technique accurately measures flow rate by looking through an unbreakable "window". The straight-thru design allows maximum flow rate and eliminates the troublesome constrictions found in other designs.



Why It Works Better

- 1. Flo-Commander Display** - Set desired flow rate, perform calibration, and get maximum control of your process.
- 2. Doppler Radar** technology accurately measures flow and provides feedback to Flo-Commander Display.
- 3. Flo-Gate** opens to allow material movement and oscillates for consistent material flow.
- 4. Air Cylinder** - rugged, fast-acting actuator controls feed volume.
- 5. Position Encoder** gives precise gate position information for the ultimate in control technology.



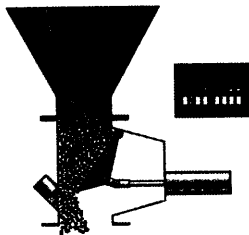
Simple Installation . . . Fast, Easy Start-Up

Replace outdated and troublesome . . .

- Mechanical Feeders • Rotary Valve Systems • Weigh Belts • Flow Balancers • Loss in Weight Feeders • Impact Feeders
- or add up-to-date flow monitoring and control capability to your new or upgraded process.

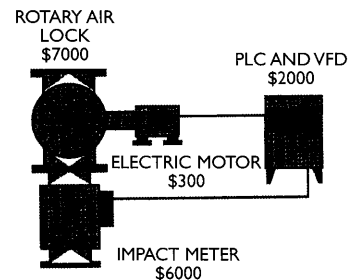
YES . . .

- Simple low cost design
- Mounts in tight spaces
- Gravity moves material . . . low power consumption



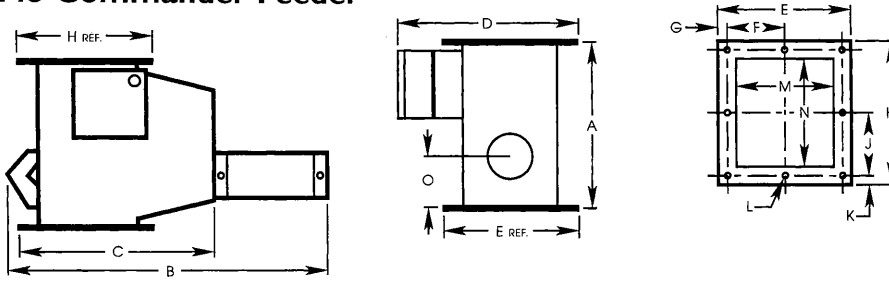
NO . . .

- Complicated and expensive
- Hours of upkeep and adjustments
- High power consumption



Dimensional Drawings

Flo-Commander Feeder

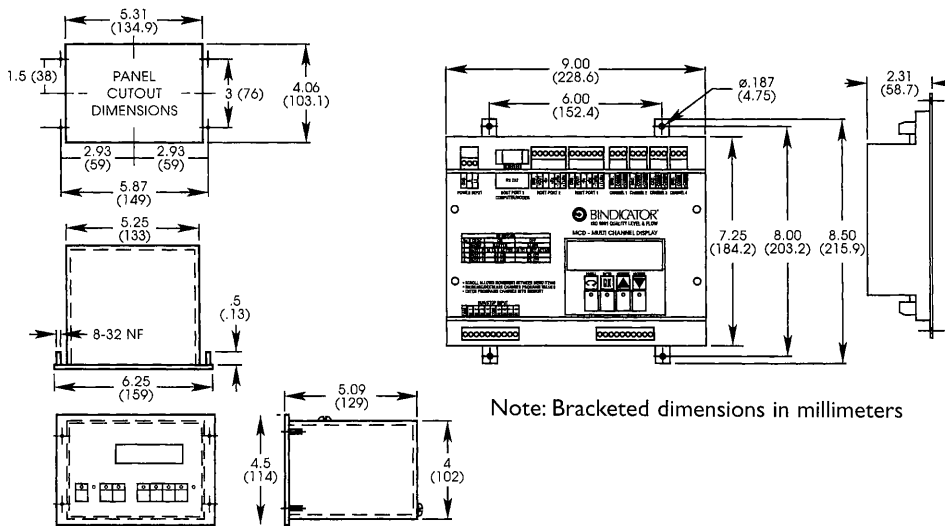


P=Number of holes per flange

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
2X2.5	12.00 305	16.90	8.75	13.20	6.00	4.00	1.00	6.50	2.50	1.00 25.4	.437	2.00	2.50	8.06	4
4X6	12.00 305	25.81 656	12.50 318	13.12 333	8.00 203	3.00 76	1.00 25	10.00 254	4.00 102	1.00 25	.437 11	4.00 102	6.00 152	4.50 114	4
6X6	12.00 305	25.81 656	12.50 318	15.12 384	10.00 254	3.00 76	1.00 25	10.00 254	4.00 102	1.00 25	.437 11	6.00 152	6.00 152	4.50 114	4
8x10	17.50 445	35.69 906	18.12 460	17.12 435	12.00 305	5.00 127	1.00 25	14.00 356	6.00 152	1.00 25	.562 14	8.00 203	10.00 254	5.25 133	8
10x14	17.50 445	35.69 906	18.12 460	22.00 559	18.00 457	8.00 203	1.00 25	14.00 356	6.00 152	1.00 25	.562 14	14.00 356	10.00 254	5.25 133	8

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. LOWER NUMBERS ARE MILLIMETERS.

Multi-Channel Display (MCD)



Note: Bracketed dimensions in millimeters

Successful Feeder Applications

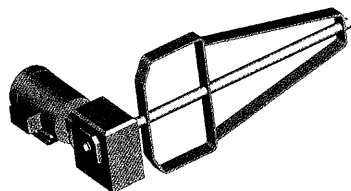
Wheat	Pepper
Oats	Plastic Resin - (All kinds & shapes)
Corn	Cement
Peas	Limestone, Powder
Soy Beans	Limestone, Crushed
Rice	Sand
Barley	Gravel - (Medium & Fine)
Malt	Flour
Canola	Salt
Mustard Seed	Starch
Sun Flower Seed	Semolina - (Durum & Wheat)
Beans	Sugar
Brewers Grain	
Buckwheat	
Coffee Beans	
Flax Seed	
Bird Seed	

Designed With Features You Asked For

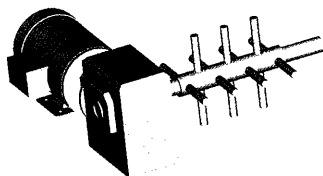
- Volumetric flow measurement and control
- 200,000 lbs./hour (90,720 kgs./hr.) capacity
- Few moving parts
- Large access and clean-out port
- Straight "flow thru" design
- Local and remote intelligent displays
- PC Compatibility/Networking
- Powder and Granular control
- Set and Forget - No tweaking required
- Most compact feeder available - little or no facility modification
- No delicate load cells or impact plates
- Changing bulk density is no problem
- Field repairable
- Non-contact flow measurement
- Flow alarming
- Can be mounted at an angle

Material Flow Promotion and De-Agglomeration Devices

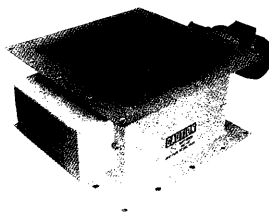
NBE custom material flow divides ensure continuous discharge of your semi- or non-freeflowing materials.



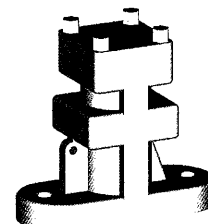
Robust hopper cone agitator eliminates bridging and ratholing within hoppers and bins for semi- and non-freeflowing material.



Rotary tine agitator eliminates material bridging at hopper and bin discharges.



The Crumbler material delumper bolts to the discharge of hoppers and bins to improve the material flowability through your conveying systems.



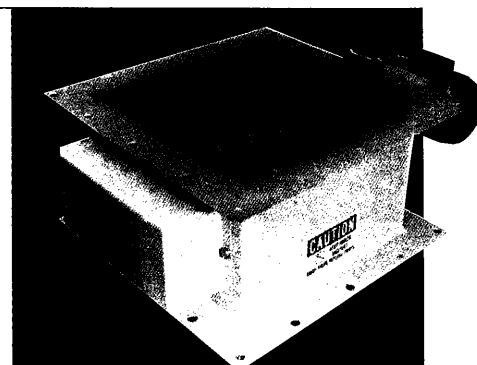
Electric and pneumatic vibrators mount to the exterior of hopper and bin cones to maintain the flow of materials from the discharge outlet.

The "Crumbler"

Break Down Agglomerated Material to Improve its Flowability Through Your Material Conveying System.

The NBE Crumbler maintains a uniform flow of material from a storage bin or hopper to downstream processing equipment.

When stored material becomes lightly packed or clumped, the Crumbler, with its dual rotary agitator shafts, works to break down those material agglomerations helping to prevent interruption in material flow to downstream equipment. The economic design of NBE's Crumbler makes it easy to install to most existing equipment, and will provide years of reliable use.



Features

Construction Welded mild steel box construction, flanged top and bottom. Rubber gasket mounting seals provided.

Drive 1/2HP; TEFC;
115/230V; 60Hz right angle motor, gear drive, reversible. Shaft bearings mounted outside box away from material flow.
30 RPM
680 lbs. full load torque

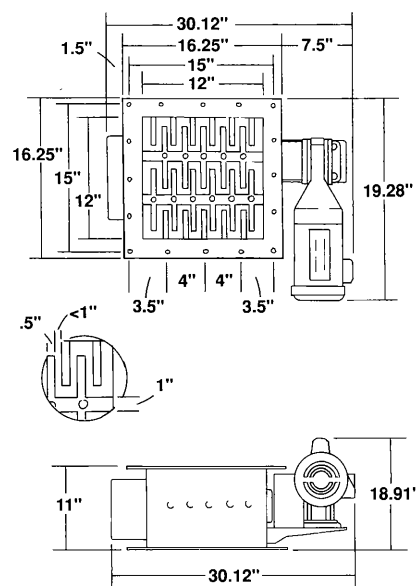
Operation Designed for continuous duty.

Finish Sandblasted and painted outside only desert sand beige.

Motor size may vary per application according to material characteristics and bin size.

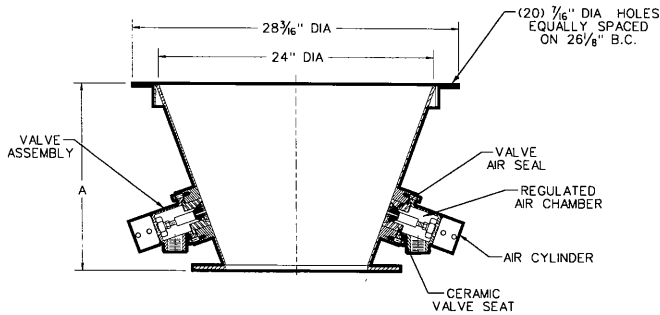
Rotor Arms 1/2" steel rod "fingers" mounted to two 1" steel shafts. Opposing shaft rotation. <1" "finger" clearances.

Specifications



Fluidizing Bin Bottom (Model 328)

The NOL-TEC Fluidizing Bin Bottom promotes the free flow of powder and granular materials in storage vessels.



Model	Piston Qty	Discharge Size	A
328-6-3	3	6"	24"
328-8-3	3	8"	21.25
328-10-3	3	10"	18.25
328-12-3	3	12"	15.50"

Standard Features:

- Three air injection valve assemblies controlled by a single solenoid valve for aeration sequencing
- Ceramic valve seat directs air into the material at various angles
- Abrasion resistant, urethane valve
- Wear parts are replaceable from outside of container

Optional Features:

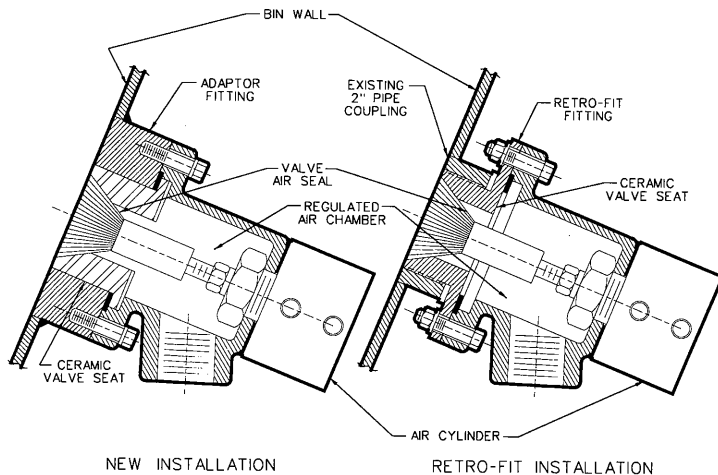
- Interior coatings
- Each aerator with individual solenoid valve for aerator sequencing
- Special mounting flanges
- Stainless steel construction
- Explosion proof electrical
- Sanitary design
- High temperature design

Specifications:

- Weight - 115 lbs.
- Air:
 - Clean and dry at correct pressure dew point
 - 80 PSIG minimum
- Electrical - 110-120V, 50/60HZ
- Temperature - 200°F

Aerator (Model 276)

The NOL-TEC Aerator is an effective device for aerating or dislodging materials in silos, bins and chutes.



Standard Features:

- Ceramic valve seat directs air into the material at various angles
- Abrasion resistant, urethane valve
- Wear parts are replaceable from outside of container

Optional Features:

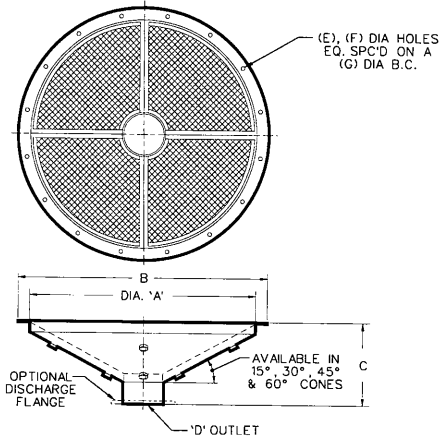
- Mounting to existing 2" pipe couplings
- Each aerator with individual solenoid valve for aerator sequencing
- Stainless steel construction
- Explosion proof electrical
- Sanitary design
- High temperature design

Specifications:

- Weight - 4 lbs.
- Air:
 - Clean and dry at correct pressure dew point
 - 80 PSIG minimum
- Electrical 110-12-V, 50/60hz
- Temperature - 200°F

Bin Discharger (Model 255)

The NOL-TEC Bin Discharger is designed to assist in discharging difficult to handle dry powders from silos or hoppers using aeration.



Standard Features:

- Four separate aeration zones
- Individual volume controls
- Full aeration media across discharger
- Low profile saves headroom
- Maintenance free aeration media
- Operates using plant air or positive displacement blower
- Continuous aeration or pulsing sequences

Optional Features:

- Stainless steel construction in material contact area
- Various fabric aeration media

- Stainless steel aeration media
- Discharge flange
- Multiple outlets
- Custom designs to fit specific applications

Specifications:

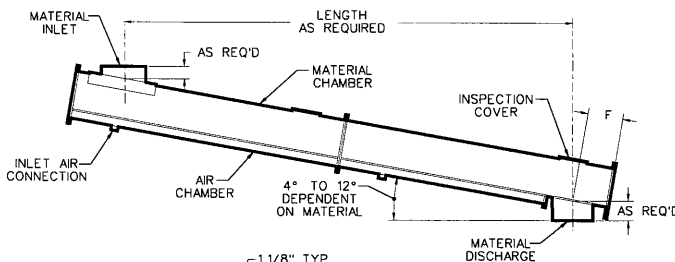
- Air - Plant compressor supply
 - Positive displacement blower
 - Clean and dry at correct pressure dew point
- Temperature - 350°F

A	B	C				D	E	F	G
		15°	30°	45°	60°				
2'-0"	2'-4"	8.00"	11.00"	15.00"	21.00"	6"	16	5/8"	2'-2 1/2"
3'-0"	3'-4"	9.00"	14.00"	21.00"	32.00"	6"	24	5/8"	3'-2 1/2"
4'-0"	4'-6"	12.00"	18.00"	28.00"	42.00"	8"	32	5/8"	4'-3 1/2"
5'-0"	5'-6"	15.00"	24.00"	34.00"	53.00"	10"	36	3/4"	5'-4"
6'-0"	6'-6"	17.00"	28.00"	40.00"	63.00"	12"	40	3/4"	6'-4"
8'-0"	8'-8"	21.00"	35.00"	40.00"	74.00"	16"	52	3/4"	8'-5"

A	FABRIC AREA IN SQ. FT			
	15°	30°	45°	60°
2'-0"	3.0	3.4	4.2	6.0
3'-0"	7.1	7.9	9.7	13.9
4'-0"	12.6	14.1	17.3	24.9
5'-0"	19.8	22.0	27.0	39.0
6'-0"	28.5	31.7	38.9	56.2
8'-0"	51.5	58.5	71.5	100.0

Air Slide (Model 208)

The NOL-TEC Air Slide is designed to convey dry granular or powder materials in a fully enclosed dust tight housing using either high or low pressure air.



Standard Features:

- 10 Ga. construction throughout
- Polyester aeration media
- Adjustable inlet location
- Air inlet in each section
- Inspection opening in each section
- Pressure relief valve

Optional Features:

- Stainless steel construction
- Stainless steel aeration media
- Flanged inlet and outlet
- High temperature design
- Multiple inlets and outlets

Specifications:

- Air - Plant compressor supply
 - Positive displacement blower
 - Clean and dry at correct pressure dew point
- Temperature - 350°F Membrane

Size	A	B	C	D	E	F
4	3.75"	4"	6.00"	8.44"	2.19"	4.00"
6	5.75"	6"	8.00"	10.44"	2.19"	6.00"
8	7.75"	8"	10.00"	12.44"	2.19"	6.00"
10	9.75"	10"	12.00"	14.44"	2.19"	8.00"
12	11.75"	12"	14.00"	16.44"	2.19"	8.00"
14	13.75"	12"	16.00"	16.44"	2.19"	10.00"
16	15.75"	12"	18.00"	16.44"	2.19"	10.00"
18	17.75"	12"	20.00"	16.44"	2.19"	12.00"

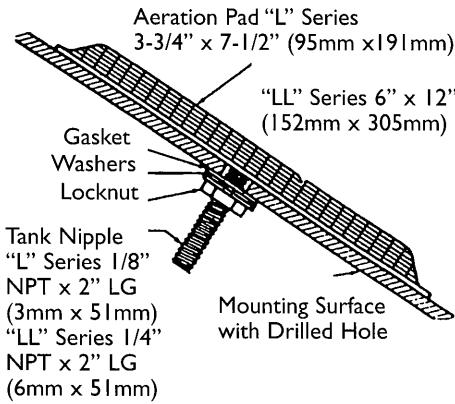
BIN-FLO®

Aeration Kits

These kits are offered for the purpose of assisting the discharge of finely ground dry materials from bins or hoppers. The assembly allows the introduction of low pressure air (3 P.S.I.G. for uncovered aerators.) Into the material through aerators spaced for efficient fluidization on 4 symmetrical inclined rows of 60 degree pyramidal or conical outlet hoppers. (Blower and piping to kit not included.)

Diameter of Tank	
6" Hopper Aeration Kit	
4 rows of 4 "L" series aerators on 12" centers	
4 rows of 3 "L" series aerators on 15" centers	
4 rows of 3 "LL" series aerators on 20" centers	
4 rows of 2 "LL" series aerators on 24" centers	
8" Hopper Aeration Kit	
4 rows of 6 "L" series aerators on 12" centers	
4 rows of 5 "L" series aerators on 15" centers	
4 rows of 4 "LL" series aerators on 20" centers	
4 rows of 3 "LL" series aerators on 24" centers	
10" Hopper Aeration Kit	
4 rows of 8 "L" series aerators on 12" centers	
4 rows of 7 "L" series aerators on 15" centers	
4 rows of 6 "LL" series aerators on 20" centers	
4 rows of 5 "LL" series aerators on 24" centers	
12" Hopper Aeration Kit	
4 rows of 9 "L" series aerators on 12" centers	
4 rows of 8 "L" series aerators on 15" centers	
4 rows of 7 "LL" series aerators on 20" centers	
4 rows of 6 "LL" series aerators on 24" centers	

Air Pressure PSI	Air Consumption per Bin-Flo Aerators - In cubic Feet per Minute	
	"L" Series	"LL" Series
1/2	2.7	6.0
1	4.2	7.5
1-1/2	5.0	9.1
2	5.7	10.4
2-1/2	6.1	11.7
3	6.5	12.7
3-1/2	6.9	13.8
4	7.1	14.7
4-1/2	7.4	15.6
5	7.6	16.4
5-1/2	8.0	17.2
6	8.2	18.3
6-1/2	8.4	19.2
7	8.7	20.2
7-1/2	8.9	21.1
8	9.1	22.0
8-1/2	9.3	23.0
9	9.6	23.8
9-1/2	9.8	24.7
10	10.0	25.6
10-1/2	10.2	26.5
11	10.4	27.4
11-1/2	10.7	28.4
12	10.9	29.2
12-1/2	11.1	30.1
13	11.3	30.9
13-1/2	11.6	31.9
14	11.8	32.9
14-1/2	12.0	33.8
15	12.2	35.1



"L" Series Installation

Drill 7/16" hole through the bin wall or mounting surface at the center of each BIN-FLO® aerator location. Insert the tank nipple (short tapered thread end) in the aerator and place the unit inside the bin, inserting the tank nipple through the drilled hole in the bin wall.

Place the gasket on the nipple next to the outside of the bin wall together with sufficient space washers and lock securely in place with the locknut.

Install piping to the BIN-FLO® aerators and complete connection to the air supply.

"LL" Series Installation

Drill 9/16" hole through the bin wall at the center of each BIN-FLO® aerator location and proceed as above.

Air Supply Piping

Piping of adequate size to carry the required volume of low pressure air must be provided to assure reliable operation of the BIN-FLO® aerators. As a general guide the following minimum pipe sizes should be used for the manifolds to which the aerators are attached. In all cases the number of pipe fittings should be held to a minimum.

"L" Series		"LL" Series	
Pipe Size	Number of BIN-FLO Aerators	Pipe Size	Number of BIN-FLO Aerators
3/4" (19mm)	1-5	1" (25.4mm)	1-5
1" (25.4mm)	6-9	1-1/4" (32mm)	6-8
1-1/4" (32mm)	10-12	1-1/2" (38mm)	9-11

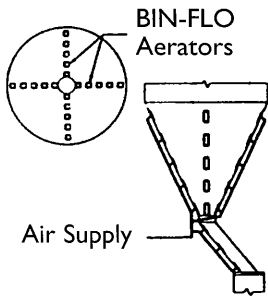
How Many BIN-FLOs Per Row?

To determine the number of BIN-FLO® aerators required for each row:

Measure the length of the sloping side of the hopper on which the aerators are to be installed. Refer to the table below, select the model to be used ("L" Series or "LL" Series) and the spacing of the units. Read down the column until the approximate length of slope is reached. The number of aerators required is shown at the left. Example: The 6'11" slope will require 6 model "L" aerators mounted on 15" centers.

No. of Aeration Pads per Row	"L" Series Mounted On		"LL" Series Mounted On	
	12" Centers	15" Centers	20" Centers	24" Centers
2	1'-8" 50.8cm	1'-11" 58cm	2'-8" 81cm	3'-0" 91cm
3	2'-8" 81cm	3'-2" 97cm	4'-4" 132cm	5'-0" 152cm
4	3'-8" 112cm	4'-5" 135cm	6'-0" 183cm	7'-0" 213cm
5	4'-8" 142cm	5'-8" 173cm	7'-8" 234cm	9'-0" 274cm
6	5'-8" 173cm	6'-11" 211cm	9'-4" 284cm	11'-0" 335cm
7	6'-8" 203cm	8'-2" 249cm	11'-0" 335cm	13'-0" 396cm
8	7'-8" 234cm	9'-5" 287cm	12'-8" 386cm	15'-0" 457cm
9	8'-8" 264cm	10'-8" 323cm	14'-4" 437cm	17'-0" 518cm
10	9'-8" 295cm	11'-11" 363cm	16'-0" 488	19'-0" 579cm

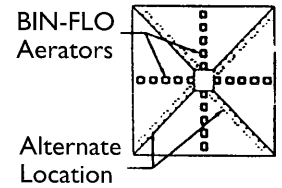
Aeration Disc - Bulk Flour Bin Activator



Conical Hopper

In a conical hopper four rows of BIN-FLO® aerators, located as shown, are normally required. The "L" series should be used in small cones as the smaller aerator adapts better to the curved surface.

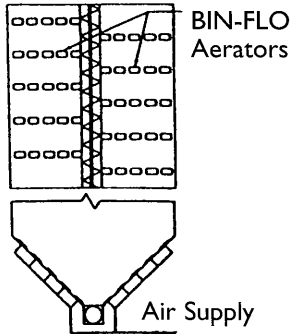
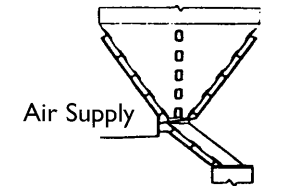
To prevent clogging of material in discharge pipe or chute, install one row of aerators on the under side of the slope, as shown.



Pyramidal Hopper

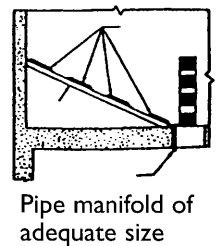
In a pyramidal hopper four rows of BIN-FLO® aerators centered on the sloping sides usually assures full and uniform flow. For minimum retention of material in the corners, an alternate location in the valleys is suggested.

To prevent clogging of material in discharge pipe or chute install one row of aerators on the under side of the slope, as shown.



V-Bottom Bin

This layout may be used in bins emptied by screw conveyor, belt conveyor or other means where the discharge opening runs the entire length of the bin, it provides full and uniform flow to the discharge opening without bridging over the outlet. Number of rows of BIN-FLO® aerator required and spacing will depend upon the size of the bin as well as the material being handled.

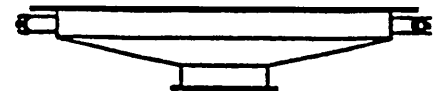


Aeration Disc - Bulk Flour Bin Activator

Aeration Discs are constructed for discharging aeratable products from bulk storage. Each unit consist of a carbon steel air reservoir covered with 4 ply polyester dacron fluidization fabric. Standard Paint: primed interior with white enamel exterior. Price includes 2" ASCO Solenoid (NEMA 4) activation valve & pipe elbow at Disc Air Inlet.

Application: Air Discs are used to promote discharge of fluidizable materials (flour, starch) from bulk storage through the use of sequenced low pressure air charges.

Disc Outside Diameter	Outlet Inside Diameter	Outlet Outside Diameter
3 Foot	8" I.D. 12" I.D.	11" O.D. 15" O.D.
4 Foot	8" I.D. 12" I.D.	11" O.D. 15" O.D.
5 Foot	8" I.D. 12" I.D. 16" I.D.	11" O.D. 15" O.D. 19" O.D.
6 Foot	8" I.D. 12" I.D. 16" I.D. 20" I.D.	11" O.D. 15" O.D. 19" O.D. 23" O.D.
7 Foot	8" I.D. 12" I.D. 16" I.D. 20" I.D.	11" O.D. 15" O.D. 19" O.D. 23" O.D.
8 Foot	8" I.D. 12" I.D. 16" I.D. 20" I.D.	11" O.D. 15" O.D. 19" O.D. 23" O.D.



- Dual discharge aeration disc should not be used when one discharge is for future use. A single disc should be used initially and the system designed for future adaptation to a dual configuration.
- Air valve sequencing is required on dual aeration disc. Both sides of the aeration disc must be used in a sequencing method for most effective discharge of material.
- Select discharge diameter to conform to the system capacity requirements. (Outlet diameter must coincide with mating equipment selection sizing to conform with system capacity requirements.)