

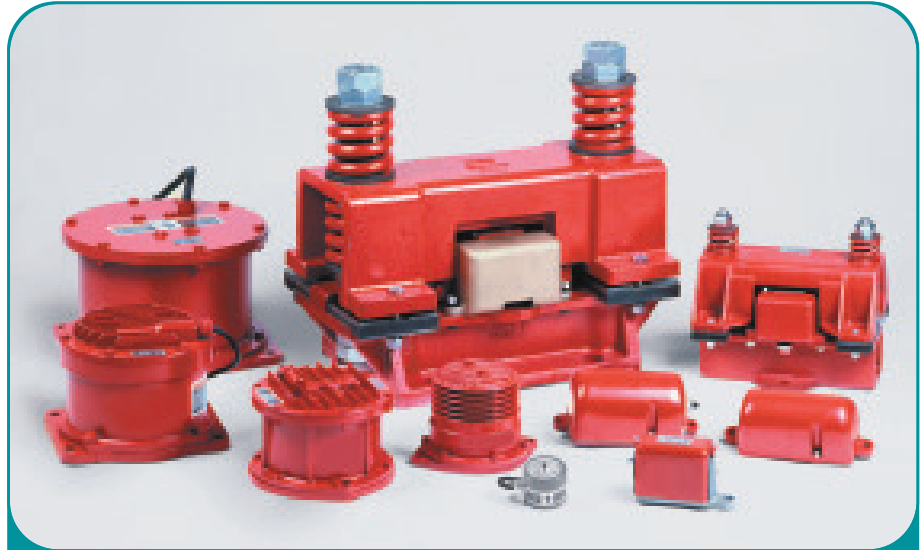
Syntron® Electromagnetic Vibrators

Keep Your Materials Flowing Efficiently and Economically

Syntron® Electromagnetic Vibrators from Syntron Material Handling offer an economical means of maintaining the flow of bulk materials from bins, hoppers and chutes. They come with an easily adjustable control which provides flexibility and assures optimum flow for the type of material being handled. Furthermore, Syntron Electromagnetic Vibrators can be operated continuously or intermittently depending upon the specific requirements.

To assure the highest standard of quality, Syntron Electromagnetic Vibrators are factory tested and adjusted for optimum performance. Most models come standard with totally enclosed, dust-tight and waterproof construction. Since these vibrators have no rotating or sliding parts, they are virtually maintenance-free.

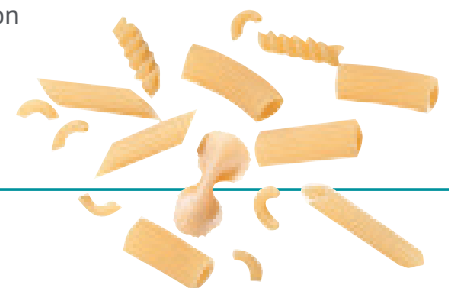
Syntron Electromagnetic Vibrators come with the technical expertise of Syntron Material Handling's application staff, who have been providing productive solutions for a wide variety of material handling problems for more than 80 years. Call Syntron Material Handling Application Specialists and request a data sheet or download one from our website at www.syntronmh.com. Syntron Electromagnetic Vibrators may also be ordered online at www.syntronmh.com.



Syntron® Electromagnetic Vibrators are available in a wide variety of sizes and force ratings.

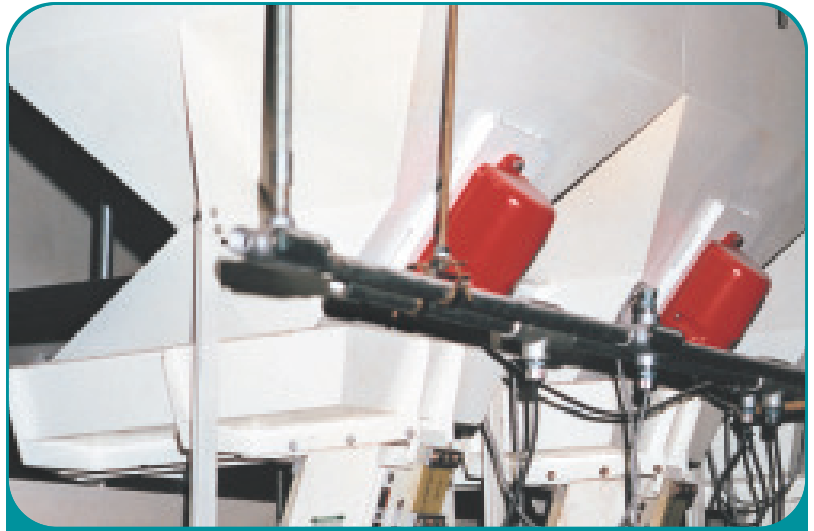
Features and Benefits

- Electromagnetic design
 - No rotating or sliding parts; maintenance-free
 - Ideal for continuous or intermittent operation
- Adjustable control
 - Varies vibration force with simple turn of control knob
- Urethane encapsulated magnet assemblies
 - Provides protection from moisture and other contaminants
 - Prevents wire degradation
- Productivity enhancing performance
 - No need for manual labor to unclog bins or to keep material flowing
- Simple design, durable, rugged construction
 - Safe, reliable performance for years of service
- Wide range of sizes
 - Accommodates your specific application
- Low noise models available
 - Quiet, reliable operation





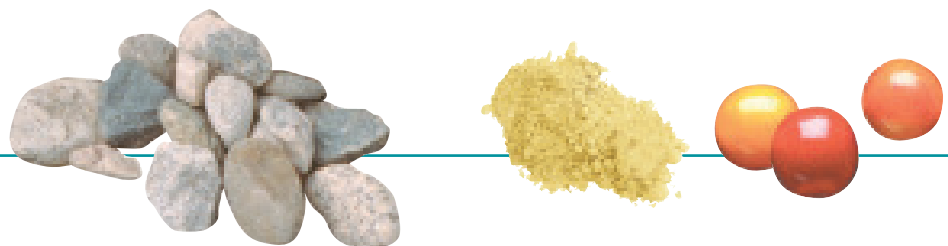
Syntron® model V-41 Electromagnetic Vibrator installed on a stainless steel bin.



Syntron® model V-20 Electromagnetic Vibrators maintain the flow of pasta from bins to packaging lines.



This Syntron® model V-85 Electromagnetic Vibrator is maintaining flow of dust particulates from the collecting hopper of an electrostatic precipitator.



Syntron® Electromagnetic Vibrator Models

Syntron® V-2 and V-4 Electromagnetic Vibrators are two of the smallest industrial vibrators available. These versatile vibrators can be controlled electrically with a separate control. When these vibrators are operated without a control, they can be mechanically controlled by turning an easily accessible adjusting screw. Increased amplitude can be obtained by using rectified AC power. Flexibility and ease of installation are common to both models and the Model V-4 is available with a dust-tight case.

Models V-9 and V-20 are compact in size, but at 3600 vpm, they pack enough vibratory “punch” to excel in a wide range of applications. Each is available with a separate dust-tight case.

Typical applications for the above models include installations on small bins, handling lightweight materials, or in counting, sorting or packaging operations.

Impact and Cushioned Vibrator Compact Models

Models V-50, V-85 and V-180 are “solid” impact vibrators. These units use a metal striking block to produce positive impact.

Models V-41, V-51, V-86 and V-181 are “cushioned” impact vibrators, which utilize a rubber striking block to produce positive impact. Their high power/low noise characteristics make them ideal for use in confined areas with nearby workers. Physical dimensions and electrical specifications are identical to the “solid” impact type vibrators. Dust-tight and waterproof construction are standard for both versions.

Open Models

Models V-75 and V-500 feature a power-packed, solid impact, open-type design. They are used on difficult, heavy-duty applications. The V-500 is one of the largest magnetic vibrators available. Both the V-75 and V-500 are available with a separate dust-tight case.

Self-Contained Models

Models V-9 through V-500 require separate controls unless specifically ordered as self-contained units. Self-contained units include a built-in rectifier and they always operate at full force. Self-contained units are recommended only where no force adjustment is required. Models V-41 and V-500 are not available as self-contained units.



V-2



V-4



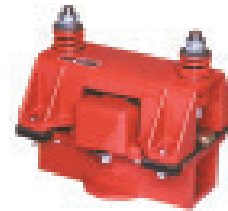
V-9, V-20



V-41



V-50
V-51



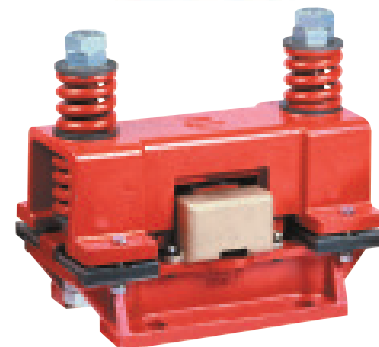
V-75



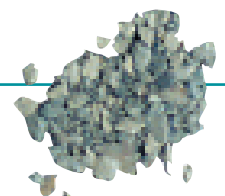
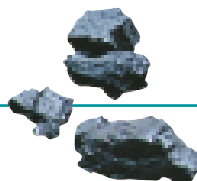
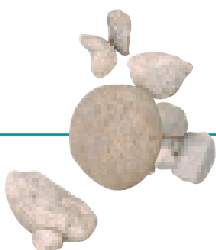
V-85
V-86



V-180
V-181

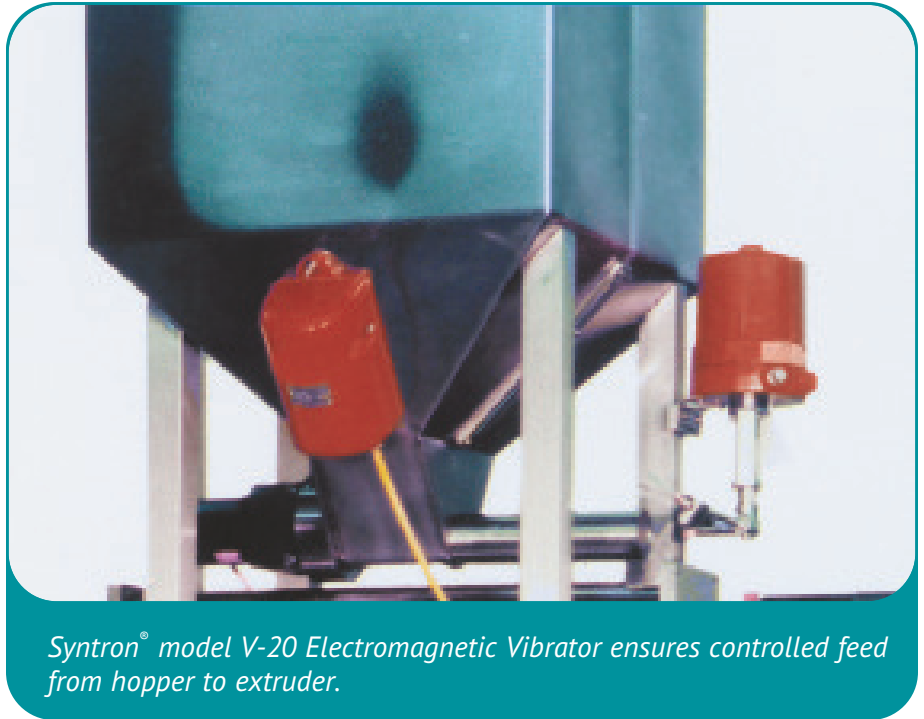


V-500



Selecting the Proper Syntron® Electromagnetic Vibrator

The primary consideration in vibrator selection is the thickness of the bin or chute wall. Once the proper vibrator model has been selected from the Application Tabulation Table, compare the capacity in the tapered portion of the bin with the rated capacity shown in the table. If the rated capacity is exceeded, multiple vibrators may be required, depending on the material being handled. Stiffeners used to reinforce the bin or chute may also affect the selection or preferred location of the vibrator. Please contact Syntron Material Handling for a copy of our data sheet and assistance with selection of appropriate units in these applications.

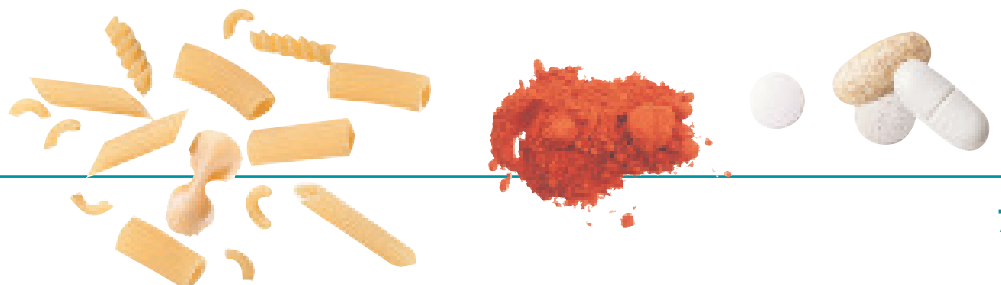
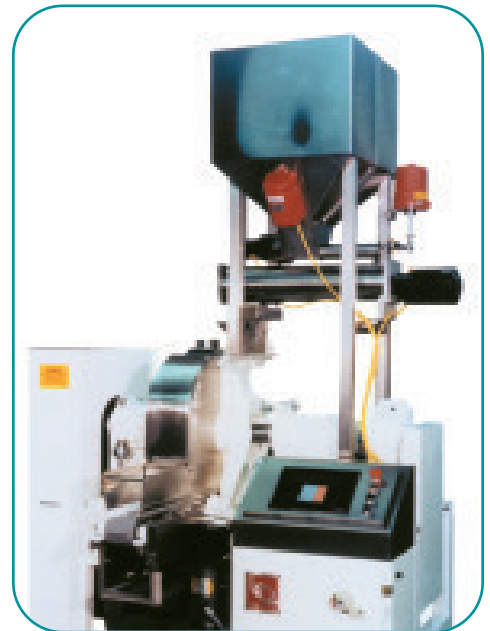


Syntron® model V-20 Electromagnetic Vibrator ensures controlled feed from hopper to extruder.

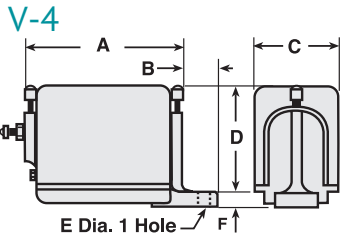
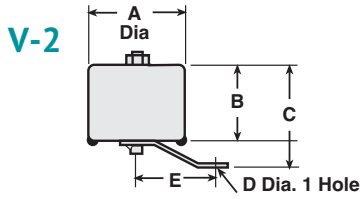
Application Tabulation

Model	Wall Thickness*	No. Vibrators Needed per Capacity in Tapered Portion of Bin/Hopper
V-2	24 ga (0.5 mm)	1 ft ³ (0.03 m ³)
V-4	22 ga (0.8 mm)	1 ft ³ (0.03 m ³)
V-9	20 ga (1 mm)	3 ft ³ (0.08 m ³)
V-20	1½ in (1.5 mm)	10 ft ³ (0.28 m ³)
V-41	1⅛ in (3 mm)	20 ft ³ (0.57 m ³)
V-51	1⅛ in (3 mm)	30 ft ³ (0.85 m ³)
V-50	¼ in (6 mm)	1 per 5-ton (4.5 metric ton)
V-86	¼ in (6 mm)	1 per 5-ton (4.5 metric ton)
V-75	5/16 in (8 mm)	1 per 20-ton (18.1 metric ton)
V-85	5/16 in (8 mm)	1 per 20-ton (18.1 metric ton)
V-181	5/16 in (8 mm)	1 per 30-ton (27.2 metric ton)
V-180	3/8 in (10 mm)	1 per 50-ton (45.4 metric ton)
V-500	1 in (25 mm)	1 per 100-ton (90.7 metric ton)

* Wall thickness is critical to proper vibrator selection; if in doubt, call Syntron Material Handling for assistance.



Electromagnetic Vibrator Specifications and Dimensions



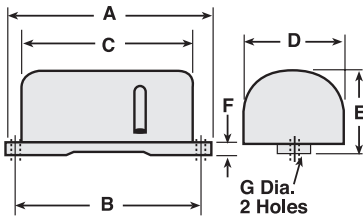
Specifications

Model	Weight		Input Amps		Speed (vpm 50 Hz)			Speed (vpm 60 Hz)		
	lb	kg	115V	230V	Without Control	AC Control	RC Control	Without Control	AC Control	RC Control
V-2	2 1/2	1.1	0.3	0.18	6,000	6,000	3,000	7,200	7,200	3,600
V-4	4 1/2	2.0	0.9	0.45	6,000	6,000	3,000	7,200	7,200	3,600

Dimensions

Model	A		B		C		D		E		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-2	2 7/8	73	2 1/4	57	3 1/16	78	1 3/32	10	2 3/8	60	--	--
V-4	5 5/8	143	1 1/4	32	3	76	3 3/4	95	1 7/32	13	1/2	13

V-9, V-20



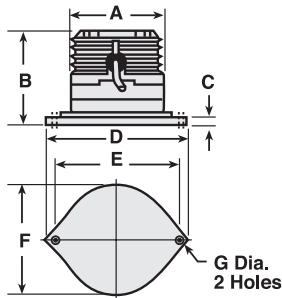
Specifications

Model	Weight		Input Amps			Speed	
	lb	kg	115V	230V	460V	(vpm 50 Hz)	(vpm 60 Hz)
V-9	9 1/2	4.3	1.2	0.75	NA	3,000	3,600
V-20	14	6.4	2.0	1.0	0.5	3,000	3,600

Dimensions

Model	A		B		C		D		E		F		G	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-9	10 1/4	260	9 1/4	235	8	203	4 1/4	108	4 1/16	103	9/16	14	7/16	11
V-20	10 1/4	260	9 1/4	235	8	203	5 1/8	130	4 5/16	110	1/2	13	7/16	11

V-41



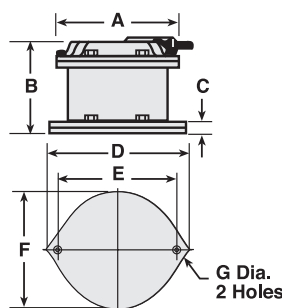
Specifications

Model	Weight		Input Amps			Speed	
	lb	kg	115V	230V	460V	(vpm 50 Hz)	(vpm 60 Hz)
V-41	25	11.3	3.5	1.75	0.88	3,000	3,600

Dimensions

Model	A		B		C		D		E		F		G	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-41	6 1/4	159	6 1/2	165	7/16	11	9 3/8	238	8 1/4	210	7 3/8	187	1 7/32	13

V-50, V-51



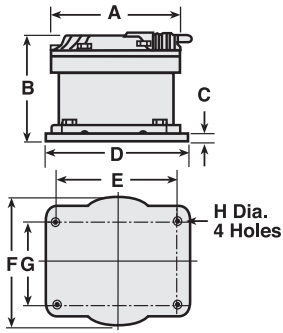
Specifications

Model	Weight		Input Amps			Speed	
	lb	kg	115V	230V	460V	(vpm 50 Hz)	(vpm 60 Hz)
V-50, V-51	40	18.1	4.5	2.3	1.2	3,000	3,600

Dimensions

Model	A		B		C		D		E		F		G	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-50	9 1/2	241	7 1/4	184	15/16	24	10 3/4	273	9 1/4	235	9 3/4	248	1 1/16	17
V-51	9 1/2	241	7 1/4	184	15/16	24	10 3/4	273	9 1/4	235	9 3/4	248	1 1/16	17

V-85, V-86



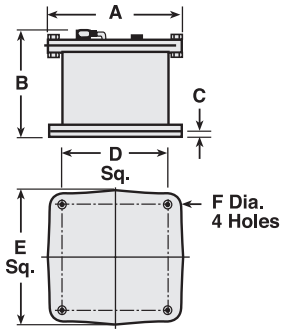
Specifications

Model	Weight		Input Amps			Speed	
	lb	kg	115V	230V	460V	(vpm 50 Hz)	(vpm 60 Hz)
V-85, V-86	79	35.8	7.0	3.5	1.8	3,000	3,600

Dimensions

Model	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-85	10 ^{7/16}	265	8 ^{3/4}	222	5/8	16	11 ^{1/2}	292	10	254	10 ^{5/8}	270	7	178	11 ^{1/16}	17
V-86	10 ^{7/16}	265	8 ^{3/4}	222	5/8	16	11 ^{1/2}	292	10	254	10 ^{5/8}	270	7	178	11 ^{1/16}	17

V-180



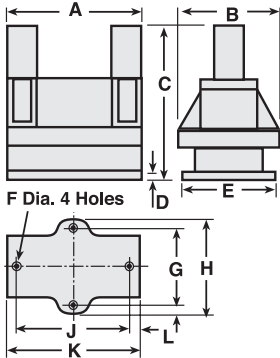
Specifications

Model	Weight		Input Amps		Speed	
	lb	kg	230V	460V	(vpm 50 Hz)	(vpm 60 Hz)
V-180, V-181	220	100	12.0	6.0	3,000	3,600

Dimensions

Model	A		B		C		D		E		F	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-180	15 ^{3/16}	386	11	279	11 ^{1/16}	17	12	305	15 ^{1/4}	387	13 ^{1/16}	21
V-181	15 ^{3/16}	386	11	279	11 ^{1/16}	17	12	305	15 ^{1/4}	387	13 ^{1/16}	21

V-75



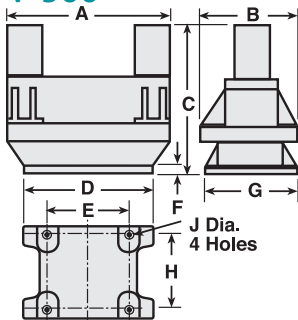
Specifications

Model	Weight		Input Amps			Speed	
	lb	kg	115V	230V	460V	(vpm 50 Hz)	(vpm 60 Hz)
V-75	113	51	16.0	8.0	4.0	3,000	3,600

Dimensions

Model	A		B		C		D		E		F		G		H		J		K		L	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-75	13	265	10	254	12 ^{3/8}	314	1/2	13	8	203	11 ^{1/16}	17	6 ^{1/2}	165	8	208	11 ^{1/2}	292	13	330	3/4	19

V-500



Specifications

Model	Weight		Input Amps		Speed	
	lb	kg	230V	460V	(vpm 50 Hz)	(vpm 60 Hz)
V-500	700	318	35.0	17.5	3,000	3,600

Dimensions

Model	A		B		C		D		E		F		G		H		J	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
V-500	25 ^{3/4}	654	14 ^{1/2}	368	23 ^{3/4}	603	20	508	13	330	1 ^{1/8}	29	14	356	11 ^{1/2}	292	1 ^{9/16}	40

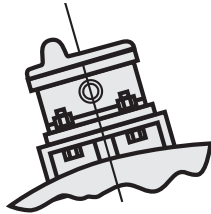
When ordering, specify 50 or 60 Hz operation. Refer to control information, page 10. For other voltage requirements, contact Syntrol Material Handling.

Mounting Syntron® Electromagnetic Vibrators

Correct location of electromagnetic vibrators is of prime importance in obtaining maximum efficiency from the selected model. Note: Operate vibrators on hoppers only when the hopper is open to flow. Otherwise, vibration may pack the hopper contents.

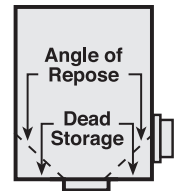
Curved Surfaces

To mount a vibrator to a curved surface, select a bracket made from a channel section or a bent plate. A center gusset is required for all totally enclosed vibrators, and two blocks of sufficient height to contact the curved surface are required for Models V-75 and V-500. The selected gusset or blocks must be securely welded to the underside of the bracket and curved surface. This arrangement is required to stiffen the mounting and transmit vibrations directly to the hopper contents. Mounting bolt heads can be welded to the underside of the bracket.



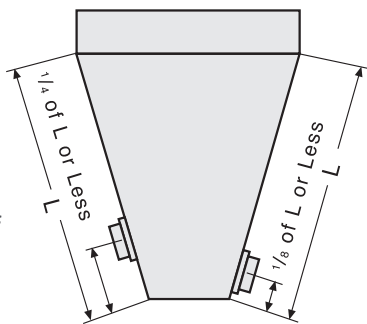
Rectangular or Cylindrical Bins with Flat Bottom and Center Discharge.

Mount directly to the side of the bin, just below the point where the materials' natural angle of repose intersects the side, as shown.



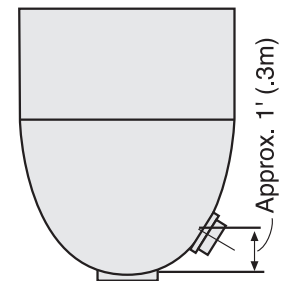
Rectangular Hoppers

Mount vibrator and mounting channel as for a conical hopper or a curved surface. If a stiffener obstructs mounting, mount the vibrator in the middle of the panel next to the stiffener. If required, a second vibrator should be mounted on the opposite face at a slightly higher elevation.



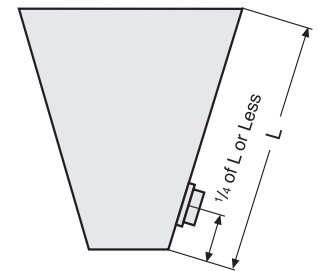
Parabolic Bins or Hoppers

Mount the vibrator within one foot of each discharge opening and in line with center of opening.



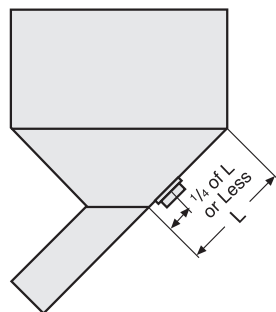
Conical Hoppers

Mount the vibrator to the hopper (as for a curved surface) 12 to 18 inches (300 to 450 mm) or less from the discharge.



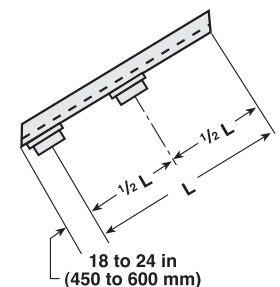
Hopper with Sloping Discharge

Mount the vibrator on the center line of the hopper, as close to the discharge as possible. An additional vibrator may be required on the discharge chute.



Inclined Chutes

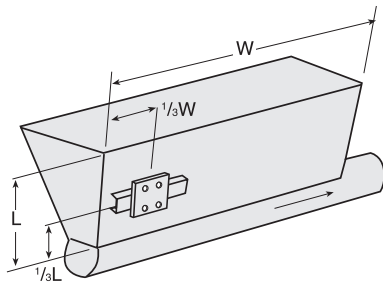
Chutes less than 10 to 12 feet (3 to 3.6 m) long are usually equipped with just one vibrator located well below the center. Allow for the vibrator to be moved about one foot (300 mm) in either direction. On chutes requiring more than one vibrator, the first one should be located 18 to 24 inches (450 to 500 mm) from the outlet. The second unit should be mounted about half-way between the first vibrator and the upper end. Allow for the vibrators to be moved about one foot (300 mm) in either direction.



Note: Drawings illustrate typical installations. Specific installations may require slight variations. For other applications not covered here, please consult factory for recommendations.

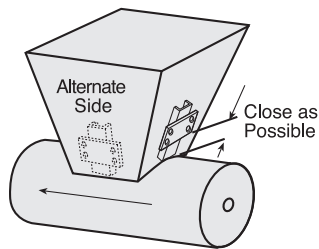
Screw Feeder

Screw conveyors feed from the back of the hopper. Vibrator should be $\frac{1}{3}$ from the inlet. If two vibrators are used, place second vibrator on opposite side, $\frac{1}{3}$ from the discharge. Do not operate the vibrator at the discharge end until the back of the bin is empty and the vibrator at the inlet is shut off.



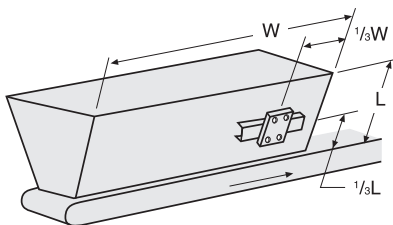
Short Screw Feeder

Place vibrator as close as possible to feeder.



Long Bin

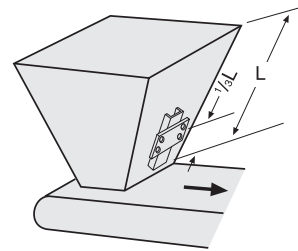
Belt conveyors feed from the front of the hopper. Vibrator should be $\frac{1}{3}$ from front. If two vibrators are used, place one on the opposite side and $\frac{1}{3}$ from back. Do not operate the back vibrator until the front is empty and the front vibrator is shut off.



Note: Drawings illustrate typical installations. Specific installations may require slight variations. For other applications not covered here, please consult factory for recommendations.

Belt Conveyor and Standard Bin

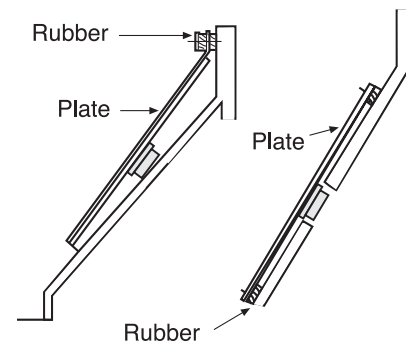
Mount vibrator on the belt discharge side of the hopper. Follow mounting instructions for the appropriate bin type on page 12.



Concrete Hopper or Lined Wooden Hopper

For wooden hoppers lined with thin sheet metal, attach vibrator mounting bolts to the hopper lining.

For concrete hoppers, secure a steel plate across the top inside of the hopper, to the discharge opening along the side to which the vibrator will be mounted. At about one-quarter or less of the distance from the discharge to the vertical side, cut an opening to allow the vibrator to be bolted to the steel plate.



Vibrating Feeder and Standard Bin

Mount vibrator on the feeder infeed side of the hopper. Follow mounting instructions for the appropriate bin type on page 12.

