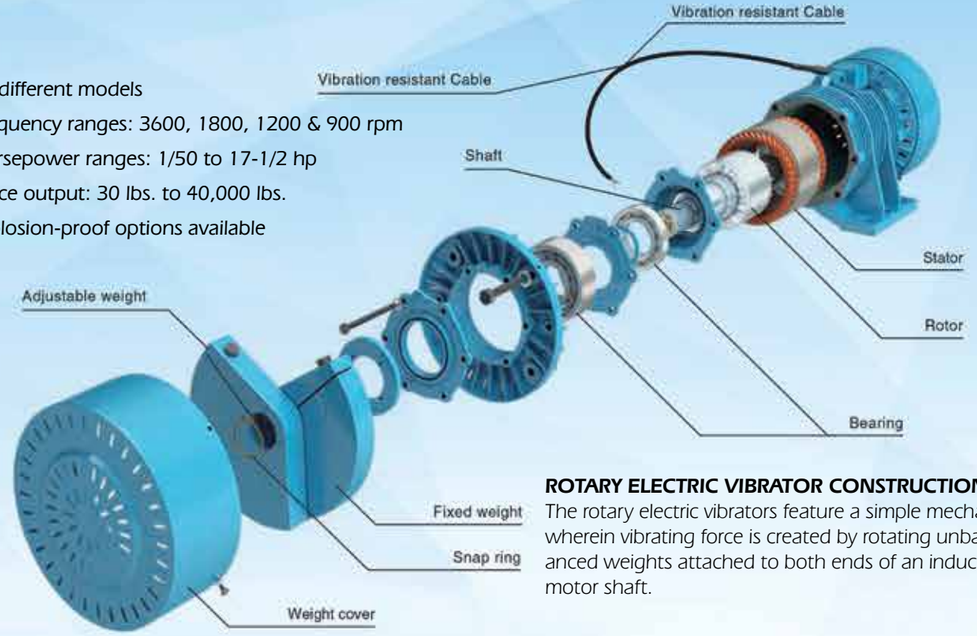
Rotary Electric Motors

www.bpsvibes.com

best process solutions, inc.

- 53 different models
- Frequency ranges: 3600, 1800, 1200 & 900 rpm
- Horsepower ranges: 1/50 to 17-1/2 hp
- Force output: 30 lbs. to 40,000 lbs.
- Explosion-proof options available



ROTARY ELECTRIC VIBRATOR CONSTRUCTION
The rotary electric vibrators feature a simple mechanism wherein vibrating force is created by rotating unbalanced weights attached to both ends of an induction motor shaft.

UNPARALLELED DESIGN FEATURES

HEAVY DUTY CONSTRUCTION guarantees long life and excellent field performance. Ductile iron castings, steel end covers and high alloy fasteners are just some of the unique design features. All units can be mounted horizontally or vertically.

LONG LIFE BEARINGS insure peak, long-term performance. The B-10 bearing life is unsurpassed in the industry. The smaller units are furnished with ball bearings which are sealed for the life of the bearing, Larger units employ both ball and roller bearings with grease fittings.

0% TO 100% FORCE ADJUSTMENT is available on all but the smallest model. Many competitive units offer models with limited "continuous duty" force settings. All SEE and KEE models are rated for continuos duty at maximum force.

THE HIGHEST FORCE TO MOTOR WEIGHT RATION in the industry.

LOW NOISE LEVEL. All motors average 55 db(A) as measured five feet from the motor.

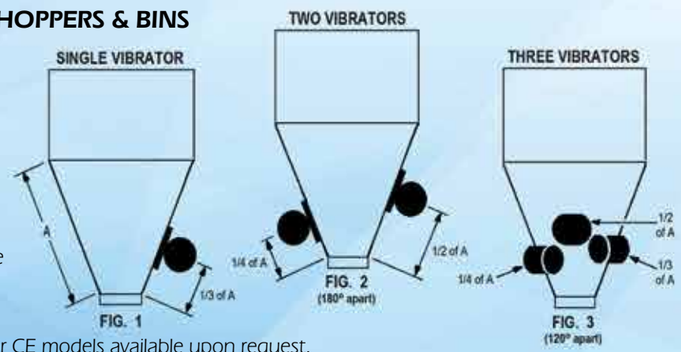
DUST TIGHT CONSTRUCTION AND SPLASHPROOF DESIGN make these motors suitable for dusty, dirty environments, as well as outdoors in rain and snow.

TERMINAL JUNCTION BOX AND CABLE are assembled with compression type Belleville locking washers to prevent loosening by vibrator.

LOCATING VIBRATOR MOTORS ON HOPPERS & BINS

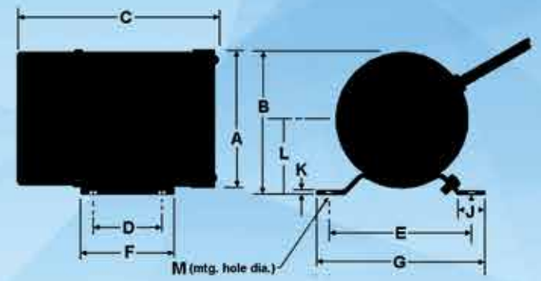
The majority of applications require only one motor vibrator. Figure 1 illustrates the most commonly recommended mounting for a single unit on a bin or hopper, attaching the motor 1/3 up the sloped wall section.

Applications requiring more than one vibrator generally involve larger hoppers or more difficult flowing materials. Figures 2 and 3 illustrate the mounting of 2 and 3 vibrators, respectively. More than 3 vibrators are rarely used on a particular hopper or bin.

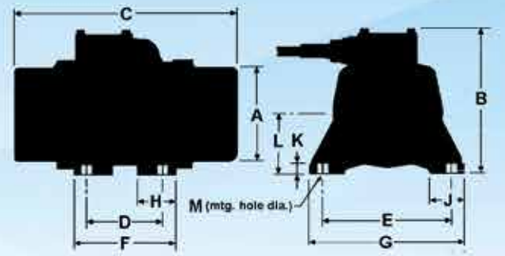


CSA and/or CE models available upon request.

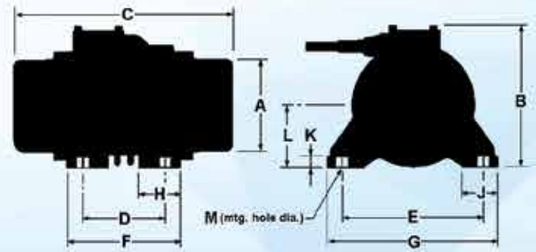
- **Operates Off Standard 115/1/60 Power**
- **Continuous Duty Rated**
- **Totally Enclosed, Dust Tight Housing**
- **Capacitor Starter Supplied with Each Unit**
- **Quiet Operating, Less Than 60 dba**
- **0-100% Force Adjustment**



Drawing A



Drawing B

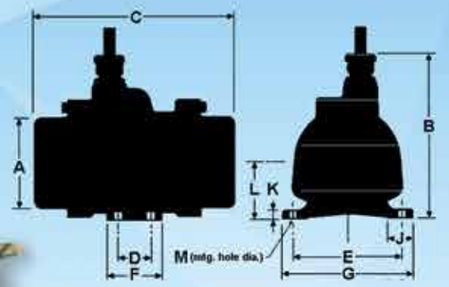


Drawing C

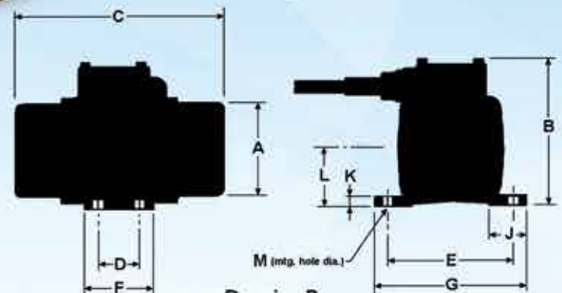
MODEL	DIRECT REPLACEMENT	H.P.	MAX FORCE (lbs.)	DRWG. REF.	DIMENSIONS (inches)												FULL LOAD AMPS AT 115v.	WT. (lbs.)	UNBALANCE (inch-lbs.)
					A	B	C	D	E	F	G	H	J	K	L	M			
SEE-0.1-2	BES-30-2	1/50	30	A	3-11/32	3-7/16	5-5/16	1-47/64	3-35/64	2-3/8	4-7/32	—	23/32	3/32	1-25/32	11/32	0.39	6	0.100
SEE-0.5-2	BES-110-2	1/25	110	B	4-19/64	6-5/8	8	1-9/16	4-11/16	2-3/4	5-21/32	—	1-9/32	29/64	2-29/64	7/16	0.53	14	0.318
SEE-1-2	BES-220-2	1/12	220	B	4-5/32	6-5/16	8-15/32	3-5/32	5-1/8	4-11/32	6-5/16	1-19/32	1-15/32	13/32	2-5/8	15/32	1.2	22	0.636
SEE-2-2	BES-440-2	1/6	440	B	4-11/32	6-29/32	9-15/32	3-35/64	5-29/32	4-23/32	7-3/32	1-25/32	1-19/32	15/32	2-13/16	9/16	1.9	30	1.27
SEE-3.5-2	BES-770-2	1/3	770	C	4-15/16	7-11/16	11-13/16	4-21/64	7-31/64	5-29/32	9-1/16	2-3/16	2-31/32	19/32	3-5/16	23/32	2.9	45	2.22

- Models SEE-0.5-2 through SEE-3.5-2 are factory preset at 100% of maximum force. They are totally adjustable by a single setting change on the eccentric weights. Force output for the SEE-0.1-2 is not adjustable.
- Capacitor and overload protection for the SEE-0.5-2 through SEE-3.5-2 are provided in a NEMA 12 enclosure, offered for each unit. Model SEE-0.1-2 has the capacitor built into the motor itself.

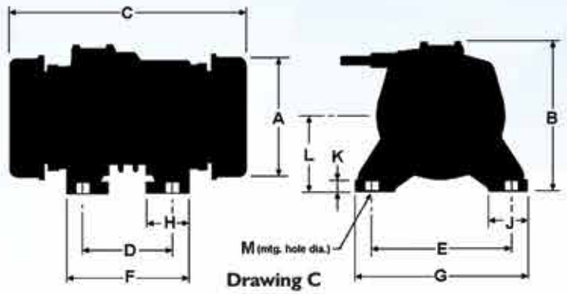
3600 RPM 2-Pole, 230/460 Volt, 3-Phase, 60 Cycle



Drawing A



Drawing B



Drawing C

- **Dust Tight Design**
- **Ideal for Bins, Hoppers and Chutes**
- **High Force to Motor Weight Ratio**
- **Heavy Duty Design for Mounting in any Position**
- **Ideal for Concrete and Refractory Applications**

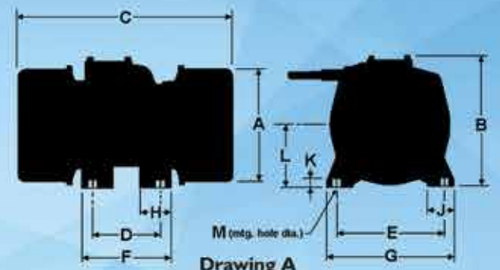
MODEL	DIRECT REPLACEMENT	H.P.	MAX FORCE (lbs.)	DRWG. REF.	DIMENSIONS (inches) A	B	C	D	E	F	G	H	J	K	L	M	FULL LOAD AMPS AT 115v.	460v.	WT. (lbs.)	UNBALANCE (inch-lbs.)
KEE-0.5-2*	BE-110-2	1/20	110	A	4-19/64	5-55/64	8	1-9/16	4-11/16	2-3/4	5-21/32	—	1-9/32	29/64	2-29/64	7/16	0.33	0.15	10	0.32
KEE-1-2	BE-220-2	1/10	220	B	4-19/64	5-55/64	8	1-9/16	4-11/16	2-3/4	5-21/32	—	1-9/32	29/64	2-29/64	7/16	0.41	0.25	15	0.64
KEE-2-2	BE-220-2	1/5	440	C	4-19/64	5-55/64	9	1-9/16	4-11/16	2-3/4	5-21/32	1-9/32	1-15/32	25/64	2-29/64	7/16	0.62	0.35	20	1.27
KEE-3.5-2	BE-770-2	1/3	770	C	4-11/32	6-29/32	10-7/16	3-35/64	5-29/32	4-23/32	7-3/32	1-25/32	1-19/32	15/32	2-15/16	9/16	1.1	0.6	35	2.22
KEE-6-2	BE-1320-2	1/2	1,320	C	4-15/16	7-11/16	11-13/16	4-21/64	7-31/64	5-29/32	9-1/16	2-3/16	1-31/32	19/32	3-5/16	23/32	1.6	0.9	55	3.82
KEE-10-2	BE-2200-2	1	2,200	C	6-11/16	8-9/32	13-25/32	4-23/32	8-21/32	6-11/16	10-5/8	2-9/16	1-3/8	23/32	3-5/8	13/16	2.7	1.4	78	6.36
KEE-16-2	BE-3520-2	1-1/2	3,520	C	6-11/16	10-1/4	16-17/32	5-33/64	9-29/64	7-7/8	11-13/16	2-31/32	2-3/4	13/16	5-1/16	1-1/32	4.0	2.0	110	10.20
KEE-23-2	BE-5060-2	2-1/4	5,060	C	7-1/2	11-1/32	17-23/32	5-29/32	10-15/64	8-9/32	12-19/32	3-5/32	2-3/4	13/16	5-19/32	1-1/32	5.6	2.9	140	14.60
KEE-30-2	BE-6600-2	3	6,600	C	8-7/8	12-19/32	19-11/16	6-11/16	12-13/64	9-7/16	14-31/32	3-3/4	3-11/32	1-1/8	6-7/32	1-5/16	7.0	3.6	210	19.10
KEE-40-2	BE-8800-2	4	8,800	C	8-7/8	4-19/32	22-1/16	8-21/32	13-25/32	11-13/16	16-15/16	—	3-15/16	1-5/16	7-9/32	1-17/32	9.8	4.9	290	25.40

- 3600 RPM motors are dual voltage, either 230 volt or 460 volt 3-phase. Specify voltage when ordering. 575 volt available on special order.
- All 3600 RPM motors are rated for continuous duty at the maximum force setting.
- 50 cycle motors are available for all 3600 RPM motors. Consult factory for pricing and availability.

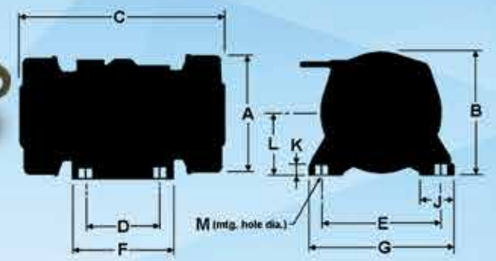
+ Factory preset at 100% of maximum force. All units are totally adjustable by a simple setting change on the eccentric weights.

* Available in 460 volt only.

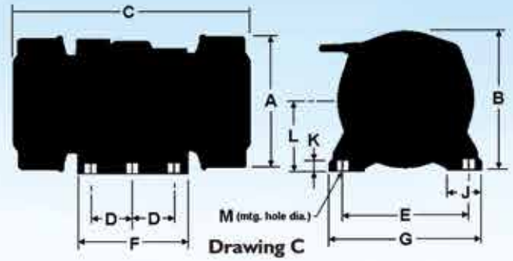
1800 RPM 4-Pole, 230/460 Volt, 3-Phase, 60 Cycle



Drawing A



Drawing B



Drawing C

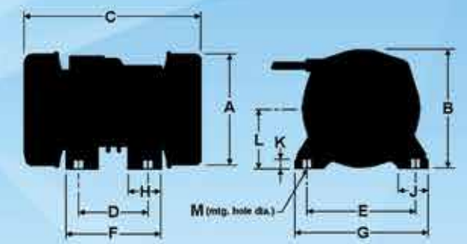
- **For Bins and Hoppers Requiring Greater Amplitude**
- **For Vibrating Tables, Feeders and Screeners**
- **Continuous Duty Rated at Maximum Force**
- **1/10 HP to 10 HP Size Range**

MODEL	DIRECT REPLACEMENT	H.P	MAX FORCE (lbs.)	DRWG. REF.	DIMENSIONS (inches) A	B	C	D	E	F	G	H	J	K	L	M	FULL LOAD AMPS AT 230v.	460v.	WT. (lbs.)	UNBALANCE (inch-lbs)
KEE-1.5-4	BE-330-4	1/10	330	A	4-19/64	5-55/64	10	1-9/16	4-11/16	2-3/4	5-21/32	—	1-9/32	29/64	2-29/64	7/16	0.33	0.15	10	0.32
KEE-3-4	BE-660-4	1/6	660	A	6-1/8	7-3/32	10-5/8	1-9/16	4-11/16	2-3/4	5-21/32	—	1-9/32	29/64	2-29/64	7/16	0.41	0.25	15	0.64
KEE-6-4	BE-1320-4	1/3	1,320	A	6-11/16	7-11/16	12-19/32	1-9/16	4-11/16	2-3/4	5-21/32	1-19/32	1-15/32	25/64	2-29/64	7/16	0.62	0.35	20	1.27
KEE-9-4	BE-1980-4	1/2	1,980	A	7-1/2	8-9/32	13-3/8	3-35/64	5-29/32	4-23/32	7-3/32	1-25/32	1-19/32	15/32	2-15/16	9/16	1.1	0.6	35	2.22
KEE-12-4	BE-2640-4	4/5	2.640	A	8-7/8	9-15/32	14-3/16	5-33/64	8-21/32	7-1/2	10-5/8	2-9/16	2-3/8	23/32	4-23/32	13/16	2.5	1.4	95	30.50
KEE-17-4	BE-3740-4	1-1/10	3,740	A	9-21/32	10-1/4	16-17/32	5-33/64	9-29/64	7-7/8	11-13/16	2-31/32	2-3/4	13/16	5-1/8	1-1/32	3.0	1.6	125	43.20
KEE-24-4	BE-5280-4	1-1/2	5,280	A	10-7/16	11-1/32	18-29/32	5-29/32	10-15/64	8-9/32	12-19/32	3-5/32	2-3/4	13/16	5-19/32	1-1/32	3.8	2.0	165	61.0
KEE-34-4	BE-7480-4	2	7,480	A	11-5/8	12-19/32	20-7/8	6-11/16	12-13/64	9-15/16	14-31/32	3-3/4	3-11/32	1-1/8	6-7/32	1-5/16	5.0	2.6	245	86.5
KEE-52-4	BE-11440-4	3	11,440	B	13-19/32	14-3/8	23-7/32	8-21/32	13-25/32	11-13/16	16-15/16	—	3-15/16	1-5/16	7-9/32	1-17/32	7.7	4.0	375	132
KEE-75-4	BE-16500-4	5	16,500	C	15-9/16	16-11/32	24-13/16	4-59/64	14-31/32	13-1/32	18-1/8	—	4-5/32	1-5/16	8-9/32	1-17/32	12.3	6.2	495	191
KEE-84-4	BE-18480-4	7-1/2	18,480	C	15-9/16	16-11/32	26-3/8	4-59/64	14-31/32	13-1/32	18-1/8	—	4-5/32	1-5/16	8-9/32	1-17/32	18.2	9.4	565	214
KEE-110-4	BE-24200-4	10	24,200	C	18-5/16	18-23/32	28-3/4	5-33/64	17-21/64	14-9/16	20-7/8	—	4-15/16	1-1/2	9-15/32	1-25/32	25	13	805	280

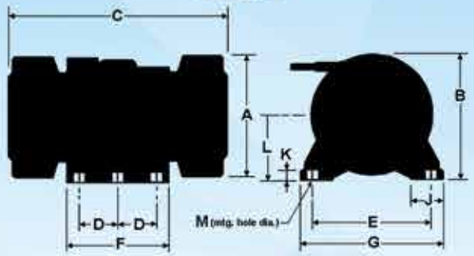
- 1800 RPM motors are dual voltage, either 230 volt or 460 volt 3-phase. Specify voltage when ordering. 575 volt available on special order.
- All 1800 RPM motors are rated for continuous duty at the maximum force setting.
- 50 cycle motors are available for all 1800 RPM motors. Consult factory for pricing and availability.

+ Factory preset at 100% of maximum force. All units are totally adjustable by a simple setting change on the eccentric weights.

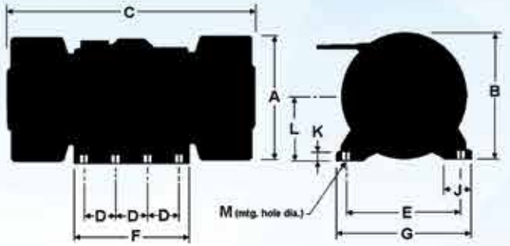
1200 RPM 6-Pole, 230/460 Volt, 3-Phase, 60 Cycle



Drawing A



Drawing B



Drawing C

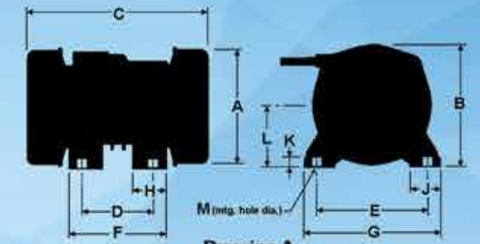
- **For Large Feeders, Tables and Screeners**
- **High Amplitude, Low Frequency Design**
- **1/4 HP to 17-1/2 HP Size Range**
- **0-100% Force Adjustment**
- **Continuous Duty Rated at Maximum Force**

MODEL	DIRECT REPLACEMENT	H.P.	MAX FORCE (lbs.)	DRWG. REF.	DIMENSIONS (inches) A	B	C	D	E	F	G	H	J	K	L	M	FULL LOAD AMPS AT 230v.	460v.	WT. (lbs.)	UNBALANCE (inch-lbs.)
KEE-3-6	BE-660-6	1/4	660	A	6-11/16	7-11/16	11-7/16	3-15/16	6-19/64	5-1/8	7-1/2	1-25/32	1-9/32	15/32	3-5/8	9/16	1.1	0.65	49	17.2
KEE-5-6	BE-1100-6	1/2	1,100	A	7-1/2	8-9/32	13	4-21/64	7-3/32	5-29/32	8-21/32	2-3/16	1-31/32	19/32	4-1/32	23/32	1.9	1.3	71	28.6
KEE-9-6	BE-1980-6	4/5	1,980	A	8-7/8	9-15/32	14-9/16	5-33/64	8-21/32	7-1/2	10-5/8	2-9/16	2-3/8	23/32	4-23/32	13/16	2.7	1.6	104	51.5
KEE-13-6	BE-2860-6	1-1/10	2,860	A	9-21/32	10-1/4	15-3/8	5-33/64	9-29/64	7-7/8	11-13/16	2-31/32	2-3/4	13/16	5-1/8	1-1/32	3.7	2.1	139	74.4
KEE-18-6	BE-3960-6	1-1/2	3,960	A	10-7/16	11-1/32	17-23/32	5-29/32	10-15/64	8-9/32	12-19/32	3-5/32	2-3/4	13/16	5-19/32	1-1/32	4.8	2.7	185	103
KEE-24-6	BE-5280-6	2	5,280	A	11-5/8	12-19/32	19-11/16	6-11/16	12-13/64	9-15/32	14-31/32	3-3/4	3-11/32	1-1/8	6-7/32	1-5/16	6.1	3.3	265	137
KEE-34-6	BE-7480-6	3	7,480	A	13-19/32	14-3/8	22-7/16	8-21/32	13-25/32	11-13/16	16-15/16	—	3-15/16	1-5/16	7-9/32	1-17/32	7.9	4.2	364	195
KEE-45-6	BE-9900-6	4	9,900	A	13-19/32	14-3/8	24-13/16	8-21/32	13-25/32	11-13/16	16-15/16	—	3-15/16	1-5/16	7-9/32	1-17/32	10.8	5.7	448	258
KEE-60-6	BE-13200-6	5-1/3	13,200	B	15-9/16	16-11/32	24-13/16	4-59/64	14-31/32	13	18-1/8	—	4-5/32	1-5/16	8-9/32	1-17/32	13.4	7.4	567	343
KEE-80-6	BE-17600-6	7-1/2	17,600	B	15-9/16	16-11/32	28-47/64	4-59/64	14-31/32	13	18-1/8	—	4-5/32	1-5/16	8-9/32	1-17/32	18.5	10	662	458
KEE-110-6	BE-24200-6	10	24,200	B	18-5/16	18-23/32	29-15/16	5-33/64	17-21/64	14-9/16	20-7/8	—	4-15/16	1-1/2	9-15/32	1-25/32	27	15	924	630
KEE-140-6	BE-30800-6	12	30,800	C	20-9/32	20-11/16	34-21/32	5-33/64	18-29/32	20-3/32	22-7/16	—	4-15/16	1-1/2	10-7/16	1-25/32	31	17	1268	801
KEE-165-6	BE-36300-6	15	36,300	C	20-9/32	20-11/16	36-39/64	5-33/64	18-29/32	20-3/32	22-7/16	—	4-15/16	1-1/2	10-7/16	1-25/32	37	20	1389	944
KEE-185-6	BE-40700-6	17-1/2	40,700	C	22-1/16	22-7/16	36-7/32	5-33/64	20-15/32	20-3/32	24-1/32	—	4-15/16	1-1/2	11-7/16	1-25/32	44	22	1599	1059

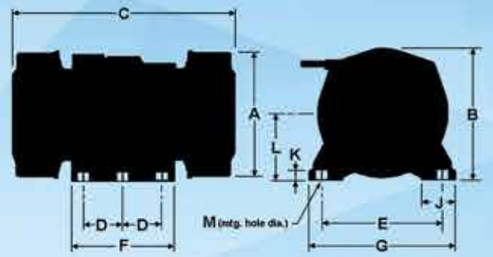
- *1200 RPM motors are dual voltage, either 230 volt or 460 volt 3-phase. Specify voltage when ordering. 575 volt available on special order.*
- *All 1200 RPM motors are rated for continuous duty at the maximum force setting.*
- *50 cycle motors are available for all 1200 RPM motors. Consult factory for pricing and availability.*

+ Factory preset at 100% of maximum force. All units are totally adjustable by a simple setting change on the eccentric weights.

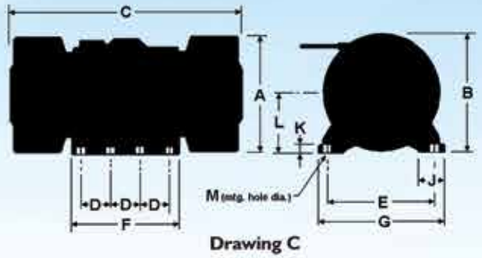
900 RPM 8-Pole, 230/460 Volt, 3-Phase, 60 Cycle



Drawing A



Drawing B



Drawing C

- **Ideal Shakeout Vibrator for Foundries**
- **High Capacity Feeder Drive**
- **Suitable Drive for Large Screeners**
- **Replace Old Belt Driven Type Shaker Drives**
- **Quiet Operating, Dust Tight, Continuous Duty Rated**

MODEL	DIRECT REPLACEMENT	H.P.	MAX FORCE (lbs.)	DRWG. REF.	DIMENSIONS (inches) A	B	C	D	E	F	G	H	J	K	L	M	FULL LOAD AMPS AT 230v.	460v.	WT. (lbs.)	UNBALANCE (inches-lbs.)
KEE-5-8	BE-1100-8	1/2	1,100	A	8-7/8	9-15/32	14-9/16	5-33/64	8-21/32	7-1/2	10-5/8	2-9/16	2-3/8	23/32	4-23/32	13/16	2.4	1.5	100	50.9
KEE-7.3-8	BE-1606-8	4/5	1,606	A	9-21/32	10-1/4	15-3/8	5-33/64	9-29/64	7-7/8	11-13/16	2-31/32	2-3/4	13/16	5-1/8	1-1/32	3.3	2.0	130	74.3
KEE-10-8	BE-220-8	1	2,200	A	10-7/16	11-1/32	17-23/32	5-29/32	10-15/64	8-9/32	12-19/32	3-5/32	2-3/4	13/16	5-19/32	1-1/32	4.9	3.3	175	102.0
KEE-20-8	BE-440-8	2	4,400	A	11-5/8	12-19/32	21-21/32	6-11/16	12-13/64	9-15/32	14-31/32	3-3/4	3-11/32	1-1/8	6-7/32	1-5/16	7.5	4.4	300	203.0
KEE-35-8	BE-7710-8	3	7,700	A	13-19/32	14-3/8	26-3/8	8-21/32	13-25/32	11-13/16	16-15/16	—	3-15/16	1-5/16	7-9/32	1-17/32	9.5	5.5	465	356.0
KEE-42-8	BE-9240-8	4	9,240	A	13-19/32	14-3/8	28-3/4	8-21/32	13-25/32	11-13/16	16-15/16	—	3-15/16	1-5/16	7-9/32	1-17/32	9.5	5.5	486	403.0
KEE-60-8	BE-13200-8	5	13,200	B	15-9/16	16-11/32	28-3/4	4-59/64	14-31/32	13-7/8	18-1/8	—	4-5/32	1-5/16	8-9/32	1-17/32	14.6	8.6	660	610.0
KEE-77-8	BE-16940-8	6	16,940	B	15-9/16	16-11/32	32-3/4	4-59/64	14-31/32	13-7/8	18-1/8	—	4-5/32	1-5/16	8-9/32	1-17/32	15	7.5	803	783.0
KEE-100-8	BE-22000-8	8	22,000	B	18-5/16	18-23/32	33-7/8	5-33/64	17-21/64	14-9/16	20-7/8	—	4-15/16	1-1/2	9-15/32	1-25/32	25	15	1070	1017.0
KEE-125-8	BE-27500-8	10	27,500	C	20-9/32	20-11/16	39-3/8	5-33/64	18-29/32	20-3/32	22-7/16	—	4-15/16	1-1/2	10-7/16	1-25/32	31	18	1420	1272.0
KEE-150-8	BE-33000-8	12	33,000	C	20-9/32	20-11/16	40-15/16	5-33/64	18-29/32	20-3/32	22-7/16	—	4-15/16	1-1/2	10-7/16	1-25/32	37	22	1560	1526.0
KEE-185-8	BE-40700-8	15	40,700	C	22-1/16	22-7/16	39-3/4	5-33/64	20-15/32	20-3/32	24-1/32	—	4-15/16	1-1/2	11-7/16	1-25/32	43	26	1800	1882.0

- *900 RPM motors are dual voltage, either 230 volt or 460 volt 3-phase. Specify voltage when ordering. 575 volt available on special order.*
- *All 900 RPM motors are rated for continuous duty at the maximum force setting.*
- *50 cycle motors are available for all 1200 RPM motors. Consult factory for pricing and availability.*

+ Factory preset at 100% of maximum force. All units are totally adjustable by a simple setting change on the eccentric weights.

AMPLITUDE & FORCE REQUIREMENTS

Amplitude (inches)

Force (pounds)

Frequency (RPM/motor)

Load (pounds)
Equal to structure weight, plus motor weight, plus material or product weight.

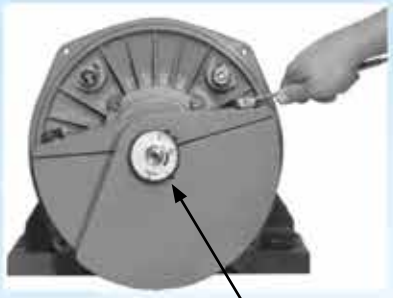
$$\textbf{AMPLITUDE} = 70{,}500 \times \frac{\textbf{FORCE}}{\textbf{LOAD} \times (\textbf{FREQUENCY})^2}$$

$$\textbf{FORCE REQUIRED} = \frac{\textbf{AMPLITUDE} \times \textbf{LOAD} \times (\textbf{FREQUENCY})^2}{70{,}500}$$

NOTE: The actual frequencies, vibrator weights, and force figures needed for the above calculations can be obtained from data charts in this brochure.

ADJUSTMENT OF FORCE OUTPUT

These motor vibrators are easily adjusted by setting the dot on the eccentric weight to the proper (% of maximum force) output. The photo at right shows the operator setting the weights at just under 90% of maximum force.



ENLARGED VIEW OF % FORCE DECAL

IMPORTANT: Both ends of the motor must be adjusted to the same setting.

BPS custom engineers and fabricates the following products and more in its 30,000 sq. ft. facility in Brunswick, OH.

- VIBRATORY FEEDERS AND CONVEYORS
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