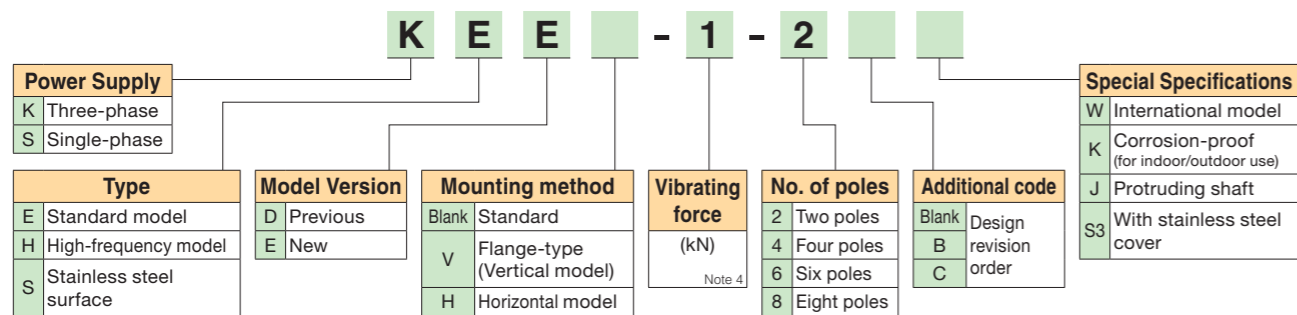


## Model Designation



Notes: 1. This table shows how to read the model numbers of standard Uras Vibrators.  
 2. Note that it is not possible to manufacture vibrators in every possible combination.  
 3. If a non-standard Uras Vibrator is required, contact the Overseas Sales Department of Uras Techno or one of our distributors.  
 4. For details on the vibrating force, refer to the pages concerned.  
 5. Models prior to D (that is, models A, B, and C) are also previous models.  
 6. 10, 12-pole vibrators are also available. Contact the Overseas Sales Department of Uras Techno or one of our distributors.  
 7. Provide some means to ensure protection against surges for 400 V-class inverters.  
 Means of protection: (1) Enhance the insulation of the Uras Vibrator (class F insulation).  
 (2) Use an inverter equipped with a surge protection function (such as the G7 series / V1000 made by Yaskawa Electric Corporation).

## Ambient Environment

Provide us with details if any of the following items applies to the ambient environment in which the Uras Vibrator will be used.

- Locations subject to temperatures below -15°C or above 40°C.
- When the temperature of the mounting base of the Uras Vibrator is below -15°C or above 40°C.
- Locations subject to corrosive gases or liquid.
- Locations subject to significant vibration.

## Precautions for Exportation

If the Uras Vibrator is to be exported and the end user of the Uras Vibrator is related to the armed forces, or if the Uras Vibrator is to be involved in the manufacture of weapons or other such items, the Uras Vibrator may be subject to the export controls stipulated in the Foreign Exchange and Foreign Trade Act, in which case a thorough screening and the necessary export formalities must be undertaken.

## Exclusive Distributor



### Overseas Sales Department

Senbo Bldg. 2F, 16-9, Uchikanda 2-Chome, Chiyoda-ku, Tokyo 101-0047, JAPAN  
 Phone : +81-3-3254-6101 Fax : +81-3-3254-6105  
<http://www.uras-techno.co.jp/en>  
 E-mail : utc-overseas@uras-techno.co.jp

## Manufacturer



1-1, Douhoku-machi, Yahatanishi-ku, Kitakyushu City, Fukuoka, 807-0811  
 Phone : +81-93-601-1037 Fax : +81-93-601-1041  
<http://www.murakami-seiki.co.jp>

## Safety Precautions

In the photos provided in this catalog showing examples of how the Uras Vibrators may be used, the vibrators are shown without the safety fences and other safety-related devices or equipment, which are required by the laws and regulations, in order to facilitate comprehension. Similarly, the illustrations and other drawings are graphical representations only. Before using a Uras Vibrator, read the through its instruction manual carefully—rather than depending on photos and illustrations alone—and then proceed to use it.

### [ General Precautions ]

- Observe the safety regulations that are applicable to the location where the Uras Vibrator will be installed and to the equipment that will be used with the Uras Vibrator. (These regulations include the occupational, health and safety regulations, the technical standards for electrical equipment, the interior wiring regulations, the explosion protection guidelines for factories, and the Building Standards Law.)
- Before using a Uras Vibrator, read the instruction manual carefully to ensure correct usage. If you do not have a copy of the instruction manual, contact the Overseas Sales Department of Uras Techno or one of our distributors to obtain a copy.

### [ Selection Precautions ]

- Select the Uras Vibrator that is suited to the intended application and usage environment.
- In food processing equipment or other equipment that must be protected from oil, install oil pans or other forms of protection against oil leakage resulting from equipment failure or problems caused by the equipment nearing the end of its service life.

Inquiries:

Note: The contents of this catalog are current as of April 2013. The specifications, appearance, and other aspects are subject to change without notice due to product improvements or other reasons.

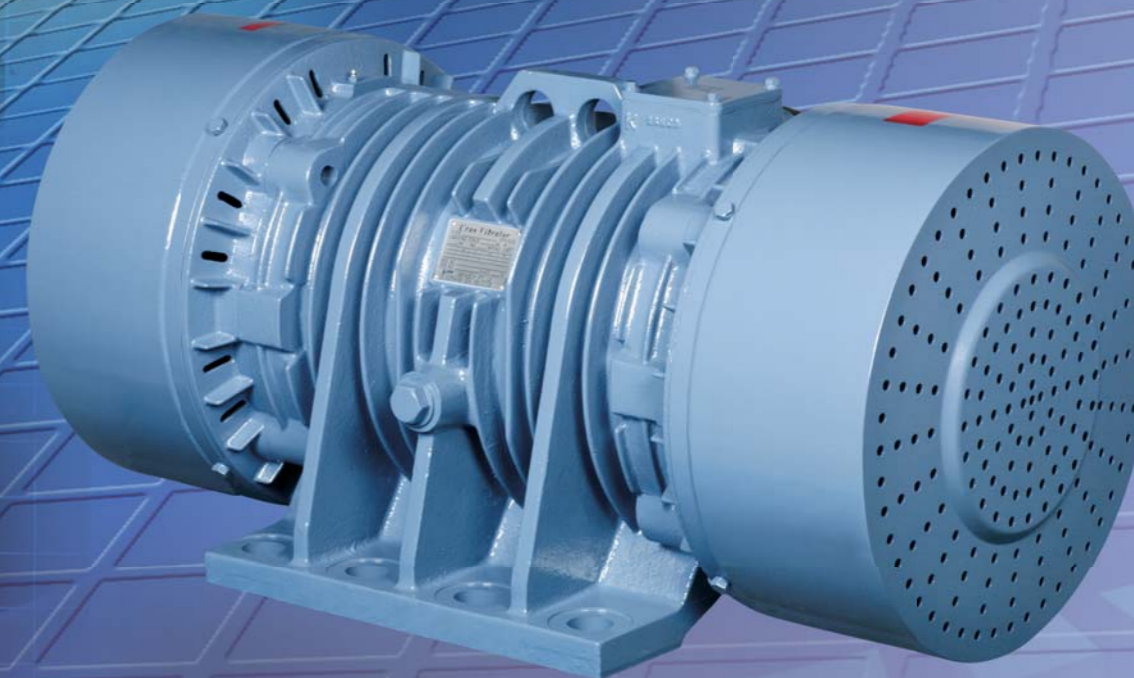
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High-Performance Vibrators

# Uras® Vibrator

The Global Standard for Vibrators



Certified under ISO 9001, the international standard for quality systems.

# The Global Standard for Vibrators

# URAS

Uras Vibrators are motor-driven high-performance vibration generators. Ever since they were initially launched on the market back in 1959, they have undergone a continuous evolution, and the total number of units delivered to date has surpassed 830,000.

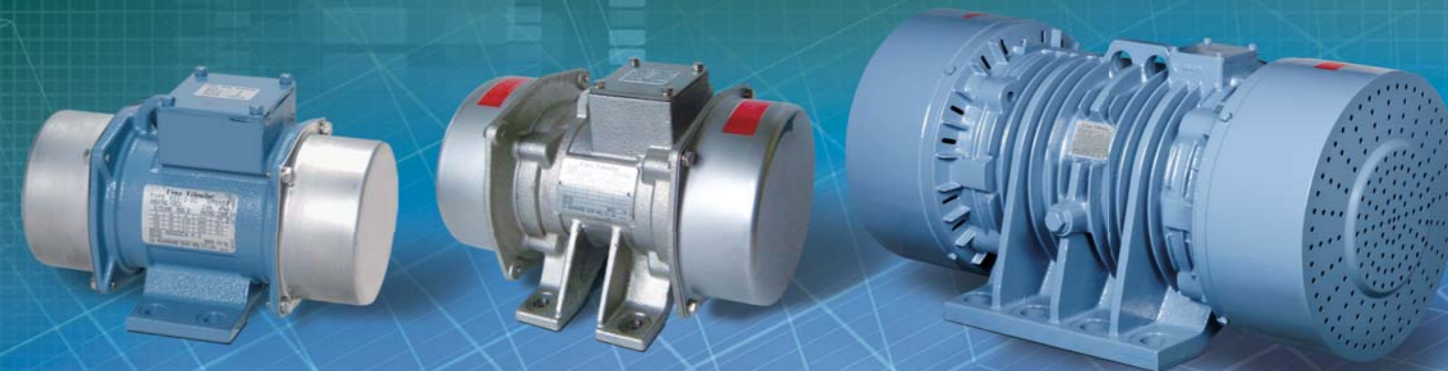
Uras Vibrators are making an active contribution in various industries throughout the world, but principally in the materials industry.

Our multi-model lineup meets the varied needs of our customers. Our Uras Vibrators feature a long service life, easy maintenance, and high reliability. Their performance, endorsed by a decades-long performance track record and high critical praise, is the true global standard. Delivered to your door is the Uras quality that brings to life the feeling of how machines are changing.

## Uras Vibrators: Making a big difference all over the world



All series redesigned as all-weather types with the standard specifications!  
You can use our vibrators under a wide variety of weather conditions.



Examples of main Uras Vibrator applications

Application	No. of poles P	Vibrating Strength G	Amplitude $\alpha$
Feeding and Conveying	4, 6, or 8	2 to 5	Medium
Screening	4, 6, or 8	3 to 7	Large
Bridging prevention	2	Low	Small
Filling	2 or 4	2 to 10	Small to medium

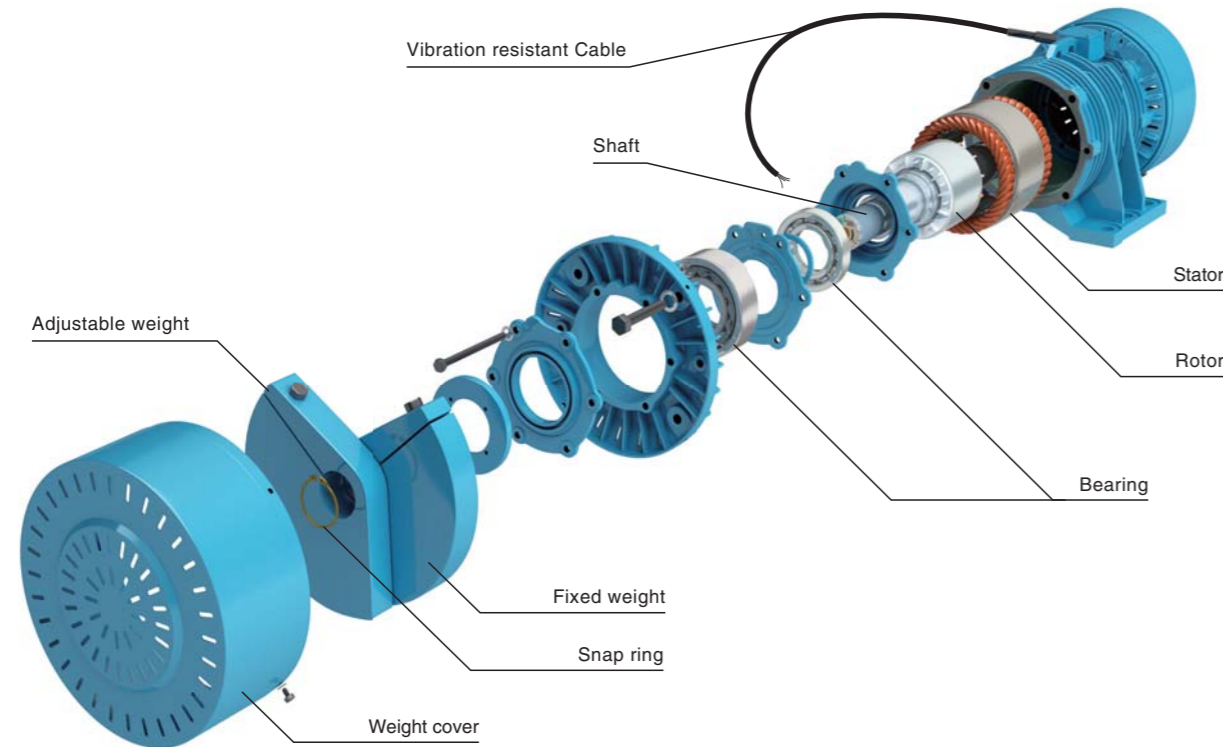
You can select the model in our extensive line-up that is ideally suited to the intended applications. (Refer to page 5 for details and list of available models.)

## CONTENTS

- Construction / How our vibrators work ..... 4
- Uras Vibrator Models and Manufacturing Range / Standard Specifications of KEE and SEE Series ... 5
- KEE Standard Uras Vibrators, Two Poles ..... 6
- KEE Standard Uras Vibrators, Four Poles ..... 8
- KEE Standard Uras Vibrators, Six Poles ..... 10
- KEE Standard Uras Vibrators, Eight Poles ..... 12
- SEE Standard Single-phase Two Pole Uras Vibrators ... 14
- KEEV Flange-type Uras Vibrators ..... 15
- KHE High-frequency Uras Vibrators ..... 16
- Options ..... 18
- Product Range of CSA Standards or CE Marking Supported Models ..... 19
- How to Adjust the Vibrating Force / Circular Vibration and Linear Vibration ..... 20
- Vibration Amplitude  $\alpha$  and Vibration Strength G Calculations / Terminal Box and Cable ..... 21
- Application to Hoppers ..... 22
- Vibration Prevention / Method Used to Mount Uras Vibrators on Small Hoppers ..... 23

The KEE Uras Vibrator is certified under the CSA standards and CE marking. (optional)

# Construction

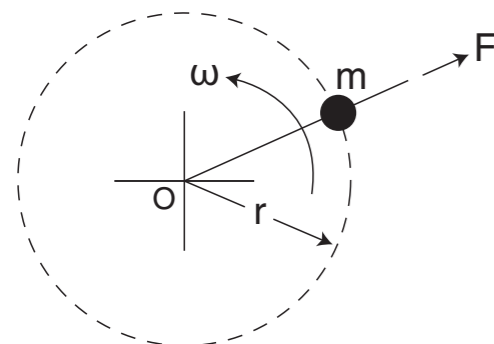


Uras Vibrators feature an extremely simple mechanism whereby vibrating force is created by rotating unbalanced weights attached to both ends of an induction motor shaft. Drawing on research and a proven track record that spans a half-century since our vibrators were originally developed, we have perfected vibrators with tough vibration resistant structures and an extremely high level of

reliability. These vibrators, usable under all weather conditions, for instance, have been designed to prevent the unbalanced weights from dropping down during adjustment so that they can be handled with complete safety. At the same time they have been designed to extend the service life of their bearings.

# How our vibrators work

How many of us remember when we were children, swinging a bucket of water around but not totally succeeding in the experiment and getting ourselves wet in the process? If we managed not to get wet, it was thanks to the centrifugal force that was exerted when we swung the bucket. Uras Vibrators work in the same way. Unbalanced weights are attached to both ends of the shaft of an induction motor (which is a regular motor) and rotated in our vibrators. This generates a great deal of centrifugal force, which is used as the vibrating force.



$$F = mr\omega^2$$

- F : Centrifugal force = vibrating force (N)
- m : Mass of weights (kg)
- O : The center of rotation (the center of the shaft)
- r : Distance from the weight's center of gravity to the center of the shaft (m)
- ω : Angular velocity =  $2\pi f$  (rad/s)
- f : Frequency of revolutions (Hz) or (1/s)

# Uras Vibrator Models and Manufacturing Range

Model	No. of Poles	No. of Models	Vibrating Force(lbf)	Vibrating Force(kN)	Voltage Class (V)	Synchronous Revolutions (r/min)	Output (HP)	Output (kW)	
Standard model	KEE	2	10	112 to 8990	0.5 to 40	200 to 690	3000/3600	0.053 to 4.02	0.04 to 3
		4	12	337 to 24700	1.5 to 110		1500/1800	0.087 to 10.1	0.065 to 7.5
		6	14	674 to 41600	3 to 185		1000/1200	0.268 to 17.4	0.2 to 13
		8	9	1120 to 38200	5 to 170		750/900	0.536 to 14.8	0.4 to 11
Flange-type model	KEEV	4	3	1600 to 4610	7.1 to 20.5	200 to 690	1500/1800	0.536 to 1.61	0.4 to 1.2
		6	3	1820 to 5040	8.1 to 22.4		1000/1200	0.469 to 1.61	0.35 to 1.2
Single-phase model	SEE	2	5	22 to 790	0.1 to 3.5	100 to 240	3000/3600	0.020 to 0.295	0.015 to 0.22
High-frequency model	KHE	2	7	225 to 4950	1 to 22	200 to 690	6000/7200	0.101 to 2.95	0.075 to 2.2
		2	5	225 to 2700	1 to 12		9000/10800	0.101 to 1.61	0.075 to 1.2

We can also manufacture vibrators for voltages other than the standard voltage specifications given above. Contact the Overseas Sales Department of Uras Techno for information on how to find the best product for your needs. Custom orders are also available.

# Standard Specifications of KEE and SEE Series

Specification	Three-phase				Single-phase	
	2 poles	4 poles	6 poles	8 poles	2 poles (capacitor start)	
Power Supply	230/460V 60Hz, 380V 50Hz, 415V 50Hz, 525V 50Hz, 575V 60Hz				240V 50Hz 100V 50/60Hz 110V 60Hz	
Time Rating	Continuous rating					
Thermal Class	Class E insulation					
External Cover Structure (Vibrating Force kN)	Totally Enclosed	0.5 to 6	1.5 to 34	3 to 60	5 to 54	Totally enclosed
	Totally enclosed, Fan-cooled	10 to 40	52 to 110	80 to 185	85 to 170	
Protection Structure	Totally Enclosed	IP66 (JIS C 0920)				Totally enclosed IP66 (JIS C 0920) (IP42 for SEE-0.1-2)
	Totally enclosed, Fan-cooled	IP55 (JIS C 4034-5)				
Output (kW)	0.040 to 3	0.065 to 7.5	0.2 to 13	0.4 to 11	0.015 to 0.22	
Synchronous Revolutions	Power Supply Frequency (Hz)	50/60				
	(r/min)	3000/3600	1500/1800	1000/1200	750/900	3000/3600
Vibrating Force (kN)	0.5 to 40	1.5 to 110	3 to 185	5 to 170	0.1 to 3.5	
Vibrating Force (lbf)	112 to 8990	337 to 24700	674 to 41600	1120 to 41600	22 to 1350	
Bearing (Vibrating Force kN)	Sealed ZZ Bearings	0.5 to 10kN	1.5 to 12kN	3 to 18kN	5 to 20kN	Sealed ZZ bearings 0.1 to 3.5 kN
	NJ roller Bearings	16 to 40kN	17 to 110kN	24 to 185kN	32 to 170kN	
Enclosed Cable	2PNCT (4-core) x 2 m cable, Wire sizes: 0.75 mm <sup>2</sup> , 1.25 mm <sup>2</sup> , 2 mm <sup>2</sup> , 5.5 mm <sup>2</sup> , 8 mm <sup>2</sup> , 14 mm <sup>2</sup> Note: The KEE-0.5-2CW has a 1 m cable, and the SEE-0.5-2CW has a 2-core 1 m cable.					
Installation Method	Frame leg installation (at any installation angle). For vertical or inclined installation, however, the vibrator must be installed so that the terminal box is on the top.					
Coating Color	Munsell 2.5PB5/2					
Installation and Operating Environment	Can be used indoors and outdoors. Ambient (including installation base) temperature: -15°C to +40°C Altitude: 1,000 m max. Relative humidity: 85% max. with no condensation					

Tropical proofing is provided as a standard feature. The KEE Uras Vibrator is certified under the CSA standards or CE marking (optional).

(Certified under CSA at a single voltage of 575 V or less and 60Hz.) Refer to page 19 for details on CSA standards or CE marking support. ▶

# KEE Standard Uras Vibrators, Two Poles

## Specifications (Imperial)

Model	Vibrating Force (lbf)	Unbalance (lbf · in)		Output (HP)	Drawing No.	Dimensions (inch)														Mass (lbs)
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.	
KEE-0.5-2CW	112	0.46	0.32	0.0536	1	4.33	4.72	1.57	0.39	2.48	5.91	1.3	—	8.07	5.71	2.76	1.57	0.39	$\frac{5}{16}$ -18	14.3
KEE-1-2CW	225	0.92	0.63	0.101	1	4.33	4.72	1.57	0.39	2.48	5.91	1.3	—	8.07	5.71	2.76	1.57	0.39	$\frac{5}{16}$ -18	16.5
KEE-2-2CW	450	1.83	1.28	0.201	1	4.33	4.72	1.57	0.39	2.48	5.91	1.3	—	9.06	5.71	2.76	1.97	0.39	$\frac{5}{16}$ -18 <sup>1</sup>	18.7
KEE-3.5-2BW	787	3.2	2.22	0.335	1	4.33	5.91	3.54	0.47	2.8	6.89	1.57	1.77	10.24	7.09	4.72	2.17	0.55	$\frac{1}{2}$ -12	30.9
KEE-6-2BW	1350	5.49	3.82	0.536	1	4.92	7.48	4.33	0.51	3.31	7.68	1.97	2.17	11.81	9.06	5.91	2.36	0.71	$\frac{5}{8}$ -11	48.5
KEE-10-2BW	2250	9.2	6.36	1.01	2	6.1	8.66	4.72	0.63	3.62	8.27	2.36	2.56	13.78	10.63	6.69	1.97	0.87	$\frac{3}{4}$ -10 <sup>1</sup>	77.2
KEE-16-2W	3600	14.7	10.2	1.61	2	6.69	9.45	5.51	0.79	5.12	10.24	2.76	2.95	16.73	11.81	7.87	2.56	1.02	$\frac{7}{8}$ -9 <sup>1</sup>	115
KEE-23-2W	5170	21.1	14.7	2.28	2	7.48	10.24	5.91	0.87	5.59	11.02	2.76	3.15	17.52	12.6	8.27	2.36	1.02	$\frac{7}{8}$ -9	141
KEE-30-2W	6740	27.5	19.1	2.95	2	8.86	12.2	6.69	0.98	6.22	12.6	3.35	3.74	19.69	14.96	9.45	2.76	1.3	1 $\frac{1}{8}$ -7	203
KEE-40-2W	8990	36.6	25.4	4.02	2	8.86	13.78	8.66	1.18	7.28	14.17	3.94	4.33	22.05	16.93	11.81	2.76	1.54	1 $\frac{3}{8}$ -6	298

\*1: Use high-tension bolts.

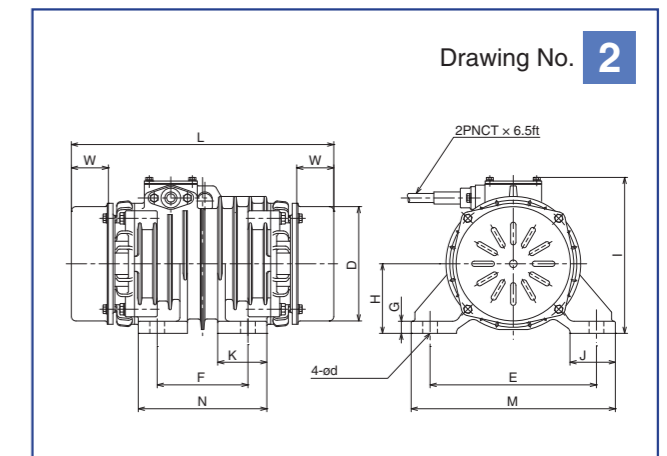
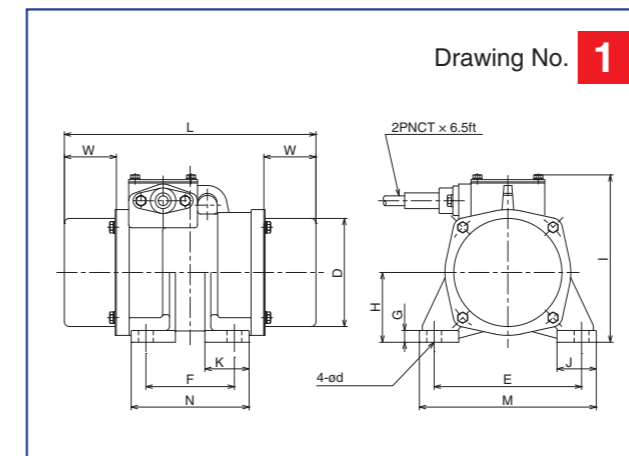
Model	Full-load Current (A)						Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (inch)	Stainless Steel Cover <sup>2</sup> (Optional)	CE Marking <sup>3</sup> (Optional)
	230/460V 60Hz	380V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz							
KEE-0.5-2CW	*1						1	Without	IP66	4	√	—
KEE-1-2CW	0.41	0.25	0.28	0.30	0.20	Custom	1	Without	IP66	4	√	—
KEE-2-2CW	0.65	0.39	0.41	0.4	Custom	Custom	1	Without	IP66	4	√	—
KEE-3.5-2BW	1.1	0.64	0.66	0.67	0.5	0.47	1	Without	IP66	4	√	√
KEE-6-2BW	1.6	0.84	0.88	0.83	0.64	0.68	1	Without	IP66	4	√	√
KEE-10-2BW	2.7	1.4	1.6	1.5	1.2	1.1	2	With	IP55	4	√	√
KEE-16-2W	4	2	2.5	2.3	1.8	Custom	2	With	IP55	4	—	√
KEE-23-2W	5.7	2.8	3.5	3.2	2.6	Custom	2	With	IP55	4	—	√
KEE-30-2W	7.2	3.7	4.3	4.0	Custom	Custom	2	With	IP55	6	—	√
KEE-40-2W	9.8	4.9	5.8	6.7	Custom	Custom	2	With	IP55	6	—	√

\*1: Custom-orders are possible for Vibrators using the following single voltage: 230 V or 460 V. Contact the Overseas Sales Department of Uras Techno or one of our distributors.  
\*2: √: Available. —: Not Available. \*3: √: CE marking supported. —: Not applicable.

## Specifications (Metric)

Model	Vibrating Force (kN)	Unbalance (kg · cm)		Output (kW)	Drawing No.	Dimensions (mm)														Mass (kg)
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.	
KEE-0.5-2CW	0.5	0.53	0.37	40W	1	110	120	40	10	63	150	33	—	205	145	70	40	10	M8	6.5
KEE-1-2CW	1	1.06	0.73	75W	1	110	120	40	10	63	150	33	—	205	145	70	40	10	M8	7.5
KEE-2-2CW	2	2.11	1.47	0.15	1	110	120	40	10	63	150	33	—	230	145	70	50	10	M8	8.5
KEE-3.5-2BW	3.5	3.69	2.56	0.25	1	110	150	90	12	71	175	40	45	260	180	120	55	14	M12	14
KEE-6-2BW	6	6.33	4.4	0.4	1	125	190	110	13	84	195	50	55	300	230	150	60	18	M16	22
KEE-10-2BW	10	10.6	7.33	0.75	2	155	220	120	16	92	210	60	65	350	270	170	50	22	M20	35
KEE-16-2W	16	16.9	11.7	1.2	2	170	240	140	20	130	260	70	75	425	300	200	65	26	M24	52
KEE-23-2W	23	24.3	16.9	1.7	2	190	260	150	22	142	280	70	80	445	320	210	60	26	M24	64
KEE-30-2W	30	31.7	22	2.2	2	225	310	170	25	158	320	85	95	500	380	240	70	33	M30	92
KEE-40-2W	40	42.2	29.3	3	2	225	350	220	30	185	360	100	110	560	430	300	70	39	M36	135

## Outline Drawings



### Vibrator Speed

Power supply frequency of 50 Hz  
...50 Hz (3000 r/min)  
Power supply frequency of 60 Hz  
...60 Hz (3600 r/min)



KEE-6-2BW

(Certified under CSA at a single voltage of 575 V or less and 60Hz.) Refer to page 19 for details on CSA standards or CE marking support. ▶

# KEE Standard Uras Vibrators, Four Poles

## Specifications (Imperial)

Model	Vibrating Force	Unbalance (lbf · in)		Output (HP)	Drawing No.	Dimensions (inch)														Mass (lbs)		
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.			
Greased and Sealed	KEE-1.5-4BW	337	5.49	3.82	0.0872	1	4.33	4.72	1.57	0.39	2.48	5.91	1.3	—	10.04	5.71	2.76	2.56	0.39	5/16	-18	24.3
	KEE-3-4BW	674	11	7.63	0.174	1	6.1	5.91	3.15	0.39	3.31	7.09	1.38	1.57	10.43	7.09	4.33	2.17	0.47	3/8	-16	37.5
	KEE-6-4BW	1350	22	15.3	0.335	1	6.69	6.3	3.94	0.47	3.62	7.68	1.57	1.77	12.4	7.48	5.12	2.95	0.55	1/2	-12	52.9
	KEE-9-4BW	2020	33	22.9	0.536	3	7.48	7.09	4.33	0.51	4.02	8.27	1.97	2.17	13.39	8.66	5.91	2.95	0.71	5/8	-11	75
	KEE-12-4BW	2700	43.9	30.6	0.805	3	8.86	8.66	5.51	0.63	4.72	9.45	2.36	2.56	14.17	10.63	7.48	2.56	0.87	3/4	-10	101
Periodic Greasing	KEE-17-4W	3820	62.2	43.2	1.14	3	9.65	9.45	5.51	0.79	5.12	10.24	2.76	2.95	16.54	11.81	7.87	3.15	1.02	7/8	-9*	137
	KEE-24-4W	5400	87.7	61	1.48	3	10.43	10.24	5.91	0.87	5.59	11.02	2.76	3.15	18.9	12.6	8.27	3.74	1.02	7/8	-9*	185
	KEE-34-4W	7640	124	86.4	2.01	3	11.61	12.2	6.69	0.98	6.22	12.6	3.35	3.74	20.67	14.96	9.45	3.74	1.3	1 1/8	-7	269
	KEE-52-4BW	11700	190	132	2.95	3	13.58	13.78	8.66	1.18	7.28	14.37	3.94	4.33	23.03	16.93	11.81	3.35	1.54	1 3/8	-6	397
	KEE-75-4BW	16900	275	191	4.96	4	15.55	14.96	4.92	1.3	8.27	16.34	4.13	—	24.8	18.11	12.99	3.94	1.54	1 3/8	-6X6	540
	KEE-84-4CW	18900	307	214	7.38	4	15.55	14.96	4.92	1.3	8.27	16.34	4.13	—	26.18	18.11	12.99	3.94	1.54	1 3/8	-6X6	595
KEE-110-4W	24700	403	279	10.1	4	18.31	17.32	5.51	1.42	9.45	18.7	4.92	—	28.74	20.87	14.57	4.72	1.77	1 5/8	-5X6	871	

\*: Use high-tension bolts.

Model	Full-load Current (A)					Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (inch)	Snap Ring	Thrust Bearing	Stainless Steel Cover* (Optional)	CE Marking** (Optional)		
	230/460V 60Hz	380V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz										
Greased and Sealed	KEE-1.5-4BW	0.50	0.33	0.3	0.32	0.23	Custom	1	Without	IP66	4	Without	Without	√	—
	KEE-3-4BW	0.80	0.52	0.53	0.58	0.37	0.34	1	Without	IP66	4	Without	Without	√	√
	KEE-6-4BW	1.2	0.78	0.78	0.81	0.64	0.56	1	Without	IP66	4	Without	Without	√	√
	KEE-9-4BW	1.7	0.99	1.1	1.1	0.81	Custom	3	Without	IP66	4	Without	Without	√	√
	KEE-12-4BW	2.3	1.3	1.5	1.4	1.0	0.9	3	Without	IP66	4	Without	Without	—	√
Periodic Greasing	KEE-17-4W	3.2	2.1	2.0	1.9	1.5	Custom	3	Without	IP66	4	Without	Without	—	√
	KEE-24-4W	3.9	2.2	2.5	2.4	1.8	Custom	3	Without	IP66	4	Without	Without	—	√
	KEE-34-4W	5.0	2.6	3.1	3.0	2.1	2.1	3	Without	IP66	6	With	Without	—	√
	KEE-52-4BW	7.5	3.8	4.6	4.2	3.6	3.0	3	With	IP55	6	With	Without	—	√
	KEE-75-4BW	12.3	6.2	7.5	6.9	5.3	Custom	4	With	IP55	8	With	Without	—	√
	KEE-84-4CW	18.2	9.4	11.0	10.2	Custom	Custom	4	With	IP55	8	With	Without	—	—
KEE-110-4W	*1	14.7	13.9	Custom	Custom	4	With	IP55	8	With	With	With	—	√	

\*1: Custom-orders are possible for Vibrators using the following single voltage: 230 V or 460 V. Contact the Overseas Sales Department of Uras Techno or one of our distributors.

\*2: √: Available. —: Not Available.

\*3: √: CE marking supported. —: Not applicable.

## Specifications (Metric)

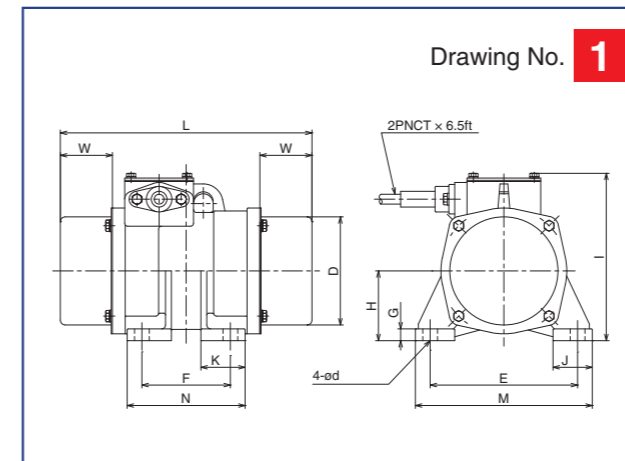
Model	Vibrating Force	Unbalance (kg · cm)		Output (kW)	Drawing No.	Dimensions (mm)														Mass (kg)	
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.		
Greased and Sealed	KEE-1.5-4BW	1.5	6.33	4.4	65W	1	110	120	40	10	63	150	33	—	255	145	70	65	10	M8	11
	KEE-3-4BW	3	12.7	8.79	0.13	1	155	150	80	10	84	180	35	40	265	180	110	55	12	M10	17
	KEE-6-4BW	6	25.3	17.6	0.25	1	170	160	100	12	92	195	40	45	315	190	130	75	14	M12	24
	KEE-9-4BW	9	38	26.4	0.4	3	190	180	110	13	102	210	50	55	340	220	150	75	18	M16	34
	KEE-12-4BW	12	50.6	35.2	0.6	3	225	220	140	16	120	240	60	65	360	270	190	65	22	M20	46
Periodic Greasing	KEE-17-4W	17	71.7	49.8	0.85	3	245	240	140	20	130	260	70	75	420	300	200	80	26	M24	62
	KEE-24-4W	24	101	70.3	1.1	3	265	260	150	22	142	280	70	80	480	320	210	95	26	M24	84
	KEE-34-4W	34	143	99.6	1.5	3	295	310	170	25	158	320	85	95	525	380	240	95	33	M30	122
	KEE-52-4BW	52	219	152	2.2	3	345	350	220	30	185	365	100	110	585	430	300	85	39	M36	180
	KEE-75-4BW	75	317	220	3.7	4	395	380	125	33	210	415	105	—	630	460	330	100	39	M36x6	245
	KEE-84-4CW	84	354	246	5.5	4	395	380	125	33	210	415	105	—	665	460	330	100	39	M36x6	270
KEE-110-4W	110	464	322	7.5	4	465	440	140	36	240	475	125	—	730	530	370	120	45	M42x6	395	



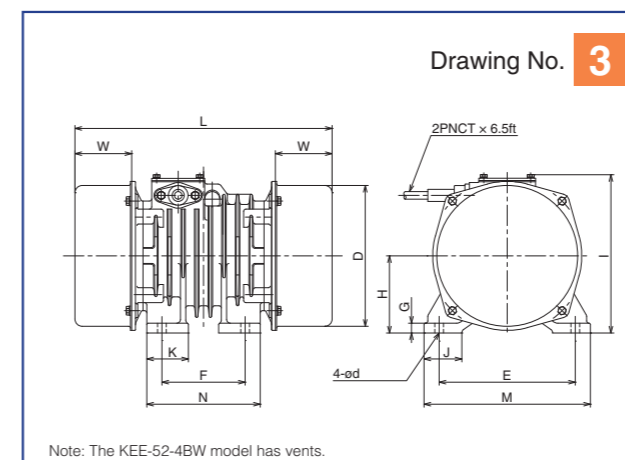
KEE-75-4BW

**Vibrator Speed**  
 Power supply frequency of 50 Hz  
 ...25 Hz (1500 r/min)  
 Power supply frequency of 60 Hz  
 ...30 Hz (1800 r/min)

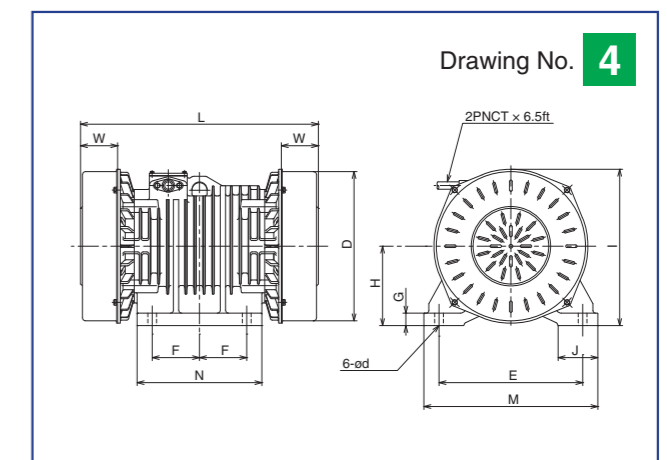
## Outline Drawings



An example of Uras Vibrator applications  
 YAMT-50 Vibro Mill is equipped with  
 KEE-50-6YV.  
 This type of Vibro Mill is used for fine  
 grinding in various fields: industrial  
 wastes, materials for batteries, etc.



Note: The KEE-52-4BW model has vents.



(Certified under CSA at a single voltage of 575 V or less and 60Hz.) Refer to page 19 for details on CSA standards or CE marking support. ▶

# KEE Standard Uras Vibrators, Six Poles

## Specifications (Imperial)

Model	Vibrating Force	Unbalance (lbf·in)		Output (HP)	Drawing No.	Dimensions (inch)														Mass (lbs)
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	φd	Bolt Dia.	
		(lbf)																		
KEE-3-6W	674	24.7	17.2	0.268	5	6.69	6.3	3.94	0.47	3.62	7.68	1.57	1.77	12.99	7.48	5.12	3.35	0.55	1/2-12	55.1
KEE-5-6W	1120	41.2	28.6	0.469	5	7.48	7.09	4.33	0.51	4.02	8.27	1.97	2.17	14.37	8.66	5.91	3.54	0.71	5/8-11	79.4
KEE-9-6BW	2020	74.2	51.5	0.805	5	8.86	8.66	5.51	0.63	4.72	9.45	2.36	2.56	16.14	10.63	7.48	3.74	0.87	3/4-10	119
KEE-13-6BW	2920	107	74.4	1.14	5	9.65	9.45	5.51	0.79	5.12	10.24	2.76	2.95	17.52	11.81	7.87	4.13	1.02	7/8-9*	157
KEE-18-6BW	4050	148	103	1.61	5	10.43	10.24	5.91	0.87	5.59	11.02	2.76	3.15	19.88	12.6	8.27	4.72	1.02	7/8-9*	207
KEE-24-6CW	5400	198	137	2.15	5	11.61	12.2	6.69	0.98	6.22	12.6	3.35	3.74	21.65	14.96	9.45	4.72	1.3	1 1/8-7	280
KEE-34-6BW	7640	280	194	2.95	5	13.58	13.78	8.66	1.18	7.28	14.37	3.94	4.33	23.82	16.93	11.81	4.13	1.54	1 3/8-6	386
KEE-45-6BW	10100	371	258	4.02	5	13.58	13.78	8.66	1.18	7.28	14.37	3.94	4.33	26.97	16.93	11.81	5.31	1.54	1 3/8-6	470
KEE-60-6BW	13500	495	344	4.96	6	15.55	14.96	4.92	1.3	8.27	16.34	4.13	—	27.56	18.11	12.99	5.31	1.54	1 3/8-6X6	595
KEE-80-6CW	18000	660	458	7.38	6	15.55	14.96	4.92	1.3	8.27	16.34	4.13	—	31.5	18.11	12.99	6.5	1.54	1 3/8-6X6	739
KEE-110-6W	24700	906	629	10.1	7	18.31	17.32	5.51	1.42	9.45	18.7	4.92	—	32.28	20.87	14.57	6.5	1.77	1 5/8-5X6	1010
KEE-140-6W	31500	1214	801	12.1	8	20.28	18.9	5.51	1.5	10.43	20.67	4.92	—	37.01	22.44	20.08	6.1	1.77	1 5/8-5X8	1390
KEE-165-6W	37100	1360	944	14.8	8	20.28	18.9	5.51	1.5	10.43	20.67	4.92	—	38.58	22.44	20.08	7.09	1.77	1 5/8-5X8	1520
KEE-185-6W	41600	1525	1059	17.4	8	22.05	20.47	5.51	1.5	11.42	22.44	4.92	—	38.19	24.02	20.08	6.69	1.77	1 5/8-5X8	1790

\*: Use high-tension bolts.

Model	Full-load Current (A)					Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (inch)	Snap Ring	Thrust Bearing	Stainless Steel Cover <sup>2</sup> (option)	CE Marking <sup>3</sup> (Optional)
	230/460V 60Hz	380V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz								
KEE-3-6W	1.1	0.65	0.75	0.82	0.61	5	without	IP66	4	without	without	✓	✓
KEE-5-6W	1.7	1.0	1.1	1.1	0.84	5	without	IP66	4	without	without	✓	✓
KEE-9-6BW	2.9	1.7	1.9	1.9	1.4	5	without	IP66	4	without	without	—	✓
KEE-13-6BW	3.9	2.1	2.3	2.3	1.7	5	without	IP66	4	without	without	—	✓
KEE-18-6BW	4.8	2.7	3.2	3.2	2.3	5	without	IP66	4	with	without	—	✓
KEE-24-6CW	6.5	3.8	4.1	4.1	3.0	5	without	IP66	6	with	without	—	✓ <sup>4</sup>
KEE-34-6W	8.2	4.6	5.3	5.1	3.9	5	without	IP66	6	with	without	—	✓
KEE-45-6BW	10.8	5.7	6.9	6.6	5.0	5	without	IP66	6	with	without	—	✓
KEE-60-6BW	13.4	7.4	8.1	7.8	5.9	6	without	IP66	8	with	without	—	✓
KEE-80-6CW	18.5	9.8	11.6	10.8	8.2	6	with	IP55	8	with	without	—	✓
KEE-110-6W	*1	16.1	15.7	11.8	Custom	7	with	IP55	8	with	with	—	—
KEE-140-6W		20	18.9	15	13	8	with	IP55	11	with	with	—	✓
KEE-165-6W		24	22.2	24	Custom	8	with	IP55	11	with	with	—	✓
KEE-185-6W		27	25	Custom	Custom	8	with	IP55	11	with	with	—	✓

\*1: Custom-orders are possible for Vibrators using the following single voltage: 230 V or 460 V. Contact the Overseas Sales Department of Uras Techno or one of our distributors.

\*2: ✓: Available. —: Not Available.

\*3: ✓: CE marking supported. —: Not applicable.

\*4: CE marking supported model is not KEE-24-6CW but KEE-24-6B (greased and sealed type).

## Specifications (Metric)

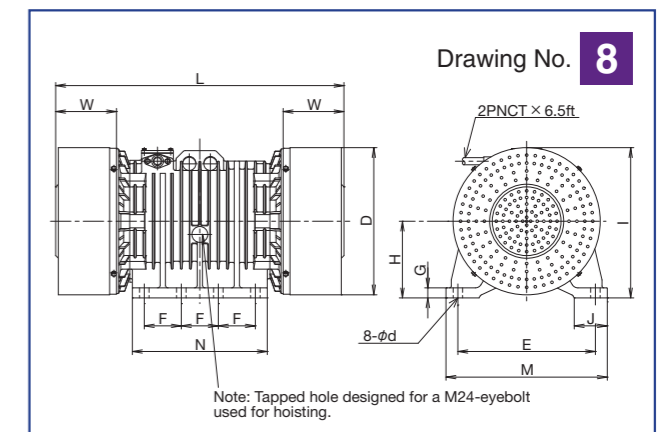
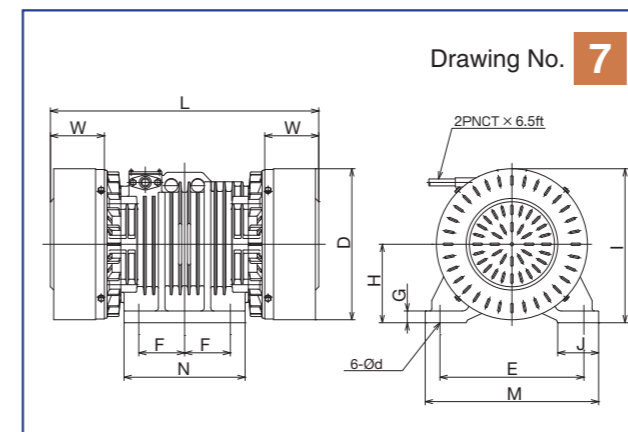
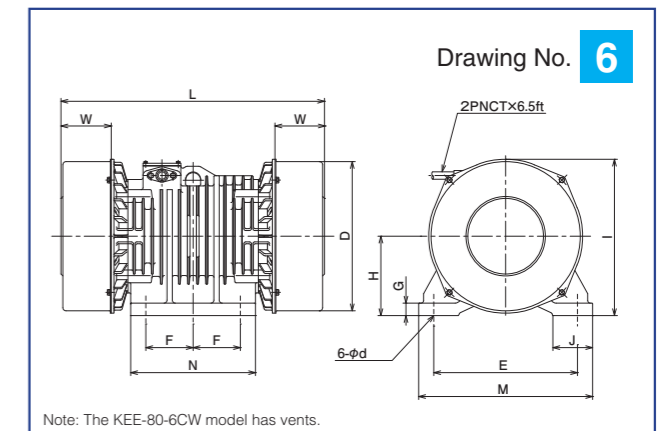
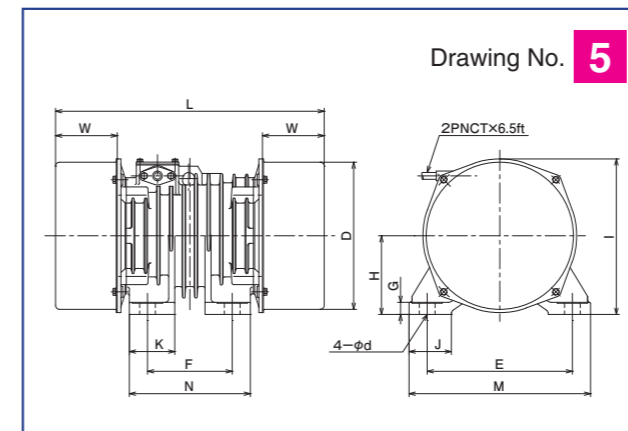
Model	Vibrating Force (kN)	Unbalance (kg·cm)		Output (kW)	Drawing No.	Dimensions (mm)														Mass (kg)
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	φd	Bolt Dia.	
KEE-3-6W	3	28.5	19.8	0.2	5	170	160	100	12	92	195	40	45	330	190	130	85	14	12	25
KEE-5-6W	5	47.5	33	0.35	5	190	180	110	13	102	210	50	55	365	220	150	90	18	16	36
KEE-9-6BW	9	85.5	59.3	0.6	5	225	220	140	16	120	240	60	65	410	270	190	95	22	20	54
KEE-13-6BW	13	123	85.7	0.85	5	245	240	140	20	130	260	70	75	445	300	200	105	26	24	71
KEE-18-6BW	18	171	119	1.2	5	265	260	150	22	142	280	70	80	505	320	210	120	26	24	94
KEE-24-6CW	24	228	158	1.6	5	295	310	170	25	158	320	85	95	550	380	240	120	33	30	127
KEE-34-6BW	34	323	224	2.2	5	345	350	220	30	185	365	100	110	605	430	300	105	39	36	175
KEE-45-6BW	45	427	297	3	5	345	350	220	30	185	365	100	110	685	430	300	135	39	36	213
KEE-60-6BW	60	570	396	3.7	6	395	380	125	33	210	415	105	—	700	460	330	135	39	M36x6	270
KEE-80-6CW	80	760	528	5.5	6	395	380	125	33	210	415	105	—	800	460	330	165	39	M36x6	335
KEE-110-6W	110	1044	725	7.5	7	465	440	140	36	240	475	125	—	820	530	370	165	45	M42x6	460
KEE-140-6W	140	1399	923	9	8	515	480	140	38	265	525	125	—	940	570	510	155	45	M42x8	630
KEE-165-6W	165	1567	1088	11	8	515	480	140	38	265	525	125	—	980	570	510	180	45	M42x8	690
KEE-185-6W	185	1757	1220	13	8	560	520	140	38	290	570	125	—	970	610	510	170	45	M42x8	810

### Vibrator Speed

Power supply frequency of 50 Hz  
...16.7 Hz (1000 r/min)  
Power supply frequency of 60 Hz  
...20 Hz (1200 r/min)



KEE-18-6BW



(Certified under CSA at a single voltage of 575 V or less and 60Hz.) Refer to page 19 for details on CSA standards or CE marking support. ▶

# KEE Standard Uras Vibrators, Eight Poles

## Specifications (Imperial)

Model	Vibrating Force (lbf)	Unbalance (lbf·in)		Output (HP)	Drawing No.	Dimensions (inch)														Mass (lbs)	
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.		
Greased and Sealed	KEE-5-8W	1120	73.3	50.9	0.536	5	8.86	8.66	5.51	0.63	4.72	9.45	2.36	2.56	16.14	10.63	7.48	3.74	0.87	$\frac{3}{4}$ -10	115
	KEE-10-8BW	2250	147	102	1.01	5	10.43	10.24	5.91	0.87	5.59	11.02	2.76	3.15	19.88	12.6	8.27	4.72	1.02	$\frac{7}{8}$ -9*	194
	KEE-20-8BW	4500	293	203	2.01	5	11.61	12.2	6.69	0.98	6.22	12.6	3.35	3.74	24.02	14.96	9.45	5.91	1.3	$1\frac{1}{8}$ -7	328
	KEE-32-8W	7190	469	325	2.95	5	13.58	13.78	8.66	1.18	7.28	14.37	3.94	4.33	27.95	16.93	11.81	6.1	1.54	$1\frac{3}{8}$ -6	507
Periodic Greasing	KEE-54-8BW	12100	792	549	4.96	6	15.55	14.96	4.92	1.3	8.27	16.34	4.13	-	30.91	18.11	12.99	6.89	1.54	$1\frac{3}{8}$ -6x6	721
	KEE-85-8W	19100	1246	864	8.05	7	18.31	17.32	5.51	1.42	9.45	18.7	4.92	-	35.43	20.87	14.57	8.07	1.77	$1\frac{5}{8}$ -5x6	1150
	KEE-110-8BW	24700	1612	1119	10.1	8	20.28	18.9	5.51	1.5	10.43	20.67	4.92	-	40.55	22.44	20.08	7.68	1.77	$1\frac{5}{8}$ -5x8	1510
	KEE-135-8BW	30300	1978	1374	12.1	8	20.28	18.9	5.51	1.5	10.43	20.67	4.92	-	42.52	22.44	20.08	9.06	1.77	$1\frac{5}{8}$ -5x8	1690
	KEE-170-8BW	38200	2491	1730	14.8	8	22.05	20.47	5.51	1.5	11.42	22.44	4.92	-	42.91	24.02	20.08	9.06	1.77	$1\frac{5}{8}$ -5x8	1970

\*: Use high-tension bolts.

## Specifications (Metric)

Model	Vibrating Force (kN)	Unbalance (kg·cm)		Output (kW)	Drawing No.	Dimensions (mm)														Mass (kg)	
		50Hz	60Hz			D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.		
Greased and Sealed	KEE-5-8W	5	84.4	58.6	0.4	5	225	220	140	16	120	240	60	65	410	270	190	95	22	M20	52
	KEE-10-8BW	10	169	117	0.75	5	265	260	150	22	142	280	70	80	505	320	210	120	26	M24	88
	KEE-20-8BW	20	338	234	1.5	5	295	310	170	25	158	320	85	95	610	380	240	150	33	M30	149
	KEE-32-8W	32	540	375	2.2	5	345	350	220	30	185	365	100	110	710	430	300	155	39	M36	230
Periodic Greasing	KEE-54-8BW	54	912	633	3.7	6	395	380	125	33	210	415	105	-	785	460	330	175	39	M36x6	327
	KEE-85-8W	85	1435	996	6	7	465	440	140	36	240	475	125	-	900	530	370	205	45	M42x6	520
	KEE-110-8BW	110	1857	1289	7.5	8	515	480	140	38	265	525	125	-	1030	570	510	195	45	M42x8	685
	KEE-135-8BW	135	2279	1583	9	8	515	480	140	38	265	525	125	-	1080	570	510	230	45	M42x8	765
	KEE-170-8BW	170	2870	1993	11	8	560	520	140	38	290	570	125	-	1090	610	510	230	45	M42x8	895

### Vibrator Speed

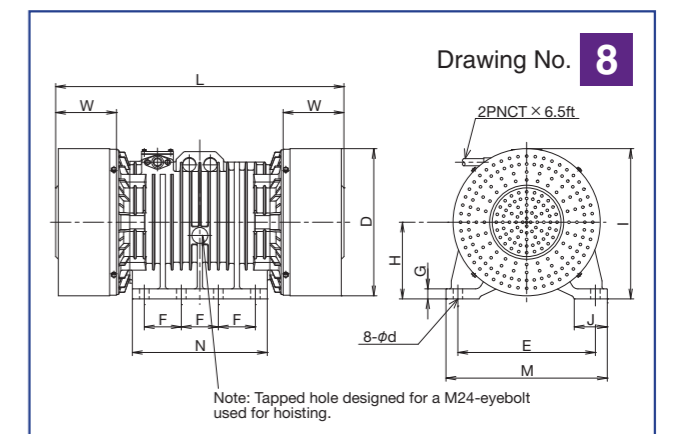
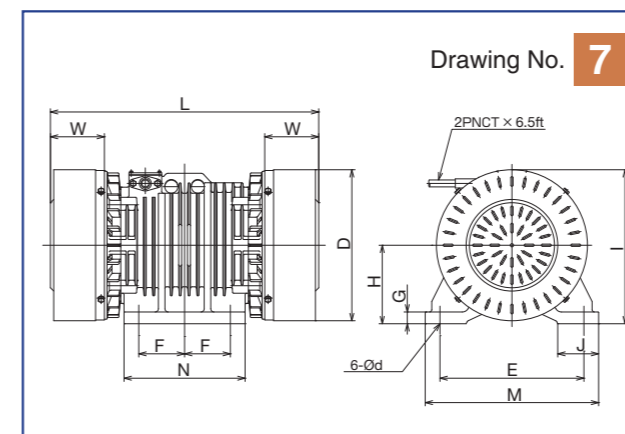
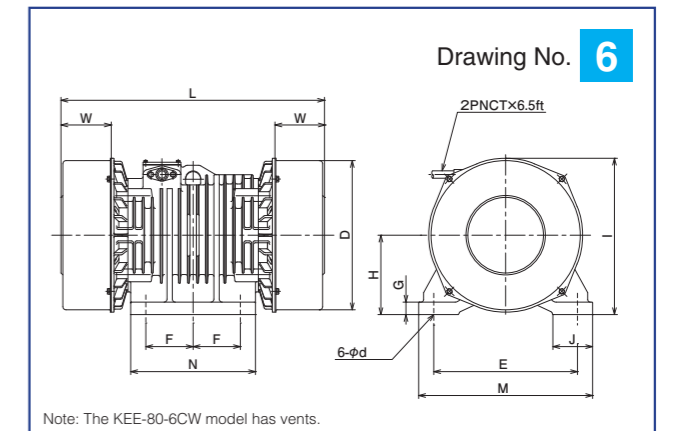
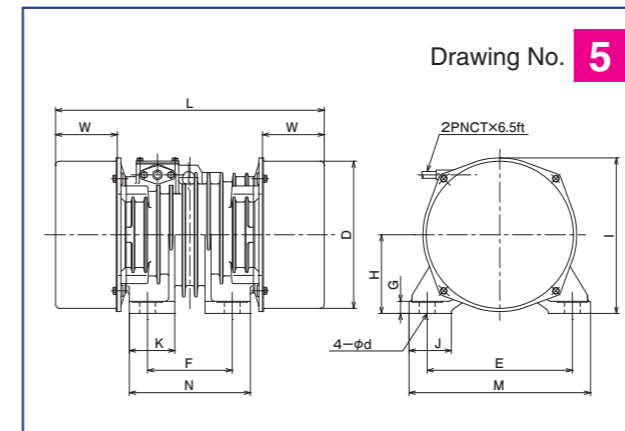
Power supply frequency of 50 Hz  
...12.5 Hz (750 r/min)  
Power supply frequency of 60 Hz  
...15 Hz (900 r/min)



KEE-170-8BW

Model	Full-load Current (A)					Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (inch)	Snap Ring	Thrust Bearing	CE Marking <sup>2</sup>		
	230/460V 60Hz	380V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz									
Greased and Sealed	KEE-5-8W	2.4	1.5	1.0	1.7	Custom	Custom	5	Without	IP66	4	Without	Without	√
	KEE-10-8BW	4.5	2.9	3.0	3.3	Custom	Custom	5	Without	IP66	4	Without	Without	√
	KEE-20-8BW	7.5	4.4	4.8	5.1	Custom	Custom	5	Without	IP66	6	With	Without	√
	KEE-32-8W	9.5	5.5	6.0	6.2	4.7	Custom	5	Without	IP66	6	With	Without	√
Periodic Greasing	KEE-54-8BW	14.6	8.6	9.1	9.4	6.8	Custom	6	Without	IP66	8	With	Without	√
	KEE-85-8W	*1		17.3	18	13	12	7	With	IP55	8	With	With	-
	KEE-110-8BW	*1		19.8	21	15.2	Custom	8	With	IP55	11	With	With	√
	KEE-135-8BW	*1		21.0	22	15.9	14.0	8	With	IP55	11	With	With	√
	KEE-170-8BW	*1		29.0	33	21	Custom	8	With	IP55	11	With	With	√

\*1: Custom-orders are possible for Vibrators using the following single voltage: 230 V or 460 V. Contact the Overseas Sales Department of Uras Techno or one of our distributors.  
\*2: √: CE marking supported. -: Not applicable.



# SEE Standard Single-phase Two Pole Uras Vibrators

## Specifications

Model	Vibrating Force		Unbalance				Output		Full-load Current (A)						Protection Structure	Min.Cable Bending Radius(inch)	Stainless Steel Cover <sup>2</sup> (Optional)
	(lbf)	(kN)	(lbs•in)		(kg•cm)		(HP)	(W)	110V		200V		240V				
			50Hz	60Hz	50Hz	60Hz			60Hz	50Hz	60Hz	50Hz	60Hz				
SEE-0.1-2	22/34	0.1/0.15	0.148	—	0.17	—	0.0201	15	0.39	*1		0.2	0.22	IP42	4	—	
SEE-0.5-2CW	112	0.5	0.495	0.347	0.57	0.4	0.0402	30	0.53	0.32	0.27	0.26	0.28	0.29	IP66	4	✓
SEE-1-2BW	225	1	0.911	0.634	1.05	0.73	0.0872	65	1.2	0.61	0.62	0.6	0.51	0.54	IP66	4	—
SEE-2-2BW	450	2	1.85	1.14	2.13	1.31	0.161	120	1.9	1.11	0.98	0.97	0.94	0.94	IP66	4	✓
SEE-3.5-2BW	787	3.5	3.26	2.01	3.76	2.32	0.295	220	2.9	1.7	1.6	1.6	1.4	1.4	IP66	4	✓

**Vibrator Speed**  
 Power supply frequency of 50 Hz ...50 Hz (3000 r/min)  
 Power supply frequency of 60 Hz ...60 Hz (3600 r/min)

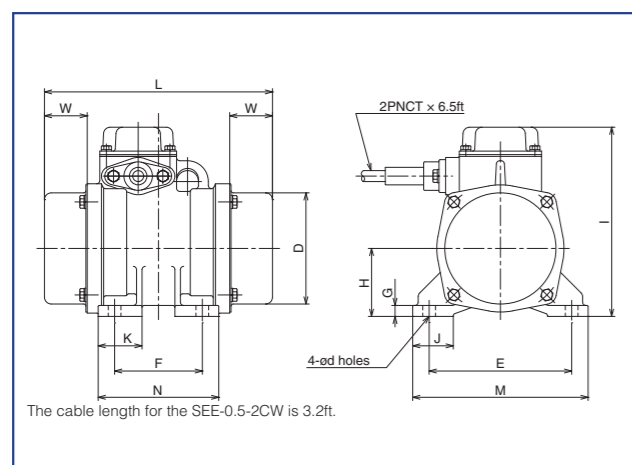


SEE-1-2BW

\*1: Contact the Overseas Sales Department of Uras Techno or one of our distributors.  
 \*2: √: Available. —: Not Available.  
 The five SEE models use Greased and Sealed bearings.  
 The vibrating force of the SEE-0.1-2 is fixed. This model is only for indoor use.  
 Use the SEE-0.1-2, -0.5-2CW, and -1-2BW at an ambient temperature between -15°C to +35°C.

Model	Dimensions(inch)														Dimensions(mm)														Mass		Bearing Lubrication Type
	D	E	F	G	H	I	J	K	L	M	N	W	φd	Bolt Dia.	D	E	F	G	H	I	J	K	L	M	N	W	φd	Bolt Dia.	(lbs)	(kg)	
SEE-0.1-2	3.35	3.54	1.73	0.09	1.77	3.54	0.71	2.95	5.31	4.21	2.36	1.77	0.33	1/4-20	85	90	44	2.3	45	90	18	75	135	107	60	45	8.5	6	6	2.5	Greased and Sealed
SEE-0.5-2CW	4.33	4.72	1.57	0.39	2.48	6.69	1.3	—	8.07	5.71	2.76	1.57	0.39	5/16-18	110	120	40	10	63	170	33	—	205	145	70	40	10	8	15	7	Periodic Greasing
SEE-1-2BW	4.13	5.12	3.15	0.39	2.44	6.89	1.46	1.57	8.27	6.3	4.33	1.57	0.47	3/8-16	105	130	80	10	62	175	37	40	210	160	110	40	12	10	21	9.5	Greased and Sealed
SEE-2-2BW	4.33	5.91	3.54	0.47	2.8	6.89	1.57	1.77	9.06	7.09	4.72	1.57	0.55	1/2-12	110	150	90	12	71	175	40	45	230	180	120	40	14	12	29	13	Periodic Greasing
SEE-3.5-2BW	4.92	7.48	4.33	0.51	3.31	7.68	1.97	2.17	11.81	9.06	5.91	2.36	0.71	5/8-11	125	190	110	13	84	195	50	55	300	230	150	60	18	16	46	21	Periodic Greasing

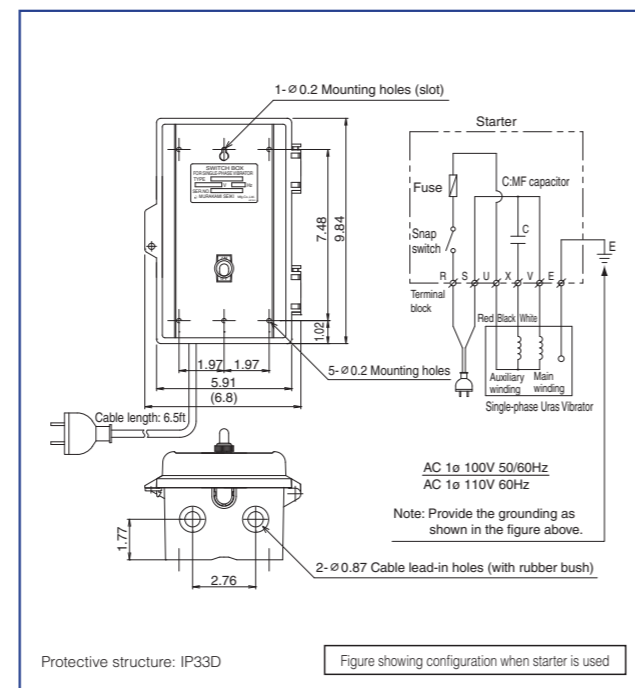
## Outline Drawings



SEE-0.1-2 (The smallest Uras Vibrator)

## Starter

The SEE-0.1-2, SEE-0.5-2CW, and SEE-1-2BW models use a capacitor, which is installed in the vibrator. The starter shown here is included in model SEE-2-2BW and higher.



Protective structure: IP33D

Figure showing configuration when starter is used

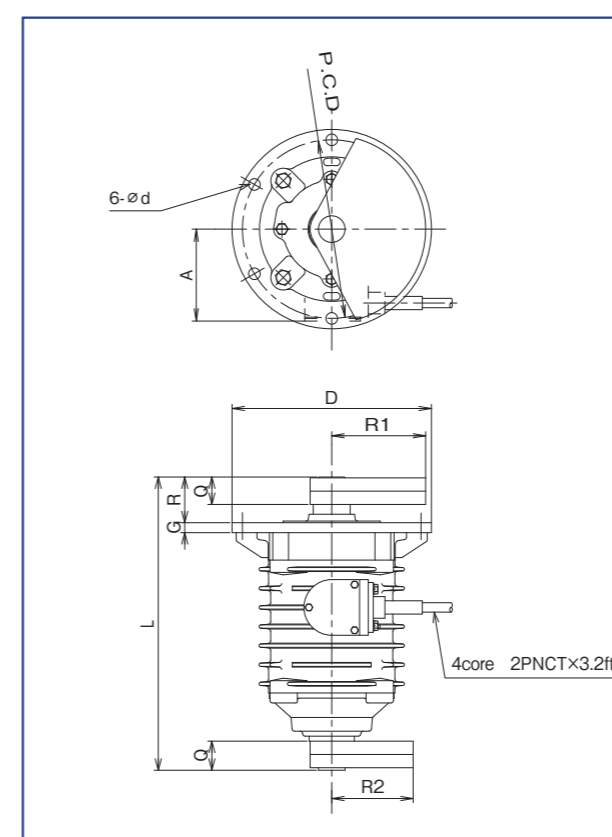
# KEEV Flange-type Uras Vibrators

## Specifications

Model	Output (HP)	Full-load Current (A)	Vibrating Force 50/60Hz																	
			Flange Side								Counter-flange Side									
			200V		Unbalance		Vibrating Force		Weight Radius R1 (inch)		Unbalance		Vibrating Force		Weight Radius R2 (inch)					
50Hz	60Hz	lbf•in	kg•cm	lbs	kN	50Hz	60Hz	lbf•in	kg•cm	lbs	kN	50Hz	60Hz							
KEEV-7-4	0.53	0.4	2.3	2.2	15.6	10.8	18	12.5	989	4.4	4.09	3.62	13.4	9.3	11.6	8.1	607	2.7	3.54	3.15
KEEV-15-4	1.13	0.85	3.8	3.7	36.5	25.2	42	29	2340	10.4	5.12	4.57	24.2	17.3	21	15	1100	4.9	4.09	3.62
KEEV-20-4	1.59	1.2	4.9	4.8	49.5	34.7	57	40	3170	14.1	5.39	4.8	31.6	21.9	27.4	19	1440	6.4	4.25	3.78
KEEV-8-6	0.464	0.35	2.5	2.2	39.9	27.8	46	32	1120	5.0	5.59	4.96	34.6	24.2	30	21	700	3.1	4.84	4.33
KEEV-16-6	1.13	0.85	4.8	4.6	86.8	59.9	100	69	2470	11.0	6.85	6.06	58.8	40.8	51	35.4	1190	5.3	5.47	4.84
KEEV-22-6	1.59	1.2	6.3	5.8	122	84.2	140	97	3460	15.4	7.28	6.46	78.3	54.1	68	47	1570	7.0	5.75	5.08

Model	Dimensions (inch)								Dimensions (mm)								Mass		Bearing Lubrication Type	
	L	D	G	R	Q	A	P.C.D.	φd	L	D	G	R	Q	A	P.C.D.	φd	Bolt Dia.	(lbs)		(kg)
KEEV-7-4	13.98	9.45	0.47	2.17	1.3	4.53	8.46	0.55	355	240	12	55	33	115	215	14	M12	66/62	30/28	Greased and Sealed
KEEV-15-4	15.55	10.83	0.51	2.6	1.54	5.12	9.65	0.71	395	275	13	66	39	130	245	18	M16	115/110	52/50	Periodic Greasing
KEEV-20-4	15.98	10.83	0.51	2.91	1.77	5.12	9.65	0.71	406	275	13	74	45	130	245	18	M16	139/132	63/60	Periodic Greasing
KEEV-8-6	13.98	9.45	0.47	2.17	1.3	4.53	8.46	0.55	355	240	12	55	33	115	215	14	M12	79/73	36/33	Greased and Sealed
KEEV-16-6	15.55	10.83	0.51	2.6	1.54	5.12	9.65	0.71	395	275	13	66	39	130	245	18	M16	148/139	67/63	Periodic Greasing
KEEV-22-6	15.98	10.83	0.51	2.91	1.77	5.12	9.65	0.71	406	275	13	74	45	130	245	18	M16	172/159	78/72	Periodic Greasing

## Outline Drawings



KEEV-20-4



Vibrating Screen



3D vibration is generated.  
 → Direction of materials  
 → Direction of vibration  
 ↻ Rotation direction of vibrators



# KHE High-frequency Uras Vibrators

## Easy compaction with high-frequency Uras Vibrators (Three-phase, Two Poles)

In the vibration range from 20 to 30 Hz, powder acts like a fluid with a vibration acceleration of approximately twice gravity. In contrast, at a vibration of 50 Hz or higher, strong compaction will occur instead of fluidization, even with a vibration acceleration that is several times gravity. The high-frequency Uras Vibrators generate high-frequency vibration to effectively utilize this characteristic.

## Specifications

**Vibrator Speed** Power supply frequency of **100 Hz (6000 r/min)** Power supply frequency of **120 Hz (7200 r/min)**

Model	Vibrating Force (lbf)	Output (HP)	Dimensions (inch)															Mass (lbs)	Protection Structure	Min. Cable Bending Radius (inch)
			D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.				
Greased and Sealed	KHE-1-2	225	0.1	3.54	4.72	1.57	0.35	2.2	5.71	1.38	—	7.48	5.71	2.56	1.57	0.39	$\frac{5}{16}$ -18	15	IP66	4
	KHE-2-2	450	0.2	4.13	5.12	3.15	0.39	2.44	6.3	1.46	1.57	8.27	6.3	4.33	1.57	0.47	$\frac{3}{8}$ -16	20	IP66	4
	KHE-4-2	899	0.53	4.53	5.91	3.54	0.47	2.8	6.89	1.57	1.77	11.42	7.09	4.72	1.57	0.55	$\frac{1}{2}$ -12	37	IP66	4
Periodic Greasing	KHE-7.5-2	1690	1	4.92	7.48	4.33	0.51	3.31	7.68	1.97	2.17	12.2	9.06	5.91	1.57	0.71	$\frac{5}{8}$ -11	53	IP66	4
	KHE-12-2	2700	1.59	5.31	8.66	4.72	0.63	3.62	8.27	2.36	2.56	14.37	10.63	6.69	2.01	0.87	$\frac{3}{4}$ -10	75	IP55	4
	KHE-16-2	3600	2.12	6.69	9.45	5.51	0.79	5.12	10.24	2.76	2.95	16.73	11.81	7.87	2.44	1.02	$\frac{7}{8}$ -9*	108	IP55	4
	KHE-22-2	4950	2.92	7.48	10.24	5.91	0.87	5.59	11.02	2.76	3.15	17.52	12.6	8.27	2.4	1.02	$\frac{7}{8}$ -9*	137	IP55	4

Model	Vibrating Force (kN)	Output (kW)	Full-load Current (A)		Dimensions (mm)															Mass (kg)
			415V 100Hz	415V 120Hz	D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.		
Greased and Sealed	KHE-1-2	1	75W	0.35	0.3	90	120	40	9	56	145	35	—	190	145	65	40	10	M8	7
	KHE-2-2	2	0.15	Custom		105	130	80	10	62	160	37	40	210	160	110	40	12	M10	9
	KHE-4-2	4	0.4	0.98	0.95	115	150	90	12	71	175	40	45	290	180	120	40	14	M12	17
Periodic Greasing	KHE-7.5-2	7.5	0.75	Custom		125	190	110	13	84	195	50	55	310	230	150	40	18	M16	24
	KHE-12-2	12	1.2	2.2	2.2	135	220	120	16	92	210	60	65	365	270	170	51	22	M20	34
	KHE-16-2	16	1.6	2.9	3	170	240	140	20	130	260	70	75	425	300	200	62	26	M24	49
	KHE-22-2	22	2.2	Custom		190	260	150	22	142	280	70	80	445	320	210	61	26	M24	62

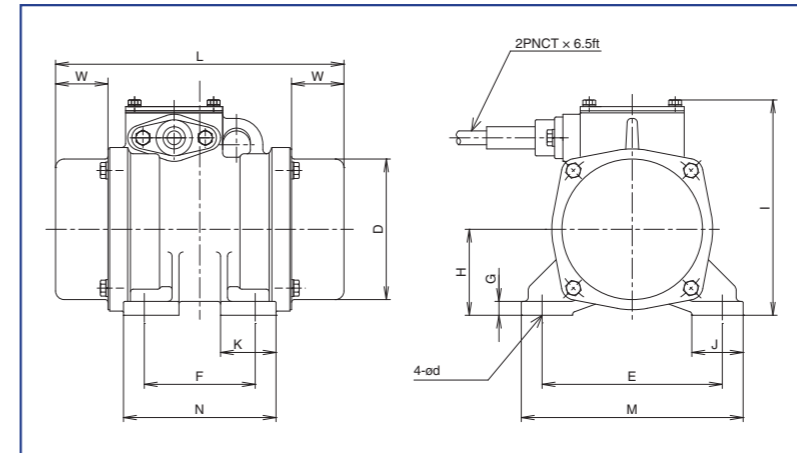
\*: Use high-tension bolts.

**Vibrator Speed** Power supply frequency of **150 Hz (9000 r/min)** Power supply frequency of **180 Hz (10800 r/min)**

Model	Vibrating Force (lbf)	Output (HP)	Full-load Current (A)		Dimensions (inch)															Mass (lbs)	Protection Structure	Min. Cable Bending Radius (inch)
			200V 150Hz	200V 180Hz	D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.				
Greased and Sealed	KHE-1-2T	225	0.1	0.61	0.55	3.54	4.72	1.57	0.35	2.2	5.71	1.38	—	7.48	5.71	2.56	1.57	0.39	$\frac{5}{16}$ -18	15	IP66	4
	KHE-2-2T	450	0.2	0.9	0.91	4.13	5.12	3.15	0.39	2.44	6.3	1.46	1.57	8.27	6.3	4.33	1.57	0.47	$\frac{3}{8}$ -16	20	IP66	4
	KHE-4-2T	899	0.53	2.2	2.2	4.53	5.91	3.54	0.47	2.8	6.89	1.57	1.77	11.42	7.09	4.72	1.57	0.55	$\frac{1}{2}$ -12	37	IP66	4
Periodic Greasing	KHE-7.5-2T	1690	1	3.6	3.5	4.92	7.48	4.33	0.51	3.31	7.68	1.97	2.17	12.2	9.06	5.91	1.57	0.71	$\frac{5}{8}$ -11	53	IP66	4
	KHE-12-2T	2700	1.59	4.7	4.8	5.31	8.66	4.72	0.63	3.62	8.27	2.36	2.56	14.37	10.63	6.69	2.01	0.87	$\frac{3}{4}$ -10	75	IP55	4

Model	Vibrating Force (kN)	Output (kW)	Full-load Current (A)		Dimensions (mm)															Mass (kg)
			200V 150Hz	200V 180Hz	D	E	F	G	H	I	J	K	L	M	N	W	ød	Bolt Dia.		
Greased and Sealed	KHE-1-2T	1	75W	0.61	0.55	90	120	40	9	56	145	35	—	190	145	65	40	10	M8	7
	KHE-2-2T	2	0.15	0.9	0.91	105	130	80	10	62	160	37	40	210	160	110	40	12	M10	9
	KHE-4-2T	4	0.4	2.2	2.2	115	150	90	12	71	175	40	45	290	180	120	40	14	M12	17
Periodic Greasing	KHE-7.5-2T	7.5	0.75	3.6	3.5	125	190	110	13	84	195	50	55	310	230	150	40	18	M16	24
	KHE-12-2T	12	1.2	4.7	4.8	135	220	120	16	92	210	60	65	365	270	170	51	22	M20	34

## Outline Drawings



KHE-4-2T

## Features

Motorized vibrator generates vibrations ranging from 100 to 180 Hz. Inverter operation is required to generate high-frequency vibration.

Table showing the applicable inverters capable of driving high-frequency Uras Vibrators (using the example of the V1000 inverter (heavy load rating) made by Yaskawa Electric Corporation)

Model	Unbalance				Full-load Current (A)		Inverter Model: CIMR-□(kW)	
	lbf · in		kg · cm		450V/100Hz		450V/120Hz	
	100Hz	120Hz	100Hz	120Hz	With 1 Uras Vibrator	With 2 Uras Vibrators		
KHE-1-2	0.234	0.156	0.27	0.18	0.35	0.3	VA4A0001 (0.1)	VA4A0002 (0.2)
KHE-2-2	0.477	0.33	0.55	0.38	Custom		VA4A0002 (0.2)	VA4A0004 (0.4)
KHE-4-2	0.903	0.625	1.04	0.72	0.98	0.95	VA4A0004 (0.4)	VA4A0006 (0.75)
KHE-7.5-2	1.73	1.2	1.99	1.38	Custom		VA4A0006 (0.75)	VA4A0010 (1.5)
KHE-12-2	2.73	1.9	3.15	2.19	2.2	2.2	VA4A0010 (1.5)	VA4A0010 (3.0)
KHE-16-2	3.7	2.57	4.26	2.96	2.9	3.0	VA4A0010 (1.5)	VA4A0020 (3.7)
KHE-22-2	5.06	3.52	5.83	4.05	Custom		Contact the Overseas Sales Department of Uras Techno or one of our distributors.	

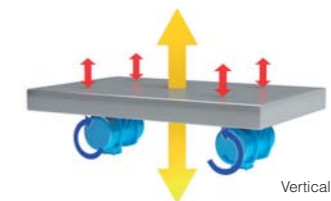
Model	Unbalance				Full-load Current (A)		Inverter Model: CIMR-□(kW)	
	lbf · in		kg · cm		200V/150Hz		200V/180Hz	
	150Hz	180Hz	150Hz	180Hz	With 1 Uras Vibrator	With 2 Uras Vibrators		
KHE-1-2T	0.1042	0.0694	0.12	0.08	0.61	0.55	VA2A0001 (0.1)	VA2A0002 (0.2)
KHE-2-2T	0.208	0.148	0.24	0.17	0.9	0.91	VA2A0002 (0.2)	VA2A0004 (0.4)
KHE-4-2T	0.408	0.286	0.47	0.33	2.2	2.2	VA2A0004 (0.4)	VA2A0008 (0.75)
KHE-7.5-2T	0.79	0.55	0.91	0.63	3.6	3.5	VA2A0006 (0.75)	VA2A0010 (1.5)
KHE-12-2T	1.24	0.86	1.43	0.99	4.7	4.8	VA2A0010 (1.5)	VA2A0018 (2.2)



Vibro Packer



V1000 inverter by Yaskawa Electric Corporation



Vertical vibration is generated.  
 ↑ Direction of materials  
 ↓ Direction of vibration  
 ↻ Rotation direction of vibrators

# Options

A wide range of options are available to ensure that Uras Vibrators meet the needs of our customers. Do not hesitate to contact the Overseas Sales Department of Uras Techno or one of our distributors for further details.

- CSA standards or CE marking support. (See page 19)
- One or two protruding shaft ends
- Special voltages
- Insulation classes (class F, class B)
- Extension of cable
- Divided weight covers
- Support for IP66 by models equipped with vents (excluding the KEE-10-2BW, 16-2W and 23-2W)
- Coating: Non-standard colors available as custom orders
- Drop-prevention wire
- Service for setting the vibrating force (Custom orders are adjusted to the vibrating force specified by the customer)
- Mounting base interchangeable with old models (example: KEB-5-4 → KEE-6-4BW)



Coupled operation of Uras Vibrator with shaft (optional)

## Recommended Wire Size for Two Poles

Uras Vibrator Model	Wire Diameter	
	inch	mm
KEE-0.5-2CW	ø0.23	ø6
KEE-1-2CW	ø0.23	ø6
KEE-2-2CW	ø0.23	ø6
KEE3.5-2BW	ø0.23	ø6
KEE-6-2BW	ø0.23	ø6
KEE-10-2BW	ø0.23	ø6
KEE-16-2W	ø0.23	ø6
KEE-23-2W	ø0.23	ø6
KEE-30-2W	ø0.31	ø8
KEE-40-2W	ø0.31	ø8



Drop-prevention wire

- An example of two protruding shaft type vibrator (KEE-34-6J) coupled using a tire shaped coupling for reinforcement and equalization of the vibrating force.



# Product Range of CSA standard or CE Marking Supported Models

√: Available –: Not available

## Two Pole Uras Vibrator

Supply Power	CSA standards up to 575V	Supply Power	CE Marking								
			200/200/220V	220/220V	230/230V	240/240V	380V	400V	415V	240/415V	220/380V
Model	60Hz	Model	50/60/60Hz	50/60Hz	50/60Hz	50/60Hz	50Hz	50Hz	50Hz	50Hz	50Hz
KEE-0.5-2CW	√	KEE-0.5-2C	–	–	–	–	–	–	–	–	–
KEE-1-2CW	√	KEE-1-2C	–	–	–	–	–	–	–	–	–
KEE-2-2CW	√	KEE-2-2C	–	–	–	–	–	–	–	–	–
KEE-3.5-2BW	√	KEE-3.5-2B	√	√	√	√	√	√	√	√	√
KEE-6-2BW	√	KEE-6-2B	√	√	√	√	√	√	–	–	√
KEE-10-2BW	√	KEE-10-2B	√	√	√	√	√	√	√	√	√
KEE-16-2W	√	KEE-16-2	√	√	√	√	√	√	√	√	√
KEE-23-2W	√	KEE-23-2	√	√	√	√	√	√	√	√	√
KEE-30-2W	√	KEE-30-2	√	√	√	√	√	√	√	√	√
KEE-40-2W	√	KEE-40-2	√	√	√	√	√	√	√	√	√

## Four Pole Uras Vibrator

Supply Power	CSA standards up to 575V	Supply Power	CE Marking								
			200/200/220V	220/220V	230/230V	240/240V	380V	400V	415V	240/415V	220/380V
Model	60Hz	Model	50/60/60Hz	50/60Hz	50/60Hz	50/60Hz	50Hz	50Hz	50Hz	50Hz	50Hz
KEE-1.5-4BW	√	KEE-1.5-4B	–	–	–	–	–	–	–	–	–
KEE-3-4BW	√	KEE-3-4B	√	√	√	√	–	√	–	–	–
KEE-6-4BW	√	KEE-6-4B	√	√	√	√	√	√	√	√	√
KEE-9-4BW	√	KEE-9-4B	√	√	√	√	–	√	–	–	–
KEE-12-4BW	√	KEE-12-4B	√	√	√	√	√	√	√	√	√
KEE-17-4W	√	KEE-17-4	√	√	√	√	√	√	√	√	√
KEE-24-4W	√	KEE-24-4	√	√	√	√	√	√	√	√	√
KEE-34-4W	√	KEE-34-4	√	√	√	√	√	√	–	–	–
KEE-52-4BW	√	KEE-52-4B	√	√	√	√	√	√	√	√	–
KEE-75-4BW	√	KEE-75-4B	√	√	√	√	√	√	√	√	√
KEE-84-4CW	√	KEE-84-4C	–	–	–	–	–	–	–	–	–
KEE-110-4W	√	KEE-110-4	√	√	√	√	√	√	√	√	√

## Six Pole Uras Vibrator

Supply Power	CSA standards up to 575V	Supply Power	CE Marking								
			200/200/220V	220/220V	230/230V	240/240V	380V	400V	415V	240/415V	220/380V
Model	60Hz	Model	50/60/60Hz	50/60Hz	50/60Hz	50/60Hz	50Hz	50Hz	50Hz	50Hz	50Hz
KEE-3-6W	√	KEE-3-6	√	√	√	√	√	√	–	–	√
KEE-5-6W	√	KEE-5-6	√	√	√	–	√	√	√	√	√
KEE-9-6BW	√	KEE-9-6B	√	√	√	√	√	√	√	√	√
KEE-13-6BW	√	KEE-13-6B	√	√	√	√	√	√	√	√	–
KEE-18-6BW	√	KEE-18-6B	√	√	√	√	√	√	√	√	√
KEE-24-6CW	√	KEE-24-6B*	√	√	√	√	√	√	√	√	√
KEE-34-6BW	√	KEE-34-6B	√	√	√	√	√	√	√	√	–
KEE-45-6BW	√	KEE-45-6B	√	√	√	√	√	√	√	√	√
KEE-60-6CW	√	KEE-60-6C	√	√	√	√	√	√	√	√	√
KEE-80-6W	√	KEE-80-6	√	√	√	√	√	√	√	√	√
KEE-110-6W	√	KEE-110-6	–	–	–	–	–	–	–	–	–
KEE-140-6W	√	KEE-140-6	√	√	√	√	√	√	√	√	√
KEE-165-6W	√	KEE-165-6	√	√	√	√	√	√	√	√	√
KEE-185-6W	√	KEE-185-6	√	√	√	–	√	√	–	–	√

## Eight Pole Uras Vibrator

Supply Power	CSA standards up to 575V	Supply Power	CE Marking								
			200/200/220V	220/220V	230/230V	240/240V	380V	400V	415V	240/415V	220/380V
Model	60Hz	Model	50/60/60Hz	50/60Hz	50/60Hz	50/60Hz	50Hz	50Hz	50Hz	50Hz	50Hz
KEE-5-8W	√	KEE-5-8	√	√	√	√	–	√	√	√	–
KEE-10-8BW	√	KEE-10-8B	√	√	√	√	√	√	√	√	√
KEE-20-8BW	√	KEE-20-8B	√	√	√	√	√	√	√	√	√
KEE-32-8W	√	KEE-32-8	√	√	√	√	√	√	√	√	√
KEE-54-8BW	√	KEE-54-8B	√	√	√	√	√	√	√	√	√
KEE-85-8W	√	KEE-85-8	–	–	–	–	–	–	–	–	–
KEE-110-8BW	√	KEE-110-8B	√	√	√	√	√	√	√	√	√
KEE-135-8BW	√	KEE-135-8B	√	√	√	√	√	√	√	√	√
KEE-170-8BW	√	KEE-170-8B	√	√	√	√	√	√	√	√	√

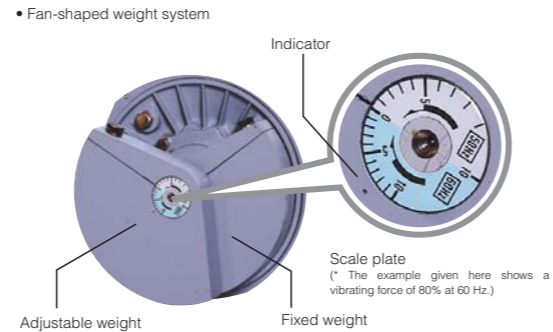
NOTE : A unit cannot be marked with both CSA standard and CE Marking.  
\*: CE marking supported model is not KEE-24-6CW but KEE-24-6B (greased and sealed type).

# How to Adjust the Vibrating Force

## Fan-shaped weight adjustment

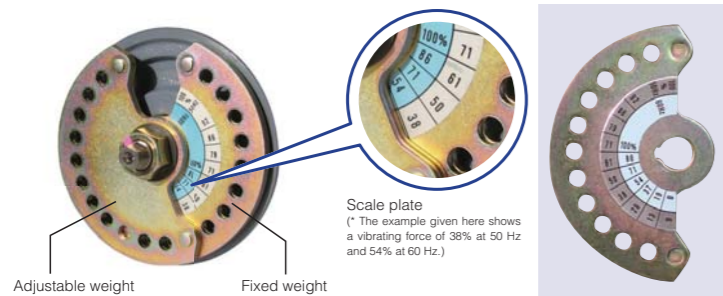
Unbalanced weights are attached at both ends of the shaft. As shown in the photo on the right, one fixed weight and one adjustable weight whose angle can be varied are attached to each end of the shaft. To adjust the vibrating force of the Uras Vibrator, the combined eccentric moment of the fixed and adjustable weights is changed by changing the angle of the center of gravity of the fixed and adjustable weights.

The required vibrating force can be set by loosening the locking bolt used to secure the adjustable weight and aligning the indicator with the required scale marking on the scale plate. The photo shows an example of an adjustment to 80% of the maximum vibrating force at 60 Hz.



## Press weight adjustment (for the SEE-0.5-2CW/KEE-0.5-2CW, 1-2CW and 2-2CW)

• Press weight system



Loosen the locking bolts securing the weights at both ends of the rotor shaft. Move the adjustable weight slightly toward the end of the shaft until the weight can move freely. Place the bump on the adjustable weight into the recess on the fixed weight and then tighten the locking bolts. The value (unit: %) displayed on the fixed weight along the edge of the adjustable weight is the selected vibrating force.

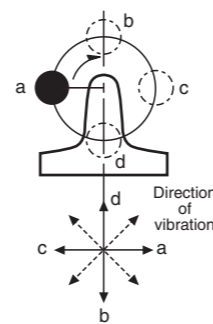
The vibrating force for this type can be set in 10 levels from a minimum of 13% up to 100% with 50 Hz operation, and in 6 levels from a minimum of 19% up to 100% with 60 Hz operation. When shipped, it is set to 38% of the maximum vibrating force at 50 Hz and to 54% of the maximum vibrating force at 60 Hz.

# Circular Vibration and Linear Vibration

### a) When generating vibration using one Uras Vibrator

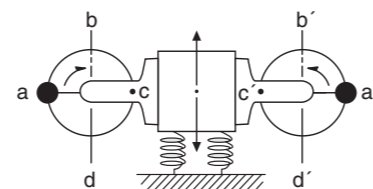
When one Uras Vibrator is installed and used to generate vibration, revolution occurs while the position of the unbalanced weight changes in the sequence of a, b, c, and d. This means that the vibration direction also changes in the same way, generating circular vibration.

Examples of the uses of circular vibration include the prevention of blockages in hoppers as well as applications in vibration milling machines and barrel finishing machines.



### b) When generating linear vibration using two Uras Vibrators

Two identical Uras Vibrators set to the same vibrating force are supported by soft springs as shown in the figure on the right and their vibrator shafts are installed in parallel. These vibrators are run concurrently in mutually opposing directions. In this configuration, a synchronous torque is produced and, even without transmission through gears or other mechanisms, the two vibrators start a synchronous operation in which the forces in the horizontal direction cancel each other out while only vertical vibration is generated. This principle is used for forced packers, vibrating feeders, conveyors, screens, and many other kinds of machines that apply vibration.



# Vibration Amplitude $\alpha$ and Vibration Strength G Calculations

As examples for a simple vibration system (forced vibration with a single degree of freedom), these calculations are shown using the "Vibropot" which is a milling machine for test purposes.

1. Amplitude is calculated by using

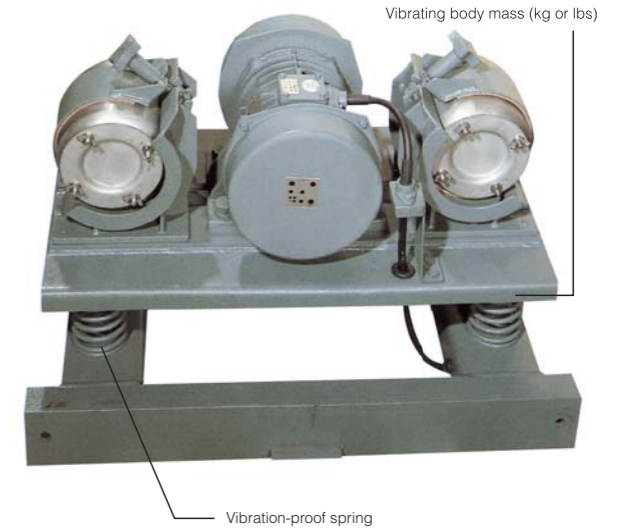
$$\text{Amplitude } \alpha = \frac{mr \times Cs}{W} \quad [\text{cm or inch}].$$

- $mr$  = Unbalance [kg·cm or lbf·in]
- $Cs$  = Vibration acceleration Settings [%]
- $W$  = Vibrating body mass [kg or lbs]

2. Vibration strength is calculated by using

$$\text{Vibration strength } G = \frac{\alpha \times \omega^2}{g} \quad (-).$$

- $\omega$  = Angular velocity =  $2\pi f (1/s)$
- $f$  No. Revolutions =  $\frac{N(\text{rpm})}{60(\text{s})}$
- $g$  = Gravity acceleration [cm/sec<sup>2</sup> or inch/sec<sup>2</sup>]  
= 980 cm/sec<sup>2</sup> or 386 inch/sec<sup>2</sup>



## Formula for calculating vibration strength (G) from amplitude $\alpha$ (inch)

No. of Uras Vibrator Poles	Power Supply Frequency (Hz)	Formula for Calculating G
2	50	$G = \alpha(\text{inch}) \times 241$
	60	$G = \alpha(\text{inch}) \times 347$
4	50	$G = \alpha(\text{inch}) \times 60.4$
	60	$G = \alpha(\text{inch}) \times 86.6$
6	50	$G = \alpha(\text{inch}) \times 26.9$
	60	$G = \alpha(\text{inch}) \times 38.5$
8	50	$G = \alpha(\text{inch}) \times 15.0$
	60	$G = \alpha(\text{inch}) \times 21.8$

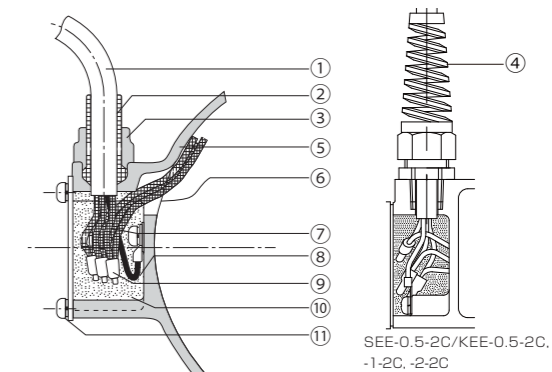


# Terminal Box and Cable

Uras Vibrator terminal boxes are filled with a special Uras Compound. This non-hardening, high-adhesion compound was developed to provide superior vibration-, humidity-, and dust-resistance. The lead cable is an anti-vibration butyl rubber insulated chloroprene cab-tire that ensures long life.

No.	Part Name	No.	Part Name
1	2PNC (anti-vibration butyl rubber insulated chloroprene cab-tire cable)	7	Single-core, lead-in wire
		8	Ground wire
		9	Insulated closed-end connector
2	Rubber bush	4	Spiral ground made of resin
3	Bellmouth		
5	Frame	10	Uras Compound (non-hardening, high-adhesion compound)
6	Epoxy resin adhesive	11	Terminal Box Cover

The red, white, black, and green wires on the cable are wired to phase U, phase V, phase W, and the ground line (E), respectively. If U, V, W, and E are respectively wired to R, S, T, and E, the motor will be rotated in the direction of the cable inlet. Wire U to phase S and V to phase R to reverse the rotation direction.



# Application to Hoppers

## Preventing Bridge Formation in Hoppers

Mount the Uras Vibrators on the hopper wall and apply circular vibration to prevent bridge formation. The success depends largely on the Vibrator models, number of Vibrators, mounting positions, operating method, and particle characteristics.

## Standard Data and Dimensions of Uras Vibrators for Conical and Angular Hoppers without Reinforced Ribs

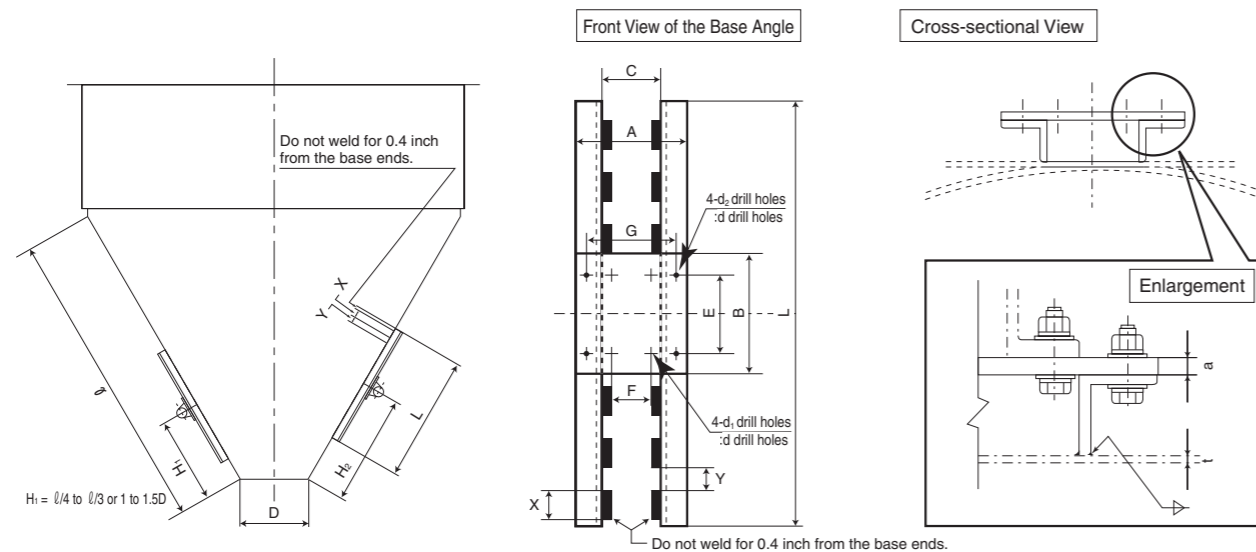
Select an appropriate Uras Vibrator based on plate thickness (t) from the following table. These thicknesses are designed to minimize the amount of welding required. The double amplitude generally ranges from 0.3 to 0.5 mm at the center of the mounted Uras Vibrator. Refer to the following table and adjust plate thickness (t) until the amplitude falls within this range.

Unit: inch

Model	Angle Dimension	Hopper Plate Thickness (t)	E	F	G	A	B	C	L (ft)	a	d	X	Y	Bolt Dimension for d
KEE-0.5-2CW	1-1/4x1-1/4x1/8	15 Gauge to 13 Gauge	4.72	1.57	3.54	4.86	5.9	2.36	1 5/8 to 2 1/4	1/4	0.394	3	2	5/16-18
KEE-1-2CW	1-1/4x1-1/4x3/16	13 Gauge to 10 Gauge	4.72	1.57	3.54	4.86	5.9	2.36	2 to 2 1/2	1/4	0.394	3	2	5/16-18
KEE-2-2CW	1-1/2x1-1/2x3/16	10 Gauge to 7 Gauge	4.72	1.57	3.94	5.36	5.9	2.36	2 1/4 to 5/16	3/8	0.394	3	2	5/16-18
KEE-3.5-2BW	2x2x1/14	7 Gauge to 3 Gauge	5.91	3.54	6.69	8.72	7.5	4.72	2 1/2 to 4	1/2	0.551	3	2	3/8-6
KEE-6-2BW	2-1/2x2-1/2x1/4	3 Gauge to 3/8	7.48	4.33	8.27	10.7	9.4	5.71	3 to 4 1/4	1/2	0.709	3	2	5/8-11
KEE-10-2BW	3x3x3/8	3/8 to 15/32	8.66	4.72	9.45	12.5	11	6.5	3 5/8 to 5	1	0.866	4	3.16	3/4-10
KEE-16-2W	3-1/2x3-1/2x3/8	15/32 to 9/16	9.45	5.51	11.02	12.5	12.2	7.48	4 to 5 1/4	1 1/4	1.12	4	3.16	1-8
KEE-23-2W	4x4x1/2	9/16 to 5/8	10.24	5.91	11.81	15.9	13	7.87	4 5/8 to 6	1 1/2	1.12	4	3.16	1-8
KEE-30-2W	5x5x5/8	5/8 to 3/4	12.2	6.69	14.57	19.5	15.4	9.45	4 5/8 to 6	1 5/8	1.24	6	4	1 1/8-6
KEE-40-2W	6x6x5/8	3/4 to 7/8	13.78	8.66	17.72	23.8	17.3	11.81	5 to 6 1/2	1 3/4	1.62	6	4	1 3/8-6

- Notes: 1. When two or more Vibrators are mounted on one hopper, separate the Vibrators by at least 100 mm. ( |H<sub>1</sub>-H<sub>2</sub>| > 100 mm) Otherwise, blockages may occur.  
 2. When welding the base angle to the hopper, temporarily tighten the base plate to keep it flat.  
 3. Use bolts, Spring washers, flat washers, and nuts to secure the Vibrator.  
 4. Use ASTM A36 or ASTM A283 Gr.D for hopper plate.  
 5. Use whitworth screw thread for "d" drill holes.

## Reference Drawing for Base Angle Manufacture and Mounting

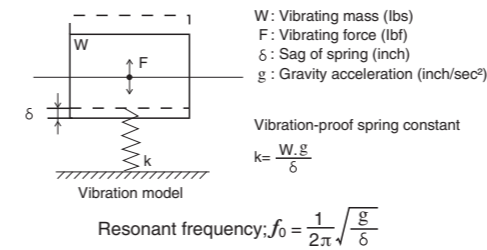


# Vibration Prevention

Transmission of vibrations to the floor

The transmission of vibrations differs depending on the vibration frequency and spring constant of the vibration-proof springs. The transmission of vibrations from vibrating machinery to the floor must be minimized. The table on the right gives the general selection guidelines.

- (1) A vibrating machine must be operated at a vibration frequency at least two times higher than the resonance point. In fact, a vibration frequency that is 5 to 10 times higher is used as indicated in the table on the right.
- (2) The vibrating force transmitted to the floor is expressed as the product of the single amplitude and spring constant. Therefore, the total load applied to the floor is the sum (±) of what is exerted by the weight of the machine itself plus that exerted by the vibration.
- (3) Because the vibration of a vibrating machine is temporarily increased when the machine passes through the resonance point when it is stopped, it will be greater than the values given in the table on the right. Safe values for the total load are 1.5 times the machine weight for a 2-pole or 4-pole vibrator, and 2.0 times the machine weight for a 6-pole or 8-pole vibrator.
- (4) Note that when the resonance point of the floor and building is close to the vibration frequency of operation (especially when the vibration frequency is changed by the vibration feeder), strong vibrations may be generated in locations other than the installation location due to resonance, possibly causing trouble.



No. of Poles	Power Frequency (Hz)	Vibration Frequency (Hz)	Resonant Frequency to (Hz)	Spring Constant k (lbs/in)	Static deflection sigma (in)
2P	60	58.3	5	5111	0.391
	50	48.3	4.6	4328	0.462
4P	60	29.1	3.5	2507	0.798
	50	24.3	3.2	2096	0.954
6P	60	19.3	2.9	1719	1.163
	50	16.1	2.6	1382	1.447
8P	60	14.5	2.5	1279	1.564
	50	12.1	2.3	1079	1.854

- \*1: These values are per 220 lbs of machine mass. The values for other masses are calculated proportionately.  
 \*2: The values given apply for a vibration acceleration of 5G. The values for other accelerations are calculated proportionately.  
 Note: The spring stress is approximately 36000 lbf/inch<sup>2</sup>.

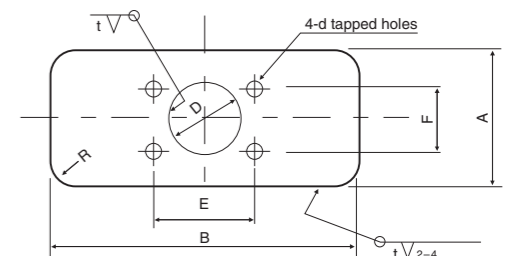
## Method Used to Mount Uras Vibrators on Small Hoppers

## Application to Small Hoppers and Chutes

Use of a base angle in a size given in the table on the previous page is also recommended when mounting a Uras Vibrator on a small hopper or chute. But when the space available is limited, use one of the bases listed below.

Unit: inch

Model	Hopper Plate Thickness (t)	External Dimensions of Base Plate	Base Plate Thickness	E	F	A	B	D	R	Bolt diameter d
KEE-0.5-2CW	16 Gauge to 13 Gauge	2.95x11.8	1/2	4.72	1.57	2.95	11.8	1.57	1.18	5/16-18
KEE-1-2CW	13 Gauge to 10 Gauge	3.54x15.7	1/2	4.72	1.57	3.54	15.7	1.57	1.18	5/16-18
KEE-2-2CW	10 Gauge to 7 Gauge	7.87x19.7	5/8	4.72	1.57	7.87	19.7	3.15	1.57	5/16-18
KEE-3.5-2BW	7 Gauge to 3 Gauge	8.66x19.7	5/8	5.91	3.54	8.66	19.7	4.72	1.97	1/2-12
KEE-6-2BW	3 Gauge to 3/8	9.84x21.7	1	7.48	4.33	9.84	21.7	5.51	2.36	5/8-11
KEE-10-2BW	3/8 to 1/2	11.8x23.6	1	8.66	4.72	11.8	23.6	5.91	2.36	3/4-10



- Notes: 1. Use ASTM A36 or ASTM A283 Gr.D for hopper plate and base plate.  
 2. Use whitworth screw thread for "d" drill holes.