URAS TECHNO

High-Performance Vibrators

URAS VIBRATOR

Engineering knows no borders.

The Global Standard for Vibrators

URAS VIBRATOR

Over 970,000units delivered!

Our extensive equipment lineup provides a large range of vibration generators to a wide variety of regions and environments all around the world.

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

A powerful source of vibration that accomplishes a wide variety of applications, such as feeding, screening, milling, and more.

Powders and bulk material can be supplied, transported, screened, crushed, and packed efficiently all with the power of vibration. Uras Vibrators are used with hoppers, feeders, screens, mills, and so on, setting the world standard for vibration in industrial machines.

60 years of research and development has led to a machine with long life and easy maintenance.

A major feature of the Uras Vibrator is the durability of the bearings, based on our unique design and manufacturing technology. In addition, the frame and bracket are made from spherical graphite cast iron and have a robust, vibration-resistant structure.

Major Applications for Uras Vibrators

Application	No. of Poles P	Vibrating Strength G	Amplitude α
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

With a lineup of over 100 models, our vibrators are highly regarded by industries around the world.

From new materials to mineral resources, from large cities to deserts and oceans, the total number of Uras Vibrators supplied to various industries is over 970,000. In addition to the highly versatile standard type, we have more than 100 different variations including high-frequency and vertical (flange) types in a wide range of sizes.

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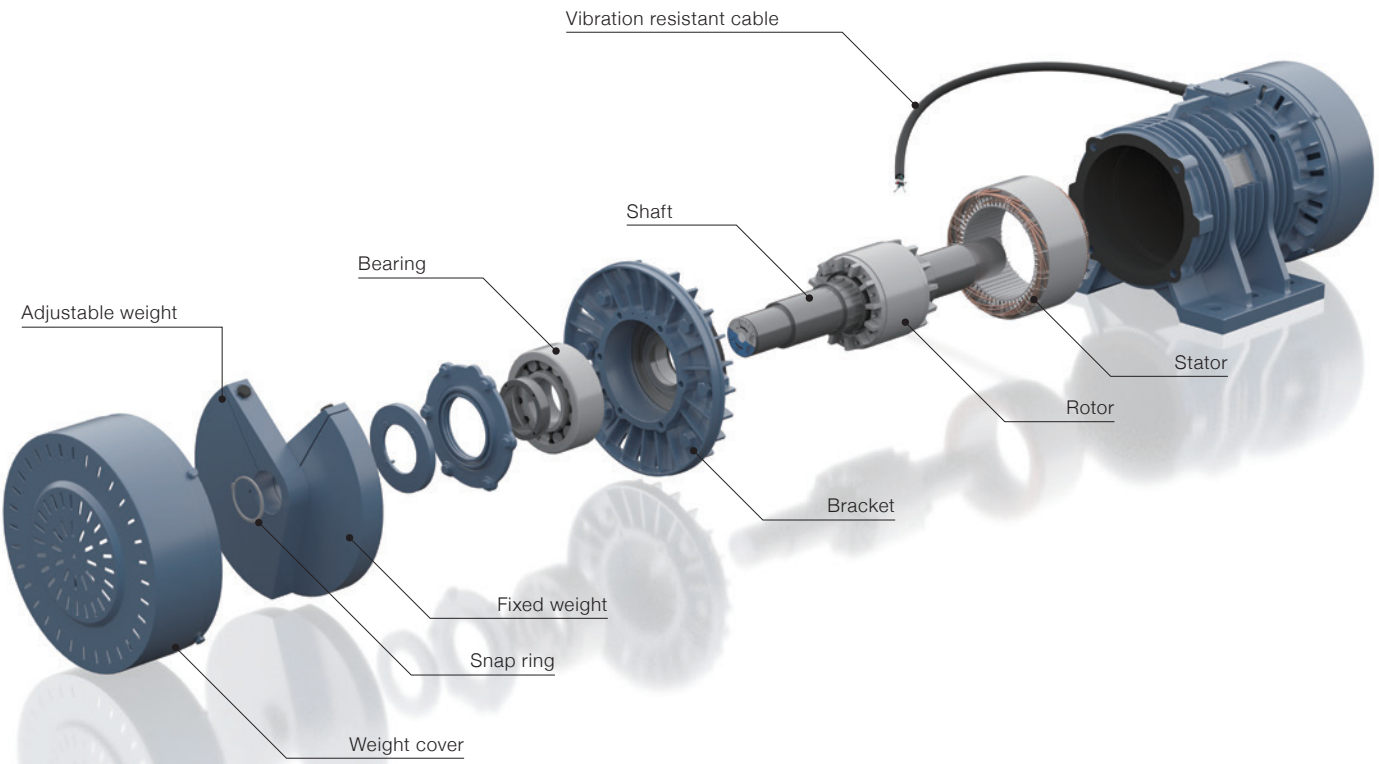
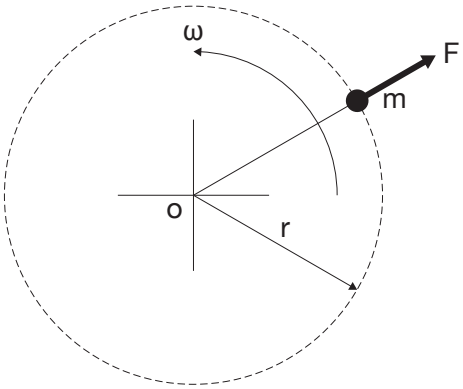
Construction



Uras Vibrators feature an extremely simple mechanism whereby a 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. This reliability comes from the long life of the bearings, easy vibration force adjusting without worrying about weights falling off, and an all-weather coating that allows them to be used indoors as well as outdoors.

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 (the most common motor) and rotated in our vibrators. This generates a great deal of centrifugal force, which is used as the vibrating power.



$$F = mr\omega^2$$

F : Centrifugal force = vibrating force (N)
m: Mass of weights (kg)
o : The center of rotation (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

Standard Model KEE Series	Single-Phase Model SEE Series	High-Frequency Model KHE Series	Flange-type Model KEEV Series
Poles: 2, 4, 6, 8	Poles: 2	Poles: 2	Poles: 4, 6
Vibrating Force: 0.5 – 210kN	Vibrating Force: 0.1 – 3.5kN	Vibrating Force: 1 – 22kN	Vibrating Force: 7.1 – 22.4kN
Voltage: 200 / 400V	Voltage: 100 / 200V	Voltage: 200V	Voltage: 200 / 400V
Output: 0.04 – 14kW	Output: 0.015 – 0.22kW	Output: 0.075 – 2.2kW	Output: 0.35 – 1.2kW

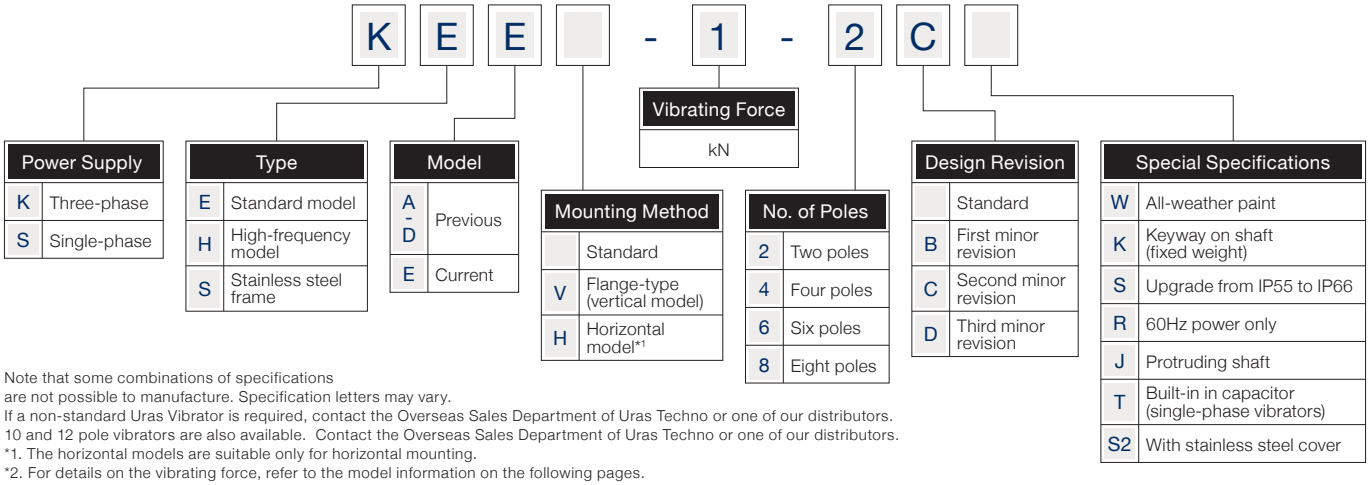
We can also manufacture vibrators for voltages other than the standard voltage specifications given above.
Contact the Overseas Sales Department of Uras Techno for information on how to find the best product for your needs. Custom orders are also available.

Standard Specifications of KEE & SEE Series

Specifications \ Model		KEE Series				SEE Series
		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				
Protection Structure (Vibration Force kN)	Totally Enclosed (IP66)	0.5 – 6	1.5 – 34	3 – 60	5 – 54	0.5 – 3.5 (SEE-0.1-2 is IP43)
	Totally Enclosed, Fan cooled (IP55)	10 – 40	52 – 140	80 – 210	85 – 210	–
Output (kW)		0.040 – 3	0.065 – 7.5	0.2 – 14	0.4 – 12	0.015 – 0.35
Synchronous Revolutions (r/min) 50 / 60Hz		3000 / 3600	1500 / 1800	1000 / 1200	750 / 900	3000 / 3600
Vibrating Force (kN)		0.5 – 40	1.5 – 140	3 – 210	5 – 210	0.1 – 3.5
Bearing (Vibrating Force kN)	Sealed ZZ Bearings	0.5 – 10	1.5 – 12	3 – 18	5 – 20	0.1 – 3.5
	NJ Roller Bearings	16 – 40	17 – 140	24 – 210	32 – 210	–
Cable		Vibration resistant cable 2PNCT (4 core) 2 meter cable, (0.75mm² / 1.25mm² / 2mm² / 5.5mm² / 8mm² / 14mm²) Note: KEE-0.5-2C is 4 core 1 meter, SEE-0.1-2 is 2 core 1m, SEE-0.5-2C is 3 core 1m, SEE-1-2C is 3 core 2m				
Installation Method		Frame leg installation at any angle (w/ exception of KEEH type) For vertical or inclined installation, the terminal box must be positioned at the top.				
Coating Color		Munsell 2.5PB5/2				
Installation and Operator Environment		Can be used indoors and outdoors, assuming ambient temperature of -15°C to 40°C (including installation base). For SEE-0.1-2, SEE-0.5-2C and SEE-1-2C, this range changes to -15°C to 35°C Altitude: 1000m 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)
When using inverters with 400V units, please provide some means to protect against surges. One of the following measures is recommended:
•Use a Uras Vibrator with insulation class F
•Install a surge suppression filter and AC reactor on the inverter output side.
•Use an inverter with surge suppression function (Yaskawa Electric G7 series, etc.).

Model Designation



Note that some combinations of specifications
are not possible to manufacture. Specification letters may vary.
If a non-standard Uras Vibrator is required, contact the Overseas Sales Department of Uras Techno or one of our distributors.
10 and 12 pole vibrators are also available. Contact the Overseas Sales Department of Uras Techno or one of our distributors.
*1. The horizontal models are suitable only for horizontal mounting.
*2. For details on the vibrating force, refer to the model information on the following pages.

Standard Uras Vibrator

High durability made possible only with original Uras technology.
Sets the world standard for vibrator technology.

Three-Phase, Two Poles

Specifications

	Model	Vibrating Force (kN)	Output (kW)	Full Load Current (A) 230 / 460V 60Hz		380V 50Hz	400V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz
Greased and Sealed	KEE-0.5-2C	0.5	40W	0.24	0.15	0.16	0.17	0.17	Custom	Custom
	KEE-1-2C	1	75W	0.41	0.25	0.25	0.29	0.25	0.19	Custom
	KEE-2-2C	2	0.15	0.64	0.37	0.39	0.40	0.40	Custom	Custom
	KEE-3.5-2C	3.5	0.25	1.1	0.64	0.66	0.66	0.67	0.50	0.47
	KEE-6-2C	6	0.4	1.6	0.84	0.88	0.85	0.83	0.64	0.68
	KEE-10-2C	10	0.75	2.7	1.4	1.6	1.5	1.5	1.2	1.1
Periodic Greasing	KEE-16-2B	16	1.2	4.0	2.0	2.5	2.4	2.3	1.8	Custom
	KEE-23-2B	23	1.7	5.7	2.8	3.5	3.4	3.2	2.6	Custom
	KEE-30-2B	30	2.2	7.2	3.7	4.3	4.1	4.0	Custom	Custom
	KEE-40-2B	40	3	9.8	4.9	5.8	5.5	5.3	Custom	3.8

Vibrator Speed

50Hz Power Supply Frequency: 50Hz, 3000r/min
60Hz Power Supply Frequency: 60Hz, 3600r/min

Power Supply

3-Phase 200/200/220V, 50/60/60Hz
3-Phase 400/400/440V, 50/60/60Hz

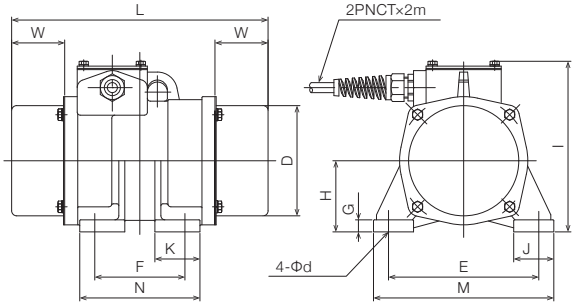
KEE-0.5-2C

	Model	Dimensions (mm) D	E	F	G	H	I	J	K	L	M	N	W	Ød	Rec. Bolt Diam.	Mass (kg)	Drawing No.	Vents Y/N	Protection Structure	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*2	SUS Cover Available
Greased and Sealed	KEE-0.5-2C	110	120	40	10	63	150	33	–	205	145	70	40	10	M8	6.5	1	Without	IP66	R90 or more	Fig.1	○
	KEE-1-2C	110	120	40	10	63	150	33	–	205	145	70	40	10	M8	7.5	1	Without	IP66	R90 or more	Fig.1	○
	KEE-2-2C	110	120	40	10	63	150	33	–	230	145	70	50	10	M8*1	8.5	1	Without	IP66	R90 or more	Fig.1	○
	KEE-3.5-2C	110	150	90	12	71	175	40	45	260	180	120	55	14	M12	14	1	Without	IP66	R90 or more	Fig.1	○
	KEE-6-2C	125	190	110	13	84	195	50	55	300	230	150	60	18	M16	22	1	Without	IP66	R90 or more	Fig.1	○
	KEE-10-2C	155	220	120	16	92	210	60	65	350	270	170	50	22	M20	35	2	With	IP55	R100 or more	Fig.1	○
Periodic Greasing	KEE-16-2B	170	240	140	20	130	260	70	75	425	300	200	65	26	M24	52	2	With	IP55	R100 or more	Fig.1	
	KEE-23-2B	190	260	150	22	142	280	70	80	445	320	210	60	26	M24	66	2	With	IP55	R100 or more	Fig.1	
	KEE-30-2B	225	310	170	25	158	320	85	95	500	380	240	70	33	M30	94	2	With	IP55	R145 or more	Fig.1	
	KEE-40-2B	225	350	220	30	185	360	100	110	560	430	300	70	39	M36	135	2	With	IP55	R145 or more	Fig.1	

*1 Use high tension bolt 8T (SCM). *2 Refer to "Terminal box and vibration resistant cable" on page 19 for the vibration resistant cable structure.

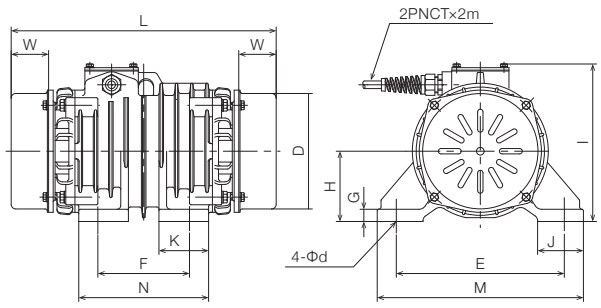
Outline Drawings

Drawing No. 1



*The cable for KEE-0.5-2C is 1 meter long.

Drawing No. 2



Three-Phase, Four Poles

Specifications

	Model	Vibrating Force (kN)	Output (kW)	Full Load Current (A) 230 / 460V 60Hz		380V 50Hz	400V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz
Greased and Sealed	KEE-1.5-4B	1.5	65W	0.5	0.33	0.3	0.31	0.32	0.23	Custom
	KEE-3-4C	3	0.13	0.8	0.52	0.44	0.56	0.46	0.37	0.34
	KEE-6-4C	6	0.25	1.2	0.78	0.78	0.79	0.81	0.64	0.56
	KEE-9-4C	9	0.4	1.7	0.99	1.1	1.1	1.1	0.81	0.75
	KEE-12-4C	12	0.6	2.3	1.3	1.5	1.4	1.4	1.0	0.94
Periodic Greasing	KEE-17-4B	17	0.85	3.2	2.1	2.0	1.9	1.9	1.5	1.3
	KEE-24-4B	24	1.1	3.9	2.2	2.5	2.4	2.4	1.8	1.6
	KEE-34-4B	34	1.5	5.0	2.6	3.1	3.1	3.0	2.1	2.1
	KEE-52-4C	52	2.2	7.5	3.8	4.6	4.3	4.2	3.6	3
	KEE-75-4C	75	3.7	12.3	6.2	7.5	7.1	6.9	5.3	4.9
	KEE-84-4D	84	5.5	18.2	9.4	10.7	10.4	10.0	7.8	7.0
	KEE-110-4B	110	7.5	25	12.5	14.6	14.3	13.9	10.7	9.9
	KEE-140-4B	140	7.5	N/A	N/A	14.7	14.3	13.9	Custom	N/A

Vibrator Speed

50Hz Power Supply Frequency: 25Hz, 1500r/min
60Hz Power Supply Frequency: 30Hz, 1800r/min

Power Supply

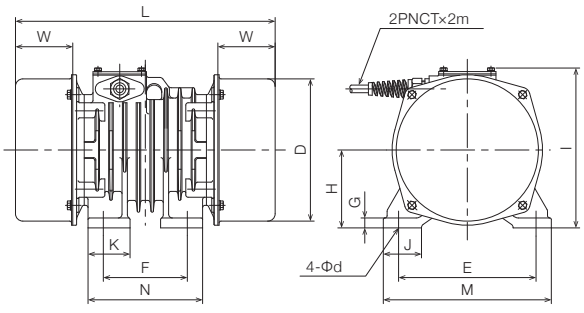
3-Phase 200/200/220V, 50/60/60Hz
3-Phase 400/400/440V, 50/60/60Hz

KEE-17-4B

	Model	Dimensions (mm) D	E	F	G	H	I	J	K	L	M	N	W	Ød	Rec. Bolt Diam.	Mass (kg)	Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*	Snap Ring	Thrust Bearing	SUS Cover Available
Greased and Sealed	KEE-1.5-4B	110	120	40	10	63	150	33	–	255	145	70	65	10	M8	11	1	Without	IP66	R90 or more	Fig.1	Without	Without	○
	KEE-3-4C	155	150	80	10	84	180	35	40	265	180	110	55	12	M10	17	1	Without	IP66	R90 or more	Fig.1	Without	Without	○
	KEE-6-4C	170	160	100	12	92	195	40	45	315	190	130	75	14	M12	24	1	Without	IP66	R90 or more	Fig.1	Without	Without	○
	KEE-9-4C	190	180	110	13	102	210	50	55	340	220	150	75	18	M16	34	3	Without	IP66	R90 or more	Fig.1	Without	Without	○
	KEE-12-4C	225	220	140	16	120	240	60	65	360	270	190	65	22	M20	46	3	Without	IP66	R100 or more	Fig.1	Without	Without	○
Periodic Greasing	KEE-17-4B	245	240	140	20	130	260	70	75	420	300	200	80	26	M24	65	3	Without	IP66	R100 or more	Fig.1	Without	Without	
	KEE-24-4B	265	260	150	22	142	280	70	80	480	320	210	95	26	M24	84	3	Without	IP66	R100 or more	Fig.1	Without	Without	
	KEE-34-4B	295	310	170	25	158	320	85	95	525	380	240	95	33	M30	125	3	Without	IP66	R145 or more	Fig.1	With	Without	
	KEE-52-4C	345	350	220	30	185	365	100	110	585	430	300	85	39	M36	180	3	With	IP55	R145 or more	Fig.1	With	Without	
	KEE-75-4C	395	380	125	33	210	415	105	–	630	460	330	100	39	M36	245	4	With	IP55	R195 or more	Fig.2	With	Without	
	KEE-84-4D	395	380	125	33	210	415	105	–	665	460	330	100	39	M36	285	4	With	IP55	R195 or more	Fig.2	With	Without	
	KEE-110-4B	465	440	140	36	240	475	125	–	730	530	370	120	45	M42	395	4	With	IP55	R215 or more	Fig.2	With	With	
	KEE-140-4B	465	440	140	36	240	475	125	–	800	530	370	120	45	M42	470	4	With	IP55	R215 or more	Fig.2	With	With	

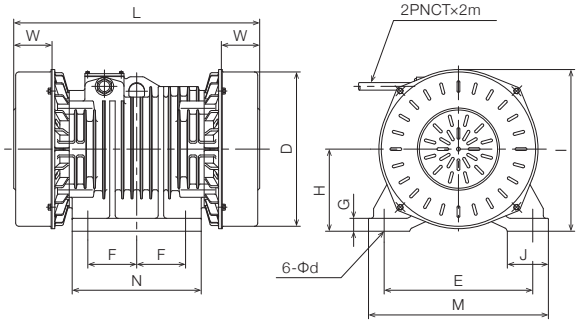
* Refer to “Terminal box and vibration resistant cable” on page 19 for the vibration resistant cable structure.

Drawing No. 3



Note: The KEE-52-4C model has vents

Drawing No. 4



Standard Uras Vibrator

High durability made possible only with original Uras technology.
Sets the world standard for vibrator technology.

Three-Phase, Six Poles

Specifications

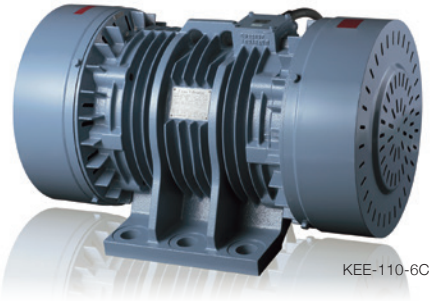
	Model	Vibrating Force (kN)	Output (kW)	Full Load Current (A)						
				230 / 460V 60Hz		380V 50Hz	400V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz
Greased and Sealed	KEE-3-6B	3	0.2	1.1	0.65	0.75	0.87	0.82	0.61	0.52
	KEE-5-6B	5	0.35	1.7	1.0	1.1	1.1	1.1	0.84	0.74
	KEE-9-6C	9	0.6	2.9	1.7	1.9	1.9	1.9	1.4	1.2
	KEE-13-6C	13	0.85	3.9	2.1	2.3	2.3	2.3	1.7	1.5
	KEE-18-6C	18	1.2	4.8	2.7	3.2	3.1	3.2	2.3	2.1
Periodic Greasing	KEE-24-6D	24	1.6	6.5	3.8	4.1	4.0	4.1	3.0	2.9
	KEE-34-6B	34	2.2	8.2	4.6	5.3	5.2	5.1	3.9	3.6
	KEE-45-6C	45	3	10.8	5.7	6.9	6.7	6.6	5.0	4.6
	KEE-60-6C	60	3.7	13.4	7.4	8.1	7.9	7.8	5.9	5.2
	KEE-80-6D	80	5.5	18.5	9.8	11.4	11.0	10.8	8.3	7.3
	KEE-110-6C	110	7.5	Custom	14.4	16.5	16.3	16.2	12.6	11.3
	KEE-140-6B	140	9	34.5	17.3	20	19.3	18.9	15	13
	KEE-165-6B	165	11	40.1	20.1	24	23	22	17	15.5
	KEE-185-6B	185	13	45.6	22.8	26	26	24	Custom	15.3
	KEE-210-6B	210	13	Custom	29	32	32	32	Custom	Custom

Vibrator Speed

50Hz Power Supply Frequency: 16.7Hz, 1000r/min
60Hz Power Supply Frequency: 20Hz, 1200r/min

Power Supply

3-Phase 200/200/220V, 50/60/60Hz
3-Phase 400/400/440V, 50/60/60Hz



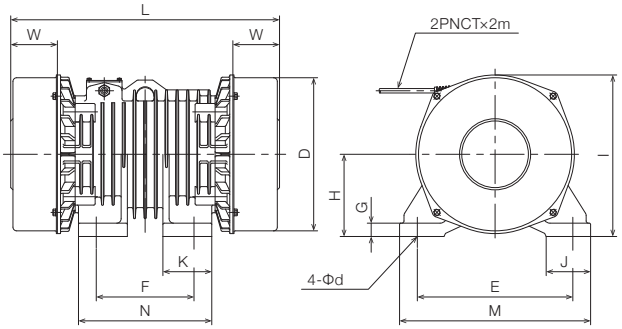
KEE-110-6C

	Model	Dimensions (mm)												Rec. Bolt Diam.	Eye Bolt (mm)	Mass (kg)	Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*	Snap Ring	Thrust Bearing	SUS Cover Available
		D	E	F	G	H	I	J	K	L	M	N	W	Ød										
Greased and Sealed	KEE-3-6B	170	160	100	12	92	195	40	45	330	190	130	85	14	M12	N/A	25	5	Without	IP66	R90 or more	Fig.1	Without	Without	○
	KEE-5-6B	190	180	110	13	102	210	50	55	365	220	150	90	18	M16	N/A	36	5	Without	IP66	R90 or more	Fig.1	Without	Without	○
	KEE-9-6C	225	220	140	16	120	240	60	65	410	270	190	95	22	M20	N/A	54	5	Without	IP66	R100 or more	Fig.1	Without	Without	
	KEE-13-6C	245	240	140	20	130	260	70	75	445	300	200	105	26	M24	N/A	71	5	Without	IP66	R100 or more	Fig.1	Without	Without	
	KEE-18-6C	265	260	150	22	142	280	70	80	505	320	210	120	26	M24	N/A	94	5	Without	IP66	R100 or more	Fig.1	With	Without	
Periodic Greasing	KEE-24-6D	295	310	170	25	158	320	85	95	565	380	240	120	33	M30	N/A	130	5	Without	IP66	R145 or more	Fig.1	With	Without	
	KEE-34-6B	345	350	220	30	185	365	100	110	605	430	300	105	39	M36	N/A	175	5	Without	IP66	R145 or more	Fig.1	With	Without	
	KEE-45-6C	345	350	220	30	185	365	100	110	685	430	300	135	39	M36	N/A	215	5	Without	IP66	R145 or more	Fig.1	With	Without	
	KEE-60-6C	395	380	125	33	210	415	105	–	700	460	330	135	39	M36	N/A	285	6	Without	IP66	R195 or more	Fig.2	With	Without	
	KEE-80-6D	395	380	125	33	210	415	105	–	800	460	330	165	39	M36	N/A	340	6	With	IP55	R195 or more	Fig.2	With	Without	
	KEE-110-6C	465	440	140	36	240	475	125	–	820	530	370	165	45	M42	N/A	460	7	With	IP55	R215 or more	Fig.2	With	With	
	KEE-140-6B	515	480	140	38	265	525	125	–	940	570	510	155	45	M42	M24	655	8	With	IP55	230V: R270+ > 380V: R215+	Fig.2	With	With	
	KEE-165-6B	515	480	140	38	265	525	125	–	980	570	510	180	45	M42	M24	715	8	With	IP55		Fig.2	With	With	
	KEE-185-6B	560	520	140	38	290	570	125	–	970	610	510	170	45	M42	M24	815	8	With	IP55		Fig.2	With	With	
	KEE-210-6B	591	520	140	45	303	595	125	–	950	610	510	160	45	M42	M24	895	8	With	IP55		Fig.2	With	With	

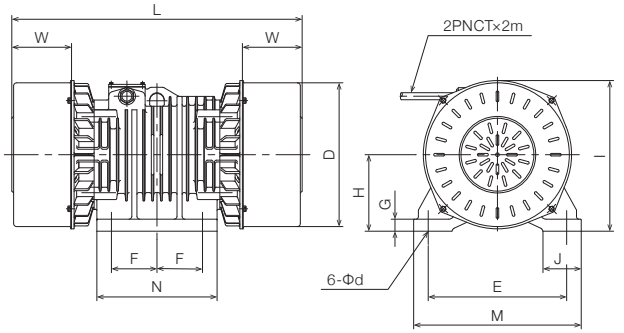
* Refer to “Terminal box and vibration resistant cable” on page 19 for the vibration resistant cable structure.

Outline Drawings

Drawing No. 5



Drawing No. 6



Note: The KEE-80-6D model has vents.

Three-Phase, Eight Poles

Specifications

	Model	Vibrating Force (kN)	Output (kW)	Full Load Current (A) 230 / 460V 60Hz		380V 50Hz	400V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz
Greased and Sealed	KEE-5-8B	5	0.4	2.4	1.5	1.6	1.6	1.7	Custom	Custom
	KEE-10-8C	10	0.75	4.9	3.3	3.0	3.3	3.5	Custom	2.1
	KEE-20-8C	20	1.5	7.5	4.4	4.8	4.9	5.1	Custom	3.1
Periodic Greasing	KEE-32-8B	32	2.2	Custom	Custom	6.0	6.1	6.2	4.7	Custom
	KEE-54-8C	54	3.7	Custom	Custom	9.1	9.2	9.2	6.8	6.3
	KEE-85-8B	85	6	27	16.2	17.3	18.0	18.6	12.8	12
	KEE-110-8C	110	7.5	37.3	18.7	18.8	20	Custom	15.1	12.9
	KEE-135-8C	135	9	39	19.5	22	21	21	15.7	14
	KEE-170-8C	170	11	Custom	23.5	28	30	33	22	19
	KEE-210-8B	210	12	Custom	29	31	33	34	Custom	Custom

Vibrator Speed

50Hz Power Supply Frequency: 12.5Hz, 750r/min
60Hz Power Supply Frequency: 15Hz, 900r/min

Power Supply

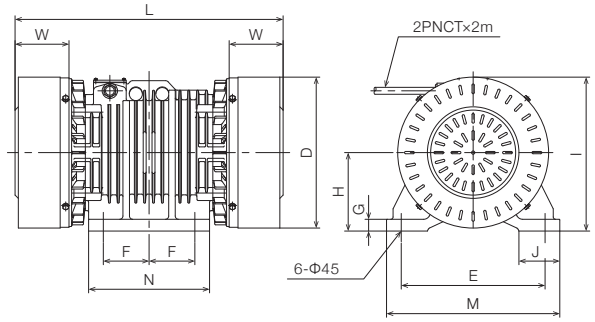
3-Phase 200/200/220V, 50/60/60Hz
3-Phase 400/400/440V, 50/60/60Hz

KEE-210-8B

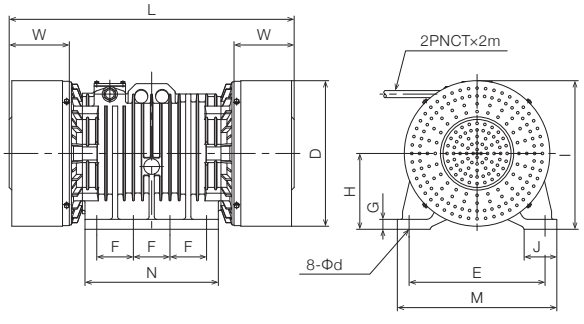
	Model	Dimensions (mm) D	E	F	G	H	I	J	K	L	M	N	W	Ød	Rec. Bolt Diam.	Eye Bolt (mm)	Mass (kg)	Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*	Snap Ring	Thrust Bearing
Greased and Sealed	KEE-5-8B	225	220	140	16	120	240	60	65	410	270	190	95	22	M20	N/A	52	5	Without	IP66	R100 or more	Fig.1	Without	Without
	KEE-10-8C	265	260	150	22	142	280	70	80	505	320	210	120	26	M24	N/A	88	5	Without	IP66	R100 or more	Fig.1	With	Without
	KEE-20-8C	295	310	170	25	158	320	85	95	610	380	240	150	33	M30	N/A	150	5	Without	IP66	R145 or more	Fig.1	With	Without
Periodic Greasing	KEE-32-8B	345	350	220	30	185	365	100	110	710	430	300	155	39	M36	N/A	230	5	Without	IP66	R145 or more	Fig.1	With	Without
	KEE-54-8C	395	380	125	33	210	415	105	–	785	460	330	175	39	M36	N/A	335	6	Without	IP66	R195 or more	Fig.2	With	Without
	KEE-85-8B	465	440	140	36	240	475	125	–	900	530	370	205	45	M42	N/A	520	7	With	IP55	R215 or more	Fig.2	With	With
	KEE-110-8C	515	480	140	38	265	525	125	–	1030	570	510	195	45	M42	M24	710	8	With	IP55	230V: R270+ > 380V: R215+	Fig.2	With	With
	KEE-135-8C	515	480	140	38	265	525	125	–	1080	570	510	230	45	M42	M24	795	8	With	IP55		Fig.2	With	With
	KEE-170-8C	560	520	140	38	290	570	125	–	1090	610	510	230	45	M42	M24	920	8	With	IP55		Fig.2	With	With
	KEE-210-8B	591	520	140	45	303	595	125	–	1090	610	510	230	45	M42	M30	1090	8	With	IP55		Fig.2	With	With

* Refer to “Terminal box and vibration resistant cable” on page 19 for the vibration resistant cable structure.

Drawing No. 7



Drawing No. 8



Standard Single Phase Uras Vibrator

SERIES SEE

Can be powered at home with any single-phase power source, or outdoors by a portable power source.

Single-Phase, Two Poles

Specifications

Vibrator Speed

50Hz Power Supply Frequency: 50Hz, 3000r/min
60Hz Power Supply Frequency: 60Hz, 3600r/min

Power Supply

Single-Phase 100/100/110V, 50/60/60Hz
Single-Phase 200/200/220V, 50/60/60Hz

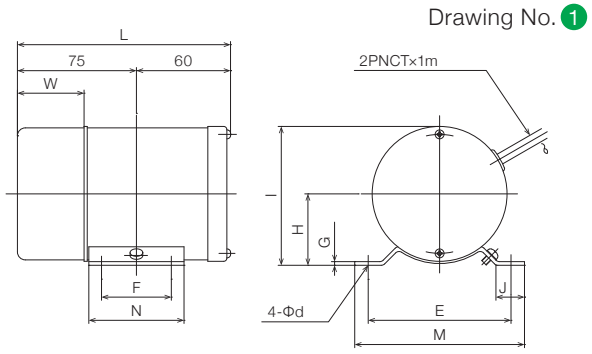
	Model	Vibrating Force (kN)	Output (kW)	Full Load Current (A) 100V 60Hz	200V 50Hz	200V 60Hz	220V 60Hz	220V 50Hz	230V 50Hz	240V 50Hz
Greased and Sealed	SEE-0.1-2	0.1/0.15	15	0.39	Custom			0.20	Custom	0.22
	SEE-0.5-2C	0.5	30	0.53	0.32	0.27	0.26	0.28	Custom	0.29
	SEE-1-2C	1	65	1.2	0.61	0.62	0.60	0.51	Custom	0.54
	SEE-2-2C	2	120	1.9	1.11	0.98	0.97	0.94	Custom	0.94
	SEE-3.5-2C	3.5	220	2.9	1.7	1.6	1.6	1.4	Custom	1.4

	Model	Dimensions (mm) D	E	F	G	H	I	J	K	L	M	N	W	Ød	Rec. Bolt Diam.	Mass (kg)	Drawing No.	Protection Structure	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*	SUS Cover Available
Greased and Sealed	SEE-0.1-2	85	90	44	2.3	45	90	18	75	135	107	60	45	8.5	M6	2.5	1	IP42	R90 or more	–	–
	SEE-0.5-2C	110	120	40	10	63	170	33	–	205	145	70	40	10	M8	7	2	IP66	R90 or more	Fig.1	○
	SEE-1-2C	105	130	80	10	62	175	37	40	210	160	110	40	12	M10	9.5	2	IP66	R90 or more	Fig.1	–
	SEE-2-2C	110	150	90	12	71	175	40	45	230	180	120	40	14	M12	13	2	IP66	R90 or more	Fig.1	○
	SEE-3.5-2C	125	190	110	13	84	195	50	55	300	230	150	60	18	M16	21	2	IP66	R90 or more	Fig.1	○

The vibrating force of the SEE-0.1-2 is fixed. This model is for indoor use only. Use the SEE-0.1-2, -0.5-2C, -1-2B at an ambient temperature between -15°C to +35°C.
The five SEE models use Greased and Sealed bearings. * Refer to “Terminal box and vibration resistant cable” on page 19 for the vibration resistant cable structure.

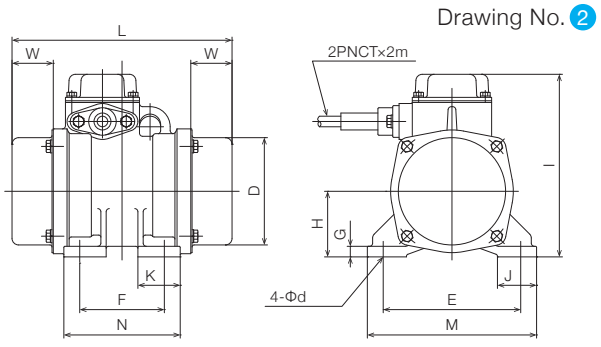
Outline Drawings

Drawing No. 1



Units: mm

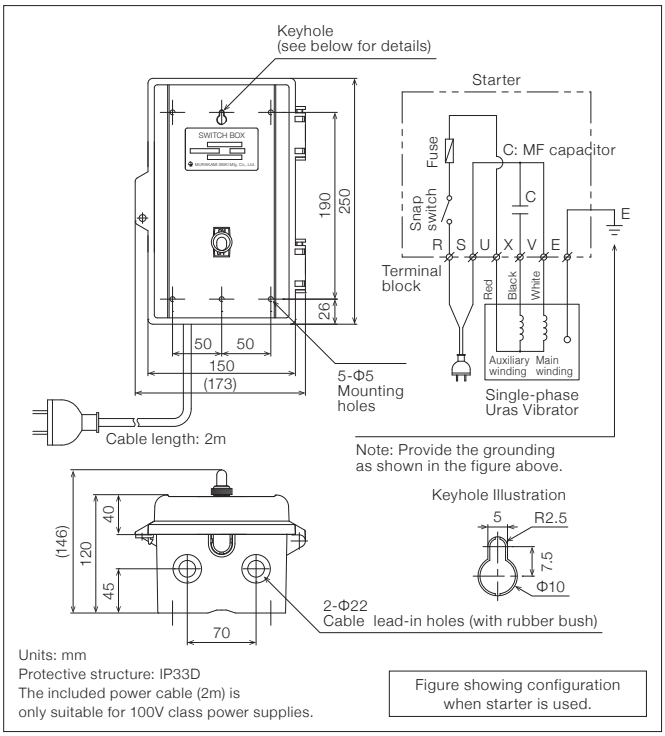
Drawing No. 2



The cable length for the SEE-0.5-2C is one meter.
The SEE-2-2C and SEE-3.5-2C cables have 4 cores.

Starter

The SEE-0.1-2, SEE-0.5-2C, SEE-1-2C models use a capacitor. The starter (accessory) shown here is used in models SEE-2-2C and SEE-3.5-2C.



Units: mm
Protective structure: IP33D
The included power cable (2m) is only suitable for 100V class power supplies.

Figure showing configuration when starter is used.

Uras Vibrator Standard Model

SERIES KSE

This stainless steel type is ideal for the food and pharmaceutical industries, where sanitation is priority number one.

Three-Phase, Two Poles, Four Poles, Six Poles

Specifications

Vibrator Speed

2 Poles 50Hz Power Supply Frequency: 50Hz, 3000r/min
60Hz Power Supply Frequency: 60Hz, 3600r/min
4 Poles 50Hz Power Supply Frequency: 25Hz, 1500r/min
60Hz Power Supply Frequency: 30Hz, 1800r/min
6 Poles 50Hz Power Supply Frequency: 16.7Hz, 1000r/min
60Hz Power Supply Frequency: 20Hz, 1200r/min

Power Supply

3-Phase 200/200/220V, 50/60/60Hz
3-Phase 400/400/440V, 50/60/60Hz

	Model	Vibrating Force (kN)	Poles	Output (kW)	Full Load Current (A)						
					230 / 460V 60Hz		380V 50Hz	400V 50Hz	415V 50Hz	525V 50Hz	575V 60Hz
Greased and Sealed	KSE-3.5-2	3.5	2	0.2	1.0	0.73	0.70	0.75	0.82	0.57	0.48
	KSE-3-4B	3	4	0.13	0.76	0.51	0.43	0.55	0.40	0.43	0.37
	KSE-6-4	6	4	0.2	0.93	0.59	0.60	0.60	0.65	0.47	0.41
	KSE-9-4	9	4	0.3	1.5	1.0	0.98	1.1	1.1	0.8	0.68
	KSE-5-6	5	6	0.35	1.7	1.1	1.1	1.2	1.2	0.89	0.77

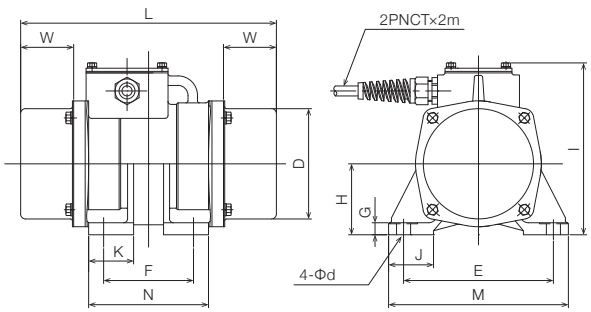
KSE-5-6

	Model	Dimensions (mm)													Rec. Bolt Diam.	Mass (kg)	Drawing No.	Vents	Protection Structure	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*
		D	E	F	G	H	I	J	K	L	M	N	W	Ød							
Greased and Sealed	KSE-3.5-2	110	150	90	12	71	175	45	45	260	180	120	55	14	M12	14	1	Without	IP66	R90 or more	Fig.1
	KSE-3-4B	155	150	80	10	84	180	35	40	265	180	110	55	12	M10	17	2	Without	IP66	R90 or more	Fig.1
	KSE-6-4	170	160	100	12	92	195	40	45	315	190	130	75	14	M12	25	2	Without	IP66	R90 or more	Fig.1
	KSE-9-4	190	180	110	13	102	210	50	60	360	220	160	75	18	M16	36	2	Without	IP66	R90 or more	Fig.1
	KSE-5-6	190	180	110	13	102	210	50	60	395	220	160	90	18	M16	38	2	Without	IP66	R90 or more	Fig.1

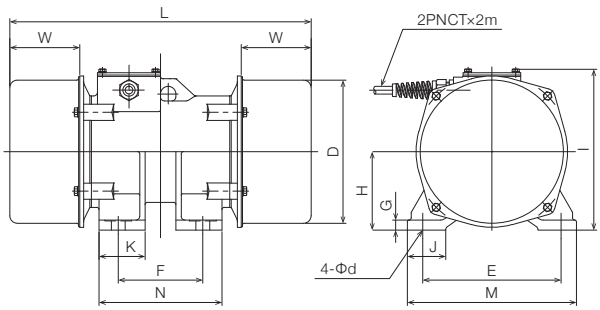
* Refer to “Terminal box and vibration resistant cable” on page 19 for the vibration resistant cable structure.

Outline Drawings

Drawing No. 1



Drawing No. 2



Flange Mount Uras Vibrator

SERIES KEEV

Flange-type models generate 3D vibrations with a single unit, making them ideal for circular screens.

Three-Phase, Four Poles, Six Poles

Specifications

Vibrator Speed

4 Poles 50Hz Power Supply Frequency: 25Hz, 1500r/min
60Hz Power Supply Frequency: 30Hz, 1800r/min
6 Poles 50Hz Power Supply Frequency: 16.7Hz, 1000r/min
60Hz Power Supply Frequency: 20Hz, 1200r/min

Power Supply

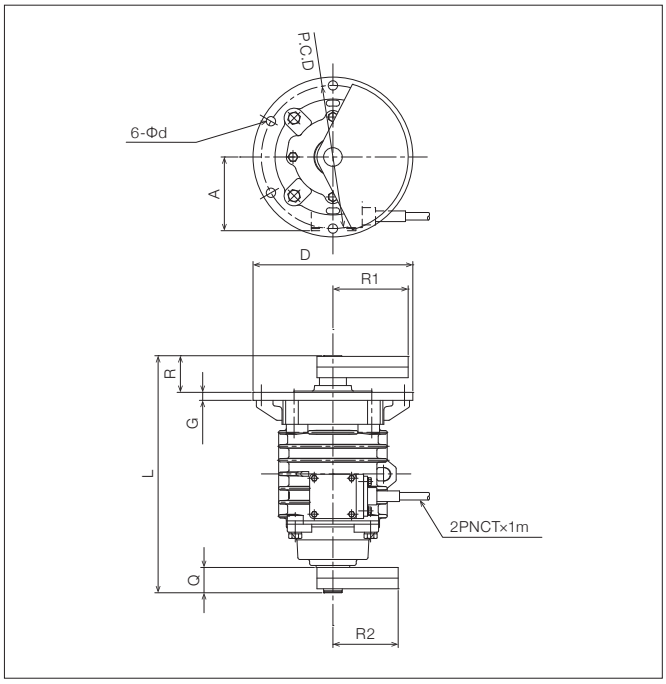
3-Phase 200V/50Hz, 3-Phase 200/220V, 60/60Hz
3-Phase 400V/50Hz, 3-Phase 400/440V, 60/60Hz

Model	Vibrating Force (kN)		Poles	Output (kW)	Full Load Current (A)						
	Flange Side	Counter-flange Side			230V 60Hz	380V 50Hz	400V 50Hz	415V 50Hz	460V 50Hz	525V 50Hz	575V 60Hz
KEEV-7-4 / KEEV-7-4R	4.4	2.7	4	0.4	1.9	1.1	1.1	1.1	0.98	0.81	0.7
KEEV-15-4 / KEEV-15-4R	10.4	4.9	4	0.85	3.4	2.0	1.9	1.9	1.7	1.5	1.3
KEEV-20-4 / KEEV-20-4R	14.1	6.4	4	1.2	4.2	2.7	2.7	2.6	2.3	1.9	1.8
KEEV-8-6 / KEEV-8-6R	5.0	3.1	6	0.35	1.7	1.1	1.1	1.1	0.95	0.84	0.74
KEEV-16-6 / KEEV-16-6R	11.0	5.3	6	0.85	3.9	2.3	2.3	2.3	2.1	1.7	1.5
KEEV-22-6 / KEEV-22-6R	15.4	7.0	6	1.2	5.1	3.2	3.1	3.2	2.8	2.3	2.1

Model	Dimensions (mm)										Rec. Bolt Diam.	Mass (kg) 50/60Hz	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*	Bearing Lubrication Type
	A	D	G	L	Q	R	R1 50/60Hz	R2 50/60Hz	P.C.D	Ød					
KEEV-7-4 / KEEV-7-4R	115	240	12	355	38	55	104/92	90/80	215	14	M12	30/28	R75 or more	Fig.3	Greased and Sealed
KEEV-15-4 / KEEV-15-4R	130	275	13	395	44	66	130/116	104/92	245	18	M16	49/47	R75 or more	Fig.3	Periodic Greasing
KEEV-20-4 / KEEV-20-4R	130	275	13	406	56	74	137/122	108/96	245	18	M16	58/55	R75 or more	Fig.3	Periodic Greasing
KEEV-8-6 / KEEV-8-6R	115	240	12	355	38	55	142/126	123/110	215	14	M12	36/33	R75 or more	Fig.3	Greased and Sealed
KEEV-16-6 / KEEV-16-6R	130	275	13	395	44	66	174/154	139/123	245	18	M16	67/63	R75 or more	Fig.3	Periodic Greasing
KEEV-22-6 / KEEV-22-6R	130	275	13	406	56	74	185/164	146/129	245	18	M16	78/72	R75 or more	Fig.3	Periodic Greasing

60Hz only models are designated with an R.
* Refer to “Terminal box and vibration resistant cable” on page 19 for the vibration resistant cable structure.

Outline Drawings



KEEV-15-4

High Frequency Uras Vibrator

SERIES KHE

A high-frequency Uras series that is specialized for secondary concrete production.

High Frequency Uras Vibrators have a frequency of between 100 to 180 Hz, high enough to compact even concrete. They can be used for various sizes of concrete products, ranging from tunneling shields to U-shaped gutters.
*Inverters are required when generating high-frequency vibrations.

Three-Phase, Two Poles (100/120Hz)

Specifications

Model	Vibrating Force (kN)	Output (kW)	Full Load Current (A)			
			400V 100Hz	400V 120Hz	415V 100Hz	415V 120Hz
KHE-1-2	1.0	75W	0.27	0.27	0.35	0.30
KHE-2-2	2.0	0.15	0.60	0.50	Custom	
KHE-4-2	4.0	0.4	0.99	0.95	0.98	0.95
KHE-7.5-2	7.5	0.75	1.5	1.6	Custom	
KHE-12-2	12	1.2	2.3	2.3	2.2	2.2
KHE-16-2	16	1.6	3.0	3.1	2.9	3.0
KHE-22-2	22	2.2	4.1	4.2	Custom	

Vibrator Speed

100Hz Power Supply Frequency: 100Hz, 6000r/min
120Hz Power Supply Frequency: 120Hz, 7200r/min

Power Supply

Three-Phase 200/200V, 100/120Hz

KHE-1-2

Three-Phase, Two Poles (150/180Hz)

Specifications

Model	Vibrating Force (kN)	Output (kW)	Full Load Current (A)			
			200V 150Hz	200V 180Hz	400V 150Hz	400V 180Hz
KHE-1-2T	1.0	75W	0.61	0.55	0.30	0.28
KHE-2-2T	2.0	0.15	0.90	0.91	0.45	0.46
KHE-4-2T	4.0	0.4	2.2	2.2	1.1	1.1
KHE-7.5-2T	7.5	0.75	3.6	3.5	1.5	1.6
KHE-12-2T	12	1.2	4.7	4.8	2.4	2.4

Vibrator Speed

150Hz Power Supply Frequency: 150Hz, 9000r/min
180Hz Power Supply Frequency: 180Hz, 10800r/min

Power Supply

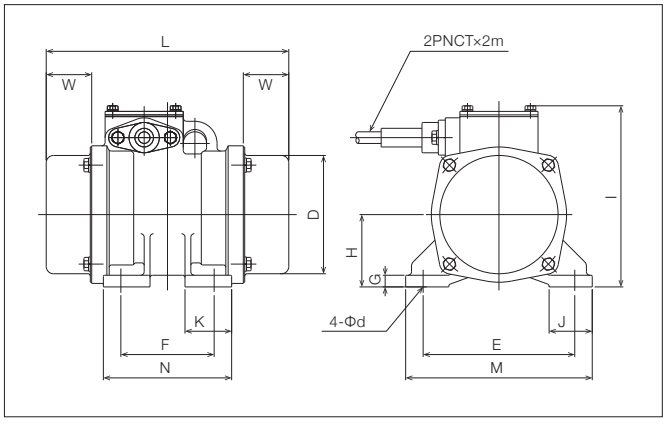
Three-Phase 200/200V, 150/180Hz

V1000 inverter
by
Yaskawa Electric Corporation

Model	Dimensions (mm)													Rec. Bolt Diam.	Mass (kg)	Protection Structure	Min. Cable Bending Radius (mm)	Vib. Resistant Cable Type*	Bearing Lubrication Type
	D	E	F	G	H	I	J	K	L	M	N	W	Ød						
KHE-1-2 / KHE-1-2T	90	120	40	9	56	145	35	–	190	145	65	40	10	M8	7	IP66	R90 or more	Fig.3	Greased and Sealed
KHE-2-2 / KHE2-2T	105	130	80	10	62	160	37	40	210	160	110	40	12	M10	9	IP66	R90 or more	Fig.3	Greased and Sealed
KHE-4-2 / KHE-4-2T	115	150	90	12	71	175	40	45	290	180	120	40	14	M12	17	IP66	R90 or more	Fig.3	Greased and Sealed
KHE-7.5-2 / KHE-7.5-2T	125	190	110	13	84	195	50	55	310	230	150	40	18	M16	24	IP66	R100 or more	Fig.3	Periodic Greasing
KHE-12-2 / KHE-12-2T	135	220	120	16	92	210	60	65	365	270	170	51	22	M20	34	IP55	R100 or more	Fig.3	Periodic Greasing
KHE-16-2	170	240	140	20	130	260	70	75	425	300	200	62	26	M24	49	IP55	R100 or more	Fig.3	Periodic Greasing
KHE-22-2	190	260	150	22	142	280	70	80	445	320	210	61	26	M24	62	IP55	R100 or more	Fig.3	Periodic Greasing

* Refer to “Terminal box and vibration resistant cable” on page 19 for the vibration resistant cable structure.

Outline Drawings



Inverter Drive

A list of potential combinations when using one or two high-frequency units along with one inverter. Note that these examples use Yaskawa Electric Corporation inverters.

Model	Inverter Model: CIMR-□ (kW)	
	With 1 Uras Vibrator	With 2 Uras Vibrators
KHE-1-2 / KHE-1-2T	VA2A0001 (0.1)	VA2A0002 (0.2)
KHE-2-2 / KHE2-2T	VA2A0002 (0.2)	VA2A0004 (0.4)
KHE-4-2 / KHE-4-2T	VA2A0004 (0.4)	VA2A0006 (0.75)
KHE-7.5-2 / KHE-7.5-2T	VA2A0006 (0.75)	VA2A0010 (1.5)
KHE-12-2 / KHE-12-2T	VA2A0010 (1.5)	VA2A0012 (2.2)
KHE-16-2	VA2A0010 (1.5)	VA2A0020 (3.7)
KHE-22-2	VA2A0012 (2.2)	VA2A0020 (3.7)

Options

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

•Special voltages

The Uras Vibrators can be made for various voltages such as 380V/50Hz, 415V/50Hz, 460V/60Hz, 575V/60Hz and so on.
Dual voltage models are also available.

•Paint specifications

It is possible to change coating and paint color depending on the customer's usage environments and needs.
•Examples
All-weather paint: Increased paint thickness compared to the standard paint.
Anti-corrosion coating: Uses epoxy resin paint with excellent durability in the presence of corrosive gas.

•Insulation classes (Class B, Class F)

•Vibrator coupling

Uras Vibrators can be coupled together, increasing the force and making the vibrations uniform. Single-shaft and double-shaft types are available.

An example of connecting two units together with a tire-type coupling

KEE-34-4BJ1, KEE-34-4BJ2

•Divided weight covers

Covers can be split vertically or horizontally

•Cable extensions

•Support for IP66 models equipped with vents

IP55 can be changed to IP66 level of protection. This excludes KEE-10-2C, 16-2B, 23-2B.

•Mounting base compatible with older models

KED, KEC, KEB, KEA series can be used with modern mounting bases. For example, KEB-5-4 --> KEE-6-4C.

•Safety cable

For drop prevention, comes with a wire and joining shackle.

Safety wire

Top: Φ2.5mm Bottom: Φ6.0mm

•CSA and CE marking

CSA and CE markings are available for all standard voltages.

•Stainless cover

Please check the specification page
for which models can use stainless steel (SUS) cover.

Stainless steel cover

KEE-3-4CS3

•Vibration force adjustment

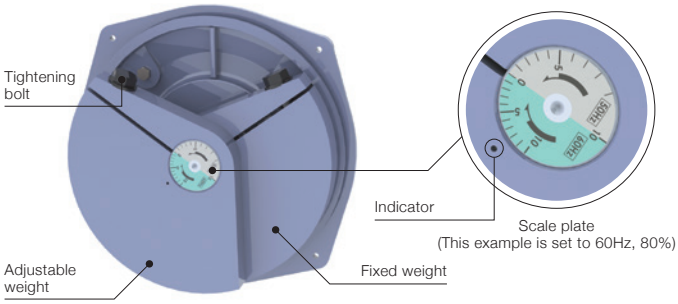
Service for setting the vibrating force. Custom orders are adjusted to the vibrating force specified by the customer.

How to Adjust the Vibrating Force

The Uras Vibrator has fixed weights and adjustment weights attached to both ends of the shaft.
You can adjust the vibration force by changing the mounting angle of the adjustment weight.

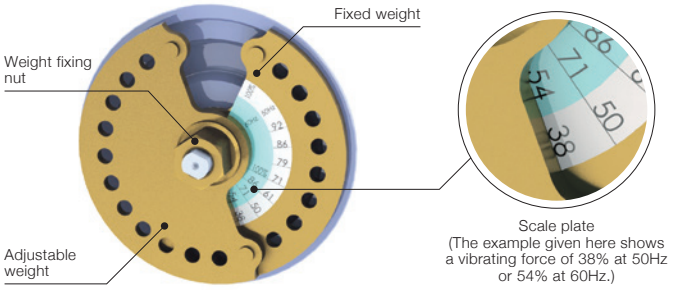
Fan-shaped weight adjustment

To adjust the force, remove the weight cover and loosen the adjustment weight tightening bolt. Turn the adjustment weight indicator on the scale plate to the required vibration force, and then re-tighten the tightening bolt. Set the same value for the scale plates on both ends of the shaft. Finally, reattach the weight cover.
This photo shows an adjustment of 80% of the maximum vibrating force at 60 Hz.



Press weight adjustment (for the KEE-0.5-2C, 1-2C, 2-2C, and SEE-0.5-2C)

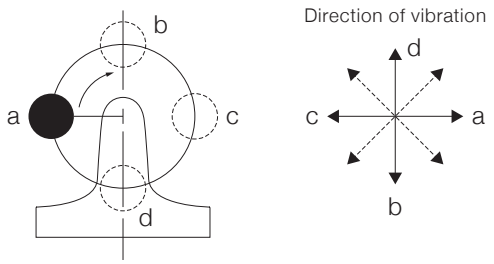
The picture to the right shows the default setting when the vibrator is shipped. The scale plate is set to a vibrating force of 38% at 50Hz, and 54% at 60Hz. To adjust this, first remove the cover, and loosen the locking bolts securing the weights at both ends of the rotor shaft. Then move the adjustable weight slightly toward the end of the shaft until the weight can move freely. Rotate the scale plate until it is at the desired value and place the bump on the adjustable weight into the hole on the fixed weight. After confirming the desired value, tighten the locking bolts. Finally, reattach the weight cover.
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

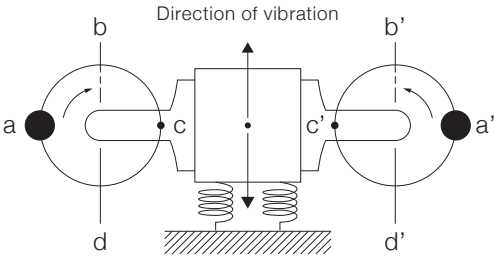
When generating vibration using one Uras Vibrator

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 vibrations.
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.



When generating linear vibration using two Uras Vibrators

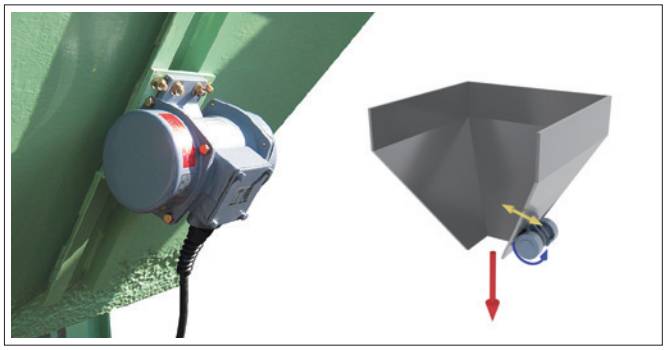
Two identical Uras Vibrators set to the same vibrating force are supported by soft springs as shown in the figure on the right and their vibrator shafts are installed in parallel. These vibrators are run concurrently in mutually opposing directions. In this configuration, a synchronous torque is produced 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.



Powder Movement Due to Vibrations

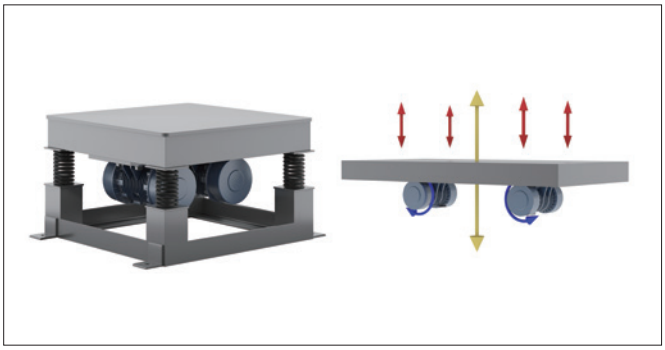
Powder movement Vibration movement Vibrator rotation

Hopper Blockage Prevention



Attaching a vibrator to the outlet of a storage tank such as a hopper breaks up bridging, rat-holing and other problems, allowing smooth discharge of the powder.

Powder Compaction



By running two Uras Vibrators in opposite directions, it produces a linear motion which can smoothly compact powders.

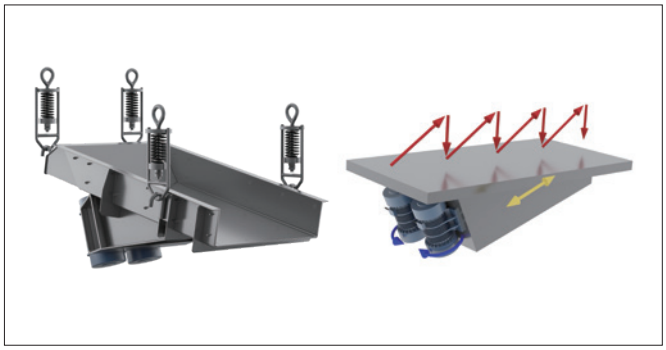
Vertical Motion

You can create torsional (spiral) motion by mounting two Uras Vibrators in an x-shape. This upwards vibration allows the powder to move up a spiral trough, achieving vertical movement.

Screening/Sifting

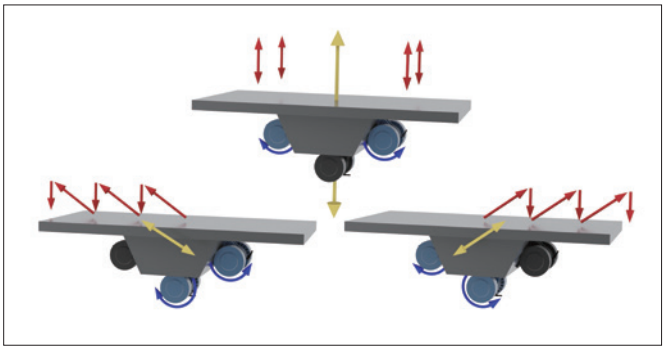
By adjusting a vertical Uras Vibrator so that the strengths of the top and bottom unbalanced weights are unequal, it can create a complex 3-dimensional vibration. This can lead to very effective screening.

Supply and Feeding



Mounting two Uras Vibrators with shafts parallel to each other but with their weights turning in opposite directions causes a linear motion. This causes particles to move linearly, which is very useful for feeding or supplying, depending on the equipment.

Compaction and Feeding/Filling



Attaching three Uras Vibrators in parallel can create some interesting combinations as well. By rotating the two outside units in opposite directions, this causes vertical vibrations that can compact materials. To move particles to the left, activate the center and right vibrators.Likewise, to move particles to the right, activate the center and left vibrators.

*Please contact us with any questions you have about these setups.

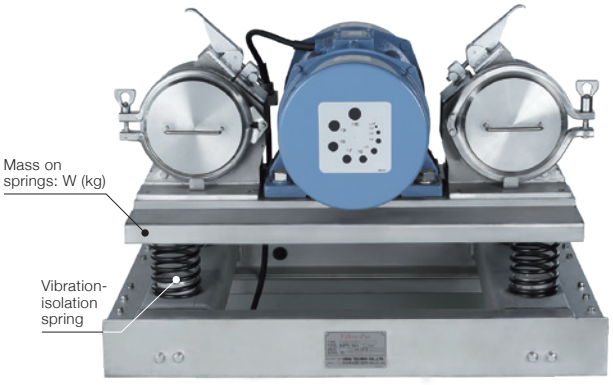
Vibration Amplitude α and Vibration Strength G Calculations

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

vibration acceleration = $\frac{F}{W} = \alpha\omega^2[m/s^2]$ (1)

vibration strength G = $\frac{\text{vibration acceleration}}{\text{gravity acceleration}} = \frac{F}{W \times g}$ (2)

angular velocity $\omega = 2\pi f$ [rad/s]



•Operating conditions

Uras Vibrator used: KEE-12-4C / maximum vibration force 12kN / 4 Poles

Vibration Machine Mass w = 115kG

Operating frequency: 60Hz

Maximum vibration force F max = 12kN / 70% power setting = 12 × 0.7 = 8.4kN

Frequency $f = \frac{N[r/m]\ /\ 60[s]}{} = \frac{1750}{60} = 29.2[Hz]$

angular velocity $\omega = 2\pi f = 2\pi \times 29.2 = 183$ rad/s

•Method of calculating vibration intensity

from (2) above: $G = \frac{F}{W \times g} = \frac{8.4 \times 10^3}{115 \times 9.8} \approx 7.5$

•Amplitude calculation method

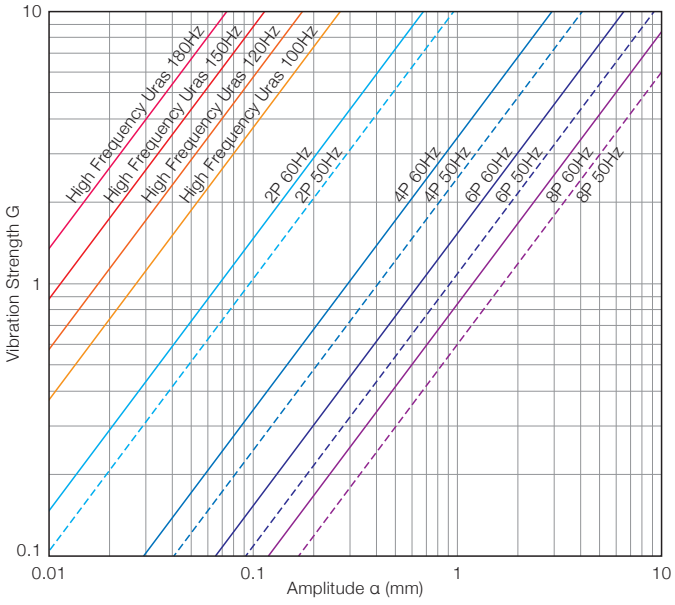
from (1) above: $\pm\alpha = \frac{F}{W \times \omega^2} = \frac{8.4 \times 10^3}{115 \times 183^2} = 2.2 \times 10^{-3}[m]$

herefore: α = ±2.2[mm]

Formula for calculating vibration strength G from amplitude α (mm)

Poles	Power Supply Frequency (Hz)	Rotations r/min	Frequency Hz	Formula for Calculating G
2P	50	2900	48.3	G = α × 9.4
	60	3500	58.3	G = α × 13.7
4P	50	1460	24.3	G = α × 2.4
	60	1750	29.2	G = α × 3.4
6P	50	970	16.2	G = α × 1.1
	60	1160	19.3	G = α × 1.5
8P	50	730	12.2	G = α × 0.6
	60	870	14.5	G = α × 0.85

Amplitude and Vibration Intensity



Vibration Isolation

When using a vibrating motor, care must be taken to isolate the vibration so as not to affect the surrounding building, other machines, etc.

[About Vibration Isolation]

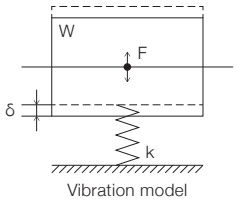
Vibrating motors generally use vibration-isolating springs to minimize the transmission of vibrations to the floor. The propagation of vibration varies depending on the spring constant, frequency, and amplitude of the springs used. The table on the right gives the general guidelines for selecting a vibration resistant spring. The resonance frequency in the table is derived from the mechanical mass as well as the spring constant of the vibration-isolating springs.

•A vibrating machine must be operated at a vibration frequency at least two times higher than the resonance point. As indicated by the table on the right, a vibration frequency that is 5 to 10 times higher is used.

•The vibrating force transmitted to the floor is expressed as the product of the single amplitude and the 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. When the vibrating machine is stopped, the values will be temporarily greater than the values given in the table. The total load at that time will be about 1.5 to 2 times its own weight, so the floor strength should be designed with this in mind.

[About Resonance]

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.



Vibration model

W: mass of machine [kg]

F: vibration force [N]

δ: sag of spring [mm]

g: acceleration from gravity [m/sec²]

vibration-isolating spring constant $k = \frac{Wg}{\delta}$

Resonance frequency $f_0 = \frac{1}{2\pi}\sqrt{\frac{g}{\delta}} \times 1000$ [Hz]

Poles	Power Supply Frequency (Hz)	Frequency Hz	Sag of Spring upon Mounting δ mm	Spring Constant K N/mm*1	Resonant Frequency of System f0 Hz	Double Amplitude 2α mm*2
2P	50	48.3	12	810	4.6	1.06
	60	58.3	10	980	5	0.74
4P	50	24.3	24	410	3.2	4.25
	60	29.2	20	490	3.5	2.95
6P	50	16.2	36	270	2.6	9.6
	60	19.3	30	320	2.9	6.7
8P	50	12.2	48	210	2.3	17.0
	60	14.5	40	250	2.5	11.7

The spring stress is approximately 250 N/mm2.

*1: These values are per 1,000kg of machine mass. The values for other masses are calculated proportionately.

*2: The values given apply for a vibration acceleration of 5G.
The vlaues for other accelerations are calculated proportionately.

Application to Hoppers

Preventing Bridge Formation in Hoppers

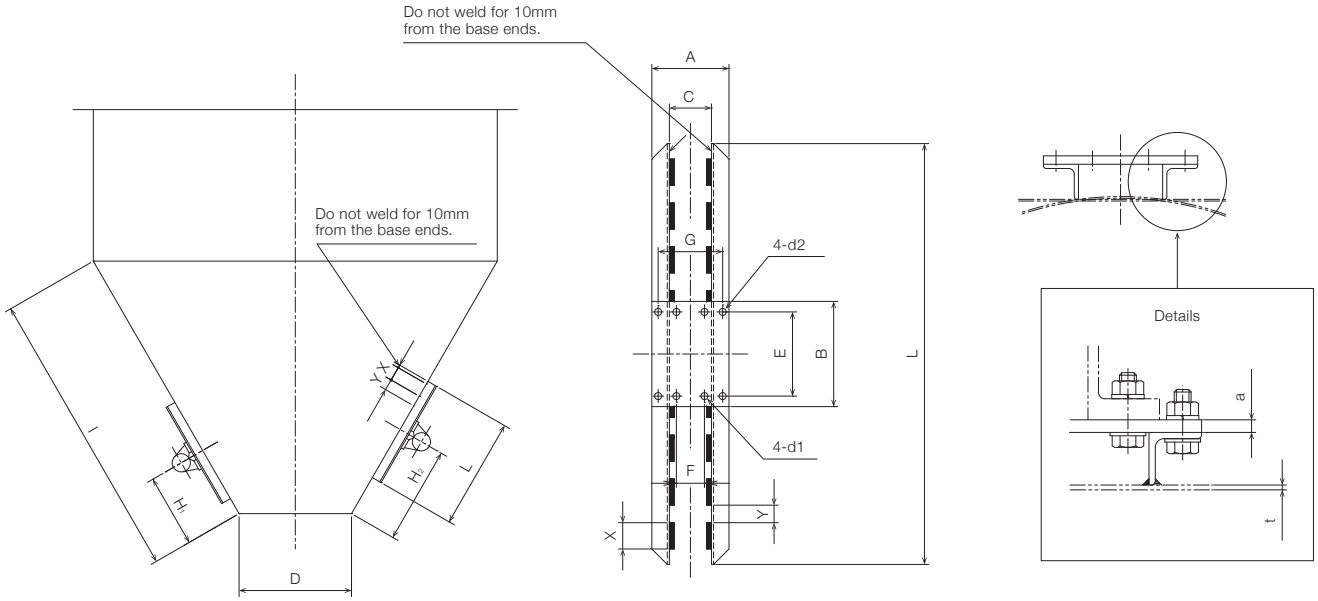
By attaching a Uras Vibrator to the wall of the hopper and applying circular vibrations, prevention of bridge formations can be achieved. Success depends largely on vibrator model, number of vibrators, mounting position, operating method, and particle characteristics.

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

Select an appropriate Uras Vibrator based on plate thickness (mm) 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.

Model	Hopper Plate Thickness mm	Angle Dimensions	Dimensions (mm)												Bolt Dimensions	
			E	F	G	A	B	C	L(m)	a	d_1	d_2	X	Y	d_1	d_2
KEE-0.5-2C	1.6 to 2.3	30 × 30 × 3	120	40	90	120	150	60	0.5 to 0.7	6	10	10	75	50	8 × 30	8 × 30
KEE-1-2C	2.3 to 3.2	30 × 30 × 5	120	40	90	120	150	60	0.6 to 0.8	6	10	10	75	50	8 × 30	8 × 30
KEE-2-2C	3.2 to 4.5	40 × 40 × 5	120	40	100	140	150	60	0.7 to 1.0	9	10	10	75	50	8 × 35	8 × 35
KEE-3.5-2C	4.5 to 6	50 × 50 × 6	150	90	170	220	190	120	0.8 to 1.2	12	14	14	75	50	10 × 40	10 × 40
KEE-6-2C	6 to 9	65 × 65 × 6	190	110	210	275	240	145	0.9 to 1.3	12	18	18	75	50	16 × 55	16 × 55
KEE-10-2C	9 to 12	75 × 75 × 9	220	120	240	315	280	165	1.1 to 1.5	16	22	22	100	80	20 × 60	20 × 60
KEE-16-2B	12	90 × 90 × 10	240	140	280	370	310	190	1.2 to 1.6	16	26	26	100	80	24 × 80	24 × 70
KEE-23-2B	16	100 × 100 × 13	260	150	300	400	330	200	1.4 to 1.8	19	26	26	100	80	24 × 80	24 × 70
KEE-30-2B	16 to 19	130 × 130 × 15	310	170	370	500	390	240	1.4 to 1.8	22	33	33	150	100	30 × 100	30 × 90
KEE-40-2B	19 to 22	150 × 150 × 15	350	220	450	600	440	300	1.5 to 2.0	25	39	39	150	100	36 × 120	36 × 120

Reference Drawing for Base Angle Manufacture and Mounting

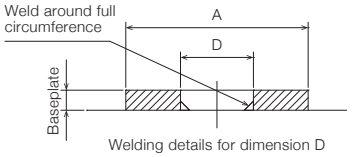


*The examples are for general recommendation only and are not guaranteed in every situation
*H_1 = l/4 to l/3 or 1 to 1.5D
Notes: 1. When two or more vibrators are mounted on one hopper, separate the vibrators by at least 100mm. |H1 - H2| => 100mm. Otherwise blockages may occur.
2. When welding the base 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 8T (SCM) mounting bolts for KEE-2-2C.
5. Use a low-hydrogen welding rod with high tensile strength when welding.

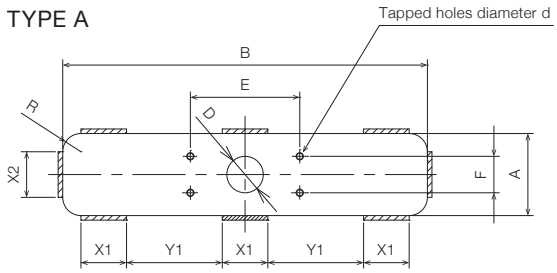
Application to Small Hoppers and Chutes

When mounting a Uras Vibrator on a small hopper or chute the base angle should be sized according to the chart on the previous page. But when the space available is limited, please use one of the bases listed below.

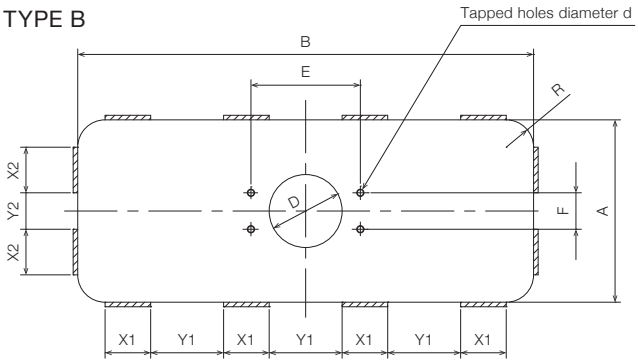
Type	Model	Hopper Plate Thickness mm	Base Plate Thickness mm	Dimensions (mm)										
				E	F	A	B	D	R	d	X1	X2	Y1	Y2
A	KEE-0.5-2C	1.6 to 2.3	12	120	40	75	300	40	30	8	50	50	50	–
	KEE-1-2C	2.3 to 3.2	12	120	40	90	400	40	30	8	70	60	65	–
B	KEE-2-2C	3.2 to 4.5	16	120	40	200	500	80	40	8	65	60	55	50
	KEE-3.5-2C	4.5 to 6	16	150	9	220	500	120	50	12	65	65	55	50
	KEE-6-2C	6 to 9	22	190	110	250	550	140	60	16	70	70	55	55
	KEE-10-2C	9 to 12	25	220	120	300	600	150	60	20	75	75	65	70



TYPE A



TYPE B



*X1 and X2 are both welding lengths,
while Y1 and Y2 are parts that do not require welding.
*The weld leg length should be about 80%
of the hopper plate thickness.

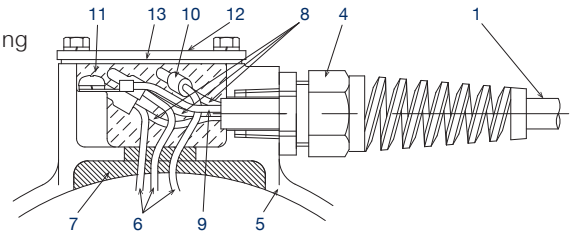
Terminal Box and Vibration Resistant Cable

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

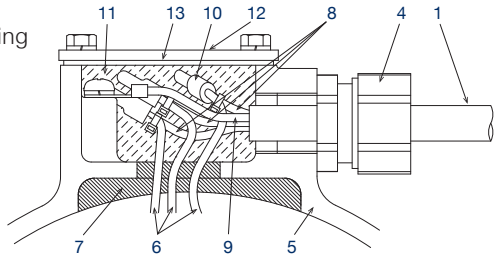
No.	Part name
1	2PNCT (anti-vibration butyl rubber insulated chloroprene cabtyre cable)
2	Rubber bush
3	Bellmouth
4	Spiral resin cable gland
5	Frame
6	Lead wire
7	Epoxy resin adhesive
8	Single-core, lead-in wire
9	Ground wire
10	Insulated closed-end connector
11	Uras Compound (non-hardening, high adhesion)
12	Terminal box cover
13	Terminal box packing

*The red, white, black, and green wires 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 same direction the cable protrudes from the terminal box.
However, if you wire U to phase S and V to phase R, the motor will rotate in the opposite direction.

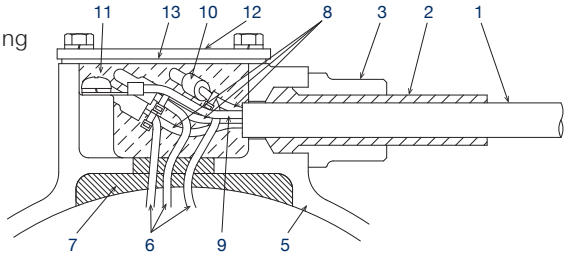
Drawing No.1



Drawing No.2



Drawing No.3



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•For inquiries:

If you need CAD data for a product, please visit the "Download" page on the Uras Techno Official Website listed above.

Note: The contents of this catalog are current as of September 2023. The specifications, appearance, and other aspects are subject to change without notice due to product improvements or other reasons.

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.

⚠ 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 law and regulations, in order to facilitate comprehension. Similarly, the illustrations and other drawings are graphical representations only. Before using a Uras Vibrator, read through its instruction manual carefully before use.

[General Precautions]

- Observe the safety regulations that are applicable to the location where the Uras Vibrator will be intsalled 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 the 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 provide you with 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.

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