

CATALOG



DUNLOP
DRIVING TO THE FUTURE

VIBRATION ISOLATORS



CIRCULAR | CUSHYFOOT | CUP MOUNT | UU SHEAR
SANDWICH MOUNTS | BOBBINS & BUFFERS | RUBBER MATS



What is Vibration ?

Basically, it is the effect of imbalance or out of balance in any rotating or reciprocating equipment that repeats itself cyclically. Out-of-balance forces occur in the operation of almost any machine. Whilst designers of most modern machines try to reduce this to as low a level as possible, it is very often physically impossible to eliminate these out of balance forces altogether. Further, it has been found that with wear & tear of equipment over long period of time, the out of balance forces and consequently the level of vibration tend to increase substantially.

Vibration in its simplest form may be considered as the motion of a machine or part of a machine, back & forth, from its position of rest. The total distance of movement is the peak to peak displacement of the vibration. The number of cycles of this movement for a given period of time is known as the frequency of the vibration.

Vibration Isolation

In discussing vibration isolation, it is useful to identify the three basic elements of all vibrating systems :

- ▶ The object to be isolated (equipment unit, machine, motor, instrument, etc.)
- ▶ The isolation system (resilient isolation mounts or isolators)
- ▶ Base (floor, base plate, concrete foundation, etc)

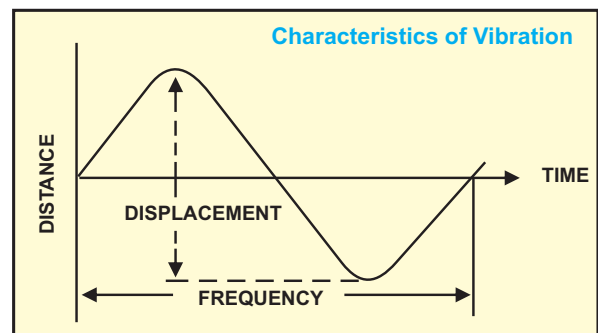
The isolators (rubber pads, springs, etc.), are interposed between the object and the base.

If the object is the source of vibration, the purpose of vibration isolation is to reduce the force transmitted from the object to the base.

If the base is the source of vibration, the purpose of isolation is to reduce the vibratory motion transmitted from the base to the object.

In both cases, the principle of vibration isolation is the same. The isolators are resilient elements. They act as a time delay and as a source of temporary energy storage, which evens out the force or motion disturbance on one side of the vibration mounts and transmits, if properly selected, a lesser disturbance to the other end (to the base in case of force isolation, to the object in case of motion isolation).

A judicious design of the vibration isolation system insures that this effect is achieved. Conversely, a **poorly designed isolation system**, not having proper frequency characteristics, **can be worse than no isolation at all.**



CUP MOUNT



A range of compact rubber unit isolators specially designed for marine and mobile applications.

The Cushyfloat is available in three sizes and three rubber compounds for loads of 12 kg to 780 kg (75 shore rubber available in 17/1657 variant for max load of 1100 kg to special order only).

TYPICAL APPLICATIONS

- ▶ Control Cabinets.
- ▶ Hydraulic Pumps and Motors.
- ▶ Rotary Compressors.
- ▶ Small Marine Diesel Propulsion Engines and Generator Sets.

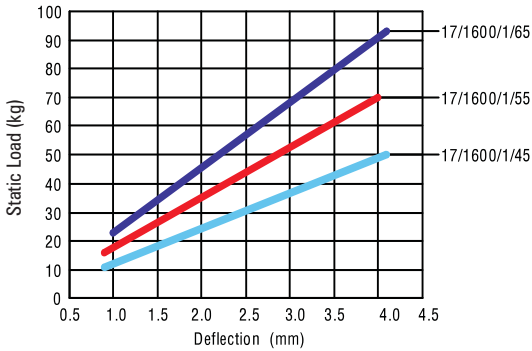
DESIGN FEATURES

- ▶ Cushyfloat type mount uses zinc plated steel components.
- ▶ Resilient elements are first grade natural rubber to metal bonded units.
- ▶ Loading the rubber elements in a combination of shear and compression provides the optimum balance between high load capacity and low stiffness.
- ▶ Rubber elements are contained and protected within the top and base metals. The shapes of the top and the rubber elements are designed to increase stiffness and control movement under overload conditions.
- ▶ Rebound washers are incorporated to control movement due to ship or vehicle motion.
- ▶ High lateral to vertical stiffness ratio of the rubber elements assists in the control of motion and in many instances obviates the need for additional external side and end restraints.
- ▶ Low height compact units, ideal for use where space is limited.

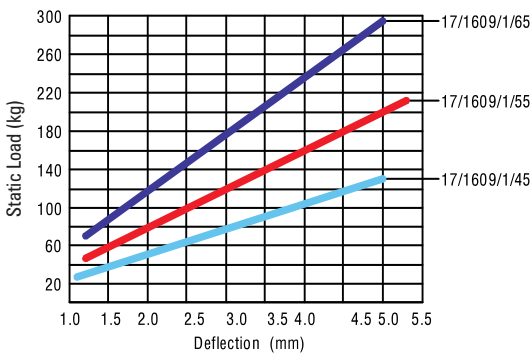
VIBRATION ISOLATORS



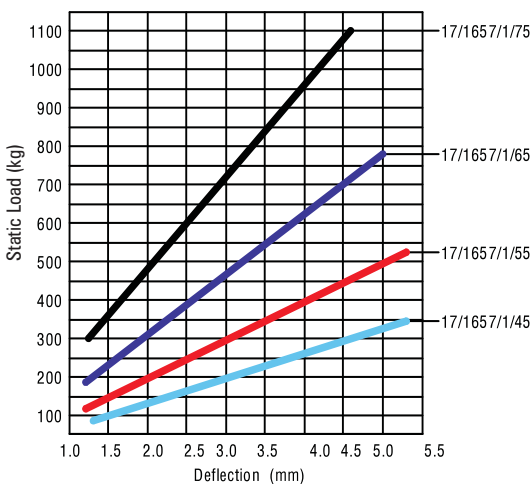
LOAD / DEFLECTION GRAPH
CUP MOUNT TYPE 17/1600/1



LOAD / DEFLECTION GRAPH
CUP MOUNT TYPE 17/1609/1

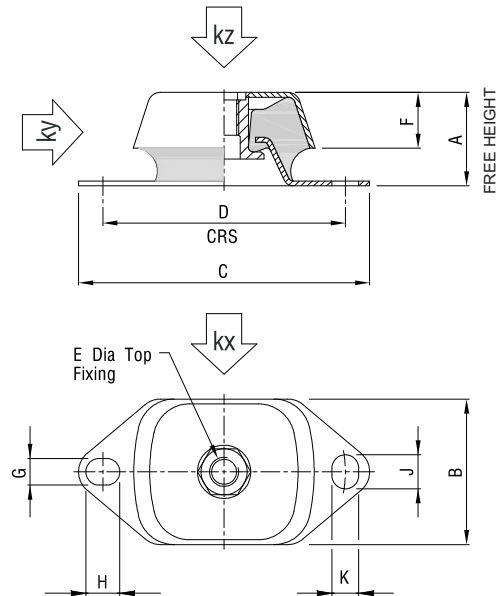


LOAD / DEFLECTION GRAPH
CUP MOUNT TYPE 17/1657/1



TYPE CUP MOUNT RUBBER UNIT ISOLATORS

PART No.	DIMENSIONS (mm)									
	A	B	C	D	E	F	G	H	J	K
17/1600/1	38.5	60	120	100	M12	22	14	11	14	11
17/1609/1	50	75	183	140	M16	32	13	20	30	13
17/1657/1	70	112	230	182	M20	50	18	26	34	18



PART No.	LOAD RANGE (kg)	STATIC STIFFNESS (N/mm)			DYNAMIC / STATIC STIFFNESS RATIO
		kx	ky	kz	
17/1600/1/45	12 - 48	90	300	120	1.15
17/1600/1/55	17 - 70	129	430	172	1.25
17/1600/1/65	25 - 91	167	558	223	1.50
17/1609/1/45	30 - 130	200	640	255	1.15
17/1609/1/55	50 - 210	294	980	392	1.25
17/1609/1/65	72 - 290	434	1446	578	1.50
17/1657/1/45	90 - 350	480	1600	640	1.15
17/1657/1/55	125 - 530	730	2430	970	1.25
17/1657/1/65	200 - 780	1150	3830	1530	1.50
17/1657/1/75*	300 - 1100	1770	5890	2355	1.95

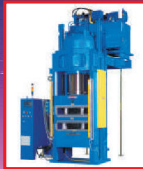
* 17/1657/1/75 to special order only.

In the interest of continual development, the company reserves the right to make modifications to these details without notice.

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- Large Fans & Ahu`s
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- Hammer Mills
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