

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)

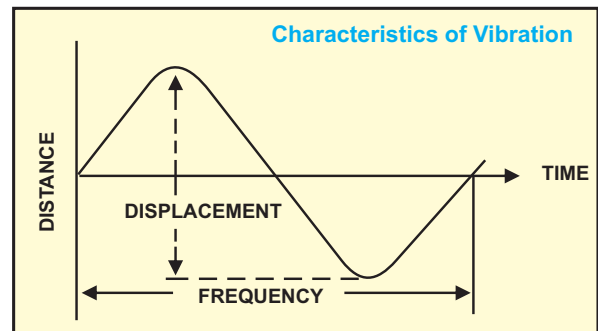
The isolators (rubber pads, springs, etc.), are interposed between the object and the base.

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.**



VIBRATION ISOLATORS



SANDWICH MOUNTS



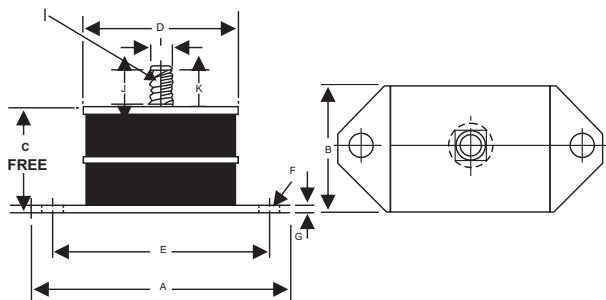
The Sandwich mounts comprise one or more layers of elastomer bonded to flat steel plates. They are designed to withstand very high compressive loads. They are very slim, large supporting surface area stackable mounts. The suspended equipment is free to move in all directions. High ratio of axial stiffness to radial stiffness. Very high axial loads.

TYPICAL APPLICATIONS

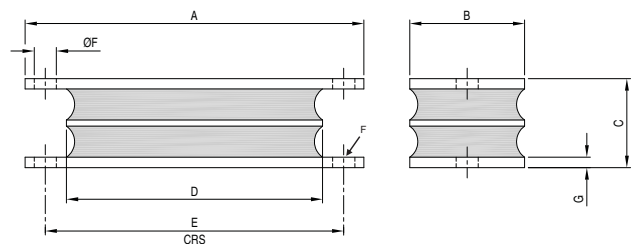
- ▶ Lift Head Gear
- ▶ Engine Mounts on Road Vehicles
- ▶ Vibrating Screens
- ▶ Conveyor Systems
- ▶ Hoppers
- ▶ Free Standing Refrigeration Isolators
- ▶ Heavy Machines Isolator (Lathes, Drilling Machines etc.)
- ▶ Coach vehicle body Isolators
- ▶ Mobile Construction Plant

DESIGN FEATURES

- ▶ Molded in First Grade Natural Rubber
- ▶ Steel Metals, Etch printed on external surfaces
- ▶ Sandwich mountings should not be used in tension or exposed to contamination by mineral oils



Part No. 31/336



Part No. 31/242

PART No.	RUBBER SHORE HARDNESS	MAX LOAD / DEFLECTION				DIMENSIONS (mm)								STEEL INTERLEAF	
		COMPRESSION		SHEAR		A	B	C	D	E	F (Dia)	G	I		J
		kg	mm	kg	mm										
31/242	40	448	3.0	120	14.6	168	57	43	127	146	11	5	-		YES
	50	575	2.9	175	14.0										
	60	846	2.8	185	9.4										
	70	989	2.2	200	7.8										
31/336	40	95	2.8	42	15.0	89	41	36	54	74.5	6.75	2.7	M8	14	YES
	50	135	2.8	65	15.0										
	60	205	2.8	80	12.0										
	70	310	2.8	90	9.0										

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

VIBRATION ISOLATORS



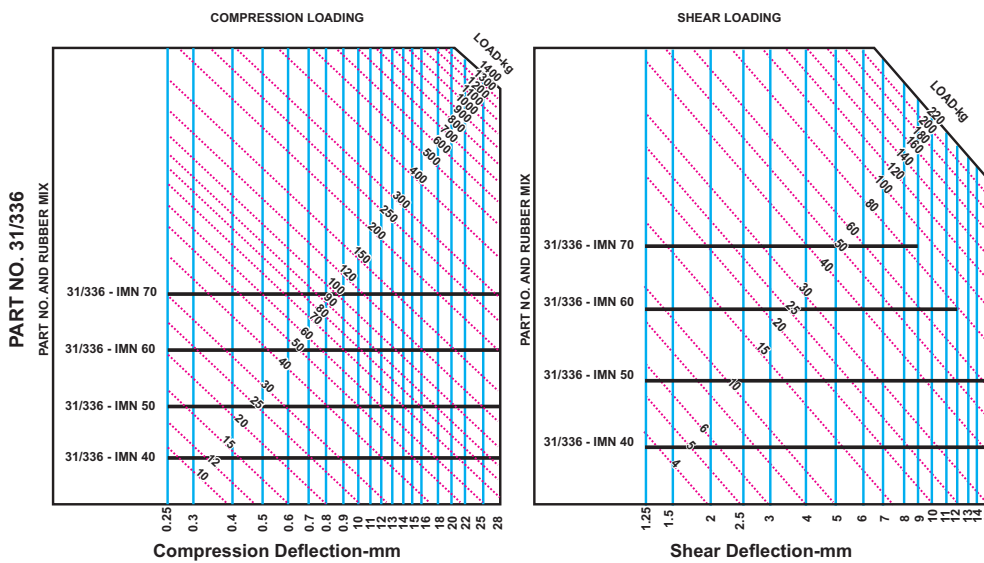
MINIMUM DEFLECTIONS TO GIVE ADEQUATE INSULATION

Disturbing frequency	c.p.m	500	700	800	900	1000	1200	1400	1600
Deflection	mm	15.2	8.9	6.3	5.1	3.8	2.8	2.0	1.5

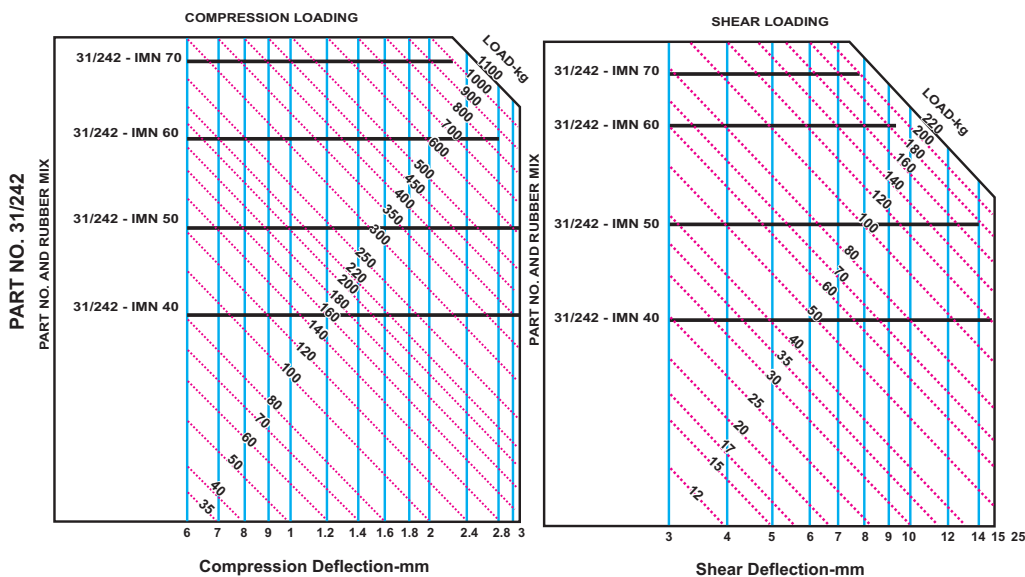
SELECTION CHARTS

How to use Selection Charts

1. Consider each mounting point separately.
2. Draw a vertical line upwards from the minimum deflection needed (on the horizontal base scale) to give good insulation. This vertical line should be projected upwards until it intersects the diagonal load line corresponding to or slightly in excess of the load under consideration
3. From the intersection follow the load line downwards to the nearest suitable mounting line (horizontal heavy black) to select the required mounting and rubber mix.
4. The actual static deflection is given by projecting a line from the intersection of the load line and mounting line downwards to the horizontal deflection scale.
5. Repeat this procedure for each mounting point if the total load is not evenly distributed over the mounting points. It should be noted that the end of each mounting line indicates, on the diagonal load scale, the maximum static load capacity of the mounting and on the vertical line, the maximum static deflection that can be permitted. Only under occasional shock load conditions can larger forces be allowed.



SELECTION CHARTS



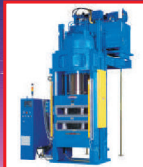
All parts are manufactured from first grade natural rubber with steel metals, etch primed on exposed surfaces. Rectangular Sandwich Mounts should not be exposed to contamination by mineral oils.

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- Hammer Mills
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