



Data Sheet

Anti-vibration mountings

This data sheet covers the following

RS stock nos:

Ring and bush mounts	688-262 to 688-414
Isolator mounts	688-420 and 688-436
Pneumatic mounts	688-486 to 442-282
Machine mounts	688-206 to 688-234

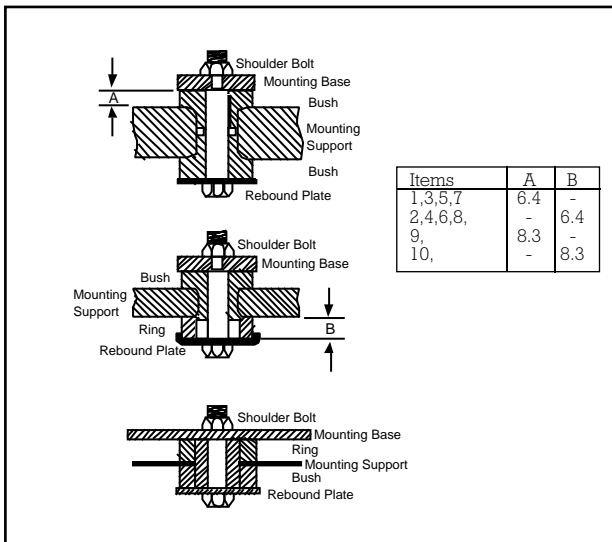
All metal products:

Light duty	254-7393 to 312-0400
Heavy duty	312-0416

Ring and bush mounts

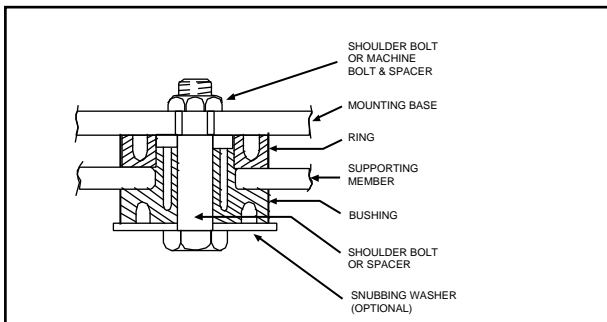
Applications

Ring and bush mounts are commonly used in office machines, motors, fans, blowers, pumps, air conditioning, heating, electronic and scientific equipment. The mount consists of an elastomeric bush and ring designed to be directly incorporated into the structural components of the equipment and the support structure. Some typical installation examples are shown in Figure 1.



Any number of mounts can be installed in parallel for greater load capacity and may be stacked in series when greater deflection is required.

A typical mounting application can be seen below:



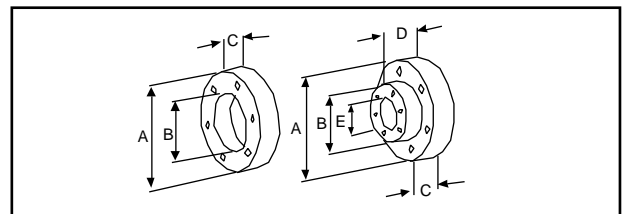
Features

When installed the mounts interrupt the path of structure-borne vibration, resulting in highly efficient noise reduction. Opposing holes in the elastomer provide excellent low frequency isolation. The location of the holes cushions shock and isolates vibration parallel to the mount axis.

The bushing holes isolate vibration perpendicular to its axis. Even if the elastomer is somehow damaged or destroyed, the mounted member stays securely on the supporting structure when properly installed. The ring and bushing mount are made of neoprene which offers temperature range operation of -29°C to +82°C.

Item	Mount	Load kg		RS stock no.
		min	max	
1	Bush	0.45	2.3	688-262
2	Ring	0.45	2.3	688-278
3	Bush	0.9	4.5	688-284
4	Ring	0.9	4.5	688-290
5	Bush	1.8	6.8	688-307
6	Ring	1.8	6.8	688-313
7	Bush	2.7	9.0	688-329
8	Ring	2.7	9.0	688-335
9	Bush	10	30	688-408
10	Ring	10	30	688-414

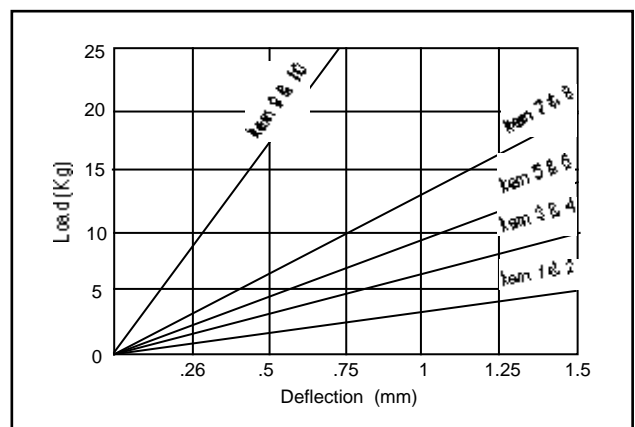
The size and hardness of the mounts govern their load and bearing capacity. This information is given in the table above, and the following dimensions diagram and table



Dimensions chart (mm)

Item	A	B	C	D	E
1-8	20.6	12.0	6.4	14.3	6.4
9-10	35.0	19.0	8.3	16.6	9.5

Performance characteristics



Installation data

1. Two bushes are generally used when the mounting support is 12.7mm thick or over.
2. The standard ring and bush arrangement is suitable when the mounting support is 3.2 to 12.7mm thick.
3. When the mounting support is less than 3.2mm thick, the mounting hole should be flanged to provide more support to the bush.

See Figure 1 again for examples.

Isolator mounts

Applications

Isolator mounts are designed to provide protection against severe shock and give vibration isolation in all attitudes, over a wide range of loads. They are able to withstand the rigours of heavy duty vehicular applications and are typically used in the mounting of electric motors, engine's transmissions, radiators, tractor seats and the reduction of structure borne noise. Electrical and electronic equipment can also be protected by the use of these mounts.

Features

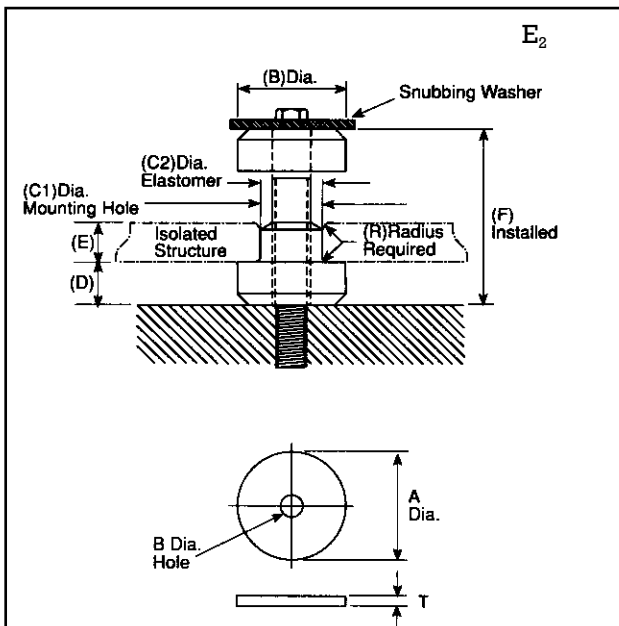
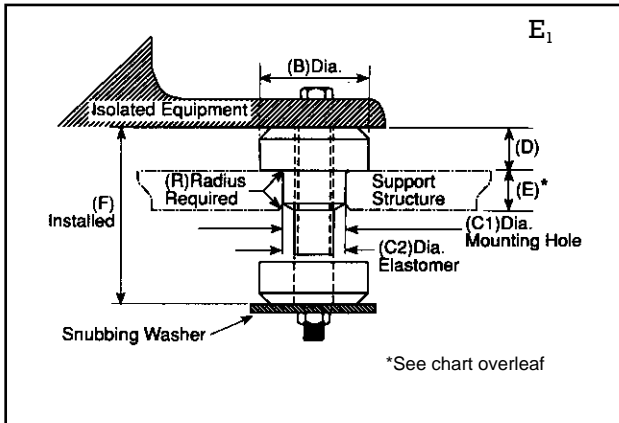
Isolator mounts can be loaded both axially and radially and provide a vertical and horizontal natural frequency (f_n) as low as 12Hz under maximum load, giving efficient, low frequency vibration isolation and shock protection. This depends upon the thickness of the support structure. Two examples are given of support structures E1 and E2 in the load table and diagrams given below and overleaf.

Mount no.	'A' dia. (mm)	'B' dia. (mm)	'T' (mm)	Snub washer stock no.
1,2,3,4	39.6	10.3	2.2	688-442
5,6,7,8	54.1	13.5	3.4	688-470
9,10	71.3	16.7	4.7	443-407
11,12	98.5	23.8	6.3	443-413

Item	A	B	C ₁	C ₂	D	E ₁	E ₂	F	R
1,2,3,4	10.3	33.2	19.05	20.06	12.3	9.5	9.5	31.7	1.0
5,6,7,8	13.5	47.7	32.25	33.02	19.8	14.0	12.5	49.2	1.5
9,10	16.7	64.7	38.10	40.13	22.8	22.0	19.0	62.2	2.2
11,12	23.8	88.9	57.15	58.42	25.4	28.5	25.5	73.1	3.0

Load table

RS stock no.	688-420	688-436
Item	1	2
E1	9.5mm	9.5mm
Axial	18.0kg	40.0kg
Radial	9.0kg	13.0kg
HZ	15.0	15.0
E2	9.5mm	9.5mm
Axial	18.0kg	40.0kg
Radial	9.0kg	13.0kg
HZ	15.0	15.0



Equal thickness rubber sections top and bottom ensure adequate rebound protection and the large bearing area of the rebound ring prevents the rubber from being drawn into the assembly socket under shock conditions.

Material. RS isolator mounts are manufactured from oil and ozone resistant neoprene.

Temperature. Suitable for use at temperatures between -30°C and +80°C.

Snubbing washers are recommended to ensure proper static and dynamic loading of the isolator and retention of suspended equipment under shock environments. Manufactured from zinc plated low carbon steel.

Pneumatic mounts

Applications

The pneumatic mount is an air sprung isolator suitable for applications requiring high deflection and a natural frequency down to 3Hz. The stability (the horizontal-to-vertical stiffness ratio is one-to-one) is ideal for use with microscopes, optical comparators, shakers, optical systems and inspection equipment.

Features

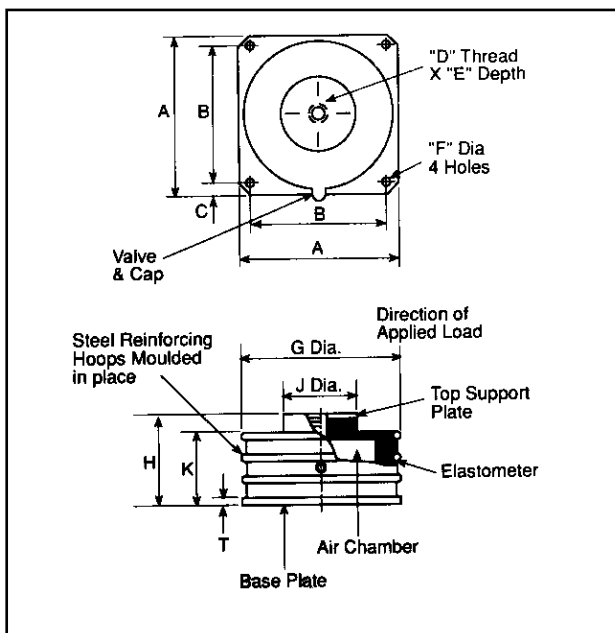
The thick walled elastomeric construction provides a high degree of safety, capable of withstanding an overload capacity of up to 10 times maximum rated load in compression for nominal design pressures of 20-80psi (1.38 to 5.52 bar). One to one horizontal-to- vertical stiffness ratio ensures an excellent stability without the need for lateral restraints. RS pneumatic mounts are not susceptible to high frequency surge, hysteresis, or the overall excitability of conventional air mounts. Transmissibility at resonance is equal to or lower than conventional rubber or neoprene isolators, damped coil springs or spring mounts.

Unlike conventional air sprung mounts commonly called air bags, RS pneumatic mounts do not have to be de-rated for impact or shock applications as do coil springs, nor do they require separate snubbers for overload conditions as do air bags. The combined resiliency of the elastomer and the air reduces susceptibility to drift or permanent set, common with conventional mounts, yet the mounts will continue to support and isolate at 10Hz natural frequency even with no air pressure.

RS pneumatic mounts require less height than conventional mounts because they operate at zero deflection under load. For most vibration applications the air pressure in the centre body provides a significant portion of the isolation capability.

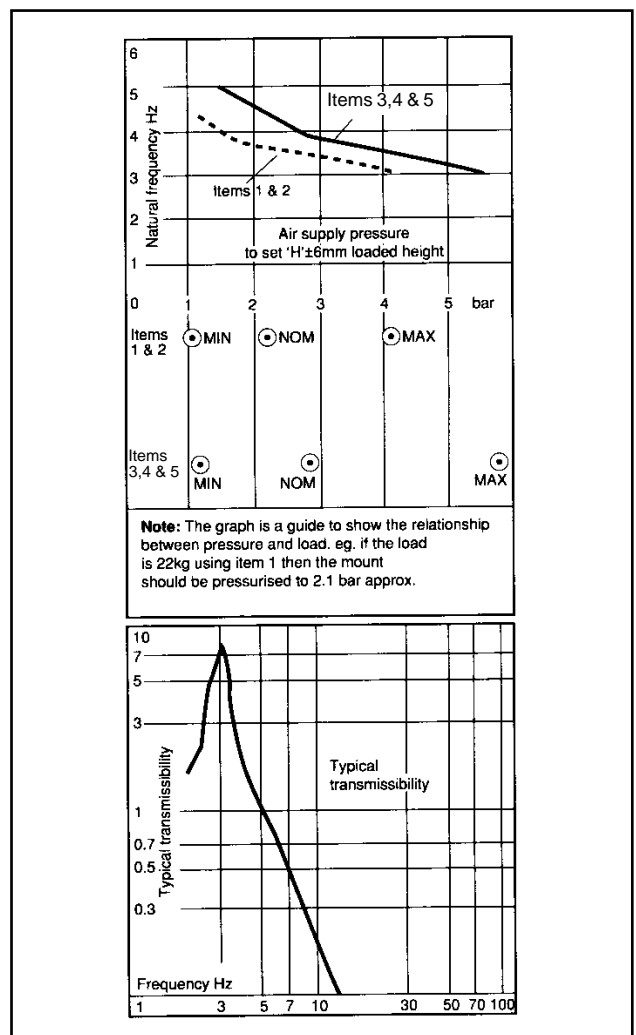
Installation

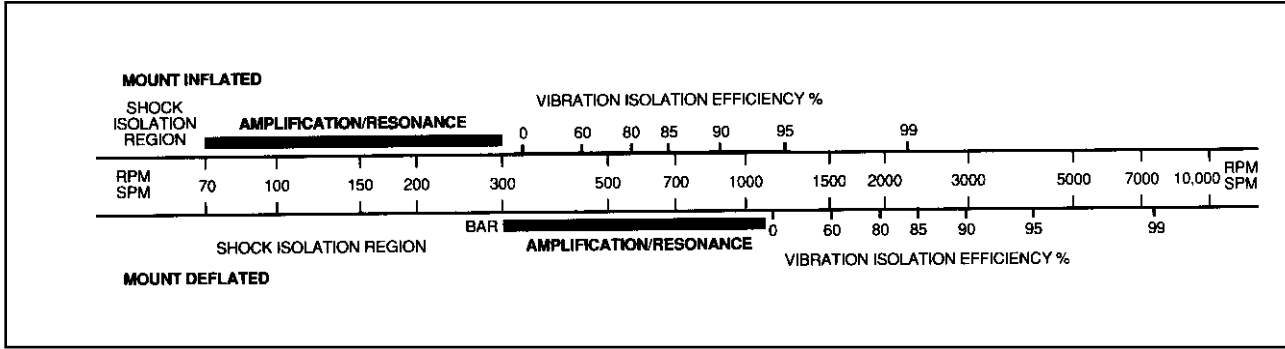
An instruction leaflet giving full guidance on installation is included with each product.



Dimensions and data chart

Item	RS stock no.	Loads kg			A	B	D	E
		Min.	Nom.	Max.				
1	688-486	11	22	45	76	60	M10	12
2	688-492	34	68	136	106	88.9	M12	14
3	688-509	68	136	272	130	108	M12	14
4	442-482	136	272	545	175	152.4	M12	14
		F	G	H	J	K	T	kg (weight)
1	688-486	7	73	64	28	49	3	0.45
2	688-492	7	105	64	52	49	3	0.68
3	688-509	7	127	89	60	75	3	1.5
4	442-482	7	171	89	95	75	3	2.5



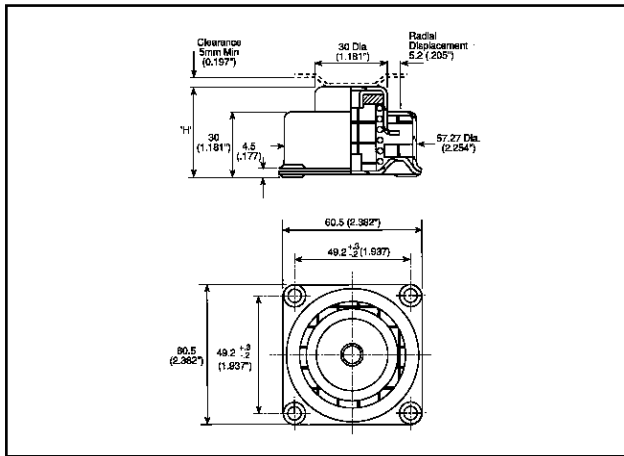


All metal anti-vibration and shock mounts

Introduction

This range of shock and vibration mounts are manufactured from stainless steel and anodised aluminium alloy. They are suitable for use in aggressive environments where elastomer based products would break down.

Light duty range



RS stock no.	Static load (kg)
254-7400	1.15- 2.30
254-7416	2.00- 4.50
254-7422	2.80- 5.60
312-0359	4.50- 9.00
312-0365	7.00- 14.00
312-0371	8.00-18.00
312-0393	16.00-22.00
312-0400	20.00-33.00

Applications

Shock and vibration isolation of aerospace, marine and mobile applications in military and civil roles plus industrial uses including some rotary machines.

Description

Stainless steel springs and resilient knitted pads. Housing, mounting cap and base are anodised aluminium alloy. Brass eyelets, tin plated.

Conforms to MIL-E-5400 and AIR 7303 military standards.

Weight 100-125gms approximately.

Dynamic characteristics

Ratio between transverse and axial stiffness (vertical): approximately 1/2.5.

Natural frequency = 7 to 10Hz vertical and 4.5 to 6Hz transverse depending on load for a displacement input of ±0.75mm (0.030in).

Maximum displacement input ±0.8mm (0.031in).

Transmissibility: 4:1.

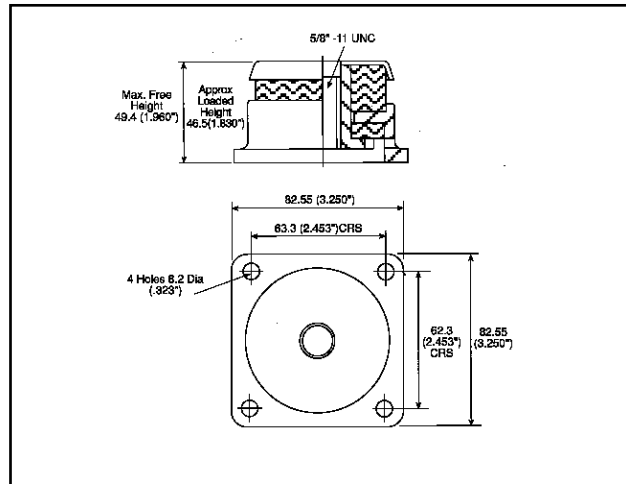
Loading limitations

Just prior to abutting snubber: Load corresponding to a continuous acceleration of at least 2g. Loads corresponding to at least 10g may be accepted without subsequently affecting the mount performance.

Maximum displacement of the suspended unit under limiting loads ±6mm (0.236in).

No alteration in characteristics between -70°C and +175°C.

Heavy duty range



Primarily developed for heavy duty applications. It is capable of withstanding compression loads as high as ten times the static load. Some common applications include isolating marine fans, mobile engines, generators and general machine shop plant such as lathes, milling machines, slotters and broaches.


Construction

The housing is a machined casting, the centre and cup are cadmium plated mild steel, and the load carrying resilient elements are formed from stainless steel wire. The drilled base flange allows for floor fixing. There is no alteration in characteristics between -70°C and +175°C.

RS stock no.	Static load (kg)
312-0416	30-700

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