

# Seismic Mount Type GSH-4

## 25mm and 50mm Nominal Static Deflection

## APPLICATION

Where equipment requires the use of a spring type mount for a high degree of isolation under normal operating conditions, but with the facility to restrain the equipment from excessive motion in any direction due to displacement inputs imparted by the foundation through earthquake activity.

## DESCRIPTION

An integrated, stand-alone six direction restrained spring mount with cup located springs and internal adjustment. GSH-4 mounts are rated to the static force restraint requirements of:

- AS1170.4 for Australian seismic zones
- NZS 4219 for most New Zealand seismic zones
- Most international seismic codes

## FEATURES

- Heavy duty stable steel spring
- Acoustically isolating location cup
- Internal leveling bolts
- Alternative equipment mounting positions
- Single adjustable central vertical restraint bolt
- Replaceable shock absorbing rubber snubbers
- Treated for weather resistance

## CONSTRUCTION

Hot dipped galvanised steel housing, oil resistant high frequency spring base isolation cup. All other components including spring, zinc plated.

## RESTRAINT CAPACITY

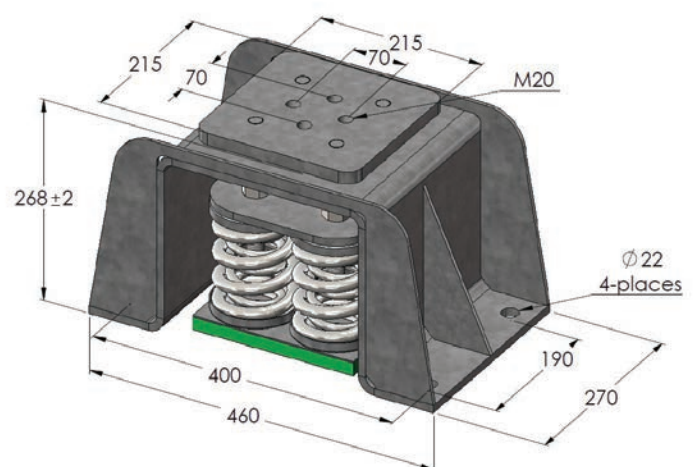
Restraint capacity is given as a maximum static force. The following can be applied simultaneously in one lateral direction and vertically up or down:

Vertical: 25kN

Lateral: 25kN

At maximum restraint loads, the displacement from normal operating position is approximately 10mm.

Type	Max Load kg	Static Defl. mm	Spring Constant kg/mm	Spring Colours	
				Outer	Inner
GSH-4-1000	1,800	25	72	Green	-
GSH-4-1023	2,040	25	84	Green	Yellow
GSH-4-1025	2,320	25	93	Green	Red
GSH-4-1026	2,760	25	110	Green	White
GSH-4-1600	3,100	25	124	Grey	-
GSH-4-1622	3,300	25	131	Grey	Blue
GSH-4-1624	3,500	25	140	Grey	Green
GSH-4-1626	4,000	25	160	Grey	White
GSH-4-1627	4,400	25	176	Grey	Orange
GSH-4-1628	4,600	24	191	Grey	Grey
GSH-4-1731	5,100	20	255	Orange	Grey / Yellow
GSH-4-521	1,400	50	28	Red	Black
GSH-4-53	1,800	50	36	Green	-
GSH-4-530	2,080	50	42	Green	Blue
GSH-4-531	2,300	50	46	Green	Black
GSH-4-532	2,800	50	56	Green	Red
GSH-4-55	2,600	50	52	Grey	-
GSH-4-551	3,100	50	62	Grey	Black
GSH-4-552	3,600	50	72	Grey	Red
GSH-4-553	4,000	50	80	Grey	Green
GSH-4-593	4,460	45	99	Orange	Green



## GSH-4 D DIMENSIONS

## DESIGN

GSH-4 Mounts are designed with spring horizontal to vertical stiffness ratios between 0.9 and 1.1 at rated loads; ratio of spring diameter to loaded height minimum 0.8; and a rated maximum static operating deflection 2/3 deflection to solid.

## ACOUSTICAL ISOLATION

Although steel spring mounts provide particularly effective isolation of mechanical vibration, the spring itself, depending on its physical geometry, may transmit certain audible level frequencies if present.

To minimise these audible level transmissions, all mounts are fitted with a resilient rubber base cup. For type GSH-4 mounts, the standard cup has a theoretical effectiveness of over 95% in isolating such transmissions.

## MOUNT SELECTION

When selecting mounts, it is recommended that a safety factor of 10-20% is applied to the calculated mass of equipment to avoid overloading of any mount. If maximum rated deflections are required, then equipment should be weighed and an accurate assessment of point loads made.

For equipment using more than four mounts, endeavour to distribute them so that each mount has equal loading. If this cannot be done, mount selection must be made on the basis of matching static deflections as closely as possible.

## WEATHER TREATING

Mounts are supplied post-treatment for weather resistance for external use. Standard treatment consists of zinc or galvanised plating of all metal components including springs, with a final gloss paint identification colour.

## RESTRAINT SYSTEM

These mounts incorporate replaceable resilient rubber snubbers for both vertical and lateral restraint. Vertical restraints have a normal design clearance of 5mm in both directions and are adjustable  $\pm 2\text{mm}$  in conjunction with level adjustments. Lateral restraints have a fixed clearance of nominal 5mm.

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## INSTALLATION

### 1. BOLTING DOWN

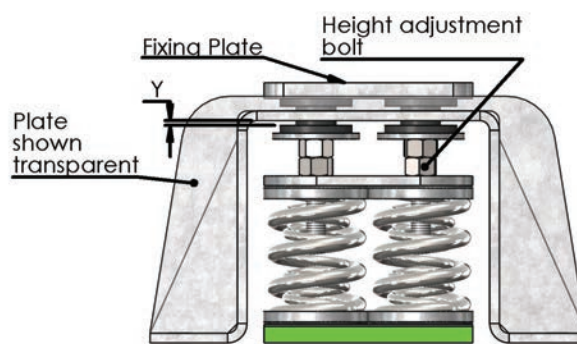
- Foundation: Place housing in position (see above) and drill through housing base holes for fastening.
- The GSH-4 mount is designed to take a maximum of M20 fastenings.
- Housing fastenings should be torqued to maximum value recommended by the fastener manufacturer.

### 2. PLACING EQUIPMENT

- Assemble the rest of the mount as shown below.
- Place equipment on mounts.

### 3. ADJUSTMENT AND LOCKING

- Load the springs alternately by winding the adjusting nut clockwise a maximum of two turns until the equipment is floating on the springs.
- Check for level and adjust if necessary.
- Lift further until gap  $Y = 5\text{mm} \pm 2\text{mm}$  on all mounts.



**GSH-4 PARTS**

## TECHNICAL ASSISTANCE

All Embelton offices can provide detailed technical assistance on the use of this product in specific applications.

## CONDITIONS OF SALE

These products are sold subject to the published General Conditions of Sale of G. P. Embelton and Co. Pty. Ltd., copies of which maybe inspected on request.

## SPECIFICATION

Spring mounts shall permit freedom of equipment motion at normal operating conditions, but restrain the equipment from excessive motion when subjected to foundation displacement in any direction. Four vertical restraint bolts shall be used, which also locks the equipment to the mount. Springs shall be free standing and laterally stable with an acoustically isolating base cup. They shall have a minimum additional travel of 50% rated deflection to solid and a diameter not less than 0.8 of loaded height; they shall be type GSH-4 as supplied by Embelton.