# Isolation Hangers Type SHLD / SHWD

50mm Static Deflection Spring

## APPLICATION

For support of low speed equipment (down to the order of 500 RPM) and pipework where a low cost hanger is required for effective isolation of vibration. Typically used for support of piping ducts, fans, packaged air conditioners, fan coil units, attenuators, etc.

## FEATURES

- Heavy duty stable steel spring
- Rugged, heavy gauge steel cage
- Rod hole in spring compression plate fully rubber isolated, (SHWD)
- Spring located by moulded rubber acoustically isolating cup in cage (SHLD)
- Large diameter lower rod clearance hole in cage

## OPTION

- Spring deflection scale and pointer plate
- Pre-compressed spring (suffix P in type code)

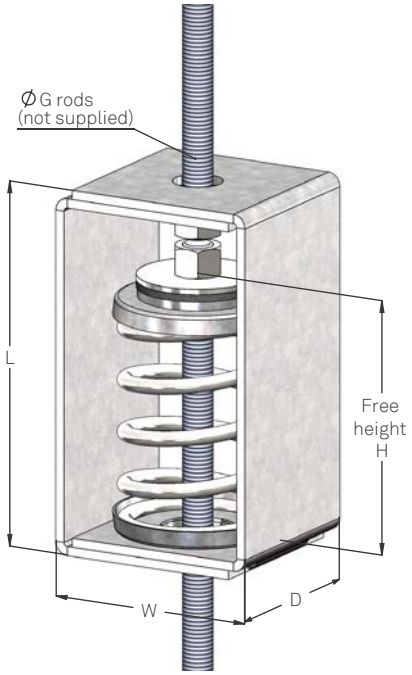
## DESIGN

Springs used in type SHD hangers are designed with a horizontal to vertical stiffness ratio between 0.9 and 1.1 at rated load. The ratio of spring diameter to loaded height is a minimum of 0.8 and a rated maximum operating deflection of 2/3 deflection to solid.

## ACOUSTICAL ISOLATION

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

In SHD series hangers, spring transmission of most audible frequencies is effectively minimised by incorporating an acoustical isolating rubber pad and sleeve into the compression plate on top of the spring (SHWD) or using a moulded rubber isolation cup under the spring (SHLD). The standard unit is theoretically 92% to 95% effective in isolation of audible frequencies. For higher levels of isolation, refer to the product RSHLD and RSHWD spring and rubber element hangers (Datasheet RSH).




**SHWD**

### SHLD / SHWD PRODUCT GUIDE

| Type | Max Load kg | Static Deflection mm | Spring Constant kg/mm | Spring Colours | |
|---|---|---|---|---|---|
| | | | | Stripe 1 | Stripe 2 |
| SHLD-44 | 6 | 50 | 0.12 | Black | Black |
| SHLD-45 | 9 | 50 | 0.18 | White | White |
| SHLD-46 | 14 | 50 | 0.28 | White | Violet |
| SHLD-47 | 22 | 50 | 0.44 | Violet | Violet |
| SHLD-48 | 35 | 50 | 0.7 | Violet | Yellow |
| SHLD-49 | 55 | 50 | 1.1 | Yellow | Yellow |
| SHWD-33 | 50 | 50 | 1 | White | - |
| SHWD-34 | 75 | 50 | 1.5 | Violet | - |
| SHWD-35 | 110 | 50 | 2.2 | Yellow | - |
| SHWD-36 | 150 | 50 | 3 | Brown | - |
| SHWD-37 | 200 | 50 | 4 | Orange | - |
| SHWD-38 | 250 | 50 | 5 | Orange | Black |
| SHWD-39 | 350 | 40 | 8.8 | Orange | Green |

### SHLD / SHWD Dimensions

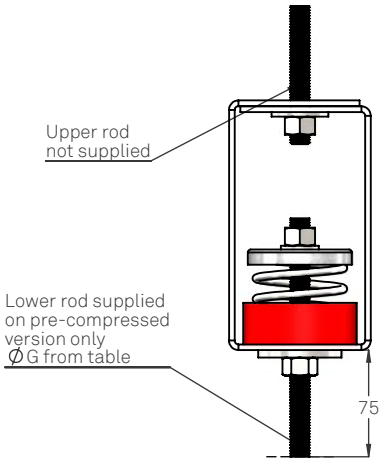
| Type | H mm | L mm | W mm | D mm | G (max) mm |
|---|---|---|---|---|---|
| SHLD | 124 | 180 | 95 | 75 | 12 |
| SHWD-33-37 | 142 | 200 | 115 | 100 | 16 |
| SHWD-38-39 | 150 | 200 | 115 | 100 | 16 |

## MISALIGNMENT CAPABILITY

The lower rod hole in the cage is a minimum of 50% larger in diameter than the maximum rod size to allow for installation misalignment. If greater than 5° misalignment is likely during operation then cages should not be hard bolted to the support structure, but allowed to self-align by pivoting on the fastening. A spherical washer can be used to aid this.

## PRE-COMPRESSION (suffix P in type code)

To aid installation of complex equipment and piping systems, the hanger maybe supplied complete with lower rod and with the spring compressed under load (the standard pre-compression setting is 75% of rated load). In this way the hanger can act as a rigid connection to facilitate leveling of the system. When full operating loads are applied (e.g. when pipes are filled) the hanger load is transferred to the spring so that the hanger acts as an isolator and normal adjustment of levels is then all that is necessary.




SHLD PRE-COMPRESSED

## DEFLECTION SCALES

Pointer plates and deflection scales can be fitted as an optional extra.

## HANGER SELECTION

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

## INSTALLATION

1. Piping or equipment should be hung at its proper elevation by using temporary fixtures that can be removed after hangers are installed and adjusted.
2. For best results, hangers should be at or near the ceiling. When used for pipe support with little or no longitudinal expansion, cages maybe hard bolted to the support point.
3. Ensure the structural support point is vertically above the centre of the pipe or equipment support point.
4. To load the spring, turn the upper nut on the lower hanger rod clockwise.

## 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 Embelton General Conditions of Sale, copies of which maybe inspected on request.

## SPECIFICATION

Resilient piping supports shall incorporate a stable steel spring in combination with a heavy duty steel cage. Springs shall have a minimum additional travel to solid of 50% rated deflection. The lower hanger rod must be acoustically isolated from the cage by the use of a resilient rubber insert incorporated into the spring compression plate or rubber isolation cup under the spring. They shall be type SHLD or SHWD as supplied by Embelton.