Isolation Hangers Type SHS / SH / SHW

25mm Static Deflection Spring

APPLICATION

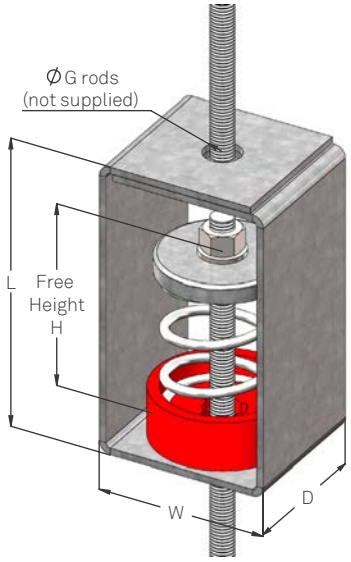
For support of equipment and pipework where a low cost hanger is required for effective isolation of vibration. Typically used for support of piping and ducts, fans, packaged air conditioners, fan coil units, attenuators, headers, etc.

FEATURES

- Heavy duty stable steel spring
- Rugged, heavy gauge steel cage
- Rod hole in spring compression plate fully rubber isolated (SHW)
- Spring located by moulded rubber acoustically isolating cup in cage (SHS, SH)
- Large diameter lower rod clearance hole in cage
- Used in enclosed plant rooms

OPTION

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



SHS / SH / SHW

SHS / SH / SHW Dimensions

Type	H mm	L mm	W mm	D mm	G (max) mm
SHS	86	130	75	65	12
SH SERIES					
92-96	123	180	95	75	16
97-99	132	180	95	75	20
SHW SERIES					
400-1024	135	200	115	100	20
1025-1628	135	200	115	100	26

SHS / SH / SHW PRODUCT GUIDE

Type	Max Load kg	Static Deflection mm	Spring Constant kg/mm	Spring Colours	
				Stripe 1	Stripe
SHS-9	10	33	0.3	Yellow	-
SHS-10	15	33	0.45	Brown	-
SHS-11	30	33	0.9	Blue	-
SHS-12	50	28	1.8	Black	-
SHS-13	75	25	3	Red	-
SHS-14	125	25	5	Green	-
SHS-16	175	20	8.8	Grey	-
SHS-17	200	15	13.3	Orange	-
				Stripe	Stripe 2
SH-92	50	33	1.5	Yellow	-
SH-93	100	33	3	Brown	-
SH-94	150	30	5	Blue	-
SH-95	200	30	6.7	Black	-
SH-96	250	28	8.9	Red	-
SH-97	300	28	10.7	Green	-
SH-98	400	25	16	Grey	-
SH-99	550	23	23.9	Orange	-
				Outer	Inner
SHW-400	200	33	6.1	Black	-
SHW-422	375	33	8.3	Black	Blue
SHW-423	300	33	9.1	Black	Yellow
SHW-425	380	30	12.7	Black	Red
SHW-1000	450	25	18	Green	-
SHW-1023	510	25	20.4	Green	Yellow
SHW-1024	550	25	22	Green	Green
SHW-1025	580	25	23.2	Green	Red
SHW-1026	690	25	27.6	Green	White
SHW-1600	775	25	31	Grey	-
SHW-1622	820	25	32.8	Grey	Blue
SHW-1624	875	25	35	Grey	Green
SHW-1626	1,000	25	40	Grey	White
SHW-1627	1,100	25	44	Grey	Orange
SHW-1628	1,150	24	47.9	Grey	Grey
SHW-1731	1,275	20	63.8	Orange	Grey/Yellow

DESIGN

Springs used in type SH 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

Steel spring mounts provide effective isolation of mechanical vibration. However, the spring itself has its own inherent surge frequency depending on its physical geometry and material properties. As such, it is possible to transmit certain audible level frequencies.

In SH 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 (SHW), or using a moulded rubber isolation cup under the spring (SHS, SH). The standard unit is theoretically 92% to 95% effective in isolation of audible frequencies. For higher levels of isolation, refer to the product RSH spring and rubber element hangers (Datasheet RSH).

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)

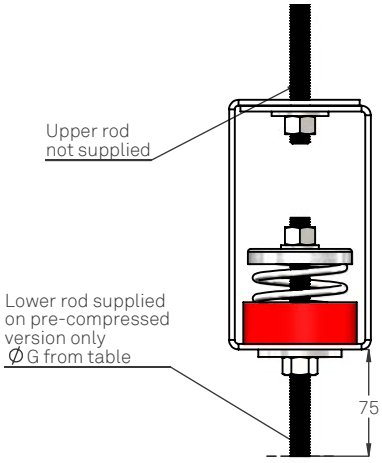
To aid installation of complex equipment and piping systems, the hanger maybe supplied complete with lower rod and with the spring compressed under load (the standard pre-compression setting is 75% of rated load). In this way the hanger can act as a rigid connection to facilitate leveling of the system. 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.

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.



PRE-COMPRESSION

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 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 or equipment supports shall incorporate a stable steel spring in combination with a heavy duty steel cage. Springs shall have a minimum additional travel of 50% rated deflection to solid. 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 SH as supplied by Embelton.