Isolation Hangers Type RSHS / RSH / RSHW

30mm Total Static Deflection, Spring & Rubber Element

APPLICATION

For support of pipework and equipment with speeds down to the order of 700 RPM requiring effective isolation of both mechanical vibration and acoustical level frequencies. Typically used for support of piping and ducts, fans, packaged airconditioners, fan coil units, attenuators, headers, etc.

FEATURES

- Heavy duty stable steel spring
- Rugged, heavy gauge steel cage
- Separate rubber acoustical isolating element
- Spring located by moulded rubber acoustically isolating cup in cage (RSHS, RSH 89-96)
- Spring located by steel cup in cage (RSH 97-99 and all RSHW)
- Large diameter lower rod clearance hole in cage
- Misalignment capability of 15°

OPTION

- Spring deflection scale and pointer plate.
- Pre-compressed spring (suffix P in type code).
- Double deflection rubber element (RDSHS, RDSH or RDSHW).

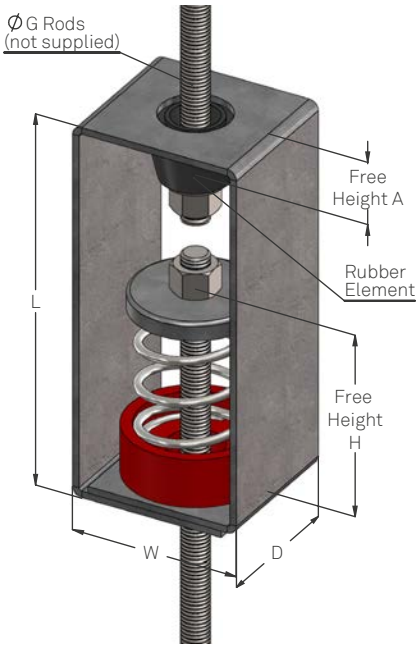
DESIGN

RSH hangers incorporate a steel spring and separate rubber acoustical isolating element mounted in a steel cage. Springs used in RSH hangers are designed with a horizontal to vertical stiffness ratio of between 0.9 and 1.1 at rated load; ratio of spring diameter to loaded height minimum 0.8; and a rated maximum operating deflection of 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.

In RSH hangers, spring transmission of most audible frequencies is effectively minimised by the use of a separate rubber element mounted in the top of the hanger cage. These elements are selected for an average deflection of 5mm at rated load so that, for type RSH, the theoretical isolation of audible frequencies is generally better than 98.5%. For full dynamic performance of the element, refer to Datasheet RHE.



RSHS / RSH / RSHW

RSHS / RSH / RSHW Dimensions

Type	H mm	L mm	W mm	D mm	A mm	øG (max) mm
SINGLE DEFLECTION						
RSHS	86	170	75	65	35	12
RSH 92-96	123	210	95	90	40	16
RSH 97-99	132	210	95	90	53	20
RSHW 400-1628	129	280	128	100	55	20
DOUBLE DEFLECTION						
RDSHS	86	170	75	65	48	12
RDSH 92-96	123	210	95	90	53	16
RDSH 97-99	132	210	95	90	80	16
RDSHW 400-1628	129	280	128	100	87	26

RSHS / RHS / RSHW PRODUCT GUIDE

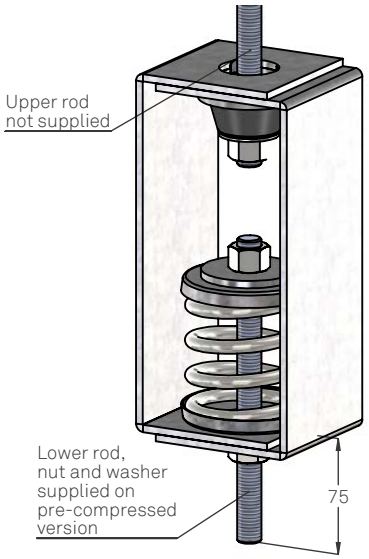
Type	Max Load kg	Static Deflection mm	Spring Constant kg/mm	Spring Colours	
				Stripe 1	Stripe 2
RSHS-9	10	34	0.30	Yellow	-
RSHS-10	15	34	0.45	Brown	-
RSHS-11	30	34	0.9	Blue	-
RSHS-12	50	32	1.8	Black	-
RSHS-13	75	31	3.0	Red	-
RSHS-14	125	29	5.0	Green	-
RSHS-16	175	26	8.8	Grey	-
RSHS-17	200	20	13.3	Orange	-
RSH-92	50	38	1.5	Yellow	-
RSH-93	100	38	3.0	Brown	-
RSH-94	150	36	5.0	Blue	-
RSH-95	200	35	6.7	Black	-
RSH-96	250	34	8.9	Red	-
RSH-97	300	34	10.7	Green	-
RSH-98	400	30	16.0	Grey	-
RSH-99	550	29	23.9	Orange	-
				Outer	Inner
RSHW-400	200	37	6.1	Black	-
RSHW-421	254	37	7.7	Black	Black
RSHW-422	275	37	8.3	Black	Blue
RSHW-423	300	37	9.1	Black	Yellow
RSHW-425	380	34	12.7	Black	Red
RSHW-1000	450	30	18.0	Green	-
RSHW-1021	480	30	19.2	Green	Black
RSHW-1023	510	30	20.4	Green	Yellow
RSHW-1024	550	30	22.0	Green	Green
RSHW-1025	580	30	24.8	Green	Red
RSHW-1026	690	30	27.6	Green	White
RSHW-1600	775	30	31.0	Grey	-
RSHW-1622	820	30	32.8	Grey	Blue
RSHW-1624	875	30	35.0	Grey	Green
RSHW-1626	1,000	30	40.0	Grey	White
RSHW-1627	1,100	30	44.0	Grey	Orange
RSHW-1628	1,150	29	47.9	Grey	Grey
RSHW-1731	1,275	25	63.8	Orange	Grey / Yellow

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. When installed correctly and under load, the RSH hanger automatically self-aligns by pivoting on the rubber element. In this way misalignment can be accommodated without interference between hanger rods and cage.

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 pre-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.



RSHW PRE-COMPRESSED

DEFLECTION SCALES

Pointer plates and deflection scales, indicating spring deflection only, 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 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 capable of up to 25mm rated static deflection, housed in a heavy duty steel cage. Springs shall have a minimum additional travel of 50% rated deflection to solid. Acoustical isolation must be achieved by use of a separate resilient rubber element of deflection 5mm incorporated into the steel hanger. They shall be type RSH as supplied by Embelton.