



Hourglass Spring



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Metalastik® 'Hourglass' Bearer Springs are in successful operation worldwide in a diversity of service applications including suspensions for LRV, metro, freight wagon and locomotives.

Designed and developed to provide an idealized interface between rail vehicle bodies and bogies, 'Hourglass' Bearer Springs allow all the relative displacements required by secondary suspensions, but with all the advantages of rubber springing, i.e. simplicity, reduced maintenance costs, improved ride characteristics and long service life.

Metalastik® 'Hourglass' Bearer Springs offer rail vehicle designers the solution of a high load capacity spring which exhibits excellent all round flexibility (vertical frequencies of 1.8 – 2.5 Hz).

The spring has a progressive load/displacement characteristic which achieves quasi-constant natural frequency. This means the same smooth ride is achieved whether at high or low vehicle loads. At the same time the progressive load/displacement minimises vehicle body height change, tare to laden. This is coupled with the ability to accommodate large horizontal, torsional and conical displacements.

About Trelleborg Industrial AVS

Over 100 years of experience as Metalastik and Novibra, today Trelleborg Industrial AVS make improvements people can physically feel. From smoother travel to quieter, more efficient machines, we make life feel better. With quality, testing and compliance built in, we're in it for the long haul, ensuring your solution still works, over an extended and often arduous life-cycle.

With three state-of-the-art manufacturing plants across the globe, our experience in rubber to metal bonding enhances several industries, including off-highway vehicles, rail and mass transit, marine and energy and general industry.

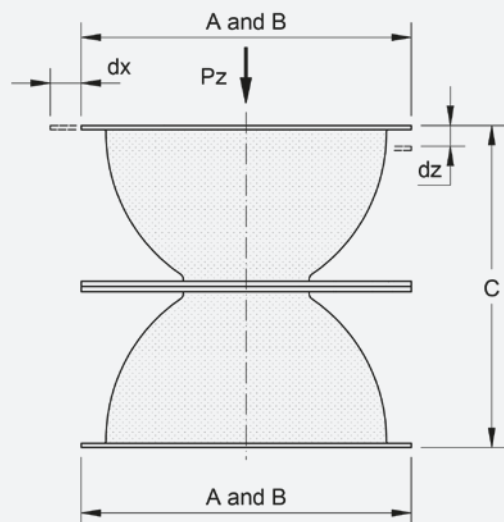
We offer an end-to-end service, to take you from concept through design, manufacturing and testing to delivery. This reduces the complexity of supply, helping you cut costs, mitigate risk and receive on time, on budget delivery.

Trelleborg IAVS is part of Trelleborg Group, which employs 15,000 people in over 40 countries. Whatever your challenge, whatever your role and wherever you are, we are nearby to offer expert knowledge and quality solutions.

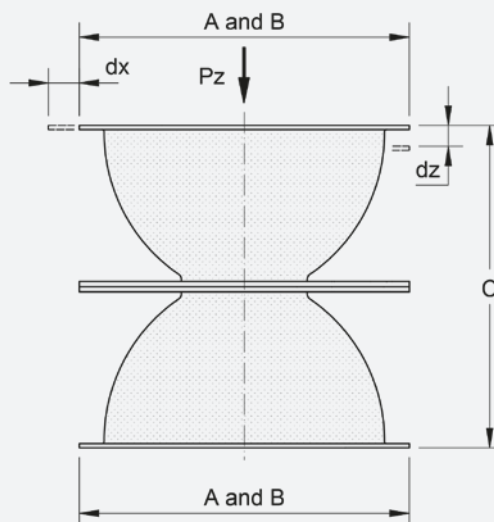
Hourglass Spring

Technical Drawing

42-100 mm Shear Deflection



100-120 mm Shear Deflection



Product Data

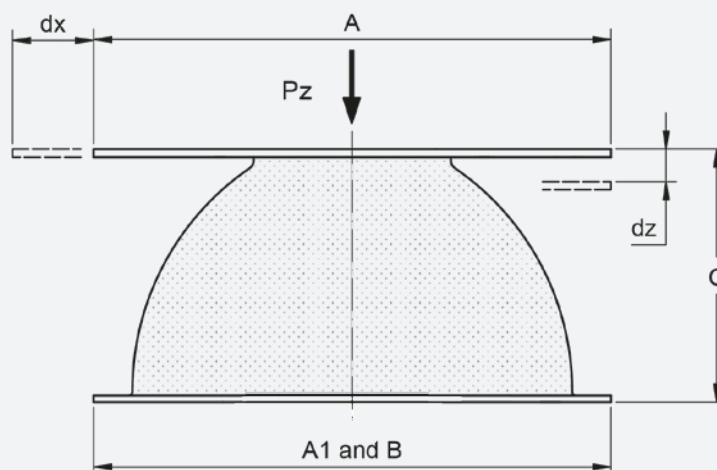
DRAWING No.	DIMENSIONS (mm)			VERTICAL LOAD Pz (kN)	VERTICAL DEFLECTION dz (mm)	HORIZONTAL DEFLECTION dx (mm)	WEIGHT (kg)
	A	B	C				
42-100mm SHEAR DEFLECTION							
17/2252	240	240	154	43	52	48	8.6
17/1653	432	370	376	63	142	120	46
17/1980	400	370	354	130	100	95	46
17/2173	320	320	311	38	119	100	19
17/1863	320	320	311	56	119	100	19
100-120mm SHEAR DEFLECTION							
17/1869	362	340	332	90	118	100	22
17/2171	432	384	376	75	142	120	42
17/1946	470	470	462	200	164	120	42.6
17/1658	570	570	370	250	128	120	92

Parts listed are part of a wider range, details of which are available upon request.

Half Hourglass Spring

Technical Drawing

20-60 mm Shear Deflection



Product Data

20-60 mm Shear Deflection

DRAWING No.	DIMENSIONS mm				VERTICAL LOAD Pz (kN)	VERTICAL DEFLECTION dz (mm)	HORIZONTAL DEFLECTION dx (mm)	WEIGHT (kg)
	A	A1	B	C				
20-60mm SHEAR DEFLECTION								
17/2134	240	240	240	77	43	26	20	4.3
17/1948	370	432	384	188	75	71	53	19.2
12/1822	284	360	330	138	99	50	40	14
17/1818	370	420	420	188	100	72	55	20.4
17/1950	495	470	470	231	200	82	60	43