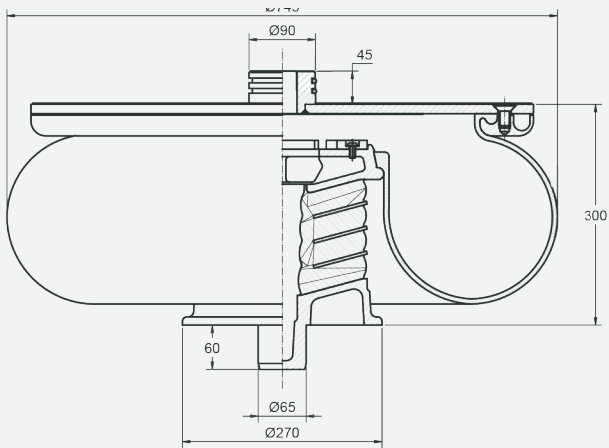
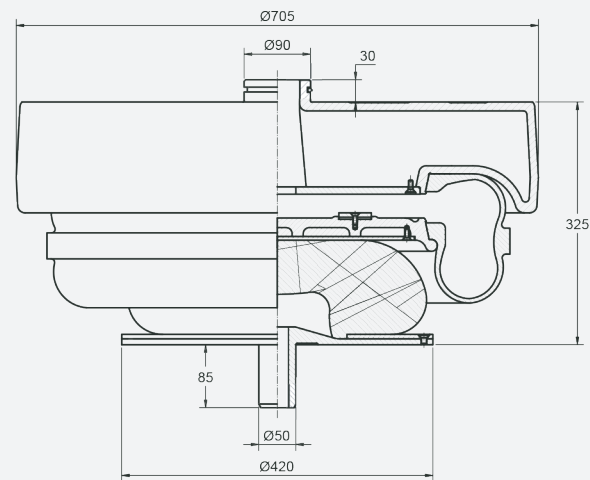


Technical Drawing

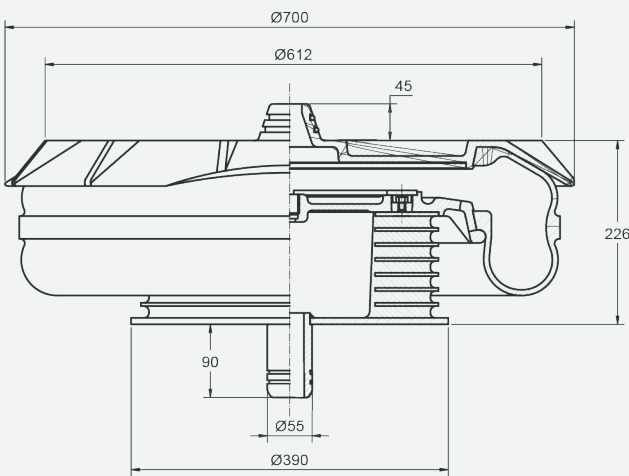


Typical Systems

Air Spring Assembly	45/1007
Vertical Load Capacity	114 kN
Vertical Frequency	< 1.0 Hz
(Airspring System plus 40 litre added volume)	
Maximum Horizontal Displacement	± 120 mm
Working Height	300 mm
Air Pressure (at maximum load)	5.3 bar
Air-bag Ref.	LM9086 A
Series Spring Ref.	LM9137



Air Spring Assembly	45/1001
Vertical Load Capacity	122 kN
Vertical Frequency	<1.0 Hz
(Airspring System plus 20 litre added volume)	
Maximum Horizontal Displacement	± 110 mm
Working Height	325 mm
Air Pressure (at maximum load)	5.4 bar
Air-bag Ref.	61/0067
Series Spring Ref.	17/1818



Air Spring Assembly	45/1003
Vertical Load Capacity	130 kN
Vertical Frequency	<1.2 Hz
(Airspring System plus 45 litre added volume)	
Maximum Horizontal Displacement	± 105 mm
Working Height	226 mm
Air Pressure (at maximum load)	5.2 bar
Air-bag Ref.	61/0070
Series Spring Ref.	17/1835



Using advanced polymer technology, Trelleborg's Antivibration Solutions (AVS) operation specializes in the field of rubber-to-metal bonding for the removal of unwanted noise and vibration. Part of the Industrial Solutions division of Trelleborg Group, we harness over 100 years of experience to solve a wide range of application and environmental challenges in sectors including rail, marine, industrial and off-highway. Focused on isolation, attenuation and suspension solutions of unrivalled quality and reliability, we have a reputation for high quality, outstanding performance and long service life. Our commitment and expert polymer technologies optimize comfort, health and safety while creating maximum business value through improved longevity, productivity and cost effectiveness.

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ANTIVIBRATION@TRELLEBORG.COM



Air Spring System

AIR SPRING SYSTEM

Collaborative expertise has created a range of Metalastik® Air Spring systems which meet the stringent requirements of modern rail technology, particularly combining large horizontal displacements and low frequency ride characteristics for both normal and emergency conditions.

The potential of progressive force/displacement characteristics enable a stable vehicle performance to be achieved.

The ability to accommodate high horizontal, torsional, and conical displacements make these Air Spring Systems ideal solutions on bolsterless bogie designs. They can of course be adapted to suit bolster arrangements.

The inclusion of an air reservoir can simplify the total system integration of the vehicle.

Benefits

- Satisfy stringent requirements for modern Rail technology
- Progressive force/displacement characteristics (if required)
- Large horizontal and angular displacement capability
- Low ride-frequency in emergency situations
- Ideal for all types of bogie designs
- Integral reservoir (if required)

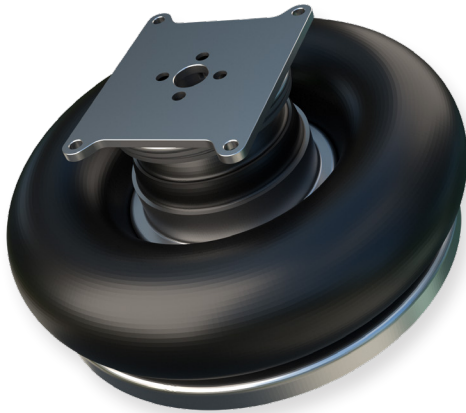
ABOUT TRELLEBORG AVS

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.

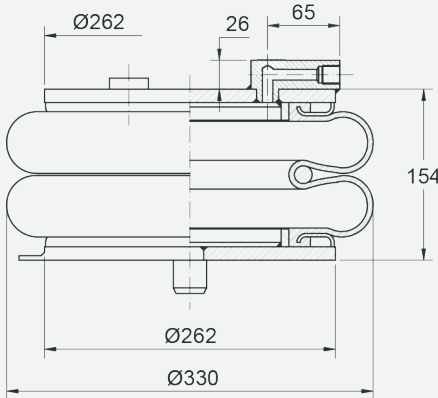
With three state-of-the-art manufacturing plants across the globe, our experience in rubber to metal bonding enhances several industries, including off-highway vehicles, rail and mass transit, marine and energy and general industry.

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 AVS 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.

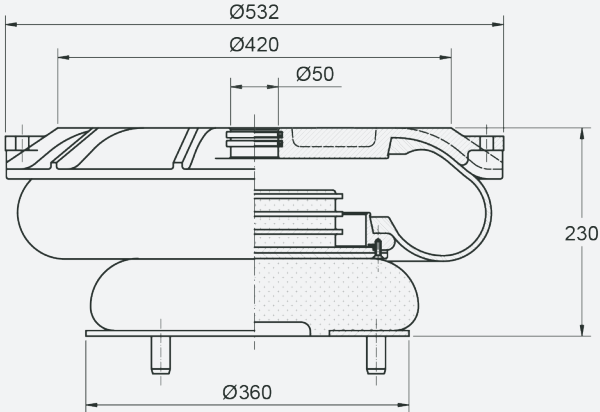


Technical Drawing

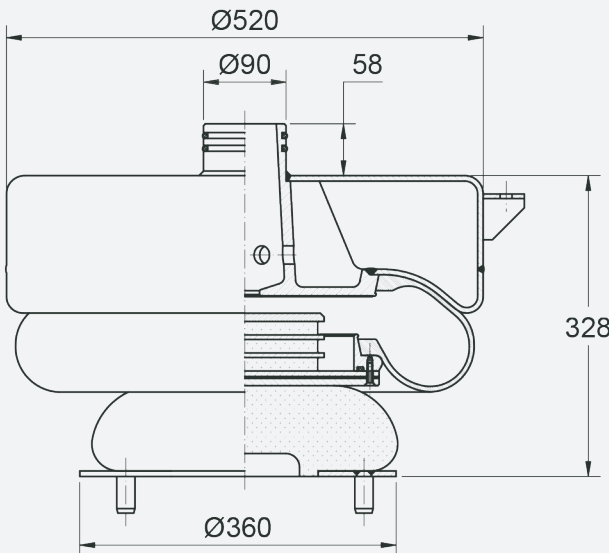


Typical Systems

Air Spring Assembly	45/1004
Vertical Load Capacity	46 kN
Vertical Frequency	< 1.55 Hz
(Airspring System plus 25 litre added volume)	
Maximum Horizontal Displacement	± 10 mm
Working Height	154 mm
Air Pressure (at maximum load)	8.0 bar
Air-bag Ref.	46/1004 G

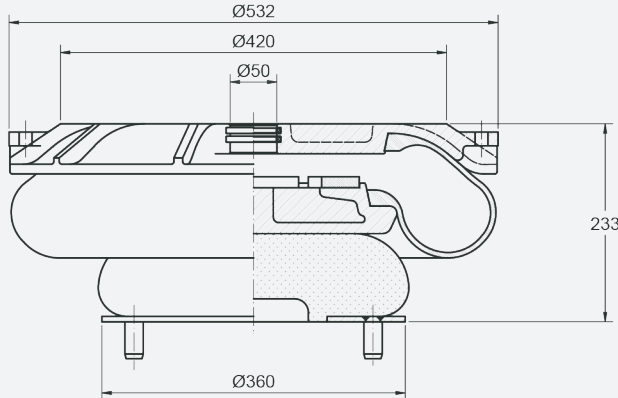


Air Spring Assembly	45/1022
Vertical Load Capacity	78 kN
Vertical Frequency	<1.3 Hz
(Airspring System plus 25 litre added volume)	
Maximum Horizontal Displacement	± 110 mm
Working Height	230 mm
Air Pressure (at maximum load)	6.1 bar
Air-bag Ref.	46/1010 E
Series Spring Ref.	17/1022
Internal Emergency Spring	15/3613



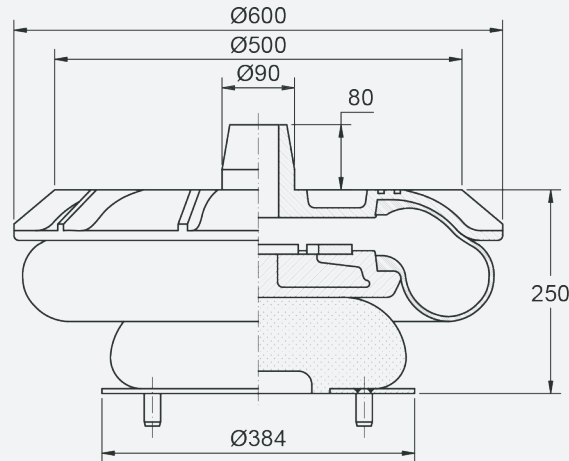
Air Spring Assembly	45/1010
Vertical Load Capacity	83 kN
Vertical Frequency	<1.3 Hz
(Airspring System plus 0 litre added volume)	
Maximum Horizontal Displacement	± 105 mm
Working Height	328 mm
Air Pressure (at maximum load)	6.2 bar
Air-bag Ref.	46/1010 E
Series Spring Ref.	17/1908
Internal Emergency Spring	15/3613

Technical Drawing

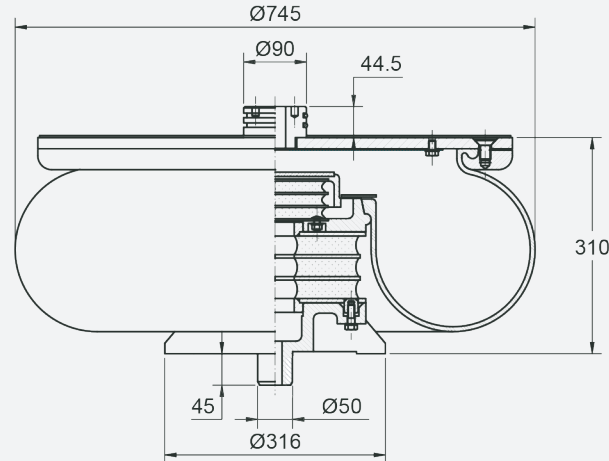


Typical Systems

Air Spring Assembly	45/1006
Vertical Load Capacity	100 kN
Vertical Frequency	< 1.3 Hz
(Airspring System plus 25 litre added volume)	
Maximum Horizontal Displacement	± 80 mm
Working Height	233 mm
Air Pressure (at maximum load)	6.9 bar
Air-bag Ref.	LM9186 A
Series Spring Ref.	17/1852



Air Spring Assembly	45/1039
Vertical Load Capacity	105 kN
Vertical Frequency	<1.5 Hz
(Airspring System plus 20 litre added volume)	
Maximum Horizontal Displacement	± 120 mm
Working Height	250 mm
Air Pressure (at maximum load)	6.0 bar
Air-bag Ref.	LM9263 A
Series Spring Ref.	LM9373



Air Spring Assembly	45/1040
Vertical Load Capacity	110 kN
Vertical Frequency	<1.0 Hz
(Airspring System plus 40 litre added volume)	
Maximum Horizontal Displacement	± 120 mm
Working Height	310 mm
Air Pressure (at maximum load)	5.2 bar
Air-bag Ref.	LM9086 A
Series Spring Ref.	17/1845
Internal Emergency Spring	17/1700