



ISO 9001:2008 Certified Company





Making a difference where it counts





MISSION: TO BE THE
BEST FOR OUR
CUSTOMERS AND THE
PREFERRED SOURCE
FOR PRECISION
ENGINEERING
COMPONENTS IN
SHEET METAL, WIRE,
MOLDED RUBBER
AND ENGINEERING
PLASTICS.

Starline Enterprises started its Business Activity in Engineering Components in the year 2005, initially as a Sourcing Organization for Precision Engineering Components addressing the Export Market.

Inspired by the support given by our Customers, and our continuing quest to deliver Quality Products to our Customers, we set up and established our own Manufacturing Unit for the Production of Pressed Sheet Metal, Wire, Engineering Plastic and Moulded Natural Rubber & Synthetic Rubber Components.

To support our Mission, we have Qualified and Experienced Engineers to extend complete Technical Support to our Customers in terms of developing products to the Customer specifications and requirements.

Our factory is fully equipped with necessary machinery including Mechanical Presses, Hydraulic Presses and Hydro Pneumatic Presses, Precision Drilling / Tapping Machines, Rubber Mill / Rubber Moulding Presses / Rubber

Extruders, Powder Coating Booth and Curing Oven in addition to complete testing and measurement devices from a fully automatic 1 Ton capacity Spring Testing Machine, to Durometers for Rubber Testing and the best in measurement and weighing instruments.

At our Office end, we have Professional and fully Trained Staff to coordinate with our Customers which in turn ensures timely responses to Customer needs and constant availability of feedback to Customer demands.

We are ISO 9001: 2008 Certified Company and follows Procedural and Documentation System which is Compliant with the standard procedures and above referred ISO.

We also serve the emerging needs of our Customers by having the services of Qualified and Competent Tool Room Engineers who can design and develop new components as per individual Customer requirement.





Quality and Customer Satisfaction is a continuous and never ending process at Starline. We work hard to ensure Customer Satisfaction by providing high Quality Products, adhering to Customer Delivery Schedules and maintaining a successful working relationship. We put Customer's needs and expectations first. Adhering to this policy in all our departments ensures maximum value to our Customers.

Our Material Procurement Department has a well established network by which only Quality Materials from Standard Companies are procured. Before its entry into our Warehouse, they are all checked and evaluated to ensure the highest Standards of Quality. Quality Checks are done at each level of Productions which are all well Documented.

Finally the Finished Goods are checked with the Engineering Drawings once again to ensure that Quality is maintained. Only after the approval of Quality Control Department which is a Stand Alone Department, the Material gets packed for Shipment.

We are committed to Customer Satisfaction through

- Good Quality Products
- Competitive Pricing
- On Time Deliveries
- Proper Response to Queries
- Compliance





We give utmost importance to Health, Safety and Environment Policy. Starline maintains its Workplace safe from Hazards and Dangerous Practices. We have given the Employees the Power to reject a job which has to be done in an Unsafe Manner with the result we have a Zero accident rate to date.

We ensure that our Employees are Healthy and injury free and also ensures that we comply with the Local Environment Regulations to achieve the following:

- 1. Promote Healthy Life Style amongst Employees.
- 2. Eliminate all Employee injuries by making the Workplace and Sites free from Hazards and Unsafe Acts.
- 3. Reduce Pollutants in the Application Processes and Site Operations.
- 4. Conserve Natural Resources by conserving Water, Electricity & other Consumables and disposal of Waste complying with the local laws.
- 5. Establish Safety and Environmental Protection Standards that comply with the Local Laws.
- 6. Employees to comply with these Standards as per their job description and Rules and Procedures of the company







- Both clamps are ribbed for providing additional strength
- Lips are provided with additional thread lengths by means of extended collared tap holes.
- For pipe size, OD 100 mm and above, welded side nuts have been provided.
- Suspension nuts have twin threads, M8, M10 for flexibility of installation.
- Side bolts have slotted cross head for ease of tightening.



- High quality Rubber lining for suppression of sound and vibration.
- Both clamps are ribbed for providing additional strength
- Lips are provided with additional thread lengths by means of extended collared tap holes.
- For pipe size, OD 100 mm and above, welded side nuts have been provided.
- Suspension nuts have twin threads, M8, M10 for flexibility of installation.
- Side bolts have slotted cross head for ease of tightening.









- Allows vertical level adjustment of pipe lines after installation.
- Models CHS250 and above are fitted with steel spacer sleeve as standard.
- Optional EPDM lined hangers are available to minimize condensation, improve noise attenuation and prevent contact between dissimilar metals.
- Material: Mild Steel electro galvanized. Optional hot dip galvanized / stainless steel.



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- Swivel Nuts are counter sunk to eliminate damage to threads.
- · Additional strength provided by notching of lips.
- Knurled nut facilitates vertical adjustment of pipe levels after installation.
- One piece clip guarantees high permissible load.
- Mounting possible without any additional tooling.



- 4.1 Full range of intermediate sizes available to ensure a simple and effective support and clamping arrangement for insulated / non insulated piping.
- Optional U Bolt with rubber sleeve / epoxy coated / PVC coated / Brass Construction / Stainless Steel Construction.









- Federal Specification AS-A-1192 (Type 1)
- MSS-SP58 (Type 1)
- MSS-SP69
- WW-H-171E (Type 1)
- EG-ASTMB 633 SC3, BS 1706 FE / ZN 12



Rubber Support Insert

- Dimensional accuracy is ensured since each set is individually machine moulded.
- Green Product.
- Product is extremely rigid. Hence resistant to deterioration over a period of time.
- Unlike wood, material is non corrosive.
- Lower installation cost due to lack of requirement of additional metal sheets for wider load distribution.
- Termite control not required.
- Tongue and groove arrangement between RSI inserts saves labour cost and time.
- Rubber pipe supports also provide an acoustic barrier against transmission of high frequencies.
- Rubber support inserts are available for all pipe size and insulation thickness and are integrated with our various type of pipe supports to ensure fast and quality pipe installation.



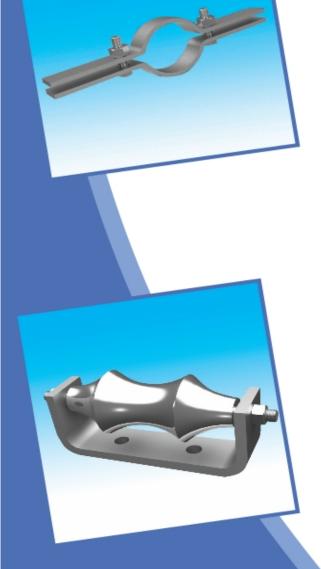




 When used as pipe guides, lateral stability is ensured while permitting axial thermal expansion / contraction.



- Starline roller chairs are made from solid steel iron rollers for rigid pipe supporting.
- The rollers are available in wide range of material specification
- Fully electrogalvanized cast iron rollers are standard.
- Stainless steel roller chair (suffix "SS")
- Nylon roller chair (suffix "NL")
- Hot dip galvanized roller chair(suffix "HDG")
- Epoxy powder coated roller chair (suffix "EP")
- The roller pin and rods are made from high tensile steel fully electrogalvanized as standard / hot dip galvanized as optional.
- Optional pipe guide assembly shall be provided to protect the piping in case of water hammer and external vibrations.









Roller Stand

Features

- Starline Roller Stands are made from solid steel iron rollers for rigid pipe supporting.
- The Roller Stands are available in wide range of material specification
- Fully electrogalvanized cast iron Roller Stands are standard.
- Stainless steel Roller Stands (suffix "SS")
- Nylon Roller Stands (suffix "NL")
- Hot dip galvanized Roller Stands (suffix "HDG")
- Epoxy powder coated Roller Stands (suffix "EP")
- The roller pin and rods are made from high tensile steel fully electrogalvanized as standard / hot dip galvanized as optional.
- Optional pipe guide assembly shall be provided to protect the piping in case of water hammer and external vibrations.



Features

- Used for Parallel Piping mounted on Channels
- Quick Installation Design



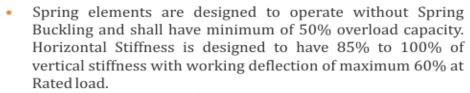
- Offset clamps are used for fixing pipes at fixed distance "H" from wall or floor.
- Extended pipe clamps, as shown, permit adjustment of distance from wall or floor at site by cutting and/or bending the legs suitably.











- Spring mount has external leveling arrangements to ensure equipment is in level condition after installation.
- Deflection can be provided for 25 mm and 50 mm at Rated Load.
- Inner walls of lower casing have resilient rubber Snubbers which
- Provides a smooth guide for the top casing.
- Prevents metal to metal contact.
- Limits lateral movement during startups, shutdown and due to horizontal wind load.
- Thick Ribbed Neoprene Pads are provided below the springs which provide noise barrier for high frequencies which may otherwise be transmitted to building structures. 10 mm thick Neoprene Sound Pads are provided.
- Springs are powder coated with individual colours to facilitate identification.
- Springs and Casings are powder coated upto 100 Microns with 1,000 Hours of Salt Spray Rating conforming to ASTM B-117. Option:
- 3.7.1 Frame Hot Dip Galvanised (Prefix Part Number with "HDG")
- 3.7.2 Spring Neoprene Coated (Prefix Part Number with "N")
- 3.7.3 Spring Plastic Coated (Prefix Part Number with "P")









- 3.1 Laterally Stable Springs are designed to prevent Spring Buckling and capable of 50% overloading capacity. Horizontal stiffness is 80% of vertical stiffness with working deflection max. 60% at Rated Load.
- Springs and Casing are powder coated with 100 hours of Salt Spray Test conforming to ASTM B-117.
- Upper Load Plate and Leveling Assembly are provided for accurate Leveling.
- In heavier capacities, Springs are welded to Load Plate with Neoprene Pad.
- Standard Product Range offers upto 2" deflection with optional Custom made Isolators of higher deflection.
- Thick ribbed Neoprene Pads are provided below Load Plate for noise isolation and non skid. 10-18 mm thick neoprene sound pads are provided.
- · Colour Coded Coated Springs for easy identification of Load.

Spring Hanger - Light Duty

- 3.1 Spring diameter to height ratios are designed to ensure that spring will never buckle even when fully loaded.
- Suspension rod misalignment (30 degree arc) is compensated in hanger design.
- Locking rubber bush centralizes the spring and prevents dislocation.
- Springs are powder coated with appropriate color coding to facilitate identification.
- Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117. Options:
- Frame Hot Dip Galvanised (Prefix Part Number with "HDG")
- Spring Neoprene Coated (Prefix Part Number with "N")
- Spring Plastic Coated (Prefix Part Number with "P")









Spring Hanger - 25 mm Deflection

Features

- Spring diameter to height ratios are designed to ensure that spring will never buckle even when fully loaded.
- Suspension rod misalignment (30 degree arc) is compensated in hanger design.
- Locking rubber bush centralizes the spring and prevents dislocation.
- Springs are powder coated with appropriate color coding to facilitate identification.
- Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117.
 - Option : Frame Hot Dip Galvanized. Part Number prefix with "HDG".
 - Spring Neoprene Coated. Part Number prefix with "N". Spring Plastic Dip Coated. Part Number prefix with "P".
- Isolation Brackets are capable of overloading upto 500%.

Spring Hanger - 50 mm Deflection

Features

- Spring diameter to height ratios are designed to ensure that spring will never buckle even when fully loaded.
- Suspension rod misalignment (30 degree arc) is compensated in hanger design.
- Locking rubber bush centralizes the spring and prevents dislocation.
- Springs are powder coated with appropriate color coding to facilitate identification.
- Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117.

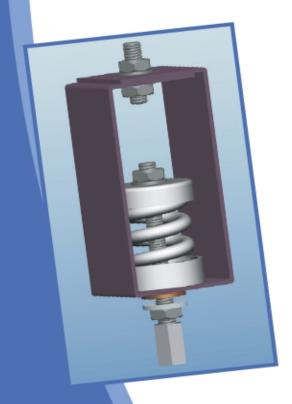
Option:

Frame Hot Dip Galvanized. Part Number prefix with "HDG". Spring Neoprene Coated. Part Number prefix with "N". Spring Plastic Dip Coated. Part Number prefix with "P".

Isolation Brackets are capable of overloading upto 500%.





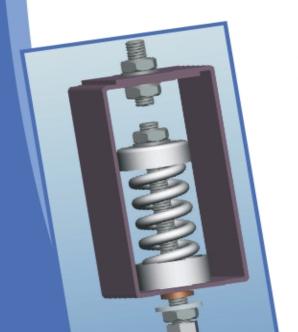


Pre Compressed Spring Hanger

- Spring diameter to height ratios are designed to ensure that spring will never buckle even when fully loaded.
- Suspension rod misalignment (30 degree arc) is compensated in hanger design.
- Direct connection to lower suspension rod by means of a threaded rod coupler.
- Printed deflection scale to indicate total spring deflection.
- Pre compressed spring effectively minimizes transfer of variations in pipe load during filling of pipes thus protecting equipment connections / flexible joints and also prevents overloading of the main equipment isolators.
- Locking rubber bush centralizes the spring and prevents dislocation.
- Springs are powder coated with appropriate color coding to facilitate identification.
- Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117.
 Options:
- Frame Hot Dip Galvanised (Prefix Part Number with "HDG")
- Spring Neoprene Coated (Prefix Part Number with "N")
- Spring Plastic Coated (Prefix Part Number with "P")







Pre Compressed Spring Hanger

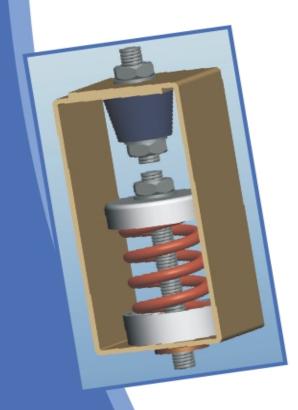
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- Printed deflection scale to indicate total spring deflection.
- Pre compressed spring effectively minimizes transfer of variations in pipe load during filling of pipes thus protecting equipment connections / flexible joints and also prevents overloading of the main equipment isolators.
- Locking rubber bush centralizes the spring and prevents dislocation.
- Springs are powder coated with appropriate color coding to facilitate identification.
- Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117.
 Options:
- Frame Hot Dip Galvanised (Prefix Part Number with "HDG")
- Spring Neoprene Coated (Prefix Part Number with "N")
- Spring Plastic Coated (Prefix Part Number with "P")







- Double protection against transmission of noise to structures is assured as the neoprene component provides an effective acoustic barrier and the moulded neoprene cup below the spring prevents metal to spring contact, thus effectively isolating the suspended equipment from the structure.
- Spring diameter to height ratios are designed to ensure that spring will never buckle even when fully loaded.
- Suspension rod misalignment (30 degree arc) is compensated in hanger design.
- Locking rubber bush centralizes the spring and prevents dislocation.
- Springs are powder coated with appropriate color coding to facilitate identification.
- Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117.
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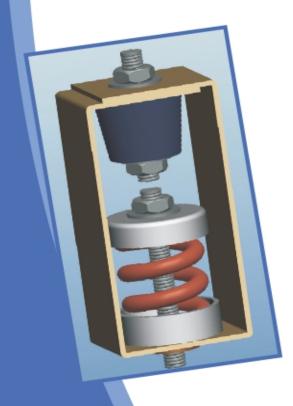








- 3.1 Double protection against transmission of noise to structures is assured as the neoprene component provides an effective acoustic barrier and the moulded neoprene cup below the spring prevents metal to spring contact, thus effectively isolating the suspended equipment from the structure.
- Spring diameter to height ratios are designed to ensure that spring will never buckle even when fully loaded.
- Suspension rod misalignment (30 degree arc) is compensated in hanger design.
- Locking rubber bush centralizes the spring and prevents dislocation.
- Springs are powder coated with appropriate color coding to facilitate identification.
- Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117.
 Options:
- Frame Hot Dip Galvanised (Prefix Part Number with "HDG")
- Spring Neoprene Coated (Prefix Part Number with "N")
- Spring Plastic Coated (Prefix Part Number with "P")









 Frame is made of G.I. steel and powder coated to 100 microns paint thickness (exceeds 1000 hours of salt spray test) and conforming to ASTM B-117.

Option: Frame Hot Dip Galvanised. Part Number prefix with "HDG".

- Rubber Mount is designed with hollow conical section thus ensuring loading of rubber in shear as well as compression mode and hence provides better isolation performance.
- Hanger Cage is designed to accommodate suspension rod misalignment up to 300
- Colour coded to facilitate easy identification
- Steel Brackets are fail safe upto 500% overloading
- Elastomer inserts are moulded from Oil Resistant Compounds

Open Spring Mount - Rubber Based

Features

- Spring elements are designed to operate without spring buckling with horizontal stiffness equal to vertical stiffness
- These springs are provided with 50% overload capacity at 1.5 times of rated deflection.
- Bottom plates are made of thick ribbed Neoprene Pad for isolating noise and vibration.
- Standard product range up to 2" deflection and custom isolators with higher deflections are available.
- Upper load plate and leveling assembly are provided for accurate leveling.
- The springs are powder coated with appropriate colour coding to facilitate identification.
- Springs are powder coated to 100 microns paint thickness (exceeds 1,000 hours of salt spray test) conforming to ASTM B-117

Options:

- Frame Hot Dip Galvanised (Prefix "HDG")
- Spring Neoprene coated (Prefix "N")
- Spring Plastic coated (Prefix "P")









- 3.1 High strength bond and specially compounded elastomers assure a long life and high load carrying capacity.
- Low cost, light weight, compact, easy to install and maintenance free.



- 3.1 Bolt down plate with holes for anchoring
- Serrated rubber surface to prevent skidding
- · Corrosion Resistant since all metal parts are encased in rubber
- Colour Coded for ease of identification
- Highly Oil Resistant for long life.









- Superior to metal springs in terms of greater sound insulation ability.
- Low cost, easy to install.
- Pads are designed for a maximum deflection of approximately 20% of its unloaded thickness.
- Load can be distributed over large surface area which reduces efforts in Leveling.
- Pads permit loading from 3.5 kg/cm2 17.5 kg/cm2 with maximum rated deflection of 8 mm
- Pad consists of 81 Modules of Size: 50 mm x 50 mm with 20 mm thick moulded in compounded Natural Rubber. The unique Square Cell Design allows maximum deflection without Rib Collapse and Sealing against external contaminants.



- Resilient rubber grommet with steel load distribution cups and extended sleeve, designed to reduce transmission of structure born noise from air ducts and suspended equipments / small pipes.
- Supplied complete with top and bottom steel load distribution cups, electro galvanised after manufacture for maximum corrosion resistance.
- Extended sleeve of rubber element prevents metal to metal contact between suspension rod and suspension bracket / trapeze channel.
- Available in two different sizes to suit width of duct / equipment suspension channel.
- Colour coded for identification of Capacity.









- 3.1 Pad comprises of multiple layers of resilient rubber in series. This
 permits higher deflection under load than feasible with a single layer.
- Load distribution plates ensure full pad area is used and give more linear load deflection characteristics.
- Starline Ribbed Multi Layer Pad
- Unique Diagonal Ribs help to distribute applied load evenly over larger area of pad surface.
- Alternating raised ribs extend pad load range.
- Ribs above and below the pad are at right angles to each other, thereby forming non skid surfaces which resist creeping of the equipment.
- Starline Square Cell Multi Layer Pad
- Square Cell pattern has a higher load bearing capacity than ribbed.
- The Grid Design creates "Suction Pockets" for better grip on equipment / floor surface.
- The suction pockets make the pad more effective for noise attenuation than ribbed pads.
- Solid cell periphery extends pad life by preventing ingress of external contaminants.

Restrained Spring Mount

- Spring elements are designed to operate without spring buckling with horizontal stiffness equal to vertical stiffness.
- These springs are provided with 50% overload capacity at 1.5 times of rated deflection.
- Steel frame with restrained Neoprene snubbers and dual vertical restraint plates are provided to limit movement of the connected machinery up to maximum 3 mm.
- Replaceable springs and built in leveling arrangements.
- Multi Directional Restraint with vertical limit stops.
- The springs are powder coated with appropriate colour coding to facilitate identification.
- Provided with Neoprene base pad which can isolate high frequency vibrations of audible range.
 - •The restraining system is capable to withstand 1.0g acceleration force.
- Springs are powder coated to 100 microns paint thickness (exceeds 1,000 hours of salt spray test) conforming to ASTM B-117.









Cased Restrained Spring Mount

Features

- Multi Directional Restraint with Vertical Limit Stops.
- Replaceable Springs.
- Epoxy Powder Coated / Hot Dipped Galvanized body.
- Springs have a deflection of 25 mm at Rated Load and are designed with 50% overload capacity to compensate for unexpected Load Variations and to reduce Operating Stress.
- Casing incorporate Restraining Plates fitted with Resilient Neoprene Snubbers and Hold Down Bolt which limit movement of Machinery to maximum of 3 mm.
- Provided with Neoprene Base Pad which can isolate High Frequency Vibrations of audible range.
- Built-in Leveling arrangements.
- The Restraining System is capable to withstand 1.0 g Acceleration Force.
- Springs and Casings have Epoxy Powder Coated finish, rated to withstand 1000 hours of Salt Spray Testing as per ASTM B117 Test Procedure.
- The Horizontal Stiffness of Springs are equal to Vertical Stiffness. The Springs are designed to have maximum 60% of deflection at Rated Load.

Housed Spring Mount

- Oil resistant Nitrile rubber housing provides better elimination of vibration and sound.
- Housed casing protects the springs from corrosion.
- The horizontal stiffness of the spring is more than 80% of vertical stiffness. Also fully closed rubber casing prevents further lateral movements. This makes HSM model spring mounts highly stable and durable in all working environments.
- The maximum deflection shall be 60% of total deflection at rated load with 50% overload capacity.
- Provided with levelling adjustments.
- Neoprene pads of 8-13mm are provided which ensure 3-4 mm deflection.
- Colour Coded labels for easy identification.
- The HSM mounts are available on following material specifications
 - Zinc plated metallic casings no suffix
 - Hot dip galvanized use HDG as suffix
 - Stainless steel use SS as suffix







- Rigid welded steel pouring frames with reinforcement bars and isolator brackets for concrete inertia bases. Supplied in rectangular or T-shape, complete with vibration isolators.
- Fabricated using formed steel channel. Optionally available in Structural Steel Channel construction.
- The frame height shall be minimum 8- 10% of longest span between isolators with minimum height of 150mm. Standard Heights: 150, 200, 240 and 300 mm. Higher frames can be supplied for special applications.
- Available for any equipment dimension. Rectangular shape supplied as standard. T-shape offered where it is required to support elbows of horizontal split casing pumps on the base itself.
- Reinforced with 12 mm OD welded in steel bars each way at approximately 200 mm spacing.
- Supplied together with Starline Isolators. Selection of mount type /
 models forms part of design process to provide a complete vibration
 isolation solution. Frames are compatible with open, cased and
 restrained mounts. These springs are designed with a horizontal
 stiffness equal to vertical stiffness to assure stability. Also spring will
 have capacity to over load 50% beyond rated capacity. Depending on
 isolation frequency, amplitude and location, any spring deflection can be
 provided.
- Pre-located anchor bolts shall be placed inside base frame.
- Snubbers shall be provided as standard accessory.

Industrial Stainless Steel Bellows

- Bellows are made from Stainless Steel convolutions of sufficient thickness and reinforcement necessary to contain rated pressure.
- The Bellows are designed for high cycle life to provide reliable decades of operation.
- Flow liners (optional) provided to minimize turbulence, pressure drop, erosion etc.
- Limit rods are provided to limit axial movement, while retaining ability to accommodate angular rotation. These can be provided with wide variety of material like GI, HDG, SS 304, SS 316L, SS 321 etc.
- These Bellows are available on wide variety of materials such as SS 304, SS 316L, SS 321 etc.
- The Flanges and Collars are provided with Epoxy coated Steel.







ISO 9001:2008 Certified Company

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