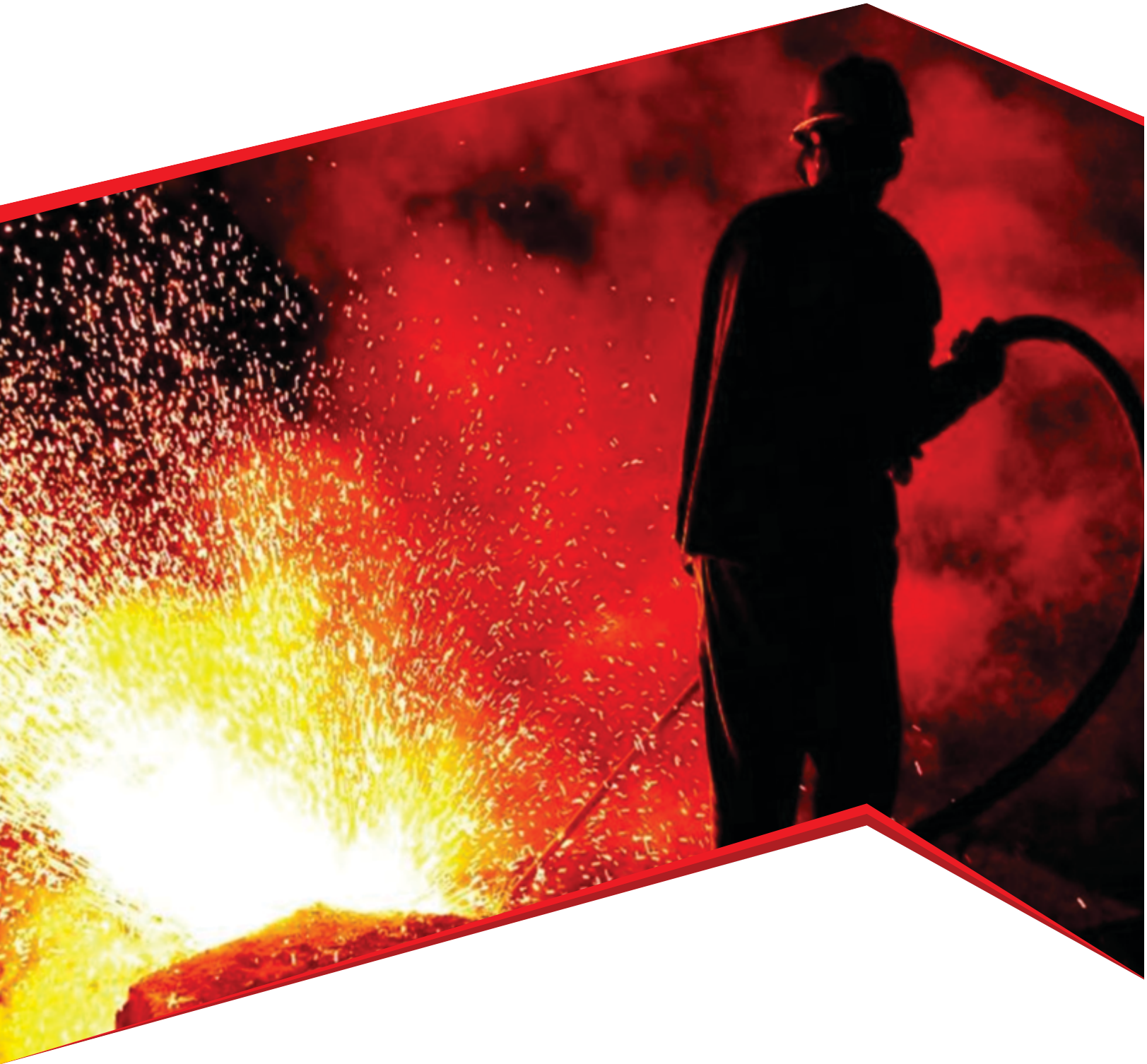


# Continuous Casting Machine Spare



AN ISO 9001 : 2015 Certified Company



Equipping Steel Industry  
at all Levels

## Continuous Casting Machine Spares



### **CONTINUOUS CASTING MACHINE**

Continuous casting machine is used for slabs, square billet, round billet, H-beam and relative spare parts. The mould parts of Continuous Casting Machine are adopted from Germany. The technology used for Continuous Casting Machine is introduced in Germany.

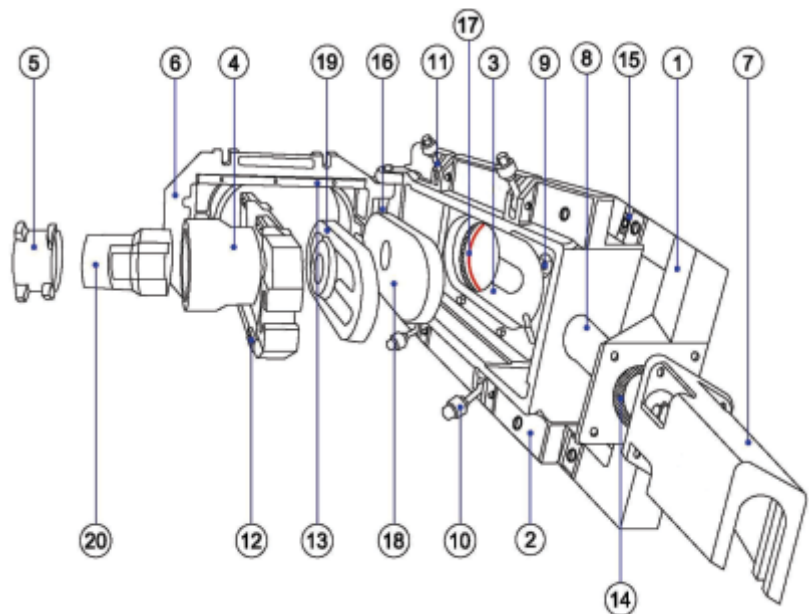
## CONTINUOUS CASTING MACHINE SPARE (CCM)

The continuous casting of molten steel into billets, blooms and slab products, has been highly refined over the years into an extremely sophisticated system. The continuous casting process is expected to produce metallurgically sound products at the lower possible cost, and this is being achieved in many steelworks throughout the world.

Lawatherm specializes in after market and genuine spare parts for continuous casting machine. We are one of the largest and truly independent suppliers of the major OEM's and aftermarket spare parts and service for Consact India, Siemens and others. In addition Lawatherm is committed to provide the largest selection of spare parts in the industries. We also offer a broad range of high quality genuine spare which come with same as their branded counterparts, together with complementary accessories. We are continuously increasing our inventory to meet the demands of our customers. All spare parts whether genuine or equivalent are fully compatible. As a leading Indian steel industries with the largest service network and a complete range of concast spare.

1. Copper mould tube ( square, rectangle and round)
2. Crystallizing equipment of continuous casters
3. Mould cooling jacket
4. Spray nozzle
5. Primary cooling hose
6. Slide gate valve
7. Heat expansion compensator Disc Springs Eye Bolt

QC Slide Gate System Make Lawatherm
1. Adaptor Frame
2. Housing
3. Fixed Plate Holder
4. Slider
5. Nozzle Holder
6. Housing Cover
7. Cylinder Bracket
8. Extension Rod
9. Eccentric Clamping Device
10. Expansion Compensating Nut
11. Eye bolts
12. Gliders
13. Gliding Rails
14. Guide Bush
15. Key for adaptor frame
16. Hinge Pin
17. Centering Ring
18. Fixed Plate
19. Sliding Plate
20. Exchange Collector Nozzle



The right spare parts must always be available so that production standstills are kept short. At the same time, capital tie-up and storage costs have to be kept low. Lawatherm supplies wear and spare parts quickly and reliably for all production stages, and supports the customers.

# Ladle Slide Gate System



Hydraulic Cylinder for Slide Gate Laddle



## Mechanically Operated Slide Gate System



The Manual Slide Gate System is ideally designed for Ladle Sizes up to 10 Tons used in foundries as well as Steel Plants. The System allows easy Operation with the help of a long Lever giving tremendous mechanical advantage. The Curvilinear Motion is specially designed for Operation of the Lever reducing both the force to be applied as well as the Refractory Cost. The Manual Slide Gate System is designed for multiple openings required for foundry applications as well as pit-side applications in the Ingots Casting Plants. This system can also be used for Continuous Casting Application where constant throughput is required through out the casting period. Both the above applications are easily executed by choosing proper Refractory's and by using appropriate Slide Gate Operation Technique. Manual Slide Gate System has very few components, which can be easily assembled and dismantled. Jigs and Fixtures are eliminated thus avoiding the preparation time. Since no Hydraulic Operations are required both the Capital Cost as well as Running Costs are substantially reduced. Manual Slide Gate System is an ideal solution for small Steel Plants and the Foundries looking for inexpensive solutions for controlling the Flow of Liquid Steel. All parts are available Ex-Stock and Performance is Guaranteed backed by extensive service.

## Hydraulic Operated Slide Gate System

The Slide gate system is a prerequisite for Modern day refining and casting practices wherein temperatures normally shoot up suddenly and violent reactions take place within the ladle. A Slide Gate System for Bottom pouring ladles has inherent advantages over the conventional Stopper Road System. Benefits can be simply stated as lesser turnaround time, therefore lesser ladles, Higher temperatures of molten metal and longer casting times. lawatherm has been in the field of Slide Gates for several years now. We have rendered invaluable service to steel plants by way of solving problems and developing quality spare parts and systems, adapted to local conditions at affordable prices. Thus we are in a position to for see any problems in an existing system and suggest solutions for the same. Our constant striving to upgrade Systems and Services has ensured a quality product with numerous inherent advantages over products / systems based on Western Technology as well as tiny manual systems.

### **Indegenious**

The lawatherm Slide Gate System is totally indigenious. A system suited to local conditions with robust components for rough handling and tough steel plant conditions.



# Flow Full Cone Nozzles

Full Cone Nozzles has high precision & uniform liquid distribution circular area. This gives uniform liquid distribution throughout the entire circular impact area. This gives uniform liquid distribution throughout the entire circular impact area. The basic design of this nozzle is based on fundamental principal of axial swirling motion

**Lawatherm** Spraying nozzles also has another variety of full cone nozzles which is called Spiral Full Cone Nozzle. There is not any insert which gives clogging free nozzle & spiral impact throughout the entire circular area.

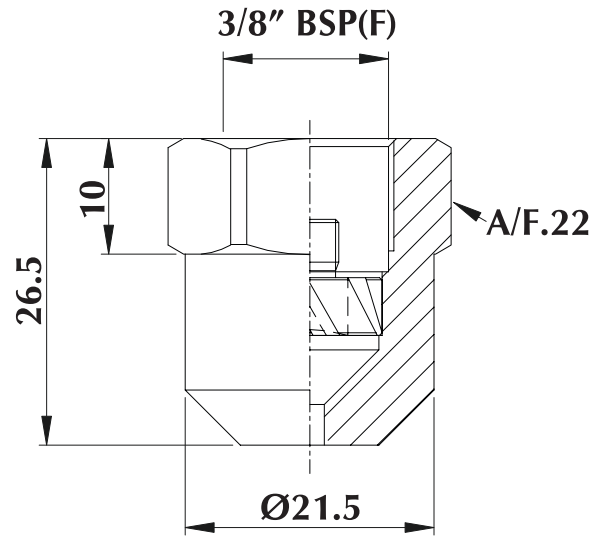
## FULL CONE NOZZLE SPRAY CHARACTERISTICS

### Application:

- Produces a full cone pattern
- Sprayed volume is evenly distributed across spray pattern
- Available with a range of spray angle

### Materials and Construction

- Standard materials are Brass and Stainless Steel
- Male and female thread available
- 3/8" or 1/4" BSP / NPT threaded connections available
- Specially designed internal core ensures a good resistance to clogging
- Standard spray angle 45°, 65°, 80°, 90°, and other spray angle on request.



Flow Rate (l/min) @ Different Pressure Value (Bar)									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	1565	65°	0.90	1.25	<b>1.50</b>	1.80	2.00	2.20	2.35
2	2065	65°	1.20	1.70	<b>2.00</b>	2.40	2.70	2.90	3.15
3	2465	65°	1.40	2.00	<b>2.40</b>	2.80	3.20	3.50	3.80
4	2565	65°	1.49	2.11	<b>2.50</b>	2.98	3.34	3.65	3.95
5	3065	65°	1.80	2.50	<b>3.00</b>	3.60	4.00	4.40	4.75
6	3565	65°	2.10	2.95	<b>3.50</b>	4.20	4.70	5.10	5.55
7	4065	65°	2.40	3.40	<b>4.00</b>	4.80	5.30	5.85	6.30
8	4565	65°	2.69	3.80	<b>4.50</b>	5.38	6.01	6.59	7.12
9	5065	65°	3.00	4.20	<b>5.00</b>	6.00	6.70	7.30	7.90
10	5565	65°	3.28	4.64	<b>5.50</b>	6.57	7.34	8.05	8.69
11	5965	65°	3.50	5.00	<b>5.90</b>	7.00	7.90	8.60	9.30
12	6065	65°	3.60	5.10	<b>6.00</b>	7.20	8.00	8.80	9.50
13	7065	65°	4.20	5.90	<b>7.00</b>	8.35	9.35	10.25	11.05
14	7565	65°	4.50	6.35	<b>7.50</b>	8.95	10.00	10.95	11.85
15	8065	65°	4.80	6.80	<b>8.00</b>	9.60	10.70	11.70	12.65
16	9065	65°	5.40	7.60	<b>9.00</b>	10.75	12.00	13.15	14.25
17	10065	65°	6.00	8.45	<b>10.00</b>	11.95	13.40	14.60	15.80
18	12065	65°	7.20	10.10	<b>12.00</b>	14.30	16.00	17.60	18.95
19	13065	65°	7.77	10.99	<b>13.00</b>	15.54	17.37	19.03	20.55
20	15065	65°	8.96	12.68	<b>15.00</b>	17.93	20.04	22.96	23.75
21	16065	65°	9.55	13.50	<b>16.00</b>	19.10	21.40	23.40	25.30

These part numbers are easy to use and identify, example:

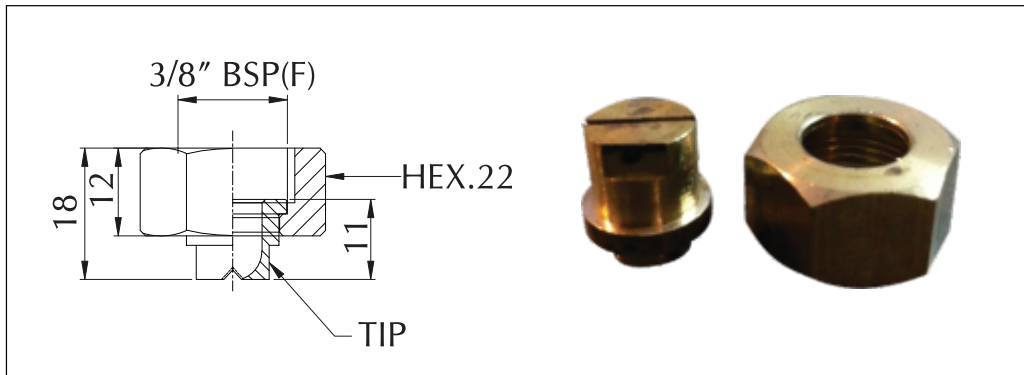
Brass or Stainless steel 3/8" Female - 2045 / 2065 = 2.00 litre/min @ 2.8 bar with a 45 & 65 angle



Lawatherm Flat Jet Nozzles ensures uniform, parabolic distribution of liquid. This flow geometry of nozzle produces compact and accurate jets with stable spray angle. These nozzles are suited for all universal application. These nozzles are not easily affected by pressure fluctuation. These nozzles are not prone to clogging.

Lawatherm Flat jet nozzles has simple and cost saving fixing attachments such as Easy Dovetail Guides.

Lawatherm Flat jet Nozzles are available with many flow rate sizes, Flat jet width, jet depth & also various spray angles to suit for various application



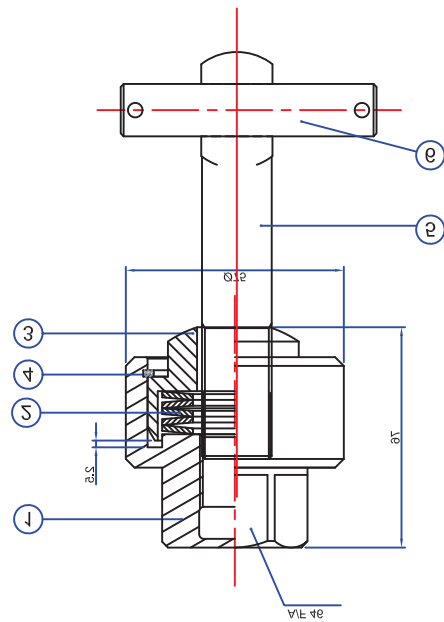
Flat nozzle tips are usually mounted onto a pipe using a welded 3/8" nipple or a clamp and secured in place with a retaining nut. The precision machined orifices can be protected against the risk of clogging by using a filter which fits neatly into the nipples and clamps, specifically designed for this purpose.

Flow Rate (l/min) @ Different Pressure Value Bar									
Sr. No.	Model No.	Angle	1.0 Bar	2.0 Bar	2.8 Bar	4.0 Bar	5.0 Bar	6.0 Bar	7.0 Bar
1	2065	65°	1.20	1.70	2.00	2.40	2.70	2.90	3.15
2	2565	65°	1.49	2.11	2.50	2.98	3.34	3.65	3.95
3	3065	65°	1.80	2.50	3.00	3.60	4.00	4.40	4.75
4	3565	65°	2.10	2.95	3.50	4.20	4.70	5.10	5.55
5	4065	65°	2.40	3.40	4.00	4.80	5.30	5.85	6.30
6	5065	65°	3.00	4.20	5.00	6.00	6.70	7.30	7.90
7	5765	65°	3.28	4.64	5.70	6.57	7.34	8.05	8.69
6	6065	65°	3.60	5.10	6.00	7.20	8.00	8.80	9.50
7	8065	65°	4.80	6.80	8.00	9.60	10.70	11.70	12.65

These part numbers are easy to use and identify, example:

Brass or Stainless steel 3/8" Female -2065 = 2.00 litre/min @ 2.8 bar with a 65° angle

# Heat Expansion compensator assembly



Heat expansion compensator assembly for slide gate system type 1QC / 2QC / 3QC / 4QC		
Sr. No.	Description	Quantity
1.	Heat expansion compensating nut	1 Nos.
2.	Disc Springs	1 Nos.
3.	Trust Pad	1 Nos.
4.	Internal circlip - 60 x 2	1 Nos.
5.	Eye Bolt	1 Nos.
6.	Pin for Eye Bolt	1 Nos.

Heat expansion compensator Disc Springs Eye Bolt are subdivided according to the different material, which are applicable to ultra-high temperature environment (up to 500°C), they are widely used in Heat Exchangers, Boilers, Furnaces & Ovens, Chemical Processing, etc



## Dummy Bar Pin Bolt Bush

We manufacture Dummy Bar with gun metal bushes. Dummy Bar is used to transfer the necessary pulling force to the slab, poured in the open when the seal from the mold following. And rely on the straightening machine will be cooled by the mold leads to the casting mold by the secondary cooling zone to enable the straightening machine to the continuous casting billet to the direction of the conveyor; Dummy Bar head from Dummy, and dummy transitional shaft is composed of three parts.



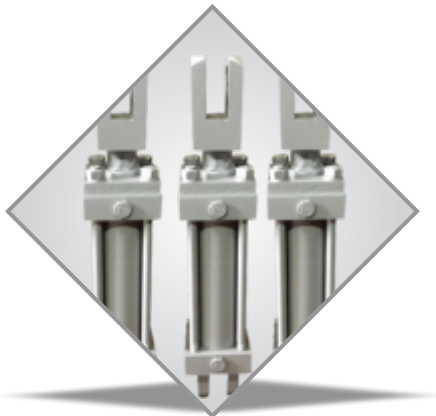


## Cylinder & Seal

Lawatherm is one of the renowned suppliers of Hydraulic & Pneumatic Spares. We Provide Hydraulic Pump, Valve, Seal, Pipe, Cylinders, Power Pack, Automation Equipment and SPM. Lawatherm holds in-depth stocks of a wide range of Hydraulic products including some of the best brands i.e. Dowty, Yuken, Polyhydron, Jacktech, Suprimo, Rexroth, Vickers, Bosch are available with us in ready stock. We will give you the import substitute also in very competitive price. We have a wide variety of Hydraulic Equipment, which have become benchmarks in the industry. Our quality controllers strictly check the range as per the standard quality parameters. We want to make sure that we can offer our clients highly efficient and durable range of hydraulic spares.

## Application

- Entry
- Dummy bar receiver (DBR)
- Pusher
- Retractable dummy bar guid(RDBG)
- Exit
- Slide gate laddle



## Rubber O-Rings Silicone

Silicone possess excellent resistance to temperature extremes. Silicone's retention of properties at high temperatures is superior to other elastic materials. Silicone has poor tensile strength, tear resistance and abrasion resistance.

Lawatherm are the largest on-line distributor of O-rings in the india .In addition to O-rings in NBR and Viton sold online we are able to supply o rings in many other sizes and polymers including Silicone, EPDM, KALREZ®/FFKM on a short lead time.

We can usually supply many other non standard polymers like HNBR, PTFE, XNBR, PU, CR; hardness (40 to 90 ShA) and colours (blue, brown, grey, red, white, yellow, green) in about 4 working weeks (subject to minimum order charge)

## Temperature Range

- Up to 200°C (Intermittant)
- Down to -60°C

## Chemical resistance

- Dry heat
- High - aniline point oils
- Chlorinated DI - phenyls
- Food processing applications
- Excellent ozone resistance.
- Water (Low temperature only)



## Switch Mode Power Supply (SMPS)

A switched-mode power supply (switching-mode power supply, SMPS, or switcher) is an electronic power supply that incorporates a switching regulator to convert electrical power efficiently. Like other power supplies, an SMPS transfers power from a source, like mains power, to a load, such as a personal computer, while converting voltage and current characteristics. Unlike a linear power supply, the pass transistor of a switching-mode supply continually switches between low-dissipation, full-on and full-off states, and spends very little time in the high dissipation transitions, which minimizes wasted energy. Ideally, a switched-mode power supply dissipates no power. Voltage regulation is achieved by varying the ratio of on-to-off time. In contrast, a linear power supply regulates the output voltage by continually dissipating power in the pass transistor. This higher power conversion efficiency is an important advantage of a switched-mode power supply. Switched-mode power supplies may also be substantially smaller and lighter than a linear supply due to the smaller transformer size and weight.

S8JC-ZS, newly released Power Supply with CE marking, additional models for economical Power Supply. S8JC-Z series.

S8JC-Z/SBJC-ZS is our best standard power supply for

- Material cost reduction
- Export machines, required safety standard
- Time saving for installation by DIN-rail mounting



## Quick release couplings



High-quality quick-action coupling made of steel, stainless steel, brass or plastic for practically every application contingency

Very robust, rapid and secure coupling of practically all fluid media. Special solutions for your application needs can also be implemented upon request.

Variants:

- flat-sealing (leakage-free), cone-sealing or ball-sealing
  - with or without check valve
  - Plug-in or screw coupling
  - Bulkhead, pipe, hose or block integration
  - optional with dust cap, dust plug
  - optional with additional pressure relief (coupling under residual pressure)
- Materials available for shipment:

- Galvanised steel / zinc-nickel
- Stainless steel 1.4571
- Brass
- Plastic

# Air Spring Bellow



- > Ø 6 ... 26 inch (152 ... 660 mm)
- > Almost frictionless operation
- > No maintenance or lubrication
- > High isolation level for vibration applications
- > Very easy to install – no alignment problems

> Typical applications; actuator, air spring, or vibration isolation



## Technical features

Compressed air lubricated or unlubricated, Nitrogen, water (with glycol)  
 Operation: Single acting  
 Operating pressure: 5,5 bar (79 psi) recommended dynamic pressure  
 8 bar (116 psi) maximum

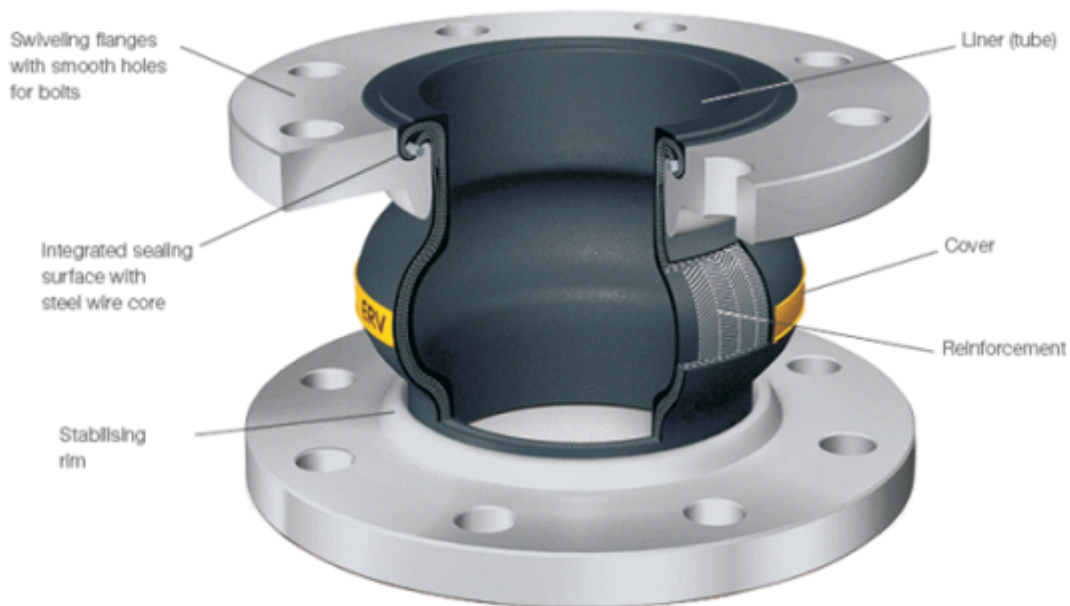
Nominal diameters: 6, 8, 10, 12, 14 1/2, 16, 21, 26 inches  
 Strokes: From 55 ... 430 mm max., depending on diameters and number of convolutions

Operating temperature: for M/31000 (Standard)  
 -30° ... +50°C (-22° ... +122°F)  
 -40° ... +70°C (-40° ... +158°F) □  
 IR for TM/31000  
 -20° ... +70°C (-4° ... 158°F)  
 -25° ... +90°C (-13° ... 194°F) □  
 ECO for EM/31000  
 +50° ... +115°C (+122° ... 239°F)  
 -20° ... +130°C (-4° ... +266°F) □  
 □ The number represent the maximum permissible operating temperature. It is sutibel to operated with restriction at this temperature, the air bellow may have a reduced life time!

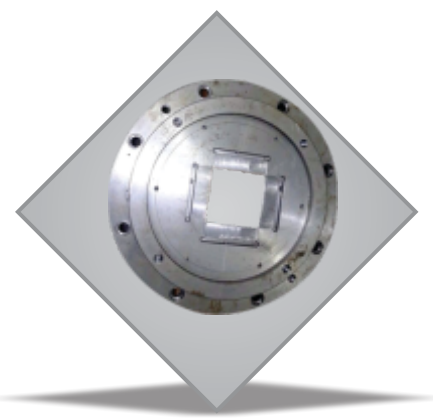
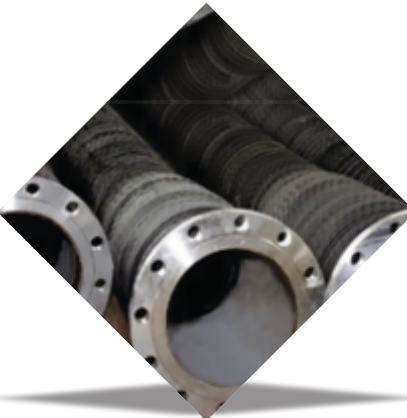
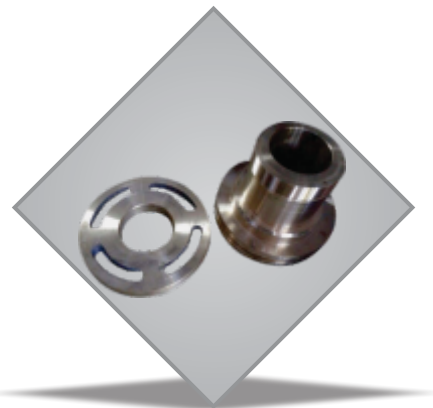
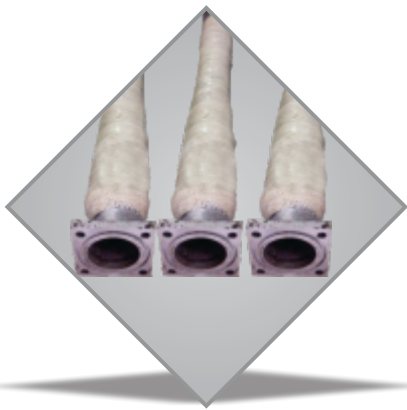
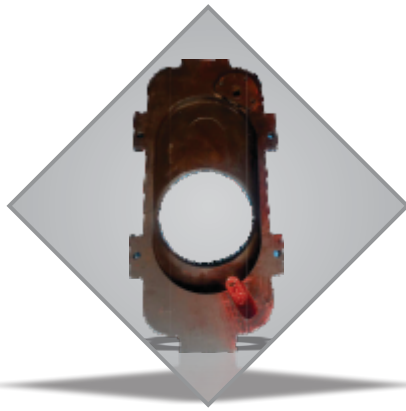
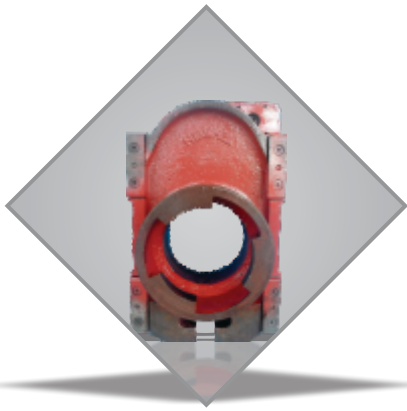
Materials:  
 End plates: steel, chromplated  
 Studs: steel, zinc plated  
 Central ring: aluminium or steel, chromplated, partly moulded in Bellow: M/31000, M/32000: NR/BR, SBR compound rubber  
 TM/31000, TM/32000: IR  
 EM/31000, EM/32000: ECO

# Rubber Bellow Expansion Joint

Our domain expertise has enabled us to come up with an excellent collection of Rubber Bellow Expansion Bellow. All the offered bellows are designed in accordance with international quality standards, using quality stainless steel material and the latest technology. Our bellows can also be customized as per the specifications laid down by the patrons.



Accessories





### COOLING TOWER SPARES

Cooling Tower can be used to reject heat from various sources such as machinery or heated process material. The primary use of large, industrial cooling towers is to remove the heat absorbed in the circulating cooling water systems used in power plants, petroleum refineries, petrochemical plants, natural gas processing plants, food processing plants, semiconductor plants, crop drying, mines, foundries, steel plant, rolling mill, glass plant, power plant and other industrial facilities.

## Water Softening Product



### WATER SOFTENING PLANT SPARES

Water Softeners that are effective in reducing the hardness of the water. They help in producing zero soft water by highly acidic cation exchanger, which removes calcium and magnesium ions from the water. We design a series of softeners that have counter current regeneration with up flow rate and concurrent regeneration with down flow rate. These are capable of operating for longer periods at low costs and are suitable for medium scale industries, Steel plant and other commercial industries.



**Lawatherm Furnace Pvt. Ltd.**

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