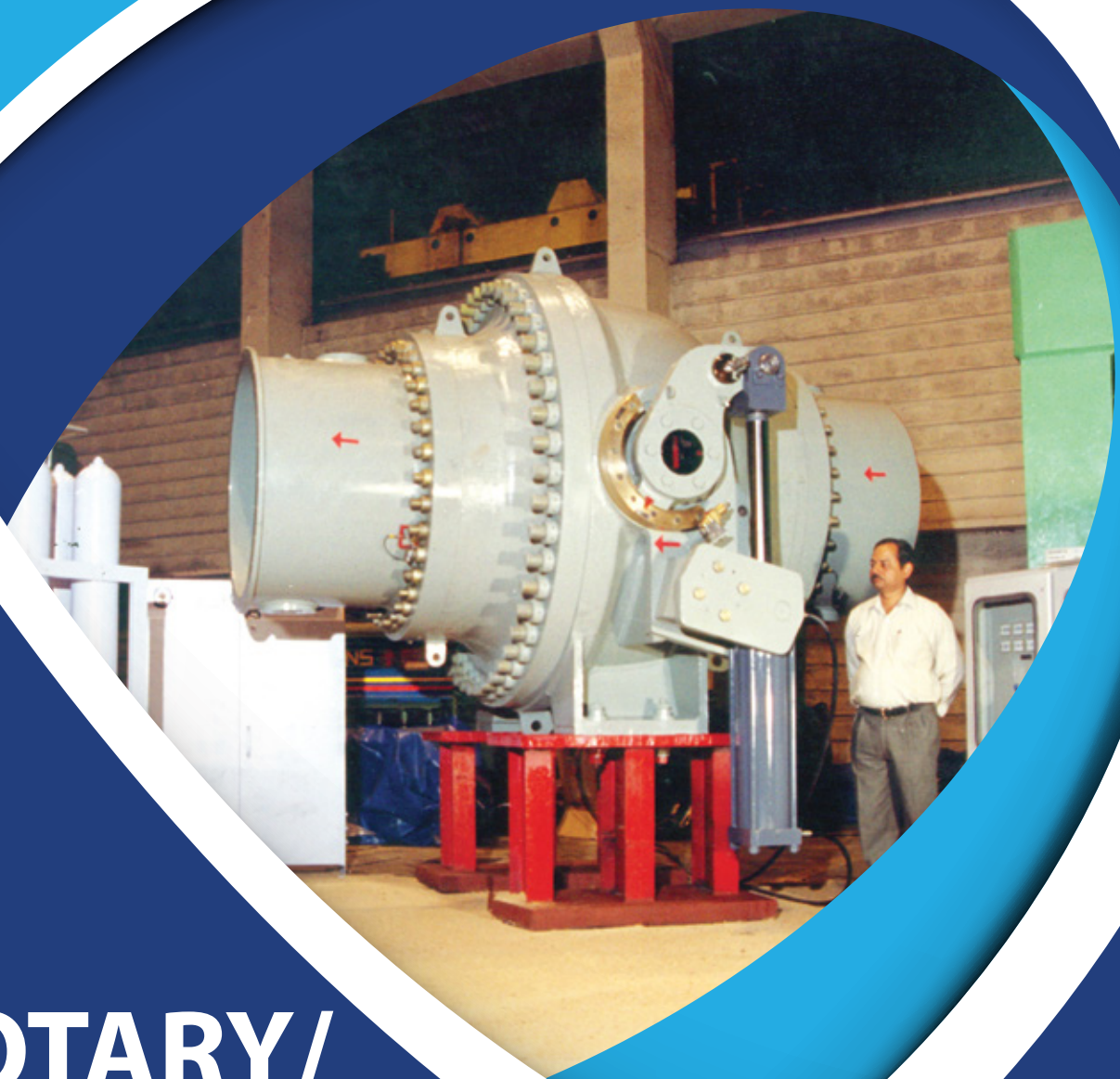
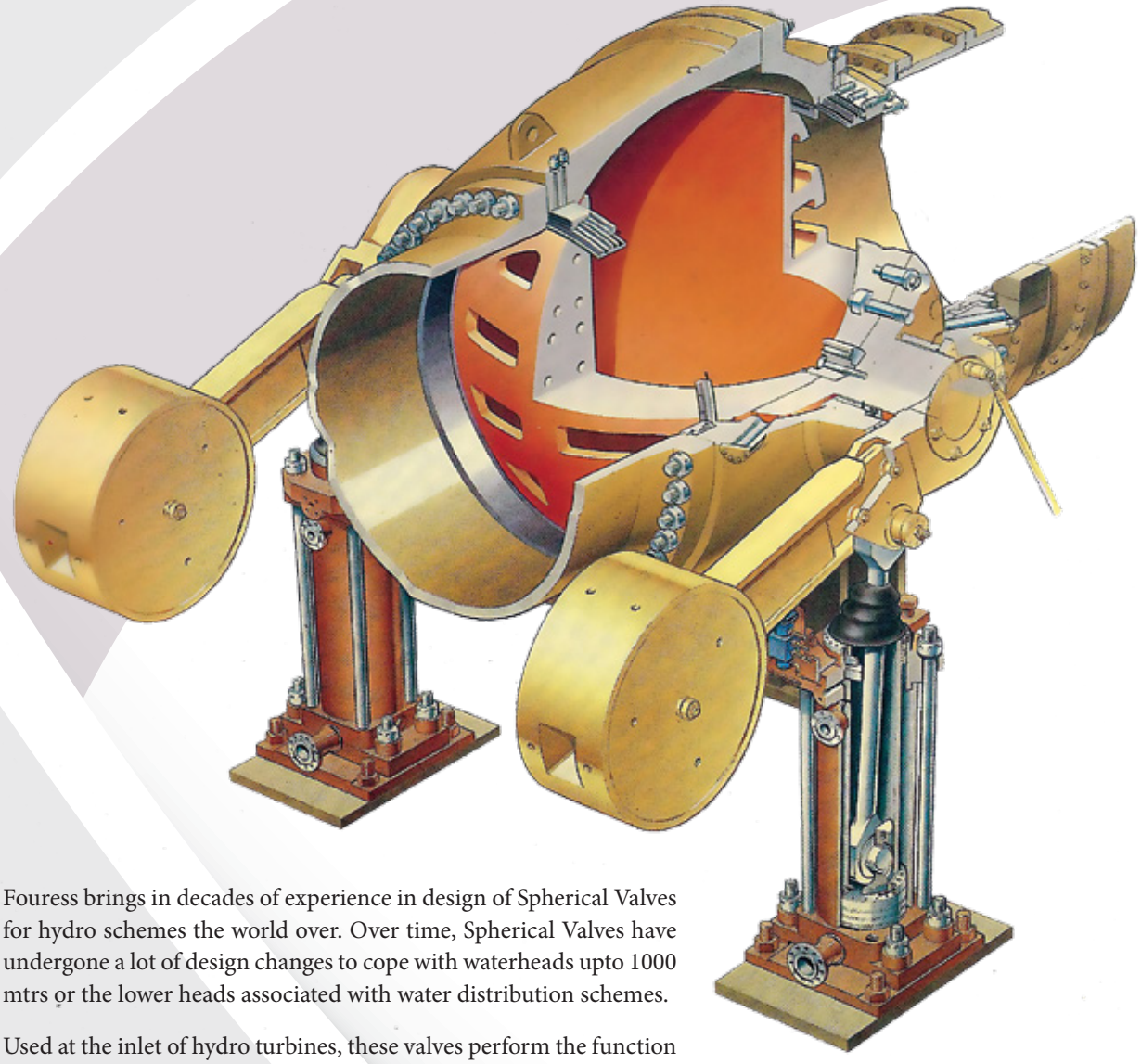
FOURESS
ENGINEERING (INDIA) LIMITED



ROTARY/ SPHERICAL VALVES

SPHERICAL VALVES

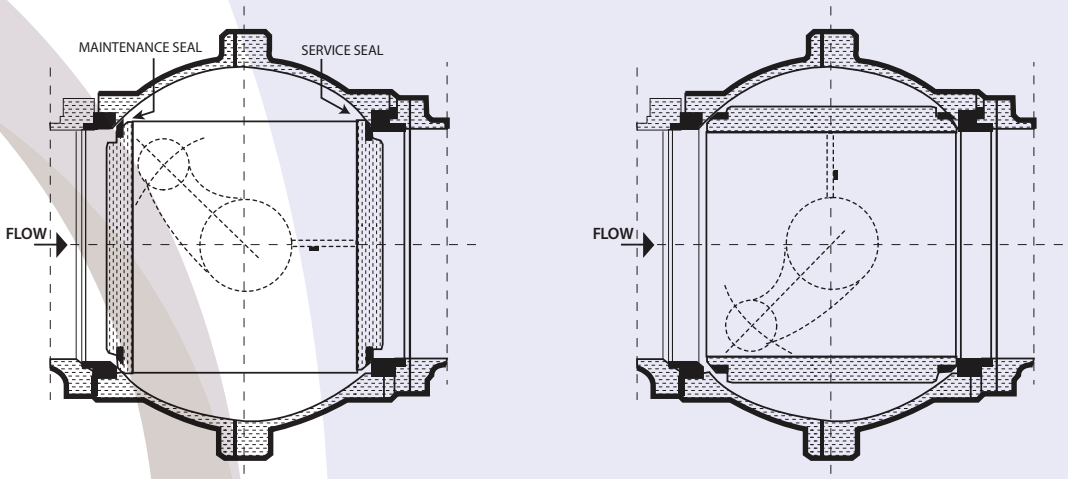


Fouress brings in decades of experience in design of Spherical Valves for hydro schemes the world over. Over time, Spherical Valves have undergone a lot of design changes to cope with waterheads upto 1000 mtrs or the lower heads associated with water distribution schemes.

Used at the inlet of hydro turbines, these valves perform the function of isolating water turbines and emergency closure against turbine trips. one of the prominent advantages of these valves is that they have a clear bore when in open condition, thus offering a negligible friction head loss.

While the low-pressure rotary valves are supplied with resilient rubber seals, metalling seating surfaces are provided for higher pressures. A combination of metal and resilient seals can also be specially designed. Our manufactiong range includes sizes between 400mm to 2600mm and operating pressure upto 100kg/cm^2 with the operation accomplised by one or two double acting hydraulic cylinders. Depending on the working parameters, we can also offer valves with alternative drive mechanism namely Electrical and Pneumatic.

Spherical (Rotary) Valve

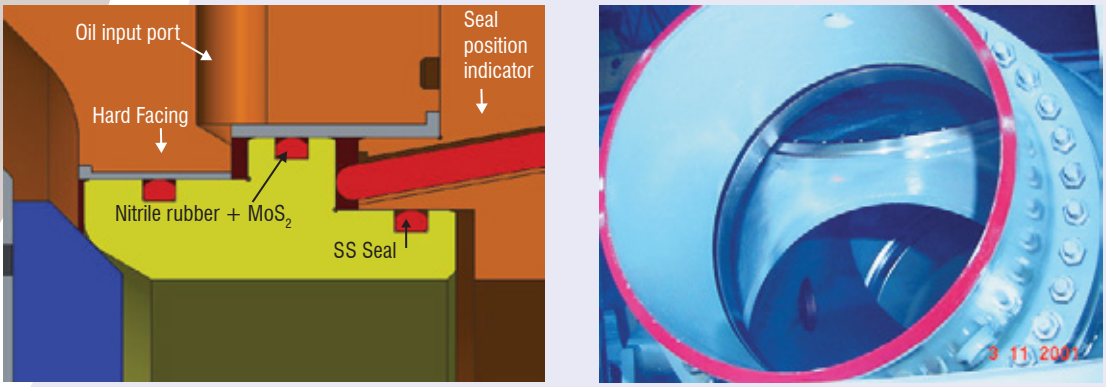


CLOSED POSITION

OPEN POSITION

Design and construction features:

The body and the rotor of the valve are normally made out of Cast Carbon Steel material confirming to ATSM A 216 Gr. WCB or fabricated using carbon steel blades as per AS5M A516CM70. The valve body is made of two halves in which the spherical rotor provides through passage (full bore) in open position. The sliding metallic seat is made up of high strength stainless steel casting. Metallic seat provided with sliding mechanism, renders totally free movement of rotor dring operation and the seat is engaged in full closure of the valve, automatically by penstock pressure through water hydraulic control system. Penstock water pressure is applied through an operating valve on receipt of appropriate signal from turbine governor whereby sliding metallic seat traves by about 10mm along the axis of the valve and engages with the seal on the rotor. Depending on the size of the valve, flow, working pressure, etc., the seals on rotor can be offered either with a nitrile rubber or with stainless steel seal ring. Also, these valves are offered with twin seal arrangement, wherein for normal operation, one set of seal and seat are provided on the down-stream side of the valve facing the turbine inlet. For emergency/maintenance requirements, another set of sliding seat and seal is provided on the upstream side. Both the seats operate on the same principle of water hydraulics and are actuated by control system when appropriate signal is given. Leak tightness and other characteristics of both the seals are identical.



Details of the movable seat ring on the body

Normally, these valves for turbine inlet applications are offered with hydraulic actuation through a servomotor. The actuation of this servomotor can be done by applying penstock water pressure on one side. Alternatively, the servomotor can also be actuated by the oil pressure avalable for the turbine governor system.

Turbine inlet valve is a critical emergency device in hydro power station, whose operation is integrated with amny systems and controls.Hence this valve should render faultless response to emergency signals. If you have any requirement of this high technology product, you can count on our technical backup, manufacturing excellence and design capabilities added to the long standing experience in this field.

575mm & 400mm Electro Hydraulically Operated Spherical Valves to TNEB, Pykara HEP, India. Head: 920mm (92 Bar)

Our Experience

FOURESS has supplied Spherical / Rotary valves from 400 mm (Dia) to 1200* mm (Dia) for Pressures upto 92 Kg/cm^2 to Hydro Power Projects (HPP) In India, countries in South East Asia, Europe and Latin America.

These valves are supplied through Turbine manufacturers like Andritz, BFL, GE, Jyoti, MHPP, TPSC & Voith Hydro.

*Larger sizes can be supplied on request against specific project requirement.

FOURESS
ENGINEERING (INDIA) LIMITED

For commercial enquiries, contact:
Fouress Engineering (India) Ltd.
Plot 2, Phase II, Peenya Industrial Area
BENGALURU - 560 058, Karnataka
Tel: +91 80 2839 5734 2839 5494
Fax: +91 80 2839 5176
E-mail: marketing@fouressindia.com

Chairman's Office & Head Quarters
Mahalaxmi Chambers, 22, Bhulabhai Desai Road,
MUMBAI - 400 026
Tel: +91 22 2353 4400-05
Fax: +91 22 2351 7544
E-mail: hq@fouressindia.com
Website: www.fouressindia.com

Other Plants
Fouress Engineering (India) Ltd.
Plot No.A-324, Road No:21, Wagle Indl. Estate
THANE – 400 604 Maharashtra
Tel: +91 22 2582 3806 / 3602
Fax: +91 22 2582 3603
E-mail: byp@fouressindia.com

Fouress Engineering (India) Ltd.
C-2, MIDC Industrial Area, Paithan - 431 148
AURANGABAD, Maharashtra
Tel: +91 2431 232 074, 232190
Fax: +91 2431 232 058
E-mail: ssk@fouressindia.com

Branches & Representatives
Mumbai ✉ feilmumbai@fouressindia.com
Baroda ✉ feilbaroda@fouressindia.com
Delhi ✉ feildelhi@fouressindia.com
Hyderabad ✉ feilhyd@fouressindia.com
Pune ✉ feilpune@fouressindia.com
Vizag ✉ feilvizag@fouressindia.com
Chennai ✉ feilchennai@fouressindia.com
Nagpur ✉ feilnagpur@fouressindia.com
Kolkata ✉ feilkolkata@fouressindia.com
Bhubaneshwar ✉ feilbbnrs@fouressindia.com
Hospet ✉ feilhospet@fouressindia.com