



365-147/B
31.08.16

BHEL – Tiruchirappalli – 620014,
India

Valves Engineering and R&D

PURCHASE SPECIFICATION

DOC No: **SPEC:HP:0004** Rev: **02**

Effective Date: **28/05/2020**

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Product: Isolating Ball Valves

Revision Record:

Rev. No	Date	Details of Revision
00	28 July 1993	First Release
01	16 December 1993	Material for Ball seal indicated
02	18 May 2020	Specification reviewed and revised completely

1. Scope of Supply:

The scope of this specification is for design, manufacture, testing, packing and dispatch of Block type Ball Valves.

2. General data for selection of Ball valves

Sl.No	Parameters	Value
2.1	Type of valve	Floating Ball Type
2.2	Dynamic Pressure	180 kg/cm ²
2.3	Static continuous pressure	200 kg/cm ²
2.4	Nominal pressure at 20°C	Refer Table-A
2.5	Maximum temperature of the medium	100°C
2.6	Medium	Refer Table-A and Enquiry/PO
2.7	Nominal Bore diameter	Refer Table-A
2.8	Inlet and Outlet Connections	Male Threaded connections to suit compression fittings DIN 2353, "S" Heavy Series including cap nuts.
2.9	Thread size for end connections	Refer Table-A

Table-A:

Valve	Nominal Tube Diameter (ODxt) mm	Nominal Pressure at 20° C, bar	Medium	Valve Bore Diameter, mm	Male Thread Size
Type-1	16x2	400	Mineral Oil/ Phosphate Ester	12 to 13	M24x1.5
Type-2	20x3	400	Mineral Oil/ Phosphate Ester	15 to 16	M30x2
Type-3	30x4	315	Mineral Oil/ Phosphate Ester	24 to 25	M42x2



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3. Material Specific to Ball Valve

- 3.1. All materials for various parts should be suitable for the above working conditions and for the above medium.
- 3.2. The Ball should be either hard chrome plated or made of stainless steel to avoid corrosion and should be designed for minimum seal wear.
- 3.3. In case stainless steel components are offered, the material shall not rust. Vendor shall ensure the same by procuring the raw materials from reputed sources.
- 3.4. The seat should be suitable for the parameters indicated in Clause 2 of this specification.
- 3.5. Metal parts except ball (including but not limited to body, stem, adapters, Lever) exposed to atmosphere shall be surface protected with Cr(VI) free Zn coating. Metal parts made of stainless steel are exempted from this requirement.
- 3.6. O-rings and elastomers should be made of Buna-N/compatible to phosphate esters (Example: Fyrquel EHC-N). This will be specified in the Enquiry / P.O
- 3.7. All the components shall be selected such that the ball valve will operate satisfactorily for the parameters in Clause 2 of this specification.
- 3.8. Indications should be marked on the valve for direction of rotation for Open and Close of the valve.

4. Documentation Requirements

- 4.1. Point wise compliance to the specification and even if there is no deviation, bidder shall indicate "NO DEVIATIONS".
- 4.2. Latest catalogue of the Ball valves and fittings offered shall be provided.
- 4.3. Pressure-temperature rating of the offered Ball Seat material.
- 4.4. Dimensional drawing of the ball valve along with fittings including weight and indicating the offered model code in it shall be provided for approval.
- 4.5. A cross section drawing indicating the location of seals, if already not available in the catalogue.
- 4.6. Quality plan shall be provided for approval. Quality plan shall include shell test and seat leak test as per EN 12266-1 and the seat leak rate shall be 'A'.
- 4.7. Type test report containing tests as per P10, P11 and P12 of EN12266-1 shall be submitted.

5. Inspection and Test Requirements

As per approved Quality plan.

6. Packing & Dispatch

Shall be as per manufacturer's standard packing practice

Signature			
Name	M Chaitanya Kumar	Mallemala Sujana Vinod	K Rajasekaran
Designation	Senior Engineer	Manager	Dy. General Manager
Date	28 May 2020	28 May 2020	28 May 2020
Action	Prepared By	Checked & Reviewed By	Approved By