

		उत्पाद मानक PRODUCT STANDARD	HG 100 38 Rev.02 पृष्ठ 3 का 1																							
गोपनीय एवं अधिकार सुरक्षित इस प्रस्ताव पर की गई जानकारी भारत हेवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है इसे प्रत्यक्ष या अप्रत्यक्ष रूप से कम्पनी के हितों को नुकसान पहुँचाने के लिए कदापि उपयोग नहीं किया जावे	SPECIFICATION FOR BUTTERFLY VALVE																									
1. GENERAL: The butterfly valves will be used for ON/OFF, & flow control of cooling water/oil in piping circuits of the hydrogenerator. Each of the valves shall be as per the specification given below & shall be in general meet the requirements of standard given in this specification. 2. CONSTRUCTION: Material of body of valve up to and including 300 mm N/B size should be cast steel with internals of gun metal fittings. Body shall be lined with Nitrile rubber/PTFE coating/EPDM or equivalent. They shall be full way type without internal screws. Valve shall be open when turned counter clockwise when facing the hand wheel. Means shall be provided for pad locking the valves in the open and close positions. Valve shall be flanged type or Wafer Lugged Type with tapped or through holes on both sides or only through holes drilled to IS-6392 Table-17 Class 16. Supplier to supply two loose flanges for each valve if the holes are drilled to DIN or any other standard. Seat shall be of Nitrile rubber/PTFE coating/EPDM or equivalent. Bearings shall be of phosphor Bronze/Brass or equivalent. Flow control lever shall be of steel coated/platted/powder coated. Shaft shall be Stainless Steel or PTFE coated. Material of other components shall be selected considering application requirements as given below: 3. APPLICATION : The valves will be connected in water/oil pipe line for opening and closing of water flow : <table border="0"> <tr> <td>Medium</td> <td>- Oil or Raw Cooling water with very fine silt</td> </tr> <tr> <td>Temp of water/Oil</td> <td>- 55° C / 70° C Max.</td> </tr> <tr> <td>Working Pressure</td> <td>- 16 Kg/CM²</td> </tr> <tr> <td>Test Pressure</td> <td>- Body/Disc - 24 Kg/CM² for 30 Minutes</td> </tr> <tr> <td></td> <td>- Seat - 18 Kg/CM² for 30 Minutes</td> </tr> </table> 4. STANDARDS: <table border="1"> <thead> <tr> <th>TEST</th> <th>STANDARD</th> <th>EXTENT OF TESTING</th> <th>CERTIFICATE REQUIRED</th> </tr> </thead> <tbody> <tr> <td>Design & Visual inspection</td> <td>API 609</td> <td>100%</td> <td>Inspection & attestation of manufacturer's Certificate by authorized inspector (AI)</td> </tr> <tr> <td>Dimensional Checks</td> <td>As per approved Drg. And IS 6392 TABLE - 17 for flanges</td> <td>100%</td> <td>Inspection report by AI</td> </tr> <tr> <td>Pressure testing</td> <td>API 598 and clause-3 above</td> <td>100%</td> <td>Inspection report by AI & Test Certificate</td> </tr> </tbody> </table>	Medium	- Oil or Raw Cooling water with very fine silt	Temp of water/Oil	- 55° C / 70° C Max.	Working Pressure	- 16 Kg/CM ²	Test Pressure	- Body/Disc - 24 Kg/CM ² for 30 Minutes		- Seat - 18 Kg/CM ² for 30 Minutes	TEST	STANDARD	EXTENT OF TESTING	CERTIFICATE REQUIRED	Design & Visual inspection	API 609	100%	Inspection & attestation of manufacturer's Certificate by authorized inspector (AI)	Dimensional Checks	As per approved Drg. And IS 6392 TABLE - 17 for flanges	100%	Inspection report by AI	Pressure testing	API 598 and clause-3 above	100%	Inspection report by AI & Test Certificate
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5. **INTERCHANGEABILITY**

All the valves of same size shall be interchangeable/replaceable with respect to their size, Space, mounting/fitting, operation and spares requirements point of view.

6. **MARKING ON VALVES:**

(A) The body shall have the following marking.

- Nominal size
- Pressure Rating
- Supplier trade mark
- Arrow showing direction of flow
- Inspector's identification mark.

(B) Name plate covering the following details

- Manufacture's name
- Nominal size
- Pressure Rating
- Manufacturer's identification / serial No.
- Year of manufacture
- BHEL P.O. Number.

(C) Hand wheel or lever shall have the marking "OPEN" & "SHUT" Duly cast along with the arrow to show direction of closing of the valve.

If physical size of valve does not permit to give all the above details then a metallic name plate can be separately attached to the valve by a chain/link/hook.

7. **DOCUMENTS TO BE FURNISHED BY SUPPLIERS :-**

The Suppliers shall furnish following information.

(A) After placement of P.O:

- 2 copies of General arrangement drawing showing major dimensions in BHEL format for approval by BHEL. .
- Procedure for assembling and dismantling and special instructions, if any, for satisfactory working of valves.
- List of spares, if any.

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		02 copies of operation and maintenance instruction including lubricant recommendation, storage instruction etc. 02 Copies of Box wise shipping list. (B) Test Certificate : i) 02 Copies of Hydraulic Test Certificate ii) 02 Copies each of - Visual inspection - Dimensional check - Material specification.	
		8. WARRANTY: Warranty shall be as per enclosed annexure.	
		9. PACKING. - All valves shall be packed suitably in closed wooden cases to avoid damage during storage and transit. Box shall be able to withstand rain and prolonged storage. - Valve openings (Stages) shall be suitably closed to exclude dirt and other foreign matter from the interior of the valves. - Hand wheel, if removed from the valves shall be packed along with valves secured by cord or wire. - Each valves after end protection should be wrapped in Polythene sheet before packing in the cases. - Each packing case must contain 2 copies of shipping list-giving details of contents of the case including dismantled parts, if any. - Following marking shall be done on each case: - Complete address of consignee as per BHEL purchase order. - BHEL purchase order No. - No. of pieces in each packing box. - Net weight - Gross weight - Packing case number & total nos. of packing. - Arrow indicating top of packing case.	
		10. COMPLIANCE TO SPECIFICATIONS Suppliers must confirm the compliance of this specification clause-by-clause in their offer in first instance itself. Any deviation from this specification shall be clearly spelt out in detail with proper technical justification for consideration of offer.	

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ANNEXURE

पृष्ठ 1 का 1

SPECIAL CONDITION OF PRODUCT STANDARD

1. WARRANTY:

The equipment shall be warranted for a period of 24 months after dispatch and 18 months after commissioning, whichever is earlier.

2. DOCUMENTATION:

Following documents shall be supplied to BHEL, Bhopal in hard copies and in electronic form i.e. compact disc (CD) compatible with latest PCs. In addition to above one hard copy shall be supplied with each supply of the equipment.

(a)	Test Certificate	02 copies
(b)	Guarantee Certificate	02 Copies
(c)	Packing List	02 copies
(d)	O&M Manual	02 copies
(e)	Drawings	02 copies

O&M Manuals must contain OGA/Schematic/Mounting/Foundation Drawings/Storage & Handling Instructions and circuit/Details of components (as applicable). It should also contain DOs, DONTs, Trouble shooting and component/cards check points.

3. DRAWINGS:

The outline dimensional drawing including mounting arrangement, schematic block diagram, weight, Bill of Material etc. shall be supplied within 4 weeks from the date of ordering for reference and comments.

4. PENALTIES:

Penalties on account of late delivery & on performance shall be as specified in enquiry/purchase order.