



SPECIFICATION FOR BF GAS ISOLATION VALVE
(GOOGLE VALVE ENCASED TYPE)

(Read along with general specification No. TOS:BFG:003 / REV:01 &
Goggle valve – E,C & I input details)

PART-I

- 1.0 Service : Blast Furnace Gas isolation tight shut off, mounted in horizontal pipe, in Boiler floor
- 1.1 Flow max : 250000 NM³ / Hr.
- 1.2 Inlet Pr. Nor. : 850 mm WC (Operating range: 250-1200 mmWC)
- 1.3 Allowable DP : 5 mm WC
- 1.4 Temp Nor / max : 27/50 ° C
- 1.5 CV Required : Equivalent to a bore of Inside Dia. 2600mm
- 1.6 Valve CV rating : Vendor to quote
- 2.0 Body type : Goggle type – Encased type.
- 2.1 Size : NB 2600 mm
- 2.2 Ends : Companion flanges (Suitable for welding to OD 2620 X 10 t pipe) with gaskets and fasteners will be in vendor's scope.
- 2.3 Body Rating : 0.35 Kg / cm² g
- 2.4 Body Material : Cast / Fabricated steel
- 2.5 Goggle plate Material : Carbon steel
- 2.6 Seat Material : Stainless steel
- 2.7 Seal Material : Resilient seals
- 2.8 Seat leak class : Bubble tight
- 2.9 Stem material : Stainless steel
- 2.10 Stem size : Vendor to quote
- 2.11 Bearings : Outboard type
- 2.12 Glands / Packings : Vendor to indicate material
- 2.13 Leakage through Glands packings : Vendor to quote- zero leakage.
- 3.0 Expansion bellows : Accommodate clamping / de-clamping movements
- 4.0 Clamping / Declamping : Shall be hydraulic cylinders minimum four number
Located equally around the periphery.
Dual hydraulic circuit shall be provided,
Hand pump for manual operation shall be included.
- 4.1 Slide movements : Shall be quick enough to complete the movement with minimum leakage. Specify the time.
The movement shall be by hydraulic motor.
The slide shall be operated manually in case of failure of motor.
- 4.2 Total Operational time : Vendor to specify
- 4.3 Limit switches : Minimum 2 nos. for indicating clamping and declamping and 2 nos. for indicating positions of slide.
The limit switches shall be proximity non-contact type and shall be provided for position limit sensing, shall be of DPDT type, 110V AC, 10Amp rated, Explosion proof, Honeywell or equivalent.



4.4 Hydraulic power pack :

Shall be weather proof suitable for outdoor location. The power pack should be provided with simple controls with minimum automatic operation. Power pack shall be mounted on a skid.

- a) The distance between the Goggle valve-NB2600 mm and Hydraulic power pack shall be approx. 50 meters. Inter connecting pipes and respective support materials shall be accordingly accounted.
- b) The Hydraulic power pack is to be placed at ground floor and frame of Hydraulic power pack shall be suitable for fixing in concrete foundation. Foundation bolt pitches shall be furnished along with GA drawing. Foundation bolts for Hydraulic power pack shall be in vendor's scope of supply.
- c) The Goggle valve is located at a floor elevation of 10.825 m and Hydraulic power pack is to be located on the ground floor. All inter connecting pipes and respective support materials shall be in vendor's scope.
- d) Suitable arrangement shall be provided over Louvers of Hydraulic power pack so that fire-fighting jet will not affect the power pack operation.

4.5 Vent valve : Fire safe ball type- Hydraulic Piston operated.
Vendor to specify size.

4.6 Solenoid valve : All solenoid valves used shall be of reputed make with class H continuous duty coil, explosion proof, suitable for the application.

4.7 Load panel : The starters for the electric motor & indication shall be provided. The voltage available at the site is 415V, 3ph, 50Hz S / F / U only. All other required power for the goggle valve system shall be derived from this source only. Explosion proof panel, Interconnection between panels & motors shall be done by vendor.

4.8 General Requirements

- a) Local control panel shall only be in vendor scope. Remote control panel is in BHEL scope. Hence vendor shall terminate the required connections for further continuation to remote panel in a junction box. The local control panels shall be placed at a safe distance of approx. 15 m away from the Goggle valve. Interconnecting cables between Local control panel and goggle valve is in vendor scope.
- b) Interconnecting cables (viz., Panel to power pack motor, Panel to power pack JB & Panel to JB each 50meters approx.) shall be in vendor scope.
- c) Limiting forces and moments at each load point of the valve shall be provided by vendor. This is required to size the structural members of the boiler. Hence vendor shall arrange to furnish details on forces on each load point of the goggle valve and hydraulic power pack. Vendor shall also furnish typical support details.
- d) The first fill of complete hydraulic system shall be in the scope of supply of vendor. The oil required for first fill may be sent separately so that it can be filled at site.
- e) All rollers and shaft supporting bearings shall be provided with "Life lubricated" sealed Ball bearings



5.0 INFORMATION REQUIRED

5.1 Along with offer:

- a. Following is the indicative list of drawings to be submitted. (1) GA of goggle valve with Total weight (2) GA & scheme of hydraulic power pack unit with total weight & foundation details (3) Hydraulic control circuit (4) Mechanical De-Clamping arrangement for slide plate valves (5) Cabinet drawing of Hydraulic power pack (6) GA of control panel (7) Electrical Circuit diagrams for control panel (8) Junction box wiring diagram.
- b. Details of power cylinders, limit switches, power pack components etc., make and model numbers.
- c. Filled in specification sheet highlighting deviations from the specification.
- d. Customer list.
- e. The forces and moments the valve can take.

5.2 After the purchase order:

Total of two (2) hard copies and two (2) copies on magnetic media (USB memory stick or CD-ROM) of the below listed details shall be provided:

- a. Quality plan.
- b. Supporting arrangement detail for the valve.
- c. Complete dimensional drgs.
- d. O & M instructions for all items concerned.
- e. Spares identification drgs.
- f. Test reports

6.0 GUARANTEE & WARRANTEE:

All materials shall be defect free and shall be replaceable free of cost during guarantee period. The performance of the valve shall be guaranteed for a period of 12 months from the date of commissioning.

7.0 Nothing in this specification shall be construed to relieve the vendor from his responsibility. This specification covers the minimum requirements of the system. It is the responsibility of the vendor to include all the requirements for completeness of the system.

8.0 E, C & I – Input details specification shall supersede technical requirements in case the scope requirement of E, C & I – input details is different from this specification.



PART-II
(VENDOR CHECKLIST FOR GOGGLE VALVE- ENCASED TYPE)

BHEL Material Code:L143014220023001

		BHEL SPECIFICATION	VENDOR CONFIRMATION
O.	FLOW DATA		
1.1	Service	BF gas isolation tight shut off, mounted in Horizontal pipe, in Boiler floor.	
1.2	Flow max.	250000 NM ³ / Hr	
1.3	Inlet Pr. nor	850 mm WC (Operating range 250-1200 mm WC)	
1.4	Allowable DP	5 mm WC	
1.5	Temp Nor / max	27 / 50 ° C	
A.	VALVE DATA		
2.1	Valve type	Slide plate type – Encased type	
2.2	CV Required	Equivalent to a bore of ø2600mm	
2.3	Valve CV rating	Vendor to quote	
2.4	Body type	Goggle type – Encased type	
2.5	Size	NB 2600 mm	
2.6	Ends	Companion flanges (Suitable for welding to OD 2620X 10t pipe) with gaskets and fasteners in vendor's scope	
2.7	Body Rating	0.35 Kg / cm ² g	
2.8	Body Material	Cast / Fabricated steel	
2.9	Goggle plate Material	Carbon steel	
2.10	Seat Material	Stainless steel	
2.11	Seal Material	Resilient seals	
2.12	Seat leak class	Bubble tight	
2.13	Stem material	Stainless steel	
2.14	Stem size	Vendor to quote	
2.15	Bearings	Outboard type	
2.16	Glands / Packings	Vendor to indicate material	
2.17	Leakage through Glands packings	Vendor to quote- zero leakage	
3.0	Expansion bellows	Accommodate clamping / declamping movements	
4.0	Clamping / De-clamping	Shall be by Hydraulic cylinders minimum four number located equally around the periphery. Dual Hydraulic circuit shall be provided. Hand pump for manual operation shall be included at a safe distance.	
4.1	Slide movements	Shall be quick enough to complete the movement with minimum of leak. Specify the time. The movement shall be by hydraulic motor. The slide shall be operated manually in case of failure of motor.	
4.2	Total Operational time	Vendor to specify	
4.2.1	Valve opening time	Vendor to specify (shall be < 60secs)	
4.2.2	Valve closing time	Vendor to specify (shall be < 60secs)	

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		BHEL SPECIFICATION	VENDOR CONFIRMATION
4.3	Limit switches	Minimum 2nos.for indicating clamping and De-clamping and 2 nos. for indicating positions of the slide. The limit switches shall be proximity non-contact type and shall be provided for position limit sensing DPDT, 110V AC, 10Amp rated, explosion proof, Honeywell or equivalent.	
4.3.1	Limit switches make & model	Vendor to specify	
4.4	Hydraulic power pack	Vendor to conform to the complete specifications requirements as per clause 4.4 of this specification.	
4.4.1	No. of Hydraulic cylinders	Vendor to specify (Minimum four)	
4.4.2	Type of Hydraulic cylinders	Vendor to specify	
4.4.3	Hydraulic cylinder bore	Vendor to specify	
4.4.4	Hydraulic cylinder stroke	Vendor to specify	
4.4.5	Type of Hydraulic motor	Vendor to specify	
4.4.6	Relief valve setting pumping unit	Vendor to specify	
4.4.7	Operating pressure of hydraulic power pack	Vendor to specify	
4.5	Vent valve	Fire safe ball type-Hydraulic piston operated. Vendor to specify size.	
4.6	Solenoid valve	All solenoid valves used shall be of reputed make with class H continuous duty coil, explosion proof, Suitable for the application.	
4.7	Load panel	The starters for electric motor & indication shall be provided. The voltage available at the site is 415V, 3ph, 50Hz S / F / U only. Explosion proof panel, Interconnection between panels & motor shall be done by vendor.	
4.8	General Requirements	Vendor to confirm to clause 4.8 of this specification	
5.0	Information required	Along with offer: As per Clause 5.1 of this specification After the purchase order: As per Clause 5.2 of this specification	
6.0	Guarantee & Warrantee	All materials shall be defect free and shall be replaceable free of cost during guarantee period. The performance of the valve shall be guaranteed for a period of 12 months from the date of commissioning or 18 months from the date of supply whichever is earlier.	