



GAIL (INDIA) LIMITED
(A.GOV'T OF INDIA UNDERTAKING)

GAIL KHERA PROJECT

BID DOCUMENT

FOR

PROCUREMENT OF BALL VALVES

VOL II OF II – TECHNICAL

(BID DOCUMENT NO110330E/WGI/GAIL/01-R0)

LIMITED INTERNATIONAL COMPETITIVE BIDDING



DELIVERS. EVOLVES.

WHOLE LIFE SOLUTIONS FOR PIPELINE AND SUBSEA SYSTEMS

ISSUED BY



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**KHERA COMPRESSOR STATION
UPGRADATION PROJECT**

Document No.

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11- 0330E- 03-08- 02- 000

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MATERIAL REQUISITION FOR BALL
VALVE

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1.0 SCOPE OF SUPPLY

1.1 General

This Specification covers the requirement of scope of supply of Ball Valve along with all accessories to be used in the proposed Filtration System.

The scope of supply covers the design, manufacture, inspection, testing, supply, erection & supervision of installation and commissioning, shipment and documentation requirements of all following items in accordance with the requirements of this Requisition.

For commissioning of gas over oil actuator operated Ball Valve, skilled engineers shall actually commission these items at site.

1.2 DESCRIPTION OF EQUIPMENT and/or SERVICES

ITEM NO.	DESCRIPTION	TAG NO.	QTY
1.0	Ball Valve (Trunion mounted and Gas over Oil Actuator operated with 30" NB & ANSI Rating #600 Flanged Ends) complete with all accessories, Drain valves, Vent Valves, Needle Valves for sealant/grease filling etc. with plugs for body and stem & any other additional items, if any for trouble free operation of ball valves as per attached data sheet and technical specification.	XOV-1007 XOV-1008 XOV-1010 XOV-1011	4 Sets
2.0	200% Gasket as Mandatory Spares for each Ball Valve	~	4 Sets
3.0	100% Fasteners as Mandatory Spares for each Ball Valve	~	4 Sets
4.0	Seat Rings/O-Rings & other Mandatory Spares (02 Nos. for each Ball Valve)	~	4 Sets
5.0	100% Commissioning Spares for each Ball Valve	~	4 Sets
6.0	First fill of all lubricants, chemicals, hydraulic oils, heat transfer media (if any) and subsequent filling for each Ball Valve before handing over to owner	~	As Required
7.0	Recommended Spares for first two years of normal operation and maintenance	~	Bidder to Specify
8.0	Special tools and Tackles, if any, required for maintenance purpose	~	Bidder to Specify
9.0	Supervision of Erection and Commissioning by Vendor for days. Vendor to quote per diem rates, inclusive of all expenses like travel, boarding, lodging etc.	~	MAD

2.0 REMARKS

2.1 Supplier's Compliance

Supplier shall submit his bid in full compliance with the requirements of this MR and attachments. Bidder shall include the following statement in his bid:

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We certify that our bid is fully complying with your enquiry dated and referenced,

Compliance with this material Requisition in any instance shall not relieve the Vendor of his responsibility to meet the specified performance.

2.2 Compliance with Specification

The supplier shall be completely responsible for the design and engineering, materials, fabrication, testing, inspection & transfer of above material to nominated delivery point strictly in accordance with the MR & all attachments thereto.

2.3 Supplier's Scope

Supplier's scope of work includes the equipment with all internals & accessories shown on the data sheets, specifications and all unmentioned parts necessary for a satisfactory operation & testing except those which are indicated to be out of Supplier's supply.

2.4 Inspection

Supplier shall submit with his bid a list of 3 well known international Third Party inspection Agencies as per enclosed vendor list, which he intends to use for inspection. This agency will issue all relevant certificates as per specification & codes.

Inspection shall also be performed by a designated Third Party Inspection agency and/or purchaser as set out & specified in the codes & particular documents forming this MR.

3.0 SPECIAL INSTRUCTIONS TO BIDDERS

3.1 Bidder to note that no correspondence shall be entered into or entertained after the bid submission.

3.2 Bidder shall furnish quotation only in case he can supply material strictly as per this Material Requisition and specification/data sheets forming part of Material Requisition.

3.3 If the offer contains any technical deviations or clarifications or stipulates any technical specifications (even if in line with MR requirements) and does not include complete scope & technical/ performance data required to be submitted with the offer, the offer shall be liable for rejection.

3.5 The submission of prices by the Bidder shall be construed to mean that he has confirmed compliance with all technical specifications of the corresponding item(s).

3.6 Bidder must submit all documents as listed in checklist along with his offer.

3.7 Supplier must note that stage wise inspection for complete fabrication, testing including the raw material inspection to be carried out.

3.8 Vendors for bought out items to be restricted to the approved vendor list attached with Bid document. Approval of additional vendor if required, for all critical bought out items shall be obtained by the supplier from the purchaser before placement of order. Credentials/ PTR of the additional vendor proposed to be submitted by supplier for review and approval of Purchaser/ Purchaser's representative.

3.9 All material shall be delivered at GAIL-Khera Compressor Station, Ujjain, MP.


4.0 INFORMATION/ DOCUMENTS/ DRAWINGS TO BE SUBMITTED BY SUCCESSFUL BIDDER

Successful Bidder shall submit six copies unless noted otherwise, of each of the following:

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- 4.1 Inspection & test reports for all mandatory tests as per the applicable code as well as test reports for any supplementary tests, in nicely bound volumes.
- 4.2 Material test certificates (physical property, chemical composition, make, heat treatment report, etc.) as applicable for items in nicely bound volumes.
- 4.3 Statutory test certificates, as applicable.
- 4.4 Filled in Quality Assurance Plan (QAP) for Purchaser's/ Consultant's approval. These QAPs shall be submitted in four copies with in 15 days from LOI/ FOI.
- 4.5 WPS & PQR, as required.
- 4.6 Within two (2) weeks of placement of order, the detailed fabrication drawings along with process and mechanical design calculations for Purchaser's/Consultant's approval.
- 4.7 Detailed completion schedule activity wise (Bar Chart), within one week of placement of order.
- 4.8 Weekly & fortnightly progress reports for all activities including procurement.
- 4.9 Purchase orders of bought out items soon after placement of order.
- 4.10 Manufacturer's drawings for bought out items, in 4 copies, for Purchaser's/Consultant's approval within 4 weeks.
- 4.11 Manufacturer related information for design of civil foundation & other matching items within 6 weeks of FOI / LOI.
- 4.12 All approved drawings / design calculation / maintenance / operating manual documents as well as inspection and test reports for Owner's / Consultants reference / record in nicely category-wise bound volumes separately.
- 4.13 A list of documents to be furnished along with supply.
- 4.14 Vendor to furnish filled up documents / formats as per "Appendix 9" - "Special instruction to Bidders" along with the offer.

Note: All drawings, instructions, catalogues, etc., shall be in English language and all dimensions shall be metric units.

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**KHERA COMPRESSION STATION
UPGRADATION PROJECT**



**TECHNICAL SPECIFICATION OF
BALL VALVE**

CLIENT JOB NO.

-

TOTAL SHEETS

9

DOCUMENT NO

11

0330E

03

08

02

018

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REV	DATE	DESCRIPTION	PREP	CHK	APPR
0	23.05.11	ISSUED FOR TENDER	AS	ASD	AD
A	29.03.11	ISSUED FOR CLIENT'S COMMENTS	AS	ASD	AD

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1.0 GENERAL

- 1.1 This specification together with all annexure enclosed covers the minimum requirements for the design, engineering, manufacturing, testing, inspection and supply of Carbon Steel Ball Valve (Trunion mounted and Gas over Oil Actuator operated with 30" NB & ANSI Rating #600 Flanged Ends) along with all the accessories and instruments to be used in Dry Natural Gas Pipeline (Above Ground).
In the event of any conflict between this specification, datasheets, related standards codes etc., the more stringent shall apply.
- 1.2 Datasheet for Trunion Mounted Ball Valve and accessories indicating materials for body, internals etc. is enclosed.
- 1.3 However, this does not absolve the vendor of the responsibility for proper selection with respect to the fluid & its operating conditions. Proper sizing & selection of ball valves and accessories are vendor's responsibility.

Sizing Calculation required for above items shall be submitted for Client/ consultant review.

Vendor shall take single point responsibility for the design, construction & performance of the valves as per the data sheet and specifications furnished.

Following information shall be furnished as a part of the valve design & engineering:

- Make, model and detailed specification of each item.
 - Fixing pressure drop across valve.
 - Sizing of valves.
 - All design performance characteristics.
 - Overall dimension of valve.
 - Weight of valve.
- 1.4 Vendor shall consider all the requirements of this specification along with those as per relevant standards and shall assume total responsibility including all aspects of engineering, design, certification etc. for valves.
- 1.5 Vendor to note that all the items of valves shall be procured from reputed vendors as per the attached Vendor list.
- 1.6 Vendor's quotations shall include the detailed specifications for all the items of valves. The vendor shall also offer data sheet / specification of any instruments / equipments required for safe and efficient operation of the system.
- 1.7 All units of measurements in vendor's specification sheets shall be same as those in attached data sheets of ball valve.
- 1.8 Vendor shall enclose catalogues giving detailed technical specification and other information for valve covered in the bid.

2.0 STANDARD AND CODES

Mechanical / Instrumentation Standards

Equipment shall generally be mechanically designed in accordance with the relevant institute of Gas Engineers (IGE) codes and the following principal codes of practice (Latest Edition).

ASME Boiler and Pressure Vessel code

Section —V	:	Non destructive examination
Section —VIII	:	Pressure Vessel, Division-1
Section —IX	:	Welding and brazing qualification

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American National Standard Code

- ANSI/ASME : B 16.5 : Flanges and Flange fittings
- ANSI/ASME B31.8 : Gas Transmission and Distribution Systems
- ANSI/ASME B 16.20 : Metallic gaskets for pipe flanges
- ANSI/ASME B 1.20.1 : Pipe threads general purpose (inch)
- ANSI/ASME B 16.34 : Valves flanged, threaded & welding ends

American Petroleum institute

- API RP 520 : Part -1 & 2, Design. and installation of pressure relieving system in refineries
- API RP 521 : Guide for Pressure relief and Depressing Systems.
- API RP 550 : Manual on installation of refinery instrument and control system.
- API 6 D : Specification for pipeline valves, end closures and swivels.
- API 527 : Commercial Seat Tightness of safety relief valves with Metal-to-Metal seats.

British Standard Specifications

- BS 449 : Structural steel work

Instrumentation

Instrumentation shall generally be in accordance with the applicable sections of the following principal codes of practice (latest editions).

- BS 1041 : Code for temperature measurement.
- BS 1042 : Code for measurement of fluid flow in pipes.
- BS 5501 : Part-1, Electrical apparatus for potentially explosive atmospheres.
- API RP 550 : Manual on Installation of Refinery Instrument Control Systems.
- API RP 521 : Guide for Pressure relief & Depressurising Systems.
- ISA A 5.1 : Instrument Symbols & Identification
- BS 2765 : Thermowell.

3.0 SCOPE OF SUPPLY

3.1 Vendor's scope shall include but not limited to:-

- i) Ball Valve (Trunion mounted and Gas over Oil Actuator operated with 30" NB & ANSI Rating #600 Flanged Ends) complete with all accessories, Drain valves, Vent Valves, Needle Valves for sealant/grease filling etc. with plugs for body and stem & any other additional items, if any for trouble free operation of ball valves as per attached data sheet and technical specification.
- iii) Anchor/Foundation bolts with nuts & washers and base plates (if any).
- iv) Protective coating & painting of equipments.
- v) Documents as called for in vendor data requirements.
- vi) Recommended Spares for two years of normal operation and maintenance. Bidders shall furnish the itemized price list of the recommended spares with the bid. However, the actual supply shall be as per Purchaser's advice.
- vii) Mandatory spares :
 - Two sets of each installed gaskets.
 - One set of fasteners for each valve
 - Two sets of Seat Ring/O-Ring and any other additional spare for each valve
 - First fill of all lubricants, chemicals, hydraulic oils, heat transfer media (if any) and subsequent filling for each Ball Valve before handing over to owner

Price to be included in the base price.

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- viii) Commissioning spares :
One set of each installed gaskets, Fasteners etc. Price to be included in base price.
- ix) Interconnecting piping, tubing, fittings, valves, instruments with fittings, necessary nozzles, flanges, blind flanges (fitted with bolts, nuts, gaskets etc.) etc. as required for the installation of Instruments.
- x) Special installation tools & tackles required for maintenance.
- xi) Any other item required to complete the Ball Valve in all respects as per technical specs mentioned in tender document.

3.2 The valves shall be complete in all respects, ready for installation and commissioning. There shall be minimum work to be done at site. All field mounted instruments shall be supplied loose to avoid damages of same during transportation of the valve. The details regarding installation of valve, shall be clearly described in the "Installation Manual" especially made for valve installation.

3.3 Make of Gas over Oil Actuator shall be as per recommended Vendor List as attached.

3.4 Valves shall be designed with fire safe as per API 6FA.

3.5 All items in the valve shall be properly supported to avoid vibration. Special supports, as required, shall also be supplied by vendor.

3.6 All interconnecting piping materials shall be as per piping material specification/codes specified. The piping fabrication work shall conform to the requirements of ANSI B31.3.

3.7 The valves shall be sized / segmented considering ease of transportation. Vendor to supply complete valve including interconnecting piping between different items of the assembled valve.

3.8 Valves shall be provided with Ball Position Indicator and Anti Blow out Stem.

3.9 All the instrument enclosures mounted in the field shall be weather proof / ex proof conforming to IP-55/ NEMA 4/ NEMA 7 as a minimum. The impulse tubing of instruments shall be supplied insulated.

3.10 Completeness of the valve, size and rating as per piping specification given herein shall be ensured.

3.11 The valve assemblies shall include all interconnecting piping, valves, inlet and outlet manifolds, control equipment and components, gauges and all other necessary components required to deliver a complete operational system. The valves shall be installed in accordance with local government rules and regulations applying to such facilities. The vendor shall be responsible for determining all applicable requirements and ensuring compliance.

3.12 The vendor shall read this specification in conjunction with Data Sheet of Ball Valve and the following documents enclosed as annexure:

- i) Natural Gas Composition.
- ii) Schematic Diagram of 30" NB Ball Valve.

3.13 Pressure Testing of Valves shall be as per API 6D.

3.14 Any soft material used in valves shall be able to retain its functional properties for minimum period of 3 years.

3.15 All materials to be used in construction of valves shall be suitable for Natural Gas services.

3.16 Vendor shall be responsible for the design and successful operation of the valves. Valves shall be provided with differential pressure Transmitters and switches.

3.17 All the calculations and units of measurement shall be metric standards only.

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- 3.18 All instruments mounted on the valves shall be suitable for installation in tropical hot and humid climate. Temp range: 0 - 65 deg. C and Relative Humidity: 95 %
- 3.19 Flow direction shall be clearly marked on the valve body.
- 3.20 Valve body and body connector casting shall be radiographed.
- 3.21
- a) Bidder shall take single point responsibility for the design, fabrication, assembly, testing and performance of the valves.
 - b) The fabrication, assembly, testing and inspection works have to be carried out at Bidder's works or works designated by the Bidder. In case of Bidder designated works, the facility should have established track record.
- 3.22 Technical Requirements for Valves :
- 1) Vendor shall be responsible for the complete supply and fabrication of valves including lifting and supporting facilities.
 - 2) The interconnecting piping items shall conform to specification and data sheets included in the Engineering documents.
 - 3) The valves shall be supplied in segments of length and weight, suitable for easy transportation. handling at site during installation. If the valves are supplied in more than one segment, necessary flange, nuts, bolts and gaskets for installation and vendor shall also supply assembly at site.
 - 4) Vendor shall submit general arrangement drawings for valves indicating the elevations of inlet and outlet flanges, overall dimensions and the weights of the individual segments.
 - 5) Vendor shall furnish details of valve lifting and supporting arrangements.
 - 6) Vendor shall submit complete dimensional drawings for valves indicating materials of all components for company's approval prior to procurement and commencement of fabrication of valves.
- 3.23 Vendors shall submit the sizing calculation of Valve.

4.0 TESTING AND INSPECTION

- 4.1 All materials and equipment shall be factory tested before shipment in the presence of purchaser's representative. No material shall be transported to site until all required tests have been carried out and equipment is certified as ready for shipment. Acceptance of equipment or the exemption of inspection or tests thereof, shall in no way absolve supplier of the responsibility for delivering equipment meeting the requirements of the specifications. Following tests shall be included.
1. Material test certificate, hydrostatic test certificate of valves.
 2. Calibration certificate of all field instruments.
 3. Seat tightness test for valves
 4. Test certificate for all field instruments such as PI, DPS etc.
 5. Certificates from statutory body for limit switches being flame proof and weather proofed.
 7. Leak test of complete valve with air/N2

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8. Valve functional testing considering pressure regulation, limiting and safety characteristics.

4.2 Supplier shall perform the usual standard tests to maintain quality control procedures. Purchaser shall submit these certificates for review before starting inspection. Supplier shall be responsible for testing and complete integration of the system. Detailed procedures of test and inspection shall be submitted by the supplier for review before order and mutually agreed upon.

Inspection will be done by Owner/Consultant at vendor's shop. For this inspection, labour, consumable, equipment and utilities as required shall be in vendor's scope.

4.3 Testing and inspection works have to be carried out at Vendor's works or works designated by the Vendor.

5.0 DOCUMENTATION

The Purchaser in vendor data requirement sheets indicates detailed drawings, data and catalogs required from the vendor. The required number of reproducible and prints should be dispatched to the address mentioned, adhering to the time limits attached.

Final drawings from the vendor shall include dimensional details, weight, mounting details and any other special requirements etc. for the valves. All dimensions in general shall be in millimeters.

Vendor shall furnish all manuals necessary to test, operate and maintain the system.

6.0 NAME PLATE

Each valve and all the instruments mounted on the valve shall have a SS nameplate attached firmly to it at a visible place furnishing the following information:

- Tag number as per Purchaser's data sheets.
- Body sizes in inches and the valve Cv.
- Set pressure range or flow range.
- Flow range in MMSCMD
- ANSI Rating
- Manufacturer's Name & model number

7.0 PAINTING

7.1 All exposed carbon steel parts to be painted shall be thoroughly cleaned from inside and outside to remove scale, rust, dirt and other foreign materials by wire brushing and sand blasting as applicable. Minimum acceptable standard in case of power tool cleaning shall be St. 3 and in case of blast cleaning shall be Sa 2-1/2 as per Swedish Standard SIS 0055900.

7.2 Non-ferrous materials, austenitic stainless steels, plastic or plastic coated materials, insulated surfaces of equipment and pre-painted items shall not be painted.

7.3 Stainless steel surfaces both inside and outside shall be pickled and passivated.

7.4 Machined and bearing surfaces shall be protected with varnish or thick coat of grease.

7.5 Depending on the environment, following primer and finish coats shall be applied.

<u>Environment</u>	<u>Description</u>
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1)	Normal Industrial	Surface Preparation	:	Sa 2-1/2
		Primer	:	2 coats of red oxide zinc chromate each 25 micron thick

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- | | | | | |
|----|---|---------------------|---|--|
| | | Finish coat | : | 2 coats of synthetic enamel, each 25 micron thick. |
| 2) | Corrosive Industrial | Surface Preparation | : | Sa 2-1/2 |
| | | Primer | : | 2 coats of epoxy zinc chromate each 35 micron thick |
| | | Finish coat | : | 2 coats of epoxy high build paint, each 100 micron thick. |
| 3) | Coastal & Marine | Surface Preparation | : | Sa 2-1/2 |
| | | Primer | : | 2 coats of high build chlorinated rubber zinc phosphate each 50 micron thick |
| | | Finish coat | : | 2 coats of chlorinated rubber paint, each 35 micron thick. |
| 4) | All Environment (80-400 ^o C) | Surface Preparation | : | Sa 2-1/2 |
| | | Finish coat | : | 2 coats of heat resistant aluminium paint suitable for specified temp, each 20 micron thick. |

(All values refer to dry film thickness).

- 7.6 The valves in carbon steel body shall be painted light gray (RAL 7038). Interconnecting piping shall be Canary yellow. However, the colour of finish coat shall be confirmed to vendor after placement of order.
- 7.7 Vendor to ship supply of primer and the paint to permit on-site repair of shipping damage (if any) to the factory coatings.

8.0 SHIPPING- Commercial part

- 8.1 All threaded and flanged opening shall be protected to prevent entry of foreign material.
- 8.2 All the field mounted instruments shall be supplied loose to avoid damages during transportation.
- 8.3 Valves shall bear proper shipping markings.
- 8.4 Shipping details like gross wt., net wt., volume, dispatch point, mode of dispatch, mode of package etc. for each valve shall be provided with the offer.

9.0 REJECTION

Vendor shall make his offer in detail, with respect to every item of the Purchaser's specification. Any offer not conforming to this shall be summarily rejected.

10.0 INFORMATION TO BE SUPPLIED WITH TENDER

The Vendor shall provide at the time of tendering a complete detailed engineering package in accordance with the vendor data requirement and shall include but not necessarily be limited to the same.

11.0 WARRANTY & DEFECT LIABILITY PERIOD

The Vendor shall as required by the Engineer in charge and without additional cost to Owner (unless it can be shown that defects and deficiencies have occurred through Owner's negligence), amend repair or replace with new materials any defects or deficiencies in the plant and/or work which become apparent at


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any time or from time to time, within the period of twelve (12) months occurring from the date of commissioning or 18 months from the date of arrival of the material at site, whichever is earlier.

If the Vendor does not make good those defects or deficiencies in the plant and/or work within a reasonable time of having been given prior written notice by the Engineer In charge to do so, the Engineer In -charge may arrange for such defects or deficiencies to be remedied by others at the risk and expenses of the Vendor, but without prejudice to any other rights which Owner has under the Contract in respect of those defects or deficiencies.

Bidder shall note that they shall submit the offer with full details as desired in the tender document. Bidder shall submit the enclosed "CHECK LIST" & "TECHNICAL QUESTIONNAIRE" duly filled in along with sets of offers to avoid further queries and to ensure proper evaluation of offer. If these are not complied with, offer is liable to be rejected.

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CLIENT	GAIL (India) Limited	KHERA COMPRESSOR STATION UPGRADATION PROJECT	
SIZE/QUANTITY	30" NB / FOUR (04)		
GENERAL SPECIFICATION			
Process Fluid	NG	ANSI Rating	600#
Design Temperature	0 to 65 Deg C	Design Pressure	93 Bar g
Design Standard	API 6D	Piping Class	6A1
Size, inch (mm)	30" (750)		
Body Type	Full Bore, Flanged End Construction, Trunion mounted, Actuator operated, Primary Metal Secondary Soft Sealed		
End Connection Type	Flanged	Standard	ANSI B16.5 / B16.47 Series-A
Flange Finish	125 AARH	Special Requirement	Vent, Drain & Sealant connection with Anti Blow out Stem
Locking Device Req'd	Yes		
VALVE DESIGN CONDITIONS			
Corrosion Allowance	3.0 mm	Design Factor	0.5
Installation	Aboveground	Stem Ext Length, mm	N.A.
Opening/Closing time	*		
CONNECTING PIPE DETAILS			
Diameter, mm (inch)	750 (30")		
Legend: FLG - Flanged End	*		
TMBV - Trunion Mounted	5 mm		
VALVE OPERATION			
Auto Actuation Req'd	As per attached Valve Table (see sheet no. 2)		
Type of Actuator	As per attached Valve Table (see sheet no. 2)		
VALVE MATERIAL SPECIFICATION			
PART DISCRIPTION	MATERIAL SPECIFIED	MATERIAL OFFERED (Equivalent or Higher)	
Body	ASTM A 216 Gr. WCB / ASTM A 234 Gr. WPB		
Ball	ASTM A 216 Gr. WCB / ASTM A 234 Gr. WPB + 0.003" ENP		
Seat Rings	AISI 4140 + 75 micrometer (0.003") ENP/ AISI 410		
Seat Seal	VITON AED O-RING		
Stem	AISI 4140 + 75 micrometer (0.003") ENP/ AISI 410		
Stem Seal	RPTFE (FEM) / VITON		
Stud Bolts	ASTM A 193 Gr. B7		
Hex Nuts	ASTM A194 Gr. 2H		
TESTING REQUIREMENT			
Hydrostatic Test Pressure	Body: 147 barg	Seat: 107.8 barg	
Air Test Pressure	7 bar		
Anti-Static Testing Requirement	As per API 6D Latest Edition		
Hardness Test	248 HV10		
Charpy Impact Test/ Temperature	Yes (at 0 deg C)		
	DATA SHEET OF BALL VALVE	Document No.	Rev.
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PROJECT: KHERA COMPRESSOR STATION UPGRADATION PROJECT	QAP NO: 11-0330E-03-08-10-020
CLIENT: GAS AUTHORITY OF INDIA LTD.	REV NO: 0
CONSULTANT: J P KENNY	ITEM DESCRIPTION/ QUANTITY: BALL VALVE
VENDOR:	JOB NO.: 110330E
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SR. NO.	COMPONENTS & OPERATIONS	TYPES OF CHECK	QUANTAM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	INSPECTION		
							SUBVENDOR/VENDOR	TPI	J P KENNY
1	<u>RAW MATERIAL</u>								
1. BODY & BONET (REFER NOTE-1)	CHEM. TEST	PER HEAT	A 216 Gr. WCB/ ASTM A234 Gr. WPB	A 216 Gr. WCB/ ASTM A234 Gr. WPB EN 10204/3.1B	3.2 Certificate	P/R	R	R	
	PHY. TEST	PER HEAT	A 216 Gr. WCB/ ASTM A234 Gr. WPB	A 216 Gr. WCB/ ASTM A234 Gr. WPB EN 10204/3.1B	3.2 Certificate	P/W	W	W	
	VISUAL	100%	MSS-SP-75	-	INTERNAL Q.C	P/W	R	R	
	IMPACT TEST (0 DEG C)	PER HEAT	ASTM A 370	35J AVERAGE VALUE / 28J (ONE SPECIMEN)	T.C.	P/W	W	W	
	RADIOGRAPHY	100%	ASTM A 16.34	ASTM A 16.34	INSPECTION REPORT/RT FILMS	P/W	R	R	
	MPT	100%	ASTM A 16.34	ASTM A 16.34	INSPECTION REPORT	P/W	W	R	
2. DISC & SEAT RING	CHEM. TEST	PER HEAT	A 216 Gr. WCB/ ASTM A234 Gr. WPB	A 216 Gr. WCB/ ASTM A234 Gr. WPB	SUPPLIER T.C.	P/W	R	R	
	PHY. TEST	PER HEAT	A 216 Gr. WCB/ ASTM A234 Gr. WPB	A 216 Gr. WCB/ ASTM A234 Gr. WPB	SUPPLIER T.C.	P/W	W	W	
	VISUAL	10% WITNESS & 100% REVIEW	-			P/W	W	R	
	IMPACT TEST (0 DEG C)	PER HEAT	ASTM A 370	35J AVERAGE VALUE / 28J (ONE SPECIMEN)	INSPECTION REPORT	P/W	W	RW	
3. SPINDLE	CHEM. TEST	PER HEAT	ASTM A 276 Gr.410	ASTM A 276 Gr.410	LAB T.C.	P/R	R	R	
	PHY. TEST	PER HEAT	ASTM A 276 Gr.410	ASTM A 276 Gr.410	LAB T.C.	P/W	W	R	



PROJECT: KHERA COMPRESSOR STATION UPGRADATION PROJECT
 CLIENT: GAS AUTHORITY OF INDIA LTD.
 CONSULTANT: J P KENNY
 VENDOR:

QAP NO: 11-0330E-03-08-10-020
 REV NO: 0
 ITEM DESCRIPTION/ QUANTITY: BALL VALVE
 JOB NO.: 110330E
 PAGE NO: 2 of 3

SR. NO.	COMPONENTS & OPERATIONS	TYPES OF CHECK	QUANTAM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	INSPECTION		
							SUBVENDOR /VENDOR	TPI	J P KENNY
2	<u>INPROCESS INP</u>								
	1. BODY & BONET	TRANSFER OF HEAT NO.	100%	-	-	INSPECTION REPORT	P/W	W	R
		DIMENSIONS	100%	APPVD.DRG	APPVD.DRG	INSPECTION REPORT	P/W	W	R
	2. DISC & SEAT RING	DIMENSIONS	100%	-DO-	-DO-	-DO-	P/W	R	R
	3. SPINDLE	DIMENSIONS	100%	-DO-	-DO-	-DO-	P/W	R	R
	4. HARD FACING	HARDNESS & D.P.	100%	ASTM B 16.34	ASTM B 16.34 350 to 450 BHN	INSPECTION REPORT	P/W	W	RW
3	<u>BROUGHTOUT ITEM</u>								
1. FASTNERS	CHEMICAL	PER LOT	ASTM A 193 Gr. B7 & A 194 Gr. 2H	ASTM A 193 Gr. B7 & A 194 Gr. 2H	INSPECTION REPORT 3.2 Certificate	P	R	R	
	PHYSICAL	PER LOT	ASTM A 193 Gr. B7 & A 194 Gr. 2H	ASTM A 193 Gr. B7 & A 194 Gr. 2H		P	R	R	
	DIMENSIONS	10%	-	-		P	R	R	
	IMPACT TEST (0 DEG C)	PER LOT	ASTM A 370	35J AVERAGE VALUE / 28J (ONE SPECIMEN)		P	W	R	





PROJECT: KHERA COMPRESSOR STATION UPGRADATION PROJECT
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 REV NO: 0
 ITEM DESCRIPTION/ QUANTITY: BALL VALVE
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SR. NO.	COMPONENTS & OPERATIONS	TYPES OF CHECK	QUANTAM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	INSPECTION		
							SUBVENDOR/ VENDOR	TPI	J P KENNY
4	FINAL INSPECTION								
	ASPER API 598 (REF.ANNEXURE-1)	VISUAL	100%	-	-	-	P	W	R
		DIMENSIONS	100%	APPVD.DRG & API 598	APPVD.DRG & API 598	INSPECTION REPORT	P/W	W	RW
		HYD. BODY TEST	100%	APPVD.DRG & API 598	APPVD.DRG & API 598	-DO-	P/W	W	RW
		HIGH PRESSURE CLOSER (SEAT) TEST	100%	APPVD.DRG & API 598	APPVD.DRG & API 598	-DO-	P/W	W	RW
		LOW PRESSURE CLOSER (SEAT) TEST	100%	APPVD.DRG & API 598	APPVD.DRG & API 598	-DO-	P/W	W	R
		BACKSEAT TEST	100%	APPVD.DRG & API 598	APPVD.DRG & API 598	-DO-	P/W	W	R
		PERFORMANCE TEST	100%	API 598	API 598	-DO-	P/W	W	RW
		HIGH PRESSURE PNEUMATIC SHELL TEST	100%	API 598	API 598	-DO-	P/W	W	RW
5	PAINTING	VISUAL	10% WITNESS & 100% REVIEW	-	-	-	P	R	R
		SURFACE PREPARATION SA 2 ^{1/2}	100%	SPEC	SPEC 60-80μ ROUGH	INSPECTION REPORT	P	W	R
		PRIMER & FINISH COAT (EACH TWO COAT)	100%	SPEC	SPEC 60-80μ EACH COAT & TOTAL WITHIN 300μ	PAINT.INSP. REPORT	P	W	R
6	FINAL DOCUMENTS	REVIEW	100%	AS PER SPEC./APPD.DRG.	AS PER SPEC./APPD.DRG.	Final dossier - IRN, 3.2 Certificate, Insp & test report, Drawing etc	P	R	R
		MARKING/TAG DETAILS	100%	AS PER SPEC./MSS SP25	AS PER SPEC./MSS SP 25		P	R	R


LEGEND: W - WITNESS, R - REVIEW, TPI - THIRD PARTY INSPECTION, RW - RANDOM WITNESS
 NOTES : 1. ALL INSTRUMENTS & EQUIPMENT SHALL HAVE VALID CALIBRATION CERTIFICATE TO BE REVIEWED BY TPI.
 2. MATERIAL TEST CERTIFICATE OF CASTING AND FASTENERS SHALL BE IN 3.2 AS PER EN-10204.
 3. TPIA TO ISSUE 3.2 CERTIFICATE AS PER EN 10204 SPEC.

LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
1	Station Piping (Seamless Pipes) Trader	Ishwardas Aggarwal & Sons (Trader)	39, Lalit House, 3rd floor, Sant Tukaram Road, Iron Market, Mumbai - 400 009	(+91)22-342 2566	(+91)22-342 3762	
2		M.J. Patel & company (Trader)	116, P.D. Mello Road, Near Camace Bridge, Mumbai - 400 009			
3		Apex Tubes Pvt. Ltd (Manufacturer & Trader)	Apex Tubes Pvt. Ltd. 1/6 B, Asaf Ali Road New Delhi - 110 002	011 - 3236408		
4		Steel Tube (India) (Trader)	526/36, Maulana Azad Road, 2nd floor, Gulawadi Circle, Mumbai - 400 004	(+91)22-389 5908 (+91)22-381 2564	(+91)22-3895906	
5		Nagardas Kanji Shah (Trader)	176, Magazine street, darukhana, Mazagaon, Mumbai 400 010	(022) 3721066/ 3724157	(022) 3781032	
6		Jyoti Industries	P.B. No. 3081, 276/278, Samuel street, 2nd floor, Vadgadi, Mumbai 400 003	(022) 3435091/92	(022) 3421 391	
7		The Bengal Mill stores supply co (Trader)	205, Magnanial Chambers, Baburao Bobde Marg, Iron Market, Mumbai 400 009	(022)3430105, 3430107, 3434918	(022) 3414763	
8		Radiant Engineering Co.	M-2, sundaram, sion college, Mumbai 40 022	(022) 409 2016, 409 6036	(022) 409 4822	
9		Tianjin Pipe corporation	PO box 17537, Jebel Ali Free zone, Dubai, U.A.E	97148833799	97148833899	
10		Milsubihsi				
11		Trub Chomulov				
12		TENARIS				
13		Valcvony				
14		Vallurorec Maneshman Tubes Brazil				
15	BALL VALVES	Virgo Engineers Ltd, Pune	Virgo Engineers, J/517, MIDC, Bhosari, Pune - 411026	020 - 2747 4481	020-2747 0772	Upto 24" class 600
16		Steel Strong Valves (P) Ltd.	Plot No. R-241, TTC Industrial area, MIDC, Rabale, New Bombay - 400 701			Upto 12" class 600 of split body type
17		Flow Chem Industries	10, Navdurga Indl. Estate, Opp Forge Blower, Naroda Road, Ahmedabad - 25	79 - 220 4773	79 - 220 1401	upto 12" class 600
18		Micro Finish Valves	B.D.K. Engineering Ltd. Gokul Road, Hubli 580 030			upto 12" class 600
19		Hawa Valves (India) Pvt Ltd	4, Karmabhumii Industrial estate, opp. Ajit Mill Police chowky. Rakhial Road, Ahmedabad			Upto 8" class 600
20		L&T / Audco valves	Chennai			Upto 24" 600#
21		Cooper Cameron Valves (singapore) Pte. Ltd	No.2, Gul Circle, Jurong Industrial Estate, singapore - 629560	0065 865 2887	0065 861 7109	Upto 48" 600#
22		BOHMER Ball Valves	Gedulderweg, 95 45549 Sprockhovel Germany	(+49) 2324 70010	(-49) 2324 700179	Upto 48" 600#
23		MSA	Hlucinska, 41 747 22 Doinin Benesov Czech Republic	(+420) 553 881111	(+420) 553 651236	Upto 48" 600#
		LIST OF RECOMMENDED VENDORS FOR BALL VALVE		Document No.		Rev.
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LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
24	BALL VALVES	RMA Maschinen - und Armaturenbau Fulhaber & Truttenbach	Oststrasse, 17 77694 Kehl Germany	(+49) 78 518680	(+49) 78 5186813	upto 30" 600#
25		SCHUCK ARMATUREN (ex BORSIG)	Dailerstrasse 4-7 89555, Steinheim Germany	(+49) 73 29 950 0	(+49) 73 29950161	upto 30" 600#
26		SUD ROBINETTERIE INDSUTRIE (SRI)	279 -305, Bvd D, Casanova 13309 Marseille, France	(+33) 495 055050	(+33) 495 055070	upto 30" 600#
27		TORMENE GAS TECHNOLOGY (VALVITALIA)	Via L. Campolongo, 97 35020 Due Carrare PD ITALY	(+39) 059 919 9511	(+39) 049 9125455	upto 30" 600#
28		VIAR VALVOLE	Via L. Cadorna, 6 21041 Albizzate VA ITALY	(+39) 0331 99 2985	(+39) 0331 992992	upto 30" 600#
29		BREDA ENERGIA SESTO INDUSTRIA	Viale Sarca, 336 20126 Milano ITALY	(+39) 0264 4771	(+39) 02 64477542	upto 30" 600#
30		FLOW CONTROL TECHNOLOGIES (TYCO Flow Control)	23, Deuzieme avenue 13743 Vitrolles FRANCE	(+33) 442 103600 (+91) 11 647 1469	(+33)442103636 G39 (+91) 11 646 1550	upto 30" 600#
31		PETRO VALVES	Viale G Borri, 42 21053 Catellanza VA ITALY	(+39) 0331 334 111	(+39) 0331 675830	upto 48" 600#
32	Contractor shall ensure that each valve manufacturer shall have valid API 6D license and in case of firm order the license shall be valid till complete execution of supplies.					
33	Gas Over Oil Actuators	BIFI	Italy			
34		Rotork Fluid System	Italy			
35		CAMERON	Italy			
36		PC Intertecnik	Germany			
37		Bettis	Belgium			
38		LEDEEN	Texas			
39	Globe Valve	Flow Chem Industries	10, Navdurga Indl. Estate, Opp Forge Blower, Naroda Road, Ahmedabad - 25	79 - 220 4773	79 - 220 1401	upto 12" 600#
40		Shreeraj Industries	101, Samrudhi, Sattar Taluka Society, Opp old high court lane, Ahmedabad	79 - 2204773/ 3623		upto 12" 600#
41		Steel Strong Valves (P) Ltd.	Plot No. R-241, TTC Industrial area, MIDC, Rabale, New Bombay - 400 701			Upto 12" class 600 of split body type
42		Ornate Valves Pvt. Ltd, Mumbai	104, Eric House 16th Road Chembur, Mumbai - 400 071			upto 12" 600#
43		Micro Finish Valves	B.D.K. Engineering Ltd. Gokul Road, Hubli 580 030			upto 12" class 600
44		L&T / Audco Valves	Chennai			Upto 24" 600#
45		Niton Valve Industries Pvt. Ltd	SD -115/116 Ghatkopar Industrial Estate, L.B.S. marg Ghatkopar (West) Mumbai 400 086	022- 500 8315	022 - 5007654	Upto 24" 600#
46	Check/ Non Return Valve	L&T / Audco valves	Chennai			
47		Steel Strong Valves (P) Ltd.	Plot No. R-241, TTC Industrial area, MIDC, Rabale, New Bombay - 400 701	022 - 27699489/90	022 - 27695537	Spring loaded type upto 12" 600# of split body type
48		Micro Finish Valves	B.D.K. Engineering Ltd. Gokul Road, Hubli 580 030			upto 12" 600 #
49		Flow Chem Industries	10, Navdurga Indl. Estate, Opp Forge Blower, Naroda Road, Ahmedabad - 25	79 - 220 4773	79 - 220 1401	upto 12" 600# (lift type, wafer type & Swing type)
		LIST OF RECOMMENDED VENDORS FOR BALL VALVE		Document No.		Rev.
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LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
50	Check/ Non Return Valve	Ornate Valves Pvt. Ltd, Mumbai	104, Eric House 16th Road Chembur, Mumbai - 400 071			upto 12" 600# Lift & Swing type
51		Arpita Enterprise	1201, GIDC Estate, Phase IV Vithal Udyog Nagar Anand 388 112	02692 - 36187		upto 8" 600# (wafer type)
52		Niton valve Industries Pvt. Ltd	SD -115/116 Ghatkopar Industrial Estate, L.B.S. marg Ghatkopar (West) Mumbai 400 086	022- 500 8315	022 - 5007654	Upto 24" 600# (Lift & Swing Type)
53	Pressure Relief Valve	FMC Sanmar Ltd	147, Karapakkam Village, Chennai-600096	044-492-5455	044-492-6114	
54		Protego Equipments Pvt. Ltd.	Navi Mumbai			
55		Larsen & Tubro (Audco)	32, Sivaji Marg, Post Box 6223, Near Moti Nagar, New Delhi	011-25931302	011-25438624	
56		MEKASTER/sebim valves India Pvt. Ltd.	908, Ansal Bhawan, 16 Kasturba Gandhi Marg, New Delhi	011-23312110, 23318360	011-23712155	
57		TYCO SANMAR LTD	Chennai			
58		RMG regal + GmbH, Germany	Germany			
59	Pipe fittings (Elbows, Tees, Reducers)	INTERFORGE	Grobe Strabe 14, 27356 Rotenburg, Germany	" +49 4261 4081"	" +49 4261 3090"	Upto 30" class 600 fittings & flow tee
60		KURVERS Piping	Mark S Clarkelaan 13 a, Haven No. M 512, 4761 RK Zevenbergen, The Netherlands	" +31 168 33 43 44"	" +31 168 33 43 49"	Upto 30" class 600 fittings & flow tee
61		MEREK Engineering	Premier estate, Leys road, Brockmoor Brierley Hill, DY5 3UT West midlands, UNITED KINGDOM	" +44 121 544 9938"	" +44 121 544 9132"	Upto 30" class 600 fittings & flow tee
62		PETROFIT	Unit 3 Rowan Court, Crystal Drive, Smethwick, B66 1RB West Midlands, UNITED KINGDOM	0121 544 9938	0121 544 9132	Upto 30" class 600 fittings & flow tee
63		PHOCEENINE (Groupe Genoyer)	Ten bergstraat 4, 2830 Wildebroek, BELGIUM	" +32 3 860 73 70"	" +32 3 860 73 71"	Upto 30" class 600 fittings & flow tee
64		VAN LEEUWEN BUIZEN	Schaarbeecklei 189, 1800 Vilvoorde, BELGIUM	" +32 2 255 40 00"	" +32 2 253 20 92"	Upto 30" class 600 fittings & flow tee
65		MS Fittings Mfg. Co. Pvt. Ltd., Kolkatta	M.S.FITTINGS MFG. CO.(P)LT.D., H.O 17 WESTERN STREET, KOLKATTA 13	033-2362902, 2362903	033-2252103	Upto 24" class 600
66		Ferrous Alloy Forgings(P) Ltd.	Ferro tubes & Forging Industries, C 1/129, GIDC Estate, vaghodia, Baroda-391760	02668-62479		Upto 12"
67		Pipe Fit Engineers	496/1 GIDC Industrial Estate, Makarpura, Baroda-390010, pipefit@pipefit.net	0265-2636 547/545	0265-2636 546	Upto 24" class 600
68		Teekay Tube	315/317, Navratan 69, P D Mello Road Near Camac Bridge, Mumbai-400009	" +91 22 342 3382-83, 91 22 343 7716 ,345477, 3446975"	(022)349162	Upto 24" class 600
69		Alliance Fittings & forgings , Navi Mumbai	Alliance fittings & forgings inc., A-468/469, T.T.C Industrial Area	022-2788 1333/1916	022-2788 1134/ 5590 2273	Upto 12" Class 600
70		Swastik Lloyds Engineering Pvt. Ltd., Mumbai	Swastik Lloyds Engineering Pvt. Ltd., 5 B Islam pura Street, Mumbai-400004	022-3860222/23	022-7402779	Upto 12" Class 600
71		Steel Tubes (India)	526/36, Maulana Azad Road, 2nd Floor, (Gulawadi Circle), mumbai-400004	022-3895908/ 3822821	022-3895906	Upto 24" class 600
72		Eften Engineering Pvt. Ltd.	D1, Sipcot Industrial Park, Irungaltukottai-602105, Tamil nadu	04111-256284, 256714	04111-256714	Upto 8" class 600
73		Dylan Belgie	Lerenveld 20, 2547 Lint, Belgium	32 3 488 4880	32 3 488 4880	Upto 30" class 600 fittings & flow tee
74	FBF	Dynamicalaan 4-8, 2610 Anwerpen, Belgium	32 3 820 5880	32 3 828 2822	Upto 30" class 600 fittings & flow tee	
75	Ferrostaal(Mangroup)	Hohenzollernstrasse 24, 45128 Essen, Germany	49 201 818 01	49 201 818 2822	Upto 30" class 600 fittings & flow tee	
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LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
76	Pipe fittings (Elbows, Tees, Reducers)	Sawan Engineers	201, Palace Plaza, Lalbaug Road, Near kashivishwanath Temple, Baroda-390001, Email :sawanengg@sify.com	0265-243 3003/553 8303	0265-243 5196	upto 24" class 600
77	Flanges	Ferrous Alloy Forging(P) Ltd.	111, DLF Industrial Estate, 14th Mile stone, Mathura Road Faridaba-121003			upto 24" 600#
78		Sanghvi Forging & Engineering Ltd	Parvati chambers, Opp Apsara cinema-pratap Nagar Road, Baroda-390004	0265-258 0644 /1658	0265 258 1125	upto 12" 600#
79		Sawan Engineers	201, Palace Plaza, Lalbaug Road, Near kashivishwanath Temple, Baroda-390001	0265-2433003/ 3096008	0265-2435196	upto 18" 600#
80		ECHJAY Forgings Ltd.	Kanjur Village Road, Kunjan Marg east Mumbai- 400042	225782461 225782830	225784962	upto 30" 600#
81		Ms Fittings Mfg.Co. Pvt.Ltd.Kolkata	Ms Fittings Mfg.Co. Pvt.Ltd.Kolkata, H.O.17 Western street, Kolkata-13	033-2352902, 2362903	033-2252103	upto 24" 600#
82		Pipe Fit Engineers	496/1, GIDC, Indi.Estate Makarpura, Baroda-390010	0265-2636547 /545	0265-2636546	upto 24" 600#
83		Punjab Steel Works	38B, Mayapuri Indl Area Phase-1 New Delhi-110064	011-5130960	115137432	upto 24" 600#
84		Pressure /Level/Temperature transmitters	Yokogawa			
85	Invensys India					
86	Honeywell Automation					
87	ABB					
88	Emerson Process Management					
89	Instrument Fittings including manifold, needle valve etc	Swagelock				
90		Hamlet				
91		Hoke				
92		Parker				
93	Impulse tubing	Sandvik				
		LIST OF RECOMMENDED VENDORS FOR BALL VALVE		Document No.		Rev.
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LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
94	Instrumentation Panel	Positronics				
95		ICA				
96		Rittal				
97		Pyrotech Controls				
98		Enclotek				
99	Turbine Flow Meter	Daniel				
100		RMG				
101		GE				
102		FMC				
103		Instromet/Elster				
104	Signal Repeater & Isolator	MTL India Pvt. Ltd	A-273 Ansal chambers-1 3,Bhikaji cama place, New Delhi	011-26715408/6180	011-2671681	
105		P & F				
106	Indication Lamp (Cluster LED type)	Concord				
107		L&T				
108	24 V DC Power supply	SITOP				
109		Siemens				
110		PHEONIX				
111	RTD With Thermowell	Pyroelectric Instruments				
112		General Instruments				
113		ALTOP				
114		A.N.Instruments				
115	MCT	Roxtec				
116		NEIMEX				
117		Signet International				
118	Junction Box	Flame Proof Control Gears Pvt. Ltd				
119		Flame Proof Equipments Pvt. Ltd				
120		Flex pro Electricals pvt. Ltd,Navsari				
121		CEAG				
		LIST OF RECOMMENDED VENDORS FOR BALL VALVE		Document No.		Rev.
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LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
122	Alarm Anunclator	IIC				
123		Procon				
124	Selector Switch	KAYCEE				
125		SALZER				
126	Quick Open Closure	PECO				
127		GD ENGG				
128		R&M Energy Systems				
129		TD Williams				
130		Peerless				
131		Huber Yale				
132		Pipeline Technologies UK				
133	Digital Bar graph Indicator	Honeywell				
134		ABB				
135		YOKOGAWA				
136		MASIBUS				
137	Switch Socket & Plugs	B.C.H.				
138		Baliga				
139		CGL				
140		MDS				
141		Delton				
142	Instrumentation Signal Control Cable	CORDS				
143		KEI				
144		Elkay Telelinks.				
145		Polycabs Associate cables				
146	Isolating Barrier	MTL India Pvt. Ltd	A-273 Ansal chambers-1 3,Bhikaji cama place, New Delhi	011-26715408/6180	011-2671681	
147		P & F				
		LIST OF RECOMMENDED VENDORS FOR BALL VALVE		Document No.		Rev.
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LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
148	Cable Glands	Control switch Gear				
149		Electromac				
150		Commet				
151		Baliga				
152		Flameproof Control Gear				
153	Lugs	Dowells				
154	Control Valve	IL Paighat				
155		Fisher				
156		Valtec				
157		Dresser valves(India)				
158		Arca Controls				
159		Masoneilan				
160	Gas Chromatograph	Daniel				
161		ABB				
162		Instromet/Elster				
163		RMG				
164	Terminal Block	Elemex				
165		Phoenix Contact(India) Pvt.Ltd.				
166	Filter Element / Cartridge	PECO-FACET				
167		FILTAN				
168		VELCON				
169		ACS				
170		BURGESS MANNING				
171		PALL				
172		FILTERATE				
173		DOLLINGER				
174		DAHLMANN				
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LIST OF RECOMMENDED VENDORS						
S.NO	ITEM	NAME OF VENDOR	ADDRESS	PHONE NO	FAX NO	QUALIFIED FOR SIZE
175	Slam Shut & Pressure Regulator Valve	IL Paighat				
176		Fisher				
177		Foxboro				
178		Valtex				
179		Dresser valves(India)				
180		Schlumberger(Actaris)				
181		Masoneilan				
182	Electronic Controllers (Flow/Level/Pressure &Temp)	Foxbro				
183		Honeywell				
184		ABB				
185	Third Party Inspection Agency	Tata Projects Ltd.	22,Sarvodaya Society,Nizampura,Baroda-390002	0265-2392863	0265-2785952	
186		Indian Register of Shipping				
187		Bax counsel Insepection Bureau Pvt. Ltd.	303, Madhava,Bandra Kurla Complex, Bandra(E),Mumbai-400051	022-26591526,022-26590236	022-26591526	
188		Bureau VeritasQI	The Leela Galleria,5th floor,Andheri-Kurla Road,Andheri(E),Mumbai-400059	022-26956300	022-26956309	
189		Germanischer Lloyd	304-305, Anna Salai,Teyanampet,Chennai-600018	044-24320335	044-24328186	
190		Velosi Certification Services,Mumbai	Velosi Certification Services(I)Pvt.Ltd.,212,Shivkrupa Complex Centre,Off Ghokhale Road,Navpada Thane(W)400602	022-25376770	022-25426777	
191		ABS Industrial Verification Ltd., Mumbai	404,Mayuresh Chambers,Sector-11,CBD Belapur(E),Navi Mumbai-400614	022-27578780 /1 /2	022-27578784 / 5	
192		Certification Engineers International Ltd.	EIL Bhavan,5th floor,1,Bhikaji Camma Place,New Delhi-110066	011-26167539, 26102121	011-26101419	
193		Dalal Mott MacDonald	501, Sakar -II, Ellisbridge,Ahemedabad-380006	079-26575550	079-6575558	
194		International Certification Systems	E-7,Chand Society, Juhu Road, Juhu, Mumbai-400049	022-26245747	022-226248167	
195		SGS	SGS India Pvt. Ltd.,SGS House,4B,A.S.Marg,Vikhroli (W),Mumbai-400083	022-25798421 to 28	022-25798431 to 33	

NOTE: IF THE VENDOR WANTS TO GO TO ANY OTHER VENDOR OTHER THAN THOSE APPEARING IN APPROVED VENDOR LIST, HE HAS TO SUBMIT PTR & FINANCIAL STATUS OF THE SAME FOR OWNER/CONSULTANT REVIEW BEFORE COMMENCING PROCUREMENT.

	LIST OF RECOMMENDED VENDORS FOR BALL VALVE	Document No.	Rev.
		11-0330E-03-08-05-021	0
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**KHERA COMPRESSOR STSTION
UPGRADATION PROJECT**



THIRD PARTY INSPECTION AGENCY FOR BALL VALVE	CLIENT JOB NO.	-
	TOTAL SHEETS	04

DOCUMENT NO	11	0330E	03	08	10	022
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0	23.05.11	ISSUED FOR TENDER	AS	ASD	AD
A	29.03.11	ISSUED FOR CLIENT'S COMMENTS	AS	ASD	AD
REV	DATE	DESCRIPTION	PREP	CHK	APPR

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2.0 SCOPE OF WORK.....3

3.0 CO-ORDINATION FOR INSPECTION3

4.0 INVOLVEMENT OF TPIA.....3



THIRD PART INSPECTION AGENCY
FOR BALL VALVE

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0

SHEET 2 of 4

1.0 INTRODUCTION

The objective is to specify the role of Third Party Inspection Agency (TPIA) appointed by Supplier for supply items for carrying out inspection.

The Supplier will appoint an independent approved Third Party Inspection Agency (TPIA) whose role shall be to witness, review and certify all quality related issues for supply of material. The TPIA shall ensure that all quality related requirements during manufacturing are strictly followed as per Owner/Owner's representative specifications and approved documents. Owner shall appoint its TPIA for witness, review and certification of all the construction activities.

2.0 SCOPE OF WORK

2.1 Role of TPIA for supply items

TPIA, as appointed by the Supplier from list to be provided, shall witness, review and certify all quality related activities for supply of material. The extent of TPIA involvement as a minimum is indicated in the various Quality Control Sheets attached with the tender document and shall be as per final approved QA/QC procedures or as per codes and standards, wherever applicable.

2.2 Role of Owner / Owner's representative for supply items

For supply items, Owner / Owner's Representative reserves the right to carryout independent inspection / audit of the plant during manufacturing. The extent of inspection shall be at the discretion of Owner / Owner's Representative. All costs related to the same (excluding travel expenses) shall be borne by Supplier

2.3 The various Hold points involvement as mentioned in various QC sheets are indicative minimum. However, actual involvement shall be decided by Owner/Owner's Representative during review of documents, and Supplier shall be bound by the same. Supplier shall also submit the calibration certificates of all the equipment/instruments, which are part of manufacturing/Inspection & testing for TPIA review TPIA shall also be responsible to check /witness the necessary calibration of such equipment/Instruments during visit to supplier's works.

3.0 CO-ORDINATION FOR INSPECTION

Supplier on award of the Contract/LOI shall submit the detailed procurement schedules within fifteen (15) days to Owner/Owner's representative for their approval. The detail item wise Manufacturing schedule indicating dates and location of manufacturer works shall be submitted by the Supplier within One (1) week from the date of issue of their internal Indent /Purchase order to sub vendor. The Supplier shall inform in writing minimum One (1) week in advance to inform the Owner/Owner's representative for Inspection Notice/Call. All coordination among Owner/Owner's representative/TPIA and Supplier's/ Vendor's works shall be the responsibility of Supplier. In case the Supplier fails to honour its inspection calls/notice, supplier has to reimburse all costs incurred by the Owner/Owner's representative at actual.

4.0 INVOLVEMENT OF TPIA

4.1 The Minimum requirements are indicated in the Quality Control Tables attached in tender document.

4.2 Mechanical

All bought out items required for execution activities for mechanical supply should satisfy the following conditions:

- All materials shall be of standard quality and shall be procured from renowned sources / manufacturers approved by Owner/Owner's representative.



THIRD PART INSPECTION AGENCY
FOR BALL VALVE

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- All tests of the materials as specified by the relevant codes should be carried out by the supplier in an approved laboratory and the test reports should be duly authenticated by the laboratory and should be submitted to TPIA for his approval. If so desired by Owner/Owner's representative, tests shall be conducted in his presence or in presence of his authorized nominee.
- Quality and acceptance of materials not covered under technical specifications shall be governed by relevant codes.
- The Supplier shall submit manufacturer's test reports on quality and suitability of any material procured from them and their recommendations on storages/application/workmanship etc. for the intended use. Submission of manufacturer's test reports does not restrict Owner/Owner's representative from asking fresh test results from an approved laboratory of the actual materials supplied even from an approved manufacturer.
- The Supplier shall furnish the QAP for all supply items for approval.

4.3 Instrumentation

All bought out items for required execution activities for Instrumentation works should satisfy the following conditions:

- Supplier shall furnish the quality assurance procedure for field instruments and cables for review of Owner/Owner's representative.
- QAP will commence at the instigation of the requisition and follows through to equipment acceptance, thereby ensuring total conformity to the specifications.
- Type test certificates of similar equipment shall be provided.
- Owner/Owner's Representative shall carryout the inspection of erection of the equipment and witness the testing and commissioning and approve the certificates.

	THIRD PART INSPECTION AGENCY FOR BALL VALVE	Document No.	Rev
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CLIENT:		GAIL India Limited		KHERA COMPRESSOR STATION UPGRADATION PROJECT	
Sl. No.	Component	Value (In %)	Remarks		
1	METHANE V/V% (C1)	82.6803			
2	ETHANE V/V% (C2)	7.1472			
3	PROPANE V/V% (C3)	3.7403			
4	I-BU	0.6763			
5	N-BU	0.7670			
6	BUTANE V/V% (C4)	1.4433			
7	I-P	0.1590			
8	N-P	0.1460			
9	PENTANE V/V% (C5)	0.3050			
10	HEXANE V/V% (C-6)	0.0766			
11	C-7 V/V%	0.0373			
12	C-8 V/V%	0.0187			
13	C-9 V/V%	0.0000			
14	C-10 V/V%	0.0000			
15	CO2 V/V%	4.4534			
16	NITROGEN V/V%	0.0979			
17	SPECIFIC GRAVITY	0.6972			
18	NCV KCAL/SCM	9059.5381			
		NATURAL GAS COMPOSITION		DOCUMENT NO.	Rev.
				ANNEXURE - I	0
				SHEET 1 OF 1	

TRUNION MOUNTED BALL VALVE

QTY. = 04 NOS.

TAG NOS.: XOV-1007, XOV-1008, XOV-1010 & XOV-1011

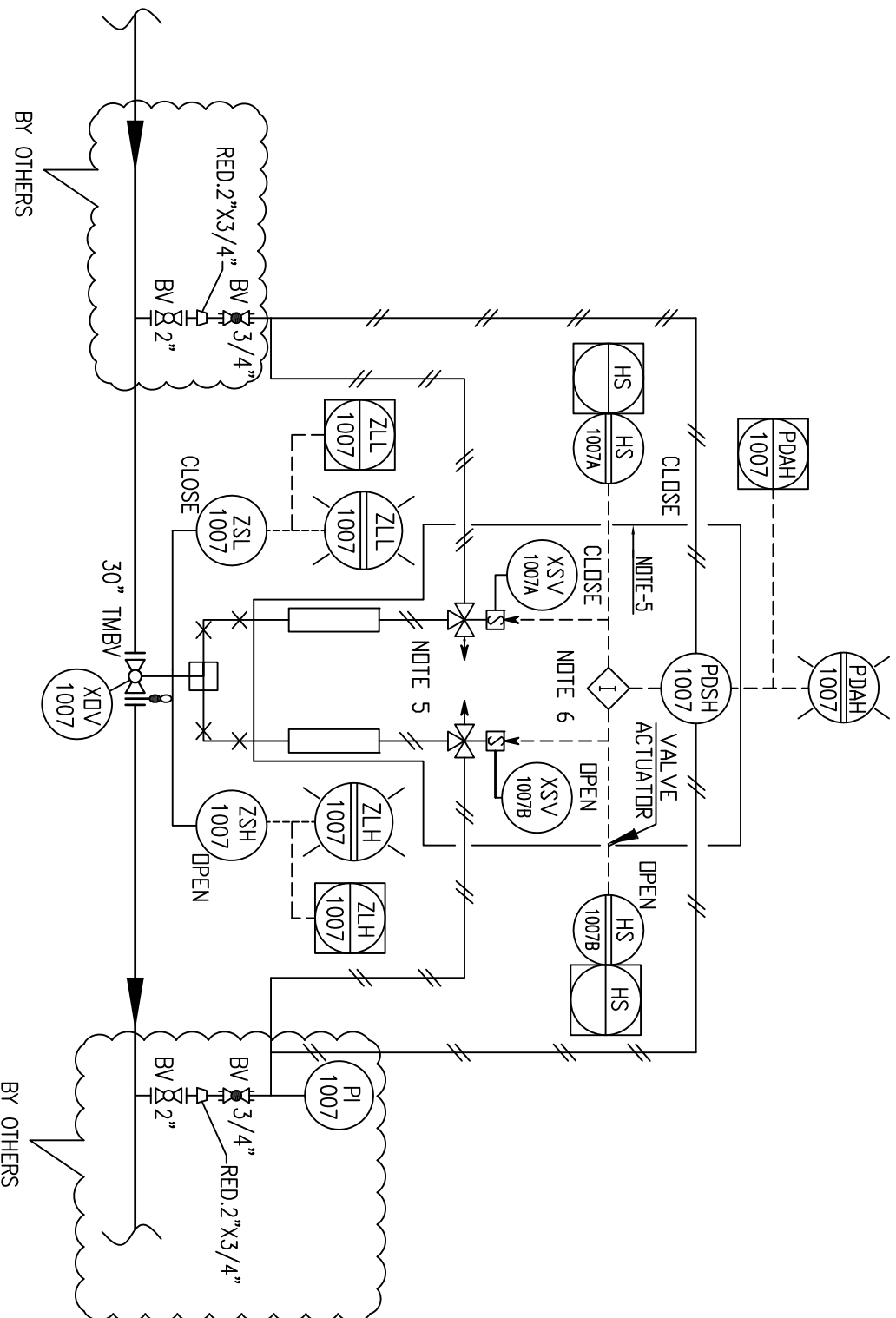
NORMAL FLOW RATE = 18.0 MMSCMD (FOR EACH BALL VALVE)

INLET PRESSURE = 42.0 KG/SQ.CM G

INLET TEMPERATURE = 45.0 DEG.C

DESIGN PRESSURE = 93.0 KG/SQ.CM G

DESIGN TEMPERATURE = 65.0 DEG.C



NOTES:-

1. INLET & OUTLET MATCHING FLANGES OR BLIND, STUD, NUT & GASKETS NOT IN GAIL-KHERA SCOPE.
2. ALL INSTRUMENT / EQUIPMENT TAG NO. SHALL BE PRECEDED BY UNIT NO. 56, I.E. P1-1007 SHALL BE READ AS 56-P1-1007.
3. 3MM THK, COPPER JUMPER WILL BE PROVIDED AT EACH FLANGE CONNECTION.
4. VALVE ACTUATOR SCHEME OF TMBV TO BE DEVELOPED BY VENDOR.
5. MANUAL OPEN/CLOSE OPERATION OF TMBV IN CASE OF POWER FAILURE, TO BE PROVIDED BY VENDOR.
6. THE INTEGRATED INBUILT INTERLOCK SHOULD BE PROVIDED IN THE VALVE SUCH THAT WITH HIGH DP ACROSS THE VALVE (>3 BAR) SHOULD NOT OPEN DURING START-UP.
6. DESIGN FLOW RATE SHALL BE 1.1 TIMES THE NORMAL FLOW RATE.

PROCESS CONDITIONS TABLE

OPERATING PARAMETER	MIN.	NORMAL	DESIGN	UNITS
FLOW	~	18.0	~	MMSCMD
INLET PRESSURE	~	42.0	93.0	KG/SQ.CM
TEMPERATURE	~	45.0	65.0	°C
PRESSURE CLASS	#600			

LEGENDS:-

- TRUNION MOUNTED FLANGED BALL VALVE (GAS OVER OIL ACTUATOR OPERATED)
- FLANGED GLOBE VALVE
- SOCKET-WELDED GLOBE VALVE
- FLANGED BALL VALVE
- SOCKET-WELDED BALL VALVE
- FLOW CONTROL VALVE
- SOLENOID OPERATED VALVE
- PLUG VALVE
- SPADE & SPACER
- PROPOSED PIPELINE
- EXISTING PIPELINE

CLIENT: **GAIL (India) Limited**
(A Government of India Undertaking)

ENGINEERING CONSULTANT: **Ipkeny**
WOOD GROUP KENNY INDIA PVT. LTD.
NEW DELHI

PROJECT: INSTALLATION OF ADDITIONAL FILTRATION SYSTEM AT KHERA COMPRESSION STATION, UJJAIN, MP
TITLE: SCHEMATIC DIAGRAM OF 30" NB BALL VALVE (GAS OVER OIL ACTUATOR OPERATED)
SCALE: JOB NO. 110330E DRAWING NUMBER ANNEXURE-II
REV: 0