



**BHAGYANAGAR GAS LIMITED**  
(A JOINT VENTURE OF HPCL & GAIL)

**BID DOCUMENT FOR**

**Procurement of SS Fittings for Operations & Maintenance  
of CNG Stations in BGL, Hyderabad**

**UNDER LIMITED DOMESTIC  
COMPETITIVE BIDDING**

**Bid Document No.: BGL/509/2020-21**

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**SECTION – 7**

**MATERIAL REQUISITION**



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<b>Part-A</b>					
<b>Sr. No.</b>	<b>Item Description</b>	<b>Size</b>	<b>Specification</b>	<b>Uom</b>	<b>Qty</b>
1	UNION CROSS	3/4"	Tube OD (3/4" x 3/4"X 3/4"X 3/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
2	UNION CROSS	1/2"	Tube OD (1/2" x 1/2"X 1/2"X 1/2"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
3	REDUCING UNION	1" - 3/4"	Tube OD(1"X3/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
4	REDUCING UNION	3/4" - 1/2"	Tube OD(3/4"X1/2"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10
5	REDUCING UNION	1/2" - 1/4"	Tube OD(1/2"X1/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10
6	REDUCING UNION	3/8" - 1/4"	Tube OD(3/8"X1/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
7	REDUCING UNION	3/4" - 3/8"	Tube OD(3/4"X3/8"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15
8	EQUAL TEE	3/4"	Tube OD(3/4"X3/4"X3/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	30
9	REDUCING TEE	3/4" OD X 1/2" OD X 3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
10	REDUCING TEE	3/4" OD X 1/2" MNPT X 3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
11	CONNECTOR	3/4" OD X 1/2" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	30
12	CONNECTOR	3/4" OD X 1/2" FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10



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13	CONNECTOR	3/4" ODX1/4" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	300
14	CONNECTOR	3/4" OD X 3/4" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
15	CONNECTOR	3/4"MNPT - 1/2"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10
16	CONNECTOR	3/4"OD X 1/2"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15
17	CONNECTOR	1/2" OD X 1/2"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
18	CONNECTOR	1/2" OD X 1/2" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
19	CONNECTOR	1/2"OD X 3/8" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
20	CONNECTOR	3/8"OD - 1/2"MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10
21	CONNECTOR	3/8"OD - 3/8"MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10
22	CONNECTOR	3/8"OD - 1/4"MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
23	TUBE ADAPTER	3/4" Tube end - 1/4"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15
24	REDUCER	3/4" Tube end - 1/4"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15
25	REDUCER	3/4"Tube end - 3/8"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10
26	REDUCER	1/2"Tube end - 3/8"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
27	REDUCER	3/8"Tube end - 1/2"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5



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28	REDUCER	3/4"Tube end - 1/2"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
29	ELBOW	1" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
30	ELBOW	3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10
31	ELBOW	1/2" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
32	ELBOW	3/8" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
33	ELBOW	1/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
34	CAP	1"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
35	CAP	3/4"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
36	CAP	1/2"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
37	PLUG	1"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
38	PLUG	3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	40
39	PLUG	1/2" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
40	NUT	1"	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5
41	FRONT FERRULES	1" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
42	FRONT FERRULES	3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	60
43	FRONT AND BACK FERRULES SET	1/2" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20



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44	FRONT AND BACK FERRULES SET	3/8" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	50
45	FRONT AND BACK FERRULES SET	1/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	80
46	BACK FERRULES	1" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20
47	BACK FERRULES	3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	60
48	BLEEDE/VENT VALVE	1/4" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15
49	CONNECTOR FOR VENT VALVE	1/4"OD - 1/4"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15
50	NRV	3/4" OD	Maximum pressure rating: 5000 psig @ 70°F Temperature rating: -40 to 250°F i.e. (-40 to 121°C)	Nos	10
51	Guagae fitting 1/2"MNPT to 3/8" FNPT	1/2"MNPT to 3/8"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	50

**Part-B**

Sr. No.	Item Description	Size	Specification	Uom	Qty
1	3 WAY BALL VALVE, SS, 1/2" OD X 1/2" OD X 1/4" FNPT; Trunnion type	1/2"OD- 1/2" OD-1/4" FNPT	Material : SS316 (Rated pressure : 344 BAR Temperature : -17 to 93 DEG C), PEEK SEATS; Trunnion type; Hydrostatic tested	Nos	10
2	SEAL KIT OF 3 WAY BALL VALVE , SS, 1/2" OD X 1/2" OD X 1/4" FNPT; Trunnion type	1/4"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to 450°F)	Nos	10



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3	3 WAY BALL VALVE, SS, 1/4" FNPT; Trunnion type	1/4" FNPT	Material : SS316 (Rated pressure : 344 BAR Temperature : -17 to 93 DEG C), PEEK SEATS; Trunnion type; Hydrostatic tested for CNG Dispensers	Nos	30
4	SEAL KIT OF 3 WAY BALL VALVE, SS, 1/4" FNPT; Trunnion type	1/4"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to 450°F)	Nos	30
5	2 WAY BALL VALVE, SS, 3/4" OD; Floating type	3/4" OD	Material : SS316 (Rated pressure : 344 BAR Temperature : -40 to 121 DEG C), PEEK SEATS; Hydrostatic tested	Nos	35
6	SEAL KIT OF 2 WAY BALL VALVE, SS, 3/4" OD; Floating type	3/4"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to 450°F)	Nos	35
7	2 WAY BALL VALVE, SS, 1/2" OD; Floating type	1/2" OD	Material : SS316 (Rated pressure : 344 BAR Temperature : -40 to 121 DEG C), PEEK SEATS; Hydrostatic tested	Nos	20
8	SEAL KIT OF 2 WAY BALL VALVE, SS, 1/2" OD; Floating type	1/2"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to 450°F)	Nos	20
9	2 WAY BALL VALVE KNOBS,		Black Nylon Handel kit for floating ball valves	Nos	100
10	3 WAY BALL VALVE KNOBS		Black phonelic Handel kit for trunnion ball valve	Nos	100





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**B. REMARKS / COMMENTS**

**1. GENERAL NOTES**

**VENDOR's Compliance**

Vendor shall submit his bid in full compliance with the requirements of this MR and attachments.

Vendor must include the following statement in his bid:

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. COMPLIANCE WITH SPECIFICATION**

The vendor shall be completely responsible for the design, materials, fabrication, testing, inspection, preparation for shipment and transport of above equipment strictly in accordance with the Material Requisition and all attachments thereto.

**3. VENDOR'S SCOPE**

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

**4. INSPECTION**

Vendor shall appoint anyone of the following TPIA for inspection purpose after approval by purchaser:

- a) Lloyd Register of Industrial Services
- b) Technische Ueberwachungs Verein (TUV) SUD South Asia
- c) International Certification Service Pvt. Ltd
- d) TQ Services
- e) Moody International (India) Pvt. Ltd
- f) Bureau Veritas (India) Pvt. Ltd
- g) SGS
- h) Quality Services and Solutions Pvt. Ltd.
- i) Velosi Certification Services
- j) Certification Engineers International Ltd

Apart from inspection by TPIA, inspection shall also be performed by BGL delegate, as set out and specified in the codes and particular documents forming this MR.



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**5. APPLICABLE DOCUMENTS**

General prescriptions, requirements and information are listed in Annexure of this Material Requisition.

**6. VENDOR'S DOCUMENTS**

Vendor shall supply the documentation as listed under Documents & Data Requirements of Material Requisition.

All documents shall be supplied in English language.

**DOCUMENTS & DATA REQUIREMENTS**

The table hereunder specifies the quantities and the nature of the documents to be submitted by the BIDDER/SUPPLIER VENDOR to the ENGINEER-IN-CHARGE (EIC)

The documents required at the inquiry stage and to be included in the bid are listed under column A.

The documents required after award of the AGREEMENT and subject to the written approval of the EIC are listed under column B.

The final and certified documents are listed under column C.

Any document even when preliminary shall be binding and therefore duly identified and signed by the BIDDER/SUPPLIER/VENDOR. It shall bear the EIC's project reference the material requisition number and the identification number.

**THE DOCUMENTS ARE FULLY PART OF THE SUPPLY WHICH SHALL BE COMPLETE ONLY IF AND WHEN THE DOCUMENTS COMPLYING FULLY WITH THE MATERIAL REQUISITION REQUIREMENTS ARE RECEIVED BY THE ENGINEER-IN-CHARGE.**

Item	Documents and Data	A			B		C	
		No. of copies	No. of copies	Required Date	No. of copies	Required Date		
1.	Copy of ISO certification for supplier/manufacturer	2	-	-	2	Along with dispatch/shipment		
2.	Technical descriptive catalogue (for information)	2	2	2 weeks	2	Along with dispatch/shipment		
3.	General Arrangement/assembly drawing of valve showing all features	2	2	2 weeks	2	Along with dispatch/shipment		



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4.	QA/QC Program (SS Ball valve, SS Fittings, SS Tubes)	2	2	2 weeks	2	Along with dispatch/shipment
5.	Compliance to Tender QCT	2	2	2 weeks	2	Along with dispatch/shipment
6.	Manufactures' test certificates		2	-	2	Along with dispatch/shipment
7.	Heat Treatment Reports		2	When available	2	2 weeks after approval with final technical file
8.	Hydrostatic and Air test Report		2	1 weeks after test	2	Along with dispatch/shipment
9.	Packing / Shipping list / weight and Dimensions		2	4 weeks	2	2 weeks before shipping
10.	Material certificate		-	-	2	Along with dispatch/shipment
11.	Final technical file		-	-	2	Before claim of final payment

Notes:

- 1) Documents listed in column A is required to be submitted during bid time (1 original+2 copies). Durations in column B (Required date) are weeks after purchase order / LOA date ore as indicated in table. Durations in column C (Required date) are weeks after document approval or as indicated in table. Due date of each document may be proposed.
- 2) Latest submittal time for:
  - Test procedure : 2 weeks before test
  - Test report : 2 weeks after test
- 3) Final technical file shall be supplied in hard copy as indicated, and in electronic format (.pdf acrobat files) on 3 (three) CD-ROMs to BGL.



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**SECTION – 8**

**SPECIAL CONDITIONS OF CONTRACT (SCC)**



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**SPECIAL CONDITIONS OF CONTRACT (SCC)**

**1.0 GENERAL**

- 1.1 Special Conditions of Contract shall be read in Conjunction with the General Conditions of Contract, Specification of work, Drawing and any other documents forming part of this Contract wherever the context so requires.
- 1.2 Notwithstanding the sub-division of the documents into these separate sections and volumes every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read within the Contract so far as it may be practicable to do so.
- 1.3 Where any portion of the General Conditions of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, unless a different intention appears, the provisions of the Special Conditions of Contract shall be deemed to over-ride the provisions of the General Conditions of Contract and shall be the extent of such repugnancy, or variations, prevail.
- 1.4 Wherever it is mentioned in the specification that the Contractor shall perform certain work or provide certain facilities, it is understood that the Contractor shall do so at his cost and the Value of Contract shall be deemed to have include cost of such performance and provisions, so mentioned.
- 1.5 The materials, design, and workmanship shall satisfy the relevant Indian Standard, the Job Specifications contained herein and Codes referred to. Where the job specification stipulate requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied.
- 1.6 In case of an irreconcilable conflict between Indian or other applicable standards, General Conditions of Contract, Special Conditions of Contract, Specification, Drawings or Schedule of Rates, the following shall prevail to the extent of such irreconcilable conflict in order of precedence:
- i) Letter of Acceptance/ FOI along with Statement of Agreed Variations.
  - ii) Schedule of Rates as enclosures to Letter of Acceptance
  - iii) Special Conditions of Contract
  - iv) Drawings
  - v) Technical/ Material Specifications
  - vi) Instruction to Bidder
  - vii) General Conditions of Contract
  - viii) Indian Standards
  - ix) Other applicable standards
- 1.7 It will be the Contractor's responsibility to bring to the notice of Engineer-in-charge any irreconcilable conflict in the contract documents before starting the work(s) or making the supply with reference which the conflict exists.



- 1.8 In the absence of any Specifications covering any material, design of work(s) the same shall be performed/ supplies/ executed in accordance with Standard Engineering Practice as per the instructions/ directions of the Engineer-in-charge, which will be binding on the Contractor.

## **2.0 SCOPE OF SUPPLY**

- 2.1 The Scope of Work shall includes supply of *Ferrule Fittings, SS Valves & Quick couplers* as applicable on FOT Site Basis and shall be as set out at MR Section-8, Technical Specifications for SS Ferrule Fittings, SS Ball Valves & Quick couplers given in Section-10(A); (B),&(C)of Volume-II of tender document and supplemented by all stipulation in the total tender document.

## **2.2 REMARKS**

### **2.2.1 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:

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

### **2.2.2 Compliance with Specification**

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

## **3.0 TERMS OF PAYMENTS**

The Payment shall be made progressively against receipt of each lot at site within 15 days from receipt of bills in the following manner.

- 100 % (Hundred percent) payment of the supplied portion along with freight including taxes & duties will be paid on receipt & acceptance of goods at FOT site after adjustment of PRS, if any along with submission of following documents: -
  - i Original Invoice in triplicate in compliance with GST law in force
  - ii Inspection Release note by Owner or his appointed or approved agency.
  - iii Original GR / LR
  - iv Packing List
  - v Insurance cover note covering transit insurance
  - vi Performance Bank Guarantee(s) of 10% of Contract Value. If already submitted, a copy of the same.
  - vii Document related to Input Tax Credit (ITC) to be claimed by owner, if applicable.



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- **For FINAL BILL, following documents are to be provided:**

- v) **No Claim & No due Certificate**
- vi) Statement of Completion
- vii) Extended BG period, in case supply is delayed beyond contractual time period

**Note: Documents related to point no. v & vi shall be submitted in company letter head duly signed and stamped.**

ii. **MODE OF PAYMENT**

All payments payable in Indian rupees against the contract shall be released by Owner through account payee cheque payable at par or by Electronic transfer.

iii. **DEDUCTION AT SOURCE**

Purchaser will release the payment to the Seller after effecting deductions as per applicable law in force.

Purchaser will release payments by F&A Dept, BGL to the Contractor after offsetting all dues to the Purchaser payable by the Contractor under the Contract.

**4.0 INLAND TRANSIT INSURANCE FOR PROCUREMENT OF GOODS**

Bidder shall arrange Transit Insurance and the cost of which shall be borne by bidder. Quoted price shall be inclusive of the same. Bidder will be required to submit documentary proof for the transit insurance before dispatch.

**5.0 LOCATION & ADDRESS OF STORES:**

The delivery of the items shall be at Hyderabad, as per the Material Requisition. The location of the store shall be informed before dispatch of items.

**6.0 DURATION OF THE CONTRACT:**

06 weeks for Group-A ( SS Fittings) and 12 weeks for Group-B ( SS Ball Valves) from the date of placement of purchase order (PO). Prices quoted to remain valid and firm for the entire duration of the contract.

**7.0 SECURITY DEPOSIT/ CONTRACT PERFORMANCE GUARANTEE:**

**Vendor shall submit SD / CPBG @ 10% of Contract/Order value within 30 days of award or Initial deposit of SD / CPBG @ 5% of Contract/Order value within 30 days of award and balance to be deducted against each RA bills till balance 5% is deducted/for supply, it is to be deducted from the invoice.** This deducted amount can be released/deduction can be stopped against submission of bank guarantee of equivalent amount. The contract performance bank guarantee shall be valid 03(three) months beyond the expiry of Warrantee/Guarantee period. The Performance Guarantee shall be in form of either Demand Draft or Banker's Cheque or irrevocable Bank Guarantee and shall be in the currency of Contract (issued by any Indian Scheduled





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bank or a branch of an International Bank situated in India and registered with Reserve Bank of India as Scheduled Foreign Bank).

However, in case of Bank Guarantee from banks other than the Nationalized Indian bank, the bank must be a commercial bank having net worth in excess of Rs. 100 Crores or equivalent US Dollars and **a declaration to** this effect should be made by such commercial bank either in the bank guarantee itself or separately on its letterhead.

BGL shall not be liable to pay any bank charges, commission or interest on the same.

Failure of the successful bidder to comply with the requirement of this clause shall constitute a breach of contract, cause for annulment of the award, forfeiture of the bid security and any such remedy the Owner may take under the Contract pursuant to GCC-Goods.

There is no exemption to MSEs including SSI units from submission of Security Deposit/ Contract Performance Bank Guarantee (CPBG).

**8.0 PRICE REDUCTION SCHEDULE FOR DELAYED DELIVERY (PRS/ LD):**

The price reduction schedule shall be @ 0.5% per week of delay or part thereof subject to maximum of 5% of total undelivered portion of contract value.

Price reduction for failure to meet technical parameters as mentioned in technical specification shall be separately applicable and shall be in addition to price reduction on account of failure of completion of supply.

**9.0 GUARANTEE / WARRANTY:**

The supplier shall warrant that everything to be furnished hereunder shall be free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards of the materials of the type offered and in full conformity with the specifications drawings or samples, if any, and shall if operable, operate, properly. This warranty shall survive inspection of payment for and acceptance of the goods but shall expire 12 months from the date of commissioning / operations or 24 months from the date of despatch, whichever is earlier.

**10.0 PRICE ESCALATION:**

The Contract price shall be deemed to be FIRM and valid for the entire duration of the contract till the completion of work and shall not be subjected to any adjustment due to increase in price of material, utilities or any other input for performance of work and the contract except for increase/decrease in taxes and duties on account of subsequent legislation.



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**11.0 QUANTITY VARIATION:**

BGL reserves the right to operate any SOR for the full quantities or part quantities or nil quantities as per the site conditions without assigning any reason. In this case; BGL's decision will be final and binding. BGL reserves the right to vary the quantity of any SOR without any change in terms and conditions.

**12.0 DISPATCH INSTRUCTIONS**

- 12.1 Seller shall obtain dispatch clearance from Purchaser prior to each dispatch.
- 12.2 Copy of Inspection Release Certificate, Dispatch Clearance and Statement showing the LR, packing list and weight of material and shipping marks etc. to be submitted along with the dispatch document.

**13.0 REJECTION**

- 13.1 Any materials/goods covered under the scope of supply, which during the process of Inspection, at any stage of manufacture/fabrication, and subsequent stages, prior to dispatch is found not conforming to the requirements/specifications of the Purchase Order, shall be liable for immediate rejection.
- 13.2 Supplier shall be responsible and liable for immediate replacement of such material with acceptable material at no extra cost to BGL and no extra on the delivery schedule to Employer.



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**SECTION – 9**  
**TIME SCHEDULE**



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**TIME SCHEDULE**

**FOT Hyderabad site basis.**

- 1) The delivery schedule for all SOR quantities of SS Fittings shall be within 06 weeks from date of LOI/PO respectively.**
- 2) The delivery schedule for all SOR quantities of SS Ball Valves shall be within 12 weeks from date of LOI/PO respectively.**

**The bidder must give unconditional confirmation to Time Schedule.**

**Signature of Authorized Signatory:.....**

**Name:.....**

**Designation:.....**

**Seal:.....**



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**SECTION – 10**

**TECHNICAL SPECIFICATIONS  
Group-A . SS FERRULE / FITTINGS**



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## **1.0 SCOPE OF SUPPLY**

1.1 The scope of this specification covers the requirement of design, manufacture/ inspection/ testing at works/ marking/ packaging/ and supply of high pressure SS Ferrule Fittings.

## **2.0 CODES & STANDARD**

**The latest edition of the following standards is referred to in this specification.**

<b>Items</b>	<b>Applicable Codes and Standards</b>
<b>Bar Stock</b>	<b>ASME SA-479-316 or DIN 4401 or BS:970-316-S31</b>
<b>Forging</b>	<b>ASME SA-182-316 or DIN 4401 or BS:970-316-S31</b>
<b>Thread</b>	<b>NPT ANSI B 1.20.1</b>

## **3.0 PRECEDENCE**

3.1 In case of any conflict between this job specification and other document, the following order of precedence shall apply:

3.1.1 Job Specification.

3.1.2 International Standards/ Codes Applicable.

## **4.0 DEVIATION**

Deviations if any required by Tenderer shall be separately furnished against each clause giving reasoning for each deviation. Tenderer to note that except the deviations furnished by them, Tenderer's offer shall be deemed to be in total conformity with the enquiry specifications.

## **5.0 SPECIFICATION**

All the items shall be suitable for compressed Natural Gas service and meet following specifications.

### **5.1 Materials**

5.1.1 Fittings shall be manufactured from the following materials: -

- i) Bar stock shall be as per BS:970-316-S31, DIN 4401 or ASME 479-316 but with carbon content less than 0.05% to provide increased resistance to corrosion.
- ii) Forgings shall be as per BS:970-316-S31, DIN 4401 or ASME SA-182-316.

5.1.2 The fittings end connections shall be compatible to tube of hardness  $\leq$ Rb80.

5.1.3 All component parts of the fittings shall be of the same material.



5.1.4 The ferrule material shall be able to withstand an atmosphere of Natural Gas, oil and moisture without rusting.

## **5.2 Design & Manufacture**

5.2.1 All fittings shall be designed in conformance with the requirements of ASME B31.3 and applicable standards. Area classification applicable for all items shall be Class-1, Division-1, Group-D as per NEC or Zone-1 Group-IIA/ IIB as per IS/ IEC specification or equivalent specification. All fittings shall be designed so that all parts/ components meet the requirements for the specified area classification.

5.2.2 The SS fittings shall be of flareless design and four piece construction, consisting of front and rear ferrules, nut and body suitable for use on SS tubes conforming to ASTM A269 TP316.

5.2.3 Fittings shall be rated for at least the design pressure as stipulated in the material requisition. The design of fittings shall ensure that they shall be capable of holding full tube burst pressure after only one and a quarter turn pull up of the nut.

5.2.4 The threaded ends of fittings shall be NPT as per ANSI B1.20.1.

5.2.5 The fittings shall hold the tube with collecting action producing a firm grip on the tube without substantially reducing the tube wall thickness.

5.2.6 Fittings shall not torque the tubing during original or subsequent make-up of the connection and should use geometry for inspection before and after make up the fittings shall not require disassembly for inspection before or after makeup.

5.2.7 All tube fittings shall be guageable for sufficient pull up after one and a quarter turn. All tube fittings shall have a guageable shoulder and there will be no radius at the point where the shoulder meets the neck of the fitting body.

5.2.8 The gap inspection gauge shall be easily insertable at finger tight position of nut. The gap inspection gauge shall not be insertable between the nut and shoulder of the fitting after completing only one and a quarter turn pull up of the nut.

5.2.9 The tube seat counter bore in the body shall be faced flat 90° to the axis of the tubing to minimize tube expansion and subsequent galling.

5.2.10 The sealing and gripping power of the fitting shall be controlled such that the action between ferrules will overcome commercial variations in tubing wall thickness, hardness, diameter and installer skill.

5.2.11 The seal contact areas of the fittings body shall have a machined finish of 32 Ra or better.

5.2.12 The fittings body shall have no machined stop or shoulder to preclude additional tightening in subsequent make-up.

## **5.2.13 Front Ferrule**





- i) The front ferrule shall effect a long, smooth repeatable seal by contact with body and a grip hold on the tube surface.
- ii) The front ferrule shall always remain in a sprung condition to compensate for thermal stresses and to accomplish repeated make and break.

#### **5.2.14 Rear Ferrule**

- i) The rear ferrule shall collect the tubing surface, improving the performance of the tubing in systems of high impulse or vibration.
- ii) The rear ferrule shall have a machine recess / super casing on the inside diameter and shall have complete surface hardening so as to substantially reduce the required pull up torque. Both the requirements i.e. complete surface hardness and machined recess shall be met for all rear ferrules.

5.2.15 Nuts shall have silver plated threads to act as a lubricating agent to avoid galling and to reduce tightening torque.

### **5.3 Inspection and Testing**

5.3.1 The manufacturer shall submit typical type test reports for the following test carried out on random samples of two ferrule fittings: -

- i) Hydraulic burst pressure test.
- ii) Helium leak test under 0.0002 PSIA negative pressure, leaks into assembly greater than  $4.0 \times 10^{-9}$  atm-cc/sec being unacceptable.
- iii) Gas pressure test for 25 remarks at 5000 Psig. No leakage should be detectable even after 25 remarks.
- iv) Impulse & vibration testing by “rotary beam method” for **10,00,000** impulse cycles and **10 million** vibration cycles with no detectable leakage at full working pressure throughout till the end of the test.

### **5.4 Test Reports and Certificates**

5.4.1 The manufacturer shall supply material compliance certificates conforming that the raw material for fittings conforms to the requirements of ASME Section-II and ASME Section-III sub section NB, NC and ND.

5.4.2 The manufacturer shall furnish test procedure and typical test reports of all tests conducted on fittings as per the requirements of clause 5.3.

### **6.0 MARKING, PACKING & SHIPMENT**

6.1 Heat code traceability number shall be stamped or etched on both body and nut of each fitting.

6.2 Replacement nuts and ferrules shall be packaged in a manner so as to allow safe and simple replacement.



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- 6.3 All the items shall be suitably wrapped and packaged to with stand rough handling during ocean shipment and inland journey.
- 6.4 Item shall be properly tagged and package separately to facilitate easy identification.
- 6.5 Items shall be wrapped and packaged in such-a-way that they can be preserved in original as new condition.

**7.0 DOCUMENTATION**

**7.1 All document shall be furnished in English language only.**

**7.2 At the time of bidding, bidder shall submit following documents:**

- i) Reference list of previous supply for similar item, giving following details:
  - a) Name of the customer.
  - b) Specification of the item i.e., size and pressure & temperature rating.
  - c) Service
  - d) Quantity
  - e) Year of supply
- ii) Test procedure and typical certificates to be submitted as per clause 5.3 and 5.4 of this specification.
- iii) Manufacturer Quality Control Plan and sampling plan.
- iv) Copy of ISO:9000 certification for supplier/ manufacturer.

**7.3 Following test certificates shall be furnished along with shipment.**

- i) Test certificate of visual, chemical, mechanical testing (incl tensile, hardness, flaring, Eddy Current and leak test).
- ii) Manufacturers standard shop inspection & test report.
- ii) The procedure and certificates to be submitted as per the requirements of clause 5.4 of this specification.
- iii) Third Party Inspection report as applicable to meet the requirements of specified codes & standards as applicable

**8.0 GUARANTEE**

8.1 Manufacturer shall guarantee that the design, materials, manufacturing and testing of fittings comply with the requirement of this specification and applicable codes and standards. Manufacturer shall replace all fittings which should result defective or fail during field pressure testing or fail to perform satisfactorily due to inadequate engineering, substandard material and workmanship.



- 8.2 The manufacturer shall guarantee against any defect, failure or malfunctioning occurring during 12 months from the date of commissioning or 24 months from the date of supply whichever is earlier.

## **9.0 GENERAL SPECIFICATIONS FOR CHECK VALVE FOR CNG APPLICATIONS**

All the items shall be suitable for compressed Natural Gas service and meet following specifications.

### **9.1 MATERIAL OF CONSTRUCTION**

1. The valve body shall be forged / machined type made of material conforming to ASTM A479 Type 316.
2. Material of construction of Buna C bonded poppet confirm to ASTM A479 Type 316.
3. Material of construction of spring confirm to ASTM A313 Type 302.
4. Material of construction of poppet stop confirm to ASTM A240 Type 316.

### **9.2 DESIGN & MANUFACTURE**

1. All Check valves shall be designed in conformance with the requirements of ASME B31.1 - Power Piping Code; ASME B31.3 - Process Piping Code.
2. Valves shall be rated for a maximum working pressure of 5000 psig with in temperature range of (-10) to 100 degree F.
3. Valves with ECE R110-Type approval shall be rated to 3700 psig and shall be capable of operation between a temperature range of (-40) to 185 degree F.
4. Valve should have Poppet with bonded elastomer seal.
5. Valve should have a fixed cracking pressure.
6. Valves shall indicate the direction to flow.
7. Cracking pressure: 1 psi.

### **9.3 INSPECTION & TESTING**

1. The valve manufacturer shall submit typical test reports for the following test carried out on similar valves.
  - Hydrostatic seat leak test shall be carried out with water. There shall be no detectable seat leakage at 1.1 times the rated pressure of the valve.



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- Hydrostatic shell leak test shall be carried out with water at 1.5 times the rated pressure of the valve. There shall be no detectable external leakage. Maximum allowable seat leakage shall be 10 std cc/hr.

**9.4 OTHER REQUIREMENTS**

1. Manufacturer shall confirm that valves are approved ECE R110-type.
2. Spares and Accessories-
  - If required, manufacturer shall furnish a list of recommended spares and accessories for valves required during start up and commissioning.
  - If required, manufacturer shall furnish a list of recommended spares and accessories required for two years of manual operation and maintenance of valves.

**9.5 TEST REPORTS & CERTIFICATES**

1. The manufacturer shall supply 'Certificate of Compliance' proving information for Material standards, Mechanical properties and Chemical analysis.
2. The valve manufacturer shall provide test procedure and valve inspection and test report for type tests carried out on similar valves as per the requirements of clause "Inspection & Testing".

**9.6 MARKING, PACKING & SHIPMENT**

1. Heat code shall be marked on valve body to facilitate traceability. All valves & fitting shall be roll stamped / etched to identify manufacturer and material.
2. All the items shall be suitably wrapped and packaged to withstand rough handling during ocean shipment and inland journey.
3. Each item shall be properly tagged and package separately to facilitate easy identification.
4. All items shall be wrapped and packaged in such a way that they can be preserved in original as new condition.

**9.7 WARRANTY**

Manufacturer & its authorized distributors should offer a comprehensive Warranty covering the performance of the product against any defects in material or workmanship for the life time of the product. A certificate to this effect must be issued on their respective Company letter head.



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**TECHNICAL SPECIFICATIONS-  
Group B. SS BALL VALVES**



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### **SCOPE OF WORK**

- 1.0 The scope of this specification includes design, manufacture/ supply, inspection/ testing/ marking/ packaging/ handling and dispatch of SS Ball Valves as per relevant codes.
- 1.1 Purchaser reserves the right to delete or order additional quantities during execution of order, based on unit rates and other terms & conditions in the original order.

### **2.0 CODES & STANDARDS**

Items	Applicable Codes and Standards
Valves	MSS-SP-99

### **3.0 PRECEDENCE**

- 3.1 In case of any conflict between this job specification and other document, the following order of precedence shall apply:
- 3.1.1 Job Specification.
- 3.1.2 International Standards/ Codes Applicable.

### **4.0 DEVIATION**

Deviations if any required by Vendor shall be separately furnished against each clause giving reasoning for each deviation. Vendor to note that except the deviations furnished by them, Vendor's offer shall be deemed to be in total conformity with the enquiry specifications.

### **5.0 MATERIALS**

- 5.1 The valve body shall be made out of material conforming to ASTM A479 Type 316.
- 5.2 Material of construction of ball shall conform to ASTM A276 Type 316.
- 5.3 Material of construction of seat springs shall be Alloy X-750.
- 5.4 Ball trunnions to be Xylan coated to prevent corrosion and increase the life of the ball.

### **6.0 DESIGN & MANUFACTURE**

- 6.1 All ball valves shall be designed in conformance with the requirements of ASME B31.3, MSS-SP-99 and other applicable code and standards. Area classification applicable for all items shall be Class-1, Division-1, Group-D as per NEC or Zone-1 Group-IIA/ IIB as per IS/ IEC specification or equivalent specification. All fittings shall be designed so that all parts/ components meet the requirements for the specified area classification.



- 6.2 Valves shall be rated for a maximum working pressure of 5000 psig and shall be capable of operation between a temperature range of (-40) ° to 250°F.
- 6.3 Valves shall have spring loaded PEEK seats allowing seal-ability over the full pressure range at any port and low operating torque over the full range of pressures and temperatures.
- 6.4 Elastomeric seals, which require no packing adjustment, shall be used.
- 6.5 Valves stem shall be of bottom loaded and blow out proof design.
- 6.6 Ball shall be blow out proof and trunnion mounted.
- 6.7 Valves shall have positive wrench/ handle stops, Phenolic black wrench/ handle shall be provided. Wrench/ handle shall indicate the direction to flow. IN the case of three way valves the stem shall also provide a visual indication of flow direction if the handle is removed.

## **7.0 INSPECTION AND TESTING**

- 7.1 The valve manufacturer shall submit typical type test reports for the following test carrier out on similar valves: -
- i) Hydrostatic seat leak test shall be carried out with de-ionized water. There shall be no detectable set leakage at 1.1 times the rated pressure of the valve.
- ii) Gas pressure test for seat and shell shall be carried out with nitrogen at 1000 psig. There shall be no detectable external leakage. Maximum allowable seat leakage shall be 0.1 atm-cc/min.

## **8.0 TEST REPORTS & CERTIFICATES**

- 8.1 The manufacturer shall supply material compliance certificates.
- 8.2 The valve manufacturer shall provide test procedure and valve inspection and test report for type tests carried out on similar valves as per the requirements of clause 7.0.

## **9.0 MARKING, PACKING & SHIPMENT**

- 9.1 Heat code shall be marked on valve body to facilitate tractability.
- 9.2 All the items shall be suitably wrapped and packaged to with stand rough handling during ocean shipment and inland journey.
- 9.3 Each item shall be properly tagged and package separately to facilitate easy identification.
- 9.4 All items shall be wrapped and packaged in such-a-way that they can be preserved in original as new condition.

## **10.0 DOCUMENTATION**





- 10.1 All documents shall be furnished in English language only.
- 10.2 At the time of bidding, bidder shall submit following documents:
- i) Reference list of previous supply for similar item, giving following details:
    - a) Name of the customer.
    - b) Specification of the item i.e., size and pressure & temperature rating.
    - c) Service
    - d) Quantity
    - e) Year of supply
  - ii) Test procedure and typical certificates to be submitted as per clause 5.3, 5.4 and 9.4 (1) of this specification.
  - iii) Copy of ISO:9000 certification for supplier/ manufacturer.
  - iv) Manufacturer Quality Control Plan and sampling plan.
  - v) Technical descriptive catalogue of manufacturer.
  - vi) General arrangement/ assembly drawing of valve showing all features.
  - vii) Sectional drawing showing major parts with reference number and material specification.

**10.3 Prior to shipment, manufacturer shall submit following test certificates and documents.**

- i) Test certificate of chemical, mechanical testing.
- ii) Manufacturers standard shop inspection test.
- iii) Manufacturers standard shop inspection and test reports.
- iv) The procedure and certificates to be submitted as per the requirements of clause 8.0 of this specification.
- v) Manual for installation, erection, maintenance and operating instructions including a list of recommended spares for valves.

**11.0 GUARANTEE**

- 11.1 Manufacturer shall guarantee that the design, materials, manufacturing and testing of fittings comply with the requirement of this specification and applicable codes and standards. Manufacturer shall replace all fittings which should result defective or fail during field pressure testing or fail to perform satisfactorily due to inadequate engineering, substandard material and workmanship.
- 11.2 The manufacturer shall guarantee against any defect, failure or malfunctioning occurring during 12 months from the date of commissioning or 24 months from the date of supply whichever is earlier.



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**SECTION – 11**  
**SCHEDULE OF RATES (SOR)**



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<b>Part-A</b>							
<b>Sr. No.</b>	<b>Item Description</b>	<b>Size</b>	<b>Specification</b>	<b>Uom</b>	<b>Qty</b>	<b>Unit Rate Including all taxes and duties excluding Freight &amp; GST (Rs.)</b>	<b>Total Rate Including all taxes and duties excluding Freight &amp; GST (Rs.)</b>
1	UNION CROSS	3/4"	Tube OD (3/4" x 3/4"X 3/4"X 3/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
2	UNION CROSS	1/2"	Tube OD (1/2" x 1/2"X 1/2"X 1/2"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
3	REDUCING UNION	1" - 3/4"	Tube OD(1"X3/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
4	REDUCING UNION	3/4" - 1/2"	Tube OD(3/4"X1/2"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10		
5	REDUCING UNION	1/2" - 1/4"	Tube OD(1/2"X1/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10		



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6	REDUCING UNION	3/8" - 1/4"	Tube OD(3/8"X1/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
7	REDUCING UNION	3/4" - 3/8"	Tube OD(3/4"X3/8"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15		
8	EQUAL TEE	3/4"	Tube OD(3/4"X3/4"X3/4"), Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	30		
9	REDUCING TEE	3/4" OD X 1/2" OD X 3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
10	REDUCING TEE	3/4" OD X 1/2" MNPT X 3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
11	CONNECTOR	3/4" OD X 1/2" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	30		
12	CONNECTOR	3/4" OD X 1/2" FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10		
13	CONNECTOR	3/4" ODX1/4" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F	Nos	300		



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			Temperature : 0°F to 400°F)				
14	CONNECTOR	3/4" OD X 3/4" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
15	CONNECTOR	3/4"MNPT - 1/2"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10		
16	CONNECTOR	3/4"OD X 1/2"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15		
17	CONNECTOR	1/2" OD X 1/2"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
18	CONNECTOR	1/2" OD X 1/2" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
19	CONNECTOR	1/2"OD X 3/8" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
20	CONNECTOR	3/8"OD - 1/2"MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10		
21	CONNECTOR	3/8"OD - 3/8"MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10		



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22	CONNECTOR	3/8"OD - 1/4"MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
23	TUBE ADAPTER	3/4" Tube end - 1/4"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15		
24	REDUCER	3/4" Tube end - 1/4"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15		
25	REDUCER	3/4"Tube end - 3/8"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	10		
26	REDUCER	1/2"Tube end - 3/8"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
27	REDUCER	3/8"Tube end - 1/2"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
28	REDUCER	3/4"Tube end - 1/2"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
29	ELBOW	1" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
30	ELBOW	3/4" OD	Material: SS 316 (Rated pressure :	Nos	10		



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			5000 PSI @ 70°F Temperature : 0°F to 400°F)				
31	ELBOW	1/2" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
32	ELBOW	3/8" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
33	ELBOW	1/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
34	CAP	1"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
35	CAP	3/4"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
36	CAP	1/2"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
37	PLUG	1"OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
38	PLUG	3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to	Nos	40		



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			400°F)				
39	PLUG	1/2" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
40	NUT	1"	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	5		
41	FRONT FERRULES	1" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
42	FRONT FERRULES	3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	60		
43	FRONT AND BACK FERRULES SET	1/2" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		
44	FRONT AND BACK FERRULES SET	3/8" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	50		
45	FRONT AND BACK FERRULES SET	1/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	80		
46	BACK FERRULES	1" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	20		





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47	BACK FERRULES	3/4" OD	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	60		
48	BLEEDE/VENT VALVE	1/4" MNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15		
49	CONNECTOR FOR VENT VALVE	1/4"OD - 1/4"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	15		
50	NRV	3/4" OD	Maximum pressure rating: 5000 psig @ 70°F Temperature rating: -40 to 250°F i.e. (-40 to 121°C)	Nos	10		
51	Guage fitting 1/2"MNPT to 3/8" FNPT	1/2"MNPT to 3/8"FNPT	Material: SS 316 (Rated pressure : 5000 PSI @ 70°F Temperature : 0°F to 400°F)	Nos	50		
<b>Sub Total (Rs.)</b>							
<a href="#">GST@18%</a>							
<b>Total amount Inclusive of all taxes and duties and excluding Packing, Forwarding &amp; Freight charges (Rs.)</b>							



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Part-B							
Sr. No.	Item Description	Size	Specification	Uom	Qty	Unit Rate Including all taxes and duties excluding Freight & GST (Rs.)	Total Rate Including all taxes and duties excluding Freight & GST (Rs.)
1	3 WAY BALL VALVE, SS, 1/2" OD X 1/2" OD X 1/4" FNPT; Trunnion type	1/2"OD-1/2" OD-1/4" FNPT	Material : SS316 (Rated pressure : 344 BAR Temperature : -17 to 93 DEG C), PEEK SEATS; Trunnion type; Hydrostatic tested	Nos	10		
2	SEAL KIT OF 3 WAY BALL VALVE , SS, 1/2" OD X 1/2" OD X 1/4" FNPT; Trunnion type	1/4"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to 450°F)	Nos	10		
3	3 WAY BALL VALVE, SS, 1/4" FNPT; Trunnion type	1/4" FNPT	Material : SS316 (Rated pressure : 344 BAR Temperature : -17 to 93 DEG C), PEEK SEATS; Trunnion type; Hydrostatic tested for CNG Dispensers	Nos	30		
4	SEAL KIT OF 3 WAY BALL VALVE, SS, 1/4" FNPT; Trunnion type	1/4"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to 450°F)	Nos	30		
5	2 WAY BALL VALVE, SS, 3/4" OD; Floating type	3/4" OD	Material : SS316 (Rated pressure : 344 BAR Temperature : -40 to 121 DEG C), PEEK SEATS; Hydrostatic tested	Nos	35		
6	SEAL KIT OF 2 WAY BALL VALVE,SS, 3/4" OD; Floating	3/4"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to	Nos	35		



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	type		450°F)				
7	2 WAY BALL VALVE, SS, 1/2" OD; Floating type	1/2" OD	Material : SS316 (Rated pressure : 344 BAR Temperature : -40 to 121 DEG C), PEEK SEATS; Hydrostatic tested	Nos	20		
8	SEAL KIT OF 2 WAY BALL VALVE,SS, 1/2" OD; Floating type	1/2"	Material: SS 316 (Rated pressure : 5000 PSI @ 200°F Temperature : 0°F to 450°F)	Nos	20		
9	2 WAY BALL VALVE KNOBS,		Black Nylon Handel kit for floating ball valves	Nos	100		
10	3 WAY BALL VALVE KNOBS		Black phonelic Handel kit for trunnion ball valve	Nos	100		
<b>Sub Total (Rs.)</b>							
<a href="#"><u>GST@</u></a>							
<b>Total amount Inclusive of all taxes and duties and excluding Packing, Forwarding &amp; Freight charges (Rs.)</b>							

**Note:**

- 1) Evaluation and award shall be done by Group –A and Group- B separately.
- 2) Bidder may quote for any one or all of the Groups.