

Govt. of India
Bhabha Atomic Research Centre
Atomic & Molecular Physics Division

Ref: AMPD/PJS/2022/42904

Date: 31.05.2022

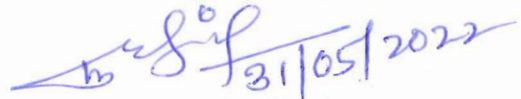
Sub: **Minor Fabrication**-Invitation of quotations for
**Fabrication of customized vacuum lines and UHV components for synchrotron
beamline as per attached specifications**

Dear Sir,

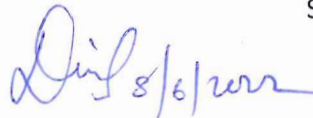
1. Quotations are invited for the minor fabrication job, as per the enclosed specifications.
2. Bidder shall quote for fabrication of these components with materials.
3. Taxes and excise duties shall be quoted separately. Form AF shall be provided if necessary.
4. The last date for receipt of quotation at BARC is **22.06.2022 (AN)**.
5. The quotation shall be mailed (it should not be faxed) to the following address in a sealed envelope superscripted with the *reference number AMPD/PJS//2022/42904* and due date **22.06.2022 (AN)**.

Head, Atomic and Molecular Physics Division
Attn. Dr. Param Jeet Singh
Scientific Officer (F)
Atomic and Molecular Physics Division
Bhabha Atomic Research Centre
Mumbai – 400 085

6. No material will be issued to bidders by the purchaser.
7. The fabrication work shall be subject to inspection by our scientists/engineers. The final components shall not be dispatched prior to approval by our scientists/engineers. Necessary inspection facilities should be provided to our scientists/engineers during the fabrication at bidder's premises.
8. The bidder shall deliver the finished components after approval by our scientific officer, within 3 month from the date the purchase order is issued to the bidder. The finished job shall be delivered by the bidder at RRCAT, Indore.
9. Head, Atomic and Molecular Physics Division, BARC reserves the right to accept/reject any or all quotations without assigning any reasons.


31/05/2022

(Param Jeet Singh)
SO/F, Atomic and Molecular Physics Division
B.A.R.C.


8/6/2022

Through:

(Dr. Dinesh V. Udupa)
Head, Atomic and Molecular Physics Division
B.A.R.C.
डा. दिनेश वी. उदुपा / Dinesh V. Udupa
अध्यक्ष, परमाणु एवं आण्विक भौतिकी प्रभाग
Head, Atomic & Molecular Physics Division

Encl: Annexure-I: Technical specifications of items under current minor fabrication work

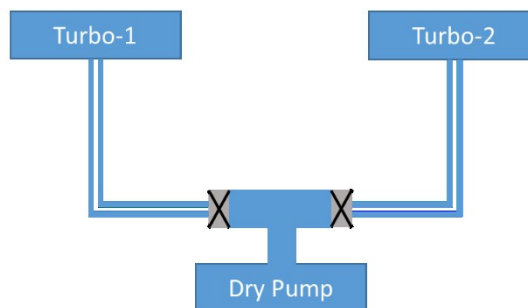
Specifications

1. Items to be fabricated:

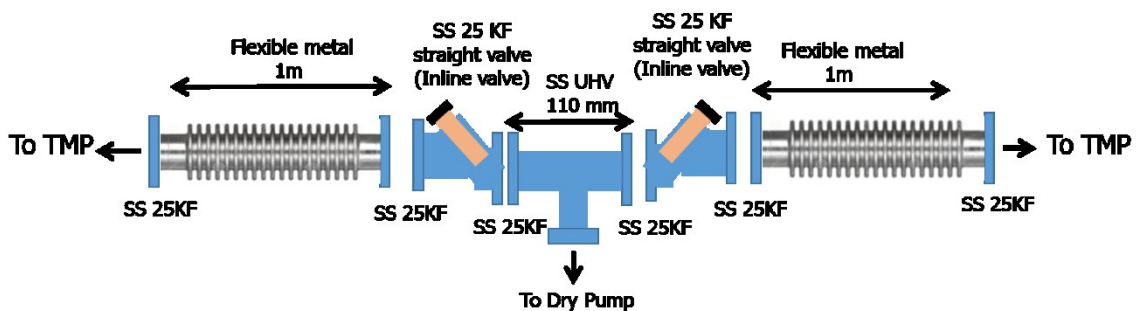
1.1. Fabrication of Vacuum system for backing two turbo with one dry pump. This system consists customised bellows, straight valves, UHV compatible tubes welded to connecting flanges, clamps.

Quantity – 1 SET

Overview of the system under fabrication



Technical details of each subcomponent required to be fabricated



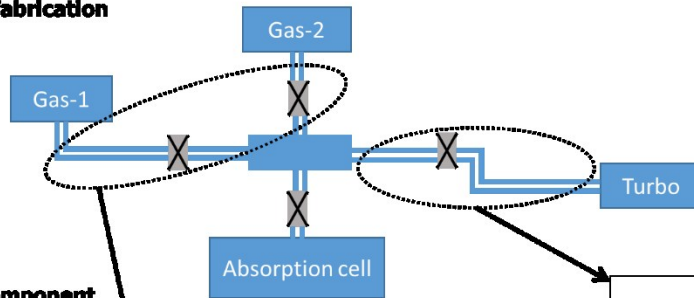
- Material of construction: SS 304
- Leak rate for all components: better than 1×10^{-9} mbar l/sec
- Details of all components to be supplied for this subsystem are
 - UHV compatible T-connector 25 KF flange welded on three side, length of each side from centre – 55 mm, TIG weld joint – 2 Nos.
 - UHV compatible Manual operated straight valve 25 KF flange welded on both side - UHV compatible, Viton sealing, Leak tightening better than 1×10^{-10} mbar l/sec - 2 Nos.
 - UHV compatible corrugated metal flexible hose (1 meter length) 25 KF flange welded on both side - UHV compatible - 2 Nos.
 - UHV compatible Set of SS 25KF centring, Viton O-ring and clamps - UHV compatible – 10 Nos.
 - Connecting tubes, Flanges welded and removable flanges should be made of SS304 with UHV compatibility.

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 21/05/2022

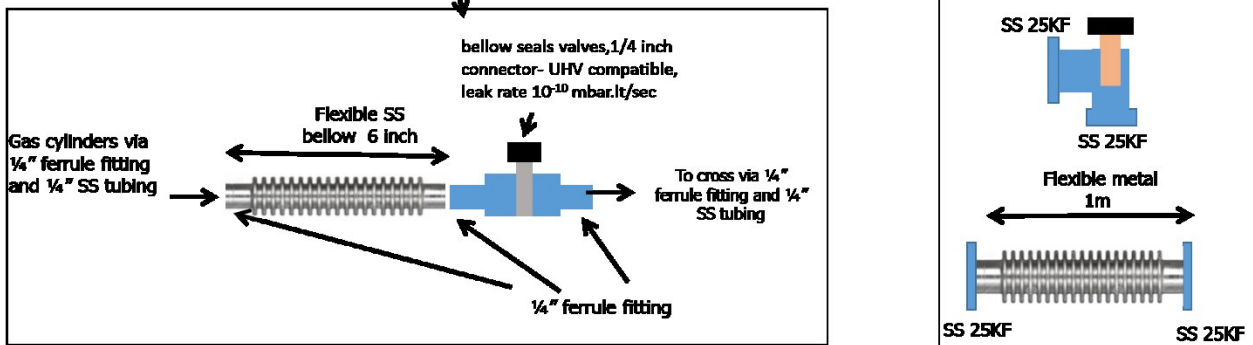
1.2. Fabrication of ultra high vacuum compatible lines for gaseous samples. This system consists customised bellows, angle valves, SS tubes, ferrules and clamps.

Quantity – 1 SET

Overview of the system under fabrication



Technical details of each subcomponent required to be fabricated



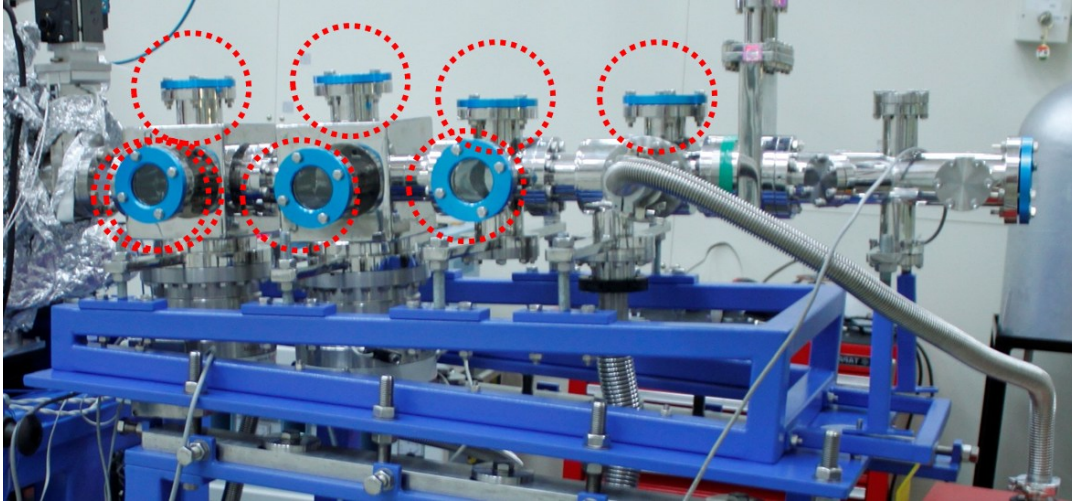
- Material of construction: SS 304
- Leak rate for all components: better than 1×10^{-9} mbar l/sec
- Details of all components to be supplied for this subsystem are
 - UHV compatible SS bellows, length 6inch, both side 1/4" ferrule connection - UHV compatible – 2 Nos.
 - UHV compatible bellow seals valves, 1/4 inch ferrule connectors- UHV compatible, leak tightening 10^{-10} mbar.lit/sec – 5 Nos.
 - UHV compatible hydroform SS bellows Length 225mm, 16KF flanges welded on both side – 4 Nos.
 - UHV compatible, 1/4 SS tubing – 5 meters
 - 1/4 inch SS 316 Ferrules and nuts- UHV compatible – 25 Sets
 - 1/4 inch SS 316 Ferrule I-connectors - UHV compatible – 5 Nos.
 - Manual operated angle valve 25 KF flange welded on both side - UHV compatible, Viton sealing, Leak tightening better than 1×10^{-10} mbar l/sec - 2 Nos.
 - UHV compatible corrugated metal flexible hose (1/2 meter length) 25 KF flange welded on both side - UHV compatible - 2 Nos.
 - SS 16KF centring, Viton O-ring and clamps- UHV compatible – 10 Sets
 - SS 40KF centring, Viton O-ring and clamps - UHV compatible - 10 Sets
 - Connecting tubes, Flanges welded and removable flanges should be made of SS304 with UHV compatibility.

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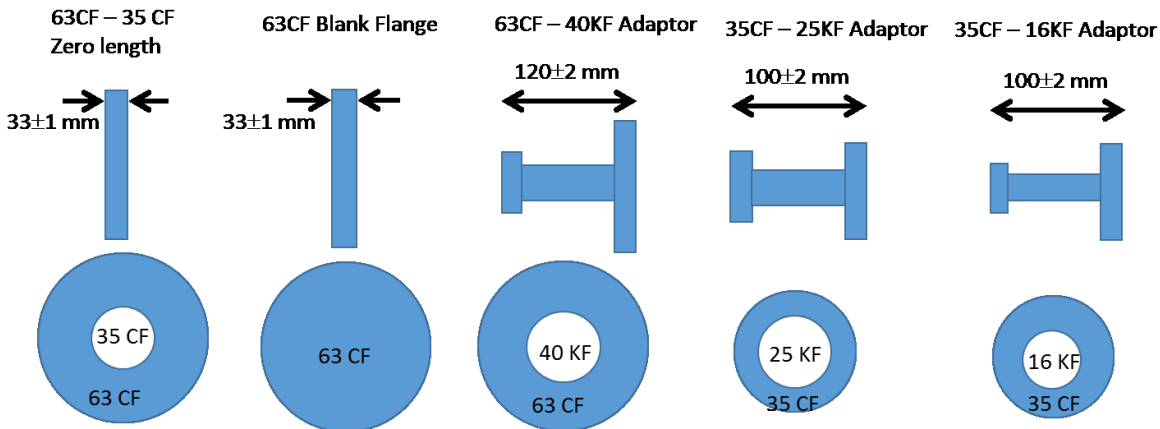
1.3. Fabrication of Vacuum SS flanges and adaptors for differential pumping system having CF and KF connectors as per requirement of the existing system.

Quantity – 1 SET

Overview of the system for which components are being fabricated



Technical details of each subcomponent required to be fabricated (Marked with dotted circles in above picture)



- Material of construction: SS 304
- Leak rate for all components: better than 1×10^{-9} mbar l/sec
- Details of all components to be supplied for this subsystem are
 - UHV compatible SS 63CF to 35 CF adaptor -length 33 mm – 4Nos.
 - UHV compatible SS 63CF to 40 KF adaptor - length 120 mm – 2 Nos.
 - UHV compatible SS 63 CF blank flange -length 33 mm – 5 Nos.
 - UHV compatible SS 35 CF to 25 KF adaptor -length 100 mm – 2 Nos
 - UHV compatible SS 35 CF to 16 KF adaptor -length 100 mm– 2 Nos
 - Flanges should be made of SS304 and welding joints should be UHV compatible.

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2. Bidder's Qualification:

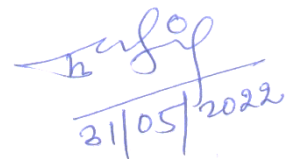
- The bidder shall be Original manufacturer of equipment or authorized representative.
- Bidders who are not Original manufacturer must provide valid authorization certificate issued by Original manufacturer.
- The bidder should have supplied similar items to reputed R&D establishment and should provide list of end users with verifiable contact details (institution details, email id and phone numbers).

3. UHV compliance:

- All components in the final form must comply UHV norms in terms of cleanliness welding joints & surface finish

4. Acceptance criteria

- Vacuum lines and other items will be accepted after testing of parameters (leak tightness, flexibility, UHV compatibility) at user site.
- Attest report of leak proof (He leak detector test report better than 1×10^{-9} mbar l/sec) must be provided for all above components.


31/05/2022