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प्लाज्मा अनुसंधान संस्थान  
**INSTITUTE FOR PLASMA RESEARCH**  
परमाणु ऊर्जा विभाग, भारत सरकार का एक सहायता प्राप्त संस्थान  
**An Aided Institute of Department of Atomic Energy,  
Government of India**



इन्दिरा पुल के पास, भाट, गांधीनगर - 382 428 भारत  
दूरभाष: (079) 2396 2020/2021/2028  
फैक्स: 91-079-23962277  
वेब: [www.ipr.res.in](http://www.ipr.res.in)

NEAR INDIRA BRIDGE, BHAT  
DIST. GANDHINAGAR - 382 428 (INDIA)  
Phone: (079) 2396 2000/2026/2332  
Fax : 91-079-23962277  
Web : [www.ipr.res.in](http://www.ipr.res.in)

## ENQUIRY

ENQUIRY NO : IPR/EQF/18-19/244  
Date : 28-03-2019

**Due on : 09-05-2019 by 1:00 PM IST**

Please send your offer in sealed envelope specifying Enquiry No, Date & Due Date, ALONG WITH your credentials for the following items which we are interested to import directly against Foreign Trade Policy 2015-2020.

### Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to [importpurchase@ipr.res.in](mailto:importpurchase@ipr.res.in)

Please ensure your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following documents properly before quoting which are available on the IPR web portal i.e., [http://www.ipr.res.in/documents/tender\\_terms.html](http://www.ipr.res.in/documents/tender_terms.html) / attached herewith.

- 1) Instructions to the bidders & Terms and conditions (refer Form No: **IPR-FP-01.V3**)
- 2) Bidding format

**GST for Goods and Services (IGST/CGST/SGST TAX BENEFITS):** Please refer **clause no: 14** of Form No: **IPR-FP-01.V3**

### QUOTATION SHOULD BE ADDRESSED TO PURCHASE OFFICER ONLY

Sr No	Description	Quantity
1	Supply installation of turbo molecular pump of pumping speed 70 l/s, backing pump and accessories as per attached specification	1.0 Nos.
2	Supply installation of turbo molecular pump of pumping speed 260 l/s, backing pump and accessories as per attached specification	1.0 Nos.

Note: 1. Please quote with complete technical details (Technical compliance sheet and product da-ta sheet).  
2. TDS as per CGST Act: As per provisions of section No. 51 of the CGST Act 2017, TDS @2% (IGST 2% or CGST 1% and SGST 1%) will be deducted while making payment to the suppliers where total value of orders/contracts/work orders exceeds Rs. 2.5 lakhs, in the event of order in Indian Rupees. Necessary TDS Certificate will be issued to the supplier after TDS deduction.

Encl: As per attached.

Sd/-  
Mr. D. Ramesh  
Purchase Officer-II

**Information to Vendors:** We are working towards a single platform for our future requirement. Hence, please refer IPR website i.e, <http://www.ipr.res.in/documents/tendersenq.html> for our future requirement.

**Specification sheet for Turbomolecular pump (TMP) with backing pump and accessories**

**Quantity: 1**

<b>Description</b>	<b>Specification</b>	<b>Compliance</b>
Pumping speed	Nitrogen ~ 60-80 l/s and Helium: > 55 l/s;	
Gas species to be pumped	Hydrogen, Helium, Nitrogen, Argon	
Ultimate pressure with rotary vane backing pump after baking at ~120 <sup>0</sup> C	~ 1 x 10 <sup>-9</sup> mbar or better	
Inlet flange and outlet flange	63 CF and 16 KF (or compatible to backing pump)	
Compression ratio (order of)	For N <sub>2</sub> : 10 <sup>10</sup> order or better ; For Helium: 10 <sup>6</sup> , hydrogen: 10 <sup>5</sup> or better	
Can handle backing pressure	upto 10 mbar or higher	
Mounting orientation	Any direction	
Bearing of turbo pump	Low maintenance, oil free bearing at the pump inlet site	
Pump Cooling:	Air cooling/water cooling, air cooling preferred	
Remote operation	Provision for remote operation through suitable communication interfaces such as RS232/485 etc. or similar	
Protection category	IP54 or similar protection standards	
Weight	< 5 kg	
If the TMP and rotary pump units are operated with single switch operation, there should be provision that, TMP and rotary pump can be operated independently		
<b>Pump control unit:</b>		
Control unit suitable for the pump and displaying of important parameters during TMP operation; Power: 230 V and 50 Hz		
Display unit have the options for showing parameters	Rotation speed; current drawn by pump; temperature of bearing, motor part and electronics; pumping status; stand by; error messages, etc. Option for adjustable venting time.	
<b>Backing pump for the above turbo pump</b>		
Backing pump	Rotary vane pump with oil mist filter	
Pumping speed	minimum 2 m <sup>3</sup> /hr and Compatible to above TMP backing requirements	
IN/Out Flange connection	Compatible to Turbo pump outlet	
Pump leak rate	5e-3 mbar.l/s or better	
Power requirement	230 V, single phase 50 Hz	
<b>Pump accessories</b>		

Quote with all accessories such necessary for the turbo pump such as air cooling kit / water cooling kit, heating jacket, vent valves, bellows, splinter shield, cables and connectors etc	
<b>Installation &amp; Acceptance, After Sale Service</b>	
The final acceptance will be given after successful testing of the pumping	
After sales service: The vendor should have adequate infrastructure and Service Centre/Facility within India to handle complete repairs of the turbo pump assembly, and availability of critical spares with him.	

**Specification sheet for Turbomolecular pump (TMP) with backing pump and accessories**

**Quantity: 1**

<b>Description</b>	<b>Specification</b>	<b>Compliance</b>
Pumping speed and gas species	Nitrogen: ~ 250 l/s or better; Helium: ~250 l/s or better , Hydrogen, Helium, Nitorgen, Argon	
Ultimate pressure with rotary vane backing pump after baking at ~120 <sup>0</sup> C	~ 1 x 10 <sup>-9</sup> mbar or better	
Allowable throughput at full rotation speed	~ 5 mbar.l/s or better (N <sub>2</sub> )	
Inlet flange and outlet flange	100 CF and 25 KF or 16 KF	
Compression ratio	For N <sub>2</sub> : 10 <sup>10</sup> order or better ; For He : 10 <sup>8</sup> order or better	
Can handle Foreline tolerance	~ 10 mbar or higher pressure	
Mounting orientation	Any	
Bearing of turbo pump	low maintenance, oil free bearing at the pump inlet site	
Pump Cooling:	appropriate cooling such as Water / Air cooling. Air cooling preferable	
Remote operation	Provision for remote operation through suitable communication interfaces such as RS232/485 etc.	
Start-up time	~ 5 minutes or lower	
Pump rotation speed	~ 60,000 rotation per minute (RPM)or better	
Turbo pump weight (excluding controller)	< 10 Kg	
Protection category	IP54 or similar standards	
If the TMP and rotary pump units are operated with single switch operation, there should be provision that, TMP and rotary pump can be operated independently		
<b>Pump control unit:</b>		
Control unit suitable for the pump and displaying of important parameters during TMP operation; Power: 230 V and 50 Hz		
Display unit have the options for showing parameters	Rotation speed; current drawn by pump; temperature of bearing, motor part and electronics; pumping status; stand by; error messages, etc. Option for adjustable venting time.	
<b>Backing pump for the above turbo pump</b>		
Backing pump	Rotary vane pump with oil mist filter	
Pumping speed	minimum 5 m3/h, compatible to above TMP backing requirements,	

Pump Inlet connection	Compatible to Turbo pump outlet	
Motor to pump coupling	Low maintenance or non contact coupling preferred	
Pump leak rate	~1e-4 mbar.l/s or better	
Power requirement	230 V, single phase 50 Hz	
<b>Pump accessories</b>		
Quote with all accessories such necessary for the turbo pump such as air cooling kit / water cooling kit, heating jacket, vent valves, bellows, splinter shield, Rotary pump oils, cables and connectors etc		
Connection cables	If pump control unit is separate from TMP, length of all the required cables connecting TMP to pump control unit: ~10 meters.	
<b>Installation &amp; Acceptance, After Sale Service</b>		
The final acceptance will be given after successful testing of the pumping unit at IPR. The supplier will carry out installation and acceptance test at IPR.		
After sales service: The vendor should have adequate infrastructure and Service Centre/Facility within India to handle complete repairs of the turbo pump assembly, and availability of critical spares with him.		

Bidder's Official Stamp and Sign:

Date: