SECTION - C

TECHNICAL SPECIFICATIONS OF STORES AND DRAWINGS.

Technical Specifications for Supply of Turbo-molecular pumping station with two stage rotary backing pump

Turbo-molecular pumping station with two stage rotary backing pump

(1) Pumping speed of TMP for N2 gas: ≥ 1200 l/s.

(2) Ultimate pressure: ≤ 1.0×10^{-7} mbar

(3) Compression Ratio for Nitrogen : ≥ 1×10^{8}

(4) Inlet flange: DN 200 ISO F

(5) Cooling: water cooled

(6) Installation: Vertical and Horizontal

(7) Power supply: Single phase 230 VAC, 50 Hz.

(8) Pump should vent automatically in case of a power failure.

(9) Baking of TMP shall be provided.

(10) Controller should be provided with single switch operation of the entire system and should have facility to view pump related parameters.

(11) **Two stage Rotary Backing Pump with following Specifications should be provided:**

1. Ultimate Pressure: ≤ 5×10^{-3} mbar
2. Ultimate pressure with Gas ballast: ≤ 1×10^{-2} mbar
3. Nominal Pumping Speed: > 15 m^3/ h
4. Automatic high vacuum safety valve (anti-suck back valve):Integrated
5. Operating fluid (oil) of the pump: supply with pump
6. Inlet port: DN 25 ISO-KF
7. Outlet Port DN 25 ISO-KF
8. Operating Voltage : Single phase 230 V AC, 50 Hz
9. Noise level : ≤ 60 dB

(12) **Warranty:** Minimum One year warranty against all sorts of manufacturing defects, faulty materials and poor workmanship.

(13) Quote for the following accessories separately.

1. Splinter shield -1 No.
2. Vent Valves-1 No.
3. Water Cooling Kit-1 set
4. All connectors and cables

(14) **Installation:**

The Installation and acceptance tests of the pump shall be carried out by vendor's representative at IPR site. **Submit the applicable charges separately, if any.**

(15) <u>Acceptance test criteria:</u>

Vendor has to complete below listed tests at IPR for final acceptance of the turbo pumps.

1. Ultimate pressure: ≤ 1.0×10^{-7} mbar
2. Leak rate of the pump body: < 1.0×10^{-8} mbar l/s.
3. Single switch operation of the entire system and facility to view pump parameters.
4. Automatically venting of pump in case of power failures.
5. Functionality of all the safety interlocks provided with the system.

COMPLIANCE TABLE

Turbo-molecular pumping station with two stage rotary backing pump

Sr No	IPR Specifications	Vendors
1	Pumping speed of TMP for N2 gas: ≥ 1200 l/s.	
2	Ultimate pressure: ≤ 1.0×10^{-7} mbar	
3	Compression Ratio for Nitrogen : ≥ 1×10^{8}	
4	Inlet flange: DN 200 ISO F	
5	Cooling: water cooled	
6	Installation: Vertical and Horizontal	
7	Power supply: Single phase 230 VAC, 50 Hz.	
8	Pump should vent automatically in case of a power failure.	
9	Baking of TMP shall be provided.	
10	Controller should be provided with single switch operation of the entire system and should have facility to view pump related parameters.	
11	Two stage Rotary Backing Pump with following Specifications should be provided: 1. Ultimate Pressure: ≤ 5 x 10^{-3} mbar 2. Ultimate pressure with Gas ballast: ≤ 1 x 10^{-2} mbar 3. Nominal Pumping Speed: > 15 m3/ h 4. Automatic high vacuum safety valve (anti-suck back valve):Integrated 5. Operating fluid (oil) of the pump: supply with pump 6. Inlet port: DN 25 ISO-KF 7. Outlet Port DN 25 ISO-KF 8. Operating Voltage : Single phase 230 V AC, 50 Hz 9. Noise level : ≤ 60 dB	
12	(Warranty: Minimum One year warranty against all sorts of manufacturing defects, faulty materials and poor workmanship.	
13	Quote for the following accessories separately. 1. Splinter shield -1 No. 2. Vent Valves-1 No. 3. Water Cooling Kit-1 set 4. All connectors and cables	
14	Installation: The Installation and acceptance tests of the pump shall be carried out by vendor's representative at IPR site. Submit the applicable charges separately, if any.	
15	**Acceptance test criteria:** Vendor has to complete below listed tests at IPR for final acceptance of the turbo pumps. 1. Ultimate pressure: ≤ 1.0 x 10^{-7} mbar 2. Leak rate of the pump body: < 1.0 x 10^{-8} mbar l/s. 3. Single switch operation of the entire system and facility to view pump parameters. 4. Automatically venting of pump in case of power failures. 5. Functionality of all the safety interlocks provided with the	

	system.	
	Quantity	3 Units

Authorized Signatory

Official seal

Date :-