



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

Powai, Mumbai 400076

For PR No.1000015433 (RFx No.6100000443)

Technical Specifications for Turbo Molecular Pumping System

Turbo Molecular Pumping System must come with the following specifications:

Must have integrated drive unit.

Inlet flange: - DN 160 CF-F,

Outlet flange: - DN 25 ISO-KF,

Pumping speed for: -

Nitrogen: higher than or equal to 680 lps,

Helium: - higher than or equal to 650 lps,

Hydrogen: - higher than or equal to 550 lps

Compression ratio for: -

Nitrogen: - higher than 1×10^{11} ,

Helium: - higher than 3×10^7 ,

Hydrogen: - higher than 4×10^5

Maximum backing vacuum pressure for N₂: - 11 mbar

Gas throughput: -

Nitrogen: - 6.5 mbar l/s,

Ultimate pressure with rotary vane backing pump: $< 5 \times 10^{-10}$ mbar as per DIN 28428 standard.

Control Unit for the above pump should inform following parameters: -

- Speed of the pump in terms of revolutions per seconds.
- Current drawn by the pump.
- Operating hours.

Air cooling kit, vent valve, splinter shield, connecting components and other essential accessories to be quoted.

The turbo pump should have maintenance free, permanent magnetic bearing at High Vacuum Side, and oil lubricated ceramic bearing.

After Sale Service Facility: - After sales service: In case of break down, complete repairs of the Turbo Pump, viz. bearing replacement, motor part replacement, complete cleaning of the pump etc. should be possible at site. The vendor should have Service Centre/Facility and complete infrastructure within India to handle complete repairs of the turbo pump, such as, changing of stator /rotor assembly, repairs of electronics, etc and availability of critical spares off the shelf, from Indian office.