

ANNEXURE-1

1) SPECIFICATION FOR TURBO PUMP WITH ITS CONTROLLER

Inlet flange	KF-25 and KF 40
Outlet flange	DN25NW
Pumping speed should be	
N ₂ ≥ 300 l/s	
He ≥ 340 l/s	
H ₂ ≥ 280 l/s	
Compression ratio	
N ₂ ≥ 1 × 10 ¹¹	
He ≥ 1 × 10 ⁶	
H ₂ ≥ 5 × 10 ⁴	
Ultimate pressure with RV backing pump	6 × 10 ⁻⁸ to 5 × 10 ⁻¹⁰ mbar
Vent port	1/8 inch BSP female with leak valve
Purge port	1/8 inch BSP female
Water cooling (water at 15°C, ambient temp at 40°C)	95 sccm
Forced air cooled, 35 °C ambient	115 sccm
Pump rotational speed	
Nominal rotational speed	60000 rpm
Standby rotational speed	Variable from 33000 to 60000 rpm (42000 rpm default)
Programmable power limit settings	Variable from 50-200W (160W default)
Start time to 90% speed	145 sec

Cooling method	Air / water
Ambient air temp for forced air cooling	5 - 35°C
Min cooling water flow rate (water 15°C)	15 l/h
Water temp range	10 - 20°C
Max inlet flange temp	80°C
Noise level at 1 metre	<45 dB(A)
Max magnetic field pump can tolerate	5 mT

2) SPECIFICATION FOR WIDE RANGE GAUGE

Pressure range	Atmosphere to 10 ⁻⁹ mbar/Torr
Accuracy	Typically ±15% <100 mbar and ±30% <10 ⁻³ mbar
Maximum over pressure	6 bar absolute (87 psia)
Power supply	+14.5 to +36 V d.c.
Power consumption	2 W maximum
Output signal	1.8 to 10.2 V d.c.
Adjustments	Atmosphere and setpoint
Maximum voltage	40 V d.c.
Current	100 mA maximum
Temperature range	
Operating	+5 to +60 °C
Storage	0 to +70 °C
Materials exposed to vacuum (Both NW and CF versions)	Stainless steel (AISI 304, 316, 321, 347), Fluoroelastomer, soda

	lime glass, Tungsten, trace of
	Nickel and Nickel Iron
External interface connector	8-way FCC68 / RJ45 Socket
Calibration	There should be option in the controller
	to measure pressure of different kind of
	gases such as helium, Nitrogen, CO ₂ etc

- There should be single controller for turbo molecular pump and gauge.