



Document No.: STSE-PU-TG390MCAB-R04

Specifications for Magnetically Suspended Compound Molecular Pump

1. Specifications

Model		TG390MCAB
Outside view drawing attached		X4-00071<2>
Inlet flange		CF100 ¹⁾
Outlet flange		KF25 ²⁾
Cooling system		Forced air cooling
Bearing system		Active 5-axis control magnetic bearing
Volume flow rate	for N ₂	340 L/s
	for N ₂ with protective screen	320 L/s
	for H ₂	290 L/s
Maximum compression ratio	for N ₂	1 × 10 ⁸
	for H ₂	4.5 × 10 ³
Ultimate pressure ³⁾		< 1 × 10 ⁻⁷ Pa (7.5 × 10 ⁻¹⁰ Torr)
Maximum throughput ^{4) 5)}	for N ₂	3680 Pa·L/s (2000 sccm)
	for Ar	1290 Pa·L/s (700 sccm)
Maximum backing pressure		400 Pa (3 Torr)
Recommended backing pump		≥ 160 L/min
Startup time ⁶⁾		2 – 3 min
Shutdown time ⁶⁾		4 – 5 min
Permissible bake-out temperature at inlet flange		≤ 120 °C
Vibration (0 – peak) ⁷⁾		≤ 0.01 μm
Rated rotational speed		40800 min ⁻¹
Installation position ⁸⁾		Any
Permissible ambient temperature		10 – 32 °C
Gas purge throughput ^{5) 10)}		18.4 Pa·L/s (10 sccm)
Major materials ⁹⁾		Stainless steel (pump body)
		Al alloy (rotor, stator)
Weight		17 kg

1) JVIS003 conflat flange

2) ISO2861/1 clamped type flange

3) Pressure attained after 48 hours of bake-out.

4) Maximum throughput when a backing pump with its volume flow rate of 320 L/min is used and the ambient temperature is 20-25 °C.

5) 1 Pa·L/s (25°C) = 0.543 sccm (0°C, 1 atm)

6) Backing pressure ≤ 10 Pa

7) Vibration peak at rated rotational speed measured with FFT.

8) Pump must be firmly secured to customer's system. (See the instruction manual for detail.)

9) Do not pump Hg, Ga and its compounds or corrosive gases. It may damage pump.

10) Use an optional gas purge inlet port.



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2. Accessories

For inlet flange	Temporary blank flange	1 ea.
	Bolts and nuts for temporary blank flange	1 set
	O-ring for temporary blank flange	1 ea.
	Protective screen (4 × 4 mm ¹⁾ , Stainless steel)	1 ea.
For outlet flange	Blank flange	1 ea.
	Centering ring with FKM O-ring	1 ea.
	Clamp	1 set
Instruction manual		1 copy

1) Mesh size of each open area

3. Shop inspection

Prior to release for shipment, each magnetically suspended compound molecular pump is tested to ensure it passes the following inspection criteria.

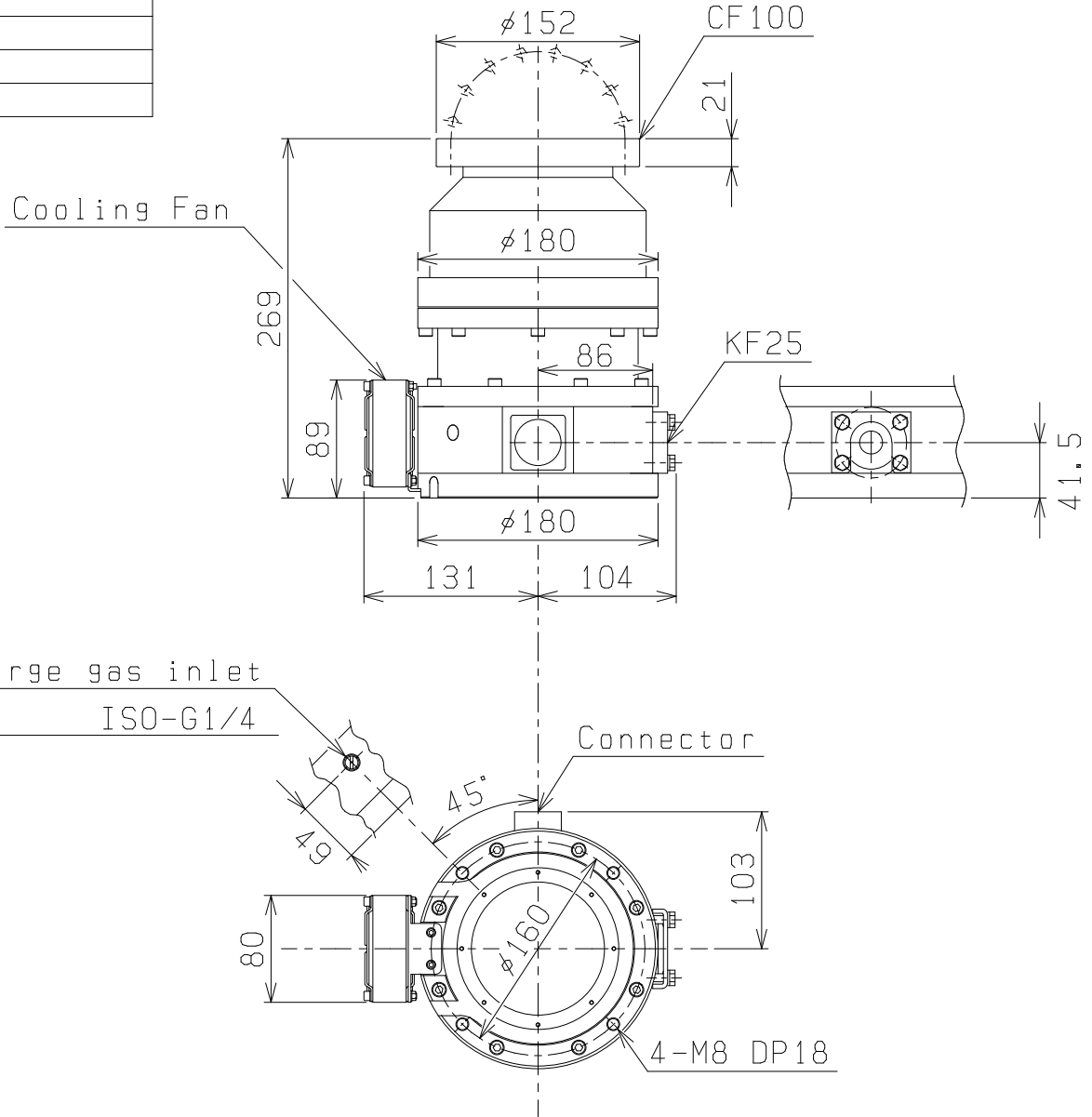
Inspection item	Criteria
Exterior check	No abnormality detected by visual check
Helium leak test	Less than 1.3×10^{-9} Pa·m ³ /s
Insulation resistance measurement ^{1) 2)}	Higher than 100 M Ω
Withstand voltage test Motor – Earth (Ground) Motor – Others ²⁾	Leakage current less than 1.0 mA. AC1,500V 1min. AC2,230V 1min.
Rotational direction	Clockwise
Rated rotational speed	Within 5% deviation from specified rated rotational speed
Startup time	In the range of specified startup time
Shutdown time	In the range of specified shutdown time
Inlet pressure measurement	Lower than 5×10^{-5} Pa (4×10^{-7} Torr) after 2 hours of evacuation without bake-out
Running test	No abnormality during continuous operation

1) By DC 500V mega-tester

2) Some sensors are excepted.

2 17000 - 4X DWG. NO.

JOB NO.	NO.	DESCRIPTION	MATERIAL	Q'TY	DWG. NO.	REMARKS



REV. NO.	DATE	DESCRIPTION	DR'N	CH'D	APP'D
④					
③					
②	2002.11.11	排気口押え形状訂正	石森	大和	中安
①	2002.06.25	G1/4 規格表記	大林	井口	井口
CHECKED	APPROVED	NO. OF SET	DATE		
石森	大林	SET	2002.02.27		
DRAWN	DESIGNED	SCALE			
大和	大和	1/5			

TITLE
TG390MCAB
 Dimensions

OSAKA VACUUM, LTD.

DWG. NO. X4 - 00071 ②