

Ceramic Ball Bearing Turbo Molecular Pump [UTM70B]

UTM70B is the compound turbo molecular pump with the ceramic ball bearings, and has excellent compression ratio. Compact design by integrated controller design. Excellent high back pressure performance allows to use smaller backing Pump.



UTM70B (ICF flange)

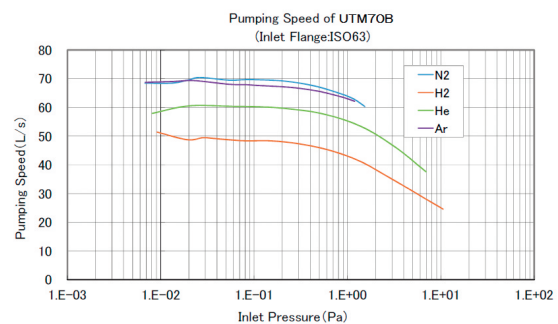
Features

- ▶ **No limitation in the mounting direction**
The degree of freedom in system design is high because of free mounting direction.
- ▶ **On-board controller**
Integrated controller to the pump body is capable to reduce wire work and downsize pumping system.
- ▶ **High compression ratio and high back pressure**
High compression ratio made it possible to run the pump at high back pressure and downsize its backing pump.
- ▶ **Three kinds of flange**
Inlet port flange is selectable from VG65, ICF114 and ISO63-K.
- ▶ **Clean vacuum environment**
Less back flow of hydrocarbon gases while both the pump is running and stopping.
- ▶ **Low noise**
Noise level at the no load is 48dB(A) or less. (with ISO63-K flange)

Applications

- ▶ Main pumping system for analytical equipments, R&D system, experimental devices, etc.
- ▶ Main pumping system for evaporators and sputtering system, etc.
- ▶ Main pumping system to evacuate low molecule gases such as H₂, He, etc.

Pumping speed curve



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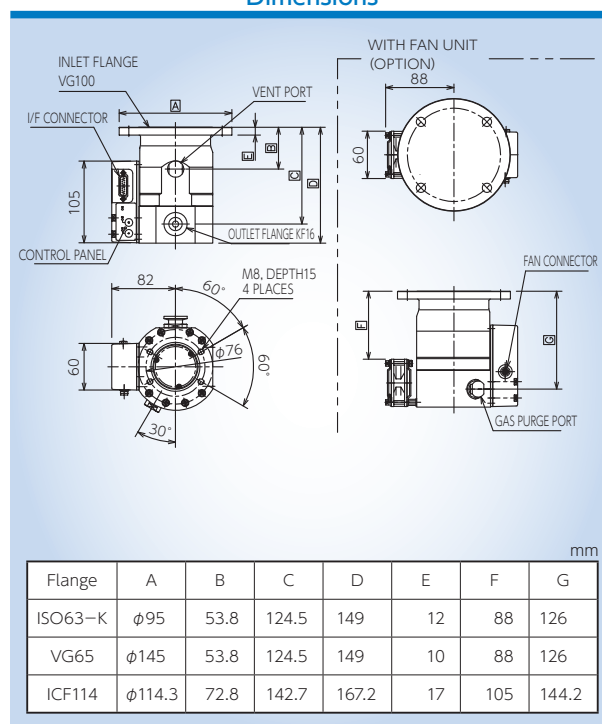
Specification		
Model	UTM70B	
Cooling method	Natural air cooling / Forced air cooling(fan)	
Inlet Flange (*1)	VG65,ICF114,ISO63-K	
Outlet Flange	KF16	
Pumping speed (without a protective net)	N2 70L/sec	
	He 60L/sec	
	H2 49L/sec	
Ultimate pressure (*2)(*3) (With 2stage back pump)	After baking -	
	Before baking 10^{-6} Pa/ 10^{-8} Torr/ 10^{-8} mbar	
Max. compression rate	$N_2 > 1 \times 10^9$, He: 4×10^7 , H ₂ : 4×10^5	
Max. pressure at inlet(*4)(*5)(*6)	N2 0.43 Pa/ 3×10^{-3} Torr/43mbar 1.1 Pa/ 8×10^{-3} Torr/110mbar	
Max. pressure at outlet(*4)(*5)(*7)	N2 300 Pa/2.3Torr/3×10 ⁴ mbar 900 Pa/6.8Torr/9×10 ⁴ mbar	
Continuous running maximum flow(*8) (when 60L/min backing pump is used)	Without gas purge N2 15 sccm 40 sccm	
	Without gas purge Ar - 10 sccm	
	With gas purge Ar - 15 sccm	
Recommend backing pump(when evacuating 10SCCM)(*9)	> 60L/min	
Weight(*10)	VG:3.3kg , ICF:3.0kg , ISO:5.0kg	
Rotation speed	87000rpm	
Start-up time(Up to 80%)(DC24V, Back pressure:5Pa or less)	1.7 min	
Surface treatment(*11)	None	
Mounting direction	All direction	
Noise(*12)	< 48 dB(A)	
Input power source	DC24V ±5%, 120W	
Contact input and output signal	REMOTE(D-sub 15 pin male) Digital input:4 points. Output:4 points. Analog output:1 point.	
Controller	Serial communication	RS-485(D-sub 15 pin male, Shared with REMOTE)
	LED Display	POWER,NORMAL,ALARM
	Switch	START/STOP,RESET
	Variable rotational frequency/ speed	Change of operation rotation speed number is possible between 25% and 100% from the pump spec by 0.1% step.
	Abnormal operation detection	Detecting alarm and warning.
Protection circuit	Indicating alarm and warning.	
Standard accessories	Instruction Manual(CD-R), Protective net(Only VG and ICF. In ISO flange protective net is built in the gasket.), Gasket(inlet flange), Dust cap(for inlet, outlet and connector)	
Applicable standard	CE, TUVus	

- *1) Inlet flange is from VG65,ICF114 and ISO63-K when ordering.
- *2) A digit number is expressed.
- *3) Baking is available only for forced air cooling type with ICF flange.
- *4) Value at the time of the ambient air temperature is 25°C. If ambient air temperature changes, an acceptable value will change.
- *5) Maximum outlet pressure and maximum inlet pressure can not be satisfied at the same time.
- *6) Maximum inlet port pressure which can accept continuous running.
- *7) Maximum pressure at exhaust port which can accept continuous running when gas flow coming from inlet port is 0 sccm.
- *8) Value when ambient temperature is 5~25°C. In addition, N2 should be used for gas purge and its flow rate should be 25 sccm.
- *9) Select appropriate backing pump not to maintain exhaust port pressure less than maximum exhaust port pressure when gas flow increases.
- *10) Cooling Fan makes UTM70B 0.2kg heavier.
- *11) Do not flow reactive gas, corrosive gas, and gas includes Gallium. Please contact us when using other gases.
- *12) This value is measured by ULVAC standard for ISO flange type.

Option	
Name	Qty.
1 Fan init for air cooling (DC24V,side installation)	1
2 Fan init for air cooling (DC24V,bottom installation)	1
3 Venting valve (DC24V,Normal close)	1
4 Gas purge adaptor (KF10)	1
5 Baking heater (AC100V,65W) ※)	1
6 Baking heater (AC230V,65W) ※)	1
7 Interface connector (D-sub 15pin female)	1
8 Interface cable (DC24V Input, RS-485, Connector for relay output) Selectable 1m,2m,3m and 5m.	1
9 Adapter power supply (Input voltage AC100-240V. With AC100V plug) Selectable 1m,3m and 5m.	1
10 Adapter power supply (Input voltage AC100-240V. With AC230V plug) Selectable 1m,3m and 5m.	1
11 Communication cable set (USB-RS485 converter and RS485 communication cable) Selectable 1m,3m and 5m.	1

※In case to use the additional baking heater, it will be required to add another power supply in addition.

Dimensions



ULVAC, Inc. Components Division

www.ulvac.co.jp/en

Overseas Sales in Japan TEL +81-467-89-2261

USA : ULVAC Technologies, Inc. TEL +1-978-686-7550
 GERMANY : ULVAC GmbH TEL +49-89-960909-0
 CHINA : ULVAC (SHANGHAI) Trading Co.,Ltd. TEL (86)21-6127-6610
 TAIWAN : ULVAC TAIWAN, Inc. TEL +886-3-579-5688
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