SHIMADZU

Kurt J. Lesker Company

C675-E085B



MAGNETICALLY LEVITATED

TURBO MOLECULAR PUMP

SHIMADZU MAGNETICALLY LEVITATED
TURBO-MOLECULAR PUMP

TMP Series

Model: TMP-203/303/403/803/1003/1303/1503/2203/2804/3304/3804/4304 series



FEATURES

◎A full range of pumps available to suit your application
◎Compact digitally controlled power supply
◎Compatible with a variety of transmission protocols
- ●Standard: RS-232C, RS-485
- ●Options: DeviceNet

◎RoHS compliant

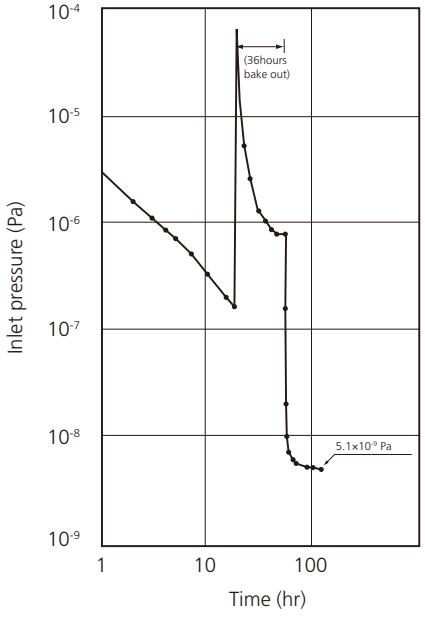
Features

Measurement of ultimate pressure

10^{-9}Pa level

(TMP-803LM, TMP-1003LM)

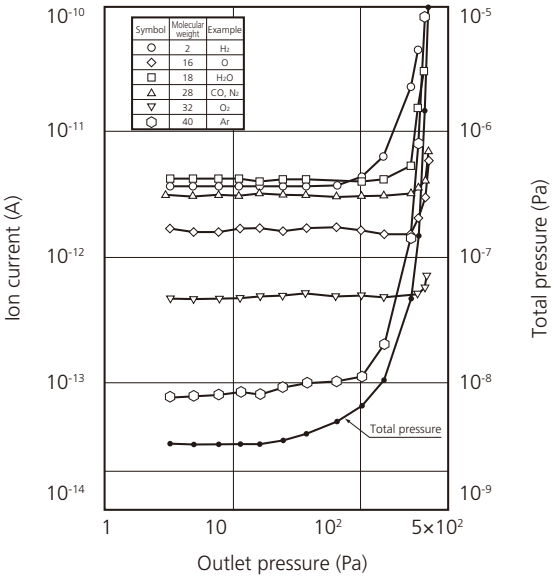
Typical Ultimate Pressure of the TMP-1003LM Magnetically Levitated Turbo Molecular Pump



Measurement of Residual Gases

Changes of Residual Gases on the Inlet Side when Argon is Introduced into the Outlet.

(Model: TMP-1003LM Magnetically Levitated Turbo Molecular Pump)



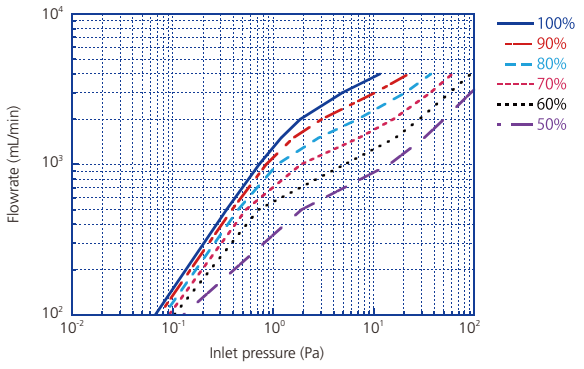
At outlet pressures of 133 Pa and less, partial pressure of the residual gases excluding Ar and H_2 does not vary, and thus a stable ultra-high vacuum is obtained.

Variable pump rotational speed functionality

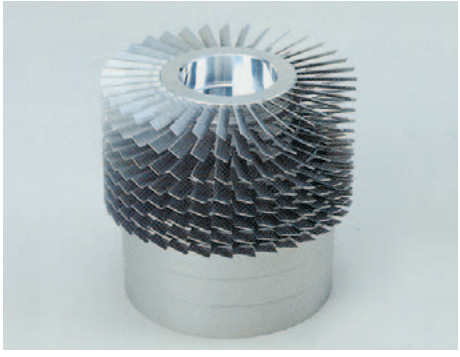
Optimal exhaust performance can be selected for the process

The pump's rotational speed can be set between 25 % and 100 %, to tune the pump exhaust performance. The chamber pressure can be tuned via the rotational speed settings. A maximum of 10 minutes is required to reach the set rotational speed. The conductance valves can also be cut if the pump is used under fixed conditions.

Exhaust Performance by Rotational Speed TMP-3304LMC (Argon gas)



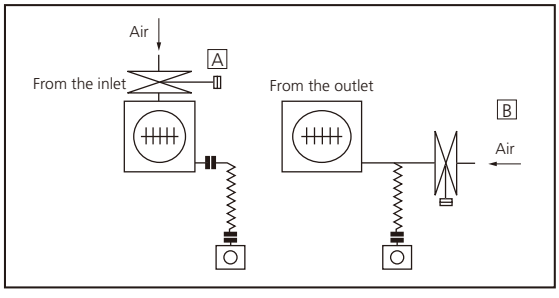
Integrated rotor blades (using die-machined forged materials)



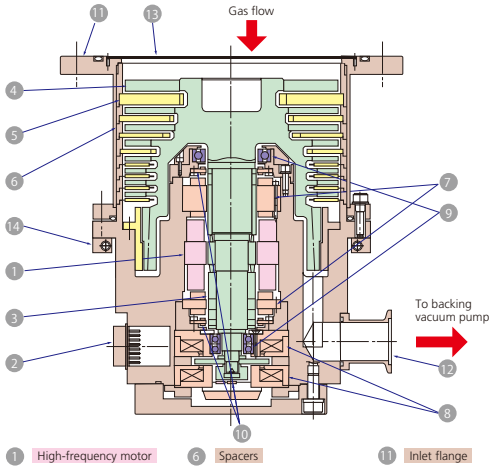
Reliability test

Air in-rush test

This confirms restart after an inrush of air.
This assures against operational failures.



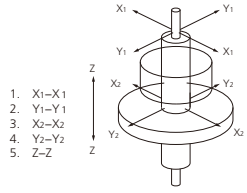
Pump construction



1 High-frequency motor
2 Connector
3 Shaft
4 Rotor blades
5 Stator blades
6 Spacers
7 Radial magnetic bearing
8 Axial magnetic bearing
9 Touchdown bearings
10 Gap sensors
11 Inlet flange
12 Outlet flange
13 Protective net
14 Cooling water pipe

Conceptual diagram of 5-axis magnetic bearings

A 5-axis magnetic bearing system has been adopted. This completely eliminates the use of oil (grease).



Response to power failures

The pump stops safely, even in the event of a power failure.

During a power failure, magnetic levitation is sustained by power generated by regenerative braking. The touchdown bearings are designed to withstand touchdown from 260 power failures.

Monitoring functionality

The LCD indicators on the front panel indicate motor current, rotational speed, and degree of imbalance, as well as error occurrences. The control timer provided keep track of maintenance times. Further, an RS-232C port is provided on the front panel. This can be used to download the operational status to a PC even while the pump is operating. Comparison with normal status leads to early detection of problems (a rise in back pressure due to the deposition of reaction by-products), which contributes to system preventative maintenance.

Typical front panel display

Status monitor

NORMAL ROT=100%
MC= 0.7A UB= 4%

- Rotational speed
- Motor current
- Imbalance monitor

Maintenance of operating time

INTEGRATING TIMER
LAST MAINTE.= 1800HR

- Maintenance-call timer
- Cumulative operating time

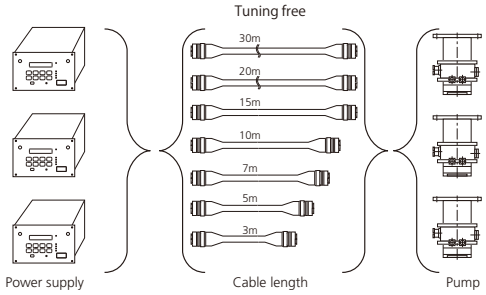
Display showing error occurrence

ALARM
15=POWER FAILURE

- Display switches automatically when an error occurs
- Error log can also be displayed

Tuning free

Because of the compatibility of the turbo molecular pump with cable and power supply system combinations, retuning is unnecessary, even if the combination is changed.
The cable length can be set between 3 m and 30 m.



Shared power supply

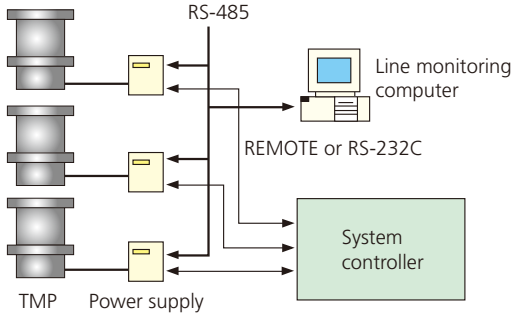
The shared power supply system can be used with all pump models. It is no longer necessary to change the power supply when the model of connected pump is changed. (Enquire about applicable models.)

Compliant with various regulations

★CE marking, TÜV
★NRTL (UL61010A-1)
★SEMI S2
★SEMI F47
★SEMI E74 compatible

Network connectivity

The system is equipped with RS-232C and RS-485 compliant serial communications ports, enabling the monitoring of pump startup/shutdown and other operational conditions, as well as readout of operating logs. Up to 32 pumps can be monitored from a single location.



Specifications

Air Cooled Type Turbo Molecular Pump, Standard Specifications

Turbo molecular pump		TMP-203M	TMP-203MC	TMP-303M	TMP-303MC
Rotor coating		None	Coated	None	Coated
Applicable power supply		EI-S04M		EI-S04M	
Inlet flange		VG100 / ICF152 / ISO100B / ISO100C		VG100 / ICF152 / ISO100B / ISO100C	
Outlet flange		KF25		KF25	
Cooling method		Air cooled		Air cooled	
Ultimate pressure (after baking) Pa (Torr) (Note 1)		10^{-8} Pa order	10^{-7} Pa order	10^{-8} Pa order	10^{-7} Pa order
Maximum inlet pressure during continuous operation (N_2)		1.3 Pa		1.3 Pa	
Maximum outlet pressure during continuous operation		40 Pa		40 Pa	
Pumping speed (Note 2)	N_2	190 L/s		320 L/s	
	He	140 L/s		340 L/s	
	H_2	120 L/s		320 L/s	
Compression ratio	N_2	1×10^9		1×10^9	
	He	6×10^4		8×10^4	
	H_2	4×10^3		1×10^4	
Rated rotation speed		50000 rpm		45000 rpm	
Startup time		Within 5 minutes		Within 5 minutes	
Direction of installation		Arbitrary		Arbitrary	
Baking temperature of pump inlet		120 ˚C or lower		120 ˚C or lower	
Vibration, measured by the Shimadzu method		Less than 0.012 μm (single amplitude)		Less than 0.012 μm (single amplitude)	
Recommended purge gas flowrate (Note 3)		20 to 30 mL/min		20 to 30 mL/min	
Recommended pumping speed of backing vacuum pump during gas purging		200 L/min or higher		200 L/min or higher	
Operational ambient temperature range		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C	
Allowable magnetic flux density	Radial directions	3 mT		3 mT	
	Axial directions	15 mT		15 mT	
Weight		9 kg		14 kg	

(Note 1) When a metal gasket is used at the inlet flange. If an O-ring gasket is used, the ultimate pressure will be order of 10^{-7} Pa.
(Note 2) When no protective net is used. If a protective net is used, the exhaust speed (N_2) will be as follows: TMP-203: 180 L/s; TMP-303: 300 L/s; TMP-403: 400 L/s; TMP-803(0): 730 L/s; TMP-1003: 970 L/s.
(Note 3) mL/min shows the volumetric flowrate at 0 ˚C and 1 atmosphere. (Equivalent to SCCM.)

Power Supply		EI-S04M	
Model		TMP-203M / MC / LM / LMC	TMP-303M / MC / LM / LMC
Compatibility		Retuning is unnecessary if the combination of pump with cable and power supply system is changed	
Permitted ambient temperature	Temperature	Operation: 0 ˚C to 45 ˚C / Storage: -25 ˚C to 70 ˚C (no condensation)	
	Humidity	40 to 80 %RH	
Input power source	Voltage	Single phase 100 V AC to 120 V AC ±10 % (50 Hz/60 Hz ±2 Hz)	
		Single phase 200 V AC to 240 V AC ±10 % (50 Hz/60 Hz ±2 Hz)	
	Power requirements	450 VA	550 VA
Weight		8 kg	

	TMP-403M	TMP-403MC	TMP-803M(0)	TMP-803MC(0)	TMP-1003M	TMP-1003MC
	None	Coated	None	Coated	None	Coated
	EI-S04M		EI-R04M		EI-R04M	
	VG150 / ICF203 / ISO160B / ISO160C		VG150 / ICF203 / ISO160B		VG200 / ICF253 / ISO200B	
	KF25		KF40		KF40	
	Air cooled		Air cooled		Air cooled	
	10^{-8} Pa order	10^{-7} Pa order	10^{-9} Pa order	10^{-8} Pa order	10^{-9} Pa order	10^{-8} Pa order
	1.3 Pa		1.3 Pa		1.3 Pa	
	40 Pa		40 Pa		40 Pa	
	420 L/s 360 L/s 340 L/s		800 L/s 800 L/s 700 L/s		1080 L/s 930 L/s 790 L/s	
	1×10^{9} 8×10^{4} 1×10^{4}		1×10^{9} min. 8×10^{4} 4×10^{3}		1×10^{9} 8×10^{4} 4×10^{3}	
	45000 rpm		35000 rpm		35000 rpm	
	Within 5 minutes		Within 5 minutes		Within 5 minutes	
	Arbitrary		Arbitrary		Arbitrary	
	120 ˚C or lower		120 ˚C or lower		120 ˚C or lower	
	Less than 0.012 μm (single amplitude)		Less than 0.01 μm (single amplitude)		Less than 0.01 μm (single amplitude)	
	20 to 30 mL/min		20 to 30 mL/min		20 to 30 mL/min	
	200 L/min or higher		500 L/min or higher		500 L/min or higher	
	Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C	
	3 mT 15 mT		3 mT 15 mT		3 mT 15 mT	
	14 kg		33 kg		32 kg max.	

	EI-S04M	EI-R04M	
	TMP-403M / MC / LM / LMC	TMP-803M(0) / MC(0) / LM(0) / LMC(0)	TMP-1003M / MC / LM / LMC
	Same as left	Retuning is unnecessary if the combination of pump with cable and power supply system is changed	
	Same as left	Operation: 0 ˚C to 45 ˚C / Storage: -25 ˚C to 70 ˚C (no condensation)	
	Same as left	40 to 80%RH	
	Same as left	Single phase 200 V AC to 240 V AC ±10 % (50 Hz/60 Hz ±2 Hz)	
	Same as left		
	550 VA	1.0 kVA	
	Same as left	8 kg	

Specifications

Wide-Range Turbo Molecular Pump Standard Specifications

Turbo molecular pump		TMP-203LM	TMP-203LMC	TMP-303LM	TMP-303LMC
Rotor coating		None	Coated	None	Coated
Applicable power supply		EI-S04M		EI-S04M	
Inlet flange		VG100 / ICF152 / ISO100B / ISO100C		VG100 / ICF152 / ISO100B / ISO100C	
Outlet flange		KF25		KF25	
Cooling method		Water cooled		Water cooled	
Ultimate pressure (after baking) Pa (Torr) (Note 1)		10^{-8} Pa order	10^{-7} Pa order	10^{-8} Pa order	10^{-7} Pa order
Maximum inlet pressure during continuous operation (N_2)		200 Pa		200 Pa	
Maximum outlet pressure during continuous operation		400 Pa		400 Pa	
Pumping speed (Note 2)	N_2	190 L/s		320 L/s	
	He	140 L/s		340 L/s	
	H_2	120 L/s		320 L/s	
Compression ratio	N_2	1×10^9		1×10^9	
	He	6×10^4		8×10^4	
	H_2	4×10^3		1×10^4	
Rated rotation speed		50000 rpm		45000 rpm	
Startup time		Within 5 minutes		Within 5 minutes	
Direction of installation		Arbitrary		Arbitrary	
Baking temperature of pump inlet		120 ˚C or lower		120 ˚C or lower	
Vibration, measured by the Shimadzu method		Less than 0.012 μm (single amplitude)		Less than 0.012 μm (single amplitude)	
Recommended purge gas flowrate (Note 3)		20 to 30 mL/min		20 to 30 mL/min	
Recommended pumping speed of backing vacuum pump during gas purging		200 L/min or higher		200 L/min or higher	
Operational ambient temperature range		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C	
Allowable magnetic flux density	Radial directions	3 mT		3 mT	
	Axial directions	15 mT		15 mT	
Cooling water	Flowrate	1 to 3 L/min		1 to 3 L/min	
	Pressure	0.2 to 0.5 MPa		0.2 to 0.5 MPa	
	Temperature	5 to 30 ˚C		5 to 30 ˚C	
Weight		9 kg		14 kg	

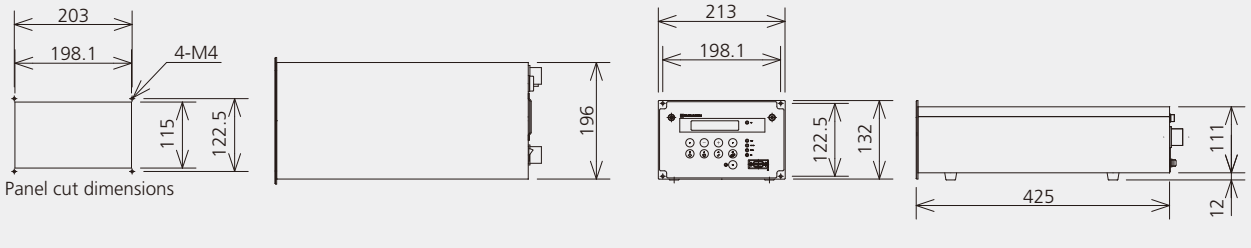
(Note 1) When a metal gasket is used at the inlet flange. If an O-ring gasket is used, the ultimate pressure will be order of 10^{-7} Pa.
(Note 2) When no protective net is used. If a protective net is used, the exhaust speed (N_2) will be as follows: TMP-203: 180 L/s; TMP-303: 300 L/s; TMP-403: 400 L/s; TMP-803(0): 730 L/s; TMP-1003: 970 L/s.
(Note 3) mL/min shows the volumetric flowrate at 0 ˚C and 1 atmosphere. (Equivalent to SCCM.)

Power Supply EI-04 series



	TMP-403LM	TMP-403LMC	TMP-803LM(0)	TMP-803LMC(0)	TMP-1003LM	TMP-1003LMC
	None	Coated	None	Coated	None	Coated
	EI-S04M		EI-R04M		EI-R04M	
	VG150 / ICF203 / ISO160B / ISO160C		VG150 / ICF203 / ISO160B		VG200 / ICF253 / ISO200B	
	KF25		KF40		KF40	
	Water cooled		Water cooled		Water cooled	
	10^{-8} Pa order	10^{-7} Pa order	10^{-9} Pa order	10^{-8} Pa order	10^{-9} Pa order	10^{-8} Pa order
	200 Pa		400 Pa		400 Pa	
	400 Pa		665 Pa		665 Pa	
	420 L/s 360 L/s 340 L/s		800 L/s 800 L/s 700 L/s		1080 L/s 930 L/s 790 L/s	
	1×10^{9} 8×10^{4} 1×10^{4}		1×10^{9} min. 8×10^{4} 4×10^{3}		1×10^{9} 8×10^{4} 4×10^{3}	
	45000 rpm		35000 rpm		35000rpm	
	Within 5 minutes		Within 5 minutes		Within 5 minutes	
	Arbitrary		Arbitrary		Arbitrary	
	120 ˚C or lower		120 ˚C or lower		120 ˚C or lower	
	Less than 0.012 μm (single amplitude)		Less than 0.01 μm (single amplitude)		Less than 0.01 μm (single amplitude)	
	20 to 30 mL/min		20 to 30 mL/min		20 to 30 mL/min	
	200 L/min or higher		500 L/min or higher		500 L/min or higher	
	Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C	
	3 mT 15 mT		3 mT 15 mT		3 mT 15 mT	
	1 to 3 L/min 0.2 to 0.5 MPa 5 to 30 ˚C		1 to 3 L/min 0.2 to 0.5 MPa 5 to 30 ˚C		1 to 3 L/min 0.2 to 0.5 MPa 5 to 30 ˚C	
	14 kg		33 kg		32 kg max.	

Dimensions of Power Supply



Specifications

High Pumping Throughput Turbo Molecular Pump Standard Specifications

Turbo molecular pump		TMP-1303LM(0)	TMP-1303LMC(0)	TMP-1503LM	TMP-1503LMC	TMP-2203LM(0)	TMP-2203LMC(0)
Rotor coating		None	Coated	None	Coated	None	Coated
Applicable power supply		EI-R04M		EI-R04M		EI-R04M	
Inlet flange		VG200 / ICF253 / ISO200B		VG250 / ICF305 / ISO250B		VG250 / ICF305 / ISO250B	
Outlet flange		KF40		KF40		KF40	
Cooling method		Water cooled		Water cooled		Water cooled	
Ultimate pressure (after baking) Pa (Torr) (Note 1)		10^{-8} Pa order	10^{-7} Pa order	10^{-8} Pa order	10^{-7} Pa order	10^{-8} Pa order	10^{-7} Pa order
Maximum flowrate of Ar gas (Note 2)		500 mL/min	800 mL/min	500 mL/min	800 mL/min	1300 mL/min	2000 mL/min
Maximum inlet pressure during continuous operation (N_2)		133 Pa		133 Pa		40 Pa	
Maximum outlet pressure during continuous operation		270 Pa		270 Pa		270 Pa	
Pumping speed (Note 3)	N_2	1300 L/s		1500 L/s		2140 L/s	
	He	1050 L/s		1200 L/s		2000 L/s	
	H_2	750 L/s		800 L/s		1350 L/s	
Compression ratio	N_2	6×10^8		6×10^8		1.4×10^8	
	He	1×10^4		1×10^4		1×10^4	
	H_2	1×10^3		1×10^3		1×10^3	
Rated rotation speed		30300 rpm		30300 rpm		24600 rpm	
Startup time		Within 7 minutes		Within 7 minutes		Within 11 minutes	
Direction of installation		Arbitrary		Arbitrary		Arbitrary	
Baking temperature of pump inlet		120 ˚C or lower		120 ˚C or lower		120 ˚C or lower	
Vibration, measured by the Shimadzu method		Less than 0.01 μm (single amplitude)		Less than 0.01 μm (single amplitude)		Less than 0.01 μm (single amplitude)	
Recommended purge gas flowrate (Note 2)		20 to 30 mL/min		20 to 30 mL/min		20 to 30 mL/min	
Recommended pumping speed of backing vacuum pump during gas purging		600 L/min or higher		600 L/min or higher		800 L/min or higher	
Operational ambient temperature range		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C	
Allowable magnetic flux density	Radial directions	3 mT		3 mT		3 mT	
	Axial directions	15 mT		15 mT		15 mT	
Cooling water	Flowrate	1 to 3 L/min		1 to 3 L/min		1 to 3 L/min	
	Pressure	0.2 to 0.5 MPa		0.2 to 0.5 MPa		0.2 to 0.5 MPa	
	Temperature	5 to 30 ˚C		5 to 30 ˚C		5 to 30 ˚C	
Weight		39 kg		42 kg		59 kg	

(Note 1) When a metal gasket is used at the inlet flange. If an O-ring gasket is used, the ultimate pressure will be order of 10^{-7} Pa.
(Note 2) mL/min shows the volumetric flowrate at 0 ˚C and 1 atmosphere. (Equivalent to SCCM.)
(Note 3) When no protective net is used. If a protective net is used, the exhaust speed (N_2) will be as follows: TMP-1303(0): 1130L/s; TMP-1503: 1380L/s; TMP-2203(0): 2050L/s.

Power Supply		EI-R04M		
Model		TMP-1303LM(0) / LMC(0)	TMP-1503LM / LMC	TMP-2203LM(0) / LMC(0)
Compatibility		Retuning is unnecessary if the combination of pump with cable and power supply system is changed		
Permitted ambient temperature	Temperature	Operation: 0 ˚C to 45 ˚C / Storage: -25 ˚C to 70 ˚C (no condensation)		
	Humidity	40 to 80 %RH		
Input power source	Voltage	Single phase 200 V AC to 240 V AC ±10 % (50 Hz/60 Hz ±2 Hz)		
	Power requirements	1.0 kVA		1.2 kVA
Weight		8 kg		

Photo of Turbo Molecular Pump Products



TMP-3304 series



TMP-4304 series



TMP-1003 series



TMP-303 series



TMP-1503 series

Turbo Molecular Pump Models

TMP- [ ] [ ] [ ] [ ] [ ] [ ]
① ② ③ ④ ⑤ ⑥

Example

TMP- [100] [3] [LM] [T] [C] [ ]

	Symbol	Description
①	(Numeral)	Exhaust speed is the value multiplied by 10.
②	(Numeral)	Product line
③	M	Air-cooled magnetic bearing type
	LM	Water-cooled magnetic bearing type
④	T	Temperature control function
	None	No temperature control function
⑤	C	Anti-corrosion coating design
	None	No coating
	*In addition, there are models with special coatings (B, F).	
⑥	S	Rotor overheating detection function (Limited number of models)

Integrated Production Factory for Turbo Molecular Pumps (Kyoto)



Specifications

High Pumping Throughput Turbo Molecular Pump Standard Specifications

Turbo molecular pump		TMP-2804LM (Note 1)	TMP-2804LMC (Note 1)	TMP-2804LMB (Note 1)	TMP-2804LMF (Note 1)	TMP-3304LM (Note 1)	TMP-3304LMC (Note 1)
Rotor coating		None	Coated			None	Coated
Applicable power supply		EI-R04M				EI-R04M	
Inlet flange		VG250 / ISO250B				VG300 / VG350 / ISO320B	
Outlet flange		KF40				KF40	
Cooling method		Water cooled				Water cooled	
Ultimate pressure (after baking) Pa (Torr) (Note 2)		10^{-7} Pa order				10^{-7} Pa order	
Maximum flowrate of Ar gas (Note 3)		1250 mL/min	1900 mL/min	2850 mL/min	2950 mL/min	1250 mL/min	1900 mL/min
Maximum inlet pressure during continuous operation (N_2)		40 Pa				40 Pa	
Maximum outlet pressure during continuous operation		270 Pa				270 Pa	
Pumping speed (Note 4)	N_2	[VG250] 2800 L/s		[ISO250B] 2500 L/s		3200 L/s	
	He	2800 L/s		2600 L/s		3100 L/s	
	H_2	2100 L/s		2000 L/s		2200 L/s	
Compression ratio	N_2	1×10^9 min.				1×10^9 min.	
	He	1×10^5				1×10^5	
	H_2	6×10^3				6×10^3	
Rated rotation speed		27600 rpm				27600 rpm	
Startup time		Within 12 minutes				Within 12 minutes	
Direction of installation		Arbitrary				Arbitrary	
Baking temperature of pump inlet		120 ˚C or lower				120 ˚C or lower	
Vibration, measured by the Shimadzu method		Less than 0.01 μm (single amplitude)				Less than 0.01 μm (single amplitude)	
Recommended purge gas flowrate (Note 3)		30 mL/min				30 mL/min	
Recommended pumping speed of backing vacuum pump during gas purging		1500 L/min or higher				1500 L/min or higher	
Operational ambient temperature range		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C				Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C	
Allowable magnetic flux density	Radial directions	3 mT				3 mT	
	Axial directions	15 mT				15 mT	
Cooling water	Flowrate	2 to 4 L/min				2 to 4 L/min	
	Pressure	0.2 to 0.5 MPa				0.2 to 0.5 MPa	
	Temperature	5 to 25 ˚C				5 to 25 ˚C	
Weight		84 kg				84 kg	

(Note 1) Models equipped with rotor overheating detection function are optionally available. (TMP-xxxS model)
(Note 2) When a metal gasket is used at the inlet flange. If an O-ring gasket is used, the ultimate pressure will be order of 10^{-7} Pa.
(Note 3) mL/min shows the volumetric flowrate at 0 ˚C and 1 atmosphere. (Equivalent to SCCM.)
(Note 4) When no protective net is used. If a protective net is used, the exhaust speed (N_2) will be as follows: TMP-2804(VG250): 2550L/s; TMP-2804(ISO250B): 2300L/s; TMP-3304: 2900L/s; TMP-3804(VG300): 3450L/s; TMP-3804(ISO320B): 3600L/s; TMP-4304: 4000L/s.

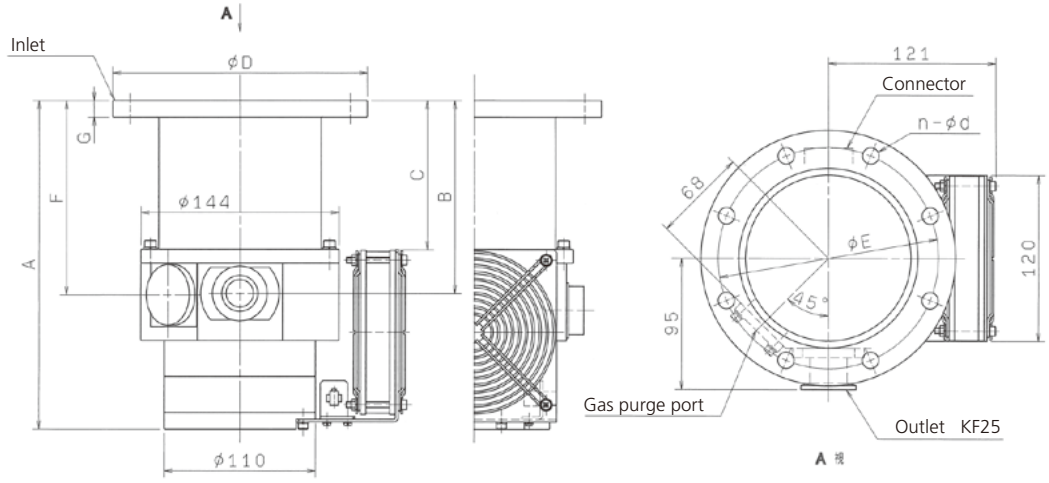
Power Supply		EI-R04M	
Model		TMP-2804LM / LMC / LMB / LMF	TMP-3304LM / LMC
Compatibility		Retuning is unnecessary if the combination of pump with cable and power supply system is changed	
Permitted ambient temperature	Temperature	Operation: 0 ˚C to 45 ˚C / Storage: -25 ˚C to 70 ˚C (no condensation)	
	Humidity	40 to 80 %RH	
Input power source	Voltage	Single phase 200 V AC to 240 V AC ±10 % (50 Hz/60 Hz ±2 Hz)	
	Power requirements	1.5 kVA	
Weight		8 kg	

	TMP-3304LMB (Note 1)	TMP-3304LMF (Note 1)	TMP-3804LMC (Note 1)	TMP-3804LMF (Note 1)	TMP-4304LMC (Note 1)	TMP-4304LMF (Note 1)
	Same as left		Coated		Coated	
	Same as left		EI-R04M		EI-R04M	
	Same as left		VG300 / ISO320B		VG350	
	Same as left		KF40		KF40	
	Same as left		Water cooled		Water cooled	
	Same as left		10^{-7} Pa order		10^{-7} Pa order	
	2850 mL/min	2950 mL/min	1900 mL/min	2800 mL/min	1900 mL/min	2800 mL/min
	Same as left		40 Pa		40 Pa	
	Same as left		270 Pa		270 Pa	
	Same as left		[VG300] 3800 L/s — 2500 L/s	[ISO320B] 4000 L/s — 2500 L/s	4400 L/s — 2600 L/s	
	Same as left		1×10^{9} min. 1×10^{5} 6×10^{3}		1×10^{9} min. 1×10^{5} 6×10^{3}	
	Same as left		24000 rpm		24000 rpm	
	Same as left		Within 18 minutes		Within 18 minutes	
	Same as left		Arbitrary		Arbitrary	
	Same as left		120 ˚C or lower		120 ˚C or lower	
	Same as left		Less than 0.01 μm (single amplitude)		Less than 0.01 μm (single amplitude)	
	Same as left		30 mL/min		30 mL/min	
	Same as left		1500 L/min or higher		1500 L/min or higher	
	Same as left		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C		Operation: 0 ˚C to 40 ˚C / Storage: -25 ˚C to 70 ˚C	
	Same as left		3 mT 15 mT		3 mT 15 mT	
	Same as left		2 to 4 L/min 0.2 to 0.5 MPa 5 to 25 ˚C		2 to 4 L/min 0.2 to 0.5 MPa 5 to 25 ˚C	
	Same as left		105 kg		105 kg	

	EI-R04M		
	TMP-3304LMB / LMF	TMP-3804LMC / LMF	TMP-4304LMC / LMF
	Same as left		
	Same as left		
	Same as left		
	Same as left		
	Same as left		
	Same as left		

Dimensions and Pumping Performance

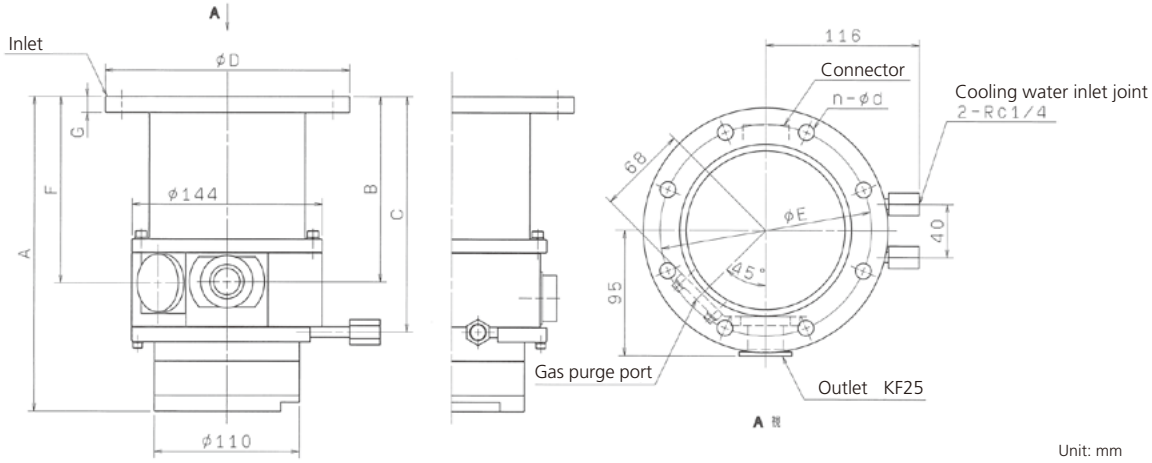
TMP-203M and TMP-203MC



Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G
ICF152	252	154	122	ø152	ø130.3	16-ø8.4	155	20
VG100	238	140	108	ø185	ø160	8-ø12	141	12
ISO100B	238	140	108	ø165	ø145	8-ø9	141	12
ISO100C	238	140	108	ø130	—	—	141	12

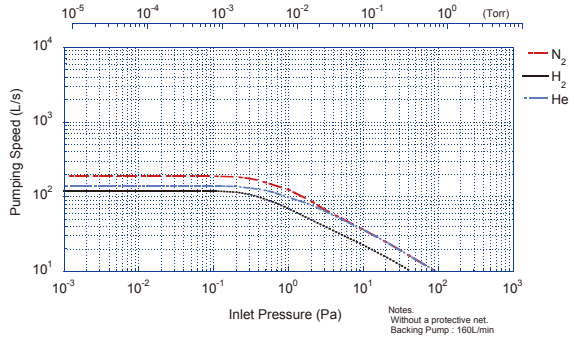
TMP-203LM and TMP-203LMC



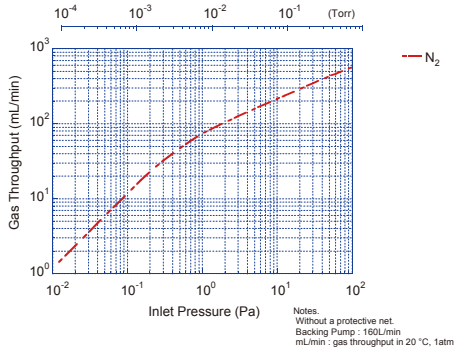
Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G
ICF152	252	154	192	ø152	ø130.3	16-ø8.4	155	20
VG100	238	140	178	ø185	ø160	8-ø12	141	12
ISO100B	238	140	178	ø165	ø145	8-ø9	141	12
ISO100C	238	140	178	ø130	—	—	141	12

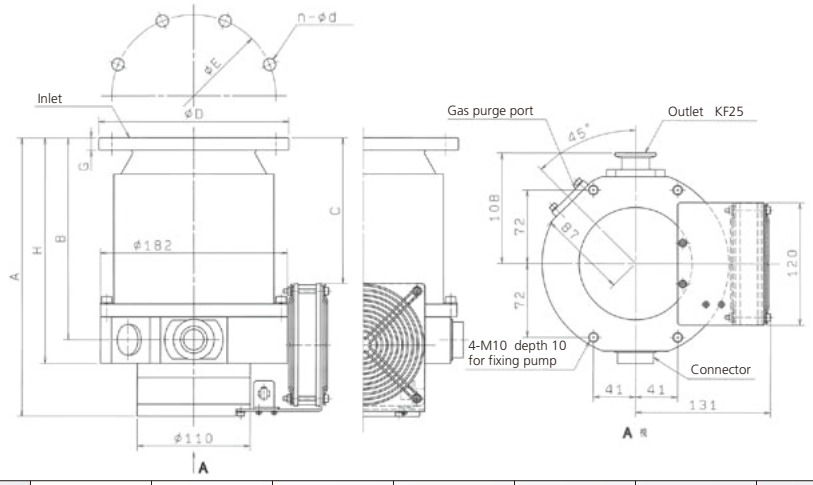
Pumping Speed (TMP-203LM / LMC)



Gas Throughput (TMP-203LM / LMC)



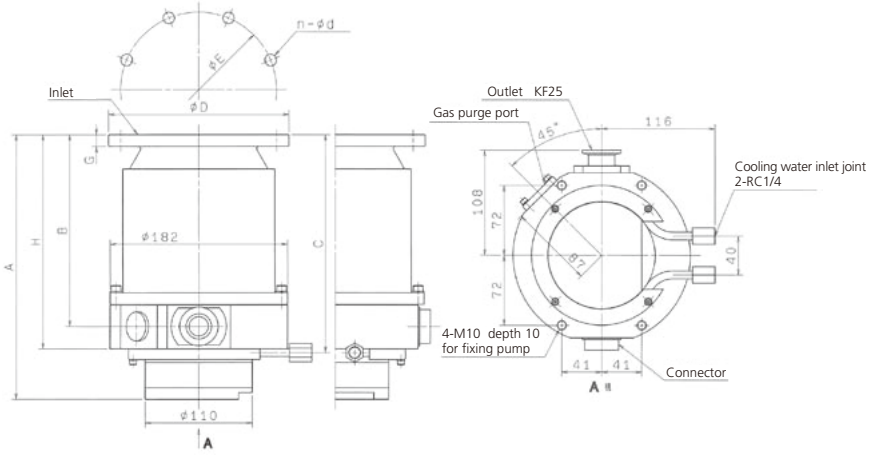
TMP-303M and TMP-303MC



Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	G	H
ICF152	279	204	149	ø152	ø130.3	16-ø8.4	20	227
VG100	272	197	142	ø185	ø160	8-ø12	12	220
ISO100B	279	204	149	ø165	ø145	8-ø9	12	227
ISO100C	279	204	149	ø130	—	—	12	227

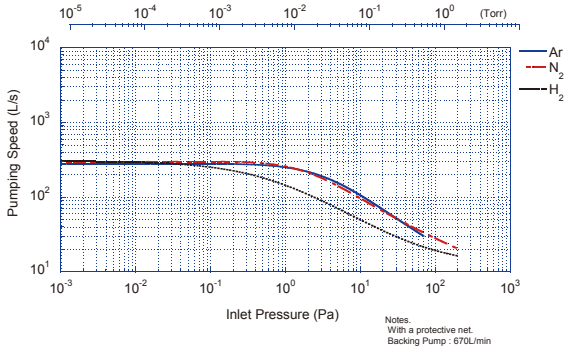
TMP-303LM and TMP-303LMC



Unit: mm

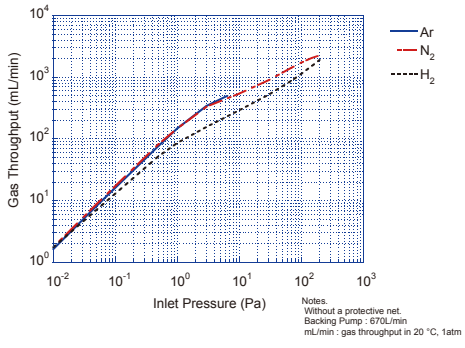
Inlet flange	A	B	C	øD	øE	n-ød	G	H
ICF152	279	204	231	ø152	ø130.3	16-ø8.4	20	227
VG100	272	197	224	ø185	ø160	8-ø12	12	220
ISO100B	279	204	231	ø165	ø145	8-ø9	12	227
ISO100C	279	204	231	ø130	—	—	12	227

Pumping Speed (TMP-303LM / LMC)



Notes.
With a protective net.
Backing Pump : 670L/min

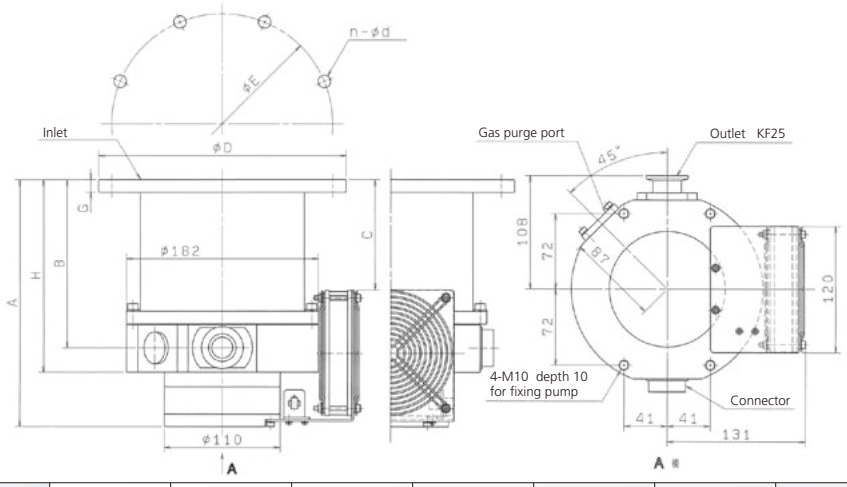
Gas Throughput (TMP-303LM / LMC)



Notes.
Without a protective net.
Backing Pump : 670L/min
mL/min : gas throughput in 20 °C, 1atm

Dimensions and Pumping Performance

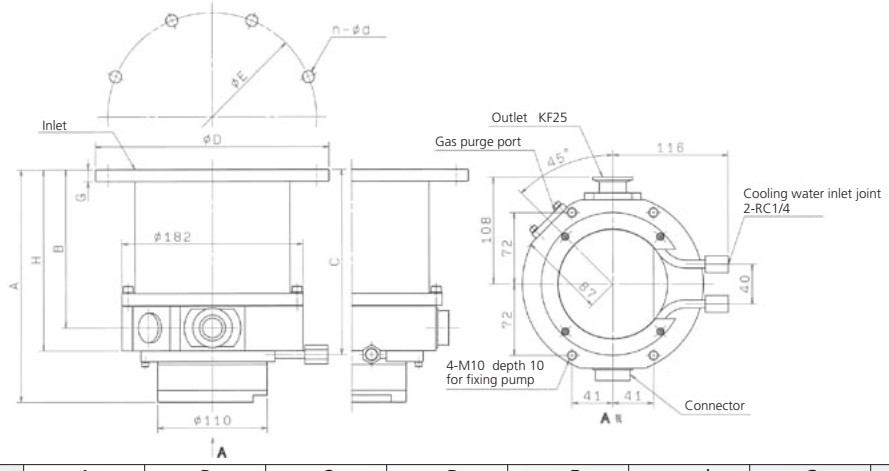
TMP-403M and TMP-403MC



Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	G	H
ICF203	238	163	108	ø203	ø181	20-ø8.4	22	186
VG150	235	160	105	ø235	ø210	8-ø12	12	183
ISO160B	241	166	111	ø225	ø200	8-ø11	16	189
ISO160C	241	166	111	ø180	—	—	12	189

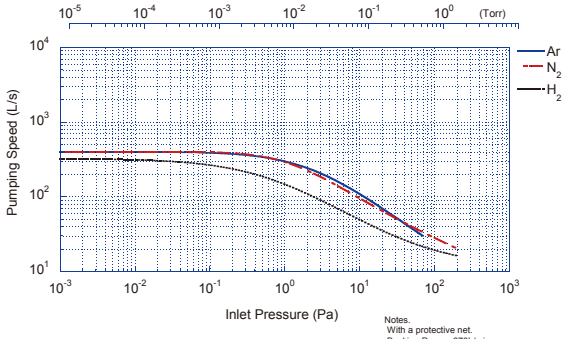
TMP-403LM and TMP-403LMC



Unit: mm

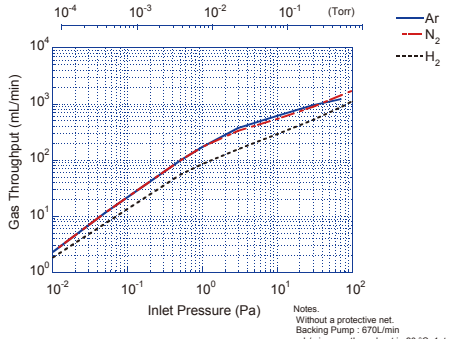
Inlet flange	A	B	C	øD	øE	n-ød	G	H
ICF203	238	163	190	ø203	ø181	20-ø8.4	22	186
VG150	235	160	187	ø235	ø210	8-ø12	12	183
ISO160B	241	166	193	ø225	ø200	8-ø11	16	189
ISO160C	241	166	193	ø180	—	—	12	189

Pumping Speed (TMP-403LM / LMC)



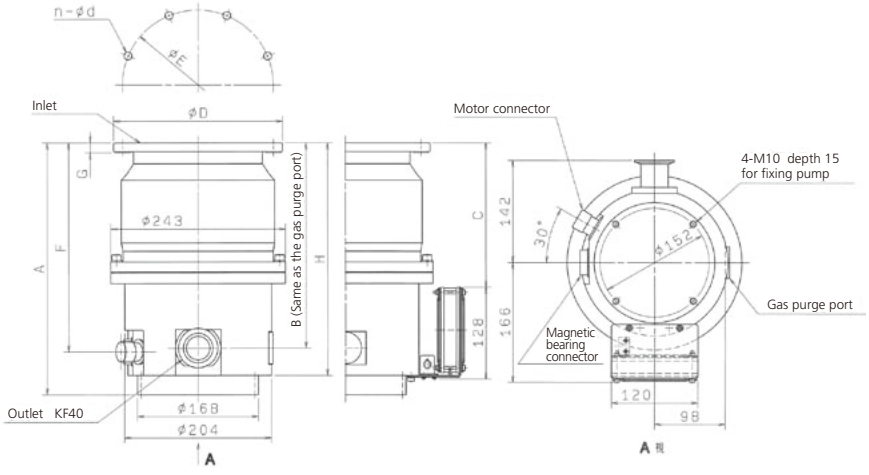
Notes.
With a protective net.
Backing Pump : 670L/min

Gas Throughput (TMP-403LM / LMC)



Notes.
Without a protective net.
Backing Pump : 670L/min
mL/min : gas throughput in 20 °C, 1atm

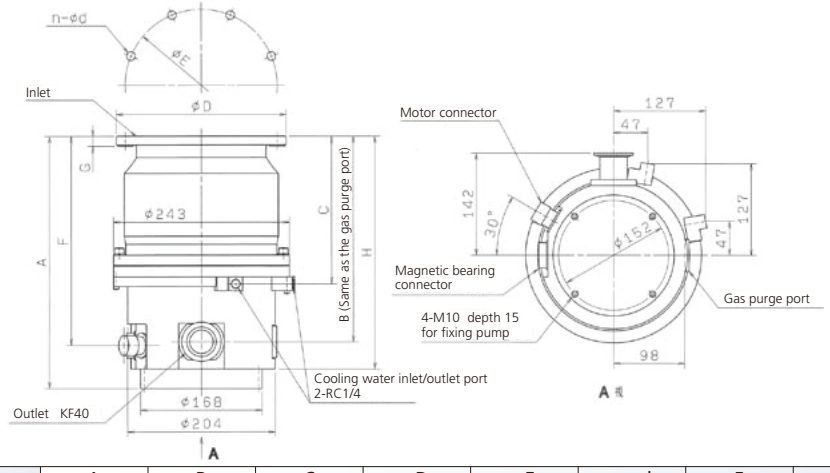
TMP-803M (0) and TMP-803MC (0)



Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G	H
ICF203	356	291	206	ø203	ø181	20-ø8.4	296	22	329
VG150	350	285	200	ø235	ø210	8-ø11	290	13.6	323
ISO160B	355	290	205	ø225	ø200	8-ø11	295	17.6	328

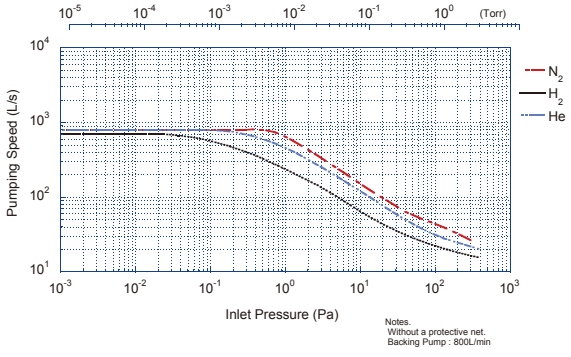
TMP-803LM (0) and TMP-803LMC (0)



Unit: mm

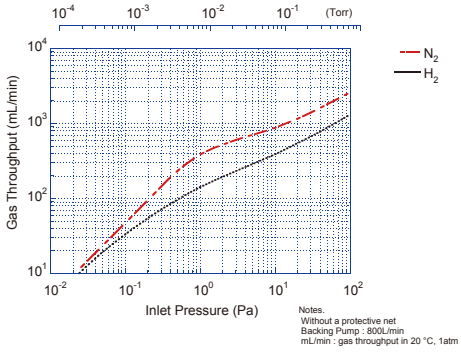
Inlet flange	A	B	C	øD	øE	n-ød	F	G	H
ICF203	356	291	211	ø203	ø181	20-ø8.4	296	22	329
VG150	350	285	205	ø235	ø210	8-ø11	290	13.6	323
ISO160B	355	290	210	ø225	ø200	8-ø11	295	17.6	328

Pumping Speed (TMP-803LM(0) / LMC(0))



Notes.
Without a protective net.
Backing Pump : 800L/min

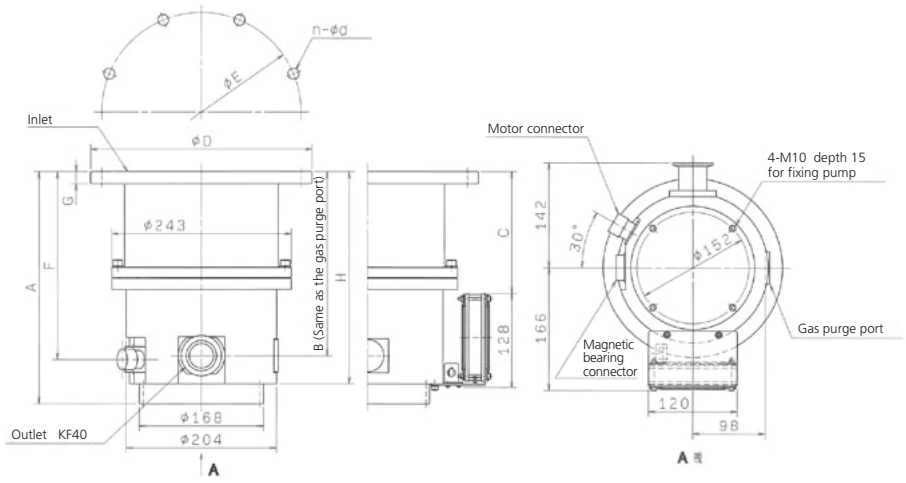
Gas Throughput (TMP-803LM(0) / LMC(0))



Notes.
Without a protective net
Backing Pump : 800L/min
mL/min : gas throughput in 20 °C, 1atm

Dimensions and Pumping Performance

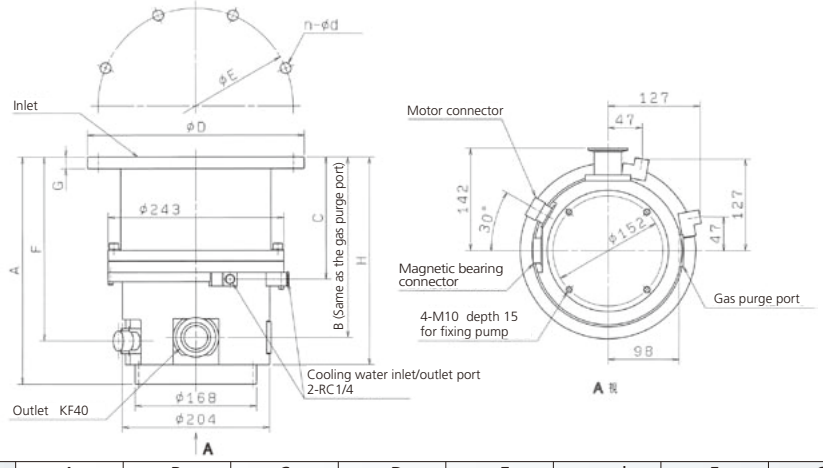
TMP-1003M and TMP-1003MC



Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G	H
ICF253	315	250	165	ø253	ø231.8	24-ø8.4	255	25	288
VG200	315	250	165	ø300	ø270	8-ø15	255	16	288
ISO200B	307	242	157	ø285	ø260	12-ø11	247	16	280

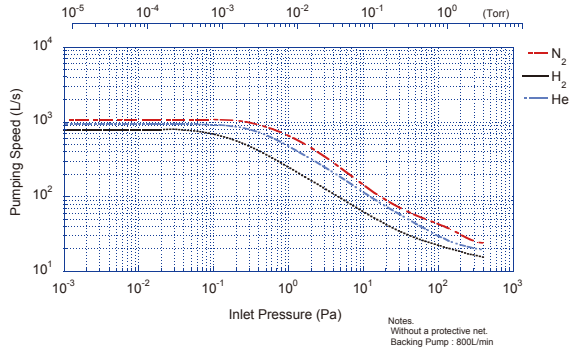
TMP-1003LM and TMP-1003LMC



Unit: mm

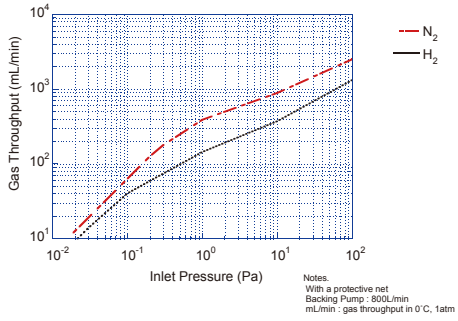
Inlet flange	A	B	C	øD	øE	n-ød	F	G	H
ICF253	315	250	170	ø253	ø231.8	24-ø8.4	255	25	288
VG200	315	250	170	ø300	ø270	8-ø15	255	16	288
ISO200B	307	242	162	ø285	ø260	12-ø11	247	16	280

Pumping Speed (TMP-1003LM / LMC)



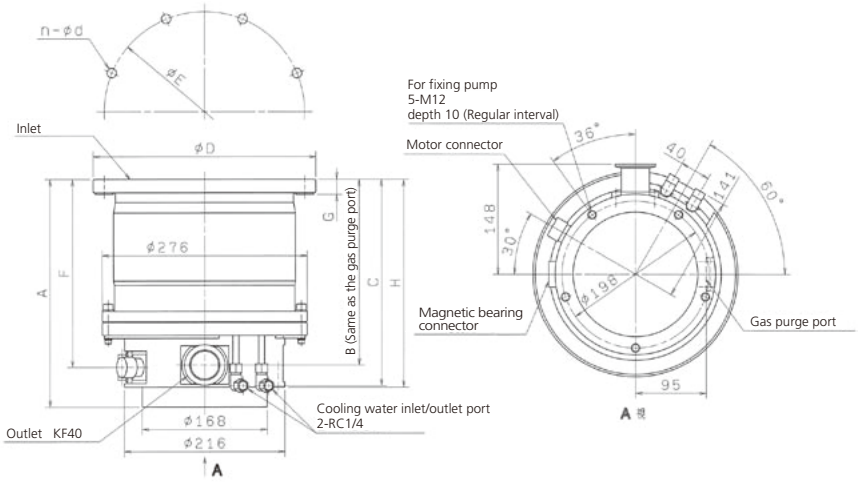
Notes.
Without a protective net.
Backing Pump : 800L/min

Gas Throughput (TMP-1003LM / LMC)



Notes.
With a protective net
Backing Pump : 800L/min
mL/min : gas throughput in 0˚C, 1atm

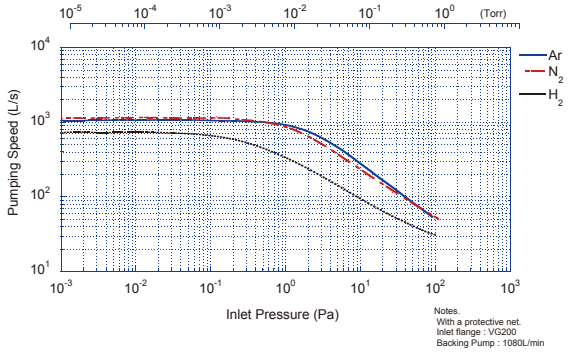
TMP-1303LM (0) and TMP-1303LMC (0)



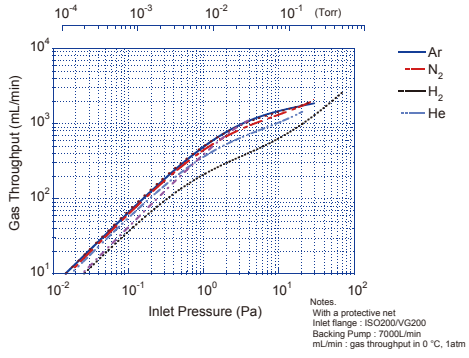
Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G	H
ICF253	347	290	318	ø253	ø231.8	24-ø8.4	293	25	320
VG200	307	250	278	ø300	ø270	8-ø13	253	20.5	280
ISO200B	312	255	283	ø285	ø260	12-ø11	258	17.6	285

Pumping Speed (TMP-1303LM(0) / LMC(0))

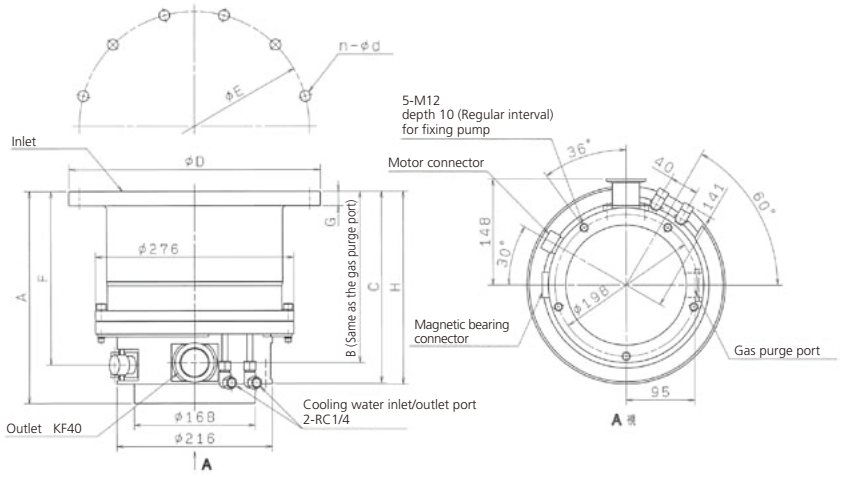


Gas Throughput (TMP-1303LM(0) / LMC(0))



Dimensions and Pumping Performance

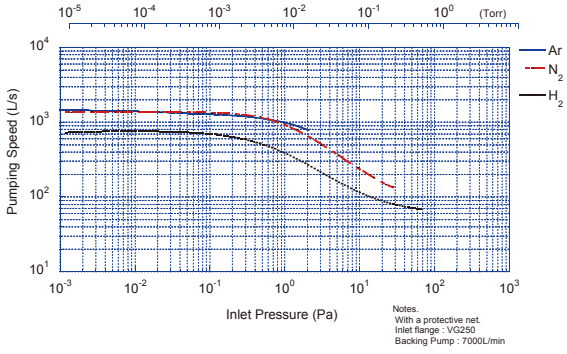
TMP-1503LM and TMP-1503LMC



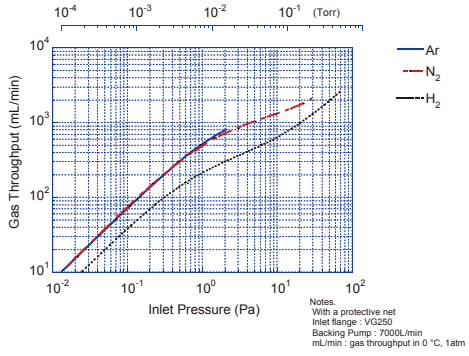
Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G	H
ICF305	296	239	267	ø305	ø284	32-ø8.4	242	28	269
VG250	296	239	267	ø350	ø320	12-ø15	242	20	269
ISO250B	304	247	275	ø335	ø310	12-ø11	250	17.6	277

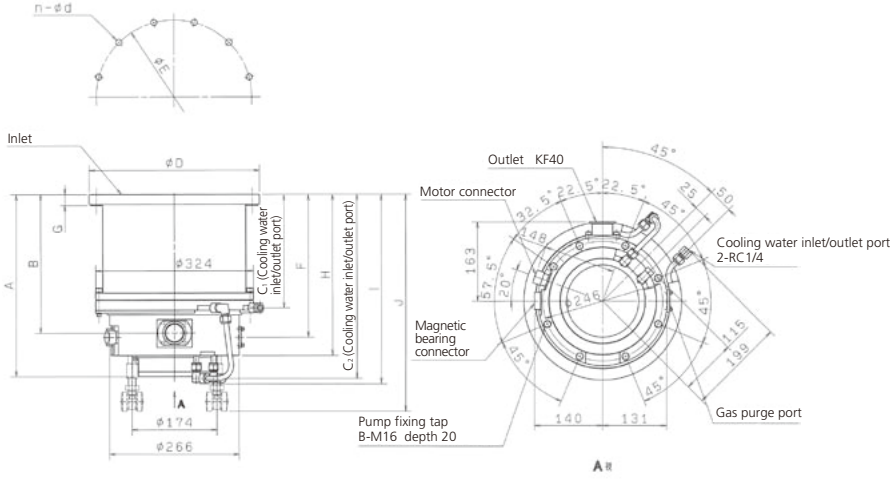
Pumping Speed (TMP-1503LM / LMC)



Gas Throughput (TMP-1503LM / LMC)



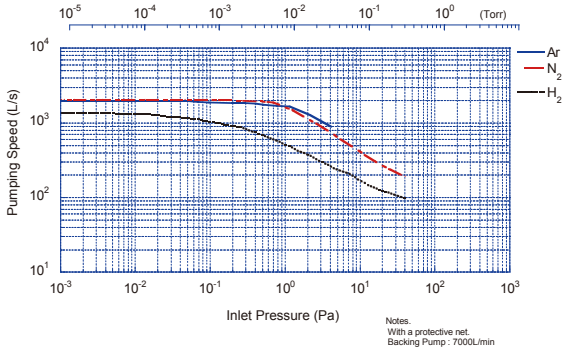
TMP-2203LM (0) and TMP-2203LMC (0)



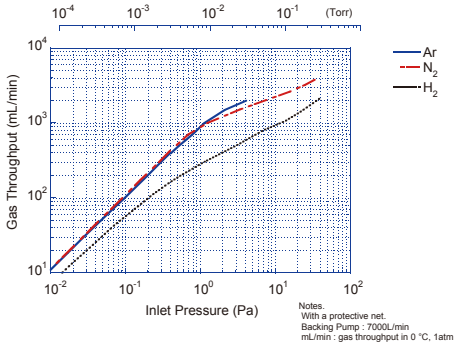
Unit: mm

Inlet flange	A	B	C_1	C_2	øD	øE	n-ød	F	G	H	I	J
ICF305	435	345	294	439	ø305	ø284	32-ø8.4	354	28	392	449	507
VG250	375	285	234	379	ø350	ø320	12-ø13	294	22.5	332	390	447
ISO250B	405	315	264	409	ø335	ø310	12-ø11	324	17.6	362	420	477

Pumping Speed (TMP-2203LM(0) / LMC(0))

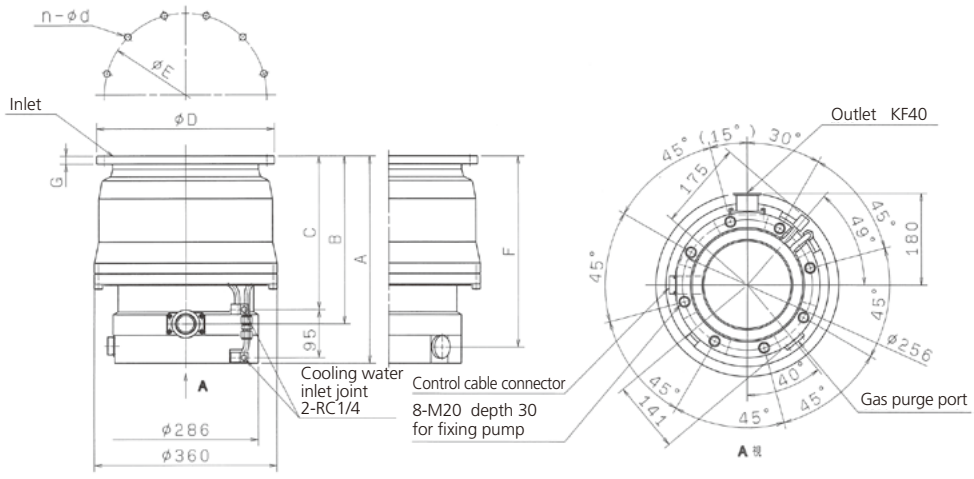


Gas Throughput (TMP-2203LM(0) / LMC(0))



Dimensions and Pumping Performance

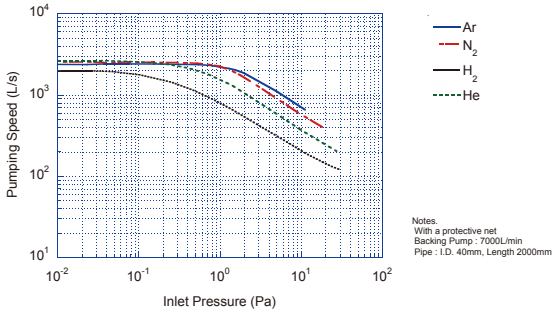
TMP-2804LM series (LMC / LMB / LMF)



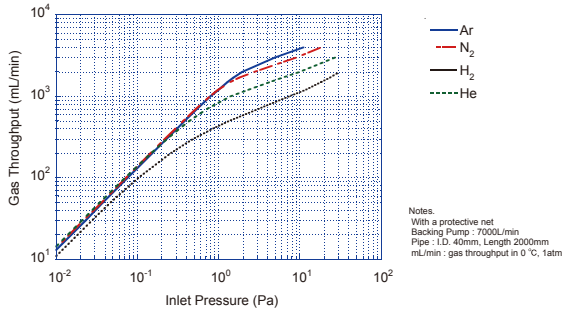
Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G
VG250	409	331	303	ø350	ø320	12-ø13	377	16
ISO250B	409	331	303	ø335	ø310	12-ø11	377	17.6

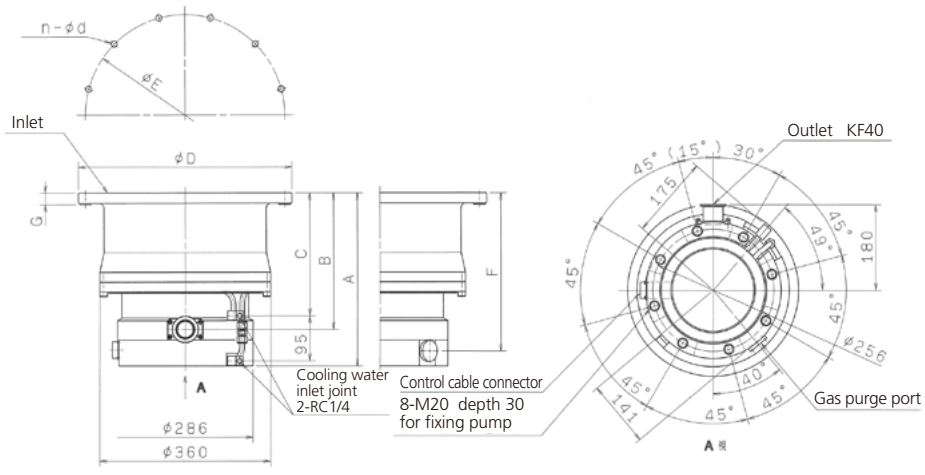
Pumping Speed (TMP-2804LM series)



Gas Throughput (TMP-2804LM series)



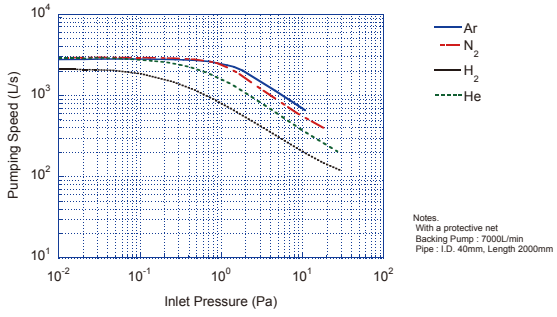
TMP-3304LM series (LMC / LMB / LMF)



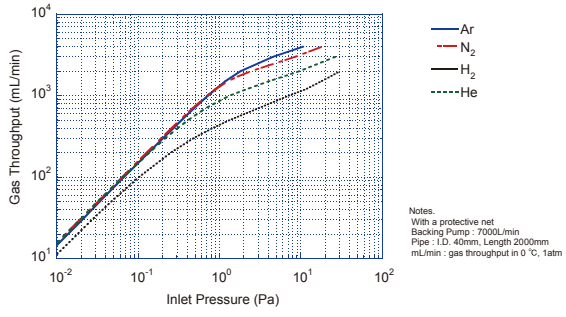
Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G
VG300	365	288	259	ø400	ø370	12-ø13	333	18.5
VG350	365	288	259	ø450	ø420	12-ø13	333	24.5
ISO320B	370	292	264	ø425	ø395	12-ø13	338	22.5

Pumping Speed (TMP-3304LM series)

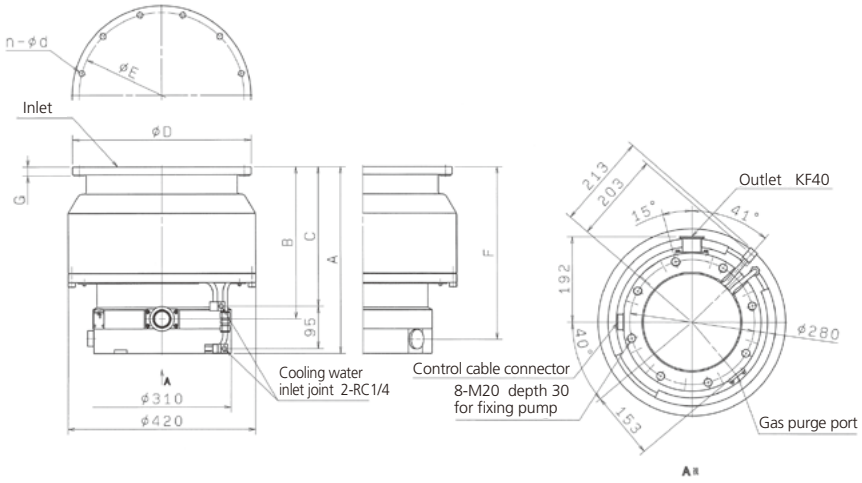


Gas Throughput (TMP-3304LM series)



Dimensions and Pumping Performance

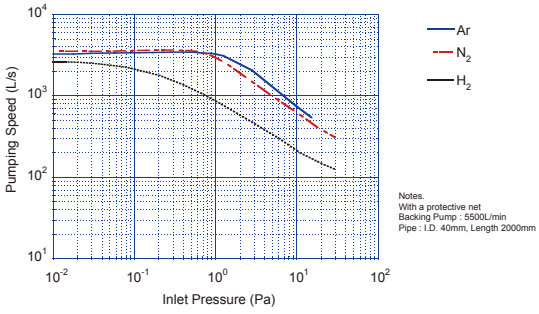
TMP-3804LMC and TMP-3804LMF



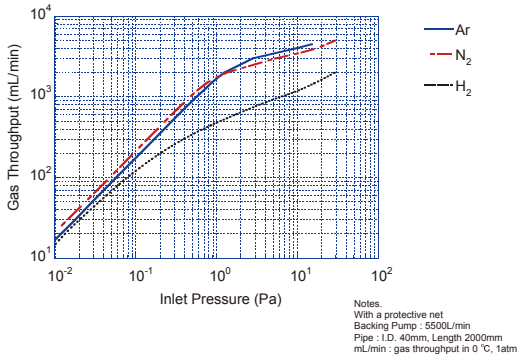
Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G
VG300	420	342	314	ø400	ø370	12-ø13	388	20.5
ISO320B	420	342	314	ø425	ø395	12-ø13	388	24.5

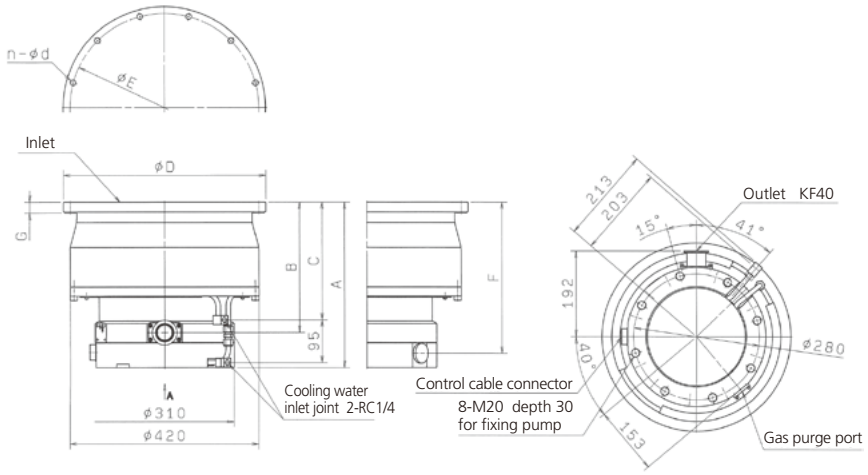
Pumping Speed (TMP-3804LMC / LMF)



Gas Throughput (TMP-3804LMC / LMF)



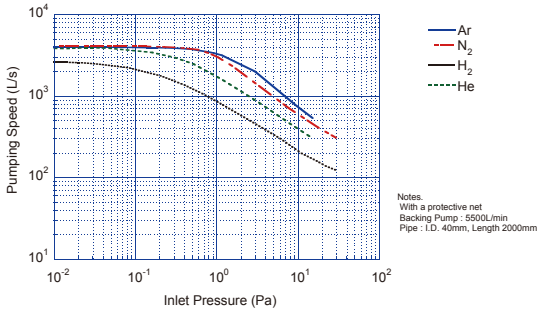
TMP-4304LMC and TMP-4304LMF



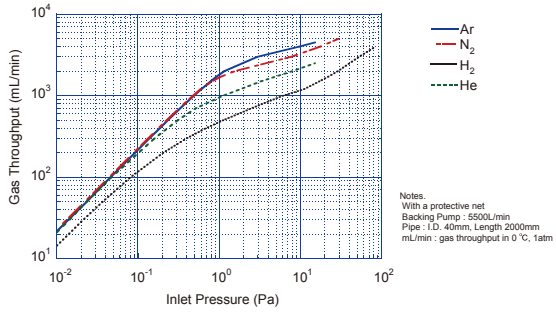
Unit: mm

Inlet flange	A	B	C	øD	øE	n-ød	F	G
VG350	370	292	264	ø450	ø420	12-ø13	338	24.5

Pumping Speed (TMP-4304LMC / LMF)

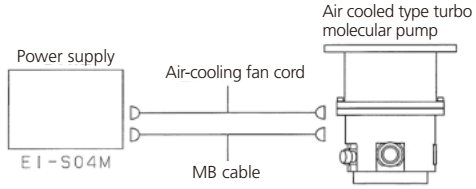


Gas Throughput (TMP-4304 LMC / LMF)



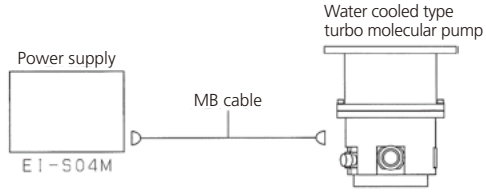
Parts List (For Pumps)

Turbo Molecular Pump, Air Cooled Type
[Pump: 03 series / Power Supply: EI-S04M]



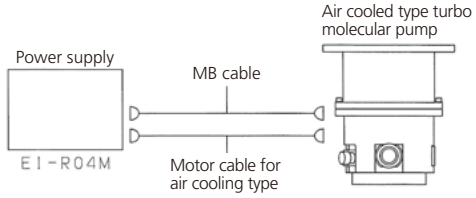
Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-203M	ICF152	262-81445-61		
	VG100	262-81445-62		
	ISO100B	262-81445-65		
	ISO100C	262-81445-63		
TMP-203MC	ICF152	262-81445-71		
	VG100	262-81445-72		
	ISO100B	262-81445-75		
	ISO100C	262-81445-73		
TMP-303M	ICF152	262-81435-61		
	VG100	262-81435-62		
	ISO100B	262-81435-65	• EI-S04M • EI-S04M(DN) • EI-S04M(232)	• MB cable • Air-cooling fan cord
	ISO100C	262-81435-63		
TMP-303MC	ICF152	262-81435-71		
	VG100	262-81435-72		
	ISO100B	262-81435-75		
	ISO100C	262-81435-73		
TMP-403M	ICF203	262-81455-61		
	VG150	262-81455-62		
	ISO160B	262-81455-65		
	ISO160C	262-81455-63		
TMP-403MC	ICF203	262-81455-71		
	VG150	262-81455-72		
	ISO160B	262-81455-75		
	ISO160C	262-81455-73		

Turbo Molecular Pump, Water Cooled Type
[Pump: 03 series / Power Supply: EI-S04M]



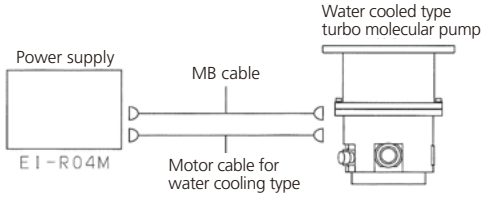
Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-203LM	ICF152	262-81445-41		
	VG100	262-81445-42		
	ISO100B	262-81445-45		
	ISO100C	262-81445-43		
TMP-203LMC	ICF152	262-81445-51		
	VG100	262-81445-52		
	ISO100B	262-81445-55		
	ISO100C	262-81445-53		
TMP-303LM	ICF152	262-81435-41		
	VG100	262-81435-42		
	ISO100B	262-81435-45	• EI-S04M • EI-S04M(DN) • EI-S04M(232)	• MB cable
	ISO100C	262-81435-43		
TMP-303LMC	ICF152	262-81435-51		
	VG100	262-81435-52		
	ISO100B	262-81435-55		
	ISO100C	262-81435-53		
TMP-403LM	ICF203	262-81455-41		
	VG150	262-81455-42		
	ISO160B	262-81455-45		
	ISO160C	262-81455-43		
TMP-403LMC	ICF203	262-81455-51		
	VG150	262-81455-52		
	ISO160B	262-81455-55		
	ISO160C	262-81455-53		

Turbo Molecular Pump, Air Cooled Type
[Pump: 03 series / Power Supply: EI-R04M]



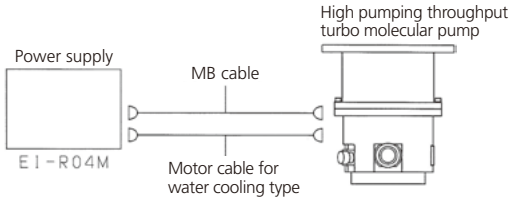
Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-803M(0)	ICF203	263-18282-61		
	VG150	263-18282-62		
	ISO160B	263-18282-65		
TMP-803MC(0)	ICF203	263-18282-71		
	VG150	263-18282-72		
	ISO160B	263-18282-75	• EI-R04M • EI-R04M(DN) • EI-R04M(232)	• MB cable • Motor cable for air cooling type
TMP-1003M	ICF253	262-81410-61		
	VG200	262-81410-62		
	ISO200B	262-81410-65		
TMP-1003MC	ICF253	262-81410-71		
	VG200	262-81410-72		
	ISO200B	262-81410-75		

Turbo Molecular Pump, Water Cooled Type
[Pump: 03 series / Power Supply: EI-R04M]



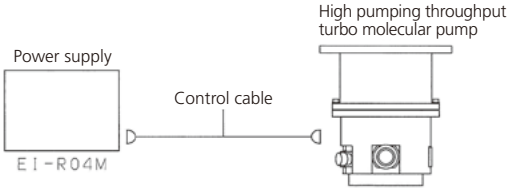
Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-803LM(0)	ICF203	263-18282-41		
	VG150	263-18282-42		
	ISO160B	263-18282-45		
TMP-803LMC(0)	ICF203	263-18282-51		
	VG150	263-18282-52		
	ISO160B	263-18282-55	• EI-R04M • EI-R04M(DN) • EI-R04M(232)	• MB cable • Motor cable for water cooling type
TMP-1003LM	ICF253	262-81410-41		
	VG200	262-81410-42		
	ISO200B	262-81410-45		
TMP-1003LMC	ICF253	262-81410-51		
	VG200	262-81410-52		
	ISO200B	262-81410-55		

High Pumping Throughput Turbo Molecular Pump
[Pump: 03 series / Power Supply: EI-R04M]



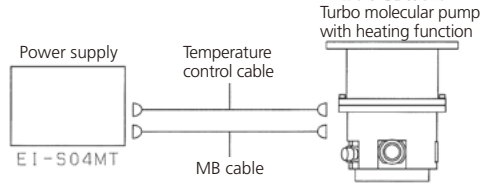
Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-1303LM(0)	ICF253	263-18283-41		
	VG200	263-18283-42		
	ISO200B	263-18283-43		
TMP-1303LMC(0)	ICF253	263-18283-51		
	VG200	263-18283-52		
	ISO200B	263-18283-53		
TMP-1503LM	ICF305	262-78773-41		
	VG250	262-78773-42	• EI-R04M	• MB cable
	ISO250B	262-78773-43	• EI-R04M(DN)	• Motor cable for
TMP-1503LMC	ICF305	262-78773-51	• EI-R04M(232)	water cooling
	VG250	262-78773-52		type
	ISO250B	262-78773-53		
TMP-2203LM(0)	ICF305	263-18286-01		
	VG250	263-18286-02		
	ISO250B	263-18286-03		
TMP-2203LMC(0)	ICF305	263-18286-11		
	VG250	263-18286-12		
	ISO250B	263-18286-13		

High Pumping Throughput Turbo Molecular Pump
[Pump: 04 series / Power Supply: EI-R04M]



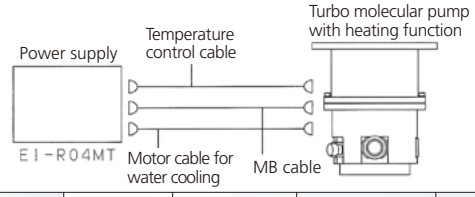
Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-2804LM	VG250	263-18168-02		
	ISO250B	263-18168-03		
TMP-2804LMC	VG250	263-18168-12		
	ISO250B	263-18168-13		
TMP-2804LMB	VG250	263-18168-42		
	ISO250B	263-18168-43		
TMP-2804LMF	VG250	263-18172-42		
	ISO250B	263-18172-43		
TMP-3304LM	VG300	263-18034-07		
	VG350	263-18034-09		
	ISO320B	263-18034-08		
TMP-3304LMC	VG300	263-18034-17	• EI-R04M	
	VG350	263-18034-19	• EI-R04M(DN)	• Control cable
	ISO320B	263-18034-18	• EI-R04M(232)	
TMP-3304LMB	VG300	263-18034-47		
	VG350	263-18034-49		
	ISO320B	263-18034-48		
TMP-3304LMF	VG300	263-18050-47		
	VG350	263-18050-49		
	ISO320B	263-18050-48		
TMP-3804LMC	VG300	263-18110-17		
	ISO320B	263-18110-18		
TMP-3804LMF	VG300	263-18114-47		
	ISO320B	263-18114-48		
TMP-4304LMC	VG350	263-18110-19		
TMP-4304LMF	VG350	263-18114-49		

Turbo Molecular Pump with Heating Function
[Pump: 03 series / Power Supply: EI-S04MT]



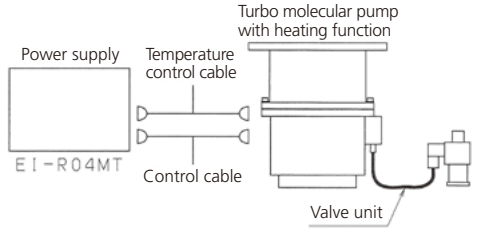
Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-303LMTC	ICF152	262-78738-41		
	VG100	262-78738-42	• EI-S04MT,SP55	
	ISO100B	262-78738-45	• EI-S04MT,SP65	
	ISO100C	262-78738-43	• EI-S04MT(DN),SP55	• MB cable
TMP-403LMTC	ICF203	262-78748-41	• EI-S04MT(DN),SP65	• Temperature
	VG150	262-78748-42	• EI-S04MT(232),SP55	control cable
	ISO160B	262-78748-45	• EI-S04MT(232),SP65	
	ISO160C	262-78748-43		

Turbo Molecular Pump with Heating Function
[Pump: 03 series / Power Supply: EI-R04MT]



Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-803LMTC(0)	ICF203	263-18287-41		
	VG150	263-18287-42	• EI-R04MT,SP55	
	ISO160B	263-18287-43	• EI-R04MT,SP65	
TMP-1003LMTC	ICF253	262-78735-41	• EI-R04MT(DN),SP55	• MB cable
	VG200	262-78735-42	• EI-R04MT(DN),SP65	• Motor cable for
	ISO200B	262-78735-43	• EI-R04MT(232),SP55	water cooling
TMP-1303LMTC(0)	ICF253	263-18288-41	• EI-R04MT(232),SP65	type
	VG200	263-18288-42	[The TMP-2203LMTC (0)	• Temperature
	ISO200B	263-18288-43	can also be used at 75 °C.]	control cable
TMP-2203LMTC(0)	ICF305	263-18290-41	• EI-R04MT,SP75	
	VG250	263-18290-42	• EI-R04MT(DN),SP75	
	ISO250B	263-18290-43	• EI-R04MT(232),SP75	

Turbo Molecular Pump with Heating Function
[Pump: 04 series / Power Supply: EI-R04MT]



Pump Model	Inlet Flange	Part Number	Applicable Power Supply	Cable
TMP-2804LMTC	VG250	263-18561-12		
	ISO250B	263-18561-13		
TMP-2804LMTB	VG250	263-18561-42		
	ISO250B	263-18561-43		
TMP-2804LMTF	VG250	263-18563-42		
	ISO250B	263-18563-43		
TMP-3304LMTC	VG300	263-18565-17		
	VG350	263-18565-19	• EI-R04MT,SP65	
	ISO320B	263-18565-18	• EI-R04MT,SP75	
TMP-3304LMTB	VG300	263-18565-47	• EI-R04MT(DN),SP65	• Control cable
	VG350	263-18565-49	• EI-R04MT(DN),SP75	• Temperature
	ISO320B	263-18565-48	• EI-R04MT(232),SP65	control cable
TMP-3304LMTF	VG300	263-18567-47	• EI-R04MT(232),SP75	
	VG350	263-18567-49		
	ISO320B	263-18567-48		
TMP-3804LMTC	VG300	263-18569-17		
	ISO320B	263-18569-18		
TMP-3804LMTF	VG300	263-18571-47		
	ISO320B	263-18571-48		
TMP-4304LMTC	VG350	263-18569-19		
TMP-4304LMTF	VG350	263-18571-49		

Parts List for Power Supplies and Cables

Power Supply

Description	Part Number	Specification
EI-S04M	263-18044-01	AC100V
	263-18044-02	AC200V
EI-S04M (DN)	263-18156-01	DeviceNet Communication, 100 V AC
	263-18156-02	DeviceNet Communication, 200 V AC
EI-S04M (232)	263-18152-01	RS-232C Communication, 100 V AC
	263-18152-02	RS-232C Communication, 200 V AC
EI-S04MT (SP55)	263-18045-05	Default: 55 ˚C, 200 V AC
EI-S04MT (SP65)	263-18045-06	Default: 65 ˚C, 200 V AC
EI-S04MT (DN),SP55	263-18157-05	DeviceNet Communication, Default: 55 ˚C, 200 V AC
EI-S04MT (DN),SP65	263-18157-06	DeviceNet Communication, Default: 65 ˚C, 200 V AC
EI-S04MT (232),SP55	263-18153-05	RS-232C Communication, Default: 55 ˚C, 200 V AC
EI-S04MT (232),SP65	263-18153-06	RS-232C Communication, Default: 65 ˚C, 200 V AC
EI-R04M	262-78982-02	
EI-R04M (DN)	263-18047-02	DeviceNet Communication
EI-R04M (232)	262-78990-02	RS-232C Communication
EI-R04MT (SP55)	262-78983-05	Default: 55 ˚C
EI-R04MT (SP65)	262-78983-06	Default: 65 ˚C
EI-R04MT (SP75)	262-78983-07	Default: 75 ˚C
EI-R04MT (DN),SP55	263-18048-05	DeviceNet Communication, Default: 55 ˚C
EI-R04MT (DN),SP65	263-18048-06	DeviceNet Communication, Default: 65 ˚C
EI-R04MT (DN),SP75	263-18048-07	DeviceNet Communication, Default: 75 ˚C
EI-R04MT (232),SP55	262-78991-05	RS-232C Communication, Default: 55 ˚C
EI-R04MT (232),SP65	262-78991-06	RS-232C Communication, Default: 65 ˚C
EI-R04MT (232),SP75	262-78991-07	RS-232C Communication, Default: 75 ˚C

MB Cable (Pump 03 series)

Description	Part Number
MB Cable, S-S 3MT	263-16200-03
MB Cable, S-S 5MT	263-16200-05
MB Cable, S-S 7MT	263-16200-07
MB Cable, S-S 10MT	263-16200-10
MB Cable, S-S 15MT	263-16200-15
MB Cable, S-S 20MT	263-16200-20
MB Cable, S-S 30MT	263-16200-30
MB Cable, L-S 3MT	263-16201-03
MB Cable, L-S 5MT	263-16201-05
MB Cable, L-S 7MT	263-16201-07
MB Cable, L-S 10MT	263-16201-10
MB Cable, L-S 15MT	263-16201-15
MB Cable, L-S 20MT	263-16201-20
MB Cable, L-S 30MT	263-16201-30

Motor Cable for Air Cooling Type (Pump 03 series)

Description	Part Number
Motor Cable, S-S 3MT	262-76410-03
Motor Cable, S-S 5MT	262-76410-05
Motor Cable, S-S 7MT	262-76410-07
Motor Cable, S-S 10MT	262-76410-10
Motor Cable, S-S 15MT	262-76410-15
Motor Cable, S-S 20MT	262-76410-20
Motor Cable, S-S 30MT	262-76410-30
Motor Cable, L-S 3MT	263-10571-03
Motor Cable, L-S 5MT	263-10571-05
Motor Cable, L-S 7MT	263-10571-07
Motor Cable, L-S 10MT	263-10571-10
Motor Cable, L-S 15MT	263-10571-15
Motor Cable, L-S 20MT	263-10571-20
Motor Cable, L-S 30MT	263-10571-30

Motor Cable for Water Cooling Type (Pump 03 series)

Description	Part Number
Motor Cable, S-S 3MT	262-76409-03
Motor Cable, S-S 5MT	262-76409-05
Motor Cable, S-S 7MT	262-76409-07
Motor Cable, S-S 10MT	262-76409-10
Motor Cable, S-S 15MT	262-76409-15
Motor Cable, S-S 20MT	262-76409-20
Motor Cable, S-S 30MT	262-76409-30
Motor Cable, L-S 3MT	262-76411-03
Motor Cable, L-S 5MT	262-76411-05
Motor Cable, L-S 7MT	262-76411-07
Motor Cable, L-S 10MT	262-76411-10
Motor Cable, L-S 15MT	262-76411-15
Motor Cable, L-S 20MT	262-76411-20
Motor Cable, L-S 30MT	262-76411-30

Control Cable (Pump 04 series)

Description	Part Number
Control Cable, S-S 3MT	263-16875-03
Control Cable, S-S 5MT	263-16875-05
Control Cable, S-S 7MT	263-16875-07
Control Cable, S-S 10MT	263-16875-10
Control Cable, S-S 15MT	263-16875-15
Control Cable, S-S 20MT	263-16875-20
Control Cable, S-S 30MT	263-16875-30
Control Cable, L-S 3MT	263-16877-03
Control Cable, L-S 5MT	263-16877-05
Control Cable, L-S 7MT	263-16877-07
Control Cable, L-S 10MT	263-16877-10
Control Cable, L-S 15MT	263-16877-15
Control Cable, L-S 20MT	263-16877-20
Control Cable, L-S 30MT	263-16877-30

Temperature Control Cable

Description	Part Number
Temperature Control Cable, S-S 3MT	263-14091-03
Temperature Control Cable, S-S 5MT	263-14091-05
Temperature Control Cable, S-S 7MT	263-14091-07
Temperature Control Cable, S-S 10MT	263-14091-10
Temperature Control Cable, S-S 15MT	263-14091-15
Temperature Control Cable, S-S 20MT	263-14091-20
Temperature Control Cable, S-S 30MT	263-14091-30

Air-Cooling Fan Cord

Description	Part Number
Fan Cord, S-S 3MT	262-75230-03
Fan Cord, S-S 5MT	262-75230-05
Fan Cord, S-S 7MT	262-75230-07
Fan Cord, S-S 10MT	262-75230-10
Fan Cord, S-S 15MT	262-75230-15
Fan Cord, S-S 20MT	262-75230-20
Fan Cord, S-S 30MT	262-75230-30

Cable Connector Shape

- S-S: double ended straight connector
- L-S: Pump - downward pointing L-shaped connector
  Power supply - straight connector

Turbo Molecular Pump with Heating Function

[Pump：04series] Valve Unit

Description	Part Number
VALVE UNIT FWG, 3MT	263-42676-03
VALVE UNIT FWG, 5MT	263-42676-05
VALVE UNIT FWG, 7MT	263-42676-07
VALVE UNIT FWG, 10MT	263-42676-10

Options

Description	Part Number	Remarks
Rack fitting B, large, D03M	263-14117	When mount fitting B is used with the old EI-03M / MD series power supply (over 800L/s), this panel is for conversion to the same rack mounting dimensions.
Rack fitting B, small, D03M	263-14457	When mount fitting B is used with the old EI-203 / 303M power supply, this panel is for conversion to the same rack mounting dimensions.
Rack fitting, EIA1, small, D03M	263-14462	When rack mount fitting C is used with the old EI-203 / 303M power supply, this panel set is for conversion to the same rack mounting dimensions.
Rack fitting, EIA2, small, D03M	263-14468	When rack mount fitting A is used with the old EI-203 / 303M power supply, this panel set is for conversion to the same rack mounting dimensions.
Adapter 2, RS-485-CABLE	263-14417-03	This cable is for converting the signal from the RS-485 port on the rear panel to an RS-232C signal.
AC Conversion Cable, D303M	263-14482	This conversion cable enables the power cable for the old EI-203 / 303M power supply to be connected to the EI-D203 / D303M and EI-S04M. (Note) If this product is used, the system will no longer be CE mark compliant.
Monitor Software EI Monitor for Windows	263-13907	In common with the conventional EI-DXX03M/MT power supply.

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- Electron Beam Sources
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