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Magnetically Levitated Turbo-Molecular-Pump

Wide range models TMP-203/303M/MC/LM/LMC

Main Features

1. The Power supplies, which use no battery, are the first half rack size units for turbo molecular pumps of magnetically levitated type.
2. No maintenance is required for the power supply.
3. The pump main body and the power supply are both compact and lightweight.
4. An RS-232C serial interface is supplied as standard.
5. No readjustment is required after the replacement of the cables and pump main bodies.
6. The self diagnostic functions ensure easy location of faulty part(s).
7. The cable is available in any length between 3 meters and 30 meters.

Rotor blade of one-piece design

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Specifications

Turbomolecular Pump	TMP-203 LM	TMP-203 LMC	TMP-303 LM	TMP-303 LMC
Ult. pressure after bake out (Torr)	10^{-10*}	10^{-8}	10^{-10*}	10^{-8}
Max. inlet pressure (Torr)		1.5		1.5
Max. outlet pressure (Torr)		4		4
Pumping Speed** (L/s):				
N2		190		320
He		140		340
H2		120		320
Compression Ratio:				
N2		1×10^9		1×10^9
He		6×10^4		8×10^4
H2		4×10^3		1×10^4
Rotational speed (rpm.)		50,000		45,000
Vibration level [mm/s (μm)]		<0.01 (0.052)		<0.01 (0.047)
Startup time (min.)		5		5
Weight (kg.)		9		14
Recom. purge gas flow rate (sccm.)		20-30		20-30
Allowable magnetic flux density:				
Radial directions (mT)		3		3
Axial directions (mT)		15		15
Cooling water flow rate (L/min.)		1-3		1-3
Cooling water pressure (psi.)		30-75		30-75
Cooling water temperature (ºC)		5-30		5-30
Power supply model		EL-203M		EL-303M

*This measurement occurs with a metal gasket used at the inlet flange.
With an o-ring, the ultimate pressure will equal 10^{-9} Torr.
** This pumping speed occurs when no protective net is used.

Note: models LM=standard; models LMC=corrosive-resistant.

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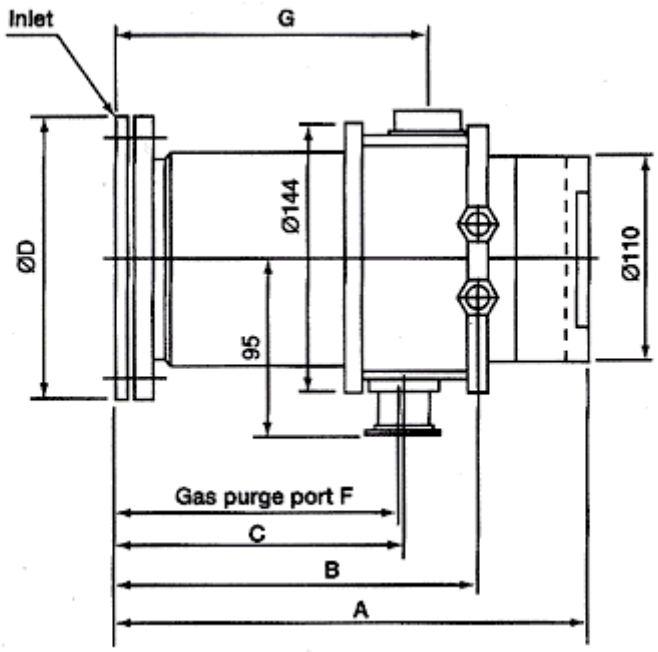
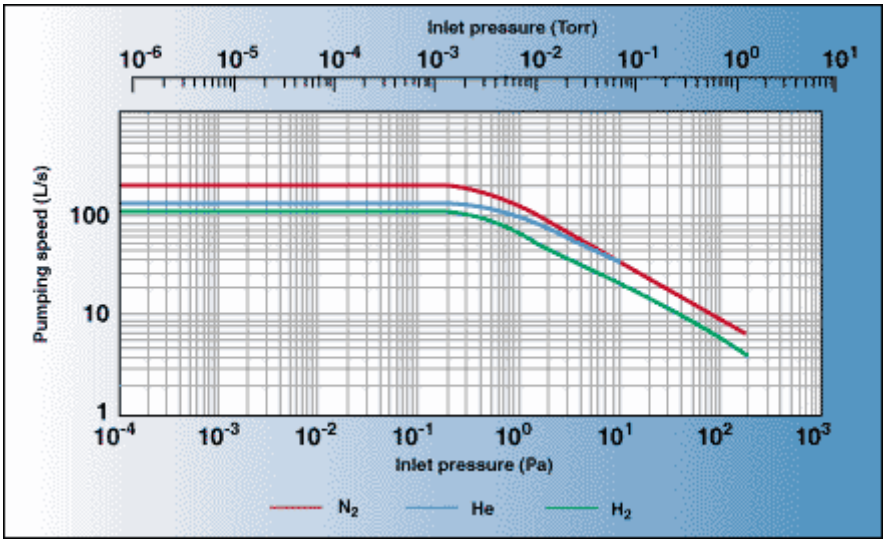
TMP-203M/MC/LM/LMC (Dimensions)

Shimadzu TMP-203LM & TMP-203LMC								
Inlet Flange	A	B	C	ØD	ØE	n-ØD	F	G
6" CF	252	192	154	152	130.2	16-Ø8.4	151	166
ISO 100	239	179	141	130	-	-	138	153

(Dimensions in millimeters, except CF flange size)





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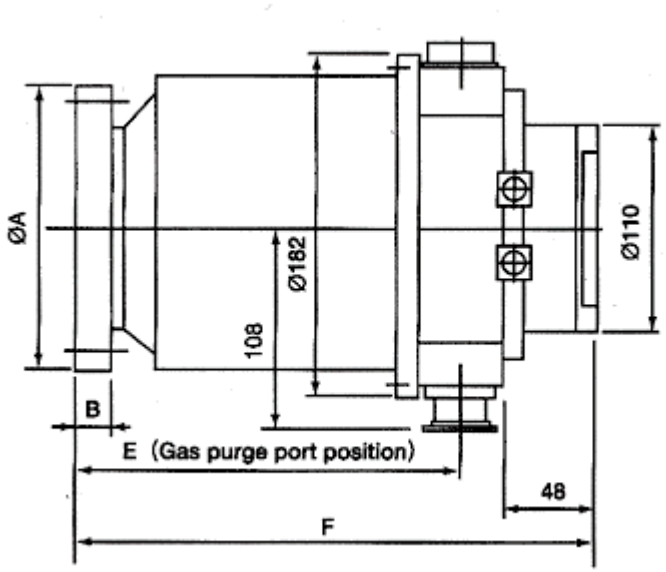
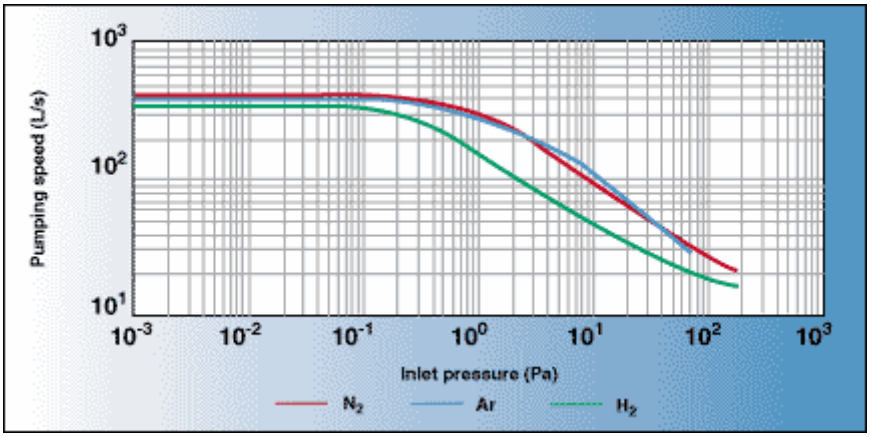
TMP-303M/MC/LM/LMC (Dimensions)

TMP-303LM & TMP-303LMC						
Inlet Flange	ØA	B	n-ØC	ØD	E	F
6" CF	Ø152	20	16-Ø8.4	Ø130.1	204	279
ISO 100	Ø130	12	-	-	204	279

(Dimensions in millimeters, except CF flange size)



Pumping Speed Curve TMP-303



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Specifications: PWR Supply

	EL-203	EL-303/403
Rated frequency (Hz)	833	750
Power source (VAC)	100-120 or 200-240	100-115 or 200-240
Maximum power consumption (kVA)	0.5	0.75
Weight (kg)	12	12

Rotational speed setting function
Optimum pumping performance for process. The power supply can set pump rpm at the range of 25-100% and tune pumping performance. The rpm setting is put to use tuning pressure of a vacuum chamber. It takes maximum 10 minutes to reach setting speed. Conductance valves may be cut if the pump is used at a stable condition.

Tuning-free
The turbomolecular pump main bodies, connecting cables and power supplies are all inter-changeable. No adjustment is required after exchange of any component. The connecting cables are available in any length from 3 meters to 30 meters.

Trouble countermeasures
Complete safety against power failure. During a power failure, the magnetic levitation is automatically maintained by regenerative braking. The touchdown bearings are designed to withstand over 260 power failure events.

Network
This power supply unit equipped with the serial communication ports of RS-232C and RS-485 conformity facilitates start/stop of the pump, monitoring the operational status, and reading out of operational log. Maximum 32 pumps can be monitored by a PC.