

DRY VACUUM PUMP TS/TE Series



UNOZAWA DRY VACUUM PUMP

The UNOZAWA Dry Vacuum Pump model "TS" is of multi-stage Roots type and developed by incorporating our vast experience and technology know-how. The dry vacuum pump uses no lubricating oil or sealing water in the gas passage, thus ensuring the highest of cleanliness. Also, because of the following special features, it is most suitable for all process which require high clean vacuum. Using a mechanical booster, it is easy to obtain a larger pumping speed and a higher vacuum level. This combination pump set with booster and dry vacuum pump is our "TE" series.

FEATURES

High reliability

As the dry vacuum pump is of multi-stage roots design using gas-cool system, the compression in the pump takes place gradually in each stage. This compression heat is removed by the cooling water in each stage.

Clean vacuum

No sealing fluids and No dust generation in pump. The most suitable backing pumps for turbo-molecular pump and cryo-pump used in high vacuum equipment.

Wide operation range

The pump can be operated within a wide range from ultimate pressure to atmospheric pressure.

Low vibration & Low noise

The perfectly balanced three-lobe rotors ensure less vibration and low noise, and it contributes to a smooth operation.

Leak tight construction

Canned motor is used for the pump thus ensuring a leak-tight pump construction.

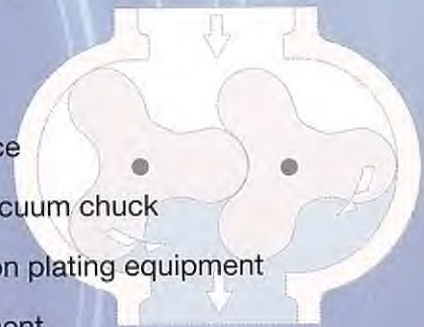
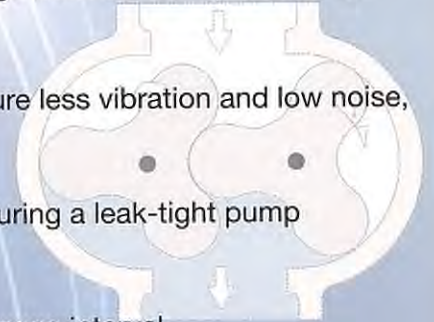
Long maintenance interval

Non contact in gas passage prolong maintenance interval.

APPLICATIONS

- Heat treatment furnace, Vacuum furnace
- Load-lock, Device handling system, Vacuum chuck
- PVD Process, Sputtering equipment, Ion plating equipment
- Plasma cleaner, Plasma ashing equipment
- Silicon crystal pulling
- Gas recovery devices
- Vacuum drying, De-aerator(water based)
- Vacuum packaging machine, Vacuum forming machine

TS/TE series dry vacuum pump is suitable for use on clean processes.
Do not use for explosive, flammable, toxic or corrosive gas – consult factory first



TECHNICAL SPECIFICATION

PUMP MODEL		TS100		TS220		TS300		TS600		TE400		TE600		TE1200		TE2400		TE4200			
		50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz		
Basic Construction		Multi-Stage Roots Type Dry Vacuum Pump								Combination Pump Set with Dry Vacuum Pump and Mechanical Booster											
Mechanical Booster		-		-		-		-		TFC06		TFC10		TFC20		TFC40		TFC80			
Dry Vacuum Pump		TS100		TS220		TS300		TS600		TS100		TS100		TS220		TS600		TS600			
Technical Data	Max. pumping speed	$m^3 \cdot h^{-1}$	96	114	190	230	270	330	600	372	465	1150	1980	3600							
		c.f.m	57	67	112	135	159	194	353	219	274	677	1165	2119							
	Ultimate Vacuum	Pa	6	3	6	3	6	3	10	0.5	0.5	0.5	0.5	0.5							
		mbar	0.06	0.03	0.06	0.03	0.06	0.03	0.1	0.005	0.005	0.005	0.005	0.005							
	Max. back-pressure	bar	1.1		1.15		1.15		1.15	1.1		1.1		1.15		1.15		1.15			
Ambient temperature range	$^{\circ}C$	5~40																			
Suction connection		NW50		ISO63		ISO63		ISO80		ISO63		ISO80		ISO160		ISO160		ISO250			
Discharge connection		NW40		NW40		NW50		NW50		NW40		NW40		NW50		NW50		NW50			
Lubricating oil capacity		lit.		1		2		2		2		2		4		4		4			
Cooling Water	Capacity	$L \cdot m^{-1}$		>4		>4		>6		>8		>4		>4		>6		>10			
	Max. inlet temperature	$^{\circ}C$		30																	
	Max. inlet pressure	bar		5																	
	Inlet / Outlet connection	Rc		3/8		3/8		1/2		1/2		3/8		3/8		1/2		1/2		1/2	
Motor Rating	Motor Power (Mech. Booster)	kW		-		-		-		-		1.5		2.2		3.7		7.5		10	
	Motor Power (Dry Pump)	kW		3.7		5.5		7.5		13		3.7		3.7		5.5		13		13	
Electrical supply	Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz		
	V	200-240		200-240		200-240		200-240		200-240		200-240		200-240		200-240		200-240		200-240	
		380-415		440-480		380-415		440-480		380-415		440-480		380-415		440-480		380-415		440-480	

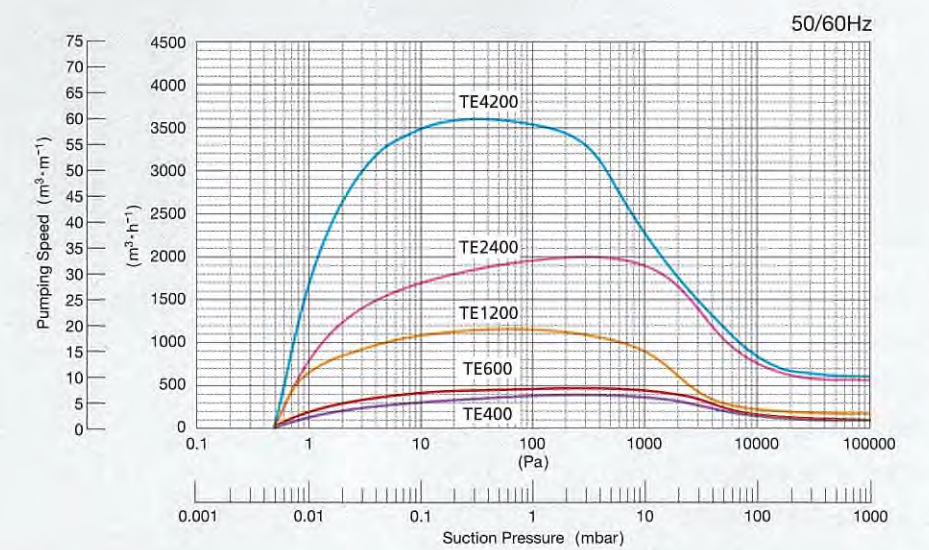
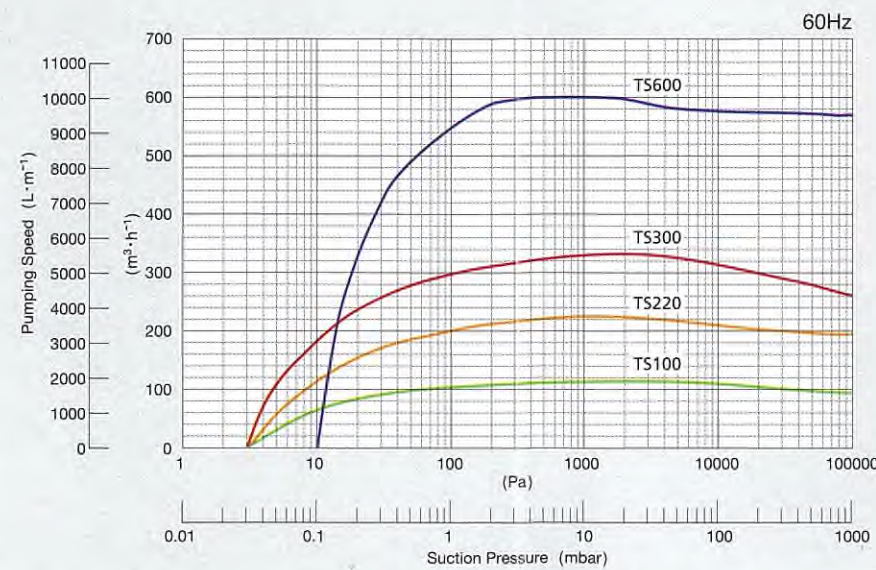
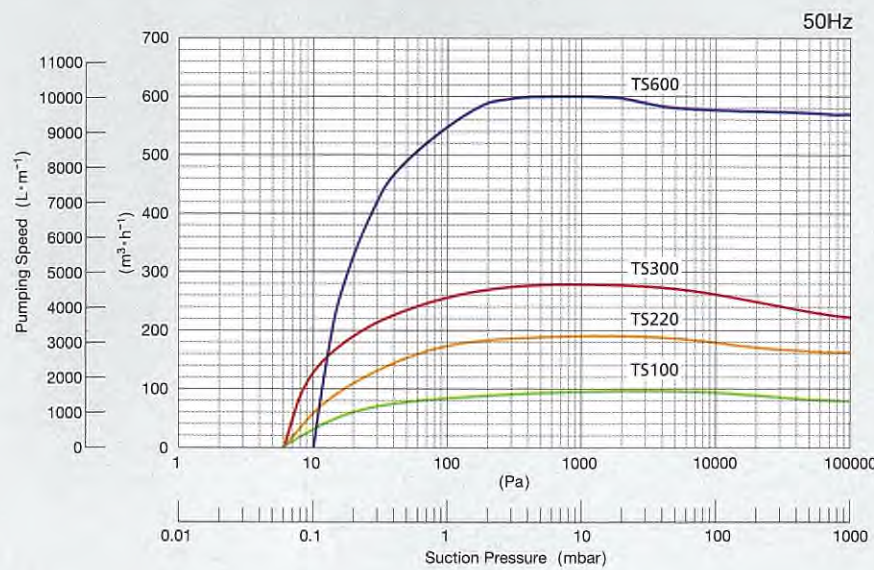


PUMPING SPEED CURVES



TS
TS Series

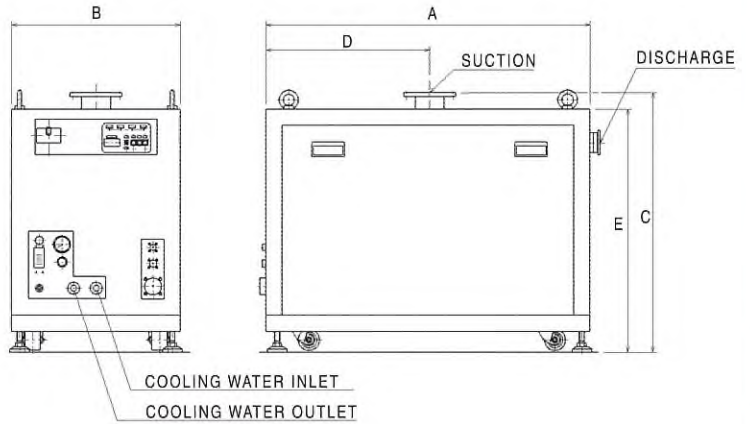
TE
TE Series



DIMENSIONS

TS

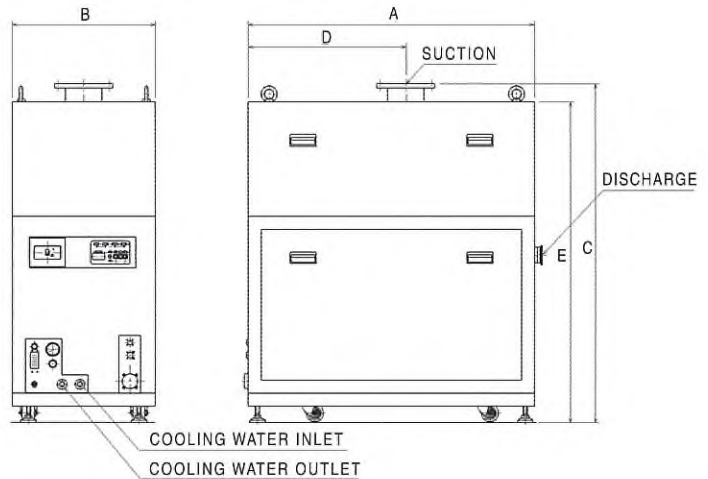
TS Series



MODEL	A	B	C	D	E
TS100	900	420	570	513	535
TS220	940	520	740	495	695
TS300	1100	520	800	565	750
TS600	1000	520	800	505	750

TE

TE Series



MODEL	A	B	C	D	E
TE400	1000	420	880	705	835
TE600	1000	420	880	705	835
TE1200	1100	550	1305	605	1235
TE2400	1100	550	1305	605	1235
TE4200	1160	600	1370	665	1305

OPTIONS

The following items are provided as options to TS/TE pump unit. These items can be equipped accordingly.

- Pump enclosure
- Electric control board
- N2 purge system
- Discharge silencer
- Flow switch for cooling water



Non-option TS pump unit

Unozawa Products

1. Rotary blower(Roots type)
2. Rotary vacuum pump(Roots type)
3. Dry Vacuum pump
4. Mechanical booster
5. Water ring Vacuum pump
6. Deaerator

Inquiries

When inquiring about Unozawa Dry vacuum pump,
please furnish us with the following information:

1. Application ; Load-lock, Sputtering ,Vacuum drier, etc.
2. Specification ; Pumping speed, Suction pressure
3. Handling gas ; Gas name, Suction gas temperature
4. Power source ; Voltage, Hertz, Phase
5. Options ; Required or not, please specify

UNOZAWA-GUMI IRON WORKS,LTD.

Head Office: 2-36-40,Shimomaruko,Ohta-ku,Tokyo 146-0092 Japan
Tel.(03)3759-4191 Fax.(03)3759-4251

Sales Dep: Tel.(03)3759-8101 Fax.(03)3759-8105

Osaka Branch: Sakurabashi-Yachiyo Bldg.,2-5-6, Umeda,Kita-ku,
Osaka 530-0001 Japan
Tel.(06)6344-0747 Fax.(06)6344-2405

<http://www.unozawa.co.jp>

<http://www.drypump.jp/>

While every care has been taken in the preparation of data and dimensional drawings,
we reserve the right to change specifications without notice.

