

Mechanical Booster Pump [PRC Series]

By using together with dry vacuum pumps, oil rotary vacuum pumps or water-sealed vacuum pumps, mechanical booster pumps can increase pumping speed in the range between 10kPa to 0.1 Pa, where roughing pump pumping speed drops. The PRC series is designed for semiconductor and liquid crystal display processes which especially require cleanliness. Atmospheric pressure start type can be selected as option.



PRC-012A

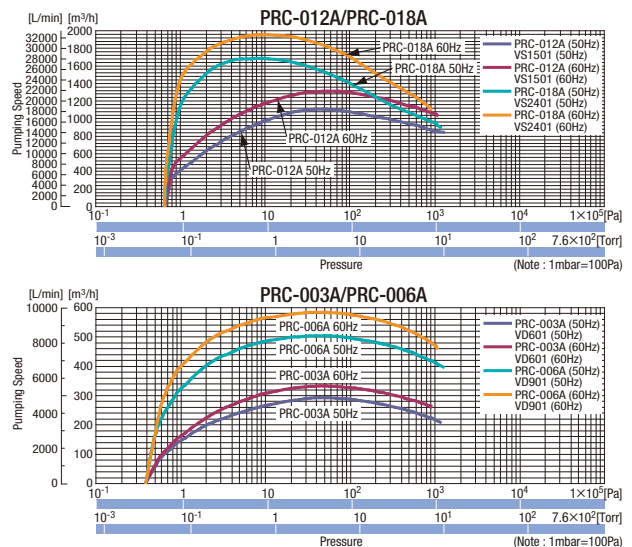
Features

- ▶ **Oil-free**
No oil in the pump casing, results in stable performance even when evacuating water vapor or solvent vapors.
- ▶ **Canned motor**
Using of canned motor could avoid using mechanical seal between atmosphere and vacuum. It can be used in clean environment without oil leak concern.
- ▶ **Excellent Corrosion Resistant Surface Treatment**
Anodic oxide coating for surface hardness and corrosive resistance on main parts can prevent scratch and corrosion inside the pump. Non-surface treatment can be selected as option.
- ▶ **Atmospheric Pressure Start type for Shorter Evacuation Type (Option: Inverter)**
This type can shorten pumping time compared with standard type because the pump starts at the same time of roughing pump.

Applications

- ▶ Evaporation, sputtering, ion plating
- ▶ Vacuum dryer, freeze dryer, vacuum degassing
- ▶ Analytical instruments, leak test system
- ▶ Gas exchange, filling, vacuum insulating
- ▶ Heat treatment, melting furnace
- ▶ Other various kind of vacuum system

Pumping Speed Curve



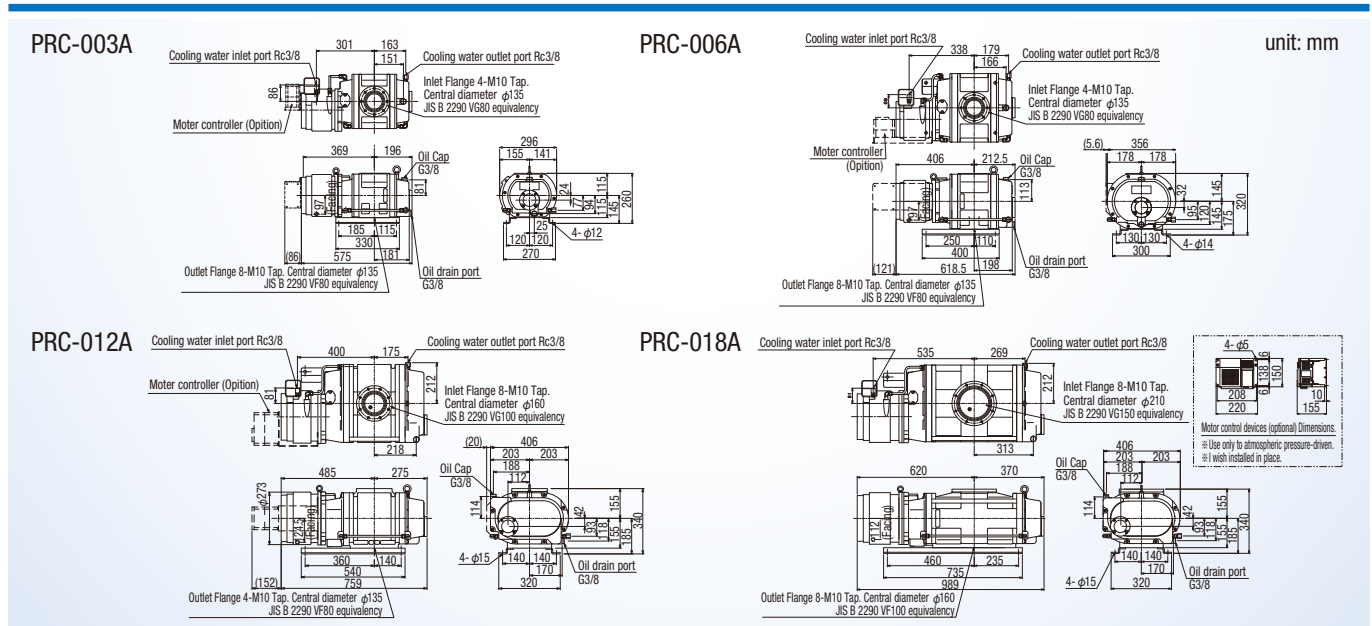
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Specifications

Model		PRC-003A	PRC-006A	PRC-012A	PRC-018A	
Maximum pumping speed	50Hz	m ³ /h	280	500	1000	1500
		L/min	4670	8330	16700	25000
		cfm	165	294	590	885
	60Hz	m ³ /h	330	600	1200	1800
		L/min	5500	10000	20000	30000
		cfm	194	353	706	1062
Maximum suction pressure	50Hz	Pa	1.2×10 ³		1.3×10 ³	1.2×10 ³
		Torr	9		10	9
		mbar	12		13	12
	60Hz	Pa	9.3×10 ²		1.1×10 ³	9.3×10 ²
		Torr	7		8.2	7
		mbar	9.3		11	9.3
Maximum allowable differential pressure	50Hz	Pa	4.0×10 ³		7.3×10 ³	4.3×10 ³
		Torr	30		55	32
		mbar	40		73	43
	60Hz	Pa	3.3×10 ³		6.0×10 ³	3.2×10 ³
		Torr	25		45	24
		mbar	33		60	32
Ultimate pressure *1	Pa		4.0×10 ⁻¹		6.7×10 ⁻¹	
	Torr		3.0×10 ⁻³		5.0×10 ⁻³	
	mbar		4.0×10 ⁻³		6.7×10 ⁻³	
Allowable drive pressure	Pa		to 1.0×10 ⁵ (atmospheric pressure start type)			
	Torr		to 760 (atmospheric pressure start type)			
	mbar		to 10000 (atmospheric pressure start type)			
Motor *2	kW (poles)	0.75 (2)	2.2 (2)	3.7 (2)	5.5 (2)	
	HP (poles)	1 (2)	3 (2)	5 (2)	7.5 (2)	
Oil *3				ULVOIL R-4		
Oil quantity	L	0.7	1.5		1.9	
Cooling water	Cooling method			Water cooling		
	Primary side pressure	MPa		0.3		
		psi		43.5		
	Inlet/outlet differential pressure	MPa		0.01 <		
		psi		1.45 <		
	Volume	L/min	2		3	
Temperature *4	°C			5 to 30		
	°F			41 to 86		
Inlet port		VG80 / ISO80F or 100F (optional)		VG100 / ISO100F (optional)	VG150 / ISO150F (optional)	
Outlet port		VF80 / ISO80F or 100F (optional)		VF100 / ISO100F (optional)	VF150 / ISO150F (optional)	
Dimension (W×D×H)	mm	296×575×260	356×784×320	406×759×340	406×989×340	
Weight total	kg	51	86	118	150	
Standard roughing pump *5		VD601	VD901	VS1501	VS2401	
Optional		adapter flange, atmospheric pressure start type (Inverter), lubrication oil, lubrication chamber evacuation				

*1 Measured by Pirani vacuum gauge. It will be about 4.0 x 10⁻²Pa when measured by MacLeod vacuum gauge. *2 AC200V (50Hz/60Hz), AC220V (60Hz), 3Phase. Other voltage is available upon request.
 *3 Synthetic (R-7000) or fluorine oil (J25F) is selectable as option *4 Please use it in the environment of no be dewy when the temperature of cooling water is low.
 *5 Performance of these pumps could change depending on roughing pump. Above data is based on standard roughing pump.

Dimensions



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