

# Vacuum Pumps, Compact

## PS23・PQ30/100・PD53/139/204

Ultimate pressure 9.3/0.67Pa

Effective pumping speed 20~200 (50Hz, L/min)

- Safe for continued operation with the integrated thermal protector.
- Two-step exhaust system to attain high level vacuum. (Model PD/PQ)
- Easy to transport. Also ideal for embedding into a unit.
- Equipped with an oil stop valve. (PD53/139/204)
- Large oil level gauge allows easy check of dirt. (PD53/PD139/204)
- Magnet coupling for no oil leakage from shaft seal and realized longer lifetime. Integrated check valve below the inlet port for backflow prevention. (PQ30/100)
- Supports multi voltages of 100 to 120V and 200 to 240V. (PD139/204)



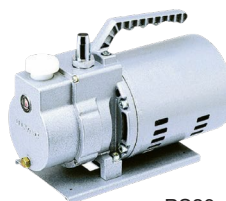
PQ30



PD53



PD139



PS23



PQ100



PD204

### Specifications

Product code	242289	242284	242290	242222	242223	242224
Model	PS23	PQ30	PD53	PQ100	PD139	PD204
Effective pumping speed (50/60Hz)	20/24L/min	30/36L/min	50/60L/min	100/120L/min	135/162L/min	200/240L/min
Ultimate pressure	9.3Pa	0.67a*1				
Motor	Single phase, 100V, 100W, 4P Split phase starting	Single phase, 100~120V, 100W, 2P Capacitor run	Single phase, 100V, 200W, 4P Split phase starting	Single phase, 100V, 300W, 2P Capacitor run	Single phase, 100/200V, 400W, 4P Multiple-range motor	Single phase, 100/200V, 550W, 4P Multiple-range motor
Full load current (50/60Hz)	3.7/3.0A	1.85A(100V)/1.89A(100V) 1.80A(110V)/1.71A(120V)	5.6/4.8A	5.5/6.3A	6.8/5.8A(100V) 3.5/2.9A(Single phase 200V)	8.2/7.9A(100V) 4.1/3.9A(Single phase 200V)
Oil capacity	230mL	370mL	650mL	1,000mL		1,100mL
Recommended oil	SMR-100	R-2	SMR-100	R-2	SMR-100	
Oil mist trap (sold separately)	OMT-050A			OMT-100A	OMT-200A	
Suction pipe diameter	O.D.18mm×I.D.14mm	O.D.15mm×I.D.11mm	O.D.18mm×I.D.14mm	O.D.27mm×I.D.20mm		
Ambient temperature	7 to 40°C					
Power source	AC115V/220V Single phase with step-down transformer				AC100-120V, AC200-240V Single phase	
External dimensions (W×L×Hmm)	156×288×199.5	120×288.5×163	165.5×395×246.5	150×413.5×234.5	170×488×263	170×516×263
Weight	Approx. 8.5kg	Approx. 9.3kg	Approx. 13.9kg	Approx. 22kg	Approx. 29kg	Approx. 31kg

The length of the power cord is about 1.5m outside the unit.

\*1 The attainable vacuum is measured by a Pillani gauge.

(In the case of measurement by macleod vacuum gauge, the value is one order of magnitude lower for pumps with an attainable vacuum of 1.3 Pa or less.)

# Vacuum Pumps Oil

## SMR-100・R-2



### SMR-100

- The vapor pressure is low, and the attainable pressure can be expected to the limit of the pump.
- The viscosity is lowered to improve startability, especially in cold regions.

### Specifications

	Unit	SMR-100	ULVOIL R-2
Composition	—	Meral oil	Synthetic oil
Density (15°C)	g/cm <sup>3</sup>	0.878	0.819
Collar (ASTM)	—	L1.0>	L1.0>
Flash point (COC)	°C	200<	200<
Kinematic viscosity (40°C)	mm <sup>2</sup> /s	44.6	17.3
Pour point	°C	-15.0>	-50>



### R-2

- The vapor pressure is low, and the attainable pressure can be expected to the limit of the pump.
- For motors of 2P and 300W or less, the viscosity is further lowered for low torque starting and good startability in cold regions.

No.	Product name	Model	Contents	Product code
①	Vacuum pumps oil (for PS/PD series)	SMR-100	500mL/can×2	242385
②			4L/can	242384
③			18L/can	242383
④	Vacuum pumps oil (for PQ series)	R-2	1L/can	242338
⑤			4L/can	242339
⑥			20L/can	242373

## Optional items (Trap, Flexible tube, Clamp, Center ring)

No.	Description	Model	Vacuum pump model	Product code
A	Oil mist trap for low level vacuum	OMT-200A	PD139/204	242040
B		OMT-100A	PQ100	242059
C		OMT-050A	PS23, PQ30, PD53	242058
D		OMI-100	PQ100	242374
E	Inline trap	OMI-200	PD139/204	242375
H	Forline trap*2	OFI-050C*1	PD53, PQ30	242354
H		OFI-050V*1		242355
I		OFI-200C*1	PQ100, PD139/204	242356
I		OFI-200V*1		242357
J	Flexible tube KF25	STK-025-1000		242333
K	Clamp KF25	SCK-1025		242358
L	Center ring KF25	SCK-2025		242359

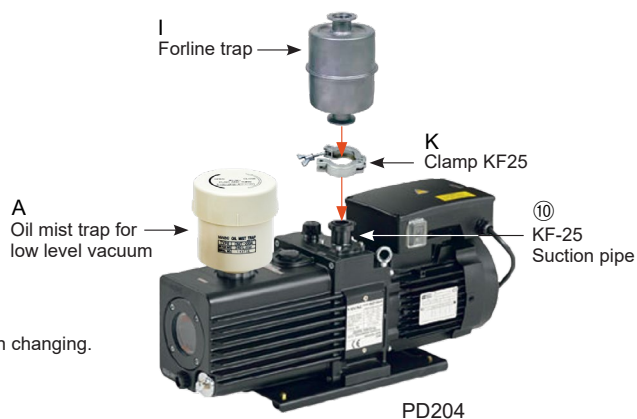
\*1 A KF-25 suction pipe is required. A long fitting or an L-shaped fitting may be required when changing.

\*2 A separate part is required to install the fore-line trap on the suction side.

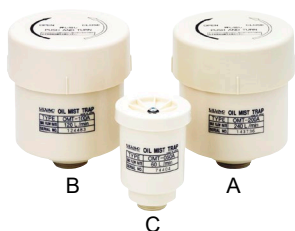
PD 53 : Suction adapter (40mm sq. flange×M20×P1)+KF-25 suction pipe

PQ 100, PD139/204 : Suction adapter (50mm sq. flange×M20×P1)+KF-25 suction pipe

## Mounting example



## Oil Mist Trap for Low level vacuum



This is an oil mist trap designed to collect the oil smoke discharged during operation of the vacuum pump and automatically recover it into the vacuum pump. In particular, small vacuum pumps are often used at high pressures, which may contaminate the atmosphere by splashing oil, but this trap solves the problem.

## Inline Trap



This is a pipe connection type of oil mist trap, and it treats oil smoke without leakage when handling harmful gases.

## Forline Trap



This is installed on the air intake side of the oil rotary vacuum pump. Two types are available: one to prevent reverse diffusion of oil into the vacuum system (OFI-050C, 200C) and the other to prevent powder or liquid from entering the vacuum pump (OFI-050V, 200V). For installation, A KF25 clamp coupling and center ring are required. Since this is a sealed type, the filter cannot be replaced.

## Optional items (Suction/Exhaust pipe)

No.	Description	Standard	PS23	PQ30	PQ100	PD53	PD139 PD204	Material	Product code
①	Hose port suction pipe	O.D. φ8×M20	●		●	●	●	Brass with plated	242194
②		O.D. φ12×M20	●		●	●	●	Brass with plated	242195
③		O.D. φ15×M20	●		●	●	●	Brass with plated	242196
④		O.D. φ18×M20	●		●	●	●	Brass with plated	242197
⑤		O.D. φ22×M20	●		●	●	●	Brass with plated	242198
⑥		O.D. φ27×40mm sq. flange						Zinc die-casting with plated	242360
⑦	KF-25 suction pipe	O.D. φ27×50mm sq. flange			●	●	●	Zinc die-casting with plated	242361
⑧		KF-25×M20	●*		●	●	●	Brass with plated	242363
⑨		KF-25×40mm sq. flange						Poly Phenylene Sulfide Resin	242364
⑩	Suction adapter	KF-25×50mm sq. flange			●	●	●	Poly Phenylene Sulfide Resin	242365
⑪		40mm sq. flange×M20×P1				●	●	Zinc die-casting with plated	242190
⑫		50mm sq. flange×M20×P1			●	●	●	Zinc die-casting with plated	242189
⑬	A-type suction pipe	R1/4-L20 male thread×M20	●		●	●	●	Brass with plated	242366
⑭	B-type suction pipe	R1/4 female thread×M20	●		●	●	●	Brass with plated	242367
⑮	C-type suction pipe	R1/4-L10 male thread×M20	●		●	●	●	Brass with plated	242368
⑯	KF-25 exhaust pipe	KF-25×G3/4	●	●	●	●	●	Poly Phenylene Sulfide Resin	242381
⑰		KF-25×G1			●		●	Poly Phenylene Sulfide Resin	242382
⑱	Hose port exhaust pipe	O.D. φ27×G1			●		●	Brass with plated	242380
⑲		O.D. φ15×G3/4	●	●		●		Brass with plated	242371
⑳		O.D. φ18×G3/4	●	●		●		Brass with plated	242372

● : Standard type ● : Can be installed as is (no Adapters necessary) ● : Suction adapter (40mm sq. flange×M20×P1) is required.

\*When the KF-25 suction pipe/M20 is used in the PS23, the oil mist trap OMT-050A cannot be installed in the exhaust port at the same time.

## Suction pipe



## Exhaust pipe

