

Double Stage Rotary Vane type VD series Ver.C



Features

With high efficiency (IE3) full multi-voltage motor developed by ULVAC. For various kinds of application.

- ▶ Single kind high efficient (IE3) full multi-voltage covers wide range voltage from 200 to 240V / 380 to 460V.
- ▶ Forced oil circulation makes pumping performance stable even near atmospheric pressure. Suitable for repetitive and consecutive operation between atmospheric and vacuum.
- ▶ Various specification A, B and H are available in addition to standard model.

Specifications

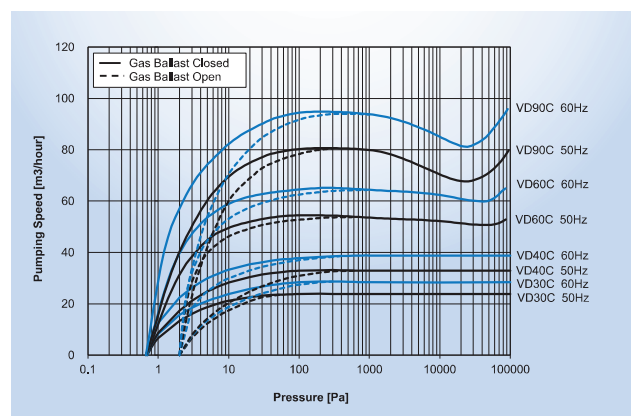
Model			VD30C	VD40C	VD60C	VD90C	
Designed pumping speed	50Hz	m ³ /hr	30	40	60	90	
		L/min	500	670	1000	1500	
		cfm	17.66	23.54	35.31	52.97	
	60Hz	m ³ /hr	36	48	72	108	
		L/min	600	800	1200	1800	
		cfm	21.29	28.25	42.38	63.57	
Ultimate pressure ^{*1}	Gas ballast port close	Pa	0,67				
		Torr	5×10 ⁻³				
		mbar	6.7×10 ⁻³				
	Gas ballast port open	Pa	2				
		Torr	1.5×10 ⁻²				
		mbar	2.0×10 ⁻²				
Maximum water vapor tolerance	Gas ballast port open	50Hz	Pa	1300	1360	1320	970
			Torr	9,8	10,2	9,9	7,3
			mbar	13,0	13,6	13,2	9,7
	Gas ballast port open	60Hz	Pa	1400	1760	2800	2820 ^{*2}
			Torr	10,5	13,2	21,0	21,2
			mbar	14,0	17,6	28,0	28,2
Maximum water vapor capacity	Gas ballast port open	50Hz	g/h	190	270	430	480
		60Hz	g/h	250	410	1100	1650 ^{*2}
Motor ^{*3}	Type Totally enclosed fan cooled 3 phase induction motor						
	Energy efficiency class IE3						
	kw (number of poles)			1,5(4)		2,2(4) 3,7(4)	
	HP (number of poles)			2 (4)		2,95(4) 4,96(4)	
	Voltage ^{*4}	50Hz					200V~240V/380V~415V
		60Hz					200V~240V/380V~460V
Oil			ULVOIL R-7				
Oil capacity L			1,0 ~ 2,5		2,5 ~ 4,0		
Cooling method			Air cooled				
Inlet			VG40 equivalency / KF40 (optional)		VG50 equivalency / KF50 (optional)		
Outlet			VG40 equivalency / KF40 (optional)		VG40 equivalency / KF40 (optional)		
Weight kg			58 60		90 133		
External dimensions WxDxH mm			210 x 660 x 324 210 x 680 x 324		280 x 761 x 371 280 x 831 x 371		
Applicable standard			CE / cTUVus				
Standard accessory			A dose of oil, a set of manual				
Recommended oil mist trap (Optional) ^{*5}			TM201: for low load operation TM401: for high load operation		TM401: for low load operation TM-2: for high load operation		
Options			Oil mist trap, other oil types, gas ballast valve, ISO flange, explosion-resistant motor, special type for special application (spec A, B and H)				

- *1 Measured with a Pirani gauge. (Apprx. 6.7×10⁻²Pa when measured with a McLeod vacuum gauge.)
- *2 VD90C is not allowed the continuous operation in the inlet pressure at 1,000Pa or more.
VD90C maximum water vapor tolerance / maximum water vapor capacity (in the continuous operation) : 1000Pa / 600g/h
- *3 Increased safety explosion-resistant motor and pressure proof explosion-resistant motor are available as an option.
- *4 Factory shipment setup is 200V class Δ delta connection. Please change it to Y connection if working voltage is 400V class.
- *5 High load operation means repeat pumping down between atmospheric pressure and vacuum in short term or long time operation at 10,000 Pa (75 Torr) or higher.

Applications

- ▶ Evaporation and sputtering
- ▶ Vacuum filling and gas exchange
- ▶ Vacuum adsorption, transport and casting
- ▶ Vacuum molding
- ▶ Vacuum drying and freeze drying
- ▶ Automated leak testing, etc

Pumping Speed Curves



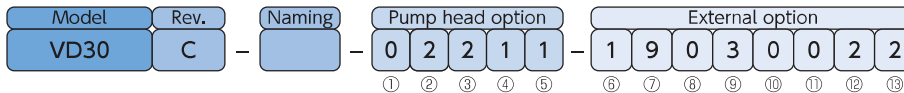
Option

Specification	Model	Main Seal Material	Independent oil filling (oiler)	He Leak Test
Standard	VD30C, VD40C, VD60C, VD90C	Fluorine Rubber	n/a	n/a
Spec. A	VD30C-A, VD40C-A	Nitrile Rubber	n/a	n/a
Spec. B	VD30C-B, VD40C-B	Silicon Rubber	-	n/a
Spec. H	VD30C-H, VD40C-H, VD60C-H, VD90C-H	Fluorine Rubber	-	-

Model Explanation

E.g.) VD30C-02211-19030022

30m³/h (50Hz) / Standard / FKM / R-7 / Totally enclosed external fan motor / Multiple voltage / ISO-KF / Without gas ballast valve / Without He leak test / English Instruction manual / English Warning label



Model VD30 : 30m ³ /h (50Hz) VD40 : 40m ³ /h (50Hz) VD60 : 60m ³ /h (50Hz) VD90 : 90m ³ /h (50Hz)
Rev. C : Current Rev.
Naming *1 None : Standard A : Spec. A B : Spec. B H : Spec. H

- ①Structure
0 : Standard
1 : Independent oil filling (oiler)
- ②Seal
1 : NBR
2 : FKM [std]
5 : Silicon+NBR
- ③Oil
1 : Mineral oil(R-4)
2 : Mineral oil(R-7) [std]
6 : Fluorine oil (J60)
- ④Vane
1 : Resin [std]
- ⑤Exhaust valve plate
1 : Stainless [std]

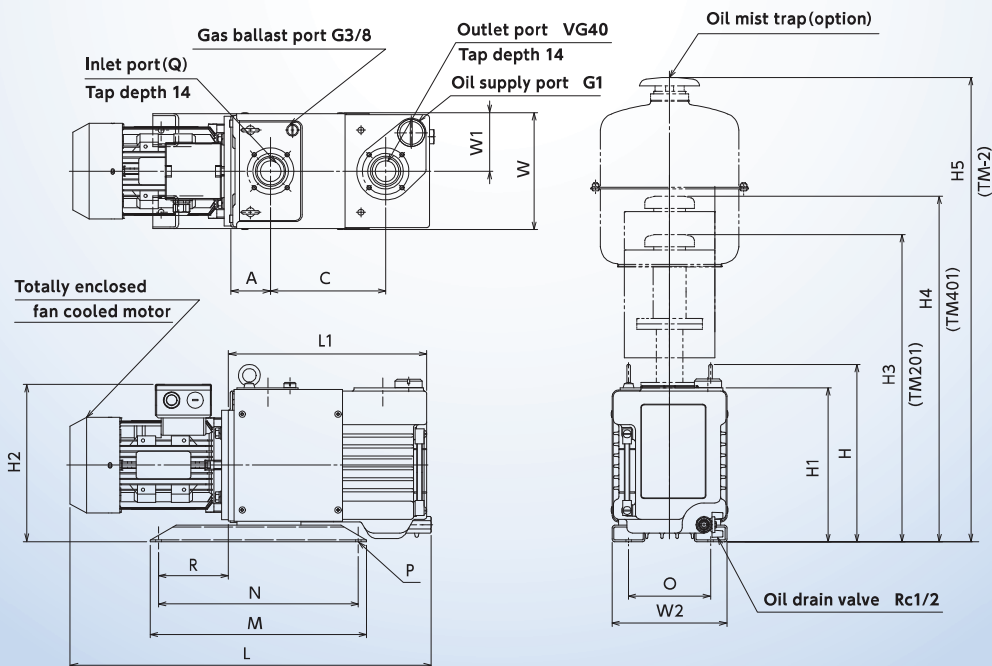
- ⑥Motor kind *2
1 : Totally enclosed external fan motor [std]
2 : Explosion-protection(indoor)
4 : Flame-proof (indoor)
- ⑦Motor voltage
9 : Multiple voltage [std]
A : Other (specified voltage)
- ⑧Motor frequency
0 : Not select [std]
1 : 50Hz
2 : 60Hz
- ⑨Inlet/Outlet flange
3 : Inlet/Outlet ISO-KF
4 : Inlet/Outlet JIS [std]
7 : Inlet ISO-KF

- ⑩Gas ballast valve
0 : None [std]
1 : Manual gas ballast valve
- ⑪He leak test
0 : Without [std]
1 : With (H type only)
- ⑫Instruction manual
1 : Japanese
2 : English
- ⑬Warning label
1 : Japanese
2 : English
3 : Simplified Chinese
4 : Traditional Chinese
5 : Korean

*1 There is not any naming for standard type. A, B or H spec is selectable as option. Options for pump head and accessories are different depending on the type.
*2 Multiple voltage motor is not available in the case of explosion-protection and flame-proof motor. Voltage needs to be specified.

► Dimensions

VD-C



TYPE	A	C	H	H1	H2	H3	H4	H5	L	L1	M	N	O	P	Q	R	W	W1	W2
VD30C	73	210	324	281	287	561	631	—	660	363	395	365	150	4-φ11	VG40	128	214	107	210
VD40C	73	230	324	281	287	561	631	—	680	383	395	365	150	4-φ11	VG40	128	214	107	210
VD60C	88	255	371	328	324	—	678	848	761	435	390	360	230	4-φ11	VG50	92	264	132	280
VD90C	88	306	371	328	348	—	678	848	831	486	570	540	200/230	8-φ11	VG50	182	264	132	280