

Rotary Vane Pumps Technical Specifications

Technical Specifications									
	Hz	Units	DS 102	DS 202	DS 302	DS 402	DS 602	DS 1002	DS 1602
Free air displacement	60 50	l/min (cfm) l/min (m ³ /h)	114 (4) 95 (5.7)	192 (6.8) 160 (9.6)	285 (10) 237 (14.2)	410 (14.5) 342 (20.5)	605 (21.4) 504 (30.2)	1010 (35.7) 842 (50.5)	1610 (56.8) 1342 (80.5)
Pumping speed*	60 50	cfm m ³ /h	3.5 5	5.8 8.3	8.2 11.6	12.3 17.4	18.3 26	31 44	51 73
Ultimate partial pressure*		mbar	10 ⁻⁴	10 ⁻⁴	10 ⁻⁴	10 ⁻⁴	10 ⁻⁴	10 ⁻⁴	10 ⁻⁴
Ultimate total pressure*		mbar	2 x 10 ⁻³	2 x 10 ⁻³	2 x 10 ⁻³	2 x 10 ⁻³	2 x 10 ⁻³	2 x 10 ⁻³	2 x 10 ⁻³
Ultimate total pressure with gas ballast*		mbar	2 x 10 ⁻²	2 x 10 ⁻²	2 x 10 ⁻²	1 x 10 ⁻²	1 x 10 ⁻²	1 x 10 ⁻²	2 x 10 ⁻²
Water vapor tolerance		mbar	15	15	20	30	30	20	20
Water vapor capacity		g/h	60	100	160	350	550	650	1000
Oil capacity min/max		l	0.2/0.5	0.25/0.6	0.25/0.6	0.5/1	0.5/1	2.3/3.1	3.5/4.5
Motor rating 1ph	50/60	kW	0.45/0.55	0.45/0.55	0.45/0.55	0.75/0.90	0.75/0.90		
Motor rating 3ph	50/60	kW				0.75/0.90	0.75/0.90	1.10/1.30	2.20/2.60
Nominal rotation speed	60 50	rpm rpm	1800 1500	1800 1500	1800 1500	1800 1500	1800 1500	1800 1500	1800 1500
Weight		kg lb	22 48	25 55	25 55	35 77	35 77	62 136	102 224
Inlet flange		DN	25KF	25KF	25KF	25KF	25KF	40KF	40KF
Exhaust flange		DN	25KF	25KF	25KF	25KF	25KF	40KF	40KF

*According to PNEUROP 6602

Pump Accessories

Oil Mist Eliminator - Exhaust Filters

The oil mist eliminator and the exhaust filters retain the oil vapors which would otherwise be expelled into the atmosphere during pumpdown and gas ballast operation. Some models feature an oil return line to allow condensed oil or fluid to return to the pump reservoir.



Foreline Roughing Traps

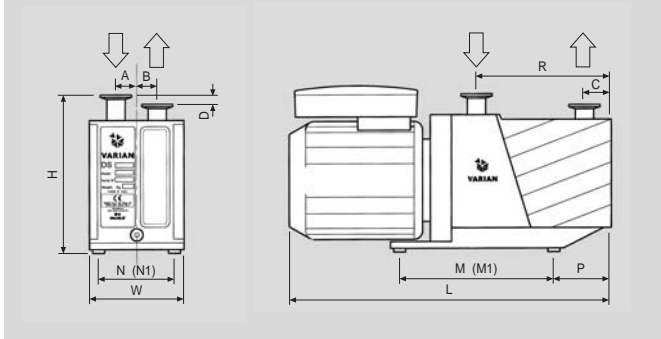
Varian's new traps are designed to prevent the backstreaming of mechanical pump fluids. Copper and stainless steel gauze inserts are designed to reduce oil backstreaming. Molecular sieve inserts are available for applications where it is desirable to increase water vapor pumping speed while eliminating backstreaming above the trap.



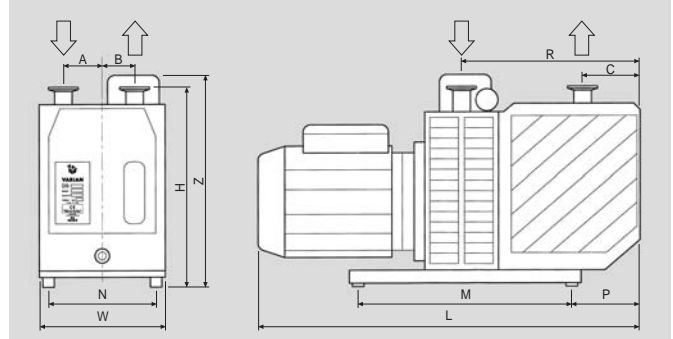
For any further details on our rotary vane pump accessories, please contact Varian Vacuum Technologies.

Outline Drawings

DS 102 - DS 202 - DS 302 - DS 402 - DS 602



DS 1002 - DS 1602



Model	A	B	C	D	H	L	M	N	P	R	W
DS 102	30 (1.18)	30 (1.18)	35 (1.38)	3 (0.12)	212 (8.3)	430 (16.9)	245 (9.6)	104 (4.1)	105 (4.13)	165 (6.5)	132 (5.2)
DS 202	30 (1.18)	30 (1.18)	35 (1.38)	3 (0.12)	212 (8.3)	467 (18.4)	245 (9.6)	104 (4.1)	105 (4.13)	205 (8.1)	132 (5.2)
DS 302	30 (1.18)	30 (1.18)	35 (1.38)	3 (0.12)	212 (8.3)	467 (18.4)	245 (9.6)	104 (4.1)	105 (4.13)	205 (8.1)	132 (5.2)
DS 402	40 (1.57)	40 (1.57)	40 (1.57)	6 (0.24)	242 (9.5)	541 (21.3)	261 (10.3)	130 (5.1)	100 (3.9)	230 (9)	164 (6.5)
DS 602	40 (1.57)	40 (1.57)	40 (1.57)	6 (0.24)	242 (9.5)	541 (21.3)	261 (10.3)	130 (5.1)	100 (3.9)	230 (9)	164 (6.5)

Alternative mounting holes are also available, with M1 = 226 (8.9) and N1 = 98 (3.8), with hole $\varnothing = 7$ (0.3) for DS 102 / DS 202 / DS 302 or thread 1/4-20UNC for DS 402 / DS 602.

Model	A	B	C	H	L	M	N	P	R	W	Z
DS 1002	65 (2.6)	55 (2.2)	95 (3.7)	335 (13.2)	640 (25.2)	355 (14)	185 (7.3)	115 (4.5)	300 (11.8)	230 (9)	350 (13.8)
DS 1602	75 (2.95)	40 (1.57)	95 (3.7)	335 (13.2)	810 (31.9)	380 (15)	210 (8.3)	160 (6.3)	390 (15.4)	225 (8.9)	450 (17.7)

Dimensions in millimeters (inches)

Ordering Information

Dual Stage Rotary Vane Pumps	Part Number
DS 102 with 1 phase worldwide motor*	9499315
DS 202 with 1 phase worldwide motor*	9499320
DS 302 with 1 phase worldwide motor*	9499325
DS 402 with 1 phase worldwide motor*	9499330
DS 402 with 3 phase worldwide motor**	9499331
DS 602 with 1 phase worldwide motor*	9499335
DS 602 with 3 phase worldwide motor**	9499336
DS 1002 with 3 phase worldwide motor**	9499340
DS 1602 with 3 phase worldwide motor**	9499345

* 1 phase motors (100-120 / 200-240) V \pm 10%, 50/60 Hz.

** 3 phase motors (200-220 / 380-415) V \pm 10% at 50 Hz or (200-230 / 460) V \pm 10% at 60 Hz.

All motors comply with CE and UL/CSA standards.

Minor Maintenance Kit

(Contains all the valves, O-rings and seals to refurbish the pump to vacuum integrity)

	Part Number
DS 102, DS 202, DS 302	9499370
DS 402, DS 602	9499371
DS 1002	9499372
DS 1602	9499373

Major Maintenance Kit

(Includes all the items of the minor kit plus the vanes)

	Part Number
DS 102	9499380
DS 202, DS 302	9499381
DS 402, DS 602	9499382
DS 1002	9499383
DS 1602	9499384

Oil and Accessories	Part Number
Rotary vane fluid, GP type, 1 liter	9499390
Rotary vane fluid, GP type, 1 liter (USA)*	K7516301
Rotary vane fluid, GP type, 2 liters	9499391
Rotary vane fluid, GP type, 1 gallon (USA)	K7516302
Oil mist eliminator (DS 102 - DS 602)	9499395
Oil mist replacement cartridge (pkg. of 2)	9499394
NW 25 oil exhaust filter	9499392
NW 40 oil exhaust filter	9499393
NW 25-NW 40 oil exhaust replacement cartridge	9499342
Oil return kit	9499376
European plug power cable 2 meters (DS 102 - DS 602) 1 ph	9499396
USA plug power cable 2 meters (DS 102 - DS 602) 1 ph	9499397
UK plug power cable 2 meters (DS 102 - DS 602) 1 ph	9499398
NW 25 centering ring Viton (DS 102 - DS 602)	KC25AV
NW 25 aluminum clamp (DS 102 - DS 602)	KQ25AWP
NW 40 centering ring Viton (DS 1002 - DS 1602)	KC40AV
NW 40 aluminum clamp (DS 1002 - DS 1602)	KQ40AWP

* When these pumps are used in Leak Detectors applications, we recommend the use of Rotary Vane Fluid (Elite-Z mechanical), P/N 695409005 as it features a lower vapour pressure.