

VAPOUR PUMPS FOR SCIENTIFIC INSTRUMENTS AND R&D APPLICATIONS MAXIMISE YOUR PRODUCTIVITY AND PERFORMANCE



Scientific and R&D applications require special vapour pumps and accessories. It is important to minimise any backstreaming of the vapour pump fluid, and the number of elastomer seals used in system design needs to be kept to a minimum, to give clean pumping with minimal outgassing. For bench-top or transportable instruments, compact air-cooled pumps are essential.

Edwards offers a range of vapour pumps and accessories which are designed to meet these needs.



Diffstak Vapour Diffusion Pumps

The compact water-cooled Diffstak pumps with an integral cooled baffle offer exceptionally clean pumping with very low backstreaming, reduced outgassing, and a reduction in the number of elastomer seals required for installation.

The Diffstak design has been proven over many years with thousands of pumps installed. They are supplied in two types: standard, and unvalved (C-collar model pumps).

The Edwards Diffstak 63 (ISO 63 inlet), 100 (ISO100 inlet), 160 (ISO160 inlet), 250 (ISO250 inlet), design has been proven over many years with thousands of pumps installed.

The standard Diffstak pumps have integral high vacuum valves and water-cooled baffles, which are supplied as either manually operated (M-model pumps) or pneumatically operated (P-model pumps).

When comparing pumping speeds, note that the speeds quoted for valved Diffstaks are the speeds above the high vacuum valve, taking full account of the valve's impedance.

The unvalved Diffstaks are for systems requiring the highest possible ultimate vacuum or for those which do not need a high vacuum valve.

All sizes are available with ISO flanges while two sizes are also available with CF flanges (F-ConFlat® model pump).

The complete range is shown in the table below. Refer to the following pages for full technical data for each of the pumps and also for full details of installations, spares and accessories.

Standard Diffstak	Unvalved Diffstak	
	ISO Flange	CF Flange
63/150M or P	63/150C	–
100/300M or P	100/300C	100/300F
160/700M or P	160/700C	160/700F
250/2000M or P	250/2000C	–

Technical Data

The following table shows the critical backing and ultimate pressures for the diffusion pump range:

Fluid	Critical Backing Pressure (mbar)	Ultimate Pressure (mbar)
Santovac® 5	0.6	5×10^{-9}
Silicone DC702	1.2	7×10^{-6}
Silicone Edwards 704	0.8	7×10^{-8}
Silicone DC705	0.6	3×10^{-8}

Data summary vapour pumps

Pump	63/150M 63/150P	63/150C
Pumping speed (M&P/C)		
Nitrogen	l s ⁻¹	135
Hydrogen	l s ⁻¹	200
Minimum backing pump displacement*	m ³ h ⁻¹	5
Inlet connection	ISO63	ISO63
Backing connection	NW10	NW10
Oil charge capacity	60 ml	60 ml
Heater power	450 W	450 W
Weight (M&P/C)	9 kg/5 kg	9 kg/5 kg

Pump	100/300M 100/300P	100/300C 100/300F
Pumping speed (M&P/C)		
Nitrogen	l s ⁻¹	280
Hydrogen	l s ⁻¹	500
Minimum backing pump displacement*	m ³ h ⁻¹	5
Inlet connection	ISO100	ISO63
Backing connection	NW25	NW10
Oil charge capacity	125 ml	60 ml
Heater power	650 W	450 W
Weight (M&P/C)	12/13 kg 9/10 kg	12/13 kg 9/10 kg

Pump	160/700M 160/700P	160/700C 160/700F
Pumping speed (M&P/C)		
Nitrogen	l s ⁻¹	700
Hydrogen	l s ⁻¹	1300
Minimum backing pump displacement*	m ³ h ⁻¹	12
Inlet connection	ISO160	ISO160/8 inch
Backing connection	NW25	NW25
Oil charge capacity	250 ml	250 ml
Heater power	1350 W	1350 W
Weight (M&P/C)	26/27 kg 18/20 kg	26/27 kg 18/20 kg

Pump	250/2000M 250/2000P	250/2000C
Pumping speed (M&P/C)		
Nitrogen	l s ⁻¹	2000
Hydrogen	l s ⁻¹	3000
Minimum backing pump displacement*	m ³ h ⁻¹	40
Inlet connection	ISO250	ISO250
Backing connection	NW40	NW40
Oil charge capacity	500 ml	500 ml
Heater power	2250 W	2250 W
Weight (M&P/C)	59/60 kg 46 kg	59/60 kg 46 kg

Ordering information

Product description	Order no:	Product description	Order no:
Standard Diffstak 63/150M		Standard Diffstak 160/700M	
110-125 V 1-ph 50/60 Hz	B34431976	110-125 V 1-ph 50/60 Hz	B34831976
210-225 V 1-ph 50/60 Hz	B34431977	210-225 V 1-ph 50/60 Hz	B34831977
230-250 V 1-ph 50/60 Hz	B34431978	230-250 V 1-ph 50/60 Hz	B34831978
Standard Diffstak 63/150P		Standard Diffstak 160/700P	
110-125 V 1-ph 50/60 Hz	B34432976	110-125 V 1-ph 50/60 Hz	B34832976
210-225 V 1-ph 50/60 Hz	B34432977	210-225 V 1-ph 50/60 Hz	B34832977
230-250 V 1-ph 50/60 Hz	B34432978	230-250 V 1-ph 50/60 Hz	B34832978
Unvalved Diffstak 63/150C		Unvalved Diffstak 160/700C	
110-125 V 1-ph 50/60 Hz	B34433976	110-125 V 1-ph 50/60 Hz	B34833976
210-225 V 1-ph 50/60 Hz	B34433977	210-225 V 1-ph 50/60 Hz	B34833977
230-250 V 1-ph 50/60 Hz	B34433978	230-250 V 1-ph 50/60 Hz	B34833978
Supplied with: NW10 elbow, NW10 centring-ring, NW10 clamp, water pipe couplings and ferrules, inlet ISO 63 Co-Seal.		Unvalved Diffstak 160/700F	
Standard Diffstak 100/300M		110-125 V 1-ph 50/60 Hz	B34840976
110-125 V 1-ph 50/60 Hz	B34631976	210-225 V 1-ph 50/60 Hz	B34840977
210-225 V 1-ph 50/60 Hz	B34631977	230-250 V 1-ph 50/60 Hz	B34840978
230-250 V 1-ph 50/60 Hz	B34631978	Supplied with: NW25 elbow, NW25 centring-ring, NW25 clamp, water pipe couplings and ferrules, inlet ISO 160 Co-Seal (C version only).	
Standard Diffstak 100/300P		Standard Diffstak 250/2000M	
110-125 V 1-ph 50/60 Hz	B34632976	110-125 V 1-ph 50/60 Hz	B35031976
210-225 V 1-ph 50/60 Hz	B34632977	210-225 V 1-ph 50/60 Hz	B35031977
230-250 V 1-ph 50/60 Hz	B34632978	230-250 V 1-ph 50/60 Hz	B35031978
Unvalved Diffstak 100/300C		Standard Diffstak 250/2000P	
110-125 V 1-ph 50/60 Hz	B34633976	110-125 V 1-ph 50/60 Hz	B35032976
210-225 V 1-ph 50/60 Hz	B34633977	210-225 V 1-ph 50/60 Hz	B35032977
230-250 V 1-ph 50/60 Hz	B34633978	230-250 V 1-ph 50/60 Hz	B35032978
Unvalved Diffstak 100/300F		Unvalved Diffstak 250/2000C	
110-125 V 1-ph 50/60 Hz	B34640976	110-125 V 1-ph 50/60 Hz	B35033976
210-225 V 1-ph 50/60 Hz	B34640977	210-225 V 1-ph 50/60 Hz	B35033977
230-250 V 1-ph 50/60 Hz	B34640978	230-250 V 1-ph 50/60 Hz	B35033978
Supplied with: NW25 elbow, NW25 centring-ring, NW25 clamp, water pipe couplings and ferrules inlet ISO co-seal (C version only).		Supplied with: NW40 elbow, NW40 centring-ring, NW40 clamp, water pipe couplings and ferrules, inlet ISO 250 trapped O-ring.	