

Design Principle

NEO D pumps are double stage oil sealed rotary vane pumps. Oil injected into the pump chamber for sealing, lubrication and cooling of the pump is recycled from the pump's oil reservoir and filtered. The lubrication system is rated for continuous operation at high intake pressures (max. 1000 mbar abs.) so that the pumps may be used in a versatile manner from atmospheric down to ultimate pressure.

The oil carried with the process gas is roughly separated in the oil box before the discharged gas enters the integrated exhaust filters where the fine oil mist is trapped. The thus filtered oil is collected in the oil box and then supplied back to the pump.

The separating system optimized in consideration of all operating conditions for the vacuum pump guarantees – also at high intake pressures and when pumping out of vapors – an exhaust gas which is free of oil mist (separation efficiency over 99.9%).

Materials used in the pump:

Steel, Cast iron, Aluminium, FPM (FKM), Glass, Polyamid 6 6, Filter material (Polymers, Paper), Epoxy resin & Glass fibre.

Pumps are yellow metal free.

Compact Design

The pumps have been so designed that efficiency of the pumps will be highest. The motor and vacuum generator section use the same shaft. All vacuum components like anti-suck back, exhaust filter with oil return line needed for a complete vacuum unit as well as the optimized placement of all controls and monitoring components allow for an extremely compact unit.

Quiet Operation

NEO D pumps are designed throughout to keep the noise level as low as possible. This is ensured by optimized running and sliding speeds and the selection of low-noise drive motors and fans, as well as perfected manufacturing techniques using CNC automatic machines for optimized tolerances and reproducibility of the individual components.

Anti-Suckback Valve

A valve is built into the intake of the NEO D pumps. This “anti-suck back valve” (called ASBV) is protected by a metal wiremesh filter. During standstill of the pump (for example due to shutting down or a power failure) the ASBV closes the intake hydraulically & very fast. This prevents the pressure from rising in the connected chamber while the pump is vented at the same time. Any suck-back of pump oil into the vacuum system is thus also effectively prevented. This closing process operates under all operating conditions and even when the gas ballast valve is open.

Protection of the Environment

The built-in exhaust filter ensures an oil-mist free exhaust gases over the entire range of operating pressures – from atmospheric pressure to ultimate pressure.

Supplied Equipment

All pumps are delivered with the required quantity of oil, already filled in and are thus ready for operation.

Frequency converter drive (optional)

- FC drive enables:
Speed control
- Monitoring (RS485 interface)
- Constant pumping speed independent of mains frequency
- Soft start w/o inrush current
- Even lower noise and vibration levels than a 1-phase motor
- 1-phase power supply 180 ... 264 V at 50 & 60 Hz, for all pump sizes!

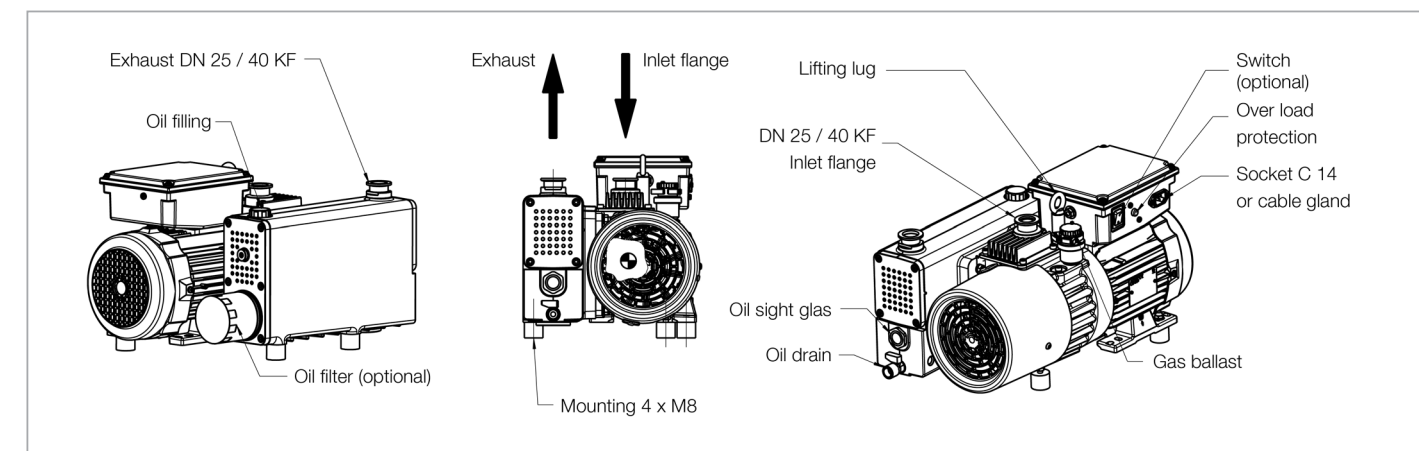
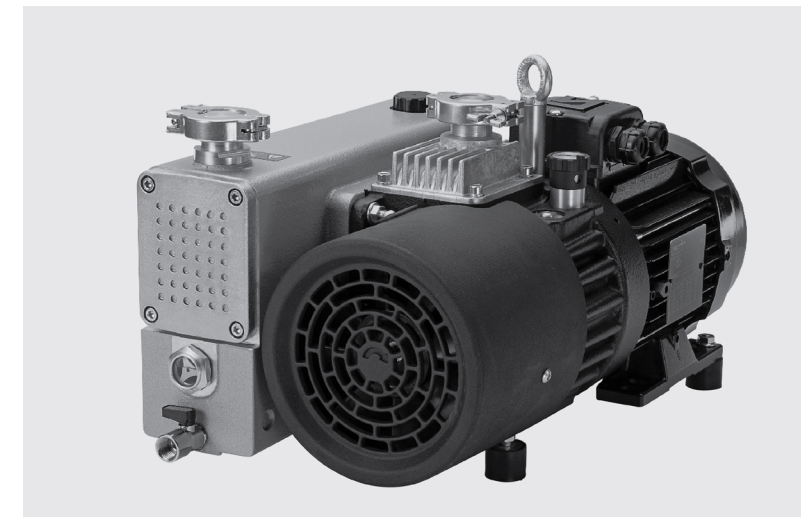
Pump failure indicator (optional)

Do you need to keep an eye on the status of your pump, even when you are not on site? Our pump failure indicator enables remote monitoring:

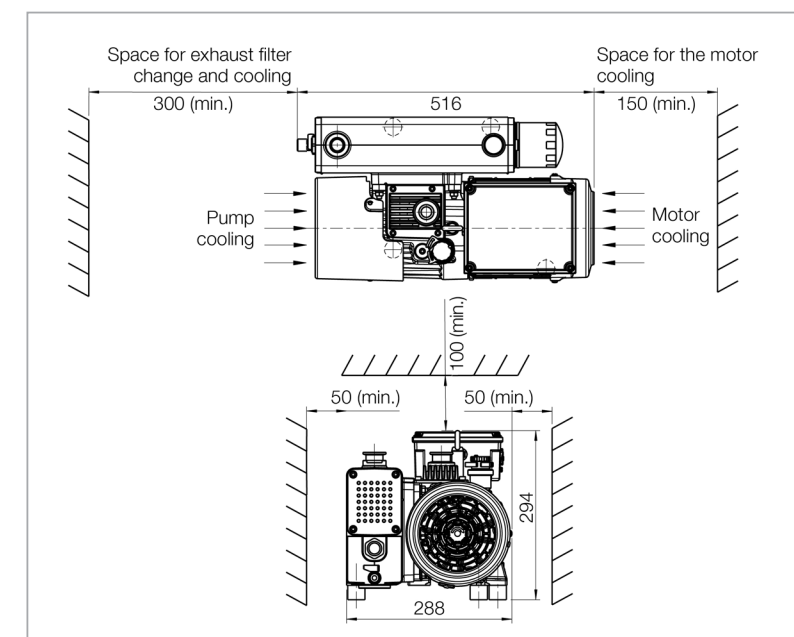
1. **Oil level**
Indicates a too low oil level
2. **Oil temp**
Indicates overheating
3. **Exhaust filter condition (back-pressure)**
Indicates that the exhaust filter needs to be changed

Products

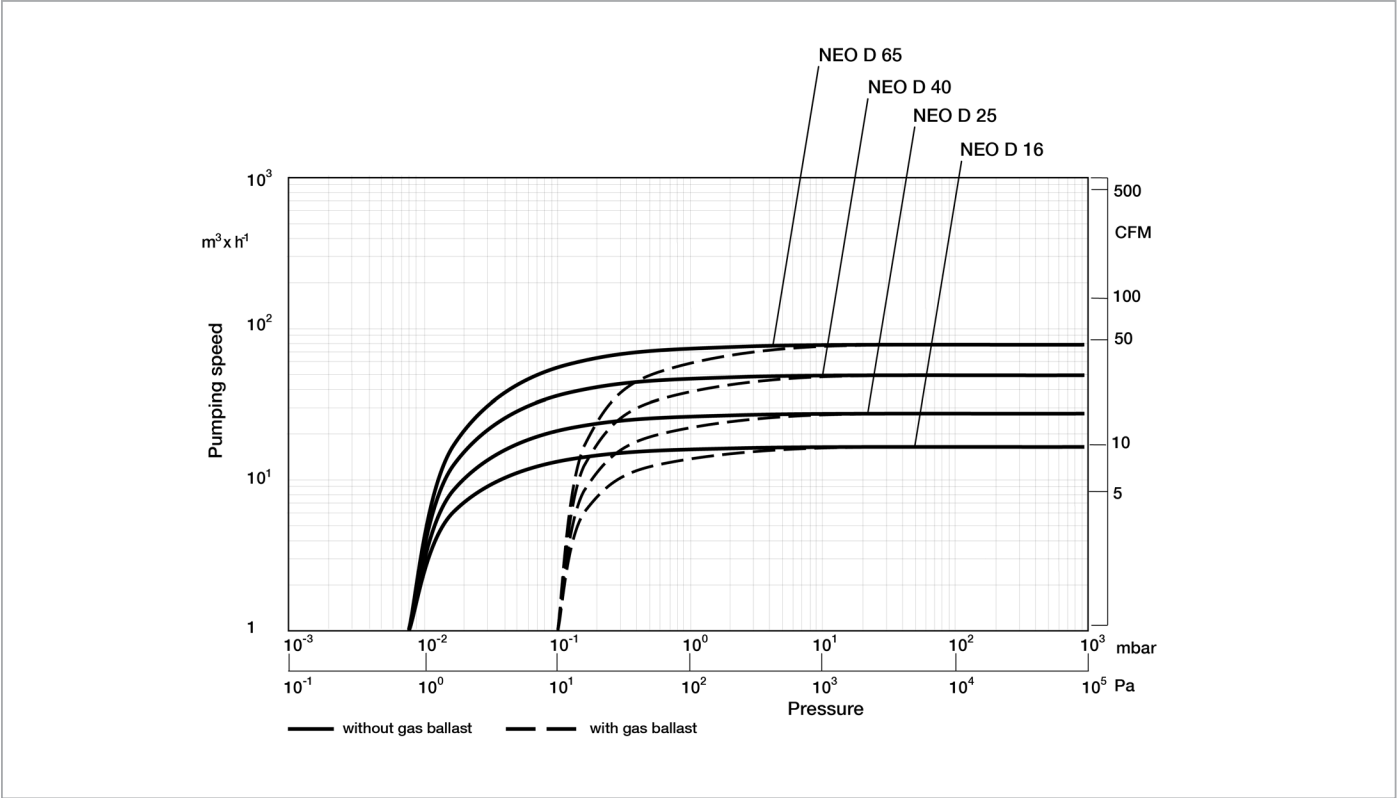
NEO D 16 / D 25 / D 40 / D 65



Typical location of main pump components



Main installation clearance (in mm)



Pumping speed characteristics of the NEO D 16, D 25, D 40 and D 65 at 50 Hz

Technical Data		NEO							
		D 16		D 25		D 40		D 65	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed ¹⁾	m³/h (cfm)	19 (11.18)	23 (13.54)	28 (16.48)	34 (20.01)	47 (27.66)	56 (32.96)	74 (43.55)	89 (52.38)
Pumping speed ¹⁾	m³/h (cfm)	16 (9.42)	19 (11.18)	24 (14.13)	29 (17.07)	40 (23.54)	48 (28.25)	63 (37.08)	76 (44.73)
Ultimate total pressure without gas ballast ¹⁾	mbar (Torr)	< 8 x 10 ⁻³ (< 6 x 10 ⁻³)							
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	< 1 x 10 ⁻¹ (< 0.75 x 10 ⁻¹)							
Water vapor tolerance ¹⁾	mbar (Torr)	10 (7.5)							
Oil capacity	l (qt)	1.5 (1.59)				3 (3.17)			
Noise level ²⁾	dB(A)	54	55	54	55	57	58	57	58
Motor power									
three-phase motor	kW (hp)	0.55 (0.75)	0.70 (0.95)	0.9 (1.22)	1.1 (1.5)	1.15(1.54)	1.5 (2.04)	2.0 (2.72)	2.6 (3.54)
single-phase motor	kW (hp)	0.75 (1.02)	0.9 (1.22)	0.9 (1.22)	1.1 (1.5)	1.3 (1.77)	1.6 (2.18)	–	–
Frequency converter	kW (hp)	0.75 (1.02)	0.9 (1.22)	0.9 (1.22)	1.1 (1.5)	1.5 (2.04)	1.5 (2.04)	2.0 (2.72)	2.2 (2.99)
Weight	kg (lbs)	48 (106)		48 (106)		80 (176)		88 (194)	
Flanges	DN	25 ISO-KF				40 ISO-KF			
Dimensions (L x W x H) ³⁾	mm (in.)			516 x 288 x 294 (20.32 x 11.34 x 11.57)		632 x 356 x 320 (24.88 x 14.02 x 12.60)			
three-phase motor	mm (in.)	516 x 288 x 294 (20.32 x 11.34 x 11.57)		516 x 288 x 294 (20.32 x 11.34 x 11.57)		632 x 356 x 320 (24.88 x 14.02 x 12.60)		669 x 359 x 320 (26.34 x 14.13 x 12.60)	
single-phase motor		516 x 288 x 294 (20.32 x 11.34 x 11.57)		516 x 288 x 294 (20.32 x 11.34 x 11.57)		12.60)		–	

¹⁾ To DIN 28 400 and following numbers

²⁾ Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft), with LVO 120, LVO 140 or LVO 700 oil

³⁾ Dimensions may vary in function of mounted accessories or specific motors

Ordering Information

Ordering Information		NEO		
	D 16	D 25	D 40	D 65
	Part No.	Part No.	Part No.	Part No.
3-phase world motor ¹⁾ 180...264 / 342...457 V, 50 Hz & 180...264 / 342...506 V, 60 Hz	970102V	970202V	970302V	970402V
1-phase ¹⁾ 180 - 264 V, 50 & 60 Hz with overload protection, w/o power cable	970100V C14 socket	970200V C14 socket	970300V C20 socket	-
1-phase ¹⁾ 115 V ± 10%, 60 Hz with overload protection, with NEMA 6-15P power cable	970103V	-	-	-
Accessories ²⁾				
External frequency converter for variable speed operation between 40 and 60 Hz and monitoring. Supply voltage 1ph 200-240 V ± 10 %, 50/60 Hz	970FC01			
Roots adapter WA(U) 251/501	-	-	970RA02	970RA01
Oil level switch	9700LS			
Exhaust filter pressure switch	971471210			
Exhaust filter pressure manometer	95193			
Temperature switch sizes 16 / 25 / 40	9700TS			
Temperature switch sizes 65	9700TS65			
PT100 sensor	-		971444320	
Gas ballast EM 24 V DC, 0.5 A	9700GBDC			
Permanent	9700GBP			
Permanent with 16 KF	EK6702221			
Manual with 16 KF	9700GBA			
Spare parts for standard pumps				
Exhaust filter	EK6702228	EK6702158	EK6702490	EK6702425
Oil filter	EK96004			
Maintenance kit	EK9701M	EK9702M	EK9703M	EK9704M
Repair kit	EK9701RES	EK9702RES	EK9703RES	EK9704RES
Seal kit	EK9701SK	EK9702SK	EK9703SK	EK9704SK
Consumables				
Oil				
Long life LVO 700	2 x L70001		3 x L70001	
Mineral LVO 120	2 x L12001		3 x L12001	

¹⁾ Pumps delivered filled in with LVO700 oil

²⁾ All accessories can be retrofitted.

For the pump inlet accessories (e.g. inlet filters, inlet absorption traps etc.) kindly consult TRIVAC B Catalogue Section

For the connection fittings, kindly consult the Flanges & Fittings Catalogue Section