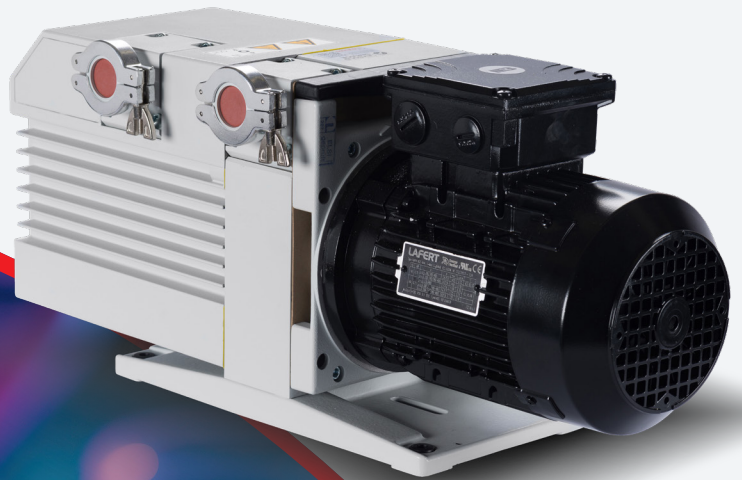




TRIVAC B

Rotary vane vacuum pumps
with a proven concept



For vacuum work in industry and research

Oil-sealed rotary vane vacuum pumps are used in all areas of vacuum technology and are particularly well suited for many applications in production and research. These pumps are used to pump down to pressures in the rough or medium vacuum range or as backing pumps in combination with roots, diffusion, turbomolecular or cryopumps.



Sustainable and quiet operation

Sustainable and eco-friendly operation with quiet operation for a comfortable working environment.



Efficient and energy-saving performance

Optimized efficiency for reduced energy consumption and a cost-effective operation.



Modern vacuum technology

High pumping speeds, low ultimate pressures and continuous operation up to 1000 mbar with external oil mist filter.

Special features

TRIVAC B series pumps are oil-sealed vacuum pumps based on the rotary vane principle. The oil injected into the pump chamber is used for sealing, lubrication and cooling purposes. TRIVAC B pumps are among the best available worldwide, with many years of operation and an impressive list of satisfied customers.

Environmentally friendly

- Low noise
- Low vibration

Energy saving

- Low power consumption
- Low thermal losses

Modern vacuum technology

- High pumping speeds down to ultimate pressure
- Very low ultimate pressure, even with gas ballast
- High water vapor tolerance
- Continuous operation right up to 1.000 mbar, with external oil mist filter
- Built-in oil pump, force-feed bearing lubrication

Well-proven design

- Compact, air cooled
- Handy, retractable handle on the small sizes
- All controls and oil level checks on the front side
- Horizontal or vertical intake and exhaust port
- Service-friendly
- Exchangeable inner section
- Installation of mechanical and chemical/mechanical full flow oil filters possible
- Pumps are free of non-ferrous metals
- Motor protection IP 54/IP 55



Technology you can rely on

Design features

Coupling and motor

The TRIVAC B's pumping area is directly linked to the motor via an elastic coupling element to ensure that the pump runs evenly and smoothly.

Gas ballast valve

The gas ballast valve is opened and closed by means of a short lever. By admitting a controlled amount of air – the gas ballast – a certain degree of vapor condensation is prevented within the pump.

Exchangeable inner section

The pump's inner section may be changed with no special tools or expertise. It consists only of all components vital to the pump's operation. Changing the TRIVAC B's inner section makes it as good as new.

1.000 mbar intake pressure

Trouble-free operation even at 1.000 mbar intake pressure is ensured by its built-in oil pump, providing forced lubrication of the bearings in which a small amount of lubricant is fed to the compression and expansion chambers to ensure lubrication of the vanes. An external oil mist filter is needed for high pressure or short cycle operation.

Surface corrosion

Pumps are yellow metal free. The oil box, intake and exhaust lines are made of aluminum, and only solvent-resistant sealing materials are employed.

Anti-suckback valve

An oil pressure-controlled anti-suckback valve is built into the TRIVAC B's intake. During standstill (as a result of a power failure, for example), the anti-suckback valve blocks the intake to prevent a pressure increase in the connected vacuum system. Additionally, the TRIVAC B's inner pump body is vented. This blocking process will also work correctly when operating the pump with an opened gas ballast valve. As a result, the backstreaming of any oil from the pump into the vacuum system is effectively prevented. The anti-suckback valve's leak rate is less than 3×10^{-5} mbar/l.s⁻¹.

TRIVAC BCS

Applications for TRIVAC BCS models will be found wherever an increased tightness, numerous accessories and/or monitoring capabilities are required.

ATEX

All TRIVAC B basic models are certified in accordance with 2014/34/EU (ATEX), Cat. 3 inside. Additionally, we offer one pump for every pumping speed class available that's certified in accordance with 2014/34/EU (ATEX), Cat. 3 inside and 3 outside. For special explosionresistant applications, two TRIVAC D 16 B pump models are available for pumping explosive atmospheres out of zone 0. Both models are certified according to 2014/34/EU (ATEX), Cat. 1 inside and 2 outside.



Flexible and reliable vacuum technology

Applications

TRIVAC*	D 4 B	D 8 B	D 16 B	D 25 B	D 40 B	D 65 B	D 16 B ex	D 16 BCS D 25 BCS D 40 BCS D 65 BCS
Vacuum coating	■	■	■	■	■			
Research and Development	■	■	■	■	■	■		■
Chemistry/Pharmaceuticals	■	■	■	■	■	■		
Metallurgy/Furnaces					■	■		
Automotive industry		■	■					
Space simulation					■	■		
Analytical engineering	■	■	■	■				
Environmental engineering	■	■	■	■	■	■		
Cooling and air-conditioning	■	■	■	■	■			
Electrical engineering	■	■	■	■	■	■		
Mechanical engineering	■	■	■	■	■	■		
Healthcare technology	■	■	■	■				■
Vacuum drying cabinets	■	■	■	■				
Freeze-drying systems	■	■	■	■	■	■		
Backing pumps for high vacuum pump systems	■	■	■	■	■	■	■	■
Leak detectors			■	■	■	■		

* Please refer to our full line catalog for the complete range of TRIVAC pumps and applications



Dual-stage rotary vane vacuum pumps



Accessories

TRIVAC*	D 4 B	D 8 B	D 16 B	D 25 B	D 40 B	D 65 B	D 16 B ex	D 16 BCS D 25 BCS D 40 BCS D 65 BCS
Exhaust filters AF(-DOT)	■	■	■	■	■	■		■
Condensate traps/separators AK	■	■	■	■	■	■		■
Exhaust filters with lubricant return ARP/AR	■	■	■	■	■	■		■
Exhaust filters with lubricant return ARS								■
Oil drain tap	■	■	■	■	■	■	■	■
Oil drain kit	■	■	■	■	■	■	■	■
Dust filters FH/DF, DN 16 - 40 ISO-KF	■	■	■	■	■	■		■
Adsorption trap FH/RF, DN 16 to 40 ISO-KF	■	■	■	■	■	■		■
Cold trap TK	■	■						
Dust separators AS	■	■	■	■	■	■		■
Mechanical oil filters OF	■	■	■	■	■	■		■
Chemical oil filters CF	■	■	■	■	■	■		■
Chemical filters with safety isolation valve CFS								■
Inert gas system IGS								■
Roots pump adapter					■	■		
Flange components, valves	■	■	■	■	■	■	■	■

* Please refer to our full line catalog for the complete range of TRIVAC pumps and accessories

Oil filters OF/CF

A pressure-lubrication system and oil pump in every TRIVAC B allows for easy connection to main flow oil filters. These filters are available for mechanical filtering (OF types) or combined chemical/mechanical filtering (CF types).

Gas ballast valve

- Increased pump lifespan
- Extended oil service life (application-dependent)
- Easy installation on the TRIVAC B
- No hose connections required
- Easy-exchange filters
- Low oil loss during filter exchange
- Expanded range of applications to meet special requirements
- Mechanical pump damage prevention
- Identical filter housings
- Maintenance indicator for exceptional reliability

Condensate traps AK

Condensate traps protect the pumps against the accumulation of condensate and backstreaming of fluids.

Advantages:

- Easy installation with no additional accessories
- For use either on the intake or exhaust side
- Solvent-resistant
- Drain via drain screw or drain tap

Under certain circumstances, liquid may accumulate in the intake line when pumping vapors. In these cases, installation of a condensate trap on the intake side of the TRIVAC B is advised. Its use is also recommended in situations where it's inconvenient to run the exhaust line and where the exhaust line may drain back to the pump.



TRIVAC D 16 B
with translucent plastic exhaust filter AF and condensate trap AK

Roots pump adapter

The Roots pump adapter allows for direct installation of a small Roots pump on a TRIVAC D40/65B/BCS.

Advantages:

- Compact and space saving
- Short and direct connection between the pumps
- Low conductance loss
- Easy installation

Exhaust filters AF

These exhaust filters retain oil mists, aerosols and harmful substances.

Advantages:

- Retains dirt and cracked products
- Built-in overpressure relief valve
- Separation efficiency over 99%
- Window for checking the amount of collected substances
- Exchangeable filter inserts
- Solvent-resistant
- Easy to clean and use

Exhaust filters with lubricant return ARP/AR/S

This combination of an exhaust filter and float-controlled valve significantly extends the TRIVAC B's maintenance intervals. As a result, oil consumption is reduced to minute levels.

Advantages:

- Filters the exhaust air from entrained lubricant particles
- Lubricant return through the aid of a float-controlled valve
- No lost lubricant operation costs
- Standard filter element
- Built-in overpressure relief valve
- Extremely low oil consumption
- All seals made of FPM (FKM)
- Easily exchanged intake port (either vertical or horizontal orientation)

Exhaust filters with lubricant returns are connected to the exhaust port of the TRIVAC B, and the return line is connected to the intermediate flange under the intake line. Depending on the properties of the pumped medium, we recommend connecting an exhaust line to the exhaust filter, particularly when pumping hazardous substances.

Dust filters

Dust filters protect the pump against inlet particles. They consist of a steel casing with a cover, featuring three locking clips for quick and easy opening and closing. The dust filter casings are equipped with a ISO-KF flange. The filter housing is supplied without inserts, as the filter insert should be selected for the individual requirements.

Advantages:

- Easy to fit
- Vacuum-tight steel casing
- Easy filter replacement
- High filter capacity

Adsorption traps

Adsorption traps are containers with stainless steel inserts which can be filled with various types of adsorbents. They provide high adsorbing capacities for vapors (water vapor in particular).

Advantages:

- Stainless steel adsorption inserts (optional)
- Bakeable stainless steel insert (up to 300 °C) for adsorbent regeneration
- For use with various adsorbents and separating components
- Quick and easy replacement of insert and adsorbent
- Cost-effective generation of hydrocarbon-free vacuum
- Low maintenance costs compared to many dry compressing pumps



Dust filter casing (empty), for optional equipping



Adsorption traps and filter insert with various adsorbents

Accessories

TRIVAC		D 4 B	D 8 B	D 16 B	D 25 B	D 40 B	D 65 B
Nominal pumping speed ¹⁾	m ³ /h	4.8	9.7	18.9	29.5	46.0	75.0
Pumping speed ¹⁾	m ³ /h	4.2	8.5	16.5	25.7	40.0	65.0
Ultimate partial pressure ¹⁾ without gas ballast	mbar	< 1 · 10 ⁻⁴	< 1 · 10 ⁻⁴	< 1 · 10 ⁻⁴	< 1 · 10 ⁻⁴	< 1 · 10 ⁻⁴	< 1 · 10 ⁻⁴
Ultimate total pressure ¹⁾ with gas ballast	mbar	< 5 · 10 ⁻³	< 5 · 10 ⁻³	< 5 · 10 ⁻³	< 5 · 10 ⁻³	< 5 · 10 ⁻³	< 5 · 10 ⁻³
Water vapor tolerance	g/h	95	160	305	480	1185	1925
Oil filling min./max.	l	0.3 / 0.8	0.3 / 0.9	0.45 / 1	0.6 / 1.4	1.7 / 2.6	2.0 / 3.3
Motor power	W	370	370	550 / 750	750	2200	2200
Rotational speed of the pump	U/min.	1500 (50 Hz) / 1800 (60 Hz)					
Connection ports	DN	16 ISO-KF	16 ISO-KF	25 ISO-KF	25 ISO-KF	40 ISO-KF	40 ISO-KF
Weight	kg	17.9	18.9	31.5	35.8	72.5	81.7

¹⁾ according to ISO/R 1000, DIN 28 400, and other German and international vacuum technology standards

Ordering information			D 4 B	D 8 B	D 16 B	D 25 B	D 40 B	D 65 B
with single phase motor			ATEX					
230 V, 50 Hz	Schuko	ATEX 3i	112 45	112 55	15130016V01CZO	15130025V01CZO	—	—
208-252 V, 50/60 Hz	Schuko **	ATEX 3i	—	—	113 25	113 35	—	—
110-115 V / 210-230 V, 50/60 Hz	Schuko **		140 081**	140 082**	—	—	—	—
with three-phase motor			ATEX					
200-240 V, 50 Hz / 200-240 V, 60 Hz								
200 V, 50 Hz (IE2) / 208-240 V, 60 Hz (EPAct)		ATEX 3i	112 46	112 56	112 66	112 76	112 86	112 96
380-400 V, 50 Hz / 380-400 V, 60 Hz								
380-400 V, 50 Hz (IE2) / 416-480 V, 60 Hz (EPAct)								
230 V / 400 V, 50 Hz		ATEX 3i/o	140 140	140 150	140 160	140 170	140 180	140 190
Accessories:								
Roots pump adapter			—	—	—	—	168 30	
Condensate trap			188 06 (AK 4-8) 190 60 (AK 8)	188 11 (AK 16-25) 190 63 (AK 16)			188 06 (AK 40-65)	
Exhaust filter			189 06 (AF 4-8) 190 50 (AF 8)	189 11 (AF 16-25) 190 53 (AF 16)			188 16 (AF 40-65)	
Exhaust filter with lubricant return			189 20 (AR 4-8)	189 21 (AR 16-25)			189 22 (AR 40-65)	
Dust filter and adsorption trap housing			140 116T (FH 16)	140 125T (FH 25)			140 140T (FH 40)	
Dust filter insert				140 117S (DF 16-25)			140 141S (DF 40-65)	
Adsorption trap filter insert, bakeable to 300 °C				140 118A (RF 16-25)			140 142A (DF 40-65)	
Adsorbents			Active charcoal, zeolite, aluminum oxide, pall rings					

* North and South American versions

** other plugs upon request

Please refer to our full line catalog for the complete range of TRIVAC pumps and accessories.

The pumps and accessories described in this folder are a just a selection from our complete product range. Additional motors and oils upon request.