

TRIVAC L



The perfect balance
of performance for
various applications



Two-stage rotary vane pumps

Leybold's new generation TRIVAC L two-stage rotary vane vacuum pumps perfectly balance performance, reliability and your overall ownership costs. These air-cooled pumps ensure stable performance and ease of operation for different industrial applications.

The TRIVAC L features an optimized design that extends the uptime of your processes through convenient and efficient onsite maintenance. The standard TRIVAC L pumps come with LVO 130 mineral oil, but custom versions are available for specific demands, like motors, oil options and systems.



Performance driven

- 90m³/h version available for higher pumping speed requirements
- Ideal for humid applications due to enhanced water vapor handling



Plug & Pump

- Upgrade to a competitive two-stage rotary vane pump via easy replacement
- Adjustable outlet flange and roots adapter for easy connection



Extended uptime

- Innovative optimized thermal design
- Improved durability from inner mechanical optimization



Lower total cost of ownership

- Low power consumption
- High energy efficient motors
- Economic solution and simplified serviceability



Economic solutions for worldwide industrial applications

Worldwide motor options

Multiple motor options for various world regions. Default CE certification for motorized variants and bare shaft variants also available.

2

1

New solution for faster evacuation

90 m³/h two-stage RVP for higher pumping speed requirement with compact installation and easy systemization.

8

Lower total cost of ownership

IE4 motors with low power consumption, high energy efficiency and simplified serviceability.

7

Easy installation and operation

Standard flanges for inlet and outlet connection. Outlet adjustable for vertical or horizontal orientation.

6

Easy systemization

Roots adapter kits for a compact direct combination and comprehensive accessories platform for variable system configurations.

5

Simple daily check

Glass window for monitoring oil status and default drain valve for applications requiring frequent oil changes.

4

Optimized air cooling

Patented oil casing design reduces heat emission into the environment, lowers oil temperature and extends the life of oil.

3

Proven performance for humid processes

Patented three-stage gas ballast provides enhanced water vapor tolerance for applications with high humidity.



Markets and applications

✓ Charging system

Refrigerator production
Air conditioner / Heat pump production
Heat pipe production



✓ General industry

Leak detection systems
Insulated containers / LNG-Cryo tanks production
Purification / Oil degassing



✓ Furnace & Metallurgy

Industrial furnaces / Heat treatment
Welding technology
Metallurgical systems



✓ Analytical, Research & Development

Laboratory equipment
Magnetic medical equipment
Spectrometers and leak detectors

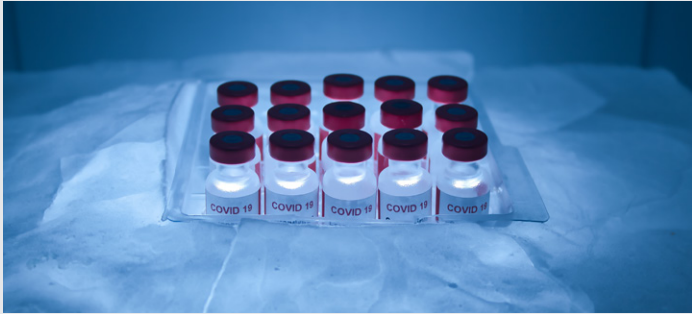


The perfect balance of performance for various applications

✓ **Freeze drying**

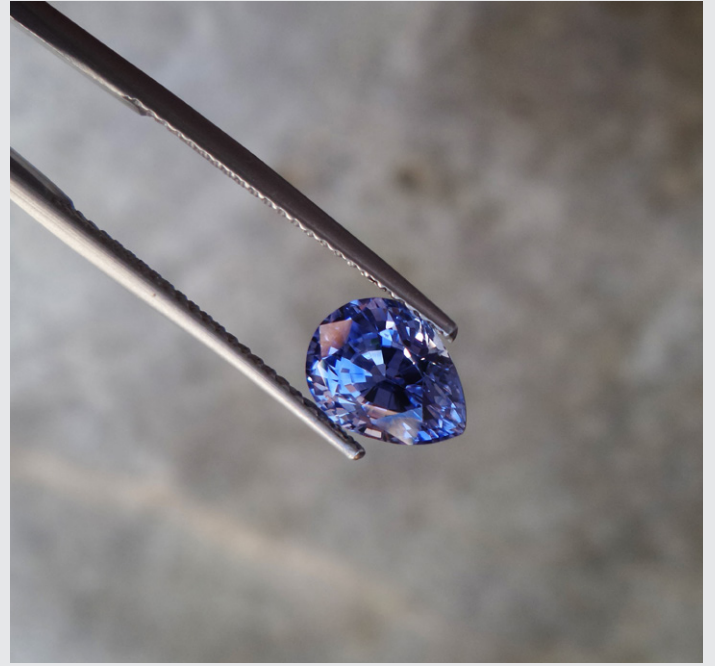
Freeze drying of food

Freeze drying of pharmaceuticals



✓ **Special applications**

Crystal pulling like sapphire, SiC or other substrate material for Semi or Solar.



✓ **Thin film coating**

Large area coating

Industrial coating



✓ **Flywheel application**

Transportation system

Frequency regulation system



Product line

The standard TRIVAC L provides four options for motor selection:

- EU/CN: Economic solution for 50Hz regions with IE4 and CE defaults
- EU/US: Wide range version for most regions with IE3 / CE / UR / CSA / EAC defaults*
- JP/KR: Special version for Japan / Korea / Taiwan with IE3 / CE / UR / CSA / EAC defaults, design meets Korea's KEMCO requirements*
- Bare shaft: Pump delivered without motor for individual requirements*

* D 5 L and D 12 L are not available

Accessories

The TRIVAC L vacuum pumps has a comprehensive range of accessories that allows it to adapt to your specific process requirements:

- Exhaust oil mist filters
- Roots pump adapters
- Gas ballast kits - permanent or solenoid
- Thermal switches
- Inlet dust filters
- Inlet absorption traps



Systems + Solutions

Custom-made solutions for your applications

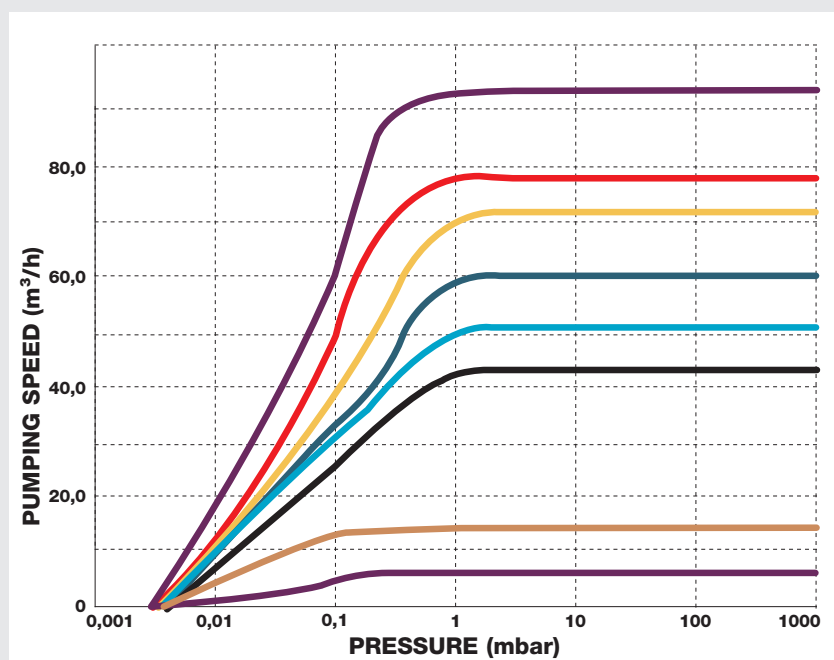
TRIVAC L pump systems are a combination of fore vacuum pumps along with roots vacuum pumps, which are typically used to attain a base pressure of 10^{-3} mbar. A line of standard pump systems has been developed to provide the right solution for your processes.

- RUVAC WA(U), WS(U) and WH(U) roots pumps
- Standardized adapter versions with compact footprint
- Customized frames (e.g.: movable or on castors)
- Electronic controls per your specifications, including solutions with electrical cabinets
- Peripheral accessory extensions (e.g., vacuum gauges, valves, dust filters, oil mist filters...)
- Subsystems for integration within customers' plants

Please contact your local Leybold sales office for custom designed vacuum solutions for special processes and configuration.



Pumping speed curve



TRIVAC D5L	50HZ
TRIVAC D12L	50HZ
TRIVAC D40L	50HZ
TRIVAC D40L	60HZ
TRIVAC D63L	50HZ
TRIVAC D63L	60HZ
TRIVAC D90L	50HZ
TRIVAC D90L	60HZ

Technical data

TRIVAC			D 5 L	D 12 L
Nominal pumping speed 50Hz	m³/h		5,8	14,2
Pumping speed 50Hz	m³/h		5,1	12
Ultimate total pressure without gas ballast	mbar		2×10 ⁻³	
Ultimate total pressure with gas ballast in position 1 and 2	mbar		3×10 ⁻² /1×10 ⁻¹	3×10 ⁻² /6×10 ⁻²
Water vapor tolerance with gas ballast in position 1 and 2	mbar		11/32	5/28
Water vapor pumping rate with gas ballast in position 1 and 2	kg/h		0.04/0.12	0.04/0.25
Noise level w/o GB 50Hz	dB(A)		50	
Maximum permitted inlet pressure	bar. G		0,05	
Maximum permitted outlet pressure	bar. G		0,2	
1 Phase Motor 50Hz	KW		0,37	
3 Phase Motor 50Hz	KW		0,37	
Weight w/o oil	1 Phase 3 Phase	kg	24 24.5	27.5 28
Length x Width x Height	1 Phase 3 Phase	mm	479 x 174 x 272 451 x 158 x 272	533x 174 x 272 506 x 158 x 272
Oil volume		L	0.45~0.7	
Feet dimension (Length x Width)		mm	280 x97	
Inlet flange		KF	25	
Outlet flange		KF	25	
Air inlet and air outlet position			Air inlet on coupling housing and air outlet on oil casing	

ORDER INFORMATION Nominal supply (VAC)			
220/230	50 Hz	15190005V00CJL	15190012V00CJL
380/400	50 Hz	15190005V02CJL	15190012V02CJL
Exhaust Oil Mist Filter AF20		14151014A001CJL	14151014A001CJL
Oil return kit 5/12		14151014A002CJL	14151014A002CJL
Oil Drain Valve		13911006A001CJL	13911006A001CJL
EM GB Kit		13911005A003CJL	13911005A003CJL
Motor Cable CN Plug/ C13, 2m		14111020A001CJL	14111020A001CJL
Motor Cable EU Plug/ C13, 2m		14111020A002CJL	14111020A002CJL



TRIVAC		D 40 L	D 63 L	D 90 L
Nominal pumping speed 50/60Hz	m³/h	49/59	67/80	92/110
Pumping speed 50/60Hz	m³/h	42/50	60/72	79/95
Ultimate total pressure without gas ballast	mbar	3×10 ⁻³		
Ultimate total pressure with gas ballast in position 1	mbar	6×10 ⁻³		
Ultimate total pressure with gas ballast in position 2	mbar	2×10 ⁻²		
Water vapor tolerance	mbar	35	30	25
Water vapor capacity 50/60Hz	g/h	1090 / 1308	1334 / 1601	1464 / 1757
Oil filling, min / max	l	3.1/4.1	3.3/4.4	3.6/4.8
Admissible ambient temperature	°C	10-40		
Noise level without / with gas ballast in position 1	dB(A)	58/60		
Motor rating power 50/60Hz	kW	1.1/1.3	1.5/1.8	2.2/2.6
Type of protection	IP	55		
Intake / exhaust connection	DN	40 KF		
Pump dimensions (L×W×H)	mm	725×244×352	781×244×352	859×244×352
Net weight	kg	78	84	96

ORDER INFORMATION Nominal supply (VAC)				
220/230/380/400 V	50 Hz	1019040V00	1019063V00	1019090V00
220/230/380/400/415 V	50 Hz	15190040V04CJL	15190063V04CJL	15190090V04CJL
230/460 V	60 Hz			
200 V	50 Hz	1019040V02	1019063V02	1019090V02
200/380 V	60 Hz			
Exhaust Oil Mist Filter AF 40		1019040A20		
Exhaust Oil Mist Filter AF 63-90		1019090A20		
Permanent GB Kit with NW16		A35924545		
EM GB Kit with NW16		A35924546		
Roots Adapter		1019040A60		

Note: Permanent GB kit is removed from plan

