Dry Screw Vacuum Pumps VARODRY

The new VARODRY vacuum pump series is designed and produced by Leybold, in Germany specifically for industrial processes.

Being 100% air-cooled and dry, the VARODRY only consumes electricity, with no extra costs for cooling water supply or oil / oil-filter exchange and disposal. Its low power consumption will save significant operation costs.

With VARODRY vacuum can be easy, efficient, reliable and dry.

Advantages to the User

- Effortless installation -
  just connect to power and process
- Smoothless control -
  via VSD or regulation valves
- Seamless integration/retrofit -
  air cooled and easy accessability
- Minimized total cost of ownership
  - Low upfront investment
  - Best-in-class power consumption
  - Limited maintenance expenses
  - No costs for cooling water and compressed air
  - Competitive at all pressures and over the complete pump life cycle
  - Excellent vapor pumping capacity
  - Quiet, low pitch sound level
- Optimized system uptime
  - Robust pump design, made for industrial applications
  - Based on proven technology and an innovative belt drive
  - Superior performance, even in humid and dusty applications
  - Long-term operation with extended service intervals
- 100 % clean vacuum
  - Completely oil-free
  - Free of any oil emissions or oil leakages

Typical Applications

The VARODRY is optimized for the challenges found in many industrial applications:

- Repeated and fast cycling:
  - The VARODRY offers a very quick pump down. The pump tolerates atmospheric pressure shocks and repeated evacuation cycles.
- Dust / particle handling:
  - The rotor screw principle and anodization offers the best performance to handle fine, dry dust particles. In the case of large dust amounts, a wide filter portfolio is available.
- Vapor handling:
  - Due to its optimized temperature profile and the built-in gas-ballast, the VARODRY offers a high vapor tolerance, avoiding internal condensation.
- Reactive gas handling:
  - Often vapors (e.g. hydrocarbons) tend to react inside hot dry pumps and built-up internal coatings which can cause pump seizing. The internal temperature profile virtually eliminates this risk.
- Liquid handling:
  - The VARODRY can handle droplets or even liquid slugs as the liquids can flow freely out of the pump.

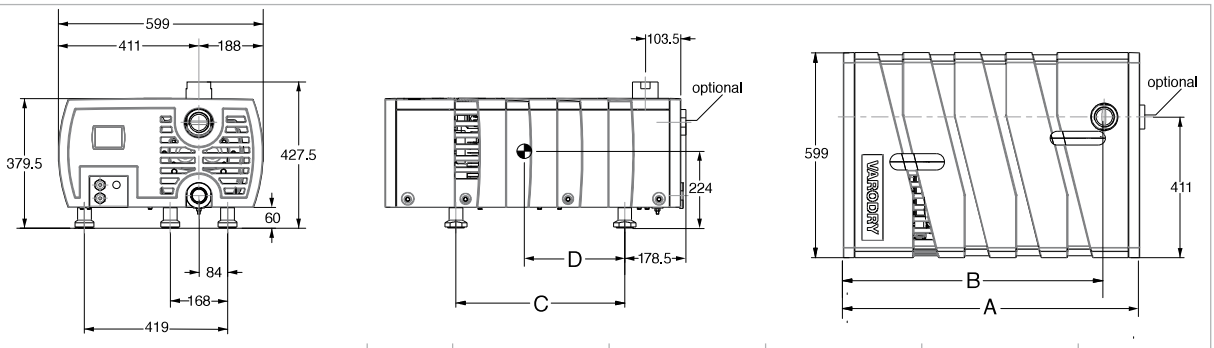
Technical details at a glance

- Intake connection
  - Horizontal or vertical orientation
  - G-thread as standard
  - ISO-KF, ISO-K or NPT thread as accessory
- Exhaust connection
  - G-thread as standard
  - ISO-KF or NPT thread as accessory
  - At lowest position, enabling condensate drainage
- Built-in exhaust silencer
  - Lowest noise emission
  - Drainable design
- Anodized variable pitch rotor
  - Benchmark for efficiency and robustness
  - Lowest power demand in its class
- Shaft seal / bearing protection
  - “Self-cleaning” seal design
  - Optional purge-gas system available
  - No need for seal purge in most industrial applications
- Gas-ballast
  - High vapor tolerance
  - Supports dust handling
- Air-cooled design
  - Low operation cost
  - Simple integration into mobile systems
- Innovative belt-drive
  - Provides synchronization and transmission
  - Proven, long-life technology
  - Easy to maintain via the partly removable enclosure
  - No need for gear lubrication
- Innovative bearing technology
  - Most robust hybrid bearing design
  - Life-time grease lubricated
  - No need for oil exchange
- Enclosure
  - Integrated noise dampening
  - Can be partly removed for convenient pump access
  - Clean and sleek design

Maintenance and Service

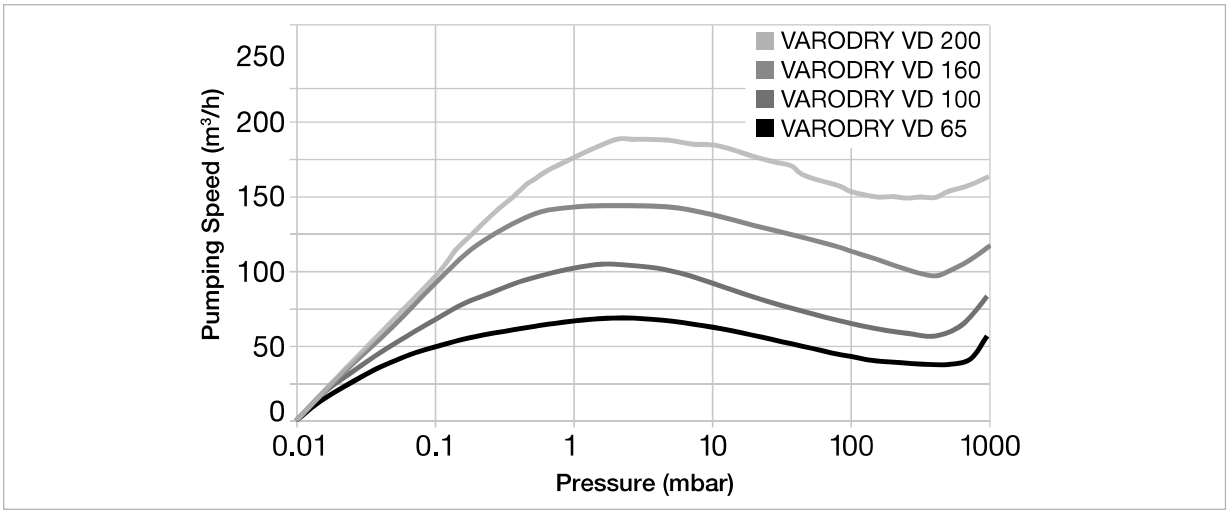
- Minimum maintenance and service requirements:
  - With only two wearing parts (belt and bearings), only minimal efforts are required to keep your pump running at peak performance. At the same moment, the uptime of your facility will be strongly improved.
- User maintenance:
  - The belt can easily be exchanged by the user in less than 30 minutes. The partly removable enclosure makes this really convenient. The belt exchange interval depends on the individual application, typically it is one year. Belt exchange kits and maintenance tools are available.
- Leybold Service:
  - The bearings can be on-site exchanged by trained Service technicians. Typical the bearing lifetime is 3 years. Complete pump-overhauls can be done in one of the many Leybold Global Service hubs.

    To ensure the highest factory uptime, Leybold offers a fast “pump exchange”. Our back-up pools offer flat pump exchange rates, to keep your production running at all times.

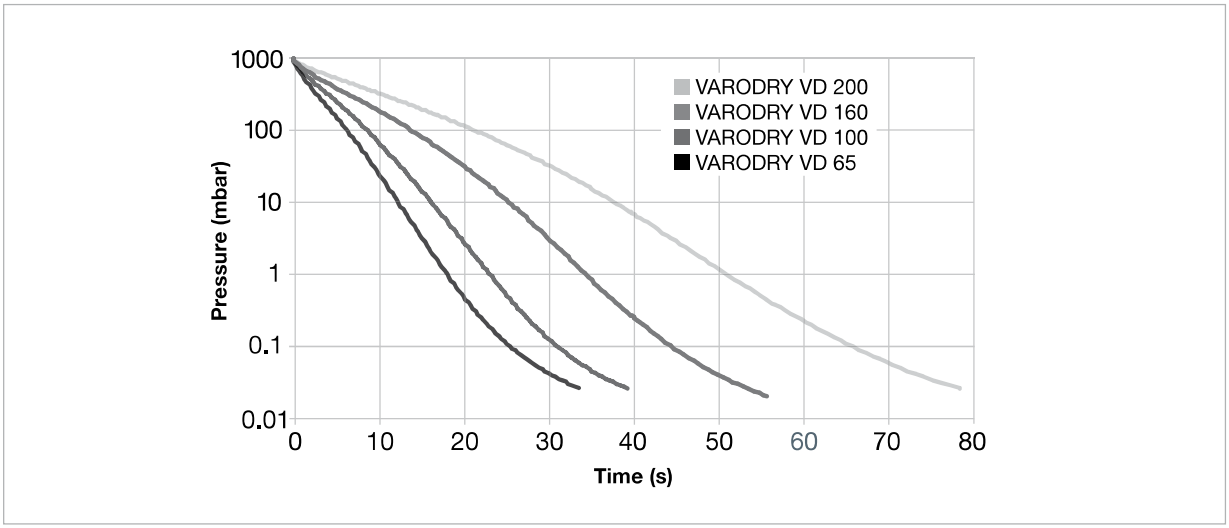


Pump Type		A	B	C	D
VD 65	mm (in.)	773 (30.43)	670 (26.38)	402 (15.83)	253 (9.96)
VD 100	mm (in.)	865 (34.06)	762 (30)	494 (19.45)	294 (3.70)
VD 160 / VD 200	mm (in.)	1060 (41.73)	957 (37.68)	647 (25.47)	270 (10.63)

Dimensional drawing for the VARODRY Pumps



Pumping speed curves of the VARODRY VD 65 and VARODRY VD 100



Pump-down time of a 100 l chamber

Technical Data

		VARODRY			
		VD 65	VD 100	VD 160	VD 200
Max. pumping speed	m^3/h	65	100	140	180
Ultimate pressure without gas ballast with standard gas ballast	 mbar mbar	 < 0.01 < 0.1			
Max. permissible inlet pressure	mbar	1050			
Max. permissible outlet pressure (rel. to ambient)	mbar	200			
Water vapor tolerance with standard gas ballast with big gas ballast	 mbar mbar	 20 60			
Water vapor capacity with standard gas ballast with big gas ballast	 kg/h kg/h	 0.8 2	 1.2 3.1	 1.9 5.1	 2.4 6.7
Noise level (with built-in silencer) at ultimate pressure (50 / 60 Hz)*	dB(A)	64 / 67		70 / 72	
Permissible ambient temperature	°C	0 to +40			
Mains voltage		50 Hz, 200/400 V ±10%, 3 ph or 60 Hz, 230/460 V ±10%, 3 ph			
Rated motor power	kW	1.5	2.2	3.0	4.0
Protection class	IP	55			
Intake connection		G 2"			
Outlet connection		G 1 1/2"			
Weight, approx.	kg	90	100	130	130

All listed data is preliminary.
*According to DIN EN ISO 2151

Ordering Information

	VARODRY			
	VD 65	VD 100	VD 160	VD 200
	Part No.	Part No.	Part No.	Part No.
Dry Screw Vacuum Pumps VARODRY 50/Hz	 **111 065 V10**	 **111 100 V10**	 **111 160 V10**	 **111 200 V10**
50/Hz, with purge gas module	**111 065 V15**	**111 100 V15**	**111 160 V15**	**111 200 V15**
60/Hz	**111 065 V11**	**111 100 V11**	**111 160 V11**	**111 200 V11**
60/Hz, with purge gas module	**111 065 V16**	**111 100 V16**	**111 160 V16**	**111 200 V16**
Accessories				
Inlet adapter DN40 ISO-KF, 20 mm	**111005A20**			
Inlet adapter G 1 1/4“, 10 mm	**111005A21**			
Inlet adapter NPT 1 1/4-11.5, 10 mm	**111005A22**			
Inlet adapter NPT 2-11.5, 35 mm	**111005A23**			
Inlet adapter DN63 ISO-K, 27 mm	**111005A24**			
Exhaust adapter DN40 ISO-KF, 20 mm	**111005A30**			
Exhaust adapter NPT 1 1/2-11.5, 30 mm	**111005A31**			
Inlet non return valve (for inlet pressures > 5 mbar) G 2“	**111005A15**			
Casters	**111005A50**			