

DRYVAC

The benchmark for
industrial applications

 **Leybold**



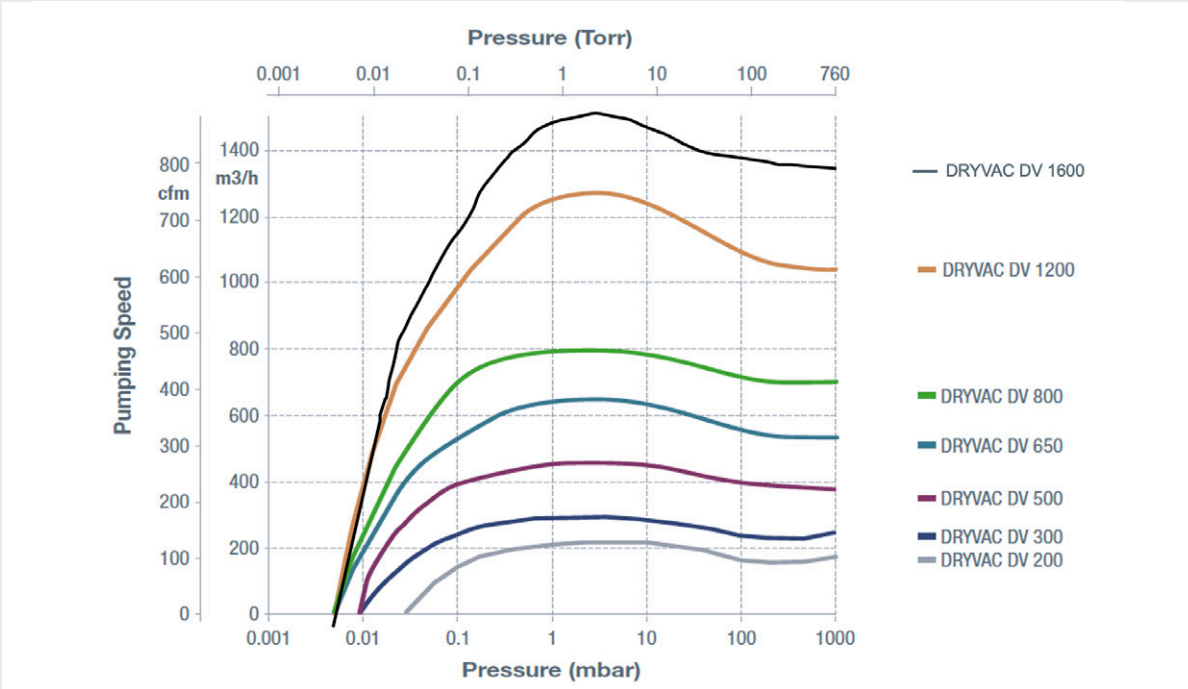
One smart concept, many variations: the DRYVAC series

Meet the models in our smart DRYVAC series. The ultimate test for an increasingly intelligent vacuum solution is whether it brings smart results. Enjoy best-in-class performance, reliability and efficiency.

What makes top-performing pumps even more intelligent? Smart accessories. All DRYVAC models are equipped with a frequency converter and offer compatibility with a intelligent range of fieldbus protocols for maximum flexibility.

This built-in frequency converter operates in conjunction with three standard sensors to monitor all electrical, thermal and mechanical components. The sensors detect the exhaust pressure, motor temperature and water outlet temperature and issue status updates and warnings when needed. Taking efficiency up a notch: with a frequency converter, DRYVAC moves up a whole class, making it the most efficient pump available.

Fieldbus compatibility makes DRYVAC vacuum pumps ready for the demands of smart manufacturing. All pumps offer serial I/O solutions including a RS485 interface and support for various fieldbus protocols.



DRYVAC
DV 650 / DV 800

DRYVAC
DV 1200 / DV 1600

DRYVAC
DV 200 / DV 300 / DV 500



Connected, efficient & reliable

Smart engineering for today and tomorrow: our network-capable DRYVAC series delivers cutting-edge performance and efficiency, even when the going gets tough.

This series of dry compressing screw-type vacuum pumps is engineered for the new era of smart manufacturing. Packed with intelligent features and functions, all **DRYVAC** models offer seamless connectivity, networked control and superior efficiency. **DRYVAC** pumps boost your productivity, minimize your carbon footprint, and lower your costs. Plus, thanks to an integrated smart service concept, they virtually look after themselves.



Harshest applications ready

Hermetically sealed, several purge options, flushable



Plug & Play

Inbuilt intelligent FC, easy networking & control, IoT ready



Performance Driven

High and stable pumping speed



Energy Efficiency

Low power due to rotor design and blow off valves



Compact

Significantly smaller than all equivalent pumps



DRYVAC for your applications

The **DRYVAC** series is suitable for even the toughest industrial demands and applications – whenever and wherever a hermetically sealed pump is required. All versions of the **DRYVAC** family feature water cooling, a highly compact design, and simple, versatile mounting options. Application examples:

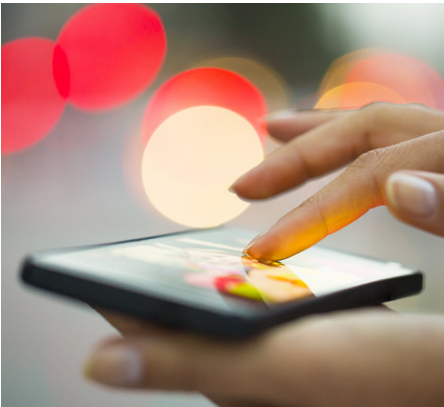
✓ **Drying**

Vacuum provides a gentle, energy-efficient drying solution, especially for heat-sensitive materials. But vacuum components also need to handle the large volumes of water vapor extracted in the process. DRYVAC pumps can withstand high humidity levels without additional maintenance (no extra oil or exhaust filter changes). Their screw design avoids condensation and allows the pumps to keep performing at a high level over time.



✓ **Coating systems**

Vacuum often plays an essential role in coating processes, which generally involve the modification of material surfaces – from metallization and glass coatings to solutions for high-tech products such as photovoltaic cells and ophthalmic lenses.



✓ **Steam sterilization**

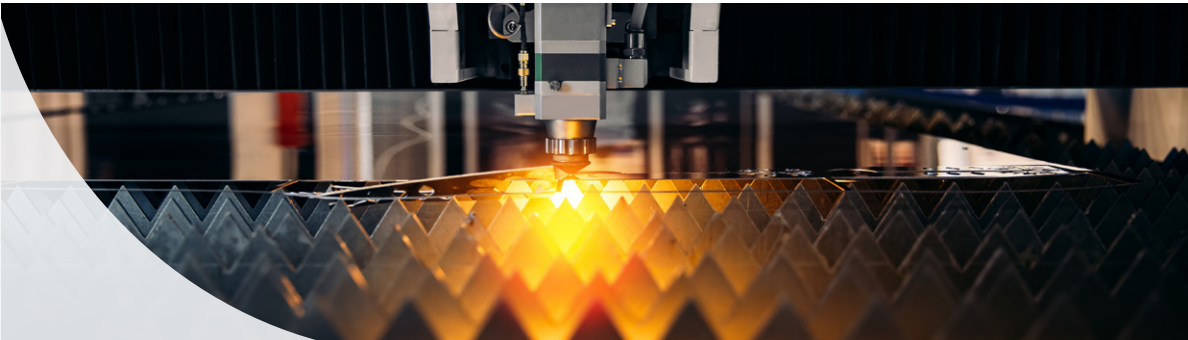
Steam sterilization processes rely on large quantities of high-temperature steam to destroy microbes. Vacuum is used to evacuate air from the sterilization chamber prior to sterilization. Like in drying processes, vacuum pumps employed in steam sterilization need to withstand high quantities of water vapor.



✓ **Heat treatment**

In brazing applications, vacuum pumps need to handle aggressive vapors. With the correct purge configuration, condensation of flux outgassing is effectively avoided and the pump operates reliably, even under the harshest conditions. Our DRYVAC models support different purge setups for added flexibility.

Please contact your local LEYBOLD representative to discuss your vacuum needs.



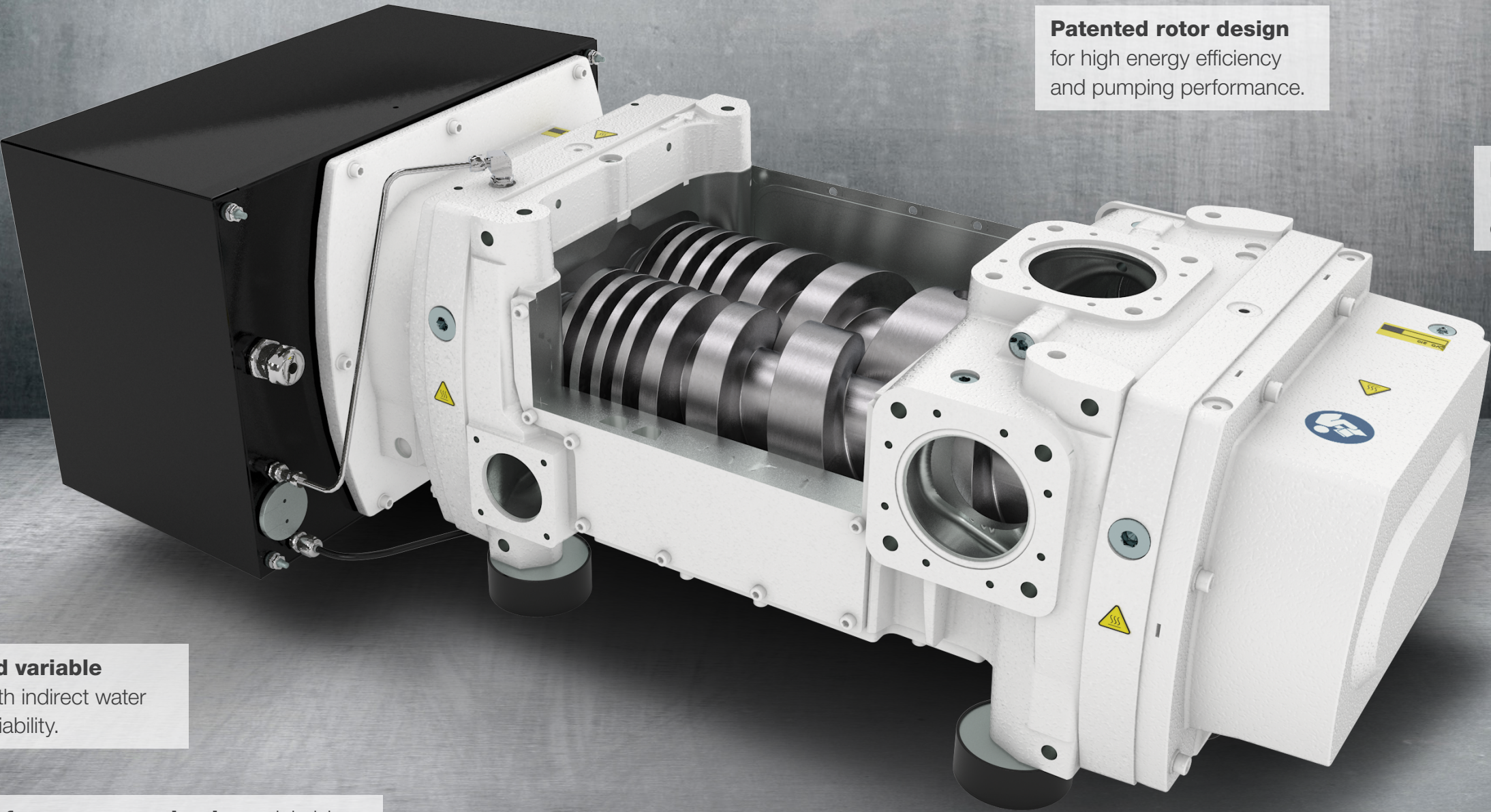
Built-in intelligence for your needs

Integrated temperature sensors
ensure a safe operation under harsh operating conditions. The water cooling lines are designed to prevent any clogging.

Easy networking, control & monitoring -
Industrial Ethernet, fieldbus or I/O

Patented rotor design
for high energy efficiency and pumping performance.

Harshest Applications Ready
Hermetically sealed - several purge options - flushable



Industrial standard variable frequency drive with indirect water cooling for highest reliability.

Oil free pump mechanism minimizing the interaction with vapors and dust.

OPTION: Energy Saver reduces the power consumption up to 50%.

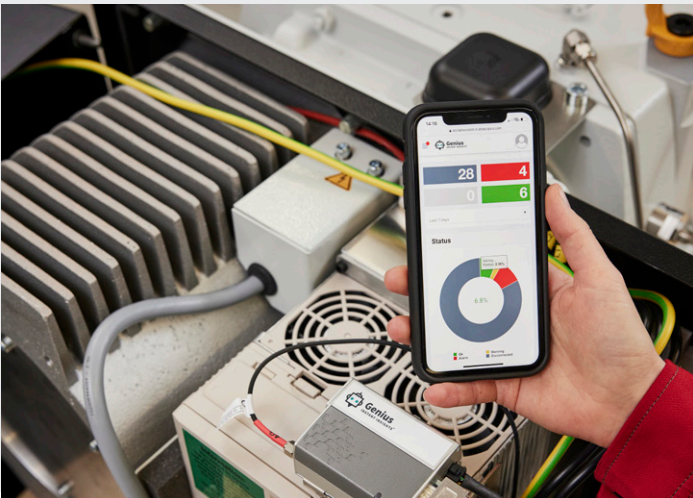


OPTION: Genius Instant Insights remote connectivity
Machine insights 24/7 and more uptime & availability for stable production.

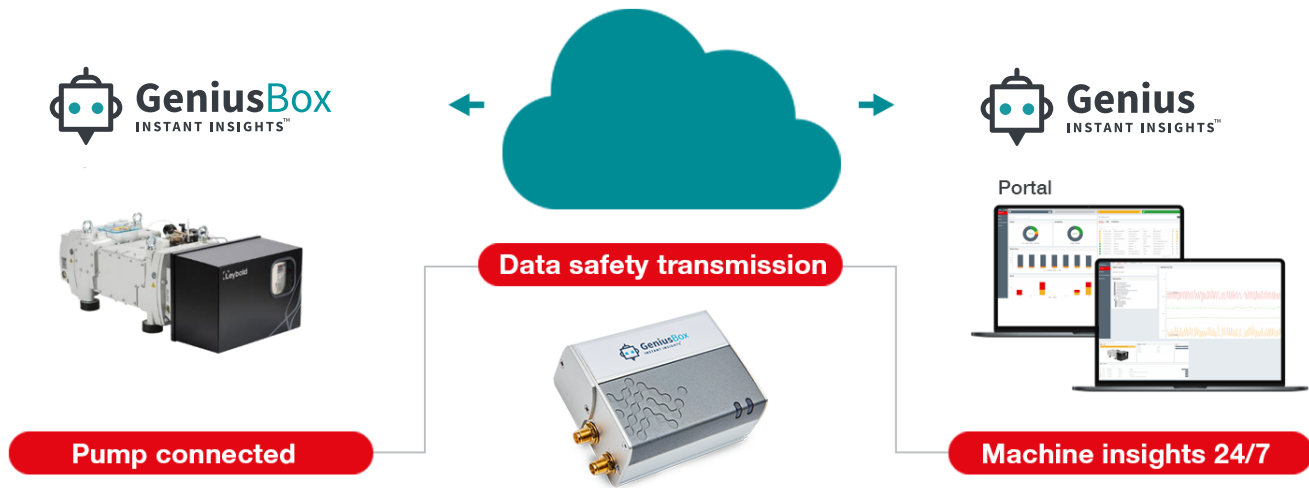
GENIUS INSIGHTS™

Benefits in combination with DRYVAC:

- Avoidance of harmful operating conditions
- Recommendations for actions for operating staff
- More efficient maintenance processes
- FSE visits – maintenance on agreed date
- Predictive maintenance timings
- Avoid unplanned downtime
- Overall CoO reductions



We offer you free GENIUS Instant Insights™ Portal Access level with 2 options of subscription upgrades. With low investment you get transparency for increased efficiency at all levels.

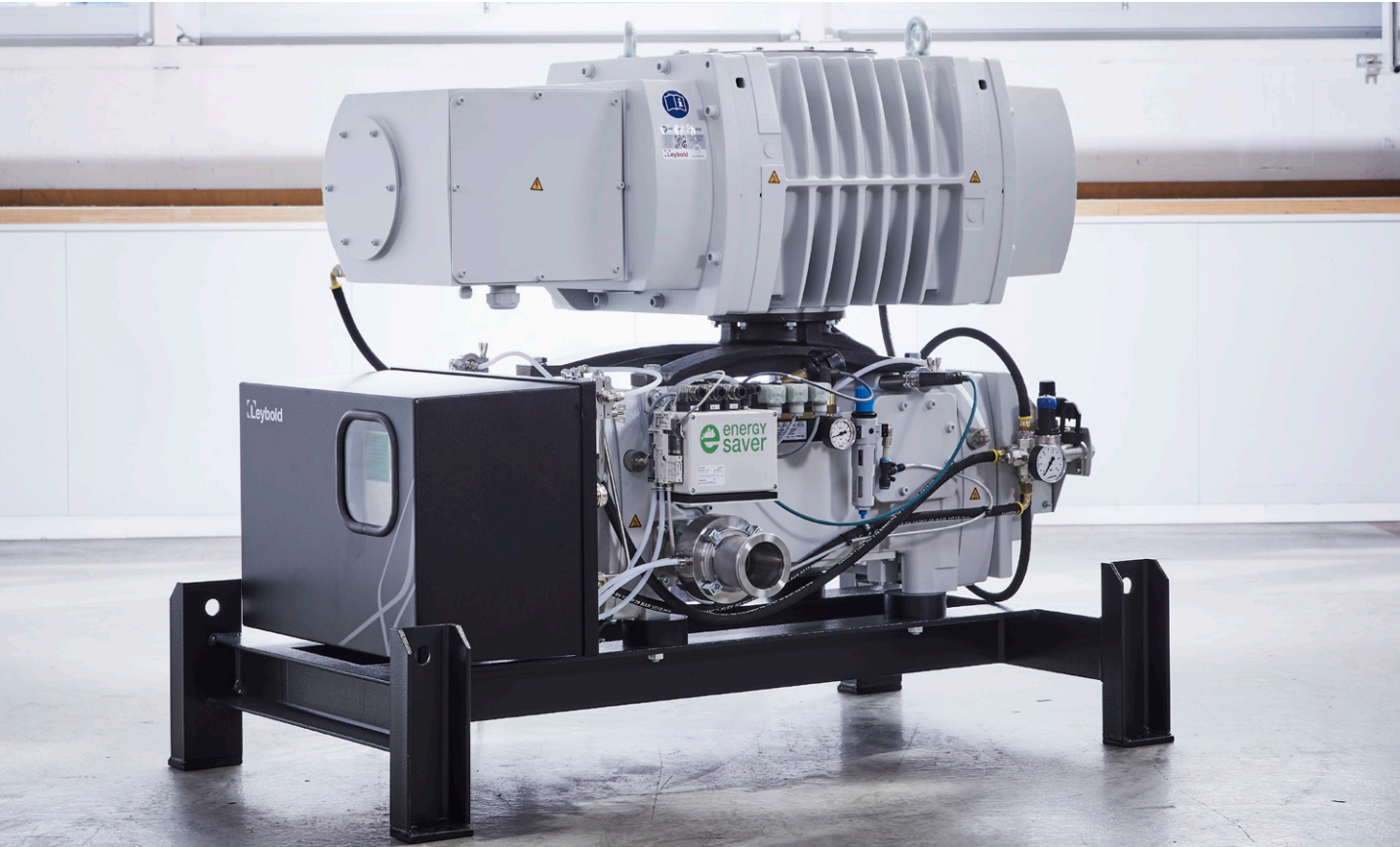


360° OVERVIEW

The GENIUS Instant Insights™ portal gives you important insights about the pumps' operation such as:

STATUS	AVAILABILITY	UPTIME	ENERGY CONSUMPTION	ALERT
Indicates the overall status of your pumps, such as running hours, temperature and service status	Indicates the percentage availability of your vacuum pumps installation, so you can count on it for steady production	The time that the pump runs producing the desired vacuum divided by the total running hours of the pump	Indicates the total energy consumption of your vacuum pump installation	Flags off warnings, failures and when service is required; the alerts can be sent to all relevant contacts in your organization via SMS

DRYVAC Energy Saver



Reduce the power consumption of your DRYVAC DV 650 and DRYVAC DV 800 up to 50% at inlet pressures < 5 mbar.

The Energy Saver kit is available as an accessory or on new pump installations. Retrofit of existing DRYVAC DV 650 and DV 800 with LVO 210 filling is possible at any time.

Power reduction by 50% by lowering the exhaust pressure automatically to 300 mbar:

- In every moment when we are below 5 mbar at inlet, the Energy Saver starts to work
- 50% energy saving
- Improves ultimate pressure by one decade

DRYVAC Systems are available either as **Basic** or **Smart** system configuration.

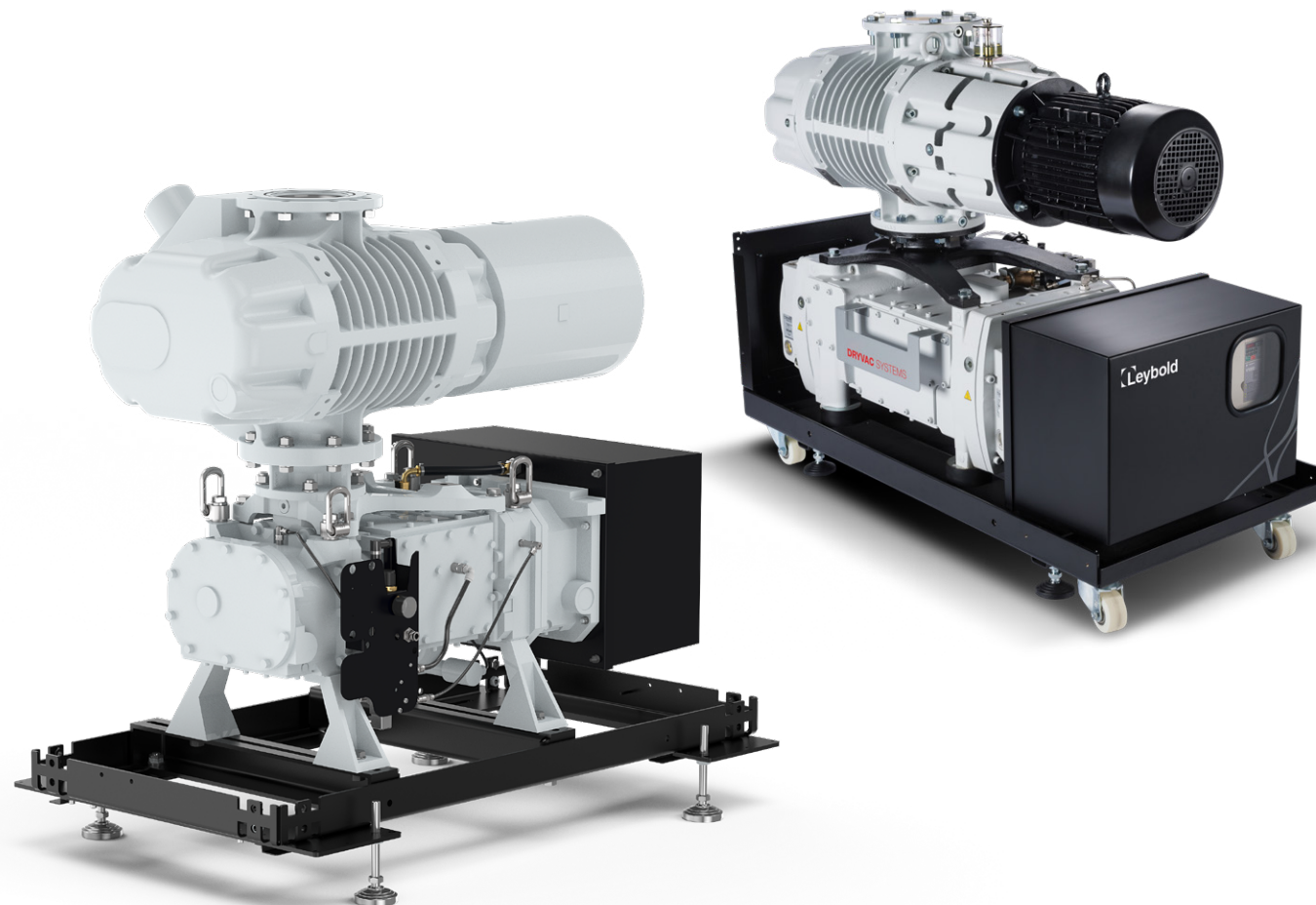
Leybold has developed the systems: The two-stage DRYVAC systems distinguish themselves particularly by their modular design and the resulting improved user friendliness and easy servicing. All equipment features are aligned to the requirements of the different markets.

BASIC

Pre-assembled vacuum pump systems (basic version). Monitoring, control, programming, and power electronic components to be provided by the customer.

Benefits:

- High performance with excellent cost-performance ratio
- Worldwide service & spare parts availability
- Rapid response times



- Extremely compact design provides more space in production areas
- Very low noise level improves working environment conditions
- Significant cost reduction because of high energy efficiency
- Clean technology with no oil emissions
- Optimized for fast cycle / load lock applications

SMART

The smart pump system versions are characterized by integrated power electronics, monitoring devices for the purge gas system and key parameters, easy and user-friendly operation handling (local / remote), and additional features, e.g. connecting a gauge head.

Benefits:

- High performance at attractive prices
- Autonomous vacuum pump system
- Worldwide service & spare parts availability
- Rapid response times



*DV 200, DV 300, DV 500 are available as Basic only.
Please contact Systems & Solutions for intelligent versions.

Technical data		DV 200	DV 300	DV 500	DV650	DV800	DV 1200	DV 1600
Max. pumping speed	m³/h cfm	210 124	280 165	460 270	650 383	800 471	1250 736	1600 942
Ultimate pressure without gas ballast	mbar Torr	< 0.05 < 0.04	< 0.01 < 0.08		< 0.005 < 0.004			
Permissible ambient temperature	°C	5 to 50					5 to 40	
Noise level with silencer, at ultimate pressure (acc. to DIN EN ISO 2151)	dB(A)	65			67	70	67	70
Relative ambient atmospheric humidity		90%, non-condensing						
Max. installation height		Up to 2000 m above sea level						
Cooling		Water						
Cooling water temperature range	°C	5 to 35						
Cooling water nominal flow	l/min	8			7.5	10	15	20
Mains voltage 50/60 Hz	V	380-460 or 200-240 ± 10%				380-460 ± 10%		
Rated power 50/60 Hz	kW	7.5	7.5	11	15	19,6	30	39,2
Power consumption at ultimate pressure	kW	4.1	4.5	4.4	6.6	7.0	13,8	14,0
Bearing lubricant		LVO 210						
Protection class		IP54						
Intake connection	ISO-K	DN 63			DN 100 (1 on top, 2 on the sides)		DN 100	
Discharge flange	ISO-K	DN 40		DN 63			DN 100	
Weight, approx.	kg	370		415	590		1400	
Dimensions (W x H x D)	mm	1115 x 612 x 478		1225 x 612 x 478	1280 x 570 x 420		1339 x 705 x 985	

¹⁾ One inlet on top, two at the side

Please contact us for more technical details on the entire DRYVAC series.

Ordering information *	DV 200	DV 300	DV 500	DV650	DV800	DV 1200	DV 1600
DRYVAC 380 - 460 V	112020V15	112030V15	112050V15	112065V15-1	112080V15-1	112120V17-1	112160V17-1
DRYVAC 200 - 240 V	112020V19	112030V19	112050V19	112065V19-1	–	–	
Accessories:							
RUVAC adapter 501/700	112004A03		112003A03	112005A03		–	–
RUVAC adapter 1001	112004A04		112003A04	112005A04		–	–
RUVAC adapter 2001	112004A05		112003A05	112005A05		–	–
RUVAC adapter 2500	112004A07		112003A07	112005A07		–	–
RUVAC adapter 4400/7000	–		112003A10	112005A10		–	–
Check valves							
Disc valve	112004A14		112003A14	112005A14		–	–
Ball valve	115005A01		–	–		–	–
Non-return valve (flap)	–		–	112005A15		–	–
Silencer	115005A21		119002			119001	119001
DV Energy Saver	-	-	-	112005A60	112005A60	-	-
Exhaust non-return valve	112004A14	112004A14	112003A14	112005A14	112005A14	incl.	

* Selection from the product range. Further model versions, motor voltages and accessories, like external frequency converters and communication cards on request. For detailed information on our full scope of DRYVAC pumps, please contact sales. Visit our webshop www.leyboldproducts.com.