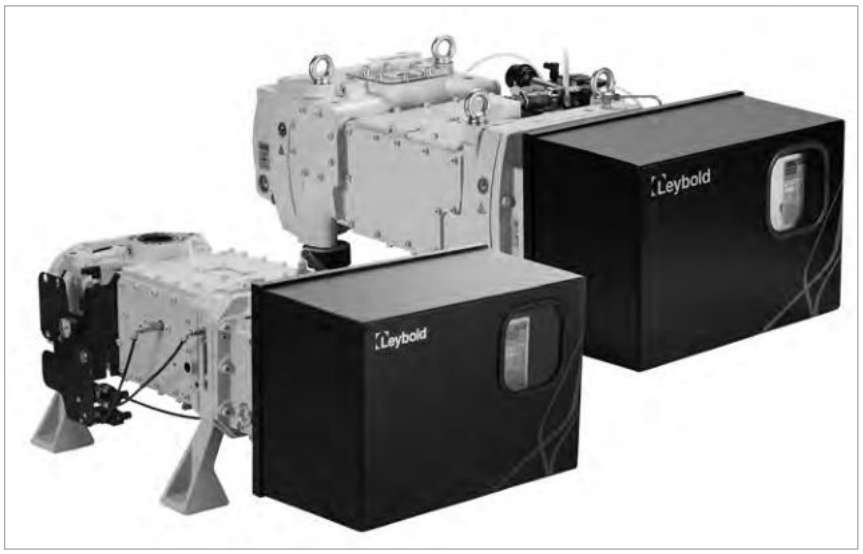
DRYVAC
DV 200 to DV 1200 -i



DRYVAC DV 200/300 (left), DV 650 (right)

DRYVAC DV 1200 -i

DRYVAC – The benchmark in industrial vacuum processes

The DRYVAC dry screw pumps provide high pumping speeds down to the lowest vacuum pressure levels required in industrial processes. The pumps provide continuous production output in your stressful environment minimizing the risk of contamination thanks to modern oil-free technology.

If you already own a mechanical booster, consider that dry pumps have the same low level of requirement in terms of maintenance and service.

All DRYVAC variants are water cooled, very compact and easy to combine into systems, in particular with the well-proven Roots pumps of the RUVAC WH series.

Concerning basic and full blown plug & play system combination of DRYVAC and RUVAC please refer the chapter DRYVAC SYSTEMS DS.

DRYVAC Versions

The DRYVAC-i versions and DS-i-Systems (see chapter DRYVAC Systems DS) expand the DRYVAC by an on board controller with a touch screen display and a user interface allowing plug&play operation and configuration.
Different interfaces are available: 24 V I/O, Profibus, Ethernet IP.

DRYVAC DV200 and DV 300 are for 200-240 Volts and for 380-460 Volts equipped with an on-boarded intelligent variable speed drive. They offer an automatically controlled vacuum side shaft seal purge and on the outside an I/O (15 pin Sub D) and RS485 interface (9 pin Sub-D). All other interfaces like Ethernet IP are available as optional cards. The DRYVAC speaks proverbial every language.

DRYVAC 450/650 with external variable speed drive (FC) are available on request. These are named DV – r.

The DRYVAC DV 650 200 V comes with an external variable speed drive (FC) as standard.

All DRYVAC DV 1200 come on a base plate with casters, adjustable feet and enclosure.

All DRYVAC S and C and DV 1200 versions comprise a water cooling unit which includes water distributions, a pressure reducer and an overpressure safety valve.

Features and Benefits

Maintenance

- Minimal maintenance requirements lead to lowest cost of ownership
- Extended periods between user intervention
- Lower consumable costs

Performance

- Very stable pumping speed gives repeatability to processes
- Continuous pumping at atmosphere
- Ability to handle dust, vapors and process by-products
- Dry eliminates back-streaming, thus protecting reactive alloys from contamination

Design

- Superior and compact design
- Energy-efficient (benchmark in 300 and 650 class)
- Integrated variable speed drive cannot be harmed by industrial cooling water or dust
- Flexible to use (three inlet ports and low height)

Safety

- Low noise levels

The best DRYVAC for every application

For industrial processes of all kinds, where rapid pumping down and short cycling (e.g. load locks) is requires the DRYVAC Industrial is the best solution.

The DRYVAC DV industrial versions (with **lubricant LVO 210, synthetic oil**) deliver an excellent pumping speed also in processes with pressures exceeding 100 mbar. They are suited for short cycle operation or for evacuation of large vacuum chambers.

The DRYVAC DV pumps are furthermore equipped with all features necessary for process industry applications (Purge gas unit including rotor purge or gas ballast for example).

In application with high oxygen concentrations, corrosive gasses or harsh PECVD processes pumps with **lubricant LVO 410 (PFPE)** are required. In these applications the DRYVAC DV C models are the right choice

Typical Applications

- Metallurgy
- Coating
- Drying
- Solar
- Vacuum chamber evacuation
- Load lock

Certifications

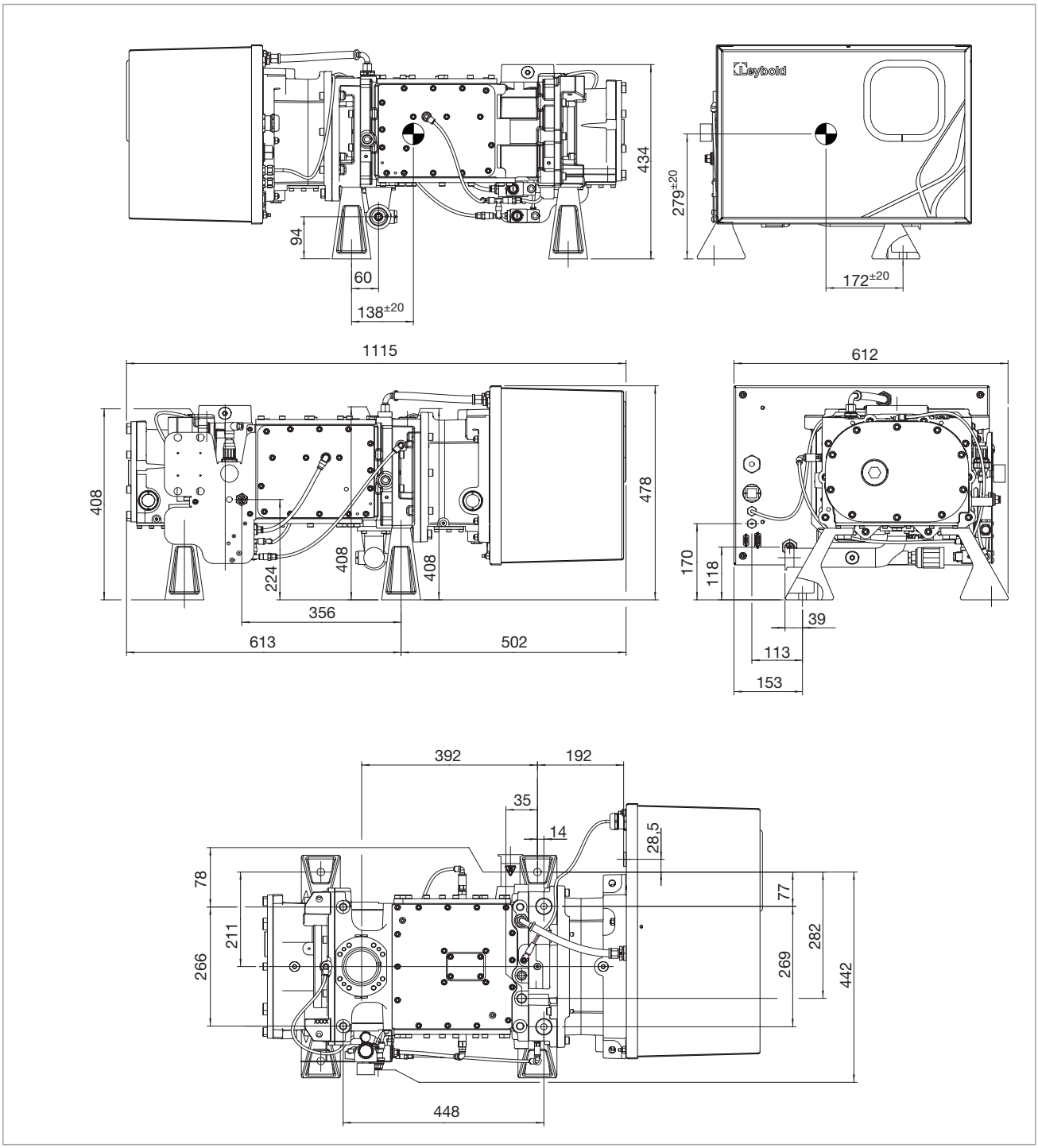
DRYVAC vacuum pumps are certified to NRTL and CSA according to UL 61010-1

The DRYVAC series

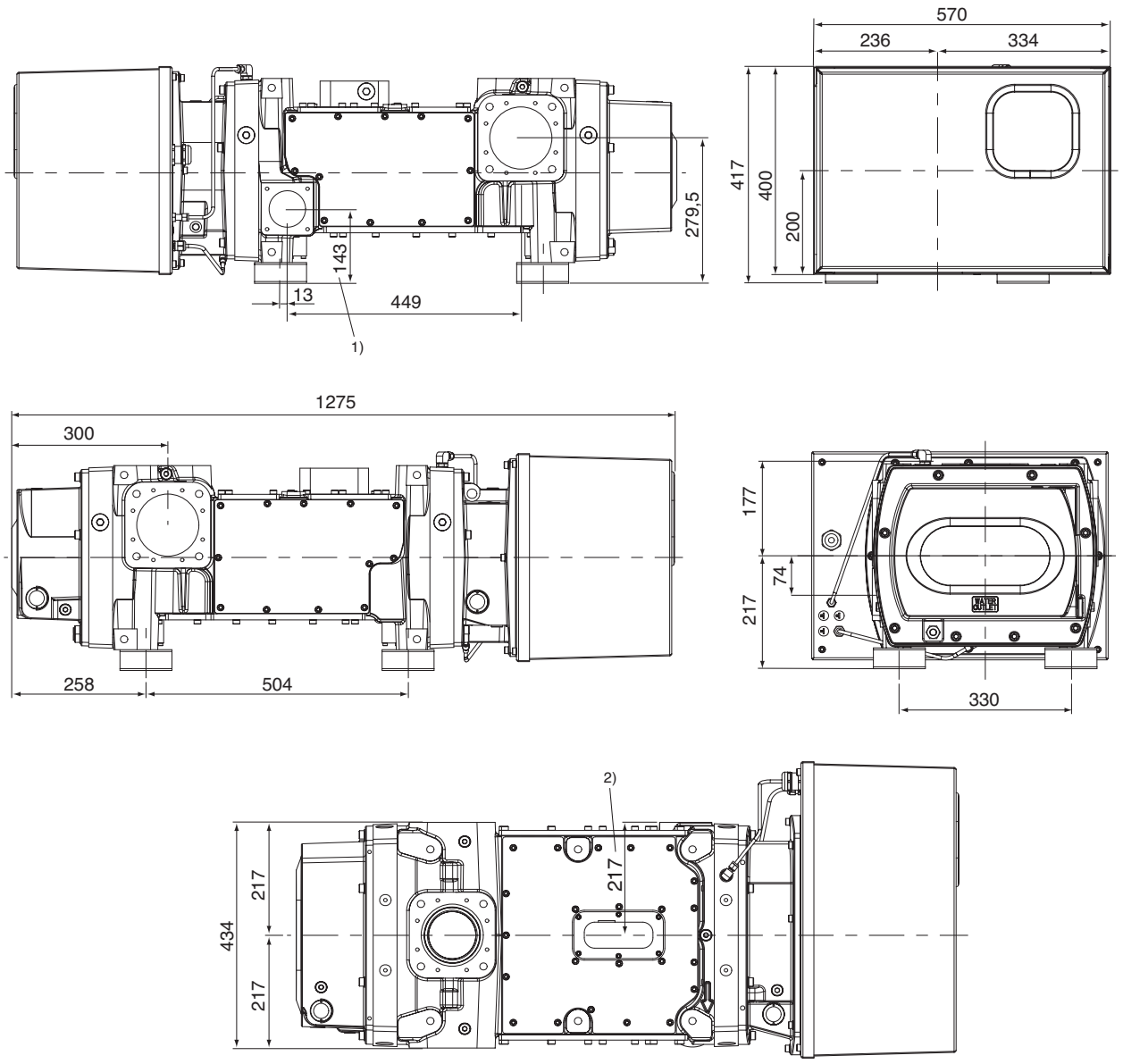
comprises the models

DRYVAC DV 200
DRYVAC DV 300
DRYVAC DV 450
DRYVAC DV 650
DRYVAC DV 650 Atex Cat. 2 I T2
DRYVAC DV 1200
DRYVAC DV 1200 S-i
DRYVAC DV 1200 Atex Cat. 2 I T2
and allows for numerous combinations with Roots pumps from the RUVAC series.

DRYVAC DS Systems with Roots Blowers RUVAC WAU 2001, WH 2500, WH 4400

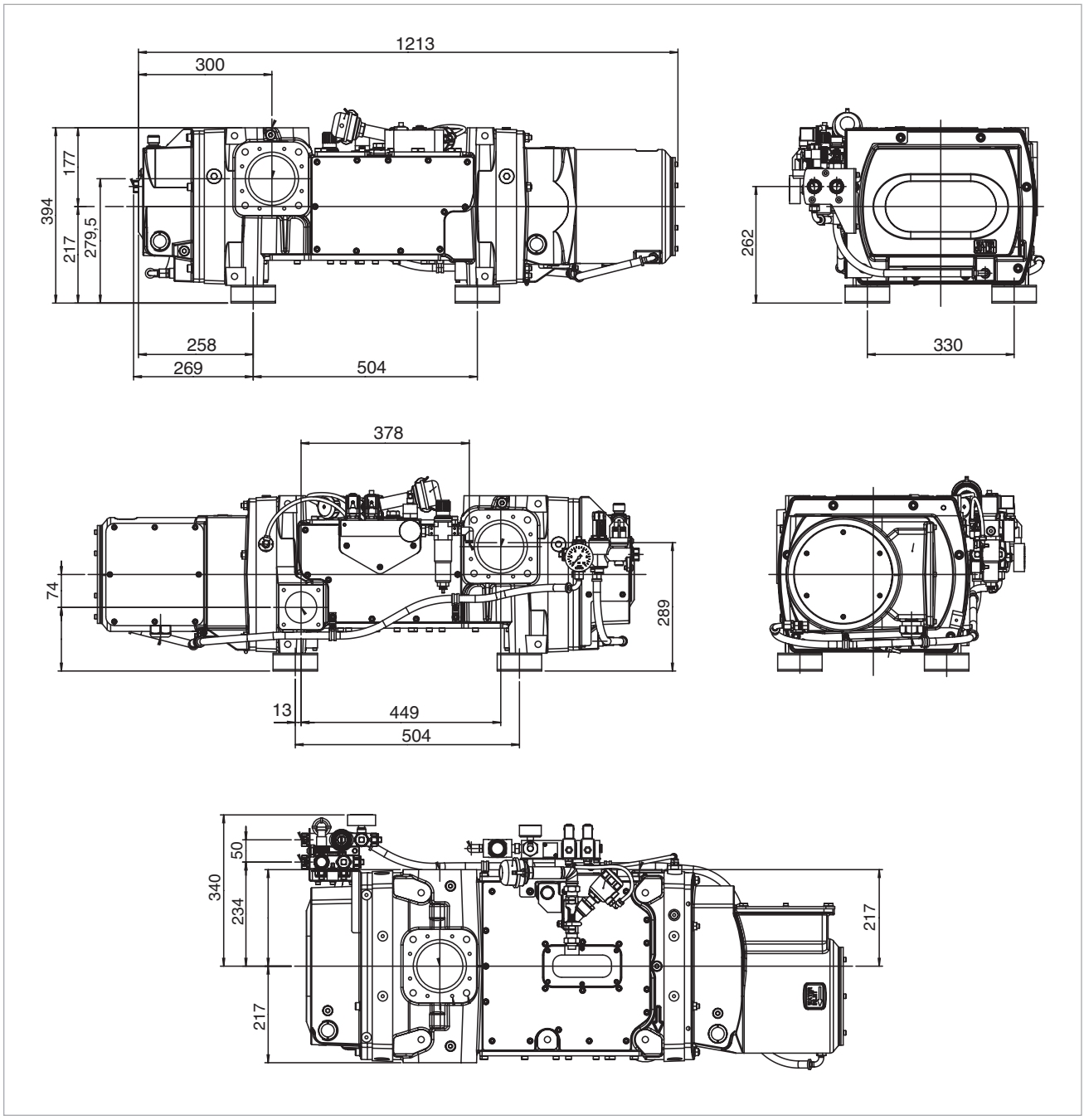


Dimensional drawing for the DRYVAC DV 200 and DV300, all dimensions in mm

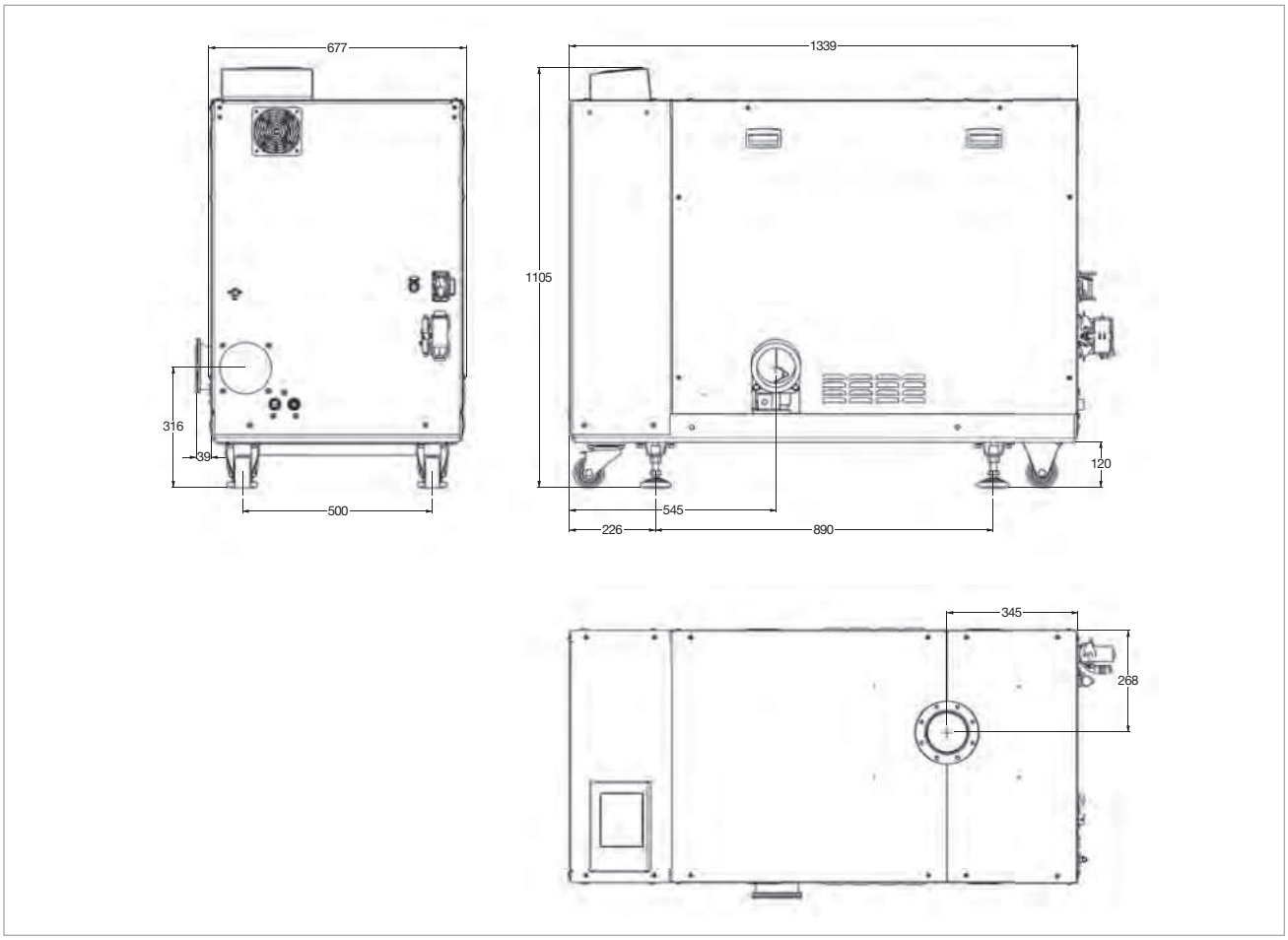


1) with non-return valve 130
2) with non-return valve 437

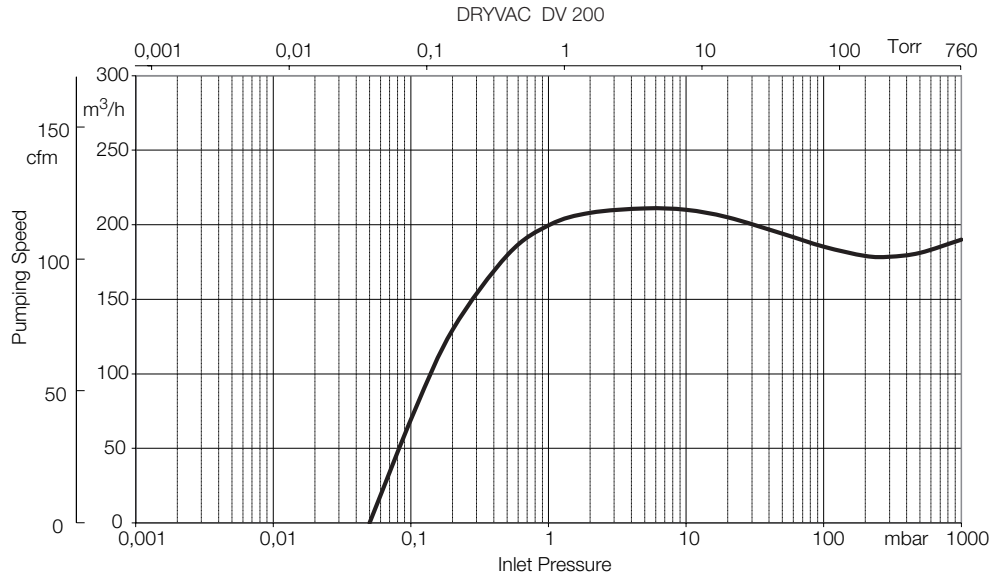
Dimensional drawing for the DRYVAC DV 450 and DV 650, all dimensions in mm

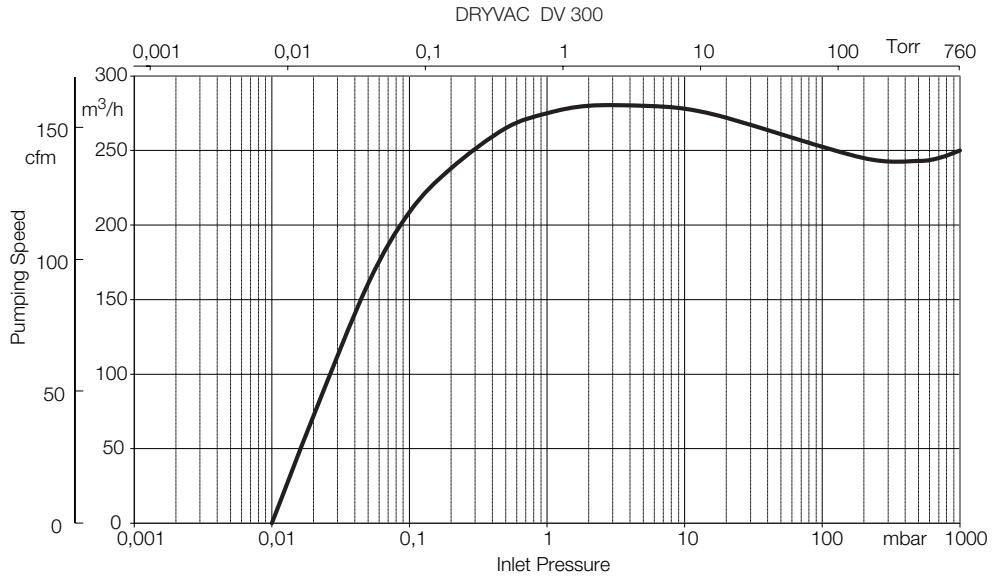


Dimensional drawing for the DRYVAC DV 450-r and DV 650-r, all dimensions in mm

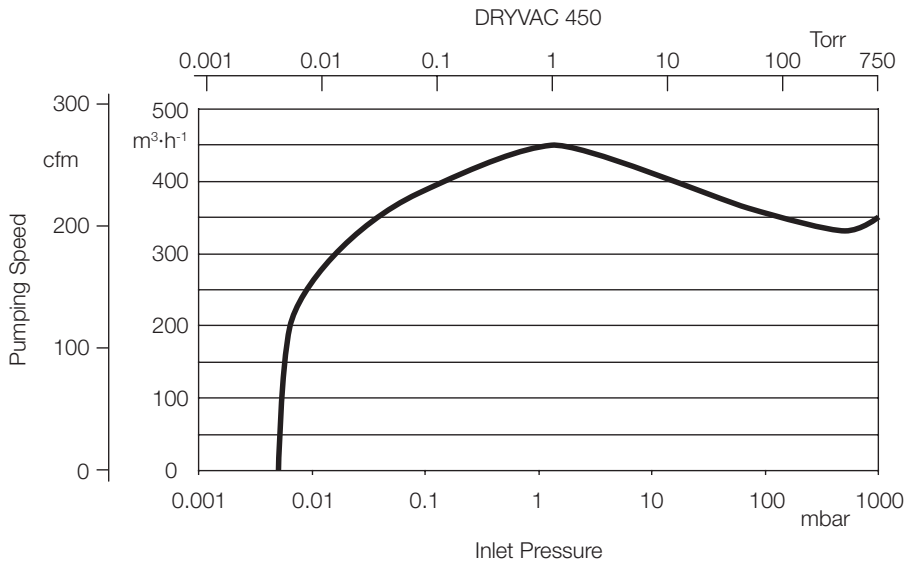


Dimensional drawing for the DRYVAC DV 1200 S-i, all dimensions in mm

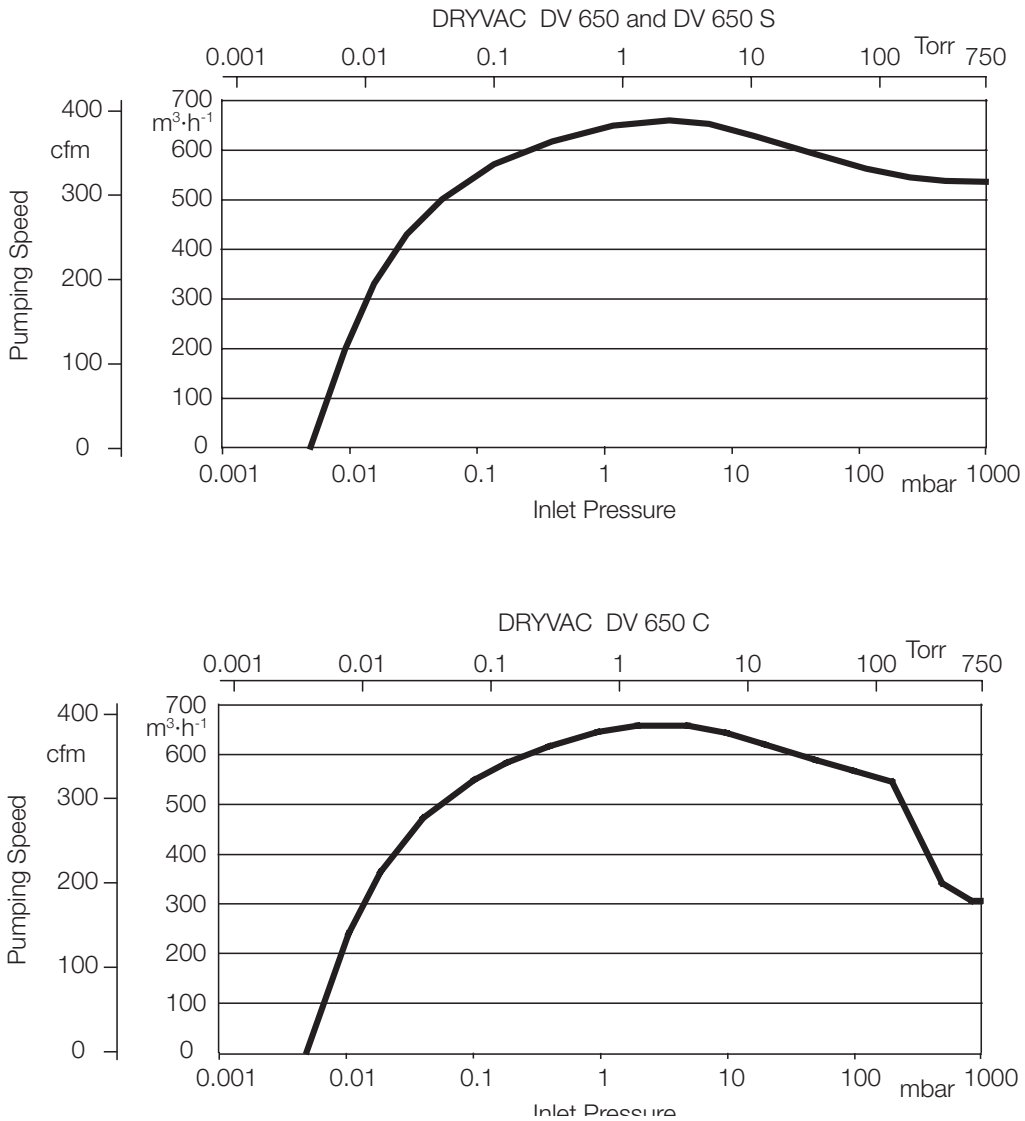




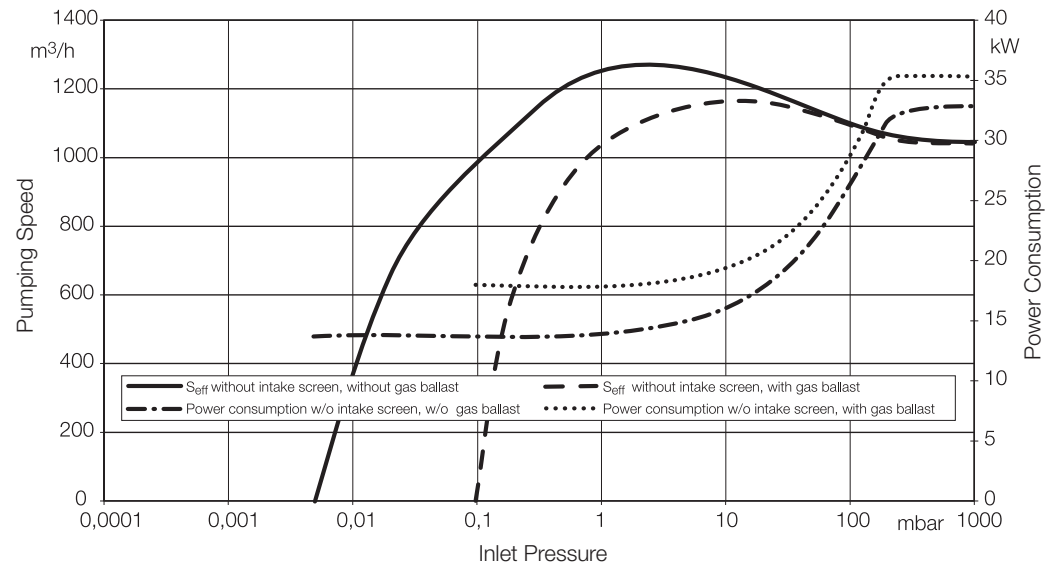
Pumping speed curves of the DRYVAC DV 200 and DV 300



Pumping speed curves of the DRYVAC DV 200 and DV 300



Pumping speed curves of the DRYVAC DV 650 (S) and DRYVAC DV 650 C



Pumping speed curves of the DRYVAC DV 1200 and DV 1200 S-i

Technical Data

		DRYVAC DV	
		200	300
Nominal pumping speed	m^3/h (cfm)	210 (123.6)	280 (164,8)
Max. effective pumping speed without gas ballast	m^3/h (cfm)	210 (123.6)	280 (164,8)
Ultimate pressure	mbar (Torr)	< 0.05 (< 0.038)	< 0.01 (< 0.0075)
Permissible ambient temperature	°C (°F)	+5 to +50 (+41 to +122)	
Water vapour tolerance with > 20 slm purge gas or gas ballas	mbar (Torr)	50 (37.5)	
Water vapour capacity	kg/h	5	
Noise level at ultimate pressure with silencer with rigid exhaust line	 dB(A) dB(A)	 65 65	
Power consumption at ultimate pressure	kW	4.1	4.5
Lubricant filling		LV 210 synthetic Oil	
Cooling		water	
Electrical connection		380-460 V or 200-240 V ±10 %, 50/60 Hz	
Phases		3-ph.	
Nominal power	kW	7.5	
Nominal current at 400 V	A	13.8	
Intake connection	DN	63 ISO-K	
Exhaust side connection	DN	40 ISO-KF	
Protection class EN 60529	IP	54	
Weight	kg (lbs)	370 (815.7)	
Dimensions (W x D x H)	mm (in.)	1110 x 613 x 478 (43.7 x 24.1 x 18.8)	
Cooling water connection Threads, female	 G	 1/2	
Cooling water temperature	°C (°F)	5 to 35 (41 to 95)	
Cooling water throughput, nominal	l/min	8	
(US gallon/min)		(2.11)	
Purge gas connection (plugged connection)		D10	

Ordering Information

	DRYVAC DV 200	DRYVAC DV 300
	Part No.	**Part No.**
DRYVAC		
200 V	**112020V19**	**112030V19**
400 V	**112020V15**	**112030V15**
DRYVAC		
ATEX, 400 V	**-**	**112030V11**
Accessories		
Profibus module for DRYVAC DV / DV-r	**155212V**	
ProfiNet module for DRYVAC DV / DV-r	**112005A35**	
EtherCAT module for DRYVAC DV / DV-r	**112005A36**	
Relay module (digital output) for DRYVAC DV / DV-r	**112005A01**	
Ethernet module (Dual port) for DRYVAC DV / DV-r	**112005A02**	
RS485/USB cable for interface X104, 1.8 m	**161820USB**	
Adapter DRYVAC DV 200/300 for		
RUVAC WH 501 / WH 700	**112004A03**	
RUVAC Wx(U) 1001	**112004A04**	
RUVAC Wx(U) 2001	**112004A05**	
RUVAC WH(U) 2500	**112004A07**	
Non-return valve DRYVAC, DN 40 KF [1)]	**115005A01**	
Elbow 90° DN 40 KF, stainless steel	**88464**	
Silencer DN 40 KF	**115005A21**	
Synthetic Oil, ester oil, LEYBONOL LVO 210, 5 litres	**L21005**	

[1)] must only be installed vertically

Technical Data

		DRYVAC DV			
		450	650	1200-i	1200
Nominal pumping speed	m^3/h (cfm)	450 (265)	650 (383)	1250 (736)	1250 (736)
Max. effective pumping speed	m^3/h (cfm)	450 (265)	650 (383)	1250 (736)	1250 (736)
Ultimate pressure	mbar (Torr)	5×10^{-3} (4×10^{-3})			
Permissible ambient temperature	°C (°F)	+5 to +50 (+41 to +122)			
Water vapour tolerance with > 20 slm purge gas or gas ballast	mbar (Torr)	60 (45)	60 (45)	- -	- -
with > 40 slm purge gas or gas ballast	mbar (Torr)	- -	- -	60 (45)	60 (45)
Water vapour capacity	kg/h	15	25	50	50
Noise level at ultimate pressure with silencer with rigid exhaust line	dB(A) dB(A)	67 65			
Power consumption at ultimate pressure	kW	4.7	6.6	14	14
Cooling		water	water	water/air	water
Electrical connection		380 – 460 V, 50/60 Hz			
Phases		3-ph.			
Nominal power at 400 V	kW	11	15	30	30
Nominal current at 400 V	A	24	31	62	62
Intake connection	DN	100 ISO-K PN6 (1x at the top, 2x at the side)	100 ISO-K PN6 (1x at the top, 2x at the side)	100 ISO-K	100 ISO-K
Exhaust side connection	DN	63 ISO-K	63 ISO-K	100 ISO-K	100 ISO-K
Protection class EN 60529	IP	54	54	20	54
Weight	kg (lbs)	620 (1367)	589 (1280)	1400 (3091)	1400 (3091)
Dimensions (W x D x H)	mm (in.)	1280 x 570 x 420 (50.4 x 22.4 x 16.5)	1280 x 570 x 420 (50.4 x 22.4 x 16.5)	1339 x 677 x 1105 (53.9 x 26.7 x 43.5)	1339 x 677 x 1105 (53.9 x 26.7 x 43.5)
Cooling water connection Threads, female	G	1/2			
Cooling water temperature with gear oil LEYBONOL LVO 210 with gear oil LEYBONOL LVO 410	°C (°F) °C (°F)	5 to 35 (41 to 95) 5 to 25 (41 to 77)			
Cooling water throughput, nominal	l/min (US gallon/min)	6.0 (1.6)	7.5 (2.0)	15.0 (4.0)	15.0 (4.0)
Purge gas connection (plugged connection)		D10			

Ordering Information

	DRYVAC DV			
	450	650	1200-i	1200
	Part No.	Part No.	Part No.	Part No.
DRYVAC LVO 210 (Industrial)				
Double purge and air- gasballast				
200 V	112045V19-1	112065V19-1	-	-
400 V	112045V15-1	112065V15-1	-	112120V17-1
400 V, with Energy Saver	-	112065V16-1	-	-
DRYVAC LVO 210 (Industrial)				
Triple purge, 400 V				
400 V	-	112065V17-1	112120V50-1	-
400 V, with Energy Saver	-	112065V18-1	-	-
DRYVAC LVO 210 (Industrial)				
Load lock, 400 V	112045V09-1	112065V09-1	-	-
DRYVAC LVO 210				
ATEX, 400 V	-	112065V11-1	-	112120V11-1
DRYVAC LVO 410 (PFPE) S				
Single purge				
200 V	112045V29-1	-	-	-
400 V	112045V20-1	112065V20-1	112120V40-1	-
DRYVAC LVO 410 (PFPE) C				
Triple purge, 400 V	112045V30-1	112065V30-1	-	-
Accessories				
DRYVAC Energy Safer (only for LVO 210)	112005A60	112005A60	-	-
Glycol Air-Cooling-System FLKS-4S	112005A45	112005A45	-	-
Kit Fitting Hoses for Glycol Air-Cooling-System	112005A47	112005A47	-	-
Outlet Flange DN 63 ISO-K x 80 mm	112005A62	112005A62	-	-
Frequenzcy Converter IP 66 for DRYVAC DV-r	112005A65	-	-	-
Profibus module for DRYVAC DV / DV-r	155212V			
ProfiNet module for DRYVAC DV / DV-r	112005A35			
EtherCAT module for DRYVAC DV / DV-r	112005A36			
Relay module (digital output) for DRYVAC DV	112005A01			
Ethernet module (Dual port) for DRYVAC DV	112005A02			
LEYASSIST Windows Software [2]	230439V01			
RS232 adapter for FC DRYVAC RUVAC WH	155224V			
Adapter USB – RS232	800110V0103			
Interface kit 24 Volt I/O for DRYVAC DV / DV-i	112005A22			
Adapter DRYVAC for DV 450/650				
RUVAC WH 700	112005A03			
RUVAC WS(U) 1001	112005A04			
RUVAC WS(U) 2001	112005A05			
RUVAC WH(U) 2500	112005A07			
RUVAC WH(U) 4400/7000	112005A10			
Cooling water unit				
DRYVAC 450/650	112005A12			
DRYVAC 450/650-r	112005A13			
Non-return valve DRYVAC, DN 63 ISO-K [1]	112005A15			
Gas ballast kit DRYVAC, 24 V electro-pneumatic	112005A17			
Silencer				
DN 63 ISO-K for DV 450/650 and SP 250	119002			
DN 100 ISO-K for DV 1200 and SP 630	119001			
Serviceable silencer				
DN 63 ISO-K for DV 450/650 and SP 250	119003V			
DN 100 ISO-K for DV 1200 and SP 630	119004V			
External display (not for 1200-i)	155213V			
Harting plug DRYVAC S-i/C-i	112005A20			
Set of nozzles for DRYVAC purge gas	112005A30			
Permanent inlet purge kit	112005A32			

[1] Already integrated in all -i versions

[2] Operating, configuration and analysis software for DRYVAC and other Leybold products