



ADH SERIES

The new high-performance dry pumps for the latest process applications

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New high-performance dry pumps

The ADH series was developed specifically for applications in demanding processes of the Solar, Semiconductor and LED markets by offering 600 to 4,500 m³/h pumping speed.

Semiconductor: High H₂ pumping speed

The ADH series performance brings the following advantages to your process:

- ALD process throughput: high pumping efficiency for light gases will permit faster chamber evacuation in between process steps.
- Epitaxy and EUV: high pumping speed and large flow rate tolerance matches the most demanding process specifications.

Solar & LED: Hydrogen ready

The ADH series offers the best hydrogen pumping efficiency for Solar (a-Si and μ -Si PECVD) and LED (MOCVD GaN, AlGaAs, AlGaInP...).

No intermediate maintenance

All bearings are oil-lubricated and do not need any on-site maintenance. Long maintenance intervals and extended pump lifetime were achieved through the improved powder tolerance and condensation management, which means a reduction of operating costs.



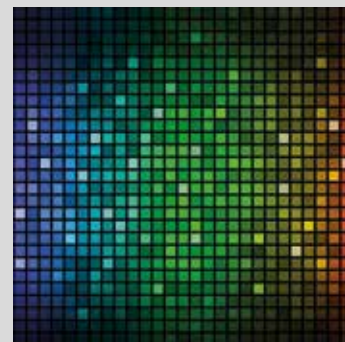
Semiconductor



Flat panel display (FPD)



Solar cells



LED

High resistance to process by-products

The pumps are equipped with double temperature controlled water cooling circuits and integrated hot N₂ purge to prevent powder accumulation or condensation. The powerful motor can handle big loads of powder and guarantees good restart capabilities. Also, carefully selected materials can withstand corrosive cleaning chemistries. Upgraded with a completely new monitoring system the features of the ADH series help to enhance process reliability.

High efficiency for low COO

An idle mode is available to decrease the operating costs by lowering the power and nitrogen consumption when the pump is not used for the process. Thanks to an optimized design, the pumps offer the best power consumption in the market at this level of pumping performance. The optimized design also permitted to lower down the heat generation and therefore to decrease the cooling water flow rate.

Robust and safe

The ADH series design and materials allow handling of large static and dynamic internal pressure stresses. This ensures the highest level of safety for applications running explosive gases such as hydrogen and silane.

**Customer benefits**

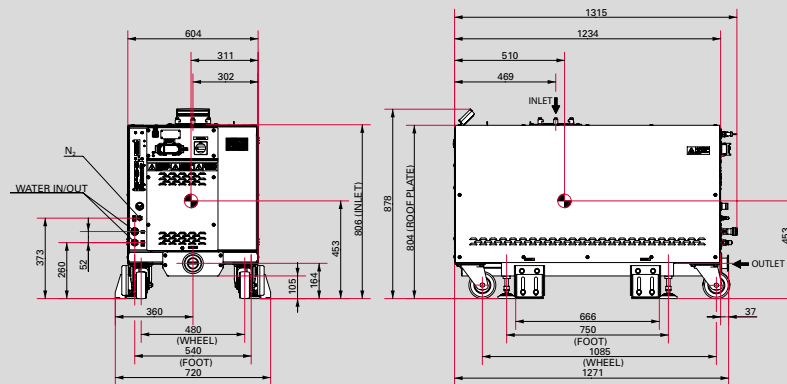
- Up to 4,500 m³/h pumping speed with comparable performance in N₂ and H₂. Same performance with 50 and 60 Hz power supply
- Long maintenance interval thanks to lubricated bearings and high resistance to process by-products
- Low COO due to low power and water consumption
- Enhanced safety due to an excellent resistance to static and dynamic internal stresses

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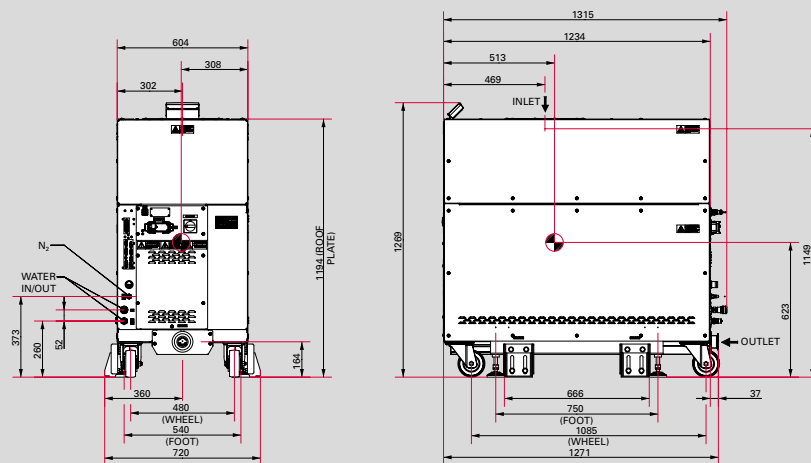
The new high-performance dry pumps for the latest process applications

Dimensions

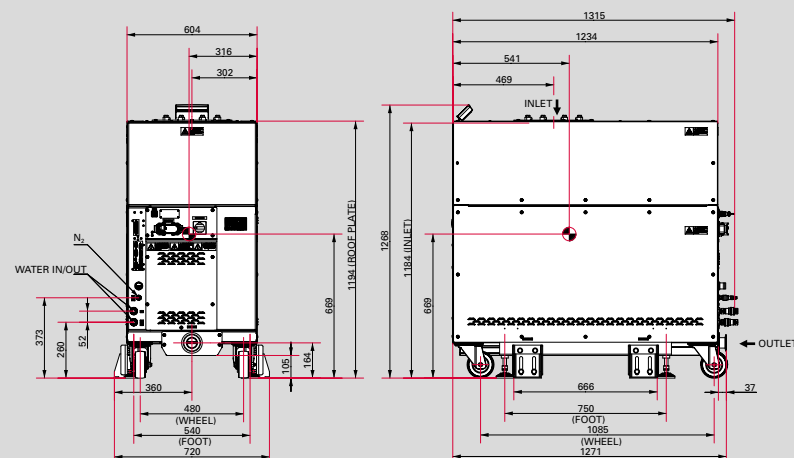
AD 600 H



AD 3060 H



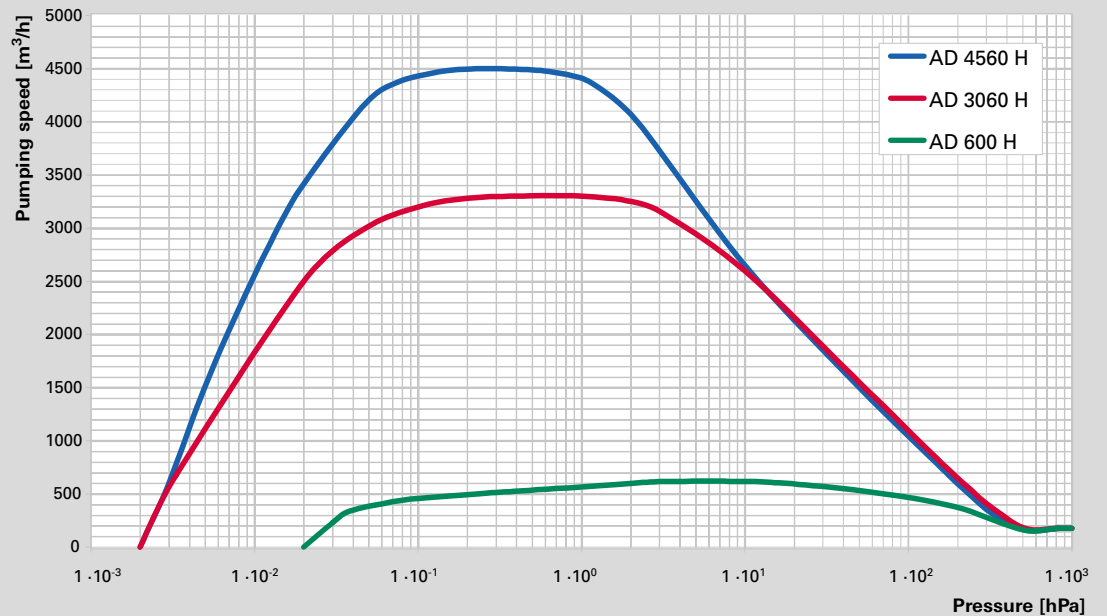
AD 4560 H



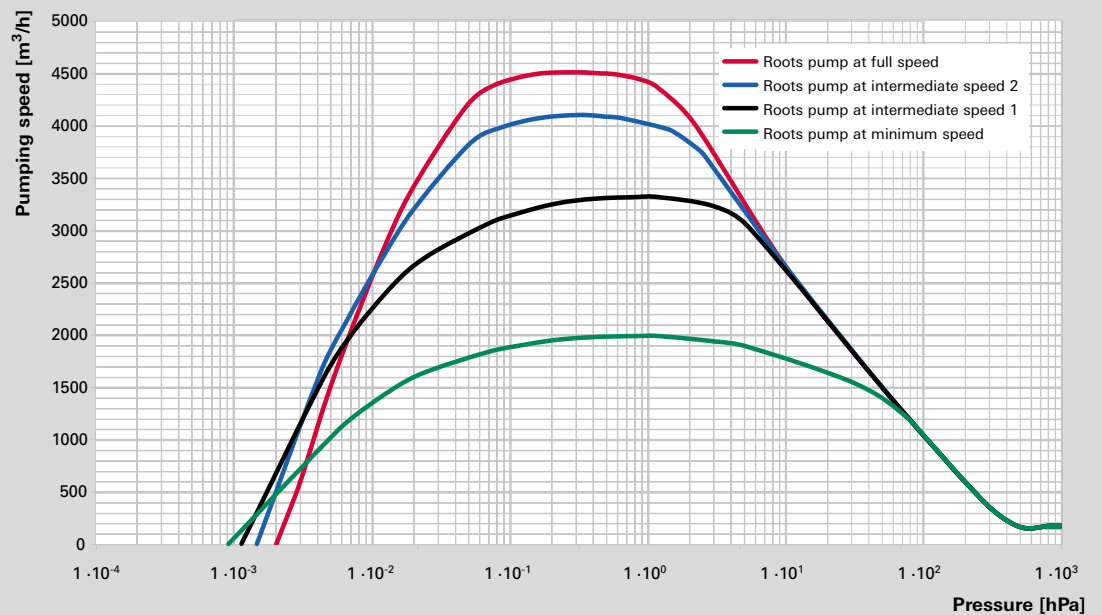
Dimensions in mm

Pumping speed

AD 4560 H
AD 3060 H
AD 600 H
with N₂



AD 4560 H
with different Roots pump
rpm with N₂



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Technical data

Pump type	AD 600 H	AD 3060 H	AD 4560 H
Peak pumping speed – N ₂	600 m ³ /h	3,300 m ³ /h	4,500 m ³ /h
Peak pumping speed – H ₂	550 m ³ /h	3,200 m ³ /h	4,500 m ³ /h
Maximum continuous inlet flow – N ₂	500 slm	160 slm	110 slm
Maximum continuous inlet flow – H ₂	400 slm	200 slm	120 slm
Maximum volume to be evacuated	50 m ³	45 m ³	40 m ³
Maximum ultimate pressure (50 slm N ₂ purge)	2 · 10 ⁻² hPa	2 · 10 ⁻³ hPa	2 · 10 ⁻³ hPa
Power consumption at ultimate pressure	5.5 kW	6.4 kW	6.5 kW
Max noise level at ultimate pressure and at maximum flow rate	65 dBA	67 dBA	67 dBA
Power supply, 3 phases, 50/60 Hz ¹⁾	200 – 230 V 380 – 480 V	200 – 230 V 380 – 450 V	200 – 230 V 380 – 480 V
Max. exhaust overpressure	1,200 hPa	1,200 hPa	1,200 hPa
Min. cooling water flow rate for max. continuous inlet flow pump specification	8 l/min	9 l/min	9 l/min
Cooling water temperature	10 – 25 °C ²⁾	10 – 25 °C ²⁾	10 – 25 °C ²⁾
N ₂ purge flow range	10 – 120 slm	10 – 120 slm	10 – 120 slm
Oil fluid capacity	2.3 l	3.25 l	3.7 l
Dimensions (L x W x H)	1,234 x 604 x 806 mm	1,234 x 604 x 1,194 mm	1,234 x 604 x 1,194 mm
Weight	830 kg	1,190 kg	1,360 kg
Inlet connection	DN 100 ISO-K	DN 160 ISO-K	DN 200 ISO-K
Exhaust connection	DN 50 ISO-KF	DN 50 ISO-KF	DN 50 ISO-KF

¹⁾ According to CE certification, pumps can handle 10% variations

²⁾ Test done until 35 °C: regulation temperature at high pressure is 70 °C min at flow rate up to 100 slm

All the values are given for 50 and 60 Hz power supply.

**Order number matrix
ADH series**

Order number

AD a b 60H c d e 6 f g h C0

Version	ab
AD 600 H	00
AD 3060 H	30
AD 4560 H	45

Voltage	c
Low voltage (200 - 230 V, 3 phases, 50/60 Hz)	1
High voltage (380 - 480 V, 3 phases, 50/60 Hz)	6

Dry pump temperature management	d
Standard	S
Medium	M
Hot	H

Roots pump temperature management	e
Standard	S
Hot	H
None	0

Exhaust	f
No check-valve	0
With check-valve	1

Purge gas	g
Standard line	1
H ₂ line	2
Powder line	3

Semi S2 certification	h
Without	0
Semi S2	1
SEPM	2

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