



HIPACE 300 H

The turbopump with high compression, especially for light gases.
Maximum reliability with best performance.

PFEIFFER  **VACUUM**

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Highest level of compression

With its new HiPace 300 H, Pfeiffer Vacuum presents a turbopump with the highest level of compression available in the 300 l/s pumping speed class. The pump has a compression ratio of 10^7 for hydrogen, making it ideal for generating high and ultra-high vacuum. The high compression ratio results in a low residual gas background in the chamber, which is desirable for mass spectrometry applications, for example.

High-performance technology

Thanks to the sophisticated design of the rotor, the HiPace 300 H has an extraordinarily high max. fore-vacuum pressure of 30 hPa. This allows the pump to achieve ultra-high vacuum even when operated with a high fore-vacuum pressure, which occurs in combination with diaphragm pumps. The integrated "Intermittent mode" function ensures that a connected backing pump is switched on by the HiPace 300 H only when the fore-vacuum pressure is no longer adequate. This reduces the energy consumption of the overall vacuum system by more than 90 %.

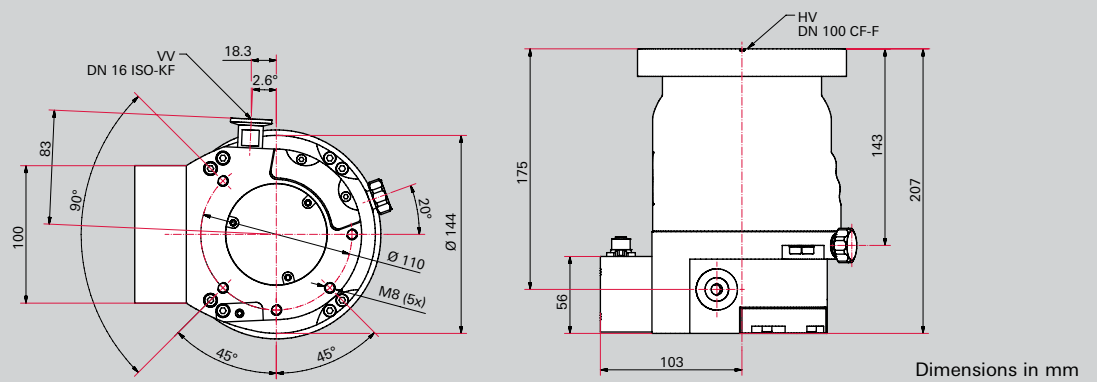
Highest reliability

Based on a so-called hybrid bearing, a combination of ceramic ball bearings on the fore-vacuum side and permanently magnetic radial bearings on the high vacuum side, our HiPace turbopumps have a particularly robust bearing design. Therefore the pumps have a long life cycle with a maintenance interval of approximately 4 years.

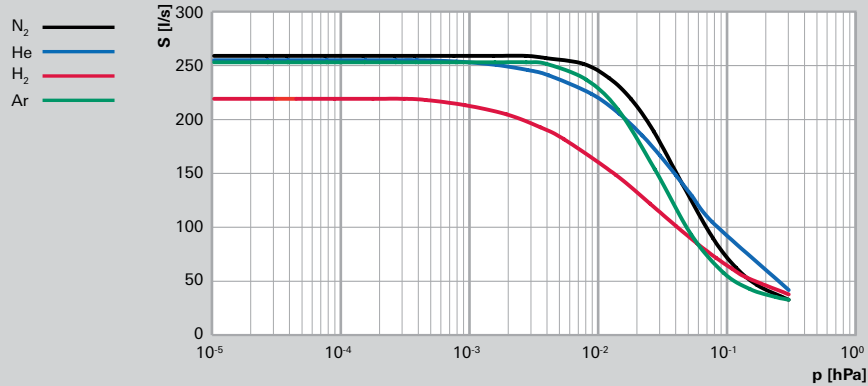
Customer benefits

- The highest level of compression, especially for light gases
- Ideal for HV and UHV applications
- Best UHV pressures even in combination with diaphragm pumps
- Intermittent mode offers energy savings of more than 90 % without any reduction in performance

Dimensions



Pumping speed



Technical data

| HiPace 300 H | DN 100 ISO-K | DN 100 CF-F | DN 100 ISO-F |
|--|----------------------------|-----------------------------|----------------------------|
| Flange (in) | DN 100 ISO-K | DN 100 CF-F | DN 100 ISO-F |
| Flange (out) | DN 16 ISO-KF / G 1/4" | | |
| Venting connection | G 1/8" | | |
| Pumping speed for Ar | 255 l/s | | |
| Pumping speed for H ₂ | 220 l/s | | |
| Pumping speed for He | 255 l/s | | |
| Pumping speed for N ₂ | 260 l/s | | |
| Rotation speed ±2% | 60,000 min ⁻¹ | | |
| Run-up time | 3 – 3.5 min. | | |
| Gas throughput at full rotational speed for Ar | 0.5 hPa l/s | | |
| Gas throughput at full rotational speed for H ₂ | 10 hPa l/s | | |
| Gas throughput at full rotational speed for He | 3.5 hPa l/s | | |
| Gas throughput at full rotational speed for N ₂ | 1.5 hPa l/s | | |
| Compression ratio for Ar | > 1 · 10 ¹³ | | |
| Compression ratio for H ₂ | 1 · 10 ⁷ | | |
| Compression ratio for He | 2.5 · 10 ⁹ | | |
| Compression ratio for N ₂ | > 1 · 10 ¹³ | | |
| Fore-vacuum max for Ar | 25 hPa | | |
| Fore-vacuum max for H ₂ | 15 hPa | | |
| Fore-vacuum max for He | 28 hPa | | |
| Fore-vacuum max for N ₂ | 30 hPa | | |
| Ultimate pressure according to PNEUROP | < 1 · 10 ⁻⁷ hPa | < 1 · 10 ⁻¹⁰ hPa | < 1 · 10 ⁻⁷ hPa |
| Weight | 5.8 – 6.2 kg | 7.8 – 8.2 kg | 6.1 – 6.5 kg |
| Cooling method, standard | Air | | |
| Cooling method, optional | Water | | |
| Cooling water consumption | 50 l/h | | |
| Cooling water temperature | 15 – 35 °C | | |
| Interfaces | RS-485, Remote | | |
| Protection category | IP54 | | |
| Permissible magnetic field max. | 5.5 mT | | |
| Sound pressure level | ≤ 50 dB (A) | | |
| Mounting orientation | in any orientation | | |
| Operating voltage | 24 V DC | | |

Order numbers

| HiPace 300 H | DN 100 ISO-K | DN 100 CF-F | DN 100 ISO-F |
|--------------|--------------|-------------|--------------|
| with TC 110 | PM P05 540 | PM P05 541 | PM P05 542 |
| for TCP 350 | PM P05 543 | PM P05 544 | PM P05 545 |

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perfect vacuum solution?
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