



# HiPace<sup>®</sup> 700 H with TC 400

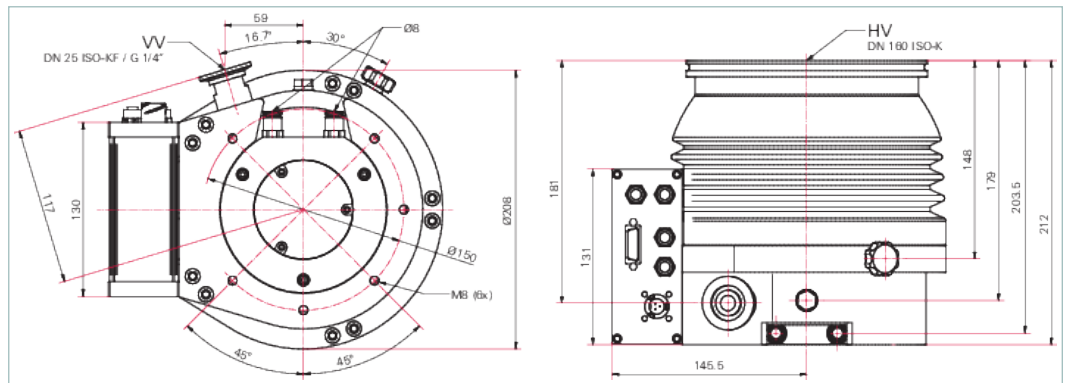


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## HiPace® 700 H with TC 400, DN 160 ISO-K

- Rugged, powerful turbopump with a pumping speed of up to 685 l/s for N<sub>2</sub>
- Extremely high compression, especially for light gases. Ideal for the generation of an ultra high vacuum
- Integrated TC 400 drive electronics
- For installation in any orientation
- Integrated, powerful cooling system

### Dimensions



### Technical Data

Technical Data	HiPace® 700 H with TC 400, DN 160 ISO-K
Bearing	Hybrid
Compression ratio for Ar	$> 1 \cdot 10^{13}$
Compression ratio for H <sub>2</sub>	$2 \cdot 10^7$
Compression ratio for He	$1 \cdot 10^9$
Compression ratio for N <sub>2</sub>	$> 1 \cdot 10^{13}$
Cooling method, optional	Air
Cooling method, standard	Water
Cooling water flow	100 l/h
Cooling water flow, max	100 l/h
Cooling water flow, min	100 l/h
Cooling water temperature	15-35 °C   59-95 °F   288-308 K
Current max.	8,75 A
Electronic drive unit	with TC 400
Flange (in)	DN 160 ISO-K
Flange (out)	DN 25 ISO-KF
Fore-vacuum max. for N <sub>2</sub>	22 hPa   16.5 Torr   22 mbar
Gas throughput at full rotational speed for Ar	2 hPa·l/s
Gas throughput at full rotational speed for H <sub>2</sub>	14 hPa·l/s
Gas throughput at full rotational speed for He	18 hPa·l/s
Gas throughput at full rotational speed for N <sub>2</sub>	3.5 hPa·l/s
I/O interfaces	RS-485, Remote
Mounting orientation	Any
Permissible radial magnetic field max.	6 mT
Power consumption max.	420 W
Protection category	IP54
Pumping speed for Ar	665 l/s
Pumping speed for H <sub>2</sub>	555 l/s
Pumping speed for He	655 l/s
Pumping speed for N <sub>2</sub>	685 l/s
Rotation speed ± 2 %	49,200 rpm   49,200 min <sup>-1</sup>
Rotation speed variable	60 – 100 %

Technical Data		HiPace® 700 H with TC 400, DN 160 ISO-K
Run-up time		2 min
Sound pressure level		≤50 dB(A)
Ultimate pressure without gas ballast		< 1 · 10 <sup>-7</sup> hPa   < 7.5 · 10 <sup>-8</sup> Torr   < 1 · 10 <sup>-7</sup> mbar
Venting connection		G 1/8"
Weight		11.8 kg   26.01 lb
Order number		
HiPace® 700 H		<b>PM P05 750</b>

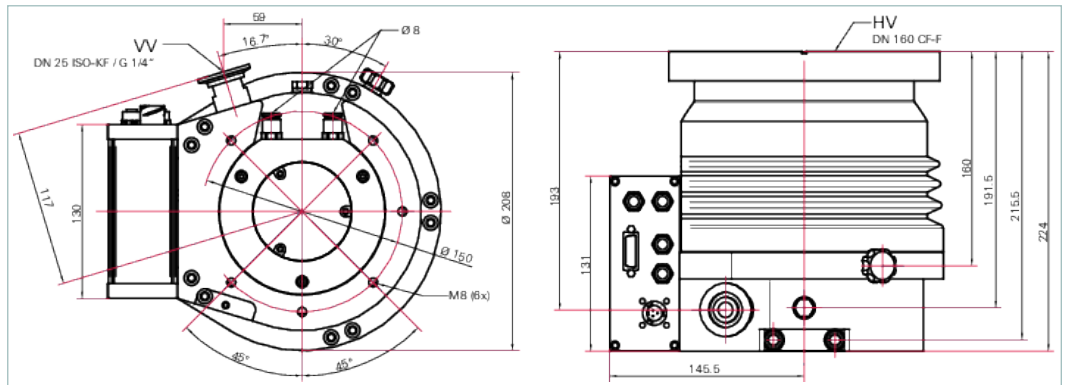


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## HiPace® 700 H with TC 400, DN 160 CF-F

- Rugged, powerful turbopump with a pumping speed of up to 685 l/s for N<sub>2</sub>
- Extremely high compression, especially for light gases. Ideal for the generation of an ultra high vacuum
- Integrated TC 400 drive electronics
- For installation in any orientation
- Integrated, powerful cooling system
- DN 160 CF-F flange for demanding UHV applications

### Dimensions



Technical Data	HiPace® 700 H with TC 400, DN 160 CF-F
Bearing	Hybrid
Compression ratio for Ar	$> 1 \cdot 10^{13}$
Compression ratio for H <sub>2</sub>	$2 \cdot 10^7$
Compression ratio for He	$1 \cdot 10^9$
Compression ratio for N <sub>2</sub>	$> 1 \cdot 10^{13}$
Cooling method, optional	Air
Cooling method, standard	Water
Cooling water flow	100 l/h
Cooling water flow, max	100 l/h
Cooling water flow, min	100 l/h
Cooling water temperature	15-35 °C   59-95 °F   288-308 K
Current max.	8,75 A
Electronic drive unit	with TC 400
Flange (in)	DN 160 CF-F
Flange (out)	DN 25 ISO-KF
Fore-vacuum max. for N <sub>2</sub>	22 hPa   16.5 Torr   22 mbar
Gas throughput at full rotational speed for Ar	2 hPa·l/s
Gas throughput at full rotational speed for H <sub>2</sub>	14 hPa·l/s
Gas throughput at full rotational speed for He	18 hPa·l/s
Gas throughput at full rotational speed for N <sub>2</sub>	3.5 hPa·l/s
I/O interfaces	RS-485, Remote
Mounting orientation	Any
Permissible radial magnetic field max.	6 mT
Power consumption max.	420 W
Protection category	IP54
Pumping speed for Ar	665 l/s
Pumping speed for H <sub>2</sub>	555 l/s
Pumping speed for He	655 l/s
Pumping speed for N <sub>2</sub>	685 l/s

Technical Data	HiPace® 700 H with TC 400, DN 160 CF-F
Rotation speed ± 2 %	49,200 rpm   49,200 min <sup>-1</sup>
Rotation speed variable	60 – 100 %
Run-up time	2 min
Sound pressure level	≤50 dB(A)
Ultimate pressure without gas ballast	< 1 · 10 <sup>-10</sup> hPa   < 7.5 · 10 <sup>-11</sup> Torr   < 1 · 10 <sup>-10</sup> mbar
Venting connection	G 1/8"
Weight	17.7 kg   39.02 lb

Order number	
HiPace® 700 H	PM P05 751

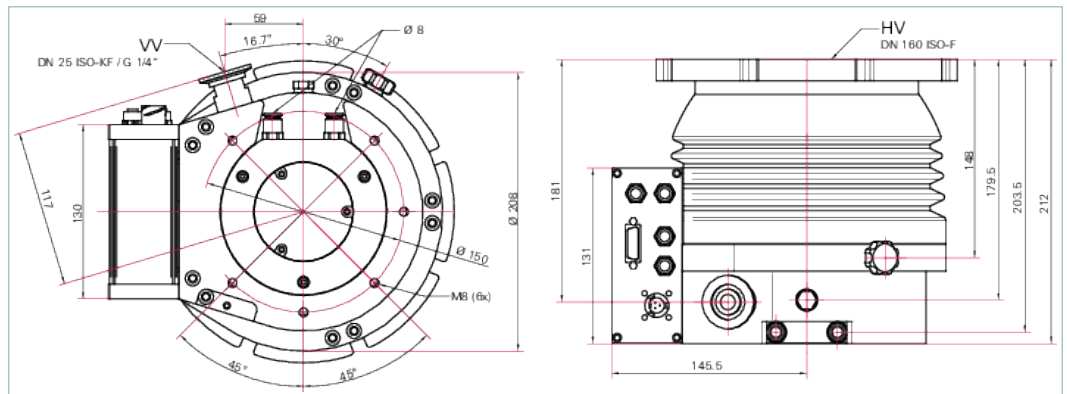


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## HiPace® 700 H with TC 400, DN 160 ISO-F

- Rugged, powerful turbopump with a pumping speed of up to 685 l/s for N<sub>2</sub>
- Extremely high compression, especially for light gases. Ideal for the generation of an ultra high vacuum
- Integrated TC 400 drive electronics
- For installation in any orientation
- Integrated, powerful cooling system

### Dimensions



Technical Data	HiPace® 700 H with TC 400, DN 160 ISO-F
Bearing	Hybrid
Compression ratio for Ar	$> 1 \cdot 10^{13}$
Compression ratio for H <sub>2</sub>	$2 \cdot 10^7$
Compression ratio for He	$1 \cdot 10^9$
Compression ratio for N <sub>2</sub>	$> 1 \cdot 10^{13}$
Cooling method, optional	Air
Cooling method, standard	Water
Cooling water flow	100 l/h
Cooling water flow, max	100 l/h
Cooling water flow, min	100 l/h
Cooling water temperature	15-35 °C   59-95 °F   288-308 K
Current max.	8,75 A
Electronic drive unit	with TC 400
Flange (in)	DN 160 ISO-F
Flange (out)	DN 25 ISO-KF
Fore-vacuum max. for N <sub>2</sub>	22 hPa   16.5 Torr   22 mbar
Gas throughput at full rotational speed for Ar	2 hPa-l/s
Gas throughput at full rotational speed for H <sub>2</sub>	14 hPa-l/s
Gas throughput at full rotational speed for He	18 hPa-l/s
Gas throughput at full rotational speed for N <sub>2</sub>	3.5 hPa-l/s
I/O interfaces	RS-485, Remote
Mounting orientation	Any
Permissible radial magnetic field max.	6 mT
Power consumption max.	420 W
Protection category	IP54
Pumping speed for Ar	665 l/s
Pumping speed for H <sub>2</sub>	555 l/s
Pumping speed for He	655 l/s
Pumping speed for N <sub>2</sub>	685 l/s
Rotation speed $\pm 2\%$	49,200 rpm   49,200 min <sup>-1</sup>

Technical Data	HiPace® 700 H with TC 400, DN 160 ISO-F
Rotation speed variable	60 – 100 %
Run-up time	2 min
Sound pressure level	≤50 dB(A)
Ultimate pressure without gas ballast	< $1 \cdot 10^{-7}$ hPa   < $7.5 \cdot 10^{-8}$ Torr   < $1 \cdot 10^{-7}$ mbar
Venting connection	G 1/8"
Weight	12.4 kg   27.34 lb

Order number	
HiPace® 700 H	<b>PM P05 752</b>

<b>Accessories</b>	
<b>Adapters (electrical) Remote</b>	
Y-Connector, shielded, M12 for accessories	<b>P 4723 013</b>
<b>Adapters (electrical) RS-232/485</b>	
Y-Connector M12 to RS-485	<b>P 4723 010</b>
USB converter to RS-485 interface	<b>PM 061 207 -T</b>
Termination resistor for RS-485	<b>PT 348 105 -T</b>
Power separator for RS-485	<b>PT 348 132 -T</b>
<b>Cables Backing pump control cables</b>	
Control cable for pumping stations 0.7 m	<b>PM 061 675 AT</b>
HiPace – ACP connection cable	<b>PM 071 142 -X</b>
<b>Cables Connection cables</b>	
Connection cable for HiPace with TC 400/TM 700 to power supply pack TPS/DCU 310/311/400/401	<b>PM 061 352 -T</b>
<b>Cables Mains cables / Power cords</b>	
Mains cable 230 V AC, CEE 7/7 to C13, 3 m	<b>P 4564 309 ZA</b>
Mains cable 115 V AC, NEMA 5-15 to C13, 3 m	<b>P 4564 309 ZE</b>
Mains cable 208 V AC, NEMA 6-15 to C13, 3 m	<b>P 4564 309 ZF</b>
<b>Cables RS-485 Interface cables</b>	
Interface cable, M12 m straight/M12 m straight, 3 m	<b>PM 061 283 -T</b>
<b>Control Devices Backing pump</b>	
Relay box for backing pumps, single phase 20 A for TC 400 and TCP 350, M12 plug	<b>PM 061 375 -T</b>
Relay box, shielded, for backing pumps, 1-phase 7 A for TC 400/1200, TM 700 and TCP 350, M12	<b>PM 071 284 -X</b>
<b>Control Devices Power supplies and control displays</b>	
HPU 001, Handheld programming unit	<b>PM 051 510 -T</b>
Accessories package for HPU 001/PC	<b>PM 061 005 -T</b>
TPS 400, power supply pack 48 V DC, for wall/standard rail fitting	<b>PM 061 343 -T</b>
TPS 401, power supply pack 48 V DC, 19" partial plug-in 3HU	<b>PM 061 347 -T</b>
DCU 002, Display Control Unit	<b>PM 061 348 AT</b>
Front panel kit for TPS 401	<b>PM 061 396 -T</b>
DCU 400, Display control unit incl. power supply pack 19"	<b>PM C01 823</b>
<b>Cooling Air cooling</b>	
Air cooling for HiPace 400/700 and 800 with TC 400	<b>PM Z01 303</b>
<b>Monitoring Pressure Sensors</b>	
RPT 010, Digital Piezo/Pirani Sensor	<b>PT R71 100</b>
IKT 010, Digital cold cathode sensor, low current	<b>PT R72 100</b>
IKT 011, Digital cold cathode sensor, high current	<b>PT R73 100</b>
<b>Monitoring Sealing gas monitoring units</b>	
Sealing gas monitoring unit G 1/8"	<b>PM 016 911 -U</b>



<b>Accessories</b>	
<b>Mounting DN ISO-F, Mounting kits</b>	
Mounting kit for DN 160 ISO-F, including coated centering ring, hexagon screws	<b>PM 016 460 -T</b>
Mounting kit for HiPace 700, DN 160 ISO-F, including coated centering ring, splinter shield, hexagon screws	<b>PM 016 461 -T</b>
Mounting kit for DN 160 ISO-F, including coated centering ring, protective screen, hexagon screws	<b>PM 016 462 -T</b>
Mounting kit for DN 160 ISO-F, including coated centering ring, stud screws	<b>PM 016 465 -T</b>
Mounting kit for DN 160 ISO-F, including coated centering ring, splinter shield, stud screws	<b>PM 016 466 -T</b>
Mounting kit for DN 160 ISO-F, including coated centering ring, protection screen, stud screws	<b>PM 016 467 T</b>
<b>Mounting DN ISO-K/-F, sealings</b>	
Centering ring with multifunction coating, DN 160 ISO-K/-F	<b>PM 016 216 -U</b>
<b>Mounting Wall rail fittings</b>	
Wall rail fitting for TPS 110/180/310/400	<b>PM 061 392 -T</b>
<b>Other</b>	
TIC 010, Adapter for two sensors	<b>PT R70 000</b>
<b>Protection DN ISO-K/-F, sealings, splinter shields, protection screens</b>	
Centering ring with multifunction coating and integrated splinter shield, DN 160 ISO-K/-F	<b>PM 016 217 AU</b>
Centering ring with multifunction coating and integrated protection screen, DN 160 ISO-K/-F	<b>PM 016 218 AU</b>
<b>Protection Sealing gas throttles</b>	
Sealing gas throttle for HiPace 300	<b>PM Z01 317</b>
<b>Valves Fore-vacuum safety valves</b>	
TVV 001, fore-vacuum safety valve, 230 V AC	<b>PM Z01 205</b>
TVV 001, fore-vacuum safety valve, 115 V AC	<b>PM Z01 206</b>
<b>Valves Sealing gas valves, shielded (normally closed)</b>	
Sealing gas valve, shielded for HiPace 300 with TC 400 and TM 700, TCP 350	<b>PM Z01 312</b>
<b>Venting Venting accessories</b>	
TTV 001, Drier for Venting Turbopumps	<b>PM Z00 121</b>
<b>Venting Venting valves (normally closed)</b>	
Venting valve, shielded, 24 V DC, G 1/8", for connection to TC 400/1200 and TM 700	<b>PM Z01 291</b>
<b>Vibration Reduction Vibration dampers</b>	
Vibration damper for HiPace with DN 160 ISO-K/F	<b>PM 006 492 AX</b>

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