



## HiPace<sup>®</sup> 400

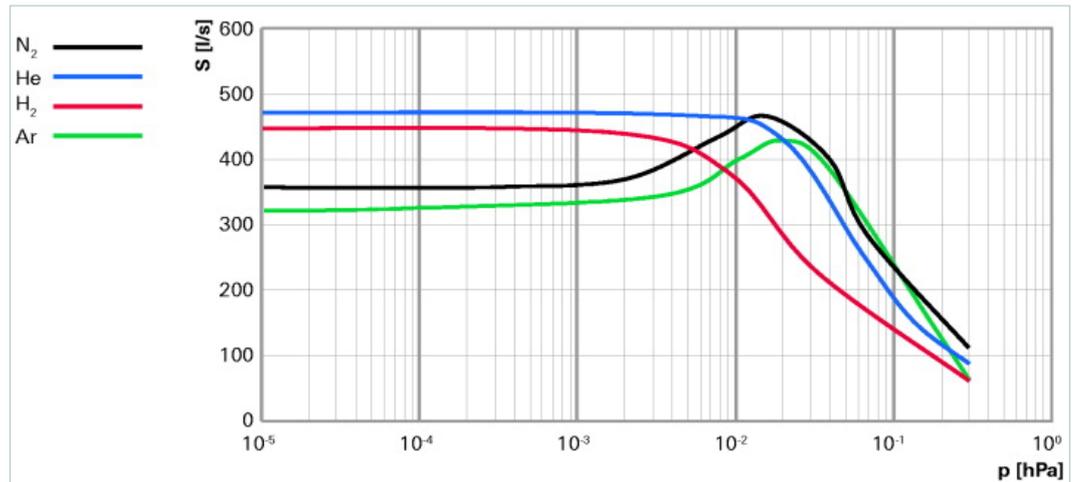
Compact yet powerful turbopumps with  
pumping speeds up to 355 l/s for N<sub>2</sub>, with a small  
DN 100 flange connection



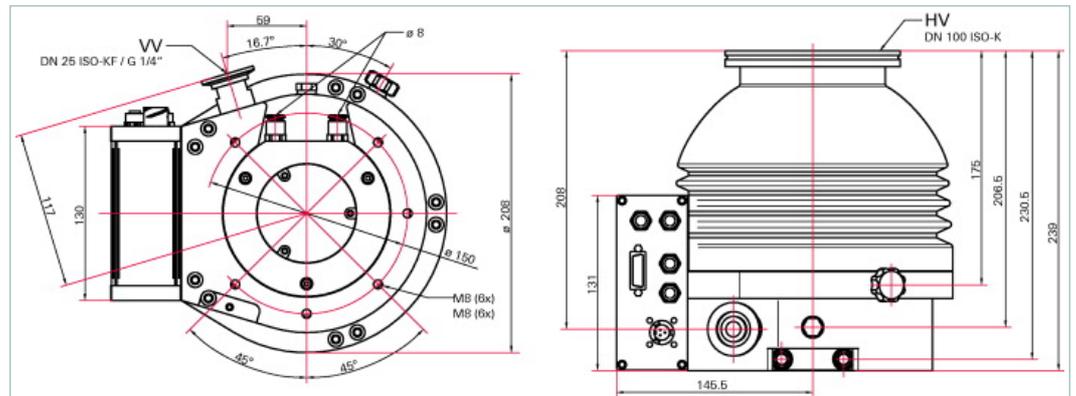
Similar Image

## HiPace® 400 for TCP 350, DN 100 ISO-K

- Compact yet powerful turbopump with a pumping speed up to 355 l/s for N<sub>2</sub>
- External TCP 350 drive electronics
- For installation in any orientation
- Integrated, powerful cooling system



### Dimensions



Technical Data	HiPace® 400 for TCP 350, DN 100 ISO-K
Bearing	Hybrid
Compression ratio for Ar	$> 1 \cdot 10^{11}$
Compression ratio for H <sub>2</sub>	$4 \cdot 10^5$
Compression ratio for He	$3 \cdot 10^7$
Compression ratio for N <sub>2</sub>	$> 1 \cdot 10^{11}$
Cooling method, optional	Air
Cooling method, standard	Water
Cooling water consumption	100 l/h
Cooling water temperature	15-35 °C   59-95 °F   288-308 K
Electronic drive unit	for TCP 350
Flange (in)	DN 100 ISO-K
Flange (out)	DN 25 ISO-KF / G 1/4"
Fore-vacuum max. for N <sub>2</sub>	10 hPa   7.5 Torr   10 mbar
Gas throughput at full rotational speed for Ar	1.5 hPa l/s   1.12 Torr l/s   1.5 mbar l/s
Gas throughput at full rotational speed for H <sub>2</sub>	$> 8$ hPa l/s   $> 6$ Torr l/s   $> 8$ mbar l/s
Gas throughput at full rotational speed for He	5 hPa l/s   3.75 Torr l/s   5 mbar l/s
Gas throughput at full rotational speed for N <sub>2</sub>	3 hPa l/s   2.25 Torr l/s   3 mbar l/s
Interfaces	RS-485, Remote

Technical Data	HiPace® 400 for TCP 350, DN 100 ISO-K
Mounting orientation	in any orientation
Permissible magnetic field max.	6 mT
Protection category	IP 54
Pumping speed for Ar	320 l/s
Pumping speed for H <sub>2</sub>	445 l/s
Pumping speed for He	470 l/s
Pumping speed for N <sub>2</sub>	355 l/s
Rotation speed ± 2 %	49200 min <sup>-1</sup>
Rotation speed variable	60-100 %
Run-up time	5.5 min
Separate electronic drive unit	yes
Sound pressure level	50 dB (A)
Ultimate pressure according to PNEUROP	< 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	10.7 kg   23.59 lb

Order number	
HiPace® 400	PM P04 026

<b>Accessories</b>	
<b>Accessory external drive units</b>	
Adapter cable, TCP 350 - backing pump relay box, M12	PM 061 377 -T
<b>Air cooling</b>	
Air cooling for HiPace 400/700/800 and HiPace 300/700/800 M, 115 V	PM Z01 342
Air cooling for HiPace 400/700/800 and HiPace 300/700/800 M, 230 V	PM Z01 341
Air cooling for HiPace 400/700 and 800 with TC 400	PM Z01 303
<b>Connection cables</b>	
Connection cable from TCP 350 to HiPace with 2 accessory ports M12, 3 m	PM 061 356 -T
<b>Control and display units</b>	
RJ 45 interface cable on M12 for HiPace	PM 051 726 -T
<b>DN ISO-K, Mounting kit, bracket screws</b>	
Mounting kit for HiPace 400, DN 100 ISO-K, including coated centering ring	PM 016 380 -T
Mounting kit for HiPace 400, DN 100 ISO-K, including coated centering ring, protection screen, bracket screws	PM 016 382 -T
Mounting kit for HiPace 400, DN 100 ISO-K, including coated centering ring, splinter shield, bracket screws	PM 016 381 -T
<b>DN ISO-K / -F, sealings, splinter shields, protection screens</b>	
Centering ring with multifunction coating, DN 100 ISO-K/-F	PM 016 210 -U
Centering ring with multifunction coating and integrated protection screen, DN 100 ISO-K/-F	PM 016 212 -U
Centering ring with multifunction coating and integrated splinter shield, DN 100 ISO-K/-F	PM 016 211 -U
<b>External drive units</b>	
TCP 350 DN, drive electronics, DeviceNet	PM C01 742
TCP 350 electronic drive unit	PM C01 740
TCP 350 PB, drive electronics, Profibus	PM C01 741
<b>Fore-vacuum safety valves</b>	
TVV 001 fore-vacuum safety valve, 115 V AC	PM Z01 206
TVV 001 fore-vacuum safety valve, 230 V AC	PM Z01 205
<b>Mains cables</b>	
Mains cable 115 V AC, NEMA 5-15 to C13, 3 m	P 4564 309 ZE
Mains cable 208 V AC, NEMA 6-15 to C13, 3 m	P 4564 309 ZF
Mains cable 230 V AC, CEE 7/7 to C13, 3 m	P 4564 309 ZA
<b>Power failure venting units (normally open)</b>	
Power failure venting valve, shielded, 24 V DC, G 1/8" for connection to TC 400, TM 700 and TC 1200	PM Z01 331
<b>Relay boxes</b>	
Backing pump relay box, single phase 20 A, for TC 400 and TCP 350, M12 plug	PM 061 375 -T
Relay box, shielded, for backing pumps, 1-phase 7 A for TC 400/1200, TM 700 and TCP 350, M12	PM 071 284 -X
<b>RS-485</b>	
Connector M12 to RS-485	PM 061 270 -X
USB converter to RS-485 interface	PM 061 207 -T
<b>Sealing gas</b>	
Sealing gas throttle for HiPace 300 - 800	PM Z01 317
Sealing gas valve, shielded for HiPace 300/400/700 and 800 with TC 400 and TM 700	PM Z01 312

<b>Accessories</b>	
<b>Venting accessory with small flange, G 1/8", hoses, air drier</b>	
Banjo fitting	<b>PM 016 787 -T</b>
Banjo fitting, small	<b>PM 143 877 -T</b>
Hose nozzle for 9 mm hose, G 1/8"	<b>PM 016 783 -T</b>
Plug-in fitting for 6 mm hose, G 1/8"	<b>PM 016 781 -T</b>
Plug-in fitting for 8 mm hose, G 1/8"	<b>PM 016 782 -T</b>
Screw-in flange, DN 10 ISO-KF, G 1/8"	<b>PM 033 737 -T</b>
Screw-on flange, DN 16 ISO-KF, G 1/8"	<b>PM 016 780 -T</b>
TTV 001, dryer for venting turbopumps	<b>PM Z00 121</b>
<b>Venting valve (normally closed)</b>	
Venting valve, 24 V DC, G 1/8" without cable	<b>PM Z01 293</b>
Venting valve, shielded, 24 V DC, G 1/8", for connecting to TC 400,1200 and TM 700 with twisted plug 270°	<b>PM Z01 292</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 damper</b>	
Vibration damper for HiPace 300/400, DN 100 ISO-K/F	<b>PM 006 459 -X</b>