



HiPace®; 400

Compact yet powerful turbopumps with pumping speeds up to 355 l/s for N₂, with a small DN 100 flange connection

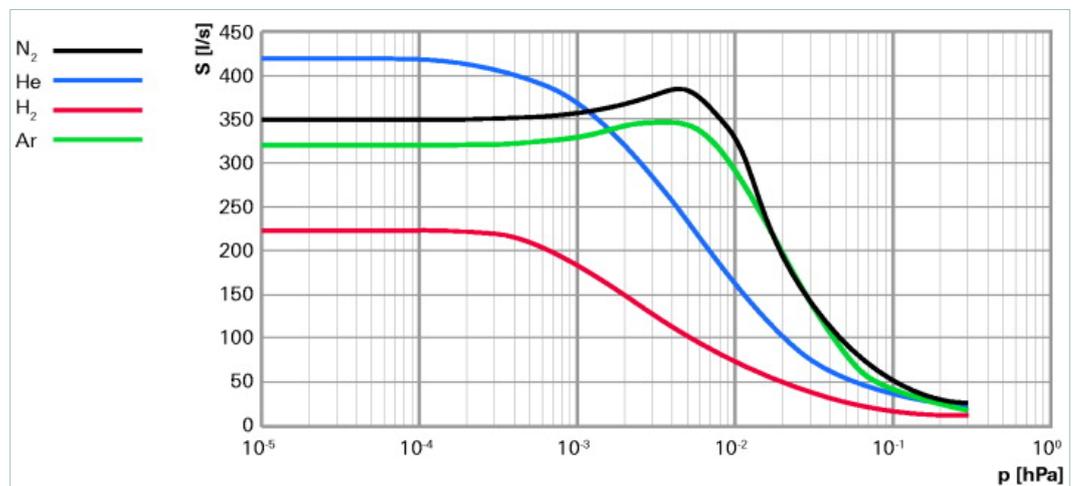




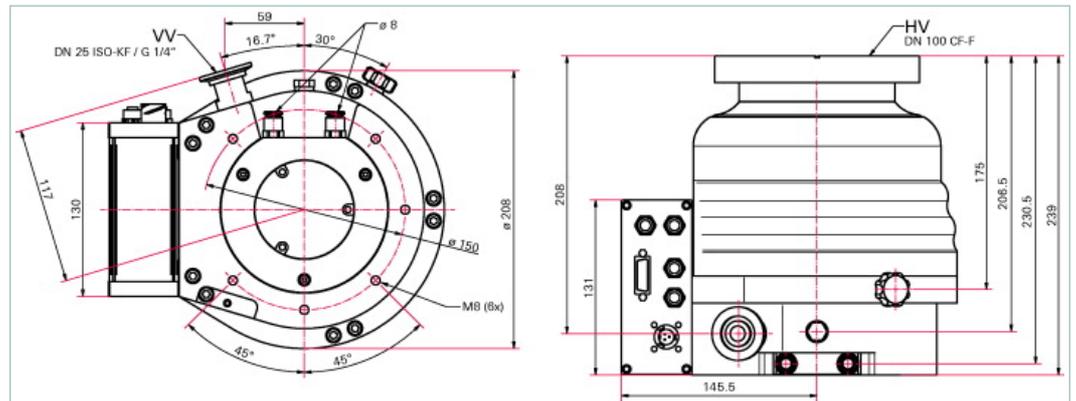
Similar Image

HiPace® 400 P with TC 400, DN 100 CF-F

- Rugged, powerful turbopump with a pumping speed up to 355 l/s for N₂
- Perfect solution for coating and semiconductor processes as well as for dusty industrial applications like electron-beam welding facilities
- Integrated drive electronics TC 400
- For installation in any orientation
- With integrated water cooling for maximum gas throughput
- Flexible through the ability to employ up to 4 accessories
- Ideal for fast cycles
- Extensive accessories expand the range of applications
- Insensitive to dust



Dimensions



Technical Data

HiPace® 400 P with TC 400, DN 100 CF-F

Bearing	Hybrid
Compression ratio for Ar	$> 1 \cdot 10^7$
Compression ratio for H ₂	$4 \cdot 10^2$
Compression ratio for He	$3 \cdot 10^3$
Compression ratio for N ₂	$> 1 \cdot 10^6$
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	with TC 400

Technical Data	HiPace® 400 P with TC 400, DN 100 CF-F
Flange (in)	DN 100 CF-F
Flange (out)	DN 25 ISO-KF / G 1/4"
Fore-vacuum max. for N ₂	0.9 hPa 0.68 Torr 0.9 mbar
Gas throughput at full rotational speed for Ar	1 hPa l/s 0.75 Torr l/s 1 mbar l/s
Gas throughput at full rotational speed for H ₂	4 hPa l/s 3 Torr l/s 4 mbar l/s
Gas throughput at full rotational speed for He	4 hPa l/s 3 Torr l/s 4 mbar l/s
Gas throughput at full rotational speed for N ₂	2 hPa l/s 1.5 Torr l/s 2 mbar l/s
Integrated power supply	yes
Interfaces	RS-485, Remote
Mounting orientation	in any orientation
Operating voltage	48 (± 5 %) V DC
Particulate matter	yes
Permissible magnetic field max.	6 mT
Protection category	IP54
Pumping speed for Ar	320 l/s
Pumping speed for H ₂	225 l/s
Pumping speed for He	420 l/s
Pumping speed for N ₂	350 l/s
Rotation speed ± 2 %	49200 min ⁻¹
Rotation speed variable	60-100 %
Run-up time	1.6 min
Sound pressure level	≤ 50 dB (A)
Ultimate pressure according to PNEUROP	< 5 · 10 ⁻¹⁰ hPa < 3.75 · 10 ⁻¹⁰ Torr < 5 · 10 ⁻¹⁰ mbar
Venting connection	G 1/8"
Weight	16.8 kg 37.04 lb

Order number	
HiPace® 400	PM P04 741

Accessories	
Accessory for TC 400/1200 and TM 700	
Y-connector, shielded, M12 for accessories	P 4723 013
Adapter and control cables	
Control cable for pumping stations 0.7 m	PM 061 675 AT
HiPace - ACP connection cable	PM 071 142 -X
Air cooling	
Air cooling for HiPace 400/700 and 800 with TC 400	PM Z01 303
CF-F, Mounting kit	
Set of hexagon screws for through hole, DN 100 CF-F	PM 016 690 -T
Set of stud screws for tapped hole, DN 100 CF-F	PM 016 692 -T
Set of stud screws for through hole, DN 100 CF-F	PM 016 734 -T
CF-F, Sealings, splinter shields, protection screens	
Protection screen for DN 100 CF-F	PM 016 336
Splinter shield for turbopumps, DN 100 CF-F	PM 016 315
Connection cables	
Connection cable for HiPace with TC 400/TM 700 to power supply TPS/DCU 310/311/400/401	PM 061 352 -T
Control and display units	
Accessories package for HPU 001/PC	PM 061 005 -T
DCU 002, Display Control Unit	PM 061 348 -T
HPU 001, Handheld Programming Unit	PM 051 510 -T
DCU with integrated power supply	
DCU 400, Display control unit incl. power supply	PM C01 823
Fore-vacuum safety valves	
TVV 001 fore-vacuum safety valve, 115 V AC	PM Z01 206
TVV 001 fore-vacuum safety valve, 230 V AC	PM Z01 205
Heating suitable for TC 110 and TC 400	
Heating jacket for HiPace 400/700/800 with TC 400, 115 V AC, UL plug	PM 061 371 -T
Heating jacket for HiPace 400/700/800 with TC 400, 208 V AC, UL plug	PM 061 370 -T
Heating jacket for HiPace 400/700/800 with TC 400, 230 V AC, safety plug	PM 061 369 -T
Interface and extension cables	
Interface cable, M12 m straight / M12 m straight, 3 m	PM 061 283 -T
Mains cables	
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
Relay boxes	
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
RS-485	
Power separator for RS-485	PT 348 132 -T
Termination resistor for RS-485	PT 348 105 -T
USB converter to RS-485 interface	PM 061 207 -T
Y-Connector M12 to RS-485	P 4723 010

Accessories	
Sealing gas	
Sealing gas throttle for HiPace 400/700/800 P and C version and HiPace 1200 - 2300	PM Z01 318
Sealing gas valve, shielded, HiPace 400/700/800 P and C with TC 400 and HiPace 1200 - 2300 with TC 1200	PM Z01 313
TPS-19" rack module	
Front panel kit for TPS 311	PM 061 395 -T
TPS 401, power supply 48 V DC, 19" partial plug-in 3HU	PM 061 347 -T
TPS wall rail fitting	
TPS 400, power supply 48 V DC, for wall/standard rail fitting	PM 061 343 -T
Wall rail fitting for TPS 110/180/310/400	PM 061 392 -T
Venting accessory with small flange, G 1/8", hoses, air drier	
TTV 001, dryer for venting turbopumps	PM Z00 121
Venting valve (normally closed)	
Venting valve, shielded, 24 V DC, G 1/8", for connection to TC 400/1200 and TM 700	PM Z01 291
Vibration damper	
Vibration damper for HiPace 300/400, DN 100 CF-F	PM 006 488 -X