



## HiPace<sup>®</sup> 60 P

Small yet powerful turbo molecular pump  
without Holweck-stage with a pumping speed of  
up to 64 l/s for N<sub>2</sub>

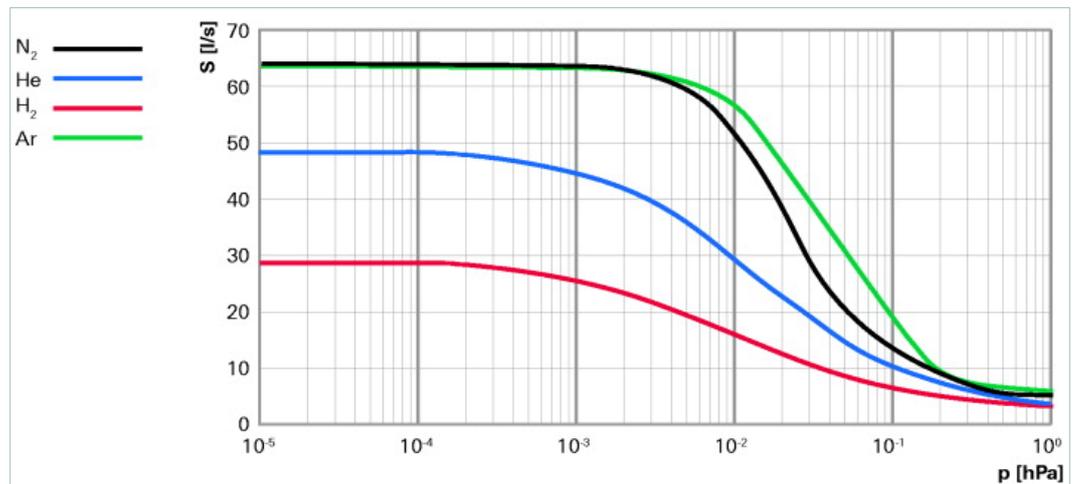




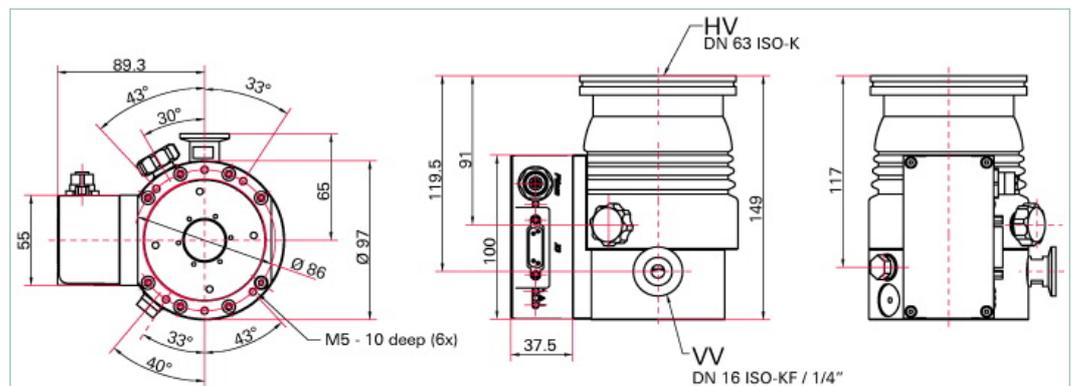
Similar Image

## HiPace® 60 P with TC 110 RS, DN 63 ISO-K

- Small yet powerful turbo molecular pump without Holweck-stage with a pumping speed of up to 64 l/s for N<sub>2</sub>
- Integrated drive electronics TC 110 RS
- 4 accessory ports and RS-485 directly on the TC 110 RS
- Installation in any orientation
- Ideal for dependable systems integration
- Insensitive to dust
- Extensive accessories expand the range of applications



### Dimensions



Technical Data	HiPace® 60 P with TC 110 RS, DN 63 ISO-K
Bearing	Hybrid
Compression ratio for Ar	2 · 10 <sup>6</sup>
Compression ratio for H <sub>2</sub>	2 · 10 <sup>2</sup>
Compression ratio for He	3.5 · 10 <sup>2</sup>
Compression ratio for N <sub>2</sub>	1 · 10 <sup>6</sup>
Cooling method, optional	Air/water
Cooling method, standard	Convection
Cooling water consumption	75 l/h
Cooling water temperature	5-25 °C   41-77 °F   278-298 K
Electronic drive unit	with TC 110 RS
Flange (in)	DN 63 ISO-K
Flange (out)	DN 16 ISO-KF / G 1/4"
Fore-vacuum max. for N <sub>2</sub>	4 hPa   3 Torr   4 mbar
Gas throughput at full rotational speed for Ar	0.83 hPa l/s   0.62 Torr l/s   0.83 mbar l/s

Technical Data	HiPace® 60 P with TC 110 RS, DN 63 ISO-K
Gas throughput at full rotational speed for H <sub>2</sub>	55 hPa l/s   41.25 Torr l/s   55 mbar l/s
Gas throughput at full rotational speed for He	55 hPa l/s   41.25 Torr l/s   55 mbar l/s
Gas throughput at full rotational speed for N <sub>2</sub>	9.2 hPa l/s   6.9 Torr l/s   9.2 mbar l/s
Integrated power supply	yes
Interfaces	RS-485, Remote
Mounting orientation	in any orientation
Operating voltage	24 (± 5 %) V DC
Permissible magnetic field max.	4 mT
Protection category	IP 54
Pumping speed for Ar	63 l/s
Pumping speed for H <sub>2</sub>	28 l/s
Pumping speed for He	48 l/s
Pumping speed for N <sub>2</sub>	64 l/s
Rotation speed ± 2 %	90,000 min <sup>-1</sup>
Rotation speed variable	50-100 %
Run-up time	1.0 min
Sound pressure level	48 dB (A)
Ultimate pressure according to PNEUROP	< 1 · 10 <sup>-6</sup> hPa   < 7.5 · 10 <sup>-7</sup> Torr   < 1 · 10 <sup>-6</sup> mbar
Venting connection	G 1/8"
Weight	2.3 kg   5.07 lb

Order number	
HiPace® 60 P	PM P04 693

<b>Accessories</b>	
<b>Accessory for TC 110</b>	
Enclosure for plug, spraywater-protected, 15-pole, D-sub	<b>P 0998 016</b>
Mains power plug angled for TC 110/120 and mating plug for interface E74	<b>P 4723 111</b>
Mains power plug for TC 110/120 and mating plug for E74 interface, straight	<b>P 4723 110</b>
TCS 11, adapter for TC 110/120 with RS-485 interface	<b>PM 061 636 -U</b>
TCS 12, adapter for TC 110/120 with interface RS-485, 4 accessory ports and coupling set	<b>PM 061 638 -U</b>
TCS 13, adapter for TC 110/120 with interface RS-485, 2 accessory ports and coupling set	<b>PM 061 856 -U</b>
<b>Adapter and control cables</b>	
Control cable for valve	<b>PM 061 687 -T</b>
HiPace - ACP connection cable	<b>PM 071 142 -X</b>
<b>Air cooling</b>	
Air cooling for HiPace 60/80, SplitFlow 50/80, 230 V	<b>PM Z01 343</b>
Air cooling for HiPace 60 P, HiPace 80 and SplitFlow 50/80 with TC 110/120	<b>PM Z01 300</b>
Air cooling for HiPace 60 P and 80, SplitFlow 50/80, 115 V	<b>PM Z01 344</b>
<b>Connection cables</b>	
Connection cable for HiPace with TC 110/120	<b>PM 061 543 -T</b>
Connection cable incl. 2 accessory ports for TC 110/120 to power supply	<b>PM 061 552 -T</b>
Connection cable with RS-485 interface and 2 accessory ports for TC110/120 to power supply	<b>PM 061 351 -T</b>
Connection cable with RS-485 interface and 3 accessory ports for TC 110/120 to power supply	<b>PM 061 512 -T</b>
Connection cable with RS-485 interface for TC 110/120 to power supply	<b>PM 061 350 -T</b>
<b>Control and display units</b>	
Accessories package for HPU 001/PC	<b>PM 061 005 -T</b>
DCU 002, Display Control Unit	<b>PM 061 348 -T</b>
HPU 001, Handheld Programming Unit	<b>PM 051 510 -T</b>
RJ 45 interface cable on M12 for HiPace	<b>PM 051 726 -T</b>
<b>DCU with integrated power supply</b>	
DCU 110, Display control unit incl. power supply	<b>PM C01 820</b>
DCU 180, Display control unit incl. power supply	<b>PM C01 821</b>
<b>DN ISO-K, claws</b>	
Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring, splinter and claw grips	<b>PM 016 511 -T</b>
Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring and claws	<b>PM 016 510 -T</b>
Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring with integrated protection screen and claws grips	<b>PM 016 512 -T</b>
<b>DN ISO-K, Mounting kit, bracket screws</b>	
Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring, protection screen and bracket screws	<b>PM 016 362 -T</b>
Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring, splinter shield and bracket screws	<b>PM 016 361 -T</b>
Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring and bracket screws	<b>PM 016 360 -T</b>

<b>Accessories</b>	
<b>DN ISO-K / -F, sealings, splinter shields, protection screens</b>	
Centering ring with multifunction coating, DN 63 ISO-K/-F	PM 016 206 -U
Centering ring with multifunction coating and integrated protection screen, DN 63 ISO-K/-F	PM 016 208 -U
Centering ring with multifunction coating and integrated splinter shield, DN 63 ISO-K/-F	PM 016 207 -U
<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>Interface and extension cables</b>	
Extension cable M8 on M8	PM 061 783 -T
Interface cable, M12 m straight/ M12 m angled 0.7 m	PM 061 791 -T
Interface cable, M12 m straight / M12 m straight, 3 m	PM 061 283 -T
<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>	
Shielded power failure venting unit, 24 V DC, G 1/8", for connection to TC 110/120	PM Z01 330
<b>Relay boxes</b>	
Relay box, shielded, for backing pumps, 1-phase 7A for TC 110/120 and TCP 350, plug M8	PM 071 282 -X
Relay box for backing pump, single phase 20 A for TC 110/120 and TCP 350, M8 plug	PM 061 373 -T
<b>RS-485</b>	
Connector M12 to RS-485	PM 061 270 -X
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
<b>Sealing gas</b>	
Sealing gas throttle for HiPace 60/80	PM Z01 316
Sealing gas valve, shielded for HiPace 60/80 with TC 110	PM Z01 310
<b>TPS-19" rack module</b>	
Front panel kit for TPS 111	PM 061 393 -T
Front panel kit for TPS 181	PM 061 394 -T
TPS 111, mains pack 19" rack module 3HU	PM 061 344 -T
TPS 181, mains pack 19" rack module 3HU	PM 061 345 -T
<b>TPS wall rail fitting</b>	
TPS 110, mains pack for wall/standard rail fitting	PM 061 340 -T
TPS 180, mains pack for wall/standard rail fitting	PM 061 341 -T
Wall rail fitting for TPS 110/180/310/400	PM 061 392 -T
<b>Venting accessory with small flange, G 1/8", hoses, air drier</b>	
Banjo fitting	PM 016 787 -T
Banjo fitting, small	PM 143 877 -T
Hose nozzle for 9 mm hose, G 1/8"	PM 016 783 -T
Plug-in fitting for 6 mm hose, G 1/8"	PM 016 781 -T
Plug-in fitting for 8 mm hose, G 1/8"	PM 016 782 -T
Screw-in flange, DN 10 ISO-KF, G 1/8"	PM 033 737 -T
Screw-on flange, DN 16 ISO-KF, G 1/8"	PM 016 780 -T
TTV 001, dryer for venting turbopumps	PM Z00 121

<b>Accessories</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 connection to TC 110/120	<b>PM Z01 290</b>
<b>Vibration damper</b>	
Vibration damper for HiPace 60/80, DN 63 ISO-K	<b>PM 006 800 -X</b>
<b>Water cooling</b>	
Water cooling for HiPace 60 P, HiPace 80 and for SplitFlow 50/80 with plug-in connection, 8 mm	<b>PM 016 623 -T</b>