



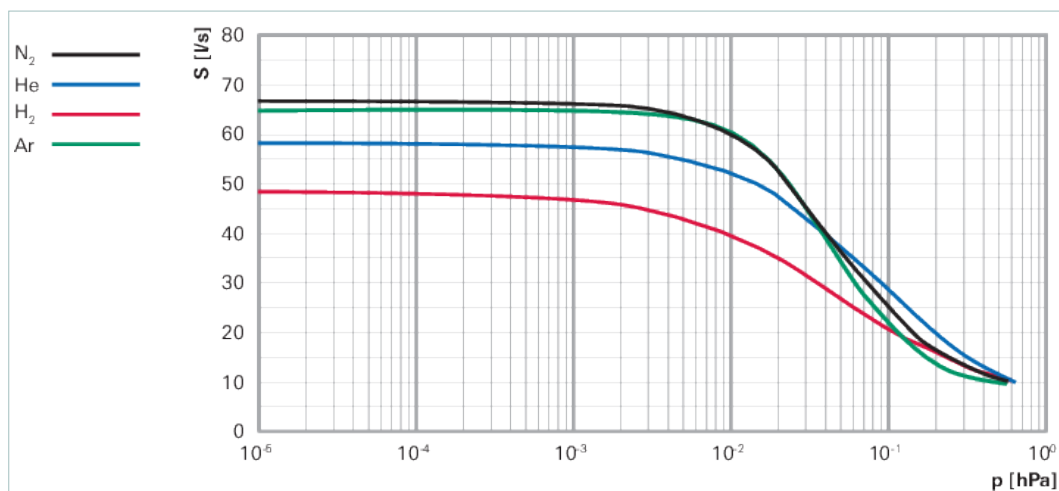
# HiPace<sup>®</sup> 80 with TC 110, DN 63 ISO-K



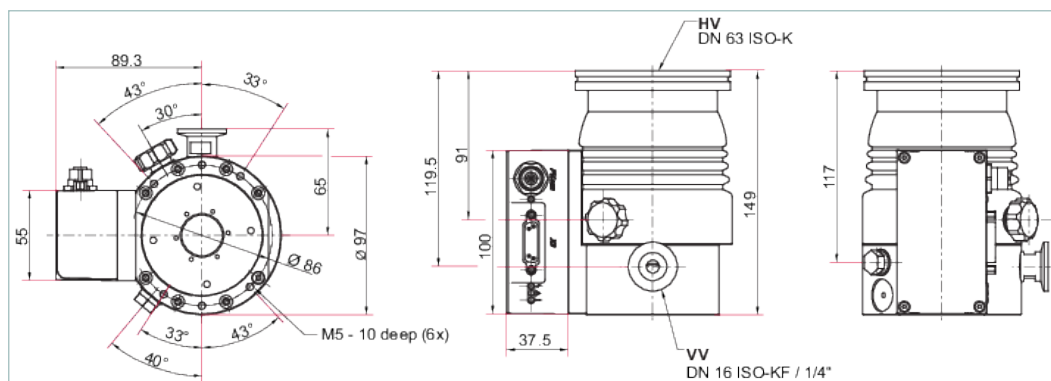
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## HiPace® 80 with TC 110, DN 63 ISO-K

- Small yet powerful turbopump with a pumping speed of up to 67 l/s for N<sub>2</sub>
- Integrated TC 110 drive electronics
- For installation in any orientation
- Ideal for dependable systems integration
- Extensive accessories expand the range of applications



### Dimensions



### Technical Data

### HiPace® 80 with TC 110, DN 63 ISO-K

|                                      |                                |
|--------------------------------------|--------------------------------|
| Bearing                              | Hybrid                         |
| Compression ratio for Ar             | $> 1 \cdot 10^{11}$            |
| Compression ratio for H <sub>2</sub> | $1.4 \cdot 10^5$               |
| Compression ratio for He             | $1.3 \cdot 10^7$               |
| Compression ratio for N <sub>2</sub> | $> 1 \cdot 10^{11}$            |
| Cooling method, optional             | Air/Water                      |
| Cooling method, standard             | Convection                     |
| Cooling water flow                   | 75 l/h                         |
| Cooling water flow, max              | 75 l/h                         |
| Cooling water flow, min              | 75 l/h                         |
| Cooling water temperature            | 5-25 °C   41-77 °F   278-298 K |
| Current max.                         | 4,6 A                          |
| Electronic drive unit                | with TC 110                    |
| Flange (in)                          | DN 63 ISO-K                    |
| Flange (out)                         | DN 16 ISO-KF/G 1/4"            |

| Technical Data                                             | HiPace® 80 with TC 110, DN 63 ISO-K                                                      |
|------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Fore-vacuum max. for N <sub>2</sub>                        | 22 hPa   16.5 Torr   22 mbar                                                             |
| Gas throughput at full rotational speed for Ar             | 0.54 hPa·l/s                                                                             |
| Gas throughput at full rotational speed for H <sub>2</sub> | 15.3 hPa·l/s                                                                             |
| Gas throughput at full rotational speed for He             | 2.7 hPa·l/s                                                                              |
| Gas throughput at full rotational speed for N <sub>2</sub> | 1.3 hPa·l/s                                                                              |
| I/O interfaces                                             | RS-485, Remote                                                                           |
| Mounting orientation                                       | Any                                                                                      |
| Operating voltage: V DC                                    | 24 (± 5 %) V DC                                                                          |
| Permissible magnetic field max.                            | 3.8 mT                                                                                   |
| Power consumption max.                                     | 110 W                                                                                    |
| Protection category                                        | IP54                                                                                     |
| Pumping speed for Ar                                       | 66 l/s                                                                                   |
| Pumping speed for H <sub>2</sub>                           | 48 l/s                                                                                   |
| Pumping speed for He                                       | 58 l/s                                                                                   |
| Pumping speed for N <sub>2</sub>                           | 67 l/s                                                                                   |
| Rotation speed ± 2 %                                       | 90,000 rpm   90,000 min <sup>-1</sup>                                                    |
| Rotation speed variable                                    | 50 – 100 %                                                                               |
| Run-up time                                                | 1.7 min                                                                                  |
| Sound pressure level                                       | ≤48 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 |
| 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                                                     | 2.4 kg   5.29 lb                                                                         |

| Order number |
|--------------|
| HiPace® 80   |
| PM P03 940   |

| Accessories                                                                                     |               |
|-------------------------------------------------------------------------------------------------|---------------|
| <b>Adapters (electrical) Remote</b>                                                             |               |
| Enclosure for plug, spraywater-protected, 15-pole, D-Sub                                        | P 0998 016    |
| Mains power plug for TC 110/120 and mating plug for E74 interface, straight                     | P 4723 110    |
| Mains power plug angled for TC 110/120 and mating plug for interface E74                        | P 4723 111    |
| TCS 11, adapter for TC 110/120 with RS-485 interface                                            | PM 061 636 -U |
| TCS 12, adapter for TC 110/120 with interface RS-485, 4 accessory ports and coupling set        | PM 061 638 -U |
| TCS 13, adapter for TC 110/120 with interface RS-485, 2 accessory ports and coupling set        | PM 061 856 -U |
| TCS 17 for control of backing pumps                                                             | PM 071 093 -U |
| <b>Adapters (electrical) RS-232/485</b>                                                         |               |
| Y-Connector M12 to RS-485                                                                       | P 4723 010    |
| USB converter to RS-485 interface                                                               | PM 061 207 -T |
| Coupling M12 for RS-485                                                                         | PM 061 270 -X |
| Termination resistor for RS-485                                                                 | PT 348 105 -T |
| Power separator for RS-485                                                                      | PT 348 132 -T |
| <b>Cables Backing pump control cables</b>                                                       |               |
| HiPace – ACP connection cable                                                                   | PM 071 142 -X |
| <b>Cables Connection cables</b>                                                                 |               |
| Connection cable with RS-485 interface for TC 110/120 to power supply pack                      | PM 061 350 -T |
| Connection cable with RS-485 interface and 2 accessory ports for TC110/120 to power supply pack | PM 061 351 -T |
| Connection cable TPS 180 - MVP 006-4 with HiPace 80/HiPace 10, 2 x 0.5 m                        | PM 061 399 -T |
| Connection cable with RS-485 interface and 3 accessory ports for TC110/120 to power supply pack | PM 061 512 -T |
| Connection cable for HiPace with TC 110/120                                                     | PM 061 543 -T |
| Connection cable incl. 2 accessory ports for TC 110/120 to power supply pack                    | PM 061 552 -T |
| <b>Cables Extension cables</b>                                                                  |               |
| Extension cable M8 on M8                                                                        | PM 061 783 -T |
| <b>Cables Mains cables / Power cords</b>                                                        |               |
| Mains cable 230 V AC, CEE 7/7 to C13, 3 m                                                       | P 4564 309 ZA |
| 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 |
| <b>Cables RS-485 Interface cables</b>                                                           |               |
| Interface cable, M12 m straight/M12 m straight, 3 m                                             | PM 061 283 -T |
| Interface cable, M12 m straight/ M12 m angled, 0.7 m                                            | PM 061 791 -T |
| <b>Control Devices Backing pump</b>                                                             |               |
| Relay box for backing pumps, 1-phase 20 A for TC 110/120 and TCP 350, plug M8                   | PM 061 373 -T |
| Relay box, shielded, for backing pumps, 1-phase 7A for TC 110/120 and TCP 350, plug M8          | PM 071 282 -X |

| <b>Accessories</b>                                                                                                           |               |
|------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Control Devices Power supplies and control displays</b>                                                                   |               |
| HPU 001, Handheld programming unit                                                                                           | PM 051 510 -T |
| Accessories package for HPU 001/PC                                                                                           | PM 061 005 -T |
| TPS 110, power supply pack for wall/standard rail fitting                                                                    | PM 061 340 -T |
| TPS 180, power supply pack for wall/standard rail fitting                                                                    | PM 061 341 -T |
| TPS 111, power supply pack 3HU 19" rack module                                                                               | PM 061 344 -T |
| TPS 181, power supply pack 19" rack module 3HU                                                                               | PM 061 345 -T |
| DCU 002, Display Control Unit                                                                                                | PM 061 348 AT |
| Front panel kit for TPS 111                                                                                                  | PM 061 393 -T |
| Front panel kit for TPS 181                                                                                                  | PM 061 394 -T |
| DCU 110, Display control unit with power supply pack                                                                         | PM C01 820    |
| DCU 180, Display control unit incl. power supply pack 19"                                                                    | PM C01 821    |
| <b>Cooling Air cooling</b>                                                                                                   |               |
| Air cooling for HiPace 60 P, HiPace 80 and SplitFlow 50/80 with TC 110/120                                                   | PM Z01 300    |
| Air cooling for HiPace 60/80, SplitFlow 50/80, 230 V                                                                         | PM Z01 343    |
| Air cooling for HiPace 60 P and 80, SplitFlow 50/80, 115 V                                                                   | PM Z01 344    |
| <b>Cooling Water cooling</b>                                                                                                 |               |
| Water cooling for HiPace 60 P   HiPace 80 and for SplitFlow 50/80 with push-in fitting, 8 mm                                 | PM 016 623 -T |
| <b>Monitoring Pressure Sensors</b>                                                                                           |               |
| RPT 010, Digital Piezo/Pirani Sensor                                                                                         | PT R71 100    |
| IKT 010, Digital cold cathode sensor, low current                                                                            | PT R72 100    |
| IKT 011, Digital cold cathode sensor, high current                                                                           | PT R73 100    |
| <b>Mounting DN ISO-K, Mounting kits, bracket screws</b>                                                                      |               |
| Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring and bracket screws                               | PM 016 360 -T |
| Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring, splinter shield and bracket screws              | PM 016 361 -T |
| Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring, protection screen and bracket screws            | PM 016 362 -T |
| <b>Mounting DN ISO-K, Mounting kits, claws</b>                                                                               |               |
| Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring and claws                                        | PM 016 510 -T |
| Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring, splinter and claw grips                         | PM 016 511 -T |
| Mounting kit for HiPace 60/80, DN 63 ISO-K, including coated centering ring with integrated protection screen and claw grips | PM 016 512 -T |
| <b>Mounting DN ISO-K/-F, sealings</b>                                                                                        |               |
| Centering ring with multifunction coating, DN 63 ISO-K/-F                                                                    | PM 016 206 -U |

| Accessories                                                                                                            |               |
|------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Mounting DN ISO-K/-F Mounting kits</b>                                                                              |               |
| Mounting kit for DN 63 ISO-K to ISO-F, with collar flange, coated centering ring, hexagon bolts                        | PM 016 930 -T |
| Mounting kit for DN 63 ISO-K to ISO-F, with collar flange, coated centering ring with splinter shield, hexagon bolts   | PM 016 931-T  |
| Mounting kit for DN 63 ISO-K to ISO-F, with collar flange, coated centering ring with protection screen, hexagon bolts | PM 016 932 -T |
| Mounting kit for DN 63 ISO-K to ISO-F, with collar flange, coated centering ring, stud screws                          | PM 016 935 -T |
| Mounting kit for DN 63 ISO-K to ISO-F, with collar flange, coated centering ring with splinter shield, stud screws     | PM 016 936 -T |
| Mounting kit for DN 63 ISO-K to ISO-F, with collar flange, coated centering ring with protection screen, stud screws   | PM 016 937 -T |
| <b>Mounting Wall rail fittings</b>                                                                                     |               |
| Wall rail fitting for TPS 110/180/310/400                                                                              | PM 061 392 -T |
| <b>Other</b>                                                                                                           |               |
| TIC 010, Adapter for two sensors                                                                                       | PT R70 000    |
| Water cooling for HiPace 30   HiPace 80 mini with push-in fitting, 8 mm                                                | PM 016 847 -T |
| <b>Protection DN ISO-K/-F, sealings, splinter shields, protection screens</b>                                          |               |
| Centering ring with multifunction coating and integrated splinter shield, DN 63 ISO-K/-F                               | PM 016 207 -U |
| Centering ring with multifunction coating and integrated protection screen, DN 63 ISO-K/-F                             | PM 016 208 -U |
| <b>Protection Sealing gas throttles</b>                                                                                |               |
| Sealing gas throttle for HiPace 30/60/80                                                                               | PM Z01 316    |
| <b>Valves Fore-vacuum safety valves</b>                                                                                |               |
| TVV 001, fore-vacuum safety valve, 230 V AC                                                                            | PM Z01 205    |
| TVV 001, fore-vacuum safety valve, 115 V AC                                                                            | PM Z01 206    |
| <b>Valves Sealing gas valves, shielded (normally closed)</b>                                                           |               |
| Sealing gas valve, shielded for HiPace 30/60/80 with TC 110                                                            | PM Z01 310    |
| <b>Venting 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>Venting Venting accessories</b>                                                                                     |               |
| Screw-on flange, DN 16 ISO-KF, G 1/8"                                                                                  | PM 016 780 -T |
| Push-in fitting for 6 mm tube, G 1/8"                                                                                  | PM 016 781 -T |
| Push-in fitting for 8 mm tube, G 1/8"                                                                                  | PM 016 782 -T |
| Hose nozzle for 9 mm hose, G 1/8"                                                                                      | PM 016 783 -T |
| Banjo fitting                                                                                                          | PM 016 787 -T |
| Screw-in flange, DN 10 ISO-KF, G 1/8"                                                                                  | PM 033 737 -T |
| Banjo fitting, small                                                                                                   | PM 143 877 -T |
| TTV 001, Drier for Venting Turbopumps                                                                                  | PM Z00 121    |
| <b>Venting Venting valves (normally closed)</b>                                                                        |               |
| Venting valve, shielded, 24 V DC, G 1/8", for connection to TC 110/120                                                 | PM Z01 290    |
| Venting valve, 24 V DC, G 1/8" without cable                                                                           | PM Z01 293    |
| <b>Vibration Reduction Vibration dampers</b>                                                                           |               |
| Vibration damper for HiPace 60/80, DN 63 ISO-K                                                                         | PM 006 800 -X |

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