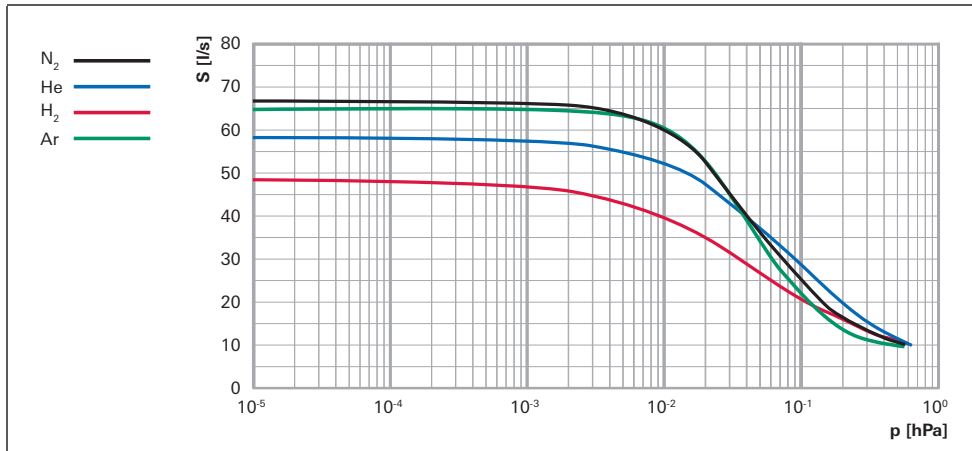


HiPace® 80



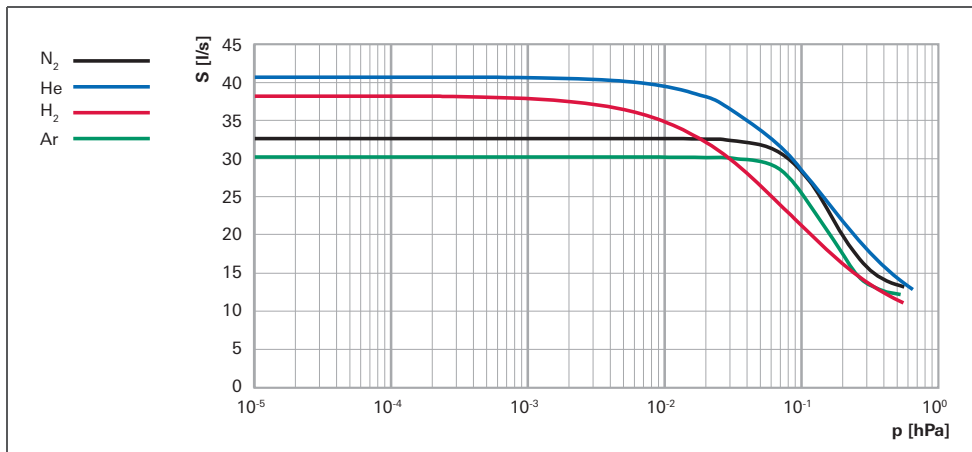
- Small yet powerful turbopump with a pumping speed of up to 67 l/s for N₂
- Integrated TC 110 drive electronics
- For installation in any orientation
- Ideal for dependable systems integration
- Extensive accessories expand the range of applications

Pumping speed



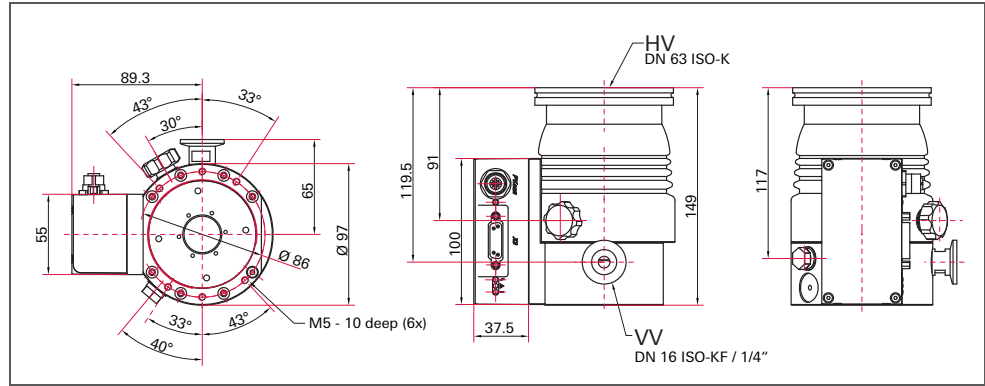
HiPace® 80 with TC 110, DN 63 ISO-K

HiPace® 80 with TC 110, DN 63 CF-F

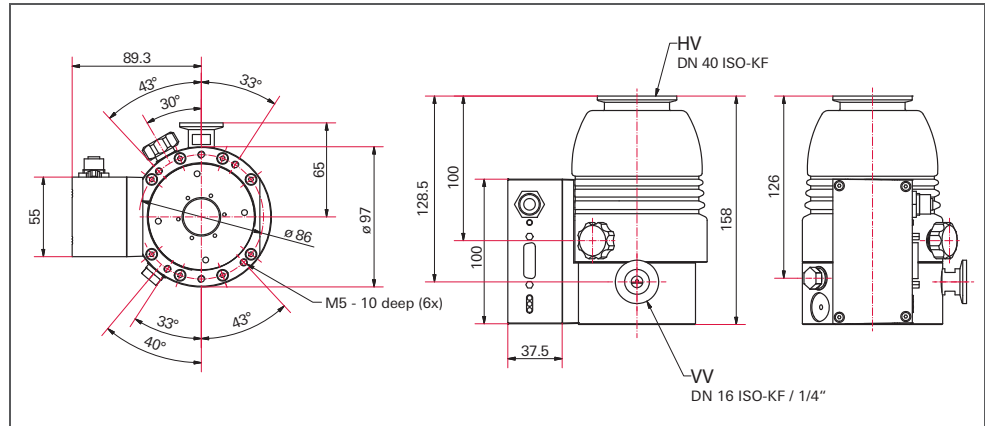


HiPace® 80 with TC 110, DN 40 ISO-KF

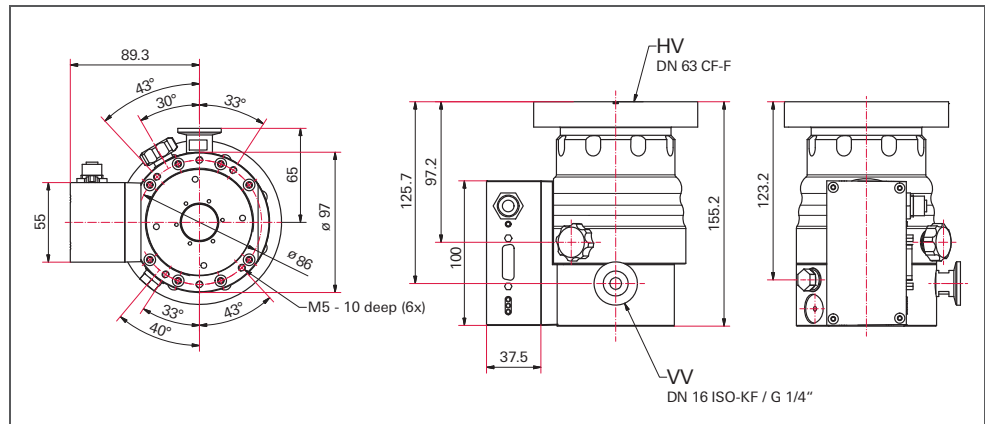
Dimensions (in mm)



HiPace[®] 80 with TC 110, DN 63 ISO-K



HiPace[®] 80 with TC 110, DN 40 ISO-KF



HiPace[®] 80 with TC 110, DN 63 CF-F

| Technical data | HiPace® 80 with TC 110, DN 63 ISO-K | HiPace® 80 with TC 110, DN 63 CF-F | HiPace® 80 with TC 110, DN 40 ISO-KF |
|--|---|--|--|
| Connection nominal diameter | | | |
| Flange (out) | DN 16 ISO-KF / G 1/4" | DN 16 ISO-KF / G 1/4" | DN 16 ISO-KF / G 1/4" |
| Flange (in) | DN 63 ISO-K | DN 63 CF-F | DN 40 ISO-KF |
| Venting connection | G 1/8" | G 1/8" | G 1/8" |
| Pumping speed | | | |
| Pumping speed for Ar | 66 l/s | 66 l/s | 30 l/s |
| Pumping speed for H ₂ | 48 l/s | 48 l/s | 38 l/s |
| Pumping speed for He | 58 l/s | 58 l/s | 41 l/s |
| Pumping speed for N ₂ | 67 l/s | 67 l/s | 35 l/s |
| Compression | | | |
| Compression ratio for Ar | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ |
| Compression ratio for H ₂ | $1.4 \cdot 10^5$ | $1.4 \cdot 10^5$ | $1.4 \cdot 10^5$ |
| Compression ratio for He | $1.3 \cdot 10^7$ | $1.3 \cdot 10^7$ | $1.3 \cdot 10^7$ |
| Compression ratio for N ₂ | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ |
| Fore-vacuum max. for N₂ | | | |
| | 22 hPa | 22 hPa | 22 hPa |
| Gas throughput | | | |
| Gas throughput at full rotational speed for Ar | 0.54 hPa l/s | 0.54 hPa l/s | 0.54 hPa l/s |
| Gas throughput at full rotational speed for H ₂ | 15.3 hPa l/s | 15.3 hPa l/s | 15.3 hPa l/s |
| Gas throughput at full rotational speed for He | 2.7 hPa l/s | 2.7 hPa l/s | 2.7 hPa l/s |
| Gas throughput at full rotational speed for N ₂ | 1.3 hPa l/s | 1.3 hPa l/s | 1.3 hPa l/s |
| Electronic drive unit | | | |
| Separate electronic drive unit | with TC 110 | with TC 110 | with TC 110 |
| Operating voltage | 24 (± 5 %) V DC | 24 (± 5 %) V DC | 24 (± 5 %) V DC |
| Rotation speed ± 2 % | 90000 min ⁻¹ | 90000 min ⁻¹ | 90000 min ⁻¹ |
| Rotation speed variable | 50-100 % | 50-100 % | 50-100 % |
| Mounting orientation | in any orientation | in any orientation | in any orientation |
| Ultimate pressure* | $< 1 \cdot 10^{-7}$ hPa | $< 5 \cdot 10^{-10}$ hPa | $< 1 \cdot 10^{-7}$ hPa |
| Weight | 2.4 kg | 3.8 kg | 2.4 kg |
| Run-up time | 1.7 min | 1.7 min | 1.7 min |
| Cooling method, optional | Air/Water | Air/Water | Air/Water |
| Cooling method, standard | Convection | Convection | Convection |
| Cooling water temperature | 5-25 °C | 5-25 °C | 5-25 °C |
| Cooling water consumption | 75 l/h | 75 l/h | 75 l/h |
| Bearing | Hybrid | Hybrid | Hybrid |
| Sound pressure level | ≤ 48 dB (A) | ≤ 48 dB (A) | ≤ 48 dB (A) |
| Interfaces | RS-485, Remote | RS-485, Remote | RS-485, Remote |
| Protection category | IP 54 | IP 54 | IP 54 |
| Permissible magnetic field max. | 3.3 mT | 3.3 mT | 3.3 mT |
| Order number pump Pumpe | PM P03 940 | PM P03 941 | PM P03 942 |

*Ultimate pressure please find description on page 272

| | HiPace® 80 for TCP 350, DN 63 ISO-K | HiPace® 80 for TCP 350, DN 63 CF-F | HiPace® 80 for TCP 350, DN 40 ISO-KF |
|--|---|--|--|
| | DN 16 ISO-KF / G 1/4" | DN 16 ISO-KF / G 1/4" | DN 16 ISO-KF / G 1/4" |
| | DN 63 ISO-K | DN 63 CF-F | DN 40 ISO-KF |
| | G 1/8" | G 1/8" | G 1/8" |
| | | | |
| | 66 l/s | 66 l/s | 30 l/s |
| | 48 l/s | 48 l/s | 38 l/s |
| | 58 l/s | 58 l/s | 41 l/s |
| | 67 l/s | 67 l/s | 35 l/s |
| | | | |
| | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ |
| | $1.4 \cdot 10^5$ | $1.4 \cdot 10^5$ | $1.4 \cdot 10^5$ |
| | $1.3 \cdot 10^7$ | $1.3 \cdot 10^7$ | $1.3 \cdot 10^7$ |
| | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ | $> 1 \cdot 10^{11}$ |
| | | | |
| | 22 hPa | 22 hPa | 22 hPa |
| | | | |
| | 0.54 hPa l/s | 0.54 hPa l/s | 0.54 hPa l/s |
| | 15.3 hPa l/s | 15.3 hPa l/s | 15.3 hPa l/s |
| | 2.7 hPa l/s | 2.7 hPa l/s | 2.7 hPa l/s |
| | 1.3 hPa l/s | 1.3 hPa l/s | 1.3 hPa l/s |
| | | | |
| | for TCP 350 | for TCP 350 | for TCP 350 |
| | YES | YES | YES |
| | | | |
| | 90000 min ⁻¹ | 90000 min ⁻¹ | 90000 min ⁻¹ |
| | 50-100 % | 50-100 % | 50-100 % |
| | in any orientation | in any orientation | in any orientation |
| | $< 1 \cdot 10^{-7}$ hPa | $< 5 \cdot 10^{-10}$ hPa | $< 1 \cdot 10^{-7}$ hPa |
| | 2.1 kg | 3.5 kg | 2.1 kg |
| | 1.7 min | 1.7 min | 1.7 min |
| | Air/Water | Air/Water | Air/Water |
| | Convection | Convection | Convection |
| | 5-25 °C | 5-25 °C | 5-25 °C |
| | 75 l/h | 75 l/h | 75 l/h |
| | Hybrid | Hybrid | Hybrid |
| | ≤ 48 dB (A) | ≤ 48 dB (A) | ≤ 48 dB (A) |
| | RS-485, Remote | RS-485, Remote | RS-485, Remote |
| | IP 54 | IP 54 | IP 54 |
| | 3.3 mT | 3.3 mT | 3.3 mT |
| | | | |
| | PM P03 943 | PM P03 944 | PM P03 945 |

| Accessories | HiPace® 80 with TC 110, DN 63 ISO-K | HiPace® 80 with TC 110, DN 63 CF-F | HiPace® 80 with TC 110, DN 40 ISO-KF |
|--|---|--|--|
| Order number pump Pumpe | PM P03 940 | PM P03 941 | PM P03 942 |
| Power supplies/power | | | |
| DCU - power supply with display control unit | PM C01 820 PM C01 821 | PM C01 820 PM C01 821 | PM C01 820 PM C01 821 |
| TPS - mains pack for wall/standard rail fitting | PM 061 340 -T PM 061 341 -T | PM 061 340 -T PM 061 341 -T | PM 061 340 -T PM 061 341 -T |
| TPS - mains pack I 19" rack module 3 RU | PM 061 344 -T PM 061 345 -T | PM 061 344 -T PM 061 345 -T | PM 061 344 -T PM 061 345 -T |
| | | | |
| Control units | | | |
| DCU - Display Control Unit | PM 061 348 -T | PM 061 348 -T | PM 061 348 -T |
| HPU - Handheld Programming Unit | PM 051 510 -T | PM 051 510 -T | PM 051 510 -T |
| Accessories for HPU | PM 061 005 -T | PM 061 005 -T | PM 061 005 -T |
| | | | |
| Mains cable DCU/TPS/TCP, 3 m | | | |
| 230 V AC mains cable with Euro-style safety plug | P 4564 309 ZA | P 4564 309 ZA | P 4564 309 ZA |
| 115 V AC mains cable with UL plug | P 4564 309 ZE | P 4564 309 ZE | P 4564 309 ZE |
| 208 V AC mains cable with UL plug | P 4564 309 ZF | P 4564 309 ZF | P 4564 309 ZF |
| | | | |
| Connection cable, length 3 m between | | | |
| Connection cable for HiPace with TC 110 to TPS/DCU 110/111/180/181 with accessorie ports and RS-485 | PM 061 351 -T | PM 061 351 -T | PM 061 351 -T |
| Connection cable for HiPace with TC 110 to power supply TPS/DCU 110/111/180/181 | PM 061 350 -T | PM 061 350 -T | PM 061 350 -T |
| Connection cable TCP 350 - HiPace with 2 accessorie ports M8, 3 m | | | |
| | | | |
| External drive units | | | |
| TCP 350 | | | |
| TCP 350 PB - Profibus | | | |
| TCP 350 DN - DeviceNet | | | |
| | | | |
| Venting accessories | | | |
| Venting valve | PM Z01 290 | PM Z01 290 | PM Z01 290 |
| Air drier TTV 001 | PM Z00 121 | PM Z00 121 | PM Z00 121 |
| | | | |
| Cooling accessories | | | |
| Air cooling | PM Z01 300 | PM Z01 300 | PM Z01 300 |
| Water cooling | PM 016 623 -T | PM 016 623 -T | PM 016 623 -T |
| | | | |
| Heating accessories | | | |
| Heating jacket 230 V AC, Euro-style safety plug | | PM 061 360 -T | |
| Heating jacket 208 V AC, UL plug | | PM 061 361 -T | |
| Heating jacket 115 V AC, UL plug | | PM 061 362 -T | |
| | | | |
| Backing pump control | | | |
| Backing pump relay box, shielded, 1-phase 20 A | PM 061 373 -T | PM 061 373 -T | PM 061 373 -T |
| Backing pump relay box, shielded, 1-phase 7 A | PM 071 282 -X | PM 071 282 -X | PM 071 282 -X |
| Connection cable from TCP 350 to backing pump relay box (length 2 m) | | | |
| TVV 001 backing pump safety valve, 230 V AC | PM Z01 205 | PM Z01 205 | PM Z01 205 |
| TVV 001 backing pump safety valve, 115 V AC | PM Z01 206 | PM Z01 206 | PM Z01 206 |
| TCS 15 for controlling backing pumps | PM 061 685 -X | PM 061 685 -X | PM 061 685 -X |
| HiPace-ACP connection cable | PM 071 142 -X | PM 071 142 -X | PM 071 142 -X |

| HiPace® 80 for TCP 350, DN 63 ISO-K | HiPace® 80 for TCP 350, DN 63 CF-F | HiPace® 80 for TCP 350, DN 40 ISO-KF |
|---|--|--|
| PM P03 943 | PM P03 944 | PM P03 945 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| P 4564 309 ZA | P 4564 309 ZA | P 4564 309 ZA |
| P 4564 309 ZE | P 4564 309 ZE | P 4564 309 ZE |
| P 4564 309 ZF | P 4564 309 ZF | P 4564 309 ZF |
| | | |
| | | |
| | | |
| | | |
| | | |
| PM 061 353 -T | PM 061 353 -T | PM 061 353 -T |
| | | |
| | | |
| PM C01 740 | PM C01 740 | PM C01 740 |
| PM C01 741 | PM C01 741 | PM C01 741 |
| PM C01 742 | PM C01 742 | PM C01 742 |
| | | |
| | | |
| | | |
| PM Z01 290 | PM Z01 290 | PM Z01 290 |
| PM Z00 121 | PM Z00 121 | PM Z00 121 |
| | | |
| | | |
| | | |
| PM Z01 300 | PM Z01 300 | PM Z01 300 |
| PM 016 623 -T | PM 016 623 -T | PM 016 623 -T |
| | | |
| | PM 061 360 -T | |
| | PM 061 361 -T | |
| | PM 061 362 -T | |
| | | |
| | | |
| PM 061 373 -T | PM 061 373 -T | PM 061 373 -T |
| PM 071 282 -X | PM 071 282 -X | PM 071 282 -X |
| PM 061 376 -T | PM 061 376 -T | PM 061 376 -T |
| PM Z01 205 | PM Z01 205 | PM Z01 205 |
| PM Z01 206 | PM Z01 206 | PM Z01 206 |
| | | |
| | | |

| Accessories | HiPace® 80 with TC 110, DN 63 ISO-K | HiPace® 80 with TC 110, DN 63 CF-F | HiPace® 80 with TC 110, DN 40 ISO-KF | |
|---|---|--|--|--|
| Order number pump Pumpe | PM P03 940 | PM P03 941 | PM P03 942 | |
| General accessories | | | | |
| Sealing gas valve | PM Z01 310 | PM Z01 310 | PM Z01 310 | |
| Sealing gas throttle | PM Z01 316 | PM Z01 316 | PM Z01 316 | |
| Centering ring | | | PF 110 140 -T | |
| Centering ring with integrated mesh screen | | | PF 113 240 -T | |
| Centering ring coated | PM 016 206 -U | | | |
| Centering ring coated with protection screen | PM 016 208 -U | | | |
| Centering ring coated with splinter shield | PM 016 207 -U | | PM 006 375 -X | |
| Protection screen | | PM 016 333 | | |
| Splinter shield | | PM 016 312 | | |
| Vibration dampers | PM 006 800 -X | PM 006 801 -X | PM 006 799 -X | |
| USB/RS-485-Converter | PM 061 207 -T | PM 061 207 -T | PM 061 207 -T | |
| Interface cable 3 m | PM 061 283 -T | PM 061 283 -T | PM 061 283 -T | |
| Connection cable, plug M12, RJ 45, 3 m | | | | |
| Y-connector M12 for RS-485 | P 4723 010 | P 4723 010 | P 4723 010 | |
| TCS 11, adapter for TC 110 with interface RS-485 | PM 061 636 -U | PM 061 636 -U | PM 061 636 -U | |
| TCS 12, adapter for TC 110 with interface RS-485, 4 accessory ports | PM 061 638 -U | PM 061 638 -U | PM 061 638 -U | |
| | | | | |
| Mounting materials | | | | |
| Centering ring coated, bracket screws | PM 016 360 -T | | | |
| Centering ring coated with protection screen, bracket screws | PM 016 362 -T | | | |
| Centering ring coated with splinter shield, bracket screws | PM 016 361 -T | | | |
| Set of hexagon screws for trough hole (CF-F) | | PM 016 683 -T | | |
| Set of stud screws for tapped hole (CF-F) | | PM 016 684 -T | | |
| Set of stud screws for trough hole (CF) | | PM 016 733 -T | | |
| Clamping ring with Centering ring | | | PM 016 625 -T | |
| Clamping ring with Centering ring with splinter shield | | | PM 016 626-T | |
| Centering ring coated DN 63 ISO-K, 4 prackets M8 | PM 016 510 -T | | | |
| Centering ring coated DN 63 ISO-K, 4 prackets M8, protection screen | PM 016 512 -T | | | |
| Centering ring coated DN 63 ISO-K, 4 prackets M8, splinter shield | PM 016 511 -T | | | |

| HiPace® 80 for TCP 350, DN 63 ISO-K | HiPace® 80 for TCP 350, DN 63 CF-F | HiPace® 80 for TCP 350, DN 40 ISO-KF |
|---|--|--|
| PM P03 943 | PM P03 944 | PM P03 945 |
| PM Z01 310 | PM Z01 310 | PM Z01 310 |
| PM Z01 316 | PM Z01 316 | PM Z01 316 |
| | | PF 110 140 -T |
| | | PF 113 240 -T |
| PM 016 206 -U | | |
| PM 016 208 -U | | |
| PM 016 207 -U | | PM 006 375 -X |
| | PM 016 333 | |
| | PM 016 312 | |
| PM 006 800 -X | PM 006 801 -X | PM 006 799 -X |
| PM 061 207 -T | PM 061 207 -T | PM 061 207 -T |
| | | |
| PM 051 726 -T | PM 051 726 -T | PM 051 726 -T |
| | | |
| | | |
| | | |
| PM 016 360 -T | | |
| PM 016 362 -T | | |
| PM 016 361 -T | | |
| | PM 016 683 -T | |
| | PM 016 684 -T | |
| | PM 016 733 -T | |
| | | PM 016 625 -T |
| | | PM 016 626-T |
| PM 016 510 -T | | |
| PM 016 512 -T | | |
| PM 016 511 -T | | |