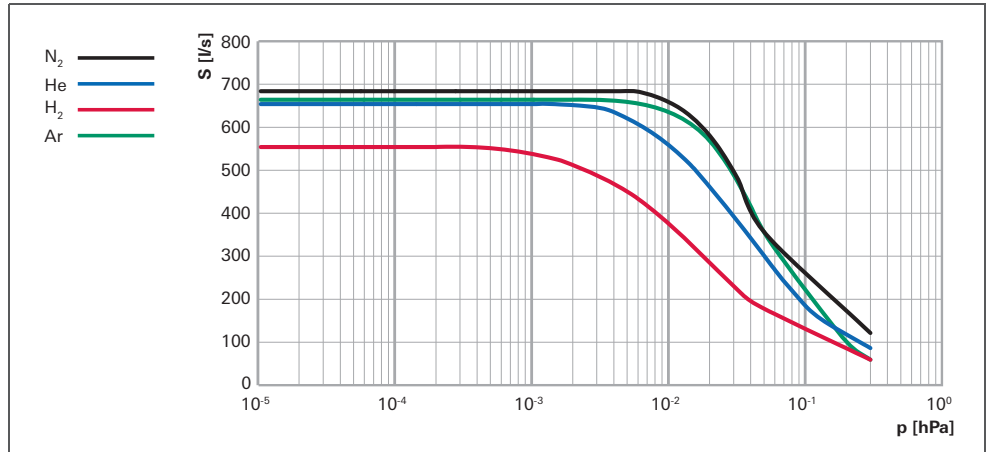


HiPace® 700

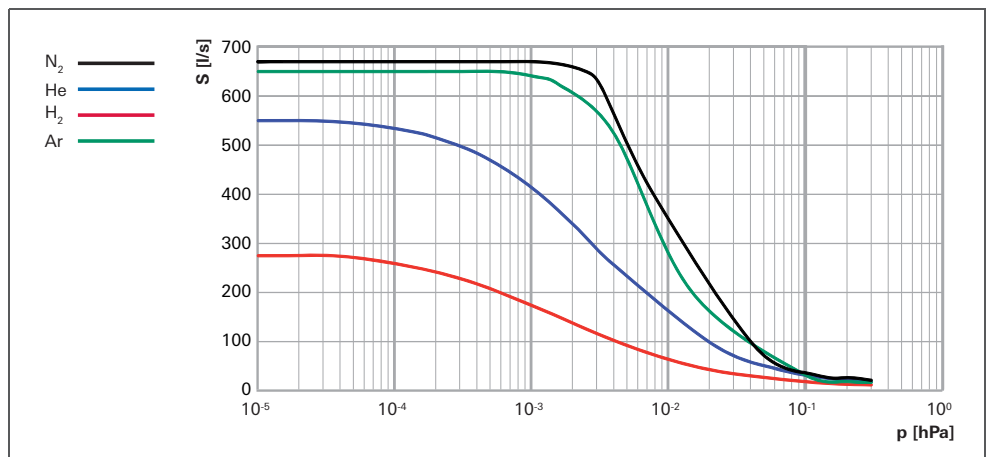


- Compact yet powerful turbopump with a pumping speed of up to 685 l/s for N₂
- Maximum vacuum performance with minimum power consumption
- For installation in any orientation
- Integrated TC 400 drive electronics
- Integrated, powerful cooling system
- Corrosive gas version available

Pumping speed

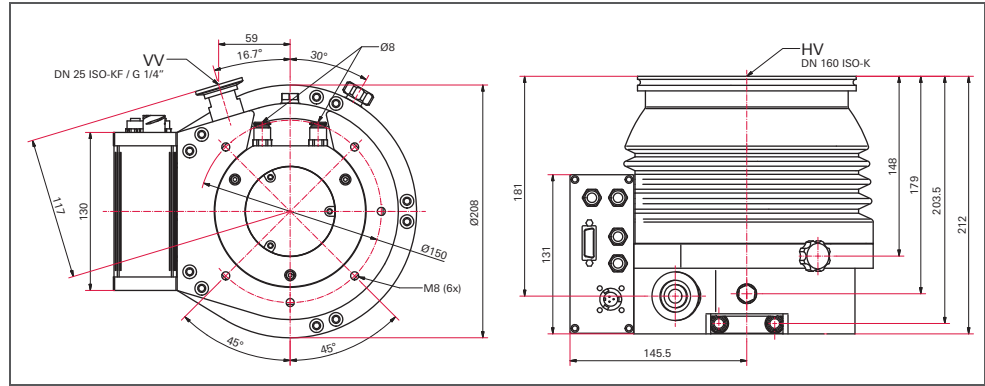


HiPace® 700

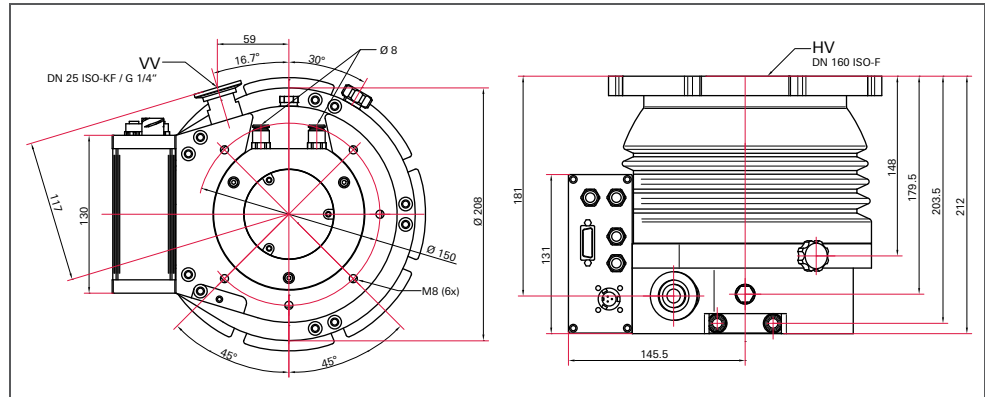


HiPace® 700 P with TC 400

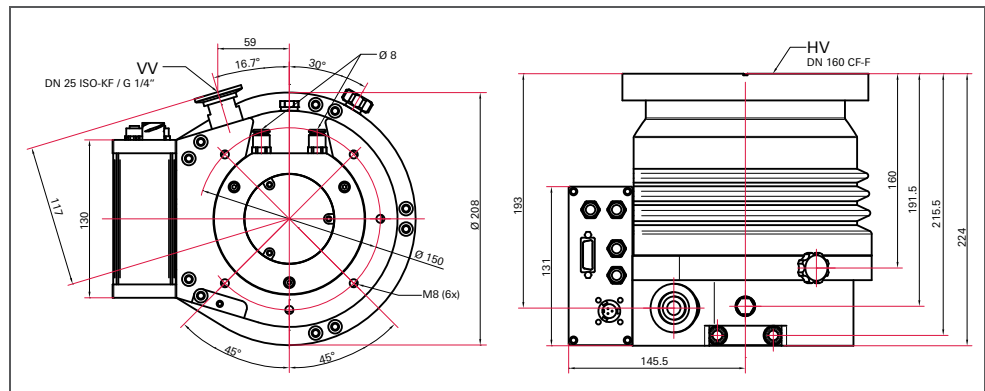
Dimensions (in mm)



HiPace® 700 with TC 400, DN 160 ISO-K



HiPace® 700 with TC 400, DN 160 ISO-F



HiPace® 700 with TC 400, DN 160 CF-F

Technical data	HiPace® 700 with TC 400, DN 160 ISO-K	HiPace® 700 with TC 400, DN 160 CF-F	HiPace® 700 with TC 400, DN 160 ISO-F	HiPace® 700 for TCP 350, DN 160 ISO-K	HiPace® 700, for TCP 350, DN 160 CF-F
Connection nominal diameter					
Flange (out)	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"
Flange (in)	DN 160 ISO-K	DN 160 CF-F	DN 160 ISO-F	DN 160 ISO-K	DN 160 CF-F
Venting connection	G 1/8"	G 1/8"	G 1/8"	G 1/8"	G 1/8"
Pumping speed					
Pumping speed for Ar	665 l/s	665 l/s	665 l/s	665 l/s	665 l/s
Pumping speed for H ₂	555 l/s	555 l/s	555 l/s	555 l/s	555 l/s
Pumping speed for He	655 l/s	655 l/s	655 l/s	655 l/s	655 l/s
Pumping speed for N ₂	685 l/s	685 l/s	685 l/s	685 l/s	685 l/s
Compression					
Compression ratio for Ar	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$
Compression ratio for H ₂	$4 \cdot 10^5$	$4 \cdot 10^5$	$4 \cdot 10^5$	$4 \cdot 10^5$	$4 \cdot 10^5$
Compression ratio for He	$3 \cdot 10^7$	$3 \cdot 10^7$	$3 \cdot 10^7$	$3 \cdot 10^7$	$3 \cdot 10^7$
Compression ratio for N ₂	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$	$> 1 \cdot 10^{11}$
Fore-vacuum max. for N₂					
	11 hPa	11 hPa	11 hPa	10 hPa	10 hPa
Gas throughput					
Gas throughput at full rotational speed for Ar	3.5 hPa l/s	3.5 hPa l/s	3.5 hPa l/s	1.5 hPa l/s	1.5 hPa l/s
Gas throughput at full rotational speed for H ₂	> 14 hPa l/s	> 14 hPa l/s	> 14 hPa l/s	> 8 hPa l/s	> 8 hPa l/s
Gas throughput at full rotational speed for He	20 hPa l/s	20 hPa l/s	20 hPa l/s	5 hPa l/s	5 hPa l/s
Gas throughput at full rotational speed for N ₂	6.5 hPa l/s	6.5 hPa l/s	6.5 hPa l/s	3 hPa l/s	3 hPa l/s
Electronic drive unit	with TC 400	with TC 400	with TC 400	for TCP 350	for TCP 350
Separate electronic drive unit				YES	YES
Operating voltage	48 (± 5 %) V DC	48 (± 5 %) V DC	48 (± 5 %) V DC		
Rotation speed ± 2 %	49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹
Rotation speed variable	60-100 %	60-100 %	60-100 %	60-100 %	60-100 %
Mounting orientation	in any orientation	in any 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	$< 1 \cdot 10^{-7}$ hPa	$< 5 \cdot 10^{-10}$ hPa
Weight	11.5 kg	17.4 kg	12.1 kg	10.6 kg	16.5 kg
Run-up time	2 min	2 min	2 min	5.5 min	5.5 min
Cooling method, optional	Air	Air	Air	Air	Air
Cooling method, standard	Water	Water	Water	Water	Water
Cooling water temperature	15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C
Cooling water consumption	100 l/h	100 l/h	100 l/h	100 l/h	100 l/h
Bearing	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid
Particulate matter					
Sound pressure level	≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)
Interfaces	RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Remote
Protection category	IP 54	IP 54	IP 54	IP 54	IP 54
Low vibrations					
Permissible magnetic field max.	6 mT	6 mT	6 mT	6 mT	6 mT
Order number pump Pumpe	PM P03 933	PM P03 934	PM P03 935	PM P04 080	PM P04 081

*Ultimate pressure please find description on page 272

HiPace® 700, for TCP 350, DN 160 ISO-F	HiPace® 700 P with TC 400, DN 160 ISO-K	HiPace® 700 P with TC 400, DN 160 ISO-F	HiPace® 700 P with TC 400, DN 160 CF-F	HiPace® 700 Plus with TC 400, DN 160 ISO-K	HiPace® 700 Plus with TC 400, DN 160 CF-F	HiPace® 700 Plus with TC 400, DN 160 ISO-F
DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"	DN 25 ISO-KF / G 1/4"
DN 160 ISO-F G 1/8"	DN 160 ISO-K G 1/8"	DN 160 ISO-F G 1/8"	DN 160 CF-F G 1/8"	DN 160 ISO-K G 1/8"	DN 160 CF-F G 1/8"	DN 160 ISO-F G 1/8"
665 l/s	650 l/s	650 l/s	650 l/s	665 l/s	665 l/s	665 l/s
555 l/s	275 l/s	275 l/s	275 l/s	555 l/s	555 l/s	555 l/s
655 l/s	550 l/s	550 l/s	550 l/s	655 l/s	655 l/s	655 l/s
685 l/s	670 l/s	670 l/s	670 l/s	685 l/s	685 l/s	685 l/s
> 1 · 10 ¹¹	> 1 · 10 ⁷	> 1 · 10 ⁷	> 1 · 10 ⁷	> 1 · 10 ¹¹	> 1 · 10 ¹¹	> 1 · 10 ¹¹
4 · 10 ⁵	4 · 10 ²	4 · 10 ²	4 · 10 ²	4 · 10 ⁵	4 · 10 ⁵	4 · 10 ⁵
3 · 10 ⁷	3 · 10 ³	3 · 10 ³	3 · 10 ³	3 · 10 ⁷	3 · 10 ⁷	3 · 10 ⁷
> 1 · 10 ¹¹	> 1 · 10 ⁶	> 1 · 10 ⁶	> 1 · 10 ⁶	> 1 · 10 ¹¹	> 1 · 10 ¹¹	> 1 · 10 ¹¹
10 hPa	1.1 hPa	1.1 hPa	1.1 hPa	11 hPa	11 hPa	11 hPa
1.5 hPa l/s	1 hPa l/s	1 hPa l/s	1 hPa l/s	3.5 hPa l/s	3.5 hPa l/s	3.5 hPa l/s
> 8 hPa l/s	6 hPa l/s	6 hPa l/s	6 hPa l/s	> 14 hPa l/s	> 14 hPa l/s	> 14 hPa l/s
5 hPa l/s	4 hPa l/s	4 hPa l/s	4 hPa l/s	20 hPa l/s	20 hPa l/s	20 hPa l/s
3 hPa l/s	2 hPa l/s	2 hPa l/s	2 hPa l/s	6.5 hPa l/s	6.5 hPa l/s	6.5 hPa l/s
for TCP 350 YES	with TC 400	with TC 400	with TC 400	with TC 400	with TC 400	with TC 400
	48 (± 5 %) V DC	48 (± 5 %) V DC	48 (± 5 %) V DC	24 (± 5 %) V DC	24 (± 5 %) V DC	24 (± 5 %) V DC
49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹	49200 min ⁻¹
60-100 %	60-100 %	60-100 %	60-100 %	60-100 %	60-100 %	60-100 %
in any orientation	in any orientation	in any orientation	in any orientation	vertical, flange up	vertikal, flange up	vertical, flange up
< 1 · 10 ⁻⁷ hPa	< 1 · 10 ⁻⁷ hPa	< 1 · 10 ⁻⁷ hPa	< 5 · 10 ⁻¹⁰ hPa	< 1 · 10 ⁻⁷ hPa	< 5 · 10 ⁻¹⁰ hPa	< 1 · 10 ⁻⁷ hPa
11.2 kg	10.8 kg	11.4 kg	16.7 kg	11.5 kg	17.4 kg	12.1 kg
5.5 min	1.6 min	1.6 min	1.6 min	4 min	4 min	4 min
Air	Air	Air	Air	Air	Air	Air
Water	Water	Water	Water	Water	Water	Water
15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C
100 l/h	100 l/h	100 l/h	100 l/h	100 l/h	100 l/h	100 l/h
Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid
YES	YES	YES	YES	YES	YES	YES
≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)	≤ 50 dB (A)
RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Remote
IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54
				YES	YES	Yes
6 mT	6 mT	6 mT	6 mT	6 mT	6 mT	6 mT
PM P04 082	PM P04 275	PM P04 680	PM P04 681	PM P04 440	PM P04 441	PM P04 442

Accessories	HiPace® 700 with TC 400, DN 160 ISO-K	HiPace® 700 with TC 400, DN 160 CF-F	HiPace® 700 with TC 400, DN 160 ISO-F	HiPace® 700 for TCP 350, DN 160 ISO-K	HiPace® 700, for TCP 350, DN 160 CF-F
Order number pump Pumpe	PM P03 933	PM P03 934	PM P03 935	PM P04 080	PM P04 081
Power supplies/power					
DCU - power supply with display control unit	PM C01 823	PM C01 823	PM C01 823		
TPS - mains pack for wall/standard rail fitting	PM 061 343 -T	PM 061 343 -T	PM 061 343 -T		
TPS - mains pack1 19" rack module 3 RU	PM 061 347 -T	PM 061 347 -T	PM 061 347 -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	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	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	P 4564 309 ZF	P 4564 309 ZF
Connection cable, length 3 m between					
Connection cable for HiPace with TC 400/TM 700 to power supply TPS/DCU 310/311/400/401	PM 061 352 -T	PM 061 352 -T	PM 061 352 -T		
TCP 350 - HiPace				PM 061 356 -T	PM 061 356 -T
External drive units					
TCP 350				PM C01 740	PM C01 740
TCP 350 PB - Profibus				PM C01 741	PM C01 741
TCP 350 DN - DeviceNet				PM C01 742	PM C01 742
Venting accessories					
Venting valve	PM Z01 291	PM Z01 291	PM Z01 291	PM Z01 291	PM Z01 291
Air drier TTV 001	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121
Cooling accessories					
Air cooling	PM Z01 303	PM Z01 303	PM Z01 303	PM Z01 303	PM Z01 303
Heating accessories					
Heating jacket 230 V AC, Euro-style safety plug		PM 061 369 -T			PM 061 369 -T
Heating jacket 208 V AC, UL plug		PM 061 370 -T			PM 061 370 -T
Heating jacket 115 V AC, UL plug		PM 061 371 -T			PM 061 371 -T
Backing pump control					
Backing pump relay box, shielded, 1-phase 20 A	PM 061 375 -T	PM 061 375 -T	PM 061 375 -T	PM 061 375 -T	PM 061 375 -T
Backing pump relay box, shielded, 1-phase 7 A	PM 071 284 -X	PM 071 284 -X	PM 071 284 -X	PM 071 284 -X	PM 071 284 -X
Control cable for pumping stations 0.7 m	PM 061 675 -T	PM 061 675 -T	PM 061 675 -T	PM 061 675 -T	PM 061 675 -T
TVV 001 backing pump safety valve, 230 V AC	PM Z01 205	PM Z01 205	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	PM Z01 206	PM Z01 206
Adapter cable, TCP 350 - backing pump relay box, M12				PM 061 377 -T	PM 061 377 -T
HiPace-ACP connection cable	PM 071 142 -X	PM 071 142 -X	PM 071 142 -X		

HiPace® 700, for TCP 350, DN 160 ISO-F	HiPace® 700 P with TC 400, DN 160 ISO-K	HiPace® 700 P with TC 400, DN 160 ISO-F	HiPace® 700 P with TC 400, DN 160 CF-F	HiPace® 700 Plus with TC 400, DN 160 ISO-K	HiPace® 700 Plus with TC 400, DN 160 CF-F	HiPace® 700 Plus with TC 400, DN 160 ISO-F
PM P04 082	PM P04 275	PM P04 680	PM P04 681	PM P04 440	PM P04 441	PM P04 442
	PM C01 823	PM C01 823	PM C01 823	PM C01 822	PM C01 822	PM C01 822
	PM 061 343 -T	PM 061 343 -T	PM 061 343 -T	PM 061 342 -T	PM 061 342 -T	PM 061 342 -T
	PM 061 347 -T	PM 061 347 -T	PM 061 347 -T	PM 061 346 -T	PM 061 346 -T	PM 061 346 -T
	PM 061 348 -T	PM 061 348 -T	PM 061 348 -T	PM 061 348 -T	PM 061 348 -T	PM 061 348 -T
	PM 051 510 -T	PM 051 510 -T	PM 051 510 -T	PM 051 510 -T	PM 051 510 -T	PM 051 510 -T
	PM 061 005 -T	PM 061 005 -T	PM 061 005 -T	PM 061 005 -T	PM 061 005 -T	PM 061 005 -T
P 4564 309 ZA	P 4564 309 ZA	P 4564 309 ZA	P 4564 309 ZA	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 ZE	P 4564 309 ZE	P 4564 309 ZE	P 4564 309 ZE
P 4564 309 ZF	P 4564 309 ZF	P 4564 309 ZF	P 4564 309 ZF	P 4564 309 ZF	P 4564 309 ZF	P 4564 309 ZF
	PM 061 352 -T	PM 061 352 -T	PM 061 352 -T	PM 061 352 -T	PM 061 352 -T	PM 061 352 -T
PM 061 356 -T						
PM C01 740						
PM C01 741						
PM C01 742						
PM Z01 291	PM Z01 291	PM Z01 291	PM Z01 291	PM Z01 291	PM Z01 291	PM Z01 291
PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121
PM Z01 303	PM Z01 303	PM Z01 303	PM Z01 303	PM Z01 303	PM Z01 303	PM Z01 303
			PM 061 369 -T		PM 061 369 -T	
			PM 061 370 -T		PM 061 370 -T	
			PM 061 371 -T		PM 061 371 -T	
PM 061 375 -T	PM 061 375 -T	PM 061 375 -T	PM 061 375 -T	PM 061 375 -T	PM 061 375 -T	PM 061 375 -T
PM 071 284 -X	PM 071 284 -X	PM 071 284 -X	PM 071 284 -X	PM 071 284 -X	PM 071 284 -X	PM 071 284 -X
PM 061 675 -T	PM 061 675 -T	PM 061 675 -T	PM 061 675 -T	PM 061 675 -T	PM 061 675 -T	PM 061 675 -T
PM Z01 205	PM Z01 205	PM Z01 205	PM Z01 205	PM Z01 205	PM Z01 205	PM Z01 205
PM Z01 206	PM Z01 206	PM Z01 206	PM Z01 206	PM Z01 206	PM Z01 206	PM Z01 206
PM 061 377 -T						
	PM 071 142 -X	PM 071 142 -X	PM 071 142 -X	PM 071 142 -X	PM 071 142 -X	PM 071 142 -X

Accessories	HiPace® 700 with TC 400, DN 160 ISO-K	HiPace® 700 with TC 400, DN 160 CF-F	HiPace® 700 with TC 400, DN 160 ISO-F	HiPace® 700 for TCP 350, DN 160 ISO-K	HiPace® 700, for TCP 350, DN 160 CF-F
Order number pump Pumpe	PM P03 933	PM P03 934	PM P03 935	PM P04 080	PM P04 081
General accessories					
Sealing gas valve	PM Z01 312	PM Z01 312	PM Z01 312	PM Z01 312	PM Z01 312
Sealing gas throttle	PM Z01 317	PM Z01 317	PM Z01 317	PM Z01 317	PM Z01 317
Centering ring coated	PM 016 216 -U		PM 016 216 -U	PM 016 216 -U	
Centering ring coated with protection screen	PM 016 218 -U		PM 016 218 -U	PM 016 218 -U	
Centering ring coated with splinter shield	PM 016 217 -U		PM 016 217 -U	PM 016 217 -U	
Protection screen		PM 016 339			PM 016 339
Splinter shield		PM 016 318			PM 016 318
Vibration dampers	PM 006 492 -X	PM 006 493 -X		PM 006 492 -X	PM 006 493 -X
USB/RS-485-Converter	PM 061 207 -T	PM 061 207 -T	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		
Y-connector M12 for RS-485	P 4723 010	P 4723 010	P 4723 010		
Y-connector M12 for accessories	P 4723 013	P 4723 013	P 4723 013		
Connection cable RJ 45 on M 12				PM 051 726 -T	PM 051 726 -T
Mounting materials					
Centering ring coated, bracket screws	PM 016 375 -T			PM 016 375 -T	
Centering ring coated with protection screen, bracket screws	PM 016 377 -T			PM 016 377 -T	
Centering ring coated with splinter shield, bracket screws	PM 016 376 -T			PM 016 376 -T	
Centering ring coated with hexagon bolts			PM 016 460 -T		
Centering ring coated with protection screen, hexagon bolts			PM 016 462 -T		
Centering ring coated with splinter shield, hexagon bolts			PM 016 461 -T		
Centering ring coated with stud screws			PM 016 465 -T		
Centering ring coated with protection screen with stud screws			PM 016 467 -T		
Centering ring coated with splinter shield with stud screws			PM 016 466 -T		
Set of hexagon screws for trough hole (CF-F)		PM 016 691 -T			PM 016 691 -T
Set of stud screws for tapped hole (CF-F)		PM 016 693 -T			PM 016 693 -T
Set of stud screws for trough hole (CF)		PM 016 735 -T			PM 016 735 -T

HiPace® 700, for TCP 350, DN 160 ISO-F	HiPace® 700 P with TC 400, DN 160 ISO-K	HiPace® 700 P with TC 400, DN 160 ISO-F	HiPace® 700 P with TC 400, DN 160 CF-F	HiPace® 700 Plus with TC 400, DN 160 ISO-K	HiPace® 700 Plus with TC 400, DN 160 CF-F	HiPace® 700 Plus with TC 400, DN 160 ISO-F
PM P04 082	PM P04 275	PM P04 680	PM P04 681	PM P04 440	PM P04 441	PM P04 442
PM Z01 312	PM Z01 313	PM Z01 313	PM Z01 313	PM Z01 312	PM Z01 312	PM Z01 312
PM Z01 317	PM Z01 318	PM Z01 318	PM Z01 318	PM Z01 317	PM Z01 317	PM Z01 317
PM 016 216 -U	PM 016 216 -U	PM 016 216 -U		PM 016 216 -U		PM 016 216 -U
PM 016 218 -U	PM 016 218 -U	PM 016 218 -U		PM 016 218 -U		PM 016 218 -U
PM 016 217 -U	PM 016 217 -U	PM 016 217 -U		PM 016 217 -U		PM 016 217 -U
			PM 016 339		PM 016 339	
			PM 016 318		PM 016 318	
	PM 006 492 -X		PM 006 493 -X	PM 006 492 -X	PM 006 493 -X	
PM 061 207 -T	PM 061 207 -T	PM 061 207 -T	PM 061 207 -T	PM 061 207 -T	PM 061 207 -T	PM 061 207 -T
	PM 061 283 -T	PM 061 283 -T	PM 061 283 -T	PM 061 283 -T	PM 061 283 -T	PM 061 283 -T
	P 4723 010	P 4723 010	P 4723 010	P 4723 010	P 4723 010	P 4723 010
	P 4723 013	P 4723 013	P 4723 013	P 4723 013	P 4723 013	P 4723 013
PM 051 726 -T						
	PM 016 375 -T			PM 016 375 -T		
	PM 016 377 -T			PM 016 377 -T		
	PM 016 376 -T			PM 016 376 -T		
PM 016 460 -T		PM 016 460 -T				PM 016 460 -T
PM 016 462 -T		PM 016 462 -T				PM 016 462 -T
PM 016 461 -T		PM 016 461 -T				PM 016 461 -T
PM 016 465 -T		PM 016 465 -T				PM 016 465 -T
PM 016 467 -T		PM 016 467 -T				PM 016 467 -T
PM 016 466 -T		PM 016 466 -T				PM 016 466 -T
			PM 016 691 -T		PM 016 691 -T	
			PM 016 693 -T		PM 016 693 -T	
			PM 016 735 -T		PM 016 735 -T	