

HiPace™ 2400 MC

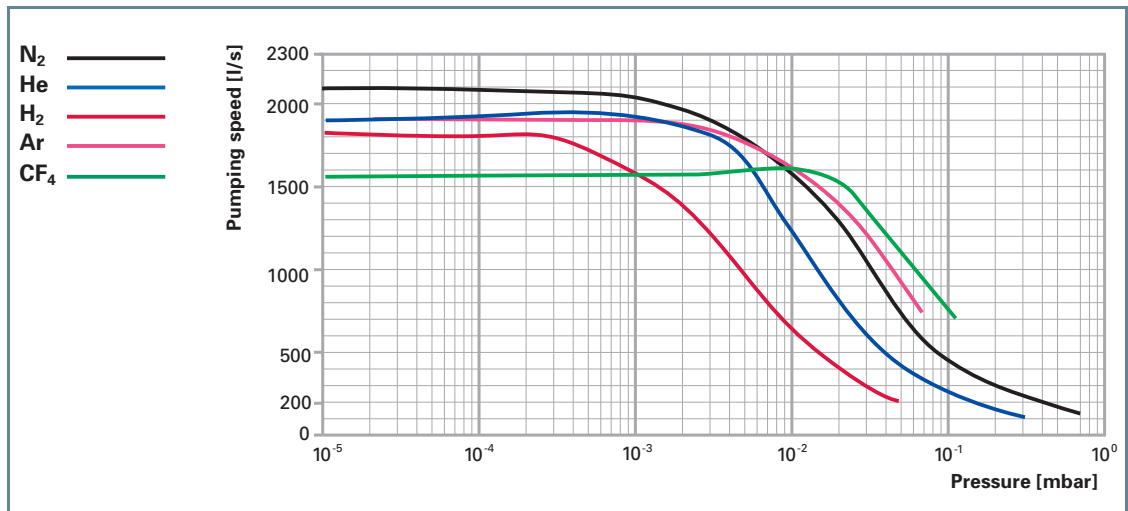
Magnetically levitated turbopumps with pumping speeds of 2100 l/s.



- ▶ Active 5-axis magnetic levitation system
- ▶ Maintenance-free, hydrocarbon-free
- ▶ Very low vibration and noise levels
- ▶ High pumping speed and gas throughput for both light and heavy gases

M = Magnetically levitated
C = Suitable for corrosive gases
Systems with DeviceNet fieldbus interface instead of Profibus available upon request.

Pumping speed

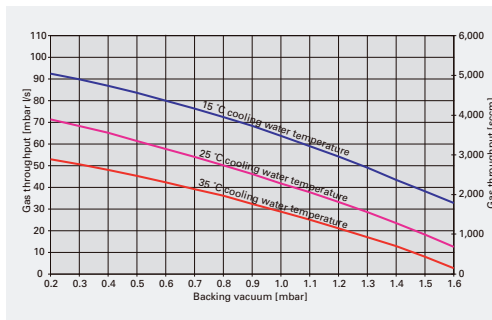


HiPace™ 2400 MC

Gas throughput

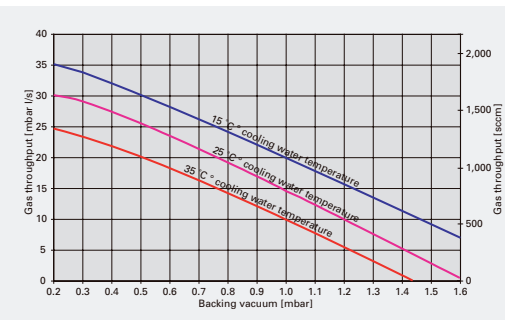
Gases with molecular mass of < 40

at nominal speed, cooling water throughput 100 l/h



Gases with molecular mass of ≥ 40

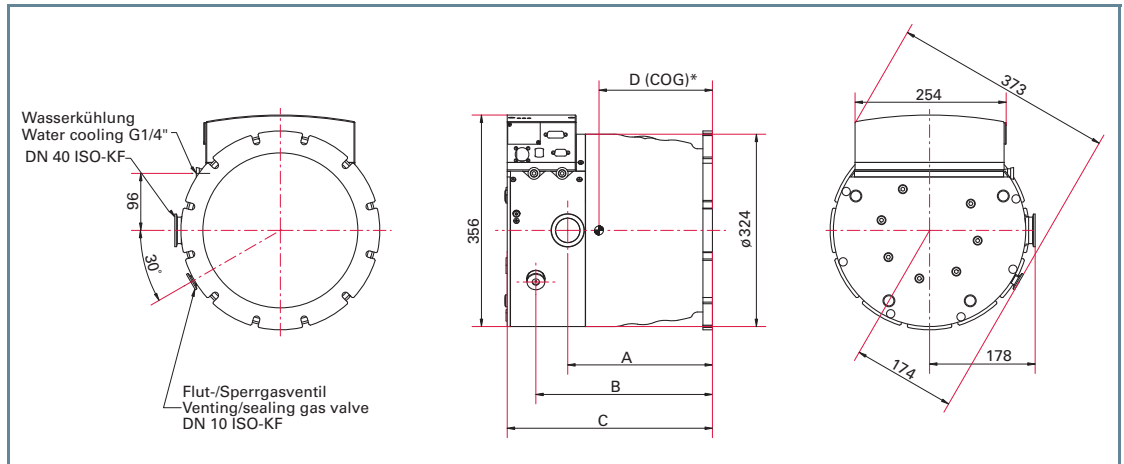
at nominal speed, sealing gas 20 sccm, cooling water throughput 100 l/h



HiPace™ 2400 MC¹⁾

¹⁾ Gas throughput relative to backing vacuum and kind of gas

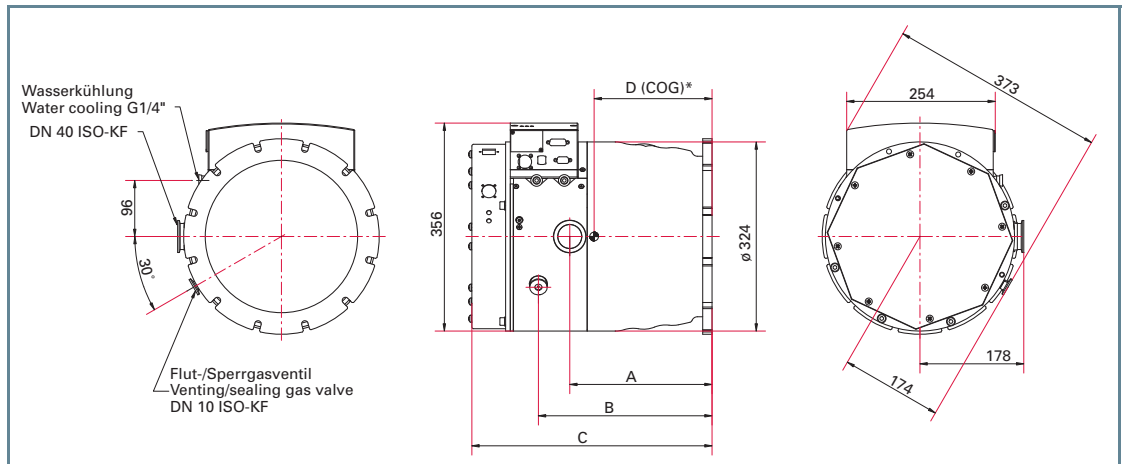
Dimensions



HiPace™ 2400 MC, with TM 3000

	DN 250 ISO-K	DN 250 ISO-F	DN 250 CF-F
A	244 mm	244 mm	268 mm
B	297 mm	297 mm	322 mm
C	346 mm	346 mm	370 mm
D	199 mm	191 mm	194 mm

Dimensions



HiPace™ 2400 MC, with TM 3000 and integrated power supply

	DN 250 ISO-K	DN 250 ISO-F	DN 250 CF-F
A	244 mm	244 mm	268 mm
B	297 mm	297 mm	322 mm
C	411 mm	411 mm	436 mm
D	210 mm	202 mm	205 mm

Technical data	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F, Profibus
Connection nominal diameter					
Flange (in)	DN 250 ISO-K	DN 250 ISO-F	DN 250 CF-F	DN 250 ISO-K	DN 250 ISO-F
Flange (out)	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF
Venting connection	DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF
Pumping speed					
Pumping speed for H ₂	1800 l/s	1800 l/s	1800 l/s	1800 l/s	1800 l/s
Pumping speed for He	1900 l/s	1900 l/s	1900 l/s	1900 l/s	1900 l/s
Pumping speed for N ₂	2100 l/s	2100 l/s	2100 l/s	2100 l/s	2100 l/s
Pumping speed for Ar	1900 l/s	1900 l/s	1900 l/s	1900 l/s	1900 l/s
Pumping speed for CF ₄	1600 l/s	1600 l/s	1600 l/s	1600 l/s	1600 l/s
Compression					
Compression ratio for H ₂	1·10 ⁴	1·10 ⁴	> 1·10 ⁴	> 1·10 ⁴	1·10 ⁴
Compression ratio for He	2·10 ⁵	2·10 ⁵	2·10 ⁵	2·10 ⁵	2·10 ⁵
Compression ratio for N ₂	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹
Compression ratio for Ar	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹
Compression ratio for CF ₄	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹
Fore Vacuum max. for N₂	3 mbar	3 mbar	3 mbar	3 mbar	3 mbar
Ultimate pressure with OnTool™ DryPump	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar
Rotation speed ±2%	29400 rpm	29400 rpm	29400 rpm	29400 rpm	29400 rpm
Run-up time	6 min	6 min	6 min	6 min	6 min
Cooling method, standard	Water	Water	Water	Water	Water
Cooling water consumption	100 l/h	100 l/h	100 l/h	100 l/h	100 l/h
Cooling water temperature	15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C
Permissible magnetic field max.	10 mT	10 mT	10 mT	10 mT	10 mT
Sound pressure level	45 dB (A)	45 dB (A)	45 dB (A)	45 dB (A)	45 dB (A)
Protection category	IP 54	IP 54	IP 54	IP 54	IP 54
Interfaces	RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Remote, Profibus	RS-485, Remote, Profibus
Weight	71 kg	75 kg	75 kg	71 kg	75 kg
Order number pump	PM P03 490	PM P03 491	PM P03 492	PM P03 493	PM P03 494

HiPace™ 2400 MC, with TM 3000, DN 250 CF-F, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K and integrated power supply, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F and integrated power supply, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F and integrated power supply, Profibus
DN 250 CF-F	DN 250 ISO-K	DN 250 ISO-F	DN 250 CF-F	DN 250 ISO-K	DN 250 ISO-F	DN 250 CF-F
DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF	DN 40 ISO-KF
DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF	DN 10 ISO-KF
1800 l/s	1800 l/s	1800 l/s	1800 l/s	1800 l/s	1800 l/s	1800 l/s
1900 l/s	1900 l/s	1900 l/s	1600 l/s	1900 l/s	1900 l/s	1900 l/s
2100 l/s	2100 l/s	2100 l/s	2100 l/s	2100 l/s	2100 l/s	2100 l/s
1900 l/s	1900 l/s	1900 l/s	1900 l/s	1900 l/s	1900 l/s	1900 l/s
1600 l/s	1600 l/s	1600 l/s	1900 l/s	1600 l/s	1600 l/s	1600 l/s
1·10 ⁴	> 1·10 ⁴	1·10 ⁴	1·10 ⁴	2·10 ⁵	> 1·10 ⁴	1·10 ⁴
> 1·10 ⁹	2·10 ⁵	2·10 ⁵	> 1·10 ⁹	1·10 ⁴	2·10 ⁵	> 1·10 ⁹
> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹
> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹	> 1·10 ⁹
2·10 ⁵	> 1·10 ⁹	> 1·10 ⁹	2·10 ⁵	> 1·10 ⁹	> 1·10 ⁹	2·10 ⁵
3 mbar	1.5 mbar	1.5 mbar	1.5 mbar	1.5 mbar	1.5 mbar	1.5 mbar
< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar	< 1·10 ⁻⁹ mbar
29400 rpm	29400 rpm	29400 rpm	29400 rpm	29400 rpm	29400 rpm	29400 rpm
6 min	7 min	7 min	7 min	7 min	7 min	7 min
Water	Water	Water	Water	Water	Water	Water
100 l/h	100 l/h	100 l/h	100 l/h	100 l/h	100 l/h	100 l/h
15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C	15-35 °C
10 mT	10 mT	10 mT	10 mT	10 mT	10 mT	10 mT
45 dB (A)	45 dB (A)	45 dB (A)	45 dB (A)	45 dB (A)	45 dB (A)	45 dB (A)
IP 54	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54
RS-485, Remote, Profibus	RS-485, Remote	RS-485, Remote	RS-485, Remote	RS-485, Profibus	RS-485, Profibus	RS-485, Profibus
75 kg	77 kg	81 kg	81 kg	77 kg	81 kg	81 kg
PM P03 495	PM P03 710	PM P03 711	PM P03 712	PM P03 713	PM P03 714	PM P03 715

Accessories	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F, Profibus
Order number pump	PM P03 490	PM P03 491	PM P03 492	PM P03 493	PM P03 494
Power supplies/power					
TPS - mains pack for wall/standard rail fitting	PM C01 760	PM C01 760	PM C01 760	PM C01 760	PM C01 760
TPS - mains pack 19" rack module 3 RU	PM C01 761	PM C01 761	PM C01 761	PM C01 761	PM C01 761
Control units					
DCU - Display Control Unit	PM 061 348-T	PM 061 348-T	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	PM 051 510-T	PM 051 510-T
Accessories for HPU	PM 061 005-T	PM 061 005-T	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	P4 564 309 HA	P4 564 309 HA	P4 564 309 HA	P4 564 309 HA	P4 564 309 HA
208 V AC mains cable with UL plug	P4 564 309 HB	P4 564 309 HB	P4 564 309 HB	P4 564 309 HB	P4 564 309 HB
Connection cable, length 3 m between					
TPS 1400 - TM 3000	PM 051 983-T	PM 051 983-T	PM 051 983-T	PM 051 983-T	PM 051 983-T
Connection cable TM 3000 - backing pump relay box, Length 2 m	PM 061 630-X	PM 061 630-X	PM 061 630-X	PM 061 630-X	PM 061 630-X
Venting accessories					
Air drier TTV 001	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121
Heating accessories					
Heating jacket 230 V AC, Euro-style safety plug			PM 061 154-T		
Heating jacket 208 V AC, UL plug			PM 061 155-T		
Backing pump control					
Backing pump relay box, single phase 20 A	PM 061 375-T	PM 061 375-T	PM 061 375-T	PM 061 375-T	PM 061 375-T
TVV 001 backing vacuum safety valve, 230 V AC	PM Z01 205	PM Z01 205	PM Z01 205	PM Z01 205	PM Z01 205
TVV 001 backing vacuum safety valve, 115 V AC	PM Z01 206	PM Z01 206	PM Z01 206	PM Z01 206	PM Z01 206

HiPace™ 2400 MC, with TM 3000, DN 250 CF-F, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K and integrated power supply, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F and integrated power supply, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F and integrated power supply, Profibus
PM P03 495	PM P03 710	PM P03 711	PM P03 712	PM P03 713	PM P03 714	PM P03 715
PM C01 760						
PM C01 761						
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 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 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	PM 061 005-T
P4 564 309 HA	P4 564 309 HA	P4 564 309 HA	P4 564 309 HA	P4 564 309 HA	P4 564 309 HA	P4 564 309 HA
P4 564 309 HB	P4 564 309 HB	P4 564 309 HB	P4 564 309 HB	P4 564 309 HB	P4 564 309 HB	P4 564 309 HB
PM 051 983-T						
PM 061 630-X	PM 061 630-X	PM 061 630-X	PM 061 630-X	PM 061 630-X	PM 061 630-X	PM 061 630-X
PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121	PM Z00 121
PM 061 154-T			PM 061 154-T			PM 061 154-T
PM 061 155-T			PM 061 155-T			PM 061 155-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 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

Accessories	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F, Profibus
Order number pump	PM P03 490	PM P03 491	PM P03 492	PM P03 493	PM P03 494
General accessories					
Coated centering ring	PM 016 225-U	PM 016 225-U		PM 016 225-U	PM 016 225-U
Coated centering ring with protection screen	PM 016 227-U	PM 016 227-U		PM 016 227-U	PM 016 227-U
Coated centering ring with integrated splinter shield	PM 016 226-U	PM 016 226-U		PM 016 226-U	PM 016 226-U
Protection screen			PM 016 345		
Splinter shield			PM 016 324		
Vibration dampers	PM 006 670-X		PM 006 671-X	PM 006 670-X	
USB 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, M 12	PM 061 283-T	PM 061 283-T	PM 061 283-T	PM 061 283-T	PM 061 283-T
Connection cable for HiPace MC with TM 3000, 3 m	PM 051 983-T	PM 051 983-T	PM 051 983-T	PM 051 983-T	PM 051 983-T
TIC 001, Serial Interface Converter RS-232/RS-485	PM 051 054-T	PM 051 054-T	PM 051 054-T	PM 051 054-T	PM 051 054-T
Connection cable, RJ 45 on M12	PM 051 726-T	PM 051 726-T	PM 051 726-T	PM 051 726-T	PM 051 726-T
Mounting materials					
Mounting kit including coated centering ring, bracket screws	PM 016 420-T			PM 016 420-T	
Coated centering ring, with protection screen, clamping screws	PM 016 422-T			PM 016 422-T	
Coated centering ring with splinter shield, bracket screws	PM 016 421-T			PM 016 421-T	
Coated centering ring, hexagon bolts		PM 016 480-T			PM 016 480-T
Coated centering ring with protection screen, hexagon bolts		PM 016 482-T			PM 016 482-T
Coated centering ring with splinter shield, hexagon bolts		PM 016 481-T			PM 016 481-T
Coated centering ring, stud screws		PM 016 485-T			PM 016 485-T
Coated centering ring with protection screen, stud screws		PM 016 487-T			PM 016 487-T
Coated centering ring with splinter shield, stud screws		PM 016 486-T			PM 016 486-T
Set of hexagon bolts			PM 016 694-T		
Set of stud screws			PM 016 695-T		

HiPace™ 2400 MC, with TM 3000, DN 250 CF-F, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F and integrated power supply	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-K and integrated power supply, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 ISO-F and integrated power supply, Profibus	HiPace™ 2400 MC, with TM 3000, DN 250 CF-F and integrated power supply, Profibus
PM P03 495	PM P03 710	PM P03 711	PM P03 712	PM P03 713	PM P03 714	PM P03 715
	PM 016 225-U PM 016 227-U PM 016 226-U	PM 016 225-U PM 016 227-U PM 016 226-U		PM 016 225-U PM 016 227-U PM 016 226-U	PM 016 225-U PM 016 227-U PM 016 226-U	
PM 016 345 PM 016 324 PM 006 671-X PM 061 207-T PM 061 283-T PM 051 983-T PM 051 054-T PM 051 726-T	PM 006 670-X PM 061 207-T PM 061 283-T PM 051 054-T PM 051 726-T	PM 061 207-T PM 061 283-T PM 051 054-T PM 051 726-T	PM 016 345 PM 016 324 PM 006 671-X PM 061 207-T PM 061 283-T PM 051 054-T PM 051 726-T	PM 006 670-X PM 061 207-T PM 061 283-T PM 051 054-T PM 051 726-T	PM 061 207-T PM 061 283-T PM 051 054-T PM 051 726-T	PM 016 345 PM 016 324 PM 006 671-X PM 061 207-T PM 061 283-T PM 051 054-T PM 051 726-T
	PM 016 420-T PM 016 422-T PM 016 421-T			PM 016 420-T PM 016 422-T PM 016 421-T		
		PM 016 480-T PM 016 482-T PM 016 481-T PM 016 485-T PM 016 487-T PM 016 486-T			PM 016 480-T PM 016 482-T PM 016 481-T PM 016 485-T PM 016 487-T PM 016 486-T	
PM 016 694-T PM 016 695-T			PM 016 694-T PM 016 695-T			PM 016 694-T PM 016 695-T