

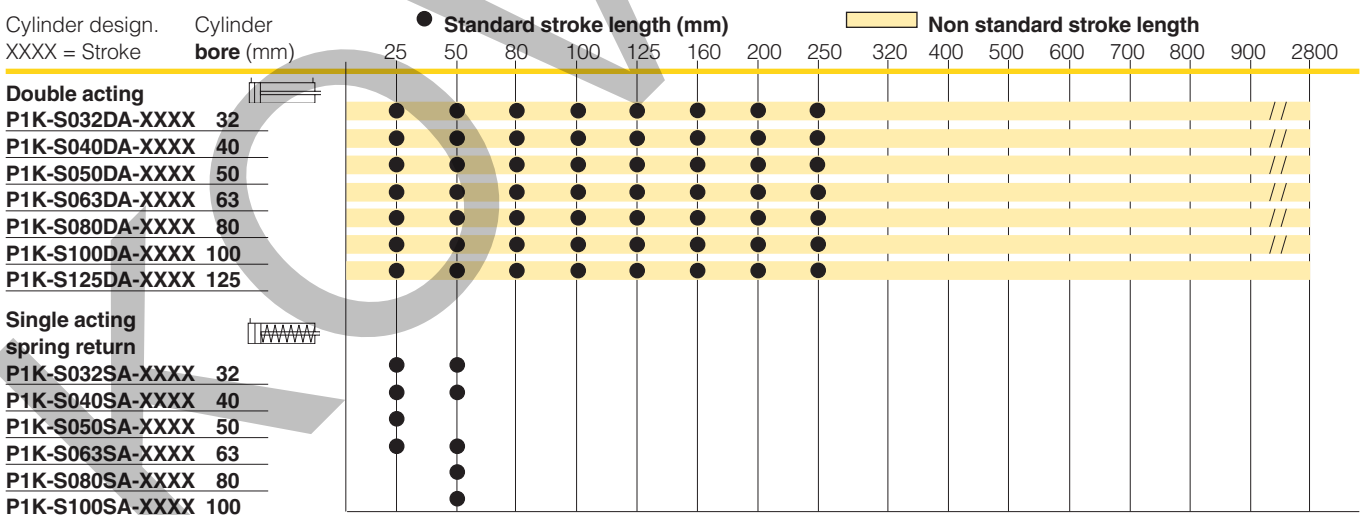
Order key

P1K - S 032 D A - 0100

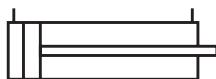
| Cyl. bore mm | Cylinder type/Function | Stroke (mm) E.g. 0025 = 25 mm |
|--------------|---|--|
| 032 | D Double acting | For standard stroke length and max length, see table below |
| 040 | K Double acting through rod | |
| 050 | S Single acting spring return | |
| 063 | B Double acting Pin screws and nuts in rear end cover | |
| 080 | A Double acting End cover screws in stainless steel | |
| 100 | * Piston rod with female thread, please contact customer service. | |
| 125 | | |

| Material piston rod | | | | Type of sealing |
|---------------------|--------------------|------------------|-----------------------|---------------------------|
| Stainless steel | Hard chromed steel | Acid-proof steel | Chromed stainl. steel | Standard -20 °C to +80 °C |
| A | T | X | 1 | |

Standard stroke length in mm

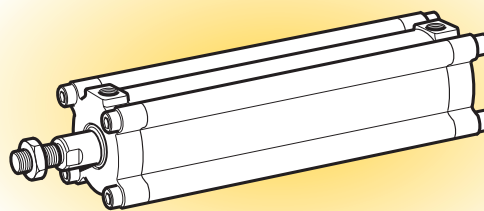


Double-acting



Fixed end cushioning

| Cyl. bore mm | Stroke mm | Order code |
|--------------------------|--------------|-----------------|
| 32 Conn. G1/8 | 25 | P1K-S032DA-0025 |
| | 50 | P1K-S032DA-0050 |
| | 80 | P1K-S032DA-0080 |
| | 100 | P1K-S032DA-0100 |
| | 125 | P1K-S032DA-0125 |
| | 160 | P1K-S032DA-0160 |
| 40 Conn. G1/8 | 25 | P1K-S040DA-0025 |
| | 50 | P1K-S040DA-0050 |
| | 80 | P1K-S040DA-0080 |
| | 100 | P1K-S040DA-0100 |
| | 125 | P1K-S040DA-0125 |
| | 160 | P1K-S040DA-0160 |
| 50 Conn. G1/8 | 25 | P1K-S050DA-0025 |
| | 50 | P1K-S050DA-0050 |
| | 80 | P1K-S050DA-0080 |
| | 100 | P1K-S050DA-0100 |
| | 125 | P1K-S050DA-0125 |
| | 160 | P1K-S050DA-0160 |
| 63 Conn. G1/8 | 25 | P1K-S063DA-0025 |
| | 50 | P1K-S063DA-0050 |
| | 80 | P1K-S063DA-0080 |
| | 100 | P1K-S063DA-0100 |
| | 125 | P1K-S063DA-0125 |
| | 160 | P1K-S063DA-0160 |
| 80 Conn. G1/4 | 25 | P1K-S080DA-0025 |
| | 50 | P1K-S080DA-0050 |
| | 80 | P1K-S080DA-0080 |
| | 100 | P1K-S080DA-0100 |
| | 125 | P1K-S080DA-0125 |
| | 160 | P1K-S080DA-0160 |
| 100 Conn. G1/4 | 25 | P1K-S100DA-0025 |
| | 50 | P1K-S100DA-0050 |
| | 80 | P1K-S100DA-0080 |
| | 100 | P1K-S100DA-0100 |
| | 125 | P1K-S100DA-0125 |
| | 160 | P1K-S100DA-0160 |
| 125 Conn. G3/8 | 25 | P1K-S125DA-0025 |
| | 50 | P1K-S125DA-0050 |
| | 80 | P1K-S125DA-0080 |
| | 100 | P1K-S125DA-0100 |
| | 125 | P1K-S125DA-0125 |
| | 160 | P1K-S125DA-0160 |



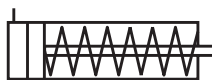
The cylinders are supplied complete with one zinc plated steel piston rod nut.



Fixed end cushioning

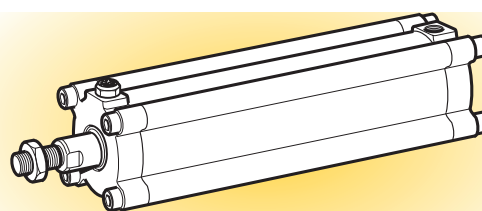
| Cyl. bore mm | Stroke mm | Order code |
|--------------------------|--------------|-----------------|
| 80 Conn. G1/4 | 25 | P1K-S080DA-0025 |
| | 50 | P1K-S080DA-0050 |
| | 80 | P1K-S080DA-0080 |
| | 100 | P1K-S080DA-0100 |
| | 125 | P1K-S080DA-0125 |
| | 160 | P1K-S080DA-0160 |
| 100 Conn. G1/4 | 25 | P1K-S100DA-0025 |
| | 50 | P1K-S100DA-0050 |
| | 80 | P1K-S100DA-0080 |
| | 100 | P1K-S100DA-0100 |
| | 125 | P1K-S100DA-0125 |
| | 160 | P1K-S100DA-0160 |
| 125 Conn. G3/8 | 25 | P1K-S125DA-0025 |
| | 50 | P1K-S125DA-0050 |
| | 80 | P1K-S125DA-0080 |
| | 100 | P1K-S125DA-0100 |
| | 125 | P1K-S125DA-0125 |
| | 160 | P1K-S125DA-0160 |

Single-acting, spring return



Fixed end cushioning

| Cyl. bore mm | Stroke mm | Order code |
|--------------------------|--------------|-----------------|
| 32 Conn. G1/8 | 25 | P1K-S032SA-0025 |
| | 50 | P1K-S032SA-0050 |
| 40 Conn. G1/8 | 25 | P1K-S040SA-0025 |
| | 50 | P1K-S040SA-0050 |
| 50 Conn. G1/8 | 25 | P1K-S050SA-0025 |
| 63 Conn. G1/8 | 25 | P1K-S063SA-0025 |
| | 50 | P1K-S063SA-0050 |
| 80 Conn. G1/4 | 50 | P1K-S080SA-0050 |
| 100 Conn. G1/4 | 50 | P1K-S100SA-0050 |



The cylinders are supplied complete with one zinc plated steel piston rod nut.

Cylinder forces, double acting variants

| Cyl. bore/ pist. rod mm | Stroke | Pistonarea cm ² | Max theoretical force in N (bar) | | | | | | | | | |
|----------------------------|--------|-------------------------------|----------------------------------|------|------|------|------|-------------|------|------|-------|-------|
| | | | 1,0 | 2,0 | 3,0 | 4,0 | 5,0 | 6,0 | 7,0 | 8,0 | 9,0 | 10,0 |
| 32/12 | + | 8,0 | 80 | 161 | 241 | 322 | 402 | 483 | 563 | 643 | 724 | 804 |
| | - | 6,9 | 69 | 138 | 207 | 276 | 346 | 415 | 484 | 553 | 622 | 691 |
| 40/16 | + | 12,6 | 126 | 251 | 377 | 503 | 628 | 754 | 880 | 1005 | 1131 | 1257 |
| | - | 10,6 | 106 | 212 | 318 | 424 | 530 | 636 | 742 | 848 | 954 | 1060 |
| 50/20 | + | 19,6 | 196 | 393 | 589 | 785 | 982 | 1178 | 1374 | 1571 | 1767 | 1963 |
| | - | 16,5 | 165 | 330 | 495 | 660 | 825 | 990 | 1155 | 1319 | 1484 | 1649 |
| 63/20 | + | 31,2 | 312 | 623 | 935 | 1247 | 1559 | 1870 | 2182 | 2494 | 2806 | 3117 |
| | - | 28,0 | 280 | 561 | 841 | 1121 | 1402 | 1682 | 1962 | 2242 | 2523 | 2803 |
| 80/25 | + | 50,3 | 503 | 1005 | 1508 | 2011 | 2513 | 3016 | 3519 | 4021 | 4524 | 5027 |
| | - | 45,4 | 454 | 907 | 1361 | 1814 | 2268 | 2721 | 3175 | 3629 | 4082 | 4536 |
| 100/32 | + | 78,5 | 785 | 1571 | 2356 | 3142 | 3927 | 4712 | 5498 | 6283 | 7069 | 7854 |
| | - | 70,5 | 705 | 1410 | 2115 | 2820 | 3525 | 4230 | 4935 | 5640 | 6345 | 7050 |
| 125/32 | + | 122,7 | 1227 | 2454 | 3682 | 4909 | 6136 | 7363 | 8590 | 9817 | 11045 | 12272 |
| | - | 114,7 | 1147 | 2294 | 3440 | 4587 | 5734 | 6881 | 8027 | 9174 | 10321 | 11468 |

+ = Outward stroke
- = Return stroke

Note!
Select a theoretical force 50-100% larger than the force required

Operation data

| | | |
|---------------------|------------|---------|
| Working pressure | Max 10 bar | |
| Working temperature | min | max |
| Standard | -20 °C | +80 °C |
| High temp version | -10 °C | +150 °C |
| Low temp version | -40 °C | +40 °C |

Greased for life, does not normally need additional lubrication. If extra lubrication is given, this must always be continued.

Working medium, air quality


Working medium Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

Recommended air quality for cylinders

For best possible service life and trouble-free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5 µm filter (standard filter) dew point +3 °C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m³, which is what a standard compressor with a standard filter gives.

ISO 8573-1 quality classes

| Quality class | Pollution | | Water max. press. dew point (°C) | Oil max concentration (mg/m ³) |
|---------------|--------------------|--|----------------------------------|--|
| | particle size (µm) | max concentration (mg/m ³) | | |
| 1 | 0,1 | 0,1 | -70 | 0,01 |
| 2 | 1 | 1 | -40 | 0,1 |
| 3 | 5 | 5 | -20 | 1,0 |
| 4 | 15 | 8 | +3 | 5,0 |
| 5 | 40 | 10 | +7 | 25 |
| 6 | - | - | +10 | - |



Important!

When the cylinders are used in applications with heavy side loading on the piston rod, an outer guide must be used to ensure maximum service life.

Main data

| Cylinder designation | Cylinder Piston rod | | | | | Total mass at 0 mm stroke length kg | Mass, moving parts | | Air consumption litre | Port size | |
|-------------------------------|---------------------|-----------------|-------|-----------------|----------|-------------------------------------|------------------------------|--------------------------|-----------------------|---------------------|-----|
| | bore | area | diam. | area | thread | | Addition per 10 mm stroke kg | at 0 mm stroke length kg | | | |
| | mm | cm ² | mm | cm ² | | | | | | | |
| Double acting | | | | | | | | | | | |
| P1K-S032DA-XXXX ¹⁾ | 32 | 8,0 | 12 | 1,1 | M10x1,25 | 0,33 | 0,024 | 0,09 | 0,009 | 0,105 ²⁾ | 1/8 |
| P1K-S040DA-XXXX ¹⁾ | 40 | 12,6 | 16 | 2,0 | M12x1,25 | 0,48 | 0,032 | 0,14 | 0,016 | 0,162 ²⁾ | 1/8 |
| P1K-S050DA-XXXX ¹⁾ | 50 | 19,6 | 20 | 3,1 | M16x1,5 | 0,70 | 0,049 | 0,26 | 0,025 | 0,253 ²⁾ | 1/8 |
| P1K-S063DA-XXXX ¹⁾ | 63 | 31,2 | 20 | 3,1 | M16x1,5 | 1,04 | 0,058 | 0,31 | 0,025 | 0,414 ²⁾ | 1/8 |
| P1K-S080DA-XXXX ¹⁾ | 80 | 50,0 | 25 | 4,9 | M20x1,5 | 1,75 | 0,081 | 0,56 | 0,039 | 0,669 ²⁾ | 1/4 |
| P1K-S100DA-XXXX ¹⁾ | 100 | 79,0 | 32 | 8,0 | M20x1,5 | 2,48 | 0,116 | 0,86 | 0,063 | 1,043 ²⁾ | 1/4 |
| P1K-S125DA-XXXX ¹⁾ | 125 | 123,0 | 32 | 8,0 | M27x2 | 4,35 | 0,138 | 1,77 | 0,063 | 1,662 ²⁾ | 3/8 |
| Single acting | | | | | | | | | | | |
| P1K-S032SA-0025 | 32 | 8,0 | 12 | 1,1 | M10x1,25 | 0,48 ³⁾ | | 0,15 ³⁾ | | 0,141 ³⁾ | 1/8 |
| P1K-S032SA-0050 | 32 | 8,0 | 12 | 1,1 | M10x1,25 | 0,60 ³⁾ | | 0,27 ³⁾ | | 0,282 ³⁾ | 1/8 |
| P1K-S040SA-0025 | 40 | 12,6 | 16 | 2,0 | M12x1,25 | 0,67 ³⁾ | | 0,24 ³⁾ | | 0,220 ³⁾ | 1/8 |
| P1K-S040SA-0050 | 40 | 12,6 | 16 | 2,0 | M12x1,25 | 0,84 ³⁾ | | 0,32 ³⁾ | | 0,440 ³⁾ | 1/8 |
| P1K-S050SA-0025 | 50 | 19,6 | 20 | 3,1 | M16x1,5 | 1,02 ³⁾ | | 0,44 ³⁾ | | 0,344 ³⁾ | 1/8 |
| P1K-S050SA-0050 | 50 | 19,6 | 20 | 3,1 | M16x1,5 | 1,27 ³⁾ | | 0,57 ³⁾ | | 0,688 ³⁾ | 1/8 |
| P1K-S063SA-0025 | 63 | 31,2 | 20 | 3,1 | M16x1,5 | 1,41 ³⁾ | | 0,51 ³⁾ | | 0,546 ³⁾ | 1/8 |
| P1K-S063SA-0050 | 63 | 31,2 | 20 | 3,1 | M16x1,5 | 1,72 ³⁾ | | 0,63 ³⁾ | | 1,092 ³⁾ | 1/8 |
| P1K-S080SA-0050 | 80 | 50,0 | 25 | 4,9 | M20x1,5 | 2,81 ³⁾ | | 1,13 ³⁾ | | 1,760 ³⁾ | 1/4 |
| P1K-S100SA-0050 | 100 | 79,0 | 32 | 8,0 | M20x1,5 | 3,99 ³⁾ | | 1,74 ³⁾ | | 2,748 ³⁾ | 1/4 |

1) XXXX=stroke length. 2) Free air consumption per 100 mm stroke length for a double stroke at 6 bar. 3) At the relevant stroke length.

Piston forces

The values for piston forces are theoretical and should be reduced to suit working conditions.

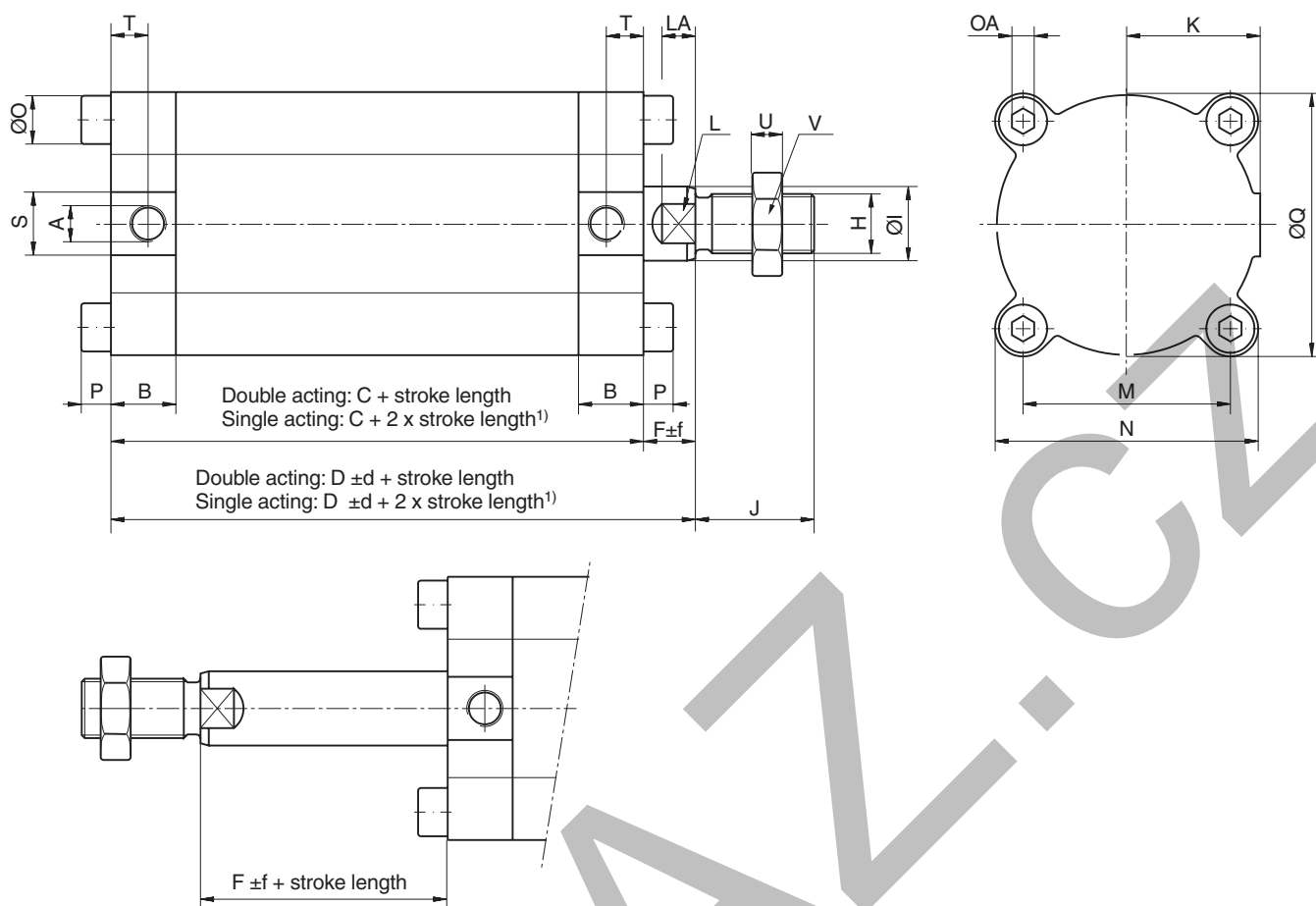
| Cylinder designation | Theoretical piston force at 6 bar Plus stroke | | Spring force | |
|----------------------|---|------|-------------------|------|
| | Nmax | Nmin | Minus stroke Nmax | Nmin |
| Single acting | | | | |
| P1K-S032SA-0025 | 450 | 441 | 30 | 39 |
| P1K-S032SA-0050 | 450 | 432 | 30 | 48 |
| P1K-S040SA-0025 | 714 | 704 | 40 | 50 |
| P1K-S040SA-0050 | 714 | 688 | 40 | 50 |
| P1K-S050SA-0025 | 1120 | 1101 | 60 | 79 |
| P1K-S050SA-0050 | 1120 | 1090 | 60 | 90 |
| P1K-S063SA-0025 | 1800 | 1782 | 70 | 88 |
| P1K-S063SA-0050 | 1800 | 1771 | 70 | 99 |
| P1K-S080SA-0050 | 2925 | 2878 | 95 | 142 |
| P1K-S100SA-0050 | 4570 | 4518 | 140 | 192 |

Material specifications

| | |
|----------------------------------|-----------------------------|
| Cylinder barrel | Anodised aluminium |
| End covers | Anodised aluminium |
| End cap screws | Galvanized steel |
| Piston | Steel/Nitrile rubber, NBR |
| Piston rod bearing | Acetal plastic/Bronze/Steel |
| Piston rod | Stainless steel |
| | X 10 CrNiS 18 9 |
| Scraper ring, piston rod sealing | UHMWPE-plastic |
| Cushioning ring | Polyurethane |
| Other sealings | Nitrile rubber, NBR |
| Return spring | stainless spring steel |

Option

| | |
|---------------------|---|
| Piston rod material | Hard-chromium plated steel, Fe 490-2 FN |
| | Acid-proof steel, X 5 CrNiMo 17 13 3 |
| | Hard-chromium plated stainless steel, X 10 CrNiS 18 9 |



Dimensions

| Cylinder designation | A | B | C | D | F | H | I | J | K | L | LA | M | N | O | OA | P | Q | S |
|----------------------|------|------|------|-------|----|----------|----|----|------|----|----|-------|-------|------|----|----|-----|----|
| | | mm | mm | mm | mm | | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm |
| P1K-S032 | G1/8 | 17,0 | 65,0 | 75,0 | 10 | M10x1,25 | 12 | 22 | 21,0 | 10 | 6 | 32,5 | 42,5 | 8,5 | 4 | 5 | 37 | 17 |
| P1K-S040 | G1/8 | 17,0 | 65,0 | 78,0 | 13 | M12x1,25 | 16 | 24 | 24,0 | 14 | 9 | 36,8 | 48,0 | 10,0 | 5 | 6 | 45 | 17 |
| P1K-S050 | G1/8 | 17,5 | 71,0 | 85,0 | 14 | M16x1,5 | 20 | 32 | 29,0 | 17 | 9 | 46,7 | 59,0 | 10,0 | 5 | 6 | 56 | 17 |
| P1K-S063 | G1/8 | 17,5 | 72,0 | 86,0 | 14 | M16x1,5 | 20 | 32 | 36,0 | 17 | 9 | 55,9 | 71,0 | 13,0 | 6 | 8 | 70 | 17 |
| P1K-S080 | G1/4 | 21,5 | 85,0 | 101,0 | 16 | M20x1,5 | 25 | 40 | 44,5 | 22 | 10 | 70,0 | 87,0 | 16,0 | 8 | 10 | 87 | 21 |
| P1K-S100 | G1/4 | 21,5 | 87,0 | 108,0 | 21 | M20x1,5 | 32 | 40 | 55,0 | 27 | 13 | 84,1 | 102,0 | 16,0 | 8 | 10 | 108 | 21 |
| P1K-S125 | G3/8 | 25,5 | 94,5 | 115,5 | 21 | M27x2 | 32 | 54 | 68,0 | 27 | 13 | 104,0 | 124,0 | 18,0 | 10 | 12 | 134 | 25 |

Dimensions

| Cylinder designation | T | U | V | Dimensions D and F | Stroke length |
|----------------------|----|------|----|--------------------|---------------------------|
| | mm | mm | mm | d f mm mm | 0-320 mm (at 6 bar) mm |
| P1K-S032 | 10 | 5,0 | 17 | 0,9 1,2 | +2,0 |
| P1K-S040 | 10 | 6,0 | 19 | 0,9 1,2 | +2,0 |
| P1K-S050 | 10 | 8,0 | 24 | 0,9 1,2 | +2,0 |
| P1K-S063 | 10 | 8,0 | 24 | 1,2 1,6 | +2,5 |
| P1K-S080 | 12 | 10,0 | 30 | 1,2 1,6 | +2,5 |
| P1K-S100 | 12 | 10,0 | 30 | 1,2 1,6 | +2,5 |
| P1K-S125 | 14 | 13,5 | 41 | 1,2 1,6 | +2,5 |

1) Stroke length for dimensions 32-63 = 25 and 50 mm, for dimensions 80-100 = 50 mm.