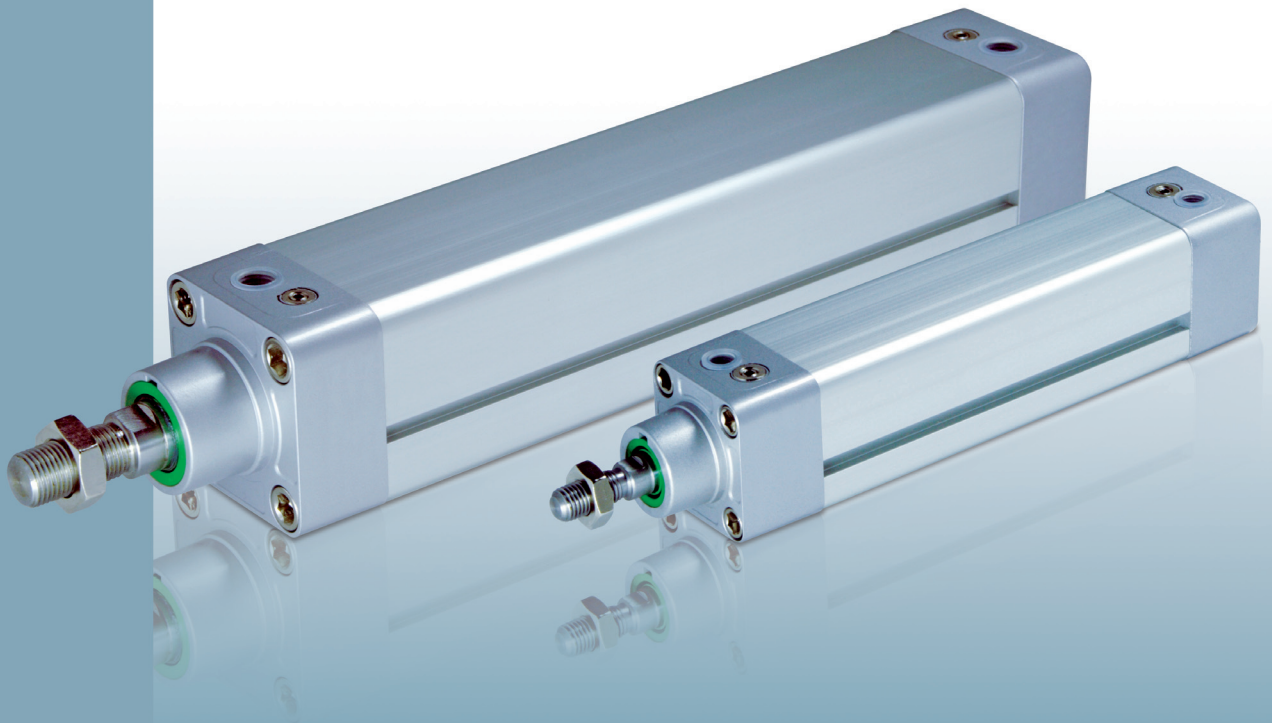


## Series 21 Cylinders ISO 15552



This catalogue is primarily intended for the design and development engineer. It is not an indication of delivery possibilities. The indicated data only serve the description of the product, they are not to be understood as the guaranteed quality of the product in legal terms. Agreements as to the quality of the product are reserved to the proper contractual relationship. Claims of damages against us – on whatever grounds – are excluded, except in instances of deliberate intent or gross negligence on our part. Reproduction, even of extracts only with the author's approval. We reserve the rights of modification, omission, error.

## **Series 21 Cylinders**

### **ISO 15552 - 32 to 100 mm Bore**

|                                  |    |
|----------------------------------|----|
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| Other versions                   | 6  |
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### General

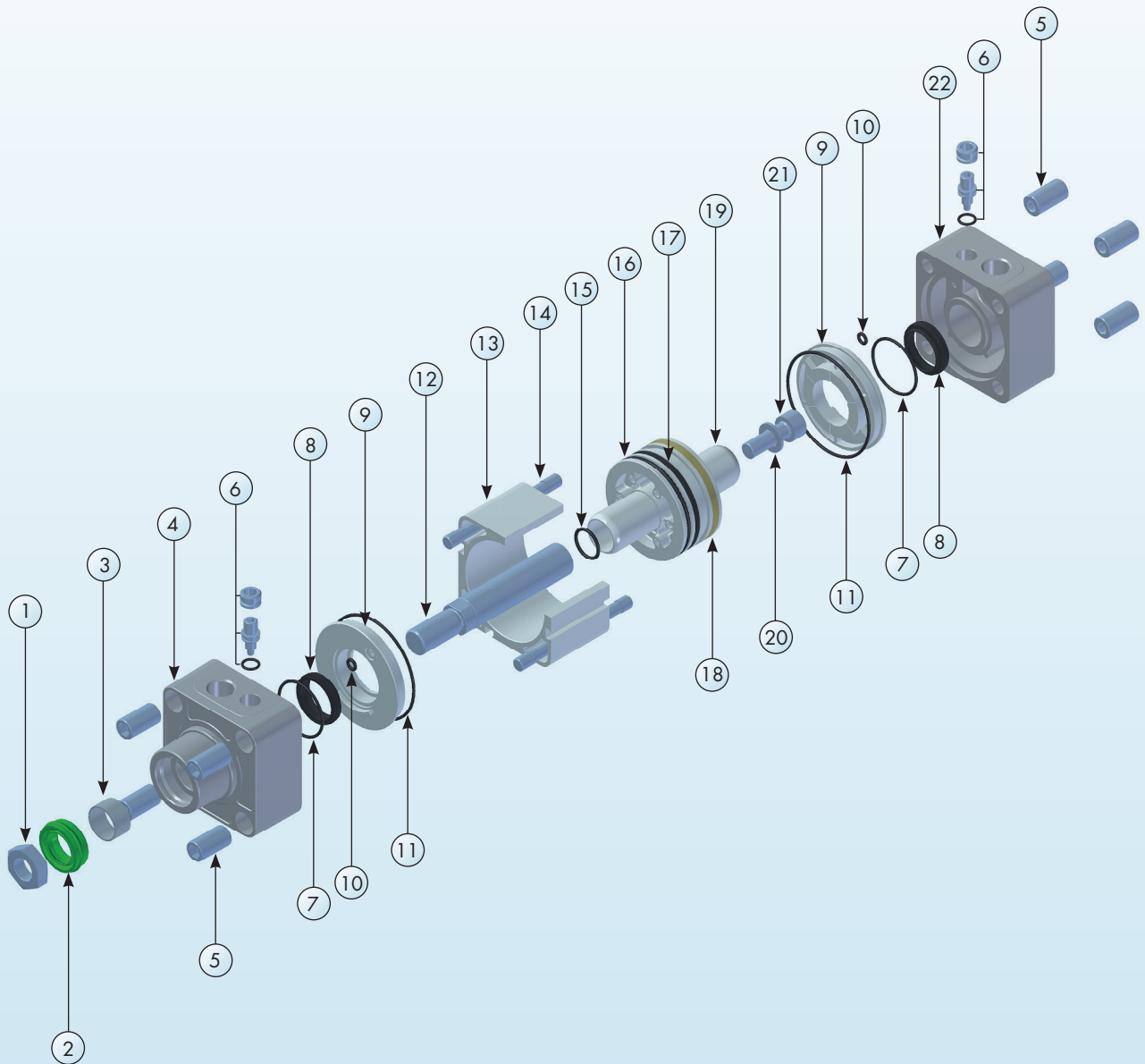
Series 21 cylinders are manufactured according to the ISO 15552 standard, which guarantees the interchangeability of the cylinders without mounted accessories. The cylinder's tube and end plates have a clean profile making them suitable for use in dusty environments as well as the food or similar industries where wash downs are necessary. The cylinder tube is internally and externally anodised, offering an excellent resistance to corrosion while providing a low friction surface for the piston.

This product has been designed to have extraordinary strength. The piston (always magnetic and complete with cushion bushings) is a solid aluminium block and the tube is assembled on covers with tie-rods. This easy structure, with simple modification of basic components, permits versions for high and low temperature applications. The cylinder is RoHS certified (Directive 2002/95/CE) and it is also available in the Atex version (Directive 94/9/CE) in zone II 2G/D c T4 T135°C -10°C <math>T\_0 < 50^{\circ}\text{C}</math>.

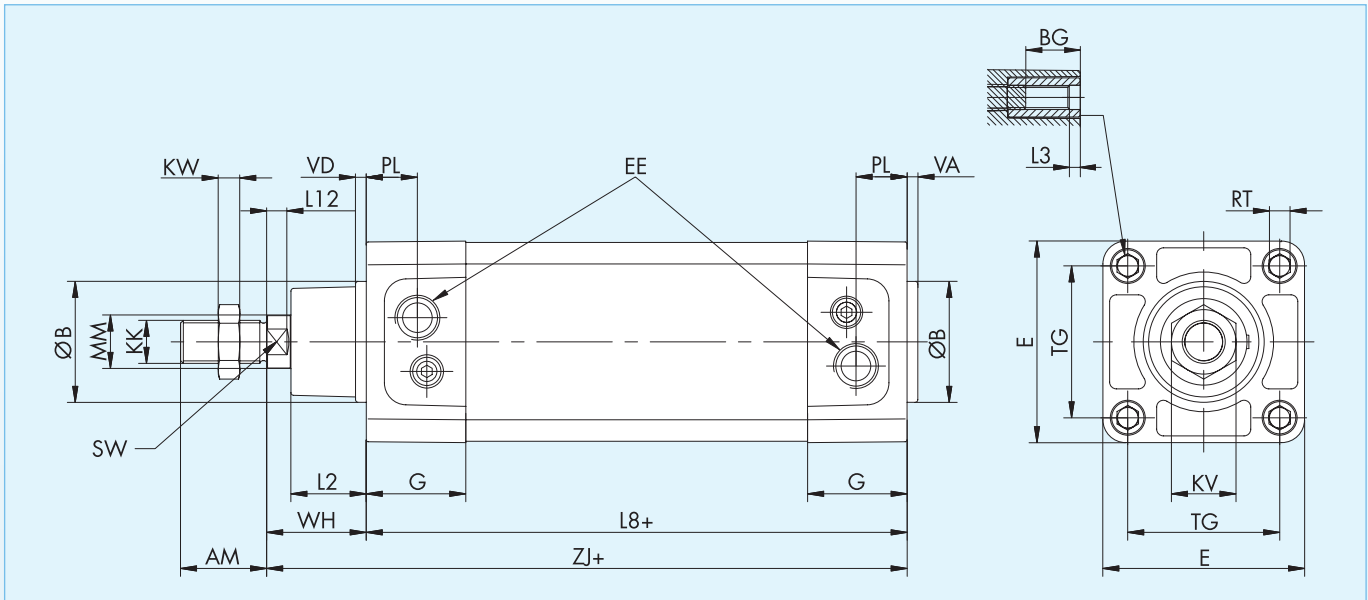
### Technical data

|                               |  |  |    |    |    |    |     |
|-------------------------------|--|--|----|----|----|----|-----|
| Piston diameters:             | Ø 32, 40, 50, 63, 80, 100 (mm)   |  |    |    |    |    |     |
| Ports:                        | Ø 32 = G1/8; Ø 40÷50 = G1/4; Ø 63÷80 = G3/8; Ø 100 = G1/2                              |  |    |    |    |    |     |
| End plates:                   | painted aluminium alloy casting  |  |    |    |    |    |     |
| Piston rod:                   | C45 chromium plated steel or AISI 303 stainless steel                                  |  |    |    |    |    |     |
| Profiled tube:                | aluminium alloy anodised 15 µm   |  |    |    |    |    |     |
| Piston with cushion bushings: | aluminium alloy casting  |  |    |    |    |    |     |
| Tie-rods:                     | Fe 37  |  |    |    |    |    |     |
| Cushioning adjustment screw:  | nickel-plated brass  |  |    |    |    |    |     |
| Piston rod seal:              | polyurethane mixture 94 SH A (Viton® on request)                                       |  |    |    |    |    |     |
| Piston seal:                  | NBR rubber 70 SH A (Viton® on request)   |  |    |    |    |    |     |
| Cushion seals:                | NBR rubber 90 SH A (Viton® on request)   |  |    |    |    |    |     |
| Other seals:                  | NBR rubber   |  |    |    |    |    |     |
| Operating medium:             | 5 µm filtered air, lubricated or not (dry air must be used for application below 0 °C) |  |    |    |    |    |     |
| Max pressure:                 | 10 bar   |  |    |    |    |    |     |
| Operating temperature:        | -20 °C ÷ +80 °C  |  |    |    |    |    |     |
| Cushioning length:            | Ø  | 32                                       | 40 | 50 | 63 | 80 | 100 |
|                               | mm   | 20                                       | 22 | 26 | 30 | 32 | 34  |
| Stroke tolerance:             | Ø 32 - 50  | < 500 mm: + 2,0 mm<br>> 500 mm: + 3,2 mm |    |    |    |    |     |
|                               | Ø 63 - 100   | < 500 mm: + 2,5 mm<br>> 500 mm: + 4,0 mm |    |    |    |    |     |
| Standard strokes:             | 25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 (mm)                                |  |    |    |    |    |     |

Explosion View



- |                                |                       |
|--------------------------------|-----------------------|
| 1. Piston rod nut              | 12. Piston rod        |
| 2. Piston rod seal             | 13. Cylinder body     |
| 3. Piston rod guide bushing    | 14. Tie-rod           |
| 4. Front cover                 | 15. Rubber seal       |
| 5. Tie-rod nut                 | 16. Piston seal       |
| 6. Cushioning adjustment screw | 17. Magnetic ring     |
| 7. Rubber seal                 | 18. Wear ring         |
| 8. Cushion seal                | 19. Piston            |
| 9. End cap cover ring          | 20. Washer            |
| 10. Rubber seal                | 21. Piston fixing nut |
| 11. Rubber seal                | 22. Rear cover        |



| Ø   | B*11 | E   | G    | L2 | L8+ | L3 | L12 | EE   | KK       | ØMM | AM | BG | KV | KW | PL   | RT  | SW | TG   | VA | VD | WH | ZJ+ |
|-----|------|-----|------|----|-----|----|-----|------|----------|-----|----|----|----|----|------|-----|----|------|----|----|----|-----|
| 32  | 30   | 45  | 30   | 18 | 94  | 5  | 6   | G1/8 | M10X1,25 | 12  | 22 | 16 | 17 | 6  | 13   | M6  | 10 | 32,5 | 3  | 4  | 26 | 120 |
| 40  | 35   | 54  | 28   | 22 | 105 | 5  | 6   | G1/4 | M12X1,25 | 16  | 24 | 16 | 19 | 7  | 15   | M6  | 13 | 38   | 3  | 4  | 30 | 135 |
| 50  | 40   | 64  | 30   | 26 | 106 | 5  | 8   | G1/4 | M16X1,5  | 20  | 32 | 16 | 24 | 8  | 15   | M8  | 17 | 46,5 | 4  | 4  | 37 | 143 |
| 63  | 45   | 75  | 37   | 28 | 121 | 5  | 8   | G3/8 | M16X1,5  | 20  | 32 | 16 | 24 | 8  | 19   | M8  | 17 | 56,5 | 4  | 4  | 37 | 158 |
| 80  | 45   | 93  | 37,5 | 31 | 128 | 5  | 10  | G3/8 | M20X1,5  | 25  | 40 | 17 | 30 | 9  | 20,5 | M10 | 22 | 72   | 4  | 4  | 46 | 174 |
| 100 | 55   | 110 | 40   | 35 | 138 | 5  | 10  | G1/2 | M20X1,5  | 25  | 40 | 17 | 30 | 9  | 22   | M10 | 22 | 89   | 4  | 4  | 51 | 189 |

|                                    |   |   |   |    |      |             |
|------------------------------------|---|---|---|----|------|-------------|
| Order code                         | 21.                                     | 1 | 1 | A. | 0200 |             |
| Series Number                      | 21                                      |   |   |    |      |             |
| Piston diameter                    |   |   |   |    |      |             |
|                                    | Ø 32                                    |   | 1 |    |      |             |
|                                    | Ø 40                                    |   | 2 |    |      |             |
|                                    | Ø 50                                    |   | 3 |    |      |             |
|                                    | Ø 63                                    |   | 4 |    |      |             |
|                                    | Ø 80                                    |   | 5 |    |      |             |
|                                    | Ø 100                                   |   | 6 |    |      |             |
| Design                             |   |   |   |    |      |             |
|                                    | piston rod C45 (standard)               |   |   |    | 1    |             |
|                                    | stainless steel piston rod              |   |   |    | 2    |             |
|                                    | piston rod C45, Viton® seal             |   |   |    | 3    |             |
|                                    | stainless steel piston rod, Viton® seal |   |   |    | 4    |             |
|                                    | Atex                                    |   |   |    | X    |             |
| Version                            |   |   |   |    |      |             |
|                                    | double acting                           |   |   |    | A    |             |
|                                    | through piston rod                      |   |   |    | B    |             |
|                                    | back to back                            |   |   |    | C    |             |
|                                    | tandem                                  |   |   |    | D    |             |
|                                    | two-strokes tandem                      |   |   |    | E    |             |
|                                    | multi-position tandem                   |   |   |    | F    |             |
| Stroke                             |   |   |   |    |      | xxxx (yyyy) |
| Piston rod lock device assembled * |   |   |   |    |      | BS          |

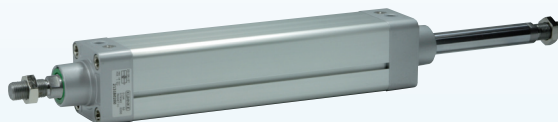
yyyy: please add stroke of the second cylinder only on versions C, E, F

\* only on versions A and B

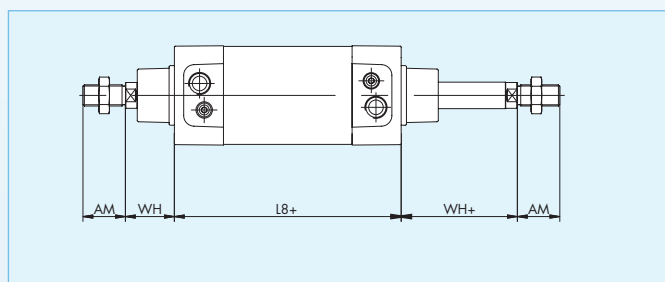
|                  |  |     |   |   |    |       |      |
|------------------|--|-----|---|---|----|-------|------|
| Special versions |  | KX. | 1 | 1 | A. | 0200. | zzzz |
|------------------|--|-----|---|---|----|-------|------|

zzzz = project no. (added by factory)

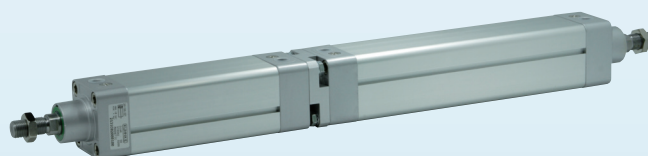
Through piston rod



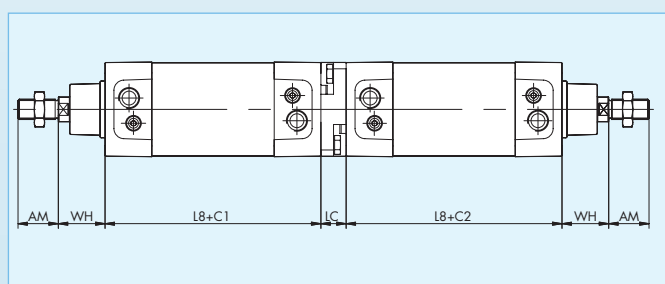
| ∅   | AM | WH | L8+ |
|-----|----|----|-----|
| 32  | 22 | 26 | 94  |
| 40  | 24 | 30 | 105 |
| 50  | 32 | 37 | 106 |
| 63  | 32 | 37 | 121 |
| 80  | 40 | 46 | 128 |
| 100 | 40 | 51 | 138 |



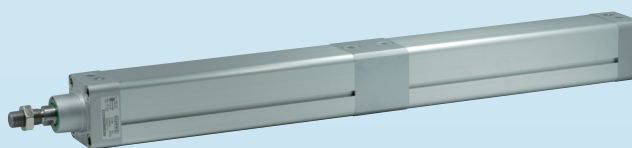
Back to back  
(C1 independent of C2)



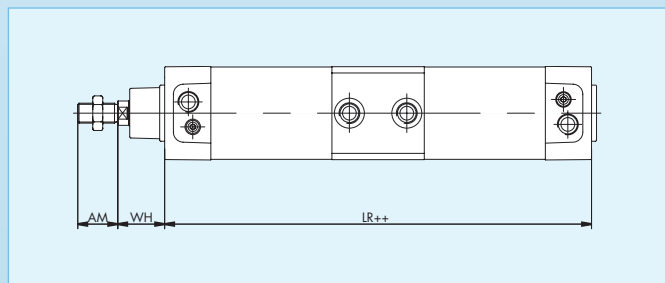
| ∅   | AM | WH | L8+ | LC |
|-----|----|----|-----|----|
| 32  | 22 | 26 | 94  | 15 |
| 40  | 24 | 30 | 105 | 15 |
| 50  | 32 | 37 | 106 | 20 |
| 63  | 32 | 37 | 121 | 20 |
| 80  | 40 | 46 | 128 | 25 |
| 100 | 40 | 51 | 138 | 25 |



Tandem

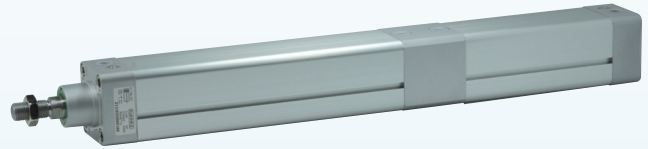


| ∅   | AM | WH | LR++ |
|-----|----|----|------|
| 32  | 22 | 26 | 188  |
| 40  | 24 | 30 | 210  |
| 50  | 32 | 37 | 212  |
| 63  | 32 | 37 | 242  |
| 80  | 40 | 46 | 256  |
| 100 | 40 | 51 | 276  |

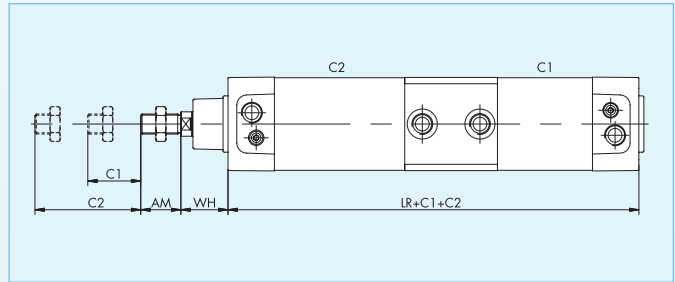




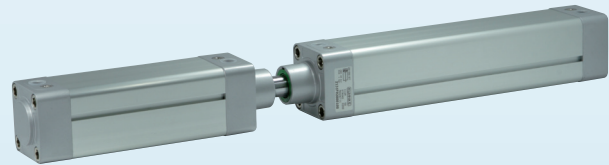
## Two-strokes tandem (C2 bigger than C1)



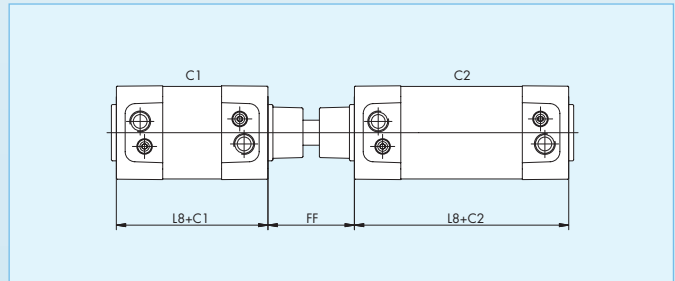
| Ø   | AM | WH | LR  |
|-----|----|----|-----|
| 32  | 22 | 26 | 188 |
| 40  | 24 | 30 | 210 |
| 50  | 32 | 37 | 212 |
| 63  | 32 | 37 | 242 |
| 80  | 40 | 46 | 256 |
| 100 | 40 | 51 | 276 |



## Multi-position tandem (C1 independent of C2)



| Ø   | FF | L8+ |
|-----|----|-----|
| 32  | 48 | 94  |
| 40  | 54 | 105 |
| 50  | 69 | 106 |
| 63  | 69 | 121 |
| 80  | 86 | 128 |
| 100 | 91 | 138 |



## Cylinder groove cover



| Order code | Description                                    |
|------------|--|
| 20.001     | Groove cover for use with position transmitter |

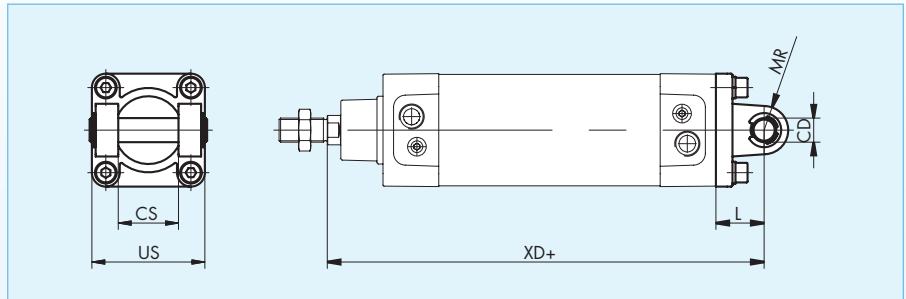
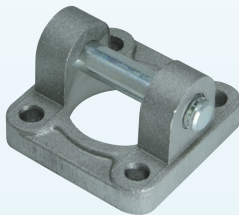
The cylinder groove cover is 2 m in length and can be cut to size.



| Order code | Description           |
|------------|-----------------------|
| 20.002     | Standard groove cover |

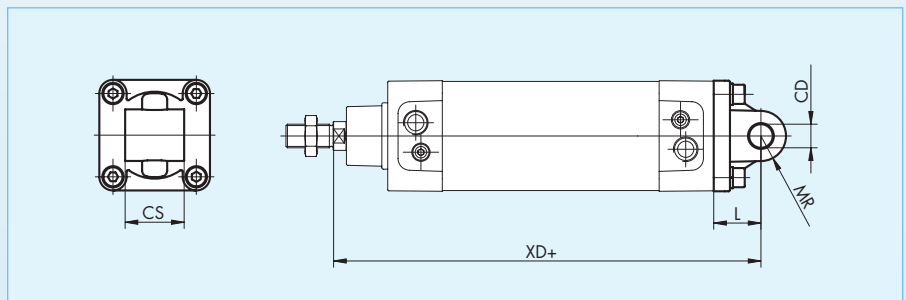
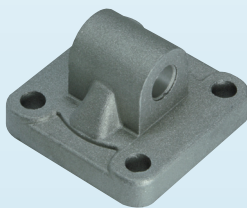
Specify length. Cover supplied cut to size.

Female Trunnion  
(bolt and fixing screws included)



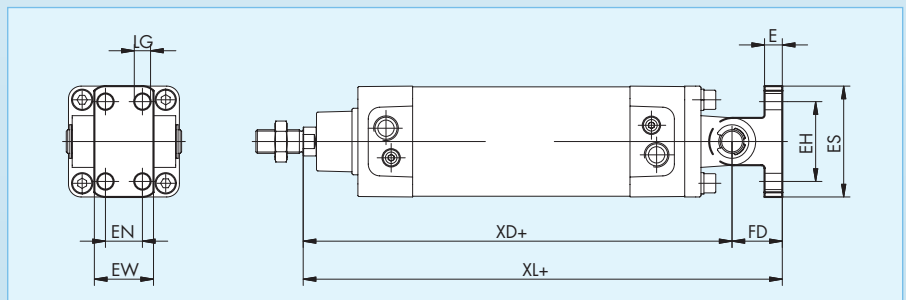
| Order code | Ø   | CS | US  | L  | XD+ | CD | MR |
|------------|-----|----|-----|----|-----|----|----|
| 18.001.01  | 32  | 26 | 45  | 22 | 142 | 10 | 11 |
| 18.001.02  | 40  | 28 | 52  | 25 | 160 | 12 | 13 |
| 18.001.03  | 50  | 32 | 65  | 27 | 170 | 12 | 13 |
| 18.001.04  | 63  | 40 | 75  | 32 | 190 | 16 | 17 |
| 18.001.05  | 80  | 50 | 95  | 36 | 210 | 16 | 17 |
| 18.001.06  | 100 | 60 | 115 | 41 | 230 | 20 | 21 |

Male Trunnion  
(fixing screws included)



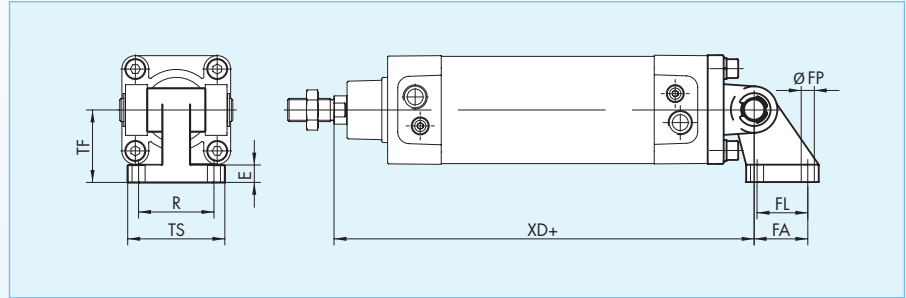
| Order code | Ø   | CS | L  | XD+ | CD | MR |
|------------|-----|----|----|-----|----|----|
| 18.002.01  | 32  | 26 | 22 | 142 | 10 | 11 |
| 18.002.02  | 40  | 28 | 25 | 160 | 12 | 13 |
| 18.002.03  | 50  | 32 | 27 | 170 | 12 | 13 |
| 18.002.04  | 63  | 40 | 32 | 190 | 16 | 17 |
| 18.002.05  | 80  | 50 | 36 | 210 | 16 | 17 |
| 18.002.06  | 100 | 60 | 41 | 230 | 20 | 21 |

Trunnion Mounting Bracket  
(Cetop standard -  
for use with female trunnion)



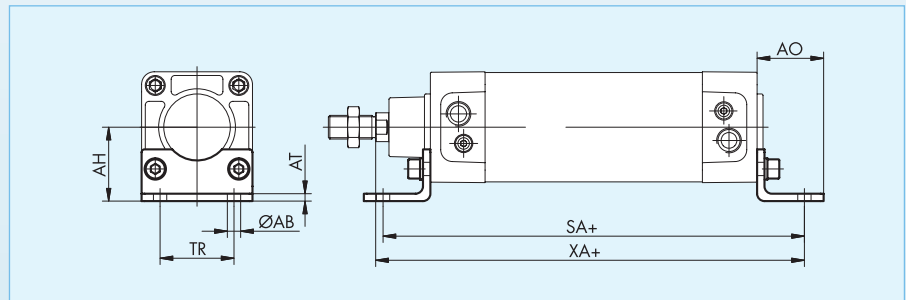
| Order code | Ø   | LG | EN | EW | XL+ | XD+ | FD | EH | ES  | E  |
|------------|-----|----|----|----|-----|-----|----|----|-----|----|
| 18.003.01  | 32  | 7  | -  | 25 | 160 | 142 | 18 | 28 | 40  | 8  |
| 18.003.02  | 40  | 9  | 16 | 28 | 186 | 160 | 26 | 38 | 52  | 10 |
| 18.003.03  | 50  | 9  | 16 | 32 | 196 | 170 | 26 | 38 | 52  | 10 |
| 18.003.04  | 63  | 11 | 25 | 40 | 224 | 190 | 34 | 54 | 75  | 12 |
| 18.003.05  | 80  | 11 | 25 | 50 | 244 | 210 | 34 | 54 | 75  | 12 |
| 18.003.06  | 100 | 14 | 32 | 60 | 271 | 230 | 41 | 90 | 115 | 16 |

Square angle trunnion mounting bracket  
(for use with female trunnion)



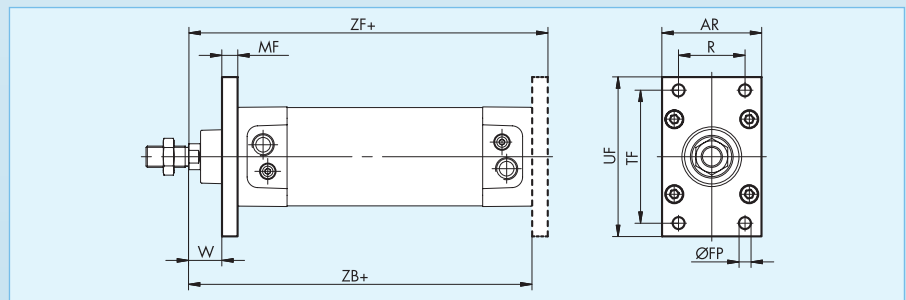
| Order code | Ø   | R  | TS | FP | XD+ | FA | FL | TF | E  |
|------------|-----|----|----|----|-----|----|----|----|----|
| 18.014.01  | 32  | 38 | 31 | 7  | 142 | 21 | 18 | 32 | 8  |
| 18.014.02  | 40  | 41 | 35 | 7  | 160 | 24 | 22 | 36 | 10 |
| 18.014.03  | 50  | 50 | 45 | 9  | 170 | 33 | 30 | 45 | 12 |
| 18.014.04  | 63  | 52 | 50 | 9  | 190 | 37 | 35 | 50 | 12 |
| 18.014.05  | 80  | 66 | 60 | 11 | 210 | 47 | 40 | 63 | 14 |
| 18.014.06  | 100 | 76 | 70 | 14 | 230 | 55 | 50 | 71 | 15 |

Mounting bracket  
(fixing screws included -  
kit includes one bracket only)



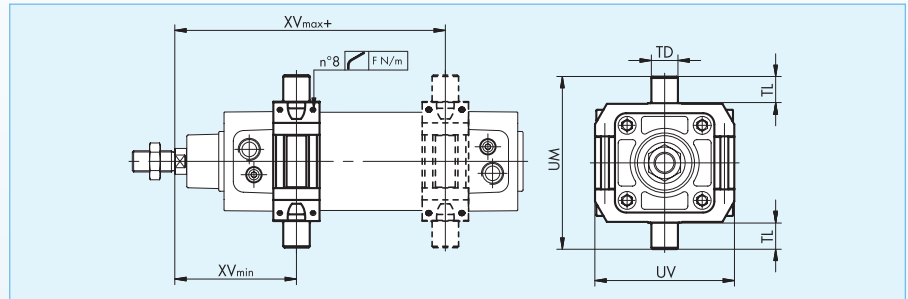
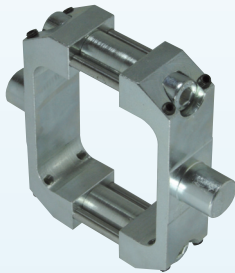
| Order code | Ø   | AT | AH | TR | AB | SA+ | XA+ | AO |
|------------|-----|----|----|----|----|-----|-----|----|
| 18.005.01  | 32  | 4  | 32 | 32 | 7  | 142 | 144 | 35 |
| 18.005.02  | 40  | 4  | 36 | 36 | 9  | 161 | 163 | 43 |
| 18.005.03  | 50  | 4  | 45 | 45 | 9  | 170 | 175 | 47 |
| 18.005.04  | 63  | 6  | 50 | 50 | 9  | 185 | 190 | 47 |
| 18.005.05  | 80  | 6  | 63 | 63 | 12 | 210 | 215 | 61 |
| 18.005.06  | 100 | 6  | 71 | 75 | 14 | 220 | 230 | 66 |

Mounting plate  
(fixing screws included)



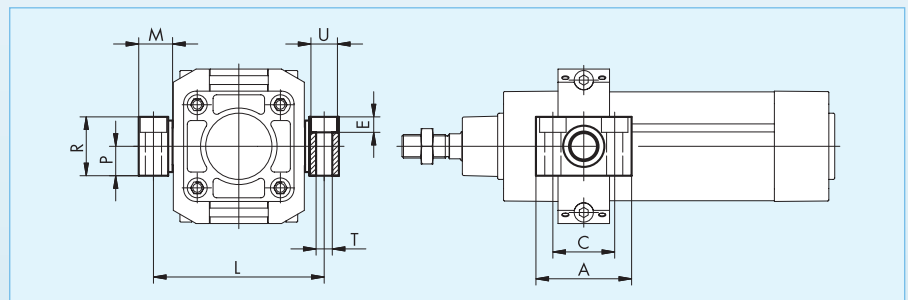
| Order code | Ø   | W  | ZF+ | R  | FP | TF  | UF  | ZB+ | AR  | MF |
|------------|-----|----|-----|----|----|-----|-----|-----|-----|----|
| 18.006.01  | 32  | 16 | 130 | 32 | 7  | 64  | 80  | 120 | 50  | 10 |
| 18.006.02  | 40  | 20 | 145 | 36 | 9  | 72  | 90  | 135 | 55  | 10 |
| 18.006.03  | 50  | 25 | 155 | 45 | 9  | 90  | 110 | 143 | 65  | 12 |
| 18.006.04  | 63  | 25 | 170 | 50 | 9  | 100 | 120 | 158 | 75  | 12 |
| 18.006.05  | 80  | 31 | 189 | 63 | 12 | 126 | 150 | 174 | 95  | 15 |
| 18.006.06  | 100 | 36 | 204 | 75 | 14 | 150 | 178 | 189 | 115 | 15 |

Swivel Bearing  
(adjustable)



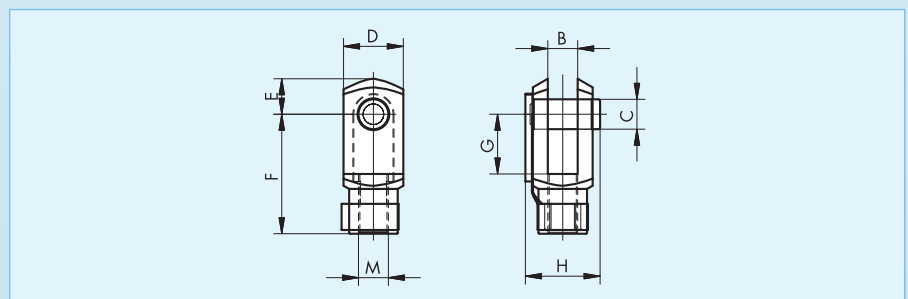
| Order code | Ø   | TD e° | TL h <sup>14</sup> | UM  | UV  | XVmin | XVmax+ | F [N/m] |
|------------|-----|-------|--------------------|-----|-----|-------|--------|---------|
| 21.1R.07   | 32  | 12    | 12                 | 74  | 65  | 66,5  | 79,5   | 2       |
| 21.2R.07   | 40  | 16    | 16                 | 95  | 75  | 71    | 94     | 2       |
| 21.3R.07   | 50  | 16    | 16                 | 107 | 85  | 80    | 100    | 2,5     |
| 21.4R.07   | 63  | 20    | 20                 | 130 | 105 | 91,5  | 103,5  | 2,5     |
| 21.5R.07   | 80  | 20    | 20                 | 150 | 130 | 101   | 118,5  | 5       |
| 21.6R.07   | 100 | 25    | 25                 | 182 | 145 | 113,5 | 126,5  | 5       |

Swivel Bearing Support  
(set of 2)



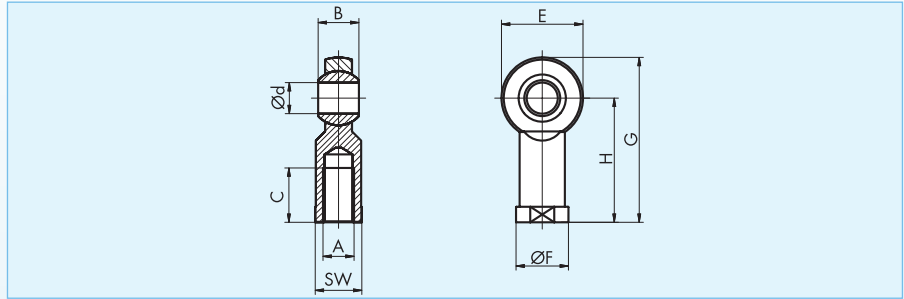
| Order code | Ø   | A  | C  | P  | R  | M    | L   | ØT | ØU | E    |
|------------|-----|----|----|----|----|------|-----|----|----|------|
| 20.007.11  | 32  | 46 | 32 | 15 | 30 | 18   | 71  | 7  | 11 | 6,5  |
| 20.007.12  | 40  | 55 | 36 | 18 | 36 | 21   | 87  | 9  | 15 | 8,5  |
| 20.007.12  | 50  | 55 | 36 | 18 | 36 | 21   | 99  | 9  | 15 | 9,5  |
| 20.007.14  | 63  | 65 | 42 | 20 | 40 | 23   | 116 | 11 | 18 | 10,5 |
| 20.007.14  | 80  | 65 | 42 | 20 | 40 | 23   | 136 | 11 | 18 | 10,5 |
| 20.007.16  | 100 | 75 | 50 | 25 | 14 | 28,5 | 164 | 13 | 20 | 12,5 |

Clevis  
(lockable pin included)



| Order code | Ø   | M        | B  | C  | D  | E  | F  | G  | H  |
|------------|-----|----------|----|----|----|----|----|----|----|
| 18.008.01  | 32  | M10x1,25 | 10 | 10 | 20 | 12 | 40 | 20 | 26 |
| 18.008.02  | 40  | M12x1,25 | 12 | 12 | 24 | 14 | 48 | 24 | 32 |
| 18.008.03  | 50  | M16x1,5  | 16 | 16 | 32 | 19 | 64 | 32 | 40 |
| 18.008.03  | 63  | M16x1,5  | 16 | 16 | 32 | 19 | 64 | 32 | 40 |
| 18.008.04  | 80  | M20x1,5  | 20 | 20 | 40 | 25 | 80 | 40 | 48 |
| 18.008.04  | 100 | M20x1,5  | 20 | 20 | 40 | 25 | 80 | 40 | 48 |

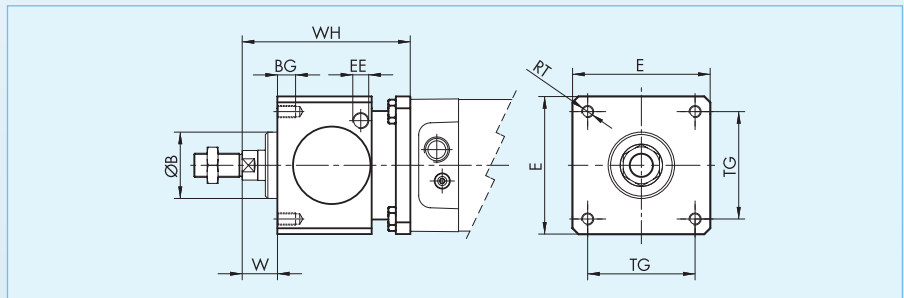
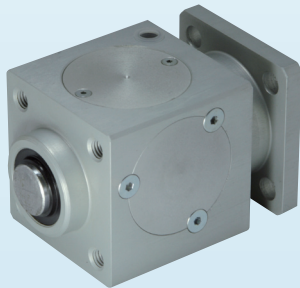
Rod end - spherical bearing



| Order code | Ø   | A        | B  | C  | d <sup>H7</sup> | E  | F  | G   | H  | SW |
|------------|-----|----------|----|----|-----------------|----|----|-----|----|----|
| 18.009.01  | 32  | M10x1,25 | 14 | 20 | 10              | 28 | 19 | 57  | 43 | 17 |
| 18.009.02  | 40  | M12x1,25 | 16 | 22 | 12              | 32 | 22 | 66  | 50 | 19 |
| 18.009.03  | 50  | M16x1,5  | 21 | 28 | 16              | 42 | 27 | 85  | 64 | 22 |
| 18.009.03  | 63  | M16x1,5  | 21 | 28 | 16              | 42 | 27 | 85  | 64 | 22 |
| 18.009.04  | 80  | M20x1,5  | 25 | 33 | 20              | 50 | 34 | 102 | 77 | 30 |
| 18.009.04  | 100 | M20x1,5  | 25 | 33 | 20              | 50 | 34 | 102 | 77 | 30 |

Piston rod lock device

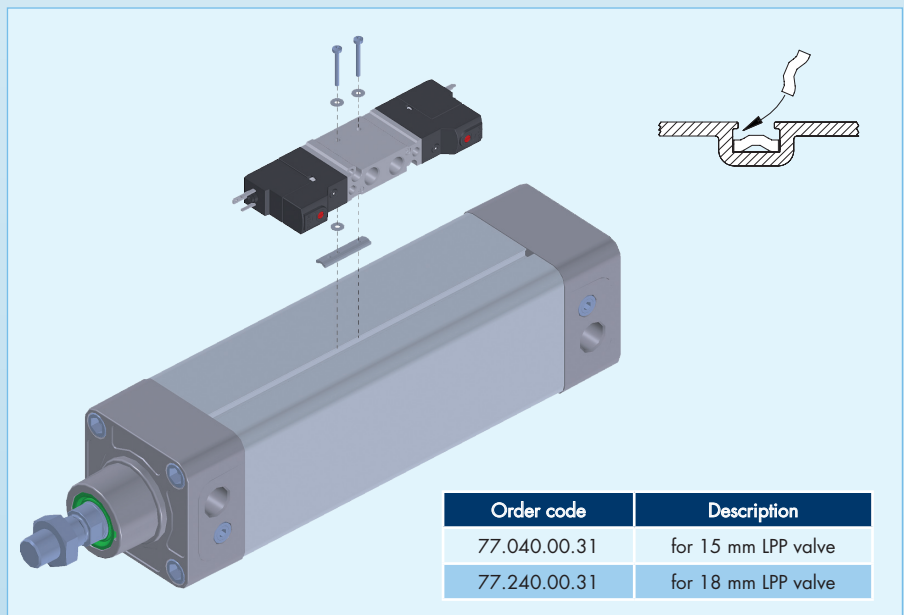
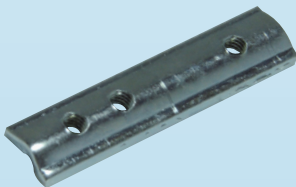
(operating pressure: 3 to 6 bar  
locking by friction with piston rod stopped  
Special length piston rod may be required)



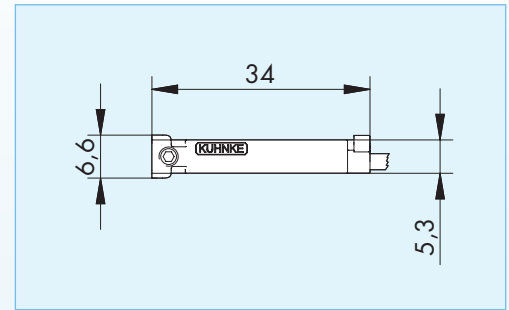
| Order code   | Ø   | B  | BG | E   | EE   | RT  | TG   | W  | WH  | F <sub>max</sub> [N] |
|--------------|-----|----|----|-----|------|-----|------|----|-----|----------------------|
| KBS.3001.032 | 32  | 30 | 8  | 47  | G1/8 | M6  | 32,5 | 26 | 86  | 790                  |
| KBS.3001.040 | 40  | 35 | 8  | 54  | G1/8 | M6  | 38   | 30 | 100 | 1240                 |
| KBS.3001.050 | 50  | 40 | 12 | 65  | G1/8 | M8  | 46,5 | 37 | 127 | 1930                 |
| KBS.3001.063 | 63  | 45 | 12 | 75  | G1/8 | M8  | 56,5 | 37 | 127 | 3060                 |
| KBS.3001.080 | 80  | 45 | 16 | 95  | G1/4 | M10 | 72   | 46 | 156 | 5400                 |
| KBS.3001.100 | 100 | 55 | 16 | 114 | G1/4 | M10 | 89   | 51 | 161 | 7700                 |

LPP valve mounting Bracket

(kit includes 10 brackets and mounting screws)



| Order code   | Description         |
|--------------|---------------------|
| 77.040.00.31 | for 15 mm LPP valve |
| 77.240.00.31 | for 18 mm LPP valve |



Position transmitter REED (2 pole)

Contact type: N.O.  
 Cable: 2 x 0,14 mm<sup>2</sup>  
 Switching capacity: max 6 W  
 Switching voltage: 5-50 V AC/DC  
 Switching current: max 200 mA  
 Voltage drop: 3 V  
 Switching time: 0,6 ms  
 Switching rate: max 400 Hz  
 Service life: 10<sup>7</sup> switchings, depending on the load  
 Ambient temperature range: -5°C ÷ +75°C  
 Protection class: IP67  
 Status indicator: LED  
 Housing material: plastic

| Order code | Description                 |
|------------|-----------------------------|
| 33.20.601  | with cable L = 2000 mm      |
| 33.20.681  | socket M8, cable L = 300 mm |

Position transmitter REED (3 pole)

Contact type: N.O.  
 Cable: 3 x 0,14 mm<sup>2</sup>  
 Switching capacity: max 6 W  
 Switching voltage: 5-30 V AC/DC  
 Switching current: max 500 mA  
 Voltage drop: 0,1 V  
 Switching time: 0,6 ms  
 Switching rate: max 400 Hz  
 Service life: 10<sup>7</sup> switchings, depending on the load  
 Ambient temperature range: -5°C ÷ +75°C  
 Protection class: IP67  
 Status indicator: LED  
 Housing material: plastic

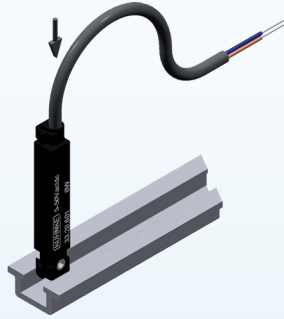
| Order code | Description                 |
|------------|-----------------------------|
| 33.20.501  | with cable L = 2000 mm      |
| 33.20.581  | socket M8, cable L = 300 mm |

Electronic Position transmitter

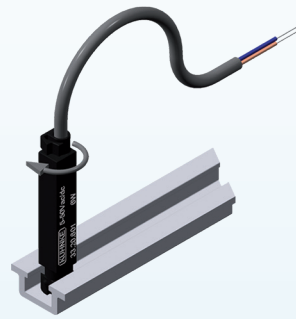
Contact Type: PNP (N.O.)  
 Cable: 3 x 0,14 mm<sup>2</sup>  
 Switching capacity: max 4 W  
 Switching voltage: 5-30 V DC  
 Switching current: max 200 mA  
 Voltage drop: 0,7 V  
 Switching time: 0,8 µs  
 Switching rate: max 1 kHz  
 Service life: 10<sup>11</sup> switchings, depending on the load  
 Ambient temperature range: -5°C ÷ +75°C  
 Protection class: IP67  
 Status indicator: LED  
 Housing material: plastic

| Order code | Description                 |
|------------|-----------------------------|
| 33.20.701  | with cable L = 2000 mm      |
| 33.20.781  | socket M8, cable L = 300 mm |

## Position transmitter assembly



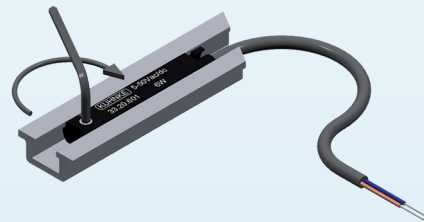
1. Insert the transmitter into the groove from the top.



2. Turn the transmitter 90° clockwise.

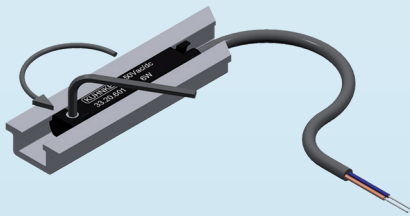


3. Lay the transmitter on the groove making sure that the locking tooth is well fixed.



4. Tighten the screw (max torque 0,3 Nm).

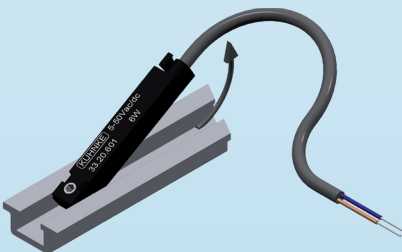
## Position transmitter disassembly



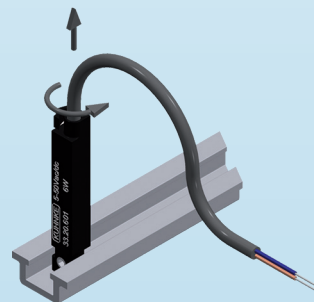
1. Loosen the screw.



2. Unlock the tooth using a screwdriver.

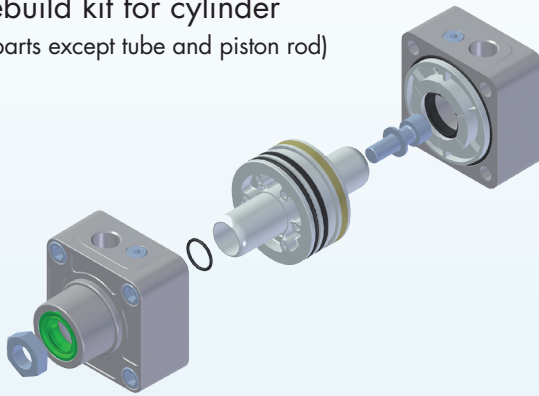


3. Lift the transmitter from the groove.



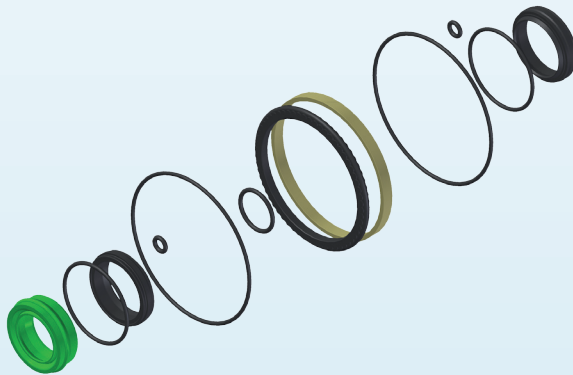
4. Turn the transmitter 90° anti-clockwise and lift out.

Complete rebuild kit for cylinder  
(kit includes all parts except tube and piston rod)



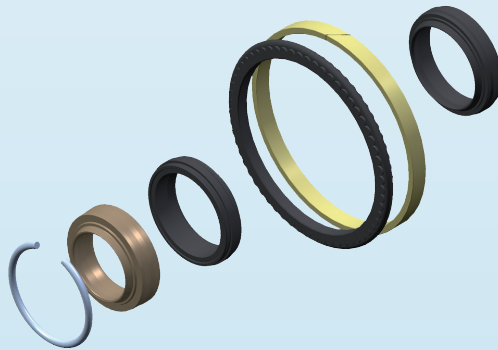
| Ø   | Order code |
|-----|------------|
| 32  | 21.1R.01   |
| 40  | 21.2R.01   |
| 50  | 21.3R.01   |
| 63  | 21.4R.01   |
| 80  | 21.5R.01   |
| 100 | 21.6R.01   |

Seal kit



| Ø   | Order code |
|-----|------------|
| 32  | 21.1R.11   |
| 40  | 21.2R.11   |
| 50  | 21.3R.11   |
| 63  | 21.4R.11   |
| 80  | 21.5R.11   |
| 100 | 21.6R.11   |

Viton® seal kit



| Ø   | Order code |
|-----|------------|
| 32  | 21.1R.12   |
| 40  | 21.2R.12   |
| 50  | 21.3R.12   |
| 63  | 21.4R.12   |
| 80  | 21.5R.12   |
| 100 | 21.6R.12   |

Rod seal kit

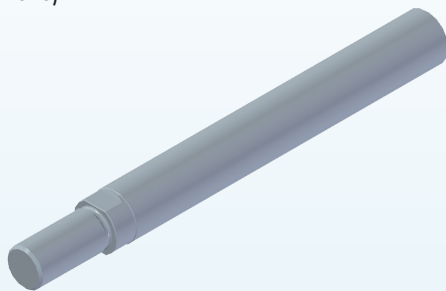


| Ø   | Order code         |          |
|-----|--------------------|----------|
|     | Polyurethane (std) | Viton®   |
| 32  | 21.1R.15           | 21.1R.16 |
| 40  | 21.2R.15           | 21.2R.16 |
| 50  | 21.3R.15           | 21.3R.16 |
| 63  | 21.4R.15           | 21.4R.16 |
| 80  | 21.5R.15           | 21.5R.16 |
| 100 | 21.6R.15           | 21.6R.16 |



## Piston rod

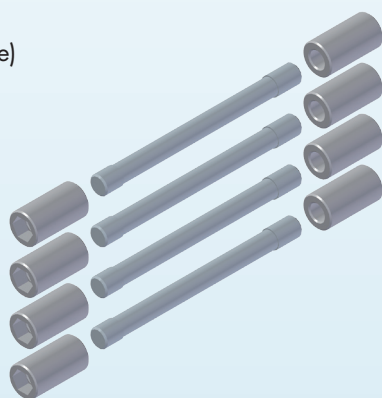
(xxxx = please add stroke)



| Ø   | Order code                |                          |
|-----|---------------------------|--------------------------|
|     | C45 chromium-plated steel | AISI 303 stainless steel |
| 32  | 21.1R.74.xxxx             | 21.1R.73.xxxx            |
| 40  | 21.2R.74.xxxx             | 21.2R.73.xxxx            |
| 50  | 21.3R.74.xxxx             | 21.3R.73.xxxx            |
| 63  | 21.4R.74.xxxx             | 21.4R.73.xxxx            |
| 80  | 21.5R.74.xxxx             | 21.5R.73.xxxx            |
| 100 | 21.6R.74.xxxx             | 21.6R.73.xxxx            |

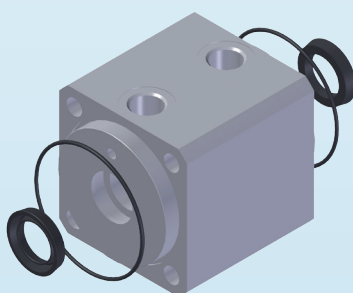
## Tie-rod kit

(xxxx = please add stroke)



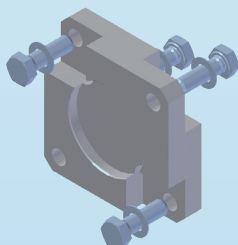
| Ø   | Order code    |
|-----|---------------|
| 32  | 21.1R.75.xxxx |
| 40  | 21.2R.75.xxxx |
| 50  | 21.3R.75.xxxx |
| 63  | 21.4R.75.xxxx |
| 80  | 21.5R.75.xxxx |
| 100 | 21.6R.75.xxxx |

## Tandem cover kit



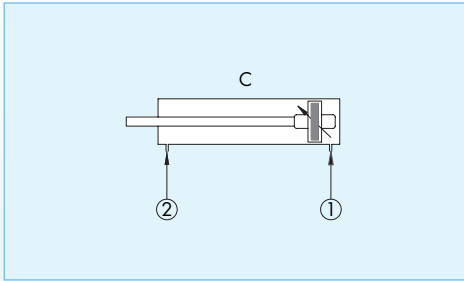
| Ø   | Order code |
|-----|------------|
| 32  | 21.1R.82   |
| 40  | 21.2R.82   |
| 50  | 21.3R.82   |
| 63  | 21.4R.82   |
| 80  | 21.5R.82   |
| 100 | 21.6R.82   |

## Back to back plate kit



| Ø   | Order code |
|-----|------------|
| 32  | 21.1R.83   |
| 40  | 21.2R.83   |
| 50  | 21.3R.83   |
| 63  | 21.4R.83   |
| 80  | 21.5R.83   |
| 100 | 21.6R.83   |

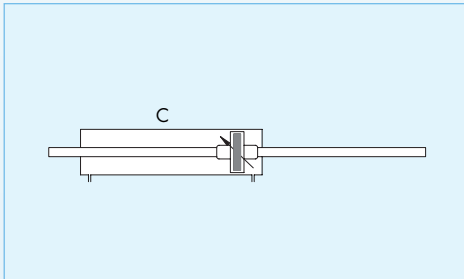
Version A



Double acting cylinder

This is the standard cylinder.  
Pressure in 1: rod out  
Pressure in 2: rod in

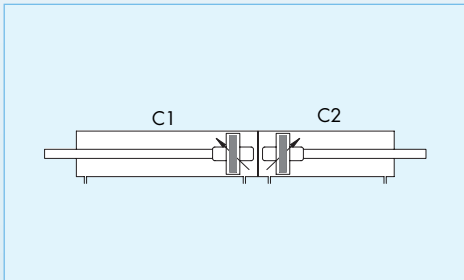
Version B



Through rod cylinder

This is a double acting cylinder with piston rod coming out from both end covers.  
Piston rod comes out from the opposite cover as regards the pressurized one.

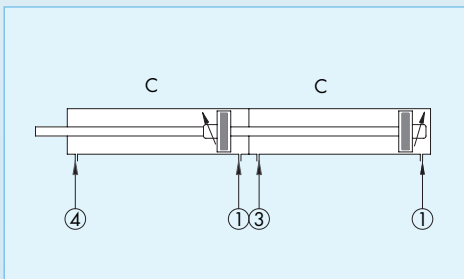
Version C



Back to back cylinder

Two standard double acting cylinders are joined together with a flange on rear covers.  
Both cylinders operate independent of each other, and they work as two standard cylinders.

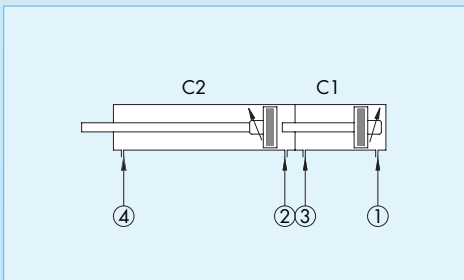
Version D



Tandem cylinder

This cylinder is used to double the force.  
Piston rod is one single piece passing through both cylinders (for this reason the strokes of the cylinders have to be exactly the same).  
Pressure in 1: pressurizing both cylinders from the rear covers (port 1), piston rod moves out.  
Piston Rod return: to have the rod retract, it is necessary to feed both cylinders (ports 3 and 4) or, if there is no load on rod return (load is applied only on the forward stroke), the rod can be returned by applying pressure only on one cylinder (3 or, in preference, 4).

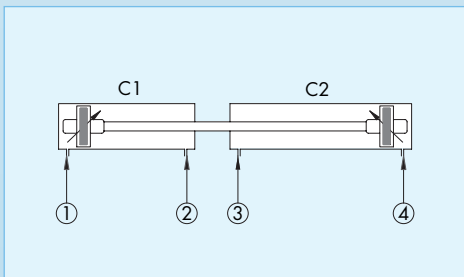
Version E



Two-strokes tandem cylinder

This is a tandem cylinder with two different piston rods (back piston rod "pushes" against the piston of the front cylinder) used to reach two sequential positions. The produced force is the one of a single cylinder.  
The stroke of the back cylinder (C1) must be less than the one of the front cylinder (C2).  
Pressure in 1: both piston rods run to the stroke of the rear cylinder (C1).  
Pressure in 2: the piston rod of the front cylinder will complete the remaining stroke (C2 less C1).  
Piston Rod return: to return the rod, pressurize the front of cylinder C2 (4).

Version F



Multi-position tandem

By coupling the piston rods of two cylinders with 2 different strokes (face-to-face) it is possible to reach up to three positions (we don't consider the rod in position, called zero setting, when both cylinders are pressurized in 2 and 3).  
Strokes are independent of each other.  
Pressure only in 1: cylinder runs to stroke C1 (Return setting: pressure in 2).  
Pressure only in 4: cylinder runs to stroke C2 (Return setting: pressure in 3).  
Pressure in 1 and 4 at the same time or sequential: cylinder runs to stroke C1 and C2.  
Zero setting: pressure in 2 and 3 at the same time or sequential.






Kuhnke Pneumatic Components spa  
Via R. Colpi, 38  
35010 Limena (PD)  
Italy


Phone +39 049 86 57 711  
Fax +39 049 88 41 571  
E-mail sales@kuhnkepneumatics.it  
Internet www.kuhnke.com

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