



# Cylinder Parts Product Range

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# INDEX

|         |   |  |         |   |  |
|---------|---|--|---------|---|--|
| ii      | ■ | <b>Introduction</b>                        | 63-70   | ■ | <b>Cushioning Cylinder Components</b>  |
| iii     | ■ | <b>Ordering</b>                            | 71-89   | ■ | <b>Weldable Attachments &amp; Associated Products</b>                          |
| v-vii   | ■ | <b>Technical Tables &amp; Information</b>  | 90-102  | ■ | <b>Burst Valves, Check Valves, Overcentre Valves &amp; Associated Products</b> |
| viii-ix | ■ | <b>Specified Tolerances</b>                | 103     | ■ | <b>Needle Valves</b>   |
| 01-10   | ■ | <b>Cylinders in Kit Form</b>               | 104-111 | ■ | <b>Hand Pumps Tank Mounted &amp; Stand Alone</b>                               |
| 11-13   | ■ | <b>Standard Glands</b>                     | 112-120 | ■ | <b>DU &amp; DX Bushes</b>  |
| 14-15   | ■ | <b>Standard Pistons</b>                    | 121     | ■ | <b>Hardened Steel Bushes</b>   |
| 16-17   | ■ | <b>Threaded Chromed Rods</b>               | 122-143 | ■ | <b>Ball Joint Ends</b>   |
| 18      | ■ | <b>Standard Threaded Pistons</b>           | 143     | ■ | <b>Imperial Ball Joint Ends</b>  |
| 19      | ■ | <b>Short Threaded Pistons</b>              | 144-155 | ■ | <b>Radial Ball Joint Ends</b>  |
| 20      | ■ | <b>High Speed Threaded Pistons</b>         | 156-158 | ■ | <b>Lower &amp; Top Link Ends</b>   |
| 21      | ■ | <b>Self Locking Threaded Pistons</b>       | 159-166 | ■ | <b>Associated Products</b>   |
| 22-23   | ■ | <b>Adhesive Range</b>                      | 167     | ■ | <b>Piston Composite Fitting Sleeves</b>  |
| 24      | ■ | <b>Unfinished Glands</b>                   | 168     | ■ | <b>Antiluce Fastener and Linch Pins</b>  |
| 25-29   | ■ | <b>Displacement Cylinder Components</b>    | 169     | ■ | <b>Spanners</b>  |
| 30-34   | ■ | <b>Standard End Caps for Cylinders</b>     | 170     | ■ | <b>Couplings</b>   |
| 35-39   | ■ | <b>Standard Threaded Cylinder Tubes</b>    | 171     | ■ | <b>Trailer Brake Rams</b>  |
| 40-44   | ■ | <b>Standard Chromed Rods</b>               | 172     | ■ | <b>Grease Nipples</b>  |
| 45      | ■ | <b>Lock Nuts</b>                           | 173-174 | ■ | <b>Weldable Flange Adaptors</b>  |
| 46-48   | ■ | <b>Imperial Cylinder Components</b>        | 175     | ■ | <b>Cylinder Spec Sheet</b>   |
| 49-50   | ■ | <b>Large Cylinder Components</b>           | 176     | ■ | <b>Application for Credit Form</b>   |
| 51-54   | ■ | <b>Heavy Duty Cylinder Components</b>      |         |   |  |
| 55-62   | ■ | <b>Stainless Steel Cylinder Components</b> |         |   |  |

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**Issue 3**

## INTRODUCTION

**FPE Seals is a worldwide distributor and manufacturer of polymeric seals and hydraulic cylinder parts, for all engineered applications.**

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#### How to open an account with us

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  - 2** We will notify you when your account has been opened
- 

#### Non-catalogue items

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FPE Seals is ISO 9001 2015 and ISO 14001 registered, demonstrating our commitment to maintaining effective and efficient quality policies.

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The metal grades quoted in this catalogue are given as a guide and may be subject to change at FPE Seals discretion. Please visit our website for details of our full terms and conditions including, information regarding warranty, order cancellation, return and refunds.

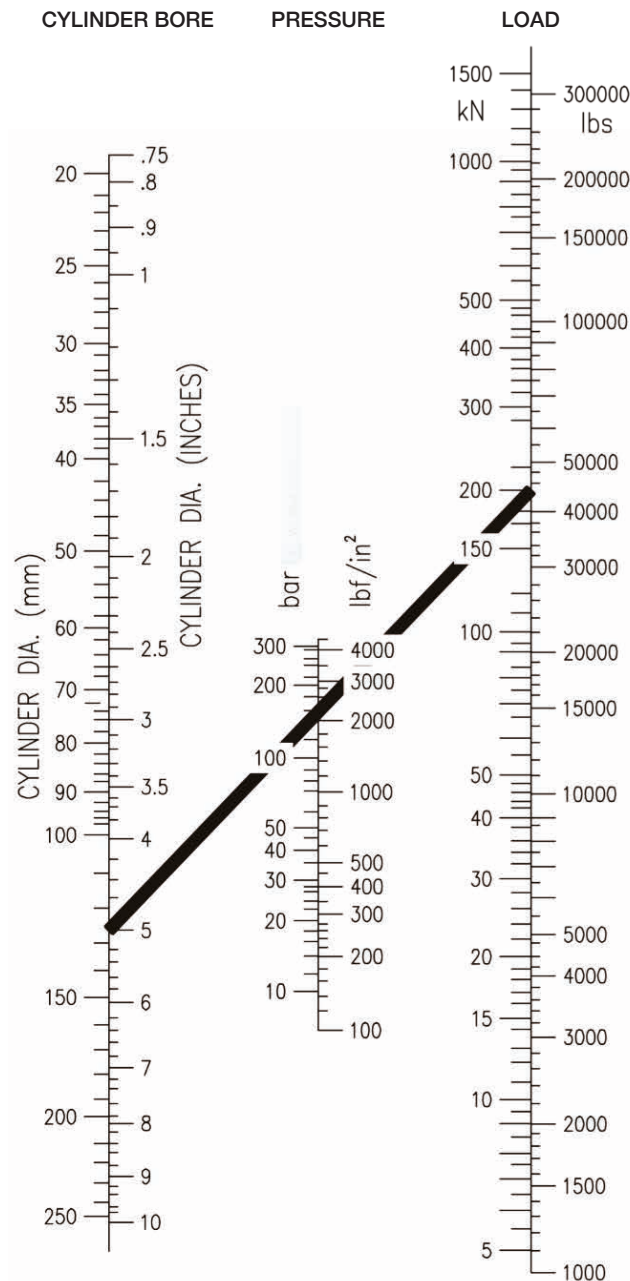
<https://www.fpeseals.com/terms-conditions>



# TECHNICAL TABLES

To calculate the load on a cylinder, draw an extension line from your required cylinder bore through your working pressure, Where this line crosses the load scale. It will give you the loading in both LBS and KN.

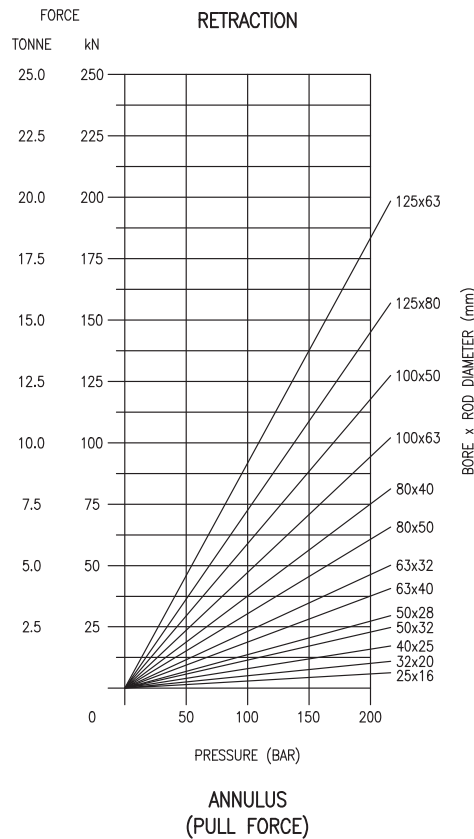
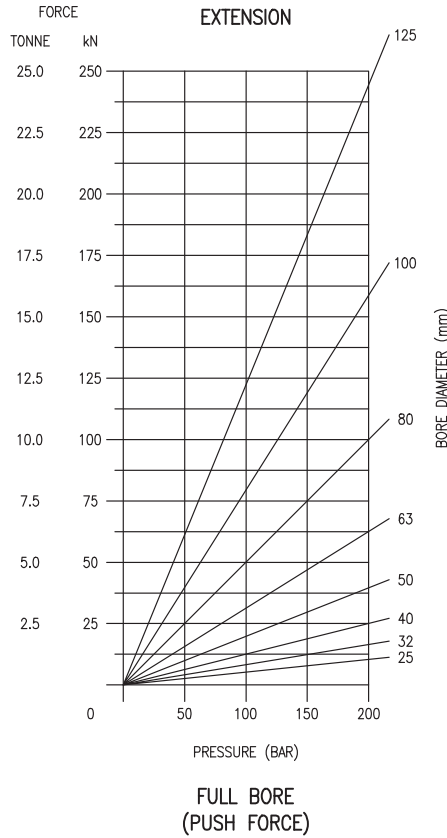
In the example shown the bore is 125mm, pressure 140bar,  
The resulting load is 45,000 lbs ÷ 2.240 = 20 tons



All measurements are given as a guide and therefore should be checked.

# TECHNICAL TABLES

The following graphs show the output forces given by the full bore & annular side of each cylinder according to the pressure available.



All measurements are given as a guide and therefore should be checked.

## TECHNICAL INFORMATION

To calculate the volume of a cylinder, you need to know the radius of the circular cross section of the cylinder – this is the measurement from the centre of the circle, to the outer-edge.

To calculate the volume of the full bore;

$$\text{Volume} = \pi \times \text{radius}^2 \text{ (cm)} \times \text{stroke (cm)}$$

Example ST63300

$$\text{Radius} = 6.3 \div 2 = 3.15 \text{ cm}$$

$$\text{Stroke} = 30.0 \text{ cm}$$

$$\text{Volume} = \pi \times (3.15)^2 \times 30$$

$$\text{Volume} = 3.142 \times 9.92 \times 30$$

$$= 935.05 \text{ cm}^3$$

Or 0.935 litre.

To calculate the volume of the annular side work out the volume of the rod and subtract from the volume of the cylinder;

$$\text{Radius} = 4.0 \div 2 = 2.0 \text{ cm}$$

$$\text{Stroke} = 30.0 \text{ cm}$$

$$\text{Volume} = \pi \times (2.0)^2 \times 30$$

$$= 3.142 \times 4.0 \times 30$$

$$= 377.04 \text{ cm}^3$$

Or 0.377 litre

$$\text{Volume on the Annular side} = 0.935 - 0.377$$

$$= 0.558 \text{ litre}$$



# SPECIFIED TOLERANCES

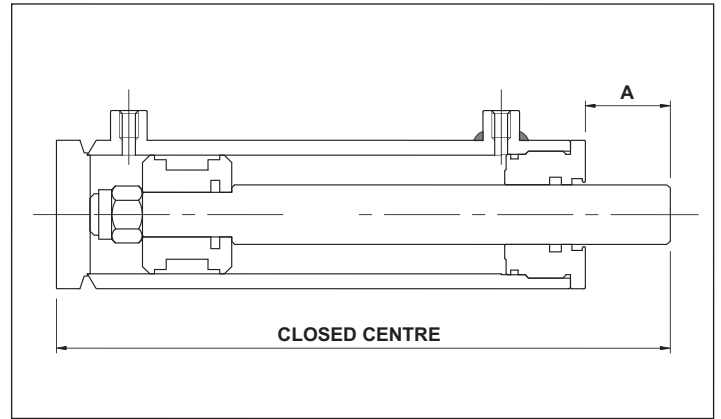
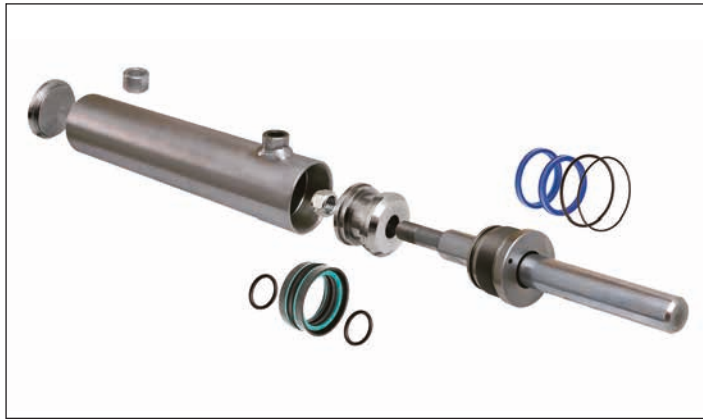
| NOMINAL SIZES<br>mm |     | SHAFTS (OUTSIDE DIAMETER)<br>UNITS 0.001mm |      |      |      |      |      |      |       | BORES (INSIDE DIAMETER)<br>UNITS 0.001mm |      |      |      |       |
|---------------------|-----|--|------|------|------|------|------|------|-------|--|------|------|------|-------|
| OVER                | TO  | f8   | f9   | h8   | h9   | h10  | h11  | js10 | js11  | H8                                       | H9   | H10  | H11  | js11  |
| 1.6                 | 3   | -6   | -6   | 0    | 0    | 0    | 0    | +20  | +30   | +14                                      | +25  | +40  | +60  | +30   |
|                     |     | -20  | -31  | -14  | -25  | -40  | -60  | -20  | -30   | 0  | 0    | 0    | 0    | -30   |
| 3                   | 6   | -10  | -10  | 0    | 0    | 0    | 0    | +24  | +37.5 | +18                                      | +30  | +48  | +75  | +37.5 |
|                     |     | -28  | -40  | -18  | -30  | -48  | -75  | -24  | -37.5 | 0  | 0    | 0    | 0    | -37.5 |
| 6                   | 10  | -13  | -13  | 0    | 0    | 0    | 0    | +29  | +45   | +22                                      | +36  | +58  | +90  | +45   |
|                     |     | -35  | -49  | -22  | -36  | -58  | -90  | -29  | -45   | 0  | 0    | 0    | 0    | -45   |
| 10                  | 18  | -16  | -16  | 0    | 0    | 0    | 0    | -35  | +55   | +27                                      | +43  | +70  | +110 | +55   |
|                     |     | -43  | -59  | -27  | -43  | -70  | -110 | -35  | -55   | 0  | 0    | 0    | 0    | -55   |
| 18                  | 30  | -20  | -20  | 0    | 0    | 0    | 0    | +42  | +65   | +33                                      | +52  | +84  | +130 | +65   |
|                     |     | -53  | -72  | -33  | -52  | -84  | -130 | -42  | -65   | 0  | 0    | 0    | 0    | -65   |
| 30                  | 50  | -25  | -25  | 0    | 0    | 0    | 0    | +50  | +80   | +39                                      | +62  | +100 | +160 | +80   |
|                     |     | -64  | -87  | -39  | -62  | -100 | -160 | -50  | -80   | 0  | 0    | 0    | 0    | -80   |
| 50                  | 80  | -30  | -30  | 0    | 0    | 0    | 0    | +60  | +95   | +46                                      | +74  | +120 | +190 | +95   |
|                     |     | -76  | -104 | -46  | -74  | -120 | -190 | -60  | -95   | 0  | 0    | 0    | 0    | -95   |
| 80                  | 120 | -36  | -36  | 0    | 0    | 0    | 0    | +70  | +110  | +54                                      | +87  | +140 | +220 | +110  |
|                     |     | -90  | -123 | -54  | -87  | -140 | -220 | -70  | -110  | 0  | 0    | 0    | 0    | -110  |
| 120                 | 180 | -43  | -43  | 0    | 0    | 0    | 0    | +80  | +125  | +63                                      | +100 | +160 | +250 | +125  |
|                     |     | -106                                       | -143 | -63  | -100 | -160 | -250 | -80  | -125  | 0  | 0    | 0    | 0    | -125  |
| 180                 | 250 | -50  | -50  | 0    | 0    | 0    | 0    | +92  | +145  | +72                                      | +115 | +185 | +290 | +145  |
|                     |     | -122                                       | -165 | -72  | -115 | -185 | -290 | -92  | -145  | 0  | 0    | 0    | 0    | -145  |
| 250                 | 315 | -56  | -56  | 0    | 0    | 0    | 0    | +105 | +160  | +81                                      | +130 | +210 | +320 | +160  |
|                     |     | -137                                       | -186 | -81  | -130 | -210 | -320 | -105 | -160  | 0  | 0    | 0    | 0    | -160  |
| 315                 | 400 | -62  | -62  | 0    | 0    | 0    | 0    | +115 | +180  | +89                                      | +140 | +230 | +360 | +180  |
|                     |     | -151                                       | -202 | -89  | -140 | -230 | -360 | -115 | -180  | 0  | 0    | 0    | 0    | -180  |
| 400                 | 500 | -68  | -68  | 0    | 0    | 0    | 0    | +125 | +200  | +97                                      | +155 | +250 | +400 | +200  |
|                     |     | -165                                       | -223 | -97  | -155 | -250 | -400 | -125 | -200  | 0  | 0    | 0    | 0    | -200  |
| 500                 | 630 | -76  | -76  | 0    | 0    | 0    | 0    | +140 | +220  | +110                                     | +175 | +280 | +440 | +220  |
|                     |     | -186                                       | -251 | -110 | -175 | -280 | -440 | -140 | -220  | 0  | 0    | 0    | 0    | -220  |
| 630                 | 800 | -80  | -80  | 0    | 0    | 0    | 0    | +160 | +250  | +125                                     | +200 | +320 | +500 | +250  |
|                     |     | -205                                       | -280 | -125 | -200 | -320 | -500 | 160  | -250  | 0  | 0    | 0    | 0    | -250  |

# SPECIFIED TOLERANCES

| NOMINAL SIZES<br>inch |       | SHAFTS (OUTSIDE DIAMETER)<br>UNITS 0.001 INCH |       |      |      |       |       |      |      | BORES (INSIDE DIAMETER)<br>UNITS 0.001 INCH |      |       |       |      |
|-----------------------|-------|---|-------|------|------|-------|-------|------|------|---|------|-------|-------|------|
| OVER                  | TO    | f8  | f9    | h8   | h9   | h10   | h11   | js10 | js11 | H8  | H9   | H10   | H11   | js11 |
| 0.04                  | 0.12  | -0.3  | -0.3  | 0    | 0    | 0     | 0     | +0.8 | +1.3 | +0.6  | +1.0 | +1.6  | +2.5  | +1.3 |
|                       |       | -0.9  | -1.2  | -0.6 | -1.0 | -1.6  | -2.5  | -0.8 | -1.3 | 0   | 0    | 0     | 0     | -1.3 |
| 0.12                  | 0.24  | -0.4  | -0.4  | 0    | 0    | 0     | 0     | +0.9 | +1.5 | +0.7  | +1.2 | +1.8  | +3.0  | +1.5 |
|                       |       | -1.1  | -1.6  | -0.7 | -1.2 | -1.8  | -3.0  | -0.9 | -1.5 | 0   | 0    | 0     | 0     | -1.5 |
| 0.24                  | 0.40  | -0.5  | -0.5  | 0    | 0    | 0     | 0     | +1.1 | +1.8 | +0.9  | +1.4 | +2.2  | +3.5  | +1.8 |
|                       |       | -1.4  | -1.9  | -0.9 | -1.4 | -2.2  | -3.5  | -1.1 | -1.8 | 0   | 0    | 0     | 0     | -1.8 |
| 0.40                  | 0.71  | -0.6  | -0.6  | 0    | 0    | 0     | 0     | -1.4 | +2.0 | +1.0  | +1.6 | +2.8  | +4.0  | +2.0 |
|                       |       | -1.6  | -2.3  | -1.0 | -1.6 | -2.8  | -4.0  | -1.4 | -2.0 | 0   | 0    | 0     | 0     | -2.0 |
| 0.71                  | 1.19  | -0.8  | -0.8  | 0    | 0    | 0     | 0     | +1.8 | +2.5 | +1.2  | +2.0 | +3.5  | +5.0  | +2.5 |
|                       |       | -2.0  | -2.8  | -1.2 | -2.0 | -3.5  | -5.0  | -1.8 | -2.5 | 0   | 0    | 0     | 0     | -2.5 |
| 1.19                  | 1.97  | -1.0  | -1.0  | 0    | 0    | 0     | 0     | +2.0 | +3.0 | +1.6  | +2.5 | +4.0  | +6.0  | +3.0 |
|                       |       | -2.6  | -3.4  | -1.6 | -2.5 | -4.0  | -6.0  | -2.0 | -3.0 | 0   | 0    | 0     | 0     | -3.0 |
| 1.97                  | 3.15  | -1.2  | -1.2  | 0    | 0    | 0     | 0     | +2.3 | +3.5 | +1.8  | +3.0 | +4.5  | +7.0  | +3.5 |
|                       |       | -3.0  | -4.1  | -1.8 | -3.0 | -4.5  | -7.0  | -2.3 | -3.5 | 0   | 0    | 0     | 0     | -3.5 |
| 3.15                  | 4.73  | -1.4  | -1.4  | 0    | 0    | 0     | 0     | +2.5 | +4.5 | +2.2  | +3.5 | +5.0  | +9.0  | +4.5 |
|                       |       | -3.6  | -4.8  | -2.2 | -3.5 | -5.0  | -9.0  | -2.5 | -4.5 | 0   | 0    | 0     | 0     | -4.5 |
| 4.73                  | 7.09  | -1.6  | -1.6  | 0    | 0    | 0     | 0     | +3.0 | +5.0 | +2.5  | +4.0 | +6.0  | +10.0 | +5.0 |
|                       |       | -4.1  | -5.6  | -2.5 | -4.0 | -6.0  | -10.0 | -3.0 | -5.0 | 0   | 0    | 0     | 0     | -5.0 |
| 7.09                  | 9.85  | -2.0  | -2.0  | 0    | 0    | 0     | 0     | +3.5 | +6.0 | +2.8  | +4.5 | +7.0  | +12.0 | +6.0 |
|                       |       | -4.8  | -6.5  | -2.8 | -4.5 | -7.0  | -12.0 | -3.5 | -6.0 | 0   | 0    | 0     | 0     | -6.0 |
| 9.85                  | 12.41 | -2.2  | -2.2  | 0    | 0    | 0     | 0     | +4.0 | +6.0 | +3.0  | +5.0 | +8.0  | +13.0 | +6.5 |
|                       |       | -5.2  | -7.3  | -3.0 | -5.0 | -8.0  | -12.0 | -4.0 | -6.0 | 0   | 0    | 0     | 0     | -6.5 |
| 12.41                 | 15.75 | -2.5  | -2.5  | 0    | 0    | 0     | 0     | +4.5 | +7.0 | +3.5  | +6.0 | +9.0  | +14.0 | +7.0 |
|                       |       | -6.0  | -8.0  | -3.5 | -6.0 | -9.0  | -14.0 | -4.5 | -7.0 | 0   | 0    | 0     | 0     | -7.0 |
| 15.75                 | 19.69 | -2.8  | -2.8  | 0    | 0    | 0     | 0     | +5.0 | +8.0 | +4.0  | +6.0 | +10.0 | +16.0 | +8.0 |
|                       |       | -6.5  | -8.8  | -4.0 | -6.0 | -10.0 | -16.0 | -5.0 | -8.0 | 0   | 0    | 0     | 0     | -8.0 |
| 19.69                 | 24.80 | -3.0  | -3.0  | 0    | 0    | 0     | 0     | +5.5 | +8.7 | +4.3  | +6.9 | +11.0 | +17.3 | +8.7 |
|                       |       | -7.0  | -9.9  | -4.3 | -6.9 | -11.0 | -17.3 | -5.5 | -8.7 | 0   | 0    | 0     | 0     | -8.7 |
| 24.80                 | 31.49 | -3.1  | -3.1  | 0    | 0    | 0     | 0     | +6.3 | +9.8 | +4.9  | +7.9 | +12.6 | +19.7 | +9.8 |
|                       |       | -8.1  | -11.0 | -4.9 | -7.9 | -12.6 | -19.7 | -6.3 | -9.8 | 0   | 0    | 0     | 0     | -9.8 |

## COMPLETE CYLINDERS IN KIT FORM

Our cylinder kits comprise all the items needed to construct a cylinder, including seals. However if you require rod eyes or weldable attachments please consult the relevant pages of this catalogue.

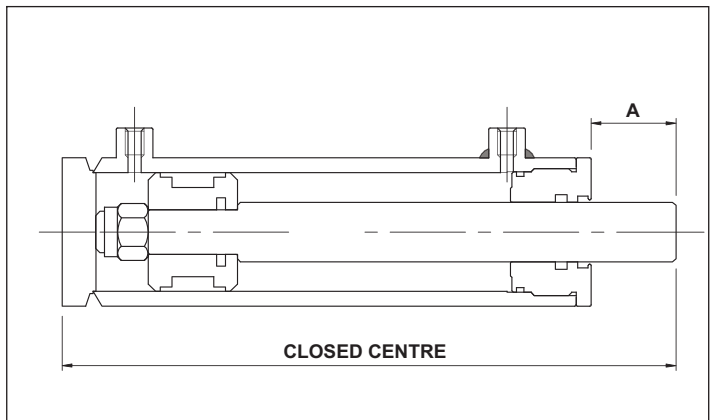
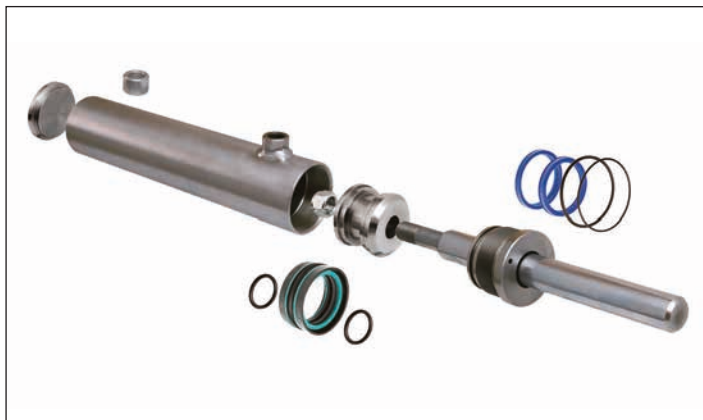


|  |                    |                     |                |              |  |
|--|--------------------|---------------------|----------------|--------------|--|
|  | CYLINDER KIT<br>CK | CYLINDER BORE<br>25 | ROD SIZE<br>16 | STROKE<br>90 |  |
|--|--------------------|---------------------|----------------|--------------|--|

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A   |
|-------------|---------------|--------------|--------|----------------|--------------|-----|
| CK251690    | 25            | 16           | 90     | 317            | 407          | 149 |
| CK2516100*  | 25            | 16           | 100    | 307            | 407          | 139 |
| CK2516190   | 25            | 16           | 190    | 317            | 507          | 49  |
| CK2516200*  | 25            | 16           | 200    | 307            | 507          | 39  |
| CK2516290   | 25            | 16           | 290    | 417            | 707          | 49  |
| CK2516300*  | 25            | 16           | 300    | 407            | 707          | 39  |
| CK2516490   | 25            | 16           | 490    | 617            | 1107         | 49  |
| CK2516500*  | 25            | 16           | 500    | 607            | 1107         | 39  |
| CK3016150   | 30            | 16           | 150    | 257            | 407          | 23  |
| CK3016300   | 30            | 16           | 300    | 407            | 707          | 23  |
| CK3016500   | 30            | 16           | 500    | 607            | 1107         | 23  |
| CK3016800   | 30            | 16           | 800    | 907            | 1707         | 23  |
| CK30161000  | 30            | 16           | 1000   | 1107           | 2107         | 23  |
| CK3220150   | 32            | 20           | 150    | 278            | 428          | 29  |
| CK3220200   | 32            | 20           | 200    | 328            | 528          | 29  |
| CK3220250   | 32            | 20           | 250    | 378            | 628          | 29  |
| CK3220300   | 32            | 20           | 300    | 428            | 728          | 29  |
| CK3220400   | 32            | 20           | 400    | 528            | 928          | 29  |
| CK3220500   | 32            | 20           | 500    | 628            | 1128         | 29  |
| CK3220600   | 32            | 20           | 600    | 728            | 1328         | 29  |
| CK4020100   | 40            | 20           | 100    | 230            | 330          | 22  |
| CK4020150   | 40            | 20           | 150    | 280            | 430          | 22  |
| CK4020200   | 40            | 20           | 200    | 330            | 530          | 22  |
| CK4020250   | 40            | 20           | 250    | 380            | 630          | 22  |
| CK4020300   | 40            | 20           | 300    | 430            | 730          | 22  |
| CK4020400   | 40            | 20           | 400    | 530            | 930          | 22  |
| CK4020500   | 40            | 20           | 500    | 630            | 1130         | 22  |
| CK4020600   | 40            | 20           | 600    | 730            | 1330         | 22  |
| CK4020800   | 40            | 20           | 800    | 930            | 1730         | 22  |
| CK40201000  | 40            | 20           | 1000   | 1130           | 2130         | 22  |
| CK40201500  | 40            | 20           | 1500   | 1630           | 3130         | 22  |
| CK4022200   | 40            | 22           | 200    | 361            | 561          | 53  |
| CK4022300   | 40            | 22           | 300    | 461            | 761          | 53  |
| CK4022500   | 40            | 22           | 500    | 661            | 1161         | 53  |
| CK4022600   | 40            | 22           | 600    | 761            | 1361         | 53  |

\*10mm TO BE CUT FROM THE THREADED END

## COMPLETE CYLINDERS IN KIT FORM

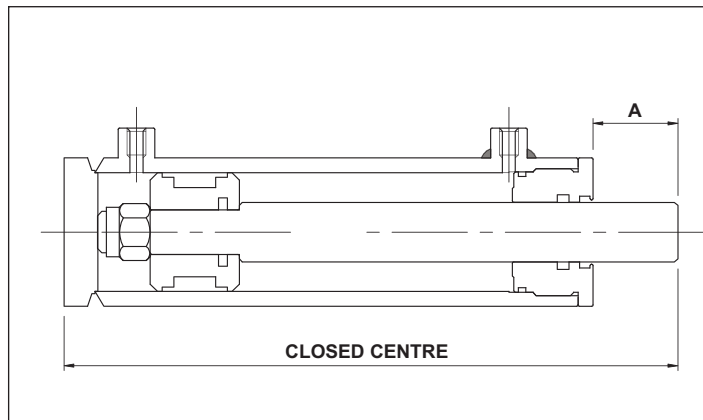
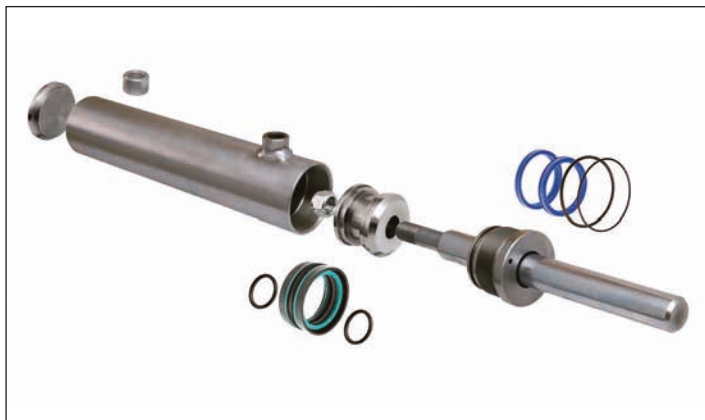


CYLINDER KIT      CYLINDER BORE      ROD SIZE      STROKE  
 CK                      32                      20                      150

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A   |
|-------------|---------------|--------------|--------|----------------|--------------|-----|
| CK4025150   | 40            | 25           | 150    | 280            | 430          | 22  |
| CK4025200   | 40            | 25           | 200    | 330            | 530          | 22  |
| CK4025250   | 40            | 25           | 250    | 380            | 630          | 22  |
| CK4025300   | 40            | 25           | 300    | 430            | 730          | 22  |
| CK4025400   | 40            | 25           | 400    | 530            | 930          | 22  |
| CK4025500   | 40            | 25           | 500    | 630            | 1130         | 22  |
| CK4025600   | 40            | 25           | 600    | 730            | 1330         | 22  |
| CK4025800   | 40            | 25           | 800    | 930            | 1730         | 22  |
| CK40251000  | 40            | 25           | 1000   | 1130           | 2130         | 22  |
| CK40251500  | 40            | 25           | 1500   | 1630           | 3130         | 22  |
| CK4028200   | 40            | 28           | 200    | 361            | 561          | 53  |
| CK4028300   | 40            | 28           | 300    | 461            | 761          | 53  |
| CK4028500   | 40            | 28           | 500    | 661            | 1161         | 53  |
| CK4028600   | 40            | 28           | 600    | 761            | 1361         | 53  |
| CK4520250   | 45            | 20           | 250    | 380            | 630          | 22  |
| CK4520300   | 45            | 20           | 300    | 430            | 730          | 22  |
| CK4520500   | 45            | 20           | 500    | 630            | 1130         | 22  |
| CK4520600   | 45            | 20           | 600    | 730            | 1330         | 22  |
| CK4520800   | 45            | 20           | 800    | 930            | 1730         | 22  |
| CK4522200   | 45            | 22           | 200    | 361            | 561          | 53  |
| CK4522250** | 45            | 22           | 250    | 461            | 711          | 103 |
| CK4522300   | 45            | 22           | 300    | 461            | 761          | 53  |
| CK4522500   | 45            | 22           | 500    | 661            | 1161         | 53  |
| CK4522600   | 45            | 22           | 600    | 761            | 1361         | 53  |
| CK4525250   | 45            | 25           | 250    | 380            | 630          | 22  |
| CK4525300   | 45            | 25           | 300    | 430            | 730          | 22  |
| CK4525500   | 45            | 25           | 500    | 630            | 1130         | 22  |
| CK4525600   | 45            | 25           | 600    | 730            | 1330         | 22  |
| CK4525800   | 45            | 25           | 800    | 930            | 1730         | 22  |
| CK5020157   | 50            | 20           | 157    | 280            | 437          | 12  |
| CK5020207   | 50            | 20           | 207    | 330            | 537          | 12  |
| CK5020257   | 50            | 20           | 257    | 380            | 637          | 12  |
| CK5020307   | 50            | 20           | 307    | 430            | 737          | 12  |
| CK5020407   | 50            | 20           | 407    | 530            | 937          | 12  |
| CK5020507   | 50            | 20           | 507    | 630            | 1137         | 12  |
| CK5020607   | 50            | 20           | 607    | 730            | 1337         | 12  |
| CK5020807   | 50            | 20           | 807    | 930            | 1737         | 12  |
| CK50201007  | 50            | 20           | 1007   | 1130           | 2137         | 12  |
| CK50201507  | 50            | 20           | 1507   | 1630           | 3137         | 12  |
| CK5025150   | 50            | 25           | 150    | 290            | 440          | 22  |

\*\* TUBE TO BE CUT TO LENGTH

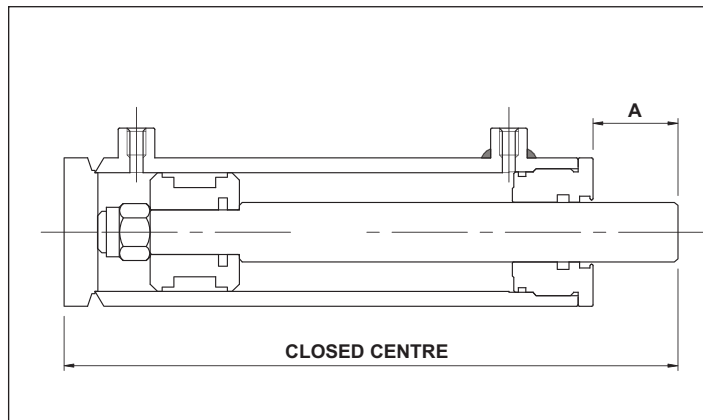
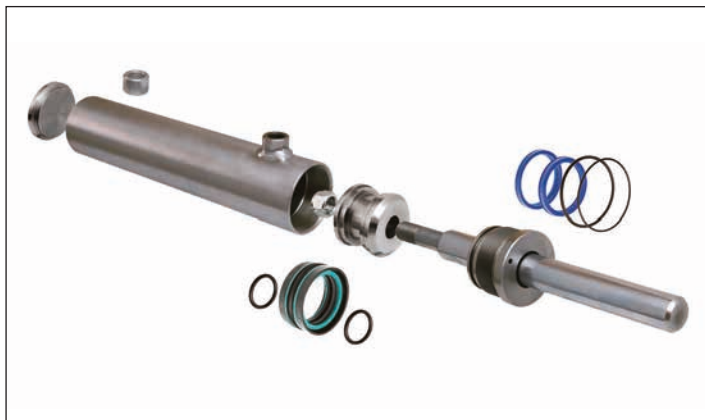
## COMPLETE CYLINDERS IN KIT FORM



CYLINDER KIT CK  
 CYLINDER BORE 50  
 ROD SIZE 20  
 STROKE 407

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|-------------|---------------|--------------|--------|----------------|--------------|----|
| CK5025200   | 50            | 25           | 200    | 340            | 540          | 22 |
| CK5025250   | 50            | 25           | 250    | 390            | 640          | 22 |
| CK5025300   | 50            | 25           | 300    | 440            | 740          | 22 |
| CK5025400   | 50            | 25           | 400    | 540            | 940          | 22 |
| CK5025500   | 50            | 25           | 500    | 640            | 1140         | 22 |
| CK5025600   | 50            | 25           | 600    | 740            | 1340         | 22 |
| CK5025800   | 50            | 25           | 800    | 940            | 1740         | 22 |
| CK50251000  | 50            | 25           | 1000   | 1140           | 2140         | 22 |
| CK50251500  | 50            | 25           | 1500   | 1640           | 3140         | 22 |
| CK5028207   | 50            | 28           | 207    | 361            | 568          | 43 |
| CK5028307   | 50            | 28           | 307    | 461            | 768          | 43 |
| CK5028507   | 50            | 28           | 507    | 661            | 1168         | 43 |
| CK5028607   | 50            | 28           | 607    | 761            | 1368         | 43 |
| CK5030150   | 50            | 30           | 150    | 290            | 440          | 22 |
| CK5030200   | 50            | 30           | 200    | 340            | 540          | 22 |
| CK5030250   | 50            | 30           | 250    | 390            | 640          | 22 |
| CK5030300   | 50            | 30           | 300    | 440            | 740          | 22 |
| CK5030400   | 50            | 30           | 400    | 540            | 940          | 22 |
| CK5030500   | 50            | 30           | 500    | 640            | 1140         | 22 |
| CK5030600   | 50            | 30           | 600    | 740            | 1340         | 22 |
| CK5030800   | 50            | 30           | 800    | 940            | 1740         | 22 |
| CK50301000  | 50            | 30           | 1000   | 1140           | 2140         | 22 |
| CK50301500  | 50            | 30           | 1500   | 1640           | 3140         | 22 |
| CK5032200   | 50            | 32           | 200    | 375            | 575          | 57 |
| CK5032300   | 50            | 32           | 300    | 475            | 775          | 57 |
| CK5032500   | 50            | 32           | 500    | 675            | 1175         | 57 |
| CK5032600   | 50            | 32           | 600    | 775            | 1375         | 57 |
| CK5525260   | 50            | 25           | 260    | 392            | 652          | 12 |
| CK5525310   | 50            | 25           | 310    | 442            | 752          | 12 |
| CK5525510   | 50            | 25           | 510    | 642            | 1152         | 12 |
| CK5525610   | 50            | 25           | 610    | 742            | 1352         | 12 |
| CK5525810   | 50            | 25           | 810    | 942            | 1752         | 12 |
| CK5530250   | 55            | 30           | 250    | 410            | 660          | 30 |
| CK5530300   | 55            | 30           | 300    | 460            | 760          | 30 |
| CK5530500   | 55            | 30           | 500    | 660            | 1160         | 30 |
| CK5530600   | 55            | 30           | 600    | 760            | 1360         | 30 |
| CK5530800   | 55            | 30           | 800    | 960            | 1760         | 30 |
| CK5535250   | 55            | 35           | 250    | 410            | 660          | 30 |
| CK5535300   | 55            | 35           | 300    | 460            | 760          | 30 |
| CK5535500   | 55            | 35           | 500    | 660            | 1160         | 30 |

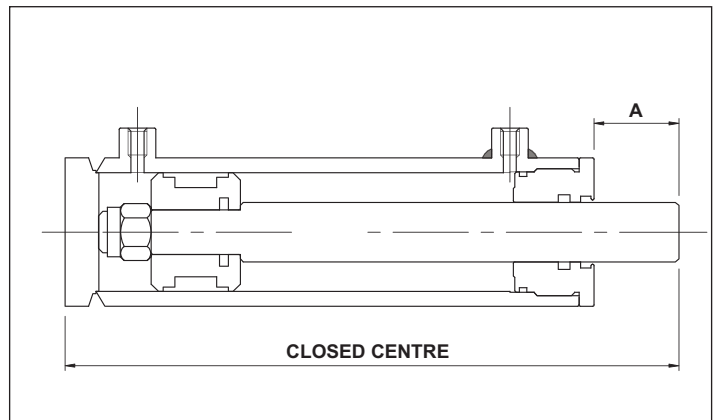
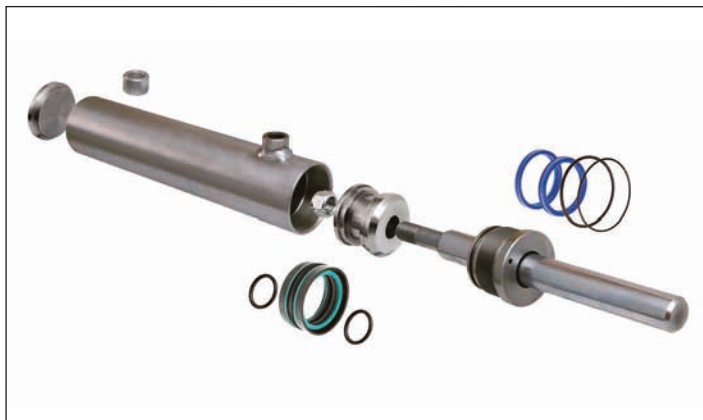
## COMPLETE CYLINDERS IN KIT FORM



CYLINDER KIT CK 55 30 300  
 CYLINDER BORE 55  
 ROD SIZE 30  
 STROKE 300

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|-------------|---------------|--------------|--------|----------------|--------------|----|
| CK5535600   | 55            | 35           | 600    | 760            | 1360         | 30 |
| CK5535800   | 55            | 35           | 800    | 960            | 1760         | 30 |
| CK6025160   | 60            | 25           | 160    | 292            | 452          | 5  |
| CK6025210   | 60            | 25           | 210    | 342            | 552          | 5  |
| CK6025260   | 60            | 25           | 260    | 392            | 652          | 5  |
| CK6025310   | 60            | 25           | 310    | 442            | 752          | 5  |
| CK6025410   | 60            | 25           | 410    | 542            | 952          | 5  |
| CK6025510   | 60            | 25           | 510    | 642            | 1152         | 5  |
| CK6025610   | 60            | 25           | 610    | 742            | 1352         | 5  |
| CK6025810   | 60            | 25           | 810    | 942            | 1752         | 5  |
| CK60251010  | 60            | 25           | 1010   | 1142           | 2152         | 5  |
| CK60251510  | 60            | 25           | 1510   | 1642           | 3152         | 5  |
| CK6030100   | 60            | 30           | 100    | 260            | 360          | 23 |
| CK6030150   | 60            | 30           | 150    | 310            | 460          | 23 |
| CK6030200   | 60            | 30           | 200    | 360            | 560          | 23 |
| CK6030250   | 60            | 30           | 250    | 410            | 660          | 23 |
| CK6030300   | 60            | 30           | 300    | 460            | 760          | 23 |
| CK6030400   | 60            | 30           | 400    | 560            | 960          | 23 |
| CK6030500   | 60            | 30           | 500    | 660            | 1160         | 23 |
| CK6030600   | 60            | 30           | 600    | 760            | 1360         | 23 |
| CK6030800   | 60            | 30           | 800    | 960            | 1760         | 23 |
| CK60301000  | 60            | 30           | 1000   | 1160           | 2160         | 23 |
| CK60301500  | 60            | 30           | 1500   | 1660           | 3160         | 23 |
| CK6035200   | 60            | 35           | 200    | 360            | 560          | 23 |
| CK6035250   | 60            | 35           | 250    | 410            | 660          | 23 |
| CK6035300   | 60            | 35           | 300    | 460            | 760          | 23 |
| CK6035400   | 60            | 35           | 400    | 560            | 960          | 23 |
| CK6035500   | 60            | 35           | 500    | 660            | 1160         | 23 |
| CK6035600   | 60            | 35           | 600    | 760            | 1360         | 23 |
| CK6035800   | 60            | 35           | 800    | 960            | 1760         | 23 |
| CK60351000  | 60            | 35           | 1000   | 1160           | 2160         | 23 |
| CK60351500  | 60            | 35           | 1500   | 1660           | 3160         | 23 |
| CK6040200   | 60            | 40           | 200    | 360            | 560          | 23 |
| CK6040250   | 60            | 40           | 250    | 410            | 660          | 23 |
| CK6040300   | 60            | 40           | 300    | 460            | 760          | 23 |
| CK6040400   | 60            | 40           | 400    | 560            | 960          | 23 |
| CK6040500   | 60            | 40           | 500    | 660            | 1160         | 23 |
| CK6040600   | 60            | 40           | 600    | 760            | 1360         | 23 |
| CK6040800   | 60            | 40           | 800    | 960            | 1760         | 23 |
| CK60401000  | 60            | 40           | 1000   | 1160           | 2160         | 23 |

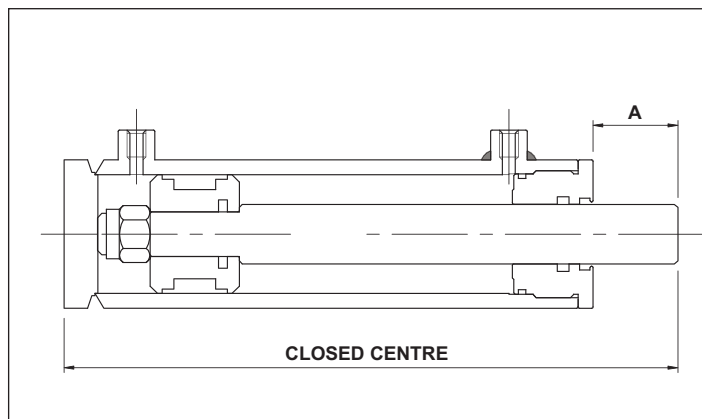
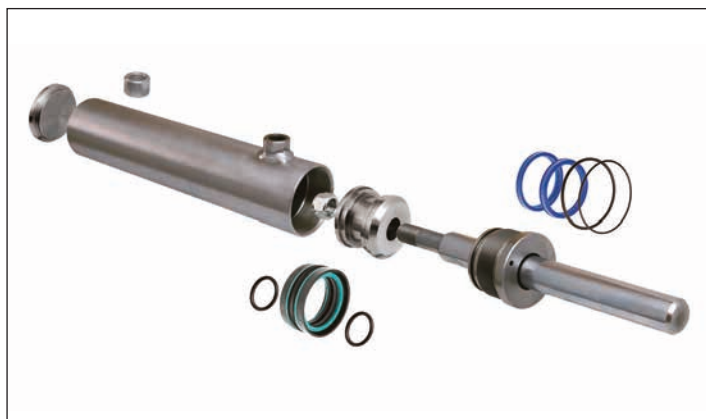
## COMPLETE CYLINDERS IN KIT FORM



CYLINDER KIT CK      CYLINDER BORE 60      ROD SIZE 40      STROKE 250

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|-------------|---------------|--------------|--------|----------------|--------------|----|
| CK60401500  | 60            | 40           | 1500   | 1660           | 3160         | 23 |
| CK6330200   | 63            | 30           | 200    | 360            | 560          | 23 |
| CK6330250   | 63            | 30           | 250    | 410            | 660          | 23 |
| CK6330300   | 63            | 30           | 300    | 460            | 760          | 23 |
| CK6330400   | 63            | 30           | 400    | 560            | 960          | 23 |
| CK6330500   | 63            | 30           | 500    | 660            | 1160         | 23 |
| CK6330600   | 63            | 30           | 600    | 760            | 1360         | 23 |
| CK6330800   | 63            | 30           | 800    | 960            | 1760         | 23 |
| CK63301000  | 63            | 30           | 1000   | 1160           | 2160         | 23 |
| CK63301500  | 63            | 30           | 1500   | 1660           | 3160         | 23 |
| CK6332200   | 63            | 32           | 200    | 400            | 600          | 63 |
| CK6332300   | 63            | 32           | 300    | 500            | 800          | 63 |
| CK6332500   | 63            | 32           | 500    | 700            | 1200         | 63 |
| CK6332600   | 63            | 32           | 600    | 800            | 1400         | 63 |
| CK6335200   | 63            | 35           | 200    | 360            | 560          | 23 |
| CK6335250   | 63            | 35           | 250    | 410            | 660          | 23 |
| CK6335300   | 63            | 35           | 300    | 460            | 760          | 23 |
| CK6335400   | 63            | 35           | 400    | 560            | 960          | 23 |
| CK6335500   | 63            | 35           | 500    | 660            | 1160         | 23 |
| CK6335600   | 63            | 35           | 600    | 760            | 1360         | 23 |
| CK6335800   | 63            | 35           | 800    | 960            | 1760         | 23 |
| CK63351000  | 63            | 35           | 1000   | 1160           | 2160         | 23 |
| CK63351500  | 63            | 35           | 1500   | 1660           | 3160         | 23 |
| CK6336200   | 63            | 36           | 200    | 400            | 600          | 63 |
| CK6336300   | 63            | 36           | 300    | 500            | 800          | 63 |
| CK6336500   | 63            | 36           | 500    | 700            | 1200         | 63 |
| CK6336600   | 63            | 36           | 600    | 800            | 1400         | 63 |
| CK6340200   | 63            | 40           | 200    | 360            | 560          | 23 |
| CK6340250   | 63            | 40           | 250    | 410            | 660          | 23 |
| CK6340300   | 63            | 40           | 300    | 460            | 760          | 23 |
| CK6340400   | 63            | 40           | 400    | 560            | 960          | 23 |
| CK6340500   | 63            | 40           | 500    | 660            | 1160         | 23 |
| CK6340600   | 63            | 40           | 600    | 760            | 1360         | 23 |
| CK6340800   | 63            | 40           | 800    | 960            | 1760         | 23 |
| CK63401000  | 63            | 40           | 1000   | 1160           | 2160         | 23 |
| CK63401500  | 63            | 40           | 1500   | 1660           | 3160         | 23 |
| CK6345200   | 63            | 45           | 200    | 375            | 575          | 38 |
| CK6345250   | 63            | 45           | 250    | 425            | 675          | 38 |
| CK6345300   | 63            | 45           | 300    | 475            | 775          | 38 |
| CK6345400   | 63            | 45           | 400    | 575            | 975          | 38 |
| CK6345500   | 63            | 45           | 500    | 675            | 1175         | 38 |
| CK6345600   | 63            | 45           | 600    | 775            | 1375         | 38 |

## COMPLETE CYLINDERS IN KIT FORM

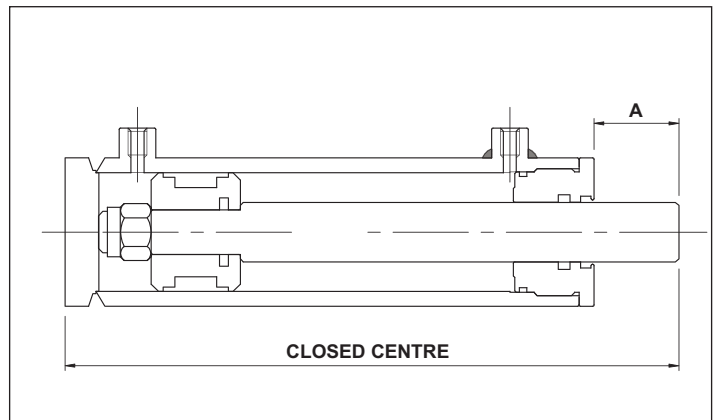
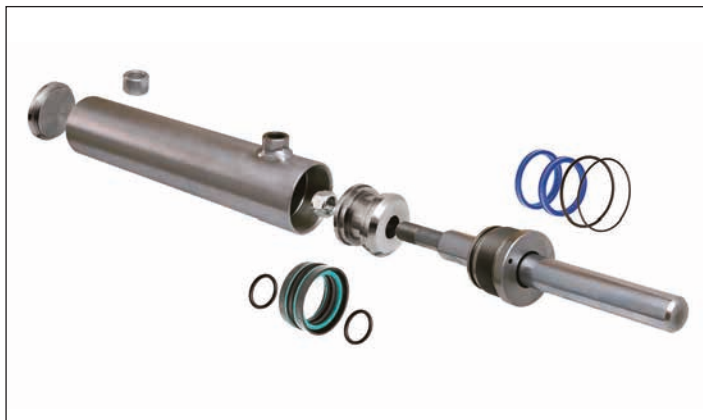


CYLINDER KIT CK  
 CYLINDER BORE 63  
 ROD SIZE 40  
 STROKE 800

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|-------------|---------------|--------------|--------|----------------|--------------|----|
| CK6345800   | 63            | 45           | 800    | 975            | 1775         | 38 |
| CK63451000  | 63            | 45           | 1000   | 1175           | 2175         | 38 |
| CK63451500  | 63            | 45           | 1500   | 1675           | 3175         | 38 |
| CK7030200   | 70            | 30           | 200    | 360            | 560          | 23 |
| CK7030250   | 70            | 30           | 250    | 410            | 660          | 23 |
| CK7030300   | 70            | 30           | 300    | 460            | 760          | 23 |
| CK7030400   | 70            | 30           | 400    | 560            | 960          | 23 |
| CK7030500   | 70            | 30           | 500    | 660            | 1160         | 23 |
| CK7030600   | 70            | 30           | 600    | 760            | 1360         | 23 |
| CK7030800   | 70            | 30           | 800    | 960            | 1760         | 23 |
| CK70301000  | 70            | 30           | 1000   | 1160           | 2160         | 23 |
| CK70301500  | 70            | 30           | 1500   | 1660           | 3160         | 23 |
| CK7035200   | 70            | 35           | 200    | 360            | 560          | 23 |
| CK7035250   | 70            | 35           | 250    | 410            | 660          | 23 |
| CK7035300   | 70            | 35           | 300    | 460            | 760          | 23 |
| CK7035400   | 70            | 35           | 400    | 560            | 960          | 23 |
| CK7035500   | 70            | 35           | 500    | 660            | 1160         | 23 |
| CK7035600   | 70            | 35           | 600    | 760            | 1360         | 23 |
| CK7035800   | 70            | 35           | 800    | 960            | 1760         | 23 |
| CK70351000  | 70            | 35           | 1000   | 1160           | 2160         | 23 |
| CK70351500  | 70            | 35           | 1500   | 1660           | 3160         | 23 |
| CK7040200   | 70            | 40           | 200    | 360            | 560          | 23 |
| CK7040250   | 70            | 40           | 250    | 410            | 660          | 23 |
| CK7040300   | 70            | 40           | 300    | 460            | 760          | 23 |
| CK7040400   | 70            | 40           | 400    | 560            | 960          | 23 |
| CK7040500   | 70            | 40           | 500    | 660            | 1160         | 23 |
| CK7040600   | 70            | 40           | 600    | 760            | 1360         | 23 |
| CK7040800   | 70            | 40           | 800    | 960            | 1760         | 23 |
| CK70401000  | 70            | 40           | 1000   | 1160           | 2160         | 23 |
| CK70401500  | 70            | 40           | 1500   | 1660           | 3160         | 23 |
| CK7045200   | 70            | 45           | 200    | 375            | 575          | 38 |
| CK7045250   | 70            | 45           | 250    | 425            | 675          | 38 |
| CK7045300   | 70            | 45           | 300    | 475            | 775          | 38 |
| CK7045400   | 70            | 45           | 400    | 575            | 975          | 38 |
| CK7045500   | 70            | 45           | 500    | 675            | 1175         | 38 |
| CK7045600   | 70            | 45           | 600    | 775            | 1375         | 38 |
| CK7045800   | 70            | 45           | 800    | 975            | 1775         | 38 |
| CK70451000  | 70            | 45           | 1000   | 1175           | 2175         | 38 |
| CK70451500  | 70            | 45           | 1500   | 1675           | 3175         | 38 |
| CK7050200   | 70            | 50           | 200    | 375            | 575          | 38 |
| CK7050250   | 70            | 50           | 250    | 425            | 675          | 38 |
| CK7050300   | 70            | 50           | 300    | 475            | 775          | 38 |
| CK7050400   | 70            | 50           | 400    | 575            | 975          | 38 |
| CK7050500   | 70            | 50           | 500    | 675            | 1175         | 38 |
| CK7050600   | 70            | 50           | 600    | 775            | 1375         | 38 |
| CK7050800   | 70            | 50           | 800    | 975            | 1775         | 38 |
| CK70501000  | 70            | 50           | 1000   | 1175           | 2175         | 38 |



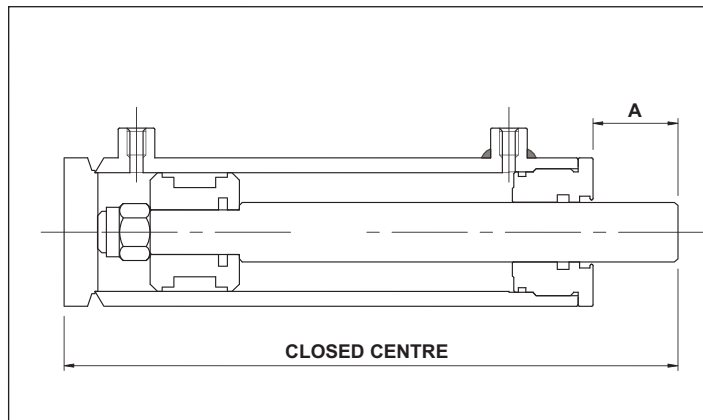
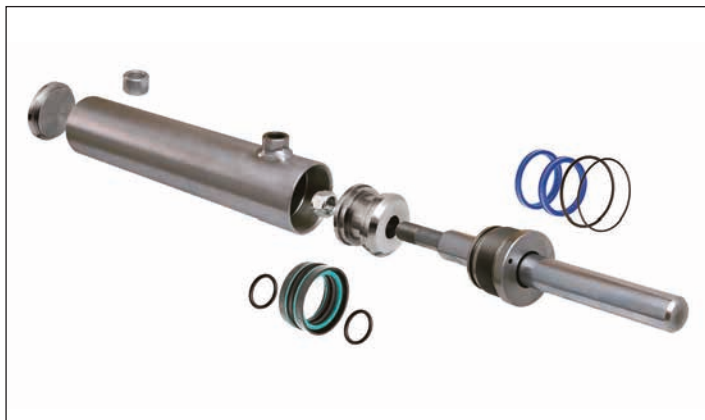
## COMPLETE CYLINDERS IN KIT FORM



CYLINDER KIT      CYLINDER BORE      ROD SIZE      STROKE  
 CK                      70                      50                      300

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|-------------|---------------|--------------|--------|----------------|--------------|----|
| CK70501500  | 70            | 50           | 1500   | 1675           | 3175         | 38 |
| CK7530308   | 75            | 30           | 308    | 500            | 808          | 45 |
| CK7530508   | 75            | 30           | 508    | 700            | 1208         | 45 |
| CK7535308   | 75            | 35           | 308    | 460            | 768          | 5  |
| CK7535508   | 75            | 35           | 508    | 660            | 1168         | 5  |
| CK7535808   | 75            | 35           | 808    | 960            | 1768         | 5  |
| CK75351008  | 75            | 35           | 1008   | 1160           | 2168         | 5  |
| CK75351508  | 75            | 35           | 1508   | 1660           | 3168         | 5  |
| CK7540308   | 75            | 40           | 308    | 460            | 768          | 5  |
| CK7540508   | 75            | 40           | 508    | 660            | 1168         | 5  |
| CK7540808   | 75            | 40           | 808    | 960            | 1768         | 5  |
| CK75401008  | 75            | 40           | 1008   | 1160           | 2168         | 5  |
| CK75401508  | 75            | 40           | 1508   | 1660           | 3168         | 5  |
| CK7545308   | 75            | 45           | 308    | 475            | 783          | 20 |
| CK7545508   | 75            | 45           | 508    | 675            | 1183         | 20 |
| CK7545808   | 75            | 45           | 808    | 975            | 1783         | 20 |
| CK75451008  | 75            | 45           | 1008   | 1175           | 2183         | 20 |
| CK75451508  | 75            | 45           | 1508   | 1675           | 3183         | 20 |
| CK7550308   | 75            | 50           | 308    | 475            | 783          | 20 |
| CK7550508   | 75            | 50           | 508    | 675            | 1183         | 20 |
| CK7550808   | 75            | 50           | 808    | 975            | 1783         | 20 |
| CK75501008  | 75            | 50           | 1008   | 1175           | 2183         | 20 |
| CK75501508  | 75            | 50           | 1508   | 1675           | 3183         | 20 |
| CK8030203   | 80            | 30           | 203    | 400            | 603          | 50 |
| CK8030303   | 80            | 30           | 303    | 500            | 803          | 50 |
| CK8030503   | 80            | 30           | 503    | 700            | 1203         | 50 |
| CK8030603   | 80            | 30           | 603    | 800            | 1403         | 50 |
| CK8035203   | 80            | 35           | 203    | 360            | 563          | 10 |
| CK8035253   | 80            | 35           | 253    | 410            | 663          | 10 |
| CK8035303   | 80            | 35           | 303    | 460            | 763          | 10 |
| CK8035403   | 80            | 35           | 403    | 560            | 963          | 10 |
| CK8035503   | 80            | 35           | 503    | 660            | 1163         | 10 |
| CK8035603   | 80            | 35           | 603    | 760            | 1363         | 10 |
| CK8035803   | 80            | 35           | 803    | 960            | 1763         | 10 |
| CK80351003  | 80            | 35           | 1003   | 1160           | 2163         | 10 |
| CK80351503  | 80            | 35           | 1503   | 1660           | 3163         | 10 |
| CK8036203   | 80            | 36           | 203    | 400            | 603          | 50 |
| CK8036303   | 80            | 36           | 303    | 500            | 803          | 50 |
| CK8036503   | 80            | 36           | 503    | 700            | 1203         | 50 |
| CK8036603   | 80            | 36           | 603    | 800            | 1403         | 50 |

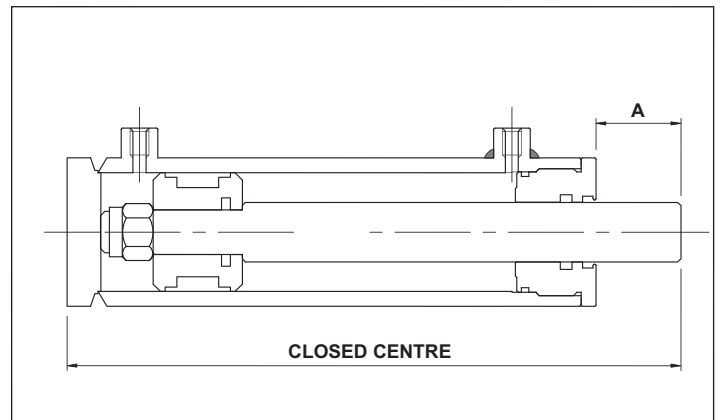
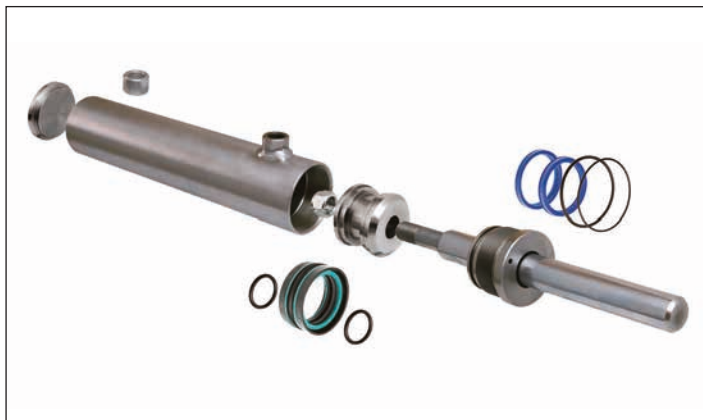
## COMPLETE CYLINDERS IN KIT FORM



CYLINDER KIT CK      CYLINDER BORE 80      ROD SIZE 35      STROKE 1003

| PART NUMBER | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|-------------|---------------|--------------|--------|----------------|--------------|----|
| CK8040200   | 80            | 40           | 200    | 375            | 575          | 25 |
| CK8040250   | 80            | 40           | 250    | 425            | 675          | 25 |
| CK8040300   | 80            | 40           | 300    | 475            | 775          | 25 |
| CK8040400   | 80            | 40           | 400    | 575            | 975          | 25 |
| CK8040500   | 80            | 40           | 500    | 675            | 1175         | 25 |
| CK8040600   | 80            | 40           | 600    | 775            | 1375         | 25 |
| CK8040800   | 80            | 40           | 800    | 975            | 1775         | 25 |
| CK80401000  | 80            | 40           | 1000   | 1175           | 2175         | 25 |
| CK80401500  | 80            | 40           | 1500   | 1675           | 3175         | 25 |
| CK8045203   | 80            | 45           | 203    | 375            | 578          | 25 |
| CK8045253   | 80            | 45           | 253    | 425            | 678          | 25 |
| CK8045303   | 80            | 45           | 303    | 475            | 778          | 25 |
| CK8045403   | 80            | 45           | 403    | 575            | 978          | 25 |
| CK8045503   | 80            | 45           | 503    | 675            | 1178         | 25 |
| CK8045603   | 80            | 45           | 603    | 775            | 1378         | 25 |
| CK8045803   | 80            | 45           | 803    | 975            | 1778         | 25 |
| CK80451003  | 80            | 45           | 1003   | 1175           | 2178         | 25 |
| CK80451503  | 80            | 45           | 1503   | 1675           | 3178         | 25 |
| CK8050200   | 80            | 50           | 200    | 375            | 575          | 25 |
| CK8050250   | 80            | 50           | 250    | 425            | 675          | 25 |
| CK8050300   | 80            | 50           | 300    | 475            | 775          | 25 |
| CK8050400   | 80            | 50           | 400    | 575            | 975          | 25 |
| CK8050500   | 80            | 50           | 500    | 675            | 1175         | 25 |
| CK8050600   | 80            | 50           | 600    | 775            | 1375         | 25 |
| CK8050800   | 80            | 50           | 800    | 975            | 1775         | 25 |
| CK80501000  | 80            | 50           | 1000   | 1175           | 2175         | 25 |
| CK80501500  | 80            | 50           | 1500   | 1675           | 3175         | 25 |
| CK9040200   | 90            | 40           | 200    | 378            | 578          | 25 |
| CK9040250   | 90            | 40           | 250    | 428            | 678          | 25 |
| CK9040300   | 90            | 40           | 300    | 478            | 778          | 25 |
| CK9040400   | 90            | 40           | 400    | 578            | 978          | 25 |
| CK9040500   | 90            | 40           | 500    | 678            | 1178         | 25 |
| CK9040600   | 90            | 40           | 600    | 778            | 1378         | 25 |
| CK9040800   | 90            | 40           | 800    | 978            | 1778         | 25 |
| CK90401000  | 90            | 40           | 1000   | 1178           | 2178         | 25 |
| CK90401500  | 90            | 40           | 1500   | 1678           | 3178         | 25 |
| CK9045203   | 90            | 45           | 203    | 378            | 581          | 25 |
| CK9045253   | 90            | 45           | 253    | 428            | 681          | 25 |
| CK9045303   | 90            | 45           | 303    | 478            | 781          | 25 |
| CK9045403   | 90            | 45           | 403    | 578            | 981          | 25 |
| CK9045503   | 90            | 45           | 503    | 678            | 1181         | 25 |
| CK9045603   | 90            | 45           | 603    | 778            | 1381         | 25 |

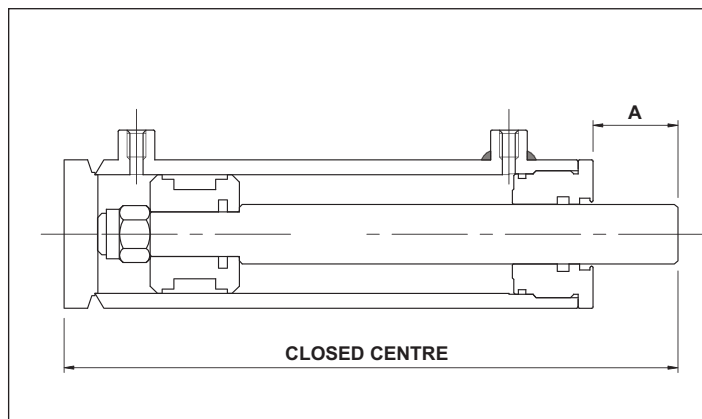
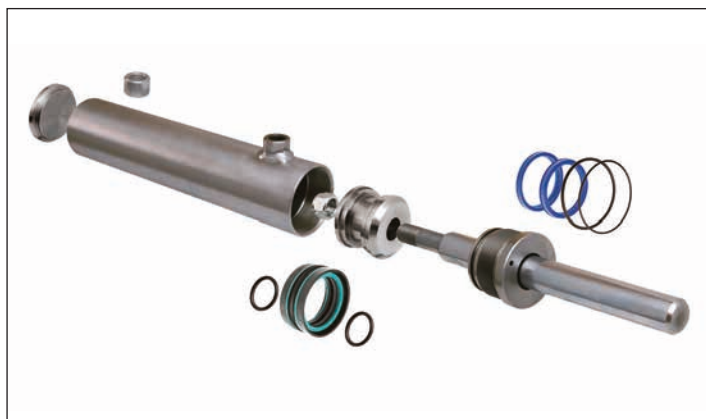
## COMPLETE CYLINDERS IN KIT FORM



CYLINDER KIT      CYLINDER BORE      ROD SIZE      STROKE  
 CK                      90                      40                      1000

| PART NUMBER  | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|--------------|---------------|--------------|--------|----------------|--------------|----|
| CK9045803    | 90            | 45           | 803    | 978            | 1781         | 25 |
| CK90451003   | 90            | 45           | 1003   | 1178           | 2181         | 25 |
| CK90451503   | 90            | 45           | 1503   | 1678           | 3181         | 25 |
| CK9050200    | 90            | 50           | 200    | 378            | 578          | 25 |
| CK9050250    | 90            | 50           | 250    | 428            | 678          | 25 |
| CK9050300    | 90            | 50           | 300    | 478            | 778          | 25 |
| CK9050400    | 90            | 50           | 400    | 578            | 978          | 25 |
| CK9050500    | 90            | 50           | 500    | 678            | 1178         | 25 |
| CK9050600    | 90            | 50           | 600    | 778            | 1378         | 25 |
| CK9050800    | 90            | 50           | 800    | 978            | 1778         | 25 |
| CK90501000   | 90            | 50           | 1000   | 1178           | 2178         | 25 |
| CK90501500   | 90            | 50           | 1500   | 1678           | 3178         | 25 |
| CK9060240    | 90            | 60           | 240    | 460            | 700          | 57 |
| CK9060290    | 90            | 60           | 290    | 510            | 800          | 57 |
| CK9060390    | 90            | 60           | 390    | 610            | 1000         | 57 |
| CK9060490    | 90            | 60           | 490    | 710            | 1200         | 57 |
| CK9060590    | 90            | 60           | 590    | 810            | 1400         | 57 |
| CK9060790    | 90            | 60           | 790    | 1010           | 1800         | 57 |
| CK9060990    | 90            | 60           | 990    | 1210           | 2200         | 57 |
| CK90601490   | 90            | 60           | 1490   | 1710           | 3200         | 57 |
| CK90601000XL | 90            | 60           | 1000   | 1210           | 2210         | 47 |
| CK90601500XL | 90            | 60           | 1500   | 1710           | 3210         | 47 |
| CK10050200   | 100           | 50           | 200    | 390            | 590          | 27 |
| CK10050250   | 100           | 50           | 250    | 440            | 690          | 27 |
| CK10050300   | 100           | 50           | 300    | 490            | 790          | 27 |
| CK10050400   | 100           | 50           | 400    | 590            | 990          | 27 |
| CK10050500   | 100           | 50           | 500    | 690            | 1190         | 27 |
| CK10050600   | 100           | 50           | 600    | 790            | 1390         | 27 |
| CK10050800   | 100           | 50           | 800    | 990            | 1790         | 27 |
| CK100501000  | 100           | 50           | 1000   | 1190           | 2190         | 27 |
| CK100501500  | 100           | 50           | 1500   | 1690           | 3190         | 27 |
| CK10050200L  | 100           | 50           | 200    | 410            | 610          | 47 |
| CK10050250L  | 100           | 50           | 250    | 460            | 710          | 47 |
| CK10050300L  | 100           | 50           | 300    | 510            | 810          | 47 |
| CK10050400L  | 100           | 50           | 400    | 610            | 1010         | 47 |
| CK10050500L  | 100           | 50           | 500    | 710            | 1210         | 47 |
| CK10050600L  | 100           | 50           | 600    | 810            | 1410         | 47 |
| CK10050800L  | 100           | 50           | 800    | 1010           | 1810         | 47 |
| CK100501000L | 100           | 50           | 1000   | 1210           | 2210         | 47 |
| CK100501500L | 100           | 50           | 1500   | 1710           | 3210         | 47 |

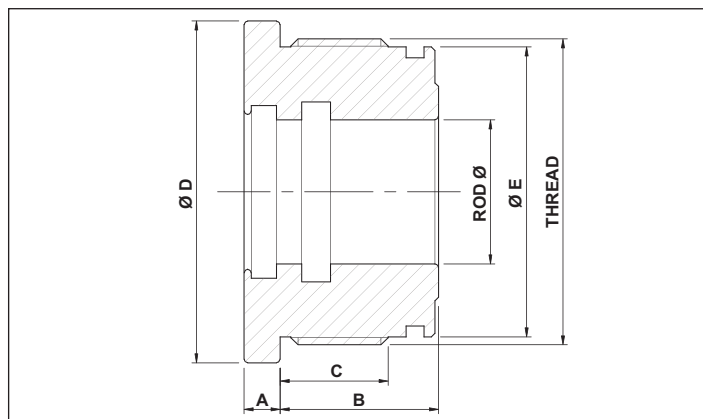
## COMPLETE CYLINDERS IN KIT FORM



CYLINDER KIT      CYLINDER BORE      ROD SIZE      STROKE  
 CK                      100                      50                      250L

| PART NUMBER   | CYLINDER BORE | ROD DIAMETER | STROKE | CLOSED CENTRES | OPEN CENTRES | A  |
|---------------|---------------|--------------|--------|----------------|--------------|----|
| CK10050300XL  | 100           | 50           | 300    | 510            | 810          | 25 |
| CK10050500XL  | 100           | 50           | 500    | 710            | 1210         | 25 |
| CK10050800XL  | 100           | 50           | 800    | 1010           | 1810         | 25 |
| CK100501000XL | 100           | 50           | 1000   | 1210           | 2210         | 25 |
| CK100501500XL | 100           | 50           | 1500   | 1710           | 3210         | 25 |
| CK100502000XL | 100           | 50           | 2000   | 2210           | 4210         | 25 |
| CK10060250    | 100           | 60           | 250    | 440            | 690          | 47 |
| CK10060300    | 100           | 60           | 300    | 490            | 790          | 47 |
| CK10060400    | 100           | 60           | 400    | 610            | 1010         | 47 |
| CK10060500    | 100           | 60           | 500    | 710            | 1210         | 47 |
| CK10060600    | 100           | 60           | 600    | 810            | 1410         | 47 |
| CK10060800    | 100           | 60           | 800    | 1010           | 1810         | 47 |
| CK100601000   | 100           | 60           | 1000   | 1210           | 2210         | 47 |
| CK100601500   | 100           | 60           | 1500   | 1710           | 3210         | 47 |
| CK10060250XL  | 100           | 60           | 250    | 460            | 710          | 25 |
| CK10060400XL  | 100           | 60           | 400    | 610            | 1010         | 25 |
| CK10060500XL  | 100           | 60           | 500    | 710            | 1210         | 25 |
| CK10060600XL  | 100           | 60           | 600    | 810            | 1410         | 25 |
| CK10060800XL  | 100           | 60           | 800    | 1010           | 1810         | 25 |
| CK100601000XL | 100           | 60           | 1000   | 1210           | 2210         | 25 |
| CK100601500XL | 100           | 60           | 1500   | 1710           | 3210         | 25 |
| CK12560503    | 125           | 60           | 503    | 713            | 1216         | 12 |
| CK12560803    | 125           | 60           | 803    | 1013           | 1816         | 12 |
| CK125601003   | 125           | 60           | 1003   | 1213           | 2216         | 12 |
| CK125601503   | 125           | 60           | 1503   | 1713           | 3216         | 12 |
| CK12570300    | 125           | 70           | 300    | 535            | 835          | 29 |
| CK12570500    | 125           | 70           | 500    | 735            | 1235         | 29 |
| CK12570800    | 125           | 70           | 800    | 1035           | 1835         | 29 |
| CK125701000   | 125           | 70           | 1000   | 1235           | 2235         | 29 |
| CK125701500   | 125           | 70           | 1500   | 1735           | 3235         | 29 |

# STANDARD GLANDS



|                      |                     |                    |                   |                 |
|----------------------|---------------------|--------------------|-------------------|-----------------|
| STANDARD GLAND<br>SG | CYLINDER BORE<br>25 | ROD DIAMETER<br>16 | LENGTH OF B<br>12 | ALUMINIUM<br>AL |
|----------------------|---------------------|--------------------|-------------------|-----------------|

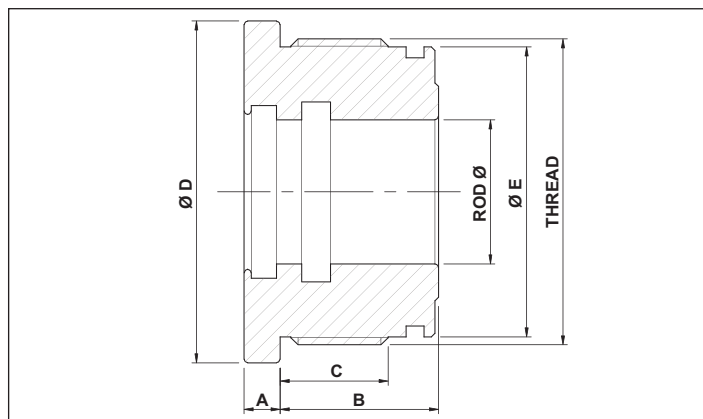
| PART NUMBER  | CYLINDER BORE | ROD Ø | A  | B  | C    | Ø D | Ø E  | THREAD   | SEAL KIT |
|--------------|---------------|-------|----|----|------|-----|------|----------|----------|
| SG251612-AL* | 25            | 16    | 18 | 12 | 12   | 35  | 25.5 | 28 x 1.5 | GK16-25  |
| SG301627-AL* | 30            | 16    | 6  | 27 | 13.5 | 40  | 30.5 | 34 x 1.5 | GK16-30  |
| SG302027     | 30            | 20    | 6  | 27 | 14   | 40  | 30.5 | 34 x 1.5 | GK20-30  |
| SG321627     | 32            | 16    | 6  | 27 | 15   | 42  | 32.5 | 36 x 1.5 | GK16-32  |
| SG322027     | 32            | 20    | 6  | 27 | 15   | 42  | 32.5 | 36 x 1.5 | GK20-32  |
| SG352032     | 35            | 20    | 8  | 32 | 18   | 45  | 35.6 | 39 x 1.5 | GK20-35  |
| SG352232     | 35            | 22    | 8  | 32 | 19   | 45  | 35.6 | 39 x 1.5 | GK22-35  |
| SG401632     | 40            | 16    | 8  | 32 | 19   | 50  | 40.6 | 44 x 1.5 | GK16-40  |
| SG402032     | 40            | 20    | 8  | 32 | 19   | 50  | 40.6 | 44 x 1.5 | GK20-40  |
| SG402232     | 40            | 22    | 8  | 32 | 19   | 50  | 40.6 | 44 x 1.5 | GK22-40  |
| SG402532     | 40            | 25    | 8  | 32 | 19   | 50  | 40.6 | 44 x 1.5 | GK25-40  |
| SG402832     | 40            | 28    | 8  | 32 | 19   | 50  | 40.6 | 44 x 1.5 | GK28-40  |
| SG452032     | 45            | 20    | 8  | 32 | 19   | 55  | 45.6 | 49 x 1.5 | GK20-45  |
| SG452232     | 45            | 22    | 8  | 32 | 19   | 55  | 45.6 | 49 x 1.5 | GK22-45  |
| SG452532     | 45            | 25    | 8  | 32 | 19   | 55  | 45.6 | 49 x 1.5 | GK25-45  |
| SG502035     | 50            | 20    | 8  | 35 | 22   | 60  | 50.6 | 54 x 1.5 | GK20-50  |
| SG502535     | 50            | 25    | 8  | 35 | 22   | 60  | 50.6 | 54 x 1.5 | GK25-50  |
| SG502835     | 50            | 28    | 8  | 35 | 22   | 60  | 50.6 | 54 x 1.5 | GK28-50  |
| SG503035     | 50            | 30    | 8  | 35 | 22   | 60  | 50.6 | 54 x 1.5 | GK30-50  |
| SG503235     | 50            | 32    | 8  | 35 | 22   | 60  | 50.6 | 54 x 1.5 | GK32-50  |
| SG503535     | 50            | 35    | 8  | 35 | 22   | 60  | 50.6 | 54 x 1.5 | GK35-50  |
| SG503635     | 50            | 36    | 8  | 35 | 22   | 60  | 50.6 | 54 x 1.5 | GK36-50  |
| SG552535     | 55            | 25    | 8  | 35 | 20   | 65  | 55.6 | 60 x 1.5 | GK25-55  |
| SG553035     | 55            | 30    | 8  | 35 | 20   | 65  | 55.6 | 60 x 1.5 | GK30-55  |
| SG553535     | 55            | 35    | 8  | 35 | 20   | 65  | 55.6 | 60 x 1.5 | GK35-55  |
| SG602540     | 60            | 25    | 10 | 40 | 26   | 70  | 60.6 | 64 x 1.5 | GK25-60  |
| SG603040     | 60            | 30    | 10 | 40 | 26   | 70  | 60.6 | 64 x 1.5 | GK30-60  |
| SG603540     | 60            | 35    | 10 | 40 | 26   | 70  | 60.6 | 64 x 1.5 | GK35-60  |
| SG604040     | 60            | 40    | 10 | 40 | 26   | 70  | 60.6 | 64 x 1.5 | GK40-60  |
| SG633040     | 63            | 30    | 10 | 40 | 26   | 73  | 63.6 | 68 x 1.5 | GK30-63  |
| SG633240     | 63            | 32    | 10 | 40 | 26   | 73  | 63.6 | 68 x 1.5 | GK32-63  |
| SG633540     | 63            | 35    | 10 | 40 | 26   | 73  | 63.6 | 68 x 1.5 | GK35-63  |
| SG633640     | 63            | 36    | 10 | 40 | 26   | 73  | 63.6 | 68 x 1.5 | GK36-63  |
| SG634040     | 63            | 40    | 10 | 40 | 26   | 73  | 63.6 | 68 x 1.5 | GK40-63  |
| SG634540     | 63            | 45    | 10 | 40 | 26   | 73  | 63.6 | 68 x 1.5 | GK45-63  |
| SG653040     | 65            | 30    | 10 | 40 | 26   | 75  | 65.6 | 69 x 1.5 | GK30-65  |
| SG653540     | 65            | 35    | 10 | 40 | 25   | 75  | 65.6 | 69 x 1.5 | GK35-65  |
| SG654040     | 65            | 40    | 10 | 40 | 25   | 75  | 65.6 | 69 x 1.5 | GK40-65  |
| SG654540     | 65            | 45    | 10 | 40 | 25   | 75  | 65.6 | 69 x 1.5 | GK45-65  |
| SG702540     | 70            | 25    | 10 | 40 | 26   | 80  | 70.6 | 74 x 1.5 | GK25-70  |
| SG703040     | 70            | 30    | 10 | 40 | 26   | 80  | 70.6 | 74 x 1.5 | GK30-70  |
| SG703540     | 70            | 35    | 10 | 40 | 26   | 80  | 70.6 | 74 x 1.5 | GK35-70  |
| SG704040     | 70            | 40    | 10 | 40 | 26   | 80  | 70.6 | 74 x 1.5 | GK40-70  |
| SG704540     | 70            | 45    | 10 | 40 | 26   | 80  | 70.6 | 74 x 1.5 | GK45-70  |
| SG705040     | 70            | 50    | 10 | 40 | 26   | 80  | 70.6 | 74 x 1.5 | GK50-70  |
| SG753050     | 75            | 30    | 10 | 50 | 33   | 90  | 75.6 | 80 x 2   | GK30-75  |
| SG753550     | 75            | 35    | 10 | 50 | 33   | 90  | 75.6 | 80 x 2   | GK35-75  |
| SG754050     | 75            | 40    | 10 | 50 | 33   | 90  | 75.6 | 80 x 2   | GK40-75  |
| SG754550     | 75            | 45    | 10 | 50 | 33   | 90  | 75.6 | 80 x 2   | GK45-75  |
| SG755050     | 75            | 50    | 10 | 50 | 33   | 90  | 75.6 | 80 x 2   | GK50-75  |

MATERIAL: HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT

\* MATERIAL : ALUMINIUM UNI 2011-11S OR EQUIVALENT

MAXIMUM WORKING PRESSURE 250 BAR

# STANDARD GLANDS

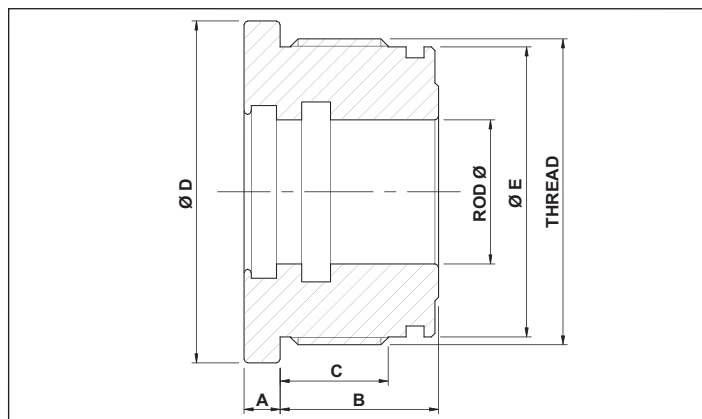


|                |               |              |             |            |
|----------------|---------------|--------------|-------------|------------|
| STANDARD GLAND | CYLINDER BORE | ROD DIAMETER | LENGTH OF B | EXTRA LONG |
| SG             | 80            | 30           | 50          | XL         |

| PART NUMBER | CYLINDER BORE | ROD Ø | A  | B  | C  | Ø D | Ø E   | THREAD  | SEAL KIT   |
|-------------|---------------|-------|----|----|----|-----|-------|---------|------------|
| SG803050    | 80            | 30    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK30-80    |
| SG803550    | 80            | 35    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK35-80    |
| SG803650    | 80            | 36    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK36-80    |
| SG804050    | 80            | 40    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK40-80    |
| SG804550    | 80            | 45    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK45-80    |
| SG805050    | 80            | 50    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK50-80    |
| SG805550    | 80            | 55    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK55-80    |
| SG805650    | 80            | 56    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK56-80    |
| SG806050    | 80            | 60    | 10 | 50 | 32 | 95  | 80.6  | 85 x 2  | GK60-80    |
| SG853550    | 85            | 35    | 10 | 50 | 30 | 100 | 85.6  | 90 x 2  | GK35-85    |
| SG854050    | 85            | 40    | 10 | 50 | 30 | 100 | 85.6  | 90 x 2  | GK40-85    |
| SG854550    | 85            | 45    | 10 | 50 | 30 | 100 | 85.6  | 90 x 2  | GK45-85    |
| SG855050    | 85            | 50    | 10 | 50 | 30 | 100 | 85.6  | 90 x 2  | GK50-85    |
| SG904050    | 90            | 40    | 10 | 50 | 32 | 105 | 90.6  | 95 x 2  | GK40-90    |
| SG904550    | 90            | 45    | 10 | 50 | 32 | 105 | 90.6  | 95 x 2  | GK45-90    |
| SG905050    | 90            | 50    | 10 | 50 | 32 | 105 | 90.6  | 95 x 2  | GK50-90    |
| SG906050    | 90            | 60    | 10 | 50 | 32 | 105 | 90.6  | 95 x 2  | GK60-90    |
| SG1005050   | 100           | 50    | 10 | 50 | 32 | 115 | 100.6 | 105 x 2 | GK50-100   |
| SG1006050   | 100           | 60    | 10 | 50 | 32 | 115 | 100.6 | 105 x 2 | GK60-100   |
| SG1004070XL | 100           | 40    | 12 | 70 | 51 | 115 | 100.6 | 105 x 2 | GK40-100XL |
| SG1004570XL | 100           | 45    | 12 | 70 | 51 | 115 | 100.6 | 105 x 2 | GK45-100XL |
| SG1005070XL | 100           | 50    | 12 | 70 | 51 | 115 | 100.6 | 105 x 2 | GK50-100XL |
| SG1005670XL | 100           | 56    | 12 | 70 | 51 | 115 | 100.6 | 105 x 2 | GK56-100XL |
| SG1006070XL | 100           | 60    | 12 | 70 | 51 | 115 | 100.6 | 105 x 2 | GK60-100XL |
| SG1006370XL | 100           | 63    | 12 | 70 | 51 | 115 | 100.6 | 105 x 2 | GK63-100XL |
| SG1007070XL | 100           | 70    | 12 | 70 | 51 | 115 | 100.6 | 105 x 2 | GK70-100XL |
| SG1104560   | 110           | 45    | 12 | 60 | 45 | 125 | 110.6 | 115 x 2 | GK45-110   |
| SG1105060   | 110           | 50    | 12 | 60 | 45 | 125 | 110.6 | 115 x 2 | GK50-110   |
| SG1106070   | 110           | 60    | 12 | 70 | 51 | 125 | 110.6 | 115 x 2 | GK60-110   |
| SG1107070   | 110           | 70    | 12 | 70 | 51 | 125 | 110.6 | 115 x 2 | GK70-110   |
| SG1108070   | 110           | 80    | 12 | 70 | 51 | 125 | 110.6 | 115 x 2 | GK80-110   |
| SG1205070   | 120           | 50    | 12 | 70 | 49 | 140 | 120.6 | 125 x 2 | GK50-120   |
| SG1206070   | 120           | 60    | 12 | 70 | 49 | 140 | 120.6 | 125 x 2 | GK60-120   |
| SG1207070   | 120           | 70    | 12 | 70 | 49 | 140 | 120.6 | 125 x 2 | GK70-120   |
| SG1208070   | 120           | 80    | 12 | 70 | 49 | 140 | 120.6 | 125 x 2 | GK80-120   |
| SG1209070   | 120           | 90    | 12 | 70 | 49 | 140 | 120.6 | 125 x 2 | GK90-120   |
| SG1256080   | 125           | 60    | 12 | 80 | 59 | 145 | 125.6 | 130 x 2 | GK60-125   |
| SG1256380   | 125           | 63    | 12 | 80 | 59 | 145 | 125.6 | 130 x 2 | GK63-125   |
| SG1257080   | 125           | 70    | 12 | 80 | 59 | 145 | 125.6 | 130 x 2 | GK70-125   |
| SG1258080   | 125           | 80    | 12 | 80 | 59 | 145 | 125.6 | 130 x 2 | GK80-125   |
| SG1259080   | 125           | 90    | 12 | 80 | 59 | 145 | 125.6 | 130 x 2 | GK90-125   |
| SG1306080   | 130           | 60    | 12 | 80 | 59 | 150 | 130.6 | 135 x 2 | GK60-130   |
| SG1307080   | 130           | 70    | 12 | 80 | 59 | 150 | 130.6 | 135 x 2 | GK70-130   |
| SG1308080   | 130           | 80    | 12 | 80 | 59 | 150 | 130.6 | 135 x 2 | GK80-130   |
| SG1309080   | 130           | 90    | 12 | 80 | 59 | 150 | 130.6 | 135 x 2 | GK90-130   |
| SG1406080   | 140           | 60    | 12 | 80 | 59 | 160 | 140.6 | 145 x 2 | GK60-140   |

XL : DENOTES EXTRA LONG  
MATERIAL: HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 250 BAR

## STANDARD GLANDS

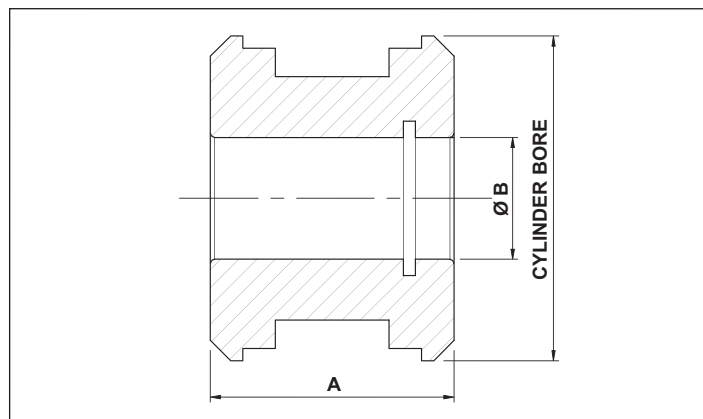


STANDARD GLAND SG CYLINDER BORE 140 ROD DIAMETER 70 LENGTH OF B 80

| PART NUMBER | CYLINDER BORE | ROD Ø      | A  | B   | C  | Ø D | Ø E   | THREAD    | SEAL KIT  |
|-------------|---------------|------------|----|-----|----|-----|-------|-----------|-----------|
| SG1407080   | 140           | 70         | 12 | 80  | 59 | 160 | 140.6 | 145 x 2   | GK70-140  |
| SG1408080   | 140           | 80         | 12 | 80  | 59 | 160 | 140.6 | 145 x 2   | GK80-140  |
| SG1409080   | 140           | 90         | 12 | 80  | 59 | 160 | 140.6 | 145 x 2   | GK90-140  |
| SG1505090   | 150           | 50         | 12 | 90  | 69 | 170 | 150.6 | 155 x 2   | GK50-150  |
| SG1507090   | 150           | 70         | 12 | 90  | 69 | 170 | 150.6 | 155 x 2   | GK70-150  |
| SG1508090   | 150           | 80         | 12 | 90  | 69 | 170 | 150.6 | 155 x 2   | GK80-150  |
| SG1509090   | 150           | 90         | 12 | 90  | 69 | 170 | 150.6 | 155 x 2   | GK90-150  |
| SG15010090  | 150           | 100        | 12 | 90  | 69 | 170 | 150.6 | 155 x 2   | GK100-150 |
| SG16000090  | 160           | PILOT 30mm | 12 | 90  | 69 | 180 | 160.6 | 165 x 2   |           |
| SG1608090   | 160           | 80         | 12 | 90  | 69 | 180 | 160.6 | 165 x 2   | GK80-160  |
| SG1609090   | 160           | 90         | 12 | 90  | 69 | 180 | 160.6 | 165 x 2   | GK90-160  |
| SG16010090  | 160           | 100        | 12 | 90  | 69 | 180 | 160.6 | 165 x 2   | GK100-160 |
| SG18000092  | 180           | PILOT 50mm | 18 | 92  | 58 | 210 | 180.6 | 188 x 2.5 |           |
| SG1808092   | 180           | 80         | 18 | 92  | 58 | 210 | 180.6 | 188 x 2.5 | GK80-180  |
| SG1809092   | 180           | 90         | 18 | 92  | 58 | 210 | 180.6 | 188 x 2.5 | GK90-180  |
| SG18010092  | 180           | 100        | 18 | 92  | 58 | 210 | 180.6 | 188 x 2.5 | GK100-180 |
| SG18012092  | 180           | 120        | 18 | 92  | 58 | 210 | 180.6 | 188 x 2.5 | GK120-180 |
| SG20000092  | 200           | PILOT 50mm | 18 | 92  | 58 | 218 | 200.6 | 208 x 2.5 |           |
| SG2009092   | 200           | 90         | 18 | 92  | 58 | 218 | 200.6 | 208 x 2.5 | GK90-200  |
| SG20010092  | 200           | 100        | 18 | 92  | 58 | 218 | 200.6 | 208 x 2.5 | GK100-200 |
| SG20012092  | 200           | 120        | 18 | 92  | 58 | 218 | 200.6 | 208 x 2.5 | GK120-200 |
| SG20014092  | 200           | 140        | 18 | 92  | 58 | 218 | 200.6 | 208 x 2.5 | GK140-200 |
| SG220000117 | 220           | PILOT 50mm | 18 | 117 | 80 | 240 | 220.6 | 228 x 2.5 |           |
| SG220100104 | 220           | 100        | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK100-220 |
| SG220110104 | 220           | 110        | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK110-220 |
| SG220120104 | 220           | 120        | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK120-220 |
| SG220150104 | 220           | 150        | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK150-220 |
| SG220160104 | 220           | 160        | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK160-220 |
| SG250000117 | 250           | PILOT 50mm | 18 | 117 | 80 | 268 | 250.6 | 258 x 2.5 |           |
| SG250120117 | 250           | 120        | 18 | 117 | 80 | 268 | 250.6 | 258 x 2.5 | GK120-250 |
| SG250150117 | 250           | 150        | 18 | 117 | 80 | 268 | 250.6 | 258 x 2.5 | GK150-250 |

MATERIAL: HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

# STANDARD PISTONS



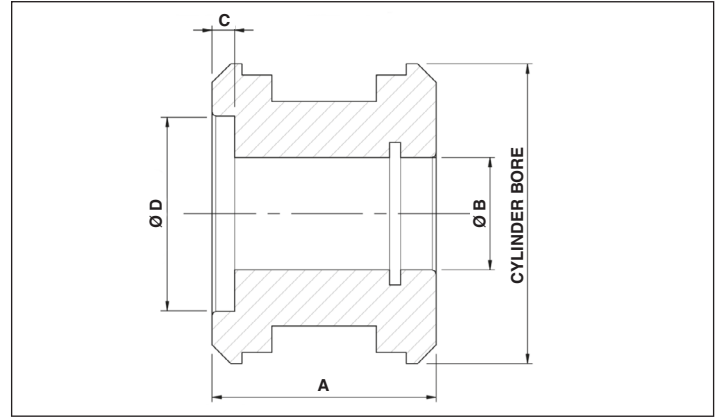
|              |               |                       |                |          |           |
|--------------|---------------|-----------------------|----------------|----------|-----------|
| METAL PISTON | CYLINDER BORE | INTERNAL DIAMETER Ø B | TOTAL LENGTH A | THREADED | ALUMINIUM |
| MP           | 25            | 10                    | 25             | TH       | AL        |

| PART NUMBER    | CYLINDER BORE | A    | Ø B    | ROD         | SEAL KIT |
|----------------|---------------|------|--------|-------------|----------|
| MP251025TH     | 25            | 25   | 10x1.5 | 16TH        | SUPPLIED |
| MP301324.7-AL* | 30            | 24.7 | 13     | 16          | PK30     |
| MP301324.7     | 30            | 24.7 | 13     | 16          | PK30     |
| MP321330       | 32            | 30   | 13     | 16          | PK32     |
| MP321530       | 32            | 30   | 15     | NIL         | PK32     |
| MP321540       | 32            | 40   | 15     | 20,25       | PK32     |
| MP351540       | 35            | 40   | 15     | 20,25       | PK35     |
| MP401540       | 40            | 40   | 15     | 20,25       | PK40     |
| MP402040       | 40            | 40   | 20     | 25,30       | PK40     |
| MP451540       | 45            | 40   | 15     | 20,25       | PK45     |
| MP501540       | 50            | 40   | 15     | 20,25       | PK50     |
| MP502040       | 50            | 40   | 20     | 25,30       | PK50     |
| MP502050       | 50            | 50   | 20     | 30,35       | PK50     |
| MP552040       | 55            | 40   | 20     | 30,35       | PK55     |
| MP552050       | 55            | 50   | 20     | 30,35       | PK55     |
| MP602045       | 60            | 45   | 20     | 30,35       | PK60     |
| MP602050       | 60            | 50   | 20     | 30,35       | PK60     |
| MP602445       | 60            | 45   | 24     | 40          | PK60     |
| MP602750       | 60            | 50   | 27     | 35,40       | PK60     |
| MP632050       | 63            | 50   | 20     | 30,35       | PK63     |
| MP632445       | 63            | 45   | 24     | 40          | PK63     |
| MP632750       | 63            | 50   | 27     | 35,40       | PK63     |
| MP633050       | 63            | 50   | 30     | 40          | PK63     |
| MP652050       | 65            | 50   | 20     | 30,35       | PK65     |
| MP652445       | 65            | 45   | 24     | 40          | PK65     |
| MP702050       | 70            | 50   | 20     | 30,35       | PK70     |
| MP702445       | 70            | 45   | 24     | 40          | PK70     |
| MP702750       | 70            | 50   | 27     | 35,40,45,50 | PK70     |
| MP752445       | 75            | 45   | 24     | 40          | PK75     |
| MP752750       | 75            | 50   | 27     | 35,40,45,50 | PK75     |
| MP802445       | 80            | 45   | 24     | 40          | PK80     |
| MP802750       | 80            | 50   | 27     | 35,40,45,50 | PK80     |
| MP803050       | 80            | 50   | 30     | 40,50       | PK80     |
| MP803350       | 80            | 50   | 33     | 50,60       | PK80     |
| MP852445       | 85            | 45   | 24     | 40          | PK85     |
| MP852750       | 85            | 50   | 27     | 35,40,45,50 | PK85     |
| MP902750       | 90            | 50   | 27     | 35,40,45,50 | PK90     |
| MP903050       | 90            | 50   | 30     | 40,50       | PK90     |
| MP903350       | 90            | 50   | 33     | 50,60       | PK90     |
| MP1002750      | 100           | 50   | 27     | 35,40,45,50 | PK100    |
| MP1003050      | 100           | 50   | 30     | 40,50       | PK100    |
| MP1003350      | 100           | 50   | 33     | 50,60       | PK100    |
| MP1004050      | 100           | 50   | 40     | 70          | PK100    |
| MP1103350      | 110           | 50   | 33     | 50,60       | PK110    |
| MP1104050      | 110           | 50   | 40     | 70          | PK110    |
| MP1204050      | 120           | 50   | 40     | 70          | PK120    |
| MP1253350      | 125           | 50   | 33     | 50,60       | PK125    |
| MP1254050      | 125           | 50   | 40     | 70          | PK125    |
| MP1304050      | 130           | 50   | 40     | 70          | PK130    |
| MP1404058      | 140           | 58   | 40     | 70          | PK140    |
| MP1504058      | 150           | 58   | 40     | 70          | PK150    |
| MP1605158      | 160           | 58   | 51     | NIL         | PK160    |

MATERIAL : STEEL 11SMn30 - 080M46 OR EQUIVALENT  
 \* MATERIAL : ALUMINIUM UNI 2011-11S OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR



## STANDARD SHORT PISTONS



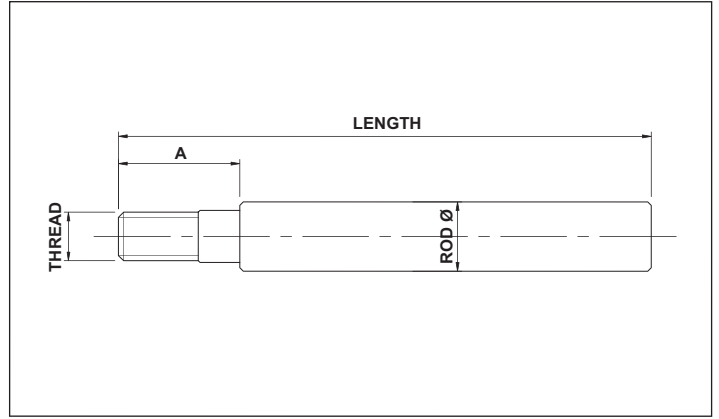
|                    |                     |                             |                      |                    |
|--------------------|---------------------|-----------------------------|----------------------|--------------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>40 | INTERNAL DIAMETER Ø B<br>15 | TOTAL LENGTH A<br>27 | SHORT PISTON<br>SP |
|--------------------|---------------------|-----------------------------|----------------------|--------------------|

| PART NUMBER | CYLINDER BORE | A  | Ø B | C   | Ø D |
|-------------|---------------|----|-----|-----|-----|
| MP401527SP  | 40            | 27 | 15  | 5   | 27  |
| MP501625SP  | 50            | 25 | 16  | NIL | NIL |
| MP502025SP  | 50            | 25 | 20  | NIL | NIL |
| MP502130SP  | 50            | 30 | 21  | 5   | 36  |
| MP602535SP  | 60            | 35 | 25  | 5   | 45  |
| MP632535SP  | 63            | 35 | 25  | 5   | 45  |
| MP652535SP  | 65            | 35 | 25  | 5   | 45  |
| MP702535SP  | 70            | 35 | 25  | 5   | 45  |
| MP802840SP  | 80            | 40 | 28  | 6   | 50  |
| MP903540SP  | 90            | 40 | 35  | 6   | 60  |
| MP1003540SP | 100           | 40 | 35  | 6   | 60  |

### SHORT PISTONS COME COMPLETE WITH SEALS

MATERIAL : STEEL 11SMn30 - 080M46 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 200 BAR

## THREADED CHROMED RODS



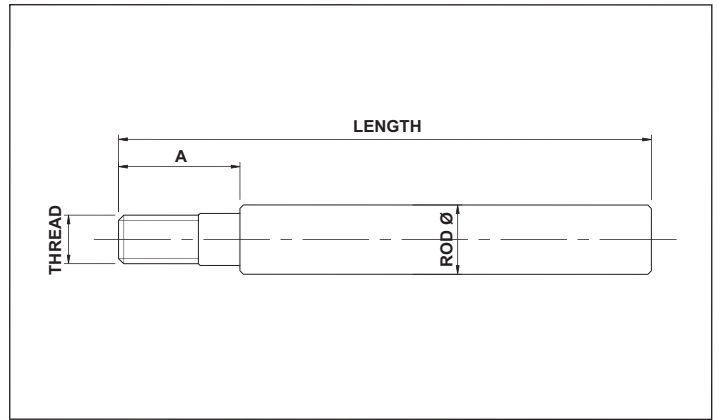
|              |              |        |        |          |
|--------------|--------------|--------|--------|----------|
| STANDARD ROD | ROD DIAMETER | STROKE | THREAD | THREADED |
| SR           | 16           | 200    | 10     | TH       |

| PART NUMBER  | ROD Ø | STROKE | LENGTH | A  | THREAD   | CHROMED LENGTH |
|--------------|-------|--------|--------|----|----------|----------------|
| SR16200-10TH | 16    | 200    | 310    | 41 | 10 x 1.5 | 269            |
| SR16300-10TH | 16    | 300    | 410    | 41 | 10 x 1.5 | 369            |
| SR16500-10TH | 16    | 500    | 610    | 41 | 10 x 1.5 | 569            |
| SR16600-10TH | 16    | 600    | 710    | 41 | 10 x 1.5 | 669            |
| SR16200-12TH | 16    | 200    | 313    | 41 | 12 x 1.5 | 272            |
| SR16300-12TH | 16    | 300    | 413    | 41 | 12 x 1.5 | 372            |
| SR16500-12TH | 16    | 500    | 613    | 41 | 12 x 1.5 | 572            |
| SR16600-12TH | 16    | 600    | 713    | 41 | 12 x 1.5 | 672            |
| SR16200-14TH | 16    | 200    | 351    | 58 | 14 x 1.5 | 293            |
| SR16300-14TH | 16    | 300    | 451    | 58 | 14 x 1.5 | 393            |
| SR16500-14TH | 16    | 500    | 651    | 58 | 14 x 1.5 | 593            |
| SR16600-14TH | 16    | 600    | 751    | 58 | 14 x 1.5 | 693            |
| SR20200-12TH | 20    | 200    | 313    | 41 | 12 x 1.5 | 272            |
| SR20300-12TH | 20    | 300    | 413    | 41 | 12 x 1.5 | 372            |
| SR20500-12TH | 20    | 500    | 613    | 41 | 12 x 1.5 | 572            |
| SR20600-12TH | 20    | 600    | 713    | 41 | 12 x 1.5 | 672            |
| SR20200-16TH | 20    | 200    | 351    | 58 | 16 x 1.5 | 293            |
| SR20300-16TH | 20    | 300    | 451    | 58 | 16 x 1.5 | 393            |
| SR20500-16TH | 20    | 500    | 651    | 58 | 16 x 1.5 | 593            |
| SR20600-16TH | 20    | 600    | 751    | 58 | 16 x 1.5 | 693            |
| SR22200-16TH | 22    | 200    | 351    | 58 | 16 x 1.5 | 293            |
| SR22300-16TH | 22    | 300    | 451    | 58 | 16 x 1.5 | 393            |
| SR22500-16TH | 22    | 500    | 651    | 58 | 16 x 1.5 | 593            |
| SR22600-16TH | 22    | 600    | 751    | 58 | 16 x 1.5 | 693            |
| SR25200-16TH | 25    | 200    | 351    | 58 | 16 x 1.5 | 293            |
| SR25300-16TH | 25    | 300    | 451    | 58 | 16 x 1.5 | 393            |
| SR25500-16TH | 25    | 500    | 651    | 58 | 16 x 1.5 | 593            |
| SR25600-16TH | 25    | 600    | 751    | 58 | 16 x 1.5 | 693            |
| SR25200-20TH | 25    | 200    | 365    | 65 | 20 x 1.5 | 300            |
| SR25300-20TH | 25    | 300    | 465    | 65 | 20 x 1.5 | 400            |
| SR25500-20TH | 25    | 500    | 665    | 65 | 20 x 1.5 | 600            |
| SR25600-20TH | 25    | 600    | 765    | 65 | 20 x 1.5 | 700            |
| SR28200-16TH | 28    | 200    | 351    | 58 | 16 x 1.5 | 293            |
| SR28300-16TH | 28    | 300    | 451    | 58 | 16 x 1.5 | 393            |
| SR28500-16TH | 28    | 500    | 651    | 58 | 16 x 1.5 | 593            |
| SR28600-16TH | 28    | 600    | 751    | 58 | 16 x 1.5 | 693            |
| SR28200-20TH | 28    | 200    | 365    | 65 | 20 x 1.5 | 300            |
| SR28300-20TH | 28    | 300    | 465    | 65 | 20 x 1.5 | 400            |
| SR28500-20TH | 28    | 500    | 665    | 65 | 20 x 1.5 | 600            |
| SR28600-20TH | 28    | 600    | 765    | 65 | 20 x 1.5 | 700            |
| SR30200-20TH | 30    | 200    | 365    | 65 | 20 x 1.5 | 300            |
| SR30300-20TH | 30    | 300    | 465    | 65 | 20 x 1.5 | 400            |
| SR30500-20TH | 30    | 500    | 665    | 65 | 20 x 1.5 | 600            |
| SR30600-20TH | 30    | 600    | 765    | 65 | 20 x 1.5 | 700            |

THESE RODS ARE DESIGNED TO FIT ALL OUR RANGE OF THREADED PISTONS

MATERIAL : STEEL CK45 - CHROME 25 µm OR EQUIVALENT

## THREADED CHROMED RODS



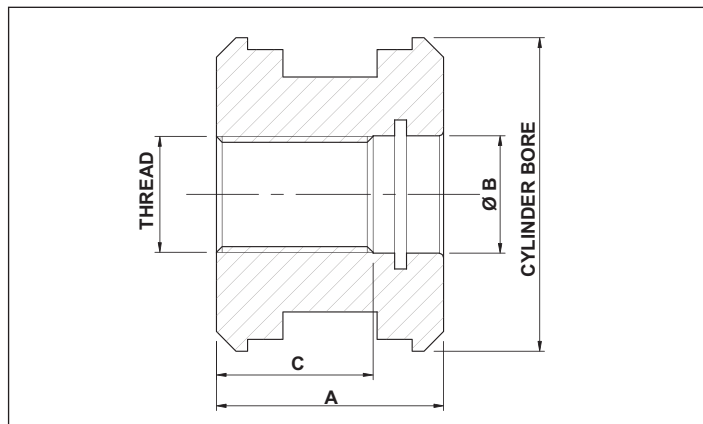
|              |              |        |        |          |
|--------------|--------------|--------|--------|----------|
| STANDARD ROD | ROD DIAMETER | STROKE | THREAD | THREADED |
| SR           | 30           | 200    | 24     | TH       |

| PART NUMBER  | ROD Ø | STROKE | LENGTH | A  | THREAD   | CHROMED LENGTH |
|--------------|-------|--------|--------|----|----------|----------------|
| SR30200-24TH | 30    | 200    | 388    | 75 | 24 x 2   | 313            |
| SR30300-24TH | 30    | 300    | 488    | 75 | 24 x 2   | 413            |
| SR30500-24TH | 30    | 500    | 688    | 75 | 24 x 2   | 613            |
| SR30600-24TH | 30    | 600    | 788    | 75 | 24 x 2   | 713            |
| SR32200-20TH | 32    | 200    | 365    | 65 | 20 x 1.5 | 300            |
| SR32300-20TH | 32    | 300    | 465    | 65 | 20 x 1.5 | 400            |
| SR32500-20TH | 32    | 500    | 665    | 65 | 20 x 1.5 | 600            |
| SR32600-20TH | 32    | 600    | 765    | 65 | 20 x 1.5 | 700            |
| SR32200-24TH | 32    | 200    | 388    | 75 | 24 x 2   | 313            |
| SR32300-24TH | 32    | 300    | 488    | 75 | 24 x 2   | 413            |
| SR32500-24TH | 32    | 500    | 688    | 75 | 24 x 2   | 613            |
| SR32600-24TH | 32    | 600    | 788    | 75 | 24 x 2   | 713            |
| SR35200-20TH | 35    | 200    | 365    | 65 | 20 x 1.5 | 300            |
| SR35300-20TH | 35    | 300    | 465    | 65 | 20 x 1.5 | 400            |
| SR35500-20TH | 35    | 500    | 665    | 65 | 20 x 1.5 | 600            |
| SR35600-20TH | 35    | 600    | 765    | 65 | 20 x 1.5 | 700            |
| SR35200-24TH | 35    | 200    | 388    | 75 | 24 x 2   | 313            |
| SR35300-24TH | 35    | 300    | 488    | 75 | 24 x 2   | 413            |
| SR35500-24TH | 35    | 500    | 688    | 75 | 24 x 2   | 613            |
| SR35600-24TH | 35    | 600    | 788    | 75 | 24 x 2   | 713            |
| SR36200-24TH | 36    | 200    | 388    | 75 | 24 x 2   | 313            |
| SR36300-24TH | 36    | 300    | 488    | 75 | 24 x 2   | 413            |
| SR36500-24TH | 36    | 500    | 688    | 75 | 24 x 2   | 613            |
| SR36600-24TH | 36    | 600    | 788    | 75 | 24 x 2   | 713            |
| SR40200-24TH | 40    | 200    | 388    | 75 | 24 x 2   | 313            |
| SR40300-24TH | 40    | 300    | 488    | 75 | 24 x 2   | 413            |
| SR40500-24TH | 40    | 500    | 688    | 75 | 24 x 2   | 613            |
| SR40600-24TH | 40    | 600    | 788    | 75 | 24 x 2   | 713            |
| SR50200-24TH | 50    | 200    | 403    | 75 | 24 x 2   | 328            |
| SR50300-24TH | 50    | 300    | 503    | 75 | 24 x 2   | 428            |
| SR50500-24TH | 50    | 500    | 703    | 75 | 24 x 2   | 628            |
| SR50600-24TH | 50    | 600    | 803    | 75 | 24 x 2   | 728            |

THESE RODS ARE DESIGNED TO FIT ALL OUR RANGE OF THREADED PISTONS

MATERIAL : STEEL CK45 - CHROME 25 µm OR EQUIVALENT

## STANDARD THREADED PISTONS



|                    |                     |                       |                      |                |
|--------------------|---------------------|-----------------------|----------------------|----------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>25 | INTERNAL THREAD<br>10 | TOTAL LENGTH A<br>25 | THREADED<br>TH |
|--------------------|---------------------|-----------------------|----------------------|----------------|

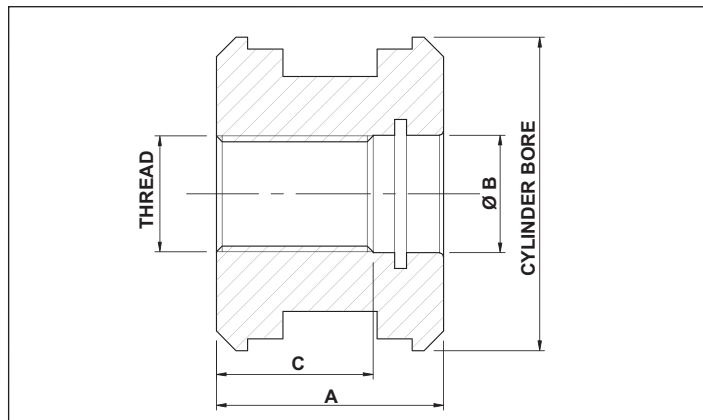
| PART NUMBER | CYLINDER BORE | A  | Ø B  | C    | THREAD   |
|-------------|---------------|----|------|------|----------|
| MP251025TH  | 25            | 25 | 11.1 | 17.5 | 10 x 1.5 |
| MP301225TH  | 30            | 25 | 13.1 | 17.5 | 12 x 1.5 |
| MP321640TH  | 32            | 40 | 17.1 | 28   | 16 x 1.5 |
| MP401640TH  | 40            | 40 | 17.1 | 30   | 16 x 1.5 |
| MP502040TH  | 50            | 40 | 21.1 | 28   | 20 x 1.5 |
| MP552040TH  | 55            | 40 | 21.1 | 30   | 20 x 1.5 |
| MP552240TH  | 55            | 40 | 22.1 | 30   | 22 x 1.5 |
| MP602045TH  | 60            | 45 | 21.1 | 30   | 20 x 1.5 |
| MP602445TH  | 60            | 45 | 25.1 | 30   | 24 x 2   |
| MP632445TH  | 63            | 45 | 25.1 | 30   | 24 x 2   |
| MP652445TH  | 65            | 45 | 25.1 | 30   | 24 x 2   |
| MP702445TH  | 70            | 45 | 25.1 | 30   | 24 x 2   |
| MP752445TH  | 75            | 45 | 25.1 | 30   | 24 x 2   |
| MP802445TH  | 80            | 45 | 25.1 | 30   | 24 x 2   |
| MP802745TH  | 80            | 45 | 28.1 | 30   | 27 x 2   |
| MP902750TH  | 90            | 50 | 28.1 | 35   | 27 x 2   |
| MP903350TH  | 90            | 50 | 35.1 | 35   | 33 x 2   |
| MP1003350TH | 100           | 50 | 35.1 | 35   | 33 x 2   |
| MP1004050TH | 100           | 50 | 42.1 | 35   | 40 x 2   |
| MP1103950TH | 110           | 50 | 42.1 | 35   | 39 x 3   |
| MP1204250TH | 120           | 50 | 45.1 | 35   | 42 x 3   |
| MP1254250TH | 125           | 50 | 45.1 | 35   | 42 x 3   |
| MP1304250TH | 130           | 50 | 45.1 | 35   | 42 x 3   |
| MP1404858TH | 140           | 58 | 51.1 | 40   | 48 x 3   |
| MP1504858TH | 150           | 58 | 51.1 | 40   | 48 x 3   |
| MP1605258TH | 160           | 58 | 54.1 | 40   | 52 x 3   |

### THREADED PISTONS COME COMPLETE WITH SEALS

STANDARD THREADED PISTONS ARE DESIGNED TO FIT OUR RANGE OF THREADED RODS

MATERIAL : STEEL 11SMn30 - 080M46 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

## SHORT THREADED PISTONS



|              |               |                 |                |          |              |
|--------------|---------------|-----------------|----------------|----------|--------------|
| METAL PISTON | CYLINDER BORE | INTERNAL THREAD | TOTAL LENGTH A | THREADED | SHORT PISTON |
| MP           | 25            | 10              | 25             | TH       | SP           |

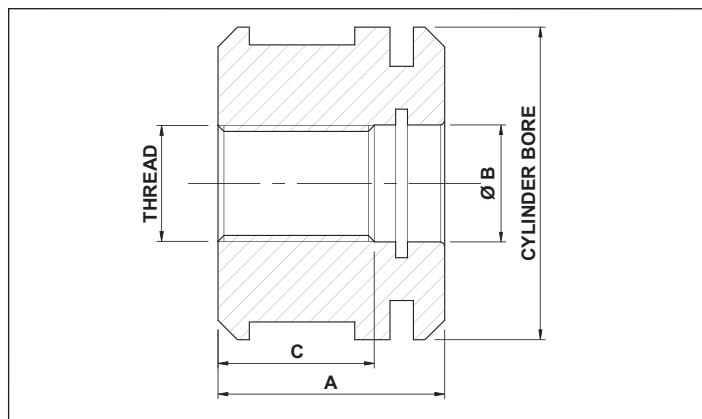
| PART NUMBER    | CYLINDER BORE | A  | Ø B  | C    | THREAD   |
|----------------|---------------|----|------|------|----------|
| MP251025TH     | 25            | 25 | 11.1 | 17.5 | 10 x 1.5 |
| MP301225TH     | 30            | 25 | 13.1 | 17.5 | 12 x 1.5 |
| MP321233TH-SP  | 32            | 33 | 13.1 | 25.5 | 12 x 1.5 |
| MP401427TH-SP  | 40            | 27 | 15.1 | 19   | 14 x 1.5 |
| MP401627TH-SP  | 40            | 27 | 17.1 | 19   | 16 x 1.5 |
| MP502030TH-SP  | 50            | 30 | 21.1 | 21   | 20 x 1.5 |
| MP602035TH-SP  | 60            | 35 | 21.1 | 24   | 20 x 1.5 |
| MP602435TH-SP  | 60            | 35 | 25.1 | 24   | 24 x 2   |
| MP632435TH-SP  | 63            | 35 | 25.1 | 24   | 24 x 2   |
| MP652435TH-SP  | 65            | 35 | 25.1 | 24   | 24 x 2   |
| MP702435TH-SP  | 70            | 35 | 25.1 | 24   | 24 x 2   |
| MP752435TH-SP  | 75            | 35 | 25.1 | 24   | 24 x 2   |
| MP802740TH-SP  | 80            | 40 | 28.1 | 26   | 27 x 2   |
| MP903340TH-SP  | 90            | 40 | 35.1 | 26   | 33 x 2   |
| MP1003340TH-SP | 100           | 40 | 35.1 | 26   | 33 x 2   |

**THREADED PISTONS COME COMPLETE WITH SEALS**

**SHORT THREADED PISTONS ARE DESIGNED TO FIT OUR RANGE OF THREADED RODS**

MATERIAL : STEEL 11SMn30 - 080M46 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 200 BAR

## HIGH SPEED THREADED PISTONS



|                    |                     |                       |                      |                |                         |
|--------------------|---------------------|-----------------------|----------------------|----------------|-------------------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>32 | INTERNAL THREAD<br>12 | TOTAL LENGTH A<br>30 | THREADED<br>TH | HIGH SPEED PISTON<br>HS |
|--------------------|---------------------|-----------------------|----------------------|----------------|-------------------------|

| PART NUMBER    | CYLINDER BORE | A  | Ø B  | C  | THREAD   |
|----------------|---------------|----|------|----|----------|
| MP321230TH-HS  | 32            | 30 | 13.1 | 20 | 12 x 1.5 |
| MP351630TH-HS  | 35            | 30 | 17.1 | 20 | 16 x 1.5 |
| MP401630TH-HS  | 40            | 30 | 17.1 | 20 | 16 x 1.5 |
| MP501630TH-HS  | 50            | 30 | 17.1 | 20 | 16 x 1.5 |
| MP602435TH-HS  | 60            | 35 | 25.1 | 23 | 24 x 2   |
| MP632435TH-HS  | 63            | 35 | 25.1 | 23 | 24 x 2   |
| MP652435TH-HS  | 65            | 35 | 25.1 | 23 | 24 x 2   |
| MP702435TH-HS  | 70            | 35 | 25.1 | 23 | 24 x 2   |
| MP802740TH-HS  | 80            | 40 | 28.1 | 28 | 27 x 2   |
| MP903345TH-HS  | 90            | 45 | 35.1 | 30 | 33 x 2   |
| MP1003345TH-HS | 100           | 45 | 35.1 | 30 | 33 x 2   |

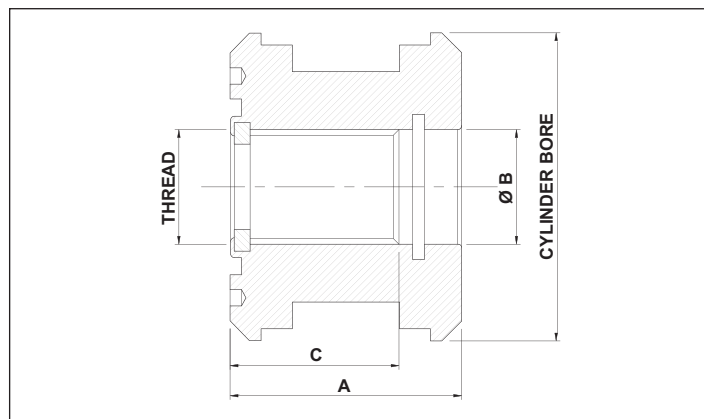
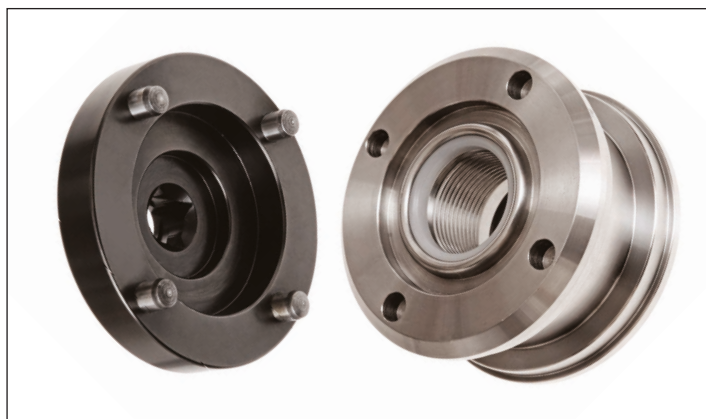
**HIGH SPEED THREADED PISTONS COME COMPLETE WITH SEALS**

**HIGH SPEED PISTONS ARE DESIGNED TO FIT OUR RANGE OF THREADED RODS**

**HIGH SPEED PISTONS CAN BE USED IN A SINGLE ACTING APPLICATION  
PLEASE ASK FOR A SINGLE ACTING SEAL WHEN ORDERING**

MATERIAL : STEEL 11SMn30 - 080M46 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 400 BAR

## SELF LOCKING THREADED PISTONS



|                    |                     |                       |                      |                |                           |
|--------------------|---------------------|-----------------------|----------------------|----------------|---------------------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>35 | INTERNAL THREAD<br>14 | TOTAL LENGTH A<br>33 | THREADED<br>TH | SELF LOCKING PISTON<br>SL |
|--------------------|---------------------|-----------------------|----------------------|----------------|---------------------------|

| PART NUMBER    | CYLINDER BORE | A  | Ø B  | C  | THREAD   | PIN SOCKET |
|----------------|---------------|----|------|----|----------|------------|
| MP351433TH-SL  | 35            | 33 | 17.1 | 23 | 14 x 1.5 | PSOCK 14   |
| MP401640TH-SL  | 40            | 40 | 17.1 | 30 | 16 x 1.5 | PSOCK 16   |
| MP502040TH-SL  | 50            | 40 | 21.1 | 28 | 20 x 1.5 | PSOCK 20   |
| MP602445TH-SL  | 60            | 45 | 25.1 | 30 | 24 x 2   | PSOCK 24   |
| MP632445TH-SL  | 63            | 45 | 25.1 | 30 | 24 x 2   | PSOCK 24   |
| MP652445TH-SL  | 65            | 45 | 25.1 | 30 | 24 x 2   | PSOCK 24   |
| MP702445TH-SL  | 70            | 45 | 25.1 | 30 | 24 x 2   | PSOCK 24   |
| MP752745TH-SL  | 75            | 45 | 28.1 | 30 | 27 x 2   | PSOCK 27   |
| MP802745TH-SL  | 80            | 45 | 28.1 | 30 | 27 x 2   | PSOCK 27   |
| MP803045TH-SL  | 80            | 45 | 33.1 | 30 | 30 x 2   | PSOCK 30   |
| MP903350TH-SL  | 90            | 50 | 35.1 | 35 | 33 x 2   | PSOCK 33   |
| MP1003350TH-SL | 100           | 50 | 35.1 | 35 | 33 x 2   | PSOCK 33   |

### SELF LOCKING PISTONS COME COMPLETE WITH SEALS

SELF LOCKING PISTONS ARE DESIGNED TO FIT OUR RANGE OF THREADED RODS

MATERIAL : STEEL 11SMn30 - 080M46 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

## SELF LOCKING PISTON TORQUE SETTINGS

| PART NUMBER    | Nm      | kgm       | Lbf-ft   | PIN SOCKET |
|----------------|---------|-----------|----------|------------|
| MP351433TH-SL  | 35-45   | 3.5 - 4.5 | 26 - 34  | PSOCK 14   |
| MP401640TH-SL  | 40-50   | 4.0 - 5.0 | 30 - 38  | PSOCK 16   |
| MP502040TH-SL  | 50-60   | 5.0 - 6.0 | 36 - 44  | PSOCK 20   |
| MP602445TH-SL  | 60-75   | 6.0 - 7.5 | 44 - 55  | PSOCK 24   |
| MP632445TH-SL  | 60-75   | 6.0 - 7.5 | 44 - 55  | PSOCK 24   |
| MP652445TH-SL  | 60-75   | 6.0 - 7.5 | 44 - 55  | PSOCK 24   |
| MP702445TH-SL  | 60-75   | 6.0 - 7.5 | 44 - 55  | PSOCK 24   |
| MP752745TH-SL  | 80-100  | 8.0 - 10  | 60 - 75  | PSOCK 27   |
| MP802745TH-SL  | 80-100  | 8.0 - 10  | 60 - 75  | PSOCK 27   |
| MP803045TH-SL  | 100-140 | 10 - 14   | 80 - 100 | PSOCK 30   |
| MP903350TH-SL  | 130-170 | 13 - 17   | 95 - 125 | PSOCK 33   |
| MP1003350TH-SL | 130-170 | 13 - 17   | 95 - 125 | PSOCK 33   |

## ADHESIVE RANGE



| PRODUCT                     | DESCRIPTION  | SUITABLE FOR  | SIZES AVAILABLE                       |
|-----------------------------|--|---|---------------------------------------|
| ND12199-FISHBOWL<br>ND12150 | Medium, Removable Strength Threadlocker<br>Seals nuts and bolts allowing disassembly using standard tools. Typical uses include locking nuts or bolts from 1/4" to 3/4" in diameter. Compare to Loctite 242  | Fasteners that are 1/4 to 3/4 in diameter<br>(Removable Grade)  | Plastic bowl dispenser<br>50ml bottle |
| ND12250                     | Medium Strength Threadlocker.<br>Greater oil tolerance. Typical uses include locking nuts or bolts ranging from 1/4" to 3/4" in diameter. Compare to Loctite 243   | Fasteners that are 1/4 to 3/4 in diameter<br>(Removable Grade)  | 50ml bottle                           |
| ND12535-GEL                 | Medium Strength Gel - Anaerobic Thread locker – Stops fasteners loosening from shock and vibration. Alleviates rust-lock and prevents leakage  | Fasteners that are 1/4 to 3/4 in diameter (Removable Grade)   | 35ml pump                             |
| ND13199-FISHBOWL<br>ND13150 | High Strength Permanent Thread locker.<br>For maximum security suitable for most applications where disassembly is not required. Designed to withstand extreme environmental conditions and chemical exposure. Ideal for the prevention of rust and corrosion. Typical uses include permanently locking nuts or bolts up to 3/4" in diameter. Heat and hand tools are needed for disassembly. Compare to Loctite 262 | Lock Nuts and bolts up to 1" in diameter  | Plastic bowl dispenser<br>50ml bottle |
| ND14050                     | High Strength Threadlocker.<br>For maximum security. Suitable for most applications where disassembly is not required. Typical uses include permanently locking nuts or bolts up to 1" in diameter. Heat and hand tools are needed for disassembly. Compare to Loctite 271   | Lock Nuts and bolts up to 1" in diameter  | 50ml bottle                           |
| ND14600-2<br>ND14650        | High Strength Threadlocker.<br>Typical uses include permanently locking nuts or bolts up to 1 1/2" in diameter. Heat and hand tools are needed for disassembly. Compare to Loctite 277   | Lock Nuts and bolts up to 1 1/2" in diameter  | 2ml tube<br>50ml bottle               |
| ND42050                     | Industrial Grade Sealant.<br>Cures rapidly with controlled lubricity preventing galling while protecting from corrosion and rust. Parts may be repositioned up to 24 hours after assembly. Typical uses include stainless steel and all other metal fittings. Gasoline resistant. Compare to Loctite 565/592   | Industrial Grade, controlled locking strength, metal fittings, high temp and high performance and is gasoline resistant | 50ml tube                             |
| ND44050                     | Hydraulic & Pneumatic High Pressure Sealant.<br>With excellent solvent resistance. It locks hydraulic and pneumatic connections producing a high strength, high pressure seal, while allowing easy disassembly with standard tools. Typical uses include pneumatic fittings, small pipe threads and hydraulic fittings up to 2" in diameter. Compare to Loctite 545  | Pneumatic and hydraulic sealant for fluid, power and gas system connections   | 50ml bottle                           |
| ND44450                     | High Pressure Sealant.<br>A general purpose pipe sealant that creates an instant seal on threaded joints with a high resistance to solvents and withstands temperature to 300° F. Typical uses; small pipe threads and hydraulic fittings. Compare to Loctite 569  | Hydraulic sealant, non-shrink, high vibration and shock resistant   | 50ml bottle                           |

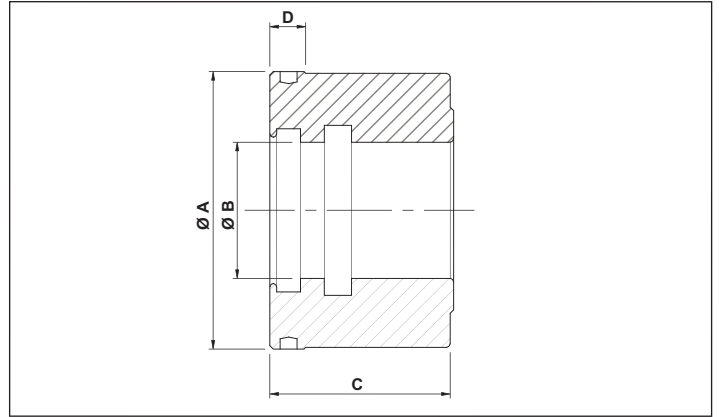


## ADHESIVE RANGE



| PRODUCT                  | DESCRIPTION   | SUITABLE FOR  | SIZES AVAILABLE                   |
|--------------------------|---|---|-----------------------------------|
| ND46050                  | PTFE Instant Pipe Sealant.<br>Prevents galling and provides an instant low pressure seal on coarse fitting threads which is further strengthened as the product cures. Assembled parts can withstand temperatures up to 400°F and may be repositioned up to 24 hours after assembly. Typical uses include stainless steel, aluminium, galvanised metal and other inert metal threaded pipe fittings. Gasoline resistant. Compare to Loctite 567 | General purpose. Suitable for stainless steel and other inert metal threaded pipes and fittings. Also gasoline resistant                            | 50ml tube                         |
| ND53050                  | General Purpose Retaining Compound.<br>Bonds metal assemblies. A low viscosity retaining compound recommended for diametral gap distances up to 0.005" to augment press fits. Withstands temperatures of up to 300° F providing a shear strength of 3,000 psi after 24 hours with a fixture time of 10 minutes. Typical uses: Rotors, shafts, bushing, bearings, and pulleys. Compare to Loctite 609/675  | General purpose for rotors, augment press fits, shafts, bushing, bearings and pulleys   | 50ml bottle                       |
| ND54100-2<br>ND54150     | High Strength Retaining Compound.<br>Cures at room temperatures filling diametral gaps up to 0.015". Typical uses include fitted cylindrical parts replacing set screws, clamp rings, and snap rings. It provides a shear strength greater than 3'000 psi after 24 hours with a fixture time of 10 minutes. Compare to Loctite 680  | High strength gap filling. Permanently retains slip fit and is suitable for rotors, shafts, impellers and splines.                                  | 2ml tube<br>50ml bottle           |
| ND73025                  | Flexible Gasket Maker that is solvent resistant - Anaerobic liquid gasketing. Benefits include: remains liquid when exposed to air, cures when confined between mating flanges, can fill gaps as large as 0.050. alleviates the need for preformed gaskets  | Suitable for aluminium and rigid machined flanges   | 250ml tube<br>50ml tube           |
| ND90712<br>ND90716       | Cooper Anti Seize Compound - specially formulated to prevent seizing, galling, pitting, excessive wear and corrosion.   | Ideal for use on softer metal parts such as copper and brass. Protects from rust and corrosion.   | 2ml tube<br>16oz jar with a brush |
| NDDRIVE-GRIP             | Anti Cam-Out Fluid.<br>Increases the grip- strength between the fastener head and tool by as much as 700%   | Unlimited shelf life, odourless, non-toxic, non-corrosive, works instantly, won't irritate skin   | 0.5 oz. tube                      |
| Vibra-Tite VC-3 Original | Vibra-Tite VC3 Original.<br>Is a powerful locking and sealing coating for threaded fasteners that work on the principle of "friction through viscosity".VC3 Original utilizes a special blend of acrylic resins to prevent fasteners from loosening even under the stress of prolonged and extreme shock and vibration.   | Stops fasteners from loosening from extreme shock and vibration. Works with metal, wood, plastic and more. Works with internal or external threads. | 1 oz. bottle<br>250cc can         |

## UNFINISHED GLANDS



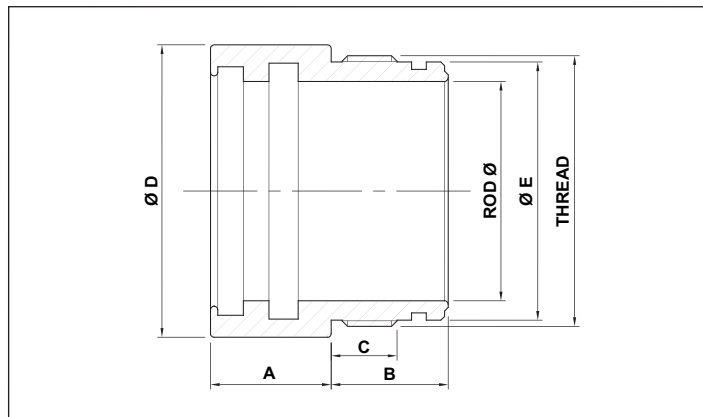
|                      |                            |                        |                      |                        |
|----------------------|----------------------------|------------------------|----------------------|------------------------|
| STANDARD GLAND<br>SG | OUTSIDE DIAMETER Ø A<br>54 | ROD DIAMETER Ø B<br>20 | PARTIAL LENGTH<br>57 | UNFINISHED GLAND<br>UF |
|----------------------|----------------------------|------------------------|----------------------|------------------------|

| PART NUMBER | Ø A | Ø B | C   | D  |
|-------------|-----|-----|-----|----|
| SG542057UF  | 54  | 20  | 65  | 8  |
| SG542257UF  | 54  | 22  | 65  | 8  |
| SG542557UF  | 54  | 25  | 65  | 8  |
| SG542857UF  | 54  | 28  | 65  | 8  |
| SG742565UF  | 74  | 25  | 75  | 10 |
| SG742865UF  | 74  | 28  | 75  | 10 |
| SG743065UF  | 74  | 30  | 75  | 10 |
| SG743265UF  | 74  | 32  | 75  | 10 |
| SG743565UF  | 74  | 35  | 75  | 10 |
| SG744065UF  | 74  | 40  | 75  | 10 |
| SG943075UF  | 94  | 30  | 85  | 10 |
| SG943575UF  | 94  | 35  | 85  | 10 |
| SG944075UF  | 94  | 40  | 85  | 10 |
| SG944575UF  | 94  | 45  | 85  | 10 |
| SG945075UF  | 94  | 50  | 85  | 10 |
| SG1144095UF | 114 | 40  | 107 | 12 |
| SG1144595UF | 114 | 45  | 107 | 12 |
| SG1145095UF | 114 | 50  | 107 | 12 |
| SG1146095UF | 114 | 60  | 107 | 12 |

### UNFINISHED GLANDS COME COMPLETE WITH SEALS FOR THE ROD

MATERIAL : HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

## DISPLACEMENT GLANDS

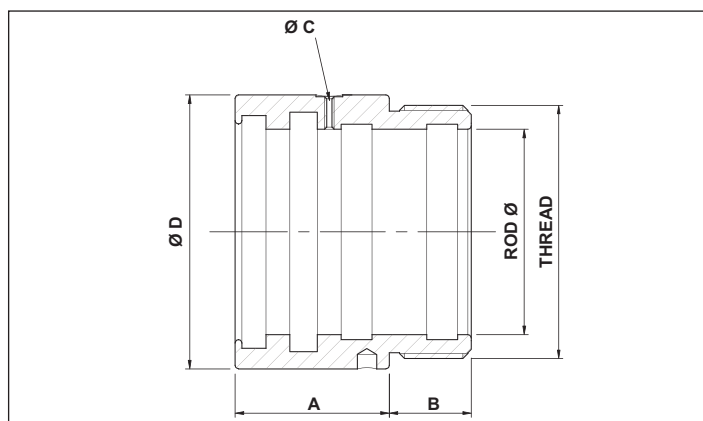


|                          |                     |                    |                   |
|--------------------------|---------------------|--------------------|-------------------|
| DISPLACEMENT GLAND<br>DG | CYLINDER BORE<br>30 | ROD DIAMETER<br>20 | LENGTH OF B<br>27 |
|--------------------------|---------------------|--------------------|-------------------|

| PART NUMBER | CYLINDER BORE | ROD Ø | A  | B  | C  | Ø D | Ø E  | THREAD   | SEAL KIT |
|-------------|---------------|-------|----|----|----|-----|------|----------|----------|
| DG302027    | 30            | 20    | 30 | 27 | 15 | 40  | 30.6 | 34 x 1.5 | DG20     |
| DG352532    | 35            | 25    | 33 | 32 | 18 | 45  | 35.6 | 39 x 1.5 | DG25     |
| DG403032    | 40            | 30    | 33 | 32 | 18 | 50  | 40.6 | 44 x 1.5 | DG30     |
| DG453532    | 45            | 35    | 33 | 32 | 18 | 55  | 45.6 | 49 x 1.5 | DG35     |
| DG504035    | 50            | 40    | 35 | 35 | 22 | 60  | 50.6 | 54 x 1.5 | DG40     |
| DG554535    | 55            | 45    | 35 | 35 | 22 | 65  | 55.6 | 60 x 1.5 | DG45     |
| DG605040    | 60            | 50    | 35 | 40 | 26 | 70  | 60.6 | 64 x 1.5 | DG50     |
| DG706040    | 70            | 60    | 35 | 40 | 26 | 80  | 70.6 | 74 x 1.5 | DG60     |
| DG908050    | 90            | 80    | 50 | 50 | 35 | 105 | 90.6 | 95 x 2   | DG80     |

MATERIAL : HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 250 BAR

## LARGE DISPLACEMENT GLANDS

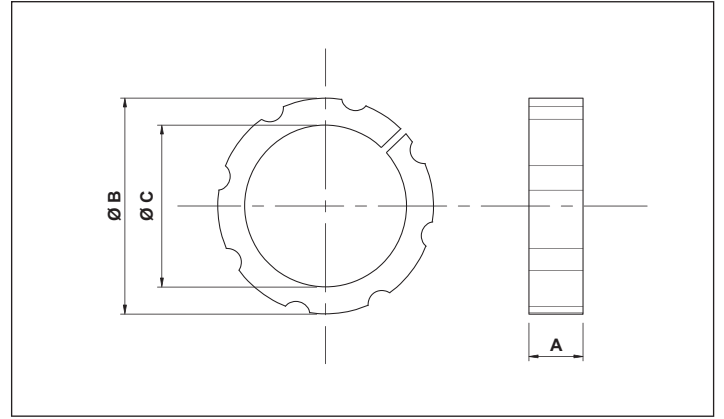


|                          |                     |                    |                   |
|--------------------------|---------------------|--------------------|-------------------|
| DISPLACEMENT GLAND<br>DG | CYLINDER BORE<br>85 | ROD DIAMETER<br>70 | LENGTH OF B<br>30 |
|--------------------------|---------------------|--------------------|-------------------|

| PART NUMBER | CYLINDER BORE | ROD Ø | A   | B  | C        | Ø D | THREAD  | SEAL KIT |
|-------------|---------------|-------|-----|----|----------|-----|---------|----------|
| DG807035    | 80            | 70    | 35  | 35 | NIL      | 95  | 85 x 2  | DG70     |
| DG857030    | 85            | 70    | 60  | 30 | M5 x 0.8 | 100 | 90 x 2  | DG70     |
| DG908040    | 90            | 80    | 55  | 40 | M5 x 0.8 | 107 | 96 x 2  | DG80     |
| DG12010042  | 120           | 100   | 115 | 42 | M5 x 0.8 | 139 | 124 x 2 | DG100    |

MATERIAL : STEEL S355JR OR EQUIVALENT  
VENT HOLE IN SIDE DRILLED AND TAPPED, PLUG SUPPLIED  
MAXIMUM WORKING PRESSURE 250 BAR

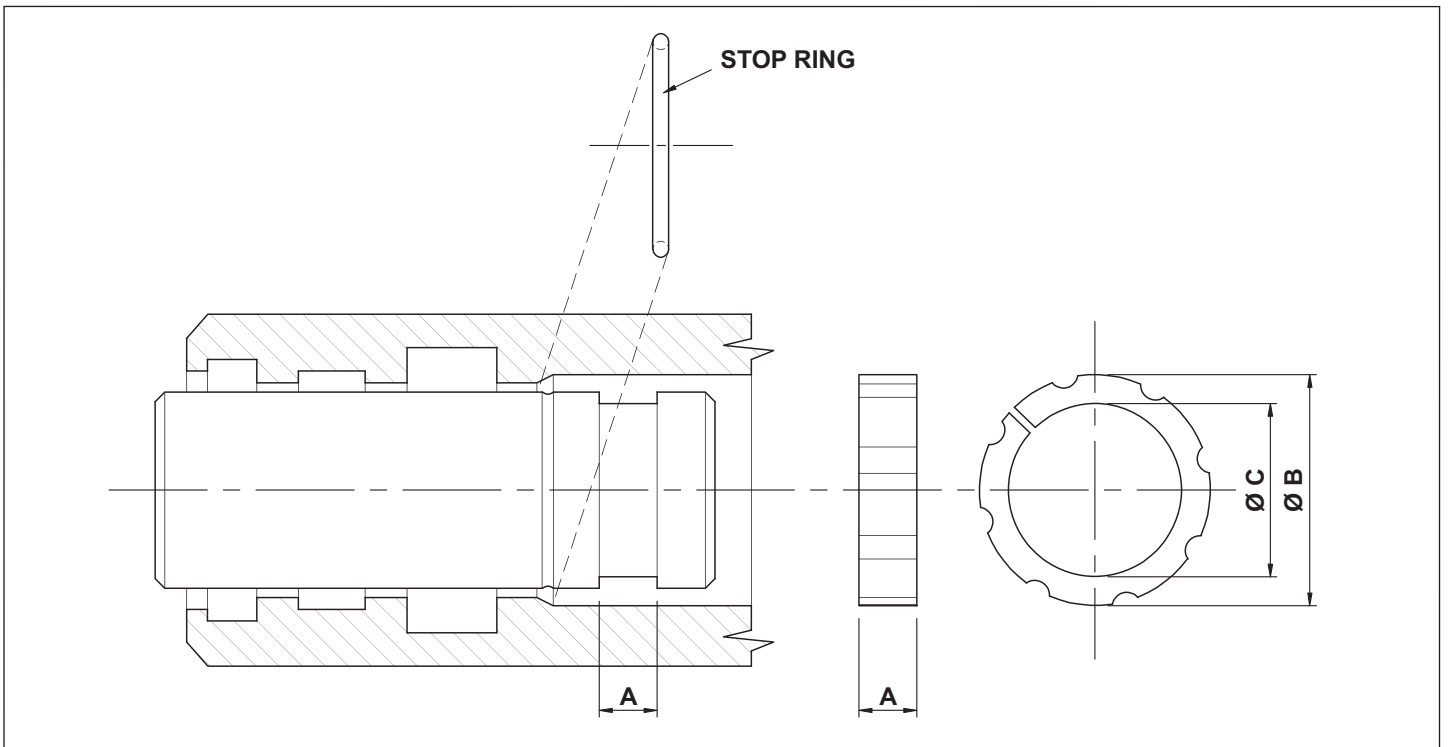
# BEARING RINGS FOR DISPLACEMENT CYLINDERS



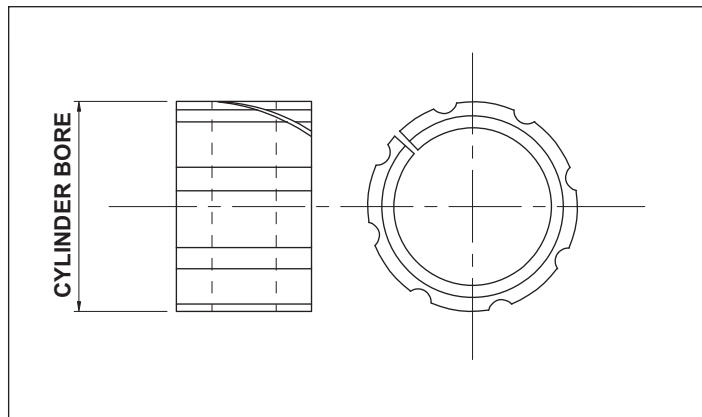
|                                  |                            |                           |                      |
|----------------------------------|----------------------------|---------------------------|----------------------|
| BEARING RING DISPLACEMENT<br>BRD | OUTSIDE DIAMETER Ø B<br>30 | INSIDE DIAMETER Ø C<br>15 | TOTAL LENGTH A<br>15 |
|----------------------------------|----------------------------|---------------------------|----------------------|

| PART NUMBER | ROD / CYLINDER | A  | Ø B | Ø C |
|-------------|----------------|----|-----|-----|
| BRD301515   | 20/30          | 15 | 30  | 15  |
| BRD352015   | 25/35          | 15 | 35  | 20  |
| BRD402515   | 30/40          | 15 | 40  | 25  |
| BRD453015   | 35/45          | 15 | 45  | 30  |
| BRD503515   | 40/50          | 15 | 50  | 35  |
| BRD504015   | 45/50          | 15 | 50  | 40  |
| BRD554015   | 45/55          | 15 | 55  | 40  |
| BRD604515   | 50/60          | 15 | 60  | 45  |
| BRD655515   | 60/65          | 15 | 65  | 55  |
| BRD705515   | 60/70          | 15 | 70  | 55  |
| BRD807110   | 75/80          | 10 | 80  | 71  |
| BRD856515   | 70/85          | 15 | 85  | 65  |
| BRD1009015  | 95/100         | 15 | 100 | 90  |
| BRD12011015 | 115/120        | 15 | 120 | 110 |

MATERIAL : GLASS FILLED ACETAL / POLYACETAL



## DISPLACEMENT BEARING RINGS

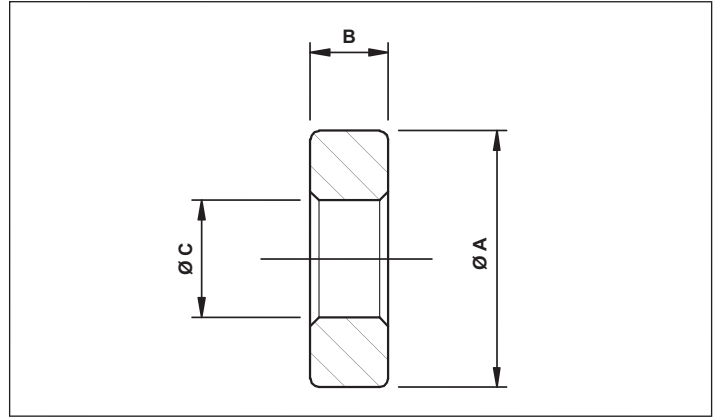
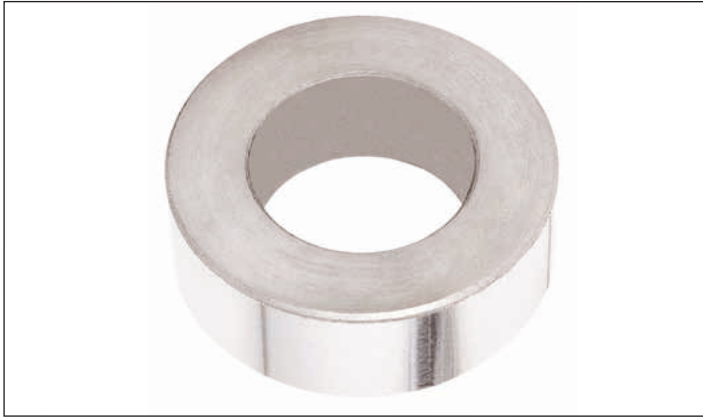


BEARING RING DISPLACEMENT  
BRD 25  
CYLINDER BORE

| PART NUMBER | STANDARD PISTON                         | STANDARD THREADED PISTON | SHORT THREADED PISTON |
|-------------|---|--------------------------|-----------------------|
| BRD25       | MP251025TH-AL                           | MP251025TH-AL            |                       |
| BRD30       | MP301324.7AL                            | MP301225TH               |                       |
| BRD32       | MP321530                                | MP321540                 | MP321640TH            |
| BRD32SP     |   | MP321233TH-SP            |                       |
| BRD35       | MP351540                                |                          |                       |
| BRD40       | MP401540 MP402040                       | MP401640TH               |                       |
| BRD40SP     |   |                          | MP401627TH-SP         |
| BRD45       | MP451540                                |                          |                       |
| BRD50       | MP501540 MP502040 MP502050              | MP502040TH               |                       |
| BRD50SP     |   |                          | MP502030TH-SP         |
| BRD55       | MP552040 MP552050                       | MP552240TH               |                       |
| BRD60       | MP602045 MP602050 MP602445 MP602750     | MP602445TH               |                       |
| BRD60SP     |   |                          | MP602435TH-SP         |
| BRD63       | MP632050 MP632445 MP632750 MP633050     | MP632445TH               |                       |
| BRD63SP     |   |                          | MP632435TH-SP         |
| BRD65       | MP652050 MP652445                       | MP652445TH               |                       |
| BRD65SP     |   |                          | MP652435TH-SP         |
| BRD70       | MP702050 MP702445 MP702750              | MP702445TH               |                       |
| BRD70SP     |   |                          | MP702435TH-SP         |
| BRD75       | MP752445 MP752750                       | MP752445TH               |                       |
| BRD75SP     |   |                          | MP752435TH            |
| BRD80       | MP802445 MP802750 MP803050              | MP802445TH MP802750TH    |                       |
| BRD80SP     |   |                          | MP802740TH-SP         |
| BRD85       | MP852445 MP852750                       |                          |                       |
| BRD90       | MP902750 MP903050 MP903350              | MP902750TH MP903350TH    |                       |
| BRD90SP     |   |                          | MP903340TH-SP         |
| BRD100      | MP1002750 MP1003050 MP1003350 MP1004050 | MP1003350TH MP1004050TH  |                       |
| BRD100SP    |   |                          | MP1003340TH-SP        |
| BRD110      | MP1103350 MP1104050                     | MP1103950TH              |                       |
| BRD120      | MP1204050                               | MP1204250TH              |                       |
| BRD125      | MP1253350 MP1254050                     | MP1254250TH              |                       |

MATERIAL : GLASS FILLED ACETAL / POLYACETAL

## DISPLACEMENT PISTONS



|                            |                     |                             |                      |
|----------------------------|---------------------|-----------------------------|----------------------|
| DISPLACEMENT PISTONS<br>DP | CYLINDER BORE<br>30 | INTERNAL DIAMETER Ø C<br>15 | TOTAL LENGTH B<br>10 |
|----------------------------|---------------------|-----------------------------|----------------------|

| PART NUMBER | CYLINDER BORE | Ø A | B  | Ø C | TO FIT ROD |
|-------------|---------------|-----|----|-----|------------|
| DP301510    | 30            | 28  | 10 | 15  | 20         |
| DP351510    | 35            | 33  | 10 | 15  | 25         |
| DP402015    | 40            | 38  | 15 | 20  | 30         |
| DP452015    | 45            | 43  | 15 | 20  | 35         |
| DP502720    | 50            | 48  | 20 | 27  | 40         |
| DP552720    | 55            | 53  | 20 | 27  | 45         |
| DP602720    | 60            | 58  | 20 | 27  | 50         |
| DP703320    | 70            | 68  | 20 | 33  | 60         |
| DP854020    | 85            | 83  | 20 | 40  | 70         |

MATERIAL: STEEL 11SMn30 - 080M46

## EXTERNAL HEAVY DUTY CIRCLIPS FOR DISPLACEMENT CYLINDERS

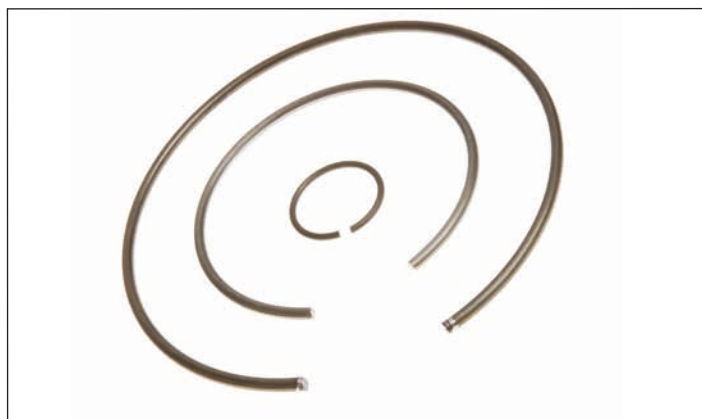


|                         |                  |                  |
|-------------------------|------------------|------------------|
| CIRCLIPS EXTERNAL<br>CE | SHAFT SIZE<br>15 | HEAVY DUTY<br>HD |
|-------------------------|------------------|------------------|

| PART NUMBER | SHAFT SIZE | WIDTH | ROD Ø       |
|-------------|------------|-------|-------------|
| CE15-HD     | 15         | 1.5   | 20/25       |
| CE19-HD     | 19         | 1.5   | 20/30       |
| CE20-HD     | 20         | 1.75  | 25/30/35    |
| CE27-HD     | 27         | 2     | 35/40/45/50 |
| CE30-HD     | 30         | 2     | 40/50       |
| CE40-HD     | 40         | 2.5   | 70          |

MATERIAL : CARBON SPRING STEEL,  
STANDARD FINISH - PHOSPHATE AND OIL.

## SNAP RINGS FOR DISPLACEMENT CYLINDERS

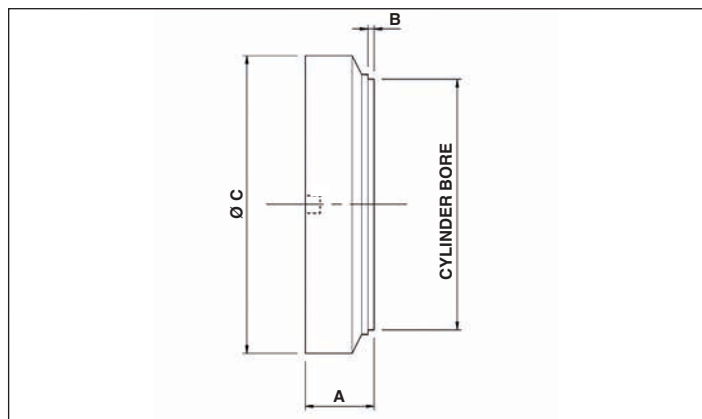


|                           |                 |                     |                    |
|---------------------------|-----------------|---------------------|--------------------|
| SNAP RING<br>DISPLACEMENT | ROD<br>DIAMETER | OUTSIDE<br>DIAMETER | INSIDE<br>DIAMETER |
| SRD                       | 20              | 22                  | 16                 |

| PART NUMBER  | ROD Ø | OUTSIDE DIAMETER | INSIDE DIAMETER | WIRE DIAMETER | CYLINDER BORE |
|--------------|-------|------------------|-----------------|---------------|---------------|
| SRD202216    | 20    | 22               | 16              | 3             | 30            |
| SRD252822    | 25    | 28               | 22              | 3             | 35            |
| SRD303327    | 30    | 33               | 27              | 3             | 40            |
| SRD323529    | 32    | 35               | 29              | 3             | 42            |
| SRD353831    | 35    | 38.5             | 31.5            | 3.5           | 45            |
| SRD404436    | 40    | 44               | 36              | 4             | 50            |
| SRD454941    | 45    | 49               | 41              | 4             | 55            |
| SRD505445    | 50    | 54.5             | 45.5            | 4.5           | 60            |
| SRD505446    | 50    | 54               | 46              | 4             | 60            |
| SRD606456    | 60    | 64               | 56              | 4             | 70            |
| SRD606554    | 60    | 65.5             | 54.5            | 5.5           | 70            |
| SRD656961    | 65    | 69               | 61              | 4             | 75            |
| SRD707664    | 70    | 76               | 64              | 6             | 80            |
| SRD757971    | 75    | 79               | 71              | 4             | 85            |
| SRD808476    | 80    | 84               | 76              | 4             | 90            |
| SRD959991    | 95    | 99               | 91              | 4             | 105           |
| SRD10010496  | 100   | 104              | 96              | 4             | 110           |
| SRD115119111 | 115   | 119              | 111             | 4             | 125           |
| SRD120124116 | 120   | 124              | 116             | 4             | 130           |

MATERIAL: BS 5216 1991 GRADE HS 3

## STANDARD END CAPS



END CAP      CYLINDER BORE      TOTAL LENGTH A  
 EC                      25                      7

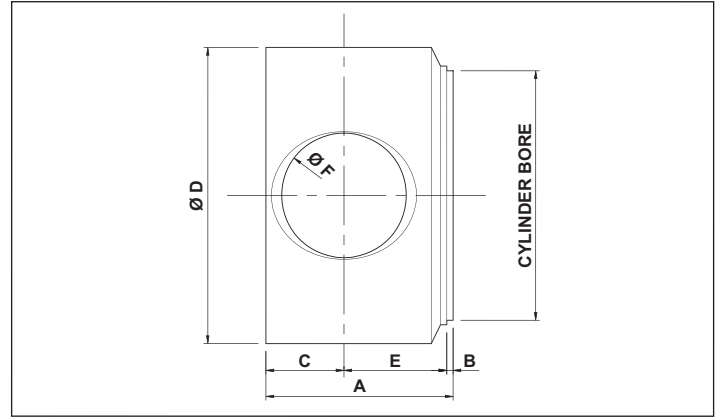
| PART NUMBER | CYLINDER BORE | A  | B  | Ø C |
|-------------|---------------|----|----|-----|
| EC2507      | 25            | 7  | 2  | 35  |
| EC3010      | 30            | 10 | 2  | 40  |
| EC3208      | 32            | 8  | 2  | 42  |
| EC3510      | 35            | 10 | 2  | 45  |
| EC3514      | 35            | 14 | 4  | 45  |
| EC4010      | 40            | 10 | 2  | 50  |
| EC4014      | 40            | 14 | 4  | 50  |
| EC4510      | 45            | 10 | 2  | 55  |
| EC4514      | 45            | 14 | 4  | 55  |
| EC5010      | 50            | 10 | 2  | 60  |
| EC5015      | 50            | 15 | 4  | 60  |
| EC5512      | 55            | 12 | 2  | 65  |
| EC6012      | 60            | 12 | 2  | 70  |
| EC6018      | 60            | 18 | 5  | 70  |
| EC6312      | 63            | 12 | 2  | 73  |
| EC6318      | 63            | 18 | 5  | 73  |
| EC6512      | 65            | 12 | 2  | 75  |
| EC6518      | 65            | 18 | 5  | 75  |
| EC7012      | 70            | 12 | 2  | 80  |
| EC7018      | 70            | 18 | 5  | 80  |
| EC7512      | 75            | 12 | 2  | 90  |
| EC7520      | 75            | 20 | 6  | 90  |
| EC8012      | 80            | 12 | 2  | 95  |
| EC8015      | 80            | 15 | 2  | 95  |
| EC8020      | 80            | 20 | 6  | 95  |
| EC8515      | 85            | 15 | 2  | 100 |
| EC9015      | 90            | 15 | 2  | 105 |
| EC9020      | 90            | 20 | 6  | 105 |
| EC10015     | 100           | 15 | 2  | 115 |
| EC10022     | 100           | 22 | 7  | 115 |
| EC11015-125 | 110           | 15 | 2  | 125 |
| EC11015     | 110           | 15 | 2  | 130 |
| EC11022     | 110           | 22 | 7  | 130 |
| EC12018     | 120           | 18 | 2  | 140 |
| EC12025     | 120           | 25 | 8  | 140 |
| EC12518     | 125           | 18 | 2  | 145 |
| EC12525     | 125           | 25 | 8  | 145 |
| EC13018     | 130           | 18 | 2  | 150 |
| EC14018     | 140           | 18 | 2  | 160 |
| EC14028     | 140           | 28 | 10 | 160 |
| EC15020     | 150           | 20 | 2  | 170 |
| EC15028     | 150           | 28 | 10 | 170 |
| EC16020     | 160           | 20 | 2  | 180 |
| EC16030     | 160           | 30 | 12 | 180 |

MATERIAL : STEEL S355JR - ASTM A105 OR EQUIVALENT  
 END CAPS MAY BE DRILLED WITH A LOCATION PEG OF Ø5 X 7 DEEP





## END CAPS BORED



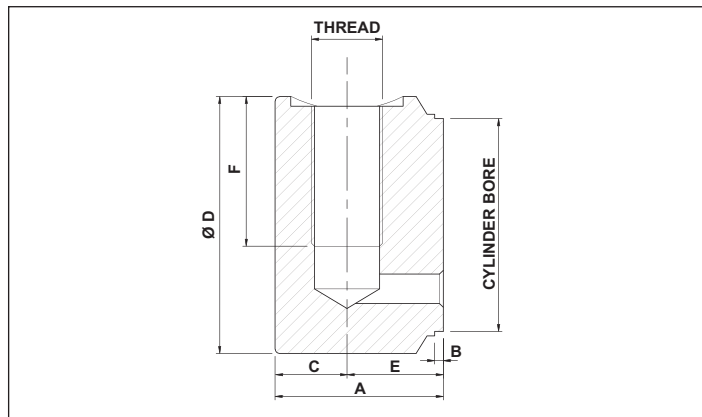
END CAP EC    CYLINDER BORE 90    TOTAL LENGTH A 60    HOLE SIZE 30    BORED B

| PART NUMBER   | CYLINDER BORE | A  | B | C  | Ø D | E  | Ø F   |
|---------------|---------------|----|---|----|-----|----|-------|
| EC9060-30B *  | 90            | 60 | 2 | 25 | 105 | 33 | 30.25 |
| EC9063-35B    | 90            | 63 | 2 | 28 | 105 | 33 | 35.25 |
| EC9070-40B    | 90            | 70 | 2 | 32 | 105 | 36 | 40.25 |
| EC9070-BLA    | 90            | 70 | 2 |    | 105 |    | BLANK |
| EC10070-30B * | 100           | 70 | 2 | 34 | 115 | 34 | 30.5  |
| EC10070-35B   | 100           | 70 | 2 | 30 | 115 | 38 | 35.25 |
| EC10073-40B   | 100           | 73 | 2 | 33 | 115 | 38 | 40.25 |
| EC10088-50B   | 100           | 88 | 2 | 40 | 115 | 46 | 50.25 |
| EC10088-BLA   | 100           | 88 | 2 |    | 115 |    | BLANK |
| EC12590-40B   | 125           | 90 | 2 | 38 | 145 | 50 | 40.25 |
| EC12597-50B   | 125           | 97 | 2 | 45 | 145 | 50 | 50.25 |
| EC12597-BLA   | 125           | 97 | 2 |    | 145 |    | BLANK |

**\* DENOTES MAY BE DRILLED AND TAPPED FOR GREASE NIPPLE**

MATERIAL: STEEL S355JR ASTM A105 OR EQUIVALENT  
 BLA : DENOTES, BLANK NOT DRILLED

## END CAPS PORTED



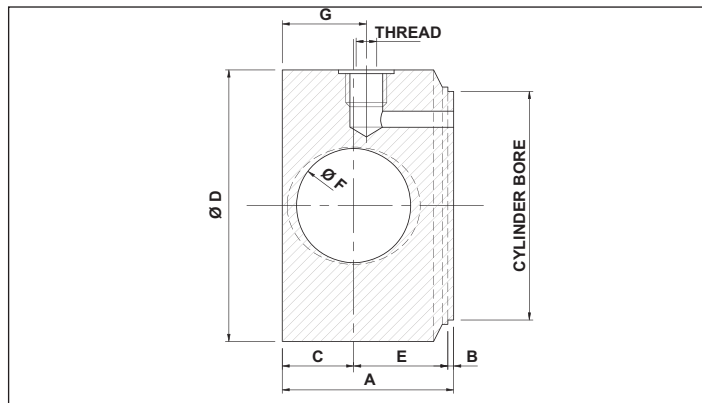
|               |                     |                      |             |
|---------------|---------------------|----------------------|-------------|
| END CAP<br>EC | CYLINDER BORE<br>40 | TOTAL LENGTH A<br>45 | PORTED<br>P |
|---------------|---------------------|----------------------|-------------|

| PART NUMBER | CYLINDER BORE | A  | B | C  | Ø D | E  | F  | BSP THREAD |
|-------------|---------------|----|---|----|-----|----|----|------------|
| EC4045P     | 40            | 45 | 2 | 19 | 50  | 26 | 30 | 1/4"       |
| EC5046P     | 50            | 46 | 2 | 19 | 60  | 27 | 35 | 3/8"       |
| EC6046P     | 60            | 46 | 2 | 19 | 70  | 27 | 35 | 3/8"       |
| EC6346P     | 63            | 46 | 2 | 19 | 73  | 27 | 35 | 3/8"       |
| EC7046P     | 70            | 46 | 2 | 19 | 80  | 27 | 35 | 3/8"       |
| EC7555P     | 75            | 55 | 2 | 22 | 90  | 33 | 45 | 1/2"       |
| EC8055P     | 80            | 55 | 2 | 22 | 95  | 33 | 45 | 1/2"       |
| EC9055P     | 90            | 55 | 2 | 22 | 105 | 33 | 45 | 1/2"       |
| EC10055P    | 100           | 55 | 2 | 22 | 115 | 33 | 45 | 1/2"       |
| EC12555P    | 125           | 55 | 2 | 22 | 145 | 33 | 45 | 1/2"       |

DESIGNED TO TAKE OUR RANGE OF BURST VALVES

MATERIAL: STEEL S355JR ASTM A105 OR EQUIVALENT

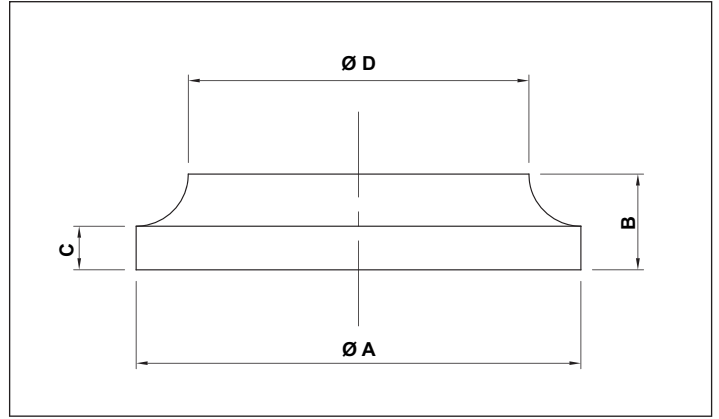
## END CAPS CROSS BORED AND PORTED



|               |                     |                      |                 |             |
|---------------|---------------------|----------------------|-----------------|-------------|
| END CAP<br>EC | CYLINDER BORE<br>40 | TOTAL LENGTH A<br>50 | HOLE SIZE<br>16 | PORTED<br>P |
|---------------|---------------------|----------------------|-----------------|-------------|

| PART NUMBER | CYLINDER BORE | A  | B | C  | Ø D | E  | Ø F   | G  | BSP THREAD |
|-------------|---------------|----|---|----|-----|----|-------|----|------------|
| EC4050-16P  | 40            | 50 | 2 | 15 | 50  | 33 | 16.2  | 30 | 1/4"       |
| EC4060-16P  | 40            | 60 | 2 | 15 | 50  | 43 | 16.2  | 38 | 1/4"       |
| EC5060-20P  | 50            | 60 | 2 | 20 | 60  | 38 | 20.25 | 38 | 3/8"       |
| EC6060-25P  | 60            | 60 | 2 | 23 | 70  | 35 | 25.25 | 38 | 3/8"       |
| EC6360-25P  | 63            | 60 | 2 | 23 | 73  | 35 | 25.25 | 38 | 3/8"       |
| EC6360-30P  | 63            | 60 | 2 | 23 | 73  | 35 | 30.25 | 38 | 3/8"       |
| EC7060-25P  | 70            | 60 | 2 | 23 | 80  | 35 | 25.25 | 38 | 3/8"       |
| EC8075-30P  | 80            | 75 | 2 | 25 | 95  | 48 | 30.25 | 47 | 1/2"       |
| EC9075-30P  | 90            | 75 | 2 | 25 | 105 | 48 | 30.25 | 47 | 1/2"       |
| EC10075-35P | 100           | 75 | 2 | 30 | 115 | 43 | 35.25 | 47 | 1/2"       |

## END CAP INTERNAL PLUG

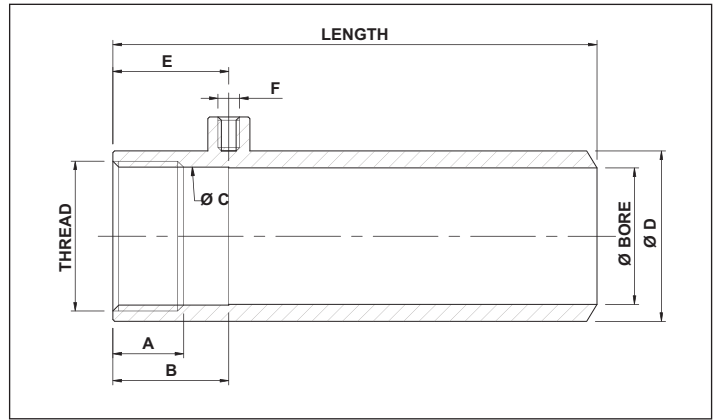


|               |                     |                      |                     |
|---------------|---------------------|----------------------|---------------------|
| END CAP<br>EC | CYLINDER BORE<br>30 | TOTAL LENGTH B<br>12 | INTERNAL PLUG<br>IP |
|---------------|---------------------|----------------------|---------------------|

| PART NUMBER | CYLINDER BORE | Ø A | B  | C   | Ø D |
|-------------|---------------|-----|----|-----|-----|
| EC3012IP    | 30            | 31  | 12 | 5   | 16  |
| EC4012IP    | 40            | 41  | 12 | 5   | 27  |
| EC5012IP    | 50            | 51  | 12 | 5   | 37  |
| EC6015IP    | 60            | 61  | 15 | 7   | 46  |
| EC6315IP    | 63            | 64  | 15 | 7   | 48  |
| EC7015IP    | 70            | 71  | 15 | 7.5 | 56  |
| EC7515IP    | 75            | 76  | 15 | 7.5 | 57  |
| EC8017IP    | 80            | 81  | 17 | 9   | 65  |
| EC9017IP    | 90            | 91  | 17 | 9   | 72  |
| EC10020IP   | 100           | 101 | 20 | 10  | 79  |
| EC12525IP   | 125           | 126 | 25 | 10  | 100 |

MATERIAL: STEEL S355JR ASTM A105 OR EQUIVALENT

# STANDARD THREADED CYLINDER TUBES



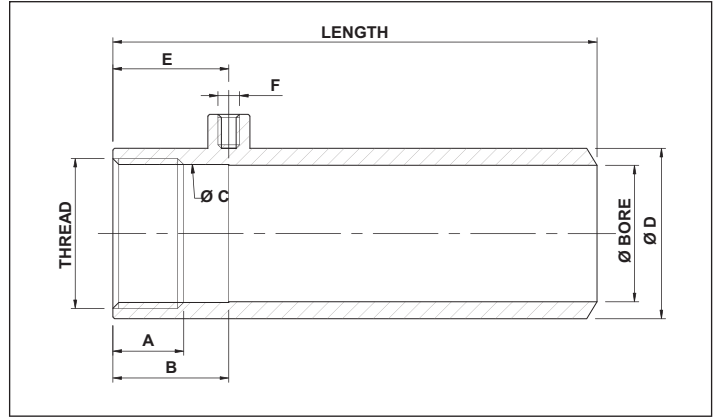
STANDARD TUBE    CYLINDER BORE    STROKE  
 ST                            25                            100

| PART NUMBER      | CYLINDER BORE | STROKE | LENGTH | A  | B  | Ø C  | Ø D | E  | F            | THREAD   |
|------------------|---------------|--------|--------|----|----|------|-----|----|--------------|----------|
| ST25100          | 25            | 100    | 145    | 12 | 20 | 25.6 | 35  | 12 | 1/4"BSP      | 28 x 1.5 |
| ST25200          | 25            | 200    | 245    | 12 | 20 | 25.6 | 35  | 12 | 1/4"BSP      | 28 x 1.5 |
| ST25300          | 25            | 300    | 345    | 12 | 20 | 25.6 | 35  | 12 | 1/4"BSP      | 28 x 1.5 |
| ST25500          | 25            | 500    | 545    | 12 | 20 | 25.6 | 35  | 12 | 1/4"BSP      | 28 x 1.5 |
| ST25800          | 25            | 800    | 845    | 12 | 20 | 25.6 | 35  | 12 | 1/4"BSP      | 28 x 1.5 |
|                  |               |        |        |    |    |      |     |    |              |          |
| ST30150          | 30            | 150    | 220    | 14 | 30 | 30.6 | 40  | 28 | 1/4"BSP      | 34 x 1.5 |
| ST30300          | 30            | 300    | 370    | 14 | 30 | 30.6 | 40  | 28 | 1/4"BSP      | 34 x 1.5 |
| ST30500          | 30            | 500    | 570    | 14 | 30 | 30.6 | 40  | 28 | 1/4"BSP      | 34 x 1.5 |
| ST30800          | 30            | 800    | 870    | 14 | 30 | 30.6 | 40  | 28 | 1/4"BSP      | 34 x 1.5 |
| ST30850-025 MALE | 30            | 850    | 920    | 14 | 30 | 30.6 | 40  | 28 | 1/4"BSP MALE | 34 x 1.5 |
|                  |               |        |        |    |    |      |     |    |              |          |
| ST301000         | 30            | 1000   | 1070   | 14 | 30 | 30.6 | 40  | 28 | 1/4"BSP      | 34 x 1.5 |
| ST32150          | 32            | 150    | 237    | 16 | 27 | 32.6 | 42  | 27 | 1/4"BSP      | 36 x 1.5 |
| ST32200          | 32            | 200    | 287    | 16 | 27 | 32.6 | 42  | 27 | 1/4"BSP      | 36 x 1.5 |
| ST32250          | 32            | 250    | 337    | 16 | 27 | 32.6 | 42  | 27 | 1/4"BSP      | 36 x 1.5 |
| ST32300          | 32            | 300    | 387    | 16 | 27 | 32.6 | 42  | 27 | 1/4"BSP      | 36 x 1.5 |
|                  |               |        |        |    |    |      |     |    |              |          |
| ST32400          | 32            | 400    | 487    | 16 | 27 | 32.6 | 42  | 27 | 1/4"BSP      | 36 x 1.5 |
| ST32500          | 32            | 500    | 587    | 16 | 27 | 32.6 | 42  | 27 | 1/4"BSP      | 36 x 1.5 |
| ST40100          | 40            | 100    | 192    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST40150          | 40            | 150    | 242    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST40200          | 40            | 200    | 292    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
|                  |               |        |        |    |    |      |     |    |              |          |
| ST40250          | 40            | 250    | 342    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST40300          | 40            | 300    | 392    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST40350-025 MALE | 40            | 350    | 442    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP MALE | 44 x 1.5 |
| ST40400          | 40            | 400    | 492    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST40500          | 40            | 500    | 592    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
|                  |               |        |        |    |    |      |     |    |              |          |
| ST40600          | 40            | 600    | 692    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST40800          | 40            | 800    | 892    | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST401000         | 40            | 1000   | 1092   | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST401500         | 40            | 1500   | 1592   | 21 | 34 | 40.6 | 50  | 34 | 1/4"BSP      | 44 x 1.5 |
| ST45250          | 45            | 250    | 342    | 21 | 34 | 45.6 | 55  | 34 | 3/8"BSP      | 49 x 1.5 |
|                  |               |        |        |    |    |      |     |    |              |          |
| ST45300          | 45            | 300    | 392    | 21 | 34 | 45.6 | 55  | 34 | 3/8"BSP      | 49 x 1.5 |
| ST45500          | 45            | 500    | 592    | 21 | 34 | 45.6 | 55  | 34 | 3/8"BSP      | 49 x 1.5 |
| ST45600          | 45            | 600    | 692    | 21 | 34 | 45.6 | 55  | 34 | 3/8"BSP      | 49 x 1.5 |
| ST45800          | 45            | 800    | 892    | 21 | 34 | 45.6 | 55  | 34 | 3/8"BSP      | 49 x 1.5 |
| ST50150          | 50            | 150    | 252    | 24 | 37 | 50.6 | 60  | 37 | 3/8"BSP      | 54 x 1.5 |

**SMOOTH/HONED TUBE AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

MATERIAL: STEEL E3555 (EN10305-2/ DIN 2393-St52.3)-ISO H8-H9 DOM & COLD DRAWN SEAMLESS TUBE OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

# STANDARD THREADED CYLINDER TUBES



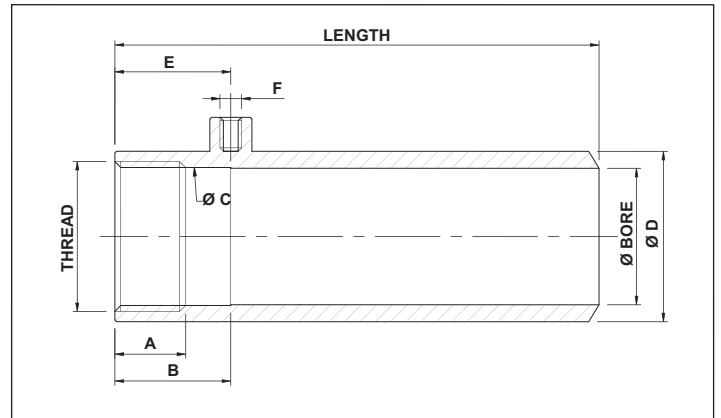
STANDARD TUBE    CYLINDER BORE    STROKE  
ST                    50                    200

| PART NUMBER | CYLINDER BORE | STROKE | LENGTH | A  | B  | Ø C  | Ø D | E  | F        | THREAD   |
|-------------|---------------|--------|--------|----|----|------|-----|----|----------|----------|
| ST50200     | 50            | 200    | 302    | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST50250     | 50            | 250    | 352    | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST50300     | 50            | 300    | 402    | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST50400     | 50            | 400    | 502    | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST50500     | 50            | 500    | 602    | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST50600     | 50            | 600    | 702    | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST50800     | 50            | 800    | 902    | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST501000    | 50            | 1000   | 1102   | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST501500    | 50            | 1500   | 1602   | 24 | 37 | 50.6 | 60  | 37 | 3/8" BSP | 54 x 1.5 |
| ST55250     | 55            | 250    | 362    | 24 | 37 | 55.6 | 65  | 37 | 3/8" BSP | 60 x 1.5 |
| ST55300     | 55            | 300    | 412    | 24 | 37 | 55.6 | 65  | 37 | 3/8" BSP | 60 x 1.5 |
| ST55500     | 55            | 500    | 612    | 24 | 37 | 55.6 | 65  | 37 | 3/8" BSP | 60 x 1.5 |
| ST55600     | 55            | 600    | 712    | 24 | 37 | 55.6 | 65  | 37 | 3/8" BSP | 60 x 1.5 |
| ST55800     | 55            | 800    | 912    | 24 | 37 | 55.6 | 65  | 37 | 3/8" BSP | 60 x 1.5 |
| ST60100     | 60            | 100    | 217    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60150     | 60            | 150    | 267    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60200     | 60            | 200    | 317    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60250     | 60            | 250    | 367    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60300     | 60            | 300    | 417    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60400     | 60            | 400    | 517    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60500     | 60            | 500    | 617    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60600     | 60            | 600    | 717    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST60800     | 60            | 800    | 917    | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST601000    | 60            | 1000   | 1117   | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST601500    | 60            | 1500   | 1617   | 29 | 42 | 60.6 | 70  | 45 | 3/8" BSP | 64 x 1.5 |
| ST63200     | 63            | 200    | 317    | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST63250     | 63            | 250    | 367    | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST63300     | 63            | 300    | 417    | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST63300-HD  | 63            | 300    | 417    | 29 | 42 | 63.6 | 78  | 45 | 3/8" BSP | 68 x 1.5 |
| ST63400     | 63            | 400    | 517    | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |

SMOOTH/HONED TUBE AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS

MATERIAL: STEEL E3555 (EN10305-2/ DIN 2393-St52.3)-ISO H8-H9 DOM & COLD DRAWN SEAMLESS TUBE OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR  
 HD : DENOTES. THICKER WALL TUBE

# STANDARD THREADED CYLINDER TUBES



STANDARD TUBE    CYLINDER BORE    STROKE  
 ST                    63                    500

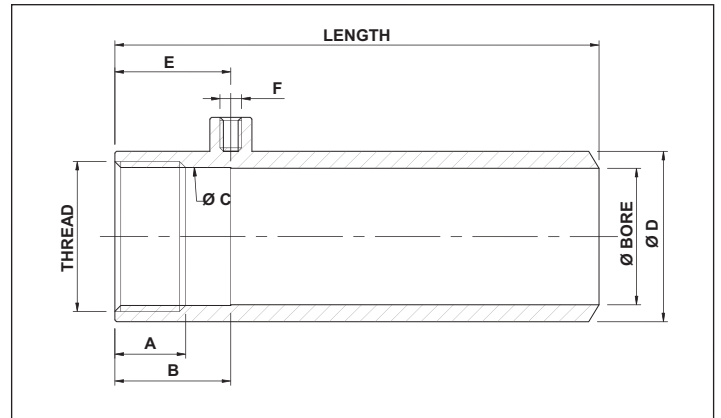
| PART NUMBER      | CYLINDER BORE | STROKE | LENGTH | A  | B  | Ø C  | Ø D | E  | F        | THREAD   |
|------------------|---------------|--------|--------|----|----|------|-----|----|----------|----------|
| ST63500          | 63            | 500    | 617    | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST63500-HD       | 63            | 500    | 617    | 29 | 42 | 63.6 | 78  | 45 | 3/8" BSP | 68 x 1.5 |
| ST63600          | 63            | 600    | 717    | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST63800          | 63            | 800    | 917    | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST631000         | 63            | 1000   | 1117   | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST631500         | 63            | 1500   | 1617   | 29 | 42 | 63.6 | 73  | 45 | 3/8" BSP | 68 x 1.5 |
| ST70200          | 70            | 200    | 317    | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST70250          | 70            | 250    | 367    | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST70300          | 70            | 300    | 417    | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST70400          | 70            | 400    | 517    | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST70500          | 70            | 500    | 617    | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST70600          | 70            | 600    | 717    | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST70800          | 70            | 800    | 917    | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST701000         | 70            | 1000   | 1117   | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST701500         | 70            | 1500   | 1617   | 29 | 42 | 70.6 | 80  | 45 | 3/8" BSP | 74 x 1.5 |
| ST75200-037 PORT | 75            | 200    | 335    | 35 | 54 | 75.6 | 90  | 56 | 3/8" BSP | 80 x 2   |
| ST75300          | 75            | 300    | 435    | 35 | 54 | 75.6 | 90  | 56 | 1/2" BSP | 80 x 2   |
| ST75500-037 PORT | 75            | 500    | 635    | 35 | 54 | 75.6 | 90  | 56 | 3/8" BSP | 80 x 2   |
| ST75500          | 75            | 500    | 635    | 35 | 54 | 75.6 | 90  | 56 | 1/2" BSP | 80 x 2   |
| ST75800          | 75            | 800    | 935    | 35 | 54 | 75.6 | 90  | 56 | 1/2" BSP | 80 x 2   |
| ST751000         | 75            | 1000   | 1135   | 35 | 54 | 75.6 | 90  | 56 | 1/2" BSP | 80 x 2   |
| ST751500         | 75            | 1500   | 1635   | 35 | 54 | 75.6 | 90  | 56 | 1/2" BSP | 80 x 2   |
| ST80200          | 80            | 200    | 330    | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |
| ST80250          | 80            | 250    | 380    | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |
| ST80300-037 PORT | 80            | 300    | 430    | 35 | 52 | 80.6 | 95  | 56 | 3/8" BSP | 85 x 2   |
| ST80300          | 80            | 300    | 430    | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |
| ST80400          | 80            | 400    | 530    | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |
| ST80500          | 80            | 500    | 630    | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |
| ST80600          | 80            | 600    | 730    | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |
| ST80800          | 80            | 800    | 930    | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |
| ST801000         | 80            | 1000   | 1130   | 35 | 52 | 80.6 | 95  | 56 | 1/2" BSP | 85 x 2   |

**SMOOTH/HONED TUBE AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

MATERIAL: STEEL E3555 (EN10305-2/ DIN 2393-St52.3)-ISO H8-H9 DOM & COLD DRAWN SEAMLESS TUBE OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

HD : DENOTES THICKER WALL TUBE

# STANDARD THREADED CYLINDER TUBES



STANDARD TUBE    CYLINDER BORE    STROKE  
 ST                    80                    1500

| PART NUMBER         | CYLINDER BORE | STROKE | LENGTH | A  | B  | Ø C   | Ø D | E  | F        | THREAD  |
|---------------------|---------------|--------|--------|----|----|-------|-----|----|----------|---------|
| ST801500            | 80            | 1500   | 1630   | 35 | 52 | 80.6  | 95  | 56 | 1/2" BSP | 85 x 2  |
| ST90150             | 90            | 150    | 280    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST90200             | 90            | 200    | 330    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST90250             | 90            | 250    | 380    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST90300-037 PORT    | 90            | 300    | 430    | 35 | 52 | 90.6  | 105 | 56 | 3/8" BSP | 95 x 2  |
| ST90300             | 90            | 300    | 430    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST90400             | 90            | 400    | 530    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST90500             | 90            | 500    | 630    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST90600             | 90            | 600    | 730    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST90800             | 90            | 800    | 930    | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST901000            | 90            | 1000   | 1130   | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST901000L           | 90            | 1000   | 1140   | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST901500            | 90            | 1500   | 1630   | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST901500L           | 90            | 1500   | 1640   | 35 | 52 | 90.6  | 105 | 56 | 1/2" BSP | 95 x 2  |
| ST100200            | 100           | 200    | 340    | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST100250            | 100           | 250    | 390    | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST100300            | 100           | 300    | 440    | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST100400            | 100           | 400    | 540    | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST100500            | 100           | 500    | 640    | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST100600            | 100           | 600    | 740    | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST100800            | 100           | 800    | 940    | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST1001000           | 100           | 1000   | 1140   | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST1001500           | 100           | 1500   | 1640   | 35 | 52 | 100.6 | 115 | 56 | 1/2" BSP | 105 x 2 |
| ST100200XL          | 100           | 200    | 360    | 53 | 72 | 100.6 | 115 | 76 | 1/2" BSP | 105 x 2 |
| ST100250XL          | 100           | 250    | 410    | 53 | 72 | 100.6 | 115 | 76 | 1/2" BSP | 105 x 2 |
| ST100300XL          | 100           | 300    | 460    | 53 | 72 | 100.6 | 115 | 76 | 1/2" BSP | 105 x 2 |
| ST100400XL          | 100           | 400    | 560    | 53 | 72 | 100.6 | 115 | 76 | 1/2" BSP | 105 x 2 |
| ST100500XL          | 100           | 500    | 660    | 53 | 72 | 100.6 | 115 | 76 | 1/2" BSP | 105 x 2 |
| ST100600XL-037 PORT | 100           | 600    | 760    | 53 | 72 | 100.6 | 115 | 76 | 3/8" BSP | 105 x 2 |
| ST100600XL          | 100           | 600    | 760    | 53 | 72 | 100.6 | 115 | 76 | 1/2" BSP | 105 x 2 |

**SMOOTH/HONED TUBE AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

MATERIAL: STEEL E3555 (EN10305-2/ DIN 2393-St52.3)-ISO H8-H9 DOM & COLD DRAWN SEAMLESS TUBE OR EQUIVALENT

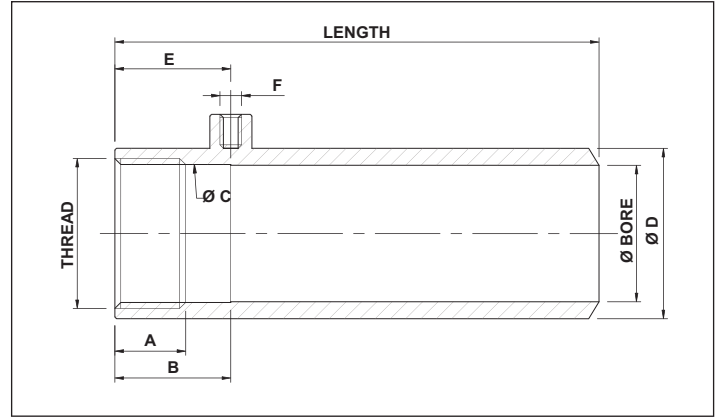
MAXIMUM WORKING PRESSURE 250 BAR

L : DENOTES LONG

XL : DENOTES EXTRA LONG



# STANDARD THREADED CYLINDER TUBES



|               |               |        |            |
|---------------|---------------|--------|------------|
| STANDARD TUBE | CYLINDER BORE | STROKE | EXTRA LONG |
| ST            | 100           | 1000   | XL         |

| PART NUMBER | CYLINDER BORE | STROKE | LENGTH | A  | B  | Ø C   | Ø D | E  | F       | THREAD  |
|-------------|---------------|--------|--------|----|----|-------|-----|----|---------|---------|
| ST100800XL  | 100           | 800    | 960    | 53 | 72 | 100.6 | 115 | 76 | 1/2"BSP | 105 x 2 |
| ST1001000XL | 100           | 1000   | 1160   | 53 | 72 | 100.6 | 115 | 76 | 1/2"BSP | 105 x 2 |
| ST1001500XL | 100           | 1500   | 1660   | 53 | 72 | 100.6 | 115 | 76 | 1/2"BSP | 105 x 2 |
| ST125300    | 125           | 300    | 478    | 58 | 82 | 125.6 | 145 | 86 | 1/2"BSP | 130 x 2 |
| ST125500    | 125           | 500    | 678    | 58 | 82 | 125.6 | 145 | 86 | 1/2"BSP | 130 x 2 |
| ST125800    | 125           | 800    | 978    | 58 | 82 | 125.6 | 145 | 86 | 1/2"BSP | 130 x 2 |
| ST1251000   | 125           | 1000   | 1178   | 58 | 82 | 125.6 | 145 | 86 | 1/2"BSP | 130 x 2 |
| ST1251500   | 125           | 1500   | 1678   | 58 | 82 | 125.6 | 145 | 86 | 1/2"BSP | 130 x 2 |

## SMOOTH/HONED TUBE AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS

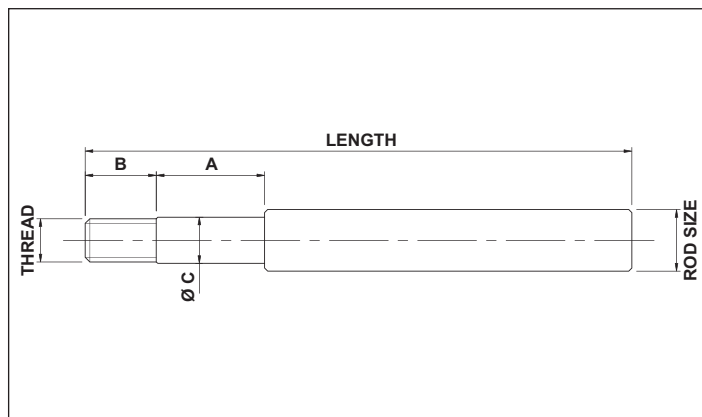
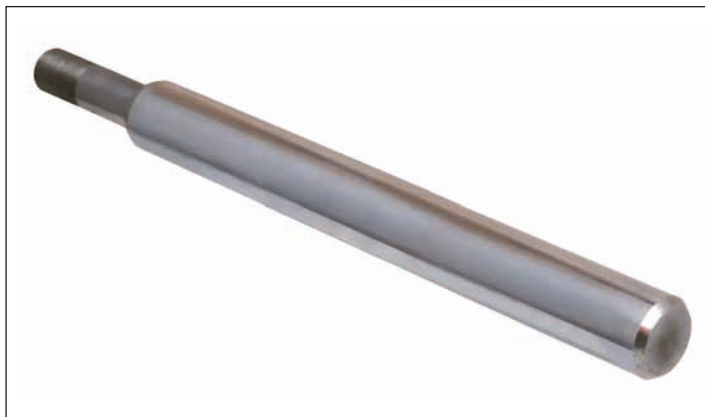
MATERIAL: STEEL E3555 (EN10305-2/ DIN 2393-St52.3)-ISO H8-H9 DOM & COLD DRAWN SEAMLESS TUBE OR EQUIVALENT

MAXIMUM WORKING PRESSURE 250 BAR

L : DENOTES LONG

XL : DENOTES EXTRA LONG

## STANDARD CHROMED RODS



STANDARD ROD SR ROD DIAMETER 16 STROKE 150 THREAD 12

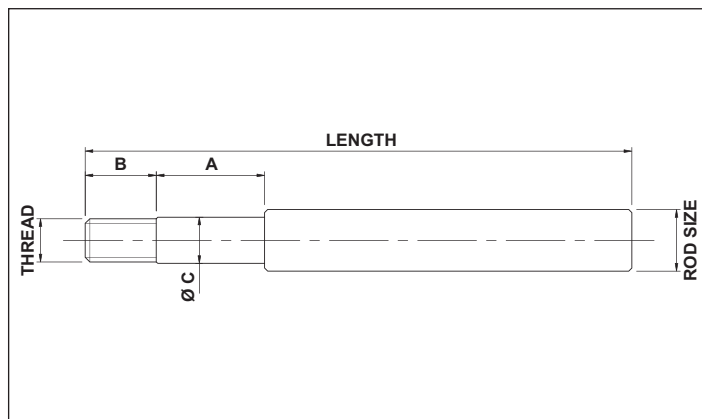
| PART NUMBER  | ROD Ø | STROKE | LENGTH | A  | B  | Ø C | THREAD   | CHROMED LENGTH |
|--------------|-------|--------|--------|----|----|-----|----------|----------------|
| SR16150-12   | 16    | 150    | 247    | 20 | 21 | 13  | 12 x 1.5 | 206            |
| SR16300-12   | 16    | 300    | 397    | 20 | 21 | 13  | 12 x 1.5 | 356            |
| SR16500-12   | 16    | 500    | 597    | 20 | 21 | 13  | 12 x 1.5 | 556            |
| SR16800-12   | 16    | 800    | 897    | 20 | 21 | 13  | 12 x 1.5 | 856            |
| SR161000-12  | 16    | 1000   | 1097   | 20 | 21 | 13  | 12 x 1.5 | 1056           |
| SR20100-14   | 20    | 100    | 220    | 35 | 23 | 15  | 14 x 1.5 | 162            |
| SR20150-14   | 20    | 150    | 270    | 35 | 23 | 15  | 14 x 1.5 | 212            |
| SR20200-14   | 20    | 200    | 320    | 35 | 23 | 15  | 14 x 1.5 | 262            |
| SR20250-14   | 20    | 250    | 370    | 35 | 23 | 15  | 14 x 1.5 | 312            |
| SR20300-14   | 20    | 300    | 420    | 35 | 23 | 15  | 14 x 1.5 | 362            |
| SR20400-14   | 20    | 400    | 520    | 35 | 23 | 15  | 14 x 1.5 | 462            |
| SR20500-14   | 20    | 500    | 620    | 35 | 23 | 15  | 14 x 1.5 | 562            |
| SR20600-14   | 20    | 600    | 720    | 35 | 23 | 15  | 14 x 1.5 | 662            |
| SR20800-14   | 20    | 800    | 920    | 35 | 23 | 15  | 14 x 1.5 | 862            |
| SR201000-14  | 20    | 1000   | 1120   | 35 | 23 | 15  | 14 x 1.5 | 1062           |
| SR201500-14  | 20    | 1500   | 1620   | 35 | 23 | 15  | 14 x 1.5 | 1562           |
| SR25150-14   | 25    | 150    | 270    | 35 | 23 | 15  | 14 x 1.5 | 212            |
| SR25200-14   | 25    | 200    | 320    | 35 | 23 | 15  | 14 x 1.5 | 262            |
| SR25250-14   | 25    | 250    | 370    | 35 | 23 | 15  | 14 x 1.5 | 312            |
| SR25300-14   | 25    | 300    | 420    | 35 | 23 | 15  | 14 x 1.5 | 362            |
| SR25400-14   | 25    | 400    | 520    | 35 | 23 | 15  | 14 x 1.5 | 462            |
| SR25500-14   | 25    | 500    | 620    | 35 | 23 | 15  | 14 x 1.5 | 562            |
| SR25600-14   | 25    | 600    | 720    | 35 | 23 | 15  | 14 x 1.5 | 662            |
| SR25800-14   | 25    | 800    | 920    | 35 | 23 | 15  | 14 x 1.5 | 862            |
| SR251000-14  | 25    | 1000   | 1120   | 35 | 23 | 15  | 14 x 1.5 | 1062           |
| SR251500-14  | 25    | 1500   | 1620   | 35 | 23 | 15  | 14 x 1.5 | 1562           |
| SR25150L-20  | 25    | 150    | 280    | 35 | 30 | 20  | 20 x 1.5 | 215            |
| SR25200L-20  | 25    | 200    | 330    | 35 | 30 | 20  | 20 x 1.5 | 265            |
| SR25250L-20  | 25    | 250    | 380    | 35 | 30 | 20  | 20 x 1.5 | 315            |
| SR25300L-20  | 25    | 300    | 430    | 35 | 30 | 20  | 20 x 1.5 | 365            |
| SR25400L-20  | 25    | 400    | 530    | 35 | 30 | 20  | 20 x 1.5 | 465            |
| SR25500L-20  | 25    | 500    | 630    | 35 | 30 | 20  | 20 x 1.5 | 565            |
| SR25600L-20  | 25    | 600    | 730    | 35 | 30 | 20  | 20 x 1.5 | 665            |
| SR25800L-20  | 25    | 800    | 930    | 35 | 30 | 20  | 20 x 1.5 | 865            |
| SR251000L-20 | 25    | 1000   | 1130   | 35 | 30 | 20  | 20 x 1.5 | 1065           |
| SR251500L-20 | 25    | 1500   | 1630   | 35 | 30 | 20  | 20 x 1.5 | 1565           |

**BOTH METRIC & IMPERIAL CHROMED ROD AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

MATERIAL: STEEL CK45 - CHROME 25 µm OR EQUIVALENT

L : DENOTES LONG

## STANDARD CHROMED RODS



STANDARD ROD SR ROD DIAMETER 30 STROKE 150 THREAD 20

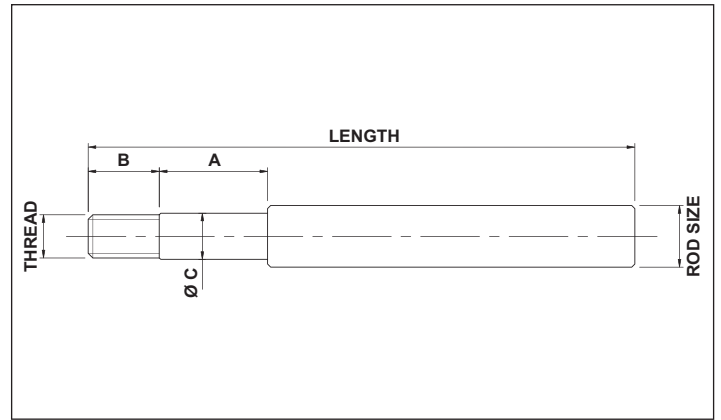
| PART NUMBER  | ROD Ø | STROKE | LENGTH | A  | B  | Ø C | THREAD   | CHROMED LENGTH |
|--------------|-------|--------|--------|----|----|-----|----------|----------------|
| SR30150-20   | 30    | 150    | 280    | 35 | 30 | 20  | 20 x 1.5 | 215            |
| SR30200-20   | 30    | 200    | 330    | 35 | 30 | 20  | 20 x 1.5 | 265            |
| SR30250-20   | 30    | 250    | 380    | 35 | 30 | 20  | 20 x 1.5 | 315            |
| SR30300-20   | 30    | 300    | 430    | 35 | 30 | 20  | 20 x 1.5 | 365            |
| SR30400-20   | 30    | 400    | 530    | 35 | 30 | 20  | 20 x 1.5 | 465            |
| SR30500-20   | 30    | 500    | 630    | 35 | 30 | 20  | 20 x 1.5 | 565            |
| SR30600-20   | 30    | 600    | 730    | 35 | 30 | 20  | 20 x 1.5 | 665            |
| SR30800-20   | 30    | 800    | 930    | 35 | 30 | 20  | 20 x 1.5 | 865            |
| SR301000-20  | 30    | 1000   | 1130   | 35 | 30 | 20  | 20 x 1.5 | 1065           |
| SR301500-20  | 30    | 1500   | 1630   | 35 | 30 | 20  | 20 x 1.5 | 1565           |
| SR30100L-20  | 30    | 100    | 248    | 45 | 30 | 20  | 20 x 1.5 | 173            |
| SR30150L-20  | 30    | 150    | 298    | 45 | 30 | 20  | 20 x 1.5 | 223            |
| SR30200L-20  | 30    | 200    | 348    | 45 | 30 | 20  | 20 x 1.5 | 273            |
| SR30250L-20  | 30    | 250    | 398    | 45 | 30 | 20  | 20 x 1.5 | 323            |
| SR30300L-20  | 30    | 300    | 448    | 45 | 30 | 20  | 20 x 1.5 | 373            |
| SR30400L-20  | 30    | 400    | 548    | 45 | 30 | 20  | 20 x 1.5 | 473            |
| SR30500L-20  | 30    | 500    | 648    | 45 | 30 | 20  | 20 x 1.5 | 573            |
| SR30600L-20  | 30    | 600    | 748    | 45 | 30 | 20  | 20 x 1.5 | 673            |
| SR30800L-20  | 30    | 800    | 948    | 45 | 30 | 20  | 20 x 1.5 | 873            |
| SR301000L-20 | 30    | 1000   | 1148   | 45 | 30 | 20  | 20 x 1.5 | 1073           |
| SR301500L-20 | 30    | 1500   | 1648   | 45 | 30 | 20  | 20 x 1.5 | 1573           |
| SR35200-20   | 35    | 200    | 348    | 45 | 30 | 20  | 20 x 1.5 | 273            |
| SR35250-20   | 35    | 250    | 398    | 45 | 30 | 20  | 20 x 1.5 | 323            |
| SR35300-20   | 35    | 300    | 448    | 45 | 30 | 20  | 20 x 1.5 | 373            |
| SR35400-20   | 35    | 400    | 548    | 45 | 30 | 20  | 20 x 1.5 | 473            |
| SR35500-20   | 35    | 500    | 648    | 45 | 30 | 20  | 20 x 1.5 | 573            |
| SR35600-20   | 35    | 600    | 748    | 45 | 30 | 20  | 20 x 1.5 | 673            |
| SR35800-20   | 35    | 800    | 948    | 45 | 30 | 20  | 20 x 1.5 | 873            |
| SR351000-20  | 35    | 1000   | 1148   | 45 | 30 | 20  | 20 x 1.5 | 1073           |
| SR351500-20  | 35    | 1500   | 1648   | 45 | 30 | 20  | 20 x 1.5 | 1573           |
| SR35200L-27  | 35    | 200    | 348    | 45 | 30 | 27  | 27 x 2   | 273            |
| SR35250L-27  | 35    | 250    | 398    | 45 | 30 | 27  | 27 x 2   | 323            |
| SR35300L-27  | 35    | 300    | 448    | 45 | 30 | 27  | 27 x 2   | 373            |
| SR35400L-27  | 35    | 400    | 548    | 45 | 30 | 27  | 27 x 2   | 473            |
| SR35500L-27  | 35    | 500    | 648    | 45 | 30 | 27  | 27 x 2   | 573            |
| SR35600L-27  | 35    | 600    | 748    | 45 | 30 | 27  | 27 x 2   | 673            |
| SR35800L-27  | 35    | 800    | 948    | 45 | 30 | 27  | 27 x 2   | 873            |
| SR351000L-27 | 35    | 1000   | 1148   | 45 | 30 | 27  | 27 x 2   | 1073           |
| SR351500L-27 | 35    | 1500   | 1648   | 45 | 30 | 27  | 27 x 2   | 1573           |

**BOTH METRIC & IMPERIAL CHROMED ROD AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

MATERIAL: STEEL CK45 - CHROME 25 µm OR EQUIVALENT

L : DENOTES LONG

## STANDARD CHROMED RODS



STANDARD ROD SR ROD DIAMETER 40 STROKE 200 THREAD 24

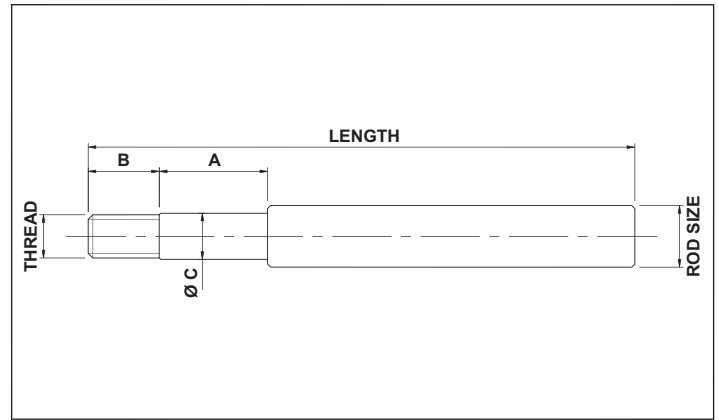
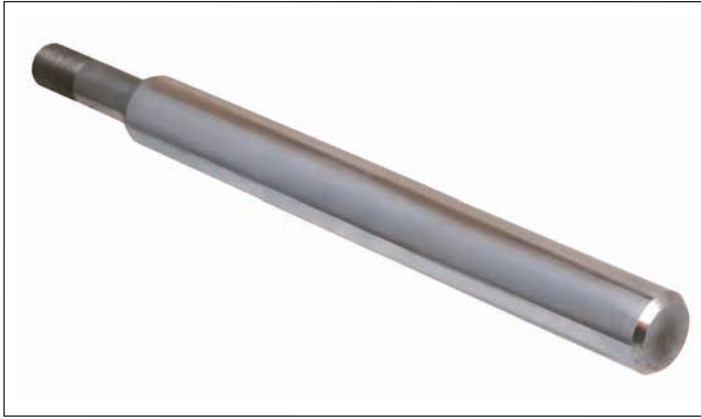
| PART NUMBER  | ROD Ø | STROKE | LENGTH | A  | B  | Ø C | THREAD | CHROMED LENGTH |
|--------------|-------|--------|--------|----|----|-----|--------|----------------|
| SR40200-24   | 40    | 200    | 348    | 40 | 35 | 24  | 24 x 2 | 273            |
| SR40250-24   | 40    | 250    | 398    | 40 | 35 | 24  | 24 x 2 | 323            |
| SR40300-24   | 40    | 300    | 448    | 40 | 35 | 24  | 24 x 2 | 373            |
| SR40400-24   | 40    | 400    | 548    | 40 | 35 | 24  | 24 x 2 | 473            |
| SR40500-24   | 40    | 500    | 648    | 40 | 35 | 24  | 24 x 2 | 573            |
| SR40600-24   | 40    | 600    | 748    | 40 | 35 | 24  | 24 x 2 | 673            |
| SR40800-24   | 40    | 800    | 948    | 40 | 35 | 24  | 24 x 2 | 873            |
| SR401000-24  | 40    | 1000   | 1148   | 40 | 35 | 24  | 24 x 2 | 1073           |
| SR401500-24  | 40    | 1500   | 1648   | 40 | 35 | 24  | 24 x 2 | 1573           |
| SR40200-27   | 40    | 200    | 348    | 45 | 30 | 27  | 27 x 2 | 273            |
| SR40250-27   | 40    | 250    | 398    | 45 | 30 | 27  | 27 x 2 | 323            |
| SR40300-27   | 40    | 300    | 448    | 45 | 30 | 27  | 27 x 2 | 373            |
| SR40400-27   | 40    | 400    | 548    | 45 | 30 | 27  | 27 x 2 | 473            |
| SR40500-27   | 40    | 500    | 648    | 45 | 30 | 27  | 27 x 2 | 573            |
| SR40550-27   | 40    | 550    | 698    | 45 | 30 | 27  | 27 x 2 | 623            |
| SR40600-27   | 40    | 600    | 748    | 45 | 30 | 27  | 27 x 2 | 673            |
| SR40800-27   | 40    | 800    | 948    | 45 | 30 | 27  | 27 x 2 | 873            |
| SR401000-27  | 40    | 1000   | 1148   | 45 | 30 | 27  | 27 x 2 | 1073           |
| SR401500-27  | 40    | 1500   | 1648   | 45 | 30 | 27  | 27 x 2 | 1573           |
| SR40200L-30  | 40    | 200    | 363    | 45 | 33 | 30  | 30 x 2 | 285            |
| SR40250L-30  | 40    | 250    | 413    | 45 | 33 | 30  | 30 x 2 | 335            |
| SR40300L-30  | 40    | 300    | 463    | 45 | 33 | 30  | 30 x 2 | 385            |
| SR40400L-30  | 40    | 400    | 563    | 45 | 33 | 30  | 30 x 2 | 485            |
| SR40500L-30  | 40    | 500    | 663    | 45 | 33 | 30  | 30 x 2 | 585            |
| SR40600L-30  | 40    | 600    | 763    | 45 | 33 | 30  | 30 x 2 | 685            |
| SR40800L-30  | 40    | 800    | 963    | 45 | 33 | 30  | 30 x 2 | 885            |
| SR401000L-30 | 40    | 1000   | 1163   | 45 | 33 | 30  | 30 x 2 | 1085           |
| SR401500L-30 | 40    | 1500   | 1663   | 45 | 33 | 30  | 30 x 2 | 1585           |
| SR45200-27   | 45    | 200    | 363    | 45 | 30 | 27  | 27 x 2 | 288            |
| SR45250-27   | 45    | 250    | 413    | 45 | 30 | 27  | 27 x 2 | 338            |
| SR45300-27   | 45    | 300    | 463    | 45 | 30 | 27  | 27 x 2 | 388            |
| SR45400-27   | 45    | 400    | 563    | 45 | 30 | 27  | 27 x 2 | 488            |
| SR45500-27   | 45    | 500    | 663    | 45 | 30 | 27  | 27 x 2 | 588            |
| SR45600-27   | 45    | 600    | 763    | 45 | 30 | 27  | 27 x 2 | 688            |
| SR45800-27   | 45    | 800    | 963    | 45 | 30 | 27  | 27 x 2 | 888            |
| SR451000-27  | 45    | 1000   | 1163   | 45 | 30 | 27  | 27 x 2 | 1088           |
| SR451500-27  | 45    | 1500   | 1663   | 45 | 30 | 27  | 27 x 2 | 1588           |

**BOTH METRIC & IMPERIAL CHROMED ROD AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

MATERIAL: STEEL CK45 - CHROME 25 µm OR EQUIVALENT

L : DENOTES LONG

## STANDARD CHROMED RODS



STANDARD ROD SR ROD DIAMETER 50 STROKE 200 THREAD 27

| PART NUMBER   | ROD Ø | STROKE | LENGTH | A  | B  | Ø C | THREAD | CHROMED LENGTH |
|---------------|-------|--------|--------|----|----|-----|--------|----------------|
| SR50200-27    | 50    | 200    | 363    | 45 | 30 | 27  | 27 x 2 | 288            |
| SR50250-27    | 50    | 250    | 413    | 45 | 30 | 27  | 27 x 2 | 338            |
| SR50300-27    | 50    | 300    | 463    | 45 | 30 | 27  | 27 x 2 | 388            |
| SR50400-27    | 50    | 400    | 563    | 45 | 30 | 27  | 27 x 2 | 488            |
| SR50500-27    | 50    | 500    | 663    | 45 | 30 | 27  | 27 x 2 | 588            |
| SR50600-27    | 50    | 600    | 763    | 45 | 30 | 27  | 27 x 2 | 688            |
| SR50800-27    | 50    | 800    | 963    | 45 | 30 | 27  | 27 x 2 | 888            |
| SR501000-27   | 50    | 1000   | 1163   | 45 | 30 | 27  | 27 x 2 | 1088           |
| SR501500-27   | 50    | 1500   | 1663   | 45 | 30 | 27  | 27 x 2 | 1588           |
| SR50200-30    | 50    | 200    | 363    | 45 | 33 | 30  | 30 x 2 | 285            |
| SR50250-30    | 50    | 250    | 413    | 45 | 33 | 30  | 30 x 2 | 335            |
| SR50300-30    | 50    | 300    | 463    | 45 | 33 | 30  | 30 x 2 | 385            |
| SR50400-30    | 50    | 400    | 563    | 45 | 33 | 30  | 30 x 2 | 485            |
| SR50500-30    | 50    | 500    | 663    | 45 | 33 | 30  | 30 x 2 | 585            |
| SR50600-30    | 50    | 600    | 763    | 45 | 33 | 30  | 30 x 2 | 685            |
| SR50800-30    | 50    | 800    | 963    | 45 | 33 | 30  | 30 x 2 | 885            |
| SR501000-30   | 50    | 1000   | 1163   | 45 | 33 | 30  | 30 x 2 | 1085           |
| SR501500-30   | 50    | 1500   | 1663   | 45 | 33 | 30  | 30 x 2 | 1585           |
| SR50200L-33   | 50    | 200    | 375    | 45 | 43 | 33  | 33 x 2 | 287            |
| SR50250L-33   | 50    | 250    | 425    | 45 | 43 | 33  | 33 x 2 | 337            |
| SR50300L-33   | 50    | 300    | 475    | 45 | 43 | 33  | 33 x 2 | 387            |
| SR50400L-33   | 50    | 400    | 575    | 45 | 43 | 33  | 33 x 2 | 487            |
| SR50500L-33   | 50    | 500    | 675    | 45 | 43 | 33  | 33 x 2 | 587            |
| SR50600L-33   | 50    | 600    | 775    | 45 | 43 | 33  | 33 x 2 | 687            |
| SR50800L-33   | 50    | 800    | 975    | 45 | 43 | 33  | 33 x 2 | 887            |
| SR501000L-33  | 50    | 1000   | 1175   | 45 | 43 | 33  | 33 x 2 | 1087           |
| SR501500L-33  | 50    | 1500   | 1675   | 45 | 43 | 33  | 33 x 2 | 1587           |
| SR50200XL-33  | 50    | 200    | 395    | 45 | 43 | 33  | 33 x 2 | 307            |
| SR50250XL-33  | 50    | 250    | 445    | 45 | 43 | 33  | 33 x 2 | 357            |
| SR50300XL-33  | 50    | 300    | 495    | 45 | 43 | 33  | 33 x 2 | 407            |
| SR50400XL-33  | 50    | 400    | 595    | 45 | 43 | 33  | 33 x 2 | 507            |
| SR50500XL-33  | 50    | 500    | 695    | 45 | 43 | 33  | 33 x 2 | 607            |
| SR50600XL-33  | 50    | 600    | 795    | 45 | 43 | 33  | 33 x 2 | 707            |
| SR50800XL-33  | 50    | 800    | 995    | 45 | 43 | 33  | 33 x 2 | 907            |
| SR501000XL-33 | 50    | 1000   | 1195   | 45 | 43 | 33  | 33 x 2 | 1107           |
| SR501500XL-33 | 50    | 1500   | 1695   | 45 | 43 | 33  | 33 x 2 | 1607           |

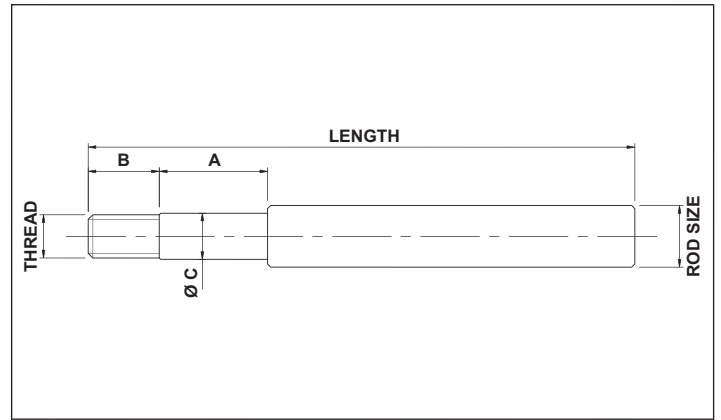
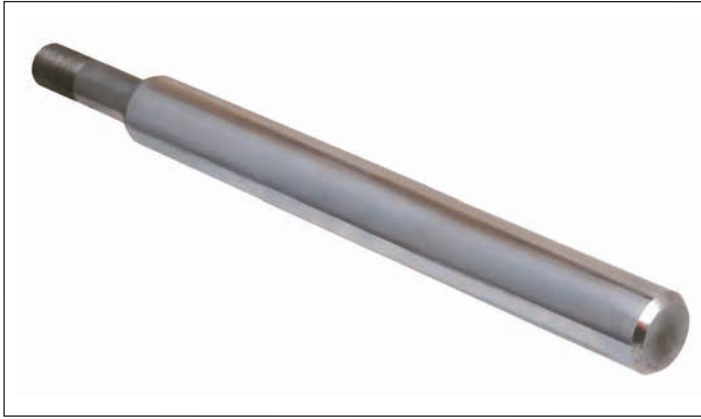
**BOTH METRIC & IMPERIAL CHROMED ROD AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

MATERIAL: STEEL CK45 - CHROME 25 µm OR EQUIVALENT

L : DENOTES LONG

XL : DENOTES EXTRA LONG

## STANDARD CHROMED RODS



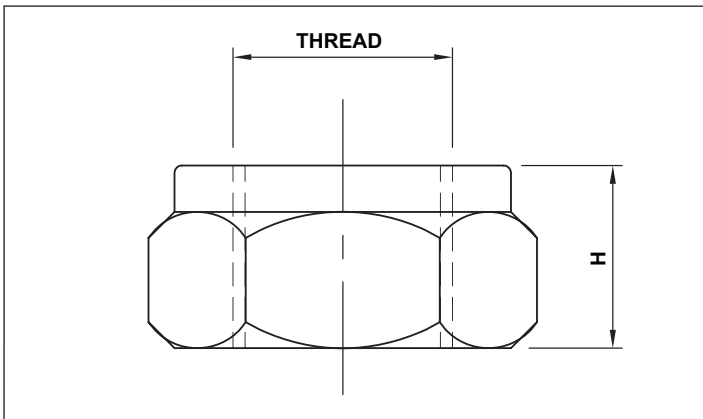
STANDARD ROD SR ROD DIAMETER 60 STROKE 250 THREAD 33

| PART NUMBER | ROD Ø | STROKE | LENGTH | A  | B  | Ø C | THREAD | CHROMED LENGTH |
|-------------|-------|--------|--------|----|----|-----|--------|----------------|
| SR60250-33  | 60    | 250    | 445    | 45 | 43 | 33  | 33 x 2 | 357            |
| SR60300-33  | 60    | 300    | 495    | 45 | 43 | 33  | 33 x 2 | 407            |
| SR60400-33  | 60    | 400    | 595    | 45 | 43 | 33  | 33 x 2 | 507            |
| SR60500-33  | 60    | 500    | 695    | 45 | 43 | 33  | 33 x 2 | 607            |
| SR60600-33  | 60    | 600    | 795    | 45 | 43 | 33  | 33 x 2 | 707            |
| SR60800-33  | 60    | 800    | 995    | 45 | 43 | 33  | 33 x 2 | 907            |
| SR601000-33 | 60    | 1000   | 1195   | 45 | 43 | 33  | 33 x 2 | 1107           |
| SR601500-33 | 60    | 1500   | 1695   | 45 | 43 | 33  | 33 x 2 | 1607           |
| SR70500-39  | 70    | 500    | 717    | 45 | 51 | 40  | 39 x 3 | 621            |
| SR70800-39  | 70    | 800    | 1017   | 45 | 51 | 40  | 39 x 3 | 921            |
| SR701000-39 | 70    | 1000   | 1217   | 45 | 51 | 40  | 39 x 3 | 1121           |
| SR701500-39 | 70    | 1500   | 1717   | 45 | 51 | 40  | 39 x 3 | 1621           |

**BOTH METRIC & IMPERIAL CHROMED ROD AVAILABLE IN UNMACHINED LENGTHS, CUT TO YOUR REQUIREMENTS**

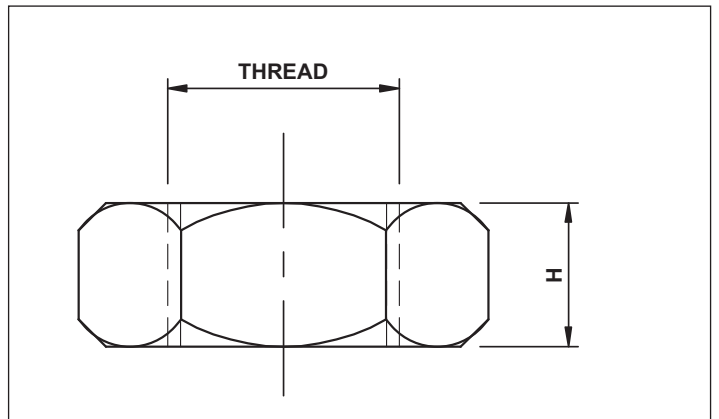
MATERIAL: STEEL CK45 - CHROME 25 µm OR EQUIVALENT  
L : DENOTES LONG

## NYLOCK NUTS



|            |             |          |
|------------|-------------|----------|
| NYLOCK NUT | THREAD SIZE | HEIGHT H |
| NN         | 10          | 11       |

## HEXAGON HALF / LOCK NUTS



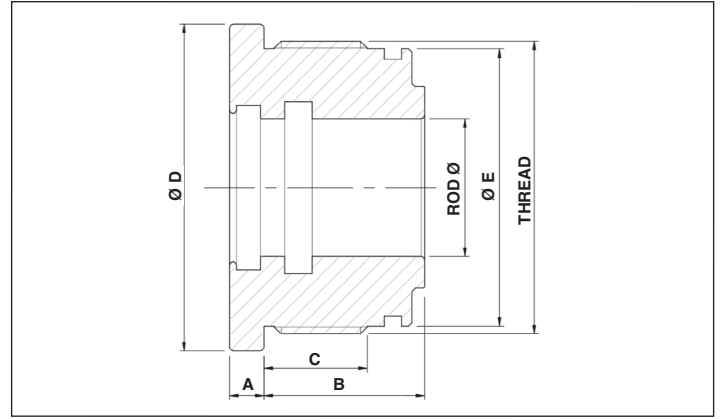
|          |             |          |
|----------|-------------|----------|
| LOCK NUT | THREAD SIZE | HEIGHT H |
| LN       | 5           | 3        |

| PART NUMBER | THREAD    | HEIGHT |
|-------------|-----------|--------|
| NN1011      | 10 x 1.25 | 11.5   |
| NN1011-1.5  | 10 x 1.5  | 11.5   |
| NN1214      | 12 x 1.5  | 14     |
| NN1414      | 14 x 1.5  | 14     |
| NN1416      | 14 x 1.5  | 16     |
| NN1618      | 16 x 1.5  | 18     |
| NN1820      | 18 x 1.5  | 20     |
| NN2017      | 20 x 1.5  | 17     |
| NN2023      | 20 x 1.5  | 23     |
| NN2225      | 22 x 1.5  | 25     |
| NN2424      | 24 x 2    | 24     |
| NN2427      | 24 x 2    | 27     |
| NN2723      | 27 x 2    | 23     |
| NN2727      | 27 x 2    | 27     |
| NN2730      | 27 x 2    | 30     |
| NN3025      | 30 x 2    | 25     |
| NN3030      | 30 x 2    | 30     |
| NN3335      | 33 x 2    | 35     |
| NN3942      | 39 x 3    | 42     |
| NN4852      | 48 x 3    | 52     |

| PART NUMBER | THREAD    | HEIGHT |
|-------------|-----------|--------|
| LN0503      | 5 x 0.8   | 3      |
| LN0603      | 6 x 1     | 3      |
| LN0804      | 8 x 1.25  | 4      |
| LN1005      | 10 x 1.5  | 5      |
| LN1206-1.5  | 12 x 1.5  | 6      |
| LN1206      | 12 x 1.75 | 6      |
| LN1408      | 14 x 2    | 8      |
| LN1608-1.5  | 16 x 1.5  | 8      |
| LN1608      | 16 x 2    | 8      |
| LN1809      | 18 x 1.5  | 9      |
| LN2008      | 20 x 1.5  | 8      |
| LN2211      | 22 x 1.5  | 11     |
| LN2410      | 24 x 2    | 10     |
| LN2712      | 27 x 2    | 12     |
| LN3012      | 30 x 2    | 12     |
| LN3314      | 33 x 2    | 14     |
| LN3614      | 36 x 3    | 14     |
| LN3629      | 36 x 2    | 29     |
| LN3916      | 39 x 3    | 16     |
| LN4216      | 42 x 3    | 16     |
| LN4518      | 45 x 3    | 18     |
| LN5220      | 52 x 3    | 20     |
| LN5622      | 56 x 4    | 22     |

SPECIFICATION: ISO METRIC COARSE AND FINE THREAD. DIN489 & UNI 5589-65

## IMPERIAL STANDARD GLANDS



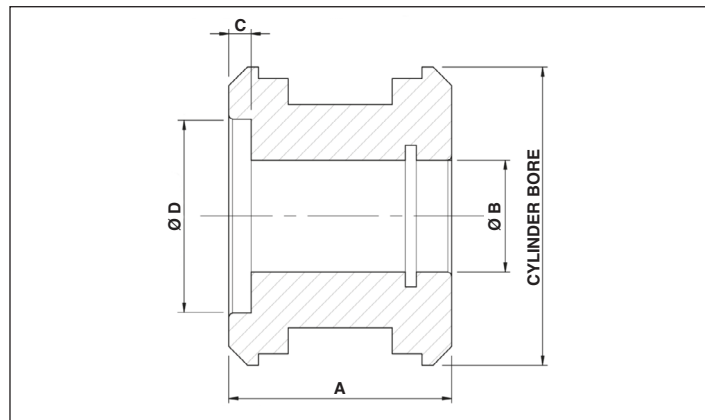
|                      |                                |                               |                              |               |
|----------------------|--------------------------------|-------------------------------|------------------------------|---------------|
| STANDARD GLAND<br>SG | CYLINDER BORE (INCHES)<br>1.50 | ROD DIAMETER (INCHES)<br>0.75 | LENGTH OF B (INCHES)<br>1.50 | IMPERIAL<br>I |
|----------------------|--------------------------------|-------------------------------|------------------------------|---------------|

| PART NUMBER   | CYLINDER BORE (INCHES) | ROD Ø (INCHES) | A (INCHES) | B (INCHES) | C (INCHES) | Ø D (INCHES) | Ø E (+0.03 +0.00) (INCHES) | THREAD (INCHES) | SEAL KIT (INCHES) |
|---------------|------------------------|----------------|------------|------------|------------|--------------|----------------------------|-----------------|-------------------|
| SG150075150-I | 1.50                   | 0.75           | 0.311      | 1.50       | 0.874      | 1.874        | 1.563                      | 1.75-12UNF      | GK0.75-1.50-I     |
| SG200112150-I | 2.00                   | 1.12           | 0.374      | 1.50       | 0.826      | 2.510        | 2.079                      | 2.25-16UNF      | GK1.12-2.00-I     |
| SG250112187-I | 2.50                   | 1.12           | 0.365      | 1.87       | 0.905      | 2.993        | 2.524                      | 2.75-16UNF      | GK1.12-2.50-I     |
| SG250125187-I | 2.50                   | 1.25           | 0.365      | 1.87       | 0.905      | 2.993        | 2.524                      | 2.75-16UNF      | GK1.25-2.50-I     |
| SG250150187-I | 2.50                   | 1.50           | 0.365      | 1.87       | 0.905      | 2.993        | 2.524                      | 2.75-16UNF      | GK1.50-2.50-I     |
| SG300150192-I | 3.00                   | 1.50           | 0.374      | 1.92       | 1.181      | 3.503        | 3.027                      | 3.25-16UNF      | GK1.50-3.00-I     |
| SG300175192-I | 3.00                   | 1.75           | 0.374      | 1.92       | 1.181      | 3.503        | 3.027                      | 3.25-16UNF      | GK1.75-3.00-I     |
| SG350175200-I | 3.50                   | 1.75           | 0.374      | 2.00       | 1.250      | 4.015        | 3.543                      | 3.75-12UNF      | GK1.75-3.50-I     |
| SG350200200-I | 3.50                   | 2.00           | 0.374      | 2.00       | 1.250      | 4.015        | 3.543                      | 3.75-12UNF      | GK.200-3.50-I     |
| SG400200275-I | 4.00                   | 2.00           | 0.498      | 2.75       | 1.771      | 4.487        | 4.024                      | 4.25-12UNF      | GK2.00-4.00-I     |
| SG400250275-I | 4.00                   | 2.50           | 0.498      | 2.75       | 1.771      | 4.487        | 4.024                      | 4.25-12UNF      | GK2.50-4.00-I     |
| SG500250287-I | 5.00                   | 2.50           | 0.500      | 2.87       | 1.968      | 5.668        | 5.039                      | 5.25-12UNF      | GK2.50-5.00-I     |
| SG500275287-I | 5.00                   | 2.75           | 0.500      | 2.87       | 1.968      | 5.668        | 5.039                      | 5.25-12UNF      | GK2.75-5.00-I     |
| SG500300287-I | 5.00                   | 3.00           | 0.500      | 2.87       | 1.968      | 5.668        | 5.039                      | 5.25-12UNF      | GK3.00-5.00-I     |
| SG600300312-I | 6.00                   | 3.00           | 0.563      | 3.12       | 2.164      | 6.692        | 6.024                      | 6.25-12UNF      | GK3.00-6.00-I     |
| SG600350312-I | 6.00                   | 3.50           | 0.563      | 3.12       | 2.164      | 6.692        | 6.024                      | 6.25-12UNF      | GK3.50-6.00-I     |

MATERIAL: HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 250 BAR



## IMPERIAL STANDARD PISTONS

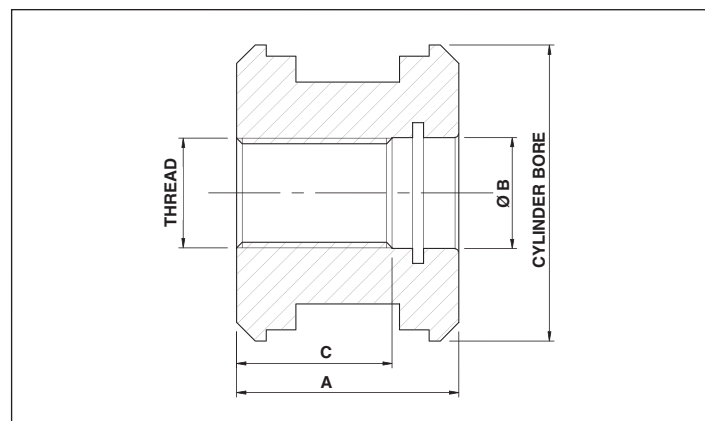


|                    |                                |                                       |                              |               |
|--------------------|--------------------------------|---------------------------------------|------------------------------|---------------|
| METAL PISTON<br>MP | CYLINDER BORE (INCHES)<br>1.50 | INTERNAL DIAMETER Ø B (INCHES)<br>.63 | LENGTH OF A (INCHES)<br>1.00 | IMPERIAL<br>I |
|--------------------|--------------------------------|---------------------------------------|------------------------------|---------------|

| PART NUMBER   | CYLINDER BORE (INCHES) | A (INCHES) | Ø B (INCHES) | C (INCHES) | Ø D (INCHES) | SEAL KIT (INCHES) |
|---------------|------------------------|------------|--------------|------------|--------------|-------------------|
| MP150063100-I | 1.50                   | 1.000      | 0.630        | 0.132      | 1.110        | PK1.50-I          |
| MP200078150-I | 2.00                   | 1.500      | 0.787        | 0.197      | 1.310        | PK2.00-I          |
| MP250078150-I | 2.50                   | 1.500      | 0.787        | 0.197      | 1.620        | PK2.50-I          |
| MP250090150-I | 2.50                   | 1.500      | 0.906        | 0.197      | 1.620        | PK2.50-I          |
| MP300118175-I | 3.00                   | 1.750      | 1.181        | 0.250      | 1.870        | PK3.00-I          |
| MP350129175-I | 3.50                   | 1.750      | 1.299        | 0.320      | 2.290        | PK3.50-I          |
| MP400129175-I | 4.00                   | 1.750      | 1.299        | 0.320      | 2.500        | PK4.00-I          |
| MP500157218-I | 5.00                   | 2.188      | 1.575        | 0.500      | 3.000        | PK5.00-I          |

MATERIAL: STEEL 11SMn30-080M46 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 250 BAR

## IMPERIAL THREADED PISTONS

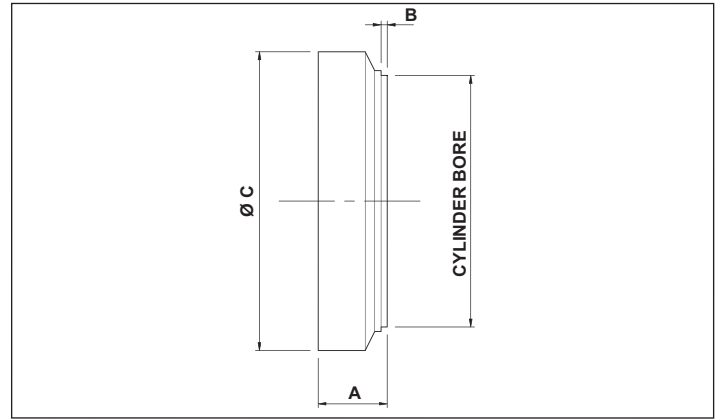


|                    |                                |                                       |                              |               |
|--------------------|--------------------------------|---------------------------------------|------------------------------|---------------|
| METAL PISTON<br>MP | CYLINDER BORE (INCHES)<br>1.50 | INTERNAL DIAMETER Ø B (INCHES)<br>.63 | LENGTH OF A (INCHES)<br>1.00 | IMPERIAL<br>I |
|--------------------|--------------------------------|---------------------------------------|------------------------------|---------------|

| PART NUMBER   | CYLINDER BORE (INCHES) | A (INCHES) | Ø B (INCHES) | C (INCHES) | THREAD  | SEAL KIT (INCHES) |
|---------------|------------------------|------------|--------------|------------|---------|-------------------|
| MP600204237-I | 6.00                   | 2.375      | 2.047        | 1.783      | 2"-12UN | PK6.00-I          |

MATERIAL: STEEL 11SMn30-080M46 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 250 BAR  
UN - UNIFIED NATIONAL

## IMPERIAL STANDARD END CAPS

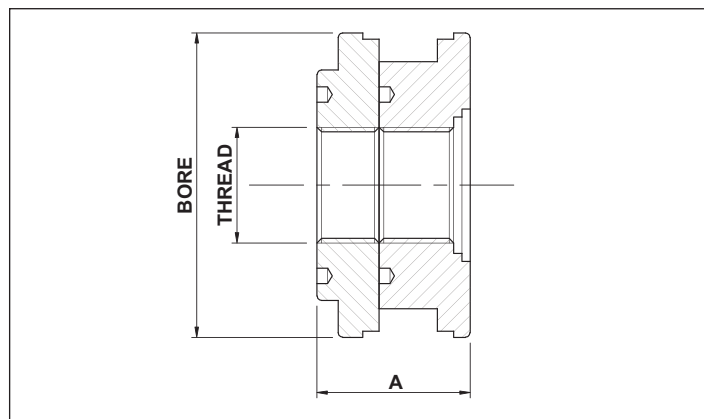


|               |                                |                                 |               |
|---------------|--------------------------------|---------------------------------|---------------|
| END CAP<br>EC | CYLINDER BORE (INCHES)<br>1.50 | TOTAL LENGTH A (INCHES)<br>0.50 | IMPERIAL<br>I |
|---------------|--------------------------------|---------------------------------|---------------|

| PART NUMBER | CYLINDER BORE (INCHES) | A (INCHES) | B (INCHES) | Ø C (INCHES) |
|-------------|------------------------|------------|------------|--------------|
| EC150050-I  | 1.50                   | 0.50       | 0.093      | 1.875        |
| EC200050-I  | 2.00                   | 0.50       | 0.125      | 2.500        |
| EC250050-I  | 2.50                   | 0.50       | 0.125      | 2.963        |
| EC300059-I  | 3.00                   | 0.59       | 0.125      | 3.543        |
| EC350069-I  | 3.50                   | 0.69       | 0.125      | 3.937        |
| EC400075-I  | 4.00                   | 0.75       | 0.125      | 4.500        |
| EC500088-I  | 5.00                   | 0.88       | 0.125      | 5.709        |
| EC600100-I  | 6.00                   | 1.00       | 0.125      | 6.750        |

MATERIAL: STEEL S355JR - ASTM A105 OR EQUIVALENT

## LARGE GLANDS

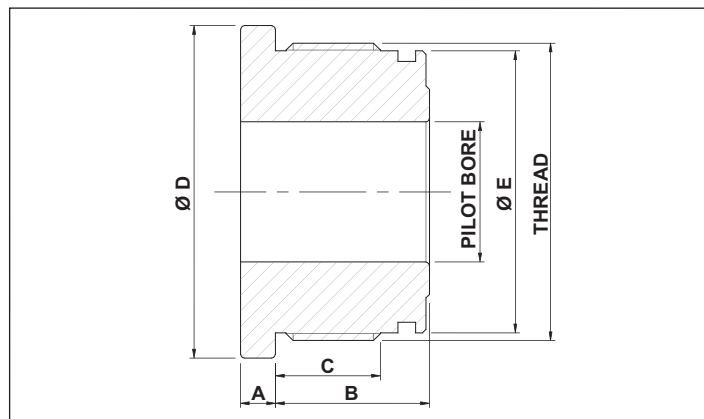


|                      |                      |                    |                   |  |  |  |  |  |  |
|----------------------|----------------------|--------------------|-------------------|--|--|--|--|--|--|
| STANDARD GLAND<br>SG | CYLINDER BORE<br>180 | ROD DIAMETER<br>80 | LENGTH OF B<br>92 |  |  |  |  |  |  |
|----------------------|----------------------|--------------------|-------------------|--|--|--|--|--|--|

| PART NUMBER | CYLINDER BORE | ROD Ø | A  | B   | C  | Ø D | Ø E   | THREAD    | SEAL KIT  |
|-------------|---------------|-------|----|-----|----|-----|-------|-----------|-----------|
| SG1808092   | 180           | 80    | 18 | 92  | 58 | 209 | 180.6 | 188 x 2.5 | GK80-180  |
| SG1809092   | 180           | 90    | 18 | 92  | 58 | 209 | 180.6 | 188 x 2.5 | GK90-180  |
| SG18010092  | 180           | 100   | 18 | 92  | 58 | 209 | 180.6 | 188 x 2.5 | GK100-180 |
| SG18012092  | 180           | 120   | 18 | 92  | 58 | 209 | 180.6 | 188 x 2.5 | GK120-180 |
| SG2009092   | 200           | 90    | 18 | 92  | 58 | 219 | 200.6 | 208 x 2.5 | GK90-200  |
| SG20010092  | 200           | 100   | 18 | 92  | 58 | 219 | 200.6 | 208 x 2.5 | GK100-200 |
| SG20012092  | 200           | 120   | 18 | 92  | 58 | 219 | 200.6 | 208 x 2.5 | GK120-200 |
| SG20014092  | 200           | 140   | 18 | 92  | 58 | 219 | 200.6 | 208 x 2.5 | GK140-200 |
| SG220100104 | 220           | 100   | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK100-220 |
| SG220110104 | 220           | 110   | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK110-220 |
| SG220120104 | 220           | 120   | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK120-220 |
| SG220150104 | 220           | 150   | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK150-220 |
| SG220160104 | 220           | 160   | 18 | 104 | 70 | 249 | 220.6 | 228 x 2.5 | GK160-220 |
| SG250120117 | 250           | 120   | 18 | 117 | 80 | 268 | 250.6 | 258 x 2.5 | GK120-250 |
| SG250150117 | 250           | 150   | 18 | 117 | 80 | 268 | 250.6 | 258 x 2.5 | GK150-250 |

MATERIAL: HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 300 BAR

## PILOT BORE GLANDS

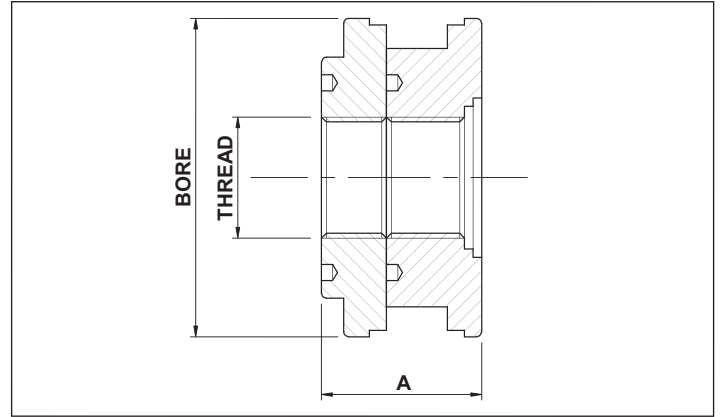


|                      |                      |                   |                   |  |  |  |  |  |  |
|----------------------|----------------------|-------------------|-------------------|--|--|--|--|--|--|
| STANDARD GLAND<br>SG | CYLINDER BORE<br>160 | PILOT BORE<br>000 | LENGTH OF B<br>90 |  |  |  |  |  |  |
|----------------------|----------------------|-------------------|-------------------|--|--|--|--|--|--|

| PART NUMBER       | CYLINDER BORE | PILOT BORE | A  | B   | C  | Ø D | Ø E | THREAD    |
|-------------------|---------------|------------|----|-----|----|-----|-----|-----------|
| SG16000090-PILOT  | 160           | PILOT 30mm | 12 | 90  | 69 | 180 | 160 | 165 x 2   |
| SG18000092-PILOT  | 180           | PILOT 50mm | 18 | 92  | 58 | 210 | 180 | 188 x 2.5 |
| SG20000092-PILOT  | 200           | PILOT 50mm | 18 | 92  | 58 | 218 | 200 | 208 x 2.5 |
| SG220000117-PILOT | 220           | PILOT 50mm | 18 | 117 | 80 | 237 | 220 | 228 x 2.5 |
| SG250000117-PILOT | 250           | PILOT 50mm | 18 | 117 | 80 | 268 | 250 | 258 x 2.5 |

MATERIAL: HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 300 BAR

## LARGE PISTONS

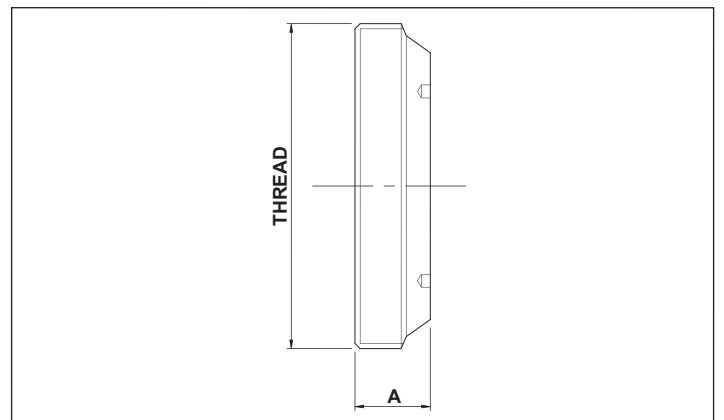


|                    |                      |                       |                      |                |
|--------------------|----------------------|-----------------------|----------------------|----------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>180 | INTERNAL THREAD<br>80 | TOTAL LENGTH A<br>82 | THREADED<br>TH |
|--------------------|----------------------|-----------------------|----------------------|----------------|

| PART NUMBER | CYLINDER BORE | A  | THREAD | SEALKIT |
|-------------|---------------|----|--------|---------|
| MP1807082TH | 180           | 82 | 70 x 2 | PK180   |
| MP1808082TH | 180           | 82 | 80 x 2 | PK180   |
| MP2008082TH | 200           | 82 | 80 x 2 | PK200   |
| MP2209082TH | 220           | 82 | 90 x 2 | PK220   |
| MP2509882TH | 250           | 82 | 98 x 2 | PK250   |

MATERIAL : STEEL 11SMn30- 080M46 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 300 BAR

## LARGE THREADED END CAPS

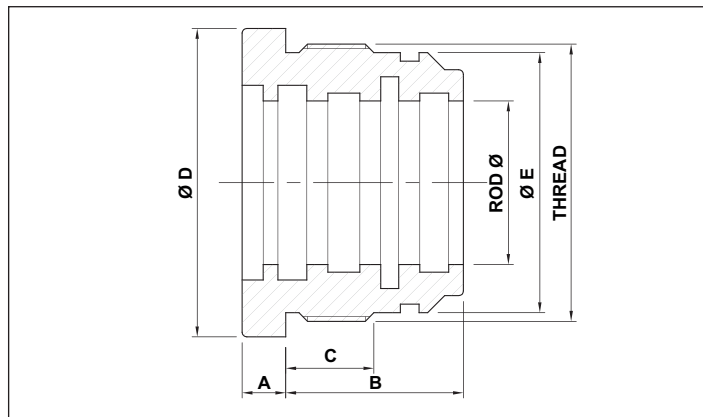


|               |                      |                      |                |
|---------------|----------------------|----------------------|----------------|
| END CAP<br>EC | CYLINDER BORE<br>180 | TOTAL LENGTH A<br>35 | THREADED<br>TH |
|---------------|----------------------|----------------------|----------------|

| PART NUMBER | CYLINDER BORE | A  | THREAD    |
|-------------|---------------|----|-----------|
| EC18035TH   | 180           | 35 | 185 x 2.5 |
| EC20048TH   | 200           | 48 | 205 x 2.5 |
| EC22048TH   | 220           | 48 | 225 x 2.5 |
| EC25048TH   | 250           | 48 | 255 x 2.5 |

MATERIAL: STEEL S355JR - ASTM A105 OR EQUIVALENT

## HEAVY DUTY GLANDS



|                |               |              |             |            |
|----------------|---------------|--------------|-------------|------------|
| STANDARD GLAND | CYLINDER BORE | ROD DIAMETER | LENGTH OF B | HEAVY DUTY |
| SG             | 50            | 25           | 45          | HD         |

| PART NUMBER | CYLINDER BORE | ROD Ø | A  | B  | C  | Ø D | Ø E   | THREAD   | SEAL KIT   |
|-------------|---------------|-------|----|----|----|-----|-------|----------|------------|
| SG502545HD  | 50            | 25    | 10 | 45 | 22 | 64  | 50.6  | 54 x 1.5 | GK25-50HD  |
| SG503045HD  | 50            | 30    | 10 | 45 | 22 | 64  | 50.6  | 54 x 1.5 | GK30-50HD  |
| SG503545HD  | 50            | 35    | 10 | 45 | 22 | 64  | 50.6  | 54 x 1.5 | GK35-50HD  |
| SG603048HD  | 60            | 30    | 12 | 48 | 22 | 74  | 60.6  | 64 x 1.5 | GK30-60HD  |
| SG603548HD  | 60            | 35    | 12 | 48 | 22 | 74  | 60.6  | 64 x 1.5 | GK35-60HD  |
| SG604048HD  | 60            | 40    | 12 | 48 | 22 | 74  | 60.6  | 64 x 1.5 | GK40-60HD  |
| SG633550HD  | 63            | 35    | 12 | 50 | 22 | 78  | 63.6  | 68 x 1.5 | GK35-63HD  |
| SG634050HD  | 63            | 40    | 12 | 50 | 22 | 78  | 63.6  | 68 x 1.5 | GK40-63HD  |
| SG634550HD  | 63            | 45    | 12 | 50 | 22 | 78  | 63.6  | 68 x 1.5 | GK45-63HD  |
| SG704050HD  | 70            | 40    | 12 | 50 | 22 | 84  | 70.6  | 74 x 1.5 | GK40-70HD  |
| SG704550HD  | 70            | 45    | 12 | 50 | 22 | 84  | 70.6  | 74 x 1.5 | GK45-70HD  |
| SG705050HD  | 70            | 50    | 12 | 50 | 22 | 84  | 70.6  | 74 x 1.5 | GK50-70HD  |
| SG754055HD  | 75            | 40    | 15 | 55 | 25 | 90  | 75.6  | 80 x 2   | GK40-75HD  |
| SG754555HD  | 75            | 45    | 15 | 55 | 25 | 90  | 75.6  | 80 x 2   | GK45-75HD  |
| SG755055HD  | 75            | 50    | 15 | 55 | 25 | 90  | 75.6  | 80 x 2   | GK50-75HD  |
| SG804060HD  | 80            | 40    | 15 | 60 | 25 | 94  | 80.6  | 85 x 2   | GK40-80HD  |
| SG804560HD  | 80            | 45    | 15 | 60 | 25 | 94  | 80.6  | 85 x 2   | GK45-80HD  |
| SG805060HD  | 80            | 50    | 15 | 60 | 25 | 94  | 80.6  | 85 x 2   | GK50-80HD  |
| SG904060HD  | 90            | 40    | 15 | 60 | 25 | 109 | 90.6  | 95 x 2   | GK40-90HD  |
| SG904560HD  | 90            | 45    | 15 | 60 | 25 | 109 | 90.6  | 95 x 2   | GK45-90HD  |
| SG905060HD  | 90            | 50    | 15 | 60 | 25 | 109 | 90.6  | 95 x 2   | GK50-90HD  |
| SG906060HD  | 90            | 60    | 15 | 60 | 25 | 109 | 90.6  | 95 x 2   | GK60-90HD  |
| SG1004560HD | 100           | 45    | 15 | 60 | 25 | 119 | 100.6 | 105 x 2  | GK45-100HD |
| SG1005060HD | 100           | 50    | 15 | 60 | 25 | 119 | 100.6 | 105 x 2  | GK50-100HD |
| SG1005660HD | 100           | 56    | 15 | 60 | 25 | 119 | 100.6 | 105 x 2  | GK56-100HD |
| SG1006060HD | 100           | 60    | 15 | 60 | 25 | 119 | 100.6 | 105 x 2  | GK60-100HD |
| SG1006360HD | 100           | 63    | 15 | 60 | 25 | 119 | 100.6 | 105 x 2  | GK63-100HD |
| SG1007060HD | 100           | 70    | 15 | 60 | 25 | 119 | 100.6 | 105 x 2  | GK70-100HD |
| SG1105070HD | 110           | 50    | 15 | 70 | 30 | 129 | 110.6 | 115 x 2  | GK50-110HD |
| SG1105670HD | 110           | 56    | 15 | 70 | 30 | 129 | 110.6 | 115 x 2  | GK56-110HD |
| SG1106070HD | 110           | 60    | 15 | 70 | 30 | 129 | 110.6 | 115 x 2  | GK60-110HD |
| SG1106370HD | 110           | 63    | 15 | 70 | 30 | 129 | 110.6 | 115 x 2  | GK63-110HD |
| SG1206070HD | 120           | 60    | 15 | 70 | 31 | 139 | 120.6 | 125 x 2  | GK60-120HD |
| SG1207070HD | 120           | 70    | 15 | 70 | 31 | 139 | 120.6 | 125 x 2  | GK70-120HD |
| SG1208070HD | 120           | 80    | 15 | 70 | 31 | 139 | 120.6 | 125 x 2  | GK80-120HD |

MATERIAL: STEEL 080M46 OR EQUIVALENT

MAXIMUM WORKING PRESSURE 350 BAR

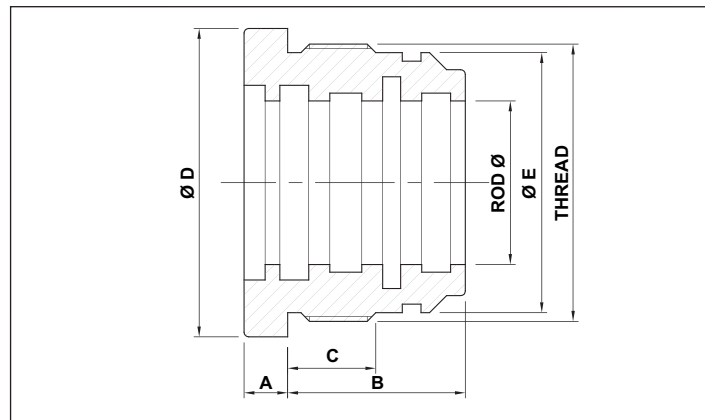
THESE NECK GLANDS ARE NOT DESIGNED TO FIT OUR STANDARD RANGE OF CYLINDERS.

WITH SPECIAL CARE AND ATTENTION SOME OF THE GLANDS WILL FIT.

FPE SEALS CANNOT BE HELD RESPONSIBLE FOR ANY CONSEQUENTIAL LOSS THAT ARISES FROM

USING THESE GLANDS WITH OUR STANDARD CYLINDERS.

## HEAVY DUTY GLANDS



|                      |                      |                    |                   |                  |
|----------------------|----------------------|--------------------|-------------------|------------------|
| STANDARD GLAND<br>SG | CYLINDER BORE<br>125 | ROD DIAMETER<br>50 | LENGTH OF B<br>75 | HEAVY DUTY<br>HD |
|----------------------|----------------------|--------------------|-------------------|------------------|

| PART NUMBER   | CYLINDER BORE | ROD Ø | A  | B   | C  | Ø D | Ø E   | THREAD    | SEAL KIT    |
|---------------|---------------|-------|----|-----|----|-----|-------|-----------|-------------|
| SG1255075HD   | 125           | 50    | 15 | 75  | 39 | 144 | 125.6 | 130 x 2   | GK50-125HD  |
| SG1256075HD   | 125           | 60    | 15 | 75  | 39 | 144 | 125.6 | 130 x 2   | GK60-125HD  |
| SG1257075HD   | 125           | 70    | 15 | 75  | 39 | 144 | 125.6 | 130 x 2   | GK70-125HD  |
| SG1258075HD   | 125           | 80    | 15 | 75  | 39 | 144 | 125.6 | 130 x 2   | GK80-125HD  |
| SG1259075HD   | 125           | 90    | 15 | 75  | 39 | 144 | 125.6 | 130 x 2   | GK90-125HD  |
| SG1407075HD   | 140           | 70    | 15 | 75  | 40 | 159 | 140.6 | 145 x 2   | GK70-140HD  |
| SG1408075HD   | 140           | 80    | 15 | 75  | 40 | 159 | 140.6 | 145 x 2   | GK80-140HD  |
| SG1409075HD   | 140           | 90    | 15 | 75  | 40 | 159 | 140.6 | 145 x 2   | GK90-140HD  |
| SG14010075HD  | 140           | 100   | 15 | 75  | 40 | 159 | 140.6 | 145 x 2   | GK100-140HD |
| SG1508085HD   | 150           | 80    | 15 | 85  | 46 | 169 | 150.6 | 155 x 2   | GK80-150HD  |
| SG1509085HD   | 150           | 90    | 15 | 85  | 46 | 169 | 150.6 | 155 x 2   | GK90-150HD  |
| SG15010085HD  | 150           | 100   | 15 | 85  | 46 | 169 | 150.6 | 155 x 2   | GK100-150HD |
| SG1607085HD   | 160           | 70    | 15 | 85  | 46 | 179 | 160.6 | 165 x 2   | GK70-160HD  |
| SG1609085HD   | 160           | 90    | 15 | 85  | 46 | 179 | 160.6 | 165 x 2   | GK90-160HD  |
| SG16010085HD  | 160           | 100   | 15 | 85  | 46 | 179 | 160.6 | 165 x 2   | GK100-160HD |
| SG16012085HD  | 160           | 120   | 15 | 85  | 46 | 179 | 160.6 | 165 x 2   | GK120-160HD |
| SG180100107HD | 180           | 100   | 18 | 107 | 60 | 215 | 180.6 | 188 x 2.5 | GK100-180HD |
| SG180120107HD | 180           | 120   | 18 | 107 | 60 | 215 | 180.6 | 188 x 2.5 | GK120-180HD |
| SG200100107HD | 200           | 100   | 18 | 107 | 60 | 225 | 200.6 | 208 x 2.5 | GK100-200HD |
| SG200120107HD | 200           | 120   | 18 | 107 | 60 | 225 | 200.6 | 208 x 2.5 | GK120-200HD |
| SG200140107HD | 200           | 140   | 18 | 107 | 60 | 225 | 200.6 | 208 x 2.5 | GK140-200HD |
| SG220120112HD | 220           | 120   | 18 | 112 | 65 | 245 | 222.0 | 228 x 2.5 | GK120-220HD |
| SG220140112HD | 220           | 140   | 18 | 112 | 65 | 245 | 222.0 | 228 x 2.5 | GK140-220HD |
| SG250150130HD | 250           | 150   | 20 | 130 | 80 | 275 | 250.6 | 258 x 2.5 | GK150-250HD |
| SG250180130HD | 250           | 180   | 20 | 130 | 80 | 275 | 250.6 | 258 x 2.5 | GK180-250HD |
| SG300150155HD | 300           | 150   | 25 | 155 | 95 | 335 | 300.6 | 308 x 3   | GK150-300HD |
| SG300180155HD | 300           | 180   | 25 | 155 | 95 | 335 | 300.6 | 308 x 3   | GK180-300HD |

MATERIAL: STEEL 080M46 OR EQUIVALENT

MAXIMUM WORKING PRESSURE 350 BAR

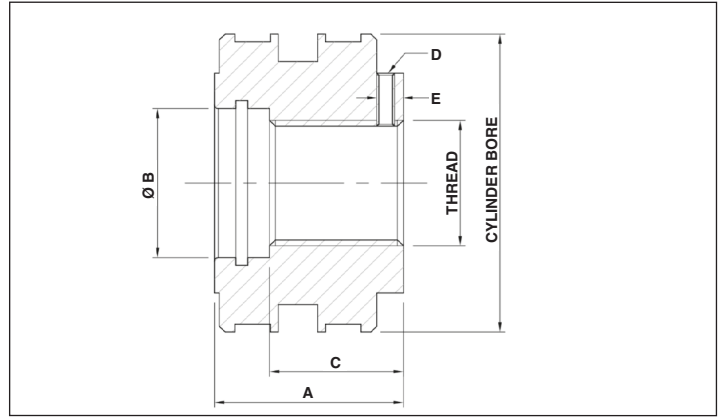
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USING THESE GLANDS WITH OUR STANDARD CYLINDERS.

## HEAVY DUTY THREADED PISTONS

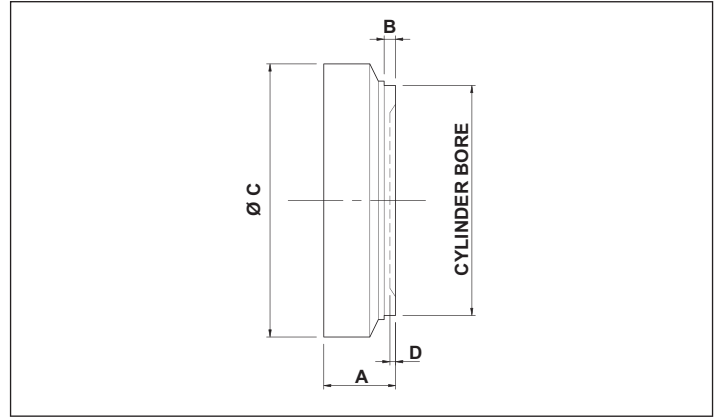


|                    |                     |                       |                      |                |                  |
|--------------------|---------------------|-----------------------|----------------------|----------------|------------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>50 | INTERNAL THREAD<br>20 | TOTAL LENGTH A<br>40 | THREADED<br>TH | HEAVY DUTY<br>HD |
|--------------------|---------------------|-----------------------|----------------------|----------------|------------------|

| PART NUMBER      | CYLINDER BORE | A   | Ø B | C   | Ø D     | E  | THREAD   | SEAL KIT |
|------------------|---------------|-----|-----|-----|---------|----|----------|----------|
| MP502040TH-HD    | 50            | 40  | 21  | 28  | 6 x 12  | 8  | 20 x 1.5 | PK50HD   |
| MP602745TH-HD    | 60            | 45  | 30  | 30  | 6 x 12  | 10 | 27 x 2   | PK60HD   |
| MP632745TH-HD    | 63            | 45  | 30  | 30  | 6 x 12  | 10 | 27 x 2   | PK63HD   |
| MP703056TH-HD    | 70            | 56  | 40  | 41  | 6 x 12  | 8  | 30 x 2   | PK70HD   |
| MP753056TH-HD    | 75            | 56  | 40  | 41  | 6 x 12  | 8  | 30 x 2   | PK75HD   |
| MP803056TH-HD    | 80            | 56  | 40  | 41  | 6 x 12  | 8  | 30 x 2   | PK80HD   |
| MP903655TH-HD    | 90            | 55  | 38  | 40  | 6 x 12  | 8  | 36 x 3   | PK90HD   |
| MP903656TH-HD-40 | 90            | 56  | 40  | 41  | 6 x 12  | 8  | 36 x 3   | PK90HD   |
| MP1004256TH-HD   | 100           | 56  | 45  | 41  | 6 x 12  | 8  | 42 x 2   | PK100HD  |
| MP1104870TH-HD   | 110           | 70  | 50  | 55  | 8 x 16  | 14 | 48 x 3   | PK110HD  |
| MP1204870TH-HD   | 120           | 70  | 50  | 55  | 8 x 16  | 14 | 48 x 3   | PK120HD  |
| MP1254870TH-HD   | 125           | 70  | 51  | 55  | 8 x 16  | 14 | 48 x 3   | PK125HD  |
| MP1404875TH-HD   | 140           | 75  | 50  | 57  | 8 x 16  | 14 | 48 x 3   | PK140HD  |
| MP1505280TH-HD   | 150           | 80  | 56  | 60  | 8 x 16  | 15 | 52 x 3   | PK150HD  |
| MP1605280TH-HD   | 160           | 80  | 56  | 60  | 8 x 16  | 15 | 52 x 3   | PK160HD  |
| MP18080115TH-HD  | 180           | 115 | 90  | 85  | 10 x 16 | 20 | 80 x 2   | PK180HD  |
| MP20090115TH-HD  | 200           | 115 | 100 | 85  | 10 x 16 | 20 | 90 x 2   | PK200HD  |
| MP220100120TH-HD | 220           | 120 | 110 | 90  | 10 x 16 | 20 | 100 x 2  | PK220HD  |
| MP250115130TH-HD | 250           | 130 | 125 | 100 | 10 x 16 | 25 | 115 x 3  | PK250HD  |
| MP300140140TH-HD | 300           | 140 | 150 | 105 | 12 x 16 | 35 | 140 x 3  | PK300HD  |

MATERIAL : STEEL 080M46 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 350 BAR

## HEAVY DUTY END CAPS



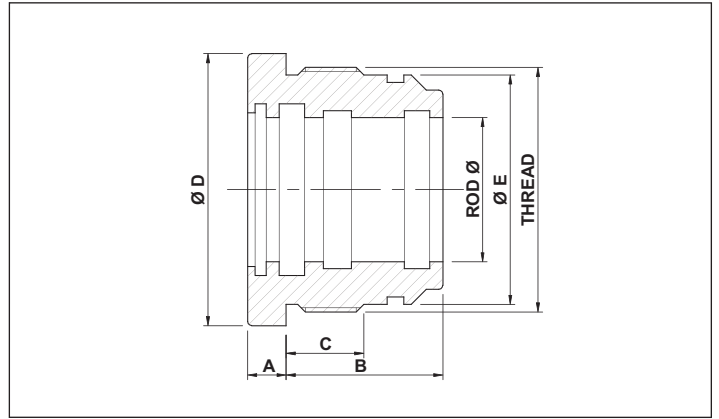
END CAP EC      CYLINDER BORE 50      TOTAL LENGTH A 18      HEAVY DUTY HD

| PART NUMBER   | CYLINDER BORE | A  | B | Ø C | D |
|---------------|---------------|----|---|-----|---|
| EC5018-HD     | 50            | 18 | 4 | 65  | 0 |
| EC6019-HD     | 60            | 19 | 4 | 75  | 0 |
| EC6322-HD     | 63            | 22 | 4 | 78  | 0 |
| EC7022-HD-CS  | 70            | 22 | 4 | 85  | 2 |
| EC7022-HD     | 70            | 22 | 4 | 85  | 0 |
| EC7522-HD     | 75            | 22 | 4 | 90  | 0 |
| EC8025 HD-CS  | 80            | 25 | 4 | 95  | 2 |
| EC8025-HD     | 80            | 25 | 4 | 95  | 0 |
| EC9026-HD     | 90            | 26 | 4 | 110 | 0 |
| EC10030-HD-CS | 100           | 30 | 4 | 120 | 2 |
| EC10030-HD    | 100           | 30 | 4 | 120 | 0 |
| EC11031-HD    | 110           | 31 | 7 | 130 | 0 |
| EC12034-HD    | 120           | 34 | 7 | 140 | 0 |
| EC12535-HD    | 125           | 35 | 7 | 145 | 0 |
| EC13035-HD    | 130           | 35 | 7 | 150 | 0 |
| EC14040-HD    | 140           | 40 | 7 | 160 | 0 |
| EC15042-HD    | 150           | 42 | 7 | 170 | 0 |
| EC16045-HD    | 160           | 45 | 7 | 180 | 0 |

MATERIAL : STEEL S355JR - ASTM A105 OR EQUIVALENT  
 CS ; DENOTES COUNTERSUNK



## STAINLESS STEEL GLANDS

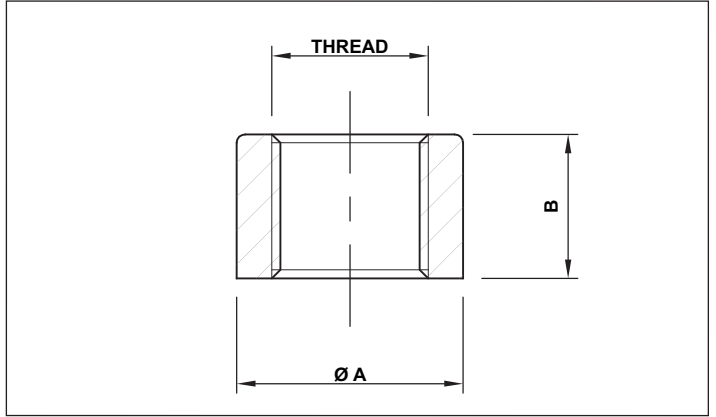


|                      |                     |                    |                   |                       |
|----------------------|---------------------|--------------------|-------------------|-----------------------|
| STANDARD GLAND<br>SG | CYLINDER BORE<br>40 | ROD DIAMETER<br>20 | LENGTH OF B<br>32 | STAINLESS STEEL<br>SS |
|----------------------|---------------------|--------------------|-------------------|-----------------------|

| PART NUMBER  | CYLINDER BORE | ROD Ø | A  | B  | C  | Ø D | Ø E   | THREAD   | SEAL KIT    |
|--------------|---------------|-------|----|----|----|-----|-------|----------|-------------|
| SG402032-SS  | 40            | 20    | 8  | 32 | 19 | 49  | 40.6  | 44 x 1.5 | GK20-40-SS  |
| SG402532-SS  | 40            | 25    | 8  | 32 | 19 | 49  | 40.6  | 44 x 1.5 | GK25-40-SS  |
| SG502535-SS  | 50            | 25    | 8  | 35 | 22 | 59  | 50.6  | 54 x 1.5 | GK25-50-SS  |
| SG503035-SS  | 50            | 30    | 8  | 35 | 22 | 59  | 50.6  | 54 x 1.5 | GK30-50-SS  |
| SG603040-SS  | 60            | 30    | 10 | 40 | 27 | 69  | 60.6  | 64 x 1.5 | GK30-60-SS  |
| SG603540-SS  | 60            | 35    | 10 | 40 | 27 | 69  | 60.6  | 64 x 1.5 | GK35-60-SS  |
| SG604040-SS  | 60            | 40    | 10 | 40 | 27 | 69  | 60.6  | 64 x 1.5 | GK40-60-SS  |
| SG703540-SS  | 70            | 35    | 10 | 40 | 27 | 79  | 70.6  | 74 x 1.5 | GK35-70-SS  |
| SG704040-SS  | 70            | 40    | 10 | 40 | 27 | 79  | 70.6  | 74 x 1.5 | GK40-70-SS  |
| SG804050-SS  | 80            | 40    | 10 | 50 | 33 | 94  | 80.6  | 85 x 2   | GK40-80-SS  |
| SG805050-SS  | 80            | 50    | 10 | 50 | 33 | 94  | 80.6  | 85 x 2   | GK50-80-SS  |
| SG904050-SS  | 90            | 40    | 10 | 50 | 33 | 104 | 90.6  | 95 x 2   | GK40-90-SS  |
| SG905050-SS  | 90            | 50    | 10 | 50 | 33 | 104 | 90.6  | 95 x 2   | GK50-90-SS  |
| SG1004053-SS | 100           | 40    | 12 | 53 | 35 | 114 | 100.6 | 105 x 2  | GK40-100-SS |
| SG1005053-SS | 100           | 50    | 12 | 53 | 35 | 114 | 100.6 | 105 x 2  | GK50-100-SS |
| SG1006053-SS | 100           | 60    | 12 | 53 | 35 | 114 | 100.6 | 105 x 2  | GK60-100-SS |

MATERIAL : STAINLESS STEEL AISI 316L OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

## STAINLESS STEEL THREADED PORTS



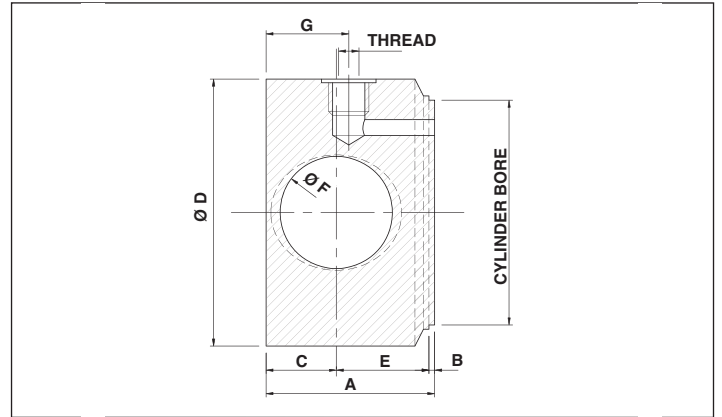
THREADED PORT BSP SIZE STAINLESS STEEL  
 TP 025 SS

| PART NUMBER | Ø A | B  | THREADED BSP |
|-------------|-----|----|--------------|
| TP025-SS    | 22  | 17 | 1/4"         |
| TP037-SS    | 26  | 17 | 3/8"         |
| TP050-SS    | 30  | 18 | 1/2"         |

MATERIAL: STAINLESS STEEL AISI 316L OR EQUIVALENT



# STAINLESS STEEL END CAP BORED AND PORTED

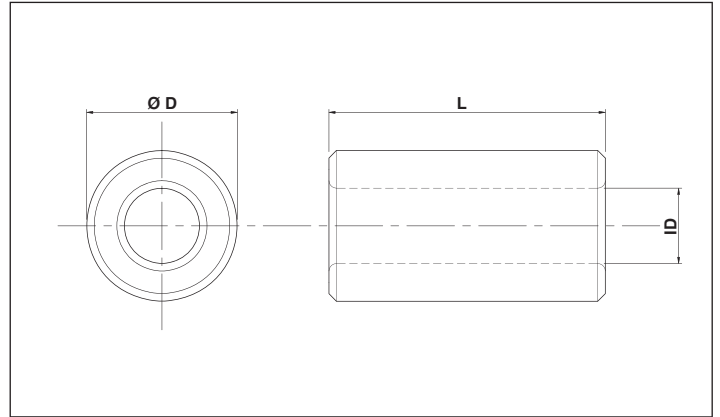


|               |                     |                        |                 |             |                       |
|---------------|---------------------|------------------------|-----------------|-------------|-----------------------|
| END CAP<br>EC | CYLINDER BORE<br>40 | TOTAL LENGTH - A<br>50 | HOLE SIZE<br>16 | PORTED<br>P | STAINLESS STEEL<br>SS |
|---------------|---------------------|------------------------|-----------------|-------------|-----------------------|

| PART NUMBER    | CYLINDER BORE | A  | B | C  | Ø D | E  | Ø F   |
|----------------|---------------|----|---|----|-----|----|-------|
| EC4050-16P-SS  | 40            | 50 | 2 | 15 | 50  | 33 | 16.2  |
| EC5060-20P-SS  | 50            | 60 | 2 | 20 | 60  | 38 | 20.25 |
| EC6060-25P-SS  | 60            | 60 | 2 | 23 | 70  | 35 | 25.25 |
| EC7060-25P-SS  | 70            | 60 | 2 | 23 | 80  | 35 | 25.25 |
| EC8075-30P-SS  | 80            | 75 | 2 | 25 | 95  | 48 | 30.25 |
| EC9075-30P-SS  | 90            | 75 | 2 | 25 | 105 | 48 | 30.25 |
| EC10075-35P-SS | 100           | 75 | 2 | 30 | 115 | 43 | 35.25 |

MATERIAL: STAINLESS STEEL AISI 316L OR EQUIVALENT

## STAINLESS STEEL WELDABLE BOSSES

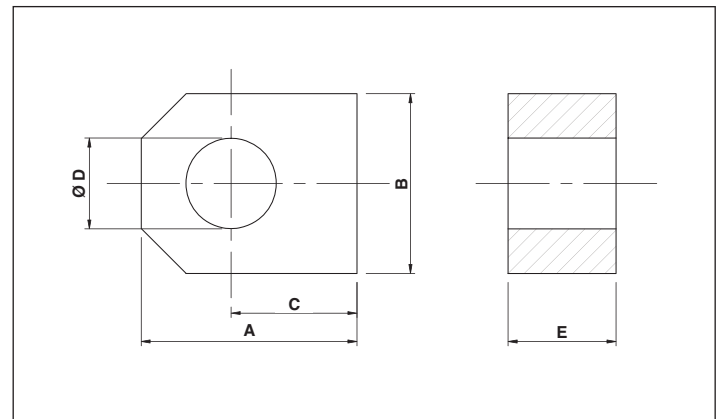


|                     |                        |                       |              |                       |
|---------------------|------------------------|-----------------------|--------------|-----------------------|
| WELDABLE BOSS<br>WB | OUTSIDE DIAMETER<br>35 | INSIDE DIAMETER<br>16 | LENGTH<br>30 | STAINLESS STEEL<br>SS |
|---------------------|------------------------|-----------------------|--------------|-----------------------|

| PART NUMBER | Ø D | ID | L  |
|-------------|-----|----|----|
| WB351630-SS | 35  | 16 | 30 |
| WB402040-SS | 40  | 20 | 40 |
| WB502550-SS | 50  | 25 | 50 |
| WB603060-SS | 60  | 30 | 60 |

MATERIAL: STAINLESS STEEL AISI 316L OR EQUIVALENT

## STAINLESS STEEL FIXED EYE

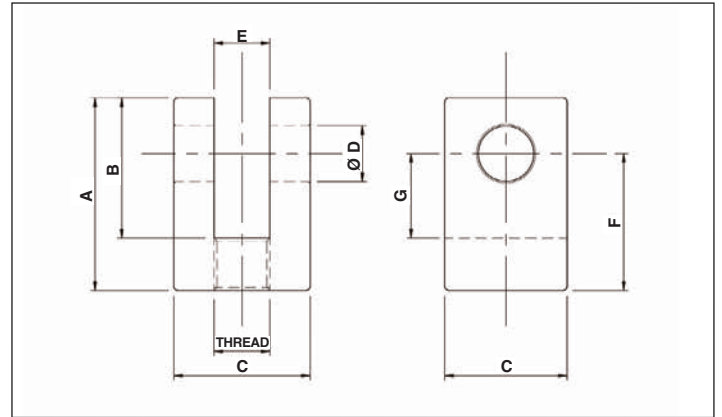
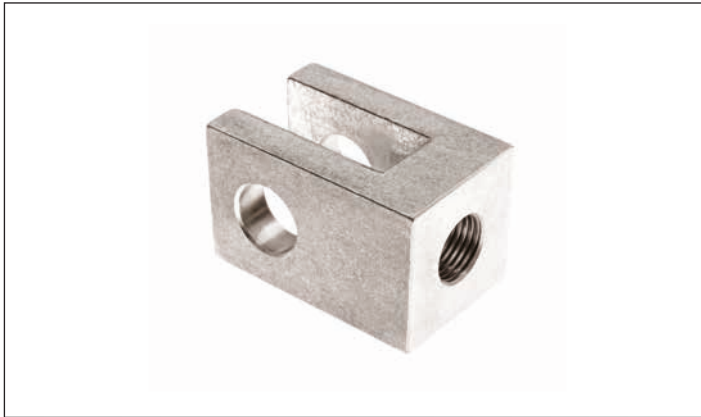


|                 |                |                    |                       |
|-----------------|----------------|--------------------|-----------------------|
| FIXED EYE<br>FE | LENGTH A<br>42 | PIN SIZE Ø D<br>16 | STAINLESS STEEL<br>SS |
|-----------------|----------------|--------------------|-----------------------|

| PART NUMBER | A  | B  | C  | Ø D  | E  |
|-------------|----|----|----|------|----|
| FE4216-SS   | 42 | 35 | 25 | 16.2 | 20 |
| FE5020-SS   | 50 | 45 | 30 | 20.2 | 25 |
| FE6025-SS   | 60 | 50 | 35 | 25.2 | 30 |
| FE7530-SS   | 75 | 60 | 45 | 30.2 | 35 |
| FE9035-SS   | 90 | 70 | 55 | 35.2 | 40 |
| FE9540-SS   | 95 | 70 | 60 | 40.2 | 40 |

MATERIAL: STAINLESS STEEL AISI 316L OR EQUIVALENT

## STAINLESS STEEL THREADED FORKS

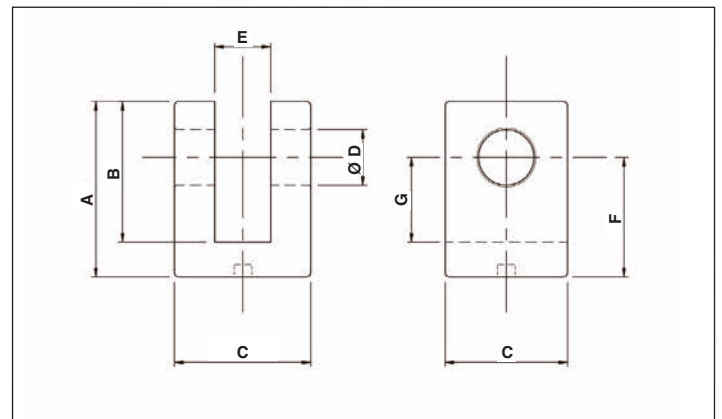


|            |                   |                       |                |                       |
|------------|-------------------|-----------------------|----------------|-----------------------|
| FORK<br>FK | PIN SIZE ØD<br>16 | CENTRE HEIGHT F<br>39 | THREADED<br>TH | STAINLESS STEEL<br>SS |
|------------|-------------------|-----------------------|----------------|-----------------------|

| PART NUMBER | A  | B  | C  | Ø D   | E  | F  | G  | THREAD   |
|-------------|----|----|----|-------|----|----|----|----------|
| FK1639TH-SS | 55 | 40 | 35 | 16.2  | 16 | 39 | 25 | 16 x 1.5 |
| FK2045TH-SS | 65 | 50 | 40 | 20.25 | 20 | 45 | 30 | 20 x 1.5 |
| FK2550TH-SS | 75 | 55 | 50 | 25.25 | 25 | 50 | 30 | 24 x 2   |

MATERIAL: STAINLESS STEEL AISI 316L OR EQUIVALENT

## STAINLESS STEEL WELDABLE FORKS

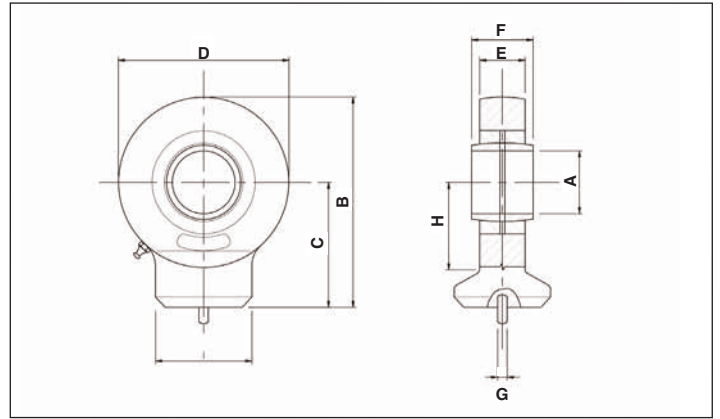


|            |                   |                       |               |                       |
|------------|-------------------|-----------------------|---------------|-----------------------|
| FORK<br>FK | PIN SIZE ØD<br>16 | CENTRE HEIGHT F<br>34 | WELDABLE<br>W | STAINLESS STEEL<br>SS |
|------------|-------------------|-----------------------|---------------|-----------------------|

| PART NUMBER | A  | B  | C  | Ø D   | E  | F  | G  |
|-------------|----|----|----|-------|----|----|----|
| FK1634W-SS  | 50 | 40 | 35 | 16.2  | 16 | 34 | 24 |
| FK2040W-SS  | 60 | 50 | 40 | 20.25 | 2  | 40 | 30 |
| FK2545W-SS  | 70 | 55 | 50 | 25.25 | 25 | 45 | 30 |

MATERIAL: STAINLESS STEEL AISI 316L OR EQUIVALENT

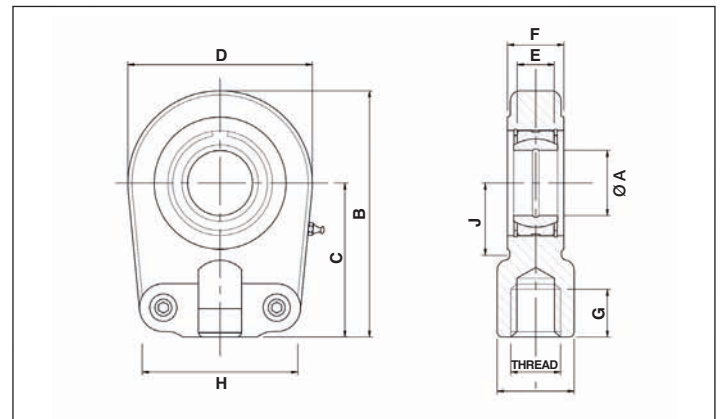
## STAINLESS STEEL BALL JOINT ENDS OTS\*\* AR-SS



| PART NUMBER | Ø A | B    | C  | D   | E  | F  | G | H    | I    | BEARING FITTED     | OUTSIDE DIAMETER OF BEARING | LOAD FACTOR (KN) |         |
|-------------|-----|------|----|-----|----|----|---|------|------|--------------------|-----------------------------|------------------|---------|
|             |     |      |    |     |    |    |   |      |      |                    |                             | STATIC           | DYNAMIC |
| OTS20AR-SS  | 20  | 64.5 | 38 | 53  | 13 | 16 | 4 | 27.5 | 27.5 | OGE020UK-STAINLESS | 35                          | 54               | 30      |
| OTS25AR-SS  | 25  | 77   | 45 | 64  | 17 | 20 | 4 | 33   | 33.5 | OGE025UK-STAINLESS | 42                          | 72               | 48      |
| OTS30AR-SS  | 30  | 87.5 | 51 | 73  | 19 | 22 | 4 | 37.5 | 40   | OGE030UK-STAINLESS | 47                          | 95               | 62      |
| OTS35AR-SS  | 35  | 102  | 61 | 82  | 21 | 25 | 4 | 43   | 47   | OGE035UK-STAINLESS | 55                          | 125              | 80      |
| OTS40AR-SS  | 40  | 115  | 69 | 92  | 23 | 28 | 4 | 48   | 52   | OGE040UK-STAINLESS | 62                          | 156              | 100     |
| OTS45AR-SS  | 45  | 128  | 77 | 102 | 27 | 32 | 6 | 52   | 58   | OGE045UK-STAINLESS | 68                          | 208              | 127     |
| OTS50AR-SS  | 50  | 144  | 88 | 112 | 30 | 35 | 6 | 59   | 62   | OGE050UK-STAINLESS | 75                          | 250              | 156     |

ISO12240-4 HOUSING MATERIAL:STAINLESS STEEL AISI 316 OR EQUIVALENT:  
BEARING MATERIAL:STAINLESS STEEL AISI 420 PTFE FABRIC

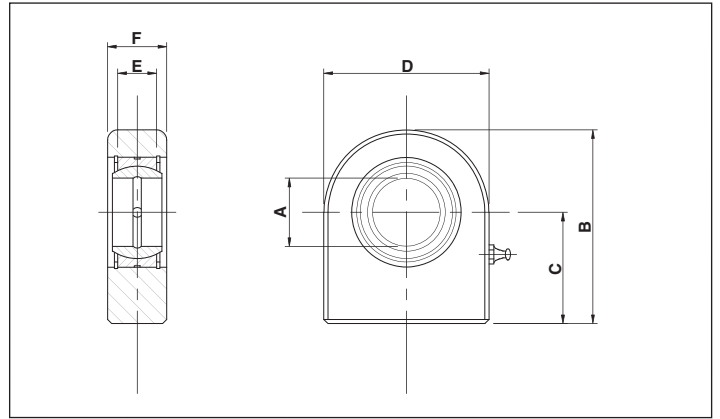
## STAINLESS STEEL BALL JOINT ENDS OTSTA\*\* U-SS



| PART NUMBER | Ø A | B   | C   | D   | E  | F  | G  | H  | I  | J  | THREAD   | BEARING FITTED     | OUTSIDE DIAMETER OF BEARING | INTERNAL CIRCLIP | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|----|----|----|----|----|----|----------|--------------------|-----------------------------|------------------|------------------|---------|
|             |     |     |     |     |    |    |    |    |    |    |          |                    |                             |                  | STATIC           | DYNAMIC |
| OTSTA20U-SS | 20  | 80  | 50  | 56  | 16 | 19 | 17 | 46 | 25 | 25 | 16 x 1.5 | OGE020UK-STAINLESS | 35                          | CI35             | 72               | 30      |
| OTSTA25U-SS | 25  | 80  | 50  | 56  | 20 | 23 | 17 | 46 | 25 | 28 | 16 x 1.5 | OGE025UK-STAINLESS | 42                          | CI42             | 72               | 48      |
| OTSTA30U-SS | 30  | 94  | 60  | 64  | 22 | 28 | 23 | 50 | 32 | 30 | 22 x 1.5 | OGE030UK-STAINLESS | 47                          | CI47             | 106              | 52      |
| OTSTA35U-SS | 35  | 112 | 70  | 78  | 25 | 30 | 29 | 66 | 40 | 38 | 28 x 1.5 | OGE035UK-STAINLESS | 55                          | CI55             | 153              | 80      |
| OTSTA40U-SS | 40  | 135 | 85  | 94  | 28 | 35 | 36 | 76 | 49 | 45 | 35 x 1.5 | OGE040UK-STAINLESS | 62                          | CI62             | 250              | 100     |
| OTSTA50U-SS | 50  | 168 | 105 | 116 | 35 | 40 | 46 | 90 | 61 | 55 | 45 x 1.5 | OGE050UK-STAINLESS | 75                          | CI75             | 365              | 156     |

ISO12240-4 HOUSING MATERIAL:STAINLESS STEEL AISI 316 OR EQUIVALENT:  
BEARING MATERIAL:STAINLESS STEEL AISI 420 PTFE FABRIC

# STAINLESS STEEL BALL JOINT ENDS OTS \*\* PR-SS

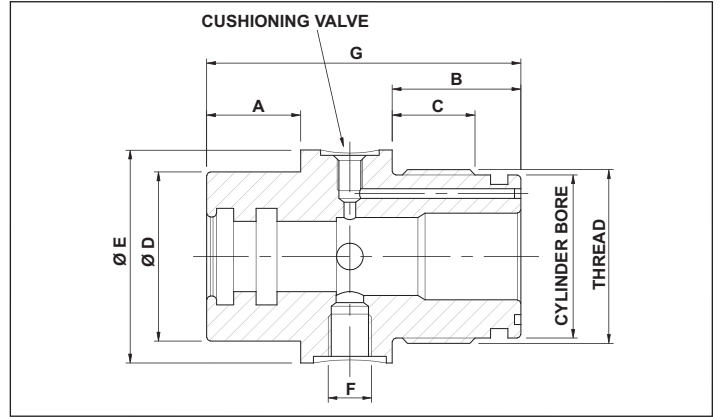


| PART NUMBER | Ø A | B     | C  | D   | E  | F  | BEARING FITTED     | OUTSIDE DIAMETER OF BEARING | INTERNAL CIRCLIP | LOAD FACTOR (KN) |         |
|-------------|-----|-------|----|-----|----|----|--------------------|-----------------------------|------------------|------------------|---------|
|             |     |       |    |     |    |    |                    |                             |                  | STATIC           | DYNAMIC |
| OTS20PR-SS  | 20  | 63    | 38 | 50  | 16 | 19 | OGE020UK-STAINLESS | 35                          | CI35             | 67               | 30      |
| OTS25PR-SS  | 25  | 72.05 | 45 | 55  | 20 | 23 | OGE025UK-STAINLESS | 42                          | CI42             | 69.5             | 48      |
| OTS30PR-SS  | 30  | 83.5  | 51 | 65  | 22 | 28 | OGE030UK-STAINLESS | 47                          | CI47             | 118              | 62      |
| OTS35PR-SS  | 35  | 102.5 | 61 | 83  | 25 | 30 | OGE035UK-STAINLESS | 55                          | CI55             | 196              | 80      |
| OTS40PR-SS  | 40  | 119   | 69 | 100 | 28 | 35 | OGE040UK-STAINLESS | 62                          | CI62             | 300              | 100     |
| OTS45PR-SS  | 45  | 132   | 77 | 110 | 32 | 40 | OGE045UK-STAINLESS | 68                          | CI68             | 380              | 127     |
| OTS50PR-SS  | 50  | 149.5 | 88 | 123 | 35 | 40 | OGE050UK-STAINLESS | 75                          | CI75             | 440              | 156     |

ISO12240-4 HOUSING MATERIAL:STAINLESS STEEL AISI 316 OR EQUIVALENT:  
 BEARING MATERIAL:STAINLESS STEEL AISI 420 PTFE FABRIC



## GLANDS WITH ADJUSTABLE CUSHIONING

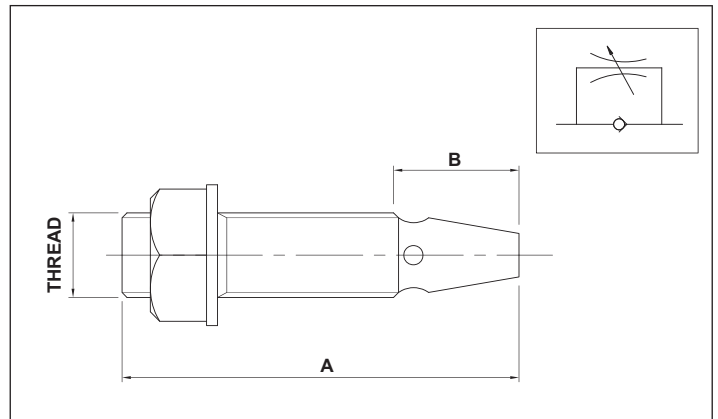


|                     |                     |                |              |                       |
|---------------------|---------------------|----------------|--------------|-----------------------|
| SPECIAL GLAND<br>SG | CYLINDER BORE<br>40 | ROD SIZE<br>20 | LENGTH<br>90 | CUSHIONING<br>CUSHION |
|---------------------|---------------------|----------------|--------------|-----------------------|

| PART NUMBER        | CYLINDER BORE | ROD | A  | B  | C  | Ø D | Ø E | BSP PORT F | G   | CUSHION VALVE | THREAD    | SEAL KIT  |
|--------------------|---------------|-----|----|----|----|-----|-----|------------|-----|---------------|-----------|-----------|
| SG402090-CUSHION   | 40            | 20  | 28 | 35 | 30 | 50  | 63  | 1/4"       | 90  | 8 x 1         | 45 x 1.5  | GK20-CUSH |
| SG5025100-CUSHION  | 50            | 25  | 32 | 40 | 25 | 60  | 66  | 1/4"       | 100 | 8 x 1         | 54 x 1.75 | GK25-CUSH |
| SG6535110-CUSHION  | 65            | 35  | 35 | 45 | 28 | 75  | 88  | 3/8"       | 110 | 10 x 1        | 69 x 1.75 | GK35-CUSH |
| SG8040125-CUSHION  | 80            | 40  | 36 | 55 | 34 | 90  | 99  | 1/2"       | 125 | 12 x 1.5      | 85 x 2    | GK40-CUSH |
| SG10050145-CUSHION | 100           | 50  | 49 | 60 | 38 | 100 | 115 | 1/2"       | 145 | 12 x 1.5      | 105 x 2   | GK50-CUSH |
| SG12570140-CUSHION | 125           | 70  | 30 | 70 | 42 | 125 | 145 | 3/4"       | 140 | 14 x 1.5      | 130 x 2   | GK70-CUSH |
| SG14080150-CUSHION | 140           | 80  | 33 | 75 | 45 | 140 | 160 | 3/4"       | 150 | 14 x 1.5      | 145 x 2   | GK80-CUSH |
| SG16090160-CUSHION | 160           | 90  | 38 | 80 | 51 | 160 | 180 | 3/4"       | 160 | 14 x 1.5      | 165 x 2   | GK90-CUSH |

MATERIAL : HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 200 BAR

## FLOW CONTROL VALVE (CUSHIONING)

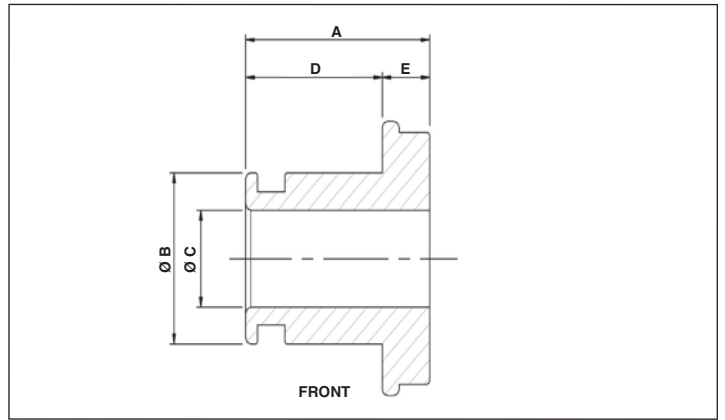


|                           |                   |                     |
|---------------------------|-------------------|---------------------|
| FLOW CONTROL VALVE<br>FCV | VALVE SIZE<br>QR2 | THREAD SIZE<br>M8x1 |
|---------------------------|-------------------|---------------------|

| PART NUMBER       | A  | B     | THREAD   |
|-------------------|----|-------|----------|
| FCV-QR2-M8 x 1    | 28 | 8.70  | 8 x 1    |
| FCV-QR3-M10 x 1   | 36 | 11.31 | 10 x 1   |
| FCV-QR4-M12 x 1.5 | 40 | 12.28 | 12 x 1.5 |
| FCV-QR5-M14 x 1.5 | 44 | 15.36 | 14 x 1.5 |

MATERIAL : STEEL SURFACE PHOSPHATED HEAT TREATED FOR HARDNESS  
DIN 51524 & 51525  
OPENING PRESSURE 0.5 BAR  
MAXIMUM PRESSURE 300 BAR

## FRONT PISTON FOR ADJUSTABLE CUSHIONING

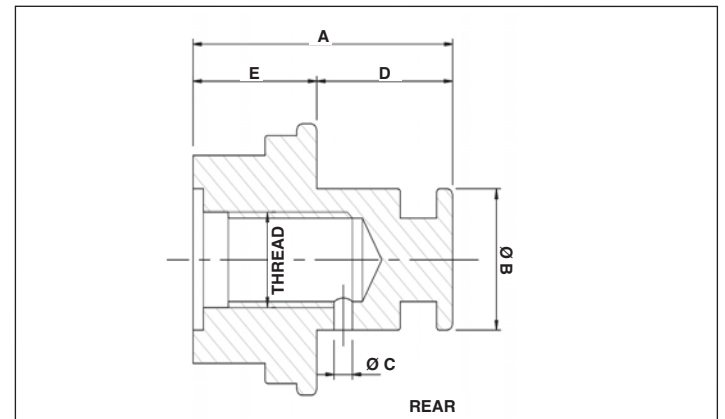


|                    |                     |                           |                        |                        |
|--------------------|---------------------|---------------------------|------------------------|------------------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>40 | INTERNAL DIAMETER C<br>14 | LENGTH OF PISTON<br>36 | FRONT SECTION<br>FRONT |
|--------------------|---------------------|---------------------------|------------------------|------------------------|

| PART NUMBER     | CYLINDER BORE | A  | Ø B | Ø C | D  | E  | SEAL KIT   |
|-----------------|---------------|----|-----|-----|----|----|------------|
| MP401436-FRONT  | 40            | 35 | 24  | 14  | 25 | 10 | PK40-CUSH  |
| MP501640-FRONT  | 50            | 40 | 30  | 16  | 29 | 11 | PK50-CUSH  |
| MP652242-FRONT  | 65            | 47 | 40  | 22  | 35 | 12 | PK65-CUSH  |
| MP802750-FRONT  | 80            | 55 | 45  | 27  | 40 | 15 | PK80-CUSH  |
| MP1003355-FRONT | 100           | 60 | 55  | 33  | 45 | 15 | PK100-CUSH |
| MP1255072-FRONT | 125           | 70 | 75  | 50  | 49 | 21 | PK125-CUSH |
| MP1405574-FRONT | 140           | 75 | 85  | 55  | 53 | 22 | PK140-CUSH |
| MP1606076-FRONT | 160           | 78 | 95  | 60  | 53 | 25 | PK160-CUSH |

MATERIAL : C25 UNI17845-78 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 200 BAR

## REAR PISTON FOR ADJUSTABLE CUSHIONING

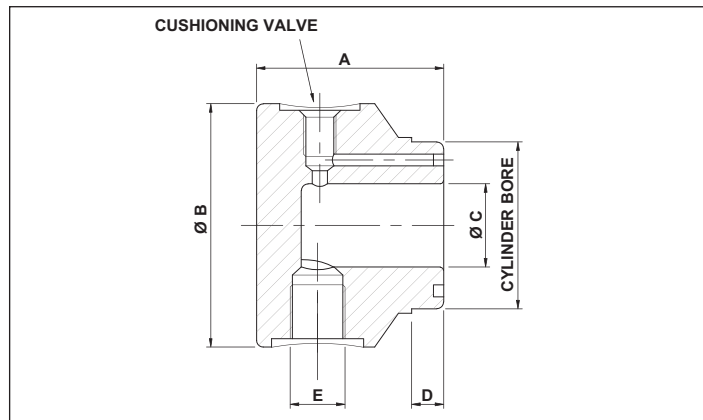


|                    |                     |                         |                        |                      |
|--------------------|---------------------|-------------------------|------------------------|----------------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>40 | INTERNAL DIAMETER<br>14 | LENGTH OF PISTON<br>36 | REAR SECTION<br>REAR |
|--------------------|---------------------|-------------------------|------------------------|----------------------|

| PART NUMBER    | CYLINDER BORE | A   | Ø B | Ø C | D  | E  | THREAD   | SEAL KIT   |
|----------------|---------------|-----|-----|-----|----|----|----------|------------|
| MP401436-REAR  | 40            | 51  | 20  | M5  | 25 | 26 | 14 x 1.5 | PK40-CUSH  |
| MP501640-REAR  | 50            | 58  | 24  | M5  | 29 | 29 | 16 x 1.5 | PK50-CUSH  |
| MP652242-REAR  | 65            | 65  | 30  | M6  | 35 | 30 | 22 x 1.5 | PK65-CUSH  |
| MP802750-REAR  | 80            | 75  | 38  | M6  | 40 | 35 | 27 x 2   | PK80-CUSH  |
| MP1003355-REAR | 100           | 85  | 48  | M6  | 45 | 40 | 33 x 2   | PK100-CUSH |
| MP1255072-REAR | 125           | 100 | 65  | M8  | 49 | 51 | 50 x 2   | PK125-CUSH |
| MP1405574-REAR | 140           | 105 | 75  | M8  | 53 | 52 | 55 x 2   | PK140-CUSH |
| MP1606076-REAR | 160           | 105 | 80  | M8  | 54 | 51 | 60 x 2   | PK160-CUSH |

MATERIAL : C25 UNI17845-78 OR EQUIVALENT  
MAXIMUM WORKING PRESSURE 200 BAR

## END CAPS FOR ADJUSTABLE CUSHIONING

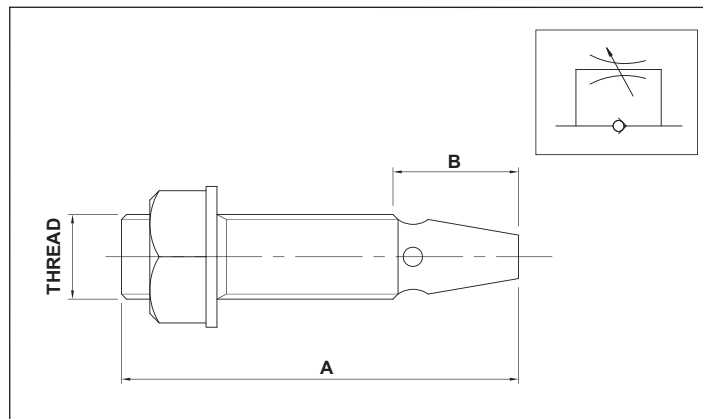


STANDARD TUBE  $\backslash$  ST  
CYLINDER BORE 30  
STROKE 150

| PART NUMBER      | CYLINDER BORE | A   | Ø B | Ø C | D  | BSP PORT E | CUSHIONING VALVE |
|------------------|---------------|-----|-----|-----|----|------------|------------------|
| EC4044-CUSHION   | 40            | 44  | 58  | 20  | 7  | 1/4"       | 8 x 1            |
| EC5048-CUSHION   | 50            | 48  | 65  | 24  | 8  | 1/4"       | 8 x 1            |
| EC6560-CUSHION   | 65            | 60  | 80  | 30  | 10 | 3/8"       | 10 x 1           |
| EC8068-CUSHION   | 80            | 68  | 95  | 38  | 10 | 1/2"       | 12 x 1.5         |
| EC10077-CUSHION  | 100           | 77  | 115 | 48  | 10 | 1/2"       | 12 x 1.5         |
| EC12590-CUSHION  | 125           | 90  | 145 | 65  | 10 | 3/4"       | 14 x 1.5         |
| EC140100-CUSHION | 140           | 100 | 160 | 75  | 10 | 3/4"       | 14 x 1.5         |
| EC160100-CUSHION | 160           | 100 | 180 | 80  | 10 | 3/4"       | 14 x 1.5         |

MATERIAL : STEEL S355JR-ASTM A105 OR EQUIVALENT

## FLOW CONTROL VALVE (CUSHIONING)

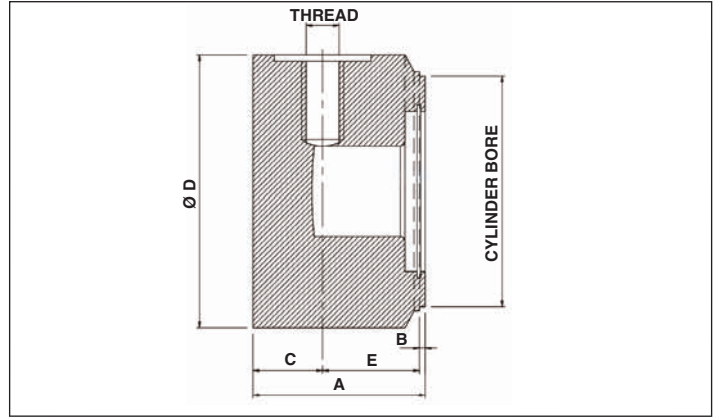


FLOW CONTROL VALVE  $\backslash$  FCV  
VALVE SIZE QR2  
THREAD SIZE M8x1

| PART NUMBER       | A  | B     | THREAD   |
|-------------------|----|-------|----------|
| FCV-QR2-M8 x 1    | 28 | 8.70  | 8 x 1    |
| FCV-QR3-M10 x 1   | 36 | 11.31 | 10 x 1   |
| FCV-QR4-M12 x 1.5 | 40 | 12.28 | 12 x 1.5 |
| FCV-QR5-M14 x 1.5 | 44 | 15.36 | 14 x 1.5 |

MATERIAL : STEEL SURFACE PHOSPHATED HEAT TREATED FOR HARDNESS  
DIN 51524 & 51252  
OPENING PRESSURE 0.5 BAR  
MAXIMUM PRESSURE 300 BAR

## END CAPS FOR CUSHIONING

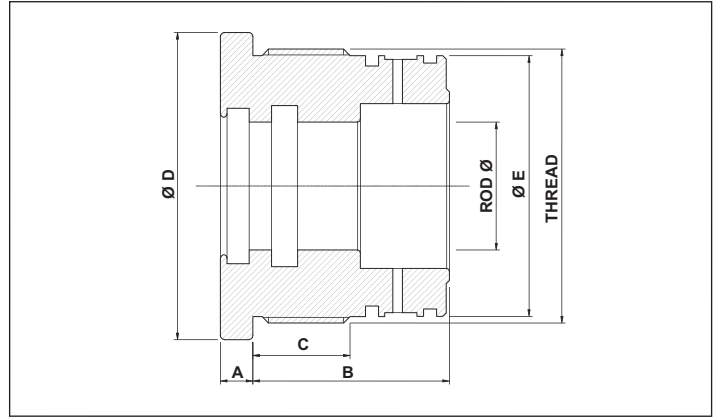


END CAP / EC      CYLINDER BORE / 50      LENGTH A / 50      CUSHIONING / CUSH

| PART NUMBER  | CYLINDER BORE | A  | B | C  | Ø D | E  | BSP THREAD |
|--------------|---------------|----|---|----|-----|----|------------|
| EC4050-CUSH  | 40            | 50 | 2 | 20 | 50  | 28 | 1/4"       |
| EC5050-CUSH  | 50            | 50 | 2 | 20 | 60  | 28 | 3/8"       |
| EC6050-CUSH  | 60            | 50 | 2 | 20 | 70  | 28 | 3/8"       |
| EC6350-CUSH  | 63            | 50 | 2 | 20 | 73  | 28 | 3/8"       |
| EC7050-CUSH  | 70            | 50 | 2 | 20 | 80  | 28 | 3/8"       |
| EC8050-CUSH  | 80            | 50 | 2 | 20 | 95  | 28 | 1/2"       |
| EC10050-CUSH | 100           | 50 | 2 | 20 | 115 | 28 | 1/2"       |

MATERIAL : STEEL 11SMn30 OR EQUIVALENT

## GLANDS WITH CUSHIONING

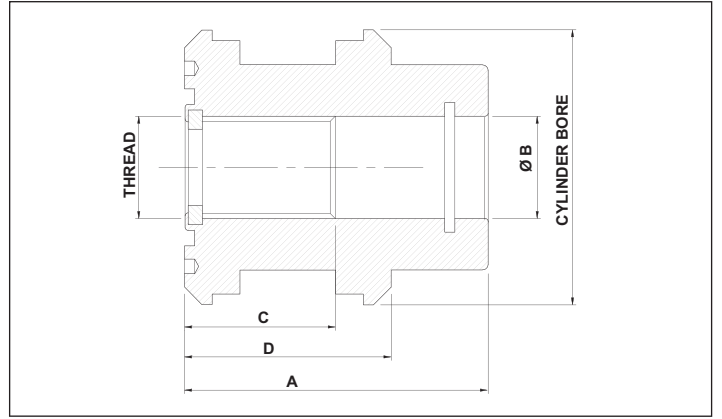


|                     |                     |                    |                   |                    |
|---------------------|---------------------|--------------------|-------------------|--------------------|
| SPECIAL GLAND<br>SG | CYLINDER BORE<br>50 | ROD DIAMETER<br>25 | LENGTH OF B<br>48 | CUSHIONING<br>CUSH |
|---------------------|---------------------|--------------------|-------------------|--------------------|

| PART NUMBER    | CYLINDER BORE | ROD | A  | B  | C  | Ø D | Ø E (+0.5) | THREAD   | SEAL KIT      |
|----------------|---------------|-----|----|----|----|-----|------------|----------|---------------|
| SG402045-CUSH  | 40            | 20  | 8  | 45 | 19 | 49  | 40         | 44 x 1.5 | GK20-40-CUSH  |
| SG502548-CUSH  | 50            | 25  | 8  | 48 | 22 | 59  | 50         | 54 x 1.5 | GK25-50-CUSH  |
| SG503048-CUSH  | 50            | 30  | 8  | 48 | 22 | 59  | 50         | 54 x 1.5 | GK30-50-CUSH  |
| SG603053-CUSH  | 60            | 30  | 10 | 53 | 27 | 69  | 60         | 64 x 1.5 | GK30-60-CUSH  |
| SG603553-CUSH  | 60            | 35  | 10 | 53 | 27 | 69  | 60         | 64 x 1.5 | GK35-60-CUSH  |
| SG604053-CUSH  | 60            | 40  | 10 | 53 | 27 | 69  | 60         | 64 x 1.5 | GK40-60-CUSH  |
| SG633053-CUSH  | 63            | 30  | 10 | 53 | 25 | 73  | 64         | 68 x 1.5 | GK30-63-CUSH  |
| SG633553-CUSH  | 63            | 35  | 10 | 53 | 25 | 73  | 64         | 68 x 1.5 | GK35-63-CUSH  |
| SG634053-CUSH  | 63            | 40  | 10 | 53 | 25 | 73  | 64         | 68 x 1.5 | GK40-63-CUSH  |
| SG703053-CUSH  | 70            | 30  | 10 | 53 | 27 | 79  | 70         | 74 x 1.5 | GK30-70-CUSH  |
| SG703553-CUSH  | 70            | 35  | 10 | 53 | 27 | 79  | 70         | 74 x 1.5 | GK35-70-CUSH  |
| SG704053-CUSH  | 70            | 40  | 10 | 53 | 27 | 79  | 70         | 74 x 1.5 | GK40-70-CUSH  |
| SG704553-CUSH  | 70            | 45  | 10 | 53 | 27 | 79  | 70         | 74 x 1.5 | GK45-70-CUSH  |
| SG803563-CUSH  | 80            | 35  | 10 | 63 | 33 | 92  | 80         | 85 x 2   | GK35-80-CUSH  |
| SG804063-CUSH  | 80            | 40  | 10 | 63 | 33 | 92  | 80         | 85 x 2   | GK40-80-CUSH  |
| SG804563-CUSH  | 80            | 45  | 10 | 63 | 33 | 92  | 80         | 85 x 2   | GK45-80-CUSH  |
| SG805063-CUSH  | 80            | 50  | 10 | 63 | 33 | 92  | 80         | 85 x 2   | GK50-80-CUSH  |
| SG1004083-CUSH | 100           | 40  | 12 | 83 | 51 | 114 | 100        | 105 x 2  | GK40-100-CUSH |
| SG1004583-CUSH | 100           | 45  | 12 | 83 | 51 | 114 | 100        | 105 x 2  | GK45-100-CUSH |
| SG1005083-CUSH | 100           | 50  | 12 | 83 | 51 | 114 | 100        | 105 x 2  | GK50-100-CUSH |
| SG1006083-CUSH | 100           | 60  | 12 | 83 | 51 | 114 | 100        | 105 x 2  | GK60-100-CUSH |

MATERIAL : HYDRAULIC CAST IRON GRADE G25 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

## PISTON FOR CUSHIONING



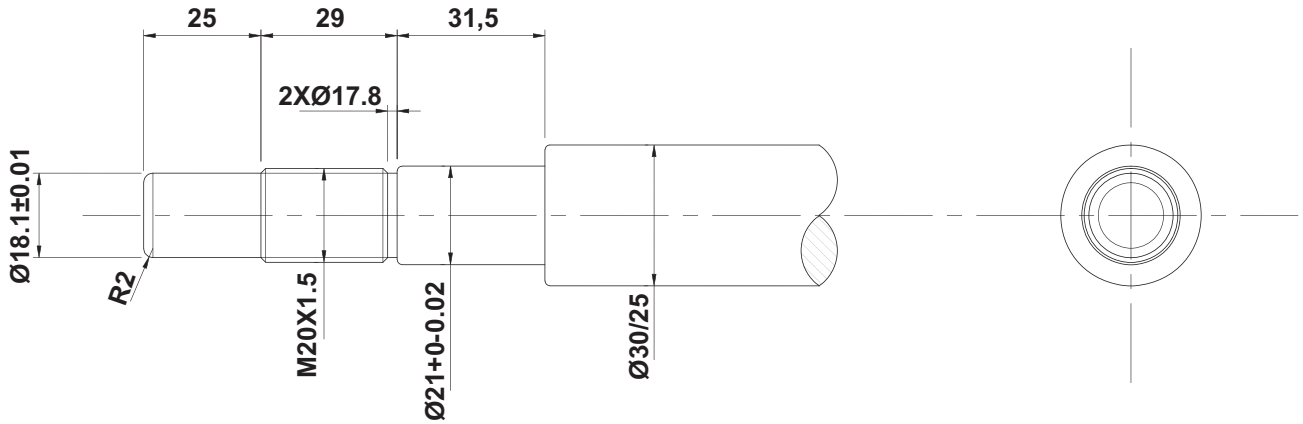
|                    |                     |                           |                        |                    |
|--------------------|---------------------|---------------------------|------------------------|--------------------|
| METAL PISTON<br>MP | CYLINDER BORE<br>50 | INTERNAL DIAMETER B<br>20 | LENGTH OF PISTON<br>60 | CUSHIONING<br>CUSH |
|--------------------|---------------------|---------------------------|------------------------|--------------------|

| PART NUMBER    | CYLINDER BORE | A  | Ø B | C  | D  | THREAD   | SEAL KIT   |
|----------------|---------------|----|-----|----|----|----------|------------|
| MP401640-CUSH  | 40            | 57 | 17  | 30 | 40 | 16 x 1.5 | PK40-CUSH  |
| MP502060-CUSH  | 50            | 60 | 21  | 28 | 40 | 20 x 1.5 | PK50-CUSH  |
| MP602465-CUSH  | 60            | 65 | 25  | 30 | 45 | 24 x 2   | PK60-CUSH  |
| MP632465-CUSH  | 63            | 65 | 25  | 30 | 45 | 24 x 2   | PK63-CUSH  |
| MP702465-CUSH  | 70            | 65 | 25  | 30 | 45 | 24 x 2   | PK70-CUSH  |
| MP803065-CUSH  | 80            | 65 | 33  | 30 | 45 | 30 x 2   | PK80-CUSH  |
| MP1003375-CUSH | 100           | 75 | 35  | 35 | 50 | 33 x 2   | PK100-CUSH |

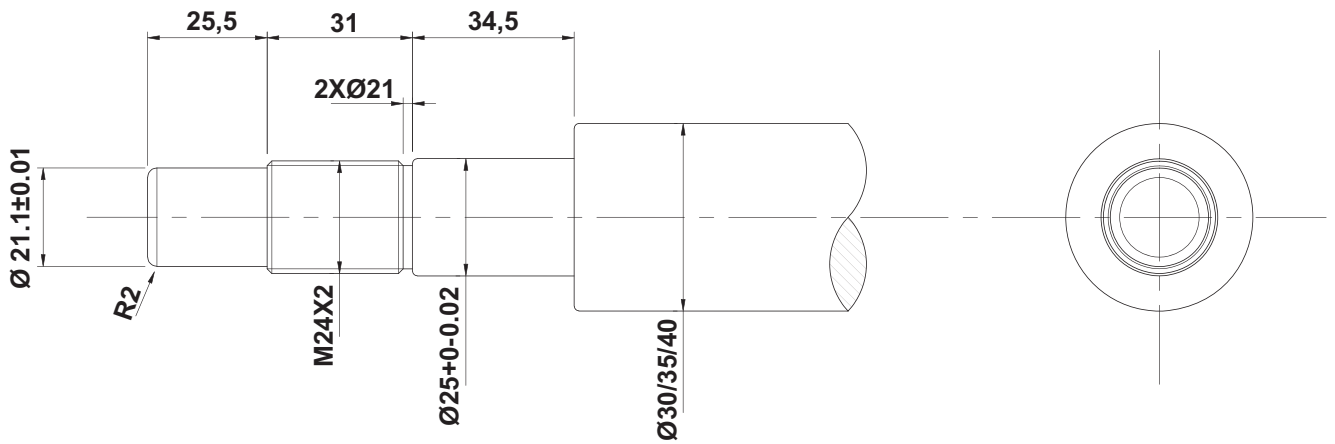
MATERIAL : STEEL 11SMn30 OR EQUIVALENT  
 MAXIMUM WORKING PRESSURE 250 BAR

# MACHINING DETAIL FOR CUSHIONING PISTONS

MACHINING DETAIL FOR  
MP502060-CUSH

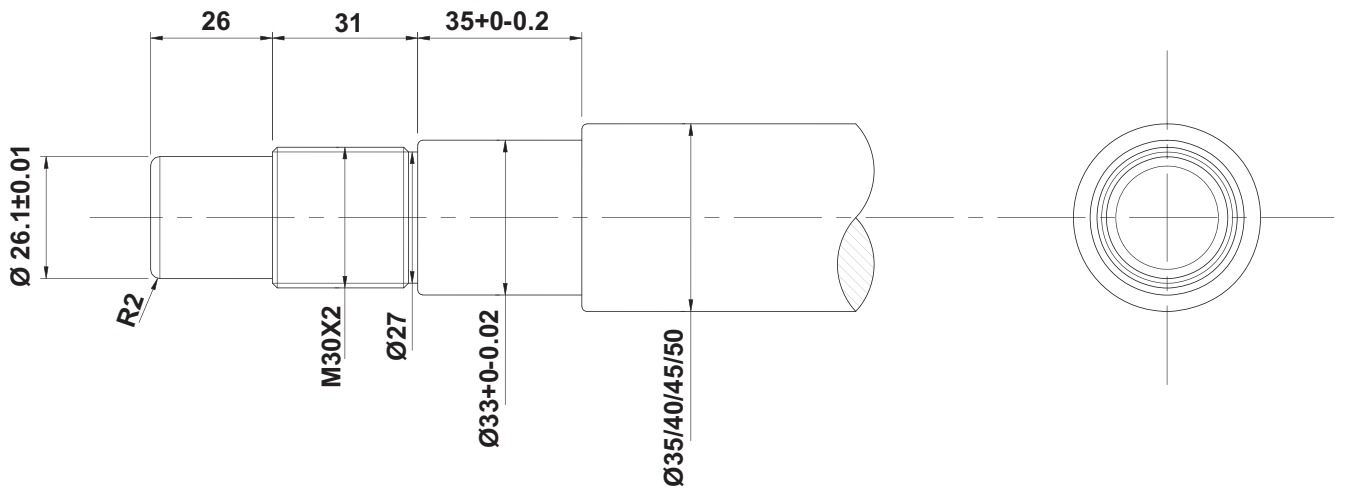


MACHINING DETAIL FOR  
MP602465-CUSH  
MP632465-CUSH  
MP702465-CUSH

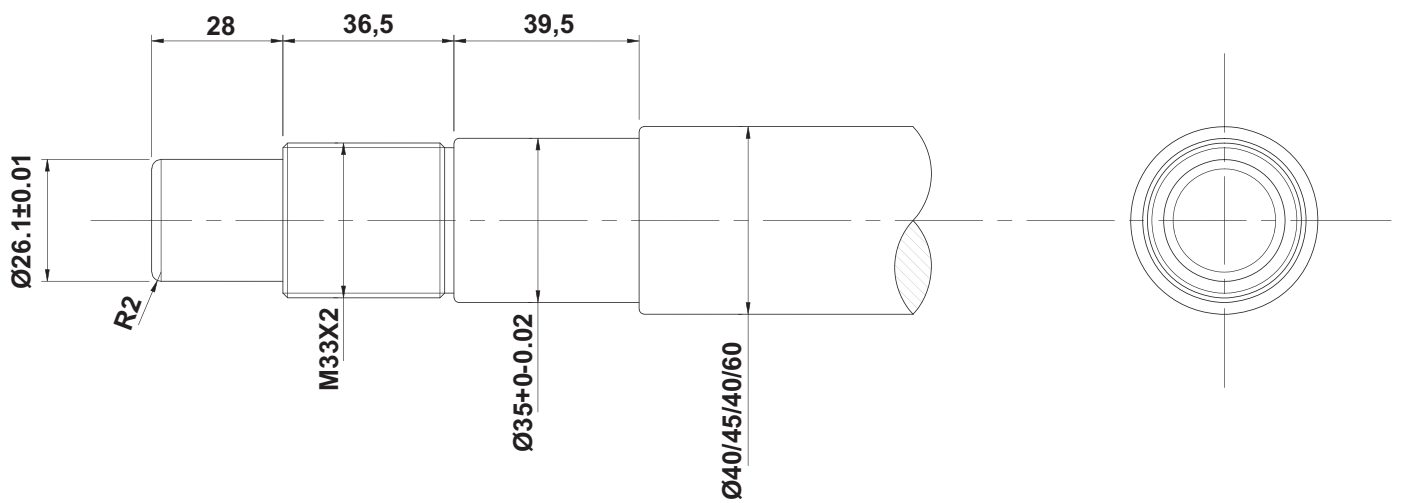


# MACHINING DETAIL FOR CUSHIONING PISTONS

MACHINING DETAIL FOR  
MP803065-CUSH

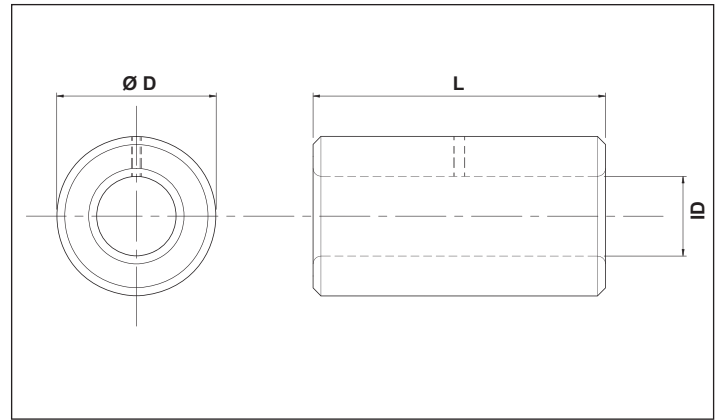


MACHINING DETAIL FOR  
MP1003375-CUSH





## WELDABLE BOSSES

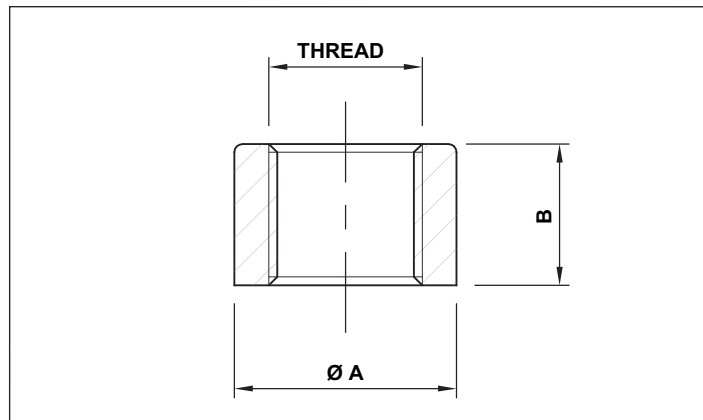


|                     |                        |                         |              |             |
|---------------------|------------------------|-------------------------|--------------|-------------|
| WELDABLE BOSS<br>WB | OUTSIDE DIAMETER<br>25 | INTERNAL DIAMETER<br>12 | LENGTH<br>25 | TAPPED<br>T |
|---------------------|------------------------|-------------------------|--------------|-------------|

| PART NUMBER | Ø D | ID | L   | TAPPED  |
|-------------|-----|----|-----|---------|
| WB251225T   | 25  | 12 | 25  | M6      |
| WB301530    | 30  | 15 | 30  |         |
| WB301635T   | 30  | 16 | 35  | M6      |
| WB351630    | 35  | 16 | 30  |         |
| WB351660    | 35  | 16 | 60  |         |
| WB352040T   | 35  | 20 | 40  | M8 / M6 |
| WB402040    | 40  | 20 | 40  |         |
| WB402040T   | 40  | 20 | 40  | M8 / M6 |
| WB402070    | 40  | 20 | 70  |         |
| WB402545T   | 40  | 25 | 45  | M8 / M6 |
| WB502545T   | 50  | 25 | 45  | M8 / M6 |
| WB502550    | 50  | 25 | 50  |         |
| WB502580    | 50  | 25 | 80  |         |
| WB502590    | 50  | 25 | 90  |         |
| WB503045T*  | 50  | 30 | 45  | M6      |
| WB503055T   | 50  | 30 | 55  | M8 / M6 |
| WB603060    | 60  | 30 | 60  |         |
| WB603070T   | 60  | 30 | 70  | M8 / M6 |
| WB6030110   | 60  | 30 | 110 |         |
| WB603560    | 60  | 35 | 60  |         |
| WB603570T   | 60  | 35 | 70  | M8 / M6 |
| WB6035110   | 60  | 35 | 110 |         |
| WB653070T   | 65  | 30 | 70  | M8 / M6 |
| WB704040    | 70  | 40 | 40  |         |
| WB704070    | 70  | 40 | 70  |         |
| WB7040130   | 70  | 40 | 130 |         |
| WB805050    | 80  | 50 | 50  |         |
| WB8050145   | 80  | 50 | 145 |         |

MATERIAL : STEEL S355JR OR EQUIVALENT  
 \*THIS PRODUCT HAS TWO DRILLED HOLES, ONE TO SUIT A 6mm DOWELL  
 THE SECOND TAPPED M6 FOR A GREASE NIPPLE  
 M8/M6 : M6 GOING FORWARD

## FEMALE THREADED PORTS BSP



THREADED PORT / TP      BSP THREAD / 012

| PART NUMBER | Ø A | B  | BSP THREAD |
|-------------|-----|----|------------|
| TP012       | 18  | 16 | 1/8"       |
| TP025       | 22  | 16 | 1/4"       |
| TP037       | 26  | 17 | 3/8"       |
| TP050       | 30  | 18 | 1/2"       |
| TP075       | 38  | 20 | 3/4"       |
| TP100       | 45  | 25 | 1"         |
| TP125       | 55  | 25 | 1 1/4"     |
| TP150       | 62  | 30 | 1 1/2"     |

MATERIAL : STEEL S235JR OR EQUIVALENT

## FEMALE THREADED PORTS METRIC

THREADED PORT / TP      METRIC THREAD / 14

| PART NUMBER | Ø A | B  | METRIC THREAD |
|-------------|-----|----|---------------|
| TP14        | 22  | 16 | 14 x 1.5      |
| TP16        | 24  | 18 | 16 x 1.5      |
| TP18        | 28  | 18 | 18 x 1.5      |
| TP20        | 30  | 18 | 20 x 1.5      |
| TP22        | 30  | 18 | 22 x 1.5      |

MATERIAL : STEEL S235JR OR EQUIVALENT

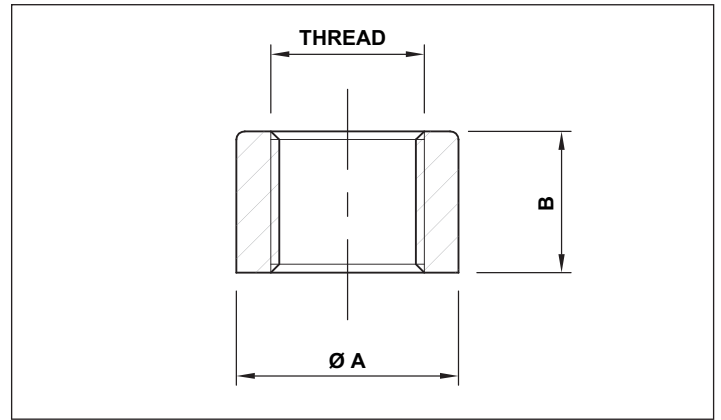
## FEMALE THREADED PORTS NPT

THREADED PORT / TP025      NPT THREAD / NPT

| PART NUMBER | Ø A | B  | NPT THREAD |
|-------------|-----|----|------------|
| TP025-NPT   | 22  | 27 | 1/4"       |
| TP037-NPT   | 25  | 25 | 3/8"       |
| TP050-NPT   | 32  | 27 | 1/2"       |
| TP075-NPT   | 38  | 32 | 3/4"       |
| TP100-NPT   | 45  | 32 | 1"         |

MATERIAL : STEEL ST.37 OR EQUIVALENT

## FEMALE THREADED PORTS JIC / UNF

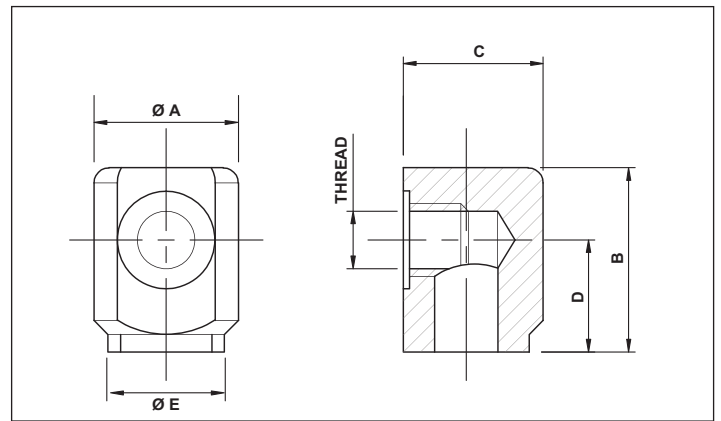


THREADED PORT TP UNF THREAD 043 UNF

| PART NUMBER | Ø A | B  | UNF THREAD |
|-------------|-----|----|------------|
| TP043UNF    | 22  | 25 | 7/16"      |
| TP056UNF    | 25  | 25 | 9/16"      |
| TP075UNF    | 31  | 27 | 3/4"       |
| TP087UNF    | 35  | 27 | 7/8"       |
| TP106UNF    | 38  | 32 | 1 1/16"    |

MATERIAL : STEEL ST37 OR EQUIVALENT

## 90° THREADED PORTS JIC / UNF

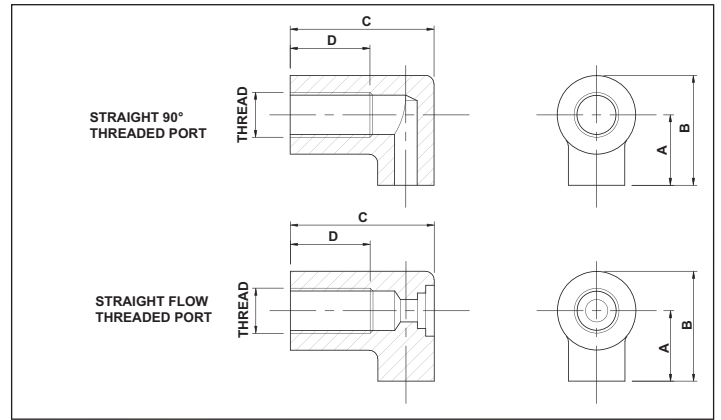


THREADED PORT TP UNF THREAD 043 UNF ANGLE 90

| PART NUMBER | Ø A | B  | C  | D  | Ø E | UNF THREAD |
|-------------|-----|----|----|----|-----|------------|
| TP043UNF-90 | 28  | 28 | 24 | 19 | 19  | 7/16"      |
| TP056UNF-90 | 32  | 32 | 29 | 21 | 22  | 9/16"      |
| TP075UNF-90 | 41  | 41 | 36 | 26 | 31  | 3/4"       |
| TP087UNF-90 | 44  | 48 | 40 | 28 | 31  | 7/8"       |
| TP106UNF-90 | 54  | 51 | 48 | 30 | 38  | 1 1/16"    |

MATERIAL : STEEL ST37 OR EQUIVALENT

## 90° THREADED PORTS FOR CYLINDERS



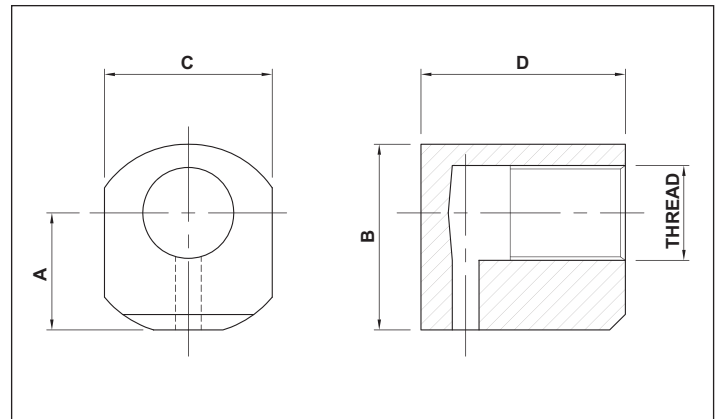
|                     |                   |             |              |                      |
|---------------------|-------------------|-------------|--------------|----------------------|
| THREADED PORT<br>TP | BSP THREAD<br>025 | ANGLE<br>90 | FEMALE<br>FM | STRAIGHT FLOW<br>STF |
|---------------------|-------------------|-------------|--------------|----------------------|

| PART NUMBER     | A  | B  | C  | D  | BSP THREAD |
|-----------------|----|----|----|----|------------|
| TP025-90-FM     | 25 | 39 | 51 | 30 | 1/4"       |
| TP025-90-FM-STF | 24 | 38 | 52 | 30 | 1/4"       |
| TP037-90-FM     | 25 | 39 | 51 | 30 | 3/8"       |
| TP037-90-FM-STF | 24 | 38 | 52 | 30 | 3/8"       |
| TP050-90-FM     | 25 | 39 | 51 | 33 | 1/2"       |
| TP050-90-FM-STF | 24 | 38 | 52 | 33 | 1/2"       |

DESIGNED TO TAKE OUR RANGE OF BURST VALVES

MATERIAL : STEEL ST52.3 OR EQUIVALENT

## 90° THREADED PORTS SQUARE



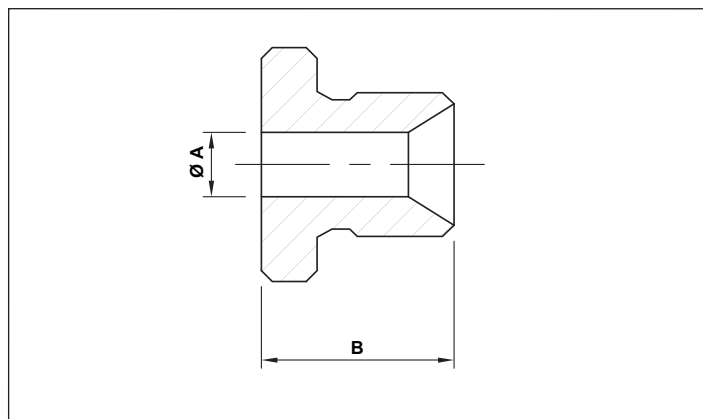
|                     |                   |                 |              |
|---------------------|-------------------|-----------------|--------------|
| THREADED PORT<br>TP | BSP THREAD<br>025 | 90 DEGREE<br>90 | SQUARE<br>SQ |
|---------------------|-------------------|-----------------|--------------|

| PART NUMBER | A  | B  | C  | D  | BSP THREAD |
|-------------|----|----|----|----|------------|
| TP025-90-SQ | 15 | 28 | 25 | 35 | 1/4"       |
| TP037-90-SQ | 19 | 33 | 30 | 38 | 3/8"       |
| TP050-90-SQ | 23 | 38 | 35 | 48 | 1/2"       |

DESIGNED TO TAKE OUR RANGE OF BURST VALVES

MATERIAL : STEEL 9SMN28 OR EQUIVALENT

## MALE THREADED PORTS WITH SPANNER FLATS

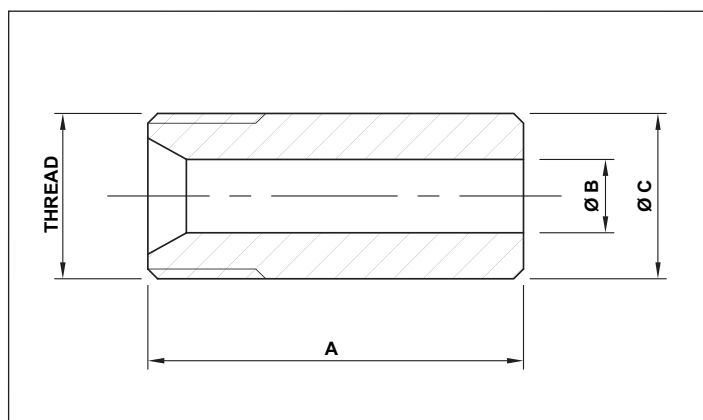


THREADED PORT TP      BSP THREAD 025      SPANNER FLATS SF      MALE THREAD MALE

| PART NUMBER   | Ø A | B  | BSP THREAD |
|---------------|-----|----|------------|
| TP025-SF-MALE | 6   | 18 | 1/4"       |
| TP037-SF-MALE | 8   | 20 | 3/8"       |
| TP050-SF-MALE | 12  | 23 | 1/2"       |
| TP075-SF-MALE | 16  | 26 | 3/4"       |
| TP100-SF-MALE | 22  | 30 | 1"         |

MATERIAL : STEEL 9SMN28 OR EQUIVALENT

## MALE THREADED PORTS BSP



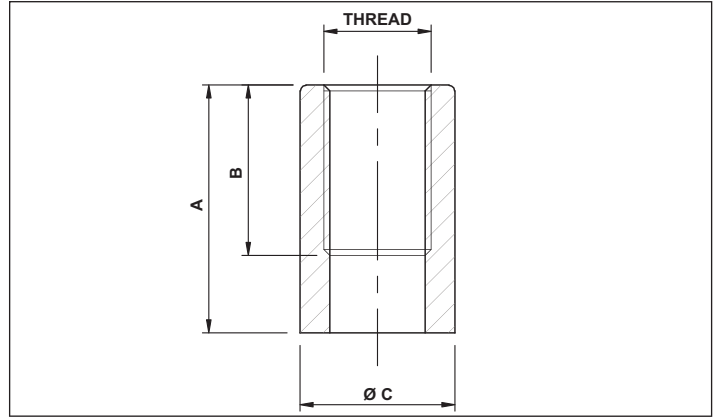
THREADED PORT TP      BSP THREAD 025      MALE THREAD MALE

| PART NUMBER | A  | Ø B | Ø C | BSP THREAD |
|-------------|----|-----|-----|------------|
| TP025-MALE  | 25 | 7   | 13  | 1/4"       |
| TP037-MALE  | 35 | 9   | 17  | 3/8"       |
| TP050-MALE  | 35 | 12  | 21  | 1/2"       |
| TP075-MALE  | 41 | 15  | 28  | 3/4"       |
| TP100-MALE  | 41 | 22  | 35  | 1"         |

DESIGNED TO TAKE OUR RANGE OF BURST VALVES

MATERIAL : STEEL 9SMN28 OR EQUIVALENT

# THREADED PORT LONG



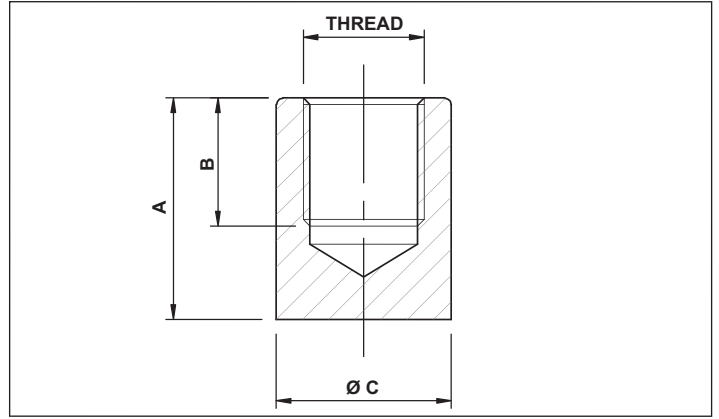
THREADED PORT TP      BSP THREAD 025      LONG SERIES LONG

| PART NUMBER | A  | B  | Ø C | BSP THREAD |
|-------------|----|----|-----|------------|
| TP025-LONG  | 40 | 27 | 22  | 1/4"       |
| TP037-LONG  | 42 | 28 | 25  | 3/8"       |
| TP050-LONG  | 48 | 33 | 30  | 1/2"       |
| TP075-LONG  | 60 | 40 | 36  | 3/4"       |

**DESIGNED TO TAKE OUR RANGE OF BURST VALVES**

MATERIAL : STEEL 9SMN28 OR EQUIVALENT

## THREADED PORT BLANK STANDARD

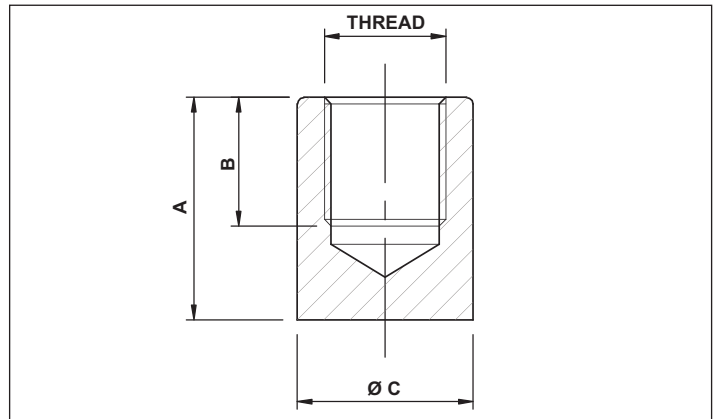


THREADED PORT TP      BSP THREAD 025      BLANK END BLANK

| PART NUMBER | A  | B  | Ø C | BSP THREAD |
|-------------|----|----|-----|------------|
| TP025-BLANK | 30 | 13 | 22  | 1/4"       |
| TP037-BLANK | 35 | 20 | 25  | 3/8"       |
| TP050-BLANK | 35 | 22 | 30  | 1/2"       |

MATERIAL : STEEL 9SMN28 OR EQUIVALENT

## THREADED PORT BLANK LONG



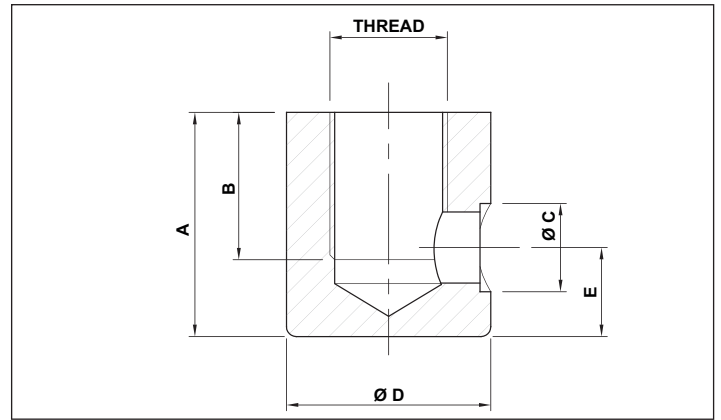
THREADED PORT TP      BSP THREAD 025      BLANK END B      LONG SERIES LONG

| PART NUMBER | A  | B  | Ø C | BSP THREAD |
|-------------|----|----|-----|------------|
| TP025B-LONG | 45 | 27 | 22  | 1/4"       |
| TP037B-LONG | 45 | 28 | 25  | 3/8"       |
| TP050B-LONG | 60 | 33 | 30  | 1/2"       |
| TP075B-LONG | 70 | 40 | 36  | 3/4"       |

DESIGNED TO TAKE OUR RANGE OF BURST VALVES

MATERIAL : STEEL 9SMN28 OR EQUIVALENT

## SIDE PORTS

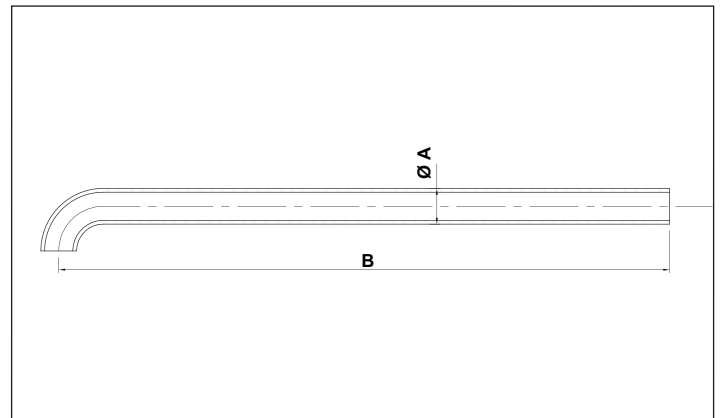


SIDE PORT **SP**      BSP THREAD **025**      SUITABLE TUBE SIZE **10**

| PART NUMBER | A  | B  | Ø C = TUBE SIZE mm | Ø D | E  | BSP THREAD |
|-------------|----|----|--------------------|-----|----|------------|
| SP02510     | 25 | 16 | 8 & 10             | 22  | 10 | 1/4"       |
| SP03710     | 30 | 17 | 8 & 10             | 25  | 12 | 3/8"       |
| SP03712     | 30 | 17 | 12                 | 25  | 12 | 3/8"       |
| SP03714     | 30 | 17 | 14                 | 25  | 12 | 3/8"       |
| SP05012     | 46 | 18 | 12                 | 30  | 12 | 1/2"       |
| SP05014     | 46 | 18 | 14                 | 30  | 12 | 1/2"       |
| SP05014-SP  | 45 | 27 | 14.2               | 30  | 20 | 1/2"       |

MATERIAL : STEEL 9SMN28 OR EQUIVALENT  
SP : DENOTES. SPECIAL

## STEEL CONNECTION PIPES



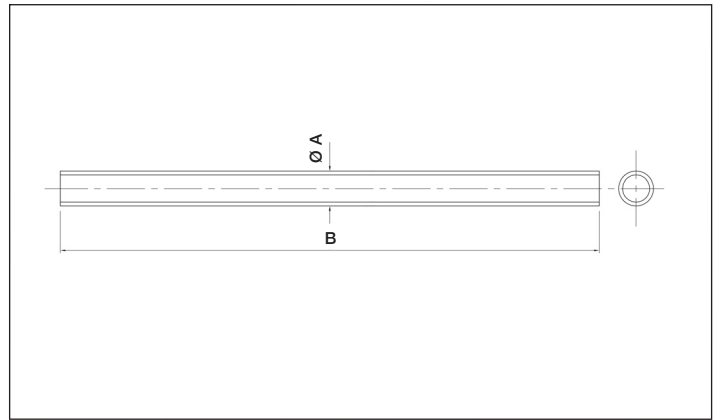
STEEL CONNECTION PIPES **SCP**      PIPE SIZE **10**      LENGTH (mm) **300**

| PART NUMBER | Ø A      | B    |
|-------------|----------|------|
| SCP10300    | 10 x 1.5 | 300  |
| SCP10600    | 10 x 1.5 | 600  |
| SCP101000   | 10 x 1.5 | 1000 |
| SCP12300    | 12 x 1.5 | 300  |
| SCP12600    | 12 x 1.5 | 600  |
| SCP121000   | 12 x 1.5 | 1000 |
| SCP14300    | 14 x 1.5 | 300  |
| SCP14600    | 14 x 1.5 | 600  |
| SCP141000   | 14 x 1.5 | 1000 |

MATERIAL : STEEL 9SMN 28 OR EQUIVALENT



## STEEL TUBES

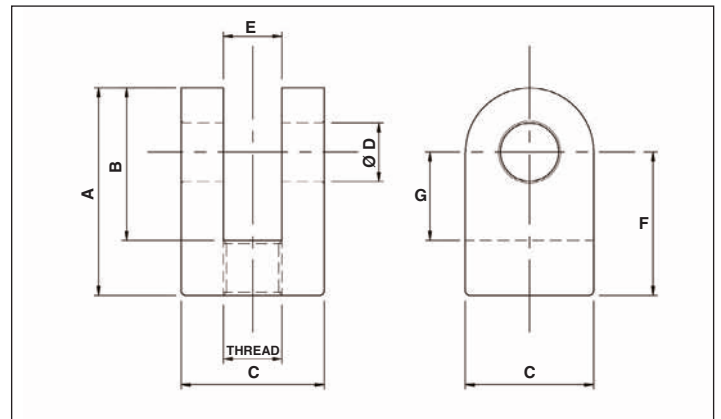
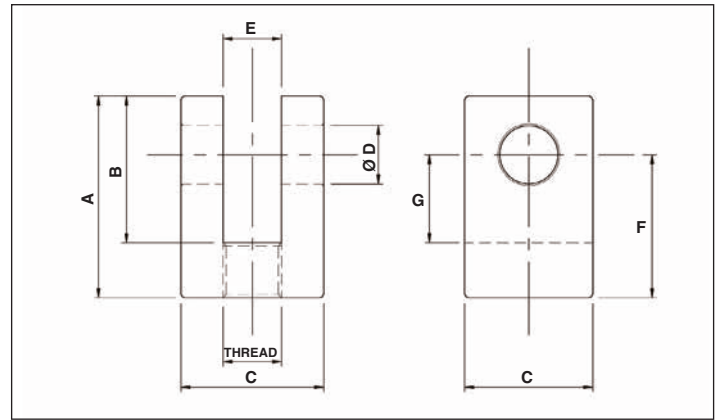


|                              |                   |                  |                     |
|------------------------------|-------------------|------------------|---------------------|
| STEEL CONNECTION TUBE<br>SCT | PIPE SIZE A<br>10 | LENGTH B<br>1000 | WALL THICKNESS<br>2 |
|------------------------------|-------------------|------------------|---------------------|

| PART NUMBER | Ø A    | B    |
|-------------|--------|------|
| SCT101000-2 | 10 x 2 | 1000 |
| SCT102000-2 | 10 x 2 | 2000 |
| SCT103000-2 | 10 x 2 | 3000 |
| SCT121000-2 | 12 x 2 | 1000 |
| SCT122000-2 | 12 x 2 | 2000 |
| SCT123000-2 | 12 x 2 | 3000 |
| SCT151000-2 | 15 x 2 | 1000 |
| SCT152000-2 | 15 x 2 | 2000 |
| SCT153000-2 | 15 x 2 | 3000 |
| SCT151000-3 | 15 x 3 | 1000 |
| SCT152000-3 | 15 x 3 | 2000 |
| SCT153000-3 | 15 x 3 | 3000 |
| SCT161000-2 | 16 x 2 | 1000 |
| SCT162000-2 | 16 x 2 | 2000 |
| SCT163000-2 | 16 x 2 | 3000 |
| SCT161000-3 | 16 x 3 | 1000 |
| SCT162000-3 | 16 x 3 | 2000 |
| SCT163000-3 | 16 x 3 | 3000 |
| SCT201000-2 | 20 x 2 | 1000 |
| SCT202000-2 | 20 x 2 | 2000 |
| SCT203000-2 | 20 x 2 | 3000 |
| SCT201000-3 | 20 x 3 | 1000 |
| SCT202000-3 | 20 x 3 | 2000 |
| SCT203000-3 | 20 x 3 | 3000 |
| SCT221000-3 | 22 x 3 | 1000 |
| SCT222000-3 | 22 x 3 | 2000 |
| SCT223000-3 | 22 x 3 | 3000 |

MATERIAL : STEEL 9SMN28 OR EQUIVALENT

# THREADED FORKS

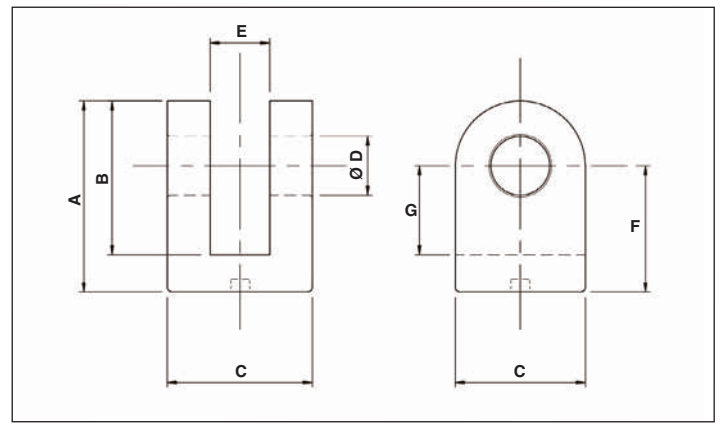
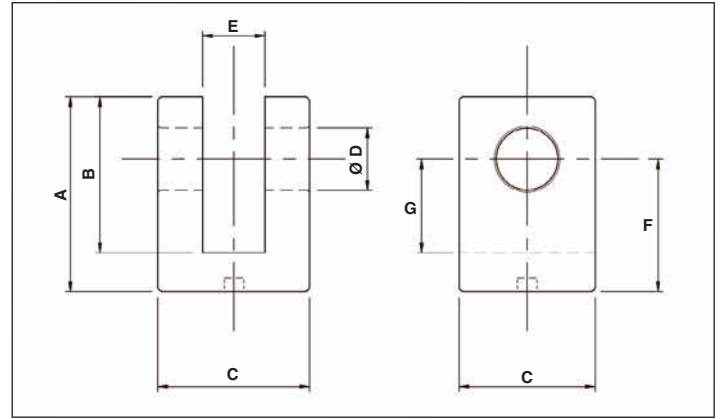
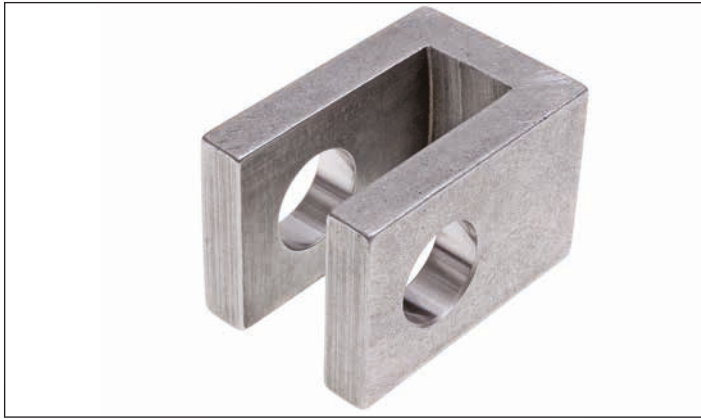


|            |                    |                       |                |               |
|------------|--------------------|-----------------------|----------------|---------------|
| FORK<br>FK | PIN SIZE Ø D<br>16 | CENTRE HEIGHT F<br>39 | THREADED<br>TH | RADIUS<br>RAD |
|------------|--------------------|-----------------------|----------------|---------------|

| PART NUMBER    | A   | B   | C   | Ø D   | E  | F   | G  | THREAD   | RADIUS |
|----------------|-----|-----|-----|-------|----|-----|----|----------|--------|
| FK1639TH       | 55  | 40  | 35  | 16.20 | 16 | 39  | 24 | 16 x 1.5 | 0      |
| FK1641TH-RAD*  | 61  | 46  | 40  | 16.20 | 20 | 41  | 26 | 16 x 1.5 | 20     |
| FK2045TH       | 65  | 50  | 40  | 20.25 | 20 | 45  | 30 | 20 x 1.5 | 0      |
| FK2045TH-RAD*  | 65  | 50  | 40  | 20.25 | 20 | 45  | 30 | 20 x 1.5 | 20     |
| FK2550TH       | 70  | 50  | 50  | 25.25 | 25 | 50  | 30 | 24 x 2   | 0      |
| FK2555TH-RAD*  | 80  | 60  | 50  | 25.25 | 25 | 55  | 35 | 24 x 2   | 25     |
| FK3065TH       | 90  | 60  | 60  | 30.25 | 30 | 65  | 35 | 30 x 2   | 0      |
| FK3065TH-RAD*  | 95  | 65  | 60  | 30.25 | 30 | 65  | 35 | 30 x 2   | 30     |
| FK3575TH       | 105 | 70  | 70  | 35.25 | 35 | 75  | 40 | 33 x 2   | 0      |
| FK3575TH-RAD   | 110 | 75  | 70  | 35.25 | 35 | 75  | 40 | 33 x 2   | 35     |
| FK4085TH-RAD   | 125 | 90  | 80  | 40.25 | 40 | 85  | 50 | 33 x 2   | 40     |
| FK50100TH-RAD* | 150 | 110 | 100 | 50.50 | 50 | 100 | 60 | 45 x 3   | 50     |
| FK60110TH-RAD  | 165 | 120 | 110 | 60.50 | 60 | 110 | 65 | 56 x 4   | 55     |

MATERIAL : STEEL S235JR - S355JR OR EQUIVALENT  
 \* : DENOTES OUR OTS BEARINGS WILL CLEAR

## WELDABLE FORKS

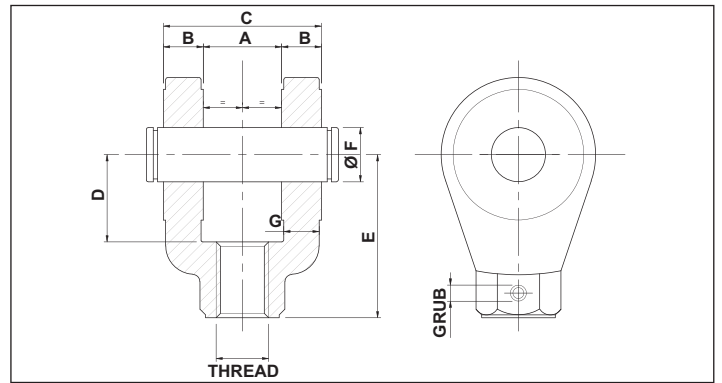


|            |                    |                       |               |               |
|------------|--------------------|-----------------------|---------------|---------------|
| FORK<br>FK | PIN SIZE Ø D<br>16 | CENTRE HEIGHT F<br>34 | WELDABLE<br>W | RADIUS<br>RAD |
|------------|--------------------|-----------------------|---------------|---------------|

| PART NUMBER  | A   | B   | C   | Ø D   | E  | F   | G  | DOWEL SIZE | RADIUS |
|--------------|-----|-----|-----|-------|----|-----|----|------------|--------|
| FK1634W      | 50  | 40  | 35  | 16.20 | 16 | 34  | 24 | 4.25 x 6   | 0      |
| FK1636W-RAD* | 56  | 46  | 40  | 16.25 | 20 | 36  | 26 | 4.25 x 4   | 20     |
| FK2040W      | 60  | 50  | 40  | 20.25 | 20 | 40  | 30 | 4.25 x 4   | 0      |
| FK2040W-RAD* | 60  | 50  | 40  | 20.25 | 20 | 40  | 30 | 4.25 x 4   | 20     |
| FK2545W      | 65  | 50  | 50  | 25.25 | 25 | 45  | 30 | CD         | 0      |
| FK2550W-RAD* | 75  | 60  | 50  | 25.25 | 25 | 50  | 35 | 4.25 x 4   | 25     |
| FK3050W      | 75  | 60  | 60  | 30.25 | 30 | 50  | 35 | CD         | 0      |
| FK3050W-RAD  | 80  | 65  | 60  | 30.25 | 30 | 50  | 35 | 4.25 x 8   | 30     |
| FK3055W-RAD* | 85  | 70  | 60  | 30.25 | 30 | 55  | 40 | 4.25 x 8   | 30     |
| FK3555W      | 85  | 70  | 70  | 35.25 | 35 | 55  | 40 | CD         | 0      |
| FK3555W-RAD  | 90  | 75  | 70  | 35.25 | 35 | 55  | 40 | 4.25 x 8   | 35     |
| FK4050W-RAD  | 90  | 78  | 70  | 40.10 | 45 | 50  | 38 | 8.25 x 8   | 40     |
| FK4070W-RAD  | 110 | 90  | 80  | 40.25 | 40 | 70  | 50 | 4.25 x 10  | 40     |
| FK5095W-RAD  | 145 | 110 | 100 | 50.50 | 50 | 95  | 60 | 6.25 x 12  | 50     |
| FK60105W-RAD | 160 | 120 | 110 | 60.50 | 60 | 105 | 65 | 6.25 x 12  | 55     |

MATERIAL : STEEL S235JR - S355JR OR EQUIVALENT  
 CD : CENTRE DRILLED  
 \* : DENOTES OUR OTS BEARINGS WILL CLEAR

## LARGE THREADED FORKS INCLUDING PINS

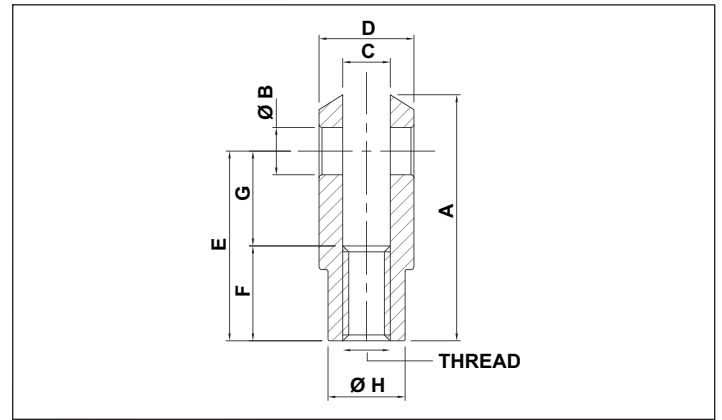


|  |            |                    |                       |                          |
|--|------------|--------------------|-----------------------|--------------------------|
|  | FORK<br>FK | PIN SIZE Ø F<br>10 | CENTRE HEIGHT E<br>32 | THREADED WITH PIN<br>THP |
|--|------------|--------------------|-----------------------|--------------------------|

| PART NUMBER | A  | B  | C   | D  | E   | Ø F | G  | THREAD    | GRUB    |
|-------------|----|----|-----|----|-----|-----|----|-----------|---------|
| FK1032-THP  | 12 | 6  | 24  | 13 | 32  | 10  | 5  | 10 x 1.25 | 5 x 5   |
| FK1236-THP  | 16 | 8  | 32  | 19 | 36  | 12  | 7  | 12 x 1.25 | 5 x 5   |
| FK1438-THP  | 20 | 10 | 40  | 19 | 38  | 14  | 8  | 14 x 1.5  | 5 x 5   |
| FK2054-THP  | 30 | 15 | 60  | 32 | 54  | 20  | 13 | 16 x 1.5  | 6 x 6   |
| FK2060-THP  | 30 | 15 | 60  | 32 | 60  | 20  | 13 | 20 x 1.5  | 6 x 6   |
| FK2875-THP  | 40 | 20 | 80  | 39 | 75  | 28  | 17 | 27 x 2    | 6 x 6   |
| FK3699-THP  | 50 | 25 | 100 | 54 | 99  | 36  | 22 | 33 x 2    | 8 x 8   |
| FK70168-THP | 80 | 40 | 160 | 83 | 168 | 70  | 37 | 64 x 3    | 12 x 12 |

MATERIAL: STEEL ST52.3 OR EQUIVALENT

## LIGHT DUTY THREADED FORKS

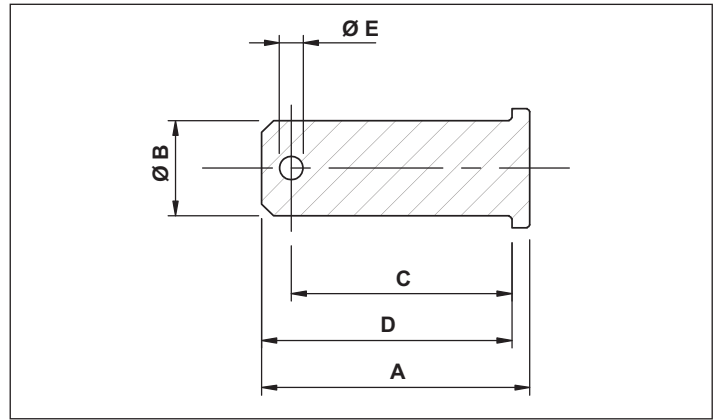


|  |            |                    |                       |                |                      |
|--|------------|--------------------|-----------------------|----------------|----------------------|
|  | FORK<br>FK | PIN SIZE Ø B<br>12 | CENTRE HEIGHT E<br>48 | THREADED<br>TH | THREAD PITCH<br>1.25 |
|--|------------|--------------------|-----------------------|----------------|----------------------|

| PART NUMBER     | A   | Ø B | C  | D  | E   | F  | G  | Ø H | THREAD    |
|-----------------|-----|-----|----|----|-----|----|----|-----|-----------|
| FK0416TH        | 21  | 4   | 4  | 8  | 16  | 8  | 8  | 8   | 4 x 0.7   |
| FK0624TH        | 31  | 6   | 6  | 12 | 24  | 12 | 12 | 10  | 6 x 1     |
| FK0832TH        | 42  | 8   | 8  | 16 | 32  | 16 | 16 | 14  | 8 x 1.25  |
| FK1040TH        | 52  | 10  | 10 | 20 | 40  | 20 | 20 | 18  | 10 x 1.50 |
| FK1248TH - 1.25 | 62  | 12  | 12 | 24 | 48  | 24 | 24 | 20  | 12 x 1.25 |
| FK1248TH - 1.75 | 62  | 12  | 12 | 24 | 48  | 24 | 24 | 20  | 12 x 1.75 |
| FK1456TH        | 72  | 14  | 14 | 27 | 56  | 28 | 28 | 24  | 14 x 2    |
| FK1664TH - 1.5  | 83  | 16  | 16 | 32 | 64  | 32 | 32 | 26  | 16 x 1.5  |
| FK1664TH        | 83  | 16  | 16 | 32 | 64  | 32 | 32 | 26  | 16 x 2    |
| FK2080TH - 1.5  | 105 | 20  | 20 | 40 | 80  | 40 | 40 | 34  | 20 x 1.5  |
| FK2080TH - 2.5  | 105 | 20  | 20 | 40 | 80  | 40 | 40 | 34  | 20 x 2.5  |
| FK25100TH - 2   | 132 | 25  | 25 | 50 | 100 | 50 | 50 | 42  | 24 x 2    |
| FK25100TH - 3   | 132 | 25  | 25 | 50 | 100 | 50 | 50 | 42  | 24 x 3    |
| FK30110TH       | 148 | 30  | 30 | 55 | 110 | 56 | 54 | 48  | 27 x 2    |
| FK35144TH       | 188 | 35  | 35 | 70 | 144 | 72 | 72 | 60  | 36 x 2    |

MATERIAL : STEEL 9SMnPb28 GALVANISED OR EQUIVALENT

## FORK PINS



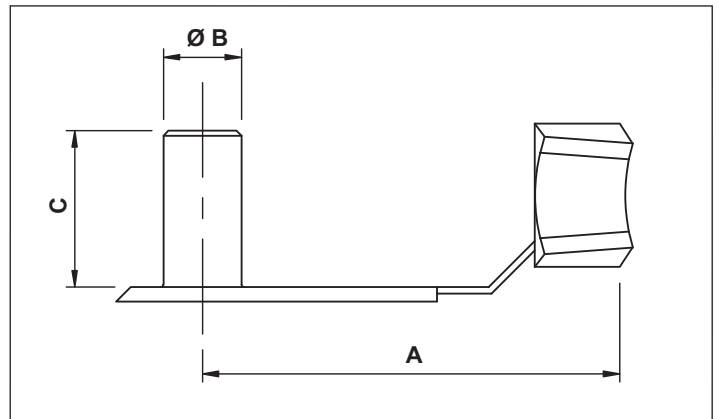
FORK PIN  
FP

PIN SIZE Ø B  
6

| PART NUMBER | A  | Ø B | C    | D  | Ø E |
|-------------|----|-----|------|----|-----|
| FP06        | 18 | 6   | 13   | 16 | 2   |
| FP08        | 22 | 8   | 17   | 20 | 2   |
| FP10        | 27 | 10  | 21.5 | 25 | 3   |
| FP12        | 33 | 12  | 26.5 | 30 | 3   |
| FP14        | 38 | 14  | 31   | 35 | 4   |
| FP16        | 43 | 16  | 36   | 40 | 4   |

MATERIAL : STEEL 9SMnPb28 GALVANISED OR EQUIVALENT  
SPECIFICATION UNI 1710-DIN1434

## SAFETY PIN CLIP



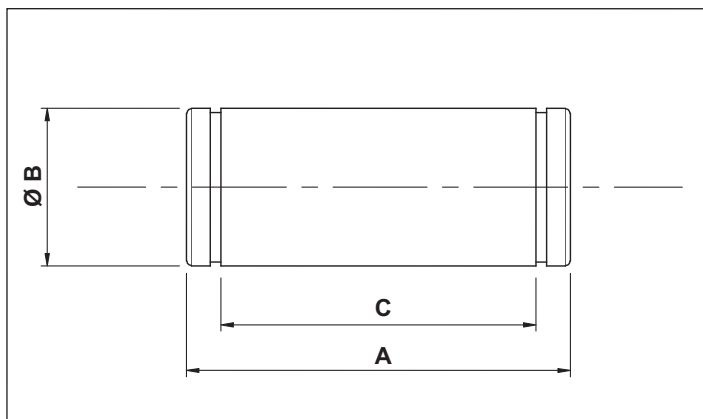
SAFETY PIN CLIP  
SCP

PIN SIZE Ø B  
4

| PART NUMBER | A  | Ø B | C  |
|-------------|----|-----|----|
| SPC04       | 15 | 4   | 9  |
| SPC06       | 23 | 6   | 14 |
| SPC08       | 31 | 8   | 19 |
| SPC10       | 39 | 10  | 23 |
| SPC12       | 47 | 12  | 28 |
| SPC14       | 52 | 14  | 31 |
| SPC16       | 62 | 16  | 36 |
| SPC20       | 72 | 20  | 44 |

MATERIAL : STEEL 9SMnPb28 GALVANISED OR EQUIVALENT  
SPECIFICATION UNI 1710-DIN1434

## CLEVIS PINS

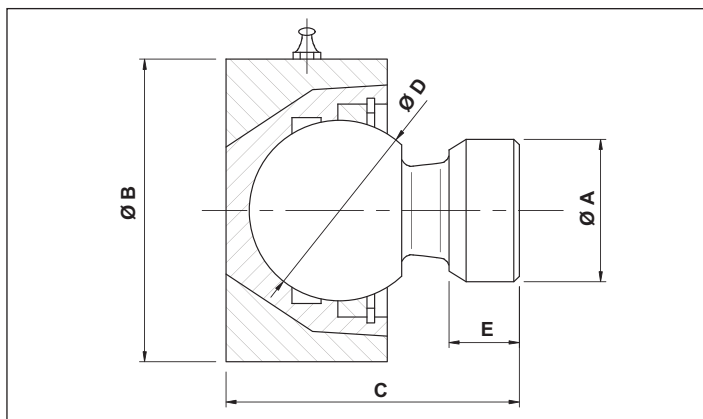


CLEVIS PIN CP DIAMETER Ø B 10 LENGTH A 25

| PART NUMBER | A  | Ø B | C  | EXTERNAL CIRCLIP |
|-------------|----|-----|----|------------------|
| CP1025      | 25 | 10  | 20 | CE10             |
| CP1034      | 34 | 10  | 29 | CE10             |
| CP1230      | 30 | 12  | 24 | CE12             |
| CP1243      | 43 | 12  | 37 | CE12             |
| CP1451      | 51 | 14  | 45 | CE14             |
| CP1639      | 39 | 16  | 32 | CE16             |
| CP1645      | 45 | 16  | 35 | CE16             |
| CP2048      | 48 | 20  | 40 | CE20             |
| CP2073      | 73 | 20  | 66 | CE20             |
| CP2560      | 60 | 25  | 50 | CE25             |
| CP2895      | 95 | 28  | 87 | CE28             |
| CP3065      | 65 | 30  | 55 | CE30             |
| CP3070      | 70 | 30  | 60 | CE30             |
| CP3584      | 84 | 35  | 70 | CE35             |

MATERIAL : STEEL 9SMnPb28 GALVANISED OR EQUIVALENT

## WELDABLE BALL JOINT END



WELDABLE BALL JOINT END WBJE

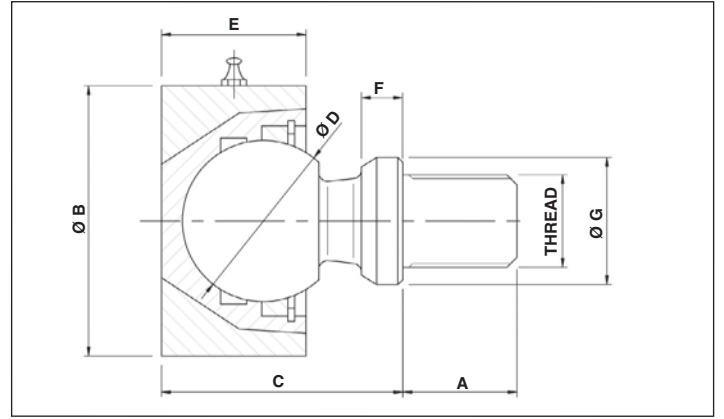
BALL DIAMETER Ø D 50

ROD DIAMETER Ø A 40

| PART NUMBER | Ø A | Ø B | C   | Ø D | E  | LOAD FACTOR KN |
|-------------|-----|-----|-----|-----|----|----------------|
| WBJE5040    | 40  | 84  | 82  | 50  | 20 | 70             |
| WBJE6050    | 50  | 98  | 100 | 60  | 25 | 121            |
| WBJE7060    | 60  | 104 | 115 | 70  | 30 | 145            |

MATERIAL : FORGED STEEL C45  
BASE S355JR or EQUIVALENT

## THREADED BALL JOINT END



THREADED BALL JOINT END  
THBJE

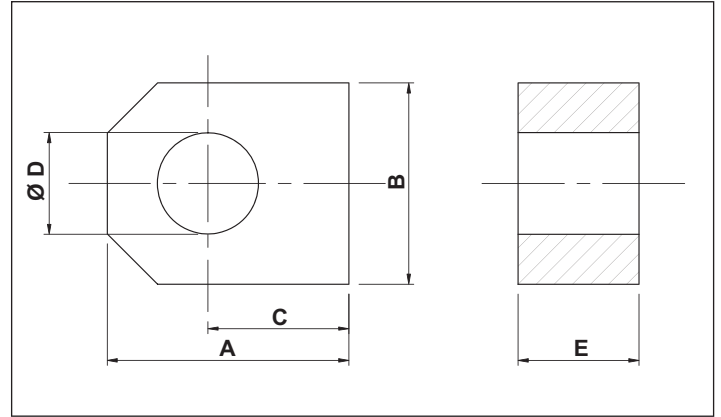
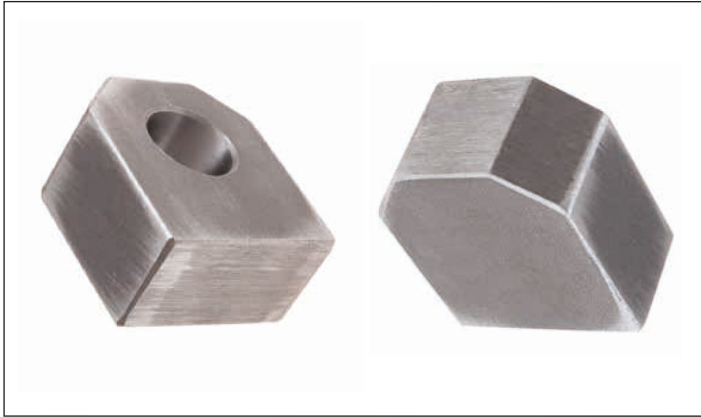
BALL SIZE Ø D  
45

THREAD SIZE  
22TH

| PART NUMBER | Ø A | Ø B | C  | Ø D | E  | F | Ø G | THREAD   | LOAD FACTOR KN |
|-------------|-----|-----|----|-----|----|---|-----|----------|----------------|
| THBJE4522TH | 26  | 95  | 65 | 45  | 45 | 7 | 30  | 22 x 1.5 | 58             |
| THBJE5532TH | 35  | 95  | 77 | 55  | 55 | 8 | 45  | 32 x 2   | 98             |

MATERIAL : BALL FORGED STEEL C45, BASE S355JR OR EQUIVALENT

## FIXED EYE



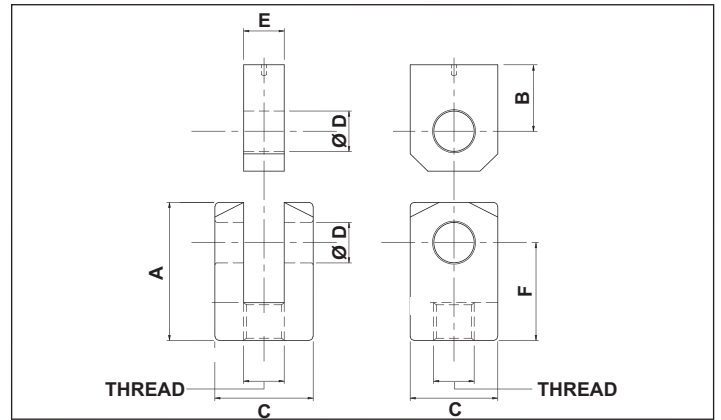
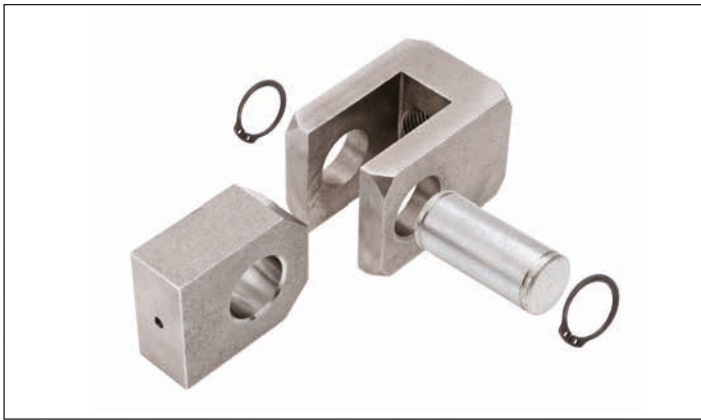
| PART NUMBER | A  | B  | C  | Ø D   | E  |
|-------------|----|----|----|-------|----|
| FE4216      | 42 | 35 | 25 | 16.2  | 20 |
| FE4216-16   | 42 | 35 | 25 | 16.2  | 16 |
| FE42BLA     | 42 | 35 |    | BLANK | 20 |
| FE5020      | 50 | 45 | 30 | 20.2  | 25 |
| FE5020-20   | 50 | 45 | 30 | 20.2  | 20 |
| FE50BLA     | 50 | 45 |    | BLANK | 25 |
| FE6025      | 60 | 50 | 35 | 25.2  | 30 |
| FE6025-25   | 60 | 50 | 35 | 25.2  | 25 |
| FE60BLA     | 60 | 50 |    | BLANK | 30 |
| FE7530      | 75 | 60 | 45 | 30.2  | 35 |
| FE7530-30   | 75 | 60 | 45 | 30    | 30 |
| FE75BLA     | 75 | 60 |    | BLANK | 35 |
| FE9035      | 90 | 70 | 55 | 35.2  | 40 |
| FE9035-35   | 90 | 70 | 55 | 35    | 35 |
| FE90BLA     | 90 | 70 |    | BLANK | 40 |
| FE9540      | 95 | 70 | 60 | 40.2  | 40 |
| FE9540-40   | 95 | 70 | 60 | 40    | 40 |
| FE95BLA     | 95 | 70 |    | BLANK | 40 |

### CLEVIS PINS TO SUIT

MATERIAL : STEEL S235JR OR EQUIVALENT



## FORK & FIXED EYE ASSEMBLY THREADED

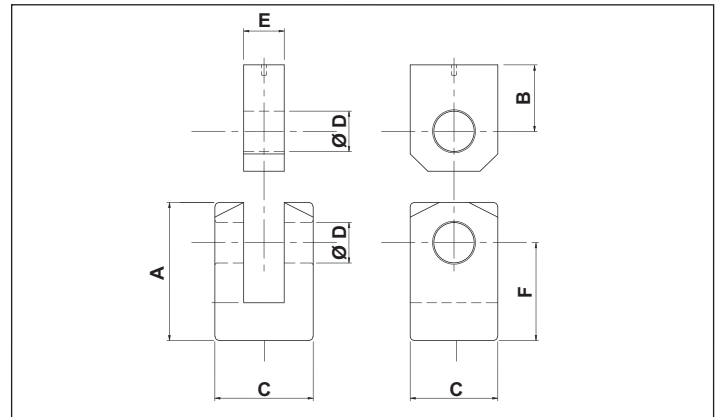
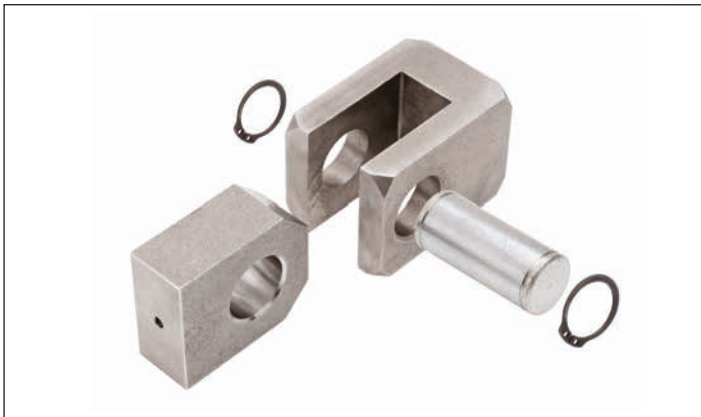


FORK ASSEMBLY FA PIN SIZE Ø D 16 THREADED TH

| PART NUMBER | A   | B  | C  | Ø D | E  | F  | B+F | THREAD   |
|-------------|-----|----|----|-----|----|----|-----|----------|
| FA16TH      | 55  | 25 | 35 | 16  | 16 | 39 | 64  | 16 x 1.5 |
| FA20TH      | 65  | 30 | 40 | 20  | 20 | 45 | 75  | 20 x 1.5 |
| FA25TH      | 70  | 35 | 50 | 25  | 25 | 50 | 85  | 24 x 2   |
| FA30TH      | 90  | 45 | 60 | 30  | 30 | 65 | 110 | 30 x 2   |
| FA35TH      | 105 | 55 | 70 | 35  | 35 | 75 | 130 | 33 x 2   |

MATERIAL : STEEL S235JR - S355JR OR EQUIVALENT

## FORK & FIXED EYE ASSEMBLY WELDABLE

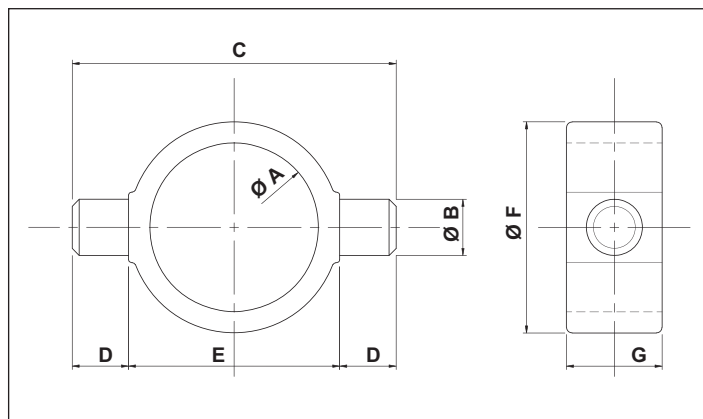


FORK ASSEMBLY FA PIN SIZE Ø D 16 WELDABLE W

| PART NUMBER | A  | B  | C  | Ø D | E  | F  | B+F |
|-------------|----|----|----|-----|----|----|-----|
| FA16W       | 50 | 25 | 35 | 16  | 16 | 34 | 59  |
| FA20W       | 60 | 30 | 40 | 20  | 20 | 40 | 70  |
| FA25W       | 65 | 35 | 50 | 25  | 25 | 45 | 80  |
| FA30W       | 75 | 45 | 60 | 30  | 30 | 50 | 95  |
| FA35W       | 85 | 55 | 70 | 35  | 35 | 55 | 110 |

MATERIAL : STEEL S235JR - S355JR OR EQUIVALENT

## WELDABLE TRUNNIONS

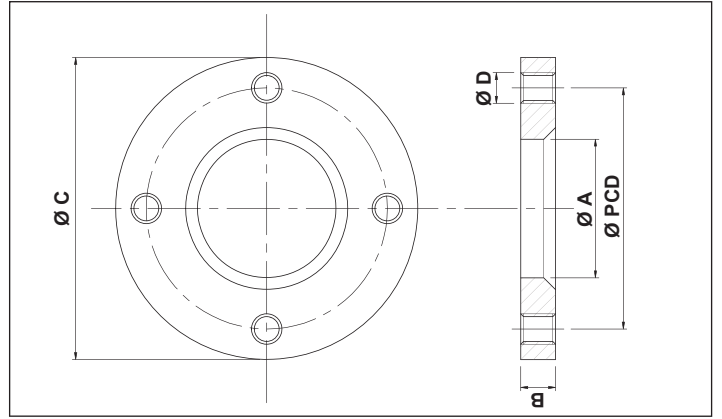


|                         |                                     |                           |                       |
|-------------------------|-------------------------------------|---------------------------|-----------------------|
| WELDABLE TRUNNION<br>WT | CYLINDER OUTSIDE DIAMETER Ø A<br>30 | SPIGOT DIAMETER Ø B<br>20 | TOTAL LENGTH C<br>110 |
|-------------------------|-------------------------------------|---------------------------|-----------------------|

| PART NUMBER | Ø A | Ø B | C   | D    | E   | Ø F | G  |
|-------------|-----|-----|-----|------|-----|-----|----|
| WT3020110   | 30  | 20  | 110 | 20   | 70  | 65  | 30 |
| WT3525130   | 35  | 25  | 130 | 25   | 80  | 75  | 35 |
| WT401595    | 40  | 15  | 95  | 17.5 | 60  | 52  | 25 |
| WT452090    | 45  | 20  | 90  | 15   | 60  | 60  | 24 |
| WT4530160   | 45  | 30  | 160 | 30   | 100 | 90  | 45 |
| WT5020110   | 50  | 20  | 110 | 20   | 70  | 65  | 30 |
| WT502595    | 50  | 25  | 95  | 15   | 65  | 65  | 29 |
| WT5525100   | 55  | 25  | 100 | 15   | 70  | 70  | 29 |
| WT6025130   | 60  | 25  | 130 | 25   | 80  | 75  | 35 |
| WT6030115   | 60  | 30  | 115 | 20   | 75  | 75  | 34 |
| WT6530120   | 65  | 30  | 120 | 20   | 80  | 80  | 34 |
| WT7030130   | 70  | 30  | 130 | 20   | 90  | 90  | 34 |
| WT7030160   | 70  | 30  | 160 | 30   | 100 | 90  | 45 |
| WT7335145   | 73  | 35  | 145 | 25   | 95  | 95  | 44 |
| WT7535150   | 75  | 35  | 150 | 25   | 100 | 100 | 44 |
| WT8035150   | 80  | 35  | 150 | 25   | 100 | 100 | 44 |
| WT8035180   | 80  | 35  | 180 | 35   | 110 | 100 | 50 |
| WT8040165   | 80  | 40  | 165 | 30   | 105 | 105 | 54 |
| WT8540165   | 85  | 40  | 165 | 30   | 105 | 105 | 54 |
| WT9045190   | 90  | 45  | 190 | 35   | 120 | 120 | 58 |
| WT9545190   | 95  | 45  | 190 | 35   | 120 | 120 | 58 |
| WT10045200  | 100 | 45  | 200 | 35   | 130 | 130 | 58 |
| WT10545200  | 105 | 45  | 200 | 35   | 130 | 130 | 58 |
| WT11550225  | 115 | 50  | 225 | 40   | 145 | 145 | 68 |
| WT11550245  | 115 | 50  | 245 | 50   | 145 | 145 | 70 |
| WT12050225  | 120 | 50  | 225 | 40   | 145 | 145 | 68 |
| WT12550235  | 125 | 50  | 235 | 40   | 155 | 155 | 68 |
| WT13050235  | 130 | 50  | 235 | 40   | 155 | 155 | 68 |
| WT14060290  | 140 | 60  | 290 | 60   | 170 | 170 | 80 |
| WT14555265  | 145 | 55  | 265 | 45   | 175 | 175 | 78 |
| WT16070305  | 160 | 70  | 305 | 55   | 195 | 187 | 88 |

MATERIAL : STEEL S355JR- FE 510 OR EQUIVALENT

## WELDABLE FLANGES

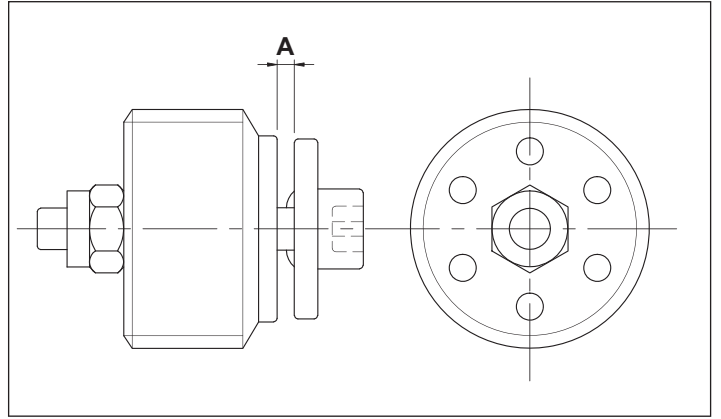


WELDABLE FLANGE CYLINDER O D Ø A OUTSIDE DIAMETER C  
 WF 50 109

| PART NUMBER | Ø A | B    | Ø C | Ø D     | Ø PCD |
|-------------|-----|------|-----|---------|-------|
| WF50109     | 50  | 12.5 | 109 | 4 x Ø11 | 87    |
| WF60128     | 60  | 14.5 | 128 | 4 x Ø13 | 105   |
| WF70142     | 70  | 16.5 | 142 | 4 x Ø13 | 117   |
| WF80162     | 80  | 16.5 | 162 | 4 x Ø15 | 127   |
| WF95181 *   | 95  | 18.5 | 181 | 6 x Ø17 | 149   |
| WF115194 *  | 115 | 24.5 | 194 | 6 x Ø17 | 162   |
| WF145240 *  | 145 | 33   | 240 | 6 x Ø19 | 195   |

MATERIAL : STEEL S355JR- ASTM A105 OR EQUIVALENT  
 \* WF95181 & W115194 & WF145240 HAVE SIX HOLES

## BURST VALVES



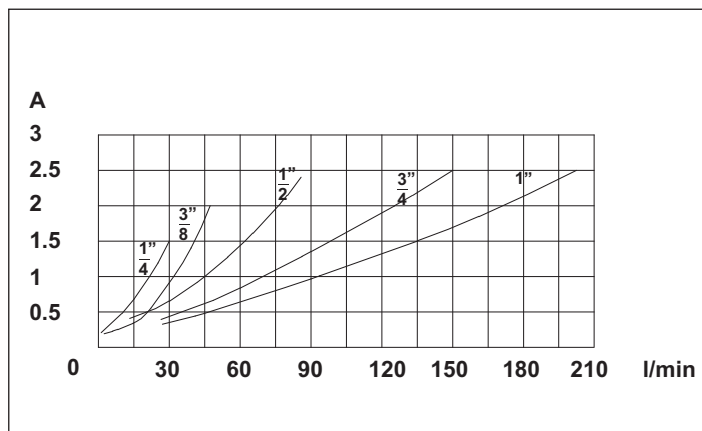
BURST VALVE    BSP SIZE  
                   BV            025

| PART NUMBER     | L/MIN MAX | (BAR) PRESSURE RATED | BSP PORT SIZE |
|-----------------|-----------|----------------------|---------------|
| BV025           | 25        | 350                  | 1/4"          |
| BV025-CALB12LPM | 12        | 350                  | 1/4"          |
| BV037           | 50        | 350                  | 3/8"          |
| BV037-CALB12LPM | 12        | 350                  | 3/8"          |
| BV050           | 80        | 350                  | 1/2"          |
| BV050-CALB18LPM | 18        | 350                  | 1/2"          |
| BV075           | 150       | 350                  | 3/4"          |
| BV100           | 180       | 350                  | 1"            |

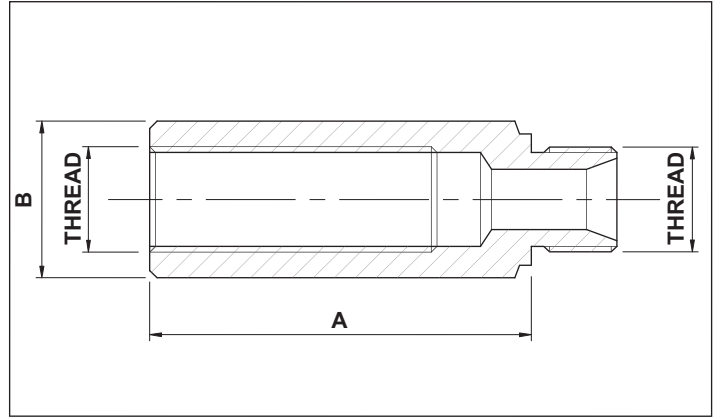
| PART NUMBER      | L/MIN MAX | (BAR) PRESSURE RATED | METRIC PORT SIZE |
|------------------|-----------|----------------------|------------------|
| BV18-037 ADAPTER | 50        | 315                  | M18 X 1.5        |

THE BURST VALVES ARE FACTORY SET AND WILL NEED TO BE ADJUSTED FROM THE CHART BELOW

## BURST VALVE SETTING DETAIL



## BURST VALVE BODIES



BURST VALVE  
BV

BSP SIZE  
025

ADAPTER BODY  
BODY

| PART NUMBER | A  | B  | BSP THREAD |
|-------------|----|----|------------|
| BV025-BODY  | 39 | 19 | 1/4"       |
| BV037-BODY  | 45 | 22 | 3/8"       |
| BV050-BODY  | 52 | 27 | 1/2"       |
| BV075-BODY  | 61 | 32 | 3/4"       |

## FITTING TOOLS



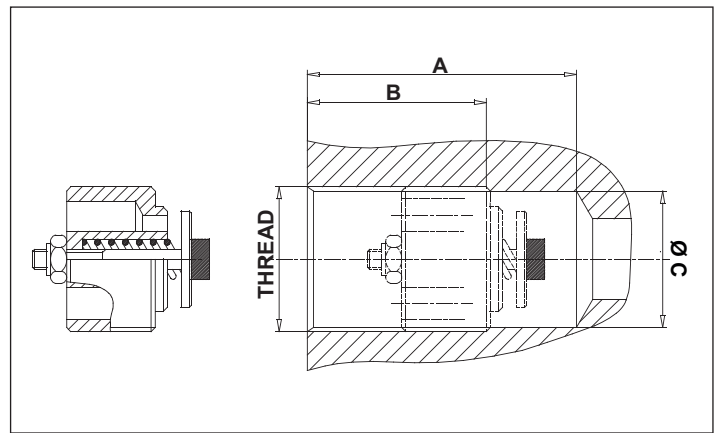
BURST VALVE  
BV

BSP SIZE  
025

FITTING TOOL  
FT

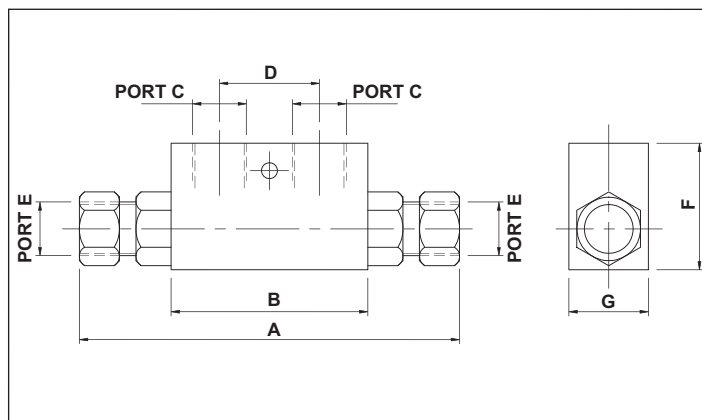
| PART NUMBER | BURST VALVE SIZE |
|-------------|------------------|
| BV025-FT    | 1/4" BSP         |
| BV037-FT    | 3/8" BSP         |
| BV050-FT    | 1/2" BSP         |
| BV075-FT    | 3/4" BSP         |

## MACHINING DETAIL



| PART NUMBER | (BSP) THREAD | A  | B  | Ø C   |
|-------------|--------------|----|----|-------|
| BV025       | 1/4"         | 35 | 28 | 11.75 |
| BV037       | 3/8"         | 40 | 31 | 15.2  |
| BV050       | 1/2"         | 43 | 33 | 19    |
| BV075       | 3/4"         | 53 | 40 | 24.5  |
| BV100       | 1"           | 66 | 43 | 30.5  |

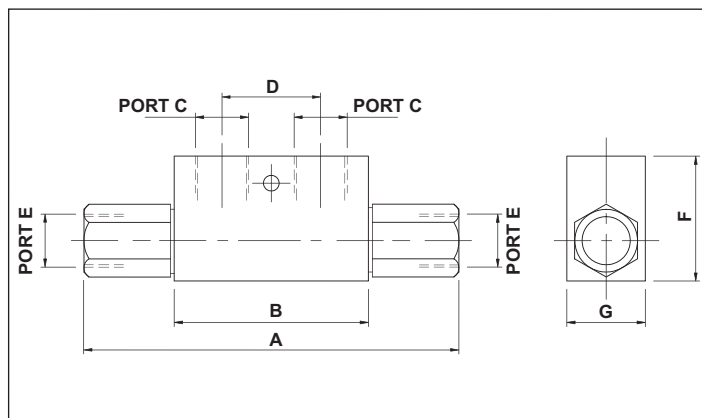
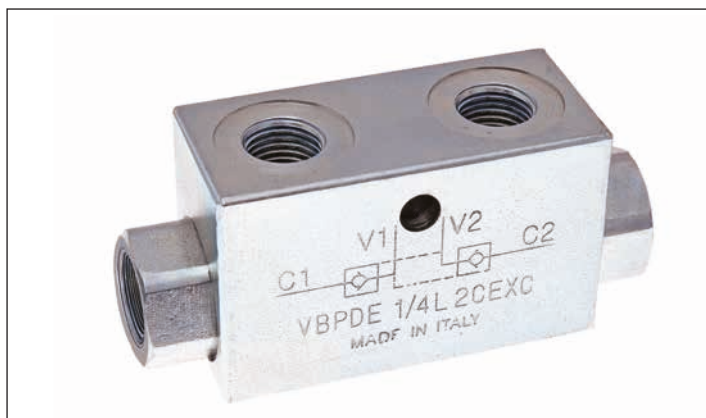
## PILOT OPERATED CHECK VALVES BSP & METRIC DOUBLE & SINGLE ACTING



|                   |                            |                              |                                   |
|-------------------|----------------------------|------------------------------|-----------------------------------|
| CHECK VALVE<br>CV | PRIMARY THREAD SIZE<br>025 | SECONDARY THREAD SIZE<br>12L | DOUBLE / SINGLE ACTING<br>DA / SA |
|-------------------|----------------------------|------------------------------|-----------------------------------|

| PART NUMBER  | L/MIN | MAX PRESSURE BAR | PILOT PRESSURE | A   | B  | (BSP) PORT C | D  | (METRIC) PORT E | F  | G  |
|--------------|-------|------------------|----------------|-----|----|--------------|----|-----------------|----|----|
| CV025-12L-DA | 25    | 350              | 1:5,5          | 130 | 64 | 1/4"         | 36 | 12L / 18mm      | 40 | 30 |
| CV025-12L-SA | 25    | 350              | 1.5,5          | 130 | 64 | 1/4"         | 36 | 12L / 18mm      | 40 | 30 |
| CV037-12L-DA | 30    | 350              | 1:5,5          | 130 | 64 | 3/8"         | 36 | 12L / 18mm      | 40 | 30 |
| CV037-12L-SA | 30    | 350              | 1.5,5          | 130 | 64 | 3/8"         | 36 | 12L / 18mm      | 40 | 30 |
| CV050-15L-DA | 50    | 350              | 1:5,0          | 164 | 90 | 1/2"         | 45 | 15L / 22mm      | 45 | 35 |
| CV050-15L-SA | 50    | 350              | 1.5,0          | 164 | 90 | 1/2"         | 45 | 15L / 22mm      | 45 | 35 |

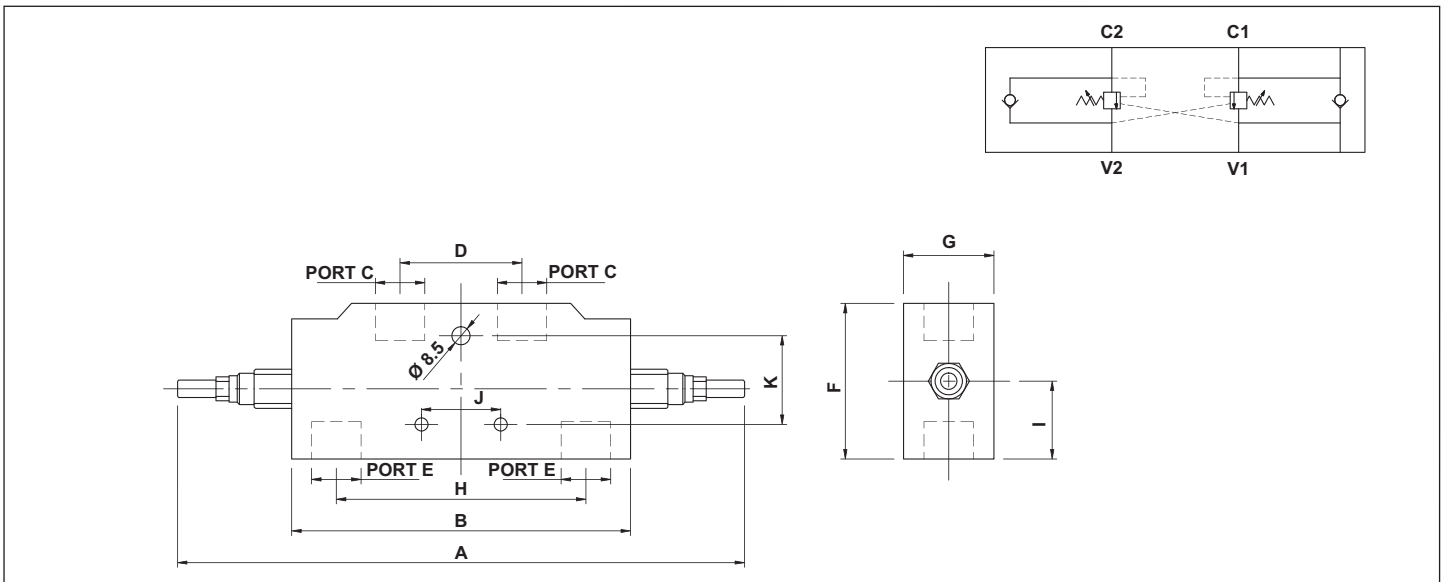
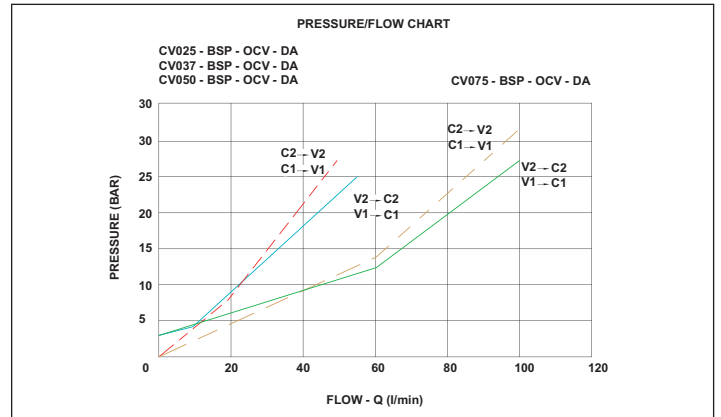
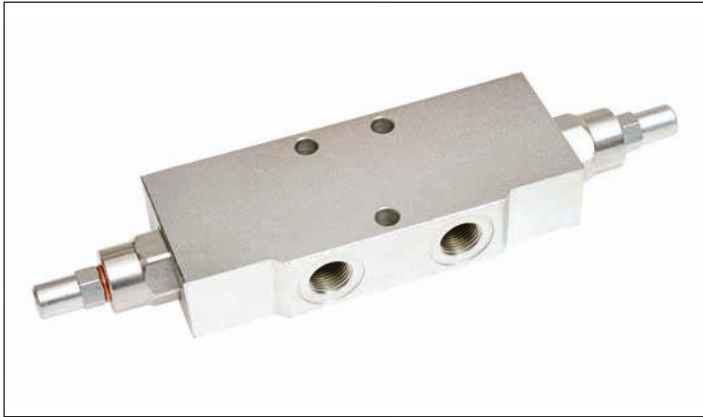
## PILOT OPERATED CHECK VALVES BSP DOUBLE & SINGLE ACTING



|                   |                            |                              |                                   |
|-------------------|----------------------------|------------------------------|-----------------------------------|
| CHECK VALVE<br>CV | PRIMARY THREAD SIZE<br>025 | SECONDARY THREAD SIZE<br>BSP | DOUBLE / SINGLE ACTING<br>DA / SA |
|-------------------|----------------------------|------------------------------|-----------------------------------|

| PART NUMBER  | L/MIN | MAX PRESSURE BAR | PILOT PRESSURE | A   | B   | (BSP) PORT C | D  | (BSP) PORT E | F  | G  |
|--------------|-------|------------------|----------------|-----|-----|--------------|----|--------------|----|----|
| CV025-BSP-DA | 20    | 350              | 1:5,5          | 113 | 64  | 1/4"         | 36 | 1/4"         | 40 | 30 |
| CV025-BSP-SA | 20    | 350              | 1.5,5          | 113 | 64  | 1/4"         | 36 | 1/4"         | 40 | 30 |
| CV037-BSP-DA | 35    | 350              | 1:5,5          | 128 | 80  | 3/8"         | 38 | 3/8"         | 40 | 30 |
| CV037-BSP-SA | 35    | 350              | 1.5,5          | 128 | 80  | 3/8"         | 38 | 3/8"         | 40 | 30 |
| CV050-BSP-DA | 50    | 350              | 1:5,0          | 142 | 90  | 1/2"         | 45 | 1/2"         | 45 | 35 |
| CV050-BSP-SA | 50    | 350              | 1.5,0          | 142 | 90  | 1/2"         | 45 | 1/2"         | 45 | 35 |
| CV075-BSP-DA | 100   | 300              | 1.4,0          | 192 | 100 | 3/4"         | 46 | 3/4"         | 60 | 40 |

# DOUBLE ACTING OVERCENTRE VALVES



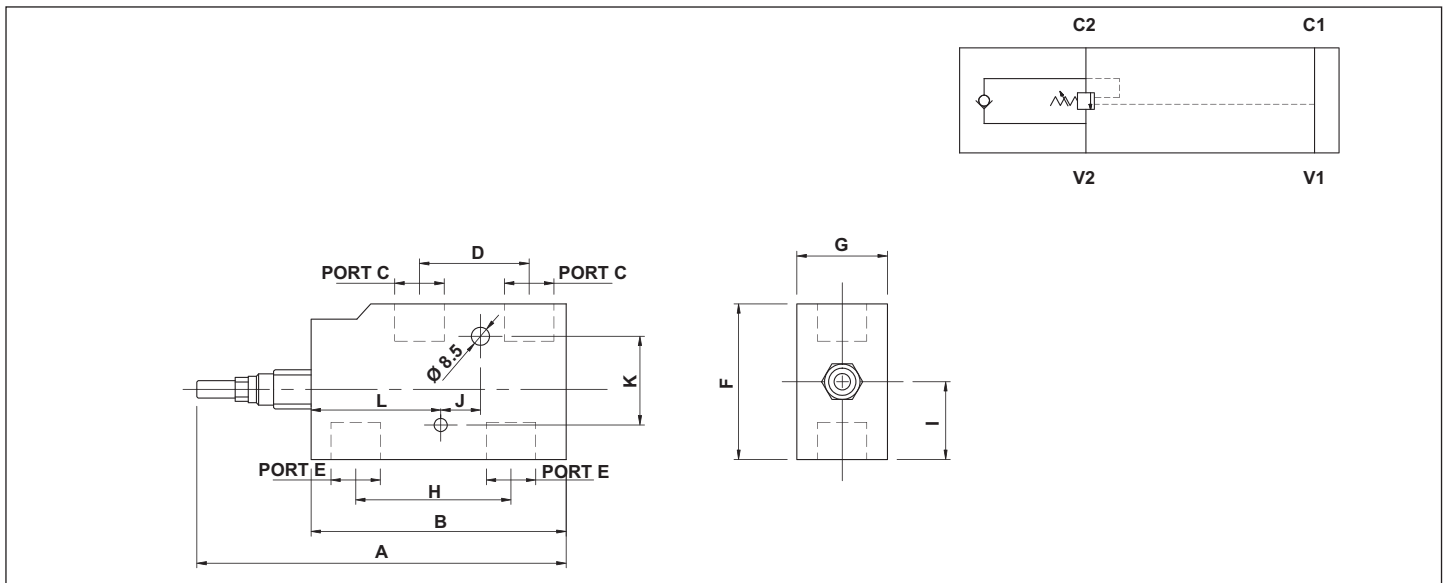
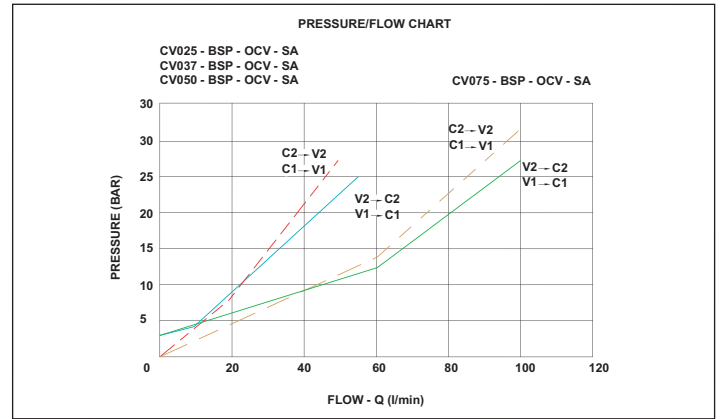
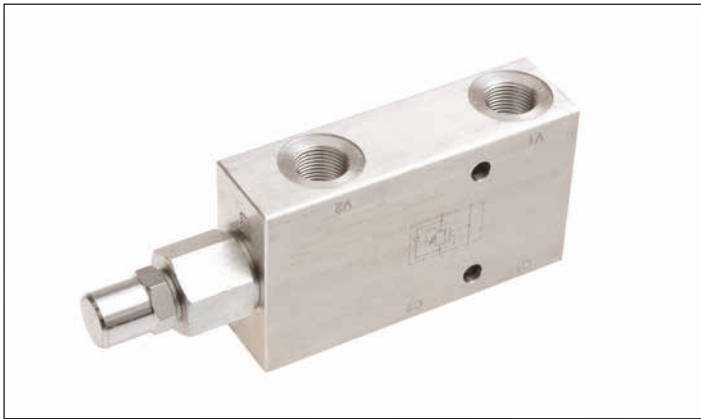
|                   |                  |               |                         |                     |
|-------------------|------------------|---------------|-------------------------|---------------------|
| CHECK VALVE<br>CV | PORT SIZE<br>025 | THREAD<br>BSP | OVERCENTRE VALVE<br>OCV | DOUBLE ACTING<br>DA |
|-------------------|------------------|---------------|-------------------------|---------------------|

| PART NUMBER      | L/MIN | MAX PRESSURE BAR | PILOT RATIO | A   | B   | (BSP) PORT C | D  | (BSP) PORT E | F  | G  | H   | I  | J  | K  |
|------------------|-------|------------------|-------------|-----|-----|--------------|----|--------------|----|----|-----|----|----|----|
| CV025-BSP-OCV-DA | 20    | 350              | 1:4.5       | 248 | 150 | 1/4"         | 50 | 1/4"         | 60 | 30 | 110 | 32 | 30 | 44 |
| CV037-BSP-OCV-DA | 40    | 350              | 1:4.5       | 248 | 150 | 3/8"         | 50 | 3/8"         | 60 | 30 | 110 | 32 | 30 | 44 |
| CV050-BSP-OCV-DA | 60    | 350              | 1:4.5       | 248 | 150 | 1/2"         | 50 | 1/2"         | 60 | 30 | 110 | 32 | 30 | 44 |
| CV075-BSP-OCV-DA | 95    | 350              | 1:5.5       | 304 | 190 | 3/4"         | 65 | 3/4"         | 80 | 35 | 143 | 40 | 44 | 64 |

MATERIAL ; STEEL - ZINC PLATED STEEL OR EQUIVALENT

APPLICATION ; THESE VALVES ARE USED TO CONTROL THE ACTUATORS MOVEMENTS AND CONTROL THE DESCENT OF A LOAD  
PORTS V1 & V2 ARE CONNECTED TO DIRECTIONAL CONTROL VALVE FEED AND RETURN.  
PORTS C1 & C2 CONNECT TO THE CYLINDER PORTS TO BE CONTROLLED.

# SINGLE ACTING OVERCENTRE VALVES



|                   |                  |               |                         |                     |
|-------------------|------------------|---------------|-------------------------|---------------------|
| CHECK VALVE<br>CV | PORT SIZE<br>025 | THREAD<br>BSP | OVERCENTRE VALVE<br>OCV | SINGLE ACTING<br>SA |
|-------------------|------------------|---------------|-------------------------|---------------------|

| PART NUMBER      | L/MIN | MAX PRESSURE BAR | PILOT RATIO | A   | B   | (BSP) PORT C | D  | (BSP) PORT E | F  | G  | H  | I  | J  | K  | L    |
|------------------|-------|------------------|-------------|-----|-----|--------------|----|--------------|----|----|----|----|----|----|------|
| CV025-BSP-OCV-SA | 20    | 350              | 1:4.5       | 149 | 100 | 1/4"         | 30 | 1/4"         | 60 | 30 | 60 | 30 | 10 | 44 | 55   |
| CV037-BSP-OCV-SA | 40    | 350              | 1:4.5       | 149 | 100 | 3/8"         | 30 | 3/8"         | 60 | 30 | 60 | 30 | 10 | 44 | 55   |
| CV050-BSP-OCV-SA | 60    | 350              | 1:4.5       | 149 | 100 | 1/2"         | 36 | 1/2"         | 60 | 30 | 65 | 30 | 10 | 44 | 57.5 |
| CV075-BSP-OCV-SA | 95    | 350              | 1:5.5       | 187 | 127 | 3/4"         | 46 | 3/4"         | 80 | 35 | 85 | 40 | 10 | 44 | 75   |

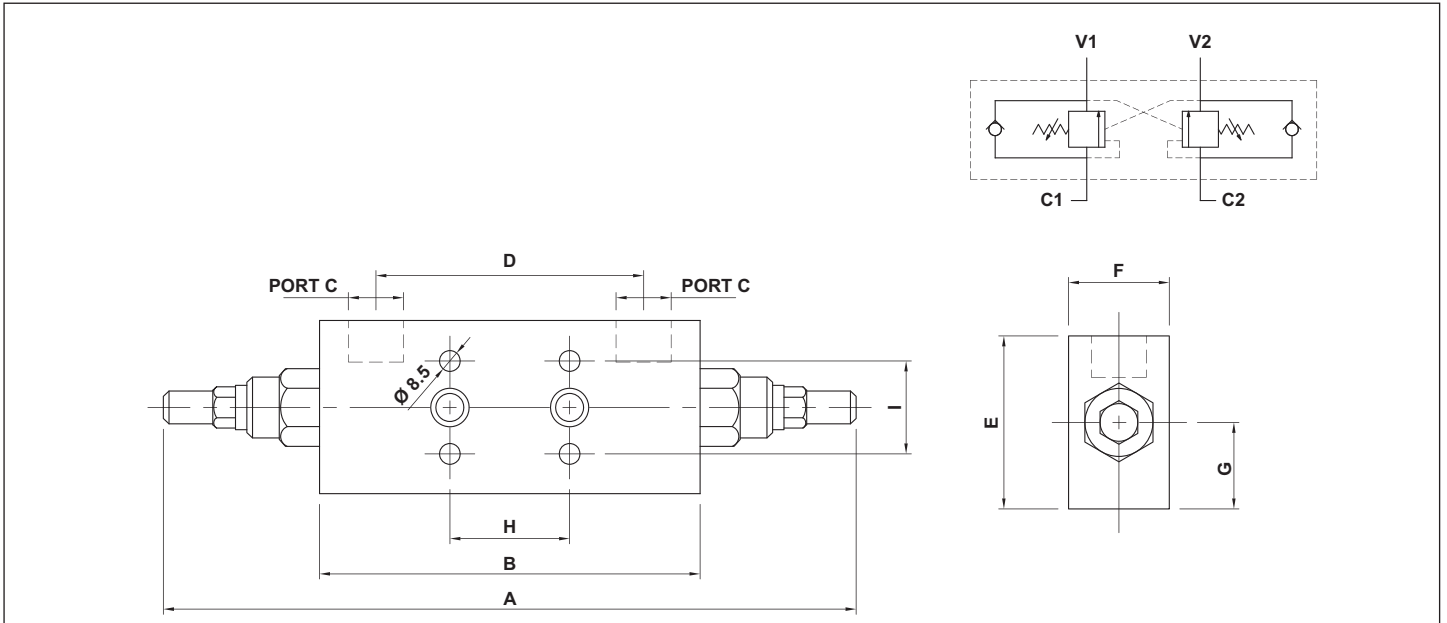
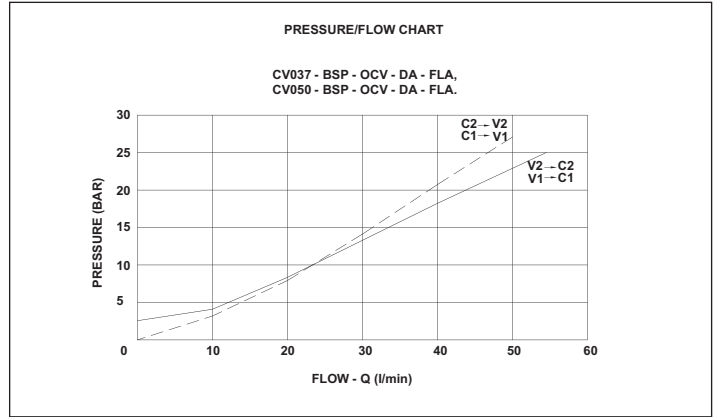
MATERIAL ; STEEL - ZINC PLATED STEEL OR EQUIVALENT

APPLICATION ; THESE VALVES ARE USED TO CONTROL THE ACTUATORS MOVEMENTS AND CONTROL THE DESCENT OF A LOAD  
PORTS V1 & V2 ARE CONNECTED TO DIRECTIONAL CONTROL VALVE FEED AND RETURN.

PORTS C 1 CONNECTS TO THE FREE FLOW SIDE OF THE CYLINDER.  
PORT C 2 CONNECTS TO THE SIDE THAT NEEDS TO BE CONTROLLED.



# DOUBLE ACTING OVERCENTRE VALVES FLANGE MOUNTED



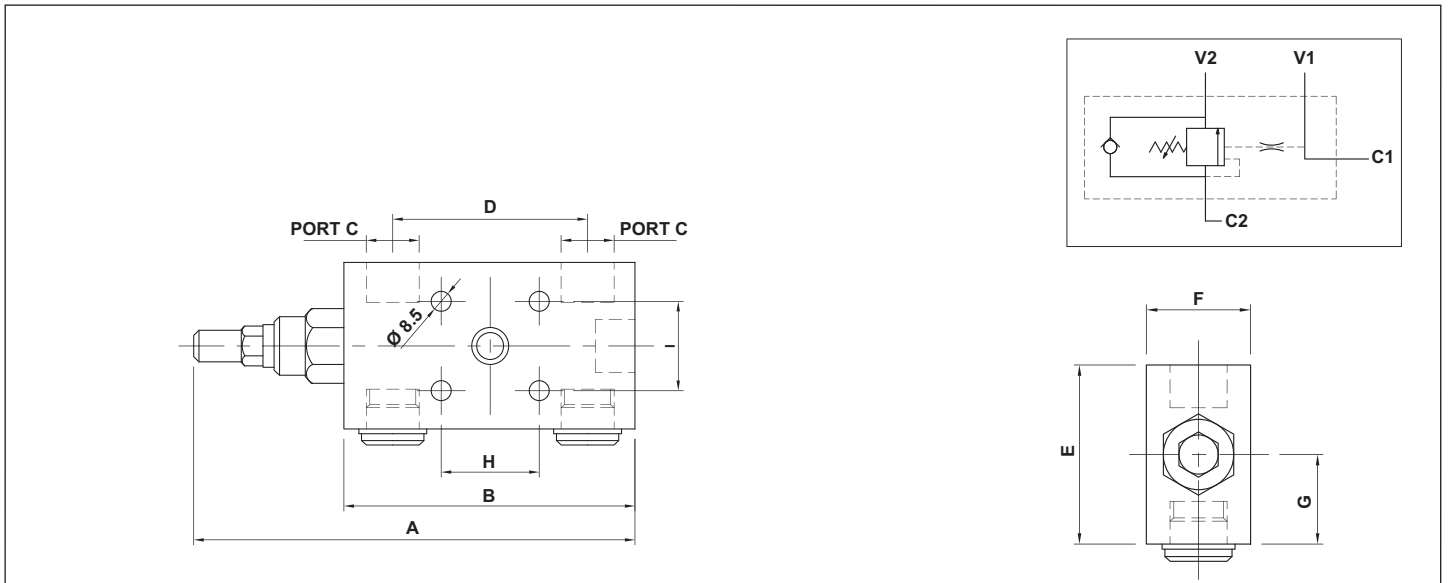
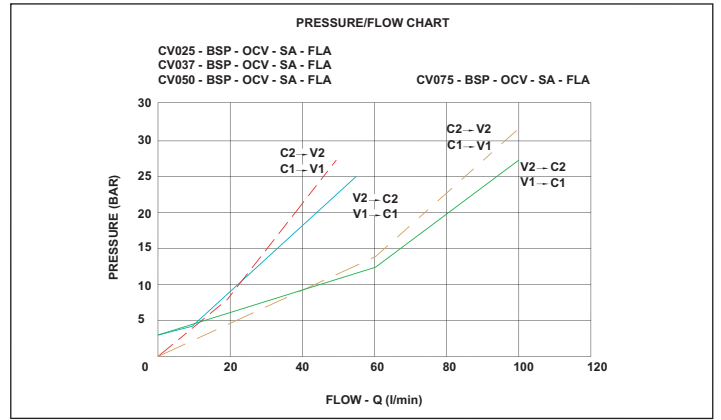
|                   |                  |               |                         |                     |                       |
|-------------------|------------------|---------------|-------------------------|---------------------|-----------------------|
| CHECK VALVE<br>CV | PORT SIZE<br>025 | THREAD<br>BSP | OVERCENTRE VALVE<br>OCV | DOUBLE ACTING<br>DA | FLANGE MOUNTED<br>FLA |
|-------------------|------------------|---------------|-------------------------|---------------------|-----------------------|

| PART NUMBER          | L/MIN | MAX PRESSURE BAR | PILOT RATIO | A   | B   | (BSP) PORT C | D   | E  | F  | G  | H  | I  |
|----------------------|-------|------------------|-------------|-----|-----|--------------|-----|----|----|----|----|----|
| CV037-BSP-OCV-DA-FLA | 40    | 350              | 1:4.5       | 248 | 150 | 3/8"         | 110 | 60 | 30 | 30 | 48 | 40 |
| CV050-BSP-OCV-DA-FLA | 60    | 350              | 1:4.5       | 248 | 150 | 1/2"         | 110 | 60 | 30 | 30 | 48 | 40 |

MATERIAL; STEEL - ZINC PLATED STEEL OR EQUIVALENT

APPLICATION; THESE VALVES ARE USED TO CONTROL THE ACTUATORS MOVEMENTS AND CONTROL THE DESCENT OF A LOAD  
PORTS C ARE CONNECTED TO DIRECTIONAL CONTROL VALVE FEED AND RETURN.

# SINGLE ACTING OVERCENTRE VALVES FLANGE MOUNTED



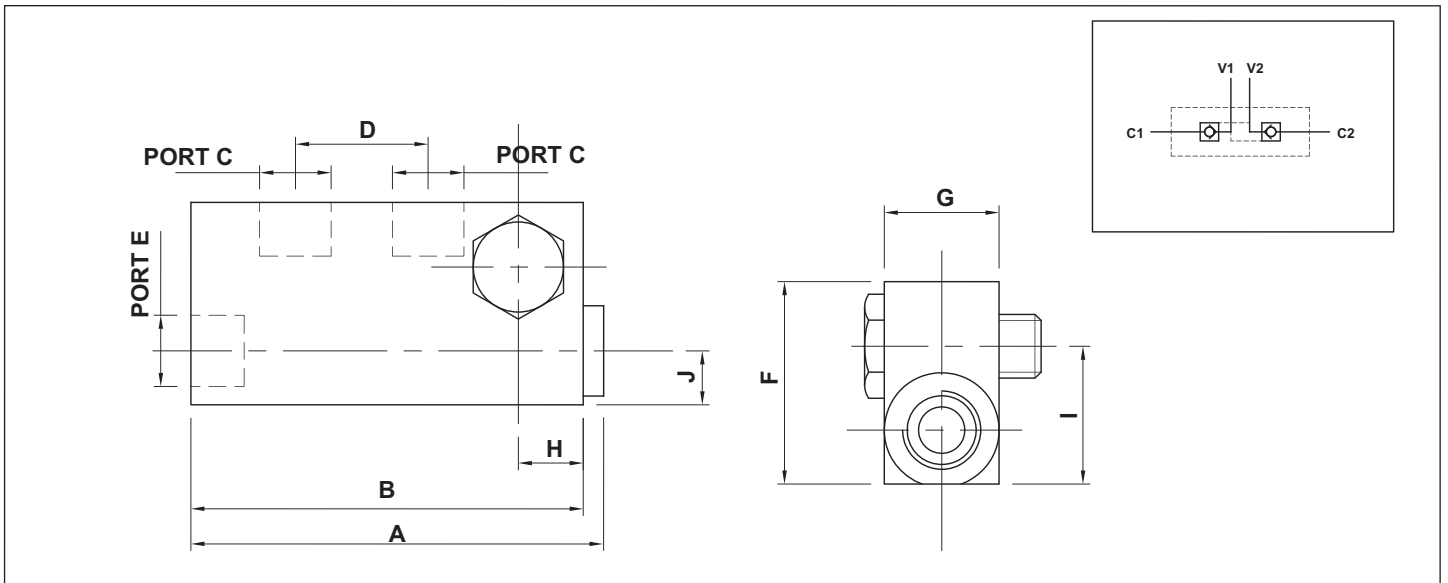
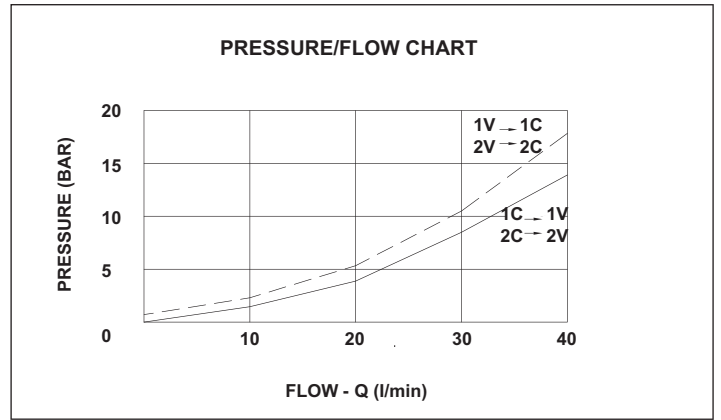
|                   |                  |               |                         |                     |                       |
|-------------------|------------------|---------------|-------------------------|---------------------|-----------------------|
| CHECK VALVE<br>CV | PORT SIZE<br>037 | THREAD<br>BSP | OVERCENTRE VALVE<br>OCV | SINGLE ACTING<br>SA | FLANGE MOUNTED<br>FLA |
|-------------------|------------------|---------------|-------------------------|---------------------|-----------------------|

| PART NUMBER          | L/MIN | MAX PRESSURE BAR | PILOT RATIO | A   | B   | (BSP) PORT C | D  | E  | F  | G  | H  | I  |
|----------------------|-------|------------------|-------------|-----|-----|--------------|----|----|----|----|----|----|
| CV037-BSP-OCV-SA-FLA | 40    | 350              | 1 : 4.5     | 149 | 100 | 3/8"         | 60 | 60 | 30 | 30 | 30 | 30 |
| CV050-BSP-OCV-SA-FLA | 60    | 350              | 1 : 4.5     | 149 | 100 | 1/2"         | 65 | 60 | 30 | 30 | 30 | 30 |

MATERIAL; STEEL - ZINC PLATED STEEL OR EQUIVALENT

APPLICATION; THESE VALVES ARE USED TO CONTROL THE ACTUATORS MOVEMENTS AND CONTROL THE DESCENT OF A LOAD  
PORTS C ARE CONNECTED TO DIRECTIONAL CONTROL VALVE FEED AND RETURN.

# BANJO MOUNTED PILOT OPERATED CHECK VALVES

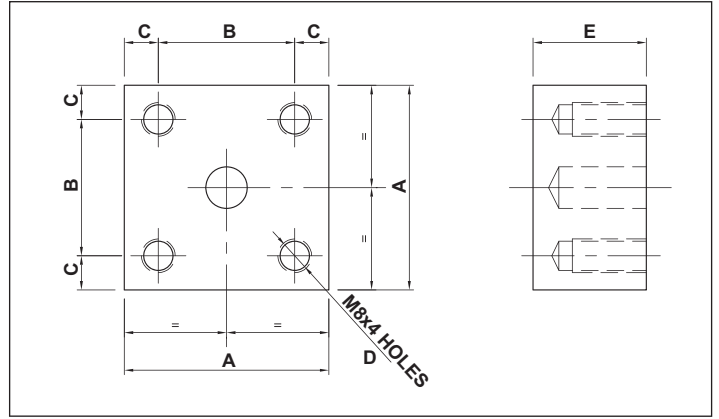


|                   |                  |               |                        |                     |
|-------------------|------------------|---------------|------------------------|---------------------|
| CHECK VALVE<br>CV | PORT SIZE<br>025 | THREAD<br>BSP | BANJO MOUNTED<br>BANJO | DOUBLE ACTING<br>DA |
|-------------------|------------------|---------------|------------------------|---------------------|

| PART NUMBER        | L/MIN | MAX PRESSURE BAR | PILOT PRESSURE | A  | B    | (BSP) PORT C | D  | (BSP) PORT E | F  | G  | H  | I  | J  |
|--------------------|-------|------------------|----------------|----|------|--------------|----|--------------|----|----|----|----|----|
| CV025-BSP-BANJO-DA | 20    | 300              | 1 : 4,9        | 89 | 84   | 1/4"         | 24 | 1/4"         | 40 | 20 | 16 | 27 | 10 |
| CV037-BSP-BANJO-SA | 20    | 300              | 1 : 4,9        | 91 | 86.5 | 3/8"         | 29 | 3/8"         | 45 | 25 | 14 | 30 | 12 |
| CV037-BSP-BANJO-DA | 20    | 300              | 1 : 4,9        | 91 | 86.5 | 3/8"         | 29 | 3/8"         | 45 | 25 | 14 | 30 | 12 |

MATERIAL : STEEL - ZINC PLATED OR EQUIVALENT

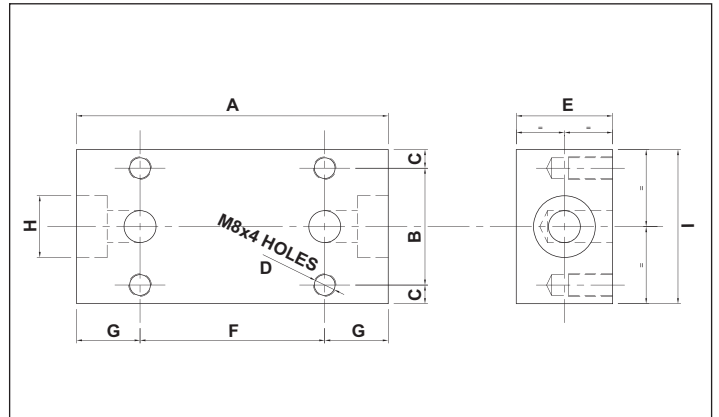
# WELDABLE SUB PLATES FOR OVERCENTRE VALVES



CHECK VALVE CV      PORT SIZE 037      WELDABLE SUB PLATE WSP      SINGLE ACTING SA

| PART NUMBER  | A  | B  | C   | D  | E  |
|--------------|----|----|-----|----|----|
| CV037-WSP-SA | 45 | 30 | 7.5 | M8 | 25 |
| CV050-WSP-SA | 45 | 30 | 7.5 | M8 | 25 |

MATERIAL : STEEL



CHECK VALVE CV      PORT SIZE 037      WELDABLE SUB PLATE WSP      DOUBLE ACTING DA

| PART NUMBER  | A   | B  | C   | D  | E  | F  | G  | H    | I  |
|--------------|-----|----|-----|----|----|----|----|------|----|
| CV037-WSP-DA | 100 | 40 | 7.5 | M8 | 25 | 48 | 26 | 14.5 | 55 |
| CV050-WSP-DA | 100 | 40 | 7.5 | M8 | 25 | 48 | 26 | 14.5 | 55 |

MATERIAL : STEEL OR EQUIVALENT

# CHECK VALVE KITS FOR STANDARD CYLINDER PARTS



CYLINDER KIT CHECK VALVE  
CKCV

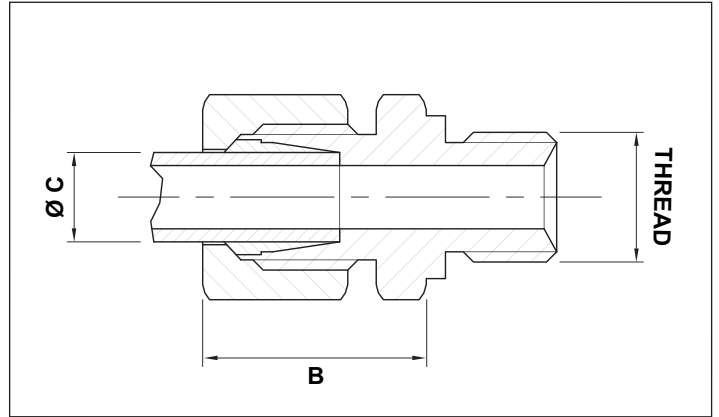
BSP SIZE  
025

LENGTH OF PIPE DOUBLE / SINGLE ACTING  
38DA

| PART NUMBER    | PORT SIZE | PIPE LENGTH A | PIPE LENGTH B | MIN CENTRE | MAX CENTRES |
|----------------|-----------|---------------|---------------|------------|-------------|
| CKCV025-38DA   | 1/4"      | 38            | 38            | 160        | 160         |
| CKCV025-38SA   | 1/4"      | 38            | 38            | 160        | 160         |
| CKCV025-100DA  | 1/4"      | 38            | 100           | 160        | 235         |
| CKCV025-100SA  | 1/4"      | 38            | 100           | 160        | 235         |
| CKCV025-200DA  | 1/4"      | 38            | 200           | 160        | 325         |
| CKCV025-200SA  | 1/4"      | 38            | 200           | 160        | 325         |
| CKCV025-300DA  | 1/4"      | 38            | 300           | 160        | 420         |
| CKCV025-300SA  | 1/4"      | 38            | 300           | 160        | 420         |
| CKCV025-400DA  | 1/4"      | 38            | 400           | 160        | 525         |
| CKCV025-400SA  | 1/4"      | 38            | 400           | 160        | 525         |
| CKCV025-600DA  | 1/4"      | 38            | 600           | 160        | 720         |
| CKCV025-600SA  | 1/4"      | 38            | 600           | 160        | 720         |
| CKCV025-850DA  | 1/4"      | 38            | 850           | 160        | 970         |
| CKCV025-850SA  | 1/4"      | 38            | 850           | 160        | 970         |
| CKCV025-1000DA | 1/4"      | 38            | 1000          | 160        | 1120        |
| CKCV025-1000SA | 1/4"      | 38            | 1000          | 160        | 1120        |
| CKCV037-38DA   | 3/8"      | 38            | 38            | 160        | 160         |
| CKCV037-38SA   | 3/8"      | 38            | 38            | 160        | 160         |
| CKCV037-100DA  | 3/8"      | 38            | 100           | 160        | 225         |
| CKCV037-100SA  | 3/8"      | 38            | 100           | 160        | 225         |
| CKCV037-200DA  | 3/8"      | 38            | 200           | 160        | 320         |
| CKCV037-200SA  | 3/8"      | 38            | 200           | 160        | 320         |
| CKCV037-300DA  | 3/8"      | 38            | 300           | 160        | 420         |
| CKCV037-300SA  | 3/8"      | 38            | 300           | 160        | 420         |
| CKCV037-400DA  | 3/8"      | 38            | 400           | 160        | 520         |
| CKCV037-400SA  | 3/8"      | 38            | 400           | 160        | 520         |
| CKCV037-500DA  | 3/8"      | 38            | 500           | 160        | 620         |
| CKCV037-500SA  | 3/8"      | 38            | 500           | 160        | 620         |
| CKCV037-600DA  | 3/8"      | 38            | 600           | 160        | 720         |
| CKCV037-600SA  | 3/8"      | 38            | 600           | 160        | 720         |
| CKCV037-850DA  | 3/8"      | 38            | 850           | 160        | 970         |
| CKCV037-850SA  | 3/8"      | 38            | 850           | 160        | 970         |
| CKCV037-1000DA | 3/8"      | 38            | 1000          | 160        | 1120        |
| CKCV037-1000SA | 3/8"      | 38            | 1000          | 160        | 1120        |
| CKCV050-44DA   | 1/2"      | 44            | 38            | 195        | 195         |
| CKCV050-44SA   | 1/2"      | 44            | 38            | 195        | 195         |
| CKCV050-100DA  | 1/2"      | 44            | 100           | 195        | 250         |
| CKCV050-100SA  | 1/2"      | 44            | 100           | 195        | 250         |
| CKCV050-200DA  | 1/2"      | 44            | 200           | 195        | 350         |
| CKCV050-200SA  | 1/2"      | 44            | 200           | 195        | 350         |
| CKCV050-300DA  | 1/2"      | 44            | 300           | 195        | 450         |
| CKCV050-300SA  | 1/2"      | 44            | 300           | 195        | 450         |
| CKCV050-400DA  | 1/2"      | 44            | 400           | 195        | 550         |
| CKCV050-400SA  | 1/2"      | 44            | 400           | 195        | 550         |
| CKCV050-500DA  | 1/2"      | 44            | 500           | 195        | 650         |
| CKCV050-500SA  | 1/2"      | 44            | 500           | 195        | 650         |
| CKCV050-600DA  | 1/2"      | 44            | 600           | 195        | 750         |
| CKCV050-600SA  | 1/2"      | 44            | 600           | 195        | 750         |
| CKCV050-850DA  | 1/2"      | 44            | 850           | 195        | 1000        |
| CKCV050-850SA  | 1/2"      | 44            | 850           | 195        | 1000        |
| CKCV050-1000DA | 1/2"      | 44            | 1000          | 195        | 1150        |
| CKCV050-1000SA | 1/2"      | 44            | 1000          | 195        | 1150        |

STANDARD KITS CONSIST OF; TWO BANJO BOLTS COMPLETE WITH COPPER WASHERS, TWO STEEL PIPES, ONE PILOT OPERATED CHECK VALVE EITHER DOUBLE OR SINGLE ACTING

## MALE STUD COUPLINGS AND ANCILLARY PRODUCTS



CHECK VALVE  
CV

BSP SIZE  
025

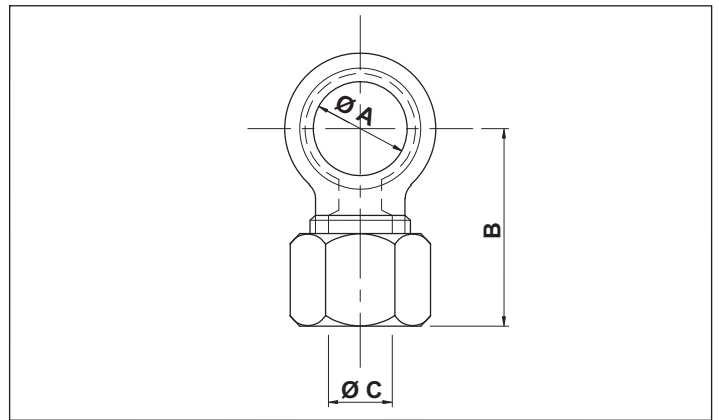
COMPRESSION SIZE  
10L

MALE STUD COUPLING  
MSC

| PART NUMBER   | (BSP) THREAD | B (mm) | Ø C (mm) |
|---------------|--------------|--------|----------|
| CV025-10L-MSC | 1/4"         | 28     | 10       |
| CV025-12L-MSC | 1/4"         | 30     | 12       |
| CV037-12L-MSC | 3/8"         | 30     | 12       |
| CV050-15L-MSC | 1/2"         | 32     | 15       |

MATERIAL : STEEL - ZINC PLATED OR EQUIVALENT

## BANJO ADAPTER



CHECK VALVE  
CV

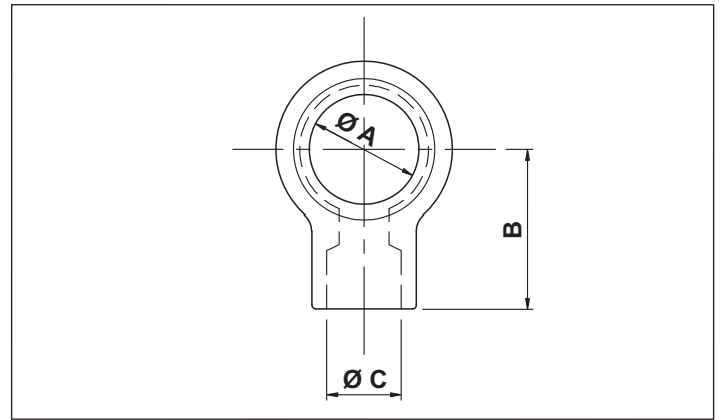
BSP SIZE  
025

BANJO COMPRESSION ADAPTER  
BANJO ADAPTER

| PART NUMBER             | Ø A (BSP) | B (mm) | Ø C (mm) |
|-------------------------|-----------|--------|----------|
| CV025-10L-BANJO ADAPTER | 1/4"      | 42     | 10       |
| CV025-12L-BANJO ADAPTER | 1/4"      | 42     | 12       |
| CV037-12L-BANJO ADAPTER | 3/8"      | 38     | 12       |
| CV050-15L-BANJO ADAPTER | 1/2"      | 43     | 15       |

MATERIAL : STEEL - ZINC PLATED OR EQUIVALENT

## BANJO END



CHECK VALVE  
CV

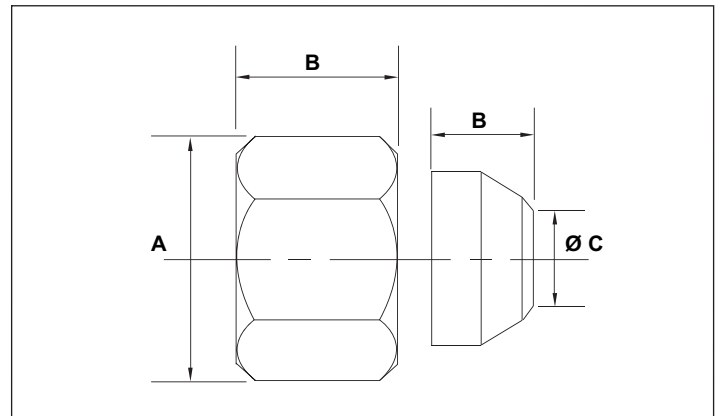
BSP SIZE  
025

BANJO END WELDABLE  
BANJO END

| PART NUMBER       | Ø A ( BSP ) | B (mm) | Ø C (mm) |
|-------------------|-------------|--------|----------|
| CV025 - BANJO END | 1/4"        | 23     | 12       |
| CV037 - BANJO END | 3/8"        | 22     | 12       |
| CV050 - BANJO END | 1/2"        | 25     | 15       |

MATERIAL : STEEL - ZINC PLATED OR EQUIVALENT

## COMPRESSION NUT OR OLIVE



CHECK VALVE  
CV

BSP SIZE  
025

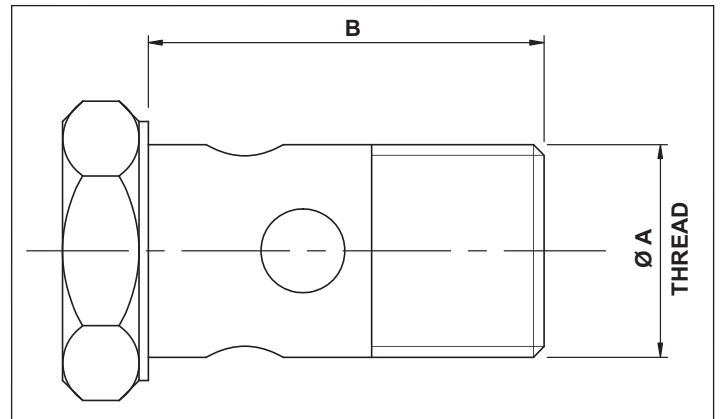
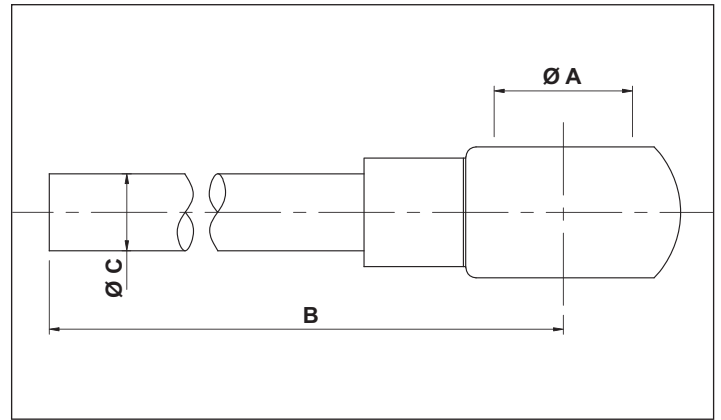
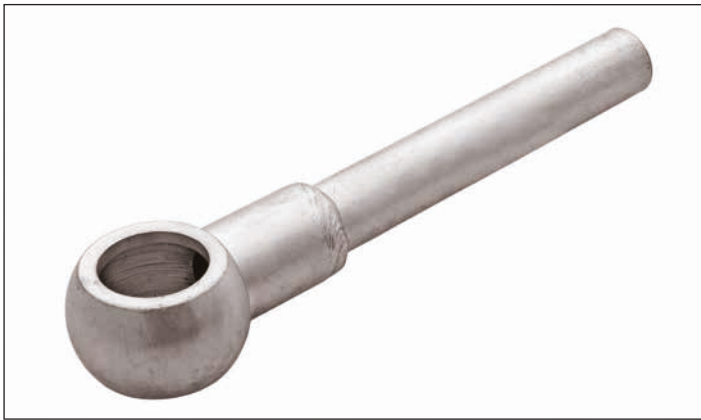
COMPRESSION SIZE  
10L

COMPRESSION NUT OR OLIVE  
NUT

| PART NUMBER     | A (AF) | B (mm) | Ø C (mm) |
|-----------------|--------|--------|----------|
| CV025-10L-NUT   | 19     | 16     | 10       |
| CV025-10L-OLIVE |        | 10     | 10       |
| CV025-12L-NUT   | 22     | 15     | 12       |
| CV025-12L-OLIVE |        | 10     | 12       |
| CV037-12L-NUT   | 22     | 15     | 12       |
| CV037-12L-OLIVE |        | 10     | 12       |
| CV050-15L-NUT   | 27     | 17     | 15       |
| CV050-15L-OLIVE |        | 10     | 15       |

MATERIAL : STEEL - ZINC PLATED OR EQUIVALENT

## FEED PIPES AND BANJO BOLTS



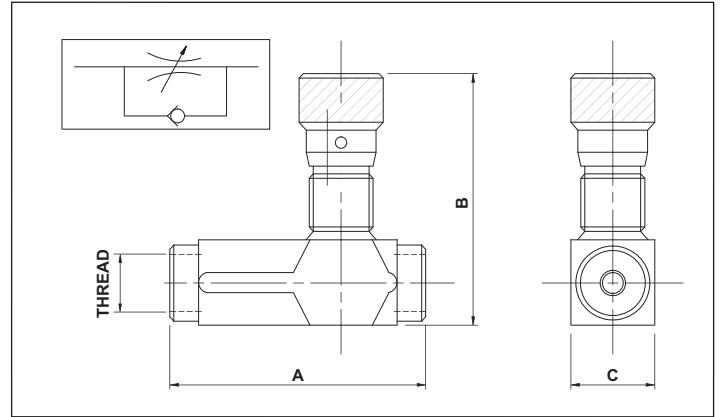
CHECK VALVE CV      BSP SIZE 025      LENGTH OF PIPE 38mm

| PART NUMBER      | THREAD A (BSP) | B (mm) | Ø C (mm) |
|------------------|----------------|--------|----------|
| CV025-BANJO BOLT | 1/4"           | 27     |          |
| CV025-38mm       | 1/4"           | 38     | 12       |
| CV025-100mm      | 1/4"           | 100    | 12       |
| CV025-200mm      | 1/4"           | 200    | 12       |
| CV025-300mm      | 1/4"           | 300    | 12       |
| CV025-400mm      | 1/4"           | 400    | 12       |
| CV025-600mm      | 1/4"           | 600    | 12       |
| CV025-850mm      | 1/4"           | 850    | 12       |
| CV025-1000mm     | 1/4"           | 1000   | 12       |
| CV037-BANJO BOLT | 3/8"           | 31     |          |
| CV037-38mm       | 3/8"           | 38     | 12       |
| CV037-50mm       | 3/8"           | 50     | 12       |
| CV037-100mm      | 3/8"           | 100    | 12       |
| CV037-200mm      | 3/8"           | 200    | 12       |
| CV037-300mm      | 3/8"           | 300    | 12       |
| CV037-400mm      | 3/8"           | 400    | 12       |
| CV037-500mm      | 3/8"           | 500    | 12       |
| CV037-600mm      | 3/8"           | 600    | 12       |
| CV037-850mm      | 3/8"           | 850    | 12       |
| CV037-1000mm     | 3/8"           | 1000   | 12       |
| CV050-BANJO BOLT | 1/2"           | 38     |          |
| CV050-44mm       | 1/2"           | 44     | 15       |
| CV050-100mm      | 1/2"           | 100    | 15       |
| CV050-200mm      | 1/2"           | 200    | 15       |
| CV050-300mm      | 1/2"           | 300    | 15       |
| CV050-400mm      | 1/2"           | 400    | 15       |
| CV050-500mm      | 1/2"           | 500    | 15       |
| CV050-600mm      | 1/2"           | 600    | 15       |
| CV050-850mm      | 1/2"           | 850    | 15       |
| CV050-1000mm     | 1/2"           | 1000   | 15       |

MATERIAL : STEEL - ZINC PLATED OR EQUIVALENT



## NEEDLE VALVES WITH BYPASS



NEEDLE VALVE  
FCV

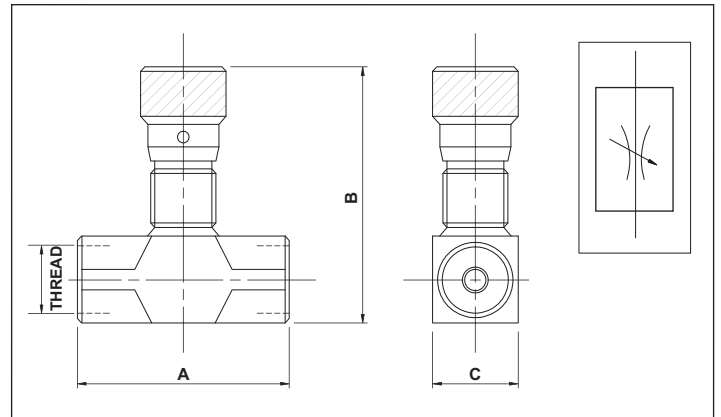
THREAD  
025

SINGLE ACTING  
SA

| PART NUMBER | L/MIN | MAX PRESSURE BAR | FLOW CONTROL BOTH WAYS | WITH INTEGRAL CHECK | CRACKING PRESSURE BAR | A  | B  | C  | (BSP) THREAD |
|-------------|-------|------------------|------------------------|---------------------|-----------------------|----|----|----|--------------|
| FCV-025-SA  | 15    | 350              | NO                     | YES                 | 0.5                   | 73 | 82 | 25 | 1/4"         |
| FCV-037-SA  | 30    | 350              | NO                     | YES                 | 0.5                   | 83 | 82 | 25 | 3/8"         |
| FCV-050-SA  | 50    | 350              | NO                     | YES                 | 0.5                   | 94 | 87 | 30 | 1/2"         |

THESE VALVES ARE USED TO ADJUST THE FLOW / SPEED OF AN ACTUATOR IN ONE DIRECTION ; FREE FLOW IS IN THE REVERSE DIRECTION

## NEEDLE VALVES WITHOUT BYPASS



NEEDLE VALVE  
FCV

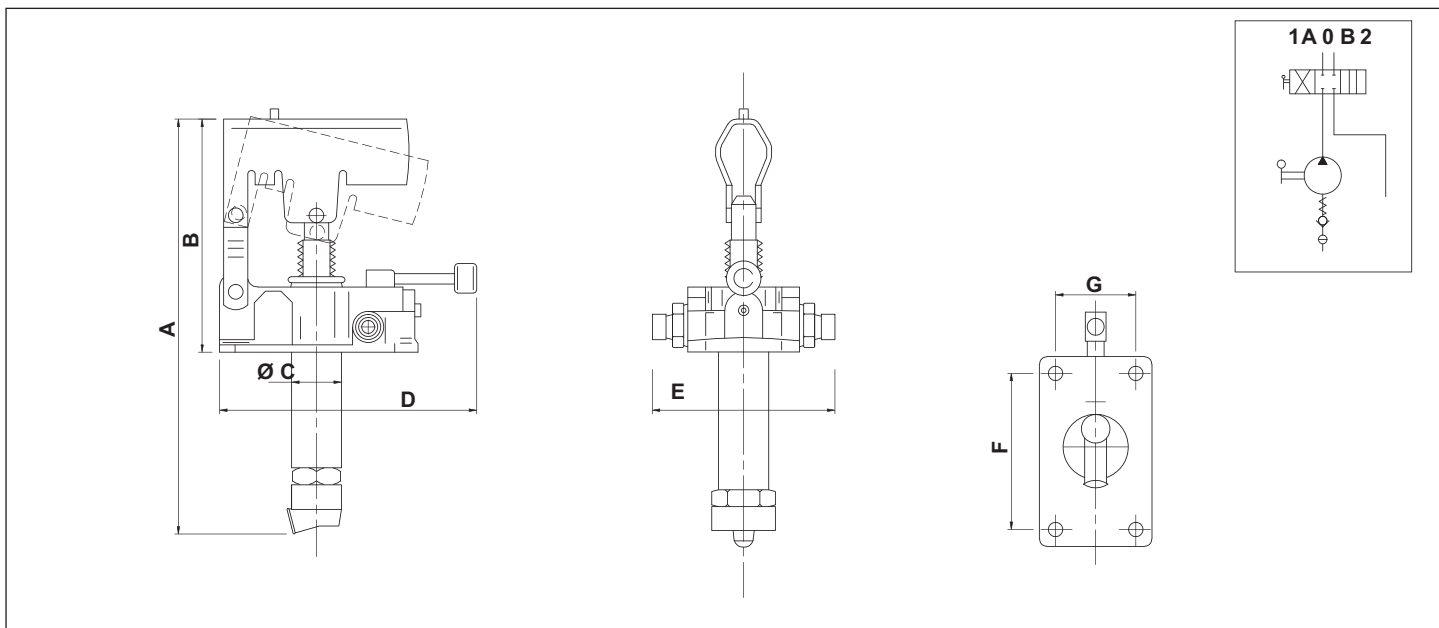
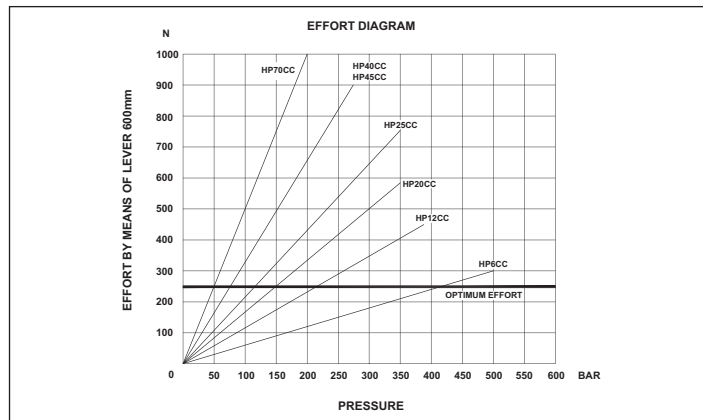
THREAD  
025

DOUBLE ACTING  
DA

| PART NUMBER | L/MIN | MAX PRESSURE BAR | FLOW CONTROL BOTH WAYS | A  | B  | C  | (BSP) THREAD |
|-------------|-------|------------------|------------------------|----|----|----|--------------|
| FCV-025-DA  | 15    | 350              | YES                    | 60 | 82 | 25 | 1/4"         |
| FCV-037-DA  | 30    | 350              | YES                    | 61 | 82 | 25 | 3/8"         |
| FCV-050-DA  | 50    | 350              | YES                    | 70 | 87 | 30 | 1/2"         |

THESE VALVES ARE USED TO ADJUST THE FLOW / SPEED OF AN ACTUATOR IN BOTH DIRECTIONS

# TANK MOUNTED DOUBLE ACTING HAND PUMPS



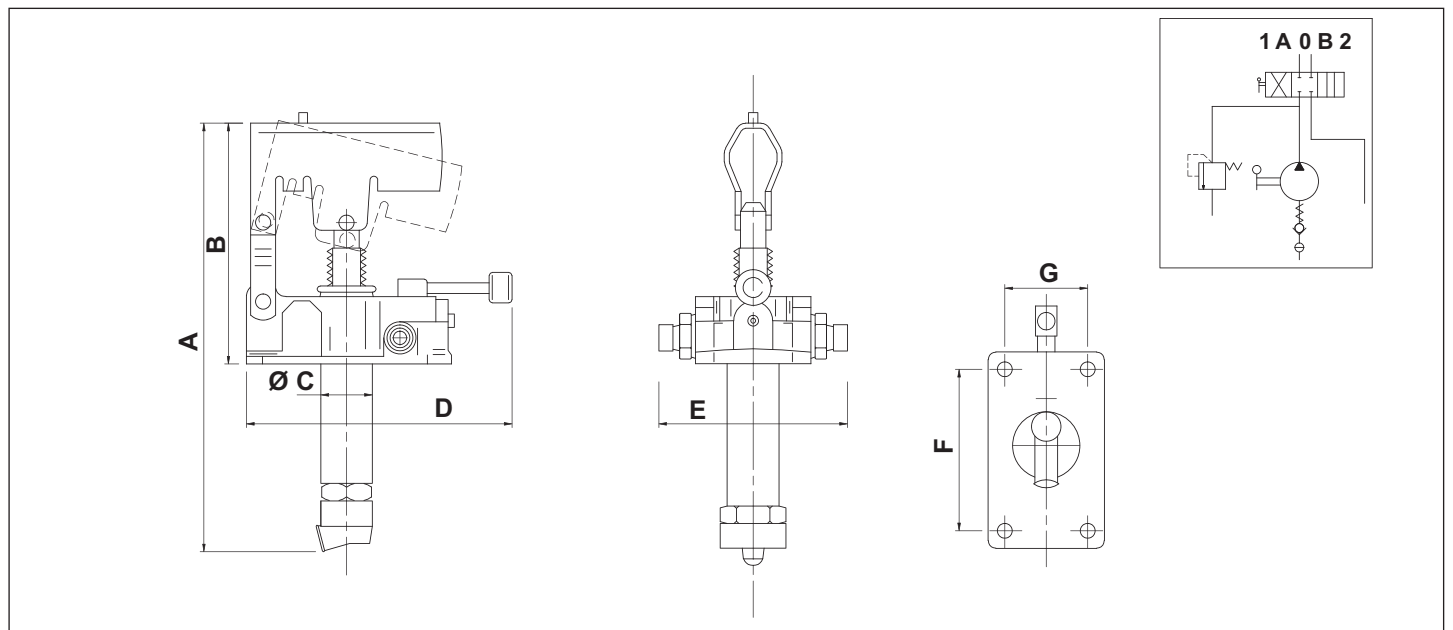
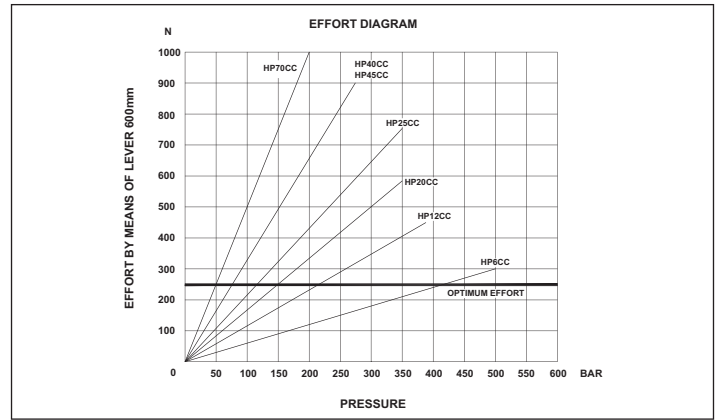
HAND PUMP      CUBIC CAPACITY      DOUBLE ACTING      CRANKED HANDLE  
 HP                      6CC                      DA                      CRHA

| PART NUMBER    | CAPACITY (CC) | ACTUAL DISPLACEMENT (CC) | PRESSURE (BAR) |     | BSP OUTLET PORT | A   | B   | Ø C | D   | E   | F  | G  |
|----------------|---------------|--------------------------|----------------|-----|-----------------|-----|-----|-----|-----|-----|----|----|
|                |               |                          | OPTIMAL        | MAX |                 |     |     |     |     |     |    |    |
| HP 6CC-DA      | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP 6CC-DA-CRHA | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP12CC-DA      | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP12CC-DA-CRHA | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP25CC-DA      | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 169 | 123 | 95 | 50 |
| HP25CC-DA-CRHA | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 169 | 123 | 95 | 50 |
| HP45CC-DA      | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 169 | 123 | 95 | 50 |
| HP45CC-DA-CRHA | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 169 | 123 | 95 | 50 |

| PART NUMBER       | DESCRIPTION        | LENGTH     |
|-------------------|--------------------|------------|
| HP HANDLE         | REPLACEMENT HANDLE | 27 Ø x 600 |
| HP CRANKED HANDLE | REPLACEMENT HANDLE | 27 Ø x 600 |

HAND PUMPS ARE SUPPLIED WITH HANDLES  
 PRESSURE RELIEF VALVES ARE FACTORY SET AT 100BAR  
 OIL TANK MOUNTING KIT INCLUDED

# TANK MOUNTED DOUBLE ACTING HAND PUMPS WITH RELIEF VALVES



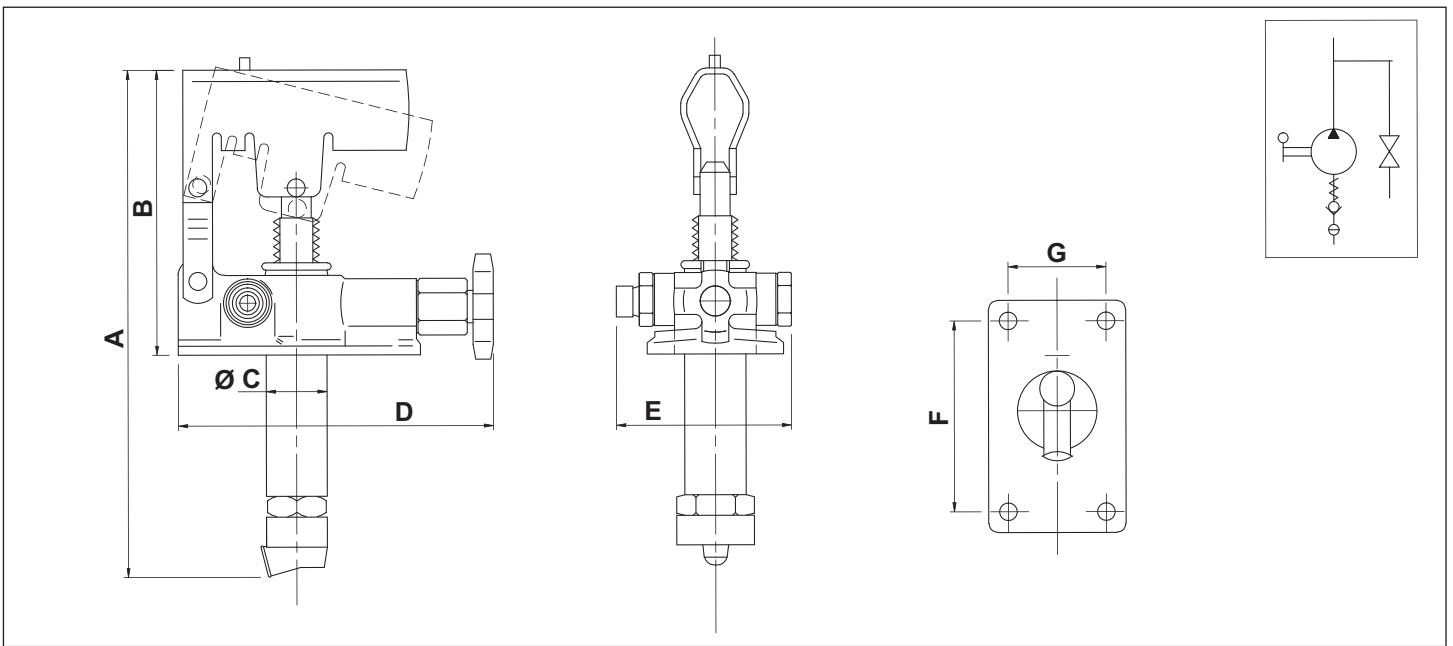
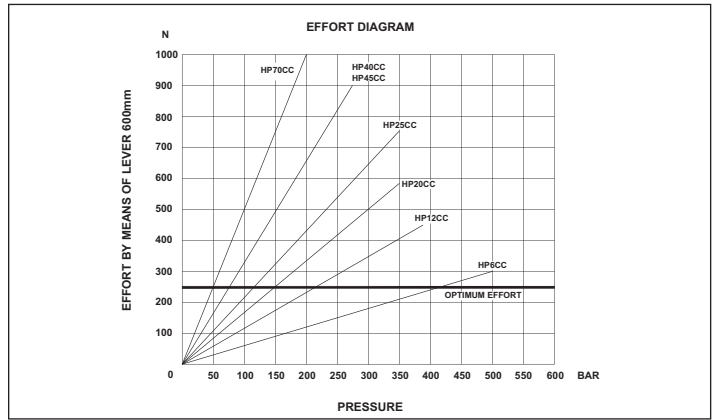
|                 |                       |                     |                    |                        |                      |
|-----------------|-----------------------|---------------------|--------------------|------------------------|----------------------|
| HAND PUMP<br>HP | CUBIC CAPACITY<br>6CC | DOUBLE ACTING<br>DA | RELIEF VALVE<br>RV | CRANKED HANDLE<br>CRHA | PILOT OPERATED<br>PO |
|-----------------|-----------------------|---------------------|--------------------|------------------------|----------------------|

| PART NUMBER        | CAPACITY (CC) | ACTUAL DISPLACEMENT (CC) | PRESSURE (BAR) |     | BSP OUTLET PORT | A   | B   | Ø C | D   | E   | F  | G  |
|--------------------|---------------|--------------------------|----------------|-----|-----------------|-----|-----|-----|-----|-----|----|----|
|                    |               |                          | OPTIMAL        | MAX |                 |     |     |     |     |     |    |    |
| HP6CC-DA-RV        | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP6CC-DA-RV-CRHA   | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP12CC-DA-RV       | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP12CC-DA-RV-PO    | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP12CC-DA-RV-CRHA  | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 169 | 123 | 95 | 50 |
| HP25CC-DA-RV       | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 169 | 123 | 95 | 50 |
| HP25CC-DA-RV-PO    | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 169 | 123 | 95 | 50 |
| HP25CC-DA -RV-CRHA | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 169 | 123 | 95 | 50 |
| HP45CC-DA-RV       | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 169 | 123 | 95 | 50 |
| HP45CC-DA-RV-PO    | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 169 | 123 | 95 | 50 |
| HP45CC-DA-RV-CRHA  | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 169 | 123 | 95 | 50 |

| PART NUMBER       | DESCRIPTION        | LENGTH     |
|-------------------|--------------------|------------|
| HP HANDLE         | REPLACEMENT HANDLE | 27 Ø x 600 |
| HP CRANKED HANDLE | REPLACEMENT HANDLE | 27 Ø x 600 |

HAND PUMPS ARE SUPPLIED WITH HANDLES  
 PRESSURE RELIEF VALVES ARE FACTORY SET AT 100BAR  
 OIL TANK MOUNTING KIT INCLUDED

# TANK MOUNTED SINGLE ACTING HAND PUMPS



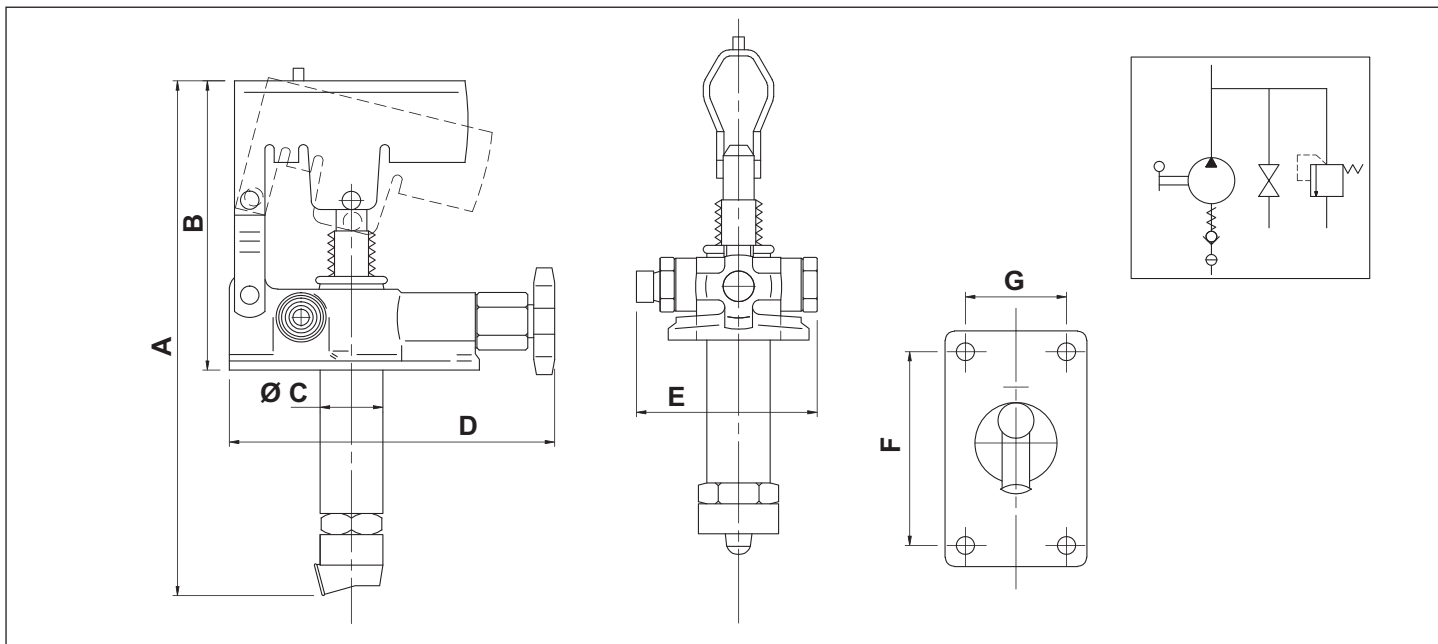
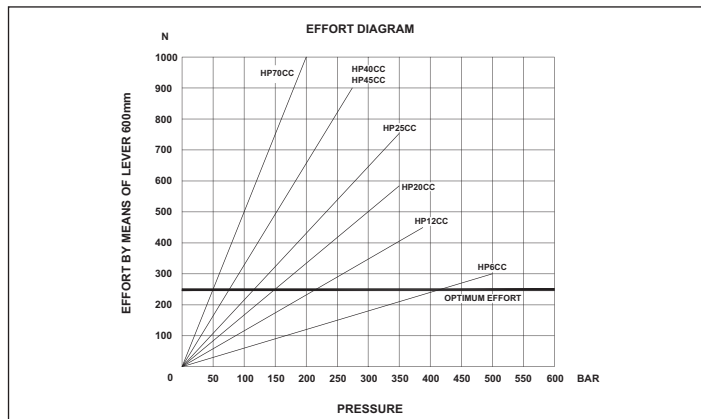
| HAND PUMP<br>HP | CUBIC CAPACITY<br>6CC | SINGLE ACTING<br>SA | CRANKED HANDLE<br>CRHA |
|-----------------|-----------------------|---------------------|------------------------|
|-----------------|-----------------------|---------------------|------------------------|

| PART NUMBER    | CAPACITY (CC) | ACTUAL DISPLACEMENT (CC) | PRESSURE (BAR) |     | BSP OUTLET PORT | A   | B   | Ø C | D   | E   | F  | G  |
|----------------|---------------|--------------------------|----------------|-----|-----------------|-----|-----|-----|-----|-----|----|----|
|                |               |                          | OPTIMAL        | MAX |                 |     |     |     |     |     |    |    |
| HP 6CC-SA      | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 156 | 107 | 95 | 50 |
| HP 6CC-SA-CRHA | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 156 | 107 | 95 | 50 |
| HP12CC-SA      | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 156 | 107 | 95 | 50 |
| HP12CC-SA-CRHA | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 156 | 107 | 95 | 50 |
| HP25CC-SA      | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 156 | 107 | 95 | 50 |
| HP25CC-SA-CRHA | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 156 | 107 | 95 | 50 |
| HP45CC-SA      | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 34  | 156 | 107 | 95 | 50 |
| HP45CC-SA-CRHA | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 156 | 107 | 95 | 50 |

| PART NUMBER       | DESCRIPTION        | LENGTH     |
|-------------------|--------------------|------------|
| HP HANDLE         | REPLACEMENT HANDLE | 27 Ø x 600 |
| HP CRANKED HANDLE | REPLACEMENT HANDLE | 27 Ø x 600 |

HAND PUMPS ARE SUPPLIED WITH HANDLES  
 PRESSURE RELIEF VALVES ARE FACTORY SET AT 100BAR  
 OIL TANK MOUNTING KIT INCLUDED

# TANK MOUNTED SINGLE ACTING HAND PUMPS WITH RELIEF VALVES



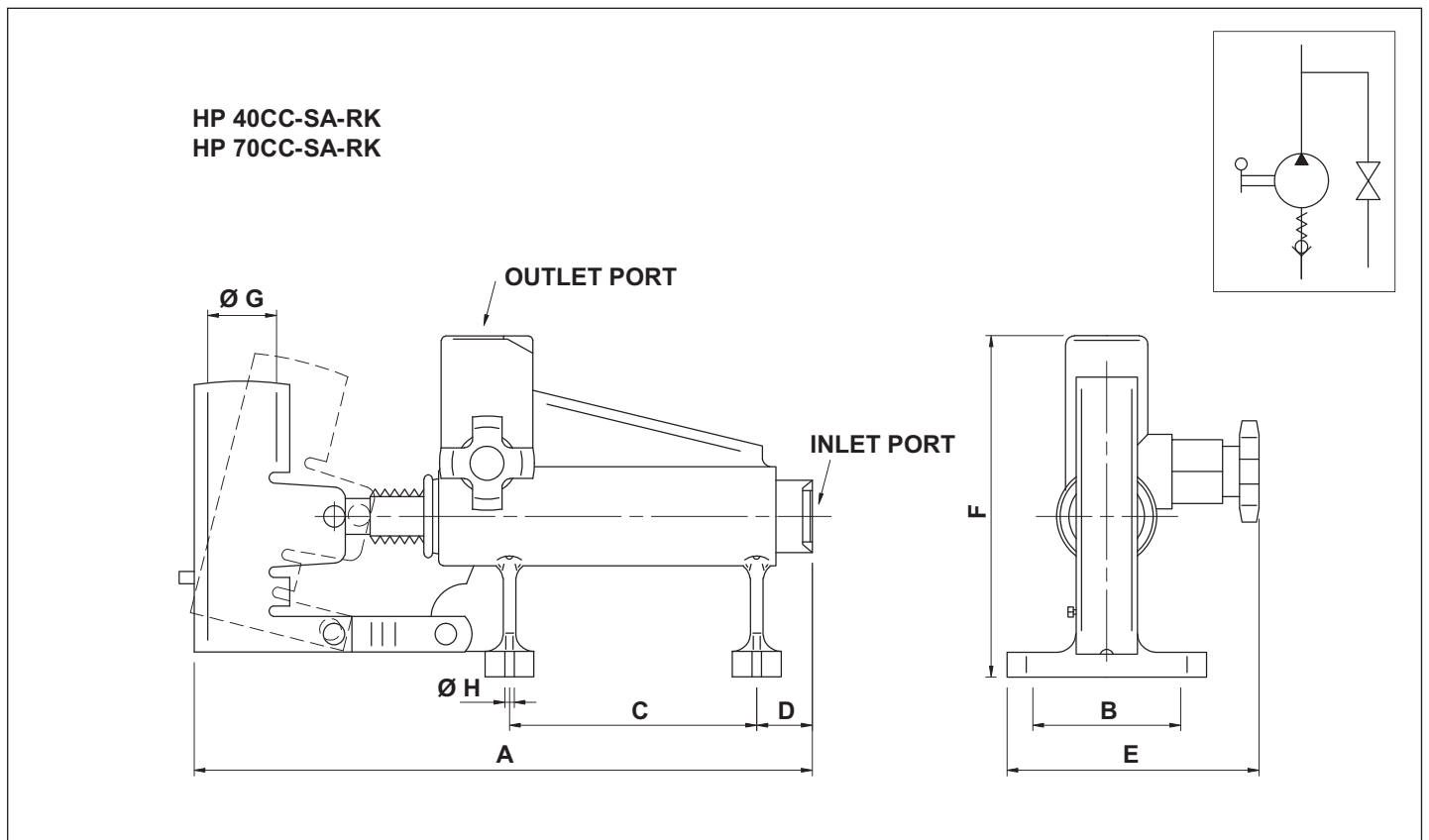
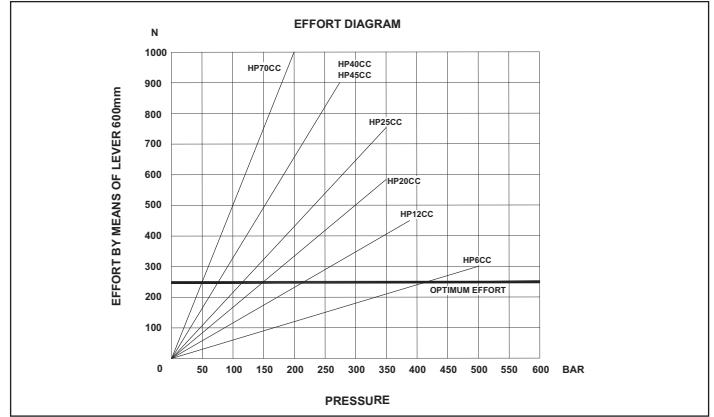
|           |                |               |              |                |
|-----------|----------------|---------------|--------------|----------------|
| HAND PUMP | CUBIC CAPACITY | SINGLE ACTING | RELIEF VALVE | CRANKED HANDLE |
| HP        | 6CC            | SA            | RV           | CRHA           |

| PART NUMBER        | CAPACITY (CC) | ACTUAL DISPLACEMENT (CC) | PRESSURE (BAR) |     | BSP OUTLET PORT | A   | B   | Ø C | D   | E   | F  | G  |
|--------------------|---------------|--------------------------|----------------|-----|-----------------|-----|-----|-----|-----|-----|----|----|
|                    |               |                          | OPTIMAL        | MAX |                 |     |     |     |     |     |    |    |
| HP6CC-SA-RV        | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 156 | 114 | 95 | 50 |
| HP6CC-SA-RV-CRHA   | 6             | 6,970                    | 420            | 500 | 3/8"            | 253 | 166 | 34  | 156 | 114 | 95 | 50 |
| HP12CC-SA-RV       | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 156 | 114 | 95 | 50 |
| HP12CC-SA-RV-CRHA  | 12            | 12,095                   | 220            | 380 | 3/8"            | 253 | 166 | 34  | 156 | 114 | 95 | 50 |
| HP25CC-SA-RV       | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 156 | 114 | 95 | 50 |
| HP25CC-SA -RV-CRHA | 25            | 25,280                   | 120            | 350 | 3/8"            | 273 | 172 | 34  | 156 | 114 | 95 | 50 |
| HP45CC-SA-RV       | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 156 | 114 | 95 | 50 |
| HP45CC-SA-RV-CRHA  | 45            | 44,532                   | 80             | 280 | 3/8"            | 283 | 172 | 40  | 156 | 114 | 95 | 50 |

| PART NUMBER       | DESCRIPTION        | LENGTH     |
|-------------------|--------------------|------------|
| HP HANDLE         | REPLACEMENT HANDLE | 27 Ø x 600 |
| HP CRANKED HANDLE | REPLACEMENT HANDLE | 27 Ø x 600 |

HAND PUMPS ARE SUPPLIED WITH HANDLES  
 PRESSURE RELIEF VALVES ARE FACTORY SET AT 100BAR  
 OIL TANK MOUNTING KIT INCLUDED

# STAND ALONE SINGLE ACTING HAND PUMPS



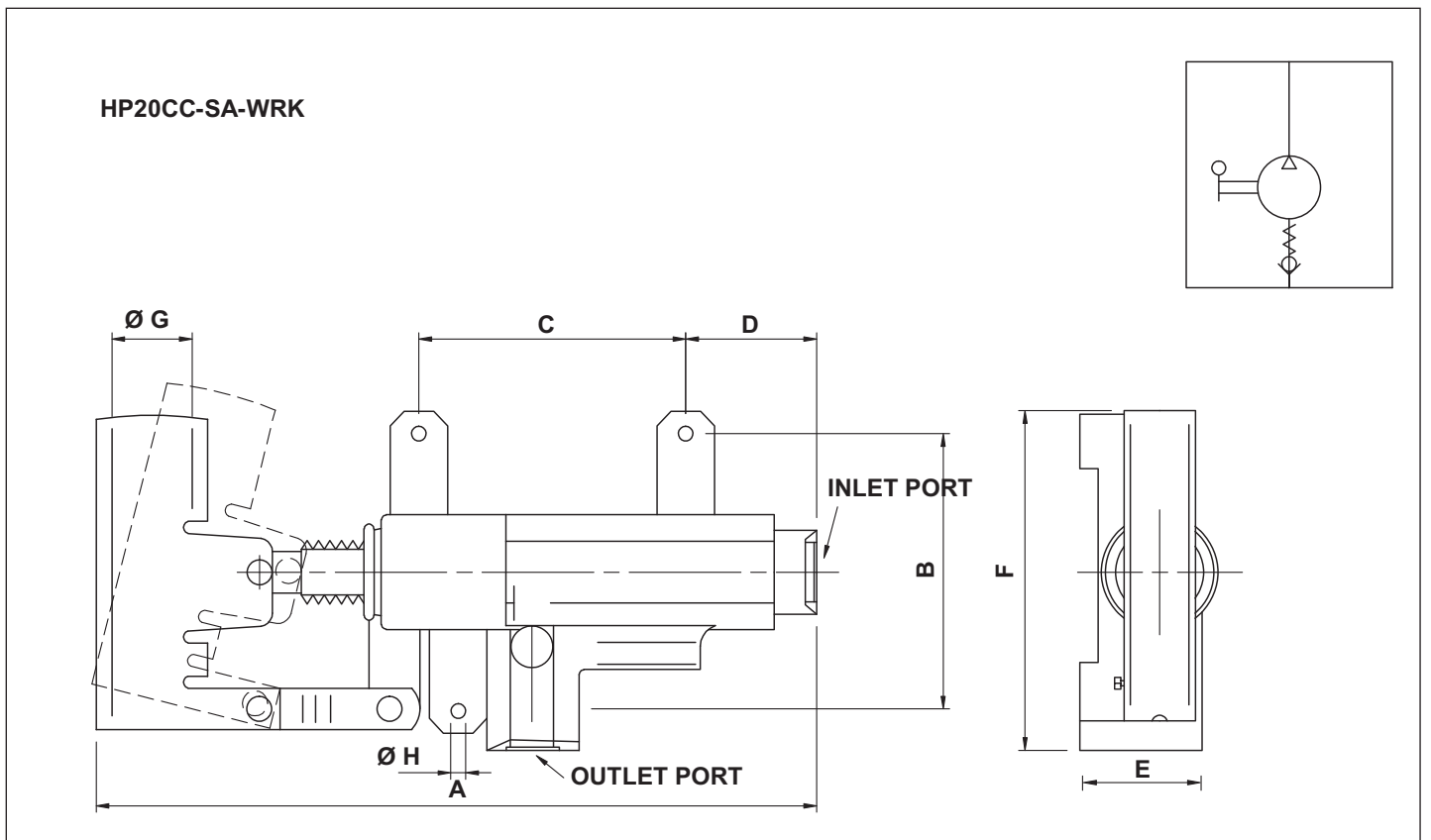
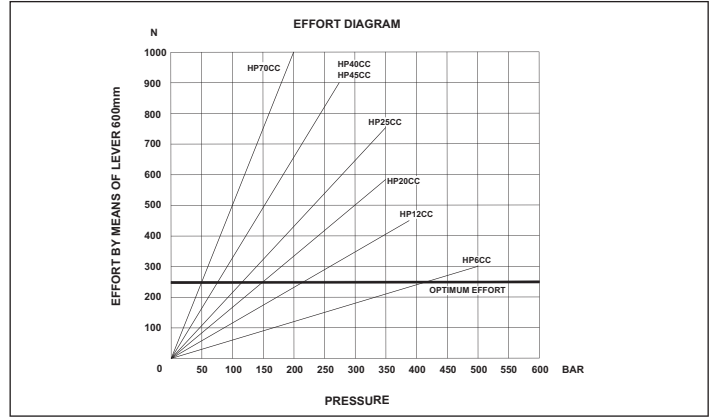
HAND PUMP / HP      CUBIC CAPACITY / 20cc      SINGLE ACTING / SA      WITHOUT RELEASE KNOB / WRK

| PART NUMBER   | CAPACITY (CC) | BSP INLET PORT | BSP OUTLET PORT | ACTUAL DISPLACEMENT (CC) | PRESSURE (BAR) OPTIMAL | MAX | A   | B  | C  | D  | E   | F   | ØG | ØH |
|---------------|---------------|----------------|-----------------|--------------------------|------------------------|-----|-----|----|----|----|-----|-----|----|----|
| HP20CC-SA-RK  | 20            | 1/2"           | 3/8"            | 20,090                   | 150                    | 350 | 257 | 76 | 75 | 37 | 84  | 102 | 27 | 9  |
| HP20CC-SA-WRK | 20            | 1/2"           | 3/8"            | 20,090                   | 150                    | 350 | 257 | 76 | 75 | 37 | 48  | 102 | 27 | 9  |
| HP40CC-SA-RK  | 40            | 1/2"           | 1/2"            | 40,180                   | 80                     | 280 | 275 | 60 | 87 | 39 | 101 | 116 | 27 | 9  |
| HP70CC-SA-RK  | 70            | 1/2"           | 1/2"            | 70,233                   | 50                     | 200 | 298 | 80 | 95 | 35 | 106 | 131 | 27 | 11 |

| PART NUMBER | DESCRIPTION        | LENGTH     |
|-------------|--------------------|------------|
| HP HANDLE   | REPLACEMENT HANDLE | 27 Ø x 600 |

HAND PUMPS ARE SUPPLIED WITH HANDLES

# STAND ALONE SINGLE ACTING HAND PUMPS



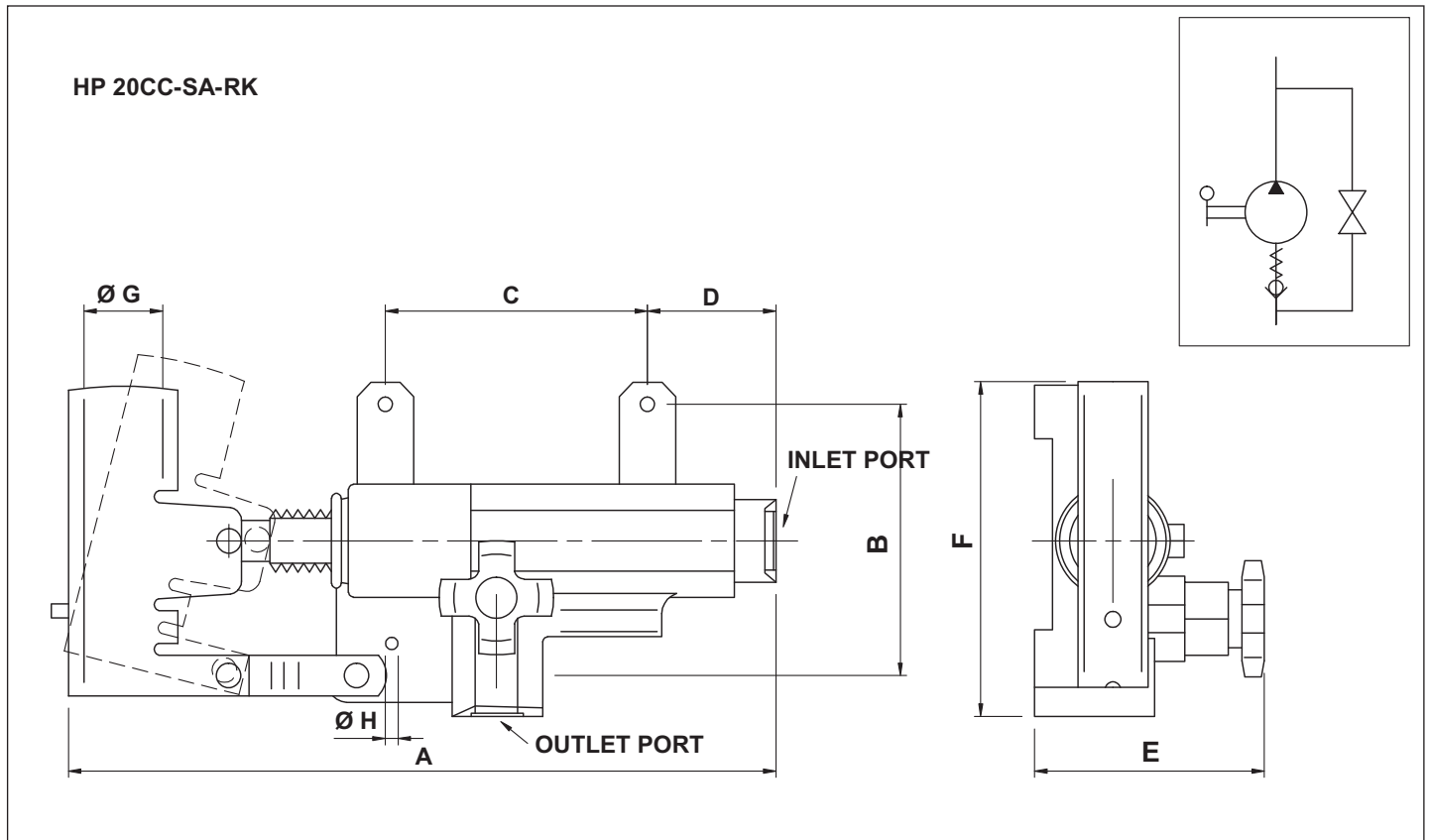
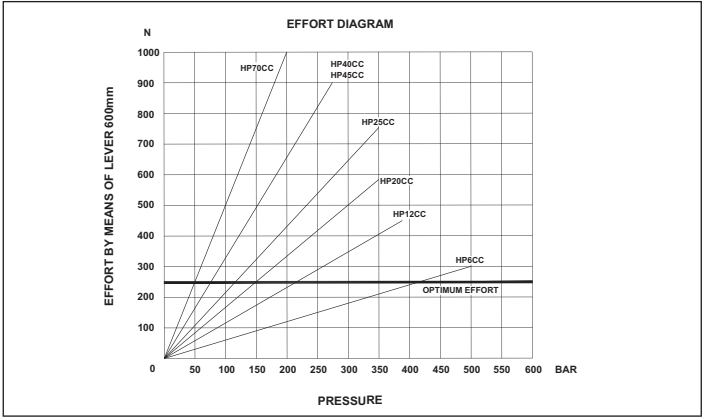
HAND PUMP      CUBIC CAPACITY      SINGLE ACTING      WITHOUT RELEASE KNOB  
 HP                      20cc                      SA                      WRK

| PART NUMBER   | CAPACITY (CC) | BSP INLET PORT | BSP OUTLET PORT | ACTUAL DISPLACEMENT (CC) | PRESSURE (BAR) |     | A   | B  | C  | D  | E   | F   | ØG | ØH |
|---------------|---------------|----------------|-----------------|--------------------------|----------------|-----|-----|----|----|----|-----|-----|----|----|
|               |               |                |                 |                          | OPTIMAL        | MAX |     |    |    |    |     |     |    |    |
| HP20CC-SA-RK  | 20            | 1/2"           | 3/8"            | 20,090                   | 150            | 350 | 257 | 76 | 75 | 37 | 84  | 102 | 27 | 9  |
| HP20CC-SA-WRK | 20            | 1/2"           | 3/8"            | 20,090                   | 150            | 350 | 257 | 76 | 75 | 37 | 48  | 102 | 27 | 9  |
| HP40CC-SA-RK  | 40            | 1/2"           | 1/2"            | 40,180                   | 80             | 280 | 275 | 60 | 87 | 39 | 101 | 116 | 27 | 9  |
| HP70CC-SA-RK  | 70            | 1/2"           | 1/2"            | 70,233                   | 50             | 200 | 298 | 80 | 95 | 35 | 106 | 131 | 27 | 11 |

| PART NUMBER | DESCRIPTION        | LENGTH     |
|-------------|--------------------|------------|
| HP HANDLE   | REPLACEMENT HANDLE | 27 Ø x 600 |

HAND PUMPS ARE SUPPLIED WITH HANDLES

# STAND ALONE SINGLE ACTING HAND PUMPS



HAND PUMP      CUBIC CAPACITY      SINGLE ACTING      RELEASE KNOB  
 HP                      20cc                      SA                      RK

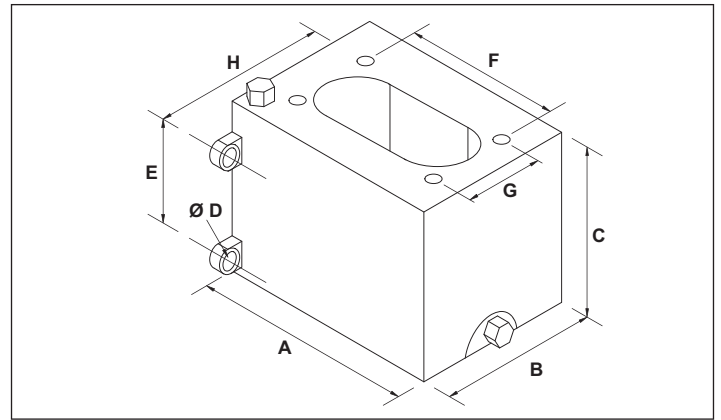
| PART NUMBER   | CAPACITY (CC) | BSP INLET PORT | BSP OUTLET PORT | ACTUAL DISPLACEMENT (CC) | PRESSURE (BAR) |     | A   | B  | C  | D  | E   | F   | ØG | ØH |
|---------------|---------------|----------------|-----------------|--------------------------|----------------|-----|-----|----|----|----|-----|-----|----|----|
|               |               |                |                 |                          | OPTIMAL        | MAX |     |    |    |    |     |     |    |    |
| HP20CC-SA-RK  | 20            | 1/2"           | 3/8"            | 20,090                   | 150            | 350 | 257 | 76 | 75 | 37 | 84  | 102 | 27 | 9  |
| HP20CC-SA-WRK | 20            | 1/2"           | 3/8"            | 20,090                   | 150            | 350 | 257 | 76 | 75 | 37 | 48  | 102 | 27 | 9  |
| HP40CC-SA-RK  | 40            | 1/2"           | 1/2"            | 40,180                   | 80             | 280 | 275 | 60 | 87 | 39 | 101 | 116 | 27 | 9  |
| HP70CC-SA-RK  | 70            | 1/2"           | 1/2"            | 70,233                   | 50             | 200 | 298 | 80 | 95 | 35 | 106 | 131 | 27 | 11 |

| PART NUMBER | DESCRIPTION        | LENGTH     |
|-------------|--------------------|------------|
| HP HANDLE   | REPLACEMENT HANDLE | 27 Ø x 600 |

HAND PUMPS ARE SUPPLIED WITH HANDLES



# HYDRAULIC TANKS FOR TANK MOUNTED HAND PUMPS

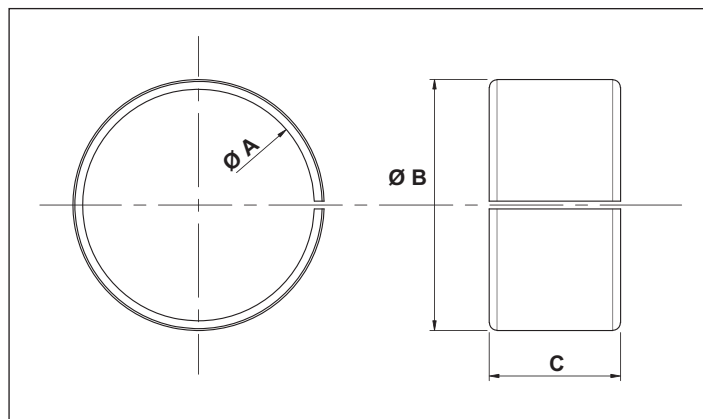


|                |            |               |              |
|----------------|------------|---------------|--------------|
| HANDPUMP<br>HP | TANK<br>TK | CAPACITY<br>1 | LITRE<br>LTR |
|----------------|------------|---------------|--------------|

| PART NUMBER | CAPACITY LTR | A   | B   | C   | Ø D | E  | F  | G  | H   |
|-------------|--------------|-----|-----|-----|-----|----|----|----|-----|
| HPTK-1LTR   | 1            | 150 | 100 | 120 | 9   | 90 | 95 | 50 | 120 |
| HPTK-2LTR   | 2            | 150 | 100 | 180 | 9   | 90 | 95 | 50 | 120 |
| HPTK-3LTR   | 3            | 150 | 100 | 247 | 9   | 90 | 95 | 50 | 120 |
| HPTK-5LTR   | 5            | 175 | 175 | 200 | 9   | 90 | 95 | 50 | 195 |
| HPTK-7LTR   | 7            | 175 | 175 | 270 | 9   | 90 | 95 | 50 | 195 |
| HPTK-10LTR  | 10           | 175 | 175 | 375 | 9   | 90 | 95 | 50 | 195 |

MATERIAL : STEEL OR EQUIVALENT  
SUITABLE FOR ALL OUR TANK MOUNTED HAND PUMPS

## DU STYLE BUSHES METRIC

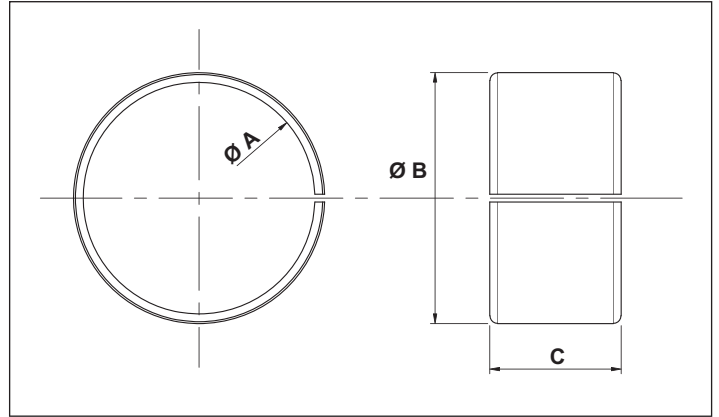


|                  |                          |                             |               |                 |
|------------------|--------------------------|-----------------------------|---------------|-----------------|
| METAL BUSH<br>MB | INSIDE DIAMETER Ø A<br>4 | OUTSIDE DIAMETER Ø B<br>5.5 | LENGTH C<br>4 | PTFE LINED<br>U |
|------------------|--------------------------|-----------------------------|---------------|-----------------|

| PART NUMBER  | Ø A | Ø B | C  |
|--------------|-----|-----|----|
| MB4-5.5-4-U  | 4   | 5.5 | 4  |
| MB4-5.5-6-U  | 4   | 5.5 | 6  |
| MB4-5.5-10-U | 4   | 5.5 | 10 |
| MB5-7-5-U    | 5   | 7   | 5  |
| MB5-7-6-U    | 5   | 7   | 6  |
| MB5-7-8-U    | 5   | 7   | 8  |
| MB5-7-10-U   | 5   | 7   | 10 |
| MB6-8-6-U    | 6   | 8   | 6  |
| MB6-8-10-U   | 6   | 8   | 10 |
| MB8-10-8-U   | 8   | 10  | 8  |
| MB8-10-12-U  | 8   | 10  | 12 |
| MB10-12-8-U  | 10  | 12  | 8  |
| MB10-12-10-U | 10  | 12  | 10 |
| MB10-12-12-U | 10  | 12  | 12 |
| MB12-14-10-U | 12  | 14  | 10 |
| MB12-14-20-U | 12  | 14  | 20 |
| MB14-16-12-U | 14  | 16  | 12 |
| MB14-16-15-U | 14  | 16  | 15 |
| MB16-18-15-U | 16  | 18  | 15 |
| MB16-18-20-U | 16  | 18  | 20 |
| MB16-18-25-U | 16  | 18  | 25 |
| MB18-20-20-U | 18  | 20  | 20 |
| MB20-23-15-U | 20  | 23  | 15 |
| MB20-23-20-U | 20  | 23  | 20 |
| MB20-23-25-U | 20  | 23  | 25 |
| MB20-23-30-U | 20  | 23  | 30 |
| MB20-23-40-U | 20  | 23  | 40 |
| MB22-25-20-U | 22  | 25  | 20 |
| MB25-28-15-U | 25  | 28  | 15 |
| MB25-28-20-U | 25  | 28  | 20 |
| MB25-28-25-U | 25  | 28  | 25 |
| MB25-28-30-U | 25  | 28  | 30 |
| MB25-28-35-U | 25  | 28  | 35 |
| MB25-28-40-U | 25  | 28  | 40 |
| MB28-32-20-U | 28  | 32  | 20 |
| MB28-32-25-U | 28  | 32  | 25 |
| MB30-34-20-U | 30  | 34  | 20 |
| MB30-34-25-U | 30  | 34  | 25 |
| MB30-34-30-U | 30  | 34  | 30 |
| MB30-34-35-U | 30  | 34  | 35 |
| MB30-34-40-U | 30  | 34  | 40 |
| MB32-36-30-U | 32  | 36  | 30 |
| MB32-36-40-U | 32  | 36  | 40 |

THESE BUSHES HAVE A STEEL OUTER AND ARE LINED WITH A PTFE COATING ON THE INSIDE

## DU STYLE BUSHES METRIC

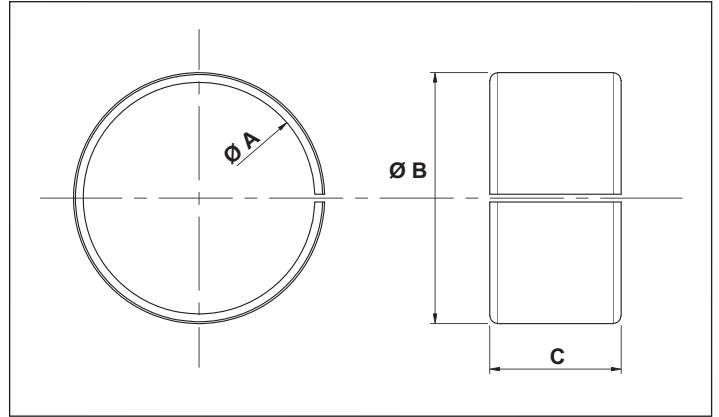


|                  |                           |                            |                |                 |
|------------------|---------------------------|----------------------------|----------------|-----------------|
| METAL BUSH<br>MB | INSIDE DIAMETER Ø A<br>35 | OUTSIDE DIAMETER Ø B<br>39 | LENGTH C<br>12 | PTFE LINED<br>U |
|------------------|---------------------------|----------------------------|----------------|-----------------|

| PART NUMBER  | Ø A | Ø B | C  |
|--------------|-----|-----|----|
| MB35-39-12-U | 35  | 39  | 12 |
| MB35-39-25-U | 35  | 39  | 25 |
| MB35-39-30-U | 35  | 39  | 30 |
| MB35-39-40-U | 35  | 39  | 40 |
| MB35-39-50-U | 35  | 39  | 50 |
| MB38-42-32-U | 38  | 42  | 32 |
| MB40-44-12-U | 40  | 44  | 12 |
| MB40-44-20-U | 40  | 44  | 20 |
| MB40-44-25-U | 40  | 44  | 25 |
| MB40-44-30-U | 40  | 44  | 30 |
| MB40-44-40-U | 40  | 44  | 40 |
| MB40-44-50-U | 40  | 44  | 50 |
| MB45-50-12-U | 45  | 50  | 12 |
| MB45-50-20-U | 45  | 50  | 20 |
| MB45-50-25-U | 45  | 50  | 25 |
| MB45-50-30-U | 45  | 50  | 30 |
| MB45-50-40-U | 45  | 50  | 40 |
| MB45-50-50-U | 45  | 50  | 50 |
| MB50-55-12-U | 50  | 55  | 12 |
| MB50-55-20-U | 50  | 55  | 20 |
| MB50-55-25-U | 50  | 55  | 25 |
| MB50-55-30-U | 50  | 55  | 30 |
| MB50-55-35-U | 50  | 55  | 35 |
| MB50-55-40-U | 50  | 55  | 40 |
| MB50-55-50-U | 50  | 55  | 50 |
| MB50-55-60-U | 50  | 55  | 60 |
| MB55-60-12-U | 55  | 60  | 12 |
| MB55-60-25-U | 55  | 60  | 25 |
| MB55-60-30-U | 55  | 60  | 30 |
| MB55-60-35-U | 55  | 60  | 35 |
| MB55-60-40-U | 55  | 60  | 40 |
| MB55-60-50-U | 55  | 60  | 50 |
| MB55-60-60-U | 55  | 60  | 60 |
| MB60-65-15-U | 60  | 65  | 15 |
| MB60-65-30-U | 60  | 65  | 30 |
| MB60-65-35-U | 60  | 65  | 35 |
| MB60-65-40-U | 60  | 65  | 40 |
| MB60-65-50-U | 60  | 65  | 50 |
| MB60-65-60-U | 60  | 65  | 60 |
| MB60-65-70-U | 60  | 65  | 70 |

THESE BUSHES HAVE A STEEL OUTER AND ARE LINED WITH A PTFE COATING ON THE INSIDE

## DU STYLE BUSHES METRIC

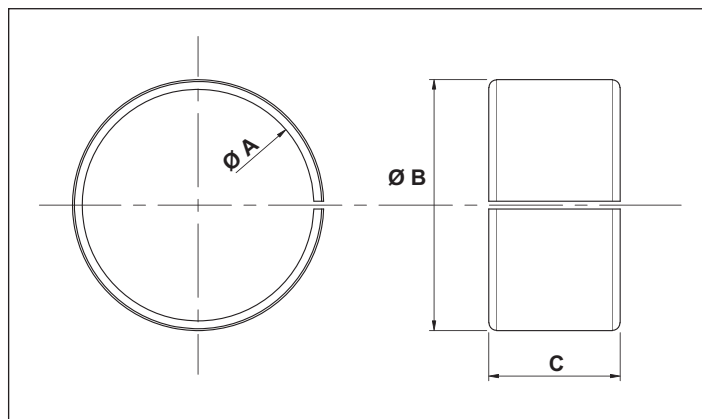


|                  |                           |                            |                |                 |
|------------------|---------------------------|----------------------------|----------------|-----------------|
| METAL BUSH<br>MB | INSIDE DIAMETER Ø A<br>65 | OUTSIDE DIAMETER Ø B<br>70 | LENGTH C<br>15 | PTFE LINED<br>U |
|------------------|---------------------------|----------------------------|----------------|-----------------|

| PART NUMBER    | Ø A | Ø B | C   |
|----------------|-----|-----|-----|
| MB65-70-15-U   | 65  | 70  | 15  |
| MB65-70-30-U   | 65  | 70  | 30  |
| MB65-70-35-U   | 65  | 70  | 35  |
| MB65-70-40-U   | 65  | 70  | 40  |
| MB65-70-50-U   | 65  | 70  | 50  |
| MB65-70-60-U   | 65  | 70  | 60  |
| MB70-75-15-U   | 70  | 75  | 15  |
| MB70-75-20-U   | 70  | 75  | 20  |
| MB70-75-30-U   | 70  | 75  | 30  |
| MB70-75-35-U   | 70  | 75  | 35  |
| MB70-75-40-U   | 70  | 75  | 40  |
| MB70-75-50-U   | 70  | 75  | 50  |
| MB70-75-60-U   | 70  | 75  | 60  |
| MB75-80-15-U   | 75  | 80  | 15  |
| MB75-80-30-U   | 75  | 80  | 30  |
| MB75-80-35-U   | 75  | 80  | 35  |
| MB75-80-40-U   | 75  | 80  | 40  |
| MB75-80-50-U   | 75  | 80  | 50  |
| MB75-80-60-U   | 75  | 80  | 60  |
| MB80-85-15-U   | 80  | 85  | 15  |
| MB80-85-30-U   | 80  | 85  | 30  |
| MB80-85-40-U   | 80  | 85  | 40  |
| MB80-85-50-U   | 80  | 85  | 50  |
| MB80-85-60-U   | 80  | 85  | 60  |
| MB80-85-80-U   | 80  | 85  | 80  |
| MB85-90-30-U   | 85  | 90  | 30  |
| MB85-90-40-U   | 85  | 90  | 40  |
| MB85-90-50-U   | 85  | 90  | 50  |
| MB85-90-60-U   | 85  | 90  | 60  |
| MB85-90-70-U   | 85  | 90  | 70  |
| MB85-90-100-U  | 85  | 90  | 100 |
| MB90-95-20-U   | 90  | 95  | 20  |
| MB90-95-30-U   | 90  | 95  | 30  |
| MB90-95-35-U   | 90  | 95  | 35  |
| MB90-95-40-U   | 90  | 95  | 40  |
| MB90-95-45-U   | 90  | 95  | 45  |
| MB90-95-50-U   | 90  | 95  | 50  |
| MB90-95-60-U   | 90  | 95  | 60  |
| MB95-100-30-U  | 95  | 100 | 30  |
| MB95-100-35-U  | 95  | 100 | 35  |
| MB95-100-40-U  | 95  | 100 | 40  |
| MB95-100-45-U  | 95  | 100 | 45  |
| MB95-100-50-U  | 95  | 100 | 50  |
| MB95-100-60-U  | 95  | 100 | 60  |
| MB95-100-100-U | 95  | 100 | 100 |

THESE BUSHES HAVE A STEEL OUTER AND ARE LINED WITH A PTFE COATING ON THE INSIDE

## DU STYLE BUSHES METRIC

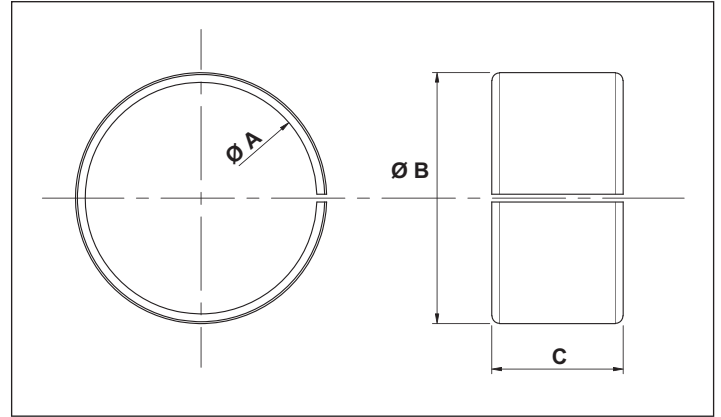


|                  |                            |                             |                |                 |
|------------------|----------------------------|-----------------------------|----------------|-----------------|
| METAL BUSH<br>MB | INSIDE DIAMETER Ø A<br>100 | OUTSIDE DIAMETER Ø B<br>105 | LENGTH C<br>20 | PTFE LINED<br>U |
|------------------|----------------------------|-----------------------------|----------------|-----------------|

| PART NUMBER     | Ø A | Ø B | C   |
|-----------------|-----|-----|-----|
| MB100-105-20-U  | 100 | 105 | 20  |
| MB100-105-30-U  | 100 | 105 | 30  |
| MB100-105-35-U  | 100 | 105 | 35  |
| MB100-105-40-U  | 100 | 105 | 40  |
| MB100-105-50-U  | 100 | 105 | 50  |
| MB100-105-60-U  | 100 | 105 | 60  |
| MB105-110-35-U  | 105 | 110 | 35  |
| MB105-110-40-U  | 105 | 110 | 40  |
| MB105-110-50-U  | 105 | 110 | 50  |
| MB105-110-60-U  | 105 | 110 | 60  |
| MB110-115-35-U  | 110 | 115 | 35  |
| MB110-115-40-U  | 110 | 115 | 40  |
| MB110-115-45-U  | 110 | 115 | 45  |
| MB110-115-50-U  | 110 | 115 | 50  |
| MB110-115-55-U  | 110 | 115 | 55  |
| MB110-115-60-U  | 110 | 115 | 60  |
| MB110-115-70-U  | 110 | 115 | 70  |
| MB115-120-35-U  | 115 | 120 | 35  |
| MB115-120-45-U  | 115 | 120 | 45  |
| MB115-120-50-U  | 115 | 120 | 50  |
| MB115-120-60-U  | 115 | 120 | 60  |
| MB115-120-70-U  | 115 | 120 | 70  |
| MB120-125-20-U  | 120 | 125 | 20  |
| MB120-125-35-U  | 120 | 125 | 35  |
| MB120-125-40-U  | 120 | 125 | 40  |
| MB120-125-50-U  | 120 | 125 | 50  |
| MB120-125-60-U  | 120 | 125 | 60  |
| MB120-125-70-U  | 120 | 125 | 70  |
| MB120-125-100-U | 120 | 125 | 100 |
| MB125-130-35-U  | 125 | 130 | 35  |
| MB125-130-50-U  | 125 | 130 | 50  |
| MB125-130-70-U  | 125 | 130 | 70  |
| MB130-135-35-U  | 130 | 135 | 35  |
| MB130-135-40-U  | 130 | 135 | 40  |
| MB130-135-50-U  | 130 | 135 | 50  |
| MB130-135-60-U  | 130 | 135 | 60  |
| MB130-135-65-U  | 130 | 135 | 65  |
| MB130-135-80-U  | 130 | 135 | 80  |
| MB135-140-60-U  | 135 | 140 | 60  |
| MB135-140-80-U  | 135 | 140 | 80  |

THESE BUSHES HAVE A STEEL OUTER AND ARE LINED WITH A PTFE COATING ON THE INSIDE

## DU STYLE BUSHES METRIC



METAL BUSH  
MB

INSIDE DIAMETER Ø A  
140

OUTSIDE DIAMETER Ø B  
145

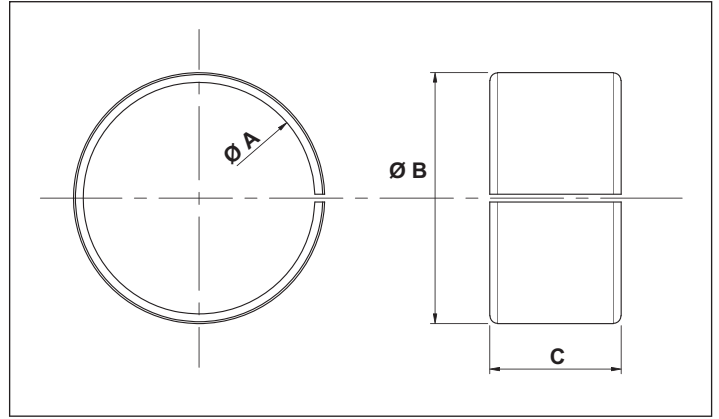
LENGTH C  
35

PTFE LINED  
U

| PART NUMBER     | Ø A | Ø B | C   |
|-----------------|-----|-----|-----|
| MB140-145-35-U  | 140 | 145 | 35  |
| MB140-145-40-U  | 140 | 145 | 40  |
| MB140-145-50-U  | 140 | 145 | 50  |
| MB140-145-55-U  | 140 | 145 | 55  |
| MB140-145-60-U  | 140 | 145 | 60  |
| MB140-145-70-U  | 140 | 145 | 70  |
| MB140-145-80-U  | 140 | 145 | 80  |
| MB150-155-40-U  | 150 | 155 | 40  |
| MB150-155-60-U  | 150 | 155 | 60  |
| MB150-155-100-U | 150 | 155 | 100 |
| MB160-165-40-U  | 160 | 165 | 40  |
| MB160-165-50-U  | 160 | 165 | 50  |
| MB160-165-65-U  | 160 | 165 | 65  |
| MB160-165-80-U  | 160 | 165 | 80  |
| MB160-165-95-U  | 160 | 165 | 95  |
| MB160-165-96-U  | 160 | 165 | 96  |
| MB160-165-100-U | 160 | 165 | 100 |
| MB180-185-50-U  | 180 | 185 | 50  |
| MB180-185-80-U  | 180 | 185 | 80  |
| MB180-185-90-U  | 180 | 185 | 90  |
| MB180-185-100-U | 180 | 185 | 100 |

THESE BUSHES HAVE A STEEL OUTER AND ARE LINED WITH A PTFE COATING ON THE INSIDE

## DU STYLE BUSHES IMPERIAL

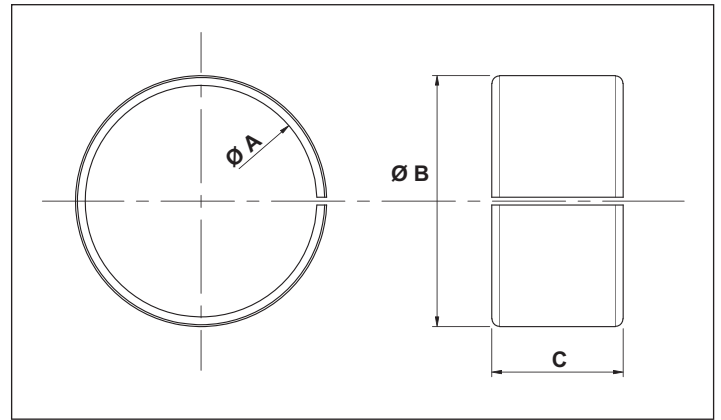


|                  |                            |                             |                 |                 |
|------------------|----------------------------|-----------------------------|-----------------|-----------------|
| METAL BUSH<br>MB | INSIDE DIAMETER Ø A<br>068 | OUTSIDE DIAMETER Ø B<br>087 | LENGTH C<br>062 | PTFE LINED<br>U |
|------------------|----------------------------|-----------------------------|-----------------|-----------------|

| PART NUMBER    | Ø A   | Ø B   | C     |
|----------------|-------|-------|-------|
| MB068087-062-U | 0.68" | 0.87" | 0.62" |
| MB075087-075-U | 0.75" | 0.87" | 0.75" |
| MB075087-100-U | 0.75" | 0.87" | 1.00" |
| MB100112-075-U | 1.00" | 1.12" | 0.75" |
| MB100112-100-U | 1.00" | 1.12" | 1.00" |
| MB100125-075-U | 1.00" | 1.25" | 0.75" |
| MB150166-100-U | 1.50" | 1.67" | 1.00" |
| MB150166-150-U | 1.50" | 1.67" | 1.50" |

THESE BUSHES HAVE A STEEL OUTER AND ARE LINED WITH A PTFE COATING ON THE INSIDE

## DX STYLE BUSHES



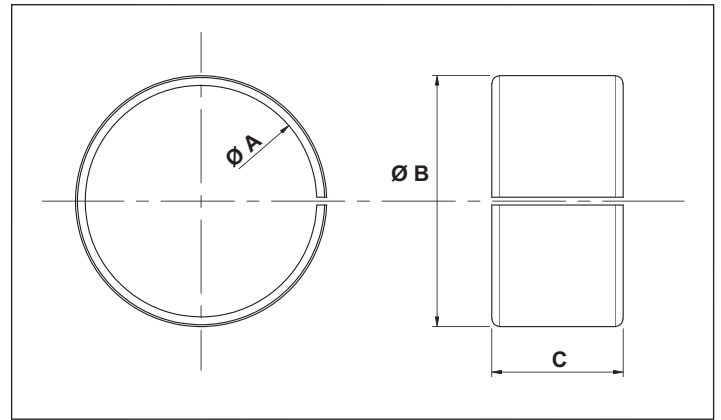
|                  |                           |                            |                |               |
|------------------|---------------------------|----------------------------|----------------|---------------|
| METAL BUSH<br>MB | INSIDE DIAMETER Ø A<br>10 | OUTSIDE DIAMETER Ø B<br>12 | LENGTH C<br>10 | DX STYLE<br>X |
|------------------|---------------------------|----------------------------|----------------|---------------|

| PART NUMBER  | Ø A | Ø B | C  |
|--------------|-----|-----|----|
| MB10-12-10-X | 10  | 12  | 10 |
| MB10-12-15-X | 10  | 12  | 15 |
| MB10-12-20-X | 10  | 12  | 20 |
| MB12-14-6-X  | 12  | 14  | 6  |
| MB12-14-15-X | 12  | 14  | 15 |
| MB12-14-25-X | 12  | 14  | 25 |
| MB14-16-10-X | 14  | 16  | 10 |
| MB14-16-20-X | 14  | 16  | 20 |
| MB15-17-10-X | 15  | 17  | 10 |
| MB15-17-25-X | 15  | 17  | 25 |
| MB16-18-15-X | 16  | 18  | 15 |
| MB16-18-20-X | 16  | 18  | 20 |
| MB16-18-25-X | 16  | 18  | 25 |
| MB18-20-20-X | 18  | 20  | 20 |
| MB20-23-10-X | 20  | 23  | 10 |
| MB20-23-15-X | 20  | 23  | 15 |
| MB20-23-25-X | 20  | 23  | 25 |
| MB20-23-30-X | 20  | 23  | 30 |
| MB22-25-15-X | 22  | 25  | 15 |
| MB22-25-25-X | 22  | 25  | 25 |
| MB22-25-30-X | 22  | 25  | 30 |
| MB24-27-15-X | 24  | 27  | 15 |
| MB24-27-20-X | 24  | 27  | 20 |
| MB24-27-30-X | 24  | 27  | 30 |
| MB25-28-10-X | 25  | 28  | 10 |
| MB25-28-15-X | 25  | 28  | 15 |
| MB25-28-20-X | 25  | 28  | 20 |
| MB25-28-25-X | 25  | 28  | 25 |
| MB25-28-30-X | 25  | 28  | 30 |
| MB25-28-40-X | 25  | 28  | 40 |
| MB25-28-50-X | 25  | 28  | 50 |
| MB28-32-20-X | 28  | 32  | 20 |
| MB30-34-15-X | 30  | 34  | 15 |
| MB30-34-20-X | 30  | 34  | 20 |
| MB30-34-25-X | 30  | 34  | 25 |
| MB30-34-30-X | 30  | 34  | 30 |
| MB30-34-35-X | 30  | 34  | 35 |
| MB30-34-40-X | 30  | 34  | 40 |
| MB30-34-50-X | 30  | 34  | 50 |

THESE BUSHES HAVE A STEEL OUTER WHICH IS COPPER COATED AND ARE LINED WITH A POLYMER COATING ON THE INSIDE



## DX STYLE BUSHES

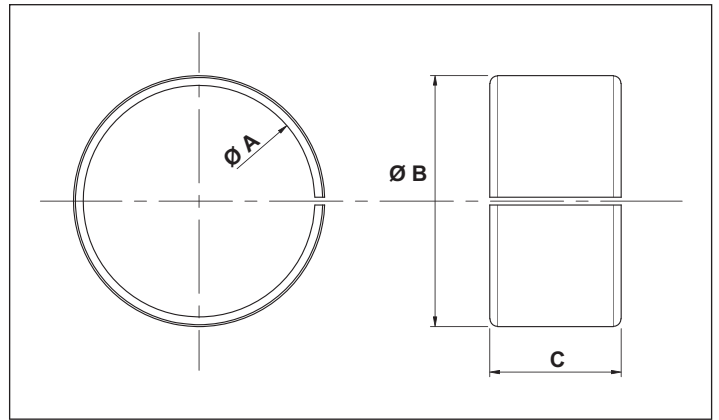


|                  |                           |                            |                |               |
|------------------|---------------------------|----------------------------|----------------|---------------|
| METAL BUSH<br>MB | INSIDE DIAMETER Ø A<br>32 | OUTSIDE DIAMETER Ø B<br>36 | LENGTH C<br>20 | DX STYLE<br>X |
|------------------|---------------------------|----------------------------|----------------|---------------|

| PART NUMBER  | Ø A | Ø B | C  |
|--------------|-----|-----|----|
| MB32-36-20-X | 32  | 36  | 20 |
| MB32-36-30-X | 32  | 36  | 30 |
| MB32-36-40-X | 32  | 36  | 40 |
| MB35-39-12-X | 35  | 39  | 12 |
| MB35-39-20-X | 35  | 39  | 20 |
| MB35-39-25-X | 35  | 39  | 25 |
| MB35-39-30-X | 35  | 39  | 30 |
| MB35-39-35-X | 35  | 39  | 35 |
| MB35-39-40-X | 35  | 39  | 40 |
| MB35-39-50-X | 35  | 39  | 50 |
| MB40-44-20-X | 40  | 44  | 20 |
| MB40-44-30-X | 40  | 44  | 30 |
| MB40-44-40-X | 40  | 44  | 40 |
| MB40-44-50-X | 40  | 44  | 50 |
| MB45-50-25-X | 45  | 50  | 25 |
| MB45-50-30-X | 45  | 50  | 30 |
| MB45-50-40-X | 45  | 50  | 40 |
| MB45-50-45-X | 45  | 50  | 45 |
| MB45-50-50-X | 45  | 50  | 50 |
| MB50-55-20-X | 50  | 55  | 20 |
| MB50-55-25-X | 50  | 55  | 25 |
| MB50-55-30-X | 50  | 55  | 30 |
| MB50-55-40-X | 50  | 55  | 40 |
| MB50-55-50-X | 50  | 55  | 50 |
| MB50-55-60-X | 50  | 55  | 60 |
| MB55-60-30-X | 55  | 60  | 30 |
| MB55-60-40-X | 55  | 60  | 40 |
| MB55-60-55-X | 55  | 60  | 55 |
| MB55-60-60-X | 55  | 60  | 60 |
| MB60-65-30-X | 60  | 65  | 30 |
| MB60-65-35-X | 60  | 65  | 35 |
| MB60-65-40-X | 60  | 65  | 40 |
| MB60-65-50-X | 60  | 65  | 50 |
| MB60-65-60-X | 60  | 65  | 60 |

THESE BUSHES HAVE A STEEL OUTER WHICH IS COPPER COATED AND ARE LINED WITH A POLYMER COATING ON THE INSIDE

## DU BUSHES COPPER COATED

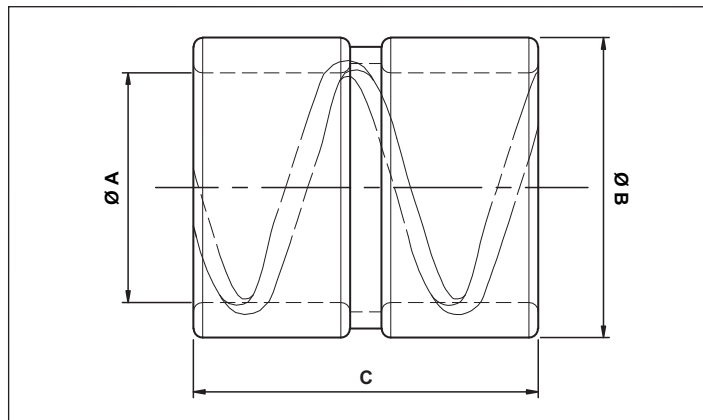


|                  |                       |                        |              |                    |
|------------------|-----------------------|------------------------|--------------|--------------------|
| METAL BUSH<br>MB | INSIDE DIAMETER<br>45 | OUTSIDE DIAMETER<br>50 | LENGTH<br>30 | COPPER COATED<br>C |
|------------------|-----------------------|------------------------|--------------|--------------------|

| PART NUMBER    | Ø A | Ø B | C  |
|----------------|-----|-----|----|
| MB45-50-30-C   | 45  | 50  | 30 |
| MB50-55-30-C   | 50  | 55  | 30 |
| MB55-60-30-C   | 55  | 60  | 30 |
| MB60-65-30-C   | 60  | 65  | 30 |
| MB60-65-35-C   | 60  | 65  | 35 |
| MB70-75-30-C   | 70  | 75  | 30 |
| MB70-75-35-C   | 70  | 75  | 35 |
| MB75-80-30-C   | 75  | 80  | 30 |
| MB80-85-30-C   | 80  | 85  | 30 |
| MB80-85-40-C   | 80  | 85  | 40 |
| MB85-90-40-C   | 85  | 90  | 40 |
| MB90-95-40-C   | 90  | 95  | 40 |
| MB95-100-40-C  | 95  | 100 | 40 |
| MB95-100-50-C  | 95  | 100 | 50 |
| MB100-105-35-C | 100 | 105 | 35 |
| MB100-105-50-C | 100 | 105 | 50 |
| MB105-110-35-C | 105 | 110 | 35 |
| MB110-115-30-C | 110 | 115 | 30 |
| MB110-115-35-C | 110 | 115 | 35 |
| MB110-115-50-C | 110 | 115 | 50 |
| MB110-115-55-C | 110 | 115 | 55 |
| MB120-125-45-C | 120 | 125 | 45 |
| MB120-125-60-C | 120 | 125 | 60 |
| MB130-135-50-C | 130 | 135 | 50 |
| MB140-145-70-C | 140 | 145 | 70 |
| MB160-165-80-C | 160 | 165 | 80 |

THESE BUSHES ARE COPPER COATED ON THE OUTSIDE AND HAVE A PTFE COATING ON THE INSIDE

# HARDENED STEEL BUSHES



|                  |                           |                            |                       |                            |                        |
|------------------|---------------------------|----------------------------|-----------------------|----------------------------|------------------------|
| STEEL BUSH<br>SB | INSIDE DIAMETER Ø A<br>25 | OUTSIDE DIAMETER Ø B<br>33 | LENGTH REQUIRED<br>** | CENTRAL GREASE PATH<br>CGP | GREASED FROM PIN<br>GP |
|------------------|---------------------------|----------------------------|-----------------------|----------------------------|------------------------|

| PART NUMBER    | Ø A | Ø B | C = LENGTH |    |    |    |    |    |    |    |    |    |    |    |     |     |  |  |
|----------------|-----|-----|------------|----|----|----|----|----|----|----|----|----|----|----|-----|-----|--|--|
|                |     |     | 20         | 25 | 30 | 35 | 40 | 50 | 60 | 65 | 68 | 70 | 80 | 90 | 100 | 120 |  |  |
| SB25-33-**     | 25  | 33  | 20         | 25 | 30 |    |    |    |    |    |    |    |    |    |     |     |  |  |
| SB25-35-**-CGP | 25  | 35  | 20         | 25 | 30 | 35 |    |    |    |    |    |    |    |    |     |     |  |  |
| SB25-38-**     | 25  | 38  |            | 25 | 30 | 35 |    |    |    |    |    |    |    |    |     |     |  |  |
| SB30-38-**     | 30  | 38  | 20         | 25 | 30 | 35 | 40 | 50 |    |    |    |    |    |    |     |     |  |  |
| SB30-40-**     | 30  | 40  | 20         | 25 | 30 | 35 | 40 | 50 |    |    |    |    |    |    |     |     |  |  |
| SB32-42-**     | 32  | 42  |            |    | 30 |    | 40 | 50 |    |    |    |    |    |    |     |     |  |  |
| SB35-45-**     | 35  | 45  |            | 25 | 30 | 35 | 40 | 50 | 60 |    |    |    |    |    |     |     |  |  |
| SB38-48-**     | 38  | 48  |            |    | 30 |    | 40 |    |    |    |    |    |    |    |     |     |  |  |
| SB40-50-**     | 40  | 50  |            | 25 | 30 | 35 | 40 | 50 | 60 |    |    | 70 |    |    |     |     |  |  |
| SB45-55-**     | 45  | 55  |            |    | 30 | 35 | 40 | 50 | 60 |    |    |    |    |    |     |     |  |  |
| SB45-60-**     | 45  | 60  |            |    | 30 | 35 | 40 | 50 | 60 |    |    | 70 |    |    |     |     |  |  |
| SB50-60-**     | 50  | 60  |            |    | 30 | 35 | 40 | 50 | 60 |    |    | 70 | 80 |    |     |     |  |  |
| SB50-62-**     | 50  | 62  |            |    | 30 |    | 40 | 50 | 60 |    |    | 70 |    |    |     |     |  |  |
| SB50-65-**     | 50  | 65  |            |    | 30 |    | 40 | 50 | 60 |    |    |    |    |    |     |     |  |  |
| SB55-70-**     | 55  | 70  |            |    | 30 | 35 | 40 | 50 | 60 |    |    | 70 |    |    |     |     |  |  |
| SB60-70-**     | 60  | 70  |            |    |    |    |    | 50 | 60 |    |    |    |    |    |     |     |  |  |
| SB60-70-**-GP  | 60  | 70  |            |    |    |    |    |    |    |    |    |    | 80 |    |     |     |  |  |
| SB60-75-**     | 60  | 75  |            |    | 30 | 35 | 40 | 50 | 60 | 65 |    | 70 | 80 |    | 100 |     |  |  |
| SB65-80-**     | 65  | 80  |            |    |    |    | 40 | 50 | 60 |    |    | 70 | 80 |    | 100 |     |  |  |
| SB70-85-**     | 70  | 85  |            |    | 30 | 35 | 40 | 50 | 60 |    |    | 70 | 80 | 90 | 100 |     |  |  |
| SB75-90-**     | 75  | 90  |            |    |    |    |    | 50 | 60 |    |    | 70 | 80 |    | 100 |     |  |  |
| SB75-95-**     | 75  | 95  |            |    |    |    |    |    | 60 |    |    | 70 | 80 |    | 100 |     |  |  |
| SB80-95-**     | 80  | 95  |            |    |    |    | 40 | 50 | 60 |    |    | 70 | 80 |    | 100 |     |  |  |
| SB80-100-**    | 80  | 100 |            |    |    |    | 40 | 50 | 60 |    |    | 70 | 80 |    | 100 |     |  |  |
| SB85-100-**    | 85  | 100 |            |    |    |    |    |    | 60 |    |    |    | 80 |    |     |     |  |  |
| SB90-110-**    | 90  | 110 |            |    |    |    | 40 | 50 | 60 |    | 68 |    | 80 |    | 100 |     |  |  |
| SB100-120-**   | 100 | 120 |            |    |    |    | 40 | 50 | 60 |    |    | 70 | 80 |    | 100 |     |  |  |
| SB105-120-**   | 105 | 120 |            |    |    |    |    |    |    |    |    |    | 80 |    |     | 120 |  |  |

**\*\* DENOTES LENGTH REQUIRED**

MATERIAL : STEEL - E410 (EN10305) - 16MnCr5(EN10305) OR EQUIVALENT  
 THE BUSHES ARE CASE HARDENED & TEMPERED  
 HARDNESS DEPTH : 0.8 - 1mm HARDNESS OF HRC 58 - 62.



**PART NUMBER**  
EC.....BC

**NOMINAL RANGE**  
20mm-60mm

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**



**PART NUMBER**  
OTSTA..N

**NOMINAL RANGE**  
20mm-120mm

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**



**PART NUMBER**  
OTS... AR

**NOMINAL RANGE**  
10mm-80mm  
3/4"-3"

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**



**PART NUMBER**  
OTSTA..U

**NOMINAL RANGE**  
20mm-120mm

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**



**PART NUMBER**  
OTS..PR

**NOMINAL RANGE**  
15mm-120mm  
3/4"-3"

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**



**PART NUMBER**  
OTSTA..CE

**NOMINAL RANGE**  
12mm-125mm

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**



**PART NUMBER**  
OTS...PR-CE

**NOMINAL RANGE**  
20mm-125mm

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**



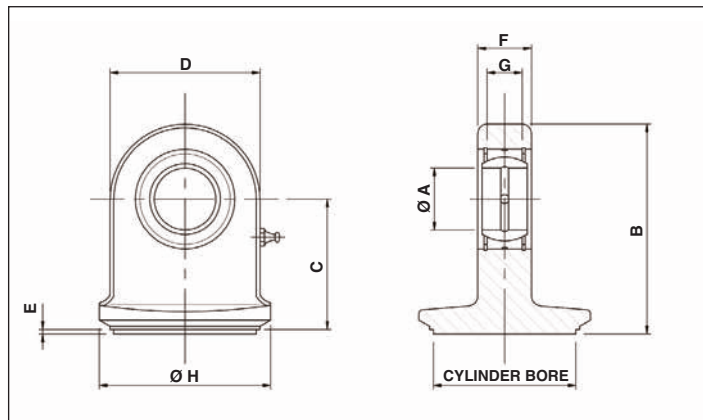
**PART NUMBER**  
OTSTA..S

**NOMINAL RANGE**  
12mm-100mm

**COUPLING SURFACES**  
STEEL /STEEL

**LUBRICATION REQUIRED**

# WELDABLE END CAP AND BALL JOINT COMPLETE

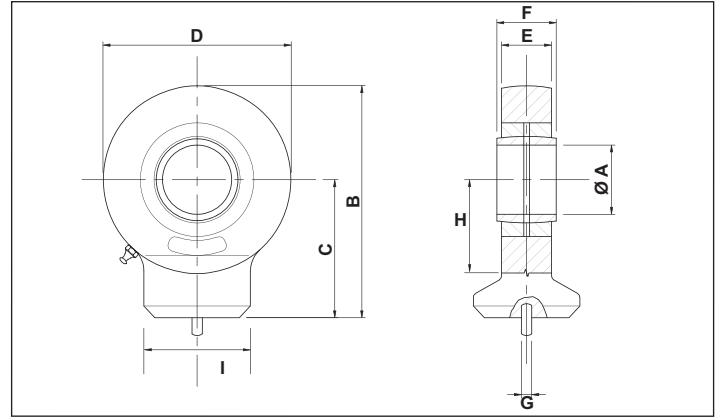


|               |                     |                           |                       |                           |
|---------------|---------------------|---------------------------|-----------------------|---------------------------|
| END CAP<br>EC | CYLINDER BORE<br>40 | BALL JOINT SIZE Ø A<br>20 | CENTRE HEIGHT C<br>46 | BALL JOINT COMPLETE<br>BC |
|---------------|---------------------|---------------------------|-----------------------|---------------------------|

| PART NUMBER  | CYLINDER BORE |     | B     | C   | D   | E | F  | G  | Ø H | BEARING FITTED | OUTSIDE DIAMETER OF BEARING | INTERNAL CIRCLIP | LOAD FACTOR (KN) |         |
|--------------|---------------|-----|-------|-----|-----|---|----|----|-----|----------------|-----------------------------|------------------|------------------|---------|
|              | Ø A           | Ø A |       |     |     |   |    |    |     |                |                             |                  | STATIC           | DYNAMIC |
| EC402046BC   | 40            | 20  | 73    | 46  | 50  | 2 | 19 | 16 | 50  | OGE020DO       | 35                          | CI35             | 67               | 30      |
| EC402553BC   | 40            | 25  | 82.5  | 53  | 55  | 2 | 23 | 20 | 50  | OGE025DO       | 42                          | CI42             | 69.5             | 48      |
| EC502046BC   | 50            | 20  | 73    | 46  | 50  | 2 | 19 | 16 | 60  | OGE020DO       | 35                          | CI35             | 67               | 30      |
| EC502553BC   | 50            | 25  | 82.5  | 53  | 55  | 2 | 23 | 20 | 60  | OGE025DO       | 42                          | CI42             | 69.5             | 48      |
| EC503059BC   | 50            | 30  | 93.5  | 59  | 65  | 2 | 28 | 22 | 60  | OGE030DO       | 47                          | CI47             | 118              | 62      |
| EC603061BC   | 60            | 30  | 95.5  | 61  | 65  | 2 | 28 | 22 | 70  | OGE030DO       | 47                          | CI47             | 118              | 62      |
| EC633061BC   | 63            | 30  | 95.5  | 61  | 65  | 2 | 28 | 22 | 73  | OGE030DO       | 47                          | CI47             | 118              | 62      |
| EC633571BC   | 63            | 35  | 114.5 | 71  | 83  | 2 | 30 | 25 | 73  | OGE035DO       | 55                          | CI55             | 196              | 80      |
| EC703571BC   | 70            | 35  | 114.5 | 71  | 83  | 2 | 30 | 25 | 80  | OGE035DO       | 55                          | CI55             | 196              | 80      |
| EC753571BC   | 75            | 35  | 114.5 | 71  | 83  | 2 | 30 | 25 | 90  | OGE035DO       | 55                          | CI55             | 196              | 80      |
| EC803571BC   | 80            | 35  | 114.5 | 71  | 83  | 2 | 30 | 25 | 95  | OGE035DO       | 55                          | CI55             | 196              | 80      |
| EC804079BC   | 80            | 40  | 131   | 79  | 100 | 2 | 35 | 28 | 90  | OGE040DO       | 62                          | CI62             | 300              | 100     |
| EC904082BC   | 90            | 40  | 134   | 82  | 100 | 2 | 35 | 28 | 105 | OGE040DO       | 62                          | CI62             | 300              | 100     |
| EC1004082BC  | 100           | 40  | 134   | 82  | 100 | 2 | 35 | 28 | 115 | OGE040DO       | 62                          | CI62             | 300              | 100     |
| EC11050101BC | 110           | 50  | 164.5 | 101 | 123 | 2 | 40 | 35 | 130 | OGE050DO       | 75                          | CI75             | 440              | 156     |
| EC12050104BC | 120           | 50  | 167.5 | 104 | 123 | 2 | 40 | 35 | 140 | OGE050DO       | 75                          | CI75             | 440              | 156     |
| EC12550104BC | 125           | 50  | 167.5 | 104 | 123 | 2 | 40 | 35 | 145 | OGE050DO       | 75                          | CI75             | 440              | 156     |
| EC13060116BC | 130           | 60  | 188   | 116 | 140 | 2 | 50 | 44 | 150 | OGE060DO       | 90                          | CI90             | 570              | 245     |
| EC14060116BC | 140           | 60  | 188   | 116 | 140 | 2 | 50 | 44 | 160 | OGE060DO       | 90                          | CI90             | 570              | 245     |
| EC15060118BC | 150           | 60  | 190   | 118 | 140 | 2 | 50 | 44 | 170 | OGE060DO       | 90                          | CI90             | 570              | 245     |

MATERIAL : STEEL- ST.52.3 OR EQUIVALENT

## BALL JOINT ENDS OTS \*\* AR

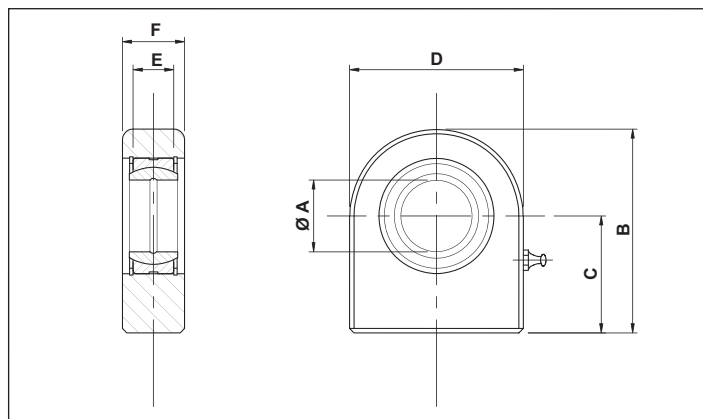


| PART NUMBER | Ø A | B    | C   | D   | E   | F  | G | H    | I    | BEARING FITTED | OUTSIDE DIAMETER OF BEARING | LOAD FACTOR (KN) |         |
|-------------|-----|------|-----|-----|-----|----|---|------|------|----------------|-----------------------------|------------------|---------|
|             |     |      |     |     |     |    |   |      |      |                |                             | STATIC           | DYNAMIC |
| OTS10AR*    | 10  | 38.5 | 24  | 29  | 6.5 | 9  | 3 | 14   | 15   | OGE010DO       | 19                          | 15.6             | 8.15    |
| OTS12AR     | 12  | 44   | 27  | 36  | 8   | 10 | 3 | 18   | 17.5 | OGE012DO       | 22                          | 21.6             | 10.8    |
| OTS15AR     | 15  | 51   | 31  | 40  | 10  | 12 | 4 | 20   | 21   | OGE015DO       | 26                          | 32               | 17      |
| OTS16AR     | 16  | 58   | 35  | 47  | 11  | 14 | 4 | 23   | 24   | OGE016DO       | 30                          | 40               | 21.2    |
| OTS17AR     | 17  | 58   | 35  | 47  | 11  | 14 | 4 | 23   | 24   | OGE017DO       | 30                          | 40               | 21.2    |
| OTS20AR     | 20  | 64.5 | 38  | 53  | 13  | 16 | 4 | 27.5 | 27.5 | OGE020DO       | 35                          | 54               | 30      |
| OTS25AR     | 25  | 77   | 45  | 64  | 17  | 20 | 4 | 33   | 33.5 | OGE025DO       | 42                          | 72               | 48      |
| OTS30AR     | 30  | 87.5 | 51  | 73  | 19  | 22 | 4 | 37.5 | 40   | OGE030DO       | 47                          | 95               | 62      |
| OTS35AR     | 35  | 102  | 61  | 82  | 21  | 25 | 4 | 43   | 47   | OGE035DO       | 55                          | 125              | 80      |
| OTS40AR     | 40  | 115  | 69  | 92  | 23  | 28 | 4 | 48   | 52   | OGE040DO       | 62                          | 156              | 100     |
| OTS45AR     | 45  | 128  | 77  | 102 | 27  | 32 | 6 | 52   | 58   | OGE045DO       | 68                          | 208              | 127     |
| OTS50AR     | 50  | 144  | 88  | 112 | 30  | 35 | 6 | 59   | 62   | OGE050DO       | 75                          | 250              | 156     |
| OTS60AR     | 60  | 168  | 100 | 137 | 38  | 44 | 6 | 72.5 | 70   | OGE060DO       | 90                          | 390              | 245     |
| OTS70AR     | 70  | 195  | 115 | 161 | 42  | 49 | 6 | 86   | 80   | OGE070DO       | 105                         | 510              | 315     |
| OTS80AR     | 80  | 231  | 141 | 180 | 47  | 55 | 6 | 98   | 95   | OGE080DO       | 120                         | 620              | 400     |

\* WITHOUT GREASE NIPPLE

ISO 12240-1-SERIES E TYPE S : COUPLING : STEEL / STEEL : BALL JOINT MADE IN FORGED STEEL. 52.3 OR EQUIVALENT

## BALL JOINT ENDS OTS \*\* PR

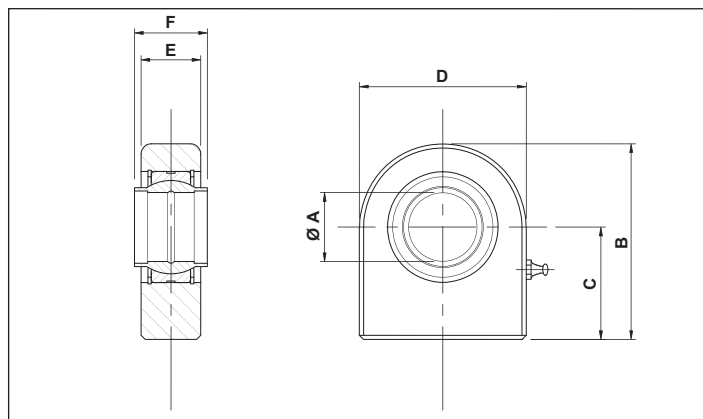


| PART NUMBER | Ø A | B     | C   | D   | E  | F    | BEARING FITTED | OUTSIDE DIAMETER OF BEARING | INTERNAL CLIP | LOAD FACTOR (KN) |         |
|-------------|-----|-------|-----|-----|----|------|----------------|-----------------------------|---------------|------------------|---------|
|             |     |       |     |     |    |      |                |                             |               | STATIC           | DYNAMIC |
| OTS15PR *   | 15  | 53.5  | 31  | 45  | 12 | 15   | OGE015DO       | 26                          | CI26          | 53               | 17      |
| OTS16PR *   | 16  | 59    | 35  | 48  | 14 | 17   | OGE016DO       | 30                          | CI30          | 59               | 21.2    |
| OTS17PR *   | 17  | 59    | 35  | 48  | 14 | 17.5 | OGE017DO       | 30                          | CI30          | 65               | 17      |
| OTS20PR     | 20  | 63    | 38  | 50  | 16 | 19   | OGE020DO       | 35                          | CI35          | 67               | 30      |
| OTS25PR     | 25  | 72.05 | 45  | 55  | 20 | 23   | OGE025DO       | 42                          | CI42          | 69.5             | 48      |
| OTS30PR     | 30  | 83.5  | 51  | 65  | 22 | 28   | OGE030DO       | 47                          | CI47          | 118              | 62      |
| OTS35PR     | 35  | 102.5 | 61  | 83  | 25 | 30   | OGE035DO       | 55                          | CI55          | 196              | 80      |
| OTS40PR     | 40  | 119   | 69  | 100 | 28 | 35   | OGE040DO       | 62                          | CI62          | 300              | 100     |
| OTS45PR     | 45  | 132   | 77  | 110 | 32 | 40   | OGE045DO       | 68                          | CI68          | 380              | 127     |
| OTS50PR     | 50  | 149.5 | 88  | 123 | 35 | 40   | OGE050DO       | 75                          | CI75          | 440              | 156     |
| OTS60PR     | 60  | 170   | 100 | 140 | 44 | 50   | OGE060DO       | 90                          | CI90          | 570              | 245     |
| OTS70PR     | 70  | 197   | 115 | 164 | 49 | 55   | OGE070DO       | 105                         | CI105         | 695              | 315     |
| OTS80PR     | 80  | 231   | 141 | 180 | 55 | 60   | OGE080DO       | 120                         | CI120         | 780              | 400     |
| OTS90PR     | 90  | 263   | 150 | 226 | 60 | 65   | OGE090DO       | 130                         | CI130         | 1340             | 490     |
| OTS100PR    | 100 | 295   | 170 | 250 | 70 | 70   | OGE100DO       | 150                         | CI150         | 1500             | 610     |
| OTS110PR    | 110 | 332.5 | 185 | 295 | 70 | 80   | OGE110DO       | 160                         | CI160         | 2160             | 655     |
| OTS120PR    | 120 | 390   | 210 | 360 | 85 | 90   | OGE120DO       | 180                         | CI180         | 3250             | 950     |

\* WITHOUT GREASE NIPPLE

ISO 12240-1-SERIES E COUPLING : STEEL/STEEL - BALLJOINT MADE IN FORGED STEEL ST.52.3 OR EQUIVALENT

## BALL JOINT ENDS OTS \*\* PR-CE

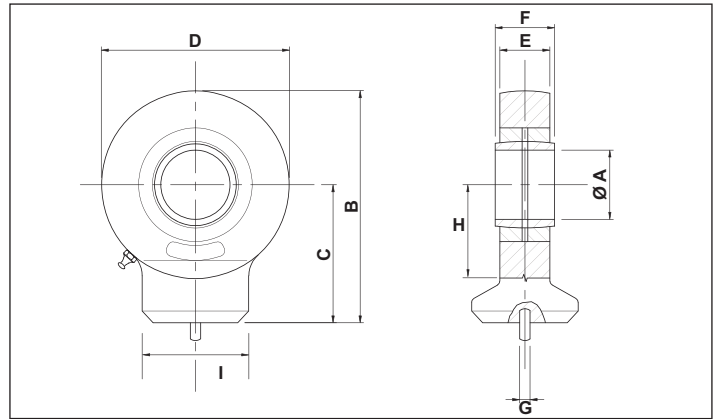


| PART NUMBER | Ø A | B     | C   | D   | E  | F   | OUTSIDE        |                     |                  |                                 |      |
|-------------|-----|-------|-----|-----|----|-----|----------------|---------------------|------------------|---------------------------------|------|
|             |     |       |     |     |    |     | BEARING FITTED | DIAMETER OF BEARING | INTERNAL CIRCLIP | LOAD FACTOR (KN) STATIC DYNAMIC |      |
| OTS20PR-CE  | 20  | 63    | 38  | 50  | 19 | 20  | OGE020LO       | 35                  | CI35             | 74                              | 30   |
| OTS25PR-CE  | 25  | 72.5  | 45  | 55  | 23 | 25  | OGE025LO       | 42                  | CI42             | 95                              | 48   |
| OTS32PR-CE  | 32  | 103   | 65  | 70  | 27 | 32  | OGE032LO       | 52                  | CI52             | 168                             | 62.5 |
| OTS40PR-CE  | 40  | 119   | 69  | 101 | 35 | 40  | OGE040LO       | 62                  | CI62             | 268                             | 100  |
| OTS50PR-CE  | 50  | 149.5 | 88  | 123 | 40 | 50  | OGE050LO       | 75                  | CI75             | 362                             | 156  |
| OTS63PR-CE  | 63  | 178   | 107 | 132 | 50 | 63  | OGE063LO       | 95                  | CI95             | 570                             | 248  |
| OTS70PR-CE  | 70  | 197   | 115 | 164 | 55 | 70  | OGE070LO       | 105                 | CI105            | 800                             | 315  |
| OTS80PR-CE  | 80  | 231   | 141 | 180 | 60 | 80  | OGE080LO       | 120                 | CI120            | 874                             | 400  |
| OTS90PR-CE  | 90  | 263   | 150 | 226 | 65 | 90  | OGE090LO       | 130                 | CI130            | 1045                            | 490  |
| OTS100PR-CE | 100 | 295   | 170 | 250 | 70 | 100 | OGE100LO       | 150                 | CI150            | 1330                            | 610  |
| OTS110PR-CE | 110 | 332.5 | 185 | 295 | 80 | 110 | OGE110LO       | 160                 | CI160            | 1490                            | 655  |
| OTS125PR-CE | 125 | 390   | 210 | 360 | 90 | 125 | OGE125LO       | 180                 | CI180            | 3250                            | 950  |

ISO 12240-1-SERIES W : COUPLING : STEEL/STEEL : BALL JOINT MADE IN FORGED STEEL ST.52.3 OR EQUIVALENT



## BALL JOINT ENDS OTS \*\* AR-I (IMPERIAL)

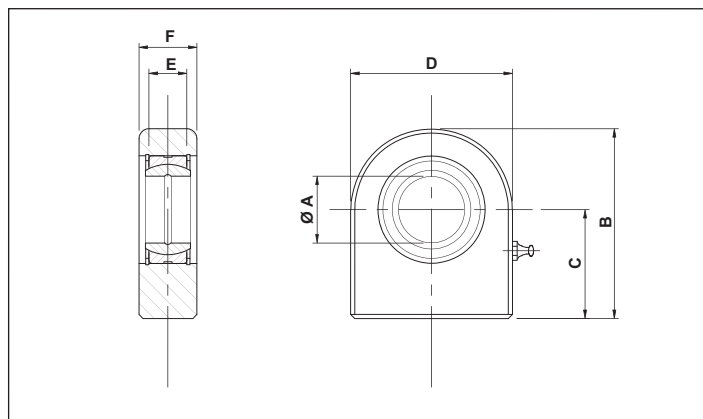


| PART NUMBER       | Ø A  | B   | C   | D   | E  | F      | G | H    | I    | BEARING FITTED | OUTSIDE DIAMETER OF BEARING | LOAD FACTOR (KN) |         |
|-------------------|------|-----|-----|-----|----|--------|---|------|------|----------------|-----------------------------|------------------|---------|
|                   |      |     |     |     |    |        |   |      |      |                |                             | STATIC           | DYNAMIC |
| OTS075AR-I (0.75) | 0.75 | 65  | 35  | 53  | 13 | 16.662 | 4 | 27.5 | 27.5 | OGE075DO-I     | 1.250                       | 54               | 30      |
| OTS087AR-I (0.87) | 0.87 | 77  | 45  | 64  | 17 | 19.431 | 4 | 33   | 33.5 | OGE087DO-I     | 1.437                       | 72               | 48      |
| OTS100AR-I (1.00) | 1.00 | 77  | 45  | 64  | 17 | 22.225 | 4 | 33   | 33.5 | OGE100DO-I     | 1.625                       | 72               | 48      |
| OTS125AR-I (1.25) | 1.25 | 102 | 61  | 82  | 21 | 27.762 | 4 | 43   | 47   | OGE125DO-I     | 2.000                       | 125              | 80      |
| OTS137AR-I (1.37) | 1.37 | 102 | 61  | 82  | 21 | 30.15  | 4 | 43   | 47   | OGE137DO-I     | 2.187                       | 125              | 80      |
| OTS150AR-I (1.50) | 1.50 | 115 | 69  | 92  | 23 | 33.325 | 4 | 48   | 52   | OGE150DO-I     | 2.438                       | 156              | 100     |
| OTS175AR-I (1.75) | 1.75 | 128 | 77  | 102 | 27 | 38.887 | 6 | 52   | 58   | OGE175DO-I     | 2.812                       | 208              | 127     |
| OTS200AR-I (2.00) | 2.00 | 168 | 100 | 137 | 38 | 44.45  | 6 | 72.5 | 70   | OGE200DO-I     | 3.187                       | 390              | 245     |
| OTS225AR-I (2.25) | 2.25 | 195 | 115 | 161 | 42 | 50.013 | 6 | 86   | 80   | OGE225DO-I     | 3.562                       | 510              | 315     |
| OTS250AR-I (2.50) | 2.50 | 195 | 115 | 161 | 42 | 55.55  | 6 | 86   | 80   | OGE250DO-I     | 3.937                       | 510              | 315     |
| OTS275AR-I (2.75) | 2.75 | 231 | 141 | 180 | 47 | 61.112 | 6 | 98   | 95   | OGE275DO-I     | 4.375                       | 620              | 400     |
| OTS300AR-I (3.00) | 3.00 | 231 | 141 | 180 | 47 | 66.675 | 6 | 98   | 95   | OGE300DO-I     | 4.750                       | 620              | 400     |

\* WITHOUT GREASE NIPPLE

ISO 12240-1-SERIES E TYPE S : COUPLING : STEEL / STEEL : BALL JOINT MADE IN FORGED STEEL. 52.3 OR EQUIVALENT

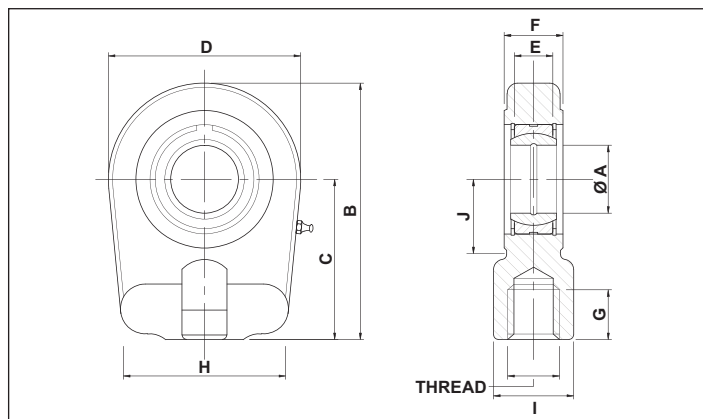
## BALL JOINT ENDS OTS \*\* PR-I (IMPERIAL)



| PART NUMBER       | Ø A  | B   | C   | D   | E      | F  | BEARING FITTED | OUTSIDE DIAMETER OF BEARING | INTERNAL CIRCLIP | LOAD FACTOR (KN) |         |
|-------------------|------|-----|-----|-----|--------|----|----------------|-----------------------------|------------------|------------------|---------|
|                   |      |     |     |     |        |    |                |                             |                  | STATIC           | DYNAMIC |
| OTS075PR-I (0.75) | 0.75 | 63  | 38  | 50  | 16.662 | 19 | OGE075DO-I     | 1.250                       | CI125 (1.25)     | 67               | 30      |
| OTS087PR-I (0.87) | 0.87 | 73  | 45  | 55  | 19.431 | 23 | OGE087DO-I     | 1.437                       | CI143 (1.43)     | 70               | 48      |
| OTS100PR-I (1.00) | 1.00 | 73  | 45  | 55  | 22.225 | 23 | OGE100DO-I     | 1.625                       | CI162 (1.62)     | 70               | 48      |
| OTS125PR-I (1.25) | 1.25 | 103 | 61  | 83  | 27.762 | 30 | OGE125DO-I     | 2.000                       | CI125 (2.00)     | 196              | 80      |
| OTS137PR-I (1.37) | 1.37 | 103 | 61  | 83  | 30.15  | 30 | OGE137DO-I     | 2.187                       | CI218 (2.18)     | 196              | 80      |
| OTS150PR-I (1.50) | 1.5  | 119 | 69  | 101 | 33.325 | 35 | OGE150DO-I     | 2.438                       | CI249 (2.43)     | 300              | 100     |
| OTS175PR-I (1.75) | 1.75 | 132 | 77  | 111 | 38.887 | 40 | OGE175DO-I     | 2.812                       | CI280 (2.81)     | 380              | 127     |
| OTS200PR-I (2.00) | 2.00 | 170 | 100 | 140 | 44.45  | 50 | OGE200DO-I     | 3.187                       | CI315 (3.15)     | 570              | 245     |
| OTS225PR-I (2.25) | 2.25 | 197 | 115 | 164 | 50.013 | 55 | OGE225DO-I     | 3.562                       | CI354 (3.54)     | 695              | 315     |
| OTS250PR-I (2.50) | 2.5  | 197 | 115 | 164 | 55.55  | 55 | OGE250DO-I     | 3.937                       | CI393 (3.93)     | 695              | 315     |
| OTS275PR-I (2.75) | 2.75 | 231 | 141 | 180 | 61.112 | 60 | OGE275DO-I     | 4.375                       | CI437 (4.37)     | 780              | 400     |
| OTS300PR-I (3.00) | 3.00 | 231 | 141 | 180 | 66.675 | 60 | OGE300DO-I     | 4.750                       | CI475 (4.75)     | 780              | 400     |

ISO 12240-1-SERIES E TYPE S : COUPLING : STEEL/STEEL : BALL JOINT MADE IN FORGED STEEL. 52.3 OR EQUIVALENT

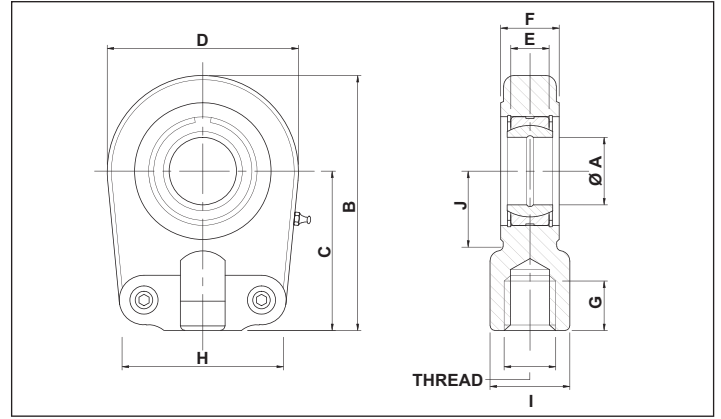
## BALL JOINT ENDS OTSTA \*\* N



| PART NUMBER | Ø A | B   | C   | D   | E  | F  | G   | H   | I   | J   | THREAD   | BEARING FITTED | OUTSIDE DIAMETER OF BEARING | INTERNAL CIRCLIP | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|----|----|-----|-----|-----|-----|----------|----------------|-----------------------------|------------------|------------------|---------|
|             |     |     |     |     |    |    |     |     |     |     |          |                |                             |                  | STATIC           | DYNAMIC |
| OTSTA20N    | 20  | 80  | 50  | 56  | 16 | 19 | 17  | 46  | 25  | 28  | 16 X 1.5 | OGE020DO       | 35                          | CI35             | 72               | 30      |
| OTSTA25N    | 25  | 80  | 50  | 56  | 20 | 23 | 17  | 46  | 25  | 28  | 16 X 1.5 | OGE025DO       | 42                          | CI42             | 72               | 48      |
| OTSTA30N    | 30  | 94  | 60  | 64  | 22 | 28 | 23  | 50  | 32  | 30  | 22 X 1.5 | OGE030DO       | 47                          | CI47             | 106              | 62      |
| OTSTA35N    | 35  | 112 | 70  | 78  | 25 | 30 | 29  | 66  | 40  | 38  | 28 X 1.5 | OGE035DO       | 55                          | CI55             | 153              | 80      |
| OTSTA40N    | 40  | 135 | 85  | 94  | 28 | 35 | 36  | 76  | 49  | 45  | 35 X 1.5 | OGE040DO       | 62                          | CI62             | 250              | 100     |
| OTSTA50N    | 50  | 168 | 105 | 116 | 35 | 40 | 46  | 90  | 61  | 55  | 45 X 1.5 | OGE050DO       | 75                          | CI75             | 365              | 156     |
| OTSTA60N    | 60  | 200 | 130 | 130 | 44 | 50 | 59  | 120 | 75  | 65  | 58 X 1.5 | OGE060DO       | 90                          | CI90             | 400              | 245     |
| OTSTA70N    | 70  | 232 | 150 | 157 | 49 | 55 | 66  | 130 | 86  | 75  | 65 X 1.5 | OGE070DO       | 105                         | CI105            | 540              | 315     |
| OTSTA80N    | 80  | 265 | 170 | 178 | 55 | 60 | 81  | 160 | 102 | 80  | 80 X 2   | OGE080DO       | 120                         | CI120            | 670              | 400     |
| OTSTA90N    | 90  | 323 | 210 | 210 | 60 | 65 | 101 | 180 | 124 | 90  | 100 X 2  | OGE090DO       | 130                         | CI130            | 980              | 490     |
| OTSTA100N   | 100 | 360 | 235 | 234 | 70 | 70 | 111 | 200 | 138 | 105 | 110 X 2  | OGE100DO       | 150                         | CI150            | 1120             | 610     |
| OTSTA110N   | 110 | 408 | 265 | 270 | 70 | 80 | 125 | 220 | 152 | 115 | 120 X 3  | OGE110DO       | 160                         | CI160            | 1700             | 655     |
| OTSTA120N   | 120 | 490 | 310 | 342 | 85 | 90 | 135 | 300 | 172 | 140 | 130 X 3  | OGE120DO       | 180                         | CI180            | 2900             | 950     |

ISO 12240-1-SERIES E : COUPLING : STEEL /STEEL : BALL JOINT MADE IN FORGED STEEL C 45 OR EQUIVALENT

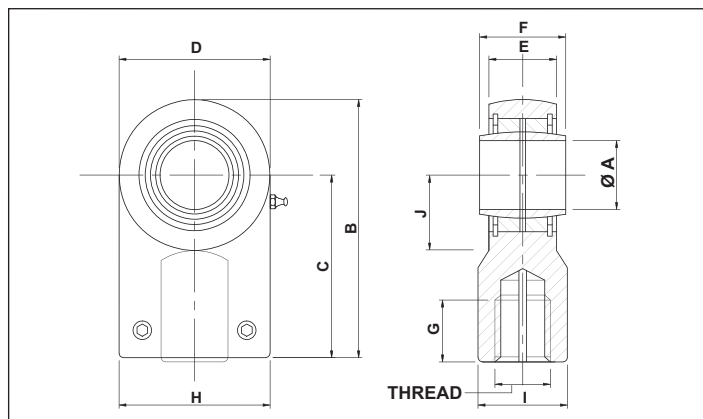
## BALL JOINT ENDS OTSTA \*\* U



| PART NUMBER | Ø A | B   | C   | D   | E  | F  | G   | H   | I   | J   | THREAD   | BEARING FITTED | OUTSIDE DIAMETER OF BEARING | INTERNAL CIRCLIP | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|----|----|-----|-----|-----|-----|----------|----------------|-----------------------------|------------------|------------------|---------|
|             |     |     |     |     |    |    |     |     |     |     |          |                |                             |                  | STATIC           | DYNAMIC |
| OTSTA20U    | 20  | 80  | 50  | 56  | 16 | 19 | 17  | 46  | 25  | 25  | 16 X 1.5 | OGE020DO       | 35                          | CI35             | 72               | 30      |
| OTSTA25U    | 25  | 80  | 50  | 56  | 20 | 23 | 17  | 46  | 25  | 28  | 16 X 1.5 | OGE025DO       | 42                          | CI42             | 72               | 48      |
| OTSTA30U    | 30  | 94  | 60  | 64  | 22 | 28 | 23  | 50  | 32  | 30  | 22 X 1.5 | OGE030DO       | 47                          | CI47             | 106              | 62      |
| OTSTA35U    | 35  | 112 | 70  | 78  | 25 | 30 | 29  | 66  | 40  | 38  | 28 X 1.5 | OGE035DO       | 55                          | CI55             | 153              | 80      |
| OTSTA40U    | 40  | 135 | 85  | 94  | 28 | 35 | 36  | 76  | 49  | 45  | 35 X 1.5 | OGE040DO       | 62                          | CI62             | 250              | 100     |
| OTSTA50U    | 50  | 168 | 105 | 116 | 35 | 40 | 46  | 90  | 61  | 55  | 45 X 1.5 | OGE050DO       | 75                          | CI75             | 365              | 156     |
| OTSTA60U    | 60  | 200 | 130 | 130 | 44 | 50 | 59  | 120 | 75  | 65  | 58 X 1.5 | OGE060DO       | 90                          | CI90             | 400              | 245     |
| OTSTA70U    | 70  | 232 | 150 | 157 | 49 | 55 | 66  | 130 | 86  | 75  | 65 X 1.5 | OGE070DO       | 105                         | CI105            | 540              | 315     |
| OTSTA80U    | 80  | 265 | 170 | 178 | 55 | 60 | 81  | 160 | 105 | 80  | 80 X 2   | OGE080DO       | 120                         | CI120            | 670              | 400     |
| OTSTA90U    | 90  | 323 | 210 | 210 | 60 | 65 | 101 | 180 | 124 | 90  | 100 X 2  | OGE090DO       | 130                         | CI130            | 980              | 490     |
| OTSTA100U   | 100 | 360 | 235 | 234 | 70 | 70 | 111 | 200 | 138 | 105 | 110 X 2  | OGE100DO       | 150                         | CI150            | 1120             | 610     |
| OTSTA110U   | 110 | 408 | 265 | 270 | 70 | 80 | 125 | 220 | 152 | 115 | 120 X 3  | OGE110DO       | 160                         | CI160            | 1700             | 655     |
| OTSTA120U   | 120 | 490 | 310 | 340 | 85 | 90 | 135 | 300 | 172 | 140 | 130 X 3  | OGE120DO       | 180                         | CI180            | 2900             | 950     |

ISO 12240-1-SERIES E : COUPLING : STEEL / STEEL : BALLJOINT MADE IN FORGED STEEL C 45 OR EQUIVALENT

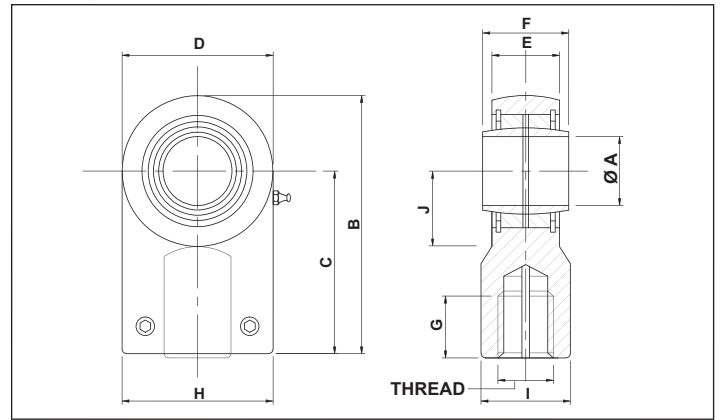
## BALL JOINT ENDS OTSTA \*\* CE



| PART NUMBER  | Ø A | B     | C   | D   | E   | F   | G   | H   | I   | J   | THREAD    | BEARING FITTED | OUTSIDE             | INTERNAL CIRCLIP | LOAD FACTOR (KN) |         |
|--------------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----------|----------------|---------------------|------------------|------------------|---------|
|              |     |       |     |     |     |     |     |     |     |     |           |                | DIAMETER OF BEARING |                  | STATIC           | DYNAMIC |
| OTSTA12CE    | 12  | 54    | 38  | 32  | 11  | 12  | 17  | 32  | 16  | 14  | 12 X 1.25 | OGE012LO       | 22                  | CI22             | 24.5             | 10.8    |
| OTSTA16CE    | 16  | 64    | 44  | 40  | 14  | 16  | 19  | 40  | 21  | 20  | 14 X 1.5  | OGE016LO       | 28                  | CI28             | 36.5             | 17.6    |
| OTSTA20CE    | 20  | 75    | 52  | 47  | 18  | 20  | 23  | 47  | 25  | 22  | 16 X 1.5  | OGE020LO       | 35                  | CI35             | 48               | 30      |
| OTSTA25CE    | 25  | 96    | 65  | 59  | 22  | 25  | 29  | 54  | 30  | 27  | 20 X 1.5  | OGE025LO       | 42                  | CI42             | 78               | 48      |
| OTSTA32CE    | 32  | 118   | 80  | 71  | 27  | 32  | 37  | 66  | 38  | 32  | 27 X 2    | OGE032LO       | 52                  | CI52             | 114              | 67      |
| OTSTA40CE    | 40  | 146   | 97  | 90  | 33  | 40  | 46  | 80  | 47  | 41  | 33 X 2    | OGE040LO       | 62                  | CI62             | 204              | 100     |
| OTSTA40CE-LH | 40  | 146   | 97  | 90  | 33  | 40  | 46  | 80  | 47  | 41  | 33 X 2 LH | OGE040LO       | 62                  | CI62             | 204              | 100     |
| OTSTA50CE    | 50  | 179   | 120 | 109 | 41  | 50  | 57  | 96  | 58  | 50  | 42 X 2    | OGE050LO       | 75                  | CI75             | 310              | 156     |
| OTSTA63CE    | 63  | 211   | 140 | 132 | 53  | 63  | 64  | 114 | 70  | 62  | 48 X 2    | OGE063LO       | 95                  | CI95             | 430              | 255     |
| OTSTA70CE    | 70  | 245   | 160 | 157 | 57  | 70  | 81  | 135 | 80  | 70  | 56 X 2    | OGE070LO       | 105                 | CI105            | 540              | 315     |
| OTSTA80CE    | 80  | 270   | 180 | 169 | 67  | 80  | 86  | 148 | 90  | 78  | 64 X 3    | OGE080LO       | 120                 | CI120            | 695              | 400     |
| OTSTA90CE    | 90  | 296   | 195 | 185 | 72  | 90  | 91  | 160 | 100 | 85  | 72 X 3    | OGE090LO       | 130                 | CI130            | 750              | 490     |
| OTSTA100CE   | 100 | 322   | 210 | 211 | 86  | 100 | 96  | 178 | 110 | 98  | 80 X 3    | OGE100LO       | 150                 | CI150            | 1060             | 610     |
| OTSTA125CE   | 125 | 405.7 | 260 | 269 | 105 | 125 | 113 | 200 | 135 | 120 | 100 X 3   | OGE125LO       | 160                 | CI160            | 1430             | 950     |

ISO 12240-1-SERIES W DIN 24388 ISO 6982 : ISO 8132 SERIES W : COUPLING : STEEL / STEEL : BALL JOINT MADE IN FORGED STEEL C 45 OR EQUIVALENT  
LH : DENOTES LEFT HAND THREAD

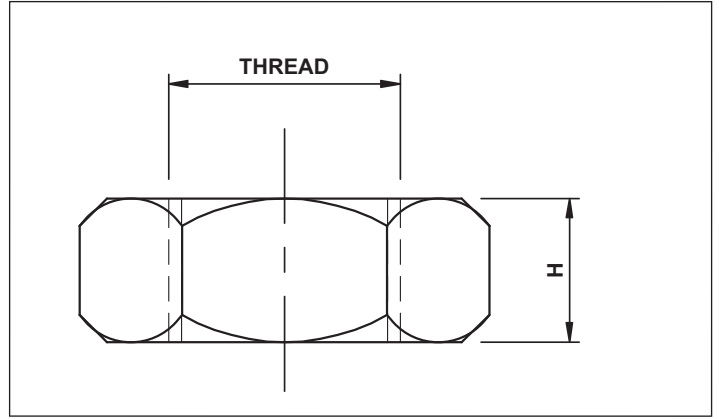
## BALL JOINT ENDS OTSTA \*\* S



| PART NUMBER | Ø A | B   | C   | D   | E  | F  | G  | H   | I   | J   | BEARING<br>THREAD | OUTSIDE<br>DIAMETER<br>OF BEARING | INTERNAL<br>CIRCLIP | LOAD FACTOR (KN) |         |      |
|-------------|-----|-----|-----|-----|----|----|----|-----|-----|-----|-------------------|-----------------------------------|---------------------|------------------|---------|------|
|             |     |     |     |     |    |    |    |     |     |     |                   |                                   |                     | STATIC           | DYNAMIC |      |
| OTSTA12S    | 12  | 60  | 42  | 40  | 8  | 10 | 15 | 35  | 17  | 16  | 10 X 1.25         | OGE012DO                          | 22                  | CI22             | 17      | 10.8 |
| OTSTA16S    | 16  | 71  | 48  | 45  | 11 | 14 | 17 | 45  | 21  | 20  | 12 X 1.25         | OGE016DO                          | 30                  | CI30             | 28.5    | 21.2 |
| OTSTA20S    | 20  | 86  | 58  | 55  | 13 | 16 | 19 | 55  | 25  | 25  | 14 X 1.5          | OGE020DO                          | 35                  | CI35             | 42.5    | 30   |
| OTSTA25S    | 25  | 101 | 68  | 65  | 17 | 20 | 23 | 62  | 30  | 31  | 16 X 1.5          | OGE025DO                          | 42                  | CI42             | 67      | 48   |
| OTSTA30S    | 30  | 125 | 85  | 80  | 19 | 22 | 29 | 77  | 36  | 35  | 20 X 1.5          | OGE030DO                          | 47                  | CI47             | 108     | 62   |
| OTSTA40S    | 40  | 155 | 105 | 100 | 23 | 28 | 37 | 90  | 45  | 45  | 27 X 2            | OGE040DO                          | 62                  | CI62             | 156     | 100  |
| OTSTA50S    | 50  | 190 | 130 | 122 | 30 | 35 | 46 | 105 | 55  | 58  | 33 X 2            | OGE050DO                          | 75                  | CI75             | 245     | 156  |
| OTSTA60S    | 60  | 230 | 150 | 160 | 38 | 44 | 57 | 134 | 68  | 68  | 42 X 2            | OGE060DO                          | 90                  | CI90             | 380     | 245  |
| OTSTA80S    | 80  | 288 | 185 | 195 | 47 | 55 | 64 | 156 | 90  | 82  | 48 X 2            | OGE080DO                          | 120                 | CI120            | 585     | 400  |
| OTSTA100S   | 100 | 360 | 240 | 235 | 57 | 70 | 86 | 190 | 110 | 116 | 64 X 3            | OGE100DO                          | 150                 | CI150            | 865     | 610  |

DIN 24555 : WITH GREASE NIPPLE : COUPLING : STEEL / STEEL : BALL JOINT END MADE IN MOULDED STEEL C45 OR EQUIVALENT

## HEXAGON HALF / LOCK NUTS



LOCK NUT LN      THREAD SIZE 5      HEIGHT H 3

| PART NUMBER | THREAD    | HEIGHT |
|-------------|-----------|--------|
| LN0503      | 5 x 0.8   | 2.7    |
| LN0603      | 6 x 1     | 3.2    |
| LN0804      | 8 x 1.25  | 4      |
| LN1005      | 10 x 1.5  | 5      |
| LN1206-1.5  | 12 x 1.5  | 6      |
| LN1206      | 12 x 1.75 | 6      |
| LN1408      | 14 x 2    | 7      |
| LN1608-1.5  | 16 x 1.5  | 8      |
| LN1608      | 16 x 2    | 8      |
| LN1809      | 18 x 1.5  | 9      |
| LN2008      | 20 x 1.5  | 10     |
| LN2211      | 22 x 1.5  | 11     |
| LN2410      | 24 x 2    | 10     |
| LN2712      | 27 x 2    | 12     |
| LN3012      | 30 x 2    | 12     |
| LN3314      | 33 x 2    | 14     |
| LN3629      | 36 x 2    | 29     |
| LN3614      | 36 x 3    | 14     |
| LN3916      | 39 x 3    | 16     |
| LN4216      | 42 x 3    | 16     |
| LN4518      | 45 x 3    | 18     |
| LN5220      | 52 x 3    | 20     |
| LN5622      | 56 x 4    | 22     |

SPECIFICATION: ISO METRIC COARSE AND FINE THREAD. DIN489 & UNI 5589-65



PART NUMBER  
OEFDO..

NOMINAL RANGE  
6mm-80mm

COUPLING SURFACES  
STEEL / STEEL

LUBRICATION  
REQUIRED



PART NUMBER  
OEMDO..

NOMINAL RANGE  
6mm-80mm

COUPLING SURFACES  
STEEL / STEEL

LUBRICATION  
REQUIRED



PART NUMBER  
OEFUK..

NOMINAL RANGE  
6mm-80mm

COUPLING SURFACES  
CHROMED  
STEEL / PTFE

LUBRICATION  
NOT  
REQUIRED



PART NUMBER  
OEMUK..

NOMINAL RANGE  
6mm-80mm

COUPLING SURFACES  
CHROMED  
STEEL / PTFE

LUBRICATION  
NOT  
REQUIRED



PART NUMBER  
OEFPB..

NOMINAL RANGE  
5mm-30mm

COUPLING SURFACES  
CHROMED  
STEEL /  
BRONZE

LUBRICATION  
NOT  
REQUIRED



PART NUMBER  
OEMPB..

NOMINAL RANGE  
5mm-30mm

COUPLING SURFACES  
CHROMED  
STEEL /  
BRONZE

LUBRICATION  
NOT  
REQUIRED



PART NUMBER  
OEFPW..

NOMINAL RANGE  
5mm-30mm

COUPLING SURFACES  
CHROMED  
STEEL / PTFE

LUBRICATION  
NOT  
REQUIRED



PART NUMBER  
OEMPW..

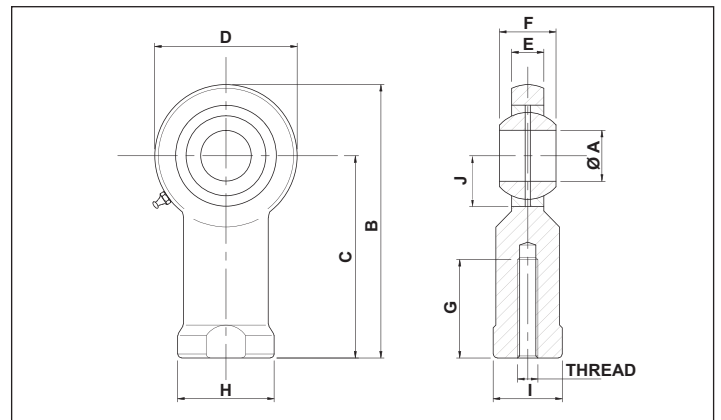
NOMINAL RANGE  
5mm-30mm

COUPLING SURFACES  
CHROMED  
STEEL / PTFE

LUBRICATION  
NOT  
REQUIRED



## BALL JOINT ENDS OEFDO WITHOUT SEALS



| PART NUMBER | Ø A | B     | C   | D  | E   | F  | G  | H  | I  | J    | THREAD      | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-------|-----|----|-----|----|----|----|----|------|-------------|---------------|------------------|---------|
|             |     |       |     |    |     |    |    |    |    |      |             |               | STATIC           | DYNAMIC |
| OEFDO06 *   | 6   | 40.5  | 30  | 21 | 4.4 | 6  | 11 | 13 | 11 | 10.5 | 6 x 1       | LN0603        | 8.15             | 3.4     |
| OEFDO08 *   | 8   | 48    | 36  | 24 | 6   | 8  | 15 | 16 | 14 | 12   | 8 x 1.25    | LN0804        | 12.9             | 5.5     |
| OEFDO10 *   | 10  | 57.5  | 43  | 29 | 7   | 9  | 20 | 19 | 17 | 14   | 10 x 1.5    | LN1005        | 17.6             | 8.15    |
| OEFDO12 *   | 12  | 67    | 50  | 34 | 8   | 10 | 24 | 22 | 19 | 17.5 | 12 x 1.75   | LN1206        | 24.5             | 10.8    |
| OEFDO15 *   | 15  | 81    | 61  | 40 | 10  | 12 | 30 | 26 | 22 | 20   | 14 x 2      | LN1408        | 36               | 17      |
| OEFDO17     | 17  | 90    | 67  | 46 | 11  | 14 | 34 | 30 | 27 | 23   | 16 x 2      | LN1608        | 45               | 21.1    |
| OEFDO20     | 20  | 103.5 | 77  | 53 | 13  | 16 | 40 | 35 | 32 | 27.5 | 20 x 1.5    | LN2008        | 60               | 30      |
| OEFDO20-LH  | 20  | 103.5 | 77  | 53 | 13  | 16 | 40 | 35 | 32 | 27.5 | 20 x 1.5 LH |               | 60               | 30      |
| OEFDO25     | 25  | 126   | 94  | 64 | 17  | 20 | 48 | 42 | 36 | 32   | 24 x 2      | LN2410        | 83               | 48      |
| OEFDO30     | 30  | 146.5 | 110 | 73 | 19  | 22 | 56 | 50 | 41 | 37   | 30 x 2      | LN3012        | 110              | 62      |

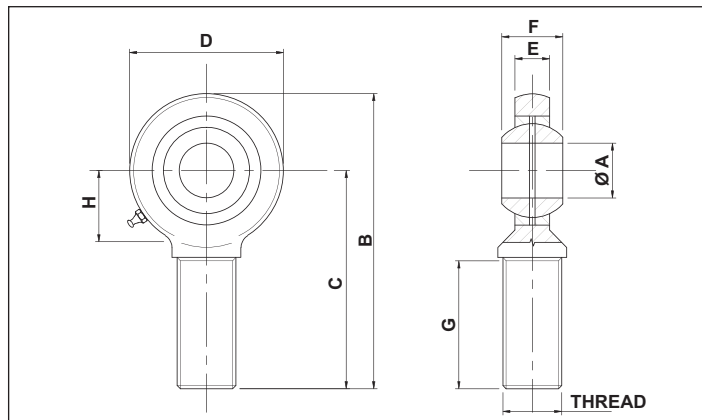
\* WITHOUT GREASE NIPPLE  
LH : DENOTES LEFT HAND THREAD

## BALL JOINT ENDS OEFDO \*\* 2RS WITH SEALS

| PART NUMBER | Ø A | B   | C   | D   | E  | F  | G  | H   | I   | J   | THREAD | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|----|----|----|-----|-----|-----|--------|---------------|------------------|---------|
|             |     |     |     |     |    |    |    |     |     |     |        |               | STATIC           | DYNAMIC |
| OEFDO352RS  | 35  | 166 | 125 | 82  | 21 | 25 | 60 | 58  | 50  | 42  | 36 x 3 | LN3614        | 146              | 80      |
| OEFDO402RS  | 40  | 188 | 142 | 94  | 23 | 28 | 65 | 65  | 56  | 48  | 39 x 3 | LN3916        | 180              | 100     |
| OEFDO452RS  | 45  | 196 | 145 | 102 | 27 | 32 | 65 | 70  | 62  | 52  | 42 x 3 | LN4216        | 240              | 127     |
| OEFDO502RS  | 50  | 216 | 160 | 112 | 30 | 35 | 68 | 75  | 68  | 59  | 45 x 3 | LN4518        | 290              | 156     |
| OEFDO602RS  | 60  | 242 | 175 | 135 | 37 | 44 | 70 | 88  | 78  | 75  | 52 x 3 | LN5220        | 450              | 245     |
| OEFDO702RS  | 70  | 280 | 200 | 162 | 42 | 49 | 80 | 98  | 85  | 87  | 56 x 4 | LN5622        | 610              | 315     |
| OEFDO802RS  | 80  | 320 | 230 | 180 | 48 | 55 | 85 | 110 | 102 | 100 | 64 x 4 | LN6426        | 750              | 400     |

ISO12240-4- SERIES E TYPE F : COUPLING : STEEL / STEEL : BALL JOINT MADE IN GALVANISED FORGED STEEL C 45 OR EQUIVALENT

## BALL JOINT ENDS OEMDO WITHOUT SEALS



| PART NUMBER | Ø A | B     | C   | D  | E   | F  | G  | H  | THREAD    | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-------|-----|----|-----|----|----|----|-----------|---------------|------------------|---------|
|             |     |       |     |    |     |    |    |    |           |               | STATIC           | DYNAMIC |
| OEMDO06 *   | 6   | 46.5  | 36  | 21 | 4.4 | 6  | 18 | 12 | 6 x 1     | LN0603        | 8.1              | 3.4     |
| OEMDO08 *   | 8   | 54    | 42  | 24 | 6   | 8  | 22 | 14 | 8 x 1.25  | LN0804        | 12.9             | 5.5     |
| OEMDO10 *   | 10  | 62.5  | 48  | 29 | 7   | 9  | 27 | 15 | 10 x 1.5  | LN1005        | 17.6             | 8.1     |
| OEMDO12 *   | 12  | 71    | 54  | 34 | 8   | 10 | 30 | 18 | 12 x 1.75 | LN1206        | 24.5             | 10.8    |
| OEMDO15     | 15  | 83    | 63  | 40 | 10  | 12 | 34 | 20 | 14 x 2    | LN1408        | 36               | 16      |
| OEMDO17     | 17  | 92    | 69  | 46 | 11  | 14 | 36 | 23 | 16 x 2    | LN1608        | 45               | 21.2    |
| OEMDO20     | 20  | 106   | 78  | 53 | 13  | 16 | 43 | 27 | 20 x 1.5  | LN2008        | 60               | 30      |
| OEMDO25     | 25  | 126   | 94  | 64 | 17  | 20 | 53 | 33 | 24 x 2    | LN2410        | 83               | 48      |
| OEMDO30     | 30  | 146.5 | 110 | 73 | 19  | 22 | 65 | 37 | 30 x 2    | LN3012        | 110              | 62      |

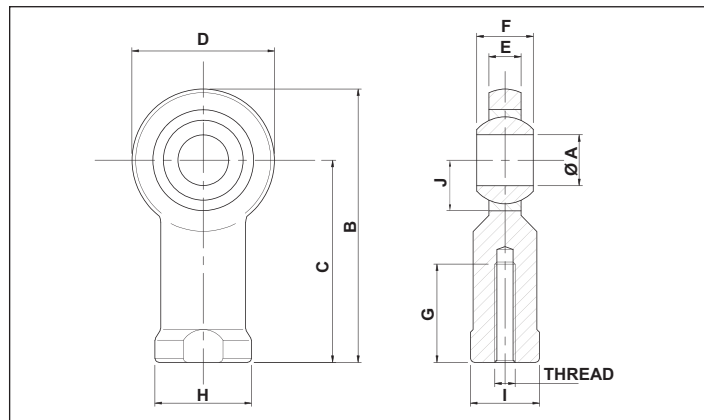
\* WITHOUT GREASE NIPPLE

## BALL JOINT ENDS OEMDO \*\* 2RS WITH SEALS

| PART NUMBER | Ø A | B     | C   | D   | E  | F  | G   | H   | THREAD | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-------|-----|-----|----|----|-----|-----|--------|---------------|------------------|---------|
|             |     |       |     |     |    |    |     |     |        |               | STATIC           | DYNAMIC |
| OEMDO352RS  | 35  | 181   | 140 | 82  | 21 | 25 | 82  | 42  | 36 x 3 | LN3614        | 146              | 80      |
| OEMDO402RS  | 40  | 196   | 150 | 92  | 23 | 28 | 86  | 48  | 39 x 3 | LN3916        | 180              | 100     |
| OEMDO452RS  | 45  | 214   | 163 | 102 | 27 | 32 | 94  | 52  | 42 x 3 | LN4216        | 240              | 127     |
| OEMDO502RS  | 50  | 241   | 185 | 112 | 30 | 35 | 106 | 60  | 45 x 3 | LN4518        | 290              | 156     |
| OEMDO602RS  | 60  | 277.5 | 210 | 135 | 38 | 44 | 115 | 75  | 52 x 3 | LN5220        | 450              | 245     |
| OEMDO702RS  | 70  | 315   | 235 | 160 | 42 | 49 | 125 | 87  | 56 x 4 | LN5622        | 610              | 315     |
| OEMDO802RS  | 80  | 360   | 270 | 180 | 48 | 55 | 140 | 100 | 64 x 4 | LN6426        | 750              | 400     |

ISO 12240-4-SERIES E TYPE M : COUPLING : STEEL / STEEL : BALL JOINT MADE IN GALVANISED FORGED STEEL C 45 OR EQUIVALENT

## BALL JOINT ENDS OEFUK WITHOUT SEALS



| PART NUMBER | Ø A | B    | C   | D  | E   | F  | G  | H  | I  | J    | THREAD       | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|------|-----|----|-----|----|----|----|----|------|--------------|---------------|------------------|---------|
|             |     |      |     |    |     |    |    |    |    |      |              |               | STATIC           | DYNAMIC |
| OEFUK06     | 6   | 40.5 | 30  | 21 | 4.4 | 6  | 11 | 13 | 11 | 10.5 | 6 x 1        | LN0603        | 8.1              | 3.6     |
| OEFUK08     | 8   | 48   | 36  | 24 | 6   | 8  | 15 | 16 | 14 | 12   | 8 x 1.25     | LN0804        | 12.9             | 5.8     |
| OEFUK10     | 10  | 57.5 | 43  | 29 | 7   | 9  | 20 | 19 | 17 | 14   | 10 x 1.5     | LN1005        | 17.6             | 8.6     |
| OEFUK12     | 12  | 67   | 50  | 34 | 8   | 10 | 24 | 22 | 19 | 17.5 | 12 x 1.75    | LN1206        | 24.5             | 11.4    |
| OEFUK12-LH  | 12  | 67   | 50  | 34 | 8   | 10 | 24 | 22 | 19 | 17.5 | 12 x 1.75 LH |               | 24.5             | 11.4    |
| OEFUK15     | 15  | 81   | 61  | 40 | 10  | 12 | 30 | 26 | 22 | 20   | 14 x 2       | LN1408        | 36               | 17.6    |
| OEFUK17     | 17  | 90   | 67  | 46 | 11  | 14 | 34 | 30 | 27 | 23   | 16 x 2       | LN1608        | 45               | 22.4    |
| OEFUK20     | 20  | 104  | 77  | 53 | 13  | 16 | 40 | 35 | 32 | 27.5 | 20 x 1.5     | LN2008        | 60               | 31.5    |
| OEFUK25     | 25  | 126  | 94  | 64 | 17  | 20 | 48 | 42 | 36 | 32   | 24 x 2       | LN2410        | 83               | 51      |
| OEFUK30     | 30  | 147  | 110 | 73 | 19  | 22 | 56 | 50 | 41 | 37   | 30 x 2       | LN3012        | 110              | 66.5    |

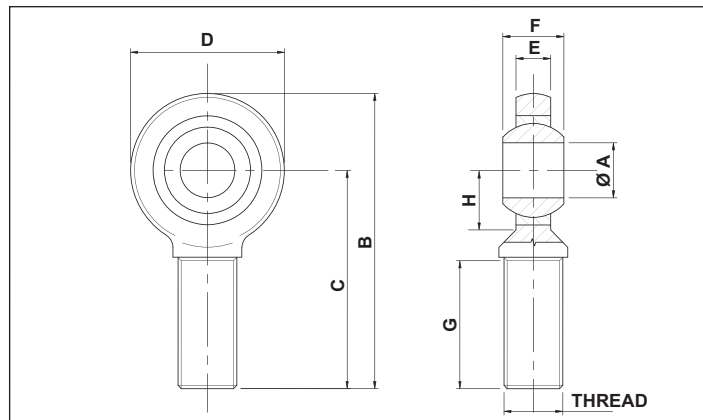
LH : DENOTES LEFT HAND THREAD

## BALL JOINT ENDS OEFUK \*\* 2RS WITH SEALS

| PART NUMBER | Ø A | B   | C   | D   | E  | F  | G  | H   | I   | J   | THREAD | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|----|----|----|-----|-----|-----|--------|---------------|------------------|---------|
|             |     |     |     |     |    |    |    |     |     |     |        |               | STATIC           | DYNAMIC |
| OEFUK352RS  | 35  | 166 | 125 | 82  | 21 | 25 | 60 | 58  | 50  | 42  | 36 x 3 | LN3614        | 146              | 112     |
| OEFUK402RS  | 40  | 188 | 142 | 94  | 23 | 28 | 65 | 65  | 56  | 48  | 39 x 3 | LN3916        | 180              | 140     |
| OEFUK452RS  | 45  | 196 | 145 | 102 | 27 | 32 | 65 | 70  | 62  | 52  | 42 x 3 | LN4216        | 240              | 180     |
| OEFUK502RS  | 50  | 216 | 160 | 112 | 30 | 35 | 68 | 75  | 68  | 59  | 45 x 3 | LN4518        | 290              | 220     |
| OEFUK602RS  | 60  | 242 | 175 | 135 | 37 | 44 | 70 | 88  | 78  | 75  | 52 x 3 | LN5220        | 450              | 345     |
| OEFUK702RS  | 70  | 280 | 200 | 162 | 42 | 49 | 80 | 98  | 85  | 87  | 56 x 4 | LN5622        | 610              | 440     |
| OEFUK802RS  | 80  | 320 | 230 | 180 | 48 | 55 | 85 | 110 | 102 | 100 | 64 x 4 | LN6426        | 750              | 570     |

ISO 12240-4-SERIES E TYPE F MAINTANCE FREE : COUPLING : CHROMED STEEL  
/ PTFE FABRIC : BALL JOINT MADE IN GALVANISED FORGED STEEL C 45

## BALL JOINT ENDS OEMUK WITHOUT SEALS



| PART NUMBER | Ø A | B     | C   | D  | E   | F  | G  | H  | THREAD    | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-------|-----|----|-----|----|----|----|-----------|---------------|------------------|---------|
|             |     |       |     |    |     |    |    |    |           |               | STATIC           | DYNAMIC |
| OEMUK06     | 6   | 46.5  | 36  | 21 | 4.4 | 6  | 18 | 12 | 6 x 1     | LN0603        | 8.1              | 3.5     |
| OEMUK08     | 8   | 54    | 42  | 24 | 6   | 8  | 22 | 14 | 8 x 1.25  | LN0804        | 12.9             | 5.8     |
| OEMUK10     | 10  | 62.5  | 48  | 29 | 7   | 9  | 27 | 15 | 10 x 1.5  | LN1005        | 17.6             | 8.6     |
| OEMUK12     | 12  | 71    | 54  | 34 | 8   | 10 | 30 | 18 | 12 x 1.75 | LN1206        | 24.5             | 11.4    |
| OEMUK15     | 15  | 83    | 63  | 40 | 10  | 12 | 34 | 20 | 14 x 2    | LN1408        | 36               | 17.6    |
| OEMUK15-LH  | 15  | 83    | 63  | 40 | 10  | 12 | 34 | 20 | 14 x 2 LH |               | 36               | 17.6    |
| OEMUK17     | 17  | 92    | 69  | 46 | 11  | 14 | 36 | 23 | 16 x 2    | LN1608        | 45               | 22.4    |
| OEMUK20     | 20  | 104.5 | 78  | 53 | 13  | 16 | 43 | 27 | 20 x 1.5  | LN2008        | 60               | 31.5    |
| OEMUK25     | 25  | 126   | 94  | 64 | 17  | 20 | 53 | 32 | 24 x 2    | LN2410        | 83               | 51      |
| OEMUK30     | 30  | 146.5 | 110 | 73 | 19  | 22 | 65 | 37 | 30 x 2    | LN3012        | 110              | 65.6    |

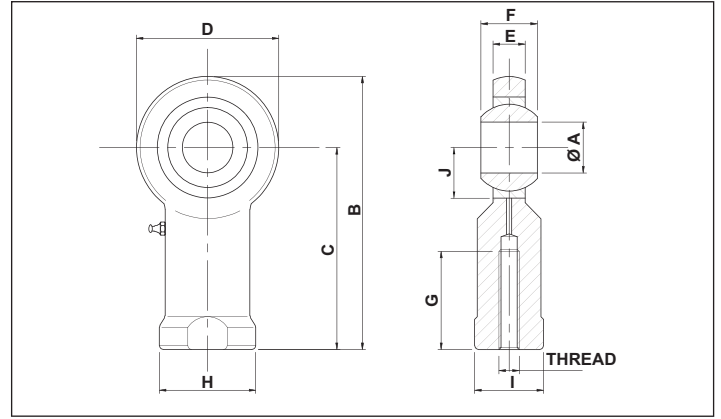
LH : DENOTES LEFT HAND THREAD

## BALL JOINT ENDS OEMUK \*\* 2RS WITH SEALS

| PART NUMBER   | Ø A | B     | C   | D   | E  | F  | G   | H   | THREAD | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|---------------|-----|-------|-----|-----|----|----|-----|-----|--------|---------------|------------------|---------|
|               |     |       |     |     |    |    |     |     |        |               | STATIC           | DYNAMIC |
| OEMUK352RS    | 35  | 181   | 140 | 82  | 21 | 25 | 82  | 42  | 36 x 3 | LN3614        | 146              | 112     |
| OEMUK402RS-39 | 40  | 196   | 150 | 93  | 23 | 28 | 86  | 48  | 39 x 3 | LN3916        | 180              | 140     |
| OEMUK402RS-42 | 40  | 196   | 150 | 93  | 23 | 28 | 86  | 48  | 42 x 3 | LN4216        | 180              | 140     |
| OEMUK452RS    | 45  | 214   | 163 | 102 | 27 | 32 | 94  | 52  | 42 x 3 | LN4216        | 240              | 180     |
| OEMUK502RS    | 50  | 241   | 185 | 112 | 30 | 35 | 106 | 60  | 45 x 3 | LN4518        | 290              | 220     |
| OEMUK602RS    | 60  | 277.5 | 210 | 135 | 38 | 44 | 115 | 75  | 52 x 3 | LN5220        | 450              | 345     |
| OEMUK702RS    | 70  | 315   | 235 | 160 | 42 | 49 | 125 | 87  | 56 x 4 | LN5622        | 610              | 440     |
| OEMUK802RS    | 80  | 360   | 270 | 180 | 48 | 55 | 140 | 100 | 64 x 4 | LN6426        | 750              | 570     |

ISO12240-4-SERIES E TYPE M : SERVICE FREE : COUPLING : CHROMED STEEL / PTFE FABRIC :  
BALL JOINT MADE IN GALVANISED FORGED STEEL C 45

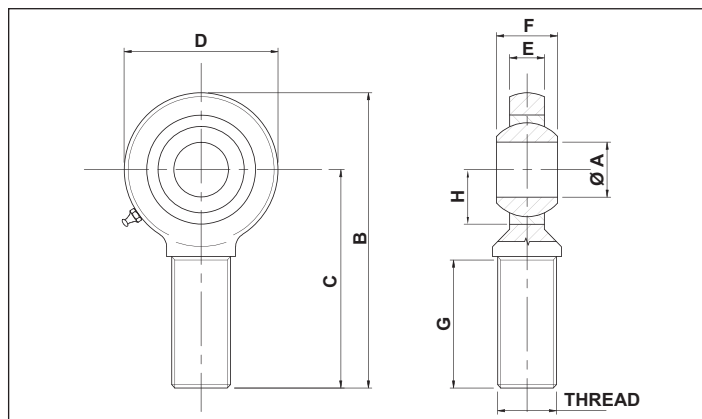
## BALL JOINT ENDS OEFPB WITHOUT SEALS



| PART NUMBER  | Ø A | B   | C   | D  | E  | F  | G  | H  | I  | J  | THREAD    | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|--------------|-----|-----|-----|----|----|----|----|----|----|----|-----------|---------------|------------------|---------|
|              |     |     |     |    |    |    |    |    |    |    |           |               | STATIC           | DYNAMIC |
| OEFPB05      | 5   | 35  | 27  | 16 | 7  | 8  | 8  | 12 | 9  | 8  | 5 x 0.8   | LN0503        | 4.1              | 3.3     |
| OEFPB06      | 6   | 39  | 30  | 18 | 7  | 9  | 9  | 13 | 11 | 9  | 6 x 1     | LN0603        | 5.3              | 4.3     |
| OEFPB08      | 8   | 47  | 36  | 22 | 9  | 12 | 12 | 16 | 14 | 11 | 8 x 1.25  | LN0804        | 9.2              | 6.8     |
| OEFPB10      | 10  | 56  | 43  | 26 | 11 | 14 | 15 | 19 | 17 | 13 | 10 x 1.5  | LN1005        | 12               | 10      |
| OEFPB12      | 12  | 65  | 50  | 30 | 12 | 16 | 18 | 22 | 19 | 15 | 12 x 1.75 | LN1206        | 17               | 13      |
| OEFPB14      | 14  | 74  | 57  | 34 | 14 | 19 | 21 | 25 | 22 | 17 | 14 x 2    | LN1408        | 22               | 17      |
| OEFPB16      | 16  | 83  | 64  | 38 | 15 | 21 | 24 | 27 | 22 | 19 | 16 x 2    | LN1608        | 28               | 21      |
| OEFPB16-LH16 | 16  | 83  | 64  | 38 | 15 | 21 | 24 | 27 | 22 | 19 | 16 x 2 LH |               | 28               | 21      |
| OEFPB18      | 18  | 92  | 71  | 42 | 17 | 23 | 27 | 31 | 27 | 21 | 18 x 1.5  | LN1809        | 34               | 26      |
| OEFPB20      | 20  | 100 | 77  | 46 | 18 | 25 | 30 | 37 | 30 | 23 | 20 x 1.5  | LN2008        | 40               | 31      |
| OEFPB22      | 22  | 109 | 84  | 50 | 20 | 28 | 33 | 37 | 32 | 25 | 22 x 1.5  | LN2210        | 50               | 38      |
| OEFPB25      | 25  | 124 | 94  | 56 | 22 | 31 | 36 | 42 | 36 | 28 | 24 x 2    | LN2410        | 63               | 47      |
| OEFPB28      | 28  | 136 | 103 | 66 | 25 | 35 | 41 | 46 | 41 | 33 | 27 x 2    | LN2712        | 81               | 59      |
| OEFPB30      | 30  | 145 | 110 | 67 | 26 | 37 | 45 | 50 | 41 | 34 | 30 x 2    | LN3012        | 86               | 63      |

ISO12240-4-SERIES K ISO6126 : COUPLING : STEEL / BRONZE : BALL JOINT END MADE IN GALVANISED FORGED STEEL  
 C 45 OR EQUIVALENT  
 LH : DENOTES LEFT HAND THREAD

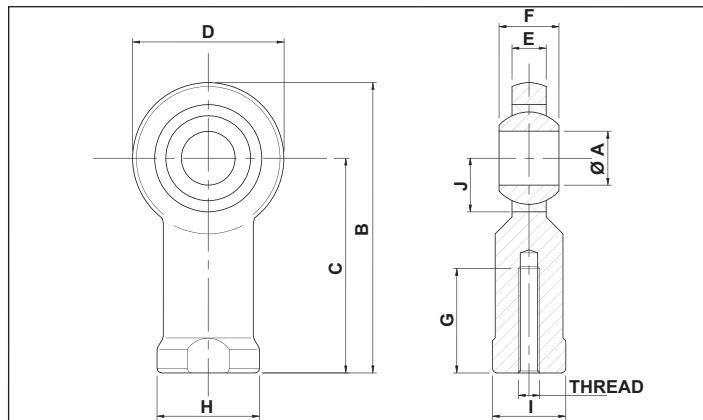
## BALL JOINT ENDS OEMPB WITHOUT SEALS



| PART NUMBER | Ø A | B   | C   | D  | E  | F  | G  | H  | THREAD      | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|----|----|----|----|----|-------------|---------------|------------------|---------|
|             |     |     |     |    |    |    |    |    |             |               | STATIC           | DYNAMIC |
| OEMPB05     | 5   | 41  | 33  | 16 | 7  | 8  | 20 | 8  | 5 x 0.8     | LN0503        | 4.1              | 3.3     |
| OEMPB06     | 6   | 46  | 36  | 18 | 7  | 9  | 22 | 9  | 6 x 1       | LN0603        | 5.3              | 4.3     |
| OEMPB08     | 8   | 53  | 42  | 22 | 9  | 12 | 25 | 11 | 8 x 1.25    | LN0804        | 9.2              | 6.8     |
| OEMPB10     | 10  | 61  | 48  | 26 | 11 | 14 | 29 | 26 | 10 x 1.5    | LN1005        | 12               | 10      |
| OEMPB10-LH  | 10  | 61  | 48  | 26 | 11 | 14 | 29 | 26 | 10 x 1.5 LH |               | 12               | 10      |
| OEMPB12     | 12  | 69  | 54  | 30 | 12 | 16 | 33 | 15 | 12 x 1.75   | LN1206        | 17               | 13      |
| OEMPB14     | 14  | 77  | 60  | 34 | 14 | 19 | 36 | 17 | 14 x 2      | LN1408        | 22               | 17      |
| OEMPB16     | 16  | 86  | 66  | 38 | 15 | 21 | 40 | 19 | 16 x 2      | LN1608        | 28               | 21      |
| OEMPB16-LH  | 16  | 86  | 66  | 38 | 15 | 21 | 40 | 19 | 16 x 2 LH   |               | 28               | 21      |
| OEMPB18     | 18  | 94  | 72  | 42 | 17 | 23 | 44 | 21 | 18 x 1.5    | LN1809        | 34               | 26      |
| OEMPB20     | 20  | 103 | 78  | 46 | 18 | 25 | 47 | 23 | 20 x 1.5    | LN2008        | 40               | 31      |
| OEMPB20-LH  | 20  | 103 | 78  | 46 | 18 | 25 | 47 | 23 | 20 x 1.5 LH |               | 40               | 31      |
| OEMPB22     | 22  | 111 | 84  | 50 | 20 | 28 | 51 | 25 | 22 x 1.5    | LN2210        | 50               | 38      |
| OEMPB25     | 25  | 124 | 94  | 56 | 22 | 31 | 57 | 30 | 24 x 2      | LN2410        | 63               | 47      |
| OEMPB28     | 28  | 137 | 103 | 66 | 25 | 35 | 62 | 33 | 27 x 2      | LN2712        | 81               | 59      |
| OEMPB30     | 30  | 145 | 110 | 67 | 25 | 37 | 66 | 35 | 30 x 2      | LN3012        | 86               | 63      |

ISO12240-4- K-SERIES - ISO6126 : COUPLING : STEEL / BRONZE : BALL JOINT MADE IN GALVANISED FORGED STEEL  
C45 OR EQUIVALENT  
LH : DENOTES LEFT HAND THREAD

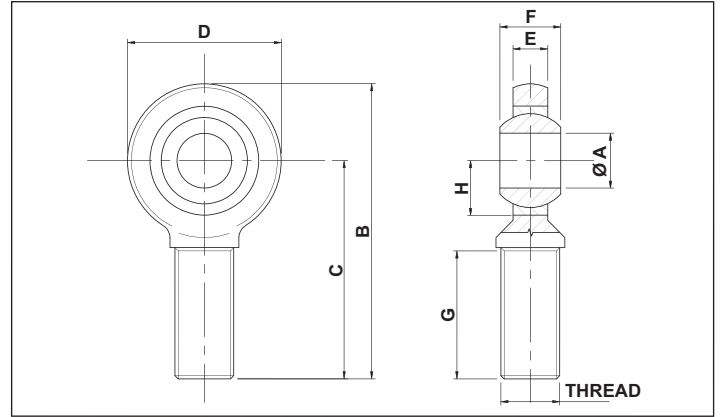
## BALL JOINT ENDS OEFPW WITHOUT SEALS



| PART NUMBER | Ø A | B   | C   | D  | E    | F  | G  | H  | I  | J  | THREAD      | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|----|------|----|----|----|----|----|-------------|---------------|------------------|---------|
|             |     |     |     |    |      |    |    |    |    |    |             |               | STATIC           | DYNAMIC |
| OEFPW05     | 5   | 35  | 27  | 16 | 7    | 8  | 8  | 12 | 9  | 9  | 5 x 0.8     | LN0503        | 7                | 3.2     |
| OEFPW06     | 6   | 39  | 30  | 18 | 7    | 9  | 9  | 13 | 11 | 10 | 6 x 1       | LN0603        | 8                | 3.5     |
| OEFPW08     | 8   | 47  | 36  | 22 | 9    | 12 | 12 | 16 | 14 | 12 | 8 x 1.25    | LN0804        | 13               | 5.8     |
| OEFPW10     | 10  | 56  | 43  | 26 | 10.5 | 14 | 15 | 19 | 17 | 14 | 10 x 1.5    | LN1005        | 18               | 8.6     |
| OEFPW10-LH  | 10  | 56  | 43  | 26 | 10.5 | 14 | 15 | 19 | 17 | 14 | 10 x 1.5 LH |               | 18               | 8.6     |
| OEFPW12     | 12  | 65  | 50  | 30 | 12   | 16 | 18 | 22 | 19 | 16 | 12 x 1.75   | LN1206        | 24               | 11.5    |
| OEFPW14     | 14  | 74  | 57  | 34 | 13.5 | 19 | 21 | 25 | 22 | 18 | 14 x 2      | LN1408        | 36               | 17.5    |
| OEFPW14-LH  | 14  | 74  | 57  | 34 | 13.5 | 19 | 21 | 25 | 22 | 18 | 14 x 2 LH   |               | 36               | 17.5    |
| OEFPW16     | 16  | 83  | 64  | 38 | 15   | 21 | 24 | 27 | 22 | 21 | 16 x 2      | LN1608        | 40               | 20      |
| OEFPW18     | 18  | 92  | 71  | 42 | 16.5 | 23 | 27 | 31 | 27 | 23 | 18 x 1.5    | LN1809        | 27               | 50      |
| OEFPW20     | 20  | 100 | 77  | 46 | 18   | 25 | 30 | 37 | 30 | 25 | 20 x 1.5    | LN2008        | 60               | 31      |
| OEFPW22     | 22  | 109 | 84  | 50 | 20   | 28 | 33 | 37 | 32 | 27 | 22 x 1.5    | LN2210        | 43               | 72      |
| OEFPW25     | 25  | 124 | 94  | 56 | 22   | 31 | 36 | 42 | 36 | 30 | 24 x 2      | LN2410        | 50               | 85      |
| OEFPW25-LH  | 25  | 124 | 94  | 56 | 22   | 31 | 36 | 42 | 36 | 30 | 24 x 2 LH   |               | 50               | 85      |
| OEFPW28     | 28  | 136 | 103 | 66 | 25   | 35 | 41 | 46 | 41 | 33 | 27 x 2      | LN2712        | 60               | 90      |
| OEFPW30     | 30  | 145 | 110 | 67 | 26   | 37 | 45 | 50 | 41 | 35 | 30 x 2      | LN3012        | 66               | 110     |

ISO 12240-4-SERIES K ISO6126 MAINTENANCE FREE : COUPLING : CHROMED STEEL / PTFE FABRIC BALL JOINT MADE IN GALVANISED FORGED STEEL C45 OR EQUIVALENT  
LH : DENOTES LEFT HAND THREAD

## BALL JOINT ENDS OEMPW WITHOUT SEALS

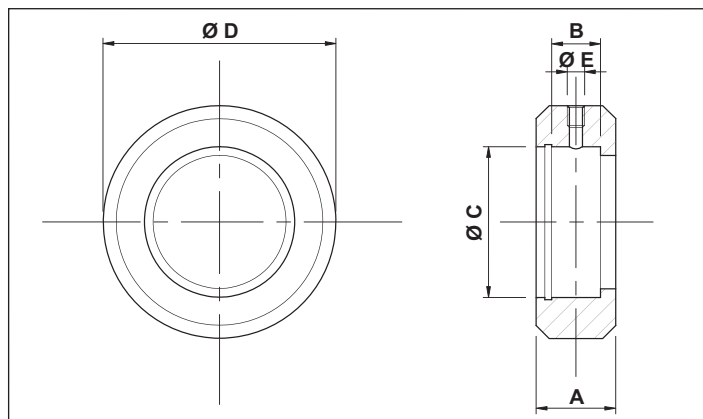


| PART NUMBER | Ø A | B   | C   | D  | E  | F  | G  | H  | THREAD    | LOCK NUT SIZE | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|----|----|----|----|----|-----------|---------------|------------------|---------|
|             |     |     |     |    |    |    |    |    |           |               | STATIC           | DYNAMIC |
| OEMPW05     | 5   | 41  | 33  | 16 | 7  | 8  | 20 | 9  | 5 x 0.8   | LN0503        | 7                | 3.2     |
| OEMPW06     | 6   | 46  | 36  | 18 | 7  | 9  | 22 | 10 | 6 x 1     | LN0603        | 8                | 3.5     |
| OEMPW08     | 8   | 53  | 42  | 22 | 9  | 12 | 25 | 12 | 8 x 1.25  | LN0804        | 13               | 5.8     |
| OEMPW10     | 10  | 61  | 48  | 26 | 11 | 14 | 29 | 14 | 10 x 1.5  | LN1005        | 18               | 8.6     |
| OEMPW12     | 12  | 69  | 54  | 30 | 12 | 16 | 33 | 16 | 12 x 1.75 | LN1206        | 24               | 11.5    |
| OEMPW14     | 14  | 77  | 60  | 34 | 14 | 19 | 36 | 18 | 14 x 2    | LN1408        | 36               | 17.2    |
| OEMPW14-LH  | 14  | 77  | 60  | 34 | 14 | 19 | 36 | 18 | 14 x 2 LH |               | 36               | 17.2    |
| OEMPW16     | 16  | 86  | 66  | 38 | 15 | 21 | 40 | 21 | 16 x 2    | LN1608        | 40               | 20      |
| OEMPW18     | 18  | 94  | 72  | 42 | 17 | 23 | 44 | 22 | 18 x 1.5  | LN1809        | 50               | 27      |
| OEMPW20     | 20  | 103 | 78  | 46 | 18 | 25 | 47 | 25 | 20 x 1.5  | LN2008        | 60               | 31      |
| OEMPW22     | 22  | 111 | 84  | 50 | 20 | 28 | 51 | 27 | 22 x 1.5  | LN2210        | 72               | 43      |
| OEMPW25     | 25  | 124 | 94  | 56 | 22 | 31 | 57 | 30 | 24 x 2    | LN2410        | 85               | 50      |
| OEMPW28     | 28  | 137 | 103 | 66 | 25 | 35 | 62 | 33 | 27 x 2    | LN2712        | 90               | 60      |
| OEMPW30     | 30  | 145 | 110 | 67 | 25 | 37 | 66 | 35 | 30 x 2    | LN3012        | 110              | 66      |

ISO 12240-4- SERIES K ISO : MAINTENANCE FREE : COUPLING CHROMED STEEL /  
PTFE FABRIC : BALL JOINT MADE IN GALVANISED FORGED STEEL C45 OR EQUIVALENT  
LH : DENOTES LEFT HAND THREAD



## WELDABLE HOUSING



|                         |                       |                            |               |
|-------------------------|-----------------------|----------------------------|---------------|
| WELDABLE HOUSING<br>WBH | SIZE OF BEARING<br>15 | OUTSIDE DIAMETER Ø D<br>40 | WIDTH A<br>15 |
|-------------------------|-----------------------|----------------------------|---------------|

| PART NUMBER | A  | B  | Ø C | Ø D | Ø E | INTERNAL CLIP | SUITABLE FOR BALL JOINT |
|-------------|----|----|-----|-----|-----|---------------|-------------------------|
| WBH154015   | 15 | 9  | 26  | 40  | M6  | CI26          | OGE015DO                |
| WBH205020   | 20 | 12 | 35  | 50  | M6  | CI35          | OGE020DO-LO             |
| WBH257024   | 24 | 16 | 42  | 70  | M6  | CI42          | OGE025DO-LO             |
| WBH307028   | 28 | 18 | 47  | 70  | M6  | CI47          | OGE030DO-UK             |
| WBH307528   | 28 | 18 | 47  | 75  | M6  | CI47          | OGE030DO-UK             |
| WBH328028   | 28 | 18 | 52  | 80  | M6  | CI52          | OGE032LO                |
| WBH358033   | 33 | 20 | 55  | 80  | M6  | CI55          | OGE035DO-UK2            |
| WBH409535   | 35 | 22 | 62  | 95  | M6  | CI62          | OGE040DO-LO             |
| WBH4510038  | 38 | 25 | 68  | 100 | M6  | CI68          | OGE045DO-UK2            |
| WBH4511040  | 40 | 25 | 68  | 110 | M6  | CI68          | OGE045DO-UK2            |
| WBH5011040  | 40 | 28 | 75  | 110 | M6  | CI75          | OGE050DO-LO             |
| WBH5012040  | 40 | 28 | 75  | 120 | M6  | CI75          | OGE050DO-LO             |
| WBH6013850  | 50 | 36 | 90  | 138 | M6  | CI90          | OGE060DO-UK2            |

MATERIAL : STEEL - FE 510 / S355JR OR EQUIVALENT  
COMES COMPLETE WITH CIRCLIP

## IMPERIAL WELDABLE HOUSING

|                         |                         |                              |                 |               |                         |
|-------------------------|-------------------------|------------------------------|-----------------|---------------|-------------------------|
| WELDABLE HOUSING<br>WBH | SIZE OF BEARING<br>1.00 | OUTSIDE DIAMETER Ø D<br>2.75 | WIDTH A<br>1.10 | IMPERIAL<br>1 | IMPERIAL SIZE<br>(1.00) |
|-------------------------|-------------------------|------------------------------|-----------------|---------------|-------------------------|

| PART NUMBER           | A (mm) | B      | Ø C    | Ø D (mm) | Ø E | INTERNAL CIRCLIP | SUITABLE FOR BALL JOINT |
|-----------------------|--------|--------|--------|----------|-----|------------------|-------------------------|
| WBH100275110-I (1.00) | 28     | 0.75"  | 1.625" | 70       | M6  | CI162 (1.62)     | OGE100DO-I (1.00)       |
| WBH125322129-I (1.25) | 33     | 0.937" | 2.00"  | 82       | M6  | CI200 (2.00)     | OGE125DO-I (1.25)       |
| WBH150374157-I (1.50) | 40     | 1.125" | 2.438" | 95       | M6  | CI243 (2.43)     | OGE150DO-I (1.50)       |
| WBH175393181-I (1.75) | 46     | 1.312" | 2.813" | 100      | M6  | CI281 (2.81)     | OGE175DO-I (1.75)       |
| WBH200452196-I (2.00) | 50     | 1.50"  | 3.187" | 115      | M6  | CI318 (3.18)     | OGE200DO-I (2.00)       |

MATERIAL : STEEL - FE 510 / S355JR OR EQUIVALENT  
COMES COMPLETE WITH CIRCLIP



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

|                     |                         |              |     |  |
|---------------------|-------------------------|--------------|-----|--|
| OGE..DO<br>OGE..DOZ | 10-180MM<br>1/2"-2 1/2" | STEEL /STEEL | YES | Radial ball joint. Hardened inner and outer rings. The outer ring has an axial groove for ease of greasing |
|---------------------|-------------------------|--------------|-----|--|



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

|             |          |              |     |  |
|-------------|----------|--------------|-----|--|
| OGE..DO-2RS | 20-160MM | STEEL /STEEL | YES | Having the same characteristics as GE..DO from which they differ in the double lip dust guard on both side |
|-------------|----------|--------------|-----|--|



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

|         |          |              |     |   |
|---------|----------|--------------|-----|---|
| OGE..LO | 12-200MM | STEEL /STEEL | YES | Radial ball joint. Hardened inner and outer rings. The outer ring has an axial groove for ease of greasing. Differ from GE..DO in their height. |
|---------|----------|--------------|-----|---|



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

|             |         |              |     |  |
|-------------|---------|--------------|-----|--|
| OGE..HO-2RS | 20-80MM | STEEL /STEEL | YES | Having the same characteristics as OGE..LO from which they differ in the double lip dust guard on both sides |
|-------------|---------|--------------|-----|--|



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

|             |          |              |     |  |
|-------------|----------|--------------|-----|--|
| OGE..FO-2RS | 20-160MM | STEEL /STEEL | YES | Radial ball joint having the same characteristics as the GE..DO-2RS type with the exception that the inner ring is wider and the outer diameter is larger. This allows a greater angle of rotation |
|-------------|----------|--------------|-----|--|



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

|                        |                     |                             |    |  |
|------------------------|---------------------|-----------------------------|----|--|
| OGE..UK<br>OGE..UK-2RS | 20-30MM<br>20-200MM | HARD CHROMED ON PTFE FABRIC | NO | Maintenance free radial ball joint, outer ring hardened and working surface of PTFE fabric. Inner ring hardened with working surface hard chromed with dust guard seals. |
|------------------------|---------------------|-----------------------------|----|--|



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

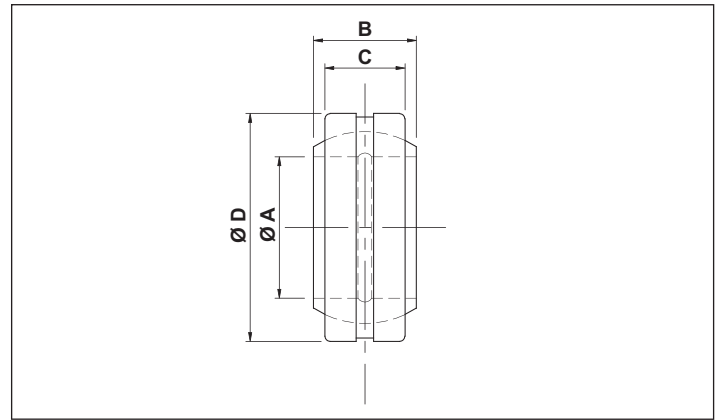
|                        |                    |                                      |    |   |
|------------------------|--------------------|--------------------------------------|----|---|
| OGE..FW<br>OGE..FW-2RS | 6-30MM<br>30-180MM | HARD CHROMED ON STEEL ON PTFE FABRIC | NO | Maintenance free radial ball joint, outer ring hardened and working surface of PTFE fabric. Inner ring hardened with working surface hard chromed with dust guard seals |
|------------------------|--------------------|--------------------------------------|----|---|



| TYPE | BORE DIAMETER | WORKING SURFACES | LUBRICATION REQUIRED | CONSTRUCTION CHARACTERISTICS |
|------|---------------|------------------|----------------------|------------------------------|
|------|---------------|------------------|----------------------|------------------------------|

|                   |          |                                |    |  |
|-------------------|----------|--------------------------------|----|--|
| OGE..UK-STAINLESS | 15-100MM | STAINLESS STEEL ON PTFE FABRIC | NO | Maintenance free radial ball joint outer ring hardened and working surface of PTFE fabric. Inner ring hardened Aisi 420. |
|-------------------|----------|--------------------------------|----|--|

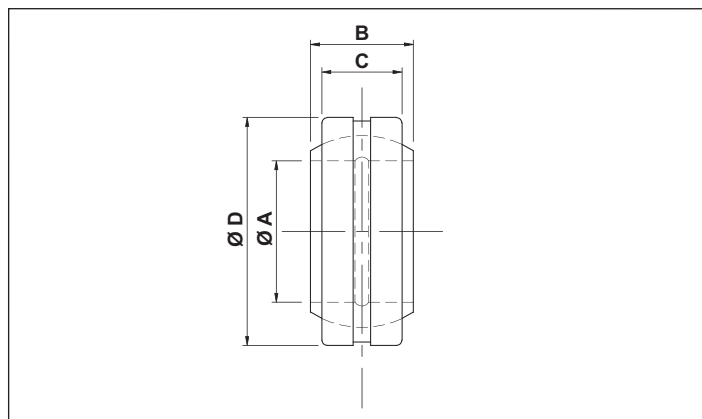
## RADIAL BALL JOINTS OGE \*\*\* DO WITHOUT SEALS



| PART NUMBER | Ø A | B   | C  | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------|-----|-----|----|-----|---------------------------|--------------------------|------------------|---------|
|             |     |     |    |     |                           |                          | STATIC           | DYNAMIC |
| OGE010DO    | 10  | 9   | 6  | 19  | CI19                      | CE10                     | 40.5             | 8.15    |
| OGE012DO    | 12  | 10  | 7  | 22  | CI22                      | CE12                     | 54               | 10.8    |
| OGE015DO    | 15  | 12  | 9  | 26  | CI26                      | CE15                     | 85               | 17      |
| OGE016DO    | 16  | 14  | 10 | 30  | CI30                      | CE16                     | 106              | 21.2    |
| OGE017DO    | 17  | 14  | 10 | 30  | CI30                      | CE17                     | 106              | 21.2    |
| OGE020DO    | 20  | 16  | 12 | 35  | CI35                      | CE20                     | 146              | 30      |
| OGE025DO    | 25  | 20  | 16 | 42  | CI42                      | CE25                     | 240              | 48      |
| OGE030DO    | 30  | 22  | 18 | 47  | CI47                      | CE30                     | 310              | 62      |
| OGE035DO    | 35  | 25  | 20 | 55  | CI55                      | CE35                     | 400              | 80      |
| OGE040DO    | 40  | 28  | 22 | 62  | CI62                      | CE40                     | 500              | 100     |
| OGE045DO    | 45  | 32  | 25 | 68  | CI68                      | CE45                     | 640              | 127     |
| OGE050DO    | 50  | 35  | 28 | 75  | CI75                      | CE50                     | 780              | 156     |
| OGE060DO    | 60  | 44  | 36 | 90  | CI90                      | CE60                     | 1220             | 245     |
| OGE070DO    | 70  | 49  | 40 | 105 | CI105                     | CE70                     | 1560             | 315     |
| OGE080DO    | 80  | 55  | 45 | 120 | CI120                     | CE80                     | 2000             | 400     |
| OGE090DO    | 90  | 60  | 50 | 130 | CI130                     | CE90                     | 2450             | 490     |
| OGE100DO    | 100 | 70  | 55 | 150 | CI150                     | CE100                    | 3050             | 610     |
| OGE110DO    | 110 | 70  | 55 | 160 | CI160                     | CE110                    | 3250             | 655     |
| OGE120DO    | 120 | 85  | 70 | 180 | CI180                     | CE120                    | 4750             | 950     |
| OGE140DO    | 140 | 90  | 70 | 210 | CI210                     | CE140                    | 5400             | 1080    |
| OGE180DO    | 180 | 105 | 80 | 260 | CI260                     | CE180                    | 6800             | 1370    |

ISO 12240-1-SERIES E - PARTS REQUIRE SERVICING : COUPLING : STEEL / STEEL OR EQUIVALENT  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

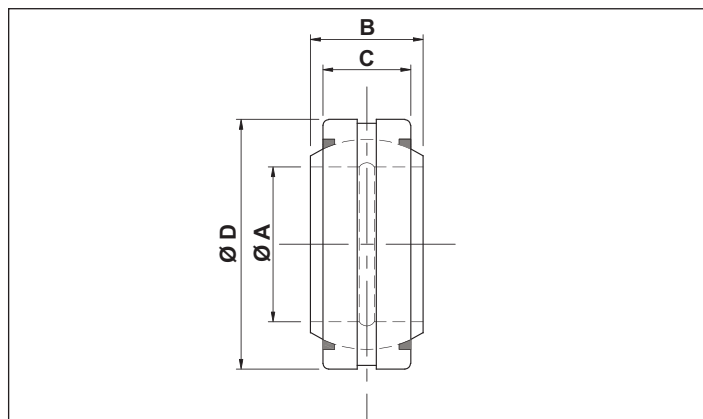
## RADIAL BALL JOINTS OGE \*\*\* DO-I IMPERIAL SIZES WITHOUT SEALS



| PART NUMBER       | Ø A   | B     | C     | Ø D   | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------------|-------|-------|-------|-------|---------------------------|--------------------------|------------------|---------|
|                   |       |       |       |       |                           |                          | STATIC           | DYNAMIC |
| OGE050DO-I (0.50) | 0.500 | 0.437 | 0.375 | 0.875 | CI087 (0.87)              | CE050 (0.50)             | 41.5             | 13.7    |
| OGE062DO-I (0.62) | 0.625 | 0.547 | 0.469 | 1.062 | CI106 (1.06)              | CE062 (0.62)             | 65.5             | 22      |
| OGE075DO-I (0.75) | 0.750 | 0.656 | 0.562 | 1.250 | CI125 (1.25)              | CE075 (0.75)             | 95               | 31.5    |
| OGE100DO-I (1.00) | 1.000 | 0.875 | 0.750 | 1.625 | CI162 (1.62)              | CE100 (1.00)             | 166              | 56      |
| OGE125DO-I (1.25) | 1.250 | 1.093 | 0.937 | 2.000 | CI200 (2.00)              | CE125 (1.25)             | 260              | 86.5    |
| OGE137DO-I (1.37) | 1.375 | 1.187 | 1.031 | 2.187 | CI218 (2.18)              | CE137 (1.37)             | 310              | 102     |
| OGE150DO-I (1.50) | 1.500 | 1.312 | 1.125 | 2.438 | CI243 (2.43)              | CE150 (1.50)             | 375              | 125     |
| OGE175DO-I (1.75) | 1.750 | 1.531 | 1.312 | 2.811 | CI281 (2.81)              | CE175 (1.75)             | 510              | 170     |
| OGE200DO-I (2.00) | 2.000 | 1.750 | 1.500 | 3.187 | CI315 (3.15)              | CE200 (2.00)             | 670              | 224     |
| OGE225DO-I (2.25) | 2.250 | 1.969 | 1.687 | 3.562 | CI354 (3.54)              | CE225 (2.25)             | 850              | 280     |
| OGE250DO-I (2.50) | 2.500 | 2.187 | 1.875 | 3.937 | CI393 (3.93)              | CE250 (2.50)             | 1060             | 355     |

ISO 12240-1-SERIES E: PARTS REQUIRE SERVICING: COUPLING :STEEL / STEEL OR EQUIVALENT  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

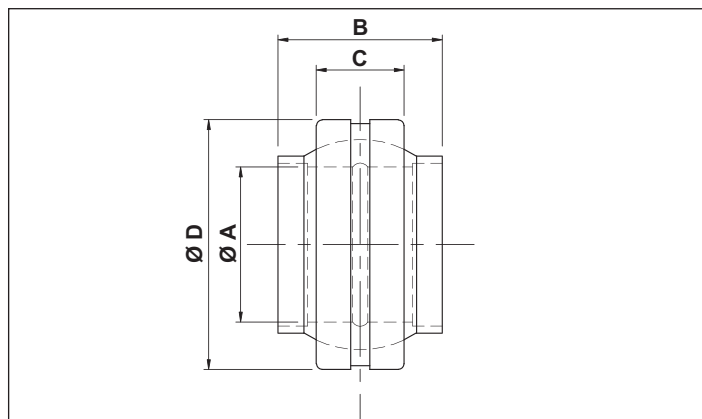
## RADIAL BALL JOINTS OGE \*\*\* DO2 WITH SEALS



| PART NUMBER | Ø A | B   | C  | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------|-----|-----|----|-----|---------------------------|--------------------------|------------------|---------|
|             |     |     |    |     |                           |                          | STATIC           | DYNAMIC |
| OGE020DO2   | 20  | 16  | 12 | 35  | CI35                      | CE20                     | 146              | 30      |
| OGE025DO2   | 25  | 20  | 16 | 42  | CI42                      | CE25                     | 240              | 48      |
| OGE030DO2   | 30  | 22  | 18 | 47  | CI47                      | CE30                     | 310              | 62      |
| OGE035DO2   | 35  | 25  | 20 | 55  | CI55                      | CE35                     | 400              | 80      |
| OGE040DO2   | 40  | 28  | 22 | 62  | CI62                      | CE40                     | 500              | 100     |
| OGE045DO2   | 45  | 32  | 25 | 68  | CI68                      | CE45                     | 640              | 127     |
| OGE050DO2   | 50  | 35  | 28 | 75  | CI75                      | CE50                     | 780              | 156     |
| OGE060DO2   | 60  | 44  | 36 | 90  | CI90                      | CE60                     | 1220             | 245     |
| OGE070DO2   | 70  | 49  | 40 | 105 | CI105                     | CE70                     | 1560             | 315     |
| OGE080DO2   | 80  | 55  | 45 | 120 | CI120                     | CE80                     | 2000             | 400     |
| OGE090DO2   | 90  | 60  | 50 | 130 | CI130                     | CE90                     | 2450             | 490     |
| OGE100DO2   | 100 | 70  | 55 | 150 | CI150                     | CE100                    | 3050             | 610     |
| OGE110DO2   | 110 | 70  | 55 | 160 | CI160                     | CE110                    | 3250             | 655     |
| OGE120DO2   | 120 | 85  | 70 | 180 | CI180                     | CE120                    | 4750             | 950     |
| OGE140DO2   | 140 | 90  | 70 | 210 | CI210                     | CE140                    | 5400             | 1080    |
| OGE160DO2   | 160 | 105 | 80 | 230 | CI230                     | CE160                    | 6800             | 1370    |

ISO 12240-1-SERIES E : PARTS REQUIRE SERVICING : COUPLING : STEEL / STEEL OR EQUIVALENT  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

## RADIAL BALL JOINTS OGE \*\*\* LO WITHOUT SEALS



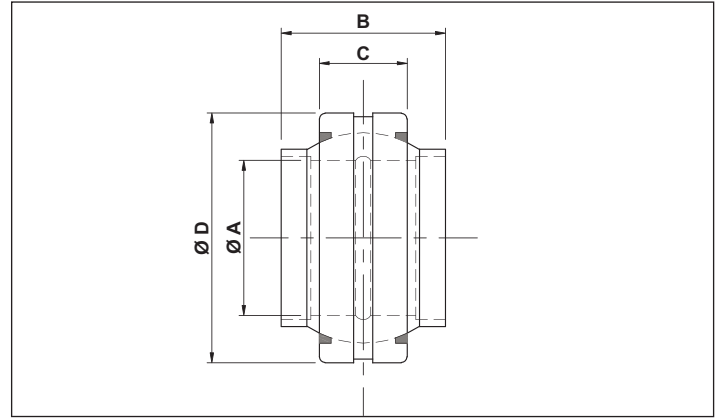
| PART NUMBER | Ø A | B   | C   | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|---------------------------|--------------------------|------------------|---------|
|             |     |     |     |     |                           |                          | STATIC           | DYNAMIC |
| OGE012LO *  | 12  | 12  | 7   | 22  | CI22                      | CE12                     | 54               | 10.8    |
| OGE016LO    | 16  | 16  | 9   | 28  | CI28                      | CE16                     | 88               | 17.6    |
| OGE020LO    | 20  | 20  | 12  | 35  | CI35                      | CE20                     | 146              | 30      |
| OGE025LO    | 25  | 25  | 16  | 42  | CI42                      | CE25                     | 240              | 48      |
| OGE030LO    | 30  | 30  | 18  | 47  | CI47                      | CE30                     | 310              | 62      |
| OGE032LO    | 32  | 32  | 18  | 52  | CI52                      | CE32                     | 335              | 67      |
| OGE040LO    | 40  | 40  | 22  | 62  | CI62                      | CE40                     | 500              | 100     |
| OGE050LO    | 50  | 50  | 28  | 75  | CI75                      | CE50                     | 780              | 156     |
| OGE063LO    | 63  | 63  | 36  | 95  | CI95                      | CE63                     | 1270             | 255     |
| OGE070LO    | 70  | 70  | 40  | 105 | CI105                     | CE70                     | 1560             | 315     |
| OGE080LO    | 80  | 80  | 45  | 120 | CI120                     | CE80                     | 2000             | 400     |
| OGE090LO    | 90  | 90  | 50  | 130 | CI130                     | CE90                     | 2450             | 490     |
| OGE100LO    | 100 | 100 | 55  | 150 | CI150                     | CE100                    | 3050             | 610     |
| OGE110LO    | 110 | 110 | 55  | 160 | CI160                     | CE110                    | 3250             | 655     |
| OGE125LO    | 125 | 125 | 70  | 180 | CI180                     | CE125                    | 4750             | 950     |
| OGE160LO    | 160 | 160 | 80  | 230 | CI230                     | CE160                    | 6800             | 1370    |
| OGE200LO    | 200 | 200 | 100 | 290 | CI290                     | CE200                    | 10600            | 2120    |

ISO12240-1-SERIES E : PARTS REQUIRE SERVICING : COUPLING : STEEL / STEEL OR EQUIVALENT

\* NOT POSSIBLE TO LUBRICATE

CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

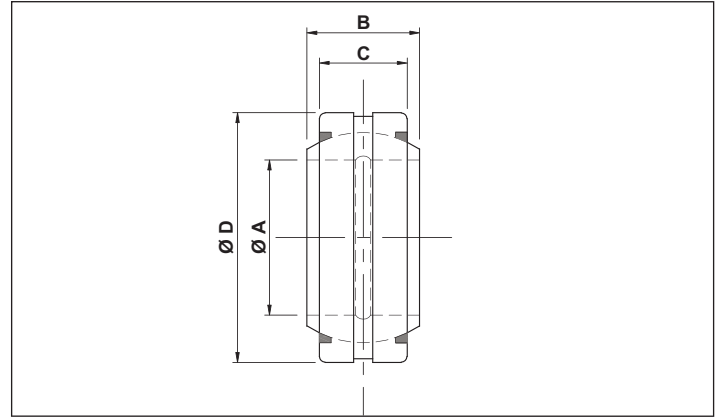
## RADIAL BALL JOINTS OGE \*\*\* HO2 WITH SEALS



| PART NUMBER | Ø A | B  | C  | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KM) |         |
|-------------|-----|----|----|-----|---------------------------|--------------------------|------------------|---------|
|             |     |    |    |     |                           |                          | STATIC           | DYNAMIC |
| OGE020HO2   | 20  | 24 | 12 | 35  | CI35                      | CE20                     | 146              | 30      |
| OGE025HO2   | 25  | 29 | 16 | 42  | CI42                      | CE25                     | 240              | 48      |
| OGE030HO2   | 30  | 30 | 18 | 47  | CI47                      | CE30                     | 310              | 62      |
| OGE035HO2   | 35  | 35 | 20 | 55  | CI55                      | CE35                     | 400              | 80      |
| OGE040HO2   | 40  | 38 | 22 | 62  | CI62                      | CE40                     | 500              | 100     |
| OGE045HO2   | 45  | 40 | 25 | 68  | CI68                      | CE45                     | 640              | 127     |
| OGE050HO2   | 50  | 43 | 28 | 75  | CI75                      | CE50                     | 780              | 156     |
| OGE060HO2   | 60  | 54 | 36 | 90  | CI90                      | CE60                     | 1220             | 245     |
| OGE070HO2   | 70  | 65 | 40 | 105 | CI105                     | CE70                     | 1560             | 315     |
| OGE080HO2   | 80  | 74 | 45 | 120 | CI120                     | CE80                     | 2000             | 400     |

ISO 12240-1-SERIES W : PARTS REQUIRE SERVICING : COUPLING : STEEL / STEEL OR EQUIVALENT  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

## RADIAL BALL JOINTS OGE \*\*\* FO2 WITH SEALS

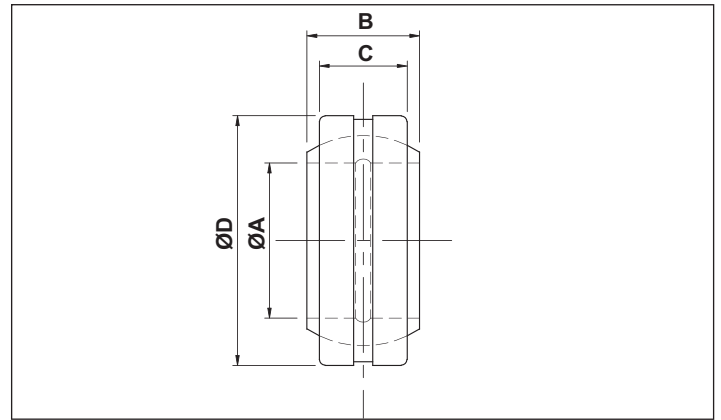


| PART NUMBER | Ø A | B   | C  | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KM) |         |
|-------------|-----|-----|----|-----|---------------------------|--------------------------|------------------|---------|
|             |     |     |    |     |                           |                          | STATIC           | DYNAMIC |
| OGE020FO2   | 20  | 25  | 16 | 42  | CI42                      | CE20                     | 240              | 48      |
| OGE025FO2   | 25  | 28  | 18 | 47  | CI47                      | CE25                     | 310              | 62      |
| OGE030FO2   | 30  | 32  | 20 | 55  | CI55                      | CE30                     | 400              | 80      |
| OGE035FO2   | 35  | 35  | 22 | 62  | CI62                      | CE35                     | 500              | 100     |
| OGE040FO2   | 40  | 40  | 25 | 68  | CI68                      | CE40                     | 640              | 127     |
| OGE045FO2   | 45  | 43  | 28 | 75  | CI75                      | CE45                     | 780              | 156     |
| OGE050FO2   | 50  | 56  | 36 | 90  | CI90                      | CE50                     | 1220             | 245     |
| OGE060FO2   | 60  | 63  | 40 | 105 | CI105                     | CE60                     | 1560             | 315     |
| OGE070FO2   | 70  | 70  | 45 | 120 | CI120                     | CE70                     | 2000             | 400     |
| OGE080FO2   | 80  | 75  | 50 | 130 | CI130                     | CE80                     | 2450             | 490     |
| OGE090FO2   | 90  | 85  | 55 | 150 | CI150                     | CE90                     | 3050             | 610     |
| OGE100FO2   | 100 | 85  | 55 | 160 | CI160                     | CE100                    | 3250             | 655     |
| OGE110FO2   | 110 | 100 | 70 | 180 | CI180                     | CE110                    | 4750             | 950     |
| OGE160FO2   | 160 | 135 | 80 | 260 | CI260                     | CE160                    | 5400             | 1080    |

ISO 12240-1-SERIES G: PARTS REQUIRE SERVICING : COUPLING: STEEL / STEEL OR EQUIVALENT  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS



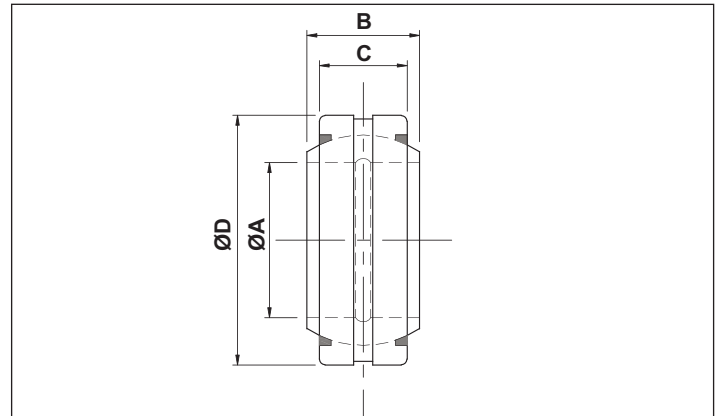
## RADIAL BALL JOINTS OGE \*\*\* UK WITHOUT SEALS



| PART NUMBER | Ø A | B  | C  | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------|-----|----|----|-----|---------------------------|--------------------------|------------------|---------|
|             |     |    |    |     |                           |                          | STATIC           | DYNAMIC |
| OGE015UK    | 15  | 12 | 9  | 26  | CI26                      | CE15                     | 44               | 17.6    |
| OGE025UK    | 25  | 20 | 16 | 42  | CI42                      | CE25                     | 127              | 51      |
| OGE030UK    | 30  | 22 | 18 | 47  | CI47                      | CE30                     | 166              | 65.5    |

ISO 12240-1-SERIES E NO SERVICING REQUIRED : COUPLING : HARD CHROMED STEEL / ON PTFE FABRIC  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

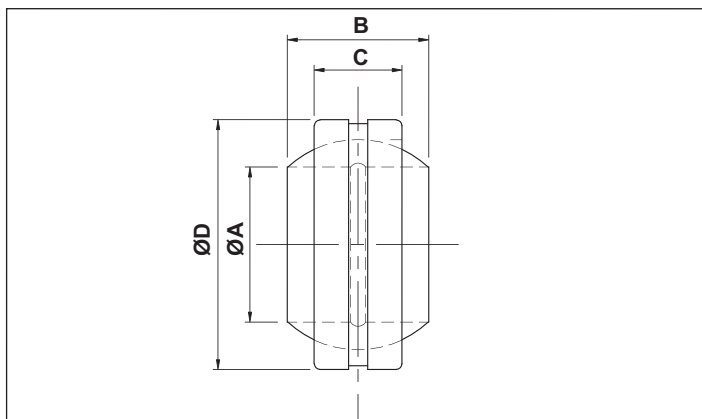
## RADIAL BALL JOINTS OGE \*\*\* UK2 WITH SEALS



| PART NUMBER | Ø A | B   | C   | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|---------------------------|--------------------------|------------------|---------|
|             |     |     |     |     |                           |                          | STATIC           | DYNAMIC |
| OGE020UK2   | 20  | 16  | 12  | 35  | CI35                      | CE20                     | 83               | 41.5    |
| OGE025UK2   | 25  | 20  | 16  | 42  | CI42                      | CE25                     | 137              | 68      |
| OGE030UK2   | 30  | 22  | 18  | 47  | CI47                      | CE30                     | 176              | 88      |
| OGE035UK2   | 35  | 25  | 20  | 55  | CI55                      | CE35                     | 224              | 112     |
| OGE040UK2   | 40  | 28  | 22  | 62  | CI62                      | CE40                     | 280              | 140     |
| OGE045UK2   | 45  | 32  | 25  | 68  | CI68                      | CE45                     | 360              | 180     |
| OGE050UK2   | 50  | 35  | 28  | 75  | CI75                      | CE50                     | 440              | 220     |
| OGE060UK2   | 60  | 44  | 36  | 90  | CI90                      | CE60                     | 695              | 345     |
| OGE070UK2   | 70  | 49  | 40  | 105 | CI105                     | CE70                     | 880              | 440     |
| OGE080UK2   | 80  | 55  | 45  | 120 | CI120                     | CE80                     | 1140             | 570     |
| OGE090UK2   | 90  | 60  | 50  | 130 | CI130                     | CE90                     | 1370             | 695     |
| OGE100UK2   | 100 | 70  | 55  | 150 | CI150                     | CE100                    | 1730             | 865     |
| OGE110UK2   | 110 | 70  | 55  | 160 | CI160                     | CE110                    | 1860             | 930     |
| OGE120UK2   | 120 | 85  | 70  | 180 | CI180                     | CE120                    | 2700             | 1340    |
| OGE140UK2   | 140 | 90  | 70  | 210 | CI210                     | CE140                    | 3000             | 1500    |
| OGE160UK2   | 160 | 105 | 80  | 230 | CI230                     | CE160                    | 3800             | 1930    |
| OGE180UK2   | 180 | 105 | 80  | 260 | CI260                     | CE180                    | 4300             | 2160    |
| OGE200UK2   | 200 | 130 | 100 | 290 | CI290                     | CE200                    | 6000             | 3000    |

ISO 12240-1-SERIES E : NO SERVICING REQUIRED : COUPLING : HARD CHROME ON STEEL / PTFE FABRIC  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

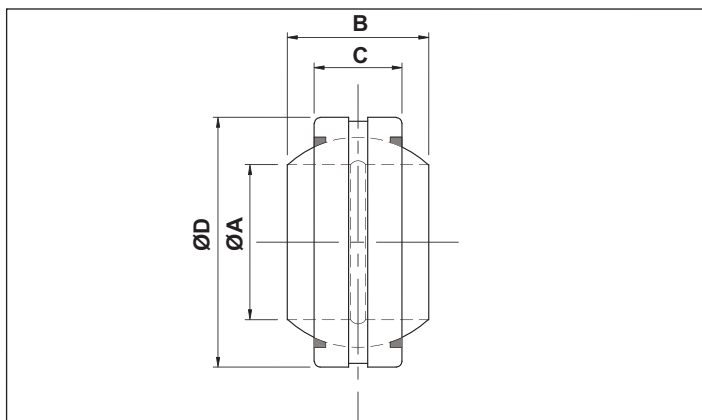
## RADIAL BALL JOINTS OGE \*\*\* FW WITHOUT SEALS



| PART NUMBER | Ø A | B  | C  | Ø D | INTERNAL CIRCLIP REQUIRED | EXTERNAL CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------|-----|----|----|-----|---------------------------|-----------------------------------|------------------|---------|
|             |     |    |    |     |                           |                                   | STATIC           | DYNAMIC |
| OGE06FW     | 6   | 9  | 5  | 16  | CI16                      | CE6                               | 14.6             | 5.85    |
| OGE08FW     | 8   | 11 | 6  | 19  | CI19                      | CE8                               | 21.6             | 8.65    |
| OGE10FW     | 10  | 12 | 7  | 22  | CI22                      | CE10                              | 28.5             | 11.4    |
| OGE12FW     | 12  | 15 | 9  | 26  | CI26                      | CE12                              | 44               | 17.6    |
| OGE15FW     | 15  | 16 | 10 | 30  | CI30                      | CE15                              | 56               | 22.4    |
| OGE17FW     | 17  | 20 | 12 | 35  | CI35                      | CE17                              | 78               | 31.5    |
| OGE20FW     | 20  | 25 | 16 | 42  | CI42                      | CE20                              | 127              | 51      |
| OGE25FW     | 25  | 28 | 18 | 47  | CI47                      | CE25                              | 166              | 65.5    |
| OGE30FW     | 30  | 32 | 20 | 55  | CI55                      | CE30                              | 224              | 112     |

ISO 12240-1-SERIES E NO SERVICING REQUIRED : COUPLING : HARD CHROMED STEEL / ON PTFE FABRIC  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

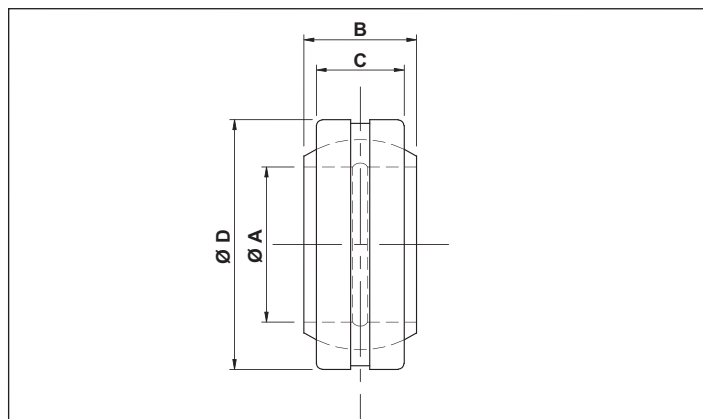
## RADIAL BALL JOINTS OGE \*\*\* FW2 WITH SEALS



| PART NUMBER | Ø A | B   | C   | Ø D | INTERNAL CIRCLIP REQUIRED | EXTERNAL CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|-------------|-----|-----|-----|-----|---------------------------|-----------------------------------|------------------|---------|
|             |     |     |     |     |                           |                                   | STATIC           | DYNAMIC |
| OGE030FW2   | 30  | 32  | 20  | 55  | CI55                      | CE30                              | 224              | 112     |
| OGE035FW2   | 35  | 35  | 22  | 62  | CI62                      | CE35                              | 280              | 140     |
| OGE040FW2   | 40  | 40  | 25  | 68  | CI68                      | CE40                              | 360              | 180     |
| OGE045FW2   | 45  | 43  | 28  | 75  | CI75                      | CE45                              | 440              | 220     |
| OGE050FW2   | 50  | 56  | 36  | 90  | CI90                      | CE50                              | 695              | 345     |
| OGE060FW2   | 60  | 63  | 40  | 105 | CI105                     | CE60                              | 880              | 440     |
| OGE070FW2   | 70  | 70  | 45  | 120 | CI120                     | CE70                              | 1140             | 570     |
| OGE080FW2   | 80  | 75  | 50  | 130 | CI130                     | CE80                              | 1370             | 695     |
| OGE090FW2   | 90  | 85  | 55  | 150 | CI150                     | CE90                              | 1730             | 865     |
| OGE100FW2   | 100 | 85  | 55  | 160 | CI160                     | CE100                             | 1860             | 930     |
| OGE110FW2   | 110 | 100 | 70  | 180 | CI180                     | CE110                             | 2700             | 1340    |
| OGE120FW2   | 120 | 115 | 70  | 210 | CI210                     | CE120                             | 3000             | 1500    |
| OGE140FW2   | 140 | 130 | 80  | 230 | CI230                     | CE140                             | 3800             | 1930    |
| OGE160FW2   | 160 | 135 | 80  | 260 | CI260                     | CE160                             | 4300             | 2160    |
| OGE180FW2   | 180 | 155 | 100 | 290 | CI290                     | CE180                             | 6000             | 3000    |

ISO 12240-1-NO SERVICING REQUIRED : CHROMED STEEL /PTFE FABRIC  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

## RADIAL BALL JOINTS OGE \*\*\* UK - STAINLESS STEEL WITHOUT SEALS



| PART NUMBER        | Ø A | B  | C  | Ø D | INTERNAL CIRCLIP REQUIRED | CIRCLIP REQUIRED FOR PIN | LOAD FACTOR (KN) |         |
|--------------------|-----|----|----|-----|---------------------------|--------------------------|------------------|---------|
|                    |     |    |    |     |                           |                          | STATIC           | DYNAMIC |
| OGE015UK-STAINLESS | 15  | 12 | 9  | 26  | CI26                      | CE15                     | 50               | 25      |
| OGE020UK-STAINLESS | 20  | 16 | 12 | 35  | CI35                      | CE20                     | 90               | 45      |
| OGE025UK-STAINLESS | 25  | 20 | 16 | 42  | CI42                      | CE25                     | 170              | 85      |
| OGE030UK-STAINLESS | 30  | 22 | 18 | 47  | CI47                      | CE30                     | 220              | 110     |
| OGE035UK-STAINLESS | 35  | 25 | 20 | 55  | CI55                      | CE35                     | 280              | 140     |
| OGE040UK-STAINLESS | 40  | 28 | 22 | 62  | CI62                      | CE40                     | 350              | 175     |
| OGE045UK-STAINLESS | 45  | 32 | 25 | 68  | CI68                      | CE45                     | 450              | 225     |
| OGE050UK-STAINLESS | 50  | 35 | 28 | 75  | CI75                      | CE50                     | 550              | 275     |
| OGE070UK-STAINLESS | 70  | 49 | 40 | 105 | CI105                     | CE70                     | 1100             | 550     |
| OGE100UK-STAINLESS | 100 | 70 | 55 | 150 | CI150                     | CE100                    | 2140             | 1070    |

ISO 12240-1-SERIES G : NO SERVICING REQUIRED : COUPLING: STAINLESS STEEL AISI 420 + PTFE FABRIC OR EQUIVALENT  
CIRCLIPS ARE NOT PROVIDED WITH RADIAL BALL JOINTS

## EXTERNAL CIRCLIPS FOR THE INTERNAL BORE OF SPHERICAL BEARINGS



CIRCLIP EXTERNAL    SIZE  
CE    04

| PART NUMBER | TO SUIT SHAFT SIZE (mm) | THICKNESS | PART NUMBER | TO SUIT SHAFT SIZE (mm) | THICKNESS |
|-------------|-------------------------|-----------|-------------|-------------------------|-----------|
| CE04        | 4                       | 1         | CE68        | 68                      | 2         |
| CE10        | 10                      | 1         | CE70        | 70                      | 2.5       |
| CE12        | 12                      | 1         | CE75        | 75                      | 2.5       |
| CE13        | 13                      | 1         | CE80        | 80                      | 2.5       |
| CE14        | 14                      | 1         | CE88        | 88                      | 2.5       |
| CE15-HD     | 15                      | 1.5       | CE90        | 90                      | 3         |
| CE16        | 16                      | 1         | CE100       | 100                     | 3         |
| CE17        | 17                      | 1         | CE105       | 105                     | 3         |
| CE18        | 18                      | 1.5       | CE110       | 110                     | 3         |
| CE20        | 20                      | 1.2       | CE120       | 120                     | 4         |
| CE22        | 22                      | 1.2       | CE130       | 130                     | 4         |
| CE25        | 25                      | 1.2       | CE140       | 140                     | 4         |
| CE28        | 28                      | 1.2       | CE150       | 150                     | 4         |
| CE30        | 30                      | 1.5       | CE160       | 160                     | 4         |
| CE32        | 32                      | 1.5       | CE180       | 180                     | 4         |
| CE35        | 35                      | 1.5       | CE200       | 200                     | 4         |
| CE38        | 38                      | 1.5       |             |                         |           |
| CE40-HD     | 40                      | 2.5       |             |                         |           |
| CE42        | 42                      | 1.75      |             |                         |           |
| CE44        | 44                      | 1.75      |             |                         |           |
| CE45        | 45                      | 1.75      |             |                         |           |
| CE46        | 46                      | 1.75      |             |                         |           |
| CE47        | 47                      | 1.75      |             |                         |           |
| CE50        | 50                      | 2         |             |                         |           |
| CE60        | 60                      | 2         |             |                         |           |
| CE63        | 63                      | 2         |             |                         |           |
| CE65        | 65                      | 2         |             |                         |           |

MATERIAL : CARBON SPRING STEEL STANDARD FINISH - PHOSPHATE AND OIL.

## INTERNAL CIRCLIPS FOR THE OUTSIDE OF SPHERICAL BEARINGS

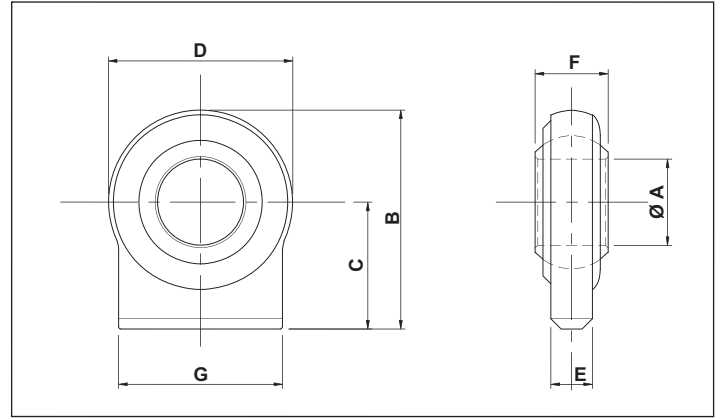


CIRCLIP INTERNAL    SIZE  
CI    12

| PART NUMBER | TO SUIT SHAFT SIZE (mm) | THICKNESS | PART NUMBER | TO SUIT SHAFT SIZE (mm) | THICKNESS |
|-------------|-------------------------|-----------|-------------|-------------------------|-----------|
| CI12        | 12                      | 1         | CI75        | 75                      | 2.5       |
| CI15        | 15                      | 1         | CI76        | 76                      | 2.5       |
| CI17        | 17                      | 1         | CI80        | 80                      | 2.5       |
| CI19        | 19                      | 1         | CI82        | 82                      | 2.5       |
| CI20        | 20                      | 1         | CI85        | 85                      | 3         |
| CI22        | 22                      | 1         | CI88        | 88                      | 3         |
| CI24        | 24                      | 1.2       | CI90        | 90                      | 3         |
| CI26        | 26                      | 1.2       | CI95        | 95                      | 3         |
| CI28        | 28                      | 1.2       | CI98        | 98                      | 3         |
| CI30        | 30                      | 1.2       | CI100       | 100                     | 3         |
| CI32        | 32                      | 1.2       | CI102       | 102                     | 4         |
| CI35        | 35                      | 1.5       | CI105       | 105                     | 4         |
| CI36        | 36                      | 1.5       | CI107       | 107                     | 4         |
| CI38        | 38                      | 1.5       | CI110       | 110                     | 4         |
| CI40        | 40                      | 1.75      | CI112       | 112                     | 4         |
| CI41        | 41                      | 1.75      | CI115       | 115                     | 4         |
| CI42        | 42                      | 1.75      | CI120       | 120                     | 4         |
| CI45        | 45                      | 1.75      | CI125       | 125                     | 4         |
| CI47        | 47                      | 1.75      | CI130       | 130                     | 4         |
| CI48        | 48                      | 1.75      | CI150       | 150                     | 4         |
| CI50        | 50                      | 2         | CI160       | 160                     | 4         |
| CI52        | 52                      | 2         | CI180       | 180                     | 4         |
| CI55        | 55                      | 2         | CI210       | 210                     | 5         |
| CI57        | 57                      | 2         | CI230       | 230                     | 5         |
| CI60        | 60                      | 2         | CI260       | 260                     | 5         |
| CI62        | 62                      | 2         | CI290       | 290                     | 5         |
| CI65        | 65                      | 2.5       | CI325       | 325                     | 5         |
| CI68        | 68                      | 2.5       |             |                         |           |
| CI70        | 70                      | 2.5       |             |                         |           |
| CI72        | 72                      | 2.5       |             |                         |           |

MATERIAL : CARBON SPRING STEEL STANDARD FINISH - PHOSPHATE AND OIL.

## LOWER LINK BALL ENDS STYLE A

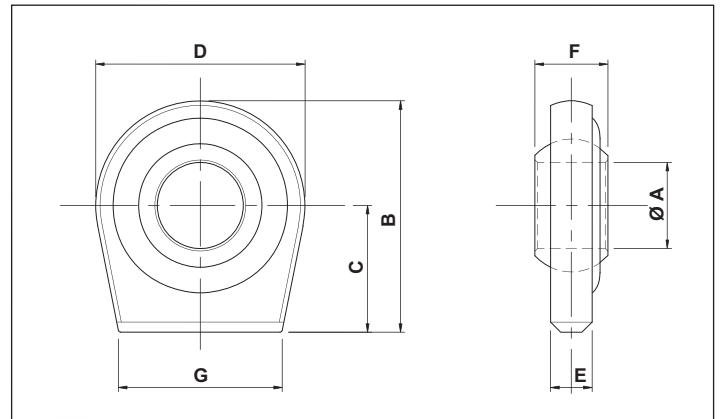


|                  |                    |                       |                     |
|------------------|--------------------|-----------------------|---------------------|
| LOWER LINK<br>LL | PIN SIZE Ø A<br>14 | CENTRE HEIGHT C<br>60 | TOTAL WIDTH F<br>32 |
|------------------|--------------------|-----------------------|---------------------|

| PART NUMBER  | CATEGORY | Ø A  | B   | C  | D  | E  | F  | G  |
|--------------|----------|------|-----|----|----|----|----|----|
| LL14-6032    |          | 14   | 83  | 60 | 46 | 11 | 32 | 30 |
| LL16-6020    |          | 16   | 83  | 60 | 46 | 11 | 20 | 30 |
| LL19-4535    | 1        | 19   | 73  | 45 | 65 | 15 | 35 | 50 |
| LL22-4535    | 1        | 22   | 73  | 45 | 65 | 15 | 35 | 50 |
| LL22-5035-76 | 1        | 22   | 88  | 50 | 76 | 18 | 35 | 70 |
| LL25-5035    | 2        | 25.4 | 88  | 50 | 76 | 18 | 35 | 70 |
| LL25-8038    | 2        | 25.4 | 120 | 80 | 80 | 22 | 38 | 70 |
| LL28-5535    | 2        | 28.4 | 97  | 55 | 83 | 18 | 35 | 70 |

MATERIAL : STEEL - ST52.3 OR EQUIVALENT

## LOWER LINK BALL ENDS STYLE B

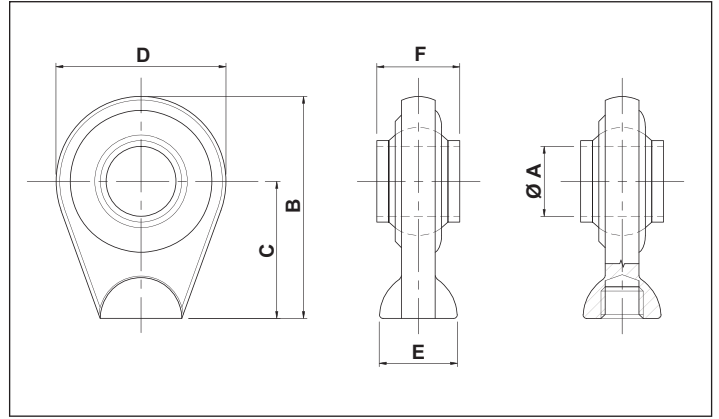


|                  |                        |                       |                     |
|------------------|------------------------|-----------------------|---------------------|
| LOWER LINK<br>LL | PIN DIAMETER Ø A<br>19 | CENTRE HEIGHT C<br>50 | TOTAL WIDTH F<br>35 |
|------------------|------------------------|-----------------------|---------------------|

| PART NUMBER  | CATEGORY | Ø A  | B   | C  | D  | E  | F  | G  |
|--------------|----------|------|-----|----|----|----|----|----|
| LL19-5035    | 1        | 19   | 84  | 50 | 67 | 18 | 35 | 56 |
| LL22-5035-67 | 2        | 22   | 84  | 50 | 67 | 18 | 35 | 56 |
| LL22-7535    | 1        | 22   | 109 | 75 | 67 | 18 | 35 | 56 |
| LL28-8035    | 2        | 28.4 | 120 | 80 | 85 | 18 | 35 | 70 |
| LL28-8045    | 2        | 28.4 | 120 | 80 | 85 | 18 | 45 | 70 |

MATERIAL : STEEL - ST52.3 OR EQUIVALENT

## TOP LINK BALL ENDS

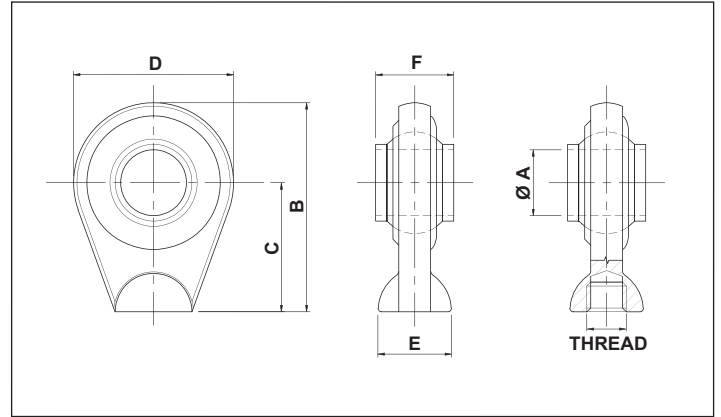


TOP LINK TL      PIN DIAMETER Ø A 19      CENTRE HEIGHT C 50      TOTAL WIDTH F 30

| PART NUMBER  | CATEGORY | Ø A  | B   | C  | D   | E       | F  |
|--------------|----------|------|-----|----|-----|---------|----|
| TL19-5030    | 1        | 19   | 77  | 50 | 53  | 25      | 30 |
| TL19-5044    | 1        | 19   | 75  | 50 | 53  | 25      | 44 |
| TL19-3444*   | 1        | 19   | 67  | 34 | 58  | 30 X 14 | 44 |
| TL19-5551    | 1        | 19   | 82  | 55 | 75  | 35      | 51 |
| TL19-6044    | 1        | 19   | 91  | 60 | 62  | 34      | 44 |
| TL20-5844    |          | 20   | 91  | 58 | 62  | 34      | 44 |
| TL20-6044    |          | 20   | 91  | 60 | 62  | 34      | 44 |
| TL22-5035    | 1        | 22   | 80  | 50 | 62  | 26      | 35 |
| TL22-6551    | 1        | 22   | 103 | 65 | 75  | 38      | 51 |
| TL25-6551-75 | 2        | 25.4 | 103 | 65 | 75  | 38      | 51 |
| TL25-6551-83 | 2        | 25.4 | 107 | 65 | 83  | 50      | 51 |
| TL25-7051    | 2        | 25.4 | 104 | 70 | 85  | 50      | 51 |
| TL30-7051    |          | 30   | 113 | 70 | 85  | 50      | 51 |
| TL32-6551    | 3        | 32   | 107 | 65 | 83  | 50      | 51 |
| TL32-6551-92 | 3        | 32   | 111 | 65 | 92  | 50      | 51 |
| TL32-8551    | 3        | 32   | 130 | 85 | 90  | 38      | 51 |
| TL35-6535    |          | 35   | 107 | 65 | 83  | 50      | 35 |
| TL40-8575    |          | 40   | 139 | 85 | 108 | 60      | 75 |

\* THIS ITEM HAS A RECTANGULAR BASE  
 MATERIAL : STEEL - ST52.3 OR EQUIVALENT  
 PLEASE NOTE THAT SIZES ARE EITHER METRIC OR IMPERIAL  
 OTHER SIZES ARE AVAILABLE ON REQUEST

## TOP LINK BALL ENDS INTERNALLY THREADED



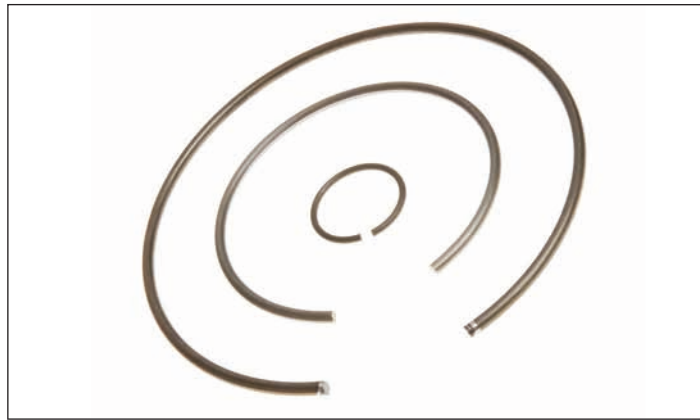
|                |                        |                       |                     |                       |
|----------------|------------------------|-----------------------|---------------------|-----------------------|
| TOP LINK<br>TL | PIN DIAMETER Ø A<br>25 | CENTRE HEIGHT C<br>70 | TOTAL WIDTH F<br>51 | INTERNAL THREAD<br>TH |
|----------------|------------------------|-----------------------|---------------------|-----------------------|

| PART NUMBER  | CATEGORY | Ø A  | B   | C  | D   | E  | F  | THREAD   |
|--------------|----------|------|-----|----|-----|----|----|----------|
| TL25-7051TH  | 2        | 25.4 | 110 | 70 | 85  | 50 | 51 | 27 x 2   |
| TL30-6030TH* |          | 30   | 90  | 60 | 61  | 35 | 30 | 22 x 1.5 |
| TL30-7051TH  |          | 30   | 110 | 70 | 85  | 50 | 51 | 27 x 2   |
| TL32-8551TH  | 3        | 32   | 130 | 85 | 90  | 38 | 51 | 27 x 2   |
| TL40-8575TH  |          | 40   | 139 | 85 | 108 | 60 | 75 | 38 x 2   |
| TL45-8575TH  |          | 45   | 139 | 85 | 108 | 60 | 75 | 38 x 2   |
| TL50-8575TH  |          | 50   | 139 | 85 | 108 | 60 | 75 | 38 x 2   |

MATERIAL : ST52.3 OR EQUIVALENT  
 PLEASE NOTE THAT SIZES ARE EITHER METRIC OR IMPERIAL  
 \* COMES WITH REMOVABLE BALL



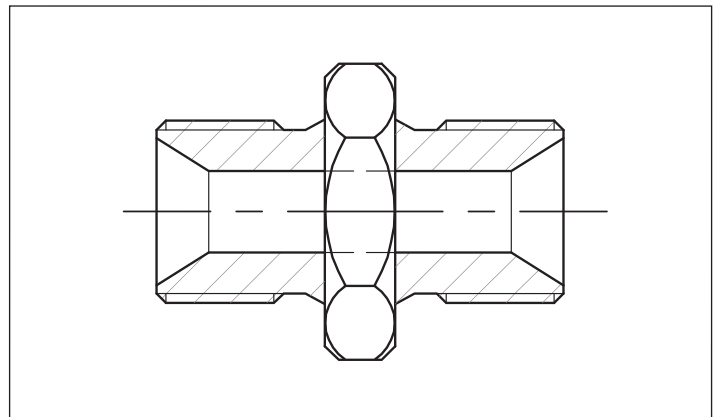
## SNAP RINGS



| PART NUMBER | TO SUIT CYLINDER BORE (mm) | WIDTH |
|-------------|----------------------------|-------|
| SN25X2      | 25                         | 2     |
| SN26X2      | 26                         | 2     |
| SN52X2.3    | 52                         | 2.3   |
| SN56X2.3    | 56                         | 2.3   |
| SN62X2.3    | 62                         | 2.3   |
| SN66X2.3    | 66                         | 2.3   |
| SN75X3.2    | 75                         | 3.2   |
| SN78X2.3    | 78                         | 2.3   |
| SN105X4     | 105                        | 4     |

MATERIAL : CARBON SPRING STEEL  
STANDARD FINISH - PHOSPHATE AND OIL

## BSP ADAPTERS



MALE MALE ADAPTER  
MMA

SIZE  
025

THREAD  
BSP

| PART NUMBER | BSP THREAD |
|-------------|------------|
| MMA025BSP   | 1/4"       |
| MMA037BSP   | 3/8"       |
| MMA050BSP   | 1/2"       |

## BREATHER PLUGS



BREATHER PLUG    BSP SIZE  
BP                    025

| PART NUMBER | BSP THREAD |
|-------------|------------|
| BP012       | 1/8"       |
| BP025       | 1/4"       |
| BP037       | 3/8"       |
| BP050       | 1/2"       |
| BP075       | 3/4"       |

MATERIAL : SINTERED BRONZE

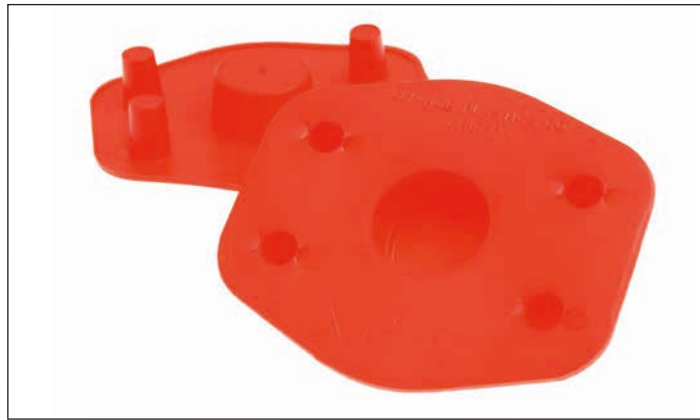
## SAE 3000 FLANGE PROTECTORS



FLANGE PROTECTORS                    SIZE                    SOCIETY OF AUTOMOTIVE ENGINEERS                    PRESSURE RATING  
FP    050    SAE    3000

| PART NUMBER    | NOMINAL DIAMETER |
|----------------|------------------|
| FP050-SAE-3000 | 1/2"             |
| FP075-SAE-3000 | 3/4"             |
| FP100-SAE-3000 | 1"               |
| FP125-SAE-3000 | 1-1/4"           |
| FP150-SAE-3000 | 1-1/2"           |
| FP200-SAE-3000 | 2"               |
| FP250-SAE-3000 | 2-1/2"           |

## SAE 6000 FLANGE PROTECTORS



|                         |             |  |                         |
|-------------------------|-------------|--|-------------------------|
| FLANGE PROTECTORS<br>FP | SIZE<br>075 | SOCIETY OF AUTOMOTIVE ENGINEERS<br>SAE | PRESSURE RATING<br>6000 |
|-------------------------|-------------|--|-------------------------|

| PART NUMBER    | NOMINAL DIAMETER |
|----------------|------------------|
| FP075-SAE-6000 | 3/4"             |
| FP100-SAE-6000 | 1"               |
| FP125-SAE-6000 | 1-1/4"           |
| FP150-SAE-6000 | 1-1/2"           |
| FP200-SAE-6000 | 2"               |

## NYLON PLUGS



|                  |             |           |
|------------------|-------------|-----------|
| NYLON PLUG<br>NP | SIZE<br>025 | MALE<br>M |
|------------------|-------------|-----------|

| PART NUMBER | SUITABLE FOR THREADS |
|-------------|----------------------|
| NP025-M     | 1/4"                 |
| NP037-M     | 3/8"                 |
| NP050-M     | 1/2"                 |
| NP075-M     | 3/4"                 |
| NP100-M     | 1"                   |
| NP16-M      | 16mm                 |
| NP18-M      | 18mm                 |
| NP20-M      | 20mm                 |
| NP22-M      | 22mm                 |

## BSP THREAD PROTECTION CAPS



|              |                    |                              |           |
|--------------|--------------------|------------------------------|-----------|
| PLUG<br>PLUG | THREAD SIZE<br>025 | BRITISH STANDARD PIPE<br>BSP | MALE<br>M |
|--------------|--------------------|------------------------------|-----------|

| PART NUMBER  | BSP THREAD |
|--------------|------------|
| PLUG025BSP-M | 1/4"       |
| PLUG037BSP-M | 3/8"       |
| PLUG050BSP-M | 1/2"       |
| PLUG075BSP-M | 3/4"       |
| PLUG100BSP-M | 1"         |

SUPPLIED WITH O-RING UNDER CAP



|            |                    |                              |              |
|------------|--------------------|------------------------------|--------------|
| CAP<br>CAP | THREAD SIZE<br>025 | BRITISH STANDARD PIPE<br>BSP | FEMALE<br>FM |
|------------|--------------------|------------------------------|--------------|

| PART NUMBER  | BSP THREAD |
|--------------|------------|
| CAP025BSP-FM | 1/4"       |
| CAP037BSP-FM | 3/8"       |
| CAP050BSP-FM | 1/2"       |
| CAP075BSP-FM | 3/4"       |
| CAP100BSP-FM | 1"         |

## METRIC THREADED PROTECTION CAPS



PLUG  
PLUG

METRIC THREAD SIZE  
20 X 1.5

MALE  
M

| PART NUMBER    | METRIC THREAD |
|----------------|---------------|
| PLUG20 x 1.5-M | 20 x 1.5      |
| PLUG22 x 1.5-M | 22 x 1.5      |
| PLUG24 x 1.5-M | 24 x 1.5      |
| PLUG26 x 1.5-M | 26 x 1.5      |
| PLUG30 x 2.0-M | 30 x 2.0      |



CAP  
CAP

METRIC THREAD SIZE  
20 X 1.5

FEMALE  
FM

| PART NUMBER    | METRIC THREAD |
|----------------|---------------|
| CAP20 x 1.5-FM | 20 x 1.5      |
| CAP22 x 1.5-FM | 22 x 1.5      |
| CAP24 x 1.5-FM | 24 x 1.5      |
| CAP26 x 1.5-FM | 26 x 1.5      |
| CAP30 x 2.0-FM | 30 x 2.0      |

## BSP THREADED PROTECTION PLUGS



PLUG  
PLUG

THREAD SIZE  
025

BRITISH STANDARD PIPE  
BSP

MALE  
M

SCREW DRIVER SLOT  
SL

O RING SEAL  
OR

| PART NUMBER        | BSP<br>THREAD |
|--------------------|---------------|
| PLUG025BSP-M-SL-OR | 1/4"          |
| PLUG037BSP-M-SL-OR | 3/8"          |
| PLUG050BSP-M-SL-OR | 1/2"          |
| PLUG075BSP-M-SL-OR | 3/4"          |
| PLUG100BSP-M-SL-OR | 1"            |
| PLUG125BSP-M-SL-OR | 1 1/4"        |

SUPPLIED WITH O-RING UNDER CAP

## NPT THREADED PROTECTION PLUGS



PLUG  
PLUG

THREAD SIZE  
025

NATIONAL PIPE TAPER  
NPT

MALE  
M

| PART NUMBER  | NPT<br>THREAD |
|--------------|---------------|
| PLUG025NPT-M | 1/4"          |
| PLUG037NPT-M | 3/8"          |
| PLUG050NPT-M | 1/2"          |
| PLUG075NPT-M | 3/4"          |

## JIC THREAD PROTECTION CAPS



PLUG  
PLUG

THREAD SIZE  
043

JOINT INDUSTRY COUNCIL  
JIC

MALE  
M

| PART NUMBER  | UNF THREAD  |
|--------------|-------------|
| PLUG043JIC-M | 7/16 x 20   |
| PLUG050JIC-M | 1/2 x 20    |
| PLUG056JIC-M | 9/16 x 18   |
| PLUG075JIC-M | 3/4 x 16    |
| PLUG087JIC-M | 7/8 x 14    |
| PLUG106JIC-M | 1-1/16 x 12 |
| PLUG118JIC-M | 1-3/16 x 12 |
| PLUG131JIC-M | 1-5/16 x 12 |



CAP  
CAP

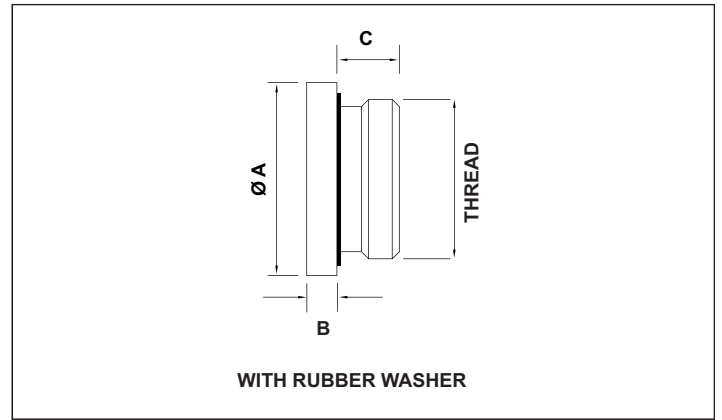
THREAD SIZE  
043

JOINT INDUSTRY COUNCIL  
JIC

FEMALE  
FM

| PART NUMBER  | UNF THREAD   |
|--------------|--------------|
| CAP043JIC-FM | 7/16" x 20   |
| CAP050JIC-FM | 1/2" x 20    |
| CAP056JIC-FM | 9/16" x 18   |
| CAP075JIC-FM | 3/4" x 16    |
| CAP087JIC-FM | 7/8" x 14    |
| CAP106JIC-FM | 1-1/16" x 12 |
| CAP118JIC-FM | 1-3/16" x 12 |
| CAP131JIC-FM | 1-5/16" x 12 |

# SOCKET CAP HEAD BLANKING PLUG



BLANKING PLUG  
BPL

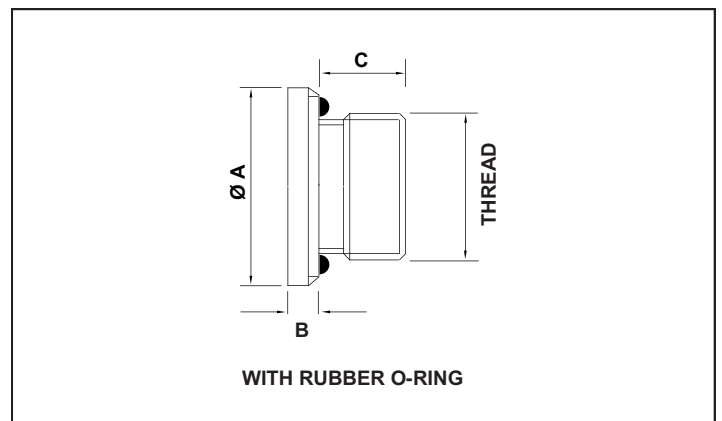
BSP THREAD  
025

SOCKET CAP SCREW  
SCS

| PART NUMBER | ØA | B   | C  | BSP<br>THREAD |
|-------------|----|-----|----|---------------|
| BPL012-SCS  | 14 | 4   | 8  | 1/8"          |
| BPL025-SCS  | 19 | 5   | 12 | 1/4"          |
| BPL037-SCS  | 22 | 5   | 12 | 3/8"          |
| BPL050-SCS  | 27 | 5   | 14 | 1/2"          |
| BPL075-SCS  | 32 | 5   | 16 | 3/4"          |
| BPL100-SCS  | 40 | 6.5 | 16 | 1"            |

| PART NUMBER     | ØA | B | C  | METRIC<br>THREAD |
|-----------------|----|---|----|------------------|
| BPL12 x 1.5-SCS | 17 | 5 | 12 | 12 x 1.5         |

MATERIAL : STEEL-9SMN28 OR EQUIVALENT



| PART NUMBER   | ØA | B   | C  | UNF<br>THREAD |
|---------------|----|-----|----|---------------|
| BPL075-16-SCS | 22 | 3.5 | 11 | 3/4" x 16 SAE |



## PISTON COMPOSITE FITTING SLEEVE



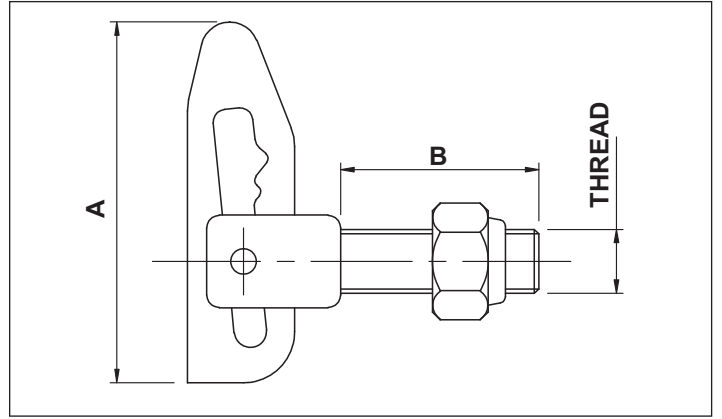
PISTON COMPOSITE FITTING SLEEVE  
PCF

CYLINDER BORE  
20

| PART NUMBER | CYLINDER BORE SIZE (mm) | LENGTH OF SLEEVE (mm) |
|-------------|-------------------------|-----------------------|
| PCF 20      | 20                      | 28                    |
| PCF 25      | 25                      | 28                    |
| PCF 30      | 30                      | 28                    |
| PCF 32      | 32                      | 28                    |
| PCF 35      | 35                      | 28                    |
| PCF 40      | 40                      | 45                    |
| PCF 45      | 45                      | 45                    |
| PCF 50      | 50                      | 45                    |
| PCF 55      | 55                      | 45                    |
| PCF 60      | 60                      | 45                    |
| PCF 63      | 63                      | 45                    |
| PCF 65      | 65                      | 45                    |
| PCF 70      | 70                      | 45                    |
| PCF 80      | 80                      | 45                    |
| PCF 90      | 90                      | 45                    |
| PCF 100     | 100                     | 45                    |
| PCF 110     | 110                     | 45                    |
| PCF 120     | 120                     | 45                    |
| PCF 125     | 125                     | 45                    |
| PCF 140     | 140                     | 45                    |
| PCF 150     | 150                     | 45                    |
| PCF 160     | 160                     | 45                    |
| PCF 180     | 180                     | 45                    |
| PCF 200     | 200                     | 45                    |
| PCF 220     | 220                     | 45                    |
| PCF 250     | 250                     | 45                    |

MATERIAL ; POLYACETAL

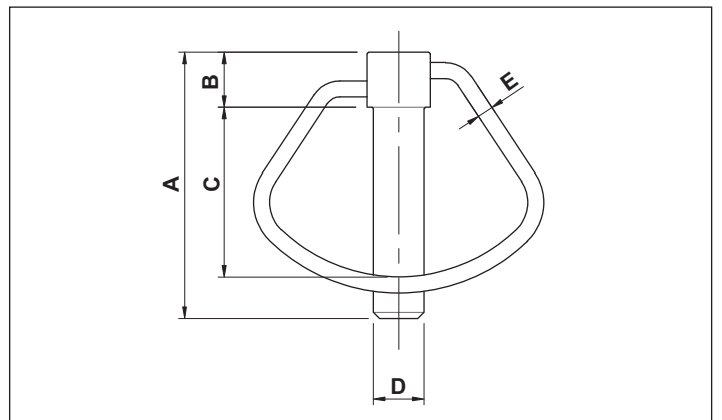
## ANTILUCE FASTENER



ANTILUCE FASTENER      THREAD (mm)  
 AF                              12

| PART NUMBER | A    | B    | THREAD   |
|-------------|------|------|----------|
| AF12        | 70mm | 39mm | 12 x 1.5 |

## LINCH PINS



LINCH PIN                      SIZE  
 LINCH PIN                      025

| PART NUMBER   | A  | B   | C  | Ø D | E   |
|---------------|----|-----|----|-----|-----|
| LINCH PIN 025 | 54 | 7.5 | 36 | 6   | 3   |
| LINCH PIN 031 | 56 | 10  | 40 | 8   | 3.5 |
| LINCH PIN 043 | 58 | 12  | 37 | 11  | 3.5 |

## PEG SPANNERS



PEG SPANNER    PIN SIZE  
PSPAN    3

| PART NUMBER        | PIN SIZE (mm) | LENGTH (mm) | JAW OPENING (mm) |
|--------------------|---------------|-------------|------------------|
| PSPAN-3            | 3             | 145         | 11-60            |
| PSPAN-3-SPARE PIN  | 3             |             |                  |
| PSPAN-4            | 4             | 145         | 11-60            |
| PSPAN-4-SPARE PIN  | 4             |             |                  |
| PSPAN-5            | 5             | 145         | 11-60            |
| PSPAN-5-SPARE PIN  | 5             |             |                  |
| PSPAN-6            | 6             | 195         | 14-100           |
| PSPAN-6-SPARE PIN  | 6             |             |                  |
| PSPAN-8            | 8             | 235         | 14-100           |
| PSPAN-8-SPARE PIN  | 8             |             |                  |
| PSPAN-10           | 10            | 235         | 22-125           |
| PSPAN-10-SPARE PIN | 10            |             |                  |

## C SPANNERS



C SPANNERS    PIN SIZE  
CSPAN    3

| PART NUMBER       | PIN SIZE (mm) | LENGTH (mm) | JAW OPENING (mm) |
|-------------------|---------------|-------------|------------------|
| CSPAN-3           | 3             | 145         | 15-35            |
| CSPAN-3-SPARE PIN | 3             |             |                  |
| CSPAN-4           | 4             | 180         | 35-50            |
| CSPAN-4-SPARE PIN | 4             |             |                  |
| CSPAN-5           | 5             | 240         | 50-80            |
| CSPAN-5-SPARE PIN | 5             |             |                  |
| CSPAN-6           | 6             | 280         | 80-120           |
| CSPAN-6-SPARE PIN | 6             |             |                  |
| CSPAN-8           | 8             | 390         | 120-180          |
| CSPAN-8-SPARE PIN | 8             |             |                  |

## QUICK RELEASE COUPLINGS



|                        |                 |      |
|------------------------|-----------------|------|
| QUICK RELEASE COUPLING | SIZE AND THREAD | MALE |
| QRC                    | 037 BSP         | MALE |

| PART NUMBER      | SIZE | DESCRIPTION  | BSP THREAD |
|------------------|------|--------------|------------|
| QRC037BSP-MALE   | 3/8" | ISO A MALE   | 3/8"       |
| QRC037BSP-FEMALE | 3/8" | ISO A FEMALE | 3/8"       |
| QRC050BSP-MALE   | 1/2" | ISO A MALE   | 1/2"       |
| QRC050BSP-FEMALE | 1/2" | ISO A FEMALE | 1/2"       |

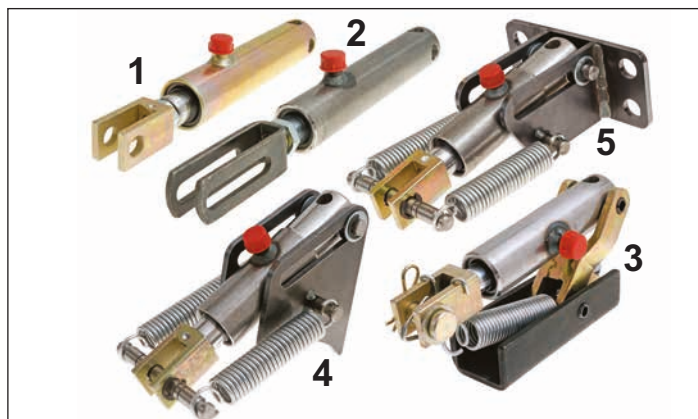
## FLAT FACE COUPLINGS



|                    |                 |      |
|--------------------|-----------------|------|
| FLAT FACE COUPLING | SIZE AND THREAD | MALE |
| FFC                | 037 BSP         | MALE |

| PART NUMBER      | SIZE | DESCRIPTION      | BSP THREAD |
|------------------|------|------------------|------------|
| FFC037BSP-MALE   | 3/8" | FLAT FACE MALE   | 3/8"       |
| FFC037BSP-FEMALE | 3/8" | FLAT FACE FEMALE | 3/8"       |
| FFC050BSP-MALE   | 1/2" | FLAT FACE MALE   | 1/2"       |
| FFC050BSP-FEMALE | 1/2" | FLAT FACE FEMALE | 1/2"       |
| FFC075BSP-MALE   | 3/4" | FLAT FACE MALE   | 3/4"       |
| FFC075BSP-FEMALE | 3/4" | FLAT FACE FEMALE | 3/4"       |

## TRAILER BRAKE RAMS



TRAILER BRAKE  
TB

ROD SIZE  
20

DESCRIPTION  
SLOTTED

| NUMBER | PART NUMBER                | CLOSED CENTRES | OPEN CENTRES | STROKE | ROD SIZE | BSP PORT | THRUST @ 100 BAR |
|--------|----------------------------|----------------|--------------|--------|----------|----------|------------------|
| 1      | TB20-STANDARD              | 252            | 327          | 75     | 20       | 3/8"     | 3,142N           |
| 2      | TB20-SLOTTED               | 231            | 304          | 73     | 20       | 3/8"     | 3,142N           |
| 3      | TB20-SQUARE AXLE           | 190            | 265          | 75     | 20       | 3/8"     | 3,142N           |
|        | TB20-SQUARE AXLE -CYL ONLY | 190            | 265          | 75     | 20       | 3/8"     | 3,142N           |
|        | TB20-SPRING                |                |              |        |          |          |                  |
|        | TB2-DLINK                  |                |              |        |          |          |                  |
| 1      | TB25-STANDARD              | 252            | 327          | 75     | 25       | 3/8"     | 3,142N           |
| 4      | TB25-ROUND AXLE            | 190            | 265          | 75     | 25       | 3/8"     | 4,909N           |
|        | TB25-ROUND AXLE-CYL ONLY   | 190            | 265          | 75     | 25       | 3/8"     | 4,909N           |
| 5      | TB25-AIR-TO-HYDRAULIC      | 190            | 265          | 75     | 25       | 3/8"     | 4,909N           |

## TRAILER BRAKE FEMALES



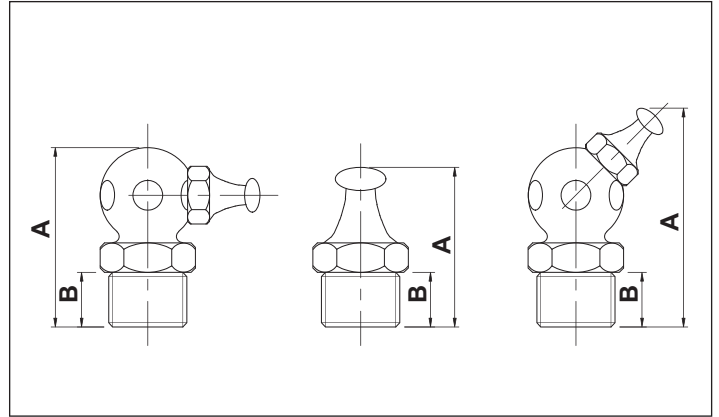
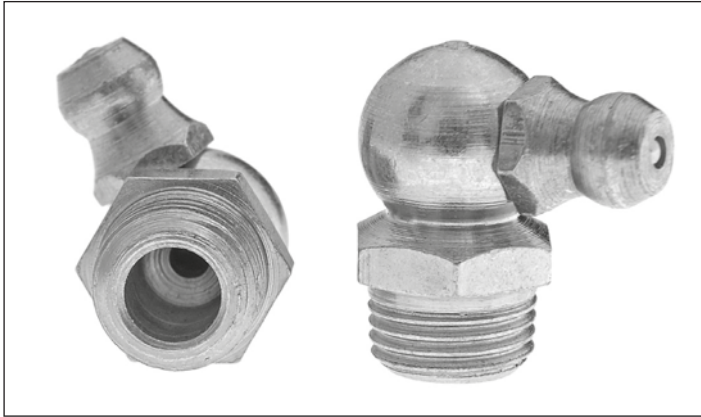
TRAILER BRAKE COUPLING  
TBC

SIZE AND THREAD  
037 BSP

FEMALE  
FEMALE

| PART NUMBER      | SIZE | DESCRIPTION          | BSP THREAD |
|------------------|------|----------------------|------------|
| TBC037BSP-FEMALE | 3/8" | TRAILER BRAKE FEMALE | 3/8"       |

# GREASE NIPPLES



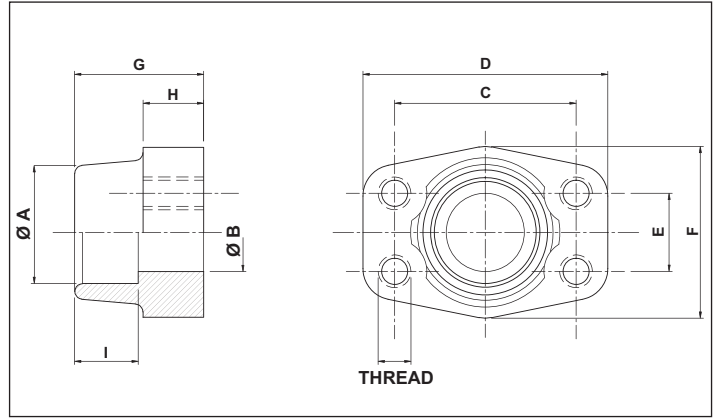
|                     |             |               |
|---------------------|-------------|---------------|
| GREASE NIPPLE<br>GN | SIZE<br>012 | THREAD<br>BSP |
|---------------------|-------------|---------------|

| PART NUMBER | A    | B   | BSP THREAD |
|-------------|------|-----|------------|
| GN012BSP    | 15   | 5.5 | 1/8"       |
| GN012BSP-45 | 25   | 5.5 | 1/8"       |
| GN012BSP-90 | 20   | 5.5 | 1/8"       |
| GN025BSP    | 17.5 | 6.5 | 1/4"       |
| GN025BSP-45 | 24   | 5.5 | 1/4"       |
| GN025BSP-90 | 19   | 5.5 | 1/4"       |

| PART NUMBER | A  | B   | UNF THREAD |
|-------------|----|-----|------------|
| GN025UNF    | 15 | 5.5 | 1/4"       |

| PART NUMBER | A  | B   | METRIC THREAD |
|-------------|----|-----|---------------|
| GN6 x 1     | 15 | 5.5 | 6 x 1         |
| GN6 x 1-45  | 23 | 5.5 | 6 x 1         |
| GN6 x 1-90  | 18 | 5.5 | 6 x 1         |
| GN8 x 1     | 15 | 5.5 | 8 x 1         |
| GN8 x 1-45  | 22 | 5.5 | 8 x 1         |
| GN8 x 1-90  | 18 | 5.5 | 8 x 1         |
| GN8 x 1.25  | 15 | 5.5 | 8 x 1.25      |
| GN10 x 1    | 15 | 5.5 | 10 x 1        |
| GN10 x 1-45 | 23 | 5.5 | 10 x 1        |
| GN10 x 1-90 | 20 | 5.5 | 10 x 1        |

## WELDABLE FLANGE ADAPTORS



|                       |             |                               |              |                            |
|-----------------------|-------------|-------------------------------|--------------|----------------------------|
| FLANGE ADAPTER<br>FLA | SIZE<br>050 | PRESSURE RATING (PSI)<br>3000 | FEMALE<br>FM | SOCKET WELD ADAPTER<br>SWA |
|-----------------------|-------------|-------------------------------|--------------|----------------------------|

| PART NUMBER        | SIZE   | Ø A  | Ø B | C     | D   | E     | F   | G  | H  | I  | THREAD |
|--------------------|--------|------|-----|-------|-----|-------|-----|----|----|----|--------|
| FLA050-3000-FM-SWA | 1/2"   | 21.6 | 13  | 38.1  | 54  | 17.48 | 46  | 36 | 16 | 19 | M8     |
| FLA075-3000-FM-SWA | 3/4"   | 27.2 | 19  | 47.63 | 65  | 22.23 | 50  | 36 | 18 | 19 | M10    |
| FLA100-3000-FM-SWA | 1"     | 34   | 25  | 52.37 | 70  | 26.19 | 55  | 38 | 18 | 19 | M10    |
| FLA125-3000-FM-SWA | 1.1/4" | 42.8 | 32  | 58.72 | 79  | 30.18 | 68  | 41 | 21 | 22 | M10    |
| FLA150-3000-FM-SWA | 1.1/2" | 48.6 | 38  | 69.85 | 93  | 35.71 | 78  | 45 | 25 | 24 | M12    |
| FLA200-3000-FM-SWA | 2"     | 61   | 51  | 77.77 | 102 | 42.8  | 90  | 45 | 25 | 26 | M12    |
| FLA250-3000-FM-SWA | 2.1/2" | 76.6 | 63  | 88.9  | 114 | 50.8  | 105 | 50 | 25 | 30 | M12    |

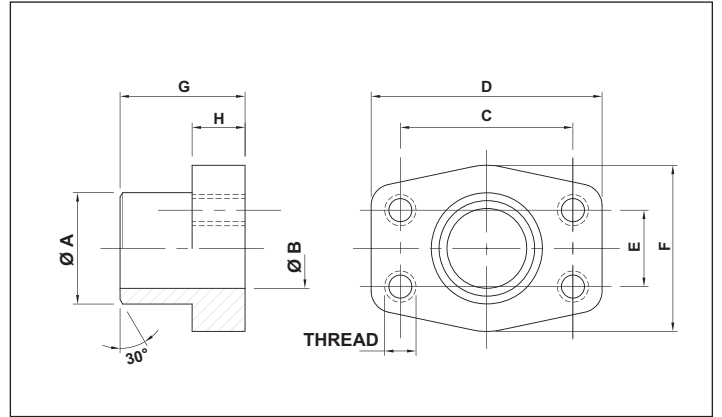
MATERIAL : STEEL-S355JO

|                       |             |                               |              |                            |
|-----------------------|-------------|-------------------------------|--------------|----------------------------|
| FLANGE ADAPTER<br>FLA | SIZE<br>050 | PRESSURE RATING (PSI)<br>6000 | FEMALE<br>FM | SOCKET WELD ADAPTER<br>SWA |
|-----------------------|-------------|-------------------------------|--------------|----------------------------|

| PART NUMBER        | SIZE   | Ø A  | Ø B | C     | D   | E     | F   | G  | H  | I  | THREAD |
|--------------------|--------|------|-----|-------|-----|-------|-----|----|----|----|--------|
| FLA050-6000-FM-SWA | 1/2"   | 21.6 | 13  | 40.49 | 54  | 18.24 | 46  | 36 | 16 | 19 | M8     |
| FLA075-6000-FM-SWA | 3/4"   | 27.2 | 19  | 50.8  | 71  | 23.8  | 55  | 35 | 21 | 22 | M10    |
| FLA100-6000-FM-SWA | 1"     | 34   | 25  | 57.15 | 81  | 27.76 | 65  | 42 | 25 | 22 | M12    |
| FLA125-6000-FM-SWA | 1.1/4" | 42.8 | 32  | 66.68 | 95  | 31.75 | 78  | 45 | 27 | 25 | M14    |
| FLA150-6000-FM-SWA | 1.1/2" | 48.6 | 38  | 79.38 | 112 | 36.5  | 94  | 50 | 30 | 28 | M16    |
| FLA200-6000-FM-SWA | 2"     | 61   | 51  | 96.82 | 134 | 44.45 | 114 | 65 | 37 | 24 | M20    |

MATERIAL : STEEL-S355JO

## WELDABLE FLANGE ADAPTORS



|                       |             |                               |           |                   |
|-----------------------|-------------|-------------------------------|-----------|-------------------|
| FLANGE ADAPTER<br>FLA | SIZE<br>050 | PRESSURE RATING (PSI)<br>3000 | MALE<br>M | BUTT WELD<br>WELD |
|-----------------------|-------------|-------------------------------|-----------|-------------------|

| PART NUMBER        | SIZE   | Ø A  | Ø B | C     | D   | E     | F   | G  | H  | THREAD |
|--------------------|--------|------|-----|-------|-----|-------|-----|----|----|--------|
| FLA050-3000-M-WELD | 1/2"   | 21   | 13  | 38.1  | 54  | 17.48 | 46  | 36 | 16 | M8     |
| FLA075-3000-M-WELD | 3/4"   | 28   | 19  | 47.63 | 65  | 22.23 | 50  | 36 | 18 | M10    |
| FLA100-3000-M-WELD | 1"     | 34   | 25  | 52.37 | 70  | 26.19 | 55  | 38 | 18 | M10    |
| FLA125-3000-M-WELD | 1.1/4" | 42.8 | 32  | 58.72 | 79  | 30.18 | 68  | 41 | 21 | M10    |
| FLA150-3000-M-WELD | 1.1/2" | 48.6 | 38  | 69.85 | 93  | 35.71 | 78  | 45 | 25 | M12    |
| FLA200-3000-M-WELD | 2"     | 61   | 51  | 77.77 | 102 | 42.8  | 90  | 45 | 25 | M12    |
| FLA250-3000-M-WELD | 2.1/2" | 77   | 63  | 88.9  | 114 | 50.8  | 105 | 50 | 25 | M12    |

MATERIAL : STEEL-S355JO

|                       |             |                               |           |                   |
|-----------------------|-------------|-------------------------------|-----------|-------------------|
| FLANGE ADAPTER<br>FLA | SIZE<br>050 | PRESSURE RATING (PSI)<br>6000 | MALE<br>M | BUTT WELD<br>WELD |
|-----------------------|-------------|-------------------------------|-----------|-------------------|

| PART NUMBER        | SIZE   | Ø A  | Ø B | C     | D   | E     | F   | G  | H  | THREAD |
|--------------------|--------|------|-----|-------|-----|-------|-----|----|----|--------|
| FLA050-6000-M-WELD | 1/2"   | 21.5 | 13  | 40.49 | 54  | 18.24 | 46  | 36 | 16 | M8     |
| FLA075-6000-M-WELD | 3/4"   | 28   | 19  | 50.8  | 71  | 23.8  | 55  | 35 | 21 | M10    |
| FLA100-6000-M-WELD | 1"     | 34   | 25  | 57.15 | 79  | 27.76 | 68  | 41 | 21 | M12    |
| FLA125-6000-M-WELD | 1.1/4" | 42.8 | 32  | 66.68 | 93  | 31.75 | 78  | 44 | 25 | M14    |
| FLA150-6000-M-WELD | 1.1/2" | 48.6 | 38  | 79.38 | 112 | 36.5  | 94  | 55 | 30 | M16    |
| FLA200-6000-M-WELD | 2"     | 61   | 51  | 96.82 | 134 | 44.45 | 114 | 65 | 37 | M20    |

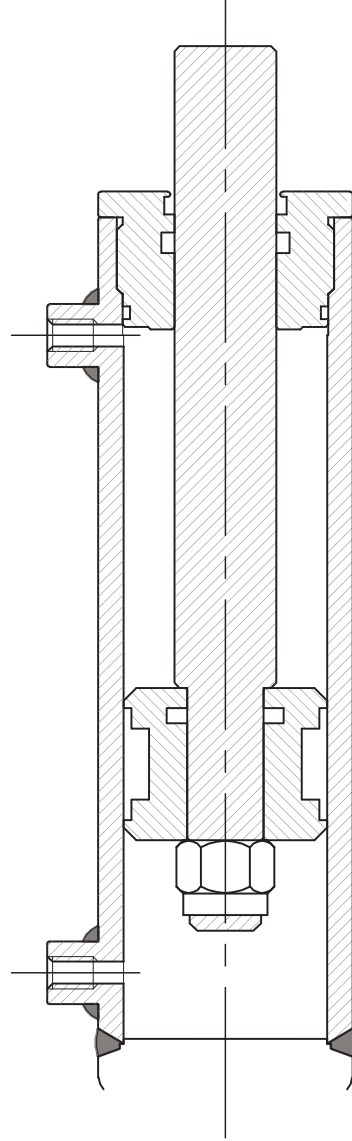
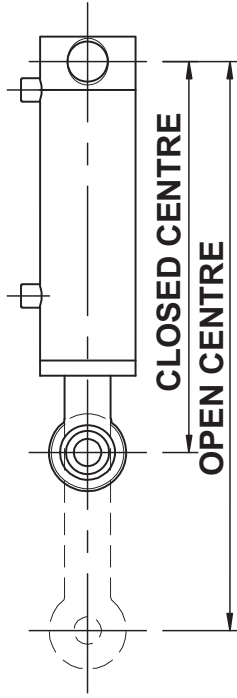
MATERIAL : STEEL-S355JO



# ENQUIRY FORM

COMPANY NAME:.....

|                    |                        |
|--------------------|------------------------|
| CLOSED CENTRES     | <u>PIN SIZE</u>        |
| OPEN CENTRES       | ROD EYE, TYPE          |
| STROKE             | DA/SA - BORE - ANNULAR |
| ROD SIZE           | PORTINGS               |
| CYLINDER BORE SIZE | QUANTITY               |
| <u>PIN SIZE</u>    | SIGNATURE              |
| CYLINDER EYE TYPE  |                        |



# APPLICATION FOR A CREDIT ACCOUNT

**Applicant Name:** .....

**Company Name:** ..... **Date:** .....

**Delivery Address:** ..... **Invoice Address** (if different) .....

.....

.....

.....

**Post Code:** .....

**Tel:** ..... **Email:** .....

**Purchaser Name:** .....

**Accounts contact details** (email/telephone): .....

**Company registration number** (Ltd Co. Only): .....

(If Soley Owned, please supply name and home address of owner. If Partnership, please supply names and home addresses of all partners.)

**Estimated monthly spend:** .....

**Preferred invoice/statement method** (please circle):    Email    Post

**Business type** (please circle):    End-User    Repairer    Plant    Distributor    OEM

**Preferred Despatch Method** (please circle):    FCP    RMSD    Collect    Carrier    Other

All applications **must** include two Trade references

**Trade Reference 1:** .....

Tel No: ..... Email: .....

**Trade Reference 2:** .....

Tel No: ..... Email: .....

Please submit the completed form to **accounts@fpeseals.com**

or post to FPE Seals, Barrington Way, Darlington DL1 4WF, UK

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▲ **Seals**



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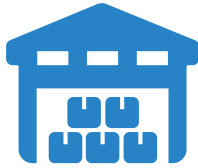


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▲ **Gaskets**

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**Large Stock**



**Quick Dispatch**



**International Service**



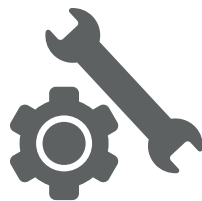
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**Skilled Engineers & Technicians**



**Quality Assured**



**Made to Order Service**

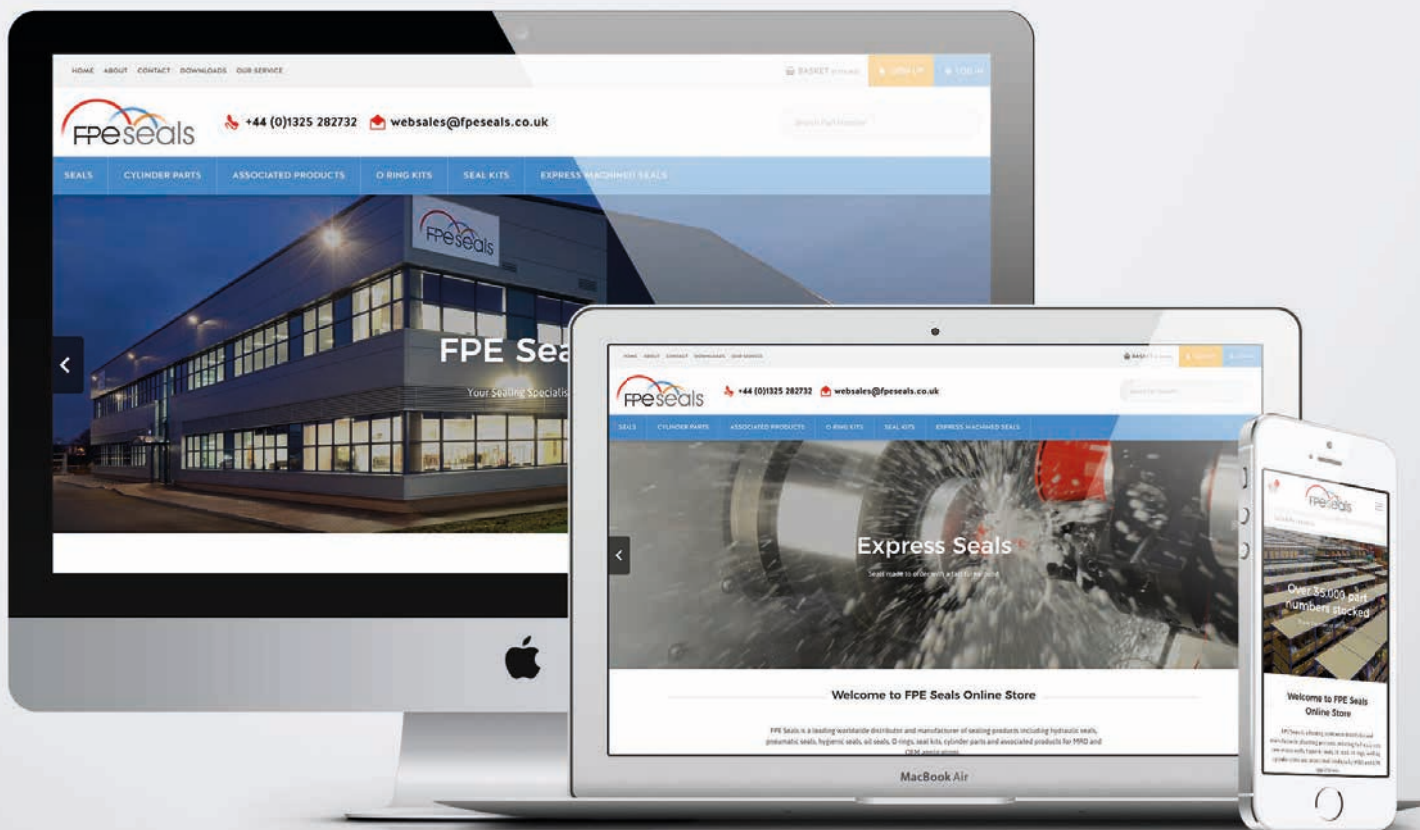


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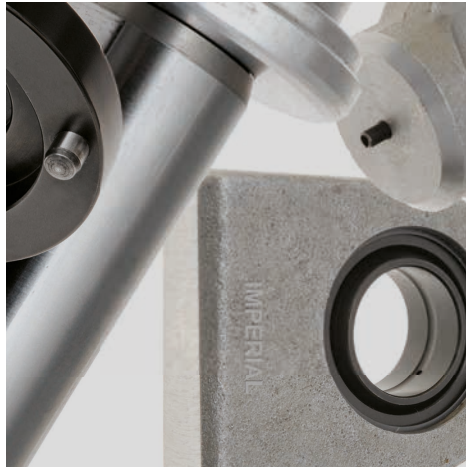
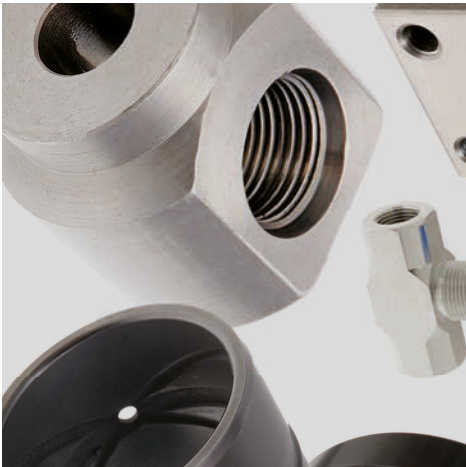
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## NOTES

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