







Contents

| | | | | |
|----|---|---------------------|---|-------|
| 1. |  | VTC series | Upper Flange Hydraulic Link Clamp | 03-05 |
| 2. |  | VSC series | Upper Flange Hydraulic Swing Clamp | 06-08 |
| 3. |  | WS-AL series | Low Pressure Hydraulic Work Support (Spring Advance) | 09-10 |
| 4. |  | WS-BL series | Low Pressure Hydraulic Work Support (Hydraulic Advance) | 11-12 |

1. Single acting and double acting; operating pressure range: 25-70 kg/cm².
2. Strengthen the link mechanism, and the supporting base and side plates are made of high-strength alloy steel.
3. The surface of the cylinder body is an inclined plane which can help to release cooling oil and cutting oil, and a special wiper is used to avoid cooling oil and metal impurity going into the cylinder body.
4. The material of the cylinder body is carbon steel which is subject to wear-resistant treatment to provide a long use cycle.
5. Cylinder body is integrated with a flow control valve which can adjust the action speed, and thus customer does not need to buy an extra valve.
6. Cylinder body has three holes for mounting supporting base. The customer can select different direction for clamping arm and thus it is more flexible in use.
7. Cylinder body is of an upper flange type, and piping mounting and manifold mounting are available in the same body.
8. This product includes a standard clamping arm, and thus customer does not need to buy an extra arm.

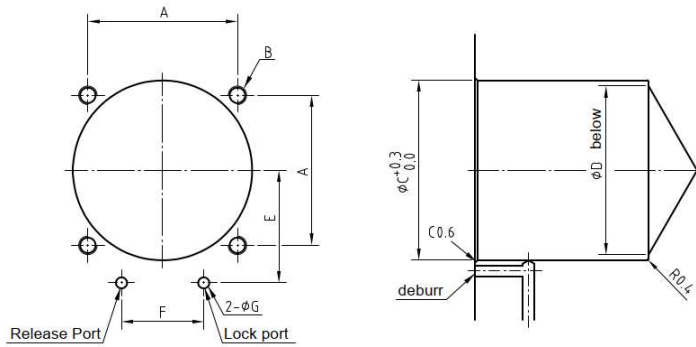


Single acting

| Bore size | 22 | | | 25 | | | 32 | | | 40 | | | 50 | | | 63 | | |
|--|---------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| Order No. | VTC-22 | | | VTC-25 | | | VTC-32 | | | VTC-40 | | | VTC-50 | | | VTC-63 | | |
| | -S-L | -S-F | -S-R | -S-L | -S-F | -S-R | -S-L | -S-F | -S-R | -S-L | -S-F | -S-R | -S-L | -S-F | -S-R | -S-L | -S-F | -S-R |
| Effective area (cm ²) | 3.8 | | | 4.91 | | | 8.04 | | | 12.56 | | | 19.62 | | | 31.16 | | |
| Total stroke (mm) | 18.5 | | | 23.5 | | | 26 | | | 29.5 | | | 35 | | | 41 | | |
| Clamping stroke (mm) | 16 | | | 21.3 | | | 24.5 | | | 27.6 | | | 32.5 | | | 40 | | |
| Swing allowance (mm) | 2.5 | | | 2.2 | | | 1.5 | | | 1.9 | | | 2.5 | | | 1 | | |
| Oil volume (cm ³) | Clamp | | | 11.5 | | | 20.9 | | | 37.1 | | | 68.7 | | | 127.8 | | |
| | Unclamp | | | 7.9 | | | 15.7 | | | 29.6 | | | 55.4 | | | 102.5 | | |
| Max. pressure (kg/cm ²) | 70 | | | | | | | | | | | | | | | | | |
| Min. pressure (kg/cm ²) | 25 | | | | | | | | | | | | | | | | | |
| Clamping force (25kg/cm ²) | 75kg | | | 120kg | | | 200kg | | | 310kg | | | 490kg | | | 77.5kg | | |
| Weight (kg) | 0.63 | | | 1.28 | | | 1.91 | | | 2.82 | | | 4.52 | | | 7.60 | | |
| Operating temperature | 0~70° | | | | | | | | | | | | | | | | | |

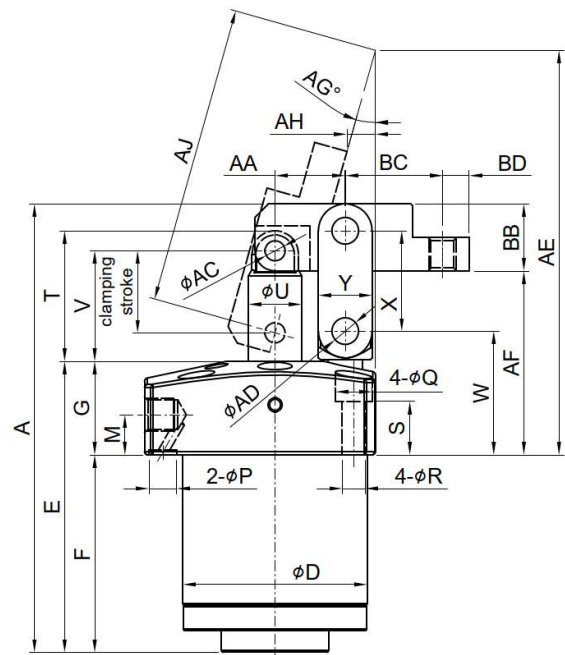
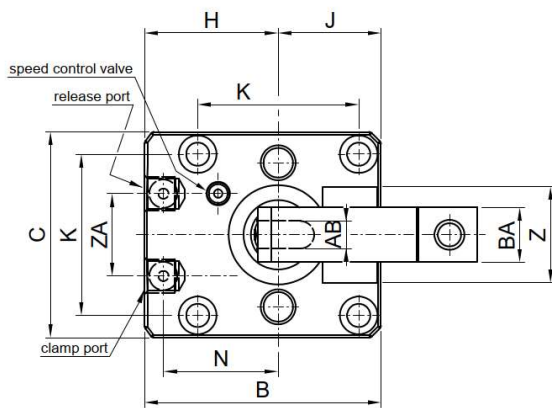
Double acting

| Bore size | 22 | | | 25 | | | 32 | | | 40 | | | 50 | | | 63 | | |
|--|---------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| Order No. | VTC-22 | | | VTC-25 | | | VTC-32 | | | VTC-40 | | | VTC-50 | | | VTC-63 | | |
| | -D-L | -D-F | -D-R | -D-L | -D-F | -D-R | -D-L | -D-F | -D-R | -D-L | -D-F | -D-R | -D-L | -D-F | -D-R | -D-L | -D-F | -D-R |
| Effective area (cm ²) | 3.8 | | | 4.91 | | | 8.04 | | | 12.56 | | | 19.62 | | | 31.16 | | |
| Total stroke (mm) | 18.5 | | | 23.5 | | | 26 | | | 29.5 | | | 35 | | | 41 | | |
| Clamping stroke (mm) | 16 | | | 21.3 | | | 24.5 | | | 27.6 | | | 32.5 | | | 40 | | |
| Swing allowance (mm) | 2.5 | | | 2.2 | | | 1.5 | | | 1.9 | | | 2.5 | | | 1 | | |
| Oil volume (cm ³) | Clamp | | | 11.5 | | | 20.9 | | | 37.1 | | | 68.7 | | | 127.8 | | |
| | Unclamp | | | 7.9 | | | 15.7 | | | 29.6 | | | 55.4 | | | 102.5 | | |
| Max. pressure (kg/cm ²) | 70 | | | | | | | | | | | | | | | | | |
| Min. pressure (kg/cm ²) | 25 | | | | | | | | | | | | | | | | | |
| Clamping force (25kg/cm ²) | 95kg | | | 120kg | | | 200kg | | | 310kg | | | 490kg | | | 770kg | | |
| Weight (kg) | 0.62 | | | 1.26 | | | 1.89 | | | 2.79 | | | 4.13 | | | 7.54 | | |
| Operating temperature | 0~70° | | | | | | | | | | | | | | | | | |



Machining dimensions

| Bore | 22 | 25 | 32 | 40 | 50 | 63 |
|------|-------|--------|------|------|----|------|
| A | 31.4 | 40 | 47 | 55 | 63 | 75 |
| B | M40.7 | M5x0.8 | M6 | M6 | M8 | M10 |
| C | 36 | 48 | 55 | 65 | 75 | 90 |
| D | 33 | 45 | 50 | 60 | 70 | 85 |
| E | 23.5 | 30 | 33.5 | 39.5 | 45 | 52.5 |
| F | 16 | 22 | 24 | 30 | 32 | 37 |
| G | 3 | 3 | 3 | 5 | 5 | 5 |



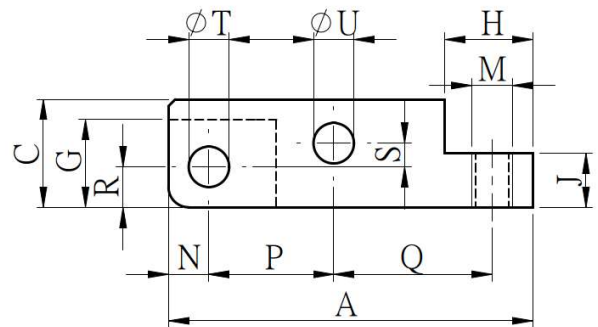
Dimensions

| Order No. | Bore size | A | B | C | D | E | F | G | H | J | K | M | N | P | Q | R | T | U | V | W | X | Y |
|-----------|-----------|-------|-------|-----|----|------|------|----|------|------|------|------|------|---|------|------|-------|----|-------|------|------|----|
| VTC-22 | 22 | 94 | 49 | 40 | 36 | 63.5 | 38.5 | 25 | 29 | 20 | 31.4 | 11 | 23.5 | 3 | 7.5 | 4.5 | 27 | 10 | 22.5 | 30 | 20 | 11 |
| VTC-25 | 25 | 114.8 | 61.0 | 51 | 48 | 75 | 47 | 28 | 35.5 | 25.5 | 40 | 12 | 30.0 | 5 | 9.5 | 5.5 | 35.75 | 14 | 29.75 | 35.5 | 26.0 | 13 |
| VTC-32 | 32 | 134 | 69.0 | 60 | 55 | 87 | 59 | 28 | 39.0 | 30.0 | 47 | 12 | 33.5 | 5 | 11.0 | 6.8 | 39 | 16 | 32 | 37 | 30.0 | 16 |
| VTC-40 | 40 | 148.0 | 81.0 | 70 | 65 | 93 | 63 | 30 | 46.0 | 35.0 | 55 | 12.5 | 39.5 | 5 | 11.0 | 6.8 | 46.0 | 18 | 38.0 | 40 | 35.5 | 19 |
| VTC-50 | 50 | 175.5 | 94.5 | 85 | 75 | 108 | 71 | 37 | 52.0 | 42.5 | 63 | 16 | 45.0 | 5 | 14.0 | 8.5 | 55.5 | 22 | 45.5 | 48.5 | 43.5 | 25 |
| VTC-63 | 63 | 209.0 | 109.5 | 100 | 90 | 128 | 88 | 40 | 59.5 | 50.0 | 75 | 16 | 52.5 | 5 | 17.5 | 11.0 | 66.5 | 28 | 54 | 54.5 | 52.5 | 28 |

| Order No. | Bore size | Z | ZA | AA | AB | AC | AD | AE | AF | AG | AH | AJ* | BA | BB | BC | BD | CA | CB | Hydraulic port | O-ring |
|-----------|-----------|----|----|------|----|----|----|--------|------|------|-----|-------|----|------|------|----|----|----|----------------|--------|
| VTC-22 | 22 | 19 | 16 | 14.5 | 5 | 5 | 5 | 74.34 | 37.5 | 19.6 | 2.9 | 47.1 | 10 | 12.5 | 19 | 5 | 4 | 9 | G1/8 | 1BP5 |
| VTC-25 | 25 | 21 | 22 | 18.5 | 6 | 6 | 6 | 100.15 | 51.8 | 18.9 | 6.3 | 70.6 | 12 | 16 | 23.5 | 6 | 4 | 9 | G1/8 | 1BP5 |
| VTC-32 | 32 | 28 | 24 | 21.0 | 8 | 6 | 8 | 120.93 | 55 | 19.9 | 8.5 | 89.4 | 16 | 20 | 29.0 | 8 | 4 | 9 | G1/8 | 1BP5 |
| VTC-40 | 40 | 37 | 30 | 24.5 | 10 | 8 | 10 | 123.2 | 60 | 20.5 | 7.1 | 89.6 | 19 | 25 | 32.0 | 10 | 5 | 19 | G1/4 | 1BP7 |
| VTC-50 | 50 | 40 | 32 | 30.0 | 11 | 10 | 12 | 135.4 | 72.5 | 21.4 | 5.7 | 94.9 | 22 | 32 | 37.5 | 11 | 5 | 19 | G1/4 | 1BP7 |
| VTC-63 | 63 | 49 | 37 | 36.0 | 13 | 12 | 15 | 146.5 | 9.6 | 22.4 | 9.6 | 120.7 | 25 | 38 | 41.5 | 14 | 5 | 22 | G3/8 | 1BP7 |

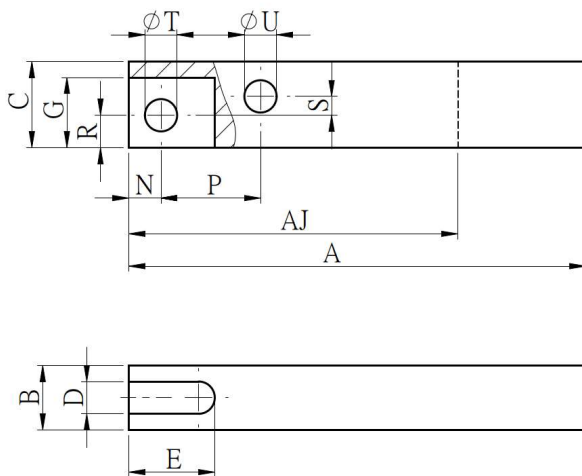
Dimensions for clamping arm

| Order | VTA-22 | VTA-25 | VTA-32 | VTA-40 | VTA-50 | VTA-63 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Bore | 22 | 25 | 32 | 40 | 50 | 63 |
| A | 43 | 54 | 64 | 74.5 | 88.5 | 102.5 |
| B | 10-0.3 | 120-0.3 | 160-0.3 | 190-0.3 | 220-0.3 | 250-0.3 |
| C | 12.5 | 16 | 20 | 25 | 32 | 38 |
| D+0.1/-0 | 5 | 6 | 8 | 10 | 11 | 13 |
| E | 12.5 | 16 | 16.5 | 21 | 25.5 | 30.5 |
| F | 2.5 | 3 | 4 | 5 | 5.5 | 6.5 |
| G | 10 | 13 | 13 | 17.5 | 22 | 26 |
| H | 10.5 | 13 | 17 | 22 | 25 | 31 |
| J | 7 | 8 | 10 | 13 | 16 | 22 |
| M | M5 | M6 | M8 | M10 | M12 | M16 |
| N | 4.5 | 6 | 6 | 8 | 10 | 11 |
| P | 14.5 | 18.5 | 21 | 24.5 | 30 | 36 |
| Q | 19 | 23.5 | 29 | 32 | 37.5 | 41.5 |
| R | 4.5 | 6 | 6 | 8 | 10 | 11 |
| S | 2.5 | 3.5 | 6 | 7.5 | 9.5 | 13 |
| T^{H7} | 5 | 6 | 6 | 8 | 10 | 12 |
| U^{H7} | 5 | 6 | 8 | 10 | 12 | 15 |



Dimensions for clamping arm blank

| Order No. | VTA-22 | VTA-25 | VTA-32 | VTA-40 | VTA-50 | VTA-63 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Bore size | 22 | 25 | 32 | 40 | 50 | 63 |
| A | 70 | 85 | 90 | 105 | 110 | 160 |
| AJ* | 47.1 | 61.2 | 71.7 | 78.7 | 90.8 | 104.6 |
| B | 10 | 12 | 16 | 19 | 22 | 25 |
| C | 12.5 | 16 | 20 | 25 | 32 | 38 |
| D | 5+0.1/-0 | 6 | 8 | 10 | 11 | 13 |
| E | 12.5 | 16.0 | 16.5 | 21.0 | 25.5 | 30.5 |
| G | 10 | 13.0 | 13.0 | 17.5 | 22.0 | 26.0 |
| N | 4.5 | 6 | 6 | 8 | 10 | 11 |
| P | 14.5 | 18.5 | 21.0 | 24.5 | 30.0 | 36.0 |
| R | 4.5 | 6 | 6 | 8 | 10 | 11 |
| S | 25 | 3.5 | 6.0 | 7.5 | 9.5 | 13.0 |
| T^{H7} | 5 | 6 | 6 | 8 | 10 | 12 |
| U^{H7} | 5 | 6 | 8 | 10 | 12 | 15 |

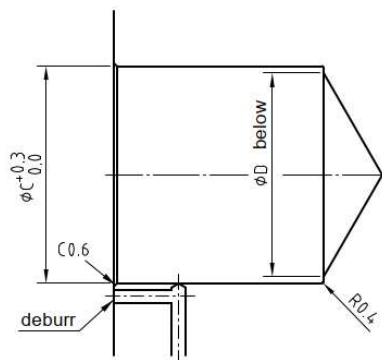
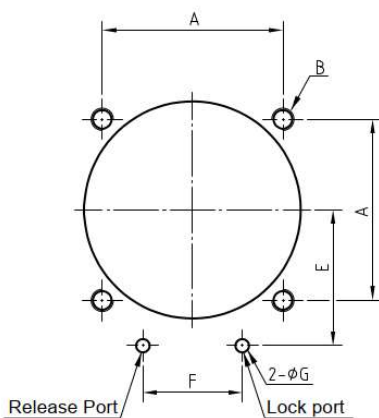


1. Double acting; operating pressure range: 25-70 kg/cm².
2. Providing precise and stable clamping by using three guiding slots. The standard angle is 90°, but special angle, such as 0°, 30°, 45°, 60°, 180°, can also be adopted depending on customer's demand. This product can help to avoid eccentric clamping and can provide a long use cycle with a low maintenance cost.
3. The surface of the cylinder body is an inclined plane which can help to release cooling oil and cutting oil, and a special wiper is used to avoid cooling oil and metal impurity going into the cylinder body.
4. The material of the cylinder body is carbon steel which is subject to wear-resistant treatment to provide a long use cycle.
5. Cylinder body is integrated with a flow control valve which can adjust the action speed, and thus customer does not need to buy an extra valve.
6. Cylinder body is of an upper flange type, and piping mounting and manifold mounting are available in the same body.
7. This product includes a standard clamping arm, and thus customer does not need to buy an extra arm.

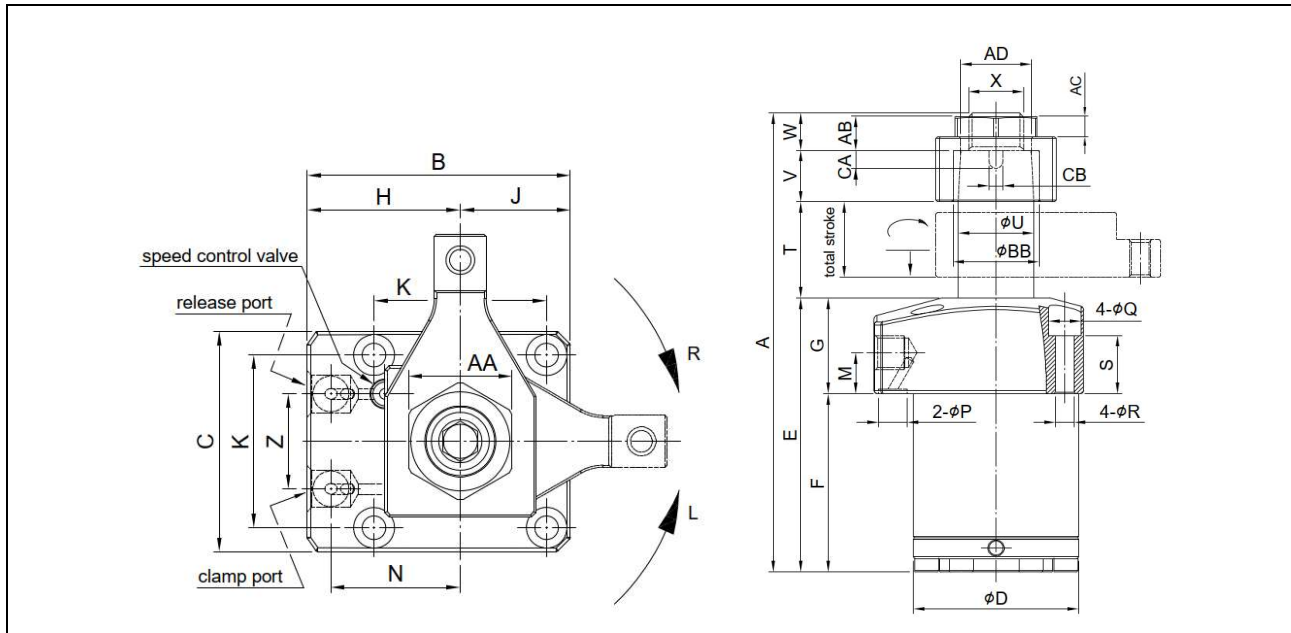


| Bore size | 25 | | 35 | | 42 | | 50 | | 60 | | 74 | |
|---|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Order No. | VSC-25 | VSC-25 | VSC-35 | VSC-35 | VSC-42 | VSC-42 | VSC-50 | VSC-50 | VSC-60 | VSC-60 | VSC-74 | VSC-74 |
| | -DL | -DR | -DL | -DR | -DL | -DR | -DL | -DR | -DL | -DR | -DL | -DR |
| Effective area (cm ²) | 3.14 | | 5.8 | | 8.9 | | 12.6 | | 18.4 | | 27.1 | |
| Total stroke (mm) | 17 | | 22 | | 25 | | 26 | | 29 | | 30 | |
| Clamping stroke (mm) | 8 | | 8.5 | | 10.5 | | 10.5 | | 12.5 | | 12.5 | |
| Swing stroke (mm) | 9 | | 13.5 | | 14.5 | | 15.5 | | 16.5 | | 17.5 | |
| Oil volume (cm ³) | Clamp | | 12.8 | | 22.4 | | 32.7 | | 53.3 | | 81.3 | |
| | Unclamp | | 21 | | 34.6 | | 51.0 | | 82.0 | | 129.0 | |
| Max. pressure (kg/cm ²) | 70 | | | | | | | | | | | |
| Min. pressure (kg/cm ²) | 5 | | | | | | | | | | | |
| 90° rotation tolerance | 90±2° | | | | | | | | | | | |
| Repeat tolerance | 0.5° | | | | | | | | | | | |
| Clamping force (70kg/ cm ²) | 219kg | | 405kg | | 625kg | | 880kg | | 1285kg | | 1896kg | |
| Weight kg | 0.7 | | 0.84 | | 1.25 | | 1.86 | | 2.86 | | 4.75 | |

Machining dimensions



| Bore | 25 | 35 | 42 | 50 | 60 | 74 |
|------|------|----|------|------|----|------|
| A | 31.4 | 40 | 47 | 55 | 63 | 75 |
| B | M4 | M5 | M6 | M6 | M8 | M10 |
| C | 36 | 48 | 55 | 65 | 75 | 90 |
| D | 33 | 45 | 50 | 60 | 70 | 85 |
| E | 23.5 | 30 | 33.5 | 39.5 | 45 | 52.5 |
| F | 16 | 22 | 24 | 30 | 32 | 37 |
| G | 3 | 3 | 3 | 5 | 5 | 5 |



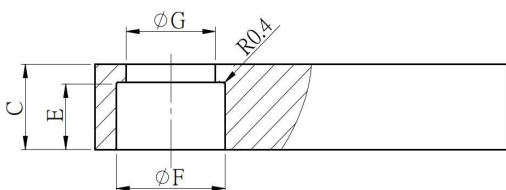
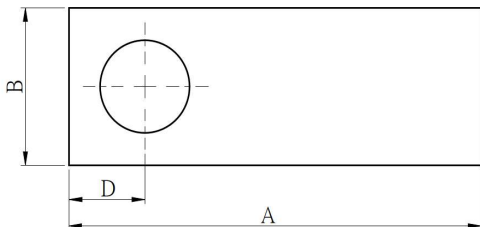
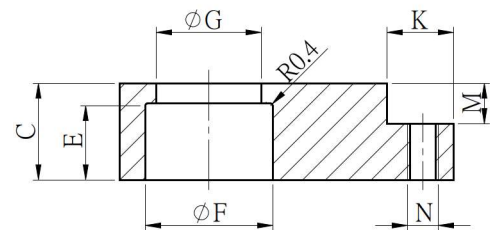
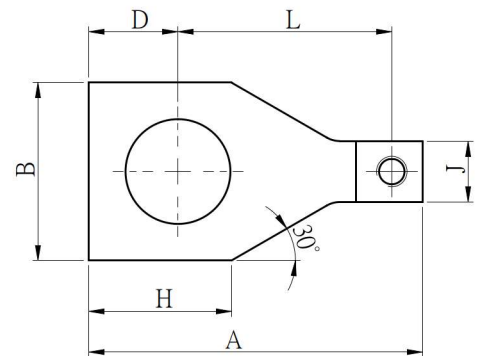
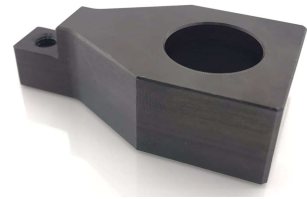
Dimensions

| Order No. | Bore size | A | B | C | D | E | F | G | H | J | K | M | N | P | Q | R | S | T |
|-----------|-----------|------|-----|----|----|------|------|----|------|------|------|----|------|------|------|------|----|------|
| VSC-25 | 25 | 99.5 | 49 | 40 | 36 | 64.5 | 39.5 | 25 | 29 | 20 | 31.4 | 11 | 23.5 | 8.2 | 7.5 | 4.5 | 17 | 19 |
| VSC-35 | 35 | 134 | 61 | 51 | 48 | 80 | 52 | 28 | 35.5 | 25.5 | 40 | 12 | 30 | 8.3 | 9.5 | 5.5 | 17 | 28 |
| VSC-42 | 42 | 147 | 69 | 60 | 55 | 87 | 59 | 28 | 39 | 30 | 47 | 12 | 33.5 | 8.2 | 11 | 6.8 | 16 | 27 |
| VSC-50 | 50 | 153 | 81 | 70 | 65 | 93 | 63 | 30 | 46 | 35 | 55 | 13 | 39.5 | 10.2 | 11 | 6.8 | 18 | 28 |
| VSC-60 | 60 | 179 | 92 | 80 | 75 | 108 | 71 | 37 | 52 | 40 | 63 | 16 | 45 | 10.2 | 14 | 8.5 | 22 | 33 |
| VSC-74 | 74 | 192 | 107 | 95 | 90 | 114 | 74 | 40 | 59.5 | 47.5 | 75 | 16 | 52.5 | 10.2 | 17.5 | 10.5 | 22 | 32.5 |

| Order No. | Bore size | U | V | W | X | Z | Dimension of bolt | | | | Dimension of slot | | PORT |
|-----------|-----------|------|-----|----|---------|----|-------------------|-----|-----|------|-------------------|----|-------|
| | | | | | | | AA | AB | AC | AD | CA | CB | |
| VSC-25 | 25 | 15 | 9.5 | 7 | M10x1.0 | 16 | 19 | 5.8 | 4 | 13.8 | 4 | 3 | G 1/8 |
| VSC-35 | 35 | 22 | 15 | 11 | M16x1.5 | 22 | 24 | 8.9 | 5.9 | 20.5 | 5.2 | 4 | G 1/8 |
| VSC-42 | 42 | 25 | 21 | 12 | M18x1.5 | 24 | 30 | 9.9 | 6.9 | 22.9 | 5.2 | 4 | G 1/8 |
| VSC-50 | 50 | 30 | 21 | 12 | M22x1.5 | 30 | 36 | 10 | 7 | 27.9 | 7.5 | 6 | G 1/4 |
| VSC-60 | 60 | 35.5 | 27 | 14 | M28x1.5 | 32 | 41 | 12 | 8 | 33 | 7.5 | 6 | G 1/4 |
| VSC-74 | 74 | 45 | 33 | 14 | M36x1.5 | 37 | 50 | 12 | 8 | 41.7 | 9.5 | 8 | G 3/8 |

Dimensions for clamping arm

| Order No. | VSA-25 | VSA-35 | VSA-42 | VSA-50 | VSA-60 | VSA-74 |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| A | 50 | 65.5 | 77.0 | 91.5 | 105.0 | 127.0 |
| B | 26 | 35 | 38 | 50 | 58 | 75 |
| C | 12 | 19 | 25 | 25 | 32 | 38 |
| D | 13 | 17.5 | 19.0 | 25.0 | 29.0 | 38.0 |
| E +/-0.1 | 9.5 | 15 | 21 | 21 | 27 | 33 |
| F ^{H8} | 17 | 25 | 28 | 34 | 40 | 49 |
| G | 13.9+0.15 | 20.6+0.15 | 23.0+0.15 | 28.0+0.15 | 32.9+0.20 | 41.8+0.20 |
| H | 22.5 | 28 | 34 | 40 | 47 | 53 |
| J | 10 | 12 | 17 | 19 | 22 | 27 |
| K | 11 | 13 | 17 | 22 | 25 | 31 |
| L | 32 | 42.0 | 50.0 | 56.5 | 65.0 | 75.0 |
| M | 4.5 | 8 | 10 | 12 | 16 | 16 |
| N | M5 | M6 | M8 | M10 | M12 | M16 |
| R | 13 | 17.5 | 19 | 25 | 29 | 37.5 |



Dimensions for clamping arm blank

| Bore size | VSB-25 | VSB-35 | VSB-42 | VSB-50 | VSB-60 | VSB-74 |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|
| A | 85 | 95 | 100 | 120 | 125 | 180 |
| B | 26 | 35 | 38 | 50 | 58 | 75 |
| C | 12 | 19 | 25 | 25 | 32 | 38 |
| D | 13 | 17.5 | 19.0 | 25.0 | 29.0 | 38.0 |
| E +/-0.1 | 9.5 | 15 | 21 | 21 | 27 | 33 |
| F ^{H8} | 17 | 25 | 28 | 34 | 40 | 49 |
| G | 13.9+0.15 | 20.6+0.15 | 23.0+0.15 | 28.0+0.15 | 32.9+0.20 | 41.8+0.20 |
| H | 13 | 17.5 | 19 | 25 | 29 | 37.5 |

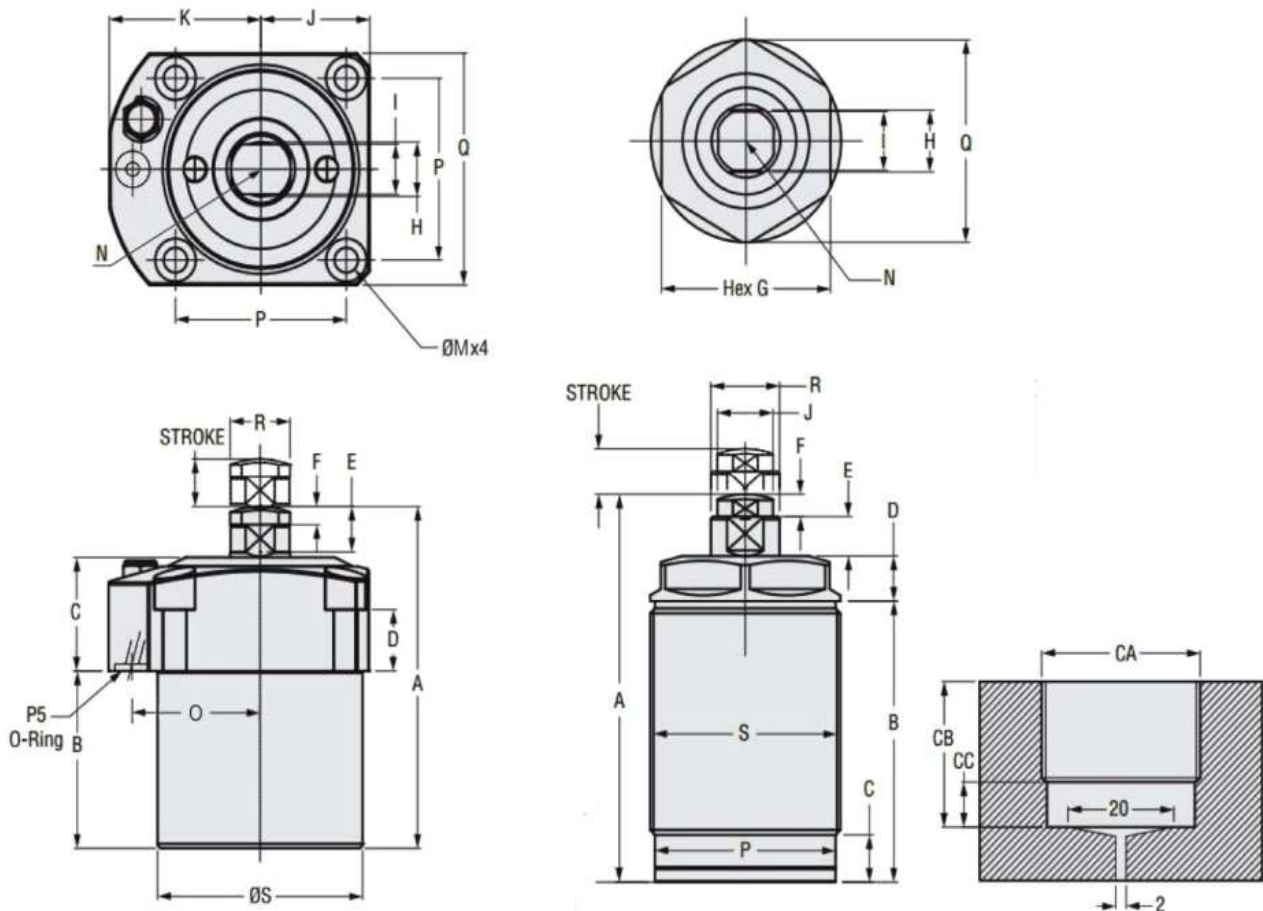
WS-AL

Low Pressure Hydraulic Work Support Spring Advance

Flowtek

<http://www.flowtek-ltd.com/>
E-mail: clamp.well@msa.hinet.net

1. The product provides a supporting function when operated by low pressure, and have COLLET and SLEEVE double mechanism to produce a stable supporting force and avoid the machining tolerance.
2. The operating range is 25-70 kg/cm². The mounting manner includes thread body type and upper flange type. Piping mounting and manifold mounting are available in the upper flange type.
3. The Inlet orifice is small, so the product can reduce the speed of the plunger when it is rising, the impact onto the workpiece, and the tolerance which is caused by instant shock.
4. The product adopts fiberglass washer to replace Teflon washer so that it can have better mechanic sealing effect, and is suitable when a higher torque is applied thereto for sealing.
5. "COLLET" and "SLEEVE" double mechanism design is adopted so that the maintenance is easier than "ball" design. The customer can easily disassemble the product to repair it.
6. Old exhaust design is not adopted any more so that the product can reduce the risk of impurity going into the cylinder body, and make easier for the customer to manufacture the mounting base for the thread body work support.



WS-AL

Low Pressure Hydraulic Work Support Spring Advance

Flowtek

<http://www.flowtek-ltd.com/>
E-mail: clamp.well@msa.hinet.net

| Order No. | WS-T26AL | WS-T30AL | WS-T36AL | WS-U40AL | WS-U48AL | WS-U55AL | WS-U65AL |
|--|--------------------------|----------|----------|----------|----------|----------|----------|
| Supporting force @70kg/cm ² | 320 kg | 470 kg | 600 kg | 600 kg | 1180 kg | 1700 kg | 2200 kg |
| Stroke (mm) | 6.5 | 8 | 8 | 8 | 10 | 12 | 14 |
| Max. Pressure (kg/cm ²) | 105 kg/cm ² | | | | | | |
| Normal Pressure (kg/cm ²) | 25-70 kg/cm ² | | | | | | |
| Original highest position (A+Stroke) | 72.5 | 81 | 77 | 75 | 85 | 97 | 115 |
| A(mm) | 66 | 73 | 69 | 67 | 75 | 85 | 101 |
| B(mm) | 48 | 53 | 50 | 31 | 39 | 45 | 56 |
| C(mm) | 6.5 | 9.5 | 9.5 | 25 | 23 | 23 | 27 |
| D(mm) | 9 | 9 | 8 | 14.5 | 13.5 | 11.5 | 14.5 |
| E(mm) | 5 | 7 | 7 | 7 | 9 | 11 | 12 |
| F(mm) | 4 | 4 | 4 | 4 | 4 | 6 | 6 |
| G(mm) | 24 | 27 | 32 | - | - | - | - |
| H(mm) | 9 | 8 | 11 | 11 | 12 | 15 | 17 |
| I(mm) | 10 | 10 | 10 | 12 | 11 | 14 | 14 |
| J(mm) | - | - | - | 22.5 | 25.5 | 30 | 35 |
| K(mm) | - | - | - | 31.5 | 35.5 | 39 | 46 |
| M(mm) | - | - | - | 5.5 | 5.5 | 6.8 | 6.8 |
| N(mm) | M6x9D | M6x9D | M8x11D | M10x8 | M10x8 | M10x10 | M10x10 |
| O(mm) | - | - | - | 26 | 30 | 33.5 | 40.5 |
| PΦ(mm) | 24 | 28 | 34.2 | 34 | 40 | 47 | 55 |
| QΦ(mm) | 26 | 30 | 36 | 45 | 51 | 60 | 70 |
| RΦ(mm) | 10 | 10 | 13 | 13 | 14 | 18 | 20 |
| S | M26x1.5 | M30x1.5 | M36x1.5 | Φ40 | Φ48 | Φ55 | Φ65 |
| CA | M26x1.5 | M30x1.5 | M36x1.5 | Φ40 | Φ48 | Φ55 | Φ65 |
| CB(mm) | 20-30 | 20-50 | 20-48 | - | - | - | - |
| CC(mm) | 2 | 9 | 8 | - | - | - | - |
| Weight (kg) | 0.20 | 0.25 | 0.35 | 0.6 | 0.8 | 1.4 | 2.2 |

The important issues when you use the work support:

1. The purity of hydraulic oil – the inner parts installed in the work support are very precise, so the purity of the hydraulic oil becomes a very important issue which can affect the life cycle of the work support; bad oil quality will cause the loss of the supporting force. In normal, the work support will work well again after cleaning the hydraulic oil. For very few conditions, the work support needs to be disassembled to clean the inner parts and sometimes to replace the oil seal.
2. Clean the cylinder body – the metal impurity may go into the collet during the machining. Please make sure to clean the body by using an air gun after each machining.
3. Please avoid the following condition, otherwise the collet will be deformed, and the plunger will not work or will lose its supporting force:
 - A. Applying an eccentric force onto the plunger.
 - B. Applying a load which exceeds the estimated supporting force.
 - C. Turing the plunger when it is locked at a supporting position.

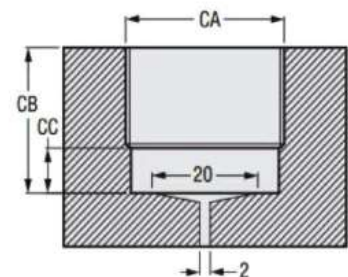
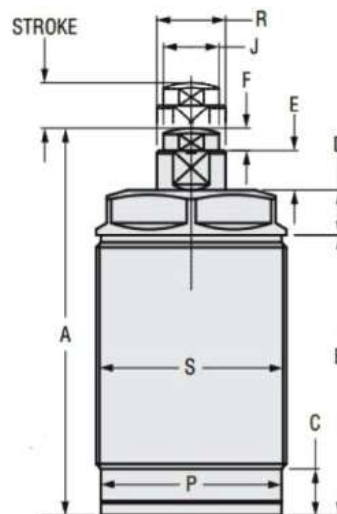
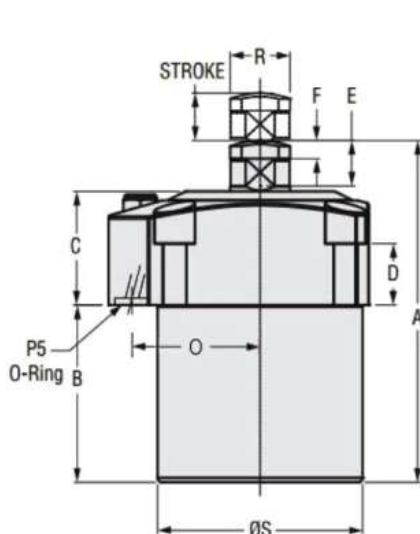
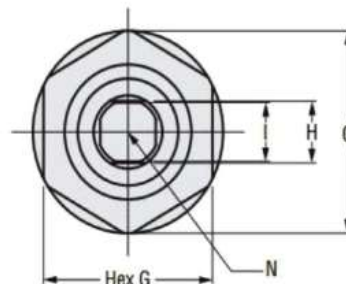
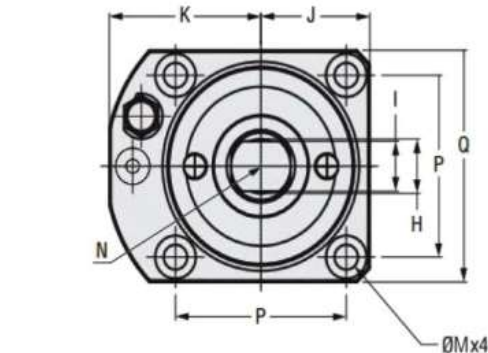
WS-BL

Low Pressure Hydraulic Work Support Hydraulic Advance

Flowtek

<http://www.flowtek-ltd.com/>
E-mail: clamp.well@msa.hinet.net

1. The product provides a supporting function when operated by low pressure, and have COLLET and SLEEVE double mechanism to produce a stable supporting force and avoid the machining tolerance.
2. The operating range is 25-70 kg/cm². The mounting manner includes thread body type and upper flange type. Piping mounting and manifold mounting are available in the upper flange type.
3. The Inlet orifice is small, so the product can reduce the speed of the plunger when it is rising, the impact onto the workpiece, and the tolerance which is caused by instant shock.
4. The product adopts fiberglass washer to replace Teflon washer so that it can have better mechanic sealing effect, and is suitable when a higher torque is applied thereto for sealing.
5. "COLLET" and "SLEEVE" double mechanism design is adopted so that the maintenance is easier than "ball" design. The customer can easily disassemble the product to repair it.
6. Old exhaust design is not adopted any more so that the product can reduce the risk of impurity going into the cylinder body, and make easier for the customer to manufacture the mounting base for the thread body work support.



WS-BL

Low Pressure Hydraulic Work Support Hydraulic Advance

Flowtek

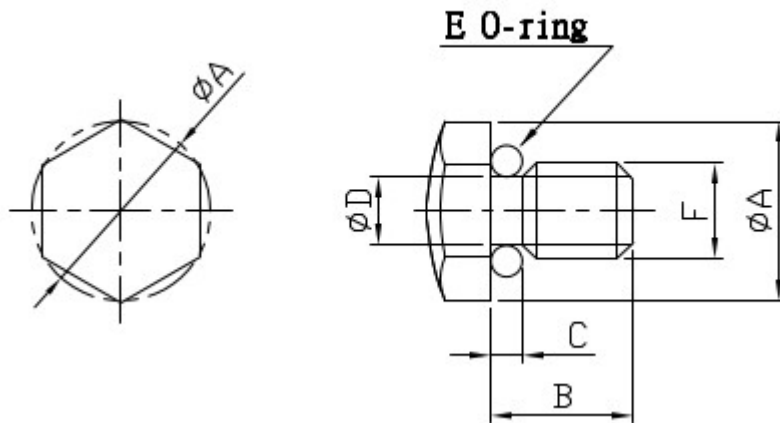
<http://www.flowtek-ltd.com/>
E-mail: clamp.well@msa.hinet.net

| Order No. | WS-T26BL | WS-T30BL | WS-T36BL | WS-U40BL | WS-U48BL | WS-U55BL | WS-U65BL |
|--|--------------------------|----------|----------|----------|----------|----------|----------|
| Supporting force @70kg/cm ² | 320 kg | 470 kg | 600 kg | 600 kg | 1180 kg | 1700 kg | 2200 kg |
| Stroke (mm) | 6.5 | 8 | 8 | 8 | 10 | 12 | 14 |
| Max. Pressure (kg/cm ²) | 105 kg/cm ² | | | | | | |
| Normal Pressure (kg/cm ²) | 25-70 kg/cm ² | | | | | | |
| A(mm) | 66 | 73 | 69 | 67 | 75 | 85 | 101 |
| B(mm) | 48 | 53 | 50 | 31 | 39 | 45 | 56 |
| C(mm) | 6.5 | 9.5 | 9.5 | 25 | 23 | 23 | 27 |
| D(mm) | 9 | 9 | 8 | 14.5 | 13.5 | 11.5 | 14.5 |
| E(mm) | 5 | 7 | 7 | 7 | 9 | 11 | 12 |
| F(mm) | 4 | 4 | 4 | 4 | 4 | 6 | 6 |
| G(mm) | 24 | 27 | 32 | - | - | - | - |
| H(mm) | 9 | 8 | 11 | 11 | 12 | 15 | 17 |
| I(mm) | 10 | 10 | 10 | 12 | 11 | 14 | 14 |
| J(mm) | - | - | - | 22.5 | 25.5 | 30 | 35 |
| K(mm) | - | - | - | 31.5 | 35.5 | 39 | 46 |
| M(mm) | - | - | - | 5.5 | 5.5 | 6.8 | 6.8 |
| N(mm) | M6x9D | M6x9D | M8x11D | M10x8 | M10x8 | M10x10 | M10x10 |
| O(mm) | - | - | - | 26 | 30 | 33.5 | 40.5 |
| PΦ(mm) | 24 | 28 | 34.2 | 34 | 40 | 47 | 55 |
| QΦ(mm) | 26 | 30 | 36 | 45 | 51 | 60 | 70 |
| RΦ(mm) | 10 | 10 | 13 | 13 | 14 | 18 | 20 |
| S | M26x1.5 | M30x1.5 | M36x1.5 | Φ40 | Φ48 | Φ55 | Φ65 |
| CA | M26x1.5 | M30x1.5 | M36x1.5 | Φ40 | Φ48 | Φ55 | Φ65 |
| CB(mm) | 20-30 | 20-50 | 20-48 | - | - | - | - |
| CC(mm) | 2 | 9 | 8 | - | - | - | - |
| Weight (kg) | 0.20 | 0.25 | 0.35 | 0.6 | 0.8 | 1.4 | 2.2 |

The important issues when you use the work support:

1. The purity of hydraulic oil – the inner parts installed in the work support are very precise, so the purity of the hydraulic oil becomes a very important issue which can affect the life cycle of the work support; bad oil quality will cause the loss of the supporting force. In normal, the work support will work well again after cleaning the hydraulic oil. For very few conditions, the work support needs to be disassembled to clean the inner parts and sometimes to replace the oil seal.
2. Clean the cylinder body – the metal impurity may go into the collet during the machining. Please make sure to clean the body by using an air gun after each machining.
3. Please avoid the following condition, otherwise the collet will be deformed, and the plunger will not work or will lose its supporting force:
 - A. Applying an eccentric force onto the plunger.
 - B. Applying a load which exceeds the estimated supporting force.
 - C. Turing the plunger when it is locked at a supporting position.

The Dimension of Contact Bolt for WS-AL / WS-BL Work Supports :



Unit: mm

| Order No. | WS-T26 | WS-T30 | WS-T36 | WS-U40 | WS-U48 | WS-U55 | WS-U65 |
|-----------|--------|--------|---------|---------|---------|---------|---------|
| A | 11.3 | 11.3 | 13.6 | 13.6 | 13.6 | 16 | 16 |
| B | 9 | 9 | 9 | 8 | 8 | 10 | 10 |
| C | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| D | 4 | 4 | 6.2 | 7.5 | 7.5 | 7.5 | 7.5 |
| E | S4 | S4 | P6 | S7 | S7 | S7 | S7 |
| F | M6x1.0 | M6x1.0 | M8x1.25 | M10x1.5 | M10x1.5 | M10x1.5 | M10x1.5 |