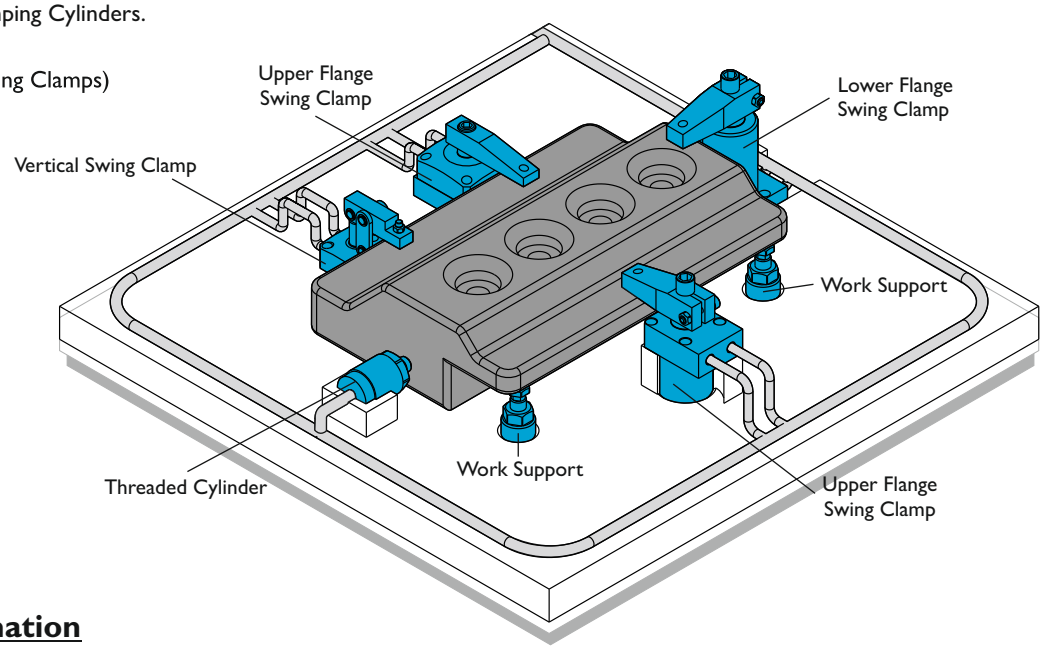
## Introduction

Steel-Smith introduces India's biggest range of Swing Clamps having clamping capacity range from 20 kgs. to 1600 kgs. The unique single cylinder design powers both the swing & force cycles eliminating the bulkier, two-cylinder concept that requires one cylinder for the swing motion and another cylinder for the force cycles. Gives you more force in less space with less parts. Loading and unloading of the job is very easy due to the swing action.

There are two types of Clamping Cylinders.

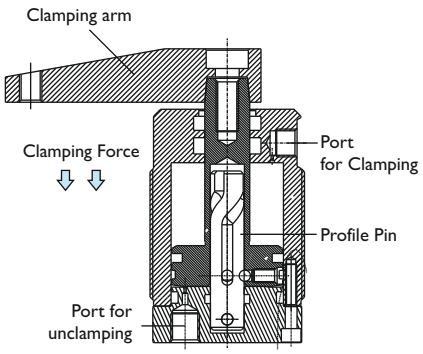
- Swing Action Clamps
- Link Clamps (Vertical Swing Clamps)



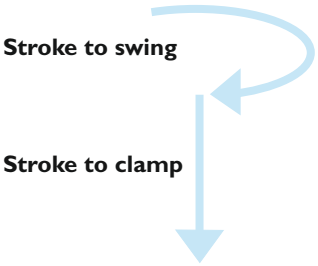

## Anatomy & Information

### Swing Clamps

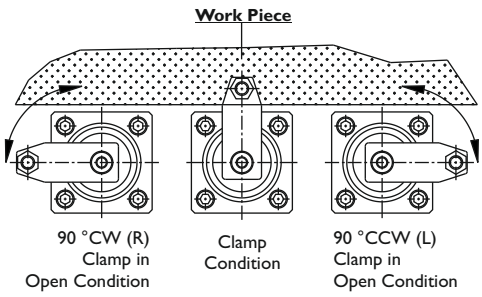
#### Cross Section View of Swing Clamp




#### Swing Stroke / Clamp Stroke

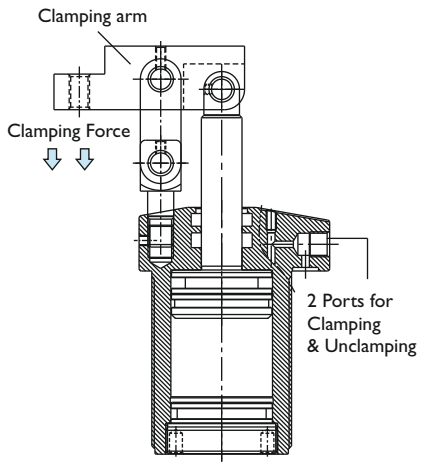



#### Direction of Rotation




### Link Clamps

#### Cross Section View of Link Clamp



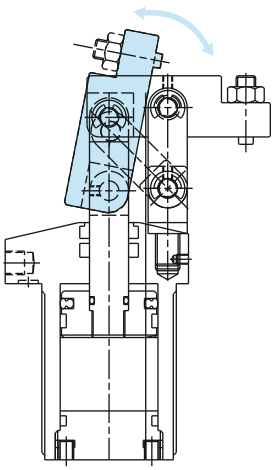

#### Features

In Vertical Swing clamping cylinders the clamping arm swings vertically to give the required clamping and unclamping action.

Can be used to clamp low profile work pieces.

Can produce larger clamp force than Swing Clamps in the same bore size.

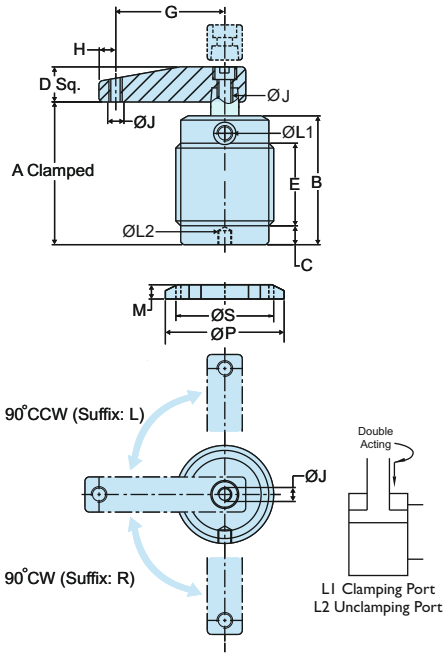
#### Opening of Link Clamp



## Pneumatic Swing Clamp - PST Series Threaded Body Model

- Body Thread for precise cylinder height positioning
- Threaded port connection
- Easy installation and removal
- Greatest flexibility in fixture design
- Available with two Flange Nuts

| | |
|---|---|
| Material | Aluminum Alloy Body |
| Acting Type | Double Acting |
| Force | 16 - 140 kgs |
| Stroke | 28 - 30 mm |
| Pressure | 4 - 7 Bar |
| Swivel Angle | 90° ±2° |

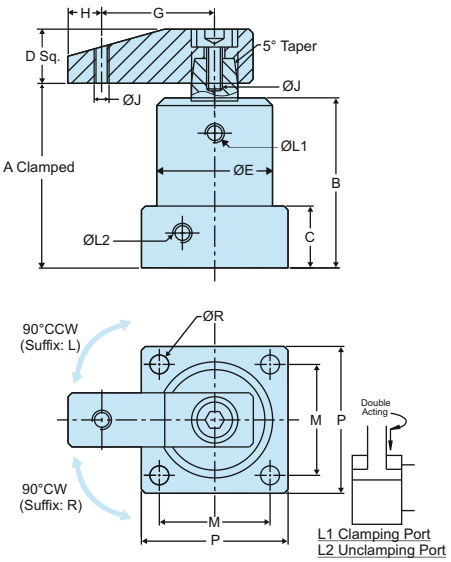



| Model No. | A Clamped | B | C | D Sq. | E | G | H | J | L | M | P | S | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in Kgs (5 kg/cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PST-25-R/L | 76 | 70 | 10 | 16 | 35 | 50 | 6 | M6x1 | M5x0.8 | 9 | 58 | M40 x 1.5 | 0.800 | 14 | 25 | 14 | 14 | 16 |
| PST-32-R/L | 83 | 79 | 13 | 19 | 40 | 60 | 9 | M8x1.25 | G1/8 | 11 | 70 | M50 x 1.5 | 1.100 | 16 | 32 | 14 | 16 | 30 |
| PST-40-R/L | 87 | 83 | 13 | 19 | 45 | 70 | 9 | M8x1.25 | G1/8 | 11 | 75 | M55 x 1.5 | 1.250 | 16 | 40 | 14 | 15 | 50 |
| PST-50-R/L | 92 | 87 | 13 | 25 | 50 | 80 | 10 | M12x1.5 | G1/8 | 12 | 85 | M65 x 1.5 | 1.700 | 20 | 50 | 14 | 14 | 85 |
| PST-63-R/L | 97 | 92 | 13 | 25 | 56 | 90 | 10 | M12x1.5 | G1/8 | 15 | 105 | M80 x 1.5 | 2.200 | 20 | 63 | 15 | 15 | 140 |

## Pneumatic Swing Clamp - PSF Series Lower Flange Version

- No Fixture hole required
- Cylinder can be bolted directly to the fixture
- Easiest mounting preparation in the swing clamp line
- Square flange design enables clamping at all four sides of the clamp
- Allows extra large parts to be clamped

| | |
|---|---|
| Material | Aluminum Alloy Body |
| Acting Type | Double Acting |
| Force | 16 - 140 kgs |
| Stroke | 26 - 29 mm |
| Pressure | 4 - 7 Bar |
| Swivel Angle | 90° ±2° |

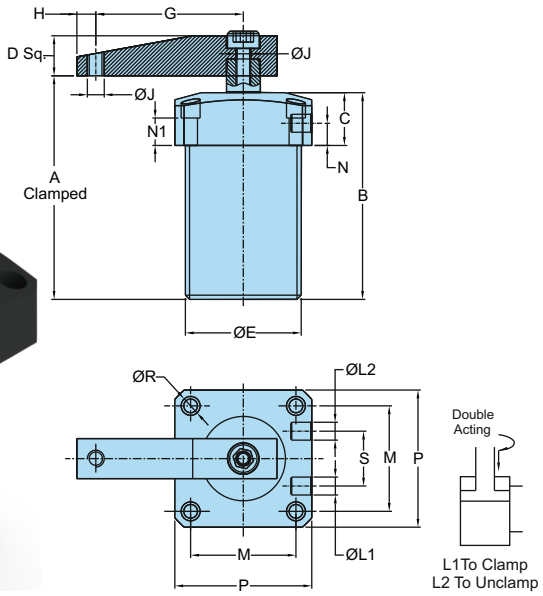



| Model No. | A Clamped | B | C | D Sq. | E | G | H | J | L | M | P | R | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in Kgs (5 kg/cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSF-25-R/L | 69.5 | 65.5 | 23 | 16 | 35 | 30 | 8 | M6 x 1.00 | M5 x 0.8 | 30 | 40 | 4.5 | 0.400 | 14 | 25 | 12 | 14 | 16 |
| PSF-32-R/L | 76.5 | 71 | 23 | 19 | 50 | 50 | 9 | M8 x 1.25 | 1/8 PT | 44 | 54 | 6.5 | 0.700 | 16 | 32 | 12 | 14 | 30 |
| PSF-40-R/L | 79 | 75 | 26 | 19 | 55 | 50 | 9 | M8 x 1.25 | 1/8 PT | 48 | 58 | 6.5 | 0.850 | 16 | 40 | 12 | 15 | 50 |
| PSF-50-R/L | 84 | 80 | 26 | 25.4 | 65 | 70 | 10 | M10 x 1.5 | 1/8 PT | 55 | 68 | 8.5 | 1.300 | 20 | 50 | 14 | 15 | 85 |
| PSF-63-R/L | 90 | 86 | 30 | 25.4 | 75 | 70 | 10 | M10 x 1.5 | 1/8 PT | 64 | 80 | 8.5 | 1.800 | 20 | 63 | 14 | 15 | 140 |

## Pneumatic Swing Clamp - NPSU Series Upper Flange Version

- No Fixture hole required
- Cylinder can be bolted directly to the fixture
- Easiest mounting preparation in the swing clamp line
- Square flange design enables clamping at all four sides of the clamp
- Allows extra large parts to be clamped

| | |
|---|---|
| Material | Aluminum Alloy Body |
| Acting Type | Double Acting |
| Force | 16 - 140 kgs |
| Stroke | 27 - 32 mm |
| Pressure | 4 - 7 Bar |
| Swivel Angle | 90° ±2° |

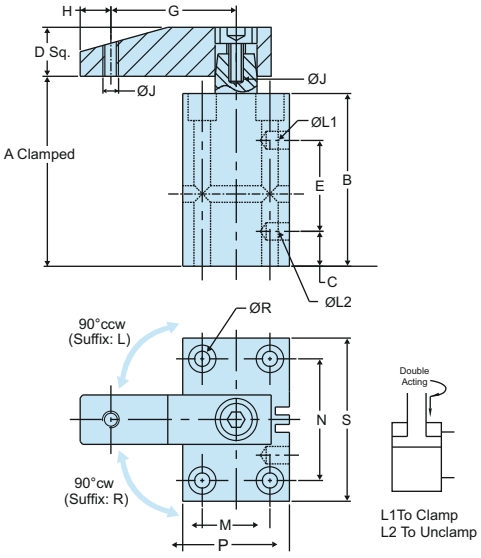



| Model No. | A Unclamp | B | C | D Sq. | E | G | H | J | L | M | N | N1 | P | R | S | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in Kgs (5 kg/cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPSU-25-R/L | 92 | 87 | 25 | 16 | M40 x 1.5 | 50 | 6 | M6 | M5 | 37 | 11.5 | 14.5 | 50 | 5.5 | 23 | 0.700 | 14 | 25 | 13 | 14 | 16 |
| NPSU-32-R/L | 103 | 98 | 25 | 19 | M50 x 1.5 | 60 | 9 | M8 | G1/8 | 45 | 10.5 | 13 | 60 | 6.5 | 23 | 0.800 | 16 | 32 | 16 | 14 | 30 |
| NPSU-40-R/L | 103 | 98 | 25 | 19 | M55 x 1.5 | 70 | 9 | M8 | G1/8 | 50 | 10.5 | 13 | 65 | 6.5 | 26 | 0.850 | 16 | 40 | 15 | 15 | 50 |
| NPSU-50-R/L | 110 | 105 | 25 | 25 | M65 x 1.5 | 80 | 10 | M12 | G1/8 | 58 | 10.5 | 11 | 75 | 8.5 | 32 | 1.000 | 20 | 50 | 17 | 15 | 80 |
| NPSU-63-R/L | 110 | 105 | 25 | 25 | M80 x 1.5 | 90 | 10 | M12 | G1/8 | 70 | 10.5 | 11 | 90 | 8.5 | 35 | 1.200 | 20 | 63 | 15 | 15 | 140 |

## Pneumatic Swing Clamp - PSB Series Block Version

- Block Design permits the clamp to mounted from three different faces
- Grooves on one side for Reed switch mounting
- Simple mounting preparation and easy installation 2 or 4 mounting bolts

| | |
|---|---|
| Material | Aluminum Alloy Body |
| Acting Type | Double Acting |
| Force | 16 - 140 kgs |
| Stroke | 27 - 32 mm |
| Pressure | 4 - 7 Bar |
| Swivel Angle | 90° ±2° |




| Model No. | A Clamped | B | C | D Sq. | E | G | H | J | L | M | N | P | R | S | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in Kgs (5 kg/cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSB-25-R/L | 82 | 78 | 21 | 16 | 34.5 | 50 | 6 | M6 x 1.00 | M5 x 0.8 | 20 | 40 | 35 | 6.5 | 55 | 0.700 | 14 | 25 | 13 | 14 | 16 |
| PSB-32-R/L | 96 | 90 | 21 | 19 | 51.5 | 60 | 9 | M8 x 1.25 | G 1/8" | 30 | 45 | 45 | 6.5 | 60 | 0.900 | 16 | 32 | 16 | 14 | 30 |
| PSB-40-R/L | 96 | 90 | 22 | 19 | 50.5 | 70 | 9 | M8 x 1.25 | G 1/8" | 37 | 52 | 55 | 8.5 | 70 | 1.100 | 16 | 40 | 15 | 15 | 50 |
| PSB-50-R/L | 105 | 100 | 25 | 25 | 53.5 | 80 | 10 | M12 x 1.5 | G 1/8" | 46 | 66 | 65 | 8.5 | 85 | 1.200 | 20 | 50 | 17 | 15 | 80 |
| PSB-63-R/L | 107 | 100 | 28 | 25 | 52 | 90 | 10 | M12 x 1.5 | G 1/8" | 60 | 80 | 80 | 10.5 | 100 | 1.400 | 20 | 63 | 15 | 15 | 140 |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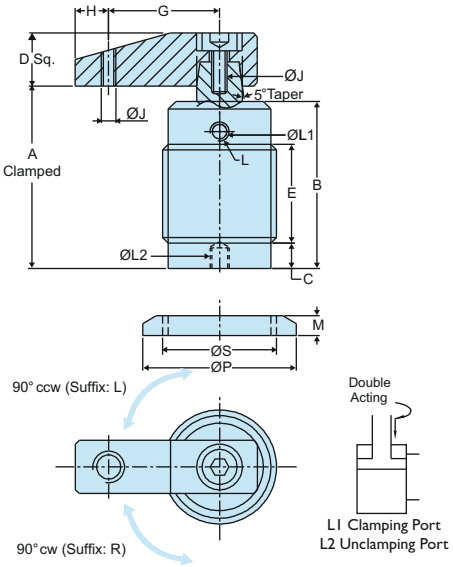
## Hydraulic Swing Clamp - HST Series Threaded Body

- Body Thread for precise cylinder height positioning
- Threaded port connection
- Easy installation and removal
- Greatest flexibility in fixture design
- Available with two Flange Nuts

| | |
|---|---|
| Material | Aluminum Alloy Body |
| Acting Type | Double Acting |
| Force | 59 - 400 kgs |
| Stroke | 26 - 29 mm |
| Pressure | 20 - 70 Bar |
| Swivel Angle | 90° ±2° |

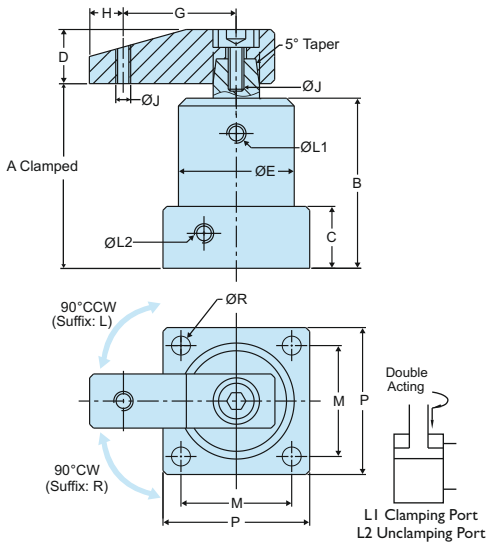



| Model No. | A Clamped | B | C | D | E | G | H | J | L | M | P | S | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in Kgs (25 kg/cm$^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HST-25-R/L | 74 | 70 | 9 | 25.4 | 35 | 50 | 10 | M10 x 1.5 | 1/8 PT | 10 | 65 | M45 x 1.5 | 0.800 | 18 | 25 | 12 | 14 | 59 |
| HST-32-R/L | 82 | 76 | 9 | 25.4 | 45 | 55 | 10 | M10 x 1.5 | 1/8 PT | 11 | 70 | M50 x 1.5 | 1.100 | 20 | 32 | 14 | 15 | 125 |
| HST-40-R/L | 84.6 | 80 | 9 | 25.4 | 45 | 55 | 10 | M10 x 1.5 | 1/8 PT | 11 | 75 | M55 x 1.5 | 1.250 | 20 | 40 | 14 | 15 | 200 |
| HST-50-R/L | 92 | 87 | 9 | 25.4 | 50 | 55 | 10 | M10 x 1.5 | 1/8 PT | 12 | 85 | M65 x 1.5 | 1.700 | 20 | 50 | 14 | 14 | 400 |

## Hydraulic Swing Clamp - HSF Series Lower Flange Version

- No Fixture hole required
- Cylinder can be bolted directly to the fixture
- Easiest mounting preparation in the swing clamp line
- Square flange design enables clamping at all four sides of the clamp
- Allows extra large parts to be clamped

| | |
|---|---|
| Material | Aluminum Alloy Body |
| Acting Type | Double Acting |
| Force | 59 - 600 kgs |
| Stroke | 26 - 29 mm |
| Pressure | 20 - 70 Bar |
| Swivel Angle | 90° ±2° |



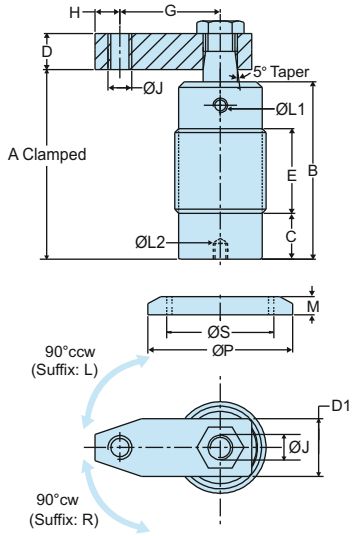

| Model No. | A Clamped | B | C | D Sq. | E | G | H | J | L | M | P | R | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in kgs (25 kg/cm$^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HSF-25-R/L | 74 | 70 | 23 | 25.4 | 45 | 50 | 10 | M10 x 1.5 | 1/8 PT | 40 | 50 | 6.5 | 0.800 | 18 | 25 | 12 | 14 | 59 |
| HSF-32-R/L | 82 | 76 | 25 | 25.4 | 50 | 55 | 10 | M10 x 1.5 | 1/8 PT | 44 | 55 | 6.5 | 1.000 | 20 | 32 | 14 | 15 | 125 |
| HSF-40-R/L | 84.6 | 80 | 27 | 25.4 | 54 | 55 | 10 | M10 x 1.5 | 1/8 PT | 48 | 62 | 8.5 | 1.100 | 20 | 40 | 14 | 15 | 200 |
| HSF-50-R/L | 85.5 | 80 | 27 | 25.4 | 65 | 55 | 10 | M10 x 1.5 | 1/8 PT | 57 | 74 | 8.5 | 1.400 | 20 | 50 | 14 | 15 | 400 |
| HSF-63-R/L | 89 | 85 | 32 | 32 | 80 | 75 | 11 | M12 x 1.75 | 1/8 PT | 70 | 88 | 10.5 | 2.300 | 25 | 63 | 14 | 15 | 600 |

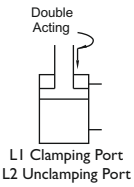
## Hydraulic Swing Clamp - NFT Series Threaded Body Model

- Body Thread for precise cylinder height positioning
- Threaded port connection
- Easy installation and removal
- Greatest flexibility in fixture design
- Available with two Flange Nuts

For Single Acting clamp the Normal Condition will be Un-clamped condition.

| | |
|---|---|
| Material | Medium Carbon Steel Body |
| Acting Type | Single Acting / Double Acting |
| Force | 495 - 1600 kgs |
| Stroke | 23 - 33 mm |
| Pressure | 50 - 350 Bar |
| Swivel Angle | 90° ±2° |



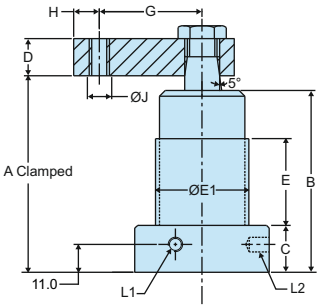

| Model No. | A Clamped | B | C | D | E | G | H | J | L | M | P | S | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in Kgs (210 kg/cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Single Acting** | | | | | | | | | | | | | | | | | | |
| NFT-25-A-R/L | 108 | 102 | 18 | 19 | 48 | 45 | 10 | M12 | 1/8 PT | 10 | 65 | M45 x 1.5 | 1.800 | 18 | 25 | 12 | 11 | 495 |
| NFT-32-A-R/L | 105 | 97 | 18 | 19 | 52 | 50 | 10 | M12 | 1/8 PT | 11 | 70 | M50 x 1.5 | 2.100 | 22 | 32 | 12 | 11 | 890 |
| NFT-40-A-R/L | 105 | 98 | 18 | 19 | 54 | 50 | 10 | M12 | 1/8 PT | 11 | 80 | M60 x 1.5 | 2.200 | 25 | 40 | 12 | 11 | 1600 |
| **Double Acting** | | | | | | | | | | | | | | | | | | |
| NFT-25-B-R/L | 103 | 102 | 18 | 19 | 48 | 45 | 10 | M12 | 1/8 PT | 10 | 65 | M45 x 1.5 | 1.800 | 18 | 25 | 15 | 18 | 495 |
| NFT-32-B-R/L | 103 | 97 | 18 | 19 | 52 | 50 | 10 | M12 | 1/8 PT | 11 | 70 | M50 x 1.5 | 2.100 | 22 | 32 | 15 | 18 | 890 |
| NFT-40-B-R/L | 103 | 98 | 18 | 19 | 54 | 50 | 10 | M12 | 1/8 PT | 11 | 80 | M60 x 1.5 | 2.200 | 25 | 40 | 15 | 18 | 1600 |

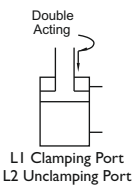
## Hydraulic Swing Clamp - NFS Series Lower Flange Version

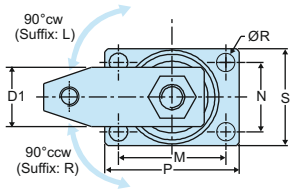
- No Fixture hole required
- Cylinder can be bolted directly to the fixture
- Flexible design allows for manifold or threaded port connection
- Easiest mounting preparation in the swing clamp line
- Square flange design enables clamping at all four sides of the clamp
- Allows extra large parts to be clamped

For Single Acting clamp the Normal Condition will be Un-clamped condition.

| | |
|---|---|
| Material | Medium Carbon Steel Body |
| Acting Type | Single Acting / Double Acting |
| Force | 495 - 1600 kgs |
| Stroke | 23 - 33 mm |
| Pressure | 50 - 350 Bar |
| Swivel Angle | 90° ±2° |




| Model No. | A Clamped | B | C | D | E | E1 | G | H | J | L | M | N | P | R | S | Weight | Piston Dia. | Bore Dia. | Swing Stroke | Clamping Stroke | Force in Kgs (210 kg/cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Single Acting** | | | | | | | | | | | | | | | | | | | | | |
| NFS-25-A-R/L | 112 | 106 | 22 | 19 | 48 | M45 x 1.5 | 45 | 10 | M12 | 1/8 PT | 50 | 30 | 64 | 6.5 | 46 | 1.600 | 18 | 25 | 12 | 11 | 495 |
| NFS-32-A-R/L | 109 | 101 | 22 | 19 | 52 | M50 x 1.5 | 50 | 10 | M12 | 1/8 PT | 54 | 34 | 68 | 8.5 | 54 | 1.800 | 22 | 32 | 12 | 11 | 890 |
| NFS-40-A-R/L | 109 | 102 | 22 | 19 | 54 | M60 x 1.5 | 50 | 10 | M12 | 1/8 PT | 66 | 40 | 84 | 8.5 | 64 | 2.800 | 25 | 40 | 12 | 11 | 1600 |
| **Double Acting** | | | | | | | | | | | | | | | | | | | | | |
| NFS-25-B-R/L | 107 | 106 | 22 | 19 | 48 | M45 x 1.5 | 45 | 10 | M12 | 1/8 PT | 50 | 30 | 64 | 6.5 | 46 | 1.400 | 18 | 25 | 15 | 18 | 495 |
| NFS-32-B-R/L | 107 | 101 | 22 | 19 | 52 | M50 x 1.5 | 50 | 10 | M12 | 1/8 PT | 54 | 34 | 68 | 8.5 | 54 | 1.700 | 22 | 32 | 15 | 18 | 890 |
| NFS-40-B-R/L | 107 | 102 | 22 | 19 | 54 | M60 x 1.5 | 50 | 10 | M12 | 1/8 PT | 66 | 40 | 84 | 8.5 | 64 | 2.700 | 25 | 40 | 15 | 18 | 1600 |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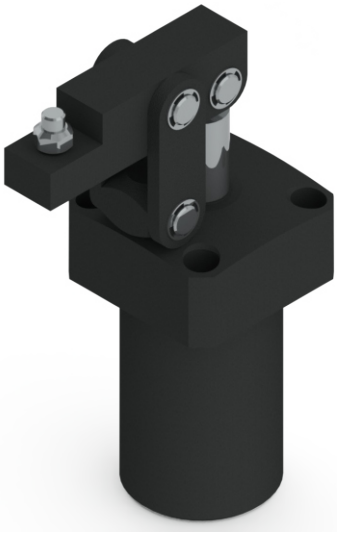
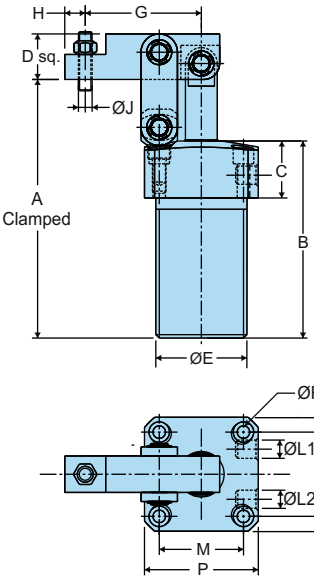
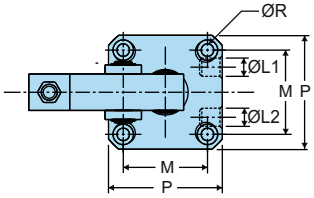
## Pneumatic Link Clamps - PLCU Series Upper Flanged Version

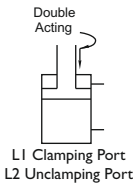
- Cylinder can be bolted directly to the fixture
- Square flange design enables clamping at all four sides of the clamp
- Allows extra large parts to be clamped

| | |
|---|---|
| Material | Aluminum Alloy Body |
| Acting Type | Double Acting |
| Force | 34 - 218 kgs |
| Pressure | 4 - 7 Bar |





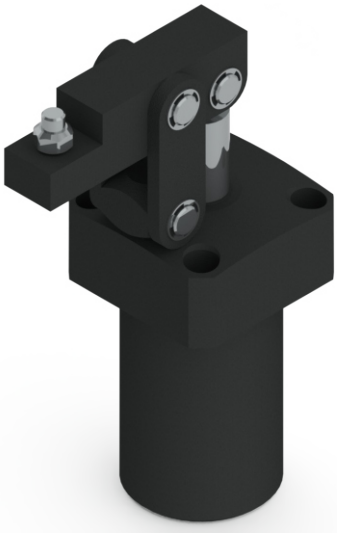



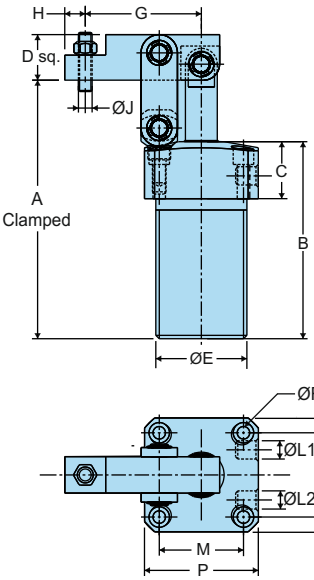

| Model No. | A Clamped | B | C | D | E | G | H | J | L | M | P | R | Weight | Piston Dia. | Bore Dia. | Stroke | Force in Kgs (7 kg/cm$^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLCU-25 | 111.5 | 86.5 | 25 | 17 | M40 x 1.5 | 41 | 7 | M6x1.0 | M5x0.8 | 37 | 50 | 5.5 | 0.600 | 14 | 25 | 22 | 34 |
| PLCU-32 | 129.5 | 97.5 | 25 | 20 | M50 x 1.5 | 52 | 8 | M8x1.25 | G1/8 | 45 | 60 | 6.5 | 1.000 | 16 | 32 | 28 | 56 |
| PLCU-40 | 132.5 | 97.5 | 25 | 25 | M55 x 1.5 | 56 | 10 | M8x1.25 | G1/8 | 50 | 65 | 6.5 | 1.200 | 16 | 40 | 30 | 88 |
| PLCU-50 | 144 | 104 | 25 | 30 | M65 x 1.5 | 63.5 | 14 | M12x1.75 | G1/8 | 58 | 75 | 8.5 | 2.000 | 20 | 50 | 30 | 137 |
| PLCU-63 | 149 | 105 | 25 | 30 | M80 x 1.5 | 74 | 14 | M12x1.75 | G1/8 | 70 | 90 | 8.5 | 2.700 | 20 | 63 | 30 | 218 |

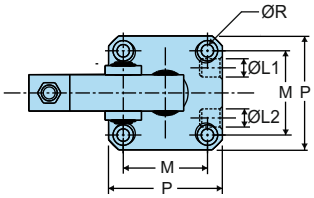
## Hydraulic Link Clamp - LHC01D Series - Upper Flange Version

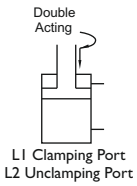
- Cylinder can be bolted directly to the fixture
- Square flange design enables clamping at all four sides of the clamp
- Allows extra large parts to be clamped

| | |
|---|---|
| Material | S45C Body |
| Acting Type | Double Acting |
| Force | 122 - 780 kgs |
| Pressure | 20 - 70 Bar |






| Model No. | A Clamped | B | C | D | E | G | H | J | L | M | P | R | Weight | Piston Dia. | Bore Dia. | Stroke | Force in Kgs (70 kg/cm$^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LHC01D-25 | 111.5 | 86.5 | 25 | 17 | M40 x 1.5 | 41 | 7 | M6x1.0 | 1/8 PT | 37 | 50 | 5.5 | 1.200 | 14 | 25 | 22 | 122 |
| LHC01D-32 | 129 | 97 | 25 | 20 | M50 x 1.5 | 52 | 8 | M8x1.25 | 1/8 PT | 45 | 60 | 6.5 | 1.800 | 16 | 32 | 28 | 201 |
| LHC01D-40 | 132 | 97 | 25 | 25 | M55 x 1.5 | 56 | 10 | M8x1.25 | 1/8 PT | 50 | 65 | 6.5 | 2.500 | 16 | 40 | 30 | 315 |
| LHC01D-50 | 144 | 104 | 25 | 30 | M65 x 1.5 | 63.5 | 14 | M12x1.75 | 1/8 PT | 58 | 75 | 8.5 | 4.000 | 20 | 50 | 30 | 490 |
| LHC01D-63 | 149 | 105 | 25 | 30 | M80 x 1.5 | 74 | 14 | M12x1.75 | 1/8 PT | 70 | 90 | 8.5 | 6.500 | 20 | 63 | 30 | 780 |