

# Hydraulic Double Acting Swing Clamp Model SH Top Flange

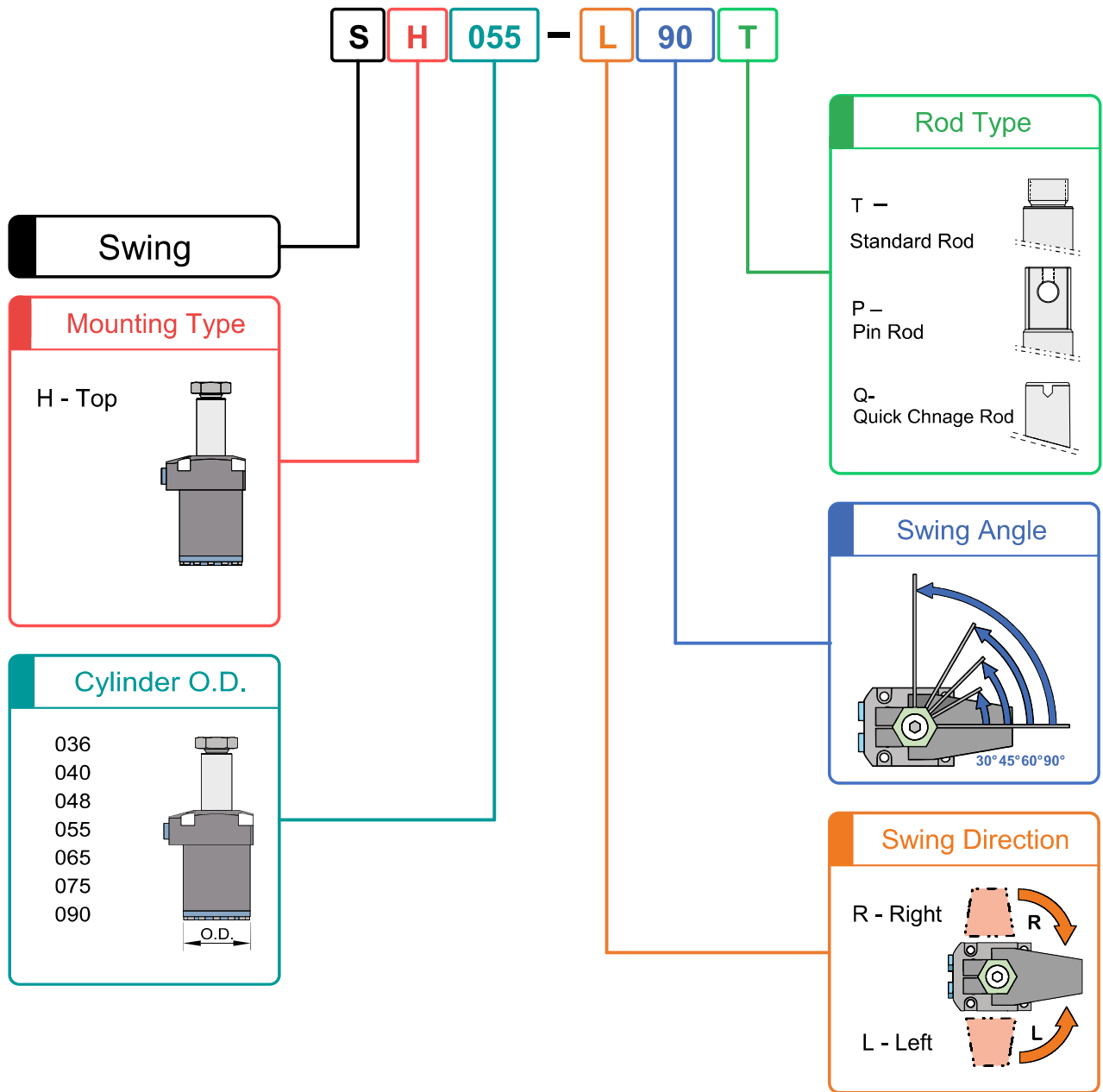


## Specifications

| Model No.                           |                 | SH036-□□□                      | SH040-□□□ | SH048-□□□ | SH055-□□□ | SH065-□□□ | SH075-□□□ | SH090-□□□ |        |
|-------------------------------------|-----------------|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
| Cylinder Force                      | kN              | 2.15                           | 3.10      | 4.37      | 6.14      | 8.62      | 12.80     | 19.41     |        |
| Cylinder Inner Diameter             | mm              | 25                             | 30        | 36        | 42        | 50        | 60        | 75        |        |
| Rod Diameter                        | mm              | 15                             | 18        | 22        | 25        | 30        | 35        | 45        |        |
| Effective Area(Clamp)               | cm <sup>2</sup> | 3.14                           | 4.52      | 6.37      | 8.94      | 12.56     | 18.65     | 28.27     |        |
| Swing Angle                         |                 | 30°±2°, 45°±2°, 60°±2°, 90°±2° |           |           |           |           |           |           |        |
| Repeated Clamp Positioning Accuracy |                 | ±1°                            |           |           |           |           |           |           |        |
| Full Stroke                         | mm              | 13.5                           | 14.5      | 15.5      | 22        | 22        | 28        | 28        |        |
| Swing Stroke 90°                    | mm              | 5.5                            | 6.5       | 7.5       | 12        | 12        | 16        | 16        |        |
| Vertical Stroke                     | mm              | 8                              | 8         | 8         | 10        | 10        | 12        | 15        |        |
| Cylinder Capacity                   | Clamp           | cm <sup>3</sup>                | 5.65      | 9.04      | 15.30     | 23.25     | 35.18     | 65.28     | 113.09 |
|                                     | Unclamp         | cm <sup>3</sup>                | 8.83      | 14.13     | 24.42     | 36.02     | 54.97     | 98.96     | 176.71 |
| Mass                                | Kg              | 0.7                            | 0.9       | 1.3       | 1.8       | 2.7       | 4.1       | 6.8       |        |

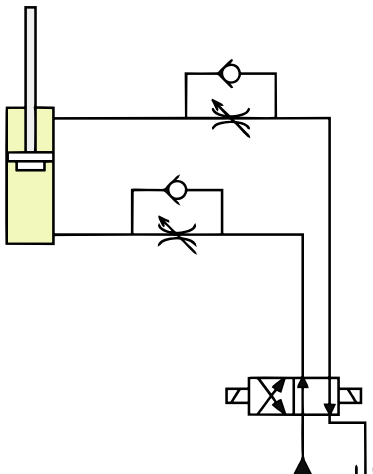
- Pressure Range: - 10-70 Bar
- Operating Temperature: - 0-70 °C
- Fluid Used: - General Mineral Based Hydraulic Oil (ISO – VG32 Equivalent)
- Given Value of Cylinder Forces Are at 70 Bar Pressure.

### Model No. Selection

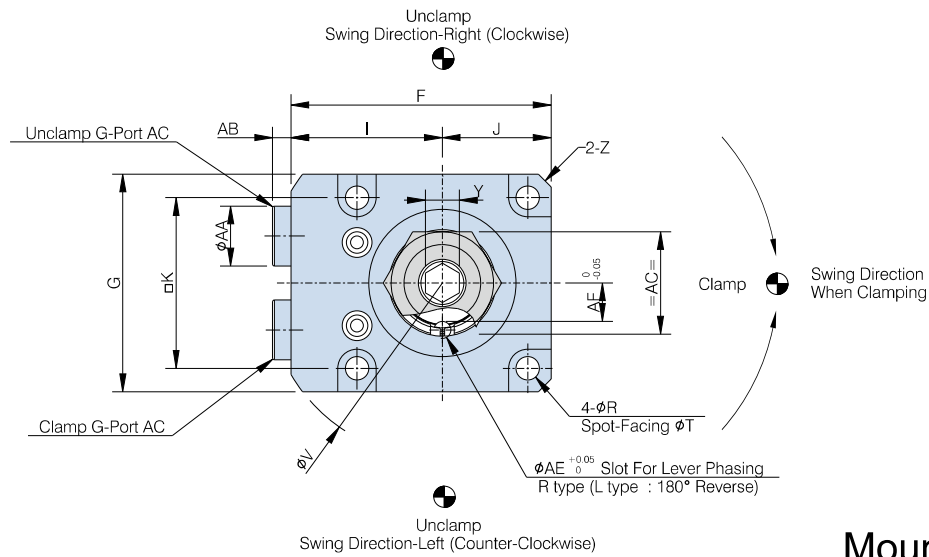


### Hydraulic Circuit Diagram

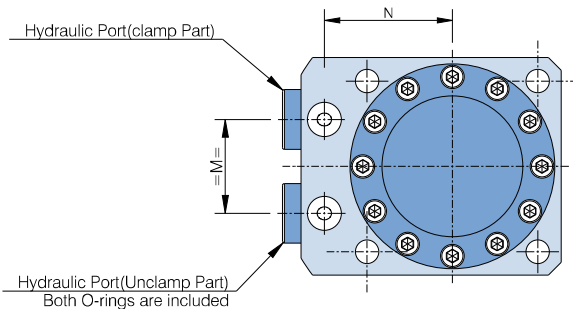
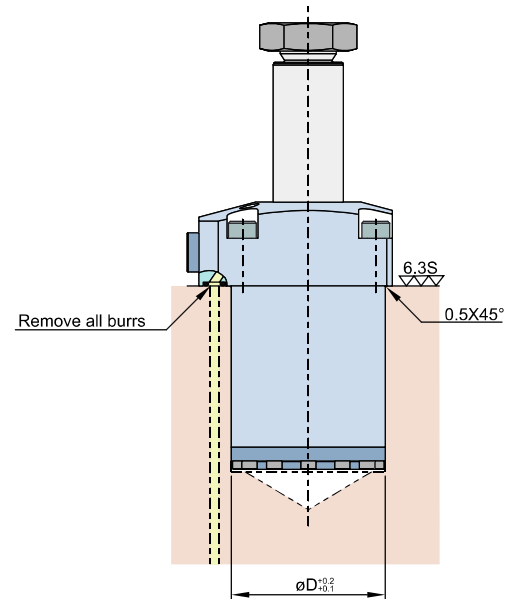
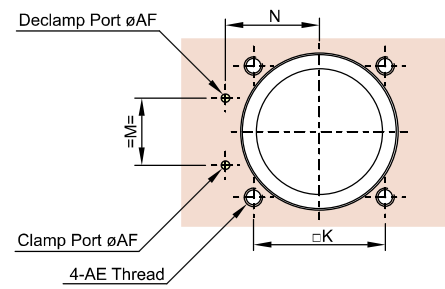
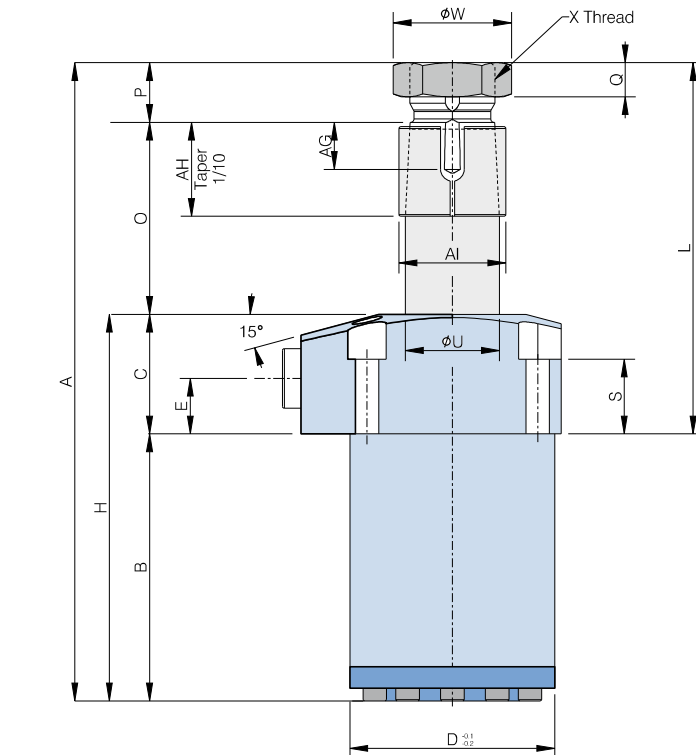
For flow control valve, we recommend the meter-in control. If meter-out control is used due to area difference it will cause back pressure and become high pressure. This can lead to malfunction of the system.



## External Dimensions



## Mounting Details

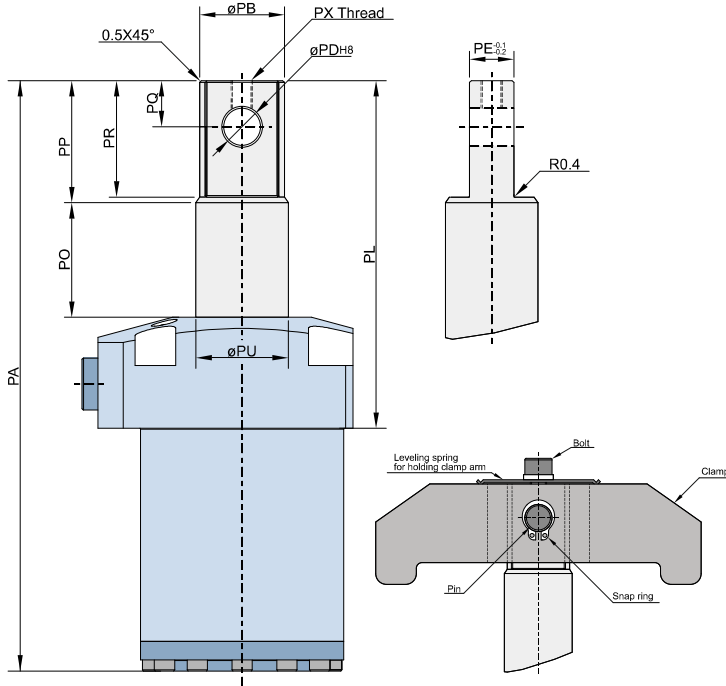


- This figure shows the released position of cylinder.
- The machining dimension  $\phi AF$  is for gasket option for hydraulic fluid supply.

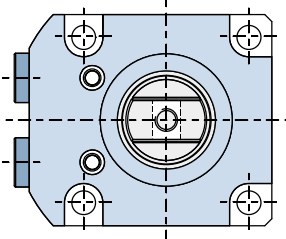
| Model No.           | SH036-□□P | SH040-□□P | SH048-□□P | SH055-□□P | SH065-□□P | SH075-□□P | SH090-□□P |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A                   | 104       | 115       | 128.5     | 149       | 158       | 186       | 205       |
| B                   | 39.5      | 46.5      | 51        | 59        | 63        | 71        | 74        |
| C                   | 25        | 25        | 28        | 30        | 31        | 38        | 46        |
| ∅D                  | 36        | 40        | 48        | 55        | 65        | 75        | 90        |
| E                   | 11        | 11        | 13        | 12        | 13        | 16        | 19        |
| F                   | 49        | 54        | 61        | 69        | 81        | 92        | 107       |
| G                   | 40        | 45        | 51        | 60        | 70        | 80        | 95        |
| H                   | 64.5      | 71.5      | 79        | 89        | 94        | 109       | 120       |
| I                   | 29        | 31.5      | 35.5      | 39        | 46        | 52        | 59.5      |
| J                   | 20        | 22.5      | 25.5      | 30        | 35        | 40        | 47.5      |
| □K                  | 31.4      | 34        | 40        | 47        | 55        | 63        | 75        |
| L                   | 64.5      | 68.5      | 77.5      | 90        | 95        | 115       | 131       |
| M                   | 16        | 18        | 22        | 24        | 30        | 32        | 37        |
| N                   | 23.5      | 26        | 30        | 33.5      | 39.5      | 45        | 52.5      |
| O                   | 28.5      | 31.5      | 35.5      | 45        | 48        | 61        | 67        |
| P                   | 11        | 12        | 14        | 15        | 16        | 14.5      | 18        |
| Q                   | 7         | 8         | 9         | 10        | 11        | 11        | 12        |
| R                   | 4.5       | 5.5       | 5.5       | 6.8       | 6.8       | 9         | 11        |
| S                   | 16        | 15        | 17.5      | 17        | 17        | 21        | 25        |
| ∅T                  | 7.5       | 9         | 9         | 11        | 11        | 14        | 17.5      |
| ∅U                  | 15        | 18        | 22        | 25        | 30        | 35        | 45        |
| ∅V                  | 66        | 73        | 83        | 88        | 106       | 116       | 136       |
| ∅W                  | 25.5      | 27.7      | 33        | 35.5      | 45        | 53.1      | 63.5      |
| X (Nominal X Pitch) | M14X1.5   | M16X1.5   | M20X1.5   | M22X1.5   | M27X1.5   | M30X1.5   | M39X1.5   |
| Y                   | 5         | 6         | 8         | 8         | 10        | 10        | 14        |
| Z                   | 2         | 3         | 3         | 3         | 4         | 5         | 6         |
| ∅AA                 | 14        | 14        | 14        | 14        | 19        | 19        | 22        |
| AB                  | 5         | 5         | 5         | 5         | 5         | 5         | 5         |
| AC                  | 22        | 24        | 30        | 32        | 41        | 46        | 55        |
| AD                  | G1/8      | G1/8      | G1/8      | G1/8      | G1/4      | G1/4      | G3/8      |
| AE                  | 4         | 4         | 5         | 6         | 6         | 8         | 8         |
| AF                  | 6         | 7         | 9         | 10        | 12.5      | 14        | 18.5      |
| AG                  | 9.5       | 8.5       | 11.5      | 9.5       | 11.5      | 12.5      | 11.5      |
| AH                  | 16        | 17        | 22        | 21        | 24        | 32.5      | 37        |
| ∅AI                 | 17        | 20        | 25        | 28        | 34        | 40        | 49        |

- Hexagonal thin nut is included and G-Thread Plug is included.
- Mounting bolts are not provided. Please prepare them according to the mounting height referring to mounting dimension "S".
- Flow control valve is sold separately. Select the right model of flow control valve according to the size of the cylinder.
- The depth of the body mounting hole ∅D should be decided according to the mounting height referring to dimension B.

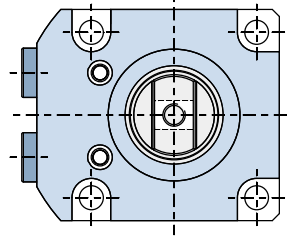
Dimensions for Pin Rod Option



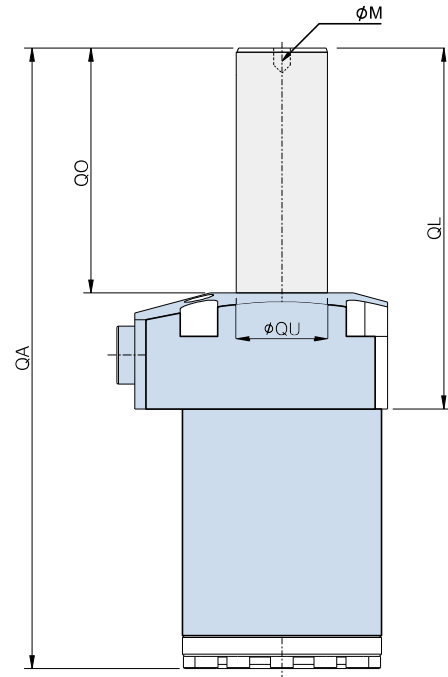
Unclamp



Clamp



Dimensions for Quick Change Option

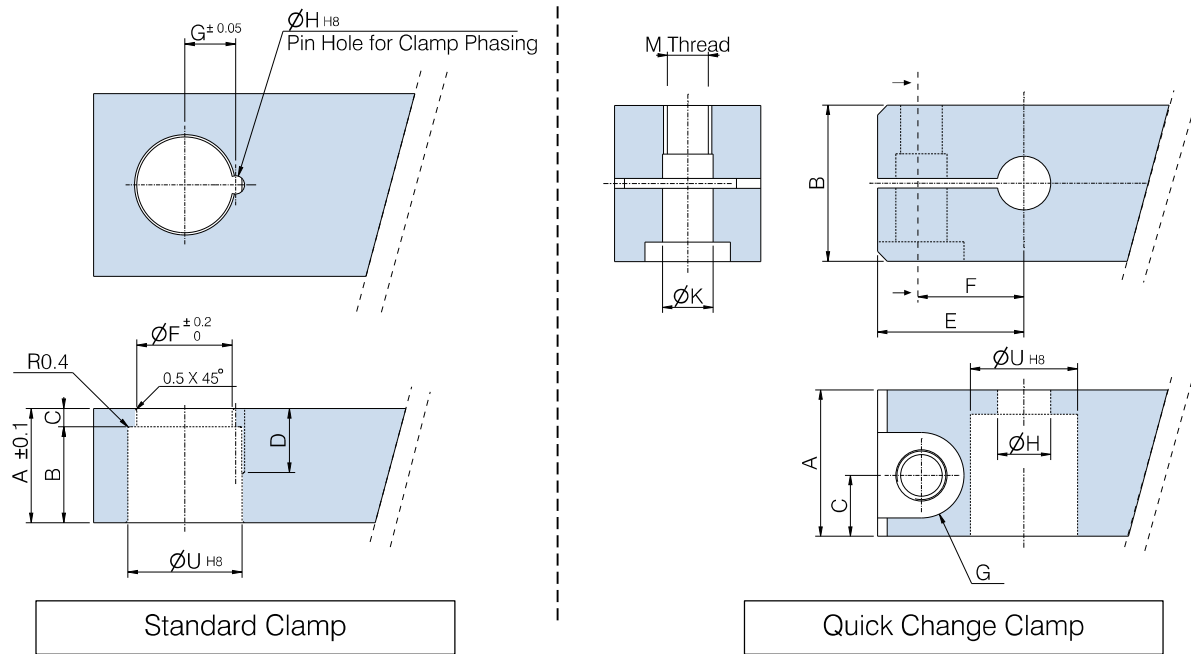


- This figure shows the released position in unclamp condition of cylinder.
- Clamp, snap ring, pin, leveling spring and bolt are not included. Please prepare them.
- Use tapped hole (px thread) on top of rod to attach leveling spring.
- Use leveling spring to maintain lever position.
- To balance clamp, the reference figure is given below.

| Model No. | SH036-□□P | SH040-□□P | SH048-□□P | SH055-□□P | SH065-□□P | SH075-□□P | SH090-□□P |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| QA        | 102       | 113       | 126.5     | 147       | 158       | 185       | 205       |
| QL        | 62.5      | 66.5      | 75.5      | 88        | 95        | 114       | 131       |
| QO        | 37.5      | 41.5      | 47.5      | 58        | 64        | 76        | 85        |
| ØQU       | 15        | 18        | 22        | 25        | 30        | 35        | 45        |
| ØM        | M8        | M8        | M12       | M12       | M12       | M12       | M12       |

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|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| PA                      | 102       | 113       | 126.5     | 144       | 157       | 186       | 206       |
| ØPB                     | 13.5      | 16        | 20        | 23        | 28        | 33.5      | 43        |
| ØPD                     | 6         | 6         | 8         | 10        | 13        | 13        | 16        |
| PE                      | 7         | 8         | 10        | 12        | 14        | 16        | 22        |
| PL                      | 62.5      | 66.5      | 75.5      | 90        | 94        | 115       | 132.5     |
| PO                      | 15.5      | 16        | 18.5      | 24        | 24        | 30        | 29        |
| PP                      | 22        | 25.5      | 29        | 36        | 39        | 47        | 57        |
| PQ                      | 9         | 11        | 12        | 12.5      | 16.5      | 19        | 23.5      |
| PR                      | 21        | 24        | 27.5      | 34.5      | 37.5      | 45.5      | 55.5      |
| ØPU                     | 15        | 18        | 22        | 25        | 30        | 35        | 45        |
| PX<br>(Nominal X Pitch) | M3X0.5    | M3X0.5    | M4X0.7    | M5X0.8    | M6X1      | M6X1      | M8X1.25   |

## Clamp Design Dimensions



| Standard Clamp |           |           |           |           |           |           |           |
|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Model No.      | SH036-□□P | SH040-□□P | SH048-□□P | SH055-□□P | SH065-□□P | SH075-□□P | SH090-□□P |
| A              | 17        | 19        | 23        | 26        | 29        | 35        | 43        |
| B              | 14        | 16        | 19        | 22        | 25        | 31        | 38        |
| C              | 3         | 3         | 4         | 4         | 4         | 4         | 5         |
| D              | 10.5      | 10.5      | 12.5      | 14.5      | 16.5      | 17.5      | 17.5      |
| ØF             | 15        | 17        | 21        | 23.5      | 29        | 33        | 42        |
| G              | 8         | 9         | 11.5      | 13        | 15.5      | 18        | 22.5      |
| H              | 4         | 4         | 5         | 6         | 6         | 8         | 8         |
| ØU             | 17        | 20        | 25        | 28        | 34        | 40        | 49        |

| Quick Change Clamp  |           |           |           |           |           |           |           |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Model No.           | SH036-□□P | SH040-□□P | SH048-□□P | SH055-□□P | SH065-□□P | SH075-□□P | SH090-□□P |
| A                   | 22        | 25        | 30        | 34        | 40        | 46        | 55        |
| B                   | 22        | 26        | 32        | 36        | 45        | 53        | 70        |
| C                   | 11        | 12.5      | 15        | 17        | 20        | 23        | 27.5      |
| E                   | 15        | 19        | 23        | 26.5      | 31.5      | 36.5      | 46        |
| F                   | 9.75      | 12        | 14.75     | 17        | 20        | 23.5      | 29.75     |
| G                   | R5.5      | R7        | R8.75     | R10       | R11.5     | R13       | R16       |
| ØH                  | 3         | 4         | 4         | 4         | 6         | 6         | 8         |
| ØJ                  | 2.5       | 3.5       | 3.5       | 4         | 5.5       | 5.5       | 7.5       |
| K                   | 6.5       | 8.5       | 10.5      | 12.5      | 14.5      | 16.5      | 21        |
| L                   | 3.4       | 4.5       | 4.5       | 4.5       | 6.5       | 6.5       | 9         |
| M (Nominal X Pitch) | M6X1      | M8X1.25   | M10X1.5   | M12X1.75  | M14X2     | M16X2     | M20X2.85  |
| ØU                  | 15        | 18        | 22        | 25        | 30        | 35        | 45        |

- Clamp is not included in scope of supply.