



## Swing Cylinder (With Overload Protection)

### Top mounting / bottom mounting, single acting / double acting

#### Top mounting :



#### Bottom mounting :



#### Description :

Swing cylinders are pull type cylinders. The piston rotates by 90° during the swing stroke, followed by straight clamping stroke due to the internal cam.

#### Application :

The clamping strap rotates by 90° while clamping and declamping. Due to the swing action, loading and unloading of the job is very easy. In the unclamped position, the workpiece area is free from the strap.

#### Versions :

Type of Cylinder

- **SW** - Single Acting (Spring Return)
- **DSW** - Double Acting

Mounting style

- **TM** - Top Mounting
- **BM** - Bottom mounting

Swing direction (While clamping & looking from rod side)

- **CW** - Clockwise
- **CCW** - Counter clockwise

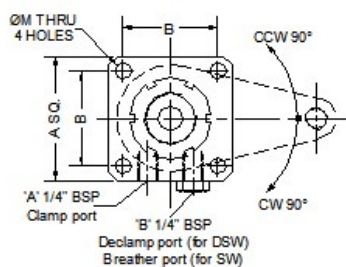
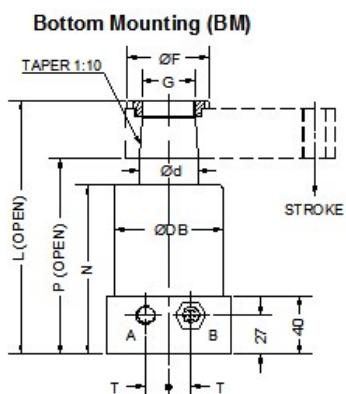
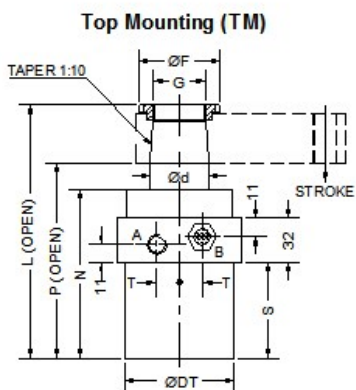
#### Specifications :

- Maximum oil pressure - 200 bar.
- Minimum oil pressure - 30 bar.

#### Notes :

- Single acting cylinders are suitable with Hydropneumatic Intensifier and should not be used with hydraulic power unit 'B'.
- Double acting cylinders are suitable with hydraulic power unit 'B'..
- Clamp the job in the straight clamping stroke only.
- Do not exceed the standard strap length.
- Adjust the oil flow rate in such a way so that the total clamping time will be between one to three seconds.
- For height adjustment, either use a spacer at the mounting plate or adjust the clamping bolt on the strap. (fig. below )
- For horizontal mounting of single acting cylinders, weight of the strap should assist the decamping swing stroke.
- For single acting, spring return cylinder, a breather is provided. It should be protected from cutting liquids and coolants.
- Use only meter in circuit.
- Assemble the strap when cylinder is in clamp condition without putting work piece.
- Angular tolerance  $\pm 3^\circ$ .
- Strap has to be ordered separately.
- For ordering the seal kit, add the prefix "S" to the part number.

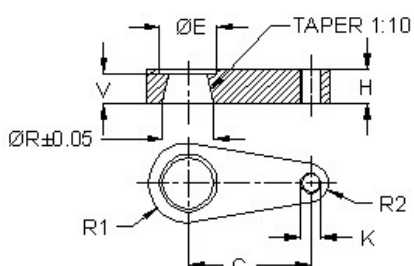
Dimensional details :



FORCE*	7 kN	10 kN	17 kN
ØBORE	40	50	63
d	32	40	50
A	75	85	105
B	60	65	80
C	75	100	120
51	60	74	88
DT	60	75	90
F	40	56	68
G	M28x1.5	M36x1.5	M46x2
M	11	11	17
L	153	184	184
N	97	116	116
P	125	144	144
S	52	67	67
T	16.5	15.5	18
TOTAL STROKE±1	24	24	24
SWING STROKE	10	10	10
STRAIGHT STROKE	14	14	14
OIL VOLUME CLAMP	11 cc	18 cc	28 cc
OIL VOLUME DECLAMP	30 cc	48 cc	75 cc
Weight	3.2 kg	4 kg	6 kg
<b>PART NOS. (WITHOUT STRAP)</b>			
SW TM CW	3510100	3520100	3530100
SW TM CCW	3510200	3520200	3530200
SW BM CW	3510300	3520300	3530300
SW BM CCW	3510400	3520400	3530400
DSW TM CW	3510500	3520500	3530500
DSW TM CCW	3510600	3520600	3530600
DSW BM CW	3510700	3520700	3530700
DSW BM CCW	3510800	3520800	3530800
<b>STRAP</b>			
PART NO.	3605200	3601400	3603100

\* Force is specified at 150 bar.

STRAP



PART NO.	R1	R2	C	H	V	E	R	K	WEIGHT
3605200	27	15	75	23	18	35	31.8	M 16	1.3 kg
3601400	30	14	100	34	28	46	39.8	M 16	1.7 kg
3603100	40	18	120	34	28	56	49.8	M 20	2.5 kg

All dimensions are in mm, Overall dimension tolerance ± 0.5 mm. Subject to change for improvement. (Revision - August 13)

Application Example :

