
SJ055-R90T
Bernoulli
B
A

Hydraulic Double Acting Swing Cylinder

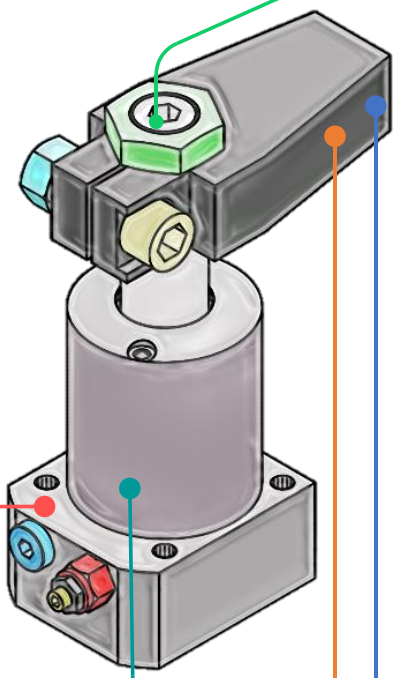
Model SJ

Bottom Flange

Index

Model No. Selection

S J 055 – L 90 T

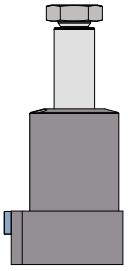


Swing

S

Mounting Type

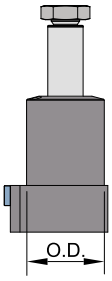
J - Bottom



J

Cylinder O.D.

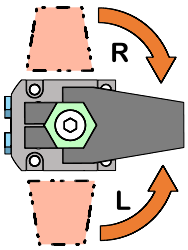
036
040
048
055
065
075
090
105



055

Swing Direction

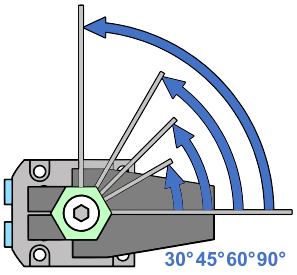
R - Right



L - Left

L

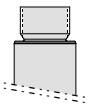
Swing Angle



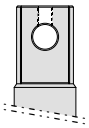
90

Rod Type

T – Standard Rod



P – Pin Rod



T

Technical Data

Specifications

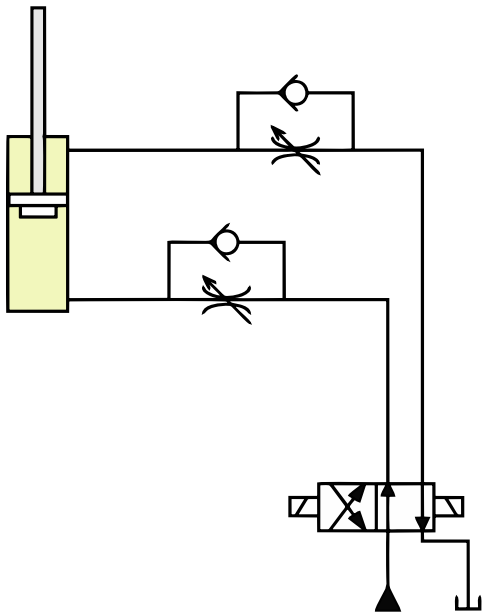
Model No.			SJ036-□□□	SJ040-□□□	SJ048-□□□	SJ055-□□□	SJ065-□□□	SJ075-□□□	SJ090-□□□	SJ105-□□□
Cylinder Force		kN	2.15	3.10	4.37	6.14	8.62	12.80	19.41	27.36
Cylinder Inner Diameter		mm	25	30	36	42	50	60	75	90
Rod Diameter		mm	15	18	22	25	30	35	45	55
Effective Area(Clamp)		cm^2	3.14	4.52	6.37	8.94	12.56	18.65	28.27	39.85
Swing Angle			30º±2º, 45º±2º, 60º±2º, 90º±2º							
Repeated Clamp Positioning Accuracy			±1º							
Full Stroke		mm	**18**	**20**	**24**	**26**	**28**	**35**	**40**	**45**
Swing Stroke 90°		mm	10	12	16	16	18	23	25	30
Vertical Stroke		mm	8	8	8	10	10	12	15	15
Cylinder Capacity	Clamp	5.65	9.04	15.30	23.25	35.18	65.28	113.09	179.36	179.36
	Unclamp	8.83	14.13	24.42	36.02	54.97	98.96	176.71	286.27	286.27
Mass		Kg	0.7	0.9	1.3	1.8	2.7	4.1	6.8	10.5

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

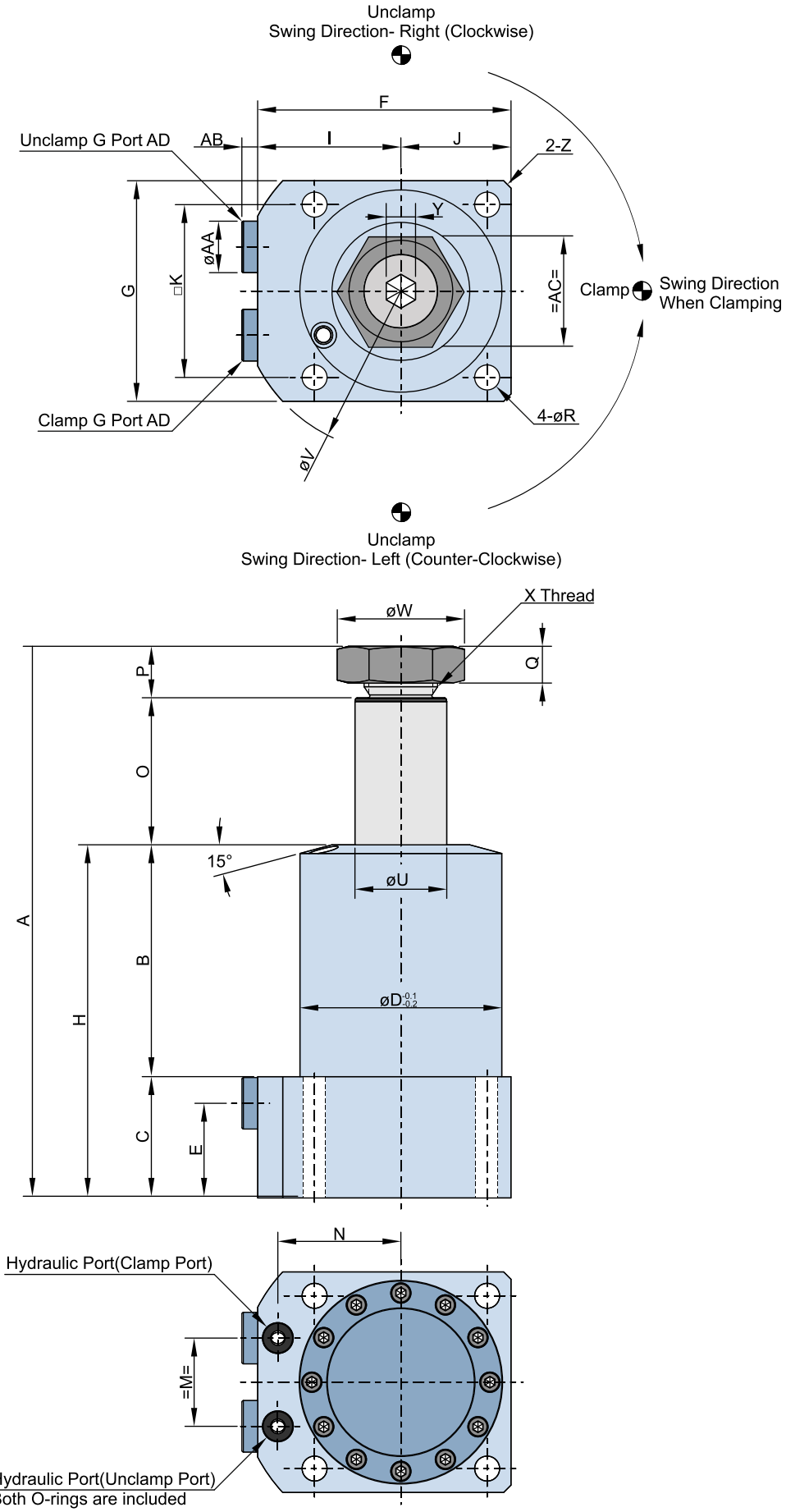
Hydraulic Circuit Diagram

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.

- Please be aware when designing the circuit.



External Dimensions

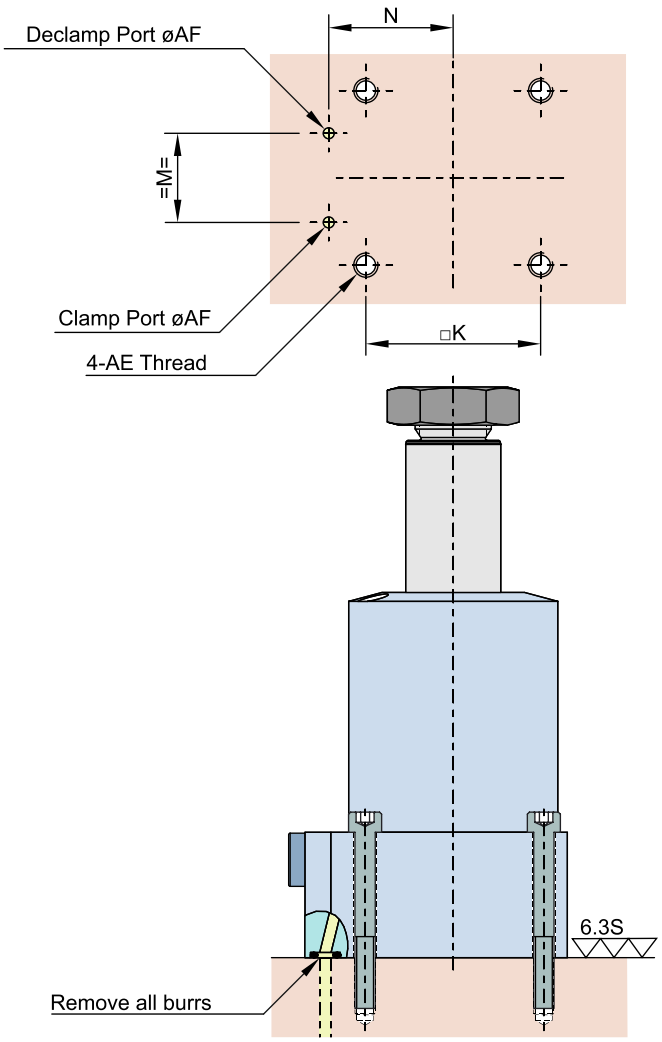


- This figure shows the released positon of cylinder.

Model No.	SJ036-□□T	SJ040-□□T	SJ048-□□T	SJ055-□□T	SJ065-□□T	SJ075-□□T	SJ090-□□T	SJ105-□□T
A	125.1	132.1	148.1	160.1	170.4	202.65	233.65	270.65
B	48.1	51.1	58.1	63.1	66.4	76.65	89.65	94.65
C	33	33	33	33	35	42	45	55
ØD	36	40	48	55	65	75	90	105
E	24	24	24	24	24	27	27	27
F	49	54	61	69	81	92	107	122
G	40	45	51	60	70	80	95	110
H	81.1	84.1	91.1	96.1	101.4	118.65	134.65	149.65
I	29	31.5	35.5	39	46	52	59.5	67
J	20	22.5	25.5	30	35	40	47.5	55
□K	31.4	34	40	47	55	63	75	88
M	16	18	22	24	30	32	37	45
N	23.5	26	30	33.5	39.5	45	52.5	60
O	34	38	45	50	55	68	80	91
P	10	10	12	14	14	16	19	30
Q	7	7	8	10	10	12	14	24
ØR	4.5	5.5	5.5	6.8	6.8	9	11	14
ØU	15	18	22	25	30	35	45	55
ØV	66	73	83	88	106	116	136	157
ØW	22	24.3	27.7	34.5	41.6	47.4	63.5	84
X (Nominal X Pitch)	M12X1.75	M14X2	M16X2	M20X2	M24X2	M27X2	M36X2	M48X2
Y	5	6	8	8	10	10	14	14
Z	2	3	3	3	4	5	6	6
ØAA	14	14	14	14	19	19	22	22
AB	5	5	5	5	5	5	5	5
AC	19	21	24	30	36	41	55	75
AD	G1/8	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8

- 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”.
- Speed control valve is sold separately. Select the right model of speed control valve according to the size of the cylinder. See page - 139.

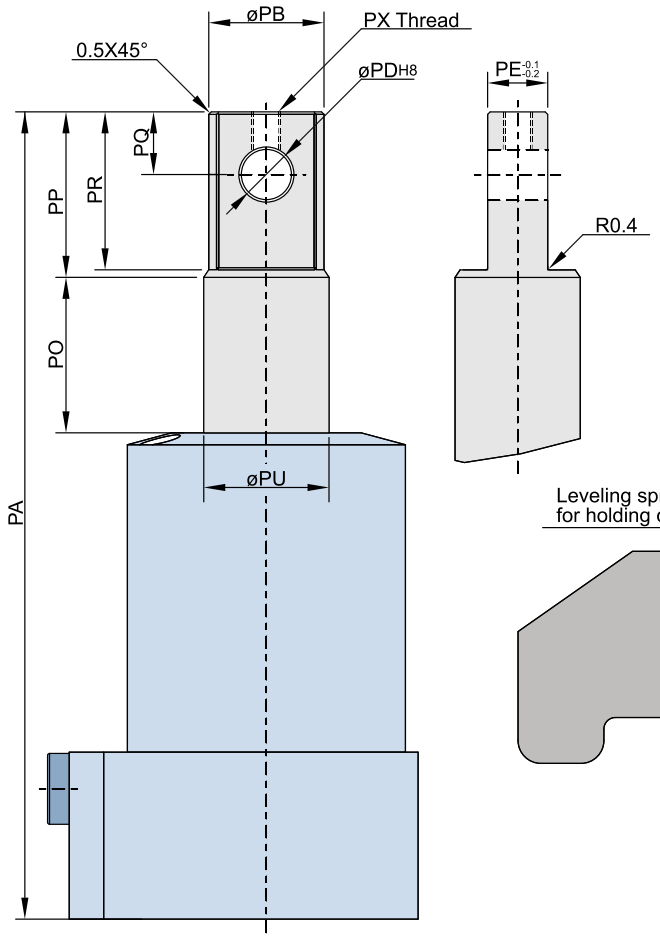
Mounting Details

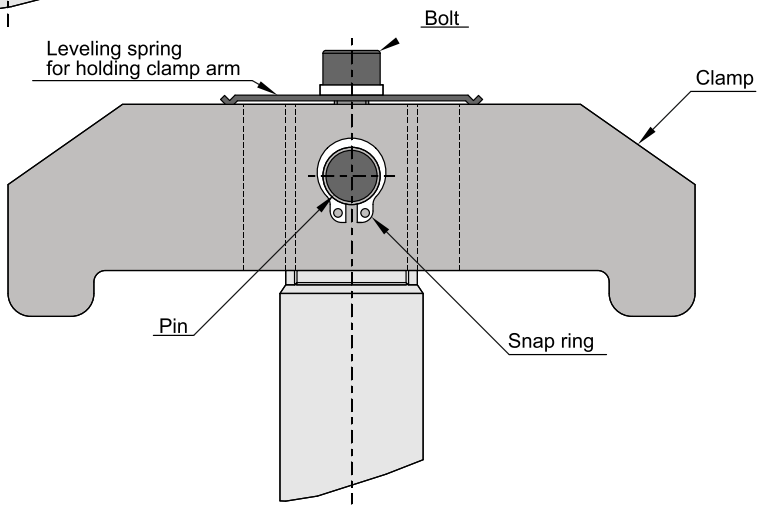


Model No.	SJ036-□□□	SJ040-□□□	SJ048-□□□	SJ055-□□□	SJ065-□□□	SJ075-□□□	SJ090-□□□	SJ105-□□□
□K	31.4	34	40	47	55	63	75	88
M	16	18	22	24	30	32	37	45
N	23.5	26	30	33.5	39.5	45	52.5	60
AE (Nominal X Pitch)	M4X0.7	M5X0.8	M5X0.8	M6X1	M6X1	M8X1.25	M10X1.5	M12X1.75
ØAF	2.5	3	3	3	4	4	4	4

- The depth of the body mounting hole ØD should be decided according to the mounting height referring to dimension B.
- AE tapping depth of mounting bolt should be decided according to the mounting height referring to dimension S.
- The machining dimension ØAF is for gasket option for hydraulic fluid supply.
- For piping installation for hydraulic fluid supply do not perform ØAF hole in machining and close gasket line in cylinder with O-ring. Refer page no.- 22

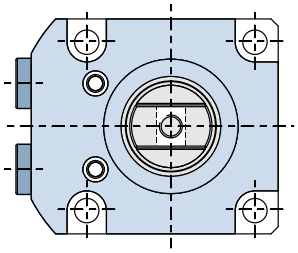
External Dimensions for Pin Rod Option



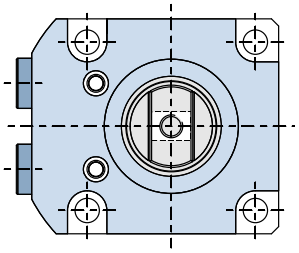


- This figure shows the released positon in unclamp condition of cylinder.
- Clamp, snap ring, pin, leveling spring and bolt are not included. Please prepare them.
- Use tapped hole (px thread) on top of rod to attach leveling spring.
- Use leveling spring to maintain lever positon.
- To balance clamp,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

Unclamp



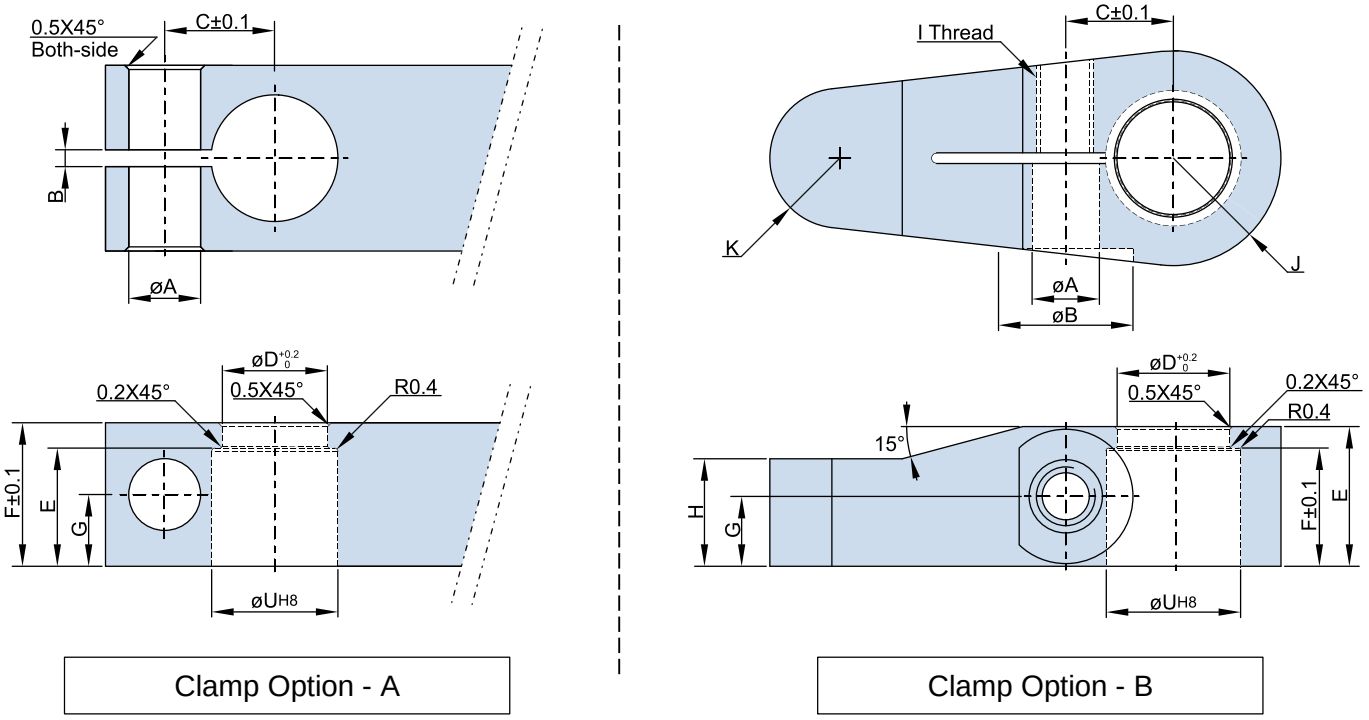
Clamp



- This figure illustrates unclamp condition and direction of pin hole will be at hydraulic port side at the time of clamping.
- Refer to specification (see page - 16), external dimensions (see page -17) for other data that are not shown.

Model No.	SJ036-□□P	SJ040-□□P	SJ048-□□P	SJ055-□□P	SJ065-□□P	SJ075-□□P	SJ090-□□P	SJ105-□□P
PA	125.1	132.1	148.1	160.1	170.4	202.65	233.65	270.65
ØPB	13.5	16	20	23	28	33.5	43	53
ØPD	6	6	8	10	13	13	16	20
PE	7	8	10	12	14	16	22	26
PO	20	22	26	28	30	37	42	55
PP	24	26	31	36	39	47	57	66
PQ	9	11	12	12.5	16.5	19	23.5	25.5
PR	23	25	29.5	34.5	37.5	45.5	55.5	64.5
ØPU	15	18	22	25	30	35	45	55
PX (Nominal X Pitch)	M3X0.5	M3X0.5	M4X0.7	M5X0.8	M6X1	M6X1	M8X1.25	M8X1.25

Clamp Design Dimensions



Clamp Option - A

Clamp Option - B

Clamp Option - A								
Model No.	SH036-□□□	SH040-□□□	SH048-□□□	SH055-□□□	SH065-□□□	SH075-□□□	SH090-□□□	SH105-□□□
ØA	8.5	8.5	10.5	12.5	14.5	16.5	21	25
B	2	2	2	2	3	3	4	4
C	13	14.5	17.5	20	23.5	27.5	35	42
ØD	12.5	14.5	16.5	20.5	24.5	27.5	36.5	48.5
E	17	19	23	26	29	35	43	50
F	14	16	19	22	25	31	38	44
G	8.5	9.5	11.5	13	14.5	17.5	21.5	25
ØU	15	18	22	25	30	35	45	55

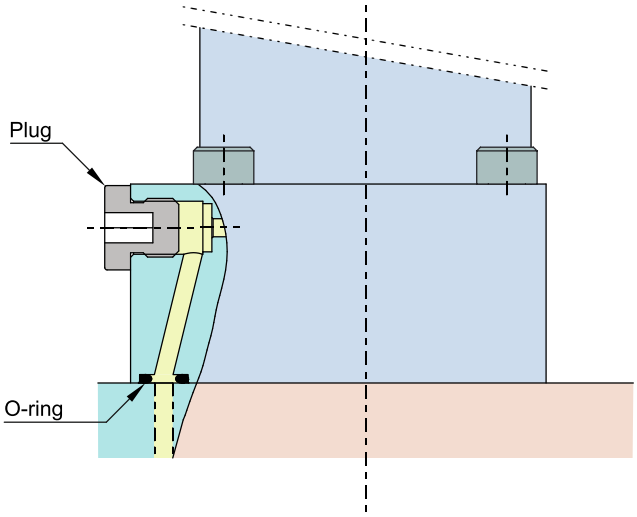
Clamp Option - B								
Model No.	SH036-□□□	SH040-□□□	SH048-□□□	SH055-□□□	SH065-□□□	SH075-□□□	SH090-□□□	SH105-□□□
ØA	8.5	8.5	10.5	12.5	14.5	16.5	21	25
ØB	16	16	22	25	29	32	38	45
C	13	14.5	17.5	20	23.5	27.5	35	42
ØD	12.5	14.5	16.5	20.5	24.5	27.5	36.5	48.5
E	17	19	23	26	29	35	43	50
F	14	16	19	22	25	31	38	44
G	8	9	11	13	14	15	18	22
H	14	15	18	20	22	30	36	40
I (Nominal X Pitch)	M8X1.25	M8X1.25	M10X1.5	M12X1.75	M14X2	M16X2	M20X2.5	M24X3
J	R14	R15	R18	R20	R24	R26	R34	R44
K	R8	R9	R13	R13	R18	R19	R24	R36
ØU	15	18	22	25	30	35	45	55

- Clamp is not included in scope of supply.

Instructions

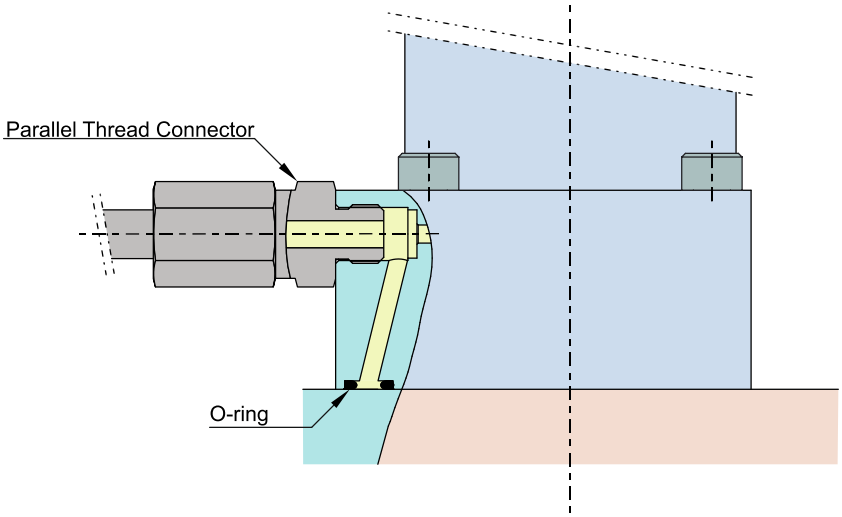
Hydraulic Connection

Gasket Option



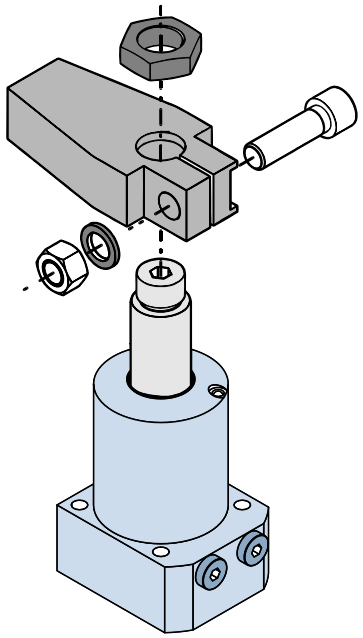
- For gasket option, a flow control valve is mountable on G-ports of the cylinder.

Piping Option

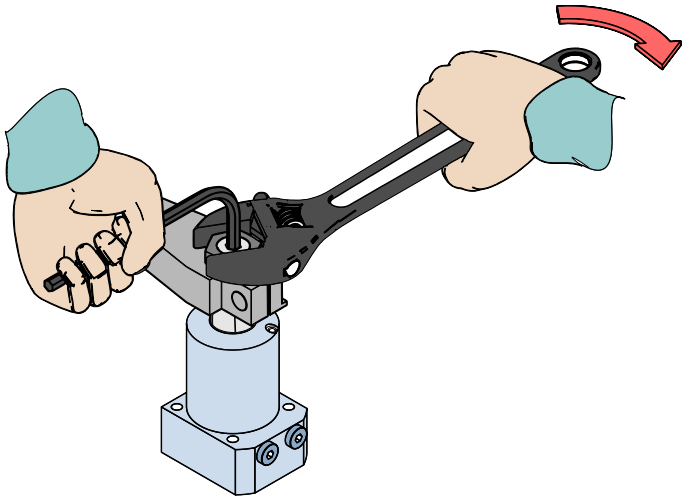


- Remove plugs in piping option. (O-ring must be used in gasket holes.).

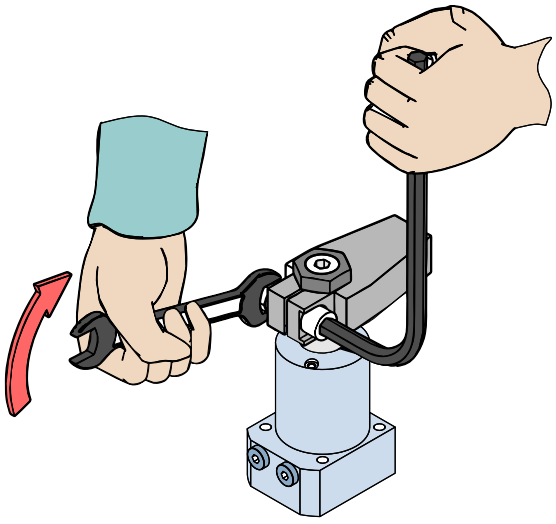
Clamp Mounting Procedure



- This figure illustrates clamp mounting procedure.
- For standard rod option, please prepare clamp and standard mounting parts (bolt, nut and washer) which is not included. Hexagonal thin nut will be provided.
- For pin rod option, Clamp, snap ring, pin, leveling spring and bolt are not included. Please prepare them.



- First of all, attach the clamp in rod.
- Fix the clamp in vise as in clamp should not rotate when tightening the clamping nut. mount the provided nut upon the rod as shown in figure.
- Tighten the nut with wrench while holding the rod with the allen key.



- Now prepare standard bolt, nut and washer, so that you can assemble it which is illustrated in the figure.
- Tighten the nut with wrench while holding the bolt with the allen key.

Cautions

1. Check the usable fluid.
    - i.e. General Mineral Based Hydraulic Oil (ISO – VG32 Equivalent)
    - Make sure the hydraulic fluid not deteriorated.

2. Cylinder clamping method
    - Never allow swing clamp to contact work piece during rotation.

3. Hydraulic supply
    - Never exceed the given pressure limit otherwise it will cause malfunction of the product.
    - If the flow rate is too high, excessive swing speed can be caused and lead to wear and damage to cylinder components.
    - The cylinder supply flow must be controlled.
    - The return flow from the cylinder must be free.

4. Installation / removal of the swing clamp
    - Oil or debris on the tightened parts of the clamp or piston rod may cause the rod to loosen.
    - Please clean them thoroughly before installation.

5. Procedure before piping
    - The pipeline, piping connector and fixture circuits should be cleaned by thoroughly flushing.
    - The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
    - There is no filter provided with product, which prevents foreign materials and contaminants from getting into the circuit.
    - While applying the sealing tape ensure that no pieces of sealing tape enters into the circuit, it can lead to oil leakage and malfunctions.
    - Please implement piping constructions in a clean environment to prevent anything getting into the product.

6. Do not touch clamp while it is working, otherwise it may cause injury due to clinging.

7. Do not disassemble or modify the product.
    - If the product is modified, then malfunction occurs.

8. Please contact us for overhaul and repair.