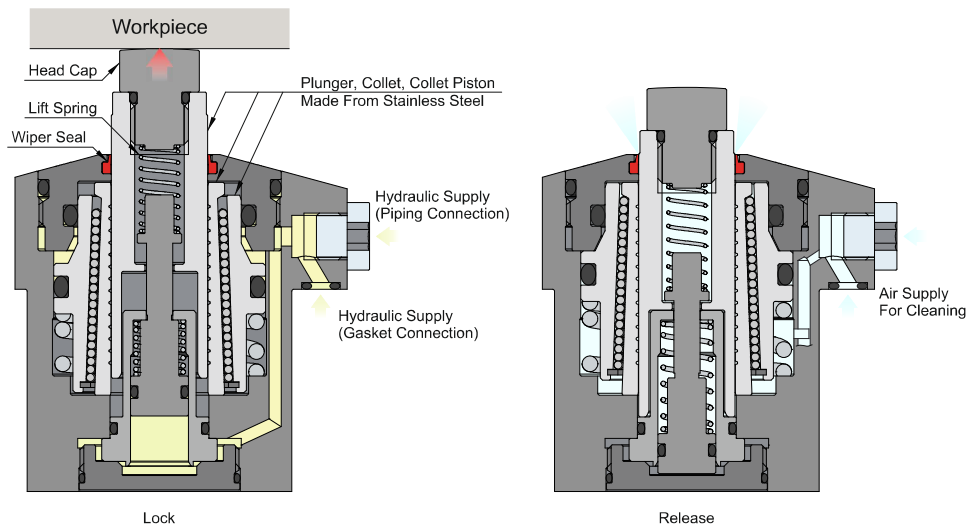


Hydraulic Work Support

Model WH

Flange Type

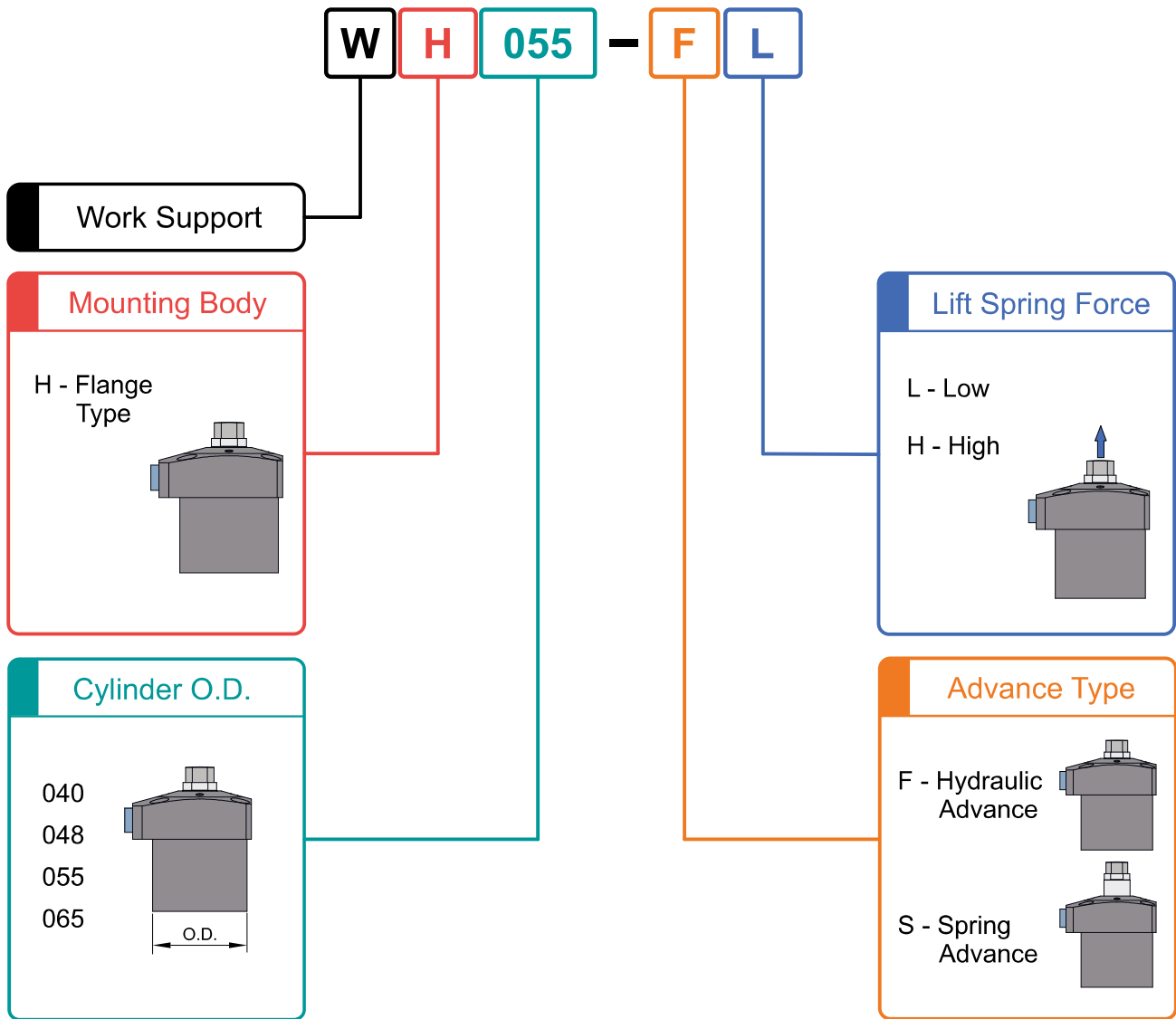


Specifications

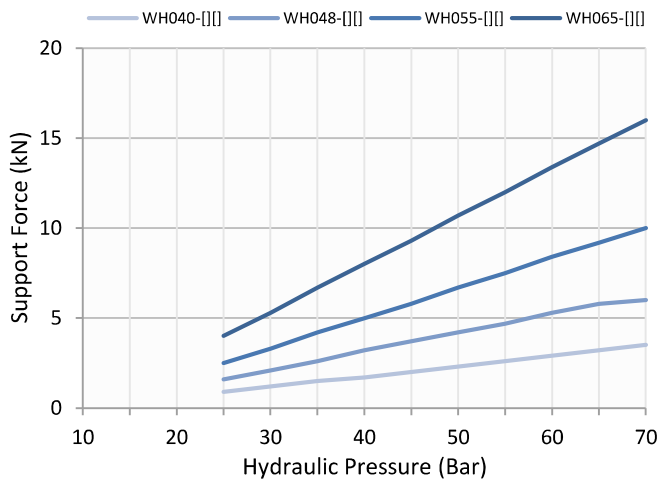
Model No.			WH040-□□	WH048-□□	WH055-□□	WH065-□□
Support Force at 70 Bar		kN	3.5	6	10	16
Lift Spring Force	Low	N	3.2 ~ 4.3	4.5 ~ 8.2	5.4 ~ 11	7 ~ 13.3
	High	N	4.5 ~ 6.1	5.2 ~ 11	8.2 ~ 17.1	9.2 ~ 17.5
Plunger Stroke		mm	8	12	12	16
Cylinder Capacity	Hydraulic Advance	cm ³	1.1	1.97	3.08	4.17
	Spring Advance	cm ³	0.47	1.03	1.73	2.36
Mass		Kg	0.65	1	1.4	2.35

- Pressure Range: - 25-70 Bar
- Operating Temperature: - 0-70 °C
- Fluid Used: - General Mineral Based Hydraulic Oil (ISO – VG32 Equivalent)

Model No. Selection

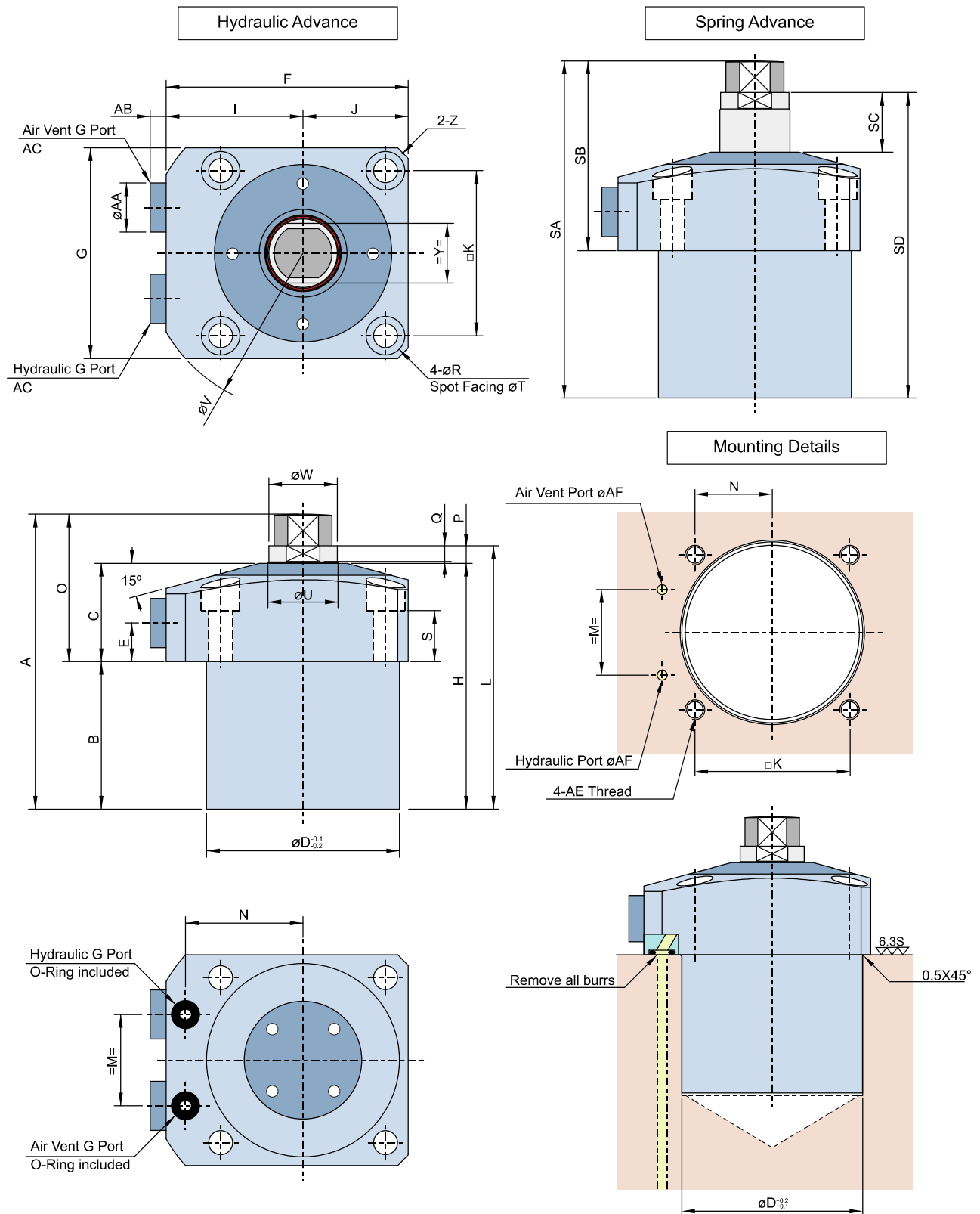


Hydraulic Pressure & Support Force



Hydraulic Pressure (Bar)	Support Force (kN)			
	WH040-□□	WH048-□□	WH055-□□	WH065-□□
25	0.9	1.6	2.5	4
30	1.2	2.1	3.3	5.3
35	1.5	2.6	4.2	6.7
40	1.7	3.2	5	8
45	2	3.7	5.8	9.3
50	2.3	4.2	6.7	10.7
55	2.6	4.7	7.5	12
60	2.9	5.3	8.4	13.4
65	3.2	5.8	9.2	14.7
70	3.5	6	10	16

External Dimensions

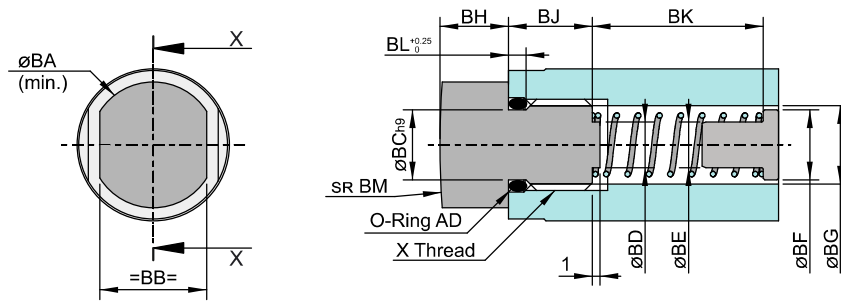


- This figure shows the position of plunger with no supply of hydraulic.

Model No.	WH040-F□	WH048-F□	WH055-F□	WH065-F□
A	68	79	82	102
B	30	41	42	57
C	26	26	28	30
ØD	40	48	55	65
E	11	11	11	11
F	54	61	69	81
G	45	51	60	70
H	56	67	70	87
I	31.5	35.5	39	46
J	22.5	25.5	30	35
□K	34	40	47	55
L	61	72	75	93
M	20	24	26	30
N	26	30	33.5	39.5
O	38	38	40	45
P	5	5	5	6
Q	4	4	4.5	5
ØR	9.5	9.5	11	11
S	15.4	14.5	14.5	14.5
ØT	5.5	5.5	6.8	6.8
ØU	15	16	20	22
ØV	73	83	90	104
ØW	14.5	15.5	19.5	21
X (Nominal X Pitch X Depth)	M10 X 1.5 X 12	M10 X 1.5 X 12	M12 X 1.75 X 13	M12 X 1.75 X 13
Y	13	13	17	19
Z	3	3	3	4
SA	76	91	94	118
SB	46	50	52	61
SC	13	17	17	22
SD	69	84	87	109
ØAA	14	14	14	14
AB	5	5	5	5
AC	G1/8	G1/8	G1/8	G1/8
AE (Nominal X Pitch)	M5X0.8	M5X0.8	M6X1	M6X1
ØAF (Max.)	3	3	3	5

- Head Cap 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 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.

Head Cap and Lift Spring Design Dimensions

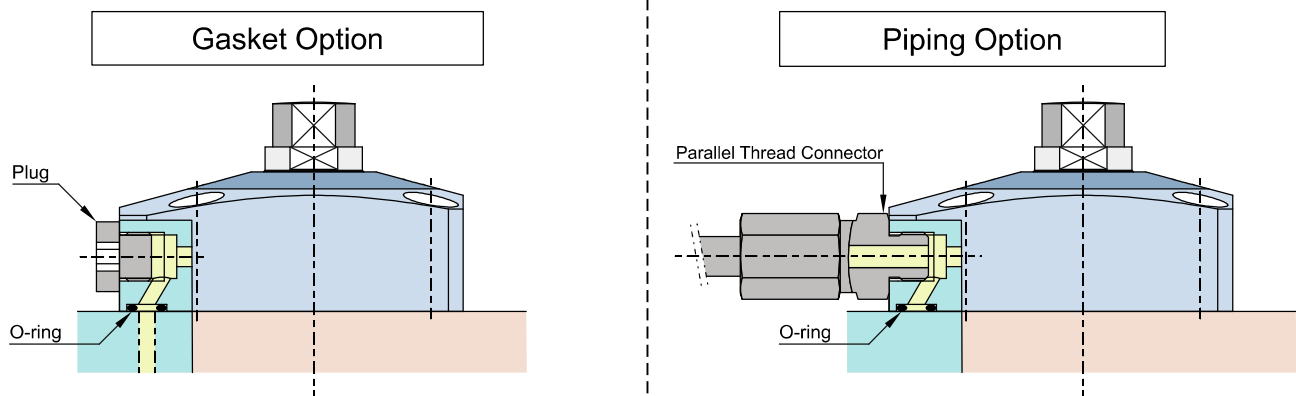


Model No.	WH040-□□	WH048-□□	WH055-□□	WH065-□□
$\varnothing BA$	12.6	12.6	16.5	16.5
BB	11	11	14	14
$\varnothing BC$	7.8	7.8	9.2	9.2
$\varnothing BD$	5	5	6	6
$\varnothing BE$	5	5	6	6
$\varnothing BF$	7.2	7.2	9.2	9.2
$\varnothing BG$	8.5	8.5	10.3	10.3
BH	7	7	7	9
BJ	9	9	11	11
BK	17.6	22	22.5	32.5
BL	2	2	2.3	2.3
BM	70	70	90	110
X (Nominal X Pitch X Depth)	M10 X 1.5 X 12	M10 X 1.5 X 12	M12 X 1.75 X 13	M12 X 1.75 X 13
AD (O-ring - I.D. X C/S)	8 X 1.5	8 X 1.5	9 X 2	9 X 2

- Reference for designing head cap and lift spring as per your requirement other than the included ones.
- When designing own head cap and lift spring, maintain dimensions which are given above in table.
- Figure indicates that head cap is assembled in a such condition where no pressure is applied.

Instructions

Hydraulic Connection

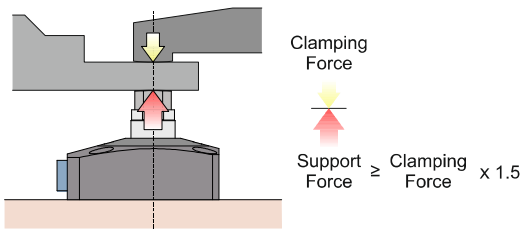


- In a gasket option, a flow control valve is mountable on G-ports of the cylinder.
- Remove plugs for piping option (O-ring must be used in gasket holes.).

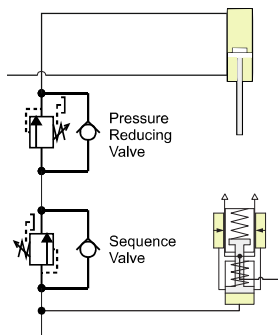

Cautions

1. Check the usable fluid.
 - Use General Mineral Based Hydraulic Oil (ISO – VG32 Equivalent)
 - Make sure the hydraulic fluid not deteriorated.
2. Hydraulic supply
 - Never exceed the given pressure limit.
 - If the flow rate is too high, excessive plunger speed can cause gap between work piece and plunger which may cause supporting fault. Always use flow control valve.
 - The supply flow must be controlled.
 - The minimum operating pressure must not be exceeded in order to have an assured clamping function. The highest clamping force is achieved at maximum operating pressure.

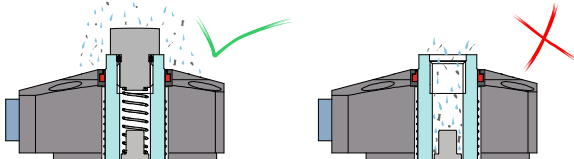
3. Appropriate actions before using cylinder
 - Work support and cylinder must be selected in such a way that the support force is 1.5 times clamping force plus machining force.



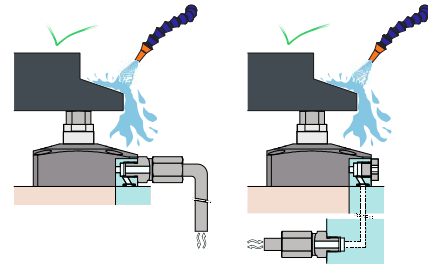
- Use pressure reducing valve to control pressure in clamping circuit.



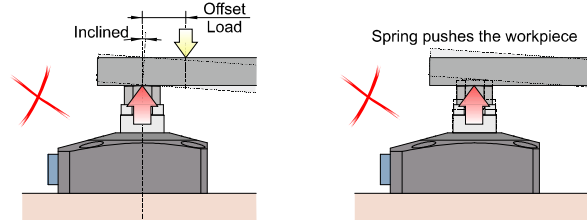
- Do not operate work support without head cap.



- The work support has air vent port for breathing. Confirm that it can breathe without being affected by cutting chips or coolant.



4. Clamping method
 - Never allow offset load and component of force affect the product.
 - If the work piece is light in weight, the lift spring in the plunger may push it upward. Determine the weight of the work piece or the lift spring force to ensure that the work piece is perfectly



seated and the work support is actuated.

- When designing head cap, make sure that weight of head cap is 30% or less from the lift spring force.
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.