



New locking structure for secure workpiece supporting

Built-in hydraulic booster generates a high pressure, forming a simple but firm locking structure (PATENT P.). High reliability and durability in a very compact body.

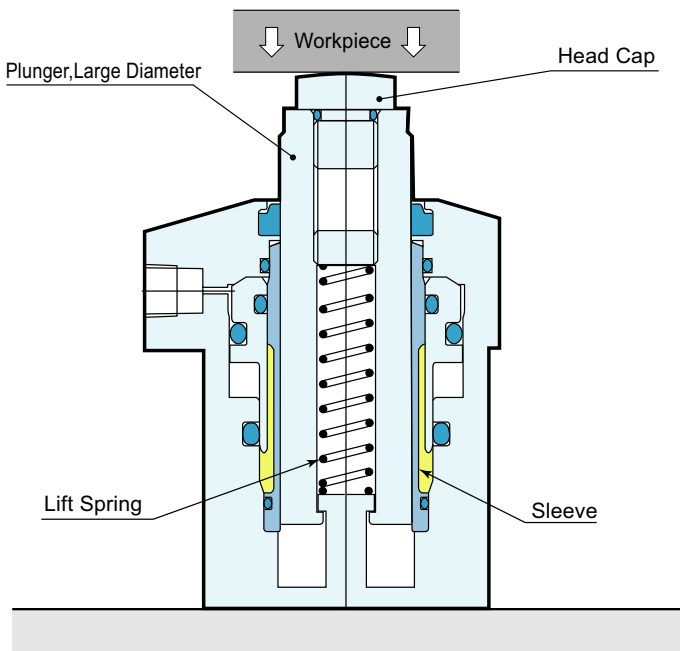
High rigidity plunger with large diameter is securely locked by sleeve with high hydraulic pressure. Such sleeve locking structure stops resonance from intermittent machining forces, thus effectively restrains vibration and deflection of workpiece.

Easy jig designing and manufacturing

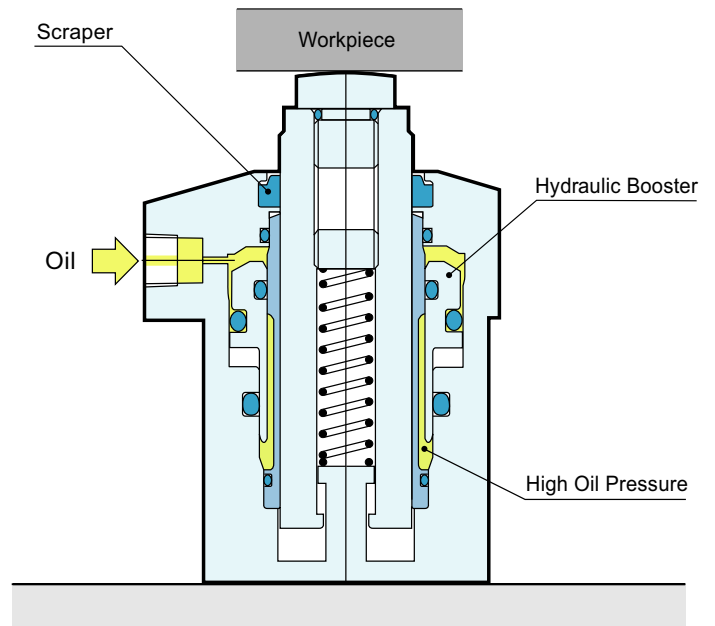
Plunger stroke is large, so ideally supports the workpieces of irregular-shape or with size error such as castings.

Highly contributes to simplification of jig designing as well as to reduction of jig manufacturing cost.

① Pushed Down by Workpiece / Height Positioning by Spring



② Hydraulically locked



Refer to page 5

Model	CSG0.6	CSG1	CSG1.6	CSG2.5
Support Force	5.9kN	9.8kN	15.7kN	24.5kN

Model		CSG0.6	CSG1	CSG1.6	CSG2.5
Support Force at 7MPa ※1		5.9 kN	9.8 kN	15.7 kN	24.5 kN
Plunger Stroke		12 mm	12 mm	16 mm	16 mm
Oil Capacity		4.2 cm ³	5.0 cm ³	9.3 cm ³	14.1 cm ³
Lift Spring Force ※2	Standard Type	3.9 ~ 7.8 N	3.9 ~ 8.8 N	6.9 ~ 14.7 N	6.9 ~ 17.6 N
	High-Power Type	5.9 ~ 12.0 N	5.9 ~ 13.7 N	10.4 ~ 21.9 N	10.4 ~ 25.9 N
Maximum Allowable Mass of Head Cap	Standard Type	0.05 kg	0.05 kg	0.15 kg	0.15 kg
	High-Power Type	0.2 kg	0.2 kg	0.3 kg	0.3 kg
Mass		0.7 kg	1.1 kg	2.2 kg	3.3 kg

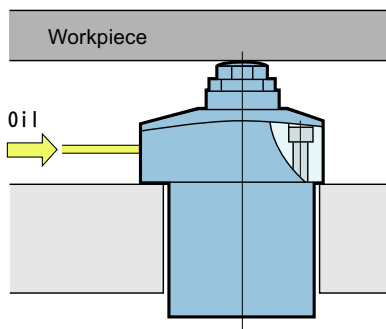
Working Pressure Range 2.5~7MPa Proof Pressure 8.5MPa Ambient Temperature 0~70° C

※1: In case WORK SUPPORT and WORK CLAMP are used at opposed directions, Support Force of Work Support must be more than 1.5 times of the applied load (sum of Clamp's Clamping Force + Machining Force). Be sure to select adequate models both of Work Support and Work Clamp.

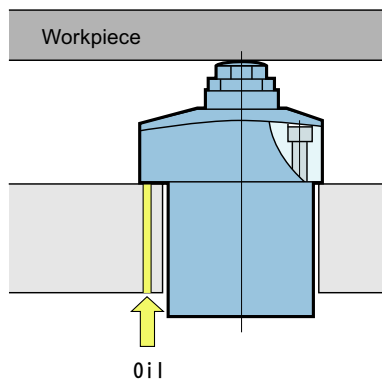
※2: Figures are for "top end~bottom end" of Plunger action.

Mounting Example

CSG①S : Piping Type



CSG①G : Manifold Type



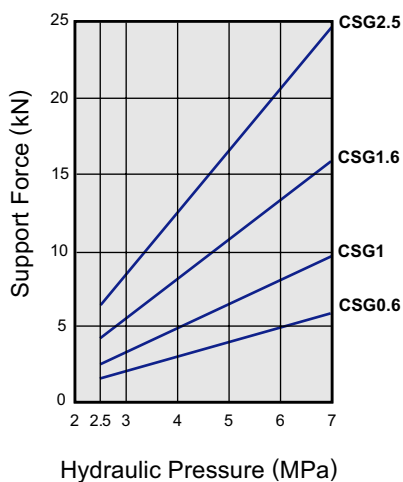
Class Definition

CSG ① ② ③ - ④ (Example: CSG1.6G)

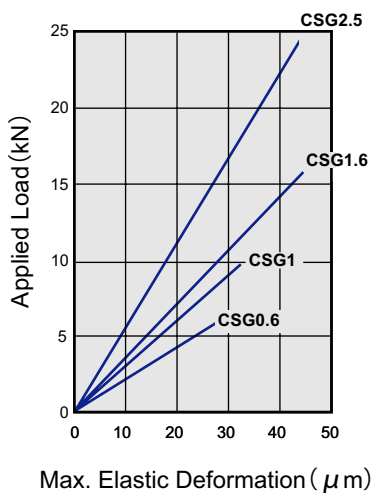
- ① Size (Refer to Specification Table above)
0.6, 1, 1.6, 2.5
- ② Type of mounting
S : Piping type G : Manifold type
- ③ Type of Lift Spring Force
Nil : Standard type H : High-Power type
- ④ Special Application
V: Fluorine rubber is adopted at the sealing portions for the protection against chlorine coolant. (except CSG 2.5 model)
※ Ineffective for heat

Performance Diagram

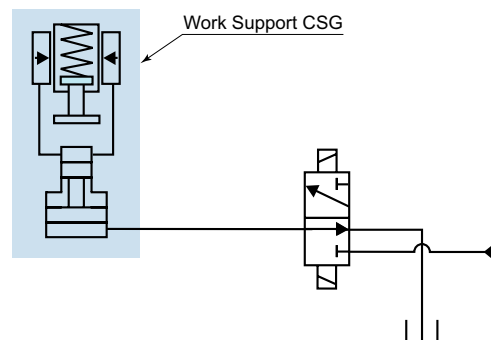
Hydraulic Pressure & Support Force



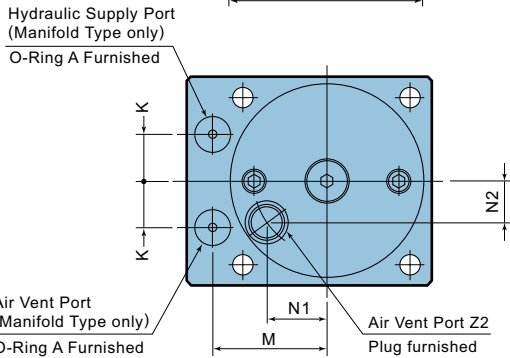
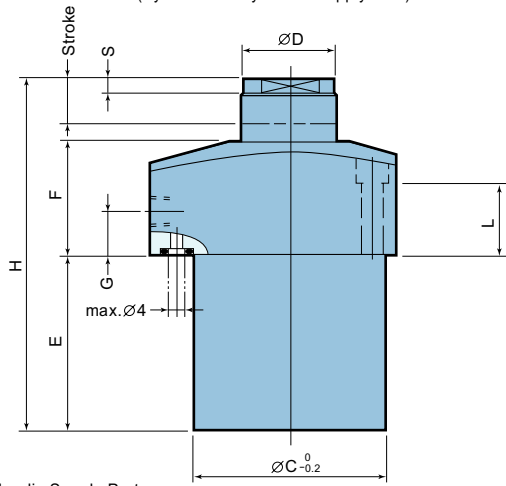
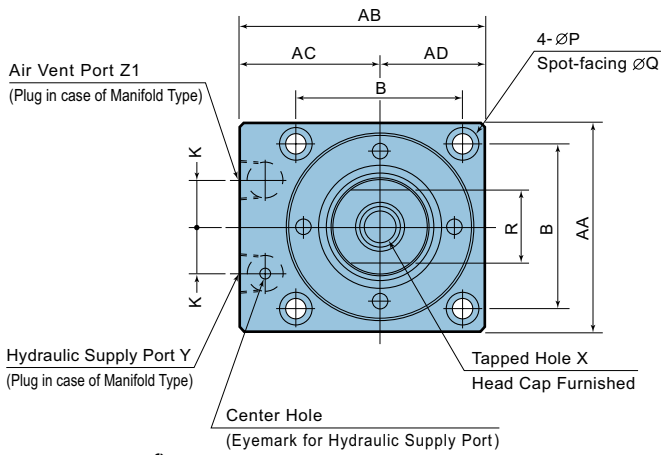
Applied Load & Max. Elastic Deformation



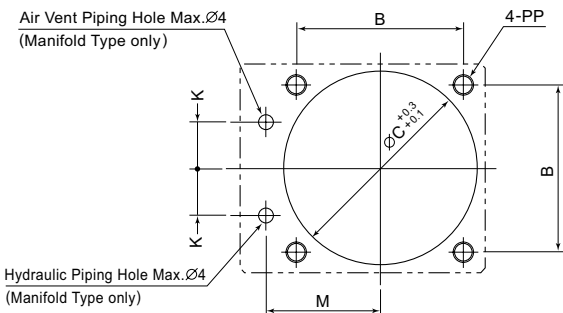
Hydraulic Circuit Diagram (reference)



CSG ① S Piping Type / CSG ① G Manifold Type



Mounting Details



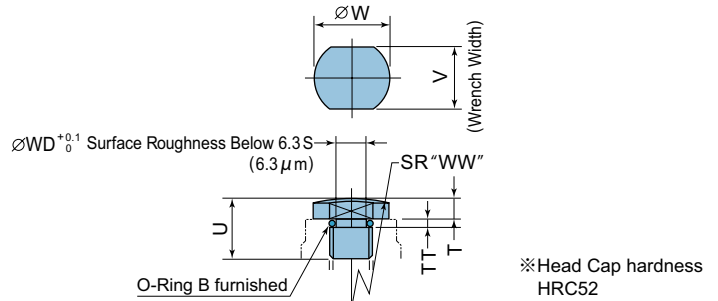
- ※ Mounting bolts are not furnished.
- ※ Plug's projection volume : Max.3mm
- ※ Outline drawing for 2D/3D CAD can be downloaded from our URL : <http://www.pascaleng.co.jp/>

Size Table

(mm)

Model	CSG0.6	CSG1	CSG1.6	CSG2.5
AA	52	56	65	78
AB	61	65	73	85
AC	35	37	40.5	46
AD	26	28	32.5	39
B	40	44	52	62
C	47	52	60	72
D	20	25	30	38
E	44	49	63	67
F	26	28	30	30
G	11	11	11	11
H	87	94	115	120
K	12	13	15	18
L	15	17	17	14
M	28	30	33.5	39
N1	14	16	19.5	25
N2	10	11	13	16
P	5.5	5.5	6.8	9
PP	M5	M5	M6	M8
Q	9.5	9.5	11	14
R (Wrench Width)	17	19	24	32
S (Wrench Width Height)	4	4.5	5	6
X	M12×20	M12×22	M16×25	M16×30
Y	Rc1/8	Rc1/8	Rc1/8	Rc1/8
Z1	Rc1/8	Rc1/8	Rc1/8	Rc1/8
Z2	Rc1/8	Rc1/8	Rc1/8	Rc1/8
O-Ring A	1BP6	1BP6	1BP6	1BP6

Head Cap Dimensions



Head Cap Size Table

(mm)

Model	CSG0.6	CSG1	CSG1.6	CSG2.5
T	7	7	9	9
TT	3	3	3.5	3.5
U	20	20	25	25
V (Wrench Width)	14	17	19	24
W	17	19	23	30
WD	8.9	8.9	13.3	13.3
WW	70	90	110	140
O-Ring B	1AP9	1AP9	AS568-014	AS568-014

⚠ Caution in use

1. In case of Manifold type, Surface Roughness at Mounting surface should be below 6.3S.
2. Do not seal Air Vent. If coolant or dust is intruding from Air Vent, make necessary piping.
3. Be sure to always put the furnished O-Ring when Head Cap is on. When Head Cap is not on, do necessary arrangement to avoid an intrusion of coolant or chips from the tap hole at plunger's top edge.