Specifications

Model			CSY00-S13	CSY03-S16	CSY04-S16	CSY06-S20
Support force (hydraulic pressure 7 MPa) *1		(kN)	3	4	5.5	10
Cylinder capacity		(cm^3)	0.9	1.0	1.4	2.2
Lift spring force *2	L : Standard	(N)	2~7	4~8	5~9	5~11
	H: Strong	(N)	3~9	5~11	6~14	8~20
Plunger stroke		(mm)	13	16	16	20
Max. allowable mass of head cap		(kg)	0.05		0.1	
Mass		(kg)	0.2	0.4	0.5	1.0

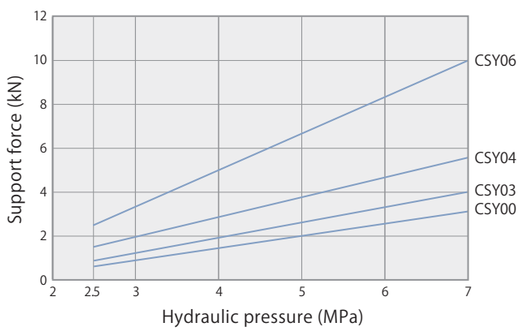
Working pressure range: 2.5 ~ 7 MPa Proof pressure: 10.5 MPa Operating temperature: 0 ~ 70°C
Fluid used: General mineral based hydraulic oil (ISO-VG32 equivalent)
*1 : When work support and clamp are used facing each other, work support and clamp must be selected in such a way that the support force is 1.5 times the applied load (clamping force + machining force).
*2 : Figures are for "upper end ~ lower end" of plunger action.
Fluorocarbon has been adopted for seal sections where cutting fluid is applied, as a measure for the use of chlorine-based cutting fluid (this is not thermal resistant specification).

Model designation

CSY①-②③ (Example: CSY03-LS13)

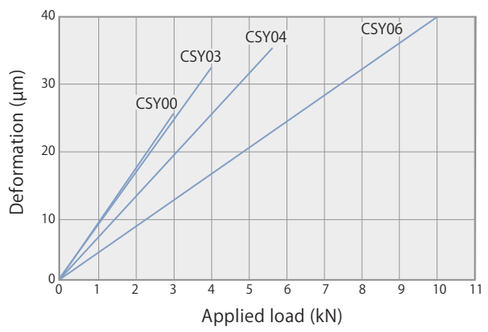
	① Size (refer to specification table)		② Lift spring force	③ Stroke
CSY	**00**	—	**L** : Standard	**S13**
	03 **04**		**H** : Strong	**S16**
	06			**S20**

Hydraulic pressure & support force



Hydraulic pressure (MPa)	Support force (kN)			
	CSY00	CSY03	CSY04	CSY06
2.5	0.8	1.0	1.4	2.5
3.0	1.0	1.3	1.8	3.3
3.5	1.3	1.7	2.3	4.2
4.0	1.5	2.0	2.8	5.0
4.5	1.8	2.3	3.2	5.8
5.0	2.0	2.7	3.7	6.7
5.5	2.3	3.0	4.1	7.5
6.0	2.5	3.3	4.6	8.3
6.5	2.8	3.7	5.0	9.2
7.0	3.0	4.0	5.5	10.0

Applied load & deformation



Applied load (kN)	Deformation (μm)			
	CSY00	CSY03	CSY04	CSY06
0	0	0	0	0
1	8	8	6	4
2	17	16	13	8
3	25	24	19	12
4	-	32	26	16
5	-	-	32	20
6	-	-	-	24
7	-	-	-	28
8	-	-	-	32
9	-	-	-	36
10	-	-	-	40

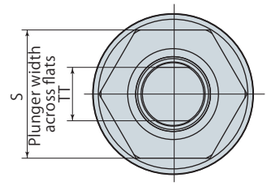
indicates nonusable range

Held with hydraulic pressure of 7 MPa.

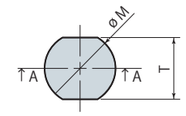
model CSY | Work support long stroke | Hydraulic lift | 7MPa

Dimension

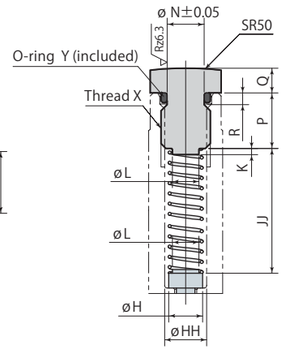
CSY 00/03/04/06 - L/H - S13/S16/S20



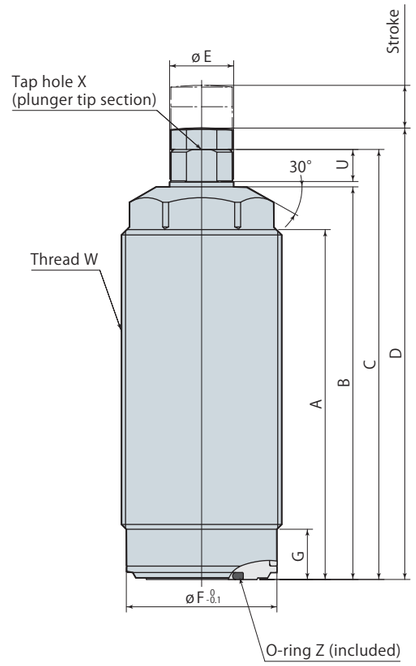
Head cap details



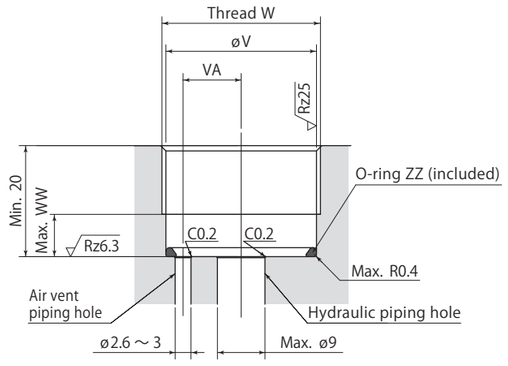
(Hardness : HRC52)



A-A



Mounting details



Mounting surface finish must be no rougher than Rz6.3 (ISO 4287:1997).

(mm)

Model	CSY00-L/H-S13	CSY03-L/H-S16	CSY04-L/H-S16	CSY06-L/H-S20
A	64	73	73	88
B	72	81	83	99
C	78	88	90	106
D	81	92	94	110
E	10	12	15	16
F	24.3	28.2	34.2	43.2
G	8.4	9.4	9.4	9.4
H	4.5	5.5	7.2	7.2
HH	5.1	6.8	8.5	8.5
JJ	24.6	27.2	29.1	36.5
K	1	1	1	1
L	3.5	4.3	5	5
M	9.5	11.5	12.5	12.5
N	4.5	6	7.8	7.8
P	7.5	9	9	9
Q	3	4	4	4
R	1.5	1.9	1.9	1.9
S	22	24	30	36
T	8	10	11	11
TT	8	10	13	13
U	5	6	6	6
V	24.5	28.5	34.5	43.5
VA	9	11	13	16
W (nominal size×pitch)	M26×1.5	M30×1.5	M36×1.5	M45×1.5
WW	8	9	9	9
X(nominal size×pitch depth)	M6×1 depth 9	M8×1.25 depth 12	M10×1.5 depth 11	M10×1.5 depth 11
O-ring Y*1	S5	S6	S8	S8
O-ring Z*2	AS568-013	AS568-014	AS568-014	AS568-015
O-ring ZZ*2	AS568-020	AS568-022	AS568-026	AS568-030
Body tightening torque	35~45N·m	40~50N·m	45~55N·m	55~65N·m
Head cap tightening torque	10N·m	20N·m	30N·m	30N·m

*1 : Material of O-ring is fluorocarbon (with hardness Hs70).
*2 : Material of O-ring is fluorocarbon (with hardness Hs90).

Note 1. When fixing the hexagon part of body with a vise, etc., make sure the tightening force is 2.5 kN or less.
2. Always attach head cap (workpiece contact spring cannot be retained). When fabricating head cap, ensure that O-ring slot, spring spot facing and guide are made by referring to head cap details. Be sure to always use O-ring.
3. When fabricating a lift spring, determine dimensions by referring to head cap details. Furthermore, rustproofing must be implemented (however, there is no guarantee for operation).
4. This diagram indicates a situation where head cap has been fitted into plunger with no pressure applied.