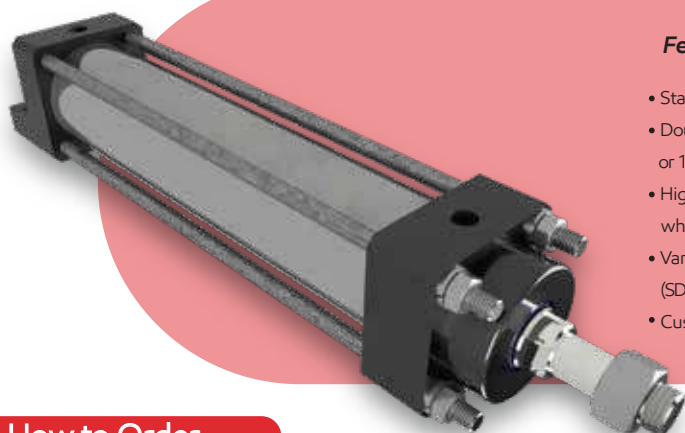
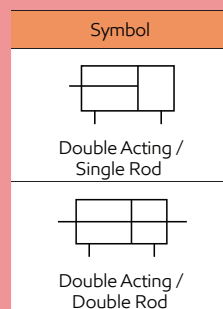


# NHC140H Series



### Features

- Standard tie rod type hydraulic cylinder
- Double acting hydraulic cylinder for 70 kgf/cm<sup>2</sup> or 140kgf/cm<sup>2</sup> with bore sizes from Ø40 to Ø250.
- High performance cushion to reduce shock when stopping.
- Various mounting styles (SD, LA, LB, FA, FB, FY, FZ, FC, FD, CA, CB, TC, TA)
- Custom made solution.



## How to Order

NHC140H   - FA  80  C - N  100  A  B      -

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

### ① Series

NHC140H	Single rod
NHC140H	Double rod
NHC140HL	With auto switch (Single rod)
NHC140HL W	With auto switch (Double rod)

### ② Seal

C	Compact seal (Standard)
Nil	Basic seal
B	Booster seal

### ③ Seal Material

Nil	Nitrile Urethane (Standard)
1	Nitrile rubber
2	Urethane rubber
3	Fluoric rubber

※ The packing material of the compact seal is nitrile rubber.

### ④ Mounting style

140kgf/cm <sup>2</sup>		70kgf/cm <sup>2</sup>	
SD	Standard	LB	Axial foot
LA	Axial angle of foot	FA	Rod side rectangular flange
FY	Rod side rectangular flange	FB	Head side rectangular flange
FZ	Head side rectangular flange		
FC	Rod side square flange		
FD	Head side square flange		
CA	Single clevis		
CB	Double clevis		
TC	Center trunnion		
TA	Rod side trunnion		

### ⑤ Bore size

Bore size	B	C
40	Ø40	Ø22
50	Ø50	Ø28
63	Ø63	Ø35
80	Ø80	Ø45
100	Ø100	Ø55
125	Ø125	Ø70
140	Ø140	Ø80
150	Ø150	Ø85
160	Ø160	Ø90
180	Ø180	Ø100
200	Ø200	Ø112
250	Ø250	Ø140

### ⑥ Rod type

### ⑦ Cushion

N	Without cushion
B	Cushions on both ends
R	Cushion on the rod side
H	Cushion on the head side

### ⑧ Cylinder stroke

Bore size	Max. stroke
Ø40, Ø50	1200
Ø63, Ø80	1600
Ø100	2000
Ø125~Ø250	2000

※ Check buckling, as it varies depending on mounting style.  
※ Contact us for longer stroke.

### ⑨ Port position

A	Standard
B,C,D	Refer to the next figure

### ⑩ Cushion valve position

B	Standard
A,C,D	Refer to the next figure

### ⑪ Bellows

	Material	Max. ambient temperature
Nil	Without bellows	
J	Nylon Tarpaulin	60 °C
K	Neoprene Cloth	110 °C

### ⑫ Rod end attachment

Nil	Rod end nut (Standard)
I	Single knuckle joint
Y	Double knuckle joint

### ⑬ Auto switch

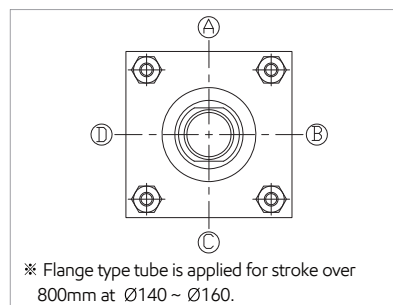
Reed A/S	Model	Solid state A/S	Model
A54	D-A54K	F59	D-F59K
A56	D-A56K	F5P	D-F5PK
A64	D-A64K	J59	D-J59K
A90(V)	D-A90(V)K	J51	D-J51K
A93(V)	D-A93(V)K	F9N	D-F9N(V)K
A96(V)	D-A96(V)K	F9P	D-F9P(V)K
		F9B	D-F9B(V)K

※ Only for single rod auto switch attached type.  
※ For more information, refer to Auto Switch Catalogue.

### ⑭ Number of auto switch

Nil	2 pcs
1	1 pc
N	N pcs (N:3,4,5...)

※ Only for single rod auto switch attached type.



### ⑮ Special order

Nil	Standard
M	Custom-made dimensions and specifications

### Specifications

Type	Standard		Auto switch attached			
	C Rod	B Rod	C Rod	B Rod		
Bore size	Ø40, Ø50, Ø63, Ø80, Ø100, Ø125, Ø140, Ø150, Ø160, Ø180, Ø200, Ø250		Ø40, Ø50, Ø63, Ø80, Ø100			
Operating pressure	70kgf/cm <sup>2</sup> (7.0MPa)	140kgf/cm <sup>2</sup> (14.0MPa)	70kgf/cm <sup>2</sup> (7.0MPa)	140kgf/cm <sup>2</sup> (14.0MPa)		
Max. operating pressure	Head side: 90kgf/cm <sup>2</sup> (9.0MPa) Rod side: 110kgf/cm <sup>2</sup> (11.0MPa)	Head side: 180kgf/cm <sup>2</sup> (18.0MPa) Rod side: 180kgf/cm <sup>2</sup> (18.0MPa)	Head side: 90kgf/cm <sup>2</sup> (9.0MPa) Rod side: 110kgf/cm <sup>2</sup> (11.0MPa)	Head side: 180kgf/cm <sup>2</sup> (18.0MPa) Rod side: 180kgf/cm <sup>2</sup> (18.0MPa)		
Proof pressure	105kgf/cm <sup>2</sup> (10.5MPa)	210kgf/cm <sup>2</sup> (21.0MPa)	105kgf/cm <sup>2</sup> (10.5MPa)	210kgf/cm <sup>2</sup> (21.0MPa)		
Min. operating pressure	Head side ≤3kgf/cm <sup>2</sup> (0.3MPa), Rod side: B rod ≤4.5kgf/cm <sup>2</sup> (0.45MPa), C rod ≤4kgf/cm <sup>2</sup> (0.4MPa)					
Operating piston speed	Ø40 ~ Ø63 : 8~400mm/sec Ø80 ~ Ø125 : 8~300mm/sec Ø140 ~ Ø250 : 8~200mm/sec		Ø40 ~ Ø63 : 8~400mm/sec Ø80 ~ Ø100 : 8~300mm/sec			
Ambient & fluid temperature	-10 ~ 80 °C		-10 ~ 70 °C			
Cushion	Metal fitting type					
Working oil	Petroleum-based fluid					
Tolerance of thread	KS class 2					
Tolerance of stroke	≤100mm <sup>+0.8</sup> <sub>0</sub>	≤101~250mm <sup>+1.0</sup> <sub>0</sub>	≤251~630mm <sup>+1.25</sup> <sub>0</sub>	≤631~1000mm <sup>+1.4</sup> <sub>0</sub>	≤1001~1600mm <sup>+1.6</sup> <sub>0</sub>	≤1601~2000mm <sup>+1.8</sup> <sub>0</sub>
Tube material	Carbon steel for machine structural use			Stainless steel		
Mounting style	SD, LA, (LB), (FA), (FB), FY, FZ, FC, FD, CA, CB, TC, TA					

- \* Operating pressure: Max. allowable setting pressure for a relief valve while cylinder is operating.
- \* Max. operating pressure: Maximum allowable pressure generated in a cylinder (surge pressure, etc.).
- \* Proof pressure: Test pressure for a cylinder can withstand without unreliable performance when returning to operating pressure
- \* Min. operating pressure: Minimum pressure for cylinder installed horizontally and operating without load.
- \* Operating pressure for the mounting styles in ( ) are 70kgf/cm<sup>2</sup>.
- \* A longer thread length (A) is required when lock nut is applied on the end of the piston rod.

### Cushion Length

Unit:mm

Bore size	Ø40 ~ Ø63	Ø80 ~ Ø100	Ø125 ~ Ø150	Ø160	Ø180	Ø200	Ø250
Cushion length	22	25	30	35	40	45	50

### Mounting Style

Bore size Mounting	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø150	Ø160	Ø180	Ø200	Ø250
Axial angle of foot	LA(Hyd.)40	LA(Hyd.)50	LA(Hyd.)63	LA(Hyd.)80	LA(Hyd.)100	LA(Hyd.)125	LA(Hyd.)140	LA(Hyd.)150	LA(Hyd.)160	LA(Hyd.)180	LA(Hyd.)200	LA(Hyd.)250
Axial foot	LB(Hyd.)40	LB(Hyd.)50	LB(Hyd.)63	LB(Hyd.)80	LB(Hyd.)100	LB(Hyd.)125	LB(Hyd.)140	LB(Hyd.)150	LB(Hyd.)160	LB(Hyd.)180	LB(Hyd.)200	LB(Hyd.)250
Flange	FA/FB (Hyd.)40	FA/FB (Hyd.)50	FA/FB (Hyd.)63	FA/FB (Hyd.)80	FA/FB (Hyd.)100	FA/FB (Hyd.)125	FA/FB (Hyd.)140	FA/FB (Hyd.)150	FA/FB (Hyd.)160	FA/FB (Hyd.)180	FA/FB (Hyd.)200	FA/FB (Hyd.)250
Reinforced square flange	FY/FZ (Hyd.)40	FY/FZ (Hyd.)50	FY/FZ (Hyd.)63	FY/FZ (Hyd.)80	FY/FZ (Hyd.)100	FY/FZ (Hyd.)125	FY/FZ (Hyd.)140	FY/FZ (Hyd.)150	FY/FZ (Hyd.)160	FY/FZ (Hyd.)180	FY/FZ (Hyd.)200	FY/FZ (Hyd.)250
Square flange	FC/FD (Hyd.)40	FC/FD (Hyd.)50	FC/FD (Hyd.)63	FC/FD (Hyd.)80	FC/FD (Hyd.)100	FC/FD (Hyd.)125	FC/FD (Hyd.)140	FC/FD (Hyd.)150	FC/FD (Hyd.)160	FC/FD (Hyd.)180	FC/FD (Hyd.)200	FC/FD (Hyd.)250
Single clevis	CA(Hyd.)40	CA(Hyd.)50	CA(Hyd.)63	CA(Hyd.)80	CA(Hyd.)100	CA(Hyd.)125	CA(Hyd.)140	CA(Hyd.)150	CA(Hyd.)160	CA(Hyd.)180	CA(Hyd.)200	CA(Hyd.)250
Double clevis	CB(Hyd.)40	CB(Hyd.)50	CB(Hyd.)63	CB(Hyd.)80	CB(Hyd.)100	CB(Hyd.)125	CB(Hyd.)140	CB(Hyd.)150	CB(Hyd.)160	CB(Hyd.)180	CB(Hyd.)200	CB(Hyd.)250
Trunnion	TA/TC (Hyd.)40	TA/TC (Hyd.)50	TA/TC (Hyd.)63	TA/TC (Hyd.)80	TA/TC (Hyd.)100	TA/TC (Hyd.)125	TA/TC (Hyd.)140	TA/TC (Hyd.)150	TA/TC (Hyd.)160	TA/TC (Hyd.)180	TA/TC (Hyd.)200	TA/TC (Hyd.)250
Double clevis pin	CB PIN (Hyd.)40	CB PIN (Hyd.)50	CB PIN (Hyd.)63	CB PIN (Hyd.)80	CB PIN (Hyd.)100	CB PIN (Hyd.)125	CB PIN (Hyd.)140	CB PIN (Hyd.)150	CB PIN (Hyd.)160	CB PIN (Hyd.)180	CB PIN (Hyd.)200	CB PIN (Hyd.)250

### Rod End Attachment

Bore size		Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø150	Ø160
Single knuckle joint	B	I(Hyd.)40B	I(Hyd.)50B	I(Hyd.)63B	I(Hyd.)80B	I(Hyd.)100B	I(Hyd.)125B	I(Hyd.)140B	I(Hyd.)150B	I(Hyd.)160B
	C	I(Hyd.)40C	I(Hyd.)50C	I(Hyd.)63C	I(Hyd.)80C	I(Hyd.)100C	I(Hyd.)125C	I(Hyd.)140C	I(Hyd.)150C	I(Hyd.)160C
Double knuckle joint	B	Y(Hyd.)40B	Y(Hyd.)50B	Y(Hyd.)63B	Y(Hyd.)80B	Y(Hyd.)100B	Y(Hyd.)125B	Y(Hyd.)140B	Y(Hyd.)150B	Y(Hyd.)160B
	C	Y(Hyd.)40C	Y(Hyd.)50C	Y(Hyd.)63C	Y(Hyd.)80C	Y(Hyd.)100C	Y(Hyd.)125C	Y(Hyd.)140C	Y(Hyd.)150C	Y(Hyd.)160C
Double knuckle joint pin		Y PIN (Hyd.)40	Y PIN (Hyd.)50	Y PIN (Hyd.)63	Y PIN (Hyd.)80	Y PIN (Hyd.)100	Y PIN (Hyd.)125	Y PIN (Hyd.)140	Y PIN (Hyd.)150	Y PIN (Hyd.)160
Rod end nut		RN(Hyd.)40	RN(Hyd.) 50	RN(Hyd.) 63	RN(Hyd.) 80	RN(Hyd.) 100	RN(Hyd.) 125	RN(Hyd.) 140	RN(Hyd.) 150	RN(Hyd.) 160

### Mass

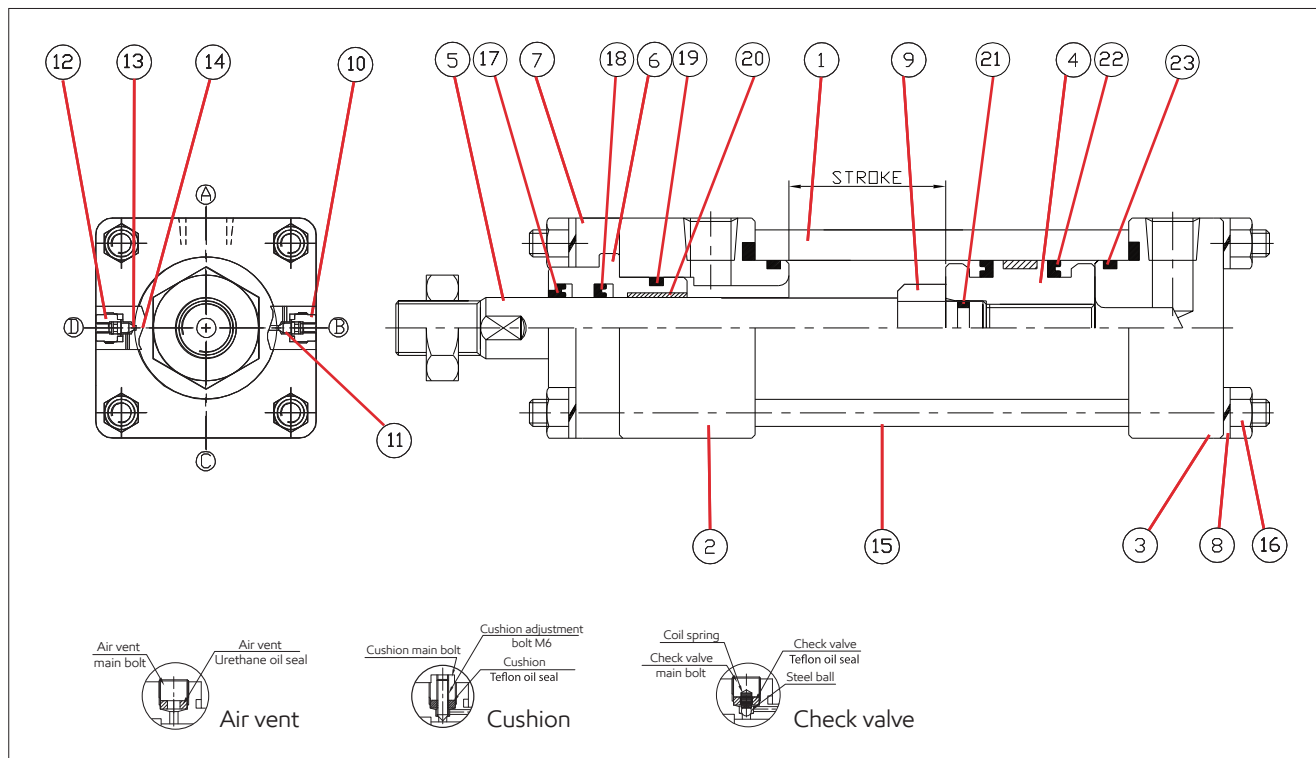
Unit : kg

Bore size	Rod type	Basic mass (SD)		Mounting mass												Accessory mass		Additional mass for each 1mm of stroke	
		Standard type	Double rod type	LA	LB	FA	FB	FC	FD	FY	FZ	CA	CB	TA	TC	Single knuckle joint	Double knuckle joint	Standard type	Double rod type
Ø40	B	3.5	4.4	0.5	0.5	0.2	0.7	0.7	1.1	0.3	0.8	0.5	0.6	0.1	0.6	0.5	0.7	0.011	0.014
	C	3.4	4.3															0.010	0.012
Ø50	B	5.0	6.4	0.9	0.7	0.7	1.2	1.5	2.0	1.1	1.6	1.0	1.2	0.4	1.0	1.0	1.2	0.014	0.019
	C	4.9	6.2															0.012	0.014
Ø63	B	7.9	10.2	1.0	1.2	1.0	1.8	2.2	3.1	1.6	2.4	2.0	2.6	0.6	1.2	2.7	3.9	0.019	0.027
	C	7.6	9.8															0.017	0.022
Ø80	B	16.2	20.3	1.8	2.0	1.1	3.0	2.8	4.7	2.1	4.0	3.0	3.6	0.6	2.1	2.7	3.7	0.032	0.045
	C	15.5	19.4															0.027	0.035
Ø100	B	26.0	32.7	2.1	2.9	1.8	4.8	4.6	7.4	3.9	6.9	5.5	6.7	1.0	3.8	4.2	7.7	0.048	0.067
	C	24.9	31.1															0.042	0.055
Ø125	B	42.9	53.6	3.2	5.5	2.9	8.4	8.0	13.0	6.2	12.1	9.9	12.1	2.1	6.2	8.0	14.6	0.077	0.107
	C	42.5	52.7															0.065	0.084
Ø140	B	59.6	73.9	3.8	7.7	3.2	11.1	9.2	17.1	8.2	16.1	16.7	21.0	4.1	11.1	19.0	28.8	0.100	0.140
	C	56.0	69.6															0.085	0.111
Ø150	B	66.9	86.5	4.8	9.6	4.9	13.7	16.6	22.4	10.7	19.5	18.2	26.8	4.6	10.9	18.9	28.3	0.118	0.162
	C	67.9	83.6															0.101	0.127
Ø160	B	84.3	114.6	5.4	10.0	5.3	16.5	19.0	25.2	11.3	22.5	22.9	28.4	5.2	14.8	22.7	34.2	0.121	0.171
	C	79.9	99.1															0.102	0.132
Ø180	B	115.1	-	7.9	13.8	7.7	22.7	25.0	33.6	17.5	32.5	33.8	42.9	-	19.4	-	-	0.179	0.241
	C	108.5	-															0.157	0.197
Ø200	B	155.2	-	11.4	21.0	10.6	31.6	28.8	48.7	22.6	43.6	51.4	65.4	-	27.2	-	-	0.220	0.295
	C	147.3	-															0.192	0.242
Ø250	B	283.7	-	18.3	46.7	17.5	55.1	48.2	88.3	42.5	80.1	74.5	91.6	-	43.3	-	-	0.333	0.454
	C	264.1	-															0.290	0.365

Calculation:

Ex.) NHC140H-LA80B-N200 A B  
 Basic mass: 16.2 / Additional mass: 0.032 / Cylinder stroke: 200mm /  
 LA type:1.8  
 $16.2+(0.032 \times 200) + 1.8 = 24.4\text{kg}$

Structure-Ø40C~Ø63C



Part List

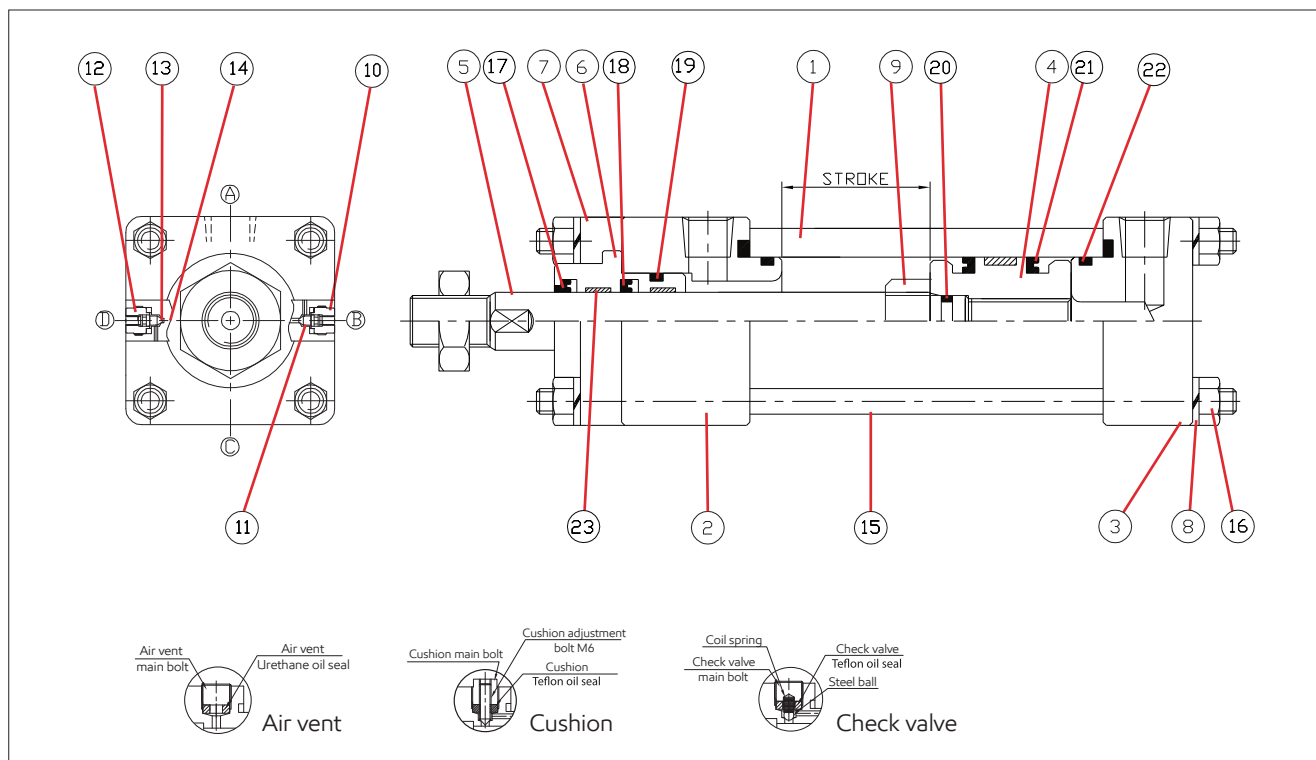
Part no.	Parts	Material	Quantity
1	Cylinder Tube	STKM13C	1
2	Rod Cover	SS400	1
3	Head Cover	SS400	1
4	Piston	SM45C	1
5	Piston Rod	SM45C	1
6	Bush	SM45C	1
7	Retainer (Bush Cover)	SS400	1
8	Spring Washer	SWRH57B	8

Part no.	Parts	Material	Quantity
9	Cushion Ring	SM45C	1
10	Cushion Body	SUM24L	2
11	Cushion Needle	SUM24L	2
12	Check Body	SUM24L	4
13	Coil Spring	SUP	4
14	Steel Ball	SUJ2	4
15	Tie Rod	SM45C	4
16	Hex Nut (2 Kinds)	SM45C	8

Packing List

Part no.	Parts	Ø40 (C)	Ø50 (C)	Ø63 (C)	Ø40 (B)	Ø50 (B)	Material	Quantity
17	Dust Seal	18×26×4.5x6	22×30×4.5x6	28×36x6	22×30×4.5x6	28×30×4.5x6	Urethane	1
18	Rod Packing	18×26×5	22×30×5	28×35.5x5	22×30×5	28×35.5x5	Urethane	1
19	Bush O-Ring	G-30	G-35	G-45	G-30	G-35	NBR	1
20	DU Bush	1820	2220	2820	2220	2820	SPCC	1
21	Rod O-Ring	P-14	P-18	P-22	P-14	P-18	NBR	1
22	Piston Packing	40×30×16.4	50×34×18.4	63×47×18.4	40×30×16.4	50×34×18.4	NBR	1
23	Tube O-Ring	G-35	G-35	G-58	G-35	G-35	NBR	2

Structure-Ø63B~Ø125B



Part List

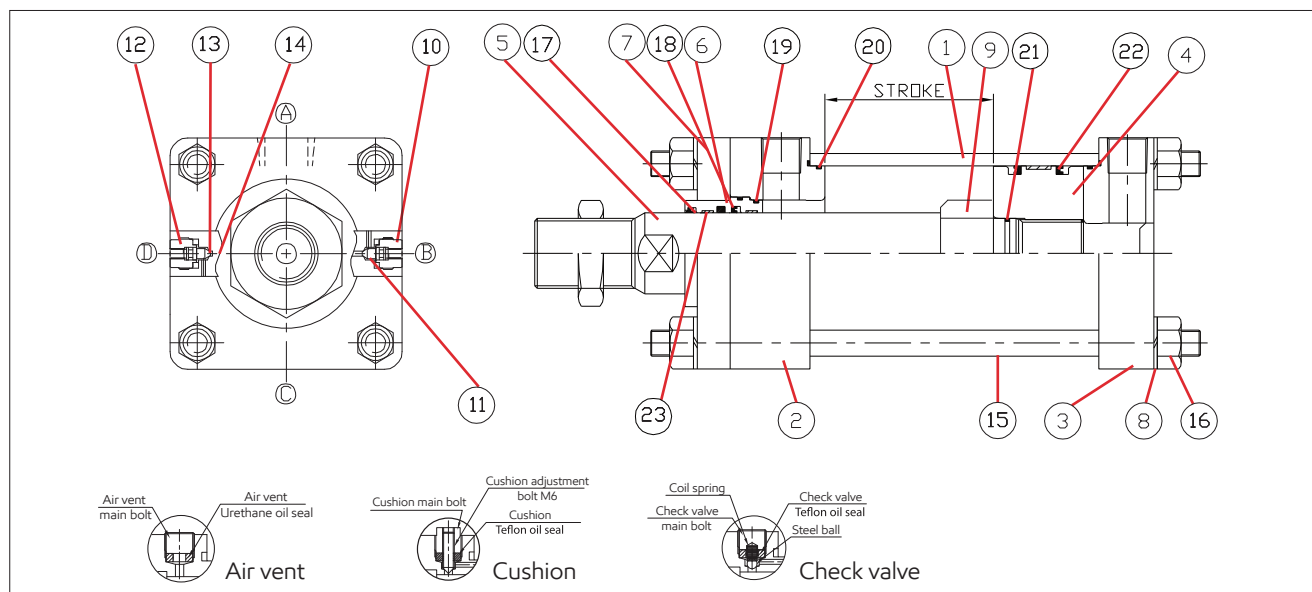
Part no.	Parts	Material	Quantity
1	Cylinder Tube	STKM13C	1
2	Rod Cover	SS400	1
3	Head Cover	SS400	1
4	Piston	SM45C	1
5	Piston Rod	SM45C	1
6	Bush	SM45C	1
7	Retainer (Bush Cover)	SS400	1
8	Spring Washer	SWRH57B	8

Part no.	Parts	Material	Quantity
9	Cushion Ring	SM45C	1
10	Cushion Body	SUM24L	2
11	Cushion Needle	SUM24L	2
12	Check Body	SUM24L	4
13	Coil Spring	SUP	4
14	Steel Ball	SUJ2	4
15	Tie Rod	SM45C	4
16	Hex Nut (2 Kinds)	SM45C	8

Packing List

Part no.	Parts	Ø80 (C)	Ø100 (C)	Ø125 (C)	Ø63 (B)	Ø80 (B)	Ø100 (B)	Ø125 (B)	Material	Qty.
17	Dust Seal	35×43×6.5	45×53×6×6.5	55×63×5/6.5	35×43×6.5	45×53×6.5	55×63×6×6.5	70×80×6/8	Urethane	1
18	Rod Packing	35×45×6	45×55×6	55×65×6	35×45×6	45×55×6	55×65×6	70×80×6	Urethane	1
19	Bush O-Ring	G-55	G-65	G-80	G-45	G-55	G-65	G-80	NBR	1
20	ROD O-Ring	P-29	G-50	G-50	P-22	P-29	G-50	G-50	NBR	1
21	Piston Packing	80×60×22.4	100×75×22.4	125×100×25.4	63×47×18.4	80×60×22.4	100×75×22.4	125×100×25.4	NBR	1
22	Tube O-Ring	G-75	G-95	G-120	G-58	G-75	G-95	G-120	NBR	2
23	Wearing	-	45×50×10	55×60×10	-	45×50×10	55×60×10	70×75×10	Phenol	2

Structure-Ø140C~Ø250B



Part List

Part no.	Parts	Material	Quantity
1	Cylinder Tube	STKM13C	1
2	Rod Cover	SS400	1
3	Head Cover	SS400	1
4	Piston	SM45C	1
5	Piston Rod	SM45C	1
6	Bush	SM45C	1
7	Retainer (Bush Cover)	SS400	1
8	Spring Washer	SS400	8

Part no.	Parts	Material	Quantity
9	Cushion Ring	SM45C	1
10	Cushion Body	SUM24L	2
11	Cushion Needle	SUM24L	2
12	Check Body	SUM24L	2
13	Coil Spring	SUP	2
14	Steel Ball	SUJ2	2
15	Tie Rod	SM45C	4
16	Hex Nut (2 Kinds)	SM45C	8

Packing List

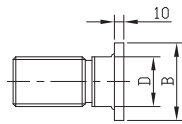
Part no.	Parts	Ø140 (C)	Ø150 (C)	Ø160 (C)	Ø180 (C)	Ø200 (C)	Ø250 (C)	Material	Qty.
17	Dust Seal	65×73x5/6.5	65×73x5/6.5	70×80x6/8	80×90x6/8	LBI-90	110×120x6/8	Urethane	1
18									
19	Rod Packing	65×75×6	65×75×6	70×80×6	80×90×6	USH-90	110×125×9	Urethane	1
20									
21	Bushing O-Ring	G80	G95	G100	G110	G125	G155	NBR	1
22									
23	Tube O-Ring	G120	G145	G150	G170	G190	G240	NBR	2
24	Rod O-Ring	G60	G60	G65	G75	G85	G105	NBR	1
25									
26	Piston Packing	140×115×25.4/9.5	150×125×25.4/9.5	160×135×25.4/9.5	180×155×25.4	200×175×25.4	250×225×25.4	NBR	1
27	Wear Ring	65×70×10	65×70×10	2.5×25/10	80×85×10	2.5×15	282×15×2.5	Pnenol	2

Part no.	Parts	Ø140 (B)	Ø150 (B)	Ø160 (B)	Ø180 (B)	Ø200 (B)	Ø250 (B)	Material	Qty.
17	Dust Seal	80×90x6/8	85×95x6/8	90×100x6/8	100×110x6/8	LBH-110	140×153x7/9.6	Urethane	1
18									
19	Rod Packing	80×90×6	85×100×9	90×105×9.5	100×115×9	USH-110	140×155×9.5	Urethane	1
20									
21	Bushing O-Ring	G80	G95	G100	G110	G125	G155	NBR	1
22									
23	Tube O-Ring	G120	G145	G150	G170	G190	G240	NBR	2
24	Rod O-Ring	G60	G60	G65	G75	G85	G105	NBR	1
25									
26	Piston Packing	140×115×25.4/9.5	150×125×25.4/9.5	160×135×25.4/9.5	180×155×25.4	200×175×25.4	250×225×25.4	NBR	1
27	Wear Ring	80×85×10	85×90×15	2.5×25/10	100×105×10	2.5×15	282×15×2.5	Phenol	2

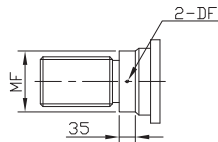
**Dimensions-Standard (SD)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

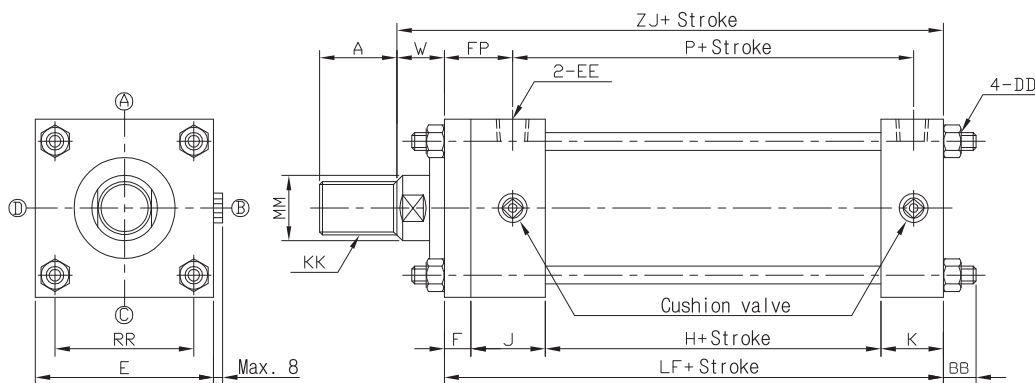


D:Width cross flat  
(for spanner)

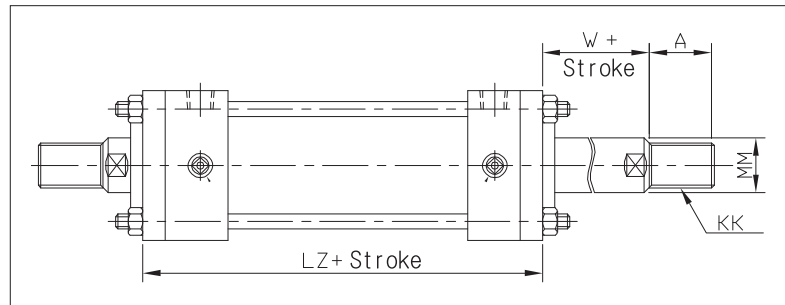


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø40 ~ Ø160)



Cylinder cover fixing method according to stroke

Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

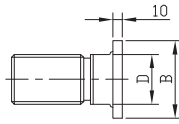
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					BB	DD	E	EE	F	FP	H	J	K	LF	LZ	P	RR	W	ZJ
	A	B	D	KK	MM	A	B	D	KK	MM															
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	M10x1.25	□65	Rc(PT)3/8	11	38	54	45	31	141	166	90	45	30	171
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	15	M10x1.25	□76	Rc(PT)1/2	13	42	58	49	35	155	182	98	52	30	185
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	17	M12x1.5	□90	Rc(PT)1/2	15	46	62	51	35	163	194	102	63	35	198
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	23	M16x1.5	□110	Rc(PT)3/4	18	56	64	59	39	180	218	106	80	35	215
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	26	M18x1.5	□135	Rc(PT)3/4	20	58	70	61	41	192	232	116	102	40	232
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	30	M22x1.5	□165	Rc(PT)1	24	67	82	67	47	220	264	130	122	45	265
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	35	M24x1.5	□185	Rc(PT)1	26	67	96	64	44	230	276	142.5	138	50	280
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	35	M27x1.5	□196	Rc(PT)1	28	68	104	64	44	240	288	151.5	148	50	290
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	35	M27x1.5	□210	Rc(PT)1	31	74	106	68	48	253	304	156	160	55	308
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	40	M30x1.5	□235	Rc(PT)1 1/4	33	75	116	70	56	275	-	172	182	55	330
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø135	85	M80X2	Ø90	40	M33x1.5	□262	Rc(PT)1 1/2	37	85	118	83	63	301	-	185	200	55	356
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	50	M42x1.5	□325	Rc(PT)2	46	106	126	118	98	346	-	200	250	65	411

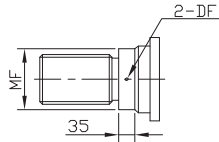
**Dimensions-Axial Angle of Foot (LA)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

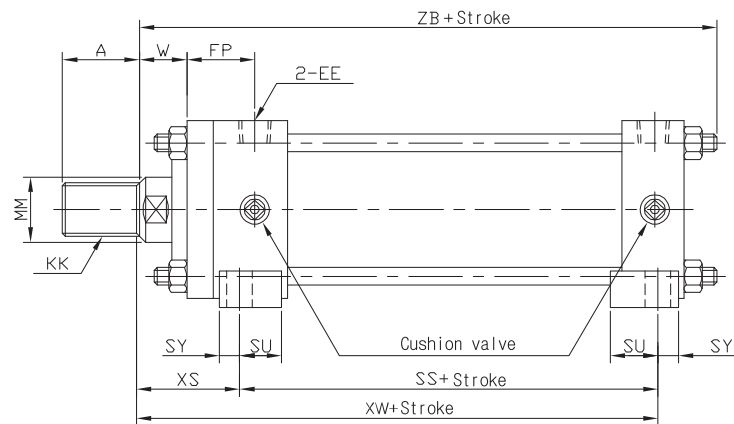
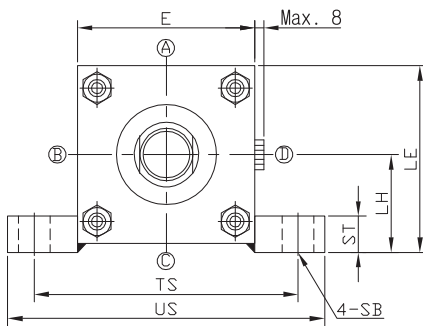


D:Width cross flat  
(for spanner)

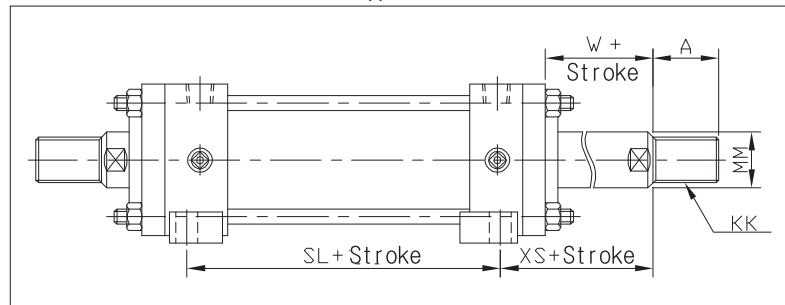


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø40 ~ Ø160)



※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke

Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

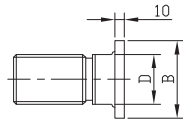
Bore size	Bore size (B type)					Bore size (C type)					E	EE	FP	LE	LH	SB	SL	SS	ST	SU	SY	TS	US	W	XS	XW	ZB
	A	B	D	KK	MM	A	B	D	KK	MM																	
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	□65	Rc(PT)3/8	38	70	37.5±0.15	Ø11	112	98	14	31	13	95	118	30	57	155	186
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	□76	Rc(PT)1/2	42	83	45±0.15	Ø14	122	108	17	34	14	115	145	30	60	168	200
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	□90	Rc(PT)1/2	46	95	50±0.15	Ø18	122	106	19	32	18	132	165	35	71	177	215
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	□110	Rc(PT)3/4	56	115	60±0.15	Ø18	140	120	25	42	18	155	190	35	74	194	238
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	□135	Rc(PT)3/4	58	138.5	71±0.15	Ø22	142	122	27	38	22	190	230	40	85	207	258
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	□165	Rc(PT)1	67	167.5	85±0.15	Ø26	156	136	32	41	25	224	272	45	99	235	295
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	□185	Rc(PT)1	67	187.5	95±0.15	Ø26	164	144	35	41	25	250	300	50	106	250	315
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	□196	Rc(PT)1	68	204	106±0.15	Ø30	166	146	37	38	28	270	320	50	111	257	325
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	□210	Rc(PT)1	74	217	112±0.15	Ø33	170	150	42	40	31	285	345	55	122	272	343
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	□235	Rc(PT)1 1/4	75	242.5	125±0.25	Ø33	-	172	47	-	35	315	375	55	123	295	370
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	□262	Rc(PT)1 1/2	85	271	140±0.25	Ø36	-	186	52	-	39	355	425	55	131	317	396
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	□325	Rc(PT)2	106	332.5	170±0.25	Ø45	-	206	57	-	47	425	515	65	158	364	461



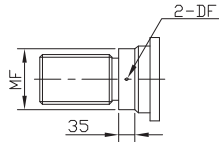
**Dimensions-Axial Foot (LB)**

70kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

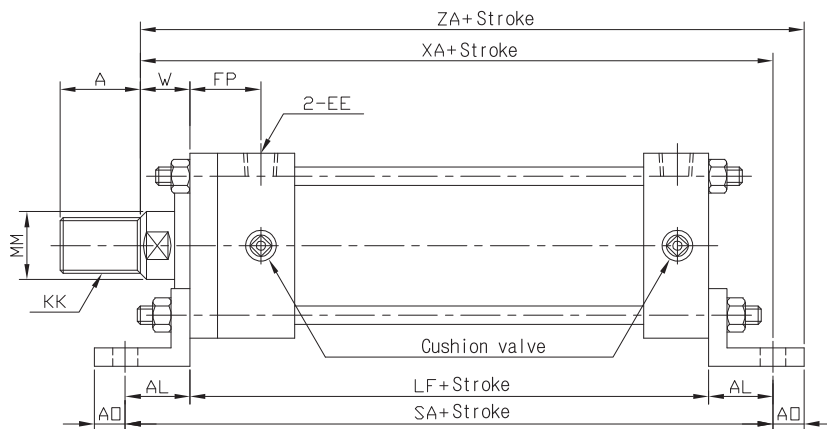
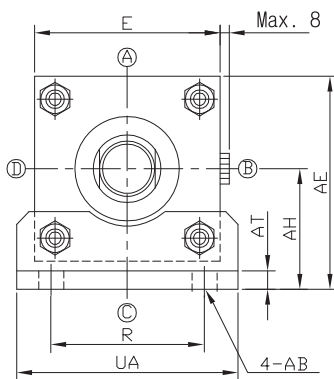


D:Width cross flat  
(for spanner)

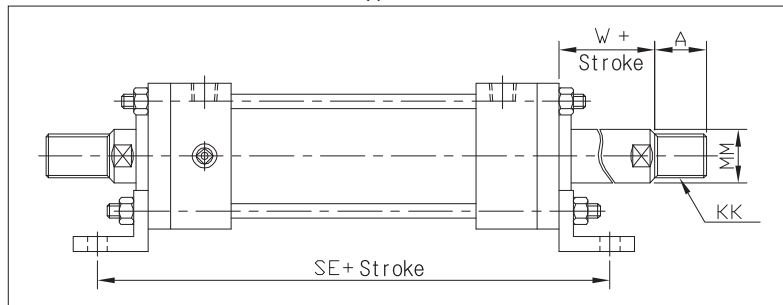


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø40 ~ Ø160)



※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke  
Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

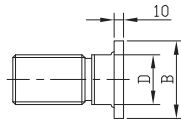
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					AB	AE	AH	AL	AO	AT	E	EE	FP	LF	R	SA	SE	UA	W	XA	ZA
	A	B	D	KK	MM	A	B	D	KK	MM																	
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	Ø11	75.5	43±0.15	32	13	9	□65	Rc(PT)3/8	38	141	46	205	230	69	30	203	216
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	Ø14	87.5	50±0.15	35	15	9	□76	Rc(PT)1/2	42	155	58	225	252	85	30	220	235
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	Ø18	105	60±0.15	42	18	12	□90	Rc(PT)1/2	46	163	65	247	278	98	35	240	258
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	Ø18	127	72±0.25	50	20	13	□110	Rc(PT)3/4	56	180	87	280	318	118	35	265	285
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	Ø22	152.5	82±0.25	55	23	13	□135	Rc(PT)3/4	58	192	109	302	342	150	40	287	310
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	Ø26	187.5	105±0.25	66	29	15	□165	Rc(PT)1	67	220	130	352	396	175	45	331	360
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	Ø26	207.5	115±0.25	70	30	18	□185	Rc(PT)1	67	230	145	370	416	195	50	350	380
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	Ø30	221	123±0.25	75	30	18	□196	Rc(PT)1	68	240	155	390	438	210	50	365	395
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	Ø33	237	132±0.25	75	35	18	□210	Rc(PT)1	74	253	170	403	454	225	55	383	418
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	Ø33	265.5	148±0.25	85	40	20	□235	Rc(PT)1 1/4	75	275	185	445	-	243	55	415	455
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	Ø36	296	165±0.25	98	40	25	□262	Rc(PT)1 1/2	85	301	206	497	-	272	55	454	494
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	Ø45	370.5	208±0.25	130	50	35	□325	Rc(PT)2	106	346	250	606	-	335	65	541	591

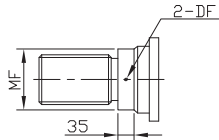
**Dimensions-Rod Side Rectangular Flange (FA)**

70kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

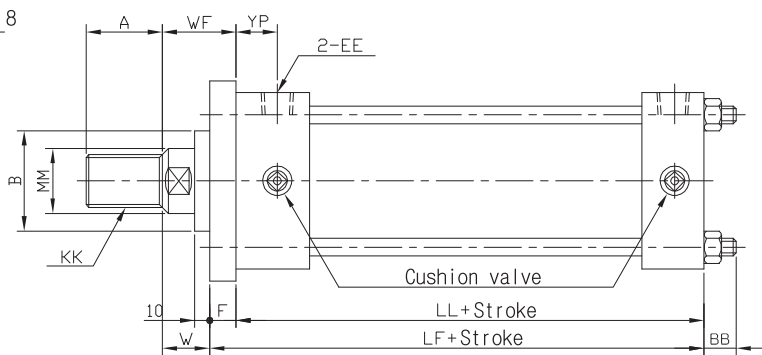
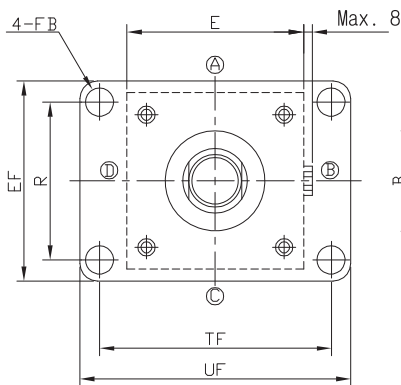


D:Width cross flat  
(for spanner)

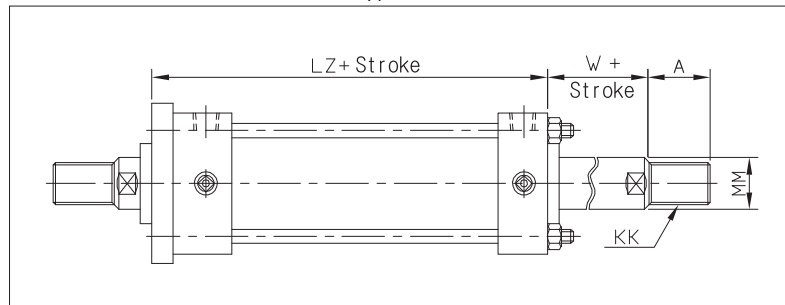


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



**Double rod type ( Ø40 ~ Ø160 )**



※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke  
Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

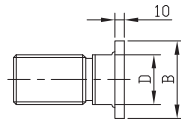
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					BB	E	EE	EF	F	FB	LF	LL	LZ	R	TF	UF	W	WF	YP
	A	B	D	KK	MM	A	B	D	KK	MM															
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	□65	Rc(PT)3/8	69	11	Ø11	141	130	166	46	95	118	30	41	27
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	15	□76	Rc(PT)1/2	85	13	Ø14	155	142	182	58	115	145	30	43	29
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	17	□90	Rc(PT)1/2	98	15	Ø18	163	148	194	65	132	165	35	50	31
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	23	□110	Rc(PT)3/4	118	18	Ø18	180	162	218	87	155	190	35	53	38
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	26	□135	Rc(PT)3/4	150	20	Ø22	192	172	232	109	190	230	40	60	38
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	30	□165	Rc(PT)1	175	24	Ø26	220	196	264	130	224	272	45	69	43
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	35	□185	Rc(PT)1	195	26	Ø26	230	204	276	145	250	300	50	76	41
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	35	□196	Rc(PT)1	210	28	Ø30	240	212	288	155	270	320	50	78	40
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	35	□210	Rc(PT)1	225	31	Ø33	253	222	304	170	285	345	55	86	43
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	40	□235	Rc(PT)1 1/4	243	33	Ø33	275	242	-	185	315	375	55	88	42
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	40	□262	Rc(PT)1 1/2	272	37	Ø36	301	264	-	206	355	425	55	92	48
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	50	□325	Rc(PT)2	335	46	Ø45	346	300	-	250	425	515	65	111	60

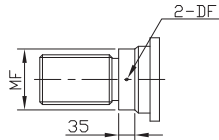
**Dimensions-Head Side Rectangular Flange (FB)**

70kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

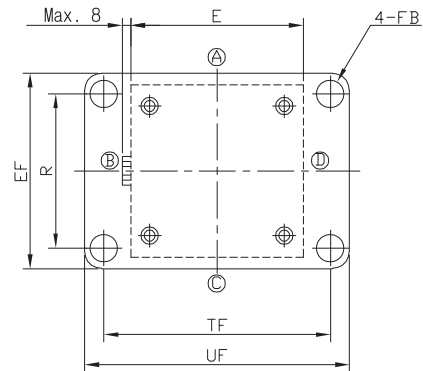
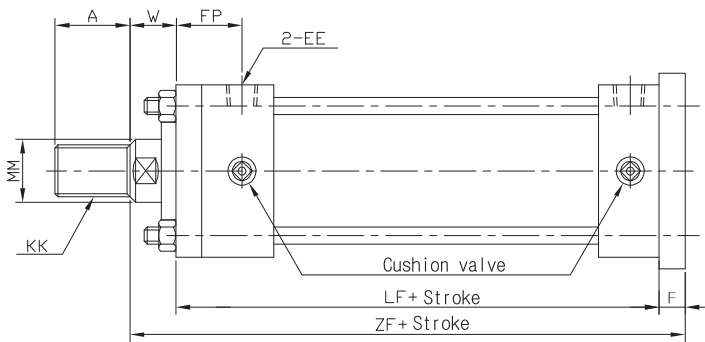


D:Width cross flat  
(for spanner)



※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15

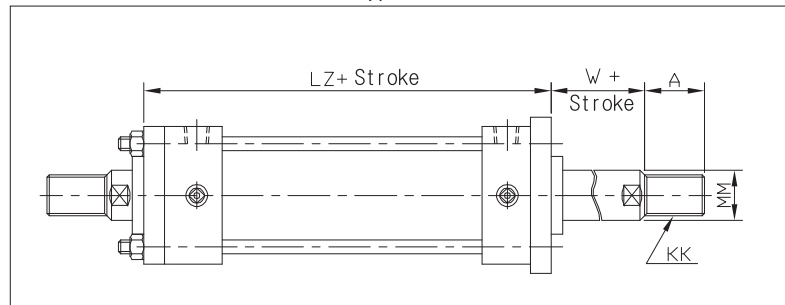


**Double rod type ( Ø40 ~ Ø160 )**

※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke  
Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type



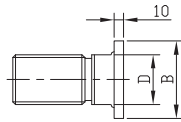
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					E	EE	EF	F	FB	FP	LF	LZ	R	TF	UF	W	ZF
	A	B	D	KK	MM	A	B	D	KK	MM													
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	□65	Rc(PT)3/8	69	11	Ø11	38	141	166	46	95	118	30	182
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	□76	Rc(PT)1/2	85	13	Ø14	42	155	182	58	115	145	30	198
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	□90	Rc(PT)1/2	98	15	Ø18	46	163	194	65	132	165	35	213
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	□110	Rc(PT)3/4	118	18	Ø18	56	180	218	87	155	190	35	233
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	□135	Rc(PT)3/4	150	20	Ø22	58	192	232	109	190	230	40	252
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	□165	Rc(PT)1	175	24	Ø26	67	220	264	130	224	272	45	289
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	□185	Rc(PT)1	195	26	Ø26	67	230	276	145	250	300	50	306
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	□196	Rc(PT)1	210	28	Ø30	68	240	288	155	270	320	50	318
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	□210	Rc(PT)1	225	31	Ø33	74	253	304	170	285	345	55	339
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	□235	Rc(PT)1 1/4	243	33	Ø33	75	275	-	185	315	375	55	363
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	□262	Rc(PT)1 1/2	272	37	Ø36	85	301	-	206	355	425	55	393
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	□325	Rc(PT)2	335	46	Ø45	106	346	-	250	425	515	65	457

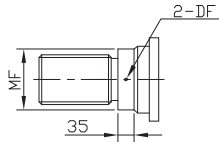
**Dimensions-Reinforced Type Rod Side Rectangular Flange (FY)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

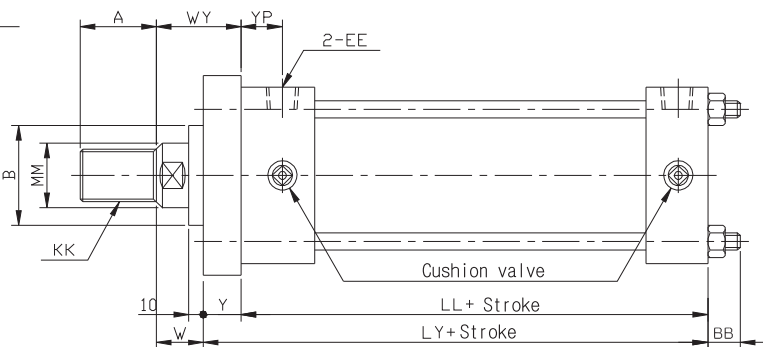
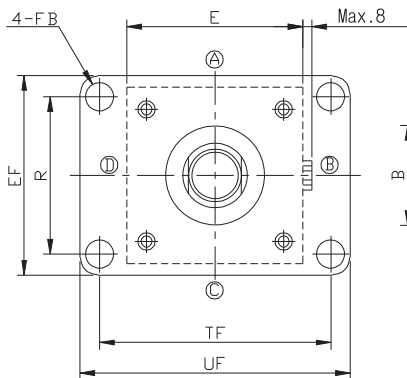


D:Width cross flat  
(for spanner)

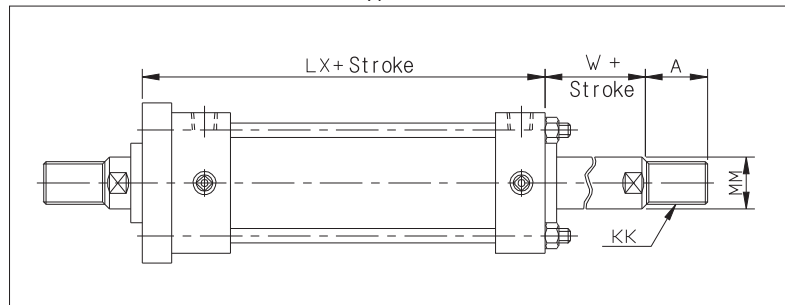


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



**Double rod type (Ø40 ~ Ø160)**



- ※ For not shown dimensions, refer to SD type (standard type).
- ※ FY type has high mounting rigidity with its reinforced flange thickness compare with FA flange.

Cylinder cover fixing method according to stroke  
Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

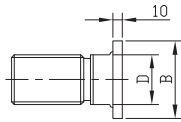
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					BB	E	EE	EF	FB	LL	LX	LY	R	TF	UF	W	WY	Y	YP
	A	B	D	KK	MM	A	B	D	KK	MM															
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	□65	Rc(PT)3/8	69	Ø11	130	168	143	46	95	118	30	43	13	27
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	15	□76	Rc(PT)1/2	85	Ø14	142	187	160	58	115	145	30	48	18	29
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	17	□90	Rc(PT)1/2	98	Ø18	148	199	168	65	132	165	35	55	20	31
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	23	□110	Rc(PT)3/4	118	Ø18	162	224	186	87	155	190	35	59	24	38
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	26	□135	Rc(PT)3/4	150	Ø22	172	240	200	109	190	230	40	68	28	38
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	30	□165	Rc(PT)1	175	Ø26	196	273	229	130	224	272	45	78	33	43
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	35	□185	Rc(PT)1	195	Ø26	204	287	241	145	250	300	50	87	37	41
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	35	□196	Rc(PT)1	210	Ø30	212	299	251	155	270	320	50	89	39	40
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	35	□210	Rc(PT)1	225	Ø33	222	314	263	170	285	345	55	96	41	43
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	40	□235	Rc(PT)1 1/4	243	Ø33	242	-	288	185	315	375	55	101	46	42
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	40	□262	Rc(PT)1 1/2	272	Ø36	264	-	315	206	355	425	55	106	51	48
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	50	□325	Rc(PT)2	335	Ø45	300	-	365	250	425	515	65	130	65	60

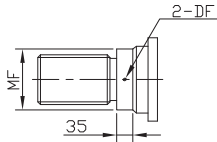
**Dimensions-Reinforced Type Head Side Rectangular Flange (FZ)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

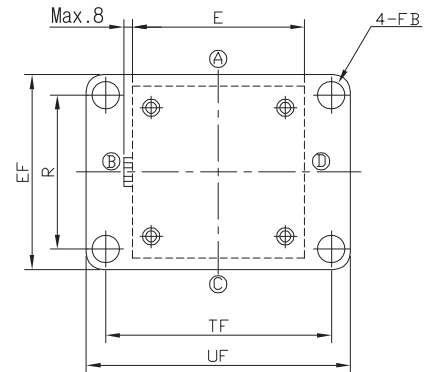
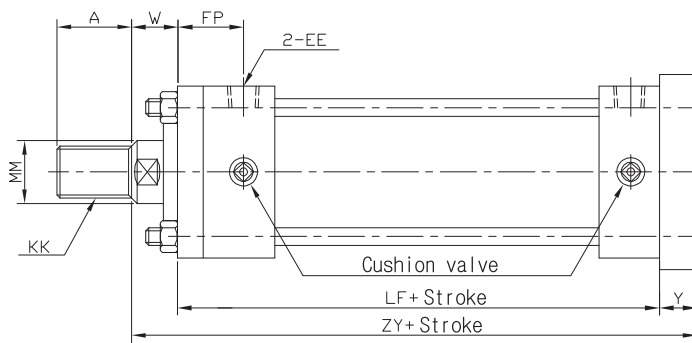


D:Width cross flat  
(for spanner)



※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15

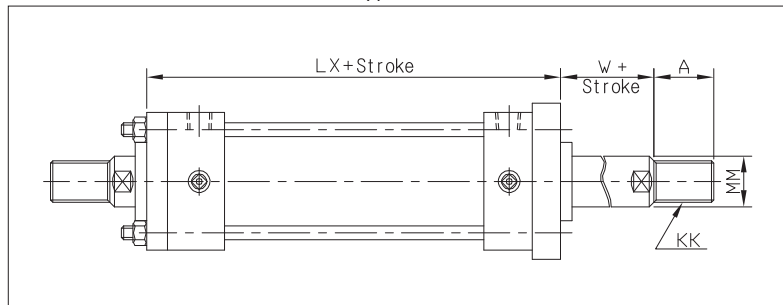


**Double rod type ( Ø40 ~ Ø160 )**

- ※ For not shown dimensions, refer to SD type (standard type).
- ※ FZ type has high mounting rigidity with its reinforced flange thickness compare with FB flange.

Cylinder cover fixing method according to stroke  
Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

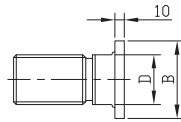


Unit : mm

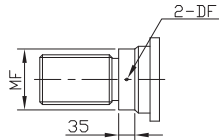
Bore size	Bore size (B type)					Bore size (C type)					E	EE	EF	FB	FP	LF	LX	R	TF	UF	W	Y	ZY
	A	B	D	KK	MM	A	B	D	KK	MM													
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	□65	Rc(PT)3/8	69	Ø11	38	141	168	46	95	118	30	13	184
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	□76	Rc(PT)1/2	85	Ø14	42	155	187	58	115	145	30	18	203
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	□90	Rc(PT)1/2	98	Ø18	46	163	199	65	132	165	35	20	218
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	□110	Rc(PT)3/4	118	Ø18	56	180	224	87	155	190	35	24	239
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	□135	Rc(PT)3/4	150	Ø22	58	192	240	109	190	230	40	28	260
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	□165	Rc(PT)1	175	Ø26	67	220	273	130	224	272	45	33	298
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	□185	Rc(PT)1	195	Ø26	67	230	287	145	250	300	50	37	317
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	□196	Rc(PT)1	210	Ø30	68	240	299	155	270	320	50	39	329
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	□210	Rc(PT)1	225	Ø33	74	253	314	170	285	345	55	41	349
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	□235	Rc(PT)1 1/4	243	Ø33	75	275	-	185	315	375	55	46	376
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	□262	Rc(PT)1 1/2	272	Ø36	85	301	-	206	355	425	55	51	407
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	□325	Rc(PT)2	335	Ø45	106	346	-	250	425	515	65	65	476

**Dimensions-Rod Side Square Flange (FC)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup> ※ Shape varies depending on bore sizes.

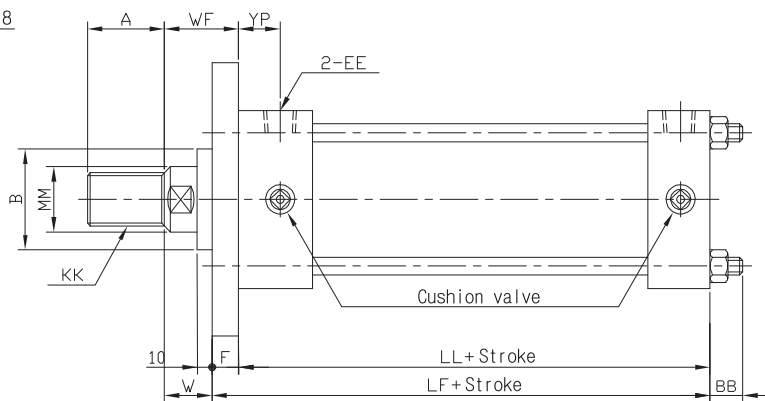
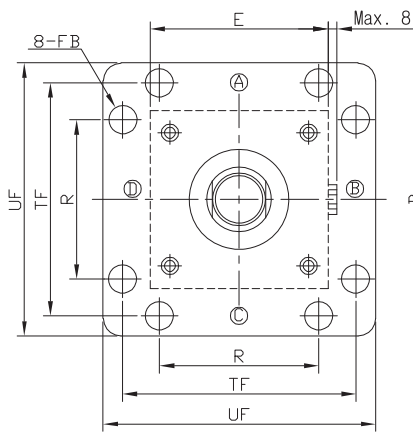


D:Width cross flat  
(for spanner)

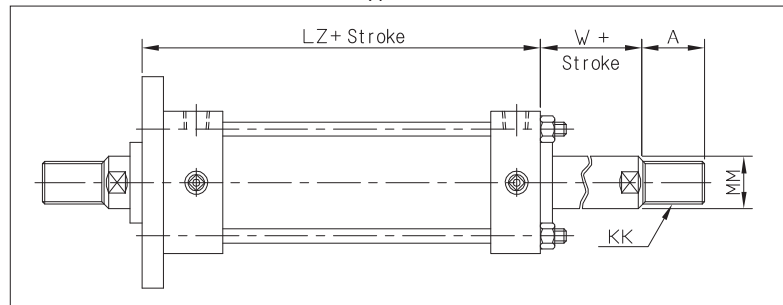


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



**Double rod type (Ø40 ~ Ø160)**



※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke  
Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

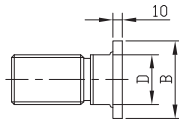
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					BB	E	EE	F	FB	LF	LL	LZ	R	TF	UF	W	WF	YP
	A	B	D	KK	MM	A	B	D	KK	MM														
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	□65	Rc(PT)3/8	11	Ø11	141	130	166	46	95	118	30	41	27
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	15	□76	Rc(PT)1/2	13	Ø14	155	142	182	58	115	145	30	43	29
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	17	□90	Rc(PT)1/2	15	Ø18	163	148	194	65	132	165	35	50	31
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	23	□110	Rc(PT)3/4	18	Ø18	180	162	218	87	155	190	35	53	38
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	26	□135	Rc(PT)3/4	20	Ø22	192	172	232	109	190	230	40	60	38
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	30	□165	Rc(PT)1	24	Ø26	220	196	264	130	224	272	45	69	43
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	35	□185	Rc(PT)1	26	Ø26	230	204	276	145	250	300	50	76	41
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	35	□196	Rc(PT)1	28	Ø30	240	212	288	155	270	320	50	78	40
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	35	□210	Rc(PT)1	31	Ø33	253	222	304	170	285	345	55	86	43
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	40	□235	Rc(PT)1 1/4	33	Ø33	275	242	-	185	315	375	55	88	42
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	40	□262	Rc(PT)1 1/2	37	Ø36	301	264	-	206	355	425	55	92	48
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	50	□325	Rc(PT)2	46	Ø45	346	300	-	250	425	515	65	111	60

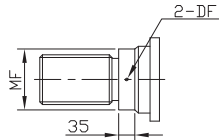
**Dimensions-Head Side Square Flange (FD)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

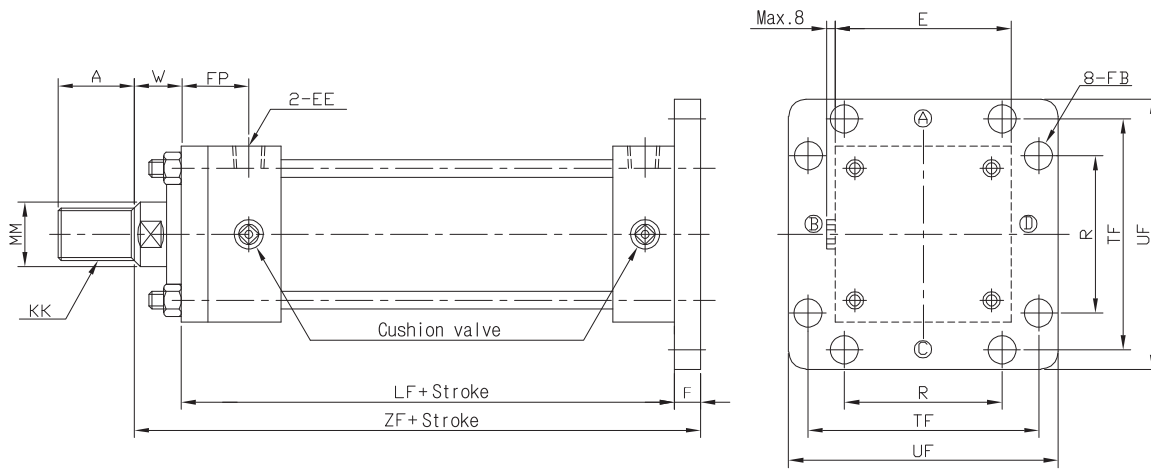


D:Width cross flat  
(for spanner)

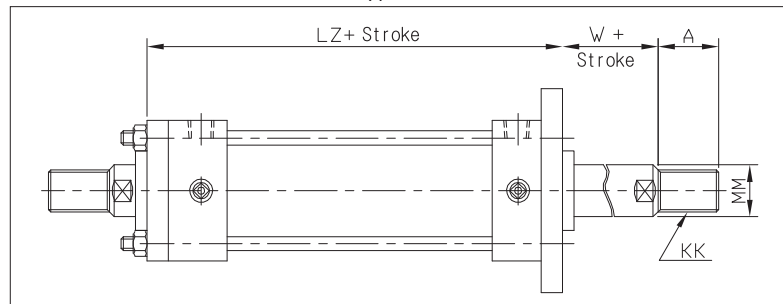


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø40 ~ Ø160)



※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke

Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

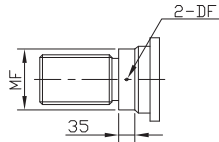
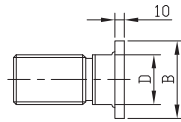
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					E	EE	F	FB	FP	LF	LZ	R	TF	UF	W	ZF
	A	B	D	KK	MM	A	B	D	KK	MM												
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	□65	Rc(PT)3/8	11	Ø11	38	141	166	46	95	118	30	182
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	□76	Rc(PT)1/2	13	Ø14	42	155	182	58	115	145	30	198
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	□90	Rc(PT)1/2	15	Ø18	46	163	194	65	132	165	35	213
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	□110	Rc(PT)3/4	18	Ø18	56	180	218	87	155	190	35	233
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	□135	Rc(PT)3/4	20	Ø22	58	192	232	109	190	230	40	252
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	□165	Rc(PT)1	24	Ø26	67	220	264	130	224	272	45	289
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	□185	Rc(PT)1	26	Ø26	67	230	276	145	250	300	50	306
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	□196	Rc(PT)1	28	Ø30	68	240	288	155	270	320	50	318
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	□210	Rc(PT)1	31	Ø33	74	253	304	170	285	345	55	339
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	□235	Rc(PT)1 1/4	33	Ø33	75	275	-	185	315	375	55	363
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	□262	Rc(PT)1 1/2	37	Ø36	85	301	-	206	355	425	55	393
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	□325	Rc(PT)2	46	Ø45	106	346	-	250	425	515	65	457

**Dimensions-Single Clevis (CA)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

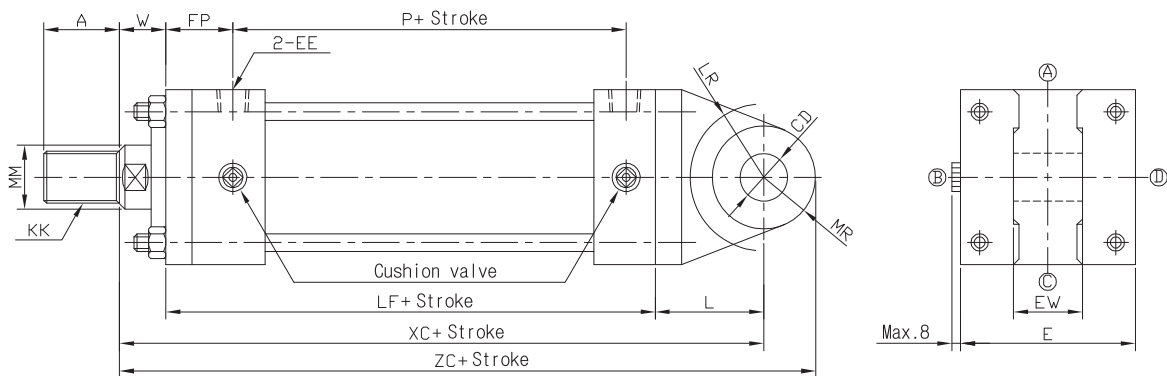
※ Shape varies depending on bore sizes.



Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15

D: Width cross flat  
(for spanner)

※ To the bore size of Ø100 a hole is placed with the width cross flat.



※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke

Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

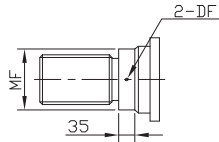
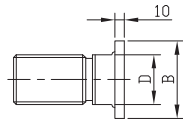
Bore size	Bore size (B type)					Bore size (C type)					CD	E	EE	EW	FP	L	LF	LR	MR	P	W	XC	ZC
	A	B	D	KK	MM	A	B	D	KK	MM													
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	Ø16H9	□65	Rc(PT)3/8	25 <sup>-0.1</sup> <sub>-0.4</sub>	38	38	141	R20	R16	90	30	209	225
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	Ø20H9	□76	Rc(PT)1/2	31.5 <sup>-0.1</sup> <sub>-0.4</sub>	42	45	155	R25	R20	98	30	230	250
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	Ø31.5H9	□90	Rc(PT)1/2	40 <sup>-0.1</sup> <sub>-0.4</sub>	46	63	163	R46	R31.5	102	35	261	292.5
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	Ø31.5H9	□110	Rc(PT)3/4	40 <sup>-0.1</sup> <sub>-0.4</sub>	56	72	180	R52	R31.5	106	35	287	318.5
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	Ø40H9	□135	Rc(PT)3/4	50 <sup>-0.1</sup> <sub>-0.4</sub>	58	84	192	R62	R40	116	40	316	356
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	Ø50H9	□165	Rc(PT)1	63 <sup>-0.1</sup> <sub>-0.4</sub>	67	100	220	R73	R50	130	45	365	415
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	Ø63H9	□185	Rc(PT)1	80 <sup>-0.1</sup> <sub>-0.6</sub>	67	120	230	R91	R63	138	50	400	463
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	Ø63H9	□196	Rc(PT)1	80 <sup>-0.1</sup> <sub>-0.6</sub>	68	122	240	R91	R63	146	50	412	475
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	Ø71H9	□210	Rc(PT)1	80 <sup>-0.1</sup> <sub>-0.6</sub>	74	137	253	R103	R71	156	55	445	516
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	Ø80H9	□235	Rc(PT)1 1/4	100 <sup>-0.1</sup> <sub>-0.6</sub>	75	150	275	R100	R80	172	55	480	560
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	Ø90H9	□262	Rc(PT)1 1/2	125 <sup>-0.1</sup> <sub>-0.6</sub>	85	170	301	R115	R90	184	55	526	616
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	Ø100H9	□325	Rc(PT)2	125 <sup>-0.1</sup> <sub>-0.6</sub>	106	185	346	R125	R100	200	65	596	696



**Dimensions-Double Clevis (CB)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

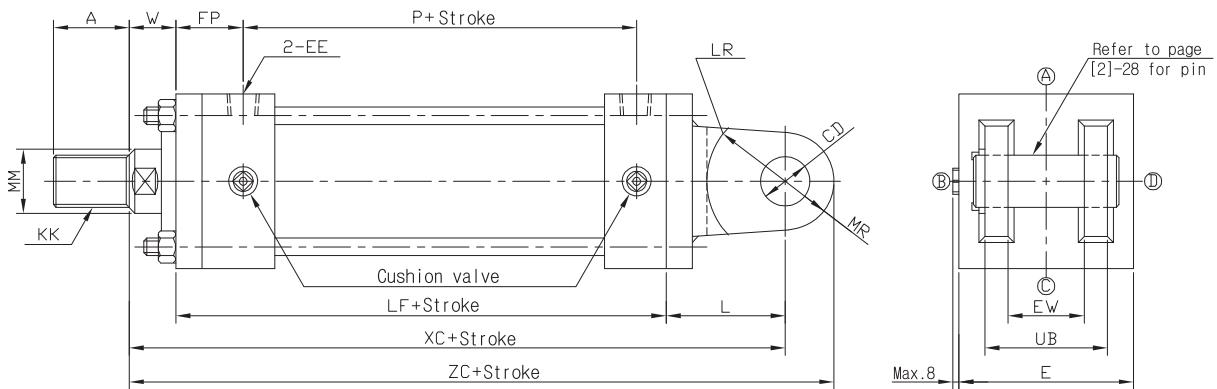
※ Shape varies depending on bore sizes.



Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15

D:Width cross flat  
(for spanner)

※ To the bore size of Ø100 a hole is placed with the width cross flat.



※ For not shown dimensions, refer to SD type(standard type).

Cylinder cover fixing method according to stroke

Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

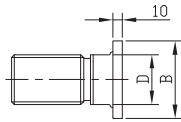
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					CD	E	EE	EW	FP	L	LF	LR	MR	P	UB	W	XC	ZC
	A	B	D	KK	MM	A	B	D	KK	MM														
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	Ø16H9	□65	Rc(PT)3/8	25 <sup>+0.4</sup> <sub>+0.1</sub>	38	38	141	R20	R16	90	50	30	209	225
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	Ø20H9	□76	Rc(PT)1/2	31.5 <sup>+0.4</sup> <sub>+0.1</sub>	42	45	155	R25	R20	98	63.5	30	230	250
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	Ø31.5H9	□90	Rc(PT)1/2	40 <sup>+0.4</sup> <sub>+0.1</sub>	46	63	163	R46	R31.5	102	80	35	261	292.5
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	Ø31.5H9	□110	Rc(PT)3/4	40 <sup>+0.4</sup> <sub>+0.1</sub>	56	72	180	R52	R31.5	106	80	35	287	318.5
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	Ø40H9	□135	Rc(PT)3/4	50 <sup>+0.4</sup> <sub>+0.1</sub>	58	84	192	R62	R40	116	100	40	316	356
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	Ø50H9	□165	Rc(PT)1	63 <sup>+0.4</sup> <sub>+0.1</sub>	67	100	220	R73	R50	130	126	45	365	415
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	Ø63H9	□185	Rc(PT)1	80 <sup>+0.6</sup> <sub>+0.1</sub>	67	120	230	R91	R63	138	160	50	400	463
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	Ø63H9	□196	Rc(PT)1	80 <sup>+0.6</sup> <sub>+0.1</sub>	68	122	240	R91	R63	146	160	50	412	475
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	Ø71H9	□210	Rc(PT)1	80 <sup>+0.6</sup> <sub>+0.1</sub>	74	137	253	R103	R71	156	160	55	445	516
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	Ø80H9	□235	Rc(PT)1 1/4	100 <sup>+0.6</sup> <sub>+0.1</sub>	75	150	275	R100	R80	172	200	55	480	560
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	Ø90H9	□262	Rc(PT)1 1/2	125 <sup>+0.6</sup> <sub>+0.1</sub>	85	170	301	R115	R90	184	251	55	526	616
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	Ø100H9	□325	Rc(PT)2	125 <sup>+0.6</sup> <sub>+0.1</sub>	106	185	346	R125	R100	200	251	65	596	696

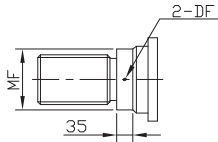
**Dimensions-Center Trunnion (TC)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

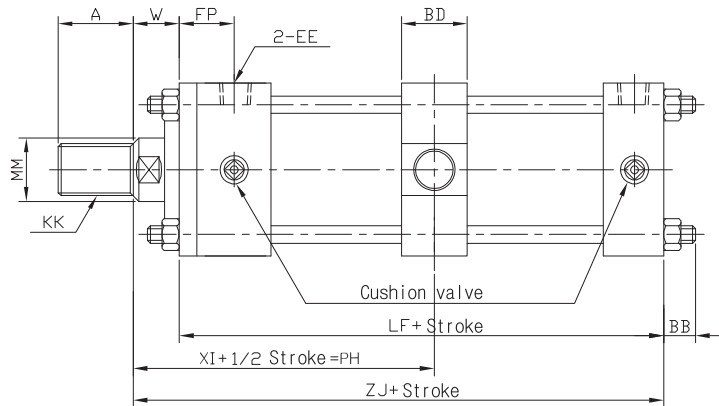
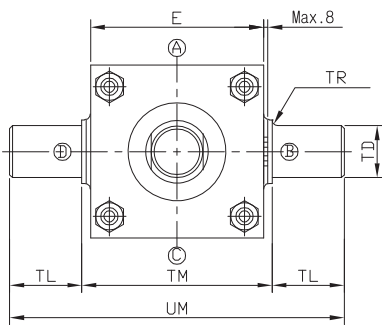


D: Width across flat (for spanner)

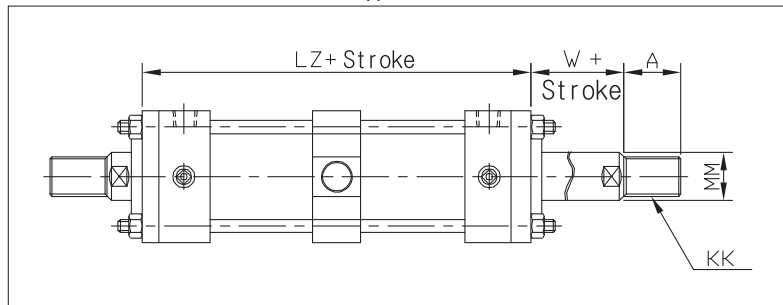


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø40 ~ Ø160)



※ For not shown dimensions, refer to SD type (standard type).

Cylinder cover fixing method according to stroke

Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

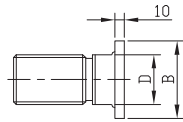
Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					BB	BD	E	EE	FP	LF	LZ	Min. PH	TD	TL	TM	TR	UM	W	XI	ZJ
	A	B	D	KK	MM	A	B	D	KK	MM																
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	28	□65	Rc(PT)3/8	38	141	166	105	Ø20e9	20	69 <sup>0</sup> <sub>-0.3</sub>	2	109	30	113	171
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	15	33	□76	Rc(PT)1/2	42	155	182	113.5	Ø25e9	25	85 <sup>0</sup> <sub>-0.35</sub>	2.5	135	30	121	185
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	17	43	□90	Rc(PT)1/2	46	163	194	127.5	Ø31.5e9	31.5	98 <sup>0</sup> <sub>-0.35</sub>	2.5	161	35	132	198
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	23	43	□110	Rc(PT)3/4	56	180	218	140.5	Ø31.5e9	31.5	118 <sup>0</sup> <sub>-0.35</sub>	2.5	181	35	146	215
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	26	53	□135	Rc(PT)3/4	58	192	232	152.5	Ø40e9	40	145 <sup>0</sup> <sub>-0.35</sub>	3	225	40	156	232
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	30	58	□165	Rc(PT)1	67	220	264	174	Ø50e9	50	175 <sup>0</sup> <sub>-0.46</sub>	3	275	45	177	265
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	35	78	□185	Rc(PT)1	67	230	276	191	Ø63e9	63	195 <sup>0</sup> <sub>-0.46</sub>	4	321	50	188	280
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	35	78	□196	Rc(PT)1	68	240	288	193	Ø63e9	63	206 <sup>0</sup> <sub>-0.46</sub>	4	332	50	194	290
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	35	88	□210	Rc(PT)1	74	253	304	211	Ø71e9	71	218 <sup>0</sup> <sub>-0.46</sub>	4	360	55	207	308
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	40	98	□235	Rc(PT)1 1/4	75	275	-	225	Ø80e9	80	243 <sup>0</sup> <sub>-0.46</sub>	4	403	55	216	330
Ø200	150	Ø140	-	M100X2	Ø112	120	Ø115	85	M80X2	Ø90	40	108	□262	Rc(PT)1 1/2	85	301	-	224	Ø90e9	90	272 <sup>0</sup> <sub>-0.52</sub>	5	452	55	232	356
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø112	50	117	□325	Rc(PT)2	106	346	-	287.5	Ø100e9	100	335 <sup>0</sup> <sub>-0.57</sub>	5	535	65	271	411

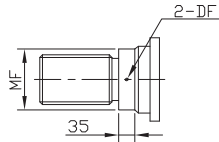
**Dimensions-Rod Side Trunnion (TA)**

70kgf/cm<sup>2</sup> • 140kgf/cm<sup>2</sup>

※ Shape varies depending on bore sizes.

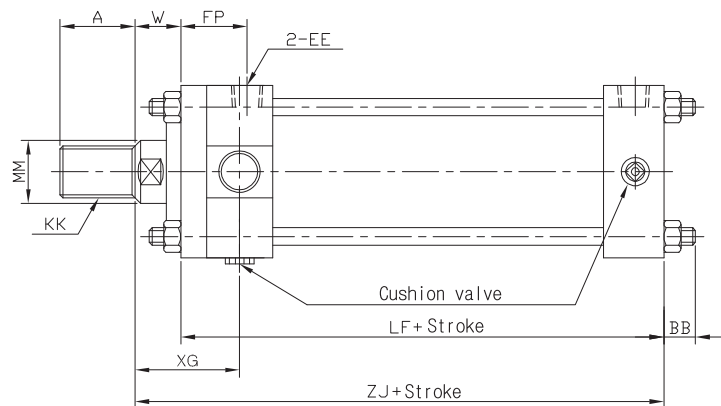
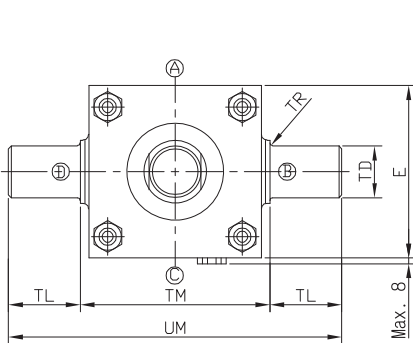


D:Width cross flat  
(for spanner)

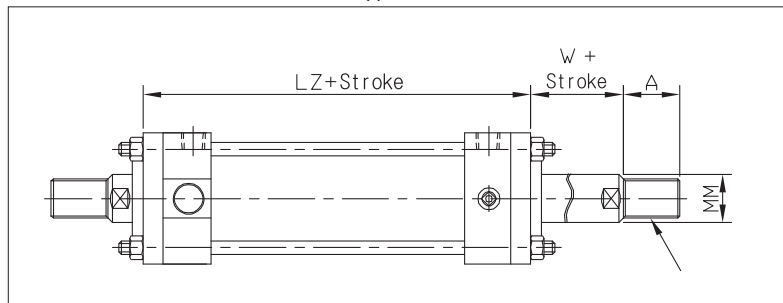


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø109	Ø15
Ø140	Ø137	Ø15



Double rod type ( Ø40 ~ Ø160)



- ※ For not shown dimensions, refer to SD type (standard type).
- ※ Cushion valve and air vent location of TA type is C. (Rod cover)

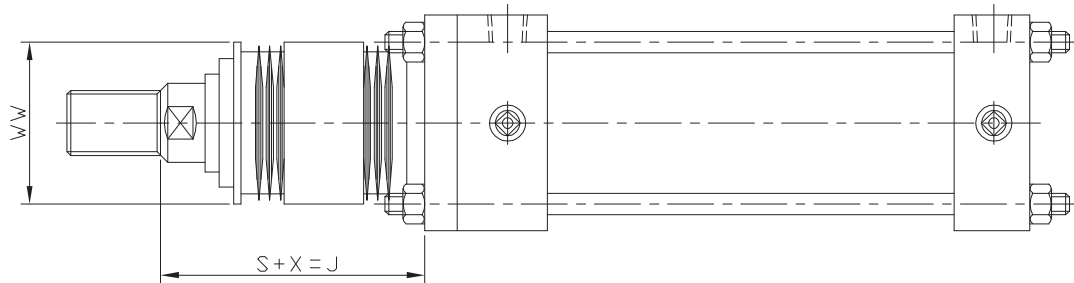
Cylinder cover fixing method according to stroke  
Unit:mm

Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

Bore size	Bore size (B type)					Bore size (C type)					BB	E	EE	FP	LF	LZ	TD	TL	TM	TR	UM	W	XG	ZJ
	A	B	D	KK	MM	A	B	D	KK	MM														
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	□65	Rc(PT)3/8	38	141	166	Ø20e9	20	69 <sup>0</sup> <sub>-0.3</sub>	2	109	30	62	171
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	15	□76	Rc(PT)1/2	42	155	182	Ø25e9	25	85 <sup>0</sup> <sub>-0.35</sub>	2.5	135	30	72	185
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø45	24	M24X1.5	Ø28	17	□90	Rc(PT)1/2	46	163	194	Ø31.5e9	31.5	98 <sup>0</sup> <sub>-0.35</sub>	2.5	161	35	74	198
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	23	□110	Rc(PT)3/4	56	180	218	Ø31.5e9	31.5	118 <sup>0</sup> <sub>-0.35</sub>	2.5	181	35	82	215
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	26	□135	Rc(PT)3/4	58	192	232	Ø40e9	40	145 <sup>0</sup> <sub>-0.4</sub>	3	225	40	89	232
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	30	□165	Rc(PT)1	67	220	264	Ø50e9	50	175 <sup>0</sup> <sub>-0.46</sub>	3	275	45	103	265
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	35	□185	Rc(PT)1	67	230	276	Ø63e9	63	195 <sup>0</sup> <sub>-0.46</sub>	4	321	50	108	280
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	35	□196	Rc(PT)1	68	240	288	Ø63e9	63	206 <sup>0</sup> <sub>-0.46</sub>	4	332	50	112	290
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	35	□210	Rc(PT)1	74	253	304	Ø71e9	71	218 <sup>0</sup> <sub>-0.46</sub>	4	360	55	126	308

**Dimensions-Bellows Attached Type (J, K)**

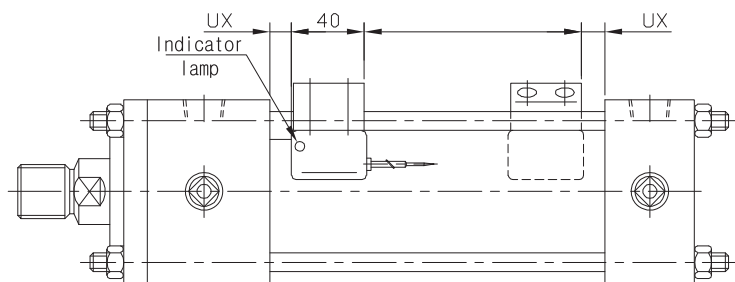
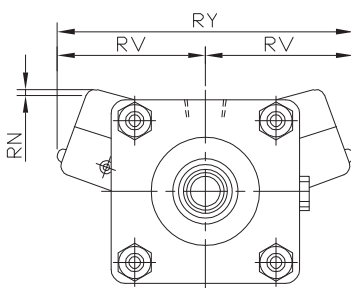


Type	J	K
Material	Nylon Tarpaulin	Neoprene Cloth
Temperature	60°C	110°C

Bore size	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø150	Ø160	Ø180	Ø200	Ø250	
X	45	45	55	55	55	65	65	65	65	65	65	80	
WW	B type	50	63	71	80	100	125	140	140	140	160	180	200
	C type	50	50	63	71	80	125	125	125	125	125	140	180
S	1/3.5×stroke		1/4×stroke		1/5×stroke						1/6×stroke		

- ※ For not shown dimensions, refer to SD type (standard type).
- ※ Dimensions remain the same even when tube flange type mounting is applied.
- ※ When calculating with decimals, please round up.
- ※ SUS band is mounted at bellows at delivery.

**Dimensions-Auto Switch Attached Type**



- ※ For not shown dimensions, refer to NHC140H series according to cylinder mounting type.

**Applicable Auto Switch**

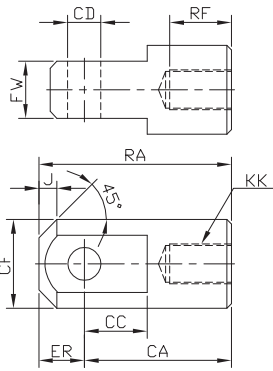
D-A54K, D-A56K, D-A64K, D-A90(V)K, DA93(V)K, D-A96(V)K, D-F59K, D-F5PK, D-J59K, D-J51K, D-F9N(V)K, D-F9P(V)K, D-F9B(V)K

Bore size	RN	RY	RV	UX
Ø40	3	99	49.5	28
Ø50	3	110	55	30
Ø63	2	120	60	35
Ø80	6	144	72	37
Ø100	5	159	79.5	45

- ※ Tube material : SUS
- ※ Magnet: Metal magnet

Dimensions- Accessory

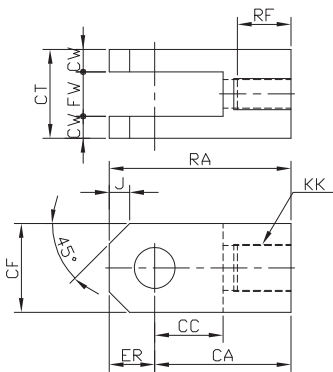
Single Knuckle Joint



Unit : mm

Part no.		CA	CC	CD	CF	CT	CW	ER	FW	J	KK		RA	RF	
B rod	C rod										B rod	C rod		B rod	C rod
I(Hyd.)40B	I(Hyd.)40C	60	23	Ø16H10	39	50	12.5	20	25 <sup>-0.1 -0.4</sup>	8	M20×1.5	M16×1.5	80	32	27
I(Hyd.)50B	I(Hyd.)50C	70	28	Ø20H10	49	63.5	16	25	31.5 <sup>-0.1 -0.4</sup>	10	M24×1.5	M20×1.5	95	37	32
I(Hyd.)63B	I(Hyd.)63C	115	43	Ø31.5H10	62	80	20	35	40 <sup>-0.1 -0.4</sup>	15	M30×1.5	M24×1.5	150	47	37
I(Hyd.)80B	I(Hyd.)80C	115	43	Ø31.5H10	62	80	20	35	40 <sup>-0.1 -0.4</sup>	15	M39×1.5	M30×1.5	150	62	47
I(Hyd.)100B	I(Hyd.)100C	145	55	Ø40H10	79	100	25	40	50 <sup>-0.1 -0.4</sup>	20	M48×1.5	M39×1.5	185	77	62
I(Hyd.)125B	I(Hyd.)125C	180	65	Ø50H10	100	126	31.5	50	63 <sup>-0.1 -0.4</sup>	30	M64×2	M48×1.5	230	97	77
I(Hyd.)140B	I(Hyd.)140C	225	85	Ø63H10	130	160	40	65	80 <sup>-0.1 -0.6</sup>	30	M72×2	M56×2	290	112	82
I(Hyd.)150B	I(Hyd.)150C	225	85	Ø63H10	130	160	40	65	80 <sup>-0.1 -0.6</sup>	30	M76×2	M60×2	290	117	87
I(Hyd.)160B	I(Hyd.)160C	240	90	Ø71H10	140	160	40	70	80 <sup>-0.1 -0.6</sup>	40	M80×2	M64×2	310	122	97

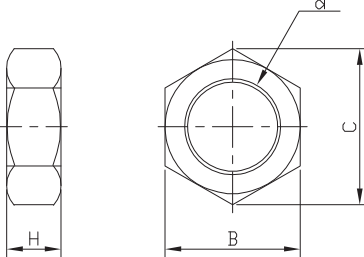
Double Knuckle Joint



Unit : mm

Part no.		CA	CC	CD	CF	CT	CW	ER	FW	J	KK		RA	RF	
B rod	C rod										B rod	C rod		B rod	C rod
Y(Hyd.)40B	Y(Hyd.)40C	60	27	Ø16 <sup>H10 fb</sup>	32	50	12.5	16	25 <sup>+0.4 +0.1</sup>	8	M20×1.5	M16×1.5	76	32	27
Y(Hyd.)50B	Y(Hyd.)50C	70	32	Ø20 <sup>H10 fb</sup>	40	63.5	16	20	31.5 <sup>+0.4 +0.1</sup>	10	M24×1.5	M20×1.5	90	37	32
Y(Hyd.)63B	Y(Hyd.)63C	115	50	Ø31.5 <sup>H10 fb</sup>	60	80	20	30	40 <sup>+0.4 +0.1</sup>	15	M30×1.5	M24×1.5	145	47	37
Y(Hyd.)80B	Y(Hyd.)80C	115	50	Ø31.5 <sup>H10 fb</sup>	60	80	20	30	40 <sup>+0.4 +0.1</sup>	15	M39×1.5	M30×1.5	145	62	47
Y(Hyd.)100B	Y(Hyd.)100C	145	60	Ø40 <sup>H10 fb</sup>	80	100	25	40	50 <sup>+0.4 +0.1</sup>	20	M48×1.5	M39×1.5	185	77	62
Y(Hyd.)125B	Y(Hyd.)125C	180	70	Ø50 <sup>H10 fb</sup>	100	126	31.5	50	63 <sup>+0.4 +0.1</sup>	30	M64×2	M48×1.5	230	97	77
Y(Hyd.)140B	Y(Hyd.)140C	225	90	Ø63 <sup>H10 fb</sup>	120	160	40	65	80 <sup>+0.6 +0.1</sup>	30	M72×2	M56×2	290	112	82
Y(Hyd.)150B	Y(Hyd.)150C	225	90	Ø63 <sup>H10 fb</sup>	120	160	40	65	80 <sup>+0.6 +0.1</sup>	30	M76×2	M60×2	290	117	87
Y(Hyd.)160B	Y(Hyd.)160C	240	100	Ø71 <sup>H10 fb</sup>	140	160	40	70	80 <sup>+0.6 +0.1</sup>	40	M80×2	M64×2	310	122	97

Rod End Nut

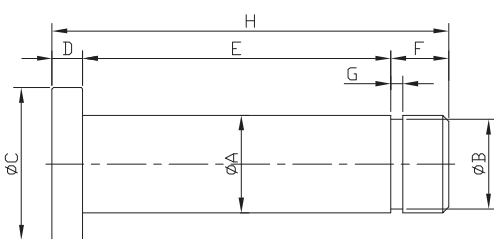


※ For rod end nut attached type, longer thread length (dimension A) is required.

Unit : mm

Part no.		B type rod end nut			C type rod end nut				
B rod	C rod	d	B	C	H	d	B	C	H
RN(Hyd.)40B	RN(Hyd.)40C	M20×1.5	30	34.6	12	M16×1.5	24	27.5	10
RN(Hyd.)50B	RN(Hyd.)50C	M24×1.5	36	41.6	14	M20×1.5	30	34.6	12
RN(Hyd.)63B	RN(Hyd.)63C	M30×1.5	46	53.1	18	M24×1.5	36	41.6	14
RN(Hyd.)80B	RN(Hyd.)80C	M39×1.5	60	69.3	23	M30×1.5	46	53.1	18
RN(Hyd.)100B	RN(Hyd.)100C	M48×1.5	75	86.5	29	M39×1.5	60	69.3	23
RN(Hyd.)125B	RN(Hyd.)125C	M64×2	95	110	38	M48×1.5	75	86.5	29
RN(Hyd.)140B	RN(Hyd.)140C	M72×2	Ø100	-	38	M56×2	Ø85	-	30
RN(Hyd.)150B	RN(Hyd.)150C	M76×2	Ø105	-	40	M60×2	Ø90	-	33
RN(Hyd.)160B	RN(Hyd.)160C	M80×2	Ø110	-	43	M64×2	Ø95	110	38

Knuckle Joint Pin / Clevis Pin



Unit : mm

Part no.		A	B	C	D	E	F	G	H
Clevis pin	Knuckle joint pin								
CB PIN(Hyd.)40	Y PIN(Hyd.)40	16	14.7	25	5	50.5	9.5	2	65
CB PIN(Hyd.)50	Y PIN(Hyd.)50	20	18.5	30	5	64	10	2	79
CB PIN(Hyd.)63	Y PIN(Hyd.)63	31.5	30	40	5	80.5	9.5	2.5	95
CB PIN(Hyd.)80	Y PIN(Hyd.)80	31.5	30	40	5	80.5	9.5	2.5	95
CB PIN(Hyd.)100	Y PIN(Hyd.)100	40	37.5	50	5	100.5	9.5	2.5	115
CB PIN(Hyd.)125	Y PIN(Hyd.)125	50	46.5	60	5	126.5	9.5	3	141
CB PIN(Hyd.)140	Y PIN(Hyd.)140	63	58.5	70	10	161	9	3	180
CB PIN(Hyd.)150	Y PIN(Hyd.)150	63	58.5	70	10	161	9	3	180
CB PIN(Hyd.)160	Y PIN(Hyd.)160	71	66.5	80	10	161	9	3	180