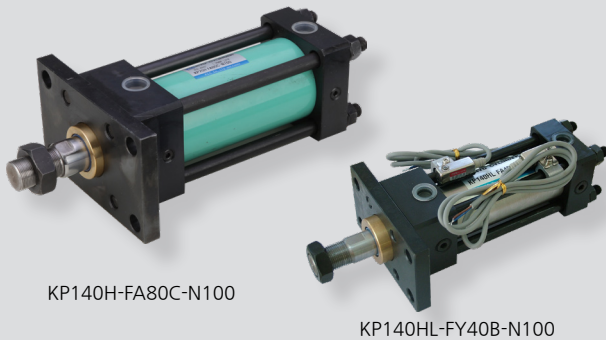


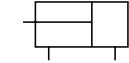
KP140H series



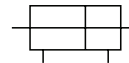
Features

- Standard tie rod type hydraulic cylinder
- Double acting hydraulic cylinder for 70 kgf/cm² or 140kgf/cm² with bore sizes from Ø32 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)

Symbol

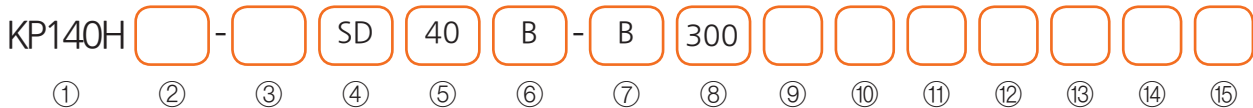


Double Acting / Single Rod



Double Acting / Double Rod

How to Order



① Series

KP140H	Single rod
KP140H W	Double rod
KP140HL	With auto switch (Single)
KP140HL W	With auto switch (Double)

② Seal

C	Compact seal (Standard)
B	Seal for booster cylinder
Nil	Basic seal

③ Seal Material

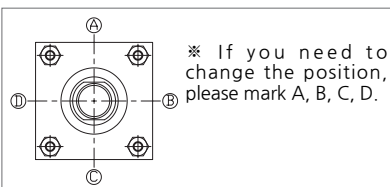
Nil	Nitrile urethane (standard)
1	Nitrile rubber
2	Urethane rubber
3	Fluoric rubber

※ When using a compact seal, the only standard type is available.

④ Mounting style

SD	Standard	FC	Rod side square flange
LA	Axial angle of foot	FD	Head side square flange
LB	Axial foot	CA	Single clevis
FA	Rod side rectangular flange	CB	Double clevis
FB	Head side rectangular flange	TC	Center trunnion
FY	Rod side rectangular flange	TA	Rod side trunnion
FZ	Head side rectangular flange		

※ LB, FA and FB are for 70kgf / cm² pressure.



⑤ Bore size

Bore size		Rod type	
		B (Strong)	C (Standard)
32	Ø32	Ø18	-
40	Ø40	Ø22	Ø18
50	Ø50	Ø28	Ø22
63	Ø63	Ø35	Ø28
80	Ø80	Ø45	Ø35
100	Ø100	Ø55	Ø45
125	Ø125	Ø70	Ø55
140	Ø140	Ø80	Ø65
150	Ø150	Ø85	Ø65
160	Ø160	Ø90	Ø70
180	Ø180	Ø100	Ø80
200	Ø200	Ø110	Ø90
250	Ø250	Ø140	Ø110

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
Ø32, 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

Nil	A (Standard)
B, C, D	Refer to the next figure

※ It can be changed depending on the support type.

⑩ Cushion valve position

Nil	B (Standard)
A, C, D	Refer to the next figure

※ It can be changed depending on the support type.

⑪ Bellows

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

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	None
ASJ	Adjustable when advancing 25mm
BSJ	Adjustable when advancing 50mm

※ Only Ø40 ~ Ø125 can be produced (B type rod)

Specifications

Type	Standard (H*)				Auto switch attached (HL*)			
	C Rod		B Rod		C Rod		B Rod	
Bore size	Ø32, Ø40, Ø50, Ø63, Ø80, Ø100, Ø125, Ø140, Ø150, Ø160, Ø180, Ø200, Ø250				Ø32, Ø40, Ø50, Ø63, Ø80, Ø100			
Operating pressure	70kgf/cm ² (7.1MPa)		140kgf/cm ² (14.3MPa)		70kgf/cm ² (7.1MPa)		140kgf/cm ² (14.3MPa)	
Max. operating pressure	Head side: 90kgf/cm ² (9.2MPa) Rod side: 110kgf/cm ² (11.2MPa)		Head side: 180kgf/cm ² (18.4MPa) Rod side: 180kgf/cm ² (18.4MPa)		Head side: 90kgf/cm ² (9.2MPa) Rod side: 110kgf/cm ² (11.2MPa)		Head side: 180kgf/cm ² (18.4MPa) Rod side: 180kgf/cm ² (18.4MPa)	
Proof pressure	105kgf/cm ² (10.7MPa)		210kgf/cm ² (21.4MPa)		105kgf/cm ² (10.7MPa)		210kgf/cm ² (21.4MPa)	
Min. operating pressure	Head side ≤ 3kgf/cm ² (0.31MPa), Rod side: B Rod ≤ 4.5kgf/cm ² (0.46MPa), C Rod ≤ 4kgf/cm ² (0.41MPa)							
Operating piston speed	Ø32 ~ Ø63 : 8~400mm/sec Ø80 ~ Ø125 : 8~300mm/sec Ø140 ~ Ø250 : 8~200mm/sec				Ø32 ~ 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	ST	≤ 100mm	101~250mm	251~630mm	631~1000mm	1001~1600mm	1601~2000mm	
	limit	+0.8 0	+1.0 0	+1.25 0	+1.4 0	+1.6 0	+1.8 0	
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/cm².
- * 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	Ø32 ~ Ø80	Ø100 ~ Ø160	Ø180 ~ Ø250
Cushion length	20	25	30

Mounting Style

Bore size	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø150	Ø160	Ø180	Ø200	Ø250
Mounting	LA (Hyd.)32	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 angle of foot	LA (Hyd.)32	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.)32	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.)32	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.)32	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.)32	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.)32	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.)32	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.)32	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.)32	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		Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø150	Ø160
Accessory	B Rod	I (Hyd.)32B	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 Rod	-	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 Rod	Y (Hyd.)32B	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 Rod	-	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.)32	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.)32	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

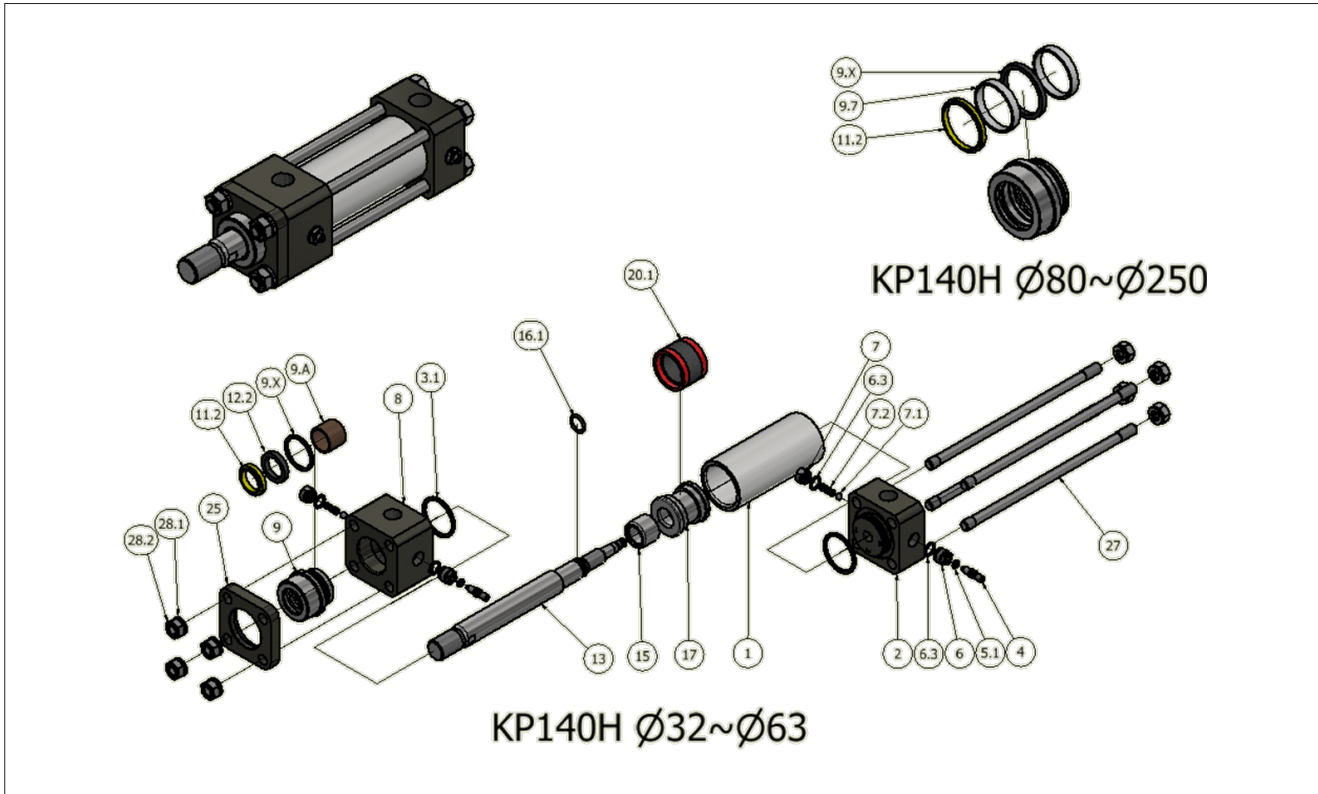
Unit : kg

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
Ø32	B	3.3	4.1	0.3	0.3	0.1	0.6	0.6	0.9	0.2	0.7	0.4	0.5	0.1	0.5	0.5	0.7	0.006	0.008
	C	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
Ø40	B	3.4	4.3															0.010	0.012
	C	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
Ø50	B	4.9	6.2															0.012	0.014
	C	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
Ø63	B	7.6	9.8															0.017	0.022
	C	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
Ø80	B	15.5	19.4															0.027	0.035
	C	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
Ø100	B	24.9	31.1															0.042	0.055
	C	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
Ø125	B	42.5	52.7															0.065	0.084
	C	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
Ø140	B	56.0	69.6															0.085	0.111
	C	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
Ø150	B	67.9	83.6															0.101	0.127
	C	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
Ø160	B	79.9	99.1															0.102	0.132
	C	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
Ø180	B	108.5	-															0.157	0.197
	C	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
Ø200	B	147.3	-															0.192	0.242
	C	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
Ø250	B	264.1	-															0.290	0.365
	C																		

Calculation:

Ex.) KP140H-LA80B-N200
 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



Part List

Part no.	Parts	Material	Part no.	Parts	Material
1	TUBE	STM13C	9	BUSH	SM45C
2	HEAD COVER	SS400	13	ROD(B)	SM45C
4	CUSHION NEEDLE	SUM24L	15	CUSHION RING	SM45C
6	CUSHION BODY	SUM24L	17	PISTON	SM45C
7	CHECK BODY	SUM24L	25	RETAINER	SS400
7.1	STEEL BALL	SUJ2	27	TIE ROD	SM45C
7.2	COIL SPRING	SUM24L	28.1	SWASHER	SWRH
8	ROD COVER	SS400	28.2	HEX NUT	SM45C

Packing List

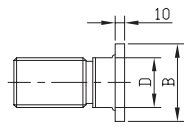
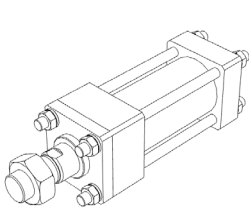
Part no.	Parts	Rod type	Material	Tube Bore Size (mm)													
				32	40	50	63	80	100	125	140	150	160	180	200	250	
3.1	TUBE O-RING	B / C	N.B.R	1B-P26/1B-G30	1B-G35	1B-G45	1B-G58	1B-G75	1B-G95	1B-G120	1B-G135	1B-G145	1B-G150	1B-G170	1B-G190	1B-G240	
5.1	NEEDLE O-RING	B / C	N.B.R	1B-P5	1B-P5	1B-P5	1B-P5	1B-P6	1B-P6	1B-P9	1B-P9	1B-P9	1B-P9	1B-P9	1B-P9	1B-P9	
6.3	C.B O-RING	B / C	N.B.R	1B-P10	1B-P10	1B-P10	1B-P10	1B-P11	1B-P11	1B-P15	1B-P15	1B-P15	1B-P15	1B-P15	1B-P15	1B-P15	
9.7	WEARING	B	PHENOL	-	-	-	-	45x50x10	55x60x10	70x75x10	80x85x10	85x90x10	90x95x10	100x105x10	110x115x10	140x145x10	
		C	PHENOL	-	-	-	-	35x40x10	45x50x10	55x60x10	65x70x10	65x70x10	70x75x10	80x85x10	90x95x10	90x95x10	
9.A	DU BUSH	B	SPCC	-	DUB2220	DUB2820	DUB3520	-	-	-	-	-	-	-	-	-	
		C	N.B.R	-	DUB1820	DUB2220	DUB2820	-	-	-	-	-	-	-	-	-	
9.X	BUSH O-RING	B / C	N.B.R	1B-G25	1B-G30	1B-G35	1B-G45	1B-G55	1B-G65	1B-G80	1B-G95	1B-G95	1B-G100	1B-G110	1B-G125	1B-G150	
11.2	DUST SEAL	B	URETHANE	-	LBI-22x30x4.5/6	LBI-28x36x4.5/6	LBI-35x43x5/6.5	LBI-45x53x5/6.5	LBI-55x63x5/6.5	LBI-70x80x6/8	LBI-80x90x6/8	LBI-85x95x6/8	LBI-100x110x6/8	LBI-100x110x6/8	LBI-110x120x6/8	LBI-140x153x7/9.5	
		C	URETHANE	-	LBI-18x26x4.5/6	LBI-22x30x4.5/6	LBI-28x36x4.5/6	LBI-35x43x5/6.5	LBI-45x53x5/6.5	LBI-55x63x5/6.5	LBI-70x80x6/8	LBI-80x90x6/8	LBI-85x95x6/8	LBI-100x110x6/8	LBI-100x110x6/8	LBI-110x120x6/8	
12.2	ROD PACKING	B	N.B.R	UHR-18	USI-22	UHR-28	UHS-35	UHR-45A	UHS-55	UHS-70	UHR-80	UHR-85	UHR-90	UHR-100	ISI-110	UHR-140	
		C	N.B.R	-	UHR-18	USI-22	UHR-28	UHS-35	UHR-45A	UHS-55	UHS-65	UHS-65	UHS-70	UHR-80	UHR-90	ISI-110	
16.1	ROD O-RING	B / C	N.B.R	1B-S12.5	1B-P14	1B-P18	1B-P22A	1B-P29	1B-G40	1B-G50	1B-G60	1B-G60	1B-G65	1B-G75	1B-G85	1B-G105	
20.1	PISTON PACKING	B / C	N.B.R	OMK	C/	C/	C/	C/	C/	C/	C/	KDSB-	C/	KDSB-	C/	C/	
				MR32x24.5x3.2	P-40x30x16.4	P-40x30x16.4	P-63x47x18.4	P-80x60x22.4	P-100x75x22.4	P-125x100x25.4	140x115x25.4x9.5	P150x125x25.4x9.5	160x135x25.4x9.5	P180x155x25.4	P-200x175x25.4	P-250x225x25.4	

※ (B): B Rod, (C): C Rod type.

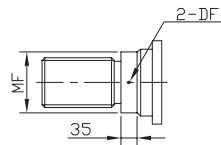
※ Port and cushion position available upon customer request. (For KCC SD(standard) type specification, Port: A, Cushion: B, Check valve: C, D)

Dimensions-Standard (SD)

70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

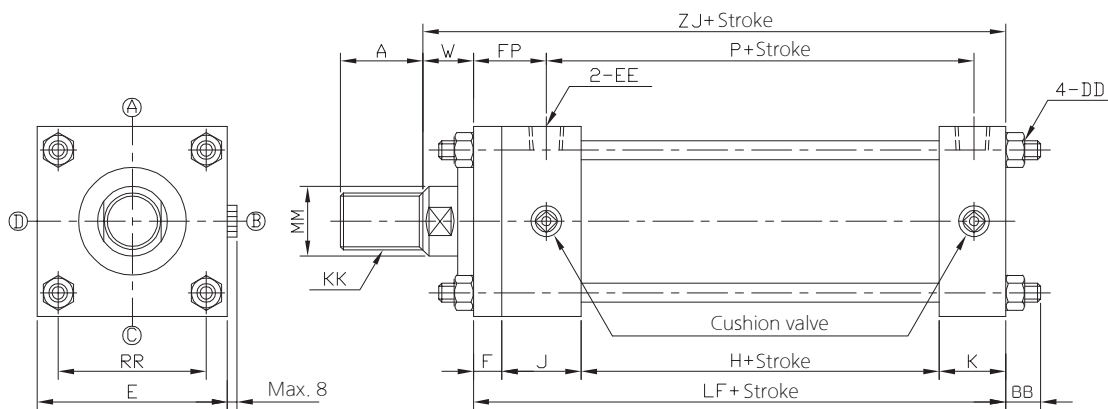


D:Width cross flat (for spanner)

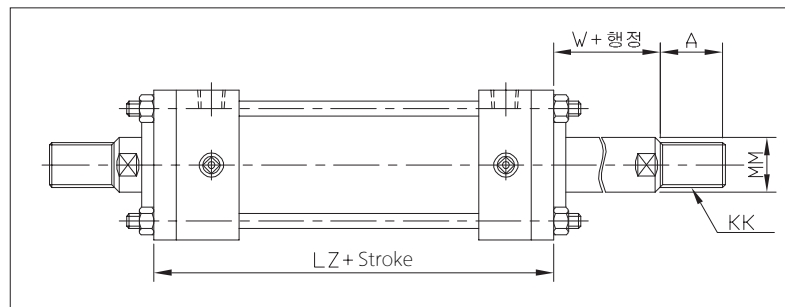


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø32 ~ Ø160)



Cylinder cover fixing method according to stroke
Unit:mm

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

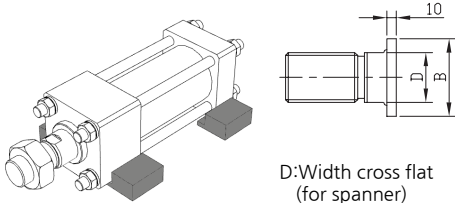
Unit : mm

Bore size	B Rod type					C Rod 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															
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	14	M10x1.25	□58	Rc(PT)3/8	11	38	44	50	36	141	166	90	38	30	171
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	61	41	184	222	110	80	35	219
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	152	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	Ø115	85	M80X2	Ø90	40	M33x1.5	□262	Rc(PT)1 1/2	37	85	115	83	66	301	-	185	200	55	356
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	50	M42x1.5	□325	Rc(PT)2	46	106	126	97	77	346	-	200	250	65	411

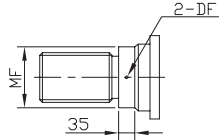
Dimensions-Axial Angle of Foot (LA)

70kgf/cm² • 140kgf/cm²

※ Shape varies depending on bore sizes.

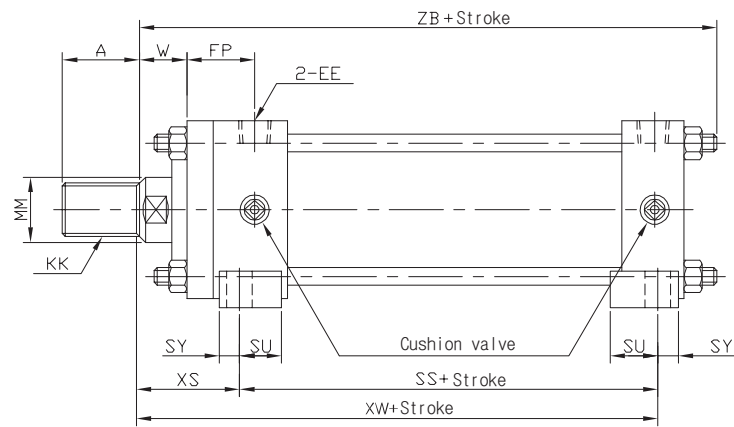
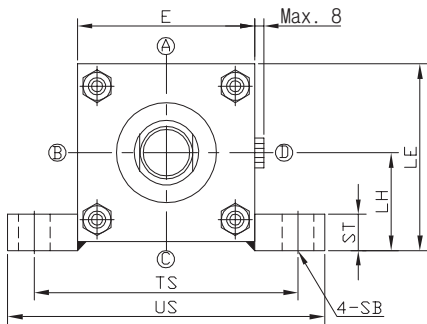


D:Width cross flat (for spanner)

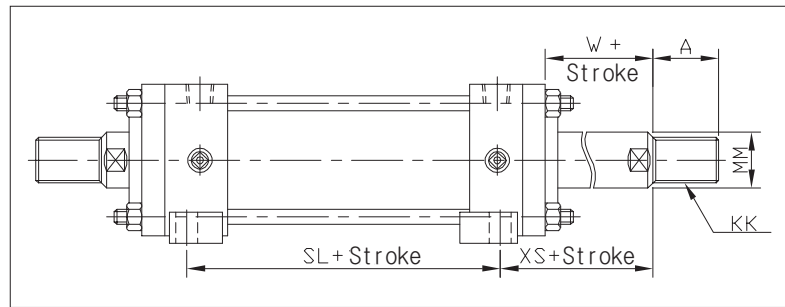


Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15

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



Double rod type (Ø32 ~ 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

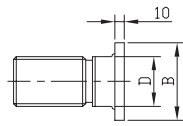
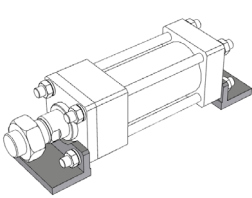
Unit : mm

Bore size	B Rod type					C Rod 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																	
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	□58	Rc(PT)3/8	38	64	35±0.15	Ø11	112	98	12	31	13	88	109	30	56	155	185
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	Ø46	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±0.25	Ø18	144	124	25	42	18	155	190	35	74	198	242
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	□135	Rc(PT)3/4	58	138.5	71±0.25	Ø22	142	122	27	38	22	190	230	40	85	207	252
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	□165	Rc(PT)1	67	167.5	85±0.25	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±0.25	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±0.25	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±0.25	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	50	35	315	375	55	123	295	370
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø115	85	M80X2	Ø90	□262	Rc(PT)1 1/2	85	271	140±0.25	Ø36	-	186	52	-	38	355	425	55	131	317	396
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	□325	Rc(PT)2	106	332.5	170±0.25	Ø45	-	206	57	-	46	425	515	65	158	364	464

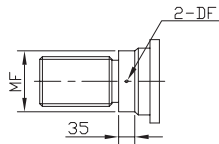
Dimensions-Axial Foot (LB)

70kgf/cm²

※ Shape varies depending on bore sizes.

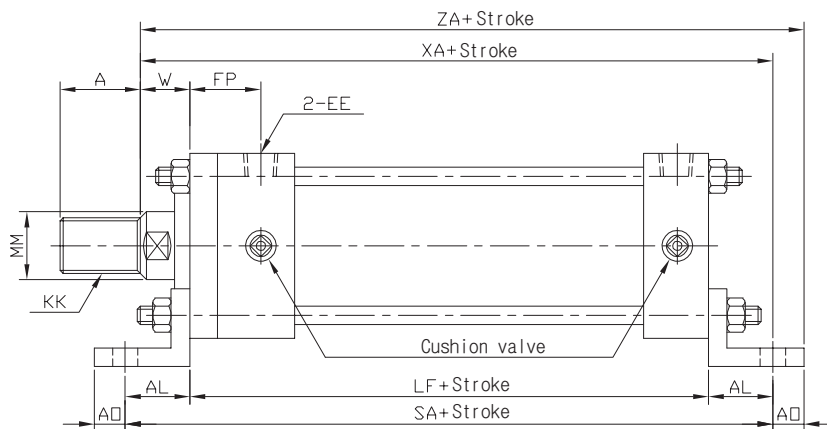
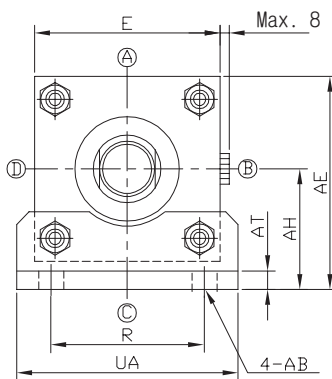


D:Width cross flat
(for spanner)

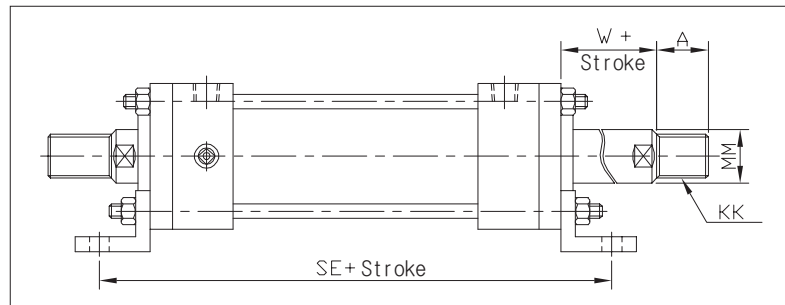


※ To the bore size of $\varnothing 100$ a hole is placed with the width cross flat.

Bore size	MF	DF
$\varnothing 100$	$\varnothing 97$	$\varnothing 12$
$\varnothing 110$	$\varnothing 107$	$\varnothing 15$
$\varnothing 140$	$\varnothing 137$	$\varnothing 15$



Double rod type ($\varnothing 32 \sim \varnothing 160$)



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

Cylinder cover fixing method according to stroke
Unit:mm

Bore size	~1500	1501~2000
$\varnothing 80 \sim \varnothing 250$	Tie rod type	Tube flange type

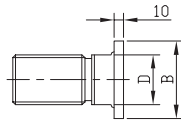
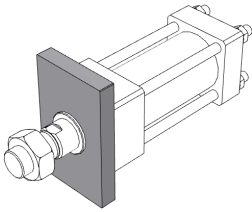
Unit : mm

Bore size	B Rod type					C Rod 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																	
$\varnothing 32$	25	$\varnothing 34$	16	M16X1.5	$\varnothing 18$	-	-	-	-	-	$\varnothing 11$	69	40 ± 0.15	32	13	8	$\square 58$	Rc(PT)3/8	38	141	40	205	230	62	30	203	216
$\varnothing 40$	30	$\varnothing 40$	21	M20X1.5	$\varnothing 22$	25	$\varnothing 36$	17	M16X1.5	$\varnothing 18$	$\varnothing 11$	75.5	43 ± 0.15	32	13	9	$\square 65$	Rc(PT)3/8	38	141	46	205	230	69	30	203	216
$\varnothing 50$	35	$\varnothing 45$	24	M24X1.5	$\varnothing 28$	30	$\varnothing 40$	20	M20X1.5	$\varnothing 22$	$\varnothing 14$	88	50 ± 0.15	35	15	9	$\square 76$	Rc(PT)1/2	42	155	58	225	252	85	30	220	235
$\varnothing 63$	45	$\varnothing 55$	30	M30X1.5	$\varnothing 35$	35	$\varnothing 46$	24	M24X1.5	$\varnothing 28$	$\varnothing 18$	105	60 ± 0.15	42	18	12	$\square 90$	Rc(PT)1/2	46	163	65	247	278	98	35	240	258
$\varnothing 80$	60	$\varnothing 65$	41	M39X1.5	$\varnothing 45$	45	$\varnothing 55$	30	M30X1.5	$\varnothing 35$	$\varnothing 18$	127	72 ± 0.25	50	20	13	$\square 110$	Rc(PT)3/4	56	184	87	284	322	118	35	269	289
$\varnothing 100$	75	$\varnothing 80$	50	M48X1.5	$\varnothing 55$	60	$\varnothing 65$	41	M39X1.5	$\varnothing 45$	$\varnothing 22$	152.5	85 ± 0.25	55	23	13	$\square 135$	Rc(PT)3/4	58	192	109	302	342	150	40	287	310
$\varnothing 125$	95	$\varnothing 95$	65	M64X2	$\varnothing 70$	75	$\varnothing 80$	50	M48X1.5	$\varnothing 55$	$\varnothing 26$	187.5	105 ± 0.25	66	29	15	$\square 165$	Rc(PT)1	67	220	130	352	396	175	45	331	360
$\varnothing 140$	110	$\varnothing 105$	75	M72X2	$\varnothing 80$	80	$\varnothing 85$	60	M56X2	$\varnothing 65$	$\varnothing 26$	207.5	115 ± 0.25	70	30	18	$\square 185$	Rc(PT)1	67	230	145	370	416	195	50	350	380
$\varnothing 150$	115	$\varnothing 110$	80	M76X2	$\varnothing 85$	85	$\varnothing 90$	60	M60X2	$\varnothing 65$	$\varnothing 30$	221	123 ± 0.25	75	30	18	$\square 196$	Rc(PT)1	68	240	155	390	438	210	50	365	395
$\varnothing 160$	120	$\varnothing 115$	85	M80X2	$\varnothing 90$	95	$\varnothing 95$	65	M64X2	$\varnothing 70$	$\varnothing 33$	237	132 ± 0.25	75	35	18	$\square 210$	Rc(PT)1	74	253	170	403	454	225	55	383	418
$\varnothing 180$	140	$\varnothing 125$	-	M95X2	$\varnothing 100$	110	$\varnothing 105$	75	M72X2	$\varnothing 80$	$\varnothing 33$	265.5	148 ± 0.25	85	40	20	$\square 235$	Rc(PT)1 1/4	75	275	185	445	-	243	55	415	455
$\varnothing 200$	150	$\varnothing 140$	-	M100X2	$\varnothing 110$	120	$\varnothing 115$	85	M80X2	$\varnothing 90$	$\varnothing 36$	296	165 ± 0.25	98	40	25	$\square 262$	Rc(PT)1 1/2	85	301	206	497	-	272	55	454	494
$\varnothing 250$	195	$\varnothing 170$	-	M130X2	$\varnothing 140$	150	$\varnothing 140$	-	M100X2	$\varnothing 110$	$\varnothing 45$	370.5	208 ± 0.25	130	50	35	$\square 325$	Rc(PT)2	106	346	250	606	-	335	65	541	591

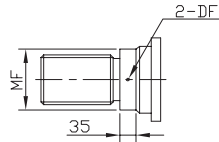
Dimensions-Rod Side Rectangular Flange (FA)

70kgf/cm²

※ Shape varies depending on bore sizes.

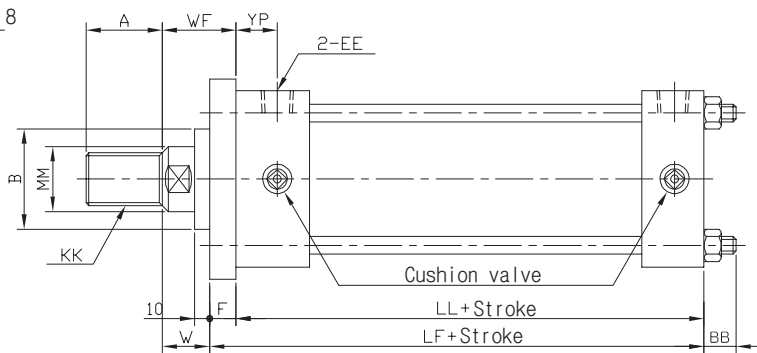
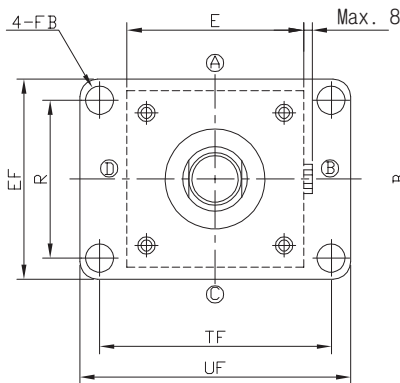


D:Width cross flat
(for spanner)

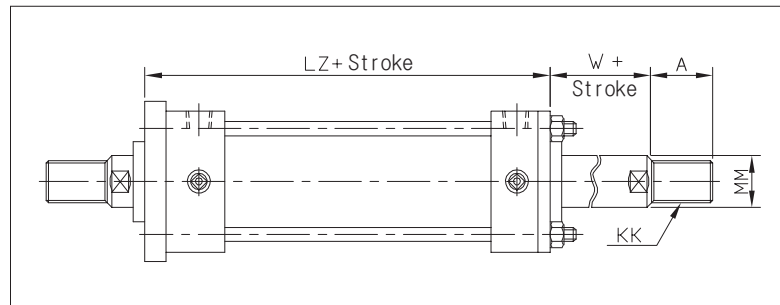


※ To the bore size of $\varnothing 100$ a hole is placed with the width cross flat.

Bore size	MF	DF
$\varnothing 100$	$\varnothing 97$	$\varnothing 12$
$\varnothing 110$	$\varnothing 107$	$\varnothing 15$
$\varnothing 140$	$\varnothing 137$	$\varnothing 15$



Double rod type ($\varnothing 32 \sim \varnothing 160$)



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

Cylinder cover fixing method according to stroke
Unit:mm

Bore size	~1500	1501~2000
$\varnothing 80 \sim \varnothing 250$	Tie rod type	Tube flange type

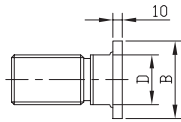
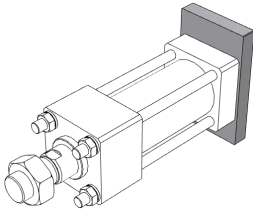
Unit : mm

Bore size	B Rod type					C Rod 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															
$\varnothing 32$	25	$\varnothing 34$	16	M16X1.5	$\varnothing 18$	-	-	-	-	-	14	$\square 58$	Rc(PT)3/8	62	11	$\varnothing 11$	141	130	166	40	88	109	30	41	27
$\varnothing 40$	30	$\varnothing 40$	21	M20X1.5	$\varnothing 22$	25	$\varnothing 36$	17	M16X1.5	$\varnothing 18$	15	$\square 65$	Rc(PT)3/8	69	11	$\varnothing 11$	141	130	166	46	95	118	30	41	27
$\varnothing 50$	35	$\varnothing 46$	24	M24X1.5	$\varnothing 28$	30	$\varnothing 40$	20	M20X1.5	$\varnothing 22$	15	$\square 76$	Rc(PT)1/2	85	13	$\varnothing 14$	155	142	182	58	115	145	30	43	29
$\varnothing 63$	45	$\varnothing 55$	30	M30X1.5	$\varnothing 35$	35	$\varnothing 46$	24	M24X1.5	$\varnothing 28$	17	$\square 90$	Rc(PT)1/2	98	15	$\varnothing 18$	163	148	194	65	132	165	35	50	31
$\varnothing 80$	60	$\varnothing 65$	41	M39X1.5	$\varnothing 45$	45	$\varnothing 55$	30	M30X1.5	$\varnothing 35$	23	$\square 110$	Rc(PT)3/4	118	18	$\varnothing 18$	184	166	222	87	155	190	35	53	38
$\varnothing 100$	75	$\varnothing 80$	50	M48X1.5	$\varnothing 55$	60	$\varnothing 65$	41	M39X1.5	$\varnothing 45$	26	$\square 135$	Rc(PT)3/4	150	20	$\varnothing 22$	192	172	232	109	190	230	40	60	38
$\varnothing 125$	95	$\varnothing 95$	65	M64X2	$\varnothing 70$	75	$\varnothing 80$	50	M48X1.5	$\varnothing 55$	30	$\square 165$	Rc(PT)1	175	24	$\varnothing 26$	220	196	264	130	224	272	45	69	43
$\varnothing 140$	110	$\varnothing 105$	75	M72X2	$\varnothing 80$	80	$\varnothing 85$	60	M56X2	$\varnothing 65$	35	$\square 185$	Rc(PT)1	195	26	$\varnothing 26$	230	204	276	145	250	300	50	76	41
$\varnothing 150$	115	$\varnothing 110$	80	M76X2	$\varnothing 85$	85	$\varnothing 90$	60	M60X2	$\varnothing 65$	35	$\square 196$	Rc(PT)1	210	28	$\varnothing 30$	240	212	288	155	270	320	50	78	43
$\varnothing 160$	120	$\varnothing 115$	85	M80X2	$\varnothing 90$	95	$\varnothing 95$	65	M64X2	$\varnothing 70$	35	$\square 210$	Rc(PT)1	225	31	$\varnothing 33$	253	222	304	170	285	345	55	86	43
$\varnothing 180$	140	$\varnothing 125$	-	M95X2	$\varnothing 100$	110	$\varnothing 105$	75	M72X2	$\varnothing 80$	40	$\square 235$	Rc(PT)1 1/4	243	33	$\varnothing 33$	275	242	-	185	315	375	55	88	42
$\varnothing 200$	150	$\varnothing 140$	-	M100X2	$\varnothing 110$	120	$\varnothing 115$	85	M80X2	$\varnothing 90$	40	$\square 262$	Rc(PT)1 1/2	272	37	$\varnothing 36$	301	264	-	206	355	425	55	92	48
$\varnothing 250$	195	$\varnothing 170$	-	M130X2	$\varnothing 140$	150	$\varnothing 140$	-	M100X2	$\varnothing 110$	50	$\square 325$	Rc(PT)2	335	46	$\varnothing 45$	346	300	-	250	425	515	65	111	60

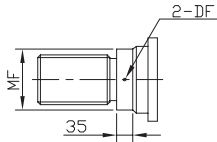
Dimensions-Head Side Rectangular Flange (FB)

70kgf/cm²

※ Shape varies depending on bore sizes.

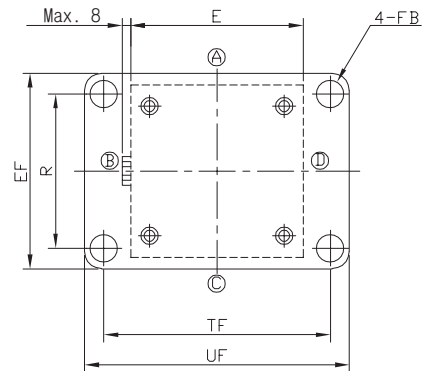
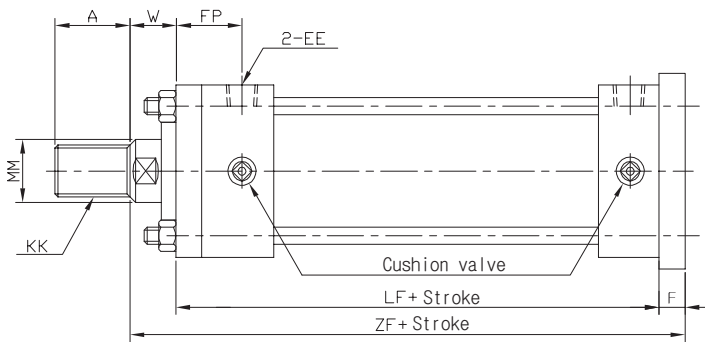


D: Width cross flat (for spanner)



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

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15

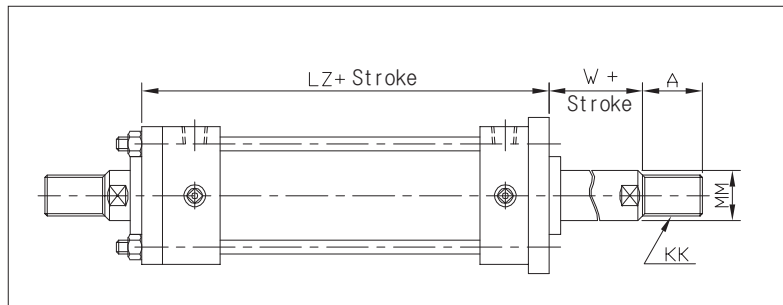


Double rod type (Ø32 ~ Ø160)

※ 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

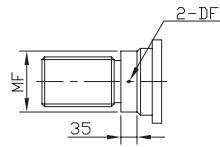
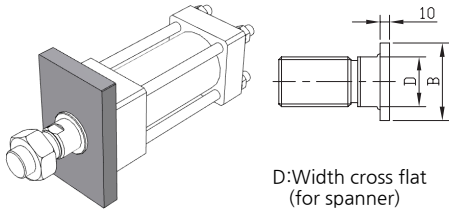


Unit : mm

Bore size	B Rod type					C Rod type					E	EE	EF	F	FB	FP	LF	LZ	R	TF	UF	W	ZF
	A	B	D	KK	MM	A	B	D	KK	MM													
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	□58	Rc(PT)3/8	62	11	Ø11	38	141	166	40	88	109	30	182
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	Ø46	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	Ø46	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	184	222	87	155	190	35	237
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)1/4	243	33	Ø33	75	275	-	185	315	375	55	363
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø115	85	M80X2	Ø90	□262	Rc(PT)1/2	272	37	Ø36	85	301	-	206	355	425	55	393
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	□325	Rc(PT)2	335	46	Ø45	106	346	-	250	425	515	65	457

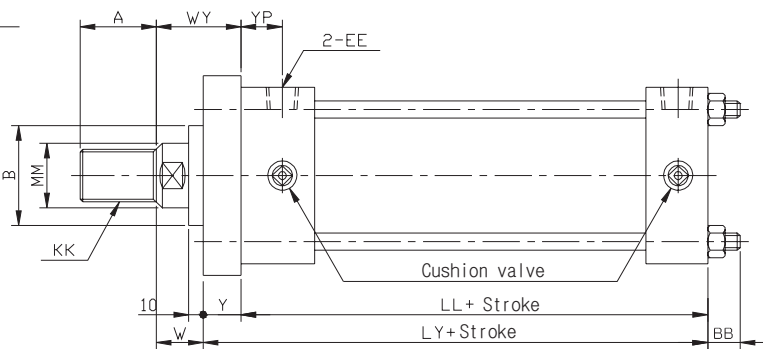
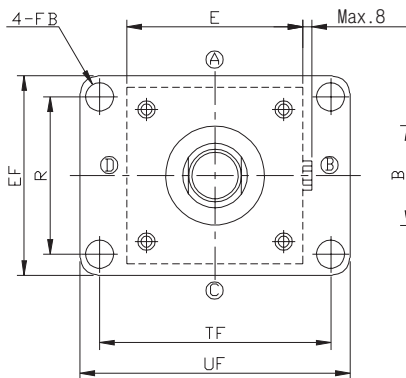
Dimensions-Reinforced Type Rod Side Rectangular Flange (FY)

70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

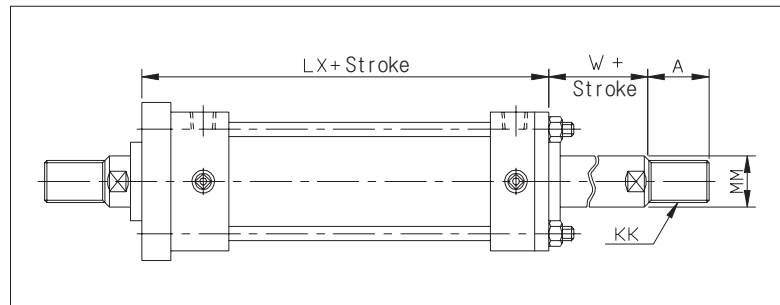


Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15

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



Double rod type (Ø32 ~ 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

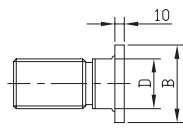
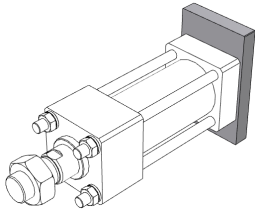
Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

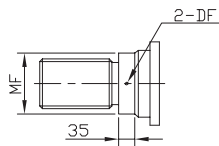
Bore size	B Rod type					C Rod type					BB	E	EE	EF	FB	LL	LX	LY	R	TF	UF	W	WY	Y	YP
	A	B	D	KK	MM	A	B	D	KK	MM															
Ø32	30	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	14	□58	Rc(PT)3/8	62	Ø11	130	168	143	40	88	109	30	43	13	27
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	□65	Rc(PT)3/8	69	Ø11	130	168	143	46	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	Ø46	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	166	228	190	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)1/4	243	Ø33	242	-	288	185	315	375	55	101	46	42
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø115	85	M80X2	Ø90	40	□262	Rc(PT)1/2	272	Ø36	264	-	315	206	355	425	55	106	51	48
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	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/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

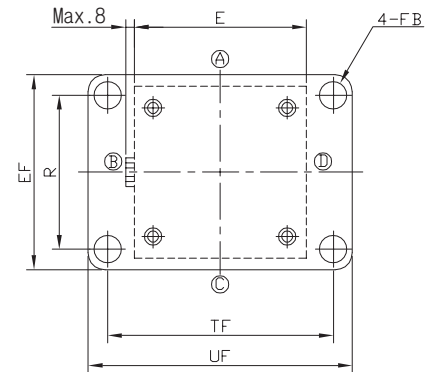
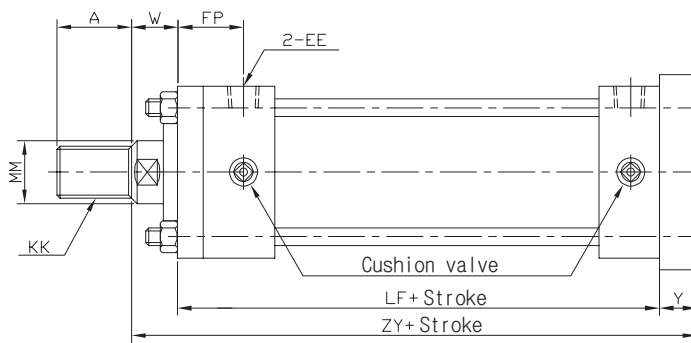


D:Width cross flat (for spanner)



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

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15

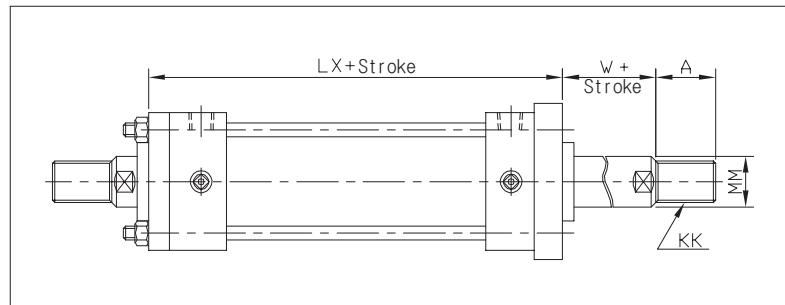


Double rod type (Ø32 ~ Ø160)

- ※ 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

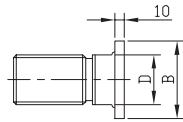
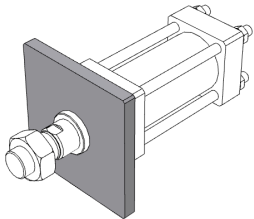


Unit : mm

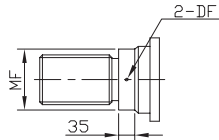
Bore size	B Rod type					C Rod type					E	EE	EF	FB	FP	LF	LX	R	TF	UF	W	Y	ZY
	A	B	D	KK	MM	A	B	D	KK	MM													
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	□58	Rc(PT)3/8	62	Ø11	38	141	168	40	88	109	30	13	184
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	□65	Rc(PT)3/8	69	Ø11	38	141	168	46	95	118	30	13	184
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	Ø46	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	184	228	87	155	190	35	24	243
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	Ø110	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	Ø110	□325	Rc(PT)2	335	Ø45	106	346	-	250	425	515	65	65	476

Dimensions-Rod Side Square Flange (FC)

70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

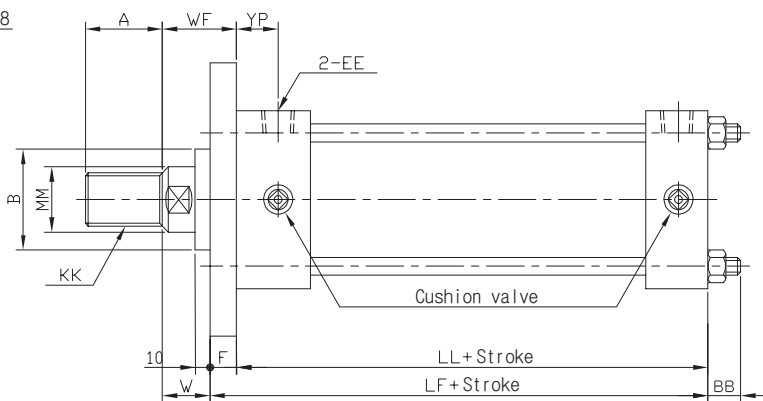
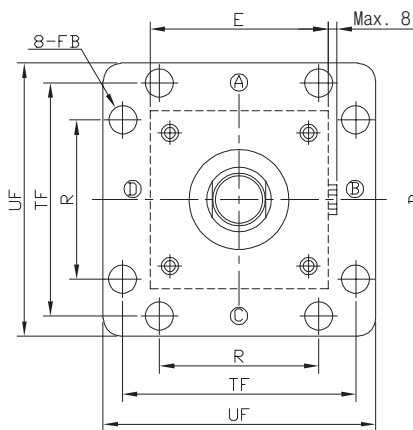


D:Width cross flat
(for spanner)

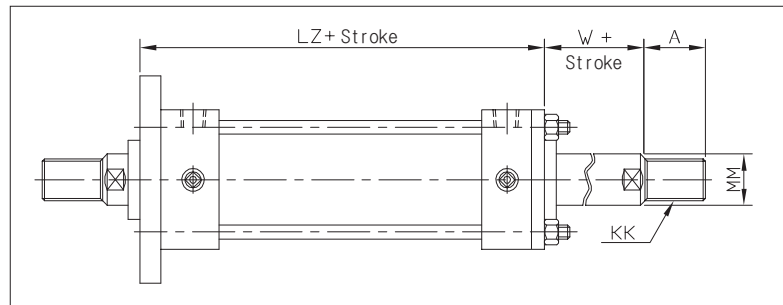


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø32 ~ Ø160)



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

Cylinder cover fixing method according to stroke
Unit:mm

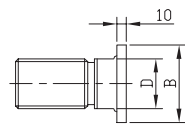
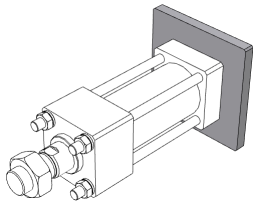
Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

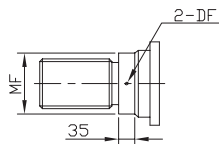
Bore size	B Rod type					C Rod type					BB	E	EE	F	FB	LF	LL	LZ	R	TF	UF	W	WF	YP
	A	B	D	KK	MM	A	B	D	KK	MM														
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	14	□58	Rc(PT)3/8	11	Ø11	141	130	166	40	88	109	30	41	27
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	□65	Rc(PT)3/8	11	Ø11	141	130	166	46	95	118	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	Ø46	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	184	166	222	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	Ø110	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	Ø110	50	□325	Rc(PT)2	46	Ø45	346	300	-	250	425	515	65	111	60

Dimensions-Head Side Square Flange (FD)

70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

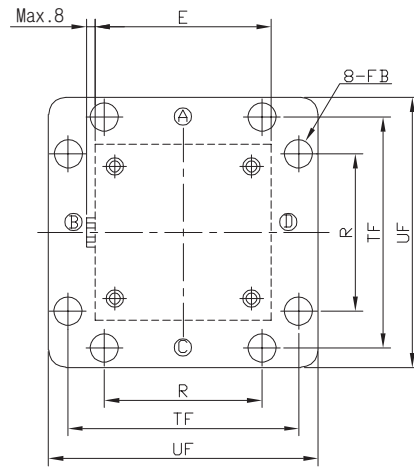
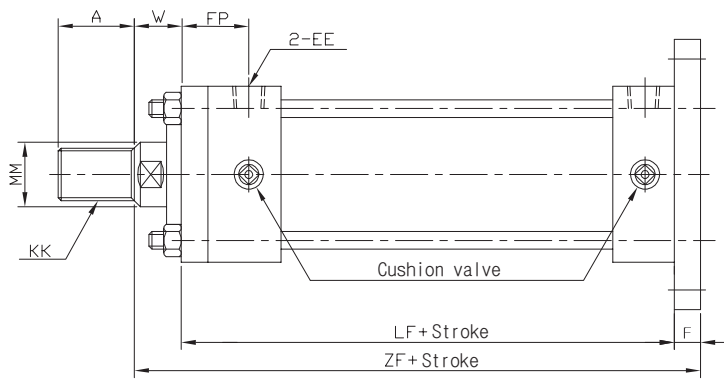


D:Width cross flat (for spanner)

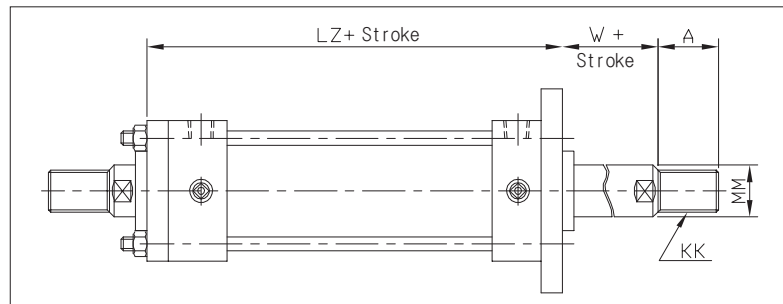


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø32 ~ Ø160)



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

Cylinder cover fixing method according to stroke
Unit:mm

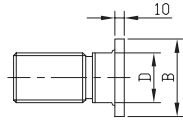
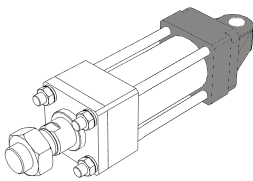
Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

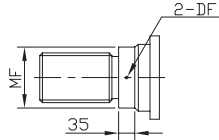
Bore size	B Rod type					C Rod type					E	EE	F	FB	FP	LF	LZ	R	TF	UF	W	ZF
	A	B	D	KK	MM	A	B	D	KK	MM												
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	□58	Rc(PT)3/8	11	Ø11	38	141	166	40	88	109	30	182
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	□65	Rc(PT)3/8	11	Ø11	38	141	166	46	95	118	30	182
Ø50	35	Ø45	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	Ø46	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	184	222	87	155	190	35	237
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)1/4	33	Ø33	75	275	-	185	315	375	55	363
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø115	85	M80X2	Ø90	□262	Rc(PT)1/2	37	Ø36	85	301	-	206	355	425	55	393
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	□325	Rc(PT)2	46	Ø45	106	346	-	250	425	515	65	457

Dimensions-Single Clevis (CA)

70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

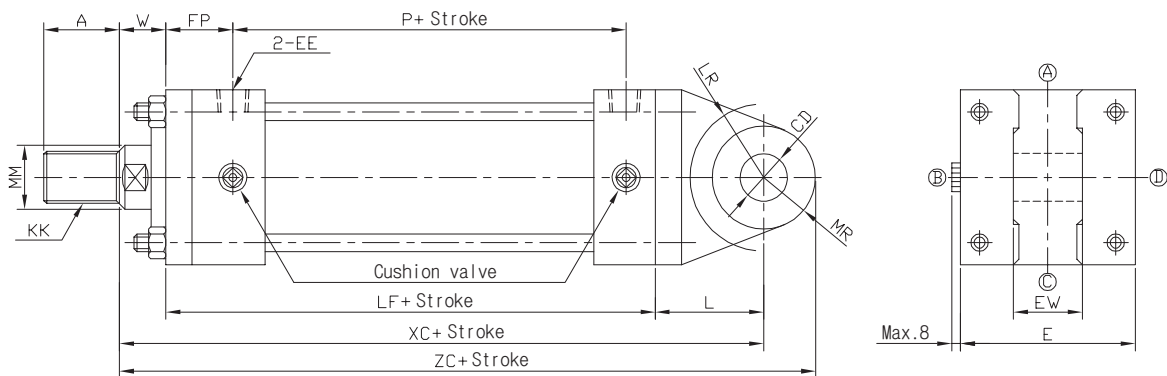


D: Width cross flat
(for spanner)



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

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15



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

Cylinder cover fixing method according to stroke
Unit:mm

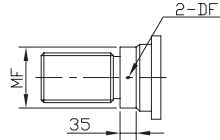
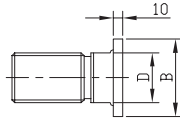
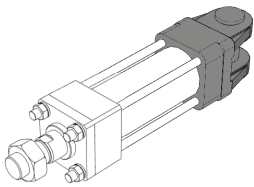
Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

Bore size	B Rod type					C Rod type					CD	E	EE	EW	FP	L	LF	LR	MR	P	W	XC	ZC
	A	B	D	KK	MM	A	B	D	KK	MM													
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	Ø16	□58	Rc(PT)3/8	25 ^{-0.1} _{-0.4}	38	38	141	R20	R16	90	30	209	225
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	Ø16	□65	Rc(PT)3/8	25 ^{-0.1} _{-0.4}	38	38	141	R20	R16	90	30	209	225
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	Ø20	□76	Rc(PT)1/2	31.5 ^{-0.1} _{-0.4}	42	45	155	R25	R20	98	30	230	250
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø46	24	M24X1.5	Ø28	Ø31.5	□90	Rc(PT)1/2	40 ^{-0.1} _{-0.4}	46	63	163	R46	R31.5	102	35	261	292.5
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	Ø31.5	□110	Rc(PT)3/4	40 ^{-0.1} _{-0.4}	56	72	184	R52	R31.5	106	35	291	322.5
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	Ø40	□135	Rc(PT)3/4	50 ^{-0.1} _{-0.4}	58	84	192	R62	R40	116	40	316	356
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	Ø50	□165	Rc(PT)1	63 ^{-0.1} _{-0.4}	67	100	220	R73	R50	130	45	365	415
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	Ø63	□185	Rc(PT)1	80 ^{-0.1} _{-0.6}	67	120	230	R91	R63	142.5	50	400	463
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	Ø63	□196	Rc(PT)1	80 ^{-0.1} _{-0.6}	68	122	240	R91	R63	151.5	50	412	475
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	Ø71	□210	Rc(PT)1	80 ^{-0.1} _{-0.6}	74	137	253	R103	R71	156	55	445	516
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	Ø80	□235	Rc(PT)1/4	100 ^{-0.1} _{-0.6}	75	150	275	R100	R80	172	55	480	560
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø115	85	M80X2	Ø90	Ø90	□262	Rc(PT)1/2	125 ^{-0.1} _{-0.6}	85	170	301	R115	R90	185	55	526	616
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	Ø100	□325	Rc(PT)2	125 ^{-0.1} _{-0.6}	106	185	346	R125	R100	200	65	596	696

Dimensions-Double Clevis (CB)

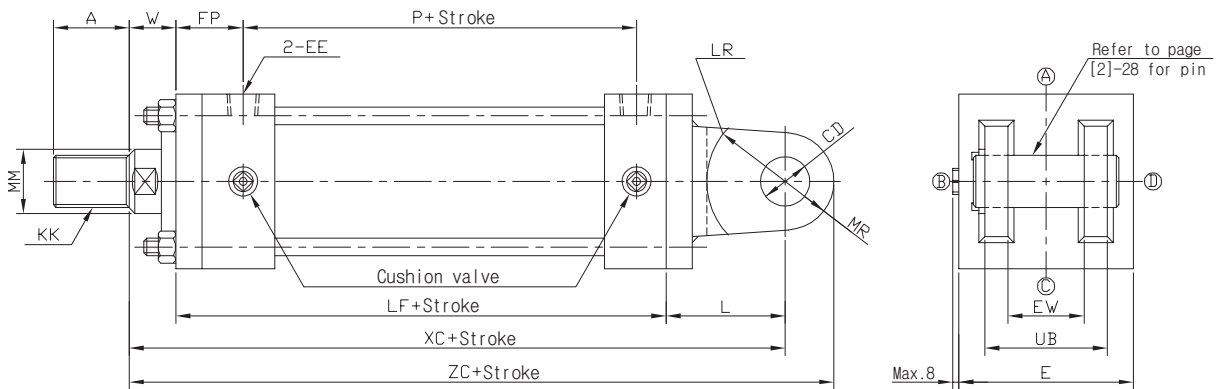
70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.



Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	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

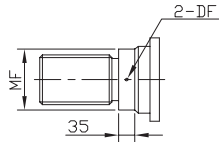
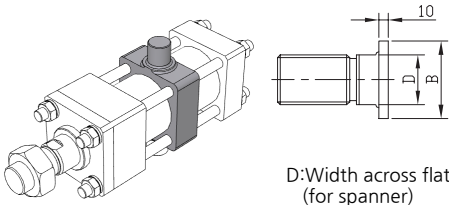
Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

Bore size	B Rod type					C Rod 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														
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	Ø16	□58	Rc(PT)3/8	25 ^{+0.4} _{+0.1}	38	38	141	R20	R16	90	50	30	209	225
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	Ø16	□65	Rc(PT)3/8	25 ^{+0.4} _{+0.1}	38	38	141	R20	R16	90	50	30	209	225
Ø50	35	Ø45	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	Ø20	□76	Rc(PT)1/2	31.5 ^{+0.4} _{+0.1}	42	45	155	R25	R20	98	63.5	30	230	250
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø46	24	M24X1.5	Ø28	Ø31.5	□90	Rc(PT)1/2	40 ^{+0.4} _{+0.1}	46	63	163	R40	R31.5	102	80	35	261	292.5
Ø80	60	Ø65	41	M39X1.5	Ø45	45	Ø55	30	M30X1.5	Ø35	Ø31.5	□110	Rc(PT)3/4	40 ^{+0.4} _{+0.1}	56	72	184	R40	R31.5	110	80	35	291	322.5
Ø100	75	Ø80	50	M48X1.5	Ø55	60	Ø65	41	M39X1.5	Ø45	Ø40	□135	Rc(PT)3/4	50 ^{+0.4} _{+0.1}	58	84	192	R50	R40	116	100	40	316	356
Ø125	95	Ø95	65	M64X2	Ø70	75	Ø80	50	M48X1.5	Ø55	Ø50	□165	Rc(PT)1	63 ^{+0.4} _{+0.1}	67	100	220	R62	R50	130	126	45	365	415
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	Ø63	□185	Rc(PT)1	80 ^{+0.6} _{+0.1}	67	120	230	R79	R63	142.5	160	50	400	463
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	Ø63	□196	Rc(PT)1	80 ^{+0.6} _{+0.1}	68	122	240	R82	R63	151.5	160	50	412	475
Ø160	120	Ø115	85	M80X2	Ø90	95	Ø95	65	M64X2	Ø70	Ø71	□210	Rc(PT)1	80 ^{+0.6} _{+0.1}	74	137	253	R89	R71	156	160	55	445	516
Ø180	140	Ø125	-	M95X2	Ø100	110	Ø105	75	M72X2	Ø80	Ø80	□235	Rc(PT)1 1/4	100 ^{+0.6} _{+0.1}	75	150	275	R100	R80	172	200	55	480	560
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø115	85	M80X2	Ø90	Ø90	□262	Rc(PT)1 1/2	125 ^{+0.6} _{+0.1}	85	170	301	R115	R90	185	251	55	526	616
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	Ø100	□325	Rc(PT)2	125 ^{+0.6} _{+0.1}	106	185	346	R125	R100	200	251	65	596	696

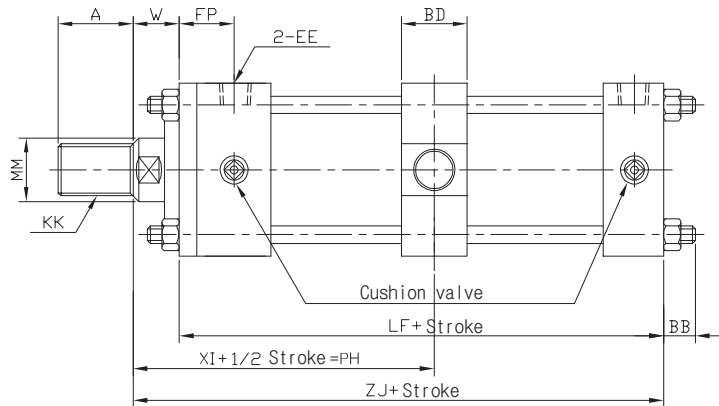
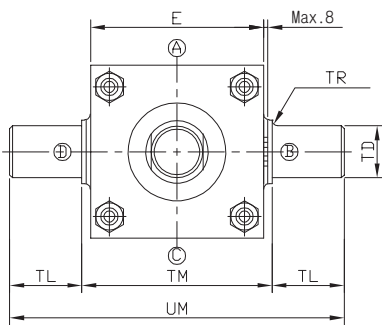
Dimensions-Center Trunnion (TC)

70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

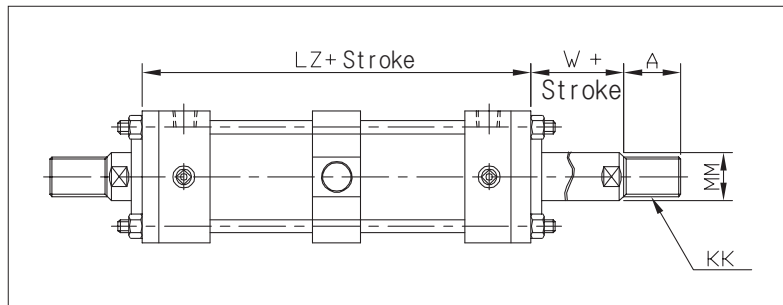


Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15

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



Double rod type (Ø32 ~ Ø160)



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

Cylinder cover fixing method according to stroke
Unit:mm

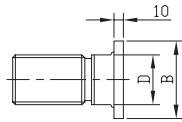
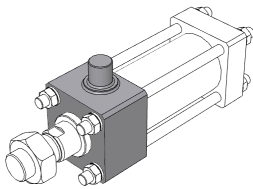
Bore size	~1500	1501~2000
Ø80~Ø250	Tie rod type	Tube flange type

Unit : mm

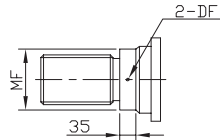
Bore size	B Rod type					C Rod type					BB	BD	E	EE	FP	LF	LZ	Min. PH	TD	TL	TM	TR	UM	W	XI	ZJ
	A	B	D	KK	MM	A	B	D	KK	MM																
Ø32	25	Ø34	16	M16X1.5	Ø18	-	-	-	-	-	14	28	□58	Rc(PT)3/8	38	141	166	105	Ø20	20	58 ⁰ _{-0.30}	2	98	30	113	171
Ø40	30	Ø40	21	M20X1.5	Ø22	25	Ø36	17	M16X1.5	Ø18	15	28	□65	Rc(PT)3/8	38	141	166	105	Ø20	20	69 ⁰ _{-0.30}	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	Ø25	25	85 ⁰ _{-0.35}	2.5	135	30	121	185
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø46	24	M24X1.5	Ø28	17	43	□90	Rc(PT)1/2	46	163	194	127.5	Ø31.5	31.5	98 ⁰ _{-0.35}	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	184	222	140.5	Ø31.5	31.5	118 ⁰ _{-0.35}	2.5	181	35	146	219
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	Ø40	40	145 ⁰ _{-0.40}	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	Ø50	50	175 ⁰ _{-0.40}	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	Ø63	63	195 ⁰ _{-0.46}	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	Ø63	63	206 ⁰ _{-0.46}	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	Ø71	71	218 ⁰ _{-0.46}	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	-	222	Ø80	80	243 ⁰ _{-0.46}	4	403	55	216	330
Ø200	150	Ø140	-	M100X2	Ø110	120	Ø115	85	M80X2	Ø90	40	108	□262	Rc(PT)1 1/2	85	301	-	241	Ø90	90	272 ⁰ _{-0.52}	5	452	55	232	356
Ø250	195	Ø170	-	M130X2	Ø140	150	Ø140	-	M100X2	Ø110	50	117	□325	Rc(PT)2	106	346	-	284.5	Ø100	100	335 ⁰ _{-0.57}	5	535	65	271	411

Dimensions-Rod Side Trunnion (TA)

70kgf/cm² · 140kgf/cm² ※ Shape varies depending on bore sizes.

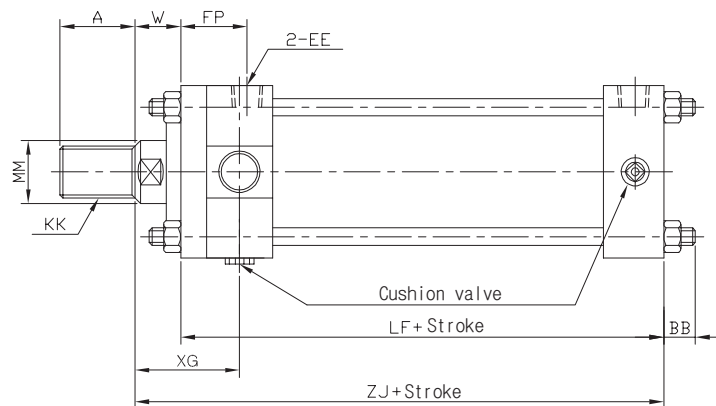
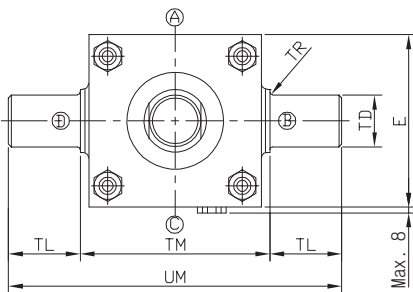


D:Width cross flat
(for spanner)

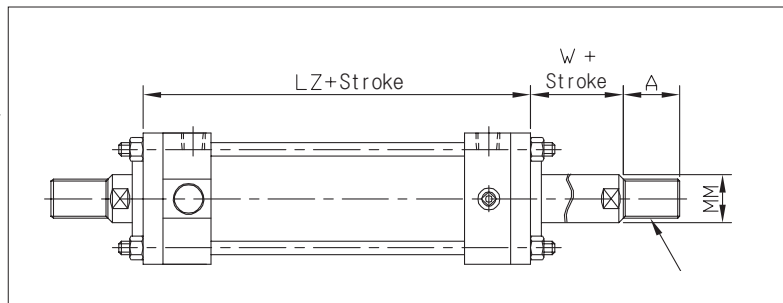


※ To the bore size of Ø100 a hole is placed with the width cross flat.

Bore size	MF	DF
Ø100	Ø97	Ø12
Ø110	Ø107	Ø15
Ø140	Ø137	Ø15



Double rod type (Ø32 ~ Ø160)



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

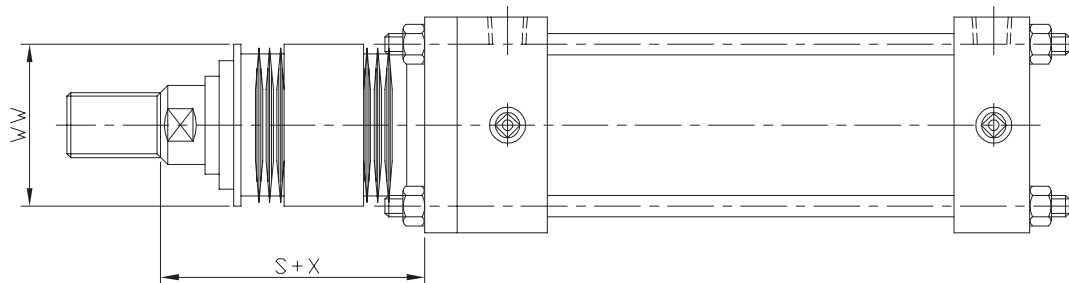
Cylinder cover fixing method according to stroke
Unit:mm

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

Unit : mm

Bore size	B Rod type					C Rod 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														
Ø32	25	Ø34	14	M16X1.5	Ø18	-	-	-	-	-	11	□58	Rc(PT)3/8	38	141	166	Ø20e9	20	58 ⁰ _{-0.7}	2	98	30	62	171
Ø40	30	Ø40	20	M20X1.5	Ø22	25	Ø36	16	M16X1.5	Ø18	15	□65	Rc(PT)3/8	38	141	166	Ø20e9	20	69 ⁰ _{-0.3}	2	109	30	62	171
Ø50	35	Ø46	24	M24X1.5	Ø28	30	Ø40	20	M20X1.5	Ø22	15	□76	Rc(PT)1/2	42	155	182	Ø25e9	25	85 ⁰ _{-0.35}	2.5	135	30	66	185
Ø63	45	Ø55	30	M30X1.5	Ø35	35	Ø46	24	M24X1.5	Ø28	17	□90	Rc(PT)1/2	46	163	194	Ø31.5e9	31.5	98 ⁰ _{-0.35}	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	184	222	Ø31.5e9	31.5	118 ⁰ _{-0.35}	2.5	181	35	82	219
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 ⁰ _{-0.4}	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 ⁰ _{-0.46}	3	275	45	103	265
Ø140	110	Ø105	75	M72X2	Ø80	80	Ø85	60	M56X2	Ø65	35	□185	Rc(PT)1	69	230	276	Ø63e9	63	195 ⁰ _{-0.46}	4	321	50	112	280
Ø150	115	Ø110	80	M76X2	Ø85	85	Ø90	60	M60X2	Ø65	35	□196	Rc(PT)1	71	240	288	Ø63e9	63	206 ⁰ _{-0.46}	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 ⁰ _{-0.46}	4	360	55	126	308

Dimensions-Bellows Attached Type (J, K)

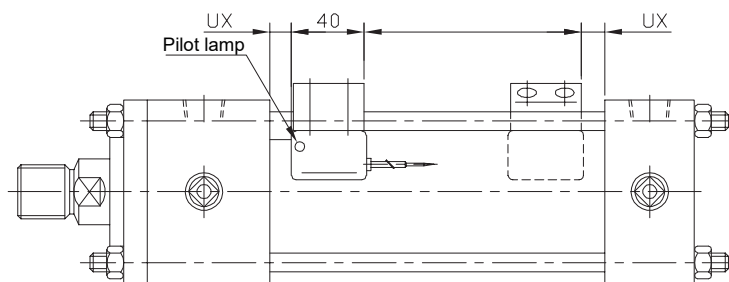
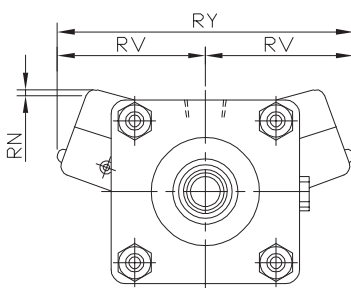


Type	J	K
Material	Nylon Tarpaulin	Neoprene Cloth
Temperature	60°C	110°C

Bore size	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø150	Ø160	Ø180	Ø200	Ø250	
X	40	45	45	55	55	55	65	65	65	65	65	65	80	
WW	B type	40	50	63	71	80	100	125	140	140	140	160	180	200
	C type	-	50	50	63	71	80	125	125	125	125	140	180	
S	1/3× stroke	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 KP140H 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

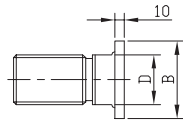
※ For more information, refer to Auto Switch Catalogue.

Bore size	RN	RY	RV	UX
Ø32	3	99	49.5	28
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

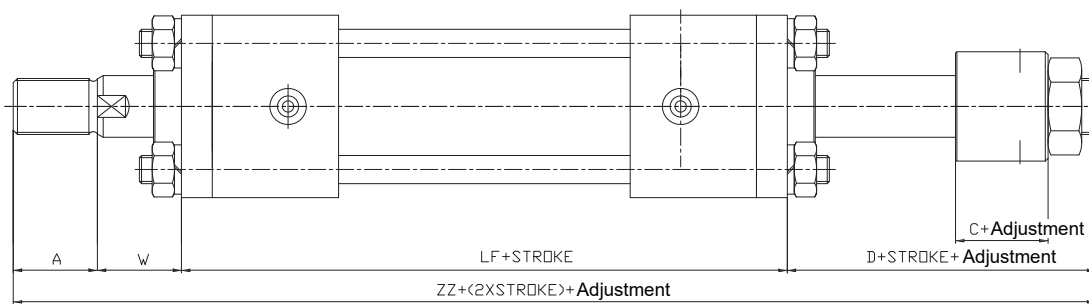
- ※ Tube material : SUS
- ※ Magnet: Metal magnet

Dimensions - Adjustable Stroke Type (SJ)

70kgf/cm² · 140kgf/cm²



D:Width cross flat
(for spanner)



Unit : mm

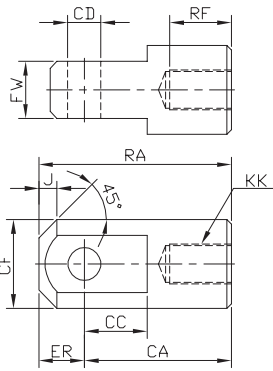
Bore size	B Rod type					
	A	C	D	LF	W	ZZ
Ø40	30	33	60	166	30	286
Ø50	35	35	65	182	30	312
Ø63	45	54	80	194	35	354
Ø80	60	59	90	222	35	407
Ø100	75	70	105	232	40	452
Ø125	95	84	130	264	45	534

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

Dimensions-Accessory

Unit : mm

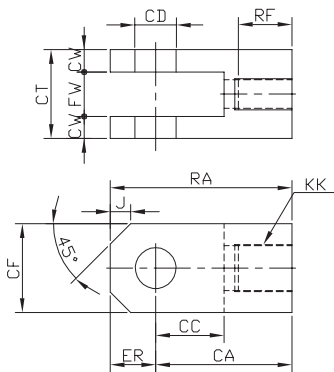
Single Knuckle Joint (I)



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

Unit : mm

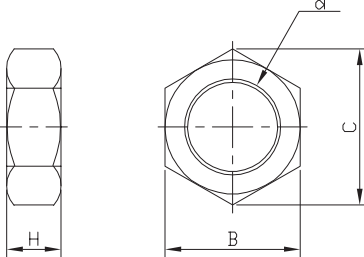
Double Knuckle Joint (Y)



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.)32B	-	60	27	Ø16 ^{H10} _B	32	50	12.5	16	25 ^{+0.4} _{+0.1}	8	M16×1.5	-	76	27	-
Y(Hyd.)40B	Y(Hyd.)40C	60	27	Ø16 ^{H10} _B	32	50	12.5	16	25 ^{+0.4} _{+0.1}	8	M20×1.5	M16×1.5	76	32	27
Y(Hyd.)50B	Y(Hyd.)50C	70	32	Ø20 ^{H10} _B	40	63.5	16	20	31.5 ^{+0.4} _{+0.1}	10	M24×1.5	M20×1.5	90	37	32
Y(Hyd.)63B	Y(Hyd.)63C	115	50	Ø31.5 ^{H10} _B	60	80	20	30	40 ^{+0.4} _{+0.1}	15	M30×1.5	M24×1.5	145	47	37
Y(Hyd.)80B	Y(Hyd.)80C	115	50	Ø31.5 ^{H10} _B	60	80	20	30	40 ^{+0.4} _{+0.1}	15	M39×1.5	M30×1.5	145	62	47
Y(Hyd.)100B	Y(Hyd.)100C	145	60	Ø40 ^{H10} _B	80	100	25	40	50 ^{+0.4} _{+0.1}	20	M48×1.5	M39×1.5	185	77	62
Y(Hyd.)125B	Y(Hyd.)125C	180	70	Ø50 ^{H10} _B	100	126	31.5	50	63 ^{+0.4} _{+0.1}	30	M64×2	M48×1.5	230	97	77
Y(Hyd.)140B	Y(Hyd.)140C	225	90	Ø63 ^{H10} _B	120	160	40	65	80 ^{+0.6} _{+0.1}	30	M72×2	M56×2	290	112	82
Y(Hyd.)150B	Y(Hyd.)150C	225	90	Ø63 ^{H10} _B	120	160	40	65	80 ^{+0.6} _{+0.1}	30	M76×2	M60×2	290	117	87
Y(Hyd.)160B	Y(Hyd.)160C	240	100	Ø71 ^{H10} _B	140	160	40	70	80 ^{+0.6} _{+0.1}	40	M80×2	M64×2	310	122	97

Unit : mm

Rod End Nut



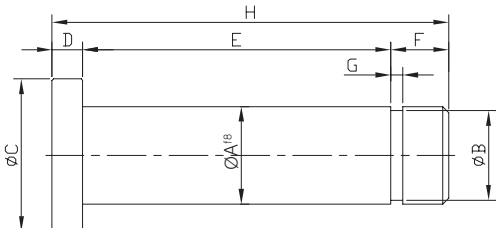
※ For rod end nut attached type, longer thread length (dimension A) is required.

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.)32B	-	M16×1.5	22	25.4	10	-	-	-	-
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

※ For cylinder Ø140 or more, use the round nut.

Unit : mm

Knuckle Joint Pin / Clevis Pin



Part no.		A	B	C	D	E	F	G	H
Clevis pin	Knuckle joint pin								
CB PIN(Hyd.)32	Y PIN(Hyd.)32	16	15.2 ⁰ _{-0.11}	25	5	50.5	6.5	2	65
CB PIN(Hyd.)40	Y PIN(Hyd.)40	16	15.2 ⁰ _{-0.11}	25	5	50.5	9.5	2	65
CB PIN(Hyd.)50	Y PIN(Hyd.)50	20	19 ⁰ _{-0.21}	30	5	64	10	2	79
CB PIN(Hyd.)63	Y PIN(Hyd.)63	31.5	30 ⁰ _{+0.25}	40	5	80.5	9.5	2.5	95
CB PIN(Hyd.)80	Y PIN(Hyd.)80	31.5	30 ⁰ _{+0.25}	40	5	80.5	9.5	2.5	95
CB PIN(Hyd.)100	Y PIN(Hyd.)100	40	38 ⁰ _{+0.25}	50	5	100.5	9.5	2.5	115
CB PIN(Hyd.)125	Y PIN(Hyd.)125	50	47 ⁰ _{+0.25}	60	5	126.5	9.5	3	141
CB PIN(Hyd.)140	Y PIN(Hyd.)140	63	60 ⁰ _{+0.3}	70	10	161	9	3	180
CB PIN(Hyd.)150	Y PIN(Hyd.)150	63	60 ⁰ _{+0.3}	70	10	161	9	3	180
CB PIN(Hyd.)160	Y PIN(Hyd.)160	71	68 ⁰ _{+0.3}	80	10	161	9	3	180