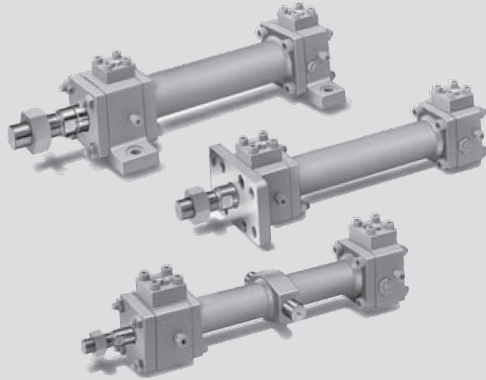


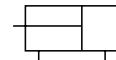
KPC140HT series



Features

- Heavy machinery (Mill type)
- Double acting hydraulic cylinder for 70kgf/cm² or 140kgf/cm² with bore sizes from Ø40 to Ø250.
- Heavy-duty type resistant to surge pressure, vibration and impact.
- Various mounting styles. (SD, LA, FA, FB, CA, TC)

Symbol



Double Acting / Single Rod

How to Order

KPC140HT - SD 40 A - B 300 A B

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

① Series

KPC140H	Single rod	140kgf/cm ²
---------	------------	------------------------

② Seal material

Nil	Nitrile urethane
1	Nitrile rubber
2	Fluoric rubber

③ Mounting style

SD	Standard
LA	Axial angle of foot
FA	Rod side flange
FB	Head side flange
CA	Single clevis
TC	Center trunnion

④ Bore size ⑤ Rod type

Bore size	A	B
40	Ø40	Ø28
50	Ø50	Ø35
63	Ø63	Ø45
80	Ø80	Ø55
100	Ø100	Ø70
125	Ø125	Ø90
140	Ø140	Ø100
160	Ø160	Ø110
180	Ø180	Ø125
200	Ø200	Ø140
224	Ø224	Ø160
250	Ø250	Ø180

⑥ Cushion

N	Without cushion
B	Cushions on both ends
R	Rod side cushion
H	Head side cushion

⑦ Cylinder stroke

All mounting styles accept TC mounting type		TC mounting style	
Bore size	Max. stroke	Bore size	Max. stroke
Ø40~Ø63	0~2000	Ø40~Ø80	101~2000
Ø80~Ø160	51~2000	Ø100, Ø125	151~2000
Ø180~Ø250	101~2000	Ø140~Ø200	201~2000
		Ø224, Ø250	251~2000

* Contact us for longer stroke.

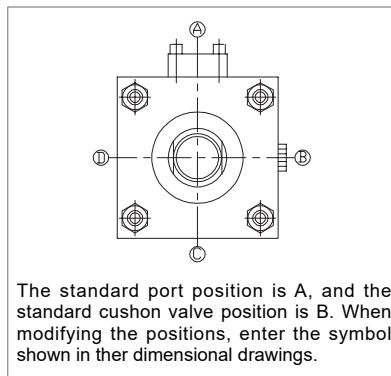
* Check buckling, it varies depending on mounting style.

⑧ Port position

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

⑨ Cushion valve position

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



⑩ Bellows

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

⑪ Rod end attachment type

Nil	None
I	Single knuckle joint
Y	Double knuckle joint

⑫ Rod end thread type

Nil	Type 1 (Standard)	
2	Type 2	

* The rod end thread of type 2 is longer than that of type 1 and has a lock nut.

⑬ Port type

Nil	Type X (Standard)	
		Weld flange
Y	Type Y	
		Thread flange
Z	Type Z	
		Cover screw

* The cylinder with type X port will be provided if the customer does not specify the port type.



Specifications

Type		KPC70HT	KPC140HT	
Bore size		Ø40, Ø50, Ø63, Ø80, Ø100, Ø125, Ø140, Ø160, Ø200, Ø224, Ø250		
Operating pressure		70kgf/cm ² (7.1MPa)	140kgf/cm ² (14.3MPa)	
Max. operating pressure		140kgf/cm ² (14.3MPa)	230kgf/cm ² (23.5MPa)	
Proof pressure		170kgf/cm ² (17.3MPa)	280kgf/cm ² (28.6MPa)	
Min. operating pressure	Ø40~Ø140	3kgf/cm ² (0.31MPa)		
	Ø160~Ø250	5kgf/cm ² (0.51MPa)		
Operating piston speed	Ø40~Ø140	10~500mm/sec		
	Ø160~Ø250	20~500mm/sec		
Ambient & fluid temperature		-10 ~ 80 °C (No freezing)		
Cushion		Metal pressure reducing type		
Working oil		Petroleum-based fluid		
Tolerance of thread		KS class 2		
Tolerance of stroke		≤100mm ^{+0.8} ₀	≤101~250mm ^{+1.0} ₀	≤251~630mm ^{+1.25} ₀
		≤631~1000mm ^{+1.4} ₀	≤1001~1600mm ^{+1.6} ₀	≤1601~2000mm ^{+1.8} ₀
Mounting style		SD, LA, FA, FB, CA, TC		
Accessory	Bellows	J : Nylon Tarpaulin, K : Neoprene Cloth		
	Rod end attachment	Single knuckle joint (I-type), Double knuckle joint (Y-type)		
	Other	Rod end nut		

* Operating pressure: Max. allowable setting pressure for a relief valve while cylinder is operating.
* The minimum working pressure does not apply to the cushion area.

Cushion Length

Unit:mm

Bore size	Ø40 ~ Ø50	Ø63 ~ Ø160	Ø180 ~ Ø224	Ø250
Cushion length	20	25	30	35

* Cushion is not applied to the following type.
A type bore size: Ø40, Ø50, Ø63 rod side
B type bore size: Ø40 rod side

Mass

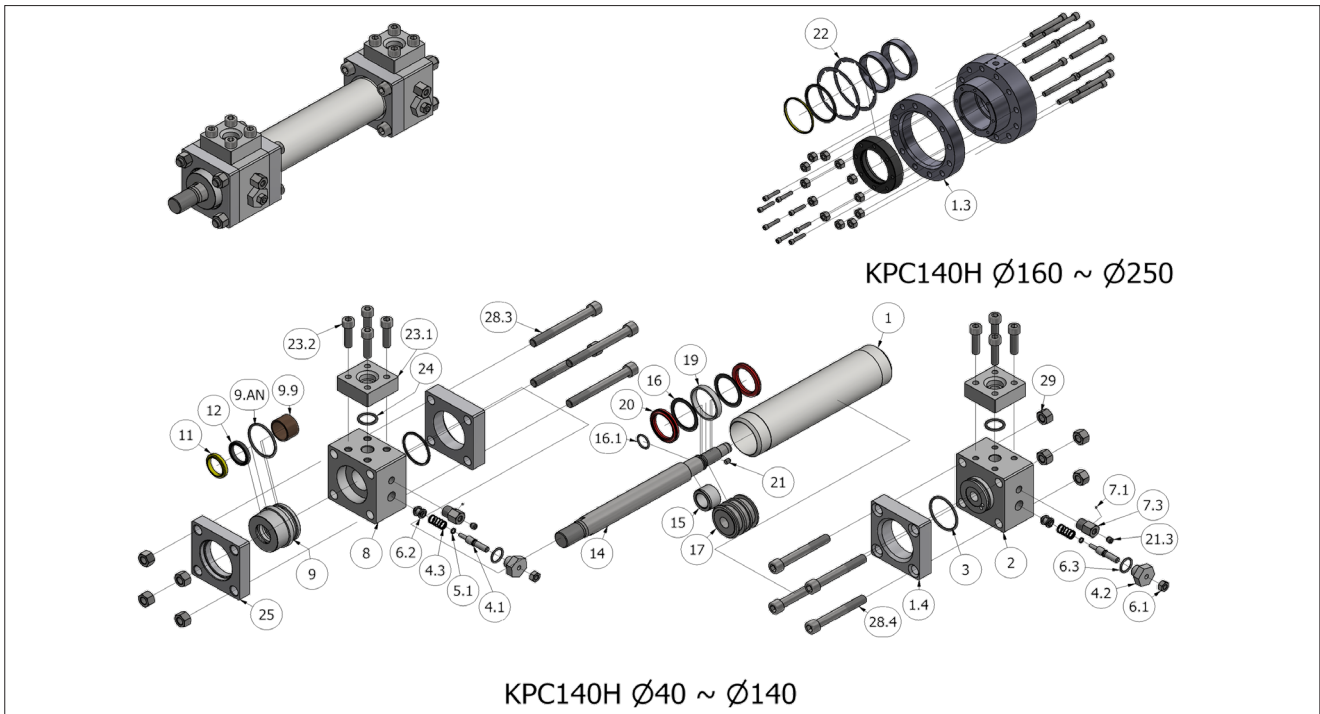
Unit : kg

Bore size	Rod type	Basic mass (SD)	Mass of mounting					Accessory		Lock nut	Additional mass per each 1mm of stroke
			LA	FA	FB	CA	TC	Single knuckle Joint	Double knuckle Joint		
Ø40	A	10.55	1.29	0.49	1.55	1.35	0.75	0.99	1.14	0.11	0.0103
	B	10.5						1.05	1.08	0.04	0.0086
Ø50	A	13.15	1.46	1.25	2.61	1.99	0.85	1.27	1.81	0.22	0.0146
	B	13.14						1.40	1.63	0.11	0.0116
Ø63	A	20.57	1.90	1.99	4.10	3.29	1.55	2.29	3.63	0.47	0.0209
	B	20.35						2.57	3.23	0.22	0.0162
Ø80	A	34.07	2.85	1.98	5.61	6.00	2.66	4.61	6.21	0.92	0.0332
	B	33.76						5.06	5.71	0.47	0.0264
Ø100	A	57.15	4.33	3.35	9.99	11.16	6.09	8.95	11.73	1.85	0.0524
	B	55.76						10.21	11.43	0.92	0.0406
Ø125	A	96.9	7.58	7.24	18.13	21.33	10.42	18.36	25.70	3.24	0.0832
	B	94.15						16.01	23.64	1.85	0.0644
Ø140	A	126.47	9.18	10.76	25.21	28.52	14.62	27.40	32.88	5.2	0.1087
	B	121.52						22.51	31.08	2.49	0.0865
Ø160	A	163.55	10.46	34.72	35.77	42.12	18.43	39.88	48.48	6.07	0.1305
	B	147.52		37.71				33.76	39.01	3.24	0.1031
Ø180	A	236.58	13.44	44.11	48.91	64.77	26.11	65.06	78.86	10.55	0.1925
	B	212.05		48.27				54.20	72.24	5.2	0.1579
Ø200	A	322.46	19.34	57.84	63.87	77.88	36.88	82.0	94.55	14.57	0.2347
	B	295.01		63.67				68.93	87.11	6.07	0.1912
Ø224	A	412.07	24.17	75.01	88.56	108.49	47.92	114.7	138.05	22.24	0.2893
	B	373.86		82.74				98.66	129.54	10.55	0.2278
Ø250	A	549.29	28.41	103.85	114.40	152.91	66.34	166.9	189.96	32.20	0.3638
	B	487.94		111.27				136.4	175.95	14.57	0.2848

Calculation:

Ex.) KPC70H-FA200A-N300
Basic mass: 322.46
Additional mass: 0.2347
Cylinder stroke: 200mm / FA type: 57.84
322.46+57.84+(0.2347 X 200) = 450.71kg

Structure



Part List

Part no.	Parts	Material	Quantity	Part no.	Parts	Material	Quantity	Part no.	Parts	Material	Quantity
1	TUBE	STKM13	1	7.1	STEEL BALL	SUJ2	2	21	SET SCREW	SCM435	1
1.3	ROD FLANGE	SS41	1	7.3	AIRVENT PLUG	SS41	2	21.3	SET SCREW	SCM435	2
1.4	TUBE FLANGE	SS400	2	8	ROD COVER	SS400	1	22	SHIN	SS41	2
2	HEAD COVER	SS400	1	9	BUSH(B)	SM45C	1	23.1	PORT FLANGE	SS400	2
4.1	VLAVE SPOOL	SM45C	2	14	ROD(B)	SMC45C	1	23.2	SOCKET BOLT	SCM435	8
4.2	VALVE NEEDLE	SM45C	2	15	CUSHION RING	FC25	1	28.3	SOCKET BOLT	SCM435	4
4.3	SPRING	PW-1	2	17	PISTON(B)	SM45C	1	28.4	SOCKET BOLT	SCM435	4
6.1	HEX NUT	SM45C	2	19	WEAR RING	PTFE	1	29	HEX NUT	SM45C	8
6.2	VALVE GUIDE	SM45C	2								

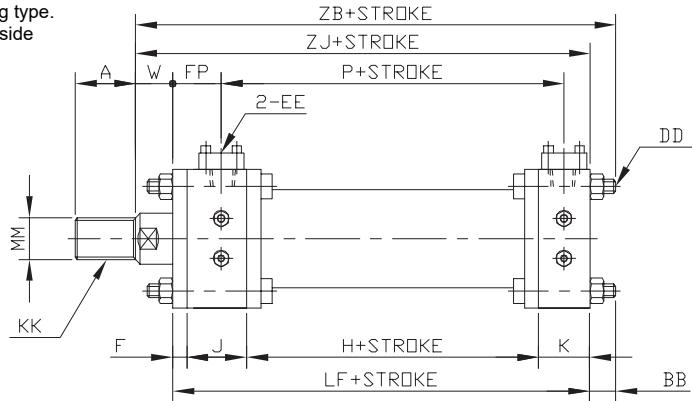
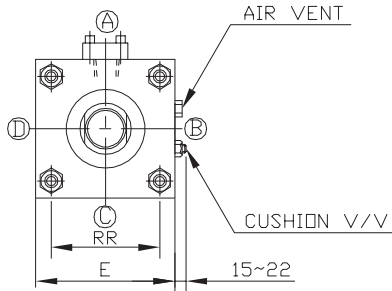
Packing List

Part no.	3	5.1	6.3	9.AN	11	12	16	16.1	20	24	22				
Parts	T/O-RING	BACK UP RING	O-RING	O-RING	DUST SEAL	R/PACKING	BACK UP RING	R/O-RING	P/PACKING	P/O-RING	V-PACKING				
Type	A/B	A/B	A/B	A/B	A type B type	A type B type	A/B	A type B type	A/B	A/B	A type B type				
Material	NBR	PTFE	PTFE	NBR	URETHANE	URETHANE	PTFE	NBR	URETHANE	NBR	NBR				
Quantity	2	2	2	1	1	1	2	2	1	2	1				
Bore size															
Ø40	1B-G35	1B-P7	1B-P18	1B-G40	1B-LBI28	1B-LBI22	1B-IAI28	1B-ISI22	40X30X1.25t	1B-P18	1B-P14	40x30x6	1B-G25	-	-
Ø50	1B-G45	1B-P7	1B-P18	1B-G50	1B-LBI35	1B-LBI28	1B-ISI35	1B-ISI28	50X40X1.25t	1B-P22A	1B-P18	50x40x6	1B-G25	-	-
Ø63	1B-G58	-	-	-	1B-LBI45	1B-LBI35	1B-ISI45	1B-ISI35	-	1B-P29.5	1B-P22A	63x53x6	1B-G25	-	-
Ø80	1B-G75	-	-	-	1B-LBI55	1B-LBI45	1B-ISI55	1B-ISI45	-	1B-G40	1B-P29.5	80x65x9	1B-G30	-	-
Ø100	1B-G95	-	-	-	1B-LBI70	1B-LBI55	1B-ISI70	1B-ISI55	-	1B-G50	1B-G40	100x85x9	1B-G30	-	-
Ø125	1B-G120	-	-	-	1B-LBI90	1B-LBI70	1B-ISI90	1B-ISI70	-	1B-G65	1B-G50	125x100x9	1B-G35	-	-
Ø140	1B-G135	-	-	-	1B-LBI100	1B-LBI80	1B-ISI100	1B-ISI80	-	1B-G75	1B-G65	140x125x9	1B-G35	-	-
Ø160	1B-G150	-	-	-	1B-LBI110	1B-LBI90	1B-ISI110	1B-ISI90	-	1B-G85	1B-G75	160x140x12	1B-G35	Ø110	Ø90
Ø180	1B-G170	-	-	-	1B-LBI125	1B-LBI100	1B-ISI125	1B-ISI100	-	1B-G95	1B-G85	180x160x12	1B-G40	Ø125	Ø100
Ø200	1B-G190	-	-	-	1B-LBI140	1B-LBI112	1B-ISI140	1B-ISI112	-	1B-G107	1B-G95	200x180x12	1B-G50	Ø140	Ø112
Ø224	1B-G214	-	-	-	1B-SDR160	1B-LBI125	1B-ISI160	1B-ISI125	-	1B-G120	1B-G107	224x204x12	1B-G50	Ø160	Ø125
Ø250	1B-G240	-	-	-	1B-LBI160	1B-LBI140	1B-ISI180	1B-ISI140	-	1B-G135	1B-G120	250x230x12	1B-G60	Ø180	Ø140

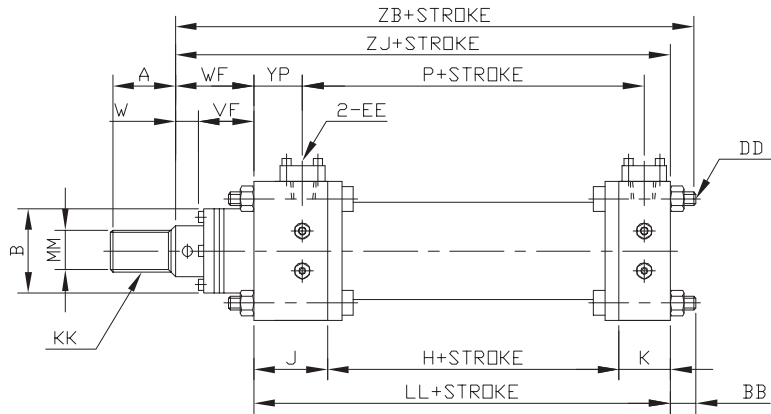
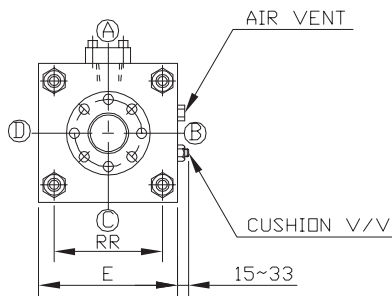
Dimensions-Standard (SD)

Ø40 ~ Ø140

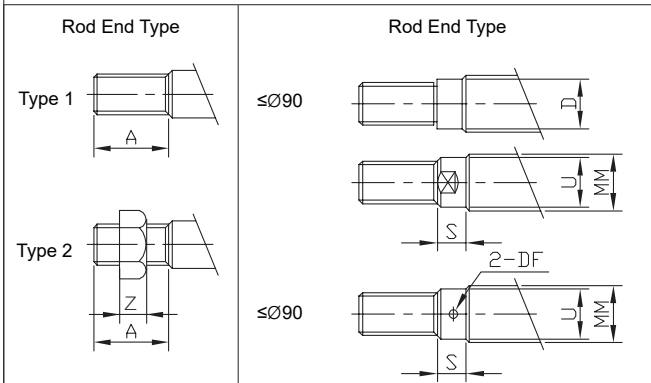
*Cushion is not applied to the following type.
A type bore size: Ø40, Ø50, Ø63 rod side
B type bore size: Ø40 rod side



Ø160 ~ Ø250



Unit : mm



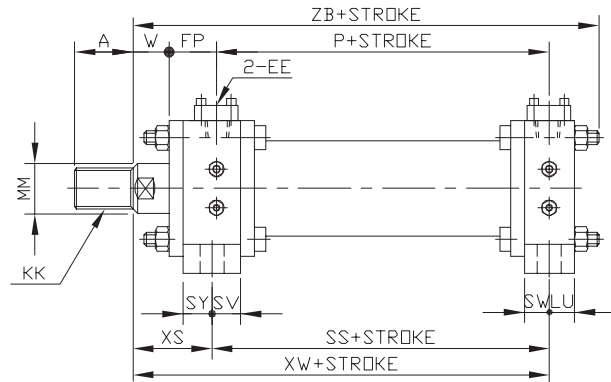
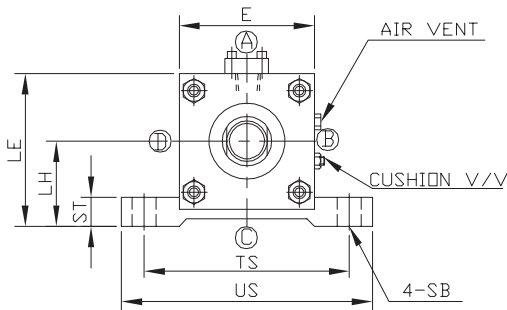
Bore size	A type rod					B type rod				
	D	DF	MM	S	U	D	DF	MM	S	U
Ø40	24	-	Ø28	-	-	19	-	Ø22	-	-
Ø50	30	-	Ø35	-	-	24	-	Ø28	-	-
Ø63	41	-	Ø45	25	Ø44	30	-	Ø35	25	Ø34
Ø80	50	-	Ø55	28	Ø54	41	-	Ø45	28	Ø44
Ø100	65	-	Ø70	34	Ø69	50	-	Ø55	34	Ø54
Ø125	85	-	Ø90	39	Ø89	65	-	Ø70	39	Ø69
Ø140	-	Ø12	Ø100	35	Ø99	75	-	Ø80	40	Ø79
Ø160	-	Ø15	Ø110	30	Ø109	85	-	Ø90	30	Ø89
Ø180	-	Ø15	Ø125	35	Ø124	-	Ø12	Ø100	35	Ø99
Ø200	-	Ø15	Ø140	33	Ø139	-	Ø15	Ø110	33	Ø109
Ø224	-	Ø15	Ø160	35	Ø159	-	Ø15	Ø125	35	Ø124
Ø250	-	Ø15	Ø180	35	Ø179	-	Ø15	Ø140	35	Ø139

Unit : mm

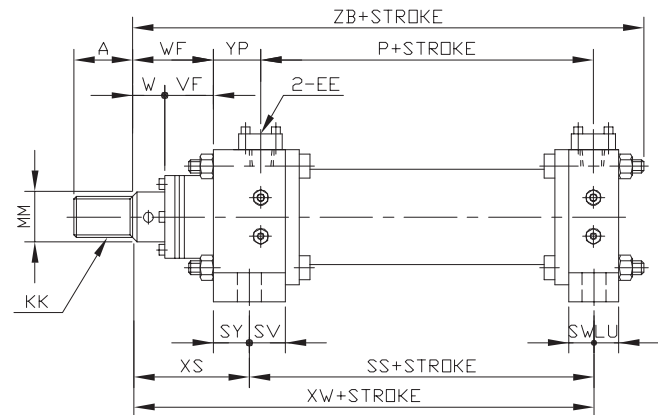
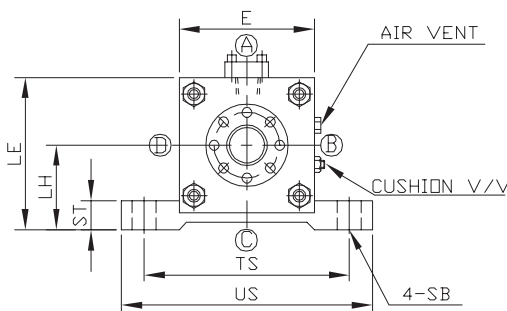
Bore size	A type rod					B type rod					BB	DD	E	EE	F	FP	H	J	K	LF	LL	P	RR	VF	W	WF	YP	ZB	ZJ
	A		KK	Z	A		B	KK	Z																				
	Typ.1	Typ.2			Typ.1	Typ.2																							
Ø40	35	55	-	M24X1.5	19	30	45	-	M20X1.5	16	11	M10X1.5	Ø80	SSA15	18	47	64	56	54	192	-	118	Ø60	-	29	-	-	232	221
Ø50	45	65	-	M30X1.5	24	35	55	-	M24X1.5	19	16	M12X1.75	Ø90	SSA15	18	47	68	56	54	196	-	122	Ø68	-	29	-	-	241	225
Ø63	60	85	-	M39X1.5	31	45	65	-	M30X1.5	24	14	M14X2	Ø110	SSA15	20	61	87	68	54	229	-	141	Ø80	-	40	-	-	283	269
Ø80	75	105	-	M48X1.5	38	60	85	-	M39X1.5	31	16	M16X2	Ø127	SSA20	26	70	97	73	58	254	-	155	Ø98	-	33	-	-	303	287
Ø100	95	140	-	M64X2	51	75	105	-	M48X1.5	38	19	M20X2.5	Ø154	SSA20	31	87	96	85	58	270	-	154	Ø120	-	39	-	-	328	309
Ø125	120	175	-	M80X2	64	95	140	-	M64X2	51	22	M24X2	Ø188	SSA25	36	105	106	103	68	313	-	174	Ø144	-	44	-	-	379	357
Ø140	140	210	-	M95X2	76	110	160	-	M72X2	58	26	M27X2	Ø212	SSA25	36	105	116	103	68	323	-	184	Ø162	-	49	-	-	398	372
Ø160	150	220	Ø191	M100X2	80	120	175	162	M80X2	64	28	M30X2	Ø238	SSA25	-	-	132	74	72	-	278	204	Ø184	92	35	127	38	433	405
Ø180	180	265	Ø208	M120X2	96	140	210	172	M95X2	76	30	M33X2	Ø272	SSA32	-	-	142	84	82	-	308	224	Ø214	92	40	132	43	470	440
Ø200	195	285	Ø229	M130X2	104	150	220	191	M100X2	80	33	M36X2	Ø298	SSA40	-	-	152	102	102	-	356	254	Ø232	102	38	140	51	529	496
Ø224	225	330	Ø253	M150X2	120	180	265	208	M120X2	96	35	M39X2	Ø328	SSA40	-	-	162	102	102	-	366	264	Ø256	112	42	154	51	555	520
Ø250	255	375	Ø280	M170X3	136	195	285	229	M130X2	104	38	M42X2	Ø362	SSA40	-	-	172	111	102	-	385	274	Ø286	127	48	175	60	598	560

Dimensions-Axial Angle of Foot (LA)

Ø40 ~ Ø140

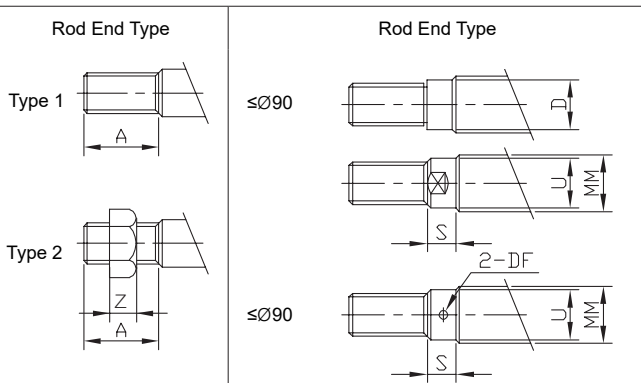


Ø160 ~ Ø250



※ Cushion is not applied to the following type.
A type bore size: Ø40, Ø50, Ø63 rod side
B type bore size: Ø40 rod side
※ For not shown dimensions, refer to SD type (standard type).

Unit : mm



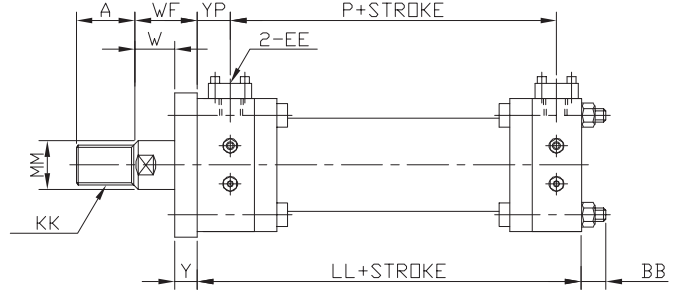
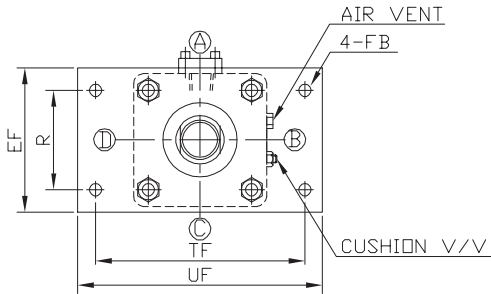
Bore size	A type rod					B type rod				
	D	DF	MM	S	U	D	DF	MM	S	U
Ø40	24	-	Ø28	-	-	19	-	Ø22	-	-
Ø50	30	-	Ø35	-	-	24	-	Ø28	-	-
Ø63	41	-	Ø45	25	Ø44	30	-	Ø35	25	Ø34
Ø80	50	-	Ø55	28	Ø54	41	-	Ø45	28	Ø44
Ø100	65	-	Ø70	34	Ø69	50	-	Ø55	34	Ø54
Ø125	85	-	Ø90	39	Ø89	65	-	Ø70	39	Ø69
Ø140	-	Ø12	Ø100	35	Ø99	75	-	Ø80	40	Ø79
Ø160	-	Ø15	Ø110	30	Ø109	85	-	Ø90	30	Ø89
Ø180	-	Ø15	Ø125	35	Ø124	-	Ø12	Ø100	35	Ø99
Ø200	-	Ø15	Ø140	33	Ø139	-	Ø15	Ø110	33	Ø109
Ø224	-	Ø15	Ø160	35	Ø159	-	Ø15	Ø125	35	Ø124
Ø250	-	Ø15	Ø180	35	Ø179	-	Ø15	Ø140	35	Ø139

Unit : mm

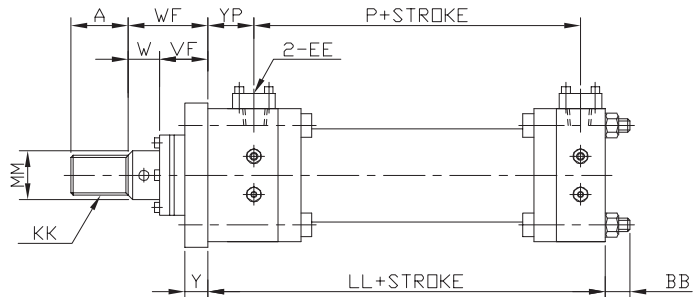
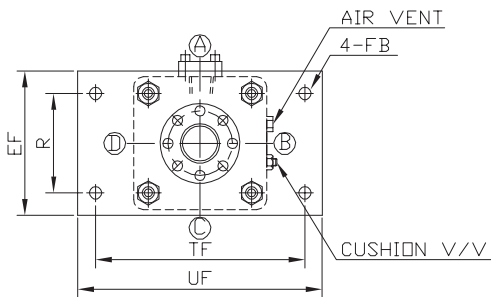
Bore size	A type rod			B type rod			E	EE	FP	LE	LH	LU	P	SB	SS	ST	SV	SW	SY	TS	US	VF	W	WF	XS	XW	YP	ZB		
	A		Z	A		Z																								
	Typ.1	Typ.2		Typ.1	Typ.2																									
Ø40	35	55	M24X1.5	19	30	45	M20X1.5	16	□80	SSA15	47	100	60±0.15	26	118	Ø14	120	20	28	28	28	125±0.5	155	-	29	-	75	195	-	232
Ø50	45	65	M30X1.5	24	35	55	M24X1.5	19	□90	SSA15	47	110	65±0.15	30	122	Ø16	120	20	28	24	28	140±0.5	175	-	29	-	75	195	-	241
Ø63	60	85	M39X1.5	31	45	65	M30X1.5	24	□110	SSA15	61	125	70±0.25	24	141	Ø18	150	25	33	30	35	155±0.5	190	-	40	-	95	145	-	283
Ø80	75	105	M48X1.5	38	60	85	M39X1.5	31	□127	SSA20	70	143.5	80±0.25	27	155	Ø20	165	30	37	31	36	180±0.5	220	-	33	-	95	260	-	303
Ø100	95	140	M64X2	51	75	105	M48X1.5	38	□154	SSA20	87	172	95±0.25	29	154	Ø24	165	35	40	29	45	220±0.5	265	-	39	-	115	280	-	328
Ø125	120	175	M80X2	64	95	140	M64X2	51	□188	SSA25	105	209	115±0.25	32	174	Ø30	195	40	53	36	50	275±0.8	330	-	44	-	130	325	-	379
Ø140	140	210	M95X2	76	110	160	M72X2	58	□212	SSA25	105	231	125±0.25	37	184	Ø33	200	45	53	31	50	305±0.8	365	-	49	-	135	335	-	398
Ø160	150	220	M100X2	80	120	175	M80X2	64	□238	SSA25	-	264	145±0.25	34	204	Ø36	206	55	36	38	38	340±0.8	405	92	35	127	165	371	38	433
Ø180	180	265	M120X2	96	140	210	M95X2	76	□272	SSA32	-	296	160±0.25	40	224	Ø39	225	60	41	42	43	375±0.8	445	92	40	132	175	400	43	470
Ø200	195	285	M130X2	104	150	220	M100X2	80	□298	SSA40	-	324	175±0.25	51	254	Ø42	250	65	47	51	55	410±0.8	485	102	38	140	195	445	51	529
Ø224	225	330	M150X2	120	180	265	M120X2	96	□328	SSA40	-	359	195±0.25	50	264	Ø48	265	70	51	52	51	460±0.8	545	112	42	154	205	470	51	555
Ø250	255	375	M170X3	136	195	285	M130X2	104	□362	SSA40	-	396	215±0.25	48	274	Ø52	282	75	56	54	55	500±0.8	590	127	48	175	230	512	60	598

Dimensions-Rod Side Flange (FA)

Ø40 ~ Ø140

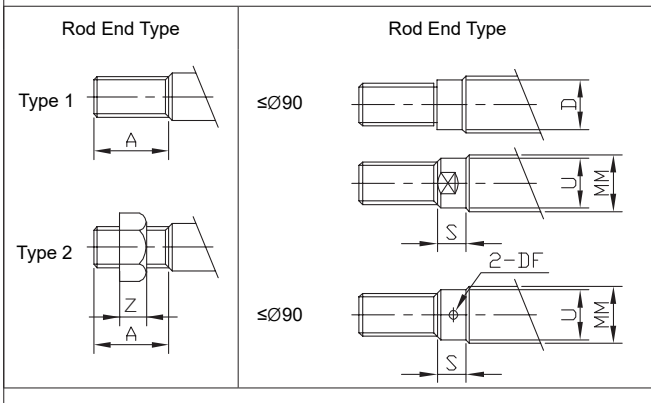


Ø160 ~ Ø250



※ Cushion is not applied to the following type.
A type bore size: Ø40, Ø50, Ø63 rod side
B type bore size: Ø40 rod side
※ For not shown dimensions, refer to SD type (standard type).

Unit : mm



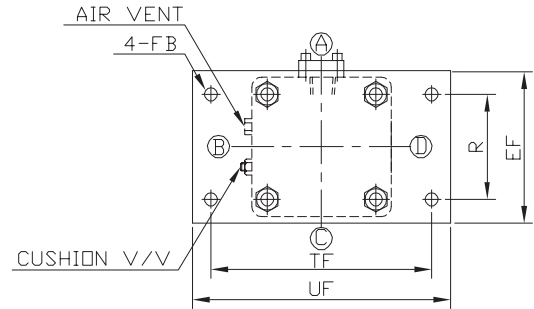
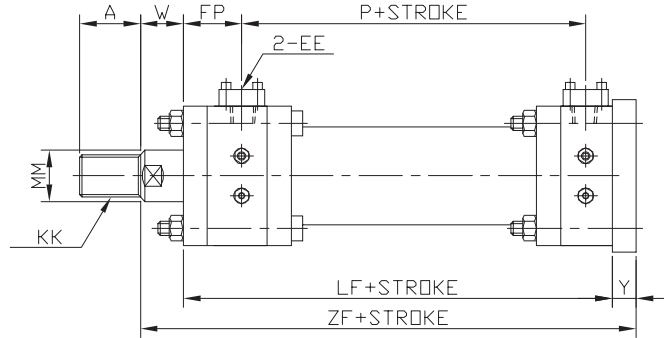
Bore size	A type rod					B type rod				
	D	DF	MM	S	U	D	DF	MM	S	U
Ø40	24	-	Ø28	-	-	19	-	Ø22	-	-
Ø50	30	-	Ø35	-	-	24	-	Ø28	-	-
Ø63	41	-	Ø45	25	Ø44	30	-	Ø35	25	Ø34
Ø80	50	-	Ø55	28	Ø54	41	-	Ø45	28	Ø44
Ø100	65	-	Ø70	34	Ø69	50	-	Ø55	34	Ø54
Ø125	85	-	Ø90	39	Ø89	65	-	Ø70	39	Ø69
Ø140	-	Ø12	Ø100	35	Ø99	75	-	Ø80	40	Ø79
Ø160	-	Ø15	Ø110	30	Ø109	85	-	Ø90	30	Ø89
Ø180	-	Ø15	Ø125	35	Ø124	-	Ø12	Ø100	35	Ø99
Ø200	-	Ø15	Ø140	33	Ø139	-	Ø15	Ø110	33	Ø109
Ø224	-	Ø15	Ø160	35	Ø159	-	Ø15	Ø125	35	Ø124
Ø250	-	Ø15	Ø180	35	Ø179	-	Ø15	Ø140	35	Ø139

Unit : mm

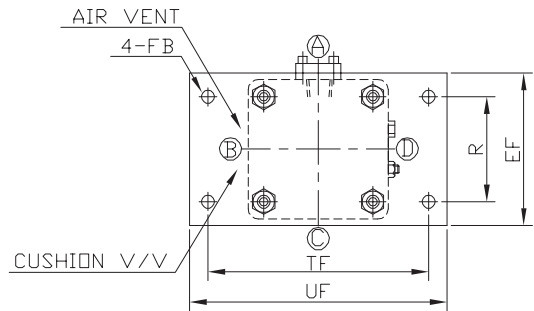
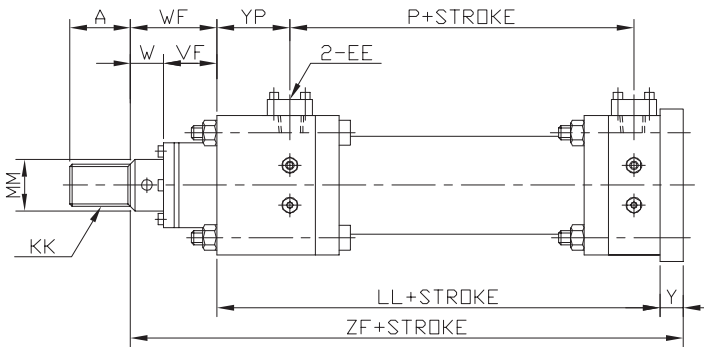
Bore size	A type rod				B type rod				BB	EE	EF	FB	LL	P	R	TF	UF	VF	W	WF	Y	YP
	A		KK	Z	A		KK	Z														
	Typ.1	Typ.2			Typ.1	Typ.2																
Ø40	35	55	M24X1.5	19	30	45	M20X1.5	16	11	SSA15	85	Ø14	174	118	55±0.3	125±0.5	155	-	29	-	15	-
Ø50	45	65	M30X1.5	24	35	55	M24X1.5	19	16	SSA15	95	Ø16	178	122	60±0.3	140±0.5	175	-	29	-	20	-
Ø63	60	85	M39X1.5	31	45	65	M30X1.5	24	14	SSA15	110	Ø18	209	141	75±0.5	155±0.5	190	-	40	-	25	-
Ø80	75	105	M48X1.5	38	60	85	M39X1.5	31	16	SSA20	130	Ø20	228	155	90±0.5	180±0.5	220	-	33	-	25	-
Ø100	95	140	M64X2	51	75	105	M48X1.5	38	19	SSA20	160	Ø24	239	154	115±0.5	220±0.5	265	-	39	-	30	-
Ø125	120	175	M80X2	64	95	140	M64X2	51	22	SSA25	200	Ø30	277	174	145±0.5	275±0.8	330	-	44	-	35	-
Ø140	140	210	M95X2	76	110	160	M72X2	58	26	SSA25	220	Ø33	287	184	160±0.5	305±0.8	365	-	49	-	40	-
Ø160	150	220	M100X2	80	120	175	M80X2	64	28	SSA25	330	Ø36	278	204	185±0.5	340±0.8	405	92	35	127	45	38
Ø180	180	265	M120X2	96	140	210	M95X2	76	30	SSA32	340	Ø39	308	224	210±0.5	375±0.8	445	92	40	132	50	43
Ø200	195	285	M130X2	104	150	220	M100X2	80	33	SSA40	380	Ø42	356	254	230±0.5	410±0.8	485	102	38	140	55	51
Ø224	225	330	M150X2	120	180	265	M120X2	96	35	SSA40	430	Ø48	366	264	255±0.8	460±0.8	545	112	42	154	60	51
Ø250	255	375	M170X3	136	195	285	M130X2	104	38	SSA40	465	Ø52	385	274	285±0.8	500±0.8	590	127	48	175	65	60

Dimensions-Head Side Flange (FB)

Ø40 ~ Ø140

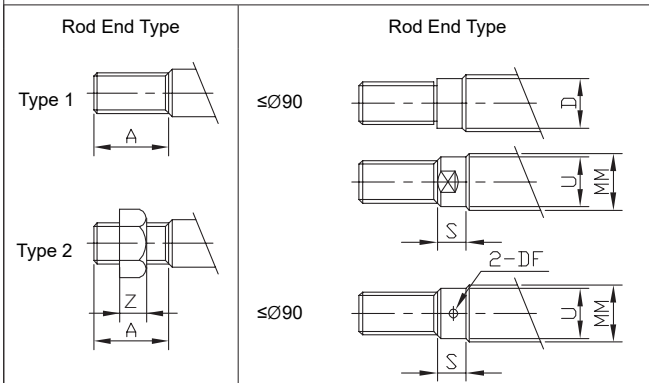


Ø160 ~ Ø250



- * Cushion is not applied to the following type.
A type bore size: Ø40, Ø50, Ø63 rod side
B type bore size: Ø40 rod side
- * For not shown dimensions, refer to SD type (standard type).

Unit : mm



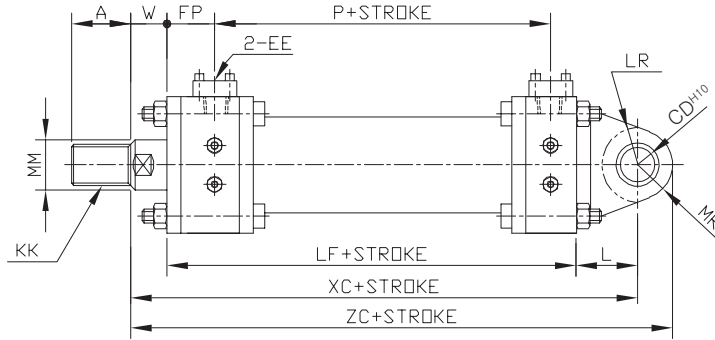
Bore size	A type rod					B type rod				
	D	DF	MM	S	U	D	DF	MM	S	U
Ø40	24	-	Ø28	-	-	19	-	Ø22	-	-
Ø50	30	-	Ø35	-	-	24	-	Ø28	-	-
Ø63	41	-	Ø45	25	Ø44	30	-	Ø35	25	Ø34.5
Ø80	50	-	Ø55	28	Ø55	41	-	Ø45	28	Ø44
Ø100	65	-	Ø70	34	Ø70	50	-	Ø55	34	Ø55
Ø125	85	-	Ø90	39	Ø89	65	-	Ø70	39	Ø70
Ø140	-	Ø12	Ø100	35	Ø99	75	-	Ø80	40	Ø79
Ø160	-	Ø15	Ø110	30	Ø111	85	-	Ø90	30	Ø89
Ø180	-	Ø15	Ø125	35	Ø124	-	Ø12	Ø100	35	Ø99
Ø200	-	Ø15	Ø140	33	Ø139	-	Ø15	Ø110	33	Ø111
Ø224	-	Ø15	Ø160	35	Ø159	-	Ø15	Ø125	35	Ø124
Ø250	-	Ø15	Ø180	35	Ø179	-	Ø15	Ø140	35	Ø139

Unit : mm

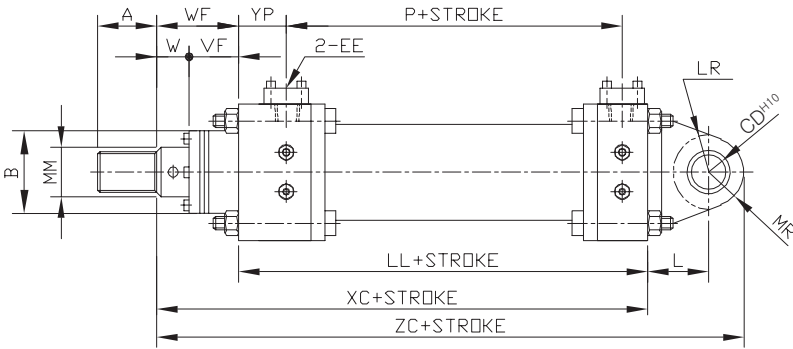
Bore size	A type rod			B type rod			EE	EF	FB	FP	LF	LL	P	R	TF	UF	VF	W	WF	Y	YP	ZF		
	A		KK	A		KK																		
	Typ.1	Typ.2		Typ.1	Typ.2																			
Ø40	35	55	M24X1.5	19	30	45	M20X1.5	16	SSA15	85	Ø14	47	192	-	118	55±0.3	125±0.5	155	-	29	-	15	-	233
Ø50	45	65	M30X1.5	24	35	55	M24X1.5	19	SSA15	95	Ø16	47	196	-	122	60±0.3	140±0.5	175	-	29	-	20	-	243
Ø63	60	85	M39X1.5	31	45	65	M30X1.5	24	SSA15	110	Ø18	61	229	-	141	75±0.5	155±0.5	190	-	40	-	25	-	299
Ø80	75	105	M48X1.5	38	60	85	M39X1.5	31	SSA20	130	Ø20	70	254	-	155	90±0.5	180±0.5	220	-	33	-	25	-	313
Ø100	95	140	M64X2	51	75	105	M48X1.5	38	SSA20	160	Ø24	87	270	-	154	115±0.5	220±0.5	265	-	39	-	30	-	399
Ø125	120	175	M80X2	64	95	140	M64X2	51	SSA25	200	Ø30	105	313	-	174	145±0.5	275±0.8	330	-	44	-	35	-	392
Ø140	140	210	M95X2	76	110	160	M72X2	58	SSA25	220	Ø33	105	323	-	184	160±0.5	305±0.8	365	-	49	-	40	-	412
Ø160	150	220	M100X2	80	120	175	M80X2	64	SSA25	330	Ø36	-	-	278	204	185±0.5	340±0.8	405	92	35	127	45	38	456
Ø180	180	265	M120X2	96	140	210	M95X2	76	SSA32	340	Ø39	-	-	308	224	210±0.5	375±0.8	445	92	40	132	50	43	496
Ø200	195	285	M130X2	104	150	220	M100X2	80	SSA40	380	Ø42	-	-	356	254	230±0.5	410±0.8	485	102	38	140	55	51	555
Ø224	225	330	M150X2	120	180	265	M120X2	96	SSA40	430	Ø48	-	-	366	264	255±0.8	460±0.8	545	112	42	154	60	51	584
Ø250	255	375	M170X3	136	195	285	M130X2	104	SSA40	465	Ø52	-	-	385	274	285±0.8	500±0.8	590	127	48	175	65	60	638

Dimensions-Single Clevis (CA)

Ø40 ~ Ø140

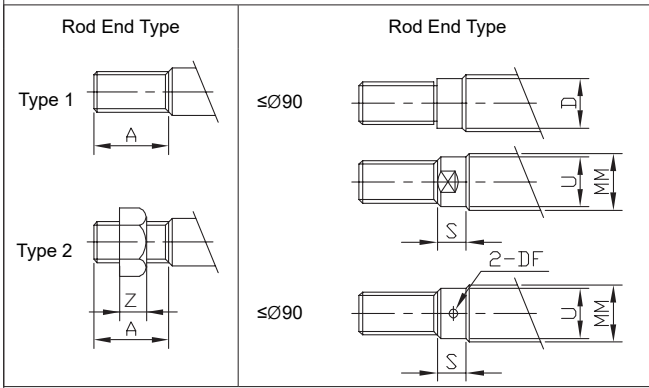


Ø160 ~ Ø250



- ※ Cushion is not applied to the following type.
A type bore size: Ø40, Ø50, Ø63 rod side
B type bore size: Ø40 rod side
- ※ For not shown dimensions, refer to SD type (standard type).

Unit : mm



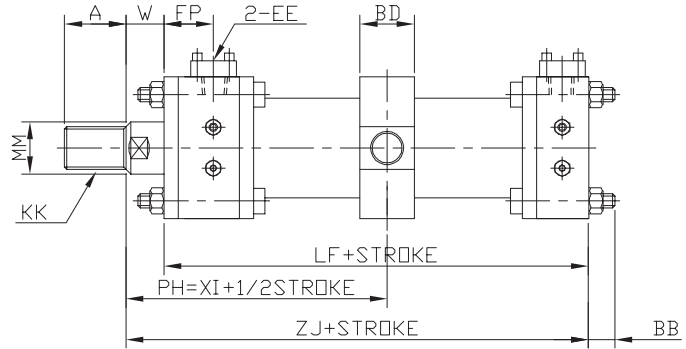
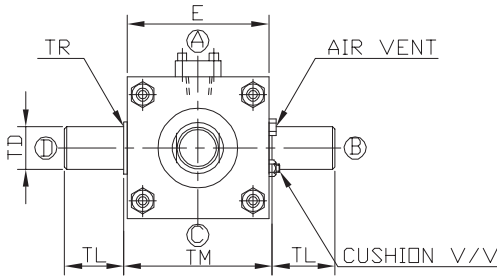
Bore size	A type rod					B type rod				
	D	DF	MM	S	U	D	DF	MM	S	U
Ø40	24	-	Ø28	-	-	19	-	Ø22	-	-
Ø50	30	-	Ø35	-	-	24	-	Ø28	-	-
Ø63	41	-	Ø45	25	Ø44	30	-	Ø35	25	Ø34
Ø80	50	-	Ø55	28	Ø54	41	-	Ø45	28	Ø44
Ø100	65	-	Ø70	34	Ø69	50	-	Ø55	34	Ø54
Ø125	85	-	Ø90	39	Ø89	65	-	Ø70	39	Ø69
Ø140	-	Ø12	Ø100	35	Ø99	75	-	Ø80	40	Ø79
Ø160	-	Ø15	Ø110	30	Ø109	85	-	Ø90	30	Ø89
Ø180	-	Ø15	Ø125	35	Ø124	-	Ø12	Ø100	35	Ø99
Ø200	-	Ø15	Ø140	33	Ø139	-	Ø15	Ø110	33	Ø109
Ø224	-	Ø15	Ø160	35	Ø159	-	Ø15	Ø125	35	Ø124
Ø250	-	Ø15	Ø180	35	Ø179	-	Ø15	Ø140	35	Ø139

Unit : mm

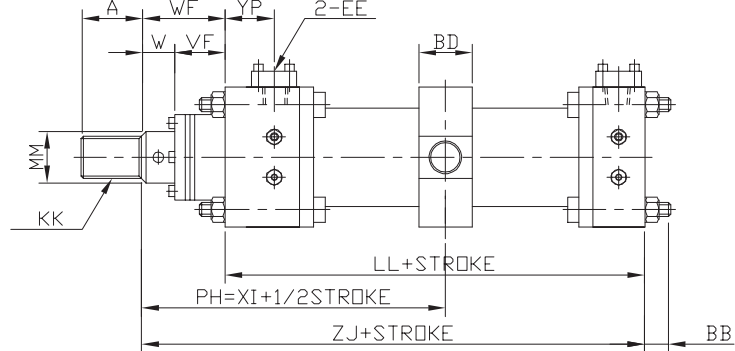
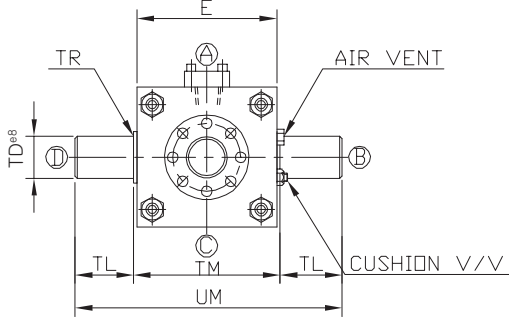
Bore size	A type rod					B type rod					CD	E	EE	EW	FP	L	LF	LL	LR	MR	P	VF	W	WF	XC	YP	ZC	
	A		B	KK	Z	A		B	KK	Z																		
	Typ.1	Typ.2				Typ.1	Typ.2																					
Ø40	35	55	-	M24X1.5	19	30	45	-	M20X1.5	16	Ø20	□80	SSA15	31.5	^{-0.1} _{-0.4}	47	56	192	-	R30	R24	118	-	29	-	277	-	301
Ø50	45	65	-	M30X1.5	24	35	55	-	M24X1.5	19	Ø25	□90	SSA15	35.5	^{-0.1} _{-0.4}	47	66	196	-	R40	R30	122	-	29	-	291	-	321
Ø63	60	85	-	M39X1.5	31	45	65	-	M30X1.5	24	Ø31.5	□110	SSA15	40	^{-0.1} _{-0.4}	61	72	229	-	R43	R38	141	-	40	-	341	-	379
Ø80	75	105	-	M48X1.5	38	60	85	-	M39X1.5	31	Ø40	□127	SSA20	50	^{-0.1} _{-0.4}	70	86	254	-	R50	R48	155	-	33	-	373	-	421
Ø100	95	140	-	M64X2	51	75	105	-	M48X1.5	38	Ø50	□154	SSA20	63	^{-0.1} _{-0.4}	87	105	270	-	R65	R60	154	-	39	-	414	-	474
Ø125	120	175	-	M80X2	64	95	140	-	M64X2	51	Ø63	□188	SSA25	80	^{-0.1} _{-0.6}	105	129	313	-	R82	R75	174	-	44	-	486	-	561
Ø140	140	210	-	M95X2	76	110	160	-	M72X2	58	Ø71	□212	SSA25	80	^{-0.1} _{-0.6}	105	147	323	-	R93	R85	184	-	49	-	519	-	604
Ø160	150	220	Ø191	M100X2	80	120	175	Ø162	M80X2	64	Ø80	□238	SSA25	100	^{-0.1} _{-0.6}	-	162	-	278	R105	R96	204	92	35	127	567	38	663
Ø180	180	265	Ø208	M120X2	96	140	210	Ø172	M95X2	76	Ø90	□272	SSA32	125	^{-0.1} _{-0.6}	-	183	-	308	R120	R108	224	92	40	132	623	43	731
Ø200	195	285	Ø229	M130X2	104	150	220	Ø191	M100X2	80	Ø100	□298	SSA40	125	^{-0.1} _{-0.6}	-	189	-	356	R125	R120	254	102	38	140	685	51	805
Ø224	225	330	Ø253	M150X2	120	180	265	Ø208	M120X2	96	Ø112	□328	SSA40	140	^{-0.1} _{-0.6}	-	214	-	366	R145	R135	264	112	42	154	734	51	869
Ø250	255	375	Ø280	M170X3	136	195	285	Ø229	M130X2	104	Ø125	□362	SSA40	160	^{-0.1} _{-0.6}	-	240	-	385	R160	R150	274	127	48	175	800	60	950

Dimensions-Center Trunnion (TC)

Ø40 ~ Ø140

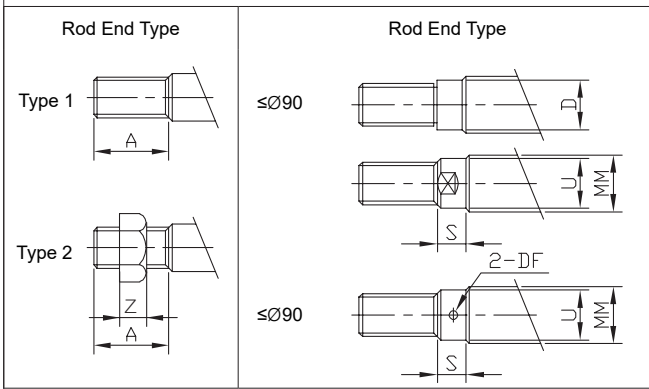


Ø160 ~ Ø250



※ Cushion is not applied to the following type.
A type bore size: Ø40, Ø50, Ø63 rod side
B type bore size: Ø40 rod side
※ For not shown dimensions, refer to SD type (standard type).

Unit : mm



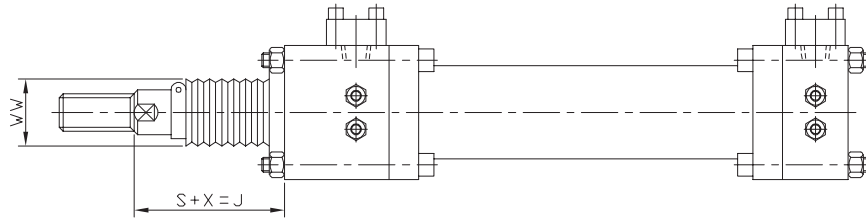
Bore size	A type rod					B type rod				
	D	DF	MM	S	U	D	DF	MM	S	U
Ø40	24	-	Ø28	-	-	19	-	Ø22	-	-
Ø50	30	-	Ø35	-	-	24	-	Ø28	-	-
Ø63	41	-	Ø45	25	Ø44	30	-	Ø35	25	Ø34
Ø80	50	-	Ø55	28	Ø54	41	-	Ø45	28	Ø44
Ø100	65	-	Ø70	34	Ø69	50	-	Ø55	34	Ø54
Ø125	85	-	Ø90	39	Ø89	65	-	Ø70	39	Ø69
Ø140	-	Ø12	Ø100	35	Ø99	75	-	Ø80	40	Ø79
Ø160	-	Ø15	Ø110	30	Ø109	85	-	Ø90	30	Ø89
Ø180	-	Ø15	Ø125	35	Ø124	-	Ø12	Ø100	35	Ø99
Ø200	-	Ø15	Ø140	33	Ø139	-	Ø15	Ø110	33	Ø109
Ø224	-	Ø15	Ø160	35	Ø159	-	Ø15	Ø125	35	Ø124
Ø250	-	Ø15	Ø180	35	Ø179	-	Ø15	Ø140	35	Ø139

Unit : mm

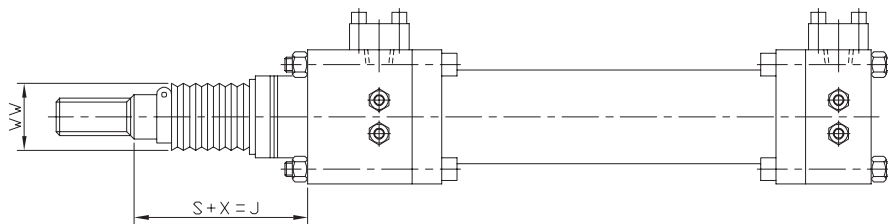
Bore size	A type rod			B type rod			BB	BD	E	EE	FP	LF	LL	최소 PH	TD	TL	TM	TR	UM	VF	W	WF	XI	YP	ZJ		
	A Typ.1	A Typ.2	KK	Z	A Typ.1	A Typ.2																				KK	Z
Ø40	35	55	M24X1.5	19	30	45	M20X1.5	16	11	33	□80	SSA15	47	192	-	166	Ø25	25	90 ^{-0.1/-0.5}	R2.5	140	-	29	-	135	-	221
Ø50	45	65	M30X1.5	24	35	55	M24X1.5	19	16	33	□90	SSA15	47	196	-	169	Ø25	25	100 ^{-0.1/-0.5}	R2.5	150	-	29	-	137	-	225
Ø63	60	85	M39X1.5	31	45	65	M30X1.5	24	14	43	□110	SSA15	61	229	-	202	Ø31.5	31.5	115 ^{-0.1/-0.5}	R2.5	178	-	40	-	171.5	-	269
Ø80	75	105	M48X1.5	38	60	85	M39X1.5	31	16	53	□127	SSA20	70	254	-	227	Ø40	40	135 ^{-0.1/-0.5}	R3.0	215	-	33	-	180.5	-	287
Ø100	95	140	M64X2	51	75	105	M48X1.5	38	19	63	□154	SSA20	87	270	-	260	Ø50	50	165 ^{-0.1/-0.5}	R3.0	265	-	39	-	203	-	309
Ø125	120	175	M80X2	64	95	140	M64X2	51	22	78	□188	SSA25	105	313	-	300	Ø63	63	205 ^{-0.1/-0.5}	R4.0	331	-	44	-	236	-	357
Ø140	140	210	M95X2	76	110	160	M72X2	58	26	88	□212	SSA25	105	323	-	315	Ø71	71	225 ^{-0.1/-0.5}	R4.0	367	-	49	-	246	-	372
Ø160	150	220	M100X2	80	120	175	M80X2	64	28	98	□238	SSA25	-	-	278	338	Ø80	80	255 ^{-0.1/-0.5}	R4.0	415	92	35	127	267	38	405
Ø180	180	265	M120X2	96	140	210	M95X2	76	30	108	□272	SSA32	-	-	308	363	Ø90	90	285 ^{-0.1/-0.8}	R5.0	465	92	40	132	287	43	440
Ø200	195	285	M130X2	104	150	220	M100X2	80	33	118	□298	SSA40	-	-	356	404	Ø100	100	310 ^{-0.1/-0.8}	R5.0	510	102	38	140	318	51	496
Ø224	225	330	M150X2	120	180	265	M120X2	96	35	137	□328	SSA40	-	-	366	433	Ø112	112	350 ^{-0.1/-0.8}	R5.0	574	112	42	154	337	51	520
Ø250	255	375	M170X3	136	195	285	M130X2	104	38	147	□362	SSA40	-	-	385	478	Ø125	125	385 ^{-0.1/-0.8}	R5.0	636	127	48	175	372	60	560

Dimensions-Bellows Attached Type (J, K)

Ø40 ~ Ø140



Ø160 ~ Ø250



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

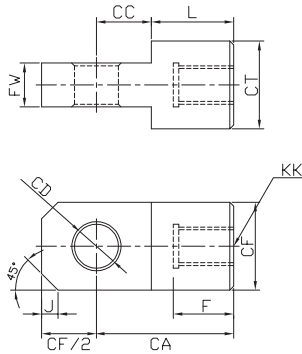
Bore size	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø160	Ø180	Ø200	Ø224	Ø250	
WW	Rod A	Ø63	Ø71	Ø80	Ø100	Ø125	Ø140	Ø160	Ø180	Ø180	Ø200	Ø220	Ø240
	Rod B	Ø50	Ø63	Ø71	Ø80	Ø100	Ø125	Ø125	Ø140	Ø160	Ø180	Ø180	Ø200
X	42	57	60	54	64	64	69	60	80	78	82	78	
S	1/3.5 × Stroke		1/4 × Stroke			1/5 × Stroke				1/6 × Stroke			

- ※ For not shown dimensions, refer to SD type (standard type).
- ※ When calculating with decimals, please round up.
- ※ SUS band is mounted at bellows at delivery.

Dimensions-Accessory

Unit : mm

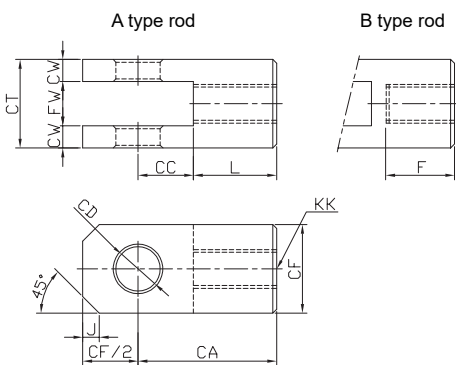
Single Knuckle Joint (I Type)



Bore size	CA	CC	CD	CF	CT	CW	F		FW	J	KK		L
							Rod A	Rod B			Rod A	Rod B	
							Ø40	80			30	Ø20 ^{H10}	
Ø50	95	35	Ø25 ^{H10}	60	50	17.5	50	40	35.5 ^{-0.4 -0.1}	15	M30X1.5	M24X1.5	60
Ø63	115	40	Ø31.5 ^{H10}	70	60	20	65	50	40 ^{-0.4 -0.1}	15	M39X1.5	M30X1.5	75
Ø80	140	50	Ø40 ^{H10}	90	70	25	80	65	50 ^{-0.4 -0.1}	20	M48X1.5	M39X1.5	90
Ø100	180	65	Ø50 ^{H10}	110	90	30	100	80	63 ^{-0.4 -0.1}	25	M64X2	M48X1.5	115
Ø125	220	80	Ø63 ^{H10}	140	110	40	125	100	80 ^{-0.1 -0.6}	30	M72X2	M64X2	140
Ø140	255	90	Ø71 ^{H10}	160	130	40	145	115	80 ^{-0.1 -0.6}	30	M80X2	M72X2	165
Ø160	275	100	Ø80 ^{H10}	180	140	50	155	125	100 ^{-0.1 -0.6}	40	M95X2	M80X2	175
Ø180	325	115	Ø90 ^{H10}	210	170	62.5	185	145	125 ^{-0.1 -0.6}	40	M100X2	M95X2	210
Ø200	355	125	Ø100 ^{H10}	230	190	62.5	200	155	125 ^{-0.1 -0.6}	40	M120X2	M100X2	230
Ø224	405	140	Ø112 ^{H10}	250	220	70	230	185	140 ^{-0.1 -0.6}	50	M130X2	M120X2	265
Ø250	455	160	Ø125 ^{H10}	280	250	80	260	200	160 ^{-0.1 -0.6}	60	M170X2	M130X2	295

Unit : mm

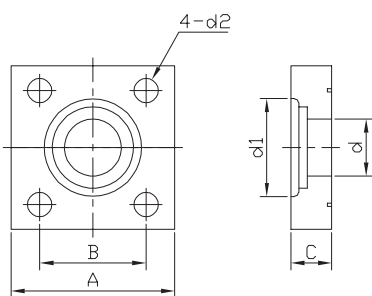
Double Knuckle Joint (Y Type)



Bore size	CA	CC	CD	CF	CT	CW	F	FW	J	KK		L
										Rod A	Rod B	
										Ø40	65	
Ø50	80	35	Ø25 ^{H10}	60	75	17.5	40	40 ^{+1.0 +0.1}	15	M30X1.5	M24X1.5	45
Ø63	100	40	Ø31.5 ^{H10}	70	85	20	50	45 ^{+1.0 +0.1}	15	M39X1.5	M30X1.5	60
Ø80	125	50	Ø40 ^{H10}	80	105	25	65	55 ^{+2.0 +0.1}	15	M48X1.5	M39X1.5	75
Ø100	160	65	Ø50 ^{H10}	100	130	30	80	70 ^{+2.0 +0.1}	20	M64X2	M48X1.5	95
Ø125	200	80	Ø63 ^{H10}	130	170	40	100	90 ^{+2.0 +0.1}	25	M72X2	M64X2	120
Ø140	230	90	Ø71 ^{H10}	150	170	40	115	90 ^{+2.0 +0.1}	30	M80X2	M72X2	140
Ø160	250	100	Ø80 ^{H10}	160	210	50	125	110 ^{+2.0 +0.1}	30	M95X2	M80X2	150
Ø180	295	115	Ø90 ^{H10}	180	260	62.5	145	135 ^{+3.0 +0.1}	40	M100X2	M95X2	180
Ø200	320	125	Ø100 ^{H10}	200	260	62.5	155	135 ^{+3.0 +0.1}	40	M120X2	M100X2	195
Ø224	365	140	Ø112 ^{H10}	230	290	70	185	150 ^{+3.0 +0.1}	50	M130X2	M120X2	225
Ø250	415	160	Ø125 ^{H10}	250	330	80	200	170 ^{+4.0 +0.1}	60	M170X2	M130X2	255

Unit : mm

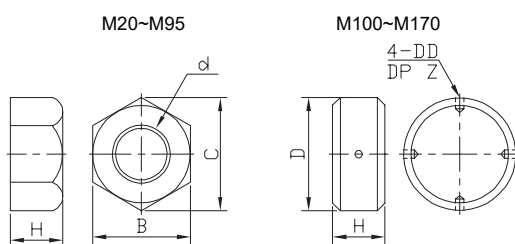
Flange



Bore size	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø140	Ø160	Ø180	Ø200	Ø224	Ø250
JIS Symbol	SSA 15			SSA 20			SSA 25		SSA 32		SSA 40	SSA 50
Port size	Rc(PT)1/2			Rc(PT)3/4			Rc(PT)1		Rc(PT)1 1/4		Rc(PT)1 1/2	Rc(PT) 2
A	54			58			68		76		92	106
B	36			40			48		56		65	73
C	22			22			28		28		36	36
d	Ø16			Ø20			Ø25		Ø31.5		Ø37.5	Ø47.5
d1	Ø22.2 ^{+0.2 0}			Ø27.7 ^{+0.2 0}			Ø34.5 ^{+0.3 0}		Ø43.2 ^{+0.3 0}		Ø49.1 ^{+0.3 0}	Ø61.1 ^{+0.3 0}
d2	Ø11			Ø11			Ø13		Ø13		Ø18	Ø18
Bolt	M10			M10			M12		M12		M16	M16
O-Ring	G25			G30			G35		G40		G50	G60

Unit : mm

Rod End Nut



Symbol	H	B	C	Symbol	H	D	DD	Z
M20xP1.5	16	30 ^{0 -0.8}	34.6	M100xP2	80	Ø150	Ø15	18
M24xP1.5	19	36 ^{0 -1.0}	41.6	M120xP2	96	Ø180	Ø15	18
M30xP1.5	24	46 ^{0 -1.0}	53.1	M130xP2	104	Ø200	Ø20	25
M39xP1.5	31	60 ^{0 -1.2}	69.3	M150xP2	120	Ø230	Ø20	25
M48xP1.5	38	75 ^{0 -1.2}	86.5	M170xP3	136	Ø260	Ø20	25
M64xP2	51	95 ^{0 -1.4}	110					
M72xP2	58	105 ^{0 -1.4}	121					
M80xP2	64	115 ^{0 -1.4}	133					
M95xP2	76	135 ^{0 -1.6}	156					

Unit : mm

* In case of rod end nut attached type, longer thread length (dimension A) is required.