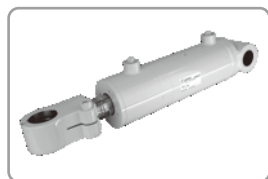


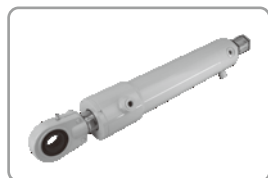
# ROUND CYLINDERS

## SERIES Products Content



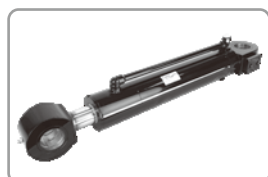
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Order indication . . . . . P407

Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

## APPLICATION EXAMPLE



ISO Specifications Cylinders

Round Hydraulic Cylinders

Specific Hydraulic Cylinders

Systems & Fittings

## FEATURE

series		RD70		RD160	
working pressure		70kgf/cm <sup>2</sup> (7MPa)		160kgf/cm <sup>2</sup> (16MPa)	
test pressure		105kgf/cm <sup>2</sup> (14MPa)		240kgf/cm <sup>2</sup> (24MPa)	
temperature	regular	-10°~80°C			
	heat, acid & alkali resist.	-30°~150°C			
stroke (mm)	stroke	tolerance	stroke	tolerance	
	≤ 100	+0.8 0	631~1000	+1.4 0	
	101~250	+1.0 0	1001~1600	+1.6 0	
	251~630	+1.25 0	1601~2000	+1.8 0	
cushion		1. With loading, a round cylinder should be cushioning when the speed reach 100mm/s. 2. If reaching more than 200mm/s, external buffer required. 3. Cushion symbol: (1) N (or no symbol) means without cushion (2) B means cushion on both ends (3) R means cushion on rod cover (4) H means cushion on head cover			
oil & seal	mineral oil (T:R68)	(PU)	(NBR)	(FPM)	
		●	●	●	
	water solutions	X	●	●	
	soluble	X	●	●	
phosphated ester	X	X	●		

**THEORETICAL OUTPUT TABLE**

Bore (mm)	Piston pressure area (cm <sup>2</sup> )			theoretical output (Kg)					
	Extend	Retract		Pressure 70(Kg/cm <sup>2</sup> )			Pressure 160(Kg/cm <sup>2</sup> )		
		shaft diameter		Extend	shaft diameter		Extend	shaft diameter	
		C	B		C	B		C	B
25	4.9	2.9	2.4	343	203	168	784	464	384
32	8	5.5	4.2	560	385	294	1280	880	672
40	12.6	8.8	6.4	882	616	448	2016	1408	1024
50	19.6	13.4	9.4	1372	938	658	3136	2144	1504
63	31.2	21	15.3	2184	1470	1071	4992	3360	2448
80	50.3	34.4	25.7	3521	2408	1799	8048	5504	4112
100	78.5	54	47.4	5495	3780	3318	12560	8640	7584
125	122.7	91.6	66	8589	6412	4620	19632	14656	10560
160	201	144	130	14070	10080	9100	32160	23040	20800
200	314	243	216	21980	17010	15120	50240	38880	34560
250	491	393	368	34370	27510	25760	78560	62880	58880
320	804	681	603	56280	47670	42210	128640	108960	96480
400	1256	1055	942	87920	73850	65940	200960	168800	150720
500	1962	1648	1471	137340	115360	102970	313920	263680	235360

Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

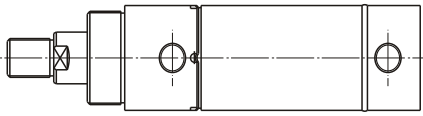
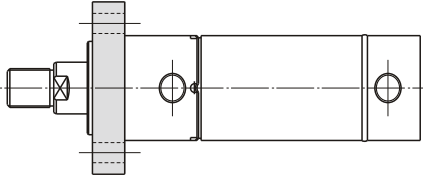
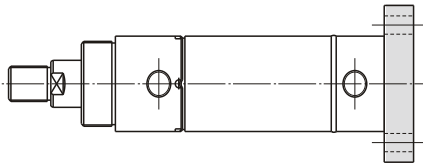
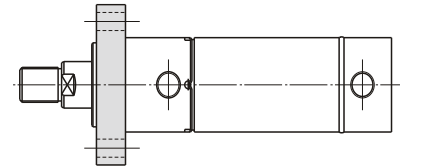
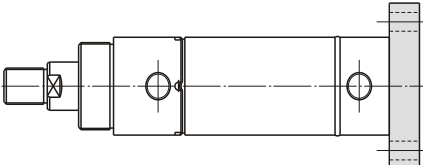
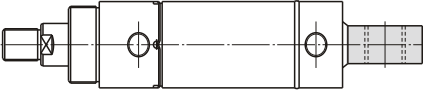
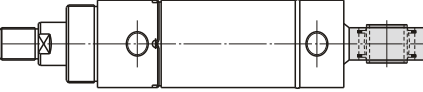
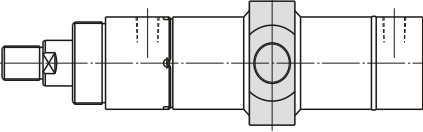
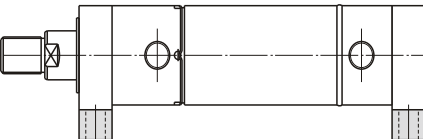
ISO Specifications Cylinders

Round Hydraulic Cylinders

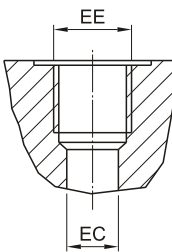
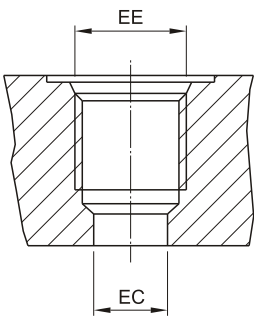
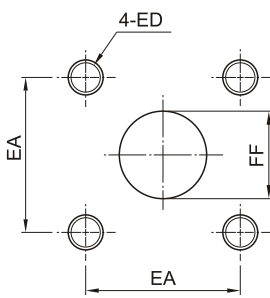
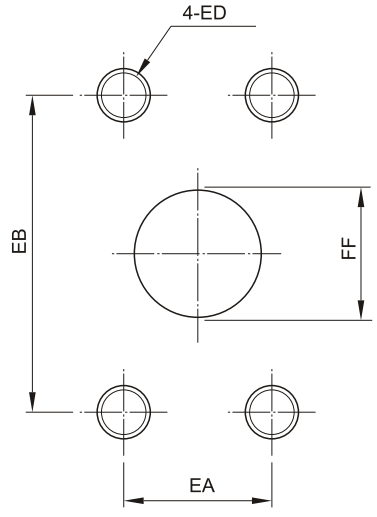
Specific Hydraulic Cylinders

Systems & Fittings

**INSTALLATION FORM**

ISO Mark	Mark	Type	Graphics	Bore
	SD	Basic		25~500
MF1	FA	Rod Flange		25~125
MF2	FB	Head Flange		
MF3	FC	Rod Flange (round)		25~500
MF4	FD	Head Flange (round)		
MP3	CA	Clevis (with bushing)		25~500
MP5	CAI	Clevis (with ball bearing)		
MT4	TC	Mid Trunnion		
MS2	LA	Foot flange		25~200

## SPEC. OF OIL INLET

ISO Spec.	ISO1179-1	ISO6149-1	ISO6164	ISO6162-1							
Type	G Parallel	M Straight	F Square	MM Rectangle							
Graphics											
Symbol	EE	EC	EE	EC	FF (max.)	EA	ED	FF -1.5 0	EA ±0.25	EB ±0.25	ED
Bore											
25	G1/4	7.5	M14x1.5	7.5	-	-	-	-	-	-	-
32	G3/8	9	M18x1.5	11	-	-	-	-	-	-	-
40 50	G1/2	14	M22x1.5	14	-	-	-	-	-	-	-
63 80	G3/4	18	M27x2	18	15	29.7	M8x1.25	12	17.5	38.1	M8x12.5
100 125	G1	23	M33x2	23	20	35.4	M8x1.25	20	22.3	47.6	M10x1.5
160 200	G1 1/4	30	M42x2	30	25	43.8	M10x1.5	25	26.2	52.4	M10x1.5
250 320	G1 1/2	36	M48x2	36	32	51.6	M12x1.75	32	30.2	58.7	M10x1.5
400 500	-	-	M60x2	46	38	60.1	M16x2	38	35.7	69.9	M12x1.75

Tie-rod  
Hydraulic  
Cylinder

Mold  
Hydraulic  
Cylinders

Swivel &  
Clamp  
Hydraulic  
Cylinders

Booster  
Cylinders  
&  
Unclamping  
cylinders

ISO  
Specifications  
Cylinders

Round  
Hydraulic  
Cylinders

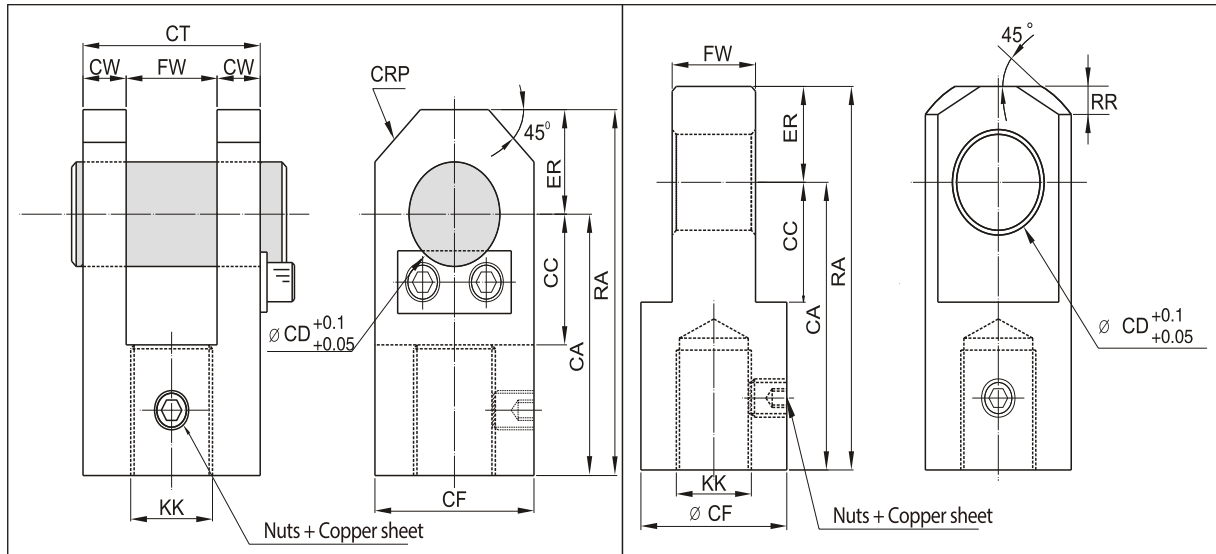
Specific  
Hydraulic  
Cylinders

Systems  
&  
Fittings

## ROD END CONNECTOR

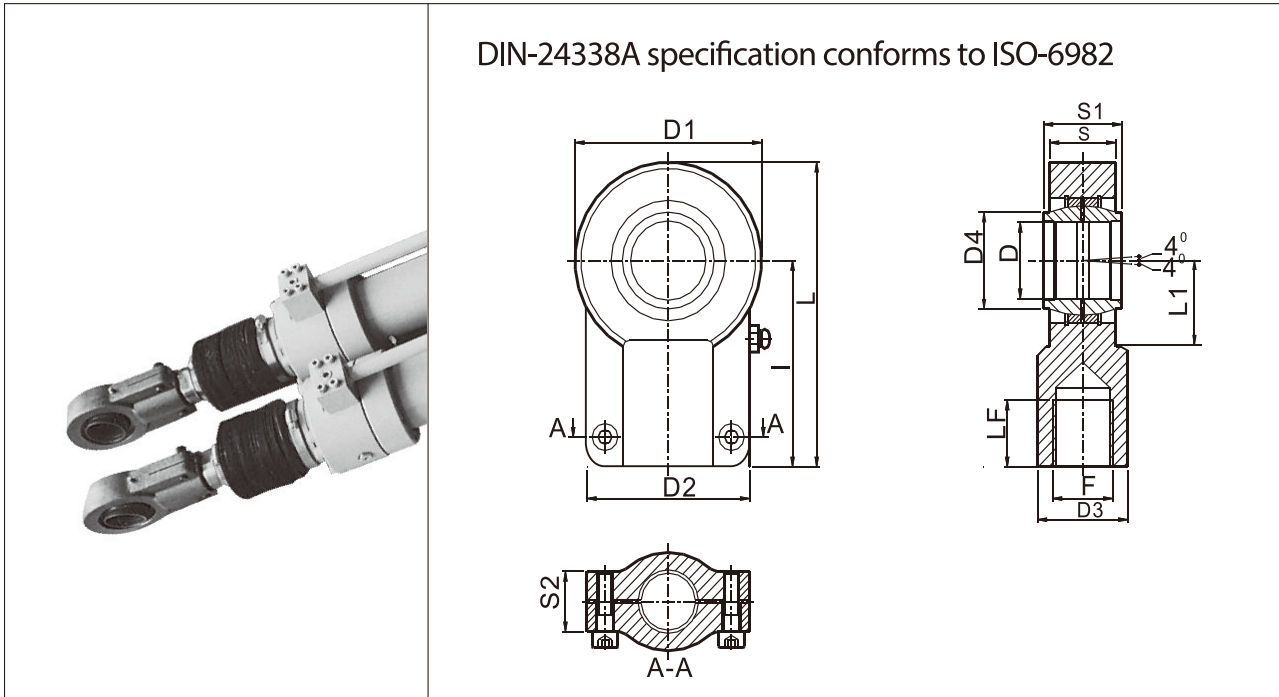
### • Y Connector

### • I Connector



Symbol Bore	KK		FW		CA		CC		RA		CF		CD	CT	ER	CW	RP	RP
	Crod	Brod	Y	I	Y	I	Y	I	Y	I	Y	I						
25	M12x1.25	M14x1.5			49	69	24	24	65	85	32	38	16	45	16	12.5	8	8
32	M14x1.5	M16x1.5	+0.4 0 20	-0.1 -0.4 20	49	69	24	24	65	85	32	38	16	45	16	12.5	8	8
40	M16x1.5	M20x1.5			49	69	24	24	65	85	32	38	16	45	16	12.5	8	8
50	M20x1.5	M27x2	+0.4 +0 25	-0.1 -0.4 25	60	80	35	30	80	100	40	44	20	55	20	15	10	10
63	M27x2	M33x2	+0.4 +0 30	-0.1 -0.4 30	75	105	40	45	105	135	60	60	31.5	63	30	16.5	15	15
80	M33x2	M42x2			75	105	40	45	105	135	60	60	31.5	63	30	16.5	15	15
100	M42x2	M48x2	+0.4 +0 40	-0.1 -0.4 40	100	120	50	50	140	160	70	70	40	78	40	19	20	20
125	M48x2	M64x3	+0.4 +0 63	-0.1 -0.4 63	180	180	70	65	230	230	100	100	50	126	50	31.5	25	25
160	M64x3	M80x3	+0.6 +0 80	-0.1 -0.6 80	240	240	100	90	310	310	140	140	71	160	70	40	35	35
200	M80x3	M100x3	+0.6 +0 125	-0.1 -0.6 125	210	210	115	115	300	300	180	180	90	225	90	50	45	45
250	M100x3	M125x4			245	245	125	125	345	345	200	200	100	251	100	63	50	50

**ROD END BALL CONNECTOR**



Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

**EXTERNAL DIMENSIONS**

ISO Specifications Cylinders

Round Hydraulic Cylinders

Specific Hydraulic Cylinders

Systems & Fittings

Bore	symbol	F	D	S <sub>1</sub>	α	I	L	D1	D2	D3	D4	S	S2	L1	LF
25	PR-12CE	M12x1.25	12	12	4°	38	54	32	32	16	15.5	11	15	14	17
	PR-16CE	M14x1.5	16	16	4°	44	64	40	40	21	20	13.8	15	20	19
32	PR-16CE	M14x1.5	20	20	4°	52	75	47	47	25	25	17.8	18.7	22	23
	PR-20CE	M16x1.5													
40	PR-20CE	M16x1.5	25	25	4°	65	96	58	54	30	30.5	21.9	19	27	29
	PR-25CE	M20x1.5													
50	PR-25CE	M20x1.5	32	32	4°	80	119	71	66	38	38	28	22	32	37
	PR-32CE	M27x2													
63	PR-32CE	M27x2	40	40	4°	97	146	90	80	47	46	33	26	41	46
	PR-40CE	M33x2													
80	PR-40CE	M33x2	50	50	4°	120	180	109	96	58	57	41	32	50	57
	PR-50CE	M42x2													
100	PR-50CE	M42x2	63	63	4°	140	212	132	114	70	71.5	53	38	62	64
	PR-63CE	M48x2													
125	PR-63CE	M48x2	80	80	4°	180	271	169	148	90	91	67	48	78	86
	PR-80CE	M64x3													
160	PR-80CE	M64x3	100	100	4°	210	323	211	178	110	113	85	62	98	96
	PR-100CE	M80x3													
200	PR-100CE	M80x3	125	125	4°	260	406	264	200	135	138	103	72	120	113
	PR-125CE	M100x3													
250	PR-125CE	M100x3	160	160	4°	310	488	326	250	165	177	130	82	150	126
	PR-160CE	M125x4													

## ORDER INDICATION

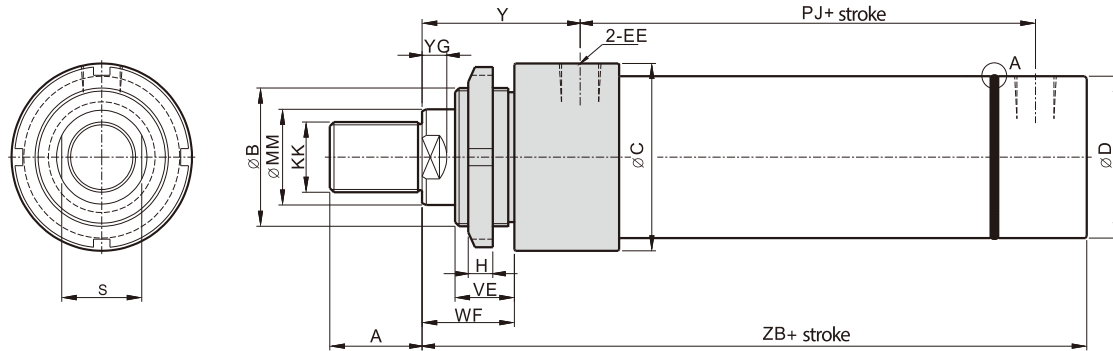
<b>RD</b>	<b>70</b>	<b>J</b>	<b>C</b>	<b>CA</b>	<b>63</b>
series	working pressure	performance	shaft diameter	installation form	bore
Round cylinders for construction machinery	70:70 kgf/cm <sup>2</sup> 160:160 kgf/cm <sup>2</sup>	H: shaft with dust cover J: heat/ acid & alkali resistance	C: small shaft diameter (used with RD70)  B: large shaft diameter (used with RD160)  Please specify when RD70 (working pressure 70) used with rod B or when RD140 (working pressure 160) used with rod C.	M00: Basic (SD) MF1: Rod Flange (FA) MF2: Head Flange (FB) MF3: Rod Round Flange (FC) MF4: Head Round Flange (FD) MP3: Clevis (CA) MP5: Clevis + Ball joint (CA1) MS2: Foot Flange (LA) MT4: Mid Trunnion (TC)	25:25mm 32:32mm 40:40mm 50:50mm 63:63mm 80:80mm 100:100mm 125:125mm 160:160mm 200:200mm 250:250mm 320:320mm 400:400mm 500:500mm

<b>200ST</b>	<b>B</b>	<b>Y</b>	<b>RC</b>
stroke	cushion	shaft end joint	Spec. of oil inlet
customized	blank = indicates standard (no cushion) B: cushion on both ends R: cushion on rod cover H: cushion on head cover  Please contact us if cover dimension when cushioning is different with catalog	Y: Y connector I: I connector  PR...CE ball joint (Compliance with ISO-6982 or DIN24338A)	RC: Taper G: Parallel M: Straight F: Square MM: Rectangle

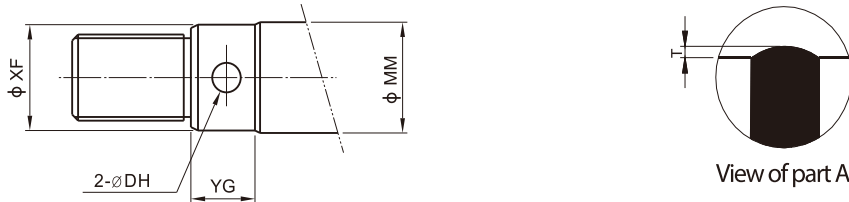


## EXTERNAL DIMENSIONS

- Basic (SD)



- Wrench dimension for rod size over  $\varnothing 90$  (included)



symbol bore	C		T	symbol bore	C		T
	class C	class B			class C	class B	
25	40	40	≤2	125	140	145	≤3
32	52	52	≤2	160	178	185	≤3
40	55	65	≤2	200	216	232	≤3
50	65	75	≤2	250	267	298	≤4
63	76	88	≤2	320	352	380	≤4
80	95	95	≤2	400	-	-	≤4
100	114	122	≤2	500	-	-	≤4

symbol bore	MM		XF		DH	
	class C	class B	class C	class B	class C	class B
125	70	90	-	88	-	10
160	90	110	88	108	10	12
200	110	140	108	138	12	12
250	140	180	138	178	12	12
320	180	220	178	218	12	14
400	220	280	218	278	14	16
500	280	360	278	358	16	16

symbol bore	rod class C			rod class B			B		D		EE	S		Y	VE	WF	PJ	ZB	YG		H
	MM	KK	A	MM	KK	A	class C	class B	C	B		C	B						C	B	
25	16	M12x1.25	16	18	M14x1.5	18	M30x1.5		35	RC1/8	14	16	58	15	28	77	150	12		7	
32	18	M14x1.5	18	22	M16x1.5	22	M35x1.5		45	RC1/4	16	17	64	19	32	89	170	12		8	
40	22	M16x1.5	22	28	M20x1.5	28	M45x1.5		55	RC3/8	17	23	71	19	32	97	190	12		10	
50	28	M20x1.5	28	36	M27x2	36	M55x1.5		65		23	32	72	24	38	111	205	12		11	
63	36	M27x2	36	45	M33x2	45	M65x2		76	RC1/2	32	39	82	29	45	117	224	12		12	
80	45	M33x2	45	56	M42x2	56	M80x2		95		39	50	91	36	54	134	250	14		15	
100	56	M42x2	56	70	M48x2	63	M100x2		114	RC3/4	50	64	108	37	57	162	300	16		18	
125	70	M48x2	63	90	M64x3	85	M125x2	140	145		64	-	121	37	60	174	325	16	20	21	
160	90	M64x3	85	112	M80x3	95	M160x3	178	185	RC1	-	-	143	41	66	191	370	20	20	25	
200	110	M80x3	95	140	M100x3	112	M200x3	216	232		-	-	190	45	75	224	450	24	24	29	
250	140	M100x3	112	180	M125x4	125	M240x4	M260x4	267	298	RC11/4	-	-	64	96	-	550	24	24	32	
320	180	M125x4	125	220	M160x4	160	M320x4	M340x4	352	380		-	-	71	108	-	660	24	24	35	
400	220	M160x4	160	280	M200x4	200	-	-	-	-	RC11/2	-	-	90	130	-	740	30	30	-	
500	280	M200x4	200	360	M250x6	250	-	-	-	-		-	-	110	163	-	890	30	30	-	

Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

ISO Specifications Cylinders

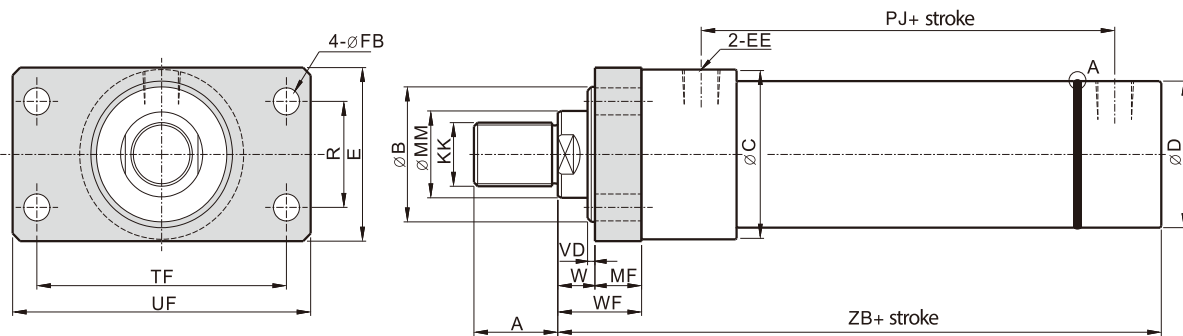
Round Hydraulic Cylinders

Specific Hydraulic Cylinders

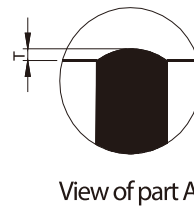
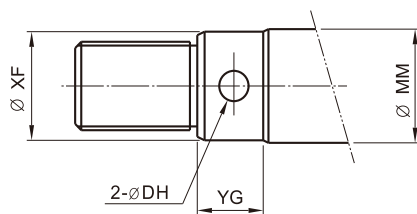
Systems & Fittings

## EXTERNAL DIMENSIONS

- MF1 Rod Flange (FA)



- Wrench dimension for rod size over  $\varnothing 90$  (included)



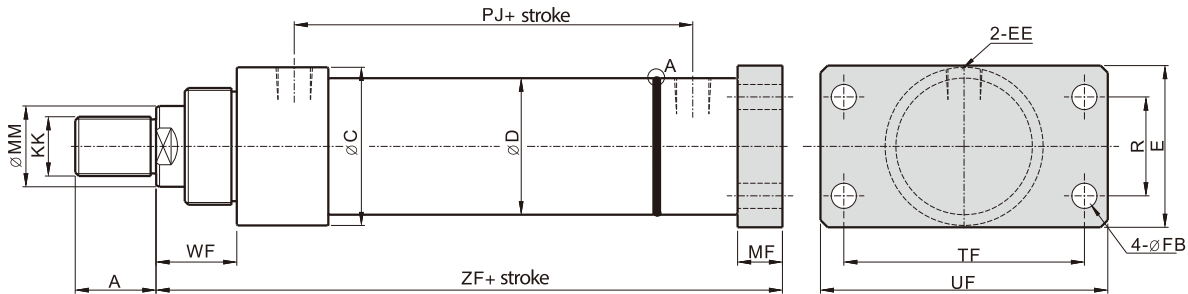
symbol bore	C		T
	class C	class B	
25	40	40	≤2
32	52	52	≤2
40	55	65	≤2
50	65	75	≤2
63	76	88	≤2
80	95	95	≤2
100	114	122	≤2
125	140	145	≤3

symbol bore	MM		XF		DH	
	class C	class B	class C	class B	class C	class B
125	70	90	-	88	-	10
160	90	110	88	108	10	12
200	110	140	108	138	12	12
250	140	180	138	178	12	12
320	180	220	178	218	12	14
400	220	280	218	278	14	16
500	280	360	278	358	16	16

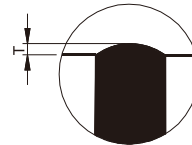
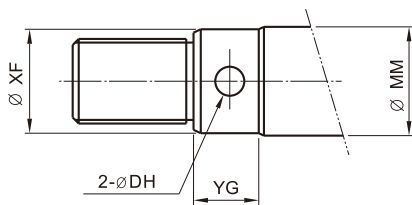
symbol bore	rod class C			rod class B			B	D		EE	VD	MF	W	WF	FB	E	R	TF	UF	PJ	ZB
	MM	KK	A	MM	KK	A		C	B												
25	16	M12x1.25	16	18	M14x1.5	18	32	35	RC1/8	3	12	16	28	6.6	45	28	69	85	77	150	
32	18	M14x1.5	18	22	M16x1.5	22	40	42	RC1/4	3	16	16	32	9	55	35	85	105	89	170	
40	22	M16x1.5	22	28	M20x1.5	28	50	55	RC3/8	3	16	16	32	9	70	40	98	115	97	190	
50	28	M20x1.5	28	36	M27x2	36	60	65		4	20	18	38	11	80	48	116	140	111	205	
63	36	M27x2	36	45	M33x2	45	70	76	RC1/2	4	25	20	45	14	90	55	134	160	117	224	
80	45	M33x2	45	56	M42x2	56	85	95		4	32	22	54	18	100	63	152	185	134	250	
100	56	M42x2	56	70	M48x2	63	106	114	RC3/4	5	32	25	57	22	125	76	185	225	162	300	
125	70	M48x2	63	90	M64x3	85	132	140		145	5	32	28	60	22	150	90	217	255	174	325

## EXTERNAL DIMENSIONS

- MF2 Head Flange (FB)



- Wrench dimension for rod size over  $\varnothing 90$  (included)



View of part A

	C		T
	class C	class B	
25	40	40	$\leq 2$
32	52	52	$\leq 2$
40	55	65	$\leq 2$
50	65	75	$\leq 2$
63	76	88	$\leq 2$
80	95	95	$\leq 2$
100	114	122	$\leq 2$
125	140	145	$\leq 3$

symbol bore	MM		XF		DH	
	class C	class B	class C	class B	class C	class B
125	70	90	-	88	-	10
160	90	110	88	108	10	12
200	110	140	108	138	12	12
250	140	180	138	178	12	12
320	180	220	178	218	12	14
400	220	280	218	278	14	16
500	280	360	278	358	16	16

Symbol bore	rod class C			rod class B			D		EE	MF	FB	R	E	TF	UF	WF	PJ	ZF
	MM	KK	A	MM	KK	A	C	B										
25	16	M12x1.25	16	18	M14x1.5	18	35		RC1/8	12	6.6	28	45	69	85	28	77	162
32	18	M14x1.5	18	22	M16x1.5	22	42		RC1/4	16	9	35	55	85	105	32	89	186
40	22	M16x1.5	22	28	M20x1.5	28	55		RC3/8	16	9	40	70	98	115	32	97	206
50	28	M20x1.5	28	36	M27x2	36	65			20	11	48	80	116	140	38	111	225
63	36	M27x2	36	45	M33x2	45	76		RC1/2	25	14	55	90	134	160	45	117	249
80	45	M33x2	45	56	M42x2	56	95			32	18	63	100	152	185	54	134	282
100	56	M42x2	56	70	M48x2	63	114		RC3/4	32	22	76	125	185	225	57	162	332
125	70	M48x2	63	90	M64x3	85	140	145		32	22	90	150	217	255	60	174	357

Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

ISO Specifications Cylinders

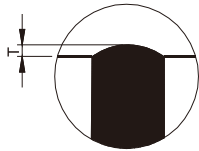
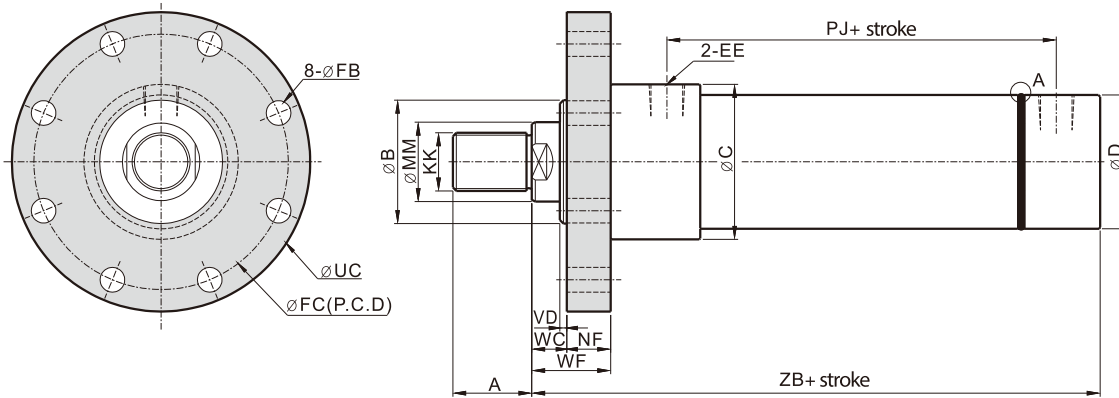
Round Hydraulic Cylinders

Specific Hydraulic Cylinders

Systems & Fittings

## EXTERNAL DIMENSIONS

- MF3 Rod Round Flange (FC)



View of part A

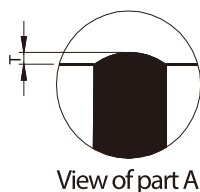
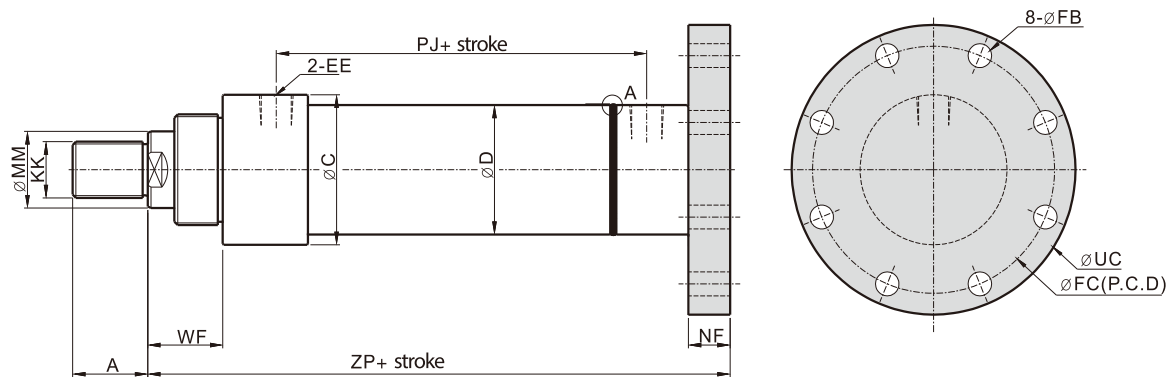
symbol bore	C			T	symbol bore	C			T
	class C	class B				class C	class B		
25	40	40	$\leq 2$	125	140	145	$\leq 3$		
32	52	52	$\leq 2$	160	178	185	$\leq 3$		
40	55	65	$\leq 2$	200	216	232	$\leq 3$		
50	65	75	$\leq 2$	250	267	298	$\leq 4$		
63	76	88	$\leq 2$	320	352	380	$\leq 4$		
80	95	95	$\leq 2$	400	-	-	$\leq 4$		
100	114	122	$\leq 2$	500	-	-	$\leq 4$		

- Wrench dimension for rod size over  $\phi 90$  (included), please refer to SD basic (P. 408)

symbol bore	rod class C			rod class B			B	D		EE	VD	NF	WC	WF	FB	FC	UC	PJ	ZB
	MM	KK	A	MM	KK	A		C	B										
25	16	M12x1.25	16	18	M14x1.5	18	32	35	RC1/8	3	12	16	28	8- $\phi 6.6$	75	90	77	150	
32	18	M14x1.5	18	22	M16x1.5	22	40	42	RC1/4	3	16	16	32	8- $\phi 9$	92	110	89	170	
40	22	M16x1.5	22	28	M20x1.5	28	50	55	RC3/8	3	16	16	32	8- $\phi 9$	106	125	97	190	
50	28	M20x1.5	28	36	M27x2	36	60	65		4	20	18	38	8- $\phi 11$	126	150	111	205	
63	36	M27x2	36	45	M33x2	45	70	76	RC1/2	4	25	20	45	8- $\phi 14$	145	170	117	224	
80	45	M33x2	45	56	M42x2	56	85	95		4	32	22	54	8- $\phi 18$	165	195	134	250	
100	56	M42x2	56	70	M48x2	63	106	114	RC3/4	5	32	25	57	8- $\phi 22$	200	240	162	300	
125	70	M48x2	63	90	M64x3	85	132	140		145	5	32	28	60	8- $\phi 22$	235	275	174	325
160	90	M64x3	85	110	M80x3	95	160	178	185	RC1	5	36	30	66	8- $\phi 22$	280	320	191	370
200	110	M80x3	95	140	M100x3	112	200	216	232		5	40	35	75	8- $\phi 26$	340	385	224	450
250	140	M100x3	112	180	M125x4	125	250	267	298	RC11/4	8	56	40	96	8- $\phi 33$	420	490	-	550
320	180	M125x4	125	220	M160x4	160	320	352	380		8	63	45	108	8- $\phi 39$	520	600	-	660
400	220	M160x4	160	280	M200x4	200	400	-	-	RC11/2	10	80	50	130	8- $\phi 45$	640	730	-	740
500	280	M200x4	200	360	M250x6	250	500	-	-		10	100	63	163	12- $\phi 45$	720	810	-	890

## EXTERNAL DIMENSIONS

- MF4 Head Round Flange (FD)



symbol	C		T	symbol	C		T
	bore	class C			class B	bore	
25	40	40	≤2	125	140	145	≤3
32	52	52	≤2	160	178	185	≤3
40	55	65	≤2	200	216	232	≤3
50	65	75	≤2	250	267	298	≤4
63	76	88	≤2	320	352	380	≤4
80	95	95	≤2	400	-	-	≤4
100	114	122	≤2	500	-	-	≤4

- Wrench dimension for rod size over Ø 90 (included), please refer to SD basic (P. 408)

symbol bore	rod class C			rod class B			D		EE	NF	WF	FB	FC	UC	PJ	ZP
	MM	KK	A	MM	KK	A	C	B								
25	16	M12x1.25	16	18	M14x1.5	18	35		RC1/8	12	28	8-ø6.6	75	90	77	162
32	18	M14x1.5	18	22	M16x1.5	22	42		RC1/4	16	32	8-ø9	92	110	89	186
40	22	M16x1.5	22	28	M20x1.5	28	55		RC3/8	16	32	8-ø9	106	125	97	206
50	28	M20x1.5	28	36	M27x2	36	65			20	38	8-ø11	126	150	111	225
63	36	M27x2	36	45	M33x2	45	76		RC1/2	25	45	8-ø14	145	170	117	249
80	45	M33x2	45	56	M42x2	56	95			32	54	8-ø18	165	195	134	282
100	56	M42x2	56	70	M48x2	63	114		RC3/4	32	57	8-ø22	200	240	162	332
125	70	M48x2	63	90	M64x3	85	140	145		32	60	8-ø22	235	275	174	357
160	90	M64x3	85	110	M80x3	95	178	185	RC1	36	66	8-ø22	280	320	191	406
200	110	M80x3	95	140	M100x3	112	216	232		40	75	8-ø26	340	385	224	490
250	140	M100x3	112	180	M125x4	125	267	298	RC11/4	56	96	8-ø33	420	490	-	606
320	180	M125x4	125	220	M160x4	160	352	380		63	108	8-ø39	520	600	-	723
400	220	M160x4	160	280	M200x4	200	-	-	RC11/2	80	130	8-ø45	640	730	-	820
500	280	M200x4	200	360	M250x6	250	-	-		100	163	12-ø45	720	810	-	990

Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

ISO Specifications Cylinders

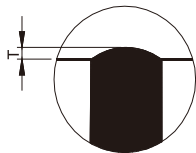
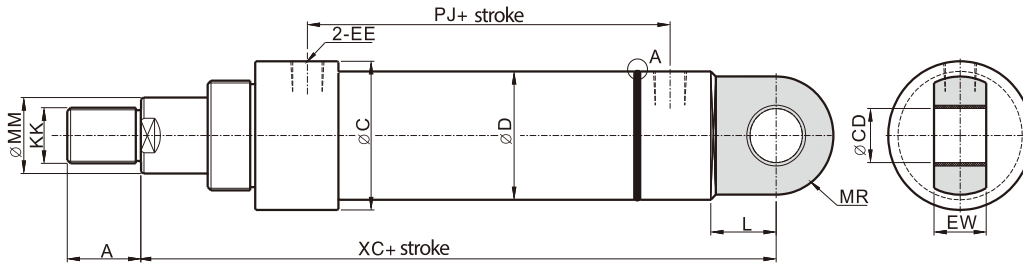
Round Hydraulic Cylinders

Specific Hydraulic Cylinders

Systems & Fittings

**EXTERNAL DIMENSIONS**

- MP3 Clevis (CA)



View of part A

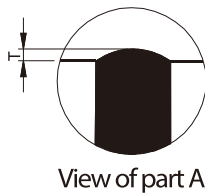
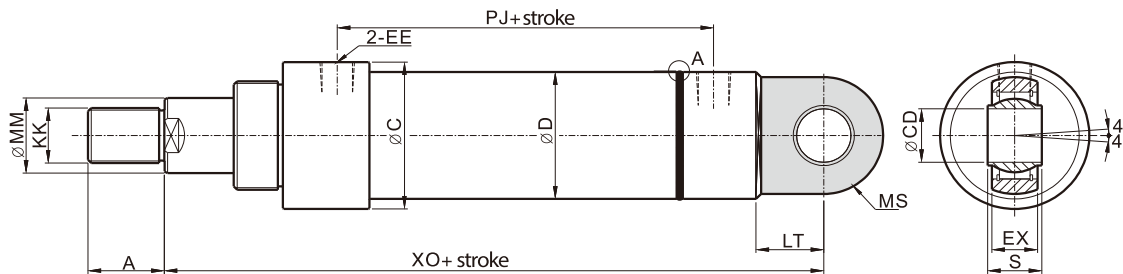
- Wrench dimension for rod size over ∅ 90 (included), please refer to SD basic (P. 408)

symbol bore	C		T	symbol bore	C		T
	class C	class B			class C	class B	
25	40	40	≤2	125	140	145	≤3
32	52	52	≤2	160	178	185	≤3
40	55	65	≤2	200	216	232	≤3
50	65	75	≤2	250	267	298	≤4
63	76	88	≤2	320	352	380	≤4
80	95	95	≤2	400	-	-	≤4
100	114	122	≤2	500	-	-	≤4

symbol bore	rod class C			rod class B			D		EE	L	CD	EW	MR	PJ	XC
	MM	KK	A	KK	A	C	B								
25	16	M12x1.25	16	18	M14x1.5	18	35		RC1/8	16	12	12	16	77	178
32	18	M14x1.5	18	22	M16x1.5	22	42		RC1/4	20	16	16	20	89	206
40	22	M16x1.5	22	28	M20x1.5	28	55		RC3/8	25	20	20	25	97	231
50	28	M20x1.5	28	36	M27x2	36	65			32	25	25	28	111	257
63	36	M27x2	36	45	M33x2	45	76		RC1/2	40	32	32	35	117	289
80	45	M33x2	45	56	M42x2	56	95			50	40	40	44.5	134	332
100	56	M42x2	56	70	M48x2	63	114		RC3/4	63	50	50	54	162	395
125	70	M48x2	63	90	M64x3	85	140	145		71	63	63	66	174	428
160	90	M64x3	85	110	M80x3	95	178	185	RC1	90	80	80	84	191	505
200	110	M80x3	95	140	M100x3	112	216	232		112	100	100	105	224	615
250	140	M100x3	112	180	M125x4	125	267	298	RC11/4	160	125	125	131	-	773
320	180	M125x4	125	220	M160x4	160	352	380		200	160	160	163	-	930
400	220	M160x4	160	280	M200x4	200	-	-	RC11/2	250	200	200	210	-	990
500	280	M200x4	200	360	M250x6	250	-	-		320	250	250	270	-	1210

## EXTERNAL DIMENSIONS

- MP5 Clevis + Ball joint (CA1)



symbol bore	C		T	symbol bore	C		T
	class C	class B			class C	class B	
25	40	40	≤2	125	140	145	≤3
32	52	52	≤2	160	178	185	≤3
40	55	65	≤2	200	216	232	≤3
50	65	75	≤2	250	267	298	≤4
63	76	88	≤2	320	352	380	≤4
80	95	95	≤2	400	-	-	≤4
100	114	122	≤2	500	-	-	≤4

- Wrench dimension for rod size over Ø 90 (included), please refer to SD basic (P. 408)

symbol bore	rod class C			rod class B			D		EE	LT	CD	EX	MS	PJ	XO	S
	MM	KK	A	MM	KK	A	C	B								
25	16	M12x1.25	16	18	M14x1.5	18	35		RC1/8	16	12	12	16	77	178	12
32	18	M14x1.5	18	22	M16x1.5	22	42		RC1/4	20	16	16	20	89	206	16
40	22	M16x1.5	22	28	M20x1.5	28	55		RC3/8	25	20	20	25	97	231	20
50	28	M20x1.5	28	36	M27x2	36	65			32	25	23	28	111	257	25
63	36	M27x2	36	45	M33x2	45	76		RC1/2	40	32	28	35	117	289	32
80	45	M33x2	45	56	M42x2	56	95			50	40	33	44.5	134	332	40
100	56	M42x2	56	70	M48x2	63	114		RC3/4	63	50	41	54	162	395	50
125	70	M48x2	63	90	M64x3	85	140	145		71	63	53	66	174	428	63
160	90	M64x3	85	110	M80x3	95	178	185	RC1	90	80	67	84	191	505	80
200	110	M80x3	95	140	M100x3	112	216	232		112	100	85	105	224	615	100
250	140	M100x3	112	180	M125x4	125	267	298	RC11/4	160	125	103	131	-	773	125
320	180	M125x4	125	220	M160x4	160	352	380		200	160	130	163	-	930	160
400	220	M160x4	160	280	M200x4	200	-	-	RC11/2	250	200	162	210	-	990	200
500	280	M200x4	200	360	M250x6	250	-	-		320	250	210	270	-	1210	250

Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

ISO Specifications Cylinders

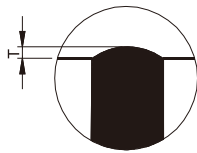
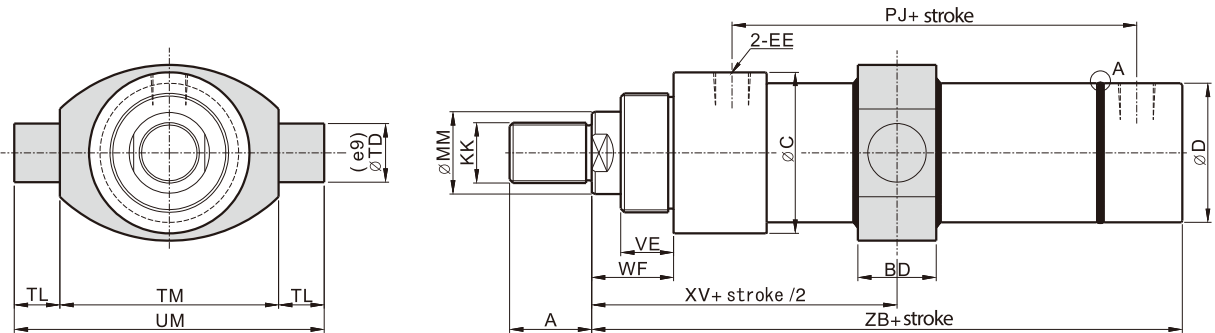
Round Hydraulic Cylinders

Specific Hydraulic Cylinders

Systems & Fittings

## EXTERNAL DIMENSIONS

- MT4 Mid Trunnion (TC)



View of part A

- Wrench dimension for rod size over Ø 90 (included), please refer to SD basic (P. 408)

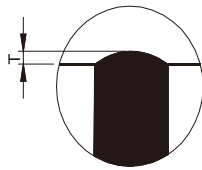
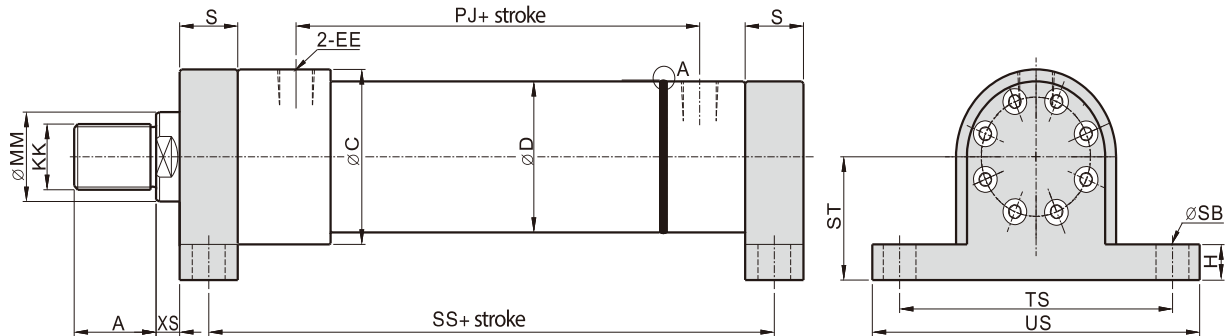
symbol bore	C		T	symbol bore	C		T
	class C	class B			class C	class B	
25	40	40	≤2	125	140	145	≤3
32	52	52	≤2	160	178	185	≤3
40	55	65	≤2	200	216	232	≤3
50	65	75	≤2	250	267	298	≤4
63	76	88	≤2	320	352	380	≤4
80	95	95	≤2	400	-	-	≤4
100	114	122	≤2	500	-	-	≤4

symbol bore	rod class C			rod class B			D		EE	VE	WF	BD	TD	TM	TL	UM	PJ	XV	ZB
	MM	KK	A	MM	KK	A	C	B											
25	16	M12x1.25	16	18	M14x1.5	18	35		RC1/8	15	28	18	12	63	10	83	77	90	150
32	18	M14x1.5	18	22	M16x1.5	22	42		RC1/4	19	32	22	16	75	12	99	89	106	170
40	22	M16x1.5	22	28	M20x1.5	28	55		RC3/8	19	32	28	20	90	16	122	97	116	190
50	28	M20x1.5	28	36	M27x2	36	65			24	38	33	25	105	20	145	111	123	205
63	36	M27x2	36	45	M33x2	45	76		RC1/2	29	45	43	32	120	25	170	117	140	224
80	45	M33x2	45	56	M42x2	56	95			36	54	53	40	135	32	199	134	159	250
100	56	M42x2	56	70	M48x2	63	114		RC3/4	37	57	58	50	160	40	240	162	182	300
125	70	M48x2	63	90	M64x3	85	140	145		37	60	78	63	195	50	295	174	197	325
160	90	M64x3	85	110	M80x3	95	178	185	RC1	41	66	98	80	240	63	366	191	231	370
200	110	M80x3	95	140	M100x3	112	216	232		45	75	117	100	295	80	455	224	288	450
250	140	M100x3	112	180	M125x4	125	267	298	RC11/4	64	96	148	125	370	100	570	-	-	550
320	180	M125x4	125	220	M160x4	160	352	380		71	108	186	160	470	125	720	-	-	660
400	220	M160x4	160	280	M200x4	200	-	-	RC11/2	90	130	230	200	570	160	890	-	-	740
500	280	M200x4	200	360	M250x6	250	-	-		110	163	280	250	700	250	1200	-	-	890



## EXTERNAL DIMENSIONS

- MS2 Foot Flange (LA)



View of part A

symbol bore	C		T	symbol bore	C		T
	class C	class B			class C	class B	
25	40	40	≤2	80	95	95	≤2
32	52	52	≤2	100	114	122	≤2
40	55	65	≤2	125	140	145	≤3
50	65	75	≤2	160	178	185	≤3
63	76	88	≤2	200	216	232	≤3

- Wrench dimension for rod size over Ø 90 (included), please refer to SD basic (P. 408)

symbol bore	rod class C			rod class B			EE	S	XS	ST	SB	TS	US	PJ	SS	H
	MM	KK	A	MM	KK	A										
25	16	M12x1.25	16	18	M14x1.5	18	RC1/8	20	18	32	9	75	92	77	142	12
32	18	M14x1.5	18	22	M16x1.5	22	RC1/4	25	19.5	38	11	90	110	89	163	16
40	22	M16x1.5	22	28	M20x1.5	28	RC3/8	25	19.5	43	11	100	120	97	183	26
50	28	M20x1.5	28	36	M27x2	36		32	22	52	14	120	145	111	199	25
63	36	M27x2	36	45	M33x2	45	RC1/2	32	29	62	18	150	180	117	211	25
80	45	M33x2	45	56	M42x2	56		40	34	70	22	170	210	134	236	30
100	56	M42x2	56	70	M48x2	63	RC3/4	50	32	82	26	205	250	162	293	35
125	70	M48x2	63	90	M64x3	85		56	32	100	33	245	300	174	321	35
160	90	M64x3	85	110	M80x3	95	RC1	60	36	119	33	295	350	191	364	45
200	110	M80x3	95	140	M100x3	112		72	39	145	39	350	415	224	447	50

Tie-rod Hydraulic Cylinder

Mold Hydraulic Cylinders

Swivel & Clamp Hydraulic Cylinders

Booster Cylinders & Unclamping cylinders

ISO Specifications Cylinders

Round Hydraulic Cylinders

Specific Hydraulic Cylinders

Systems & Fittings