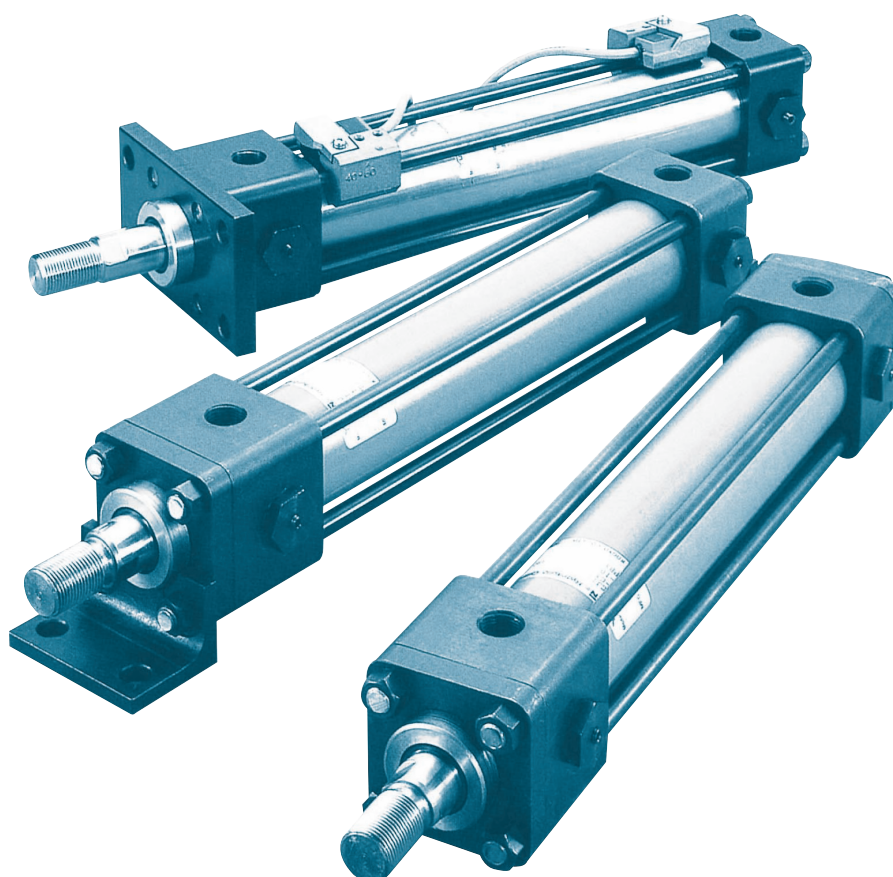


J

HYDRAULIC CYLINDER

- CJT TYPE 35 · 70 · 140 · 210 SERIES HYDRAULIC CYLINDER..... J-4
- CJT SERIES HYDRAULIC CYLINDER WITH PROXIMITY SWITCH J-45
- C6 SERIES COMPACT CYLINDER J-51



Related to the unit and the design number

■ Unit

This catalog to the International System of Units SI, and here the main display unit of the conventional (gravity units) with the { } in the notation.

(For example) the pressure- 21MPa{214kgf/cm²}

This latest international trends as the introduction of SI units are still being carried out in Japan (1986 enacted on or after January 1, revised Japanese Industrial Standards (JIS) for the week to display units in SI units.) And is determined can. Here also according to the catalog of the show was to.

In particular, the main display is shown with { } SI units and conventional units with the conversion factor is as follows. { }

- Pressure 1MPa=10.197162=10.2kgf/cm²
- Kinematic viscosity 1mm²/s=1cSt

■ For a number of design changes

Products designed to improve the numbers are subject to change without notice. However, if you change the design number one place to the bottom of the mounting dimensions and performance specifications is not a change.

Contents

CJT series hydraulic cylinder	-----	J-4
● 35 Series hydraulic cylinder	-----	J-4
● 70/140 Series Type hydraulic cylinder	-----	J-14
● 210 Series Type hydraulic cylinder	-----	J-37
CJT series hydraulic cylinder with proximity switch	-----	J-45
C6 series compact cylinder	-----	J-51

210 Series CJT type KS standard hydraulic cylinder

SEWON's 210 Series CJT type KS standard hydraulic cylinders are provided with many mouning types so that they can be used for wide use of general purpose industrial machines such as machine tools.

Moreover, Switch-Set “CJT” Series Hydraulic Cylinders with a proximity switch which facilitates detecting a position with a slide proximity switch on the cylinder body is also available.

- Various mounting types
- Excellent ability in low speed and high-precision operation.
- Gentle stop characteristics obtained with a smooth cushion effect.



Ratings

[illegible]

- Estimate the mass calculated by the following calculation.

$$[\text{Mass}] = [\text{primary Mass}] + \left[[\text{Additional mass per stroke 100mm}] \times \frac{\text{Stroke(mm)}}{100} \right]$$

In particular, the primary mass and additional mass per stroke 100mm indicated at dimensions drawing. So refer to the dimensions drawing.

Graphic Symbols



- ★ 1. Allowable surge pressure means maximum pressure being risen intermittently including surge pressure and it should be operable in terms of strength.
- ★ 2. It may be the case that the value is limited to less than the value shown in the table due to the buckling strength.
For the maximum stroke permissible from buckling strength see page 7.
- ★ 3. KS B 8354 A Class
Tolerance Stroke

Stroke mm	Tolerance mm
~ 100	+ 0.8 0
100~ 250	+ 1.0 0
250~ 630	+ 1.25 0
630~1000	+ 1.4 0
1000~1600	+ 1.6 0
1600~	+ 1.8 0

Standard hydraulic cylinder

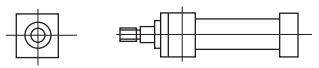
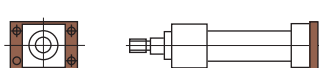
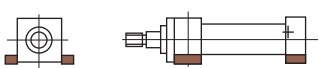
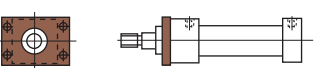
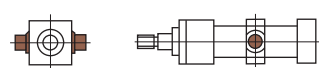
210 Series CJT type KS standard hydraulic cylinder

Model Number Designation

F	CJT210	-LA	50	B	100	B	-A	B	D	-K	-10
Special Seals	Series Number	Mounting	Cylinder Bore mm	Rod type	Stroke mm	Type of Cushioning	Port Direction	Cushioning Direction	Air vent Direction	Option	Design Number
F: Indicate only if fluid with phosphatic ester is used.	CJT210: 210 Series CJT type KS standard hydraulic cylinder	SD, LA FA, FB, CA, TC	40, 50 63, 80 100, 125 140, 160	Series B (Heavy type)	Indicate necessary stroke by considering maximum stroke allowed.	B: Rod end and Head end with Cushioning	(Viewed from rod end)			F: With dust cover (material : nylon terpolin, upper temp. limit 80℃) G: With dust cover (material : neoprene, upper temp. limit 130℃)	10
						R: Rod end with Cushioning H: Head end with Cushioning N: Without Cushioning	A: Up (Standard) B: Right C: Down D: Left	B: Right (Standard) A: Up C: Down D: Left	D: Left (Standard) A: Up B: Right C: Down		

- ★ 1. Optionals can be used in combination. Indicate the symbol for the optional used.
2. A port and a cushioning valve cannot be put in the same direction.

Mounting

Symbol	Name	Illustration of Mounting Type	Symbol	Name	Illustration of Mounting Type
SD	Basic Type		FB	Head-end rectangular flange type	
LA	Right-angle to axis foot type		CA	Detachable eye type	
FA	Axial direction foot type		TC	Intermediate fixed trunnion type	

210 Series CJT type KS standard hydraulic cylinder

Maximum Stroke Permissible from Buckling Strength

● Calculation of Maximum Stroke

1. Obtain the coefficient "n" from the table on the right.
2. Obtain the maximum mounting length "L" by applying the figures such as cylinder bore, rod diameter, pressure and coefficient to the following figure.
3. Calculate drawn mounting length "Lo" from the dimensions and maximum stroke "S" from $S = L - L_o$

Ex.) Calculating the maximum stroke when the standard cylinder with cylinder bore 100mm, rod diameter 56mm and mounting of TC (Intermediate Trunnion) type is used at pressure of 80kgf/cm².

From the table on the right $N=1$

From the following table $L \div 1980$

From the outer dimensions and piston rod attachment

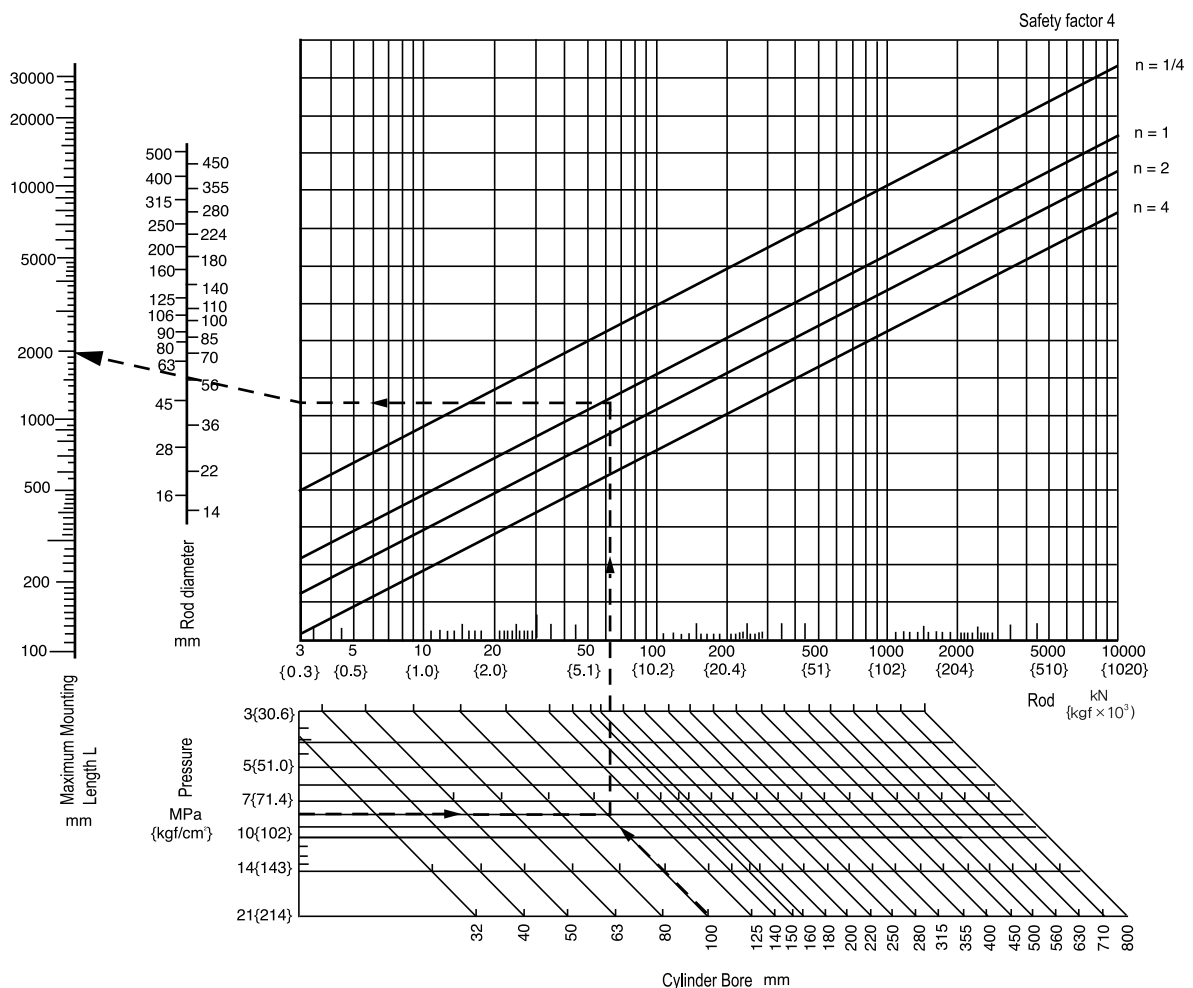
$$L_o = (181 + 145) =$$

$$\text{Therefore } S = L - L_o = 1980 - [(181 + 145) + S/2]$$

$$\text{Thus } S \div 1122 \text{ mm}$$

Mounting	Operating Condition	Coefficient n	Mounting	Operating Condition	Coefficient n
LA Type		1/4	FB Type		1/4
		2			2
		4			4
FA Type		1/4	TC Type		1
		2			
		4	CA Type		1

$S = L - L_o$
 S: Stroke mm
 L: Stretched mounting length mm
 Lo: Drawn mounting length mm
 (Note) Refer to the dimensions and piston rod attachment for Lo.



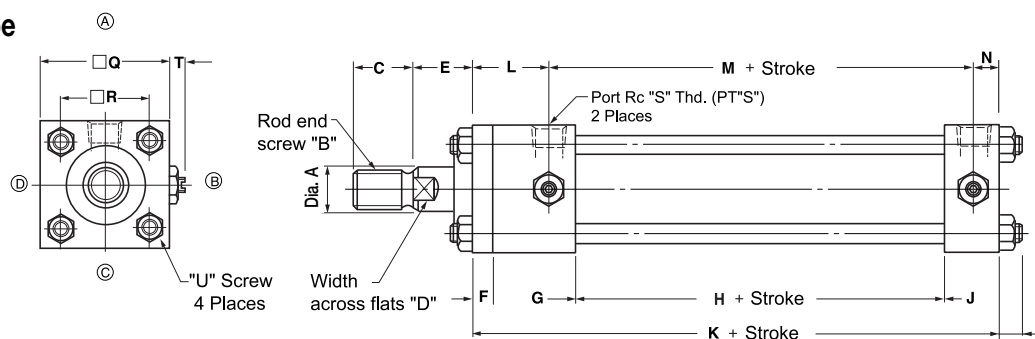
Standard hydraulic cylinder

210 Series CJT type KS standard hydraulic cylinder

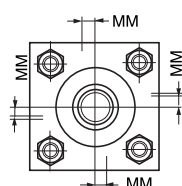
Summary

Type of Rod	Cylinder Bore mm	Rod Dia. mm	Action	Effective area cm ²	Output Power kN{kgf}				Speed at Flow rate 10 L/min mm/s	Flow rate at speed 10 mm/sec ℓ /min
					1MPa{10.2kgf/cm ² }	7MPa{71.4kgf/cm ² }	14MPa{143kgf/cm ² }	21MPa{214kgf/cm ² }		
B	40	22	Push	12.6	1.26 {129}	8.79 {897}	17.58 {1793}	26.37 {2690}	132	0.8
			Pull	8.8	0.88 {89.8}	6.13 {625}	12.27 {1252}	18.39 {1876}	189	0.5
	50	28	Push	19.6	1.96 {200}	13.74 {1401}	27.48 {2803}	41.20 {4202}	85	1.2
			Pull	13.5	1.35 {138}	9.43 {962}	18.86 {1924}	28.28 {2885}	123	0.8
	63	36	Push	31.2	3.12 {318}	21.81 {2225}	43.62 {4449}	65.41 {6672}	53	1.9
			Pull	21.0	2.10 {214}	14.69 {1498}	29.38 {2997}	44.05 {4493}	79	1.3
	80	45	Push	50.3	5.03 {513}	35.17 {3587}	70.34 {7175}	105.50 {10761}	33	3.0
			Pull	34.3	3.43 {350}	24.04 {2452}	48.08 {4904}	72.11 {7355}	49	2.1
	100	56	Push	78.5	7.85 {801}	54.95 {5605}	109.90 {11210}	164.85 {16815}	21	4.7
			Pull	53.9	5.39 {550}	37.72 {3847}	75.44 {7695}	113.14 {11540}	31	3.2
	125	70	Push	122.7	12.27 {1252}	85.86 {8758}	171.72 {17515}	257.46 {26261}	14	7.4
			Pull	84.2	8.42 {859}	58.93 {6011}	117.87 {12023}	176.79 {18033}	20	5.1
	140	80	Push	153.9	15.39 {1570}	107.70 {10985}	215.40 {21971}	322.98 {32944}	10.8	9.2
			Pull	103.6	10.36 {1057}	72.53 {7398}	145.07 {14797}	217.56 {22191}	16	6.2
	160	90	Push	201.0	20.10 {2050}	140.67 {14348}	281.34 {28697}	421.89 {43033}	8.3	12.1
			Pull	137.4	13.74 {1401}	96.16 {9808}	192.33 {19618}	288.33 {29410}	12	8.2

SD: Basic type

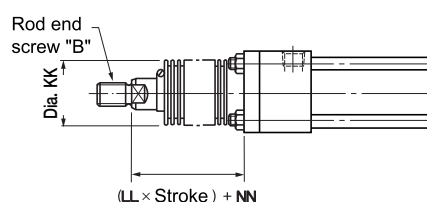


- Position of rod side cushion value (cylinder bore 50, 63) moves "MM" from center as below figure.



Cylinder Bore	50	63
MM	15	11

Dust Cover (Option)

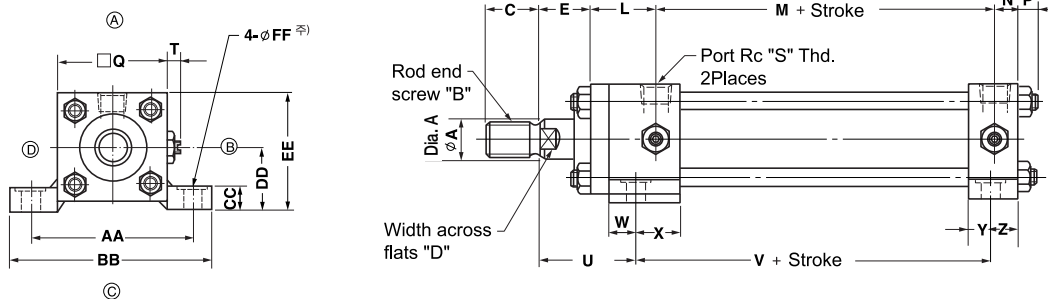


Cylinder Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	KK	LL	(※)	Approx. Mass kg	
																							Basic Weight	Additional Mass per 1mm stroke
40	22	M20×1.5	25	19	30	13	47	64	32	156	43	98	15	13	70	50	3/8	8	M12×1.25	52	1/3.5	47(45)	4.9	1.2
50	28	M24×1.5	30	24	30	15	52	68	37	172	48	106	18	14.5	85	62	1/2	8	M14×1.5	59		50(45)	8.1	1.7
63	36	M30×1.5	35	30	35	18	57	75	37	187	56	113	18	16	100	74	1/2	8	M16×1.5	69		61(55)	12.4	2.5
80	45	M39×1.5	45	41	35	24	67	85	42	218	69	129	20	18	125	92	3/4	8	M18×1.5	81	1/4	55(55)	22.7	3.7
100	56	M48×1.5	55	50	40	26	67	95	42	230	71	139	20	21	160	120	3/4	12	M22×1.5	100		60(55)	38.5	6.6
125	70	M64×2	75	65	45	33	77	105	52	267	83	159	25	25	190	145	1	12	M27×1.5	118		69(65)	65.6	8.7
140	80	M72×2	80	75	50	36	77	110	52	275	86	164	25	27	215	165	1	12	M30×1.5	129	1/5	70(65)	85.9	10.9
160	90	M80×2	90	85	55	41	80	132	51	304	94	186	24	29	240	185	1	12	M33×1.5	140		70(65)	117.9	14.2

※ Only the mounting type FA has a different dimension. Display with () is type FA

210 Series CJT type KS standard hydraulic cylinder

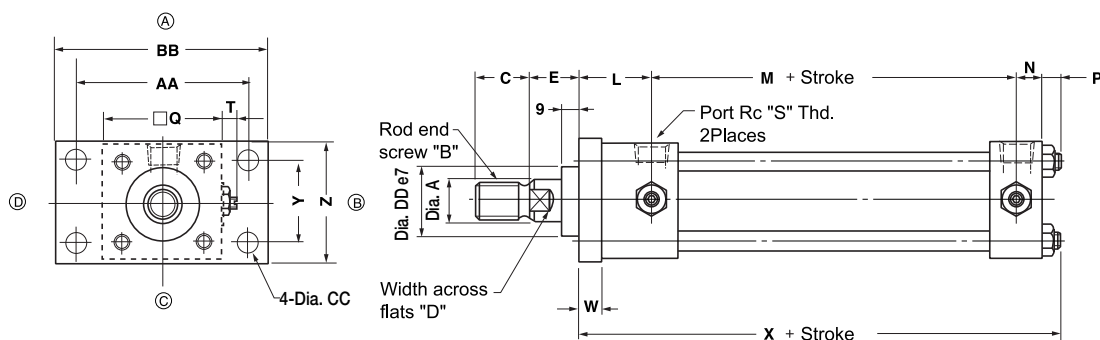
LA: Right-angle to axis foot type



- Note)
1. Use socket head cap screws for mounting.
 2. When a type with cylinder bore of 40~100 is used with the port direction B or D, the pipe fitting may interfere with a cylinder mounting bolt. See the notes on operation on page J-4 for details.

Cylinder Bore	A	B	C	D	E	L	M	N	P	Q	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	Approx. Mass kg	
																									Basic Weight	Additional Mass per 1mm stroke
40	22	M20×1.5	25	19	30	43	98	15	13	70	3/8	8	59	111	16	31	16	16	98	122	15	42±0.15	77	11	5.3	1.2
50	28	M24×1.5	30	24	30	48	106	18	14.5	85	1/2	8	63	120	18	34	18	19	118	145	20	55±0.15	97.5	14	8.9	1.7
63	36	M30×1.5	35	30	35	56	113	18	16	100	1/2	8	71	132	18	39	18	19	140	175	25	63±0.15	113	18	13.8	2.5
80	45	M39×1.5	45	41	35	69	129	20	18	125	3/4	8	80	152	21	46	21	21	175	210	30	75±0.25	137.5	22	24.9	3.7
100	56	M48×1.5	55	50	40	71	139	25	21	160	3/4	12	89	162	23	44	23	24	215	260	35	85±0.25	165	26	42.7	6.6
125	70	M64×2	75	65	45	83	159	30	25	190	1	12	106	182	28	49	28	29	270	330	45	105±0.25	200	33	73.7	8.7
140	80	M72×2	80	75	50	86	164	30	27	215	1	12	114	187	28	49	28	29	280	335	45	112±0.25	219.5	33	91.6	10.9
160	90	M80×2	90	85	55	94	186	35	29	240	1	12	127	212	31	49	31	31	315	375	50	125±0.25	245	36	130.3	14.2

FA: Rod-end rectangular flange type

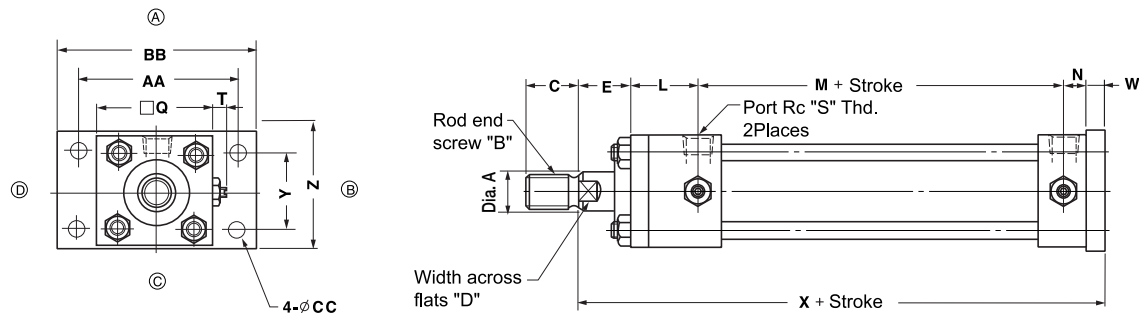


Cylinder Bore	A	B	C	D	E	L	M	N	P	Q	S	T	W	X	Y	Z	AA	BB	CC	D D	Approx. Mass kg	
																					Basic Weight	Additional Mass per 1mm stroke
40	22	M20×1.5	25	19	28	45	98	15	13	70	3/8	8	15	171	50	73	98	122	11	40	5.4	1.2
50	28	M24×1.5	30	24	25	53	106	18	14.5	85	1/2	8	20	191.5	60	88	118	145	14	46	9.2	1.7
63	36	M30×1.5	35	30	29	62	113	18	16	100	1/2	8	24	209	73	106	140	175	18	55	14.5	2.5
80	45	M39×1.5	45	41	35	69	129	20	18	125	3/4	8	24	236	90	130	175	210	22	65	24.9	3.7
100	56	M48×1.5	55	50	35	76	139	20	21	160	3/4	12	31	256	115	165	215	260	26	80	43.8	6.6
125	70	M64×2	75	65	41	87	159	25	25	190	1	12	37	296	145	205	270	330	33	95	75.9	8.7
140	80	M72×2	80	75	45	91	164	25	27	215	1	12	41	307	160	218	280	335	33	105	96.3	10.9
160	90	M80×2	90	85	50	99	186	24	29	240	1	12	46	338	180	243	315	375	36	120	132.2	14.2

Standard hydraulic cylinder

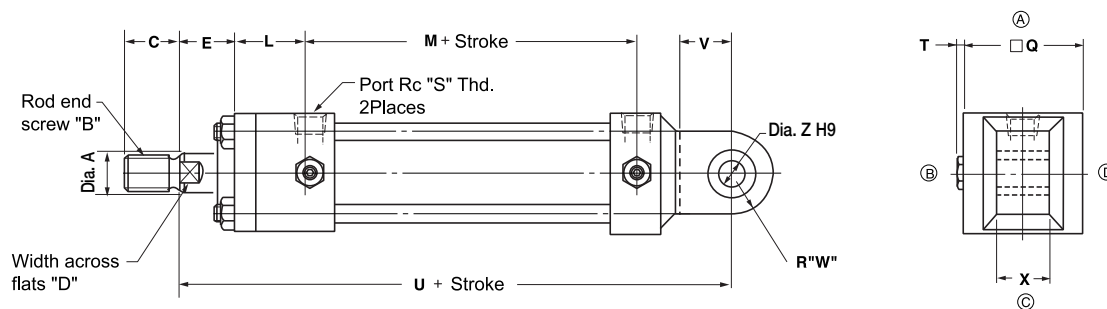
210 Series CJT type KS standard hydraulic cylinder

FB: Head-end rectangular flange



Cylinder Bore	A	B	C	D	E	L	M	N	Q	S	T	W	X	Y	Z	AA	BB	C	Approx. Mass kg	
																			Basic Weight	Additional Mass per 1mm stroke
40	22	M20×1.5	25	19	30	43	98	15	70	3/8	8	15	201	50	73	98	122	11	5.9	1.2
50	28	M24×1.5	30	24	30	48	106	18	85	1/2	8	20	222	60	88	118	145	14	10.0	1.7
63	36	M30×1.5	35	30	35	56	113	18	100	1/2	8	24	246	73	106	140	175	18	15.9	2.5
80	45	M39×1.5	45	41	35	69	129	20	125	3/4	8	24	277	90	130	175	210	22	27.9	3.7
100	56	M48×1.5	55	50	40	71	139	20	160	3/4	12	31	301	115	165	215	260	26	49.0	6.6
125	70	M64×2	75	65	45	83	159	25	190	1	12	37	349	145	205	270	330	33	85.3	8.7
140	80	M72×2	80	75	50	86	164	25	215	1	12	41	366	160	218	280	335	33	109.4	10.9
160	90	M80×2	90	85	55	94	186	24	240	1	12	46	405	180	243	315	375	36	150.8	14.2

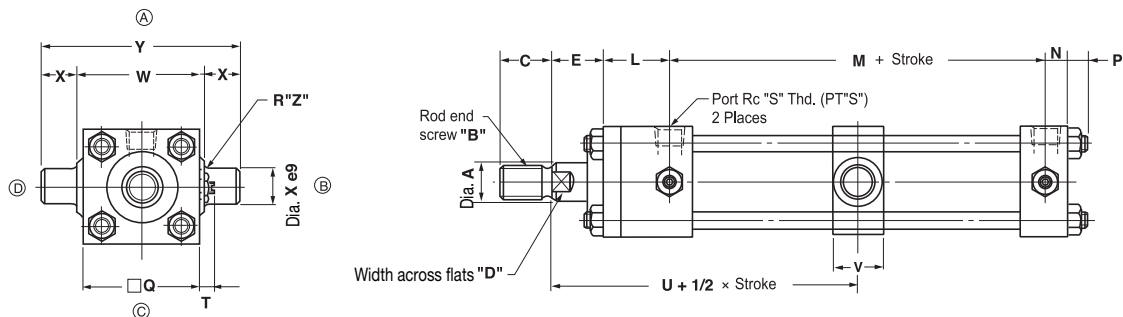
CA: Detachable eye type



Cylinder Bore	A	B	C	D	E	L	M	Q	S	T	U	V	W	X	Z	Approx. Mass kg	
																Basic Weight	Additional Mass per 1mm stroke
40	22	M20×1.5	25	19	30	43	98	70	3/8	8	221	25	25	32 ^{-0.1/-0.4}	20	5.4	1.2
50	28	M24×1.5	30	24	30	48	106	85	1/2	8	247	32	30	36 ^{-0.1/-0.4}	25	9.1	1.7
63	36	M30×1.5	35	30	35	56	113	100	1/2	8	277	40	35	40 ^{-0.1/-0.4}	31.5	14.1	2.5
80	45	M39×1.5	45	41	35	69	129	125	3/4	8	323	50	40	50 ^{-0.1/-0.4}	40	25.6	3.7
100	56	M48×1.5	55	50	40	71	139	160	3/4	12	350	63	50	63 ^{-0.1/-0.4}	50	43.7	6.6
125	70	M64×2	75	65	45	83	159	190	1	12	417	79	63	80 ^{-0.1/-0.6}	63	76.4	8.7
140	80	M72×2	80	75	50	86	164	215	1	12	440	89	70	80 ^{-0.1/-0.6}	71	99.3	10.9
160	90	M80×2	90	85	55	94	186	240	1	12	484	100	80	100 ^{-0.1/-0.6}	80	138.6	14.2

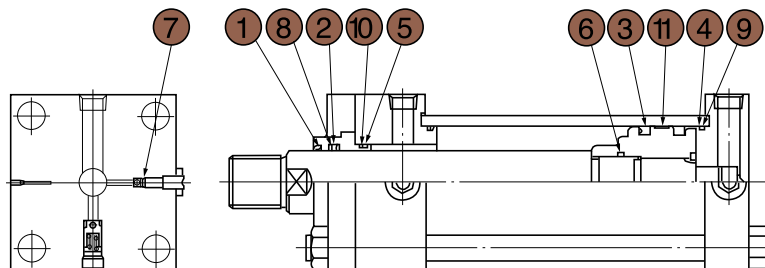
210 Series CJT type KS standard hydraulic cylinder

TC: Intermediate fixed trunnion type



Cylinder Bore	A	B	C	D	E	L	M	N	P	Q	S	T	U	V	W	X	Y	Z	Approx. Mass kg	
																			Basic Weight	Additional Mass per 1mm stroke
40	22	M20×1.5	25	19	30	43	98	15	13	70	3/8	8	122	33	73 ⁰ _{-0.3}	25	123	2.5	5.7	1.2
50	28	M24×1.5	30	24	30	48	106	18	14.5	85	1/2	8	131	33	88 ⁰ _{-0.35}	25	138	2.5	9.4	1.7
63	36	M30×1.5	35	30	35	56	113	18	16	100	1/2	8	148	43	106 ⁰ _{-0.35}	30	169	2.5	14.7	2.5
80	45	M39×1.5	45	41	35	69	129	20	18	125	3/4	8	169	53	128 ⁰ _{-0.4}	40	208	3	27.1	3.7
100	56	M48×1.5	55	50	40	71	139	20	21	160	3/4	12	181	63	170 ⁰ _{-0.4}	50	270	3	47.2	6.6
125	70	M64×2	75	65	45	83	159	25	25	190	1	12	208	78	205 ⁰ _{-0.46}	63	331	4	80.3	8.7
140	80	M72×2	80	75	50	86	164	25	27	215	1	12	218	88	225 ⁰ _{-0.46}	71	367	4	107.5	10.9
160	90	M80×2	90	85	55	94	186	24	29	240	1	12	242	98	255 ⁰ _{-0.52}	80	415	4	146.7	14.2

List of Seals



Cylinder Bore	Item	Name	Qty.	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	Tightening torque for the rod Nm(kgf · m)
				Dust seal	Rod packing	Piston Packing	Cover O-Ring	Bush O-Ring	Piston O-Ring	Cushion O-Ring	Rod packing Backup ring	Cover Backup ring	Bush Backup ring	Wearing	
40	KS-CJT210-40B-10			LBH-22	USH-22	USH-40	G 35	G25	P22	P4	TC-RNY-22	G35	G26 ^{*5}	WPB-40A	62 {6.3}
50	KS-CJT210-50B-10			LBH-28	USH-28	USH-50	G 45	G30	G25	P4	TC-RNY-28	G45	G32 ^{*5}	WPB-50A	100{10.2}
63	KS-CJT210-63B-10			LBH-36	USH-36	USH-63	G 55	G40	P31	P4	TC-RNY-36	G58 ^{*5}	G40	WPB-63A	150{15.3}
80	KS-CJT210-80B-10			LBH-45	USH-45A	USH-80A	G 75	G50	P38	P4	TC-RNY-45A	G75	G50	WPB-80	200{20.4}
100	KS-CJT210-100B-10			LBH-56	USH-56	USH-100	G 95	G60	P46	P7	TC-RNY-56	G95	G60	WPB-100	400{40.8}
125	KS-CJT210-125B-10			LBH-70	USH-70	USH-125	G120	G80	P58	P7	TC-RNY-70	G120	G80	WPB-125	800{81.6}
140	KS-CJT210-140B-10			LBH-80	USH-80	USH-140	G135	G90	G65	P7	TC-RNY-80	G135	G90	WPB-140	1100{112}
160	KS-CJT210-160B-10			LBH-90	USH-90	USH-160	G150	G100	G75	P7	TC-RNY-90	G150	G100	WPB-160	1400{143}

- ★ 1. When ordering seals, refer to the table above and specify a sea kit No.
- ★ 2. Material for the standard packing is nitril rubber. When phosphate ester type fluids are used, viton seals are required. Add "F" before the seal kit No.
- ★ 3. The hardness of an Item No. 4,5,6 O-ring is Hs90.
The hardness of an Item No. 7 O-ring is Hs70.
- ★ 4. The kind of an Item No. 8,9,10,11 Backup ring is Bias cut.
- ★ 5. (S) : Special Type