

Hydraulic Cylinders

Hydraulic cylinders are devices which convert fluids power into mechanical force or motion. This force or motion will be in a straight line.



Graphic Symbol



“CE” Series Hydraulic Cylinders

CE-Type standard hydraulic cylinders (small bore series) have a variety of applications in various fields.

Specification

Model Number	Cylinder Bore mm	Surge Pressure Kgf/cm ²		Operating Pressure Kgf/cm ²		Operating Speed mm/sec		Max. Stroke mm	Ambt. Temp Range °C	Stroke Tolerance
		Allowable	Withstand	Max.	Min.	Max.	Min.			
CE-※-※※-140B	40, 50	210 (105) ^{*1}	210 (105) ^{*1}	140 (70) ^{*1}	3	300 ^{*2}	10	1200 ^{*3}	-10 ~ +80	Ref Table-1
	63, 80							1600 ^{*3}		
	100, 125, 150							200 ^{*3}		

*1 In case of ‘LB’ type mounting, pressure will be as given in ().

*2 Surge Pressure should be kept within acceptable range.

*3 Stroke should be determined according to buckling strength. Obtain the max. stroke according to the buckling strength from the chart given in the page 730.

Tolerance of Stroke

[Table 1]

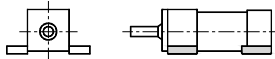
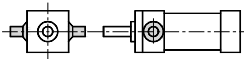
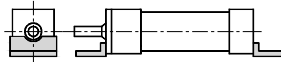
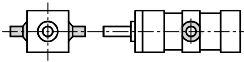
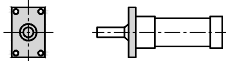
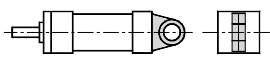
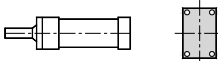
Stroke mm	Tolerance mm
~ 100	+0.8 0
100 ~ 250	+1.0 0
250 ~ 630	+1.25 0
630 ~ 1000	+1.4 0

Model Number Designation

F-	CE	-LA	-100	B	-140	B	-100	-30	80
Special Series	Series Number	Mounting	Cylinder Bore mm	Rod Type	Max. operating Pressure Kg/cm ²	Location of Cushion	Stroke mm	Design* Number	Design Std.
F: Applicable for Phosphate Ester Type Fluids (Omit if not required)	CE: CE Type standard hydraulic cylinder	LA, LB, FA, FB, TA, TC, CA	40, 50, 63, 80, 100, 125, 150	B: Heavy Duty Type C: Standard Type	140 : 140	B: With cushion at both ends R: With cushion at rod end H: With cushion at head end N: No cushion provided	Ex: 100 mm For different stroke length requirement, refer to rating table on page 3 to 10	30	80

* Design Numbers subjected to change from 30 to 39 but installation dimensions remain same.

Mounting

Name of Mounting Type	Illustration of Mounting type	Name of Mounting Type	Illustration of Mounting type
LA: Foot Mounting Side Lugs		TA: Rod Trunnion	
LB: Foot Mounting Side End Angle		TC: Intermediate Trunnion	
FA: Rod Rectangular Flange		CA: Cap detachable eye/clevis	
FB: Cap/Head Rectangular Flange		_____	_____

Care in Application

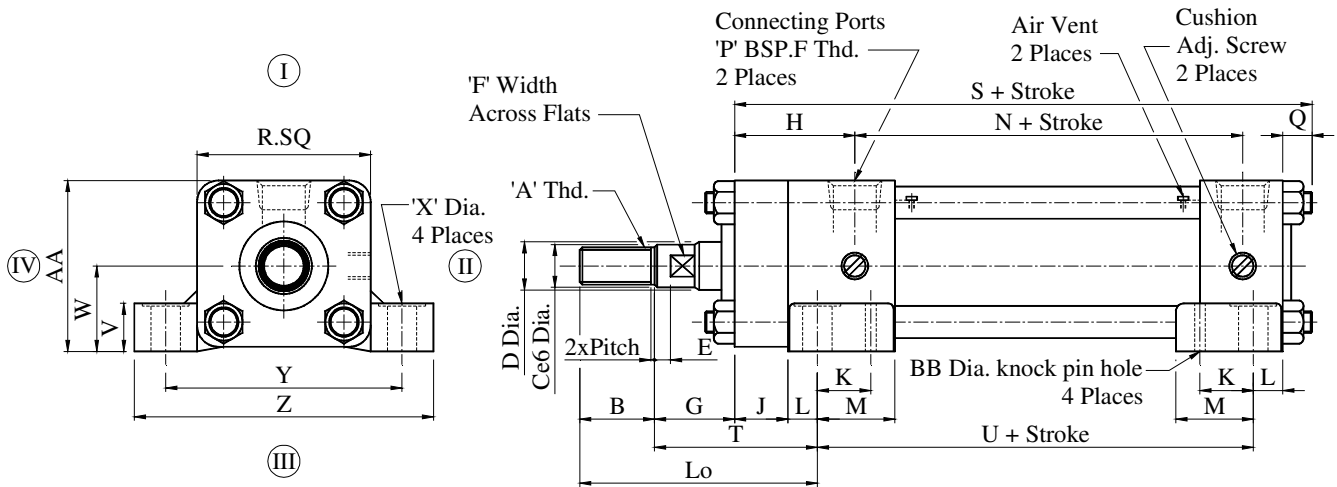
- Air Bleeding :** Air Bleed screws are provided at head and rod side to remove any air entrapped in the oil chamber. Turn the screw anti-clockwise to remove air. After air removal turn the screw clockwise to close the screw.
- Cushion :** Cylinder cushion are often provided at both ends of the cylinder to slow down near the end of the stroke and prevent the piston from hammering against the end cap.
- Cushion Adjust Valve :** Turn the screw clockwise for longer cushioning time and turn screw anti-clockwise for shorter cushion time.

Effective Length of Cushion

Cylinder Bore mm	40	50	63	80	100	125	150
Cushion Position							
Head Side mm	10	13	13	15	15	15	15
Rod Side mm	17	20	20	22	22	25	25

LA : Foot Mounting Side Lugs Type

The positions of connecting port and cushion adjusting screw can not be altered. The position of air vent is indicated in the illustration as the standard. However it is changeable to other position. When required to install the air vent at any other position, please specify it by the following positional numbers (II, III & IV)



Calculate the approximate weight using the formula below.

$$\text{Weight} = \text{Basic Weight} + \text{Added Weight Per Stroke of } 100 \text{ mm} \times \frac{\text{Stroke}}{100}$$

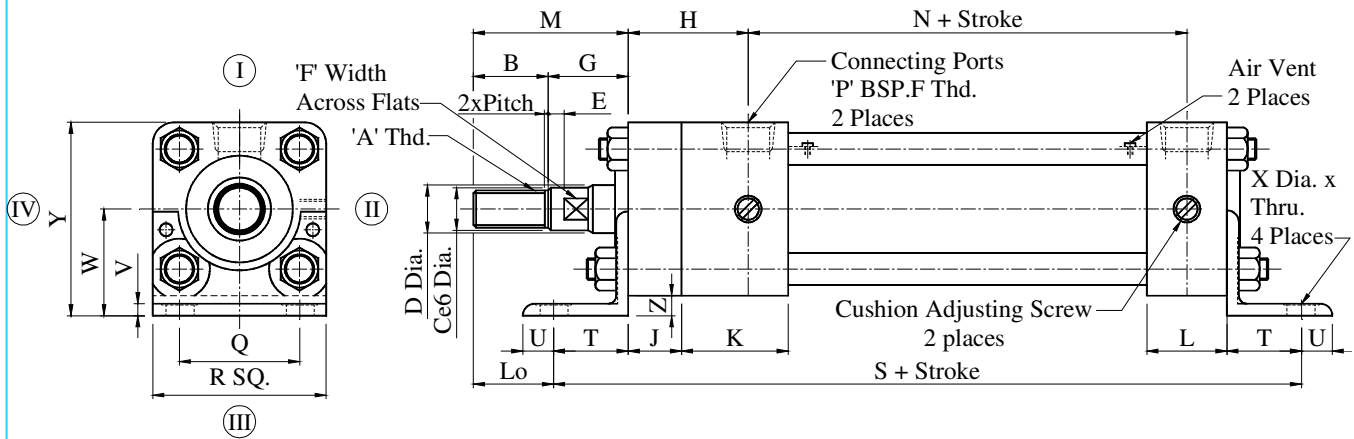
Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
CELA-40C	M14,P1.5	28	16	18	6	14	30	45	20	20	11	29	94	3/8	11	65	165	61
CELA-40B	M18,P1.5	31.5	20	22.4	6	17												
CELA-50C	M18,P1.5	31.5	20	22.4	6	17	35.5	49.2	21.2	23	11.5	33.5	116	1/2	13	80	195.2	68.2
CELA-50B	M22,P1.5	35.5	26	28	8	23												
CELA-63C	M22,P1.5	35.5	26	28	8	23	40	52	24	23	13.5	31.5	114	1/2	14	95	197	77.5
CELA-63B	M26,P1.5	40	33	35.5	8	29												
CELA-80C	M26,P1.5	40	33	35.5	8	29	47.5	60.5	27	28	16.5	30.5	132	3/4	16	115	231	91
CELA-80B	M33,P1.5	47.5	42	45	10	38												
CELA-100C	M33,P1.5	47.5	42	45	10	38	53	69	35.5	28	17	39	144	3/4	19	136	254.5	105.5
CELA-100B	M42,P1.5	56	53	56	10	46												
CELA-125C	M42,P1.5	56	53	56	10	46	60	80	39	35.5	19.5	51.5	168	1	21	165	299	118.5
CELA-125B	M55,P2	67	68	71	12	58												
CELA-150C	M50,P1.5	63	64	67	12	54	67	88.5	47.5	35.5	22.5	48.5	178	1	23	200	319.5	137
CELA-150B	M65,P2	80	82	85	12	67												

Model Number	U	V	W	X	Y	Z	AA	BB	Lo.	Weight (Approx.) Kg	
										Basic Weight	Added Wt/100 mm
CELA-40C	112	18	±0.15	11	90	112	64	5	89	4.6	0.9
CELA-40B			33.5							4.7	1.0
CELA-50C	138	21.2	±0.15	13	109	132	82.5	5	99.7	7.3	1.4
CELA-50B			42.5							7.5	1.4
CELA-63C	132	25	±0.15	15	128	155	97.5	5	113	11.3	2.0
CELA-63B			50							11.6	2.3
CELA-80C	155	30	±0.25	18	152	185	117.5	8	131	20.0	3.0
CELA-80B			60							20.5	3.5
CELA-100C	166	35.5	±0.25	20	178	212	139	8	153	33.0	4.6
CELA-100B			71							33.7	5.3
CELA-125C	200	42.5	±0.25	24	211	250	167.5	8	174.5	57.0	7.0
CELA-125B			85							58.2	8.2
CELA-150C	204	50	±0.25	28	255	300	203	8	200	89.0	10.3
CELB-150B			103							90.5	11.8

Foot Mounting Side Lugs Type

LB : Foot Mounting Side End Angles Type

The standard positions are as indicated in the illustration ①. However it can be changed to other ones when you required to install at any other position. Please specify the following positional numbers (②③&④) provided. The relative position of connecting port and cushion adjusting screw can not be altered.



Calculate the approximate weight using the formula below.

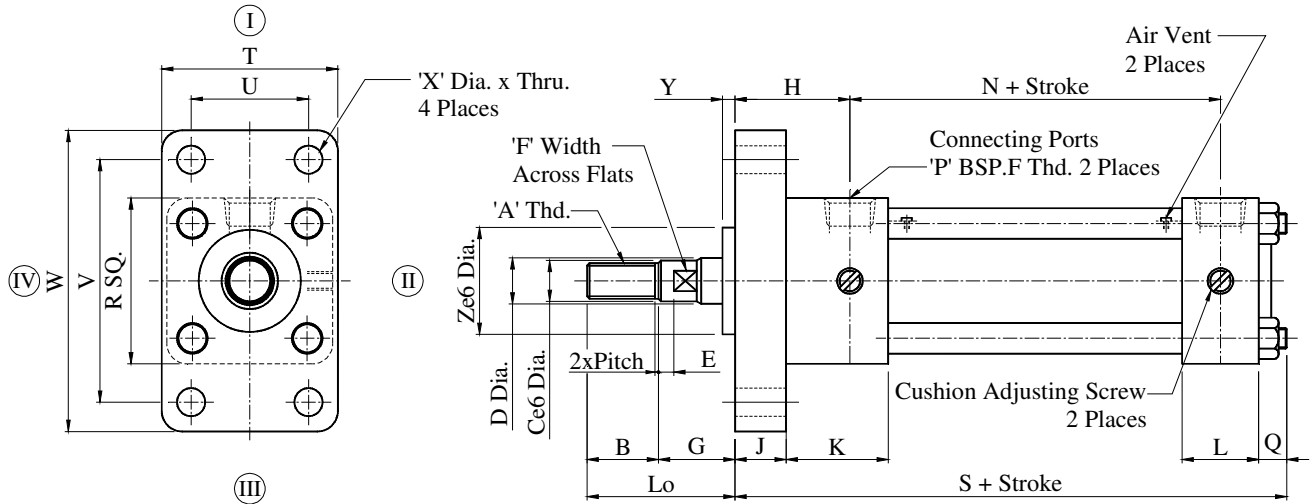
$$\text{Weight} = \text{Basic Weight} + \text{Added Weight Per Stroke of } 100 \text{ mm} \times \frac{\text{Stroke}}{100}$$

Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
CELB-40C	M14,P1.5	28	16	18	6	14	30	45	20	40	30	58	94	3/8	44	65	210	28
CELB-40B	M18,P1.5	31.5	20	22.4	6	17						61.5						
CELB-50C	M18,P1.5	31.5	20	22.4	6	17	35.5	49.2	21.2	45	34	67	116	1/2	53	80	252.2	35
CELB-50B	M22,P1.5	33.5	26	28	8	23						71						
CELB-63C	M22,P1.5	33.5	26	28	8	23	40	52	24	45	34	75.5	114	1/2	65	95	257	37
CELB-63B	M26,P1.5	40	33	35.5	8	29						80						
CELB-80C	M26,P1.5	40	33	35.5	8	29	47.5	60.5	27	56	45	87.5	132	3/4	82	115	299	42
CELB-80B	M33,P1.5	47.5	42	45	10	38						95						
CELB-100C	M33,P1.5	47.5	42	45	10	38	53	69	35.5	56	45	100.5	144	3/4	100	136	335.5	50
CELB-100B	M42,P1.5	56	53	56	10	46						109						
CELB-125C	M42,P1.5	56	53	56	10	46	60	80	39	71	60	116	168	1	122	165	398	60
CELB-125B	M55,P2	67	68	71	12	58						127						
CELB-150C	M50,P1.5	63	64	67	12	54	67	88.5	47.5	71	60	130	178	1	147	200	466.5	85
CELB-150B	M65,P2	80	82	85	12	67						147						

Model Number	U	V	W	X	Y	Z	Lo.	Weight (Approx.) Kg	
								Basic Weight	Added Wt/100 mm
CELB-40C	11.5	4.5	±0.15	11	72.5	7.5	30	4.5	0.9
CELB-40B			40					4.6	1.0
CELB-50C	14.5	5.5	±0.15	13	87.5	7.5	32	7.1	1.4
CELB-50B			47.5					7.3	1.6
CELB-63C	22.5	6.5	±0.15	15	103.5	8.5	38.5	10.8	2.0
CELB-63B			56					11.1	2.3
CELB-80C	22.5	7.5	±0.25	18	124.5	9.5	45.5	19.2	3.0
CELB-80B			67					19.7	3.5
CELB-100C	23	10	±0.25	20	148	12	50.5	31.0	4.6
CELB-100B			80					31.7	5.3
CELB-125C	29.5	12.5	±0.25	24	182.5	17.5	56	55.6	7.0
CELB-125B			100					56.8	8.2
CELB-150C	44	16	±0.25	28	210	18	45	87.0	10.3
CELB-150B			118					88.5	11.8

FA : Rod Rectangular Flange Type

The standard positions are as indicated in the illustration (I). However it can be changed to other ones when you required to install at any other position. Specify the following positional numbers (II, III & IV) provided. The relative position of connecting port and cushion adjusting screw can not be altered.



Calculate the approximate weight using the formula below.

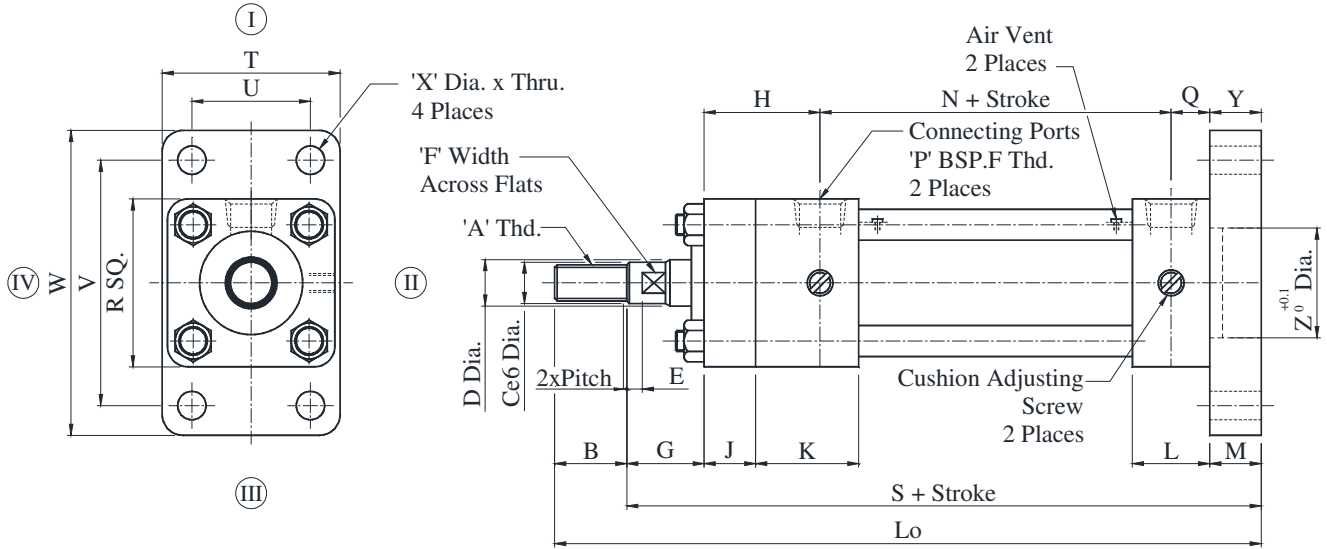
$$\text{Weight} = \text{Basic Weight} + \text{Added Weight Per Stroke of } 100 \text{ mm} \times \frac{\text{Stroke}}{100}$$

Model Number	A	B	C	D	E	F	G	H	J	K	L	N	P	Q	R	S	T
CEFA-40C	M14, P1.5	28	16	18	6	14	30	45	20	40	30	94	3/8	11	65	165	69
CEFA-40B	M18, P1.5	31.5	20	22.4	6	17											
CEFA-50C	M18, P1.5	31.5	20	22.4	6	17	35.5	49.2	21.2	45	34	116	1/2	13	80	95.2	85
CEFA-50B	M22, P1.5	35.5	26	28	8	23											
CEFA-63C	M22, P1.5	35.5	26	28	8	23	40	52	24	45	34	114	1/2	14	95	197	98
CEFA-63B	M26, P1.5	40	33	35.5	8	29											
CEFA-80C	M26, P1.5	40	33	35.5	8	29	47.5	60.5	27	56	45	132	3/4	16	115	231	118
CEFA-80B	M33, P1.5	47.5	42	45	10	38											
CEFA-100C	M33, P1.5	47.5	42	45	10	38	53	69	35.5	56	45	144	3/4	19	136	254.5	145
CEFA-100B	M42, P1.5	56	53	56	10	46											
CEFA-125C	M42, P1.5	56	53	56	10	46	60	80	39	71	60	168	1	21	165	299	175
CEFA-125B	M55, P2	67	68	71	12	58											
CEFA-150C	M50, P1.5	63	64	67	12	54	67	88.5	47.5	71	60	178	1	23	200	319.5	206
CEFA-150B	M65, P2	80	82	85	12	67											

Model Number	U	V	W	X	Y	Z	Lo.	Weight (Approx.) Kg	
								Basic Weight	Added Wt/100 mm
CEFA-40C	46	95	118	11	6	42.5	58	4.2	0.9
CEFA-40B							61.5	4.3	1.0
CEFA-50C	58	115	145	13	6	50	67	6.7	1.4
CEFA-50B							71	6.9	1.6
CEFA-63C	69	132	165	15	8	63	75.6	10.0	2.0
CEFA-63B							80.0	10.3	2.3
CEFA-80C	87	155	190	18	8	75	87.5	17.8	3.0
CEFA-80B							95	18.3	3.5
CEFA-100C	109	185	224	20	8	85	100.5	28.2	4.6
CEFA-100B							109	28.9	5.3
CEFA-125C	132	224	272	24	8	106	116	50.5	7.0
CEFA-125B							127	51.7	8.2
CEFA-150C	155	265	315	28	8	118	130	78.4	10.3
CEFA-150B							147	79.9	11.8

FB : Head Rectangular Flange Type

The standard positions are as indicated in the illustration ①. However it can be changed to other ones when you required to install at any other position. Please specify the following positional numbers ②③&④ provided. The relative position of connecting port and cushion adjusting screw can not be altered.



Calculate the approximate weight using the formula below.

$$\text{Weight} = \text{Basic Weight} + \text{Added Weight Per Stroke of } 100 \text{ mm} \times \frac{\text{Stroke}}{100}$$

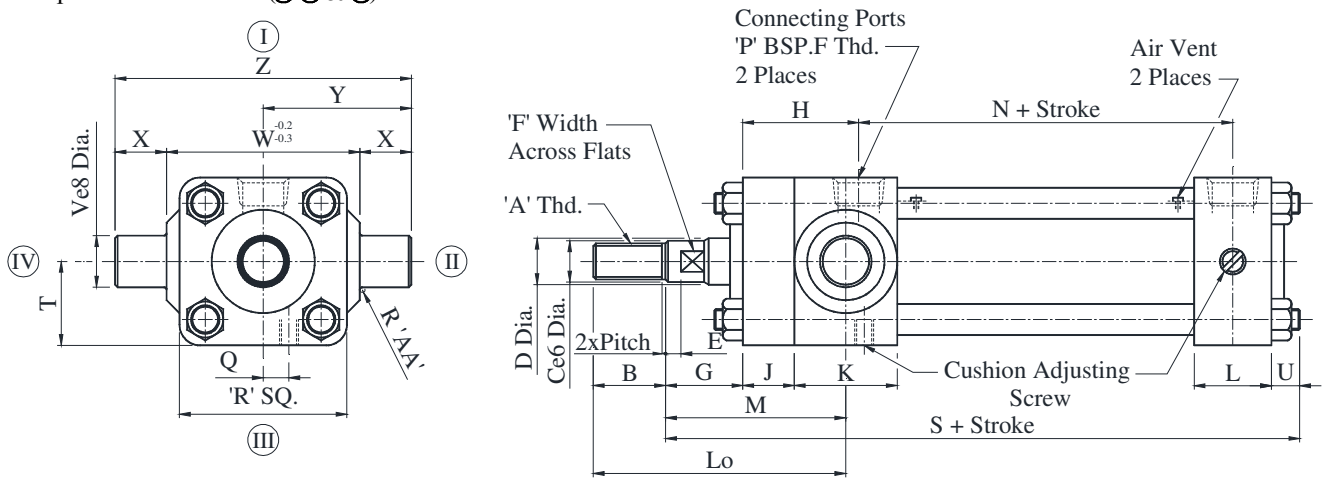
Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
CEFB-40C	M14, P1.5	28	16	18	6	14	30	45	20	40	30	20	94	3/8	15	65	204	69
CEFB-40B	M18, P1.5	31.5	20	22.4	6	17												
CEFB-50C	M18, P1.5	31.5	20	22.4	6	17	35.5	49.2	21.2	45	34	21.2	116	1/2	17	80	239.2	85
CEFB-50B	M22, P1.5	35.5	26	28	8	23												
CEFB-63C	M22, P1.5	35.5	26	28	8	23	40	52	24	45	34	24	114	1/2	17	95	247	98
CEFB-63B	M26, P1.5	40	33	35.5	8	29												
CEFB-80C	M26, P1.5	40	33	35.5	8	29	47.5	60.5	27	56	45	27	132	3/4	22.5	115	289.5	118
CEFB-80B	M33, P1.5	47.5	42	45	10	38												
CEFB-100C	M33, P1.5	47.5	42	45	10	38	53	69	35.5	56	45	35.5	144	3/4	22.5	136	324	145
CEFB-100B	M42, P1.5	56	53	56	10	46												
CEFB-125C	M42, P1.5	56	53	56	10	46	60	80	39	71	60	39	168	1	30	165	377	175
CEFB-125B	M55, P2	67	68	71	12	58												
CEFB-150C	M50, P1.5	63	64	67	12	54	67	88.5	47.5	71	60	47.5	178	1	30	200	411	206
CEFB-150B	M65, P2	80	82	85	12	67												

Model Number	U	V	W	X	Y	Z	Lo.	Weight (Approx.) Kg	
								Basic Weight	Added Wt/100 mm
CEFB-40C	46	95	118	11	15	42.5	232+Stroke	3.2	0.9
CEFB-40B							235.5+Stroke	5.3	1.0
CEFB-50C	58	115	145	13	16.2	50	270.7+Stroke	8.4	1.4
CEFB-50B							274.7+Stroke	8.6	1.6
CEFB-63C	69	132	165	15	19	63	282.5+Stroke	12.7	2.0
CEFB-63B							287+Stroke	13.0	2.3
CEFB-80C	87	155	190	18	22	75	329.5+Stroke	22.2	3.0
CEFB-80B							337+Stroke	22.7	3.5
CEFB-100C	109	185	224	20	30	85	371.5+Stroke	36.1	4.6
CEFB-100B							380+Stroke	36.8	5.3
CEFB-125C	132	224	272	24	34	106	433+Stroke	63.2	7.0
CEFB-125B							444+Stroke	64.4	8.2
CEFB-150C	155	265	315	28	42.5	118	474+Stroke	101.2	10.3
CEFB-150B							491+Stroke	102.7	11.0

Head Rectangular Flange Type

TA : Rod Side Trunnion Type

The position of connecting port and cushion adjusting screw cannot be altered except those indicated in the illustration. The position of air vent is as indicated in the illustration ① as the standard. However it is changeable to other position, when you required to install the air vent at any other position. Please specify it by the following positional numbers ② ③ & ④



Calculate the approximate weight using the formula below.

$$\text{Weight} = \text{Basic Weight} + \text{Added Weight Per Stroke of 100 mm} \times \frac{\text{Stroke}}{100}$$

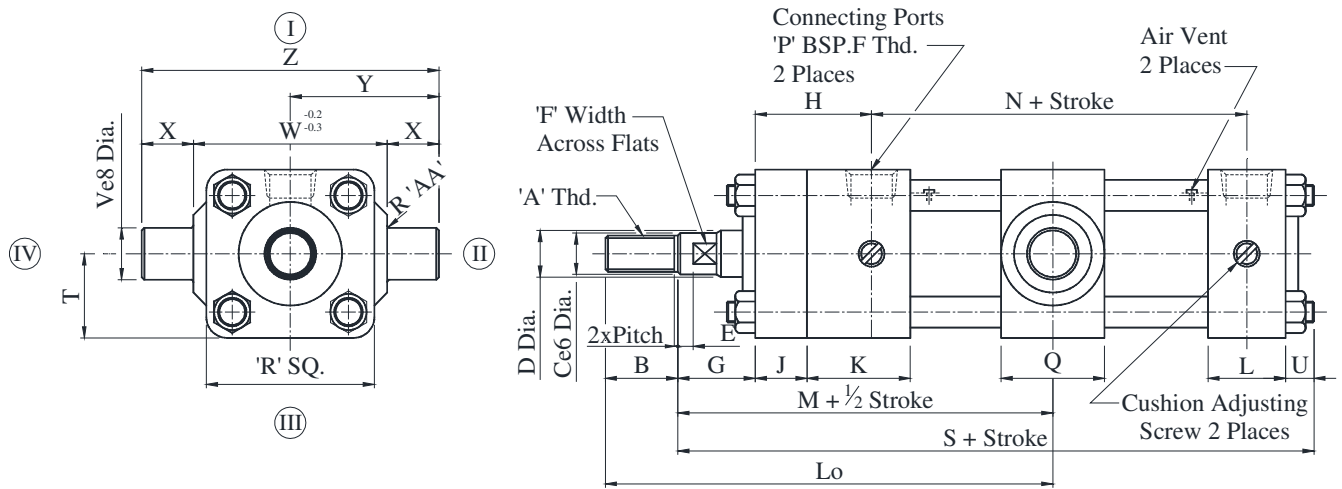
Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
CETA-40C	M14, P1.5	20	16	18	6	14	30	45	20	40	30	70	94	3/8	10	65	195	32.5
CETA-40B	M18, P1.5	31.5	20	22.4	6	17												
CETA-50C	M18, P1.5	31.5	20	22.4	6	17	35.5	49.2	21.2	45	34	79.2	116	1/2	10	80	231	40
CETA-50B	M22, P1.5	35.5	26	28	8	23												
CETA-63C	M22, P1.5	35.5	26	28	8	23	40	52	24	45	34	86.5	114	1/2	10	95	237	47.5
CETA-63B	M26, P1.5	40	33	35.5	8	29												
CETA-80C	M26, P1.5	40	33	35.5	8	29	47.5	60.5	27	56	45	102.5	132	3/4	10	115	278.5	57.5
CETA-80B	M33, P1.5	47.5	42	45	10	38												
CETA-100C	M33, P1.5	47.5	42	45	10	38	53	69	35.5	56	45	116.5	144	3/4	10	136	307.5	68
CETA-100B	M42, P1.5	56	53	56	10	46												
CETA-125C	M42, P1.5	56	53	56	10	46	60	80	39	71	60	134.5	168	1	10	165	359	82.5
CETA-125B	M55, P2	67	68	71	12	58												
CETA-150C	M50, P1.5	63	64	67	12	54	67	88.5	47.5	71	60	150	178	1	10	200	386.5	100
CETA-150B	M65, P2	80	82	85	12	67												

Model Number	U	V	W	X	Y	Z	AA	Lo.	Weight (Approx.) Kg	
									Basic Weight	Added Wt/100 mm
CETA-40C	11	20	75	20	57.5	115	1	98	4.2	0.9
CETA-40B								101.5	4.3	1.0
CETA-50C	13	25	90	25	70	140	1	110.7	6.8	1.4
CETA-50B								114.7	7.0	1.6
CETA-63C	14	31.5	105	31.5	84	168	2	122	10.3	2.0
CETA-63B								126.5	10.6	2.3
CETA-80C	16	31.5	125	31.5	94	188	2	142.5	18.5	3.0
CETA-80B								150	19.0	3.5
CETA-100C	19	40	146	40	113	226	2	164	29.5	4.6
CETA-100B								172.5	30.2	5.3
CETA-125C	21	50	175	50	137.5	275	2	190.5	53.3	7.0
CETA-125B								201.5	54.5	8.2
CETA-150C	23	63	210	63	168	336	2	213	82.3	10.3
CETA-150B								230	83.8	11.8

Rod Side Trunnion Type

TC : Intermediate Trunnion Type

The standard positions are as indicated in the illustration ①. However it can be changed to other ones when required to install at any other position. Please specify the following positional numbers ②③④ provided. The relative position of connecting port and cushion adjusting screw can not be altered.



Calculate the approximate weight using the formula below.

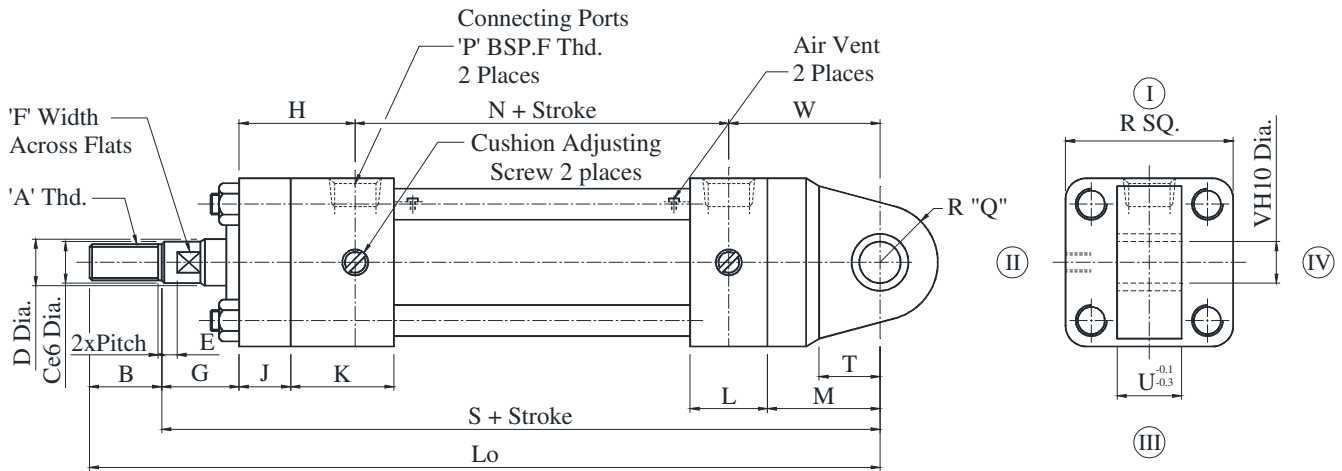
$$\text{Weight} = \text{Basic Weight} + \text{Added Weight Per Stroke of } 100 \text{ mm} \times \frac{\text{Stroke}}{100}$$

Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
CETC-40C	M14, P1.5	28	16	18	6	14	30	45	20	40	30	122	94	3/8	40	65	195	32.5
CETC-40B	M18, P1.5	31.5	20	22.4	6	17												
CETC-50C	M18, P1.5	31.5	20	22.4	6	17	35.5	49.2	21.2	45	34	142.7	116	1/2	45	80	231	40
CETC-50B	M22, P1.5	35.5	26	28	8	23												
CETC-63C	M22, P1.5	35.5	26	28	8	23	40	52	24	45	34	149	114	1/2	45	95	237	47.5
CETC-63B	M26, P1.5	40	33	35.5	8	29												
CETC-80C	M26, P1.5	40	33	35.5	8	29	47.5	60.5	27	56	45	174	132	3/4	56	115	278.5	57.5
CETC-80B	M33, P1.5	47.5	42	45	10	38												
CETC-100C	M33, P1.5	47.5	42	45	10	38	53	69	35.5	56	45	194	144	3/4	56	136	307.5	68
CETC-100B	M42, P1.5	56	53	56	10	46												
CETC-125C	M42, P1.5	56	53	56	10	46	60	80	39	71	60	224	168	1	71	165	359	82.5
CETC-125B	M55, P2	67	68	71	12	58												
CETC-150C	M50, P1.5	63	64	67	12	54	67	88.5	47.5	71	60	224.5	178	1	71	200	386.5	100
CETC-150B	M65, P2	80	82	85	12	67												

Model Number	U	V	W	X	Y	Z	AA	Lo.	Weight (Approx.) Kg	
									Basic Weight	Added Wt/100 mm
CETC-40C	11	20	75	20	57.5	115	1	150+1/2Stroke	4.6	0.9
CETC-40B								153.5+1/2Stroke	4.7	1.0
CETC-50C	13	25	90	25	70	140	1	174.2+1/2Stroke	8.5	1.4
CETC-50B								178.2+1/2Stroke	8.7	1.6
CETC-63C	14	31.5	105	31.5	84	168	2	184.5+1/2Stroke	12.5	2.0
CETC-63B								189+1/2Stroke	13.0	2.3
CETC-80C	16	31.5	125	31.5	94	188	2	214+1/2Stroke	21.5	3.0
CETC-80B								221.5+1/2Stroke	22.0	3.5
CETC-100C	19	40	146	40	113	226	2	241.5+1/2Stroke	32.5	4.6
CETC-100B								250+1/2Stroke	34.2	5.3
CETC-125C	21	50	175	50	137.5	275	2	280+1/2Stroke	56.2	7.0
CETC-125B								291+1/2Stroke	57.4	8.2
CETC-150C	23	63	168	63	168	336	2	307.5+1/2Stroke	85.5	10.3
CETC-150B								324.5+1/2Stroke	87.0	11.8

CA : Head Detachable Clevis Type

The standard positions are as indicated in the illustration ①. However it can be changed to other ones when required to install at any other position. Please specify the following positional numbers (②③&④) provided. The relative position of connecting port and cushion adjusting screw can not be altered.



Calculate the approximate weight using the formula below.

$$\text{Weight} = \text{Basic Weight} + \text{Added Weight Per Stroke of } 100 \text{ mm} \times \frac{\text{Stroke}}{100}$$

Model Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
CECA-40C	M14, P1.5	28	16	18	6	14	30	45	20	40	30	47.5	94	3/8	22.4	65	231.5	27.5
CECA-40B	M18, P1.5	31.5	20	22.4	6	17												
CECA-50C	M18, P1.5	31.5	20	22.4	6	17	35.5	49.2	21.2	45	34	50	116	1/2	26.5	80	267.7	28
CECA-50B	M22, P1.5	35.5	26	28	8	23												
CECA-63C	M22, P1.5	35.5	26	28	8	23	40	52	24	45	34	71	114	1/2	37.5	95	294	45
CECA-63B	M26, P1.5	40	33	35.5	8	29												
CECA-80C	M26, P1.5	40	33	35.5	8	29	47.5	60.5	27	56	45	75	132	3/4	40	115	337.5	45
CECA-80B	M33, P1.5	47.5	42	45	10	38												
CECA-100C	M33, P1.5	47.5	42	45	10	38	53	69	35.5	56	45	90	144	3/4	48	136	378.5	55
CECA-100B	M42, P1.5	56	53	56	10	46												
CECA-125C	M42, P1.5	56	53	56	10	46	60	80	39	71	60	105	168	1	58	165	443	65
CECA-125B	M55, P2	67	68	71	12	58												
CECA-150C	M50, P1.5	63	64	67	12	54	67	88.5	47.5	71	60	128	178	1	80	200	491.5	84
CECA-150B	M65, P2	80	82	85	12	67												

Model Number	U	V	W	Lo.	Weight (Approx.) Kg	
					Basic Weight	Added Wt/100 mm
CECA-40C	25	16	62.5	259.5+Stroke	4.5	0.9
CECA-40B				263+Stroke	4.7	1.0
CECA-50C	31.5	20	67	299.2+Stroke	8.1	1.4
CECA-50B				303.2+Stroke	8.3	1.6
CECA-63C	40	31.5	88	329.5+Stroke	12.4	2.0
CECA-63B				334+Stroke	12.7	2.3
CECA-80C	40	31.5	97.5	377.5+Stroke	22.2	3.0
CECA-80B				385+Stroke	22.7	3.5
CECA-100C	50	40	112.5	426+Stroke	35.5	4.6
CECA-100B				434.5+Stroke	36.2	5.3
CECA-125C	63	50	135	499+Stroke	63.4	7.0
CECA-125B				510+Stroke	64.6	8.2
CECA-150C	80	63	158	554.5+Stroke	97.2	10.3
CECA-150B				571.5+Stroke	98.7	11.8

Head Detachable Clevis Type

Theoretical Output

Theoretical output means an output calculated by neglecting all resistance as the output is proportional to pressure. The theoretical output pressure at levels other than 10 & 140 Kg/cm² should be obtained by a proportional calculation based on the output at pressure of 10 Kg/cm².

Model Numbers	Piston Area cm ²		Speed Ratio Forward : Reverse	Theoretical Output Kgf			
	Head Side	Rod Side		At pressure of 10 Kg/cm ²		At pressure of 140 Kg/cm ²	
			Forward	Reverse	Forward	Reverse	
CE※-40C	12.5	10.0	1 : 1.25	125	100	1750	1400
CE※-50C	19.6	15.7		196	157	2740	2200
CE※-63C	31.2	25.0		312	250	4370	3500
CE※-80C	50.3	40.4		503	404	7040	5660
CE※-100C	78.5	62.6		785	626	11000	8760
CE※-125C	123	98.1		1230	981	17200	13700
CE※-150C	177	141		1770	1410	24800	19700
CE※-40B	12.5	8.6	1 : 1.5	125	86	1750	1200
CE※-50B	19.6	13.5		196	135	2740	1890
CE※-63B	31.2	21.3		312	213	4370	2980
CE※-80B	50.3	34.4		503	344	7040	4820
CE※-100B	78.5	53.9		785	539	11000	7550
CE※-125B	123	83.1		1230	831	17200	11600
CE※-150B	177	120		1770	1200	24800	16800

Max. Stroke Vs. Buckling Strength

How to obtain Max. Stroke

- 1 Obtain the co-efficient of end 'n' from the table 1 on page 11.
- 2 Obtain the max. installation length L applying the values of cylinder bore, rod dia., pressure co-efficient of end. etc. to the following chart which is given in the next page.
- 3 Obtaining the installation length Lo at the time of retraction from the external dimensional drawing. Obtain the maximum stroke 'S' using the formula $S = L - L_o$.

Example When using the standard cylinder of which cylinder bore is 100 mm, rod dia is 56 mm & support type is TC (Intermediate Trunnion type) at pressure of 80 Kg/cm², the maximum stroke becomes as follows:

From following chart

$$n = 1$$

$$L = 1980 \text{ (Approx.)}$$

From the external dimensional drawing

$$L_o = 250 + S/2$$

Therefore $S = L - L_o = 1980 - (250 + S/2)$
The maximum stroke is 1150 mm
 $S \approx 1150 \text{ mm (Approx.)}$

Max. Installation Length Vs. Cylinder Bore.

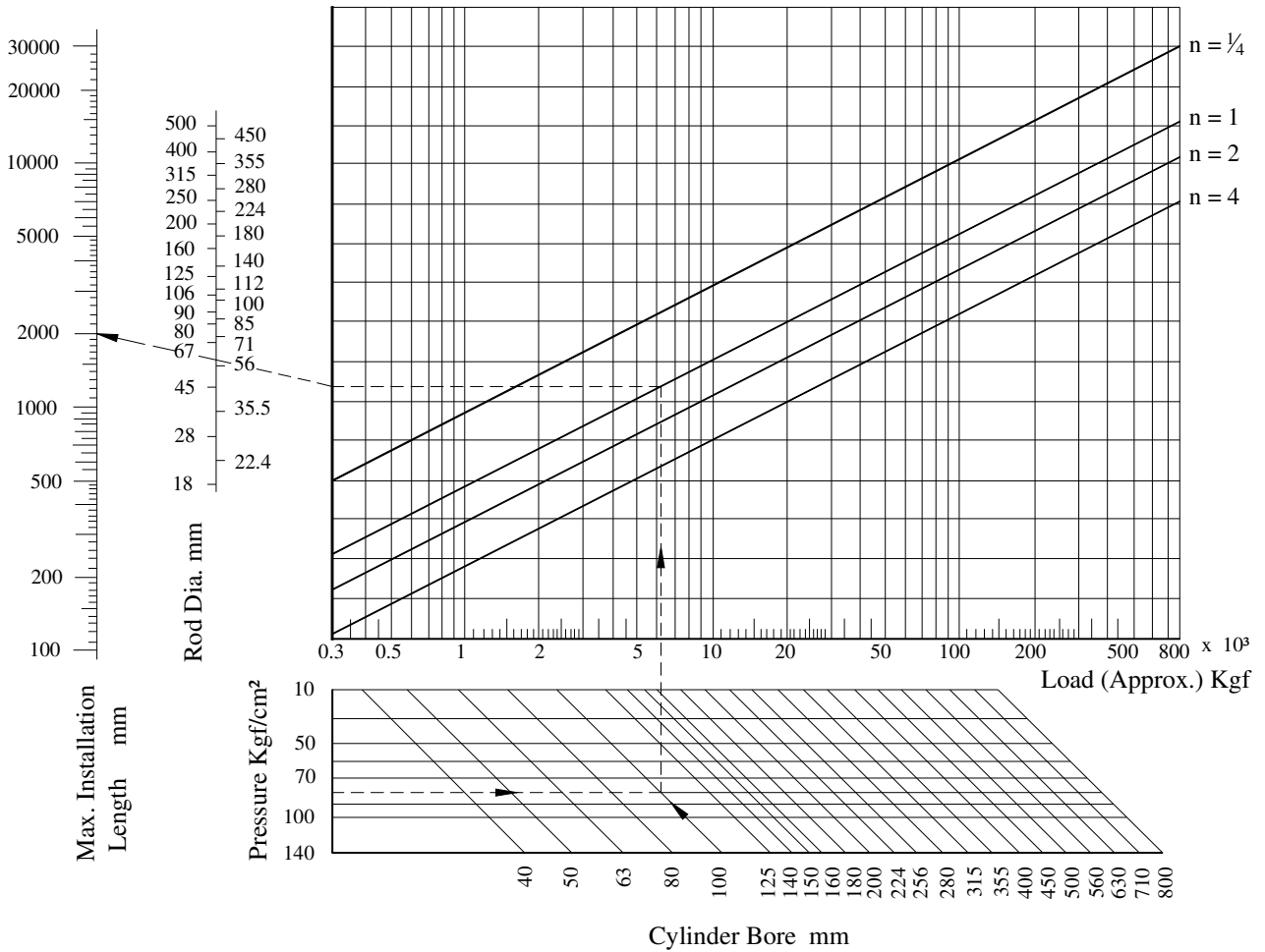


Table - 1

Support Type	Operating Condition	Coefficient of End n	Support Type	Operating Condition	Coefficient of End n
LA-Type		1/4	FB-Type		1/4
LB-Type		2			2
		4			4
FA-Type		1/4	TA-Type		1
		2	TC-Type		
		4	CA-Type		

$S = L - L_o$ $S = \text{Stroke mm}$
 $L = \text{Installation Length at a time of Expansion}$
 $L_o = \text{Installation Length at a time of Retraction}$
 $L \ \& \ L_o = \text{mm}$
 Note: Obtain L_o from the external dimensional drawing