Square body demonstrates powerful downsizing capacity.

JIG CYLINDERS (SERIES

Richly abundant series of 9 different types and 69 models

A rich series configuration spanning from ϕ 6 [0.236in.] to ϕ 100 [3.940in.] responds to diverse needs far better than previous thin type cylinders.

Moreover, Non-ion specification is also available as standard.

(Excludes $\phi 6$ [0.236in.], $\phi 8$ [0.315in.], and $\phi 10$ [0.394in.])

Provides powerful back-up for device miniaturization

Exhibits no protrusions in its external shape even after a sensor switch has been mounted, for easy mounting in tight spaces.

This cylinder is one step up on cylinders of the same class in terms of size, mass, and performance.

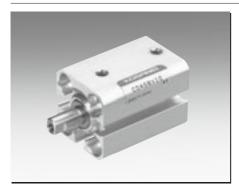


φ 100 [3.940in.]



New Line-Up Includes ϕ 6 [0.236in.], ϕ 8 [0.315in.], and ϕ 10 [0.394in.]

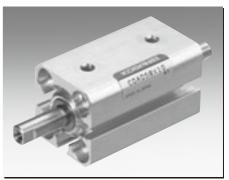
For a greater selection in response to needs for miniaturization, 3 new bore sizes at ϕ 6, ϕ 8, and ϕ 10 have been added, increasing the range of sizes to choose from.



Standard Cylinders *φ*6 [0.236in.]∼*φ*100 [3.940in.]



Non-rotating Cylinders ϕ 6 [0.236in.] $\sim \phi$ 10 [0.394in.]



Double Rod Cylinders ϕ 6 [0.236in.] \sim ϕ 100 [3.940in.]

The Jig Cylinders C Series Includes the 9 Types Shown Below.



■ Double Rod Cylinders p.154



p.180 ■ Lateral Load Resistant Cylinders



■Mounting Brackets p.197



■ Sensor Switches p.199





p.161 ■Tandem Cylinders



■Long Stroke Cylinders p.185



■Square Rod Cylinders



■ Dual Stroke Cylinders



■End Keep Cylinders



	Ope	eration t	type	Cylinder sp	ecifications	Rod end sp	ecifications	Bumpers	Centering location	Non-ion specification	Moun	ting bra	ackets
	Double acting type	Single acting push type	Single acting pull type	Cylinder with magnet	Heat resistant type	Female thread	Male thread	Not avail- able for heat resistant type		Not avail- able for heat resistant type	Foot mounting bracket	Flange mounting bracket	Clevis mounting bracket
Standard Cylinders													
Non-rotating Cylinders	Note			Note		Note	Note						
Square Rod Cylinders													
Double Rod Cylinders													
Tandem Cylinders													
Dual Stroke Cylinders													
Lateral Load Resistant Cylinders													
Long Stroke Cylinders													
End Keep Cylinders													

The colored areas include bore sizes of ϕ 6, ϕ 8, and ϕ 10. Note: Non-rotating cylinders are set at bore sizes ϕ 6, ϕ 8, and ϕ 10 only.

Cylinder Thrust

Select a suitable bore size considering the load and air pressure to obtain the required thrust.

Since the figures in the table are calculated values, select a bore size that results in a load ratio (load ratio = $\frac{\text{Load}}{\text{Calculated value}}$) of 70% or less (50% or less for high speed).

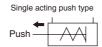
Double acting type

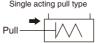


N [lbf.]

Bore size	Piston rod	0	Pressure area				,	Air pressure	MPa [psi.]			
mm [in.]	diameter mm [in.]	Operation	mm² [in?]	0.1 [15]	0.2 [29]	0.3 [44]	0.4 [58]	0.5 [73]	0.6 [87]	0.7 [102]	0.8 [116]	0.9 [131]	1.0 [145]
. [200.01.2	4 [0 4 [7]	Push side	28.3 [0.0439]	2.8 [0.63]	5.7 [1.28]	8.5 [1.91]	11.3 [2.54]	14.1 [3.17]	17.0 [3.82]	19.8 [4.45]	22.6 [5.08]	25.4 [5.71]	-
6 [0.236]	4 [0.157]	Pull side	15.7 [0.0243]	1.6 [0.36]	3.1 [0.7]	4.7 [1.06]	6.3 [1.42]	7.9 [1.78]	9.4 [2.11]	11.0 [2.47]	12.6 [2.83]	14.1 [3.17]	-
0 [0 245]	E [0 107]	Push side	50.3 [0.0780]	5.0 [1.12]	10.1 [2.27]	15.1 [3.39]	20.1 [4.52]	25.1 [5.64]	30.2 [6.79]	35.2 [7.91]	40.2 [9.04]	45.2 [10.2]	-
8 [0.315]	5 [0.197]	Pull side	30.6 [0.0474]	3.1 [0.70]	6.1 [1.37]	9.2 [2.07]	12.3 [2.77]	15.3 [3.44]	18.4 [4.14]	21.4 [4.81]	24.5 [5.51]	27.6 [6.20]	-
10 [0 204]	E [0 107]	Push side	78.5 [0.1217]	7.9 [1.78]	15.7 [3.53]	23.6 [5.31]	31.4 [7.06]	39.3 [8.83]	47.1 [10.6]	55.0 [12.4]	62.8 [14.1]	70.7 [15.9]	-
10 [0.394]	5 [0.197]	Pull side	58.9 [0.0913]	5.9 [1.33]	11.8 [2.65]	17.7 [3.98]	23.6 [5.31]	29.5 [6.63]	35.3 [7.94]	41.2 [9.26]	47.1 [10.6]	53.0 [11.9]	_
12 [0.472]	6 [0 006]	Push side	113.0 [0.175]	11.3 [2.54]	22.6 [5.08]	33.9 [7.62]	45.2 [10.2]	56.5 [12.7]	67.8 [15.2]	79.1 [17.8]	90.4 [20.3]	101.7 [22.86]	113.0 [25.40]
12 [0.472]	6 [0.236]	Pull side	84.8 [0.131]	8.5 [1.91]	17.0 [3.82]	25.4 [5.71]	33.9 [7.62]	42.4 [9.53]	50.9 [11.4]	59.3 [13.3]	67.8 [15.2]	76.3 [17.2]	84.8 [19.1]
16 [0.630]	8 [0.315]	Push side	201.0 [0.312]	20.1 [4.52]	40.2 [9.04]	60.3 [13.6]	80.4 [18.1]	100.5 [22.59]	120.6 [27.11]	140.7 [31.63]	160.8 [36.15]	180.9 [40.67]	201.0 [45.18]
10 [0.030]	6 [0.313]	Pull side	150.0 [0.233]	15.1 [3.39]	30.1 [6.77]	45.2 [10.2]	60.3 [13.6]	75.4 [16.9]	90.4 [20.3]	105.5 [23.72]	120.6 [27.11]	135.6 [30.48]	150.7 [33.88]
20 [0.787]	10 [0.394]	Push side	314.0 [0.487]	31.4 [7.06]	62.8 [14.1]	94.2 [21.2]	125.6 [28.23]	157.0 [35.29]	188.4 [42.35]	219.8 [49.41]	251.2 [56.47]	282.6 [63.53]	314.0 [70.59]
20 [0.767]	10 [0.394]	Pull side	235.5 [0.365]	23.6 [5.31]	47.1 [10.6]	70.7 [15.9]	94.2 [21.2]	117.8 [26.48]	141.3 [31.76]	164.9 [37.07]	188.4 [42.35]	212.0 [47.66]	235.5 [52.94]
25 [0.984]	12 [0.472]	Push side	490.6 [0.760]	49.1 [11.0]	98.1 [22.1]	147.2 [33.09]	196.3 [44.13]	245.3 [55.14]	294.4 [66.18]	343.4 [77.20]	392.5 [88.23]	441.6 [99.27]	490.6 [110.3]
25 [0.964]	12 [0.472]	Pull side	377.6 [0.585]	37.8 [8.50]	75.5 [17.0]	113.3 [25.47]	151.0 [33.94]	188.8 [42.44]	226.6 [50.94]	264.3 [59.41]	302.1 [67.91]	339.8 [76.39]	377.6 [84.88]
32 [1.260]	16 [0.630]	Push side	803.8 [1.246]	80.4 [18.1]	160.8 [36.15]	241.2 [54.22]	321.5 [72.27]	401.9 [90.35]	482.3 [108.4]	562.7 [126.5]	643.1 [144.6]	723.5 [162.6]	803.8 [180.7]
32 [1.200]	10 [0.030]	Pull side	602.9 [0.934]	60.3 [13.6]	120.6 [27.11]	180.9 [40.67]	241.2 [54.22]	301.4 [67.75]	361.7 [81.31]	422.0 [94.87]	482.3 [108.4]	542.6 [122.0]	602.9 [135.5]
40 [1.575]	16 [0.630]	Push side	1256.0 [1.947]	125.6 [28.23]	251.2 [56.47]	376.8 [84.70]	502.4 [112.9]	628.0 [141.2]	753.6 [169.4]	879.2 [197.6]	1004.8 [225.9]	1130.4 [254.1]	1256.0 [282.3]
	10 [0.000]	Pull side	1055.0 [1.635]	105.5 [23.72]	211.0 [47.43]	316.5 [71.15]	422.0 [94.87]	527.5 [118.6]	633.0 [142.3]	738.5 [166.0]	844.0 [189.7]	949.5 [213.4]	1055.0 [237.2]
50 [1.969]	20 [0.787]	Push side	1962.5 [3.042]	196.3 [44.13]	392.5 [88.23]	588.8 [132.4]	785.0 [176.5]	981.3 [220.6]	1177.5 [264.7]	1373.8 [308.8]	1570.0 [352.9]	1766.3 [397.1]	1962.5 [441.2]
30 [1.303]	20 [0.707]	Pull side	1648.5 [2.555]	164.9 [37.07]	329.7 [74.12]	494.6 [111.2]	659.4 [148.2]	824.3 [185.3]	989.1 [222.3]	1154.0 [259.4]	1318.8 [296.5]	1483.7 [333.5]	1648.5 [370.6]
63 [2.480]	20 [0.787]	Push side	3115.7 [4.829]	311.6 [70.05]	623.1 [140.1]	934.7 [210.1]	1246.3 [280.2]	1557.8 [350.2]	1869.4 [420.2]	2181.0 [490.3]	2492.5 [560.3]	2804.1 [630.4]	3115.7 [700.4]
00 [2.400]	20 [0.707]	Pull side	2801.7 [4.343]	280.2 [62.99]	560.3 [126.0]	840.5 [188.9]	1120.7 [251.9]	1400.8 [314.9]	1681.0 [377.9]	1961.2 [440.9]	2241.3 [503.8]		2801.7 [629.8]
80 [3.150]	25 [0.984]	Push side	5024.0 [7.787]	502.4 [112.9]	1004.8 [225.9]	1507.2 [338.8]	2009.6 [451.8]	2512.0 [564.7]	3014.4 [677.6]	3516.8 [790.6]			5024.0 [1129.4]
00 [0.100]	20 [0.904]	Pull side	4533.4 [7.027]	453.3 [101.9]	906.7 [203.8]	1360.0 [305.7]	1813.4 [407.7]	2266.7 [509.6]	2720.0 [611.5]		3626.7 [815.3]		4533.4 [1019.1]
100 [3.940]	32 [1 181]	Push side	7850.0 [12.168]	785.0 [176.5]	1570.0 [352.9]	2355.0 [529.4]	3140.0 [705.9]	3925.0 [882.3]	4710.0 [1058.8]	5495.0 [1235.3]	6280.0 [1411.7]	7065.0 [1588.2]	7850.0 [1764.7]
100 [3.940]	02 [1.101]	Pull side	7046.2 [10.922]	704.6 [158.4]	1409.2 [316.8]	2113.8 [475.2]	2818.5 [633.6]	3523.1 [792.0]	4227.7 [950.4]	4932.3 [1108.8]	5636.9 [1267.2]	6341.5 [1425.6]	7046.2 [1584.0]

Single acting type





N [lbf.]

													14 [101.]
Operation	Bore size	Piston rod diameter	Pressure area					Air pressure	MPa [psi.]			
type	mm [in.]	mm [in.]	mm² [in.²]	0.1 [15]	0.2 [29]	0.3 [44]	0.4 [58]	0.5 [73]	0.6 [87]	0.7 [102]	0.8 [116]	0.9 [131]	1.0 [145]
	6 [0.236]	4 [0.157]	28.3 [0.0439]	-	_	5.6 [1.26]	8.4 [1.89]	11.2 [2.52]	14.1 [3.17]	16.9 [3.80]	19.7 [4.43]	22.5 [5.06]	-
	8 [0.315]	5 [0.197]	50.3 [0.0780]	-	-	10.4 [2.34]	15.4 [3.46]	20.4 [4.59]	25.5 [5.73]	30.5 [6.86]	35.5 [7.98]	40.5 [9.10]	-
	10 [0.394]	5 [0.197]	78.5 [0.1217]	-	-	18.9 [4.25]	26.7 [6.00]	34.6 [7.78]	42.4 [9.53]	50.3 [11.3]	58.1 [13.1]	66.0 [14.8]	-
. .	12 [0.472]	6 [0.236]	113.0 [0.175]	-	12.8 [2.88]	24.1 [5.42]	35.4 [7.96]	46.7 [10.5]	58.0 [13.0]	69.3 [15.6]	80.6 [18.1]	91.9 [20.7]	103.2 [23.20]
Single	16 [0.630]	6 [0.236]	201.0 [0.312]	-	26.1 [5.87]	46.2 [10.4]	66.3 [14.9]	86.4 [19.4]	106.5 [23.94]	126.6 [28.46]	146.7 [32.98]	166.8 [37.50]	186.9 [42.02]
acting push type	20 [0.787]	8 [0.315]	314.0 [0.487]	-	49.0 [11.0]	80.4 [18.1]	111.8 [25.13]	143.2 [32.19]	174.6 [39.25]	206.0 [46.31]	237.4 [53.37]	268.8 [60.43]	300.2 [67.48]
pusitiyee	25 [0.984]	10 [0.394]	490.6 [0.760]	-	76.3 [17.2]	125.4 [28.19]	174.5 [39.23]	223.5 [50.24]	272.6 [61.28]	321.6 [72.30]	370.7 [83.33]	419.8 [94.37]	468.8 [105.4]
	32 [1.260]	12 [0.472]	803.8 [1.246]	-	123.4 [27.74]	203.8 [45.81]	284.1 [63.87]	364.5 [81.94]	444.9 [100.0]	525.3 [118.1]	605.7 [136.2]	686.1 [154.2]	766.4 [172.3]
	40 [1.575]	16 [0.630]	1256.0 [1.947]	-	205.9 [46.29]	331.5 [74.52]	457.1 [102.8]	582.7 [131.0]	708.3 [159.2]	833.9 [187.5]	959.5 [215.7]	1085.1 [243.9]	1210.5 [272.1]
	50 [1.969]	20 [0.787]	1962.5 [3.042]	141.0 [31.70]	337.2 [75.80]	533.5 [119.9]	729.7 [164.0]	926.0 [208.2]	1122.2 [252.3]	1318.5 [296.4]	1514.7 [340.5]	1711.0 [384.6]	1907.2 [428.7]
	6 [0.236]	4 [0.157]	15.7 [0.0243]	-	-	1.8 [0.40]	3.4 [0.76]	5.0 [1.12]	6.5 [1.46]	8.1 [1.82]	9.7 [2.18]	11.2 [2.52]	-
	8 [0.315]	5 [0.197]	30.6 [0.0474]	-	-	4.5 [1.01]	7.6 [1.71]	10.6 [2.38]	13.7 [3.08]	16.7 [3.75]	19.8 [4.45]	22.9 [5.15]	-
	10 [0.394]	5 [0.197]	58.9 [0.0913]	-	_	13.0 [2.92]	18.9 [4.25]	24.8 [5.58]	30.6 [6.88]	36.5 [8.21]	42.4 [9.53]	48.3 [10.9]	-
	12 [0.472]	6 [0.236]	84.8 [0.131]	-	7.2 [1.62]	15.6 [3.51]	24.1 [5.42]	32.6 [7.33]	41.1 [9.24]	49.5 [11.1]	58.0 [13.0]	66.5 [14.9]	75.0 [16.9]
Single	16 [0.630]	6 [0.236]	150.7 [0.234]	-	16.0 [3.60]	31.1 [6.99]	46.2 [10.4]	61.3 [13.8]	76.3 [17.2]	91.4 [20.5]	106.5 [23.94]	121.5 [27.31]	136.6 [30.71]
acting pull type	20 [0.787]	8 [0.315]	235.5 [0.365]	-	33.3 [7.49]	56.9 [12.8]	80.4 [18.1]	104.0 [23.38]	127.5 [28.66]	151.1 [33.97]	174.6 [39.25]	198.2 [44.56]	221.7 [49.84]
pun type	25 [0.984]	10 [0.394]	377.6 [0.585]	-	75.5 [17.0]	113.3 [25.47]	151.0 [33.94]	188.8 [42.44]	226.6 [50.94]	264.3 [59.41]	302.1 [67.91]	339.8 [76.39]	377.6 [84.88]
	32 [1.260]	12 [0.472]	602.9 [0.934]	-	61.4 [13.8]	121.7 [27.36]	182.0 [40.91]	242.2 [54.45]	302.5 [68.00]	362.8 [81.56]	423.1 [95.11]	483.4 [108.7]	543.7 [122.2]
	40 [1.575]	16 [0.630]	1055.0 [1.635]	-	165.7 [37.25]	271.2 [60.97]	376.7 [84.68]	482.2 [108.4]	587.7 [132.1]	693.2 [155.8]	798.7 [179.5]	904.2 [203.3]	1009.7 [227.0]
	50 [1.969]	20 [0.787]	1648.5 [2.555]	109.6 [24.64]	274.4 [61.69]	439.3 [98.75]	604.1 [135.8]	769.0 [172.9]	933.8 [209.9]	1098.7 [247.0]	1263.5 [284.0]	1428.4 [321.1]	1593.2 [358.2]

Spring return force

			N [lbf.]
Bore size mm	Stroke mm	Zero stroke	End of stroke
6	× 5 ×10	2.1 [0.47] 1.2 [0.27]	2.9 [0.65]
8	× 5 ×10	3.3 [0.74] 1.9 [0.43]	4.7 [1.06]
10	× 5 ×10	3.3 [0.74] 1.9 [0.43]	4.7 [1.06]
12	× 5 ×10 ×15 ×20 ×25 ×30	7.7 [1.73] 5.7 [1.28] 3.7 [0.83] 5.7 [1.28] 4.7 [1.06] 3.7 [0.83]	9.8 [2.20]
16	× 5 ×10 ×15 ×20 ×25 ×30	11.1 [2.50] 8.2 [1.84] 5.3 [1.19] 8.2 [1.84] 6.7 [1.51] 5.3 [1.19]	14.1 [3.17]
20	× 5 ×10 ×15 ×20 ×25 ×30	11.6 [2.61] 9.5 [2.14] 7.3 [1.64] 9.5 [2.14] 8.4 [1.89] 7.3 [1.64]	13.8 [3.10]

			N [lbf.]
Bore size mm	Stroke mm	Zero stroke	End of stroke
25	× 5 ×10 ×15 ×20 ×25 ×30	18.1 [4.07] 14.5 [3.26] 10.7 [2.41] 14.5 [3.26] 12.7 [2.85] 10.9 [2.45]	21.8 [4.90]
32	× 5 ×10 ×15 ×20 ×25 ×30	32.0 [7.19] 26.7 [6.00] 21.3 [4.79] 26.7 [6.00] 24.0 [5.40] 21.3 [4.79]	37.4 [8.41]
40	× 5 ×10 ×15 ×20 ×25 ×30	37.7 [8.47] 30.2 [6.79] 22.6 [5.08] 30.2 [6.79] 26.4 [5.93] 22.6 [5.08]	45.3 [10.18]
50	×10 ×15 ×20 ×25 ×30 ×35 ×40	45.4 [10.21] 40.5 [9.10] 35.5 [7.98] 43.0 [9.67] 40.5 [9.10] 38.0 [8.54] 35.5 [7.98]	55.3 [12.43]

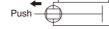
How to read the thrust table

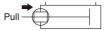
- 1. For the thrust of the double rod cylinder double acting type, see the pull side of the double acting type thrust table. For the thrust of the single acting type, see the single acting pull type thrust table.
- 2. The thrust of the tandem cylinder is double that of the standard type when air is supplied simultaneously to Port A and Port B, for any operation type before the stroke in Cylinder 1 is complete. When air is supplied to any of Ports A, B, or C alone, then the thrust is the same as for the standard type.

- 3. The thrust for dual stroke cylinders is the same as for the standard type, for any operation type.
- 4. When directly carrying a load, care must be exercised of a lateral load.

For details, see p.206 "Lateral Load."

Square rod cylinders





													N [lbf.]
Bore size	Piston rod size	Operation	Pressure area					Air pressu	ıre MPa				
mm [in.]	mm [in.]	Operation	mm² [in.²]	0.1 [15]	0.2 [29]	0.3 [44]	0.4 [58]	0.5 [73]	0.6 [87]	0.7 [102]	0.8 [116]	0.9 [131]	1.0 [145]
20 [0.787]		Push side	314.0 [0.487]	31.4 [7.06]	62.8 [14.1]	94.2 [21.2]	125.6 [28.23]	157.0 [35.29]	188.4 [42.35]	219.8 [49.41]	251.2 [56.47]	282.6 [63.53]	314.0 [70.59]
20 [0.767]	□7.4	Pull side	259.2 [0.402]	25.9 [5.82]	51.8 [11.6]	77.8 [17.5]	103.7 [23.3]	129.6 [29.13]	155.5 [34.96]	181.5 [40.80]	207.4 [46.62]	233.3 [52.45]	259.2 [58.27]
25 [0.984]	[0.291]	Push side	490.6 [0.760]	49.1 [11.0]	98.1 [22.1]	147.2 [33.09]	196.3 [44.13]	245.3 [55.14]	294.4 [66.18]	343.4 [77.20]	392.5 [88.23]	441.6 [99.27]	490.6 [110.3]
25 [0.504]		Pull side	435.9 [0.676]	43.6 [9.80]	87.2 [19.6]	130.8 [29.40]	174.3 [39.18]	217.9 [48.98]	261.5 [58.79]	305.1 [68.59]	348.7 [78.39]	392.3 [88.19]	435.9 [97.99]
32 [1.260]		Push side	803.8 [1.246]	80.4 [18.1]	160.8 [36.15]	241.2 [54.22]	321.5 [72.27]	401.9 [90.35]	482.3 [108.4]	562.7 [126.5]	643.1 [144.6]	723.5 [162.6]	803.8 [180.7]
32 [1.200]	□13	Pull side	634.8 [0.984]	63.5 [14.3]	127.0 [28.55]	190.5 [42.82]	253.9 [57.08]	317.4 [71.35]	380.9 [85.63]	444.4 [99.90]	507.9 [114.2]	571.4 [128.5]	634.8 [142.7]
40 [1.575]	[□0.512]	Push side	1256.0 [1.947]	125.6 [28.23]	251.2 [56.47]	376.8 [84.70]	502.4 [112.9]	628.0 [141.2]	753.6 [169.4]	879.2 [197.6]	1004.8 [225.9]	1130.4 [254.1]	1256.0 [282.3]
40 [1.575]		Pull side	1087.0 [1.685]	108.7 [24.44]	217.4 [48.87]	326.1 [73.31]	434.8 [97.74]	543.5 [122.2]	652.2 [146.6]	760.9 [171.1]	869.6 [195.5]	978.3 [219.9]	1087.0 [244.4]
50 [1.969]		Push side	1962.5 [3.042]	196.3 [44.13]	392.5 [88.23]	588.8 [132.4]	785.0 [176.5]	981.3 [220.6]	1177.5 [264.7]	1373.8 [308.8]	1570.0 [352.9]	1766.3 [397.1]	1962.5 [441.2]
50 [1.909]	□18	Pull side	1638.5 [2.540]	163.9 [36.84]	327.7 [73.67]	491.6 [110.5]	655.4 [147.3]	819.3 [184.2]	983.1 [221.0]	1147.0 [257.8]	1310.8 [294.7]	1474.7 [331.5]	1638.5 [368.3]
63 [2.480]	[□0.709]	Push side	3115.7 [4.829]	311.6 [70.05]	623.1 [140.1]	934.7 [210.1]	1246.3 [280.2]	1557.8 [350.2]	1869.4 [420.2]	2181.0 [490.3]	2492.5 [560.3]	2804.1 [630.4]	3115.7 [700.4]
03 [2.400]		Pull side	2791.7 [4.327]	279.2 [62.76]	558.3 [125.5]	837.5 [188.3]	1116.7 [251.0]	1395.8 [313.8]	1675.0 [376.5]	1954.2 [439.3]	2233.3 [502.0]	2512.5 [564.8]	2791.7 [627.6]

JIG CYLINDERS C SERIES STANDARD CYLINDERS

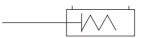
Double Acting Type,
Single Acting Push Type, Single Acting Pull Type

Symbols









Specifications

Item B	ore size mm [in.]	6 [0.236] 8 [0.315] 10 [0.394] 12 [0.472	2] 16 [0.630] 20 [0.	787] 25 [0.984]	32 [1.260] 40	[1.575] 5	50 [1.969]	63 [2.480] 80	[3.150]	100 [3.940]	
Operation type		Double ac	ting type, Sir	ngle acting push	type, Single	acting pull	type		Double	acting	type	
Media					Air			'				
Operating pressure range	Double acting type	0.15~0.9 [22~131]			0.1~1.0 15~145]				0.05~ [7~14			
MPa [psi.]	Single acting type	0.25~0.9 [36~131]			5~1.0 Note1 22~145]			0.1~1.0 [15~145]		_		
Proof pressure	MPa [psi.]	1.35 [196]	1.35 [196] 1.5 [218]									
Operating temperature range	°C [°F]		$0\sim$ 60 [32 \sim 140] (The heat resistant specification is 120 [248]. Note2)									
Operating speed range	Double acting type	30~500 [1.2~19.	.7]	30~5	00 [1.2~19.	7]		30	30~300 [1.2~11.8]			
mm/s [in./sec.]	Single acting type	50~500 [2.0~19.	.7]	100~	500 [3.9~19.	.7]		100~300 [3.9~11.8]		_		
Overhiere	Double acting type	None			Rubb	oer bumper	(Option ¹	Note3)				
Cushion	Single acting type			None						_		
Lubrication	•	Not req	uired (If lubri	cation is require	d, use Turbir	ne Oil Class	1 [ISO \	VG32] or	equivalent	i.)		
Port size		M3×0.5 M5×0.8 Rc1/8 Rc1/4 Rc3/8							3/8			

Remark: For Handling Instructions and Precautions, see p.205.

Notes: 1. The single acting pull type of ϕ 12 is 0.18 \sim 1.0MPa [26 \sim 145psi.].

- 2. For heat resistant specification, it is not available with the sensor switch. Not available for bore sizes ϕ 6, ϕ 8, and ϕ 10.
- 3. Not available for bore sizes ϕ 6, ϕ 8, and ϕ 10, and heat resistant specification.

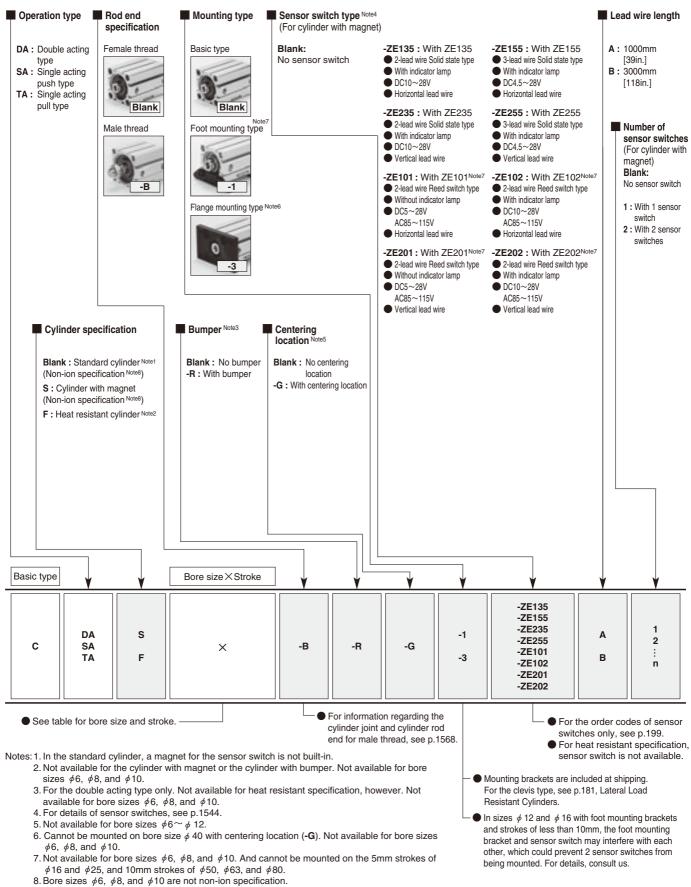
Note: For strokes that exceed the maximum standard strokes for each double acting type cylinder's bore size, use the long stroke cylinders on p.185~189.

Bore Size and Stroke

For non-standard strokes, see p.206. mm Standard strokes Operation type Bore size Standard cylinder Cylinder with magnet 6 8 5, 10, 15, 20 5, 10, 15, 20 10 12 5, 10, 15, 20, 25, 30 5, 10, 15, 20, 25, 30 16 20 Double 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 25 acting type 32 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 40 50 63 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 80 100 6 8 5. 10 5.10 10 12 16 Single acting type 20 5, 10, 15, 20, 25, 30 5, 10, 15, 20, 25, 30 25 32 40 50 10, 15, 20, 25, 30, 35, 40 $10,\,15,\,20,\,25,\,30,\,35,\,40$

Remarks: 1. Stroke tolerance $^{+1}_{0}$ [$^{+0.039in.}_{0}$]

^{2.} In most cases, body cutting is used for the non-standard strokes. However, body cutting is not used for strokes of less than 5mm for ϕ 12 $\sim \phi$ 40, and strokes of less than 10mm for ϕ 50 $\sim \phi$ 100. The collar packed is used for these cases.



Additional Parts (To be ordered separately)



Foot mounting bracket (p.197)



Flange mounting bracket (p.198)

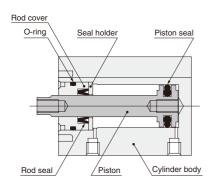


Mounting screws (p.209)

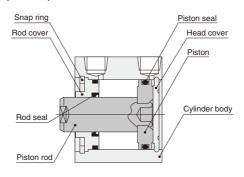
Inner Construction and Major Parts

● Double acting type (CDA)

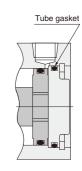




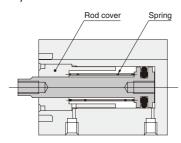


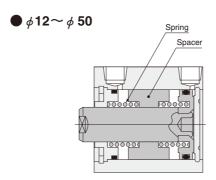


$\phi 50 \sim \phi 100$

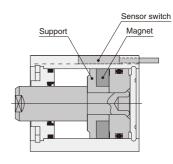


Single acting push type (CSA)





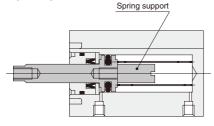
Cylinder with magnet



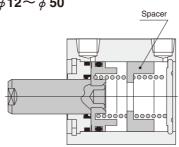
• The diagram is for ϕ 12 \sim ϕ 100.

● Single acting pull type (CTA)

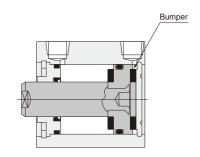




 \bullet ϕ 12 \sim ϕ 50



With bumper



• The diagram is for ϕ 12 \sim ϕ 100.

Major Parts and Materials

Parts Bore mm	φ6	φ8	φ 10	φ 12	φ 16	φ 20	φ 25	φ 32	ϕ 40	ϕ 50	ϕ 63	ϕ 80	φ 100
Cylinder body					Alum	inum	alloy	(and	odize	d)			
Piston	Stai	nless	steel	Alu	ıminu	m allo	y (sp	ecial r	ust pr	event	ion tr	eatme	nt)
Piston rod		Stainless steel (chrome plated) Steel (chrome plated))	
Seal		Synthetic rubber (NBR)											
Rod cover		Aluminum alloy (special wear-resistant treatment)											
Head cover		_			Alum	inum	alloy	(and	odize	d)			
Snap ring		_			Stee	l (pho	ospha	ate co	ating	J)			
Spring						Pia	ano w	/ire				_	
Spacer		_		Alumin	num allo	y (spec	ial rust	prevent	tion trea	tment)		_	
Bumper		- Synthetic rubber (NBR; urethane for ϕ 12 on									nly)		
Magnet	Neody	mium ı	magnet				Pla	astic	magr	net			
Support	Copper alloy Aluminum alloy (special rust prevention treatment)									nt)			

Seals

Parts	Rod seal	Piston seal	Tube	gasket
Bore mm	nou seai	Fision seal	Rod side	Head side
φ 12	MYR-6	COP-12	Y090260	None
φ 16	MYR-8	COP-16	Y090207	None
φ 20	MYR-10	COP-20(MYA-16)	Y090216	None
φ 25	MYR-12	COP-25(MYA-21)	Y090210	None
φ 32	MYR-16	COP-32	L090084	None
φ 40	MYR-16	COP-40	L090151	None
φ 50	MYR-20	COP-50	L090174	L090106
φ 63	MYR-20	COP-63	L090180	L090107
φ 80	PNY-25	COP-80	L090171	L090108
φ 100	PNY-32	COP-100	L090172	L090109

Note: Items in parentheses ($\,\,$) are for the single acting type.

Double acting type

g [oz.]

A LUCY L						
Additional mass for each 1mm	Additional mass of	Additional mass of			Additional mass of	
[0.0394in.] stroke	cylinder with bumper	cylinder with magnet	Foot bracket	Flange bracket	ZE 🗆 🗆 A	ZE□□□B
0.74 [0.0261]		3.9 [0.138]				
0.95 [0.0335]	_	5.4 [0.190]	_	_	l i	I
1.12 [0.0395]		6.8 [0.240]			l i	I
1.28 [0.0451]	6.42 [0.226]	6.59 [0.232]	50 [1.76]	55 [1.94]	l j	l
1.62 [0.0571]	8.08 [0.285]	9.93 [0.350]	62 [2.19]	71 [2.50]	l i	I
2.26 [0.0797]	11.29 [0.398]	25.71 [0.907]	84 [2.96]	101 [3.56]	l i	I
3.11 [0.110]	15.53 [0.548]	37.47 [1.322]	104 [3.67]	160 [5.64]	15 [0.53]	35 [1.23]
4.11 [0.145]	20.57 [0.726]	52.43 [1.849]	126 [4.44]	186 [6.56]	1	I
4.77 [0.168]	0	69.15 [2.439]	160 [5.64]	335 [11.82]	l i	l
7.03 [0.248]	0	108 [3.81]	220 [7.76]	447 [15.77]	l j	l
8.69 [0.307]	0	159 [5.61]	300 [10.58]	591 [20.85]	1	l
13.06 [0.461]	0	245 [8.64]	644 [22.72]	1414 [49.88]	1	I
] 18.61 [0.656]	0	360 [12.70]	1172 [41.34]	2606 [91.92]	<u> </u>	
]	each 1mm [0.0394in.] stroke 0.74 [0.0261] 0.95 [0.0335] 1.12 [0.0395] 1.28 [0.0451] 1.62 [0.0571] 2.26 [0.0797] 3.11 [0.110] 4.11 [0.145] 4.77 [0.168] 7.03 [0.248] 8.69 [0.307] 13.06 [0.461]	ss each 1mm [0.0394in.] stroke cylinder with bumper 0.74 [0.0261] — 0.95 [0.0335] — 1.12 [0.0395] — 1.28 [0.0451] 6.42 [0.226] 1.62 [0.0571] 8.08 [0.285] 2.26 [0.0797] 11.29 [0.398] 3.11 [0.110] 15.53 [0.548] 4.11 [0.145] 20.57 [0.726] 4.77 [0.168] 0 7.03 [0.248] 0 8.69 [0.307] 0 9 [13.06 [0.461] 0	ss each 1mm [0.0394in.] stroke cylinder with bumper cylinder with magnet 0.74 [0.0261] — 3.9 [0.138] 0.95 [0.0335] — 5.4 [0.190] 1.12 [0.0395] — 6.8 [0.240] 1.28 [0.0451] 6.42 [0.226] 6.59 [0.232] 1.62 [0.0571] 8.08 [0.285] 9.93 [0.350] 2.26 [0.0797] 11.29 [0.398] 25.71 [0.907] 3.11 [0.110] 15.53 [0.548] 37.47 [1.322] 4.11 [0.145] 20.57 [0.726] 52.43 [1.849] 4.77 [0.168] 0 69.15 [2.439] 3 7.03 [0.248] 0 108 [3.81] 3 8.69 [0.307] 0 159 [5.61] 3 13.06 [0.461] 0 245 [8.64]	Additional mass of cylinder with bumper cylinder with magnet cylinder with magnet cylinder with magnet polyinder with magnet cylinder with mag	ss each 1mm [0.0394in.] stroke cylinder with bumper cylinder with magnet Foot bracket Flange bracket 0.74 [0.0261] — 3.9 [0.138] — — 0.95 [0.0335] — 5.4 [0.190] — — 1.12 [0.0395] — 6.8 [0.240] — — 2.28 [0.0451] 6.42 [0.226] 6.59 [0.232] 50 [1.76] 55 [1.94] 3.1 [0.0571] 8.08 [0.285] 9.93 [0.350] 62 [2.19] 71 [2.50] 3.26 [0.0797] 11.29 [0.398] 25.71 [0.907] 84 [2.96] 101 [3.56] 3.11 [0.110] 15.53 [0.548] 37.47 [1.322] 104 [3.67] 160 [5.64] 4.11 [0.145] 20.57 [0.726] 52.43 [1.849] 126 [4.44] 186 [6.56] 3.1 [0.168] 0 69.15 [2.439] 160 [5.64] 335 [11.82] 3.1 [0.168] 0 108 [3.81] 220 [7.76] 447 [15.77] 3.1 [0.168] 0 159 [5.61] 300 [10.58] 591 [20.85] 3.1 [0.168] 0 245 [8.64] 644 [22.72]	ss each 1mm [0.0394in.] stroke cylinder with bumper cylinder with magnet Foot bracket Flange bracket ZE Administration 0.74 [0.0261] — 3.9 [0.138] — — — 0.95 [0.0335] — 5.4 [0.190] — — — 1.12 [0.0395] — 6.8 [0.240] — — — 1.28 [0.0451] 6.42 [0.226] 6.59 [0.232] 50 [1.76] 55 [1.94] — 1.62 [0.0571] 8.08 [0.285] 9.93 [0.350] 62 [2.19] 71 [2.50] 71 [2.50] 1.226 [0.0797] 11.29 [0.398] 25.71 [0.907] 84 [2.96] 101 [3.56] 15 [0.53] 1.31 [0.110] 15.53 [0.548] 37.47 [1.322] 104 [3.67] 160 [5.64] 15 [0.53] 1.41 [0.145] 20.57 [0.726] 52.43 [1.849] 126 [4.44] 186 [6.56] 15 [0.53] 1.31 [0.10] 0 69.15 [2.439] 160 [5.64] 335 [11.82] 160 [5.64] 335 [11.82] 160 [5.64] 335 [11.82] 160 [5.64] 36 [7.76] 447 [15.77]

Note: Sensor switch codes A and B show the lead wire lengths.

A: 1000mm [39in.] B: 3000mm [118in.]

Single acting push type

g [oz.]

Item				Basic m	ass Note1				Additional mass of	Mass of mou	inting bracket	Additional mass of sensor switch Note2	
Bore mm	5	10	15	20	25	30	35	40	cylinder with magnet	Foot bracket	Flange bracket	ZEA	ZE
6	20.8 [0.734]	24.5 [0.864]	_	_	_	_	_	_	3.9 [0.138]	_	_		
8	28.3 [0.998]	33.1 [1.167]	_	-	_	_	-	_	5.4 [0.190]	_	_		
10	36.2 [1.277]	41.8 [1.474]	_	_	_	_	_	_	6.8 [0.240]	_	_		
12	32.81 [1.157]	39.22 [1.383]	45.64 [1.610]	67 [2.36]	73.42 [2.590]	79.83 [2.816]	_	_	7.78 [0.274]	50 [1.76]	55 [1.94]		
16	46.6 [1.644]	54.68 [1.929]	62.75 [2.213]	91 [3.21]	99.08 [3.495]	107.15 [3.780]	-	_	10.32 [0.364]	62 [2.19]	71 [2.50]	15 [0.53]	35 [1.23]
20	58.33 [2.057]	69.62 [2.456]	80.91 [2.854]	121 [4.27]	132.29 [4.666]	143.58 [5.065]	-	_	25.38 [0.895]	84 [2.96]	101 [3.56]	15 [0.55]	33 [1.23]
25	86.37 [3.047]	101.9 [3.594]	117.43 [4.142]	173 [6.10]	188.53 [6.650]	204.06 [7.198]	_	_	39.1 [1.379]	104 [3.67]	160 [5.64]		
32	128.85 [4.545]	149.42 [5.271]	169.99 [5.996]	276 [9.74]	296.57 [10.461]	317.14 [11.187]	_	_	50.58 [1.784]	126 [4.44]	186 [6.56]		
40	190.73 [6.728]	214.58 [7.569]	238.43 [8.410]	373 [13.16]	396.85 [13.998]	420.7 [14.84]	_		69.42 [2.449]	160 [5.64]	335 [11.82]		
50	_	343.95 [12.132]	379.11 [13.372]	414.26 [14.61]	582 [20.53]	617.16 [21.769]	652.31 [23.009]	687.47 [24.249]	106.05 [3.741]	220 [7.76]	447 [15.77]		

Notes: 1. The above table is for the standard strokes.

2. Sensor switch codes A and B show the lead wire lengths.

A: 1000mm [39in.] B: 3000mm [118in.]

Single acting pull type

g [oz.]

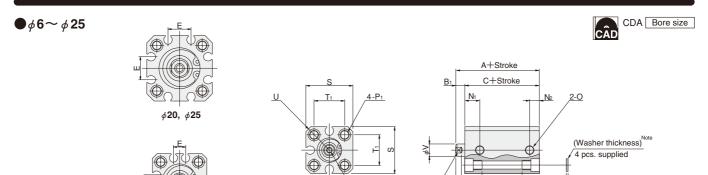
Item				Basic m	nass Note1				Additional mass of	Mass of mou	nting bracket	Additional mass of sensor switch Note2	
Bore mm	5	10	15	20	25	30	35	40	cylinder with magnet	Foot bracket	Flange bracket	ZE	ZE B
6	20.5 [0.723]	24.2 [0.854]	_	_	_	_	-	_	3.9 [0.138]	_	_		
8	27.6 [0.974]	32.4 [1.143]	_	_	_	_	_	_	5.5 [0.194]	_	_		
10	35.1 [1.238]	40.7 [1.436]	_	_	_	_	_	_	6.7 [0.236]	_	_		
12	32.03 [1.130]	38.44 [1.356]	44.86 [1.582]	64 [2.26]	70.42 [2.484]	76.83 [2.710]	_	_	8.56 [0.302]	50 [1.76]	55 [1.94]		
16	45.55 [1.607]	53.63 [1.892]	61.7 [2.176]	86 [3.03]	94.08 [3.319]	102.15 [3.603]	_	_	11.37 [0.401]	62 [2.19]	71 [2.50]	15 [0.53]	35 [1.23]
20	68.4 [2.413]	79.69 [2.811]	90.98 [3.209]	125 [4.41]	136.29 [4.807]	147.58 [5.206]	_	_	26.31 [0.928]	84 [2.96]	101 [3.56]	15 [0.55]	33 [1.23]
25	100.02 [3.528]	115.55 [4.076]	131.08 [4.623]	178 [6.28]	193.53 [6.826]	209.06 [7.374]	_	_	38.45 [1.356]	104 [3.67]	160 [5.64]		
32	144.73 [5.105]	165.3 [5.831]	185.87 [6.556]	269 [9.49]	289.57 [10.214]	310.14 [10.940]	-	_	51.71 [1.824]	126 [4.44]	186 [6.56]		
40	215.24 [7.592]	239.09 [8.434]	262.94 [9.275]	374 [13.19]	397.85 [14.034]	421.7 [14.875]	-	_	67.91 [2.395]	160 [5.64]	335 [11.82]		
50	_	378.94 [13.366]	414.1 [14.61]	449.25 [15.847]	580 [20.46]	615.16 [21.699]	650.31 [22.939]	685.47 [24.179]	70.06 [2.471]	220 [7.76]	447 [15.77]		

Notes: 1. The above table is for the standard strokes.

2. Sensor switch codes A and B show the lead wire lengths.

A: 1000mm [39in.] B: 3000mm [118in.]

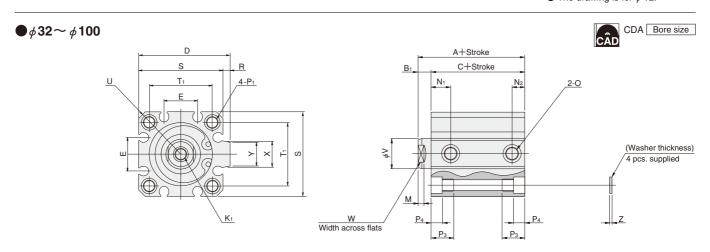
Calculation example: For the mass of a double acting type cylinder with magnet, bore size of 25mm, stroke of 30mm, and with 2 sensor switches (**ZE135A**) $70.47 + (3.11 \times 30) + 37.47 + (15 \times 2) = 231.24g [8.157oz.]$



 ϕ 6, ϕ 8, ϕ 10, ϕ 12

Width across

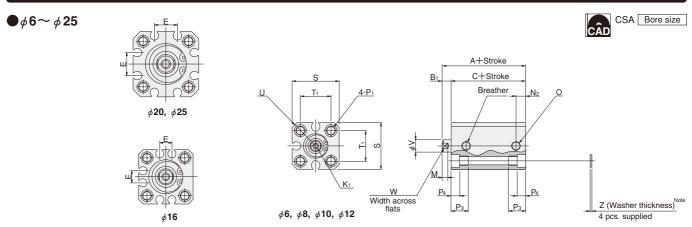
Note: Bore sizes ϕ 6, ϕ 8, and ϕ 10 are not available with washers. lacktriangle The drawing is for ϕ 12.



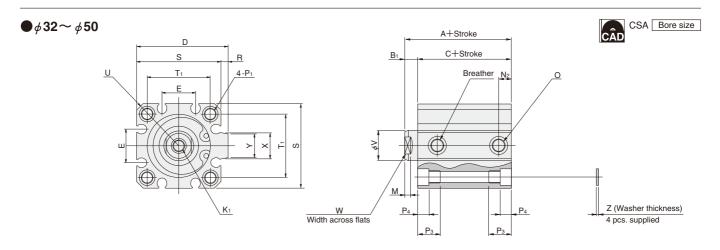
Туре	Standar	d cylinde	r (CDA)	Cylinder v	vith magne	et (CDAS)	Standard cyl	inder with burr	per (CDA-R)	Cylinder with r	nagnet and bum	per (CDAS-R)	D	Е	K 1	М	N ₁	N ₂
Bore Code	Α	B ₁	С	Α	B ₁	С	Α	B ₁	С	Α	B ₁	С	ט	ш	N 1	IVI	IN1	IN2
6 [0.236]	19	5	14	24	5	19	_	_	_	_	_	_	_	_	M2.5 X 0.45 Depth5	3	6.5	3.5
8 [0.315]	20	5	15	25	5	20	_	_	_	_	_	-	_	-	M3×0.5 Depth5	3	7.5	3.5
10 [0.394]	21	5	16	26	5	21	_	_	_	_	_	_	_	_	M3×0.5 Depth5	3	8	4
12 [0.472]	22	5	17	27	5	22	27	5	22	32	5	27	_	_	M3×0.5 Depth6	3.5	8	5
16 [0.630]	22.5	5.5	17	27.5	5.5	22	27.5	5.5	22	32.5	5.5	27	_	6.2	M4×0.7 Depth8	3.5	8	5
20 [0.787]	25	5.5	19.5	35	5.5	29.5	30	5.5	24.5	40	5.5	34.5	_	12.2	M5×0.8 Depth10	4.5	9.5	5
25 [0.984]	27	6	21	37	6	31	32	6	26	42	6	36	_	12.2	M6X1 Depth10	5	10.5	5
32 [1.260]	30	7	23	40	7	33	35	7	28	40	7	33	48.5	18.2	M8×1.25 Depth12	6	9.5	7.5(6)
40 [1.575]	33	7	26	43	7	36	33	7	26	43	7	36	56.5	18.2	M8 X 1.25 Depth 12	6	10.5	7.5
50 [1.969]	37	9	28	47	9	38	37	9	28	47	9	38	70	24.8	M10X1.5 Depth15	7	11	9.5
63 [2.480]	41	9	32	51	9	42	41	9	32	51	9	42	83	26.8	M10X1.5 Depth15	7	12.5	11
80 [3.150]	52	11	41	62	11	51	52	11	41	62	11	51	102	32.8	M14X2 Depth20	9	18	12
100 [3.940]	63	12	51	73	12	61	63	12	51	73	12	61	122	32.8	M18×2.5 Depth20	9	22.5	16.5

Bore Type	0	P ₁	Рз	P ₄	R	s	T ₁	U	٧	W	Х	Υ	Z	Appropriate through bolt
6 [0.236]	M3×0.5	ϕ 3.3 (Thru hole) C'bore ϕ 6 (Both sides) and M4 \times 0.7 (Both sides)	9.5	3.5	_	19	11	R12	4	3.5	_	_	_	M3
8 [0.315]	M3×0.5	φ 3.3 (Thru hole) C'bore φ 6.2 (Both sides) and M4×0.7 (Both sides)	9.5	3.5	_	21	13	R13.5	5	4	_	_	_	МЗ
10 [0.394]	M3×0.5	φ 3.3 (Thru hole) C'bore φ 6.2 (Both sides) and M4×0.7 (Both sides)	9.5	3.5	_	23	15	R15	5	4	_	_	_	M3
12 [0.472]	M5×0.8	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 $ imes$ 0.8 (Both sides)	9.5	4.5	_	25	16.3	R16	6	5	_	_	1	МЗ
16 [0.630]	M5×0.8	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 $ imes$ 0.8 (Both sides)	9.5	4.5	_	29	19.8	R19	8	6	_	_	1	M3
20 [0.787]	M5×0.8	φ 4.3 (Thru hole) C'bore φ 6.5 (Both sides) and M5×0.8 (Both sides)	9.5	4.5	_	34	24	R22	10	8	_	_	1	M3
25 [0.984]	M5×0.8	ϕ 5.1 (Thru hole) C'bore ϕ 8 (Both sides) and M6 $ imes$ 1 (Both sides)	11.5	5.5	_	40	28	R25	12	10	_	_	1	M4
32 [1.260]	Rc1/8	φ 5.1 (Thru hole) C'bore φ 8 (Both sides) and M6×1 (Both sides)	11.5	5.5	4.5	44	34	R29.5	16	14	15	13.6	1	M4
40 [1.575]	Rc1/8	ϕ 6.9 (Thru hole) C'bore ϕ 9.5 (Both sides) and M8 $ imes$ 1.25 (Both sides)	15.5	7.5	4.5	52	40	R35	16	14	15	13.6	1.6	M5
50 [1.969]	Rc1/4	φ 6.9 (Thru hole) C'bore φ 11 (Both sides) and M8×1.25 (Both sides)	16.5	8.5	8	62	48	R41	20	17	21.6	19	1.6	M6
63 [2.480]	Rc1/4	ϕ 6.9 (Thru hole) C'bore ϕ 11 (Both sides) and M8 $ imes$ 1.25 (Both sides)	16.5	8.5	8	75	60	R50	20	17	21.6	19	1.6	M6
80 [3.150]	Rc3/8	ϕ 10.5 (Thru hole) C'bore ϕ 14 (Both sides) and M12 \times 1.75 (Both sides)	22.5	10.5	8	94	74	R62	25	22	27.6	25	1.6	M8
100 [3.940]	Rc3/8	ϕ 12.3 (Thru hole) C'bore ϕ 17.5 (Both sides) and M14 $ imes$ 2 (Both sides)	27	13	8	114	90	R75	32	27	27.6	25	2	M10

Note: Figure in parentheses () is for the standard cylinder (CDA) with 5mm stroke. Remark: If using a through bolt to directly mount the body in place, see p.205.



Note: Bore sizes ϕ 6, ϕ 8, and ϕ 10 are not available with washers. lacktriangle The drawing is for ϕ 12.



Туре		Star	ndard cy	linder (C	SA)			Cylind	er with n	nagnet (CSAS)							
Stroke	5∼15	(φ 50 : 1 0	0 ∼20)	16~30	(φ 50 : 2	1~40)	5∼15	(φ 50 : 1 0	0 ∼20)	16~30) (φ 50 : 2	1~40)	D	E	K 1	M	N ₂	0
Bore Code mm [in.]	Α	B ₁	С	Α	B ₁	С	Α	B ₁	С	Α	B ₁	С						
6 [0.236]	29	5	24	_	_	_	34	5	29	_	_	_	_	_	M2.5×0.45 Depth5	3	3.5	M3×0.5
8 [0.315]	30	5	25	_	_	_	35	5	30	_	_	_	_	_	M3 X 0.5 Depth5	3	3.5	M3×0.5
10 [0.394]	31	5	26	_	_	_	36	5	31	_	_	_	_	_	M3 X 0.5 Depth5	3	4	M3×0.5
12 [0.472]	27	5	22	37	5	32	32	5	27	42	5	37	_	_	M3 X 0.5 Depth6	3.5	5	M5×0.8
16 [0.630]	27.5	5.5	22	37.5	5.5	32	32.5	5.5	27	42.5	5.5	37	_	6.2	M4X0.7 Depth8	3.5	5	M5×0.8
20 [0.787]	25	5.5	19.5	35	5.5	29.5	35	5.5	29.5	45	5.5	39.5	_	12.2	M5 X 0.8 Depth10	4.5	5	M5×0.8
25 [0.984]	27	6	21	37	6	31	37	6	31	47	6	41	_	12.2	M6X1 Depth10	5	5	M5×0.8
32 [1.260]	30	7	23	45	7	38	40	7	33	55	7	48	48.5	18.2	M8 X1.25 Depth12	6	7.5(6)	Rc1/8
40 [1.575]	33	7	26	48	7	41	43	7	36	58	7	51	56.5	18.2	M8 X 1.25 Depth 12	6	7.5	Rc1/8
50 [1.969]	37	9	28	52	9	43	47	9	38	62	9	53	70	24.8	M10×1.5 Depth15	7	9.5	Rc1/4

Bore Code mm [in.]	P ₁	P ₃	P ₄	R	S	T ₁	U	٧	w	Х	Υ	Z	Appropriate through bolt %
6 [0.236]	ϕ 3.3 (Thru hole) C'bore ϕ 6 (Both sides) and M4 $ imes$ 0.7 (Both sides)	9.5	3.5	_	19	11	R12	4	3.5	_	_	_	M3
8 [0.315]	ϕ 3.3 (Thru hole) C'bore ϕ 6.2 (Both sides) and M4 $ imes$ 0.7 (Both sides)	9.5	3.5	_	21	13	R13.5	5	4	_	_	_	M3
10 [0.394]	ϕ 3.3 (Thru hole) C'bore ϕ 6.2 (Both sides) and M4 $ imes$ 0.7 (Both sides)	9.5	3.5	_	23	15	R15	5	4	-	_	_	M3
12 [0.472]	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 $ imes$ 0.8 (Both sides)	9.5	4.5	_	25	16.3	R16	6	5	_	_	1	M3
16 [0.630]	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 $ imes$ 0.8 (Both sides)	9.5	4.5	_	29	19.8	R19	8	6	_	_	1	M3
20 [0.787]	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 $ imes$ 0.8 (Both sides)	9.5	4.5	_	34	24	R22	10	8	-	_	1	M3
25 [0.984]	ϕ 5.1 (Thru hole) C'bore ϕ 8 (Both sides) and M6 $ imes$ 1 (Both sides)	11.5	5.5	_	40	28	R25	12	10	-	_	1	M4
32 [1.260]	φ 5.1 (Thru hole) C'bore φ 8 (Both sides) and M6×1 (Both sides)	11.5	5.5	4.5	44	34	R29.5	16	14	15	13.6	1	M4
40 [1.575]	ϕ 6.9 (Thru hole) C'bore ϕ 9.5 (Both sides) and M8 $ imes$ 1.25 (Both sides)	15.5	7.5	4.5	52	40	R35	16	14	15	13.6	1.6	M5
50 [1.969]	ϕ 6.9 (Thru hole) C'bore ϕ 11 (Both sides) and M8 $ imes$ 1.25 (Both sides)	16.5	8.5	8	62	48	R41	20	17	21.6	19	1.6	M6

Note: Figure in parentheses [) is for the standard cylinder (CSA) with 5mm stroke. Remark: If using a through bolt to directly mount the body in place, see p.205.

^{**}Some types of mounting screws are available (to be ordered separately). See p.209.

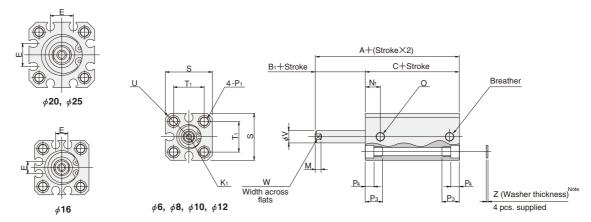
● *φ* 6 ~ *φ* 25



Z (Washer

thickness)

4 pcs. supplied



Note: Bore sizes $\,\phi$ 6, $\,\phi$ 8, and $\,\phi$ 10 are not available with washers. • The drawing is for ϕ 12.

P4

$\bigcirc \phi$ 32 $\sim \phi$ 50 CTA Bore size A+(Stroke×2) B₁+Stroke C+Stroke R T₁ 4-P₁ Breather Νı

Width across flats

Туре		Star	ndard cy	linder (C	TA)			Cylind	er with n	nagnet (CTAS)							
Stroke	5~15	(φ 50 : 10 ~	~20)**1	16~30	(φ 50: 2	1~40)	5~15	(φ 50 : 10 [~]	~20)**1	16~30	O (φ 50 : 2	1~40)	D	Е	K 1	M	N ₁	0
Bore Code	Α	B ₁	С	Α	B ₁	С	Α	B ₁	С	Α	B ₁	С						
6 [0.236]	29	5	24	_	_	_	34	5	29	_	_	_	_	_	M2.5×0.45 Depth5	3	6.5	M3×0.5
8 [0.315]	30	5	25	_	_	_	35	5	30	_	_	_	_	_	M3 X 0.5 Depth5	3	7.5	M3×0.5
10 [0.394]	31	5	26	_	_	_	36	5	31	_	_	_	_	_	M3 X 0.5 Depth5	3	8	M3×0.5
12 [0.472]	27	5	22	37	5	32	32	5	27	42	5	37	_	_	M3 X 0.5 Depth6	3.5	8	M5×0.8
16 [0.630]	27.5	5.5	22	37.5	5.5	32	32.5	5.5	27	42.5	5.5	37	_	6.2	M4X0.7 Depth8	3.5	8	M5×0.8
20 [0.787]	30	5.5	24.5	40	5.5	34.5	40	5.5	34.5	50	5.5	44.5	_	12.2	M5 X 0.8 Depth 10	4.5	9.5	M5×0.8
25 [0.984]	32	6	26	42	6	36	42	6	36	52	6	46	_	12.2	M6X1 Depth10	5	10.5	M5×0.8
32 [1.260]	35	7	28	50	7	43	45	7	38	60	7	53	48.5	18.2	M8X1.25 Depth12	6	9.5	Rc1/8
40 [1.575]	38	7	31	53	7	46	48	7	41	63	7	56	56.5	18.2	M8X1.25 Depth12	6	10.5	Rc1/8
50 [1.969]	37	9	28	52	9	43	47	9	38	62	9	53	70	24.8	M10×1.5 Depth15	7	11	Rc1/4

Bore Code mm [in.]	P ₁	P ₃	P ₄	R	s	T ₁	U	٧	w	х	Υ	Z	Appropriate through bolt *2
6 [0.236]	φ 3.3 (Thru hole) C'bore φ 6 (Both sides) and M4×0.7 (Both sides)	9.5	3.5	_	19	11	R12	4	3.5	_	_	_	M3
8 [0.315]	ϕ 3.3 (Thru hole) C'bore ϕ 6.2 (Both sides) and M4 \times 0.7 (Both sides)	9.5	3.5	_	21	13	R13.5	5	4	_	_	_	M3
10 [0.394]	ϕ 3.3 (Thru hole) C'bore ϕ 6.2 (Both sides) and M4 \times 0.7 (Both sides)	9.5	3.5	-	23	15	R15	5	4	_	_	_	M3
12 [0.472]	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 \times 0.8 (Both sides)	9.5	4.5	-	25	16.3	R16	6	5	_	_	1	M3
16 [0.630]	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 $ imes$ 0.8 (Both sides)	9.5	4.5	-	29	19.8	R19	8	6	_	_	1	M3
20 [0.787]	ϕ 4.3 (Thru hole) C'bore ϕ 6.5 (Both sides) and M5 $ imes$ 0.8 (Both sides)	9.5	4.5	_	34	24	R22	10	8	_	_	1	M3
25 [0.984]	φ 5.1 (Thru hole) C'bore φ 8 (Both sides) and M6×1 (Both sides)	11.5	5.5	-	40	28	R25	12	10	_	_	1	M4
32 [1.260]	φ 5.1 (Thru hole) C'bore φ 8 (Both sides) and M6 ×1 (Both sides)	11.5	5.5	4.5	44	34	R29.5	16	14	15	13.6	1	M4
40 [1.575]	φ 6.9 (Thru hole) C'bore φ 9.5 (Both sides) and M8 X 1.25 (Both sides)	15.5	7.5	4.5	52	40	R35	16	14	15	13.6	1.6	M5
50 [1.969]	ϕ 6.9 (Thru hole) C'bore ϕ 11 (Both sides) and M8 \times 1.25 (Both sides)	16.5	8.5	8	62	48	R41	20	17	21.6	19	1.6	M6

Remark: If using a through bolt to directly mount the body in place, see p.205.

^{* 1.} Bore sizes ϕ 6, ϕ 8, and ϕ 10 are 5 \sim 10 strokes.

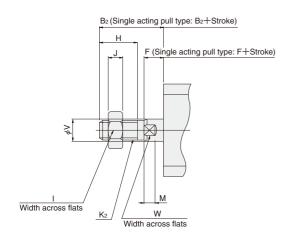
2. Some types of mounting screws are available (to be ordered separately). See p.209.

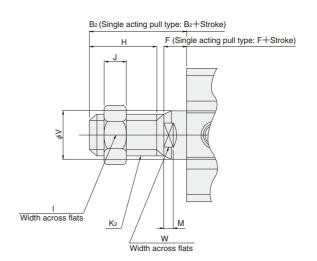


● Double acting type, Single acting push type, Single acting pull type



(Single acting type available up to ϕ 50)

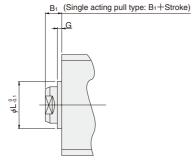




Bore Code	B ₂	F	Н	I	J	K ₂	M	V	W
6 [0.236]	15	5	8	5.5	1.8	M3×0.5	3	4	3.5
8 [0.315]	15	5	8	7	2.4	M4×0.7	3	5	4
10 [0.394]	15	5	8	7	2.4	M4×0.7	3	5	4
12 [0.472]	17	5	10	8	4	M5×0.8	3.5	6	5
16 [0.630]	20.5	5.5	13	10	5	M6×1	3.5	8	6
20 [0.787]	22.5	5.5	15	12	5	M8×1	4.5	10	8
25 [0.984]	24	6	15	14	6	M10×1.25	5	12	10
32 [1.260]	35	7	25	19	8	M14×1.5	6	16	14
40 [1.575]	35	7	25	19	8	M14×1.5	6	16	14
50 [1.969]	37	9	25	27	11	M18×1.5	7	20	17
63 [2.480]	37	9	25	27	11	M18×1.5	7	20	17
80 [3.150]	44	11	30	32	13	M22×1.5	9	25	22
100 [3.940]	50	12	35	36	14	M26×1.5	9	32	27

Remark: Cylinder joints and cylinder rod ends are available for mounting with the rod end male thread specification. For details, see p.1568.

Dimensions of Centering Location (mm)



•Not available for bore sizes ϕ 6, ϕ 8, ϕ 10 and ϕ 12.

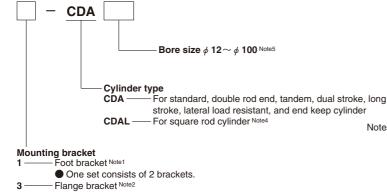
Bore Code mm [in.]	B ₁	G	L
16 [0.630]	5.5	1.5	9.4
20 [0.787]	5.5	1.5	12
25 [0.984]	6	2	15
32 [1.260]	7	2	21
40 [1.575]	7	2	29
50 [1.969]	9	2	38
63 [2.480]	9	2	40
80 [3.150]	11	2	45
100 [3.940]	12	2	55

JIG CYLINDERS C SERIES MOUNTING BRACKETS

Foot Mounting Bracket, Flange Mounting Bracket, Clevis Mounting Bracket



Order Codes of Mounting Bracket Only



- Notes: 1. Cannot be mounted on tandem or dual stroke cylinders. And cannot be mounted on the 5mm strokes of ϕ 16 and ϕ 25, and 10mm strokes of ϕ 50, ϕ 63, and ϕ 80 of the standard cylinders.
 - 2. Cannot be mounted on the head side of the tandem cylinder, cylinder 1 side of the dual stroke cylinder, the rod side of the square rod cylinder with centering location, or the bore size ϕ 40 with centering location (-G).
 - 3. Cannot be used with anything other than the long stroke cylinder, the lateral load resistant cylinder, or the end keep cylinder.

 4. Applicable to the foot mounting bracket only.

 - 5. Not available for ϕ 6 [0.236in.], ϕ 8 [0.315in.], and ϕ 10 [0.394in.].

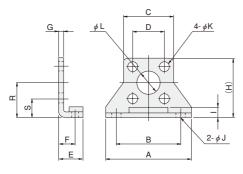
Dimensions of Foot Mounting Bracket (mm)



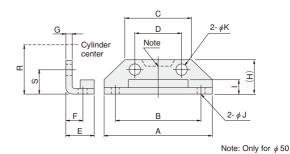
 ϕ 12~ ϕ 40 : CDA-OP1, ϕ 50~ ϕ 100 : CDA-OP2

φ 12~ φ 16

Clevis bracket Note3

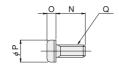


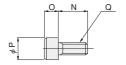
$\bullet \phi 20 \sim \phi 100$



For ϕ 100

Mounting screw For ϕ 12 \sim ϕ 80





Material: Steel

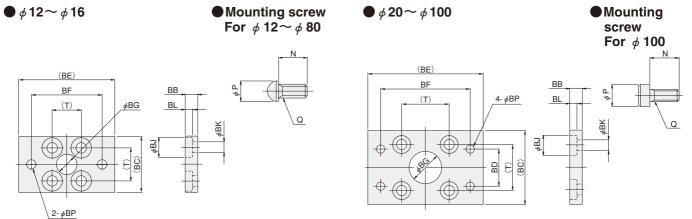
Bore Code mm [in.]	Α	В	С	D	Е	F	G	Н	I	J	K	L	N	0	Р	Q	R	S	Mass g [oz.]
12 [0.472]	44	34	25	16.3	12.5	8	2	29.5	4.5	4.5	5.5	11	12	2.7	9.5	M5	17	8.9	50 [1.76]
16 [0.630]	48	38	29	19.8	13	8	2	33.5	4.5	4.5	5.5	11	12	2.7	9.5	M5	19	9.1	62 [2.19]
20 [0.787]	54	44	34	24	15	9.2	3.2	16.5	7	4.5	5.5	_	12 (12, 20)	2.7	9.5	M5	24	12	84 [2.96] (87 [3.07])
25 [0.984]	64	52	40	28	16.5	10.7	3.2	17.5	6	5.5	6.6	_	14 (14, 22)	3.3	10.5	M6	26	12	104 [3.67] (108 [3.81])
32 [1.260]	68	56	44	34	17	11.2	3.2	19	8	5.5	6.6	_	14 (14, 25)	3.3	10.5	M6	30	13	126 [4.44] (131 [4.62])
40 [1.575]	78	64	52	40	18.2	11.2	3.2	19	7	6.6	9	_	20 (20, 30)	4.4	14	M8	33	13	160 [5.64] (168 [5.93])
50 [1.969]	96	78	62	48	22.7	14.7	3.2	22	8	9	9	_	20 (20, 35)	4.4	14	M8	39	15	220 [7.76] (232 [8.18])
63 [2.480]	108	90	75	60	25.2	16.2	3.2	24	8.5	9	9	_	20 (20, 35)	4.4	14	M8	46	16	300 [10.58] (312 [11.01])
80 [3.150]	134	112	94	74	30.5	19.5	4.5	33	12	11	14	_	25	6.6	21	M12	59	22	644 [22.72]
100 [3.940]	160	134	114	90	35.5	23	6	40	14	14	16	_	30	14	21	M14	71	26	1172 [41.34]

Remark: Figures in parentheses () are for square rod cylinders.

Two figures in parentheses (), Left side: for head side; Right side: for rod side

Material: Steel



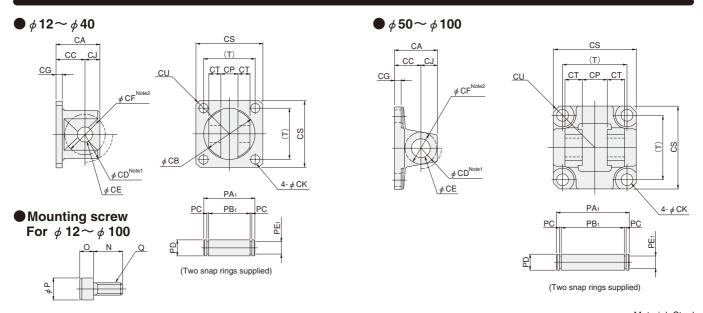


Bore Code mm [in.] вв вс BE BG BJ Ν Р Q Т BD BF BK BL BP Mass g [oz.] 12 [0.472] 9.5 M5 16.3 6 28 50 38 11 10 5.5 3.6 4.5 55 [1.94] 16 [0.630] 9.5 M5 19.8 6 32 54 42 11 10 5.5 3.6 4.5 71 [2.50] 20 [0.787] 12(18) 9.5 M5 24 6 36 58 46 15 10 5.5 3.6 4.5 101 [3.56] (105 [3.70]) 25 [0.984] 14(22) 10.5 M6 28 8 42 28 68 54 17 11 6.6 4.3 5.5 160 [5.64] (165 [5.82]) 14(25) 10.5 M6 34 8 48 34 72 58 22 11 6.6 4.3 32 [1.260] 5.5 186 [6.56] (196 [6.91]) 20(30) 40 8 40 84 68 28 15 9 5.3 40 [1.575] 14 M8 58 6.6 335 [11.82] (351 [12.38]) 40 38 50 [1.969] 20(35) 14 M8 48 8 66 102 82 15 9 5.3 9 447 [15.77] (471 [16.61]) M8 8 50 96 40 15 9 63 [2.480] 20(35) 14 60 78 116 5.3 9 591 [20.85] (615 [21.69]) M12 74 70 142 45 80 [3.150] 25 21 12 100 118 22 14 7.3 11 1414 [49.88] 100 [3.940] 30 21 M14 90 20 116 80 170 142 55 23 16 15.2 14 2606 [91.92]

Remark: Figures in parentheses () are for square rod cylinders.

Dimensions of Clevis Mounting Bracket (mm)

CÂD φ 12~ φ 40 : CDA-OP5, φ 50~ φ 100 : CDA-OP6



																						IV	atena	al: Steel
Bore Code mm [in.]	Ν	0	Р	Q	Т	CA	СВ	СС	CD	CE	CF	CG	CJ	CK	СР	cs	СТ	CU	PA ₁	PB ₁	PC	PD	PE ₁	Mass g [oz.]
12 [0.472]	12	5	8.5	M5	16.3	15	12	11	R 7.5	4+0.03	R5	4	4	5.5	4 ^{+0.2} _{+0.1}	25	3	R16	15	10.6	0.7	4 _{f8}	2.5	30 [1.06]
16 [0.630]	12	5	8.5	M5	19.8	17	16	12	R10	5 ^{+0.03}	R6	4	5	5.5	5 ^{+0.2} _{+0.1}	29	3.5	R19	17	12.6	0.7	5 _{f8}	3	40 [1.41]
20 [0.787]	12	5	8.5	M5	24	25	22	17	R14	8+0.04	R11	4	8	5.5	8 ^{+0.4} +0.2	34	5.2	R22	24.4	19.6	0.9	8 _{f8}	6	75 [2.65]
25 [0.984]	16	6	10	M6	28	25	26	17	R16	8+0.04	R11	4	8	6.6	8 ^{+0.4} +0.2	40	5.2	R25	24.4	19.6	0.9	8 f8	6	100 [3.53]
32 [1.260]	16	6	10	M6	34	29	34	19	R20	10 ^{+0.04}	R12.5	4	10	6.6	12 ^{+0.4} _{+0.2}	44	8	R29.5	34	29.2	0.9	10f8	8	165 [5.82]
40 [1.575]	20	8	13	M8	40	29	34	19	R20	10+0.04	R12.5	4	10	9	12+0.4	52	8	R35	34	29.2	0.9	10f8	8	200 [7.05]
50 [1.969]	22	8	13	M8	48	32	_	19	R17	14+0.08	R14	5	13	9 Counterbore φ 17	20+0.6	63	12.5	R41.5	55	47	1.15	14 ^{-0.030} 0.070	13.4	315 [11.11]
63 [2.480]	20	8	13	M8	60	32	_	19	R17	14+0.08	R14	6	13	9 Counterbore φ 20	20+0.6	76	15	R50.5	60	52	1.15	14 ^{-0.030} 0.070	13.4	495 [17.46]
80 [3.150]	30	12	18	M12	74	52	_	32	R24	20+0.1	R20	7	20	14 Counterbore φ 22	32+0.6	95	16	R62.5	74	66	1.35	20 ^{-0.040} -0.084	19	1110 [39.15]
100 [3.940]	30	14	21	M14	90	52	_	32	R24	20+0.1	R21	7	20	16 Counterbore φ 26	32+0.6	115	16	R75.5	74	66	1.35	20 ^{-0.040} -0.084	19	1490 [52.56]

Notes: 1. CD = Swing range of clevis mounting bracket itself.

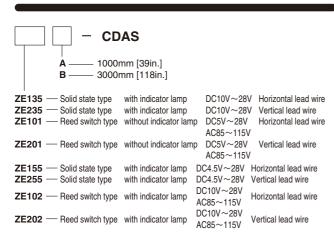
Remark: ϕ 12~ ϕ 50 are mounted with 2 bolts.

CF = Maximum radius of swing for mating bracket.

JIG CYLINDERS C SERIES SENSOR SWITCHES

Solid State Type, Reed Switch Type

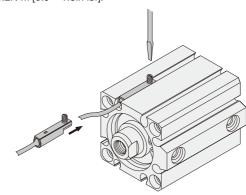
Order Codes



• For details of sensor switches, see p.1544.

Moving Sensor Switch

- Loosening mounting screw allows the sensor switch to be moved along the switch mounting groove on the cylinder body.
- Tighten the mounting screw with a tightening torque of 0.1 ~ 0.2N·m [0.9 ~ 1.8in·lbf].



Minimum Cylinder Strokes When Using Sensor Switches

Solid state	type		mm
Bore size	2 pcs. mo	unting ^{Note}	1 no mounting
Bore Size	1-surface mounting	2-surface mounting	1 pc. mounting
6~12 [0.236~0.472in.]	30	10	-
16~100 [0.630~3.940in.]	1	0	5

Note: Two pieces can be mounted with 5mm stroke.

Take note that overlapping may occur, however.

Reed switc	h type		mm
Bore size	2 pcs. m	nounting	1 no mounting
Dore Size	1-surface mounting	2-surface mounting	1 pc. mounting
12 [0.472in.]	30	10	10
40 400 0 000 0 040: 1	4	0	10

10

Sensor Switch Operating Range, Response Differential, and Maximum Sensing Location

lacktriangle Operating range : ℓ

The distance the piston travels in one direction, while the switch is in the ON position.

Response differential : C

mm [in]

16~100 [0.630~3.940in.]

The distance between the point where the piston turns the switch ON and the point where the switch is turned OFF as the piston travels in the opposite direction.

Solid state type

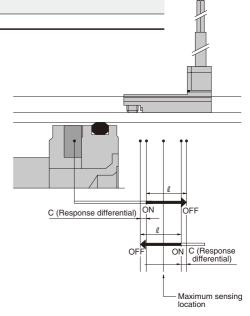
		·											[]			
Item Bore	6 [0.236]	8 [0.315]	10 [0.394]	12 [0.472]	16 [0.630]	20 [0.787]	25 [0.984]	32 [1.260]	40 [1.575]	50 [1.969]	63 [2.480]	80 [3.150]	100 [3.940]			
Operating range : ℓ	1.8~3.0 [0.071~0.118]	1.8~3.0 [0.071~0.118]	2.0~3.2 [0.079~0.126]	2~4 [0.079~0.157]	2~5 [0.079~0.197]	3.5~7.5 [0.138~0.295]	4~8 [0.157~0.315]	3~7 [0.118~0.276]	3.5~7.5 [0.138~0.295]	3.5~7.5 [0.138~0.295]	4~8.5 [0.157~0.335]	4.5~9.5 [0.177~0.374]	4.5~9.0 [0.177~0.354]			
Response differential : C	0.2	2 [0.008] or le	ess					0.5 [0.02	2] or less							
Maximum sensing location	6 [0.236]															
Dama and The a	-1			Novel The development of the second second												

Remark: The above table shows reference values.

Reed switch type

		<i>,</i> ,								
Item Bore	12 [0.472]	16 [0.630]	20 [0.787]	25 [0.984]	32 [1.260]	40 [1.575]	50 [1.969]	63 [2.480]	80 [3.150]	100 [3.940]
Operating range : £	4.5~8.5 [0.177~0.335]	5.5~9.5 [0.217~0.374]	9~13.5 [0.354~0.531]	10~15.5 [0.394~0.610]	8~12 [0.315~0.472]	8.5~14 [0.335~0.551]	9~15 [0.354~0.591]	10~16 [0.394~0.630]	11~16 [0.433~0.630]	11~16.5 [0.433~0.650]
Response differential : C	1.0 [0.039] or less		2.0 [0.079] or less							2.5 [0.098] or less
Maximum sensing location		10 [0.394]								

Remark: The above table shows reference values.

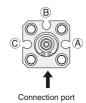


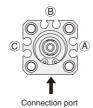
mm [in]

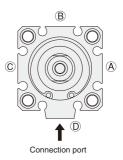
ϕ 6 \sim ϕ 12



$\bullet \phi 20 \sim \phi 100$







lacktriangle The drawing is for ϕ 32.

The standard mounting positions at shipping for the end of stroke detection on the rod side is either surface A or surface C, while the end of stroke detection on the head side is surface (B). If mounting sensor switches on the same surface

for detection of both ends is required, consult us. (The sensor switch may sometimes protrude from the cylinder body.)

Mounting on any of surfaces (A), (B), or (C) allows detection of the end of stroke on the rod side and

(The sensor switch may sometimes protrude from the cylinder body.)

Mounting on any of surfaces (A), (B), (C), or (D) allows detection of the end of stroke on the rod side and

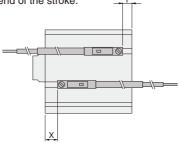
(The sensor switch may sometimes protrude from the cylinder body.)

However, the **ZE2** sensor switches cannot be mounted on the \bigcirc position in ϕ 32, ϕ 40, and ϕ 50.

Mounting Location of End of Stroke Detection Sensor Switch

When the sensor switch is mounted in the position shown in the diagram below (figures in the tables are reference values), the magnet reaches the sensor switch's maximum sensing location at the end of the stroke.

Standard cylinder, Non-rotating cylinder



■ Solid state type

Double acting type

	Double ac	tin	g ty	/pe									mm	[in.]
Code	Bore	6	8	10	12	16	20	25	32	40	50	63	80	100
х	Standard type	7.2 [0.283]	8 [0.315]	8.3 [0.327]	7 [0.276]	7 [0.276]	11 [0.433]	11 [0.433]		-	12.5 [0.492]	-	20 [0.787]	25 [0.984]
^	With bumper (-R)	_	_	-	10 [0.394]	1 O [0.394]	15 [0.591]	16 [0.630]			15.5 [0.610]	-	20 [0.787]	25 [0.984]
Υ	Standard type	1 [0.039]	O.3 [0.012]	1 [0.039]	4 [0.157]	4 [0.157]	7.5 [0.295]	9 [0.354]			14.5 [0.571]	_	20 [0.787]	25 [0.984]
Y	With bumper (-R)	_	_	_	6 [0.236]	6 [0.236]	8.5 [0.335]	9 [0.354]	6.5 [0.256]	8.5 [0.335]	11.5 [0.453]	_	20 [0.787]	25 [0.984]

Single acting puch type

Tolligle acting push type mm [in.]														
Code	6	8	10	12	16	20	25	32	40	50				
х	17.2 [0.677]	18 [0.709]	18.3 [0.720]		15 [0.591]	14 [0.551]			17.5 [0.689]					
Y	1 [0.039]	0.3 [0.012]	1 [0.039]	1 [0.039]	1 [0.039]	4.5 [0.177]	5.5 [0.217]		7.5 [0.295]					

Single acting pull type

Code	6	8	10	12	16	20	25	32	40	50			
х	7.2 [0.283]	8 [0.315]	8.3 [0.327]	7 [0.276]	7 [0.276]	11 [0.433]	11 [0.433]		14.5 [0.571]				
Y	11 [0.433]	10.3 [0.406]		9 [0.354]	9 [0.354]	12.5 [0.492]	14 [0.551]		15.5 [0.610]				

■ Reed switch type

_	Double acting type mm [in													
C	ode	Bore	12	16	20	25	32	40	50	63	80	100		
	х	Standard type	2.5 [0.098]	2.5 [0.098]	6.5 [0.256]	6.5 [0.256]	9 [0.354]	10 [0.394]	8 [0.315]	10.5 [0.413]	15.5 [0.610]	20.5 [0.807]		
	^	With bumper (-R)	5.5 [0.217]	5.5 [0.217]	10.5 [0.413]		11 [0.433]	12 [0.472]	11 [0.433]	10.5 [0.413]				
	v	Standard type	-0.5 [-0.020]	-0.5 [-0.020]	3 [0.118]	4.5 [0.177]	4 [0.157]	6 [0.236]	10 [0.394]	11.5 [0.453]	15.5 [0.610]	20.5 [0.807]		
	Υ	With bumper (-R)	1.5 [0.059]	1.5 [0.059]	4 [0.157]	4.5 [0.177]	2 [0.079]	4 [0.157]	7 [0.276]	11.5 [0.453]	15.5 [0.610]			

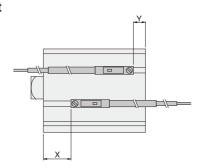
Single acting puch type

Sillyle act	illig þi	usii ty	þe				mm [in.]
Code	12	16	20	25	32	40	50
х	10.5	10.5	9.5	10	11	13	12.5
	[0.413]	[0.413]	[0.374]	[0.394]	[0.433]	[0.512]	[0.492]
Y	-3.5	-3.5	0	1	2	3	6
	[-0.138]	[-0.138]	[0]	[0.039]	[0.079]	[0.118]	[0.236]

Single acting pull type

Olligic act	mg p	ин сур					mm [in.]
Code	12	16	20	25	32	40	50
х	2.5	2.5	6.5	6.5	9	10	8
	[0.098]	[0.098]	[0.256]	[0.256]	[0.354]	[0.394]	[0.315]
Υ	4.5	4.5	8	9.5	9	11	10
	[0.177]	[0.177]	[0.315]	[0.374]	[0.354]	[0.433]	[0.394]

Square rod cylinders with magnet



■ Solid state type

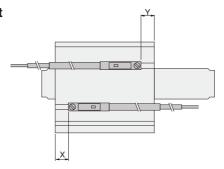
Double acting type

	Double ac	ting ty	ре				mm [in.]
Code	Bore	20	25	32	40	50	63
х	Standard type	17.5 [0.689]	17.5 [0.689]	22.5 [0.886]	24.5 [0.965]	27.5 [1.083]	30 [1.181]
^	With bumper (-R)	21.5 [0.846]	22.5 [0.886]	24.5 [0.965]	26.5 [1.043]	30.5 [1.201]	30 [1.181]
· ·	Standard type	10 [0.394]	9 [0.354]	14 [0.551]	14.5 [0.571]	14.5 [0.571]	16 [0.630]
Υ	With bumper (-R)	8.5 [0.335]	9 [0.354]	6.5 [0.256]	8.5 [0.335]	11.5 [0.453]	16 [0.630]

■ Reed switch type

	Jouble ac	ting ty	ре				mm [in.]
Code	Bore	20	25	32	40	50	63
х	Standard type	13 [0.512]	13 [0.512]	18 [0.709]	20 [0.787]	23 [0.906]	25.5 [1.004]
^	With bumper (-R)	17 [0.669]	18 [0.709]	20 [0.787]	22 [0.866]	26 [1.024]	25.5 [1.004]
V	Standard type	5 [0.197]	4.5 [0.177]	4 [0.157]	6 [0.236]	10 [0.394]	11.5 [0.453]
Υ	With bumper (-R)	4 [0.157]	4.5 [0.177]	2 [0.079]	4 [0.157]	7 [0.276]	11.5 [0.453]

Double rod cylinders with magnet



■Solid state type

■ Double acting type

mm [in.]														
Code	Bore	6	8	10	12	16	20	25	32	40	50	63	80	100
v	Standard type	7.2 [0.283]	8 [0.315]	8.3 [0.327]	7 [0.276]	7 [0.276]	11 [0.433]						20.5 [0.807]	
X	With bumper (-R)	_	_	_	1 O [0.394]	10 [0.394]	15 [0.591]		15.5 [0.610]		l	1 -	20.5 [0.807]	
v	Standard type	5.5 [0.217]		6 [0.236]	1 O [0.394]	10 [0.394]				-			26.5 [1.043]	
Υ	With bumper (-R)	_	_	_	12 [0.472]	12 [0.472]		14.5 [0.571]			_		26.5 [1.043]	

Single acting type

Sillyle act	ing ty	he					mm [in.]
Code Bore	12	16	20	25	32	40	50
х	15	15	14	14.5	15.5	17.5	16.5
	[0.591]	[0.591]	[0.551]	[0.571]	[0.610]	[0.689]	[0.650]
Υ	7	7	11	11	13.5	14.5	12.5
	[0.276]	[0.276]	[0.433]	[0.433]	[0.531]	[0.571]	[0.492]

■ Reed switch type

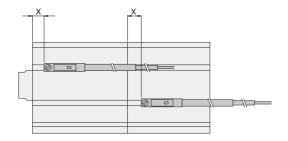
Double acting type

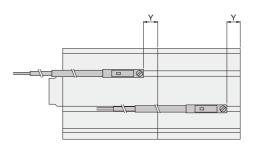
	Double acting type mm [in.]												
	Code	Bore	12	16	20	25	32	40	50	63	80	100	
	х	Standard type	2.5 [0.098]	2.5 [0.098]	6.5 [0.256]	6.5 [0.256]	9 [0.354]	10 [0.394]	8 [0.315]	10.5 [0.413]	16 [0.630]	20.5 [0.807]	
	^	With bumper (-R)	5.5 [0.217]	5.5 [0.217]	10.5 [0.413]	11.5 [0.453]	11 [0.433]	12 [0.472]	9.5 [0.374]	10.5 [0.413]	16 [0.630]	20.5 [0.807]	
	· ·	Standard type	5.5 [0.217]	5.5 [0.217]	9.5 [0.374]	10 [0.394]	11 [0.433]	13 [0.512]	12 [0.472]	13.5 [0.531]	22 [0.866]	27 [1.063]	
	Υ	With bumper (-R)	7.5 [0.295]	7.5 [0.295]	10.5 [0.413]	10 [0.394]	2 [0.079]	11 [0.433]	10.5 [0.413]		22 [0.866]	27 [1.063]	

■ Single acting type

Siligle act	ing ty	he	Single acting type m													
Code	12	16	20	25	32	40	50									
х	10.5	10.5	9.5	10	11	13	12									
	[0.413]	[0.413]	[0.374]	[0.394]	[0.433]	[0.512]	[0.472]									
Υ	2.5	2.5	6.5	6.5	9	10	8									
	[0.098]	[0.098]	[0.256]	[0.256]	[0.354]	[0.394]	[0.315]									

● Tandem cylinders with magnet





■Solid state type

Double acting type

	Double acting type mm [in.]												
Cod	e Bore	12	16	20	25	32	40	50	63	80	100		
X	Standard type	7 [0.276]	7 [0.276]	11 [0.433]	11 [0.433]	13.5 [0.531]		12.5 [0.492]	15 [0.591]	20 [0.787]	25 [0.984]		
^	With bumper (-R)	10 [0.394]	10 [0.394]	15 [0.591]	16 [0.630]	15.5 [0.610]			15 [0.591]	20 [0.787]	25 [0.984]		
	Standard type	4 [0.157]	4 [0.157]	7.5 [0.295]	9 [0.354]	8.5 [0.335]	10.5 [0.413]	14.5 [0.571]	16 [0.630]	20 [0.787]	25 [0.984]		
Υ	With bumper (-R)	6 [0.236]	6 [0.236]	8.5 [0.335]	9 [0.354]	6.5 [0.256]	8.5 [0.335]	11.5 [0.453]	16 [0.630]	20 [0.787]	25 [0.984]		

Single acting push type

Comple dot	9 P	uon ty	PC				[]
Code	12	16	20	25	32	40	50
Х	15 [0.591]	15 [0.591]	14 [0.551]	14.5 [0.571]	15.5 [0.610]	17.5 [0.689]	16.5 [0.650]
Y	1 [0.039]	1 [0.039]	4.5 [0.177]	5.5 [0.217]	6.5 [0.256]	7.5 [0.295]	10.5 [0.413]

■ Reed switch type

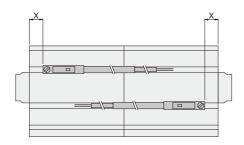
■ Double acting type

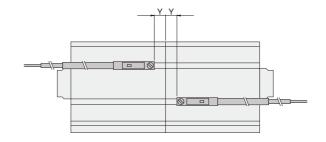
1	L	Jouble at	ung	гур	е						mı	m [in.]
Ī	Code	Bore	12	16	20	25	32	40	50	63	80	100
	Х	Standard type	2.5 [0.098]	2.5 [0.098]	6.5 [0.256]	6.5 [0.256]	9 [0.354]	10 [0.394]	8 [0.315]	10.5 [0.413]	15.5 [0.610]	
	^	With bumper (-R)	5.5 [0.217]	5.5 [0.217]	10.5 [0.413]		11 [0.433]	12 [0.472]	11 [0.433]		15.5 [0.610]	
	٧	Standard type	-0.5 [-0.020]	-0.5 [-0.020]	3 [0.118]	4.5 [0.177]	4 [0.157]	6 [0.236]	10 [0.394]		15.5 [0.610]	
Υ	Υ	With bumper (-R)	1.5 [0.059]	1.5 [0.059]	4 [0.157]	4.5 [0.177]	2 [0.079]	4 [0.157]	7 [0.276]	11.5 [0.453]	15.5 [0.610]	

Single acting push type

Single acting push type mm													
Code	12	16	20	25	32	40	50						
х	10.5 [0.413]	10.5 [0.413]	9.5 [0.374]	10 [0.394]	11 [0.433]	13 [0.512]	12 [0.472]						
Y	-3.5 [-0.138]	-3.5 [-0.138]	0 [0]	1 [0.039]	2 [0.079]	3 [0.118]	6 [0.236]						

Dual stroke cylinders with magnet





■ Solid state type

■ Double acting type

			9	אני ו							1111	[]
Ī	Code	Bore	12	16	20	25	32	40	50	63	80	100
	х	Standard type	7 [0.276]	7 [0.276]	11 [0.433]	11 [0.433]	13.5 [0.531]		12.5 [0.492]	15 [0.591]	20 [0.787]	25 [0.984]
	^	With bumper (-R)	10 [0.394]	10 [0.394]	15 [0.591]	16 [0.630]	15.5 [0.610]	16.5 [0.650]	14 [0.551]	15 [0.591]	20 [0.787]	25 [0.984]
	.,	Standard type	4	4	7.5	9	8.5	10.5	14.5	16 [0.630]	20	25
	Υ	With bumper (-R)	6 [0.236]	6 [0.236]	8.5 [0.335]	9 [0.354]	6.5 [0.256]	8.5 [0.335]	13.5 [0.531]	16 [0.630]	20 [0.787]	25 [0.984]

Single acting push type

● Single act	Single acting push type mm [in.]													
Code	12	16	20	25	32	40	50							
Х	15 [0.591]	15 [0.591]	14 [0.551]	14.5 [0.571]	15.5 [0.610]	17.5 [0.689]	16.5 [0.650]							
Υ	1 [0.039]	1 [0.039]	7.5 [0.295]	5.5 [0.217]	6.5 [0.256]	7.5 [0.295]	10.5 [0.413]							

Single acting pull type

Olligic dol														
Code Bore	12	16	20	25	32	40	50							
Х	7	7	11	11	13.5	14.5	12.5							
	[0.276]	[0.276]	[0.433]	[0.433]	[0.531]	[0.571]	[0.492]							
Υ	9	9	12.5	14	13.5	15.5	14.5							
	[0.354]	[0.354]	[0.492]	[0.551]	[0.531]	[0.610]	[0.571]							

■ Reed switch type

■ Double acting type

mm [in]

		ouble ac	ung	гур	<u> </u>						m	m [ın.]
Code Bore 12 16 20 25 32 40								40	50	63	80	100
•	Х	Standard type	2.5 [0.098]	2.5 [0.098]	6.5 [0.256]	6.5 [0.256]	9 [0.354]	10 [0.394]	8 [0.315]	10.5 [0.413]		
	^	With bumper (-R)	5.5 [0.217]	5.5 [0.217]		11.5 [0.453]	11 [0.433]	12 [0.472]	9.5 [0.374]		15.5 [0.610]	
	,	Standard type	-0.5 [-0.020]		3 [0.118]	4.5 [0.177]	4 [0.157]	6 [0.236]	10 [0.394]	11.5 [0.453]		
	Υ	With bumper (-R)	1.5 [0.059]	1.5 [0.059]	4 [0.157]	4.5 [0.177]	2 [0.079]	4 [0.157]	9 [0.354]	11.5 [0.453]		

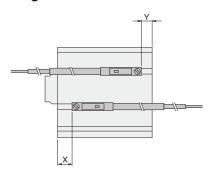
Single acting push type

Single act	Single acting push type mm [in.]												
Code	12	16	20	25	32	40	50						
х	10.5	10.5	9.5	10	11	13	12						
	[0.413]	[0.413]	[0.374]	[0.394]	[0.433]	[0.512]	[0.472]						
Υ	-3.5	-3.5	3	1	2	3	6						
	[-0.138]	[-0.138]	[0.118]	[0.039]	[0.079]	[0.118]	[0.236]						

■ Single acting null type

Janie	ie aci	illig p	uii typ	-				mm [in.]
Code	Bore	12	16	20	25	32	40	50
Х		2.5 [0.098]	2.5 [0.098]	6.5 [0.256]	6.5 [0.256]	9 [0.354]	10 [0.394]	8 [0.315]
Υ		4.5 [0.177]	4.5 [0.177]	8 [0.315]	9.5 [0.374]	9 [0.354]	11 [0.433]	10 [0.394]

● Lateral load resistant cylinders with magnet



■Solid state type

■ Double acting type

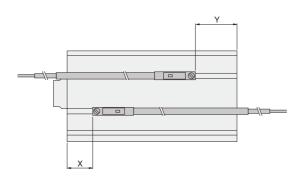
- Boubio dotting typo										111111 [1111.			
Code Bore	12	16	20	25	32	40	50	63	80	100			
x	10 [0.394]	10 [0.394]	15 [0.591]		15.5 [0.610]								
Υ	6 [0.236]	6 [0.236]	8.5 [0.335]	9 [0.354]	6.5 [0.256]				18.5 [0.728]				

■ Reed switch type

■ Double acting type

Double acting type										m [in. _]
Code Bore	12	16	20	25	32	40	50	63	80	100
х	5.5 [0.217]				11 [0.433]	12 [0.472]		13 [0.512]	22 [0.866]	27 [1.063]
Υ	1.5 [0.059]	1.5 [0.059]	4 [0.157]	4.5 [0.177]	2 [0.079]	4 [0.157]	7 [0.276]	9 [0.354]	14 [0.551]	19 [0.748]

Long stroke cylinders with magnet



■ Solid state type

Double acting type

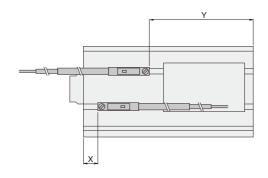
<u> </u>												
Code	12	16	20	25	32	40	50	63	80	100		
х	15 [0.591]	15 [0.591]	20 [0.787]					22.5 [0.886]				
Υ	12 [0.472]	12 [0.472]	15 [0.591]	14.5 [0.571]	13.5 [0.531]	15.5 [0.610]	12.5 [0.492]	13.5 [0.531]	18.5 [0.728]	23.5 [0.925]		

■Reed switch type

■ Double acting type

Double at	bodble acting type mm [in.										
Code	12	16	20	25	32	40	50	63	80	100	
х		10.5 [0.413]				17 [0.669]	16 [0.630]	18 [0.709]	27 [1.063]	32 [1.260]	
Υ	7.5 [0.295]	7.5 [0.295]	10.5 [0.413]		9 [0.354]	11 [0.433]	8 [0.315]	9 [0.354]	14 [0.551]	19 [0.748]	

End keep cylinder with magnet



■ Solid state type

■Head side end keen

Thead Side	mm [in.]											
Code	16	20	25	32	40	50	63					
х	15.5	20.5	21.5	20.5	21.5	20.5	22.5					
	[0.610]	[0.807]	[0.846]	[0.807]	[0.846]	[0.807]	[0.886]					
Υ	36.5	34.5	34.5	43.5	45.5	51.5	54.5					
	[1.437]	[1.358]	[1.358]	[1.713]	[1.791]	[2.028]	[2.146]					

■ Reed switch type

■ Solid state type

Х

Rod side end keep

16

35.5

35.5

[1.398] [1.398] [1.437]

11.5 14.5 14.5 [0.453] [0.571] [0.571]

Rod side end keep										
Code Bore	16	20	25	32	40	50	63			
х	31	31	32	41	42	51	53			
	[1.220]	[1.220]	[1.260]	[1.614]	[1.654]	[2.008]	[2.087]			
Υ	7	10	10	9	11	7	9			
	[0.276]	[0.394]	[0.394]	[0.354]	[0.433]	[0.276]	[0.354]			

25

36.5

■ Reed switch type

Thead Side	Thead side end keep										
Code Bore	16	20	25	32	40	50	63				
х	11	16	17	16	17	16	16				
	[0.433]	[0.630]	[0.669]	[0.630]	[0.669]	[0.630]	[0.630]				
Y	32	30	30	39	41	47	50				
	[1.260]	[1.181]	[1.181]	[1.535]	[1.614]	[1.850]	[1.969]				

mm [in.]

63

57.5

[2.185] [2.264]

40

[1.831]

50

15.5 11.5 13.5 [0.610] [0.453] [0.531]

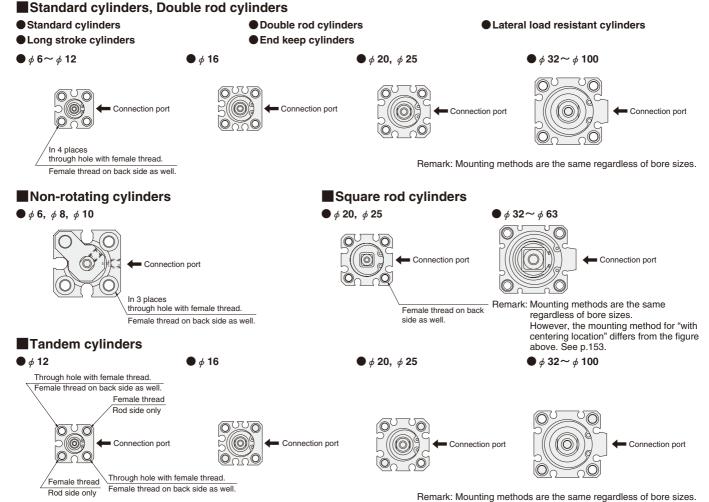
32

[1.791]

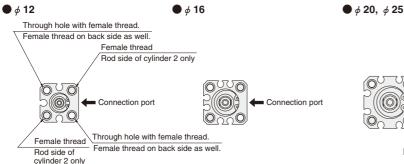
13.5 [0.531]

Body mounting

Jig cylinder mounting holes include both through holes with female mounting thread, and dedicated female mounting threads, for a variety of mountings. For details, see the diagrams below.



■ Dual stroke cylinders



Notes: 1. Avoid applying lateral loads on the piston rod, with the exception of Lateral load resistant cylinders, Long stroke cylinders, and End keep cylinders.

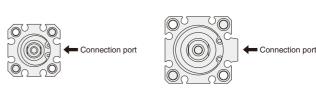
- 2. When using through holes for mounting, always use the supplied dedicated washers. (except ϕ 6, ϕ 8, and ϕ 10)
- Mount an external stopper, etc., to prevent the cylinder from being subjected to direct shocks during operation.

Tightening thread of the end of piston rod

Since a tool (thin wrench) has been prepared for holding the piston rod when tightening the rod end thread, consult us.

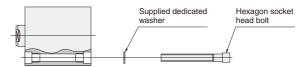


 ϕ 32 $\sim \phi$ 100



Remark: Mounting methods are the same regardless of bore sizes.

• Always use the supplied dedicated washer whenever using a through bolt to directly mount the cylinder body in place.* Use the bolts shown in the table below to mount in place. And for bolts used for direct mounting, see p.209.



*Washer not available for bore sizes ϕ 6, ϕ 8, and ϕ 10.

Bore size	6	8	10	12	16	20	25	32	40	50	63	80	100
mm [in.]	[0.236]	[0.315]	[0.394]	[0.472]	[0.630]	[0.787]	[0.984]	[1.260]	[1.575]	[1.969]	[2.480]	[3.150]	[3.940]
Hexagon socket head bolt nominal size	МЗ	МЗ	МЗ	МЗ	МЗ	МЗ	M4	M4	M5	M6	M6	M8	M10

Bracket mounting

- Foot mounting brackets cannot be installed on tandem cylinders and dual stroke
- Flange mounting brackets cannot be installed on the head side of tandem cylinders and the stroke 1 side of dual stroke cylinders.
- Clevis mounting brackets cannot be installed on anything except for lateral load resistant cylinders, long stroke cylinders, and end keep cylinders.

Non-standard stroke

In most cases, body cutting is used for the manufacturing for non-standard strokes. However, body cutting is not used for strokes of less than 5mm for ϕ 12 $[0.472in.] \sim \phi 40 [1.575in.]$, and strokes of less than 10mm for ϕ 50 [1.969in.] $\sim \phi$ 100 [3.940in.]. The collar packed is used for these cases. Moreover, sizes ϕ 6 [0.236in.] $\sim \phi$ 10 [0.394in.] are collar packed only. For delivery, consult us.

Rod side end keep cylinders cannot be collar packed.

- Dimensions
- 1. Additional strokes obtained by body cutting remain classed as non-standard strokes.
- 2. Additional strokes obtained by collar packed are classed as standard strokes in the longer one.

Lateral Load

- Keep the lateral load on the rod end of the lateral load resistant cylinder, long stroke cylinder, and end keep cylinder, at or below the values shown in the graphs below.
 - Note: Avoid applying lateral load on any cylinder types other than the lateral load resistant cylinder, long stroke cylinder, and end keep cylinder.

Lateral load resistant cylinders

z

Load

4.9

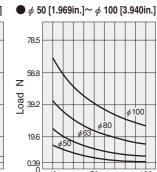
14.7

9.8

Z

- Standard type (CBDA)
- ϕ 12 [0.472in.] $\sim \phi$ 20 [0.787in.]

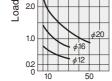




1N = 0.2248lbf1mm = 0.0394in.

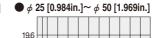
Stroke mm

Z



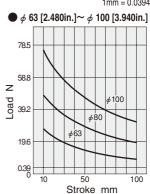
Stroke mm Cylinder with magnet (CBDAS)

 \bullet ϕ 12 [0.472in.] $\sim \phi$ 20 [0.787in.]



50

Stroke mm



20 z Load 2.0 φ₁₂ Stroke mm

Long stroke cylinders, End keep cylinders

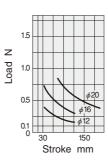
• Standard type (CCDA,CCDAK) • ϕ 25 [0.984in.] $\sim \phi$ 50 [1.969in.]

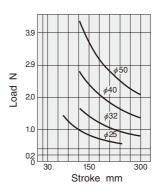
Stroke mm

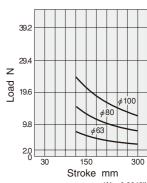
1mm = 0.0394in. \bullet ϕ 63 [2.480in.] \sim ϕ 100 [3.940in.]

1N = 0.2248lbf

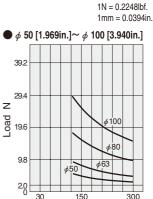
lacktriangledown 4 12 [0.472in.] $\sim \phi$ 20 [0.787in.]







Cylinder with magnet (CCDAS, CCDAKS)



Stroke mm

z Load 1.0 0.5 0.1 Stroke mm

2.9 Z Load 2.0 1.0 150 Stroke mm

Single acting cylinders

Standard cylinders single acting push type
Standard cylinders single acting pull type
Double rod cylinders single acting type
Tandem cylinders single acting push type
Dual stroke cylinders single acting push type
Dual stroke cylinders single acting pull type

If in the above types' application, air is being continuously applied from a connection port, and the spring remains in a compressed state for long periods of time, the piston may sometimes fail to return to its original position even after the air is exhausted. If equipment is to be used in this way over long periods of time, consult us.

End keep cylinder

Control circuit

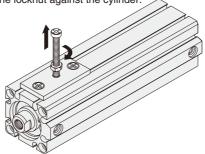
- For control of Jig end keep cylinders, we recommend the use of 2-position, 4-, 5-port valves. Avoid the use of a control circuit of ABR connections (exhaust centers) with 3position valves that exhaust air from 2 ports.
- Always use meter-out control for speed control. Meter-in control may result in failure of the locking mechanism to release.

Notes: 1. It is dangerous to supply air to a connection port on a side with a locking mechanism while already exhausted, because the piston rod could suddenly extend (retract). In addition, it could also cause galling of the lock piston and piston rod, resulting in defective operation. Always supply air to the connection port on the opposite side to ensure back pressure is applied.

- When restarting operations after air has been exhausted from the cylinder due to completion of operations or to an emergency stop, always start by supplying air to the connection port on the opposite side of the locking mechanism.
- Connect the valve port A (NC) to the connection port on the side with the locking mechanism.

Manual operation of the locking mechanism

While the locking mechanism is normally released automatically through cylinder operations, it can also be released manually. For manual release, insert an M3 \times 0.5 screw that has 30mm [1.18in.] below head length into the manual override opening, thread it in about 3 turns into the internal lock piston, and then pull up the screw. To maintain the manual override for adjustment, etc., thread the locknut onto the screw and, with the locking mechanism in a released state, tighten the locknut against the cylinder.



Notes:1. It is dangerous to release the lock when a load (weight) is present on the piston rod, because it may cause a sudden fall or cause the unintended piston rod's extension (retraction). In this case, always supply air to the connection port opposite the one adjacent to the locking mechanism before releasing the locking mechanism.

- 2. If the locking mechanism cannot easily be released even with manual override, it could be the result of galling of the lock piston and piston rod. In this case, supply air to the connection port opposite the one adjacent to the locking mechanism before releasing the locking mechanism.
- 3. Because water, oil, dust, etc., entering via the manual override opening could be a cause of defective locking or other erratic operation, use a cover, etc., for protection when using in locations subject to dripping water, dripping oil, or to large amounts of dust, etc.

Sensor switch

In the standard cylinder, a magnet for the sensor switch is not built-in.

To install a sensor switch, a cylinder with a built-in magnet for the sensor switch is required.

Notes: 1. For the sensor switch mounting location and moving ranges, see p.199.

 Contact protection measures are required for connecting inductive loads to reed sensor switches or for when capacitive surges are generated. For contact protection measures, see p.1566.

Piping

Always thoroughly blow off (use compressed air) the tubing before connecting it to the cylinder. Entering chips, sealing tape, rust, etc., generated during piping work could result in air leaks or other defective operation.

Atmosphere

- If using in locations subject to dripping water, dripping oil, etc., or to large amounts of dust, use a cover to protect the unit.
- The product cannot be used when the media or ambient atmosphere contains any of the substances listed below.

Organic solvents, phosphate ester type hydraulic oil, sulphur dioxide, chlorine gas, or acids, etc.

Lubrication

The product can be used without lubrication, if lubrication is required, use Turbine Oil Class 1 (ISO VG32) or equivalent.

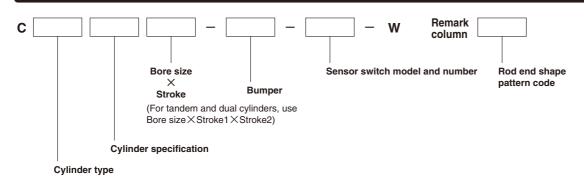
Avoid using spindle oil or machine oil.

OPTIONAL ROD END SHAPE PATTERNS

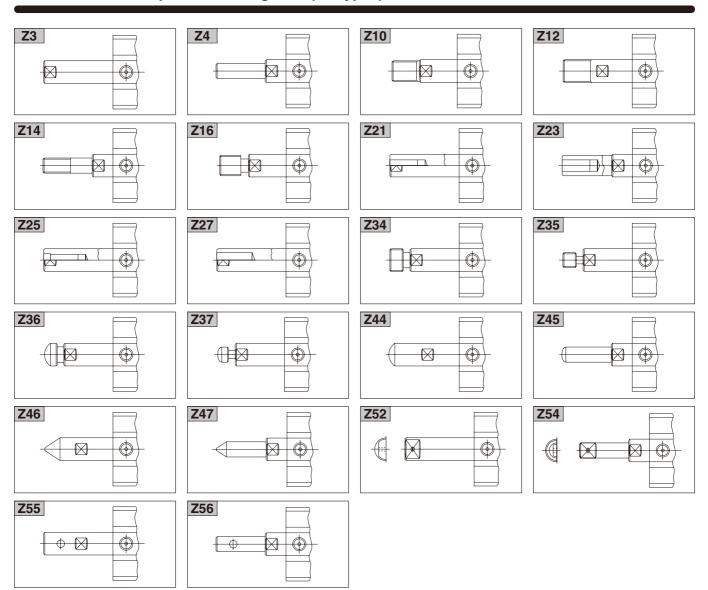
Use an order form of rod end pattern and fill the items on the selected one from among 22 types of optional patterned shapes to obtain made-to-order cylinders of non-standard rod end shapes. The optional rod end shapes can be applied to the entire Jig Cylinders C Series. For the order form containing the optional patterned shapes, contact us.

(Except ϕ 6, ϕ 8, ϕ 10)

Order Codes



Piston Rod End Shape Pattern Diagrams (22 Types)



MOUNTING SCREWS FOR JIG CYLINDERS

11 1111

Some types of mounting screws specifically for the Jig Cylinders are available.

Use the order codes below to place orders.

① Mounting screw type: JIS B 1176 Hexagon socket head cap screws ② Surface treatment: Nickel plated

List of Order Codes

Applicable cylinder bore size mm [in.]	Mounting screw order code	Screw size	Number of supplied screws
	CRK124	M3×25	
	CRK125	M3×30	
6 [0.236]	CRK126	M3×35	2
8 [0.315]	CRK127	M3×40	
10 [0.394]	CRK128	M3×45	
	CRK129	M3×50	
12 [0.472]	CRK130	M3×30	
16 [0.630]	CRK131	M3×35	
20 [0.787]	CRK132	M3×40	4
	CRK133	M3×45	
	CRK134	M3×50	
	CRK135	M4×30	4
	CRK136	M4×35	4
	CRK137	M4×40	_
05 [0 004]	CRK138	M4×45	4
25 [0.984]	CRK139	M4×50	4
32 [1.260]	CRK140	M4×55	4
	CRK141	M4×60	4
	CRK142	M4×65	4
	CRK143	M4×70	-
	CRK144	M4×75	
	CRK145	M5×35	-
	CRK146	M5×40	+
	CRK147 CRK148	M5×45 M5×50	+
	CRK149	M5×55	+
	CRK150	M5×60	+
•	CRK151	M5×65	-
40 [1.575]	CRK152	M5×70	4
	CRK153	M5×75	1
	CRK154	M5×80	1
	CRK155	M5×85	1
	CRK156	M5×90	1
	CRK157	M5×100	1
	CRK158	M5×110	1
	CRK159	M6×40	
	CRK160	M6×45	
	CRK161	M6×50	
	CRK162	M6×55	
	CRK163	M6×60	
	CRK164	M6×65	
	CRK165	M6×70	
50 [1.969]	CRK166	M6×75	4
63 [2.480]	CRK167	M6×80	
03 [Z.40U]	CRK168	M6×85	
	CRK169	M6×90	
	CRK170	M6×100	
	CRK171	M6×110	
	CRK172	M6×120	
	CRK173	M6×130	
	CRK174	M6×140	
	CRK175	M6×150	

Applicable cylinder bore size mm [in.]	Mounting screw order code	Screw size	Number of supplied screws		
	CRK176	M8×60			
	CRK177	M8×65			
	CRK178	M8×70			
	CRK179	M8×75			
	CRK180	M8×80			
	CRK181	M8×85			
	CRK182	M8×90			
80 [3.150]	CRK183	M8×95	4		
ou [3.130]	CRK184	M8×100	4		
	CRK185	M8×110			
	CRK186	M8×120			
	CRK187	M8×130			
	CRK188	M8×140			
	CRK189	M8×150			
	CRK190	M8×160			
	CRK191	M8×170			
	CRK192	M10×65			
	CRK193	M10×70			
	CRK194	M10×75			
	CRK195	M10×80			
	CRK196	M10×85			
	CRK197	M10×90			
	CRK198	M10×95			
100 [3.940]	CRK199	M10×100	4		
	CRK200	M10×110			
	CRK201	M10×120			
	CRK202	M10×130			
	CRK203	M10×140			
	CRK204	M10×150			
	CRK205	M10×160			
	CRK206	M10×170			