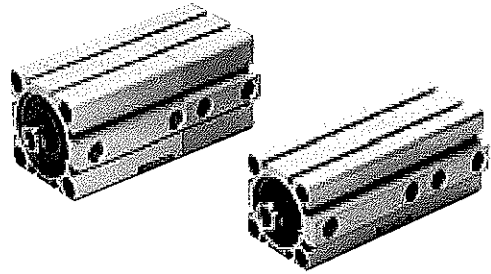


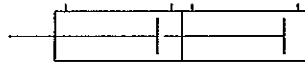
# JIG CYLINDERS C SERIES TANDEM CYLINDERS

Double Acting Type,  
Single Acting Push Type

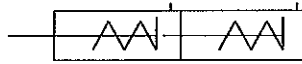


## Symbols

### ● Double acting type



### ● Single acting push type



## Specifications

Item	Bore size mm [in.]											
	12	16	20	25	32	40	50	63	80	100		
Operation type	Double acting type, Single acting push type							Double acting type				
Media	Air											
Operating pressure range MPa [psi.]	Double acting type		0.2~1.0 [29~145]				0.1~1.0 [15~145]					
	Single acting type		0.3~1.0 [44~145]				0.2~1.0 [29~145]		—			
Proof pressure MPa [psi.]	1.5 [218]											
Operating temperature range °C [°F]	0~60 [32~140] (The heat resistant specification is 120 [248]. Note1)											
Operating speed range mm/s [in./sec.]	Double acting type		30~500 [1.2~19.7]				30~300 [1.2~11.8]					
	Single acting type		100~500 [3.9~19.7]				100~300 [3.9~11.8]		—			
Cushion	Double acting type		Rubber bumper (Option Note2)								—	
	Single acting type		None								—	
Lubrication	Not required (If lubrication is required, use Turbine Oil Class 1 [ISO VG32] or equivalent.)											
Port size	M5×0.8			Rc1/8		Rc1/4		Rc3/8				

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

- Notes: 1. For heat resistant specification, consult us.  
2. Not available for heat resistant specification.

## Bore Size and Stroke

For non-standard strokes, see p.206.

Operation type	Stroke1 Bore size	mm											
		5	10	15	20	25	30	35	40	45	50	75	100
Double acting type CDAT CDATS	12, 16	0,5,10 15,20,25	0,5,10 15,20	0,5,10,15	0,5,10	0,5	0	—	—	—	—	—	—
	20, 25	0,5,10,15 20,25,30 35,40,45	0,5,10,15 20,25,30 35,40	0,5,10 15,20,25 30,35	0,5,10,15 20,25,30	0,5,10 15,20,25	0,5,10 15,20	0,5,10,15 15,20	0,5,10	0,5	0	—	—
	32, 40	0,5,10,15 20,25,30,35 40,45,70,95	0,5,10,15 20,25,30,35 40,65,90	0,5,10,15 20,25,30 35,60,85	0,5,10,15 20,25,30 55,80	0,5,10 15,20,25 50,75	0,5,10 15,20 45,70	0,5,10,15 40,65	0,5,10 35,60	0,5,30,55	0,25,50	0,25	0
	50, 63 80, 100	— 0,5,10,15 20,25,30,35 40,65,90	0,5,10,15 20,25,30,35 40,65,90	0,5,10,15 20,25,30 35,60,85	0,5,10,15 20,25,30 55,80	0,5,10 15,20,25 50,75	0,5,10,15 20,45,70	0,5,10,15 40,65	0,5,10 35,60	0,5,30,55	0,25,50	0,25	0
Single acting type CSAT CSATS	12, 16, 20 25, 32, 40	0,5,10 15,20,25	0,5,10 15,20	0,5,10,15	0,5,10	0,5	0	—	—	—	—	—	—
	50	— 0,5,10,15 20,25,30	0,5,10 15,20,25	0,5,10 15,20,25	0,5,10 15,20	0,5,10,15	0,5,10	0,5	0	—	—	—	—

- Remarks: 1. Stroke tolerance: Stroke 1 side  $\begin{matrix} +1 \\ 0 \end{matrix} \begin{matrix} +0.033 \\ -0.008 \end{matrix} \text{in.}$ , stroke 2 side  $\begin{matrix} +1 \\ 0 \end{matrix} \begin{matrix} +0.039 \\ -0 \end{matrix} \text{in.}$   
2. The figures in the table are combinations of stroke 2 (standard) responding to stroke 1 (standard).  
3. In most cases, body cutting is used for the non-standard strokes. However, body cutting is not used for "Stroke 1" or "Stroke 1 + Stroke 2" under the condition mentioned below. The collar packed is used for these cases.  
 $\phi$  12 ~  $\phi$  40: less than 5mm  
 $\phi$  50 ~  $\phi$  100: less than 10mm

### ● About stroke 1 and stroke 2

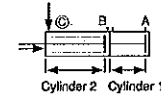
Stroke 1 is the stroke of cylinder 1.

Stroke 2 is obtained by subtracting stroke 1 from the stroke of cylinder 2.

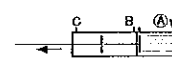
## Operation of Tandem Cylinders

Tandem Cylinders are a set of 2 cylinders joined end to end.

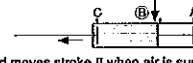
It can be used as a two-stage stroke cylinder by supplying air to either Port A or Port B. It can also obtain twice the thrust within the "stroke 1" range.



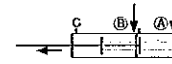
The rods retract strokes II and I when air is supplied from Port C.



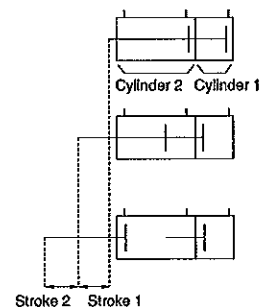
The rod moves stroke I when air is supplied from Port A.



The rod moves stroke II when air is supplied from Port B.

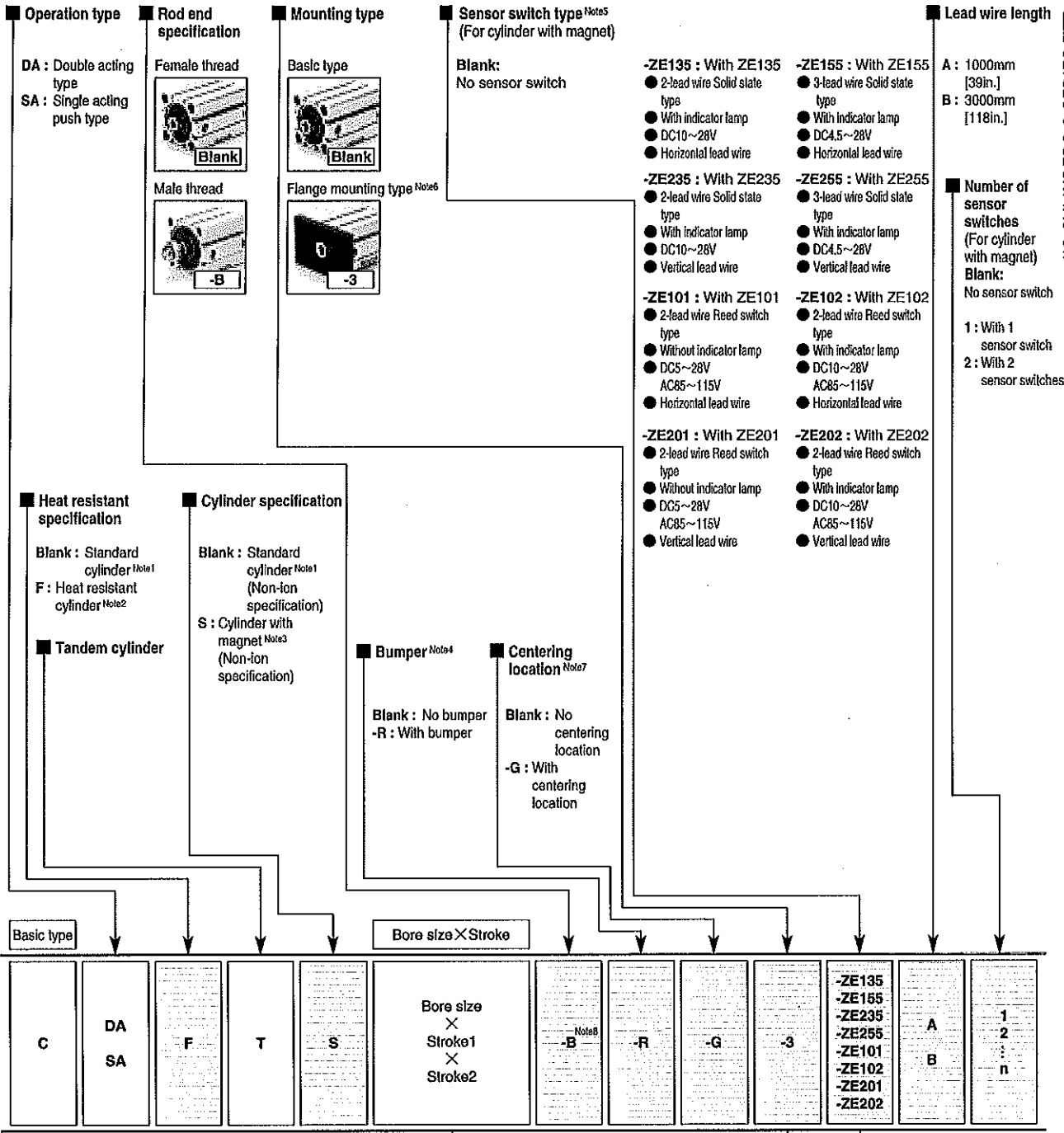


Twice the thrust is obtained within the stroke I range when air is supplied from Ports A and B.



# Order Codes for Tandem Cylinders

JIG CYLINDERS C SERIES



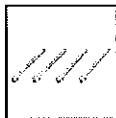
- See table for bore size and stroke.
- Mounting brackets are included at shipping.
- For the order codes of sensor switches only, see p.199.
- For heat resistant specification, sensor switch is not available.

Notes: 1. In the standard cylinder, a magnet for the sensor switch is not built-in.  
 2. Not available for the cylinder with magnet or the cylinder with bumper.  
 3. Not available in heat resistant specification.  
 4. For the double acting type only. Not available for heat resistant specification.  
 5. For details of sensor switches, see p.1544.  
 6. The flange mounting bracket can be mounted on the rod side only. Moreover, it cannot be mounted on the bore size  $\phi$  40 with centering location (-G).  
 7. Not available for the bore size  $\phi$  12.  
 8. For information regarding the cylinder joint and cylinder rod end for male thread, see p.1568.

## Additional Parts (To be ordered separately)



Flange mounting bracket (p.198)

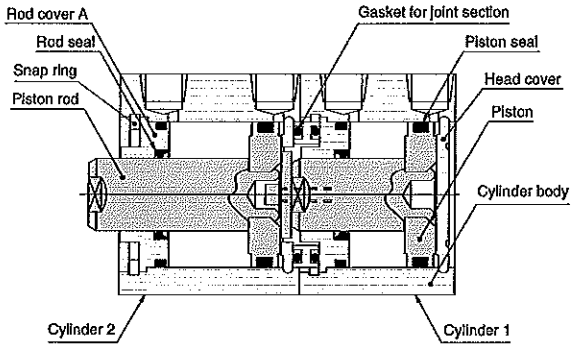


Mounting screws (p.209)

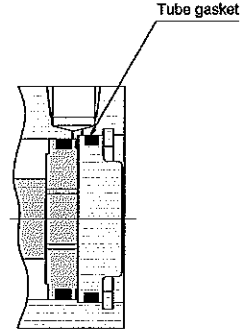
## Inner Construction and Major Parts

### ● Double acting type (CDAT)

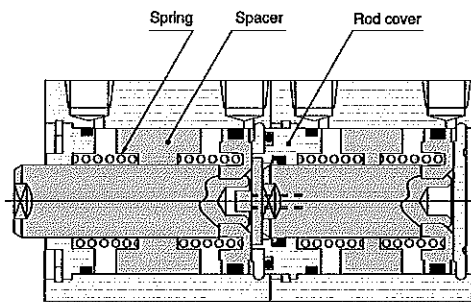
●  $\phi 12 \sim \phi 40$



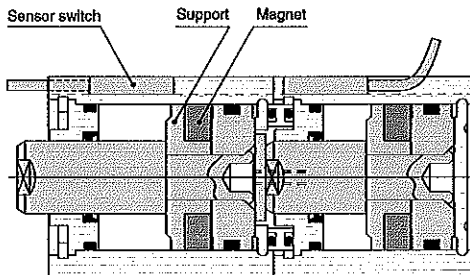
●  $\phi 50 \sim \phi 100$



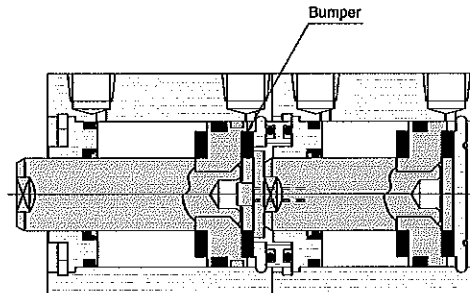
### ● Single acting push type (CSAT)



### ● Cylinder with magnet



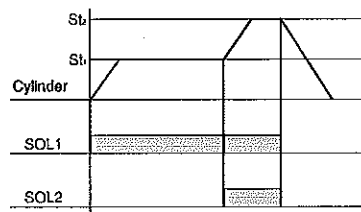
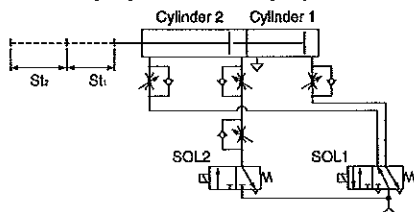
### ● With bumper



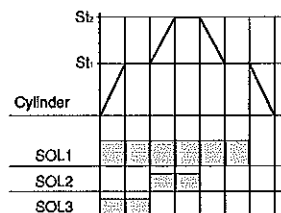
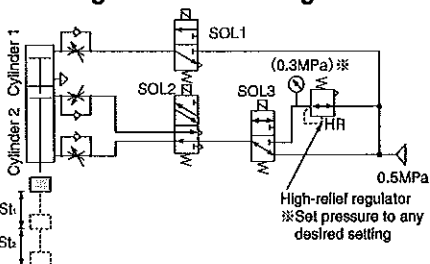
## Tandem Cylinder Air Circuit Examples

When using a tandem cylinder as a 2-stage stroke cylinder, refer to the air circuits shown below. For application of other air circuits not shown below, consult us.

### ● For mounting upward-facing cylinders



### ● For mounting downward-facing or horizontal cylinders



## Major Parts and Materials

Parts	Bore mm	φ 12	φ 16	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100	
Cylinder body		Aluminum alloy (anodized)										
Piston		Aluminum alloy (special rust prevention treatment)										
Piston rod		Stainless steel (chrome plated)					Steel (chrome plated)					
Seal		Synthetic rubber (NBR)										
Rod cover		Aluminum alloy (special wear-resistant treatment)										
Head cover		Aluminum alloy (anodized)										
Snap ring		Steel (phosphate coating)										
Spring		Piano wire										
Spacer		Aluminum alloy (special rust prevention treatment)					—					
Bumper		Synthetic rubber (NBR; urethane for φ 12 only)										
Magnet		Plastic magnet										
Support		Aluminum alloy (special rust prevention treatment)										

## Seals

Parts Bore mm	Rod seal	Piston seal	Tube gasket		Gasket for joint section
			Rod side	Head side	
φ 12	MYR-6	COP-12	Y090260	None	Y090119
φ 16	MYR-8	COP-16	Y090207	None	M202208
φ 20	MYR-10	COP-20(MYA-16)	Y090216	None	L090134
φ 25	MYR-12	COP-25(MYA-21)	Y090210	None	Y090196
φ 32	MYR-16	COP-32	L090084	None	L090015
φ 40	MYR-16	COP-40	L090151	None	L090028
φ 50	MYR-20	COP-50	L090174	L090106	None
φ 63	MYR-20	COP-63	L090180	L090107	None
φ 80	PNY-25	COP-80	L090171	L090108	None
φ 100	PNY-32	COP-100	L090172	L090109	None

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

JIG CYLINDERS C SERIES

## Mass

### ● Double acting type

Bore size mm [in.]	Zero stroke mass <sup>Note1</sup>	Additional mass for each 1mm [0.0394in.] of stroke1	Additional mass for each 1mm [0.0394in.] of stroke2	Additional mass of cylinder with bumper	Additional mass of cylinder with magnet	Mass of mounting bracket Flange bracket	Additional mass of sensor switch <sup>Note2</sup>	
							ZE□□□A	ZE□□□B
12 [0.472]	44.26 [1.561]	2.68 [0.095]	1.28 [0.045]	13.39 [0.472]	13.73 [0.484]	55 [1.94]	15 [0.53]	35 [1.23]
16 [0.630]	61.11 [2.156]	3.34 [0.118]	1.62 [0.057]	16.71 [0.589]	20.41 [0.720]	71 [2.50]		
20 [0.787]	96.79 [3.414]	4.63 [0.163]	2.26 [0.080]	23.14 [0.816]	52.54 [1.853]	101 [3.56]		
25 [0.984]	147.69 [5.210]	6.41 [0.226]	3.11 [0.110]	32.05 [1.131]	76.92 [2.713]	160 [5.64]		
32 [1.260]	220.3 [7.771]	8.43 [0.297]	4.11 [0.145]	42.13 [1.486]	106.84 [3.769]	186 [6.56]		
40 [1.575]	345.12 [12.174]	9.85 [0.347]	4.77 [0.168]	0	141.38 [4.987]	335 [11.82]		
50 [1.969]	562.47 [19.840]	14.51 [0.512]	7.03 [0.248]	0	220.44 [7.776]	447 [15.77]		
63 [2.480]	890.99 [31.428]	17.83 [0.629]	8.69 [0.307]	0	322.44 [11.374]	591 [20.85]		
80 [3.150]	1770.07 [62.436]	26.91 [0.949]	13.06 [0.461]	0	497.9 [17.563]	1414 [49.88]		
100 [3.940]	3252 [114.7]	38.46 [1.357]	18.61 [0.656]	0	732.34 [25.832]	2606 [91.92]		

- 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, 30mm for stroke 1, 10mm for stroke 2, and 2 sensor switches (ZE135A)  
 $147.69 + (6.41 \times 30) + (3.11 \times 10) + 76.92 + (15 \times 2) = 478.01g [16.861oz.]$

### ● Single acting push type

Bore size mm [in.]	Zero stroke mass <sup>Note1</sup>			Additional mass for each 1mm [0.0394in.] of stroke1	Additional mass for each 1mm [0.0394in.] of stroke2	Additional mass of cylinder with magnet	Mass of mounting bracket Flange bracket	Additional mass of sensor switch <sup>Note2</sup>	
	Stroke1							ZE□□□A	ZE□□□B
	Stroke1 + Stroke2								
	5~15 (φ 50: 10~20)	16~30 (φ 50: 21~40)	16~30 (φ 50: 21~40)						
12 [0.472]	55.88 [1.971]	69.98 [2.468]	85.21 [3.006]	2.68 [0.0945]	1.28 [0.0451]	16.11 [0.568]	15 [0.53]	35 [1.23]	
16 [0.630]	80.31 [2.833]	99.64 [3.515]	120.1 [4.236]	3.34 [0.118]	1.62 [0.0571]	21.21 [0.748]			
20 [0.787]	96.88 [3.417]	124.84 [4.404]	153.93 [5.430]	4.63 [0.163]	2.26 [0.0797]	51.89 [1.830]			
25 [0.984]	147.45 [5.201]	186 [6.561]	226.53 [7.990]	6.41 [0.226]	3.11 [0.110]	80.18 [2.828]			
32 [1.260]	223.01 [7.866]	306.96 [10.828]	393.89 [13.894]	8.43 [0.297]	4.11 [0.145]	103.14 [3.638]			
40 [1.575]	345.03 [12.170]	453.44 [15.994]	566.46 [19.982]	9.85 [0.347]	4.77 [0.168]	141.93 [5.006]			
50 [1.969]	561.93 [19.821]	691.19 [24.381]	827.1 [29.175]	14.51 [0.512]	7.03 [0.248]	216.54 [7.638]			

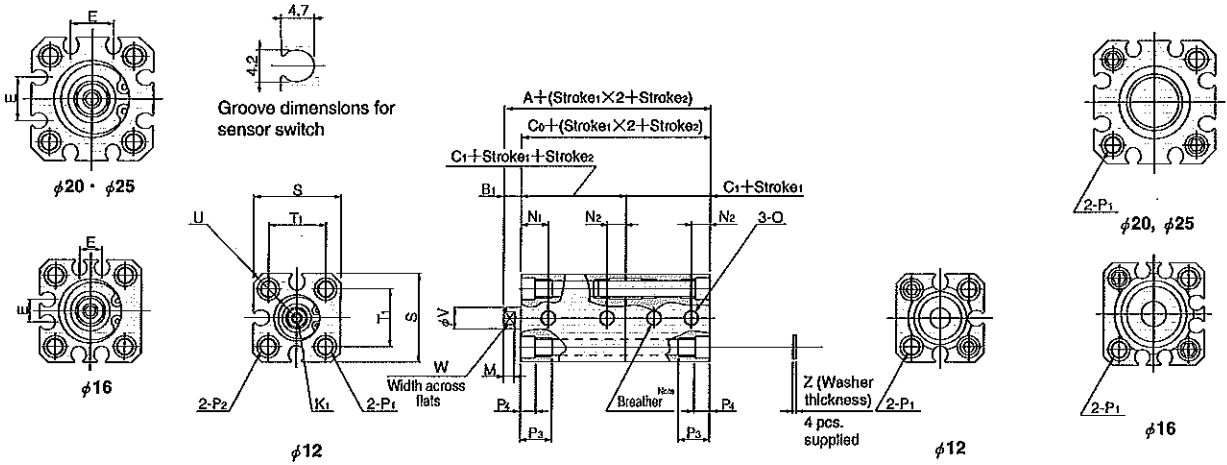
- Notes: 1: The above table is for the standard strokes.  
2: Sensor switch codes A and B show the lead wire lengths.  
A: 1000mm [39in.] B: 3000mm [118in.]

Calculation example: For the mass of a single acting push type cylinder with magnet, bore size of 25mm, 10mm for stroke 1, 20mm for stroke 2, and 2 sensor switches (ZE135A)  
 $186 + (6.41 \times 10) + (3.11 \times 20) + 80.18 + (15 \times 2) = 422.48g [14.902oz.]$

# Dimensions of Tandem Cylinder Double Acting Type (mm)

●  $\phi 12 \sim \phi 25$

CAD Bore size

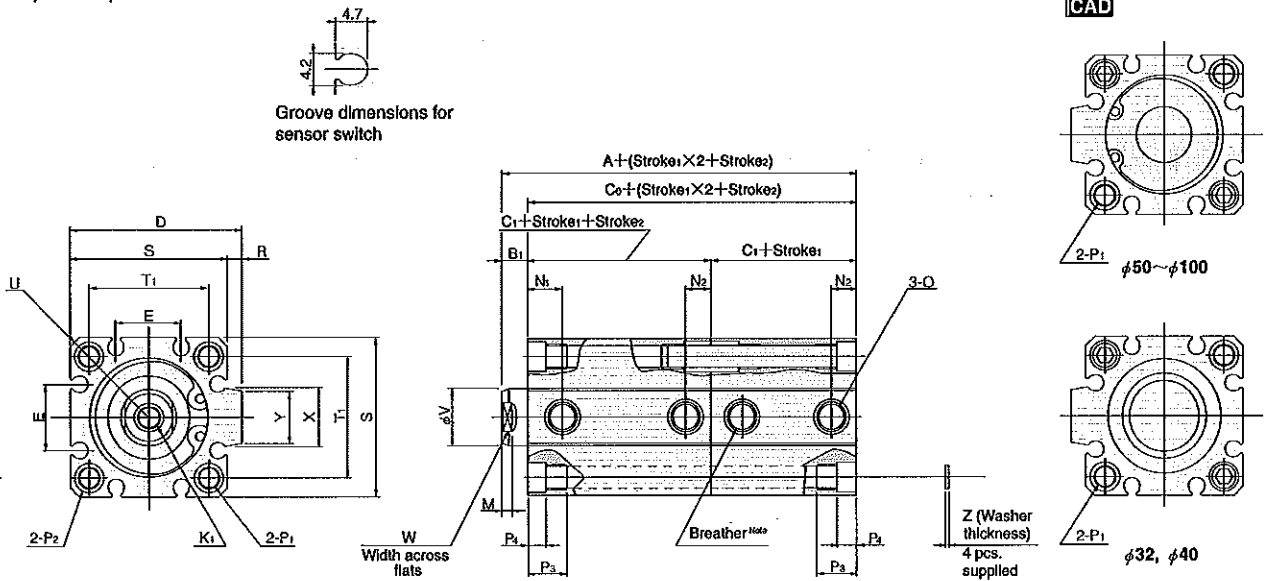


Note: Mufflers, etc. are not included.  
Install a muffler when using in places exposed to dust, etc.

● The drawing is for  $\phi 12$ .

●  $\phi 32 \sim \phi 100$

CAD Bore size



Note: Mufflers, etc. are not included.  
Install a muffler when using in places exposed to dust, etc.

Type Bore mm [in.]	Code	Standard cylinder (CDAT)				Cylinder with magnet (CDATS)				Standard cylinder with bumper (COAT-R)				Cylinder with magnet with bumper (COATS-R)				D	E	K <sub>1</sub>	M	N <sub>1</sub>	N <sub>2</sub>	O
		A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>	A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>	A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>	A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>							
12 [0.472]		39	5	34	17	49	5	44	22	49	5	44	22	59	5	54	27	—	—	M3X0.5 Deg#8	3.5	8	5	M5X0.8
16 [0.630]		39.5	5.5	34	17	49.5	5.5	44	22	49.5	5.5	44	22	59.5	5.5	54	27	—	6.2	M4X0.7 Deg#8	3.5	8	5	M5X0.8
20 [0.787]		44.5	5.5	39	19.5	64.5	5.5	59	29.5	54.5	5.5	49	24.5	74.5	5.5	69	34.5	—	12.2	M5X0.8 Deg#10	4.5	9.5	5	M5X0.8
25 [0.984]		48	6	42	21	68	6	62	31	58	6	52	26	78	6	72	36	—	12.2	M6X1 Deg#10	5	10.5	5	M5X0.8
32 [1.260]		53	7	46	23	73	7	66	33	63	7	56	28	73	7	66	33	48.5	18.2	M6X1.25 Deg#12	6	9.5	7.5(6)	Rc1/8
40 [1.575]		59	7	52	26	79	7	72	36	59	7	52	26	79	7	72	36	56.5	18.2	M6X1.25 Deg#12	6	10.5	7.5	Rc1/8
50 [1.969]		65	9	56	28	85	9	76	38	65	9	56	28	85	9	76	38	70	24.8	M7X1.5 Deg#15	7	11	9.5	Rc1/4
63 [2.480]		73	9	64	32	93	9	84	42	73	9	64	32	93	9	84	42	63	26.8	M7X1.5 Deg#15	7	12.5	11	Rc1/4
80 [3.150]		93	11	82	41	113	11	102	51	93	11	82	41	113	11	102	51	102	32.8	M8X2 Deg#18	9	18	12	Rc3/8
100 [3.940]		114	12	102	51	134	12	122	61	114	12	102	51	134	12	122	61	122	32.8	M8X2.5 Deg#20	9	22.5	16.5	Rc3/8

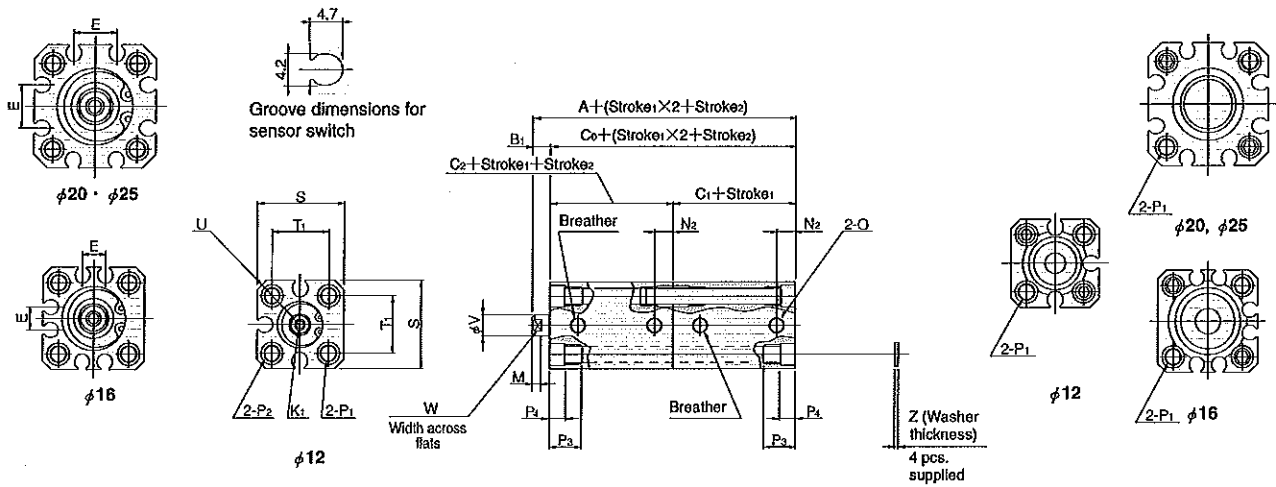
Bore mm [in.]	Code	P <sub>1</sub>		P <sub>2</sub>		P <sub>3</sub>	P <sub>4</sub>	R	S	T <sub>1</sub>	U	V	W	X	Y	Z	Appropriate through bolt※				
		φ	Thru hole	C bore	φ													Thru hole	C bore	φ	Thru hole
12 [0.472]		φ 4.3	(Thru hole)	C bore φ 6.5	(Both sides)	and M5X0.8	(Both sides)	Counterbore φ 6.5	and M5X0.8	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 M5X0.8	(Both sides)	Counterbore φ 6.5	and M5X0.8	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 M5X0.8	(Both sides)	Counterbore φ 6.5	and M5X0.8	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 M6X1	(Both sides)	Counterbore φ 8	and M6X1	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 M6X1	(Both sides)	Counterbore φ 8	and M6X1	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 M8X1.25	(Both sides)	Counterbore φ 9.5	and M8X1.25	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 M8X1.25	(Both sides)	Counterbore φ 11	and M8X1.25	16.5	8.5	8	62	48	R41	20	17	21.6	19	1.6	M6
63 [2.480]		φ 6.9	(Thru hole)	C bore φ 11	(Both sides)	and M8X1.25	(Both sides)	Counterbore φ 11	and M8X1.25	16.5	8.5	8	75	60	R50	20	17	21.6	19	1.6	M6
80 [3.150]		φ 10.5	(Thru hole)	C bore φ 14	(Both sides)	and M12X1.75	(Both sides)	Counterbore φ 14	and M12X1.75	22.5	10.5	8	94	74	R62	25	22	27.6	25	1.6	M8
100 [3.940]		φ 12.3	(Thru hole)	C bore φ 17.5	(Both sides)	and M14X2	(Both sides)	Counterbore φ 17.5	and M14X2	27	13	8	114	90	R75	32	27	27.6	25	2	M10

Note: Figure in parentheses ( ) is for the standard cylinder (CDAT) when stroke 1, or stroke 1 + stroke 2 is 5mm.  
 ※ Some types of mounting screws are available (to be ordered separately). See p.209.

# Dimensions of Tandem Cylinder Single Acting Push Type (mm)

●  $\phi 12 \sim \phi 25$

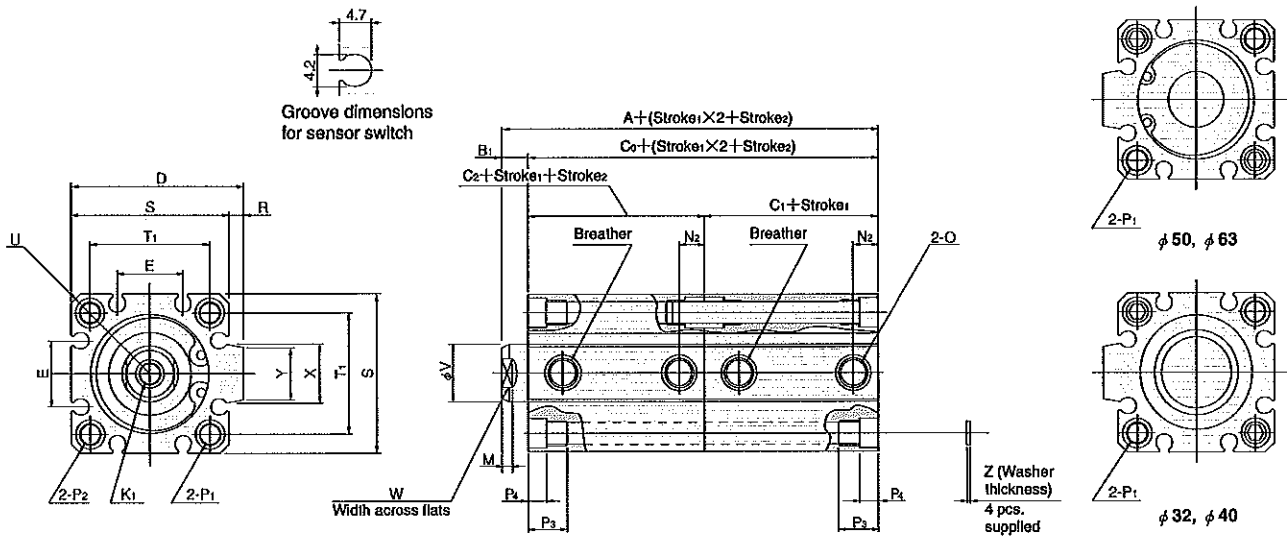
CAD CSAT Bore size



● The drawing is for  $\phi 12$ .

●  $\phi 32 \sim \phi 50$

CAD CSAT Bore size



Type Stroke 1	Code	Standard cylinder (CSAT)										Cylinder with magnet (CSATS)									
		5~15 (φ 50: 10~20)					16~30 (φ 50: 21~40)					5~15 (φ 50: 10~20)					16~30 (φ 50: 21~40)				
		A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>	C <sub>2</sub>	A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>	C <sub>2</sub>	A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>	C <sub>2</sub>	A	B <sub>1</sub>	C <sub>0</sub>	C <sub>1</sub>	C <sub>2</sub>
12 [0.472]	D1	49	5	44	22	22	—	—	—	—	59	5	54	27	27	—	—	—	—	—	—
	D2	59	—	54	22	32	69	5	64	32	32	69	—	64	27	37	79	5	74	37	37
16 [0.630]	D1	49.5	5.5	44	22	22	—	—	—	—	59.5	5.5	54	27	27	—	—	—	—	—	—
	D2	59.5	—	54	22	32	69.5	5.5	64	32	32	69.5	—	64	27	37	79.5	5.5	74	37	37
20 [0.787]	D1	44.5	5.5	39	19.5	19.5	—	—	—	—	64.5	5.5	59	29.5	29.5	—	—	—	—	—	—
	D2	54.5	—	49	19.5	29.5	64.5	5.5	59	29.5	29.5	74.5	—	69	29.5	39.5	84.5	5.5	79	39.5	39.5
25 [0.984]	D1	48	6	42	21	21	—	—	—	—	68	6	62	31	31	—	—	—	—	—	—
	D2	58	—	52	21	31	68	6	62	31	31	78	—	72	31	41	88	6	82	41	41
32 [1.260]	D1	53	7	46	23	23	—	—	—	—	73	7	66	33	33	—	—	—	—	—	—
	D2	68	—	61	23	38	83	7	76	38	38	88	—	81	33	48	103	7	96	48	48
40 [1.575]	D1	59	7	52	26	26	—	—	—	—	79	7	72	36	36	—	—	—	—	—	—
	D2	74	—	67	26	41	89	7	82	41	41	94	—	87	36	51	109	7	102	51	51
50 [1.969]	D1	65	9	56	28	28	—	—	—	—	85	9	76	38	38	—	—	—	—	—	—
	D2	80	—	71	28	43	95	9	86	43	43	100	—	91	38	53	115	9	106	53	53


Bore mm [in.]	Code	D	E	K <sub>1</sub>	M	N <sub>2</sub>	O	P <sub>1</sub>						
12 [0.472]	D1	—	—	M3×0.5 Depth6	3.5	5	M5×0.8	φ 4.3 (Thru hole) Counterbore φ 6.5 (Both sides) and M5×0.8 (Both sides)						
	D2	—	—	M3×0.5 Depth6	3.5	5	M5×0.8	φ 4.3 (Thru hole) Counterbore φ 6.5 (Both sides) and M5×0.8 (Both sides)						
16 [0.630]	D1	—	6.2	M4×0.7 Depth8	3.5	5	M5×0.8	φ 4.3 (Thru hole) Counterbore φ 6.5 (Both sides) and M5×0.8 (Both sides)						
	D2	—	6.2	M4×0.7 Depth8	3.5	5	M5×0.8	φ 4.3 (Thru hole) Counterbore φ 6.5 (Both sides) and M5×0.8 (Both sides)						
20 [0.787]	D1	—	12.2	M5×0.8 Depth10	4.5	5	M5×0.8	φ 4.3 (Thru hole) Counterbore φ 6.5 (Both sides) and M5×0.8 (Both sides)						
	D2	—	12.2	M5×0.8 Depth10	4.5	5	M5×0.8	φ 4.3 (Thru hole) Counterbore φ 6.5 (Both sides) and M5×0.8 (Both sides)						
25 [0.984]	D1	—	12.2	M6×1 Depth10	5	5	M5×0.8	φ 5.1 (Thru hole) Counterbore φ 8 (Both sides) and M6×1 (Both sides)						
	D2	—	12.2	M6×1 Depth10	5	5	M5×0.8	φ 5.1 (Thru hole) Counterbore φ 8 (Both sides) and M6×1 (Both sides)						
32 [1.260]	D1	48.5	18.2	M8×1.25 Depth12	6	7.5	Rc1/8	φ 5.1 (Thru hole) Counterbore φ 8 (Both sides) and M6×1 (Both sides)						
	D2	48.5	18.2	M8×1.25 Depth12	6	7.5	Rc1/8	φ 5.1 (Thru hole) Counterbore φ 8 (Both sides) and M6×1 (Both sides)						
40 [1.575]	D1	56.5	18.2	M8×1.25 Depth12	6	7.5	Rc1/8	φ 6.9 (Thru hole) Counterbore φ 9.5 (Both sides) and M8×1.25 (Both sides)						
	D2	56.5	18.2	M8×1.25 Depth12	6	7.5	Rc1/8	φ 6.9 (Thru hole) Counterbore φ 9.5 (Both sides) and M8×1.25 (Both sides)						
50 [1.969]	D1	70	24.8	M10×1.5 Depth15	7	9.5	Rc1/4	φ 6.9 (Thru hole) Counterbore φ 11 (Both sides) and M8×1.25 (Both sides)						
	D2	70	24.8	M10×1.5 Depth15	7	9.5	Rc1/4	φ 6.9 (Thru hole) Counterbore φ 11 (Both sides) and M8×1.25 (Both sides)						

Bore mm [in.]	Code	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	R	S	T <sub>1</sub>	U	V	W	X	Y	Z	Appropriate through bolt
12 [0.472]	D1	Counterbore φ 6.5	9.5	4.5	—	25	16.3	R16	6	5	—	—	1	M3
	D2	Counterbore φ 6.5 and M5×0.8	9.5	4.5	—	25	16.3	R16	6	5	—	—	1	M3
16 [0.630]	D1	Counterbore φ 6.5	9.5	4.5	—	29	19.8	R19	8	6	—	—	1	M3
	D2	Counterbore φ 6.5 and M5×0.8	9.5	4.5	—	29	19.8	R19	8	6	—	—	1	M3
20 [0.787]	D1	Counterbore φ 6.5	9.5	4.5	—	34	24	R22	10	8	—	—	1	M3
	D2	Counterbore φ 6.5 and M5×0.8	9.5	4.5	—	34	24	R22	10	8	—	—	1	M3
25 [0.984]	D1	Counterbore φ 8	11.5	5.5	—	40	28	R25	12	10	—	—	1	M4
	D2	Counterbore φ 8 and M6×1	11.5	5.5	—	40	28	R25	12	10	—	—	1	M4
32 [1.260]	D1	Counterbore φ 8	11.5	5.5	4.5	44	34	R29.5	16	14	15	13.6	1	M4
	D2	Counterbore φ 8 and M6×1	11.5	5.5	4.5	44	34	R29.5	16	14	15	13.6	1	M4
40 [1.575]	D1	Counterbore φ 9.5	15.5	7.5	4.5	52	40	R35	16	14	15	13.6	1.6	M5
	D2	Counterbore φ 9.5 and M8×1.25	15.5	7.5	4.5	52	40	R35	16	14	15	13.6	1.6	M5
50 [1.969]	D1	Counterbore φ 11	16.5	8.5	8	62	48	R41	20	17	21.6	19	1.6	M6
	D2	Counterbore φ 11 and M8×1.25	16.5	8.5	8	62	48	R41	20	17	21.6	19	1.6	M6

Notes: D1 is when stroke 1 + stroke2 is 5~15 (φ 50: 10~20) mm.  
D2 is when stroke 1 + stroke2 is 16~30 (φ 50: 21~40) mm.  
※ Some types of mounting screws are available (to be ordered separately). See p.209.



## Dimensions of Male Rod End Thread Specification (mm)

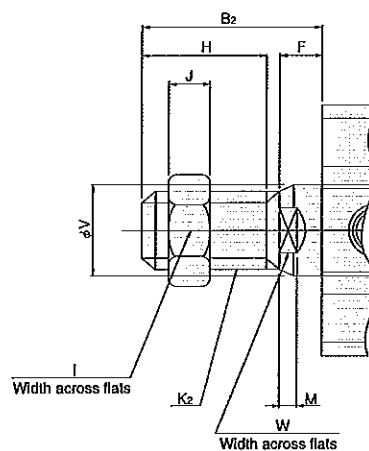
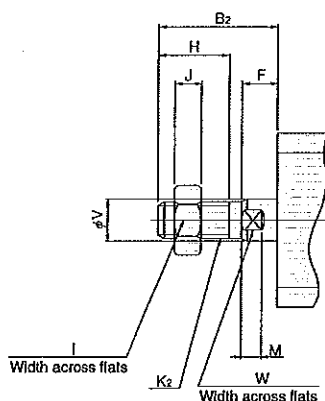
 Available in the file of each cylinder body.

● Double acting type, Single acting push type

●  $\phi 12 \sim \phi 25$

●  $\phi 32 \sim \phi 100$

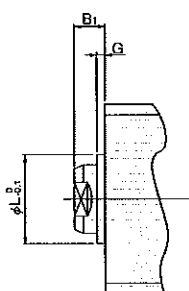
(Single acting type available up to  $\phi 50$ )



Bore mm (in.)	Code	B <sub>2</sub>	F	H	I	J	K <sub>2</sub>	M	V	W
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.1566.

## Dimensions of Centering Location (mm)



● Not available for bore size  $\phi 12$ .

Bore mm (in.)	Code	B <sub>1</sub>	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