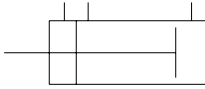


**Symbol**



**Specifications**

Item	Bore size mm [in.]		
	6 [0.236]	10 [0.394]	16 [0.630]
Operating type	Double acting type		
Media	Air		
Operating pressure range MPa [psi.]	0.15~0.7 [22~102]	0.1~0.7 [15~102]	0.08~0.7 [12~102]
Proof pressure MPa [psi.]	1.03 [149]		
Operating temperature range °C [°F]	0~60 [32~140]		
Operating speed range mm/s [in./sec.]	50~300 [2.0~11.8]		
Cushion	Rubber bumper		
Lubrication	Not required		
Port size	M5×0.8		
Stroke tolerance mm [in.]	+1 [+0.039] 0 0		

**Bore Size and Stroke**

Bore size	Standard strokes
6 [0.236]	5, 10, 15, 20, 25, 30
10 [0.394]	
16 [0.630]	

**Order Codes**

**CS** — **BDA**    **10×30** —         

- Clean system product**
- Multi mount cylinder**  
Double acting type
- Cylinder specification**  
Blank — Standard cylinder  
S — Cylinder with magnet
- Bore size × Stroke**
- Lead wire length**  
A — 1000mm [39in.]  
B — 3000mm [118in.]
- Number of sensor switches**  
1 — With 1 sensor switch  
2 — With 2 sensor switches
- Sensor switch**  
Blank — Without sensor switch  
ZC130 — 2-lead wire Solid state type with indicator lamp (DC10~28V)  
ZC153 — 3-lead wire Solid state type with indicator lamp (DC4.5~28V)  
CS5T — 2-lead wire Reed switch type without indicator lamp (DC5~28V, AC85~115V)  
CS11T — 2-lead wire Reed switch type with indicator lamp (DC10~28V)

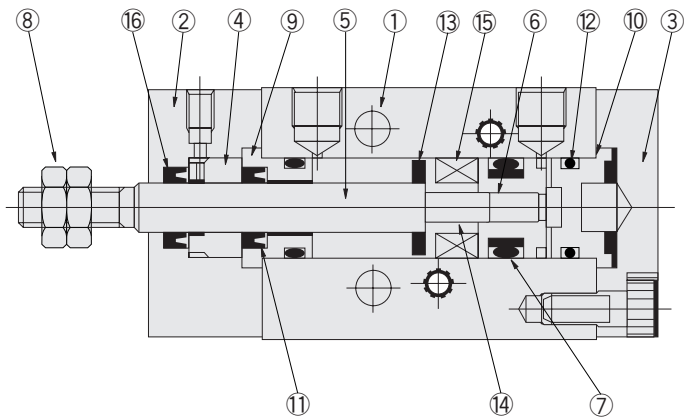
**Shield Plate Model**

Bore size mm [in.]	Stroke	
	5, 10, 15	20, 25, 30
6 [0.236]	CS-BS061	CS-BS062
10 [0.394]	CS-BS101	CS-BS102
16 [0.630]	CS-BS161	CS-BS162

● For details of sensor switches, see p.111~121.

## Inner Construction and Major Parts

### ● CS-BDAS



### Major Parts and Materials

No.	Parts	Materials
①	Body	Aluminum alloy (anodized)
②	Rod cover	Aluminum alloy (black anodized)
③	Head cover	Aluminum alloy (black anodized)
④	Rod bushing	Oil impregnated bronze
⑤	Piston rod	Stainless steel
⑥	Piston	Brass
⑦	Piston seal	Synthetic rubber (NBR)
⑧	Rod end nut	Steel (electric nickel plated)
⑨	Seal case	Brass
⑩	Cap	Plastic
⑪	Rod seal	Synthetic rubber (NBR)
⑫	O-ring	Synthetic rubber (NBR)
⑬	Bumper	Urethane rubber
⑭	Support	Brass
⑮	Magnet	φ 6: Sintered alloy magnet; φ 10, φ 16: Plastic magnet
⑯	Dust leak prevention seal	Synthetic rubber (NBR)

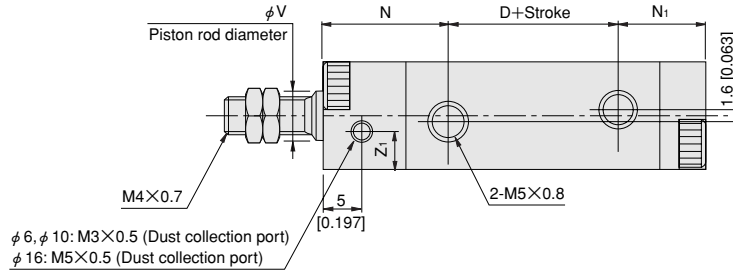
### Seals

Bore size mm	Parts	Rod seal	Piston seal	O-ring	Dust leak prevention seal
	Q'ty	1	1	2	1
6		NY-6×3×2	PPH-6	8.4×6×1.2	NY-6×3×2
10		NY-8×5×2	PPH-10	10×7.6×1.2	NY-8×5×2
16		NY-9×6×2	PPH-16	16×13×1.5	NY-9×6×2

### Mass

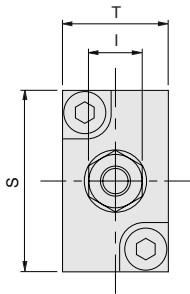
Bore size mm [in.]	Stroke mm	Mass of side mount		Additional mass g [oz.]			
		Standard cylinder	Cylinder with magnet	With 1 sensor switch (Only for cylinder with magnet)			
				ZC130□	ZC153□	CS5T□	CS11T□
6 [0.236]	5	23 [0.81]	26 [0.92]	20 [0.71]			
	10	26 [0.92]	29 [1.02]				
	15	29 [1.02]	32 [1.13]				
	20	32 [1.13]	35 [1.23]				
	25	35 [1.23]	38 [1.34]				
	30	38 [1.34]	41 [1.45]				
10 [0.394]	5	41 [1.45]	47 [1.66]	20 [0.71]			
	10	45 [1.59]	51 [1.80]				
	15	49 [1.73]	55 [1.94]				
	20	53 [1.87]	59 [2.08]				
	25	57 [2.01]	63 [2.22]				
	30	61 [2.15]	67 [2.36]				
16 [0.630]	5	84 [2.96]	97 [3.42]	20 [0.71]			
	10	91 [3.21]	104 [3.67]				
	15	98 [3.46]	111 [3.92]				
	20	105 [3.70]	118 [4.16]				
	25	112 [3.95]	125 [4.41]				
	30	119 [4.20]	132 [4.66]				

# Dimensions mm [in.]

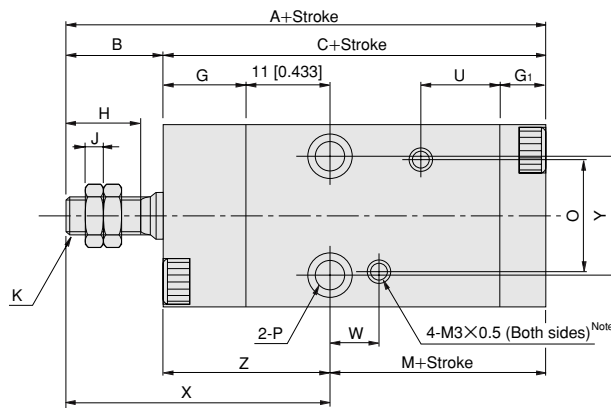
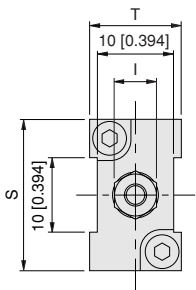


$\phi 6, \phi 10$ : M3×0.5 (Dust collection port)  
 $\phi 16$ : M5×0.5 (Dust collection port)

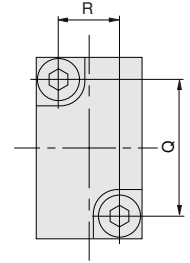
**$\phi 10, \phi 16$**



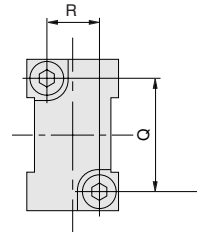
**$\phi 6$**



**$\phi 10, \phi 16$**



**$\phi 6$**



Type Code	Standard cylinder				Cylinder with magnet				B	G	G <sub>1</sub>	H	I	J	K
	A	C	D	M	A	C	D	M							
<b>6 [0.236]</b>	43 [1.693]	33 [1.299]	8 [0.315]	12 [0.472]	48 [1.890]	38 [1.496]	13 [0.512]	17 [0.669]	10 [0.394]	10 [0.394]	5 [0.197]	7 [0.276]	5.5 [0.217]	1.8 [0.071]	M3×0.5
<b>10 [0.394]</b>	48 [1.890]	35 [1.378]	7 [0.276]	13 [0.512]	53 [2.087]	40 [1.575]	12 [0.472]	18 [0.709]	13 [0.512]	11 [0.433]	6 [0.236]	10 [0.394]	7 [0.276]	2.4 [0.094]	M4×0.7
<b>16 [0.630]</b>	53 [2.087]	38 [1.496]	8 [0.315]	15 [0.591]	58 [2.283]	43 [1.693]	13 [0.512]	20 [0.787]	15 [0.591]	12 [0.472]	7 [0.276]	12 [0.472]	8 [0.315]	3.2 [0.126]	M5×0.8

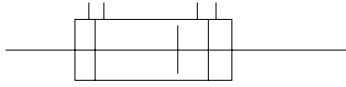
Code	N	N <sub>1</sub>	O	P	Q	R	S	T	U	V	W	X	Y	Z	Z <sub>1</sub>
<b>6 [0.236]</b>	15 [0.591]	10 [0.394]	14 [0.551]	$\phi 3.5$ [0.138], 4- $\phi 6$ [0.236] Counterbore Depth 4.2 [0.165] (Both sides)	15 [0.591]	7 [0.276]	20 [0.787]	12 [0.472]	10.5 [0.413]	3 [0.118]	6.5 [0.256]	31 [1.220]	12 [0.472]	21 [0.827]	5 [0.197]
<b>10 [0.394]</b>	16.5 [0.650]	11.5 [0.453]	15 [0.591]	$\phi 3.5$ [0.138], 4- $\phi 6$ [0.236] Counterbore Depth 3.2 [0.126] (Both sides)	18 [0.709]	8 [0.315]	24 [0.945]	14 [0.551]		5 [0.197]	5 [0.197]	35 [1.378]	16 [0.630]	22 [0.866]	5 [0.197]
<b>16 [0.630]</b>	17.5 [0.689]	12.5 [0.492]	19 [0.748]	$\phi 4.5$ [0.177], 4- $\phi 7.6$ [0.299] Counterbore Depth 4.2 [0.165] (Both sides)	25 [0.984]	12 [0.472]	33 [1.299]	20 [0.787]		6 [0.236]	7.5 [0.295]	38 [1.496]	24 [0.945]	23 [0.906]	7 [0.276]

Note: The 4-M3×0.5 female thread (for sensor switch mounting) in the drawing should not be used for mounting the cylinder. Moreover, it is not available with the cylinder body of a standard 5mm [0.197in.] stroke cylinder.

# MULTI MOUNT CYLINDERS

## Double Acting Double Rod End Type

### Symbol



### Specifications

Item	Bore size mm [in.]		
	6 [0.236]	10 [0.394]	16 [0.630]
Operating type	Double acting type		
Media	Air		
Operating pressure range MPa [psi.]	0.2~0.7 [29~102]	0.15~0.7 [22~102]	0.1~0.7 [15~102]
Proof pressure MPa [psi.]	1.03 [149]		
Operating temperature range °C [°F]	0~60 [32~140]		
Operating speed range mm/s [in./sec.]	50~300 [2.0~11.8]		
Cushion	Rubber bumper		
Lubrication	Not required		
Port size	M5×0.8		
Stroke tolerance mm [in.]	+1 0 [ +0.039 0 ]		

### Bore Size and Stroke

Bore size	Standard strokes
6 [0.236]	5, 10, 15, 20, 25, 30
10 [0.394]	
16 [0.630]	

### Order Codes

**CS** — **BDAD**   **10×30** —      

**Clean system product**

**Multi mount cylinder**  
**Double acting double rod end type**

**Cylinder specification**  
**Blank** — Standard cylinder  
**S** — Cylinder with magnet

**Bore size**  
×  
**Stroke**

**Number of sensor switches**  
1 — With 1 sensor switch  
2 — With 2 sensor switches

**Lead wire length**  
**A** — 1000mm [39in.]  
**B** — 3000mm [118in.]

**Sensor switch**  
**Blank** — Without sensor switch  
**ZC130** — 2-lead wire Solid state type with indicator lamp (DC10~28V)  
**ZC153** — 3-lead wire Solid state type with indicator lamp (DC4.5~28V)  
**CS5T** — 2-lead wire Reed switch type without indicator lamp (DC5~28V, AC85~115V)  
**CS11T** — 2-lead wire Reed switch type with indicator lamp (DC10~28V)

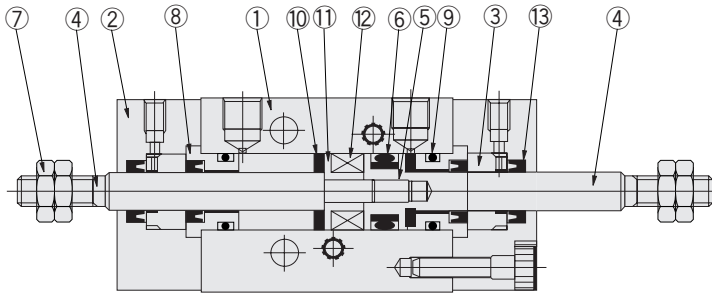
### ● Shield Plate Model

Bore size mm [in.]	Stroke	
	5, 10, 15	20, 25, 30
6 [0.236]	CS-BS061	CS-BS062
10 [0.394]	CS-BS101	CS-BS102
16 [0.630]	CS-BS161	CS-BS162

● For details of sensor switches, see p.111~121.

# Inner Construction and Major Parts

## ● CS-BDADS



### Major Parts and Materials

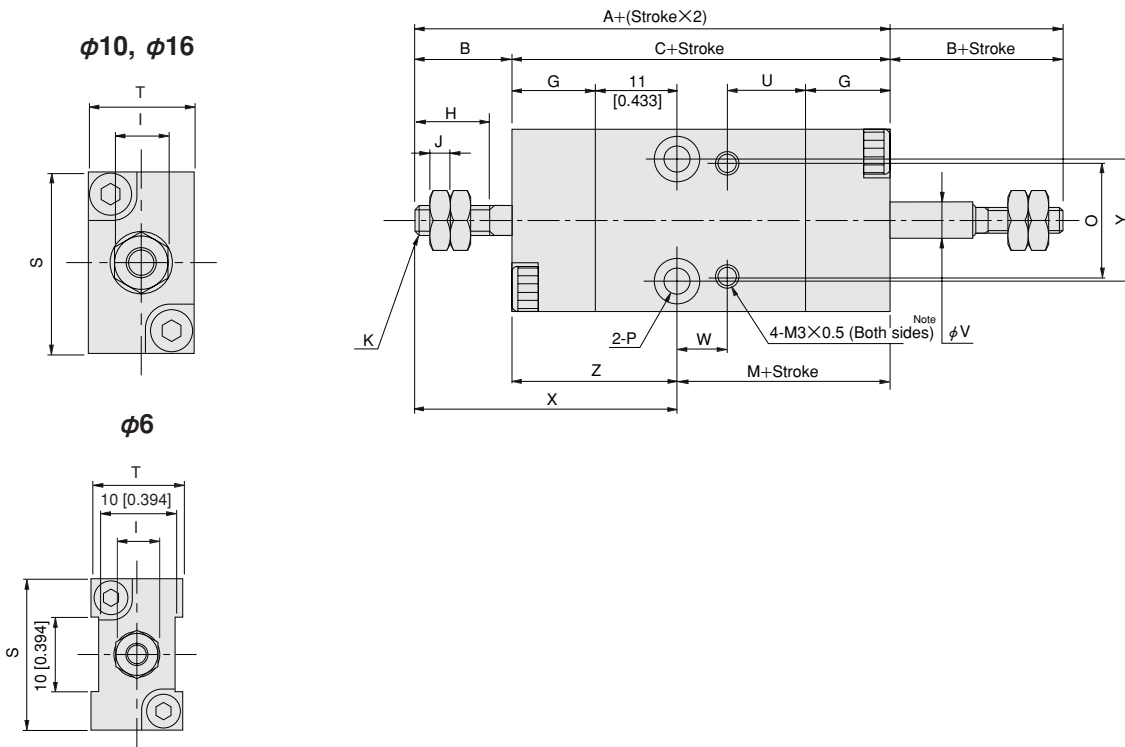
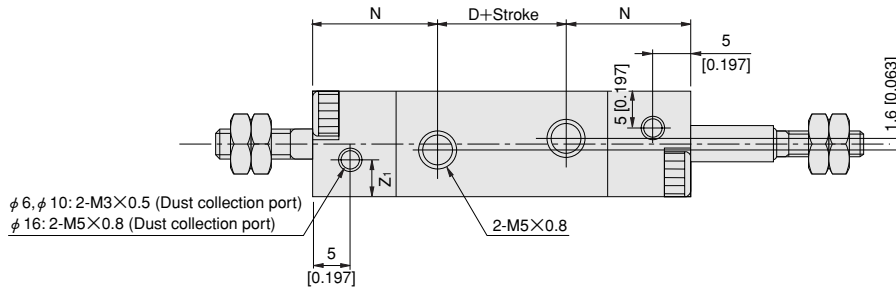
No.	Parts	Materials
①	Body	Aluminum alloy (anodized)
②	Rod cover	Aluminum alloy (black anodized)
③	Rod bushing	Oil impregnated bronze
④	Piston rod	Stainless steel
⑤	Piston	Stainless steel
⑥	Piston seal	Synthetic rubber (NBR)
⑦	Rod end nut	Steel (electric nickel plated)
⑧	Seal case	Brass
⑨	O-ring	Synthetic rubber (NBR)
⑩	Bumper	Urethane rubber
⑪	Support	Brass
⑫	Magnet	φ 6: Sintered alloy magnet, φ 10, φ 16: Plastic magnet
⑬	Dust leak prevention seal	Synthetic rubber (NBR)

### Seals

Bore size mm	Parts Q'ty	Rod seal	Piston seal	O-ring	Dust leak prevention seal
		2	1	2	2
6		NY-6×3×2	PPH-6	8.4×6×1.2	NY-6×3×2
10		NY-8×5×2	PPH-10	10×7.6×1.2	NY-8×5×2
16		NY-9×6×2	PPH-16	16×13×1.5	NY-9×6×2

### Mass

Bore size mm [in.]	Stroke mm	Mass of side mount		Additional mass g [oz.]			
		Standard cylinder	Cylinder with magnet	With 1 sensor switch (Only for cylinder with magnet)			
				ZC130□	ZC153□	CS5T□	CS11T□
6 [0.236]	5	31 [1.09]	34 [1.20]	20 [0.71]			
	10	34 [1.20]	37 [1.31]				
	15	37 [1.31]	40 [1.41]				
	20	40 [1.41]	43 [1.52]				
	25	43 [1.52]	46 [1.62]				
	30	46 [1.62]	49 [1.73]				
10 [0.394]	5	53 [1.87]	59 [2.08]	20 [0.71]			
	10	57 [2.01]	63 [2.22]				
	15	61 [2.15]	67 [2.36]				
	20	65 [2.29]	71 [2.50]				
	25	69 [2.43]	75 [2.65]				
	30	73 [2.57]	79 [2.79]				
16 [0.630]	5	105 [3.70]	118 [4.16]	20 [0.71]			
	10	112 [3.95]	125 [4.41]				
	15	119 [4.20]	132 [4.66]				
	20	126 [4.44]	139 [4.90]				
	25	133 [4.69]	146 [5.15]				
	30	140 [4.94]	153 [5.40]				



Type Code Bore size	Standard cylinder				Cylinder with magnet				B	G	H	I	J	K
	A	C	D	M	A	C	D	M						
<b>6 [0.236]</b>	58 [2.283]	38 [1.496]	8 [0.315]	17 [0.669]	63 [2.480]	43 [1.693]	13 [0.512]	22 [0.866]	10 [0.394]	10 [0.394]	7 [0.276]	5.5 [0.217]	1.8 [0.071]	M3×0.5
<b>10 [0.394]</b>	66 [2.598]	40 [1.575]	7 [0.276]	18 [0.709]	71 [2.795]	45 [1.772]	12 [0.472]	23 [0.906]	13 [0.512]	11 [0.433]	10 [0.394]	7 [0.276]	2.4 [0.094]	M4×0.7
<b>16 [0.630]</b>	73 [2.874]	43 [1.693]	8 [0.315]	20 [0.787]	78 [3.071]	48 [1.890]	13 [0.512]	25 [0.984]	15 [0.591]	12 [0.472]	12 [0.472]	8 [0.315]	3.2 [0.126]	M5×0.8

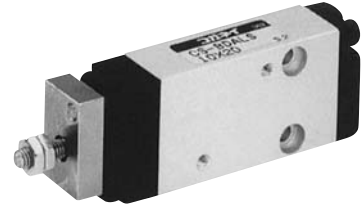
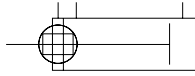
Code Bore size	N	O	P	S	T	U	V	W	X	Y	Z	Z <sub>1</sub>
	<b>6 [0.236]</b>	15 [0.591]	14 [0.551]	φ 3.5 [0.138] Counterbore φ 6 [0.236] Depth 4.2 [0.165] (Both sides)	20 [0.787]	12 [0.472]	10.5 [0.413]	3 [0.118]	6.5 [0.256]	31 [1.220]	12 [0.472]	21 [0.827]
<b>10 [0.394]</b>	16.5 [0.650]	15 [0.591]	φ 3.5 [0.138] Counterbore φ 6 [0.236] Depth 3.2 [0.126] (Both sides)	24 [0.945]	14 [0.551]	5 [0.197]		35 [1.378]		16 [0.630]	22 [0.866]	5 [0.197]
<b>16 [0.630]</b>	17.5 [0.689]	19 [0.748]	φ 4.5 [0.177] Counterbore φ 7.6 [0.299] Depth 4.2 [0.165] (Both sides)	33 [1.299]	20 [0.787]	6 [0.236]	7.5 [0.295]	38 [1.496]	24 [0.945]	23 [0.906]	7 [0.276]	

Note: The 4-M3×0.5 female thread (for sensor switch mounting) in the drawing should not be used for mounting the cylinder. Moreover, it is not available with the cylinder body of a standard 5mm [0.197in.] stroke cylinder.

# MULTI MOUNT CYLINDERS

## Non-rotating Double Acting Type

### Symbol



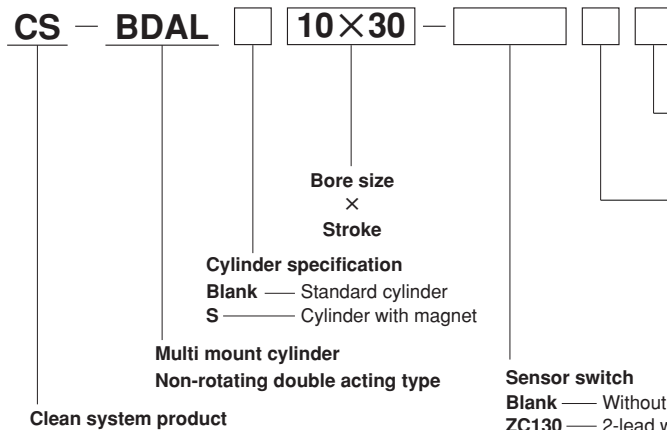
### Specifications

Item	Bore size mm [in.]		
	6 [0.236]	10 [0.394]	16 [0.630]
Operating type	Non-rotating double acting type		
Media	Air		
Operating pressure range MPa [psi.]	0.2~0.7 [29~102]	0.15~0.7 [22~102]	0.1~0.7 [15~102]
Proof pressure MPa [psi.]	1.03 [149]		
Operating temperature range °C [°F]	0~60 [32~140]		
Operating speed range mm/s [in./sec.]	50~300 [2.0~11.8]		
Cushion	Rubber bumper		
Lubrication	Not required		
Non-rotating accuracy	±2°	±1.5°	±1°
Port size	M5×0.8		
Stroke tolerance mm [in.]	+1 [0.039] 0 [0]		

### Bore Size and Stroke

Bore size	Standard strokes
6 [0.236]	5, 10, 15, 20, 25, 30
10 [0.394]	
16 [0.630]	

### Order Codes



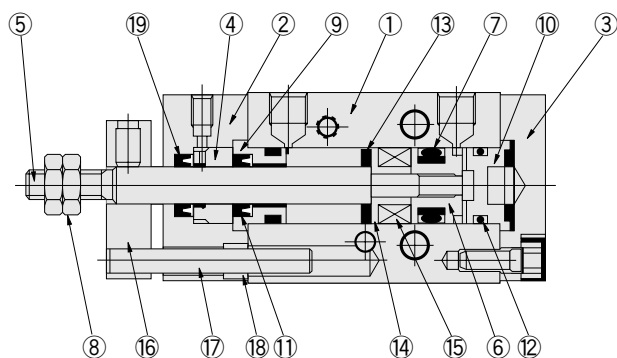
### Shield Plate Model

Bore size mm [in.]	Stroke	
	5, 10, 15	20, 25, 30
6 [0.236]	CS-BS061	CS-BS062
10 [0.394]	CS-BS101	CS-BS102
16 [0.630]	CS-BS161	CS-BS162

● For details of sensor switches, see p.111~121.

## Inner Construction and Major Parts

### ● CS-BDALS



### Major Parts and Materials

No.	Parts	Materials
①	Body	Aluminum alloy (anodized)
②	Rod cover	Aluminum alloy (black anodized)
③	Head cover	Aluminum alloy (black anodized)
④	Rod bushing	Oil impregnated bronze
⑤	Piston rod	Stainless steel
⑥	Piston	Brass
⑦	Piston seal	Synthetic rubber(NBR)
⑧	Rod end nut	Steel (electric nickel plated)
⑨	Seal case	Brass
⑩	Cap	Plastic
⑪	Rod seal	Synthetic rubber (NBR)
⑫	O-ring	Synthetic rubber (NBR)
⑬	Bumper	Urethane rubber
⑭	Support	Brass
⑮	Magnet	φ 6: Sintered alloy magnet φ 10, φ 16: Plastic magnet
⑯	Plate	Brass (electric nickel plated)
⑰	Guide pin	Stainless steel
⑱	Bushing	Plastic
⑲	Dust leak prevention seal	Synthetic rubber(NBR)

### Seals

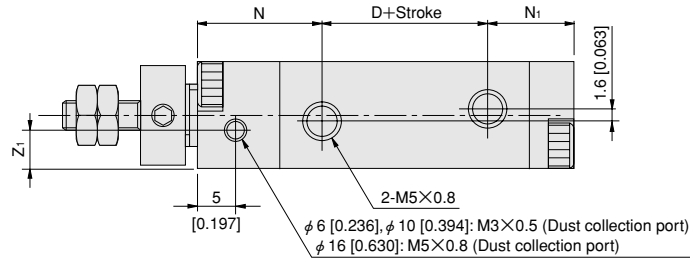
Bore size mm	Parts	Rod seal	Piston seal	O-ring	Dust leak prevention seal
	Q'ty	1	1	2	1
<b>6</b>		NY-6×3×2	PPH-6	8.4×6×1.2	NY-6×3×2
<b>10</b>		NY-8×5×2	PPH-10	10×7.6×1.2	NY-8×5×2
<b>16</b>		NY-9×6×2	PPH-16	16×13×1.5	NY-9×6×2

### Mass

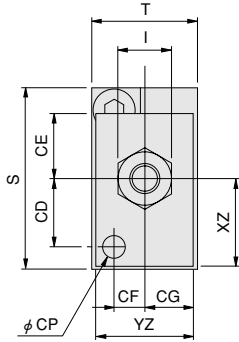
Bore size mm [in.]	Stroke mm	Mass of side mount		Additional mass			
		Standard cylinder	Cylinder with magnet	With 1 sensor switch (Only for cylinder with magnet)			
				ZC130□	ZC153□	CS5T□	CS11T□
<b>6 [0.236]</b>	5	33 [1.16]	36 [1.27]	20 [0.71]			
	10	36 [1.27]	39 [1.38]				
	15	39 [1.38]	42 [1.48]				
	20	42 [1.48]	45 [1.59]				
	25	45 [1.59]	48 [1.69]				
	30	48 [1.69]	51 [1.80]				
<b>10 [0.394]</b>	5	55 [1.94]	61 [2.15]	20 [0.71]			
	10	59 [2.08]	65 [2.29]				
	15	63 [2.22]	69 [2.43]				
	20	67 [2.36]	73 [2.57]				
	25	71 [2.50]	77 [2.72]				
	30	75 [2.65]	81 [2.86]				
<b>16 [0.630]</b>	5	109 [3.84]	122 [4.30]	20 [0.71]			
	10	116 [4.09]	129 [4.55]				
	15	123 [4.34]	136 [4.80]				
	20	130 [4.59]	143 [5.04]				
	25	137 [4.83]	150 [5.29]				
	30	144 [5.08]	157 [5.54]				



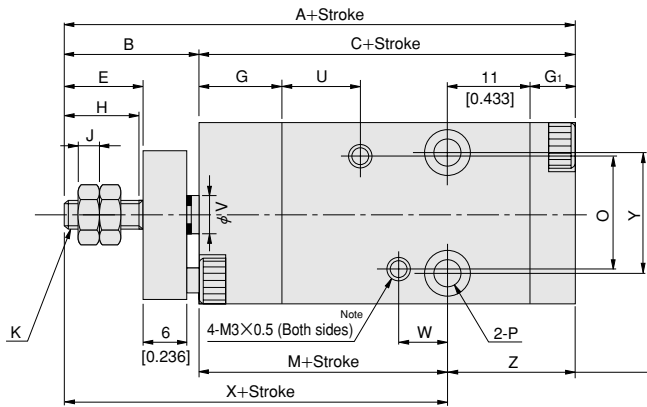
# Dimensions mm [in.]



**φ10 [0.394],  
φ16 [0.630]**

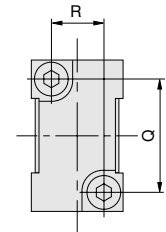
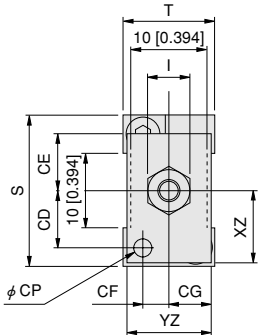


**φ10 [0.394],  
φ16 [0.630]**



**φ6 [0.236]**

**φ6 [0.236]**



Type Code Bore size	Standard cylinder					Cylinder with magnet					B	E	G	I	J	K
	A	C	D	M	X	A	C	D	M	X						
<b>6 [0.236]</b>	48 [1.890]	33 [1.299]	8 [0.315]	17 [0.669]	32 [1.260]	53 [2.087]	38 [1.496]	13 [0.512]	22 [0.866]	37 [1.457]	15 [0.591]	7.5 [0.295]	10 [0.394]	5.5 [0.217]	1.8 [0.071]	M3×0.5
<b>10 [0.394]</b>	53 [2.087]	35 [1.378]	7 [0.276]	18 [0.709]	36 [1.417]	58 [2.283]	40 [1.575]	12 [0.472]	23 [0.906]	41 [1.614]	18 [0.709]	10.5 [0.413]	11 [0.433]	7 [0.276]	2.4 [0.094]	M4×0.7
<b>16 [0.630]</b>	58 [2.283]	38 [1.496]	8 [0.315]	20 [0.787]	40 [1.575]	63 [2.480]	43 [1.693]	13 [0.512]	25 [0.984]	45 [1.772]	20 [0.787]	12.5 [0.492]	12 [0.472]	8 [0.315]	3.2 [0.126]	M5×0.8

Code Bore size	N	N <sub>1</sub>	O	P	Q	R	S	T	U	V	W	Y	Z	Z <sub>1</sub>
	<b>6 [0.236]</b>	15 [0.591]	10 [0.394]	14 [0.551]	φ 3.5 [0.138], Counterbore φ 6 [0.236] Depth 4.2 [0.165] (Both sides)	15 [0.591]	7 [0.276]	20 [0.787]	12 [0.472]	10.5 [0.413]	3 [0.118]	6.5 [0.256]	12 [0.472]	16 [0.630]
<b>10 [0.394]</b>	16.5 [0.650]	11.5 [0.453]	15 [0.591]	φ 3.5 [0.138], Counterbore φ 6 [0.236] Depth 3.2 [0.126] (Both sides)	18 [0.709]	8 [0.315]	24 [0.945]	14 [0.551]	5 [0.197]		16 [0.630]	17 [0.669]	5 [0.197]	
<b>16 [0.630]</b>	17.5 [0.689]	12.5 [0.492]	19 [0.748]	φ 4.5 [0.177], Counterbore φ 7.6 [0.299] Depth 4.2 [0.165] (Both sides)	25 [0.984]	12 [0.472]	33 [1.299]	20 [0.787]	6 [0.236]		7.5 [0.295]	24 [0.945]	18 [0.709]	7 [0.276]

Code Bore size	CD	CE	CF	CG	CP	XZ	YZ
	<b>6 [0.236]</b>	7.5 [0.295]	7.5 [0.295]	3.5 [0.138]	5.5 [0.217]	2.5 [0.098]	9.5 [0.374]
<b>10 [0.394]</b>	9 [0.354]	8.5 [0.335]	4 [0.157]	6.5 [0.256]	3 [0.118]	11.5 [0.453]	13 [0.512]
<b>16 [0.630]</b>	12.5 [0.492]	9 [0.354]	6 [0.236]	9.5 [0.374]	4 [0.157]	16 [0.630]	19 [0.748]

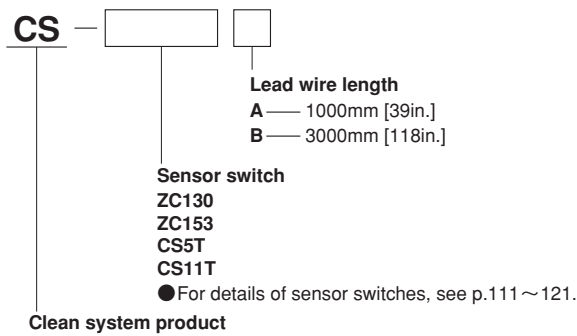
Note: The 4-M3×0.5 female thread (for sensor switch mounting) in the drawing should not be used for mounting the cylinder. Moreover, it is not available with the cylinder body of a standard 5mm [0.197in.] stroke cylinder.

# MULTI MOUNT CYLINDERS

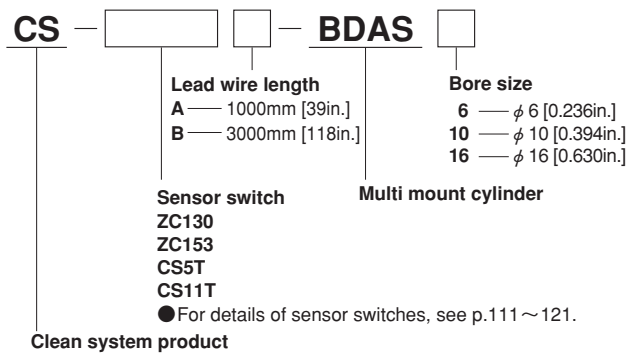
## Sensor Switches

### Order Codes (for Sensor Switches Only)

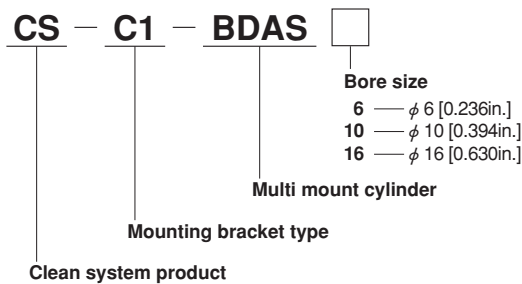
#### ● Sensor switches only



#### ● Sensor switch and Mounting bracket (Sensor switch with mounting bracket)



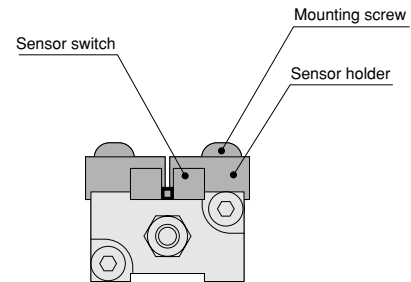
#### ● Mounting bracket only



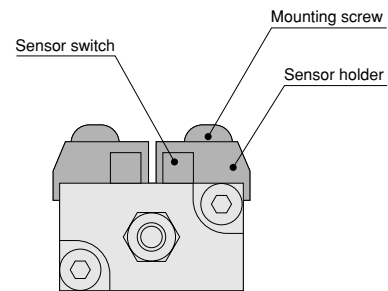
### Moving Sensor Switch

- Loosening the mounting screw allows the sensor switch to be moved freely in the cylinder's axial direction.
- Tighten the mounting screw with a tightening torque of 19.6N·cm [1.73in·lbf] or less.

#### ● $\phi$ 6



#### ● $\phi$ 10,16



### Minimum Cylinder Strokes When Mounting Sensor Switches

Bore size	mm [in.]			
	Solid state type sensor switch		Reed switch type sensor switch	
	2 pcs. mounting	1 pc. mounting	2 pcs. mounting	1 pc. mounting
<b>6 [0.236]</b>				
<b>10 [0.394]</b>	5 [0.197]	5 [0.197]	10 [0.394]	5 [0.197]
<b>16 [0.630]</b>				

Remark: Two sensor switches cannot be mounted on a cylinder with flange B mount.

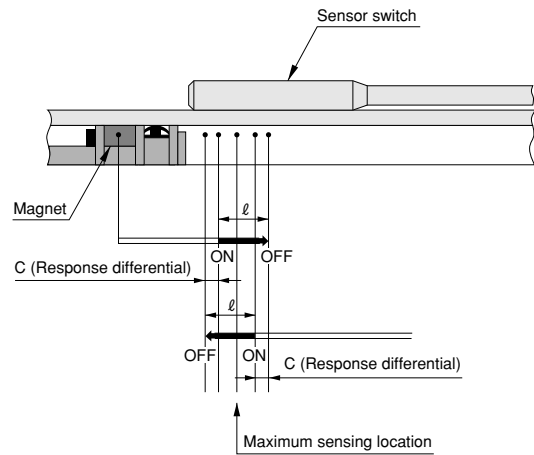
Mount 1 sensor switch on the head side when the flange B mount is used on the rod side, and mount 1 sensor switch on the rod side when the flange B mount is used on the head side.

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

- Operating range:  $\ell$   
The distance the piston travels in one direction, while the switch is in the ON position.
- Response differential: C  
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.

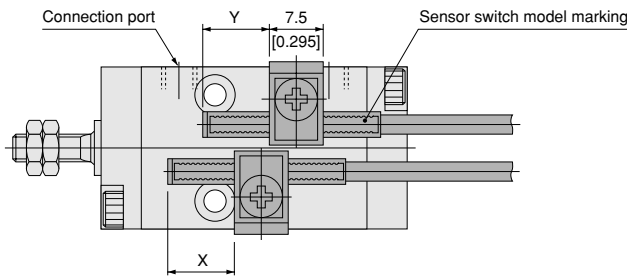
Bore size	ZC130□, ZC153□		CS5T□, CS11T□	
	Operating range	Response differential	Operating range	Response differential
6 [0.236]	2.0~3.0 [0.079~0.118]	0.3 [0.012] or less	4.8~7.2 [0.189~0.283]	1.3 [0.051] or less
10 [0.394]	2.0~3.0 [0.079~0.118]	0.3 [0.012] or less	5.8~8.3 [0.228~0.327]	2.0 [0.079] or less
16 [0.630]	2.5~4.0 [0.098~0.157]	0.3 [0.012] or less	7.5~9.4 [0.295~0.370]	2.5 [0.098] or less

Remark: The above table shows reference values.

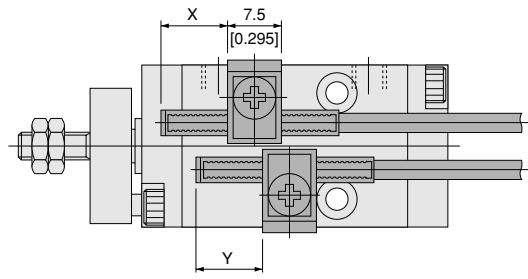


## Mounting Location of End of Stroke Detection Sensor Switch

- Cylinder with magnet
- Double rod end cylinder with magnet



- Non-rotating cylinder with magnet
- Non-rotating double rod end cylinder



### Double acting type (Including double rod end cylinders) mm [in.]

Bore size	Mounting location	Sensor switch model		
		ZC130□, ZC153□	CS5T□	CS11T□
6 [0.236]	X	13.0 [0.512]	11.5 [0.453]	15 [0.591]
10 [0.394]	Y	8.0 [0.315]	6.5 [0.256]	10 [0.394]
16 [0.630]	X	14.0 [0.551]	12.5 [0.492]	16 [0.630]
	Y	9.0 [0.354]	7.5 [0.295]	11 [0.433]

### Double acting type (Including double rod end cylinders) mm [in.]

Bore size	Mounting location	Sensor switch model		
		ZC130□, ZC153□	CS5T□	CS11T□
6 [0.236]	X	6.0 [0.236]	4.5 [0.177]	8 [0.315]
10 [0.394]	Y	1.0 [0.039]	-0.5 [-0.020]	3 [0.118]
16 [0.630]	X	7.0 [0.276]	5.5 [0.217]	9 [0.354]
	Y	2.0 [0.079]	0.5 [0.020]	4 [0.157]

### Single acting push type mm [in.]

Bore size	Mounting location	Sensor switch model		
		ZC130□, ZC153□	CS5T□	CS11T□
6 [0.236]	X	8.0 [0.315]	6.5 [0.256]	10 [0.394]
10 [0.394]	Y	8.0 [0.315]	6.5 [0.256]	10 [0.394]
16 [0.630]	X	9.0 [0.354]	7.5 [0.295]	11 [0.433]
	Y	9.0 [0.354]	7.5 [0.295]	11 [0.433]

### Single acting push type mm [in.]

Bore size	Mounting location	Sensor switch model		
		ZC130□, ZC153□	CS5T□	CS11T□
6 [0.236]	X	1.0 [0.039]	-0.5 [-0.020]	3 [0.118]
10 [0.394]	Y	1.0 [0.039]	-0.5 [-0.020]	3 [0.118]
16 [0.630]	X	2.0 [0.079]	0.5 [0.020]	4 [0.157]
	Y	2.0 [0.079]	0.5 [0.020]	4 [0.157]

### Single acting pull type mm [in.]

Bore size	Mounting location	Sensor switch model		
		ZC130□, ZC153□	CS5T□	CS11T□
6 [0.236]	X	13.0 [0.512]	11.5 [0.453]	15 [0.591]
10 [0.394]	Y	13.0 [0.512]	11.5 [0.453]	15 [0.591]
16 [0.630]	X	14.0 [0.551]	12.5 [0.492]	16 [0.630]
	Y	14.0 [0.551]	12.5 [0.492]	16 [0.630]

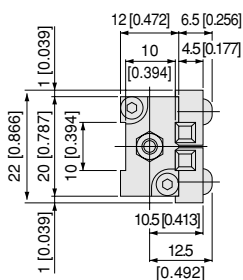
### Single acting pull type mm [in.]

Bore size	Mounting location	Sensor switch model		
		ZC130□, ZC153□	CS5T□	CS11T□
6 [0.236]	X	6.0 [0.236]	11.5 [0.453]	8 [0.315]
10 [0.394]	Y	6.0 [0.236]	11.5 [0.453]	8 [0.315]
16 [0.630]	X	7.0 [0.276]	12.5 [0.492]	9 [0.354]
	Y	7.0 [0.276]	12.5 [0.492]	9 [0.354]

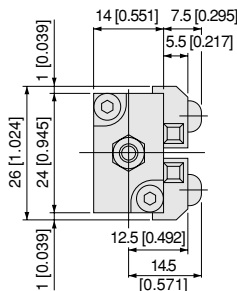
- Remarks:
1. The above tables give reference values for the standard strokes. For the procedure to find-out the best sensing position, see p.23.
  2. The above figures are obtained when the piping connection port turned to face upward.
  3. Use the distance between the cylinder mounting hole and the rod cover to confirm the mounting location of the end of stroke detection sensor switch on the double rod end cylinder.
  4. Mount the sensor switch so that the surface showing the sensor switch model marking faces up.

## Dimensions of Sensor Switch Mounting mm [in.]

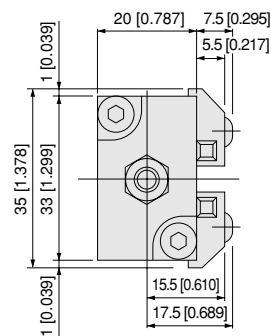
●  $\phi$  6 [0.236]



●  $\phi$  10 [0.394]

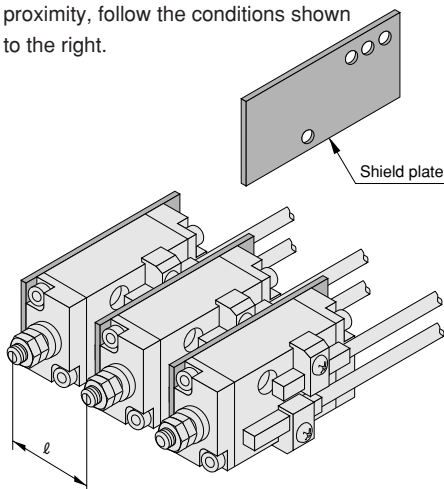


●  $\phi$  16 [0.630]



## Precautions for Mounting Cylinders with Magnets

When mounting 2 or more Multi Mount Cylinders with sensor switches in close proximity, follow the conditions shown to the right.



Bore size mm [in.]	Without shield plate		With shield plate
	$\ell$	$\ell$	$\ell$
6 [0.236]	25mm [0.984] or longer	23mm [0.906] or longer	22mm [0.866] or longer
10 [0.394]	29mm [1.142] or longer	31mm [1.220] or longer	25mm [0.984] or longer
16 [0.630]	35mm [1.378] or longer	39mm [1.535] or longer	31mm [1.220] or longer

Remark: Except the above, there are no particular limitations in mounting.

## Shield Plate Model (Order Code)

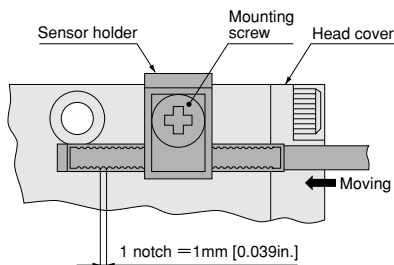
Operating type Stroke mm Bore size mm [in.]	Applicable shield plate model			
	Double acting type, Double acting double rod end type		Single acting push/pull type	
	5, 10, 15	20, 25, 30	5, 10	15
6 [0.236]	CS-BS061	CS-BS062	CS-BS061	CS-BS062
10 [0.394]	CS-BS101	CS-BS102	CS-BS101	CS-BS102
16 [0.630]	CS-BS161	CS-BS162	CS-BS161	CS-BS162

Remarks: 1. All shield plates come with 2 mounting screws.  
2. Order shield plates separately.

## Procedure for finding the best sensing position

### ● Setting the head side stroke end

1. Push piston rod to the fully retracted position.
2. Install a sensor switch in a holder without tightening a mounting screw all the way, move the switch from head side to rod side until it turns ON (for ZC130□, ZC153□ and CS11T□, when the LED lights up), then move the switch 1 notch (=1mm [0.039in.]) for ZC130□ and ZC153□, or 2 notches (=2mm [0.079in.]) for CS5T□ and CS11T□ toward the rod side, and tighten the mounting screw.



### ● Setting the rod side stroke end

Conduct the same procedure as the head side, but on the reversed way.

1. Pull piston rod to the fully extended position.
2. Install a sensor switch in a holder without tightening a mounting screw all the way, move the switch from rod side to head side until it turns ON, then move the switch 1 notch (=1mm [0.039in.]) for ZC130□ and ZC153□, or 2 notches (=2mm [0.079in.]) for CS5T□ and CS11T□ toward the head side, and tighten the mounting screw.

### ● Caution when installing sensor switches on the cylinder

