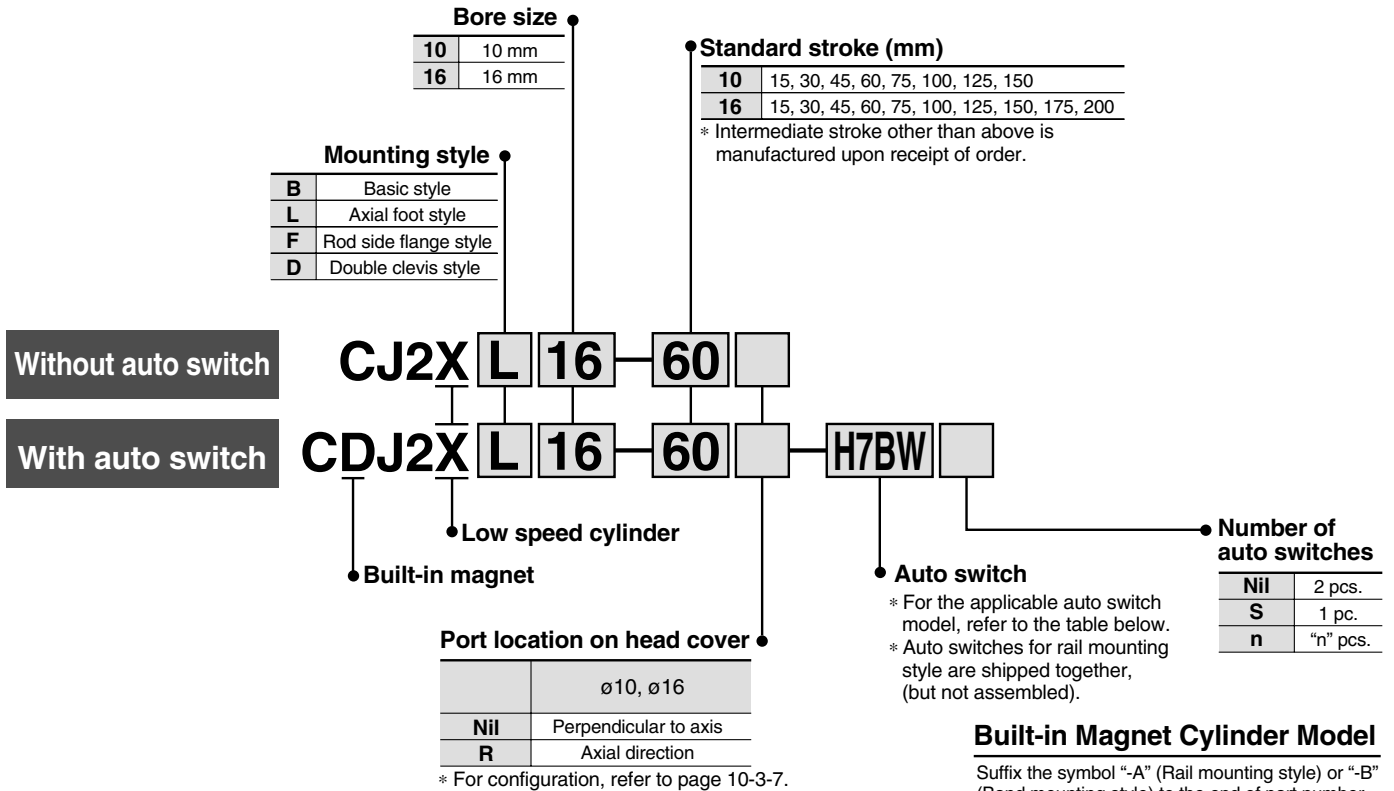




The external dimensions and the related things about auto switches are the same as standard type, double acting, single rod. For Series CJ2, refer to Best Pneumatics Vol. 6.

Low Speed Cylinder Double Acting, Single Rod Series CJ2X ø10, ø16

How to Order



Built-in Magnet Cylinder Model

Suffix the symbol "-A" (Rail mounting style) or "-B" (Band mounting style) to the end of part number for cylinder with auto switch.

Example	Rail mounting style	CDJ2XB10-45-A
	Band mounting style	CDJ2XB16-60-B

Applicable Auto Switch/Refer to page 10-20-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)*				Pre-wire connector	Applicable load					
					DC	AC	Band mounting	Rail mounting	0.5 (Nil)	3 (L)	5 (Z)	None (N)		IC circuit	Relay, PLC				
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	C76	—	A76H	●	●	—	—	—	IC circuit	—		
						—	200 V	—	A72	A72H	●	●	—	—	—	—	—		
		Connector		2-wire	24 V	12 V	100 V	C73	A73	A73H	●	●	●	—	—	—	—	—	Relay, PLC
						12 V	—	C73C	A73C	—	●	●	●	●	—	—	—	—	
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	H7A1	F7NV	F79	●	●	○	—	○	IC circuit	Relay, PLC		
				3-wire (PNP)				H7A2	F7PV	F7P	●	●	○	—	○				
				2-wire				H7B	F7BV	J79	●	●	○	—	○				
				—				H7C	J79C	—	●	●	●	●	○	○			
		Connector		2-wire	24 V	5 V, 12 V	—	H7NW	F7NWW	F79W	●	●	○	—	○	IC circuit			
								H7PW	—	F7PW	●	●	○	—	○				
								H7BW	F7BWV	J79W	●	●	○	—	○				
								H7NF	—	F79F	●	●	○	—	○				

* Lead wire length symbols: 0.5 m Nil (Example) C73C
 3 m L (Example) C73CL
 5 m Z (Example) C73CZ
 None N (Example) C73CN

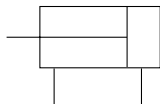
* Solid state switches marked with "○" are produced upon receipt of order.

- Since there are other applicable auto switches than listed, refer to Best Pneumatics Vol. 6 for details.
- For details about auto switches with pre-wire connector, refer to page 10-20-66.

Low Speed Cylinder Double Acting, Single Rod Series CJ2X



JIS Symbol
Double acting,
Single rod



⚠ Precautions

Be sure to read before handling. For Safety Instructions and Actuator Precautions, refer to pages 10-24-3 to 10-24-6.

Mounting

⚠ Caution

- During installation, secure the rod cover and tighten by applying an appropriate tightening force to the retaining nut or to the rod cover body. If the head cover is secured or the head cover is tightened, the cover could rotate, leading to the deviation.
- Proper tightening torque for mounting thread should be within the range specified. Apply a Loctite® (no. 242 Blue) for mounting thread.

Bore size (mm)	Proper tightening torque for mounting thread (N·m) (tightening torque for mounting nut)
10	3.0 to 3.2
16	5.4 to 5.9

- To remove and install the snap ring for the knuckle pin or the clevis pin, use an appropriate pair of pliers (tool for installing a type C snap ring). Especially with $\phi 10$, use ultra thin pliers, such as Super Tool Corp., CSM-07A.
- For the auto switch mounting rail, do not remove the pre-equipped rail. Since the mounting thread is drilled through inside a the cylinder, it will result in air leakage.

Operating Precautions

⚠ Warning

- It might not be able to control by meter-out at a low speed operation.

⚠ Caution

- For Series CJ2X, 0.1 Nℓ/min is the values at maximum in terms of its construction and there is internal leakage (ANR).

Specifications

Action	Double acting, Single rod	
Fluid	Air	
Proof pressure	1.05 MPa	
Maximum operating pressure	0.7 MPa	
Minimum operating pressure	0.06 MPa	
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)	
Cushion	Rubber bumper (Standard equipment)	
Lubrication	Not required (Non-lube)	
Thread tolerance	JIS Class 2	
Stroke length tolerance	+1.0 0	
Piston speed	1 to 300 mm/s	
Allowable kinetic energy	$\phi 10$	0.035 J
	$\phi 16$	0.090 J

Standard Stroke

Bore size (mm)	Standard stroke (mm)
10	15, 30, 45, 60, 75, 100, 125, 150
16	15, 30, 45, 60, 75, 100, 125, 150, 175, 200

Mounting Style and Accessory

Mounting		Basic style	Axial foot style	Rod side flange style	Double* clevis style
Standard equipment	Mounting nut	●	●	●	—
	Rod end nut	●	●	●	●
	Clevis pin	—	—	—	●
Option	Single knuckle joint	●	●	●	●
	Double knuckle joint*	●	●	●	●
	T-bracket	—	—	—	●

* Pin and snap ring are shipped together with double clevis and double knuckle joint.

Port Location on Head Cover

For basic style, the port position in a head cover is available either perpendicular to the axis or in-line with the cylinder axis.



Axial direction

Perpendicular

Mounting Bracket Part No.

Mounting bracket	Bore size (mm)	
	10	16
Foot bracket	CJ-L010B	CJ-L016B
Flange bracket	CJ-F010B	CJ-F016B
T-bracket*	CJ-T010B	CJ-T016B

* T-bracket is used with double clevis (D).

Auto Switch Mounting Bracket Part No. (Band mounting style)

Bore size (mm)	Auto switch mounting bracket part no.	Note
10	BJ2-010	Common for the types of D-C7/C8 and D-H7
16	BJ2-016	

RE_B^A

REC

C□X

C□Y

MQ_M^Q

RHC

MK(2)

RS_G^Q

RS_A^H

RZQ

MI_S^W

CEP1

CE1

CE2

ML2B

C₅-S

CV

MVGQ

CC

RB

J

D-

-X

20-

Data

Made to Order Specifications:

-XB13: Low Speed Cylinder

5 to 50 mm/s (CY1: 7 to 50 mm/s)



Symbol

Low Speed Cylinder										-XB13			
CJ2	Standard model no.				—XB13		CY1	Standard model no.				—XB13	
CM2	Mounting style	Bore size	Stroke		—XB13		MGP ^M _L	Standard model no.				—XB13	
CG1	Standard model no.				—XB13		MGGM	Standard model no.				—XB13	
MB	Standard model no.				—XB13		MGCM	Standard model no.				—XB13	
CU	Standard model no.				—XB13		CX2	Standard model no.				—XB13	
CQ2	Standard model no.				—XB13		CXW ^M _L	Standard model no.				—XB13	
CQS	Standard model no.				—XB13		CXS ^M _L	Standard model no.				—XB13	
					Low speed cylinder ●		MXU	Standard model no.				—XB13	
							CXT ^M _L	Standard model no.				—XB13	
												Low speed cylinder ●	

Note) Operate without lubrication from a pneumatic system lubricator.

Specifications

Applicable cylinder	Air cylinder/Standard					Free mount cylinder	Compact cylinder	Compact cylinder	Magnetically coupled rodless cylinder	Compact guide cylinder	Guide cylinder		Slide unit	Dual rod cylinder	Compact slide	Platform cylinder
	Series	CJ2	CM2	CG1	MB						CU	CQ2				
Action	Double acting, Single rod						Double acting									
Bore size (mm)	6, 10 16	20, 25 32, 45	20, 25 32, 40 50, 63	32, 40 50, 63 80, 100	6, 10 16, 20 25, 32	12, 16, 20 25, 32, 40 50, 63, 80 100	12, 16 20, 25	CY1B: 6 10, 15, 20 25, 32 40, 50, 63 CY1S, CY1L: 6 to 40	12, 16, 20 25, 32, 40 50, 63, 80 100		20, 25, 32 40, 50	10, 15 25	10, 16, 20 25, 32	6, 10 15, 20 25, 32	6, 10 16	12, 16 20, 25 32, 40
Piston speed	5 to 50 mm/s						7 to 50 mm/s	5 to 50 mm/s	5 to 50 mm/s							
Cushion	Rubber bumper		Air cushion on both ends	Rubber bumper on both ends	No rubber bumper	No rubber bumper	Rubber bumper on both ends	Rubber bumper (Basic cylinder)	Shock absorber (CX2: Option)		Rubber bumper					
Auto switch	Mountable															
Mounting	Basic Foot Flange Double clevis	Basic Foot Flange Trunnion Clevis	Basic Foot Flange Clevis Trunnion	Basic	Basic Foot Flange Double clevis	Basic Foot Flange Double clevis	Basic Slider	Basic	Basic Front mounting Flange	Basic						
Dimensions	Dimensions and specifications are the same as standard products of double acting. Refer to Best Pneumatics Vol. 6, 7 and 8.															
Additional specifications																

* No shock absorber is available for the Series MGGM.

Related Products: Speed Controller for Low Speed Operation

The effective area of controlled flow is approximately 1/10 of the standard type.
These controllers are suitable for controlling the speed of microspeed cylinders.
The dual type speed controller is especially suitable for cylinders with a small bore size.

Elbow/Universal Type



Air Flow/Effective Area

Model		AS12□1FM-M5 AS13□1FM-M5	AS22□1FM-□01 AS23□1FM-□01	AS22□1FM-□02 AS23□1FM-□02			
Tubing O.D.	Metric size	ø3.2, ø4, ø6	ø3.2, ø4	ø6, ø8	ø4	ø6	ø8, ø10
	Inch size	ø1/8", ø5/32", ø3/16" ø1/4"	ø1/8", ø5/32"	ø3/16", ø1/4" ø5/16"	ø5/32"	ø3/16"	ø1/4", ø5/16" ø3/8"
Controlled flow	Air flow (ℓ/min (ANR))	7	12		38		
	Effective area (mm ²)	0.1	0.2		0.6		
Free flow	Flow rate (ℓ/min (ANR))	100	180	230	260	390	460
	Effective area (mm ²)	1.5	2.7	3.5	4	6	7

Note) Supply pressure: 0.5 MPa, Temperature: 20°C

In-line Type



Air Flow/Effective Area

Model		AS1001FM	AS2001FM		AS2051FM	
Tubing O.D.	Metric size	ø3.2, ø4, ø6	ø4	ø6	ø6	ø8
	Inch size	ø1/8", ø5/32", ø3/16" ø1/4"	ø5/32"	ø3/16", ø1/4"	ø3/16"	ø1/4", ø5/16"
Controlled flow	Air flow (ℓ/min (ANR))	7	12		38	
	Effective area (mm ²)	0.1	0.2		0.6	
Free flow	Flow rate (ℓ/min (ANR))	100	130	230	290	460
	Effective area (mm ²)	1.5	2	3.5	4.5	7

Note) Supply pressure: 0.5 MPa, Temperature: 20°C

Elbow Type (Metal body)



Air Flow/Effective Area

Model			AS12□0M		AS22□0M-□01		AS22□0M-□02	
Port size	Cylinder side Tube side	M5 x 0.8	10-32 UNF		R 1/8	NPT 1/8		R 1/4
					Rc 1/8			Rc 1/4
Controlled flow	Air flow (ℓ/min (ANR))	7		12		38		
	Effective area (mm ²)	0.1		0.2		0.6		
Free flow	Flow rate (ℓ/min (ANR))	105		280		420		
	Effective area (mm ²)	1.6		4.3		6.5		

Note) Supply pressure: 0.5 MPa, Temperature: 20°C

Dual Type



Air Flow/Effective Area

Model		ASD230FM-M5	ASD330FM-□01	ASD430FM-□02	
Tubing O.D.	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10
	Inch size	ø1/8", ø5/32" ø3/16", ø1/4"	ø3/16", ø1/4"	—	ø1/4", ø5/16" ø3/8"
Controlled flow	Air flow (ℓ/min (ANR))	7	12	38	
	Effective area (mm ²)	0.1	0.2	0.6	
Free flow	Air flow (ℓ/min (ANR))	75	175	295	350
	Effective area (mm ²)	1.1	2.7	4.5	5.3

Note) Supply pressure: 0.5 MPa, Temperature: 20°C

RE_B^A

REC

C□X

C□Y

MQ_M^Q

RHC

MK(2)

RS_G^Q

RS_A^H

RZQ

MI_S^W

CEP1

CE1

CE2

ML2B

C₅-S

CV

MVGQ

CC

RB

J

D-

-X

20-

Data