Air Cylinder: Non-rotating Rod Type
Double Acting, Single Rod
CJ2K Series
ø10, ø16

RoHS

How to Order

CJ2K **B** **16** – **60** □ **Z** – □□ – □

With auto switch: CDJ2K **B** **16** – **60** □ **Z** – □□ – **M9BW** □ – **B** – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

With auto switch (Built-in magnet)

❶ Mounting

B	Basic
E	Double-side bossed
D**	Double clevis
L	Single foot
M	Double foot
F	Rod flange
G	Head flange

*: Foot/Flange brackets are shipped together with the product, but not assembled.
**: Refer to page 151-1 for the double clevis (with one-touch connecting pin).

❷ Bore size

10	10 mm
16	16 mm

❸ Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 89.

❹ Head cover port location

Nil	Perpendicular to axis	
R	Axial	

*: For double clevis, the product is perpendicular to the cylinder axis.
*: For double-side bossed, the product is perpendicular to the cylinder axis.

❺ Pivot bracket

Nil	None
N	Pivot bracket is shipped together with the product.

*: Only for the double clevis type
*: Pivot bracket is shipped together with the product, but not assembled.

❻ Rod end bracket

Nil	None
V	Single knuckle joint
W**	Double knuckle joint
T	Rod end cap (Flat type)
U	Rod end cap (Round type)

*: Rod end bracket is shipped together with the product, but not assembled.
**: Refer to page 63 for the double knuckle joint (with one-touch connecting pin).

❼ Auto switch

Nil	Without auto switch

*: For applicable auto switches, refer to the table below.
★ Enter the auto switch mounting type (A or B) even when a built-in magnet cylinder without an auto switch is required.

❽ Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

❾ Auto switch mounting type

A	Rail mounting
B	Band mounting

*: For rail mounting, screws and nuts for 2 auto switches come with the rail.
*: Refer to page 148 for auto switch mounting brackets.

❿ Made to Order

Refer to page 89 for details.

*: **Refer to "Ordering Example of Cylinder Assembly" on page 89.**

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Band mounting Perpendicular	Band mounting In-line	Rail mounting Perpendicular	Rail mounting In-line	Lead wire length [m] 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)	Pre-wired connector	Applicable load	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V,12 V	—	**M9NV**	**M9N**	**M9NV**	**M9N**	●	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)			**M9PV**	**M9P**	**M9PV**	**M9P**	●	●	●	○	—	○		
				2-wire	12 V		**M9BV**	**M9B**	**M9BV**	**M9B**	●	●	●	○	—	○	—	
		Connector					—	**H7C**	**J79C**	—	●	—	●	●	●	—		
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V,12 V		**M9NWV**	**M9NW**	**M9NWV**	**M9NW**	●	●	●	○	—	○	IC circuit	
				3-wire (PNP)			**M9PWV**	**M9PW**	**M9PWV**	**M9PW**	●	●	●	○	—	○		
				2-wire	12 V		**M9BWV**	**M9BW**	**M9BWV**	**M9BW**	●	●	●	○	—	○	—	
	Water resistant (2-color indicator)			3-wire (NPN)	5 V,12 V		**M9NAV**※1	**M9NA**※1	**M9NAV**※1	**M9NA**※1	○	○	●	○	—	○	IC circuit	
				3-wire (PNP)			**M9PAV**※1	**M9PA**※1	**M9PAV**※1	**M9PA**※1	○	○	●	○	—	○		
				2-wire	12 V		**M9BAV**※1	**M9BA**※1	**M9BAV**※1	**M9BA**※1	○	○	●	○	—	○	—	
	With diagnostic output (2-color indicator)			4-wire (NPN)	5 V,12 V		—	**H7NF**	—	**F79F**	●	—	●	○	—	○	IC circuit	
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	**A96V**	**A96**	●	—	●	—	—	—	IC circuit	—
				2-wire	24 V	—	200 V	—	—	**A72**	**A72H**	●	—	●	—	—	—	—	
			No			12 V	100 V	**A93V**※2	**A93**	**A93V**※2	**A93**	●	●	●	●	—	—		
							100 V or less	**A90V**	**A90**	**A90V**	**A90**	●	—	●	—	—	—	IC circuit	Relay, PLC
		Connector	Yes				—	—	**C73C**	**A73C**	—	●	—	●	●	●	—	—	
			No				24 V or less	—	**C80C**	**A80C**	—	●	—	●	●	●	—	IC circuit	
	Diagnostic indication (2-color indicator)	Grommet	Yes			—	—	—	—	**A79W**	—	●	—	●	—	—	—	—	

*1: Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please contact SMC regarding water resistant types with the above model numbers.
*2: 1 m type lead wire is only applicable to D-A93.

*: Lead wire length symbols: 0.5 m ····· Nil (Example) M9NW
1 m ····· M (Example) M9NWM
3 m ····· L (Example) M9NWL
5 m ····· Z (Example) M9NWZ
None ····· N (Example) H7CN

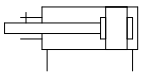
*: Since there are other applicable auto switches than listed, refer to page 149 for details.
*: Solid state auto switches marked with "○" are produced upon receipt of order.
*: The D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only auto switch mounting brackets are assembled before being shipped.)

A cylinder which rod does not rotate because of the hexagonal rod shape.

Non-rotating accuracy
ø10: ±1.5°, ø16: ±1°
Can operate without lubrication.

Symbol

Double acting, Single rod, Rubber bumper



Made to Order

Made to Order: Individual Specifications (For details, refer to page 150.)

Symbol	Specifications
-X446	PTFE grease
-X2838	Double clevis (With one-touch connecting pin)

Made to Order
Click here for details

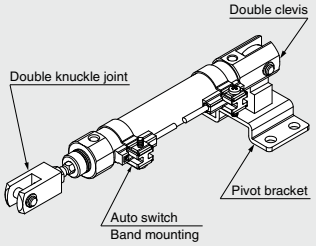
Symbol	Specifications
-XA□	Change of rod end shape
-XC3	Special port location
-XC9	Adjustable stroke cylinder/Adjustable retraction type
-XC10	Dual stroke cylinder/Double rod type
-XC22	Fluororubber seal
-XC51	With hose nipple
-XC85	Grease for food processing equipment

⚠ Precautions

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2KD16-60Z-NW-M9BW-B



Mounting D: Double clevis
Pivot bracket N: Yes
Rod end bracket W: Double knuckle joint
Auto switch D-M9BW: 2 pcs.
Auto switch mounting B: Band mounting

∗: Pivot bracket, double knuckle joint and auto switch are shipped together with the product, but not assembled.

Specifications

Bore size [mm]	10	16
Action	Double acting, Single rod	
Fluid	Air	
Proof pressure	1 MPa	
Maximum operating pressure	0.7 MPa	
Minimum operating pressure	0.06 MPa	
Ambient and fluid temperature	Without auto switch: −10°C to 70°C (No freezing) With auto switch: −10°C to 60°C	
Cushion	Rubber bumper	
Lubrication	Not required (Non-lube)	
Stroke length tolerance	$^{+1.0}_{0}$	
Rod non-rotating accuracy	±1.5°	±1°
Piston speed	50 to 750 mm/s	
Allowable kinetic energy	0.035 J	0.090 J

Standard Strokes

[mm]

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

∗: Manufacture of intermediate strokes in 1 mm increments is possible. (Spacers are not used.)
∗: Please consult with SMC for strokes which exceed the standard stroke length.
∗: Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on front matter pages. In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc.

Mounting and Accessories

/Refer to page 42 for the list of brackets and page 63 for details about part numbers and dimensions.

●···Mounted on the product. ○···Can be ordered within the cylinder model. △···Order separately.

Mounting		Basic	Foot	Flange	Double clevis	Double clevis (including T-bracket)
Standard	Mounting nut	●	●	●	—	—
	Rod end nut	●	●	●	●	●
	Clevis pin (including retaining rings)	—	—	—	●	●
Option	Double clevis (With one-touch connecting pin)	△	△	△	○ (-X2838)	○ (-X2838)
	Single knuckle joint	○	○	○	○	○
	Double knuckle joint (including a pin and retaining rings)	○	○	○	○	○
	Double knuckle joint (With one-touch connecting pin)	△	△	△	△	△
	Rod end cap (Flat/Round type)	○	○	○	○	○
	Pivot bracket (T-bracket)	—	—	—	○	●

Mounting Brackets/Part No.

Mounting bracket	Bore size [mm]	
	10	16
Foot	CJ-L016C	CJK-L016C
Flange	CJ-F016C	CJK-F016C
Pivot bracket (T-bracket)∗1	CJ-T010C	CJ-T016C

∗1: The pivot bracket (T-bracket) is used with double clevis (D).

Refer to pages 142 to 149 for cylinders with auto switches.

- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Minimum stroke for auto switch mounting
- Operating range
- Auto switch mounting brackets/Part no.

Weights

[g]

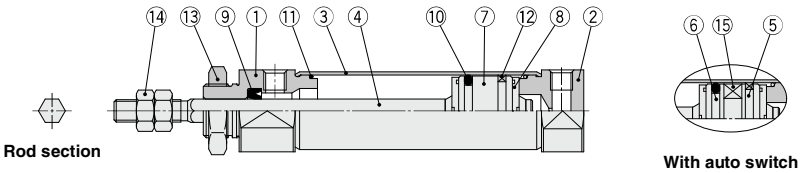
Bore size [mm]		10	16
Basic weight (When the stroke is zero)	Basic	25	47
	Axial piping	25	47
	Double clevis (including clevis pin)	27	55
	Head-side bossed	29	50
Additional weight per 15 mm of stroke		4	7
Mounting bracket weight	Single foot	8	25
	Double foot	16	50
	Rod flange	5	13
	Head flange	5	13
Accessories	Clevis pin	1	3
	One-touch connecting pin for double clevis	2	4
	Single knuckle joint	17	23
	Double knuckle joint (including knuckle pin)	25	21
	Double knuckle joint (With one-touch connecting pin)	26	22
	Rod end cap (Flat type)	1	2
	Rod end cap (Round type)	1	2
	Pivot bracket (T-bracket)	32	50

∗: Mounting nut and rod end nut are included in the basic weight.
∗: Mounting nut is not included in the basic weight for the double clevis.

Calculation:
Example) **CJ2KL10-45Z**
- Basic weight ····· 25 (ø10)
- Additional weight ····· 4/15 stroke
- Cylinder stroke ····· 45 stroke
- Mounting bracket weight ··· 8 (Single foot)

25 + 4/15 x 45 + 8 = **45 g**

Construction (Not able to disassemble)



Rod section

With auto switch

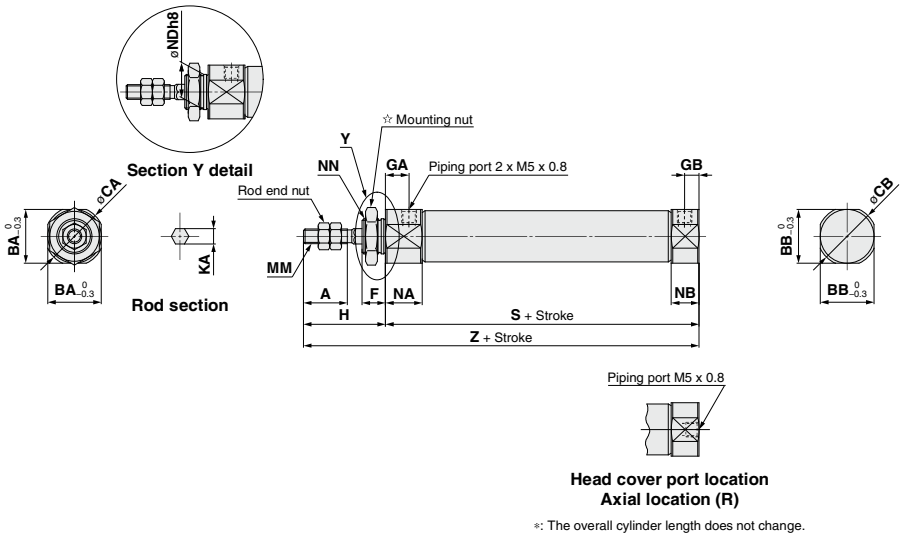
Component Parts

No.	Description	Material	Note
1	**Rod cover**	Aluminum alloy	
2	**Head cover**	Aluminum alloy	
3	**Cylinder tube**	Stainless steel	
4	**Piston rod**	Stainless steel	
5	**Piston A**	Aluminum alloy	
6	**Piston B**	Aluminum alloy	
7	**Piston**	Aluminum alloy	
8	**Bumper**	Urethane	

No.	Description	Material	Note
9	**Rod seal**	NBR	
10	**Piston seal**	NBR	
11	**Tube gasket**	NBR	
12	**Wear ring**	Resin	
13	**Mounting nut**	Rolled steel	
14	**Rod end nut**	Rolled steel	
15	**Magnet**	—	

Basic (B)

CJ2KB $\begin{matrix}10\\16\end{matrix}$ – Stroke Head cover port location Z



∗: The overall cylinder length does not change.

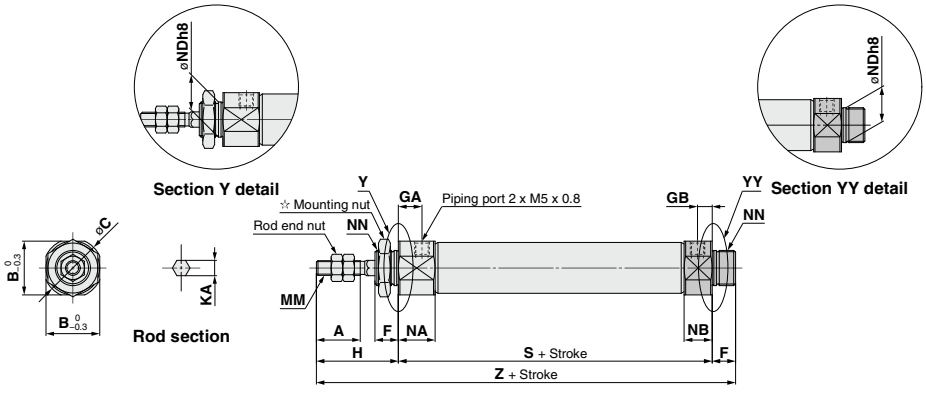
☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

[mm]

Bore size	A	BA	BB	CA	CB	F	GA	GB	H	KA	MM	NA	NB	NDh8	NN	S	Z
10	15	15	12	17	14	8	8	5	28	4.2	M4 x 0.7	12.5	9.5	$10^{0}_{-0.022}$	M10 x 1.0	46	74
16	15	18.3	18.3	20	20	8	8	5	28	5.2	M5 x 0.8	12.5	9.5	$12^{0}_{-0.027}$	M12 x 1.0	47	75

Double-side Bossed (E)

CJ2KE $\begin{matrix}10\\16\end{matrix}$ – Stroke Z



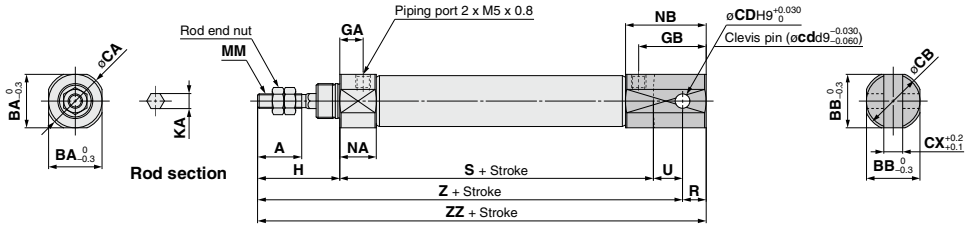
☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

[mm]

Bore size	A	B	C	F	GA	GB	H	KA	MM	NA	NB	NDh8	NN	S	Z
10	15	15	17	8	8	5	28	4.2	M4 x 0.7	12.5	9.5	$10^{0}_{-0.022}$	M10 x 1.0	46	82
16	15	18.3	20	8	8	5	28	5.2	M5 x 0.8	12.5	9.5	$12^{0}_{-0.027}$	M12 x 1.0	47	83

Double Clevis (D)

CJ2KD $^{10}_{16}$ – Stroke Z



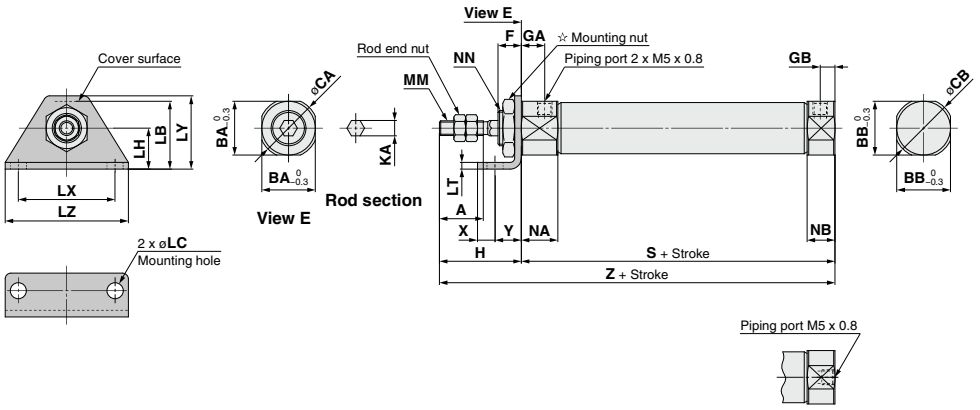
∗: A clevis pin and retaining rings are included.

[mm]

Bore size	A	BA	BB	CA	CB	CD(cd)	CX	GA	GB	H	KA	MM	NA	NB	R	S	U	Z	ZZ
10	15	15	12	17	14	3.3	3.2	8	18	28	4.2	M4 x 0.7	12.5	22.5	5	46	8	82	87
16	15	18.3	18.3	20	20	5	6.5	8	23	28	5.2	M5 x 0.8	12.5	27.5	8	47	10	85	93

Single Foot (L)

CJ2KL $^{10}_{16}$ – Stroke Head cover port location Z



Head cover port location
Axial location (R)

∗: The overall cylinder length does not change.

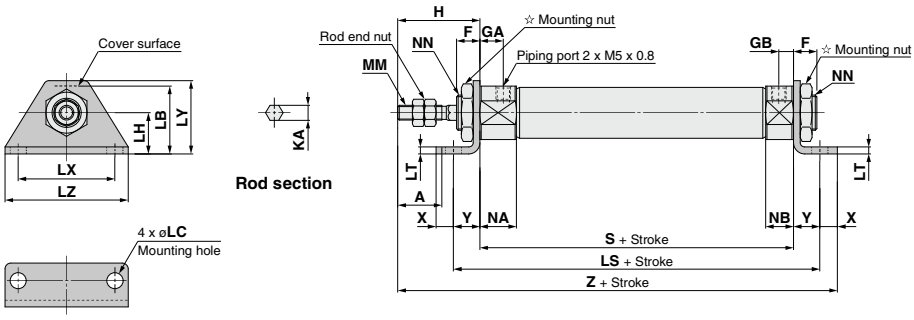
☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

[mm]

Bore size	A	BA	BB	CA	CB	F	GA	GB	H	KA	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	S	X	Y	Z
10	15	15	12	17	14	8	8	5	28	4.2	21.5	5.5	14	2.3	33	25	42	M4 x 0.7	12.5	9.5	M10 x 1.0	46	6	9	74
16	15	18.3	18.3	20	20	8	8	5	28	5.2	23	5.5	14	2.3	33	25	42	M5 x 0.8	12.5	9.5	M12 x 1.0	47	6	9	75

Double Foot (M)

CJ2KM $\begin{matrix}10\\16\end{matrix}$ – Stroke Z



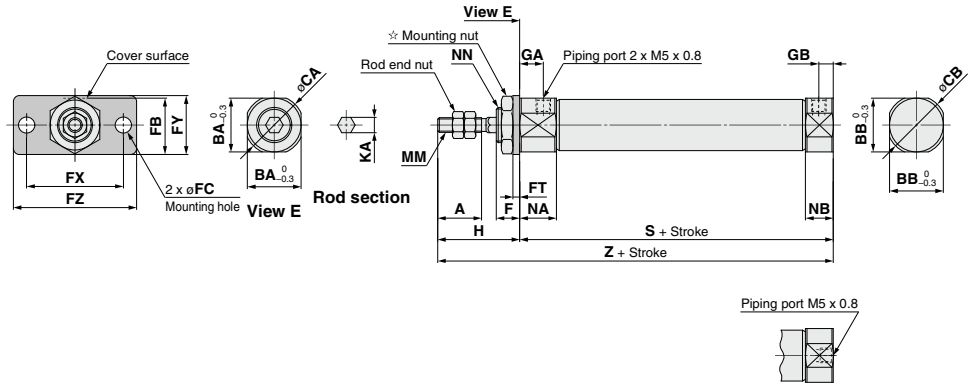
☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

[mm]

Bore size	A	F	GA	GB	H	KA	LB	LC	LH	LS	LT	LX	LY	LZ	MM	NA	NB	NN	S	X	Y	Z
10	15	8	8	5	28	4.2	21.5	5.5	14	64	2.3	33	25	42	M4 x 0.7	12.5	9.5	M10 x 1.0	46	6	9	89
16	15	8	8	5	28	5.2	23	5.5	14	65	2.3	33	25	42	M5 x 0.8	12.5	9.5	M12 x 1.0	47	6	9	90

Rod Flange (F)

CJ2KF $\begin{matrix}10\\16\end{matrix}$ – Stroke Head cover port location Z



Head cover port location
Axial location (R)

※: The overall cylinder length does not change.

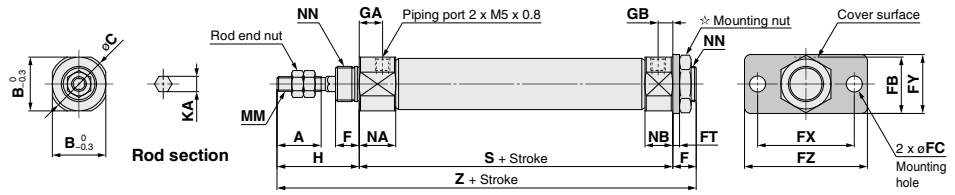
☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

[mm]

Bore size	A	BA	BB	CA	CB	F	FB	FC	FT	FX	FY	FZ	GA	GB	H	KA	MM	NA	NB	NN	S	Z
10	15	15	12	17	14	8	17.5	5.5	2.3	33	20	42	8	5	28	4.2	M4 x 0.7	12.5	9.5	M10 x 1.0	46	74
16	15	18.3	18.3	20	20	8	19	5.5	2.3	33	20	42	8	5	28	5.2	M5 x 0.8	12.5	9.5	M12 x 1.0	47	75

Head Flange (G)

CJ2KG $\begin{matrix}10\\16\end{matrix}$ **–** **Stroke** **Z**



☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

[mm]

Bore size	A	B	C	F	FB	FC	FT	FX	FY	FZ	GA	GB	H	KA	MM	NA	NB	NN	S	Z
10	15	15	17	8	17.5	5.5	2.3	33	20	42	8	5	28	4.2	M4 x 0.7	12.5	9.5	M10 x 1.0	46	82
16	15	18.3	20	8	19	5.5	2.3	33	20	42	8	5	28	5.2	M5 x 0.8	12.5	9.5	M12 x 1.0	47	83