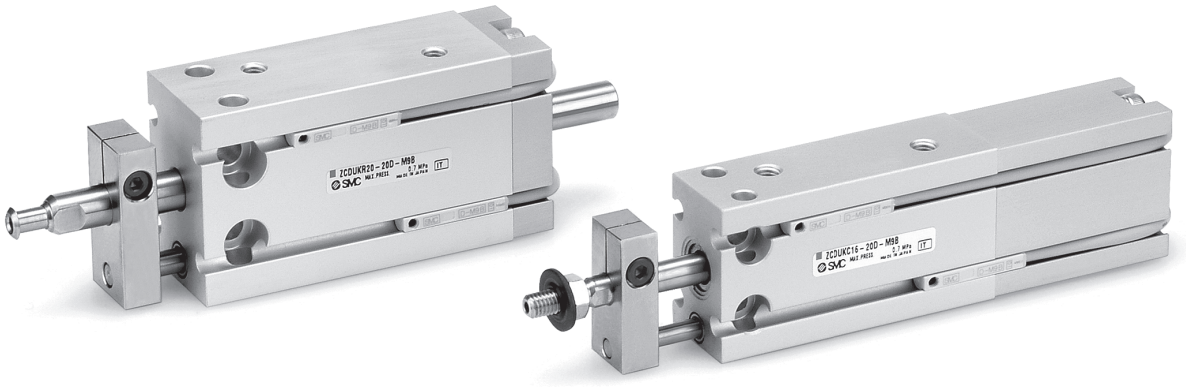
Free Mount Cylinder for Vacuum
ZCUK Series

A free mount cylinder with a vacuum passage in the rod to meet the requirements for Air cylinder + Vacuum pad.

A vacuum passage has been provided in the rod of the CUK cylinder to enable a vacuum pad to be installed on the end of the rod.



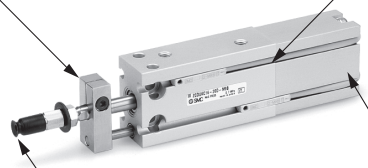
Not necessary to provide vacuum tubing space at the end of the rod.

The area around the vacuum pad is uncluttered.

● Non-rotationg rod

A guide is provided as standard equipment
Non-rotating rod accuracy (no load: when the rod is retracted on the detent plate side):
Ø 10, Ø 16 ——— ±0.8°
Ø 20, Ø 25, Ø 32 ——— ±0.5°

Do not apply a lateral load to the piston rod. Because the piston rod is a hollow rod, a lateral load can cause the piston rod to bend or break.



● Auto switch

Reed auto switch:
D-A9□ (Heavy-duty cord, in-line entry)
D-A9□V (Heavy-duty cord, perpendicular entry)

Solid state auto switch:
D-M9□, D-M9□W (Heavy-duty cord, in-line entry)
D-M9□V, D-M9□WV (Heavy-duty cord, perpendicular entry)

● How to provide piping to the vacuum side

Cap piping

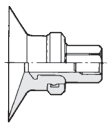
The piston rod of the vacuum side does not protrude.
Also, the vacuum outlet tube does not move when the piston is operating.
Vacuum port pressure range: -101 kPa to 0.6 MPa
Pressurise only when releasing the vacuum. At that time, use it under the cylinder operating pressure.

Rod piping

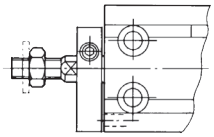
Lighter weight than the cap piping.
Can also be used for air blowing.
Vacuum port pressure range: -101 kPa to 0.6 MPa

● Vacuum pad (Pad diameter: Ø 2 to Ø 50)

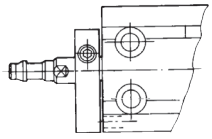
<Perpendicular female thread>



<Male thread>



<Direct mounting>



<Barb fitting>

Free Mount Cylinder for Vacuum
ZCUK Series

How to Order

ZCUK [C] [16] [ ] – [20] [D]

With auto switch **ZCDUK** [C] [16] [ ] – [20] [D] – [M9BW] [ ]

Built-in magnet

Style (Tubing method in vacuum side)/(Rod end shape)

C	Cap piping/Male thread
D	Cap piping/Pad direct mounting
Q	Rod piping/Male thread
R	Rod piping/Pad direct mounting

Bore size

10	10 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm

Port thread type

Symbol	Type	Bore size
—	M5 x 0.8	Ø 10, Ø 16, Ø 20, Ø 25
	Rc1/8	Ø 32
TN	NPT1/8	Ø 32
TF Note)	G1/8	Ø 32

Note) In the case of rod piping (Q, R), TF (G1/8) is not available.

Acting

D	Double acting

Auto switch

—	Without auto switch

* Refer to the table below for applicable auto switches.

Number of auto switches

—	2 pcs.
S	1 pc.

Cylinder standard stroke [mm]

10, 16	5, 10, 15, 20, 25, 30
20, 25, 32	5, 10, 15, 20, 25, 30, 40, 50

Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) ZCDUKC20-20D

Applicable Auto Switches/Refer to Auto Switch guide for the detailed specifications on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Perpendicular	Auto switch model: In-line	Lead wire length (m): 0.5 (—)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load:	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)			M9PV	M9P	●	●	●	○	○		
				2-wire	12 V		M9BV	M9B	●	●	●	○	○	—	
	Diagnostic indication (2-colour indication)			3-wire (NPN)	5 V, 12 V		M9NWV	M9NW	●	●	●	○	○	IC circuit	
				3-wire (PNP)			M9PWV	M9PW	●	●	●	○	○		
				2-wire	12 V		M9BWV	M9BW	●	●	●	○	○	—	
	Water resistant (2-colour indication)			3-wire (NPN)	5V,12V		M9NAV**	M9NA**	○	○	●	○	○	IC circuit	
				3-wire (PNP)			M9PAV**	M9PA**	○	○	●	○	○		
				2-wire	12V		M9BAV**	M9BA**	○	○	●	○	○	—	
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	—	●	—	—	IC circuit	—
			No	2-wire	24 V	12 V	100 V	A93V	A93	●	—	●	●	—	—	Relay, PLC
							100 V or less	A90V	A90	●	—	●	—	—	IC circuit	

** Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.

* Lead wire length symbols: 0.5 m····· — (Example) M9NW
1 m····· M (Example) M9NWM
3 m····· L (Example) M9NWL
5 m····· Z (Example) M9NWZ

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

* Refer to "Best Pneumatics" for the details on auto switches with a pre-wired connector.

* Auto switches are shipped together but not assembled.

How to Order Vacuum Pad

Note) Refer to page 4 for combination of cylinder and pad.

● In the case of rod end male

ZPT [02] [U] [N] – [B4]

Pad dia. [mm]

02	Ø 2
04	Ø 4
06	Ø 6
08	Ø 8
10	Ø 10
13	Ø 13
16	Ø 16
20	Ø 20
25	Ø 25
32	Ø 32
40	Ø 40
50	Ø 50

Pad type Application: Refer to "Table (1)".

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR (Ø 2 to Ø 16 only)
GS	Conductive silicone rubber (Ø 2 to Ø 16 only)

Vacuum entry (Mounting thread diameter)

	Symbol	Thread dia.	Ø 2 to Ø 8	Ø 10 to Ø 16	Ø 20 to Ø 32	Ø 40, Ø 50
Female thread	B4	M4 x 0.7	●	—	—	—
	B5	M5 x 0.8	●	●	—	—
	B6	M6 x 1	—	●	●	—
	B8	M8 x 1.25	—	—	●	●
	B10	M10 x 1.25	—	—	●	●

Table (1) Pad Dia./Pad Type

Type \ Dia. [mm]	2	4	6	8	10	13	16	20	25	32	40	50
Flat	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	●	—	●	—	●	—	●	—
Bellows	—	—	●	●	●	●	●	●	●	●	●	●

● In the case of pad direct mounting

ZP [04] [U] [N] – [X11]

Pad dia. [mm]

02	Ø 2
04	Ø 4
06	Ø 6
08	Ø 8
10	Ø 10
13	Ø 13
16	Ø 16
20	Ø 20
25	Ø 25
32	Ø 32
40	Ø 40
50	Ø 50

Pad type

U	Flat
C	Flat with ribs
D	Deep
B	Bellows (Except "-X11")

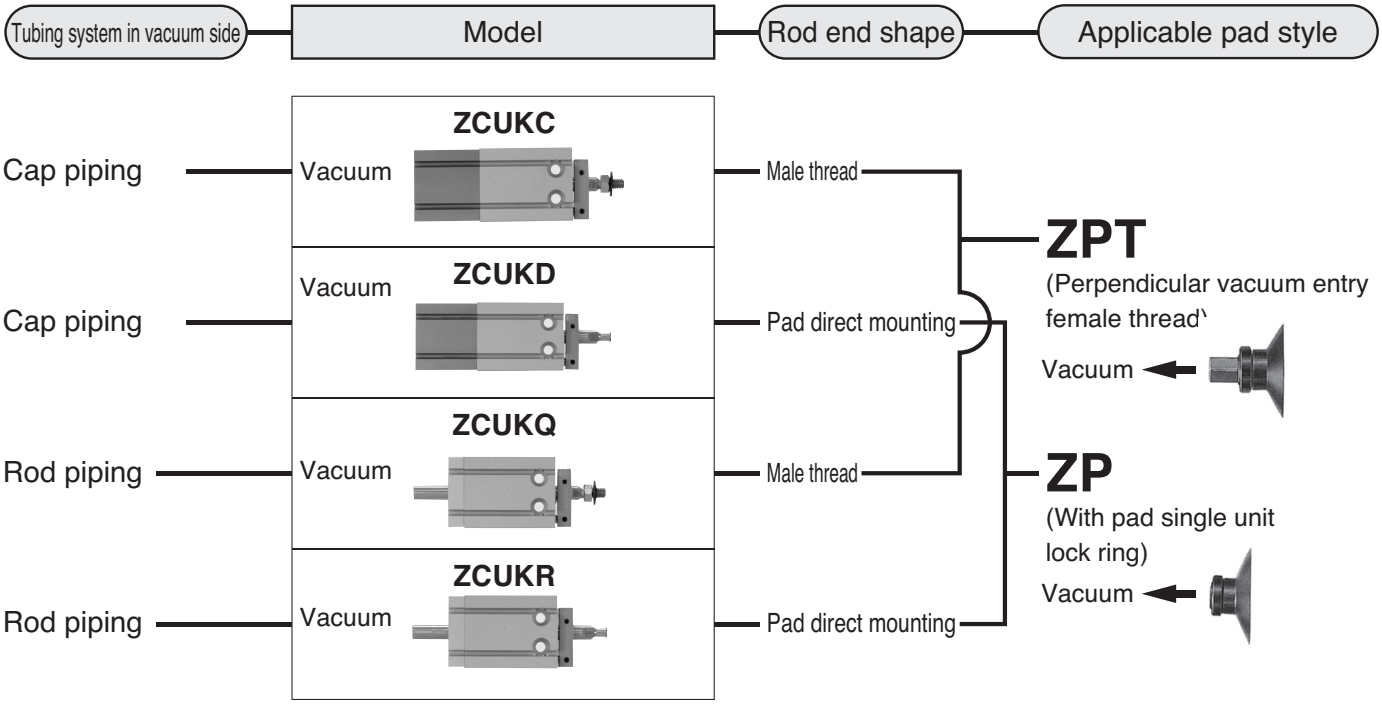
Suffix

Symbol	Applicable cylinder model
X11	ZC(D)UK$^{D}_{R}$10
—	ZC(D)UK$^{D}_{R}$16 to 32

Note) -X11 pad: Ø 2 to Ø 8 diameter and flat style only.

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR (Ø 2 to Ø 16 only)
GS	Conductive silicone rubber (Ø 2 to Ø 16 only)



⚠Precautions

⚠ Caution

①**Do not place your finger in the clearence between the detent plate and the cylinder tube.**
Never insert your finger between the non-rotating plate and the cylinder tube to prevent it from being pinched when the piston rod retracts. If your finger is caught, it could injure your finger because the cylinder outputs a considerable amount of force.

②Make sure that rotational torque is not applied to the piston rod. If this is unavoidable, operate the cylinder within the allowable rotational torque listed in the table below.

Allowable Rotational Torque

Bore size [mm]	Ø 10	Ø 16	Ø 20	Ø 25	Ø 32
Allowable rotational torque [N·m]	0.02	0.04	0.10	0.15	0.20

③To secure a workpiece to the end of the piston rod, tighten the workpiece onto the piston rod with the piston rod fully retracted so that torque is not applied to the piston rod.

④To install a cylinder, tighten it within the torque valves indicated in the table below.

Proper Tightening Torque

Bore size [mm]	Hexagon socket head bolt diameter [mm]	Proper tightening torque [N·m]
Ø 10	M3	1.08 ±10 %
Ø 16	M4	2.45 ±10 %
Ø 20, Ø 25	M5	5.10 ±10 %
Ø 32	M6	8.04 ±10 %

Specifications

Bore size [mm]	Ø 10	Ø 16	Ø 20	Ø 25	Ø 32
Fluid	Air				
Proof pressure	1.05 MPa				
Maximum operating pressure	0.7 MPa				
Minimum operating pressure	0.13 MPa		0.11 MPa		
Vacuum port pressure	-101 kPa to 0.6 MPa (At vacuum release 0 to 0.6 MPa) Note)				
Ambient and fluid temperature	Without auto switch: -10 to +70 °C (No freezing) With auto switch: -10 to +60 °C (No freezing)				
Lubrication	Not required				
Piston speed	50 to 500 mm/s				
Cushion	Rubber bumper on both sides				
Stroke allowance	$^{+1.0}_{0}$				
Rod tip screw	With or without (Pad direct mounting)				
Mounting	Basic type				
Applicable pad	Refer to page 4 for details.				

Note) For a cap type, supply pressure only when vacuum is released. That pressure should be less than the cylinder pressure.

Non-rotating Rod Accuracy (No load/At retraction of the rod at the locking plate side)

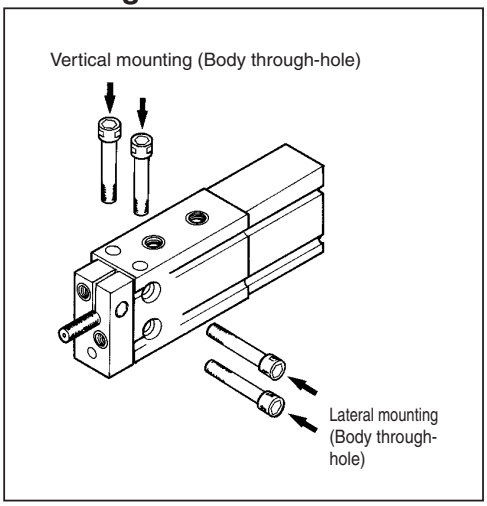
Tube bore size [mm]	Ø 10	Ø 16	Ø 20	Ø 25	Ø 32
Non-rotating piston rod accuracy	±0.8°		±0.5°		

Applicable Auto Switch Model

Model		Electrical entry		Indicator light
Reed switch	D-A90	Grommet	2 wire/In line	Unavailable
	D-A93			Available
	D-A96		3 wire/In line	
	D-A90V		2 wire/Perpendicular	Unavailable
	D-A93V			Available
	D-A96V		3 wire/Perpendicular	
Solid state switch	D-M9N		3 wire/NPN/In line	Available
	D-M9P		3 wire/PNP/In line	
	D-M9B		2 wire/In line	
	D-M9NW		3 wire/NPN/In line(2 colour indicator)	
	D-M9PW		3 wire/PNP/In line (2 colour indiator)	
	D-M9BW		2 wire/In line (2 colour indicator)	
	D-M9NV		3 wire/NPN/Perpendicular	
	D-M9PV		3 wire/PNP/Perpendicular	
	D-M9BV		2 wire/Perpendicular	
	D-M9NWV		3 wire/NPN/Perpendicular (2 colour indicator)	
	D-M9PWV		3 wire/PNP/Perpendicular (2 colour indicator)	
	D-M9BWV		2 wire/Perpendicular (2 colour indicator)	

Note) "D-9□" auto switches are also mountable (D-90, D-90A, D-93A and D-97).

Mounting



Standard Stroke

[mm]

Cylinder bore [mm]	Double acting/Single rod, Non-rotating piston rod							
	Stroke [mm]							
	5	10	15	20	25	30	40	50
10	●	●	●	●	●	●	–	–
16	●	●	●	●	●	●	–	–
20	●	●	●	●	●	●	●	●
25	●	●	●	●	●	●	●	●
32	●	●	●	●	●	●	●	●

Min. Stroke for Mounting Auto switch

Applicable auto switch	No. of switches	
	1 pc.	2 pcs.
D-M9□ D-M9□V	5	5
D-M9□W D-M9□WV	5	10
D-A9□ D-A9□V	5	10

Theoretical Force/Double Acting Style

Unit: N

Cylinder bore [mm]	Rod dia. [mm]	Effective area [cm²]	Operating pressure [MPa]		
			0.3	0.5	0.7
10	4	66.0	19.8	33	46.2
16	6	172	51.6	86	121
20	8	264	79.2	132	185
25	10	412	124	206	289
32	12	691	207	346	484

Cylinder/Applicable Pad

•In case of rod end male thread

Use series ZPT pad (vertical vacuum entry/female thread mounting).

Cylinder		Pad(ZPT02 to 50□□-B4 to 10)												
Model	Bore [mm]	Pad dia. [mm]												Thread dia.
		2	4	6	8	10	13	16	20	25	32	40	50	
ZCUKC ZCUKQ ZCDUKC ZCDUKQ	**10**	●	●	●	●	–	–	–	–	–	–	–	–	M4
	16	●	●	●	●	●	●	●	–	–	–	–	–	M5
	20	–	–	–	–	●	●	●	●	●	●	–	–	M6
	25	–	–	–	–	–	–	–	●	●	●	●	●	M8
	32	–	–	–	–	–	–	–	●	●	●	●	●	M10 X 1.25

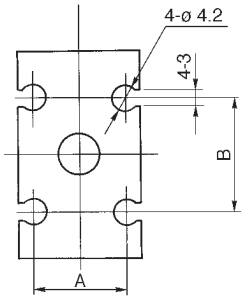
•In case of pad direct mounting

Use series ZP pad (single unit).

Cylinder		Pad (ZP02 to 50□□)											
Model	Bore [mm]	Pad dia. [mm]											
		2	4	6	8	10	13	16	20	25	32	40	50
ZCUKD ZCUKR ZCDUKD ZCDUKR	10 (Note 1)	●	●	●	●	–	–	–	–	–	–	–	–
	16	●	●	●	●	–	–	–	–	–	–	–	–
	20	–	–	–	–	●	●	●	–	–	–	–	–
	25	–	–	–	–	–	–	–	●	●	●	–	–
	32	–	–	–	–	–	–	–	–	–	–	●	●

Note 1) When using "ZC(D) UK$^{U}_{R}$10", use ZP02 to 08U∗ -X11. Pad shape is flat only.

Switch Groove Location

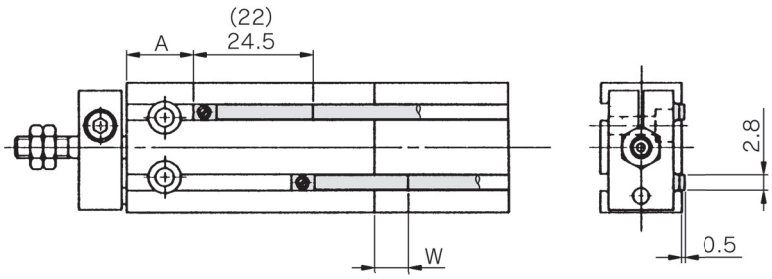


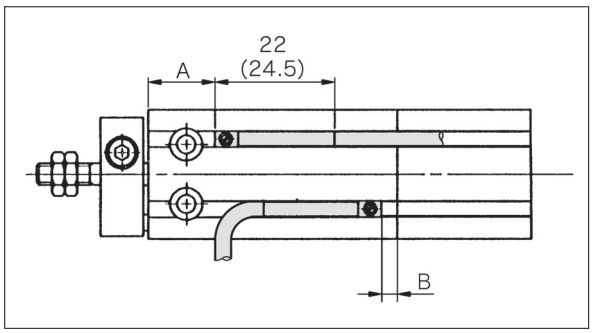
Bore size	A	B
10	10.3	13
16	15	18
20	21	23
25	27	25
32	35	27

Auto Switch Mounting 1

Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

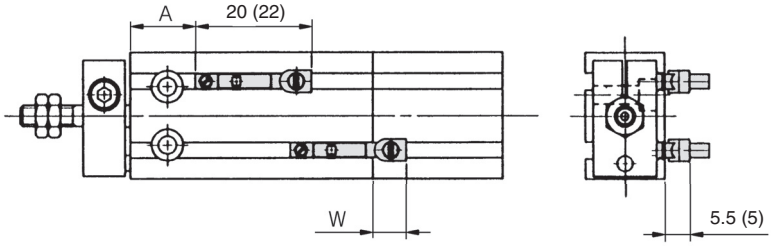
D-M9□
D-M9□W
D-M9□A
D-A9□

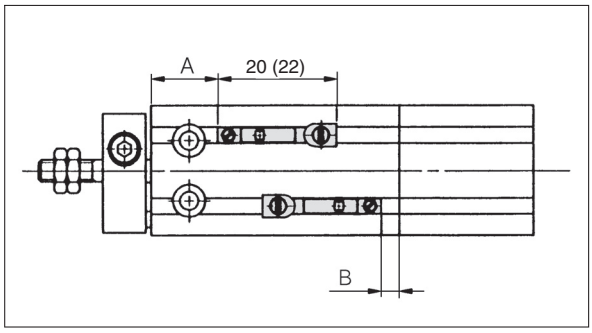




( ): Denotes the values of D-A96.

D-M9□V
D-M9□WV
D-M9□AV
D-A9□V





( ): Denotes the values of D-A9□V.

[mm]

Bore size [mm]	D-A9□, D-A9□V			D-M9□, D-M9□W			D-M9□V, D-M9□WV			D-M9□A			D-M9□AV		
	A	B	W	A	B	W	A	B	W	A	B	W	A	B	W
10	12.5	3	–1.5 (1)	16.5	7.5	2.5	16.5	7.5	0.5	16.5	7.5	4.5	16.5	7.5	2.5
16	16	4	–2 (0.5)	20	8	1.5	20	8	0	20	8	3.5	20	8	2
20	20	6	–4 (–1.5)	24	10	0	24	10	–2	24	10	2	24	10	0
25	22.5	7	–5.5 (–3)	26.5	11.5	–1.5	26.5	11.5	–3.5	26.5	11.5	0.5	26.5	11.5	–1.5
32	23.5	8	–6.5 (–4)	27.5	12.5	–2.5	27.5	12.5	–4.5	27.5	12.5	–0.5	27.5	12.5	–2.5

Note 1) Figures in the table above are used as a reference when mounting the auto switches for stroke end detection. In the case of actually setting the auto switches, adjust them after confirming their operation.
Note 2) Negative figures in the table show dimensions mounted inside cylinder body.
Note 3) In the case of 5 mm stroke or the 10 mm stroke, there are times in which the auto switches will not turn OFF or 2 auto switches will turn ON simultaneously due to their movement range. Therefore, set the position approximately 1 to 4 mm outward from the values given in the table above. Then, perform an operation inspection to make sure that the auto switches operate normally (if 1 switch is used, make sure that it turns ON and OFF properly; if 2 auto switches are used, make sure that both switches turn ON).
Note 4) Figures in ( ) in the table W are D-A90 and A93.

Operation Range

[mm]

Auto switch model	Bore size				
	10	**16**	**20**	**25**	**32**
D-A9□, A9□V	6	9	11	12.5	14
D-M9□, M9□V **D-M9□W, M9□WV** **D-M9□A, M9□AV**	4	5	7	7	7

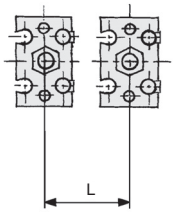
∗ Since this is the average value at a normal temperature including hysteresis (tolerance ±30 %), it is not guaranteed.
Figures may change substantially depending upon the surrounding environment.

Auto Switch Mounting 2

Mounting of Auto Switch

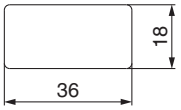
Cautions on Proximity Installation

When free mounting cylinders equipped with auto switches are used, the auto switches could activate unintentionally if the installed distance is less than the dimensions shown in the table. Therefore, make sure to provide a greater clearance. Due to unavoidable circumstances, if they must be used with less distance than the dimensions given in the table, the cylinders must be shielded. Therefore, affix a steel plate or a magnetic shielding plate (MU-S025) to the area on the cylinder that corresponds to the adjacent auto switch. (Please contact SMC for details.) Auto switches may malfunction if a shielding plate is not used.



Bore size [mm]	Mounting pitch L [mm]
10	20
16	33
20	40
25	46
32	56

Shielding plate (MU-S025) dimensions



Material: Ferrite stainless steel, Thickness: 0.3 mm
The product is attached to the cylinder since the bottom side is pre-treated with adhesive glue.

Weight

Basic Type/With Auto Switch ( ): Denotes the values with D-A93.

Unit: g

Model	Bore size [mm]	Cylinder stroke [mm]							
		5	**10**	**15**	**20**	**25**	**30**	**40**	**50**
ZC(D)UKC	**10**	63 (68)	69 (79)	75 (85)	81 (91)	87 (97)	93 (103)	—	—
	16	103 (128)	115 (145)	127 (157)	139 (169)	151 (181)	163 (193)	—	—
	20	180 (214)	204 (244)	228 (267)	252 (292)	276 (316)	300 (340)	348 (388)	396 (436)
	25	304 (358)	343 (402)	382 (441)	421 (480)	460 (519)	499 (558)	577 (636)	655 (714)
	32	514 (587)	574 (652)	634 (712)	694 (772)	754 (832)	814 (892)	934 (1012)	1054 (1132)
ZC(D)UKQ	**10**	49 (54)	53 (63)	57 (67)	61 (71)	65 (75)	69 (79)	—	—
	16	79 (104)	86 (116)	93 (123)	100 (130)	107 (137)	114 (144)	—	—
	20	145 (179)	159 (198)	173 (212)	187 (226)	201 (240)	215 (254)	243 (282)	271 (310)
	25	259 (313)	279 (338)	299 (358)	319 (378)	339 (398)	359 (418)	399 (458)	439 (498)
	32	421 (494)	451 (529)	481 (559)	511 (589)	541 (619)	571 (649)	631 (709)	691 (769)

Besides the models listed in How to Order, the following auto switches are applicable.

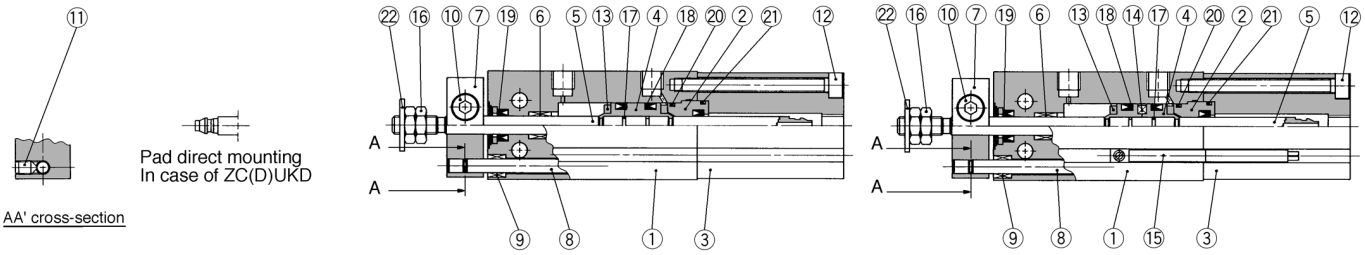
* For solid state switches, auto switches with a pre-wired connector are also available. Refer to the **Auto Switches Guide on www.smc.eu**.
* Normally closed (NC = b contact), solid state switch (D-F9G/F9H type) are also available. Refer to the **Auto Switches Guide on www.smc.eu**.

Construction

Cap piping/Male thread: ZC(D)UKC

Ø 10

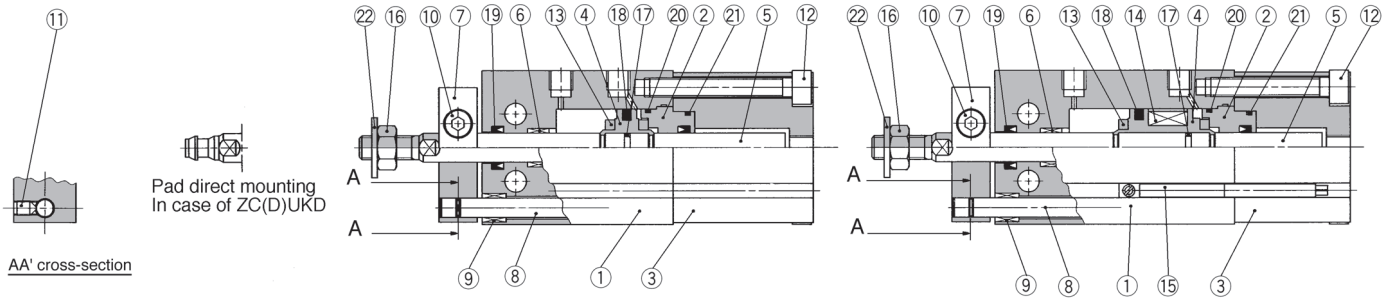
With auto switch



Refer to CUK series for outside colour of the piston rod, tube and cap.

Ø 16 to Ø 32

With auto switch



Refer to CUK series for outside color of the piston rod, tube and cap.

Component Parts

No.	Description	Material	Notes
①	Cylinder tube	Aluminium alloy	Hard anodised
②	Rod cover B	Aluminium bearing alloy	Chromated
③	Cap	Aluminium alloy	Hard anodised
④	Piston	Aluminium alloy	Chromated
⑤	Piston rod	Stainless steel	
⑥	Bush	Oil impregnated sintered metal	
⑦	Plate	Aluminium alloy	Nickel plated
⑧	Guide rod	Stainless steel	
⑨	Bush	Oil impregnated sintered metal	
⑩	Hexagon set screw	Carbon steel	Black zinc chromated
⑪	Hexagon socket head cap screw	Carbon steel	Black zinc chromated
⑫	Hexagon set screw	Carbon steel	Nickel plated

Component Parts

No.	Description	Material	Notes
⑬	Damper	Urethane	
⑭	Magnet	Magnetic material	
⑮	Auto switch	–	
⑯	Rod end nut	Carbon steel	Nickel plated
⑰	Piston gasket	NBR	
⑱	Piston seal	NBR	
⑲	Rod seal		
⑳	Gasket		
㉑	Gasket for cap		
㉒	Seal washer	Rolled steel/NBR	

Replacement Parts: Seal Kit
Cap piping

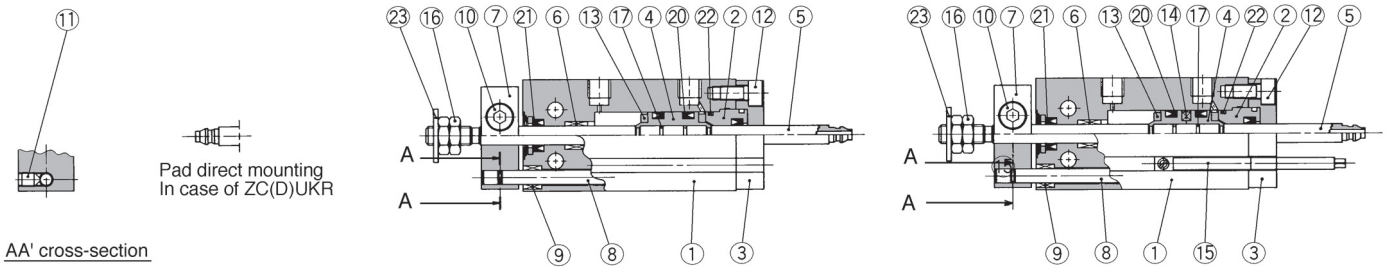
Kit no.	Bore size / Part no.				
	ø10	ø16	ø20	ø25	ø32
	ZCU10-PS	ZCU16-PS	ZCU20-PS	ZCU25-PS	ZCU32-PS

∗ Seal kit includes ⑱, ⑲, ⑳ and ㉑. Order the seal kit based on each bore size.
∗ Seal kit includes a grease pack (10 g).
Order with the following part number when only the grease pack is needed.
Grease pack part no.: GR-S-010 (10 g)

Construction

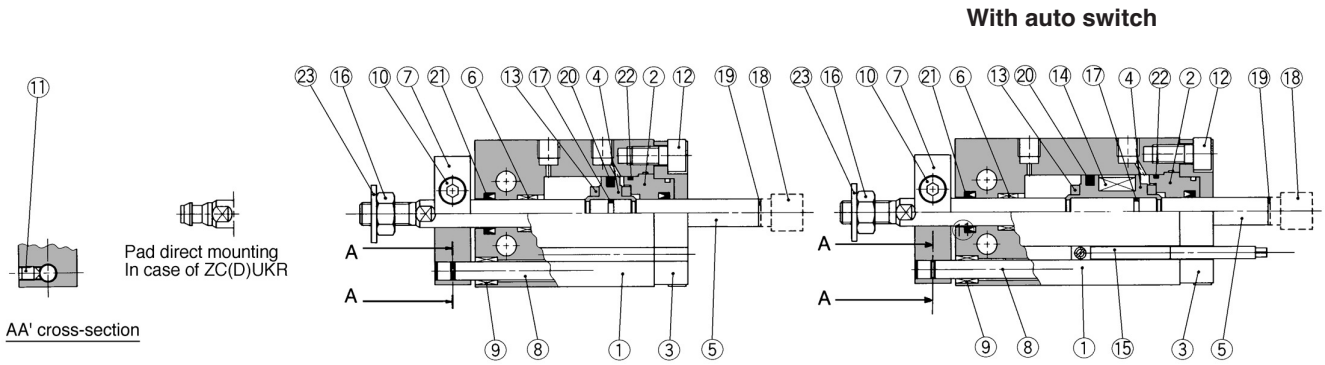
Rod piping/Male thread: ZC(D)UKQ

Ø 10



Refer to CUK series for outside colour of the piston rod, tube and cap.

Ø 16 to Ø 32



Refer to CUK series for outside colour of the piston rod, tube and cap.

Component Parts

No.	Description	Material	Notes
①	Cylinder tube	Aluminium alloy	Hard anodised
②	Rod cover B	Aluminium bearing alloy	Chromated
③	Rod cover retainer plate	Aluminium alloy	Hard anodised
④	Piston	Aluminium alloy	Chromated
⑤	Piston rod	Stainless steel	
⑥	Bush	Oil impregnated sintered metal	
⑦	Plate	Aluminium alloy	Nickel plated
⑧	Guide rod	Stainless steel	
⑨	Bush	Oil impregnated sintered metal	
⑩	Hexagon set screw	Carbon steel	Black zinc chromated
⑪	Hexagon socket head cap screw	Carbon steel	Black zinc chromated
⑫	Hexagon set screw	Carbon steel	Nickel plated

Component Parts

No.	Description	Material	Notes
⑬	Damper	Urethane	
⑭	Magnet	Magnetic material	
⑮	Auto switch	—	
⑯	Rod end nut	Carbon steel	Nickel plated
⑰	Piston gasket	NBR	
⑱	Socket	Carbon steel	Ø 16 only
⑲	Gasket	NBR	Ø 16 only
⑳	Piston seal		
㉑	Rod seal		
㉒	Gasket		
㉓	Seal washer	Rolled steel/NBR	

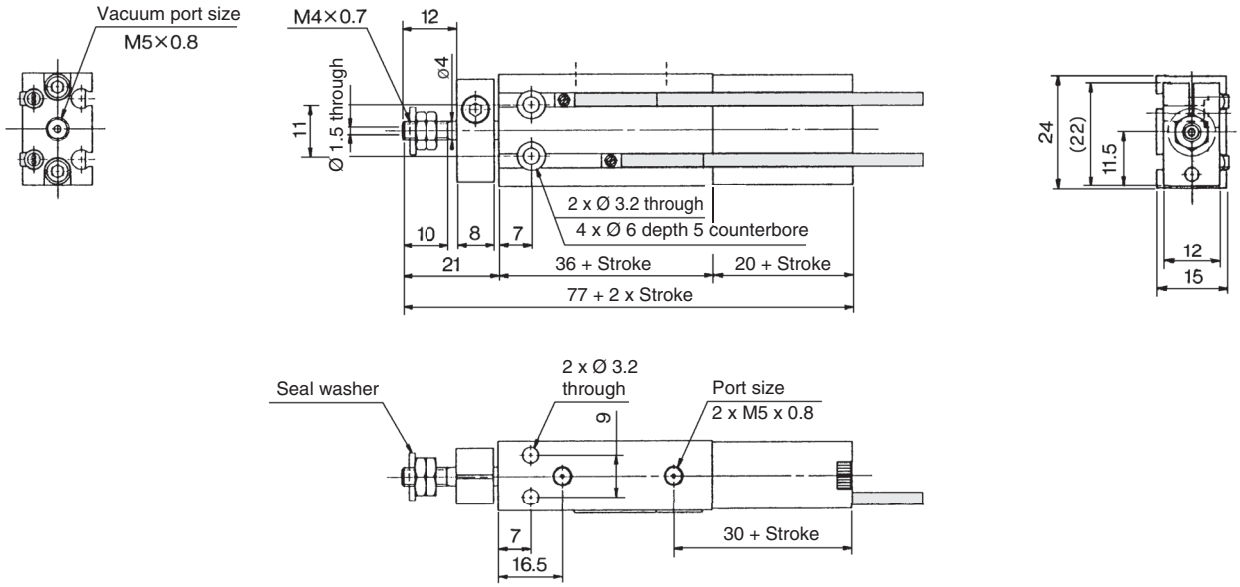
Replacement Parts: Seal Kit
Rod piping

Kit no.	Bore size / Part no.				
	ø10	ø16	ø20	ø25	ø32
	CUW10D-PS	CUW16D-PS	CUW20D-PS	CUW25D-PS	CUW32D-PS

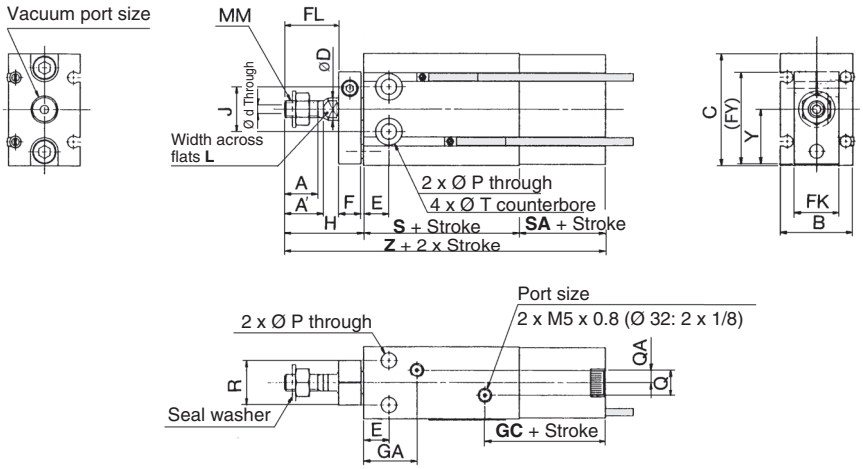
∗ Seal kit includes ⑳, ㉑ and ㉒. Order the seal kit based on each bore size.
∗ Seal kit includes a grease pack (10 g).
Order with the following part number when only the grease pack is needed.
Grease pack part no.: GR-S-010 (10 g)

Vacuum Piping: Cap Piping/Rod End Shape: Male Thread
ZC(D)UKC Cylinder bore – Stroke D

Ø 10



Ø 16 to Ø 32



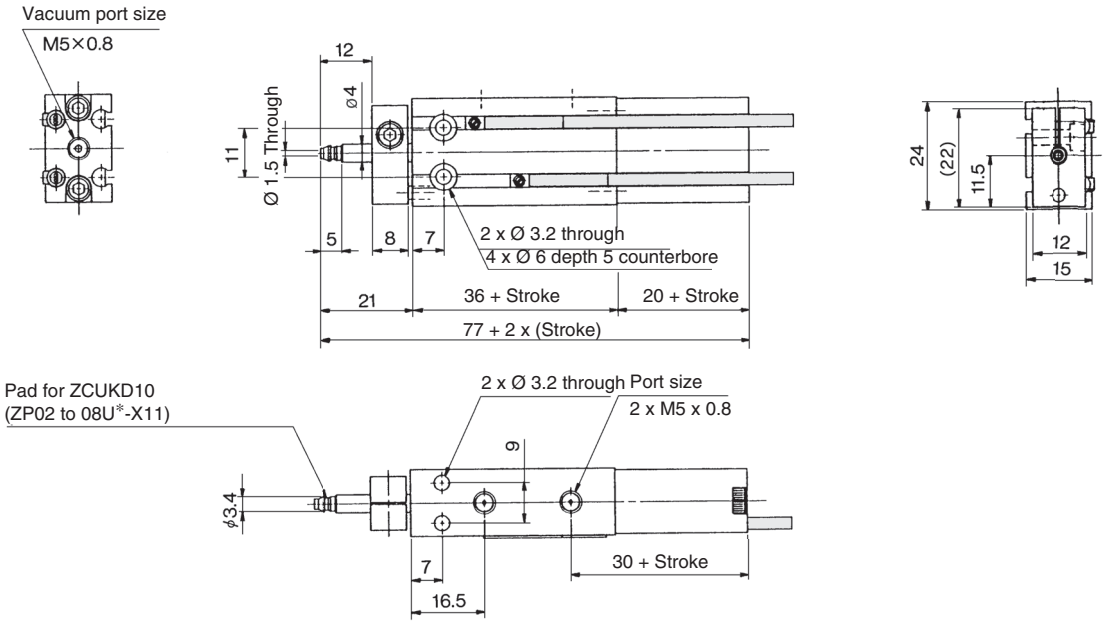
Model	Port size		Stroke range [mm]	A	A'	B	C	Ø d	Ø D	E	F	FK	FL	FY	GA	GC
	Air port	Vacuum port														
ZC(D)UKC16	M5 x 0.8	M5 x 0.8	5 to 30	11	12.5	20	32	2	6	7	8	13	17	28	16.5 Note 1)	31
ZC(D)UKC20	M5 x 0.8	1/8	5 to 50	12	14	26	40	3	8	9	8	16	20	33	19	33.5
ZC(D)UKC25	M5 x 0.8	1/8	5 to 50	15.5	18	32	50	4	10	10	10	20	22	43.5	21.5	34
ZC(D)UKC32	1/8	1/8	5 to 50	19.5	22	40	62	5	12	11	12	24	29	51.5	23	34.5

Model	H	J	L	MM	Ø P	Q	QA	R	S	SA	Ø T	Y	Z
ZC(D)UKC16	26	14	5	M5 x 0.8	4.5	4	2	12	30 (40)	19.5	7.6 depth 6.5	15.5	75.5 (85.5)
ZC(D)UKC20	29	16	6	M6 x 1.0	5.5	9	4.5	16	36 (46)	21	9.3 depth 9	19.5	86 (96)
ZC(D)UKC25	33	20	8	M8 x 1.25	5.5	9	4.5	20	40 (50)	21	9.3 depth 8	24.5	94 (104)
ZC(D)UKC32	42	24	10	M10 x 1.25	6.6	13.5	4.5	24	42 (52)	22	11 depth 11.5	30.5	106 (116)

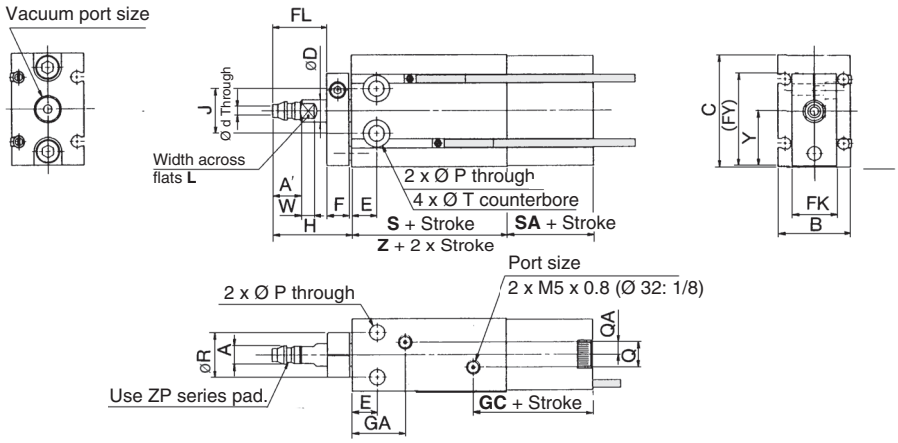
( ): In the case of a mounted auto switch. Note 1) In the case of ZCUKC16-5D: 14.5 mm.

Vacuum Piping: Cap Piping/Rod End Shape: Pad Direct Mounting
ZC(D)UKD Cylinder bore – Stroke D

Ø 10



Ø 16 to Ø 32



Model	Port size		Stroke range [mm]	Ø A	A'	B	C	Ø d	Ø D	E	F	FK	FL	FY	GA	GC
	Air port	Vacuum port														
ZC(D)UKD16	M5 x 0.8	M5 x 0.8	5 to 30	5	7	20	32	2	6	7	8	13	17	28	16.5 Note 1)	31
ZC(D)UKD20	M5 x 0.8	1/8	5 to 50	6.6	8	26	40	3	8	9	8	16	20	33	19	33.5
ZC(D)UKD25	M5 x 0.8	1/8	5 to 50	8	9	32	50	4	10	10	10	20	22	43.5	21.5	34
ZC(D)UKD32	1/8	1/8	5 to 50	11.5	10.5	40	62	5	12	11	12	24	29	51.5	23	34.5

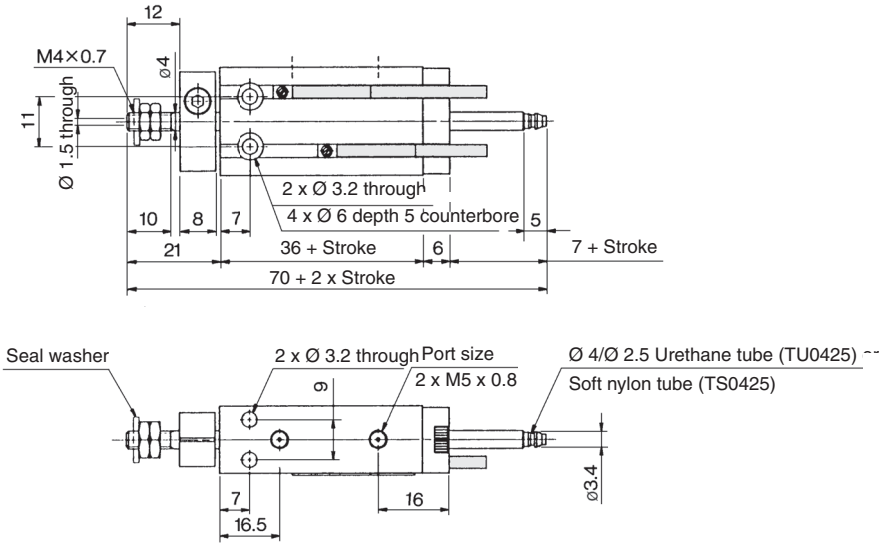
Model	H	J	L	Ø P	Q	QA	R	S	SA	Ø T	W	Y	Z
ZC(D)UKD16	26	14	5	4.5	4	2	12	30 (40)	19.5	7.6 depth 6.5	3.5	15.5	75.5 (85.5)
ZC(D)UKD20	29	16	6	5.5	9	4.5	16	36 (46)	21	9.3 depth 8	5	19.5	86 (96)
ZC(D)UKD25	33	20	8	5.5	9	4.5	20	40 (50)	21	9.3 depth 9	5	24.5	94 (104)
ZC(D)UKD32	42	24	10	6.6	13.5	4.5	24	42 (52)	22	11 depth 11.5	5	30.5	106 (116)

( ): In the case of a mounted auto switch.

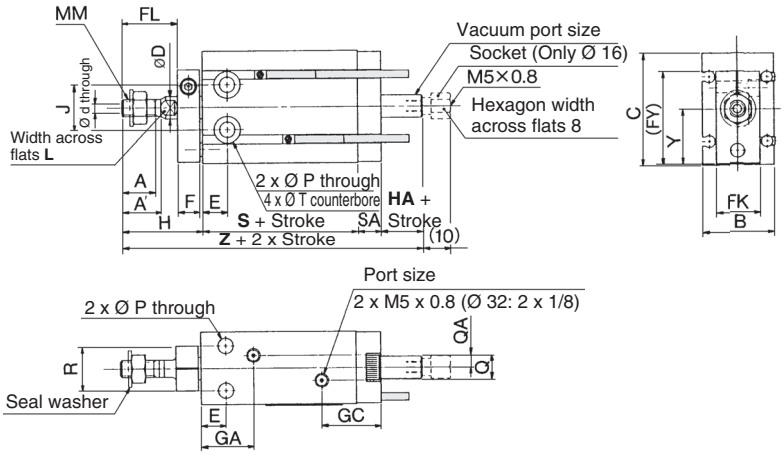
Note 1) In the case of ZCUKD16-5D: 14.5 mm.

Vacuum Piping: Rod Piping/Rod End Shape: Male Thread
ZC(D)UKQ Cylinder bore – Stroke D

Ø 10



Ø 16 to Ø 32



Model	Port size		Stroke range [mm]	A	A'	B	C	Ø d	Ø D	E	F	FK	FL	FY	GA	GC
	Air port	Vacuum port														
ZC(D)UKQ16	M5 x 0.8	M5 x 0.8 Note 2)	5 to 30	11	12.5	20	32	2	6	7	8	13	17	28	16.5 Note 1)	19
ZC(D)UKQ20	M5 x 0.8	M5 x 0.8	5 to 50	12	14	26	40	3	8	9	8	16	20	33	19	21.5
ZC(D)UKQ25	M5 x 0.8	M5 x 0.8	5 to 50	15.5	18	32	50	4	10	10	10	20	22	43.5	21.5	22
ZC(D)UKQ32	1/8	1/8	5 to 50	19.5	22	40	62	5	12	11	12	24	29	51.5	23	22.5

Model	H	HA	J	L	MM	Ø P	Q	QA	R	S	SA	Ø T	Y	Z
ZC(D)UKQ16	26	5	14	5	M5 x 0.8	4.5	4	2	12	30 (40)	7.5	7.6 depth 6.5	15.5	68.5 (78.5)
ZC(D)UKQ20	29	5	16	6	M6 x 1.0	5.5	9	4.5	16	36 (46)	9	9.3 depth 8	19.5	79 (89)
ZC(D)UKQ25	33	5	20	8	M8 x 1.25	5.5	9	4.5	20	40 (50)	9	9.3 depth 9	24.5	87 (97)
ZC(D)UKQ32	42	5	24	10	M10 x 1.25	6.6	13.5	4.5	24	42 (52)	10	11 depth 11.5	30.5	99 (109)

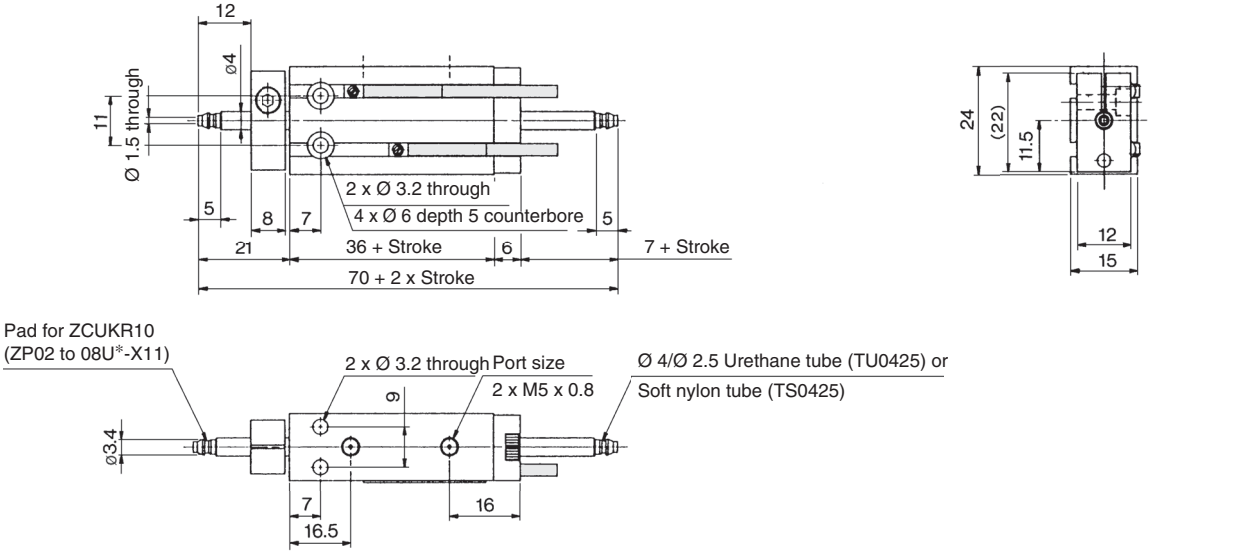
( ): In the case of a mounted auto switch.

Note 1) In the case of ZCUKQ16-5D: 14.5 mm.

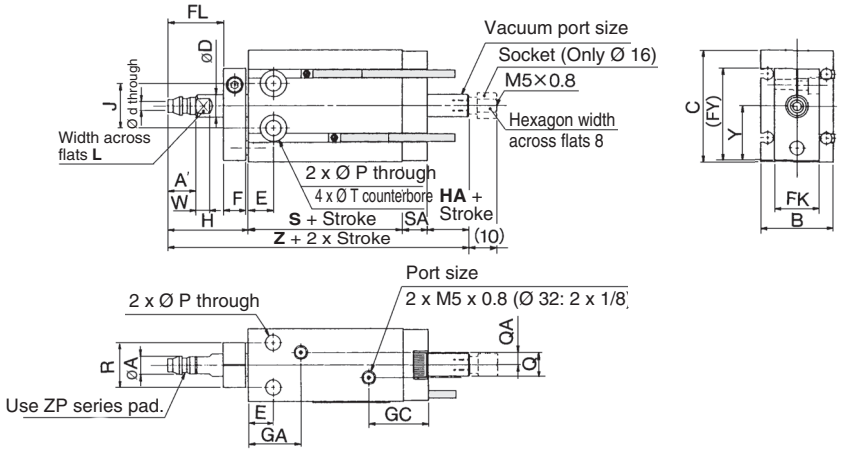
Note 2) In the case of socket equipped type.

Vacuum Piping: Rod Piping/Rod End Shape: Pad Direct Mounting
ZC(D)UKR Cylinder bore – Stroke D

Ø 10



Ø 16 to Ø 32



Model	Port size		Stroke range [mm]	Ø A	A	B	C	Ø d	Ø D	E	F	FK	FL	FY	GA	GC
	Air port	Vacuum port														
ZC(D)UKR16	M5 x 0.8	M5 x 0.8 Note 2)	5 to 30	5	7	20	32	2	6	7	8	13	17	28	16.5 Note 1)	19
ZC(D)UKR20	M5 x 0.8	M5 x 0.8	5 to 50	6.6	8	26	40	3	8	9	8	16	20	33	19	21.5
ZC(D)UKR25	M5 x 0.8	M5 x 0.8	5 to 50	8	9	32	50	4	10	10	10	20	22	43.5	21.5	22
ZC(D)UKR32	1/8	1/8	5 to 50	11.5	10.5	40	62	5	12	11	12	24	29	51.5	23	22.5

Model	H	HA	J	L	Ø P	Q	QA	R	S	SA	Ø T	W	Y	Z
ZC(D)UKR16	26	5	14	5	4.5	4	2	12	30 (40)	7.5	7.6 depth 6.5	3.5	15.5	68.5 (78.5)
ZC(D)UKR20	29	5	16	6	5.5	9	4.5	16	36 (46)	9	9.3 depth 8	5	19.5	79 (89)
ZC(D)UKR25	33	5	20	8	5.5	9	4.5	20	40 (50)	9	9.3 depth 9	5	24.5	87 (97)
ZC(D)UKR32	42	5	24	10	6.6	13.5	4.5	24	42 (52)	10	11 depth 11.5	5	30.5	99 (109)

( ): In the case of a mounted auto switch.

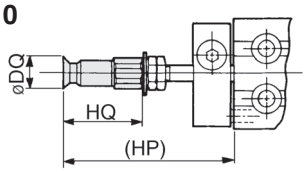
Note 1) In the case of ZCUKQ16-5D: 14.5 mm.

Note 2) In the case of socket equipped type.

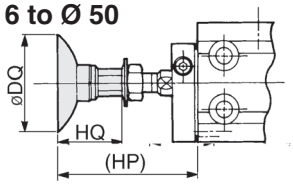
Dimensions of Pad Mounted Model

Rod end shape: Male thread

Tube bore: Ø 10



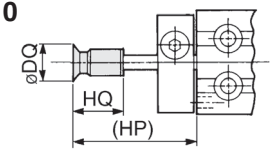
Tube bore: Ø 16 to Ø 50



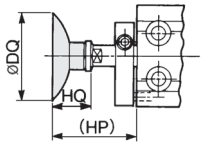
Model	Dia.[mm]	Flat/Flat with ribs												Deep				Bellows										Applicable pad model
		2	4	6	8	10	13	16	20	25	32	40	50	10	16	25	40	6	8	10	13	16	20	25	32	40	50	
ZC(D)UKC10 ZC(D)UKQ10	Ø DQ	2.6	4.8	7	9	–	–	–	–	–	–	–	–	–	–	–	–	7	9	–	–	–	–	–	–	–	–	**ZPT□□□-B4**
	HQ	19.5	19.5	19.5	19.5	–	–	–	–	–	–	–	–	–	–	–	–	20.5	20.5	–	–	–	–	–	–	–	–	
	HP	36.5	36.5	36.5	36.5	–	–	–	–	–	–	–	–	–	–	–	–	37.5	37.5	–	–	–	–	–	–	–	–	
ZC(D)UKC16 ZC(D)UKQ16	Ø DQ	2.6	4.8	7	9	12	15	18	–	–	–	–	–	12	18	–	–	7	9	12	15	18	–	–	–	–	–	**ZPT□□□-B5**
	HQ	19.5	19.5	19.5	19.5	21	21	21.5	–	–	–	–	–	24	25	–	–	20.5	20.5	25	27.5	29	–	–	–	–	–	
	HP	41.5	41.5	41.5	41.5	44	42	42.5	–	–	–	–	–	45	46	–	–	42.5	42.5	46	48.5	50	–	–	–	–	–	
ZC(D)UKC20 ZC(D)UKQ20	Ø DQ	–	–	–	–	12	15	18	23	28	35	–	–	12	18	28	–	–	–	12	15	18	22	27	34	–	–	**ZPT□□□-B6**
	HQ	–	–	–	–	21	21	21.5	23	23	23.5	–	–	24	25	29	–	–	–	25	27.5	29	32.5	33	38	–	–	
	HP	–	–	–	–	44	44	44.5	46	46	46.5	–	–	47	48	52	–	–	–	48	50.5	52	55.5	56	61	–	–	
ZC(D)UKC25 ZC(D)UKQ25	Ø DQ	–	–	–	–	–	–	–	23	28	35	43	53	–	–	28	43	–	–	–	–	–	22	27	34	43	53	**ZPT□□□-B8**
	HQ	–	–	–	–	–	–	–	29	29	29.5	32	33	–	–	35	42.5	–	–	–	–	–	38.5	39	44	47.5	51.5	
	HP	–	–	–	–	–	–	–	54	54	54.5	57	58	–	–	60	67.5	–	–	–	–	–	63.5	64	69	72.5	76.5	
ZC(D)UKC32 ZC(D)UKQ32	Ø DQ	–	–	–	–	–	–	–	23	28	35	43	53	–	–	28	43	–	–	–	–	–	22	27	34	43	53	**ZPT□□□-B10**
	HQ	–	–	–	–	–	–	–	32	32	32.5	35	36	–	–	38	45.5	–	–	–	–	–	41.5	42	47	50.5	54.5	
	HP	–	–	–	–	–	–	–	64	64	64.5	67	68	–	–	70	77.5	–	–	–	–	–	73.5	74	79	82.5	86.5	

Rod end shape: Pad Direct mounting

Tube bore: Ø 10



Tube bore: Ø 16 to Ø 50

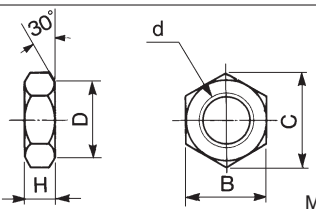


Model	Dia. [mm]	Flat/Flat with ribs												Deep				Bellows										Applicable pad model
		2	4	6	8	10	13	16	20	25	32	40	50	10	16	25	40	6	8	10	13	16	20	25	32	40	50	
ZC(D)UKD10 ZC(D)UKR10	Ø DQ	2.6	4.8	7	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**ZP□U□-X11**[Note]
	HQ	10	10	10	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	HP	26	26	26	26	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
ZC(D)UKD16 ZC(D)UKR16	Ø DQ	2.6	4.8	7	9	–	–	–	–	–	–	–	–	–	–	–	–	7	9	–	–	–	–	–	–	–	–	**ZP□□□**
	HQ	12	12	12	12	–	–	–	–	–	–	–	–	–	–	–	–	13	13	–	–	–	–	–	–	–	–	
	HP	31	31	31	31	–	–	–	–	–	–	–	–	–	–	–	–	32	32	–	–	–	–	–	–	–	–	
ZC(D)UKD20 ZC(D)UKR20	Ø DQ	–	–	–	–	12	15	18	–	–	–	–	–	12	18	–	–	–	–	12	15	18	–	–	–	–	–	**ZP□□□**
	HQ	–	–	–	–	12	12	12.5	–	–	–	–	–	15	16	–	–	–	–	16	18.5	20	–	–	–	–	–	
	HP	–	–	–	–	33	33	33.5	–	–	–	–	–	36	37	–	–	–	–	37	39.5	41	–	–	–	–	–	
ZC(D)UKD25 ZC(D)UKR25	Ø DQ	–	–	–	–	–	–	–	23	28	35	–	–	–	–	28	–	–	–	–	–	–	22	27	34	–	–	**ZP□□□**
	HQ	–	–	–	–	–	–	–	14	14	14.5	–	–	–	–	20	–	–	–	–	–	–	23.5	24	29	–	–	
	HP	–	–	–	–	–	–	–	38	38	38.5	–	–	–	–	44	–	–	–	–	–	–	47.5	48	53	–	–	
ZC(D)UKD32 ZC(D)UKR32	Ø DQ	–	–	–	–	–	–	–	–	–	–	43	53	–	–	–	43	–	–	–	–	–	–	–	–	43	53	**ZP□□□**
	HQ	–	–	–	–	–	–	–	–	–	–	18.5	19.5	–	–	–	29	–	–	–	–	–	–	–	–	34	38	
	HP	–	–	–	–	–	–	–	–	–	–	50	51	–	–	–	60.5	–	–	–	–	–	–	–	–	65.5	69.5	

Note) ZP□U□-X11: Flat style only.

Accessary Dimensions (Attached only to a rod end male thread type.)

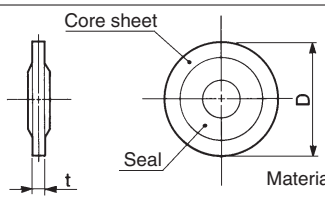
Rod end nut



Material: Carbon steel

Parts No.	Applicable cylinder bore [mm]	d	H	B	C	D
NTP-010	10	M4	2.4	7	8.1	6.8
NTJ-015A	16	M5	4	8	9.2	7.8
NT-015A	20	M6	5	10	11.5	9.8
NT-02	25	M8	5	13	15.0	12.5
NT-03	32	M10 X 1.25	6	17	19.6	16.5

Seal washer



Material: Core sheet — Rolled steel
Seal — NBR

Parts No.	Applicable cylinder bore [mm]	t	D
WCS4 X 0.7	10	1.2	11.5
WCS5 X 0.8	16	1.2	12.5
WCS6 X 1	20	1.2	14.0
WCS8 X 1	25	1.6	15.5
WCS10 X 1	32	1.6	18.0