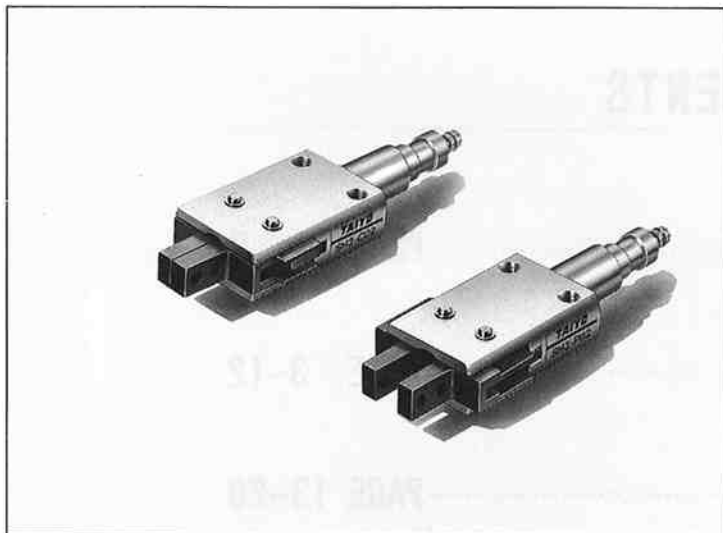


# SH3-※02 SILKY CHUCK (PARALLEL TYPE)

PATENTED



High Accuracy Parallel Chuck  
with Stabilized Gripping Capacity  
Even for Differential Objects.

- Parallel motion is ideal for stabilized gripping even in case of differential objects.
- Mounting is simple with shank and hole(2 taps for body) attached for mounting.

## SPECIFICATIONS

Structure	Single acting type	
	Normal close type	Normal open type
Code	SH3-C02	SH3-P02
Open, close stroke(mm)	4	
* Actual gripping capacity	0.2kgf	0.3kgf
Working fluid	Air	
Lubrication	Unnecessary	
Operating pressure range	3.5~5kgf/cm <sup>2</sup> (0.343~0.490MPa)	
Proof test pressure	7kgf/cm <sup>2</sup> (0.686MPa)	
Max. operating frequency	50C. P. M.	
Temperature range	-10~+60°C (Do not use when frozen.)	
Tolerance for thread	ISO 4795/1 6g	
Repeatability	±0.1mm (Initial value at tip of finger)	
Lubricant	JIS K 2213-2 (Additive turbine oil ISO VG32) or equivalent	
Max. transfer weight	50gf (Includes attachment weight.)	
Weight	20gf	

Note : \* Actual gripping capacity is the value at tip of finger with supply pressure of 5kgf/cm<sup>2</sup>.

CODE For order, specify the following code.

SH3-C 02

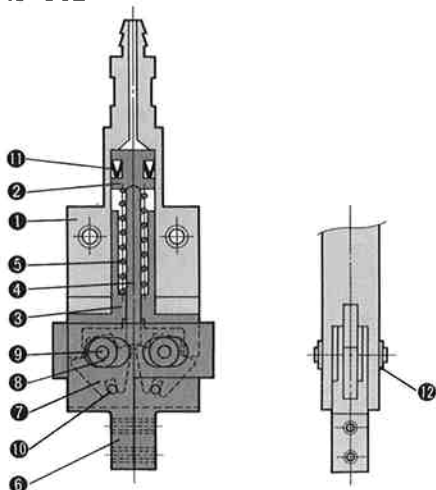
Actual gripping capacity

Series

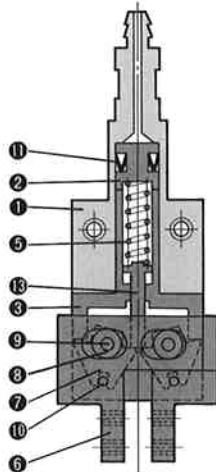
Structure	
C	Normal close type
P	Normal open type

## SECTIONAL DRAWINGS

SH3-C02



SH3-P02



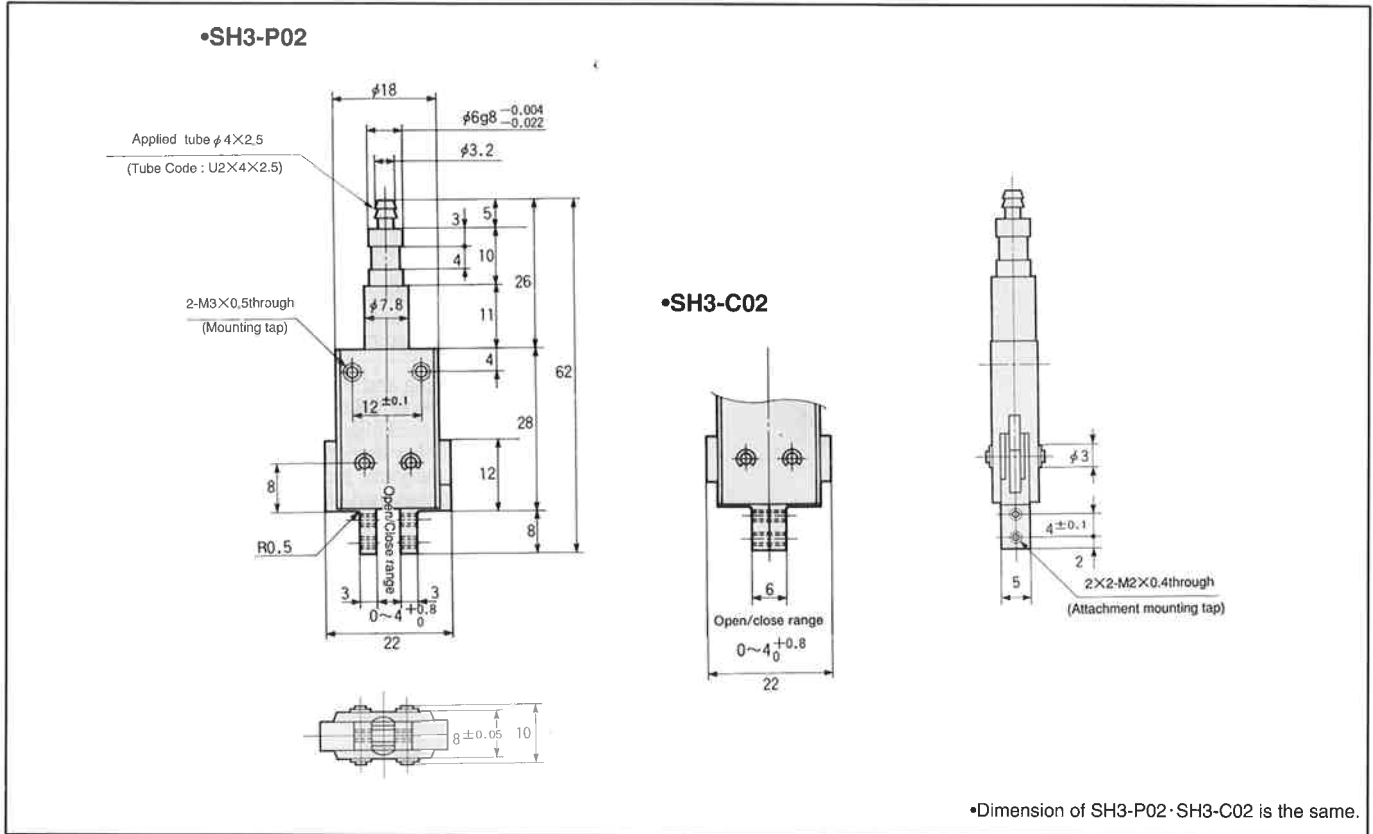
## PARTS LIST

No.	Name	Material	Q'ty
①	Body	Aluminum alloy	1
②	Piston S	Carbon steel	1
③	Piston L	Aluminum alloy	1
④	Needle pin	Carbon tool steel	1
⑤	Spring	Stainless steel	1
⑥	Finger	Carbon steel	2
⑦	Action lever	Carbon steel	2
⑧	Slider	Carbon steel	2
⑨	Pin	Carbon tool steel	2
⑩	Needle	Bearing steel	2
⑪	Piston seal	Nitrile rubber(MY-3)	1
⑫	E type set ring	Stainless steel	4
⑬	Plunger	Carbon tool steel	1

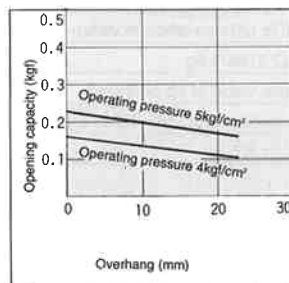
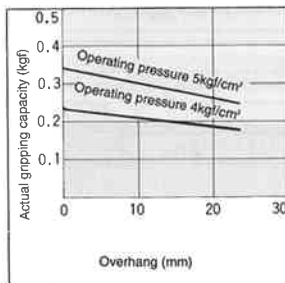
# SILKY CHUCK (PARALLEL TYPE) SH3-※02

## DIMENSIONAL DRAWINGS

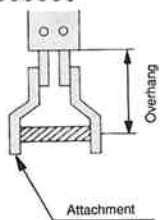
Unit : mm



## ACTUAL GRIPPING · OPENING CAPACITY



Weight for holding and conveyance with the actual gripper is about 10% of the actual gripping, opening capacity. Cautions shall be taken that the conveyance load becomes smaller according to the material and shape of work fingers and the conveyance condition of work.



For mounting at device, utilize the tap hole of body or shank at rear.

•When the tap hole of body is utilized, cautions shall be taken that bracket will not touch pin as shown in figure. (Fig. 1)

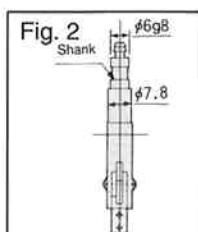
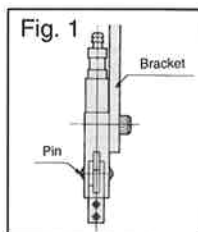
•When shank is used for mounting, it shall be fixed at part of  $\phi 6g8$ . (Fig. 2)

Note : Fixing at part of  $\phi 7.8$  shall not be conducted.

It may cause the working inferiority.

•The mounting direction shall be set perpendicularly downward.

•For conveyance, shock shall not be caused at Silky Chuck body as much as possible.

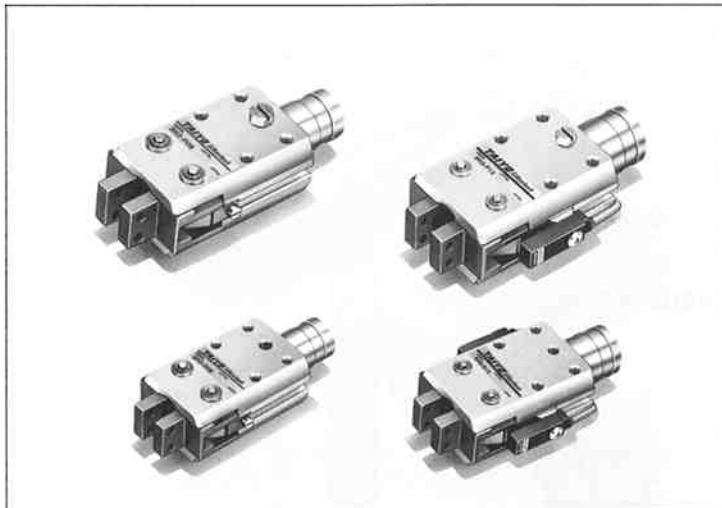


1. The repeatability shall be stabilized with accurate working by setting chuck to grip softly and slowly as much as possible.

2. Attachment to be mounted at finger shall be made lightly and shortened as much as possible. If attachment is longer and larger, the shock for opening, closing becomes large, thereby causing the working inferiority, abrasion and damage.

# SH3 SILKY CHUCK (PARALLEL TYPE)

PATENTED



## High Accuracy Parallel Chuck with Stabilized Gripping Capacity Even for Differential Objects

- By improving finger from the single type to the double type, the flow to the lateral load direction has been remarkably decreased, and the repeatability positional accuracy and durability have also been improved.
- Mounting is simple with shank and hole (4 taps at body) attached for mounting.
- For the parallel motion of fingers, the piston movement has been converted with the special action lever supported by bearing. The high speed response is excellent as there is no twisting phenomenon.
- Switch is adjustable and detectable at the optional position. Two switches can be mounted on the body of Silky Chuck.
- High frequency oscillation type switch (no contact type) with excellent oil-proof, vibration-proof, shock-proof is adopted. As compared with magnetic proximity switch, it features little effect on external magnetic field and temperature.

## BODY SPECIFICATIONS

Type	Fundamental type • Switch set								
Structure	Double acting type				Single acting type (Normal open)				
Code	SH3-D06 (-※)	SH3-D08 (-※)	SH3-D12 (-※)	SH3-D20 (-※)	SH3-P04 (-※)	SH3-P06 (-※)	SH3-P08 (-※)	SH3-P12 (-※)	SH3-P20 (-※)
Open, close stroke (mm)	5	6	8	10	4	5	6	8	10
*Actual gripping capacity (kgf)	2.6	3.1	5.3	8.7	2.0	2.5	3.1	5.2	8.4
Working fluid	Air								
Lubrication	Unnecessary (But possible)								
Port size	M5×0.8								
Operating pressure range	2～5kgf/cm² (0.196～0.490MPa)				2.5～5kgf/cm² (0.245～0.490MPa)				
Proof test pressure	7kgf/cm² (0.686MPa)								
Max. operating frequency	40 C.P.M.								
Temperature range	－10～＋60℃ (Do not use when frozen.)								
Tolerance for thred	ISO 4795/1 6g								
Repeatability	±0.05mm (Initial value at tip of finger)								
Lubricant	JIS K2213-2 (Additive turbine oil ISO VG 32) or equivalent								
Weight (gf)	97	140	237	428	62	89	126	211	383

Note : \* Value at tip of finger with supply pressure of 5kgf/cm<sup>2</sup>.

•With actual gripping, the weight available for holding and conveyance is about 10% of the actual gripping capacity.

•Switch set is available only by mounting switch on the fundamental type.

## SWITCH SPECIFICATIONS

Code	CS101-A (With cord 1.5m)
Detection method	High frequency oscillation type
Power supply voltage	DC12~24±10% (Ripple P-P 10% and less)
Operating pressure • current	DC24V MAX. 100mA
Current consumption	DC24V MAX. 15mA
Voltage drop	DC24V MAX. 1V
Insulation resistance	DC500V Mega MIN. 50MΩ (Case~Cable)
Voltage-proof	AC1000V No trouble for 1 min. (Case~Cable)
Shock-proof	50G
Vibration-proof	Double vibration width 1.5mm 10~55Hz 2 hours
Temperature	-10~+60°C
Wiring method	0.12mm <sup>2</sup> 3 cores Outer dia. φ 2.9 Cabtyre cord
Protective structure	IP67 (Japan Electrical Manufacturers' Association grade) or equivalent
Indicating lamp	LED (Lights with switch ON)
Electric circuit	
Applied load	Miniature relay • Small relay • Sequencer
Weight (gf)	23

## DIFFERENCE OF SH3, SH2 (OLD TYPE)

	SH3	SH2
Finger Mounting style	 Double holding type	 Single holding type
Switch	•Adjustable type •2 pieces mountable	•Fixed type •1 piece mountable

# SILKY CHUCK (PARALLEL TYPE)

# SH3

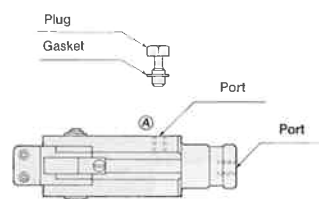
## CODE

For order, specify the following code.

<b>SH3 - D</b>		<b>06 - S</b>	
Series		Switch code	
		No entry	No switch
		S	With 1 switch
		D	With 2 switches
		Actual gripping capacity (Supply pressure 5kgf/cm <sup>2</sup> )	
		Double acting	Single acting
		04	2.0kgf
		06	2.6kgf
		08	3.1kgf
		12	5.3kgf
		20	8.7kgf
Structure			
D Double acting type			
P Single acting (Normal open)			

## DELIVERY FORM

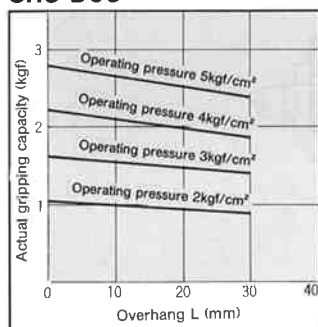
- For switch set, deliver with switch not mounted on body.
- For single acting type, deliver with port plug mounted at (A) position.



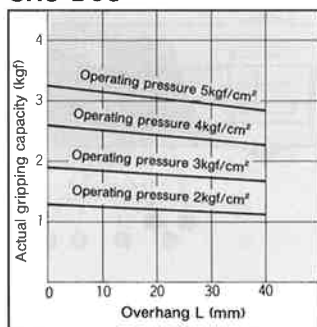
## ACTUAL GRIPPING CAPACITY

### DOUBLE ACTING TYPE

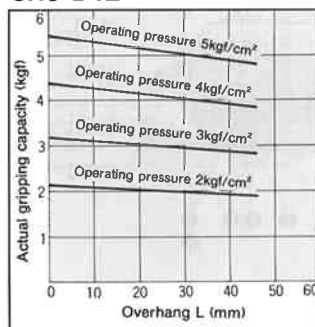
SH3-D06



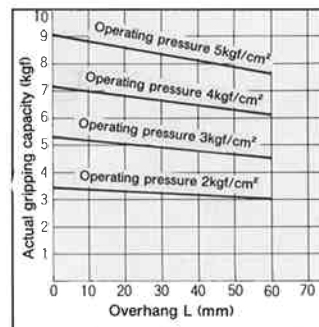
SH3-D08



SH3-D12

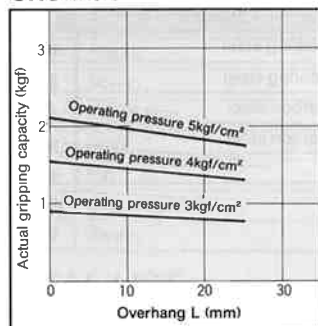


SH3-D20

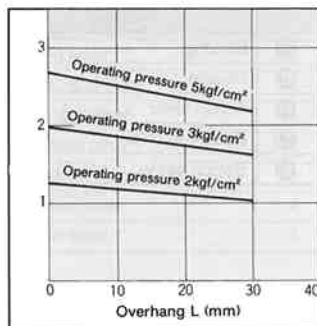


### SINGLE ACTING TYPE

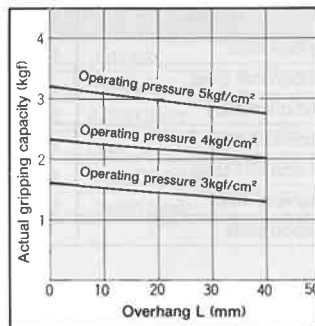
SH3-P04



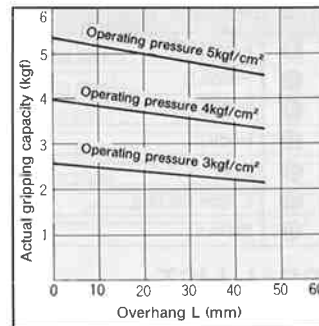
SH3-P06



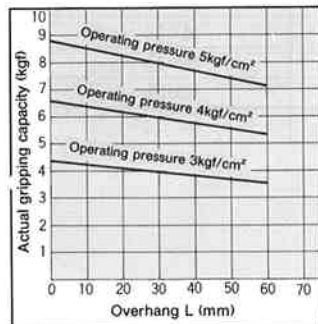
SH3-P08



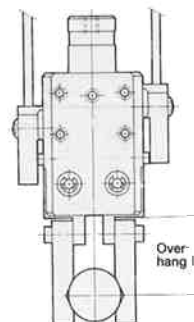
SH3-P12



SH3-P20



- The actual opening capacity of double acting type is about 40% of the actual gripping capacity.
  - Weight available for holding and conveyance with actual gripper is about 10% of the actual gripping, opening capacity.
- Cautions shall be taken that the conveyance load may become smaller according to the material and shape of work finger and the work conveyance condition.



## MAX. OVERHANG

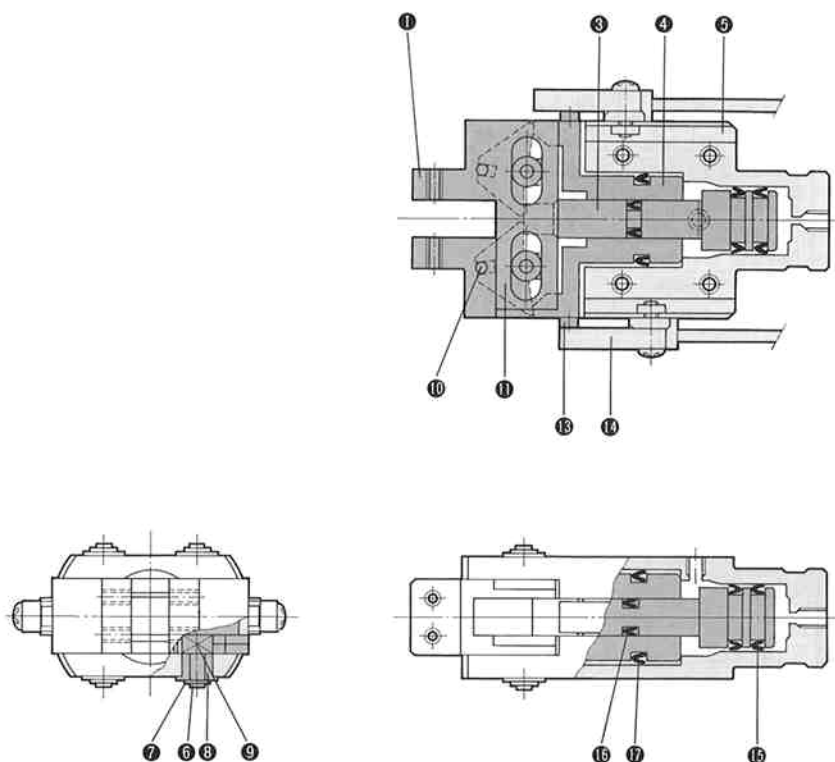
Unit: mm

SH3-P 04	25
SH3-※06	30
SH3-※08	40
SH3-※12	50
SH3-※20	60

Overhang shall be used in the range of the above table.

# SH3 SILKY CHUCK (PARALLEL TYPE)

## SECTIONAL DRAWINGS/DOUBLE ACTING TYPE SH3-D※(-※)



The above drawings show the switch set.

PATENTED.

### PARTS LIST

No.	Name	Material	Q'ty
1	Finger	Carbon steel	2
3	Piston S	Carbon tool steel	1
4	Piston L	Aluminum alloy	1
5	Body	Aluminum alloy	1
6	Pin	Carbon tool steel	2
7	E type set ring	Stainless steel	4
8	Sleeve	Carbon steel	4

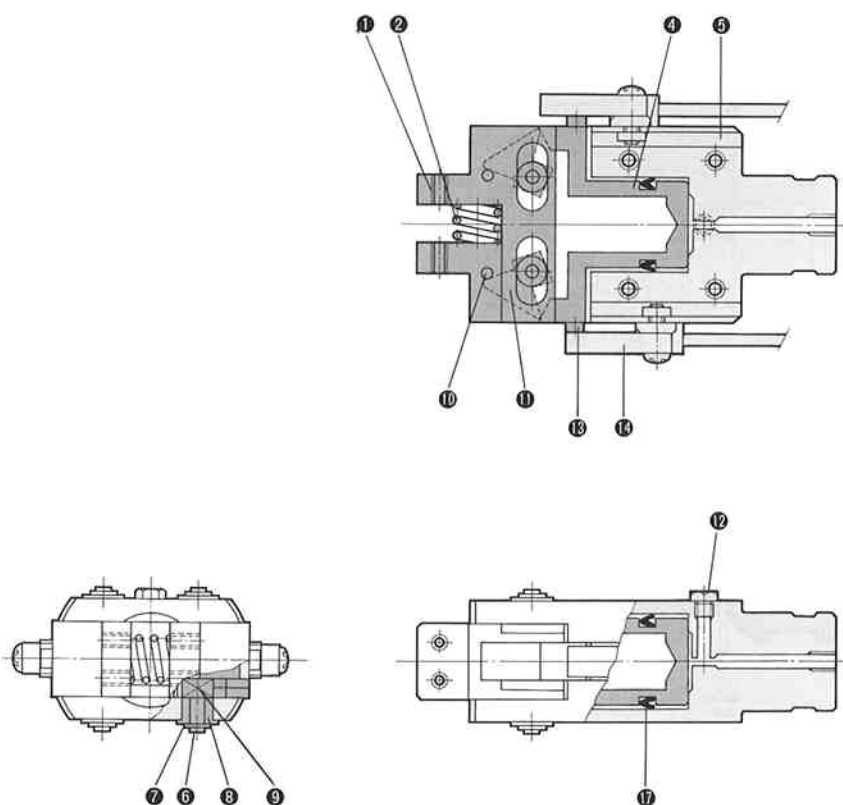
No.	Name	Material	Q'ty
9	Bearing	Bearing steel	4
10	Needle	Bearing steel	2
11	Action lever	Carbon steel	2
13	Detecting chip	Carbon steel	2
14	Switch ass'y		※

### SEAL LIST

Code	Name	15 Piston seal (Piston S)	16 Piston seal (Piston S)	17 Piston seal (Piston L)
	Q'ty	2	1	1
SH3-D06(-※)		MY-6	MY-3	MY-10A
SH3-D08(-※)		MY-7	MY-3	MY-12
SH3-D12(-※)		MY-10A	MY-5	MY-16
SH3-D20(-※)		MY-12	MY-5	MY-21

# SILKY CHUCK (PARALLEL TYPE) SH3

## SECTIONAL DRAWINGS/SINGLE ACTING TYPE SH3-P※(-※)



The above drawings show the switch set.

PATENTED.

## PARTS LIST

No.	Name	Material	Q'ty
①	Finger	Carbon steel	2
②	Spring	Carbon tool steel	1
④	Piston L	Aluminum alloy	1
⑤	Body	Aluminum alloy	1
⑥	Pin	Carbon tool steel	2
⑦	E type set ring	Stainless steel	4
⑧	Sleeve	Carbon steel	4

No.	Name	Material	Q'ty
⑨	Bearing	Bearing steel	4
⑩	Needle	Bearing steel	2
⑪	Action lever	Carbon steel	2
⑫	Plug	Brass	1
⑬	Detecting chip	Carbon steel	2
⑭	Switch ass'y	—	※

## SEAL LIST

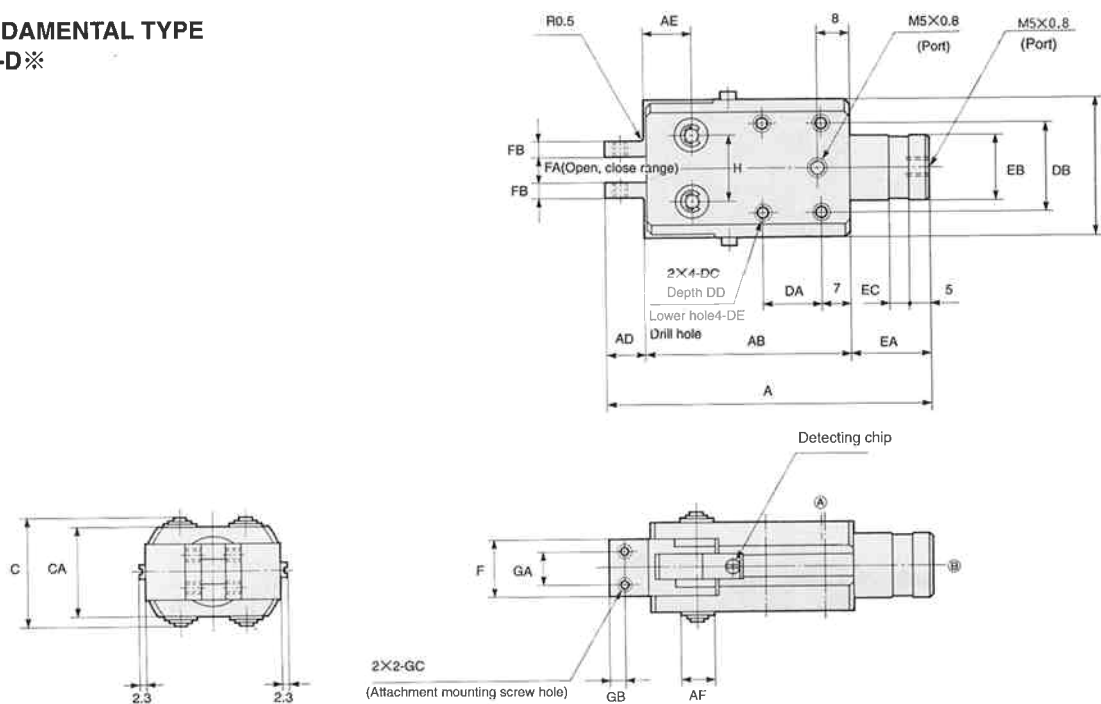
Name	⑬ Piston seal (Piston L)
Code	Q'ty
SH3-P04(-※)	MY-9
SH3-P06(-※)	MY-10A
SH3-P08(-※)	MY-12
SH3-P12(-※)	MY-16
SH3-P20(-※)	MY-21

# SH3 SILKY CHUCK (PARALLEL TYPE)

## DIMENSIONAL DRAWINGS/DOUBLE ACTING TYPE

Unit : mm

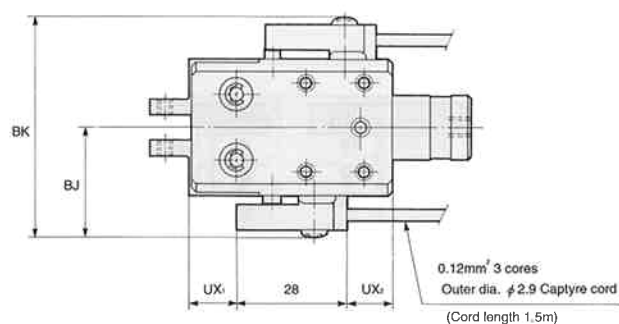
### •FUNDAMENTAL TYPE SH3-D※



•For the double acting type, gripper is closed by the air supply from (A) port, and is opened by the air supply from (B) port.

### •SWITCH SET SH3-D※ - D

S: With 1 switch  
D: With 2 switches



•Refer to the fundamental type for the other dimension.

## DIMENSIONAL TABLE

Code	Symbol	A	AB	AD	AE	AF	B	BK	BJ	C	CA	DA	DB	DC	DD
SH3-D06(-※)		78	48	10	10	φ 8	30	51	25.5	24	19±0.05	14	20	M4×0.7	6
SH3-D08(-※)		82	52	10	12	φ 8	34	55	27.5	27	22±0.05	15	22	M4×0.7	6
SH3-D12(-※)		94	61	10	14	φ 8	42	63	31.5	31	26±0.05	19	28	M5×0.8	8
SH3-D20(-※)		111	72	14	16.5	φ 11	52	73	36.5	38	32±0.05	23	34	M5×0.8	10

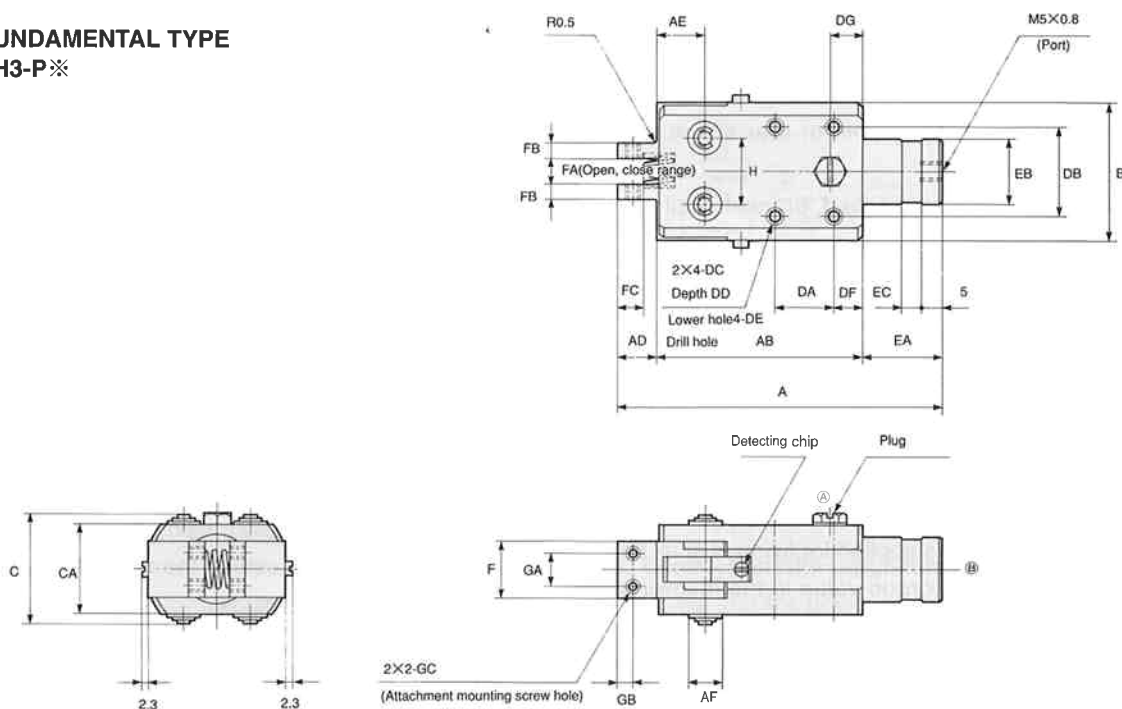
Code	Symbol	DE	EA	EB	EC	F	FA(Open,close range)	FB	GA	GB	GC	H	UX <sub>1</sub>	UX <sub>2</sub>
SH3-D06(-※)		φ 3.3	20	φ 14g7	5	12	0~5	4	6	4	M3×0.5	12.2	9~17	3~11
SH3-D08(-※)		φ 3.3	20	φ 16g7	5	14	0~6	5	8	4	M3×0.5	16.2	11~20	4~13
SH3-D12(-※)		φ 4.2	23	φ 22g7	6	16	0~8	6	8	4	M3×0.5	20.2	14~24	9~19
SH3-D20(-※)		φ 4.2	25	φ 26g7	6	20	0~10	8	10	6	M4×0.7	25.2	19~30	14~25

# SILKY CHUCK (PARALLEL TYPE) SH3

## DIMENSIONAL DRAWINGS/SINGLE ACTING TYPE

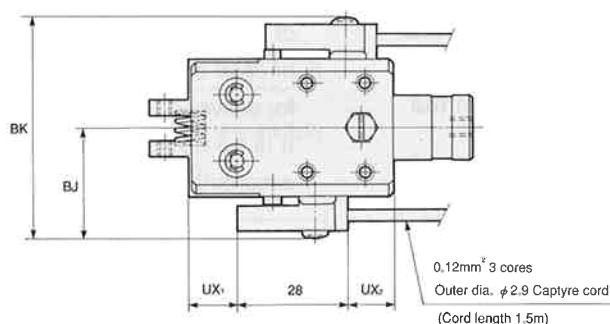
Unit : mm

### •FUNDAMENTAL TYPE SH3-P※



### •SWITCH SET SH3-P※ - D

S: With 1 switch  
D: With 2 switches



•Refer to the fundamental type for the other dimension.

## DIMENSIONAL TABLE

Code	Symbol	A	AB	AD	AE	AF	B	BK	BJ	C	CA	DA	DB	DC	DD	DE	DF
SH3-P04(-※)		65	43	7	8.5	φ 7	27	48	24	21.5	17±0.05	12	18	M4×0.7	6	φ 3.3	5
SH3-P06(-※)		78	48	10	10	φ 8	30	51	25.5	24	19±0.05	14	20	M4×0.7	6	φ 3.3	7
SH3-P08(-※)		82	52	10	12	φ 8	34	55	27.5	27	22±0.05	15	22	M4×0.7	6	φ 3.3	7
SH3-P12(-※)		94	61	10	14	φ 8	42	63	31.5	31	26±0.05	19	28	M5×0.8	8	φ 4.2	7
SH3-P20(-※)		111	72	14	16.5	φ 11	52	73	36.5	38	32±0.05	23	34	M5×0.8	10	φ 4.2	7

Code	Symbol	DG	EA	EB	EC	F	FA(Open,close range)	FB	FC	GA	GB	GC	H	UX <sub>1</sub>	UX <sub>2</sub>
SH3-P04(-※)		5	15	φ 12g7	5	11	0~5	4	3.5	6	2.5	M3×0.5	11.2	6~14	1~9
SH3-P06(-※)		8	20	φ 14g7	5	12	0~5	4	5.5	6	4	M3×0.5	12.2	9~17	3~11
SH3-P08(-※)		8	20	φ 16g7	5	14	0~6	5	7	8	4	M3×0.5	16.2	11~20	4~13
SH3-P12(-※)		8	23	φ 22g7	6	16	0~8	6	7	8	4	M3×0.5	20.2	14~24	9~19
SH3-P20(-※)		8	25	φ 26g7	6	20	0~10	8	8	10	6	M4×0.7	25.2	19~30	14~25