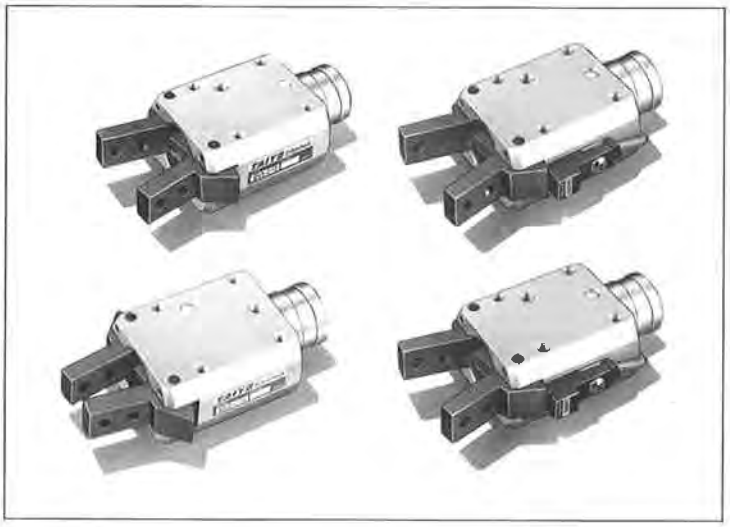
SV2 SILKY CHUCK (ANGULAR TYPE)



Angular Chuck of Small, Lightweight, Excellent Durability

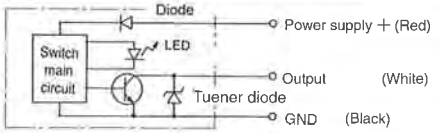
- Two types of single acting type (Normal open, Normal close) and double acting type have been set in series according to the output and applications.
- Small, lightweight and cheap.
- The durability has been improved for slipping by adopting a thrust washer with abrasion-proof surface treated, low friction and low abrasion.
- For angular pin, the abrasion-proof has been improved with the adoption of hardened steel.
- For mounting body, there are 3 styles (lower shank, lower mounting screw and side mounting screw). Especially, the lower mounting screw is conformed to the rod end screw dia. (KK dimension) of Our Company's pneumatic cylinder (10S-1G, 10Z-1G, 10Z-2G, 10A-5G).
- Switch set is available with switch mounted only on Silky Chuck body. As switch is the fixed type, there is no need for detailed adjustment.
- High frequency oscillating switch (no contact type) of excellent oil-proof, vibration-proof, shock-proof has been adopted as switch. As compared with the magnetic proximity switch, the switch performance is little affected by the external magnetic field and temperature.

BODY SPECIFICATIONS

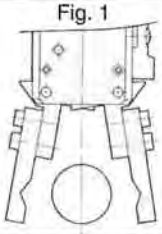
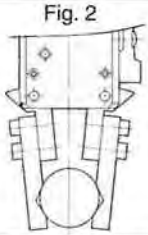
Type	Fundamental type • Switch set											
Structure	Double acting type				Single acting type (Normal open)				Single acting type (Normal close)			
Code	SV2-D02 (-S)	SV2-D06 (-S)	SV2-D12 (-S)	SV2-D20 (-S)	SV2-P02 (-S)	SV2-P06 (-S)	SV2-P12 (-S)	SV2-P20 (-S)	SV2-C02 (-S)	SV2-C06 (-S)	SV2-C12 (-S)	SV2-C20 (-S)
*Theoretical gripping capacity (kgf)	1.9	4.9	9.4	19.5	1.5	4.2	8.4	18.3	—	—	—	—
*Theoretical opening capacity (kgf)	2.5	6.5	12.6	23.3	—	—	—	—	2.0	5.7	11.6	22.0
Working fluid	Air											
Lubrication	Unnecessary (But possible)											
Port size	M5×0.8											
Operating pressure range	1~6kgf/cm² (0.098~0.588MPa)				2~6kgf/cm² (0.196~0.588MPa)							
Proof test pressure	9kgf/cm² (0.883MPa)											
Max. operating frequency	40 C.P.M.											
Temperature range	−10~+60℃ (Do not use when frozen.)											
Tolerance for thread	ISO 4795/1 6g											
Lubricant	JIS K2213-2 (Additive turbine oil ISO VG 32) or equivalent											
Weight (gf)	70 (95)	130 (155)	230 (255)	380 (405)	70 (95)	130 (155)	230 (255)	380 (405)	70 (95)	130 (155)	230 (255)	380 (405)

Note : *Theoretical gripping, opening capacity is the value at the supply pressure of 5kgf/cm², overhang of 10mm.
•Weight available for holding, conveyance with actual gripper is about 10%of the theoretical gripping, opening capacity.
•Switch set is available with switch mounted only on the fundamental type.
•Figures in parenthesis are the weight of switch set.

SWITCH SPECIFICATIONS (WITH NO CONTACT)

Code	CS201 (With cord 1.5m)
Detection method	High frequency oscillating type
Power supply voltage	DC12~24±10% (Ripple P-P 10% and less)
Voltage • 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℃
Wiring method	0.12mm²3 cores Outer dia. φ2.9 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

SWITCH SET

	Fig. 1	Fig. 2
Working diagrams		
Switch ON • OFF	ON	OFF
Remarks	Confirm that fingers are fully opened for preventing the damage of work by finger in motion to take work.	Confirm that fingers have actuated. But, B contact of relay is necessary as switch is the fixed type.

•Switch is detectable only when fingers are opened.
•As to the B contact application method, refer to the connection method of handling instructions.

CODE

For order, specify the following code.

SV2- D 06 -S

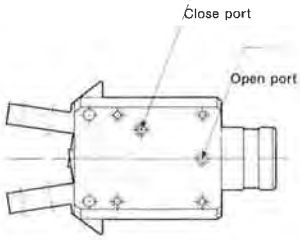
- SV2- D : Series
- 06 : Theoretical gripping, opening capacity (Supply pressure 5kgf/cm²·Overhang 10mm)
- -S : Switch symbol (Fill only for switch set)

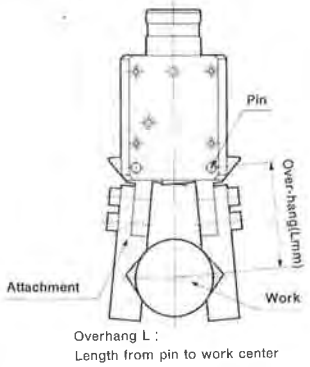
Structure	
D	Double actihg type
P	Single acting(Normal open)
C	Single acting(Normal close)

Code	Double acting type		Single acting type	
			Normal open	Normal close
	Theoretical gripping capacity	Theoretical opening capacity	Theoretical gripping capacity	Theoretical opening capacity
02	1.9	2.5	1.5	2.0
06	4.9	6.5	4.2	5.7
12	9.4	12.6	8.4	11.6
20	19.5	23.3	18.3	22.0

DELIVERY FORM

1. For switch set, deliver with switch not mounted on body.
2. For single acting type, filter is mounted at one port.
   Normal open type···Filter at open port
   Normal close type···Filter at close port



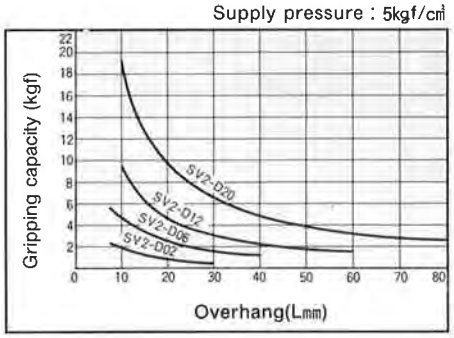


Overhang L :
Length from pin to work center

GRIPPER THEORETICAL GRIPPING, OPENING CAPACITY

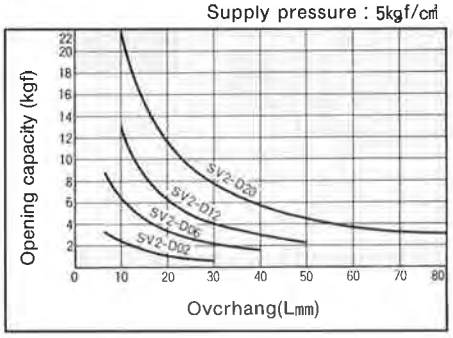
DOUBLE ACTING TYPE/SV2-D※(–S)
⟨GRIPPER THEORETICAL GRIPPING CAPACITY⟩

Supply pressure : 5kgf/cm²



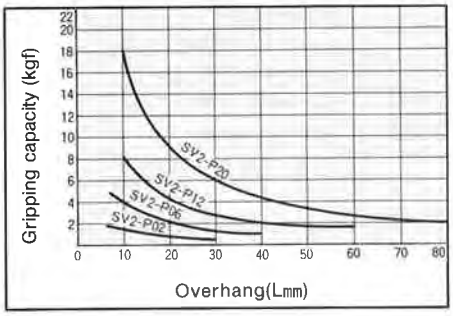
DOUBLE ACTING TYPE/SV2-D※(–S)
⟨GRIPPER THEORETICAL OPENING CAPACITY⟩

Supply pressure : 5kgf/cm²

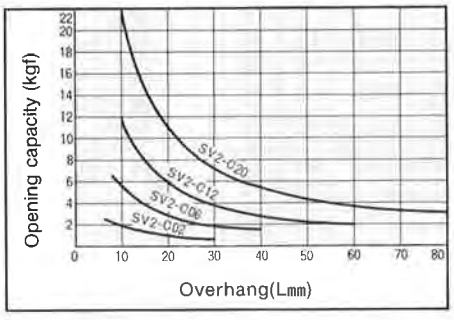


SINGLE ACTING TYPE/SV2-P※(–S)
⟨GRIPPER THEORETICAL GRIPPING CAPACITY⟩

Supply pressure : 5kgf/cm²



SINGLE ACTING TYPE/SV2-C※(–S)
⟨GRIPPER THEORETICAL OPENING CAPACITY⟩



PRECAUTIONS FOR SELECTION

- Weight available for holding, conveyance with actual chuck is about 10% of the theoretical gripping, opening capacity.
  Cautions shall be taken that the conveyance load becomes smaller according to the material and shape of work attachment.
- Cautions shall be taken that more surplus is needed when the large acceleration and shock are caused for work conveyance.

THEORETICAL GRIPPING CAPACITY

Unit : kgf

Code	Structure \ Supply pressure (kgf/cm²)	1	2	3	4	5	6
SV2-D02(-S)	Double acting type	0.4	0.8	1.1	1.5	1.9	2.3
SV2-P02(-S)	Single acting(Normal open)	—	0.3	0.7	1.1	1.5	1.8
SV2-D06(-S)	Double acting type	1.0	2.0	2.9	3.9	4.9	5.9
SV2-P06(-S)	Single acting(Normal open)	—	1.2	2.2	3.2	4.2	5.1
SV2-D12(-S)	Double acting type	1.9	3.8	5.7	7.5	9.4	11.3
SV2-P12(-S)	Single acting(Normal open)	—	2.8	4.6	6.5	8.4	10.3
SV2-D20(-S)	Double acting type	3.9	7.8	11.8	15.7	19.6	23.5
SV2-P20(-S)	Single acting(Normal open)	—	6.5	10.5	14.4	18.3	22.2

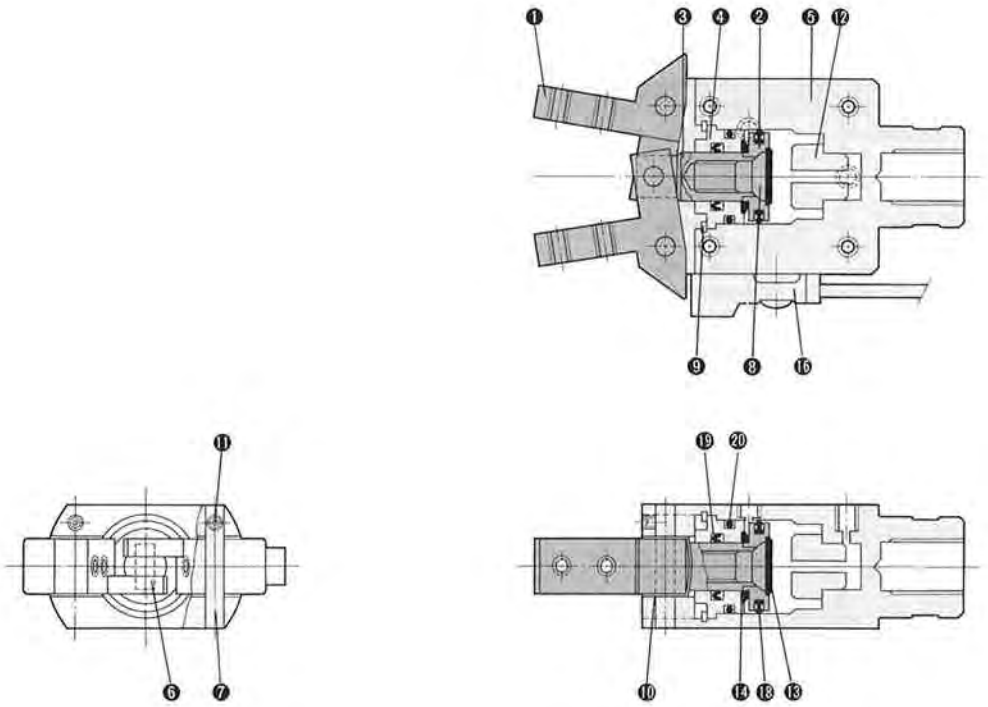
THEORETICAL OPENING CAPACITY

Unit : kgf

Code	Structure \ Supply pressure (kgf/cm²)	1	2	3	4	5	6
SV2-D02(-S)	Double acting type	0.5	1.0	1.5	2.0	2.5	3.1
SV2-C02(-S)	Single acting(Normal close)	—	0.5	1.0	1.5	2.0	2.5
SV2-D06(-S)	Double acting type	1.3	2.6	3.9	5.2	6.5	7.8
SV2-C06(-S)	Single acting(Normal close)	—	1.8	3.1	4.4	5.7	7.0
SV2-D12(-S)	Double acting type	2.5	5.0	7.5	10.1	12.6	15.1
SV2-C12(-S)	Single acting(Normal close)	—	4.0	6.6	9.1	11.6	14.1
SV2-D20(-S)	Double acting type	4.7	9.3	14.0	18.7	23.3	28.0
SV2-C20(-S)	Single acting(Normal close)	—	9.1	12.7	17.4	22.0	26.7

SV2 SILKY CHUCK (ANGULAR TYPE)

SECTIONAL DRAWINGS/DOUBLE ACTING TYPE SV2-D※(-S)



The above are the sectional drawings of SV2-D12/D20(-S).
As to SV2-D02/D06(-S), a part of structure differs.

PARTS LIST

No.	Name	Material	Q'ty
❶	Finger	Chrome Molybdenum steel	2
❷	Piston	Copper alloy	1
❸	Rod	Stainless steel(With hard chrome plated)	1
❹	Rod gland	Copper alloy	1
❺	Body	Aluminum alloy	1
❻	Pin A	High-carbon chrome bearing steel	1
❼	Pin B	High-carbon chrome bearing steel	2
❽	Piston set screw	Chrome Molybdenum steel	1

Note : For SV2-D02/D06(-S), there are no ❽ piston set screw, ⓬ spring guide, ⓭ cushion pad(cap side), ⓮ cushion pad(head side).

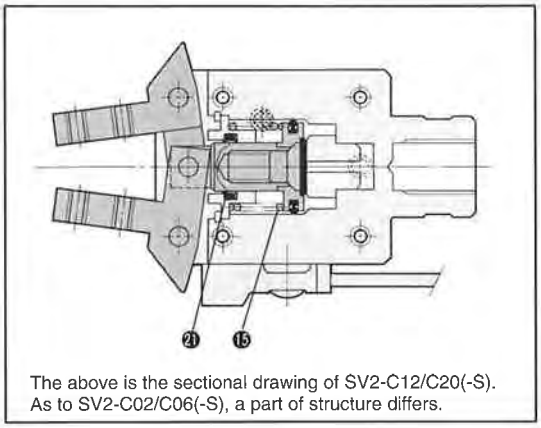
No.	Name	Material	Q'ty
❾	C type set ring	Carbon steel	1
❿	Thrust washer	Synthetic resin	2
⓫	Set screw	Chrome Molybdenum steel	2
⓬	Spring guide	Aluminum alloy	1
⓭	Cushion pad (Cap side)	Urethane rubber	1
⓮	Cushion pad (Head side)	Urethane rubber	1
⓰	Switch ass'y	———	1

SEAL LIST

Name / Material / Q'ty / Code	⓲ Piston seal	⓳ Rod seal	⓴ O ring for rod gland
Material	Nitrile rubber	Nitrile rubber	Nitrile rubber
Q'ty	1	1	1
SV2-D02(-S)	PSD-12	DYR-6	S-10
SV2-D06(-S)	PSD-16	MYN-8	S-14
SV2-D12(-S)	ZT-20	DYR-10	S-18
SV2-D20(-S)	ZT-25	DYR-10	S-22

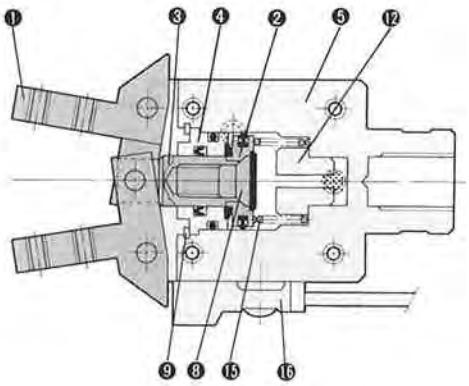
SECTIONAL DRAWINGS/SINGLE ACTING TYPE(NORMAL OPEN•NORMAL CLOSE) SV2-P※(-S) SV2-C※(-S)

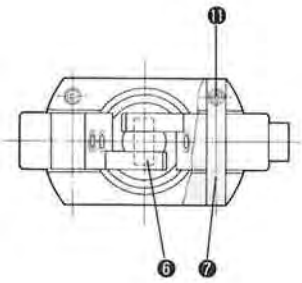
•NORMAL CLOSE TYPE
SV2-C※(-S)

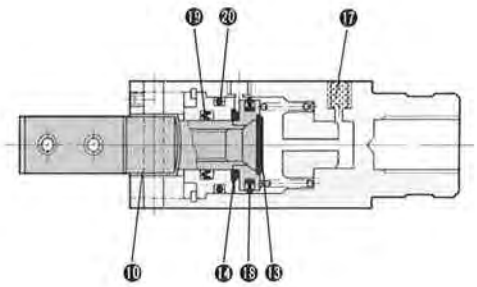


The above is the sectional drawing of SV2-C12/C20(-S).
As to SV2-C02/C06(-S), a part of structure differs.

•NORMAL OPEN TYPE
SV2-P※(-S)







The above are the sectional drawings of SV2-P12/P20(-S).
As to SV2-P02/P06(-S), a part of structure differs.

PARTS LIST

No.	Name	Material	Q'ty
❶	Finger	Chrome Molybdenum steel	2
❷	Piston	Copper alloy	1
❸	Rod	Stainless steel(With hard chrome plated)	1
❹	Rod gland	Copper alloy	1
❺	Body	Aluminum alloy	1
❻	Pin A	High-carbon chrome bearing steel	1
❼	Pin B	High-carbon chrome bearing steel	2
❽	Piston set screw	Chrome Molybdenum steel	1

No.	Name	Material	Q'ty
❾	C type set ring	Carbon steel	1
❿	Thrust washer	Synthetic resin	2
⓫	Set screw	Chrome Molybdenum steel	2
⓬	Spring guide	Aluminum alloy	1
⓭	Cushion pad (Cap side)	Urethane rubber	1
⓮	Cushion pad (Head side)	Urethane rubber	1
⓯	Spring	Piano wire	1
⓰	Switch ass'y	———	1
⓱	Filter	Resin	1

Note : For SV2-※02/06(-S), there are no ❽piston set screw, ⓬spring guide, ⓭cushion pad(cap side), ⓮ cushion pad(head side).

SEAL LIST

Code \ Name / Material / Q'ty	⓲ Piston seal Nitrile rubber 1	⓳ Rod seal Nitrile rubber 1	⓴ O ring for rod gland Nitrile rubber 1	㉑ Dust wiper Nitrile rubber 1
SV2-P02(-S)	PSD-12	DYR-6	S-10	———
SV2-C02(-S)		———	———	———
SV2-P06(-S)	PSD-16	MYN-8	S-14	———
SV2-C06(-S)		———	———	———
SV2-P12(-S)	ZT-20	DYR-10	S-18	———
SV2-C12(-S)		———	———	SER-10
SV2-P20(-S)	ZT-25	DYR-10	S-22	———
SV2-C20(-S)		———	———	SER-10

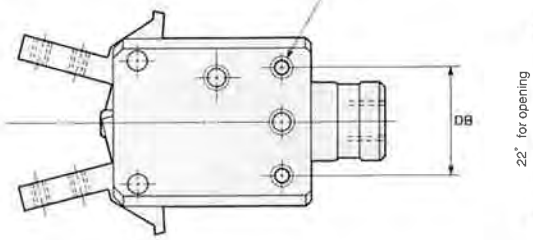
SV2 SILKY CHUCK (ANGULAR TYPE)

DIMENSIONAL DRAWINGS/DOUBLE ACTING TYPE

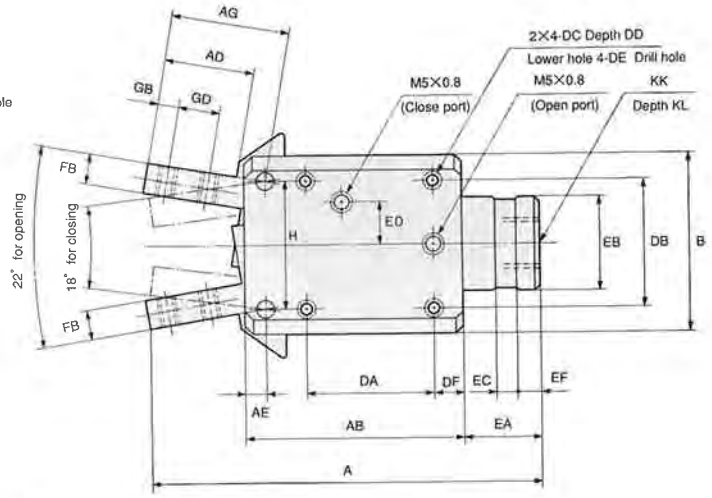
Unit : mm

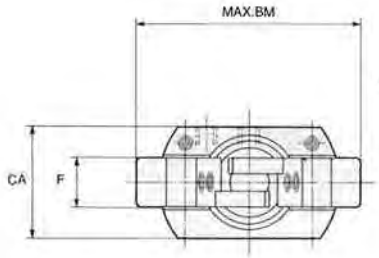
•FUNDAMENTAL TYPE

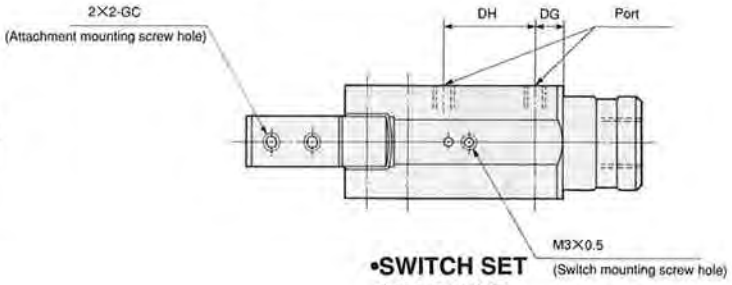
SV2-D02/D06



SV2-D12/D20

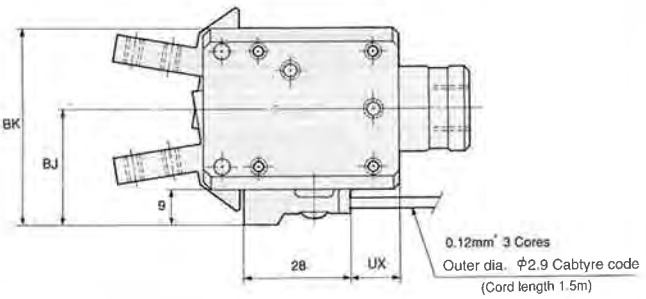






•SWITCH SET

SV2-D※(-S)



•Refer to fundamental type for other dimensions.

DIMENSIONAL TABLE

Code \ Symbol	A	AB	AD	AE	AG	B	BJ	BK	BM	CA	DA	DB	DC	DD	DE	DF	DG
SV2-D02(-S)	64	37	13.5	4.5	19.5	28	23	37	40	17	—	18	M4×0.7	6	φ3.3	6	6
SV2-D06(-S)	73	40	16	5	23	35	26.5	44	46	22	—	22	M4×0.7	6	φ3.3	6	6
SV2-D12(-S)	93	52	20.5	5	28	42	30	51	54	26	30	30	M4×0.7	6	φ3.3	7	7
SV2-D20(-S)	102	59	22.5	6	31	52	35	61	64	32	34	34	M5×0.8	8	φ4.2	7	7

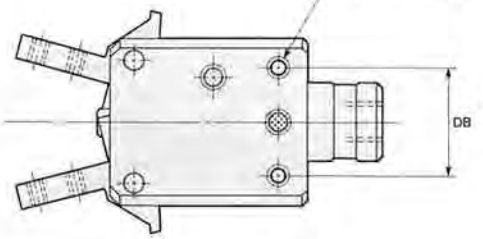
Code \ Symbol	DH	EA	EB	EC	ED	EF	F	FB	GB	GC	GD	H	KK	KL	UX
SV2-D02(-S)	12	12	φ14g7	4	8	4	7	5	4	M3×0.5	6	20	M8×1.25	10	0
SV2-D06(-S)	13	15	φ16g7	5	9	5	10	6	4	M3×0.5	8	25	M8×1.25	10	1
SV2-D12(-S)	21	18	φ22g7	6	10	5	12	7	5	M4×0.7	10	30	M12×1.25	15	13
SV2-D20(-S)	23	18	φ26g7	6	11	5	14	8	5	M5×0.8	10	38	M12×1.25	16	18.5

DIMENSIONAL DRAWINGS/SINGLE ACTING TYPE/(NORMAL OPEN•NORMAL CLOSE)

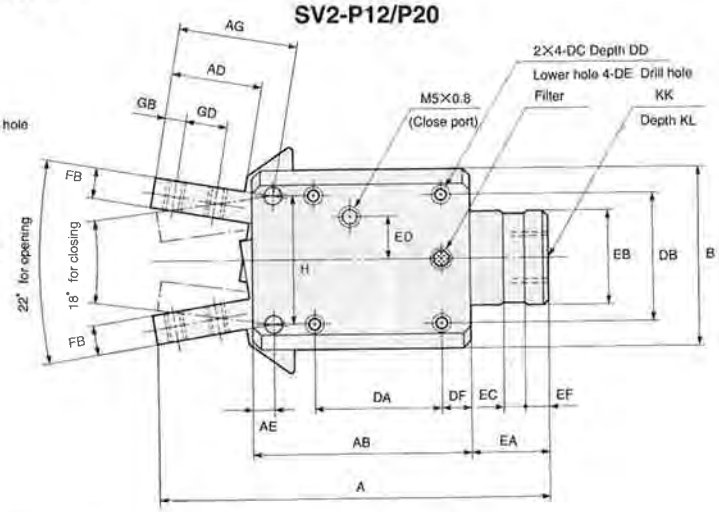
Unit : mm

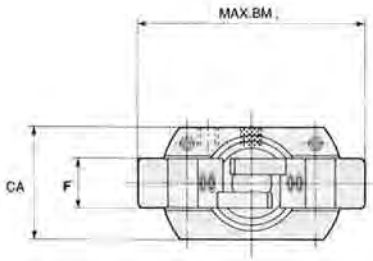
•FUNDAMENTAL TYPE NORMAL OPEN TYPE

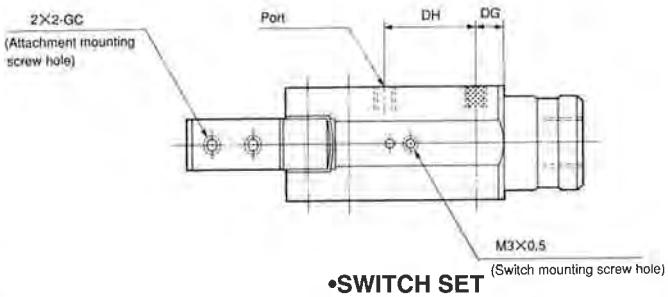
SV2-P02/P06



SV2-P12/P20

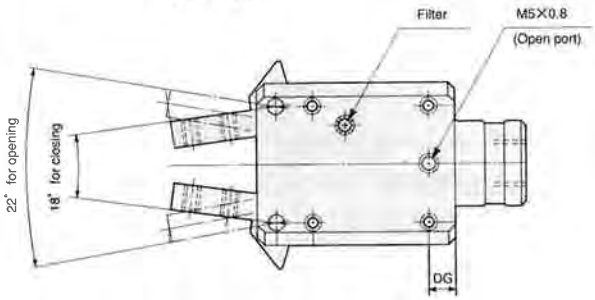






NORMAL CLOSE TYPE

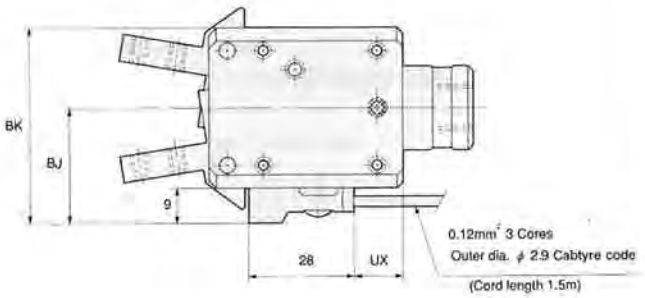
SV2-C※



•Refer to Normal open type for other dimensions.

•SWITCH SET

SV2-P C※(-S)



•Refer to fundamental type for other dimensions.

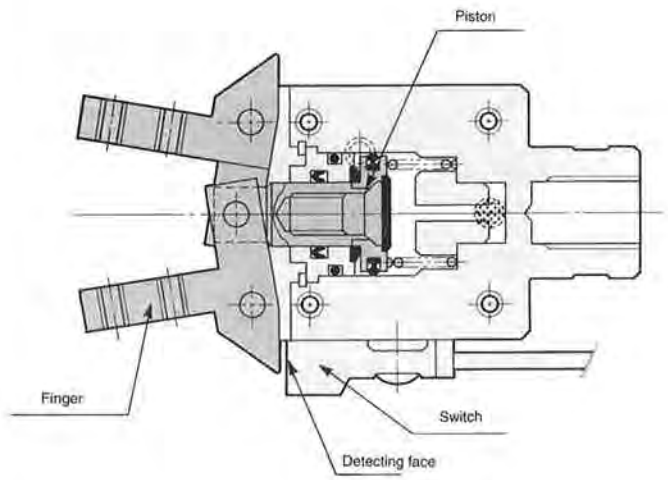
DIMENSIONAL TABLE

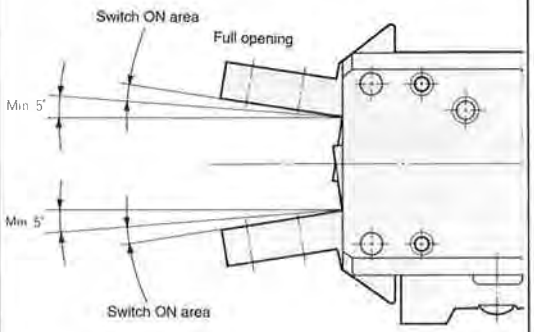
Code \ Symbol	A	AB	AD	AE	AG	B	BJ	BK	BM	CA	DA	DB	DC	DD	DE	DF	DG
SV2-P C02(-S)	64	37	13.5	4.5	19.5	28	23	37	40	17	—	18	M4X0.7	6	ϕ3.3	6	6
SV2-P C06(-S)	73	40	16	5	23	35	26.5	44	46	22	—	22	M4X0.7	6	ϕ3.3	6	6
SV2-P C12(-S)	93	52	20.5	5	28	42	30	51	54	26	30	30	M4X0.7	6	ϕ3.3	7	7
SV2-P C20(-S)	102	59	22.5	6	31	52	35	61	64	32	34	34	M5X0.8	8	ϕ4.2	7	7

Code \ Symbol	DH	EA	EB	EC	ED	EF	F	FB	GB	GC	GD	H	KK	KL	UX
SV2-P C02(-S)	12	12	ϕ14g7	4	8	4	7	5	4	M3X0.5	6	20	M8X1.25	10	0
SV2-P C06(-S)	13	15	ϕ16g7	5	9	5	10	6	4	M3X0.5	8	25	M8X1.25	10	1
SV2-P C12(-S)	21	18	ϕ22g7	6	10	5	12	7	5	M4X0.7	10	30	M12X1.25	15	13
SV2-P C20(-S)	23	18	ϕ26g7	6	11	5	14	8	5	M5X0.8	10	38	M12X1.25	16	18.5

SV2 SILKY CHUCK (ANGULAR TYPE)

WORKING DESCRIPTION OF SWITCH SET





WORKING DESCRIPTION

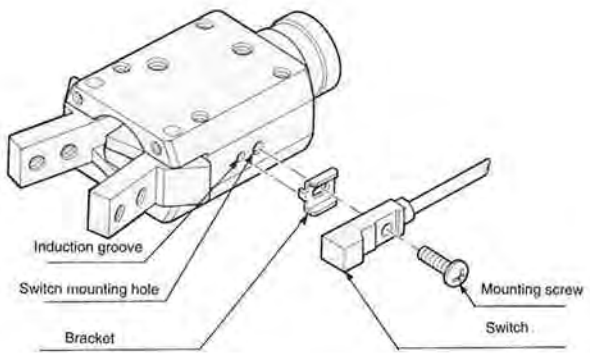
High frequency oscillating type switch is mounted on the Silky Chuck body. As the detecting face of finger comes close to the detecting face of switch, switch is actuated, and the opening of Silky Chuck finger is detected without contact from outside.

WORKING RANGE

Switch does not actuate unless the Silky Chuck finger in parallel condition is opened by over 5°.

HOW TO MOUNT SWITCH

Clamp torque of mounting screw shall be set at 4 ~ 6kgf cm.



Mounting screw is inserted in switch, bracket, and then is mounted at switch mounting hole while finger of bracket is set to enter the induction groove.