Product series

Series name		Acting type	Bore size	Collocation of sensor switch
				CS1–A DS1–A DS1–69AM DS1–69DM
MCKA 		Double acting	40 50 63 80	
	MCKB 			
Page	394			396 403

Installation and Application

1. In normal situation such as: edge packing, installation, jig test…and so on. Standard cylinder is suggested.
2. In case of high-magnetic field generated by welding in the vicinity, anti-magnetic welding clamp cylinder shall be used and corresponding anti-magnetic sensor switch shall be matched.
3. Before cylinder connecting, the dust must be eliminated to avoid it entering in the cylinder.
4. The medium used by cylinder shall be filtered to 40 μ m or below.
5. Under high temperature environment, the cylinder of high-temperature resistance shall be selected. Anti-freezing measure shall be adopted under low temperature environment to prevent the water freezing in cylinder.
6. If cylinder is not used for a long time, please advert the surface to get rusty. Inlet and outlet ports should be have anti–dust caps and also spread the oil to avoid getting rusty on piston rod.

Theoretical clamping force

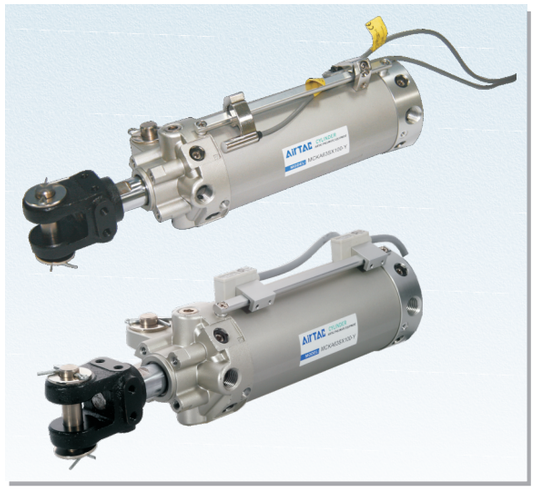
Unit：Newton (N)

Bore size	Rod size	Acting type		Operating pressure(MPa) 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
40	20	Double acting	Push side	125.6	251.2	376.8	502.4	628.0	753.6	879.2	1004.8
			Pull side	94.2	188.4	282.6	376.8	471.0	565.2	659.4	753.6
50	20	Double acting	Push side	196.3	392.6	588.9	785.2	981.5	1177.8	1374.1	1570.4
			Pull side	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1319.2
63	20	Double acting	Push side	311.7	623.4	935.1	1246.8	1558.5	1870.2	2181.9	2493.6
			Pull side	280.3	560.6	840.9	1121.2	1401.5	1681.8	1962.1	2242.4
80	25	Double acting	Push side	502.6	1005.2	1507.8	2010.4	2513.0	3015.6	3518.2	4020.8
			Pull side	453.6	907.2	1360.8	1814.4	2268.0	2721.6	3175.2	3628.8

MCK

Clamping cylinder

MCK Series



Specification

Bore size(mm)	40	50	63	80
Acting	Double acting type			
Fluid	Air			
Pressure range	0.05~1.0MPa(8~145psi)			
Proof pressure	1.5MPa(215psi)			
Temperature	-20~80 ℃			
Speed range	50~500mm/s			
Cushion type	variable cushion for covers			
Speed controlled valve	Standard setting for covers			
Lubrication	Not required			
Installatsion type	Double hinged-supports			
Port size ①	1/4"		3/8"	

① PT thread、NPT thread and G thread are available;

Stroke

Bore size(mm)	Standard stroke(mm)	Available stroke
40, 50, 63, 80	50 75 100 125 150	150

Remark) Consult us for non-standard stroke.

Example of model

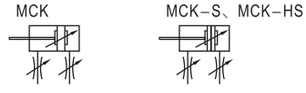
MCK A–50 × 75–S–Y–P

- **Model**: MCK: Clamping cylinder(Double acting) ①
- **Orifice model**: A: Orifice model A; B: Orifice model B
- **Bore size**: 40 50 63 80
- **Stroke**: Refer to Stroke table for detial
- **Thread type**: P: PT; T: NPT; G: G
- **Mounting type**: Blank: Without Y knuckle; Y: With Y knuckle
- **Magnet**: Blank: Without magnet; S: With normal magnet; HS: With powerful magnet ②

① When the bore is 80, only one type of orifice is available, so the code is blank.

② In AC magnetic field, cylinder with powerful magnet is suggested and sensor switch for high-magnet shall be matched. In DC magnetic field, cylinder with powerful magnet must be used and sensor switch for high-magnet shall be matched. Please refer to Page 396 for option.

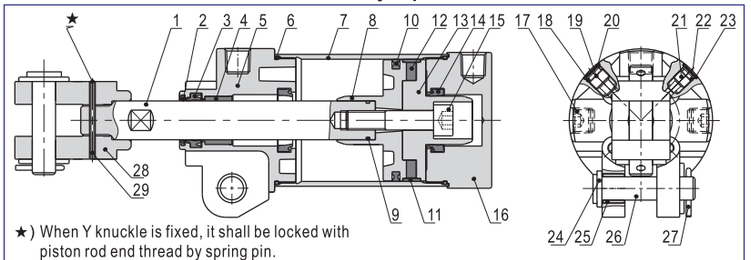
Symbol



Product feature

1. It suits for workshops that make automation welding.
2. There is a scraping dust ring in front cover, and it is firm and durable that can avoid dust and splashed welding slag breaking cylinders. It is more reliable than dust helmet.
3. It fits the working environment where has strong magnetic field, if it uses the sensor switch which is with strong magnet and anti–strong magnetic field.
4. Inlet interface are optional on three sides; buffer adjustment and speed limit adjustment are built-in.
5. Various types of sensor switches are available.

Inner structure and material of major parts



★) When Y knuckle is fixed, it shall be locked with piston rod end thread by spring pin.

No.	Item	Material	No.	Item	Material	No.	Item	Material
1	Piston rod	Carbon steel	11	Wear ring	Wear resistant material	21	Speed controlled screw	Aluminum alloy
2	Scraping dust ring	Stainless steel	12	Magnet	magnetism material	22	O-ring	NBR
3	Spool packing	NBR	13	Magnet holder	Aluminum alloy	23	Bead flange	Spring steel
4	Sliding bushing	Powder metallurgy	14	Cushion O-ring	TPU	24	Washer	SPCC
5	Front cover	Aluminum alloy	15	Countersink	S35C	25	Bronze	Brass
6	O-ring	NBR	16	Back cover	Aluminum alloy	26	Pin	S45C
7	Barrel	Aluminum alloy	17	Stop screw	S35C	27	Orifice Pin	Midl steel
8	Piston	Aluminum alloy	18	O-ring	NBR	28	Y knuckle	Nodular cast iron
9	Piston rod O-ring	NBR	19	Cush controlled screw	Aluminum alloy	29	Spring pin	Spring steel
10	Piston seal	NBR	20	Bead flange	Spring steel			

Ordering code

Model can to be changed Ordering code. Example:
Production type: MCK
Orifice model: Orifice model A
Bore size: 50mm
Stroke: 75mm
Magnet: With strong magnet
Mounting type: With Y-joint
Thread type: G

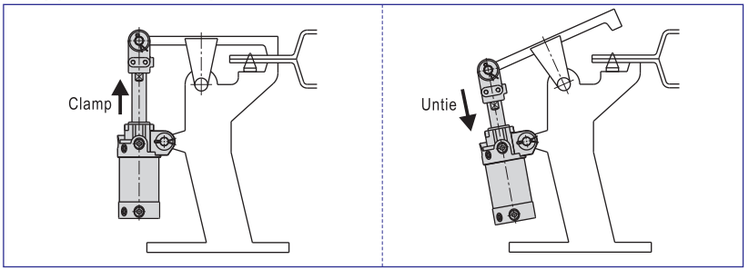
Model: MCK A–50 × 75–HS-Y-G

Ordering code: MCK A 50 HS 0075 Y G

- **Model**
- **Orifice model**: A: Orifice model A; B: Orifice model B
- **Bore size**: 40: Φ40mm; 50: Φ50mm; 63: Φ63mm; 80: Φ80mm
- **Magnet**: Blank: Without magnet; S: With normal magnet; HS: With powerful magnet
- **Stroke**: In 4 digits
- **Mounting type**: Blank: Without Y knuckle; Y: With Y knuckle
- **Thread type**: P: PT; T: NPT; G: G

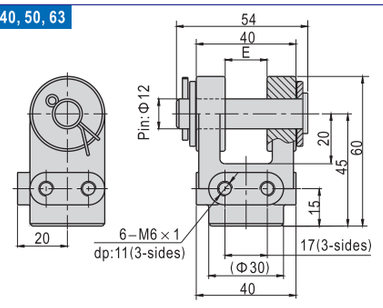
MCK

Application examples



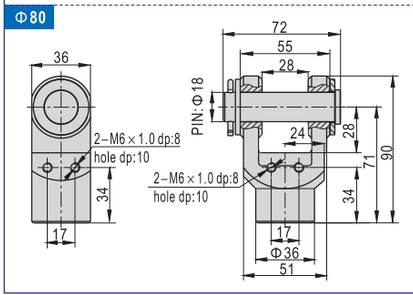
Specifications and ordering codes of Y knuckle

Φ40, 50, 63



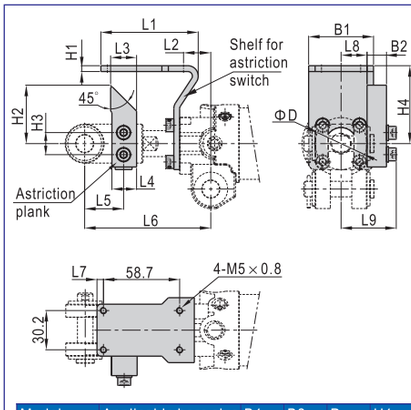
Model	Ordering code	Applicable bore size	E
MCKA	MCKA50−Y	40, 50, 63	16.5
MCKB	MCKB50−Y	40, 50, 63	19.5

Φ80



Dimension and ordering code for astriction switch accessories

Astriction switch accessories contain mounting shelf and astriction plank. They can be used in pairs, also can be used independently. Their dimension and ordering code are below.



Model	Applicable bore size	B1	B2	D	H1
MCK40-MJ	40, 50, 63	50	15	40	4.5
MCK80-MJ	80	50	15	44	4.5

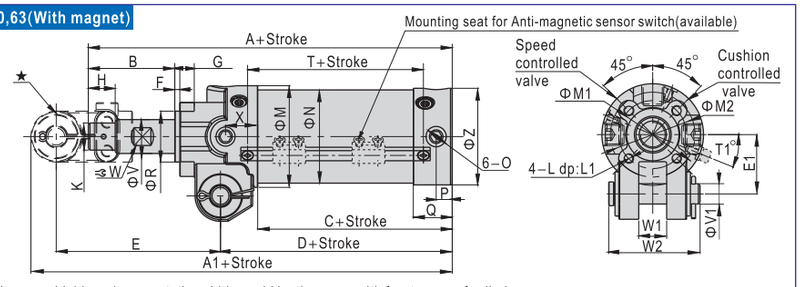
Model	Applicable bore size	H2	H3	H4	L1
MCK40-MJ	40, 50, 63	45	17	60	75
MCK80-MJ	80	45	17	60	75

Model	Applicable bore size	L2	L3	L4	L5
MCK40-MJ	40, 50, 63	21	20	19	30
MCK80-MJ	80	17	20	19	37

Model	Applicable bore size	L6	L7	L8	L9
MCK40-MJ	40, 50, 63	97	5	20	42.5
MCK80-MJ	80	110	5	24	46.5

Dimensions

Φ40,50,63(With magnet)

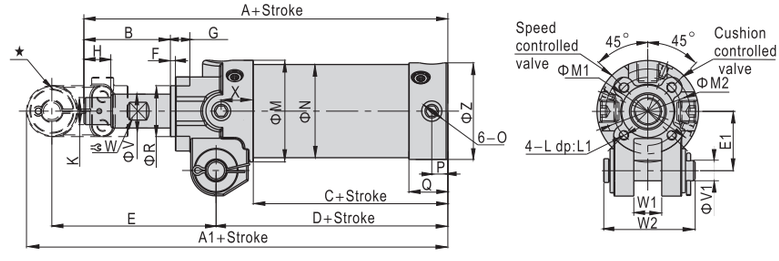


★) If it goes with hinged-support, the width would be the same with front cover of cylinder.

Bore size\Item	A	A1	B	C	D	E	E1	F	G	H	K	L	L1	M	M1	M2	N	O	P	Q	R
40	162	196	51	59	84	97	35	3	11.5	16	M16×1.5	M6×1.0	13	52	40	50	45	1/4	9	21	30
50	165	199	51	65	87	97	35	3	11.5	16	M16×1.5	M6×1.0	12	60	40	50	55	1/4	9.5	23	30
63	167	201	51	67	89	97	35	3	11.5	16	M16×1.5	M6×1.0	12	74	40	50	68	1/4	9.5	23	30

Bore size\Item	V	V1	W	W1(MCKA)	W1(MCKB)	W2	X	Z	T	T1
40	20	12	17	16.5	19.5	54	20	47	54	24
50	20	12	17	16.5	19.5	54	19	57	54	22
63	20	12	17	16.5	19.5	54	19	70	54	22

Φ40,50,63(Without magnet)

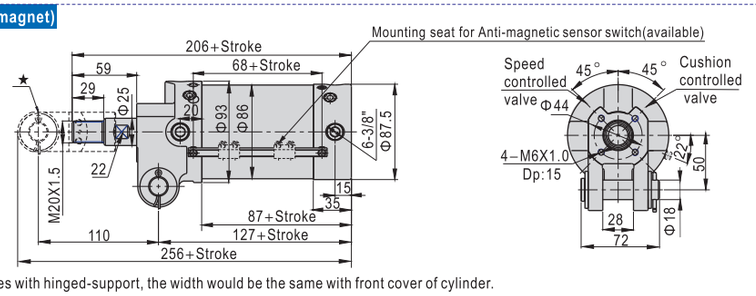


★) If it goes with hinged-support, the width would be the same with front cover of cylinder.

Bore size\Item	A	A1	B	C	D	E	E1	F	G	H	K	L	L1	M	M1	M2	N	O	P	Q	R
40	162	196	51	59	84	97	35	3	11.5	16	M16×1.5	M6×1.0	13	52	40	50	45	1/4"	9	21	30
50	165	199	51	65	87	97	35	3	11.5	16	M16×1.5	M6×1.0	12	60	40	50	55	1/4"	9.5	23	30
63	167	201	51	67	89	97	35	3	11.5	16	M16×1.5	M6×1.0	12	74	40	50	68	1/4"	9.5	23	30

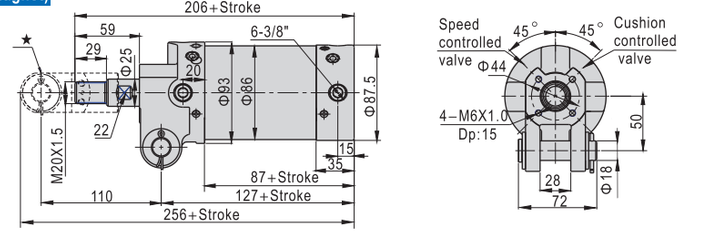
Bore size\Item	V	V1	W	W1(MCKA)	W1(MCKB)	W2	X	Z
40	20	12	17	16.5	19.5	54	20	47
50	20	12	17	16.5	19.5	54	19	57
63	20	12	17	16.5	19.5	54	19	70

Φ80(With magnet)



★) If it goes with hinged-support, the width would be the same with front cover of cylinder.

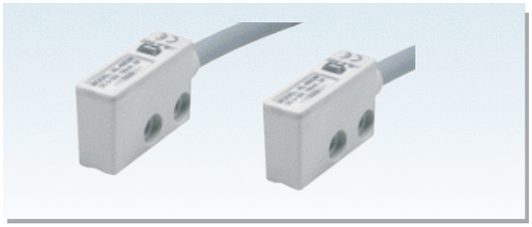
Φ80(Without magnet)



★) If it goes with hinged-support, the width would be the same with front cover of cylinder.

MCK

Sensor switch——DS1–69AM、DS1–69DM Series



Feature

DS1–69AM、DS1–69DM series are anti-magnetic sensor switch, which are for AC or DC magnetic environment.

Ordering code

DS1–69AM

Number of sensor swich

Code

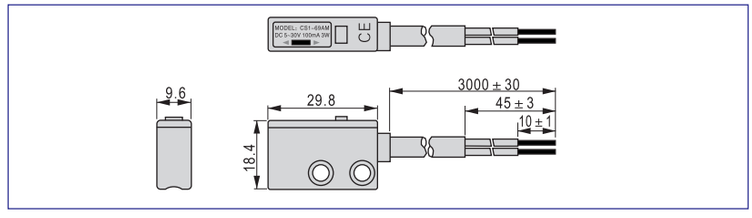
69AM:Anti-magnetic sensor switch (AC resistant welder)
69DM:Anti-magnetic sensor switch (DC)

Specification

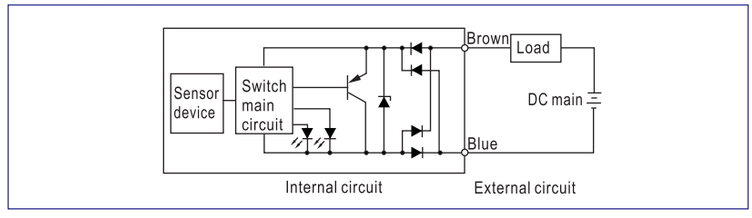
Item\Type	DS1-69AM	DS1-69DM ①
Switch logic	Transistor without contact, normally opened type	
Sensor type	Transistor, two-line, nonpolarity	
Operating voltage (V)	10~30V/DC	
Max. Switching current	100mA Max.	
Switching Rating (W)	3W Max.	
Anti-magnetic current	AC 17000A	
Voltage drop	4.8V Max. @100mA DC	
Leakage current	0.6mA Max. @30V DC	
Min. working current	3mA Min.	
Indicator	Stable range:Green LED ; Non-table range:Red LED	
Cable	Φ5.3/0.5SQ × 2C × 3m/oil resistant, Flame retarded, flection/gravy PVC	
Sensitivity	65~75 Gauss	
Max. Frequency	8Hz	
Temperature range	–10~70℃	
Shock	50m/s²	
Vibration	9m/s²	
Protection	IP 67(EN60529)	
Protection circuit	Transistor without contact, surge suppression	
Fire retardant grade	UL94-V0	

①：DC type has not been on sale.

Dimensions

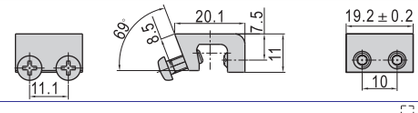
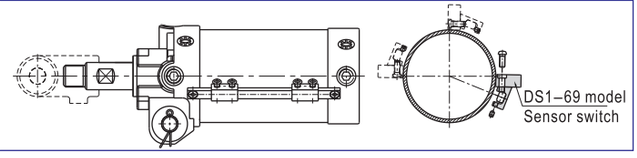


Wiring diagram

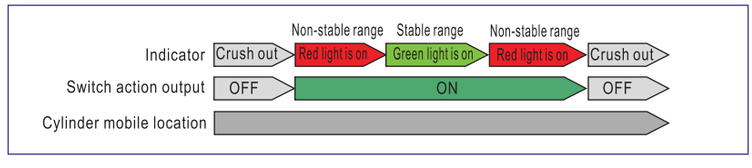


Mounting

The MCK–HS(with strong magnet) cylinder must be used with the anti–magnetic sensor switch, and the anti-magnetic bracket(F-MH) must be ordered separately, the ordering code, dimensions and the mounting method are below:

Ordering code	F-MH
Dimensions	
Mounting	

Indicator action illustration



MCK