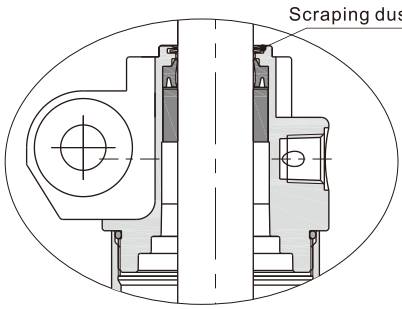
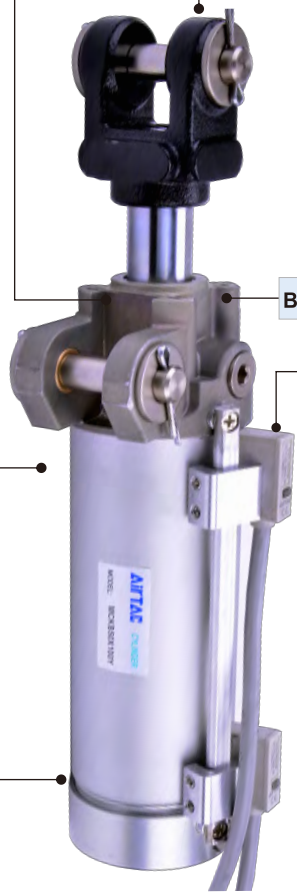
Compendium of MCK Series

Dustproof and welding slag out desigh

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.



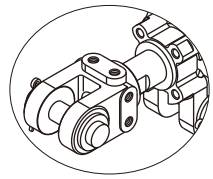
Two orifice models air available



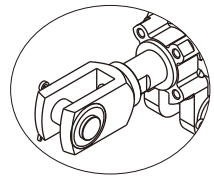
Rolling packed structure

Back cover and barrel adopt riveted rolling packed structure to form a reliable connection.

Y knuckle is available



Y：With M6 thread hole

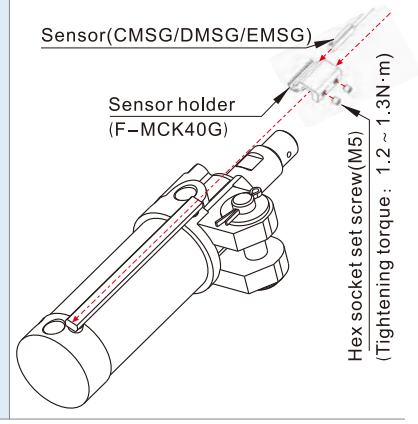


YW：Without M6 thread hole

Buffer adjustment and speedlimit adjustment are built-in

Various types of sensor switches are available.

1. The Anti-magnetic sensor should be used with the anti-magnetic bracket. For details, refer to page P509.
2. Common sensors (DMSG, CMSG, EMSG) should be used with the sensor holder (F-MCK40G). Please refer to common sensors for details about DMSG and CMSG EMSG sensor. The matching sensor holders need to be ordered separately. The ordering method and installation method are as follows:

Sensor holder's ordering code	F–MCK40G(Matching with MCK)
Sensor's installation method	**Installation steps：** 1. The sensor is installed in the G-shaped groove of the sensor fixing base and locked with a slotted screwdriver; 2. The sensor holder is installed on the fixing bar, moves to a proper position and closes to the outer cylinder of the cylinder, and then tightens the hexagonal cap screws with the hexagonal wrench. 3. Avoid mechanical damage during installation; 4. When installing, pay attention to avoid interference with peripheral components. 

Theoretical clamping force

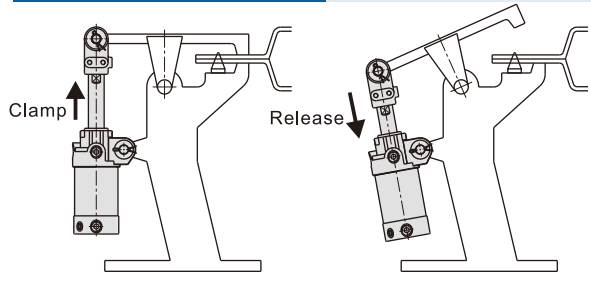
Unit：Newton(N)

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

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 40μm 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.

Application examples



Clamping cylinder

MCK Series

Specification

Bore size(mm)	40	50	63	80
Acting type	Double acting			
Fluid	Air(to be filtered by 40μm filter element)			
Operating pressure	0.15~1.0MPa(22~145psi)			
Proof pressure	1.5MPa(215psi)			
Temperature	-20~70 ℃			
Speed range	50~500mm/s			
Cushion type	Variable cushion for back cover or front cover(optional)			
Speed controlled valve	Standard setting for covers			
Lubrication	Not required			
Installatsion type	Double hinged-supports			
Port size [Note1]	1/4"			3/8"

[Note1]G thread is available.

Symbol

MCK

MCK-S□ MCK-HS

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.

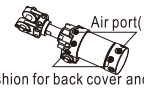
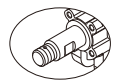
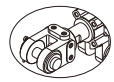
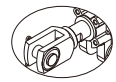
Product feature

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.

Ordering code

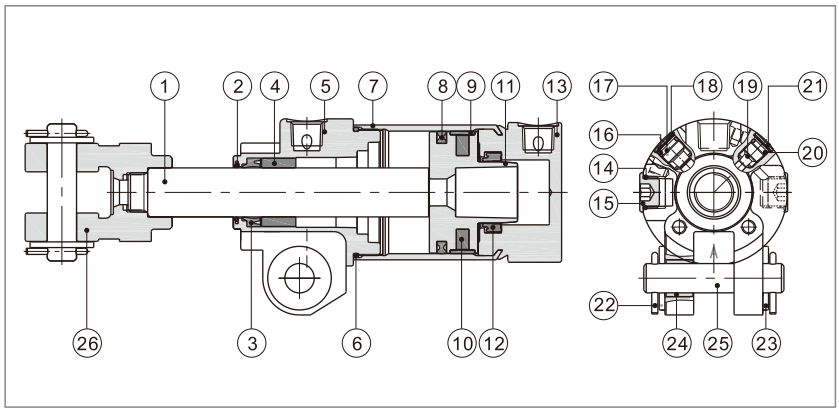
MCK A 50×75 S □ Y G

1 2 3 4 5 6 7 8

①Model	②Orifice model	③Bore size	④Stroke	⑤Magnet	⑥Mounting type	⑦Mounting type	⑧Thread type
MCK: Clamping cylinder (Double acting)	A: Orifice model A B: Orifice model B	40 50 63	Refer to Stroke table for detial	Blank: Without magnet S: With normal magnet[Note1]	Blank: Three groups air port in the front and back cover (Variable cushion for back and front cover)  Air port(Three groups) Variable cushion for back cover and front cover	Blank: Without Y knuckle  Y：With Y knuckle (With M6 thread hole)  YW：With Y knuckle (No M6 thread hole) 	G: G Thread
	No this code	80					

[Note1] In powerful magnetic field, sensor switch for high-magnet shall be matched. Please refer to Page 556 for option.

Inner structure and material of major parts

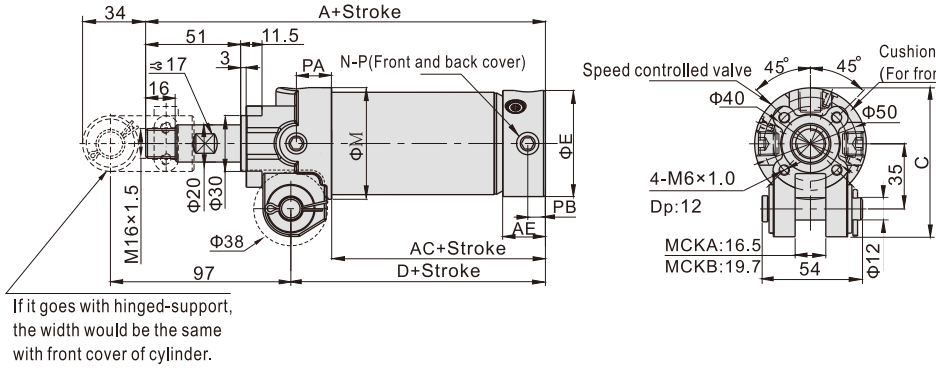


No.	Item	Material	No.	Item	Material
1	Piston rod	Carbon steel	15	Stop screw	S35C
2	Scraping dust ring	Stainless steel	16	O-ring	NBR
3	Spool packing	NBR	17	Cush controlled screw	Aluminum alloy
4	Sliding bushing	Aluminum alloy			
5	Front cover	Aluminum alloy	18	Bead flange	Spring steel
6	O-ring	NBR	19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

MCK Series

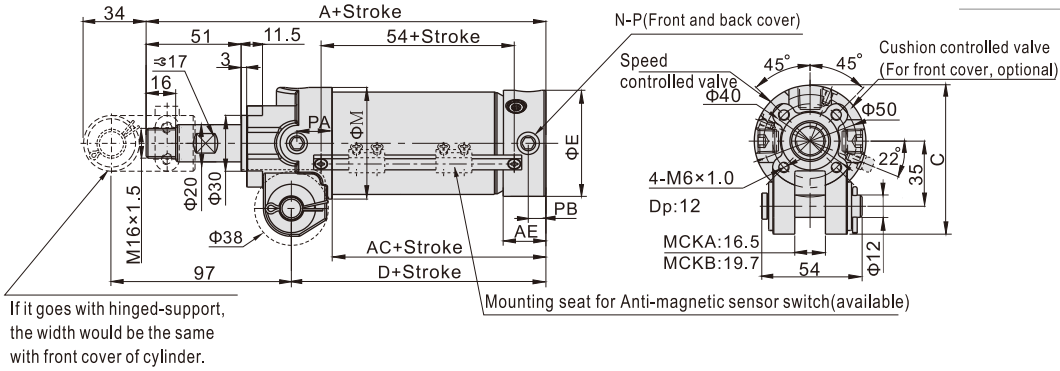
Dimensions

Φ40/50/63(Without magnet)

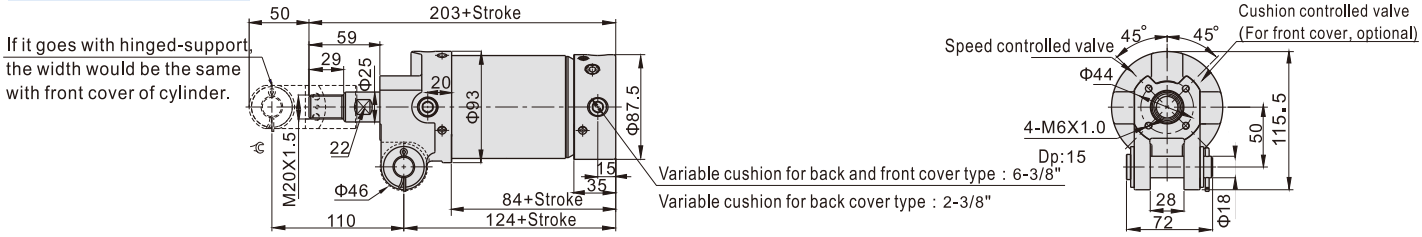


Item\Bore size		40	50	63
A		162	165	167
AC		59	65	67
AE		20	22	23
C		76	80	87
D		84	87	89
E		47	57	70
M		52	60	74
N (Number of hole)	Variable cushion for back and front cover	6	6	6
	Variable cushion for back cover	2	2	2
P(Inlet and out let port)		1/4"		
PA		20	19	19
PB		9	9.5	9.5

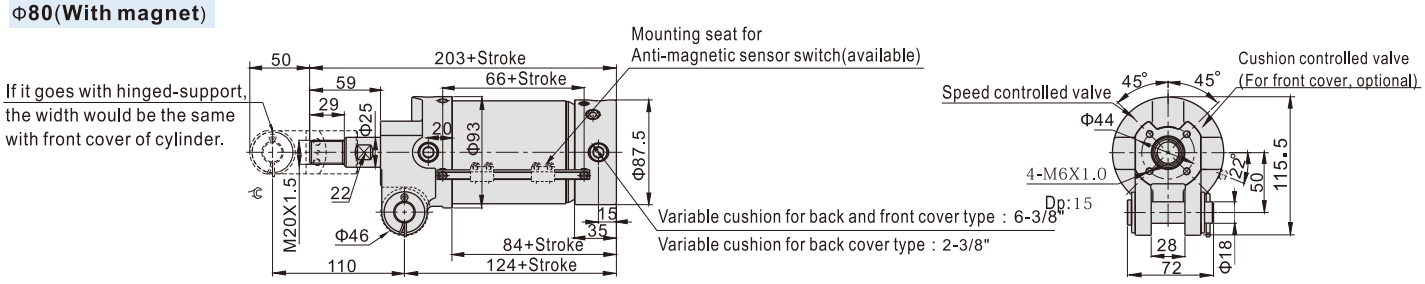
Φ40/50/63(With magnet)



Φ80(Without magnet)

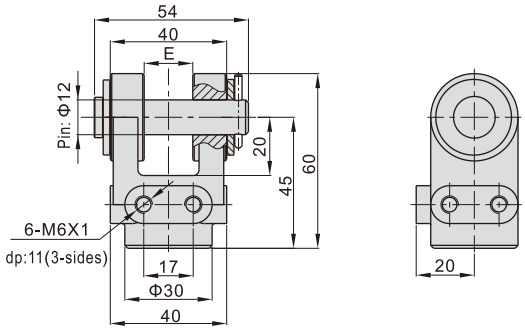


Φ80(With magnet)



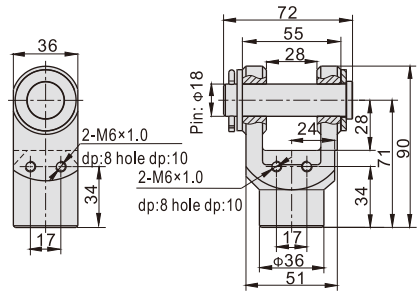
Specifications and ordering codes of Y knuckle

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



Model	Ordering code	Applicable bore size
MCK	MCK80-Y	80

Sensor switch——DS1-69AM Series

Feature

DS1-69AM series are anti-magnetic sensor switch, which are for AC magnetic environment.

Ordering code

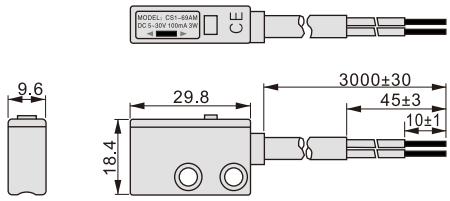
DS1-69AM

①Number of sensor swich	②Code
	69AM: Anti-magnetic sensor switch (AC resistant welder)

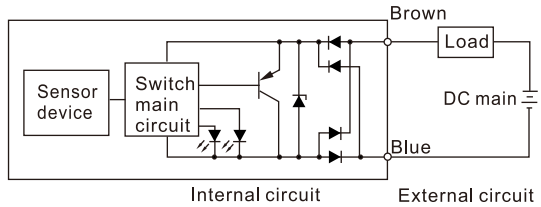
Specification

Item\Type	DS1-69AM
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	30~40 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

Dimensions

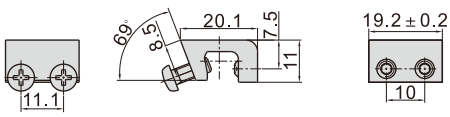
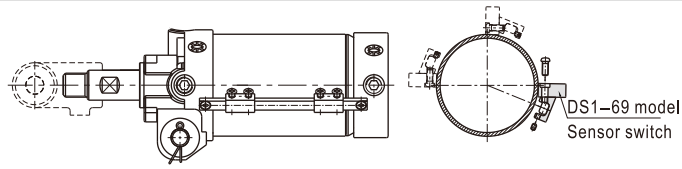
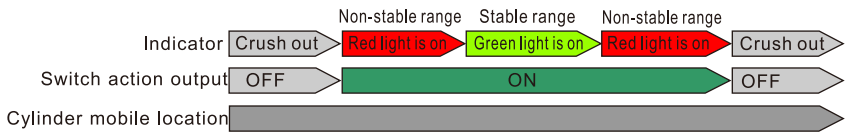


Wiring diagram



Mounting

In powerful magnetic field, sensor switch for high-magnet shall be matched, and the anti-magnetic bracket (F-MCK40H for MCK series) must be ordered separately, the ordering code, dimensions and the mounting method are below:

Ordering code	Dimensions	Mounting
F-MCK40H (For MCK Series)		

Indicator action illustration