

10 MPa

ISO Standard Hydraulic Cylinder

CHSD Series

Ø 40, Ø 50, Ø 63, Ø 80, Ø 100

How to Order

CHSD B 40 - 100 - M9BW

Magnet for auto switch

—	Without
D	Built-in

Series type

Symbol	Nominal pressure
D	10 MPa

Mounting type

B	Basic
LA	Transaxial foot type
FY	Rod rectangular flange type
FZ	Head rectangular flange type
CB	Double clevis
TA	Rod trunnion

Bore size

40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

Port thread type

—	Rc
TN	NPT
TF	GF

Stroke

Refer to the standard stroke table on page 3.

Cylinder suffix

Rod end nut	—	Without rod end nut
	A	With rod end nut
Presence of cushion	—	With cushion on both sides
	N	Without cushion
	R	With front bumper
	H	With rear bumper

Number of auto switches

—	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch

—	Without auto switch
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* Select an applicable auto switch model from the table below.

Port position

Symbol	Position	Port and cushion valve location viewed from the side of piston rod end thread
—	Port on top, cushion valve on the right	
A	Port on top, cushion valve on the left	
B	Port on top, cushion valve down	
C	Port on the right, cushion valve down	
D	Port on the right, cushion valve on top	
E	Port on the right, cushion valve on the left	

Built-in Magnet Cylinder Model

If a built-in magnet cylinder without auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) CHSDSB50-100

Applicable Auto Switches/Refer to website: www.smc.eu for further details on each auto switch.

Type	Special function	Electrical entry	Indicator/light	Wiring (output)	Load voltage	Auto switch model	Lead wire length (m)	Pre-wired connector	Applicable load
Solid state auto switch	Diagnostic indication (2-colour indicator)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	M9N	● ● ● ○ ○	IC circuit
				3-wire (PNP)			M9P	● ● ● ○ ○	—
				2-wire	12 V	5 V, 12 V	M9B	● ● ● ○ ○	—
				3-wire (NPN)			M9NW	● ● ● ○ ○	IC circuit
	Water resistant (2-colour indicator)	Grommet	Yes	3-wire (PNP)	24 V	5 V, 12 V	M9PW	● ● ● ○ ○	IC circuit
				2-wire			M9BW	● ● ● ○ ○	—
				3-wire (NPN)	12 V	5 V, 12 V	M9NA**	○ ○ ● ○ ○	IC circuit
				3-wire (PNP)			M9PA**	○ ○ ● ○ ○	IC circuit
	Diagnostic output (2-colour indicator)	Grommet	Yes	2-wire	12 V	5 V, 12 V	M9BA**	○ ○ ● ○ ○	—
				4-wire (NPN)			F59F	● — ● ○ ○	IC circuit
Reed auto switch	Diagnostic output (2-colour indicator)	Grommet	Yes	3-wire (NPN equiv.)	24 V	5 V	Z76	● — ● — —	IC circuit
				2-wire			Z73	● — ● — —	—
				2-wire	12 V	100 V or less	Z80	● — ● — —	IC circuit
				2-wire			A54*	● — ● ● —	—
				2-wire	—	100 V, 200 V	A64*	● — ● ● —	—
				2-wire			A59W*	● — ● ● —	—

** 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.
* D-A5□/A6□/A59W can not be mounted to Ø 40, 50.

* Besides the models in the above table, there are some other auto switches that are applicable. For more information, refer to page 9.

* For details about auto switches with pre-wired connector, refer to website: www.smc.eu.

* D-M9□, M9□W, M9□A, Z7□, Z80 auto switches are shipped together, (not assembled). (Only auto switch mounting brackets are packed assembled.)

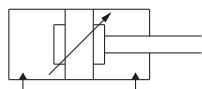
Piping port Cushion valve
 Note 1) Refer to table 1 for manufacturability.
 Note 2) Diagrams illustrate the view from the rod on the left side of the cylinder dimensions.
 Note 3) For mounting types FY, FZ, or TA, indicate port position with the symbol B.

Table 1 Manufacturability Check List by Mounting Type and Port Position

Mounting bracket Port position	B	LA	FY FZ	CB	TA
—	○	○	○	○	—
A	○	○	○	○	—
B	○	○	○	○	○
C	○	—	○	○	—
D	○	—	○	○	—
E	○	—	○	○	—

○: Standard product ○: Made to Order
 —: Not available due to size limitation.

CHSD Series



Specifications

Bore size [mm]		40	50	63	80	100
Action		Double Acting: Single Rod				
Fluid		General mineral hydraulic fluid				
Nominal pressure		10 MPa				
Maximum allowable pressure		12 MPa				
Proof pressure		15 MPa				
Minimum operating pressure	With pressure at front side	0.25 MPa				
	With pressure at rear side	0.15 MPa				
Ambient and fluid temperature	Without magnet	-10 to 80 °C				
	Built-in magnet	-10 to 60 °C				
Piston speed		8 to 300 mm/s				
Cushion		Cushion seal				
Thread tolerance		JIS 6 g/6 H				
Stroke length tolerance		From 100st $^{+0.8}_0$, 101 to 250st $^{+1.0}_0$, 251 to 630st $^{+1.25}_0$, 631 to 1000st $^{+1.4}_0$				

Standard Stroke

Bore size [mm]	Standard stroke [mm]
40	25 to 800
50	25 to 800
63	25 to 800
80	25 to 800
100	25 to 1000

Theoretical Output



Unit: N

Bore size [mm]	Rod size [mm]	Operating direction	Piston area [mm ²]	Operating pressure [MPa]		
				3.5	7	10
40	22	OUT	1256	4396	8792	12560
		IN	876	3066	6132	8760
50	28	OUT	1963	6871	13741	19630
		IN	1347	4715	9429	13470
63	36	OUT	3117	10910	21819	31170
		IN	2099	7346	14693	20990
80	45	OUT	5026	17591	35182	50260
		IN	3436	12026	24052	34360
100	56	OUT	7853	27486	54971	78530
		IN	5390	18865	37730	53900

Theoretical output (N) = Pressure (MPa) x Piston area (mm²)

Weight

Unit: kg

Bore size [mm]			40	50	63	80	100
Basic weight (0 stroke)	Basic	B	2.10	3.20	5.10	8.90	14.5
	Transaxial foot	LA	2.40	3.60	5.50	9.70	16.0
	Rod flange	FY	2.60	3.80	5.90	10.1	16.0
	Head flange	FZ	2.50	3.80	6.00	10.0	16.4
	Double clevis	CB	2.30	3.50	6.10	9.90	16.2
	Rod trunnion	TA	2.10	3.40	5.40	9.40	15.5
Additional weight per 10 strokes			0.06	0.09	0.13	0.21	0.32