

**FENG&TENG**  
风 腾 气 动



**FENG&TENG PNEUMATIC**

产品选型手册  
Product Selection Manual



**安徽风腾自动化科技有限公司**  
ANHUI FENGTEG AUTOMATIC TECHNOLOGY CO.,LTD.



Anhui Fengteng Automatic Technology Co., Ltd. is a production-oriented enterprise specializing in the production, processing and sales of pneumatic cylinders. It is a professional company dedicated to the promotion and application of international excellent brand products of pneumatic components for a long time. Design, installation, and maintenance of efficient, low-cost automated actuators and pneumatic systems. The company's main products include mini cylinders, free cylinders, double rod cylinders, thin cylinders, standard cylinders, guide rod cylinders, rotary cylinders, finger cylinders, swing cylinders, rodless cylinders and slide cylinders.

Fengteng is committed to the production of high-end cylinder products. Quality is the cornerstone of Fengteng's rapid development. Fengteng has an automated production and storage workshop of about 5,500 square meters. The high-efficiency and high-precision automatic machining center production line lays the foundation for high-quality products. At present, the company With a complete production line from raw materials to finished products, Fengteng's cylinders have passed CE and ISO9001 international certifications. The main markets of the products include the United States, Europe, Japan, Southeast Asia and other countries and regions.



## FENG&TENG

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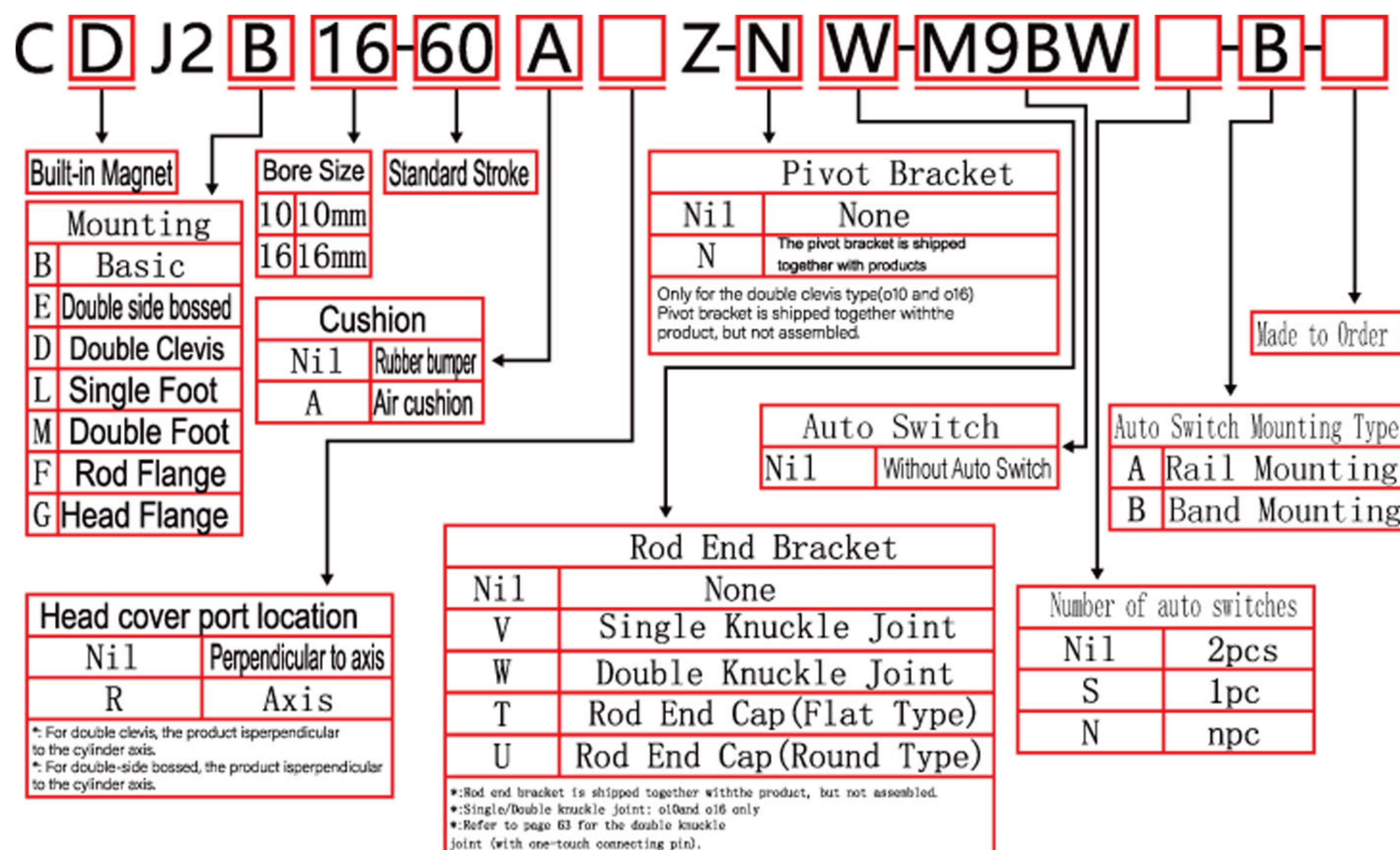


## CJ2 Series

Bore Size: 6mm, 10mm, 16mm



## Ordering Code



## Specifications

Bore size [mm]		6	10	16
Action		Double acting, Single rod		
Fluid		Air		
Proof pressure		1 MPa		
Maximum operating pressure		0.7 MPa		
Minimum operating pressure	Rubber bumper	0.12 MPa	0.06 MPa	
	Air cushion	—	0.1 MPa	
Ambient and fluid temperature		Without auto switch: -10°C to 70°C (No freezing) With auto switch: -10°C to 60°C		
Cushion		Rubber bumper	Rubber bumper/Air cushion	
Lubrication		Not required (Non-lube)		
Piston speed	Rubber bumper	50 to 750 mm/s		
	Air cushion	—	50 to 1000 mm/s	
Allowable kinetic energy	Rubber bumper	0.012 J	0.035 J	0.090 J
	Air cushion (Effective cushion length)	—	0.07 J (9.4 mm)	0.18 J (9.4 mm)
Stroke length tolerance		+1.0 0		

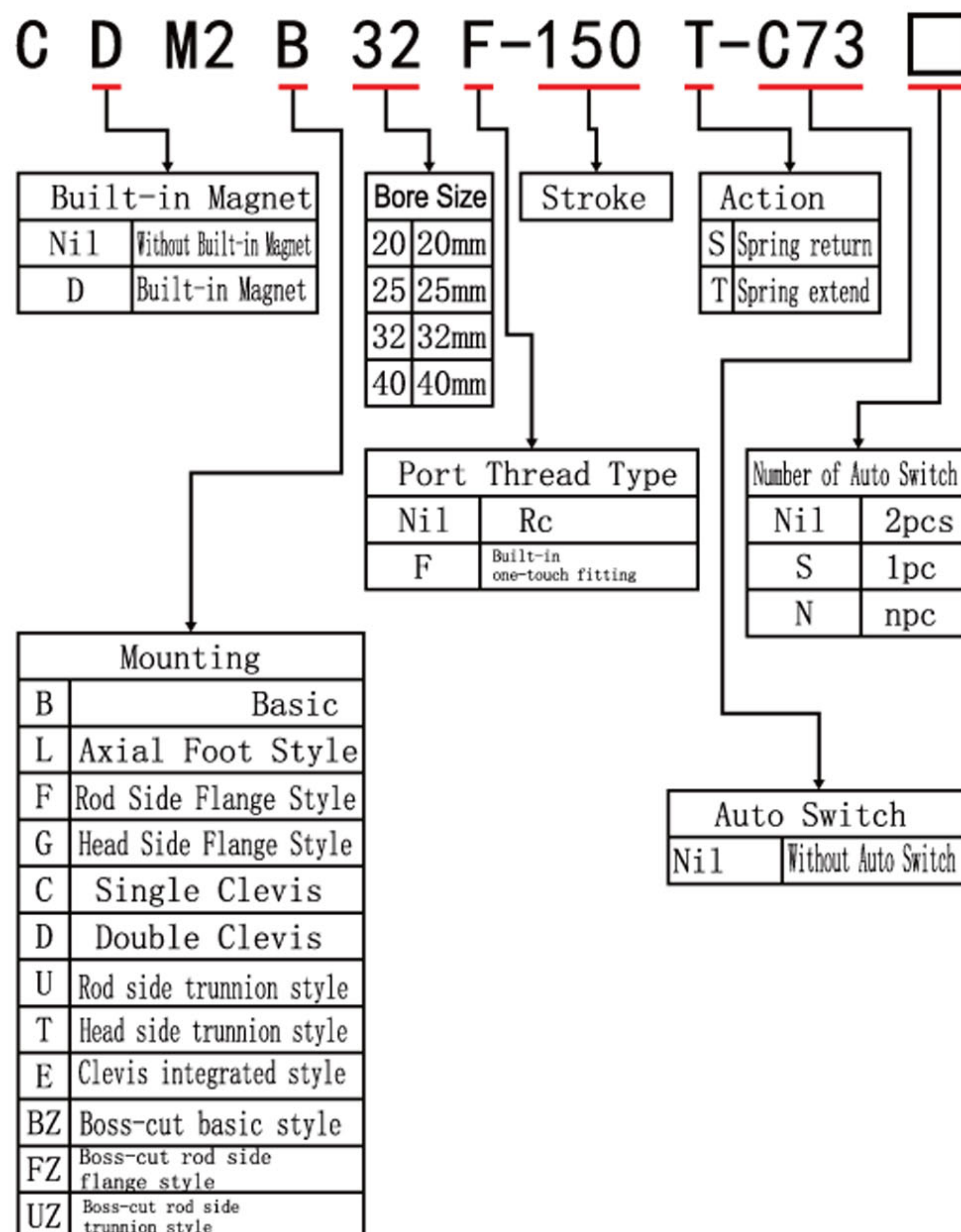


## CM2 Series

Bore Size:20mm, 25mm, 32mm, 40mm



### Ordering Code



### Specifications

Bore size (mm)		20	25	32	40
Rod non-rotating accuracy		±0.7		±0.5	
Action		Spring acting, Spring return/Spring extend			
Fluid		Air			
Cushion		Rubber bumper			
Proof pressure		1.5 MPa			
Maximum operating pressure		1.0 MPa			
Minimum operating pressure	Spring return	0.18 MPa			
	Spring extend	0.23 MPa			
Ambient and fluid temperature		Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)			
Lubrication		Not required (Non-lube)			
Stroke length tolerance		+1.4 0 mm			
Piston speed		50 to 500 mm/s			
Allowable kinetic energy		0.27 J	0.4 J	0.65 J	1.2 J

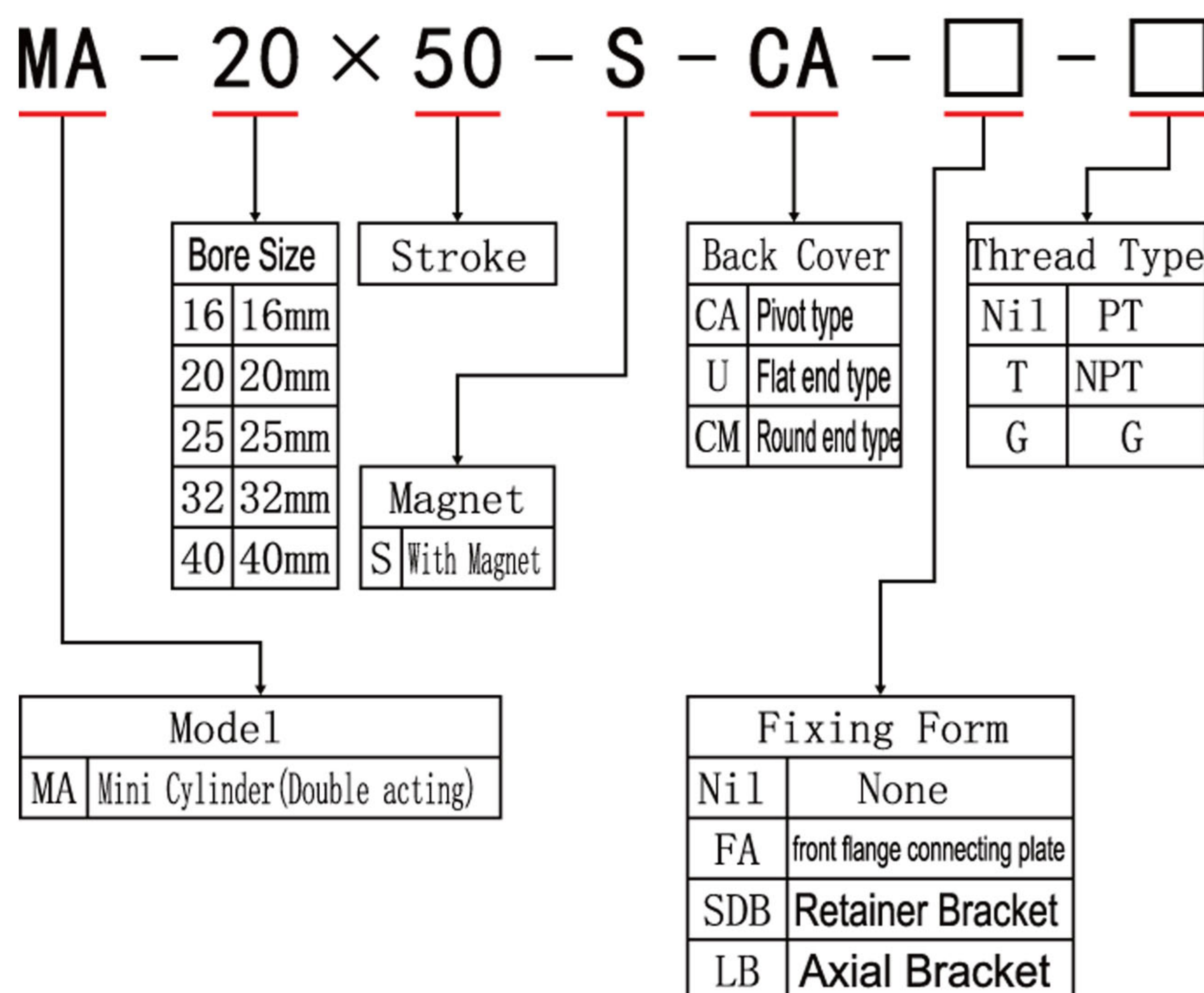


## MA Series

**Bore Size: 16mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm**



### Ordering Code



### Specification

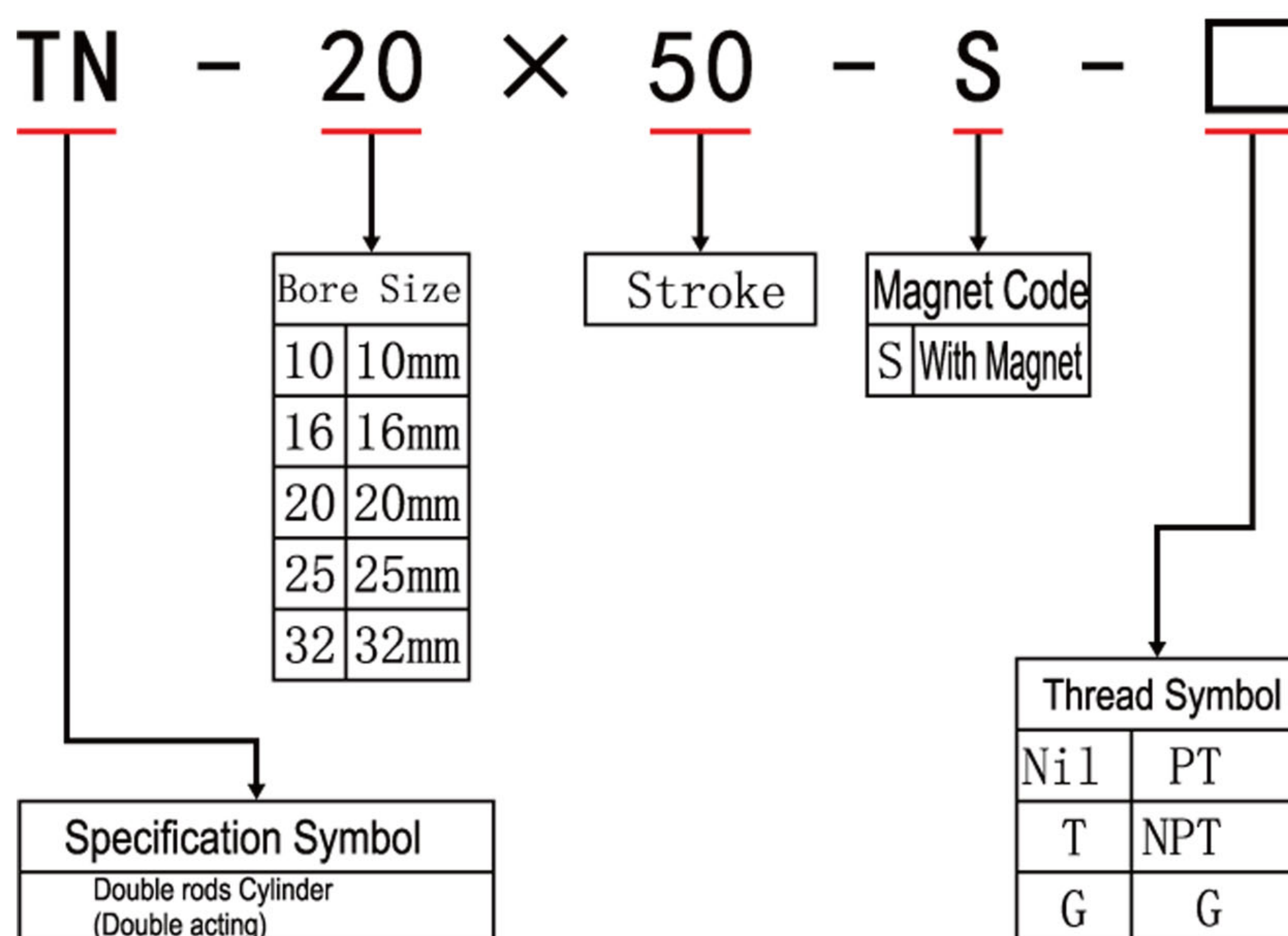
Bore size(mm)		16	20	25	32	40	50	63
Acting type	MSA, MTA	Single acting					—	
	MA, MAD, MAJ	Double acting					—	
	MAR	—	Double acting					
	MAC, MACD, MACJ	—	Double acting with cushion					
Fluid		Air(to be filtered by 40 μ m filter element)						
Operating pressure	Double acting	0.1~1.0MPa(15~145psi)(1.0~10.0bar)						
	Single acting	0.2~1.0MPa(28~145psi)(2.0~10.0bar)						
Proof pressure		1.5MPa(215psi)(15bar)						
Temperature °C		-20~70						
Speed range mm/s		Double acting: 30~800 Single acting: 50~800						
Stroke tolerance		0~150 <sup>+1.0</sup> <sub>0</sub> >150 <sup>+1.4</sup> <sub>0</sub>						
Cushion type		MAC、MACD、MACJ Series: Adjustable cushion					Other series: Bumper	
Port size ①		M5×0.8	1/8"				1/4"	

① PT thread, NPT thread and G thread are available. Add) Refer to P397~420 for detail of sensor switch.





### Ordering Code



### Specification

Bore size(mm)	10	16	20	25	32
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μ m filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature °C	-20~70				
Speed range mm/s	30~500				
Adjustable stroke mm	-10~0				
Stroke tolerance	≤100 <sup>+1.0</sup> <sub>0</sub> >100 <sup>+1.5</sup> <sub>0</sub>				
Cushion type	Bumper				
Non-rotating tolerance [Note1]	±0.4°	±0.3°			
Port size [Note2]	M5×0.8				1/8"

[Note1] Retract position.

[Note2]PT thread is available.

Add) Refer to P353 for detail of sensor switch.



## CXSM Series Bore Size: 6mm, 10mm, 15mm, 20mm, 25mm, 32mm



### Ordering Code

**CXS M 20-100 - Y7BW S**

Bearing Type	
M	Slide Bearing
L	Ball bushing bearing

Auto Switch Model	
Nil	
Without auto switch (with built-in magnet)	

Bore size & stroke(mm)	
Bore size	Standard stroke(mm)
6	10 20 30 40 50
10	10 15 20 25 30 35 40 45 50 60 70 75
15 20 25 32	10 15 20 25 30 35 40 45 50 60 70 75 80 90 100

Numbers of auto switch	
Nil	2pcs
S	1pc
N	npc

## Specifications

Bore size (mm)	6	10	15	20	25	32
Fluid	Air (Non-lube)					
Proof pressure	1.05 MPa					
Maximum operating pressure	0.7 MPa					
Minimum operating pressure	0.15 MPa	0.1 MPa		0.05 MPa		
Ambient and fluid temperature	-10 to 60°C (No freezing)					
Piston speed	30 to 300 mm/s	30 to 800 mm/s	30 to 700 mm/s		30 to 600 mm/s	
Cushion	Rubber bumper					
Stroke adjustable range	0 to -5 mm compared to the standard stroke					
Port size	M5 x 0.8				Rc 1/8	
Bearing type	Slide bearing, Ball bushing bearing (Same dimensions for both)					
Allowable kinetic energy	0.0023 J	0.064 J	0.095 J	0.17 J	0.27 J	0.32 J



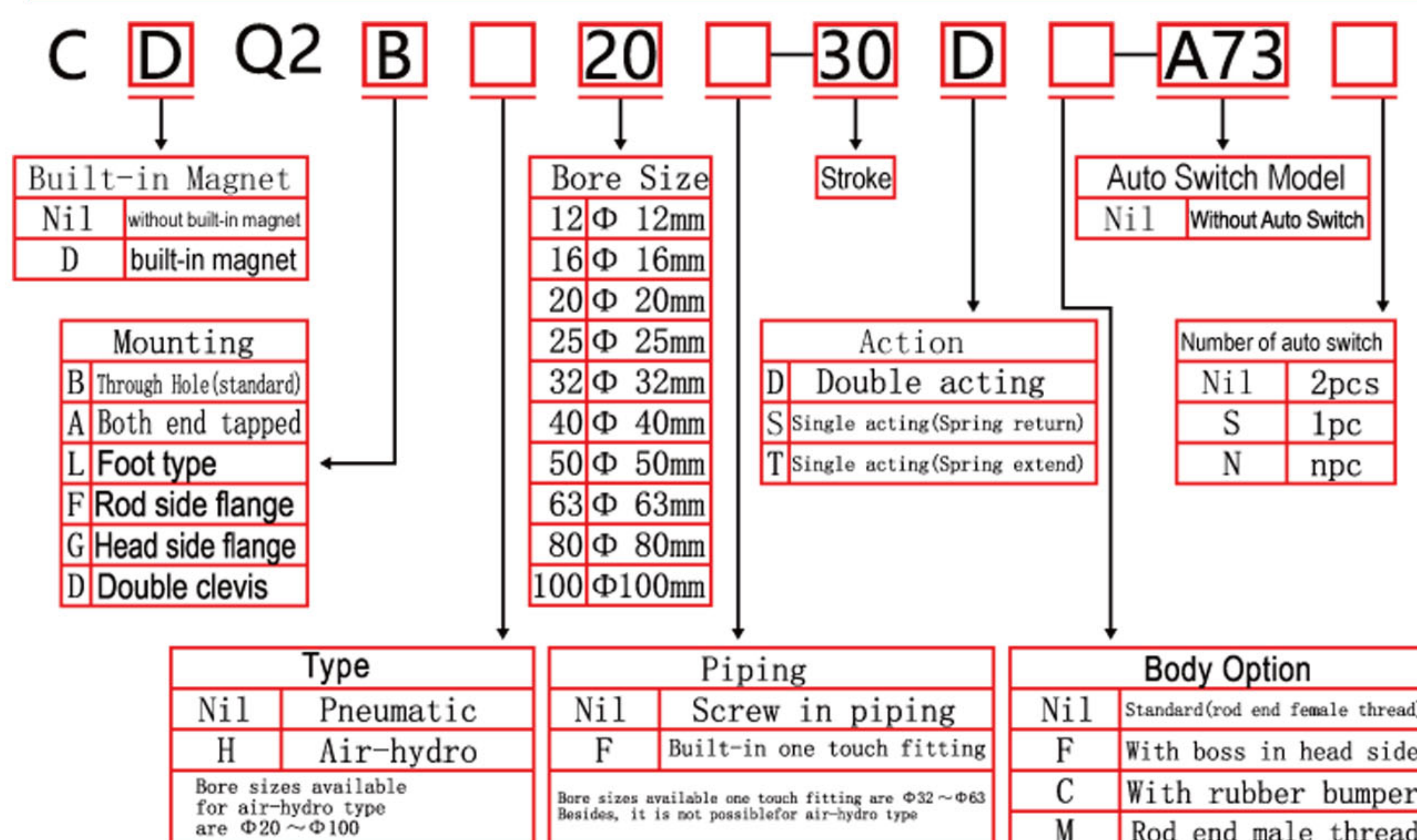
# Compact Cylinder:Double acting,Single rod

## CQ2 Series

Bore Size:12mm, 16mm, 20mm, 25mm  
32mm, 40mm, 50mm, 63mm, 80mm,100mm



## Ordering Code



## Specifications

### Pneumatic type

Bore size (mm)		12	16	20	25	32	40	50	63	80	100
Action		Double acting, Single rod									
Fluid		Air									
Proof pressure		1.5 MPa									
Maximum operating pressure		1.0 MPa									
Minimum operating pressure		0.07 MPa		0.05 MPa							
Ambient and fluid temperature		Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)									
Lubrication		Not required (Non-lube)									
Piston speed		50 to 500 mm/s									
Allowable kinetic energy (J)	Standard	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
	With rubber bumper	0.043	0.075	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54
Stroke length tolerance		+1.0 mm (Note) 0									

Note) Stroke length tolerance does not include the amount of bumper change.

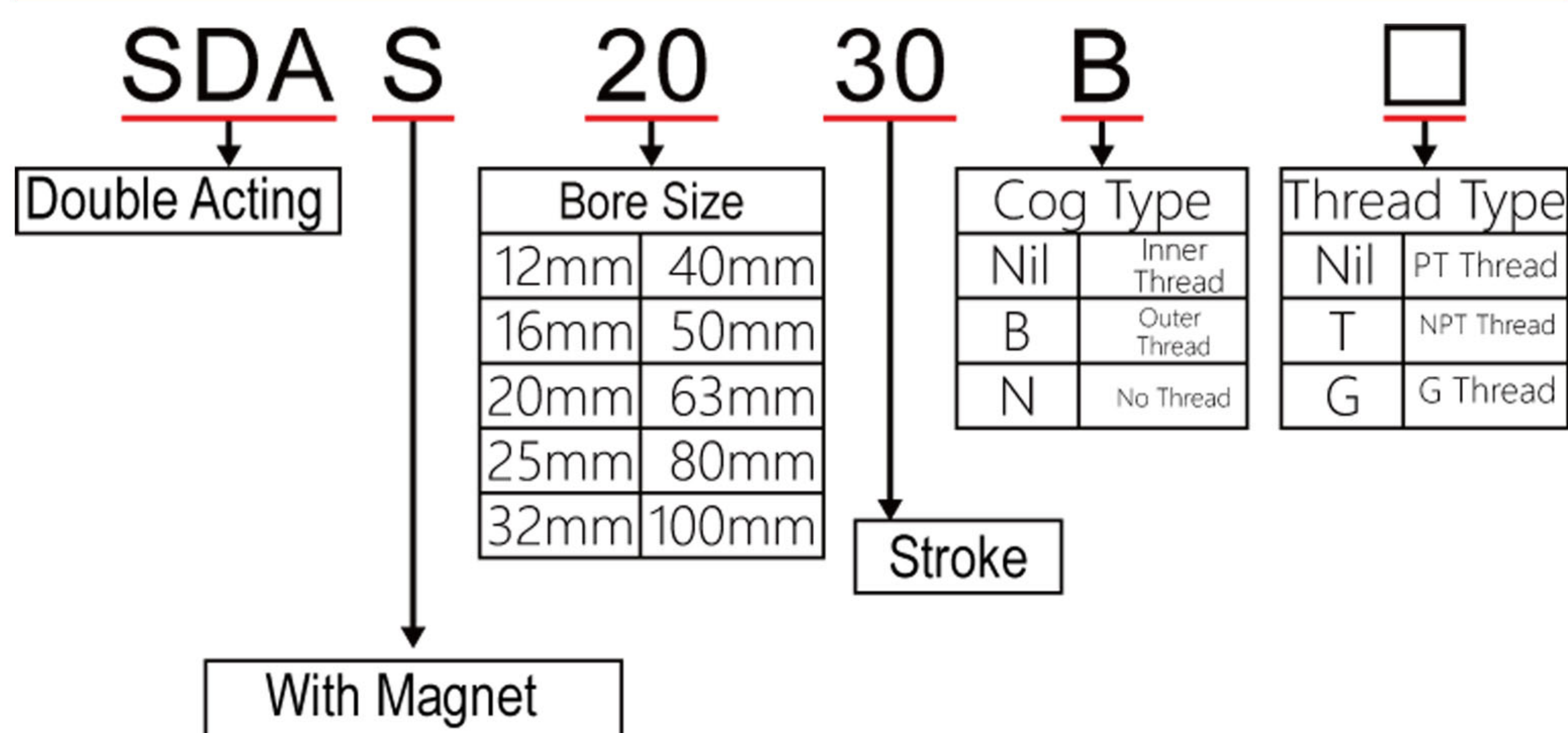


## SDA Series

Bore Size: 12mm, 16mm, 20mm, 25mm  
32mm, 40mm, 50mm, 63mm, 80mm, 100mm



## Ordering Code



## Specification

Bore size ( mm )		12	16	20	25	32	40	50	63	80	100
Acting type		Double acting type									
		Single acting-Push type、Single acting-Pull type									-
Fluid		Air( to be filtered by 40um filter element)									
Operating pressure	Double acting	0.1~1.0MPa(14~145Psi)									
	Single acting	0.2~1.0MPa(28~145Psi)									
Proof pressure		1.5MPa(215Psi)									
Temperature ℃		-20~80									
Speed range mm/s		Double acting type: 30~500      Single acting type: 50~500									
Stroke tolerance		$\begin{matrix} +1.0 \\ 0 \end{matrix}$									
Cushion type		Bumper									
Port size ①		M5 × 0.8				1/8"		1/4"		3/8"	

① PT thread、NPT thread and G thread are available;  
Add: Refer to PVI-39~VI-50 for detail of sensor switch.

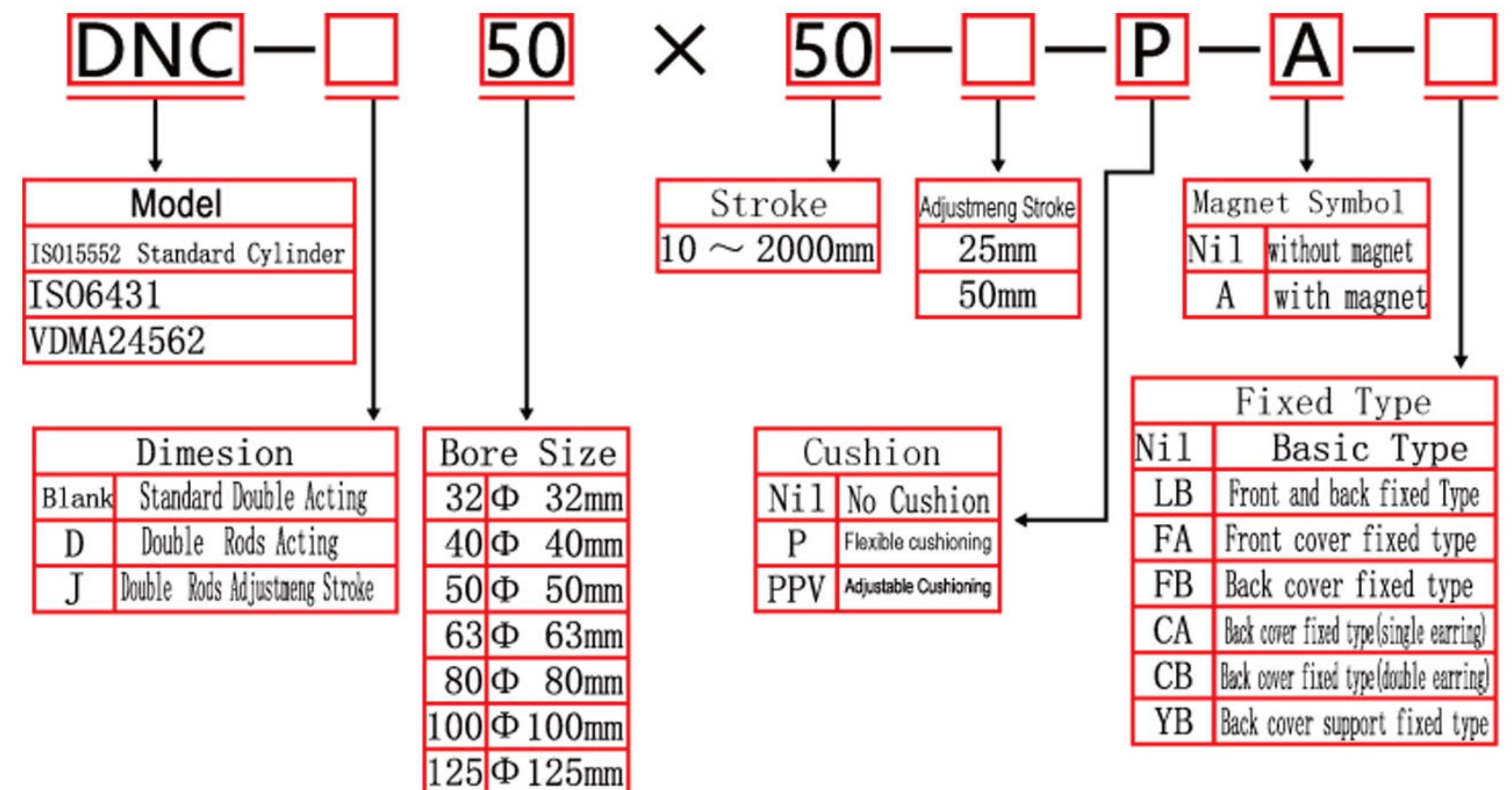


## DNC Series

Bore Size: 32mm, 40mm, 50mm, 63mm  
80mm, 100mm, 125mm



## Ordering Code

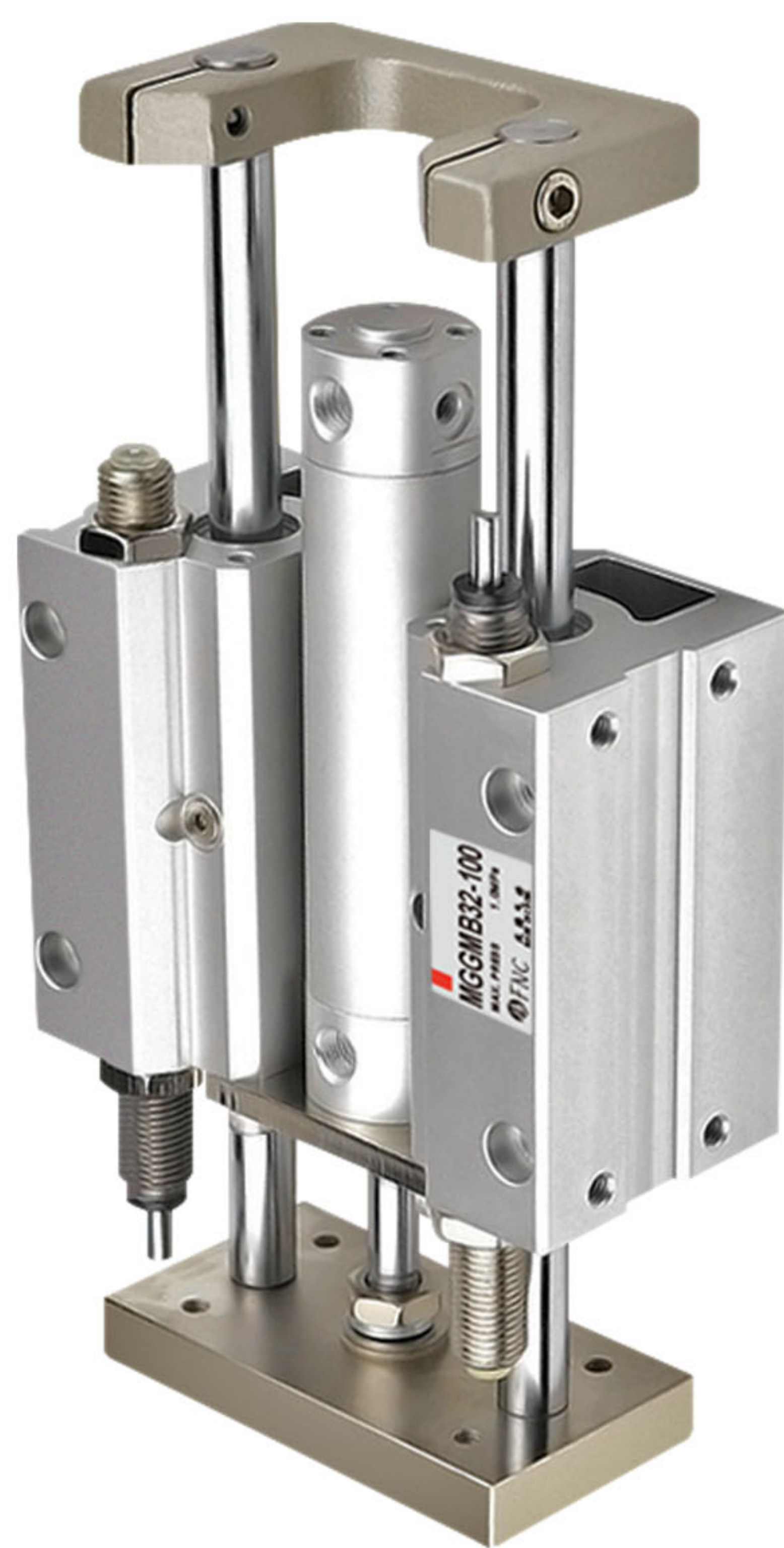


Operating and environmental conditions									
Piston Ø		32	40	50	63	80	100	125	
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]							
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)							
Operating pressure [bar]		0.6 ... 12						0.6 ... 10	
	R8	1.5 ... 12						1.5 ... 10	
	S11	After 10 strokes							
		0.16 ... 12			0.1 ... 12		0.06 ... 12		0.06 ... 10
		After 24 hours							
		0.3 ... 12			0.2 ... 12		0.1 ... 12		0.1 ... 10
Ambient temperature <sup>1)</sup> [°C]		-20 ... +80							
	S6	0 ... 120							
Corrosion resistance class		2							
CRC <sup>2)</sup>	R3	3							
Maritime classification <sup>3)</sup>		See certificate							
ATEX		Specified types → <a href="http://www.festo.com">www.festo.com</a>							

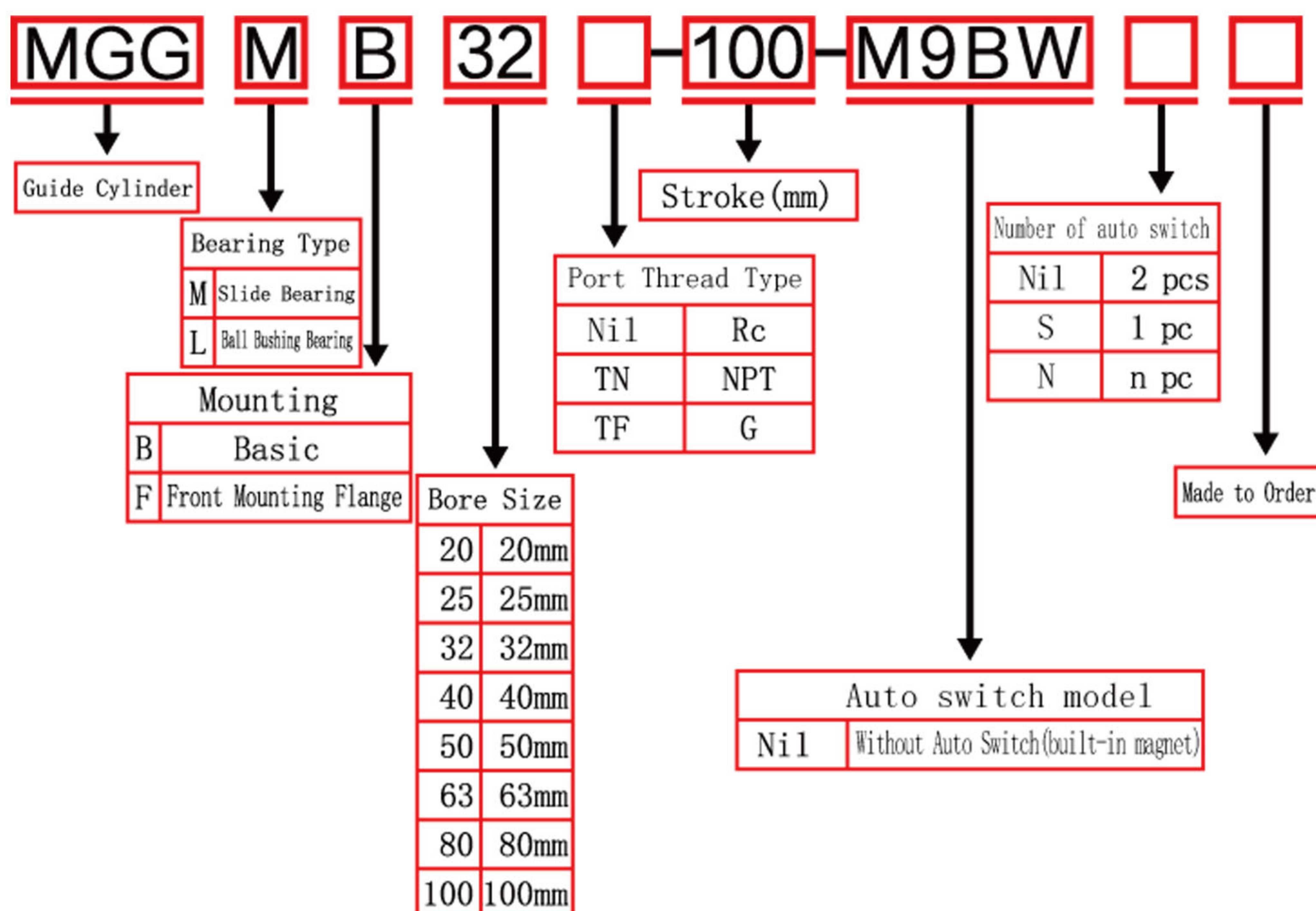


## MGG Series

Bore Size: 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 80mm, 100mm



## Ordering Code



## Specifications

Model		MGG□□20	MGG□□25	MGG□□32	MGG□□40	MGG□□50	MGG□□63	MGG□□80	MGG□□100
Basic cylinder		CDG1BN		Bore size	Port thread type	–	Stroke	–	Auto switch
Bore size (mm)		20	25	32	40	50	63	80	100
Action		Double acting							
Fluid		Air							
Proof pressure		1.5 MPa							
Maximum operating pressure		1.0 MPa							
Minimum operating pressure		0.15 MPa (Horizontal with no load)							
Ambient and fluid temperature		–10 to 60°C							
Piston speed		50 to 1000 mm/s						50 to 700 mm/s	
Cushion	Basic cylinder	Rubber bumper							
	Guide unit	Built-in shock absorbers (2 pcs.)							
Stroke adjusting range (One side) [Built-in adjusting bolts (2 pcs.)]		0 to –10 mm	0 to –15 mm						
Base cylinder lubrication		Non-lube							
Stroke length tolerance		<sup>+1.9</sup> <sub>+0.2</sub> mm(1000 st or less), <sup>+2.3</sup> <sub>+0.2</sub> mm(1001 st or more)							
Non-rotating accuracy *	Slide bearing	±0.07°	±0.06°	±0.06°	±0.05°	±0.04°	±0.04°	±0.04°	±0.03°
	Ball bushing bearing	±0.06°	±0.05°	±0.04°	±0.04°	±0.04°	±0.03°	±0.03°	±0.02°
Piping port size (Rc, NPT, G)		1/8				1/4		3/8	1/2

\* When the cylinder is retracted (initial value), the non-rotating accuracy without loads or deflection of the guide rods will be below the values shown in the table above as a guideline.

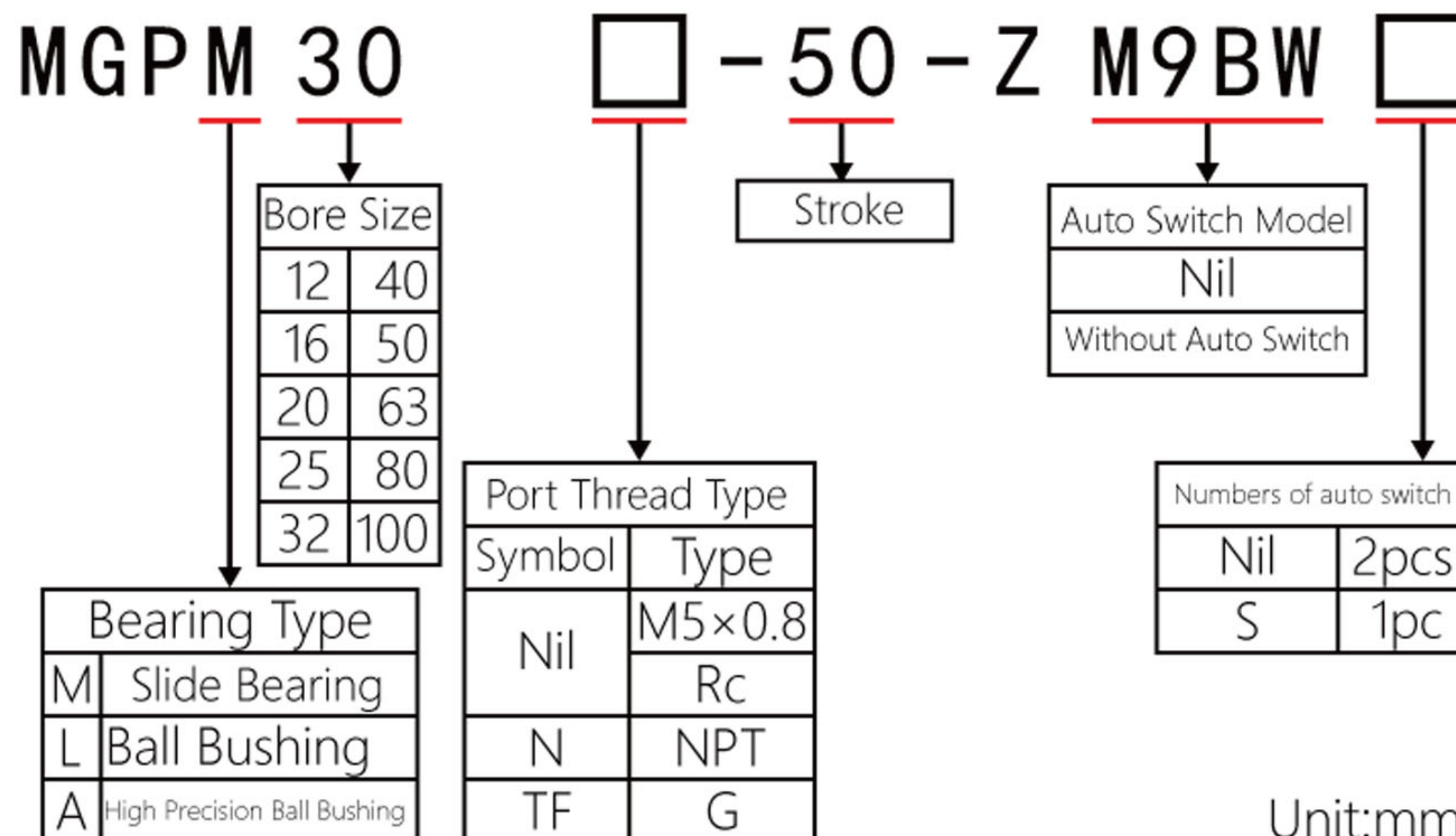


## MGPM Series

**Bore Size:** 12mm, 16mm, 20mm, 25mm  
32mm, 40mm, 50mm, 63mm, 80mm, 100mm



## Ordering Code



## Specifications

Bore size	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Action	Double acting									
Fluid	Air									
Proof pressure	218psi (1.5 MPa)									
Maximum operating pressure	145psi (1.0 MPa)									
Minimum operating pressure	17psi (0.12 MPa)		14.5psi (0.1 MPa)							
Ambient and fluid temperature	14 to 140°F (−10 to 60°C) (No freezing)									
Piston speed <small>Note)</small>	50 to 500 mm/s								50 to 400 mm/s	
Cushion	Rubber bumper on both ends									
Lubrication	Not required (Non-lube)									
Stroke length tolerance	$+1.5_0$ mm									

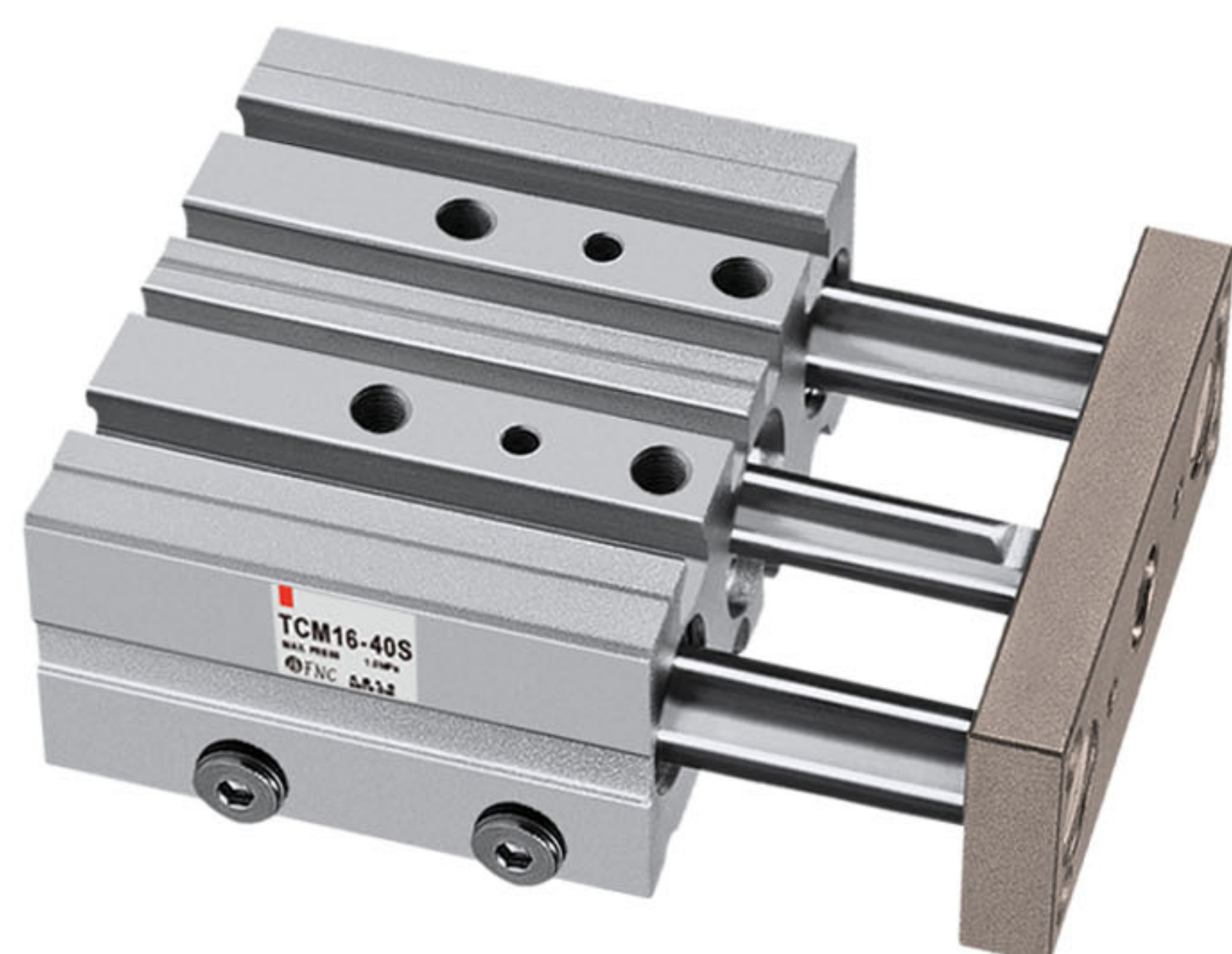
Note) Maximum speed with no load.

Make a model selection, considering a load according to the graph on pages 8 to 14.



## TC Series

**Bore Size: 6mm, 10mm, 12mm, 16mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 80mm, 100mm**



### 产品选型

TC M J 50 × 50 - 20 S □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Model	② Bearing Type	③ Model Symbol	④ Bore size	⑤ Stroke	⑥Adjust Stroke		⑦ Magnet	⑧ Thread Type
Tri-rod Cylinder (Double acting type)	M: Bronze bearing	Blank:Standard	6	Refer to stock table for details	No codes		S: with Magnet	Blank:PT G:G T:NPT
	L: Linear Bearing  M: Bronze Bearing	Blank: Standard J: Adjust  空白 : 标准型	10		Standard	Adjust		
			12		No codes	10 20 30 40 50 75 100		
			16					
			20					
			25					
			32					
			40					
			50					
			63					
			80					
			100					

[Note1] TC Series are all with magnet

[Note2] When the thread is standard, the code is blank

## Specification

Bore size(mm)		6	10	12	16	20	25	32	40	50	63	80	100		
Acting type		Double acting													
Fluid		Air(to be filtered by 40 μ m filter element)													
Operating pressure		0.15~0.7MPa(22~100psi)				0.15~1.0MPa(22~145psi)									
Proof pressure		1.2MPa(175psi)				1.5MPa(215psi)									
Temperature °C		-20~70													
Speed range mm/s		50~500				30~500						50~400			
Stroke tolerance		≤100 <sup>+1.0</sup> <sub>0</sub> >100 <sup>+1.5</sup> <sub>0</sub>													
Cushion type		Bumper													
Non-rotating tolerance [Note1]	TCL	-				±0.08°		±0.07°		±0.06°		±0.05°		±0.04°	
	TCM	±0.1°				±0.10°		±0.09°		±0.08°		±0.06°		±0.05°	
Port size [Note2]		M3×0.5				M5×0.8		1/8"			1/4"		3/8"		

[Note1] Retract position.

[Note2] PT thread, G thread and NPT thread are available.

Add) Refer to P353 for detail of sensor switch.



## ACK Series

Bore Size: 25mm, 32mm, 40mm, 50mm, 63mm



## Ordering Code

**ACK R - 25 × 90 - □**

Rotary Direction

L	Push and turn left
R	Push and turn right

Bore Size

25	Φ 25mm
32	Φ 32mm
40	Φ 40mm
50	Φ 50mm
63	Φ 63mm

Rotary angle

90	90°
180	180°

Model

ACK	Twist Clamp Cylinder(Double Acting)
ACKD	Twist Clamp Cylinder
Double push plate type only for 90°	

Thread Type

Nil	PT
T	NPT
G	G

## Specification

Bore size(mm)	25	32	40	50	63
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μ m filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature °C	-20~80				
Speed range mm/s	50~200				
Stroke tolerance	+1.0 0				
Rotary angle tolerance	± 1.5°				
Cushion type ①	No cushion				
Port size ②	M5 × 0.8		1/8"		

① If there is no buffering device, exhaust throttle shall be added to achieve buffering effect.

② PT thread, G thread and NPT thread are available.



## SRC Series

Bore Size:25mm, 32mm, 40mm, 50mm, 63mm

### Ordering Code



**SRC R 32 × 12 - D**

Series Model

Rotary Direction

L	Left
R	Right

Bore Size

25	Φ 25mm
32	Φ 32mm
40	Φ 40mm
50	Φ 50mm
63	Φ 63mm

Stroke

12mm
12mm
12mm
15mm
15mm

Stroke is push stroke  
(without rotary stroke)

Plate Type

Nil	Single Plate
D	Double Plate
Note:Not available for 25 in Double Plate	

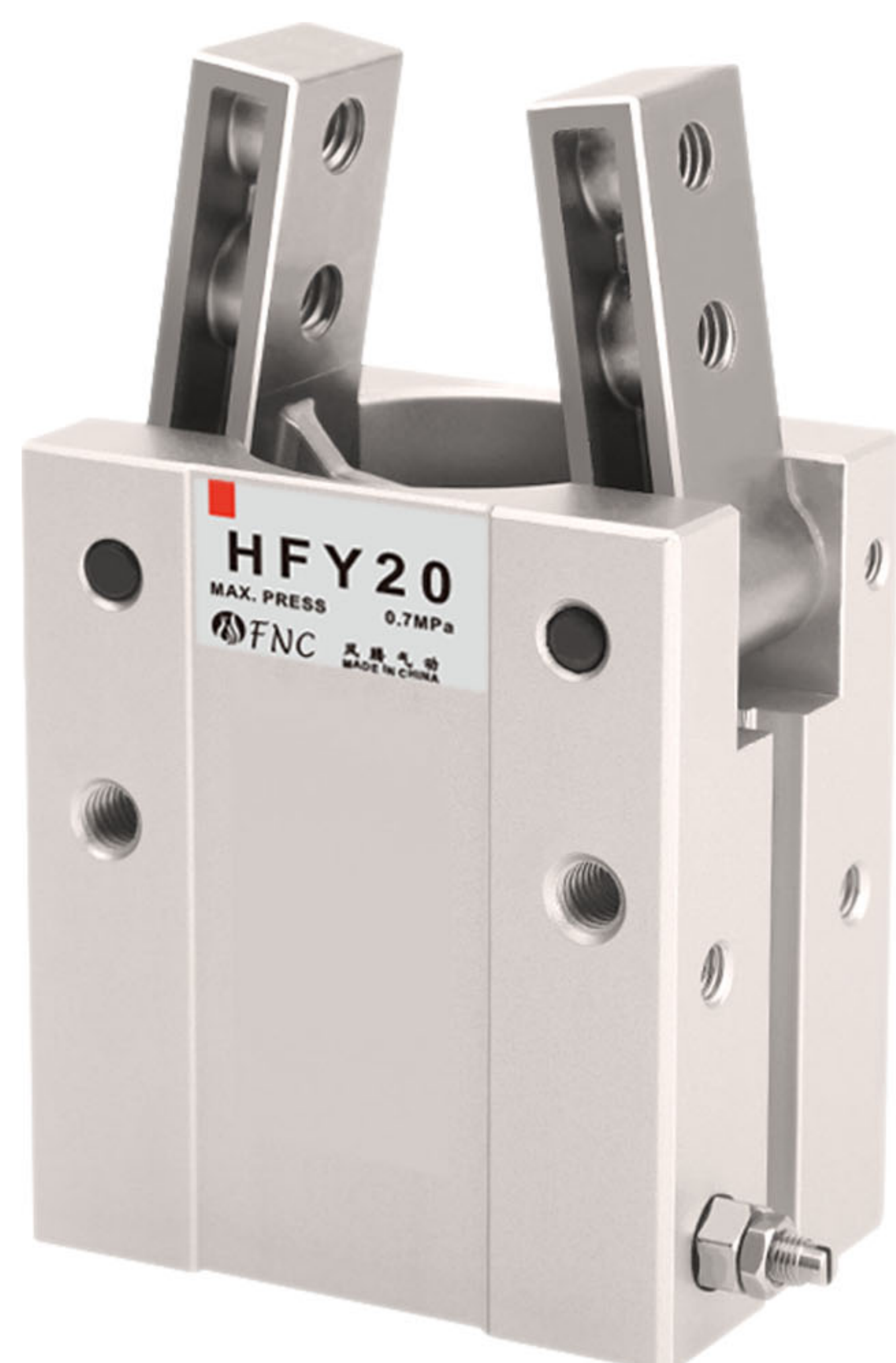
### Specification

Bore	25	32	40	50	63
Motion Pattern	Double Action				
Working Medium	Air				
Operating Pressure	1.5~9.5(150-950)kg/cm <sup>2</sup> (kpa)				
Operating Temperture	0~60°C				
Operating Stroke	30~500mm/sec				
Rotating Stroke	11	13		15	
Pushing Stroke	11	13		15	
Rotating Angle	90° can be customized(0°,45°,90°)				
Rotating Direction	Turn Left[from right to left]-L, Turn Right[from left to right]-R				
Cushion Direction	Rubber Gacket Buffer				
Lubricating	Free supply mode				
Port Size	M5*0.8				



## HFY Series

Bore Size: 6mm, 10mm, 16mm, 20mm, 25mm, 32mm



### Ordering Code

HFY

20

Model	
HFY	Air finger(Angle Style, Double acting)
HFTY	Air finger(Angle Style, Single acting and normally opened)

Bore Size	
Φ 6mm	Φ20mm
Φ10mm	Φ25mm
Φ16mm	Φ32mm

Model	HFY6	HFY10	HFY16	HFY20	HFY25	HFY32
Air hole thread	M3*0.5	M3*0.5	M5*0.8	M5*0.8	M5*0.8	M5*0.8

### Specification

Bore size (mm)			6	10	16	20	25	32
Acting type			Double acting    Single acting					
Fluid			Air(to be filtered by 40 μ m filter element)					
Operating pressure	Double acting	φ6	0.15~0.7MPa(22~100psi)(1.5~7.0bar)					
		φ10~φ32	0.1~0.7MPa(15~100psi)(1.0~7.0bar)					
	Single acting	φ6	0.3~0.7MPa(45~100psi)(3.0~7.0bar)					
		φ10~φ32	0.25~0.7MPa(36~100psi)(2.5~7.0bar)					
Temperature    °C			-20~70					
Lubrication			Cylinder : Not required;    Gripper jaws : Lubricate grease					
Cushion type			Bumper					
Max. frequency			180(c.p.m)					
Sensor switches ①			DS1-H	CS1-G、DS1-G				

① Sensor switch should be ordered additionally, please refer to P419~442 for detail of sensor switch.

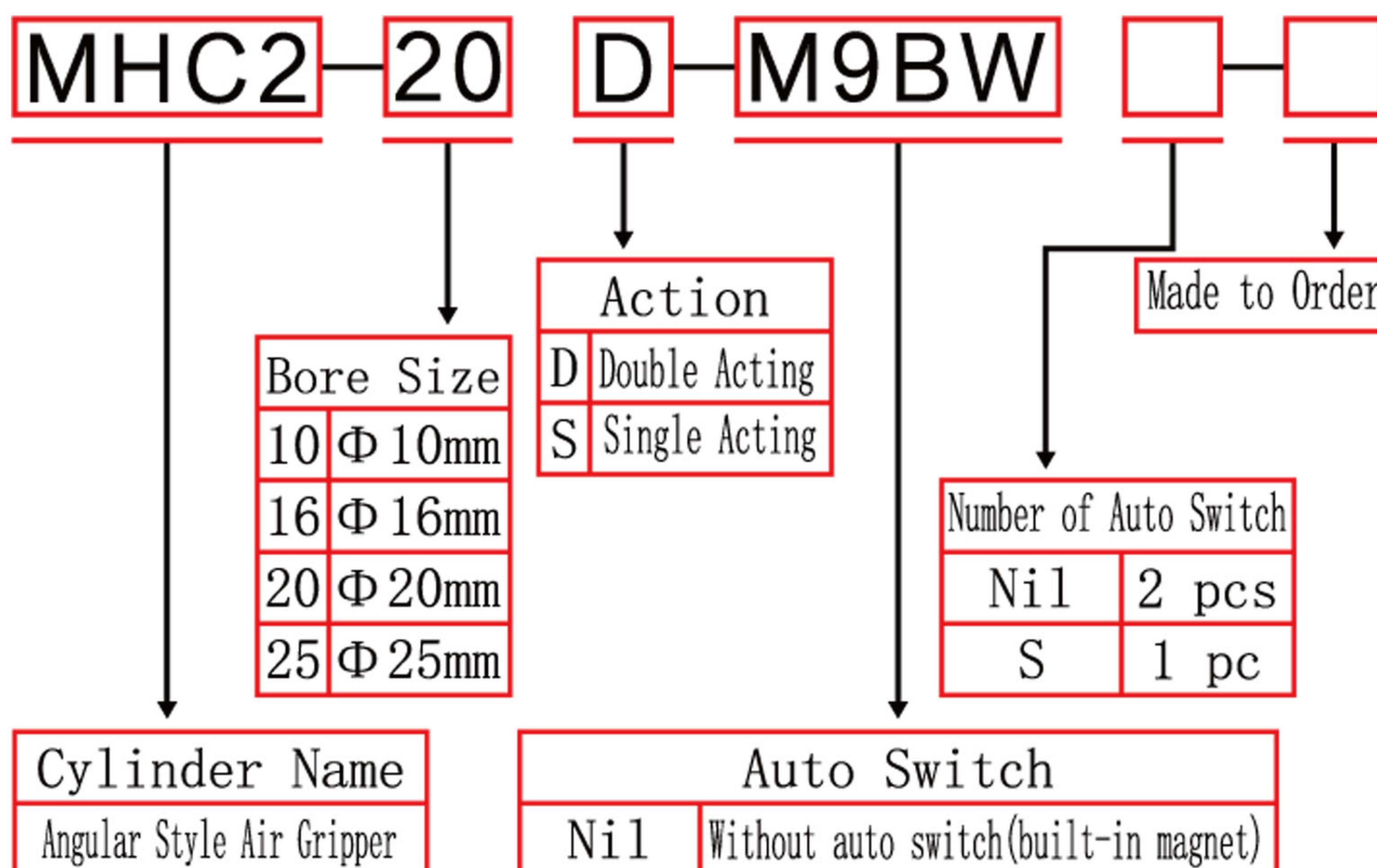


## MHC2 Series

Bore Size: 10mm, 16mm, 20mm, 25mm



## Ordering Code



## Specifications

Fluid		Air
Operating pressure	Double acting	0.15 to 0.6 MPa
	Single acting: Normally open	0.3 to 0.6 MPa
Ambient and fluid temperature		-10 to 60°C
Repeatability		±0.02 mm
Maximum operating frequency		180 c.p.m
Lubrication		Non-lube
Action		Double acting, Single acting (Normally open)
Auto switch (Option) <small>Note)</small>		Solid state auto switch (3-wire, 2-wire)

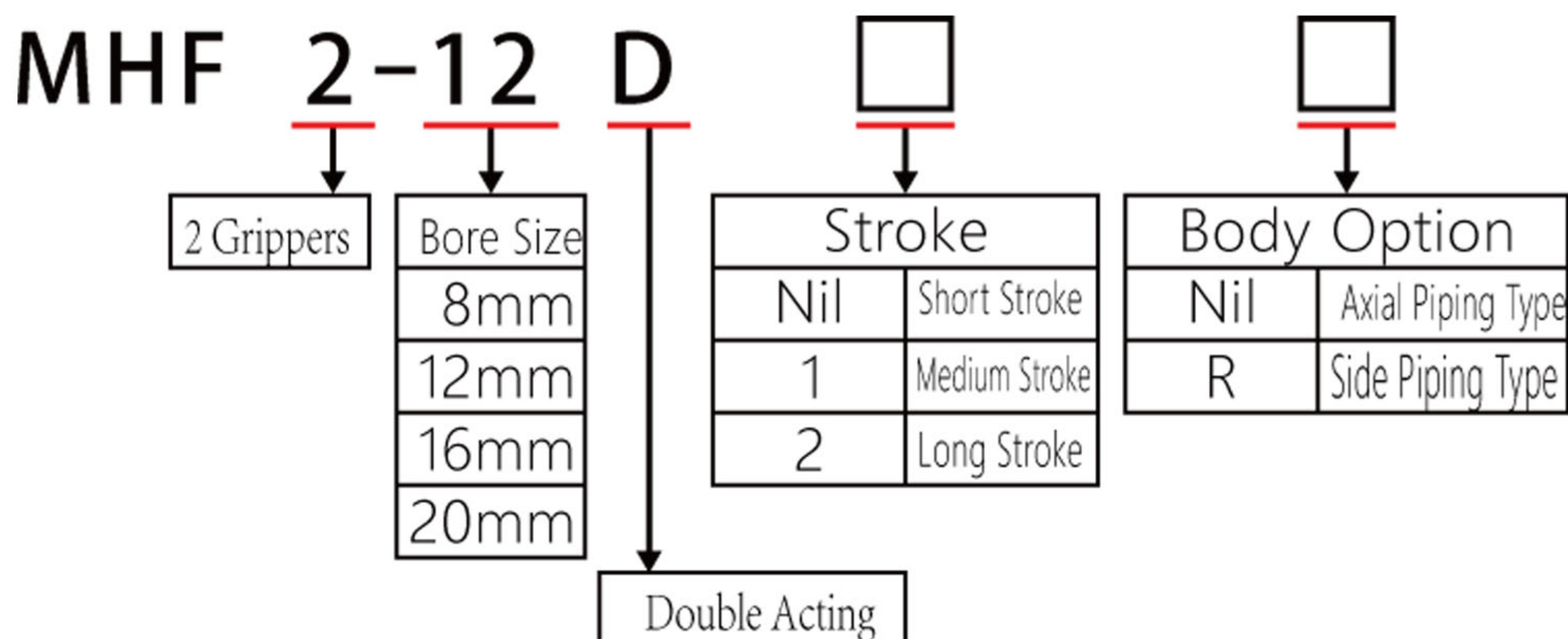
Note) Refer to pages 761 to 809 for further information on auto switches.



## MHF2 Series

Bore Size: 8mm, 12mm, 16mm, 20mm,

### Ordering Code



## Specifications

Fluid		Air
Operating pressure		ø8: 0.15 to 0.7 MPa
		ø12 to 20: 0.1 to 0.7 MPa
Ambient and fluid temperature		-10 to 60°C (with no condensation)
Repeatability		±0.05 mm <small>Note 1)</small>
Maximum operating frequency	Short stroke	120 c.p.m.
	Medium stroke	120 c.p.m.
	Long stroke	60 c.p.m.
Lubrication		Not required
Action		Double acting
Auto switch (Option) <small>Note 2)</small>		Solid state auto switch (3-wire, 2-wire)

Note 1) This is the value when no offset load is applied to the finger.

When an offset load is applied to the finger, the maximum value is ±0.15 mm due to the influence of backlash of the rack and pinion.

Note 2) Refer to pages 761 to 809 for further information on auto switches.



## MHL2 Series

Bore Size: 10mm, 16mm, 20mm, 25mm  
32mm, 40mm



### Ordering Code

MHL 2 – 16 □ D □ – M9BW □

Wide Opening

Number of fingers

2 2 fingers

Bore Size

10	10mm
16	16mm
20	20mm
25	25mm
32	32mm
40	40mm

Action

D Double Acting

Number of auto switch

Nil	2 pcs
S	1 pc
N	n pc

Auto Switch Model

Nil

Without auto switch(built-in magnet)

Thread Type

Symbol	Type	Bore Size
Nil	M Thread	ø10 ~ ø25
	Rc	
TN	NPT	ø32 ~ ø40
TF	G	

Opening & closing stroke(mm)

symbol	ø10	ø16	ø20	ø25	ø32	ø40
Nil	20	30	40	50	70	100
1	40	60	80	100	120	160
2	60	80	100	120	160	200

## Specifications

Bore size (mm)	10	16	20	25	32	40
Fluid	Air					
Action	Double acting					
Operating pressure (MPa)	0.15 to 0.6	0.1 to 0.6				
Ambient and fluid temperature	-10 to 60°C					
Repeatability	± 0.1					
Lubrication	Not required					
Effective gripping force (N) <sup>Note)</sup> at 0.5 MPa	14	45	74	131	228	396

Note) Gripping point = Bore size 10, 16, 20, 25: 40 mm, Bore size 32, 40: 80 mm.

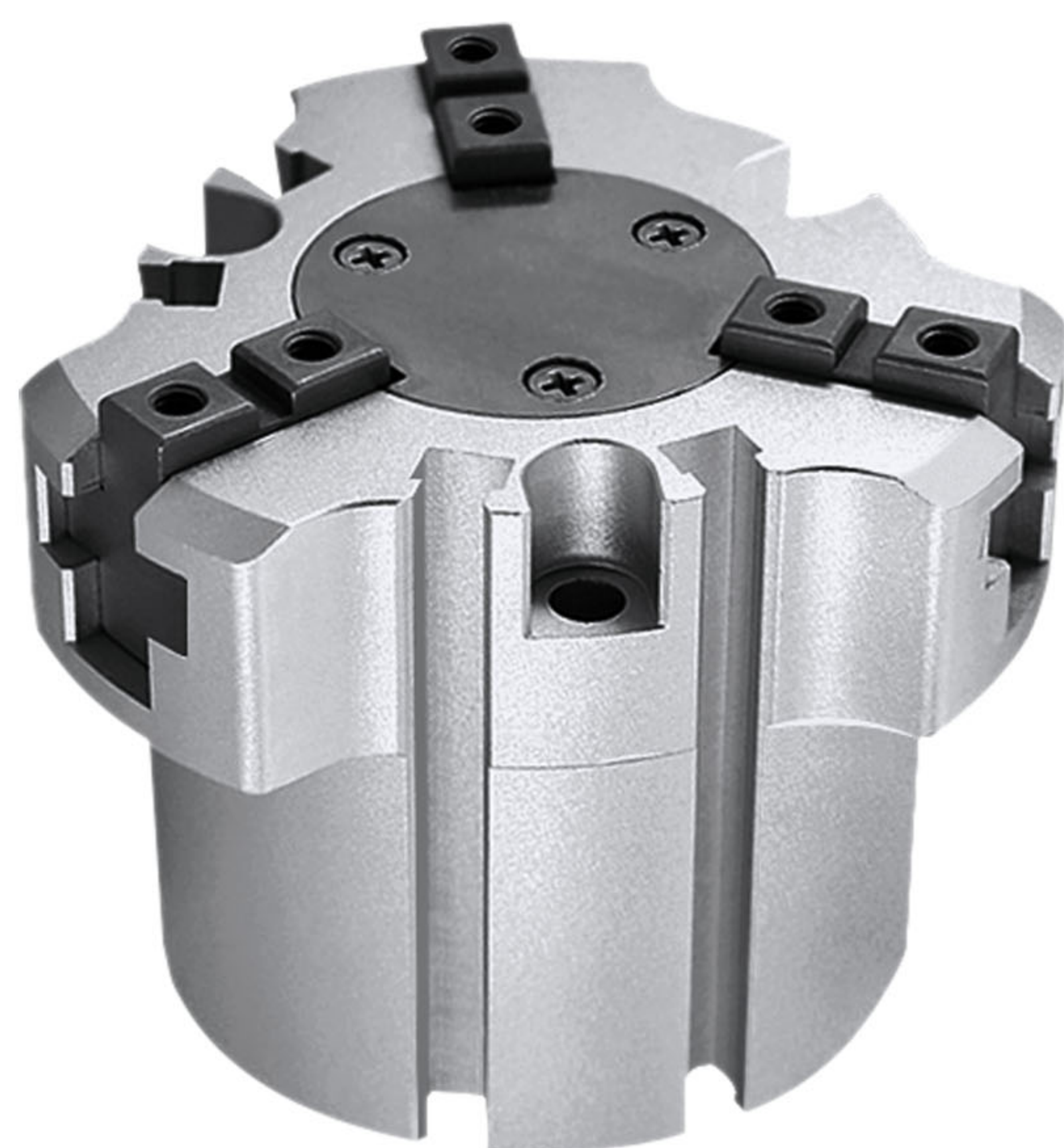


# 3 Finger Air Gripper Parallel Type



## MHSL3 Series

Bore Size: 16mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 80mm, 100mm, 125mm



### Ordering Code

MHS L 3 - 32 D - M9N  

Type	
Nil	Standard
L	Long Stroke type
J	with dust cover

Bore Size	
16	20
25	32
40	50
63	80
100	125

Double Acting

Auto Switch  
Nil  
Without Auto Switch  
(built-in magnet)

number of auto switch	
Nil	2 pcs
S	1 pc
※N	n pc
※Bore Size Φ32~Φ125	

3 Grippers

Auto Switch model  
+wire length model

Nil	0.5m
L	3m
Z	5m
Example: Y59BL	

Model	MHS3-16D	MHS3-20D	MHS3-25D	MHS3-32D	MHS3-40D	MHS3-50D	MHS3-63D	MHS3-80D	MHS3-100D	MHS3-125D	
Cylinder bore size mm	16	20	25	32	40	50	63	80	100	125	
Fluid	Air										
Operating pressure MPa	0.2 to 0.6			0.1 to 0.6							
Ambient and fluid temperature °C	-10 to 60										
Repeatability mm	±0.01										
Max. operating frequency c.p.m.	120			60				30			
Lubrication	Non-lube										
Action	Double acting										
Effective gripping force N at pressure of 0.5MPa	External gripping force	14	25	42	74	118	187	335	500	750	1,270
	Internal gripping force	16	28	47	82	130	204	359	525	780	1,320
Opening/closing stroke mm (dia.)	4	4	6	8	8	12	16	20	24	32	
Weight g	60	100	140	237	351	541	992	1,850	3,340	6,460	

Note 1) Values for ø16 to ø25 are with gripping point L = 20mm, for ø32 to ø63 with gripping point L = 30mm, and for ø80 to ø125 with gripping point L = 50mm.

Refer to the "Effective Gripping Force" data on pages 5-169 through 5-171 for the gripping force at each gripping position.

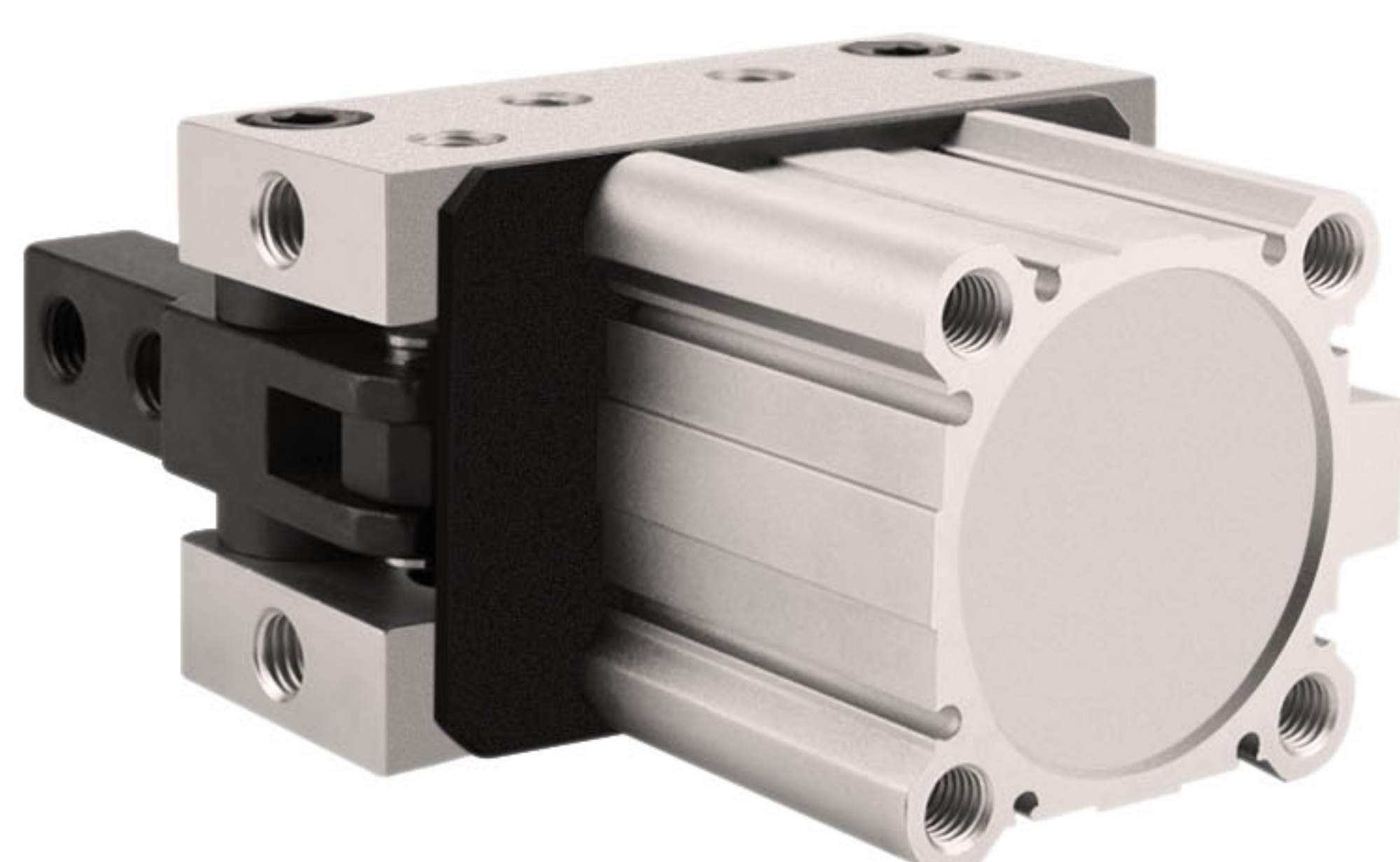
Note 2) Open and closed diameter values apply for external gripping of work pieces.



## MHT Series

Recirculating linear ball bearing

Bore Size: 32mm, 40mm, 50mm, 63mm



### Ordering Code

MHT 2 - 32 D - A73 ☐

2 Fingers

Bore Size

32mm

40mm

50mm

63mm

Auto Switch Symbol

Nil

Without Auto Switch

Double Acting

Numbers of Auto Switch

Nil

2pcs

S

1pcs

N

npcs

Bore size (mm)	32	40	50	63
Air intake thread	1/8	1/8	1/4	1/4
Blessing torque(N·m)	12.4	36	63	106
Finger opening angle	-3° ~ 28°	-3° ~ 27°	-2° ~ 23°	-2° ~ 23°

### Model/Specifications

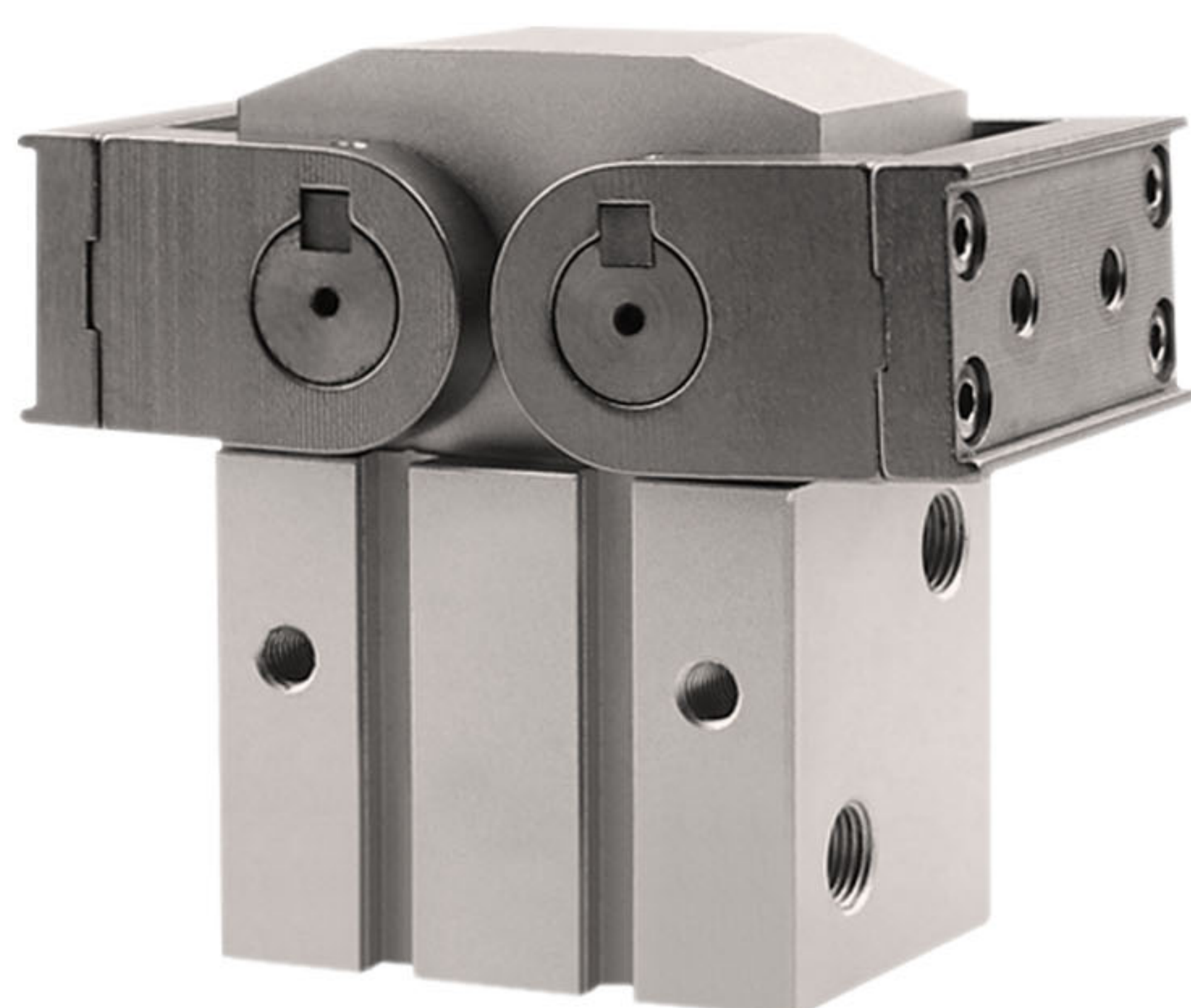
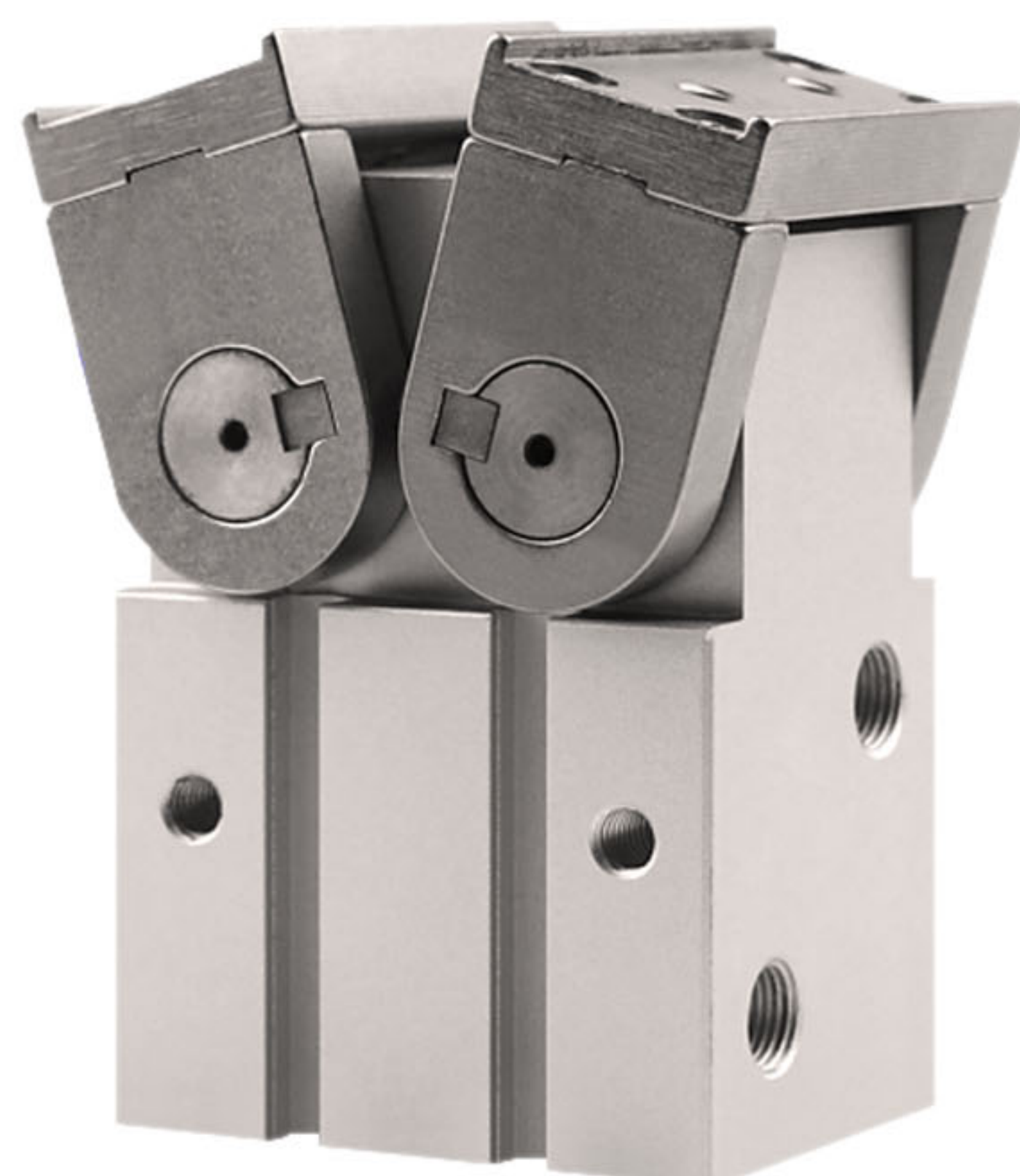
Model	MHT2-32D	MHT2-40D	MHT2-50D	MHT2-63D
Bore size (mm)	32	40	50	63
Action	Double acting			
Fluid	Air			
Operating pressure	0.1 to 0.6MPa			
Ambient and fluid temperature	5 to 60°C			
Lubrication	Non-lube			
Finger opening angle (total)	-3° to 28°	-3° to 27°	-2° to 23°	-2° to 23°
Weight	0.80 kg	1.09 kg	1.93kg	2.8 kg
Holding moment (Effective value) Nm <sup>Note)</sup>	12.4	36.0	63.0	106

Note) At pressure 0.5 MPa



## MHW Series

Bore Size: 20mm, 25mm, 32mm, 40mm, 50mm



### Ordering Code

MHW 2 - 20 □ D 1 - M9BW □

Numbers of Finger	
2	2Fingers

Bore Size	
20	20mm
25	25mm
32	32mm
40	40mm
50	50mm

Action Model	
D	Double Acting

Finger Option	
Nil	Flat type fingers (Standard)
1	Right angle type fingers tapped mounting

Numbers of Auto Switch	
Nil	2pcs
S	1pc
N	npcs

Port thread type		
Symbol	Type	Size
Nil	M Thread	ø20、ø25
	Rc	ø32
TN	NPT	ø40
TF	G	ø50

Auto Switch Model	
Nil	Without auto switch (Built-in magnet)

Unit: mm

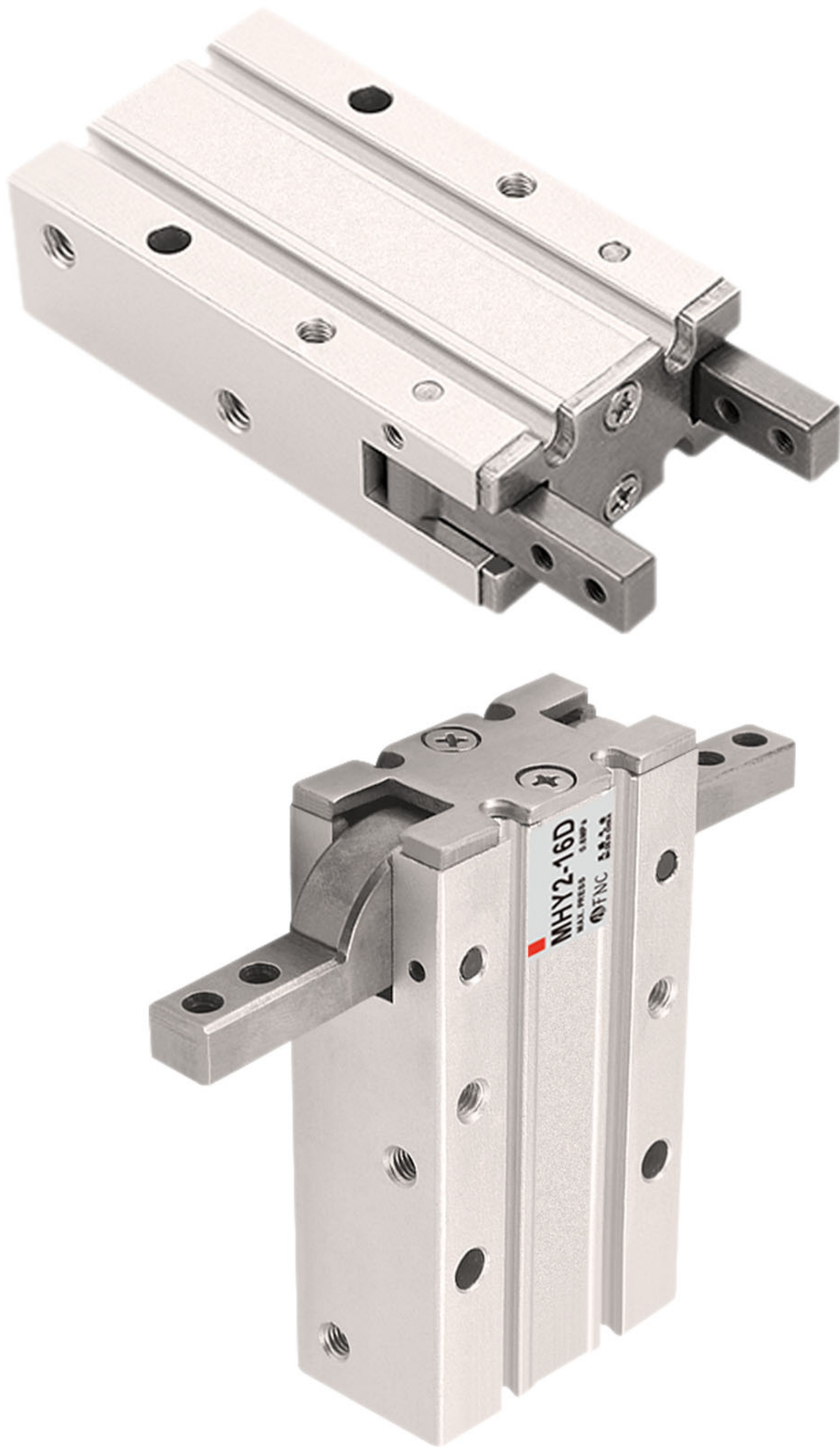
## Specifications

Fluid	Air
Operating pressure	0.15 to 0.7 MPa
Ambient and fluid temperature	-10 to 60°C
Repeatability	±0.2 mm
Max. operating frequency	ø20, 25: 60 c.p.m. ø32 to 50: 30 c.p.m.
Lubrication	Not required
Action	Double acting
Auto switch (Option) <sup>Note)</sup>	Solid state auto switch (3-wire, 2-wire)



MHY Series

Bore Size:10mm, 16mm, 20mm, 25mm



Ordering Code

MHY2-16D2-M9NL

2 Grippers

Bore Size

10mm

16mm

20mm

25mm

Double Acting

Auto Switch Model

Nil

Without Auto Switch

Auto Switch Model+ Wrie Length Model

Nil L Z

0.5m 3m 5m

Example:M9N、 M9NL

Fingers Option

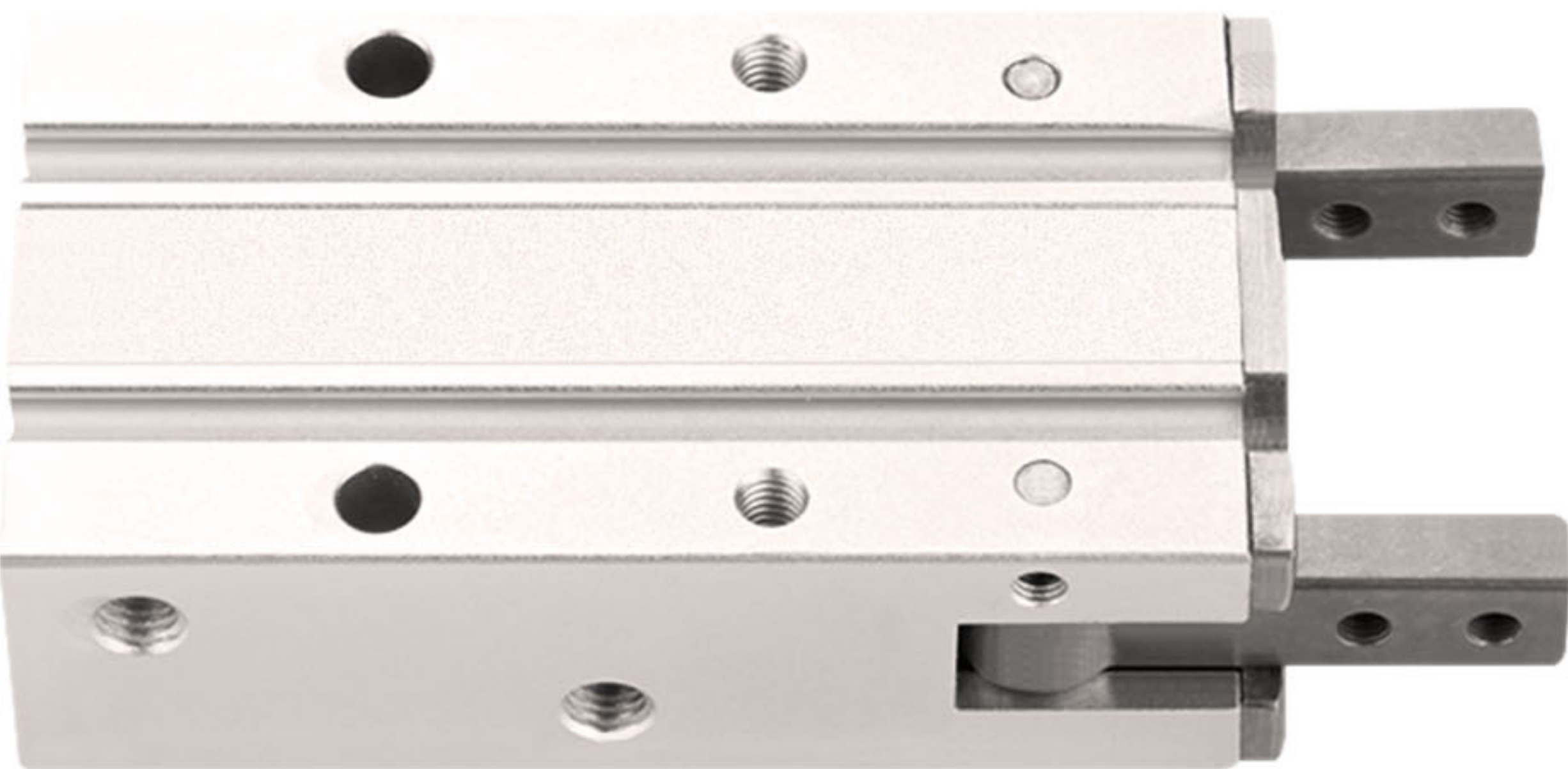
Nil Standard Tapped Mounting

2 Through Holes in opening/closing direction

Numbers of Atuo Switch

Nil 2pcs

S 1pcs



Specifications

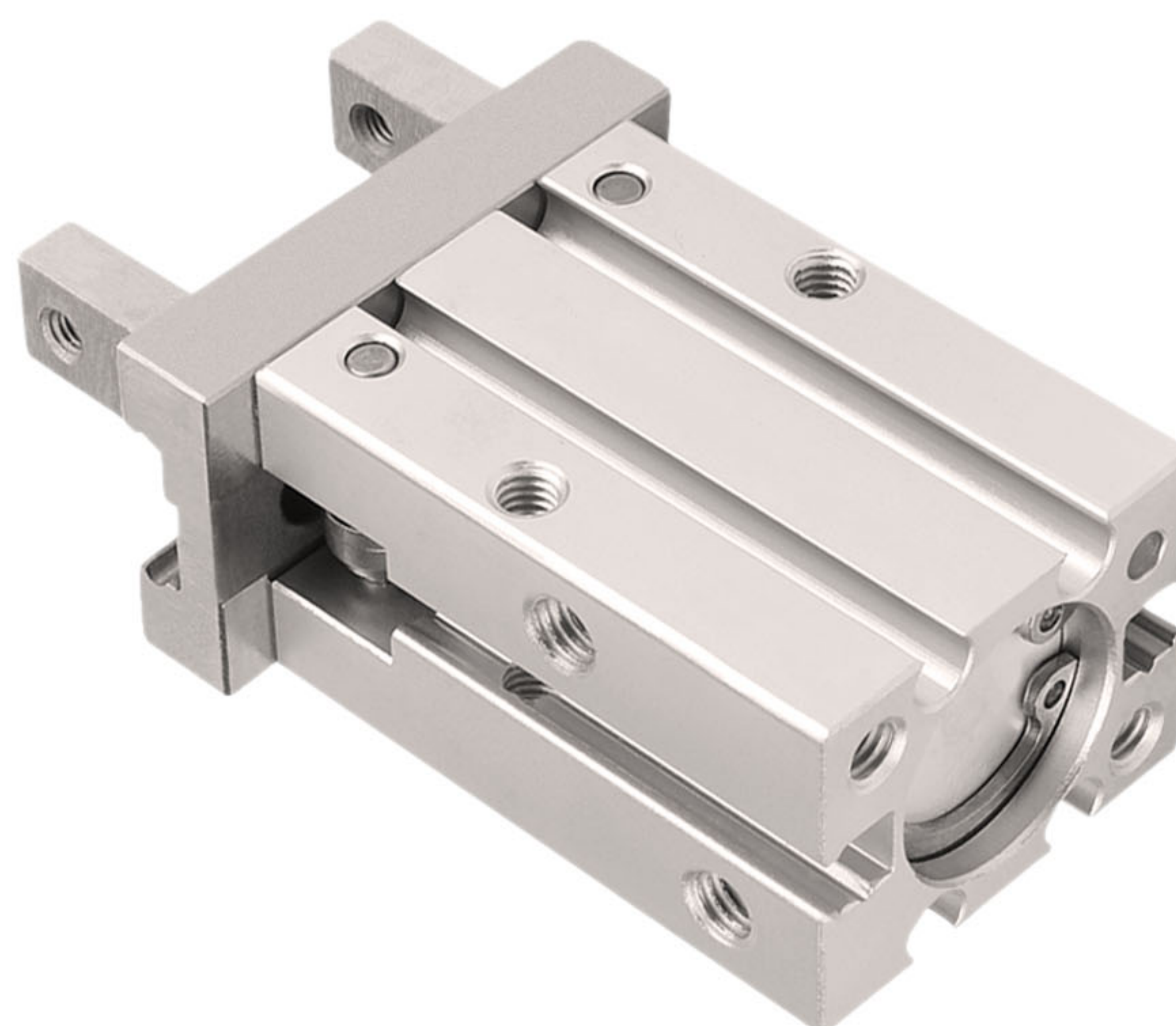
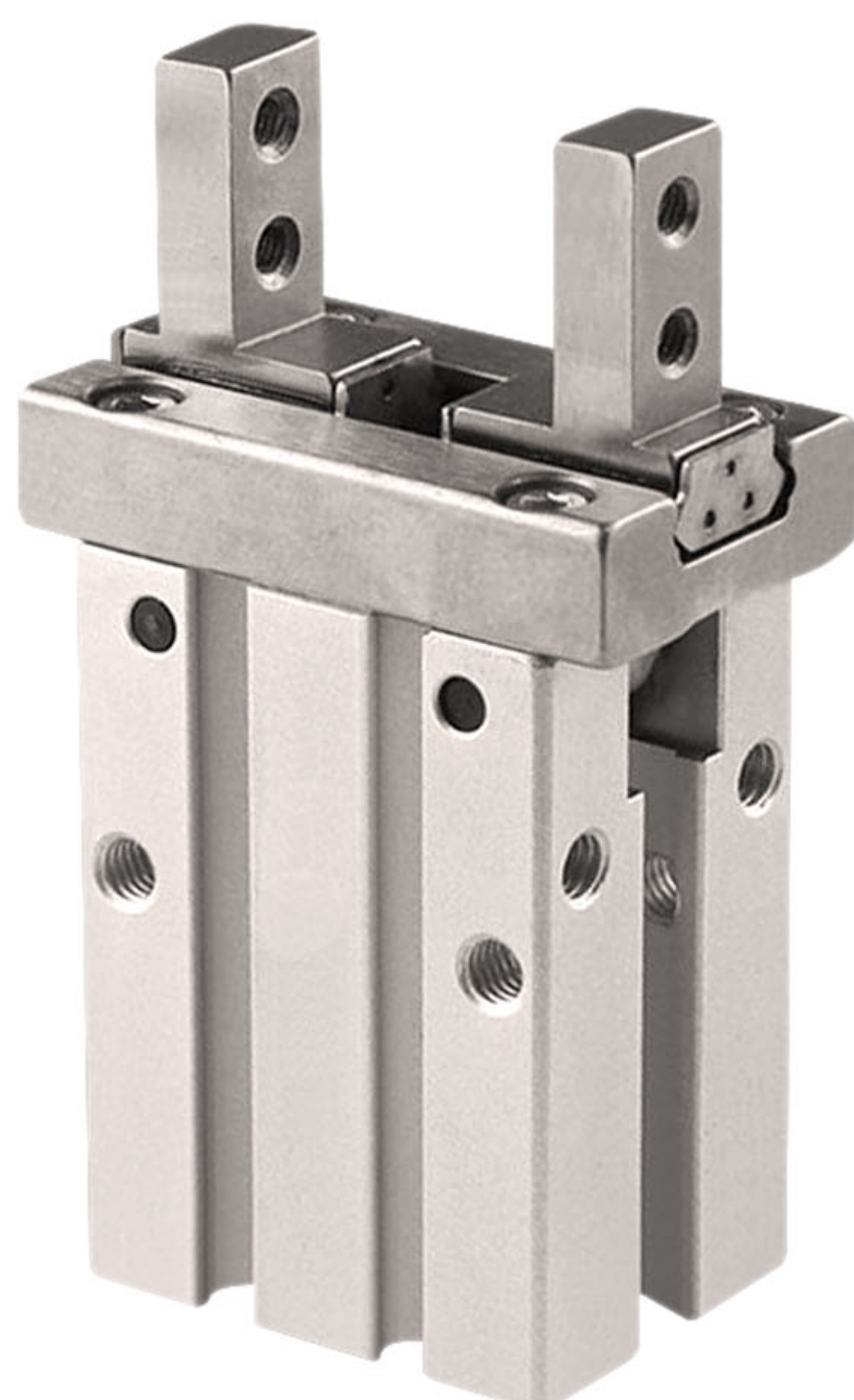
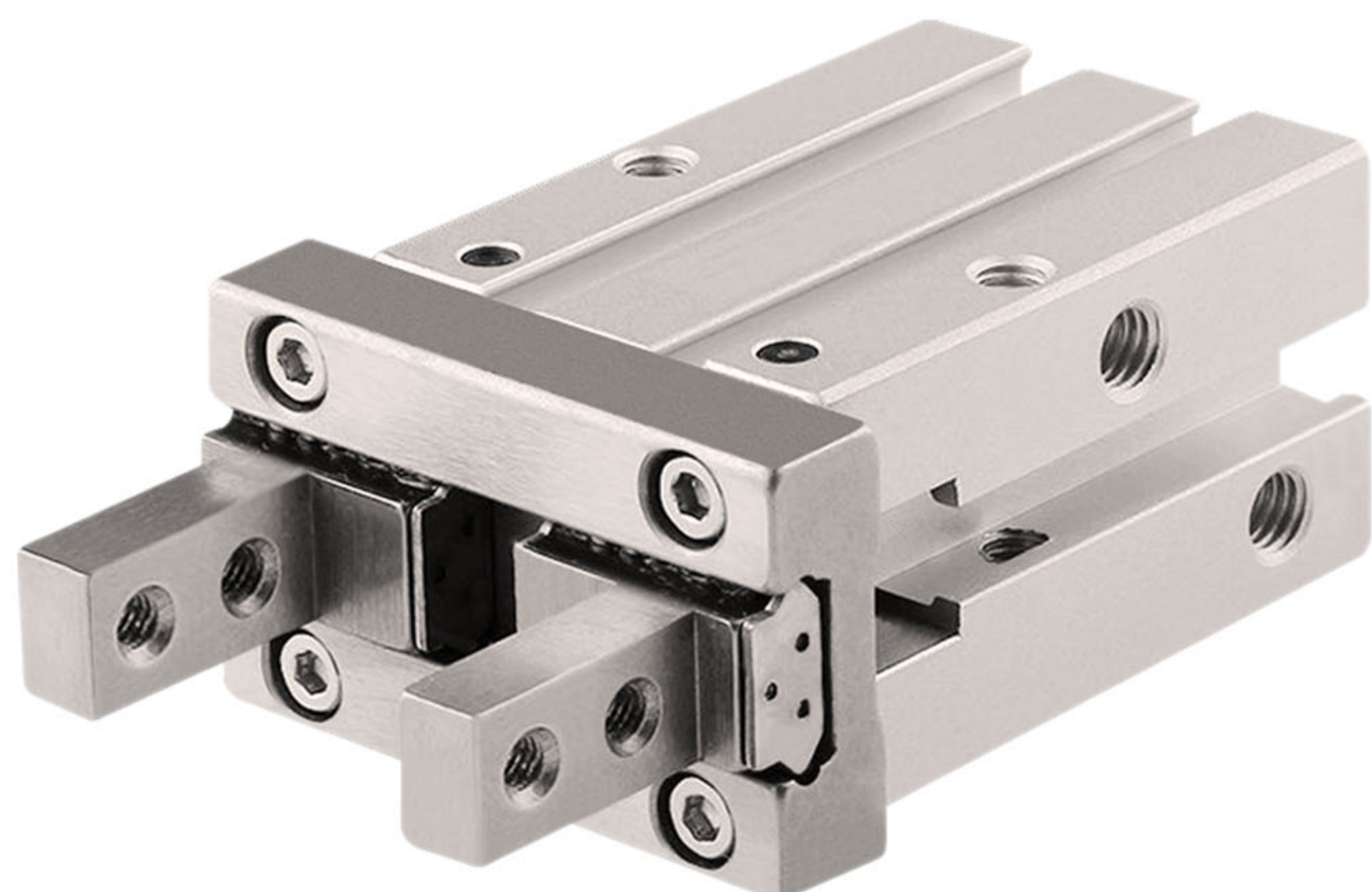
Fluid	Air
Operating pressure	0.1 to 0.6 MPa
Ambient and fluid temperature	-10 to 60°C
Repeatability	±0.2 mm
Max. operating frequency	60 c.p.m.
Lubrication	Not required
Action	Double acting
Auto switch (Option) <small>Note)</small>	Solid state auto switch (3-wire, 2-wire)

Note) Refer to pages 797 to 850 for further information on auto switches.



## MHZ Series

**Bore Size: 10mm, 16mm, 20mm, 25mm  
32mm, 40mm**



### Ordering Code

**M H Z 2 - 2 0 S N**

Series Number	
MHZ2	Parallel opening and closing type
MHZL2	Long stroke type

Bore
10
16
20
25
32
40

Action	
D	Double acting
S	Single acting (Normally open)
C	Single acting (Normally closed)

Finger Type	
Nil	Standard
N	narrow

### Specifications

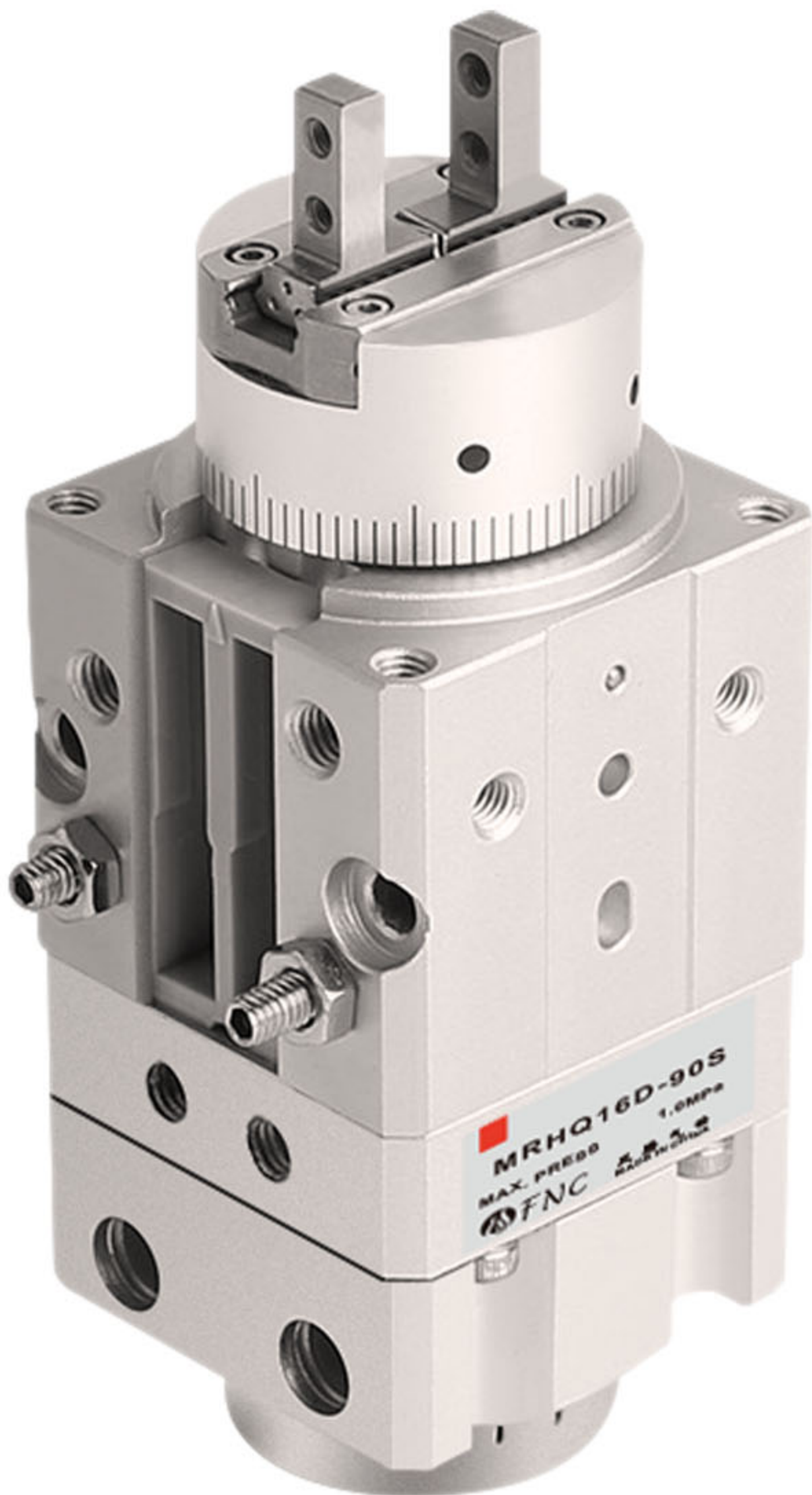
Fluid			Air
Operating pressure	Double acting		ø6: 0.15 to 0.7 MPa ø10: 0.2 to 0.7 MPa ø16 to ø25: 0.1 to 0.7 MPa
	Single acting	Normally open	ø6: 0.3 to 0.7 MPa ø10: 0.35 to 0.7 MPa ø16 to ø25: 0.25 to 0.7 MPa
		Normally closed	
Ambient and fluid temperature			−10 to 60°C
Repeatability			±0.01 mm
Max. operating frequency			180 c.p.m.
Lubrication			Not required
Action			Double acting, Single acting
Auto switch (option) <sup>Note)</sup>			Solid state auto switch (3-wire, 2-wire)

Note) Refer to pages 761 to 809 for further information on auto switches.

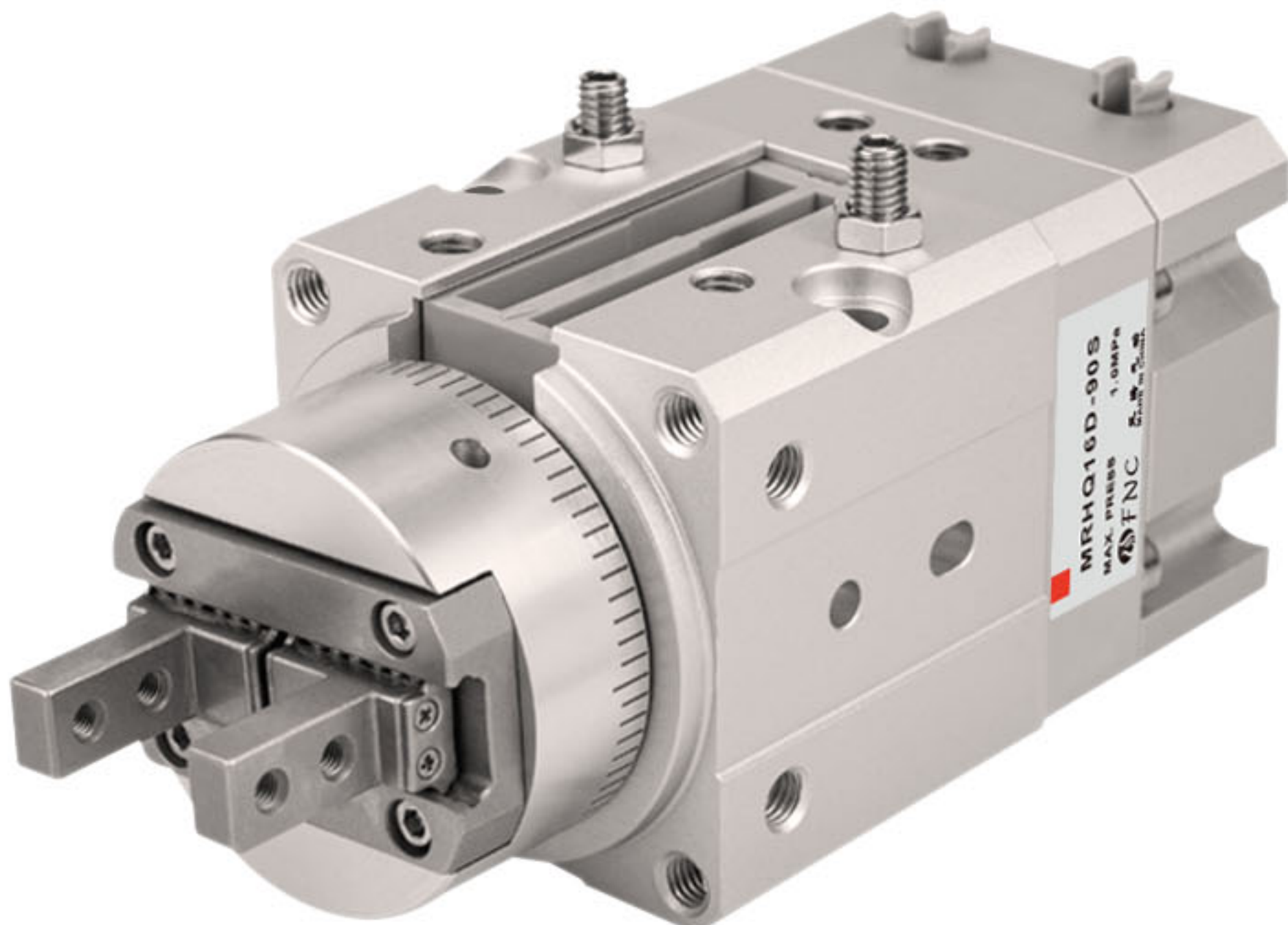
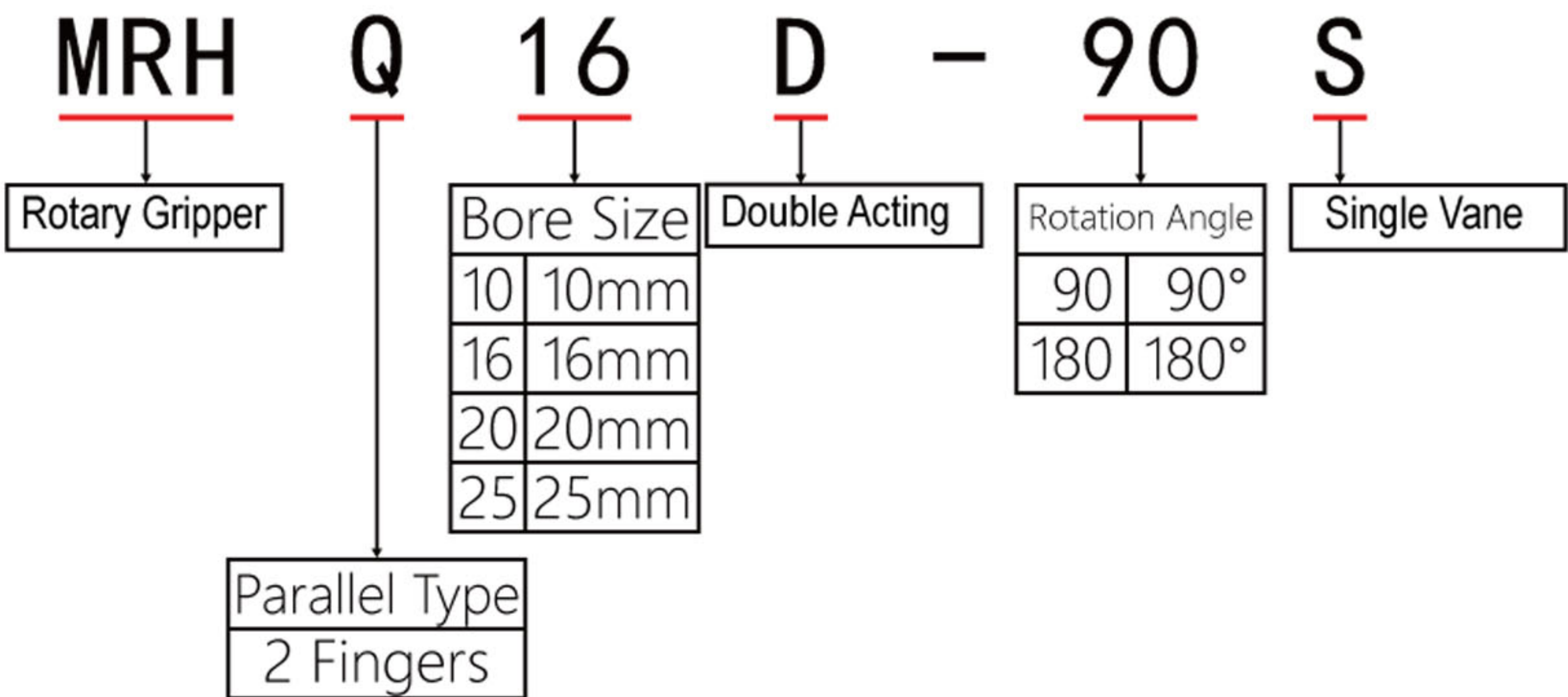


MRHQ Series

Recirculating linear ball bearing  
Bore Size:10mm, 16mm, 20mm, 25mm



Ordering Code



Specifications

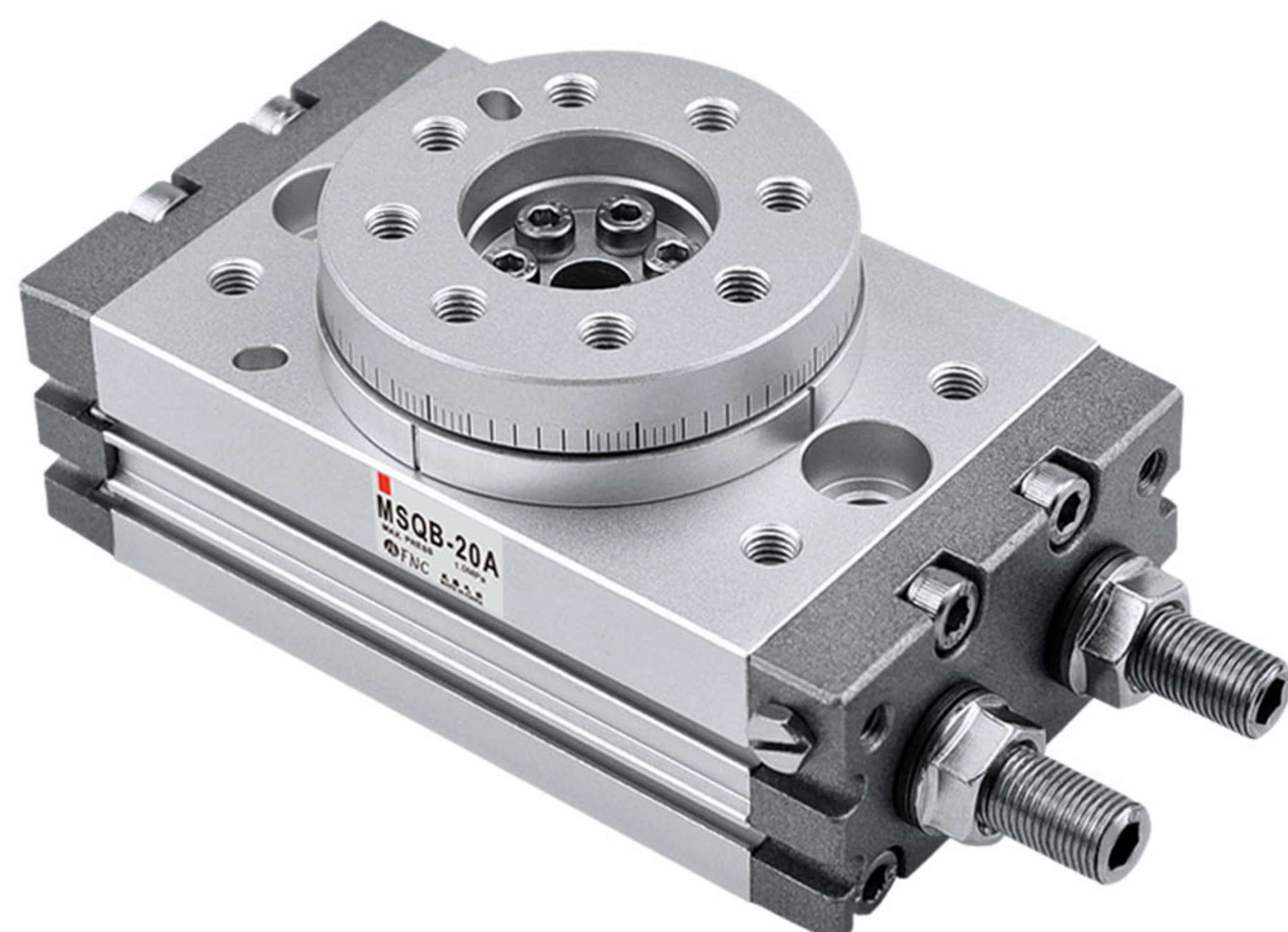
Model			MRHQ10	MRHQ16	MRHQ20	MRHQ25
Fluid			Air			
Operating pressure	Rotary unit		0.25 to 0.7 MPa		0.25 to 1.0 MPa	
	Gripper unit	Double acting	0.25 to 0.7 MPa	0.1 to 0.7 MPa		
		Single acting	0.35 to 0.7 MPa	0.25 to 0.7 MPa		
Rotation angle			90° ±10°, 180° ±10° (Both ends of vibration ±5° adjustable)			
Gripper action			Double acting, Single acting			
Finger opening/closing repeatability			±0.01mm			
Gripper maximum operating frequency			180 c.p.m			
Ambient and fluid temperature			5 to 60°C			
Adjustable rotation time range <sup>(1)</sup>			0.07 to 0.3 s/90° (at 0.5 MPa)			
Allowable kinetic energy			0.0046 J	0.014 J	0.034 J	0.074 J
Auto switch	Rotary unit		Solid state auto switch (2-wire, 3-wire)			
	Gripper unit		Solid state auto switch (2-wire, 3-wire)			

Note 1) Operate within the speed adjustment range, as speed control exceeding the limit value of the low speed may cause sticking or failure to operate.

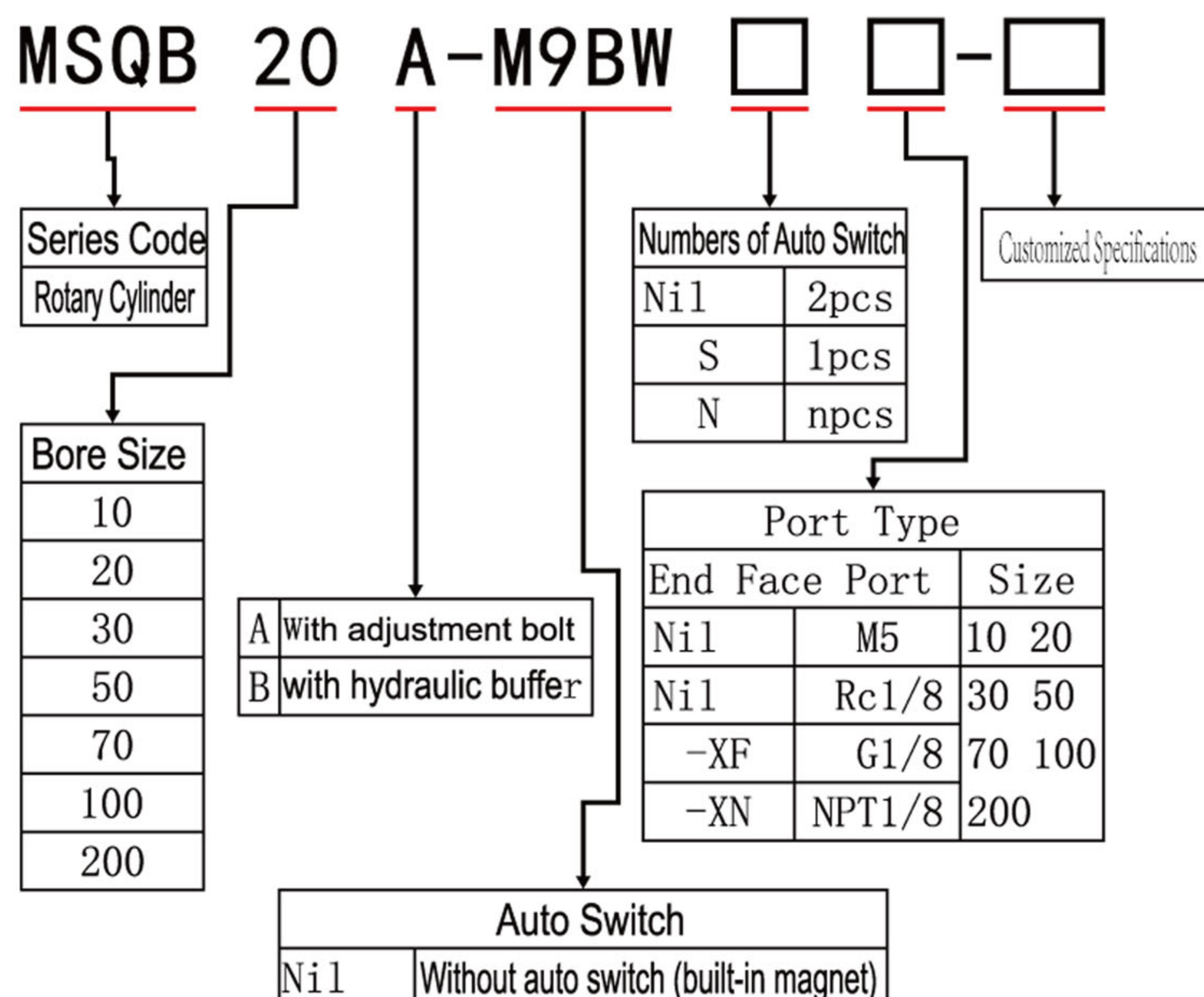


## MSQ Series

Recirculating linear ball bearing  
Bore Size: 1mm, 2mm, 3mm, 7mm



### Ordering Code



## Specifications

Size		10	20	30	50	70	100	200
Fluid		Air (non-lube)						
Maximum operating pressure	With adjustment bolt	1 MPa						
	With internal shock absorber	0.6 MPa <sup>Note 1)</sup>						
Minimum operating pressure	Basic type	0.1 MPa						
	High precision type	0.2 MPa	0.1 MPa			—		
Ambient and fluid temperature		0 to 60°C (with no freezing)						
Cushion	With adjustment bolt	Rubber bumper						
	With internal shock absorber	Shock absorber						
	Shock absorber model	RBA0805-X692	RBA1006-X692	RBA1411-X692	RBA2015-X821	RBA2725-X821		
Angle adjustment range		0 to 190° <sup>Note 2)</sup>						
Maximum rotation		190°						
Cylinder bore size		ø15	ø18	ø21	ø25	ø28	ø32	ø40
Port size	End ports	M5 x 0.8		Rc 1/8, G 1/8, NPT 1/8				
	Side ports	M5 x 0.8						

Note 1) The maximum operating pressure of the actuator is restricted by the maximum allowable thrust of the shock absorber.

Note 2) Be careful if the rotation angle of a type with internal shock absorber is set below the value in the table below, the piston stroke will be smaller than the shock absorber's effective stroke, resulting in decreased energy absorption ability.



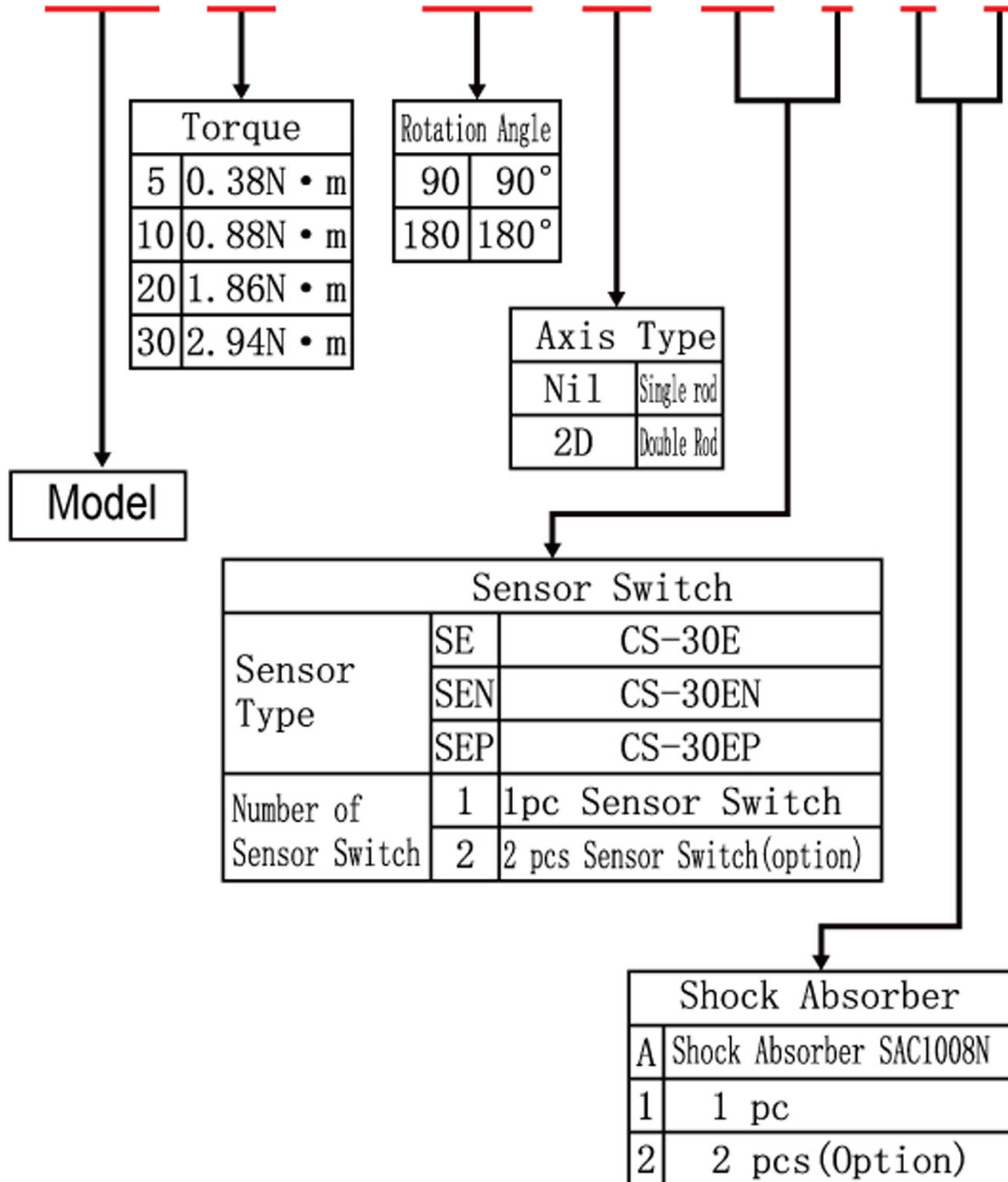
## RTP Series

Bore Size: 16mm, 20mm, 25mm, 30mm



### Ordering Code

**RTP 10 × 180-2D-SE 2-A 2**



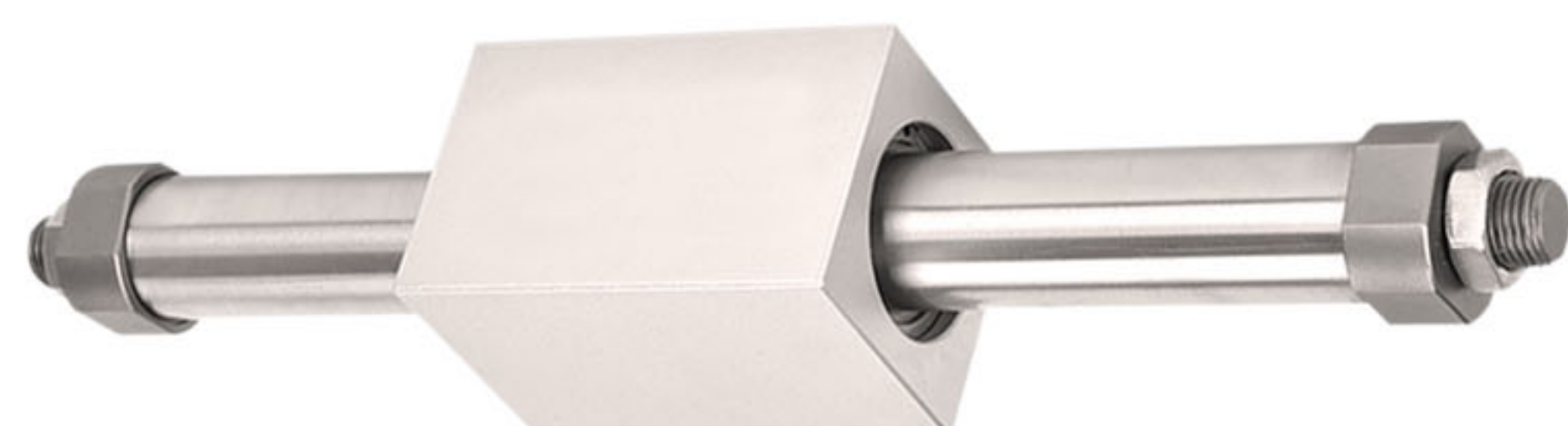
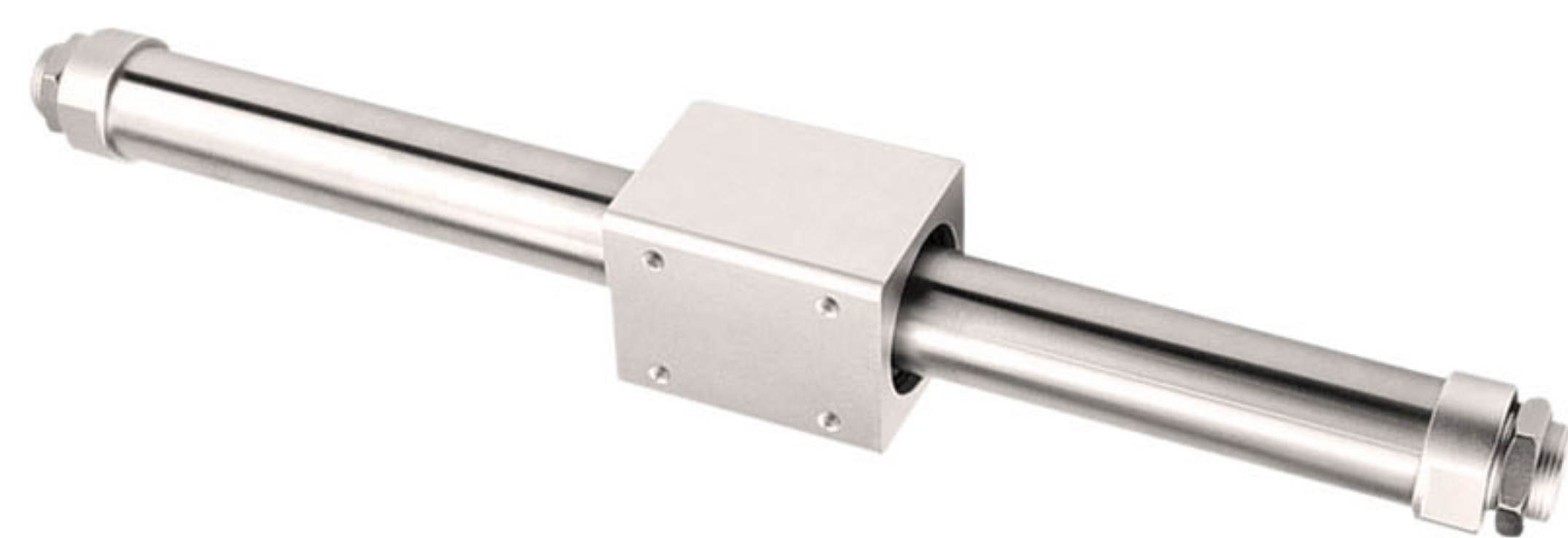
### Specification

Item	Model	RTP5 - <input type="checkbox"/>	RTP10 - <input type="checkbox"/>	RTP20 - <input type="checkbox"/>	RTP30 - <input type="checkbox"/>
Operation		Double acting			
Fluid		Air			
Torque	N·m	0.38	0.88	1.86	2.94
Bore size		Ø16	Ø20	Ø25	Ø30
Rotation angle		90°、180°			
Adjustment angle		+5°~ -30°			
Prot size		Rc1/8"			
Pressure range	kgf/cm <sup>2</sup> (kpa)	1.5 ~ 7 ( 150 ~ 700 )			
Temperature range	℃	0 ~ 50			



# CY1B Series

**Bore Size:6mm, 10mm, 50mm, 63mm**



## Ordering Code

CY1B      20      H      —      50

①                                  ②

Unit:mm

①Bore Size	②Stroke
6	50/100/150/200
10	50/100/150/200/250
15	50/100/150/200/250/300/350/400/450/500
20	50/100/150/200/250/300/350/400/450/500/600/700/800
25	50/100/150/200/250/300/350/400/450/500/600/700/800/900/1000
32	
40	
50	
63	

## Specifications

Fluid	Air
Proof pressure	1.05 MPa
Maximum operating pressure	0.7 MPa
Minimum operating pressure	0.18 MPa
Ambient and fluid temperature	-10 to 60°C
Piston speed	50 to 400 mm/s
Cushion	Rubber bumper on both ends
Lubrication	Non-lube
Stroke length tolerance	0 to 250 st: $^{+1.0}_0$ , 251 to 1000 st: $^{+1.4}_0$ , 1001 st and up: $^{+1.8}_0$
Mounting orientation	Free
Mounting nuts (2 pcs.)	Standard equipment (Accessory)



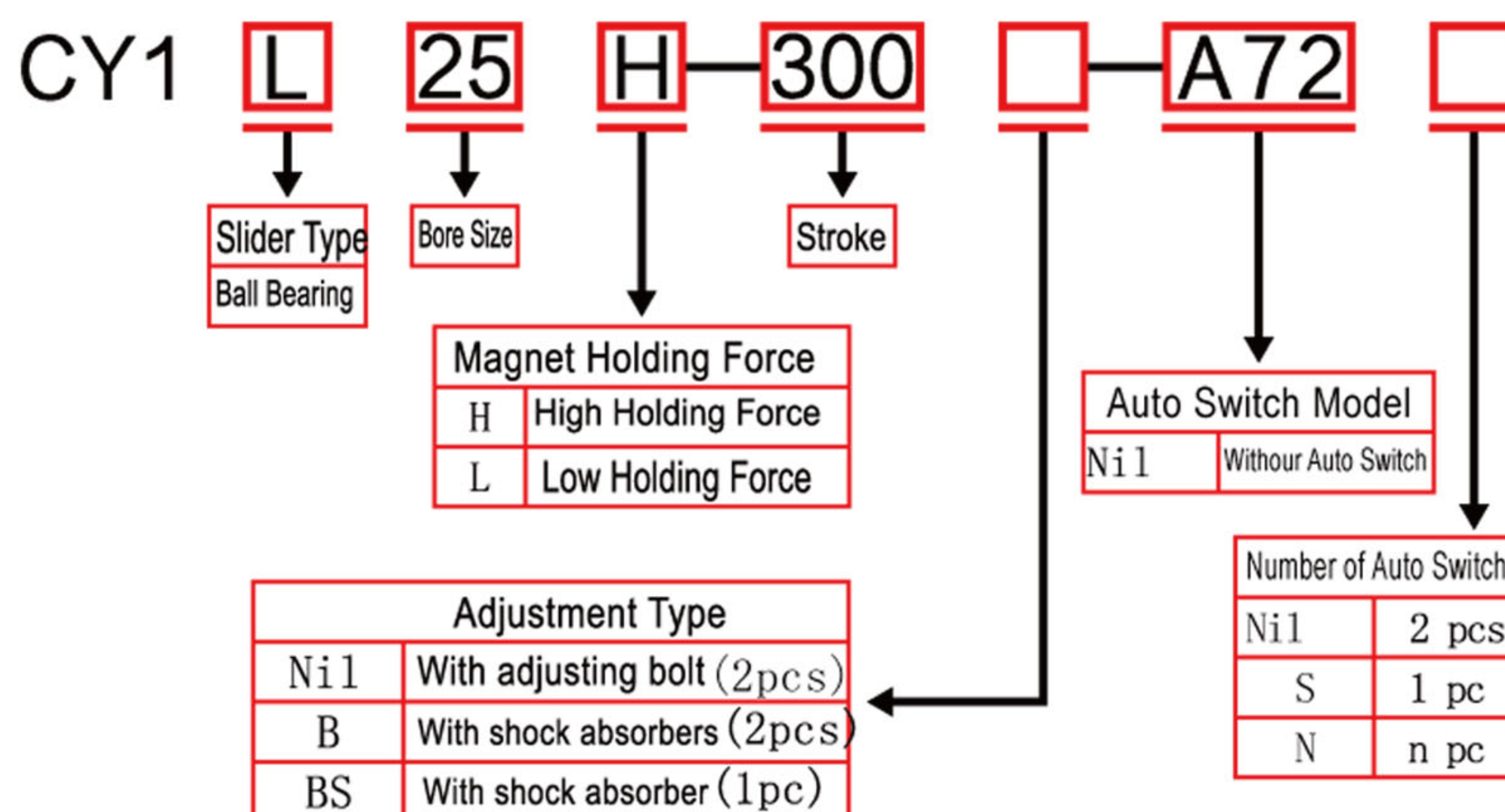
## CY1L Series

Recirculating linear ball bearing

Bore Size: 6mm, 10mm, 15mm, 20mm, 25mm, 32mm, 40mm



## Ordering Code



## Specifications

Bore size (mm)		6	10	15	20	25	32	40
Fluid		Air						
Proof pressure		1.05 MPa						
Maximum operating pressure		0.7 MPa						
Minimum operating pressure		0.18 MPa						
Ambient and fluid temperature		-10 to 60°C						
Piston speed *		50 to 500 mm/s						
Cushion		Rubber bumper/Shock absorber						
Lubrication		Not required (Non-lube)						
Stroke length tolerance		0 to 250 st: $^{+1.0}_0$ , 251 to 1000 st: $^{+1.4}_0$ , 1001 st and up: $^{+1.8}_0$						
Holding force	Type H	19.6	53.9	137	231	363	588	922
	Type L	—	—	81.4	154	221	358	569
Standard equipment		Auto switch mounting rail						

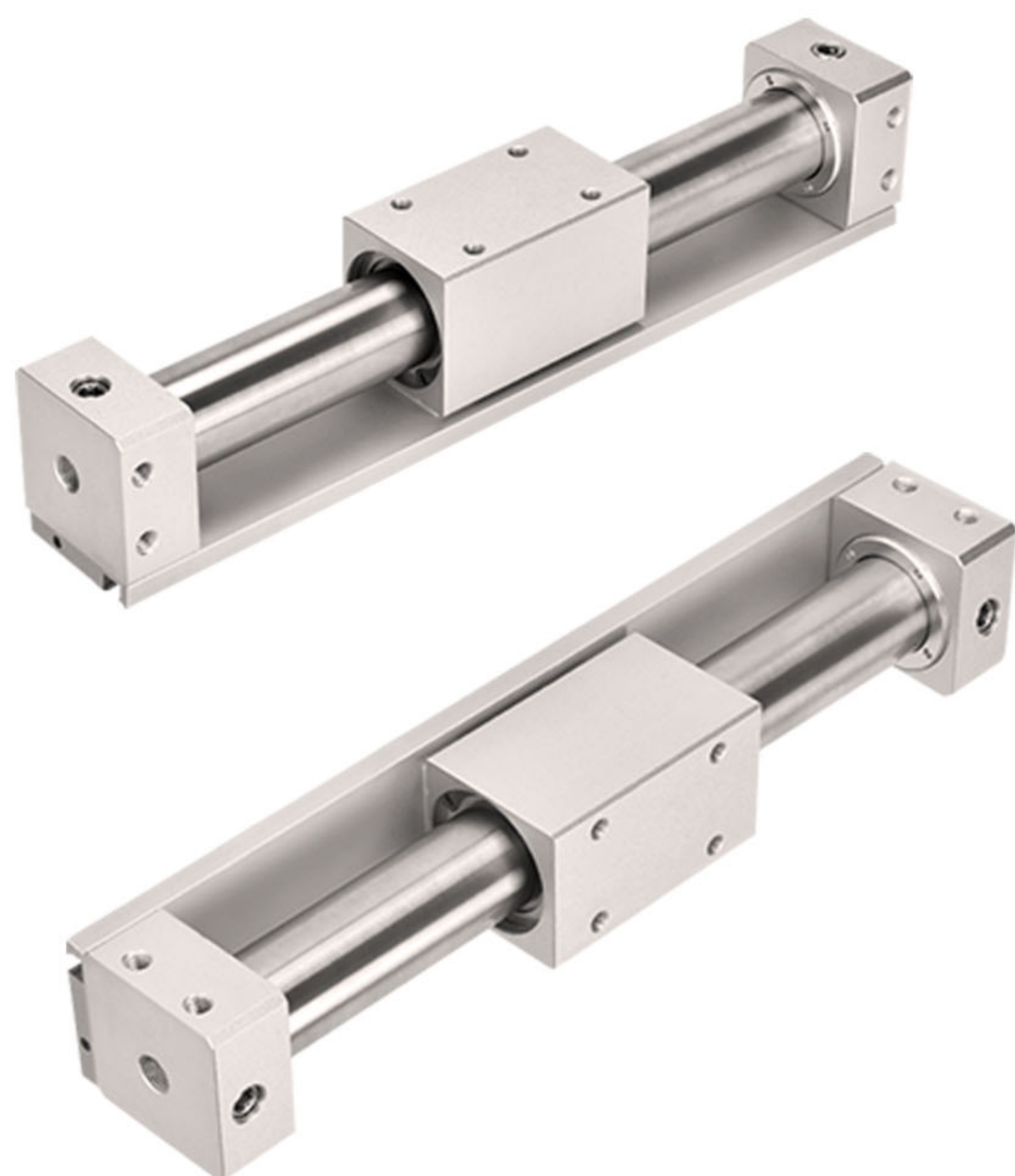
\* In the case of setting an auto switch at the intermediate position, the maximum piston speed is subject to restrict for detection upon the response time of a load (Relays, Sequence controller, etc.).



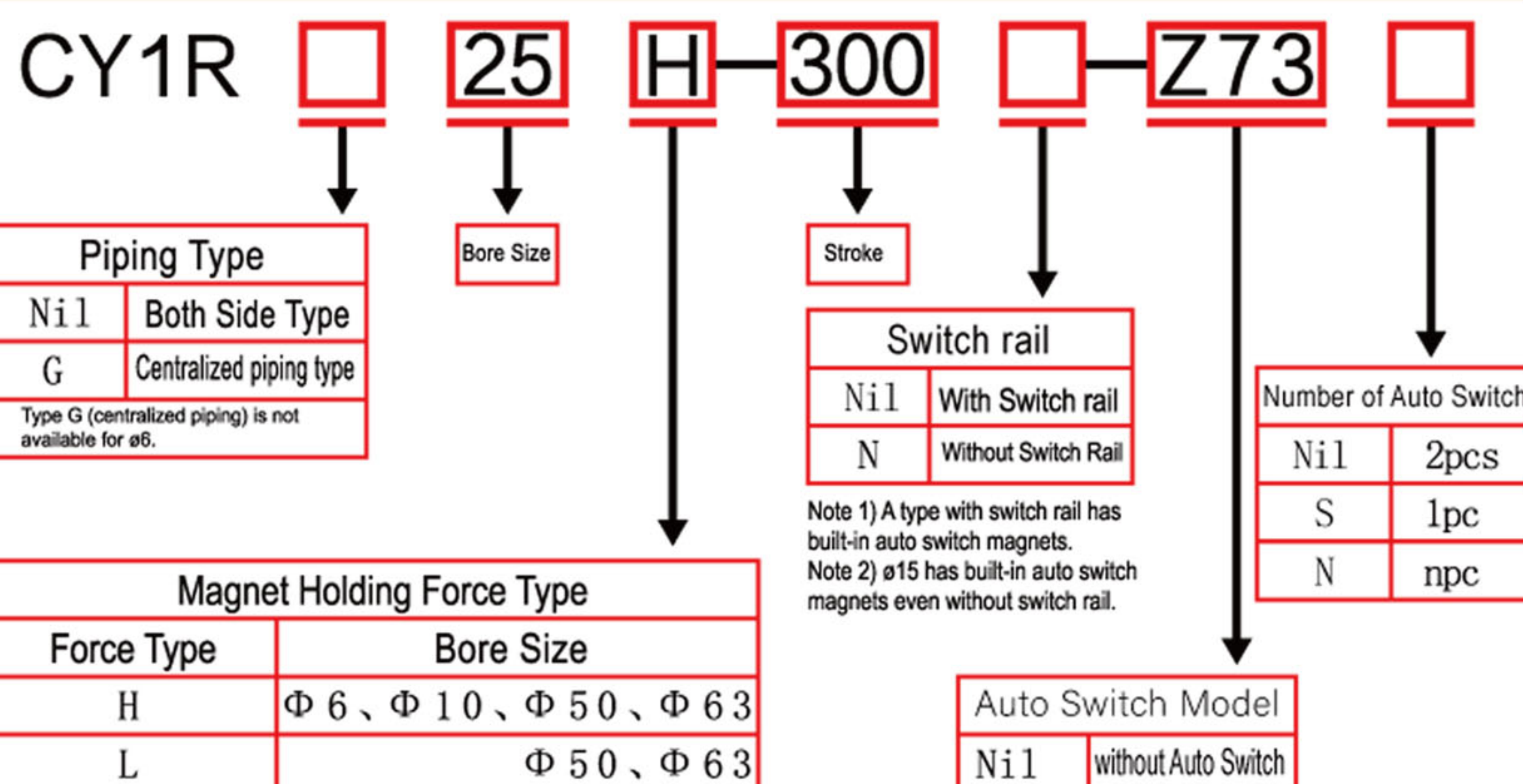
## CY1R Series

Recirculating linear ball bearing

Bore Size: 6mm, 10mm, 15mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm



## Ordering Code



## Specifications

Bore size (mm)	6	10	15	20	25	32	40	50	63
Fluid	Air								
Proof pressure	1.05 MPa								
Max. operating pressure	0.7 MPa								
Min. operating pressure	0.16	0.16	0.16	0.16	0.15	0.14	0.12	0.12	0.12
Ambient and fluid temperature	-10 to 60°C								
Piston speed	50 to 500 mm/s								
Cushion	Rubber bumper								
Lubrication	Not required (Non-lube)								
Stroke length tolerance	0 to 250 st: $+1.0_0$ , 251 to 1000 st: $+1.4_0$ , 1001 st to: $+1.8_0$								
Mounting	Direct mount type								
Mounting orientation	Horizontal, Inclined, Vertical <small>Note 2)</small>								
Magnet holding force (N)	19.6	53.9	137	231	363	588	922	1471	2256

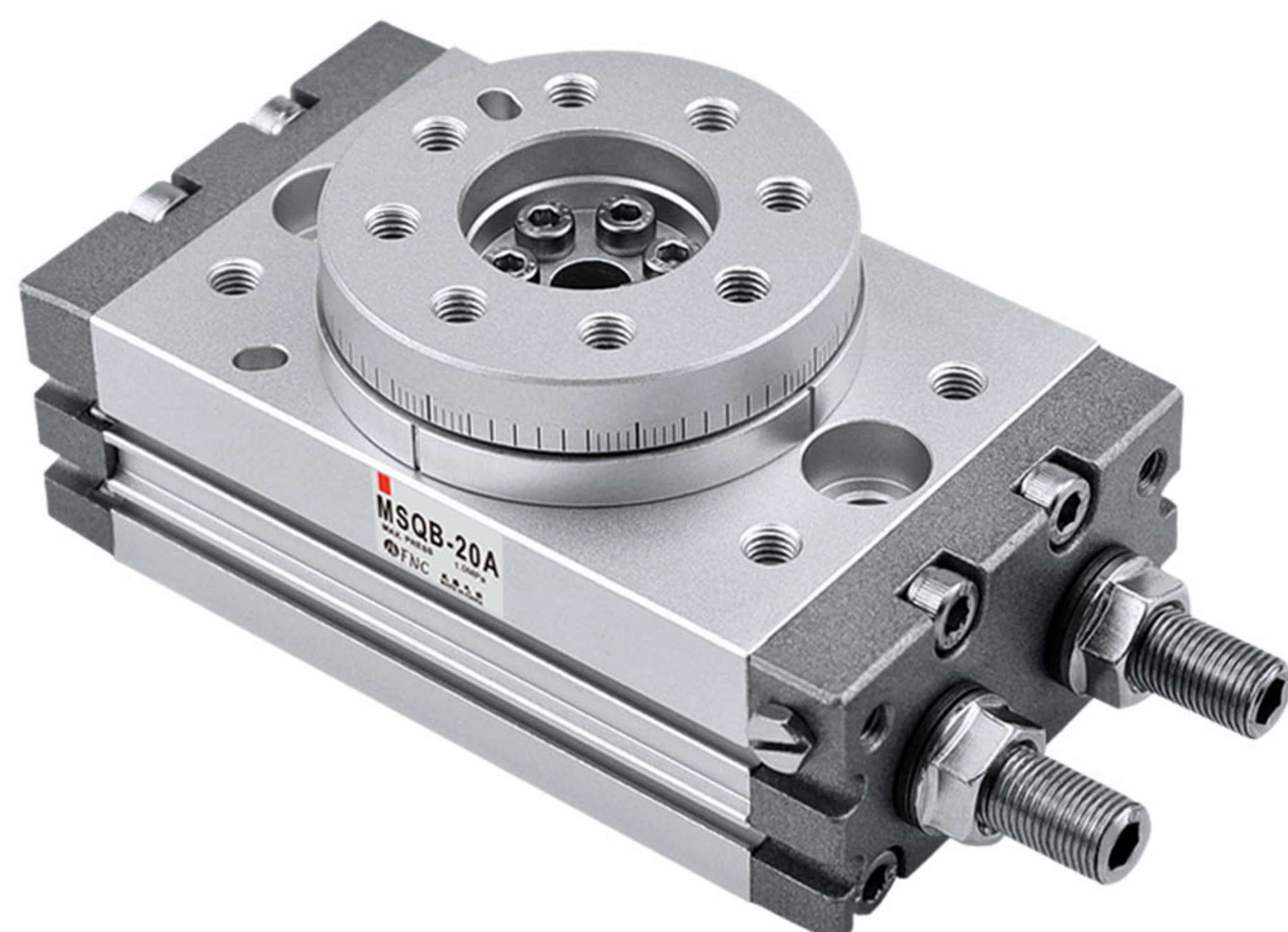
Note 1) When an auto switch is installed at an intermediate position of a type with auto switch, keep the maximum piston speed at 300 mm/s or below to ensure operation of relays or other devices.

Note 2) When vertically mounting, it is impossible to perform an intermediate stop by means of a pneumatic circuit.

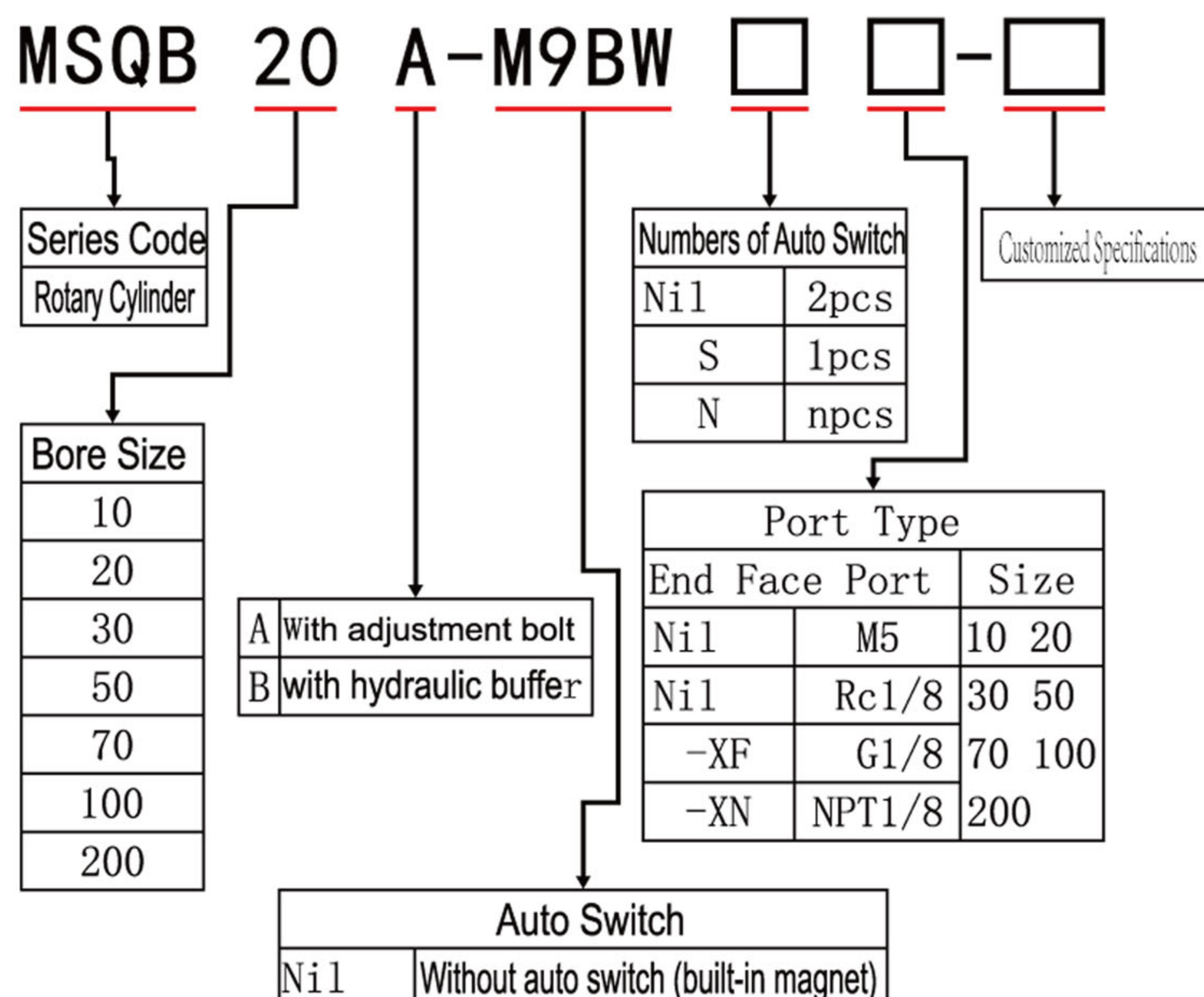


## MSQ Series

Recirculating linear ball bearing  
Bore Size: 1mm, 2mm, 3mm, 7mm



### Ordering Code



## Specifications

Size		10	20	30	50	70	100	200
Fluid		Air (non-lube)						
Maximum operating pressure	With adjustment bolt	1 MPa						
	With internal shock absorber	0.6 MPa <sup>Note 1)</sup>						
Minimum operating pressure	Basic type	0.1 MPa						
	High precision type	0.2 MPa	0.1 MPa			—		
Ambient and fluid temperature		0 to 60°C (with no freezing)						
Cushion	With adjustment bolt	Rubber bumper						
	With internal shock absorber	Shock absorber						
	Shock absorber model	RBA0805-X692	RBA1006-X692	RBA1411-X692	RBA2015-X821	RBA2725-X821		
Angle adjustment range		0 to 190° <sup>Note 2)</sup>						
Maximum rotation		190°						
Cylinder bore size		ø15	ø18	ø21	ø25	ø28	ø32	ø40
Port size	End ports	M5 x 0.8		Rc 1/8, G 1/8, NPT 1/8				
	Side ports	M5 x 0.8						

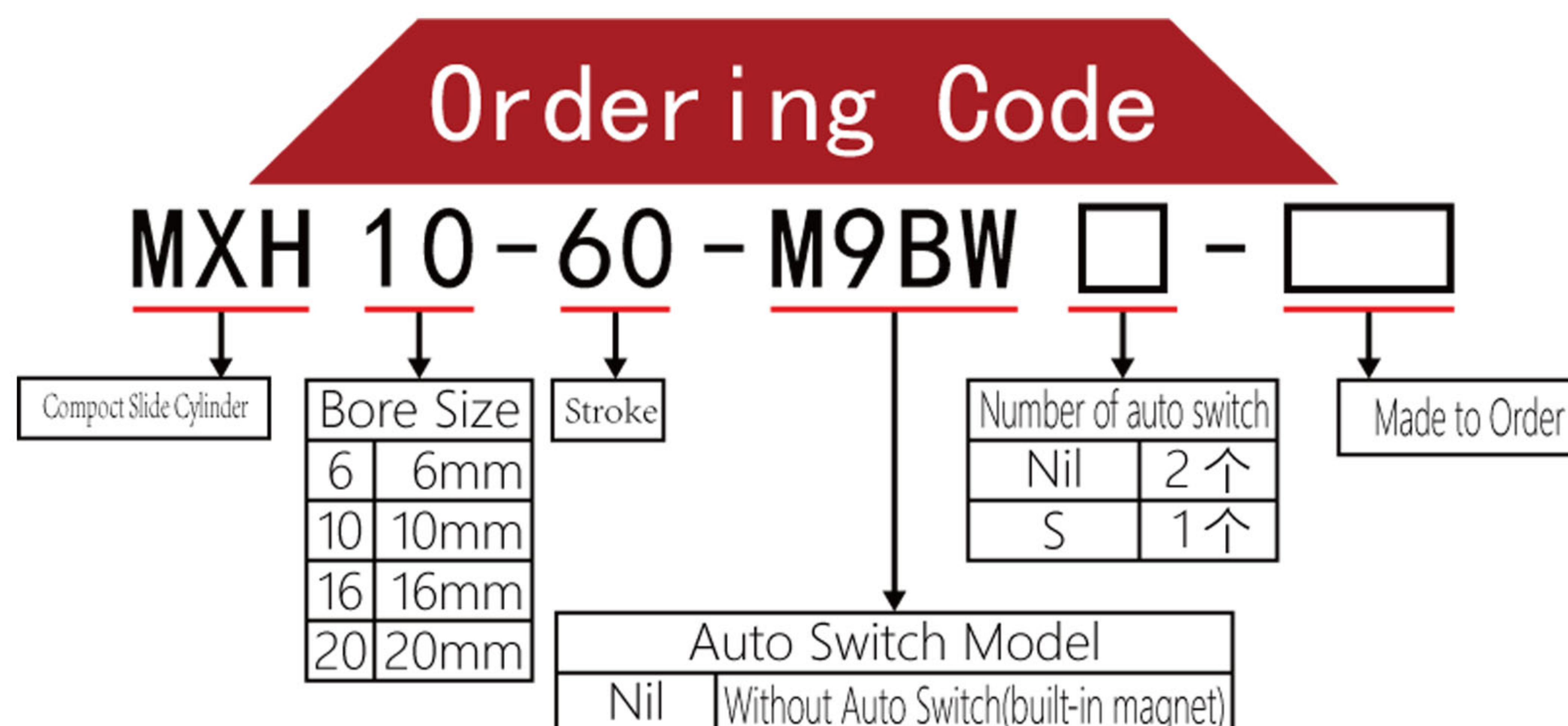
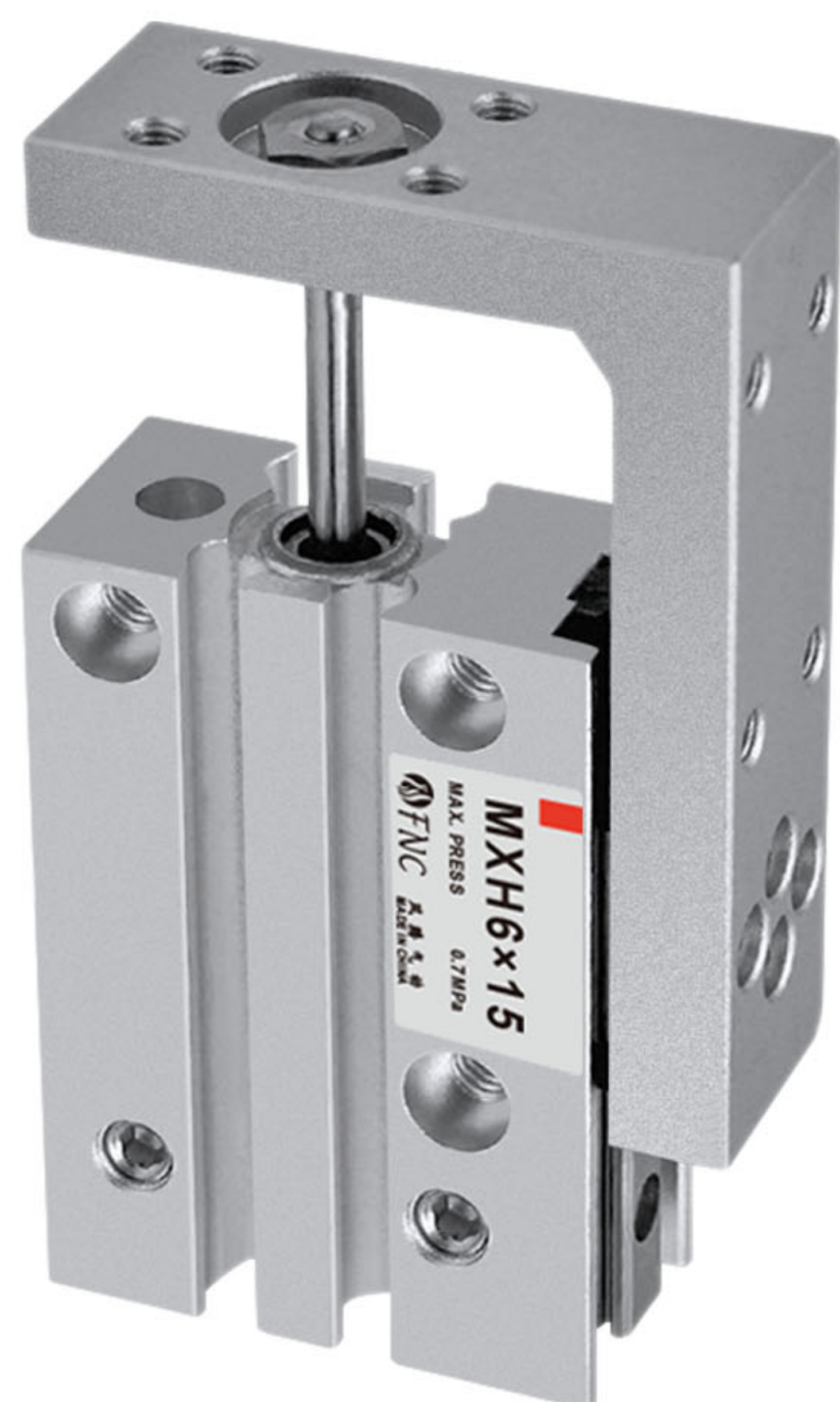
Note 1) The maximum operating pressure of the actuator is restricted by the maximum allowable thrust of the shock absorber.

Note 2) Be careful if the rotation angle of a type with internal shock absorber is set below the value in the table below, the piston stroke will be smaller than the shock absorber's effective stroke, resulting in decreased energy absorption ability.



## MXH Series

Bore Size: 6mm, 10mm, 16mm, 20mm



## Specifications

Bore size (mm)	6	10	16	20
Guide rail width (mm)	5	7	9	12
Fluid	Air			
Action	Double acting			
Piping port size	M5 x 0.8			
Minimum operating pressure	0.15 MPa	0.06 MPa		0.05 MPa
Maximum operating pressure	0.7 MPa			
Proof pressure	1.05 MPa			
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)			
Piston speed	50 to 500 mm/s			
Allowable kinetic energy (J)	0.0125	0.025	0.05	0.1
Lubrication	Non-lube			
Cushion	Rubber bumper on both ends			
Stroke length tolerance	+ 1.0 0			
Auto switch (Option)	Reed auto switch: D-A9□ Solid state auto switch: D-M9□, D-M9□W			

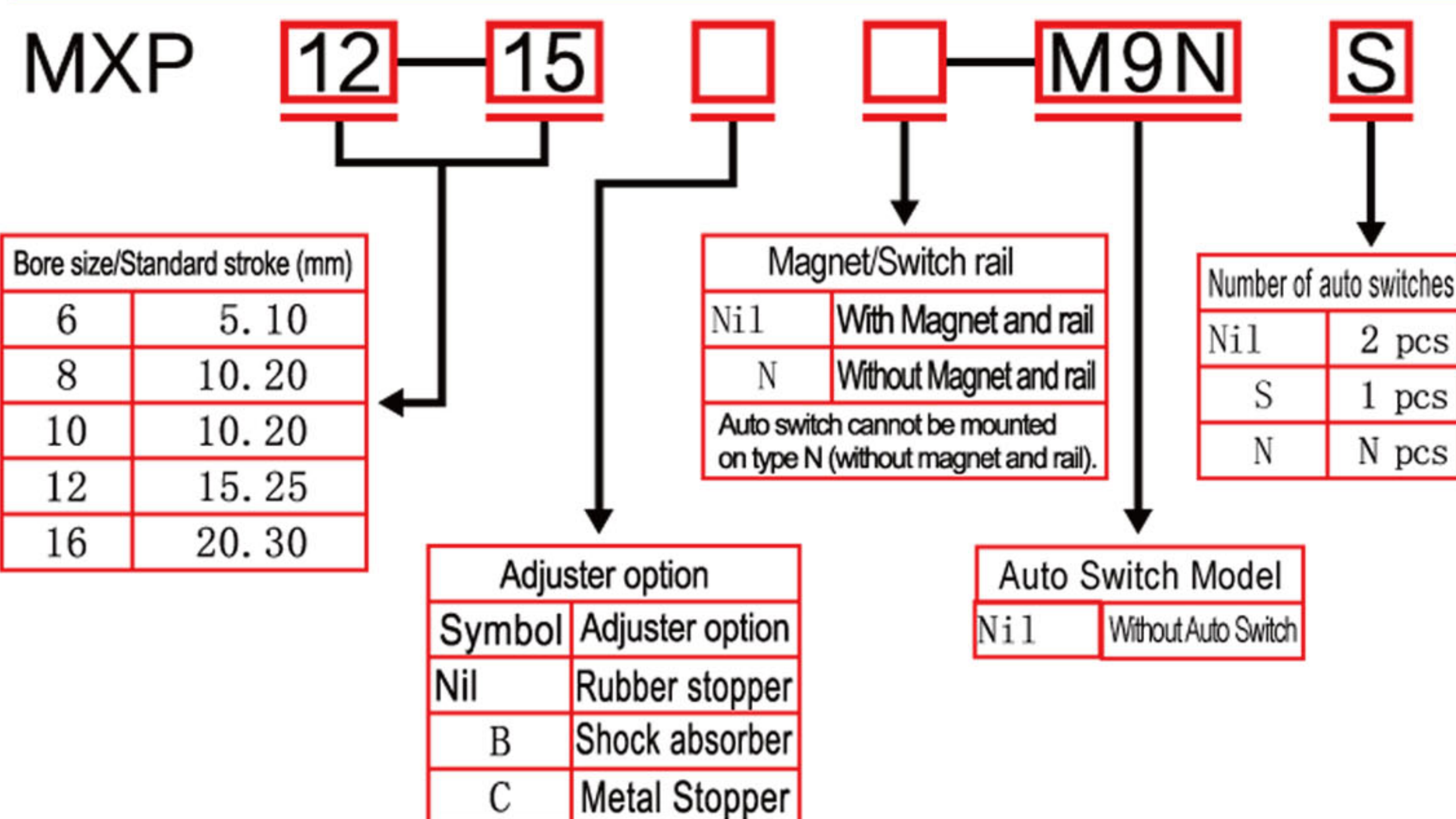


## HLQ Series

Recirculating linear ball bearing  
Bore Size:6mm, 8mm, 12mm, 16mm



### Ordering Code



Note 1) Adjuster for Series MXP6 is available for one side only.

Note 2) Shock absorber is not available in Series MXP6 and MXP8.

Note 3) Stroke adjusting screw of metal stopper uses stainless steel 304.

For heat treated specifications, refer to "Made to Order Specifications" .

### Specifications

Model	MXP6	MXP8	MXP10	MXP12	MXP16
Bore size (mm)	6	8	10	12	16
Piping port size	M3 x 0.5	M5 x 0.8			
Fluid	Air				
Action	Double acting				
Operating pressure	0.15 to 0.7 MPa				
Proof pressure	1.05 MPa				
Ambient and fluid temperature	-10 to 60°C				
Piston speed	50 to 500 mm/s (Adjuster option/Metal stopper: 50 to 200 mm/s)				
Cushion	Rubber bumper Shock absorber (Option is not available for Series MXP6 and MXP8) None (Adjuster option/Metal stopper)				
Lubrication	Non-lube				
Stroke adjuster	Standard equipment (Adjustable on one side only, for the MXP6)				
Stroke adjustment range	Rubber stopper	0 to 5 mm on one side only	Each 0 to 3 mm on both ends		
	Shock absorber	—	Each 0 to 5 mm on both ends		
	Metal stopper	0 to 6 mm on one side only	Each 0 to 5 mm on both ends	Each 0 to 4 mm on both ends	
Auto switch	Reed auto switch (2-wire, 3-wire) Solid state auto switch (2-wire, 3-wire) 2-color indication solid state auto switch (2-wire, 3-wire)				
Stroke length tolerance	+1 0 mm				

### Standard Stroke

(mm)

Model	Standard stroke
<b>MXP6</b>	5, 10
<b>MXP8</b>	10, 20
<b>MXP10</b>	10, 20
<b>MXP12</b>	15, 25
<b>MXP16</b>	20, 30



## MXQ Series

Recirculating linear ball bearing  
Bore Size: 6mm, 8mm, 12mm, 16mm, 20mm, 25mm



### Ordering Code

MXQ12		L	50	AS	FR	-	M9N	
Bore Size		Stroke		Auto Switch Model		Number of auto switches		
6mm	16mm			Nil		Nil		
8mm	20mm			Without Auto Switch		2pcs		
12mm	25mm					1pcs		
Nil		Standard type				N		
L		Symmetric type				npcs		
Adjuster option								
Nil		Blank		Functional option				
AS	Limiter with Rubber	Extension	Nil					
AT		Retraction	Blank					
A		Double	F					
BS	With hydraulic buffer	Extension	R (注②)					
BT		Retraction	With End Lock					
B		Double	P					
CS	Metal Limiter	Extension	FR(注②)					
CT		Retraction	With buffer and end lock					
C		Double	FP					

Note: W/ end lock is not available in Series MXQ6

Note: W/ end lock is not available in Series MXQ6

Model	Standard stroke (mm)
MXQ 6	10, 20, 30, 40, 50
MXQ 8	10, 20, 30, 40, 50, 75
MXQ12	10, 20, 30, 40, 50, 75, 100
MXQ16	10, 20, 30, 40, 50, 75, 100, 125
MXQ20	10, 20, 30, 40, 50, 75, 100, 125, 150
MXQ25	10, 20, 30, 40, 50, 75, 100, 125, 150

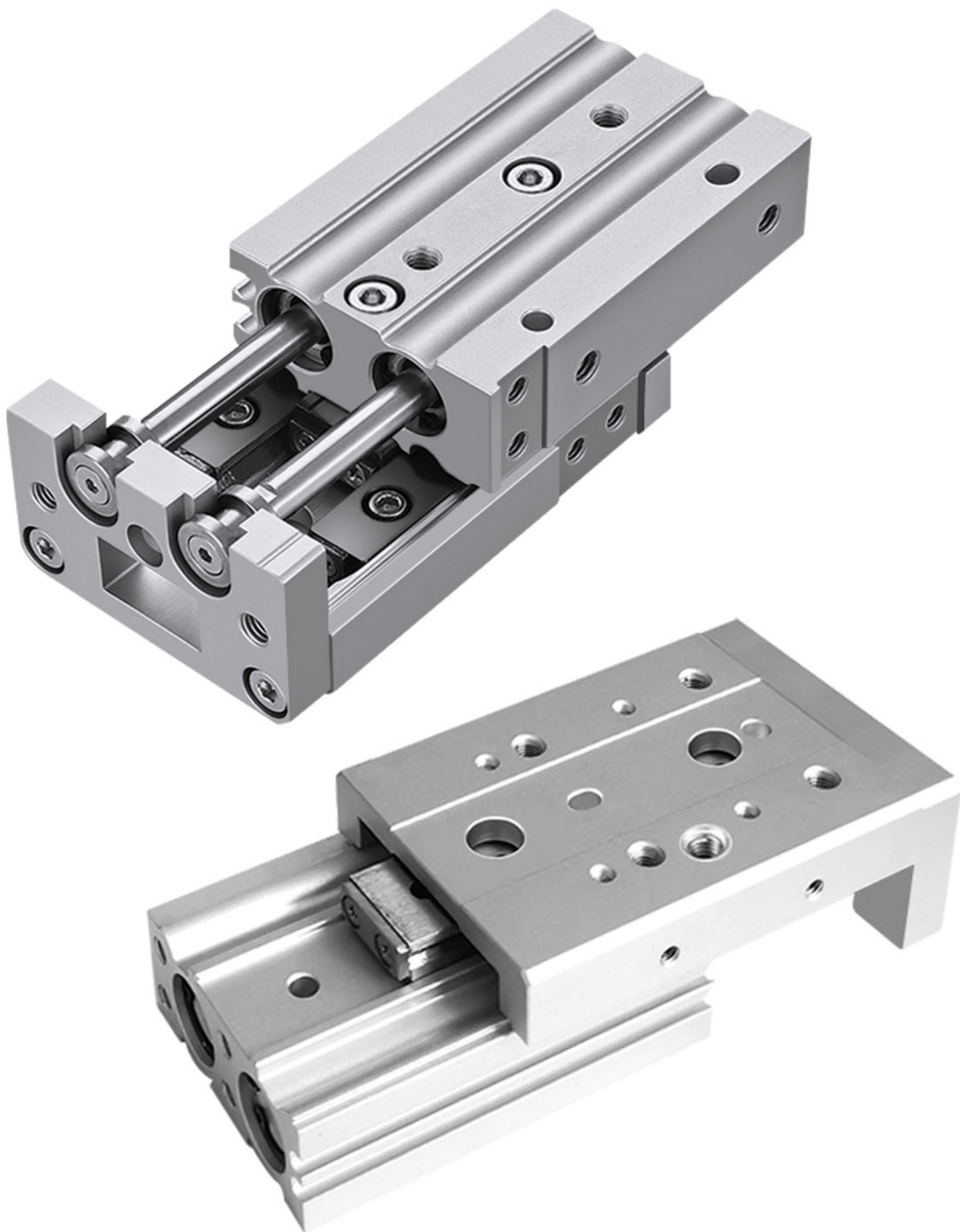
## Specifications

Bore size (mm)	6	8	12	16	20	25
Piping port size	M5 x 0.8				Rc 1/8, NPT 1/8, G 1/8	
Fluid	Air					
Action	Double acting					
Operating pressure	0.15 to 0.7 MPa					
Proof pressure	1.05 MPa					
Ambient and fluid temperature	-10 to 60°C					
Piston speed	50 to 500 mm/s (Adjuster option/Metal stopper: 50 to 200 mm/s)					
Cushion	Rubber bumper (Standard, Adjuster option/Rubber stopper) Shock absorber (Adjuster option/Shock absorber) None (Adjuster option/Metal stopper)					
Lubrication	Non-lube					
Auto switch	Reed auto switch (2-wire, 3-wire) Solid state auto switch (2-wire, 3-wire) 2-color indication solid state auto switch (2-wire, 3-wire)					
Stroke length tolerance	$+1_0$ mm					



MXS Series

Recirculating linear ball bearing  
Bore Size:6mm, 8mm, 12mm, 16mm, 20mm, 25mm



Ordering Code

M

X

S

8

-

50

A

S

Bore Size

6

8

12

16

20

25

Stroke

Adjuster option

Blank	Without adjuster
AS	Adjuster on extension end
AT	Adjuster on retraction end
A	Adjuster on both ends
BS	Absorber on extension end
BT	Absorber on retraction end
B	Absorber on both ends
ASBT	Adjuster on extension end + Absorber on retraction end
BSAT	Absorber on extension end + Adjuster on retraction end

Unit: mm

Note 1) Options BS, BT and B are not available with the MXS6 series.

STANDARD STROKE	
Model	Standard stroke (mm)
MXS6	10, 20, 30, 40, 50
MXS8	10, 20, 30, 40, 50, 75
MXS12	10, 20, 30, 40, 50, 75, 100
MXS16	10, 20, 30, 40, 50, 75, 100, 125
MXS20	10, 20, 30, 40, 50, 75, 100, 125, 150
MXS25	10, 20, 30, 40, 50, 75, 100, 125, 150

Specifications

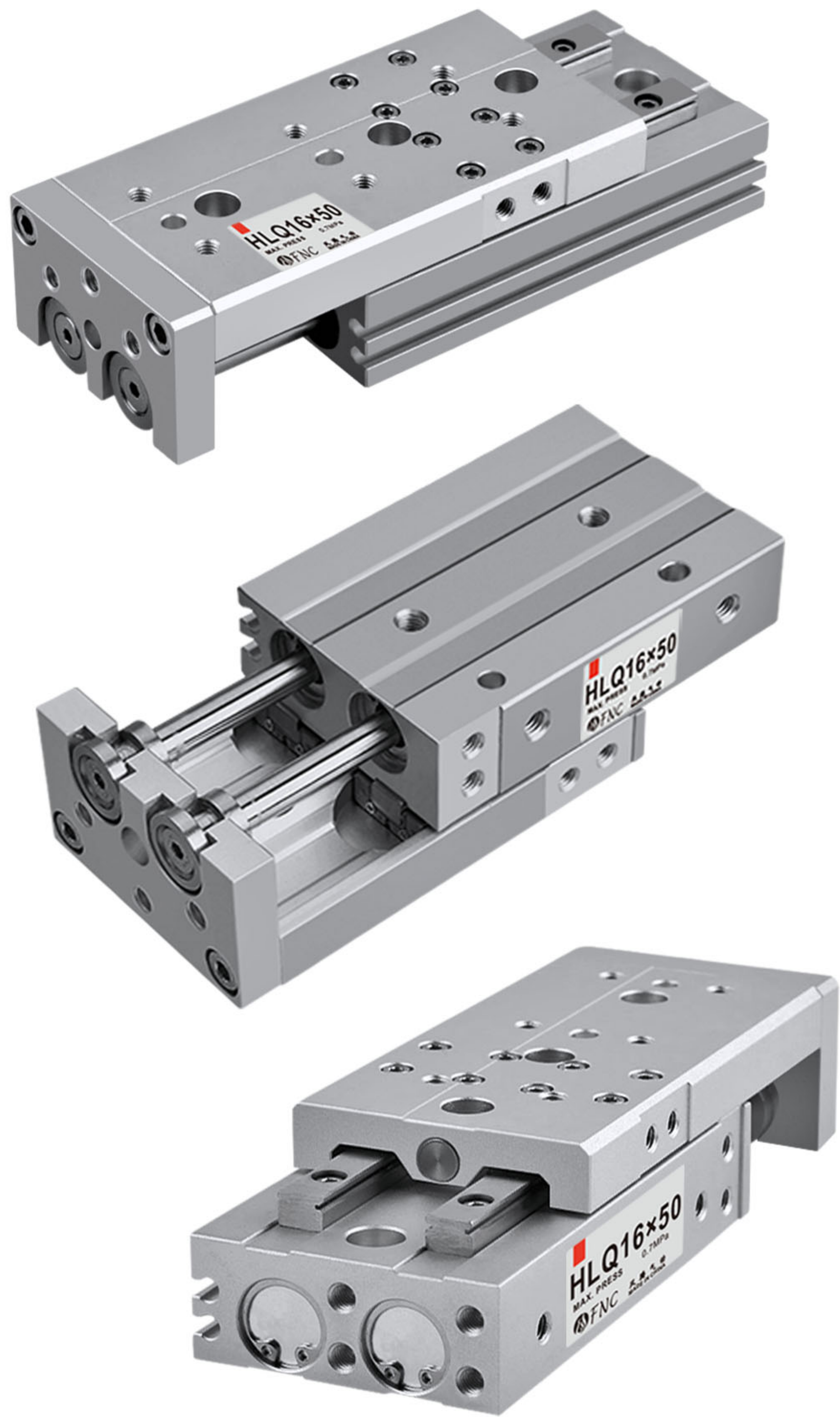
Bore size (mm)	6	8	12	16	20	25
Piping port size	M3 x 0.5	M5 x 0.8			Rc 1/8, NPT 1/8, G 1/8	
Fluid	Air					
Action	Double acting					
Operating pressure	0.15 to 0.7 MPa					
Proof pressure	1.05 MPa					
Ambient and fluid temperature	-10 to 60°C					
Piston speed	50 to 500 mm/s					
Cushion	Rubber bumper (Standard, With stroke adjuster) Shock absorber (Optional)					
Lubrication	Non-lube					
Auto switch (Optional)	Reed auto switch (2-wire, 3-wire) Solid state auto switch (2-wire, 3-wire) 2-color indication solid state auto switch (2-wire, 3-wire)					
Stroke length tolerance	$^{+1}_0$ mm					



HLQ Series

Recirculating linear ball bearing

Bore Size:6mm, 8mm, 12mm, 16mm, 20mm, 25mm



Ordering Code

HLQ

20×30

S

AS

Borze

6

8

12

16

20

25

Stroke

S

with Magnet

Thread Code

PT Thread

G Thread

NPT

Specification Symbol

HLQ

Double rods precision slide cylinder (Recirculating Ball) (Standard Type)

HLQL

Double rods precision slide cylinder (Recirculating Ball) (SymmetryType)

Adjuster Option

Blank

Without Adjuster(Basic)

A

Adjustable Rubber Stoper

AS

Adjustable rubber topper(Extention)

AF

Adjustable rubber topper(Retraction)

B

Shock absorber(Both ends)

BS

Shock absorber(Extention)

BF

Shock absorber(Retraction)

STANDARD STROKE		
Bore (mm)	Standard Stroke (mm)	Max Stroke
6	10 20 30 40 50	50
8	10 20 30 40 50 75	75
12	10 20 30 40 50 75 100	100
16	10 20 30 40 50 75 100 125	125
20	10 20 30 40 50 75 100 125 150	150
25	10 20 30 40 50 75 100 125 150	150
Note: Special stroke, please contact to us.		

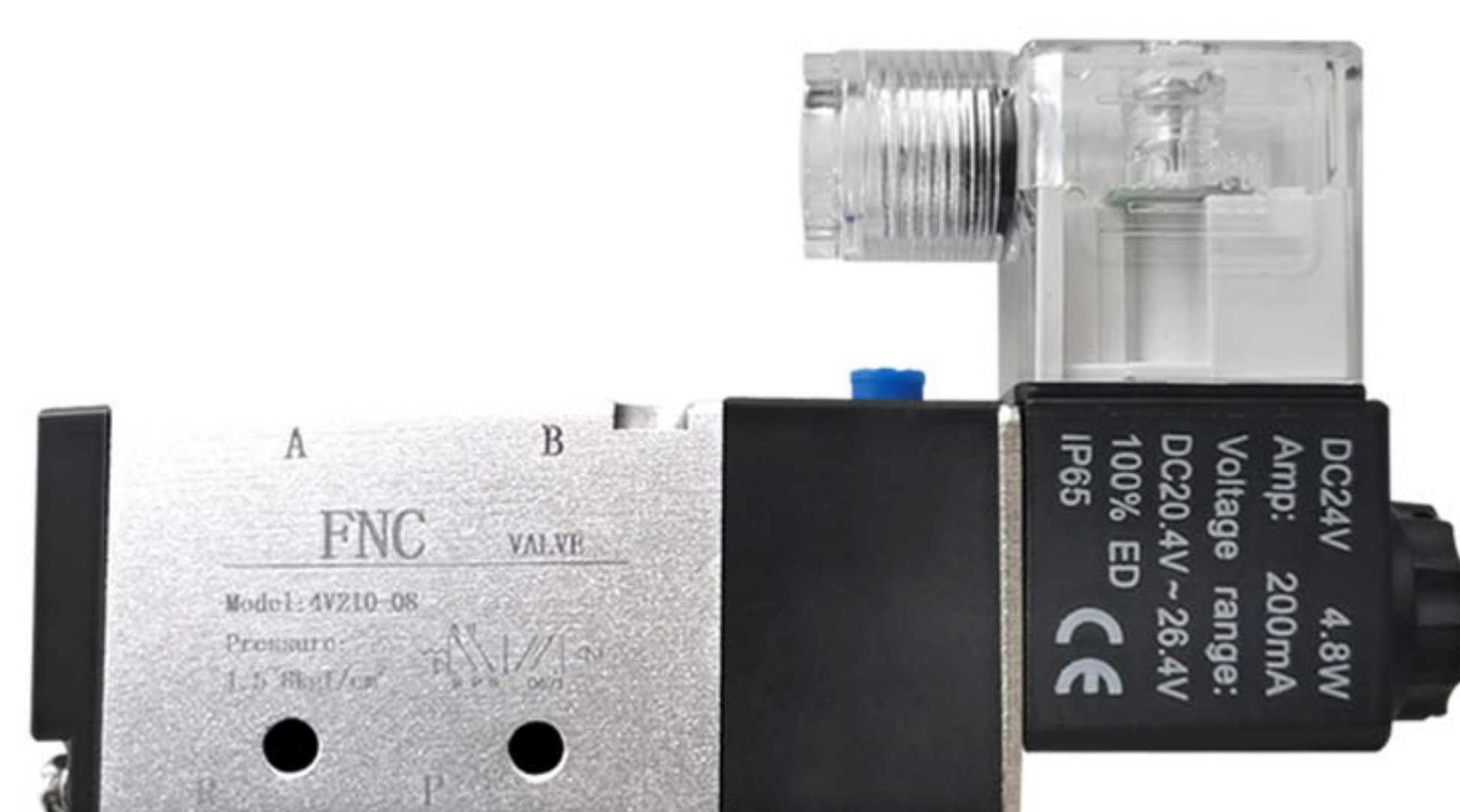
THREAD LIST				
Imperial	Chinese	Other Standard	Outside Diameter (mm)	Inner Diameter (mm)
G1/8	1 分	DN6	9.5±0.2	8.8±0.2
G1/4	2 分	DN8	12.5±0.3	11.5±0.3
G3/8	3 分	DN10	16.2±0.3	15.3±0.3
G1/2	4 分	DN15	20.3±0.3	19.5±0.3
G3/4	6 分	DN20	25.7±0.5	24±0.5
G1	1 寸	DN25	32.5±0.5	30.5±0.5
G1-1/4	1.2 寸	DN32	41.3±0.5	39.5±0.5
G1-1/2	1.5 寸	DN40	47.8±0.5	46.6±0.5
G2	2 寸	DN50	59.6±0.5	56.6±0.5

Specification

Bore size(mm)	6	8	12	16	20	25
Guide rail width(mm)	10	10	7	9	9	12
Number of guide rail	Single guide rail		Double guide rail			
Acting type	Double acting					
Fluid	Air(to be filtered by 40μm filter element)					
Operating pressure	22~100psi(0.15~0.7MPa)					
Proof pressure	175psi(1.2MPa)					
Temperature	-20~70℃					
Speed range mm/s	50~500					
Stroke tolerance	Stroke≤100 <sup>+1.0</sup> <sub>0</sub> Stroke>100 <sup>+1.5</sup> <sub>0</sub>					
Cushion type	Bumper(Both ends)、Shock absorber					
Sensor switches	CMSh、DMSH(S)					
Port size [Note1]	M5×0.8				1/8	

[Note1] NPT thread is available.





## 4A210-08



## 4A220-08

### Ordering code

**4A 2 10 08 T**

① ② ③ ④ ⑤

① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4A: Air valve (5/2, 5/3 way)	2: 200 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	06: 1/8" 08: 1/4"	T: NPT

Please refer to P111 for manifold specification and the order way.

### Specification

Model	4A210-06 4A220-06	4A230C-06 4A230E-06 4A230P-06	4A210-08 4A220-08	4A230C-08 4A230E-08 4A230P-08
Fluid	Air(to be filtered by 40 μ m filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=Exhaust=1/8"		In=Out=1/4" Exhaust=1/8"	
Orifice size [Note4]	4A210-08,4A220-08:17.0mm <sup>2</sup> (Cv=1.0) 4A230C-08:13.6mm <sup>2</sup> (Cv=0.8)			
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	21~114psi(0.15~0.8MPa)			
Proof pressure	175psi(1.2MPa)			
Temperature	-20~70℃			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4A210-06:185 4A220-06:285	365	4A210-08:185 4A220-08:285	365

[Note1] NPT thread is available.

[Note2] Once lubricated air is used, continue with same medium to optimize valve life span.  
Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.



## ACK Series

Bore Size: 25mm, 32mm, 40mm, 50mm, 63mm



## Ordering Code

**ACK R - 25 × 90 - □**

Rotary Direction

L	Push and turn left
R	Push and turn right

Bore Size

25	Φ 25mm
32	Φ 32mm
40	Φ 40mm
50	Φ 50mm
63	Φ 63mm

Rotary angle

90	90°
180	180°

Model

ACK	Twist Clamp Cylinder(Double Acting)
ACKD	Twist Clamp Cylinder
Double push plate type only for 90°	

Thread Type

Nil	PT
T	NPT
G	G

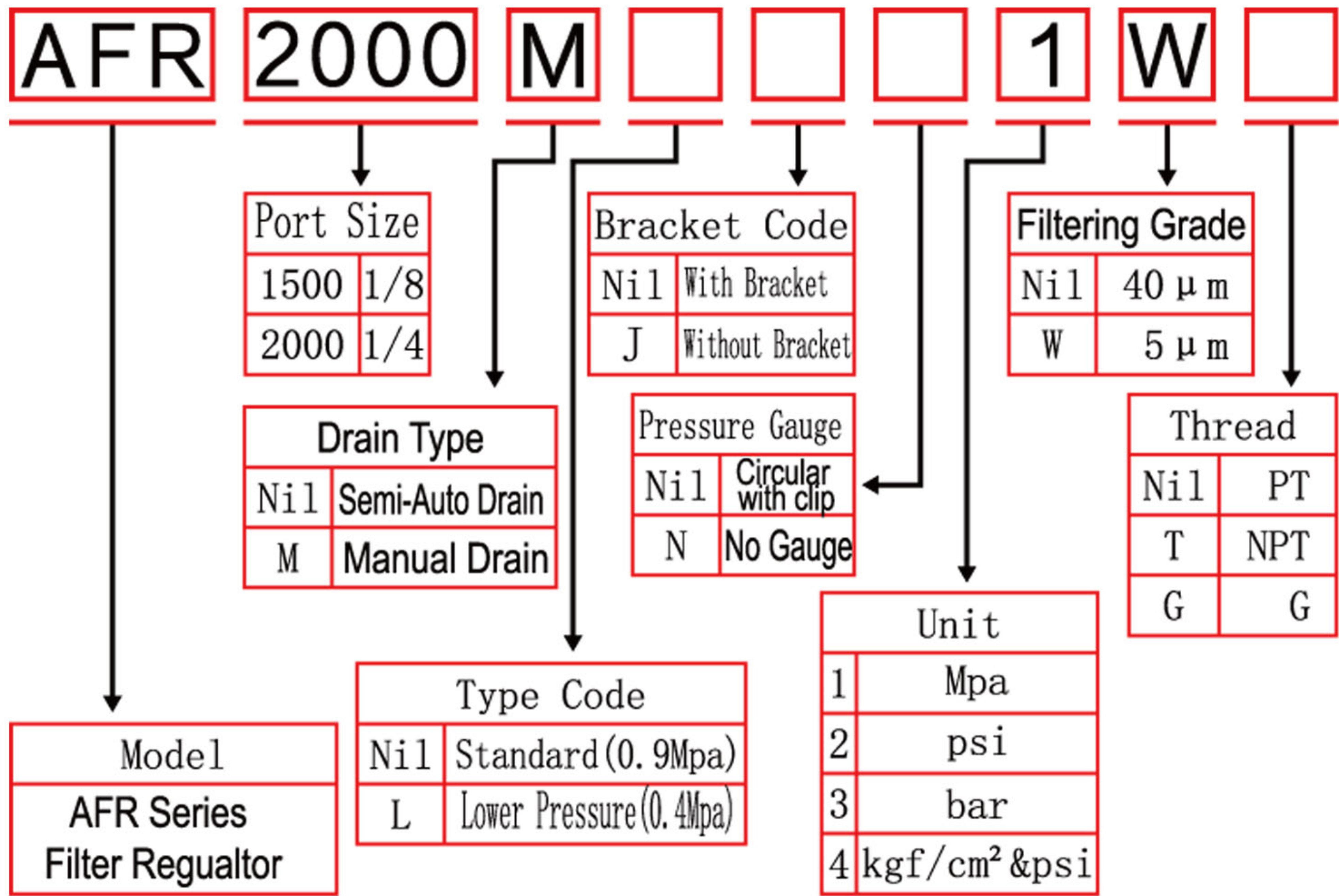
## Specification

Bore size(mm)	25	32	40	50	63
Acting type	Double acting				
Fluid	Air(to be filtered by 40 μ m filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature °C	-20~80				
Speed range mm/s	50~200				
Stroke tolerance	+1.0 0				
Rotary angle tolerance	± 1.5°				
Cushion type ①	No cushion				
Port size ②	M5 × 0.8		1/8"		

① If there is no buffering device, exhaust throttle shall be added to achieve buffering effect.

② PT thread, G thread and NPT thread are available.

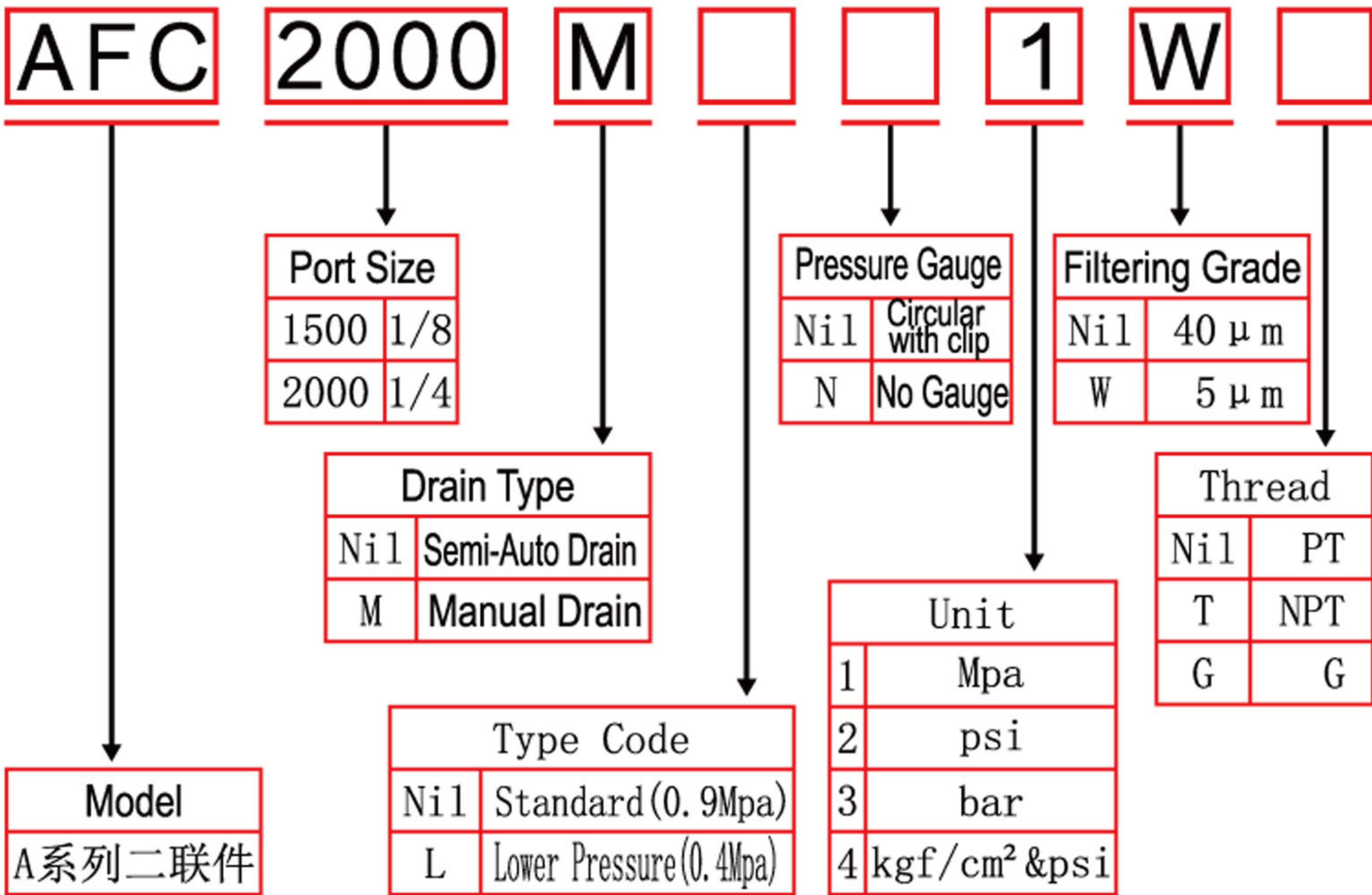




Model	AFR1500	AFR2000	BFR2000	BFR3000	BFR4000
Fluid	Air				
Port size	1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade	40μm or 5 μm				
Pressure range	Semi-auto and automatic drain: 0.15~0.9MPa(20~130Psi) Manual drain: 0.05~0.9Mpa(7~130Psi)				
Max. pressure	1.0MPa(145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	- 5~70°C(unfreeze)				
Capacity of oil bowl	15CC		60CC		
Weight	260g		400g		



# Air Filter Regulator Lubricator Combinations



Specification					
Model	AFC1500 AFC1500A AFC1500M	AFC2000 AFC2000A AFC2000M	BFC2000 BFC2000A BFC2000M	BFC3000 BFC3000A BFC3000M	BFC4000 BFC4000A BFC4000M
Component	Filter-regulator Lubricator	AFR1500 AL1500	AFR2000 AL2000	BFR2000 BL2000	BFR3000 BL3000
Port size RC(PT)	1/8"	1/4"	1/4"	3/8"	1/2"
Fluid	Air				
Proof pressure	0.5~8.5bar kgf/cm²				
Max. operating pressure	9.5kgf/cm²				
Ambient & fluid temperature	15.0kgf/cm²				
Nominal filtration rate	5-60℃				
Recommended lubrication	40μM				
Adjustable pressure range	Turbine No.1 oil (ISO VG32)				
Drain bowl capacity	15CC	60CC	60CC	60CC	60CC
Oil bowl capacity	25CC	90CC	90CC	90CC	90CC
Weight (kg)	0.5	0.7	0.7	0.7	0.7
Main parts material	Body Bowl Bowl guard	Aluminum alloy PC AFC1500~AFC2000: without BFC2000~BFC4000: with (Plastic)			





Ordering Code

AD402

03

Thread Type	
Nil	Rc
N	NPT
F	G

Standard Specification	
Nil	—
2	Metal Cover

Port Size		
Symbol	IN	OUT
02	1/4	3/8
03	3/8	3/8
04	1/2	3/8

Model  
Auto Drain Valve

Model/Specifications

Model	AD402	AD600
Proof pressure	1.5 MPa	1.5 MPa
Max. operating pressure	1.0 MPa	1.0 MPa
Operating pressure range <sup>Note)</sup>	0.1 to 1.0 MPa	0.3 to 1.0 MPa
Ambient and fluid temperature	−5 to 60°C (No freezing)	−5 to 60°C (No freezing)
Port size	Rc 1/4, 3/8, 1/2	Rc 3/4, 1
Drain discharge port size	3/8	3/4, 1
Weight (g)	620	2100





**4H 2 30C 08 T**

① ② ③ ④ ⑤

① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4H: Manual return 4HA: Spring return	2: 200 Series	10: 5/2 Way 30C: 5/3 Way closed center 30E: 5/3 Way exhaust center	06: 1/8" 08: 1/4"	T: NPT
	3: 300 Series		08: 1/4" 10: 3/8"	

## Specification

Model	210-06	230-06	210-08	230-08	310-08	330-08	310-10	330-10
Fluid	Air (to be filtered by 40 μm filter element)							
Operating	Manual control direct acting type)							
Port size[Note1]	In=Out =Exhaust=1/8"		In=Out=1/4"; Exhaust=1/8"		In=Out =Exhaust=1/4"		In=Out=3/8"; Exhaust=1/4"	
Orifice size [Note3]	4H210-08:17.0mm <sup>2</sup> (Cv=1.0) 4H230C-08:13.6mm <sup>2</sup> (Cv=0.8)				4H310-10:28.0mm <sup>2</sup> (Cv=1.65) 4H330C-10:21.3mm <sup>2</sup> (Cv=1.25)			
Valve type	5/2 way	5/3 way	5/2 way	5/3 way	5/2 way	5/3 way	5/2 way	5/3 way
Lubrication [Note2]	Not required							
Pressure range	0~145psi(0~1.0MPa)							
Proof pressure	215psi(1.5MPa)							
Temperature	-20~70℃							
Material body	Aluminum alloy							
Operating angle	± 15°	± 8.5°	± 15°	± 8.5°	± 18°	± 10°	± 18°	± 10°

[Note1] NPT thread is available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span.

It is suggested to use ISO VG32 lubricant or the oil with the same grade.

[Note3] Equivalent orifice S and Cv are all calculated from the flow rate data.





D-A73



CS1-G



CS1-J



D-A93



CS1-M



CS1-U



D-A54



D-Z73





**AC**

**2010**

**02**

**D**

**Model**

Air Treatment  
Combination

Cover Size

2010  
3010  
4010  
5010

Thread Port

02: G1/4  
03: G3/8  
04: G1/2  
06: G3/4  
10: G1

**Drain Type**

Nil: Manual Drain  
D: Automatic Drain

Model	AC1010-M5	AC2010-01	<u>AC2010-02</u>	AC3010-02	AC3010-03	AC4010-03	AC4010-04	AC4010-06	AC5010-06	AC5010-10
Fluid Medium	Air									
Filtering Grade	25µm									
Pressure Gauge Port Size	G1/16	<u>G1/8</u>		G1/8		G1/4				
Port size	M5	G1/8	<u>G1/4</u>		G3/8		G1/2	G3/4		G1
Max Operating Pressure	1.0MPa(145psi)									
Proof Pressure	1.5MPa(217psi)									
Working Temperature	5--60°C									
Recommended Lubricant	Class 1 Turbine Oil(ISO VG32)									
Bowl Guard	Not Available			Available						
Rated Flow(L/min)	90	<u>500</u>		1700		3000			4000	
Components	AW1000	<b>AW2000</b>		AW3000		AW4000			AW5000	
	AL1000	<u>AL2000</u>		AL3000		AL4000			AL5000	
Weight/g	220	<u>660</u>		980		1930		1990	3200	





**AC**

**2000**

**02**

**D**

**Series**

**Body Size**  
2000  
3000  
4000  
5000

**Thread Port**  
02: G1/4  
03: G3/8  
04: G1/2  
06: G3/4  
10: G1

**Drain Type**  
Nil: Manual Drain  
D: Automatic Drain

Model		AC1500	AC2000	BC2000	BC3000	BC4000
Fluid		Air				
Port size		1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade		40µm or 5 µm				
Pressure range		Semi-auto and automatic drain: 0.15~0.9MPa(20~130Psi) Manual drain: 0.05~0.9Mpa(7~130Psi)				
Max. pressure		1.0MPa(145Psi)				
Proof pressure		1.5MPa(215Psi)				
Temperature range		- 5~70°C(unfreeze)				
Capacity of drain bowl		15CC		60CC		
Capacity of oil bowl		25CC		90CC		
Recommend lubricant		ISO VG 32 or equivalent				
Weight		700g		900g		
Constitute	Filter	AF1500	AF2000	BF2000	BF3000	BF4000
	Regulator	AR1500	AR2000	BR2000	BR3000	BR4000
	Lubricator	AL1500	AL2000	BL2000	BL3000	BL4000





AL

2000

02

Series

Cover Size

Thread Port

2000

02: G1/4

3000

03: G3/8

4000

04: G1/2

5000

06: G3/4

10: G1

Specifications

Model	AL1500	AL2000	BL2000	BL3000	BL4000
Fluid	Air				
Port size	1/8"	1/4"	1/4"	3/8"	1/2"
Pressure range	0.05-1.0MPa(7-145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-5-70 C(unfreeze)				
Capacity of oil bowl	25CC		90CC		
Recommended lubricant	ISO VG 32 or equivalent				
Weight	170g		250g		






## Ordering code

PC 6 01 □ □

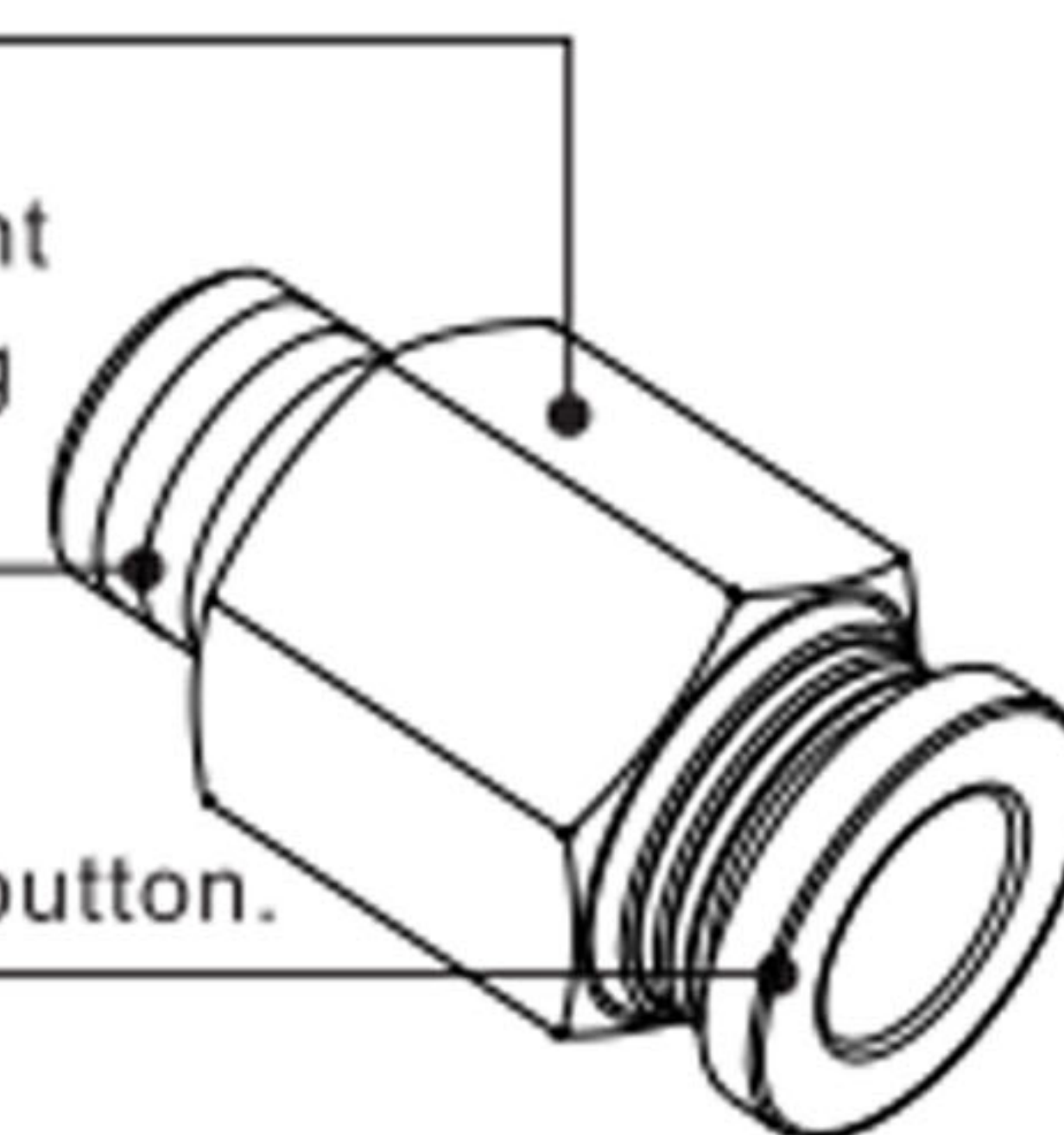
① ② ③ ④ ⑤

① Model	② Port size	③ Thread connection	④ Standard color	⑤ Thread type
PC: Male connector 	4 □ Φ4mm 6 □ Φ6mm 8 □ Φ8mm 10 □ Φ10mm 12 □ Φ12mm	Thread connection M5 □ M5X0.8  01: 1/8" 02: 1/4" 03: 3/8" 04: 1/2"	Adaptable port size Φ4, Φ6  Φ4, Φ6 Φ8, Φ10 Φ12	Standard color Blank: Gray  D: Black  Specification Release button: Gray  Release button: Black  Blank: PT

1. The compact appearance space saving.

2. The threaded portion is covered with sealant and the M5 thread is attached with a sealing gasket to prevent air leakage over the connection thread portion.

3. Grey and black are optional for the release button.



## Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black