

# Hygienic Design Cylinder Round Type

## Series *HYB*

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

### How to Order

**HYB 20 [ ] R - 50 F**

**With auto switch** **HYDB 20 [ ] R - 50 F - H7BAL [ ]**

**With auto switch (Built-in magnet)**

**Bore size**

20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

**Port thread type**

Nil	M thread	ø20, ø25
	Rc	
TN	NPT	ø32 to ø100
TF	G	

**Sealant material**

R	NBR
H	External FKM <sup>Note)</sup>

Note) External seal material:  
Rod scraper, tube gasket,  
and rod seal are made  
from FKM.

**Number of auto switches**

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

**Auto switch**

Nil	Without auto switch (Built-in magnet)
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Refer to table below for selection of  
applicable auto switch.

**Grease**

Nil	Standard grease (for non-food)
F	Grease for food

Note) Select grease for food for use in a water  
dispersion environment or when washing  
a product with water.  
(Water resistance is insufficient with  
standard grease.)

**Cylinder stroke**  
Refer to the next page for the standard stroke.

< Mounting bracket > Foot and flange (Rod end)

< Option parts > Plug bolt

Please place an order for above mentioned parts separately, please refer to pages 885 to 889 for details.

### Applicable Auto Switches/Refer to pages 1306 and 1307 for detailed auto switch specifications.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)*		Pre-wired connector	Applicable load
					DC		ø20 to ø63	ø80, ø100	3 (L)	5 (Z)		
<b>Solid state switch</b>	Water resistance improvement product (2-color display)	Grommet	Yes	2-wire	24 V	12 V	<b>H7BA</b>	<b>G5BA</b>	●	○	○	Relay, PLC

\* Lead wire length symbols  
3 m..... L (Example) H7BAL  
5 m..... Z (Example) H7BAZ

\* Auto switches marked with a "○" symbol are produced upon receipt of orders.

• Refer to pages 1328 and 1329 for detailed specifications about the auto switch with pre-wired connector.



## Specifications

Bore size (mm)	20	25	32	40	50	63	80	100
<b>Action</b>	Double acting, Single rod							
<b>Fluid</b>	Air							
<b>Minimum operating pressure</b>	0.2 MPa		0.15 MPa			0.07 MPa		
<b>Maximum operating pressure</b>	1.0 MPa							
<b>Proof pressure</b>	1.5 MPa							
<b>Ambient and operating fluid temperature</b>	Without auto switch 0°C to 70°C							
	With auto switch 0°C to 60°C							
<b>Lubrication</b>	Not required							
<b>Piston speed</b>	50 to 500 mm/s (With pressure at 1.0 MPa) <sup>Note)</sup>							
<b>Cushion</b>	Rubber bumper							
<b>Stroke length tolerance</b>	$^{+1.4}_0$ mm							
<b>Piston rod material</b>	Stainless steel 304 / Hard chrome plated							

Note) Use a cylinder below the allowable kinetic energy. Refer to page 856 for the allowable kinetic energy.

## Standard Stroke

Bore size (mm)	Standard stroke (mm)
<b>20</b>	25, 50, 75, 100, 125, 150, 200
<b>25 to 100</b>	25, 50, 75, 100, 125, 150, 200, 250, 300

\* Intermediate strokes of 1 mm each can be produced. (The spacer is not used.)

## Mass

### Without auto switch

Unit: kg

Bore size (mm)	Stroke (mm)									
	25	50	75	100	125	150	175	200	250	300
<b>20</b>	0.15	0.17	0.18	0.20	0.22	0.24	0.26	0.27	—	—
<b>25</b>	0.20	0.22	0.24	0.27	0.29	0.31	0.34	0.36	0.40	0.45
<b>32</b>	0.26	0.29	0.32	0.35	0.38	0.41	0.44	0.47	0.53	0.59
<b>40</b>	0.50	0.55	0.59	0.64	0.68	0.73	0.78	0.82	0.91	1.01
<b>50</b>	0.88	0.95	1.02	1.09	1.15	1.22	1.29	1.35	1.49	1.62
<b>63</b>	1.21	1.29	1.38	1.47	1.55	1.64	1.72	1.81	1.98	2.15
<b>80</b>	2.01	2.13	2.24	2.35	2.47	2.58	2.69	2.81	3.03	3.26
<b>100</b>	3.52	3.68	3.84	3.99	4.15	4.31	4.47	4.63	4.95	5.27

### With auto switch (Built-in magnet)

Unit: kg

Bore size (mm)	Stroke (mm)									
	25	50	75	100	125	150	175	200	250	300
<b>20</b>	0.15	0.17	0.19	0.21	0.22	0.24	0.26	0.28	—	—
<b>25</b>	0.20	0.22	0.25	0.27	0.29	0.32	0.34	0.36	0.41	0.46
<b>32</b>	0.28	0.31	0.33	0.36	0.39	0.42	0.45	0.48	0.54	0.60
<b>40</b>	0.51	0.56	0.61	0.65	0.70	0.74	0.79	0.83	0.93	1.02
<b>50</b>	0.90	0.97	1.03	1.10	1.17	1.23	1.30	1.37	1.50	1.64
<b>63</b>	1.23	1.32	1.40	1.49	1.58	1.66	1.75	1.83	2.00	2.17
<b>80</b>	2.04	2.16	2.27	2.38	2.50	2.61	2.72	2.84	3.06	3.29
<b>100</b>	3.55	3.71	3.87	4.03	4.19	4.35	4.51	4.67	4.98	5.30

## Theoretical Output

Unit: N

Bore size (mm)	Operating direction	Operating pressure (MPa)		
		0.3	0.5	0.7
<b>20</b>	OUT	94.2	157	220
	IN	79.2	132	185
<b>25</b>	OUT	147	246	344
	IN	124	206	288
<b>32</b>	OUT	241	402	563
	IN	207	346	484
<b>40</b>	OUT	378	630	882
	IN	318	530	742
<b>50</b>	OUT	588	980	1370
	IN	495	825	1160
<b>63</b>	OUT	936	1560	2180
	IN	840	1400	1960
<b>80</b>	OUT	1510	2520	3520
	IN	1360	2270	3180
<b>100</b>	OUT	2360	3930	5500
	IN	2150	3580	5010

CJ5  
CG5

HY

C   
M

D-

-X

Individual  
-X

Technical  
data