Hygienic Design Cylinder
Series HYG
ø20, ø25, ø32, ø40, ø50, ø63

How to Order

HYG **20** □ **R** – **50** **F**

With auto switch **HYDG** **20** □ **R** – **50** **F** – **F6B** □

With auto switch
(Built-in magnet and switch rail)

Bore size

20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm

Port thread type

Nil	M thread	ø20, ø25
	Rc	ø32 to ø63
TN	NPT	
TF	G	

Sealant material

R	NBR
H	External FKM Note)

Note) External sealant: Scraper, rod seal, O-ring (rod end) and seal washer are made from FKM.

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.

Auto switch

Nil	Without auto switch

Refer to the table below for selection of applicable auto switch.

Number of auto switches

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

Optional parts (plug bolt) should be ordered separately.
Please refer to page 888 for details.

Applicable Auto Switches/Refer to page 1312 for detailed auto switch specifications.

Type	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC		Auto switch model	Lead wire length (m)* 0.5 (Nil)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state switch	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	**F6N**	●	●	○	○	IC circuit	Relay, PLC
			3-wire (PNP)			**F6P**	●	●	○	○		
			2-wire		12 V	**F6B**	●	●	○	○	—	

∗ Lead wire length symbols 0.5 m.....Nil (Example) F6B
3 m..... L (Example) F6BL
5 m..... Z (Example) F6BZ

∗ 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.
∗ Auto switch is shipped not assembled with the cylinder.

Specifications

Bore size (mm)	20	25	32	40	50	63
Action	Double acting					
Fluid	Air					
Minimum operating pressure	0.2 MPa		0.15 MPa			
Maximum operating pressure	1.0 MPa					
Proof pressure	1.5 MPa					
Ambient and operating fluid temperature	0°C to 60°C					
Lubrication	Not required					
Piston speed	50 to 500 mm/s (With pressure at 1.0 MPa) Note)					
Cushion	Rubber bumper					
Stroke length tolerance	$^{+1.5}_{0}$ mm					

Note) Use a cylinder below the allowable kinetic energy. Refer to page 877 for the allowable kinetic energy.

Standard Stroke

Bore size (mm)	Standard stroke (mm)
20	20, 30, 50, 100, 150, 200
25	20, 30, 50, 100, 150, 200
32	25, 50, 100, 150, 200
40	25, 50, 100, 150, 200
50	25, 50, 100, 150, 200
63	25, 50, 100, 150, 200

∗ Manufacture of Intermediate Stroke
Intermediate strokes of 1 mm each can be produced by using spacers with standard stroke cylinders. However, intermediate strokes of 5 mm each can be produced about ø40 to 63.
Example) HYG32R-57 mounts a 43mm spacer in standard stroke cylinder HYG32R-100.

Mass

Without auto switch Unit: kg

Bore size (mm)	Stroke (mm)						
	20	25	30	50	100	150	200
20	0.77	—	0.86	1.10	1.68	2.24	2.42
25	1.17	—	1.29	1.61	2.40	3.15	3.43
32	—	2.04	—	2.56	3.61	4.59	5.43
40	—	2.31	—	2.90	4.12	5.23	6.17
50	—	3.79	—	4.64	6.43	8.04	9.41
63	—	4.71	—	5.74	7.95	9.92	11.56

With auto switch (Built-in magnet and switch rail) Unit: kg

Bore size (mm)	Stroke (mm)						
	20	25	30	50	100	150	200
20	0.80	—	0.89	1.12	1.71	2.26	2.45
25	1.19	—	1.32	1.63	2.43	3.18	3.47
32	—	2.07	—	2.60	3.66	4.66	5.51
40	—	2.35	—	2.94	4.96	5.30	6.25
50	—	3.83	—	4.68	6.48	8.11	9.49
63	—	4.75	—	5.79	8.01	9.99	11.65

Theoretical Output

Unit: N

Bore size (mm)	Operating direction	Operating pressure (MPa)		
		0.3	0.5	0.7
20	IN	71	118	165
	OUT	94	157	220
25	IN	113	189	265
	OUT	147	246	344
32	IN	181	302	422
	OUT	241	402	563
40	IN	317	528	739
	OUT	377	629	880
50	IN	495	825	1154
	OUT	589	982	1374
63	IN	841	1402	1962
	OUT	935	1559	2182