

High Power Cylinder Series *RHC*

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

How to Order

RHC **B** **20** — **H7BW** —

Mounting style

B	Basic style
L	Axial foot style
F	Rod side flange style
G	Head side flange style

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

Number of auto switches

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

Auto switch

Nil	Without auto switch
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* For the applicable auto switch model, refer to the table below.

* Auto switches are shipped together, (but not assembled).

Cylinder stroke (mm)

* Refer to "Stroke" on page 10-6-7.

Applicable Auto Switch/Refer to page 10-20-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)*				Pre-wire connector	Applicable load				
					DC	AC	Applicable bore size (mm)		0.5 (Nil)	3 (L)	5 (Z)	None (N)		IC circuit	—			
							20 to 63	80, 100										
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	C76	—	●	●	—	—	—	IC circuit	—		
				Connector	2-wire	24 V	12 V	100 V, 200 V	—	B54	—	●	●	●	—	—	—	—
		100 V						—	C73	—	●	●	●	—	—			
		—						—	C73C	—	●	●	●	—	—			
		100 V, 200 V						—	A33	—	—	—	●	—	—			
		DIN terminal		2-wire	24 V	12 V	100 V, 200 V	—	—	A34	—	—	—	●	—	—	—	Relay, PLC
A44	—		—							—	●	—	—					
Diagnostic indication (2-color indication)	Grommet	—	—	—	—	—	B59W	—	●	●	—	—	—	—	—	—		
Solid state switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	—	H7A1	G59	●	●	○	—	○	IC circuit	Relay, PLC		
				3-wire (PNP)				H7A2	G5P	●	●	○	—	○				
		Connector		2-wire	12 V	—	—	H7B	K59	●	●	○	—	○	—		—	
								H7C	—	●	●	●	●	—	—			
		Terminal conduit		3-wire (NPN)	24 V	12 V	—	—	—	G39	—	—	—	●	—		—	IC circuit
										K39	—	—	—	●	—		—	
		Grommet		3-wire (NPN)	24 V	12 V	—	—	—	H7NW	G59W	●	●	○	—		○	—
										H7PW	G5PW	●	●	○	—		○	—
		Diagnostic indication (2-color indication)		Grommet	3-wire (PNP)	24 V	12 V	—	—	H7BW	K59W	●	●	○	—		○	—
										H7BA	G5BA	—	●	○	—		○	—
		Water resistant (2-color indication)		Grommet	2-wire	12 V	—	—	—	H7NF	G59F	●	●	○	—		○	—
		With diagnostic output (2-color indication)								4-wire (NPN)	5 V, 12 V	—	—	—	—		—	—

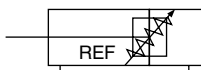
* Lead wire length symbols: 0.5 m..... Nil (Example) C73C
 3 m..... L (Example) C73CL
 5 m..... Z (Example) C73CZ
 None N (Example) C73CN

* Solid state switches marked with "○" are produced upon receipt of order.
 * Do not indicate suffix "N" for no lead wire on D-A3□/A44/G39/K39 models.

- Since there are other applicable auto switches than listed, refer to page 10-6-17 for details.
- For details about auto switches with pre-wire connector, refer to page 10-20-66.



JIS Symbol



Specifications

Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa
Ambient and fluid temperature	-10 to 60°C (No freezing)
Piston speed	50 to 3000 mm/s
Cushion	Air cushion
Lubrication	Not required (Non-lube)
Thread tolerance	JIS Class 2
Stroke length tolerance	Up to 250 st: ${}^{+1.0}_0$, 251 to 1000 st: ${}^{+1.4}_0$, 1001 to 1500 st: ${}^{+1.8}_0$
Mounting	Basic style, Axial foot style, Rod/Head side flange style

Stroke

Bore size (mm)	Minimum stroke (Recommended)	Standard stroke (2)	Max. stroke
20	250	Up to 700	1500
25	250	Up to 700	1500
32	250	Up to 1000	1500
40	250	Up to 1000	1500
50	250	Up to 1200	1500
63	250	Up to 1200	1500
80	250	Up to 1400	1500
100	250	Up to 1500	1500

Note 1) The cylinder performance may not be as expected when stroke is shorter than recommended stroke (1 to 249 stroke), even they are available.

Note 2) Stroke exceeding the standard stroke length is not subject to the guarantee.

Absorbed Energy/ Cushioning Stroke

Bore size (mm)	Maximum energy absorption (J)	Effective cushioning stroke (mm)
20	7	80
25	12	80
32	21	80
40	33	80
50	47	80
63	84	80
80	127	80
100	196	80

Mounting Bracket Part No.

Bore size (mm)	20	25	32	40	50	63	80	100
Axial foot*	RHC-L020	RHC-L025	RHC-L032	RHC-L040	RHC-L050	RHC-L063	RHC-L080	RHC-L100
Flange*	RHC-F020	RHC-F025	RHC-F032	RHC-F040	RHC-F050	RHC-F063	RHC-F080	RHC-F100

* When ordering foot bracket, order 2 pieces per cylinder.

Auto Switch Mounting Bracket Part No. (Including band and screw)

Applicable auto switch		Bore size (mm)							
		20	25	32	40	50	63	80	100
Reed	D-C7□, D-C80 D-C73C, D-C80C								
Solid state	D-H7□/H7C D-H7□W D-H7NF/H7BAL	BMA2-020	BMA2-025	BMA2-032	BMA2-040	BMA2-050	BMA2-063	—	—
Reed	D-B5□, D-B64, D-B59W								
Solid state	D-G5□/K59/G5□W/K59W D-G5NTL, D-G5BAL	BA-01	BA-02	BA-32	BA-04	BA-05	BA-06	BA-08	BA-10
Reed	D-A3□, D-A44								
Solid state	D-G39, D-K39	BD1-01M	BD1-02M	BD1-02	BD1-04M	BD1-05M	BD1-06M	BD1-08M	BD1-10M

* Mounting screws set made of stainless steel
The set of stainless steel mounting screws (with nuts) described below is available and can be used depending on the operating environment.
(A switch mounting band is not included, so please order it separately.)

BBA3: For D-B5/B6/G5

BBA4: For D-C7/C8/H7

- "D-G5BAL" and "D-H7BAL" switches are set on the cylinder with the stainless steel screws above when shipped.
When a switch is shipped independently, "BBA3" or "BBA4" screws are attached.

RE_A
B

REC

C□X

C□Y

MQ_M^Q

RHC

MK(2)

RS_G^Q

RS_A^H

RZQ

MI_S^W

CEP1

CE1

CE2

ML2B

C₅-S

CV

MVGQ

CC

RB

J

D-

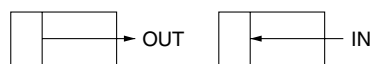
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20-

Data

Series RHC

Theoretical Output



(N)

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)								
				0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
20	10	OUT	314	63	94	126	157	188	220	251	283	314
		IN	236	47	71	94	118	142	165	189	212	236
25	12	OUT	491	98	147	196	246	295	344	393	442	491
		IN	378	76	113	151	189	227	265	302	340	378
32	12	OUT	804	161	241	322	402	482	563	643	724	804
		IN	691	138	207	276	346	415	484	553	622	691
40	16	OUT	1260	252	378	504	630	756	882	1010	1130	1260
		IN	1060	212	318	424	530	636	742	848	954	1060
50	20	OUT	1963	393	589	785	982	1178	1374	1570	1767	1964
		IN	1473	295	442	589	736	884	1031	1178	1325	1473
63	20	OUT	3117	623	935	1247	1559	1870	2182	2494	2806	3117
		IN	2626	525	788	1051	1313	1576	1839	2101	2364	2626
80	25	OUT	5027	1005	1508	291	2513	3016	3519	4021	4524	5027
		IN	4320	864	1296	1728	2160	2592	3024	3456	3888	4320
100	30	OUT	7854	1570	2356	3142	3927	4712	5498	6283	7069	7854
		IN	6892	1378	2068	2757	3446	4135	4824	5514	6203	6892

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

Weight (In the case of 500 stroke)

(kg)

Bore size (mm)		20	25	32	40	50	63	80	100
Basic weight	Basic style	1.20	1.62	2.04	3.20	4.90	6.08	8.93	13.60
	Axial foot style	1.44	1.88	2.44	3.72	5.95	7.32	11.04	16.67
	Flange style	1.29	1.79	2.23	3.47	5.68	6.97	10.67	15.92
Additional weight per each 50 mm of stroke		0.06	0.08	0.09	0.15	0.22	0.25	0.35	0.51

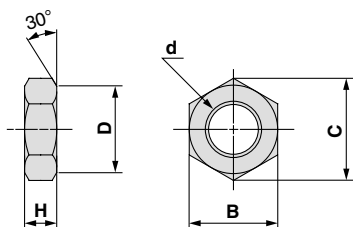
Calculation: (Example) RHCL32-600

- Basic weight 500 st 2.44 (kg) (Foot style ø32)
- Additional weight 0.09 (kg/50 st)
- Cylinder stroke 600 (st)

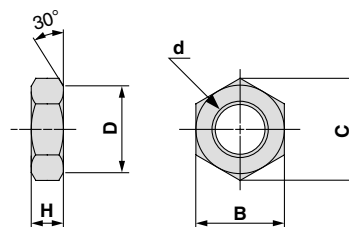
$$2.44 + 0.09 \times (600 - 500)/50 = 2.62 \text{ kg}$$

Accessory

Mounting nut



Rod end nut



Material: Carbon steel

Part no.	Applicable bore (mm)	B	C	D	d	H
SOR-20	20	26	30	26	M22 x 1.5	8
SOR-25	25	32	36.9	32	M24 x 1.5	8
SOR-32	32	38	43.9	38	M30 x 1.5	9
SOR-40	40	41	47.3	41	M33 x 2.0	11

Material: Carbon steel

Part no.	Applicable bore (mm)	B	C	D	d	H
NT-02	20	13	15	12.5	M8 x 1.25	5
NT-03	25, 32	17	19.6	16.5	M10 x 1.25	6
NT-04	40	22	25.4	21.0	M14 x 1.5	8
NT-05	50, 63	27	31	26	M18 x 1.5	11
NT-08	80	32	37	31	M22 x 1.5	13
NT-10	100	41	47.3	39	M26 x 1.5	16

Copper-free

20-RHC Mounting style Bore size Stroke Suffix

↓ Copper-free

The type which prevents copper based ions from generating by changing the copper based materials with electroless nickel plated treatment or non-copper materials in order to eliminate the effects by copper based ions or fluororesins over the color cathode ray tube.

Specifications

Action	Double acting, Single rod
Bore size (mm)	20, 25, 32, 40, 50, 63, 80, 100
Max. operating pressure	1 MPa
Min. operating pressure	0.05 MPa
Cushion	Air cushion
Piping	Screw-in type
Piston speed	50 to 3000 mm/s
Mounting	Basic style, Axial foot style, Rod side flange style, Head side flange style

RE^A_B

REC

C□X

C□Y

MQ^Q_M

RHC

MK(2)

RS^Q_G

RS^H_A

RZQ

MI^W_S

CEP1

CE1

CE2

ML2B

C¹/₅-S

CV

MVGQ

CC

RB

J

D-

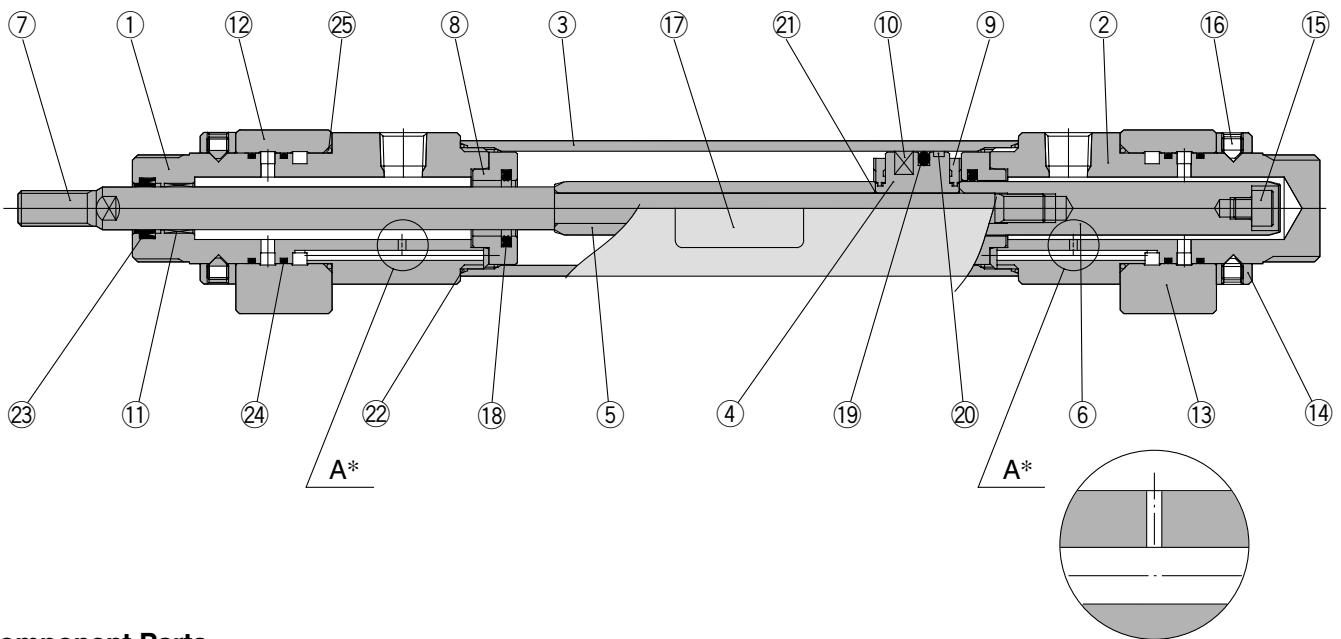
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20-

Data

Series RHC

Construction: $\varnothing 20$ to $\varnothing 40$



Enlarged view of "A"

Component Parts

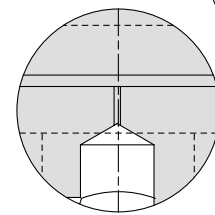
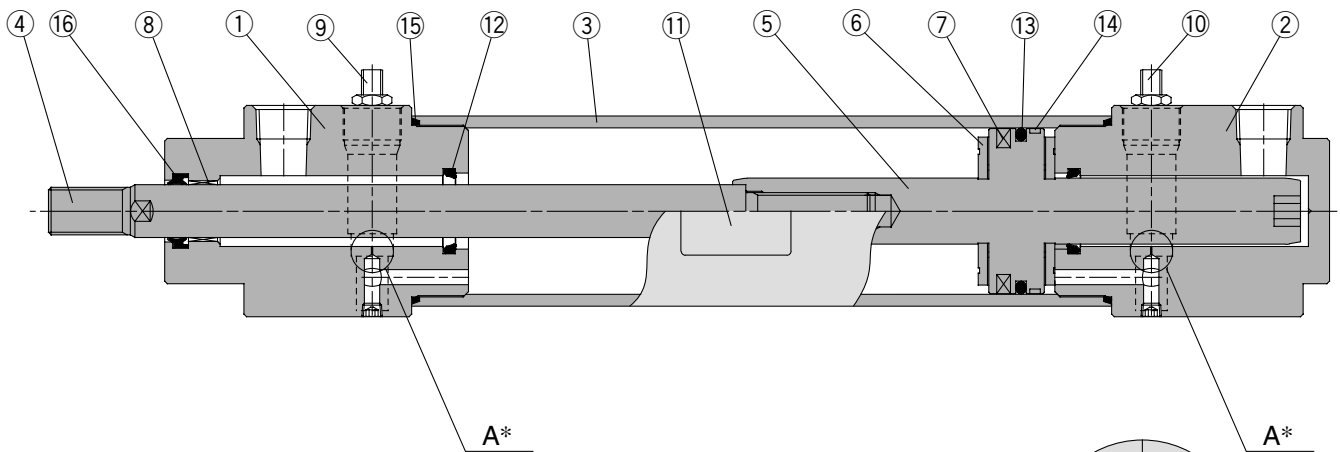
No.	Description	Material	Note
①	Rod cover	Aluminum alloy	White anodized
②	Head cover	Aluminum alloy	White anodized
③	Cylinder tube	Aluminum alloy	Hard anodized
④	Piston	Aluminum alloy	Chromated
⑤	Cushion ring A	Carbon steel	Hard chrome plated
⑥	Cushion ring B	Carbon steel	Hard chrome plated
⑦	Piston rod	Stainless steel or Carbon steel*	Hard chrome plated
⑧	Cushion spacer	Stainless steel	
⑨	Bumper	Urethane	
⑩	Magnet	—	
⑪	Bushing	Oil-impregnated sintered alloy	
⑫	Relief valve assembly (Rod side)	—	
⑬	Relief valve assembly (Head side)	—	
⑭	Relief valve body holder	Aluminum alloy	Clear anodized
⑮	Hexagon socket head cap screw	Carbon steel	$\varnothing 20$: M5 x 0.8 x 6 $\varnothing 25, \varnothing 32$: M6 x 1 x 6 $\varnothing 40$: M8 x 1.25 x 8 Nickel plated
⑯	Hexagon socket head set screw	Carbon steel	$\varnothing 20, \varnothing 25$: M5 x 0.8 x 6 $\varnothing 32, \varnothing 40$: M6 x 1 x 8 Nickel plated
⑰	Plate	—	
⑱	Cushion seal	Special resin	
⑲	Piston seal	NBR	
⑳	Wear ring	Resin	
㉑	Piston gasket	NBR	
㉒	Cylinder tube gasket	NBR	
㉓	Rod seal	NBR	
㉔	O-ring	NBR	
㉕	O-ring	NBR	

* Stainless steel for $\varnothing 20, \varnothing 25$
Carbon steel for $\varnothing 32, \varnothing 40$

Replacement Parts

Bore size (mm)	Kit no.	Contents
20	RHC20-PS	Set of nos. above ⑱, ⑲, ⑳, ㉑, ㉒, ㉔, ㉕
25	RHC25-PS	
32	RHC32-PS	
40	RHC40-PS	

Construction: $\phi 50$ to $\phi 100$



Enlarged view of "A"

Component Parts

No.	Description	Material	Note
①	Rod cover	Aluminum alloy	White anodized
②	Head cover	Aluminum alloy	White anodized
③	Cylinder tube	Aluminum alloy	Hard anodized
④	Piston rod	Carbon steel	Hard chromate plated
⑤	Piston	Aluminum alloy	Hard anodized
⑥	Bumper	Urethan	
⑦	Plastic magnet	—	
⑧	Bushing	—	
⑨	Relief valve assembly L	—	
⑩	Relief valve assembly R	—	
⑪	Plate	—	
⑫	Cushion seal	Urethan	
⑬	Piston seal	NBR	
⑭	Wear ring	Resin	
⑮	Cylinder tube gasket	NBR	
⑯	Rod seal	NBR	

* It is very difficult to disassemble the cylinder bore size $\phi 50$ or larger, because of very high torque. Please contact our sales branch when seal replace is required.

RE^A_B

REC

C□X

C□Y

MQ^Q_M

RHC

MK(2)

RS^Q_G

RS^H_A

RZQ

MI^W_S

CEP1

CE1

CE2

ML2B

C¹/₅-S

CV

MVGQ

CC

RB

J

D-

-X

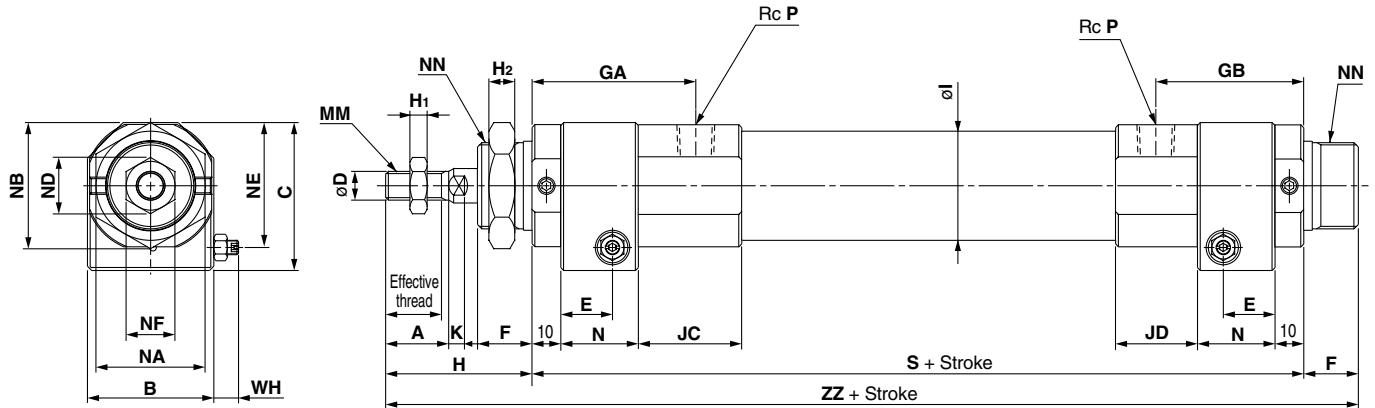
20-

Data

Series RHC

Dimensions: Basic Style

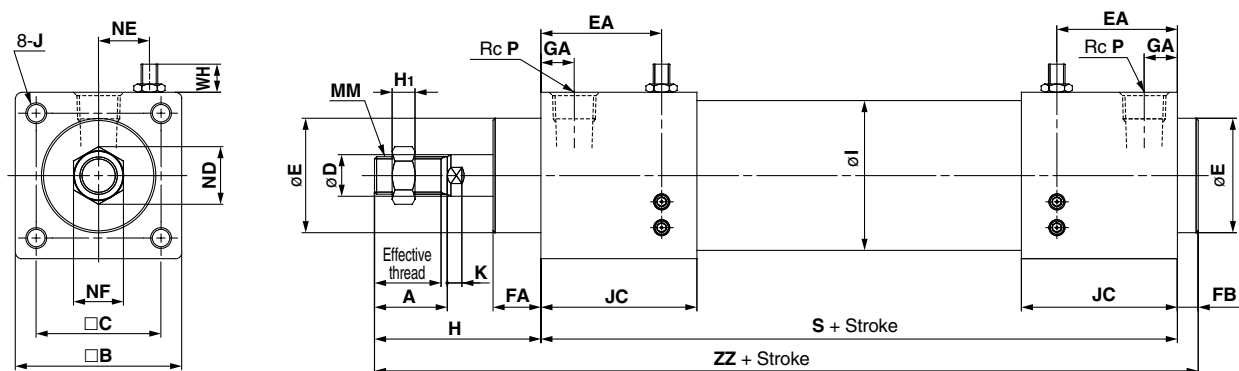
ø20 to ø40



Bore size (mm)	Stroke range (mm)	Eff. thread length	A	B	C	D	E	F	GA	GB	H	H ₁	H ₂	I
20	Up to 700	15.5	18	32	40.5	10	14.5	16	53.5	47.5	44	5	8	26
25	Up to 700	19.5	22	36	45.5	12	18	16	56.5	49.5	48	6	8	31
32	Up to 1000	19.5	22	44	51.5	12	18	19	55	51.5	51	6	9	38
40	Up to 1000	21	24	53	61.5	16	20.5	21	56	51.5	54.5	8	11	47

Bore size (mm)	JC	JD	K	MM	N	NE	NA	NB	NF	ND	NN	P	S	WH	ZZ
20	43	30.5	5	M8 x 1.25	22	33.5	26	30	13	15.0	M22 x 1.5	1/4	192	5.8 to 8.8	252
25	39	25.5	5.5	M10 x 1.25	27	37	32	36.9	17	19.6	M24 x 1.5	1/4	193		257
32	36	28.5	5.5	M10 x 1.25	27	43.5	38	43.9	17	19.6	M30 x 1.5	3/8	195		265
40	32	23	7.5	M14 x 1.5	30	52.5	41	47.3	22	25.4	M33 x 2.0	3/8	201.5	6.8 to 11.3	277

ø50 to ø100

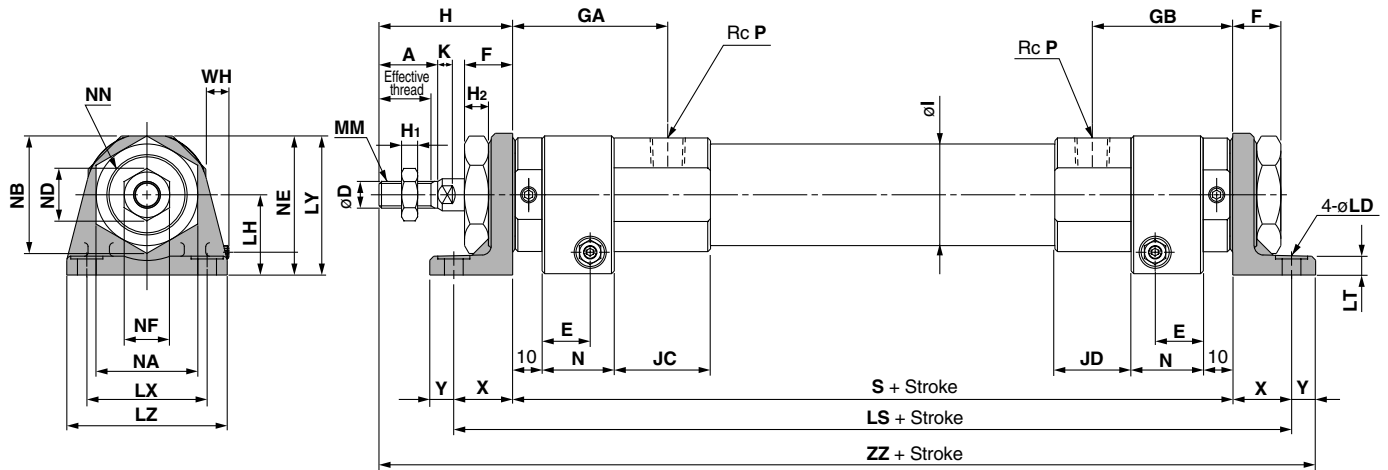


Bore size (mm)	Stroke range (mm)	Eff. thread length	A	B	C	D	E	EA	FA	FB	GA	H
50	Up to 1200	32	35	70	53	20	50 ⁰ _{-0.042}	62	23	10	16	80
63	Up to 1200	32	35	80	60	20	55 ⁰ _{-0.074}	58	23	10	16	80
80	Up to 1400	37	40	95	75	25	65 ⁰ _{-0.074}	61	23	10	20	90
100	Up to 1500	37	40	116	90	30	80 ⁰ _{-0.074}	63	25	10	20	95

Bore size (mm)	H ₁	I	J	JC	K	MM	ND	NE	NF	P	S	WH	ZZ
50	11	58	M10 x 1.5 thread depth 20	75	7	M18 x 1.5	31	25	27	1/2	215	6.8 to 11.3	305
63	11	72	M10 x 1.5 thread depth 20	75	7	M18 x 1.5	31	24.5	27	1/2	215		305
80	13	89	M12 x 1.75 thread depth 25	78	10	M22 x 1.5	37	30.5	32	3/4	228	8.5 to 13.5	328
100	16	110	M12 x 1.75 thread depth 25	80	10	M26 x 1.5	47.3	34	41	3/4	236		341

Dimensions: Axial Foot Style

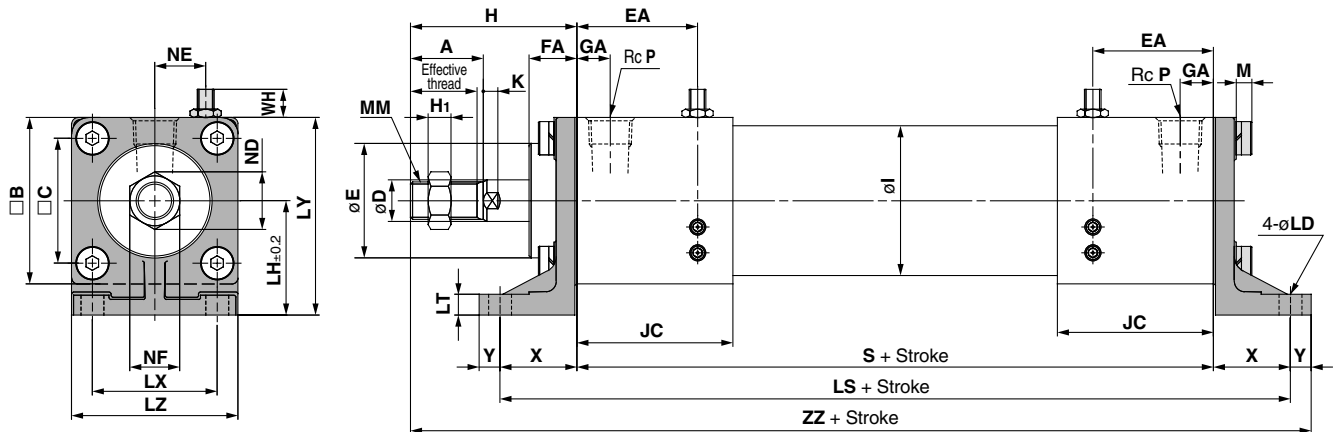
ø20 to ø40



Bore size (mm)	Stroke range (mm)	Eff. thread length	A	D	E	F	GA	GB	H	I	JC	JD	K	LD	LH	H ₁	H ₂
20	Up to 700	15.5	18	10	14.5	16	53.5	47.5	44	26	43	30.5	5	7	25	5	8
25	Up to 700	19.5	22	12	18	16	56.5	49.5	48	31	39	25.5	5.5	7	28	6	8
32	Up to 1000	19.5	22	12	18	19	55	51.5	51	38	36	28.5	5.5	7	30	6	9
40	Up to 1000	21	24	16	20.5	21	56	51.5	54.5	47	32	23	7.5	9	35	8	11

Bore size (mm)	LS	LT	LX	LY	LZ	MM	N	NA	NB	NE	NF	ND	NN	P	S	WH	X	Y	ZZ
20	232	6.5	40	41	55	M8 x 1.25	22	26	30	33.5	13	15.0	M22 x 1.5	1/4	192	5.8 to 8.8	20	9	265
25	233	6.5	40	46.5	55	M10 x 1.25	27	32	36.9	37	17	19.6	M24 x 1.5	1/4	193		20	9	270
32	241	7	45	53	60	M10 x 1.25	27	38	43.9	43.5	17	19.6	M30 x 1.5	3/8	195	23	9	278	
40	251.5	7	55	62	75	M14 x 1.5	30	41	47.3	52.5	22	25.4	M33 x 2.0	3/8	201.5	6.8 to 11.3	25	11	292

ø50 to ø100



Bore size (mm)	Stroke range (mm)	Eff. thread length	A	B	C	D	E	EA	FA	GA	H	H ₁	I	JC	K	LD
50	Up to 1200	32	35	70	53	20	50 ^{+0.042}	62	23	16	80	11	58	75	7	11
63	Up to 1200	32	35	80	60	20	55 ^{+0.074}	58	23	16	80	11	72	75	7	11
80	Up to 1400	37	40	95	75	25	65 ^{+0.074}	61	23	20	90	13	89	78	10	13
100	Up to 1500	37	40	116	90	30	80 ^{+0.074}	63	25	20	95	16	110	80	10	13

Bore size (mm)	LH	LS	LT	LY	LX	LZ	M	MM	ND	NE	NF	P	S	WH	X	Y	ZZ
50	52	275	10	88.5	53	73	7.5	M18 x 1.5	31	25	27	1/2	215	6.8 to 11.3	30	10	335
63	55	289	10	95	60	80	7.5	M18 x 1.5	31	24.5	27	1/2	215		37	10	342
80	65	308	12	115	75	100	10	M22 x 1.5	37	30.5	32	3/4	228	8.5 to 13.5	40	13	371
100	80	330	14	139	90	118	10	M26 x 1.5	47.3	34	41	3/4	236		47	13	391

RE^A_B

REC

C□X

C□Y

MQ^Q_M

RHC

MK(2)

RS^Q_G

RS^H_A

RZQ

MI^W_S

CEP1

CE1

CE2

ML2B

C₅-S

CV

MVGQ

CC

RB

J

D-

-X

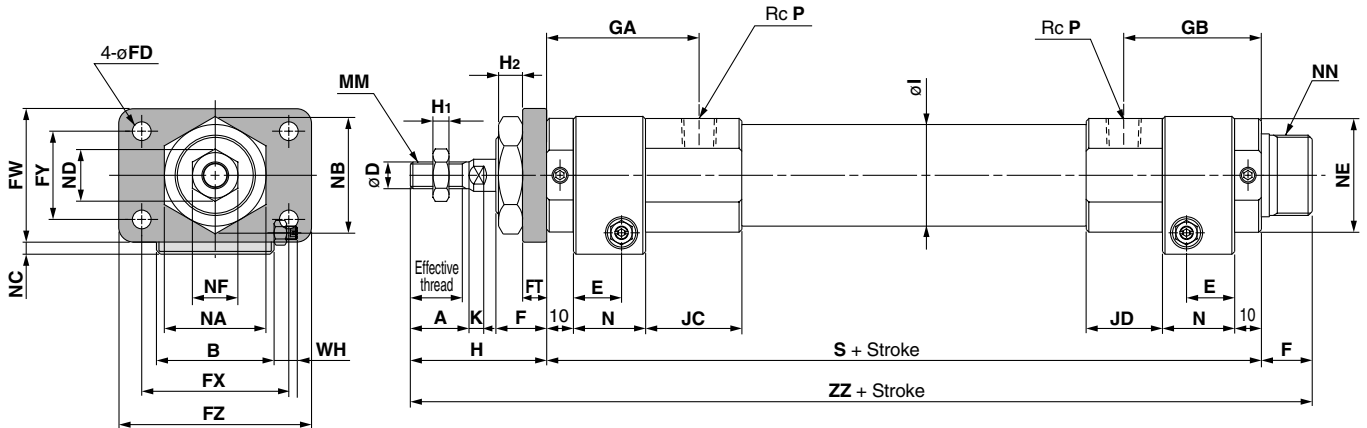
20-

Data

Series RHC

Dimensions: Rod Side Flange Style

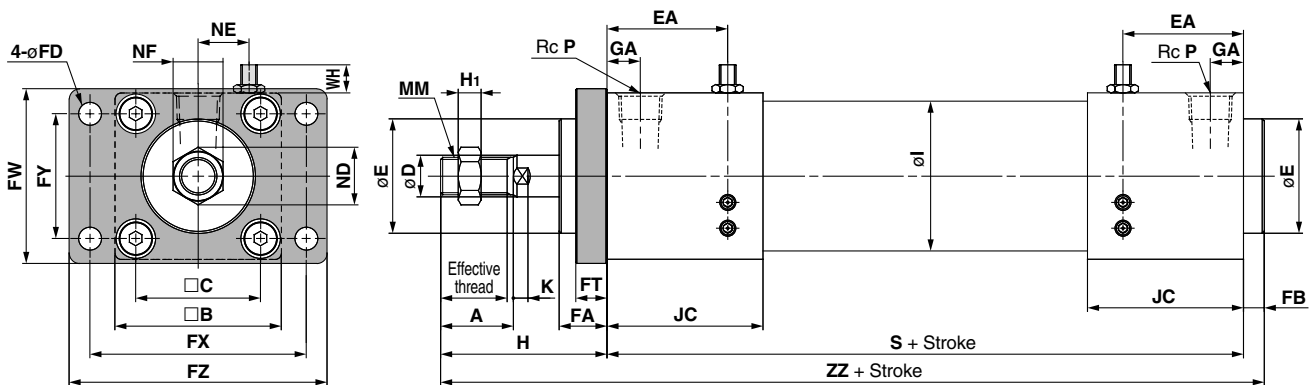
ø20 to ø40



Bore size (mm)	Stroke range (mm)	Eff. thread length	A	B	D	E	F	FD	FT	FX	FY	FW	FZ	GA	GB	H ₁	H ₂
20	Up to 700	15.5	18	32	10	14.5	16	7	6	51	21	38	68	53.5	47.5	5	8
25	Up to 700	19.5	22	36	12	18	16	7	9	53	27	44	70	56.5	49.5	6	8
32	Up to 1000	19.5	22	44	12	18	19	7	9	55	33	50	72	55	51.5	6	9
40	Up to 1000	21	24	53	16	20.5	21	9	9	66	36	60	84	56	51.5	8	11

Bore size (mm)	H	I	JC	JD	K	MM	N	NA	NB	NC	NE	NF	ND	NN	P	S	WH	ZZ
20	44	26	43	30.5	5	M8 x 1.25	22	26	30	5.5	33.5	13	15.0	M22 x 1.5	1/4	192	5.8 to 8.8	252
25	48	31	39	25.5	5.5	M10 x 1.25	27	32	36.9	5.5	37	17	19.6	M24 x 1.5	1/4	193		257
32	51	38	36	28.5	5.5	M10 x 1.25	27	38	43.9	4.5	43.5	17	19.6	M30 x 1.5	3/8	195		265
40	54.5	47	32	23	7.5	M14 x 1.5	30	41	47.3	4.5	52.5	22	25.4	M33 x 2.0	3/8	201.5	6.8 to 11.3	277

ø50 to ø100

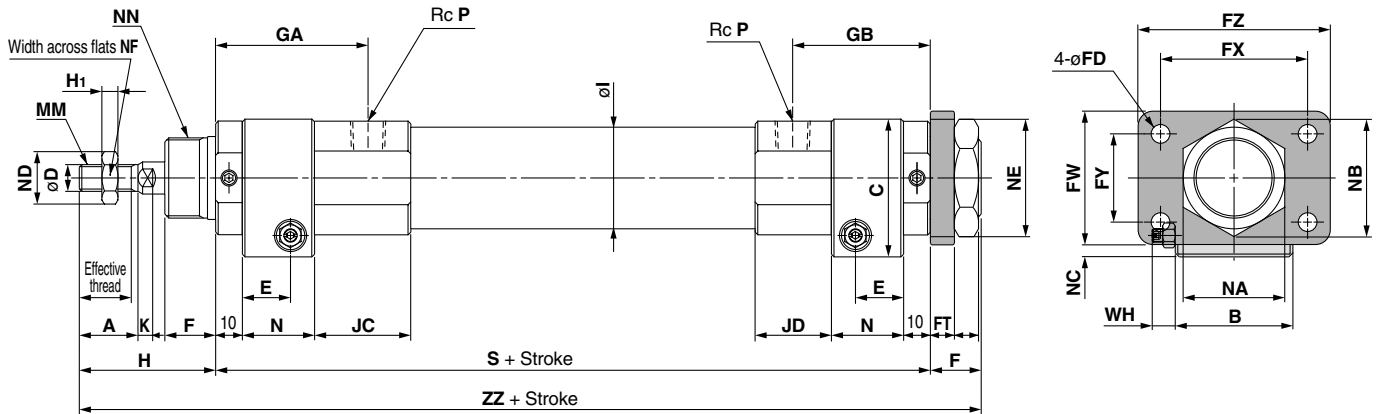


Bore size (mm)	Stroke range (mm)	Eff. thread length	A	B	C	D	E	EA	FA	FB	FD	FT	FW	FX
50	Up to 1200	32	35	70	53	20	50 ⁰ _{-0.042}	62	23	10	11	15	78	96
63	Up to 1200	32	35	80	60	20	55 ⁰ _{-0.074}	58	23	10	11	15	84	104
80	Up to 1400	37	40	95	75	25	65 ⁰ _{-0.074}	61	23	10	13	18	106	130
100	Up to 1500	37	40	116	90	30	80 ⁰ _{-0.074}	63	25	10	13	20	120	145

Bore size (mm)	FY	FZ	GA	H	H ₁	I	JC	K	MM	ND	NE	NF	P	S	WH	ZZ
50	53	116	16	80	11	58	75	7	M18 x 1.5	31	25	27	1/2	215	6.8 to 11.3	305
63	60	124	16	80	11	72	75	7	M18 x 1.5	31	24.5	27	1/2	215	8.5 to 13.5	305
80	75	155	20	90	13	89	78	10	M22 x 1.5	37	30.5	32	3/4	228		328
100	90	172	20	95	16	110	80	10	M26 x 1.5	47.3	34	41	3/4	236		341

Dimensions: Rear Flange Style

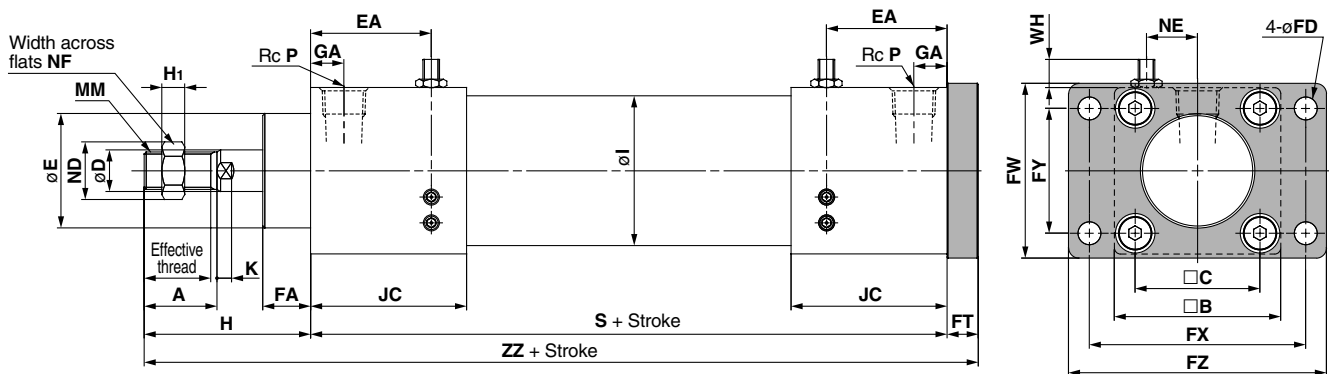
ø20 to ø40



Bore size (mm)	Stroke range (mm)	Eff. thread length	A	B	C	D	E	F	FD	FT	FX	FY	FW	FZ	GA	GB	H ₁	H ₂
20	Up to 700	15.5	18	32	40.5	10	14.5	16	7	6	51	21	38	68	53.5	47.5	5	8
25	Up to 700	19.5	22	36	45.5	12	18	16	7	9	53	27	44	70	56.5	49.5	6	8
32	Up to 1000	19.5	22	44	51.5	12	18	19	7	9	55	33	50	72	55	51.5	6	9
40	Up to 1000	21	24	53	61.5	16	20.5	21	9	9	66	36	60	84	56	51.5	8	11

Bore size (mm)	H	I	JC	JD	K	MM	N	NA	NB	NC	NE	NF	ND	NN	P	S	WH	ZZ
20	44	26	43	30.5	5	M8 x 1.25	22	26	30	5.5	33.5	13	15.0	M22 x 1.5	1/4	192	5.8 to 8.8	252
25	48	31	39	25.5	5.5	M10 x 1.25	27	32	36.9	5.5	37	17	19.6	M24 x 1.5	1/4	193		257
32	51	38	36	28.5	5.5	M10 x 1.25	27	38	43.9	4.5	43.5	17	19.6	M30 x 1.5	3/8	195		265
40	54.5	47	32	23	7.5	M14 x 1.5	30	41	47.3	4.5	52.5	22	25.4	M33 x 2.0	3/8	201.5		6.8 to 11.3

ø50 to ø100



Bore size (mm)	Stroke range (mm)	Eff. thread length	A	B	C	D	E	EA	FA	FD	FT	FW	FX	FY
50	Up to 1200	32	35	70	53	20	50 ⁰ _{-0.042}	62	23	11	15	78	96	53
63	Up to 1200	32	35	80	60	20	55 ⁰ _{-0.074}	58	23	11	15	84	104	60
80	Up to 1400	37	40	95	75	25	65 ⁰ _{-0.074}	61	23	13	18	106	130	75
100	Up to 1500	37	40	116	90	30	80 ⁰ _{-0.074}	63	25	13	20	120	145	90

Bore size (mm)	FZ	GA	H	H ₁	I	JC	K	MM	ND	NE	NF	P	S	WH	ZZ
50	116	16	80	11	58	75	7	M18 x 1.5	31	25	27	1/2	215	6.8 to 11.3	310
63	124	16	80	11	72	75	7	M18 x 1.5	31	24.5	27	1/2	215		310
80	155	20	90	13	89	78	10	M22 x 1.5	37	30.5	32	3/4	228	8.5 to 13.5	336
100	172	20	95	16	110	80	10	M26 x 1.5	47.3	34	41	3/4	236		351

 RE^A_B

REC

C□X

C□Y

 MQ^Q_M
RHC

MK(2)

 RS^Q_G

 RS^H_A

RZQ

 MI^W_S

CEP1

CE1

CE2

ML2B

 C₅-S

CV

MVGQ

CC

RB

J

D-

-X

20-

Data

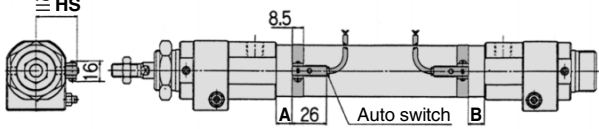
Series RHC

Auto Switch Specifications

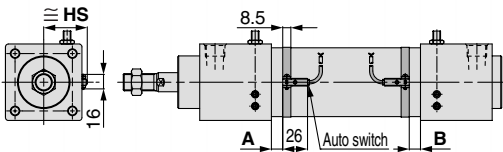
Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

D-C7□/C80

ø20 to 40

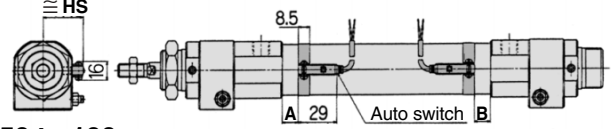


ø50 to 100

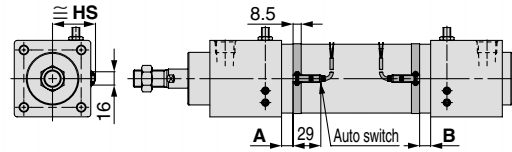


D-H7□/H7□W/H7NF/H7BAL

ø20 to 40

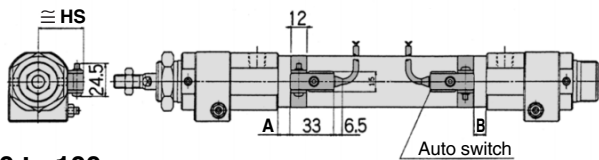


ø50 to 100

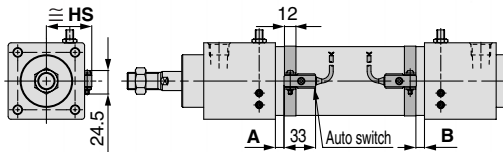


D-B5□/B64/B59W

ø20 to 40

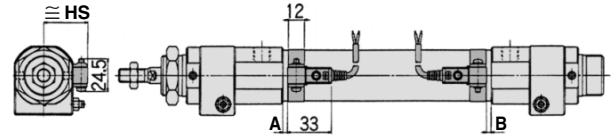


ø50 to 100

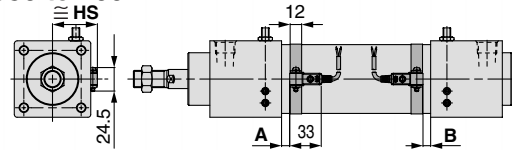


D-G5□/K59/G5□W/K59W/G5NTL, D-G5BAL

ø20 to 40

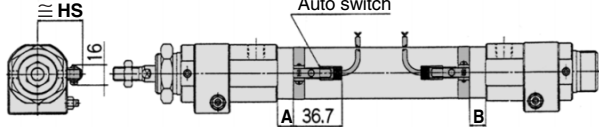


ø50 to 100

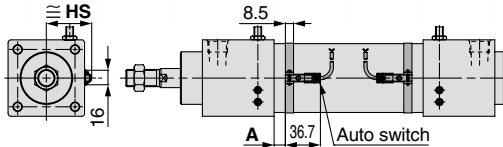


D-C73C/C80C

ø20 to 40

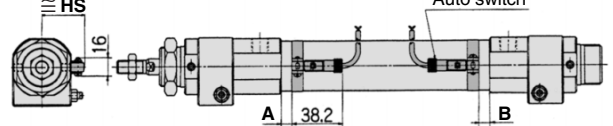


ø50 to 100

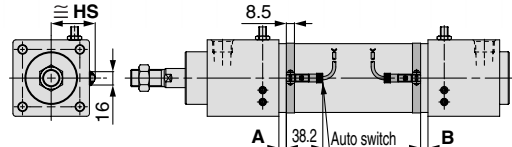


D-H7C

ø20 to 40

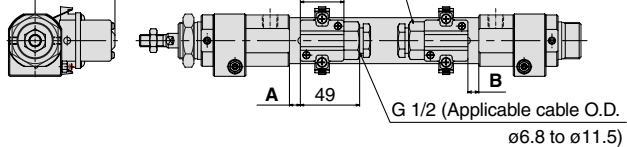


ø50 to 100



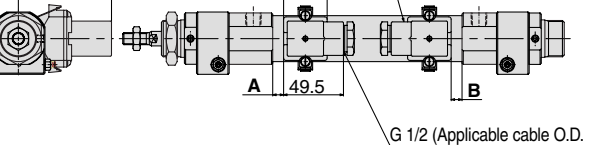
D-A3□/G39/K39

ø20 to 40



D-A44

ø20 to 40



Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

Proper Auto Switch Mounting Position

Bore size (mm)	D-C7□ D-C80 D-C73C D-C80C		D-B5□ D-B64		D-H7□ D-H7C D-H7NF D-H7□W D-H7BAL		D-G5□ D-G5□W D-G5NTL D-G5BAL D-K59 D-K59W		D-B59W		D-A33□ D-A44 D-G39 D-K39	
	A	B	A	B	A	B	A	B	A	B	A	B
20	15	20.5	9	14.5	14	19.5	10.5	16	12	17.5	8.5	14
25	15	20.5	9	14.5	14	19.5	10.5	16	12	17.5	8.5	14
32	15	22.5	9	16.5	14	21.5	10.5	18	12	19.5	8.5	16
40	20	27.5	14	21.5	19	26.5	15.5	23	17	24.5	13.5	21
50	18	28	12	22	17	27	13.5	23.5	15	28.5	11.5	21.5
63	18	28	12	22	17	27	13.5	23.5	15	28.5	11.5	21.5
80	—	—	13.5	27.5	—	—	15	29	16.5	30.5	13	27
100	—	—	15.5	29.5	—	—	17	31	18.5	32.5	15	29

Auto Switch Mounting Height

Bore size (mm)	D-C7□ D-C80 D-H7□ D-H7□W D-H7NF D-H7BAL	D-B5□/B64 D-B59W D-G5□/K59 D-G5□W/K59W D-G5NTL D-G5BAL D-H7C	D-C73C D-C80C	D-A3□ D-G39 D-K39	D-A44
	HS	HS	HS	HS	HS
20	24.5	27.5	27	62	72
25	27	30	29.5	64.5	74.5
32	30.5	33.5	33	68	78
40	35	38	37.5	72.5	82.5
50	40.5	43.5	43	78	88
63	47.5	50.5	50.5	85	95
80	—	59	—	93.5	103.5
100	—	69.5	—	104	114

Operating Range

Auto switch model	Bore size (mm)							
	20	25	32	40	50	63	80	100
D-C7□/Z80 D-C73C/C80C	8	10	9	10	10	11	—	—
D-B5□/B64	8	10	9	10	10	11	11	11
D-B59W	13	13	14	14	14	17	16	18
D-H7□/H7NF/H7□W/H7BAL	4	4	4.5	5	6	6.5	6.5	7
D-H7C	7	8.5	9	10	9.5	10.5	10.5	11
D-A3□/A44	9	10	9	10	10	11	11	11
D-G39/K39	8	9	9	9	9	10	10	11
D-G5□/K59/G5□WK 59W/G5BAL/G5NTL	4	4	4.5	5	6	6.5	6.5	7

* Since this is a guideline including hysteresis, not meant to be guaranteed. (Assuming approximately ±30% dispersion.)
There may be the case it will vary substantially depending on an ambient environment.

Minimum Stroke for Auto Switch Mounting (mm)

Auto switch model	No. of auto switches mounted				
	2		n		1
	Different sides	Same side	Different sides	Same side	
D-C7□ D-C80	15	50		50 + 45 (n-2)	10
D-H7□ D-H7□W D-H7BAL D-H7NF	15	60	$15 + 45 \left(\frac{n-2}{2}\right)$ (n = 2, 4, 6, ...)	60 + 45 (n-2)	10
D-C73C D-C80C D-H7C	15	65	$15 + 50 \left(\frac{n-2}{2}\right)$ (n = 2, 4, 6, ...)	65 + 50 (n-2)	10
D-B5□/B64 D-G5□/K59 D-G5□W/K59W D-G5BAL D-G5NTL	15	75	$15 + 50 \left(\frac{n-2}{2}\right)$ (n = 2, 4, 6, ...)	75 + 55 (n-2)	10
D-B59W	20	75	$20 + 50 \left(\frac{n-2}{2}\right)$ (n = 2, 4, 6, ...)		15
D-A3□ D-A44 D-G39 D-K39	35	100	35 + 30 (n-2)	100 + 100 (n-2)	10

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted. For detailed specifications, refer to page 10-20-1.

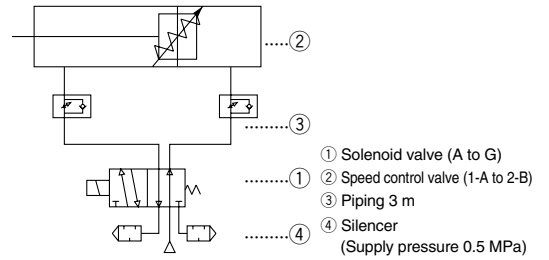
Type	Model	Electrical entry	Features	Applicable bore size (mm)
Reed switch	D-C80	Grommet	Without indicator light	20 to 63
	D-C80C	Connector		
	D-B53	Grommet	—	20 to 100
D-B64	Grommet	Without indicator light		
Solid state switch	D-G5NTL	Grommet	With timer	

* With pre-wire connector is available for D-G5NTL type, too. Refer to page 10-20-60 for details.

* Wide range detection type, solid state auto switch (D-G5NBL type) is also available.

RE_A
RE_B
REC
C□X
C□Y
MQ_M^Q
RHC
MK(2)
RS_G^Q
RS_A^H
RZQ
MI_S^W
CEP1
CE1
CE2
ML2B
C₅-S
CV
MVGQ
CC
RB
J
D-
-X
20-
Data

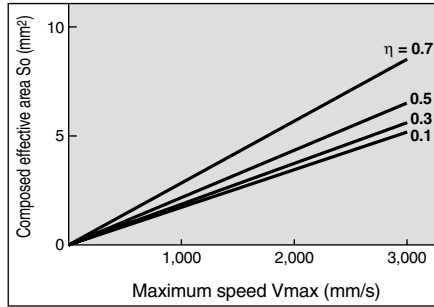
Series RHC System Selection



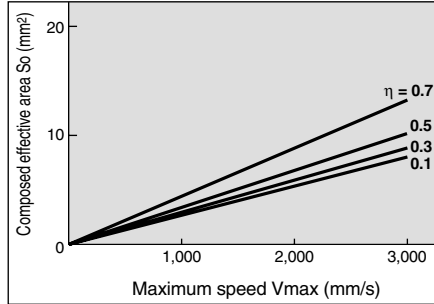
Apply η (cylinder load ratio) and V_{max} (max. speed) and determine effective sectional area "So".

Refer to "System Selection" table, and the appropriate solenoid valve, speed control valve and bore size may be selected.

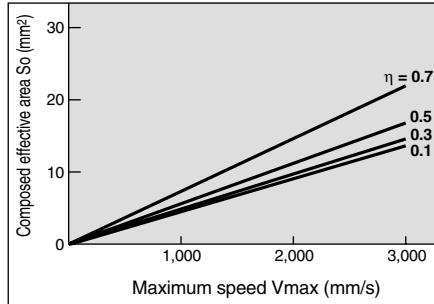
ø20



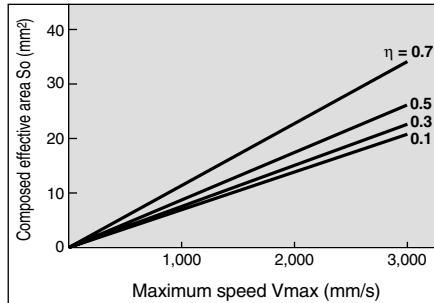
ø25



ø32



ø40



η : Cylinder load ratio

V_{max} : Maximum speed (Refer to page 10-6-5.)

System Selection

Bore size (mm)	Maximum speed (mm/s)	Solenoid valve (): Effective area [mm ²]					Speed controller		Tubing O.D. (mm) Steel piping size
		Metal seal					With One-touch fittings	Elbow type	
		A	B	C	D	E			
		3.6 to 6.3	9.0 to 14.4	16.2 to 21.6	36 to 45	64.8 to 67	1-A	Elbow type	
		VQ1000 (3.6)	VQ2000 (14.4)	—	VQ4000 (36.0)	—	1-B	Universal type	
		VQ1000 (5.4)	—	VQ2000 (16.2)	VQ4000 (39.6)	—	1-C	In-line type	
		SY3000 (5.4)	SY5000 (12.6)	SY7000 (21.6)	—	—	2-A	Metal elbow type	
		SX3000 (5.4)	SX5000 (12.6)	SX7000 (21.6)	—	—	2-B	In-line type	
		SYJ5000 (4.5)	SYJ7000 (12.6)	—	—	—			
		VQZ1000 (3.6)	VQZ2000 (12.6)	VQZ3000 (16.2)	—	—			
		VQZ1000 (6.3)	VQZ2000 (12.6)	VQZ3000 (21.6)	—	—			
		—	—	VFR2000 (16.2)	VFR3000 (41.4)	VFR4000 (67.0)			
		—	VFS1000 (9.0)	VFS2000 (18.0)	VFS3000 (36.0)	VFS4000 (64.5)			
		—	—	—	—	—			
20	500	1.5					1-A	AS22□1F (3.5)	ø6 1/8, 1/4
							1-B	AS23□1F (3.5)	
							1-C	AS2051F (4.5)	
		1000	3				2-A	AS22□0 (2.9)	ø6 1/4, 3/8
							2-B	AS2000 (3.8)	
							1-C	AS3001F (6.5)	
		1500	4.5				2-B	AS3000, AS3500 (12.3)	ø10 1/4, 3/8
							1-C	AS4001F (16)	
							2-B	AS3000, AS3500 (12.3)	
		2000	6				1-C	AS4001F (16)	ø10 1/4, 3/8
							2-B	AS3000, AS3500 (12.3)	
							1-C	AS4001F (16)	
	2500	7.5				2-B	AS3000, AS3500 (12.3)	ø10 1/4, 3/8	
						1-C	AS4001F (16)		
						2-B	AS3000, AS3500 (12.3)		
	3000	9				1-C	AS4001F (16)	ø10 1/4, 3/8	
						2-B	AS3000, AS3500 (12.3)		
						1-C	AS2051F (4.5)		
25	500	2.5				2-B	AS3000, AS3500 (12.3)	ø6 1/4, 3/8	
							1-C		AS2051F (4.5)
	1000	5				1-C	AS3001F (10)	ø8 1/4, 3/8	
							2-B		AS3000, AS3500 (12.3)
	1500	7.5				1-C	AS4001F (16)	ø10 1/4, 3/8	
							2-B		AS3000, AS3500 (12.3)
2000	10				1-C	AS4001F (16)	ø10 1/4		
						2-B		AS4000 (25.5)	
2500	12.5				2-B	AS4000 (25.5)	1/4		
						2-B		AS4000 (25.5)	
32	500	4				1-A	AS32□1F (10)	ø6 ø10 1/4, 3/8	
							1-B		AS33□1F (10)
							1-C		AS4001F (16)
		1000	8				2-A	AS32□0 (13)	ø10 1/4, 3/8
							2-B	AS3000, AS3500 (12.3)	
							1-C	AS4001F (16)	
		1500	12				2-B	AS4000 (25.5)	1/4, 3/8
							2-B	AS5000 (74)	
							2-B	AS5000 (74)	
		2000	16				2-B	AS5000 (74)	3/8
							2-B	AS5000 (74)	
							2-B	AS5000 (74)	
	2500	20				2-B	AS5000 (74)	3/8	
						2-B	AS5000 (74)		
						2-B	AS5000 (74)		
	3000	24				2-B	AS5000 (74)	3/8	
						2-B	AS5000 (74)		
						2-B	AS5000 (74)		
40	500	6				1-A	AS32□1F (10)	ø8 ø10 1/4, 3/8	
							1-B		AS33□1F (10)
							1-C		AS4001F (16)
		1000	12				2-A	AS32□0 (13)	ø10 1/4, 3/8
							2-B	AS3000, AS3500 (12.3)	
							2-B	AS4000 (25.5)	
		1500	18				2-B	AS4000 (25.5)	3/8, ø12
							2-B	AS5000 (74)	
							2-B	AS5000 (74)	
		2000	24				2-B	AS5000 (74)	3/8, ø12
							2-B	AS5000 (74)	
							2-B	AS5000 (74)	
	2500	30				2-B	AS5000 (74)	3/8, ø12	
						2-B	AS5000 (74)		
						2-B	AS5000 (74)		
	3000	36				2-B	AS420 (74)	3/8, ø12	
						2-B	AS420 (74)		
						2-B	AS420 (74)		

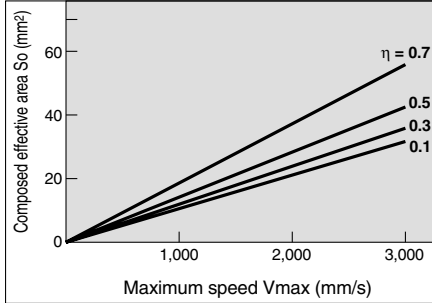
Note) Refer to page 10-6-7 for maximum absorbed energy since cushioning ability may in some cases exceed the allowable cushioning ability if the cylinder is used under high speeds and large loads.

System Selection

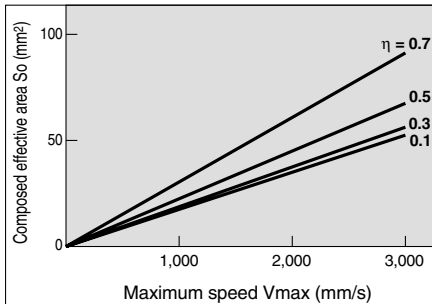
Apply η (cylinder load ratio) and V_{max} (max. speed) and determine effective sectional area "So".

Refer to "System Selection" table, and the appropriate solenoid valve, speed control valve and bore size may be selected.

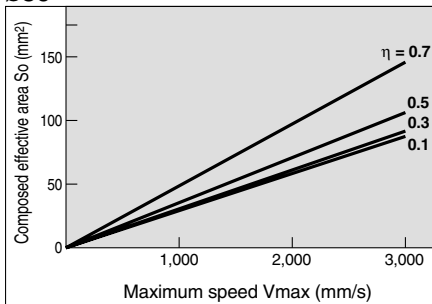
ø50



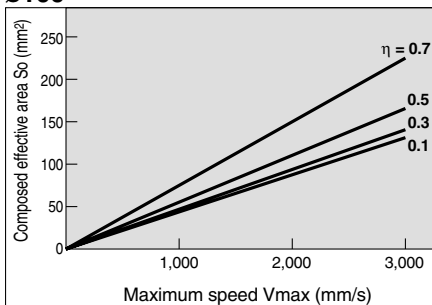
ø63



ø80



ø100



η : Cylinder load ratio

V_{max} : Maximum speed (Refer to page 10-6-5.)

Bore size (mm)	Maximum speed (mm/s)	Solenoid valve (): Effective area [mm ²]					Speed controller		Tubing I.D. (mm) Steel piping size
		Metal seal					1- A Elbow type	1- B Universal type	
		C	D	E	F	G			
50	500	16.2 to 21.6	36 to 45	64.8 to 67	102.6 to 120	180 to 300	1- A Elbow type	1- B Universal type	ø8, ø10 1/4
		—	VQ4000 (36.0)	—	—	—			
		VQ2000 (16.2)	VQ4000 (39.6)	—	—	—			
		SY7000 (21.6)	—	—	—	—			
		SX7000 (21.6)	—	—	—	—			
	1000	—	—	—	—	—	2- A Metal elbow type	2- B In-line type	
		VQZ3000 (16.2)	—	—	—	—			
		VQZ3000 (21.6)	—	—	—	—			
		VFR2000 (16.2)	VFR3000 (41.4)	VFR4000 (67.0)	VFR5000 (102.6)	VFR6000 (191)			
		VFS2000 (18.0)	VFS3000 (36.0)	VFS4000 (64.5)	VFS5000 (12.6)	VFS6000 (180)			
1500	—	—	—	VP□50 (120)	VP□70 (300)	Standard type			
	28.5	—	—	—	—				
	38	—	—	—	—				
	47	—	—	—	—				
	56.5	—	—	—	—				
63	500	—	—	—	—	—	1- A AS42□1F (24)	2- B AS43□1F (24)	ø12, ø16 1/4, 3/8
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
	1000	—	—	—	—	—	1- A AS42□1F (26)	2- B AS43□1F (24)	
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
1500	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
2000	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
2500	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
3000	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
80	500	—	—	—	—	—	1- A AS42□1F (24)	2- B AS43□1F (24)	ø10, ø12, ø16 1/4, 3/8
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
	1000	—	—	—	—	—	1- A AS4001F (16)	2- A AS4200 (26)	
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
1500	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
2000	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
2500	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
3000	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
100	500	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)	ø16 3/8, 1/2
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
	1000	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)	
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
		—	—	—	—	—			
1500	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
2000	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
2500	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
3000	—	—	—	—	—	2- A AS4200 (26)	2- B AS420 (102)		
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				
	—	—	—	—	—				

Note) Refer to page 10-6-7 for the maximum absorbed energy since cushioning ability may in some cases exceed the allowable cushioning ability if the cylinder is used under high speeds and large loads.

RE^A_B

REC

C□X

C□Y

MQ^Q_M

RHC

MK(2)

RS^Q_G

RS^H_A

RZQ

MI^W_S

CEP1

CE1

CE2

ML2B

C¹/₅-S

CV

MVGQ

CC

RB

J

D-

-X

20-

Data