

ISO/VDMA Cylinder: With Lock Type Double Acting, Single Rod

Series C95N

ø32, ø40, ø50, ø63, ø80, ø100

How to Order

Without auto switch

C95N B 32 100 D

With auto switch

C95ND B 32 100 D A53 S

Built-in magnet

Mounting style

B	Basic/without bracket style
L	Axial foot style
F	Rod side flange style
G	Head side flange style
C	Single clevis style
D	Double clevis style

Bore size

32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

Lock direction

D	Both direction
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Stroke (mm)

Refer to "Standard Stroke" on page 6-12-20.

Auto switch

Nil	Without auto switch
S	1 pc.
n	"n" pcs.

Number of auto switches

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

Applicable Auto Switch/Tie-rod Mounting

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length (m)			Applicable load	
					DC		AC	Tie-rod mounting	Band mounting	0.5 (Nil)	3 (L)	5 (Z)		
Reed switch	—	Grommet	Yes	3-wire (Equiv. to NPN)	—	5 V	—	A56	—	●	●	—	IC	—
				2-wire	24 V	12 V	—	A53	—	●	●	●	—	Relay, PLC
			5 V, 12 V			—	A67	—	●	●	—	IC		
			12 V			200 V or less	A64	—	●	●	—	—		
	—		—			A59W	—	●	●	—	—			
	No		3-wire	—	5 V	—	Z76	—	●	●	—	IC	—	
		2-wire	24 V	12 V	AC 100	Z73	—	●	●	●	—	Relay, PLC		
	5 V, 12 V			100 V or less	Z80	—	●	●	—	IC	—			
	Yes			12 V	—	—	—	A33	—	—	—	—	PLC	
					100 V, 200 V	—	A34	—	—	—	—	—	Relay, PLC	
Diagnostic indication (2-color)	Terminal conduit	Yes	2-wire	24 V	12 V	100 V, 200 V	—	A44	—	—	—	—	—	
							DIN terminal	—	—	—	—	—	—	—
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	F59	—	●	●	○	IC	Relay, PLC
				3-wire (PNP)				F5P	—	●	●	○		
				2-wire	—	—	100 V, 200 V	J51	—	●	●	○	—	
				3-wire (NPN)	5 V, 12 V	J59	—	●	●	○	—			
						F59W	—	●	●	○	IC			
				3-wire (PNP)	12 V	F5PW	—	●	●	○	—			
						J59W	—	●	●	○	—			
				2-wire	5 V, 12 V	F5BAL	—	—	●	○	—			
				F5NTL		—	—	●	○	IC				
				3-wire (NPN)	24 V	—	F59F	—	●	●	○	—		
	4-wire (NPN)			P5DW			—	—	●	●	—	—		
	2-wire			5 V, 12 V	Y59A	—	●	●	○	IC				
					Y59B	—	●	●	○	—				
	3-wire (PNP)			5 V, 12 V	Y7P	—	●	●	○	IC				
					Y7NW	—	●	●	○					
	3-wire (NPN)			—	Y7PW	—	●	●	○		Relay, PLC			
					Y7BW	—	●	●	○			—		
	3-wire (PNP)			5 V, 12 V	Y7BAL	—	—	●	○	—				
		—	—		—	—	—	—	—					
	2-wire	5 V, 12 V	—	G39	—	—	—	IC						
			—	K39	—	—	—	—	—					

* Lead wire length symbols: 0.5 m Nil (Example) A53
3 m L (Example) A53L
5 m Z (Example) A53Z

○: Manufactured upon receipt of order.

Refer to page 6-16-1 for details of applicable auto switches in addition to those listed above.

Auto Switch Mounting Bracket Part No.

Bore size (mm)	32	40	50	63	80	100
D-A3/A4/K3/G3	BMB2-032	BMB2-040	BMB1-050	BMB1-063	BMB1-080	BMB1-100
D-A5/A6/F5/J5	BT-03		BT-05		BT-06	
D-Z□/Y□	BMB4-032		BMB4-050		BMB4-063	
D-P5DWL	BMB3T-040		BMB3T-050		BMB3T-080	

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

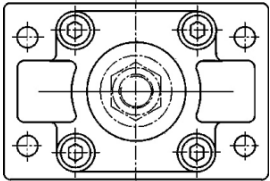
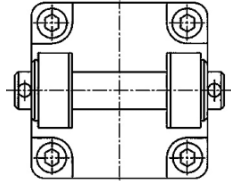
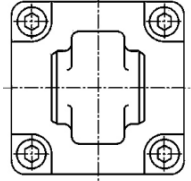
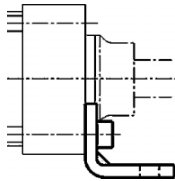
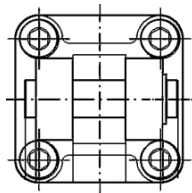
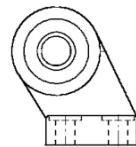
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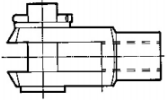
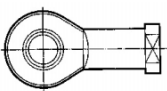
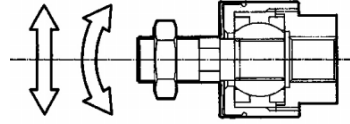
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Accessory

Mounting Accessory, Cylinder

Bore size (mm)	F Rod/Head side flange	D Female head side clevis (Corresponds to E accessories)	C Male head side clevis
	 Supplied with 4 screws	 Supplied with bolt, safety device and 4 screws	 Supplied with 4 screws
32	<u>Without lock</u>	D5032	<u>Plain</u>
40	F5032	D5040	C5032
50	F5040	D5050	C5040
63	F5050	D5063	C5050
80	F5063	D5080	C5063
100	F5080	D5100	C5080
	F5100		C5100
	See page 6-12-8 and 24 for dimensions.	See pages 6-12-8, 9 and 24 for dimensions	See pages 6-12-8, 9 and 24 for dimensions. Note) See page 6-12-9 for male head side clevis with swivel CR50.
Bore size (mm)	L Foot	DS Female head side clevis (for ES accessory)	E Angled head side clevis
	 Supplied with two pieces Supplied with 4 screws		
32	L5032	DS5032	E5032
40	L5040	DS5040	E5040
50	L5050	DS5050	E5050
63	L5063	DS5063	E5063
80	L5080	DS5080	E5080
100	L5100	DS5100	E5100
	See page 6-12-8 and 24 for dimensions.	See page 6-12-10 for dimensions.	See page 6-12-9 for dimensions.

Mounting Accessory, Rod

Bore size (mm)	GKM Rod clevis ISO 8140	KJ Piston rod ball joint ISO 8139	JA Floating joint
	 Supplied with bolts and safety devices		
32	GKM10-20	KJ10D	JA30-10-125
40	GKM12-24	KJ12D	JA40-12-125
50	GKM16-32	KJ16D	JA50-16-150
63	GKM16-32	KJ16D	JA50-16-150
80	GKM20-40	KJ20D	JAH50-20-150
100	GKM20-40	KJ20D	JAH50-20-150
	See page 6-12-11 for dimensions.	See page 6-12-11 for dimensions.	See page 6-12-11 for dimensions.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

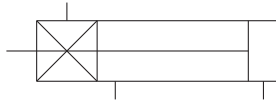
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Data

Series C95N



JIS Symbol
Cylinder with lock



Specifications

Bore size (mm)	32, 40, 50, 63, 80, 100
Model	Non-lube
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.08 MPa
Piston speed	50 to 1000 mm/s Note)
Ambient and fluid temperature	Without auto switch: -10°C to 70°C (No freezing) With auto switch: -10°C to 60°C (No freezing)
Cushion	Double side air cushion
Stroke length tolerance	Up to 250: $^{+1.0}_0$, 251 to 1000: $^{+1.4}_0$
Mounting	Basic style, Axial foot style, Rod side flange style, Head side flange style, Single clevis style, Double clevis style

Note) Load limits exist depending upon piston speed when locked, mounting direction and operating pressure.

Lock Specifications

Lock actuation	Spring lock (Exhaust lock)
Unlocking pressure	0.25 MPa or more
Locking pressure	0.20 MPa or less
Maximum operating pressure	1.0 MPa
Locking direction	Two-way

Standard Stroke

For cases with auto switches, refer to the table of minimum strokes for mounting of auto switches on page 6-12-25.

Bore size (mm)	Standard stroke (mm)
32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500
40	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500
50	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600
63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600
80	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800
100	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800

Stopping Accuracy

(mm)

Locking system	Piston speed (mm/s)			
	100	300	500	1000
Spring lock	±0.3	±0.6	±1.0	±2.0

Conditions / Horizontal supply pressure P = 0.5 MPa

Load weight.....Upper limit of allowable value

Solenoid valve for locking mounted on the unlocking port

Maximum value of stopping position dispersion from 100 measurements

Spring Lock Holding Power (Maximum static load)

Bore size (mm)	32	40	50	63	80	100
Holding power N	552	882	1370	2160	3430	5390

ISO/VDMA Cylinder: With Lock Type Double Acting, Single Rod Series C95N

Weight/Aluminum Tube

(kg)

Bore size (mm)		32	40	50	63	80	100
Basic weight	Basic style	1.26	1.87	2.97	4.50	7.34	10.80
	Foot style	0.16	0.20	0.38	0.46	0.89	1.09
	Flange style	0.20	0.23	0.47	0.58	1.30	1.81
	Single clevis style	0.16	0.23	0.37	0.60	1.07	1.73
	Double clevis style	0.20	0.32	0.45	0.71	1.28	2.11
Additional weight per each 50 mm of stroke	All mounting brackets	0.11	0.16	0.26	0.27	0.42	0.56
Accessory	Single rod clevis	0.07	0.11	0.22	0.22	0.40	0.40
	Double clevis (With pin)	0.09	0.15	0.34	0.34	0.69	0.69

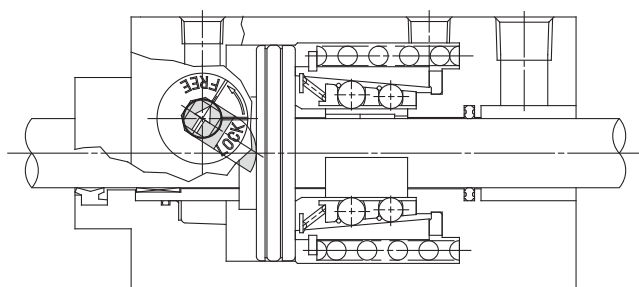
Calculation: (Example) C95ND40-100

- Basic weight 1.87 (kg) (Basic, ø40)
- Additional weight 0.16 (kg/50 st)
- Cylinder stroke 100 (st)

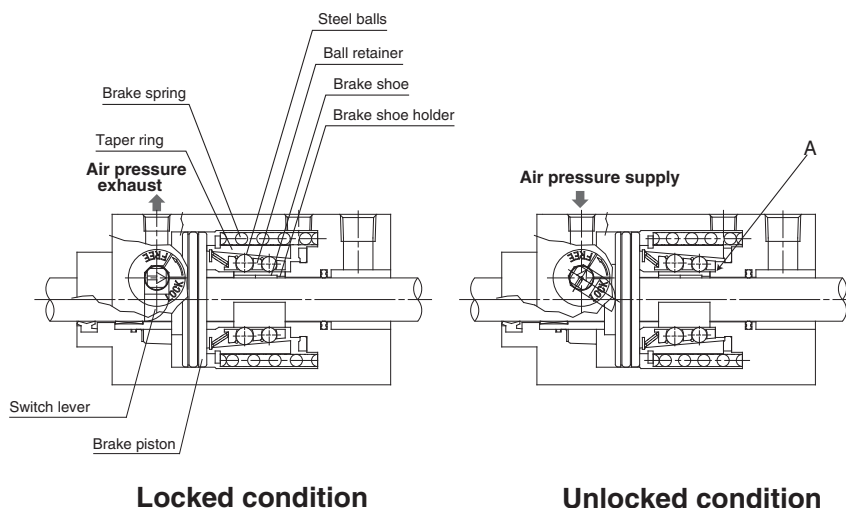
$$1.87 + 0.16 \times 100/50 + 0.32 = 2.51 \text{ kg}$$

Manual override for unlocking

In case the air supply is cut off or discharged, unlocking can be performed with a commercially available tool. The fail safe mechanism locks again when manual override is released.



Construction Principle



Spring lock (Exhaust lock)

The spring force which acts upon the taper ring is magnified by a wedge effect, and is conveyed to all of the numerous steel balls which are arranged in two circles. These act on the brake shoe holder and brake, which locks the piston rod by tightening against it with a large force.

Unlocking is accomplished when air pressure is supplied to the unlocking port. The brake piston and taper ring oppose the spring force, moving to the right side, and the ball retainer strikes the cover section A. The braking force is released as the steel balls are removed from the taper ring by the ball retainer.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

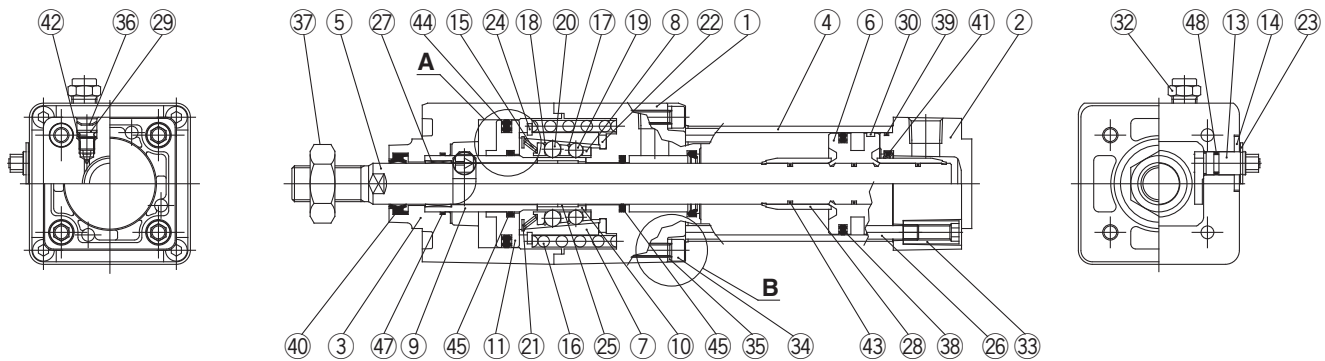
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Data

Series C95N

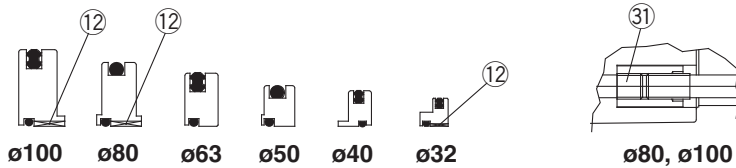
Construction

[First angle projection]



Section A
(Release piston bushing)

Section B
(Tie-rod for unit attachment)



Component Parts

No.	Description	Material	Qty.	Note
①	Rod cover	Aluminum alloy	1	
②	Head cover	Aluminum die-casted	1	
③	Cover	Aluminum alloy	1	
④	Cylinder tube	Aluminum alloy	1	
⑤	Piston rod	Carbon steel	1	
⑥	Piston	Aluminum alloy	1	
⑦	Taper ring	Carbon steel	1	
⑧	Ball retainer	Special resin	1	
⑨	Piston guide	Carbon steel	1	
⑩	Brake shoe holder	Special steel	1	
⑪	Brake release piston	Carbon steel	1	32, 80, 100
		Aluminum alloy	1	40, 50, 63
⑫	Brake release piston bushing	Steel + Special resin	1	32, 80, 100 only
⑬	Cam for lock release	Chrome molybdenum steel	1	
⑭	Washer	Carbon steel	1	
⑮	Spring for retainer pre-load	Stainless wire	1	
⑯	Brake spring	Stainless wire	1	
⑰	Clip A	Stainless steel	1	
⑱	Clip B	Stainless steel	1	
⑲	Steel ball A	Carbon steel	10	32 to 50
			9	63 to 100

No.	Description	Material	Qty.	Note
⑳	Steel ball B	Carbon steel	10	32 to 50
			9	63 to 100
㉑	Tooth ring	Stainless steel	1	
㉒	Damper	Polyurethane rubber	1	
㉓	Snap ring for release cam ㉔	Carbon steel	1	
㉔	Snap ring for taper ring	Carbon steel	1	
㉕	Brake shoe	Special friction material	2	
㉖	Tie-rod	Carbon steel	4	
㉗	Bushing	Lead bronze casting	1	
㉘	Cushion ring	Brass	2	
㉙	Cushion valve	Steel wire	2	
㉚	Wear ring	Resin	1	
㉛	Tie-rod for unit attachment	Carbon steel	2	
㉜	BC element	Bronze + Brass	1	
㉝	Tie-rod nut	Carbon steel	4	32 to 63
			8	80, 100
㉞	Cap screw	Chrome molybdenum steel	4	
㉟	Spring washer	Steel wire	4	
㊱	Snap ring	Steel for spring	2	40 to 100
㊲	Rod end nut	Steel	1	

No.	Description	Material	Qty.
㉞	Piston seal	NBR	1
㉟	Tube gasket	NBR	2
㊱	Rod seal A	NBR	1
㊲	Cushion seal	NBR	2
㊳	Cushion seal valve	NBR	2
㊴	Piston gasket	NBR	3
㊵	Release piston seal	NBR	1
㊶	Rod seal B	NBR	1
㊷	Gasket for release piston	NBR	1
㊸	Gasket for release guide	NBR	1
㊹	Gasket for release cam	NBR	1

Replacement Parts: Seal Kit

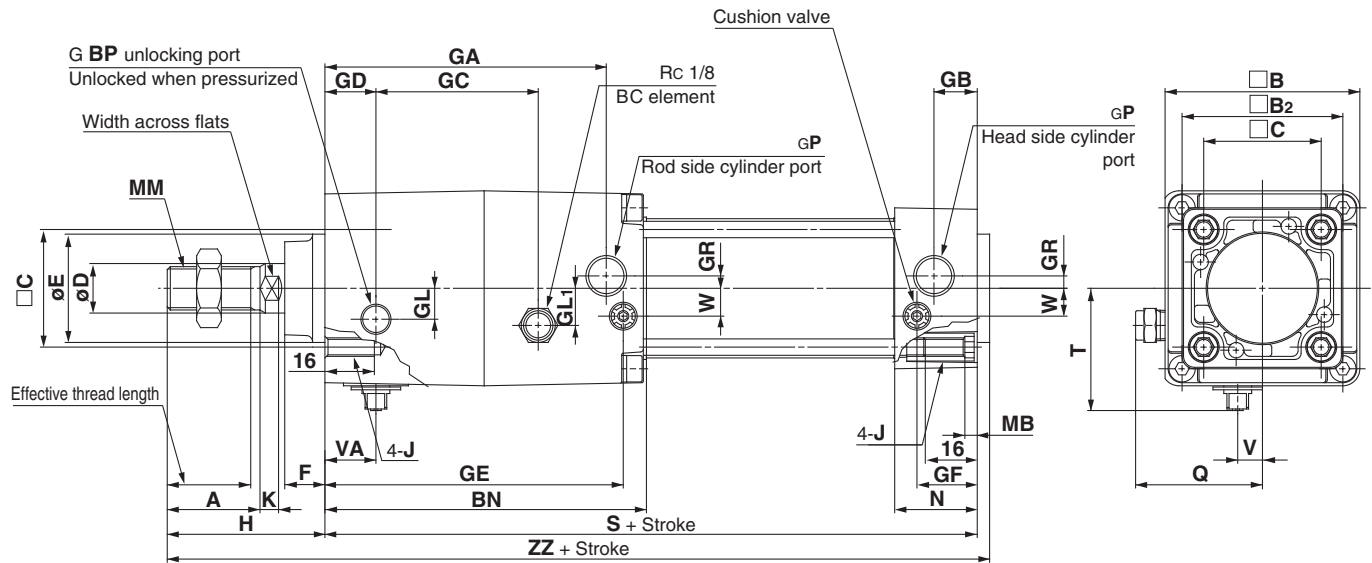
Bore size (mm)	Kit no.	Contents
32	CS95-32	Kits include items ㉞ and ㉟ to ㊹.
40	CS95-40	
50	CS95-50	
63	CS95-63	
80	CS95-80	
100	CS95-100	

* Seal kits consist of items ㉞ and ㉟ to ㊹ contained in one kit, and can be ordered using the order number for each respective tube bore size.

ISO/VDMA Cylinder: With Lock Type Double Acting, Single Rod Series C95N

Dimensions

Basic style (B): C95NB



Bore size (mm)	Effective thread length (mm)	Width across flats	A	B	B ₂	BN	BP	C	D	Ee ₁₁	F	GA	GB	GC	GD	GL	GL ₁
32	19.5	10	22	54	46	97	G 1/8	32.5	12	30	13	83	13	45.5	13	7.5	12
40	21	13	24	63	52	104	G 1/8	38	16	35	13	91	14	52.5	16.5	10	12
50	29	16	32	75	65	120.5	G 1/4	46.5	20	40	14	104.5	15.5	58.5	19	11.5	15
63	29	16	32	90	75	134.5	G 1/4	56.5	20	45	14	119.5	16.5	68	23	17.5	12
80	37	21	40	102	95	169	G 1/4	72	25	45	20	150	19	81	33	22	18
100	37	21	40	116	114	189	G 1/4	89	30	55	20	170	19	96	37.5	25	20

Bore size (mm)	GR	GE	GF	J	MB	K	MM	N	P	Q	H	S	T	V	VA	W	ZZ
32	4	88.5	18.5	M6 x 1	4	6	M10 x 1.25	27	G 1/8	37	48	164	34	6.5	13	6.5	216
40	4	96.5	19.5	M6 x 1	4	6.5	M12 x 1.25	27	G 1/4	41.5	54	182	39.5	8	16.5	9	240
50	5	111.2	23	M8 x 1.25	5	8	M16 x 1.5	31.5	G 1/4	47.5	69	195	47	9	20	10.5	268
63	9	123.5	20.5	M8 x 1.25	5	8	M16 x 1.5	31.5	G 3/8	55	69	224	55.5	8.5	23	12	297
80	11.5	157	26	M10 x 1.5	5	10	M20 x 1.5	38	G 3/8	61	86	259	61.5	10.5	33	14	349
100	17	177	26	M10 x 1.5	5	10	M20 x 1.5	38	G 1/2	68	91	289	69.5	10.5	37.5	15	384

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

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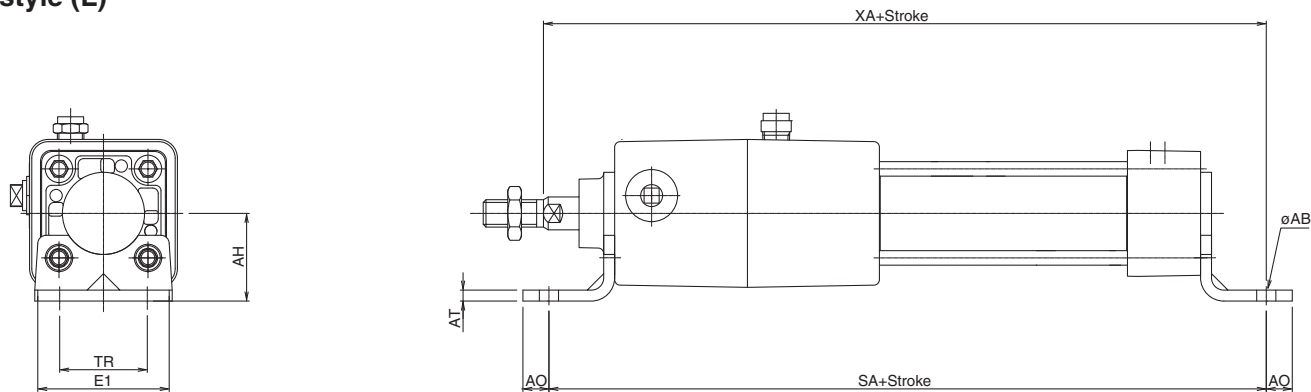
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Series C95N

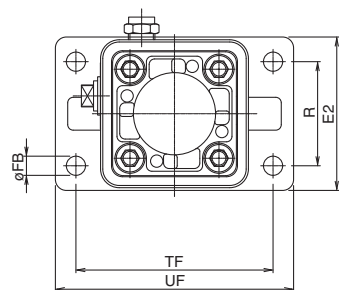
Dimensions: Cylinder Mounting Accessory

[First angle projection]

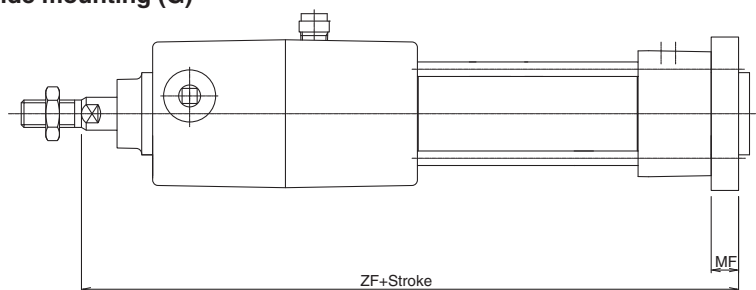
Foot style (L)



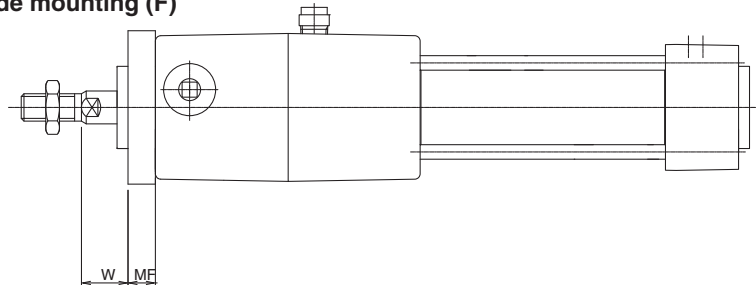
Flange style (F, G)



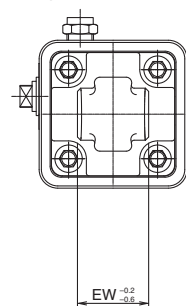
Head side mounting (G)



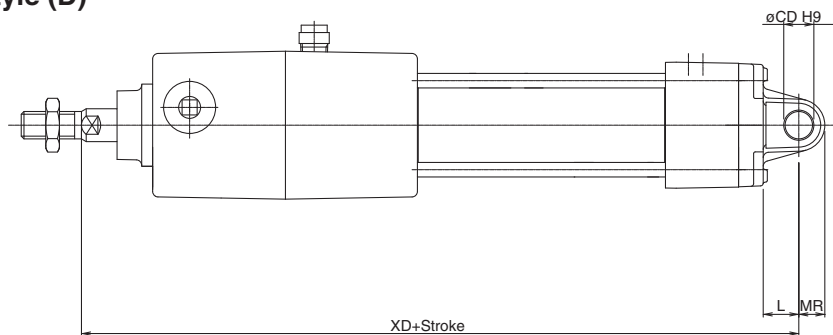
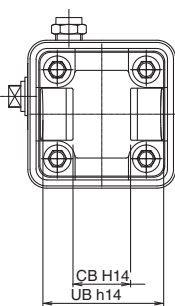
Rod side mounting (F)



Head side single clevis style (C)



Head side double clevis style (D)



Bore (mm)	E1	R	W	MF	ZF	øFB	øCD H9	EB	L	XD	UB h14	CB H14	EW ^{-0.2 -0.6}	MR	TR	AO	AT	XA	SA	AH	øAB	TF	UF	E2
32	48	38	16	10	200	7	10	65	12	212	45	26	26	9.5	32	10	4.5	214	212	32	7	72	87	56
40	55	46	20	10	222	9	12	75	15	237	52	28	28	12	36	11	4.5	240	238	36	10	83	101	65
50	68	52	25	12	244	9	12	80	15	259	60	32	32	12	45	12	5.5	264	259	45	10	100	120	77
63	80	62	25	12	273	9	16	90	20	293	70	40	40	16	50	12	5.5	293	288	50	10	115	135	92
80	100	63	30	16	321	12	16	110	20	341	90	50	50	16	63	14	6.5	346	341	63	12	126	153	100
100	120	75	35	16	356	14	20	140	25	381	110	60	60	20	75	16	6.5	381	371	71	14.5	150	178	120

**Series C95N****Auto Switch Specifications****Applicable Auto Switch**

Type	Auto switch model	Electrical entry (Function)
Reed switch	D-A5□/A6□	Grommet
	D-A59W	Grommet (2-color indication)
	D-Z7□/Z80	Grommet
	D-A3□	Terminal conduit
	D-A44	DIN terminal
Solid state switch	D-F5□/J5□	Grommet
	D-F5□W/J59W	Grommet (2-color indication)
	D-F5BAL	Grommet (2-color indication, Water resistant)
	D-F59F	Grommet (2-color indication, Diagnostic output)
	D-F5NTL	Grommet (With timer)
	D-Y59□	Grommet (In-line)
	D-Y69□	Grommet (Perpendicular)
	D-Y7P	Grommet (In-line)
	D-Y7PV	Grommet (Perpendicular)
	D-Y7□W	Grommet (2-color indication, In-line)
	D-Y7□WV	Grommet (2-color indication, Perpendicular)
	D-Y7BAL	Grommet (Water resistant, In-line)
	D-G39/K39	Terminal conduit

Minimum Strokes for Auto Switch Mounting

Auto switch model	Number of auto switch mounted	ø32 to ø63	ø80, ø100
A5□ A6□	1, 2	15	20
	n	$15 + 55(n - 2)/2$ n = 2, 4, 6, 8...	$20 + 55(n - 2)/2$ n = 2, 4, 6, 8...
A59W	2	15	20
	n	$20 + 55(n - 2)/2$ n = 2, 4, 6, 8...	$25 + 55(n - 2)/2$ n = 2, 4, 6, 8...
F5□(W)/J5□J 59W F5BAL/F59F	1	15	25
	1, 2	15	25
F5NTL	n	$15 + 55(n - 2)/2$ n = 2, 4, 6, 8...	$25 + 55(n - 2)/2$ n = 2, 4, 6, 8...
	1, 2	15	25
A3□ K3□ G3□	1	10	10
	2 (Same side)	100	100
	2 (Different sides)	35	35
	n (Same side)	$100 + 100(n - 2)$ n = 2, 4, 6, 8...	$100 + 100(n - 2)$ n = 2, 4, 6, 8...
	n (Different sides)	$35 + 30(n - 2)$ n = 2, 4, 6, 8...	$35 + 30(n - 2)$ n = 2, 4, 6, 8...
A44	1	10	10
	2 (Same side)	55	55
	2 (Different sides)	35	35
	n (Same side)	$55 + 50(n - 2)$ n = 2, 4, 6, 8...	$55 + 50(n - 2)$ n = 2, 4, 6, 8...
	n (Different sides)	$35 + 30(n - 2)$ n = 2, 4, 6, 8...	$35 + 30(n - 2)$ n = 2, 4, 6, 8...
Z7□ Z80	1, 2	15	15
	n	$15 + 40(n - 2)/2$ n = 2, 4, 6, 8...	$15 + 40(n - 2)/2$ n = 2, 4, 6, 8...
Y59□ Y7P Y7□W	1, 2	15	15
	n	$15 + 40(n - 2)/2$ n = 2, 4, 6, 8...	$15 + 40(n - 2)/2$ n = 2, 4, 6, 8...
Y69□ Y7PV Y7□WV	1, 2	10	10
	n	$10 + 30(n - 2)/2$ n = 2, 4, 6, 8...	$10 + 30(n - 2)/2$ n = 2, 4, 6, 8...
Y7BAL	1, 2	20	20
	n	$20 + 45(n - 2)/2$ n = 2, 4, 6, 8...	$20 + 45(n - 2)/2$ n = 2, 4, 6, 8...
P5DWL	1, 2	15	20
	n	$15 + 65(n - 2)/2$ n = 2, 4, 6, 8...	$20 + 65(n - 2)/2$ n = 2, 4, 6, 8...

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

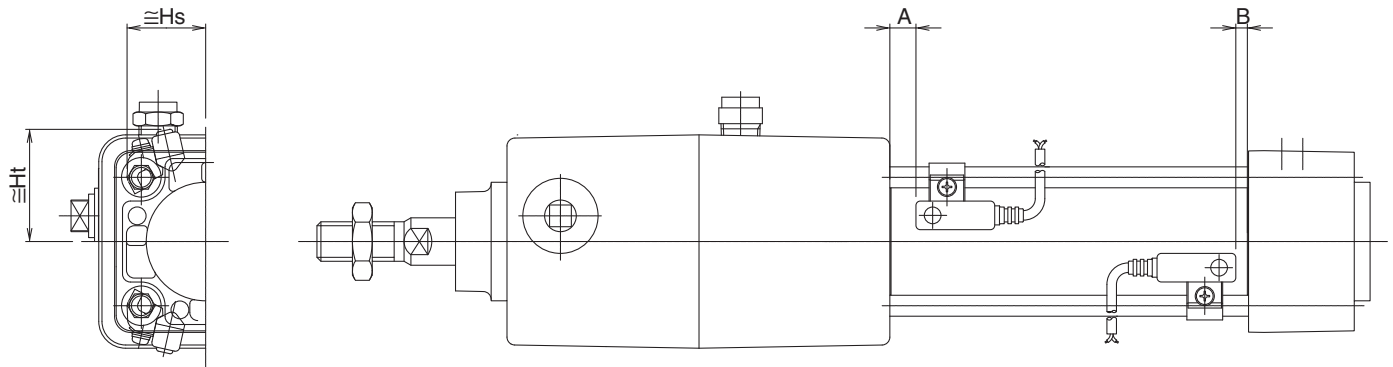
20-

Data

Series C95N

Auto Switch Mounting Position and Mounting Height

[First angle projection]



Auto Switch Mounting Position

Bore size (mm)	D-A5□ D-A6□		D-A59W		D-F5□, D-F5□W D-J5□, D-J59W D-F59F, D-F5BAL		D-F5NTL		D-Z7□, D-Y59□, D-Y7BAL D-Z80, D-Y69□, D-Y7□W(V) D-Y7P(V)		D-A3□, D-G39 D-A44, D-K39		D-P5DWL	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
32	10.5	0	14.5	2	17	4.5	22	9.5	14	1.5	10.5	0	13.5	1
40	21.5	0	25.5	2	28	4.5	33	9.5	25	1.5	21.5	0	24.5	1
50	23	0	27	2.5	29.5	5	34.5	10	26.5	2	23	0	26	1.5
63	28	0	32	2.5	34.5	5	39.5	10	31.5	2	28	0	31	1.5
80	28	2.5	22	6.5	24.5	9	29.5	14	21.5	6	28	2.5	31	5.5
100	28	2.2	32	6.5	34.5	9	39.5	14	31.5	6	28	2.5	31	5.5

Auto Switch Mounting Height

Bore size (mm)	D-A5□ D-A6□ D-A59W		D-F5□, D-J5□ D-F5□W, D-J59W D-F5BAL, D-F5NTL D-F59F		D-A3□, D-K39 D-G39		D-A44		D-Z7□, D-Z80 D-Y59□, Y7P D-Y7□W		D-Y69□, D-Y7PV D-Y7□WV		D-Y7BAL		D-P5DWL	
	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht
32	35	24.5	32.5	25	67	27.5	77	27.5	25.5	23	26.5	23	30	23	38	31
40	38.5	27.5	36.5	27.5	71.5	27.5	81.5	27.5	29.5	26	30	26	34	26	42	33
50	43.5	34.5	41	34	77	—	87	—	33.5	31	34.5	31	38	31	46.5	39
63	48.5	39.5	46	39	83.5	—	93.5	—	39	36	40	36	43	36	51.5	44
80	55	46.5	52.5	46.5	92.5	—	103	—	47.5	45	48.5	45	52	45	58	51.5
100	62	55	59.5	55	103	—	113.5	—	55.5	53.5	56.5	53.5	60	53.5	65.5	60.5

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted. For detailed specifications, refer to page 6-16-1.

Type	Model	Electrical entry (Fetching direction)	Features
Reed switch	D-A53/A56	Grommet (In-line)	—
Solid state switch	D-F59/F5P/J59	Grommet (In-line)	—
	D-F59W/F5PW/J59W		2-color indication type
	D-F5BAL		2-color indication type, Water resistant
	D-F5NTL		With timer
	D-G5NTL		—
	D-Y69A/Y69B/Y7PV	Grommet (Perpendicular)	—
	D-Y7NWV/Y7PWV/Y7BWV		2-color indication type

* With pre-wire connector is available for solid state auto switches. For details, refer to page 6-16-60.

* Normally closed (NC = b contact), solid state switch (D-Y7G/Y7H type) are also available. For details, refer to page 6-16-39.

Series C95N

Model Selection

Precautions on Model Selection

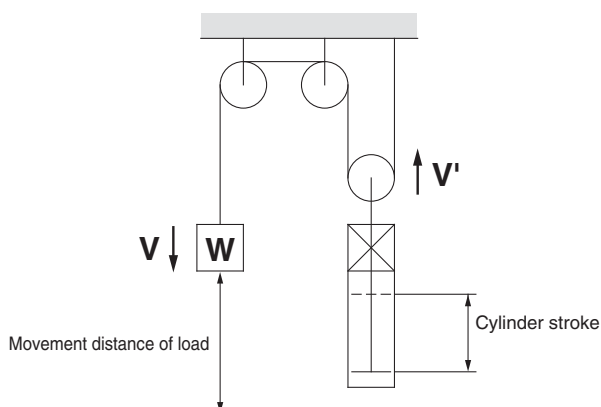
⚠ Caution

1. In order that the originally selected maximum speed is not exceeded, be certain to use a speed controller to adjust the total movement distance of the load so that movement takes place in no less than the applicable movement time.

The movement time is the time that is necessary for the load to travel the total movement distance from the start without any intermediate stops.

2. In cases where the cylinder stroke and the movement distance of the load are different (double speed mechanism, etc.), use the movement distance of the load for selection purposes.

Example)



Selection Example

- Load weight: $m = 50 \text{ kg}$
- Movement distance: $st = 500 \text{ mm}$
- Movement time: $t = 2 \text{ s}$
- Load condition: Vertical downward = Load in direction of rod extension
- Operating pressure: $P = 0.4 \text{ MPa}$

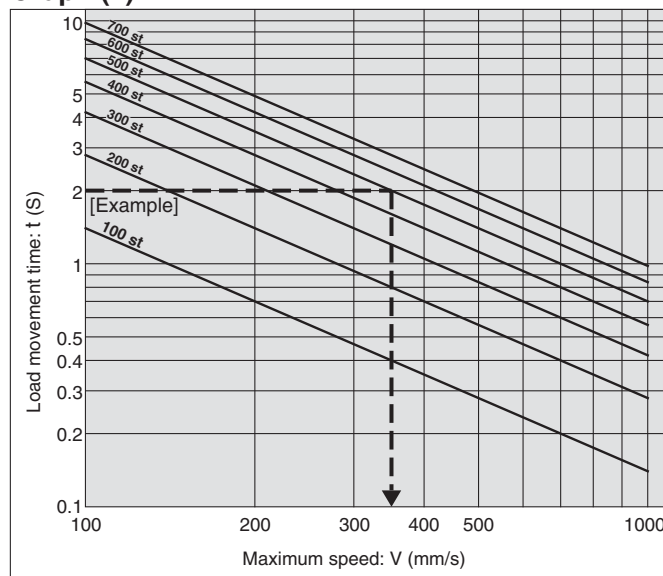
Step 1: From graph 1 find the maximum movement speed of the load
 $\therefore$ Maximum speed V : approx. 350 mm/s

Step 2: Select Graph (6) based upon the load condition and operating pressure, and then from the intersection of the maximum speed $V = 350 \text{ mm/s}$ found in Step 1, and the load weight $m = 50 \text{ kg}$
 $\therefore \phi 63 \rightarrow$ Select a MNB63 or larger bore size.

Step 1 Find the Maximum Load Speed: V

Find the maximum load speed: V (mm/s) from the load movement time: t (s) and the movement distance: st (mm).

Graph (1)



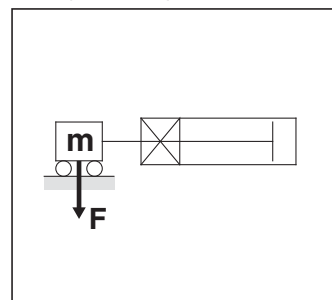
Step 2 Find the Cylinder Bore Size.

Select a graph based upon the load condition and operating pressure, and then find the point of intersection for the maximum speed found in Step 1 and the load weight. Select the bore size on the line above the point of intersection.

Load Condition

Operating pressure

Direction of load at right angle to rod
 (* Being held by a guide)

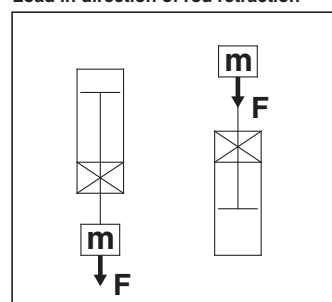


From 0.3 MPa $\rightarrow$ Graph (2)

From 0.4 MPa $\rightarrow$ Graph (3)

From 0.5 MPa $\rightarrow$ Graph (4)

Load in direction of rod extension
 Load in direction of rod retraction



From 0.3 MPa $\rightarrow$ Graph (5)

From 0.4 MPa $\rightarrow$ Graph (6)

From 0.5 MPa $\rightarrow$ Graph (7)

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

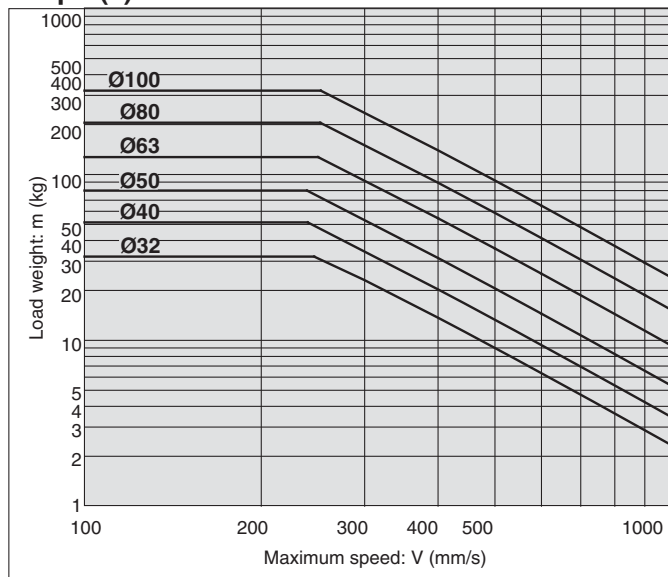
Data

Series C95N

Selection Graph

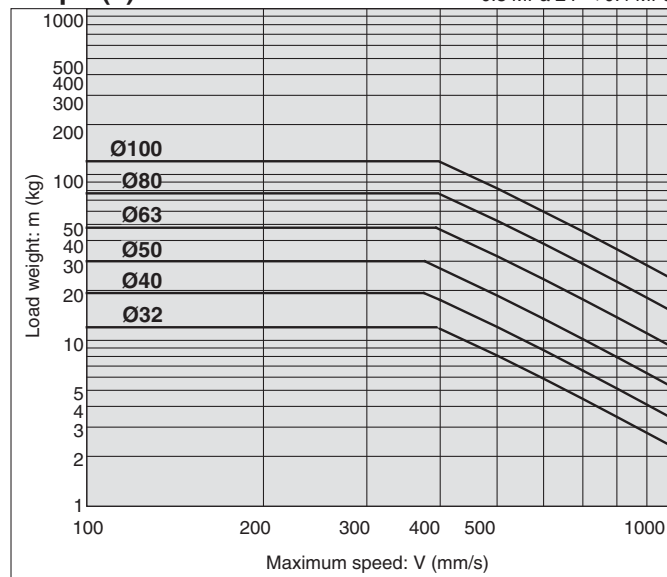
Graph (2)

$0.3 \text{ MPa} \leq P < 0.4 \text{ MPa}$



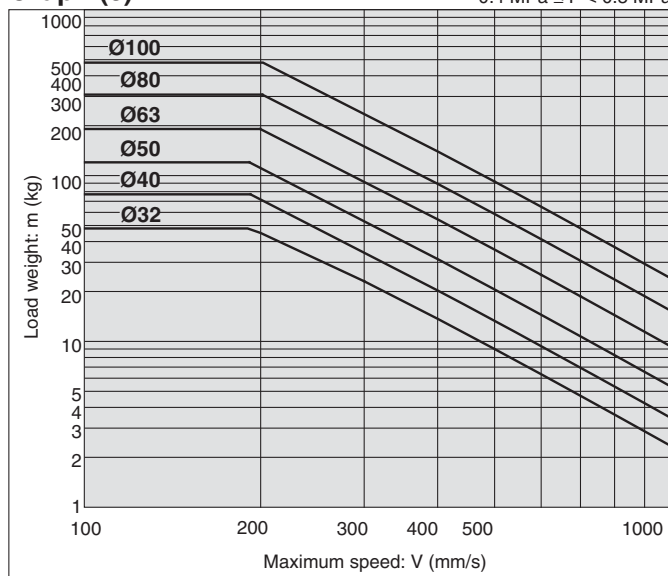
Graph (5)

$0.3 \text{ MPa} \leq P < 0.4 \text{ MPa}$



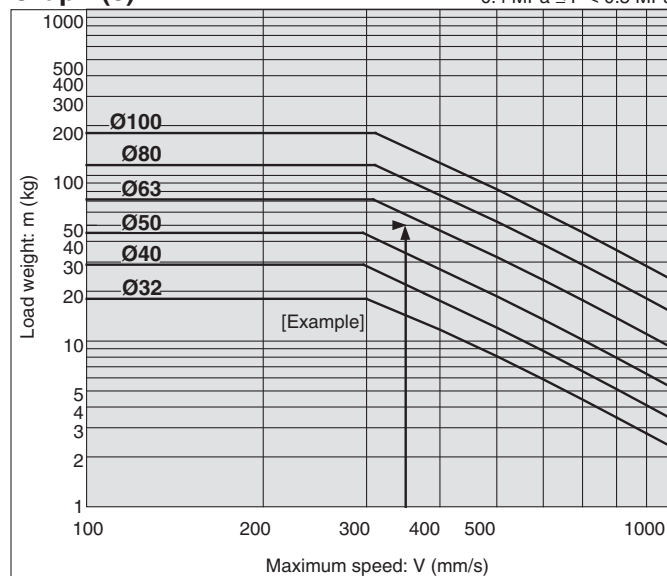
Graph (3)

$0.4 \text{ MPa} \leq P < 0.5 \text{ MPa}$



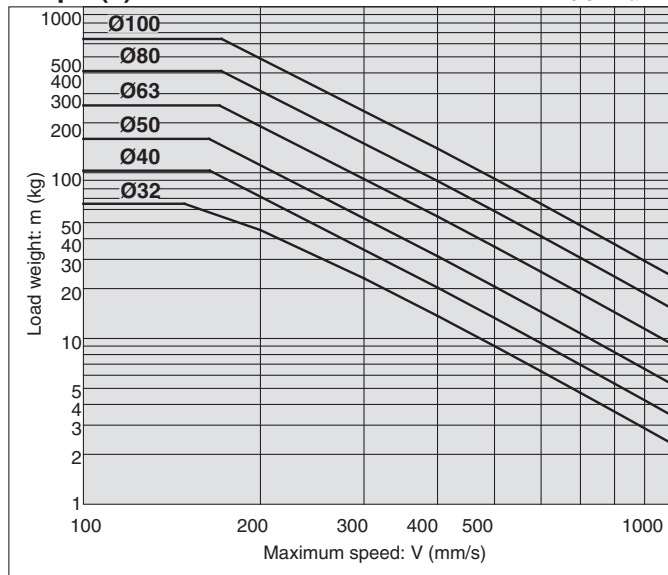
Graph (6)

$0.4 \text{ MPa} \leq P < 0.5 \text{ MPa}$



Graph (4)

$0.5 \text{ MPa} \leq P$



Graph (7)

$0.5 \text{ MPa} \leq P$

