



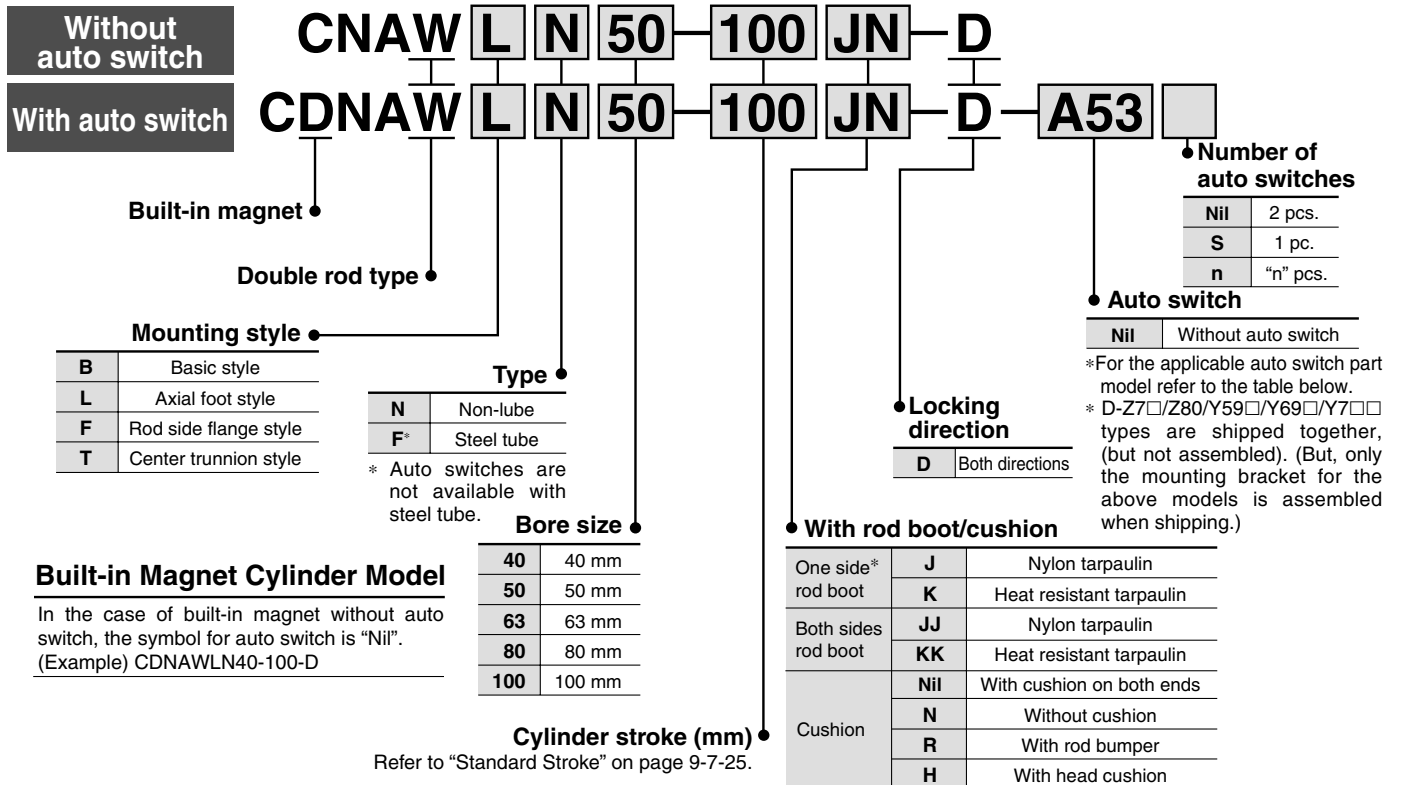
Cylinder with Lock

Double Acting, Double Rod

Series CNAW

ø40, ø50, ø63, ø80, ø100

How to Order



* In the case of one side, it is in the lock side.
** When the symbols are two or more, indicate them alphabetically.

Applicable Auto Switch/Refer to page 9-15-1 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	Tie-rod mounting	Band mounting	0.5 (Nil)	3 (L)	5 (Z)					
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	Z76	—	●	●	—	—	IC circuit	—	
				2-wire	24 V	12 V	100 V	Z73	—	●	●	●	—	—	—	Relay, PLC PLC Relay, PLC PLC
							100 V, 200 V	A54	B54	●	●	●	—			
							—	A33C	A33	—	—	—	—			
							100 V 200 V	A34C	A34	—	—	—	—			
				DIN terminal	—	—	—	A44C	A44	—	—	—	—	—	Relay, PLC	
Diagnostic indication (2-color indication)	—	—	—	A59W	B59W	●	●	—	—	—						
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y59A	G59	●	●	○	○	IC circuit	Relay, PLC	
				3-wire (PNP)				Y7P	G5P	●	●	○	○			
				2-wire	—	100 V, 200 V	Y59B	K59	●	●	○	○	—			
				3-wire (NPN)			G39C	G39	—	—	—	—		IC circuit		
				2-wire			K39C	K39	—	—	—	—		—		
				3-wire (NPN)			Y7NW	G59W	●	●	○	○		IC circuit		
		3-wire (PNP)		Y7PW	G5PW	●	●	○	○	IC circuit						
		Grommet		Terminal conduit	2-wire	24 V	5 V, 12 V	—	Y7BW	K59W	●	●	○	○		—
					Water resistant (2-color indication)				Y7BA	G5BA	—	—	○	○		—
					With diagnostic output (2-color indication)				F59F	G59F	●	●	○	○		IC circuit
					Magnetic field resistant (2-color indication)				—	—	—	—	—	—		—
					—				P5DW	—	—	—	—	—		—
—	—		—		—				—	—	—	—				

* Lead wire length symbols: 0.5 m.....Nil (Example) A54
3 m.....L (Example) A54L
5 m.....Z (Example) A54Z

* Solid state switches marked with "○" are produced upon receipt of order.
• Since there are other applicable auto switches than listed, refer to page 9-7-26 for details.
• For details about auto switches with pre-wire connector, refer to page 9-15-66.

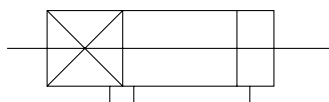


Cylinder with Lock Double Acting, Double Rod **Series CNAW**



JIS Symbol

Double acting,
Double rod



Made to Order Specifications
(For details, refer to page 9-16-1.)

Symbol	Specifications
-XC14	Change of trunnion pivot bracket mounting position

Specifications

Bore size (mm)	40, 50, 63, 80, 100
Fluid	Air
Type	Non-lube
Action	Double acting
Lock operation	Spring locking
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa
Min. operating pressure	0.1 MPa
Piston speed	50 to 1000 mm/s *
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)
Cushion	Air cushion
Stroke length tolerance	Up to 250: $^{+1.0}_0$, 251 to 1000: $^{+1.4}_0$, 1001 to 1500: $^{+1.8}_0$
Mounting	Basic style, Axial foot style, Rod side flange style, Head side flange style, Center trunnion style

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

Lock Specifications

Locking action	Spring locking (Exhaust locking)
Unlocking pressure	0.25 MPa or more
Lock starting pressure	0.20 MPa or less
Max. operating pressure	1.0 MPa
Locking direction	Both directions

Standard Stroke For cases with auto switches, refer to the table of minimum strokes for mounting of auto switches Table on page 9-7-21.

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

Stopping Accuracy

Lock type	Piston speed (mm/s)			
	100	300	500	1000
Spring locking	±0.3	±0.6	±1.0	±2.0

Condition: Lateral, Supply pressure P = 0.5 MPa
 Load weight Upper limit of allowed value
 Solenoid valve for locking mounted on the unlocking port
 Maximum value of stopping position dispersion from 100 measurements

Holding Force of Spring Locking (Maximum static load)

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

CL
CL1
MLGC
CNG
MNB
CNA
CNS
CLS
CLQ
MLGP
RLQ
MLU
ML1C
D-
-X
20-
Data

Series CNAW

Mounting Bracket Part No.

Bore size (mm)	40	50	63	80	100
Foot *	CA1-L04	CA1-L05	CA1-L06	CA1-L08	CA1-L10
Flange	CA1-F04	CA1-F05	CA1-F06	CA1-F08	CA1-F10

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

Rod Boot Material

Symbol	Rod boot material	Max. ambient temperature
J	Nylon tarpaulin	70°C
K	Heat resistant tarpaulin	110°C *

* Maximum ambient temperature for the rod boot itself.

Accessory

Mounting		Basic style	Foot style	Flange style	Center trunnion style
Standard equipment	Rod end nut	●	●	●	●
	Clevis pin	—	—	—	—
Option	Single knuckle joint	●	●	●	●
	Double knuckle joint (With pin)	●	●	●	●
	With rod boot	●	●	●	●

* Dimensions are same as double acting, single rod type of Series CNA. (Refer to page 9-7-10.)

Weight(): denotes the values for steel tube.

Bore size (mm)		40	50	63	80	100
Basic weight	Basic style	1.84 (1.89)	2.93 (2.99)	4.34 (4.38)	7.76 (7.92)	11.50 (11.71)
	Foot style	2.03 (2.08)	2.97 (3.01)	4.68 (4.72)	8.43 (8.59)	12.49 (12.70)
	Flange style	2.21 (2.26)	3.20 (3.24)	5.13 (5.17)	9.21 (9.37)	13.42 (13.63)
	Trunnion style	2.29 (2.39)	3.28 (3.38)	5.23 (5.43)	9.46 (9.75)	13.90 (14.29)
Additional weight per each 50 mm of stroke	Aluminum tube	Mounting bracket	0.30	0.40	0.50	0.71
	Steel tube	Mounting bracket except trunnion	0.35	0.47	0.55	0.89
		Trunnion style	0.44	0.58	0.77	1.06
Accessory bracket	Single knuckle joint		0.23	0.26	0.26	0.60
	Double knuckle joint		0.32	0.38	0.38	0.73
	Knuckle pin		0.05	0.05	0.05	0.14

Calculation: (Example) CNAWLN-40-100-D • Base weight 2.03 (Foot, ø40)

• Additional weight 0.03/50 strokes

• Cylinder stroke 100 strokes

$2.03 + 0.30 \times 100/50 = 2.63 \text{ kg}$

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted. For detailed specifications, refer to page 9-15-1.

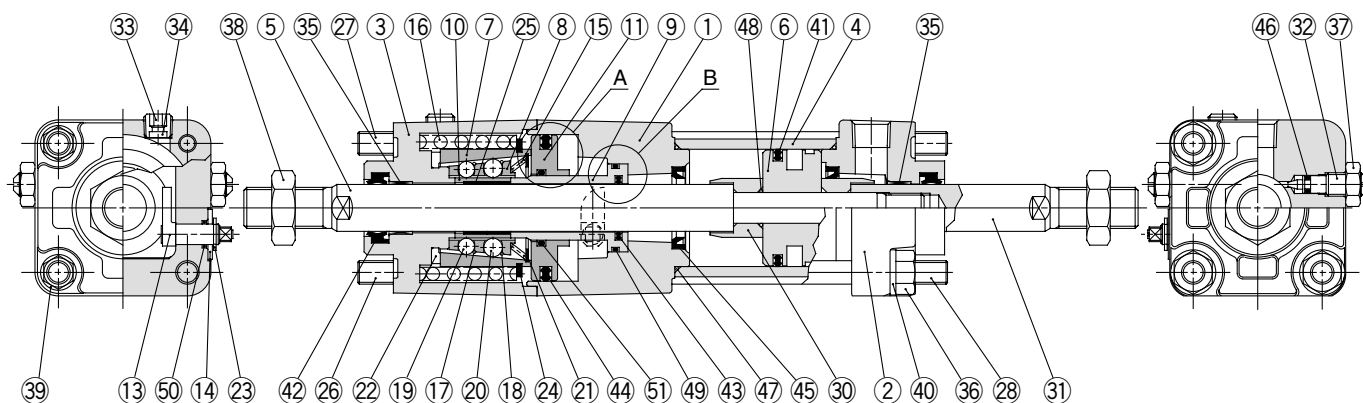
Type	Model	Electrical entry (Fetching direction)	Features
Reed switch	D-A53/A56	Grommet (In-line)	—
	D-A64/A67		Without indicator light
	D-Z80		
Solid state switch	D-F59/F5P/J59	Grommet (In-line)	—
	D-F59W/F5PW/J59W		2-color indication type
	D-F5BAL		2-color indication type, Water resistant
	D-F5NTL		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 9-15-66.

* Normally closed (NC = b contact), solid state switch (D-Y7G/Y7H type) are also available. For details, refer to page 9-15-40.

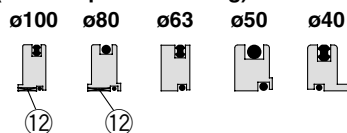
Cylinder with Lock Double Acting, Double Rod Series CNAW

Construction



A section

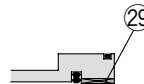
(Release piston bushing)



B section

(Piston guide bushing)

ø50, ø63, ø80, ø100



Component Parts

No.	Description	Material	Note	
①	Rod cover	Aluminum alloy	Black painted after hard anodized	
②	Rod cover	Aluminum alloy	Black painted	
③	Cover	Aluminum alloy	Black painted after hard anodized	
④	Cylinder tube	Aluminum alloy	Hard anodized	
⑤	Piston rod A	Carbon steel	Hard chrome plated	
⑥	Piston	Aluminum alloy	Chromated	
⑦	Taper ring	Carbon steel	Heat treated	
⑧	Ball retainer	Special resin		
⑨	Piston guide	Carbon steel	Zinc chromated	
⑩	Brake shoe holder	Special steel	Heat treated	
⑪	Release piston	ø40	Aluminum alloy	Hard anodized
		ø50		
		ø63		
		ø80	Carbon steel	Zinc chromated
		ø100		
⑫	Release piston bushing	Steel + Special resin	Hard anodized	
⑬	Unlocking cam	Chromium molybdenum steel	Zinc chromated	
⑭	Washer	Carbon steel	Black zinc chromated	
⑮	Retainer pre-load spring	Steel wire	Zinc chromated	
⑯	Brake spring	Steel wire	Zinc chromated	
⑰	Clip A	Stainless steel		
⑱	Clip B	Stainless steel		
⑲	Steel ball A	Carbon steel		
⑳	Steel ball B	Carbon steel		
㉑	Tooth ring	Stainless steel		
㉒	Bumper	Polyurethane rubber		
㉓	Type C retaining ring for unlocking cam shaft	Carbon steel		
㉔	Type C retaining ring for taper ring	Carbon steel		
㉕	Brake shoe	Special friction material		
㉖	Unit holding tie-rod A	Carbon steel	Chromated	
㉗	Unit holding tie-rod B	Carbon steel	Chromated	
㉘	Tie-rod	Carbon steel	Chromated	
㉙	Bushing	Lead-bronze casted		

No.	Description	Material	Note
⑳	Cushion ring	Rolled steel plate	Zinc chromated
㉑	Piston rod B	Carbon steel	Hard chrome plated
㉒	Cushion valve	Rolled steel plate	Electroless nickel plated
㉓	Hexagon socket head plug	Chromium molybdenum steel	Black zinc chromated
㉔	Element	Bronze	
㉕	Bushing	Lead-bronze casted	
㉖	Tie-rod nut	Carbon steel	Black zinc chromated
㉗	Lock nut	Carbon steel	Nickel plated
㉘	Rod end nut	Carbon steel	Nickel plated
㉙	Spring washer	Steel wire	Black zinc chromated
㉚	Spring washer	Steel wire	Black zinc chromated
㉛	Piston seal	NBR	
㉜	Rod seal A	NBR	
㉝	Rod seal B	NBR	
㉞	Release piston seal	NBR	
㉟	Cushion seal	NBR	
㊱	Cushion valve seal	NBR	
㊲	Tube gasket	NBR	
㊳	Piston gasket	NBR	
㊴	Piston guide gasket	NBR	
㊵	Unlocking cam gasket	NBR	
㊶	O-ring	NBR	

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Content
40	CA1WN 40A-PS	Including no. ④①, ④②, ④⑥ and ④⑦
50	CA1WN 50A-PS	
63	CA1WN 63A-PS	
80	CA1WN 80A-PS	
100	CA1WN100A-PS	

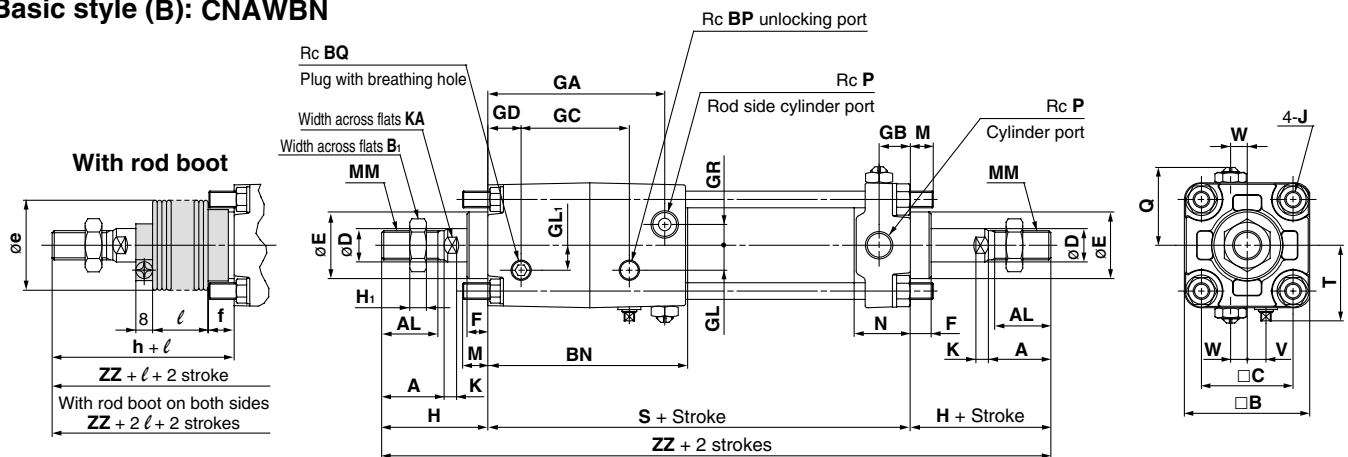
* Since the lock section for Series CNA is normally replaced as a unit, kits are for the cylinder section only. These can be ordered using the order number for each bore size.

CL
CL1
MLGC
CNG
MNB
CNA
CNS
CLS
CLQ
MLGP
RLQ
MLU
ML1C
D-
-X
20-
Data

Series CNAW

Dimensions

Basic style (B): CNAWBN



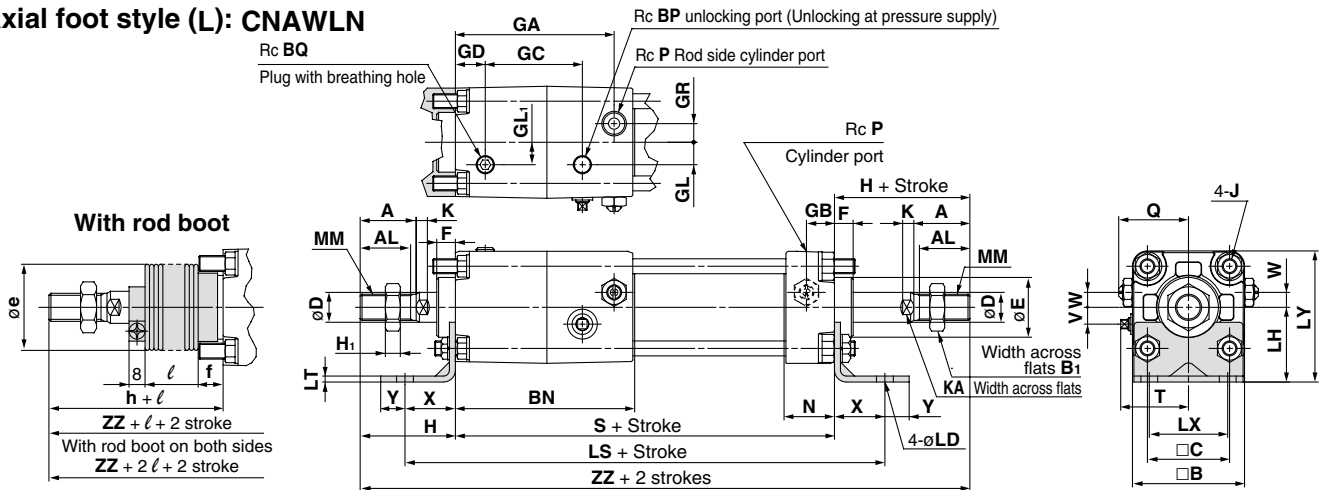
Bore size (mm)	Stroke range (mm)	A	AL	B	B ₁	BN	BP	BQ	C	D	E	F	GA	GB	GC	GD	GL	GL ₁	GR	H ₁	J	K	KA
40	Up to 500	30	27	60	22	96	1/8	1/8	44	16	32	10	85	15	52	16	12	12	10	8	M8 x 1.25	6	14
50	Up to 600	35	32	70	27	108	1/4	1/8	52	20	40	10	95	17	56.5	20	13	15	12	11	M8 x 1.25	7	18
63	Up to 600	35	32	86	27	115	1/4	1/4	64	20	40	10	102	17	67	20	18	12	15	11	M10 x 1.25	7	18
80	Up to 750	40	37	102	32	139	1/4	1/4	78	25	52	14	123	21	83	20	23	18	17	13	M12 x 1.75	11	22
100	Up to 750	40	37	116	41	160	1/4	1/4	92	30	52	14	144	21	98	22	25	20	19	16	M12 x 1.75	11	26

Bore size (mm)	M	MM	N	P	Q	H	S	T	V	W	ZZ
40	11	M14 x 1.5	27	1/4	37 to 39.5	51	153	37.5	9	8	255
50	11	M18 x 1.5	30	3/8	42 to 44.5	58	168	44	11	0	284
63	14	M18 x 1.5	31	3/8	50 to 51.5	58	182	52.5	12	0	298
80	17	M22 x 1.5	37	1/2	59.5 to 62.5	71	218	59.5	15	0	360
100	17	M26 x 1.5	40	1/2	66.5 to 69.5	72	246	69.5	15	0	390

With Rod Boot

Bore size (mm)	Stroke range (mm)	e	f	h	ℓ	ZZ (One side)	ZZ (Both sides)
40	20 to 500	43	11.2	59	1/4 stroke	263	271
50	20 to 600	52	11.2	66	1/4 stroke	292	300
63	20 to 600	52	11.2	66	1/4 stroke	306	314
80	20 to 750	65	12.5	80	1/4 stroke	369	378
100	20 to 750	65	14	81	1/4 stroke	399	408

Axial foot style (L): CNAWLN



Bore size (mm)	Stroke range (mm)	A	AL	B	B ₁	BN	BP	BQ	C	D	E	F	GA	GB	GC	GD	GL	GL ₁	GR	H ₁	J	K	KA	LD	LH	LS	LT
40	Up to 500	30	27	60	22	96	1/8	1/8	44	16	32	10	85	15	52	16	12	12	10	8	M8 x 1.25	6	14	9	40	207	3.2
50	Up to 600	35	32	70	27	108	1/4	1/8	52	20	40	10	95	17	56.5	20	13	15	12	11	M8 x 1.25	7	18	9	45	222	3.2
63	Up to 600	35	32	86	27	115	1/4	1/4	64	20	40	10	102	17	67	20	18	12	15	11	M10 x 1.25	7	18	11.5	50	250	3.2
80	Up to 750	40	37	102	32	139	1/4	1/4	78	25	52	14	123	21	83	20	23	18	17	13	M12 x 1.75	11	22	13.5	65	306	4.5
100	Up to 750	40	37	116	41	160	1/4	1/4	92	30	52	14	144	21	98	22	25	20	19	16	M12 x 1.75	11	26	13.5	75	332	6.0

With Rod Boot

Bore size (mm)	LX	LY	MM	N	P	Q	H	S	T	V	W	X	Y	ZZ	Bore size (mm)	Stroke range (mm)	e	f	h	ℓ	ZZ (One side)	ZZ (Both sides)
40	42	70	M14 x 1.5	27	1/4	37 to 39.5	51	153	37.5	9	8	27	13	255	40	20 to 500	43	11.2	59	1/4 stroke	263	271
50	50	80	M18 x 1.5	30	3/8	42 to 44.5	58	168	44	11	0	27	13	284	50	20 to 600	52	11.2	66	1/4 stroke	292	300
63	59	93	M18 x 1.5	31	3/8	50 to 51.5	58	182	52.5	12	0	34	16	298	63	20 to 600	52	11.2	66	1/4 stroke	306	314
80	76	116	M22 x 1.5	37	1/2	59.5 to 62.5	71	218	59.5	15	0	44	16	360	80	20 to 750	65	12.5	80	1/4 stroke	369	378
100	92	133	M26 x 1.5	40	1/2	66.5 to 69.5	72	246	69.5	15	0	43	17	390	100	20 to 750	65	14	81	1/4 stroke	399	408