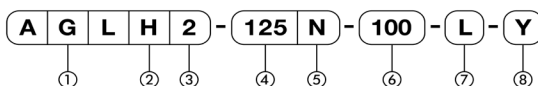


A□L Series

Air cylinder/Fall-prevention type
 Ø125, Ø140, Ø160, Ø180, Ø200

Ordering Instructions



① Magnet

C: No magnet (without switch available)
 G: Cylinder with switch available (with built-in magnet)

② Lock Position

H: Rod side lock
 R: Head side lock

③ Action

2: Double acting, single rod

④ Bore (mm)

125: Ø125
 140: Ø140
 160: Ø160
 180: Ø180
 200: Ø200

⑤ Cushion

No symbol: Both-side air cushion (Standard)
 R: Rod side air cushion
 H: Head side air cushion
 N: No cushion
 F: Cushion on the other side (R)

⑥ Stroke (mm)

Refer to Standard Stroke Table

⑦ Mounting

L: Axial foot
 A: Rod side flange
 B: Head side flange
 C: Eye
 W: Clevis
 T: Center trunnion

⑧ Accessories

No symbol: Rod end nut
 Y: With rod end clevis
 I: With rod end eye
 (note) Y: Provided with pin

Model No. of Packing

Bore (mm)	Packing	
	Oil-feeding type	Without Oil-feeding type
Ø125	AL125-PS	AGL125-PS
Ø140	AL140-PS	AGL140-PS
Ø160	AL160-PS	AGL160-PS
Ø180	AL180-PS	AGL180-PS
Ø200	AL200-PS	AGL200-PS

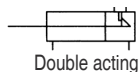
Model No. of Mounting Bracket

Bore (mm)	Ø125	Ø140	Ø160	Ø180	Ø200
Axial foot mount bracket	A125-L	A140-L	A160-L	A180-L	A200-L
Flange mount bracket	A125-A	A140-A	A160-A	A180-A	A200-A
Eye mount bracket	A125-C	A140-C	A160-C	A180-C	A200-C
Clevis mount bracket	A125-W	A140-W	A160-W	A180-W	A200-W
Trunnion mount bracket	A125-T	A140-T	A160-T	A180-T	A200-T



The built-in magnet is provided by default. Pneumatic cylinders of K, A Series provide a locking device (so-called fall prevention device). When a starting point or an end point of the stroke is reached, air supply will be terminated and the locking device will thus be activated. This device helps prevent cylinder from falling and related hazards from happening.

JIS Label



Value shown in this catalog is shown in SI unit. However, value within this output table is in generic unit. Use the following formula to convert to SI unit:

$$\text{Pressure Y (MPa)} = X (\text{kgf/cm}^2) \times 9.80665 \times 10^{-2}$$

$$\text{Force Y (N)} = X (\text{kgf}) \times 9.80665$$

Specifications

Action	Unit	Double-acting
Fluid		Lubricated air
Pressure range	MPa(kgf/cm ²)	0.15~1 (1.5~10.7)
Temperature range	°C	5~60
Piston speed range	mm/s	50~500
Cushion		Standard
Piston stroke allowance	mm	~250: ^{+1.0} ₀ 251~1000: ^{+1.4} ₀ 1001~2000: ^{+1.8} ₀
Mounting		Axial foot, Rod side flange, Head side flange, Eye, Clevis, Center trunnion
Locking position		Back end, Rod end
Piston stroke when locking	mm	7
Manual unlock		Locking type

Maximum Stroke

(Unit: mm)

Bore	Max. Stroke
Ø125	1000
Ø140	
Ø160	
Ø180	1200
Ø200	

Cushion Stroke

(Unit: mm)

Bore	Cushion Stroke
Ø125	22
Ø140	
Ø160	
Ø180	
Ø200	30

Maximum Load Weight

(Unit: mm)

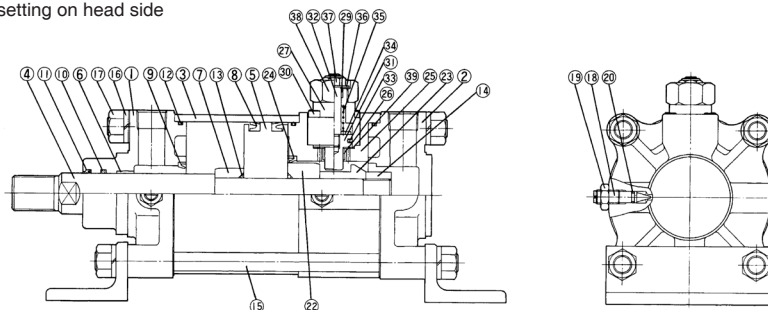
Bore	Maximum Load Weight
Ø125	1220
Ø140	1530
Ø160	2000
Ø180	2540
Ø200	3140

Accessories

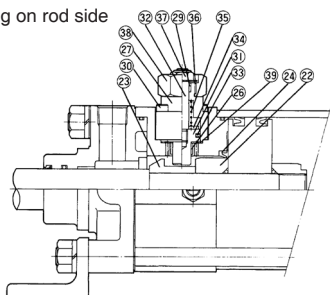
Name	Axial foot	Rod side flange	Head side flange	Eye	Clevis	Center trunnion
Standard	Rod end nut	○	○	○	○	○
	Clevis fixed shaft type	—	—	—	○	—
Optional	With rod end clevis	○	○	○	○	○
	With rod end eye	○	○	○	○	○

Construction

Lock setting on head side



Lock setting on rod side



Parts List

No.	Description	No.	Description
1	Front cover	21	Rod end nut
2	End cover	22	Sleeve B
3	Outer tube	23	Locking sleeve
4	Piston rod	24	Cushion Packing B
5	Piston A	25	ML base
6	Bearing	26	Bearing A
7	Cushion sleeve	27	Locking body
8	Piston Packing	28	Gasket A
9	Cushion Packing	29	Bearing B
10	Rod Packing	30	Hexagon socket screw
11	Wiper plate	31	Locking piston
12	O-ring for cover	32	Locking rod
13	Sleeve gasket	33	Locking rod packing
14	Sleeve nut	34	Gasket B
15	Tie rod	35	Locking spring
16	Washer	36	Braking device
17	Hexagon nut	37	U-shaped nut
18	Cushion needle	38	Release knob
19	Cushion locking nut	39	Locking body gasket
20	Cushion needle packing		

Packing List

Bore (mm)	8.Piston Packing		9.Cushion Packing		10.Rod Packing		11.Wiper ring		12.O-ring for cover	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø125	UPP-125 PSD-125	2	CP-45	2	P35	1	DP-35	1	G120	3
Ø140	UP-125 PSD-140	2	CP-45	2	P35	1	DP-35	1	G135	3
Ø160	UP-145 PSD-160	2	CP-55	2	P45	1	DP-45	1	G150	3
Ø180	UP-165 PSD-180	2	CP-55	2	P45	1	DP-45	1	G170	3
Ø200	UP-180 PSD-200	2	CP-60	2	P50	1	DP-50	1	G190	3

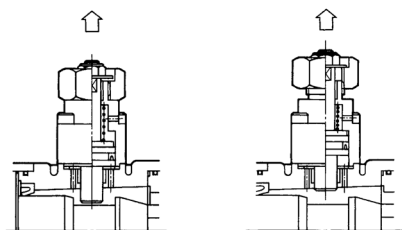
Bore (mm)	13.Sleeve gasket		20.Cushion needle packing		24.Cushion Packing B		33.Locking rod packing		39.Locking body gasket	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø125	P28	2	P7	2	PCS-55	1	PSD-32	1	—	
Ø140	P28	2	P7	2	PCS-55	1	PSD-32	1	—	
Ø160	P38	2	P7	2	PCS-75	1	PSD-50	1	IN-56	1
Ø180	P38	2	P7	2	PCS-75	1	PSD-50	1	IN-56	1
Ø200	P40	2	P7	2	PCS-75	1	PSD-50	1	IN-56	1

(Note) Seal repair and assembly kits are also available for purchase.

Manual unlock

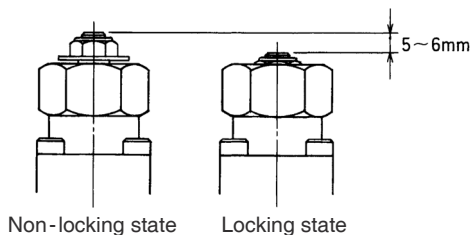
(Ø125~Ø200)

When turning the knob counter-clockwise all the way down, the cylinder will be unlocked (in this circumstance, cylinder will continue to remain at unlock state). If locking device is needed, simply turning the knob clockwise to activate the locking state.



(Locking indications for bore size of 50mm~100mm)

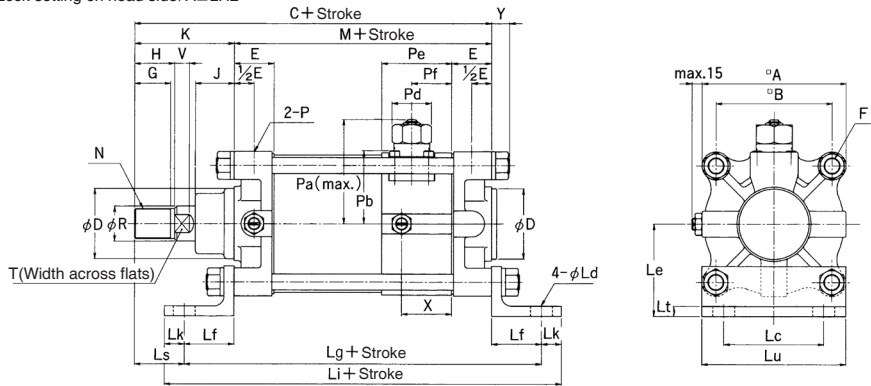
When the position of majority of the U-shaped nut exceeds over the release knob, it means the cylinder is at unlock state (unlocked by the air during cylinder acting). When cylinder is manually locked, the U-shaped nut should only expose minimally, as the graph suggest.



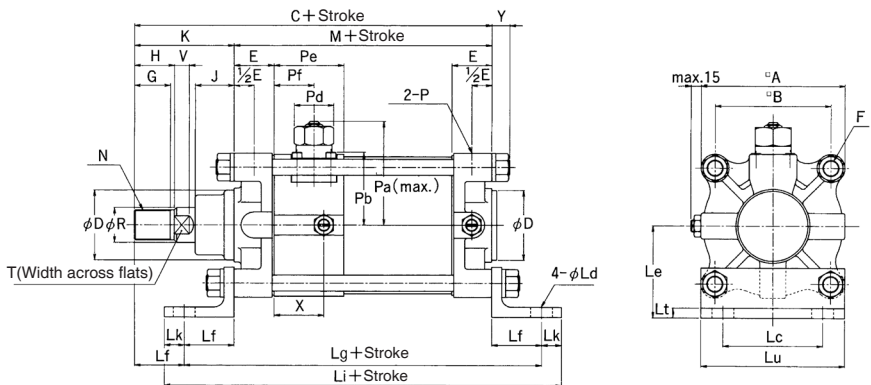
Axial foot mounting/L

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



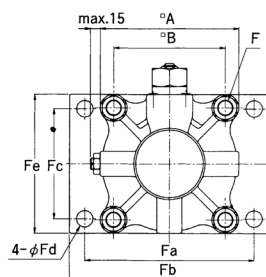
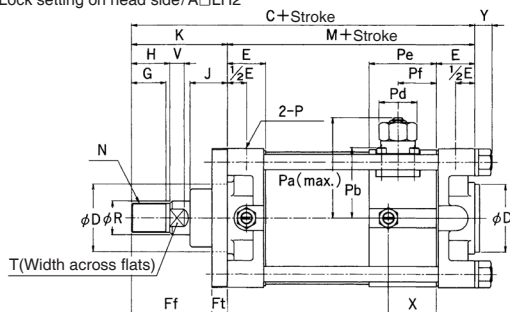
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
Ø140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
Ø160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
Ø180	200	164	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
Ø200	224	170	399	100	50	M20	56	60	44	127	272	M45×1.5	Rc1	50	45	18	22

Bore	Lc	Ld	Le	Lf	Lg	Li	Lk	Ls	Lt	Lu	X	Pa	Pb	Pd	Pe	Pf
Ø125	100	22	92	50	308	348	20	50	10	144	50	104	73	41.9	70	40
Ø140	116	22	100	50	308	348	20	50	10	160	50	104	73	41.9	70	40
Ø160	130	22	114	55	354	404	25	65	12	180	80	140	98	63.5	100	55
Ø180	140	22	123	55	354	404	25	65	12	200	80	140	98	63.5	100	55
Ø200	150	26	137	60	392	452	30	67	12	224	80	140	98	63.5	100	55

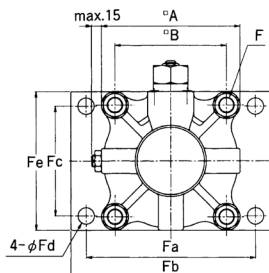
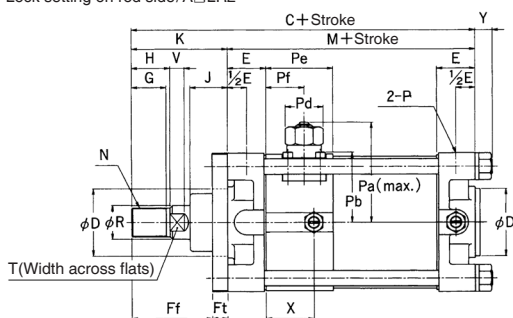
Rod side flange mounting/A

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



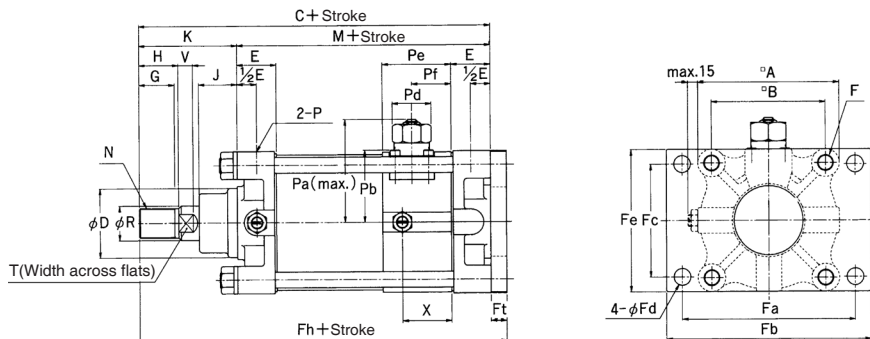
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
∅180	200	164	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
∅200	224	170	399	100	50	M20	56	60	44	127	272	M45×1.5	Rc1	50	45	18	22

Bore	Fa	Fb	Fc	Fd	Fe	Ff	Ft	X	Pa	Pb	Pd	Pe	Pf
∅125	176	208	114	17	144	84	16	50	104	73	41.9	70	40
∅140	200	240	120	22	160	84	16	50	104	73	41.9	70	40
∅160	220	260	140	22	180	102	18	80	140	98	63.5	100	55
∅180	244	288	156	22	200	96	24	80	140	98	63.5	100	55
∅200	276	330	170	26	224	101	26	80	140	98	63.5	100	55

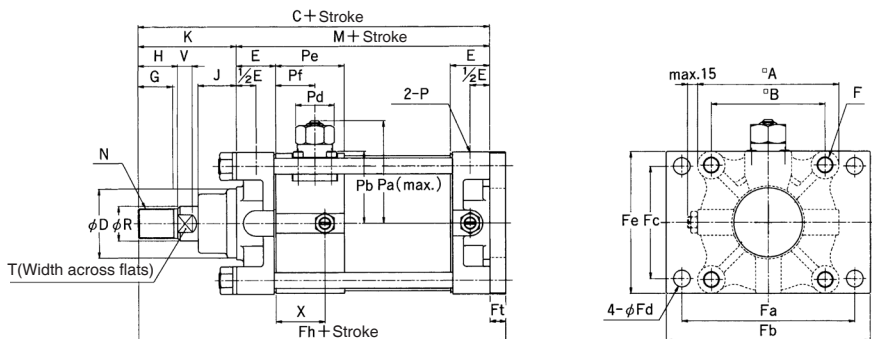
Head side flange mounting/B

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



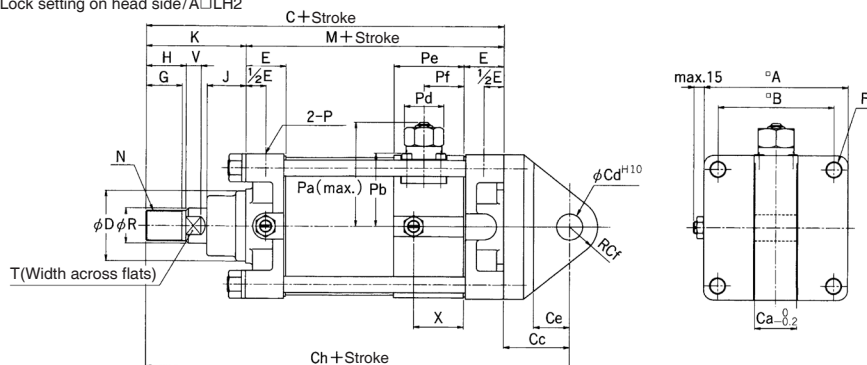
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
∅180	200	164	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
∅200	224	170	399	100	50	M20	56	60	44	127	272	M45×1.5	Rc1	50	45	18	22

Bore	Fa	Fb	Fc	Fd	Fe	Fh	Ft	X	Pa	Pb	Pd	Pe	Pf
∅125	176	208	114	17	144	324	16	50	104	73	41.9	70	40
∅140	200	240	120	22	160	324	16	50	104	73	41.9	70	40
∅160	220	260	140	22	180	382	18	80	140	98	63.5	100	55
∅180	244	288	156	22	200	388	24	80	140	98	63.5	100	55
∅200	276	330	170	26	224	425	26	80	140	98	63.5	100	55

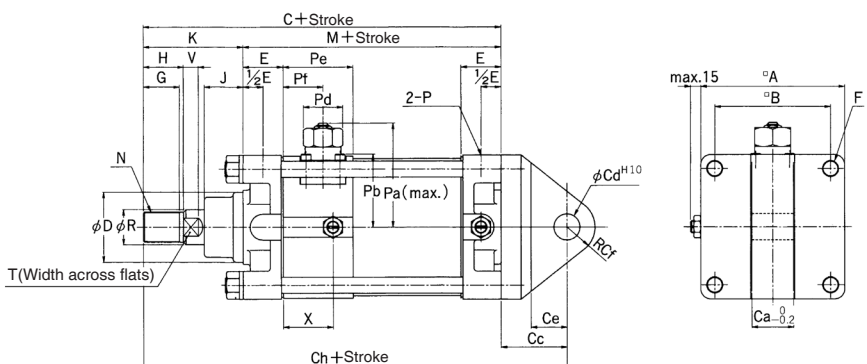
Eye mounting/C

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



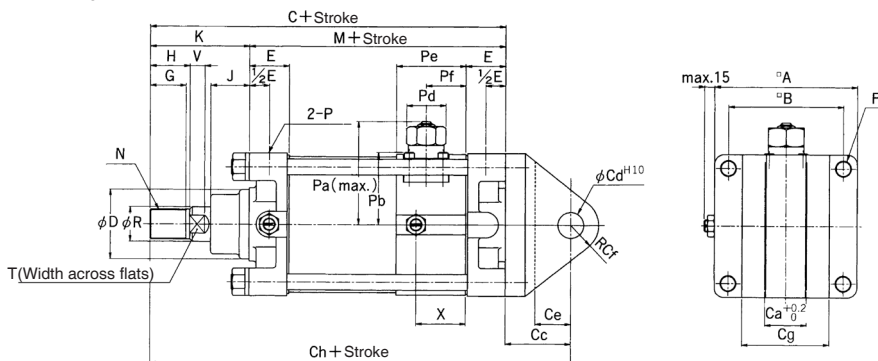
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc¾	35	30	15	18
Ø140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc¾	35	30	15	18
Ø160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc¾	45	40	15	20.5
Ø180	200	164	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc¾	45	40	15	20.5
Ø200	224	170	399	100	50	M20	56	60	44	127	272	M45×1.5	Rc1	50	45	18	22

Bore	Ca	Cc	Cd	Ce	Cf	Ch	X	Pa	Pb	Pd	Pe	Pf
Ø125	42	66	26	36	28	370	50	104	73	41.9	70	40
Ø140	42	66	26	36	28	370	50	104	73	41.9	70	40
Ø160	48	84	30	49	34	432	80	140	98	63.5	100	55
Ø180	48	84	30	49	34	432	80	140	98	63.5	100	55
Ø200	53	94	35	52	40	487	80	140	98	63.5	100	55

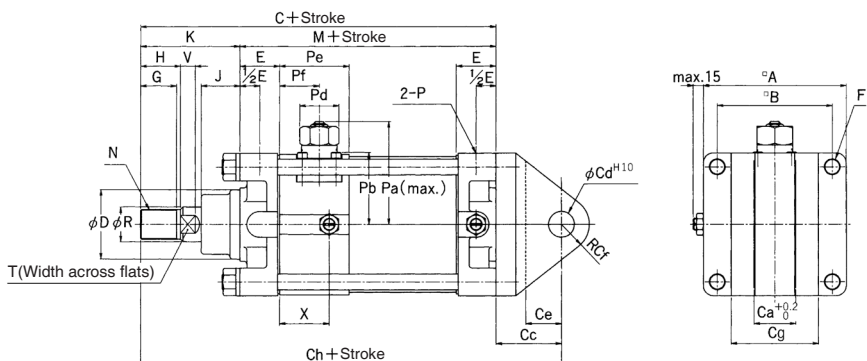
Clevis mounting/W

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



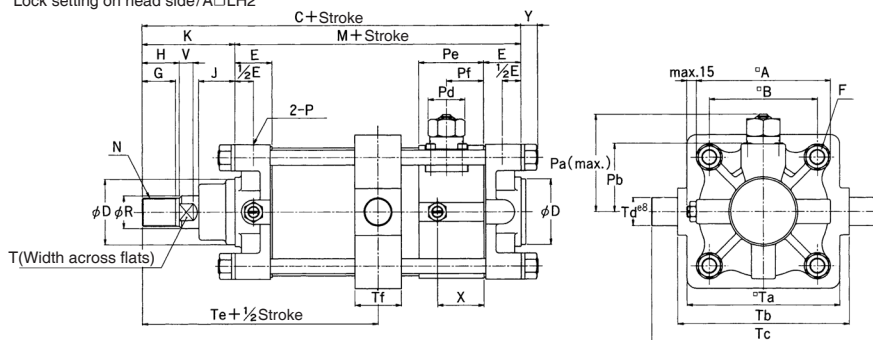
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc ^{3/4}	35	30	15	18
Ø140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc ^{3/4}	35	30	15	18
Ø160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc ^{3/4}	45	40	15	20.5
Ø180	200	164	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc ^{3/4}	45	40	15	20.5
Ø200	224	170	399	100	50	M20	56	60	44	127	272	M45×1.5	Rc1	50	45	18	22

Bore	Ca	Cc	Cd	Ce	Cf	Cg	Ch	X	Pa	Pb	Pd	Pe	Pf
Ø125	42	66	26	36	28	88	440	50	104	73	41.9	70	40
Ø140	42	66	26	36	28	88	440	50	104	73	41.9	70	40
Ø160	48	84	30	49	34	100	532	80	140	98	63.5	100	55
Ø180	48	84	30	49	34	100	532	80	140	98	63.5	100	55
Ø200	53	94	35	52	40	109	587	80	140	98	63.5	100	55

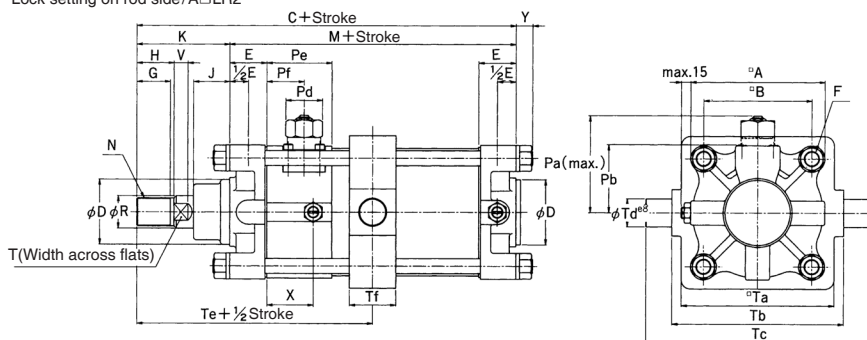
Center trunnion mounting/T

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
○125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
○140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
○160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
○180	200	164	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
○200	224	170	399	100	50	M20	56	60	44	127	272	M45×1.5	Rc1	50	45	18	22

Bore	Ta	Tb	Tc	Td	Te	Tf	X	Pa	Pb	Pd	Pe	Pf
○125	164	184	240	30	204	50	50	104	73	41.9	70	40
○140	180	200	260	30	204	50	50	104	73	41.9	70	40
○160	200	220	290	35	242	60	80	140	98	63.5	100	55
○180	220	240	310	35	242	60	80	140	98	63.5	100	55
○200	244	270	340	40	263	60	80	140	98	63.5	100	55