

K,A

Series

Pneumatic air cylinder



K, A Series

K Series

Pneumatic cylinder

Ø40, Ø50, Ø63, Ø80, Ø100

Magnet is provided by default and can be used together with sensor. Mounting type can be easily exchange.

		Standard	Double rod type	With lock mechanism type
		K Series	K□7 Series	K□L Series
				
Action	Double -acting	☐	☐	☐
Cushion	Air cushion	☐	☐	☐
	Without cushion	☐	☐	☐
Mounting	Standard type	☐	☐	☐
	Axial foot	☐	☐	☐
	Rod side flange	☐	☐	☐
	Head side flange	☐		☐
	Eye	☐		☐
	Clevis	☐		☐
	Center trunnion	☐	☐	☐
Sensor switch	M type reed switch	☐	☐	☐
	M type proximity switch	☐	☐	☐

D.4

D.14

D.35

Accessories

Standard

- Rod end nut

Optional

- Rod end clevis
- Rod end eye

Custom-made Cylinder

- Dual stroke cylinder (D.20)
- Stroke-adjustable cylinder (D.22)
- Low friction cylinder (D.24)
- Heat-resistance cylinder (D.25)
- Air-hydro cylinder (D.26)

A Series

Pneumatic cylinder

Ø125, Ø140, Ø160, Ø180, Ø200

Heavy load type cylinder

		Standard	With lock mechanism type
		A Series	A□L Series
			
Type	Lubricating type	☐	☐
Action	Double-acting	☐	☐
Cushion	Air cushion	☐	☐
	Without cushion	☐	☐
Mounting	Axial foot	☐	☐
	Rod side flange	☐	☐
	Head side flange	☐	☐
	Eye	☐	☐
	Clevis	☐	☐
	Center trunnion	☐	☐

D.27

D.49

Accessories

Standard

- Rod end nut

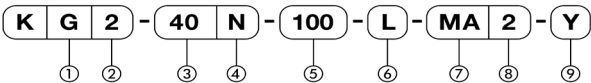
Optional

- Rod end clevis
- Rod end eye

K Series

Air cylinder/Standard type
 Ø40, Ø50, Ø63, Ø80, Ø100

Ordering Instructions



① Magnet
 G : Cylinder with switch available (With built-in magnet)

② Action
 2 : Double acting, single rod

③ Bore (mm)
 40 : Ø40
 50 : Ø50
 63 : Ø63
 80 : Ø80
 100 : Ø100

④ 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)

⑤ Stroke (mm)
 Refer to Standard Stroke Table

⑥ Mounting
 N : Standard type
 L : Axial foot
 A : Rod side flange
 B : Head side flange
 C : Eye
 W : Clevis
 T : Center trunnion

Model No. of Mounting Bracket

Bore (mm)	Ø40	Ø50	Ø63	Ø80	Ø100
Axial foot mount bracket	K40-L	K50-L	K63-L	K80-L	K100-L
Flange mount bracket	K40-A	K50-A	K63-A	K80-A	K100-A
Eye mount bracket	K40-C	K50-C	K63-C	K80-C	K100-C
Clevis mount bracket	K40-W	K50-W	K63-W	K80-W	K100-W
Trunnion mount bracket	K40-T	K50-T	K63-T	K80-T	K100-T

Model No. of Sensor Switch Mounting Bracket

Bore (mm)	M type sensor switch	
	Reed	Proximity
Ø40	K40-MJ	K40-MTJ
Ø50		
Ø63		
Ø80	K80-MJ	K80-MTJ
Ø100		

⑦ Sensor switch type

No symbol	No switch	
MA	MA-1 (AC110V, DC24V)	M type reed switch
MB	MD-1 (DC24V)	
MC	MD-3 (DC5, 6V)	
MD	MR (AC, DC5~110V)	
ME	MA-2L (AC110V)	
MF	MA-2H (AC220V)	M type proximity switch
MG	MT-3 (DC5~30V)	
MH	MT-3U (DC5~30V)	
MJ	MT-2 (DC24V)	
MK	MT-2U (DC24V)	

⑧ Number of switches

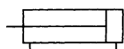
No symbol : No switch
 2 : With 2 units
 1 : With 1 unit

⑨ 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
Ø40	K40-PS
Ø50	K50-PS
Ø63	K63-PS
Ø80	K80-PS
Ø100	K100-PS

**JIS Label**

Double acting

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:

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

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

Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/Lubricated air
Pressure range	MPa (kgf/cm ²)	0.05~1 (0.51~10.2)
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
Mounting		Standard type, Axial foot, Rod side flange, Head side flange, Eye, Clevis, Center trunnion

(Note) When piston is within the buffer stroke range, the minimum pneumatic pressure is 0.1MPa{1.0kgf/cm²}.
If it falls outside of the range, the minimum pneumatic pressure is 0.05MPa{0.51kgf/cm²}.

Standard Stroke

(Unit: mm)

Bore	Standard Stroke	Max. Stroke
Ø40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600
Ø50		800
Ø63		
Ø80		
Ø100		1000

Cushion Stroke

(Unit: mm)

Bore	Cushion Stroke
Ø40	16
Ø50	
Ø63	
Ø80	20
Ø100	

Theoretical Output

(Unit: kgf)

Bore	Mounting	Operating pressure (kgf/cm ²)									
		1	2	3	4	5	6	7	8	9	10
Ø40	Out stroke	12	25	37	50	62	75	87	100	113	125
	In stroke	10	21	31	42	52	63	73	84	95	105
Ø50	Out stroke	19	39	58	78	98	117	137	157	176	196
	In stroke	16	32	49	65	82	98	115	131	148	164
Ø63	Out stroke	31	62	93	124	155	187	218	249	280	311
	In stroke	28	56	84	112	140	168	196	224	252	280
Ø80	Out stroke	50	100	150	201	251	301	351	402	452	502
	In stroke	45	90	136	181	226	272	317	362	408	432
Ø100	Out stroke	78	157	235	314	392	471	549	628	706	785
	In stroke	71	142	214	285	357	428	500	571	643	714

(Note) Effective output = Theoretical output x 0.85

Accessories

	Name	Standard type	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	○	○	○	○	○	○	○

Cylinder Mass

(Unit : g)

Bore (mm)	Standard Mass (0 Stroke)						Additional weight
	Standard type	Axial foot	Mounting plate	Eye	Clevis	Center trunnion	Additional 1mm on stroke
∅40	0.66	0.84	0.82	0.92	0.91	1.27	0.0035
∅50	0.94	1.16	1.20	1.29	1.36	1.74	0.0046
∅63	1.24	1.54	1.57	1.89	1.95	2.10	0.0051
∅80	2.34	2.85	2.96	3.75	3.88	4.57	0.0082
∅100	3.09	3.72	3.94	5.14	5.32	6.27	0.0104

Calculation formula :

(Ex) KG2-50-100-L

Standard weight ----- 1.16kg

Additional weight----- 0.0046/stroke

Stroke ----- 100/stroke

$$1.16 + 0.0046 \times 100 = 1.62\text{kg}$$

Model With Switch

M Type Reed Switch

Lead With Wire



Model No.	Rated voltage (V)	Rated current (mA)	Pilot lamp (Lights up at ON)	Application
MA-1	AC110	5~45	○	Relay PLC
	DC24	5~45		
MD-1	DC24	25~65	○	Relay
MD-3	DC5, 6	Max.50 (Inductive load) Max.300 (Resistive load)	○	IC circuit
MR	AC 5~110 DC	Max.50 (Inductive load) Max.300 (Resistive load)	No indicator	Relay PLC
MA-2L	AC110	5~150	○	Relay
MA-2H	AC220	5~150	○	Relay

M Type Proximity Switch

Lead With Wire



Model No.	Rated voltage (V)	Rated current range (mA)	Pilot lamp (Lights up at CN)	Application
MT-2 MT-2U	DC24 (DC10~30)	5~100	○	Relay PLC
MT-3 MT-3U	DC5~30	5~200	○	Relay PLC IC circuit

(Note) The MA-2L is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2L.

The MA-2H is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2H.

Minimum Stroke with M Type Switch

(Unit: mm)

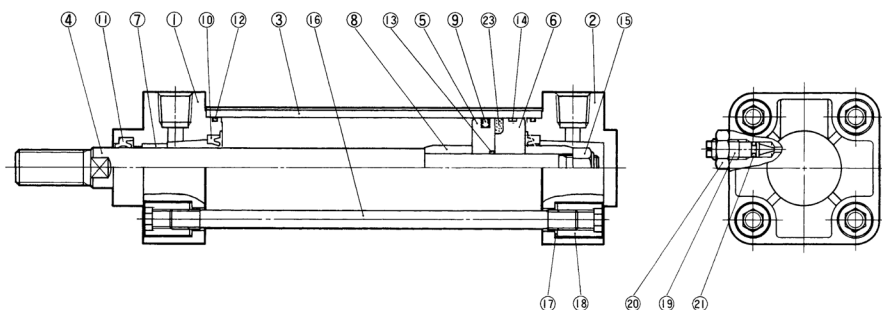
Bore	Number of switches			
	Aside from center trunnion			Center trunnion
	With 2 units (on the same surface)	With 2 units (on different surfaces)	With 1 unit	With 2 units (on the same surface)
Ø40	10	10	5	75
Ø50				85
Ø63				
Ø80				
Ø100				100



When changing the mounting method, please use a hex wrench.

Bore (mm)	Hexagon socket round nut	Hexagon socket screw
Ø40, Ø50, Ø63	M8×1.25 Width across flats: 8mm	M8×1.25 Width across flats: 6mm
Ø80, Ø100	M10×1.5 Width across flats: 10mm	M10×1.5 Width across flats: 8mm

Construction



Parts List

No.	Description	No.	Description
1	Front cover	13	Sleeve gasket
2	End cover	14	Wear ring
3	Outer tube	15	U-shaped nut
4	Piston rod	16	Iron rod
5	Piston A	17	Washer
6	Piston B	18	Tie rod nut
7	Bearing	19	Cushion needle
8	Cushion sleeve	20	Cushion locking nut
9	Piston packing	21	Cushion needle packing
10	Cushion packing	22	Rod end nut
11	Rod packing	23	Magnet
12	O-ring for cover		

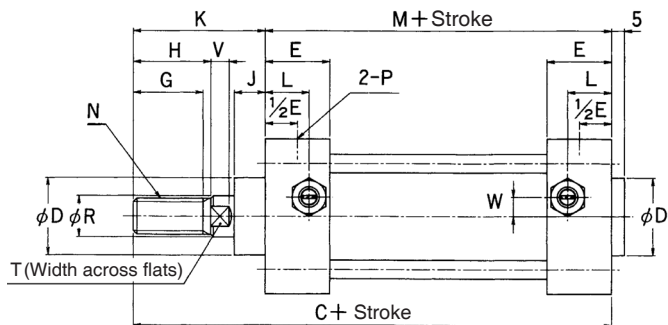
Packing List

Bore (mm)	9. Piston packing		10. Cushion packing		11. Rod packing		12. O-ring for cover		13. Sleeve gasket		21. Cushion needle packing	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
∅40	PSD-40	1	CP-18	2	PDU-16	1	KG40	2	IN-11.2	1	P3	2
∅50	PSD-50	1	CP-24	2	PDU-20	1	KG50	2	P12	1	P3	2
∅63	PSD-63	1	CP-24	2	PDU-20	1	KG63	2	P12	1	P3	2
∅80	PSD-80	1	CP-30	2	PDU-25	1	KG80	2	P16	1	P3	2
∅100	PSD-100	1	CP-35	2	PDU-30	1	KG100	2	P20	1	P3	2

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

Standard type/N

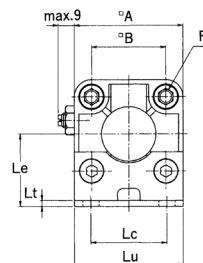
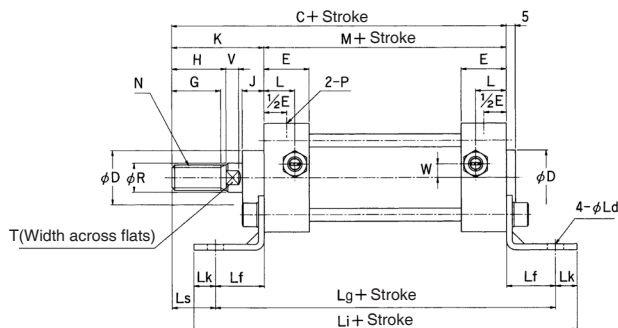
(Unit: mm)



Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	135	30	25	M8	27	30	12	51	17	84	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	146.5	36	26	M8	32	35	13	57.5	18	89	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	153.5	36	26	M8	32	35	13	60.5	18	93	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	184	42	32	M10	36	40	16	74	24	110	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	191	48	32	M10	36	40	18	79	24	112	M26×1.5	Rc1/2	30	27	13	0

Axial foot mounting/L

(Unit: mm)

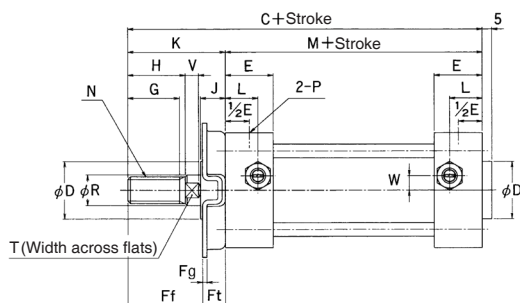


Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	135	30	25	M8	27	30	12	51	17	84	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	146.5	36	26	M8	32	35	13	57.5	18	89	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	153.5	36	26	M8	32	35	13	60.5	18	93	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	184	42	32	M10	36	40	16	74	24	110	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	191	48	32	M10	36	40	18	79	24	112	M26×1.5	Rc1/2	30	27	13	0

Bore	Lc	Ld	Le	Lf	Lg	Li	Lk	Ls	Lt	Lu
Ø40	42	9	40	27	138	162	12	24	3.2	60
Ø50	50	9	45	27.5	144	169	12.5	30	3.2	68
Ø63	59	11.5	50	36.5	166	193	13.5	24	3.2	78
Ø80	76	13.5	65	47	204	238	17	27	4	100
Ø100	92	13.5	75	50	212	246	17	29	4	116

Rod side flange mounting/A

(Unit: mm)

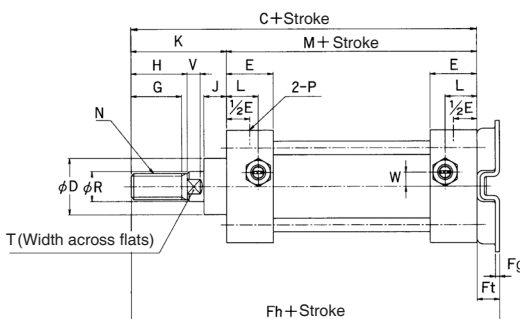


Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	135	30	25	M8	27	30	12	51	17	84	M14x1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	146.5	36	26	M8	32	35	13	57.5	18	89	M18x1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	153.5	36	26	M8	32	35	13	60.5	18	93	M18x1.5	Rc3/8	20	17	8	0
Ø80	96	72	184	42	32	M10	36	40	16	74	24	110	M22x1.5	Rc1/2	25	22	13	0
Ø100	110	86	191	48	32	M10	36	40	18	79	24	112	M26x1.5	Rc1/2	30	27	13	0

Bore	Fa	Fb	Fc	Fd	Fe	Ff	Fg	Ft
Ø40	80	100	42	9	70	39	2.3	12
Ø50	90	110	50	9	80	45	3.2	12.5
Ø63	105	130	59	11.5	92	43	3.2	17.5
Ø80	130	160	76	13.5	114	53	4	21
Ø100	150	180	92	13.5	130	54	4	25

Head side flange mounting/B

(Unit: mm)

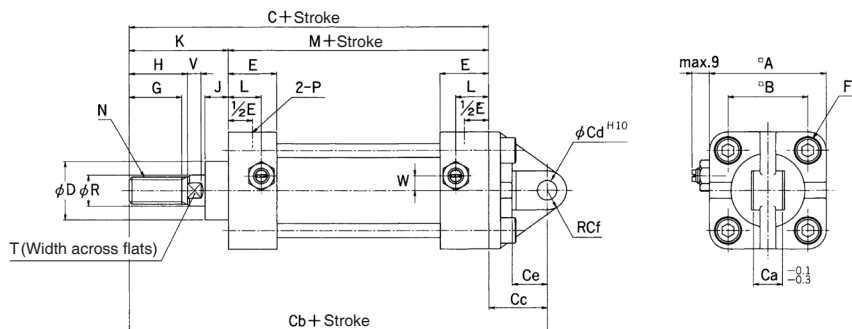


Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	135	30	25	M8	27	30	12	51	17	84	M14x1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	146.5	36	26	M8	32	35	13	57.5	18	89	M18x1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	153.5	36	26	M8	32	35	13	60.5	18	93	M18x1.5	Rc3/8	20	17	8	0
Ø80	96	72	184	42	32	M10	36	40	16	74	24	110	M22x1.5	Rc1/2	25	22	13	0
Ø100	110	86	191	48	32	M10	36	40	18	79	24	112	M26x1.5	Rc1/2	30	27	13	0

Bore	Fa	Fb	Fc	Fd	Fe	Fg	Fh	Ft
Ø40	80	100	42	9	70	2.3	147	12
Ø50	90	110	50	9	80	3.2	159	12.5
Ø63	105	130	59	11.5	92	3.2	171	17.5
Ø80	130	160	76	13.5	114	4	205	21
Ø100	150	180	92	13.5	130	4	216	25

Eye mounting/C

(Unit: mm)

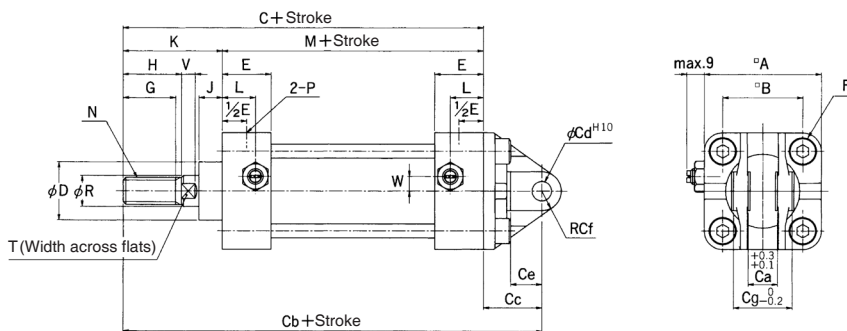


Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	135	30	25	M8	27	30	12	51	17	84	M14×1.5	Rc 1/4	16	14	7	7.5
Ø50	68	48	146.5	36	26	M8	32	35	13	57.5	18	89	M18×1.5	Rc 3/8	20	17	7	6.5
Ø63	78	58	153.5	36	26	M8	32	35	13	60.5	18	93	M18×1.5	Rc 3/8	20	17	8	0
Ø80	96	72	184	42	32	M10	36	40	16	74	24	110	M22×1.5	Rc 1/2	25	22	13	0
Ø100	110	86	191	48	32	M10	36	40	18	79	24	112	M26×1.5	Rc 1/2	30	27	13	0

Bore	Ca	Cc	Cd	Ce	Cf	Cb
Ø40	15	30	10	16	10	165
Ø50	18	35.5	12	19	12	182
Ø63	25	42.5	16	23	16	196
Ø80	31.5	51	20	28	20	235
Ø100	35.5	65	25	36	25	256

Clevis mounting/W

(Unit: mm)

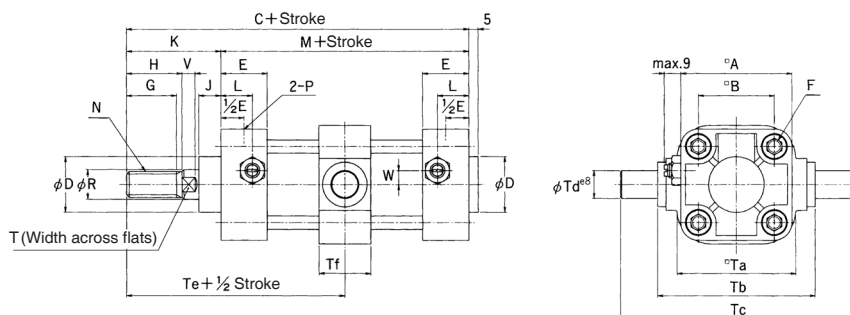


Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	135	30	25	M8	27	30	12	51	17	84	M14×1.5	Rc 1/4	16	14	7	7.5
Ø50	68	48	146.5	36	26	M8	32	35	13	57.5	18	89	M18×1.5	Rc 3/8	20	17	7	6.5
Ø63	78	58	153.5	36	26	M8	32	35	13	60.5	18	93	M18×1.5	Rc 3/8	20	17	8	0
Ø80	96	72	184	42	32	M10	36	40	16	74	24	110	M22×1.5	Rc 1/2	25	22	13	0
Ø100	110	86	191	48	32	M10	36	40	18	79	24	112	M26×1.5	Rc 1/2	30	27	13	0

Bore	Ca	Cc	Cd	Ce	Cf	Cg	Cb
Ø40	15	30	10	16	10	30	165
Ø50	18	35.5	12	19	12	35.5	182
Ø63	25	42.5	16	23	16	50	196
Ø80	31.5	51	20	28	20	63	235
Ø100	35.5	65	25	36	25	71	256

Center trunnion mounting/T

(Unit: mm)

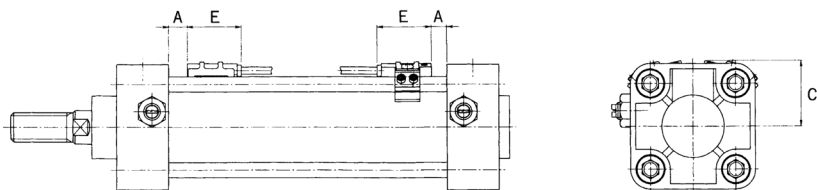


Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	135	30	25	M8	27	30	12	51	17	84	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	146.5	36	26	M8	32	35	13	57.5	18	89	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	153.5	36	26	M8	32	35	13	60.5	18	93	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	184	42	32	M10	36	40	16	74	24	110	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	191	48	32	M10	36	40	18	79	24	112	M26×1.5	Rc1/2	30	27	13	0

Bore	Ta	Tb	Tc	Td	Te	Tf
Ø40	64	85	125	15	93	28
Ø50	76	95	135	15	102	28
Ø63	92	110	160	18	107	30
Ø80	112	140	200	25	129	40
Ø100	136	162	222	25	135	45

Sensor switch mounting position / M type sensor switch

(Unit: mm)



Bore	A		C
	Reed	Proximity	
Ø40	5.5	11.5	32
Ø50	7	13	37
Ø63	9	15	42
Ø80	11.5	17.5	51
Ø100	12.5	18.5	59

Switch	E
M type reed switch	28
M type proximity switch	26.5(24)

(Note) value within bracket is of the MT-“U type.

(Unit: mm)

Model. No	Applicable bore	a	b	c	d	e	f	g	m	r
K40-Y	Ø40	22	28	55	12	20	16	44	M14×1.5	14
K50-Y	Ø50, Ø63	27	30	60	12	20	16	44	M18×1.5	15
K80-Y	Ø80	37	40	71	18	26	28	60	M22×1.5	20
K100-Y	Ø100	37	44	83	20	28	30	60	M26×1.5	22

Technical drawing of a shaft-hub assembly. The shaft has a diameter of ϕd^{H10} and a surface finish of $R_{f0.3}$. The hub has an inner diameter of ϕb and a total length of c . The shaft is inserted into the hub, with a fit of f and a clearance of a . The hub has a thickness of m . A detail view shows a cross-section of the shaft with a radius r .

Model. No	Applicable bore	a	b	c	d	e	f	m	r
K40-I	Ø40	22	28	55	12	20	16	M14×1.5	14
K50-I	Ø50, Ø63	27	30	60	12	20	16	M18×1.5	15
K80-I	Ø80	37	40	71	18	26	28	M22×1.5	20
K100-I	Ø100	37	44	83	20	28	30	M26×1.5	22

Model. No	Applicable bore	D	L	d	ℓ	m	t	snap ring
K40-YP	Ø40, Ø50, Ø63	12	52	11.5	44.2	2.75	1.15	C12
K80-YP	Ø80	18	68	17	60.2	2.55	1.35	C18
K100-YP	Ø100	20	74	19	66.2	2.55	1.35	C20

Diagram illustrating the geometry of a bolted joint. The top washer has thickness t and length L . The bottom washer has thickness t and length l . The bolt has diameter ϕd and the nut has diameter ϕD^{19} .

Model. No	Applicable bore	D	L	d	ℓ	m	t	snap ring
K40-WP	Ø40	10	36.5	9.6	30.2	2	1.15	C10
K50-WP	Ø50	12	42	11.5	35.7	2	1.15	C12
K63-WP	Ø63	16	56.5	15.2	50.2	2	1.15	C16
K80-WP	Ø80	20	70	19	63.2	2	1.35	C20
K100-WP	Ø100	25	78	23.9	71.2	2	1.35	C25

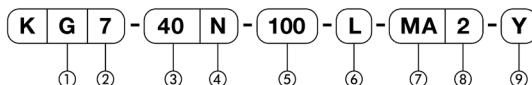
Model. No	Applicable bore	m	H	B	C	D
J40-RN	∅40	M14×1.5	8	22	25.4	21
K50-RN	∅50, ∅63	M18×1.5	11	27	31.2	26
K80-RN	∅80	M22×1.5	13	32	37	31
K100-RN	∅100	M26×1.5	16	41	47.3	39

(Note) Bore 40mm can be shared with J series.

K□7 Series

Air cylinder/Double rod type
 Ø40, Ø50, Ø63, Ø80, Ø100

Ordering Instructions



① Magnet

G : Cylinder with switch available (With built-in magnet)

② Action

7 : Double acting, double rod

③ Bore (mm)

40 : Ø40
 50 : Ø50
 63 : Ø63
 80 : Ø80
 100 : Ø100

④ 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)

⑤ Stroke (mm)

Refer to Standard Stroke Table

⑥ Mounting

N : Standard type
 L : Axial foot
 A : Rod side flange
 T : Center trunnion

⑦ Sensor switch type

No symbol	No switch	
MA	MA-1 (AC110V, DC24V)	M type reed switch
MB	MD-1 (DC24V)	
MC	MD-3 (DC5, 6V)	
MD	MR (AC, DC5 ~ 110V)	
ME	MA-2L (AC110V)	
MF	MA-2H (AC220V)	M type proximity switch
MG	MT-3 (DC5 ~ 30V)	
MH	MT-3U (DC5 ~ 30V)	
MJ	MT-2 (DC24V)	
MK	MT-2U (DC24V)	

⑧ Number of switches

No symbol : No switch
 2 : With 2 units
 1 : With 1 unit

⑨ Accessories

No symbol : Rod end nut
 Y : With rod end clevis
 I : With rod end eye
 YY : With two rod end clevis
 II : With two rod end eye

Model No. of Mounting Bracket

Bore (mm)	Ø40	Ø50	Ø63	Ø80	Ø100
Axial foot mount bracket	K40-L	K50-L	K63-L	K80-L	K100-L
Flange mount bracket	K40-A	K50-A	K63-A	K80-A	K100-A
Trunnion mount bracket	K40-T	K50-T	K63-T	K80-T	K100-T

Model No. of Sensor Switch Mounting Bracket

Bore (mm)	M type sensor switch	
	Reed	Proximity
Ø40	K40-MJ	K40-MTJ
Ø50		
Ø63		
Ø80	K80-MJ	K80-MTJ
Ø100		

Model No. of Packing

Bore (mm)	Packing
Ø40	K740-PS
Ø50	K750-PS
Ø63	K763-PS
Ø80	K780-PS
Ø100	K7100-PS

**JIS Label**

Double acting

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:

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

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

Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/Lubricated air
Pressure range	MPa (kgf/cm ²)	0.05~1 (0.51~10.2)
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
Mounting		Standard type, Axial foot, Rod side flange, Center trunnion

(Note) When piston is within the buffer stroke range, the minimum pneumatic pressure is 0.1MPa{1.0kgf/cm²}.

If it falls outside of the range, the minimum pneumatic pressure is 0.05MPa{0.51kgf/cm²}.

Standard Stroke

(Unit: mm)

Bore	Standard Stroke	Max. Stroke
∅40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600
∅50		800
∅63		
∅80		
∅100		1000

Cushion Stroke

(Unit : mm)

Bore	Cushion Stroke
∅40	16
∅50	
∅63	
∅80	20
∅100	

Accessories

Name		Standard type	Axial foot	Rod side flange	Center trunnion
Standard	Rod end nut	○	○	○	○
Optional	With rod end clevis	○	○	○	○
	With rod end eye	○	○	○	○

Model With Switch

M Type Reed Switch

Lead With Wire



Model No.	Rated voltage (V)	Rated current (mA)	Pilot lamp (Lights up at ON)	Application
MA-1	AC110	5~45	○	Relay PLC
	DC24	5~45		
MD-1	DC24	25~65	○	Relay
MD-3	DC5, 6	Max.50 (Inductive load) Max.300 (Resistive load)	○	IC circuit
MR	AC 5~110 DC	Max.50 (Inductive load) Max.300 (Resistive load)	No indicator	Relay PLC
MA-2L	AC110	5~150	○	Relay
MA-2H	AC220	5~150	○	Relay

(Note) The MA-2L is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2L.

The MA-2H is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2H.

M Type Proximity Switch

Lead With Wire



Model No.	Rated voltage (V)	Rated current range (mA)	Pilot lamp (Lights up at CN)	Application
MT-2 MT-2U	DC24 (DC10~30)	5~100	○	Relay PLC
MT-3 MT-3U	DC5~30	5~200	○	Relay PLC IC circuit

Minimum Stroke with M Type Switch

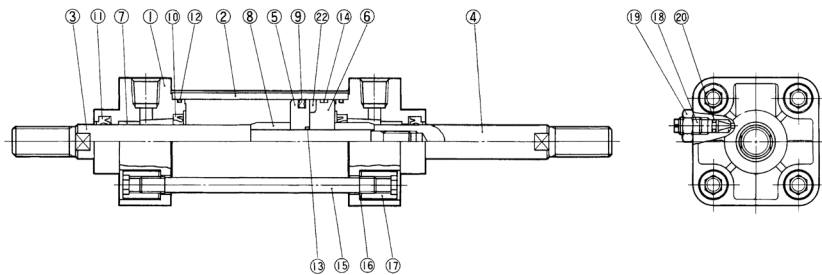
(Unit: mm)

Bore	Number of switches			
	Aside from center trunnion			Center trunnion
	With 2 units (on the same surface)	With 2 units (on different surfaces)	With 1 unit	With 2 units (on the same surface)
∅40	10	10	5	75
∅50				85
∅63				
∅80				
∅100				100

Sensor Switch Fixed Position

Sensor switch fixed position is the same as that of K Series Standard Type.

Construction



Parts List

No.	Description	No.	Description
1	Front cover	12	O-ring for cover
2	Outer tube	13	Sleeve gasket
3	Piston rod A	14	Wear ring
4	Piston rod B	15	Iron rod
5	Piston A	16	Washer
6	Piston B	17	Tie rod nut
7	Bearing	18	Cushion needle
8	Cushion sleeve	19	Cushion locking nut
9	Piston packing	20	Cushion needle packing
10	Cushion packing	21	Rod end nut
11	Rod packing	22	Magnet

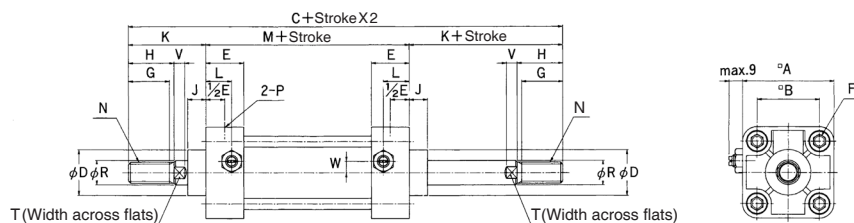
Packing List

Bore (mm)	9. Piston packing		10. Cushion packing		11. Rod packing		12. O-ring for cover		13. Sleeve gasket		20. Cushion needle packing	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø40	PSD-40	1	CP-18	2	PDU-16	2	KG40	2	IN-11.2	1	P3	2
Ø50	PSD-50	1	CP-24	2	PDU-20	2	KG50	2	P12	1	P3	2
Ø63	PSD-63	1	CP-24	2	PDU-20	2	KG63	2	P12	1	P3	2
Ø80	PSD-80	1	CP-30	2	PDU-25	2	KG80	2	P16	1	P3	2
Ø100	PSD-100	1	CP-35	2	PDU-30	2	KG100	2	P20	1	P3	2

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

Standard type/N

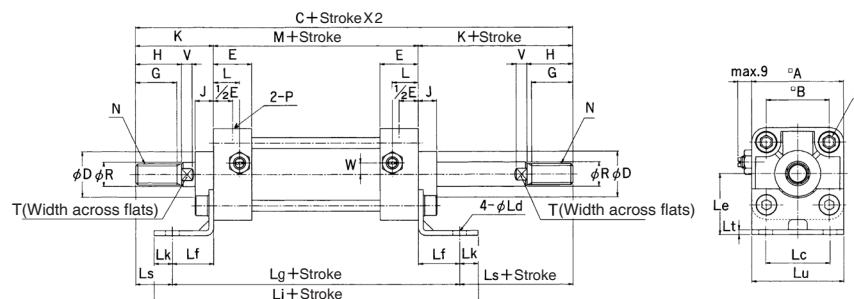
(Unit: mm)



Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	186	30	25	M8	27	30	12	51	17	84	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	204	36	26	M8	32	35	13	57.5	18	89	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	214	36	26	M8	32	35	13	60.5	18	93	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	258	42	32	M10	36	40	16	74	24	110	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	270	48	32	M10	36	40	18	79	24	112	M26×1.5	Rc1/2	30	27	13	0

Axial foot mounting/L

(Unit: mm)



Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	186	30	25	M8	27	30	12	51	17	84	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	204	36	26	M8	32	35	13	57.5	18	89	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	214	36	26	M8	32	35	13	60.5	18	93	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	258	42	32	M10	36	40	16	74	24	110	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	270	48	32	M10	36	40	18	79	24	112	M26×1.5	Rc1/2	30	27	13	0

Bore	Lc	Ld	Le	Lf	Lg	Li	Lk	Ls	Lt	Lu
Ø40	42	9	40	27	138	162	12	24	3.2	60
Ø50	50	9	45	27.5	144	169	12.5	30	3.2	68
Ø63	59	11.5	50	36.5	166	193	13.5	24	3.2	78
Ø80	76	13.5	65	47	204	238	17	27	4	100
Ø100	92	13.5	75	50	212	246	17	29	4	116

(Unit: mm)

Bore	Fa	Fb	Fc	Fd	Fe	Ff	Fg	Ft
Ø40	80	100	42	9	70	39	2.3	12
Ø50	90	110	50	9	80	45	3.2	12.5
Ø63	105	130	59	11.5	92	43	3.2	17.5
Ø80	130	160	76	13.5	114	53	4	21
Ø100	150	180	92	13.5	130	54	4	25

(Unit: mm)

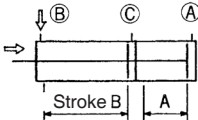
Bore	Ta	Tb	Tc	Td	Te	Tf
Ø40	64	85	125	15	93	28
Ø50	76	95	135	15	102	28
Ø63	92	110	160	18	107	30
Ø80	112	140	200	25	129	40
Ø100	136	162	222	25	135	45

KGD2 Series

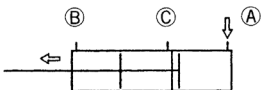
Pneumatic cylinder/Single rod, dual stroke cylinder

Ø40, Ø50, Ø63, Ø80, Ø100

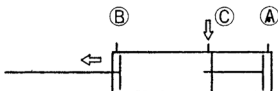
This cylinder is made of two cylinders in series. Strokes can be controlled in the two procedures.



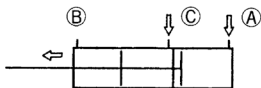
When pressure is supplied from port B, axis will retract back to the stroke between A and B.



When pressure is supplied from port A axis will only be on stroke A.

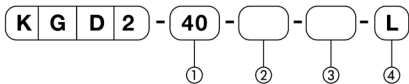


When pressure is supplied from port C axis will only be on stroke B



When pressure is supplied from port A and port C, axis will double output on stroke A

Ordering Instructions



① Bore (mm)

② Stroke A (mm)

③ Stroke B (mm)

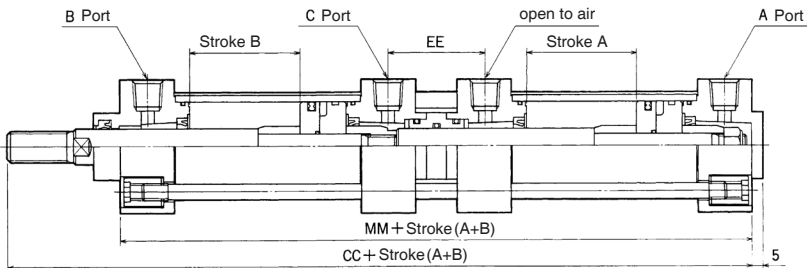
④ Mounting

Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/ lubricated air
Pressure range	MPa(kgf/cm ²)	0.05~1[0.51~10.2]
Temperature range	°C	5~60
Piston speed range	mm/s	50~500
Cushion		Standard
Mounting		Standard type Axial foot Rod side flange Head side flange Eye Clevis Center trunnion

Construction and dimensions

(Unit: mm)



(Note)

Other dimensions are the same with K series Standard type.

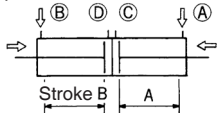
Bore	CC	EE	MM
Ø40	238	44	187
Ø50	255.5	46	198
Ø63	266.5	46	206
Ø80	312	50	238
Ø100	321	50	242

KGD7 Series

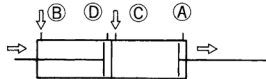
Air cylinder/Double rod type, Dual stroke cylinder

Ø40, Ø50, Ø63, Ø80, Ø100

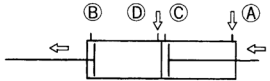
This cylinder is made of two cylinders in series. Strokes can be controlled in the three procedures.



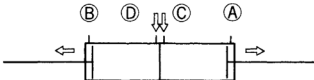
When pressure is supplied to port A and port B, axis will retract back to the original position.



When pressure is supplied to port B and port C, axis will retract to position D and the other to position A.

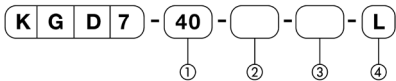


When pressure is supplied to port A and port D, axis will retract back to the stroke A and stretch the stroke A.



When pressure is supplied from port C and port D, axis will be on stroke A and stroke B

Ordering Instructions



① Bore (mm)

② Stroke A (mm)

③ Stroke B (mm)

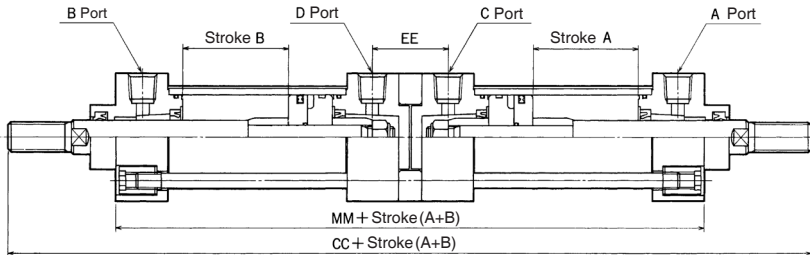
④ Mounting

Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/ lubricated air
Pressure range	MPa(kgf/cm ²)	0.05 ~ 1 [0.51 ~ 10.2]
Temperature range	°C	5 ~ 60
Piston speed range	mm/s	50 ~ 500
Cushion		Standard
Mounting		Standard type Axial foot Rod side flange Center trunnion

Construction and dimensions

(Unit: mm)



(Note)

Other dimensions are the same with K series
Standard type.

Bore	CC	EE	MM
Ø40	281	36	179
Ø50	304	37	189
Ø63	318	37	197
Ø80	379	43	231
Ø100	393	43	235

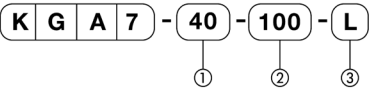
KGA7 Series

Pneumatic cylinder/Stroke-adjustable cylinder (Rod extended)
Ø40, Ø50, Ø63, Ø80, Ø100

Installing brake connector on the front axis to adjust height. When extending the rod, stroke can be adjusted within 0~50mm.



Ordering Instructions



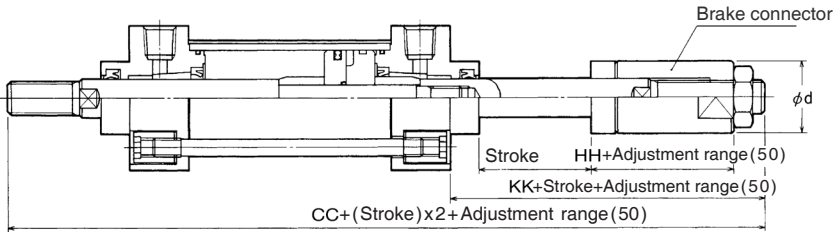
- ① Bore (mm)
- ② Stroke (mm)
- ③ Mounting

Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/ lubricated air
Pressure range	MPa (kgf/cm ²)	0.05 ~ 1 [0.51 ~ 10.2]
Temperature range	°C	5 ~ 60
Piston speed range	mm/s	50 ~ 500
Cushion		Standard
Stroke allowance		Brake connector
Adjustment range	mm	0 ~ 50
Mounting		Standard type Axial foot Rod side flange Center trunnion

Construction and dimensions

(Unit: mm)



Bore	d	CC	HH	KK
Ø40	30	192	35	57
Ø50	35	206.5	35	60
Ø63	35	213.5	35	60
Ø80	45	256	41	72
Ø100	50	283	54	92

(Note)
Other dimensions are the same with K series
Standard type.

KGA2 Series

Pneumatic cylinder/Stroke-adjustable cylinder (Rod retracted)

Ø40, Ø50, Ø63, Ø80, Ø100

Installing adjusting bolt on the front axis to adjust height, when retracting the rod, stroke can be adjusted within 0~50mm.

Ordering Instructions

K G A 2 - **40** - **100** - **L**

① ② ③

① Bore (mm)

② Stroke (mm)

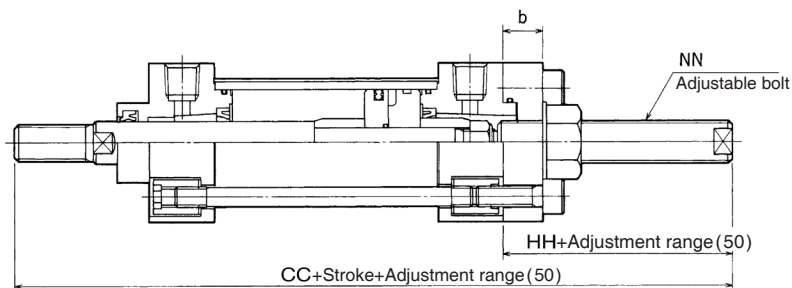
③ Mounting

Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/ lubricated air
Pressure range	MPa (kgf/cm ²)	0.05 ~ 1 [0.51 ~ 10.2]
Temperature range	°C	5 ~ 60
Piston speed range	mm/s	50 ~ 500
Cushion		Standard
Stroke allowance		Adjusting bolt
Adjustment range	mm	0 ~ 50
Mounting		Standard type Axial foot Rod side flange Center trunnion

Construction and dimensions

(Unit: mm)



Bore	b	CC	HH	NN
Ø40	15	172	37	M16×1.5
Ø50	18	186.5	40	M16×1.5
Ø63	18	196.5	43	M20×1.5
Ø80	21	233	49	M24×1.5
Ø100	21	240	49	M24×1.5

(Note)

Other dimensions are the same with K series
Standard type.

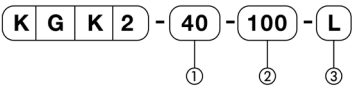
KGK2 Series

Pneumatic cylinder/Low friction cylinder
Ø40, Ø50, Ø63, Ø80, Ø100

Products in this series are applied with pistons with low-sliding-friction. Especially suitable for operating in a low-pressure, smooth-acting environment



Ordering Instructions



- ① Bore (mm)
- ② Stroke (mm)
- ③ Mounting

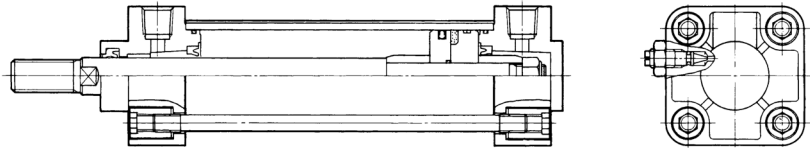
Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/ lubricated air
Pressure range	MPa(kgf/cm ²)	0.01~0.7[0.1~7.1]
Temperature range	°C	5~60
Cushion		Standard
Mounting		Standard type Axial foot Rod side flange Head side flange Eye Clevis Center trunnion

(Note) Converting to SI unit: 0.1MPa=1.02kgf/cm²

Construction and dimensions

(Unit: mm)



(Note) Other dimensions are the same with K series Standard type.

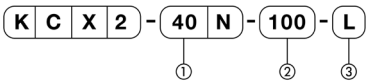
KCX Series

Pneumatic cylinder/Heat-resistance cylinder
 Ø40, Ø50, Ø63, Ø80, Ø100

Pneumatic cylinders of A, K series use heat-resistance packing capable of withstanding temperature up to 150 degrees.



Ordering Instructions



① Bore (mm)

② Stroke (mm)

③ Mounting

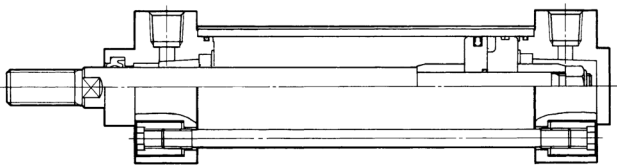
Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/ lubricated air
Pressure range	MPa (kgf/cm ²)	0.05 ~ 1 [0.5 ~ 10.2]
Temperature range	°C	5 ~ 150
Piston speed range	mm/s	50 ~ 500
Cushion		Standard
Mounting		Standard type Axial foot Rod side flange Head side flange Eye Clevis Center trunnion

(Note) If an inductive sensor is in place, please keep the temperature below 60°C the whole time to avoid potential problems and damages.

Construction and dimensions

(Unit: mm)



(Note) Other dimensions are the same with K series Standard type.

Cylinder of this series are for air-hydro systems and are suitable for use at low speeds of 50mm/s or less.



K G O 2 - 40 N - 100 - L

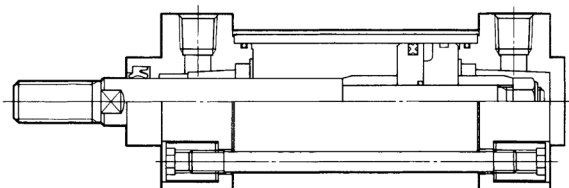
① ② ③

- ### ③ Mounting

Action	Unit	Double-acting
Fluid		Oil
Pressure range	MPa (kgf/cm ²)	0.05~1 [0.5~10.2]
Temperature range	°C	5~60
Piston speed range	mm/s	1~300
Cushion		Standard
Mounting		Standard type Axial foot Rod side flange Head side flange Eye Clevis Center trunnion

(Note) Recommend oil: ISO VG32.

(Unit: mm)



(Note) Other dimensions are the same with K series Standard type.

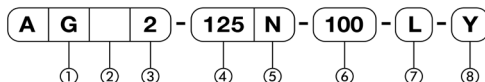
A Series

Air cylinder/Standard type

Ø125, Ø140, Ø160, Ø180, Ø200

Ordering Instructions

lubricated air



① Magnet

C: No magnet (without switch available)

G: Cylinder with switch available (With built-in magnet)

② Outer Tube Material

No mark: Aluminum tube

F : Steel tube

(Note) Only aluminum tube is suitable for oil feeding type and sensor switch

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: Front nut

Y : With rod end clevis

I : With rod end eye

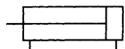
(note) Y : Provided with pin

Model No. of Packing

Bore (mm)	Packing	
	Without magnet	With built-in magnet
Ø125	A125-PS	AG125-PS
Ø140	A140-PS	AG140-PS
Ø160	A160-PS	AG160-PS
Ø180	A180-PS	AG180-PS
Ø200	A200-PS	AG200-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

**JIS Label**

Double acting

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:

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

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

Specifications

Action	Unit	Double-acting
Fluid		Lubricated air
Pressure range	MPa (kgf/cm ²)	0.05~1 (0.51~10.2)
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

(Note) When piston is within the buffer stroke range, the minimum pneumatic pressure is 0.1MPa{1.0kgf/cm²}.
If it falls outside of the range, the minimum pneumatic pressure is 0.05MPa{0.51kgf/cm²}.

Maximum Stroke

(Unit: mm)

Bore	Max. Stroke
Ø125	1000
Ø140	
Ø160	1200
Ø180	
Ø200	

Cushion Stroke

(Unit: mm)

Bore	Cushion Stroke
Ø125	22
Ø140	
Ø160	
Ø180	30
Ø200	

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	○	○	○	○	○	○

Theoretical output

(Unit: kgf)

Bore	Mounting	Operating pressure(kgf/cm ²)									
		1	2	3	4	5	6	7	8	9	10
Ø125	Out stroke	123	246	369	492	615	738	861	984	1107	1230
	In stroke	113	226	339	452	565	678	791	904	1017	1130
Ø140	Out stroke	154	308	462	616	770	924	1078	1232	1386	1540
	In stroke	144	288	432	576	720	864	1008	1152	1296	1440
Ø160	Out stroke	201	402	603	804	1005	1206	1407	1608	1809	2010
	In stroke	185	370	555	740	925	1110	1295	1480	1665	1850
Ø180	Out stroke	254	508	762	1016	1270	1524	1778	2032	2286	2540
	In stroke	238	476	714	952	1190	1428	1666	1904	2142	2380
Ø200	Out stroke	314	628	942	1256	1570	1884	2198	2512	2826	3141
	In stroke	294	589	883	1178	1472	1767	2061	2356	2650	2945

(Note) Effective output = Theoretical output x 0.85

Cylinder Mass(Aluminum tube)

(Unit: g)

Bore (mm)	Operating pressure(kgf/cm ²)					Additional weight
	Axial foot	Mounting plate	Eye	Clevis	Center trunnion	Additional 1mm on stroke
Ø125	18.5	18.5	20.5	20.5	21.5	0.022
Ø140	20.9	22.9	22.9	22.9	24.4	0.022
Ø160	26.2	32.2	33.2	33.2	32.2	0.028
Ø180	36.1	40.6	42.1	42.1	40.6	0.028
Ø200	47	53.5	58.5	58.5	48.5	0.028

Cylinder Mass(Steel tube)

(Unit: g)

Bore (mm)	Operating pressure(kgf/cm ²)					Additional weight
	Axial foot	Mounting plate	Eye	Clevis	Center trunnion	Additional 1mm on stroke
Ø125	19	19	21	21	22	0.031
Ø140	21.5	23.5	23.5	23.5	25	0.033
Ø160	27	33	34	34	33	0.041
Ø180	37	41.5	43	43	41.5	0.043
Ø200	48.5	55	60	60	50	0.05

Calculation formula

(Ex) AC2-125-100-L

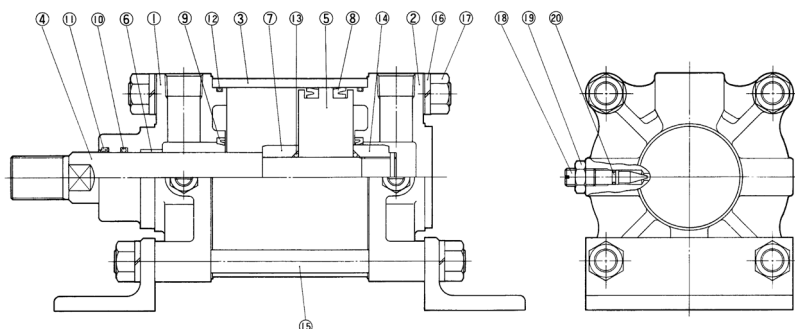
Standard weight ----- 18.5kg

Additional weight ----- 0.0022/stroke

Stroke ----- 100/stroke

18.5 + 0.0022 × 100 = 20.7kg

Construction



Parts List

No.	Description	No.	Description
1	Front cover	12	O-ring for cover
2	End cover	13	Sleeve gasket
3	Outer tube	14	Piston nut
4	Piston rod	15	Tie rod
5	Piston	16	Washer
6	Bearing	17	Tie rod nut
7	Cushion sleeve	18	Cushion needle
8	Piston packing	19	Cushion locking nut
9	Cushion packing	20	Cushion needle packing
10	Rod packing	21	Rod end nut
11	Wiper ring		

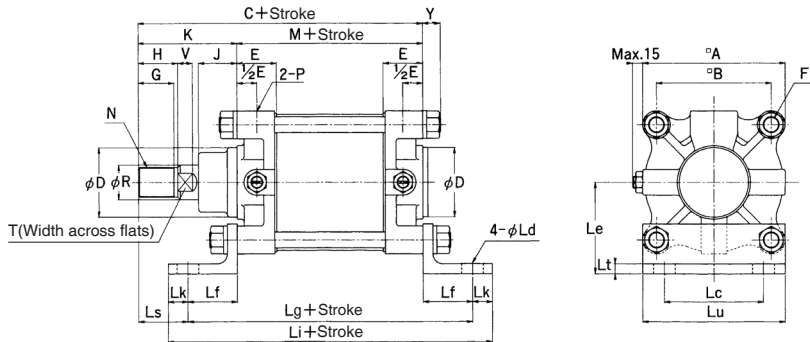
Packing List

Bore (mm)	8.Piston packing		9.Cushion packing		10.Rod packing		11.Wiper ring		12.O-ring for cover		13.Sleeve gasket		20.Cushion needle packing	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø125	UPP-125 PSD-125	2 1	CP-45	2	P35	1	DP-35	1	G120	2	P28	2	P7	2
Ø140	UPP-140 PSD-140	2 1	CP-45	2	P35	1	DP-35	1	G135	2	P28	2	P7	2
Ø160	UP-145 PSD-160	2 1	CP-55	2	P45	1	DP-45	1	G150	2	P38	2	P7	2
Ø180	UP-165 PSD-180	2 1	CP-55	2	P45	1	DP-45	1	G170	2	P38	2	P7	2
Ø200	UP-180 PSD-200	2 1	CP-60	2	P50	1	DP-50	1	G190	2	P40	2	P7	2

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

Axial foot mounting/L

(Unit: mm)

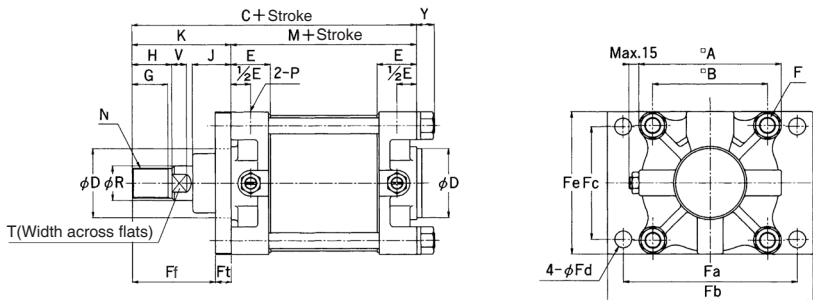


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc%	35	30	15	18
Ø140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc%	35	30	15	18
Ø160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc%	45	40	15	20.5
Ø180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc%	45	40	15	20.5
Ø200	224	170	299	100	50	M20	56	60	44	127	172	M45×1.5	Rc1	50	45	18	22

Bore	Lc	Ld	Le	Lf	Lg	Li	Lk	Ls	Lt	Lu
Ø125	100	22	92	50	238	278	20	50	10	144
Ø140	116	22	100	50	238	278	20	50	10	160
Ø160	130	22	114	55	254	304	25	65	12	180
Ø180	140	22	123	55	254	304	25	65	12	200
Ø200	150	26	137	60	292	352	30	67	12	224

Rod side flange mounting/A

(Unit: mm)

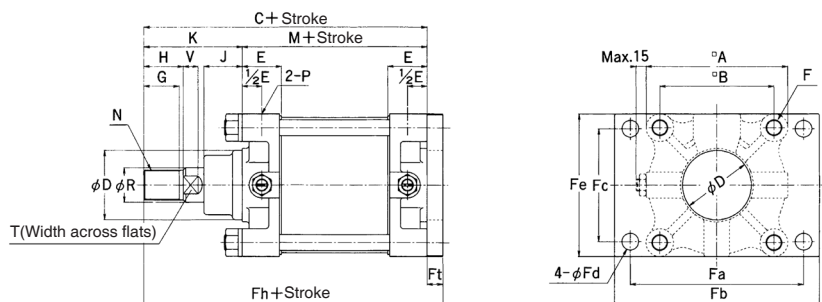


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc%	35	30	15	18
Ø140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc%	35	30	15	18
Ø160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc%	45	40	15	20.5
Ø180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc%	45	40	15	20.5
Ø200	224	170	299	100	50	M20	56	60	44	127	172	M45×1.5	Rc1	50	45	18	22

Bore	Fa	Fb	Fc	Fd	Fe	Ff	Ft
Ø125	176	208	114	17	144	84	16
Ø140	200	240	120	22	160	84	16
Ø160	220	260	140	22	180	102	18
Ø180	244	288	156	22	200	96	24
Ø200	276	330	170	26	224	101	26

Head side flange mounting/B

(Unit: mm)

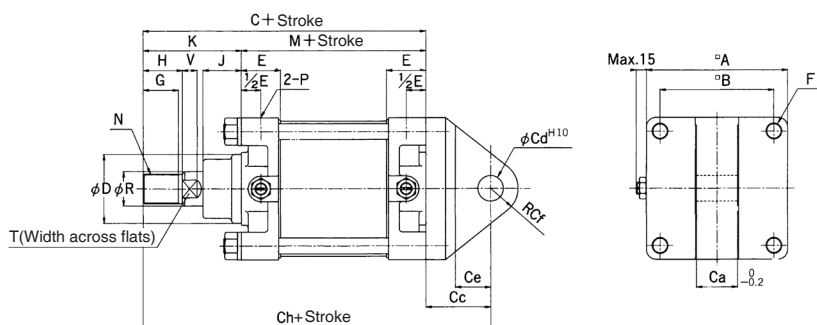


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V
Ø125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15
Ø140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15
Ø160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15
Ø180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15
Ø200	224	170	299	100	50	M20	56	60	44	127	172	M45×1.5	Rc1	50	45	18

Bore	Fa	Fb	Fc	Fd	Fe	Fh	Ft
Ø125	176	208	114	17	144	254	16
Ø140	200	240	120	22	160	254	16
Ø160	220	260	140	22	180	282	18
Ø180	244	288	156	22	200	288	24
Ø200	276	330	170	26	224	325	26

Eye mounting/C

(Unit: mm)

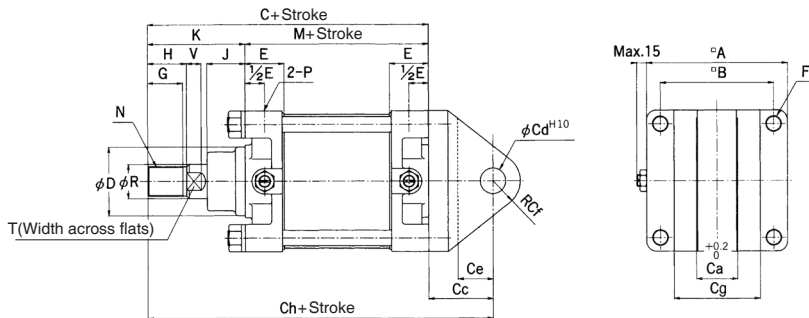


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V
Ø125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15
Ø140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15
Ø160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15
Ø180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15
Ø200	224	170	299	100	50	M20	56	60	44	127	172	M45×1.5	Rc1	50	45	18

Bore	Ca	Cc	Cd	Ce	Cf	Ch
Ø125	42	66	26	36	28	304
Ø140	42	66	26	36	28	304
Ø160	48	84	30	49	34	348
Ø180	48	84	30	49	34	348
Ø200	53	94	35	52	40	393

Clevis mounting/W

(Unit: mm)

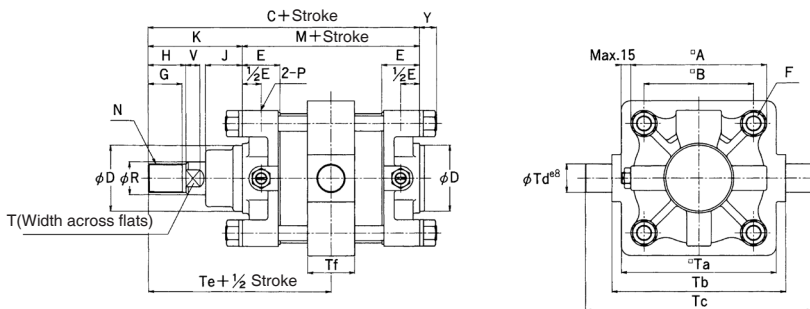


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V
Ø125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15
Ø140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15
Ø160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15
Ø180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15
Ø200	224	170	299	100	50	M20	56	60	44	127	172	M45×1.5	Rc1	50	45	18

Bore	Ca	Cc	Cd	Ce	Cf	Cg	Ch
Ø125	42	66	26	36	28	88	304
Ø140	42	66	26	36	28	88	304
Ø160	48	84	30	49	34	100	348
Ø180	48	84	30	49	34	100	348
Ø200	53	94	35	52	40	109	393

Center trunnion mounting/T

(Unit: mm)



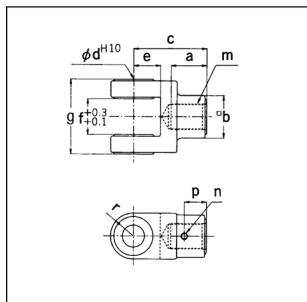
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
Ø140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
Ø160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
Ø180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
Ø200	224	170	299	100	50	M20	56	60	44	127	172	M45×1.5	Rc1	50	45	18	22

Bore	Ta	Tb	Tc	Td	Te	Tf
Ø125	164	184	240	30	169	50
Ø140	180	200	260	30	169	50
Ø160	200	220	290	35	192	60
Ø180	220	240	310	35	192	60
Ø200	244	270	340	40	213	60

Accessories

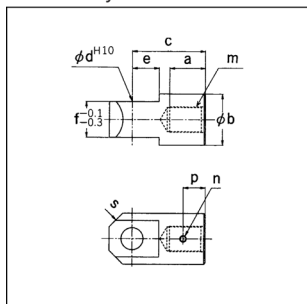
(Unit: mm)

Rod end clevis



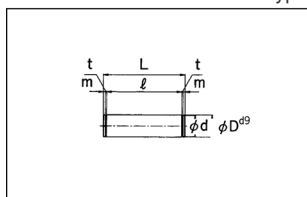
Model No	Applicable bore	a	b	c	d	e	f	g	m	n	p	r
A125-Y	∅125, ∅140	42	50	86	26	31.5	42	88	M30×1.5	M8	26	27
A160-Y	∅160, ∅180	57	66	114	30	40	48	100	M40×1.5	M8	39	34
A200-Y	∅200	62	76	132	35	50	53	109	M45×1.5	M8	42	41

Rod end eye



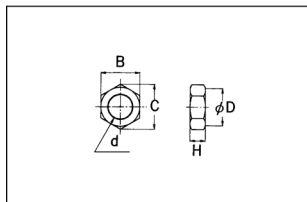
Model No	Applicable bore	a	b	c	d	e	f	m	n	p	s
A125-I	∅125, ∅140	42	60	86	26	31.5	42	M30×1.5	M8	26	16
A160-I	∅160, ∅180	57	75	114	30	40	48	M40×1.5	M8	39	22
A200-I	∅200	62	90	132	35	50	53	M45×1.5	M8	42	27

Axis rod end clevis fixed shaft type



Model No	Applicable bore	D	L	d	ℓ	m	t	snap ring
A125-WP	∅125, ∅140	26	96.2	24.9	88.5	2.5	1.35	C26
A160-WP	∅160, ∅180	30	109	28.6	100.5	2.5	1.75	C30
A200-WP	∅200	35	118	33	109.5	2.5	1.75	C35

Rod end nut



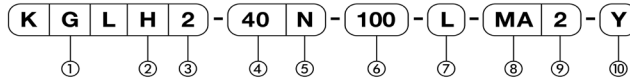
Model No	Applicable bore	d	H	B	C	D
A125-RN	∅125, ∅140	M30×1.5	18	46	53.1	44
A160-RN	∅160, ∅180	M40×1.5	25	65	75	62
A200-RN	∅200	M45×1.5	27	70	80.8	67

K□L Series

Air cylinder/With fall prevention device

∅40, ∅50, ∅63, ∅80, ∅100

Ordering Instructions



① Magnet

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)

40 : ∅40

50 : ∅50

63 : ∅63

80 : ∅80

100: ∅100

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

N : Standard type

L : Axial foot

A : Rod side flange

B : Head side flange

C : Eye

W : Clevis

T : Center trunnion

⑧ Sensor switch type

No symbol	No switch	
MA	MA-1 (AC110V, DC24V)	M type reed switch
MB	MD-1 (DC24V)	
MC	MD-3 (DC5, 6V)	
MD	MR (AC, DC5~110V)	
ME	MA-2L (AC110V)	
MF	MA-2H (AC220V)	M type proximity switch
MG	MT-3 (DC5~30V)	
MH	MT-3U (DC5~30V)	
MJ	MT-2 (DC24V)	
MK	MT-2U (DC24V)	

⑨ Number of switches

No symbol: No switch

2 : With 2 units

1 : With 1 unit

⑩ Accessories

No symbol: Rod end nut

Y : With rod end clevis

I : With rod end eye

(note) Y : Provided with pin

Model No. of Mounting Bracket

Bore (mm)	∅40	∅50	∅63	∅80	∅100
Axial foot mount bracket	K40-L	K50-L	K63-L	K80-L	K100-L
Flange mount bracket	K40-A	K50-A	K63-A	K80-A	K100-A
Eye mount bracket	K40-C	K50-C	K63-C	K80-C	K100-C
Clevis mount bracket	K40-W	K50-W	K63-W	K80-W	K100-W
Trunnion mount bracket	K40-T	K50-T	K63-T	K80-T	K100-T

Model No. of Sensor Switch Mounting Bracket

Bore (mm)	M type sensor switch	
	Reed	Proximity
∅40	K40-MJ	K40-MTJ
∅50		
∅63		
∅80	K80-MJ	K80-MTJ
∅100		

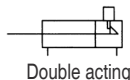
Model No. of Packing

Bore (mm)	Packing
∅40	KL40-PS
∅50	KL50-PS
∅63	KL63-PS
∅80	KL80-PS
∅100	KS100-PS



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



Double acting

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:

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

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

Specifications

Action	Unit	Double-acting
Fluid		Non-lubricated air/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
Mounting		Standard type, Axial foot, Rod side flange, Head side flange, Eye, Clevis, Center trunnion
Locking position		Back end, Rod end
Piston stroke when locking	mm	5
Manual unlock		∅40: Non-locking type ∅50~∅100: Locking type

Standard Stroke

(Unit: mm)

Bore	Standard Stroke	Max. Stroke
∅40	50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600
∅50		800
∅63		
∅80		1000
∅100		

Cushion Stroke

(Unit: mm)

Bore	Cushion Stroke
∅40	16
∅50	
∅63	
∅80	20
∅100	

Maximum Load Weight

(Unit: mm)

Bore	Maximum Load Weight
∅40	125
∅50	195
∅63	310
∅80	500
∅100	775

Accessories

Name	Standard type	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	○	○	○	○	○	○

Model With Switch

M Type Reed Switch

Lead With Wire



Model No.	Rated voltage (V)	Rated current (mA)	Pilot lamp (Lights up at ON)	Application
MA-1	AC110	5~45	○	Relay PLC
	DC24	5~45		
MD-1	DC24	25~65	○	Relay
MD-3	DC5, 6	Max.50 (Inductive load) Max.300 (Resistive load)	○	IC circuit
MR	AC 5~110 DC	Max.50 (Inductive load) Max.300 (Resistive load)	No indicator	Relay PLC
MA-2L	AC110	5~150	○	Relay
MA-2H	AC220	5~150	○	Relay

M Type Proximity Switch

Lead With Wire



Model No.	Rated voltage (V)	Rated current range (mA)	Pilot lamp (Lights up at CN)	Application
MT-2 MT-2U	DC24 (DC10~30)	5~100	○	Relay PLC
MT-3 MT-3U	DC5~30	5~200	○	Relay PLC IC circuit

(Note) The MA-2L is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2L.

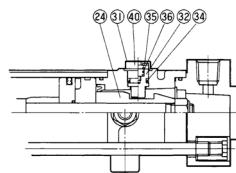
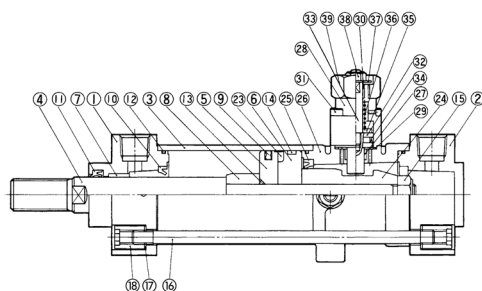
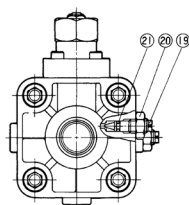
The MA-2H is the same as the MA-1 except that MA-2H is also equipped with protective circuit SS-2H.

Minimum Stroke with M Type Switch

(Unit: mm)

Bore	Number of switches			
	Aside from center trunnion			Center trunnion
	With 2 units (on the same surface)	With 2 units (on different surfaces)	With 1 unit	With 2 units (on the same surface)
∅40	10	10	5	75
∅50				85
∅63				95
∅80				100
∅100				

Construction

 $\phi 40$  $\phi 50 \sim \phi 100$ 

Parts List

No.	Description	No.	Description
1	Front cover	21	Cushion needle packing
2	End cover	22	Rod end nut
3	Outer tube	23	Magnet
4	Piston rod	24	Sleeve B
5	Piston A	25	Cushion packing B
6	Piston B	26	ML base
7	Bearing	27	Bearing A
8	Cushion sleeve	28	Locking body
9	Piston packing	29	Gasket A
10	Cushion packing	30	Bearing B
11	Rod packing	31	Hexagon socket screw
12	O-ring for cover	32	Locking piston
13	Sleeve gasket	33	Locking rod
14	Wear ring	34	Locking rod packing
15	U-shaped nut	35	Gasket B
16	Tie rod	36	Locking spring
17	Washer	37	Braking device
18	Tie rod nut	38	U-shaped nut
19	Cushion needle	39	Release knob
20	Cushion locking nut	40	Locking cap

Packing List

Bore(mm)	9.Piston packing		10.Cushion packing		11.Rod packing		12.O-ring for cover	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø40	PSD-40	1	CP-18	1	PDU-16	1	KG40	3
Ø50	PSD-50	1	CP-24	1	PDU-20	1	KG50	3
Ø63	PSD-63	1	CP-24	1	PDU-20	1	KG63	3
Ø80	PSD-80	1	CP-30	1	PDU-25	1	KG80	3
Ø100	PSD-100	1	CP-35	1	PDU-30	1	KG100	3

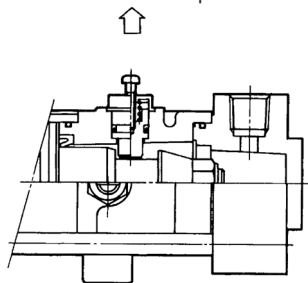
Bore(mm)	13.Sleeve gasket		21.Cushion needle packing		25.Cushion packing B		34.Locking rod packing	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø40	IN-11.2	1	P3	2	CP-24	1	NY-9N	1
Ø50	P12	1	P3	2	CP-30	1	NY-16N	1
Ø63	P12	1	P3	2	CP-30	1	NY-16N	1
Ø80	P16	1	P3	2	CP-40	1	NY-21N	1
Ø100	P20	1	P3	2	CP-45	1	NY-21N	1

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

Manual unlock

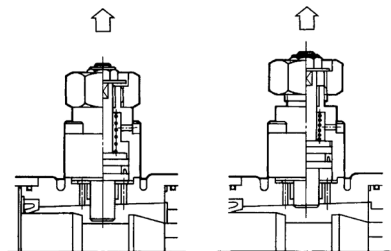
(Ø40)

When unlocking, insert the screw to the hole of in the tip-top of locking cover and pull the screw upward to unlock the piston. The piston will automatically lock up after resetting. The above-mentioned screw (M3X0.5X12ℓ) comes with the cylinder set. However, during regular operation, please take out the screw to avoid problems.



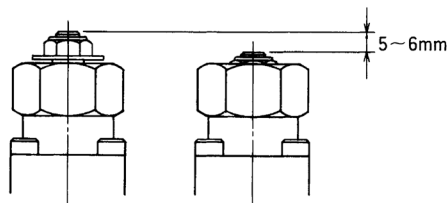
(Ø50~Ø100)

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

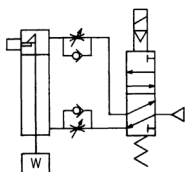
When the position of majority of the U-shaped nut exceeds over the release knob, it means the cylinder is at unlock state (unlocked by the air during cylinder acting). When cylinder is manually locked, the U-shaped nut should only expose minimally, as the graph suggest.



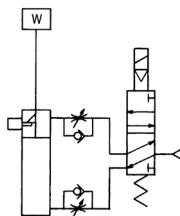
⚠ Operational Prevention Measure

Pneumatic circuit recommended

Fall prevention device
set at the rod end



Fall prevention device
set at the head center

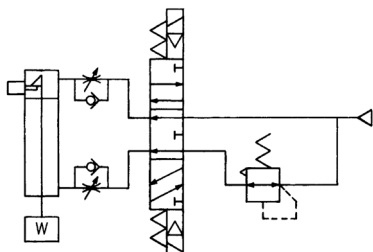


Precautions with regard to control circuit selection

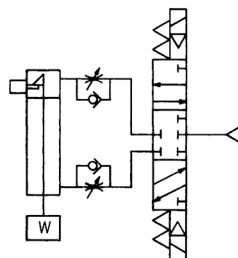
Do not operate the control circuit of a pneumatic cylinder as the graph shown below. If a three-position solenoid is used, it cannot be locked because there is residual pressure at the port of locking device. In addition, air leakage from the solenoid will enter into a pneumatic cylinder, locking will be removed as time goes by.

This circuit may not be used.

Connect ABR port, P port closed type.



All ports closed type.



Before operation, check whether air for the control circuit is prioritized to supply ports without locking devices. (Please refer to the above circuit recommended).

Operating pressure

Please operate at the port with a locking device under pneumatic pressure over 0.15MPa{1.5kgf/cm²}. If the pneumatic pressure falls below above-mentioned pressure, it will not be unlocked.

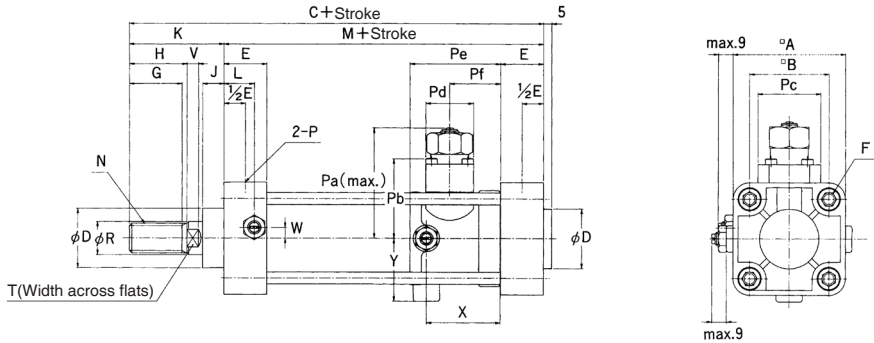
Unlocking

When unlocking is needed, first check that air supply is provided to the port of the non-locking side to avoid loading on the locking device. If unlocking is conducted simultaneously with air discharge to the port of the non-locking side, excessive force may cause damages to locking devices or sudden movement.

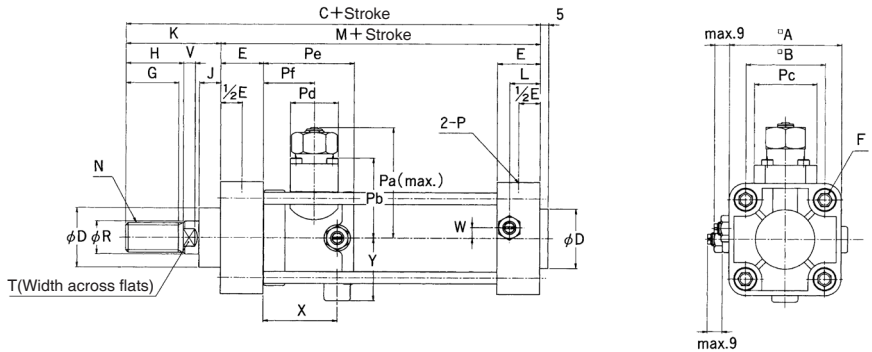
Standard type/N

(Unit: mm)

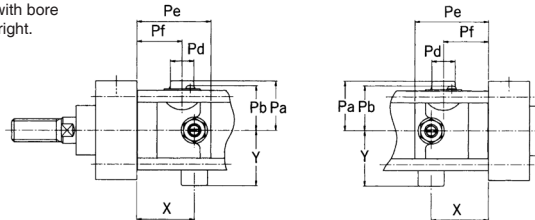
Lock setting on head side/KGLH2



Lock setting on rod side/KGLR2



Locking mechanism of cylinder with bore size of 40mm are shown on the right.



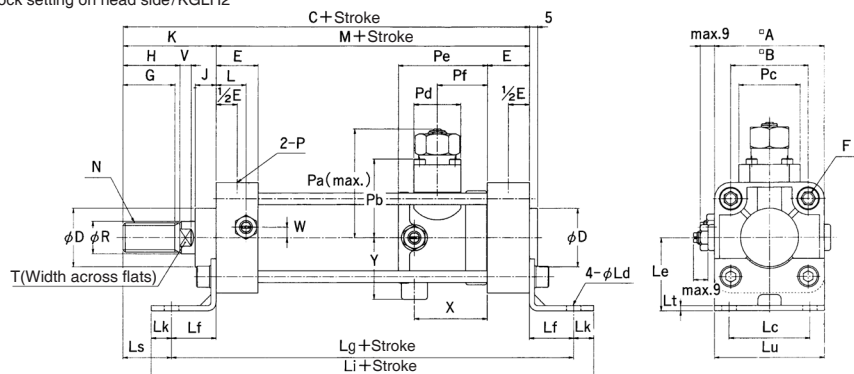
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
∅40	60	41	180	30	25	M8	27	30	12	51	17	129	M14×1.5	Rc1/4	16	14	7	7.5
∅50	68	48	201.5	36	26	M8	32	35	13	57.5	18	144	M18×1.5	Rc3/8	20	17	7	6.5
∅63	78	58	208.5	36	26	M8	32	35	13	60.5	18	148	M18×1.5	Rc3/8	20	17	8	0
∅80	96	72	254	42	32	M10	36	40	16	74	24	180	M22×1.5	Rc1/2	25	22	13	0
∅100	110	86	261	48	32	M10	36	40	18	79	24	182	M26×1.5	Rc1/2	30	27	13	0

Bore	X	Y	Pa	Pb	Pc	Pd	Pe	Pf
∅40	36	33.5	30	27	26	14.3	45	27.5
∅50	45	38	76	49	38	29	55	30.5
∅63	45	39	76	49	38	29	55	30.5
∅80	60	47	92	58	48	39	70	38.5
∅100	60	55	94.5	60.5	48	39	70	38.5

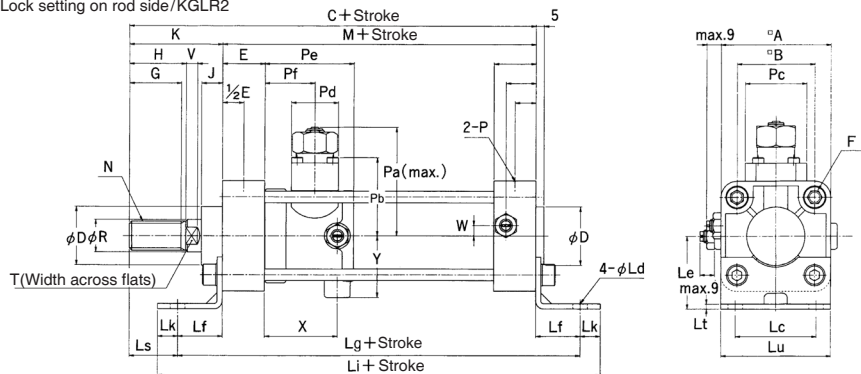
Axial foot mounting/L

(Unit: mm)

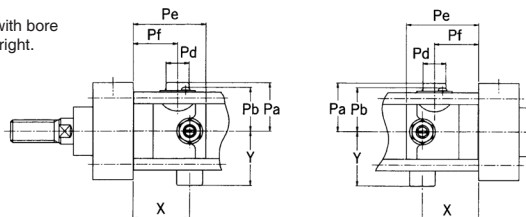
Lock setting on head side/KGLH2



Lock setting on rod side/KGLR2



Locking mechanism of cylinder with bore size of 40mm are shown on the right.



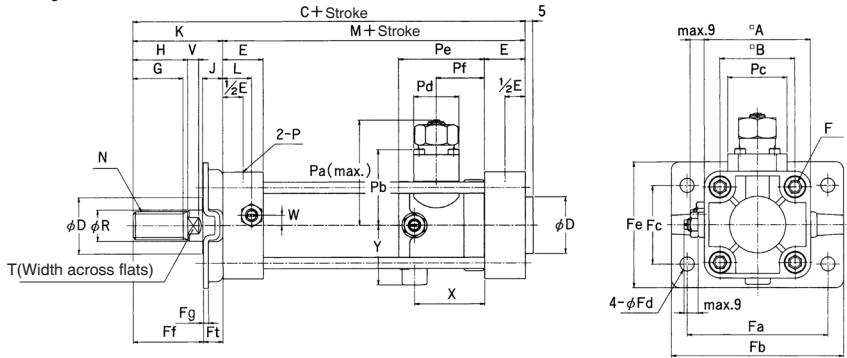
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	180	30	25	M8	27	30	12	51	17	129	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	201.5	36	26	M8	32	35	13	57.5	18	144	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	208.5	36	26	M8	32	35	13	60.5	18	148	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	254	42	32	M10	36	40	16	74	24	180	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	261	48	32	M10	36	40	18	79	24	182	M26×1.5	Rc1/2	30	27	13	0

Bore	Lc	Ld	Le	Lf	Lg	Li	Lk	Ls	Lt	Lu	X	Y	Pa	Pb	Pc	Pd	Pe	Pf
Ø40	42	9	40	27	183	207	12	24	3.2	60	36	33.5	30	27	26	14.3	45	27.5
Ø50	50	9	45	27.5	199	224	12.5	30	3.2	68	45	38	76	49	38	29	55	30.5
Ø63	59	11.5	50	36.5	221	248	13.5	24	3.2	78	45	39	76	49	38	29	55	30.5
Ø80	76	13.5	65	47	274	308	17	27	4	100	60	47	92	58	48	39	70	38.5
Ø100	92	13.5	75	50	282	316	17	29	4	116	60	55	94.5	60.5	48	39	70	38.5

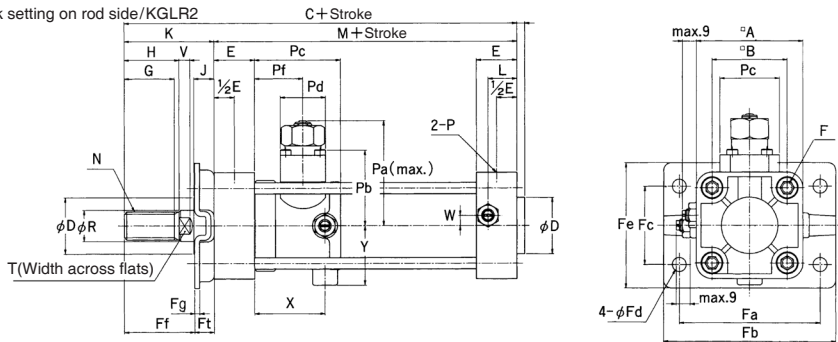
Rod side flange mounting/A

(Unit: mm)

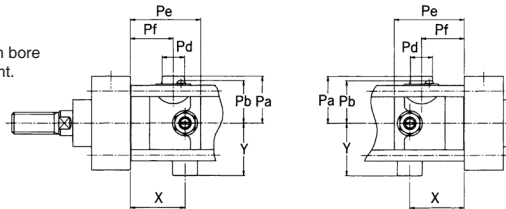
Lock setting on head side/KGLH2



Lock setting on rod side/KGLR2



Locking mechanism of cylinder with bore size of 40mm are shown on the right.



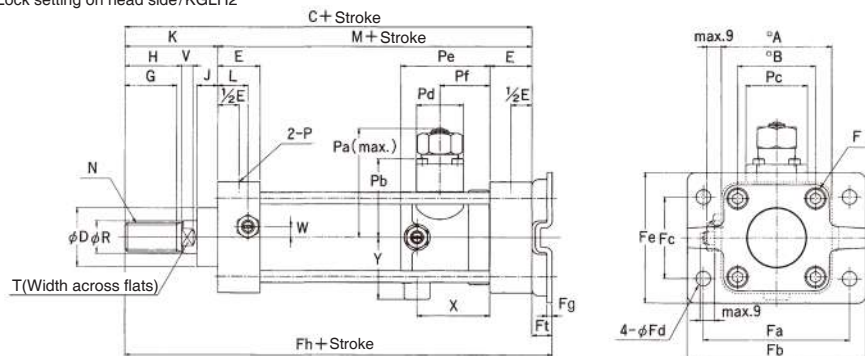
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	180	30	25	M8	27	30	12	51	17	129	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	201.5	36	26	M8	32	35	13	57.5	18	144	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	208.5	36	26	M8	32	35	13	60.5	18	148	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	254	42	32	M10	36	40	16	74	24	180	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	261	48	32	M10	36	40	18	79	24	182	M26×1.5	Rc1/2	30	27	13	0

Bore	Fa	Fb	Fc	Fd	Fe	Ff	Fg	Ft	X	Y	Pa	Pb	Pc	Pd	Pe	Pf
Ø40	80	100	42	9	70	39	2.3	12	36	33.5	30	27	26	14.3	45	27.5
Ø50	90	110	50	9	80	45	3.2	12.5	45	38	76	49	38	29	55	30.5
Ø63	105	130	59	11.5	92	43	3.2	17.5	45	39	76	49	38	29	55	30.5
Ø80	130	160	76	13.5	114	53	4	21	60	47	92	58	48	39	70	38.5
Ø100	150	180	92	13.5	130	54	4	25	60	55	94.5	60.5	48	39	70	38.5

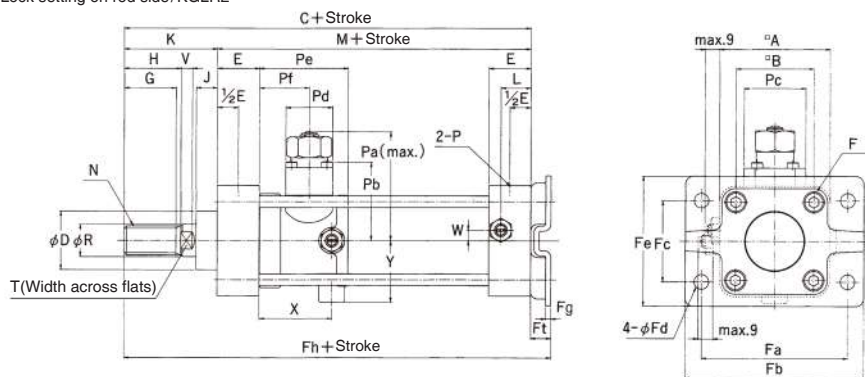
Head side flange mounting/B

(Unit: mm)

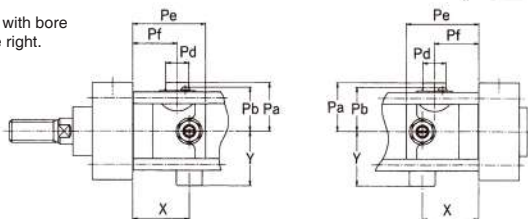
Lock setting on head side/KGLH2



Lock setting on rod side/KGLR2



Locking mechanism of cylinder with bore size of 40mm are shown on the right.



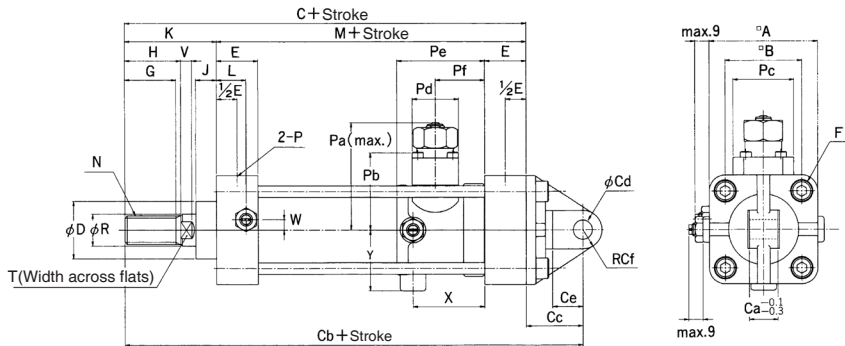
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	180	30	25	M8	27	30	12	51	17	129	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	201.5	36	26	M8	32	35	13	57.5	18	144	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	208.5	36	26	M8	32	35	13	60.5	18	148	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	254	42	32	M10	36	40	16	74	24	180	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	261	48	32	M10	36	40	18	79	24	182	M26×1.5	Rc1/2	30	27	13	0

Bore	Fa	Fb	Fc	Fd	Fe	Ff	Fg	Ft	X	Y	Pa	Pb	Pc	Pd	Pe	Pf
Ø40	80	100	42	9	70	39	2.3	12	36	33.5	30	27	26	14.3	45	27.5
Ø50	90	110	50	9	80	45	3.2	12.5	45	38	76	49	38	29	55	30.5
Ø63	105	130	59	11.5	92	43	3.2	17.5	45	39	76	49	38	29	55	30.5
Ø80	130	160	76	13.5	114	53	4	21	60	47	92	58	48	39	70	38.5
Ø100	150	180	92	13.5	130	54	4	25	60	55	94.5	60.5	48	39	70	38.5

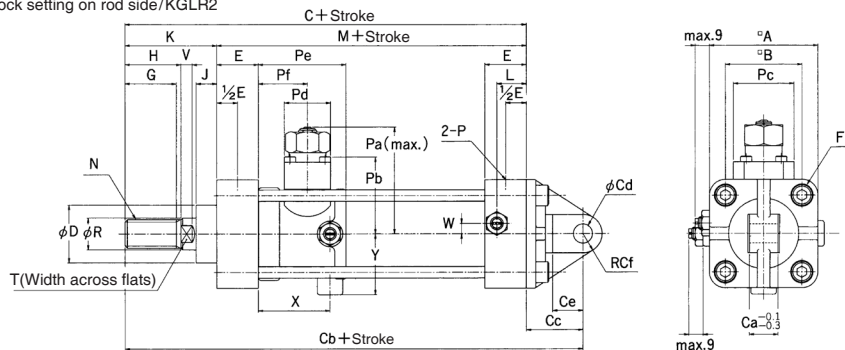
Eye mounting/C

(Unit: mm)

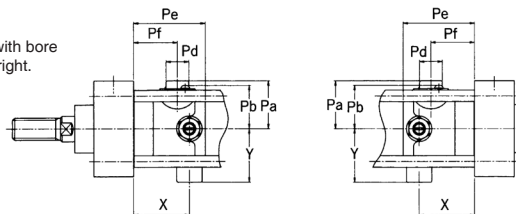
Lock setting on head side/KGLH2



Lock setting on rod side/KGLR2



Locking mechanism of cylinder with bore size of 40mm are shown on the right.



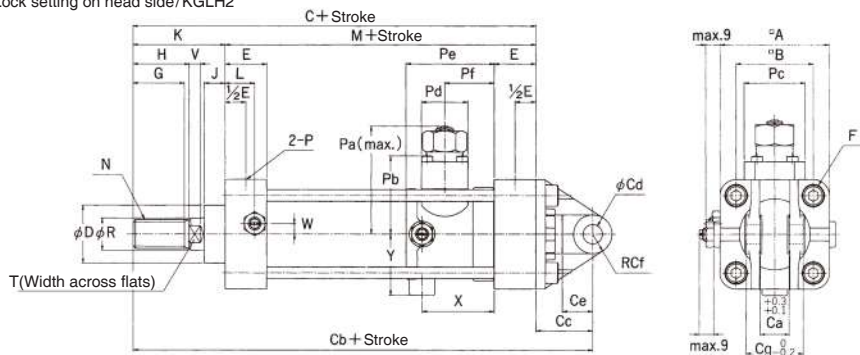
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	180	30	25	M8	27	30	12	51	17	129	M14×1.5	Rc ¹ / ₄	16	14	7	7.5
Ø50	68	48	201.5	36	26	M8	32	35	13	57.5	18	144	M18×1.5	Rc ³ / ₈	20	17	7	6.5
Ø63	78	58	208.5	36	26	M8	32	35	13	60.5	18	148	M18×1.5	Rc ³ / ₈	20	17	8	0
Ø80	96	72	254	42	32	M10	36	40	16	74	24	180	M22×1.5	Rc ¹ / ₂	25	22	13	0
Ø100	110	86	261	48	32	M10	36	40	18	79	24	182	M26×1.5	Rc ¹ / ₂	30	27	13	0

Bore	Ca	Cc	Cd(H10)	Ce	Cf	Cb	X	Y	Pa	Pb	Pc	Pd	Pe	Pf
Ø40	15	30	10	16	10	210	36	33.5	30	27	26	14.3	45	27.5
Ø50	18	35.5	12	19	12	237	45	38	76	49	38	29	55	30.5
Ø63	25	42.5	16	23	16	251	45	39	76	49	38	29	55	30.5
Ø80	31.5	51	20	28	20	305	60	47	92	58	48	39	70	38.5
Ø100	35.5	65	25	36	25	326	60	55	94.5	60.5	48	39	70	38.5

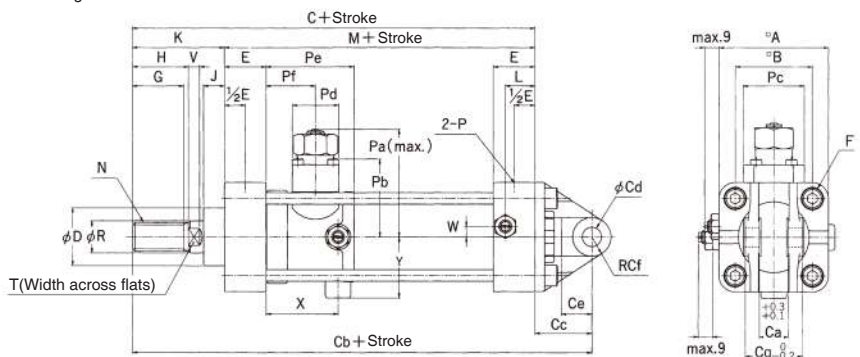
Clevis mounting/W

(Unit: mm)

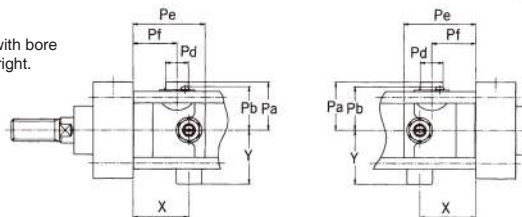
Lock setting on head side/KGLH2



Lock setting on rod side/KGLR2



Locking mechanism of cylinder with bore size of 40mm are shown on the right.



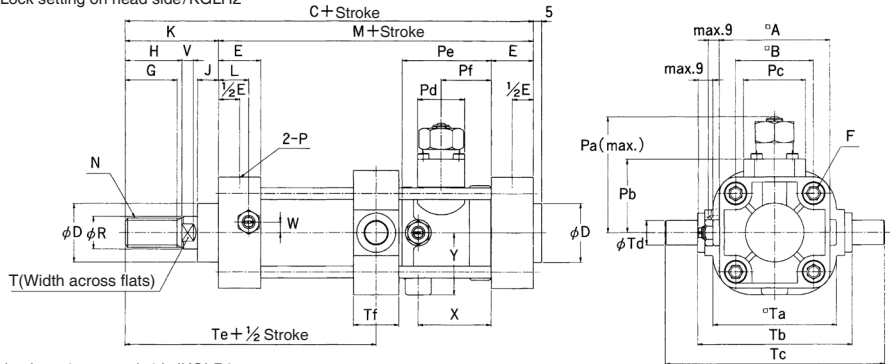
Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	180	30	25	M8	27	30	12	51	17	129	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	201.5	36	26	M8	32	35	13	57.5	18	144	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	208.5	36	26	M8	32	35	13	60.5	18	148	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	254	42	32	M10	36	40	16	74	24	180	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	261	48	32	M10	36	40	18	79	24	182	M26×1.5	Rc1/2	30	27	13	0

Bore	Ca	Cc	Cd(H10)	Ce	Cf	Cg	Cb	X	Y	Pa	Pb	Pc	Pd	Pe	Pf
Ø40	15	30	10	16	10	30	210	36	33.5	30	27	26	14.3	45	27.5
Ø50	18	35.5	12	19	12	35.5	237	45	38	76	49	38	29	55	30.5
Ø63	25	42.5	16	23	16	50	251	45	39	76	49	38	29	55	30.5
Ø80	31.5	51	20	28	20	63	305	60	47	92	58	48	39	70	38.5
Ø100	35.5	65	25	36	25	71	326	60	55	94.5	60.5	48	39	70	38.5

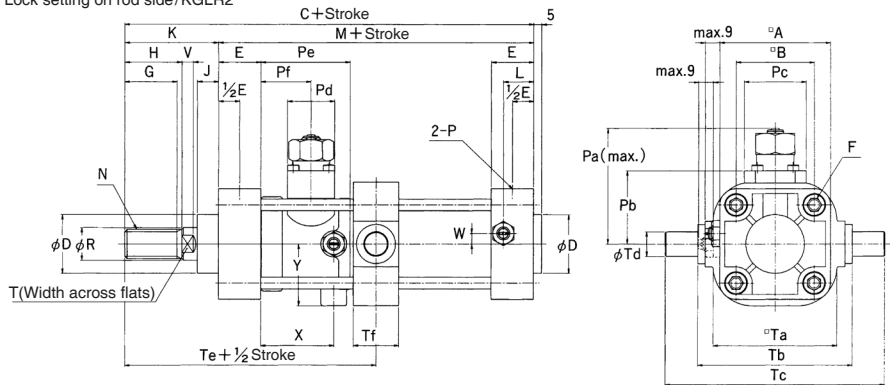
Center trunnion mounting/T

(Unit: mm)

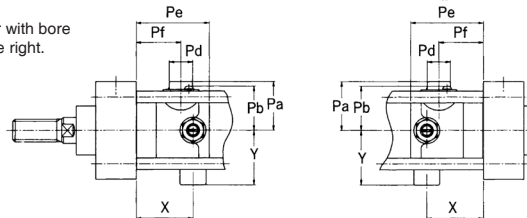
Lock setting on head side/KGLH2



Lock setting on rod side/KGLR2



Locking mechanism of cylinder with bore size of 40mm are shown on the right.

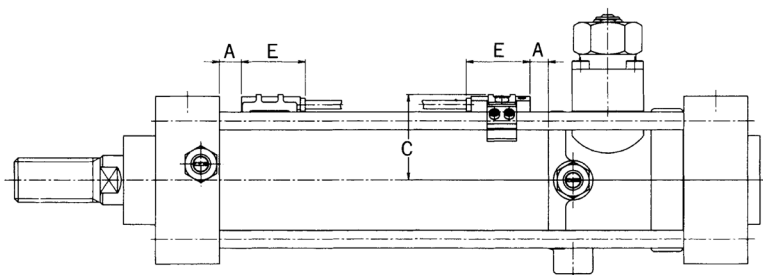


Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	V	W
Ø40	60	41	180	30	25	M8	27	30	12	51	17	129	M14×1.5	Rc1/4	16	14	7	7.5
Ø50	68	48	201.5	36	26	M8	32	35	13	57.5	18	144	M18×1.5	Rc3/8	20	17	7	6.5
Ø63	78	58	208.5	36	26	M8	32	35	13	60.5	18	148	M18×1.5	Rc3/8	20	17	8	0
Ø80	96	72	254	42	32	M10	36	40	16	74	24	180	M22×1.5	Rc1/2	25	22	13	0
Ø100	110	86	261	48	32	M10	36	40	18	79	24	182	M26×1.5	Rc1/2	30	27	13	0

															Stroke less than 75mm			
Bore	Ta	Tb	Tc	Tb(e8)	Te	Tf	X	Y	Pa	Pb	Pc	Pd	Pe	Pf	Bore			
Te	Ø40	64	85	125	15	115.5	28	36	33.5	30	27	26	14.3	45	27.5	Ø40	138	93
	Ø50	76	95	135	15	129.5	28	45	38	76	49	38	29	55	30.5	Ø50	157	102
	Ø63	92	110	160	18	134.5	30	45	39	76	49	38	29	55	30.5	Ø63	162	107
	Ø80	112	140	200	25	164	40	60	47	92	58	48	39	70	38.5	Ø80	199	129
	Ø100	136	162	222	25	170	45	60	55	94.5	60.5	48	39	70	38.5	Ø100	205	135

Sensor switch setting position-M type sensor switch

(Unit: mm)



Bore	A		C
	Reed	Proximity	
∅40	5.5	11.5	32
∅50	7	13	37
∅63	9	15	42
∅80	11.5	17.5	51
∅100	12.5	18.5	59

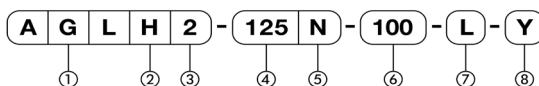
Switch	E
M type reed switch	28
M type proximity switch	26.5(24)

(Note) value within bracket is the MT-*U type.

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

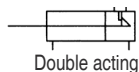
Model No. of Mounting Bracket

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:

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

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

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)

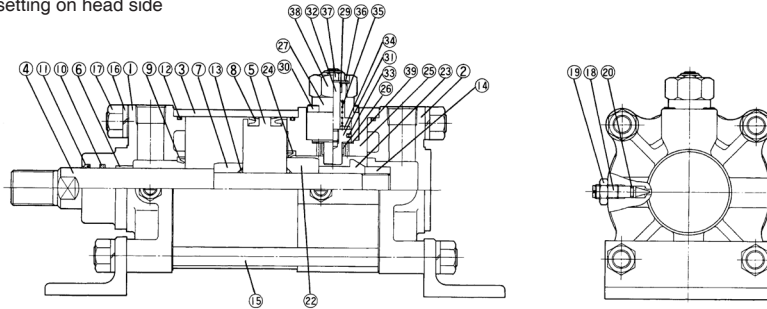
Bore	Maximum Load Weight
Ø125	1220
Ø140	1530
Ø160	2000
Ø180	2540
Ø200	3140

Accessories

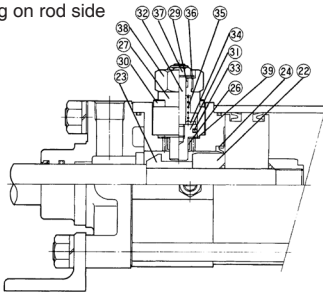
Name	Axial foot	Rod side flange	Head side flange	Eye	Clevis	Center trunnion
Standard	Rod end nut	○	○	○	○	○
	Clevis fixed shaft type	—	—	—	○	—
Optional	With rod end clevis	○	○	○	○	○
	With rod end eye	○	○	○	○	○

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

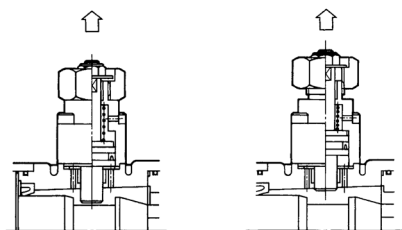
Bore (mm)	13.Sleeve gasket		20.Cushion needle packing		24.Cushion Packing B		33.Locking rod packing		39.Locking body gasket	
	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount	Model No.	Amount
Ø125	P28	2	P7	2	PCS-55	1	PSD-32	1	—	
Ø140	P28	2	P7	2	PCS-55	1	PSD-32	1	—	
Ø160	P38	2	P7	2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

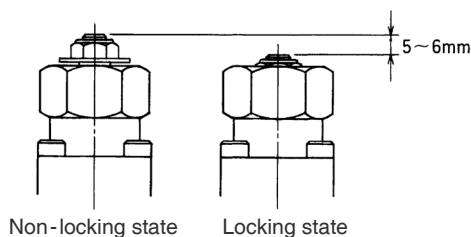
(Ø125~Ø200)

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)

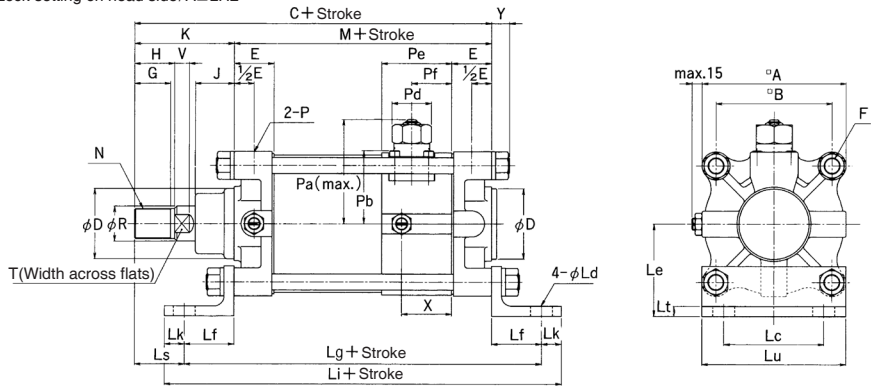
When the position of majority of the U-shaped nut exceeds over the release knob, it means the cylinder is at unlock state (unlocked by the air during cylinder acting). When cylinder is manually locked, the U-shaped nut should only expose minimally, as the graph suggest.



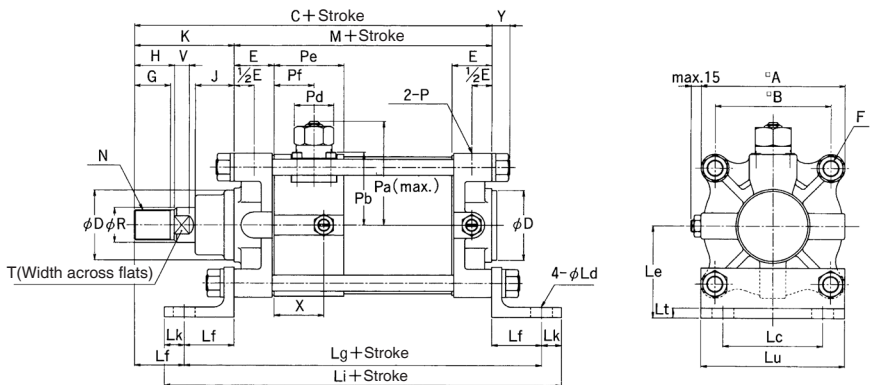
Axial foot mounting/L

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



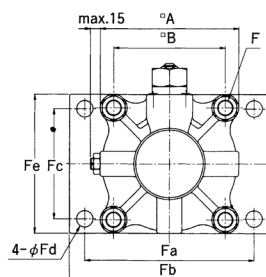
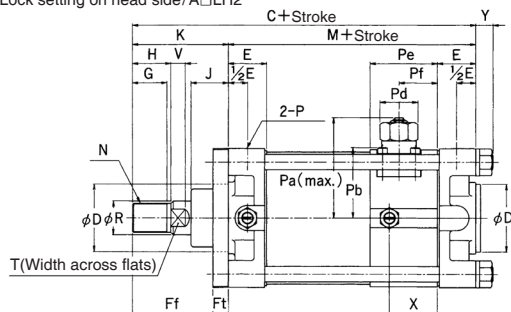
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
∅180	200	164	364	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	Lc	Ld	Le	Lf	Lg	Li	Lk	Ls	Lt	Lu	X	Pa	Pb	Pd	Pe	Pf
∅125	100	22	92	50	308	348	20	50	10	144	50	104	73	41.9	70	40
∅140	116	22	100	50	308	348	20	50	10	160	50	104	73	41.9	70	40
∅160	130	22	114	55	354	404	25	65	12	180	80	140	98	63.5	100	55
∅180	140	22	123	55	354	404	25	65	12	200	80	140	98	63.5	100	55
∅200	150	26	137	60	392	452	30	67	12	224	80	140	98	63.5	100	55

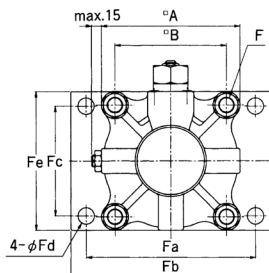
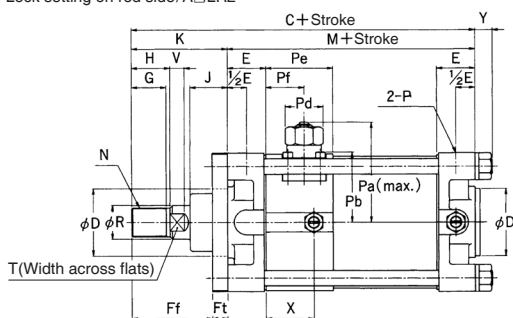
Rod side flange mounting/A

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



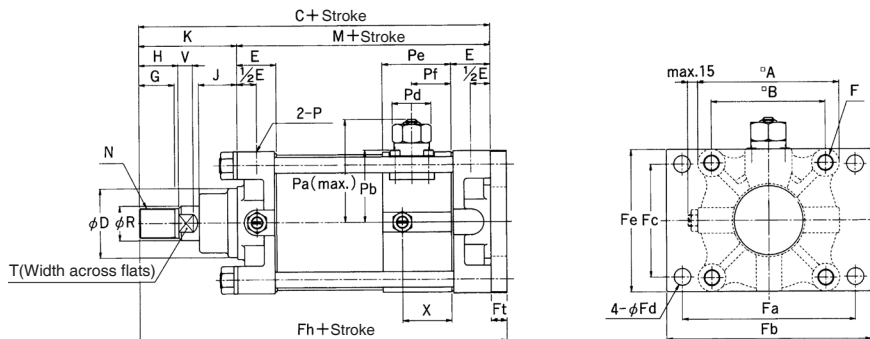
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
∅180	200	164	364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

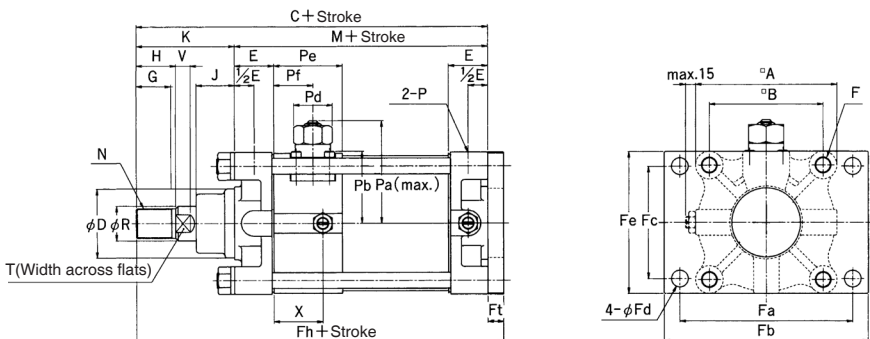
Head side flange mounting/B

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



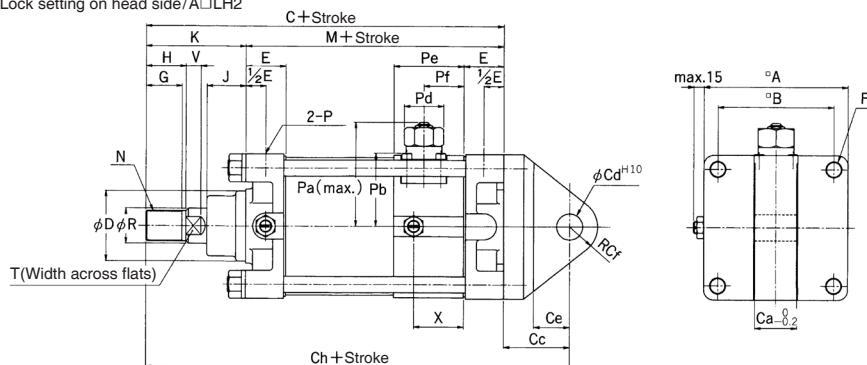
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
Ø140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
Ø160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
Ø180	200	164	364	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	Fa	Fb	Fc	Fd	Fe	Fh	Ft	X	Pa	Pb	Pd	Pe	Pf
Ø125	176	208	114	17	144	324	16	50	104	73	41.9	70	40
Ø140	200	240	120	22	160	324	16	50	104	73	41.9	70	40
Ø160	220	260	140	22	180	382	18	80	140	98	63.5	100	55
Ø180	244	288	156	22	200	388	24	80	140	98	63.5	100	55
Ø200	276	330	170	26	224	425	26	80	140	98	63.5	100	55

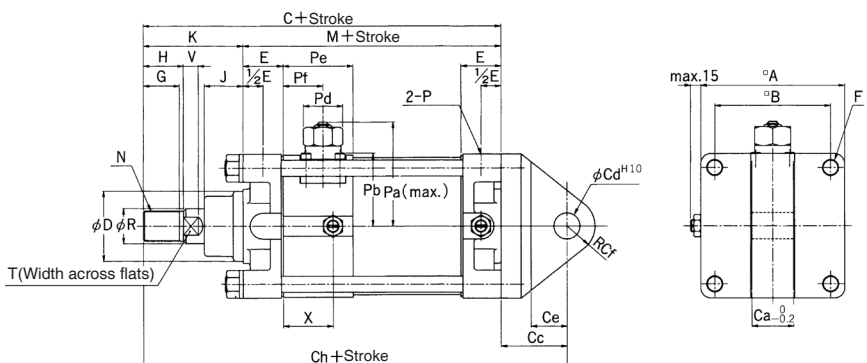
Eye mounting/C

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



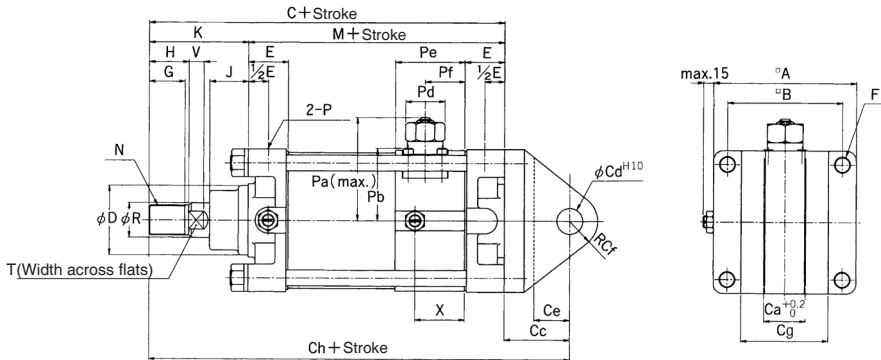
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
Ø125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc ^{3/4}	35	30	15	18
Ø140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc ^{3/4}	35	30	15	18
Ø160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc ¹	45	40	15	20.5
Ø180	200	164	364	90	40	M18	51	55	44	120	244	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	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

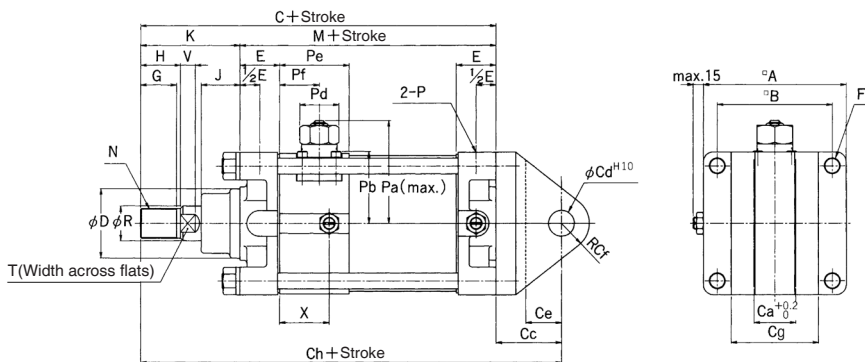
Clevis mounting/W

(Unit: mm)

Lock setting on head side/A□LH2



Lock setting on rod side/A□LR2



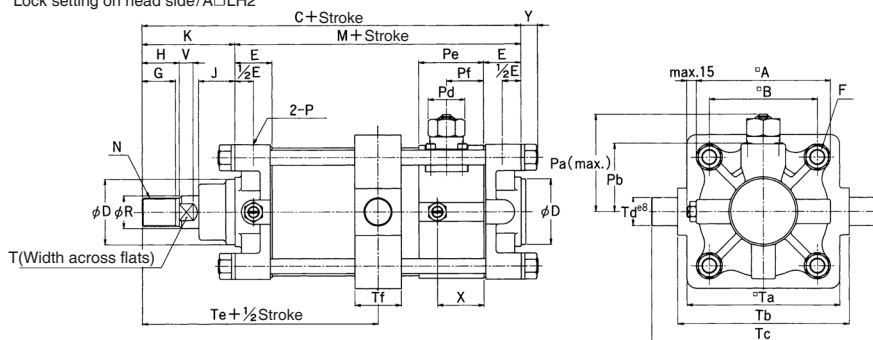
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅140	160	130	308	70	40	M16	36	40	39	100	208	M30×1.5	Rc $\frac{3}{4}$	35	30	15	18
∅160	180	146	364	90	40	M18	51	55	44	120	244	M40×1.5	Rc $\frac{3}{4}$	45	40	15	20.5
∅180	200	164	364	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	Ca	Cc	Cd	Ce	Cf	Cg	Ch	X	Pa	Pb	Pd	Pe	Pf
∅125	42	66	26	36	28	88	440	50	104	73	41.9	70	40
∅140	42	66	26	36	28	88	440	50	104	73	41.9	70	40
∅160	48	84	30	49	34	100	532	80	140	98	63.5	100	55
∅180	48	84	30	49	34	100	532	80	140	98	63.5	100	55
∅200	53	94	35	52	40	109	587	80	140	98	63.5	100	55

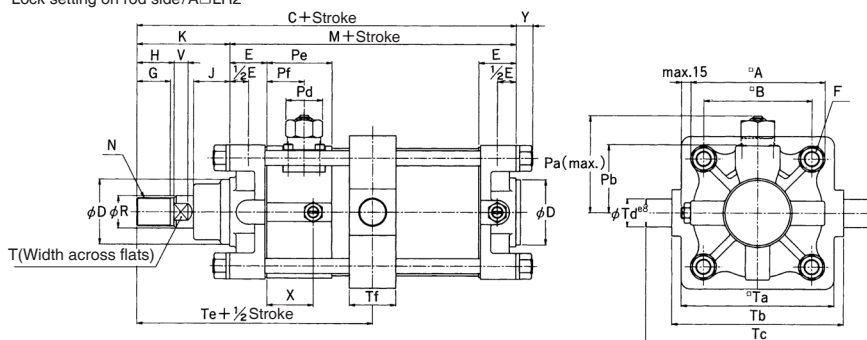
Center trunnion mounting/T

(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