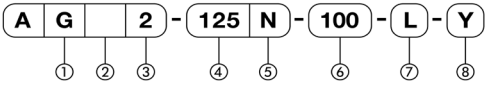
A Series

Air cylinder/Standard type
∅125, ∅140, ∅160, ∅180, ∅200

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: ∅125
140: ∅140
160: ∅160
180: ∅180
200: ∅200

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

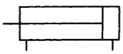
Model No. of Packing

Bore(mm)	Packing	
	Without magnet	With built-in magnet
∅125	A125-PS	AG125-PS
∅140	A140-PS	AG140-PS
∅160	A160-PS	AG160-PS
∅180	A180-PS	AG180-PS
∅200	A200-PS	AG200-PS

Model No. of Mounting Bracket

Bore(mm)	∅125	∅140	∅160	∅180	∅200
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:

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

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

Specifications

Action	Unit	Double-acting
Fluid		Lubricated air
Pressure range	MPa(kgf/cm^2)	0.05~1(0.51~10.2)
Temperature range	ºC	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
∅125	1000
∅140	
∅160	1200
∅180	
∅200	

Cushion Stroke

(Unit : mm)

Bore	Cushion Stroke
∅125	22
∅140	
∅160	
∅180	30
∅200	

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/cm²)									
		1	2	3	4	5	6	7	8	9	10
∅125	Out stroke	123	246	369	492	615	738	861	984	1107	1230
	In stroke	113	226	339	452	565	678	791	904	1017	1130
∅140	Out stroke	154	308	462	616	770	924	1078	1232	1386	1540
	In stroke	144	288	432	576	720	864	1008	1152	1296	1440
∅160	Out stroke	201	402	603	804	1005	1206	1407	1608	1809	2010
	In stroke	185	370	555	740	925	1110	1295	1480	1665	1850
∅180	Out stroke	254	508	762	1016	1270	1524	1778	2032	2286	2540
	In stroke	238	476	714	952	1190	1428	1666	1904	2142	2380
∅200	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/cm²)					Additional weight
	Axial foot	Mounting plate	Eye	Clevis	Center trunnion	Additional 1mm on stroke
∅125	18.5	18.5	20.5	20.5	21.5	0.022
∅140	20.9	22.9	22.9	22.9	24.4	0.022
∅160	26.2	32.2	33.2	33.2	32.2	0.028
∅180	36.1	40.6	42.1	42.1	40.6	0.028
∅200	47	53.5	58.5	58.5	48.5	0.028

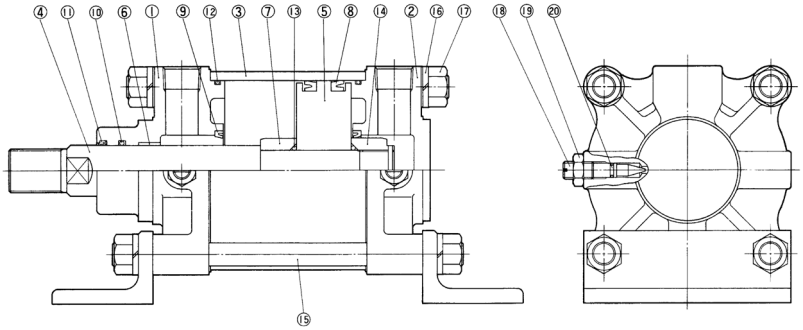
Cylinder Mass (Steel tube)

(Unit: g)

Bore (mm)	Operating pressure (kgf/cm²)					Additional weight
	Axial foot	Mounting plate	Eye	Clevis	Center trunnion	Additional 1mm on stroke
∅125	19	19	21	21	22	0.031
∅140	21.5	23.5	23.5	23.5	25	0.033
∅160	27	33	34	34	33	0.041
∅180	37	41.5	43	43	41.5	0.043
∅200	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		

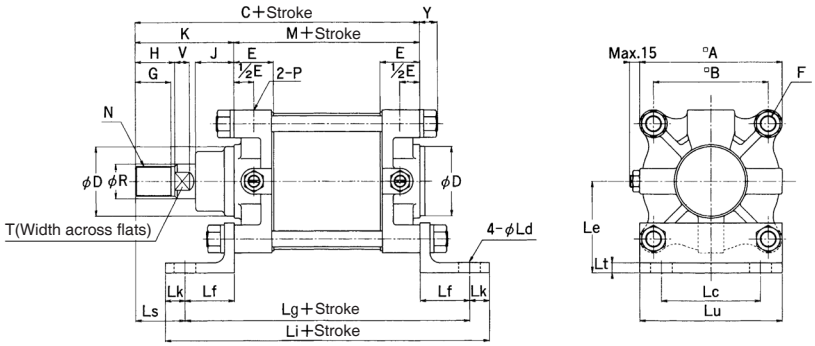
Packing List

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
∅125	UPP-125 PSD-125	2 1	CP-45	2	P35	1	DP-35	1	G120	2	P28	2	P7	2
∅140	UPP-140 PSD-140	2 1	CP-45	2	P35	1	DP-35	1	G135	2	P28	2	P7	2
∅160	UP-145 PSD-160	2 1	CP-55	2	P45	1	DP-45	1	G150	2	P38	2	P7	2
∅180	UP-165 PSD-180	2 1	CP-55	2	P45	1	DP-45	1	G170	2	P38	2	P7	2
∅200	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)

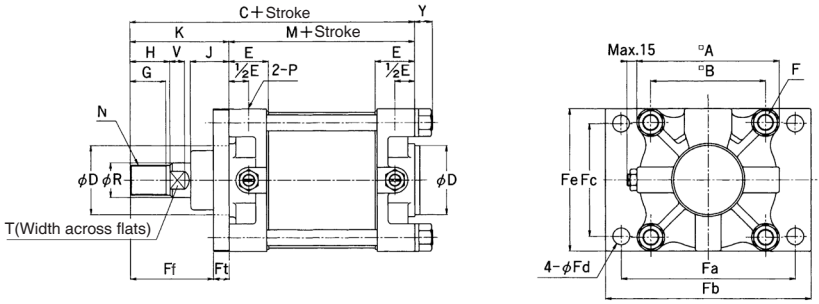


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15	18
∅140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15	18
∅160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15	20.5
∅180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15	20.5
∅200	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
∅125	100	22	92	50	238	278	20	50	10	144
∅140	116	22	100	50	238	278	20	50	10	160
∅160	130	22	114	55	254	304	25	65	12	180
∅180	140	22	123	55	254	304	25	65	12	200
∅200	150	26	137	60	292	352	30	67	12	224

Rod side flange mounting/A

(Unit: mm)

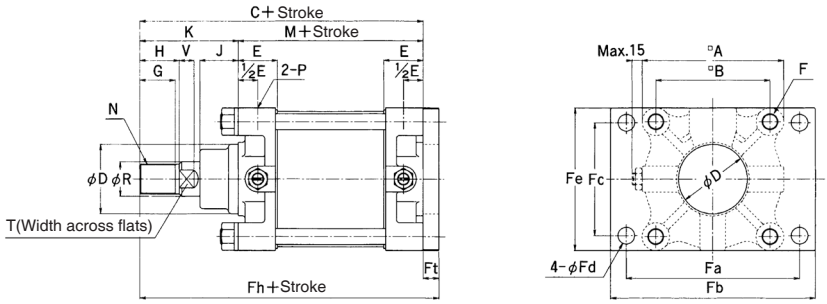


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15	18
∅140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15	18
∅160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15	20.5
∅180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15	20.5
∅200	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
∅125	176	208	114	17	144	84	16
∅140	200	240	120	22	160	84	16
∅160	220	260	140	22	180	102	18
∅180	244	288	156	22	200	96	24
∅200	276	330	170	26	224	101	26

Head side flange mounting/B

(Unit: mm)

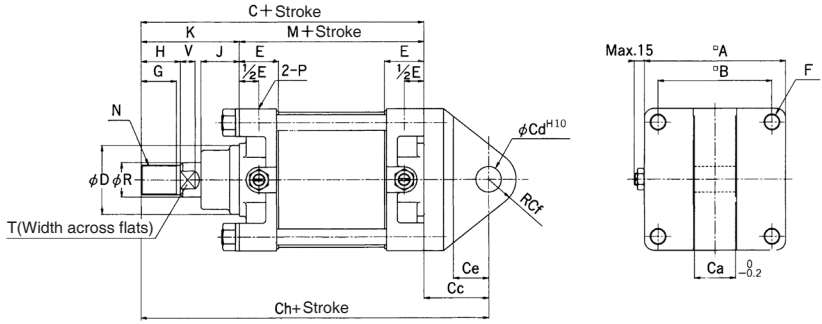


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V
∅125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15
∅140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15
∅160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15
∅180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15
∅200	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
∅125	176	208	114	17	144	254	16
∅140	200	240	120	22	160	254	16
∅160	220	260	140	22	180	282	18
∅180	244	288	156	22	200	288	24
∅200	276	330	170	26	224	325	26

Eye mounting/C

(Unit: mm)

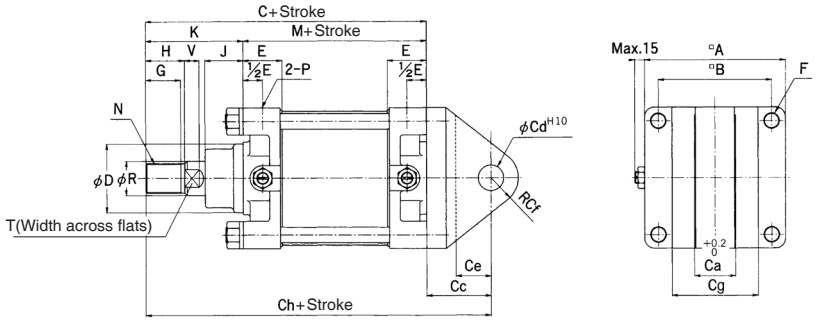


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V
∅125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15
∅140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15
∅160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15
∅180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15
∅200	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
∅125	42	66	26	36	28	304
∅140	42	66	26	36	28	304
∅160	48	84	30	49	34	348
∅180	48	84	30	49	34	348
∅200	53	94	35	52	40	393

Clevis mounting/W

(Unit: mm)

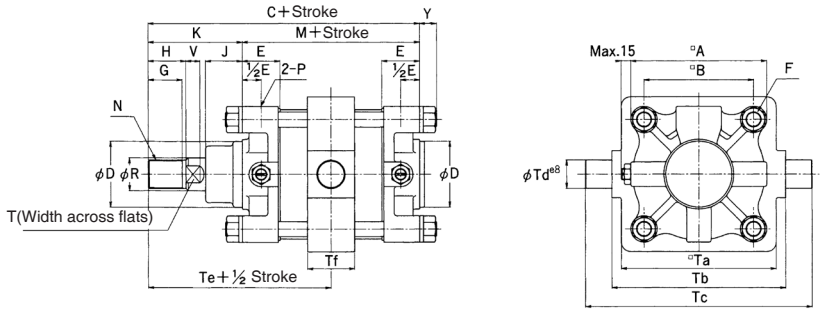


Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V
∅125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15
∅140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15
∅160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15
∅180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15
∅200	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
∅125	42	66	26	36	28	88	304
∅140	42	66	26	36	28	88	304
∅160	48	84	30	49	34	100	348
∅180	48	84	30	49	34	100	348
∅200	53	94	35	52	40	109	393

Center trunnion mounting/T

(Unit: mm)



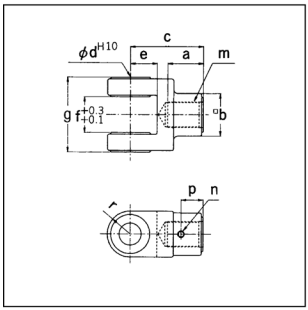
Bore	A	B	C	D	E	F	G	H	J	K	M	N	P	R	T	V	Y
∅125	144	116	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15	18
∅140	160	130	238	70	40	M16	36	40	39	100	138	M30×1.5	Rc¾	35	30	15	18
∅160	180	146	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15	20.5
∅180	200	164	264	90	40	M18	51	55	44	120	144	M40×1.5	Rc¾	45	40	15	20.5
∅200	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
∅125	164	184	240	30	169	50
∅140	180	200	260	30	169	50
∅160	200	220	290	35	192	60
∅180	220	240	310	35	192	60
∅200	244	270	340	40	213	60

Accessories

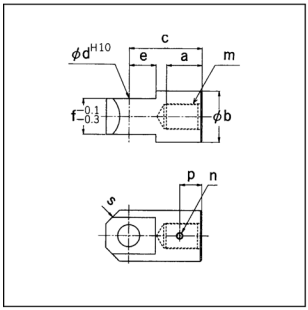
(Unit: mm)

Rod end clevis



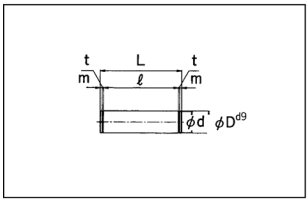
Model. No	Applicable bore	a	b	c	d	e	f	g	m	n	p	r
A125-Y	∅125, ∅140	42	50	86	26	31.5	42	88	M30×1.5	M8	26	27
A160-Y	∅160, ∅180	57	66	114	30	40	48	100	M40×1.5	M8	39	34
A200-Y	∅200	62	76	132	35	50	53	109	M45×1.5	M8	42	41

Rod end eye



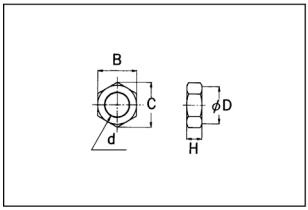
Model. No	Applicable bore	a	b	c	d	e	f	m	n	p	s
A125-I	∅125, ∅140	42	60	86	26	31.5	42	M30×1.5	M8	26	16
A160-I	∅160, ∅180	57	75	114	30	40	48	M40×1.5	M8	39	22
A200-I	∅200	62	90	132	35	50	53	M45×1.5	M8	42	27

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