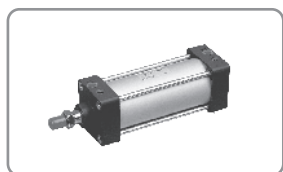


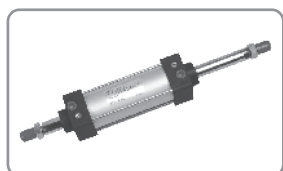
AL

Tie-rod Cylinders

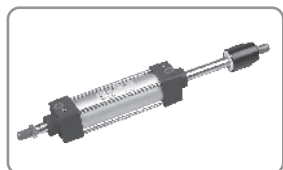
SERIES Products Content



ALA Double Acting Cylinders $\varnothing 32 \sim \varnothing 100$ P.022



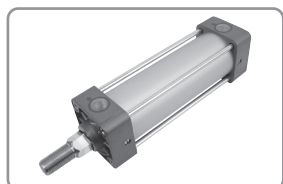
ALC Double Rods Cylinders $\varnothing 32 \sim \varnothing 100$ P.034



ALD Double Rods With Forward Alignment Cylinders $\varnothing 32 \sim \varnothing 100$ P.036



ALTK Air/Oil Converter $\varnothing 50 \sim \varnothing 100$ P.038



ALR Non-Rotating Tie-Rod Cylinders $\varnothing 40 \sim \varnothing 100$ P.219

(Detail and dimensions please refer P.219)

Feature

■ Cylinder Bore Selection Instructions

- Determine whether the cylinder outputs power on the push side (air intake from the rear cover)
Or the pull side (air intake from the front cover)
- Set the working pressure of the supply cylinder (kgf/cm²)
- Actual output size(kg)
- Select the appropriate bore size from the theoretical output table
Note: values in the theoretical output table x 60% (cylinder mechanical efficiency) = actual effort

Bore (mm)	32、40、50、63、80、100	
Fluid	Filter Compressed Air (Need Lubricating Oil/ Iso-Vg32)	
Working Pressure (kgf/cm ²)	0.5 ~ 9.9	
Temperature (°C)	0 ~ +60	
Piston Speed (M/S)	Max. 1	
Stroke	(1) S≤500: +2.0 ~ 0 (2) 501≤S≤1250: +3.2 ~ 0	
Cushion Length (mm)	Ø 32、Ø 40、Ø 50、Ø 63	20
	Ø 80、Ø 100	25

Air
Preparation
(FRL)Pneumatic
ValvesPneumatic
CylindersPneumatic
Connectors

Sensors

Pneumatic
Accessories

Theoretical Output Table

Units:kg

Bore (mm)	Rod (mm)	Action	Pressure Area (cm ²)	Working Pressure (kgf/cm ²)					
				3	4	5	6	7	8
32	12	Push	8.04	24	32	40	48	56	64
		Pull	6.91	21	27	34	41	48	55
40	16	Push	12.56	38	50	63	75	88	100
		Pull	10.56	32	42	53	63	74	84
50	20	Push	19.63	59	79	98	118	137	157
		Pull	16.49	49	66	82	99	115	132
63	20	Push	31.16	93	125	156	187	218	249
		Pull	28.02	84	112	140	168	196	224
80	25	Push	50.24	151	201	251	301	352	402
		Pull	45.34	136	181	227	272	317	363
100	25	Push	78.5	236	314	393	471	550	628
		Pull	73.6	221	294	368	442	515	589

Type

Type	Mark	Graphics	Sensor	Heat Resistance	Dust Cover	Bore (Mm)					
						32	40	50	63	80	100
Double Acting Cylinders	AL - A		AL - AG	AL - AJ	AL - AH	●	●	●	●	●	●
Double Rods Cylinders	AL - C		AL - CG	AL - CJ	AL - CH	●	●	●	●	●	●
Double Rods With Forward Alignment Cylinders	AL - D		AL - DG	AL - DJ	AL - DH	●	●	●	●	●	●
Air/ Oil Converter	AL-TK		—	AL-LJ	—	—	—	●	●	●	●
Non-Rotating Tie-Rod Cylinders	AL-R		Detail and dimensions please prefer p.219								

Weight

Units:g

Bore	40	50	63	80	100
SD Type,Stroke St = 0	720	1040	1380	2420	3180
Add Weight For Every 50mm Increase In Stroke	80	100	120	200	200

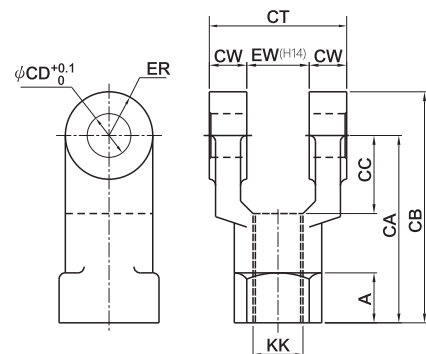
Parts Weight

Units:g

Symbol Bore	FA/FB	LB	LA	CA	CB	CC	TC	CB-BK	TC-BK	Y	I	P	KGT	KGF	KGL	PHS
40	220	120	200	320	160	170	540	400	1120	320	280	70	142	252	412	114
50	340	160	280	420	300	250	660	660	1120	320	280	80	552	1086	1208	200
63	480	220	400	540	400	400	740	660	1120	320	280	80	552	1086	1208	200
80	1260	360	780	1400	800	900	1240	2020	1580	700	720	192	808	2269	1992	372
100	1840	480	1220	1820	1320	1600	1580	2020	1580	700	720	192	808	2269	1992	372

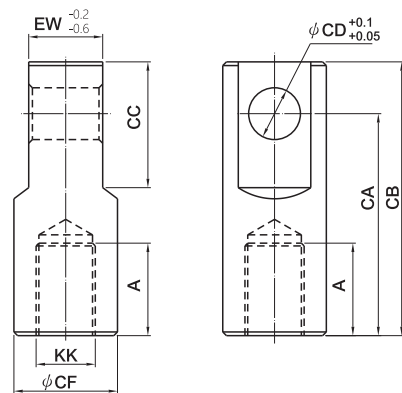
Connector Dimensions

● Y Connector



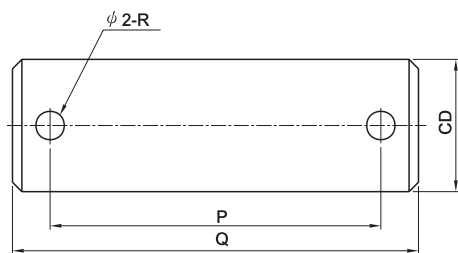
Symbol Bore	KK	A	CA	CB	CC	CD	CT	CW	EW	ER
32	M10×P1.25	16	55	67	20	12	32	8	16	12
40	M12×P1.25	16	60	74	25	14	44	12	20	14
50	M16×P1.5	16	60	74	25	14	44	12	20	14
63										
80	M20×P1.5	20	85	103	35	20	62	16	30	18
100										

● I Connector



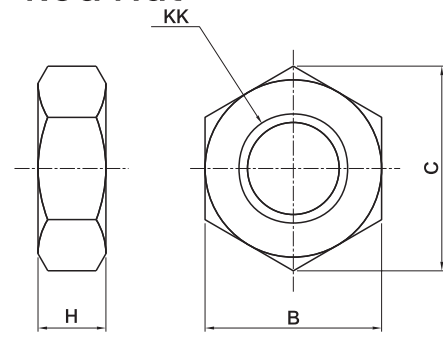
Symbol Bore	KK	A	CA	CB	CC	CD	CF	EW
32	M10×P1.25	20	55	67	32	12	25	16
40	M12×P1.25	20	60	74	34	14	28	20
50	M16×P1.5	25	60	74	34	14	28	20
63								
80	M20×P1.5	30	85	105	50	20	38	30
100								

● Pin



Symbol Bore	CD	P	Q	R
40	14	50	58	3
50	14	50	58	3
63				
80	20	70	78	3
100	20	70	78	3

● Rod Nut



Symbol Bore	KK	B	C	H
32	M10×P1.25	17	19	6
40	M12×P1.25	19	22	7
50	M16×P1.5	24	27	8
63				
80	M20×P1.5	30	34	9
100				

Air
Preparation
(FRL)

Pneumatic
Valves

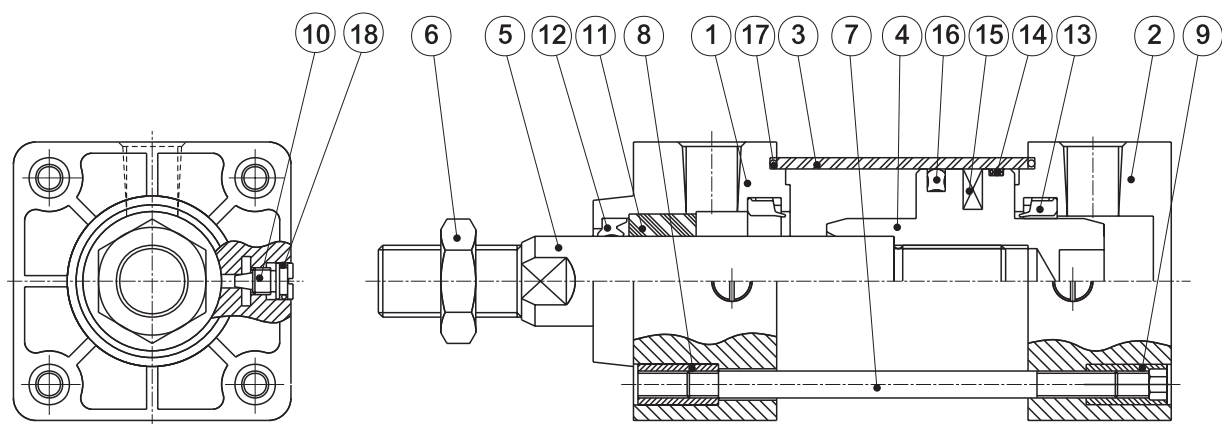
Pneumatic
Cylinders

Pneumatic
Connectors

Sensors

Pneumatic
Accessories

Internal Structure And Parts Name



Item	Part Name	Qty	Item	Part Name	Qty
①	Rod Cover	1	⑩	Cushion Screw	2
②	Head Cover	1	⑪	Powder Brozen Bushing	1
③	Tube	1	⑫	Piston Rod Seal	1
④	Piston	1	⑬	Cushion Seal	2
⑤	Piston Rod	1	⑭	Piston Wear-Ring	1
⑥	Piston Rod Nut	1	⑮	Induction Magnet	1
⑦	Tie-Rod	4	⑯	Piston Seal	1
⑧	Rod Cover Tie-Rod Nut (Inner Teeth)	4	⑰	Cover O-Ring	2
⑨	Head Cover Tie-Rod Nut (Inner Hax.)	4	⑱	Cushion Screw O-Ring	2

ALA Double Acting Cylinders



1. AL series of pneumatic cylinders is made of aluminum alloy rod and head cover, piston and steel pipe.

2. It is lightness and high efficiency.

3. All standard products are equipped with cushion devices.

4. Magnets can be attached to the piston, and magnetic sensors can be installed in all cylinders.

5. It adopts international brand sealing components to ensure excellent life.

Standard Stroke

Bore (Mm)	Stroke (Mm)
32	50 、 75 、 100 、 125 、
40	200 、 250 、 300 、 350 、
50	400 、 450 、 500 、 550 、
63	600 、 650 、 700 、 750 、
80	800 、 850 、 900 、 950 、
100	1000

Order Indication

ALA		SD	40	100ST			T × n
Series	Performance	Installation Type	Bore	Stroke	Bracket	End Connectors	Magnetic Sensor
Double Acting Tie-Rod Cylinders	Blank: Indicates Standard G: Sensor H: Shaft With Dust Cover J: Heat/Acid & Alkali Resistance Q: Low Friction Oil Seal	SD: Basic FA: Front Flange FB: Rear Flange LA: Foot Flange LB: End Flange CA: Clevis CB: Double Clevis CC: Short Clevis TC: Mid Trunnion	32:32mm 40:40mm 50:50mm 63:63mm 80:80mm 100:100mm	Refer To Standard Stroke	CB-BK: Double Clevis Bracket TC-BK: Mid Trunnion Bracket	Y: Y Connector I: I Connector Pin: Pin Kgt: Floating Joint Phs: Fish Eye	JFS01 T: 2 Outgoing Lines, Standard Line Is 2 M P:Pnp 3 Outgoing Lines, Standard Line Is 2 M N:Npn 3 Outgoing Lines, Standard Line Is 2 M N: Qty *The Order With G Mark But No T X N Mark Indicates That Only Induction Magnet Is Attached Without Magnetic Sensor JFS01 

▲ Blank = indicates standard, no need to specify when order

Air Preparation (FRL)

Pneumatic Valves

Pneumatic Cylinders

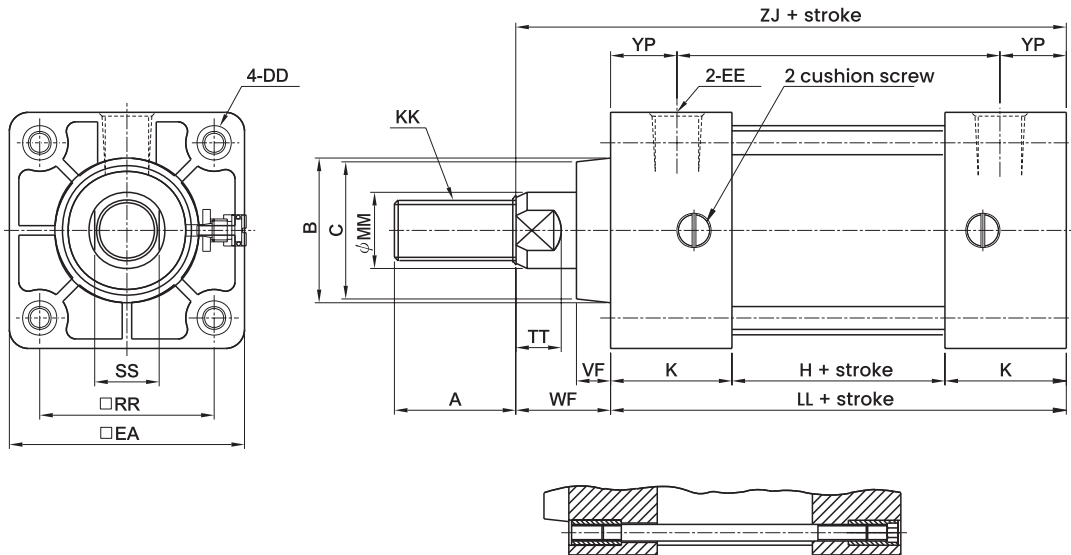
Pneumatic Connectors

Sensors

Pneumatic Accessories

External Dimensions

• ALA-SD Basic



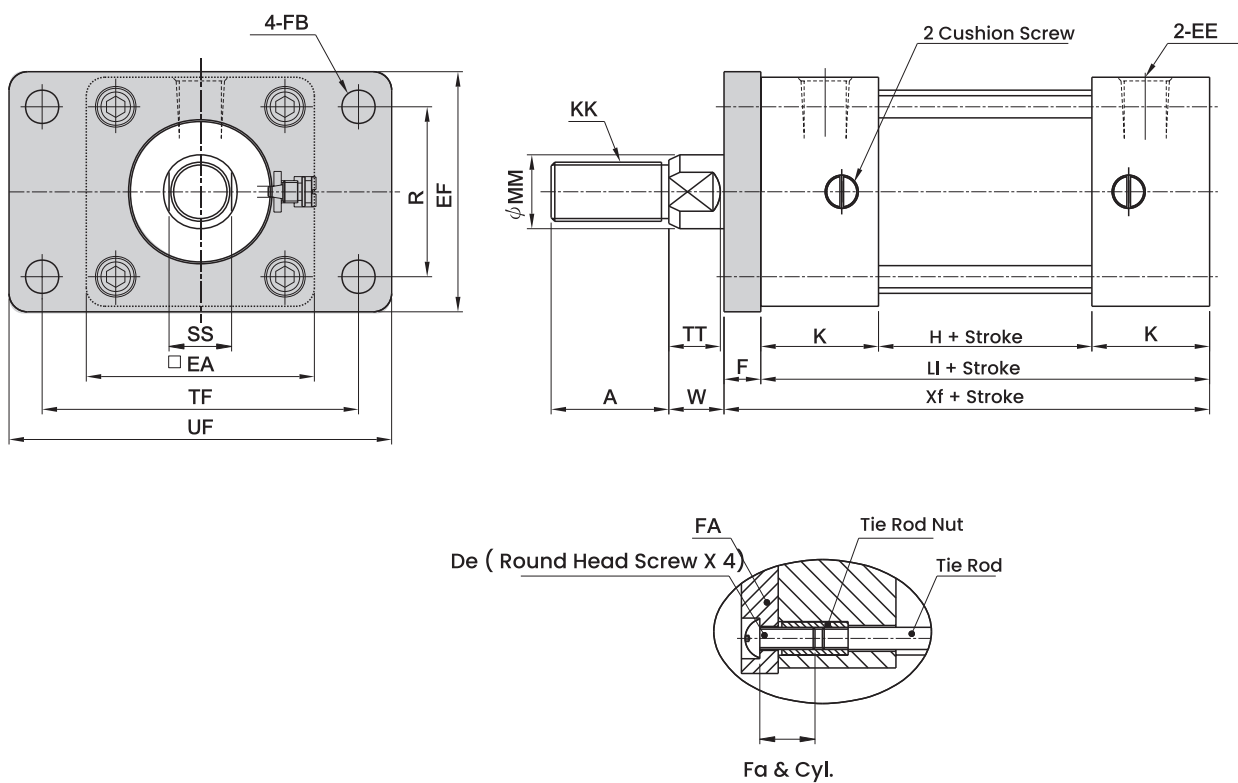
SD Type Installation Method Of Column Caps Fixed At Both Ends

Sensor (ALA-G)	Shaft With Dust Cover (ALA-H)	Heat/Acid &Alkali Resist. (ALA-J)
*external dimension same as above	*x= piston rod retracted length	*external dimension same as above
● Magnet Is Attached On Piston ● Sensor Is Attached On Tube	● Specify Material When Ordering: (1) N: Rubber (2) V: Heat Resist.≤200°C	● Temperature: ≤200°C

Symbol Bore	A	MM	KK	B	C	DD	EA	EE	H	K	LL	P	RR	SS	TT	VF	WF	YP	ZJ	X	Y
32	22	12	M10×P1.25	28	28	M6×P1.0	45	RC1/8	29	32	93	58	33	10	7	15	25	17.5	118	1/3 stroke + 45	60
40	24	16	M12×P1.25	32	30	M6×P1.0	50	RC1/4	28	32	92	57	37	14	12	9	25	17.5	117		
50	32	20	M16×P1.5	38	36	M6×P1.0	62	RC1/4	28	32	92	57	46	17	12	9	25	17.5	117	1/3 stroke + 50	60
63	32	20	M16×P1.5	38	36	M8×P1.25	75	RC3/8	31	32	95	60	56	17	12	9	25	17.5	120		
80	40	25	M20×P1.5	47	43	M10×P1.5	94	RC3/8	31	38	107	64	70	21	14	14	35	21.5	142	1/3 stroke + 55	70
100	40	25	M20×P1.5	47	43	M10×P1.5	112	RC1/2	39	38	115	72	84	21	14	14	35	21.5	150		

External Dimensions

• ALA-FA Front Flange



Air
Preparation
(FRL)

Pneumatic
Valves

Pneumatic
Cylinders

Pneumatic
Connectors

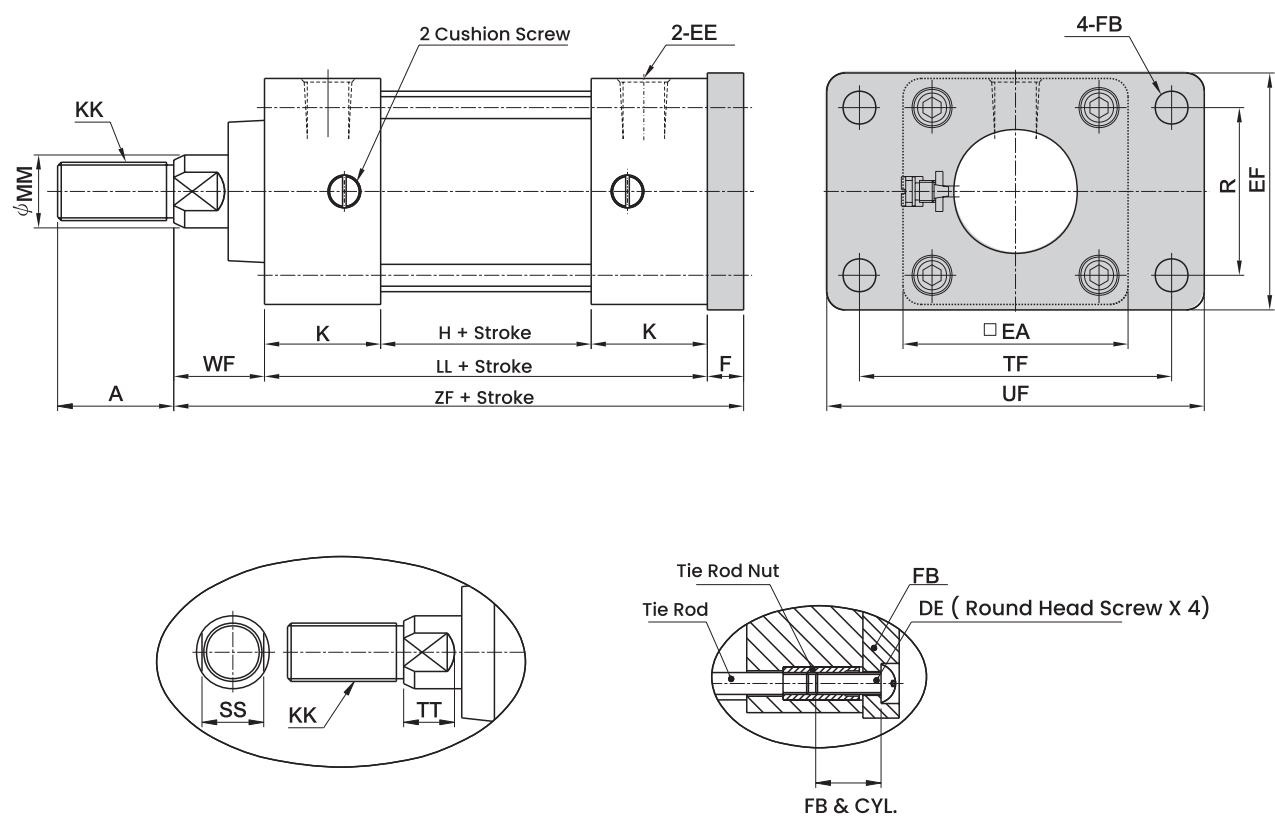
Sensors

Pneumatic
Accessories

Symbol Bore	A	MM	KK	DE	EA	EE	EF	F	FB	H	K	LL	R	SS	TF	TT	UF	W	XF
32	22	12	M10×P1.25	M6×P1.0	45	RC1/8	47	10	φ 7	29	32	93	33	10	58	7	72	15	103
40	24	16	M12×P1.25	M6×P1.0	50	RC1/4	52	10	φ 7	28	32	92	36	14	70	12	91	15	103
50	32	20	M16×P1.5	M6×P1.0	62	RC1/4	65	10	φ 9	28	32	92	46	17	86	12	104	15	102
63	32	20	M16×P1.5	M8×P1.25	75	RC3/8	76	10	φ 9	31	32	95	56	17	98	12	116	15	105
80	40	25	M20×P1.5	M10×P1.5	94	RC3/8	95	16	φ 12	31	38	107	70	21	119	14	146	19	123
100	40	25	M20×P1.5	M10×P1.5	112	RC1/2	115	16	φ 12	39	38	115	84	21	138	14	165	19	131

External Dimensions

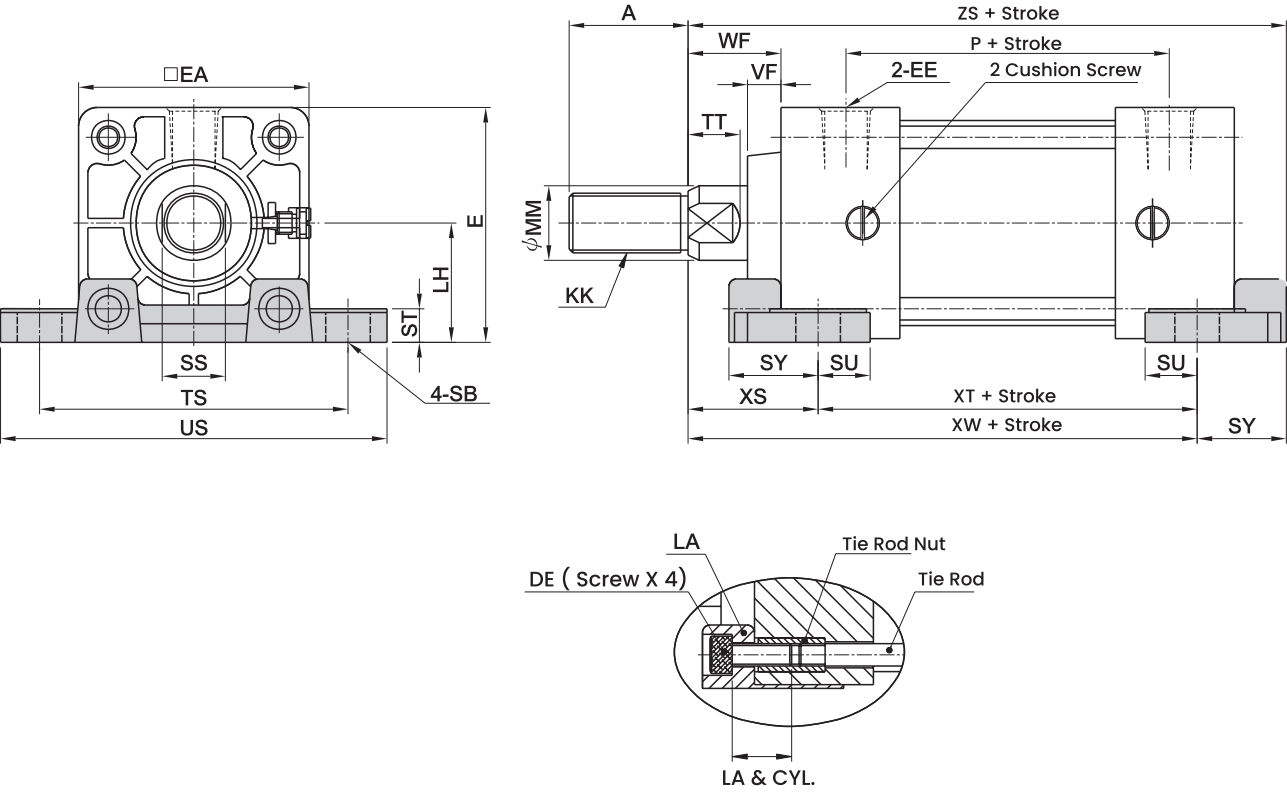
• ALA-FB Rear Flange



Symbol Bore	A	MM	KK	DE	EA	EE	EF	F	FB	H	K	LL	R	SS	TF	TT	UF	WF	ZF
32	22	12	M10×P1.25	M6×P1.0	45	RC1/8	47	10	φ 7	29	32	93	33	10	58	7	72	25	128
40	24	16	M12×P1.25	M6×P1.0	50	RC1/4	52	10	φ 7	28	32	92	36	14	70	12	91	25	127
50	32	20	M16×P1.5	M6×P1.0	62	RC1/4	65	10	φ 9	28	32	92	46	17	86	12	104	25	127
63	32	20	M16×P1.5	M8×P1.25	75	RC3/8	76	10	φ 9	31	32	95	56	17	98	12	116	25	130
80	40	25	M20×P1.5	M10×P1.5	94	RC3/8	95	16	φ 12	31	38	107	70	21	119	14	146	35	158
100	40	25	M20×P1.5	M10×P1.5	112	RC1/2	115	16	φ 12	39	38	115	84	21	138	14	165	35	166

External Dimensions

• ALA-LA Foot Flange

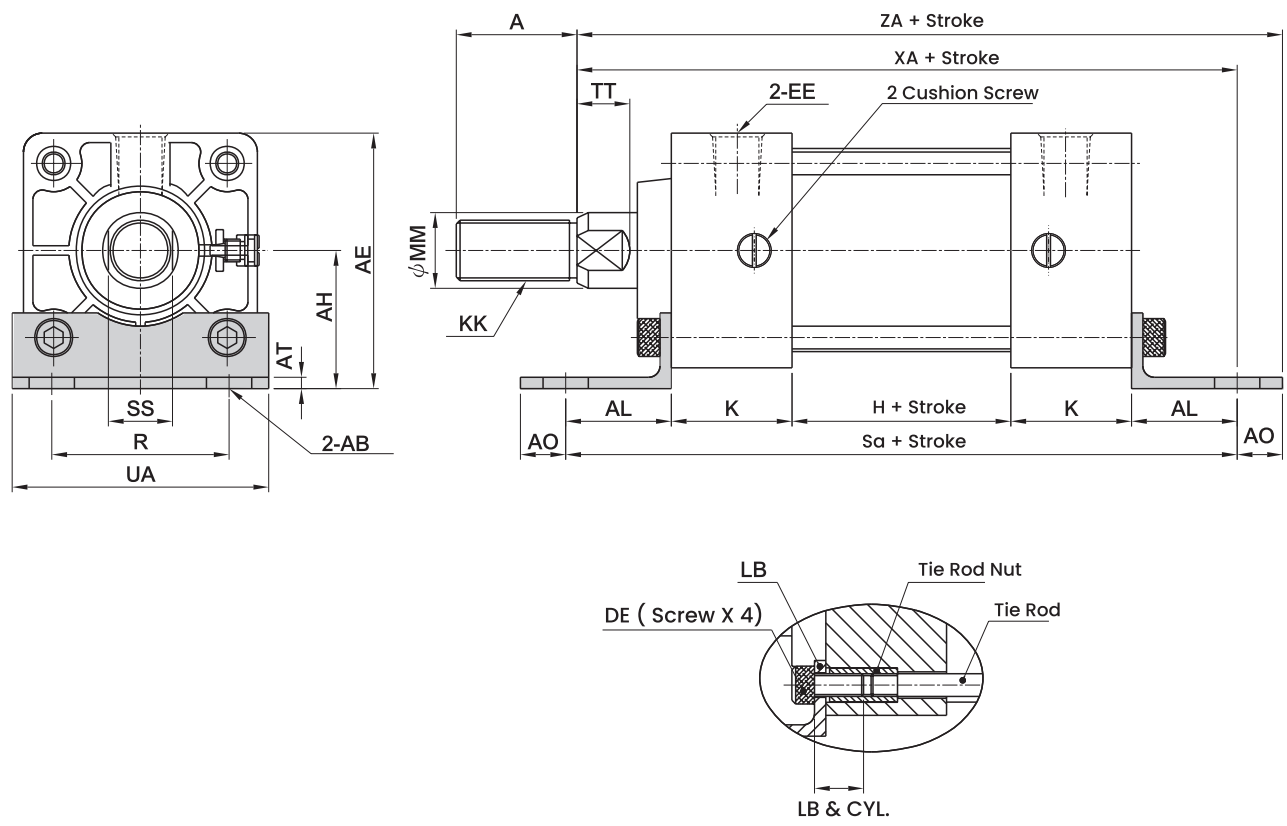


- Air Preparation (FRL)
- Pneumatic Valves
- Pneumatic Cylinders
- Pneumatic Connectors
- Sensors
- Pneumatic Accessories

Symbol Bore	A	MM	KK	DE	E	EA	EE	LH	P	SB	SS	ST	SU	SY	TS	TT	US	VF	WF	XS	XT	XW	ZS
32	22	12	M10XP1.25	M6XP1.0	45	45	Rc1/8	22.5	58	9	10	8	13	22	63	7	80	15	25	35	73	108	130
40	24	16	M12XP1.25	M6XP1.0	53	50	RC1/4	27	57	12	14	8	14	23	70	12	91	9	25	35	72	107	129
50	32	20	M16XP1.5	M6XP1.0	63	62	RC1/4	32	57	12	17	9	14	24	83	12	104	9	25	35	72	107	131
63	32	20	M16XP1.5	M8XP1.25	75.5	75	RC3/8	38	60	12	17	9	14	26	95	12	116	9	25	35	75	110	136
80	40	25	M20XP1.5	M10XP1.5	95	94	RC3/8	48	64	14	21	12	18	33	121	14	146	14	35	48	81	129	162
100	40	25	M20XP1.5	M10XP1.5	115	112	RC1/2	58	72	14	21	14	18	37	140	14	165	14	35	48	89	137	174

External Dimensions

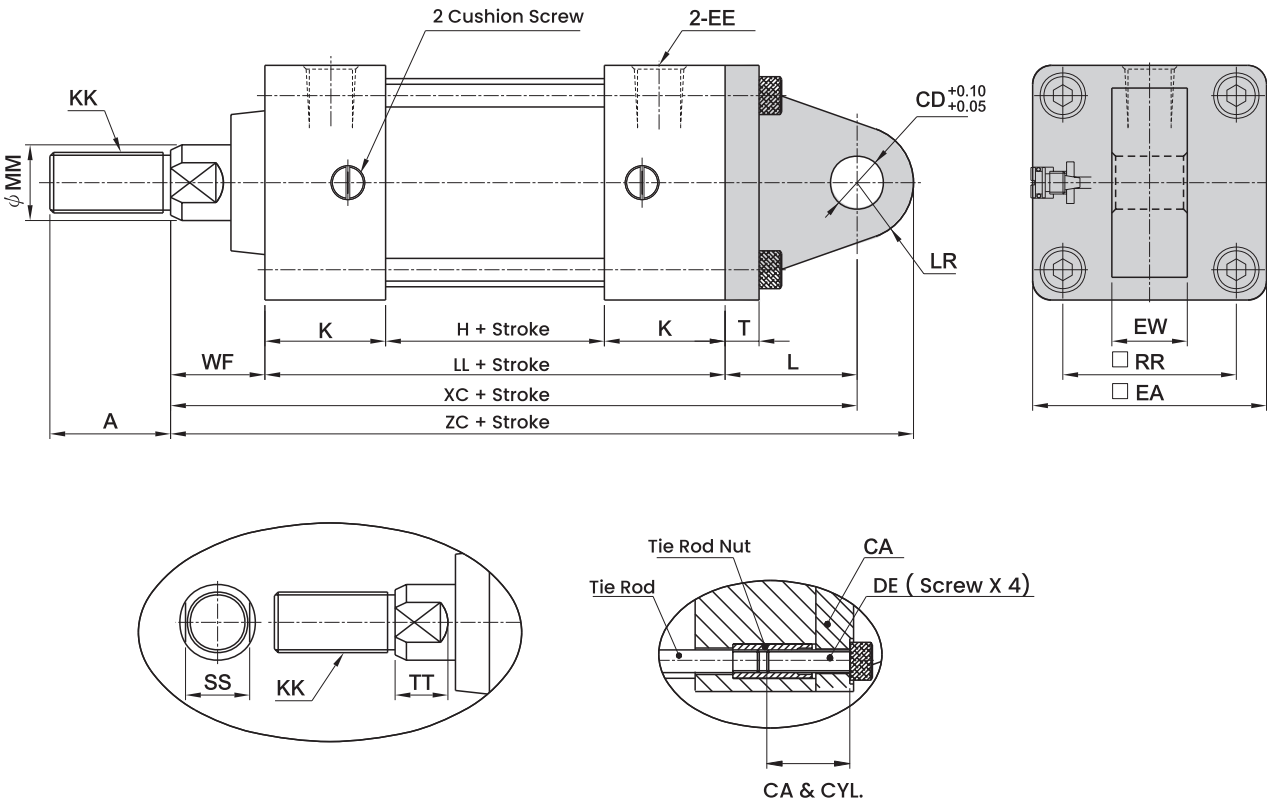
• ALA-LB End Flange



Symbol Bore	A	MM	KK	AB	AE	AH	AL	AO	AT	DE	EE	H	K	R	SA	SS	TT	UA	XA	ZA
32	22	12	M10×P1.25	φ 9	50.5	28	20.5	9.5	3	M6×P1.0	RC1/8	29	32	33	134	10	7	50	138.5	148
40	24	16	M12×P1.25	φ 12	56	30	23.5	12.5	3	M6×P1.0	RC1/4	28	32	36	139	14	12	57	140.5	153
50	32	20	M16×P1.5	φ 12	67.5	36.5	28	12	3	M6×P1.0	RC1/4	28	32	47	148	17	12	68	145	157
63	32	20	M16×P1.5	φ 12	79	41	31	14	3	M8×P1.25	RC3/8	31	32	56	157	17	12	80	151	164
80	40	25	M20×P1.5	φ 14	96	49	30	15	4	M10×P1.5	RC3/8	31	38	70	167	21	14	97	172	188
100	40	25	M20×P1.5	φ 14	112	57	30	15	4	M10×P1.5	RC1/2	39	38	84	175	21	14	112	180	196

External Dimensions

• ALA-CA Clevis



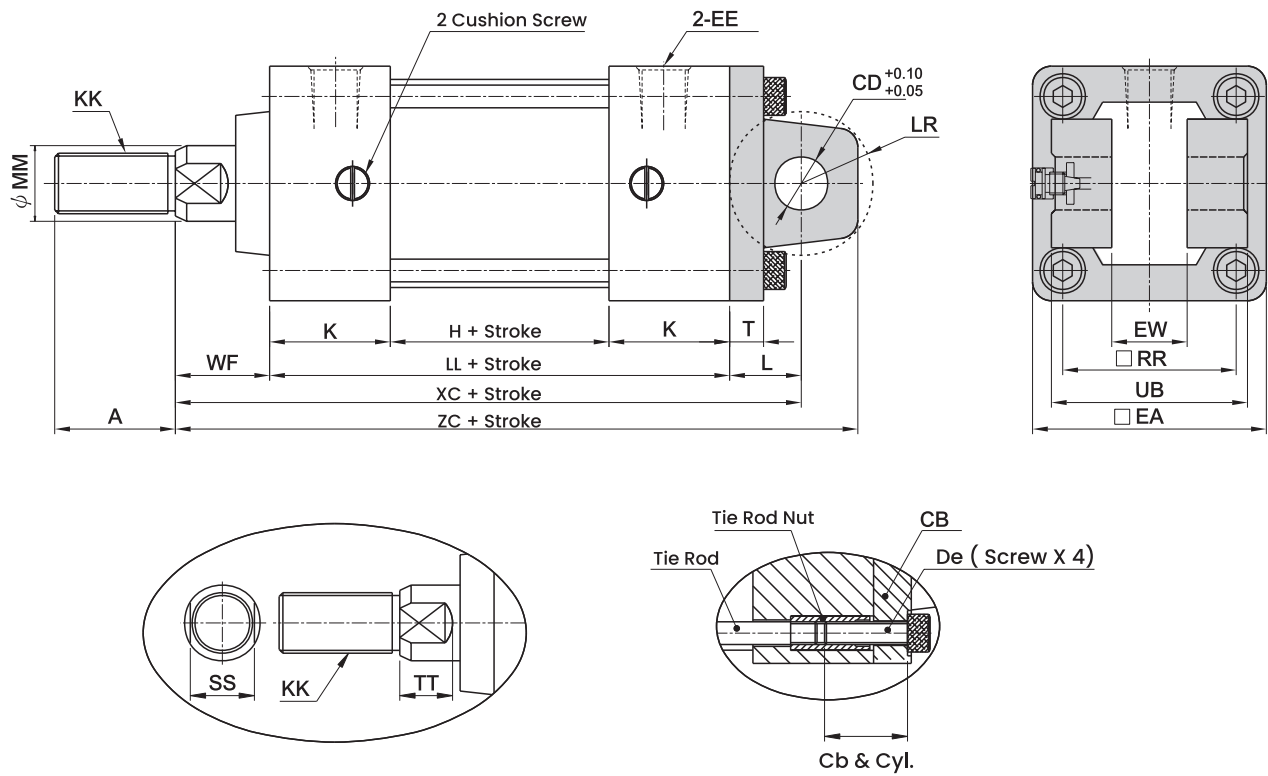
Note : (1) ϕ CD $\begin{smallmatrix} +0.10 \\ +0.05 \end{smallmatrix}$
(2) EW $\begin{smallmatrix} -0.30 \\ -0.60 \end{smallmatrix}$

Symbol Bore	A	MM	KK	CD	DE	EA	EE	EW	H	K	L	LL	LR	RR	SS	T	TT	WF	XC	ZC
40	24	16	M12×P1.25	ϕ 14	M6×P1.0	50	RC1/4	20	28	32	34.5	92	R14	37	14	9	12	25	151.5	165
50	32	20	M16×P1.5	ϕ 14	M6×P1.0	62	RC1/4	20	28	32	34.5	92	R15	46	17	9	12	25	151.5	166
63	32	20	M16×P1.5	ϕ 14	M8×P1.25	75	RC3/8	20	31	32	34.5	95	R15	56	17	9	12	25	154.5	169
80	40	25	M20×P1.5	ϕ 20	M10×P1.5	94	RC3/8	30	31	38	50	107	R24	70	21	14	14	35	192	210
100	40	25	M20×P1.5	ϕ 20	M10×P1.5	112	RC1/2	30	39	38	50	115	R25	84	21	14	14	35	200	218

Air Preparation (FRL)
Pneumatic Valves
Pneumatic Cylinders
Pneumatic Connectors
Sensors
Pneumatic Accessories

External Dimensions

• ALA-CB Double Clevis

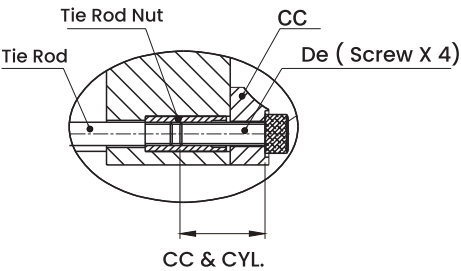
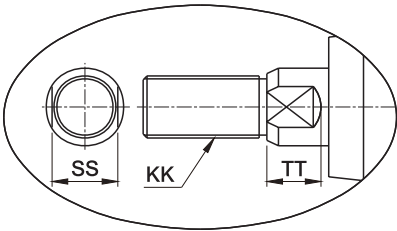
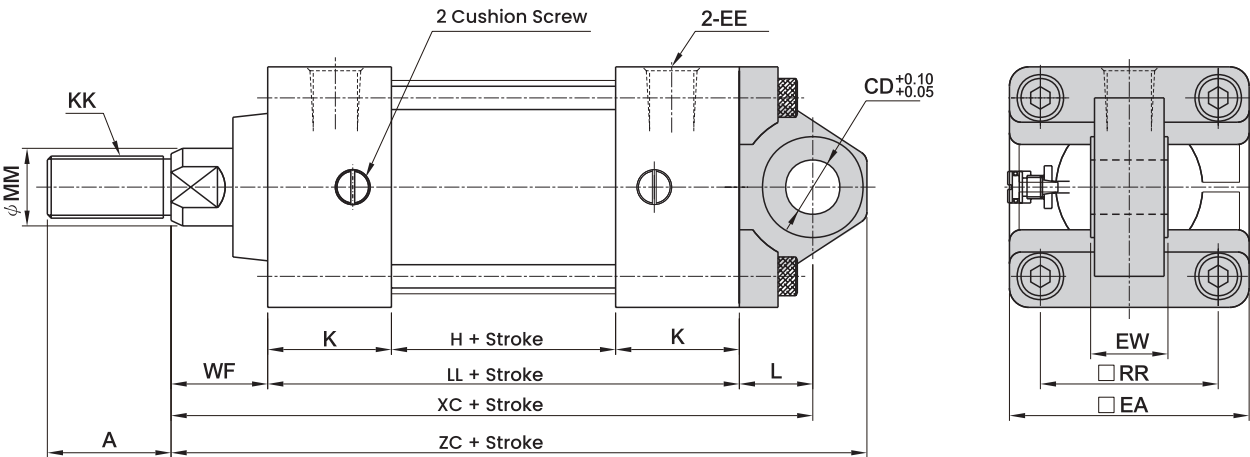


Note : (1) $\phi CD^{+0.10}_{+0.05}$
(2) EW(H14)

Symbol Bore	A	MM	KK	CD	DE	EA	EE	EW	H	K	L	LL	LR	RR	SS	T	TT	UB	WF	XC	ZC
32	22	12	M10XP1.25	$\phi 12$	M6XP1.0	45	Rc1/8	16	29	32	19	93	R16	33	10	8	7	32	25	137	149
40	24	16	M12XP1.25	$\phi 14$	M6XP1.0	50	RC1/4	20	28	32	19	92	R16	37	14	9	12	44	25	136	151
50	32	20	M16XP1.5	$\phi 14$	M6XP1.0	62	RC1/4	20	28	32	19	92	R16	46	17	9	12	52	25	136	151
63	32	20	M16XP1.5	$\phi 14$	M8XP1.25	75	RC3/8	20	31	32	19	95	R16	56	17	9	12	52	25	139	154
80	40	25	M20XP1.5	$\phi 20$	M10XP1.5	94	RC3/8	30	31	38	32	107	R24	70	21	12	14	64	35	174	195
100	40	25	M20XP1.5	$\phi 20$	M10XP1.5	112	RC1/2	30	39	38	32	115	R24	84	21	12	14	64	35	182	203

External Dimensions

• ALA-CC Short Clevis



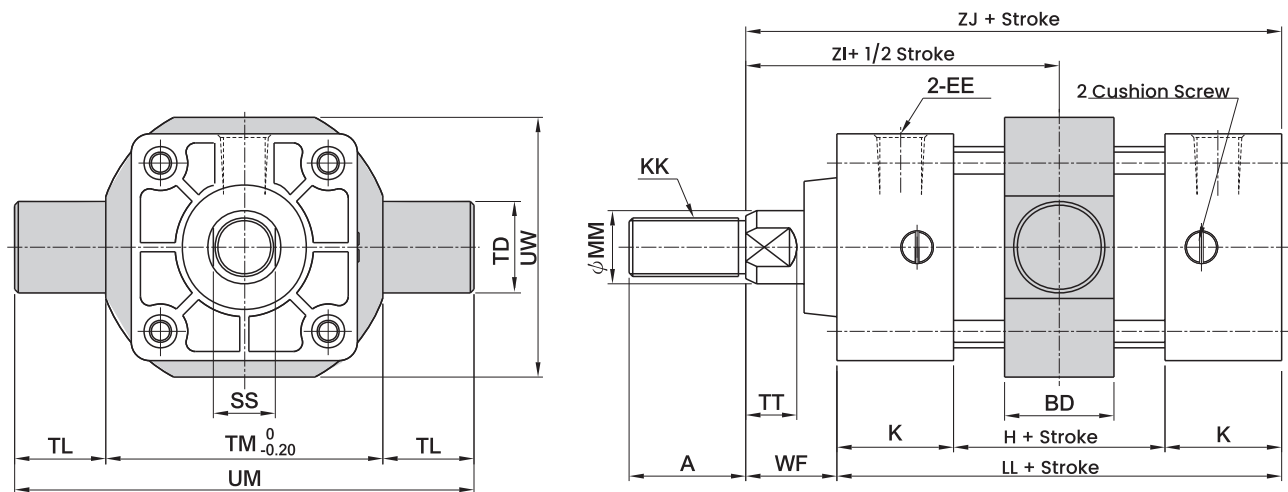
Note: (1) $\phi CD \begin{smallmatrix} +0.10 \\ +0.05 \end{smallmatrix}$
(2) $EW \begin{smallmatrix} -0.30 \\ -0.60 \end{smallmatrix}$

Symbol Bore	A	MM	KK	CD	DE	EA	EE	EW	H	K	L	LL	RR	SS	TT	WF	XC	ZC
32	22	12	M10XP1.25	$\phi 12$	M6XP1.0	45	Rc1/8	16	29	32	19	93	33	10	7	25	137	149
40	24	16	M12XP1.25	$\phi 14$	M6XP1.0	50	RC1/4	20	28	32	19	92	37	14	12	25	136	150
50	32	20	M16XP1.5	$\phi 14$	M6XP1.0	62	RC1/4	20	28	32	19	92	46	17	12	25	136	150
63	32	20	M16XP1.5	$\phi 14$	M8XP1.25	75	RC3/8	20	31	32	19	95	56	17	12	25	139	153
80	40	25	M20XP1.5	$\phi 20$	M10XP1.5	94	RC3/8	30	31	38	32	107	70	21	14	35	174	194
100	40	25	M20XP1.5	$\phi 20$	M10XP1.5	112	RC1/2	30	39	38	32	115	84	21	14	35	182	202

- Air Preparation (FRL)
- Pneumatic Valves
- Pneumatic Cylinders
- Pneumatic Connectors
- Sensors
- Pneumatic Accessories

External Dimensions

• ALA-TC Mid Trunnion



note: (1)TM(h14)

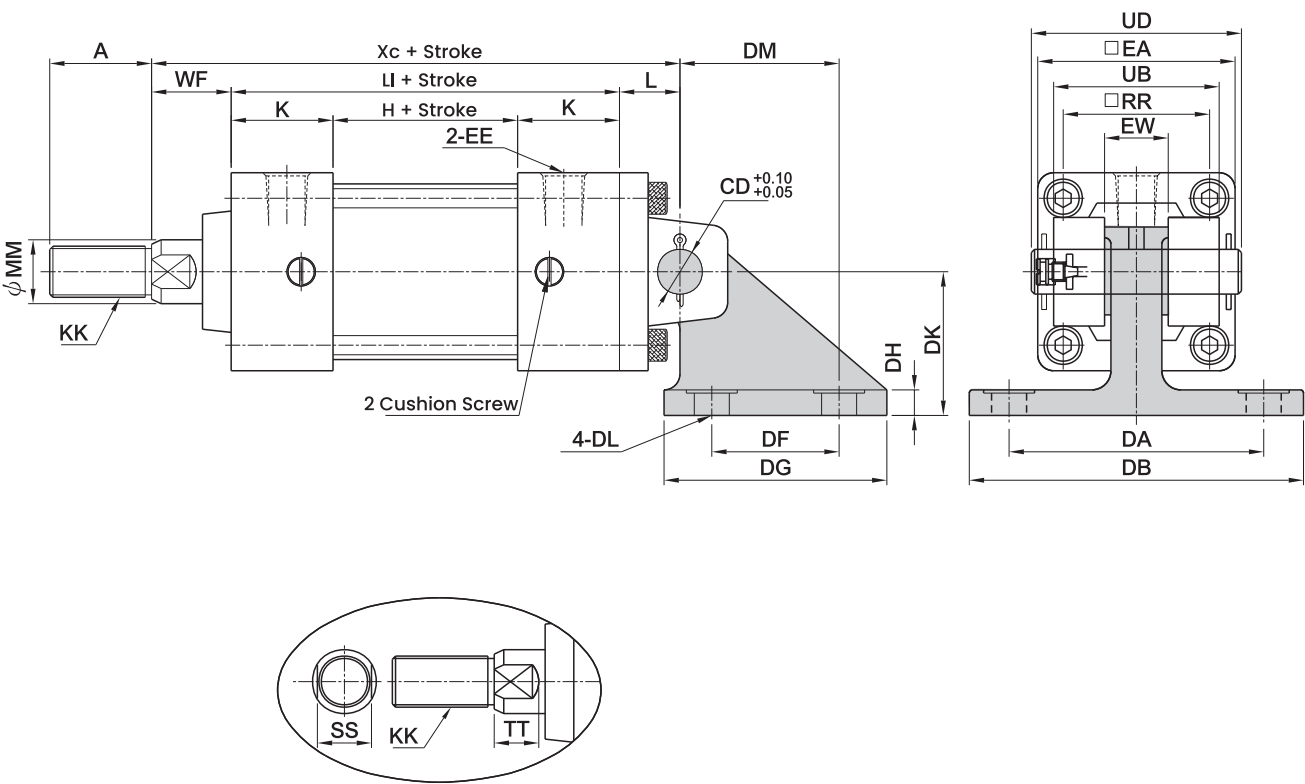
(2) ϕ TD $_{-0.10}^{-0.05}$

Symbol Bore	A	MM	KK	BD	EE	H	K	LL	SS	TD	TL	TM	TT	UM	UW	WF	ZI	ZJ
32	22	12	M10XP1.25	30	Rc1/8	29	32	93	10	16	16	55	7	87	52	25	71.5	118
40	24	16	M12XP1.25	30	RC1/4	28	32	92	14	25	25	63	12	113	59	25	71	117
50	32	20	M16XP1.5	30	RC1/4	28	32	92	17	25	25	76	12	126	71	25	71	117
63	32	20	M16XP1.5	30	RC3/8	31	32	95	17	25	25	88	12	138	86	25	72.5	120
80	40	25	M20XP1.5	35	RC3/8	31	38	107	21	25	25	114	14	164	104	35	88.5	142
100	40	25	M20XP1.5	40	RC1/2	39	38	115	21	25	25	132	14	182	128	35	92.5	146

Note: Stroke must more than 100ST (excluding 100ST) if need to add an induction switch.

External Dimensions

• ALA-CBBK Double Clevis Bracket

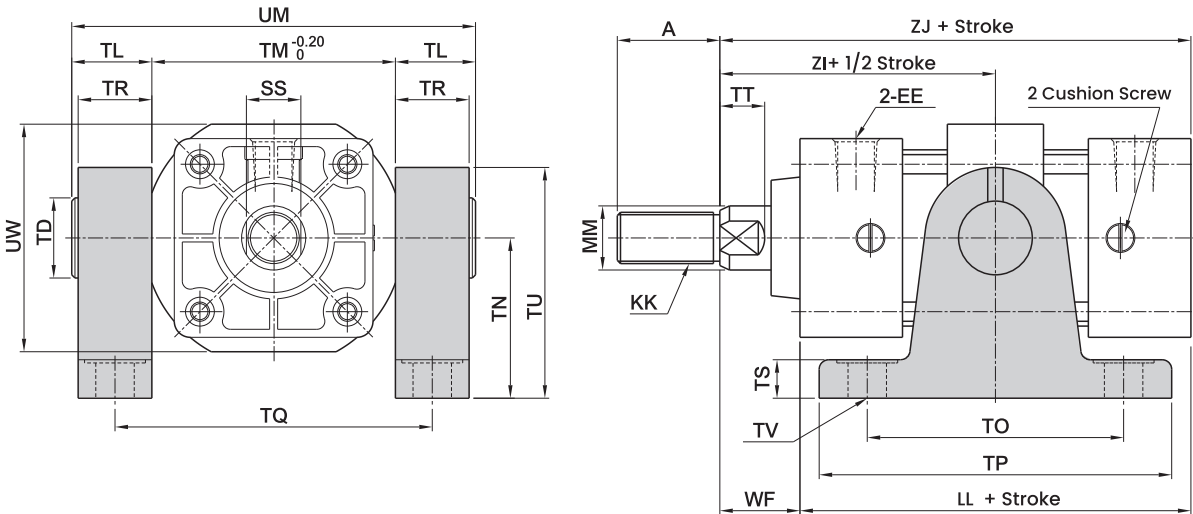


- Air Preparation (FRL)
- Pneumatic Valves
- Pneumatic Cylinders
- Pneumatic Connectors
- Sensors
- Pneumatic Accessories

Symbol Bore	A	MM	KK	CD	DA	DB	DF	DG	DH	DK	DL	DM	EA	EE	EW	H	K	L	LL	RR	SS	TT	UB	UD	WF	XC
32	22	12	M10XP1.25	12	65	85	40	60	8	35	φ 9	45	45	Rc1/8	16	29	32	19	93	33	10	7	32	46	25	137
40	24	16	M12XP1.25	14	80	105	40	70	8	45	φ 11	50	50	RC1/4	20	28	32	19	92	37	14	12	44	58	25	136
50	32	20	M16XP1.5	14	80	105	40	70	8	45	φ 11	50	62	RC1/4	20	28	32	19	92	46	17	12	52	66	25	136
63	32	20	M16XP1.5	14	80	105	40	70	8	45	φ 11	50	75	RC3/8	20	31	32	19	95	56	17	12	52	66	25	139
80	40	25	M20XP1.5	20	105	135	65	95	12	60	φ 14	70	94	RC3/8	30	31	38	32	107	70	21	14	64	78	35	174
100	40	25	M20XP1.5	20	105	135	65	95	12	60	φ 14	70	112	RC1/2	30	39	38	32	115	84	21	14	64	78	35	182

External Dimensions

• ALA-TCBK Mid Trunnion Bracket



Symbol Bore	A	MM	KK	EE	LL	SS	TD	TL	TM	TN	TO	TP
32	22	12	M10XP1.25	Rc1/8	93	10	16	16	55	40	60	80
40	24	16	M12×P1.25	RC1/4	92	14	25	25	63	50	80	110
50	32	20	M16×P1.5	RC1/4	92	17	25	25	76	50	80	110
63	32	20	M16×P1.5	RC3/8	95	17	25	25	88	50	80	110
80	40	25	M20×P1.5	RC3/8	107	21	25	25	114	70	85	120
100	40	25	M20×P1.5	RC1/2	115	21	25	25	132	70	85	120

Symbol Bore	TQ	TR	TT	TS	TU	TV	UM	UW	WF	ZI	ZJ
32	70	15	7	12	56	9	87	52	25	71.5	118
40	86	23	12	12	72	12	113	59	25	71	117
50	99	23	12	12	72	12	126	71	25	71	117
63	111	23	12	12	72	12	138	86	25	72.5	120
80	137	23	14	12	92	14	164	104	35	88.5	142
100	155	23	14	12	92	14	182	128	35	92.5	146

Note: Stroke must more than 100ST (excluding 100ST) if need to add an induction switch.

ALC Double Rods Cylinders



- 1. Al series of pneumatic cylinders is made of aluminum alloy rod and head cover, piston and steel pipe.
- 2. It is lightness and high efficiency.
- 3. All standard products are equipped with cushion devices.
- 4. Magnets can be attached to the piston, and magnetic sensors can be installed in all cylinders.
- 5. It adopts international brand sealing components to ensure excellent life.

Order Indication

ALC		SD	40	100ST		T×n
Series	Performance	Installation Type	Bore	Stroke	End Connectors	Magnetic Sensor
Double Rods Tie-Rod Cylinders	Blank: Indicates Standard G: Sensor H: Shaft With Dust Cover J: Heat/Acid & Alkali Resistance Q: Low Friction Oil Seal	SD: Basic FA: Front Flange FB: Rear Flange LA: Foot Flange LB: End Flange TC: Mid Trunnion	32:32mm 40:40mm 50:50mm 63:63mm 80:80mm 100:100mm		Y: Y Connector I: I Connector Pin: Pin Kgt: Floating Joint Phs: Fish Eye	JFS01 T: 2 Outgoing Lines, Standard Line Is 2 M P:npn 3 Outgoing Lines, Standard Line Is 2 M N:npn 3 Outgoing Lines, Standard Line Is 2 M N: qty *The Order With G Mark But No T X N Mark Indicates That Only Induction Magnet Is Attached Without Magnetic Sensor JFS01 

 blank = indicates standard, no need to specify when order

Air Preparation (FRL)

Pneumatic Valves

Pneumatic Cylinders

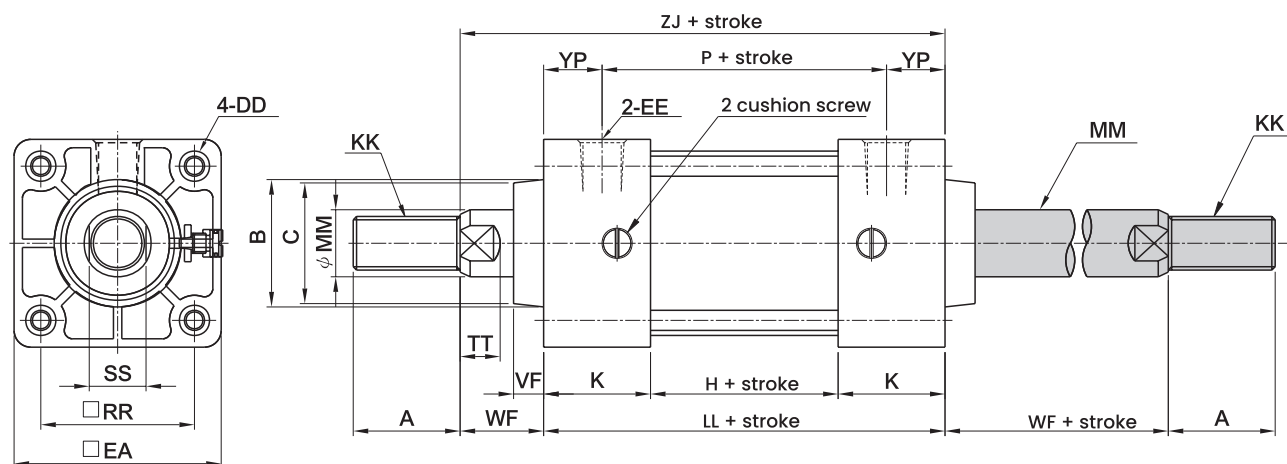
Pneumatic Connectors

Sensors

Pneumatic Accessories

External Dimensions

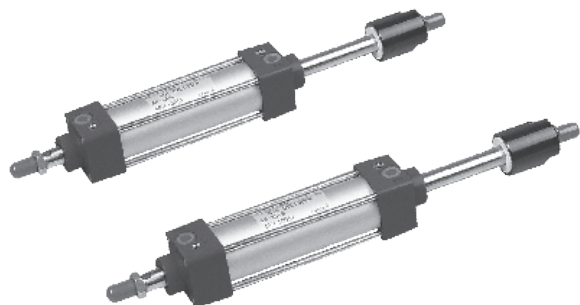
• ALC-SD Basic



Symbol Bore	A	MM	KK	B	C	DD	EA	EE	H	K	LL	P	RR	SS	TT	VF	YP	ZJ	Wf
32	22	12	M10×P1.25	28	28	M6×P1.0	45	RC1/8	29	32	93	58	33	10	7	15	17.5	118	20
40	24	16	M12×P1.25	32	30	M6×P1.0	50	RC1/4	28	32	92	57	37	14	12	9	17.5	117	14
50	32	20	M16×P1.5	38	36	M6×P1.0	62	RC1/4	28	32	92	57	46	17	12	9	17.5	117	14
63	32	20	M16×P1.5	38	36	M8×P1.25	75	RC3/8	31	32	95	60	56	17	12	9	17.5	120	14
80	40	25	M20×P1.5	47	43	M10×P1.5	94	RC3/8	31	38	107	64	70	21	14	14	21.5	142	19
100	40	25	M20×P1.5	47	43	M10×P1.5	112	RC1/2	39	38	115	72	84	21	14	14	21.5	150	19

▲ note: For external dimensions of other accessories, please refer to P.022~P.033 ALA double-acting cylinder.

Ald Double Rods Cylinders (With Forward Alignment)



- 1. AL series of pneumatic cylinders is made of aluminum alloy rod and head cover, piston and steel pipe.
- 2. It is lightness and high efficiency.
- 3. All standard products are equipped with cushion devices.
- 4. Magnets can be attached to the piston, and magnetic sensors can be installed in all cylinders.
- 5. It adopts international brand sealing components to ensure excellent life.

Order Indication

Ald		Sd	40	100st		25mm	T × n
Series	Performance	Installation Type	Bore	Stroke	End Connectors	Adjustable Stroke	Magnetic Sensor
Double Rods Tie-rod Cylinders (With Forward Alignment)	Blank: Indicates Standard G: Sensor H: Shaft With Dust Cover J: Heat/ Acid & Alkali Resistance Q: Low Friction Oil Seal	SD: Basic FA: Front Flange FB: Rear Flange LA: Foot Flange LB: End Flange TC: Mid Trunnion	32:32mm 40:40mm 50:50mm 63:63mm 80:80mm 100:100mm		Y: Y Connector I: I Connector Pin: Pin Kgt: Floating Joint Phs: Fish Eye	Basic Types: 25mm & 50mm	JFS01 T: 2 Outgoing Lines, Standard Line Is 2 M P:pnp 3 Outgoing Lines, Standard Line Is 2 M N:npn 3 Outgoing Lines, Standard Line Is 2 M N: Qty *the Order With G Mark But No T X N Mark Indicates That Only Induction Magnet Is Attached Without Magnetic Sensor
							JFS01

blank = indicates standard, no need to specify when order

Air Preparation (FRL)

Pneumatic Valves

Pneumatic Cylinders

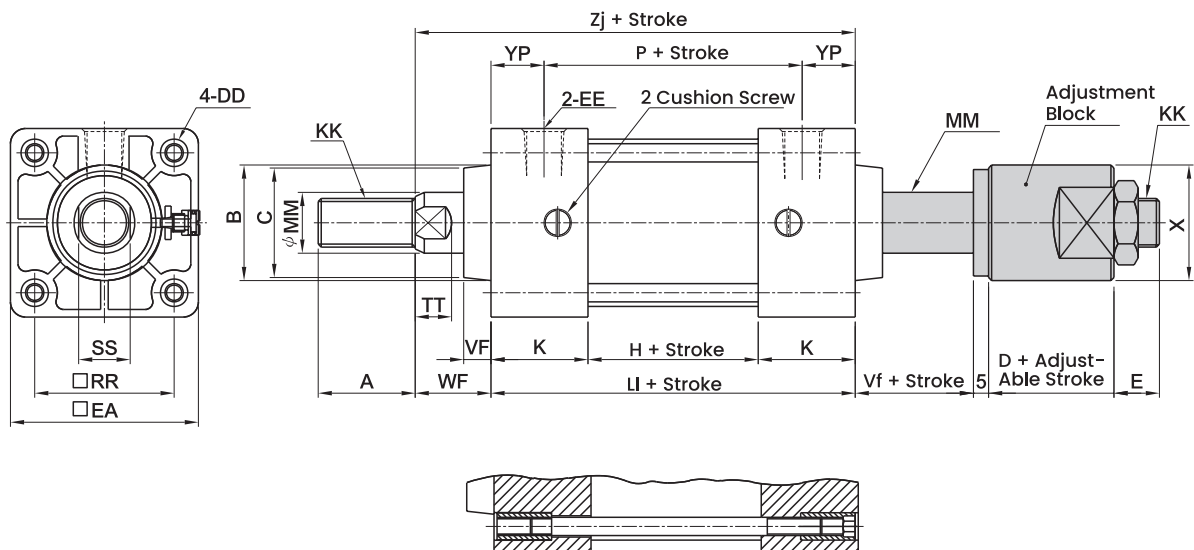
Pneumatic Connectors

Sensors

Pneumatic Accessories

External Dimensions

• ALD-SD Basic

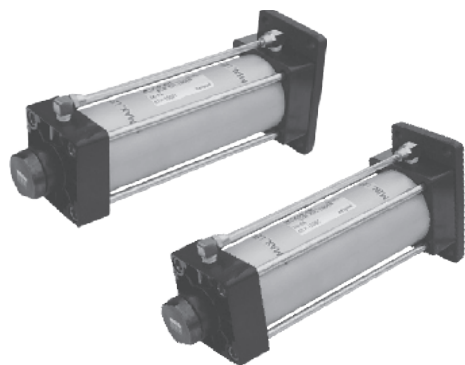


SD type installation method of column caps fixed at both ends

Symbol Bore	A	MM	KK	B	C	D	DD	E	EA	EE	H	K	LL	P	RR	SS	TT	VF	WF	X	YP	ZJ
32	22	12	M10×P1.25	28	28	20	M6×P1.0	15	45	RC1/8	29	32	93	33	10	10	7	15	25	28	17.5	118
40	24	16	M12×P1.25	32	30	20	M6×P1.0	15	50	RC1/4	28	32	92	57	37	14	12	9	25	32	17.5	117
50	32	20	M16×P1.5	38	36	20	M6×P1.0	15	62	RC1/4	28	32	92	57	46	17	12	9	25	38	17.5	117
63	32	20	M16×P1.5	38	36	25	M8×P1.25	15	75	RC3/8	31	32	95	60	56	17	12	9	25	38	17.5	120
80	40	25	M20×P1.5	47	43	25	M10×P1.5	15	94	RC3/8	31	38	107	64	70	21	14	14	35	44	21.5	142
100	40	25	M20×P1.5	47	43	25	M10×P1.5	15	112	RC1/2	39	38	115	72	84	21	14	14	35	44	21.5	150

⚠ note: For external dimensions of other accessories, please refer to P.022~P.033 ALA double-acting cylinder.

ALTK Air/ Oil Converter



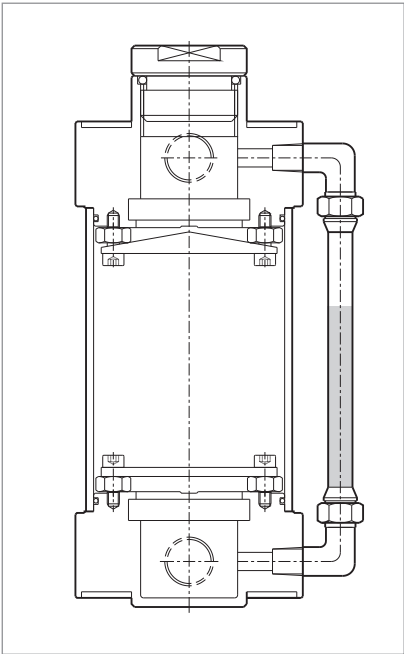
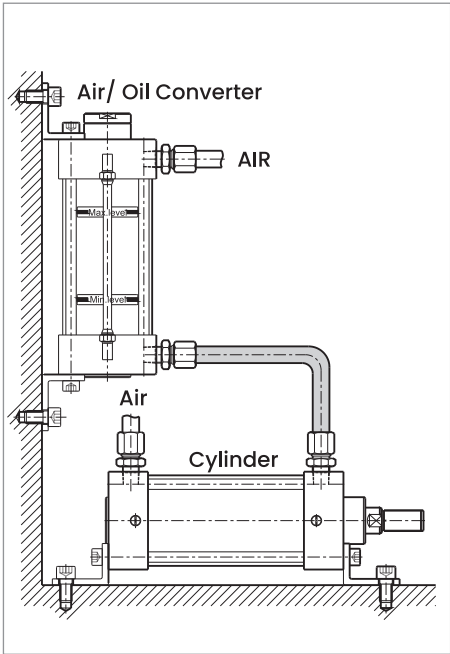
- 1.Air pressure is used to push the hydraulic oil in the cylinder to switch to the same pressure.
- 2.Utilizes the principle of incompressibility of hydraulic oil to drive the air-oil conversion cylinder.
- 3.The action is slow and steady.

Order Indication

AL	TK	SD	50	200ST
Series	Type	Installation Type	Bore	Stroke
Tie-Rod Cylinders	Air/ Oil Converter	Sd: Basic Lb: End Flange Fb: Rear Flange	50 : 50 mm 63 : 63 mm 80 : 80 mm 100 : 100 mm	150mm ~ 500mm

Installation

- Converter must be installed vertically and higher than acting cylinder.
- Structure Of Converter



Air Preparation (FRL)

Pneumatic Valves

Pneumatic Cylinders

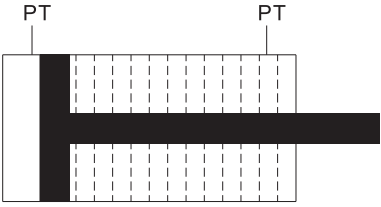
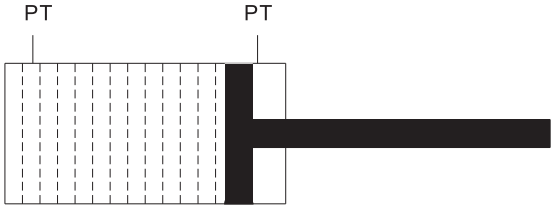
Pneumatic Connectors

Sensors

Pneumatic Accessories

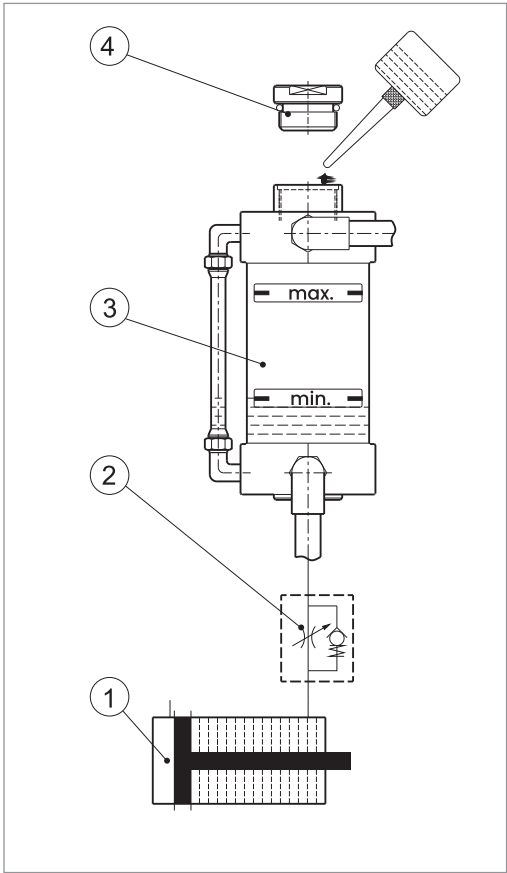
Selection Instructions

- Bore and stroke of converter is based on the needed volume of acting cylinder.
- Calculation Of Volume:

Forward With Stable Speed	Backward With Stable Speed
	
$\text{Volume } V = \pi / 4 \times (D^2 - d^2) \times L$	
$= 0.785 \times (D^2 - d^2) \times L$	
NOTE: V=cm³(cc) D=Bore(cm) d=Rod(cm) L=Stroke(cm) $\pi/4=0.785$	

- Converter volume(v) ≥ 1.5 x cylinder volume(v)

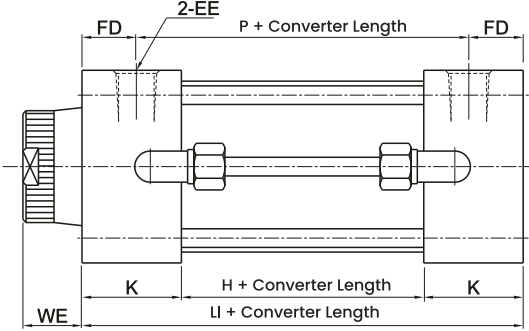
Oil Injection Instructions



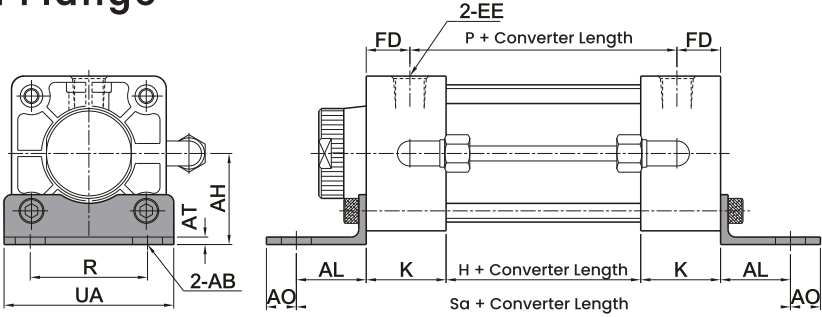
- Set acting cylinder (1) at the end point.
- Align the flow control valve (2) to the full open position.
- Release the inlet cover (3) of converter (4).
- Inject oil into coverter (3) from the top until reach the minimum oil point.
- Lock inlet cover (4).
- Apply pressure to acting cylinder (1) to move back and forward 3~5 times to eject airs inside of cylinder (1) and flow control valve (2).

External Dimensions

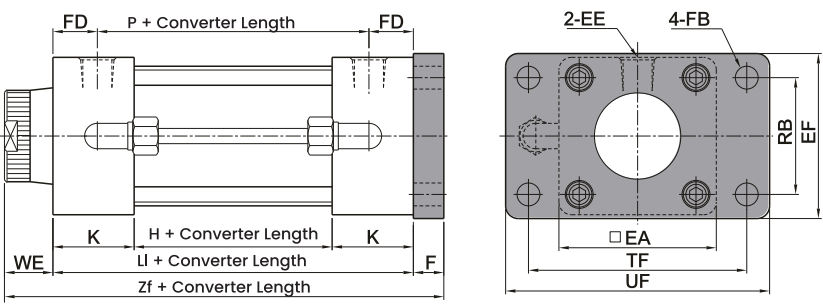
• SD Basic



• LB End Flange



• FB Rear Flange



Symbol Bore	H	K	P	WE	LL	EE	FD	R	EA	AB	AH	AT	AL	AO	UA	SA	F	FB	RB	EF	TF	UF	ZF
50	28	32	57	19	92	RC1/4	17.5	47	62	12	36.5	3	28	12	68	148	10	9	46	65	86	104	121
63	31	32	60	19	95	RC3/8	17.5	56	75	12	41	3	31	14	80	157	10	9	56	76	98	116	124
80	31	38	64	24	107	RC3/8	21.5	70	94	14	49	4	30	15	97	167	16	12	70	95	119	146	147
100	39	38	72	24	115	RC1/2	21.5	84	112	14	57	4	30	15	112	175	16	12	84	115	138	165	155

Air
Preparation
(FRL)

Pneumatic
Valves

Pneumatic
Cylinders

Pneumatic
Connectors

Sensors

Pneumatic
Accessories