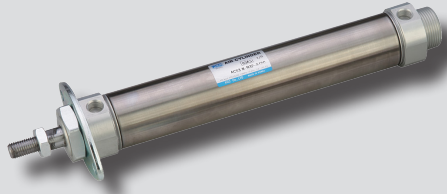


ACS5 series

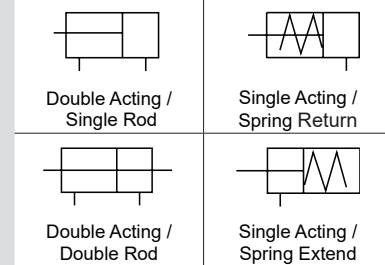


ACS5A-N B32-S150

Features

- Tube material: Stainless steel
- With built-in magnet (Standard).
- With non-lubricated seal.
- Improved bush decreases deflection, improves lateral load resistance.
- Easy to replace rod seal.
- The floating cushion seal is applied

Symbol



How to Order



- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Series

ACS5	Double acting single rod small cylinder
ACS5 W	Double acting double rod small cylinder
ACS5A	Double acting single rod small cylinder (With air cushion)
ACS5AW	Double acting double rod small cylinder (With air cushion)

② Lubrication

N	Non lubricated (Standard)
---	---------------------------

③ Mounting style

B	Standard	CD	Integrated clevis
LB	Foot	TR	Rod side trunnion
FA	Rod side flange	TH	Head side trunnion
FB	Head side flange	BC	Boss-cut
CA	Single clevis	BF	Boss-cut flange
CB	Double clevis	BT	Boss-cut trunnion

④ Bore size

20	25	32	40
Ø20	Ø25	Ø32	Ø40

⑤ Cylinder stroke

Bore size	Standard stroke	Max. stroke
Ø20	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500	650
Ø25		
Ø32		
Ø40		

※ Other intermediate strokes is available upon request.

⑥ Bellows

	Material	Max. ambient temperature
Nil	Without bellows	
J	Nylon Tarpaulin	60 °C
K	Neoprene cloth	110 °C

⑦ Rod end attachment

Nil	Rod end nut (Standard):1pc
I	Single knuckle joint
Y	Double knuckle joint

⑧ Auto switch

Reed A/S	Model	Solid State A/S	Model
C72	D-C72K	H7A1	D-H7A1K
C73	D-C73K	H7A2	D-H7A2K
C76	D-C76K	H7B	D-H7BK
C80	D-C80K		

- ※ Only for auto switch attached type.
- ※ Refer to Auto Switch Catalogue for more information.

⑨ Number of auto switches

Nil	2 pcs
1	1 pc
N	N pcs (N: 3, 4, 5...)

※ Only for auto switch attached type.

⑩ Special order

Nil	None
TW	Multi-step stroke cylinder(Double rod)
ASJ	Stroke adjustable type (In forward direction within 25mm)
BSJ	Stroke adjustable type (in forward direction within 50mm)
SV	Heat resistant cylinder
SS	Stainless steel piston rod

⑪ Working format

Nil	Double acting cylinder
S	Single acting spring return
T	Single acting spring extend

※ The ACS5 cannot be disassembled, so spring exchange is not possible.

Specifications

Type	Non-Lubricated			Low hydraulic type
	Double acting, Single rod	Double acting, Double rod	Single acting spring return / Single acting spring extend	
Fluid	Air			Hydraulic oil
Proof pressure	14.7kgf/cm ² (1.5MPa)			
Max. operating pressure	9.9kgf/cm ² (1.0MPa)			
Min. operating pressure	0.5kgf/cm ² (0.05MPa)	0.8kgf/cm ² (0.08MPa)	Forward: 1.8kgf/cm ² (0.18MPa) Reverse: 2.3kgf/cm ² (0.23MPa)	1.8kgf/cm ² (0.18MPa)
Ambient & fluid temperature	-10 °C ~ 70 °C (Without auto switch) -10 °C ~ 60 °C (With auto switch)			
Operating piston speed	Rubber cushion: 50~750mm/s, Air cushion: 50~1000mm/s		Rubber cushion: 50~750mm/s	Rubber cushion: 15~300mm/s
Cushion	Rubber cushion, Air cushion		Rubber cushion	Rubber cushion
Tolerance of thread	KS class 2			
Tolerance of stroke	~500 ST : $\begin{matrix} +1.4 \\ 0 \end{matrix}$			

Accessory

Mounting style	Standard	Axial foot	Rod side flange	Head side flange	Integrated clevis	Single clevis	²⁾ Double clevis	Rod side trunnion	Head side trunnion	Boss-cut	Boss cut Flange	Boss cut Trunnion	
Standard	Mounting screw	●(1pc)	●(2pcs)	●(1pc)	●(1pc)	-	-	-	¹⁾ ●(1pc)	¹⁾ ●(1pc)	●(1pc)	●(1pc)	●(1pc)
	Rod end nut	●	●	●	●	●	●	●	●	●	●	●	
	Clevis pin	-	-	-	-	-	³⁾ ●	-	-	-	-	-	
Option	Single knuckle joint	●	●	●	●	●	●	●	●	●	●	●	
	²⁾ Double knuckle joint	●	●	●	●	●	●	●	●	●	●	●	
	Bellows	●	●	●	●	●	●	●	●	●	●	●	

- ※ 1) Trunnion nut is included in the rod side trunnion and head side trunnion.
- ※ 2) Pin and snap ring are included in double clevis and double knuckle joint.
- ※ 3) Snap ring is included in clevis pin.
- ※ Double rod type cylinder includes 2pcs rod end nuts.

Mounting Style

Mounting style	Minimum order quantity	Bore size(mm)			Remarks
		Ø20	Ø25	Ø32	
Axial foot	1set (2pcs)	LB 20	LB 25/32		LB 40 (Round type) Foot 2pcs, Mounting nut 1pc
Flange	1pc	FA/FB 20	FA/FB 25/32		FA/FB 40 (Round type) Flange 1pc, Mounting nut 1pc
Single clevis	1pc	CA 20	CA 25/32		CA 40 (Round type) Single clevis 1pc
Double clevis	1pc	CB 20	CB 25/32		CB 40 (Round type) Double clevis 1pc, Clevis pin 1pc, Snap ring 2pcs
Trunnion	1pc	TC 20	TC 25/32		TC 40 (Round type) Trunnion 1pc, Trunnion nut 1pc

Rod End Attachment

Bore size(mm)	Ø20	Ø25, Ø32	Ø40
Accessory			
Single knuckle joint	I20	I25/32	I40
Double knuckle joint	Y20	Y25/32	Y40

- ※ Rod end attachment of ACS5 40 and that of ACM 40 are the same.



Mass

Unit: kg

Bore size (mm)		Double acting single rod cylinder				Double acting double rod cylinder			
		Ø20	Ø25	Ø32	Ø40	Ø20	Ø25	Ø32	Ø40
Basis mass	Standard	0.150	0.228	0.280	0.568	0.171	0.271	0.320	0.659
	Foot	0.224	0.306	0.358	0.720	0.245	0.349	0.398	0.811
	Flange	0.194	0.280	0.332	0.676	0.215	0.323	0.372	0.767
	Integrated clevis	0.130	0.208	0.270	0.528	-	-	-	-
	Single clevis	0.200	0.280	0.332	0.696	-	-	-	-
	Double clevis (With pin)	0.210	0.288	0.340	0.730	-	-	-	-
	Trunnion	0.190	0.298	0.340	0.668	0.211	0.341	0.380	0.759
	Boss-cut Standard	0.140	0.208	0.260	0.538	-	-	-	-
	Boss-cut Flange	0.180	0.258	0.310	0.648	-	-	-	-
	Boss-cut Trunnion	0.180	0.278	0.320	0.638	-	-	-	-
Additional mass per each 50mm of stroke		0.048	0.068	0.076	0.132	0.720	0.102	0.124	0.193
Accessory	Single knuckle joint	0.056	0.056	0.056	0.166	-	-	-	-
	Double knuckle joint (With pin)	0.074	0.072	0.072	0.220	-	-	-	-
	Rod nut	0.002	0.008	0.008	0.016	-	-	-	-

Calculation:

1. Double acting single rod cylinder

Ex) ACS5-N-LB32-S100

Basis mass: 0.358(FootØ32) / Additional mass: 0.076/50 / Stroke: 100mm
 $0.358 + 0.076/50 \times 100 = 0.51\text{kg}$

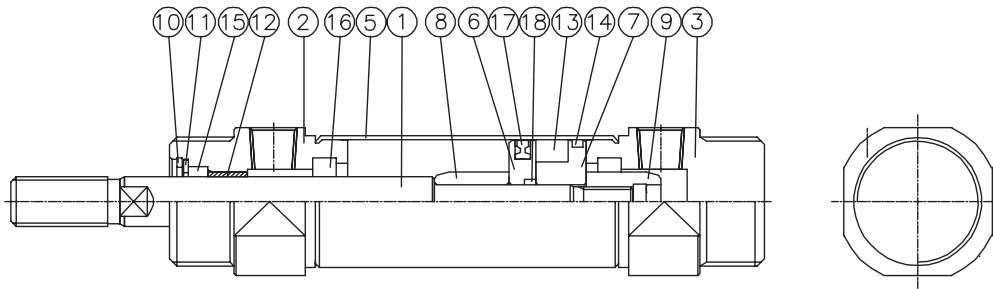
2. Double acting double rod cylinder

Ex) ACS5W-N-LB32-S100

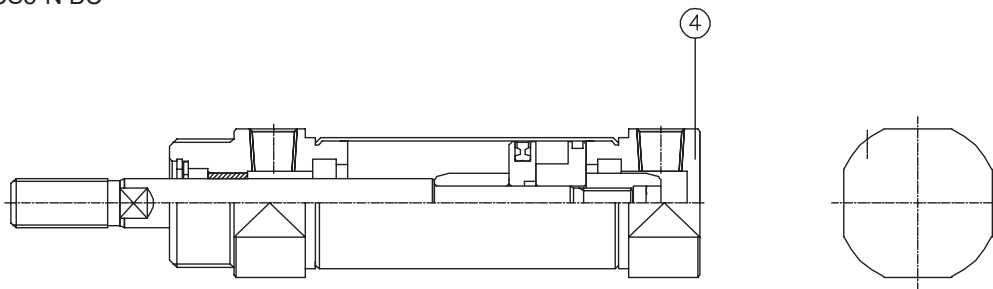
Basis mass: 0.398(FootØ32) / Additional mass: 0.124/50 / Stroke: 100mm
 $0.398 + 0.124/50 \times 100 = 0.646\text{kg}$

Structure

Standard (Non lubricated) ACS5-N B



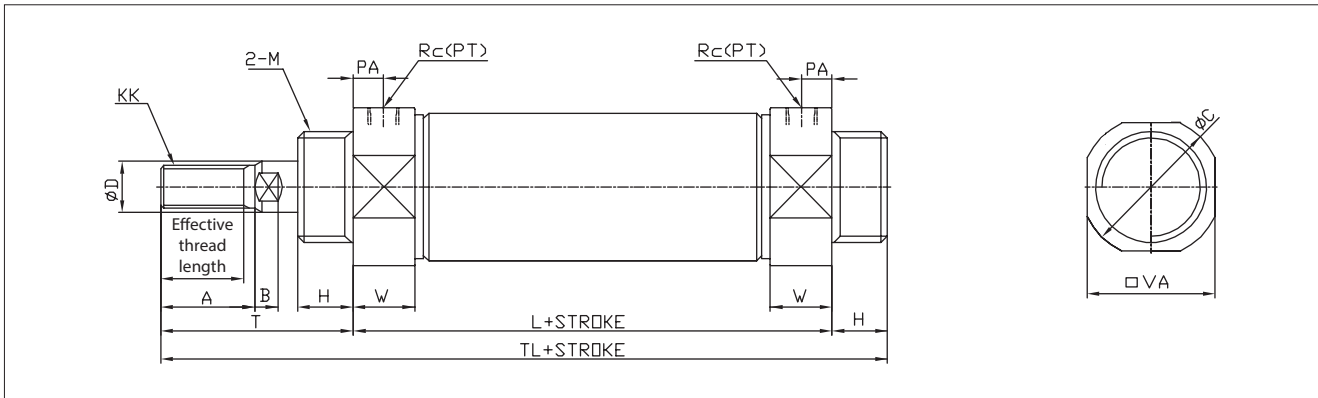
Boss-cut ACS5-N BC



Part no.	Parts	Material	Remark
1	Rod	Carbon Steel	Hard Chromium Plating
2	Rod Cover	AL Alloy	White Anodizing
3	Head Cover	AL Alloy	White Anodizing
4	Head Cover	AL Alloy	White Anodizing
5	Cylinder Tube	Stainless Steel	-
6	Piston	AL Alloy	-
7	Magnet Holder	AL Alloy	-
8	Cushion Ring	AL Alloy	-
9	Cushion Ring Nut	AL Alloy	-
10	Stop Ring	Carbon Tool Steel	-
11	Packing Wash	Rolled Steel	-
12	Bush	Sintered Metal	-
13	Magnet	-	-
14	Wearing	Resin	-

Part no.	Parts	Material	Bore size			
			Ø20	Ø25	Ø32	Ø40
15	Rod Packing	NBR	DRP8	DRP10	DRP12	DRP14
16	Cushion Packing	NBR	-	-	-	-
17	Piston packing	NBR	OPA20	OPA25	OPA32	OPA40
18	Rod O-Ring	NBR	S6	S6	S8	S10

Dimensions-Standard (B)

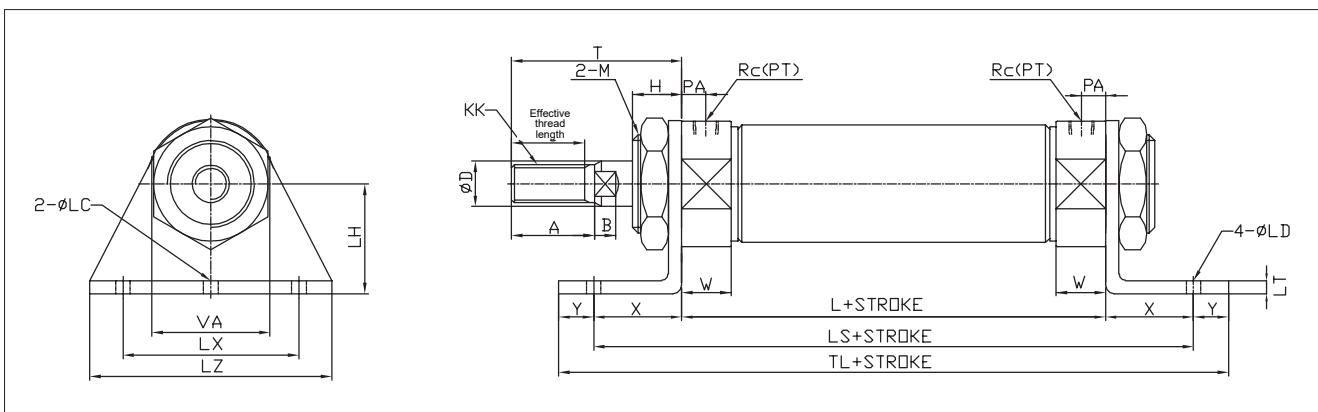


Unit : mm

Bore size	Effective thread length	A	B	ØC	ØD	H	KK	L	M	PA	Rc(PT)	T	TL
Ø20	15.5	18	5.0	27	8	13	M8X1.25	62	M20X1.5	8	1/8	41	116
Ø25	19.5	22	5.5	33	10	13	M10X1.25	62	M26X1.5	8	1/8	45	120
Ø32	19.5	22	5.5	37.5	12	13	M10X1.25	64	M26X1.5	8	1/8	45	122
Ø40	21.0	24	7.5	46.5	14	16	M14X1.50	88	M32X2.0	11	1/4	50	154

Bore size	□VA	W
Ø20	24	15
Ø25	30	15
Ø32	34.5	15
Ø40	42.5	21

Dimensions-Foot (LB)

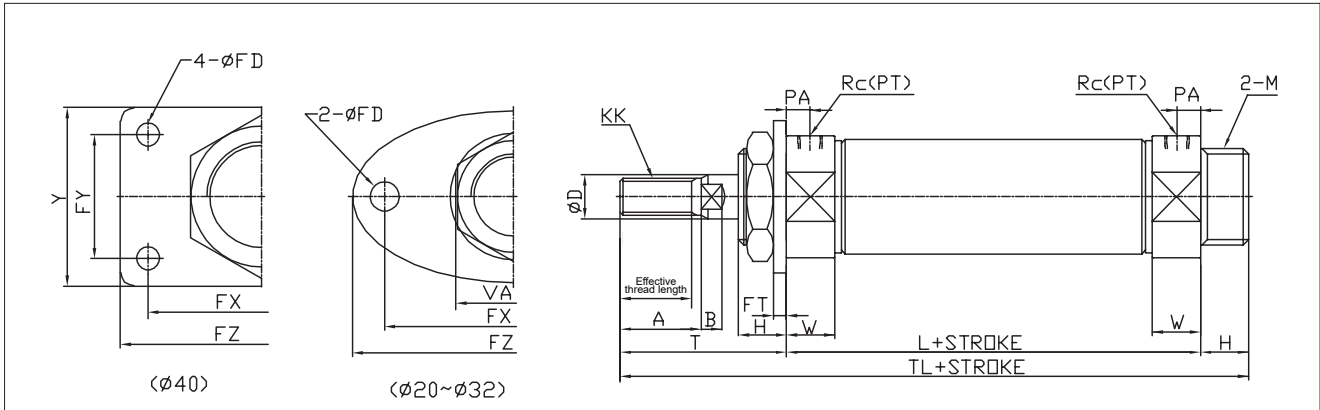


Unit: mm

Bore size	Effective thread length	A	B	ØD	H	KK	L	ØLC	ØLD	LH	LS	LT	LX
Ø20	15.5	18	5.0	8	13	M8X1.25	62	4	6.8	25	102	3	40
Ø25	19.5	22	5.5	10	13	M10X1.25	62	4	6.8	28	102	3	40
Ø32	19.5	22	5.5	12	13	M10X1.25	64	4	6.8	28	104	3	40
Ø40	21.0	24	7.5	14	16	M14X1.50	88	4	7.0	30	134	3	55

Bore size	LZ	M	PA	Rc(PT)	T	TL	W	X	Y
Ø20	55	M20X1.5	8	1/8	41	118	15	20	8
Ø25	55	M26X1.5	8	1/8	45	118	15	20	8
Ø32	55	M26X1.5	8	1/8	45	120	15	20	8
Ø40	75	M32X2.0	11	1/4	50	158	21	23	12

Dimensions-Rod side Flange (FA)

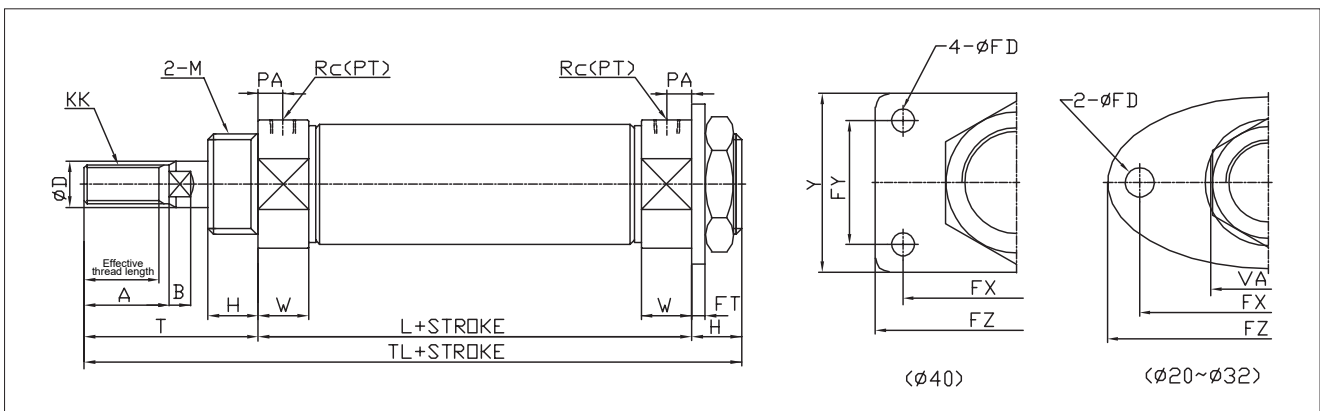


Unit:mm

Bore size	Effective thread length	A	B	∅D	∅FD	FT	FX	FY	FZ	H	KK	L	M
∅20	15.5	18	5.0	8	7	3.2	60	-	75	13	M8X1.25	62	M20X1.5
∅25	19.5	22	5.5	10	7	4.5	60	-	75	13	M10X1.25	62	M26X1.5
∅32	19.5	22	5.5	12	7	4.5	60	-	75	13	M10X1.25	64	M26X1.5
∅40	21.0	24	7.5	14	7	4.5	66	36	82	16	M14X1.50	88	M32X2.0

Bore size	PA	Rc(PT)	T	TL	W	Y
∅20	8	1/8	41	116	15	40
∅25	8	1/8	45	120	15	42
∅32	8	1/8	45	122	15	42
∅40	11	1/4	50	154	21	52

Dimensions-Head side Flange (FB)

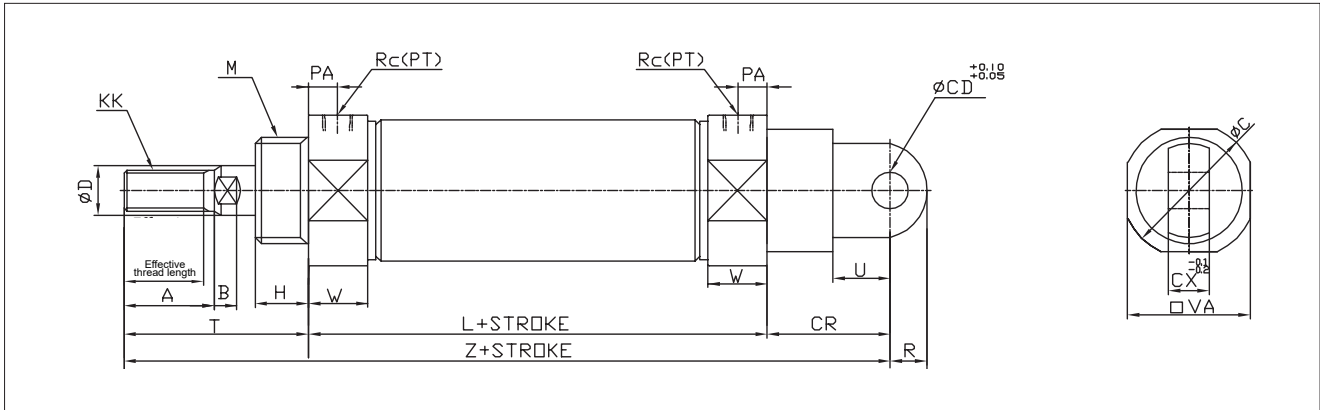


Unit:mm

Bore size	Effective thread length	A	B	∅D	∅FD	FT	FX	FY	FZ	H	KK	L	M
∅20	15.5	18	5.0	8	7	3.2	60	-	75	13	M8X1.25	62	M20X1.5
∅25	19.5	22	5.5	10	7	4.5	60	-	75	13	M10X1.25	62	M26X1.5
∅32	19.5	22	5.5	12	7	4.5	60	-	75	13	M10X1.25	64	M26X1.5
∅40	21.0	24	7.5	14	7	4.5	66	36	82	16	M14X1.50	88	M32X2.0

Bore size	PA	Rc(PT)	T	TL	W	Y
∅20	8	1/8	41	116	15	40
∅25	8	1/8	45	120	15	42
∅32	8	1/8	45	122	15	42
∅40	11	1/4	50	154	21	52

Dimensions-Single clevis (CA)

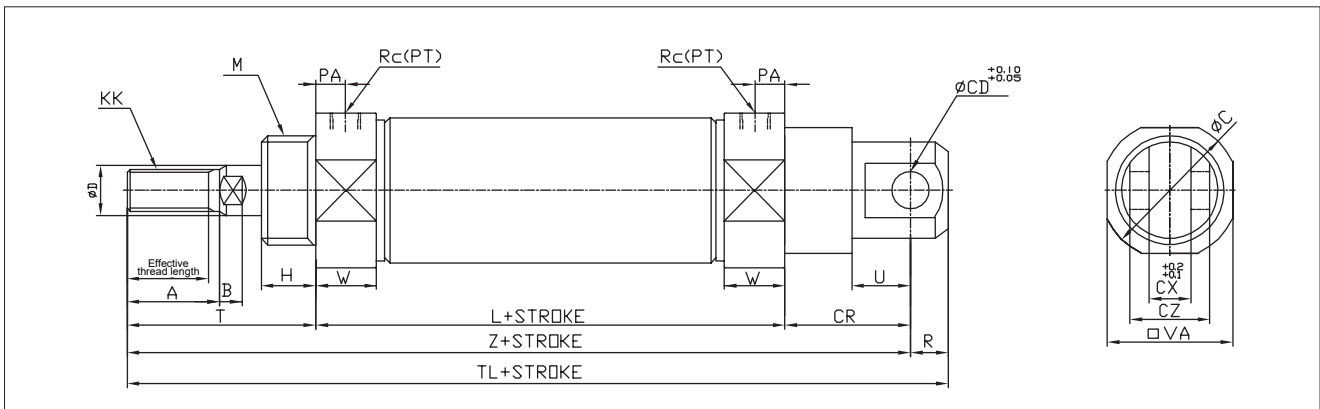


Unit:mm

Bore size	Effective thread length	A	B	ØC	ØCD	CR	CX	ØD	H	KK	L	M	PA
Ø20	15.5	18	5.0	27	9	30	10	8	13	M8X1.25	62	M20X1.5	8
Ø25	19.5	22	5.5	33	9	30	10	10	13	M10X1.25	62	M26X1.5	8
Ø32	19.5	22	5.5	37.5	9	30	10	12	13	M10X1.25	64	M26X1.5	8
Ø40	21.0	24	7.5	46.5	10	39	15	14	16	M14X1.50	88	M32X2.0	11

Bore size	R	Rc(PT)	T	TL	U	□VA	W	Z
Ø20	9	1/8	41	142	14	24	15	133
Ø25	9	1/8	45	146	14	30	15	137
Ø32	9	1/8	45	148	14	34.5	15	139
Ø40	11	1/4	50	188	18	42.5	21	177

Dimensions-Double clevis (CB)

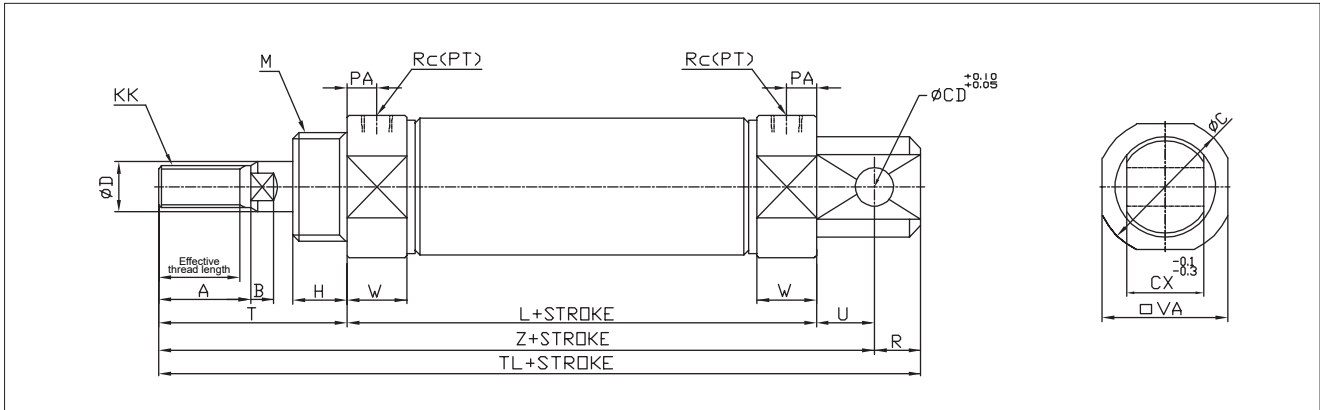


Unit:mm

Bore size	Effective thread length	A	B	ØC	ØCD	CR	CX	CZ	ØD	H	KK	L	M
Ø20	15.5	18	5.0	27	9	30	10	19	8	13	M8X1.25	62	M20X1.5
Ø25	19.5	22	5.5	33	9	30	10	19	10	13	M10X1.25	62	M26X1.5
Ø32	19.5	22	5.5	37.5	9	30	10	19	12	13	M10X1.25	64	M26X1.5
Ø40	21.0	24	7.5	46.5	10	39	15	30	14	16	M14X1.50	88	M32X2.0

Bore size	PA	R	Rc(PT)	T	TL	U	□VA	W	Z
Ø20	8	9	1/8	41	142	14	24	15	133
Ø25	8	9	1/8	45	146	14	30	15	137
Ø32	8	9	1/8	45	148	14	34.5	15	139
Ø40	11	11	1/4	50	188	18	42.5	21	177

Dimensions-Integrated clevis (CD)

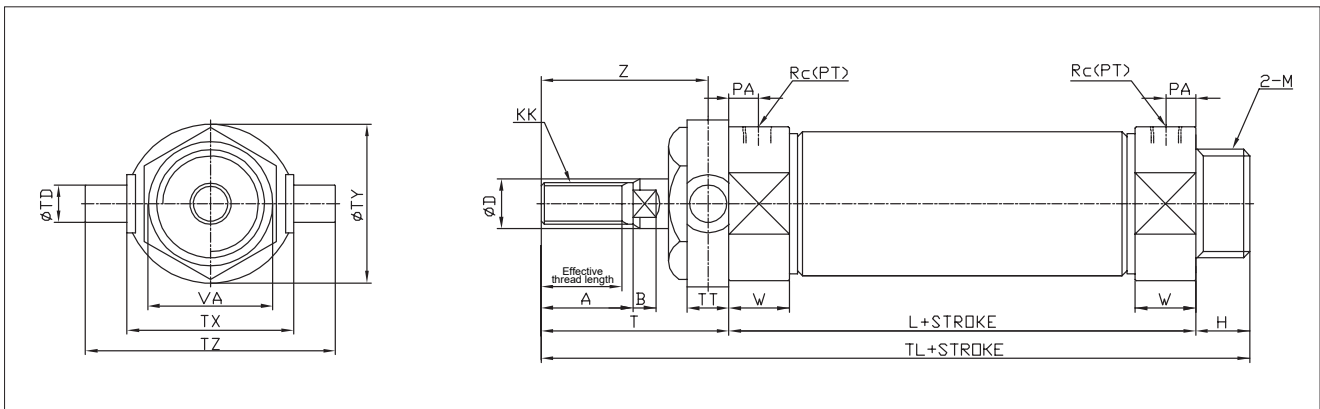


Unit:mm

Bore size	Effective thread length	A	B	ØC	ØCD	CX	ØD	H	KK	L	M	PA	R
Ø20	15.5	18	5.0	27	8	12	8	13	M8X1.25	62	M20X1.5	8	9
Ø25	19.5	22	5.5	33	8	12	10	13	M10X1.25	62	M26X1.5	8	9
Ø32	19.5	22	5.5	37.5	10	20	12	13	M10X1.25	64	M26X1.5	8	12
Ø40	21.0	24	7.5	46.5	10	20	14	16	M14X1.50	88	M32X2.0	11	12

Bore size	Rc(PT)	T	TL	U	□VA	W	Z
Ø20	1/8	41	124	12	24	15	115
Ø25	1/8	45	128	12	30	15	119
Ø32	1/8	45	136	15	34.5	15	124
Ø40	1/4	50	165	15	42.5	21	153

Dimensions-Rod side Trunnion (TR)

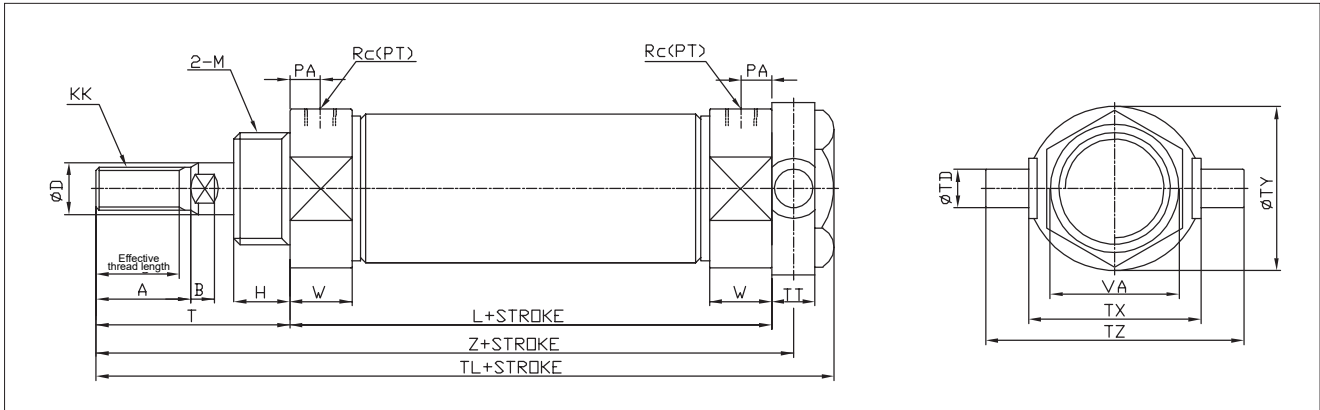


Unit:mm

Bore size	Effective thread length	A	B	ØD	H	KK	L	M	PA	Rc(PT)	T	ØTD	TL
Ø20	15.5	18	5.0	8	13	M8X1.25	62	M20X1.5	8	1/8	41	8	116
Ø25	19.5	22	5.5	10	13	M10X1.25	62	M26X1.5	8	1/8	45	9	120
Ø32	19.5	22	5.5	12	13	M10X1.25	64	M26X1.5	8	1/8	45	9	122
Ø40	21.0	24	7.5	14	16	M14X1.50	88	M32X2.0	11	1/4	50	10	154

Bore size	TT	TX	ØTY	TZ	W	Z
Ø20	10	32	32	52	15	36
Ø25	10	40	40	60	15	40
Ø32	10	40	40	60	15	40
Ø40	11	53	53	77	21	44.5

Dimensions-Head side Trunnion (TH)

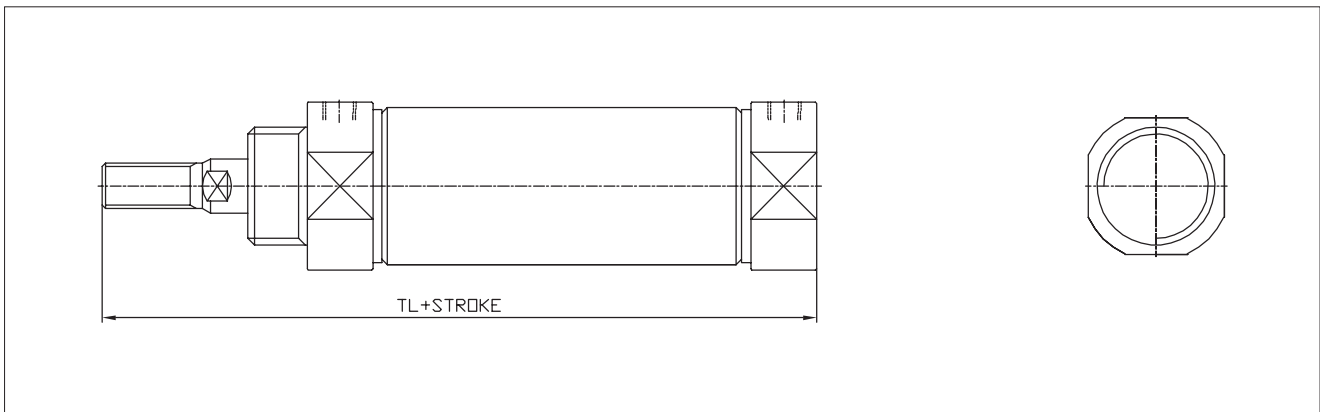


Unit:mm

Bore size	Effective thread length	A	B	ØD	H	KK	L	M	PA	Rc(PT)	T	ØTD	TL
Ø20	15.5	18	5.0	8	13	M8X1.25	62	M20X1.5	8	1/8	41	8	118
Ø25	19.5	22	5.5	10	13	M10X1.25	62	M26X1.5	8	1/8	45	9	122
Ø32	19.5	22	5.5	12	13	M10X1.25	64	M26X1.5	8	1/8	45	9	124
Ø40	21.0	24	7.5	14	16	M14X1.50	88	M32X2.0	11	1/4	50	10	154

Bore size	TT	TX	ØTY	TZ	W	Z
Ø20	10	32	32	52	15	108
Ø25	10	40	40	60	15	112
Ø32	10	40	40	60	15	114
Ø40	11	53	53	77	21	143.5

Dimensions-Boss-cut (BC)



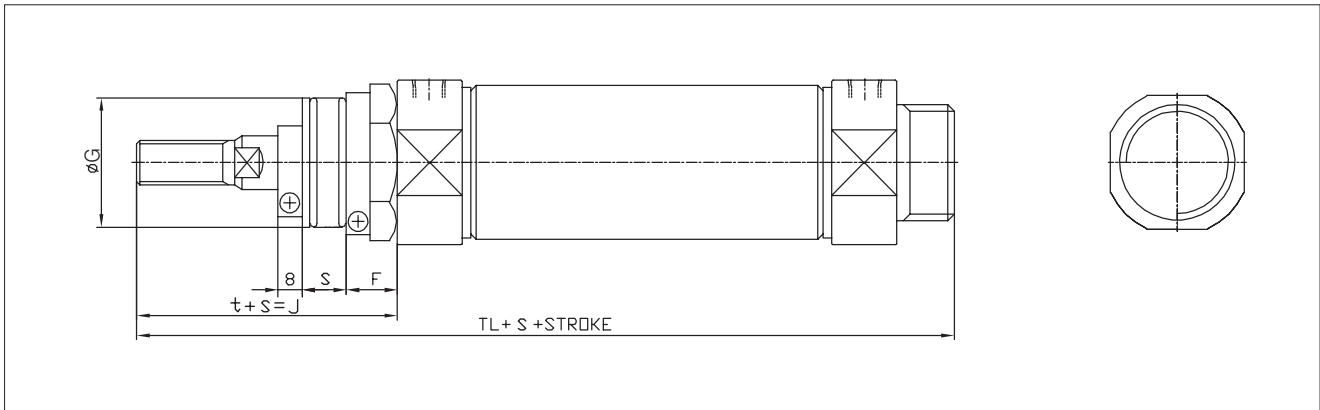
The overall length reduces by removing the headcover screw. Attachment space is reduced.

Compact Boss-cut	
Bore size (mm)	TL
Ø20	103
Ø25	107
Ø32	109
Ø40	138

Overall length dimensions (compared to general type)			
Ø20	Ø25	Ø32	Ø40
-13	-13	-13	-16

※ Attachment type: Standard (BC), Rod side Flange (BF), Rod side Trunnion (BT)
 ※ Dimensions not indicated are the same as ACS5 standard type.

Dimensions-With bellows (J, K)



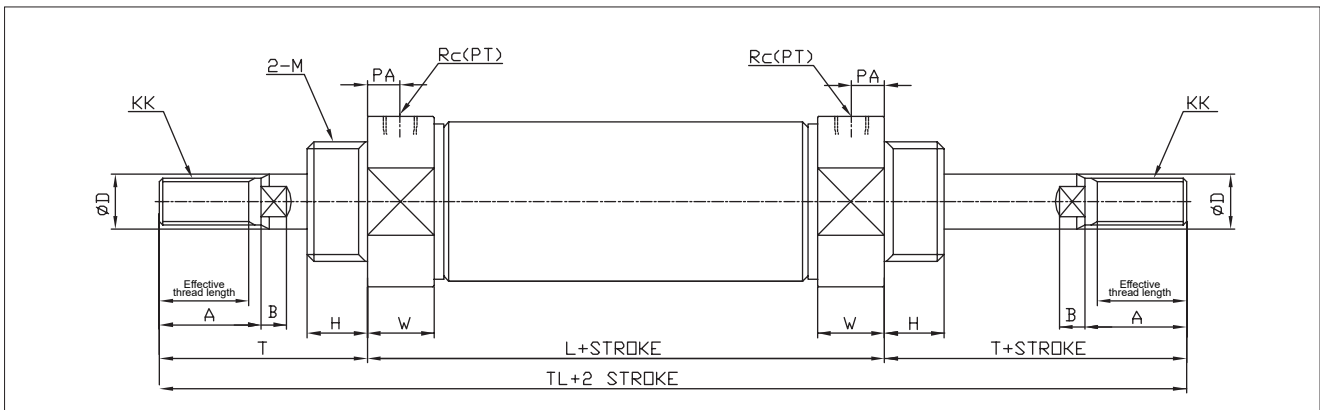
Unit:mm

Bore size	F	ØG	s	t	TL
Ø20	16	39	0.3Stroke+3	56	131
Ø25	16	39	0.3Stroke+3	60	135
Ø32	16	39	0.3Stroke+3	60	137
Ø40	18	40	0.25Stroke+3	67	171

Type	J	K
Material	Nylon Tarpaulin	Neoprene Cloth
Heat resistant	60°C	110°C

※ Dimensions not indicated are the same as ACS5 standard type.
※ SUS band is attached to bellows.

Dimensions-Double rod (W)



Unit:mm

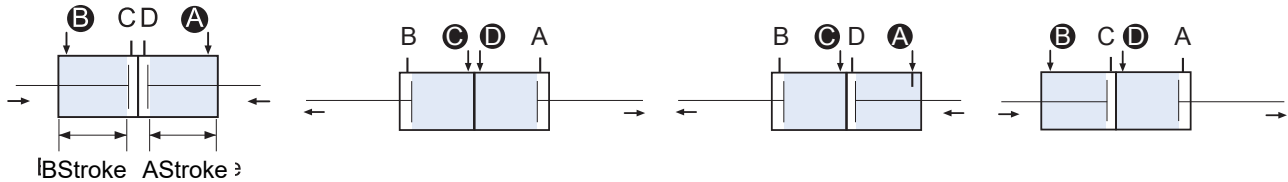
Bore size	Effective thread length	A	B	ØD	H	KK	L	M	PA	Rc(PT)	T	TL	W
Ø20	15.5	18	5.0	8	13	M8X1.25	62	M20X1.5	8	1/8	41	144	15
Ø25	19.5	22	5.5	10	13	M10X1.25	62	M26X1.5	8	1/8	45	152	15
Ø32	19.5	22	5.5	12	13	M10X1.25	64	M26X1.5	8	1/8	45	154	15
Ø40	21.0	24	7.5	14	16	M14X1.50	88	M32X2.0	11	1/4	50	188	21

Double rod Multi-Step Stroke Cylinder (TW)

By combining the head side, two cylinders can be integrated to control the cylinder stroke in three stages as well as reciprocating.

Ordering notation: A stroke + B stroke

Ex) 150 + 200 (A side = 150, B side = 200)



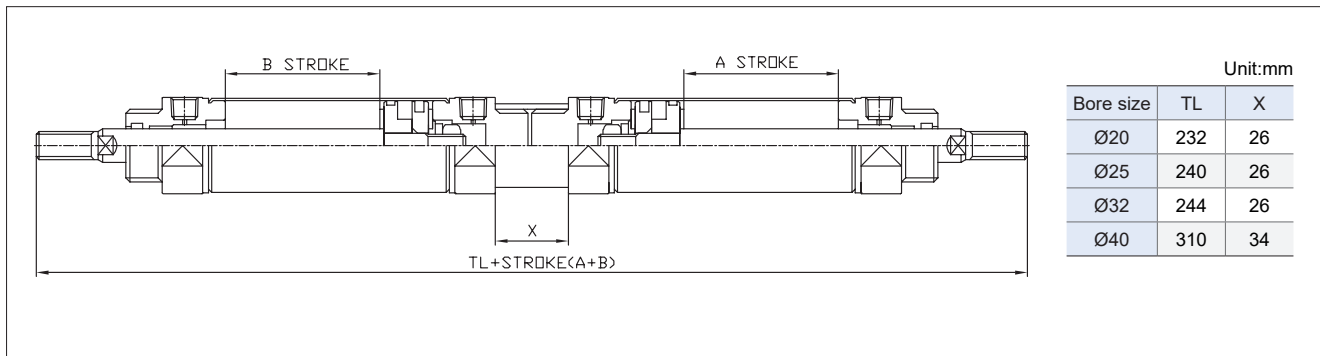
When the air pressure is supplied to A, B ports, A and B strokes reverse.

A and B strokes operate when air is supplied to C and D ports.

When the air pressure is supplied to ports A and C, stroke B is activated.

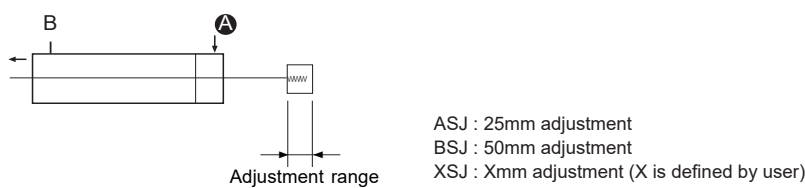
The stroke A is activated when pneumatic pressure is supplied to the pot.

Dimensions-Double rod Multi-Step Stroke Cylinder (TW)

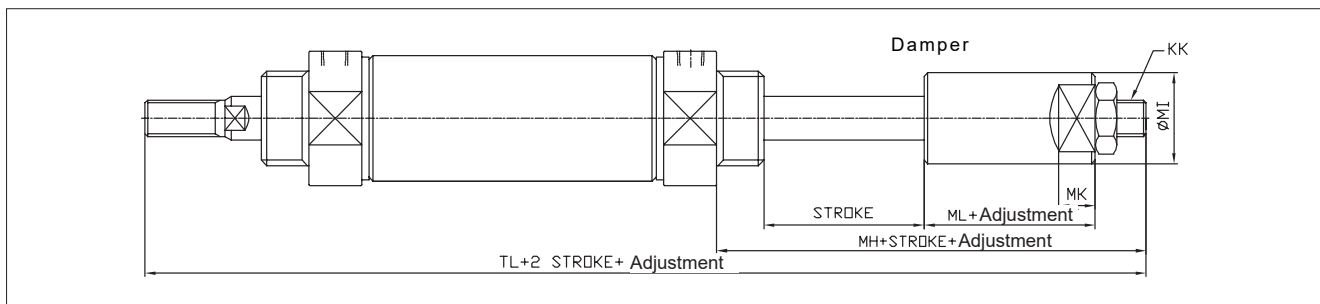


Stroke adjustable type (Forward direction) (ASJ, BSJ)

To adjust the entire forward stroke from 0mm to 50mm an adjustment mechanism is attached to the head side.



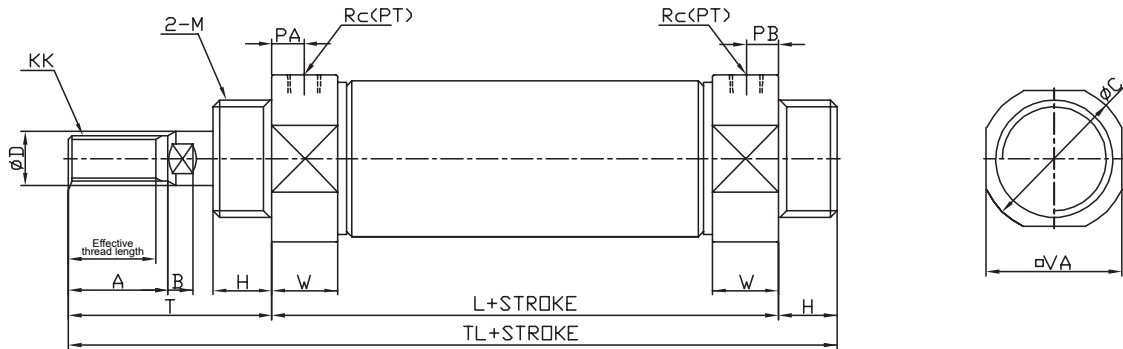
Dimensions-Stroke adjustable type (Forward direction) (ASJ, BSJ)



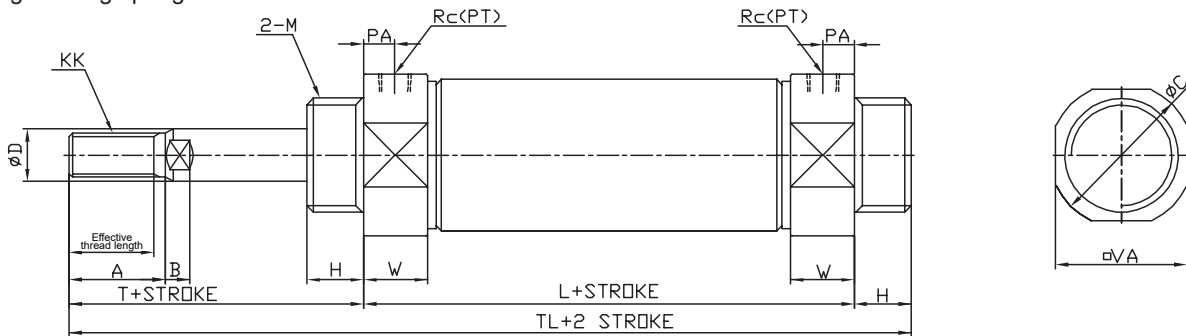
Unit:mm						
Bore size	KK	MH	ØMI	MK	ML	TL
Ø20	M8X1.25	47	20	8	20	150
Ø25	M10X1.25	49	25	10	22	156
Ø32	M10X1.25	49	25	10	22	158
Ø40	M14X1.50	60	30	12	26	198

Dimensions-Single acting spring return(S), Single acting spring extend(T)

Single acting spring return



Single acting spring extend



Unit:mm

Bore size	Effective thread length	A	B	ØC	ØD	H	KK	PA	Rc(PT)	T	□VA	VB	M	W
Ø20	15.5	18	5	28	8	13	M8×1.25	8	1/8	41	24	15	M20×1.5	15
Ø25	19.5	22	5.5	33.5	10	13	M10×1.25	8	1/8	45	30	15	M26×1.5	15
Ø32	19.5	22	5.5	37.5	12	13	M10×1.25	8	1/8	45	34.5	15	M26×1.5	15
Ø40	21	24	7.5	46.5	14	16	M14×1.5	11	1/4	50	42.5	21.5	M32×2.0	21

Unit:mm

Bore size	Stroke		1~50		51~100		101~150		151~200		201~250	
	L	TL	L	TL	L	TL	L	TL	L	TL	L	TL
Ø20	87	141	112	166	137	191	-	-	-	-	-	-
Ø25	87	145	112	170	137	195	-	-	-	-	-	-
Ø32	89	147	114	172	139	197	164	222	-	-	-	-
Ø40	113	179	138	204	163	229	188	254	213	279	-	-

Heat resistant cylinder (SV)

This cylinder is equipped with a heat-resistant packing that can be used at ambient temperatures up to 150 °C.

Specifications

Type	Non-Lubricated
Cylinder Bore size	Ø20, Ø25, Ø32, Ø40
Ambient temperature	-20 ~ 150 °C
Packing Material	VITON

Stainless steel piston rod (SS)

It is used when there is a risk of rust or corrosion due to water immersion when the end of the rod moves forward.

Specifications

Type	Non-Lubricated
Cylinder Bore size	Ø20, Ø25, Ø32, Ø40
Rod Material	SUS 303