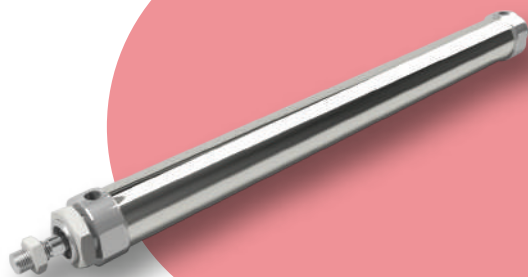


# SPC2 Series



### Features

- Tube material: Stainless steel
- With auto switch, rubber bumper (Standard).
- With non-lubricated seal.
- Improved bush decreases deflection, improves lateral load resistance.
- Lighter and more compact in size than that of conventional type.
- Custom made solution.

Symbol	
Double Acting / Single Rod	Single Acting / Spring Return
Double Acting / Double Rod	Single Acting / Spring Extend

## How to Order

SPC2 -  B  32 -  150

①      ②      ③      ④      ⑤      ⑥      ⑦      ⑧      ⑨      ⑩

### ① Series

SPC2	Double acting single rod small cylinder
SPC2W	Double acting double rod small cylinder

### ② Lubrication

Nil	Standard
L	Low hydraulic pressure type ( ≤5kgf/cm <sup>2</sup> )

### 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.
- ※ Refer to page [1]-133, for Specification about custom-made rod ends.

### 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
Nil	None	Nil	None
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)
S	Single acting spring return
T	Single acting spring extend
SV	Heat resistant cylinder
SS	Stainless steel piston rod
M	Custom Mode

## Specifications

Type	Non-Lubricated			Low hydraulic pressure
	Double acting, Single rod	Double acting, Double rod	Single acting spring return / Single acting spring extend	
Fluid	Air			Turbine Oil VG32
Proof pressure	15kgf/cm <sup>2</sup> (1.5MPa)			
Max. operating pressure	10kgf/cm <sup>2</sup> (1.0MPa)			5kgf/cm <sup>2</sup> (0.5MPa)
Min. operating pressure	0.5kgf/cm <sup>2</sup> (0.05MPa)	0.8kgf/cm <sup>2</sup> (0.08MPa)	Forward: 1.8kgf/cm <sup>2</sup> (0.18MPa) Reverse: 2.3kgf/cm <sup>2</sup> (0.23MPa)	1.8kgf/cm <sup>2</sup> (0.18MPa)
Ambient & fluid temperature	5 ~ 60 °C			
Operating piston speed	50 ~ 750mm/s			15 ~ 300mm/s
Cushion	Rubber bumper			
Tolerance of thread	KS class 2			
Tolerance of stroke	~250 <sup>ST</sup> : <sup>+1.0</sup> / <sub>0</sub>		251~500 <sup>ST</sup> : <sup>+1.0</sup> / <sub>0</sub>	

## Accessory

Mounting style		Standard	Axial foot	Rod side flange	Head side flange	Integrated clevis	Single clevis	<sup>2)</sup> Double clevis	Rod side trunnion	Head side trunnion	Boss-cut	Boss-cut Flange	Boss-cut Trunnion
Standard	Mounting screw	●(1pc)	●(2pcs)	●(1pc)	●(1pc)	-	-	-	<sup>1)</sup> ●(1pc)	<sup>1)</sup> ●(1pc)	●(1pc)	●(1pc)	●(1pc)
	Rod end nut	●	●	●	●	●	●	●	●	●	●	●	●
	Clevis Pin	-	-	-	-	-	-	<sup>3)</sup> ●	-	-	-	-	-
Option	Single Knuckle Joint	●	●	●	●	●	●	●	●	●	●	●	●
	<sup>2)</sup> 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.

※ For double rod type cylinder, rod end nuts (2pcs) are included.

## Mounting Style

Mounting style	Minimum order quantity	Bore size(mm)				Remarks
		Ø20	Ø25	Ø32	Ø40	
Axial foot	1set (2pcs)	LB 20	LB 25/32		LB 40 (Round type)	Foot 2pcs, Nut 1pc
Flange	1pc	FA/FB 20	FA/FB 25/32		FA/FB 40 (Round type)	Flange 1pc, 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

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

※ Rod end attachment of SPC2 40 and that of MPC1 40 are the same.

※ Rod end attachment is the same as SPC1 series. Refer page [1]-23 for more information.

Mass

Unit: kg

Bore size (mm)		Double acting, Single rod				Double acting, Double rod			
		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	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

Ex) SPC2-N-LB32-S100

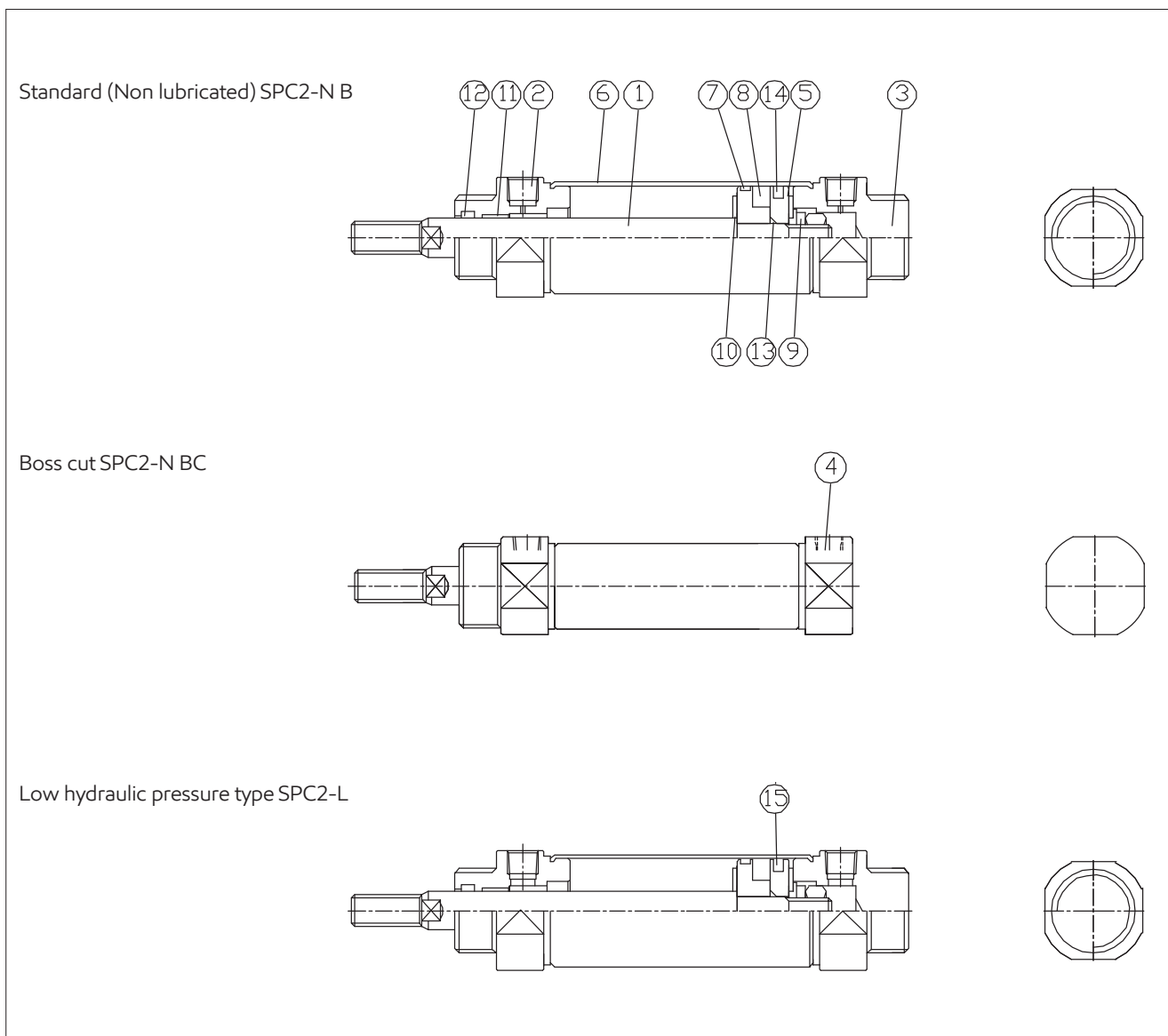
Basis mass: 0.358(FootØ32) / Additional mass: 0.076/50 / Stroke: 100mm  
 $0.358 + 0.076/50 \times 100 = 0.51\text{kg}$

2. Double acting double rod

Ex) SPC2W-N-LB32-S100

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

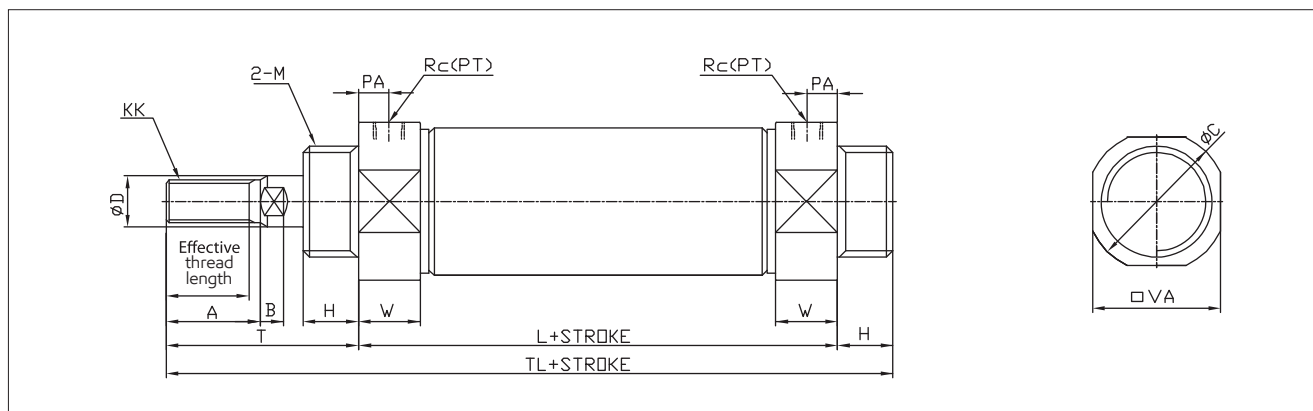
Structure



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	Boss Cut
5	Piston	AL Alloy	-
6	Cylinder Tube	SUS304	-
7	Wearing	Resin	-
8	Magnet	NBR	-
9	Spring Wash	Hard Steel Wire	-
10	Damper	Urethane	-
11	Bush	Copper	-

Part no.	Parts	Material	Bore size				
			Ø20	Ø25	Ø32	Ø40	
Non lubricated	12	Rod Packing	NBR	DRP10	DRP12	DRP12	DRP16
	13	Rod O-Ring	NBR	S6	S8	S8	S10
Low hydraulic pressure	14	Non Lubricated Packing	NBR	OPA20	OPA25	OPA32	OPA40
	15	Low Hydraulic Pressure type Packing	NBR	HSD20	HSD25	HSD32	HSD40

**Dimensions-Standard (B)**

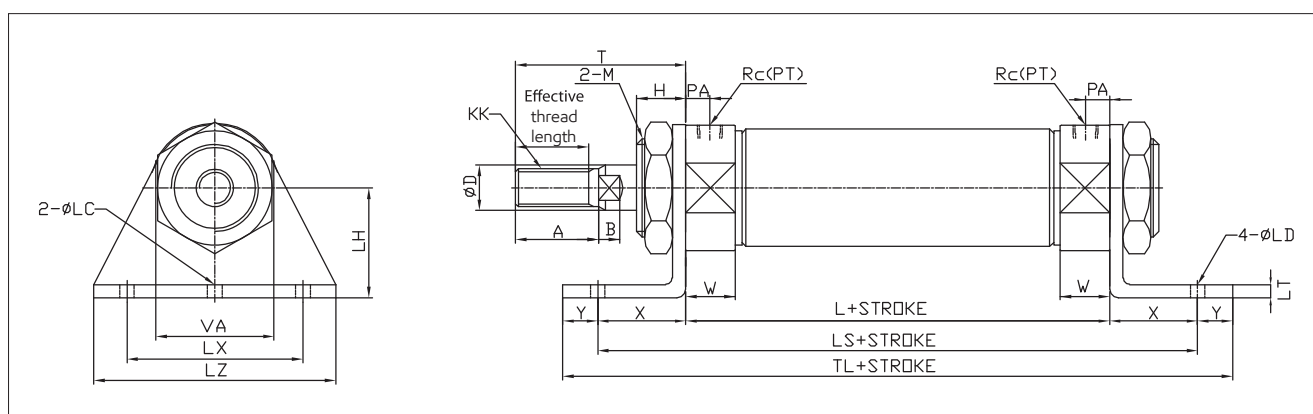


Unit : mm

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	10	13	M8X1.25	62	M20X1.5	8	1/8	41	116
Ø25	19.5	22	5.5	33	12	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	16	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)**

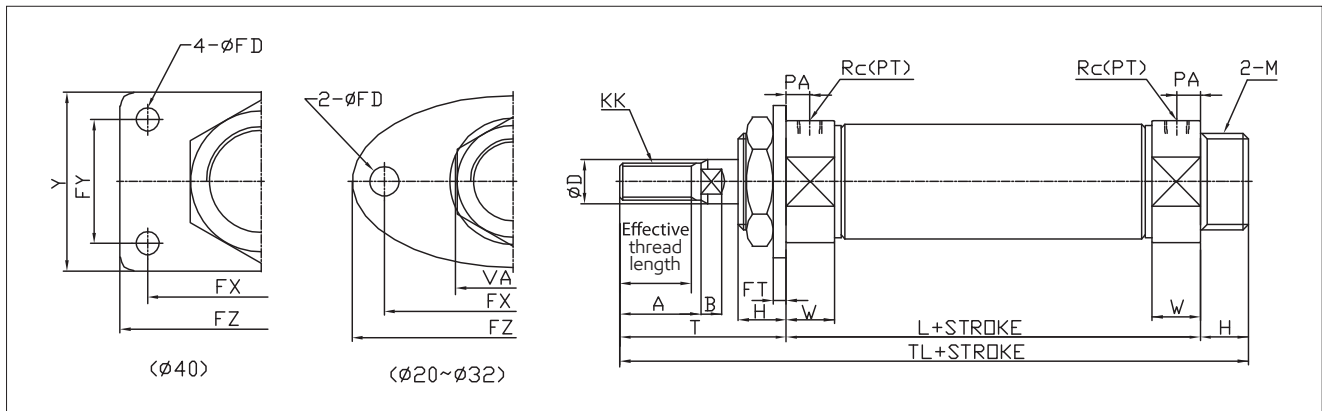


Unit : mm

Bore size	Effective thread length	A	B	ØD	H	KK	L	ØLC	ØLD	LH	LS	LT	LX
Ø20	15.5	18	5.0	10	13	M8X1.25	62	4	6.8	25	102	3.2	40
Ø25	19.5	22	5.5	12	13	M10X1.25	62	4	6.8	28	102	3.2	40
Ø32	19.5	22	5.5	12	13	M10X1.25	64	4	6.8	28	104	3.2	40
Ø40	21.0	24	7.5	16	16	M14X1.50	88	4	7.0	30	134	3.2	55

Bore size	LZ	M	PA	Rc(PT)	T	TL	W	X	Y
Ø20	55	M20X1.5	8	1/8	41	131	15	20	8
Ø25	55	M26X1.5	8	1/8	45	135	15	20	8
Ø32	55	M26X1.5	8	1/8	45	137	15	20	8
Ø40	75	M32X2.0	11	1/4	50	173	21	23	12

**Dimensions-Rod Side Flange (FA)**

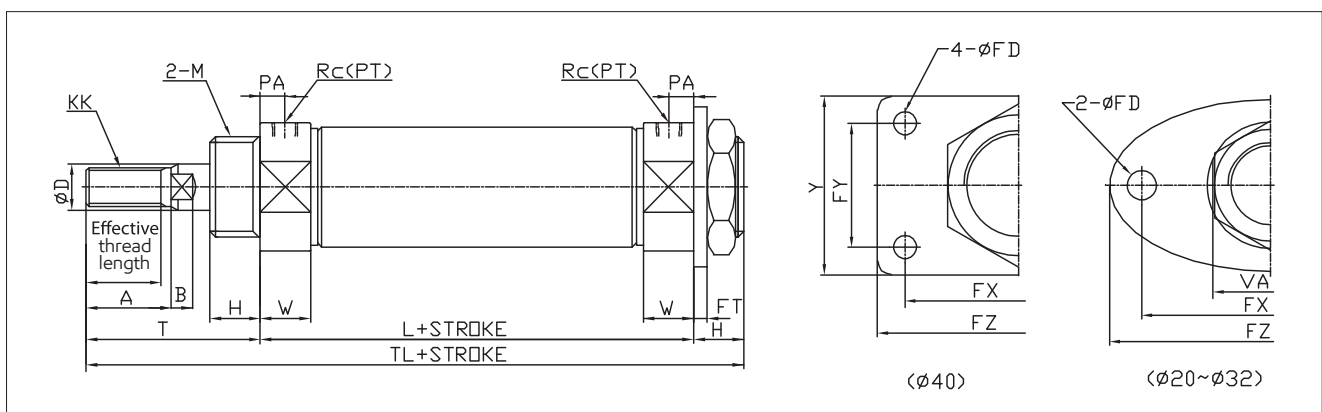


Unit : mm

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

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

**Dimensions- Head Side Flange (FB)**

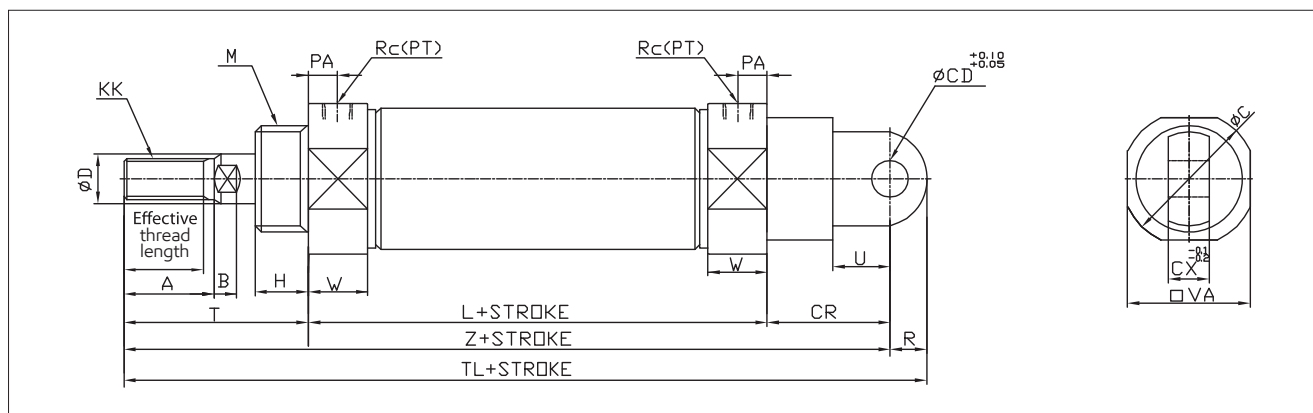


Unit : mm

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

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

**Dimensions- Single Clevis (CA)**

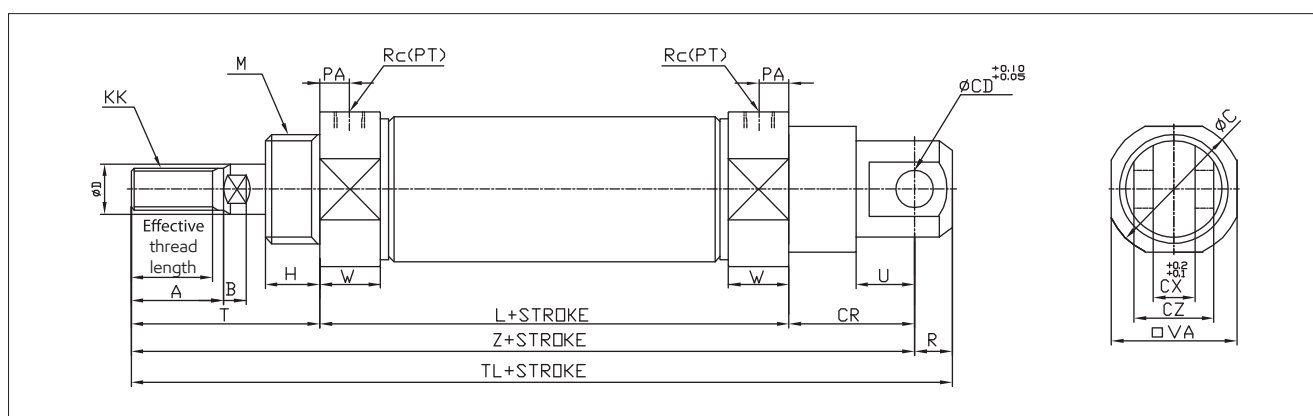


Unit : mm

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	10	13	M8X1.25	62	M20X1.5	8
Ø25	19.5	22	5.5	33	9	30	10	12	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	16	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)**

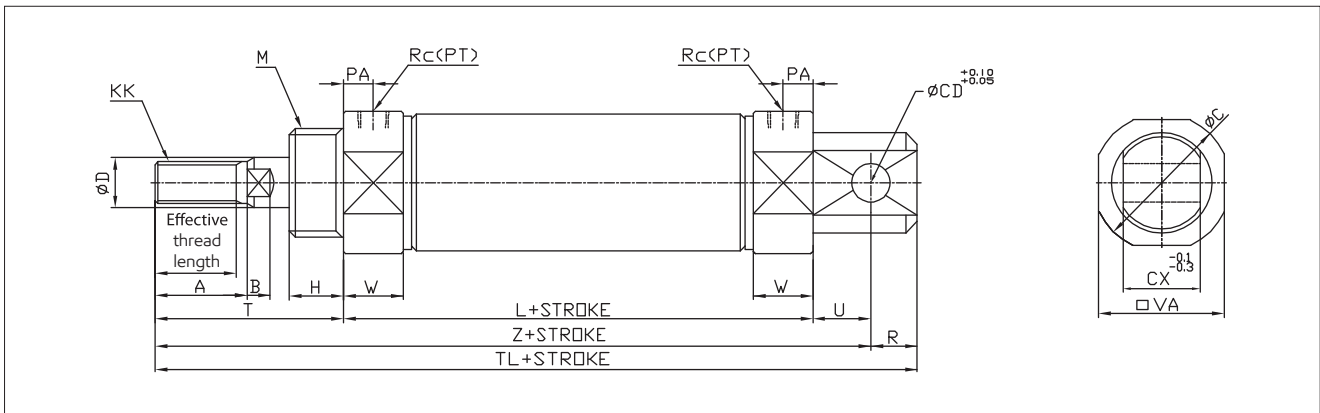


Unit : mm

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	10	13	M8X1.25	62	M20X1.5
Ø25	19.5	22	5.5	33	9	30	10	19	12	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	16	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)**

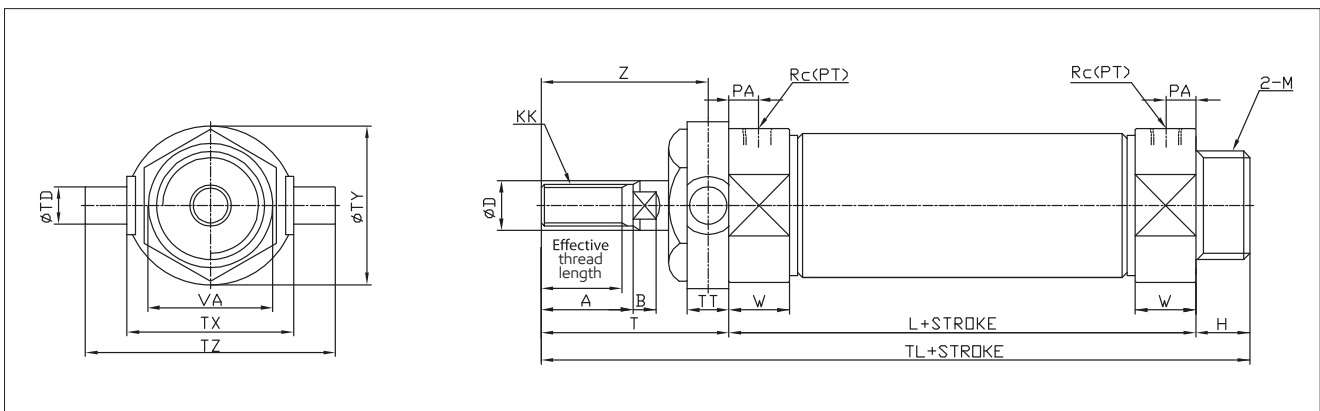


Unit : mm

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	10	13	M8X1.25	62	M20X1.5	8	9
Ø25	19.5	22	5.5	33	8	12	12	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	16	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)**



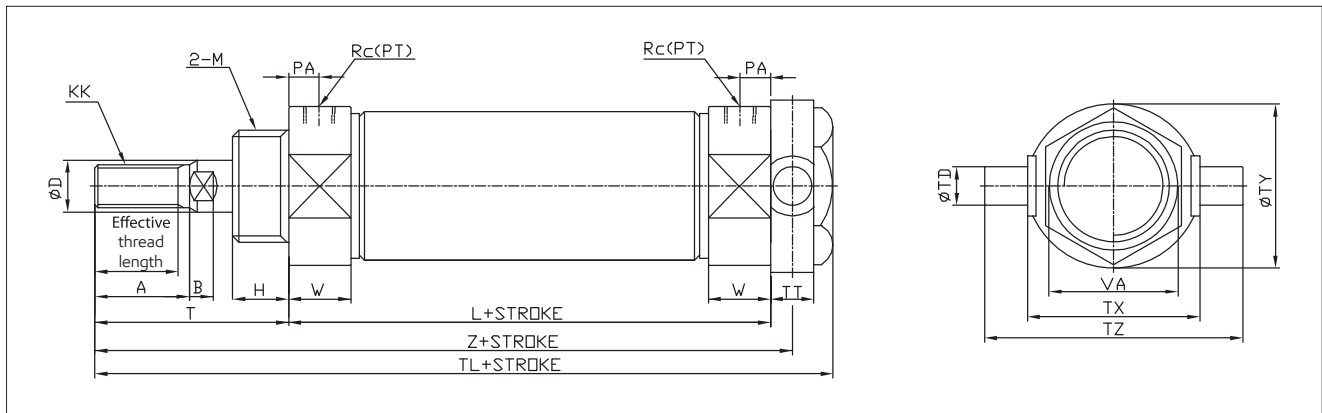
Unit : mm

Bore size	Effective thread length	A	B	ØD	H	KK	L	M	PA	Rc(PT)	T	ØTD	TL
Ø20	15.5	18	5.0	10	13	M8X1.25	62	M20X1.5	8	1/8	41	8	116
Ø25	19.5	22	5.5	12	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	16	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)**

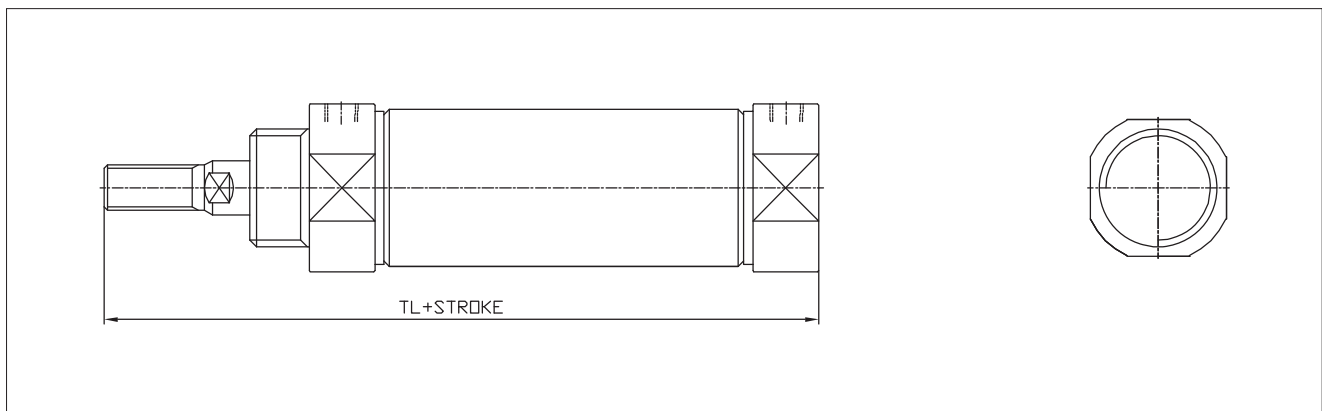


Unit : mm

Bore size	Effective thread length	A	B	ØD	H	KK	L	M	PA	Rc(PT)	T	ØTD	TL
Ø20	15.5	18	5.0	10	13	M8X1.25	62	M20X1.5	8	1/8	41	8	118
Ø25	19.5	22	5.5	12	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	16	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)**



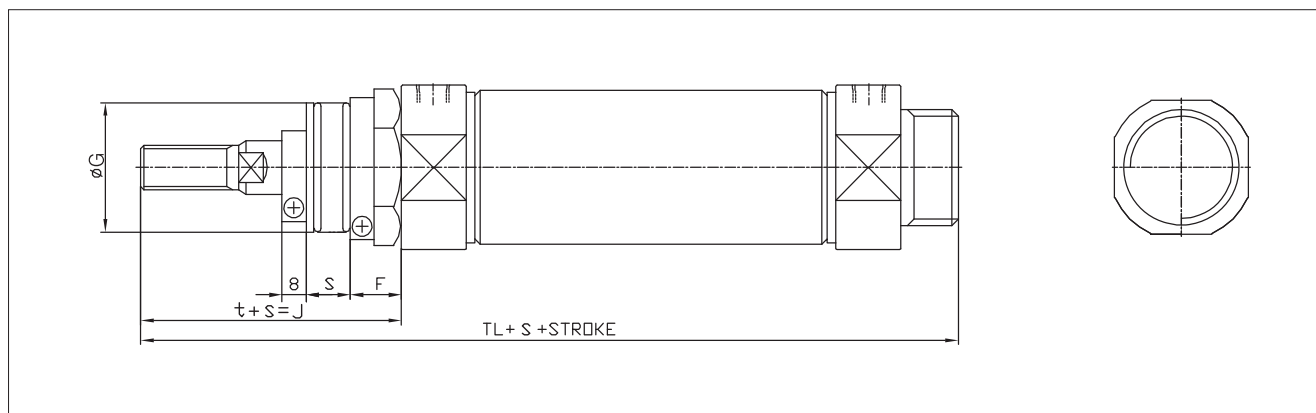
The total length of cylinder and space for attachment is reduced by removing the thread portion of head cover.

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

Dimensions Length Comparison (Comparison with Standard type).			
Ø20	Ø25	Ø32	Ø40
-13	-13	-13	-16

※ Type of attachment: Standard(BC), Rod side flange type(BF), Rod Side Trunnion(BT)  
 ※ For not shown dimensions, refer to SPC2 standard type.

**Dimensions-Bellows Attached Type (J, K)**



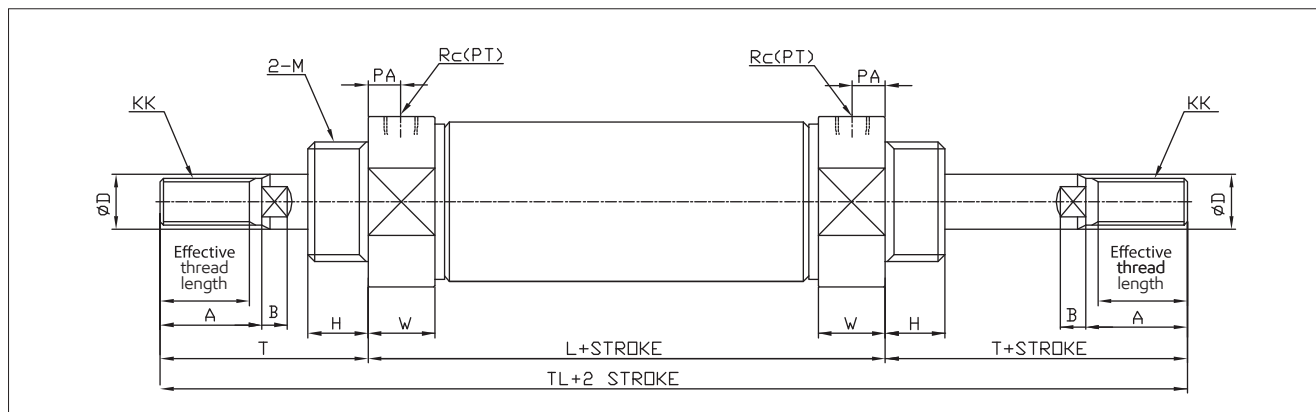
Unit : mm

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

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

※ For dimensions not shown in these figures, refer to the SPC2 standard type.  
 ※ SUS band is mounted at bellows at delivery.

**Dimensions-Double Rod (W)**



Unit : mm

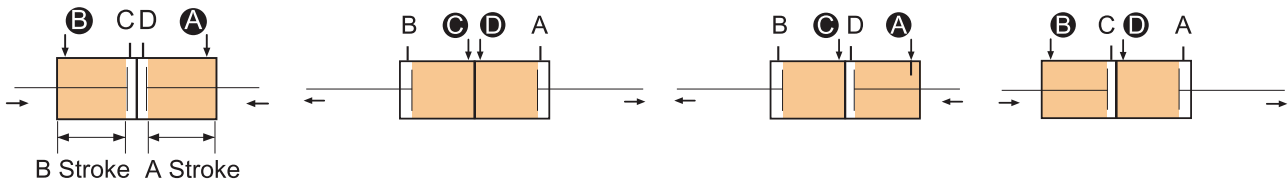
Bore size	Effective thread length	A	B	ØD	H	KK	L	M	PA	Rc(PT)	T	TL	W
Ø20	15.5	18	5.0	10	13	M8X1.25	62	M20X1.5	8	1/8	41	144	15
Ø25	19.5	22	5.5	12	13	M10X1.25	62	M26X1.5	8	1/8	45	152	15
Ø32	19.5	22	5.5	12	13	M10X1.25	64	M26X1.5	8	1/8	45	154	15
Ø40	21.0	24	7.5	16	16	M14X1.50	88	M32X2.0	11	1/4	50	188	21

**Double Rod Multi-Step Stroke Cylinder (TW)**

Head side assembly. By integrating two cylinders enable back and forth stroke and three steps control.

Ordering notation: A Stroke + B Stroke

Example) 150 + 50 (A Side = 150, B Side = 50)



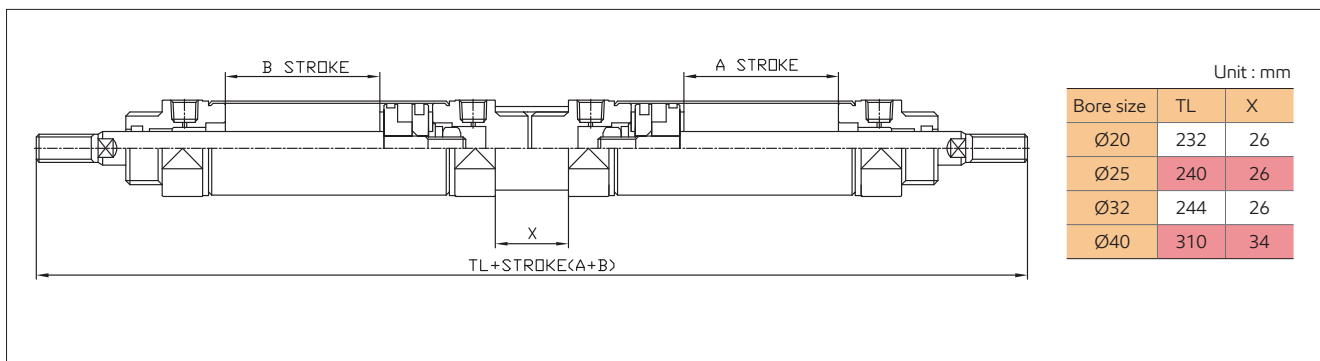
When A and B ports are supplied with air pressure, A and B strokes reverse.

When C and D ports are supplied with air pressure, A and B strokes move forward.

When A and C ports are supplied with air pressure, B stroke move forward.

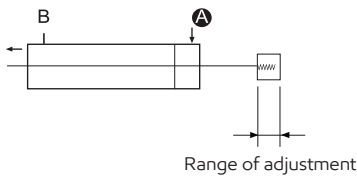
When B and D ports are supplied with air pressure, A stroke move forward.

**Dimensions-Double Rod Multi-Step Stroke Cylinder (TW)**



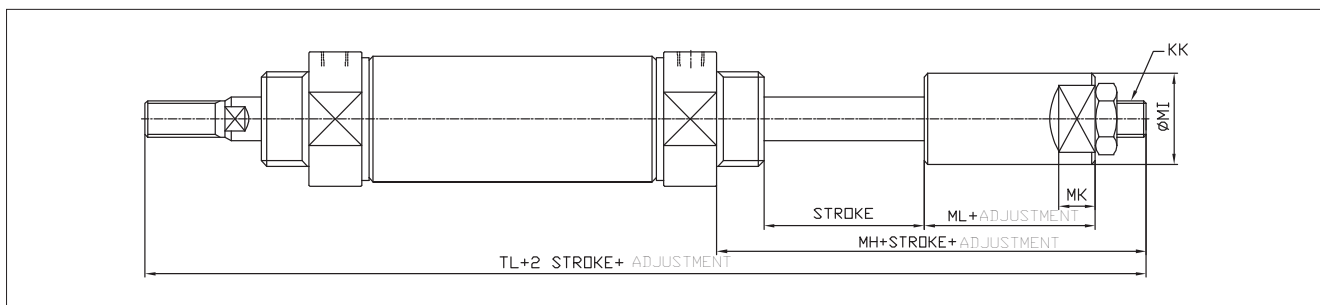
**Forward Stroke Adjustable Cylinder (ASJ, BSJ)**

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



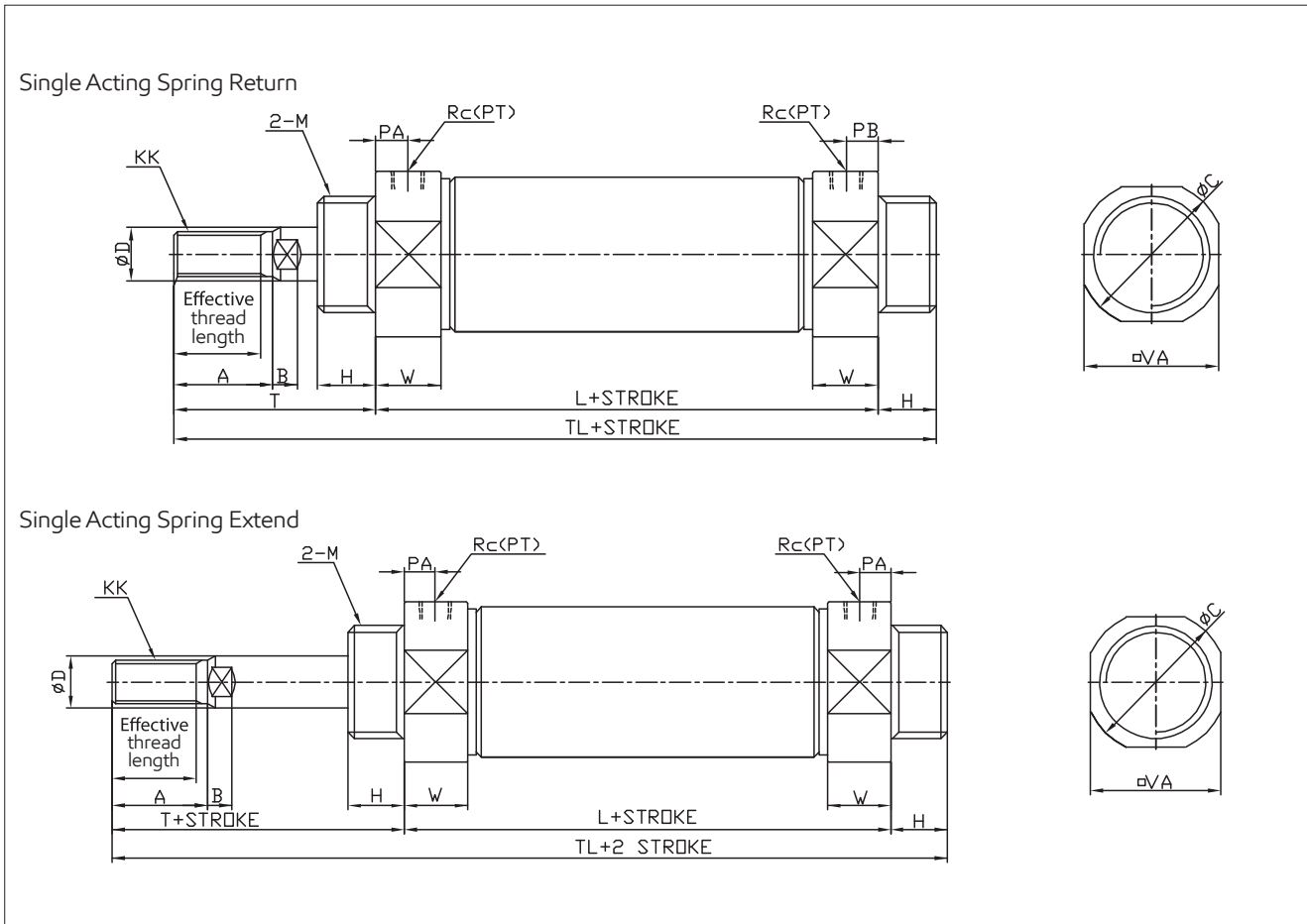
ASJ : 25mm adjustment  
BSJ : 50mm adjustment  
XSJ : Xmm adjustment (X: stroke decided by user)

**Dimensions-Forward Stroke Adjustable Cylinder (ASJ, BSJ)**



Unit : mm							
Bore size	KK	MA	MH	ØMI	MK	ML	TL
Ø20	M8X1.25	12	47	20	8	20	150
Ø25	M10X1.25	17	49	25	10	22	156
Ø32	M10X1.25	17	49	25	10	22	158
Ø40	M14X1.50	22	60	30	12	26	198

**Dimensions-Single Acting Spring Return (S), Spring Extend (T)**



Unit : mm

Bore size	Effective thread length	A	B	C	ØD	H	KK	PA	Rc(PT)	T	□VA	VB	W
Ø20	15.5	18	5	28	10	13	M8×1.25	8	1/8	41	24	15	15
Ø25	19.5	22	5.5	33.5	12	13	M10×1.25	8	1/8	45	30	15	15
Ø32	19.5	22	5.5	37.5	12	13	M10×1.25	8	1/8	45	34.5	15	15
Ø40	21	24	7	46.5	16	13	M14×1.5	11	1/4	50	42.5	21.5	21.5

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
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)**

Heat resistant cylinder can be used at a high ambient temperature up to 150 °C by equipped with heat-resistant seal.

**Specifications**

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

**Stainless Steel Piston Rod (SS)**

Stainless steel cylinder rod is selected to prevent the end of rod from corrosion when it is in contact with water during operation.

**Specifications**

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