

21 MPa position sensing cylinders using absolute method

- Now even more compact. (compared to the PTT-1B)
Total cylinder length: Shortened by up to 43mm
- The position sensor applying a magnetostriction phenomenon enables high-accuracy absolute position detection.
- There is no need for a switch for the original position settings.
- Compact design.
- Cushions available at either end.



Standard Specifications

Type	General purpose type	
Nominal pressure	21MPa	
Maximum allowable pressure	Rod side: Rod A 26.5 MPa Cap side: Rod A 26.5 MPa Rod B 24.5 MPa Rod B 26.5 MPa	
Proof test pressure	31.5MPa	
Minimum operating pressure	Rod side: Rod A 0.6 MPa or less Cap side: 0.3 MPa or less Rod B 0.45 MPa or less	
Working speed range (excluding cushion)	ϕ 50 to ϕ 63 : 8 to 400mm/s ϕ 80 to ϕ 125 : 8 to 300mm/s ϕ 140 to ϕ 160 : 8 to 200mm/s	
Working temperature range (ambient/fluid temperature)	Standard type -10 to +80°C (No freezing)	
Structure of cushioning	Metal fitting system	
Adaptable fluid	Petroleum-based fluid (When using another fluid, refer to the table of fluid adaptability.)	
Tolerance for thread	JIS 6g/6H	
Tolerance of stroke	0 to 100mm: $\begin{matrix} +0.8 \\ 0 \end{matrix}$ 101 to 250mm: $\begin{matrix} +1.0 \\ 0 \end{matrix}$ 251 to 630mm: $\begin{matrix} +1.25 \\ 0 \end{matrix}$ 631 to 1000mm: $\begin{matrix} +1.4 \\ 0 \end{matrix}$ 1001 to 1600mm: $\begin{matrix} +1.6 \\ 0 \end{matrix}$ 1601 to 2000mm: $\begin{matrix} +1.8 \\ 0 \end{matrix}$	
Mounting style	SD, LA, FA, TA, TC	
Accessories	Boots	Standard: Nylon tarpaulin Semi-standard: Chloroprene, Conex
	Rod end attachments	Rod eye (T-end), Rod clevis (Y-end) with pin
	Others	Lock nut

Terminologies

Nominal pressure

Pressure given to a cylinder for convenience of naming. It is not always the same as the working pressure (rated pressure) that guarantees performance under the specified conditions.

Maximum allowable pressure

The maximum allowable pressure generated in a cylinder (surge pressure, etc.).

Proof test pressure

Test pressure against which a cylinder can withstand without unreliable performance at the return to nominal pressure.

Minimum operating pressure

The minimum pressure that a cylinder placed horizontally without a load can work.

Notes)

- The hydraulic pressure generated in a cylinder due to the inertia of load must be lower than the maximum allowable pressure.
- In case that the lock nut is attached to the piston rod end thread part, increase the thread length (dimension A).
- Conex, material of the boots, is the registered trademark of Teijin Limited.

Adaptability of Fluid to Seal Material

Seal material	Adaptable fluid					Adaptable cutting oil		Seal operating temperature range (°C)
	Petroleum based fluid	Water-glycol fluid	Phosphate ester fluid	Water in oil fluid	Oil in water fluid	Nonaqueous	Aqueous	
1 Nitrile rubber	○	○	×	○	○	×	△	-10 to 80
2 Urethane rubber	○	×	×	△	△	×	×	-10 to 80
3 Fluorocarbon	○	×	○	○	○	○	×	0 to 100
6 HNBR	○	○	×	○	○	△	○	-10 to 120

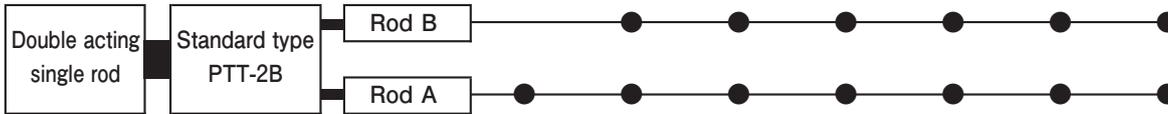
Notes) 1. ○: Applicable, ×: Inapplicable. Consult us before using the △-marked items.

Protect with a boot or similar in environments in which the cutting oil disperses frequently.

Product Lineup

Unit : mm

Series Variations	Type	Rod dia.	φ50	φ63	φ80	φ100	φ125	φ140	φ160
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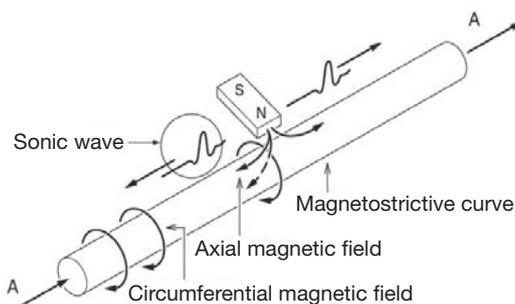
Detector Specifications

Power supply		24 V DC ±2V 0.1A
Accuracy	Linearity	±0.05%FS or ±150 μm TYP
	Resolution	0.01%FS or less or 30 μm or less
	Repeatability	±0.01%FS or less or ±30 μm or less
	Temperature characteristics	±40 ppmFS/°C or less or 12 μm/°C or less
Output	Standard	Current output of 4 to 20 mA, load resistance of 500 Ω or less
	Semi-Standard	Voltage output: 0 to 10V Load current: 5 mA max. Load resistance: 2 kΩ min.
Frequency characteristics		Scanning frequency 1 kHz
Working temperature range		-20°C to +80°C
Impact resistance		50G (2ms)
Vibration resistance		6 G or 40 Hz 2mmPP
Protective structure		IP-67
Connection	Pin No.	Signal
	1	24 V DC
	2	0V
	3	Output
	4	COM
		Shield to be connected to 0 V by user 0 V and COM are connected internally.
Supplied connector		OMRON XS2C-D4S1
Applicable cable (not supplied)		Outer diameter: 5 to 6 mm Wire size: 0.18 to 0.75 mm ²

* Above shown are the specifications for the sensor only.
* A larger value of two values of each accuracy item is applicable.

- In the mounted state on the cylinder, the above accuracy cannot be assured due to deformation of cylinder elements caused by pressure and load. For the repeatability under the same conditions, a value close to the above accuracy can be obtained.
- The output is 4.0 to 4.5 mA (or 0 to 0.3 V) at the cylinder retracting end and 12 to 20 mA (or 5 to 10 V) at the cylinder advancing end. At some cylinder strokes, part of the sensor effective length may not be used. Set the controller conditions based on the actual output at the cylinder advancing and retracting ends.

Principle of Operation of Position Sensor



The figure shows the basic principle. When a current pulse shown by arrow A is given to the magnetostrictive curve, a circumferential magnetic field is generated on the magnetostrictive curve. When a magnet is positioned as shown in the figure, an axial magnetic field is given only to the position, and a diagonal magnetic field as shown by the dotted line is generated, thereby causing torsion in this part of the magnetostrictive curve. Since this torsion is a kind of vibration, it propagates at the sonic speed on the magnetostrictive curve which is a metallic tube. PTT-2B Series uses absolute type position sensors which measure the propagation time at the supersonic speed to find the magnet position.

Stroke Range

Unit : mm

Bore	Stroke
φ50 to φ160	to 1500

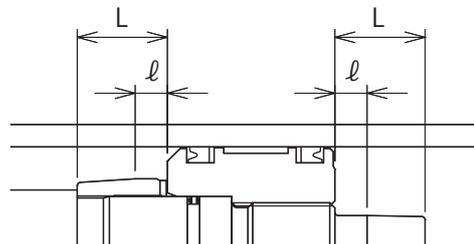
- The above strokes indicate the maximum available strokes for the standard type. Contact us for longer strokes.
- For the rod buckling, check with the buckling chart in the selection materials of our general catalog.

Cushion Stroke Length

Unit : mm

Bore	Cushion ring length L	Cushion ring parallel part length ℓ
φ50 to φ63	25	7
φ80 to φ100	30	12
φ125 to φ160	33	15

- The cushion stroke lengths in case of cylinders used up to the stroke end.
- In the case that a cylinder is not used up to the stroke end, and it is stopped 5 mm or more before the stroke end, the cushioning effect will be weakened.



How to order

★You will need to specify the air vent position of ⑧ when replacing the PTT-1B with the PTT-2B.

- ① Type
- ② Seal material
- ③ Mounting style
- ④ Cylinder bore
- ⑤ Rod type
- ⑥ Cushioning
- ⑦ Stroke
- ⑧ Air vent position
- ⑨ Port position
- ⑩ Cushion valve position
- ⑪ Rod end attachment
- ⑫ Lock nut
- ⑬ Boots

Standard type	PTT-2B	2	LA	80	B	B	100	N	A	B	-	T	K	J
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① Type **PTT-2B**

② Seal material

1	Nitrile rubber
2	Urethane rubber

3	Fluorocarbon
6	HNBR

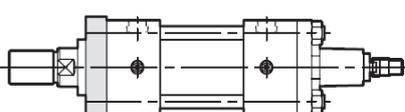
For 140 and 160 mm bore cylinders with rod A, only [1] and [2] can be used.

③ Mounting style

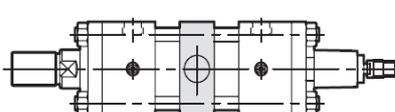
SD (basic style)



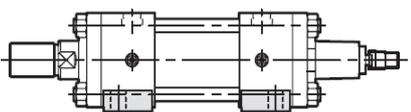
FA (rod flange)



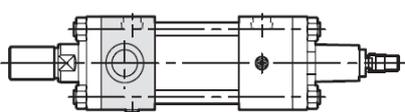
TC (intermediate trunnion)



LA (side lugs)



TA (rod trunnion)



④ Cylinder bore (mm) Standard type $\phi 50 \cdot \phi 63 \cdot \phi 80 \cdot \phi 100 \cdot \phi 125 \cdot \phi 140 \cdot \phi 160$

⑤ Rod type

A	Rod A
B	Rod B

 · 50 mm bore cylinders can use only the rod A.

⑥ Cushioning

B	With cushions on both ends
R	With cushion on the rod side

H	With cushion on the cap side
N	No cushion

⑦ Cylinder stroke (mm)

⑧ Air vent position (A,B,C,D,N,-) · Specify the codes (A, B, C or D) listed in the dimensions table for ⑧, ⑨ and ⑩.

- If there is no air vent ⑧, this will be N.
- If there is no cushion ⑩, this will be 0.
- You cannot specify the same surface for the port, cushion valve and air vent.
- The shape of the air vent on the rod side in the TA model is different depending on whether or not there is cushioning. The plug is the same size as the cushion plug when there is no cushion.
- The check plug on the outer surface of the cover also serves as the air vent for the sizes of $\phi 50$ and $\phi 63$.
- Set the air vent code position to "-" for the sizes of $\phi 50$ and $\phi 63$.

⑨ Port position (A,B,C,D)

⑩ Cushion valve position (A,B,C,D,0)

⑪ Rod end attachment

T	Rod eye (T-end)
Y	Rod clevis (Y-end)

The rod end attachments are dedicated to the rod B. To use them for the rod A, give instructions to change the rod end thread length to that of the rod B.

⑫ Lock nut

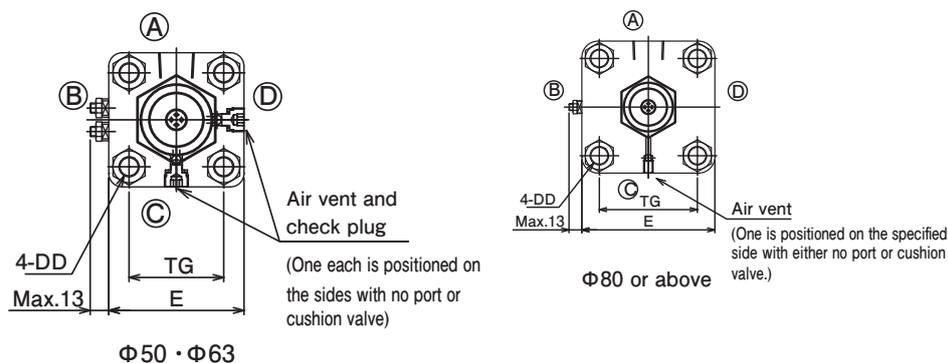
K	Long thread with lock nut
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 The rod end thread length (dimension A) is longer.

⑬ Boots

J	Nylon tarpaulin
JN	Chloroprene
JK	Conex

· Air vent position



Weight Table

Unit : kg

Bore mm	Rod type	Basic weight (SD style)	Additional weight per mm of stroke	Mounting accessory additional weight				Rod end attachment weight			
				LA	FA	TA	TC	Rod eye (T-end)	Rod clevis (Y-end)	With lock nut	
										Nut only	Standard long thread
φ 50	A	9.3	0.019	1.03	1.11	0.28	1.02	-	-	0.22	0.36
	B	-	-	-	-	-	-	1.67	2.30	0.11	-
φ 63	A	12.8	0.028	1.42	1.66	0.62	1.64	-	-	0.48	0.81
	B	12.2	0.024	1.42	1.51	0.62	1.64	2.51	3.97	0.22	0.36
φ 80	A	20.0	0.043	2.42	2.57	1.29	3.07	-	-	0.91	1.48
	B	19.2	0.036	2.40	2.12	1.29	3.07	3.77	6.54	0.48	0.81
φ 100	A	31.0	0.065	3.41	4.91	3.22	6.24	-	-	1.84	3.10
	B	28.9	0.054	3.39	4.41	3.25	6.24	7.47	12.62	0.91	1.48
φ 125	A	52.2	0.103	5.66	7.96	4.96	12.70	-	-	3.23	5.80
	B	48.3	0.084	5.56	6.82	4.96	12.70	12.41	22.96	1.84	3.10
φ 140	A	73.9	0.131	6.93	8.67	7.64	18.26	-	-	5.16	9.60
	B	68.5	0.109	6.93	7.08	7.60	18.26	19.17	33.75	2.50	4.42
φ 160	A	101.6	0.166	9.95	13.04	17.49	22.91	-	-	6.22	11.14
	B	96.3	0.141	9.95	10.86	17.28	22.91	26.97	46.72	3.23	5.80

Notes) See the "With lock nut-Standard long thread" column when the nut symbol is K. The values include the weight for the increase in screw length.

The rod eye and rod clevis are dedicated to the rod B. When the rod A is used, change the rod end thread diameter to that of the rod B.

Calculation formula

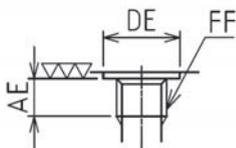
Cylinder weight = basic weight
 + (cylinder stroke (mm) × additional weight per mm of stroke)
 + mounting accessory weight
 + rod end attachment weight

Calculation example: PTT-2B, rod B, bore φ 80, cylinder stroke 500 mm, LA style, with rod clevis (Y-end)

Cylinder weight = 19.2 + (500 × 0.036) + 3.39 + 6.54 = 47.13kg

★Port G thread type

We provide support for the following shape port G screws. Indicate separately.

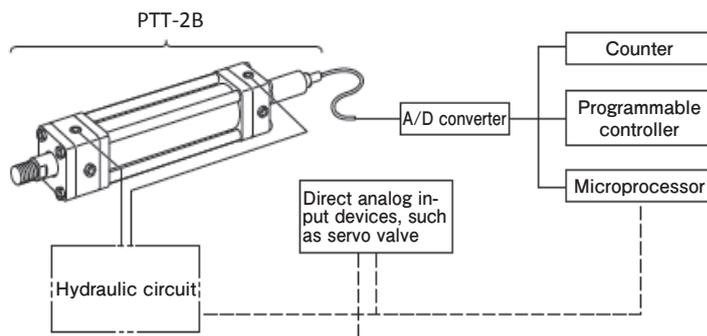


Bore	AE	DE	FF
φ 50, φ 63	14	φ 30	G 1/2
φ 80, φ 100	16	φ 36.9	G 3/4
φ 125 to φ 160	18	φ 46.1	G 1

★Semi-standard range

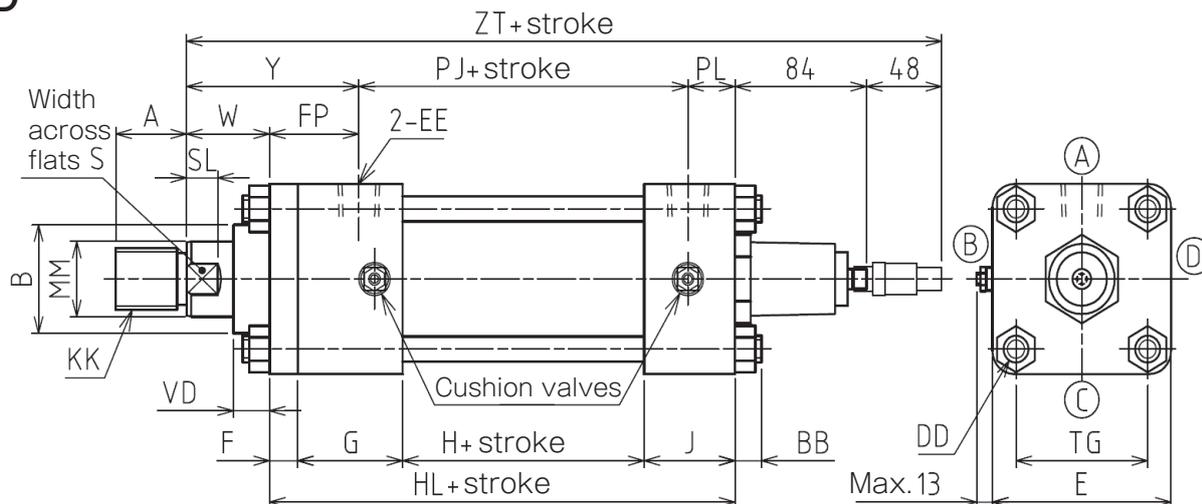
- Change in piston rod end
- Change in TC accessory position (dimensional symbol: PH)
- With boots
- Plated cylinder tube (hard chrome plating thickness: 0.02 mm)
- Specification of working fluid (water-glycol fluid)
- Specification of dimension BB (extension of tie rod)

Application Example

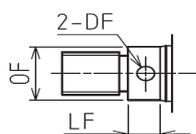


- The cylinder position and operation can be checked on the counter, and position adjustment and inching can be easily performed by manual operation.
- When combined with a personal computer or a microprocessor, the cylinder can be decelerated and stopped at any position.

SD



- The cushion valve position is different depending on the bore.
- For the thread length (dimension A) when the lock nut is used, refer to "Thread length of rod end with lock nut."



Bore	DF	LF	OF
φ 125	φ 12	25	φ 89.5
φ 140	φ 12	28	φ 99.5
φ 160	φ 15	26	φ 109.5

Rod A, φ 125 or above

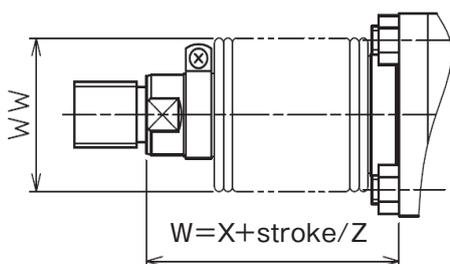
Dimension Table

Unit : mm

Symbol Bore	Rod B									Rod A								
	A	B	KK	MM	S	SL	VD	W	Y	A	B	KK	MM	S	SL	VD	W	Y
φ 50	-	-	-	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16	15	36	78
φ 63	35	φ 55	M30x1.5	φ 36	30	16	15	43	90	45	φ 65	M39x1.5	φ 45	41	20	19	43	90
φ 80	45	φ 65	M39x1.5	φ 45	41	20	18	48	105	55	φ 80	M48x1.5	φ 56	50	23	19	48	105
φ 100	55	φ 80	M48x1.5	φ 56	50	23	17	53	111	75	φ 95	M64x2	φ 70	65	27	21	53	113
φ 125	75	φ 95	M64x2	φ 70	65	27	19	60	133	90	φ 120	M80x2	φ 90	-	-	28	60	133
φ 140	80	φ 105	M72x2	φ 80	75	31	15	60	141	105	φ 130	M95x2	φ 100	-	-	24	60	141
φ 160	90	φ 120	M80x2	φ 90	85	33	15	60	146	110	φ 140	M100x2	φ 110	-	-	24	60	146

Symbol Bore	BB	DD	E	EE	F		FP		G	H	HL		J	PJ	PL	TG	ZT	
					B	A	B	A			B	A					B	A
φ 50	13	M12x1.25	□80	Rc1/2	-	13	-	42	56	48	-	188	71	102	44	□56	-	356
φ 63	14	M14x1.5	□94	Rc1/2	15	15	47	47	59	52	185	185	59	106	32	□68	360	360
φ 80	16	M16x1.5	□114	Rc3/4	18	18	57	57	67	54	197	197	58	110	30	□84	377	377
φ 100	18	M18x1.5	□135	Rc3/4	20	22	58	60	66	60	206	208	60	116	32	□102	391	393
φ 125	21	M22x1.5	□165	Rc1	24	24	73	73	82	64	228	228	58	130	25	□125	420	420
φ 140	25	M27x2	□192	Rc1	32	32	81	81	82	72	244	244	58	138	25	□144	436	436
φ 160	27	M30x2	□218	Rc1	37	37	86	86	87	80	267	267	63	156	25	□164	459	459

With Boots

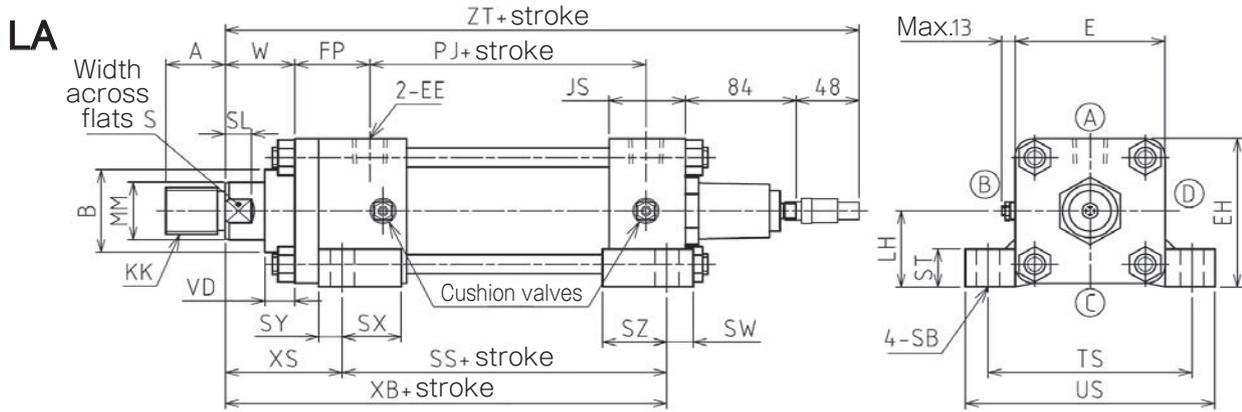


Symbol:Material	Heat proof
J: Nylon tarpaulin	80°C
JN: Chloroprene	130°C
JK: Conex	200°C

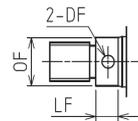
Unit : mm

Symbol Bore	Rod B				Rod A			
	WW	X	Z		WW	X	Z	
			J,JN	JK			J,JN	JK
φ 50	-	-	-	-	φ 71	55	4	3
φ 63	φ 71	55	4	3	φ 80	55	4	3
φ 80	φ 80	55	4	3	φ 100	55	4	3
φ 100	φ 100	55	4	3	φ 125	65	5	3.5
φ 125	φ 125	65	5	3.5	φ 140	65	5	4
φ 140	φ 125	65	5	3.5	φ 160	65	5	4
φ 160	φ 140	65	5	4	φ 180	65	5	4

- Remember that the heat proof field in the table above shows the allowable temperatures for the boots, not for the cylinder.
- The boots have been mounted at our factory prior to delivery.
- Conex is the registered trademark of Teijin Limited.
- If the calculated value has a fractional part, round it up.



- The cushion valve position is different depending on the bore.
- For the thread length (dimension A) when the lock nut is used, refer to "Thread length of rod end with lock nut."



Bore	DF	LF	OF
φ 125	φ 12	25	φ 89.5
φ 140	φ 12	28	φ 99.5
φ 160	φ 15	26	φ 109.5

Rod A, φ 125 or above

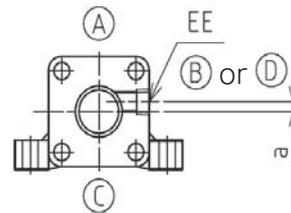
Dimension Table

Unit : mm

Symbol Bore	Rod B							Rod A						
	A	B	KK	MM	S	SL	VD	A	B	KK	MM	S	SL	VD
φ 50	-	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16	15
φ 63	35	φ 55	M30x1.5	φ 36	30	16	15	45	φ 65	M39x1.5	φ 45	41	20	19
φ 80	45	φ 65	M39x1.5	φ 45	41	20	18	55	φ 80	M48x1.5	φ 56	50	23	19
φ 100	55	φ 80	M48x1.5	φ 56	50	23	17	75	φ 95	M64x2	φ 70	65	27	21
φ 125	75	φ 95	M64x2	φ 70	65	27	19	90	φ 120	M80x2	φ 90	-	-	28
φ 140	80	φ 105	M72x2	φ 80	75	31	15	105	φ 130	M95x2	φ 100	-	-	24
φ 160	90	φ 120	M80x2	φ 90	85	33	15	110	φ 140	M100x2	φ 110	-	-	24

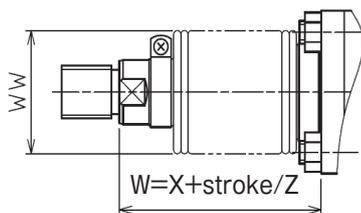
Symbol Bore	a	E	EE	EH	FP		JS	LH	PJ	SB	SS	ST	SW	SX	SY	SZ
					B	A										
φ 50	6	□80	Rc1/2	85	-	42	71	45 ±0.15	102	φ 14	124	20	18	32	18	32
φ 63	6	□94	Rc1/2	97	47	47	59	50 ±0.15	106	φ 18	137	25	15	32	18	35
φ 80	10	□114	Rc3/4	117	57	57	58	60 ±0.25	110	φ 18	143	30	18	47	18	47
φ 100	10	□135	Rc3/4	137.5	58	60	60	70 ±0.25	116	φ 22	150	35	18	48	18	48
φ 125	10	□165	Rc1	167.5	73	73	58	85 ±0.25	130	φ 26	173	45	23	59	23	50
φ 140	0	□192	Rc1	196	81	81	58	100 ±0.25	138	φ 30	183	45	28	54	28	57
φ 160	0	□218	Rc1	224	86	86	63	115 ±0.25	156	φ 33	202	55	30	57	30	65

Symbol Bore	TS	US	W		XB	XS	ZT
			B	A			
φ 50	115	145	-	36	191	67	356
φ 63	136	169	43	43	213	76	360
φ 80	155	190	51	51	230	87	380
φ 100	190	230	60	58	248	98	398
φ 125	224	272	65	65	285	112	425
φ 140	262	320	60	60	303	120	436
φ 160	294	356	60	60	329	127	459



*If the port takes the B or D surfaces, this will be offset on the side of the A surface.

With Boots

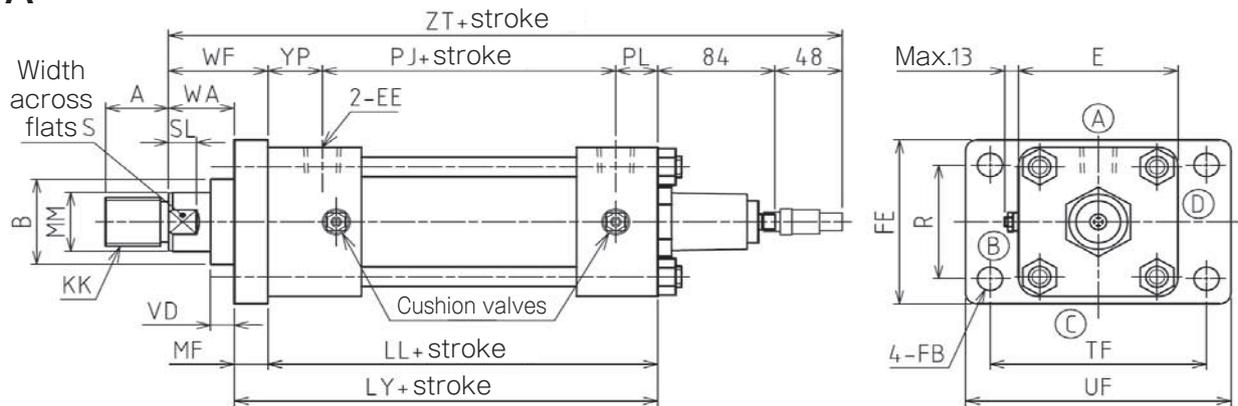


Symbol:Material	Heat proof
J: Nylon tarpaulin	80°C
JN: Chloroprene	130°C
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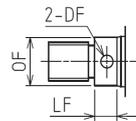
Symbol Bore	Rod B								Rod A			
	WW	X	Z		WW	X	Z					
			J,JN	JK			J,JN	JK				
φ 50	-	-	-	-	φ 71	55	4	3				
φ 63	φ 71	55	4	3	φ 80	55	4	3				
φ 80	φ 80	58	4	3	φ 100	58	4	3				
φ 100	φ 100	62	4	3	φ 125	70	5	3.5				
φ 125	φ 125	70	5	3.5	φ 140	70	5	4				
φ 140	φ 125	65	5	3.5	φ 160	65	5	4				
φ 160	φ 140	65	5	4	φ 180	65	5	4				

- Remember that the heat proof field in the table above shows the allowable temperatures for the boots, not for the cylinder.
- The boots have been mounted at our factory prior to delivery.
- Conex is the registered trademark of Teijin Limited.
- If the calculated value has a fractional part, round it up.

FA



- The cushion valve position is different depending on the bore.
- For the thread length (dimension A) when the lock nut is used, refer to "Thread length of rod end with lock nut."



Bore	DF	LF	OF
φ 125	φ 12	25	φ 89.5
φ 140	φ 12	28	φ 99.5
φ 160	φ 15	26	φ 109.5

Dimension Table

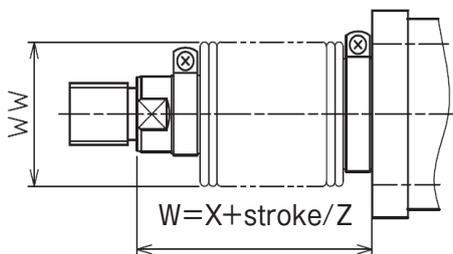
Rod A, φ 125 or above

Unit : mm

Symbol Bore	Rod B							Rod A						
	A	B	KK	MM	S	SL	VD	A	B	KK	MM	S	SL	VD
φ 50	-	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16	8
φ 63	35	φ 55	M30x1.5	φ 36	30	16	6	45	φ 65	M39x1.5	φ 45	41	20	10
φ 80	45	φ 65	M39x1.5	φ 45	41	20	12	55	φ 80	M48x1.5	φ 56	50	23	13
φ 100	55	φ 80	M48x1.5	φ 56	50	23	6	75	φ 95	M64x2	φ 70	65	27	12
φ 125	75	φ 95	M64x2	φ 70	65	27	6	90	φ 120	M80x2	φ 90	-	-	15
φ 140	80	φ 105	M72x2	φ 80	75	31	6	105	φ 130	M95x2	φ 100	-	-	15
φ 160	90	φ 120	M80x2	φ 90	85	33	6	110	φ 140	M100x2	φ 110	-	-	15

Symbol Bore	BB	E	EE	FB	FE		LL	LY	MF	PJ	PL	R	TF	UF	WA	WF	YP	ZT
					B	A												
φ 50	13	□80	Rc1/2	φ 14	-	92	175	195	20	102	44	58	115	145	29	49	29	356
φ 63	14	□94	Rc1/2	φ 18	98	105	170	194	24	106	32	65	132	165	34	58	32	360
φ 80	16	□114	Rc3/4	φ 18	125	140	179	203	24	110	30	87	155	190	42	66	39	377
φ 100	18	□135	Rc3/4	φ 22	150	165	186	217	31	116	32	109	190	230	44	75	38	393
φ 125	21	□165	Rc1	φ 26	175	195	204	241	37	130	25	130	224	272	47	84	49	420
φ 140	25	□192	Rc1	φ 30	195	215	212	253	41	138	25	145	250	300	51	92	49	436
φ 160	27	□218	Rc1	φ 33	225	245	230	276	46	156	25	170	285	345	51	97	49	459

With Boots



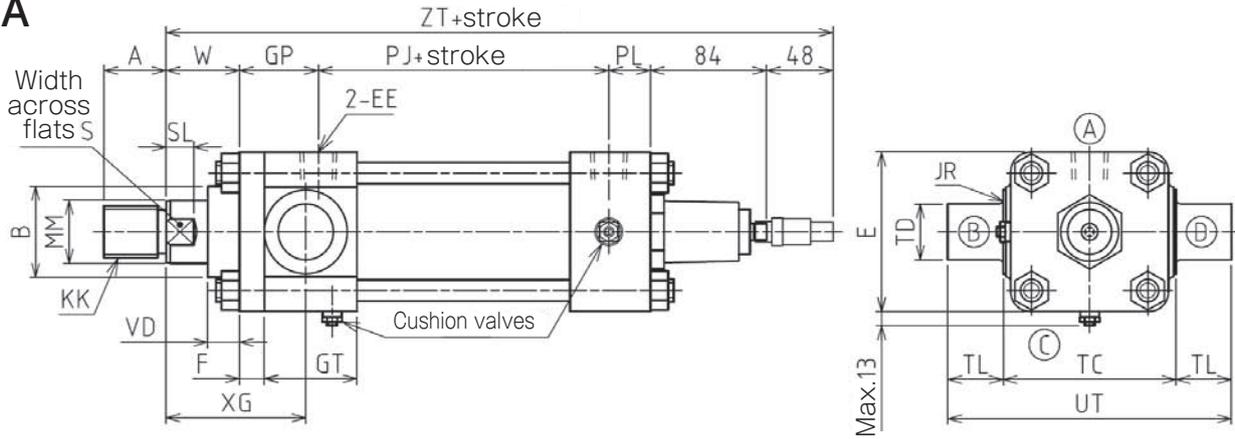
- Remember that the heat proof field in the table above shows the allowable temperatures for the boots, not for the cylinder.
- The boots have been mounted at our factory prior to delivery.
- Conex is the registered trademark of Teijin Limited.
- If the calculated value has a fractional part, round it up.

Symbol:Material	Heat proof
J: Nylon tarpaulin	80°C
JN: Chloroprene	130°C
JK: Conex	200°C

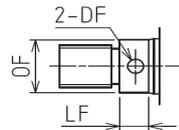
Unit : mm

Symbol Bore	Rod B				Rod A			
	WW	X	Z		WW	X	Z	
J,JN			JK	J,JN			JK	
φ 50	-	-	-	-	φ 71	55	4	3
φ 63	φ 71	55	4	3	φ 80	55	4	3
φ 80	φ 80	55	4	3	φ 100	55	4	3
φ 100	φ 100	55	4	3	φ 125	65	5	3.5
φ 125	φ 125	65	5	3.5	φ 140	65	5	4
φ 140	φ 125	65	5	3.5	φ 160	65	5	4
φ 160	φ 140	65	5	4	φ 180	65	5	4

TA



- The cushion valve position is different depending on the bore.
- For the thread length (dimension A) when the lock nut is used, refer to "Thread length of rod end with lock nut."



Rod A, φ 125 or above

Unit : mm

Bore	DF	LF	OF
φ 125	φ 12	25	φ 89.5
φ 140	φ 12	28	φ 99.5
φ 160	φ 15	26	φ 109.5

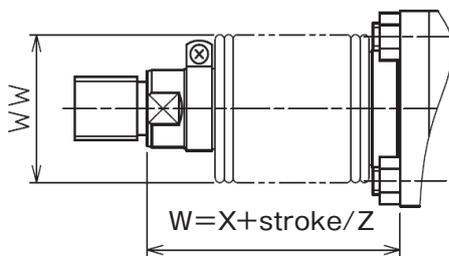
Dimension Table

Unit : mm

Symbol Bore	Rod B								Rod A							
	A	B	KK	MM	S	SL	VD	W	A	B	KK	MM	S	SL	VD	W
φ 50	-	-	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16	15	36
φ 63	35	φ 55	M30x1.5	φ 36	30	16	15	43	45	φ 65	M39x1.5	φ 45	41	20	19	43
φ 80	45	φ 65	M39x1.5	φ 45	41	20	18	48	55	φ 80	M48x1.5	φ 56	50	23	19	48
φ 100	55	φ 80	M48x1.5	φ 56	50	23	17	55	75	φ 95	M64x2	φ 70	65	27	21	53
φ 125	75	φ 95	M64x2	φ 70	65	27	19	60	90	φ 120	M80x2	φ 90	-	-	28	60
φ 140	80	φ 105	M72x2	φ 80	75	31	15	60	105	φ 130	M95x2	φ 100	-	-	24	60
φ 160	90	φ 120	M80x2	φ 90	85	33	15	60	110	φ 140	M100x2	φ 110	-	-	24	60

Symbol Bore	E	EE	F			GP		GT	JR	PJ	PL	TC	TD	TL	UT	XG	ZT
			B	A	FP	B	A										
φ 50	□80	Rc1/2	-	13	42	-	42	56	R2.5	102	44	85 ⁰ _{-0.35}	φ 25 e9	25	135	72	356
φ 63	□94	Rc1/2	15	15	47	47	47	59	R2.5	106	32	100 ⁰ _{-0.35}	φ 32 e9	32	164	83	360
φ 80	□114	Rc3/4	18	18	57	57	57	67	R3	110	30	125 ⁰ _{-0.4}	φ 40 e9	40	205	96	377
φ 100	□135	Rc3/4	20	22	58	64	66	72	R3	116	32	155 ⁰ _{-0.4}	φ 50 e9	50	255	107	399
φ 125	□165	Rc1	24	24	73	73	73	82	R4	130	25	195 ⁰ _{-0.45}	φ 63 e9	63	321	122	420
φ 140	□192	Rc1	32	32	81	86	86	87	R4	138	25	220 ⁰ _{-0.45}	φ 70 e9	70	360	132	441
φ 160	□218	Rc1	37	37	86	111	111	112	R4	156	25	240 ⁰ _{-0.45}	φ 80 e9	80	400	147	484

With Boots



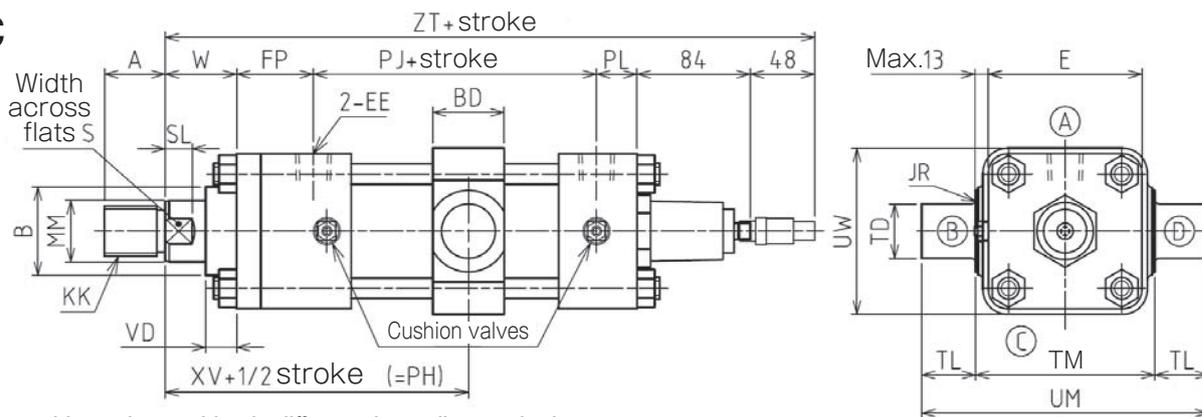
- Remember that the heat proof field in the table above shows the allowable temperatures for the boots, not for the cylinder.
- The boots have been mounted at our factory prior to delivery.
- Conex is the registered trademark of Teijin Limited.
- If the calculated value has a fractional part, round it up.

Symbol:Material	Heat proof
J: Nylon tarpaulin	80°C
JN: Chloroprene	130°C
JK: Conex	200°C

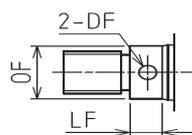
Unit : mm

Symbol Bore	Rod B				Rod A			
	WW	X	Z		WW	X	Z	
			J,JN	JK			J,JN	JK
φ 50	-	-	-	-	φ 71	55	4	3
φ 63	φ 71	55	4	3	φ 80	55	4	3
φ 80	φ 80	55	4	3	φ 100	55	4	3
φ 100	φ 100	57	4	3	φ 125	65	5	3.5
φ 125	φ 125	65	5	3.5	φ 140	65	5	4
φ 140	φ 125	65	5	3.5	φ 160	65	5	4
φ 160	φ 140	65	5	4	φ 180	65	5	4

TC



- The cushion valve position is different depending on the bore.
- For the thread length (dimension A) when the lock nut is used, refer to "Thread length of rod end with lock nut."



Bore	DF	LF	OF
φ 125	φ 12	25	φ 89.5
φ 140	φ 12	28	φ 99.5
φ 160	φ 15	26	φ 109.5

Dimension Table

Rod A, φ 125 or above Unit : mm

Symbol Bore	Rod B							Rod A						
	A	B	KK	MM	S	SL	VD	A	B	KK	MM	S	SL	VD
φ 50	-	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16	15
φ 63	35	φ 55	M30x1.5	φ 36	30	16	15	45	φ 65	M39x1.5	φ 45	41	20	19
φ 80	45	φ 65	M39x1.5	φ 45	41	20	18	55	φ 80	M48x1.5	φ 56	50	23	19
φ 100	55	φ 80	M48x1.5	φ 56	50	23	17	75	φ 95	M64x2	φ 70	65	27	21
φ 125	75	φ 95	M64x2	φ 70	65	27	19	90	φ 120	M80x2	φ 90	-	-	28
φ 140	80	φ 105	M72x2	φ 80	75	31	15	105	φ 130	M95x2	φ 100	-	-	24
φ 160	90	φ 120	M80x2	φ 90	85	33	15	110	φ 140	M100x2	φ 110	-	-	24

Symbol Bore	BD	E	EE	FP		JR	Min.PH		PJ	PL	TD	TL	TM	UM	UW	
				B	A		B	A								
φ 50	33	□80	Rc1/2	-	42	R2.5	-	121.5	102	44	φ 25 e9	25	85	+0/-0.35	135	□80
φ 63	43	□94	Rc1/2	47	47	R2.5	138.5	138.5	106	32	φ 32 e9	32	100	+0/-0.35	164	□94
φ 80	53	□114	Rc3/4	57	57	R3	152.5	159.5	110	30	φ 40 e9	40	125	+0/-0.4	205	□114
φ 100	63	□135	Rc3/4	58	60	R3	166.5	172.5	116	32	φ 50 e9	50	155	+0/-0.4	255	□146
φ 125	78	□165	Rc1	73	73	R4	198	205	130	25	φ 63 e9	63	195	+0/-0.46	321	□185
φ 140	88	□192	Rc1	81	81	R4	211	218	138	25	φ 70 e9	70	220	+0/-0.46	360	□210
φ 160	98	□218	Rc1	86	86	R4	226	233	156	25	φ 80 e9	80	240	+0/-0.46	400	□230

Symbol Bore	W		XV	ZT	
	B	A		B	A
φ 50	-	36	129	-	356
φ 63	43	43	144.5	360	360
φ 80	41	48	167.5	370	377
φ 100	49	53	180	387	393
φ 125	53	60	208	413	420
φ 140	53	60	221	429	436
φ 160	53	60	235.5	452	459

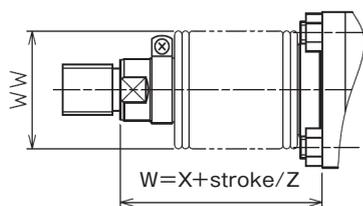
Possible Minimum

Stroke of TC Style Unit : mm

Symbol Bore	Special XV	StandardXV	
		B	A
φ 80	-	28	14
φ 100	4	33	21
φ 125	15	48	34
φ 140	17	52	38
φ 160	19	55	41

Contact us about the special XV.

With Boots



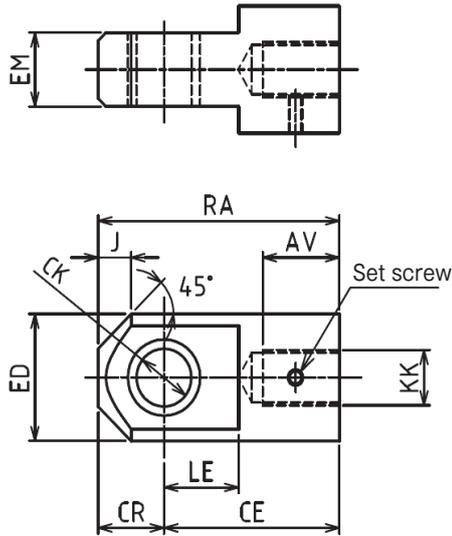
Symbol:Material	Heat proof
J: Nylon tarpaulin	80°C
JN: Chloroprene	130°C
JK: Conex	200°C

- Remember that the heat proof field in the table above shows the allowable temperatures for the boots, not for the cylinder.
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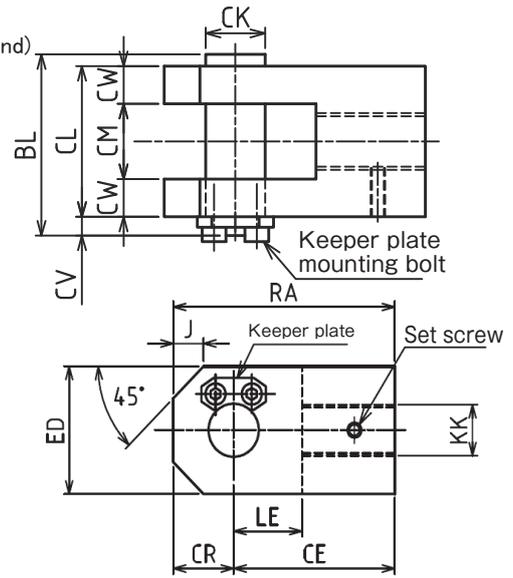
Unit : mm

Symbol Bore	Rod B				Rod A			
	WW	X	Z		WW	X	Z	
			J,JN	JK			J,JN	JK
φ 50	-	-	-	-	φ 71	55	4	3
φ 63	φ 71	55	4	3	φ 80	55	4	3
φ 80	φ 80	48	4	3	φ 100	55	4	3
φ 100	φ 100	51	4	3	φ 125	65	5	3.5
φ 125	φ 125	58	5	3.5	φ 140	65	5	4
φ 140	φ 125	58	5	3.5	φ 160	65	5	4
φ 160	φ 140	58	5	4	φ 180	65	5	4

Rod eye (T-end)



Rod clevis (Y-end) with pin



Dimension Table/Rod eye (T-end)

Unit : mm

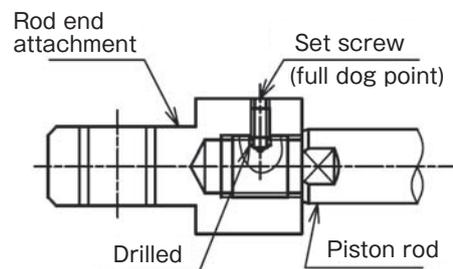
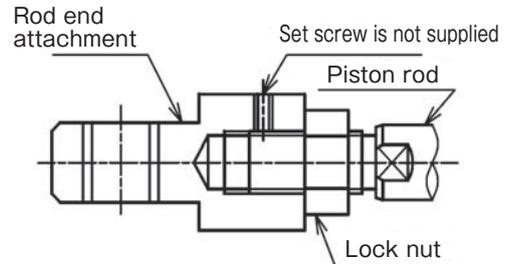
Symbol	Part number	AV	CE	CK	CR	ED	EM	J	KK	LE	RA
φ 50	RTH-24-3-H	35	80	φ 25 H10	30	φ 55	32 ^{-0.1} _{-0.4}	15	M24x1.5	34	110
φ 63	RTH-30-2-H	40	95	φ 32 H10	35	φ 70	40 ^{-0.1} _{-0.4}	16	M30x1.5	42	130
φ 80	RTH-39-2-H	53	110	φ 40 H10	40	φ 80	50 ^{-0.1} _{-0.4}	15	M39x1.5	52	150
φ 100	RTH-48-2-H	62	135	φ 50 H10	50	φ 98	63 ^{-0.1} _{-0.4}	20	M48x1.5	65	185
φ 125	RTH-64-3-H	80	160	φ 63 H10	63	φ 118	80 ^{-0.1} _{-0.6}	30	M64x2	75	223
φ 140	RTH-72-3-H	87	180	φ 70 H10	70	φ 138	90 ^{-0.1} _{-0.6}	35	M72x2	82	250
φ 160	RTH-80-3-H	96	195	φ 80 H10	80	φ 158	100 ^{-0.1} _{-0.6}	40	M80x2	94	275

Dimension Table/Rod clevis (Y-end) with pin

Symbol	Part number	BL	CE	CK	CL	CM	CR	CV	CW	ED	J	KK	LE	RA
φ 50	RYH-24-3-H	77	80	φ 25 ^{H10} _{f8}	64	32 ^{+0.4} _{+0.1}	30	8	16	60	15	M24x1.5	34	110
φ 63	RYH-30-1-H	93	95	φ 32 ^{H10} _{f8}	80	40 ^{+0.4} _{+0.1}	35	8	20	70	16	M30x1.5	42	130
φ 80	RYH-39-2-H	117	110	φ 40 ^{H10} _{f8}	100	50 ^{+0.4} _{+0.1}	40	12	25	80	15	M39x1.5	52	150
φ 100	RYH-48-2-H	143	135	φ 50 ^{H10} _{f8}	126	63 ^{+0.4} _{+0.1}	50	12	31.5	100	20	M48x1.5	65	185
φ 125	RYH-64-3-H	183	160	φ 63 ^{H10} _{f8}	160	80 ^{+0.6} _{+0.1}	63	18	40	120	30	M64x2	75	223
φ 140	RYH-72-3-H	203	180	φ 70 ^{H10} _{f8}	180	90 ^{+0.6} _{+0.1}	70	18	45	140	35	M72x2	82	250
φ 160	RYH-80-4-H	230	195	φ 80 ^{H10} _{f8}	200	100 ^{+0.6} _{+0.1}	80	24	50	160	40	M80x2	94	275

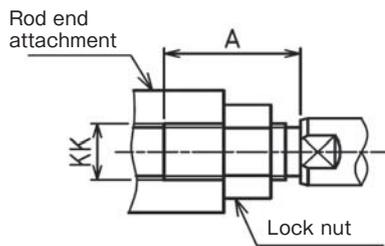
Delivery of rod end attachment (T-end or Y-end)

- When the lock nut and rod end attachment are additionally ordered
The rod end attachment and lock nut are temporarily assembled to the piston rod for delivery. Since the lock nut is not tightened, tighten it after adjusting the position of the rod end attachment.
No set screw is supplied.
- When only the rod end attachment is additionally ordered (without lock nut)
The rod end attachment is tightened to the piston rod, a drill hole is made on the piston rod and it is secured with the set screw for delivery.
If the drill hole is unnecessary, give us such instructions.



Note) The rod end attachments are dedicated to the rod B.
To use them for the rod A, give instructions to change the rod A end thread diameter to that of the rod B.

Thread length of rod end with lock nut



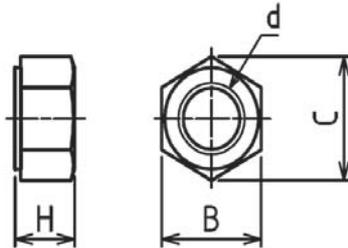
The standard fitting length of the rod end attachment and piston rod is about 80% of the thread diameter. Therefore, if you order a cylinder with a lock nut, dimension A is longer.

Dimension Table/Dimension A when lock nut is used (long thread)

Unit : mm

Bore	Symbol	Rod B		Rod A	
		A	KK	A	KK
φ 50		50	M24x1.5	60	M30x1.5
φ 63		60	M30x1.5	80	M39x1.5
φ 80		80	M39x1.5	95	M48x1.5
φ 100		95	M48x1.5	125	M64x2
φ 125		125	M64x2	155	M80x2
φ 140		140	M72x2	185	M95x2
φ 160		155	M80x2	190	M100x2

Lock nut

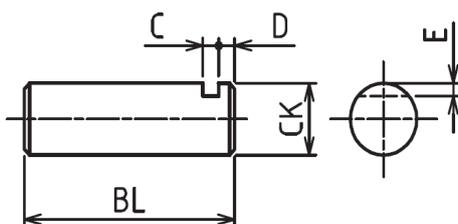


Dimension Table/Lock nut

Unit : mm

Bore	Symbol	Part number	Rod B				Rod A				
			B	C	d	H	Part number	B	C	d	H
φ 50		LNH-24F-1-H	36	41.6	M24x1.5	20	LNH-30F-1-H	46	53.1	M30x1.5	25
φ 63		LNH-30F-1-H	46	53.1	M30x1.5	25	LNH-39F-1-H	60	69.3	M39x1.5	32
φ 80		LNH-39F-1-H	60	69.3	M39x1.5	32	LNH-48F-1-H	75	86.6	M48x1.5	38
φ 100		LNH-48F-1-H	75	86.6	M48x1.5	38	LNH-64F-1-H	95	109.7	M64x2	51
φ 125		LNH-64F-1-H	95	109.7	M64x2	51	LNH-80F-1-H	115	132.8	M80x2	64
φ 140		LNH-72F-1-H	105	121.2	M72x2	58	LNH-95F-1-H	135	155.9	M95x2	76
φ 160		LNH-80F-1-H	115	132.8	M80x2	64	LNH-100F-1-H	145	167.4	M100x2	80

Parallel pin



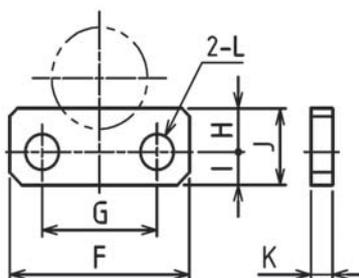
Dimension Table/Parallel pin

Unit : mm

Bore	Symbol	BL	C	CK	D	E
		φ 50	77	5	φ 25	3
φ 63		93	5	φ 32	3	4
φ 80		117	7	φ 40	5	5
φ 100		143	7	φ 50	5	5
φ 125		183	10	φ 63	8	8
φ 140		203	10	φ 70	8	8
φ 160		230	13	φ 80	11	10

The tolerance of CK is f8.

Keeper plate



Dimension Table/Keeper plate

Unit : mm

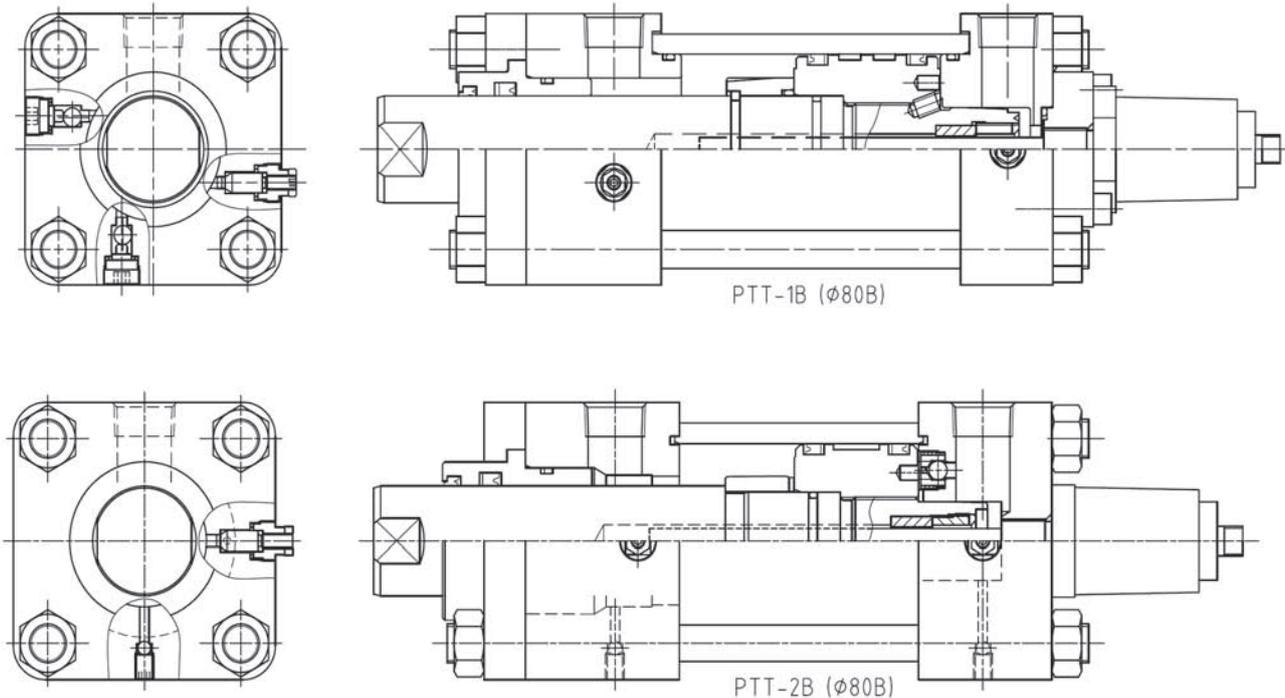
Bore	Symbol	F	G	H	I	J	K	L	Bolt
		φ 50	32	18	7.5	7.5	15	4.5	φ 7
φ 63		32	18	7.5	7.5	15	4.5	φ 7	M6
φ 80		50	30	10	10	20	6	φ 10	M8
φ 100		65	40	12	10	22	6	φ 12	M10
φ 125		75	48	17	13	30	9	φ 14	M12
φ 140		75	48	17	13	30	9	φ 14	M12
φ 160		100	68	24	16	40	12	φ 18	M16

PTT-1B/PTT-2B Model Change

Now even more compact.

Total cylinder length shortened.

We will end our standard support for the PTT-1B in June 2016.
The successor series will be the PTT-2B.



The main differences between the PTT-1B and the PTT-2B are as follows.

1. Change to the cushion structure

- The conventional structure in which the check valve was attached to the outer surface of the cover is no longer used. Instead, we have adopted a cushion ring which also serves as a check valve on the rod side, and a check valve directly connected to the hole under the port on the head side. This is to obtain even more stable cushion performance. (bore sizes of φ80 and above)
- The check valve is no longer used in place of the air vent. This is so that the check valve is not exposed on the outer surface. Indicate when placing order if you need an air vent. (bore sizes of φ80 and above)

2. Shorter axis direction dimensions

We have changed to a shape in which the sensor is directly mounted to the head cover.
This means the axis direction dimensions have been reduced by up to 43mm.

The basic mounting of the PTT-1B and PTT-2B is the same.

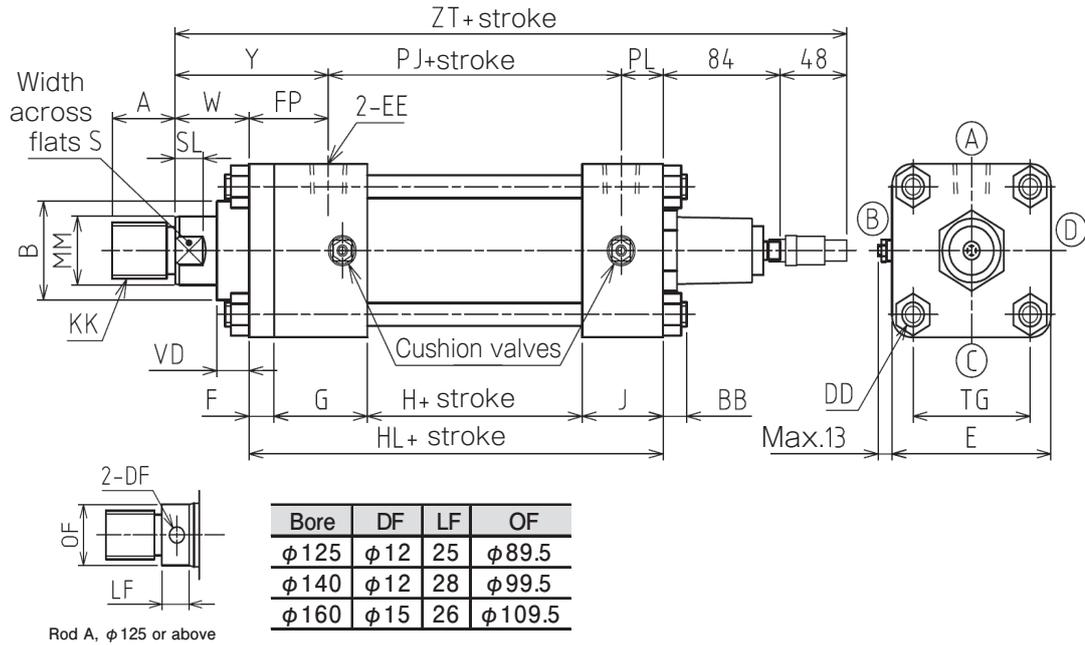
- The mounting dimensions (e.g. mounting hole diameters and hole pitches) are basically the same. However, there are cases in which the port positions and rod protrusion lengths are different. For details, refer to the comparison table of each mounting style.

PTT-1B/PTT-2B Comparison Table

SD (basic style)

Unit : mm

SD



- The cushion valve position (e.g. the offset from the center) differs. Contact us for details.
- There is an air vent on the side with no check valve for the PTT-1B and PPT-2B in sizes of φ63 and below.
However, you will need to specify whether or not there is an air vent and its position for the PTT-2B in sizes of φ80 and above.
- The distance from the mounting reference surface to the rod reference point is the same. If there are multiple mounting surfaces, it is necessary to adjust the W dimensions.

1 indicates PTT-1B. 2 indicates PTT-2B.
2B and 2A are the rod B and rod A respectively.
The dimensions with no 1 or 2 listed are the same.

Symbol Bore	Rod B							Rod A						
	A	B	KK	MM	S	SL	W	A	B	KK	MM	S	SL	W
φ50	-	-	-	-	-	-	-	35	φ55	M30x1.5	φ36	30	16	36
φ63	35	φ55	M30x1.5	φ36	30	16	43	45	φ65	M39x1.5	φ45	41	20	43
φ80	45	φ65	M39x1.5	φ45	41	20	48	55	φ80	M48x1.5	φ56	50	23	48
φ100	55	φ80	M48x1.5	φ56	50	23	53	75	φ95	M64x2	φ70	65	27	53
φ125	75	φ95	M64x2	φ70	65	27	60	90	φ120	M80x2	φ90	-	-	60
φ140	80	φ105	M72x2	φ80	75	31	60	105	φ130	M95x2	φ100	-	-	60
φ160	90	φ120	M80x2	φ90	85	33	60	110	φ140	M100x2	φ110	-	-	60

Symbol Bore	BB	DD	E	EE	F		FP		G		H		HL			J		
					1,2A	2B	1	2B	2A	1	2	1	2	1	2B	2A	1	2
φ50	13	M12x1.25	□80	Rc1/2	13	-	42	-	42	47	56	66	48	186	-	188	60	71
φ63	14	M14x1.5	□94	Rc1/2	15	15	47	47	47	50	59	73	52	203	185	185	65	59
φ80	16	M16x1.5	□114	Rc3/4	18	18	57	57	57	60	67	83	54	202	197	197	41	58
φ100	18	M18x1.5	□135	Rc3/4	22	20	61	58	60	60	66	90	60	213	206	208	41	60
φ125	21	M22x1.5	□165	Rc1	24	24	73	73	73	75	82	98	64	248	228	228	51	58
φ140	25	M27x2	□192	Rc1	32	32	81	81	81	75	82	108	72	266	244	244	51	58
φ160	27	M30x2	□218	Rc1	37	37	86	86	86	75	87	127	80	290	267	267	51	63

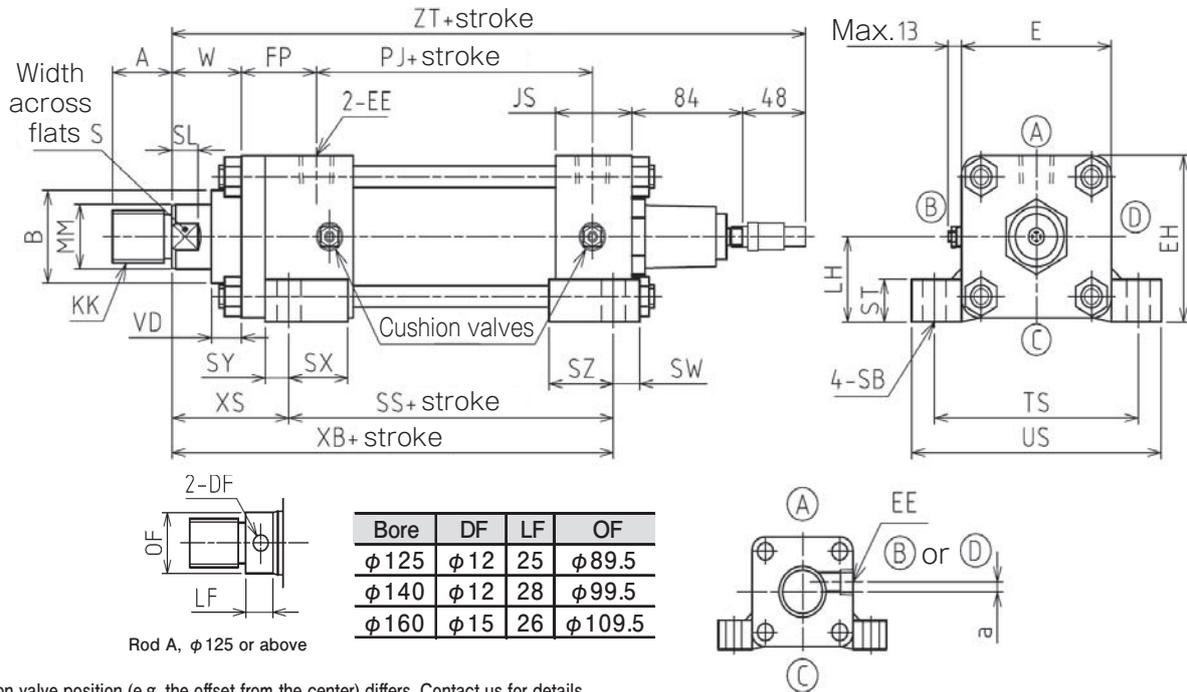
Symbol Bore	PJ		PL		TG	VD				Y				ZT		
	1	2	1	2		1B	2B	1A	2A	1B	2B	1A	2A	1	2B	2A
φ50	102	102	42	44	□56	-	-	15	15	-	-	78	78	367	-	356
φ63	109	106	47	32	□68	15	15	19	19	90	90	90	90	378	360	360
φ80	125	110	20	30	□84	12	18	19	19	105	105	105	105	400	377	377
φ100	132	116	20	32	□102	15	17	19	21	114	111	114	113	416	391	393
φ125	150	130	25	25	□125	19	19	28	28	133	133	133	133	460	420	420
φ140	160	138	25	25	□144	15	15	24	24	141	141	141	141	478	436	436
φ160	179	156	25	25	□164	15	15	24	24	146	146	146	146	502	459	459

PTT-1B/PTT-2B Comparison Table

LA (side lugs)

Unit : mm

LA



Bore	DF	LF	OF
φ 125	φ 12	25	φ 89.5
φ 140	φ 12	28	φ 99.5
φ 160	φ 15	26	φ 109.5

Rod A, φ 125 or above

- The cushion valve position (e.g. the offset from the center) differs. Contact us for details.
- There is an air vent on the side with no check valve for the PTT-1B and PPT-2B in sizes of φ 63 and below. However, you will need to specify whether or not there is an air vent and its position for the PTT-2B in sizes of φ 80 and above.
- The distance from the mounting reference surface to the rod reference point is the same. If there are multiple mounting surfaces, it is necessary to adjust the W dimensions.

• If the port takes the B or D surfaces, this will be offset on the side of the A surface.

1 indicates PTT-1B. 2 indicates PTT-2B.
2B and 2A are the rod B and rod A respectively.
The dimensions with no 1 or 2 listed are the same.

Symbol Bore	Rod B						Rod A					
	A	B	KK	MM	S	SL	A	B	KK	MM	S	SL
φ 50	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16
φ 63	35	φ 55	M30x1.5	φ 36	30	16	45	φ 65	M39x1.5	φ 45	41	20
φ 80	45	φ 65	M39x1.5	φ 45	41	20	55	φ 80	M48x1.5	φ 56	50	23
φ 100	55	φ 80	M48x1.5	φ 56	50	23	75	φ 95	M64x2	φ 70	65	27
φ 125	75	φ 95	M64x2	φ 70	65	27	90	φ 120	M80x2	φ 90	-	-
φ 140	80	φ 105	M72x2	φ 80	75	31	105	φ 130	M95x2	φ 100	-	-
φ 160	90	φ 120	M80x2	φ 90	85	33	110	φ 140	M100x2	φ 110	-	-

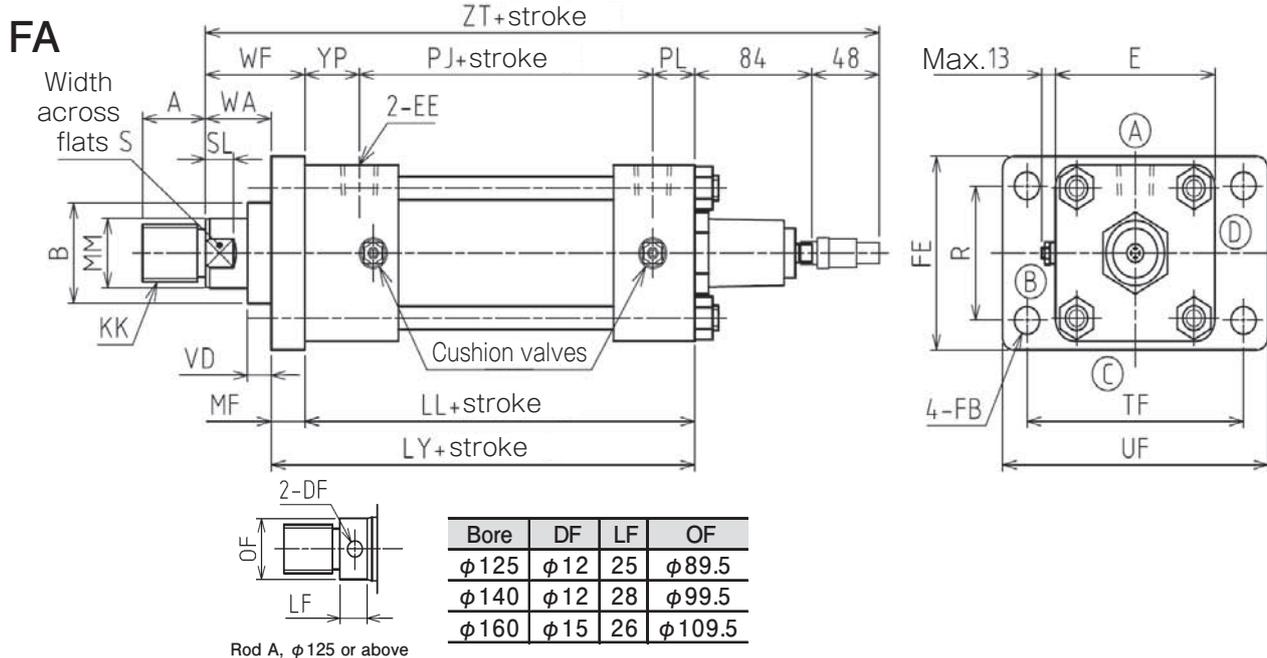
Symbol Bore	a	E	EE	EH	FP			JS		LH	PJ		SB	SS	ST
					1	2B	2A	1	2		1	2			
φ 50	6	□80	Rc1/2	85	42	-	42	60	71	45 ±0.15	102	102	φ 14	124	20
φ 63	6	□94	Rc1/2	97	47	47	47	65	59	50 ±0.15	109	106	φ 18	137	25
φ 80	10	□114	Rc3/4	117	57	57	57	41	58	60 ±0.25	125	110	φ 18	143	30
φ 100	10	□135	Rc3/4	137.5	61	58	60	41	60	70 ±0.25	132	116	φ 22	150	35
φ 125	10	□165	Rc1	167.5	73	73	73	51	58	85 ±0.25	150	130	φ 26	173	45
φ 140	0	□192	Rc1	196	81	81	81	56	58	100 ±0.25	160	138	φ 30	183	45
φ 160	0	□218	Rc1	224	86	86	86	60	63	115 ±0.25	179	156	φ 33	202	55

Symbol Bore	SW		SX		SY		SZ		TS	US	VD				W			XB	XS	ZT	
	1	2	1	2	1	2	1	2			1B	2B	1A	2A	1	2B	2A			1	2
φ 50	18	32	29	32	18	18	29	18	115	145	-	-	15	15	36	36	36	191	67	367	356
φ 63	18	15	32	32	18	18	32	35	136	169	15	15	19	19	43	43	43	213	76	378	360
φ 80	20	18	39	47	21	18	21	47	155	190	12	18	19	19	48	51	51	230	87	400	380
φ 100	18	18	37	48	23	18	23	48	190	230	15	17	19	21	53	60	58	248	98	416	398
φ 125	23	23	47	59	28	23	28	50	224	272	19	19	28	28	60	65	65	285	112	460	425
φ 140	28	28	47	54	28	28	28	57	262	320	15	15	24	24	60	60	60	303	120	483	436
φ 160	30	30	45	57	30	30	30	65	294	356	15	15	24	24	60	60	60	329	127	511	459

PTT-1B/PTT-2B Comparison Table

FA (rod flange)

Unit : mm



- The cushion valve position (e.g. the offset from the center) differs. Contact us for details.
- There is an air vent on the side with no check valve for the PTT-1B and PPT-2B in sizes of φ63 and below.
However, you will need to specify whether or not there is an air vent and its position for the PTT-2B in sizes of φ80 and above.
- The distance from the mounting reference surface to the rod reference point is the same. If there are multiple mounting surfaces, it is necessary to adjust the W dimensions.

1 indicates PTT-1B. 2 indicates PTT-2B.
2B and 2A are the rod B and rod A respectively.
The dimensions with no 1 or 2 listed are the same.

Symbol Bore	Rod B						Rod A					
	A	B	KK	MM	S	SL	A	B	KK	MM	S	SL
φ 50	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16
φ 63	35	φ 55	M30x1.5	φ 36	30	16	45	φ 65	M39x1.5	φ 45	41	20
φ 80	45	φ 65	M39x1.5	φ 45	41	20	55	φ 80	M48x1.5	φ 56	50	23
φ 100	55	φ 80	M48x1.5	φ 56	50	23	75	φ 95	M64x2	φ 70	65	27
φ 125	75	φ 95	M64x2	φ 70	65	27	90	φ 120	M80x2	φ 90	-	-
φ 140	80	φ 105	M72x2	φ 80	75	31	105	φ 130	M95x2	φ 100	-	-
φ 160	90	φ 120	M80x2	φ 90	85	33	110	φ 140	M100x2	φ 110	-	-

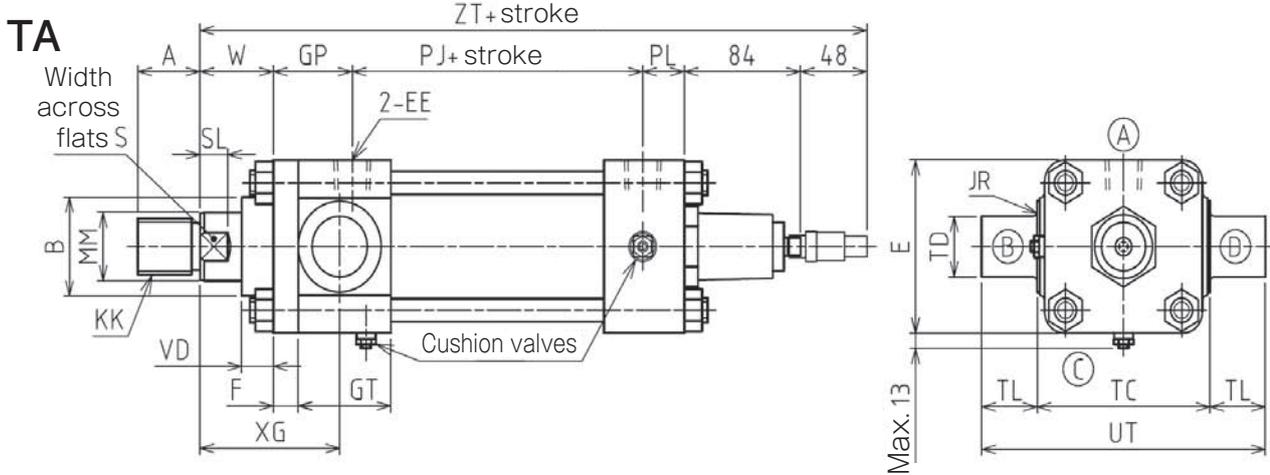
Symbol Bore	BB	E	EE	FB	FE		LL		LY		MF	PJ		PL	
					B	A	1	2	1	2		1	2	1	2
					φ 50	13	□80	Rc1/2	φ 14	85		92	173	175	193
φ 63	14	□94	Rc1/2	φ 18	98	105	188	170	212	194	24	109	106	47	32
φ 80	16	□114	Rc3/4	φ 18	125	140	184	179	208	203	24	125	110	20	30
φ 100	18	□135	Rc3/4	φ 22	150	165	191	186	222	217	31	132	116	20	32
φ 125	21	□165	Rc1	φ 26	175	195	224	204	261	241	37	150	130	25	25
φ 140	25	□192	Rc1	φ 30	195	215	234	212	275	253	41	160	138	25	25
φ 160	27	□218	Rc1	φ 33	225	245	253	230	299	276	46	179	156	25	25

Symbol Bore	R	TF	UF	VD				WA	WF	YP		ZT	
				1B	2B	1A	2A			1	2	1	2
				φ 50	58	115	145			-	-	8	8
φ 63	65	132	165	6	6	10	10	34	58	32	32	378	360
φ 80	87	155	190	6	12	13	13	42	66	39	39	400	377
φ 100	109	190	230	6	6	10	12	44	75	39	38	416	393
φ 125	130	224	272	6	6	15	15	47	84	49	49	460	420
φ 140	145	250	300	6	6	15	15	51	92	49	49	478	436
φ 160	170	285	345	6	6	15	15	51	97	49	49	502	459

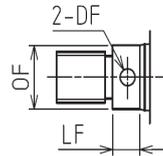
PTT-1B/PTT-2B Comparison Table

TA (rod trunnion)

Unit : mm



- The cushion valve position (e.g. the offset from the center) differs. Contact us for details.
- There is an air vent on the side with no check valve for the PTT-1B and PPT-2B in sizes of $\phi 63$ and below. However, you will need to specify whether or not there is an air vent and its position for the PTT-2B in sizes of $\phi 80$ and above.
- The distance from the mounting reference surface to the rod reference point is the same. If there are multiple mounting surfaces, it is necessary to adjust the W dimensions.



Bore	DF	LF	OF
$\phi 125$	$\phi 12$	25	$\phi 89.5$
$\phi 140$	$\phi 12$	28	$\phi 99.5$
$\phi 160$	$\phi 15$	26	$\phi 109.5$

Rod A, $\phi 125$ or above

1 indicates PTT-1B. 2 indicates PTT-2B.
2B and 2A are the rod B and rod A respectively.
The dimensions with no 1 or 2 listed are the same.

Symbol Bore	Rod B						Rod A					
	A	B	KK	MM	S	SL	A	B	KK	MM	S	SL
$\phi 50$	-	-	-	-	-	-	35	$\phi 55$	M30x1.5	$\phi 36$	30	16
$\phi 63$	35	$\phi 55$	M30x1.5	$\phi 36$	30	16	45	$\phi 65$	M39x1.5	$\phi 45$	41	20
$\phi 80$	45	$\phi 65$	M39x1.5	$\phi 45$	41	20	55	$\phi 80$	M48x1.5	$\phi 56$	50	23
$\phi 100$	55	$\phi 80$	M48x1.5	$\phi 56$	50	23	75	$\phi 95$	M64x2	$\phi 70$	65	27
$\phi 125$	75	$\phi 95$	M64x2	$\phi 70$	65	27	90	$\phi 120$	M80x2	$\phi 90$	-	-
$\phi 140$	80	$\phi 105$	M72x2	$\phi 80$	75	31	105	$\phi 130$	M95x2	$\phi 100$	-	-
$\phi 160$	90	$\phi 120$	M80x2	$\phi 90$	85	33	110	$\phi 140$	M100x2	$\phi 110$	-	-

Symbol Bore	E	EE	F			GP			GP		GT		JR	PJ		PL	
			1	2B	2A	1	2B	2A	B	A	1	2		1	2		
$\phi 50$	$\square 80$	Rc1/2	13	13	13	42	-	42	42	42	47	56	R2.5	102	102	42	44
$\phi 63$	$\square 94$	Rc1/2	15	15	15	47	47	47	47	47	50	59	R2.5	109	106	47	32
$\phi 80$	$\square 114$	Rc3/4	18	18	18	57	57	57	57	57	60	67	R3	125	110	20	30
$\phi 100$	$\square 135$	Rc3/4	22	20	22	66	64	66	64	66	65	72	R3	132	116	20	32
$\phi 125$	$\square 165$	Rc1	24	24	24	73	73	73	73	73	75	82	R4	150	130	25	25
$\phi 140$	$\square 192$	Rc1	32	32	32	86	86	86	86	86	80	87	R4	160	138	25	25
$\phi 160$	$\square 218$	Rc1	37	37	37	111	111	111	111	111	100	112	R4	179	156	25	25

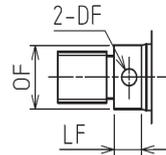
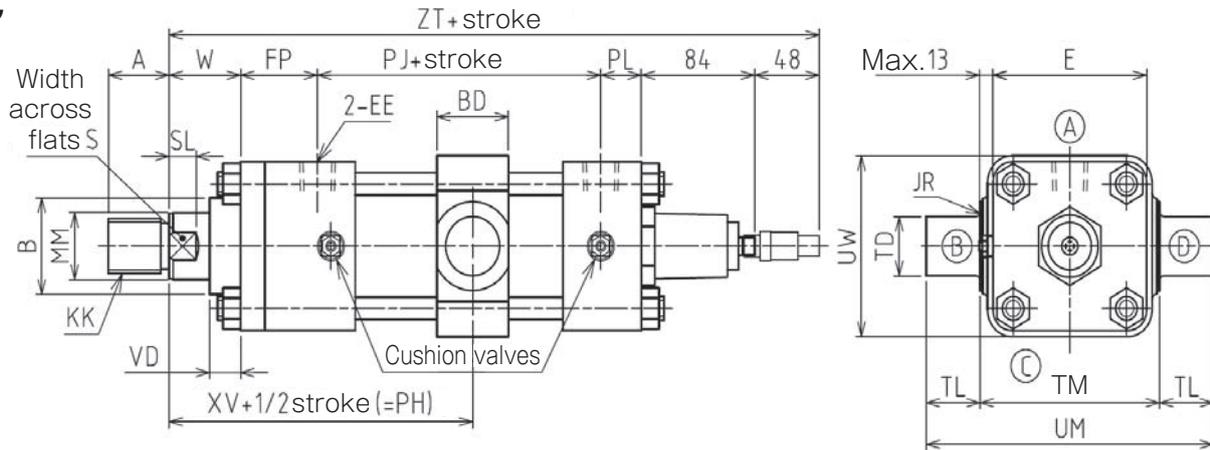
Symbol Bore	TC	TD	TL	UT	VD				W			XG	ZT	
					1B	2B	1A	2A	1	2B	2A		1	2
$\phi 50$	85 ⁰ _{-0.35}	$\phi 25$ e9	25	135	-	-	15	15	36	-	36	72	367	356
$\phi 63$	100 ⁰ _{-0.35}	$\phi 32$ e9	32	164	15	15	19	19	43	43	43	83	378	360
$\phi 80$	125 ⁰ _{-0.4}	$\phi 40$ e9	40	205	12	18	19	19	48	48	48	96	400	377
$\phi 100$	155 ⁰ _{-0.4}	$\phi 50$ e9	50	255	15	17	19	21	53	55	53	107	421	399
$\phi 125$	195 ⁰ _{-0.45}	$\phi 63$ e9	63	321	19	19	28	28	60	60	60	122	460	420
$\phi 140$	220 ⁰ _{-0.45}	$\phi 70$ e9	70	360	15	15	24	24	60	60	60	132	483	441
$\phi 160$	240 ⁰ _{-0.45}	$\phi 80$ e9	80	400	15	15	24	24	60	60	60	147	527	484

PTT-1B/PTT-2B Comparison Table

TC (intermediate trunnion)

Unit : mm

TC



Bore	DF	LF	OF
φ 125	φ 12	25	φ 89.5
φ 140	φ 12	28	φ 99.5
φ 160	φ 15	26	φ 109.5

- The cushion valve position (e.g. the offset from the center) differs. Contact us for details.
- There is an air vent on the side with no check valve for the PTT-1B and PPT-2B in sizes of φ63 and below. However, you will need to specify whether or not there is an air vent and its position for the PTT-2B in sizes of φ80 and above.
- The distance from the mounting reference surface to the rod reference point is the same. If there are multiple mounting surfaces, it is necessary to adjust the W dimensions.

Rod A, φ 125 or above

1 indicates PTT-1B. 2 indicates PTT-2B.
2B and 2A are the rod B and rod A respectively.
The dimensions with no 1 or 2 listed are the same.

Symbol Bore	Rod B						Rod A					
	A	B	KK	MM	S	SL	A	B	KK	MM	S	SL
φ 50	-	-	-	-	-	-	35	φ 55	M30x1.5	φ 36	30	16
φ 63	35	φ 55	M30x1.5	φ 36	30	16	45	φ 65	M39x1.5	φ 45	41	20
φ 80	45	φ 65	M39x1.5	φ 45	41	20	55	φ 80	M48x1.5	φ 56	50	23
φ 100	55	φ 80	M48x1.5	φ 56	50	23	75	φ 95	M64x2	φ 70	65	27
φ 125	75	φ 95	M64x2	φ 70	65	27	90	φ 120	M80x2	φ 90	-	-
φ 140	80	φ 105	M72x2	φ 80	75	31	105	φ 130	M95x2	φ 100	-	-
φ 160	90	φ 120	M80x2	φ 90	85	33	110	φ 140	M100x2	φ 110	-	-

Symbol Bore	BD	E	EE	FP			JR	Min.PH			PJ		PL	
				1	2B	2A		1	2B	2A	1	2	1	2
				φ 50	33	□80		Rc1/2	42	42	42	R2.5	112.5	121.5
φ 63	43	□94	Rc1/2	47	47	47	R2.5	129.5	138.5	138.5	109	106	47	32
φ 80	53	□114	Rc3/4	57	57	57	R3	152.5	152.5	159.5	125	110	20	30
φ 100	63	□135	Rc3/4	61	58	60	R3	166.5	166.5	172.5	132	116	20	32
φ 125	78	□165	Rc1	73	73	73	R4	198	198	205	150	130	25	25
φ 140	88	□192	Rc1	81	81	81	R4	211	211	218	160	138	25	25
φ 160	98	□218	Rc1	86	86	86	R4	221	226	233	179	156	25	25

Symbol Bore	TD	TL	TM	UM	UW	VD				W			XV	ZT		
						1B	2B	1A	2A	1	2B	2A		1	2B	2A
						φ 50	φ 25 e9	25	85 +0/-0.35	135	□80	-		-	15	15
φ 63	φ 32 e9	32	100 +0/-0.35	164	□94	15	15	19	19	43	43	43	144.5	378	360	360
φ 80	φ 40 e9	40	125 +0/-0.4	205	□114	12	18	19	19	48	41	48	167.5	400	370	377
φ 100	φ 50 e9	50	155 +0/-0.4	255	□146	15	17	19	21	53	49	53	180	416	387	393
φ 125	φ 63 e9	63	195 +0/-0.46	321	□185	19	19	28	28	60	53	60	208	460	413	420
φ 140	φ 70 e9	70	220 +0/-0.46	360	□210	15	15	24	24	60	53	60	221	478	429	436
φ 160	φ 80 e9	80	240 +0/-0.46	400	□230	15	15	24	24	60	53	60	235.5	502	452	459

