

Short Stroke Thruster **P5TA9 Series**



Short Stroke Thruster _____ P.383

$\phi 12, \phi 16, \phi 20, \phi 25, \phi 32, \phi 40, \phi 50, \phi 63, \phi 80$

Short Stroke Thruster

P5TA9 Series



● Piping in 2 directions

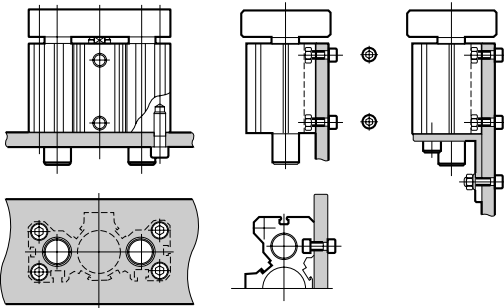
Body or Top piping can be selected by application.

● Mounting in 4 position

Drop-in switch with reed and proximity type.

● 2 types of bearing

Select slide or ball bearing.



● Compact body

Compact design with 2 guides and piston.

● High Accuracy, High Stiffness

Positioning with high accuracy and without rotation by two guides.

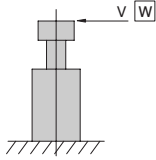
● Various Sensor Option.



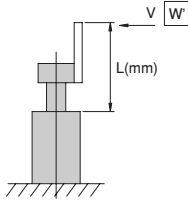
TECHNICAL INFORMATION ①

APPLICATION GUIDE(Ø12 ~ Ø32)

Capacity for the use as a stopper

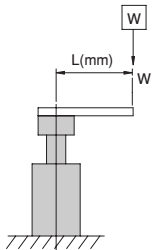


- Note) 1. for the use attaching a plate to the link bar, choose bore size referring to the formula below
 2. Ball bearing type is not available as a stopper

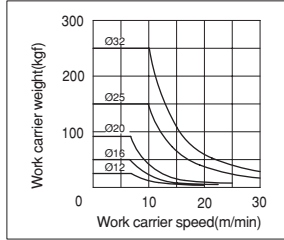


Capacity for use as a lifter

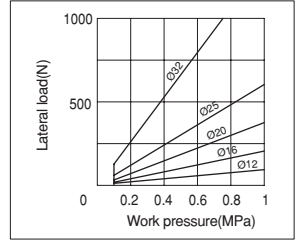
Allowable eccentricity load for the use as a lifter(at supply pressure 0.5MPa)



Stop Capacity
 P5TA9 03_30st



Normal Lateral Load
 P5TA9 03_30st



Refer to below table for length of attachment

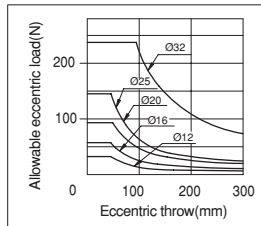
Coefficient for conversion

$$W = W' \times \frac{L}{l}$$

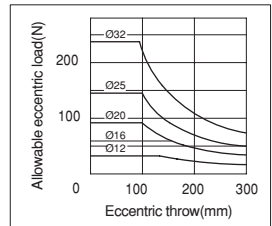
P5TA9	Ø12	Ø16	Ø20	Ø25	Ø32
l	40	42	42	42	44

W' : The maximum weight of the work carrier in the above graph for the stopper's capacity

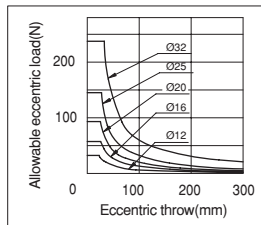
Slide Bearing
 P5TA903...10-50st



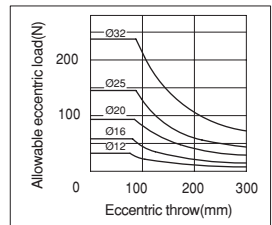
Slide Bearing
 P5TA903...75-200st



Ball Bearing
 P5TA923...10-50st



Ball Bearing
 P5TA923...75-200st

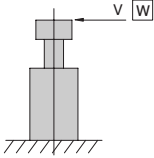




TECHNICAL INFORMATION ②

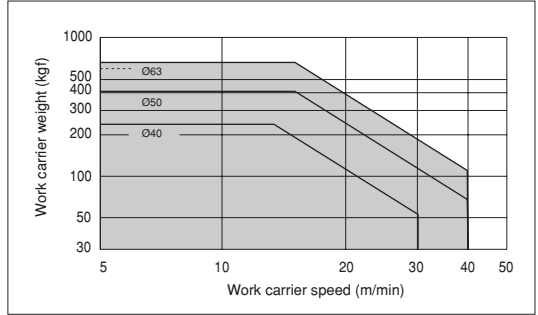
APPLICATION GUIDE(Ø40 ~ Ø63)

Capacity for the use as a stopper



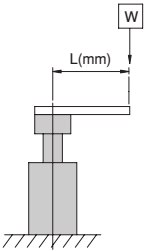
Linear bush bearing type is not available as a stopper.

Stop Capacity
P5TA9 03 _ 25st

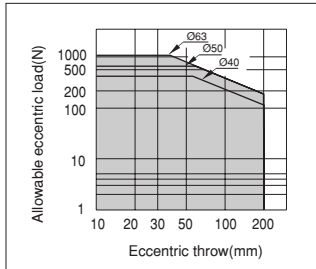


Capacity for the use as a lifter

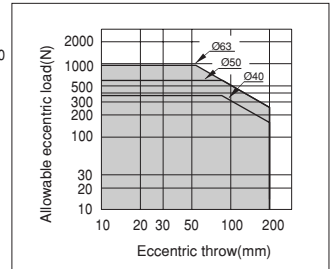
Allowable eccentricity load for the use as a lifter(at supply pressure 0.5MPa)



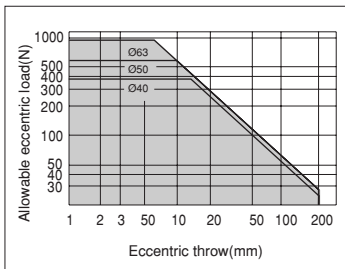
Slide Bearing
P5TA903...25-50st



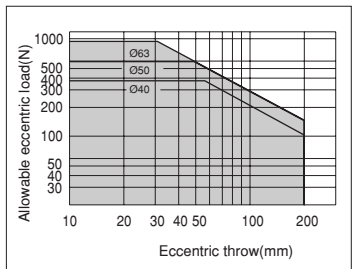
Slide Bearing
P5TA903...75-200st



Ball Bearing
P5TA923...25-50st



Ball Bearing
P5TA923...75-100st





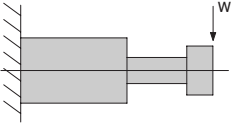
TECHNICAL INFORMATION ③

APPLICATION GUIDE

Capacity Table

Allowable Lateral Load

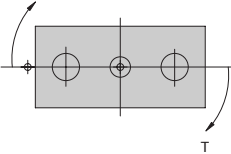
(Unit : N)



Bore	Bearing Type	Stroke (mm)											
		10	20	25	30	40	50	75	100	125	150	175	200
Ø12	Slide Bearing	31	24	—	19	16	13	37	31	—	—	—	—
	Ball Bearing	23	17	—	14	34	30	23	19	—	—	—	—
Ø16	Slide Bearing	50	39	—	32	27	24	54	45	—	—	—	—
	Ball Bearing	36	29	—	24	59	52	40	33	—	—	—	—
Ø20	Slide Bearing	—	51	—	44	39	35	54	46	74	66	59	54
	Ball Bearing	—	43	—	36	98	87	69	57	46	40	36	32
Ø25	Slide Bearing	—	68	—	59	52	46	72	61	98	88	79	72
	Ball Bearing	—	67	—	56	148	132	105	87	70	62	55	50
Ø32	Slide Bearing	—	—	165	—	—	129	106	90	138	123	111	101
	Ball Bearing	—	—	104	—	—	74	165	138	114	100	90	81

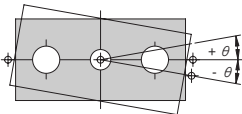
Allowable Rotating torque

(Unit : Nm)



Bore	Bearing Type	Stroke (mm)											
		10	20	25	30	40	50	75	100	125	150	175	200
Ø12	Slide Bearing	0.64	0.48	—	0.39	0.32	0.28	0.75	0.63	—	—	—	—
	Ball Bearing	0.47	0.35	—	0.29	0.71	0.62	0.4	0.38	—	—	—	—
Ø16	Slide Bearing	1.14	0.9	—	0.74	0.63	0.55	1.23	1.04	—	—	—	—
	Ball Bearing	0.84	0.66	—	0.54	1.35	1.19	0.93	0.76	—	—	—	—
Ø20	Slide Bearing	—	1.14	—	1.21	1.07	0.95	1.49	1.25	2.03	1.81	1.63	1.48
	Ball Bearing	—	1.19	—	0.99	2.69	2.4	1.89	1.56	1.26	1.1	0.98	0.88
Ø25	Slide Bearing	—	2.19	—	1.88	1.65	1.47	2.31	1.94	3.15	2.8	2.52	2.3
	Ball Bearing	—	2.14	—	1.79	4.74	4.22	3.36	2.78	2.25	1.98	1.76	1.59
Ø32	Slide Bearing	—	—	6.61	—	—	5.16	4.23	3.59	5.52	4.93	4.45	4.06
	Ball Bearing	—	—	4.17	—	—	2.95	6.6	5.52	4.56	4.02	3.59	3.24

Anti-roll accuracy



Bore	Bearing Type	Anti-roll accuracy (θ)
Ø12	Slide Bearing	$\pm 0.09^\circ$
	Ball Bearing	$\pm 0.06^\circ$
Ø16	Slide Bearing	$\pm 0.08^\circ$
	Ball Bearing	$\pm 0.06^\circ$
Ø20	Slide Bearing	$\pm 0.08^\circ$
	Ball Bearing	$\pm 0.06^\circ$
Ø25	Slide Bearing	$\pm 0.07^\circ$
	Ball Bearing	$\pm 0.05^\circ$
Ø32	Slide Bearing	$\pm 0.07^\circ$
	Ball Bearing	$\pm 0.04^\circ$



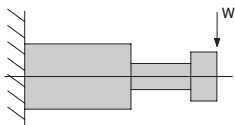
TECHNICAL INFORMATION ④

APPLICATION GUIDE

Capacity Table

Allowable Lateral Load

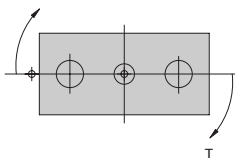
(Unit : N)



Bore	Bearing Type	Stroke (mm)											
		10	20	25	30	40	50	75	100	125	150	175	200
Ø40	Slide Bearing	-	-	203	-	-	164	182	159	-	-	-	-
	Ball Bearing	-	-	113	-	-	78	129	106	-	-	-	-
Ø50	Slide Bearing	-	-	296	-	-	245	273	241	-	-	-	-
	Ball Bearing	-	-	120	-	-	83	178	148	-	-	-	-
Ø63	Slide Bearing	-	-	296	-	-	245	273	241	-	-	-	-
	Ball Bearing	-	-	117	-	-	81	176	145	-	-	-	-
Ø80	Slide Bearing	-	-	-	-	-	245	294	245	-	-	-	-
	Ball Bearing	-	-	-	-	-	-	588	539	-	-	-	-

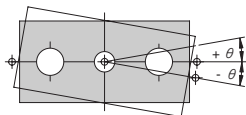
Allowable Rotating torque

(Unit : Nm)



Bore	Bearing Type	Stroke (mm)											
		10	20	25	30	40	50	75	100	125	150	175	200
Ø40	Slide Bearing	-	-	7.0	-	-	5.66	6.27	5.48	-	-	-	-
	Ball Bearing	-	-	5.24	-	-	4.25	7.19	6.33	-	-	-	-
Ø50	Slide Bearing	-	-	13.0	-	-	10.8	12.0	10.6	-	-	-	-
	Ball Bearing	-	-	7.02	-	-	5.76	12.3	10.9	-	-	-	-
Ø63	Slide Bearing	-	-	14.7	-	-	12.1	13.5	12.0	-	-	-	-
	Ball Bearing	-	-	7.77	-	-	6.35	13.7	12.2	-	-	-	-
Ø80	Slide Bearing	-	-	-	-	-	10.79	13.73	12.75	-	-	-	-
	Ball Bearing	-	-	-	-	-	-	27.46	24.52	-	-	-	-

Anti-roll accuracy



Bore	Bearing Type	Anti-roll accuracy (θ)
Ø40	Slide Bearing	$\pm 0.06^\circ$
	Ball Bearing	$\pm 0.08^\circ$
Ø50	Slide Bearing	$\pm 0.05^\circ$
	Ball Bearing	$\pm 0.06^\circ$
Ø63	Slide Bearing	$\pm 0.05^\circ$
	Ball Bearing	$\pm 0.06^\circ$
Ø80	Slide Bearing	$\pm 0.04^\circ$
	Ball Bearing	$\pm 0.02^\circ$

Short Stroke Thruster

P5TA9 Series

Ø12, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80

ORDER KEY

P5TA9
03
16
100
M

①

②

③

④

⑤

1. Series

2. Cylinder Option

03	Slide Bearing
23	Ball Bearing

3. Bore Size

12	Ø 12	40	Ø 40
16	Ø 16	50	Ø 50
20	Ø 20	63	Ø 63
25	Ø 25	80	Ø 80
32	Ø 32		

4. Stroke
Please refer to standard stroke table(Page 7)

5. Port

M	M5 (Ø12~Ø16)
R	Rc (Ø20~Ø80)

Sensor

Type	Part No.	Load Voltage	Load Current	Leak Current	Indicator Lamp	Wire	Wire direction	Applicable Bore size
Reed type	PD11L*	DC24V	5~40mA		LED	2 Wire	Horizontal	Ø12~Ø63
		AC110V	5~20mA					
		AC220V	5~10mA					
	PD31L*	DC24V	5~40mA				Vertical	
		AC110V	5~20mA					
		AC220V	5~10mA					
	PD12L*	DC24V	2.5~40mA		Horizontal	None		
		AC110V	2.5~20mA					
		AC220V	2.5~10mA					
	PD32L*	DC24V	2.5~40mA		Vertical			
		AC110V	2.5~20mA					
		AC220V	2.5~10mA					
RCB	5~120V DC/AC	100mA	Vertical	LED		Ø80		
Solid state Type	PD13L*	DC5~28V	DC0.1~40mA	Max. 50 μ A	LED	3 Wire(NPN)	Horizontal	Ø12~Ø63
	PD14L*	DC10~28V	DC5~20mA	Max. 1mA (DC24V)	None	2 Wire		
	PD15L*		DC 2.5~20mA					
	PE33L*	DC5~28V	DC0.1~40mA	Max. 50 μ A	LED	3 Wire(NPN)	Vertical	
	PE34L*	DC10~28V	DC5~20mA	Max. 1mA (DC24V)				
	PE35L*		DC 2.5~20mA					
					None	2 Wire		

Note) *: Lead wire length : 1m - 1 / 3m - 3

Short Stroke Thruster

Ø12, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80



Specification

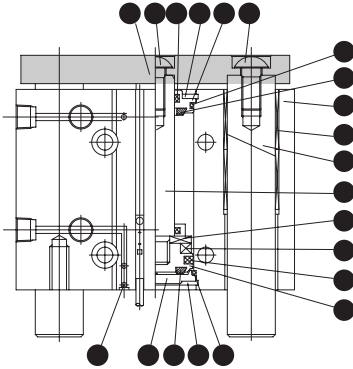
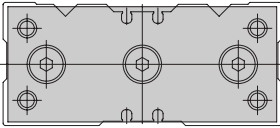
Bore	Unit	Ø12, Ø16	Ø20, Ø25, Ø32, Ø40	Ø50, Ø63	Ø80
Port Size		M5×0.8	Rc1/8	Rc1/4	Rc3/8
Fluid	MPa(bar)	Air			
Pressure Range		0.1~0.99 (1~9.9)			
Proof Pressure		1.5 (15)			
Lubrication		Not necessary			
Temperature Range	°C	5~60			
Operation Type		Double acting			
Cushion		Bumper cushion			

Standard Stroke

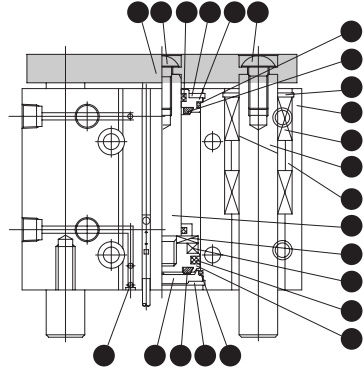
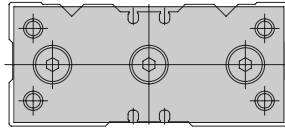
Bore	Stroke (mm)											
	10	20	25	30	40	50	75	100	125	150	175	200
Ø 12	○	○	—	○	○	○	○	○	—	—	—	—
Ø 16	○	○	—	○	○	○	○	○	—	—	—	—
Ø 20	—	○	—	○	○	○	○	○	○	○	○	○
Ø 25	—	○	—	○	○	○	○	○	○	○	○	○
Ø 32	—	○	—	○	○	○	○	○	○	○	○	○
Ø 40	—	—	○	—	—	○	○	○	—	—	—	—
Ø 50	—	—	○	—	—	○	○	○	—	—	—	—
Ø 63	—	—	○	—	—	○	○	○	—	—	—	—
Ø 80	—	—	—	○	○	○	○	○	—	—	—	—

Construction

Slide Bearing Type : $\varnothing 12 \sim \varnothing 32$



Ball Bearing Type : $\varnothing 12 \sim \varnothing 32$



No.	Parts	Material
1	Body	Aluminium alloy
2	Connecting Plate	Carbon steel
3	Guide Rod	Carbon steel
4	Head Cover	Carbon steel
5	Piston rod	Carbon steel
6	Piston	Aluminium alloy
7	Rod Cover	Stainless steel
8	Piston Packing	NBR
9	Rod Packing	NBR
10	Body Gasket-1	NBR
11	Stop Ring	Carbon steel
12	Cushion Cap side	NBR
13	Cushion Head side	NBR
14	Magnet cover	
15	Magnet	
16	Bush Bearing	
17	Screw Bolt	Chromium-molybdenum steel
18	Body Gasket-2	
19	Steel Ball	
20	Screw	
24	Spacer	Carbon steel
25	Stop Ring	Carbon steel

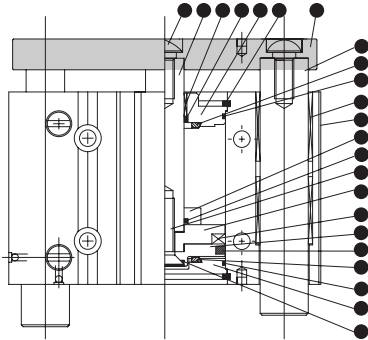
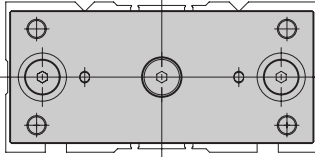
Note) If make stroke over than 100, added to No.24

Short Stroke Thruster

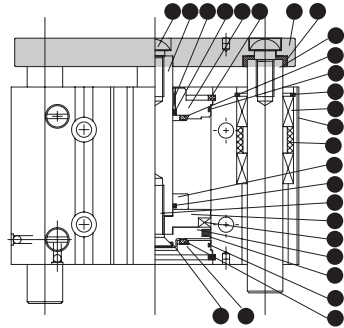
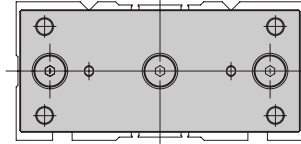
Construction

(Unit : mm)

Slide Bearing Type : $\varnothing 40 \sim \varnothing 63$



Ball Bearing Type : $\varnothing 40 \sim \varnothing 63$

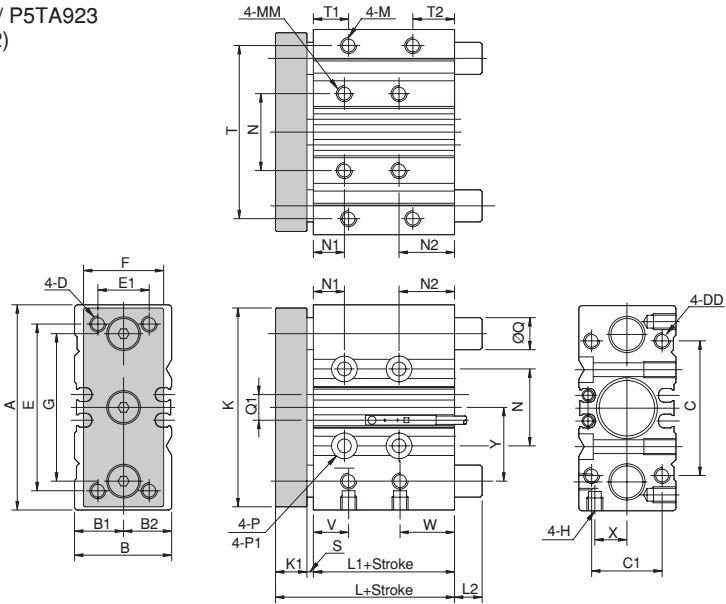


No.	Parts	Material
1	Screw Bolt	Chromium-molybdenum steel
2	Piston Rod	Carbon steel
3	Bush	
4	Rod Packing	NBR
5	Rod Cover	Copper
6	Stop Ring	Carbon steel
7	Connecting Plate	Carbon steel
8	Guide Rod	Carbon steel
9	Body Gasket	NBR
10	Cushion	NBR
11	Bearing	
12	Body	Aluminium alloy
13	Magnet Cover	
14	Magnet	
15	Piston	Aluminium alloy
16	Piston Packing	NBR
17	Cushion	NBR
18	Head Cover	
21	O-Ring	NBR
22	Piston Bolt	
23	Stop Ring	Carbon steel
24	Rod Ring	ST>75
26	Sleeve	Carbon steel

Dimensions

(Unit : mm)

P5TA903 / P5TA923
(Ø12~Ø32)



Bore	A	B	B1	B2	C	C1	D	DD	E	E1	F	G	H	K	K1	L	L1	L2	M
Ø12	58	26	13	13	40	18	M4X0.7	M4X0.7	48	14	22	41	M5X0.8	56	8	39	29		M4X0.7
Ø16	64	30	15	15	42	22	M5X0.8	M5X0.8	52	16	25	46	M5X0.8	62	10	43	31		M5X0.8
Ø20	85	36	17	19	52	26	M5X0.8	M5X0.8	60	18	30	55	PT1/8	72	10	47	35	*	M5X0.8
Ø25	96	42	21	21	62	32	M6X1.0	M6X1.0	70	26	38	65	PT1/8	86	10	47.5	35.5		M6X1.0
Ø32	116	51	26	25	80	38	M8X1.25	M8X1.25	96	30	48	80	PT1/8	112	12	47.5	35.5		M8X1.25

MM	N	N1	N2	P	P1	Q		Q1	S	T	T1	T2	V	W	X	Y	
						Slide Bearing	Ball Bearing										
Ø12	M5X0.8	23	5	20	Ø4.3	Ø8X4.5dp	8	6	6	2	50	12	12	11	15	8.5	19.5
Ø16	M5X0.8	24	5	22	Ø4.3	Ø8X4.5dp	10	8	8	2	54	11	13	11	17	10	23
Ø20	M6X1.0	28	19	16	Ø5.3	Ø9.5X5.5dp	12	10	10	2	64	11	14	12	23	11.5	24.5
Ø25	M6X1.0	34	22	12.5	Ø5.3	Ø9.5X5.5dp	16	13	12	2	76	12	13.5	11	23.5	13.5	24
Ø32	M8X1.25	42	22	14.5	Ø6.6	Ø11X6.5dp	20	16	16	2	100	12	16.5	11.5	25	16	31

※ P5TA9 03

Bore	L2 / Stroke (mm)											
	10	20	25	30	40	50	75	100	125	150	175	200
Ø12	0	0	-	0	0	0	18	18	-	-	-	-
Ø16	0	0	-	0	0	0	21	21	-	-	-	-
Ø20	-	0	-	0	0	0	14	14	31	31	31	31
Ø25	-	0	-	0	0	0	14	14	31	31	31	31
Ø32	-	-	20	-	-	20	20	20	42	42	42	42

※ P5TA9 23

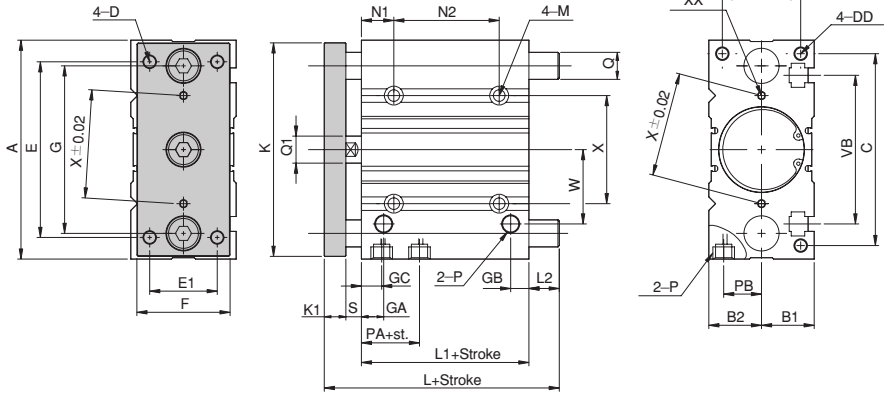
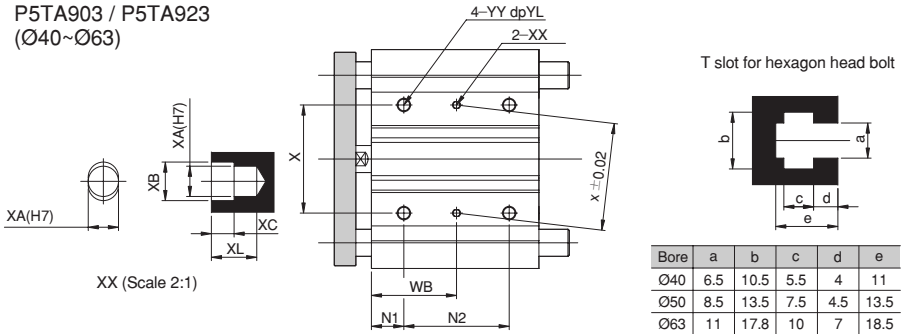
Bore	L2 / Stroke (mm)											
	10	20	25	30	40	50	75	100	125	150	175	200
Ø12	0	0	-	0	14	14	14	14	-	-	-	-
Ø16	0	0	-	0	21	21	21	21	-	-	-	-
Ø20	-	0	-	0	27	27	27	27	50	50	50	50
Ø25	-	2	-	2	32	32	32	32	50	50	50	50
Ø32	-	-	8	-	-	8	42	42	55	55	55	55

Short Stroke Thruster

Dimensions

(Unit : mm)

P5TA903 / P5TA923
(Ø40~Ø63)



Bore	A	B1	B2	C	D	DD	E	E1	F	G	GA	GB	GC	H	K	K1	L1	M
Ø40	120	27	27	106	M8X1.25	M8X1.25 dp20	104	30	44	86	14	10	14	40	118	12	44	Ø6.6thro. Ø11 dp7.5
Ø50	148	32	32	130	M10X1.5	M10X1.5 dp22	130	40	60	110	14	11	12	46	146	16	44	Ø8.6thro. Ø14 dp9
Ø63	162	39	39	142	M10X1.5	M10X1.5 dp22	130	50	70	124	16.5	13.5	16.5	58	158	16	49	Ø8.6thro. Ø14 dp9

Bore	N1	P	PA	PB	Q1	S	VB	W	X	YY	YL	N2			WB		
												25ST	50,75,100ST	100ST over	25ST	50,75,100ST	100ST over
Ø40	22	PF 1/8	13	18	16	10	72	38	50	M8X1.25	16	24	48	124	34	48	84
Ø50	24	PF 1/4	9	21.5	20	12	92	47	66	M10X1.5	20	24	48	124	36	48	86
Ø63	24	PF 1/4	14	28	20	12	110	55	80	M10X1.5	20	28	52	128	38	50	88

P5TA9 03

Bore	L		Q	L2	
	25,50ST	50ST over		25,50ST	50ST over
Ø40	97	102	Ø20	31	36
Ø50	106.5	118	Ø25	34.5	46
Ø63	106.5	118	Ø25	29.5	41

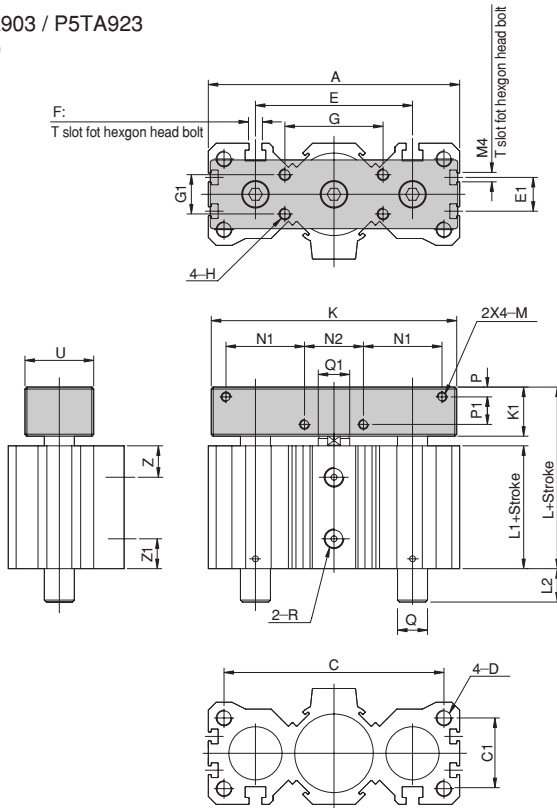
P5TA9 23

Bore	L			Q	L2		
	25,50ST	75,100ST	100ST over		25,50ST	75,100ST	100ST over
Ø40	81	98	118	Ø16	15	32	52
Ø50	93	114	134	Ø20	21	42	62
Ø63	93	114	134	Ø20	16	37	57

Dimensions

(Unit : mm)

P5TA903 / P5TA923 (Ø80)



L2 Dimension

Bore	Stroke (mm)			
	30	50	75	100
80	0	0	38.5	38.5

P5TA903

Bore	A	B	B1	C	C1	D	E	E1	F	H	K1	L	L1
80	243	110	100	212	71	M16X2.0 dp 40	160	30	M12	M10X1.5 dp 20	40	110.5	62.5

Bore	M	N1	N2	P	P1	Q1	R	Z	Z1	G	G1	U	K	Q
80	M10X1.5 dp 20	60	80	10	18	Ø25	PT3/8	22	19.5	106	56	75	224	Ø25

P5TA923

Bore	A	B	B1	C	C1	D	E	E1	F	H	K1	L	L1
80	243	110	100	212	71	M16X2.0 dp 40	160	30	M12	M10X1.5 dp 20	40	110.5	62.5

Bore	M	N1	N2	P	P1	Q1	R	Z	Z1	G	G1	U	K	Q	L2
80	M10X1.5 dp 20	60	80	10	18	Ø35	PT3/8	22	19.5	106	56	75	224	Ø35	103

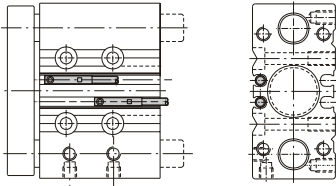
Accessory

Auto Switch

Installation

1. Loosen set bolt in switch
2. Insert switch into cylinder tube and position in cap and head side.
3. Tighten the switch when is in proper position.
Torque 0.1Nm~0.2Nm in recommended.
4. LED is On when piston is moved in switch position

● PD/PE Auto switch-P5TA9($\phi 12 \sim \phi 63$)



● RCB Auto Switch-P5TA9($\phi 80$)

