Compendium of STW Series

With magnetic switch slots

Double-piston rod structure

The structure of double-piston rod provides the good performance of anti-bending and anti-torsion and can bear relatively stronger movement radial and load.

Multi-type cylinder

STWA: Slide table cylinder
(Double acting type)Fixing plate mounted

STWB: Slide table cylinder
(Double acting type)Body mounted

With shock absorber

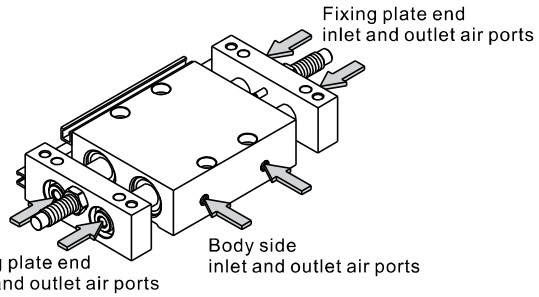
Buffer device such as the integrated shock absorber can effectively slowdown impact velocity and extend life.

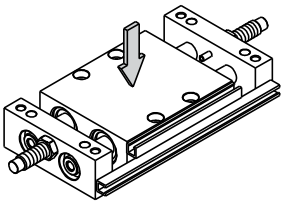
Five bore size are available

Bore size：10、16、20、25、32

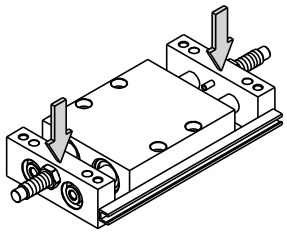
Three groups of inlet and outlet air ports

Two kinds of mounting type





Body mounted



Fixing plate mounted

Criteria for selection: Cylinder thrust

Unit：Newton(N)

Bore size	Rod size	Acting type	Pressure area(mm^2)	Operating pressure(MPa)						
				0.1	0.2	0.3	0.4	0.5	0.6	0.7
10	6	Double acting	100.5	10.1	20.1	30.2	40.2	50.3	60.3	70.4
16	10		245.0	24.5	49.0	73.5	98.0	122.5	147.0	171.5
20	12		402.1	40.2	80.4	120.6	160.8	201.1	241.3	281.5
25	16		579.6	58.0	115.9	173.9	231.8	289.8	347.8	405.7
32	20		980.2	98.0	196.0	294.1	392.1	490.1	588.1	686.1

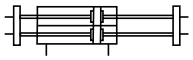
Installation and application

1. When load changes in the work, the cylinder with abundant output capacity shall be selected.
2. Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion;
3. Necessary protection measure shall be taken in the environment with higher humidity, much dust or water drops, oil dust and welding dregs.
4. Dirty substances in the pipe must be eliminated before cylinder is connected with pipeline to prevent the entrance of contaminants into the cylinder.
5. The medium used by cylinder shall be filtered to 40 μ m or below.
6. The cylinder shall avoid the influence of side load in operation to maintain the normal work of cylinder and extend service life.
7. Anti–freezing measure shall be adopted under low temperature environment to prevent moisture freezing.
8. If the cylinder is dismantled and stored for a long time, please conduct anti–rust treatment to the surface.
   Anti– dust cap shall be inserted into the inlet and outlet ports. As the precision of the manufacture and guide is high, dismantle the fixed block or cylinder cover .

Slide table cylinder

STW Series

Symbol



Product feature

1. Both body and fixing plates can be installed.
2. Three sets of air inlet and outlet are available for customer to choose and convenient for piping.
3. The structure of double-piston rod provides the good performance of anti-bending and anti-torsion and can bear relatively stronger movement radial and load.
4. Buffer device such as the integrated shock absorber can effectively slowdown impact velocity and extend life.

Specification

Bore size(mm)	10	16	20	25	32
Acting type	Double acting				
Fluid	Air(to be filtered by 40μm filter element)				
Operating pressure	0.15~1.0MPa(22~145psi)(1.5~10bar)				
Proof pressure	1.5MPa(215psi)(15bar)				
Temperature ℃	-20~70				
Speed range mm/s	30~500				
Stroke tolerance	Stroke≤100 $^{+1.0}_{0}$ Stroke>100 $^{+1.5}_{0}$				
Cushion type	Shock absorber				
Non-rotating tolerance [Note1]	±0.1°	±0.05°		±0.03°	
Port size [Note2]	M5×0.8			1/8"	

[Note1] Retract position.
[Note2]PT thread, G thread and NPT thread are available.
Add) Refer to P313 for detail of sensor switch.

Stroke

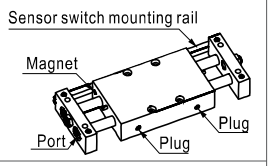
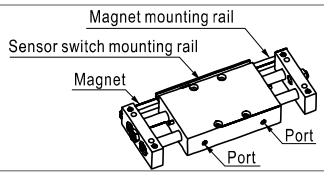
Bore size (mm)	Standard stroke (mm)	Max.std stroke
10	25 50 75 100	100
16	25 50 75 100 125 150 175 200	200
20	25 50 75 100 125 150 175 200	200
25	25 50 75 100 125 150 175 200	200
32	25 50 75 100 125 150 175 200	200

[Note] Consult us for non-standard stroke.

Ordering code

STW B 25 × 50 S □

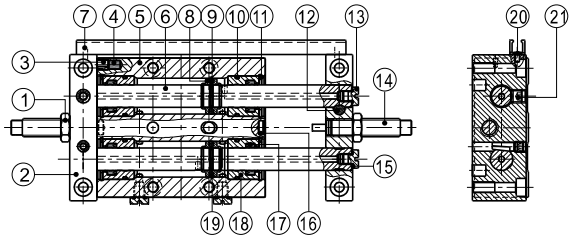
① ② ③ ⑥ ⑦ ⑧

①Model	②Mounting type	③Bore size	④Stroke	⑤Magnet	⑥Thread type [Note1]
STW: Slide table cylinder (Double acting type)	A: Fixing plate mounted  B: Body mounted 	10 16 20 25 32	Refer to stroke table for details	S: With magnet	Blank: PT G: G T: NPT

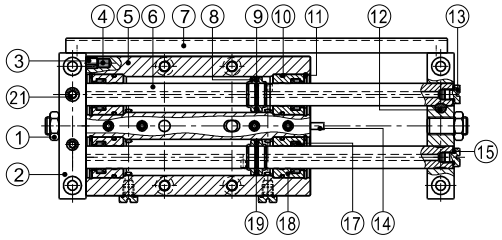
[Note1] When the thread is standard, the code is blank.

Inner structure and material of major parts

STWA16X25S



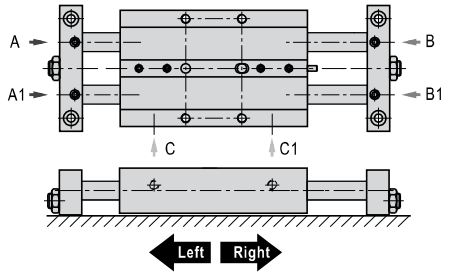
STWA16X50~200S



NO.	Item	Material	NO.	Item	Material	NO.	Item	Material	NO.	Item	Material
1	Hexagon nut	Carbon steel	6	Piston rod	Carbon steel	11	C clip	Spring steel	17	O-ring	NBR
2	Fixing plate	Aluminum alloy	7	Sensor switch mounting rail	Aluminum alloy	12	Pin	Carbon steel	18	Front cover	Aluminum alloy
3	Washer	NBR				13	Plug screw	Carbon steel	19	Piston seal	NBR
4	Magnet	Sintered metal (Neodymium-iron-boron)	8	Piston	Aluminum alloy	14	Shock absorber	Combination	20	Screw	Carbon steel
			9	O-ring	NBR	15	O-ring	NBR	21	Countersink	Carbon steel
5	Body	Aluminum alloy	10	O-ring	NBR	16	Bumper	Carbon steel			

Installation and application

1. There are 3 sets of air inlet and outlet ports on body and fixing plates, which are available for pipe connection from three directions.

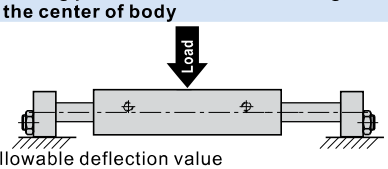


2. When air inlets and outlets are connected , the movement direction of cylinder is different. For example, when fixing plate is mounted on the machine, it's corresponding movement is indicated as the table below;

Pressure port	A	A1	B	B1	C	C1
Movement direction	Right	Left	Right	Left	Left	Right

3. Loading of piston rod—reference value for deflection

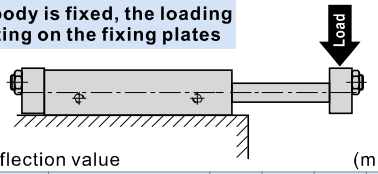
The fixing plates are fixed, the loading is acting on the center of body



Allowable deflection value (mm)

Model	Load(N)\Stroke	100	200
STW10	9.81	0.07	–
STW16	39.2	0.05	0.20
STW20	49	0.04	0.15
STW25	58.8	0.02	0.08
STW32	98.1	0.02	0.07

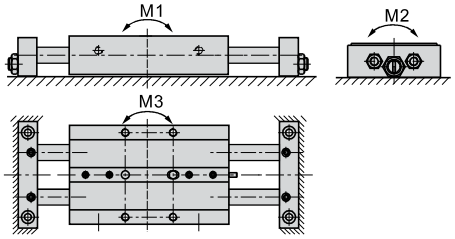
The body is fixed, the loading is acting on the fixing plates

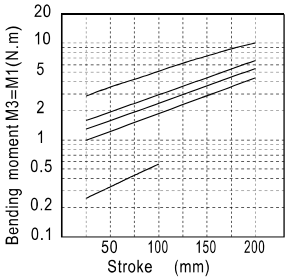


Deflection value (mm)

Model	Load(N)\Stroke	50	100	100	200
STW10	2.94	0.06	0.30	–	–
STW16	4.84	0.03	0.10	0.25	0.45
STW20	7.48	0.03	0.09	0.18	0.35
STW25	9.81	0.03	0.09	0.16	0.25
STW32	29.42	0.02	0.05	0.10	0.15

4. Reference value of allowable moment (M1, M2 and M3)





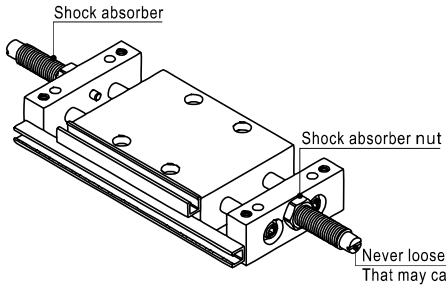
Bore size	Allowable bending moment(M2)
10	0.11
16	0.55
20	0.81
25	1.03
32	2.70

5. About shock absorber

5.1) Shock absorbers are consumable parts. When a decrease in energy absorption capacity is noticed, it must be replaced. Refer to the table below for shock absorber type.

5.2) Never loosen the bottom screw of the shock absorber. (It is not an adjustment screw.) That may cause oil leakage.

5.3) Refer to the table below for tightening torques of the shock absorber setting nut.



Model	Shock absorber	Tightening torques(Nm)
STW10	ACA0806-1N	1.67
STW16	ACA0806-1N	1.67
STW20	ACA1007-1N	3.14
STW25	ACA1007-1N	3.14
STW32	ACA1412-1N	10.8

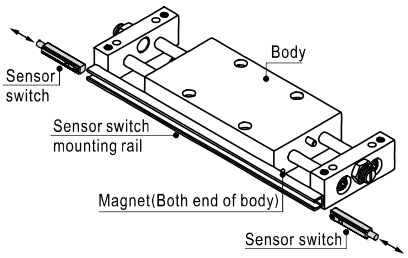
6. About sensor switch

6.1) STW series are all with magnet, the revelant sensor switchs are CS1-G、DS1-G.

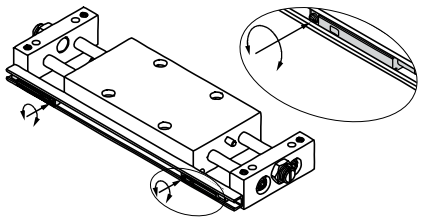
6.2) The magnet locations of STWA & STWB are different, so sensor switch's position is different, please refer to below for details.

STWA

① Please refer below to secure sensor switch in sensor switch mounting rail.

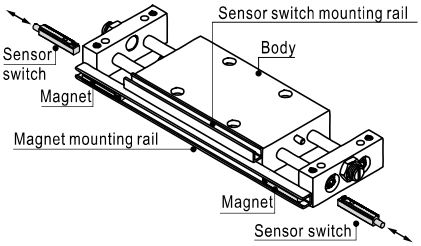


② Adjusting sensor switch position, tightening screw to secure sensor switch.

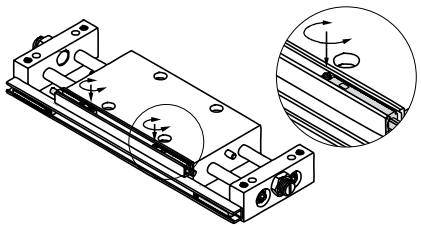


STWB

① Please refer below to secure sensor switch in sensor switch mounting rail.

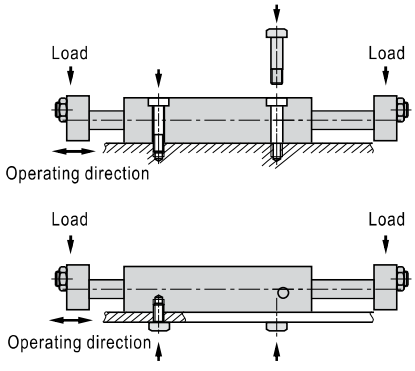


② Adjusting sensor switch position, tightening screw to secure sensor switch.

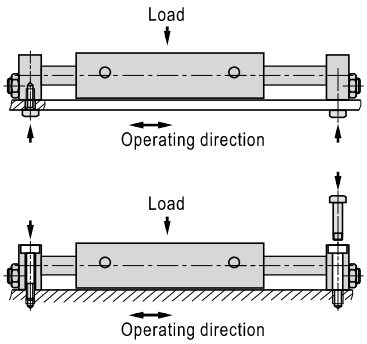


7. Mounting type

Body mounted(B)



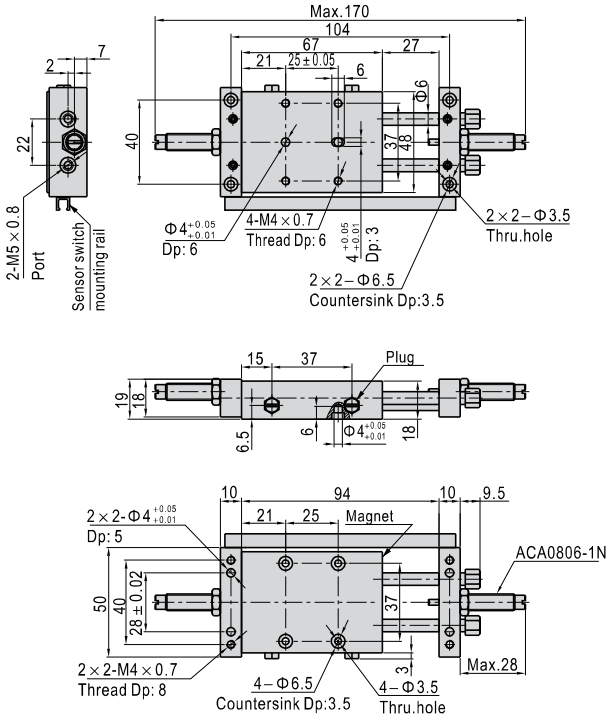
Fixing plate mounted(A)



Dimensions

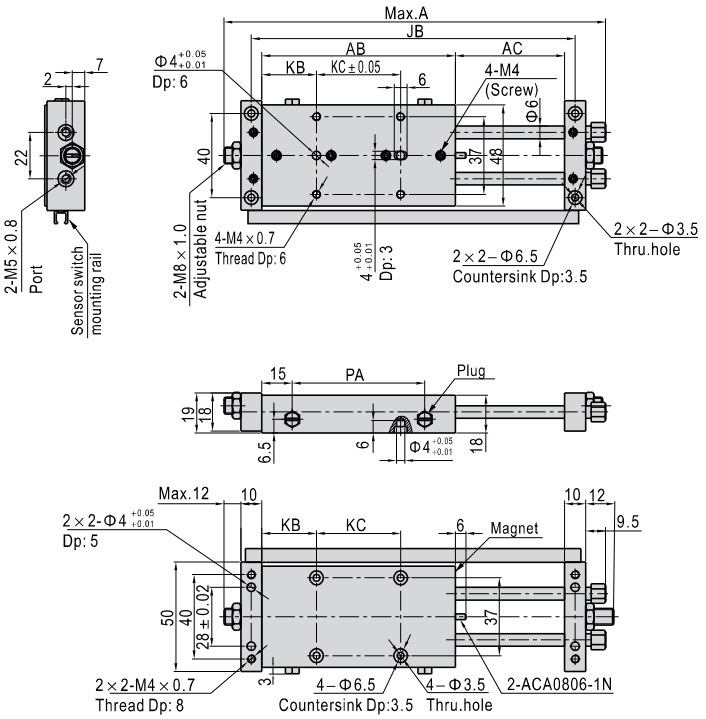
STW10 Stroke=25mm

A Type(Fixing plate mounted)

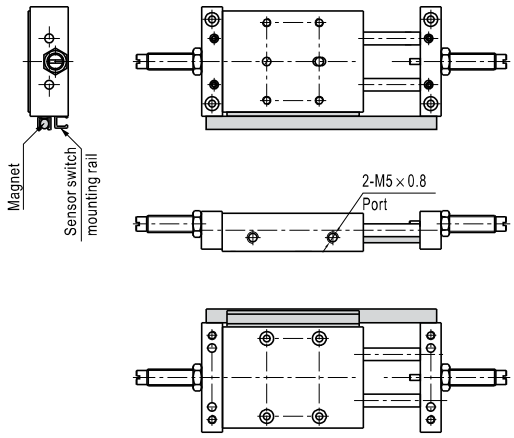


STW10 Stroke=50 75 100mm

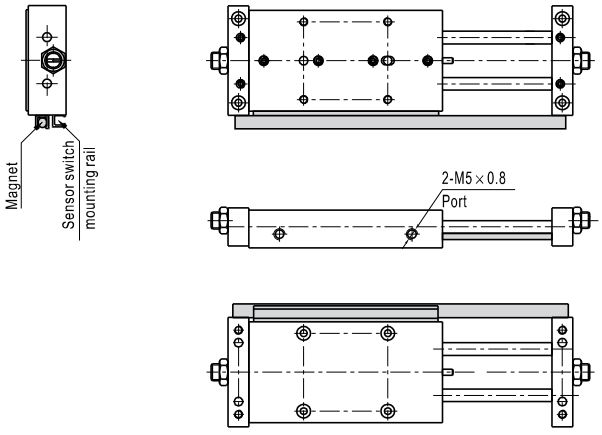
A Type(Fixing plate mounted)



B Type(Body mounted)



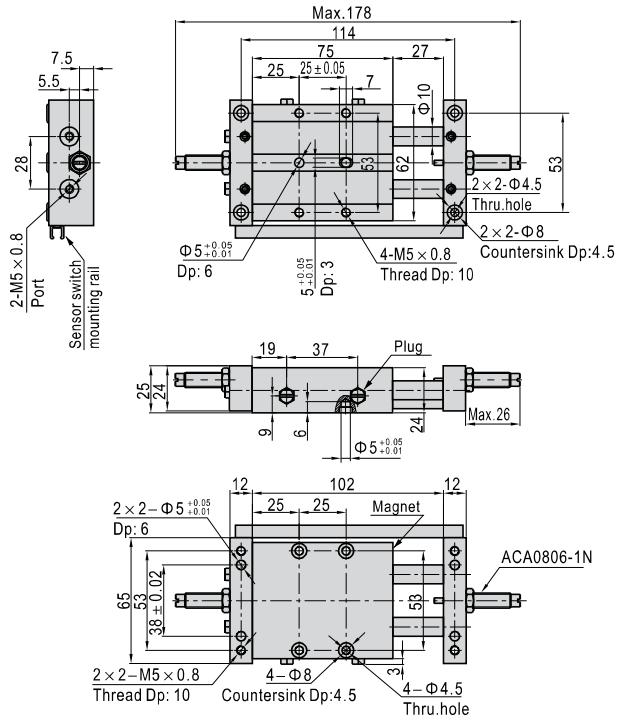
B Type(Body mounted)



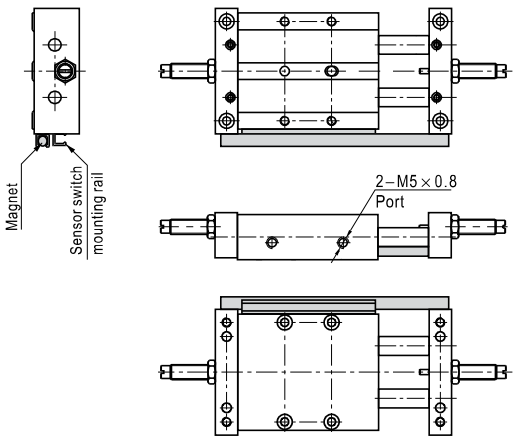
Stroke\Item	A	AB	AC	JB	KB	KC	PA
50	188	92	52	154	26	40	62
75	238	117	77	204	26	65	87
100	288	142	102	254	26	90	112

STW16 Stroke=25mm

A Type(Fixing plate mounted)

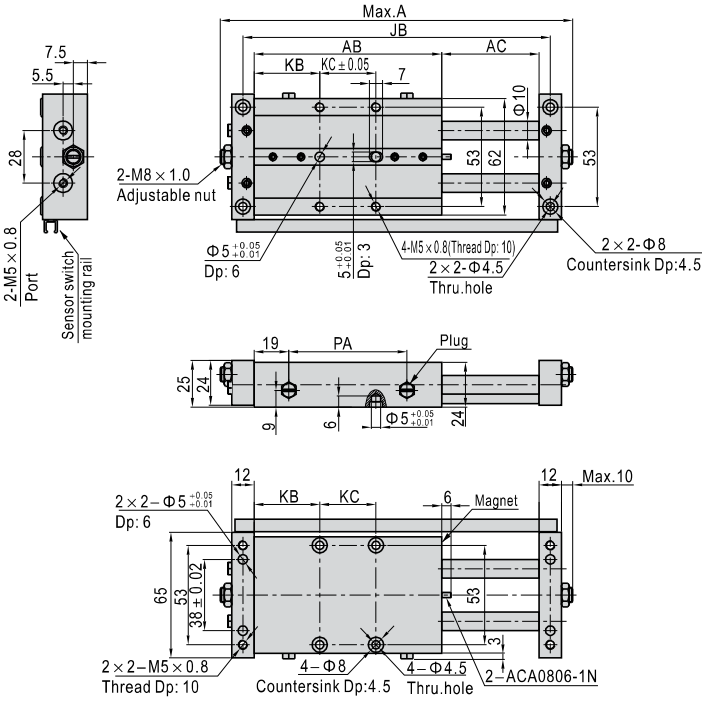


B Type(Body mounted)

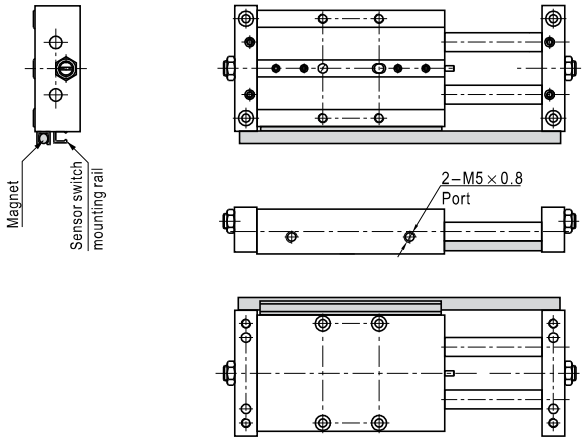


STW16 Stroke=50 75 100 125 150 175 200mm

A Type(Fixing plate mounted)



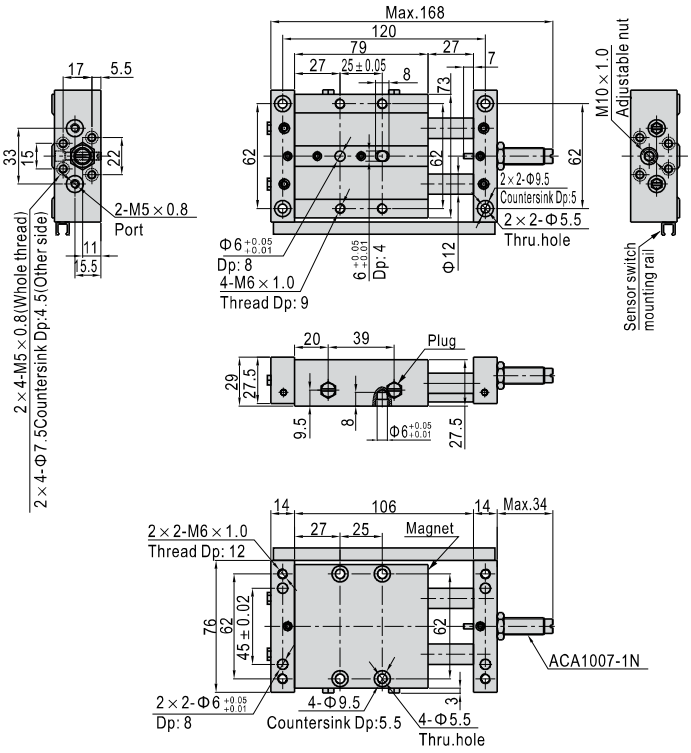
B Type(Body mounted)



Stroke\Item	A	AB	AC	JB	KB	KC	PA
50	196	100	52	164	35	30	62
75	246	125	77	214	32.5	60	87
100	296	150	102	264	37.5	75	112
125	346	175	127	314	42.5	90	137
150	396	200	152	364	55	90	162
175	446	225	177	414	67.5	90	187
200	496	250	202	464	80	90	212

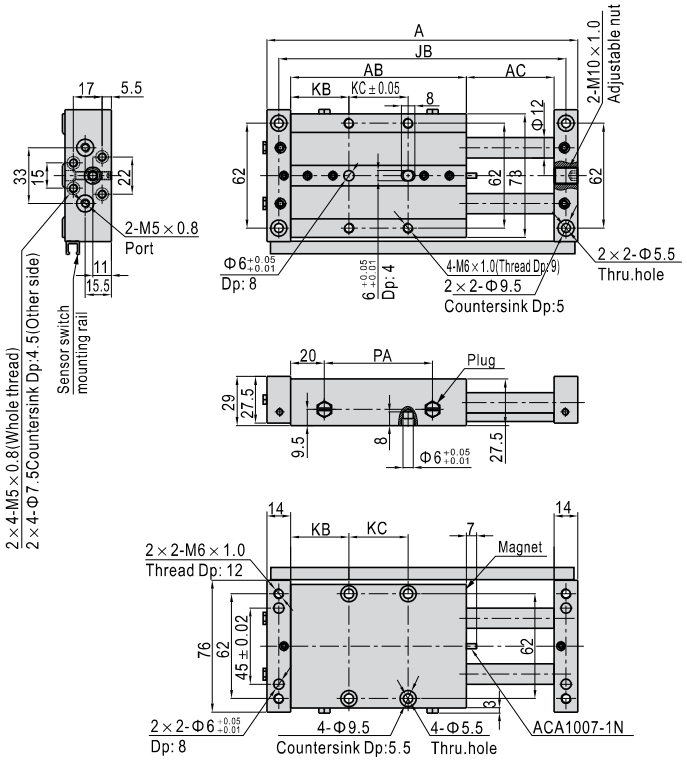
STW20 Stroke=25mm

A Type(Fixing plate mounted)

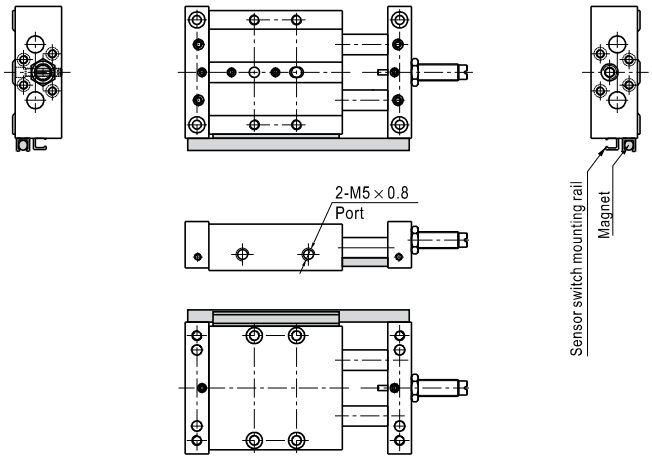


STW20 Stroke=50 75 100 125 150 175 200mm

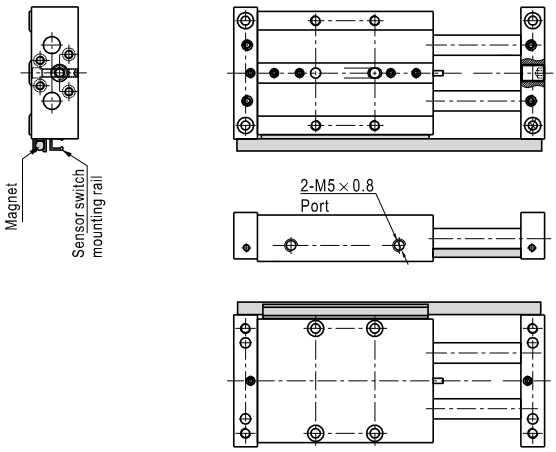
A Type(Fixing plate mounted)



B Type(Body mounted)



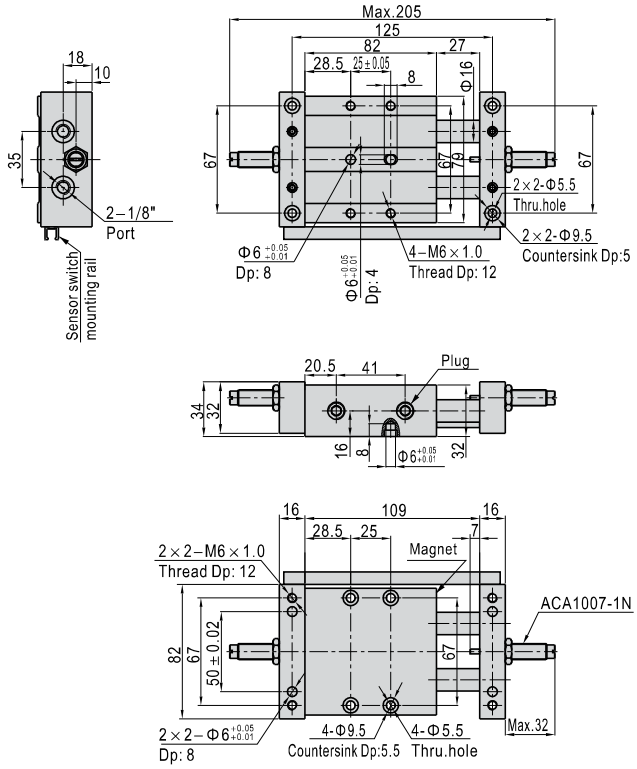
B Type(Body mounted)



Stroke\Item	A	AB	AC	JB	KB	KC	PA
50	184	104	52	170	34.5	35	64
75	234	129	77	220	34.5	60	89
100	284	154	102	270	39.5	75	114
125	334	179	127	320	44.5	90	139
150	384	204	152	370	57	90	164
175	434	229	177	420	69.5	90	189
200	484	254	202	470	82	90	214

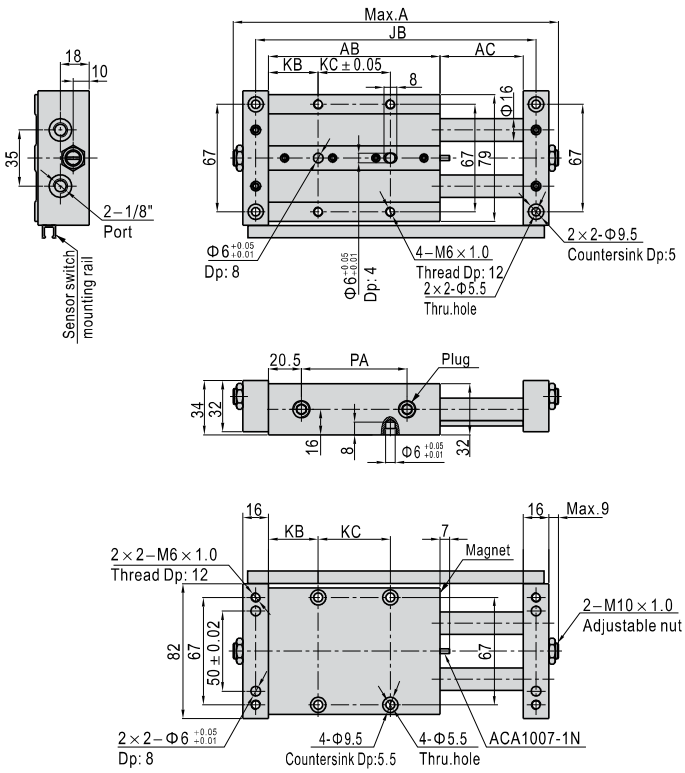
STW25 Stroke=25mm

A Type(Fixing plate mounted)

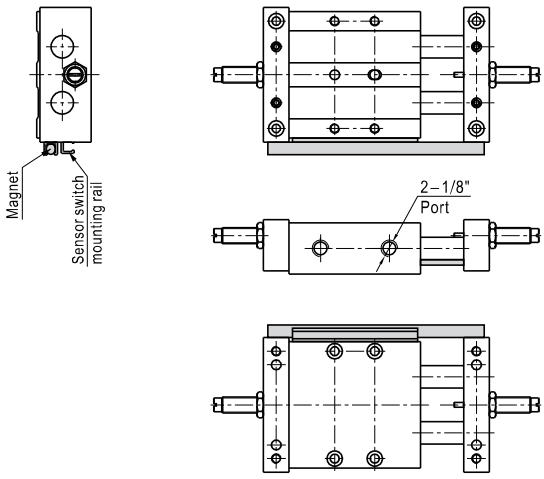


STW25 Stroke=50 75 100 125 150 175 200mm

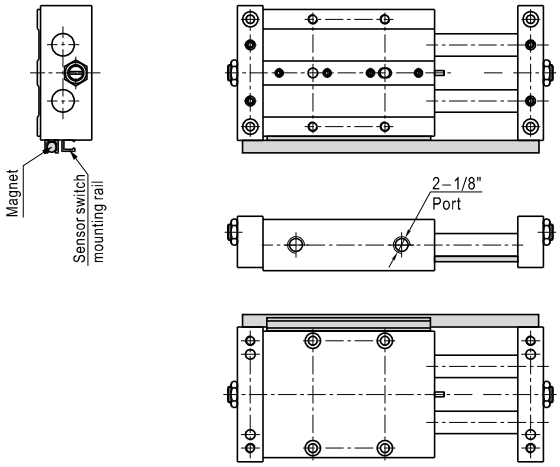
A Type(Fixing plate mounted)



B Type(Body mounted)



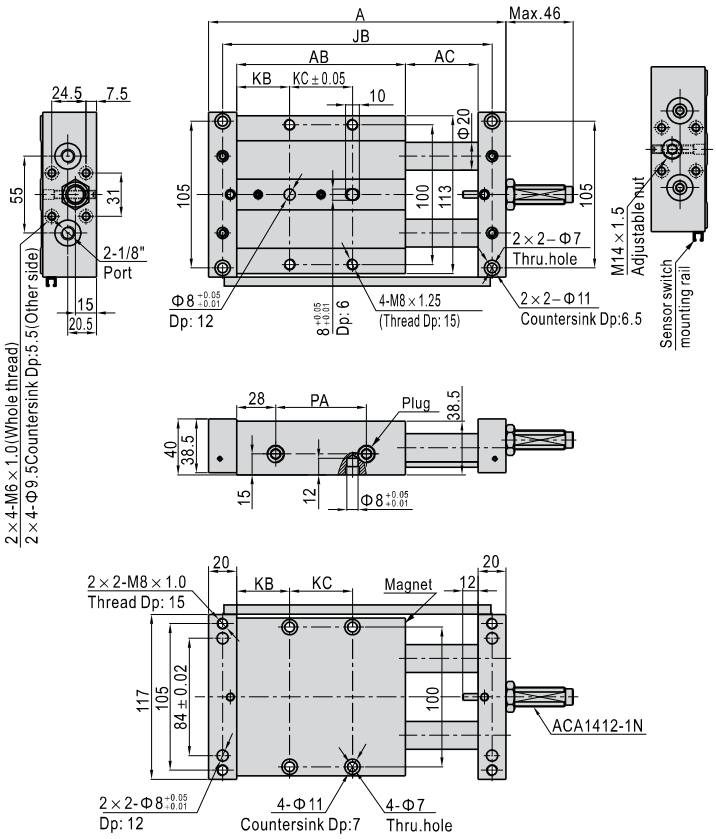
B Type(Body mounted)



Stroke\Item	A	AB	AC	JB	KB	KC	PA
50	209	107	52	175	31	45	66
75	259	132	77	225	33.5	65	91
100	309	157	102	275	33.5	90	116
125	359	182	127	325	46	90	141
150	409	207	152	375	58.5	90	166
175	459	232	177	425	71	90	191
200	509	257	202	475	83.5	90	216

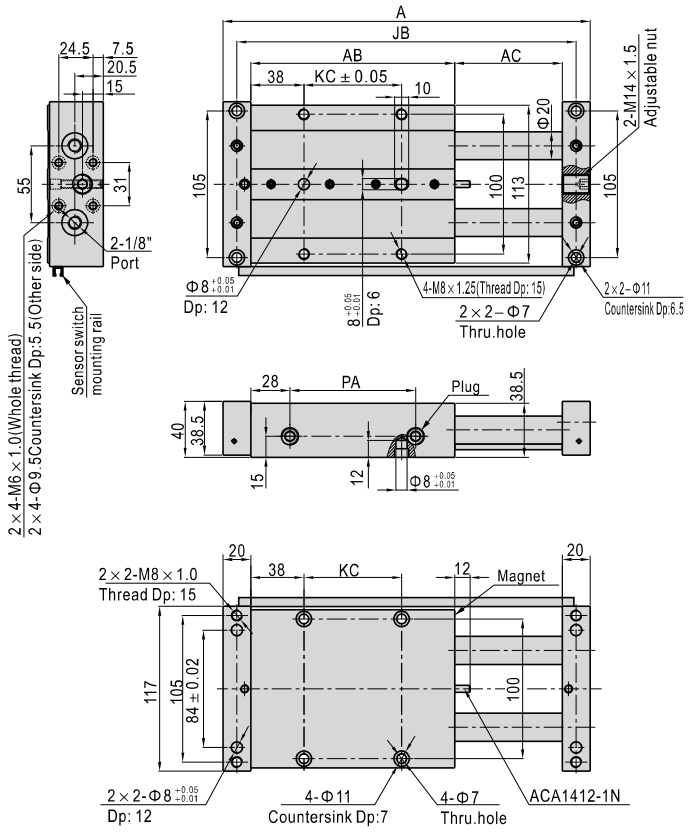
STW32 Stroke=25 50mm

A Type(Fixing plate mounted)

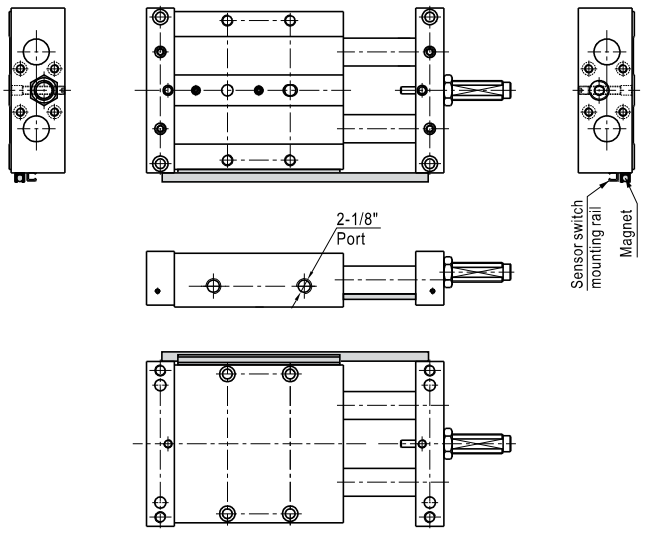


STW32 Stroke=75 100 125 150 175 200mm

A Type(Fixing plate mounted)

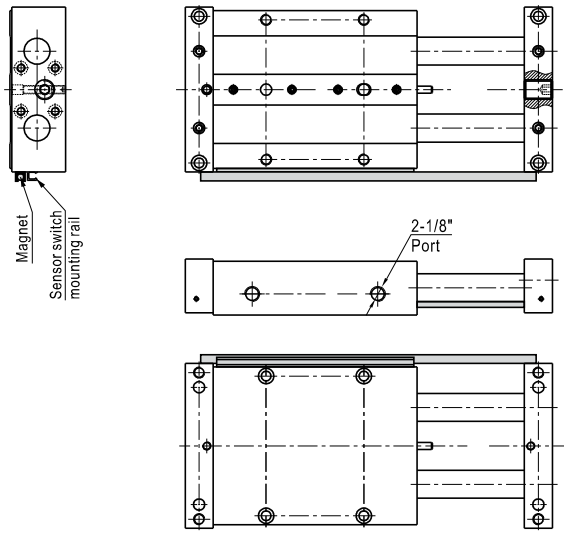


B Type(Body mounted)



Stroke\Item	A	AB	AC	JB	KB	KC	PA
25	163	96	27	143	37	22	40
50	213	121	52	193	38	45	65

B Type(Body mounted)



Stroke\Item	A	AB	AC	JB	KC	PA
75	263	146	77	243	70	90
100	313	171	102	293	95	115
125	363	196	127	343	120	140
150	413	221	152	393	145	165
175	463	246	177	443	170	190
200	513	271	202	493	195	215