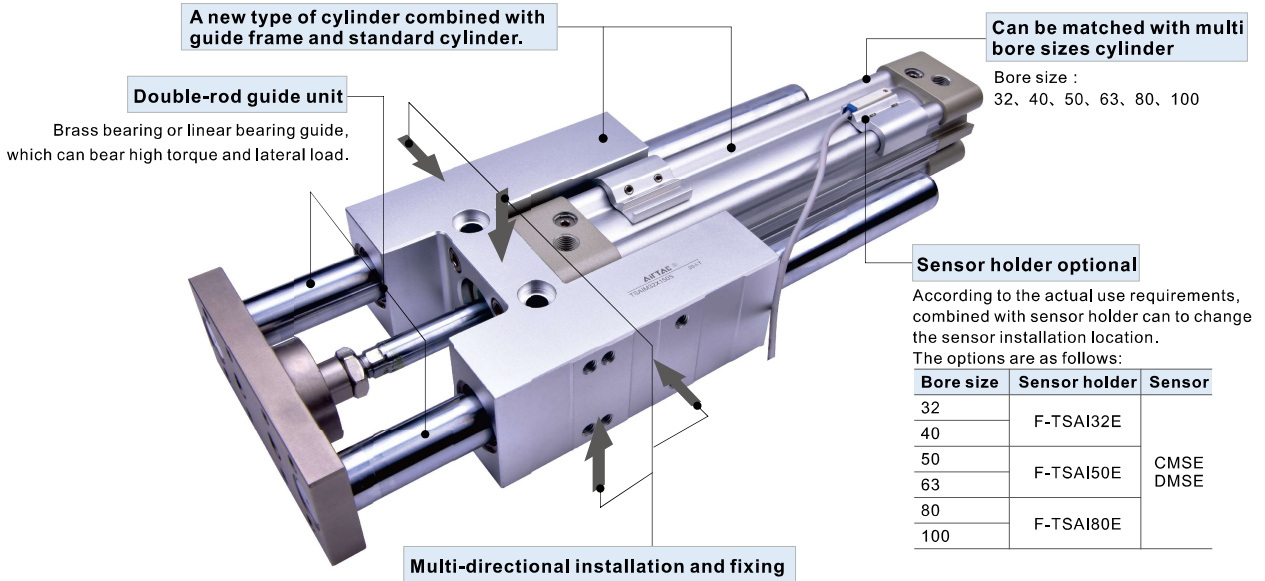




TSAI series with guide frame cylinder

Compendium of TSAI series



Sensor holder optional
According to the actual use requirements, combined with sensor holder can to change the sensor installation location. The options are as follows:

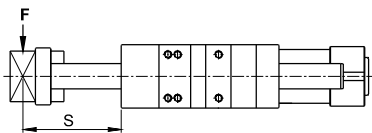
Bore size	Sensor holder	Sensor
32	F-TSAI32E	CMSE DMSE
40		
50	F-TSAI50E	
63	F-TSAI80E	
80		
100		

Criteria for selection: Cylinder thrust

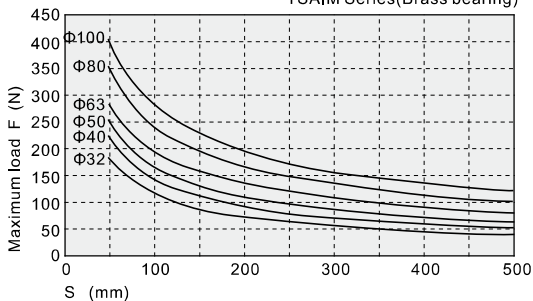
Unit : Newton(N)

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	0.8	0.9
32	12	Double acting Push side	804	80.4	160.8	241.2	321.6	402.0	482.4	562.8	643.2	723.6
		Double acting Pull side	690	69.0	138.0	207.0	276.0	345.0	414.0	483.0	552.0	621.0
40	16	Double acting Push side	1256	125.6	251.2	376.8	502.4	628.0	753.6	879.2	1002.4	1130.4
		Double acting Pull side	1055	105.5	211.0	316.5	422.0	527.5	633.0	738.5	844.0	949.5
50	20	Double acting Push side	1963	196.3	392.6	588.9	785.2	981.5	1177.8	1374.1	1570.4	1766.7
		Double acting Pull side	1649	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1399.2	1484.1
63	20	Double acting Push side	3117	311.7	623.4	935.1	1246.8	1558.5	1870.2	2181.9	2493.6	2805.3
		Double acting Pull side	2803	280.3	560.6	840.9	1121.2	1401.5	1681.8	1962.1	2242.4	2522.7
80	25	Double acting Push side	5026	502.6	1005.2	1507.8	2010.4	2513.0	3015.6	3518.2	4020.8	4523.4
		Double acting Pull side	4536	453.6	907.2	1360.8	1814.4	2268.0	2721.6	3175.2	3628.8	4082.4
100	25	Double acting Push side	7853	785.3	1570.6	2355.9	3141.2	3926.5	4711.8	5497.1	6282.4	7067.7
		Double acting Pull side	7362	736.2	1472.4	2208.6	2948.6	3681.0	4417.2	5153.4	5889.6	6625.8

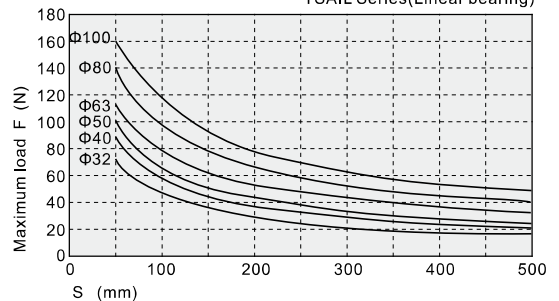
Maximum load relationship curve



TSAIM Series(Brass bearing)



TSAIL Series(Linear bearing)



TSAI Series

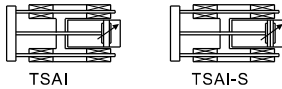


Specification

Bore size(mm)	32	40	50	63	80	100
Acting type	Double acting					
Fluid	Air(to be filtered by 40μm filter element)					
Operating pressure	0.15~1.0MPa(22~145psi)(1.5~10.0bar)					
Proof pressure	1.5MPa(215psi)(15bar)					
Temperature °C	-20~70					
Speed range mm/s	30~500					
Stroke tolerance	0~250 ^{+1.0} ₀ >250 ^{+1.5} ₀					
Cushion type	Variable cushion					
Port size [Note]	1/8"	1/4"	3/8"	1/2"		

[Note] PT thread, G thread are available.

Symbol



TSAI

TSAI-S

Product feature

1. A new type of cylinder combined with guide frame and standard cylinder.
2. Brass bearing: It is suitable for the action that has radial load resistance, with greater torsion stiffness.
Linear bearing: It is suitable for push-up action, or where high precision and high load capacity are required, especially for occasions requiring low friction.
3. The special design of the guide frame body provides a multi-directional mounting.
4. The buffer adjustment of cylinder is smooth and steady.
5. According to the actual use requirements, combined with sensor holder can to change the sensor installation location.

Stroke

Bore size(mm)	Standard stroke (mm)										Max.std stroke(mm)
32	50	100	150	200	250	300	350	400	450	500	500
40	50	100	150	200	250	300	350	400	450	500	500
50	50	100	150	200	250	300	350	400	450	500	500
63	50	100	150	200	250	300	350	400	450	500	500
80	50	100	150	200	250	300	350	400	450	500	500
100	50	100	150	200	250	300	350	400	450	500	500

[Note] Consult us for non-standard stroke.

Ordering code

TSAI M 40 X 100 S □

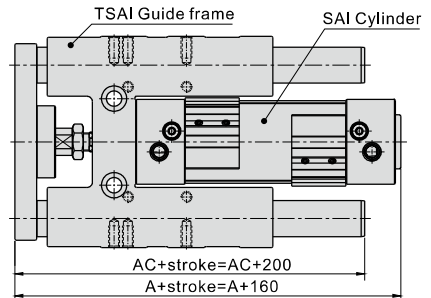


① Model	TSAI: With guide frame cylinder
② Bearing type	M: Brass bearing L: Linear bearing
③ Bore size	32 40 50 63 80 100
④ Stroke	Refer to stroke table for details
⑤ Magnet[Note 1]	Blank: Without magnet S: With magnet
⑥ Thread type	Blank: PT G: G

[Note 1] With magnet cylinders are equipped with 2 pcs sensor holders.

Ordering instructions :

1. When ordering guide frame separately, only standard strokes from the stroke list can be ordered. (Other stroke can only be ordered by non-standard)
2. To order non-standard stroke cylinders with guide frame, the combination is as follows:
Non-standard stroke cylinder + guide frame of the upper standard stroke.
Example: SAI32X160 (non-standard stroke cylinder) + F-TSAIM32X200 (Standard stroke guide frame).
The dimension is as follows:



Ordering code(for guide frame)

F - TSAI M 40 X 100



① Accessory code	F: Accessory
② Model	TSAI: With guide frame cylinder
③ Bearing type	M: Brass bearing L: Linear bearing
④ Bore size	32 40 50 63 80 100
⑤ Stroke	Refer to stroke table for details

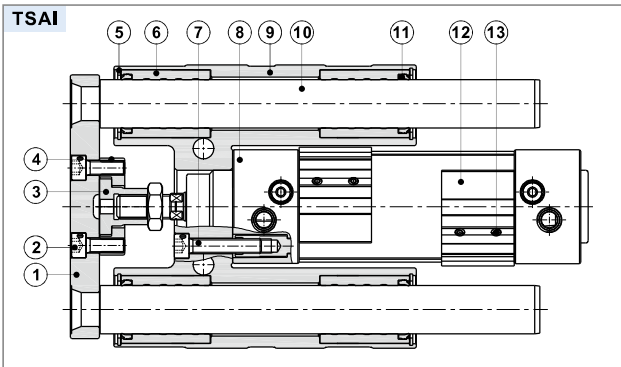
[Note] When ordering the guide frames separately, 2 pcs sensor holders are equipped. The matching relationship between the sensor holder and the bore size is shown in the following table.

Sensor holder type\Bore size	32	40	50	63	80	100
F-TSAI32E	•	•				
F-TSAI50E			•	•		
F-TSAI80E					•	•

With guide frame cylinder

TSAI Series

Inner structure and material of major parts

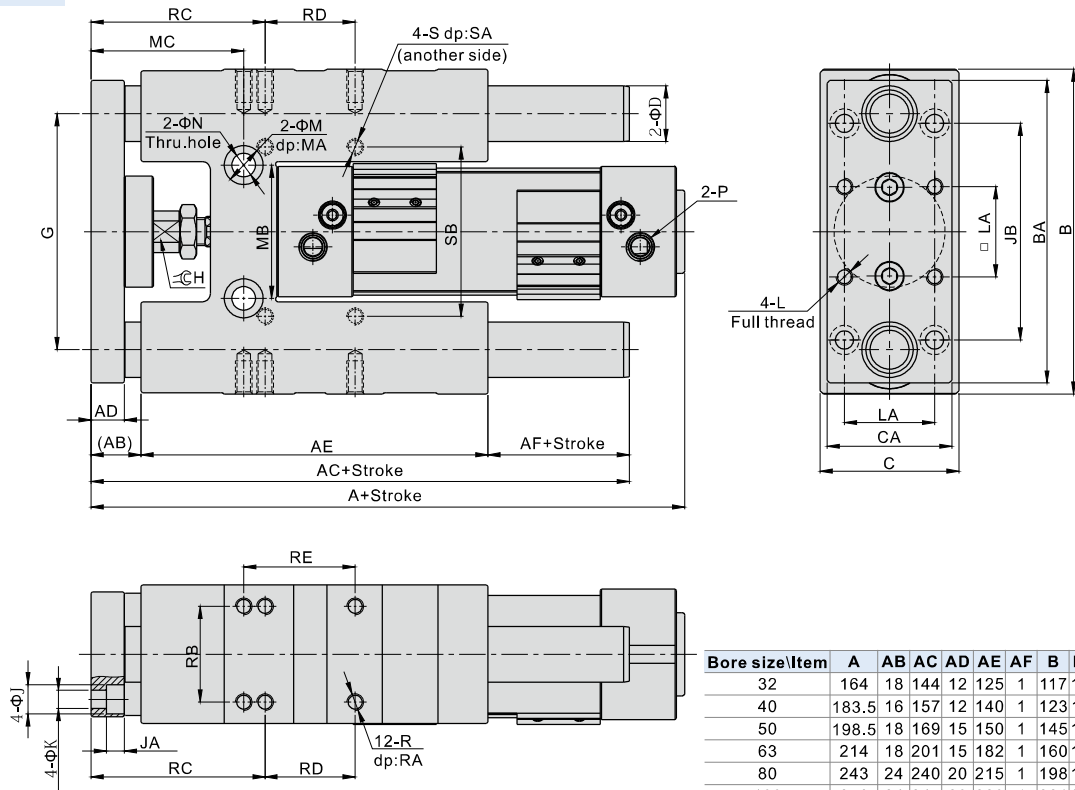


NO.	Item	Material
1	Fixed plate	Ductile iron
2	Bolt	Carbon steel
3	Floating nut	Carbon steel
4	Floating baffle	Carbon steel
5	C clip	Spring steel
6	Linear bearing	-
	Brass bearing	Brass
7	Bolt	Carbon steel
8	SAI Cylinder	Unit
9	Guide frame	Aluminum alloy
	Guider(Linear)	Alloy steel
10	Guider(Brass)	Carbon steel
	Dust ring	Plastic
11	Sensor holder	Aluminum alloy
12	Screw	Alloy steel

Note: inner structure & material data sheet is based on certain bore size. Please contact AirTAC if you need inner structure & material data sheet for specific bore size.

Dimensions

TSAIM/TSAIL



Bore size\Item	A	AB	AC	AD	AE	AF	B	BA	C	CA
32	164	18	144	12	125	1	117	109	50	45
40	183.5	16	157	12	140	1	123	115	58	54
50	198.5	18	169	15	150	1	145	135	70	63
63	214	18	201	15	182	1	160	150	85	80
80	243	24	240	20	215	1	198	189	105	100
100	258	24	245	20	220	1	221	210	130	120

Bore size\Item	D	G	H	J	JA	JB	K	L	LA	M	MA	MB	MC	N	P	R	RA	RB	RC	RD	RE	S	SA	SB
32	20(16)	85	15	10.5	6.5	78	6.5	M6X1.0	32.5	14	4.5	48	55	8.5	1/8"	M6X1.0	12	34.5	62.7	32.5	40.2	M6X1.0	12	61
40	20(16)	91	15	10.5	6.5	84	6.5	M6X1.0	38	14	6	54	61	8.5	1/4"	M6X1.0	14	38	64	38	51	M6X1.0	14	69
50	20	108	19	14	8.5	100	8.5	M8X1.25	46.5	17	7	66	72	10.5	1/4"	M8X1.25	16	46.5	70.2	46.5	64.7	M8X1.25	16	85
63	20	123	19	14	8.5	105	8.5	M8X1.25	56.5	17	10	79	72	10.5	3/8"	M8X1.25	16	56.5	73.7	56.5	76.5	M8X1.25	16	100
80	30(25)	150	27	17	10.5	130	10.5	M10X1.5	72	-	-	-	-	-	3/8"	M10X1.5	20	72	90	72	90	M10X1.5	20	130
100	30(25)	172	27	17	10.5	150	10.5	M10X1.5	89	-	-	-	-	-	1/2"	M10X1.5	20	89	91.5	89	113	M10X1.5	20	150

[Note]The values in "()" in the above table are TSAIL series sizes.

