

Micro grasping system

An automatic gripper used for clamping and transporting trays, which can prevent detachment through steel balls



Micro gripper

Product features:

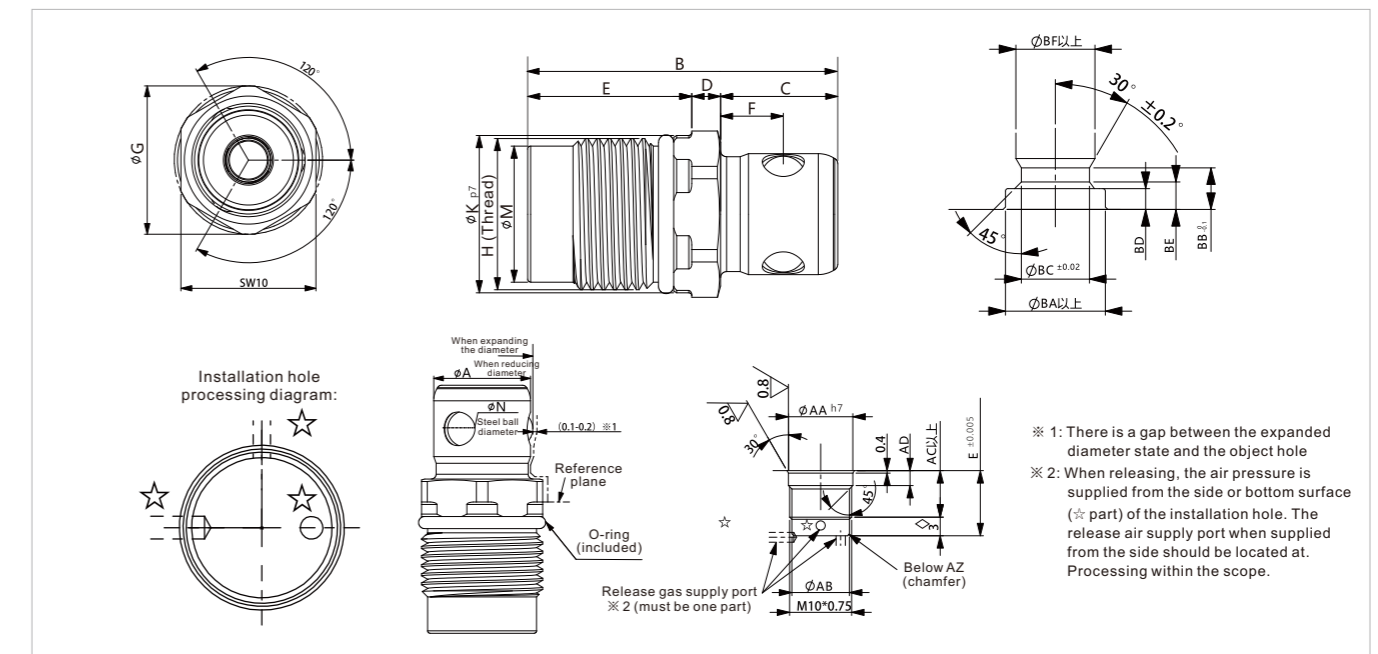
- Use pneumatic robotic arms;
- Steel ball clamp;
- Lightweight and compact in size, allowing the robot to perform at its maximum capacity with minimal impact on its transportability.

Applicable industry:

- Suitable for automated multi axis robot handling operations.



Outline dimensions:



Main parameter table:

Order Number	Expansion and contraction diameter size		B	C	D	E	F	G	H (nominal * pitch)	K	M	N
	When reducing the diameter of A	When expanding the diameter										
MST-M10	8 ⁰ _{-0.05}	9.3	20.5	8	2	10.5	4.5	11	M10*0.75	10.4 ^{+0.036} _{+0.018}	9	3
MST-M12	10 ⁰ _{-0.05}	11.5	22.5	9	2.5	11	5	13.5	M12*1	12.4 ^{+0.036} _{+0.018}	10.7	3.5
MST-M14	12 ⁰ _{-0.05}	13.8	25	10	3	12	5.5	15.5	M14*1	14.4 ^{+0.036} _{+0.018}	12.7	4
MST-M18	16 ⁰ _{-0.05}	18.2	29.5	11.5	4	14	6.5	21.2	M18*1.5	19.4 ^{+0.043} _{+0.022}	16.1	5

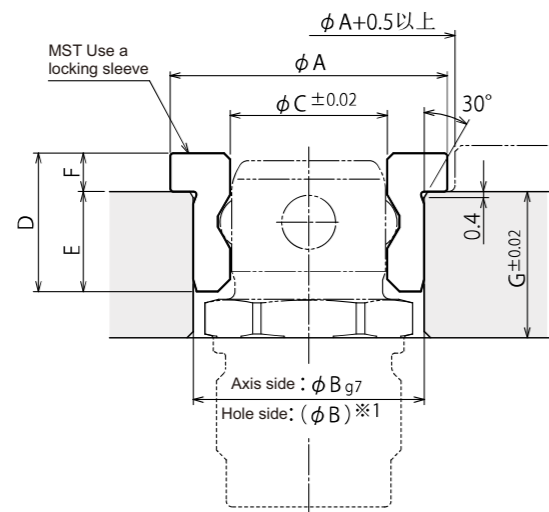
Order Number	AA	AB	AC	AD	AZ (Chamfer)	BA	BB	BC	BD	BE	BF
MST-M10	10.4 ^{+0.018} ₀	9.3 ^{+0.07} _{-0.11}	7.5	2.4	0.2	12	5	8.2	2.5	3.3	9.5
MST-M12	12.4 ^{+0.021} ₀	11 ^{+0.15} _{-0.08}	8	2.4	0.4	14.5	5.8	10.2	3	4.6	11.7
MST-M14	14.4 ^{+0.018} ₀	13 ^{+0.15} _{-0.08}	9	2.8	0.4	17	6.45	12.2	3.5	4.9	14.2
MST-M18	19.4 ^{+0.021} ₀	16.5 ^{+0.17} _{-0.12}	10.5	3.8	0.4	23	8	16.2	4.5	6.5	18.6

Specifications:

Model	MST-M10	MST-M12	MST-M14	MST-M18
Shrinkage size	Ø8	Ø10	Ø12	Ø16
Pull resistance (holding force) (N)	70	100	150	200
Release side capacity (cm ³)	0.08	0.15	0.26	0.49
Maximum operating pressure (MPa)	0.7			
Minimum operating pressure (MPa)	0.25			
Voltage resistance (MPa)	1.0			
Usage temperature °C	When selecting unsigned	0~70		
	When selecting V	0~120		
Weight (g)	8	13	20	41

▲ Note: unsigned: standard specification (operating temperature 0~70 °C) sealing ring material: nitrile rubber;
 V: High temperature specification (operating temperature 0~120 °C) sealing ring material: fluororubber;
 This product has no pulling force or clamping force, only holding force.

MST locking sleeve:



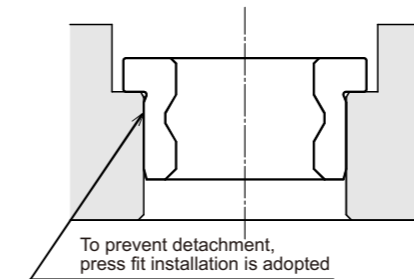
Note: Material: Martensitic stainless steel;
 Hole side: Regarding the installation hole tolerance of ϕB , please refer to the shaft side dimensions and let the customer decide on their own.
 (Please refer to the installation example of P72 locking sleeve)

Main parameter table:

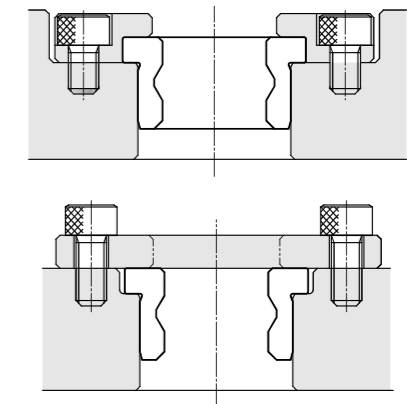
Order Number	A	B		C	D	E	F	G	Weight
		Axis side	Hole side						
MST-M10-T	14	12 ^{-0.006/-0.024}	(12)*1	8.2	7.5	5.5	2	8	4g
MST-M12-T	18	15 ^{-0.006/-0.024}	(15)*1	10.2	9	6.5	2.5	9.5	8g
MST-M14-T	20	17 ^{-0.006/-0.024}	(17)*1	12.2	10	7.5	2.5	11	10g
MST-M18-T	26	23 ^{-0.006/-0.024}	(23)*1	16.2	11.5	8.5	3	13	19g

Installation example of locking sleeve:

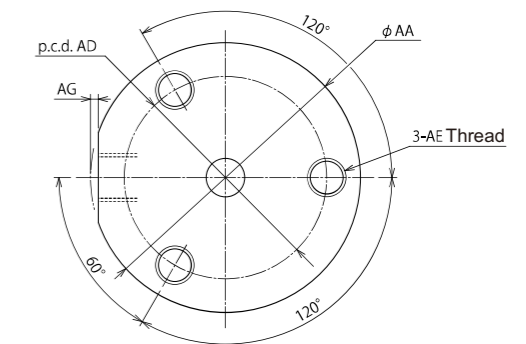
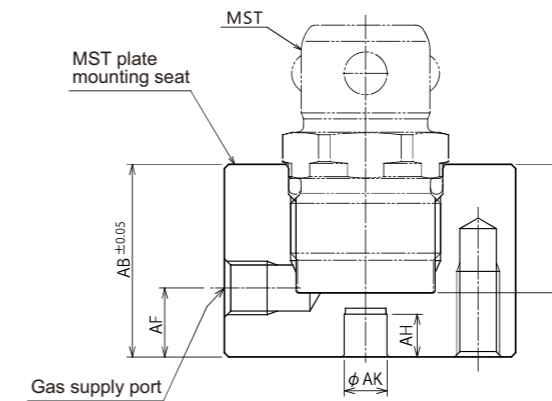
[Press fit installation]



[Installation method through cover plate]



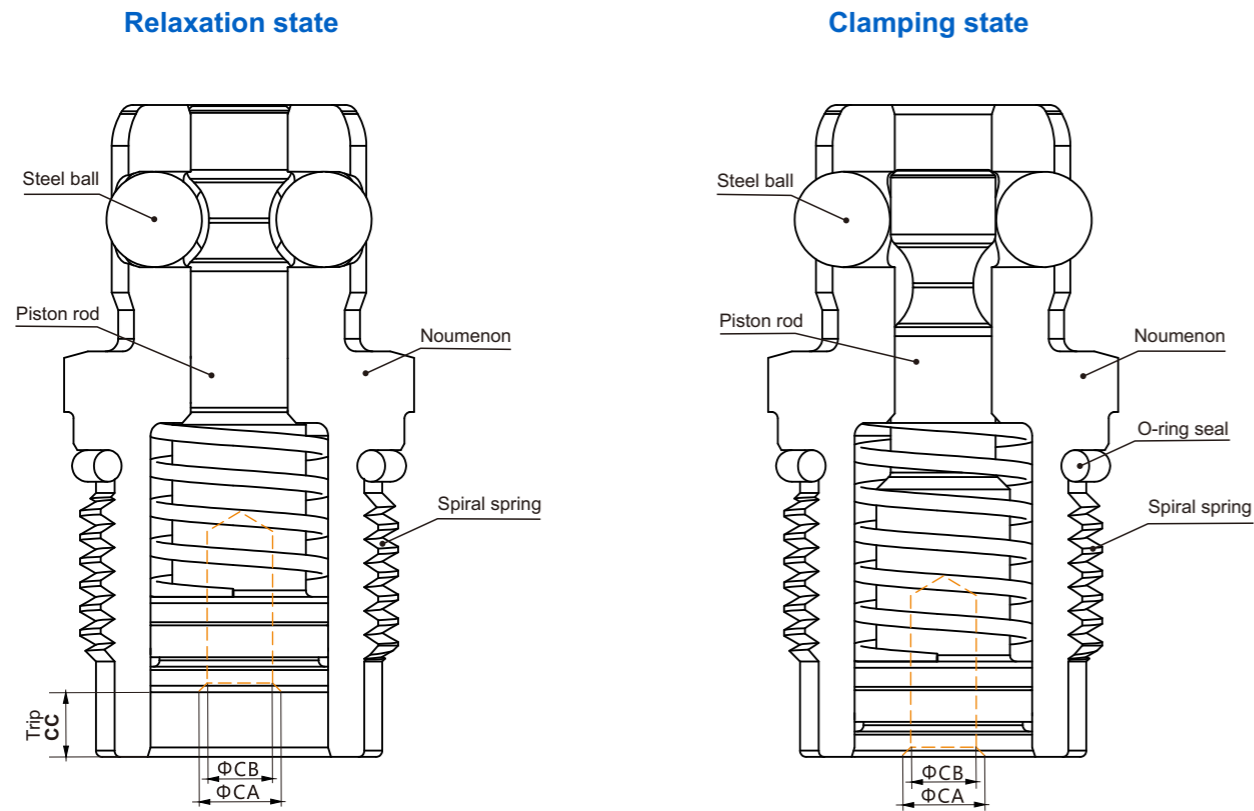
MST plate mounting base:



Main parameter table:

Corresponding products	AA	AB	AC	AD	AE	供气口	AF	AG	AK	AH	Weight
MST-M10	20	15	10.5	15	M3x0.5 thread depth 6	M3x0.5 thread	5	0.5	2 ^{+0.03/0}	2	10g
MST-M12	22	16	11	17	M3x0.5 thread depth 6	M3x0.5 thread	5	0.5	3 ^{+0.03/0}	3	13g
MST-M14	28	18	12	21	M4x0.7 thread depth 8	M5x0.8 thread	6	0.8	4 ^{+0.03/0}	4	24g
MST-M18	32	20	14	25	M4x0.7 thread depth 8	M5x0.8 thread	6	0.8	4 ^{+0.03/0}	4	33g

Release direction and size during manual and other external force actions :

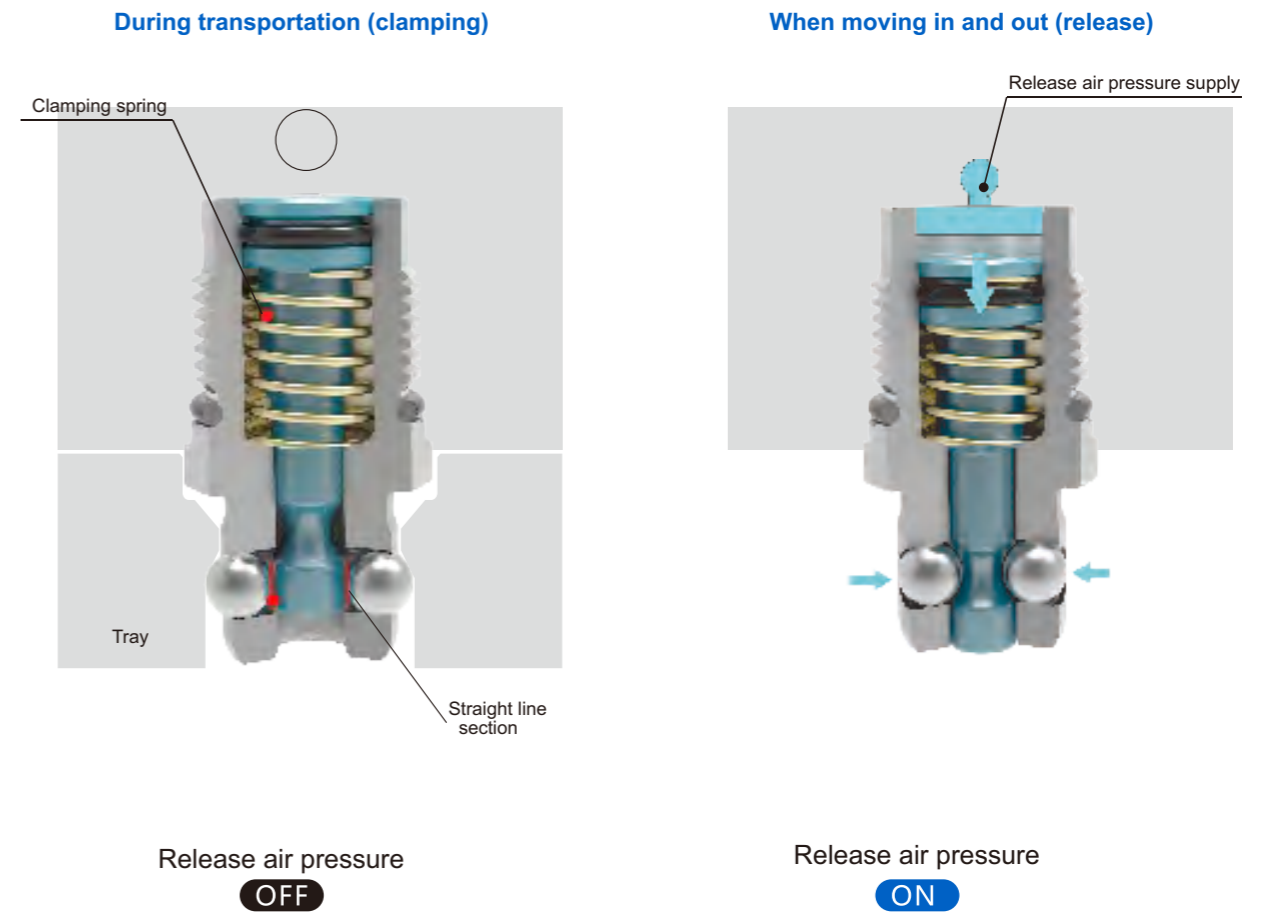


Main parameter table:

Model	MST-M10	MST-M12	MST-M14	MST-M18
Required release force (N)	10	12	12	17
Maximum release force F Max※1(N)	40	60	60	100
Size (mm)	ΦCA	6.2	8.5	10.5
	ΦCB	2.55	5	6.5
	CC	2	2.3	2.7
	CM	M2.5*0.45 thread depth 3	M3*0.5 thread depth 4	M4*0.7 thread depth 6

Parts	Noumenon	Piston rod	Steel ball	Spring
Texture of material	Martensitic stainless steel			Stainless steel

Action description:



When clamping, the built-in spring pulls back the piston rod, causing the steel ball to expand outward. Clamping the steel ball at the straight part of the piston rod can effectively prevent it from falling off when clamping the tray. In special circumstances such as power outages, even if the air pressure supply is cut off, the transported goods will not fall off.

The release action is to push the piston rod forward by supplying air pressure to clamp the steel ball part. Because only when in a relaxed state does air pressure need to be supplied, the air consumption is also very low, which can effectively reduce operating costs.