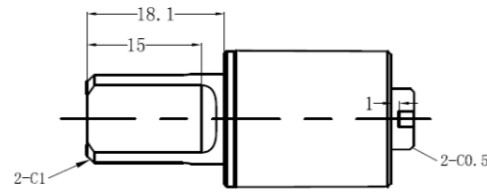
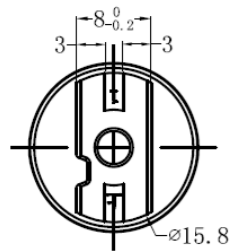
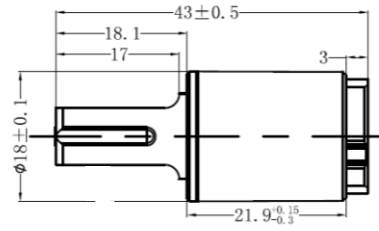
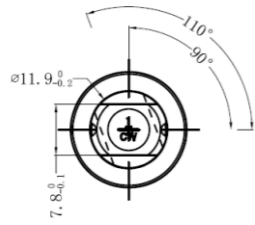
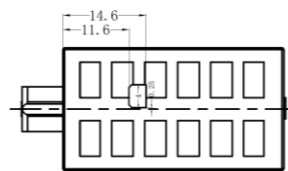
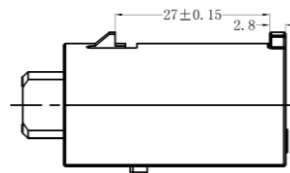
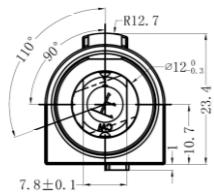
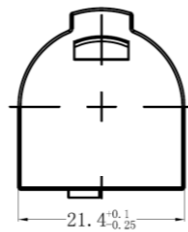
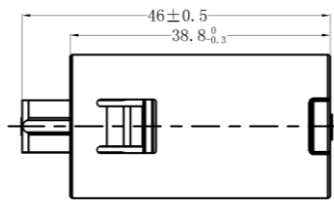
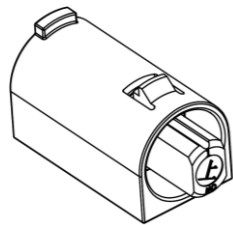


Model: PR-T095A-One way



Torque	5-45 KGf.CM
Max Opening Angle	110°
Static Storage Temperature	-40°C - 110°C
Dynamic Working Temperature	-5°C - 50°C
Body Material	PBT/ PA66
Shaft Material	Zinc Alloy
Oil	Silicone Oil

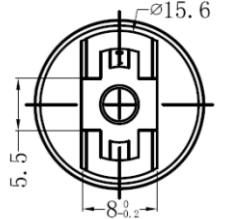
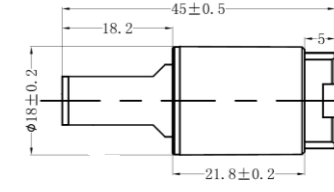
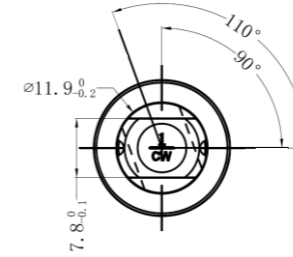
Model: PR-T095B-One way



Torque	5-45 KGf.CM
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Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
110°	-40°C - 110°C	-5°C - 50°C	PBT	PA66/ Zinc Alloy	Silicone Oil

Model: PR-T095C-One way



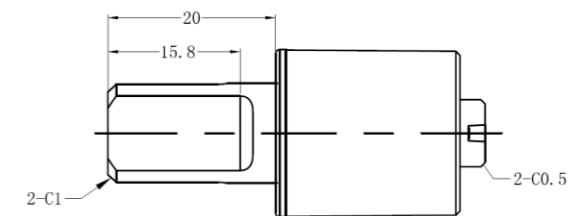
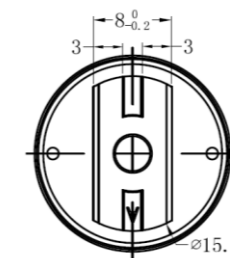
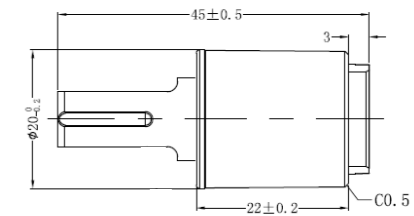
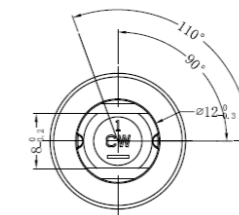
Torque	5-45 KGf.CM
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Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
110°	-40°C - 110°C	-5°C - 50°C	PBT/ PA66	Zinc Alloy	Silicone Oil

Remarks:

Compared with T095C, T095F is different in working angle 0-180°; T095M is of shaft diameter 7.8±0.1mm.

Model: PR-T098D-One way



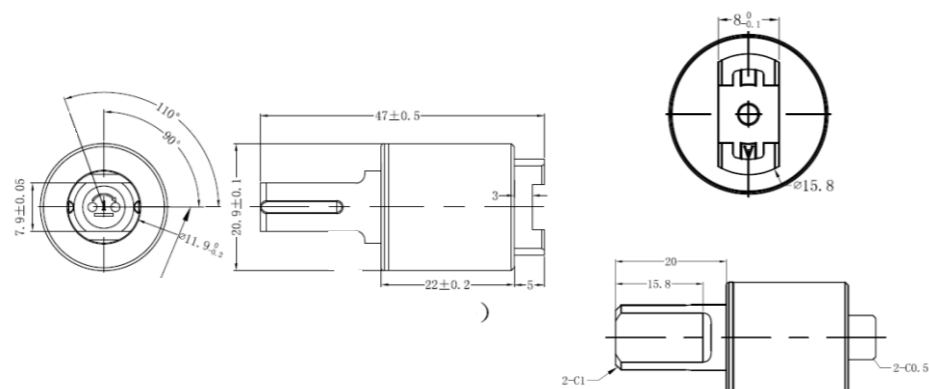
Torque	10-65 KGf.CM
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Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
110°	-40°C - 110°C	-5°C - 50°C	PBT/ PA66	Zinc Alloy	Silicone Oil

Remarks:

Compare with T098D, body diameter of T098A is 19.6mm. The end attachment of T098C is 5mm in height.

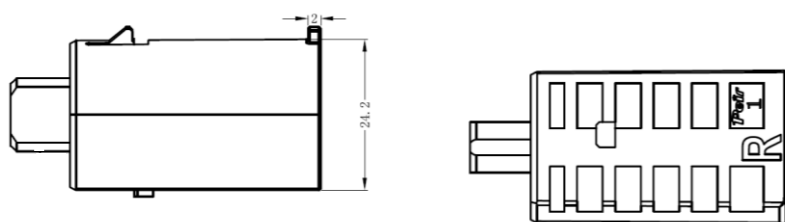
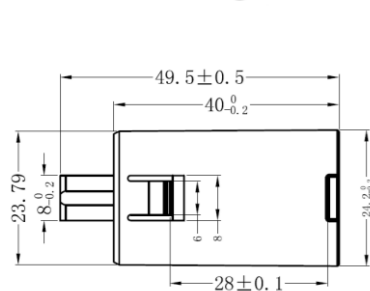
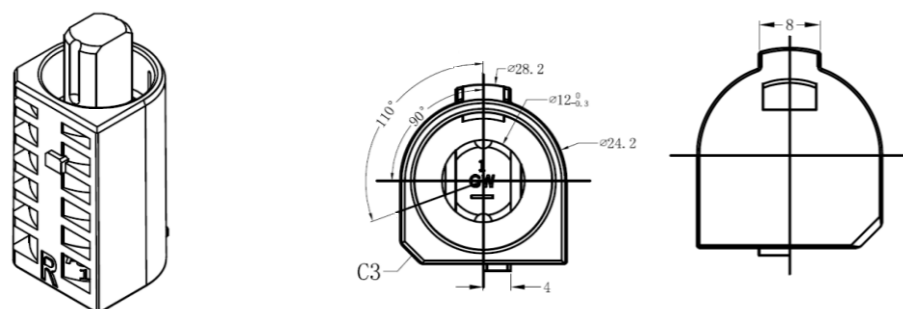
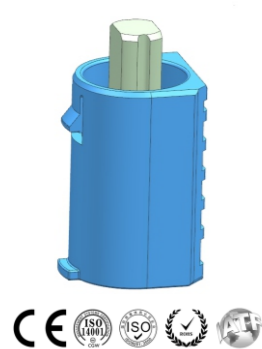
Model: PR-T098E-One way



Torque
10-65 KGf.CM

Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
110°	-40°C - 110°C	-5°C - 50°C	PA66	Zinc Alloy	Silicone Oil

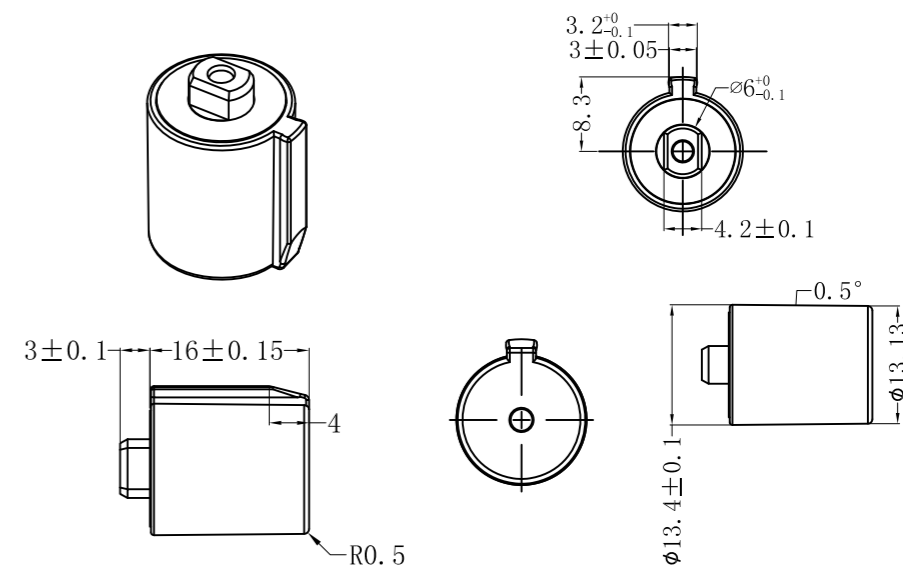
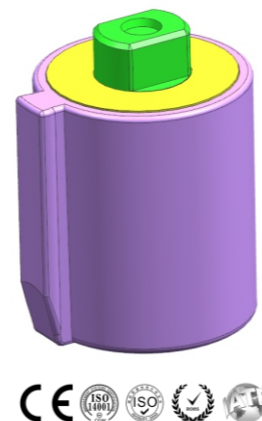
Model: PR-T098H-One way



Torque
10-65 KGf.CM

Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
110°	-40°C - 110°C	-5°C - 50°C	POM	Zinc Alloy	Silicone Oil

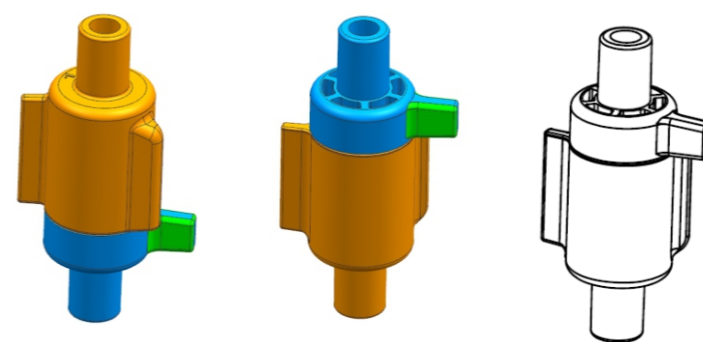
Model: PR-T025-Two way



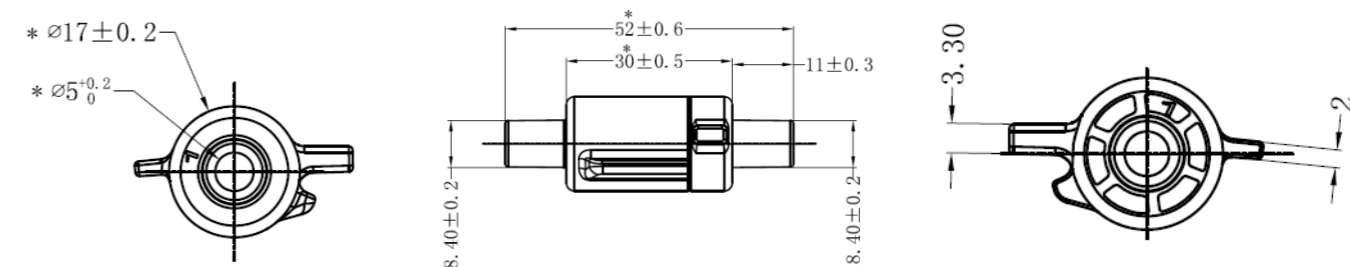
Torque	500-5000 GF.CM
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Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
-40°C-110°C	-5°C-50°C	PC	POM	Silicone Oil

Model: PR-T051A-Two way (For front load washer, etc)



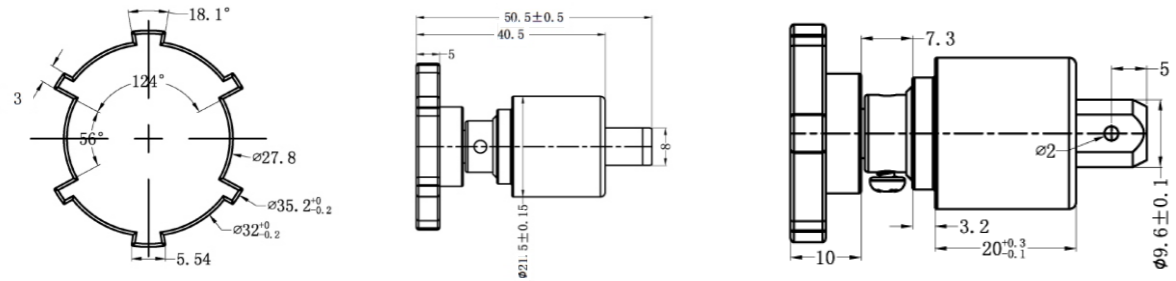
Torque	2000-5000 GF.CM
Static Storage Temperature	-40°C - 110°C
Dynamic Working Temperature	-5°C - 50°C
Body Material	PA66 Gray
Shaft Material	PA66 Gray
Oil	Silicone Oil



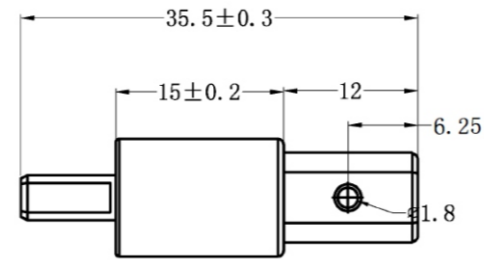
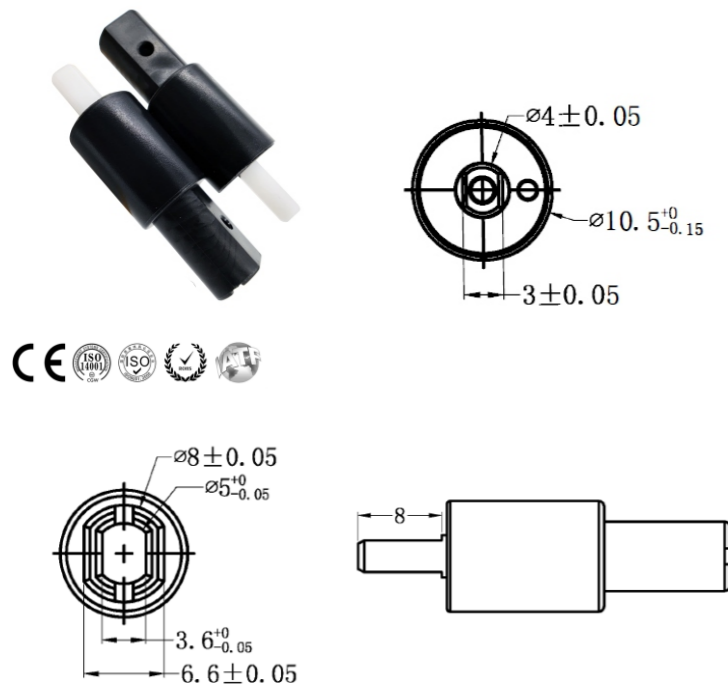
Model: PR-T058A-One/Two way (For curtain, etc)



Torque	500-3000 GF.CM
Static Storage Temperature	-40°C - 110°C
Dynamic Working Temperature	-5°C - 50°C
Body Material	PC
Shaft Material	POM
Oil	Silicone Oil

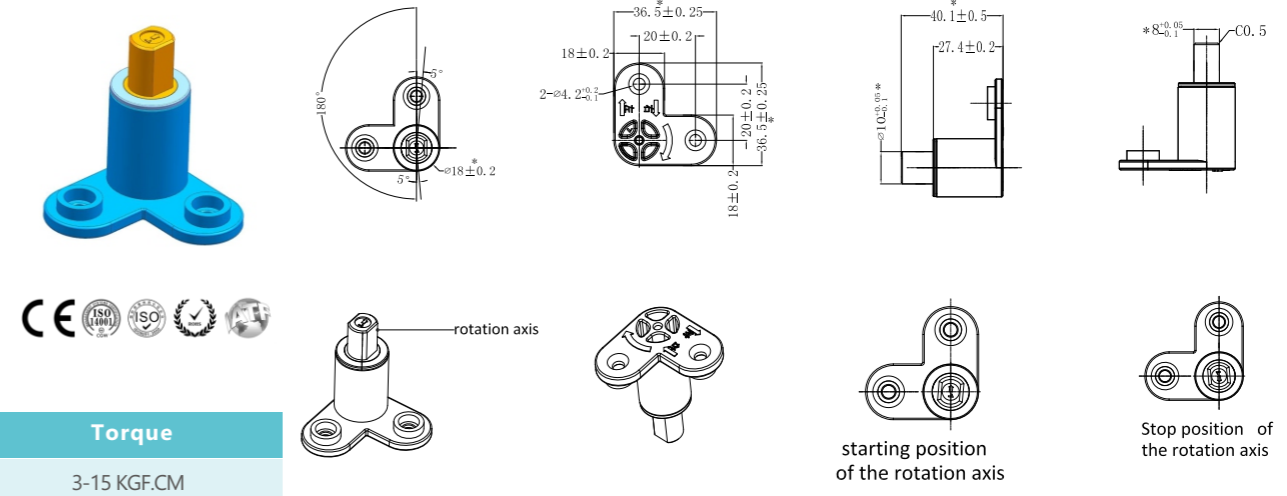


Model: PR-T060A-One/Two way (For curtain, etc)



Torque	80-300 GF.CM
Static Storage Temperature	-40°C - 110°C
Dynamic Working Temperature	-5°C - 50°C
Body Material	PC
Shaft Material	POM
Oil	Silicone Oil

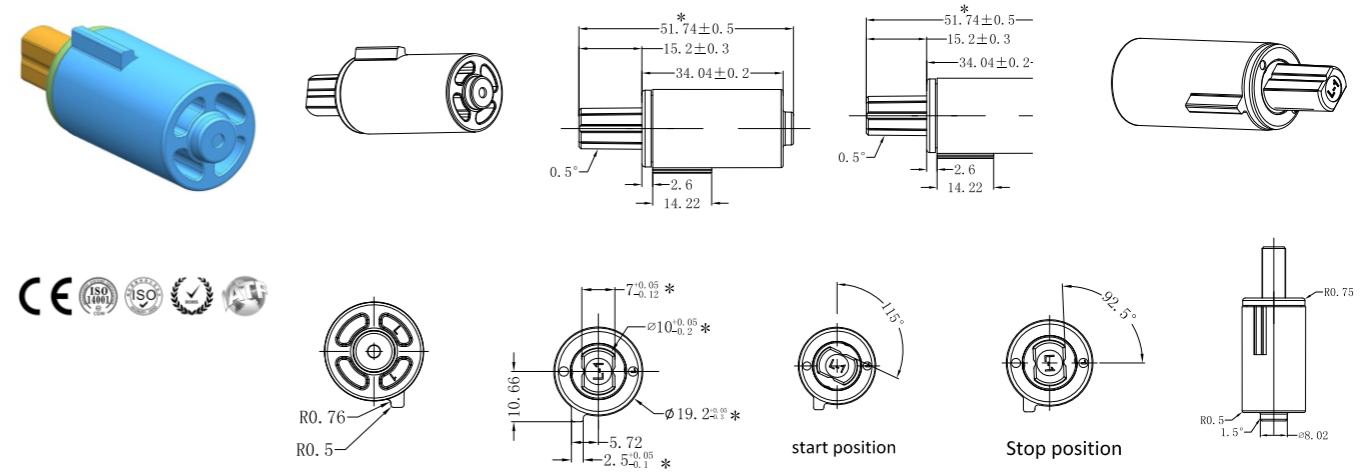
Model: PR-T069A-Two way (For refrigerator, etc)



Torque	3-15 KG.F.CM
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Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
190°	-40°C - 110°C	-5°C - 50°C	PA66-GF	Zinc Alloy	Silicone Oil

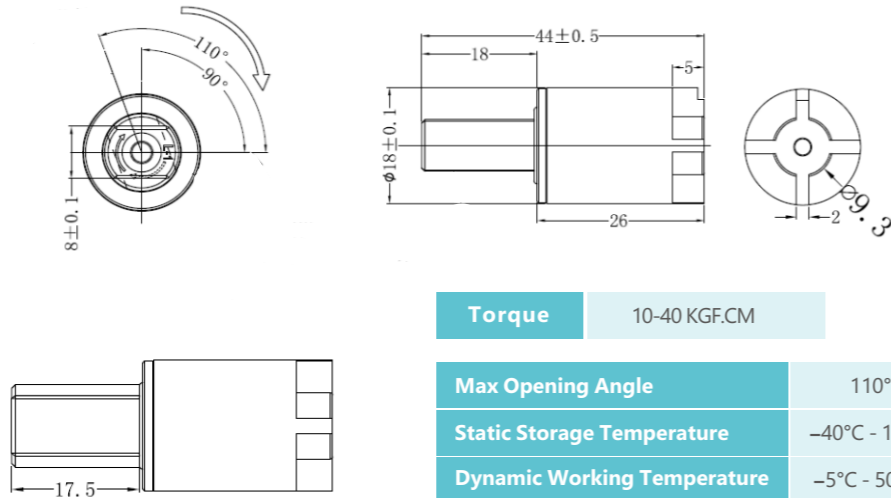
Model: PR-T083A-One way



Torque	5-45 KG.F.CM
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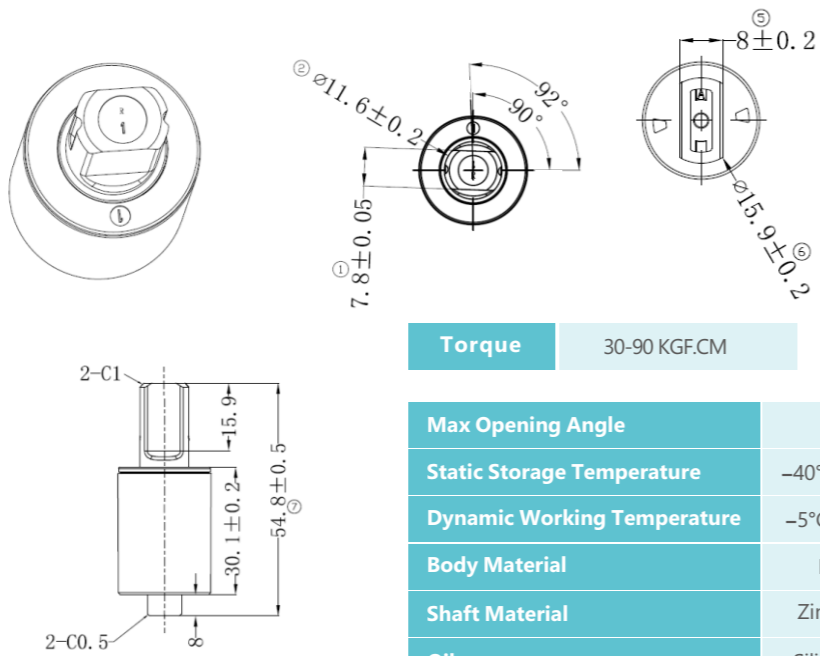
Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
115°	-40°C - 110°C	-5°C - 50°C	PA66-GF	Zinc Alloy	Silicone Oil

Model: PR-T086A-One way



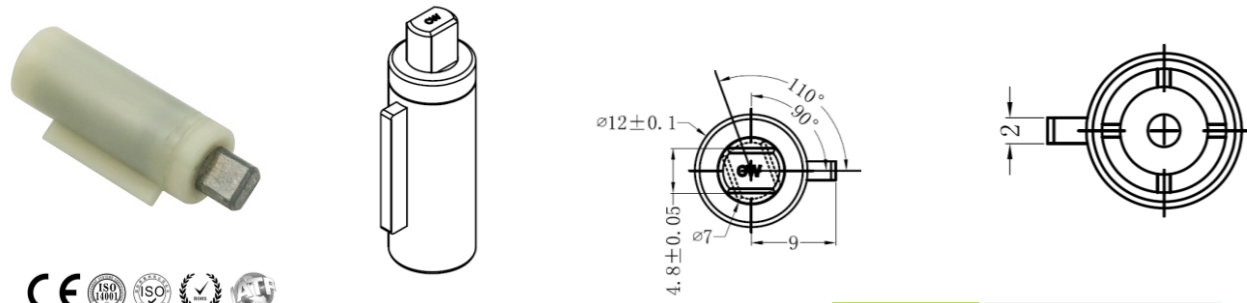
Torque	10-40 KGF.CM
Max Opening Angle	110°
Static Storage Temperature	-40°C - 110°C
Dynamic Working Temperature	-5°C - 50°C
Body Material	PBT
Shaft Material	Zinc Alloy
Oil	Silicone Oil

Model: PR-T097A-One way



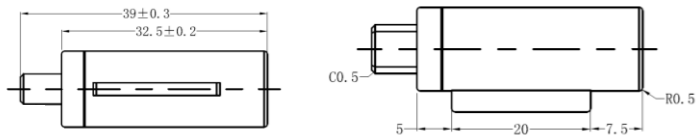
Torque	30-90 KGF.CM
Max Opening Angle	92°
Static Storage Temperature	-40°C - 110°C
Dynamic Working Temperature	-5°C - 50°C
Body Material	PA66
Shaft Material	Zinc Alloy
Oil	Silicone Oil

Model:PR-T099B-One way

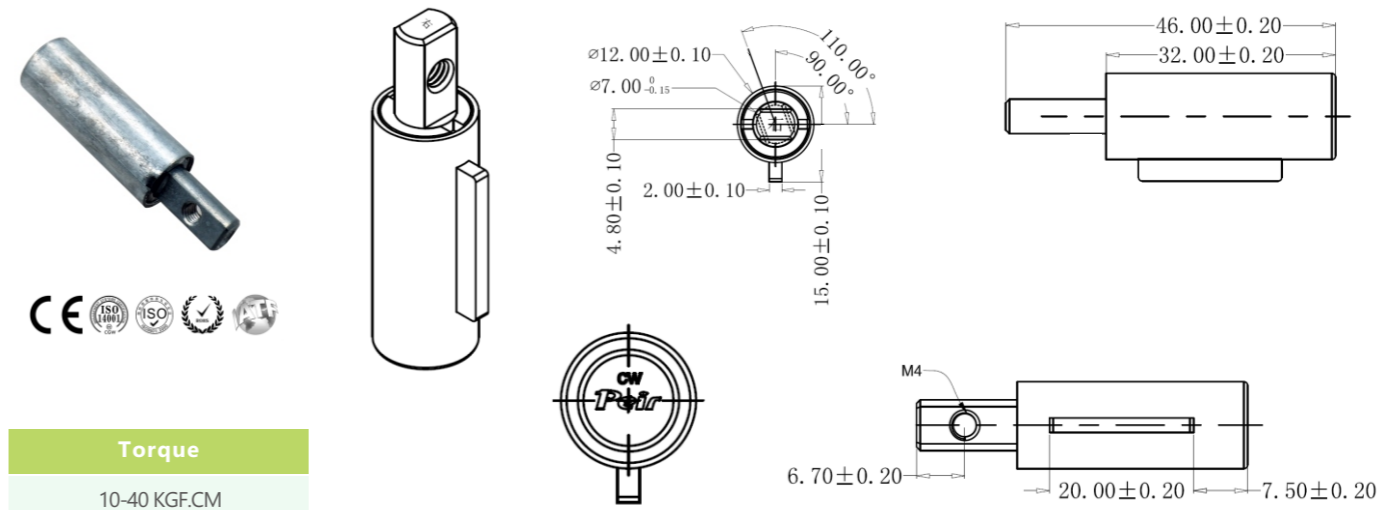


Torque	3-15KGF.CM
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Max Opening Angle	110°
Static Storage Temperature	-40°C - 110°C
Dynamic Working Temperature	-5°C - 50°C
Body Material	PA66
Shaft Material	Zinc Alloy
Oil	Silicone Oil



Model: PR-T099E-One way



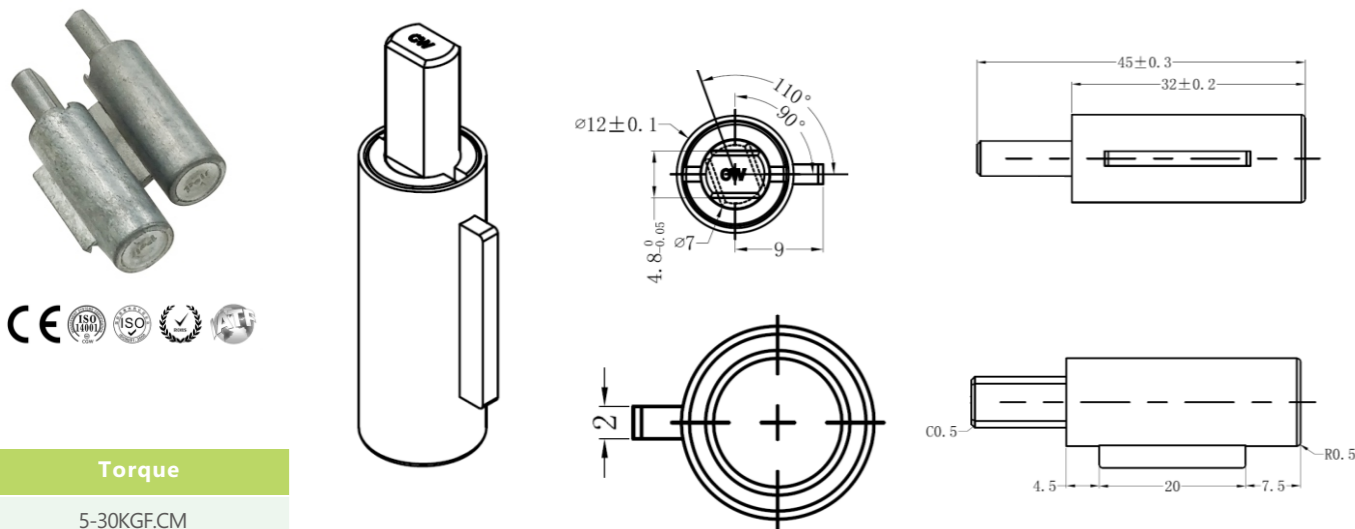
Torque	10-40 KGF.CM
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Max Opening Angle	110°	Static Storage Temperature	-40°C - 110°C	Dynamic Working Temperature	-20°C - 80°C	Body Material	Zinc Alloy	Shaft Material	Zinc Alloy	Oil	Silicone Oil
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Remarks:

Compared with T099E, the shaft length of T099D is different, with size 12±0.2mm; T099N is different in working angle, 0-100°; T099R is different in the position of threaded hole.

Model:PR-T099C-One way



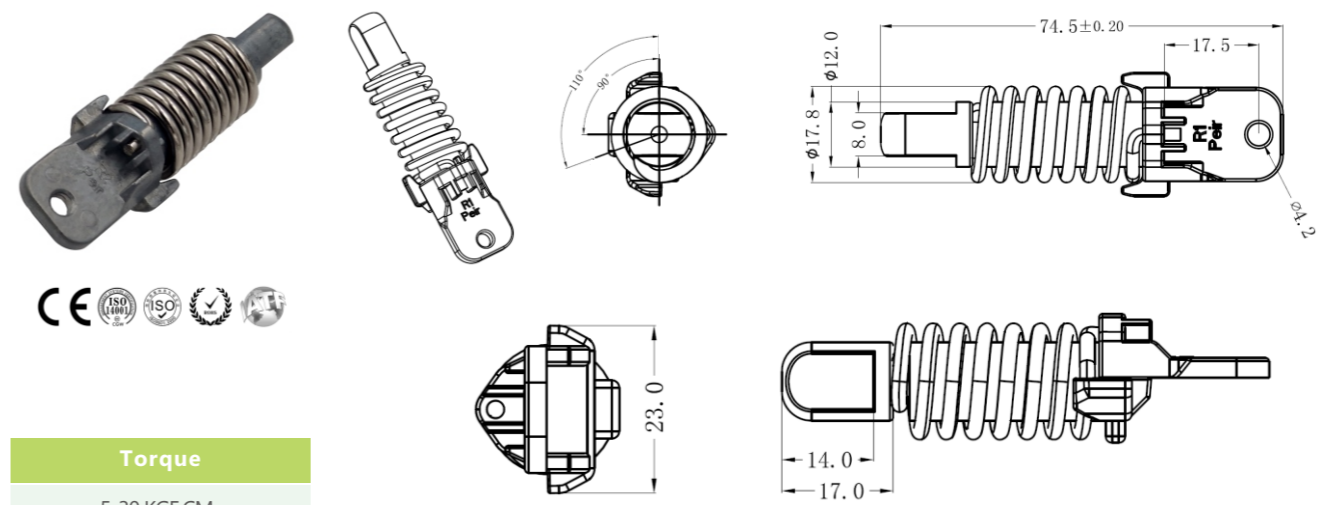
Torque	5-30KGF.CM
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Max Opening Angle	110°	Static Storage Temperature	-40°C - 110°C	Dynamic Working Temperature	-20°C - 80°C	Body Material	Zinc Alloy	Shaft Material	Zinc Alloy	Oil	Silicone Oil
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Remarks:

Compared with T099C, the shaft of T099A is shorter, 7mm in length; T099Q is based on C, only special with R angle on rib.

Model: PR-T099G-One way (Spring can provide assistance force.)

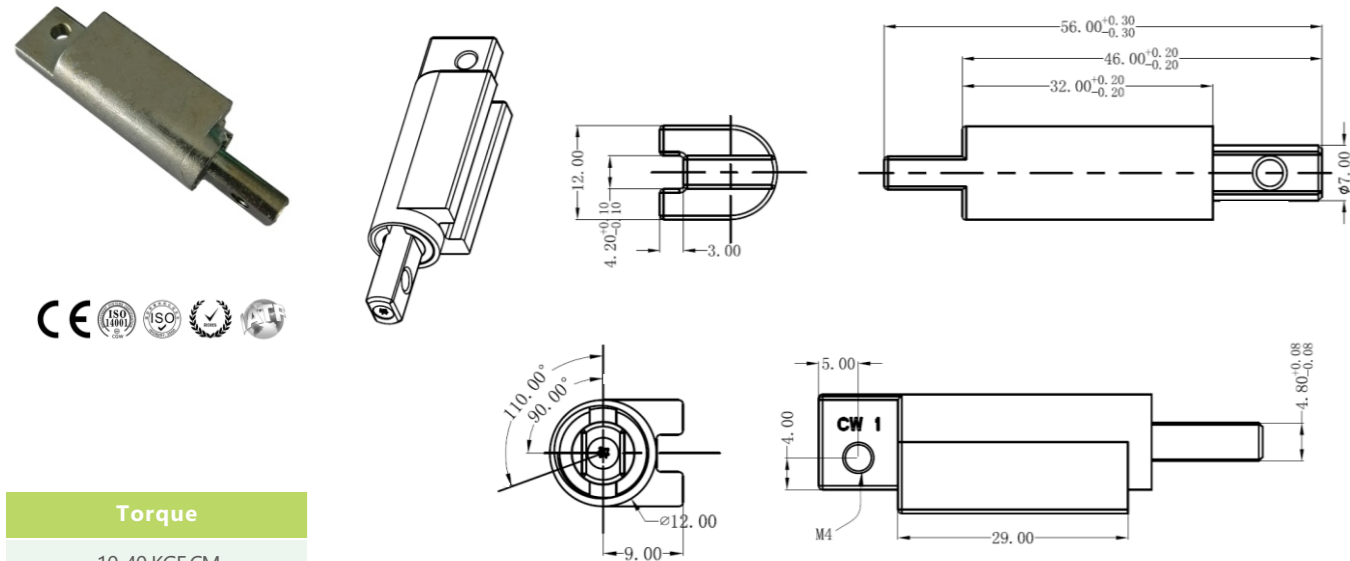


Torque	5-30 KGF.CM
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Max Opening Angle	110°	Static Storage Temperature	-40°C - 110°C	Dynamic Working Temperature	-20°C - 80°C	Body Material	Zinc Alloy	Shaft Material	Zinc Alloy	Oil	Silicone Oil
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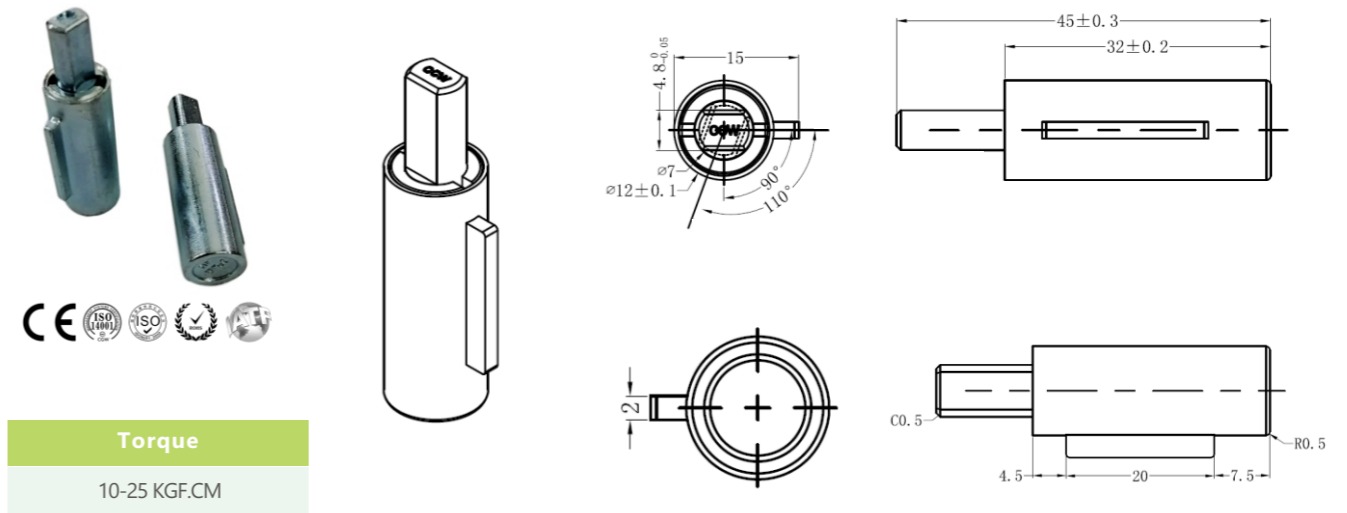
Spring	Music Wire 9.25
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Model: PR-T099K-One way (For dishwasher, etc)



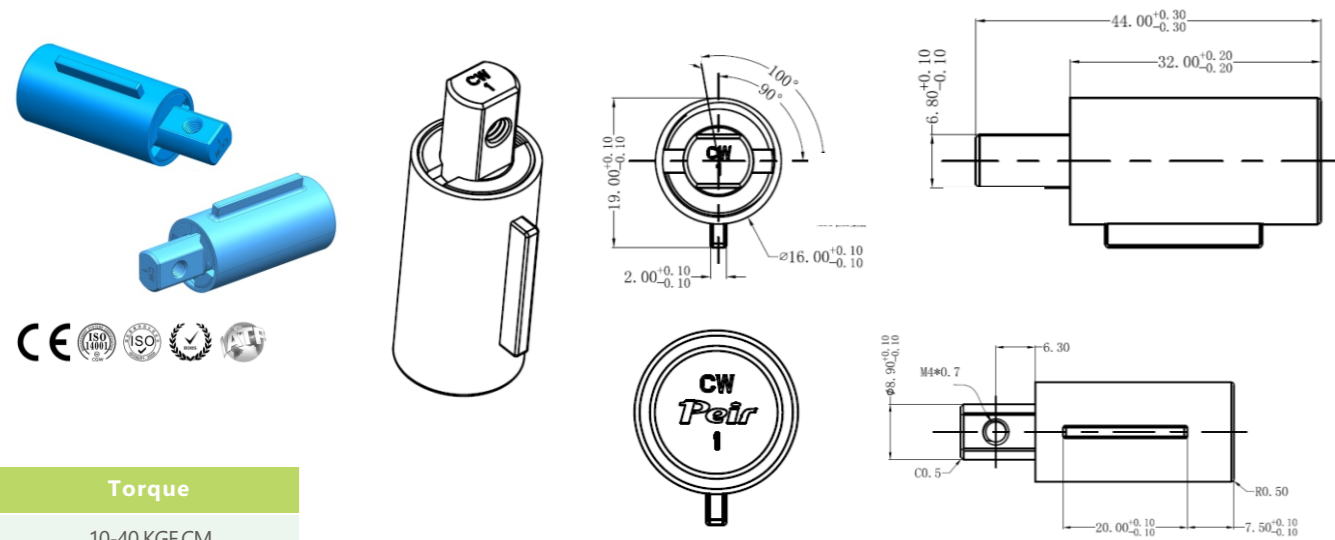
Max Opening Angle	Static Storage Temperature	Body Material	Shaft Material	Oil
110°	-20°C - 80°C	Zinc Alloy	Zinc Alloy	Silicone Oil

Model: PR-T099S-Two way



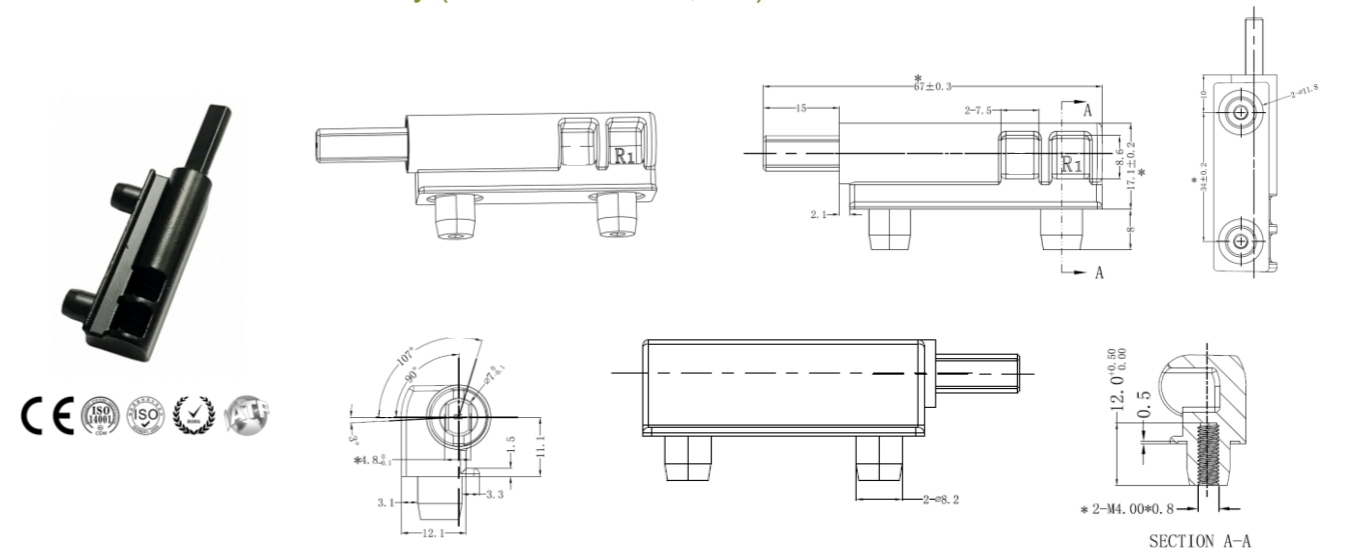
Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
110°	-40°C - 110°C	-20°C - 80°C	Zinc Alloy	Zinc Alloy	Silicone Oil

Model: PR-T099M-One way



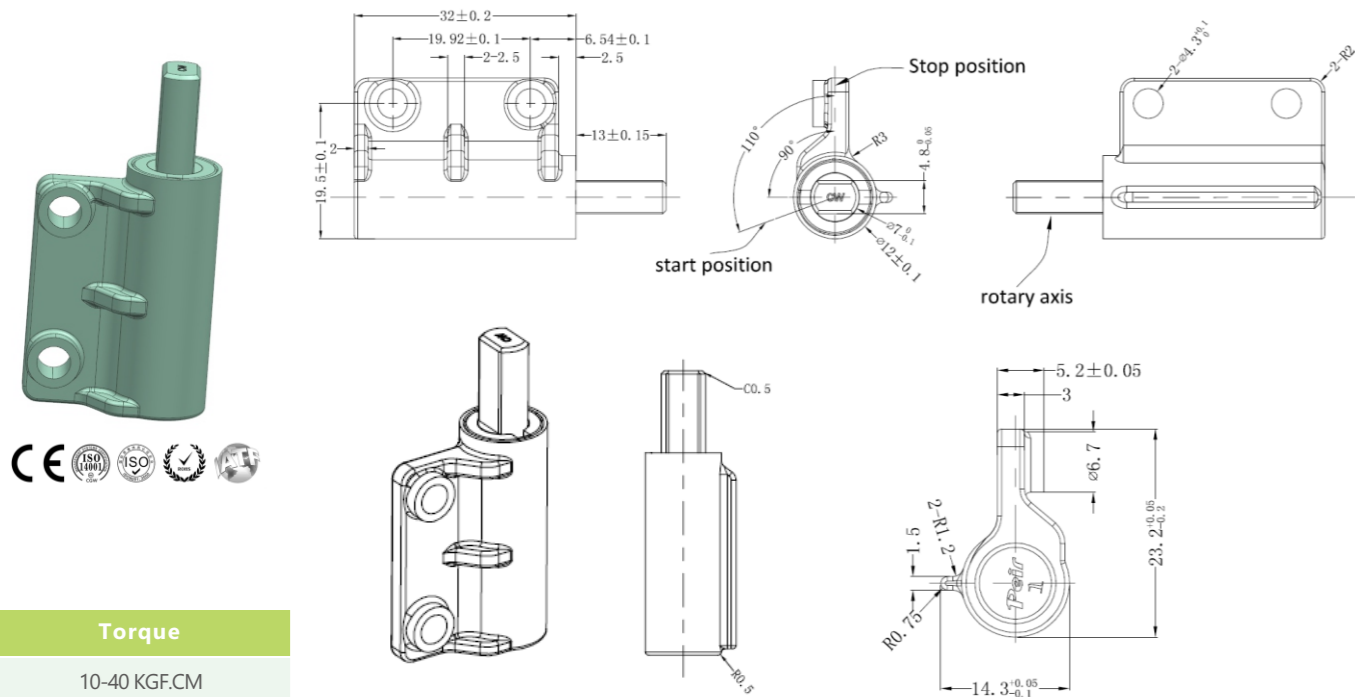
Max Opening Angle	Static Storage Temperature	Dynamic Working Temperature	Body Material	Shaft Material	Oil
100°	-40°C - 110°C	-20°C - 80°C	Zinc Alloy	Zinc Alloy	Silicone Oil

Model: PR-T099T-One way (For dishwasher, etc)



Torque	Max Opening Angle	Static Storage Temperature	Body Material	Shaft Material	Oil
10-40 KGF.CM	107°	-20°C - 80°C	Zinc Alloy	Zinc Alloy	Silicone Oil

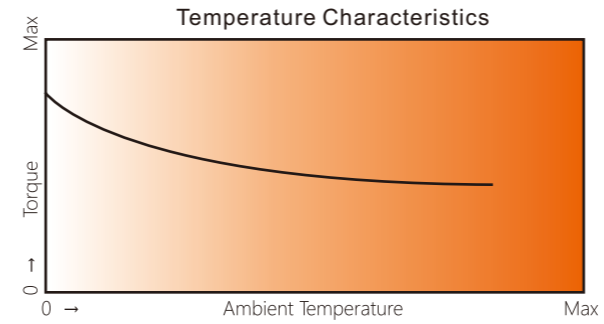
Model: PR-T099W-One way



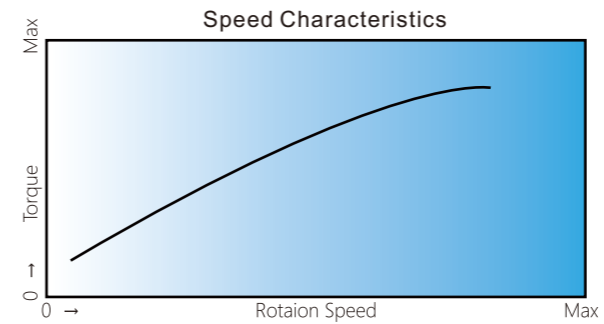
Torque
10-40 KGf.CM

Max Opening Angle	Static Storage Temperature	Body Material	Shaft Material	Oil
110°	-20°C - 80°C	Zinc Alloy	Zinc Alloy	Silicone Oil

Rotary Damper Temperature & Speed Characteristics

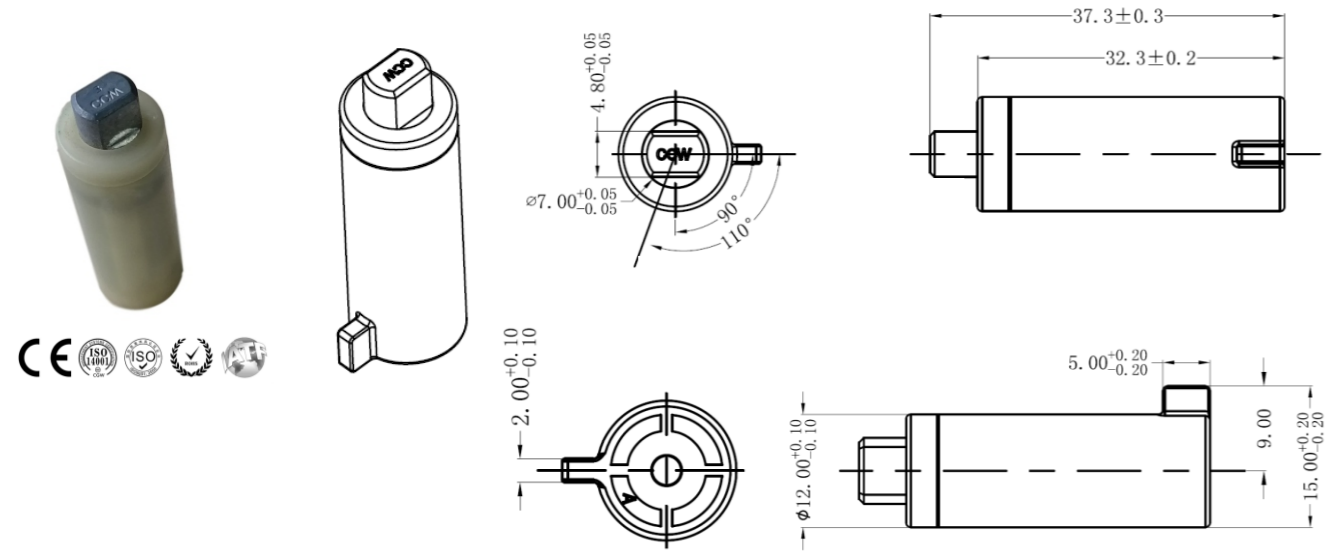


Temperature Characteristics
The torque of the rotary damper varies according to the temperature. The higher temperature for the lower torque; The lower temperature for the higher torque. When the temperature returns to normal, the damper characteristics will return to normal as well.

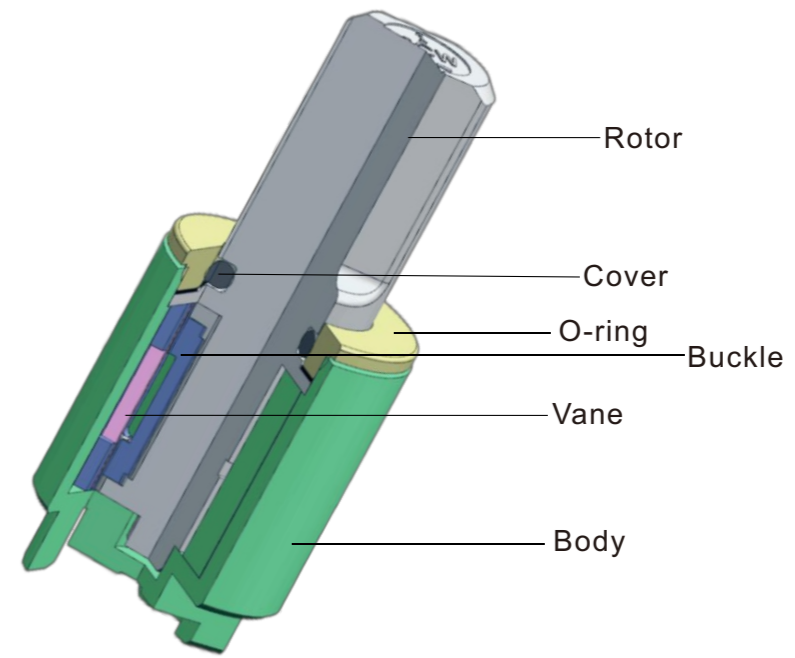


Speed Characteristics
The torque of the rotary damper varies according to rpm. In general, if the rpm goes up, the torque increases; If the rpm goes down, the torque decreases. In addition, please note that the starting torque slightly differs from the rated torque. (The torque value indicated in the product data is measured at the rotation speed of 20r/min)

Model: PR-T099H-One way



Torque	Max Opening Angle	Static Storage Temperature	Body Material	Shaft Material	Oil
3-15 KGf.CM	110°	-5°C - 50°C	PA66	Zinc Alloy	Silicone Oil



Vane Damper

Torque calculation method in different scenarios

1. Controlled slow closing down. (From 90° - 0°)

Showed on the right figure, the flat starts to close down from position of less than 90 to horizon position.

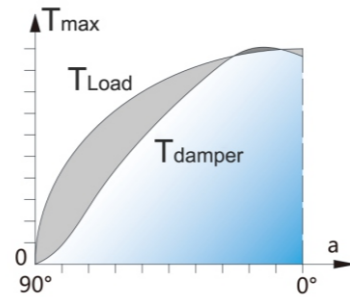
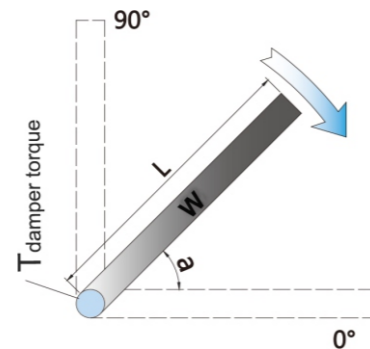
$$T = (W * g) * (L/2) * (\cos a)$$

Example:

W=2KG, L=300mm

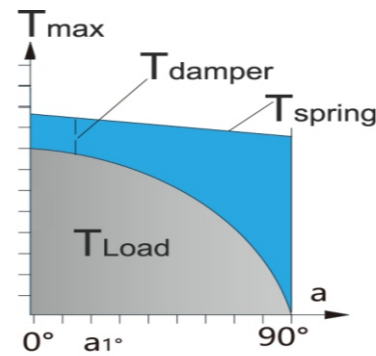
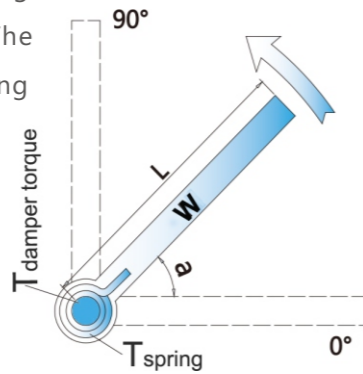
$$T_{max} = (2 * 9.8) * (0.3/2) = 2.94 \text{ Nm}$$

$$T_{damper} = 0 - 3.0 \text{ Nm}$$



2. Damper and springs achieve soft opening. (0° ~ 90°)

As the right picture shows, the flat open along the axis when the spring exerts force on it. The graph below shows the relation among spring Force T, gravity of flat W and the resistance of rotation of damper:



Example:

W=1 KG, L=200mm

$$T_{load} = 1 * 9.8 * (0.2/2) = 0.98 \text{ Nm}$$

$$T_{spring} = 1.2 \sim 0.5 \text{ Nm}$$

$$T_{damper} \leq F_{spring} - F_{load}$$

$$= (1.2 - 0.98) \text{ Nm} \sim (0.5 - 0) \text{ Nm}$$

$$= 0.22 \sim 0.5 \text{ Nm}$$

Note:

T: Torque.

L/2: 1/2 the length of the cover from the pivot to the end (Center of gravity).

W: Actual weight of lid.

a: Max angle between the cover and horizontal position.

