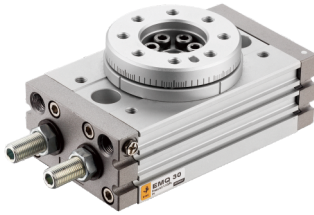
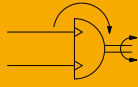


## EMQ

### Rotary Cylinder



### Specifications

| Specifications                 | 7   | 10                      | 20                       | 30         | 50   |      |
|--------------------------------|---|-------------------------|--------------------------|------------|------|------|
| Acting type                    | Double Cylinder,Rack & Pinion Style,Double Acting |                         |                          |            |      |      |
| Working medium                 | Clean Air(40um filtration or better)              |                         |                          |            |      |      |
| Working pressure range         | With angle adjustable screw                       | 0.1~0.7MPa              |                          | 0.1~1.0MPa |      |      |
|                                | With shock absorber                               | None                    |                          | 0.1~0.6MPa |      |      |
| Proof pressure(MPa)            | 1.5MPa  |                         |                          |            |      |      |
| Working temperature ( °C )     | -20~70( No freezing)                              |                         |                          |            |      |      |
| Angle adjustable range         | 0~190°  |                         |                          |            |      |      |
| Repeat Accuracy                | With angle adjustable screw                       | 0.2°                    |                          |            |      |      |
|                                | With shock absorber                               | None                    | 0.05°                    |            |      |      |
| Theoretical Torque(NM)(0.5Mpa) | 0.63  | 1.1                     | 2.2                      | 2.8        | 5.0  |      |
| Cushion                        | With angle adjustable screw                       | Rubber bumper(Standard) |                          |            |      |      |
|                                | With shock absorber                               | None                    | Shock absorber(Optional) |            |      |      |
| Port size                      | Front port  | M5x0.8                  |                          | G1/8①      |      |      |
|                                | Side port   |                         |                          | M5x0.8     |      |      |
| Weight(g)                      | With angle adjustable screw                       | 270                     | 530                      | 1020       | 1310 | 2130 |
|                                | With shock absorber                               | None                    | 540                      | 1020       | 1310 | 2140 |

Note: When setting the rotation angle for rotary tables with shock absorbers, following the above table. Failing to follow the guide may result in a decrease in energy absorption capacity.

① PT、NPT port size is optional

| Bore Size(mm)  | 10  | 20  | 30  | 50  |
|--|-----|-----|-----|-----|
| Minimum rotation angle that will not allow decrease of energy absorption ability | 61° | 52° | 46° | 66° |

### How to Order?

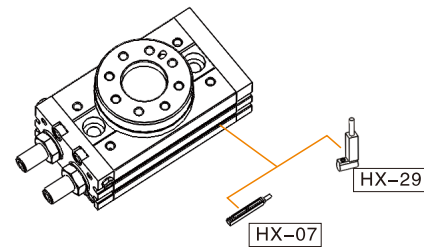
| Series No | Specifications            | Magnet No                              | Cushion Type  | Thread Type                 |
|-----------|---------------------------|--|---|-----------------------------|
| EMQ       | 7<br>10<br>20<br>30<br>50 | S: With magnet<br>(Magnet is standard) | A: With adjustment bolt<br>R: With shock absorber<br>(7 series no shock absorber is optional) | Blank: G<br>P: PT<br>T: NPT |

#### Order Example:

EMQ Series Rotary Cylinder, Specifications 30, with adjustment bolt, G Thread, ERP code is: EMQ30-S-A

Note: Specific Bore and Stroke of the cylinder subject to the drawing.

### Optional Accessories



Note: Short stroke please use HX-29 series due to limited space.

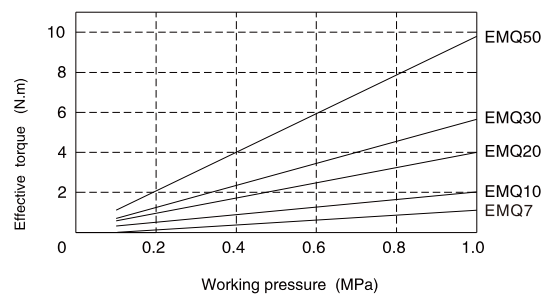
### Allowable Kinetic Energy and Rotation Time Adjustment Range

| Model | Allowable kinetic energy (J) |                    | Rotation time adjustment range for stable operation (s/90°) |                    |
|-------|------------------------------|--------------------|---|--------------------|
|       | With adjutment bolt          | With shok absorber | With adjutment bolt   | With shok absorber |
| EMQ7  | 0.006                        | None               | 0.2~1.0   | None               |
| EMQ10 | 0.01                         | 0.04               | 0.2~1.0   | 0.2~0.7            |
| EMQ20 | 0.025                        | 0.12               | 0.2~1.0   | 0.2~0.7            |
| EMQ30 | 0.05                         | 0.12               | 0.2~1.0   | 0.2~0.7            |
| EMQ50 | 0.08                         | 0.30               | 0.2~1.0   | 0.2~0.7            |

Note 1. If operated where the kinetic energy exceeds the allowable value, this may cause damage to the internal parts and result in product failure. Please pay special attention to the kinetic energy levels when designing and during operation to avoid exceeding the allowable limit.

2. When the rotation time of the type with an internal absorber is set longer than the time shown in the table above, energy absorption of the shock absorber greatly decreases.

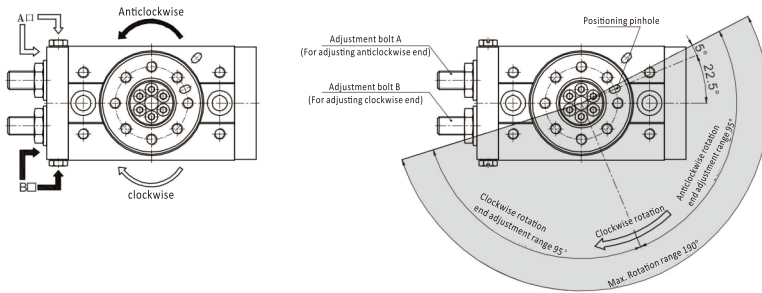
### Effective Output Torque



## Installation and Use

### 1. Rotation direction and rotation angle

- 1.1 When pressurized from port A, the shaft rotates clockwise and counter-clockwise when pressurized from port B.
- 1.2 To obtain the desired rotation angle, the rotation ends can be set within the range shown in the diagram by regulating the adjustment bolt.
- 1.3 Rotary table with a shock absorber is available to adjust the rotation angle.

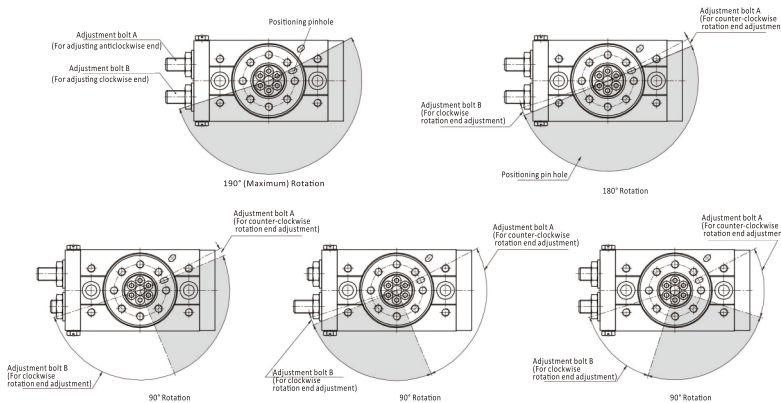


#### Note:

- \* The figure above shows the rotation range of from the positioning pinhole.
- \* Position of the pinhole in the figure above shows a counter-clockwise rotation where the rotation angle is set at 180° by equally tightening the A & B adjustment bolts.
- \* The adjustment bolt of the shock absorber is factory set to the maximum output. Please adjust inward for first use if necessary.

### 2. Rotation range example:

- 2.1 Rotation can be set by adjusting the A & B adjuster bolts.
- 2.2 Rotary tables with shock absorbers can be set to various angles.



### 3. Adjustment angle per rotation (Adjustment bolt or shock absorber) The adjustment angle of the turntable for each turn is as follows:

| Bore size | Adjustment angle per rotation |
|-----------|-------------------------------|
| 7         | 10.2°                         |
| 10        | 10.2°                         |
| 20        | 7.4°                          |
| 30        | 6.5°                          |
| 50        | 8.2°                          |

- 4. The rotation angle has been adjusted to the maximum output at the factory. Please do not extend the rotation angle beyond the maximum factory setting.
- 5. The movement energy should not exceed the maximum allowable energy, or the inner components can be damaged.
- 6. The rotary parts do not require lubrication.
- 7. Minimum operation pressure for a rotary table with a shock absorber is no less than 0.1Mpa.

### 8. Refer to the table below for tightening torques of the shock absorber setting nut.

| Shock absorber size | Max. tightening torque (Nm) |
|---------------------|-----------------------------|
| M8X1.0              | 2.5                         |
| M10X1.0             | 3.5                         |
| M14X1.5             | 11                          |

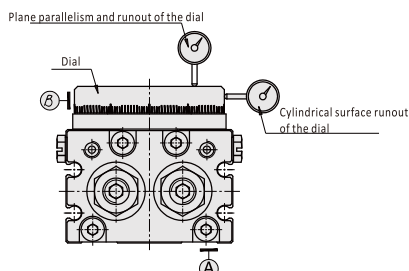
### 9. Never loosen the bottom screw of the shock absorber.

That may cause oil leakage.

### 10. Shock absorbers are consumable parts. When a decrease in energy absorption capacity is noticed, it must be replaced.

| Series | Shock Absorber Type and Ordering code | Thread Type |
|--------|---------------------------------------|-------------|
| EMQ10  | AC0806-SN                             | M8X1.0      |
| EMQ20  | AC1007-SN                             | M10X1.0     |
| EMQ30  | AC1007-SN                             | M10X1.0     |
| EMQ50  | AC1412-SN                             | M14X1.5     |

### 11. Control the runout and parallelism of the dial according to the requirements of the following table:

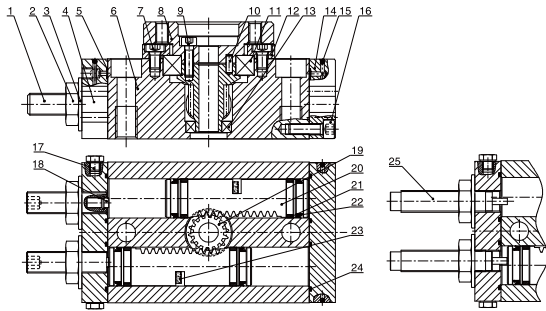


| Items                                  | Specific Requirements (mm) | Relative Datum |
|--|----------------------------|----------------|
| Plane parallelism of the dial          | 0.1                        | A              |
| Plane runout of the dial               | 0.1                        | A              |
| Cylindrical surface runout of the dial | 0.1                        | B              |

# EMQ Series Rotary Cylinder

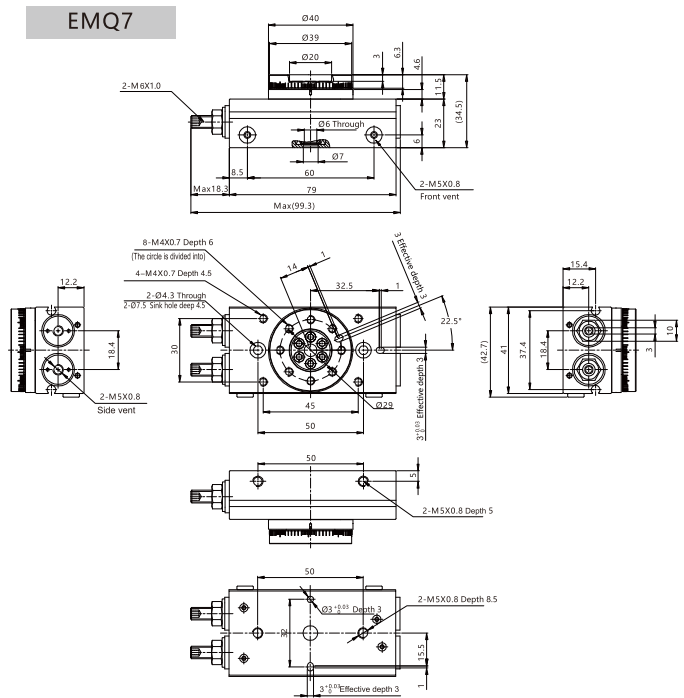


## Internal Structure

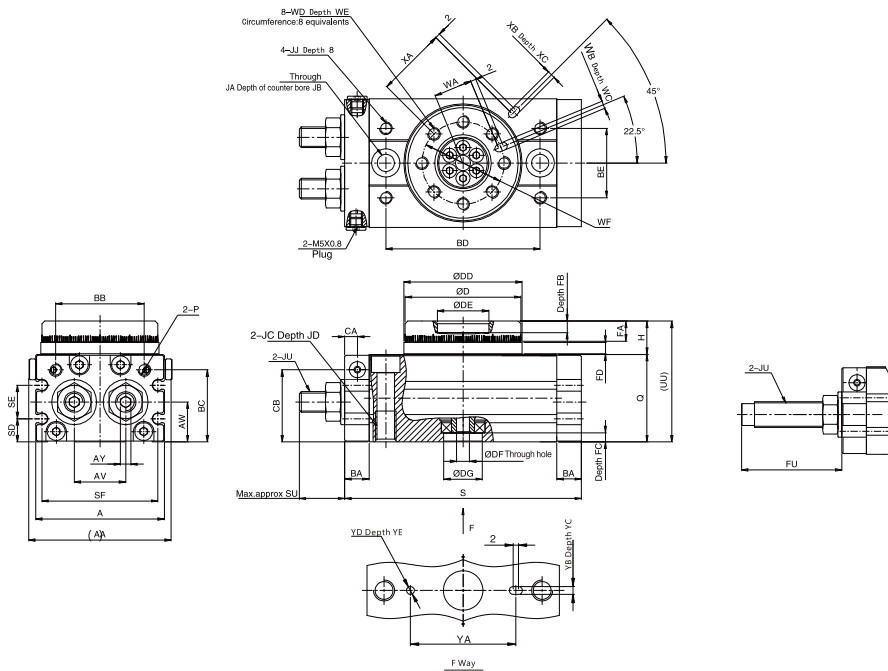


| No. | Part Name                     | Material                    | No. | Part Name                     | Material        |
|-----|-------------------------------|-----------------------------|-----|-------------------------------|-----------------|
| 1   | Adjustment screw              | Carbon steel                | 14  | Rear cover                    | Aluminum alloy  |
| 2   | Hexagon nut                   | Carbon steel                | 15  | Steel ball                    | Stainless steel |
| 3   | Seal washer                   | Carbon steel rubber coating | 16  | Hexagon socket head set screw | Carbon steel    |
| 4   | Head cover                    | Aluminum alloy              | 17  | Plug                          | Carbon steel    |
| 5   | O-ring                        | NBR                         | 18  | Cushion pad                   | NBR             |
| 6   | Barrel                        | Aluminum alloy              | 19  | Pinion                        | Alloy steel     |
| 7   | Hexagon socket head set screw | Carbon steel                | 20  | Rack                          | Alloy steel     |
| 8   | Dial                          | Aluminum alloy              | 21  | Wear ring                     | PTFE            |
| 9   | Hexagon socket head set screw | Carbon steel                | 22  | Piston seal                   | NBR             |
| 10  | Positioning pin               | Stainless steel             | 23  | Magnet                        | Sintered NdFeB  |
| 11  | Deep groove ball bearing      | Subassembly                 | 24  | O-ring                        | NBR             |
| 12  | Plate                         | Aluminum alloy              | 25  | Shock absorber                | Subassembly     |
| 13  | Deep groove ball bearing      | Subassembly                 |     |                               |                 |

## Main Dimension



## EMQ10~50



| 型号 | AA   | A       | AV      | AW     | AY | BA   | BB   | BC   | BD   | BE   | CA  | CB   | D                                 | DD                                | DE                                | DF | DG                                | FA   | FB                              | FC  | FD  | H                               | J    | JA                               | JB   | JC       | FU   |
|----|------|---------|---------|--------|----|------|------|------|------|------|-----|------|-----------------------------------|-----------------------------------|-----------------------------------|----|-----------------------------------|------|---------------------------------|-----|-----|---------------------------------|------|----------------------------------|------|----------|------|
| 10 | 52.8 | 50      | 20      | 15.5   | 4  | 9.5  | 34.5 | 28   | 60   | 27   | 5   | 28   | 45 <sup>+0.032</sup> <sub>0</sub> | 46 <sup>+0.062</sup> <sub>0</sub> | 20 <sup>+0.052</sup> <sub>0</sub> | 5  | 15 <sup>+0.043</sup> <sub>0</sub> | 7.8  | 4.5                             | 3.5 | 4.5 | 13                              | 6.8  | 11                               | 6.5  | M8X1.25  | 30.9 |
| 20 | 67.8 | 65      | 27.5    | 16     | 5  | 12   | 47   | 30   | 76   | 34   | 6.5 | 30   | 60 <sup>+0.074</sup> <sub>0</sub> | 61 <sup>+0.074</sup> <sub>0</sub> | 28 <sup>+0.052</sup> <sub>0</sub> | 9  | 17 <sup>+0.043</sup> <sub>0</sub> | 9.8  | 6.5                             | 3   | 6.5 | 17                              | 8.6  | 14                               | 8.5  | M10X1.5  | 34.8 |
| 30 | 72.4 | 70      | 29      | 18.5   | 5  | 12   | 50   | 32.5 | 84   | 37   | 7   | 33.5 | 85 <sup>+0.074</sup> <sub>0</sub> | 87 <sup>+0.074</sup> <sub>0</sub> | 32 <sup>+0.052</sup> <sub>0</sub> | 10 | 22 <sup>+0.052</sup> <sub>0</sub> | 9.8  | 5                               | 3.5 | 6.5 | 17                              | 8.6  | 14                               | 8.5  | M10X1.5  | 34.8 |
| 50 | 82.4 | 80      | 38      | 22     | 6  | 15.5 | 63   | 37.5 | 100  | 50   | 10  | 37.5 | 75 <sup>+0.074</sup> <sub>0</sub> | 77 <sup>+0.074</sup> <sub>0</sub> | 35 <sup>+0.052</sup> <sub>0</sub> | 11 | 26 <sup>+0.052</sup> <sub>0</sub> | 11.8 | 5.5                             | 3.5 | 7.5 | 20                              | 10.3 | 18                               | 10.5 | M12X1.75 | 54.3 |
| 型号 | JD   | JJ      | JU      | P      | Q  | S    | SD   | SE   | SF   | SU   | UU  | WA   | WB                                | WC                                | WD                                | WE | WF                                | XA   | XB                              | XC  | YA  | YB                              | YC   | YD                               | YE   |          |      |
| 10 | 12   | M5X0.8  | M8X1    | M5X0.8 | 34 | 92   | 9    | 13   | 45   | 17.3 | 47  | 15   | 3 <sup>+0.025</sup> <sub>0</sub>  | 3.5                               | M5X0.8                            | 8  | 32                                | 27   | 3 <sup>+0.03</sup> <sub>0</sub> | 3.5 | 40  | 3 <sup>+0.03</sup> <sub>0</sub> | 3.5  | Ø3 <sup>+0.03</sup> <sub>0</sub> | 3.5  |          |      |
| 20 | 15   | M6X1    | M10X1   | M5X0.8 | 37 | 117  | 10   | 12   | 59.7 | 24.8 | 54  | 20.5 | 4 <sup>+0.03</sup> <sub>0</sub>   | 4.5                               | M6X1                              | 10 | 43                                | 36   | 4 <sup>+0.03</sup> <sub>0</sub> | 4.5 | 50  | 4 <sup>+0.03</sup> <sub>0</sub> | 4.5  | Ø4 <sup>+0.03</sup> <sub>0</sub> | 4.5  |          |      |
| 30 | 15   | M6X1    | M10X1   | 1/8"   | 40 | 127  | 11.5 | 14   | 64.7 | 24.8 | 57  | 23   | 4 <sup>+0.03</sup> <sub>0</sub>   | 4.5                               | M6X1                              | 10 | 48                                | 39   | 4 <sup>+0.03</sup> <sub>0</sub> | 4.5 | 58  | 4 <sup>+0.03</sup> <sub>0</sub> | 4.5  | Ø4 <sup>+0.03</sup> <sub>0</sub> | 4.5  |          |      |
| 50 | 18   | M8X1.25 | M14X1.5 | 1/8"   | 46 | 152  | 14.5 | 15   | 74.7 | 31.3 | 66  | 26.5 | 5 <sup>+0.03</sup> <sub>0</sub>   | 5.5                               | M8X1.25                           | 12 | 55                                | 45   | 5 <sup>+0.03</sup> <sub>0</sub> | 5.5 | 68  | 5 <sup>+0.03</sup> <sub>0</sub> | 5.5  | Ø5 <sup>+0.03</sup> <sub>0</sub> | 5.5  |          |      |