



TP rotary unit series

FOUK-TP

In the rotating unit series, TP product is a universal rotating device driven by the compressed air, which can realize rotation for 90°/180°



Usage Video of TP Series Products

Rotation angle 90/180°	Output torque 0.13...15.6P	Allowable kinetic energy 0.3...25J
Load bending moment 7.400Nm	Specification Quantity: 6	

Industry-class hydraulic buffer

The TP series is equipped with high-performance buffer developed by FOUK as standard, realizing stable energy absorption under heavy load working conditions

It has the ability to adjust the angle within the range of ±30°

With the hoop structure, it is easy to adjust, and the large-range adjustment capability makes the TP suitable for more use scenarios.

With Hierarchical Porous Structure design, it is more convenient for electrical wiring

On the premise of ensuring small size, the Hierarchical Porous Structure is realized, so that convenience is provided for the arrangement of the air pipe and the wire harness at the end

Structural disassembly of TP12

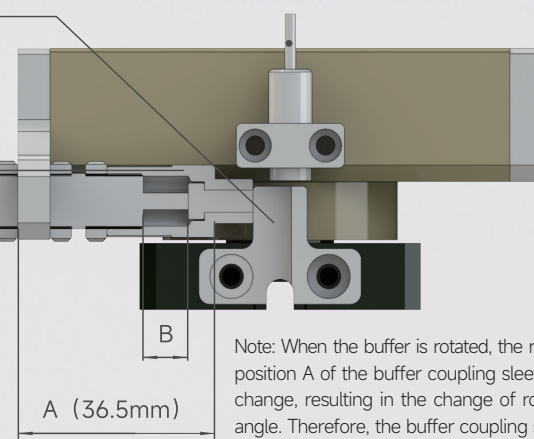
Hard limit

Buffer coupling sleeve

Hydraulic buffer

Adjustment method of rotation angle: Rotate the buffer coupling sleeve, and adjust the distance A=36.5mm, with the rotation angle of 180°.

Adjustment mode of buffer: Rotate the buffer, the buffer effect will be weakened if the distance B is increased, and the buffer effect will be enhanced if the distance B is decreased.

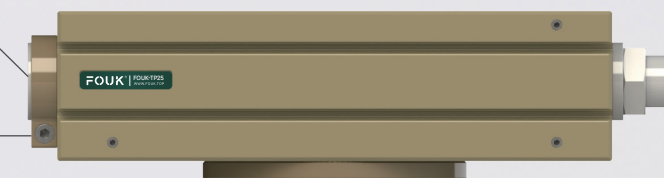


Note: When the buffer is rotated, the relative position A of the buffer coupling sleeve will change, resulting in the change of rotation angle. Therefore, the buffer coupling sleeve shall be adjusted synchronously when the buffer is adjusted.

Structural disassembly of TP25~TP63

Adjustment knob for rotation limit

Limit retaining hoop



Dependable hydraulic buffer

The buffer is independently researched, developed, and manufactured by the Company. It has the warranty of 3 million times in the high-performance state.

Product Code	Effective torque	Specification of buffer unit	Page
TP12	0.13 × P	M10 Hydraulic buffer	96
TP25	0.98 × P	M14 Hydraulic buffer	98
TP32	1.93 × P	M20 Hydraulic buffer	100
TP40	4.02 × P	M25 Hydraulic buffer	102
TP50	7.07 × P	M33 Hydraulic buffer	104
TP63	15.6 × P	M45 Hydraulic buffer	106

P: Compressed air pressure [bar]

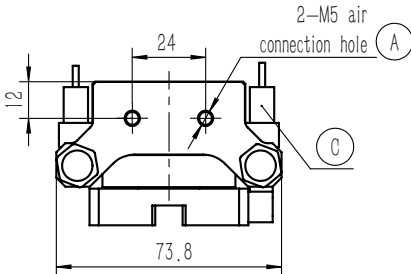
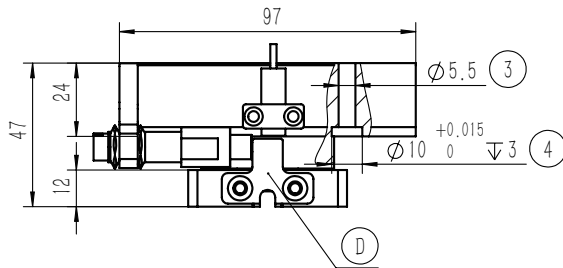
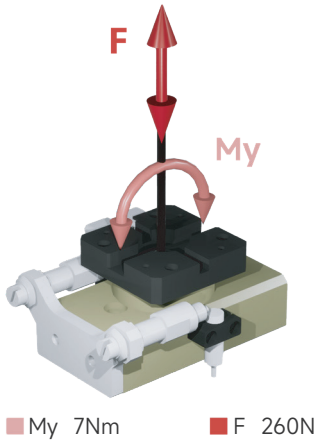
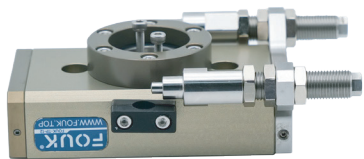
Gas consumption: volume of gas consumed at normal pressure (0.5MPa)

Rotary unit series FOUK-TF

TP12

TP12

Static load-bearing torque



TP12 - 180

Serial No. Cylinder bore Rotation angle

TP Rotating unit 12 180°

Rotation angle 90°

Rotation angle 180°

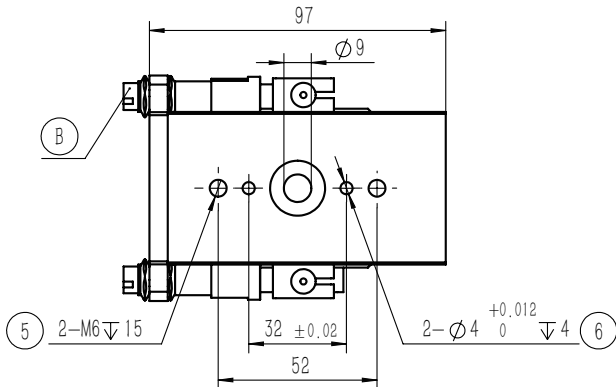
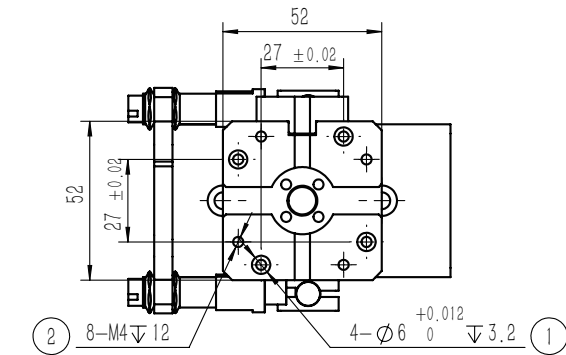
Inductive proximity sensor

IPSD-2NS-0823-L3 Inductive, NPN, 3-core3m

IPSD-2PS-0823-L3 Inductive, PNP, 3-core3m

*Two sensors are required for each rotation unit. For the detailed monitoring of two positions, see the sensor appendix.

Product attributes	Parameter Value	Unit
Product Code	TP12	
Cylinder bore	12	mm
Theoretical torque	0.13 × P	N·m
Rotation angle	180	°
Product weight	0.65	kg
Allowable rotation time	0.8~2	s
Rotation time	0.4~2	sec
Maximum allowable kinetic energy	0.3	J
Sensor type	Inductive proximity sensor	
P: Compressed air pressure [bar]		
Specification of buffer unit	M10 Hydraulic buffer	Specification of air connection port
Repeated gripping accuracy/mm	± 0.05	Temperature range of application/°C
Operating air pressure range/bar	3~7	IP rating

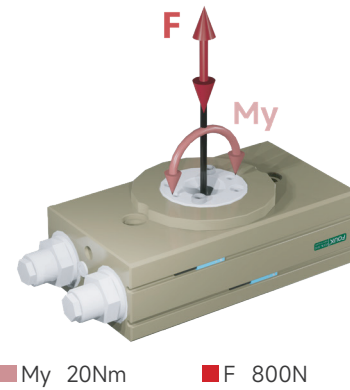


- ② ③ ⑤ are gripper mounting holes
- ① ④ ⑥ are gripper positioning holes
- Ⓐ Compressed air connection port
- Ⓑ Hydraulic buffer
- Ⓒ Location of inductive proximity sensor
- Ⓓ Hard limit

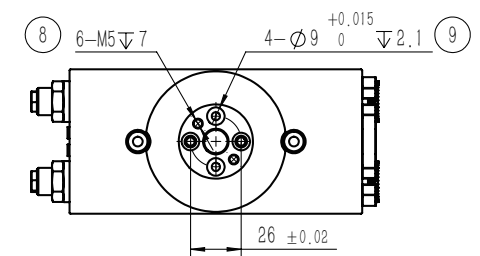
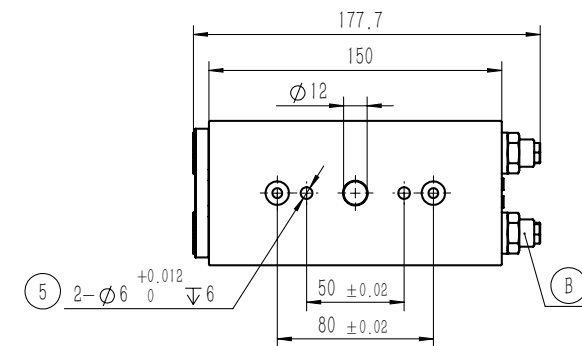
Note:

- To be used with the speed control valve
- The figure shows the middle position of rotation, and the gripper needs to be selected additionally.
- The output torque at the end position of rotation is half of the rated torque and is changed to the external limit to output the rated torque at the end position.

TP25



■ My 20Nm ■ F 800N



TP 25 - 90°

Serial No.

TP	Rotating unit
----	---------------

Cylinder bore

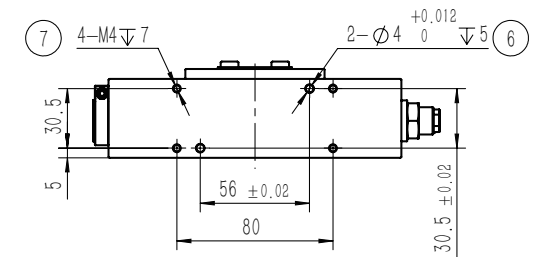
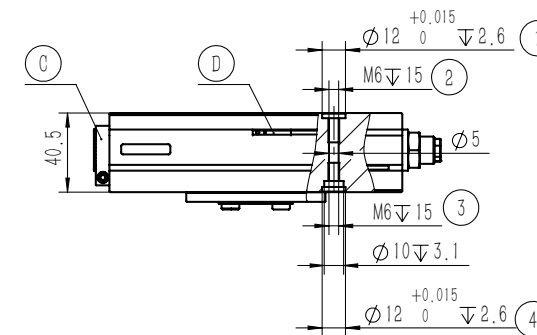
Rotation angle

Rotation angle	90°
Rotation angle	180°

Magnetic proximity sensor

MZC2-1V7NS-FU0	Magnetic, NPN, 3-core3m
MZC2-1V7PS-FU0	Magnetic, PNP, 3-core3m

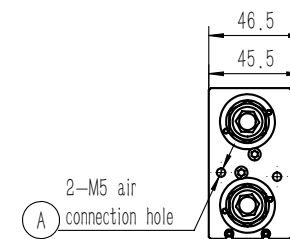
*Two sensors are required for each rotation unit. For the detailed monitoring of two positions, see the sensor appendix.



Product attributes	Parameter Value	Unit
Product Code	TP25	
Cylinder bore	25	mm
Theoretical torque	$0.98 \times P$	N·m
Rotation angle	90/180	°
Adjustment range of rotation angle	± 30	°
Product weight	1.55	kg
Allowable rotation time	1~2	s
Rotation time	0.5~2	sec
Maximum allowable kinetic energy	1.4	J
Sensor type	Magnetic proximity sensor	

P: Compressed air pressure [bar]

Specification of buffer unit	M14 Hydraulic buffer	Specification of air connection port	M5
Repeated gripping accuracy/mm	± 0.05	Temperature range of application/°C	-5~60
Operating air pressure range/bar	3~7	IP rating	65



☒ 1 ☒ 9 The pin bushing is of the standard version
☒ 2 ☒ 3 ☒ 7 ☒ 8 are gripper mounting holes
☒ 1 ☒ 4 ☒ 5 ☒ 6 ☒ 9 are gripper positioning holes
☒ A Compressed air connection port
☒ B Hydraulic buffer
☒ C Adjustment knob for rotation limit
☒ D Location of magnetic proximity sensor

Note:

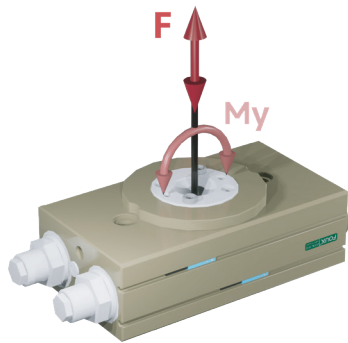
1. To be used with the speed control valve
2. The figure shows the middle position of rotation, and the gripper needs to be selected additionally.
3. The output torque at the end position of rotation is half of the rated torque and is changed to the external limit to output the rated torque at the end position.

Rotary unit series FOUK-TF

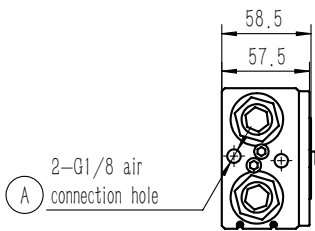
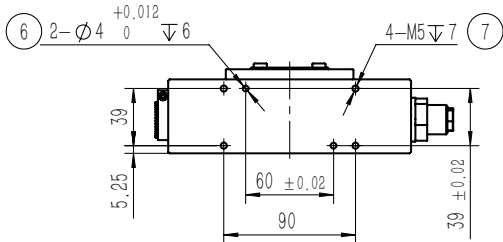
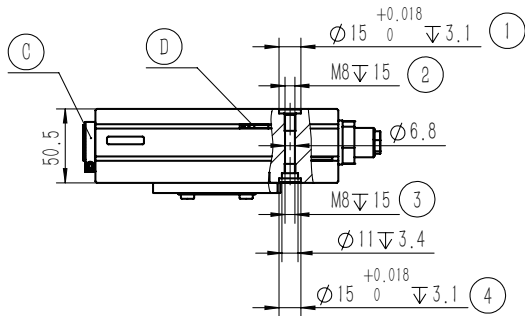
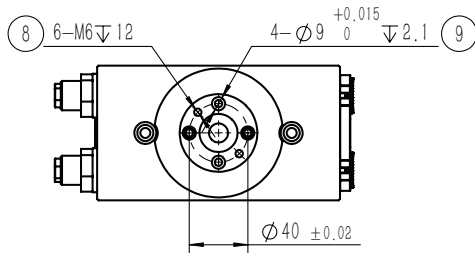
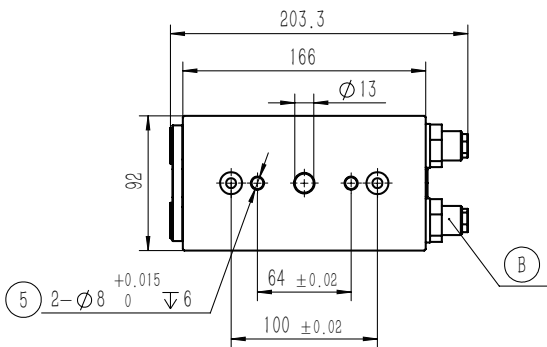
TP32

TP32

Static load-bearing torque



My 40Nm F 1200N



- ① ⑨ The pin bushing is of the standard version
- ② ③ ⑦ ⑧ are gripper mounting holes
- ① ④ ⑤ ⑥ ⑨ are gripper positioning holes
- A Compressed air connection port
- B Hydraulic buffer
- C Adjustment knob for rotation limit
- D Location of magnetic proximity sensor

Note:

- To be used with the speed control valve
- The figure shows the middle position of rotation, and the gripper needs to be selected additionally.
- The output torque at the end position of rotation is half of the rated torque and is changed to the external limit to output the rated torque at the end position.

TP

Serial No.

TP Rotating unit

32

Cylinder bore

- 90°

Rotation angle

Rotation angle 90°

Rotation angle 180°

Magnetic proximity sensor

MZC2-1V7NS-FU0 Magnetic, NPN, 3-core3m

MZC2-1V7PS-FU0 Magnetic, PNP, 3-core3m

*Two sensors are required for each rotation unit. For the detailed monitoring of two positions, see the sensor appendix.

Product attributes	Parameter Value	Unit
Product Code	TP32	
Cylinder bore	32	mm
Theoretical torque	1.93 × P	N·m
Rotation angle	90/180	°
Adjustment range of rotation angle	± 30	°
Product weight	2.75	kg
Allowable rotation time	1~3	s
Rotation time	0.9~3	sec
Maximum allowable kinetic energy	8	J
Sensor type	Magnetic proximity sensor	

P: Compressed air pressure [bar]

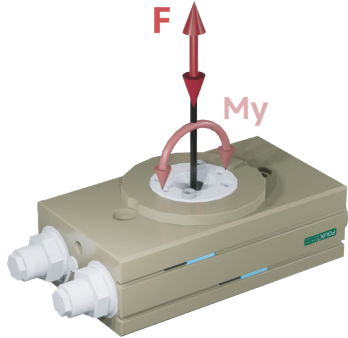
Specification of buffer unit	M20 Hydraulic buffer	Specification of air connection port	G1/8
Repeated gripping accuracy/mm	± 0.05	Temperature range of application/°C	-5~60
Operating air pressure range/bar	3~8	IP rating	65

Rotary unit series FOUK-TF

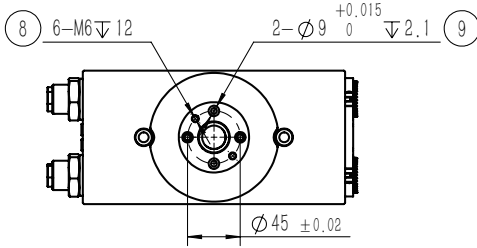
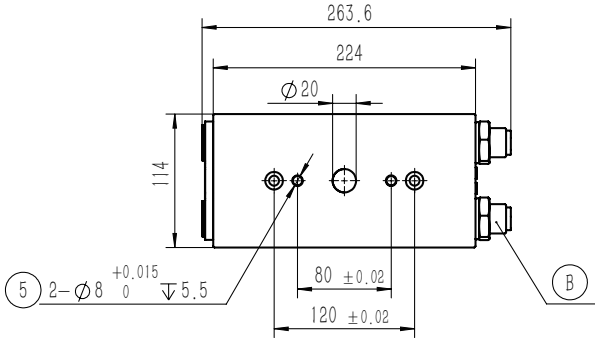
TP40

TP40

Static load-bearing torque



My 70Nm F 2500N

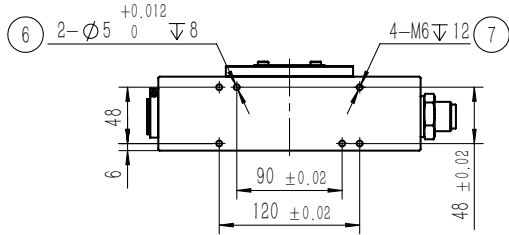
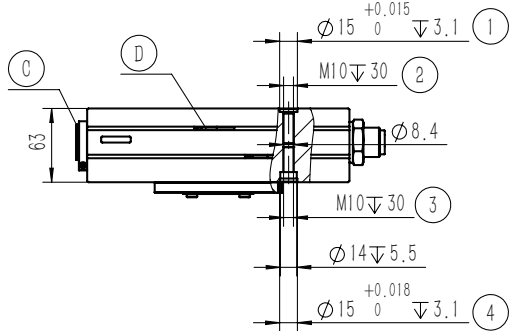


TP 40 - 90°
Serial No. Cylinder bore Rotation angle
TP Rotating unit Rotation angle 90°
Rotation angle 180°

Magnetic proximity sensor

MZC2-1V7NS-FU0	Magnetic, NPN, 3-core3m
MZC2-1V7PS-FU0	Magnetic, PNP, 3-core3m

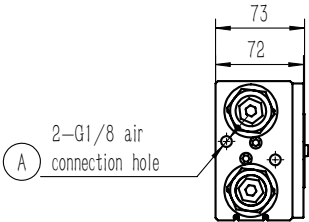
*Two sensors are required for each rotation unit. For the detailed monitoring of two positions, see the sensor appendix.



Product attributes	Parameter Value	Unit
Product Code	TP40	
Cylinder bore	40	mm
Theoretical torque	4.02 × P	N·m
Rotation angle	90/180	°
Adjustment range of rotation angle	± 30	°
Product weight	5.85	kg
Allowable rotation time	1~3	s
Rotation time	0.9~3	sec
Maximum allowable kinetic energy	12	J
Sensor type	Magnetic proximity sensor	

P: Compressed air pressure [bar]

Specification of buffer unit	M25 Hydraulic buffer	Specification of air connection port	G1/8
Repeated gripping accuracy/mm	± 0.05	Temperature range of application/°C	-5~60
Operating air pressure range/bar	3~8	IP rating	65



- ① ⑨ The pin bushing is of the standard version
② ③ ⑦ ⑧ are gripper mounting holes
① ④ ⑤ ⑥ ⑨ are gripper positioning holes
A Compressed air connection port
B Hydraulic buffer
C Adjustment knob for rotation limit
D Location of magnetic proximity sensor

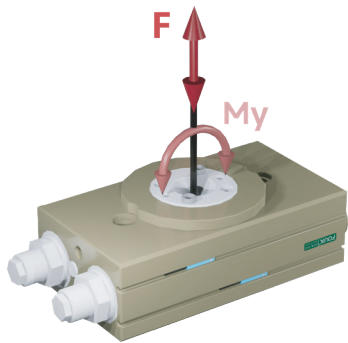
Note:
1. To be used with the speed control valve
2. The figure shows the middle position of rotation, and the gripper needs to be selected additionally.
3. The output torque at the end position of rotation is half of the rated torque and is changed to the external limit to output the rated torque at the end position.

Rotary unit series FOUK-TF

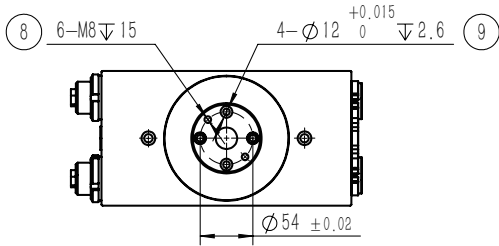
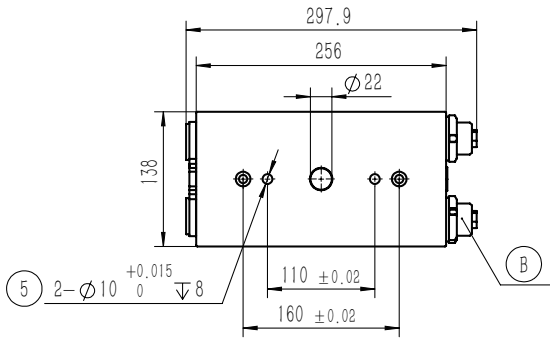
TP50

TP50

Static load-bearing torque



My 300Nm F 9000N



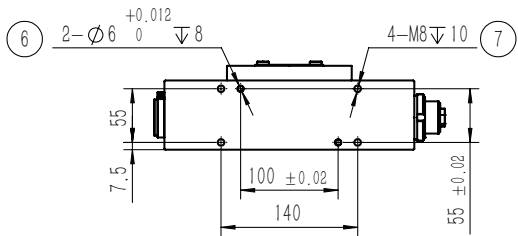
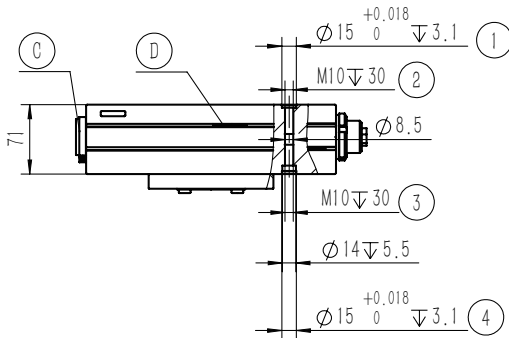
TP 50 - 90°

Serial No. Cylinder bore Rotation angle
TP Rotating unit Rotation angle 90°
Rotation angle 180°

Magnetic proximity sensor

MZC2-1V7NS-FU0	Magnetic, NPN, 3-core3m
MZC2-1V7PS-FU0	Magnetic, PNP, 3-core3m

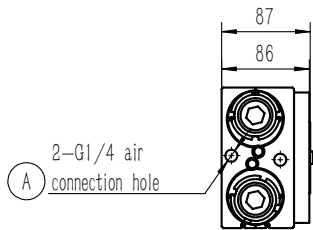
*Two sensors are required for each rotation unit. For the detailed monitoring of two positions, see the sensor appendix.



Product attributes	Parameter Value	Unit
Product Code	TP50	
Cylinder bore	50	mm
Theoretical torque	7.07 × P	N·m
Rotation angle	90/180	°
Adjustment range of rotation angle	± 30	°
Product weight	9.50	kg
Allowable rotation time	1.5~4	s
Rotation time	1.5~4	sec
Maximum allowable kinetic energy	19	J
Sensor type	Magnetic proximity sensor	

P: Compressed air pressure [bar]

Specification of buffer unit	M33 Hydraulic buffer	Specification of air connection port	G1/4
Repeated gripping accuracy/mm	± 0.05	Temperature range of application/°C	-5~60
Operating air pressure range/bar	3~8	IP rating	65



- ① ⑨ The pin bushing is of the standard version
- ② ③ ⑦ ⑧ are gripper mounting holes
- ① ④ ⑤ ⑥ ⑨ are gripper positioning holes
- Ⓐ Compressed air connection port
- Ⓑ Hydraulic buffer
- Ⓒ Adjustment knob for rotation limit
- Ⓓ Location of magnetic proximity sensor

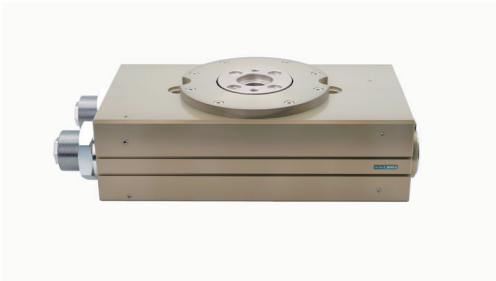
Note:

- To be used with the speed control valve
- The figure shows the middle position of rotation, and the gripper needs to be selected additionally.
- The output torque at the end position of rotation is half of the rated torque and is changed to the external limit to output the rated torque at the end position.

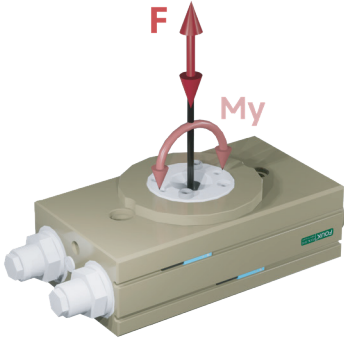
Rotary unit series FOUK-TF

TP63

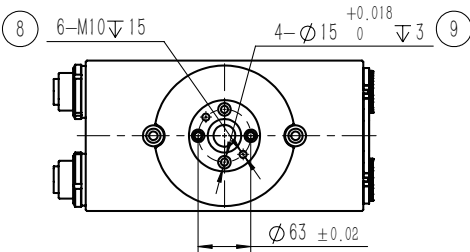
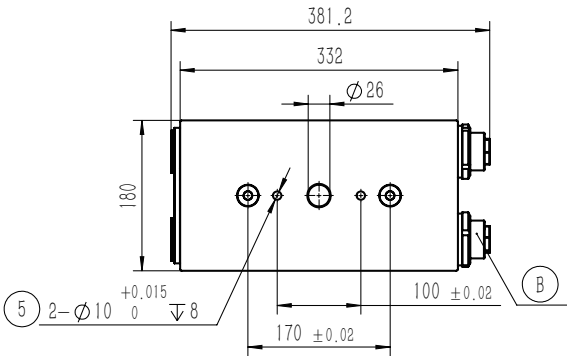
TP63



Static load-bearing torque



■ My 400Nm ■ F 10000N



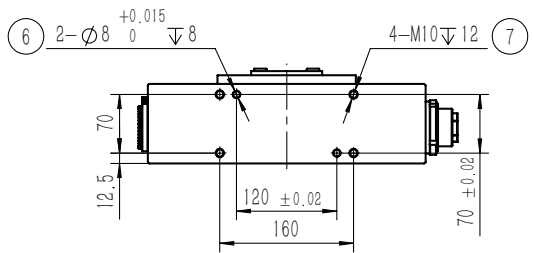
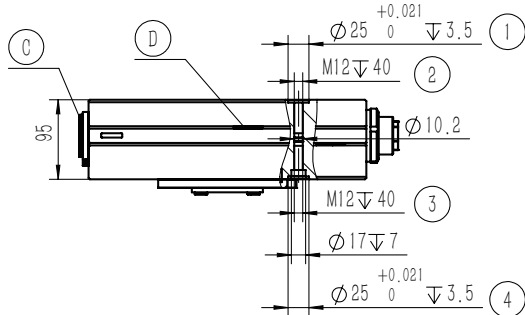
TP 63 - 90°

Serial No.	Cylinder bore	Rotation angle
TP Rotating unit		Rotation angle 90° Rotation angle 180°

Magnetic proximity sensor

MZC2-1V7NS-FU0	Magnetic, NPN, 3-core3m
MZC2-1V7PS-FU0	Magnetic, PNP, 3-core3m

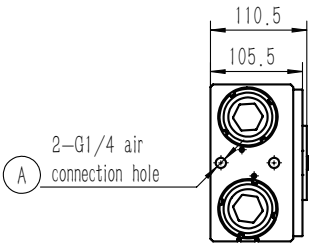
*Two sensors are required for each rotation unit. For the detailed monitoring of two positions, see the sensor appendix.



Product attributes	Parameter Value	Unit
Product Code	TP63	
Cylinder bore	63	mm
Theoretical torque	15.6 × P	N·m
Rotation angle	90/180	°
Adjustment range of rotation angle	± 30	°
Product weight	20.15	kg
Allowable rotation time	1.5~6	s
Rotation time	2~4.5	sec
Maximum allowable kinetic energy	25	J
Sensor type	Magnetic proximity sensor	

P: Compressed air pressure [bar]

Specification of buffer unit	M45 Hydraulic buffer	Specification of air connection port	G1/4
Repeated gripping accuracy/mm	± 0.05	Temperature range of application/°C	-5~60
Operating air pressure range/bar	3~8	IP rating	65



- ① ⑨ The pin bushing is of the standard version
- ② ③ ⑦ ⑧ are gripper mounting holes
- ① ④ ⑤ ⑥ ⑨ are gripper positioning holes
- Ⓐ Compressed air connection port
- Ⓑ Hydraulic buffer
- Ⓒ Adjustment knob for rotation limit
- Ⓓ Location of magnetic proximity sensor

Note:

- To be used with the speed control valve
- The figure shows the middle position of rotation, and the gripper needs to be selected additionally.
- The output torque at the end position of rotation is half of the rated torque and is changed to the external limit to output the rated torque at the end position.