Vane type rotary actuators



General

The vane type rotary actuators, 6420 series is designed to operate at 90-180 or 270 deg. In a contained space. Dimensionally are more compact than other types of rotary actuators.

The range includes bore sizes from 10 to 100 in 4 configurations:
- basic.
- with rotary angle adjustment mechanism.
- with sensing support.
- with rotary angle adjustment mechanism and sensing support.

The bodies are in aluminium , the shafts in chrome plated steel and the seals in NBR.
The sensing support kit enables for the sensors to be positioned in any position.
The rotary angle adjustment mechanism enables the adjustment of the complete rotation on bore sizes 10 to 40 while on the others sizes carries as standard hydraulic dampers which enable the adjustment only of the last part of the rotation.
The units can be fixed using the thread on the body or the through holes on the body.
On bore sizes 50 to 100 the shaft runs into ball bearings which ensure high resistence.o rotante è guidato su cuscinetti a sfere che assorbono i carichi radiali e assiali, garantendo durata e affidabilità. assiali, garantendo durata e affidabilità.

Ordering code

6420.Ø._._

Size
Ø10
Ø15
Ø20
Ø30
Ø40
Ø50
Ø63
Ø80
Ø100

Rotation angle
90 = 90°
180 = 180°
270 = 270°

Version
/ = Without adjustable rotation angle, and without sensor support
R = With adjustable rotation angle
S = With sensor supports
T = With adjustable rotation angle and sensor supports

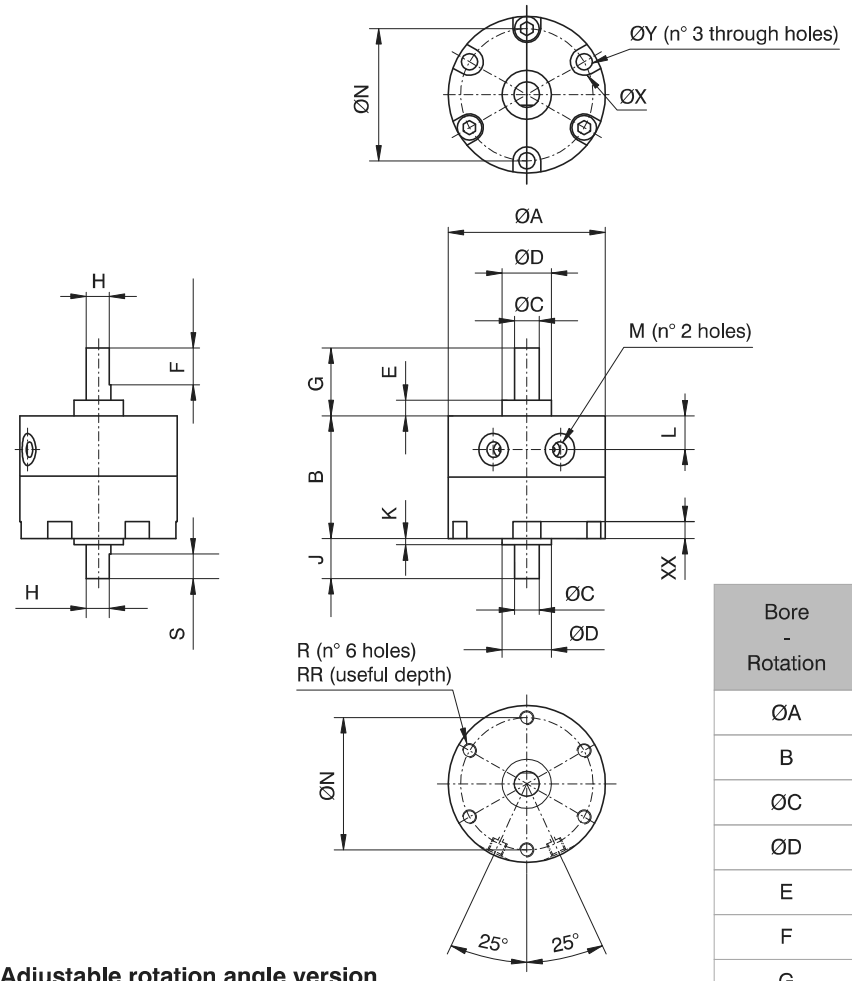
Construction characteristics

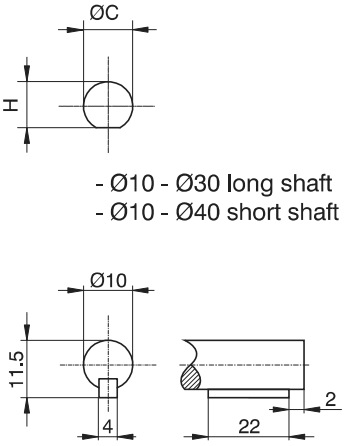
Body	anodised aluminium
Rod	steel
Seals	NBR
Vane	vulcanized NBR rubber on steel core
Cushoning	elastic bumper; hydraulic dampers from size Ø50 - Ø100 versions R or T

Operational characteristics

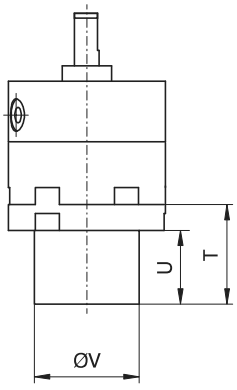
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous.
Working pressure	1,5 - 7 bar
Temperature	0°C - 50°C
Rotation range	90° - 180° - 270°

Overall dimensions Ø10 - Ø40

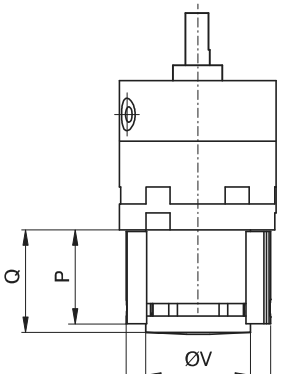




Adjustable rotation angle version

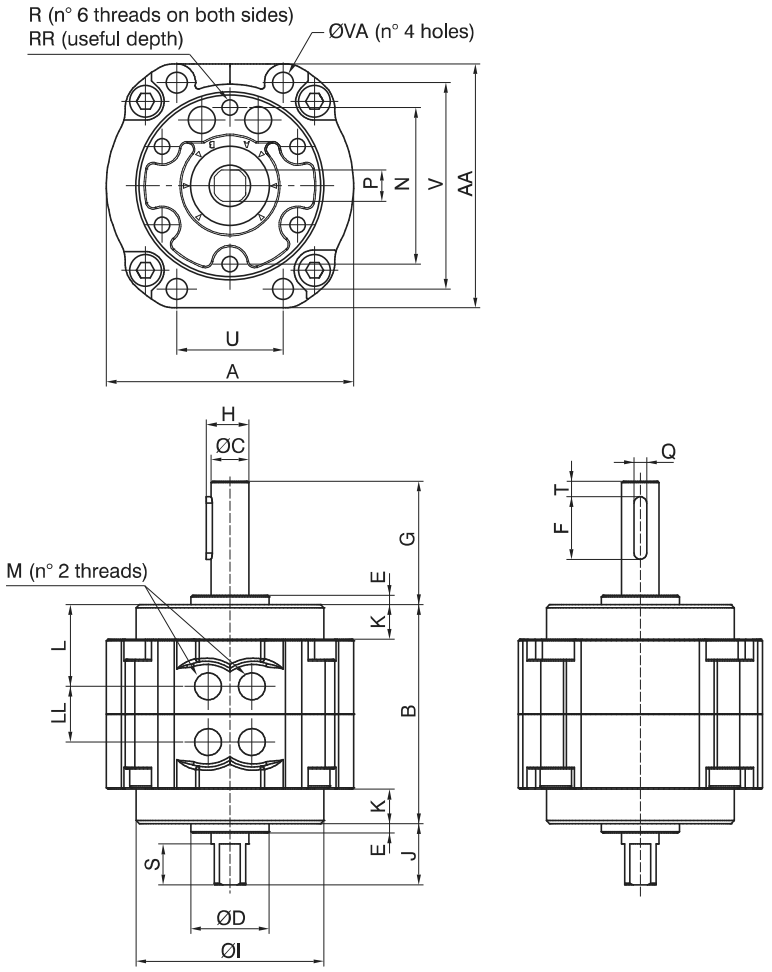


With sensor support version

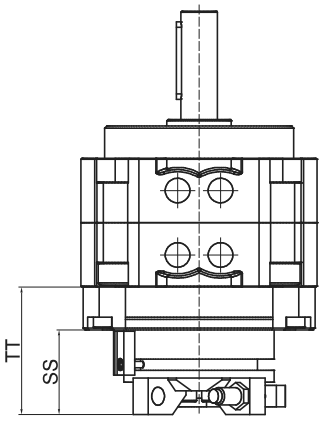


Bore - Rotation	10 - 90°	15 - 90°	20 - 90°	30 - 90°	40 - 90°
	10 - 180°	15 - 180°	20 - 180°	30 - 180°	40 - 180°
	10 - 270°	15 - 270°	20 - 270°	30 - 270°	40 - 270°
ØA	30	35	44	51	64
B	17	20,1	29,1	40	45
ØC	4	5	6	8	10
ØD	9	12	14	16	25
E	3	4	4,5	5	6,5
F	9	10	10	12	22
G	14	18	20,3	22	30
H	3,5	4,5	5,5	7,5	9
J	8	9	9,6	13	15
K	1	1,5	1,6	2	4,5
L	4,2	5	8,5	11	9,5
M	M5x0,8	M5x0,8	M5x0,8	M5x0,8	M5x0,8
ØN	24	29	36	43	56
P	23,3	28	28	30,8	33
Q	24	29,5	30,5	34	36
R	M3x0,5	M3x0,5	M4x0,7	M5x0,8	M5x0,8
RR	3	3	4,5	9	9
S	5	6	7	8	9
T	24	28	28,5	32,5	34,5
U	18	22	21	24	26
ØV	18	24	30	34	34
ØX	6	6	7,5	9	9
XX	3,5	3,5	4,5	5,5	5,5
ØY	2,3	2,3	3,2	4,2	4,2
Z	29	34	42	47	47
Weight (g) Base	28	48	112	200	342
Weight (g) With regulation					

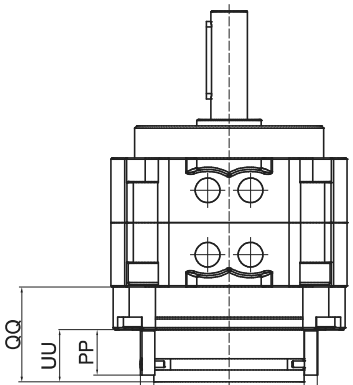
Overall dimensions Ø50 - Ø100



Adjustable rotation angle version



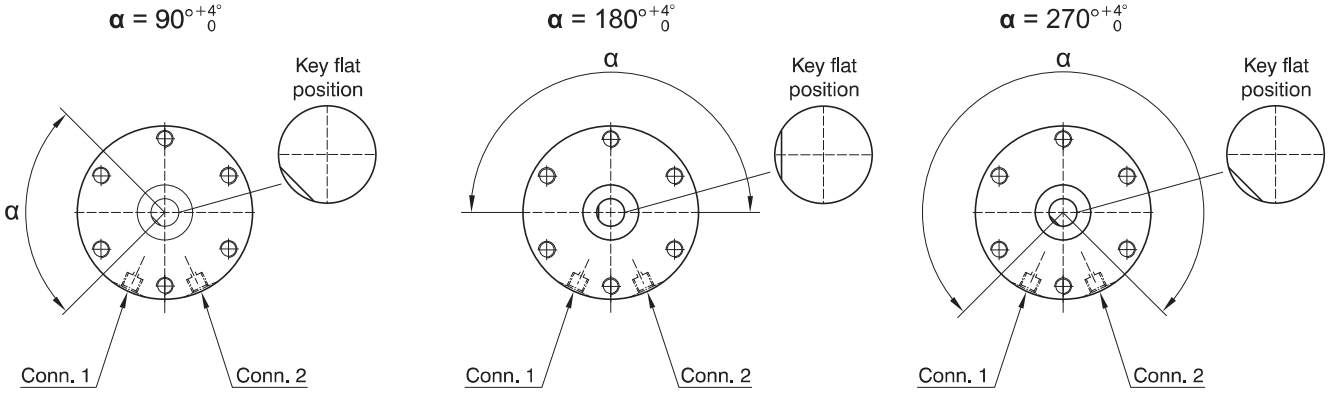
With sensor support version



Bore - Rotation	50 - 90°	63 - 90°	80 - 90°	100 - 90°
	50 - 180°	63 - 180°	80 - 180°	100 - 180°
	50 - 270°	63 - 270°	80 - 270°	100 - 270°
A	79	98	110	140
AA	78	98	110	140
B	70	80	90	103
ØC	12	15	17	25
ØD	25	28	30	45
E	3	3	3	4
F	20	25	36	40
G	39,5	45	53,5	65
H	13,5	17	19	29
ØI	60	75	88	108
J	19,5	21	23,5	30
K	11	14	15	11,5
L	26	28,9	30	35,4
LL	18	22,2	30	32,2
M	G1/8"	G1/8"	G1/4"	G1/4"
N	50	60	70	80
P	10	12	13	19
PP	21	21	21	21
Q	4	5	5	7
QQ	39,4	43	44	48,5
R	M6x1	M8x1,25	M8x1,25	M10x1,5
RR	8	10	14	14
S	13	14	16	16
SS	38	38	39	39,5
T	5	7,5	5	5
TT	53	56,5	59	63
U	34	39	48	60
UU	24,5	24,5	24,5	24,5
V	66	83	94	120
ØVA	6,5	9	9	11
ØW	60	60	70	70
Z	73	73	83	83
Weight (g) Base	760	1290	1920	4100
Weight (g) With regulation				

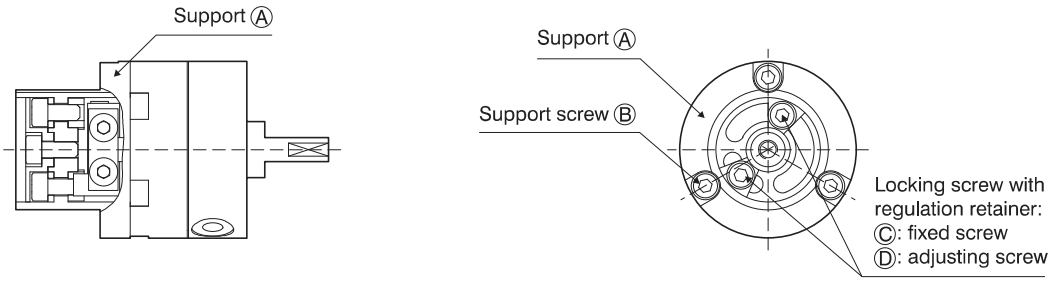
Key flat position and adjustable rotation angle Ø10 - Ø40

ROTATING SHAFT KEY FLAT POSITION



ROTATION ANGLE SETUP

To regulate the rotation angle (codes 6420..R or T), follow the instructions below

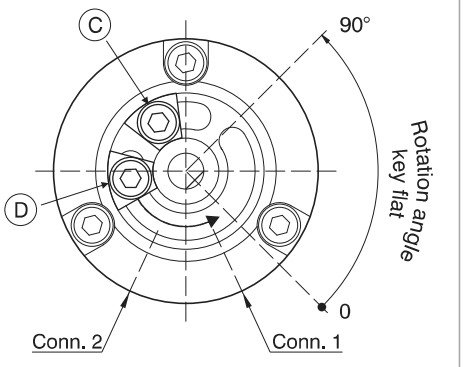


Phase 1 : Choose the regulation configuration based on the following options (consider the actuator base position):
rotation 90°, regulation 0 - 90°, rotation 180°, regulation 0 - 180°, rotation 270°, regulation 0 - 175°

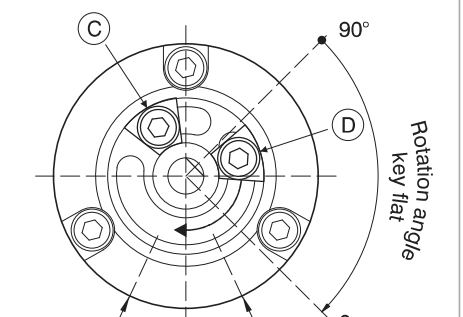
ROTATION CONFIGURATION

90°

Standard version — from 0° to 90°



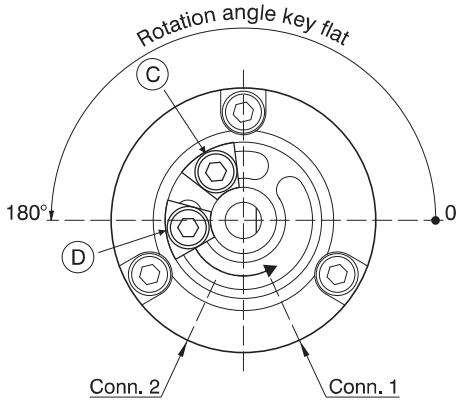
from 90° to 0°



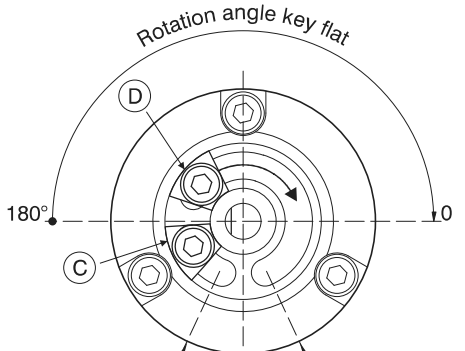
ROTATION CONFIGURATION

180°

Standard version — from 0° to 180°



from 180° to 0°



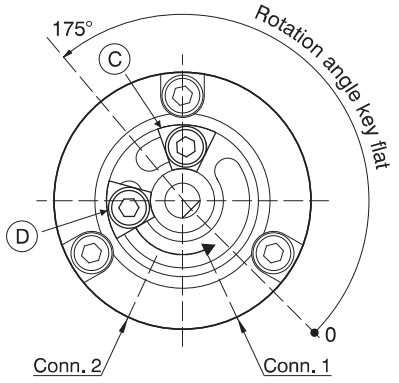
Key flat position and adjustable rotation angle Ø10 - Ø40

ROTATION CONFIGURATION

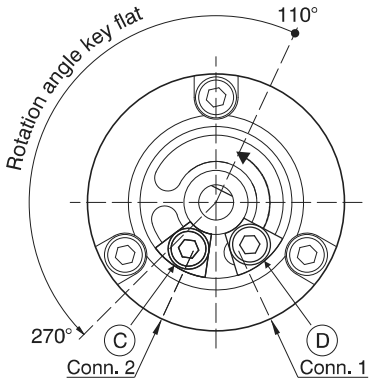
270°

Standard version

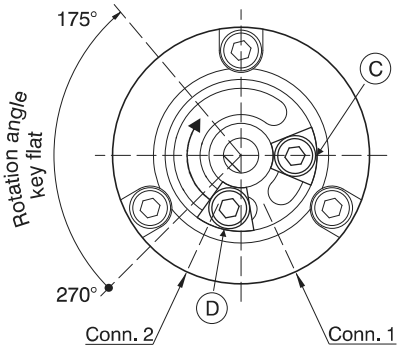
from 0° to 175°



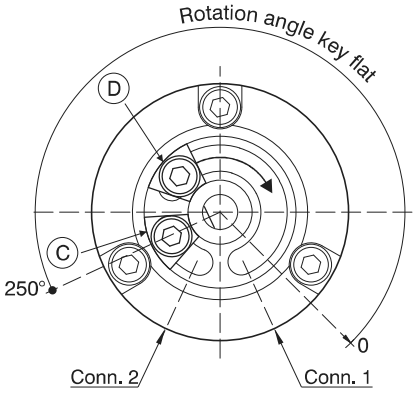
from 110° to 270°



from 270° to 175°



from 250° to 0°



Ⓒ = **Fixed screw** Ⓓ = **Adjusting screw**

Phase 2 : If the desired settings do not correspond to the basic version settings:
- remove screw Ⓔ and disk Ⓕ or Ⓖ (depending on the version) (see figure 1)
- remove screws Ⓑ, the actuator support Ⓐ (see figure 1) and unlock blocking screws Ⓒ and Ⓓ (see rotation configuration)
- position screws Ⓒ and Ⓓ and the key flat of rotating shaft as indicated in the chosen rotation configuration in order to align the key flat of rotating shaft (see figure 2)
- re-assemble actuator support Ⓐ, tighten screws Ⓑ
- position screws Ⓒ and Ⓓ according to the desired adjustment and tighten the screws
- re-assemble disk Ⓕ or Ⓖ and screw Ⓔ

Figure 1

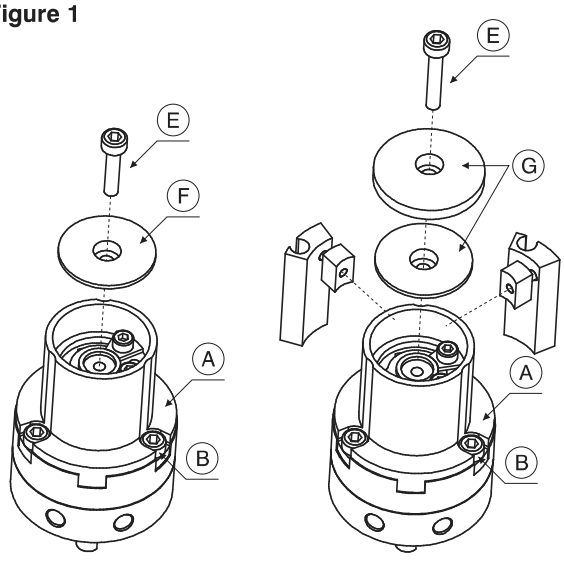
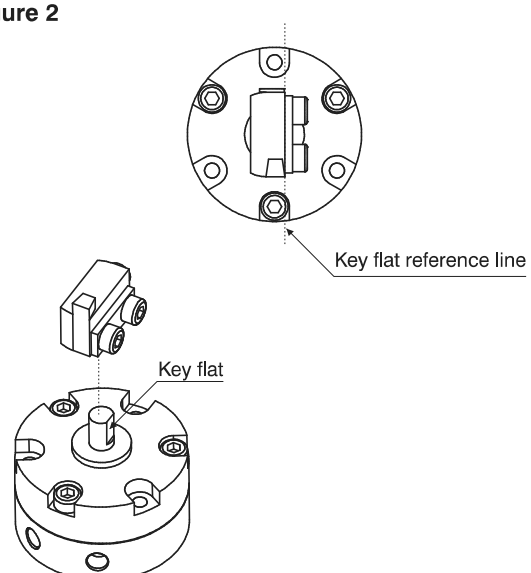
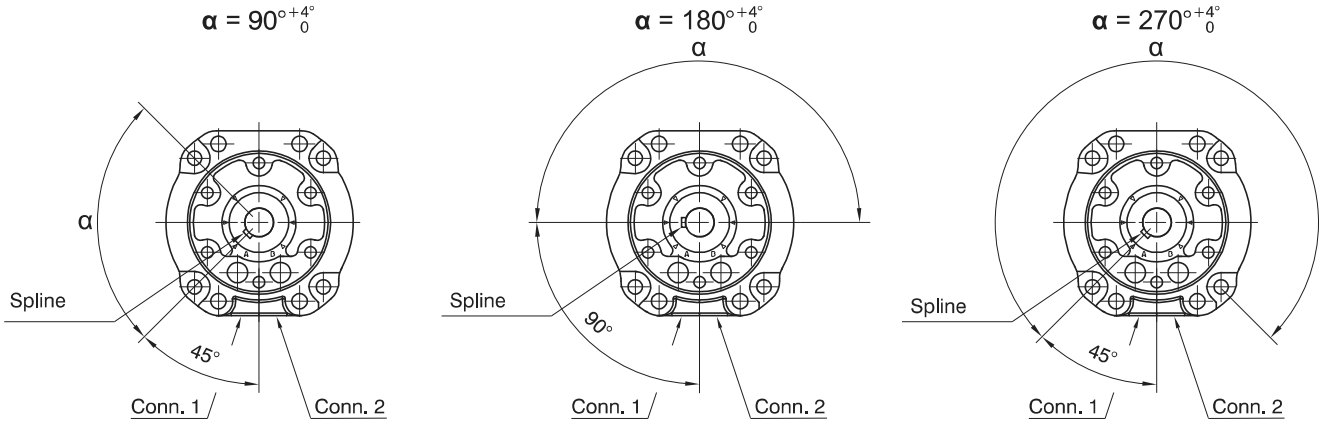


Figure 2



Spline position and adjustable rotation angle Ø50-Ø100

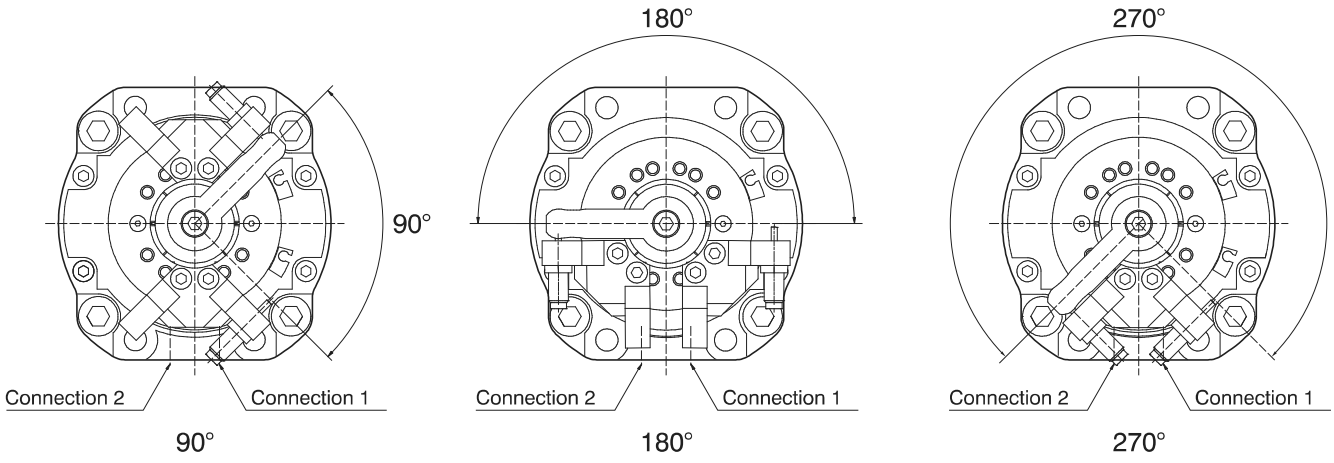
ROTATING SHAFT SPLINE POSITION



ROTATION ANGLE SETUP

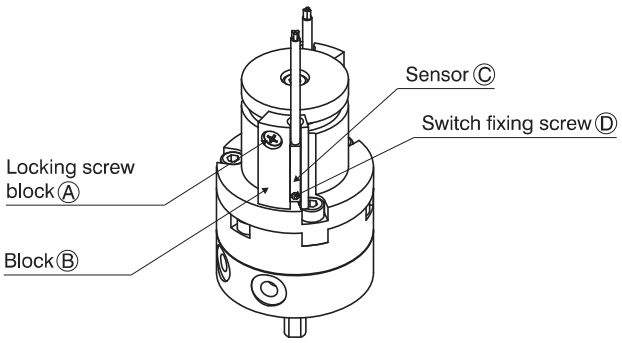
The version with adjustable rotation angle (cod. 6420..R or T) is available with hydraulic dampers which enable to regulate the rotation angle by 15° and to decelerate moving mass.

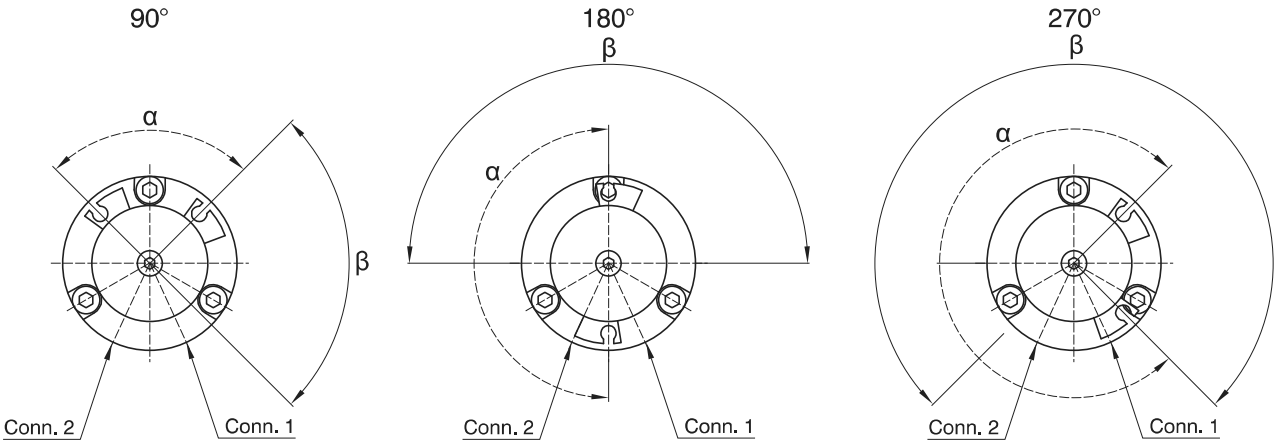
Example: for 90° rotation and 15° regulation per decelerator, the effective rotation angle is 60°
Example: for 180° rotation and 15° regulation per decelerator, the effective rotation angle is 150°
Example: for 270° rotation and 15° regulation per decelerator, the effective rotation angle is 240°



Switch positioning instructions Ø10 - Ø40

Phase 1 - Unfasten screw Ⓐ
Phase 2 - Assemble the switch Ⓒ into the dedicated housing Ⓑ and lock with screw Ⓓ
Phase 3 - Rotate block Ⓑ in the desired position (see following image)





α - magnet rotating angle
β - shaft key flat rotating angle
For correct functionality position the switch within angle **α**

Phase 4 - tighten screw Ⓐ
Phase 5 - repeat the following phases for the second switch

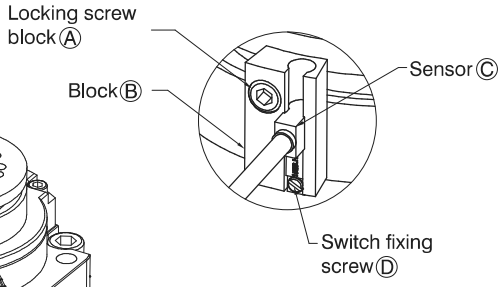
AVAILABLE SENSORS

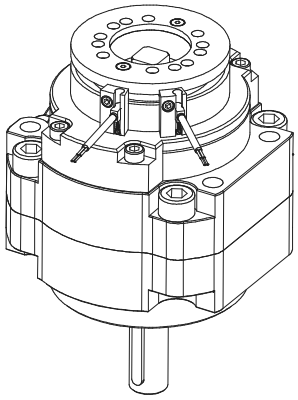
	Code
	**1581.U**
	TRS.U
	1581.HAP
	THS.P

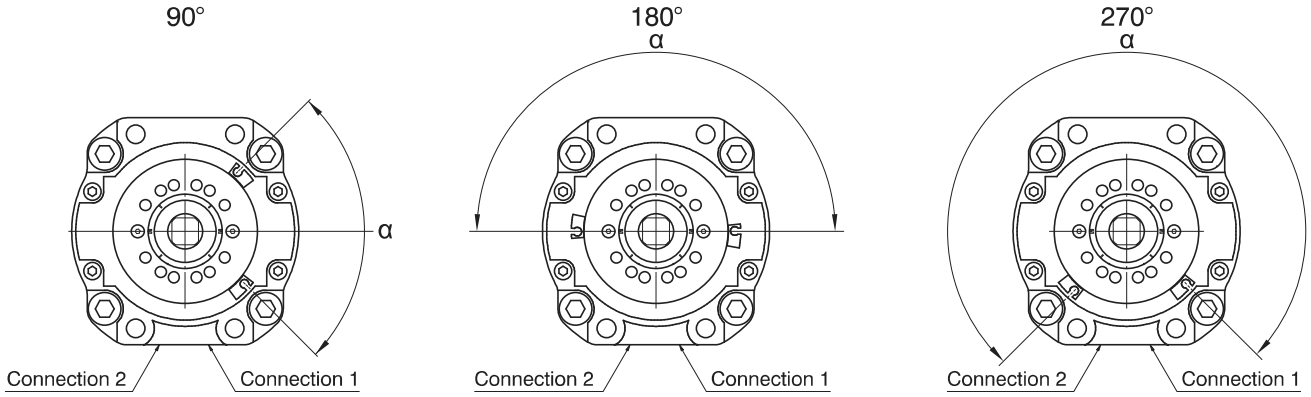
	Code
	**1583.DC**
	1583.HAP
	THR.P

Switch positioning instructions Ø50 - Ø100

Phase 1 - Unfasten screw Ⓐ
Phase 2 - Assemble the switch Ⓒ into the dedicated housing Ⓑ and lock with screw Ⓓ
Phase 3 - Rotate block Ⓑ in the desired position (see following image)







α - magnet rotating angle (that corresponds to the shaft key flat rotating angle)
For correct functionality position the switch within angle **α**

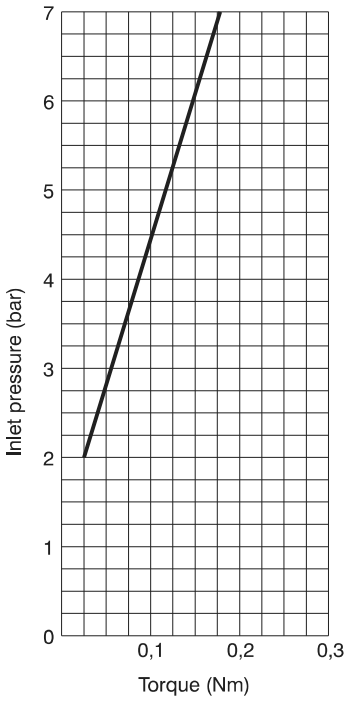
Phase 4 - tighten screw Ⓐ
Phase 5 - repeat the following phases for the second switch

AVAILABLE SENSORS

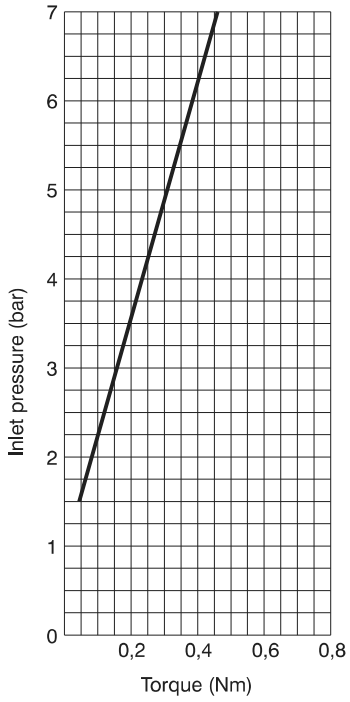
	Code
	**1583.DC**
	1583.HAP
	THR.P

Available torques

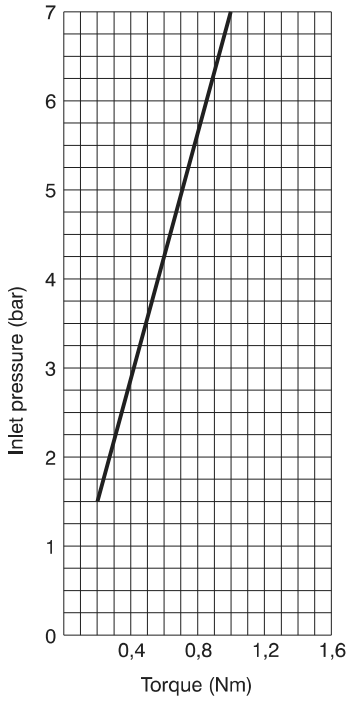
Ø10



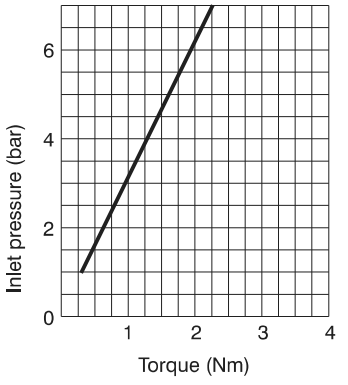
Ø15



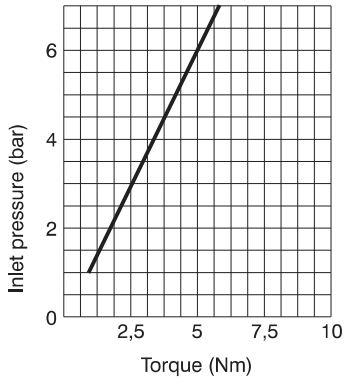
Ø20



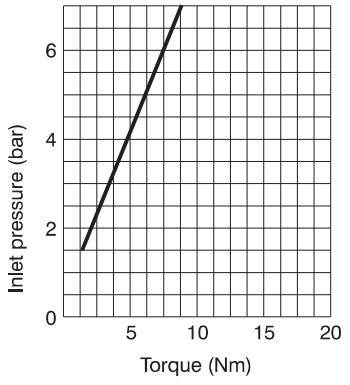
Ø30



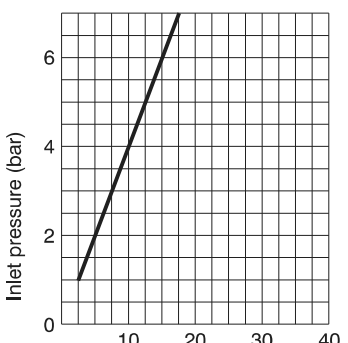
Ø40



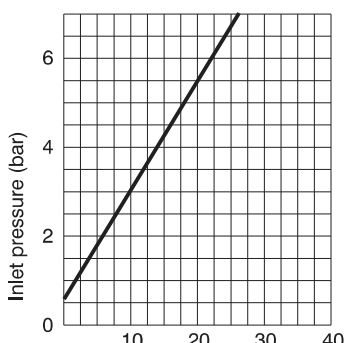
Ø50



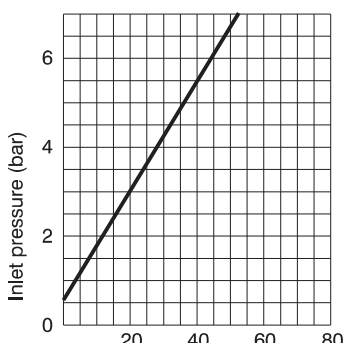
Ø63



Ø80

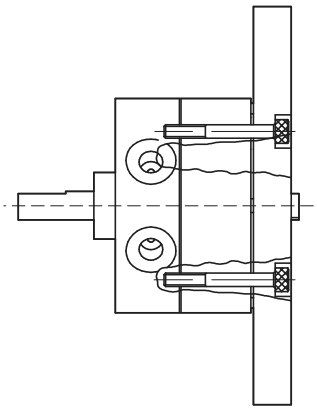


Ø100

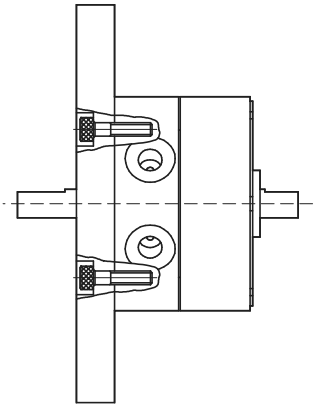


Direct mounting

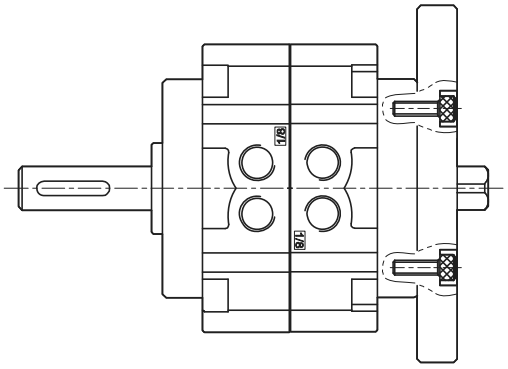
Mounting types



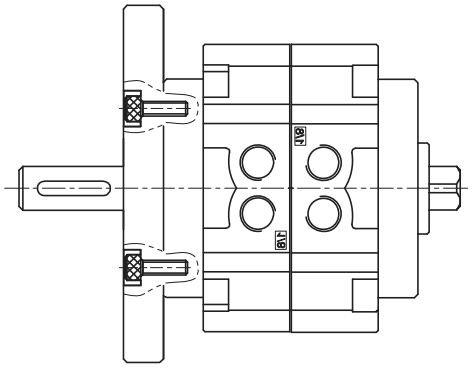
Rear mounting



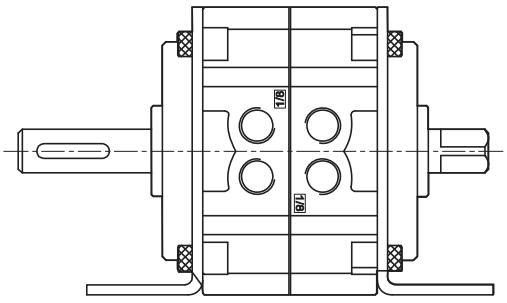
Frontal mounting



Rear mounting



Frontal mounting



Mounting with flange