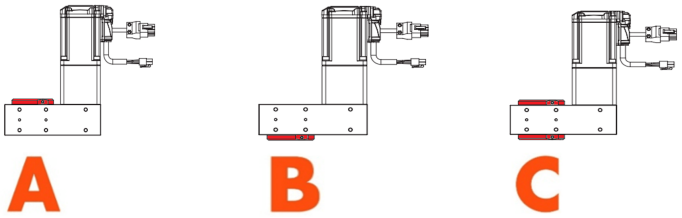
METAL WORK PNEUMATIC

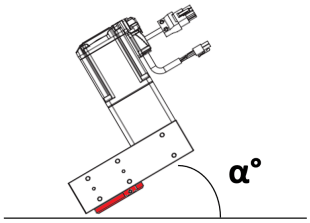
Electric rotary actuators

Company	
Compiled by	
Date	

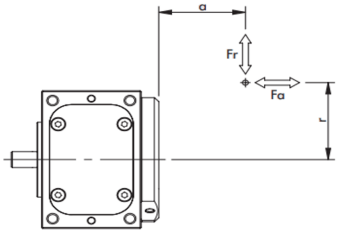
Rotating flange mounting position



Actuator mounting position



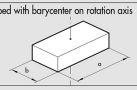
Load diagram



Rotating flange mounting position	☐ A ☐ B ☐ C
Actuator mounting position α from 0° to 90°	

Phase No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Rotation angle (°deg) + clockwise (CW) - counterclockwise (CCW)										
Time (s)										
Moment of inertia J with respect to the axis of rotation (kg • m²)										

MOMENTS OF INERTIA FOR THE MOST COMMON SHAPES

	Denomination	Unit of measurement	Formula	Example
			Disco 	
M	Disk mass	kg		7
d	Disk diameter	m		0.3
J	Moment of inertia of the disk	kg m²	$= \frac{Md^2}{8}$	$= \frac{7 \cdot 0.3^2}{8} = 0.0787$
			Mass distant from rotation axis 	
M	Mass	kg		0.5
R	Distance between barycenter and rotation axis	m		0.2
J	Moment of inertia of the mass	kg m²	$= MR^2$	$= 0.5 \times 0.2^2 = 0.02$
			Parallelepiped with barycenter on rotation axis 	
M	Mass	kg		10
L	Sides a and b of the parallelepiped	m		a = 0.4; b = 0.3
J	Moment of inertia of the mass	kg m²	$= M \cdot \frac{1}{12} \cdot (a^2 + b^2)$	$= \frac{10 \cdot (0.4^2 + 0.3^2)}{12} = 0.21$

EXTERNAL FORCE (N) (e.g. force of a cylinder/spring to be resisted)										
Fa										
Fr										
POSITION OF EXTERNAL FORCE APPLICATION POINT (MM)										
a										
r										
Resistant torque (Nm)										

Any space limitations	
Should the axis work "in position" (e.g., reach a defined angle, counteracting external torques), or "in torque" (e.g., push with controlled torque against contrast in an undefined position)?	☐ Torque ☐ Position
A feedback control is needed.	☐ Torque (brushless motor) ☐ Position (stepper with encoder or brushless)
No. of hours/day worked (h/d)	
ENVIRONMENTAL CONDITIONS	
Temperature °C / Humidity	
Severity of environment use presence of dust, processing chips, etc.	
Need for rotating flange stopped with motor not powered	
Motor	☐ Metal Work ☐ Client ☐ To be evaluated (produce both solutions)
ACCESSORIES	
V-Lock Adapter	
Motor cable length	
Available supply voltage	
The control will be done with:	☐ PLC with step-dir board and "Line Driver" signals ☐ PLC with step-dir board and "Open Collector" signals ☐ PLC with brushless axis board ☐ There is no PLC
Short description, notes and draw of the possible application:	