Rotary Actuator Model Selection Software

Selection results

CRB1 Standard type CDRB1BW80-90D-[][][]

Specification

Fluid:	Air (Non-lube)
Port size:	Rc
Proof pressure:	1.5 MPa
Inner volume VA:	136 cm³
Inner volume VB:	136 cm³
Body basic weight:	2,120 g
Type:	Double vane
Cushion:	Rubber
Size:	80
Rotating angle:	Standard 90°
Magnet:	Magnet installed / With auto switch unit (Auto switch mountable)
Mounting:	Basic type
Shaft type:	W Double shaft (Long shaft: key Short shaft: with four chamfers)
Port location:	Side ported

Condition input

Application:	Rotation
Mounting orientation:	Vertical
Input method of load shape:	Select and input the shape.
Load shape type:	Single shape
Rotation center and load center of gravity:	Rotation center and load center are not the same.
Load shape:	Thin shaft
Mass m:	1.000 kg
Distance La between axis of rotation and load center of gravity:	150.0 mm
Distance Lb between the mounting surface of the load center of gravity and the end of the rotary actuator:	20.0 mm
Length a :	300.0 mm
Rotating angle:	90.0 °
Rotating time:	0.200 s
Supply pressure:	0.50 MPa
Ambient temperature:	20 °C
External bearing:	Not use
External stop mechanism:	Shock absorber

Calculation results

Items	Unit	Input values/Calc. values	Allowable range
Ambient temperature	°C	20	5～60
Supply pressure	MPa	0.50	0.15～1
Rotating time	s/90°	0.2	0.1～1
Rotating angle	°	90.0	0～90
Required torque	N·m	30.912	0～36.5
Load M	N·m	0.196	0～20.09
Load Fr	N	9.8	0～490
Load Fsa	N	0	0～490
Load FSb	N	0	0～490
Kinetic energy	J	3.7010954	
Moment of inertia I	kg·m²	0.03	

Precautions

* Body basic weight: Excluding the weight of auto switch, auto switch unit and angle adjustment unit.
* Allowable kinetic energy of cushion type is the maximum absorption energy when the cushion needle adjustment is optimized.
* Available with conditions

Out of allowable range of kinetic energy

When None or Stopper is selected in the external stop mechanism: Install the proper size of shock absorber.

When Shock absorber is selected in the external stop mechanism: Install the proper size of shock absorber that the total of allowable kinetic energy of the rotary and the absorption energy of the shock absorber becomes more than the kinetic energy.

Note 1: When installing the stopper and the shock absorber with the external stop mechanism, refer to the precautions in catalogue before installing.

Note 2: When installing a shock absorber, please use the adjustment bolt type. When stopping with the adjustment bolt in the middle of the shock absorbing stroke, the kinetic energy absorption capacity of the shock absorber may decrease. Install a shock absorber of a suitable size.

Note 3: For product with an air cushion, when stopping with a shock absorber in the middle of the cushioning process, the kinetic energy absorption capacity of the air cushion may decrease. Install a shock absorber of a suitable size.

Note 4: For product with an absorber, when stopping with a stopper in the middle of the absorbing stroke, the kinetic energy absorption capacity of the absorber may decrease. Install a rotary actuator of a suitable size.

Comment

Describe comments.

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