

DRVS
Semi-rotary drive

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8158337
Operating instructions
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Translation of the original instructions
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1 Applicable Documents

All available documents for the product -> www.festo.com/sp.

2 Safety

2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Take into account the ambient conditions at the location of use.
- Only use the product if it is in perfect technical condition.
- Store the product in a cool, dry environment protected from UV and corrosion. Keep storage times short.
- Before working on the product, switch off the compressed air supply and lock it to prevent it from being switched on again.

2.2 Intended use

The product is intended to swivel payloads that must execute a defined angular movement.

2.3 Foreseeable misuse

Do not exceed the maximum permissible transverse loads -> 11 Technical data.

2.4 Training of qualified personnel

Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers. The qualified personnel have skills and experience in dealing with pneumatic (open-loop) control technology.

3 Additional information

- Contact the regional Festo contact if you have technical problems -> www.festo.com.
- Accessories -> www.festo.com/catalogue.

4 Function

The pneumatic ports [4] are pressurised alternately, causing the inner sash in the housing to swivel back and forth. The swivel motion is transmitted to the drive shaft [1]. The drive shaft serves as an interface and connecting element for the extension elements push-on flange FWSR and push-on flange DARF. The square [2] serves as a connecting element for the extension elements sensors SRBS, stop kit KSM and stop kit DADP.

5 Product design

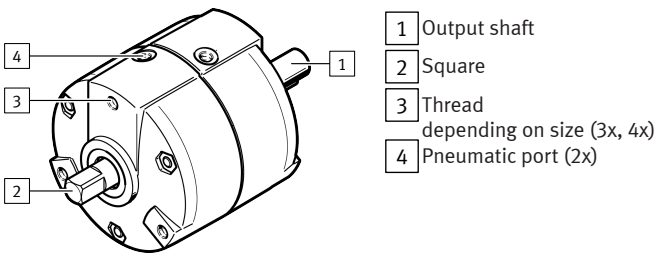


Fig. 1: Product design

6 Assembly

1. Mount the product on the threads [3].
2. Push the payload onto the drive shaft and fasten it.

7 Installation

- Use one-way flow control valves to set the swivel speed.
- Screw the one-way flow control valves into the pneumatic ports [4].

8 Commissioning

- For use with reduced particle emission:
Clean the product with a clean, soft cloth and non-abrasive cleaning agents.
1. Close the one-way flow control valves completely.
 2. Unscrew the one-way flow control valves one turn.
 3. Pressurise the product slowly.
 4. Start a test run.
 5. Take the following into account in the test run:
 - The swivel range
 - The swivel speed
 6. Make changes only when stationary.
 7. Unscrew the one-way flow control valves until the required swivel speed is reached. Do not fall below the minimum permissible swivel time -> www.festo.com/catalogue.

NOTICE

Dynamic characteristic values that are too high can lead to the destruction of the product, e.g. internal vanes.

- Observe the mass moment of inertia and the maximum permissible swivel frequency.

8. Terminate the test run.

9 Cleaning

- Clean the product with a clean, soft cloth and non-abrasive cleaning agents.
- For use with reduced particle emission:
- Remove abraded particles and soil from the product:
 - Prior to initial commissioning
 - Regularly during operation

10 Fault clearance

Fault description	Cause	Remedy
Uneven movement	The flow control valves are incorrectly adjusted.	Check the exhaust air flow control
Hard impacts at the end position	Excessive residual energy	<ul style="list-style-type: none">- Select a lower rotational speed.- Use external shock absorbers.- Only drive against the residual air cushion on the exhaust air side.- Select a smaller payload mass.
The output shaft does not remain in the end position.		

Tab. 1: Fault clearance

11 Technical data

DRVS		-6	-8	-12	-16
Pneumatic port		M3		M5	
Mounting position		any			
Design		Rotary cylinder with rotary vane			
Cushioning		Elastic cushioning, at both ends			
Ambient temperature	[°C]	0 ... 60			
Storage temperature	[°C]	0 ... 20			
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]			
Information on operating medium		lubricated operation possible, in which case lubricated operation will always be required			
Operating pressure	[MPa]	0.35 ... 0.8		0.25 ... 0.8	
	[bar]	3.5 ... 8		2.5 ... 8	
	[psi]	50.75 ... 116		36.25 ... 116	
Forces					
Permissible impact force F _{max}	[N]	15	30	90	160
Theoretical torque at 0.6 MPa (6 bar, 87 psi)	[N]	0.15	0.35	1	2
Max. permissible forces on the drive shaft					
Axial force F _x	[N]	10		20	25
Radial force F _z	[N]	15	20	25	30
Mass moment of inertia at 0.6 MPa (6 bar, 87 psi)					
unthrottled	10 ⁻⁴ kgm ²	0.05	0.1	0.3	0.6
throttled	10 ⁻⁴ kgm ²	6.5	13	50	100
Max. permissible swivel frequency					
DRVS-...-90	[Hz]	3			
DRVS-...-180	[Hz]	3			
DRVS-...-270	[Hz]	–	–	2	

Tab. 2: Technical data DRVS-6 ... -16

DRVS		-25	-32	-40
Pneumatic port		M5	G1/8	
Mounting position		any		
Design		Rotary cylinder with rotary vane		
Cushioning		Elastic cushioning, at both ends		
Ambient temperature	[°C]	0 ... 60		
Storage temperature	[°C]	0 ... 20		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]		
Information on operating medium		lubricated operation possible, in which case lubricated operation will always be required		
Operating pressure	[MPa]	0.2 ... 0.8		
	[bar]	2 ... 8		
	[psi]	29 ... 116		
Forces				
Permissible impact force F _{max} [N]		320	480	650
Theoretical torque at 0.6 MPa (6 bar, 87 psi) [N]		5	10	20
Max. permissible forces on the drive shaft				
Axial force F _x [N]		40	75	120
Radial force F _z [N]		60	200	350
Mass moment of inertia at 0.6 MPa (6 bar, 87 psi)				
unthrottled	10 ⁻⁴ kgm ²	0.9	1.5	2
throttled	10 ⁻⁴ kgm ²	120	200	350
Max. permissible swivel frequency				
DRVS-...-90 [Hz]		3		
DRVS-...-180 [Hz]		3		
DRVS-...-270 [Hz]		2		

Tab. 3: Technical data DRVS-25 ... -40