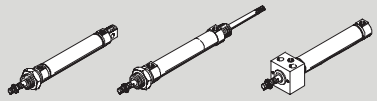
DSNU-...-EX4-...
Cylinder with piston rod



FESTO

Festo SE & Co. KG
Ruiter Straße 82
73734 Esslingen
Germany
+49 711 347-0

www.festo.com

Operating conditions I EX

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CE

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Translation of the original instructions

1 Identification EX

Identification mark		
Ex	II 2G	Ex h IIC T4 Gb
Ex	II 2D	Ex h IIIC T120°C Db
		–20°C ≤ T_a ≤+60°C

Tab. 1

2 Applicable documents

NOTICE!

Technical data for the product can have different values in other documents. For operation in an explosive atmosphere, the technical data in this document always have priority.

All available documents for the product ➔ www.festo.com/pk.

3 Function

Pressurising the cylinder chambers causes the piston in the pipe to move back and forth. The piston rod transfers the movement outwards.

4 Safety

4.1 Safety instructions

– The device can be used under the stated operating conditions in zones 1 and 2, explosive gas atmospheres, and in zones 21 and 22, explosive dust atmospheres.
– All work must be carried out outside of potentially explosive areas.
– Only operate the device with a suitable operating medium ➔ Technical data
– The device is not intended for use with other fluids.
– It is not intended to be used as a spring and damping element. Impermissible loads may occur.
– Avoid lateral forces and torques on the piston rod.

4.2 Intended use

The piston rod cylinder is intended for the transportation of loads and the transmission of forces.

5 Commissioning

⚠ WARNING!

The discharge of electrostatically charged parts can lead to ignitable sparks.
- Prevent electrostatic discharge by taking appropriate installation and cleaning measures.
- Include the device in the system's potential equalisation.

⚠ WARNING!

Some piston rod attachments and mounting elements permit oscillating rotating and swivelling movements of the cylinder. This could result in impermissible heating.
- Do not use piston rod attachments and mounting elements as radial plain bearings with circumferential speeds of ≥1 m/s.

NOTICE!

Draw in compressed air outside of the explosive atmosphere.

NOTICE!

Escaping exhaust air can swirl up dust and create an explosive dust atmosphere.

NOTICE!

Particulate matter in the compressed air can cause electrostatic charges.

NOTICE!

Related type of ignition protection: c (constructional safety)

– Observe the product labelling.
– Seal unused openings with blanking plugs or slot covers.

When using PPV end-position cushioning:
– Adjust the cushioning so that the piston rod safely reaches the end positions and that it does not strike hard against them or rebound.

6 Maintenance and care

– Check the operational reliability of the device regularly. Interval: 2 million movement cycles or after 6 months at the latest.

When using the device in a dusty environment, the lifecycle of guides is shorter than it would be in a low-particle environment.
– Check the guide rods and bearings for operational reliability at shorter intervals depending on the ambient conditions.

7 Fault clearance

Malfunction	Remedy
External damage after visual inspection	Send the device back to the Festo repair service / Replace device
Audible leakage at the rod seal	Send the device back to the Festo repair service / Replace device
Cylinder not securely mounted, mounting on piston rod not secure	Tighten the retaining screws
Dry lubricant residue adhering to the piston rod	Clean the piston rod with a soft cloth
The piston strikes the end position harshly.	PPV: adjust the end-position cushioning Without PPV: send the device back to the Festo repair service
Longitudinal scoring marks on the piston rod	Send the device back to the Festo repair service
Longitudinal scoring marks on the guide rod	Send the device back to the Festo repair service Replace device
Irregular running behaviour	Send the device back to the Festo repair service
Deterioration in guide quality caused by increased bearing play	Replace device
Increased noise generation	Replace device

Tab. 2

The replacement of wearing and spare parts is possible in individual cases. Repairs of this type must only be carried out by trained and authorised specialists.
– Please contact your Festo technical consultant.

8 Technical data

Operating conditions		
Ambient temperature	[°C]	–20 ≤ T_a ≤ +60
Temperature of medium	[°C]	–20 ≤ T_a ≤ +60
Operating pressure	[bar]	10
Operating medium		Compressed air to ISO 8573-1:2010 [5:–:–]
Mounting position		Any
All aluminium alloys used contain less than 7.5 % magnesium (Mg).		

Tab. 3

Special operating conditions										
∅	8	10	12	16	20	25	32	40	50	63
Max. permissible impact energy at the end positions [J]										
	0.03	0.05	0.07	0.15	0.2	0.3	0.4	0.7	1	1.3
Max. permissible tightening torque on the bearing cap [Nm]										
	10	10	20	20	40	40	60	80	100	100
Max. permissible torque on piston rod [Nm]										
	–	–	0.1	0.1	0.3	0.8	1.1	1.5	3	3
Max. permissible backlash of the piston rod [±°]										
	–	–	2	2	1.7	1.3	1.2	0.9	0.8	0.8

Tab. 4