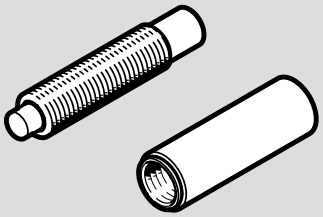
DYSS-G8
Shock absorber



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Operating instructions

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[8166415]

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Translation of the original instructions

1 Applicable documents

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

Documents	Product	Contents
Operating instructions	Mini slide DGST	–
Assembly instructions	Shock absorber DYEF-...-Y1F	–

Tab. 1: Applicable documents

2 Safety

2.1 Safety instructions

- Only use the product in its original condition without unauthorised modifications.
- Observe the identifications on the product.
- Store the product in a cool, dry environment protected from UV and corrosion. Keep storage times short.
- Repair of the product is not permitted.
- 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 for use with the mini slide DGST for cushioning and adjustment of the slide end positions.

2.3 Training of qualified personnel

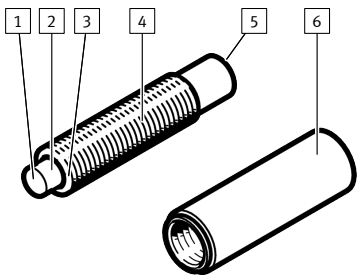
Work on the product may only be carried out by qualified personnel who can evaluate the work and detect dangers. Personnel must have the relevant mechanical training.

3 Additional information

- Contact the regional Festo contact if you have technical problems ➔ www.festo.com.
- Accessories and spare parts ➔ www.festo.com/catalogue.

4 Product overview

4.1 Product design



1 Buffer (only DYSS-G8-5... -12)
2 Piston rod
3 Fixed stop
4 Male thread
5 Internal hexagon socket/ Slot (DYSS-G8-2 only)
6 Threaded sleeve

Fig. 1: Product design

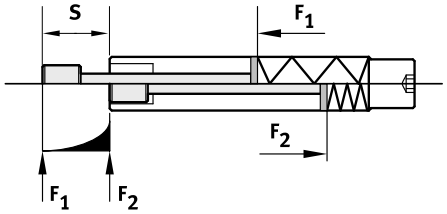
The screw in the internal hexagon socket of the shock absorber must not be loosened.

NOTICE

Tensile forces on the piston rod can seriously damage the shock absorber.

4.2 Function

Insertion force F2 acting on the buffer moves the piston rod of the hydraulic shock absorber through the cushioning length s to the fixed stop to the end position. When the piston rod is retracted, the hydraulic fluid in the shock absorber flows through a path-dependent flow control valve and cushions the motion.
If the insertion force is less than the reset force F1 of the internal compression spring, the piston rod returns to the initial position.



F1 Reset force
F2 Insertion force
s Stroke/cushioning distance

Tab. 2: Function

5 Assembly

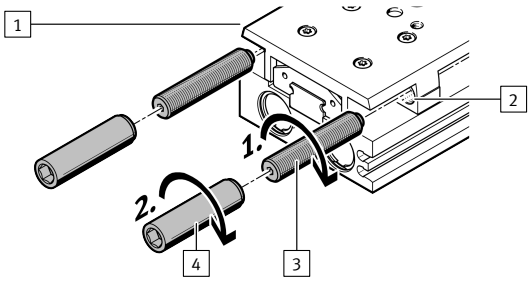


Fig. 2: Mounting on mini slide DGST

1 Thread on housing: cushioning for retracted end position
2 Thread on slide: cushioning for extended end position
3 Shock absorber
4 Threaded sleeve

1. Screw the shock absorbers into the thread on the housing [1] and into the thread on the slide [2].
2. Screw the threaded sleeves [4] onto the shock absorbers [3].

6 Commissioning

6.1 Adjustment of slide end positions

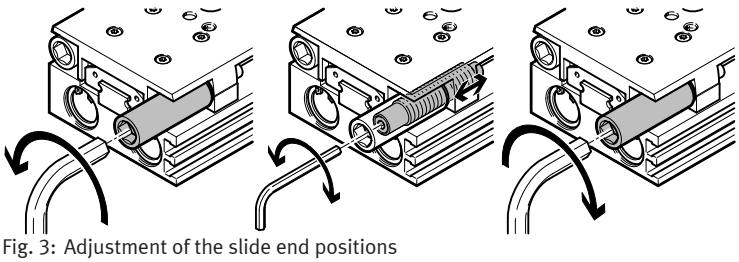


Fig. 3: Adjustment of the slide end positions

1. Loosen the threaded sleeves.
2. Position the slides one after the other at the retracted and advanced end positions.
3. At the end position: screw in the shock absorbers to the end position. Do not exceed the maximum torque when screwing the internal hexagon socket/ slot. Maintain the minimum distance L. If the minimum distance L is not long enough, the shock absorbers will not be completely effective and the product will impact internally. This can lead to the destruction of the product. Minimum distance L with retracted end position ➔ 1 Applicable documents.
4. At the end position: pressurise the slide as a counterhold to the shock absorber. Tighten the threaded sleeve to the specified tightening torque.

DGST		-6	-8	-10	-12	-16	-20	-25
Shock absorber								
DYSS-G8-...		2	3	4	5	7	8	10
Internal hexagon/slot on the shock absorber								
Max. torque	[Nm]	0.1	0.5	0.6	1	3	5	10
Threaded sleeve								
Tightening torque	[Nm]	0.4	0.64	0.8	1.6	2.4	4	6.4
		Tolerance ± 20%						

NOTICE

The exact slide position must be checked during a test run with compressed air applied and, if necessary, corrected.

1. When operating the DGST-...-E1: restrict the speed.
2. Observe the permissible impact energies .
3. Suitable shock absorbers can retrofitted to the product ➔ www.festo.com/catalogue.

6.2 Executing test run

1. Observe the operating instructions for the mini slide DGST ➔ 1 Applicable documents.
2. Observe the assembly instructions for the shock absorber DYEF-...-Y1F ➔ 1 Applicable documents. The cushioning for the shock absorber DYEF-...-Y1F can be adjusted.

6.3 Notes on operation

Energy absorption

- Only use the shock absorber within the permissible range of 25% to 100% of the maximum energy absorption ➔ 10 Technical data.

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Recommendation: use the shock absorber within the optimum range from 50% to 80% of the maximum energy absorption.

Energy absorption	Note
0 ... 25%	Unfavourable; fluid leakage at the shock absorber may be increased
25 ... 50%	Permitted
50 ... 80%	Optimal
80 ... 100%	Permitted
> 100%	Impermissible

Tab. 3: Energy absorption of the shock absorber

Cushioning effect

The viscosity of the hydraulic fluid declines over its operating life due to the generated friction heat. This can reduce the cushioning effect.

7 Maintenance

Maintenance interval	Maintenance work
Every 2 million load changes	Check shock absorber: – sealing, no fluid leakage – fixed stop, no deformation – Cushioning distance s ➔ 10 Technical data In case of leakage, hard stop or cushioning distance too short: replace shock absorber.

Tab. 4: Maintenance schedule

The hydraulic fluid in the shock absorber cannot be topped up or changed.

8 Fault clearance

Malfunction	Possible cause	Remedy
Leakage/fluid leakage	Shock absorber faulty	Replace shock absorber.
Hard stop in the end position	Shock absorber overloaded	Reduce impact velocity or check the layout of the shock absorber.
	Shock absorber faulty	Replace shock absorber.

Tab. 5: Fault clearance

9 Dismantling and disposal

⚠ CAUTION

The product contains pressurised hydraulic fluid that can escape in an uncontrolled manner if the housing is damaged.

The hydraulic fluid can injure people's eyes and skin and damage the environment.

- Have the product disposed of by a qualified waste disposal company.
- Do not destroy the product in order to drain the hydraulic fluid.

10 Technical data

Size		2	3	4	5
Stroke/cushioning distance s	[mm]	4	4	4	5
Male thread		M4x0.5	M5x0.5	M6x0.5	M8x1
Mode of operation		single-acting, pushing			
Cushioning		self-adjusting			
Mounting position		any			
Max. load	[kg]	0.8	1	1.7	2.5
Max. energy absorption per stroke at +20 °C[1]	[J]	0.1	0.4	0.8	1.4
Max. energy absorption per hour at +20 °C[1]	[kJ]	0.27	4.5	5.5	8
Max. operating frequency[2]	[cycles/min]	50	80	80	80
Impact velocity	[m/s]	0.1 … 0.5	0.1 … 1.0		
Min. insertion force F_2	[N]	2.5	3.5	4.5	10
Max. stop force in end position	[N]	60	80	100	200
Min. reset force F_1	[N]	0.7	0.5	0.7	0.9
Reset time at 20 °C[3]	[s]	≤ 0.5	≤ 0.2		
Ambient temperature	[°C]	–10 … +70	–10 … +80		

1) At higher temperatures in the range of 80 °C the maximum mass will be reduced by approximately 50%.
2) For energy utilisation from 70 % per stroke.
3) At temperatures below 0 °C, the reset time can increase to 1 s. The reset time may increase during continuous actuation in the end position.

Tab. 6: Technical data, size 2 ... 5

Size		7	8	10
Stroke/cushioning distance s	[mm]	5	8	10
Male thread		M10x1	M12x1	M14x1
Mode of operation		single-acting, pushing		
Cushioning		self-adjusting		
Mounting position		any		
Max. load	[kg]	5.5	15	20
Max. energy absorption per stroke at +20 °C[1]	[J]	2	3	6
Max. energy absorption per hour at +20 °C[1]	[kJ]	12	18	25
Max. operating frequency[2]	[cycles/min]	70	50	50
Impact velocity	[m/s]	0.1 … 1.5		
Min. insertion force F_2	[N]	10	18	24
Max. stop force in end position	[N]	300	500	700
Min. reset force F_1	[N]	1.2	2.5	4
Reset time at 20 °C[3]	[s]	≤ 0.2		
Ambient temperature	[°C]	–10 … +80		

1) At higher temperatures in the range of 80 °C the maximum mass will be reduced by approximately 50%.
2) For energy utilisation from 70 % per stroke.
3) At temperatures below 0 °C, the reset time can increase to 1 s. The reset time may increase during continuous actuation in the end position.

Tab. 7: Technical data, size 7 ... 10