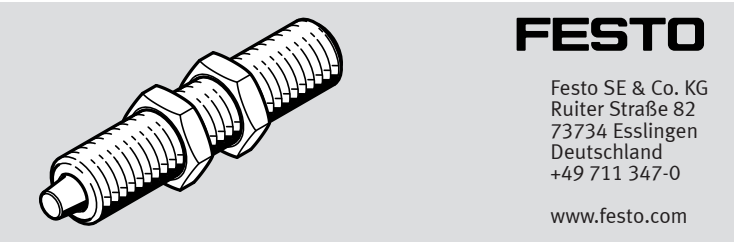


DYEF

Shock absorber



Operating instructions

8149990
 2021-04b
 [8149992]



Translation of the original instructions

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1 Applicable documents

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

These operating instructions do not apply to the product variant DYEF-G8. Separate operating instructions are available for the product variant DYEF-G8.

2 Safety

2.1 Safety instructions

- Only use the product in original status without unauthorised modifications.
- Observe labelling on the product.
- Before working on the product, switch off the power supply and secure it against being switched on again.

2.2 Intended use

The product is intended for use for cushioning the force of linear moving masses.

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

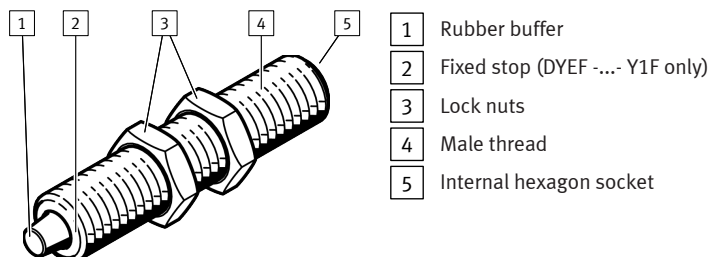


Fig. 1: Product design

4.2 Function

DYEF -...- Y1

The mechanical shock absorber has an elastic, non-adjustable rubber buffer to absorb the cushioning energy.

DYEF -...- Y1F

The mechanical shock absorber has an elastic, adjustable rubber buffer and a fixed stop on the housing to absorb the cushioning energy.

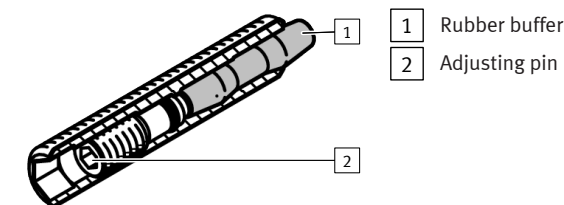


Fig. 2: Function DYEF -...- Y1F

5 Transport and storage

Store the product in a cool, dry environment protected from UV and corrosion. Keep storage times short.

6 Assembly

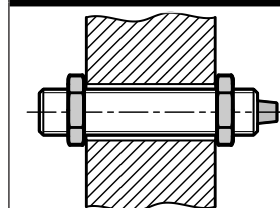
6.1 Mounting product

Mounting options:

- in through-hole
- in through thread

When mounting in hole

Lock nut mounting, at both ends



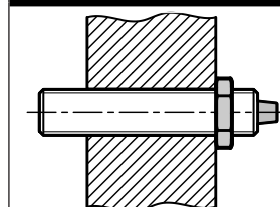
The lock nuts must not protrude beyond the threaded area.

Tab. 1: Mounting in hole

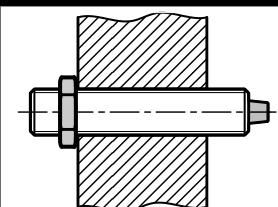
1. Insert product to the desired stop position.
2. Secure the product with lock nuts. Tighten the lock nuts with tightening torque.

With mounting in thread

Lock nut mounting on one side



The lock nut must not protrude beyond the threaded area.



The mounting surface must not protrude beyond the thread area.

Tab. 2: Mounting in thread

1. Screw product in to the desired stop position.
2. Tighten the lock nut to the tightening torque.

Size	4	5	6	8	10	12	14	16	22
Lock nut [Nm]	0.5	0.8	1	2	3	5	8	20	35
Tightening torque	Tolerance ± 20%								

Tab. 3: Tightening torques

6.2 Align product

The mass must contact the buffer over a wide area and, if possible, vertically.

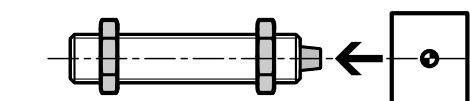


Fig. 3: Force direction and alignment

7 Commissioning

7.1 Adjust cushioning

The cushioning and end position can be adjusted for the product variant DYEF -...- Y1F.

Requirement for the setting:

- The adjusting pin in the housing is fully screwed in. This sets the maximum cushioning and cushioning distance.

Reduce cushioning and cushioning distance

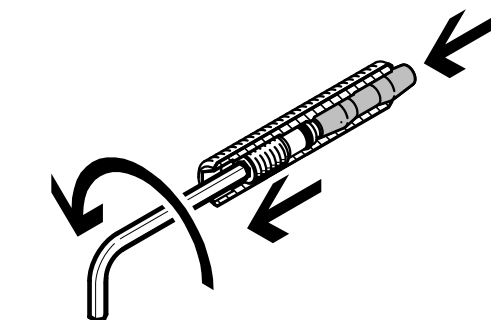


Fig. 4: Reduce cushioning DYEF -...- Y1F

- With force acting on the rubber buffer:
Gradually unscrew the adjusting pin on the internal hexagon socket until the desired reduced cushioning and, if applicable, the end position of the mass at the fixed stop of the shock absorber is reached.

Increase cushioning and cushioning length

- Screw the adjusting pin in gradually on the internal hexagon socket.

7.2 Executing test run

- Start the test run at the drive with reduced speed.
- If necessary, readjust the position of the shock absorber.
- Gradually increase the speed of the drive in steps to the operating value. If set correctly, the end position is reached without a hard stop.

With hard stop:

- If necessary, increase cushioning of the shock absorber.
- If necessary, reduce impact speed.
- Check function and design of the shock absorber.

8 Maintenance

Maintenance interval	Maintenance work
Every 5 million load changes	Check cushioning for soft stop. In case of hard stop: replace shock absorber.

Tab. 4: Maintenance schedule

9 Malfunctions

9.1 Fault clearance

Malfunction	Possible cause	Remedy
Hard stop	DYEF-...-Y1F: cushioning set too low.	Increase cushioning.
	Shock absorber overloaded.	Reduce impact speed or check the design of the shock absorber.
	Rubber buffer is defective.	Replace the shock absorber.

Tab. 5: Fault clearance

9.2 Repair

The shock absorber cannot be repaired.

10 Technical data

DYEF-...-Y1, without fixed stop

Size	4	5	6	8
Stroke/cushioning distance [mm]	0.9	1.5	1.5	1.3
Male thread	M4x0.5	M5x0.5	M6x0.5	M8x1
Mode of operation	Elastomer cushioning without metal fixed stop			
Cushioning	not adjustable			
Mounting position	any			
Max. load [kg]	0.15	0.35	0.7	1.0
Max. energy absorption per stroke [J]	0.015	0.05	0.08	0.12
Max. impact velocity [m/s]	0.8			
Recommended drive force at max. cushioning [N]	17	30	47	68
Ambient temperature [°C]	0 ... +60			

Tab. 6: Technical data DYEF-...-Y1, size M4 ... M8

Size	10	12	14	16
Stroke/cushioning distance [mm]	1.0	1.2	1.2	1.3
Male thread	M10x1	M12x1	M14x1	M16x1
Mode of operation	Elastomer cushioning without metal fixed stop			
Cushioning	not adjustable			
Mounting position	any			
Max. load [kg]	2	3	5	7
Max. energy absorption per stroke [J]	0.25	0.35	0.45	0.55
Max. impact velocity [m/s]	0.8			
Recommended drive force at max. cushioning [N]	121	188	294	482
Ambient temperature [°C]	0 ... +60			

Tab. 7: Technical data DYEF-...-Y1, size M10 ... M16

DYEF-...-Y1F, with fixed stop and adjustable stroke

Size	4	5	6	8
Max. stroke/ cushioning distance [mm]	1.7	2.8	3.1	3.4
Male thread	M4x0.5	M5x0.5	M6x0.5	M8x1
Mode of operation	Elastomer cushioning with metal fixed stop			
Cushioning	adjustable			
Mounting position	any			
Max. load [kg]	0.15	0.25	0.4	0.6

Size	4	5	6	8
Max. energy absorption per stroke [J]	0.005	0.02	0.03	0.04
Max. impact velocity [m/s]	0.8			
Recommended drive force at max. cushioning [N]	17	30	47	68
Reset force at max. stroke ¹⁾ [N]	15	30	40	60
Ambient temperature [°C]	0 ... +60			

1) Corresponds to the force required for the retracted end position.

Tab. 8: Technical data DYEF-...-Y1F, size M4 ... M8

Size	10	12	14	16	22
Max. stroke/ cushioning distance [mm]	3.7	4.2	5.0	4.8	7.0
Male thread	M10x1	M12x1	M14x1	M16x1	M22x1.5
Mode of operation	Elastomer cushioning with metal fixed stop				
Cushioning	adjustable				
Mounting position	any				
Max. load [kg]	1.2	1.8	3.0	5.0	15.0
Max. energy absorption per stroke [J]	0.06	0.12	0.2	0.25	1.2
Max. impact velocity [m/s]	0.8				
Recommended drive force at max. cushioning [N]	121	188	294	482	730
Reset force at max. stroke ¹⁾ [N]	70	100	150	180	500
Ambient temperature [°C]	0 ... +60				

1) Corresponds to the force required for the retracted end position.

Tab. 9: Technical data DYEF-...-Y1F, size M10 ... M22