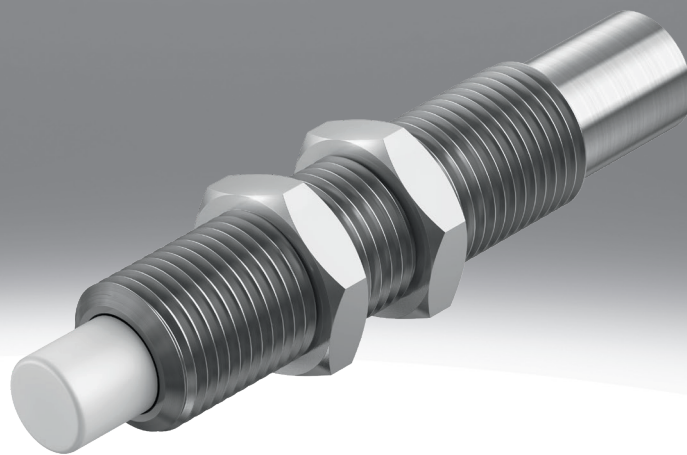


## Shock absorber DYSS

**FESTO**



## Characteristics

### At a glance

Further information → [dyss](#)

- Hydraulic shock absorber with path-controlled flow control function
- Rapidly increasing cushioning force curve
- Short cushioning stroke
- Suitable for low-vibration operation
- Not suitable for rotary drives
- Maintenance-free
- Metal end position on the housing
- Continuous mounting thread with internal hex

### Product segmentation



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### Diagrams

Further information → [dyss](#)

The diagrams shown in this document are also available online. These can be used to display precise values.

### Allocation

[G8] Version G8

For mini slides DGSS/DGST

### Geometric characteristics

[Y1] Internal hex

The shock absorber can be adjusted using the hexagon socket

### Stop

[F] With fixed stop

Metal end position on the shock absorber housing

### Special material properties

[F1A] Recommended for production plants for manufacturing lithium-ion batteries, F1A

Metals with more than 1% copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, circuit boards, cables, electrical plug connectors and coils

## Type code

001	Series
DYSS	Shock absorber

002	Allocation
	None
G8	Version G8

003	Size
2	2 mm
3	3 mm
4	4 mm
5	5 mm
7	7 mm
8	8 mm
10	10 mm
12	12 mm

004	Stroke [mm]
4	4
5	5
8	8
10	10
12	12

005	Geometric characteristics
Y1	Internal hex

006	Stop
F	With fixed stop

007	Special material properties
	None
F1A	Recommended for production plants for manufacturing lithium-ion batteries, F1A

## Datasheet

General technical data								
Size	2	3	4	5	7	8	10	12
Stroke	4 mm			5 mm		8 mm	10 mm	12 mm
Mode of operation	Single-acting, Pushing							
Cushioning	Self-adjusting							
Cushioning length	4 mm			5 mm		8 mm	10 mm	12 mm
Type of mounting	Via threaded sleeve Via lock nut							Via lock nut
Max. impact speed	0.5 m/s	1 m/s			1.5 m/s			
Mounting position	optional							
Ambient temperature	-10 ... 70°C		-10 ... 80°C				-5 ... 80°C	
Corrosion resistance class CRC <sup>1)</sup>	2 - Moderate corrosion stress							

1) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

Reset time								
Size	2	3	4	5	7	8	10	12
Reset time at room temperature <sup>1)</sup>	0.5 s		0.2 s					

1) At higher temperatures (+80 °C) the max. mass and the cushioning energy must be reduced by approx. 50%.

At low temperatures (-10 °C), the reset time may be up to 1 second. At low temperatures (-10 °C) the reset time for the DYSS-2-4...-F1A can increase to over 1 second.

If the end position is held for a relatively long period of time, an increased reset time must be expected, which can be 3 seconds or more in unfavourable conditions.

Forces								
Size	2	3	4	5	7	8	10	12
Min. insertion force <sup>1)</sup>	2.5 N	3.5 N	4.5 N	10 N		18 N	24 N	35 N
Max. stop force <sup>2)</sup>	60 N	80 N	100 N	200 N	300 N	500 N	700 N	1,000 N
Reset force <sup>3)</sup>	0.7 N	0.5 N	0.7 N	0.9 N	1.2 N	2.5 N	4 N	

1) This is the minimum force that must be applied so that the shock absorber is pushed precisely into the retracted end position. This value is reduced accordingly with an extended external end position.

2) If the maximum stop force is exceeded, a fixed stop (e.g. YSRA) must be fitted 0.5 mm before the end of the stroke.

3) This is the maximum force that can act on the piston rod so that the shock absorber can still extend fully (e.g. upstream bolt).

Forces for DYSS-...-F1A								
Size	2	3	4	5	7	8	10	
Min. insertion force <sup>1)</sup>	2.5 N	3.5 N	4.5 N	10 N		18 N	24 N	
Max. stop force <sup>2)</sup>	60 N	80 N	100 N	200 N	300 N	500 N	700 N	
Reset force <sup>3)</sup>	0.4 N		0.7 N	0.9 N	1.2 N	2.5 N	4 N	

1) This is the minimum force that must be applied so that the shock absorber is pushed precisely into the retracted end position. This value is reduced accordingly with an extended external end position.

2) If the maximum stop force is exceeded, a fixed stop (e.g. YSRA) must be fitted 0.5 mm before the end of the stroke.

3) This is the maximum force that can act on the piston rod so that the shock absorber can still extend fully (e.g. upstream bolt).

Energy								
Size	2	3	4	5	7	8	10	12
Max. energy consumption per stroke	0.1 J	0.4 J	0.8 J	1.4 J	2 J	3 J	6 J	10 J
Max. energy consumption per hour	270 J	4,500 J	5,500 J	8,000 J	12,000 J	18,000 J	25,000 J	36,000 J
Max. residual energy	0.003 J	0.004 J	0.006 J	0.01 J		0.02 J	0.03 J	0.05 J

Weight								
Size	2	3	4	5	7	8	10	12
Product weight <sup>1)</sup>	1 g	3 g	4.5 g	7 g	15 g	30 g	51 g	82 g

1) Weight without nut.

Weight for DYSS-G8-...									
Size	2		3	4		5	7	8	10
Product weight <sup>1)</sup>	3.9 g		7.8 g	10.2 g		16 g	33 g	57 g	105 g

1) Weight without nut.

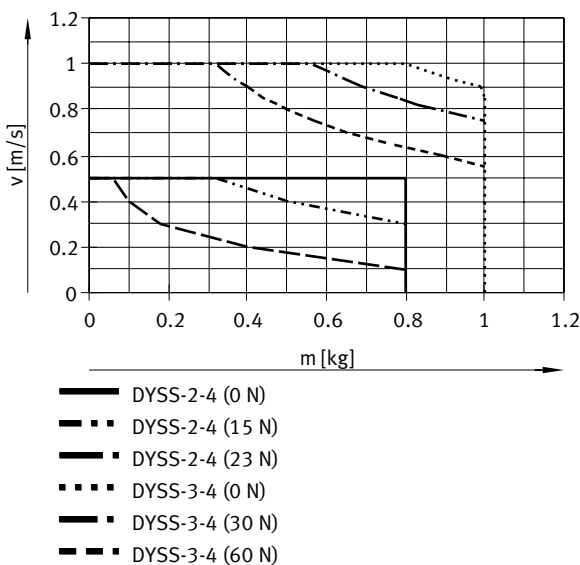
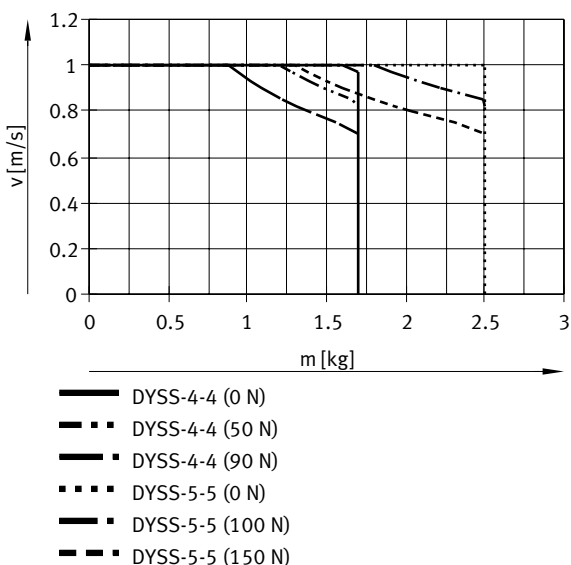
## Datasheet

## Mass range

Size	2	3	4	5	7	8	10	12
Mass range	0.8 kg	1 kg	1.7 kg	2.5 kg	5.5 kg	15 kg	20 kg	45 kg

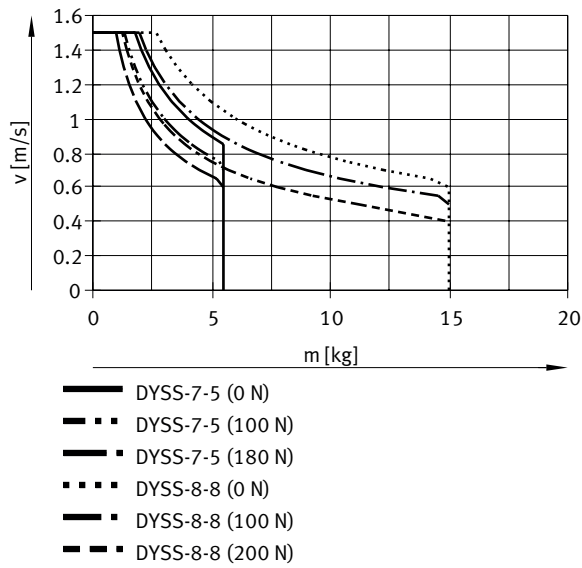
## Materials

Material housing	High-alloy steel
Material piston rod	High-alloy steel
Material seals	NBR
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L
Suitability for the production of Li-ion batteries	Metals with more than 1% copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils, Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils

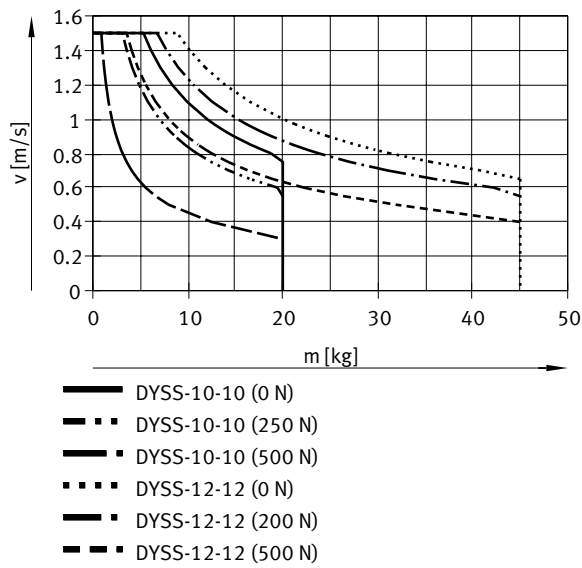
Impact velocity  $v$  as a function of mass  $m$  – DYSS-2-4/3-4Impact velocity  $v$  as a function of mass  $m$  – DYSS-4-4/5-5

Datasheet

Impact velocity  $v$  as a function of mass  $m$  – DYSS-7-5/8-8

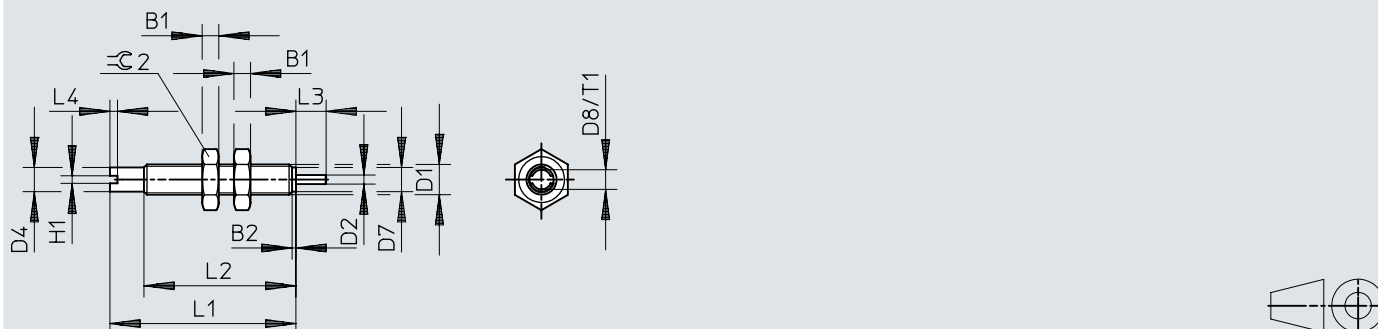


Impact velocity  $v$  as a function of mass  $m$  – DYSS-10-10/12-12



## Dimensions

## Dimensions – DYSS-2-4

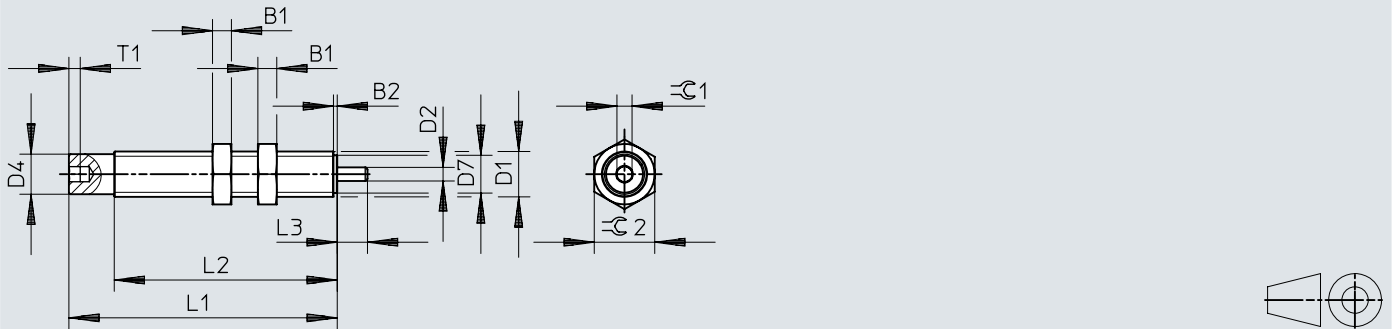
Download CAD data → [www.festo.com](http://www.festo.com)

- [1] To increase the service life: prevent dirt or liquids getting into the inner piston chamber via the piston rod (e.g. by using a cover).  
 [2] The piston rod must not be pushed beyond the stop surface.  
 [3] Do not pull on the piston rod.  
 [4] The screw in the hex socket must not be loosened.

	B1	B2	D1	D2	D4	D7	D8	H1	L1	L2	L3	L4	$\ominus 2$
		±0,1		∅	+0,1/-0,05	-0,3	+0,5		±0,2	±0,3	+0,5		±0,3
DYSS-2-4-Y1F	2,2	0,5	M4x0,5	1,2	3,2	3,2	2,6	1	24,6	20,1	4	1	7

## Dimensions

## Dimensions – DYSS-3-4/DYSS-4-4

Download CAD data → [www.festo.com](http://www.festo.com)

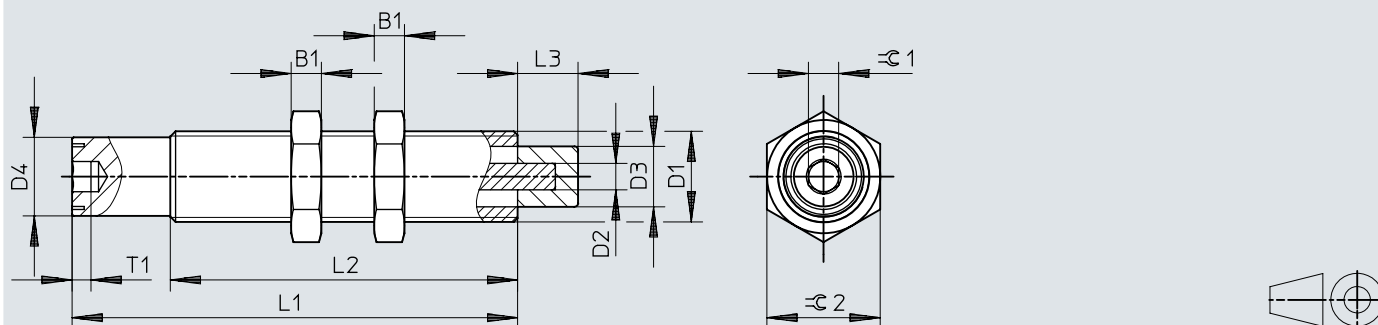
- [1] To increase the service life: prevent dirt or liquids getting into the inner piston chamber via the piston rod (e.g. by using a cover).  
 [2] The piston rod must not be pushed beyond the stop surface.  
 [3] Do not pull on the piston rod.  
 [4] The screw in the hex socket must not be loosened.

	B1	B2 ±0,1	D1	D2 ∅	D4 ∅ +0,1/- 0,05	D7 ∅ -0,3	L1 ±0,2	L2 ±0,3	L3 +0,6	T1	≡C1	≡C2 ±0,3
DYSS-3-4-Y1F-...	2,7	0,5	M5x0,5	1,5	4,3	4	33,5	27,5	4	1,5	2	8
DYSS-4-4-Y1F-...	2,5	0,5	M6x0,5	1,8	5,3	5	35,5	29,5	4	1,5	2	8



## Dimensions


Dimensions – DYSS-...


Download CAD data → [www.festo.com](http://www.festo.com)

- [1] To increase the service life: prevent dirt or liquids getting into the inner piston chamber via the piston rod (e.g. by using a cover).
- [2] The piston rod must not be pushed beyond the stop surface.
- [3] Do not pull on the piston rod.
- [4] The screw in the hex socket must not be loosened.


	B1	D1	D2 ∅	D3 ∅	D4 ∅	L1 ±0,2	L2 ±0,3	L3	T1	≙C1	≙C2
DYSS-5-5-Y1F	3	M8x1	2,5	5±0,1	6,7+0,1/-0,05	38,6	32,6	5 <sup>+0,6</sup>	2	2,5	10
DYSS-7-5-Y1F	3,5	M10x1	3	6±0,1	8,6+0,1/-0,05	45,2	35,2	5 <sup>+0,6</sup>	2,2	3	13
DYSS-8-8-Y1F	4	M12x1	3,5	8±0,2	10,4+0,15/-0,1	59	49	8 <sup>+0,6</sup>	2,5	4	15
DYSS-10-10-Y1F	5	M14x1	4	10±0,2	12,5+0,15/-0,1	70	57	10 <sup>+0,8</sup>	3,5	5	17
DYSS-12-12-Y1F	5	M16x1	5	12±0,2	14,5+0,15/-0,1	82,5	69,5	12 <sup>+0,8</sup>	3,5	5	19

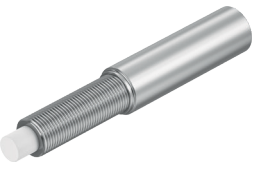
## Ordering data

DYSS-...-Y1F-...						
	Size	Stroke	Cushioning	Allocation	Part no.	Type
	2	4 mm	Self-adjusting	None	8081767	DYSS-2-4-Y1F
	3				8111390	DYSS-3-4-Y1F-G2
	4				8111391	DYSS-4-4-Y1F-G2
	5	5 mm			8081770	DYSS-5-5-Y1F
	7				8069001	DYSS-7-5-Y1F
	8				8069002	DYSS-8-8-Y1F
	10	10 mm			8069003	DYSS-10-10-Y1F
	12	12 mm			8069004	DYSS-12-12-Y1F

DYSS-G8-...-Y1F-... – for DGSS/DGST						
	Size	Stroke	Cushioning	Allocation <sup>1)</sup>	Part no.	Type
	2	4 mm	Self-adjusting	Version G8	★ 8073911	DYSS-G8-2-4-Y1F
	3				★ 8111383	DYSS-G8-3-4-Y1F-G2
	4				8111384	DYSS-G8-4-4-Y1F-G2
	5	5 mm			★ 8073914	DYSS-G8-5-5-Y1F
	7				★ 8073915	DYSS-G8-7-5-Y1F
	8				★ 8073916	DYSS-G8-8-8-Y1F
	10	10 mm			★ 8073917	DYSS-G8-10-10-Y1F

1) Version G8 = for mini slide DGSS/DGST

DYSS-...-Y1F-F1A-... – For manufacturing Li-ion batteries						
	Size	Stroke	Cushioning	Allocation	Part no.	Type
	2	4 mm	Self-adjusting	None	8119993	DYSS-2-4-Y1F-F1A
	3				8179966	DYSS-3-4-Y1F-F1A-G2
	4				8119994	DYSS-4-4-Y1F-F1A-G2
	5	5 mm			8179967	DYSS-5-5-Y1F-F1A
	7				8179968	DYSS-7-5-Y1F-F1A
	8				8179969	DYSS-8-8-Y1F-F1A
	10	10 mm			8179970	DYSS-10-10-Y1F-F1A

DYSS-G8-...-Y1F-F1A-... – for manufacturing Li-ion batteries, for DGSS/DGST						
	Size	Stroke	Cushioning	Allocation <sup>1)</sup>	Part no.	Type
	2	4 mm	Self-adjusting	Version G8	8119980	DYSS-G8-2-4-Y1F-F1A
	3				8119981	DYSS-G8-3-4-Y1F-F1A-G2
	4				8119982	DYSS-G8-4-4-Y1F-F1A-G2
	5	5 mm			8119983	DYSS-G8-5-5-Y1F-F1A
	7				8119984	DYSS-G8-7-5-Y1F-F1A
	8				8132349	DYSS-G8-8-8-Y1F-F1A
	10	10 mm			8132350	DYSS-G8-10-10-Y1F-F1A

1) Version G8 = for mini slide DGSS/DGST