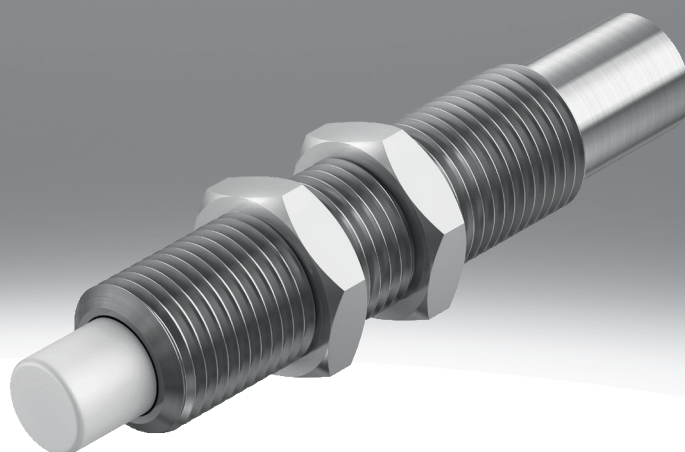


Shock absorber DYSS

FESTO



Characteristics

At a glance Link 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

Diagrams Link 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

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	Pushing, Single-acting							
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	Any							
Ambient temperature	-10 ... 70°C		-10 ... 80°C					-5 ... 80°C
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress							

1) More information www.festo.com/x/topic/crc

Reset time

Size	2	3	4	5	7	8	10	12
Reset time at room temperature ¹⁾	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 ¹⁾	2.5 N	3.5 N	4.5 N	10 N		18 N	24 N	35 N
Max. stop force ²⁾	60 N	80 N	100 N	200 N	300 N	500 N	700 N	1,000 N
Reset force ³⁾	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 in the case of an external upstream end position.

2) If the max. 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 still extends completely (e.g. upstream bolt).

Forces for DYSS-...-F1A

Size	2	3	4	5	7	8	10	
Min. insertion force ¹⁾	2.5 N	3.5 N	4.5 N	10 N		18 N	24 N	
Max. stop force ²⁾	60 N	80 N	100 N	200 N	300 N	500 N	700 N	
Reset force ³⁾	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 in the case of an external upstream end position.

2) If the max. 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 still extends completely (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		0.002 ... 0.02 J		0.03 J

Weight

Size	2	3	4	5	7	8	10	12
Product weight ¹⁾	1 g	3 g	4.5 g	7 g	15 g	10 ... 30 g		51 g

1) Weight without nut.

Weight for DYSS-G8-...

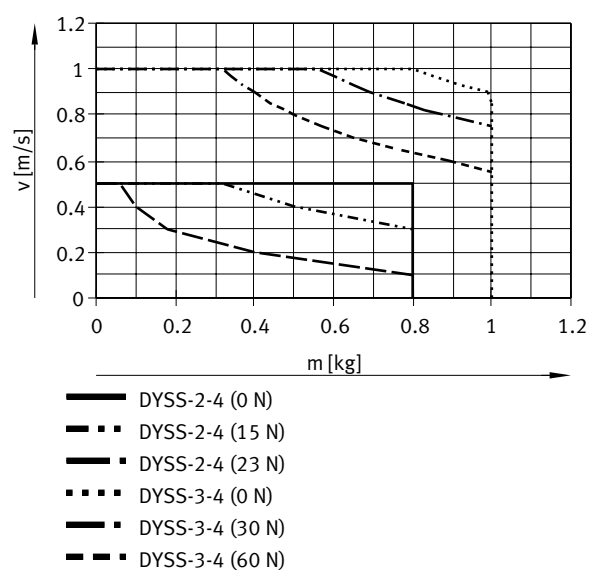
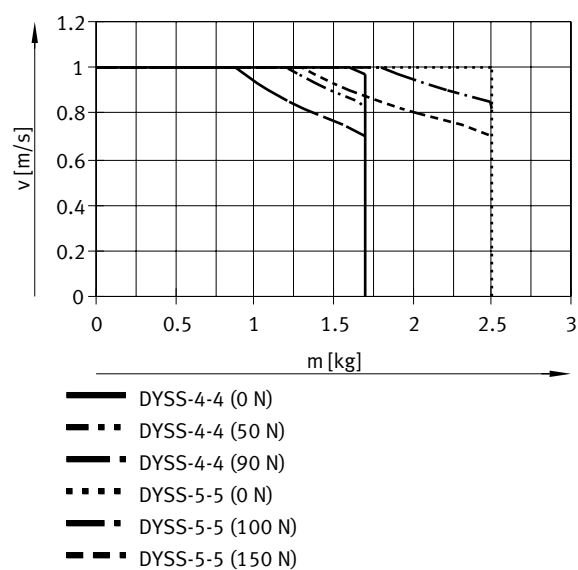
Size	2	3	4	5	7	8	10	
Product weight ¹⁾	3.9 g		7.8 g	10.2 g	16 g	33 g	57 g	105 g

1) Weight without nut.

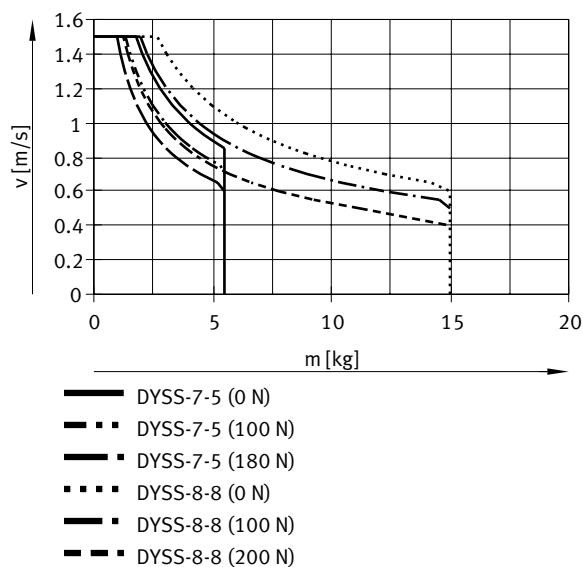
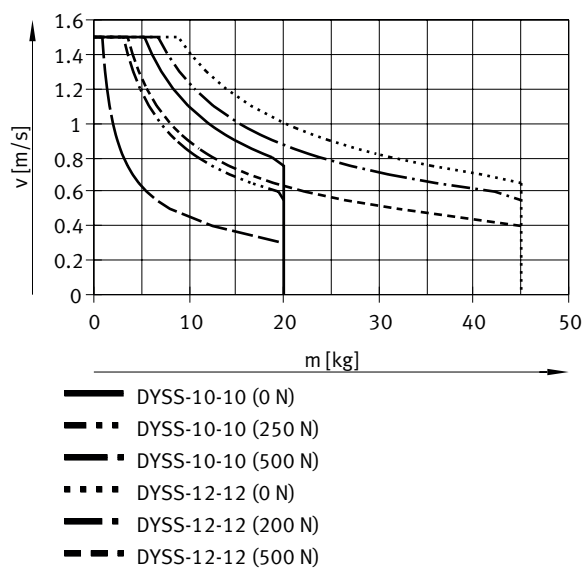
Datasheet

Load range								
Size	2	3	4	5	7	8	10	12
Load 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	Suitable for battery production with reduced Cu/Zn/Ni values (F1a)

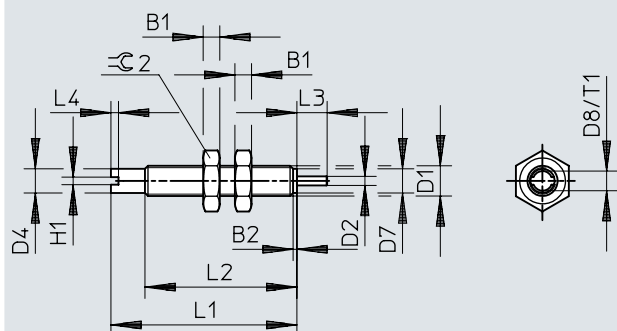
Impact velocity v as a function of mass m – DYSS-2-4/3-4Impact velocity v as a function of mass m – DYSS-4-4/5-5

Datasheet

Impact velocity v as a function of mass m – DYSS-7-5/8-8Impact velocity v as a function of mass m – DYSS-10-10/12-12

Dimensions

Dimensions – DYSS-2-4

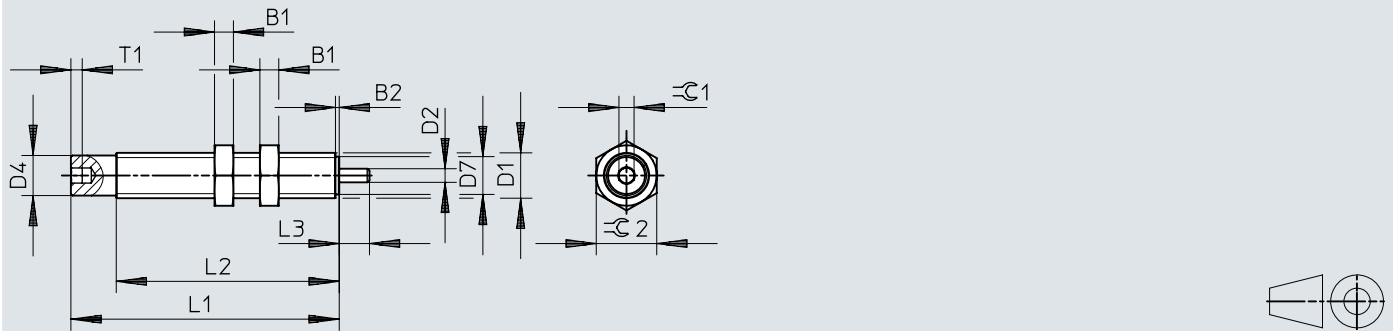
[Download CAD data](#) www.festo.com


- [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	D8 ∅ +0,5	H1	L1 ±0,2	L2 ±0,3	L3 +0,5	L4	⌀2 ±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

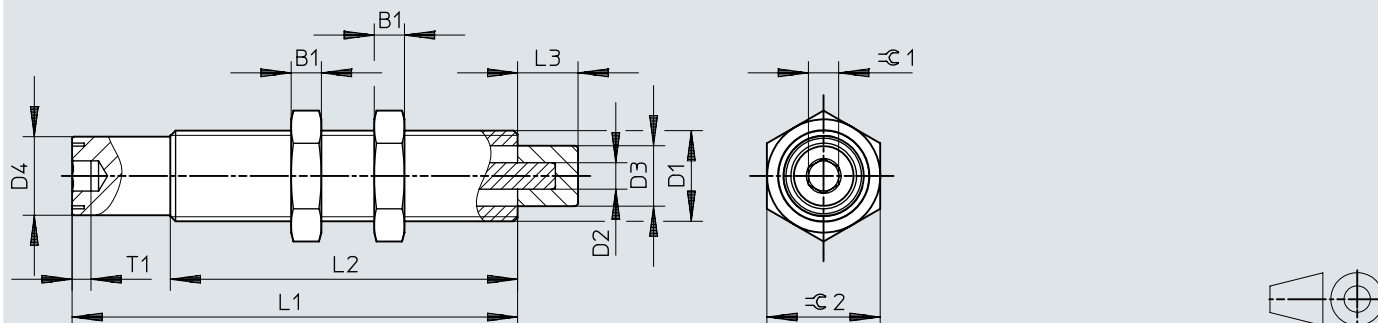


- [1] To increase the service life: prevent dirt or liquids getting into the inner piston chamber via the piston rod (e.g. by using a cover).
- [2] The piston rod must not be pushed beyond the stop surface.
- [3] Do not pull on the piston rod.
- [4] The screw in the hex socket must not be loosened.

	B1	B2	D1	D2	D4	D7	L1	L2	L3	T1	C1	C2
		±0,1		Ø	Ø +0,1/-0,05	Ø -0,3	±0,2	±0,3	+0,6			±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](http://www.festo.com) 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 ø	D3 ø	D4 ø	L1 ±0,2	L2 ±0,3	L3	T1	⌀1	⌀2
DYSS-5-5-Y1F	3	M8x1	2,5	5±0,1	6,7+0,1/-0,05	38,6	32,6	5 ^{+0,6}	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 ^{+0,6}	2,2	3	13
DYSS-8-8-Y1F	4	M12x1	3,5	8±0,2	10,4+0,15/-0,1	59	49	8 ^{+0,6}	2,5	4	15
DYSS-10-10-Y1F	5	M14x1	4	10±0,2	12,5+0,15/-0,1	70	57	10 ^{+0,8}	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 ^{+0,8}	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	8 mm			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 ¹⁾	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	8 mm			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	8 mm			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 ¹⁾	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	8 mm			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

Accessories

Monitoring with distance sensor SOIA

To monitor the application and condition of the cushioning components. Enables predictive maintenance and increases reliability and precision.

The following parameters can be monitored:

- Impact velocity
- End position
- Energy absorption
- Residual energy
- Cushioning reserve

Distance sensor SOIA, inductive						Link  soia		
	Mounting type	Displacement measuring range	Switching output	Electrical connection	Part no.	Type		
	Flush	0 ... 2 mm	PNP/NPN, switchable, Push-pull	Open end	8161194	SOIA-M8PB-PNLK-LE		
		0 ... 4 mm			8161198	SOIA-M12PB-PNLK-LE		
	Not flush	0 ... 7 mm			8161196	SOIA-M8PNB-PNLK-LE		
					8161200	SOIA-M12PNB-PNLK-LE		