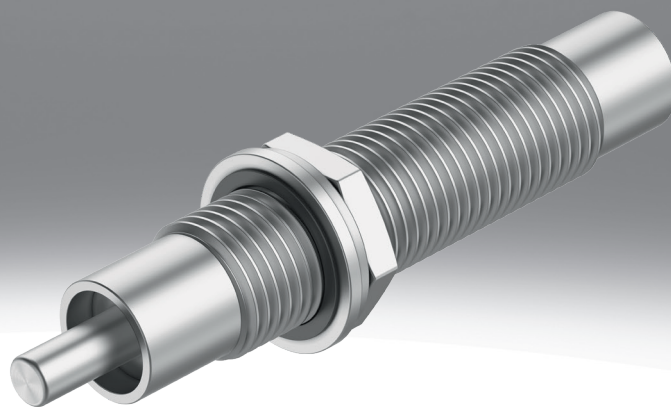


## Shock absorber DYSD

**FESTO**



## Characteristics

### At a glance

[Link](#)  [dysd](#)

- Hydraulic shock absorber with path-controlled flow control function
- Rapidly increasing cushioning force curve
- Short cushioning stroke
- Suitable for rotary drives
- Maintenance-free
- Through mounting thread
- Without impact buffer
- Suitable for pressure chambers
- With additional return spring for compensation in the pressure chamber

### Diagrams

[Link](#)  [dysd](#)



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

### Allocation

[Q11] Version Q11

For semi-rotary drives DRRD

[Q13] Version Q13

For semi-rotary drives DRRS

### 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

## Type code

001	Series
DYSD	Shock absorber

002	Allocation
Q11	Version Q11
Q13	Version Q13

003	Size
4	4 mm
5	5 mm
7	7 mm
8	8 mm
12	12 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm

004	Stroke [mm]
4	4
5	5
8	8
12	12
15	15
16	16
24	24
25	25

005	Geometric characteristics
Y1	Internal hex

006	Stop
F	With fixed stop

007	Energy absorption
	Standard
L	Large
S	Light

008	Cushioning characteristic
Y9	Standard
Y10	Hard
Y14	Soft

## Datasheet

## General technical data

Allocation	Version Q11								Version Q13			
Size	5	7	8	12	16	20	25	32	4	5	7	8
Stroke	5 mm		8 mm	12 mm	15 mm	16 mm	24 mm	25 mm	4 mm	5 mm		8 mm
Mode of operation	Pushing Single-acting											
Cushioning	Self-adjusting											
Cushioning length	5 mm		8 mm	12 mm	15 mm	16 mm	24 mm	25 mm	4 mm	5 mm	8 mm	
Type of mounting <sup>1)</sup>	Via lock nut											
Position detection	Without											
Max. impact speed	1 m/s								0.5 m/s			
Mounting position	optional											
Max. tightening torque	–								1 Nm	2 Nm	3 Nm	5 Nm
Ambient temperature	0 ... 60°C								-10 ... 60°C			
Corrosion resistance class CRC <sup>2)</sup>	2 - Moderate corrosion stress											

1) With sealing washer and washer for sealing the pressure chamber

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

## Reset time

Allocation	Version Q11								Version Q13			
Size	5	7	8	12	16	20	25	32	4	5	7	8
Reset time at room temperature <sup>1)</sup>	0.2 s				0.3 s				0.2 s			
Reset time at min. ambient temperature	–								1 s			

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

DYSD-Q11: At low temperatures (-10 °C), the reset time may be up to 1 second.

DYSD-Q13: At low temperatures (-10 °C), the reset time may be more than 1 second.

## Forces

Allocation	Version Q11								Version Q13			
Size	5	7	8	12	16	20	25	32	4	5	7	8
Min. insertion force <sup>1)</sup>	27 N	40 N	60 N	100 N	160 N	260 N	430 N	480 N	18 N	20 N		30 N
Max. stop force <sup>2)</sup>	200 N	300 N	500 N	1,000 N	2,000 N	3,000 N	4,000 N	6,000 N	110 N	180 N	270 N	420 N
Reset force <sup>3)</sup>	7 N	12 N	18 N	28 N	46 N	75 N	120 N	150 N	3 N	5 N	7 N	9 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 sources for DYSD-...-Y9

Allocation	Version Q11								Version Q13			
Size	5	7	8	12	16	20	25	32	4	5	7	8
Max. energy consumption per stroke	2 J	3 J	6 J	10 J	40 J	70 J	140 J	220 J	0.6 J	1 J	2.1 J	4.8 J
Max. energy consumption per hour	8,000 J	12,000 J	18,000 J	36,000 J	64,000 J	92,000 J	150,000 J	180,000 J	1,440 J	2,400 J	5,040 J	11,520 J
Max. residual energy	0.01 J		0.02 J	0.05 J	0.16 J	0.32 J	0.8 J	2 J	–			

## Energy sources for DYSD-...-Y10

Size	12		20		25		32	
Max. energy consumption per stroke	12 J		90 J		180 J		270 J	
Max. energy consumption per hour	36,000 J		92,000 J		150,000 J		180,000 J	
Max. residual energy	0.05 J		0.32 J		0.8 J		2 J	

## Datasheet

## Energy sources for DYSD-...-Y14

Size	7	8	12	16	20
Max. energy consumption per stroke	4 J		8 J	30 J	50 J
Max. energy consumption per hour	12,000 J	18,000 J	36,000 J	64,000 J	92,000 J
Max. residual energy	0.01 J	0.02 J	0.05 J	0.16 J	0.32 J

## Weight

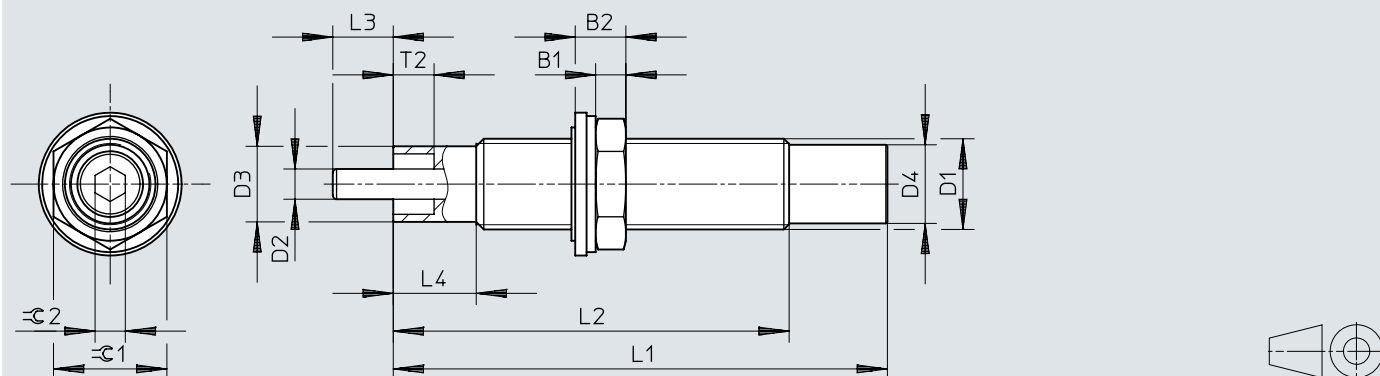
Allocation	Version Q11								Version Q13			
Size	5	7	8	12	16	20	25	32	4	5	7	8
Product weight	10 g	20 g	40 g	95 g	220 g	385 g	635 g	1,050 g	6.5 g	12 g	20 g	41.5 g
Load range	-								4.8 kg	8 kg	16.8 kg	38.4 kg

## Materials

Allocation	Version Q11								Version Q13			
Size	5	7	8	12	16	20	25	32	4	5	7	8
Material housing	High-alloy steel			Galvanised steel					High-alloy steel			
Material piston rod	High-alloy steel											
Material nut	Galvanised steel								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 according to the Festo internal definition of the degree of severity F1A with restrictions regarding the use of Cu/Zn/Ni			

## Dimensions

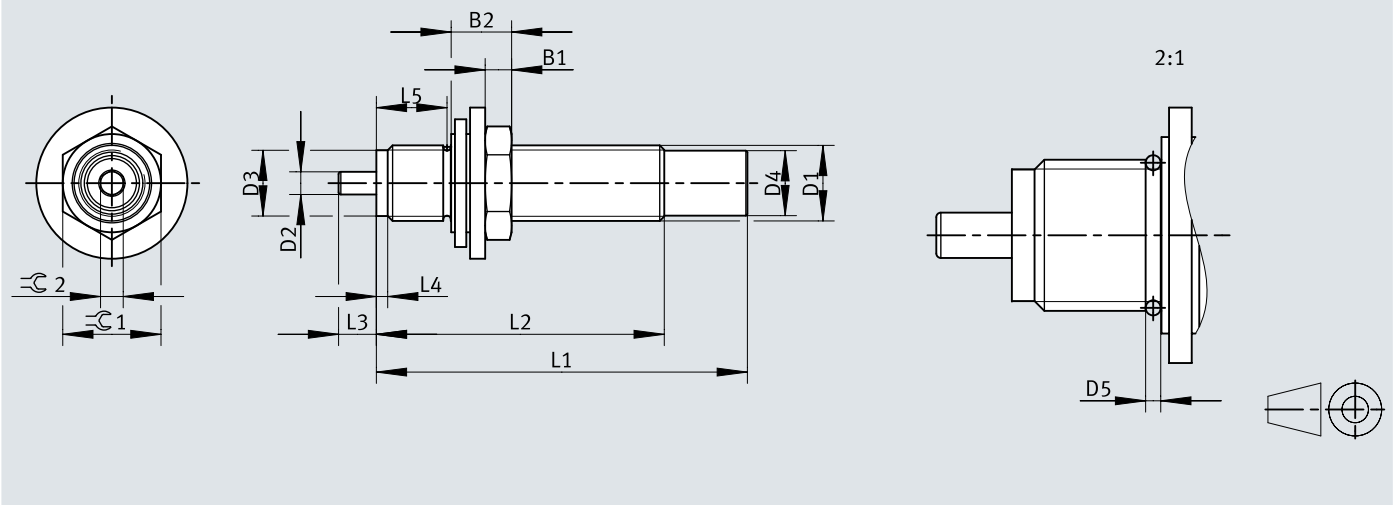
## Dimensions – Shock absorber DYSD-Q11-...

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

	B1	B2	D1	D2 ∅	D3 ∅ -0,1	D4 ∅	L1 +0,1	L2 +0,3/-0,2	L3	L4 ±0,2	T2	≅1	≅2
DYSD-Q11-5-5-Y1F-...	3	5,5	M8x1	2,5	-	6,7±0,05	43	34	5+0,32/-0,23	-	3	10	2,5
DYSD-Q11-7-5-Y1F-...	3,5	5,8	M10x1	3	-	8,6±0,05	49,1	38,1	5+0,32/-0,23	-	4,5	13	3
DYSD-Q11-8-8-Y1F-...	4	6,7	M12x1	4	10	10,4±0,1	65,4	52,4	8+0,35/-0,25	11	5,4	15	4
DYSD-Q11-12-12-Y1F-...	5	9	M16x1	6	14,2	14,5±0,1	89	76	12+0,35/-0,3	14	6,5	19	5
DYSD-Q11-16-15-Y1F-...	6	11	M22x1,5	8	19,4	19,6±0,1	111,8	94,8	15+0,45/-0,4	18	5	27	5
DYSD-Q11-20-16-Y1F-...	8	13,5	M26x1,5	10	23,6	23,8±0,1	137,5	116,5	15,5+0,45/-0,4	23	5	32	6
DYSD-Q11-25-24-Y1F-...	10	14,9	M30x1,5	12	27,5	27,8±0,1	174,5	146,5	24+0,5/-0,4	25	5	36	8
DYSD-Q11-32-25-Y1F-...	12	17,5	M37x1,5	15	34,4	34,8±0,1	177	149	25+0,5/-0,4	25	5	46	8

## Dimensions


Dimensions – Shock absorber DYSD-Q13-...

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


	B1	B2	D1	D2 $\varnothing$	D3 $\varnothing$	D4 $\varnothing$	L1	L2	L3	L4	L5	$\approx C1$	$\approx C2$
DYSD-Q13-4-4-Y1F-Y9	2,5	5,9	M6x0,5	1,8	5	5,3	36,8	29,8	4	0,5	6,1	8	2
DYSD-Q13-5-5-Y1F-Y9	3	7,1	M8x1	2,5	6,7	6,7	43	34	5	1,5	6,8	10	2,5
DYSD-Q13-7-5-Y1F-Y9	3,5	8	M10x1	3	8,7	8,6	49,1	38,1			9,4	13	3
DYSD-Q13-8-8-Y1F-Y9	4	7,5	M12x1	3,5	10,7	10,4	65,4	52,4	8	-	15	4	

## Ordering data


## DYSD-Q11-....Y9 – for semi-rotary drives DRRD

	Size	Stroke	Energy absorption	Part no.	Type
	5	5 mm	Large	8161520	DYSD-Q11-5-5-Y1F-L-Y9
	7			8161521	DYSD-Q11-7-5-Y1F-L-Y9
	8			8161523	DYSD-Q11-8-8-Y1F-L-Y9
	12	12 mm	Standard	8161525	DYSD-Q11-12-12-Y1F-Y9
	16	15 mm		8161528	DYSD-Q11-16-15-Y1F-Y9
	20	16 mm		8161530	DYSD-Q11-20-16-Y1F-Y9
	25	24 mm		8161533	DYSD-Q11-25-24-Y1F-Y9
		32	25 mm	Light	8161535


## DYSD-Q13-....Y9 – for semi-rotary drives DRRS

	Size	Stroke	Energy absorption	Part no.	Type
	4	4 mm	Standard	8199038	DYSD-Q13-4-4-Y1F-Y9
	5	5 mm		8199039	DYSD-Q13-5-5-Y1F-Y9
	7			8199040	DYSD-Q13-7-5-Y1F-Y9
	8	8 mm		8199041	DYSD-Q13-8-8-Y1F-Y9

## DYSD-Q11-....Y10 – for semi-rotary drives DRRD; hard version

	Size	Stroke	Energy absorption	Part no.	Type
	12	12 mm	Large	8161526	DYSD-Q11-12-12-Y1F-L-Y10
	20	16 mm		8161531	DYSD-Q11-20-16-Y1F-L-Y10
	25	24 mm		8161534	DYSD-Q11-25-24-Y1F-L-Y10
	32	25 mm		8161536	DYSD-Q11-32-25-Y1F-L-Y10

## DYSD-Q11-....Y14 – for semi-rotary drives DRRD; soft version

	Size	Stroke	Energy absorption	Part no.	Type
	7	5 mm	Standard	8161522	DYSD-Q11-7-5-Y1F-Y14
	8	8 mm	Light	8161524	DYSD-Q11-8-8-Y1F-S-Y14
	12	12 mm		8161527	DYSD-Q11-12-12-Y1F-S-Y14
	16	15 mm		8161529	DYSD-Q11-16-15-Y1F-S-Y14
	20	16 mm		8161532	DYSD-Q11-20-16-Y1F-S-Y14