

Shock absorber YSRW

FESTO



Characteristics

At a glance

Further information → [ysrw](#)

- Hydraulic shock absorber with path-controlled flow control function
- Slowly increasing cushioning force curve
- Long cushioning stroke
- Suitable for low-vibration operation
- Short cycle times possible
- Maintenance-free
- Through mounting thread with spanner flat

Diagrams

Further information → [ysrw](#)

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

Type code

| 001 | Series |
|------|----------------|
| YSRW | Shock absorber |

| 002 | Size |
|-----|-------|
| 5 | 5 mm |
| 7 | 7 mm |
| 8 | 8 mm |
| 10 | 10 mm |
| 12 | 12 mm |
| 16 | 16 mm |
| 20 | 20 mm |

| 003 | Stroke [mm] |
|-----|-------------|
| 8 | 8 |
| 10 | 10 |
| 14 | 14 |
| 17 | 17 |
| 20 | 20 |
| 26 | 26 |
| 34 | 34 |

Datasheet

General technical data

| Size | 5 | 7 | 8 | 10 | 12 | 16 | 20 |
|---|---|-------|-------|-------|-------|-------|-------|
| Stroke | 8 mm | 10 mm | 14 mm | 17 mm | 20 mm | 26 mm | 34 mm |
| Mode of operation | Single-acting, Pushing | | | | | | |
| Cushioning | Self-adjusting, Soft characteristic curve | | | | | | |
| Cushioning length | 8 mm | 10 mm | 14 mm | 17 mm | 20 mm | 26 mm | 34 mm |
| Type of mounting | Via lock nut | | | | | | |
| Max. impact speed | 2 m/s | 3 m/s | | | | | |
| Mounting position | optional | | | | | | |
| Ambient temperature | -10 ... 80°C | | | | | | |
| Corrosion resistance class CRC ¹⁾ | 2 - Moderate corrosion stress | | | | | | |

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

Reset time

| Size | 5 | 7 | 8 | 10 | 12 | 16 | 20 |
|--|-------|---|---|----|-------|----|----|
| Reset time at room temperature ¹⁾ | 0.2 s | | | | 0.3 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.

Forces

| Size | 5 | 7 | 8 | 10 | 12 | 16 | 20 |
|------------------------------------|-------|-------|-------|-------|---------|---------|---------|
| Min. insertion force ¹⁾ | 7.5 N | 10 N | 18 N | 25 N | 35 N | 60 N | 100 N |
| Max. stop force ²⁾ | 200 N | 300 N | 500 N | 700 N | 1,000 N | 2,000 N | 3,000 N |
| Reset force ³⁾ | 0.9 N | 1.2 N | 2.5 N | 3.5 N | 5 N | 6 N | 10 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 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 | 5 | 7 | 8 | 10 | 12 | 16 | 20 |
|------------------------------------|----------|----------|----------|----------|----------|----------|-----------|
| Max. energy consumption per stroke | 1.3 J | 2.5 J | 4 J | 8 J | 12 J | 35 J | 70 J |
| Max. energy consumption per hour | 10,000 J | 15,000 J | 21,000 J | 30,000 J | 41,000 J | 68,000 J | 100,000 J |
| Max. residual energy | 0.01 J | | 0.02 J | 0.03 J | 0.05 J | 0.16 J | 0.32 J |

Mass range

| Size | 5 | 7 | 8 | 10 | 12 | 16 | 20 |
|------------|------|------|-------|-------|-------|-------|-------|
| Mass range | 2 kg | 5 kg | 10 kg | 20 kg | 30 kg | 50 kg | 80 kg |

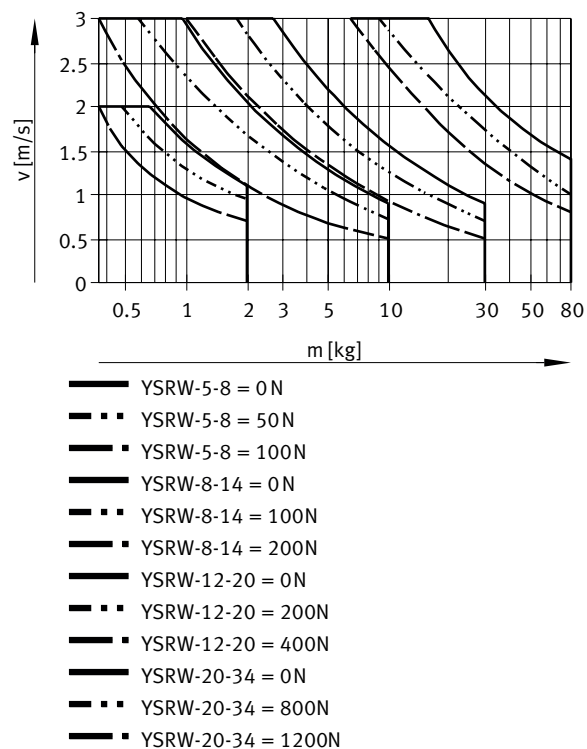
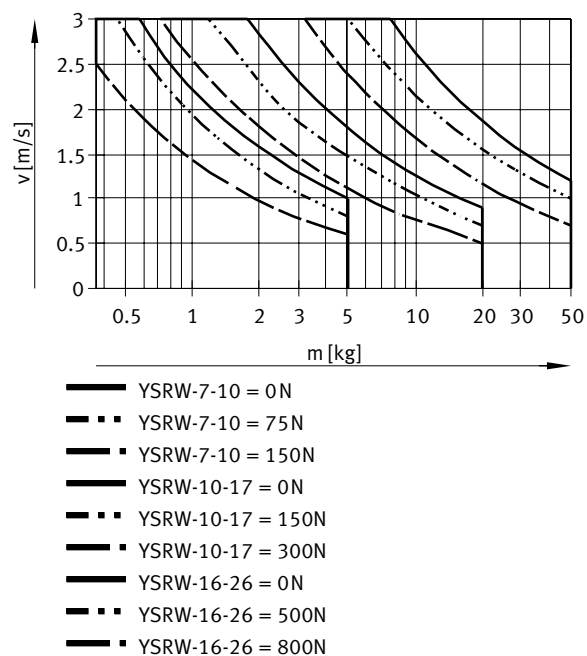
Weight

| Size | 5 | 7 | 8 | 10 | 12 | 16 | 20 |
|----------------|-----|------|------|------|------|-------|-------|
| Product weight | 8 g | 18 g | 34 g | 54 g | 78 g | 190 g | 330 g |

Materials

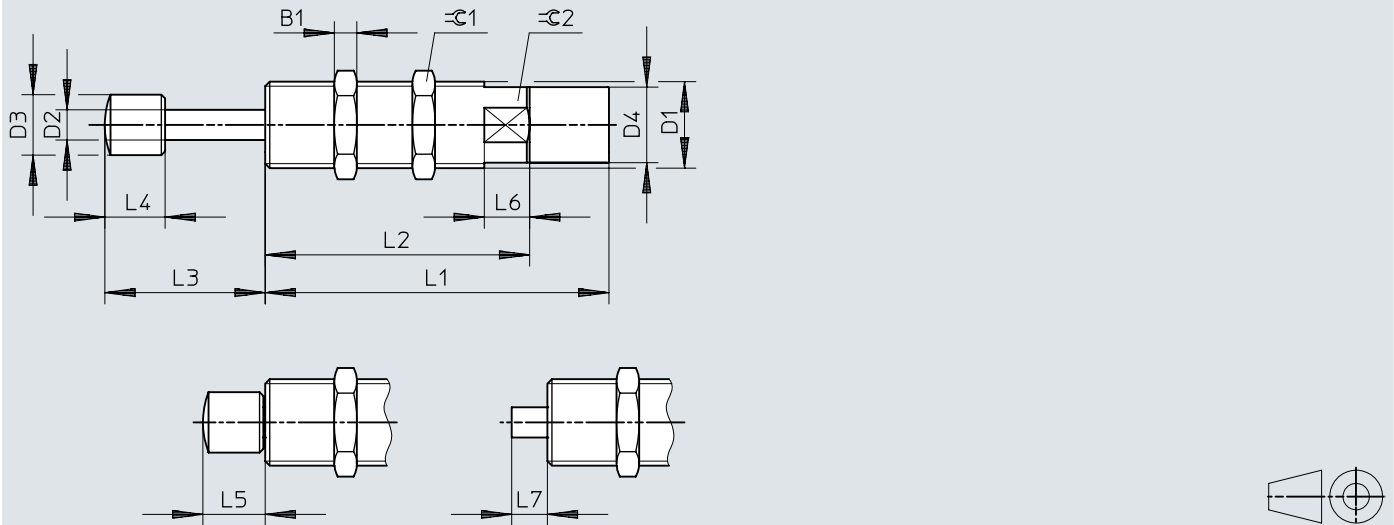
| Size | 5 | 7 | 8 | 10 | 12 | 16 | 20 |
|------------------------|------------------|---|---|------------------|----|----|----|
| Material piston rod | High-alloy steel | | | | | | |
| Material housing | High-alloy steel | | | Galvanised steel | | | |
| Material seals | NBR | | | | | | |
| Note on materials | RoHS-compliant | | | | | | |
| LABS (PWIS) conformity | VDMA24364-B2-L | | | | | | |

Datasheet

Impact velocity v as a function of mass m – YSRW-7/10/16

Dimensions

Dimensions – YSRW

Download CAD data → www.festo.com

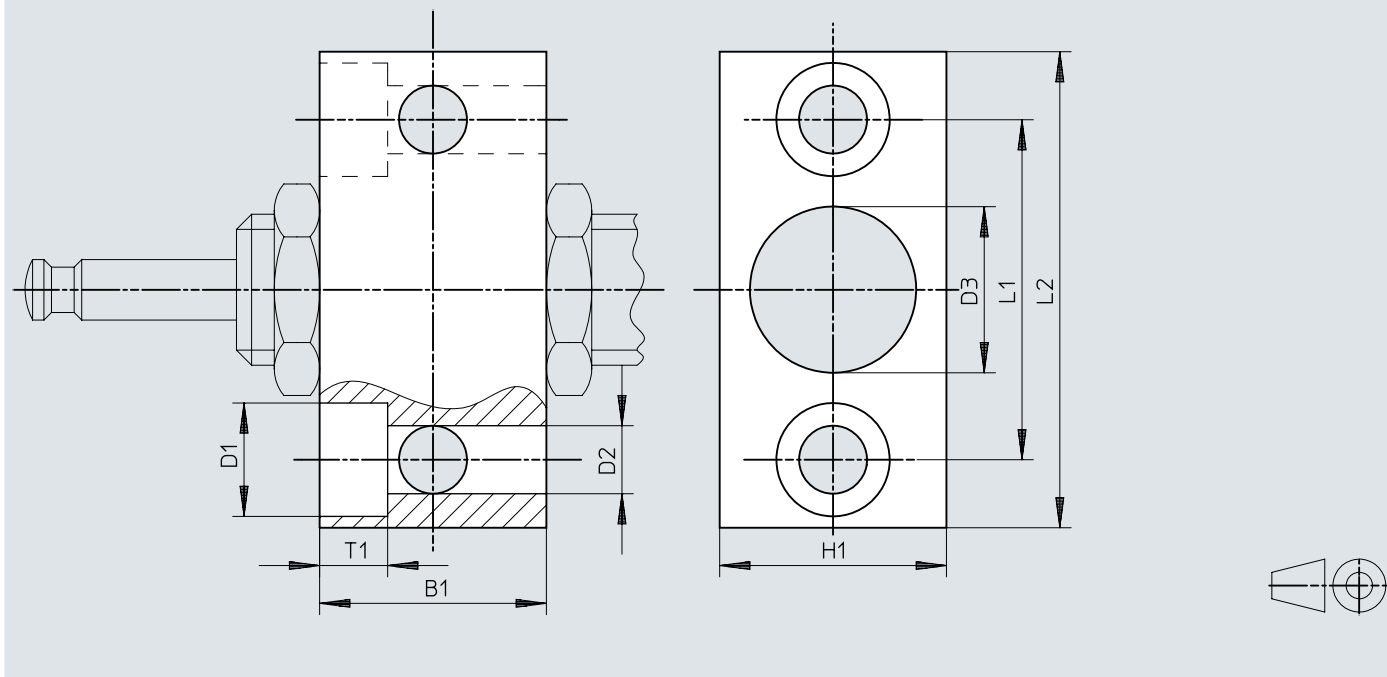
[1] To increase the service life: prevent dirt or liquids getting into the inner piston chamber via the piston rod (e.g. by using a cover).

| | B1 | D1 | D2 ∅ | D3 ∅ | D4 ∅ | L1 ±0,1 | L2 ±0,3 |
|------------|-----|---------|---------|-----------|-----------|------------|------------|
| YSRW-5-8 | 3 | M8x1 | 2,5 | 4,7 ±0,05 | 6,7 ±0,05 | 33,5 | 22,5 |
| YSRW-7-10 | 3,5 | M10x1 | 3 | 6 ±0,1 | 8,6 ±0,05 | 41 | 30 |
| YSRW-8-14 | 4 | M12x1 | 4 | 8 ±0,2 | 10,4 ±0,1 | 53 | 40 |
| YSRW-10-17 | 5 | M14x1 | 5 | 10 ±0,2 | 12,4 ±0,1 | 62 | 49 |
| YSRW-12-20 | 5 | M16x1 | 6 | 12 ±0,2 | 14,5 ±0,1 | 72,5 | 59,5 |
| YSRW-16-26 | 6 | M22x1,5 | 8 | 16 ±0,2 | 20 ±0,1 | 91 | 70 |
| YSRW-20-34 | 8 | M26x1,5 | 10 | 18,8 ±0,2 | 24 ±0,1 | 112 | 91 |

| | L3 | L4 | L5 | L6 +0,5 | L7 | $\sqrt{\text{Ra}}1$ | $\sqrt{\text{Ra}}2$ |
|------------|-----------------|----------|-----------------|------------|-----------------|---------------------|---------------------|
| YSRW-5-8 | 13,8 +0,6/-0,25 | 5,5 ±0,1 | 5,8 +0,35/-0,25 | 5 | 3,5 ±0,25 | 10 | 7 |
| YSRW-7-10 | 17,3 +0,7/-0,25 | 7 ±0,2 | 7,3 +0,35/-0,25 | 6 | 4,3 ±0,25 | 13 | 9 |
| YSRW-8-14 | 22,3 +0,7/-0,25 | 8 ±0,2 | 8,3 +0,4/-0,25 | 8 | 5,3 +0,3/-0,25 | 15 | 11 |
| YSRW-10-17 | 27,5 +0,7/-0,25 | 10 ±0,2 | 10,5 +0,4/-0,25 | 10 | 6,5 +0,3/-0,25 | 17 | 13 |
| YSRW-12-20 | 32,5 +0,7/-0,25 | 12 ±0,2 | 12,5 +0,4/-0,25 | 12 | 7,5 +0,3/-0,25 | 19 | 15 |
| YSRW-16-26 | 42,5 +0,7/-0,35 | 16 ±0,2 | 16,5 +0,4/-0,25 | 12 | 9,5 +0,3/-0,25 | 27 | 20 |
| YSRW-20-34 | 54,5 +0,7/-0,35 | 20 ±0,2 | 20,5 +0,4/-0,25 | 12 | 11,5 +0,3/-0,25 | 32 | 24 |

Dimensions

Dimensions – Mounting flange YSRF

Download CAD data → www.festo.com

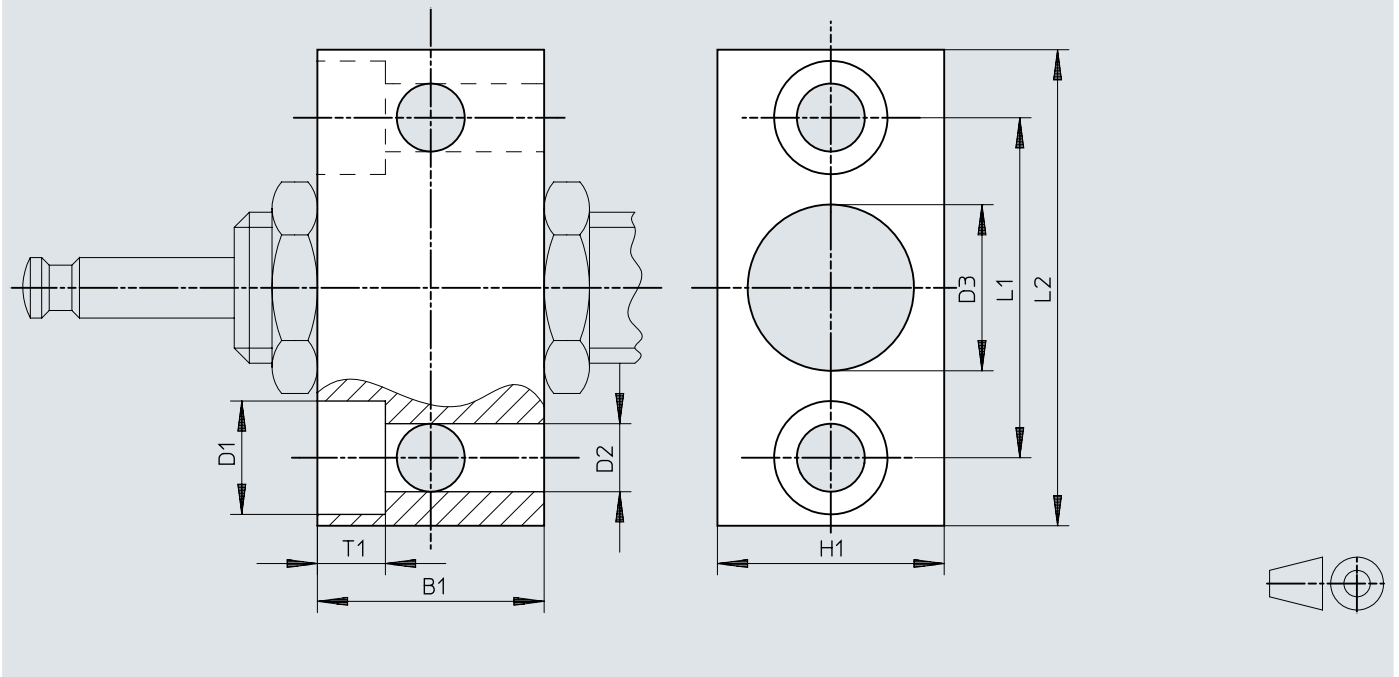
| | B1 | B2 | D1 | D2 | D3 | H1 | L1 | L2 |
|----------------------|----|-----|----|-----|------|----|----|----|
| YSRF-8 ¹⁾ | 16 | 5,5 | 10 | 5,5 | 10,2 | 16 | 25 | 38 |

1) For shock absorber diameter size 7

Dimensions

Dimensions – Mounting flange YSRF-C

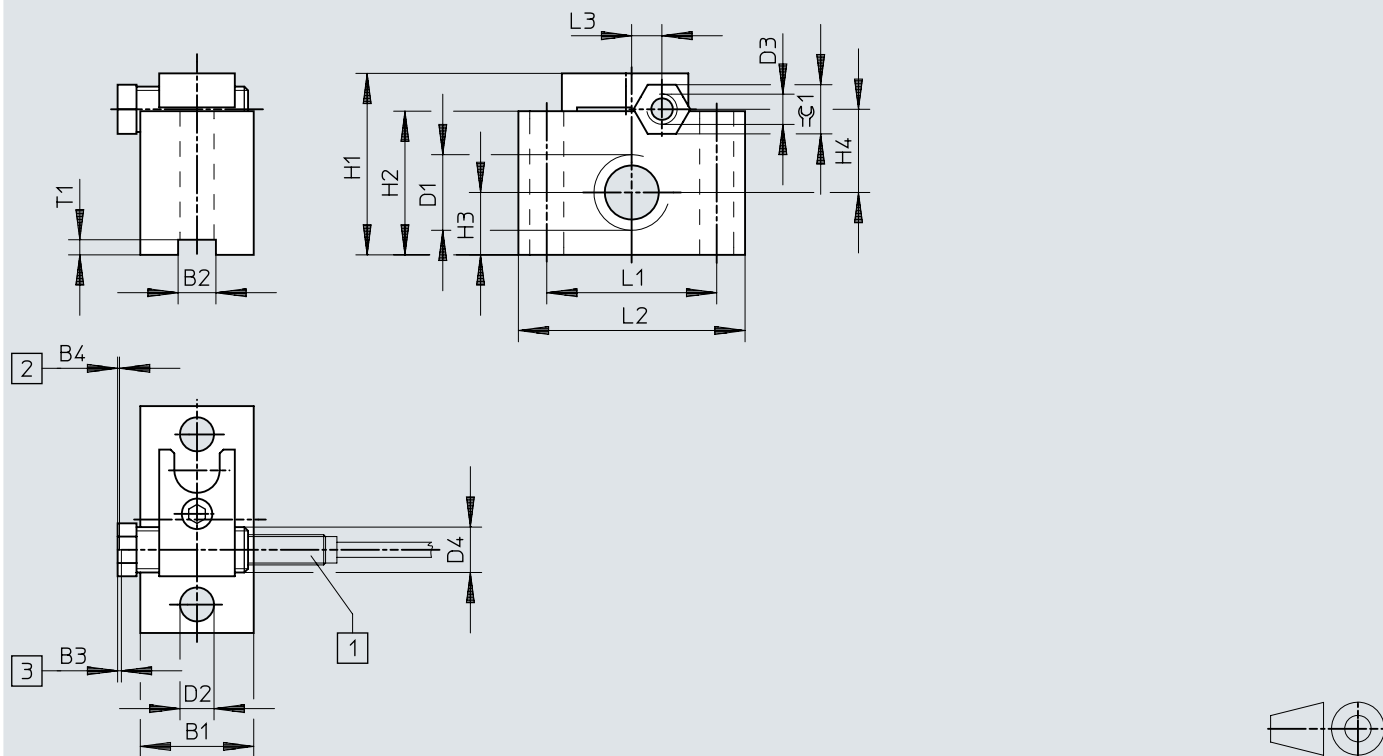
Download CAD data → www.festo.com



| | B1 | B2 | D1 | D2 | D3 | H1 | L1 | L2 |
|-----------|----|-----|----|-----|------|----|----|----|
| YSRF-8-C | 20 | 5,5 | 10 | 5,5 | 12,2 | 20 | 28 | 41 |
| YSRF-12-C | 25 | 6,8 | 11 | 6,6 | 16,2 | 25 | 36 | 50 |
| YSRF-16-C | 32 | 9 | 15 | 9 | 22,2 | 32 | 45 | 63 |
| YSRF-20-C | 40 | 11 | 18 | 11 | 26,2 | 40 | 56 | 78 |

Dimensions

Dimensions – Mounting flange YSRF-S-...-C

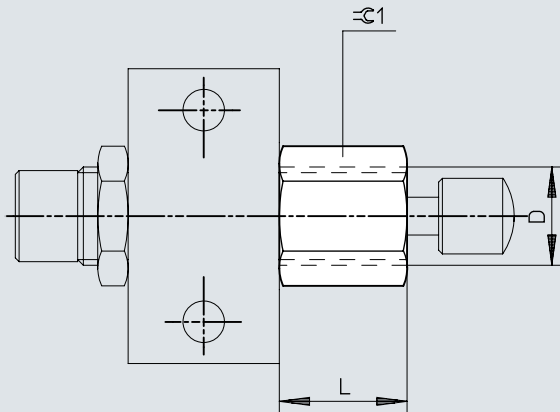
Download CAD data → www.festo.com

- [1] Sensor
 [2] Min. distance sensor/stop
 [3] End position shock absorbers

| | B1 | D1 | D2 ∅ | H1 | H2 | H3 | H4 | L1 | L2 | L3 | T1 |
|-------------|----|---------|---------|----|----|------|------|----|----|------|----|
| YSRF-S-8-C | 20 | M12x1 | 5,5 | 35 | 25 | 9,5 | 16 | 32 | 45 | 4 | 2 |
| YSRF-S-12-C | 25 | M16x1 | 6,6 | 42 | 32 | 12,5 | 20 | 36 | 50 | 3 | 4 |
| YSRF-S-16-C | 30 | M22x1,5 | 9 | 48 | 38 | 16,5 | 22 | 45 | 60 | 8 | 4 |
| YSRF-S-20-C | 30 | M26x1,5 | 11 | 52 | 42 | 19 | 23,5 | 56 | 80 | 11,5 | 4 |


Dimensions

Dimensions – End stop limiter YSRA-...-C

Download CAD data → www.festo.com

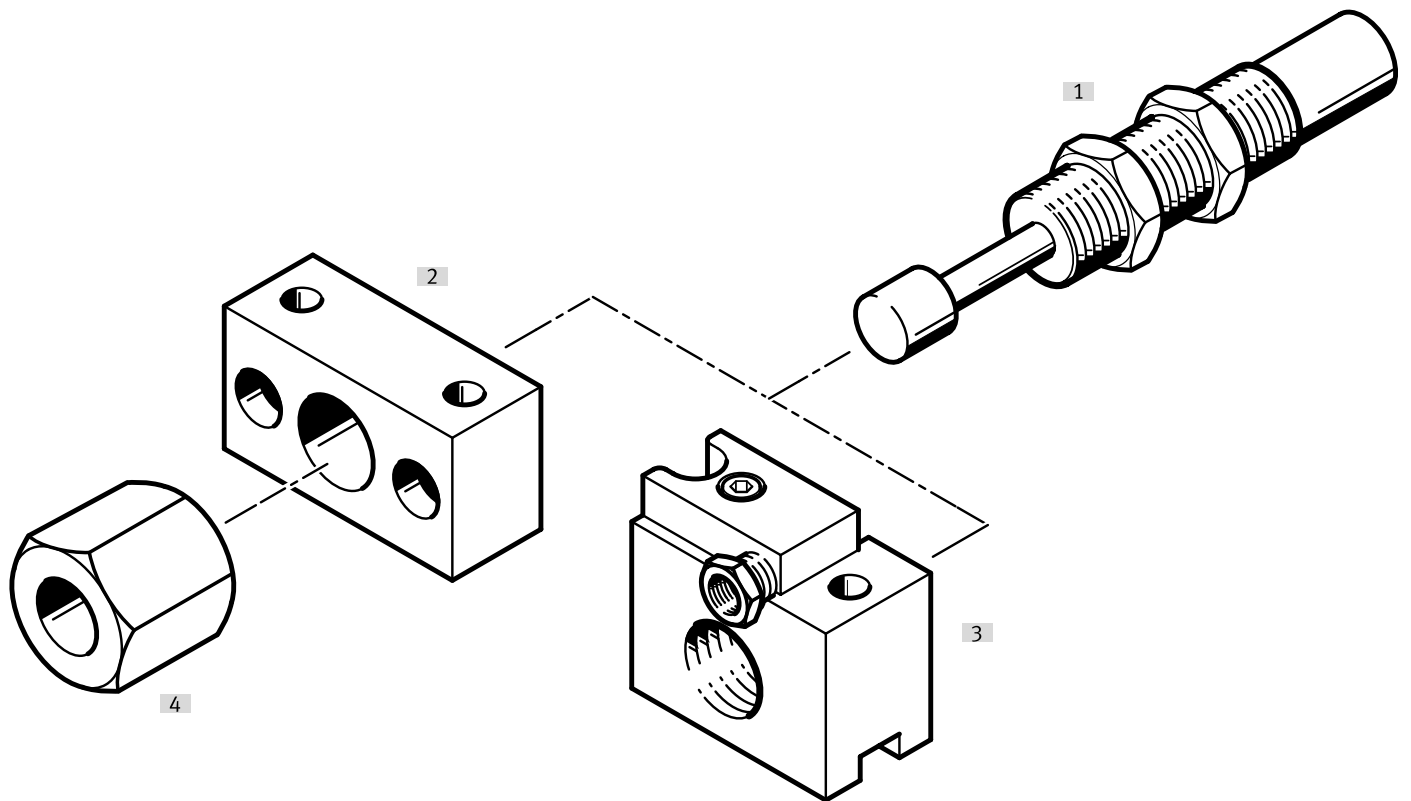
| | D | L | Ø1 |
|-----------|-------|------|----|
| YSRA-7-C | M10x1 | 14,5 | 13 |
| YSRA-8-C | M12x1 | 18 | 15 |
| YSRA-12-C | M16x1 | 24,5 | 19 |

Ordering data

| Ordering data | | | | | |
|---|------|--------|--|---------------|-------------------|
| | Size | Stroke | Cushioning | Part no. | Type |
|  | 5 | 8 mm | Self-adjusting, Soft characteristic curve | 191192 | YSRW-5-8 |
| | 7 | 10 mm | | 191193 | YSRW-7-10 |
| | 8 | 14 mm | | 191194 | YSRW-8-14 |
| | 10 | 17 mm | | 191195 | YSRW-10-17 |
| | 12 | 20 mm | | 191196 | YSRW-12-20 |
| | 16 | 26 mm | | 191197 | YSRW-16-26 |
| | 20 | 34 mm | | 191198 | YSRW-20-34 |

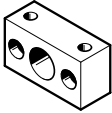
Peripherals

Peripherals overview YSRW

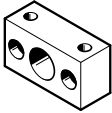


| Accessories | | | → Page/Internet |
|----------------------------|---|--|-----------------|
| Type/order code | Description | | |
| [1] Shock absorber YSRW | Hydraulic shock absorber with progressive cushioning characteristics | | ysrw |
| [2] Mounting flange YSRF | Mounting option for shock absorber | | 13 |
| [3] Mounting flange YSRF-S | Mounting option for shock absorber with integrated, attached stop sleeve and position detection | | 13 |
| [4] End stop limiter YSRA | Stroke limitation for shock absorber | | 14 |
| [5] Proximity switch SIEN | For mounting flange YSRF-S | | 13 |

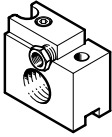
Accessories

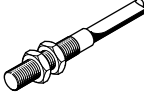
| Mounting flange YSRF/YSRF-C | | | | | |
|---|--------------------|-------------------|----------------|--------------|---------------|
| | Size ¹⁾ | Material housing | Product weight | Part no. | Type |
|  | 8 | Steel, Galvanised | 50 g | 11681 | YSRF-8 |

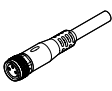
1) YSRF-8 for shock absorber size 7

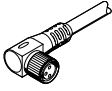
| Mounting flange YSRF/YSRF-C | | | | | |
|---|--------------------|-------------------|----------------|--------------|------------------|
| | Size ¹⁾ | Material housing | Product weight | Part no. | Type |
|  | 8 | Steel, Galvanised | 90 g | 34575 | YSRF-8-C |
| | 12 | | 180 g | 34576 | YSRF-12-C |
| | 16 | | 330 g | 34577 | YSRF-16-C |
| | 20 | | 700 g | 34578 | YSRF-20-C |

1) YSRF-8 for shock absorber size 7


| Mounting flange YSRF-S-C | | | | | |
|--|------|-------------------|----------------|--------------|--------------------|
| | Size | Material housing | Product weight | Part no. | Type |
|  | 8 | Steel, Galvanised | 12 g | 34579 | YSRF-S-8-C |
| | 12 | | 130 g | 34580 | YSRF-S-12-C |
| | 16 | | 180 g | 34581 | YSRF-S-16-C |
| | 20 | | 250 g | 34582 | YSRF-S-20-C |

| Inductive sensors M8, for mounting flange YSRF-S-C | | | | | | |
|---|------------------|----------------------------|------------------|-----------------------|---------------|------------------------|
| | Type of mounting | Switching element function | Switching output | Electrical connection | Part no. | Type |
|  | Via lock nut | N/C contact | PNP | Open end | 150390 | SIEN-M8B-PO-K-L |
| | | | | Plug M8, A-coded | 150391 | SIEN-M8B-PO-S-L |
| | | N/O contact | | Open end | 150386 | SIEN-M8B-PS-K-L |
| | | | | Plug M8, A-coded | 150387 | SIEN-M8B-PS-S-L |

| Connecting cables NEBU, straight | | | | | | |
|---|---|---|--|--------------|---------------|----------------------------|
| | Electrical connection 1, connector system | Electrical connection 2, connector system | Electrical connection 2, number of connections/cores | Cable length | Part no. | Type |
|  | M8x1, A-coded, to EN 61076-2-104 | Open end | 3 | 2.5 m | 541333 | NEBU-M8G3-K-2.5-LE3 |
| | | | | 5 m | 541334 | NEBU-M8G3-K-5-LE3 |

| Connecting cables NEBU, angled | | | | | | |
|---|---|---|--|--------------|---------------|----------------------------|
| | Electrical connection 1, connector system | Electrical connection 2, connector system | Electrical connection 2, number of connections/cores | Cable length | Part no. | Type |
|  | M8x1, A-coded, to EN 61076-2-104 | Open end | 3 | 2.5 m | 541338 | NEBU-M8W3-K-2.5-LE3 |
| | | | | 5 m | 541341 | NEBU-M8W3-K-5-LE3 |

Accessories

| End stop limiter YSRA-C | | | | | |
|--|------|-------------------|----------------|----------|-----------|
| | Size | Material housing | Product weight | Part no. | Type |
|  | 7 | Steel, Galvanised | 12 g | 150932 | YSRA-7-C |
| | 8 | | 28 g | 150933 | YSRA-8-C |
| | 12 | | 48 g | 150934 | YSRA-12-C |