Hydraulic cushioning cylinder DYHR

FESTO

Characteristics

At a glance Further information ➔ dyhr

- Hydraulic cushioning cylinder for constant, slow braking speeds across the entire stroke
- Braking speed can be precisely adjusted
- A built-in compression spring returns the piston rod to the initial position
- Suitable for slow feed speeds in the range up to 0.1 m/s

Diagrams Further information ➔ dyhr

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

Geometric characteristics

[Y5] Internal hex for adjusting cushioning

The hydraulic cushioning cylinder can be adjusted using the hexagon socket

Type code

001	Series	
DYHR	Hydraulic cushioning cylinder	

002	Size	
16	16 mm	
20	20 mm	
25	25 mm	
32	32 mm	

003	Stroke [mm]	
20	20	
25	25	
40	40	
50	50	
60	60	

004	Geometric characteristics	
Y5	Internal hex for adjusting cushioning	

Datasheet

General technical data						
Size	16		20		25	32
Stroke	20 mm	40 mm	25 mm	50 mm	40 mm	60 mm
Mode of operation	Single-acting, Pushing					
Cushioning	Adjustable					
Type of mounting	Via lock nut					
Max. impact speed	0.3 m/s					
Mounting position	optional					
Feed speed	0.2 ... 100 mm/s					
Ambient temperature	0 ... 80°C					
Corrosion resistance class CRC [1]	1 - Low corrosion stress					

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

Reset time						
Size	16		20		25	32
Stroke	20 mm	40 mm	25 mm	50 mm	40 mm	60 mm
Reset time at room temperature [1]	0.4 s	0.8 s	0.5 s	1 s	0.8 s	1.2 s

1) Increased reset times must be expected at low temperatures (0 °C). Up to 5 s for sizes 12 and 16 and up to 12 s for sizes 25 and 32.

Forces				
Size	16	20	25	32
Min. feed force [1]	160 N	250 N	400 N	640 N
Max. feed force [2]	1,600 N	2,500 N	4,000 N	6,400 N
Reset force [3]	5.4 N	9 N	12.5 N	18 N

1) Minimum force required for constant and repeatable braking speed

2) Corresponds to the max. force in the end position

3) With advanced piston rod

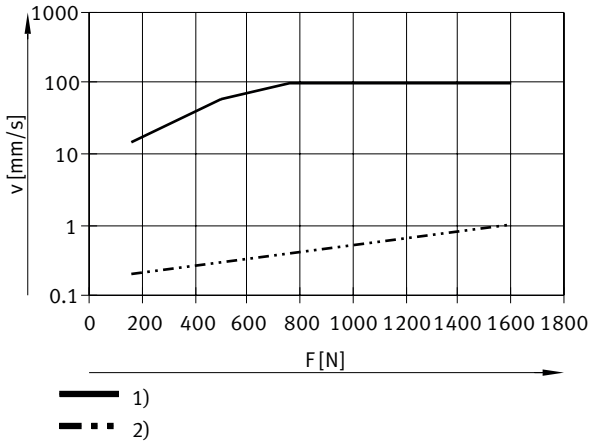
Energy						
Size	16		20		25	32
Stroke	20 mm	40 mm	25 mm	50 mm	40 mm	60 mm
Max. energy consumption per stroke	32 J	64 J	62.5 J	125 J	160 J	384 J
Max. energy consumption per hour	65,000 J	100,000 J	90,000 J	140,000 J	150,000 J	220,000 J
Max. residual energy	0.16 J		0.32 J		0.8 J	2 J

Weight						
Size	16		20		25	32
Stroke	20	40	25	50	40	60
Product weight	190 g	255 g	360 g	440 g	720 g	1,380 g

Materials				
Size	16	20	25	32
Material piston rod	Hardened, High-alloy steel			
Material housing	Steel, Galvanised			
Material seals	NBR			
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-B2-L			

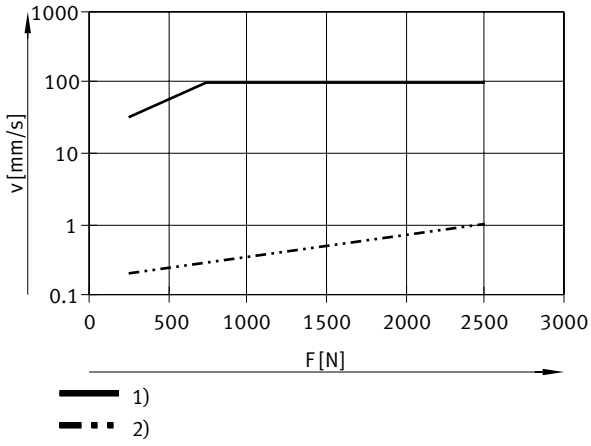
Datasheet

Braking speed v as a function of drive force F and flow control valve setting – DYHR-16



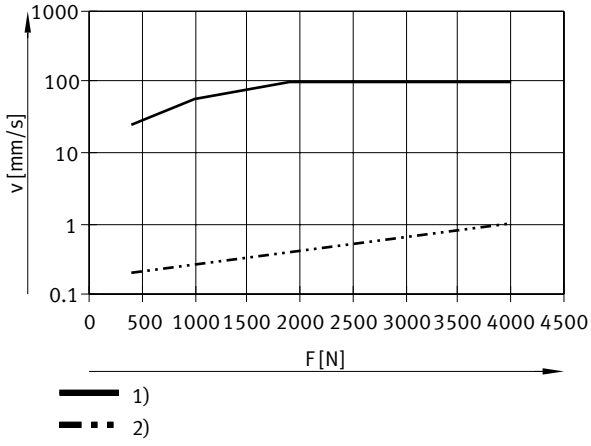
1) = Flow control valve open
2) = Flow control valve closed

Braking speed v as a function of drive force F and flow control valve setting – DYHR-20



1) = Flow control valve open
2) = Flow control valve closed

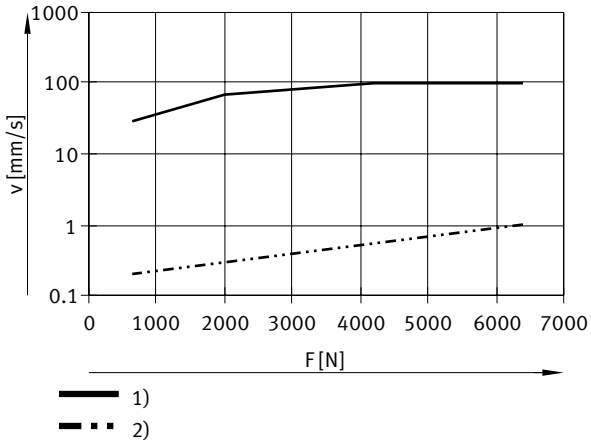
Braking speed v as a function of drive force F and flow control valve setting – DYHR-25



1) = Flow control valve open
2) = Flow control valve closed

Datasheet

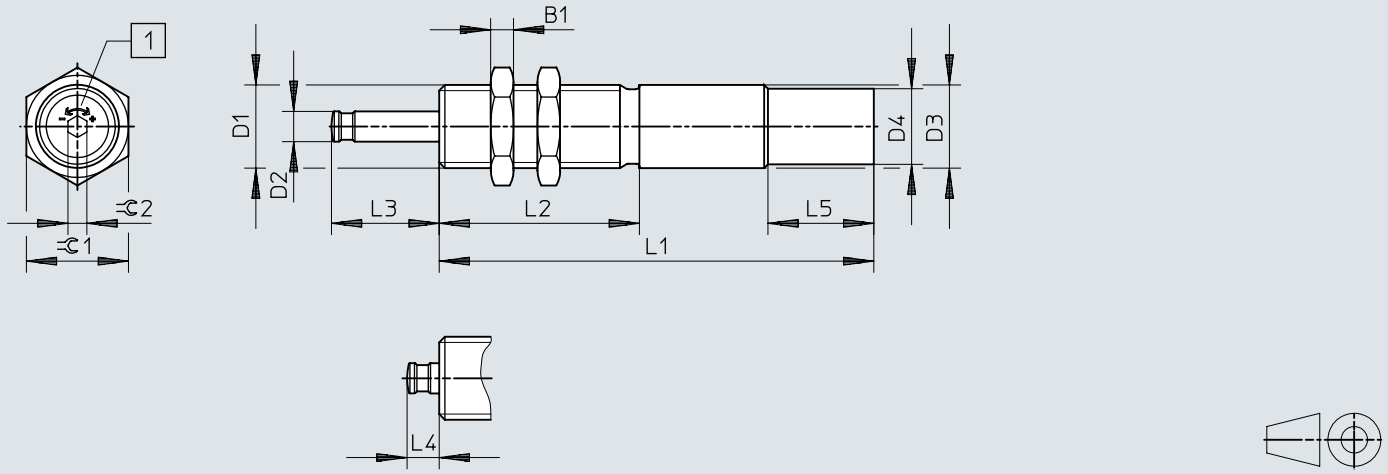
Braking speed v as a function of drive force F and flow control valve setting – DYHR-32



1) = Flow control valve open
2) = Flow control valve closed

Dimensions

Dimensions – DYHR Download CAD data ➔ www.festo.com



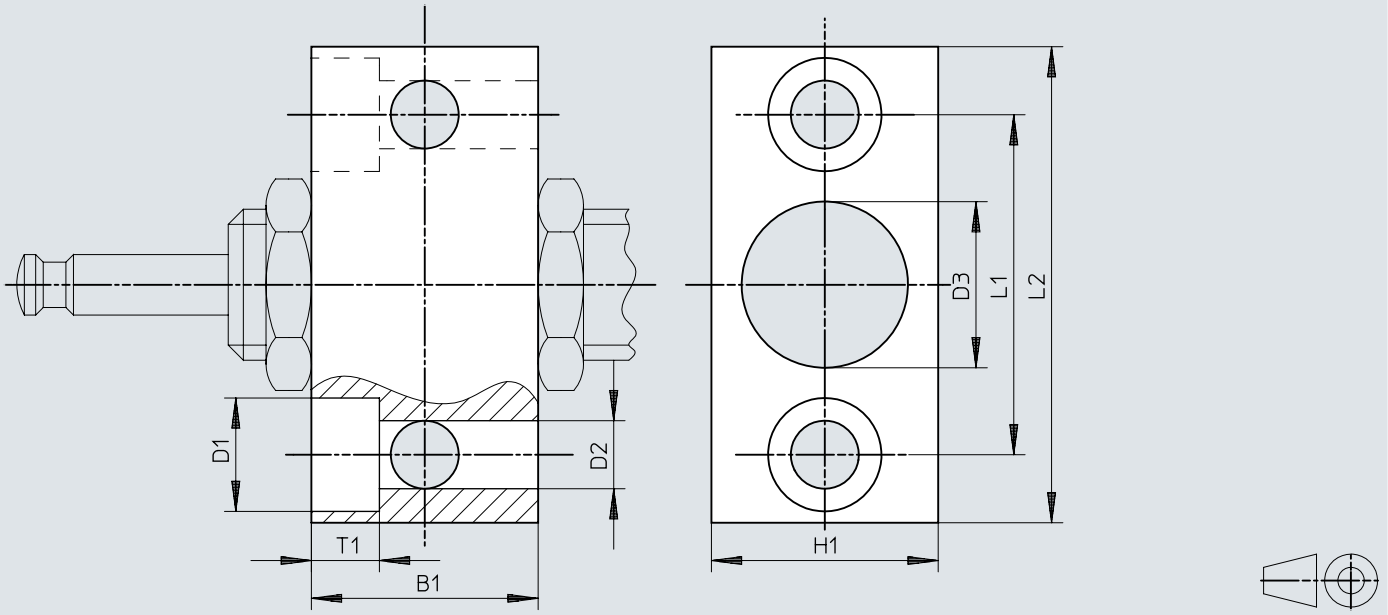
[1] Speed control

	L1[1)]	B1	D1	D2 ø	D3 ø +0,15/–0,1	D4 ø +0,15	L1	L2 ±0,1	L3	L4	L5 ±0,2	⊂1	⊂2
DYHR-16-20-Y5	20	6	M20x1,25	8	20	–	115±0,1	53	28,5+0,4/–0,3	8,5+0,45/–0,4	–	24	5
DYHR-16-40-Y5	40						150±0,1		48,5+0,4/–0,3				
DYHR-20-25-Y5	25	8	M24x1,25	10	24	–	138±0,1	60	35,6+0,4/–0,3	10,6+0,45/–0,4	–	30	5
DYHR-20-50-Y5	50						181±0,1		60,6+0,4/–0,3				
DYHR-25-40-Y5	40	10	M30x1,5	12	30	28,8	178±0,1	80	52,8+0,4/–0,3	12,8+0,45/–0,4	28	36	6
DYHR-32-60-Y5	60	12	M37x1,5	15	37	34,8	230±0,15	108	76+0,5/–0,4	16+0,5/–0,4	28	46	6

1) Stroke

Dimensions

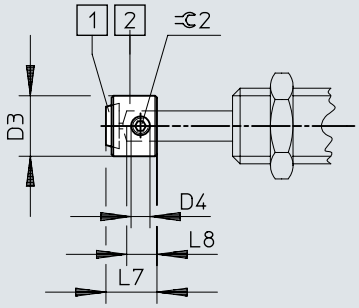
Dimensions – Mounting flange YSRF Download CAD data ➔ www.festo.com



	B1	B2	D1	D2	D3	H1	L1	L2
YSRF-16	30	9	15	9	20,2	30	45	63
YSRF-20	36	11	18	11	24,2	36	56	78
YSRF-25	45	13	20	13,5	30,2	45	63	86
YSRF-32	55	15	24	15,5	37,2	55	80	108

Dimensions

Dimensions – Buffer YSRP Download CAD data → www.festo.com



[1] Polyurethane insert
[2] Buffer

	D3	D4	L7	L8	⫧ 2
YSRP-16	16	M5	13,5	8	2,5
YSRP-20	20	M6	17	10	3
YSRP-25	25	M8	20,5	12	4
YSRP-32	32	M8	26	15	4

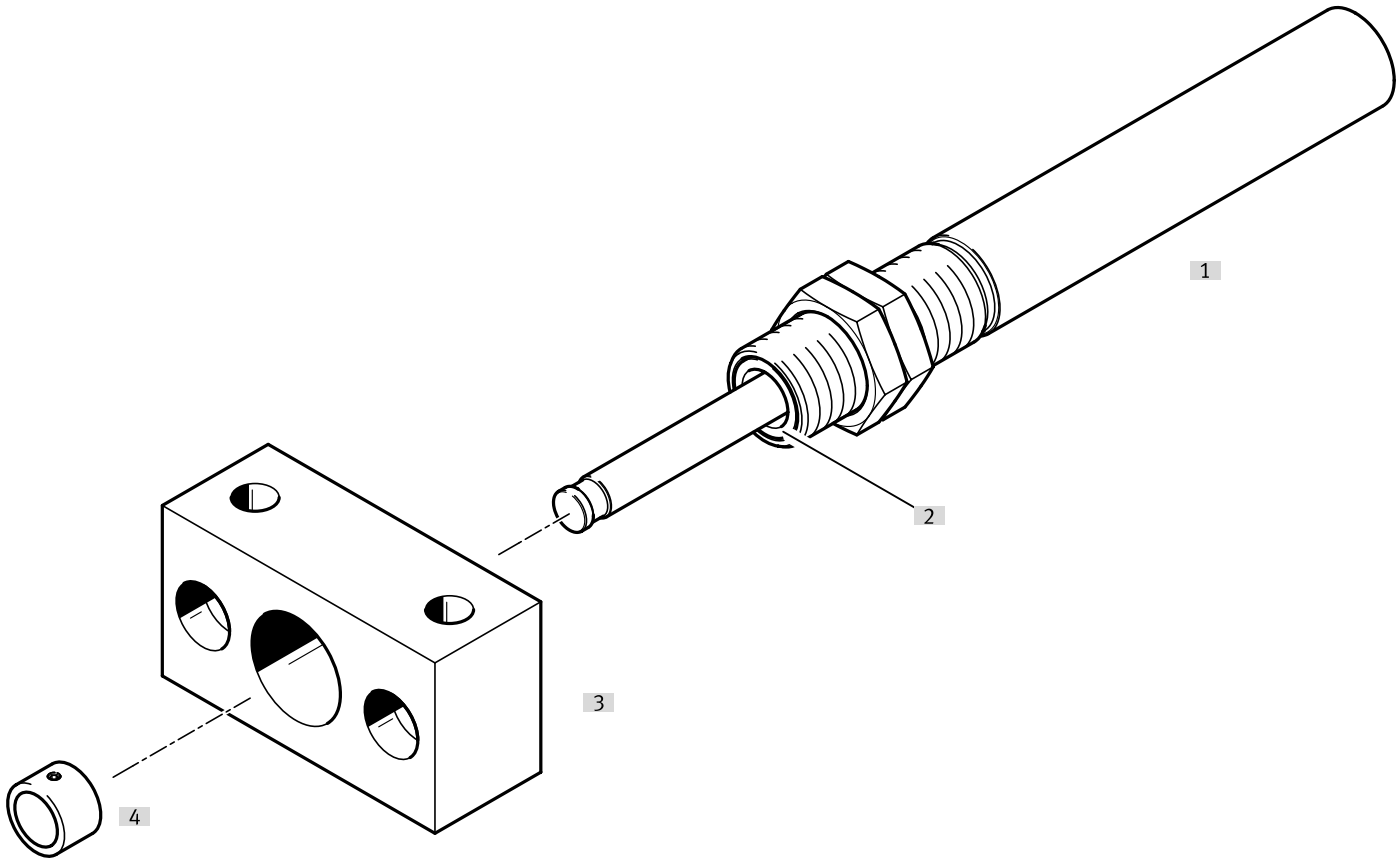
Ordering data

Ordering data

	Size	Stroke	Cushioning	Part no.	Type
	16	20 mm	Adjustable	**1155690**	**DYHR-16-20-Y5**
		40 mm		**1155691**	**DYHR-16-40-Y5**
	20	25 mm		**1155692**	**DYHR-20-25-Y5**
		50 mm		**1155693**	**DYHR-20-50-Y5**
	25	40 mm		**1155694**	**DYHR-25-40-Y5**
	32	60 mm		**1155696**	**DYHR-32-60-Y5**

Peripherals

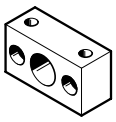
Peripherals overview DYHR



Accessories			→ Page/Internet
	Type/order code	Description	
[1]	Hydraulic cushioning cylinder DYHR	Hydraulic cushioning cylinder with return spring for slow feed speeds	dyhr
[2]	Scraper/hardened piston rod	The scraper and the hardened piston rod significantly increase the service life. - Scraper: prevents the ingress of dirt - Hardened piston rod: offers protection against scratches	dyhr
[3]	Mounting flange YSRF	Mounting option for hydraulic cushioning cylinder	12
[4]	Buffer YSRP	For protecting the piston rod	12

Accessories

Mounting flange YSRF/YSRF-C

	Size	Material housing	Product weight	Part no.	Type
	16	Steel, Galvanised	300 g	**11683**	**YSRF-16**
	20		535 g	**11684**	**YSRF-20**
	25		895 g	**11685**	**YSRF-25**
	32		1,730 g	**11686**	**YSRF-32**

Buffer YSRP

	Size	Material housing	Product weight	Part no.	Type
	16	Steel, Galvanised	15 g	**11134**	**YSRP-16**
	20		27 g	**11135**	**YSRP-20**
	25		52 g	**11136**	**YSRP-25**
	32		110 g	**11137**	**YSRP-32**