

Slim and self-adjusting

Round cylinders DSNU, ESNU and DSNU-S



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Agenda:

1. Brief overview of the drive
2. Find out about solutions for your requirements



Slim and self-adjusting

Round cylinders DSNU, ESNU and DSNU-S

- **Best performance**
proven reliability of the DSNU, ESNU series
- **Extremely versatile**
thanks to optional variants in the modular system for the DSNU, ESNU
- **Minimal space requirement**
New space-optimised series DSNU-S
- **Extremely easy and time-saving installation**
With self-adjusting cushioning PPS
- **Extremely economical**
Thanks to attractive price and long service life
- **Easily available**
Short delivery times and worldwide availability of the Core Range



Pneumatic round cylinder

DSNU, ESNU (ISO)



Update
2021

- For use in any application, standardised (ISO 6432)
- Reliable design principles for over 30 years
- **Wide range of applications and variants**

DSNU-S (space-saving)



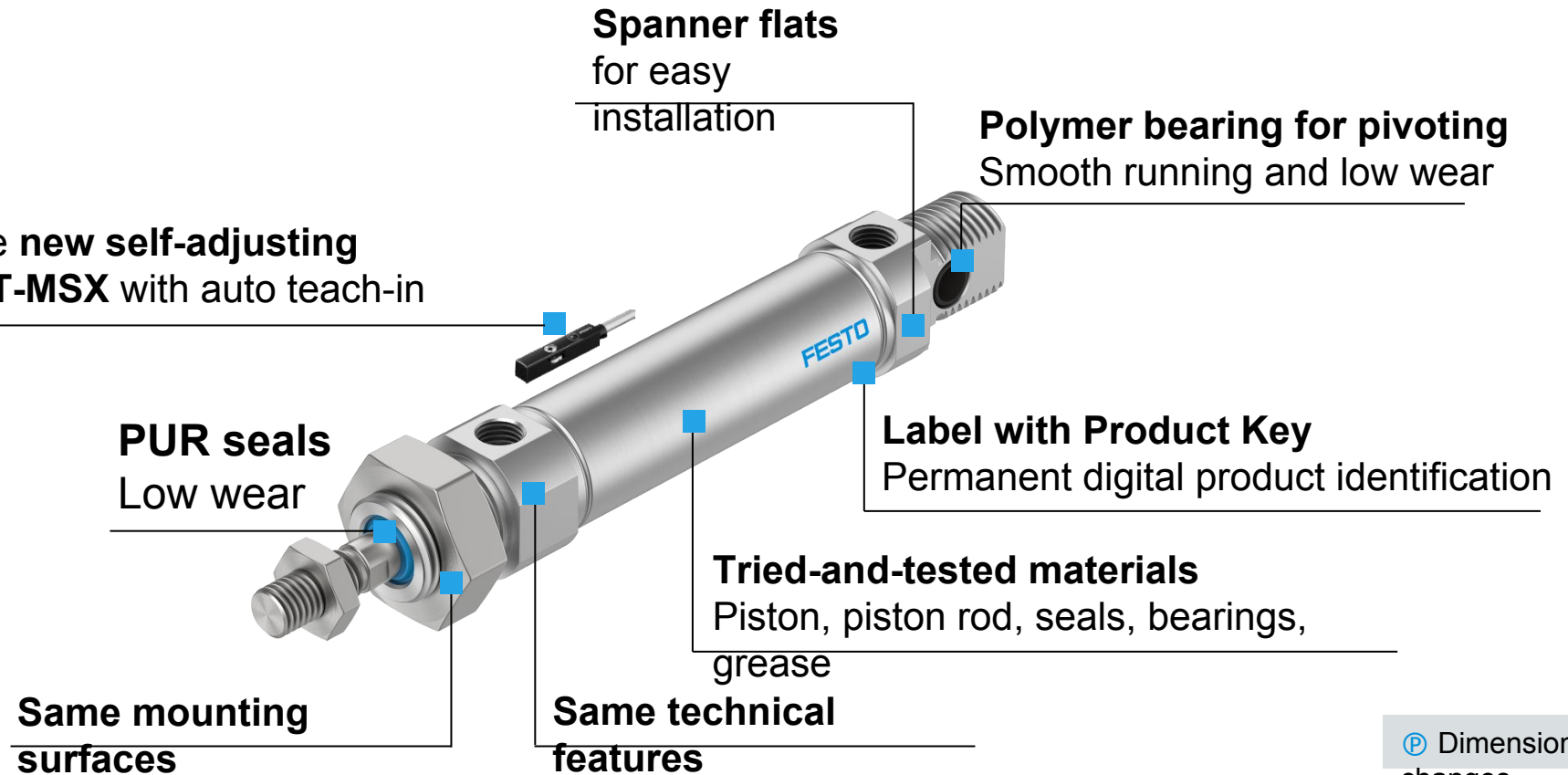
Since July
2020

- Up to 35 mm shorter
- Up to -40% slimmer
- Designed for direct mounting in space-critical applications

DSNU, ESNU ISO variants – Product relaunch

Updates from 2021

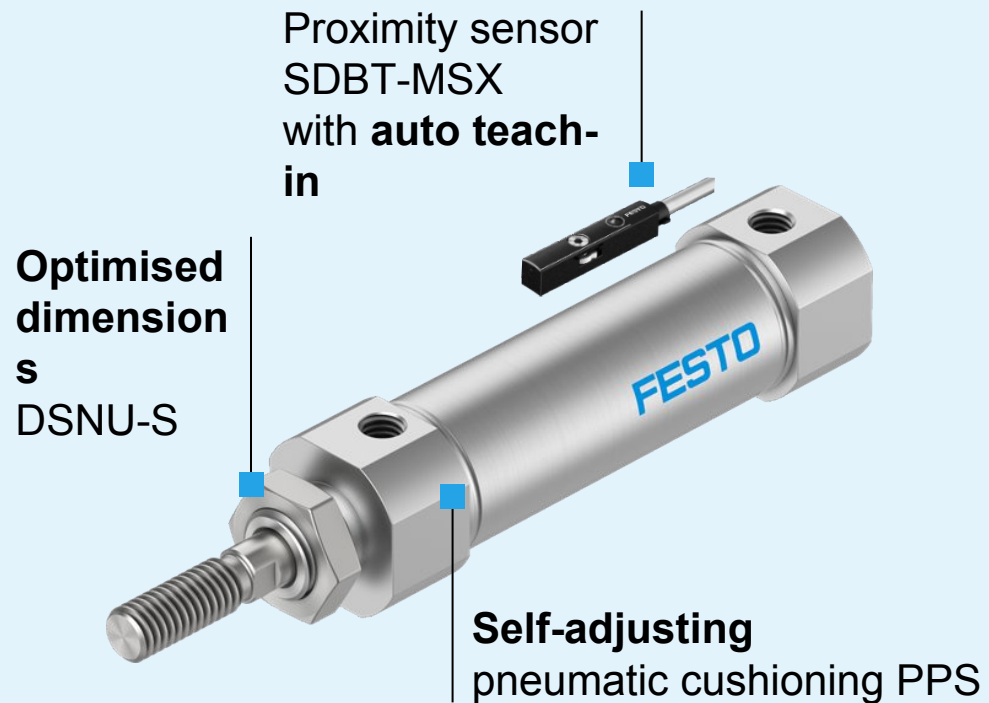
Sensing option using the **new self-adjusting proximity sensor SDBT-MSX** with auto teach-in function



Ⓟ Dimensional changes

Continuation of usual part numbers and type codes

New possibilities of the space-saving DSNU-S



Copper-free variant available
Usage for battery production

Smallest space requirements for your machine design

- Up to 40% slimmer
- Up to 35 mm shorter than DSNU ISO variants
- ☾ Unbeatable in tight conditions

Lightweight

Easy to assemble, even when things are tight

- Self-adjusting cushioning above Ø 16
- Self-adjusting proximity sensor SDBT-MSX
- ☾ It doesn't get any faster

A word cloud centered around the text "Your requirements?". The words are arranged in a circular pattern around the central text. The words include: "Availability", "Features", "Delivery time", "Functions", "Applications", "Maintenance", "Warehousing", "Product service life", "Tips and tricks", and "g". The words are in various shades of blue and black, with different font sizes and orientations.

Availability **Features** **Your requirements?** **Functions** **Maintenance** **Warehousing** **Product service life** **Applications** **Tips and tricks** **Delivery time**

Topics



DSNU-S-...
8 ... 16

DSNU-S-...
20/25

Motivation

Features

Dimensions

Interfaces

Sustainability

Application

Features

Dimensions



DSNU
(ISO)

Comparison:	<u>Features</u>	<u>Forces</u>	<u>Technical data</u>	<u>Accessories</u>	<u>PPS cushioning</u>	<u>Overview</u>
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Features

DSNU (ISO)

Self-adjusting pneumatic cushioning PPS

- Easy installation
- Time saving
- Reduced space requirements w/o screw
- Tamper-proof

Piston with magnet for sensing standard

- Easy product selection and stock handling
- Usage of new self-adjusting cylinder switch SDBT-MSX

Seal for piston rod and piston made of PUR

- Wear resistant

- Economical by long lifetime

Piston rod made of stainless steel

- Corrosion and wear resistant to prevent leakage
- Economical by long lifetime

Piston with integrated elastic cushioning element

- Standard with all cushioning variants
- Reduced effort for noise reduction
- Robust for max. impact force
- High performance also with higher loads and speeds
- Economical by long lifetime

Polymer bearing for pivoting

- Standard for all sizes
- Reduced wear
- Economical by long lifetime

Label with product-key

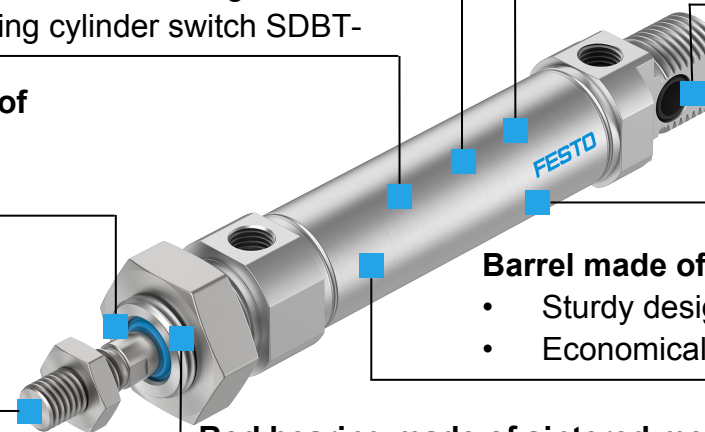
- Unique product identification
- Service for customer and logistics, re-ordering and traceability

Barrel made of stainless steel

- Sturdy design
- Economical by long lifetime

Rod bearing made of sintered metal

- Robust performance with lateral loads, long strokes and applied moment with pivoting
- Economical by long lifetime

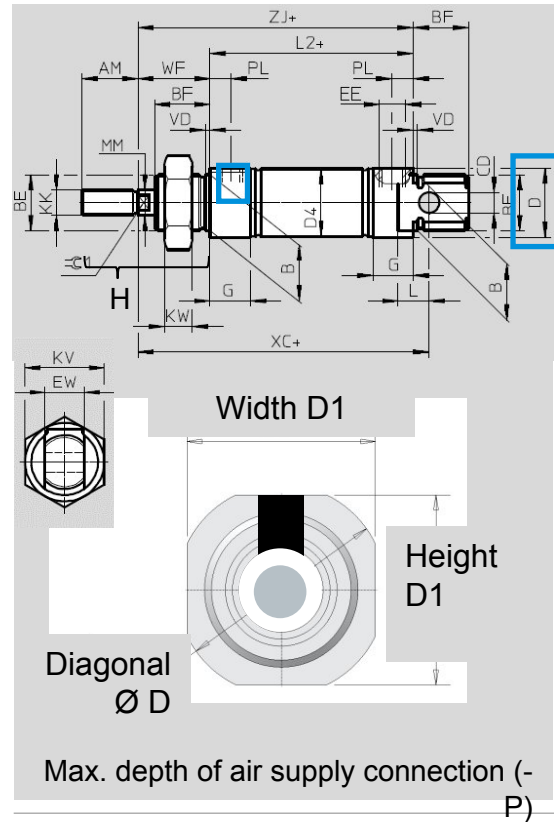


Variety of optional modular kit types

- Perfect fit to the surroundings
- Easy ordering of serial products
- Global availability by known order channels

Dimensions

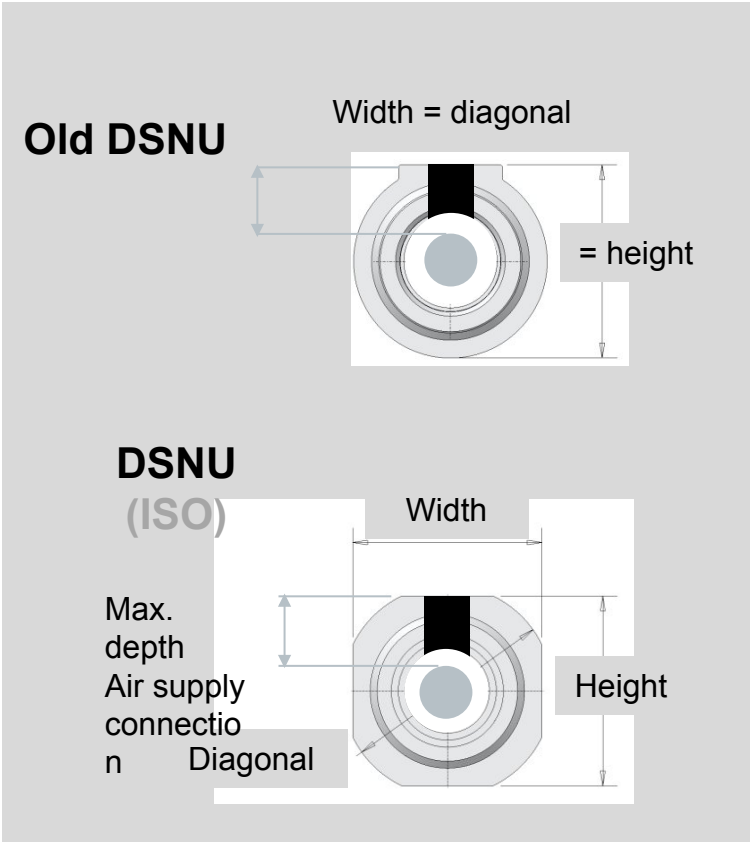
Compatibility comparison



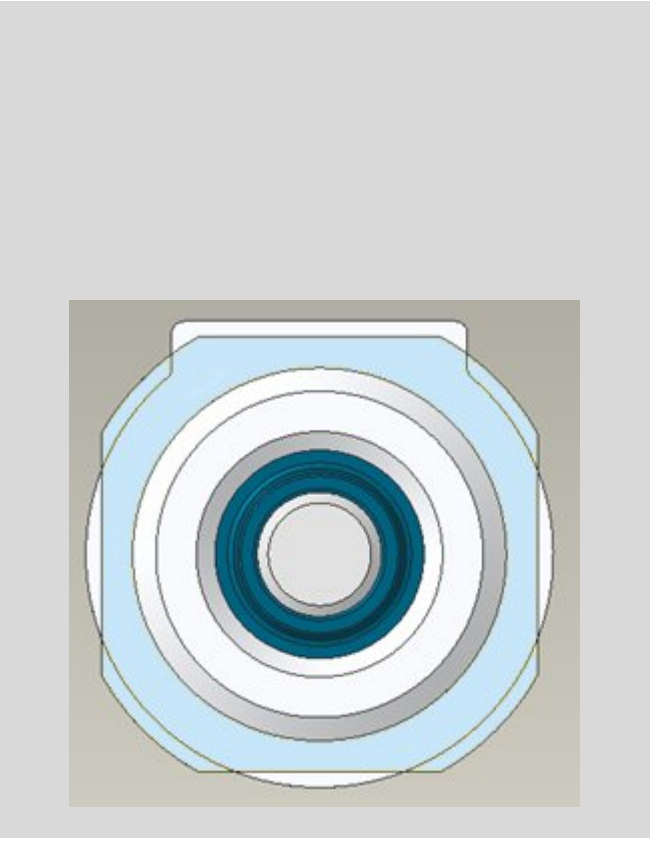
	DSNU (old)								DSNU (ISO)							
Ø	8	10	12	16	20	25	32	40	8	10	12	16	20	25	32	40
AM	12		16		20	22	22	24	12		16		20	22	22	24
WF	16		22		24	28	34	39	16		22		24	28	34	39
BF	12		17		20	22	26	30	12		17		20	22	26	30
H	28		38		44	50	56	63	28		38		44	50	56	63
L2+	46		50	56	68	69.5	69.5	84.6	46		50	56	68	69.5	69.5	84.6
ZJ+	62		72	78	92	97.5	103.5	123.6	62		72	78	92	97.5	103.5	123.6
XC+	64		75	82	95	104	117.5	139.6	64		75	82	95	104	117.5	139.6
D1	15		20		27	27	38	46	14		18		26	27	38	45
D	15		20		27		38	46	16		20		30		41	49
KV	19		24		32	32			19		24		32	32		
KK	M4		M6		M8	M10 x1.25	M10 x1.25	M12 x1.25	M4		M6		M8	M10 x1.25	M10 x1.25	M12 x1.25
BE	M12x1.25		M16x1.5		M22x1.5		M30 x1.5	M38 x1.5	M12x1.25		M16x1.5		M22x1.5		M30 x1.5	M38 x1.5
EE	M5				G1/8			G1/4	M5				G1/8			G1/4
-P	5,5		7		9,5	8,5	13	15	5		6		9	8,5	13	14,5

Applications

Comparison of end caps DSNU (ISO)

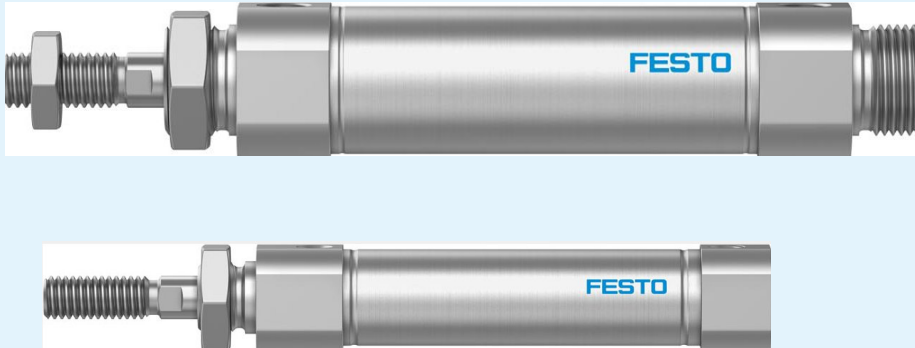


Deltas in the space required for the new design				
Ø	Width = Height = D1	Diagonal D	Max. depth of air supply connection	Design
8	- 1 mm	+ 1 mm	- 0,5 mm	New design
10	- 1 mm	+ 1 mm	- 0,5 mm	
12	- 2 mm	0	- 1 mm	
16	- 2 mm	0	- 1 mm	
20	- 1 mm	+ 3 mm	- 0,5 mm	
25	0	+ 3 mm	0	
32	0	+ 3 mm	0	
40	- 1 mm	+ 3 mm	- 0,5 mm	
50	0	0	0	Old design
63	0	0	0	



Motivation

DSNU-S-...



Space-optimised design

Attractively priced

Extended portfolio for round cylinders

Features

DSNU-S-... space optimized

Self-adjusting pneumatic cushioning PPS

- Easy installation
- Time saving
- Reduced space requirements w/o

screw

- Tamper-proof

Piston with magnet for sensing standard

- Easy product selection and stock handling
- Usage of new self-adjusting cylinder switch SDBT-

Seal for piston rod and piston made of PUR

- Wear resistant
- Economical by long lifetime

Piston rod made of stainless steel

- Corrosion and wear resistant to prevent leakage
- Economical by long lifetime

Free of copper

- Usage for battery production
- No emission of unwanted particles
- Quality of production

Piston with integrated elastic cushioning element

- Standard with all cushioning variants
- Reduced effort for noise reduction
- Robust for max. impact force
- High performance also with higher loads and speeds
- Economical by long lifetime

Without pivot bearing and without mounting thread for bore size 8/12/16

- Short end cap
- Economical by minimized space

Label with product-key

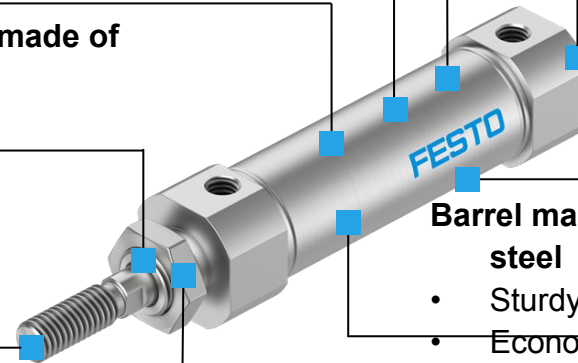
- Unique product identification
- Service for customer and logistics, re-ordering and traceability

Barrel made of stainless steel

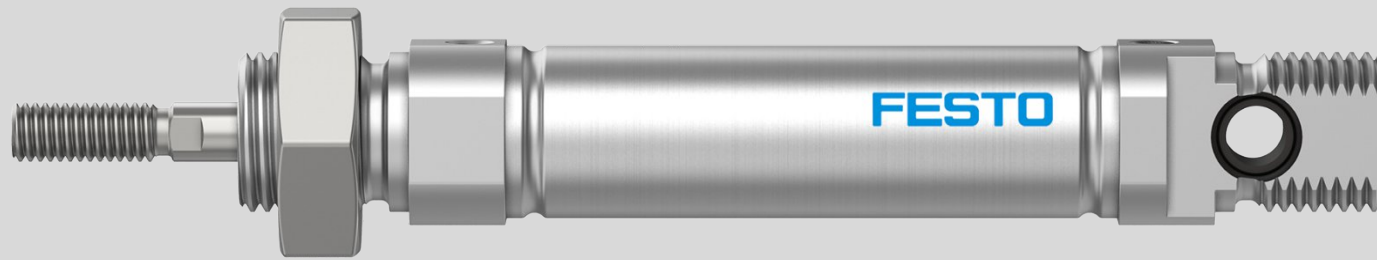
- Sturdy design
- Economical by long lifetime

Without separate piston rod bearing

- Slim design for mounting thread at bearing cap
- Economical by minimized space requirement



The new way of saving space with the DSNU-S



DSNU to ISO 6432

- Standardised interfaces for easy connection
- Wide range of variants for greater flexibility

**Up to
40%
slimmer**



**Up to 35 mm
shorter**

DSNU-S space-saving

- For tight installation spaces
- Enables a sustainable machine design and an energy-saving layout for handling units

Same nominal diameter and stroke length

Shown here: DSNU/-S-16-25-P-A

Application example for parallel mounting

DSNU-S space-saving

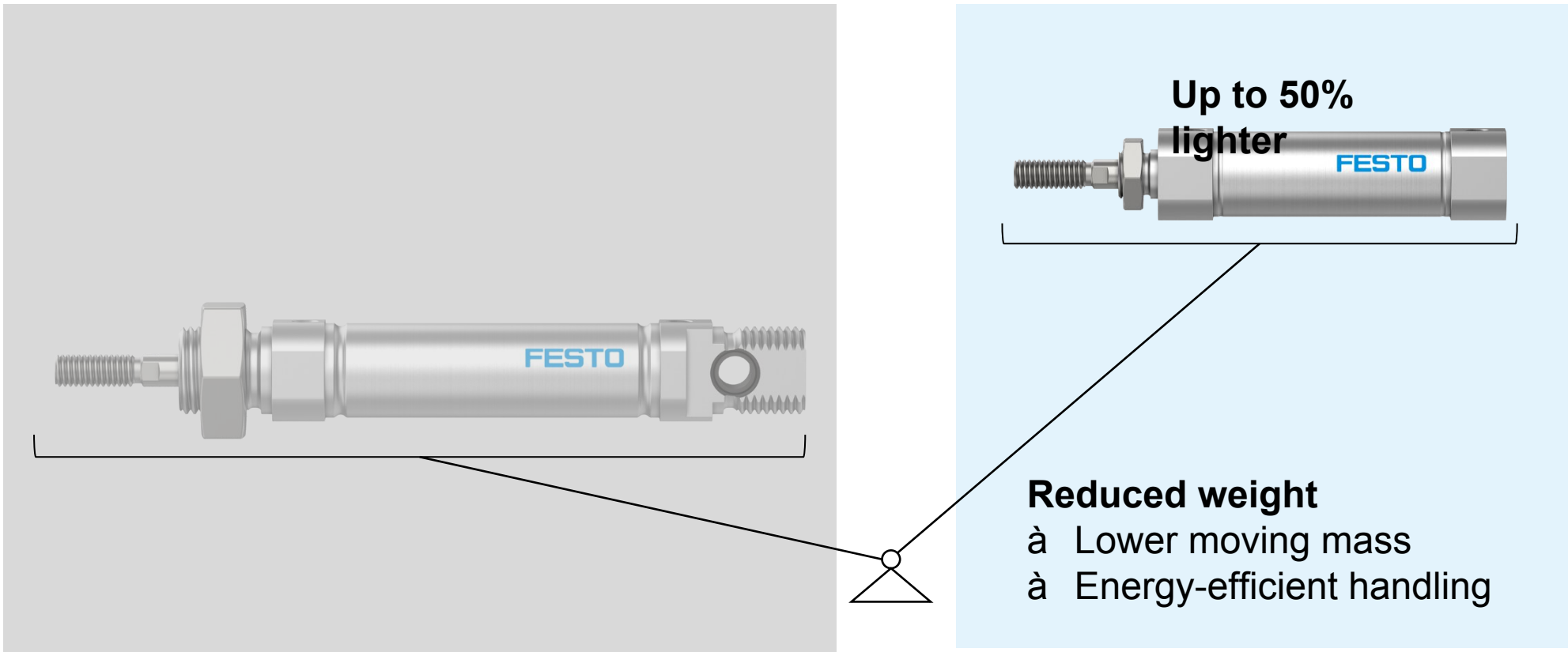
Parallel mounting for separating workpieces at buffer sections



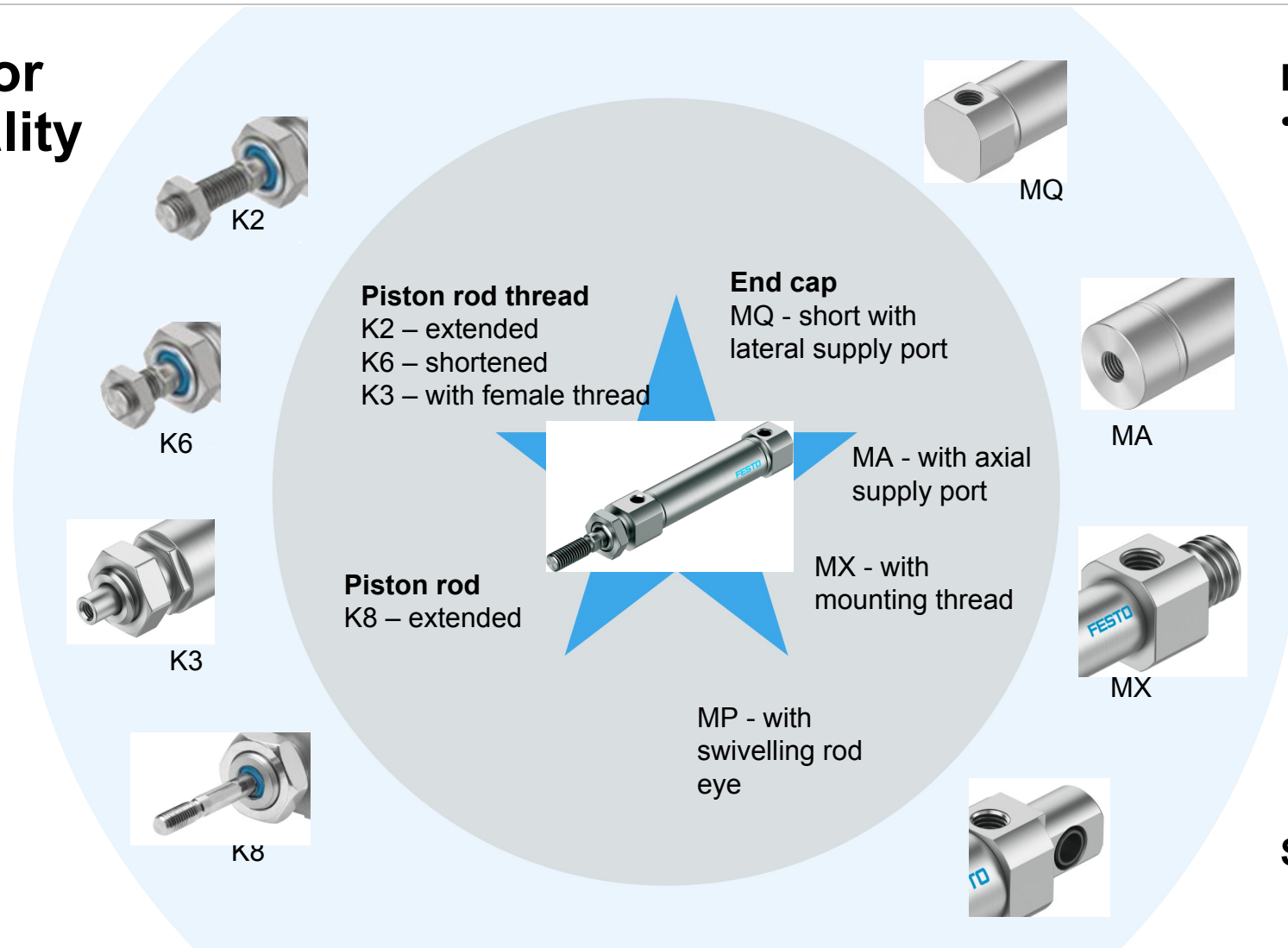
Features:

- For simple linear movements
- For small to medium strokes
- For low transverse loads
- **For handling small workpieces**
- **For limited installation space in terms of width (mounted in parallel)**

Pneumatic round cylinder for durable and compact machine design



An interface for every eventuality



DSNU-S-...

- with multiple interfaces

Simply part of the solution

DSNU, ESNU ISO types

Wide choice of variants and features



Standard



MQ

Short cylinder end cap
with lateral supply port



MA

Axial
supply port

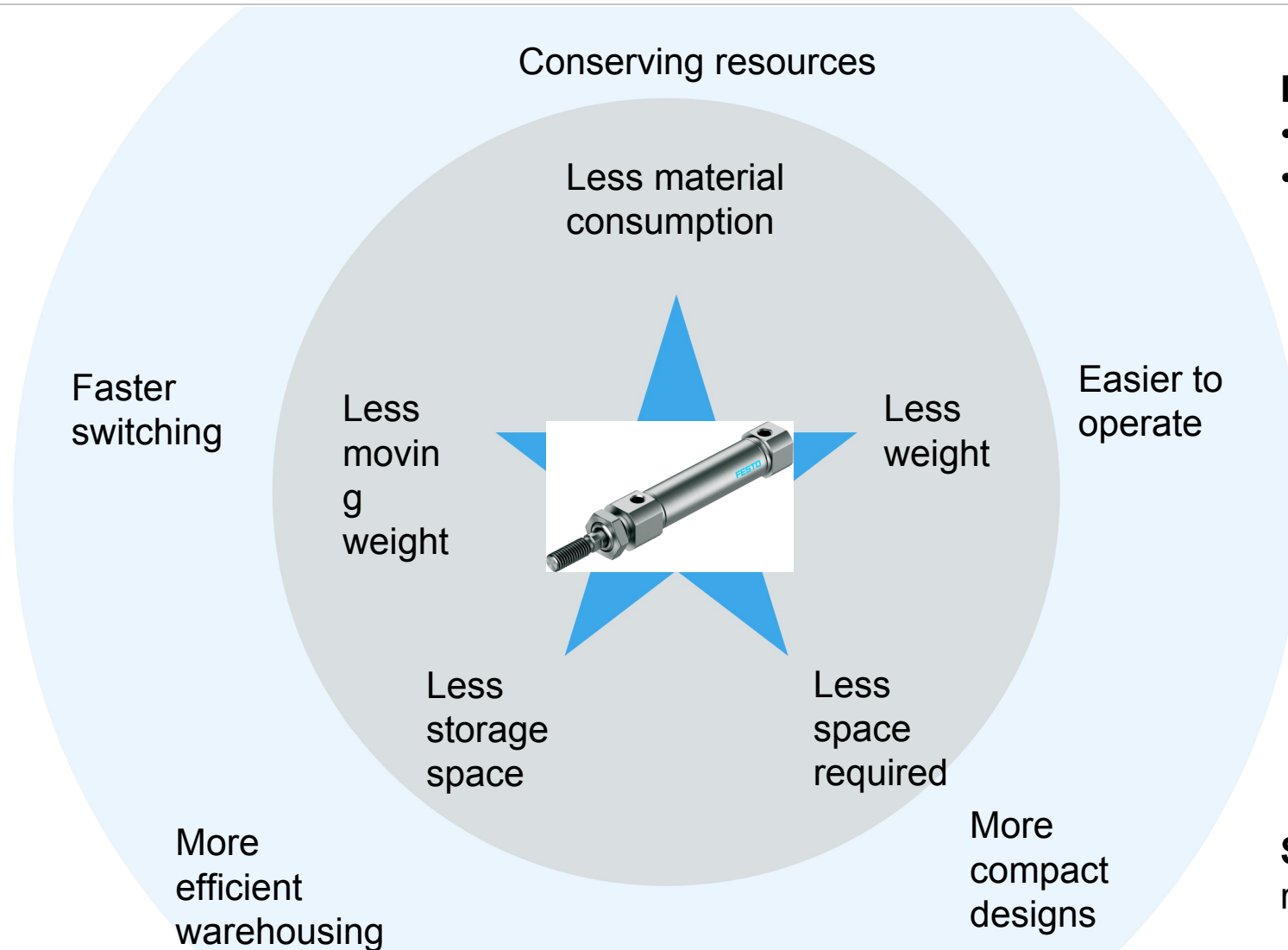


MH

Direct mounting on the
bearing cap
Short end cap with
lateral supply port

- Square piston rod (protection against rotation)
- Through piston rod
- Heat-resistant seals up to 120 °C
- Corrosion resistant with NSF-H1 grease
- From 2021: FPM seal for increased chemical resistance
- Extended male piston rod thread
- Female piston rod thread
- Special thread on the piston rod
- Piston rod with male thread shortened at one end
- Extended piston rod
- From 2021: Low friction
- Constant motion (at low piston speeds)
- Clamping unit on the piston rod
- ATEX II 2GD compliant
- Dust protection (seal with scraper) 32... 63 mm
- Metal scraper 32 ... 63 mm
- ESNU single-acting

Sustainable development



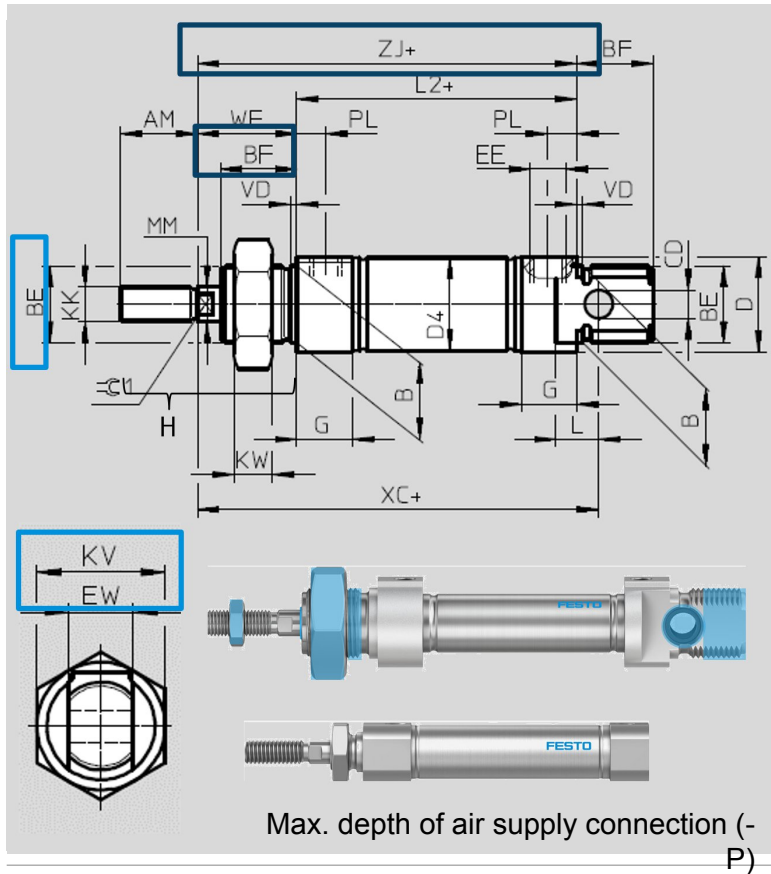
DSNU-S-...

- up to 35 mm shorter
- up to 40% slimmer

Simply part of our future range

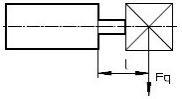
Dimensions

DSNU-S-... compared to DSNU (ISO)



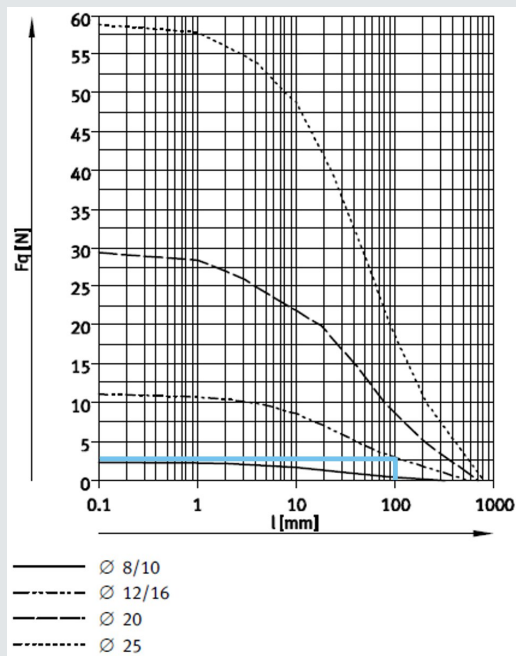
	DSNU-S-...						DSNU (ISO)					
Ø	8	12	16 P	16 PPS	20	25	8	10	12	16	20	25
AM	12	16	16		20	22	12		16		20	22
WF	12	13	13		17	20	16		22		24	28
BF	8	8	8		13	13	12		17		20	22
H	24	29	29		37	42	28		38		44	50
L2+	45	46	46	57	58	61	46		50	56	68	69.5
ZJ+	58	59	60	70	76	81	62		72	78	92	97.5
D	12	14	18		24	27	14		18		26	27
KV	11	14	14		26	26	19		24		32	32
KK	M4	M6	M6		M8	M10	M4		M6		M8	M10
BE	M8	M10	M10		M20	M20	M12x1.25		M16x1.5		M22x1.5	
EE	M5				G1/8		M5				G1/8	
-P	4	4	6		8	8,5	5		6		9	8,5

Forces



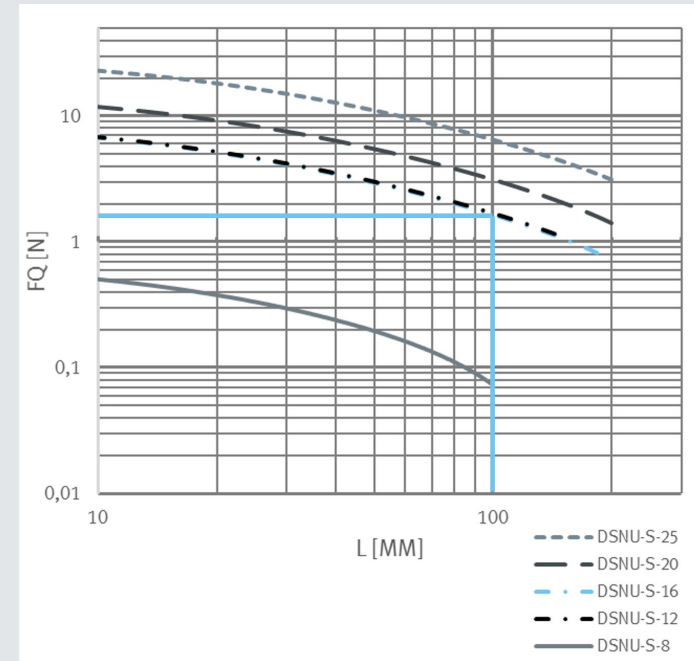
DSNU-16 (ISO)

Allowable lateral load

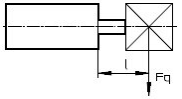


DSNU-S-16

Allowable lateral load

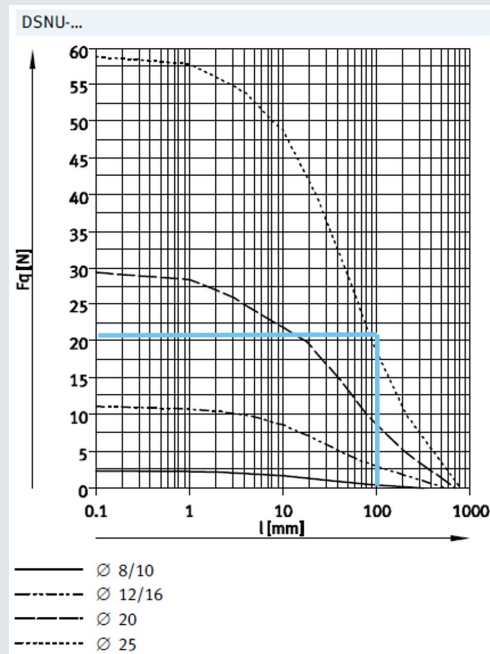


Forces



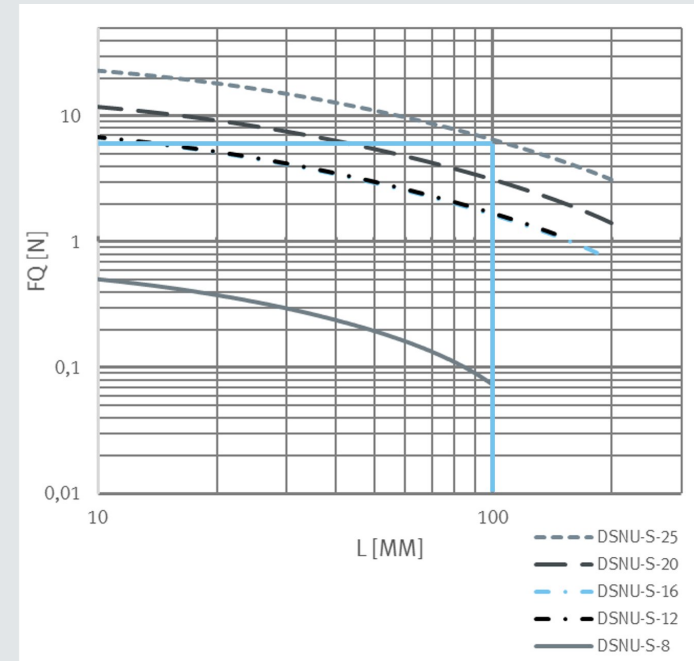
DSNU-25 (ISO)

Allowable lateral load



DSNU-S-25

Allowable lateral load



Technical data

General selection

	DSNU-S-...	DSNU (ISO)
Nominal size	8/12/16/20/25	8/10/12/16/20/25/32/40/50/63
Max. standard strokes	200 mm	500 mm
Max. intermediate strokes	200 mm	500 mm (longer on request, up to 2,000 mm)
Cushioning	P/PPS	P/PPS/PPV
Magnet for position measurement	Standard	Standard
Mounting thread on bearing cap	All Ø	All Ø
Mounting thread on end cap	For Ø 20/25	All Ø
Pivot device on end cap	Not possible	Incl. pivoting for all Ø
Modular system variants	Not possible	Available

Features

DSNU-S-... compared to new DSNU (ISO)

Available sizes

- Ø 8, 12, 16, 20, 25
- Without Ø 10

Same PUR piston rod seal

- Ø 8...16 behind bearing
- Ø 20/25 in front of bearing

Without separate bearing

- Free of copper
- Reduced max. lateral load
- Smaller mounting thread size for min. total width

Same piston rod

- Stainless steel

Different mounting interfaces

- Smaller threads
- Not interchangeable

Air supply port

- Same types M5 and G1/8
- ~1mm less deep

Same P and PPS cushioning

- No PPV available

Shorter end caps

- Without hole for swivel bearing
- Ø 20/25 with thread as standard
- Cylinder in total ~2,5 cm shorter than DSNU
- DSNU-S-16-P 1 cm shorter than DSNU-S-16-PPS
- DSNU-S-20/25-P same length as -PPS

Even thinner

- Caps about -3 mm more flat than new DSNU
- Smaller mounting threads and nuts (up to -40%)

Same rolling connection

- Same look

Same piston

- Magnet and elastic damping standard
- Same max. energy

Same barrel

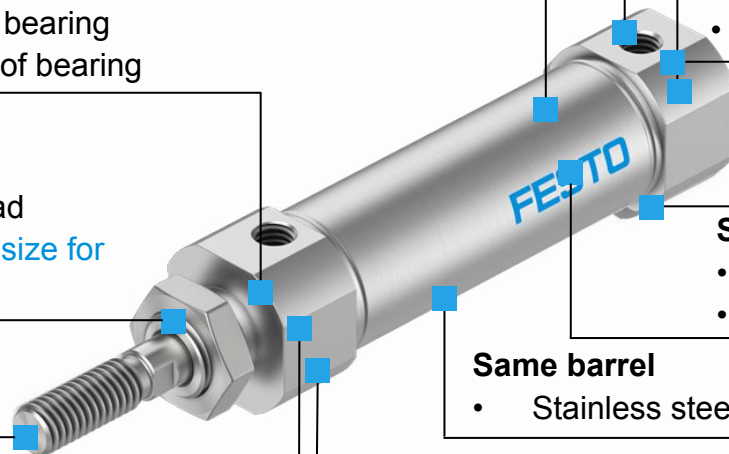
- Stainless steel

Same grease

- PWIS free

Same material for end caps

- Anodized aluminium

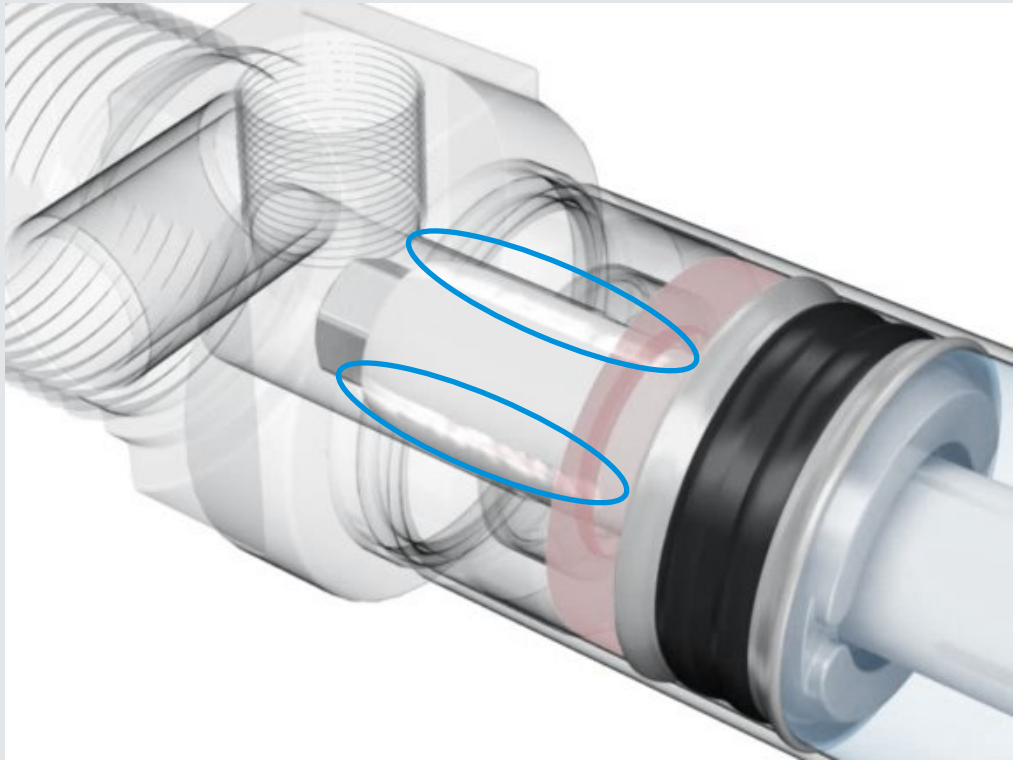


Ø 20/25-PPS

Less space requirement with focused usage on direct mounting

Simply better with self-adjusting cushioning PPS

Effective pneumatic cushioning



Longitudinal slots ()
allow the air () to escape,
permitting dynamic, gentle
movement into the end
position

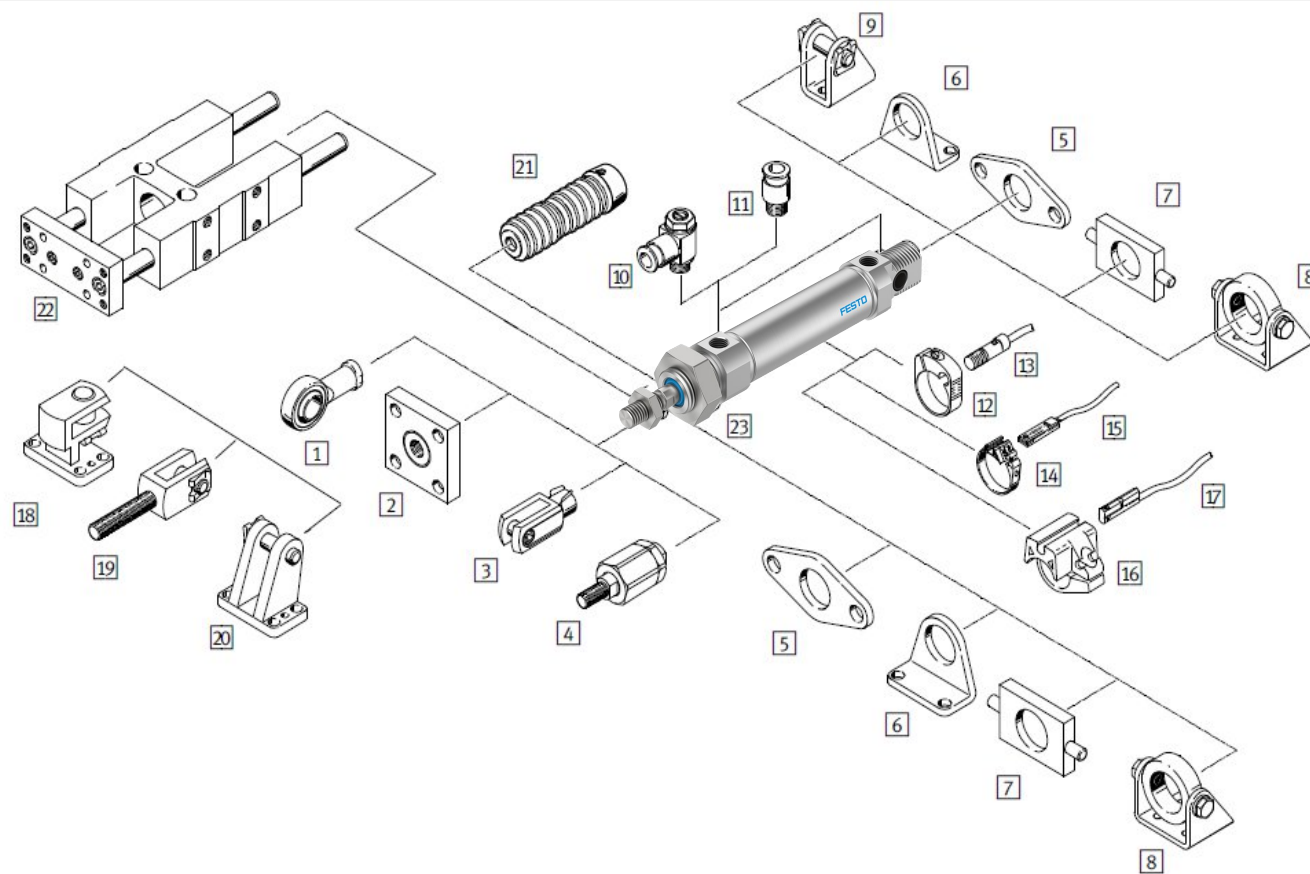


Animation



Self-adjusting without adjusting screw
= Space-saving with no access required
= Quick commissioning
= Tamper-proof
...

Accessories



Useful peripherals



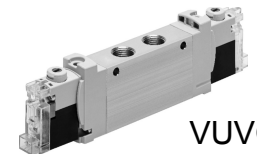
SDBT-MSX



VFOE



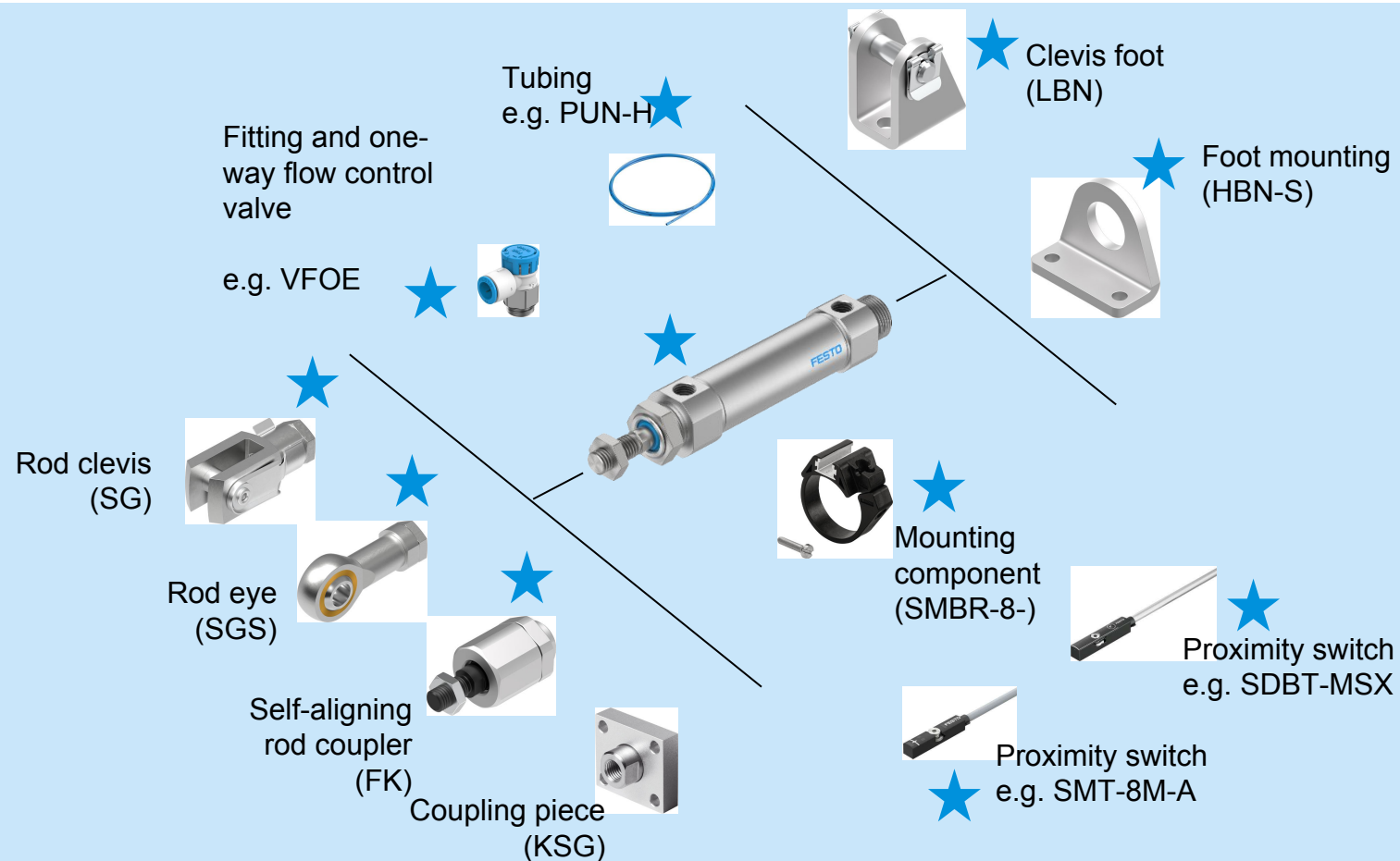
PUN-H



VUVG-...-S

**Further use of
accessories of the DSNU**

Wide selection of accessories in the Core Range



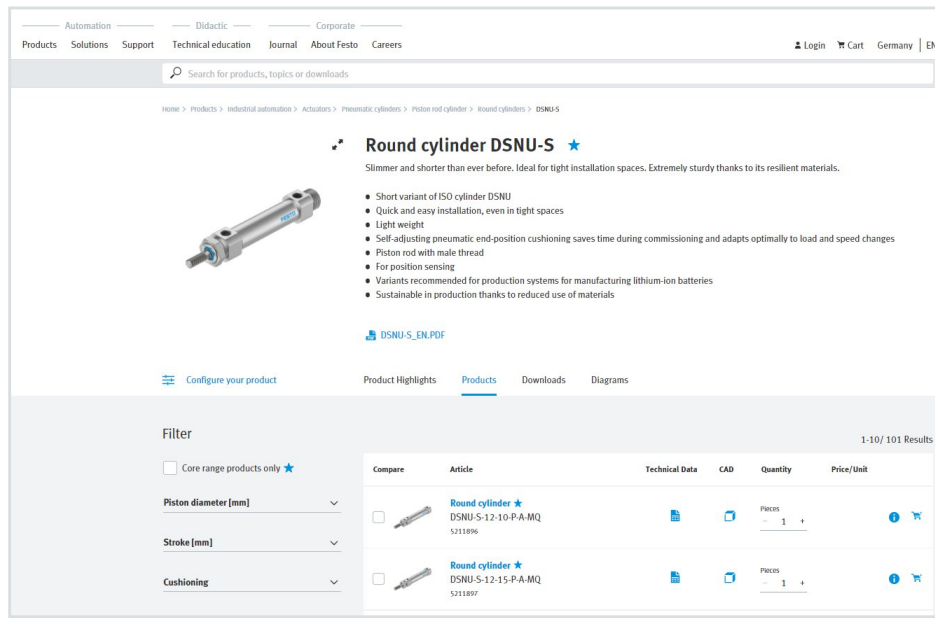
Core Range products
Quickly available worldwide

Engineering tools to ease your workload

DSNU-S ★

From the Festo Core Range - quickly available worldwide

☾ Simply order on the Online Portal



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Round cylinder DSNU-S ★

Slimmer and shorter than ever before. Ideal for tight installation spaces. Extremely sturdy thanks to its resilient materials.

- Short variant of ISO cylinder DSNU
- Quick and easy installation, even in tight spaces
- Light weight
- Self-adjusting pneumatic end-position cushioning saves time during commissioning and adapts optimally to load and speed changes
- Piston rod with male thread
- For position sensing
- Variants recommended for production systems for manufacturing lithium-ion batteries
- Sustainable in production thanks to reduced use of materials

DSNU-S_EN.PDF

Configure your product

Product Highlights | **Products** | Downloads | Diagrams

Filter

☐ Core range products only ★

Piston diameter [mm] ▾

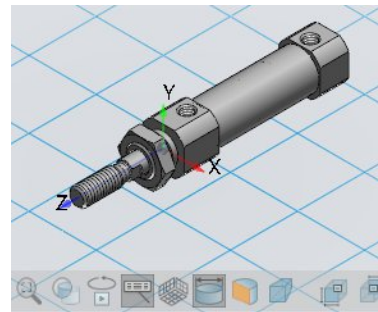
Stroke [mm] ▾

Cushioning ▾

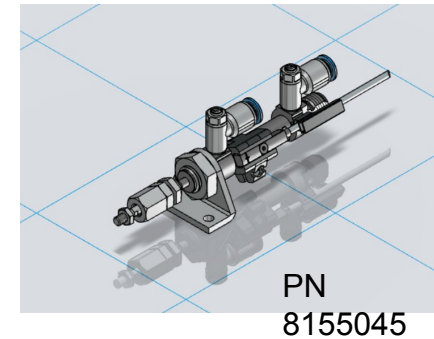
1-10 / 101 Results

Compare	Article	Technical Data	CAD	Quantity	Price/Unit
☐	Round cylinder ★ DSNU-S-12-10-P-A-MQ 5211896			Pieces 1	
☐	Round cylinder ★ DSNU-S-12-15-P-A-MQ 5211897			Pieces 1	

Quick access to
CAD data
@PARTdataManager



Easy to select
accessories
@Festo Design Tool FDT



Pneumatic simulation
Simulation of the
complete pneumatic
chain



Overview

DSNU (ISO), ESNU (ISO), DSNU-S-...

		Nominal size	Strokes	Cushioning	Magnet	Variants
Stays the same	DSNU (ISO) 	Ø 12...40	10...320 mm (standard strokes)	P PPS from Ø 16 PPV from Ø 16	Standard	None
	DSNU (ISO) ESNU (ISO)	Ø 8...63 Production goods and goods for resale Ø 8/10/50/63	1...500 mm (longer on request)	P PPS from Ø 16 PPV from Ø 12	Standard	X-strokes Modular kit (S2, S6, Q, R3, ATEX, etc.)
New	DSNU-S-... 	Ø 8/12/16 Ø 20/25	10...200 mm (standard strokes)	P PPS from Ø 16	Standard	None
	DSNU-S-...	Ø 8...25	1...200 mm	P PPS from Ø 16	Standard	X-strokes

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[DSNU-S Application](#)

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