

Guide units FEN/FENG for standards-based cylinders

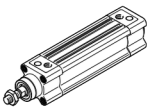
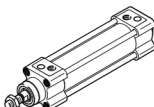
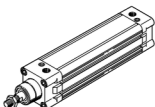
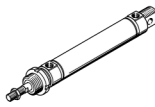
At a glance

The guide units FEN and FENG protect standards-based cylinders against torsion when these are subjected to high torque loads. They offer high-precision guidance for workpiece handling and other application areas.

Two guide variants are available:

- Plain-bearing guide (GF)
- Recirculating ball bearing guide (KF)

Drive/guide unit combination options

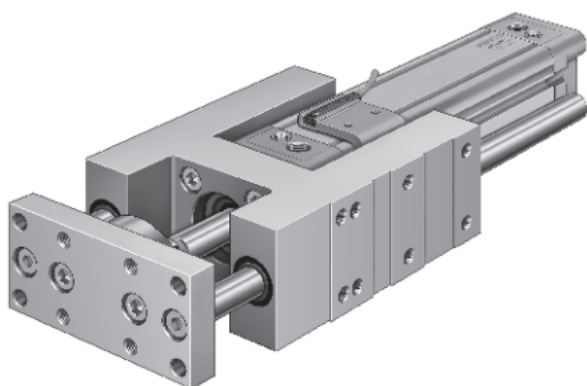
Drive/guide unit	DSBC	DSBG	DNC	DSNU
FENG				
FEN	h	h	h	—
a	—	—	—	h
Page/Internet	dsbc	dsbg	dnc	dsnu

Position sensing

With standards-based cylinder DNC:
When installed, a mounting kit is required to sense the front end position.

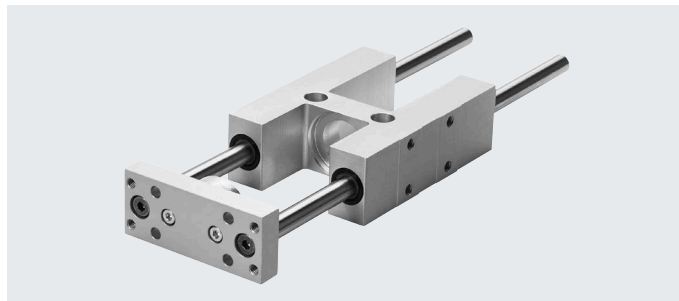
The rear end position can be sensed directly via the sensor slot.

With standards-based cylinder DSNU:
With these standards-based cylinders, a mounting kit is absolutely necessary for sensing the end positions.



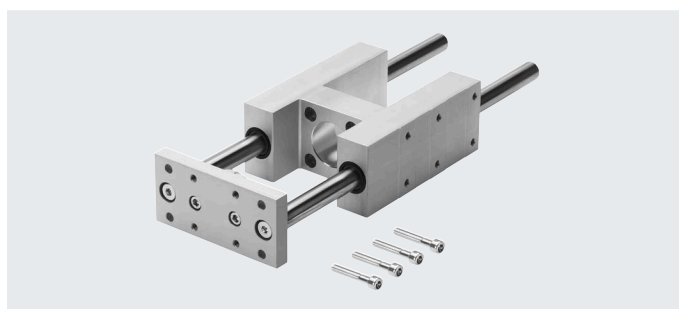
Guide units FEN/FENG for standards-based cylinders

- N- Diameter
8 ... 25 mm
- T- Stroke length
1 ... 250 mm



FENG to ISO 15552

- N- Diameter
32 ... 100 mm
- T- Stroke length
10 ... 500 mm



General technical data											
Type		FEN-...				FENG-...					
Piston @		8, 10	12, 16	20	25	32	40	50	63	80	100
Stroke [mm]		1 ... 100	1 ... 200	2 ... 250		10 ... 500					
Design		Guide									
Guide											
FEN/FENG-...-GF		Plain-bearing guide									
FEN/FENG-...-KF		Recirculating ball bearing guide									
Displacement force											
FEN/FENG-...-GF [N]		15	15	15	15	30	30	50	50	70	70
FEN/FENG-...-KF [N]		15	15	15	15	15	15	15	15	40	40
Type of mounting	[N]	20 ... +80°C									
Mounting position	[J]										
Ambient temperature	[°C]										

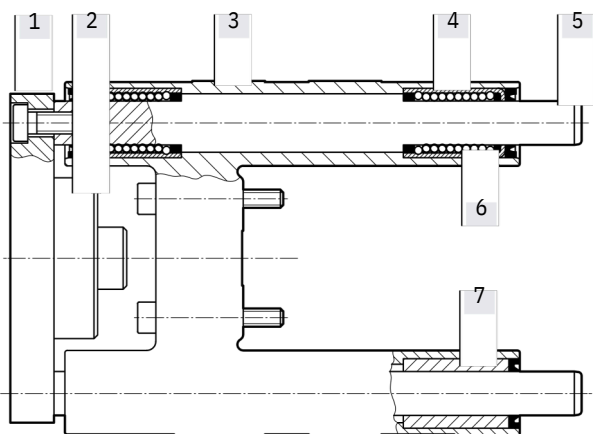
Weight [g] (calculation example page 8)											
Type		FEN-...				FENG-...					
Piston @		8, 10	12, 16	20	25	32	40	50	63	80	100
Plain-bearing guide (GF)											
Basic weight with 0 mm stroke		332	490	873	866	1570	2480	4190	5540	10720	13420
Additional weight per 10 mm stroke		8	12	12	12	17	31	48	48	76	76
Moving mass with 0 mm stroke		90	161	269	269	478	782	1414	1720	4955	5935
Additional mass per 10 mm stroke		8	12	12	12	17	31	48	48	76	76
Recirculating ball bearing guide (KF)											
Basic weight with 0 mm stroke		300	429	828	813	1530	2370	4030	5410	10430	12990
Additional weight per 10 mm stroke		8	12	12	12	18	32	49	49	77	77
Moving mass with 0 mm stroke		90	161	269	269	483	792	1430	1739	4990	5970
Additional mass per 10 mm stroke		8	12	12	12	18	32	49	49	77	77

Centre of gravity of the moving mass [mm] (calculation example page 8)

Type	FEN-...					FENG-..				
Piston @	8, 10	12, 16	20	25	32	40	50	63	80	100
With 0 mm stroke	30	40	42	42	43	57	60	69	54	47
Supplement per 10 mm stroke	4.9	4.9	4.7	4.7	4.5	4.7	4.7	4.6	3.9	3.6

Materials

Sectional view



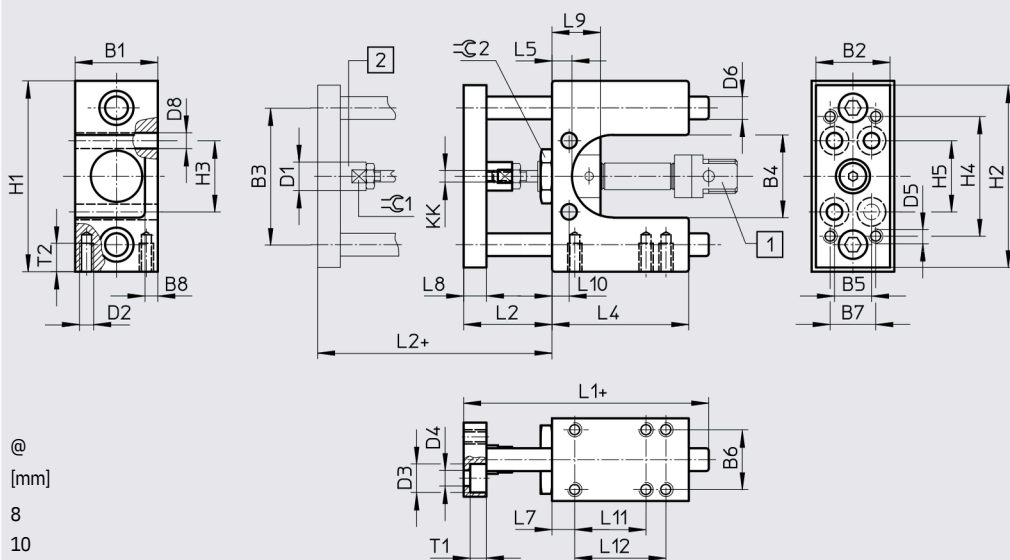
- [6] Recirculating ball bearing guide
[7] Plain-bearing guide

Guide unit	FEN/FENG-...-GF	FEN/FENG-...-KF
[1] Yoke plate		
Piston @ 32 ... 63	Aluminium Steel	Aluminium
Piston @ 80, 100	Steel Aluminium	Steel Steel
[2] Coupling	Sintered bronze	Aluminium
[3] Guide	Steel RoHS-compliant	Steel Steel
[4] Bearing	VDMA24364-B2	
[5] Guide rods	L	
- Note on materials		
- RoHS-compliant		

Guide units FEN/FENG for standards-based cylinders

Dimensions

FEN-8,10



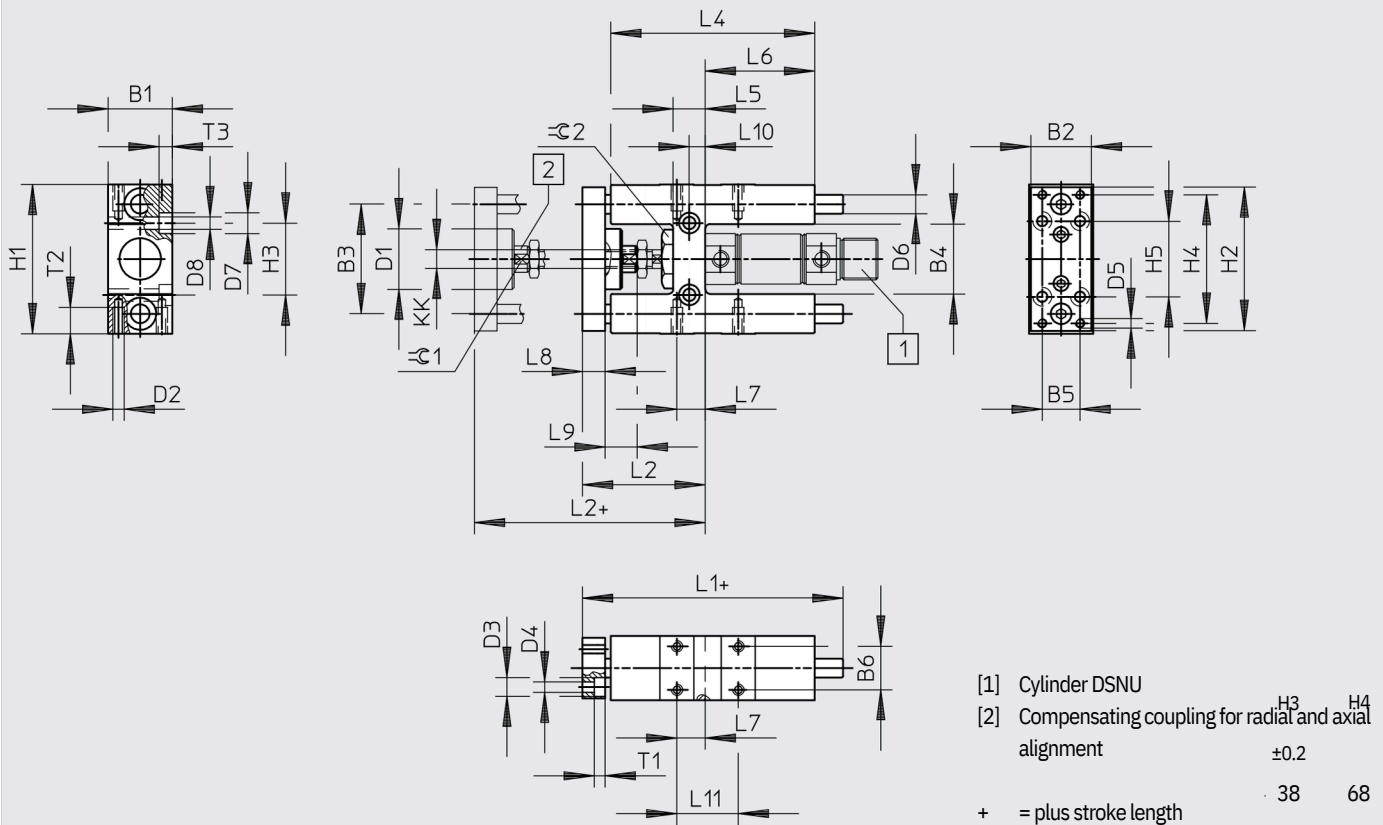
- [1] Cylinder DSNU H1 H2
[2] Compensating coupling for radial and axial alignment
67 64
+ = plus stroke length

@ [mm]	B1	B2	B3	B4	B5	B6	B7	B8	D1 @	D2	D3 @	D4 @	D5	D6(1) @	D8 @	β1	β2
8	-0.3		±0.15														
10	29	26	48	29	13	21	16	4.5	10	M5	10	5.5	M5	8	5.5	9	19
1)	FEN-...-GF: Tolerance class h8 FEN-...-KF: Tolerance class h6																
	H3	H4	H5	KK	L1	L2	L4	L5	L7	L8	L9	L10	L11	L12	T1	T2	
						+2											
	25	42	25	M4	86	31	48	7	8	8	17	6	25	32	5.7	10	

Guide units FEN/FENG for standards-based cylinders

Dimensions

FEN-20, 25



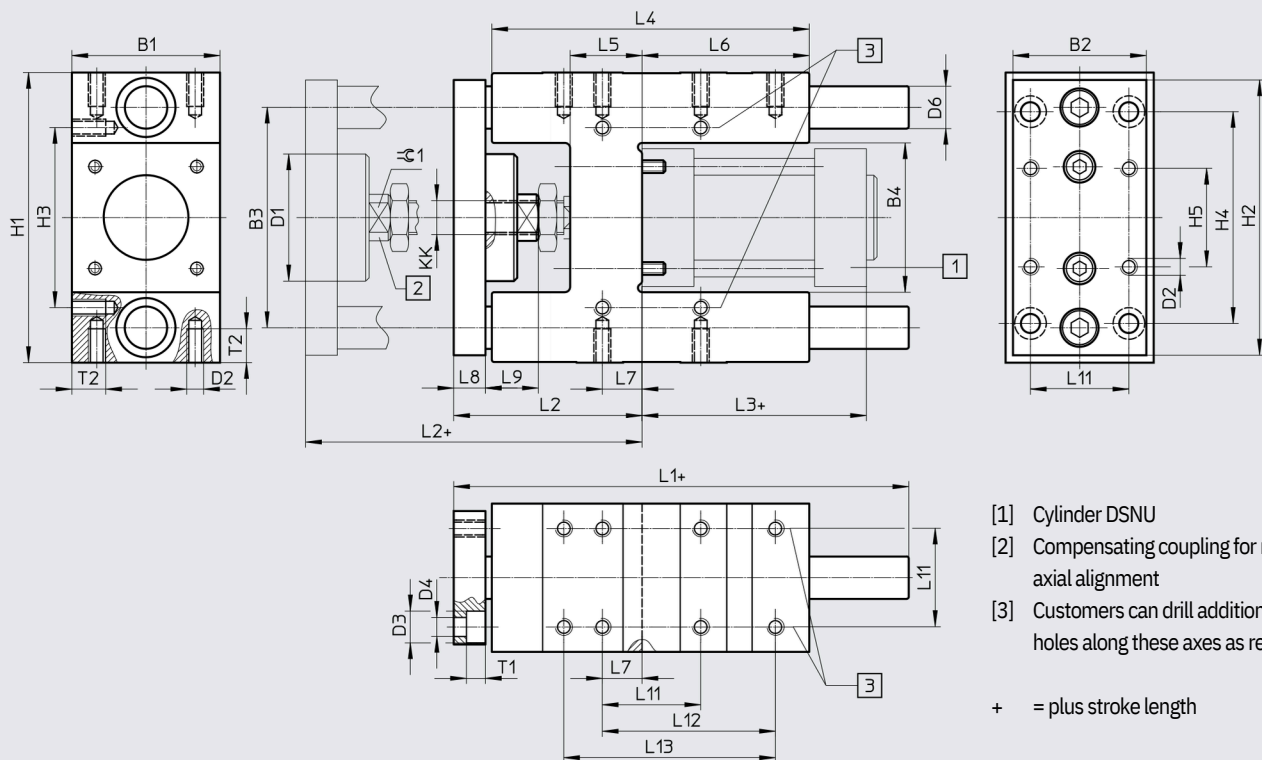
@ [mm]	B1	B2	B3	B4	B5	B6	D1 @	D2	D3 @	D4 @	D5	D6(1) @	D7 @	D8 @	H1	H2	Ø1	Ø2
138	34	32	±0.2	37	20	23	32	M6	10	5.5	M5	10	11	6.6	79	76	13	27
25																		

@ [mm]	H5	KK	L1	L2	L4	L5	L6	L7	L8	L9	L10	L11	T1	T2	T3		
138				+5								±0.2					
25	40	M8 M10x1.25	138	65	108	17	58	15	12	22 17	8.5	32.5	5.7	14	6.8		

1) FEN-...-GF: Tolerance class h8
FEN-...-KF: Tolerance class h7

Dimensions

FENG-32 ... 100



@ [mm]	B1 -0.3	B2	B3 ±0.2	B4	D1 @	D2	D3 @	D4 @	D61) @	H1	H2	H3 ±0.2	H4 ±0.2	H5 ±0.2	KK
132	50	45	74	50.5 ±0.3	45	M6	11	6.6	12	97 -0.4	90	61	78	32.5	M10x1.25
40	58	54	87	58.5 ±0.3	45	M6	11	6.6	16	115 -0.4	110	69	84	38	M12x1.25
50	70	63	104	70.5 ±0.3	60	M8	15	9	20	137 -0.5	130	85	100	46.5	M16x1.5
63	85	80	119	85.5 ±0.3	60	M8	15	9	20	152 -0.5	145	100	105	56.5	M16x1.5
80	105	100	148	106 ±0.6	78	M10	18	11	25	189 -0.5	180	130	130	72	M20x1.5
100	130	120	172	131 ±0.6	78	M10	18	11	25	213 -0.5	200	150	150	89	M20x1.5

@ [mm]	L1	L2	L3	L4	L5	L6	L7	L8	L9	L11 ±0.2	L12 ±0.2	L13 ±0.2	T1	T2 max.	β1
132	155	67 +5	94	125	24	76	4.3	12	20	32.5	70.3	78	6.5	14	15
40	170	75 +5	105	140	28	81	11	12	22	38	84	-	6.5	14	15
50	188	89 +10	106	150	34	79	18.8	15	25	46.5	81.8	100	9	16	19
63	220	89 +10	121	182	34	111	15.3	15	25	56.5	105	-	9	16	19
80	258	111 +10	128	215	40	128	21	20	32	72	-	-	11	20	27
100	263	116 +10	138	220	40	128	24.5	20	32	89	-	-	11	20	27

1) FENG-...-GF: Tolerance class h8
FENG-...-KF: Tolerance class h7