



EichenbergerGewinde



100% Swiss made 

Main Catalogue

Carry ball screws

Carry Speed-line high-helix ball screws

Speedy high-helix lead screws

Rondo round thread lead screws

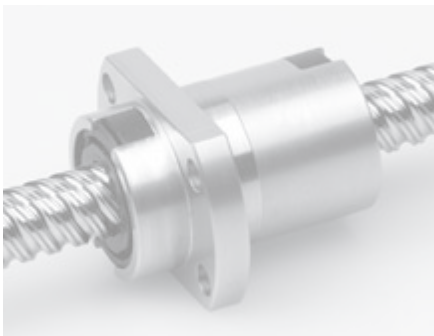


Carry ball screws

Due to their premium quality and precision, the rolled Carry ball screws are often an ideal substitute for expensive, machine-ground screws. In general, they are suitable for all linear applications where heavy loads need to be transferred with optimum efficiency.

- $\varnothing$ 4–40 mm
- p 1–40 mm
- for high loads at medium moving speeds

pages 4/5 and 6–37



Carry Speedline high-helix ball screws

The cold-rolled, wear-resistant Carry Speedline are marked by an extremely high helix. They provide for high moving speeds and deliver an efficiency which is nothing short of impressive.

- $\varnothing$ 8–25 mm
- p 10–50 mm
- for medium loads at high moving speeds

pages 4/5 and 38–47

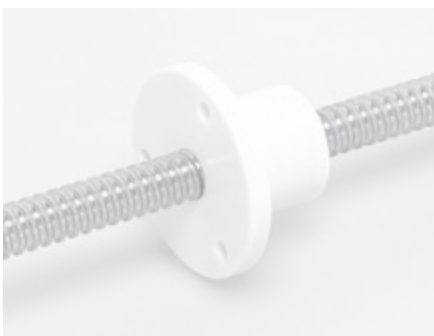


Speedy high-helix lead screws

The innovative Speedy high-helix lead screws with helix up to 6 x diameter provide for maximum moving speeds at low rotational speeds or efficient conversion of linear to rotary movements.

- $\varnothing$ 4–36 mm
- p 4–200 mm
- for low loads at high moving speeds
- slide screw unit

pages 48/49 and 50–71



Rondo round thread lead screws

The alternative to trapezoidal screws with remarkable efficiency.

- $\varnothing$ 6–16 mm
- p 2–5 mm
- for medium loads at medium moving speeds
- slide screw unit

pages 48/49 and 72–76

Contract work:

Thread rolling

pages 77/78

About the Company:

Eichenberger Gewinde AG

page 79

Slide lead screw product range



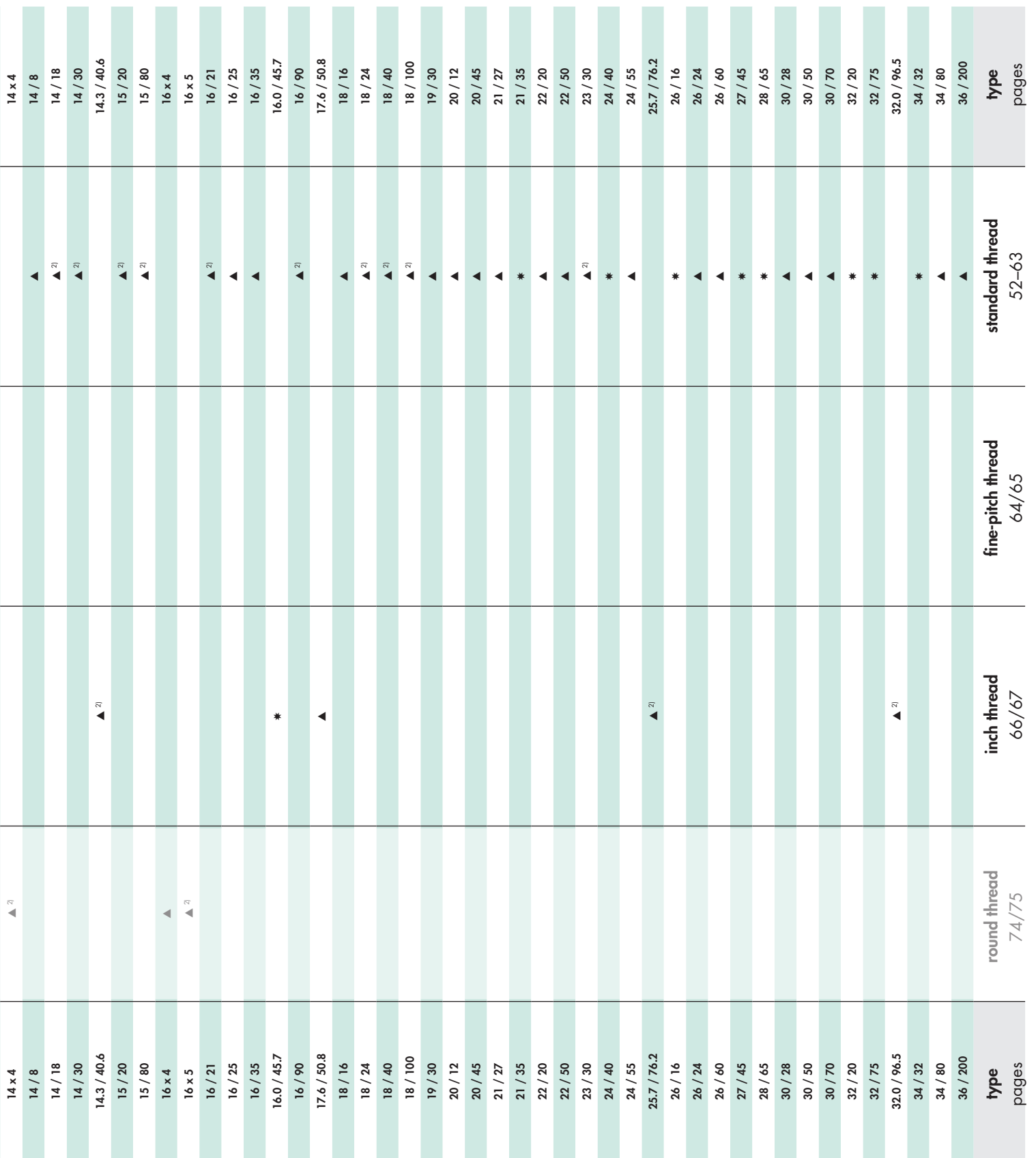
▲ = standard range

* = on request

²⁾ = also available with left-hand thread

		Speedy					
type	pages	round thread	inch thread	fine-pitch thread	standard thread	type	pages
		74/75	66/67	64/65	52-63		
							
d_0 / p_0						d_0 / p_0	
4 / 10	4 / 10			▲		4 / 10	
5 / 5	5 / 5			▲		5 / 5	
5 / 20	5 / 20			▲ ²⁾		5 / 20	
6 x 2	6 x 2	▲ ²⁾				6 x 2	
6 / 25	6 / 25			▲		6 / 25	
6.35 / 6.35	6.35 / 6.35		▲			6.35 / 6.35	
6.35 / 12.7	6.35 / 12.7		▲			6.35 / 12.7	
6.35 / 25.4	6.35 / 25.4		▲			6.35 / 25.4	
7.5 / 7.5	7.5 / 7.5			▲		7.5 / 7.5	
7.94 / 12.7	7.94 / 12.7		▲			7.94 / 12.7	
8 x 2	8 x 2	▲ ²⁾				8 x 2	
8 / 4	8 / 4				▲	8 / 4	
8 / 10	8 / 10				▲ ²⁾	8 / 10	
8 / 12	8 / 12				▲	8 / 12	
8 / 15	8 / 15				▲	8 / 15	
8 / 30	8 / 30			▲ ²⁾		8 / 30	
9 / 20	9 / 20				▲	9 / 20	
9.7 / 25.4	9.7 / 25.4		▲ ²⁾			9.7 / 25.4	
10 x 3	10 x 3	▲ ²⁾				10 x 3	
10 / 10	10 / 10			▲		10 / 10	
10 / 12	10 / 12				▲ ²⁾	10 / 12	
10 / 15	10 / 15				▲	10 / 15	
10 / 35	10 / 35			▲ ²⁾		10 / 35	
10 / 50	10 / 50				▲ ²⁾	10 / 50	
11 / 40	11 / 40			▲		11 / 40	
11 / 60	11 / 60				▲	11 / 60	
11.2 / 30.5	11.2 / 30.5		▲			11.2 / 30.5	
12 x 3	12 x 3	▲ ²⁾				12 x 3	
12 x 4	12 x 4	▲ ²⁾				12 x 4	
12 / 15	12 / 15				▲ ²⁾	12 / 15	
12 / 25	12 / 25				▲ ²⁾	12 / 25	
12 / 45	12 / 45			▲ ²⁾		12 / 45	
12.5 / 12.5	12.5 / 12.5			*		12.5 / 12.5	
12.8 / 35.6	12.8 / 35.6		▲			12.8 / 35.6	
13 / 20	13 / 20				▲	13 / 20	
13 / 70	13 / 70				▲ ²⁾	13 / 70	
14 x 3	14 x 3	▲ ²⁾				14 x 3	

Speedy high-helix lead screws and Rondo round thread lead screws





Speedy high-helix lead screws

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- efficiency	
- driving torque / required power	
Basic calculations:	71
- Maximum authorized load depending on speed	

Visit www.gewinde.ch for the latest on existing and/or new products.

Speedy high-helix lead screws

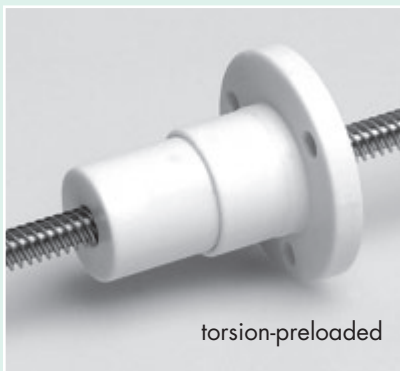
Speedy with standard thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

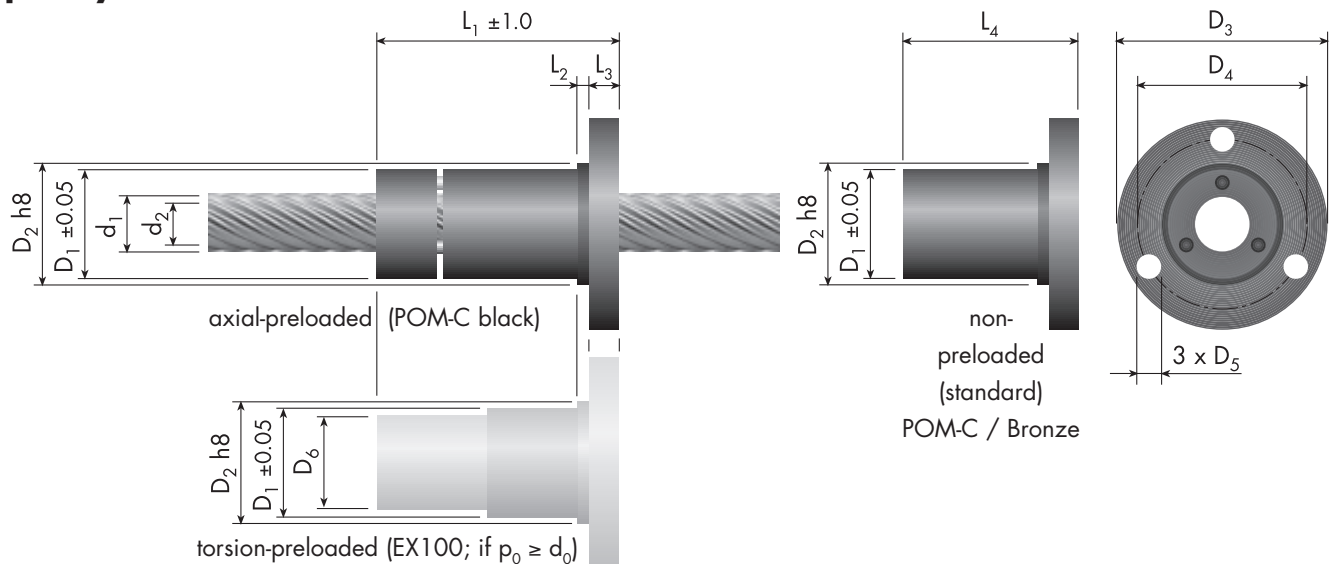
⁶⁾ = not available with torsion-preload

Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008

Speedy with standard thread (1/6)



Speedy	Dimensions														Load rates
	Screw				Nut										
	d ₁	d ₂	p	i	D ₁ ±0.05 mm	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B	
d ₀ / p ₀															C _{stat} for POM/EX100 N
mm	mm														
right-hand threads															
8 / 4	7.9	5.5	4	2	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	950
8 / 10	8.2	5.5	10	4	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	800
8 / 12	8.0	5.9	12	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	800
8 / 15	8.0	5.9	15	6	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	850
9 / 20	8.9	5.8	20	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	850
10 / 12	10.0	7.1	12	4	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 200
10 / 15	10.0	7.4	15	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 200
12 / 15	12.2	9.2	15	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 400
12 / 25	11.9	8.0	25	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 500
left-hand threads															
8 / 10	8.2	5.5	10	4	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	800
10 / 12	10.0	7.1	12	4	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 200
12 / 15	12.2	9.2	15	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 400
12 / 25	11.9	8.0	25	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 500

The CAD data corresponding to the types shown above are available at www.gewinde.ch

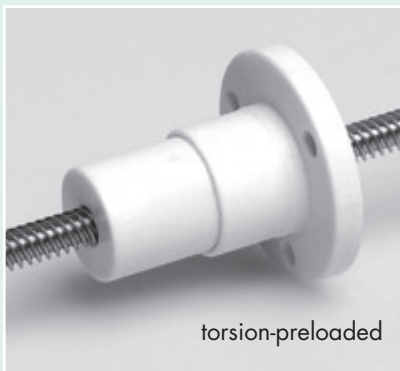
Speedy with standard thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

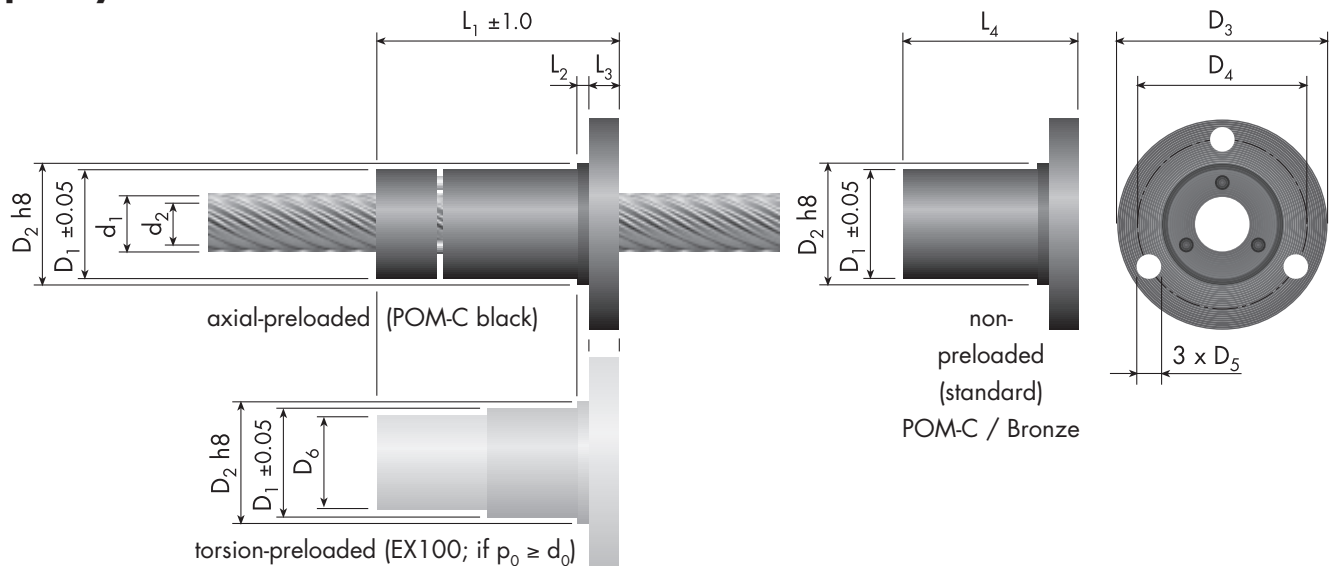
⁶⁾ = not available with torsion-preload

Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008

Speedy with standard thread (2/6)



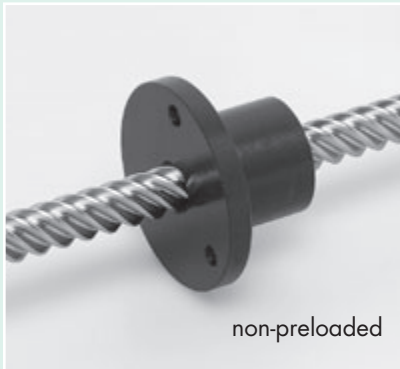
Speedy	Dimensions														Load rates	
	Screw				Nut											
	d ₀ / p ₀	d ₁	d ₂	p	i	D ₁ ±0.05 mm	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B	C _{stat} for POM/EX100 N
mm	mm															
right-hand threads																
10 / 50	10.0	7.4	50	10	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 250
11 / 60	11.7	9.1	60	12	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 500
13 / 20	13.3	8.8	20	4	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 300
13 / 70	13.5	10.9	70	14	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 750
14 / 8 ⁶⁾	14.0	9.8	8	2	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		900
14 / 18	14.3	11.4	18	6	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 600
14 / 30	13.9	10.1	30	6	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 750
left-hand threads																
10 / 50	10.0	7.4	50	10	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 250
13 / 70	13.5	10.9	70	14	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 750
14 / 18	14.3	11.4	18	6	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 600
14 / 30	13.9	10.1	30	6	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30		1 750

The CAD data corresponding to the types shown above are available at www.gewinde.ch

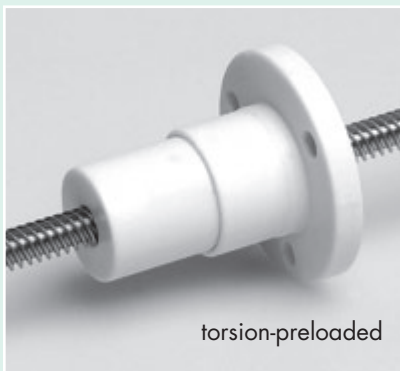
Speedy with standard thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

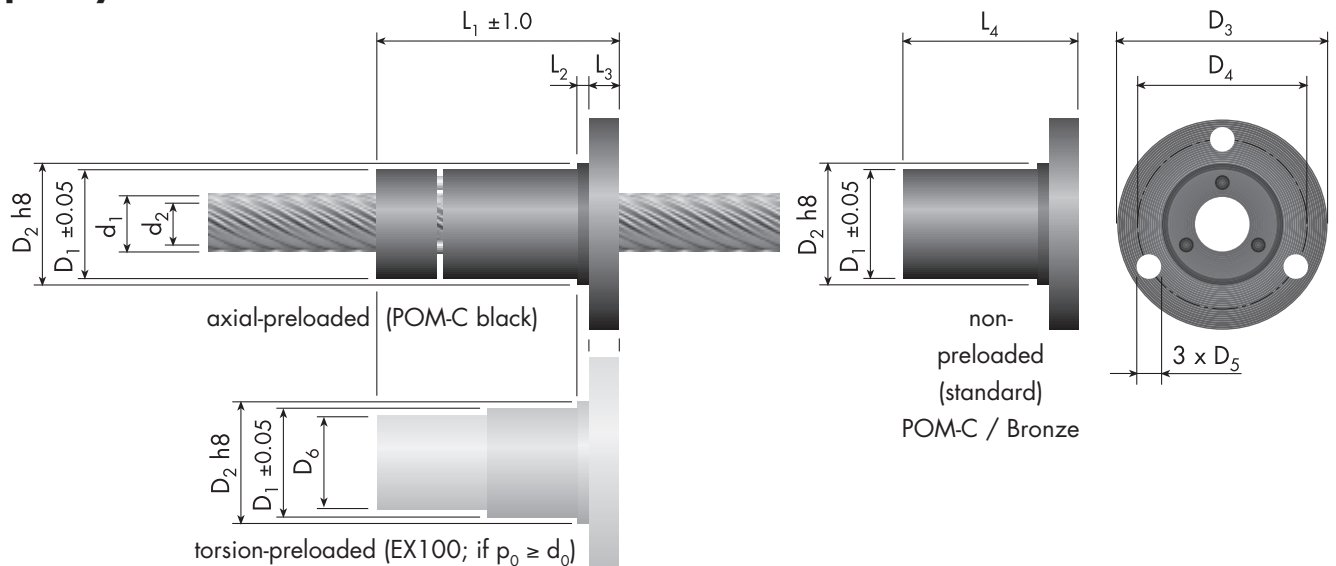
⁶⁾ = not available with torsion-preload

Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008

Speedy with standard thread (3/6)



Speedy	Dimensions														Load rates	
	Screw				Nut											
	d ₀ / p ₀	d ₁	d ₂	p	i	D ₁ ±0.05	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B	C _{stat} for POM/EX100 N
mm	mm				mm											
right-hand threads																
15 / 20	15.2	12.5	20	8	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 600	
15 / 80	15.2	12.6	80	16	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 000	
16 / 21	16.5	13.6	21	7	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 800	
16 / 25	16.0	11.5	25	5	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 550	
16 / 35	15.9	12.1	35	7	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 000	
16 / 90	17.0	14.3	90	18	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 250	
18 / 16	18.0	14.3	16	4	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 100	
18 / 24	18.7	15.7	24	8	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 000	
18 / 40	17.9	14.1	40	8	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 250	
18 / 100	18.8	16.2	100	20	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 500	
19 / 30	18.8	14.2	30	6	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 800	
left-hand threads																
15 / 20	15.2	12.5	20	8	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 600	
15 / 80	15.2	12.6	80	16	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 000	
16 / 21	16.5	13.6	21	7	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 800	
16 / 90	17.0	14.3	90	18	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 250	
18 / 24	18.7	15.7	24	8	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 000	
18 / 40	17.9	14.1	40	8	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 250	
18 / 100	18.8	16.2	100	20	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 500	

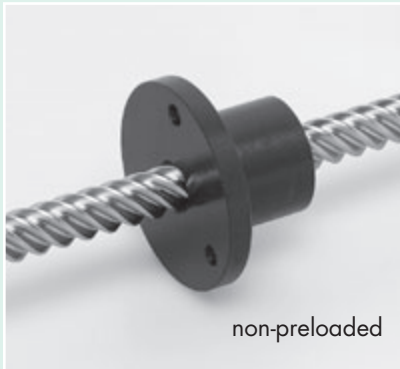
The CAD data corresponding to the types shown above are available at www.gewinde.ch

Speedy high-helix lead screws

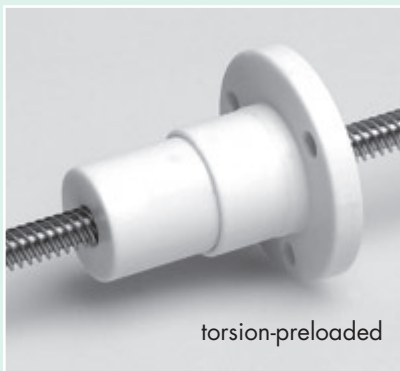
Speedy with standard thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

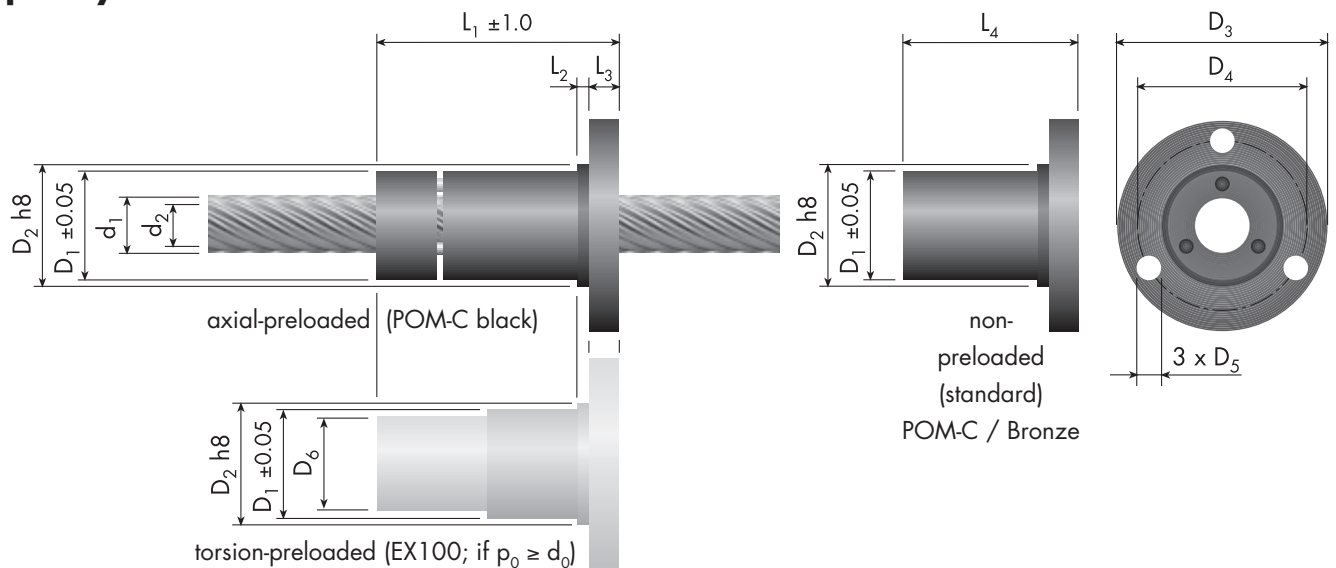
⁶⁾ = not available with torsion-preload

Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008

Speedy with standard thread (4/6)



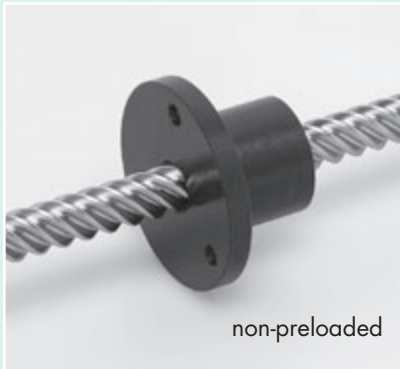
Speedy	Dimensions														Load rates
	Screw				Nut										
	d ₀ / p ₀	d ₁	d ₂	p	i	D ₁ ±0.05	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B
mm	mm				mm										
right-hand threads															
20 / 12 ⁶⁾	20.0	15.8	12	3	35.5	36	59	47	6.2	33	64	5	8	46 / 32	1 200
20 / 45	20.0	16.1	45	9	35.5	36	59	47	6.2	33	64	5	8	46 / 32	2 500
21 / 27	20.8	17.9	27	9	35.5	36	59	47	6.2	33	64	5	8	46 / 32	2 200
21 / 35 ³⁾	21.5	17.0	35	7	35.5	36	59	47	6.2	33	64	5	8	46 / 32	2 050
22 / 20	22.0	18.3	20	5	35.5	36	59	47	6.2	33	64	5	8	46 / 32	1 400
22 / 50	22.0	18.1	50	10	35.5	36	59	47	6.2	33	64	5	8	46 / 32	2 750
23 / 30	23.0	20.0	30	10	35.5	36	59	47	6.2	33	64	5	8	46 / 32	2 400
24 / 40 ³⁾	24.3	19.8	40	8	35.5	36	59	47	6.2	33	64	5	8	46 / 32	2 300
24 / 55	24.0	20.1	55	11	35.5	36	59	47	6.2	33	64	5	8	46 / 32	3 000
left-hand threads															
23 / 30	23.0	20.0	30	10	35.5	36	59	47	6.2	33	64	5	8	46 / 32	2 400

The CAD data corresponding to the types shown above are available at www.gewinde.ch

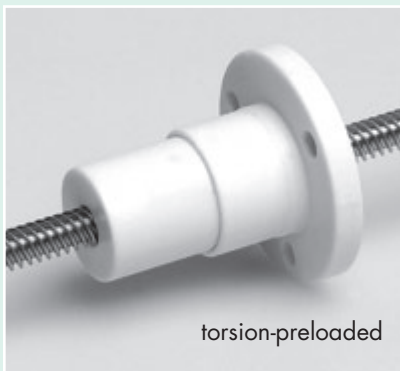
Speedy with standard thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

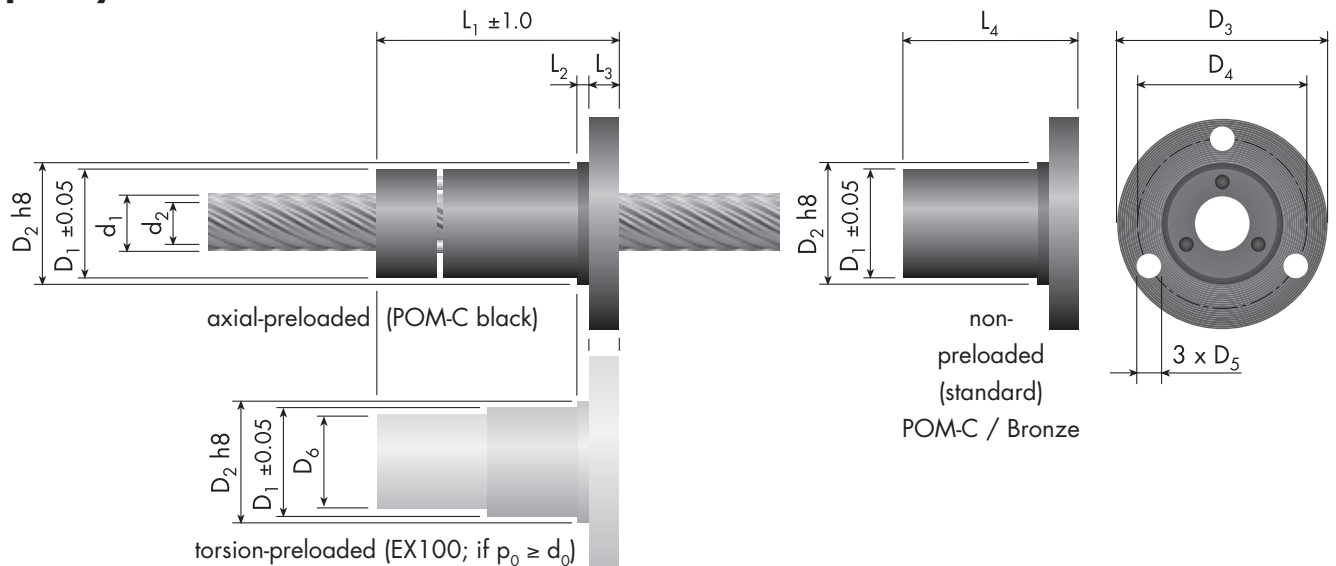
⁶⁾ = not available with torsion-preload

Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008

Speedy with standard thread (5/6)



Speedy	Dimensions														Load rates	
	Screw				Nut											
	d ₀ / p ₀	d ₁	d ₂	p	i	D ₁ ±0.05	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B	C _{stat} for POM/EX100 N
mm	mm				mm											
right-hand threads																
26 / 16 ^{3) 6)}	26.0	21.8	16	4	41.5	42	64	53	6.2	39	71	5	8	50 / 35	1 400	
26 / 24	26.0	22.3	24	6	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2 000	
26 / 60	26.0	22.2	60	12	41.5	42	64	53	6.2	39	71	5	8	50 / 35	3 250	
27 / 45 ³⁾	27.0	22.5	45	9	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2 550	
28 / 65 ³⁾	28.0	24.2	65	13	41.5	42	64	53	6.2	39	71	5	8	50 / 35	3 500	
30 / 28	30.0	26.5	28	7	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2 000	
30 / 50	29.8	25.3	50	10	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2 800	
30 / 70	30.0	26.2	70	14	41.5	42	64	53	6.2	39	71	5	8	50 / 35	3 750	

The CAD data corresponding to the types shown above are available at www.gewinde.ch

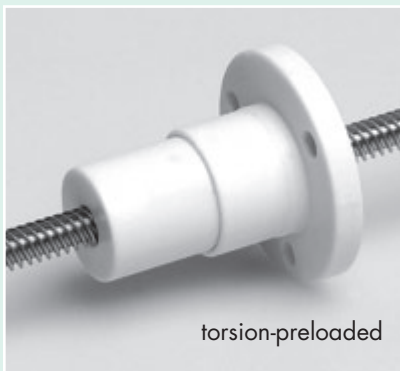
Speedy with standard thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

⁶⁾ = not available with torsion-preload

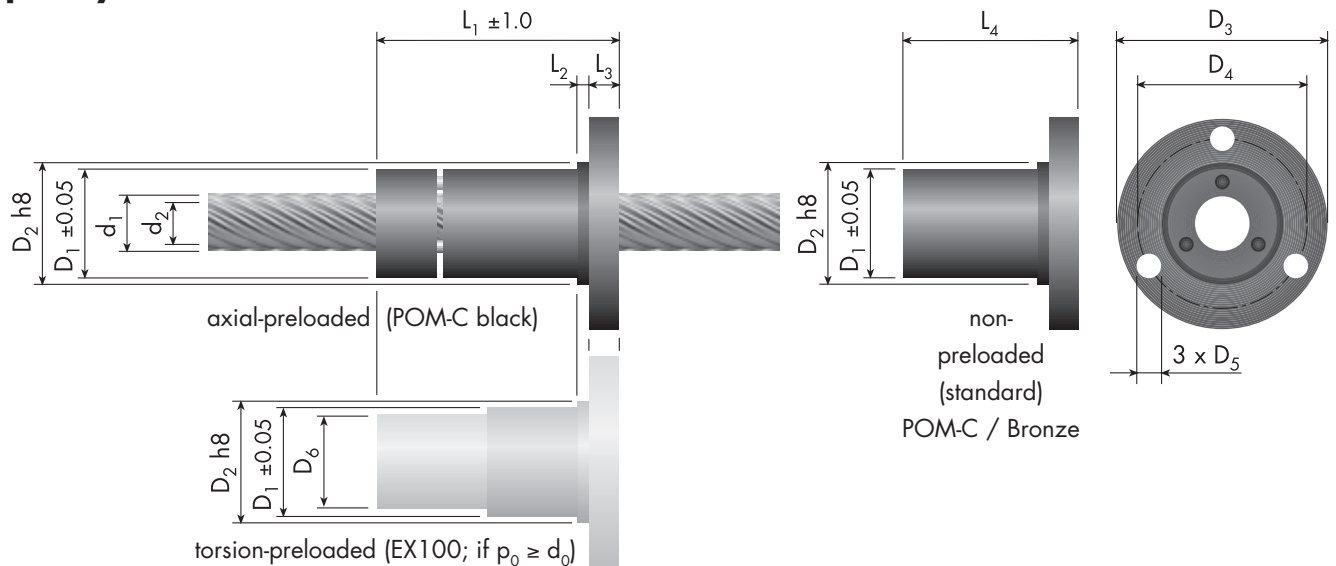
Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008



Speedy with standard thread (6/6)



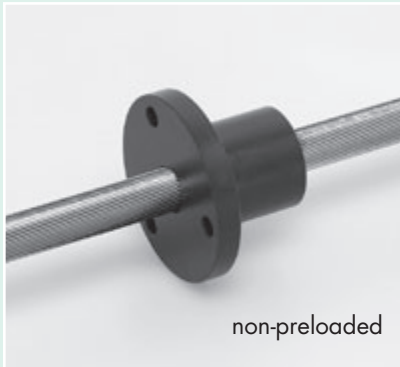
Speedy	Dimensions														Load rates
	Screw				Nut										
	d ₀ / p ₀	d ₁	d ₂	p	i	D ₁ ±0.05	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B
mm	mm				mm										
right-hand threads															
32 / 20 ³⁾	32.0	27.8	20	5	49.5	50	80	65	9.0	—	—	10	12	70 / 50	2000
32 / 75 ³⁾	32.0	28.2	75	15	49.5	50	80	65	9.0	—	—	10	12	70 / 50	4000
34 / 32 ³⁾	34.0	30.5	32	8	49.5	50	80	65	9.0	—	—	10	12	70 / 50	2300
34 / 80	34.0	30.2	80	16	49.5	50	80	65	9.0	—	—	10	12	70 / 50	4250
36 / 200	36.0	33.4	200	40	49.5	50	80	65	9.0	—	—	10	12	70 / 50	4500

The CAD data corresponding to the types shown above are available at www.gewinde.ch

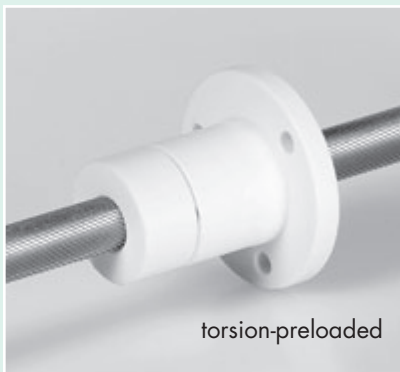
Speedy with fine-pitch thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

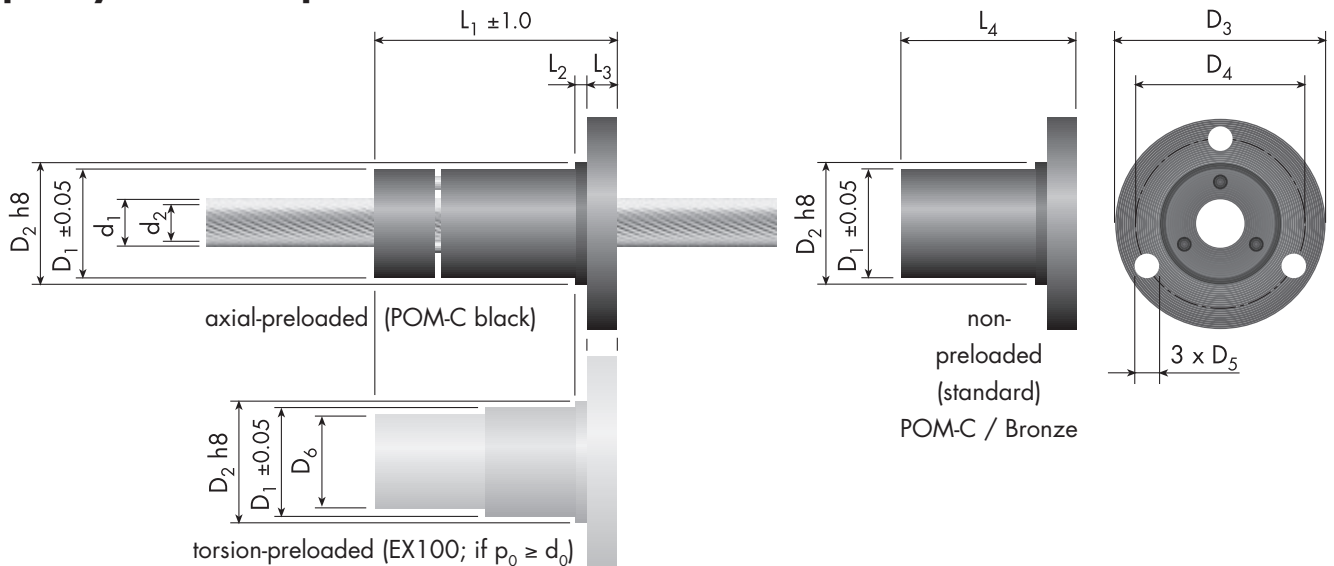
⁶⁾ = not available with torsion-preload

Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008

Speedy with fine-pitch thread



Speedy	Dimensions														Load rates	
	Screw				Nut											
	d ₀ / p ₀	d ₁	d ₂	p	i	D ₁ ±0.05	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B	C _{stat} for POM/EX100 N
mm	mm				mm											
right-hand threads																
4 / 10	4.0	3.0	10	8	11.5	12	28	18	3.2	—	—	3	4	20 / 15	150	
5 / 5	5.4	3.6	5	4	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	300	
5 / 20	6.0	5.0	20	16	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	300	
6 / 25	7.4	6.3	25	20	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	400	
7.5 / 7.5	7.7	5.9	7.5	6	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	450	
8 / 30	8.6	7.5	30	24	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	500	
10 / 10	10.0	8.2	10	8	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	600	
10 / 35	10.1	8.9	35	28	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	600	
11 / 40	11.5	10.2	40	32	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	700	
12 / 45	12.8	11.4	45	36	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	800	
12.5 / 12.5 ³⁾	12.3	10.4	12.5	10	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	750	
left-hand threads																
5 / 20	6.0	5.0	20	16	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	300	
8 / 30	8.6	7.5	30	24	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	500	
10 / 35	10.1	8.9	35	28	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	600	
12 / 45	12.8	11.4	45	36	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	800	

The CAD data corresponding to the types shown above are available at www.gewinde.ch

Speedy high-helix lead screws

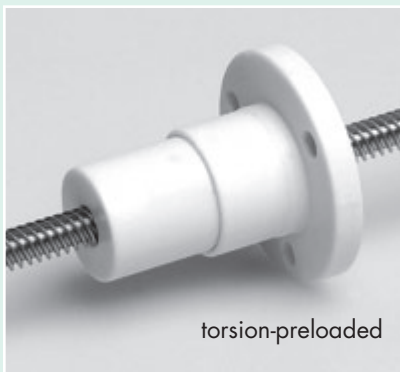
Speedy with inch thread



Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

Legend

d_0 = nominal screw diameter [mm]

d_2 = core diameter [mm]

p_0 = nominal pitch [mm]

p = effective pitch [mm]

i = number of threads [-]

C_{stat} = static load rates for non-preloaded POM-C or preloaded EX100 nuts [N];

for higher load rates, bronze nuts must be used ($C_{stat\ bronze} = 1.3 \times C_{stat\ POM/EX100}$)

B = bronze CuSn12, material N° 2.1052

³⁾ = only on request

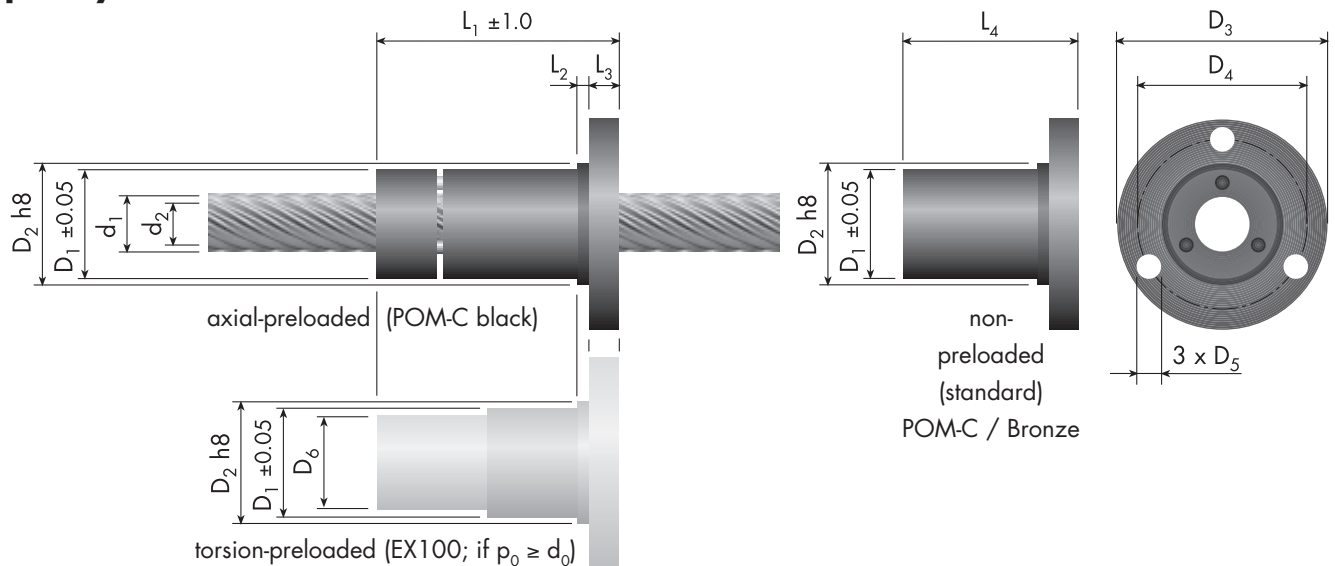
⁶⁾ = not available with torsion-preload

Special designs available on request.

All specifications are subject to change without notice.

Quality management ISO 9001:2008

Speedy with inch thread



Speedy	Dimensions															Load rates
	Screw				Nut											
	d ₁	d ₂	p	i	D ₁ ±0.05 mm	D ₂ h8	D ₃	D ₄ hole circle	D ₅	D ₆	L ₁	L ₂	L ₃	L ₄ POM / B	C _{stat} for POM/EX100 N	
mm	mm															
right-hand threads																
6.35 / 6.35	6.4	4.4	6.35	4	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	850	
6.35 / 12.7	6.3	4.6	12.70	6	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	800	
6.35 / 25.4	6.35	4.2	25.40	10	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	700	
7.94 / 12.7	7.9	5.8	12.70	6	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	1 100	
9.7 / 25.4	9.7	6.4	25.40	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / —	1 200	
11.2 / 30.5	11.2	8.0	30.48	6	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 400	
12.8 / 35.6	12.8	9.6	35.56	7	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 600	
14.3 / 40.6	14.4	11.2	40.64	8	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30	1 800	
16.0 / 45.7 ³⁾	16.0	12.8	45.72	9	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 000	
17.6 / 50.8	17.6	14.4	50.80	10	29.5	30	49	39	5.1	27	58	3	7	42 / 30	2 200	
25.7 / 76.2	25.7	24.0	76.20	15	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2 800	
32.0 / 96.5	32.2	29.0	96.52	19	49.5	50	80	65	9.0	—	—	10	12	70 / 50	4 600	
left-hand threads																
9.7 / 25.4	9.7	6.4	25.40	5	23.5	24	42	32	4.2	21.5	38	3	5	25 / —	1 200	
14.3 / 40.6	14.4	11.2	40.64	8	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30	1 800	
25.7 / 76.2	25.7	24.0	76.20	15	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2 800	
32.0 / 96.5	32.2	29.0	96.52	19	49.5	50	80	65	9.0	—	—	10	12	70 / 50	4 600	

The CAD data corresponding to the types shown above are available at www.gewinde.ch

Speedy high-helix lead screws



Basic design

The Eichenberger high-helix lead screws are not called Speedy for nothing: never before have such high moving speeds been obtained at such low rotational speeds. The Eichenberger Speedy has made this possible by using a helix pitch unheard of before. High-helix lead screws are made of stainless steel and are formed by the cold-rolling process. They are coupled with high wear-resistant thermoplastic nuts in simple (standard, POM-C) or preloaded (POM-C or EX 100) designs. For higher loads or special applications, alternative plastic materials or bronze may be used for the nuts.

Materials

Screw

- stainless steel X20Cr13,
(material N° 1.4021 / AISI 420)
- other steel qualities, i.e.
 - X2CrNiMo17-12-2
(material N° 1.4404 / AISI 316 L)
- or
- X10CrNiS18-09
(material N° 1.4305 / AISI 303)
- on request
- other materials, i.e. hard-anodized aluminium for fine-pitch threads on request

Nut

- non-preloaded: POM-C black
- preloaded:
 - axial-preloaded: POM-C black
 - torsion-preloaded: EX100 white
(if $p_0 \geq d_0$)
- bronze CuSn12, material N° 2.1052
- other plastics on request

Nut design

For all thread types a standard flange nut design has been defined, which is deliverable in the following types:



Flange nut, non-preloaded
– type «SFM»: POM-C black
– type «SBM»: bronze



Flange nut axial-preloaded
– type «SFV»: POM-C black
– type «SBV»: bronze (on request)



Flange nut torsion-preloaded (for square pitches and larger)
– type «SFT»: EX100 white
– type «SBT»: bronze (on request)

Of course, any other application-specific nut designs can be supplied on request including injection-molded solutions.

Temperature range

POM-C nuts: –40 to +60 °C
EX100 nuts: –40 to +60 °C
bronze nuts: –40 to +200 °C

Lead accuracy

Standard

G9 = $\leq 0.1 \text{ mm}/300 \text{ mm}$
(according to DIN 69051)

On request

other lead accuracies



Duty cycle

Load rates, lubrication notice and basic calculation with load factor f_L are based on a duty cycle of 10 % for a Speedy with non-preloaded POM-C nut.

Efficiency

The efficiency η depends on the helix angle and reaches values from ~0.5 to 0.75 (see chart on page 70).

Factory length

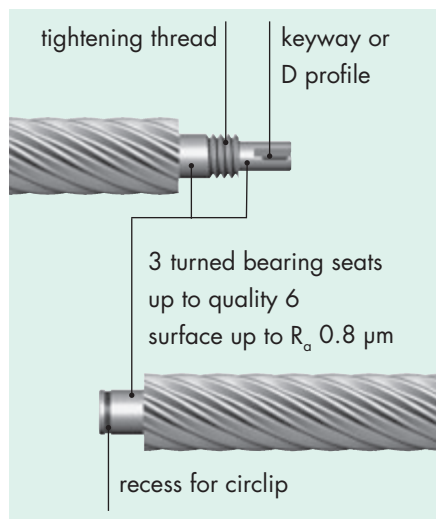
In general, Eichenberger screws are available as threaded rods, approx. 3 m long. Upon request, lengths up to 6 m are available, depending on diameter and supply market situation.

Lead screw ends

Speedy lead screws are cut to the desired length without special machining (standard).

Upon request, a so-called standard screw end journal with three turned bearing seats (see figure below) is available. Dimensions are as per customer specifications.

Note also the links to the CAD data at www.gewinde.ch



Handling

High-helix lead screws are precision parts (non-hardened) and must be protected from shock, dirt or moisture when transported or stored. Please do not unpack until ready for use.

Please check for cleanness when mounting the lead screw unit. Dirt or foreign matter on the thread may cause excessive wear.

Please consult lubrication recommendation before mounting or operating Speedy lead screws.

Radial loads and torque

Radial loads or torque brought to bear upon the nut result in overload of individual contact surfaces, thus seriously affecting the service life of the lead screw assembly. Therefore it is important to properly mount the screw and to comply with all relevant form and positional tolerances.

Lubrication

In some cases, a single lubrication with grease or oil is sufficient. However, any lubrication cycle depends on the application environment.

Bronze nuts have to be lubricated regularly.

Lubricant used by manufacturer:

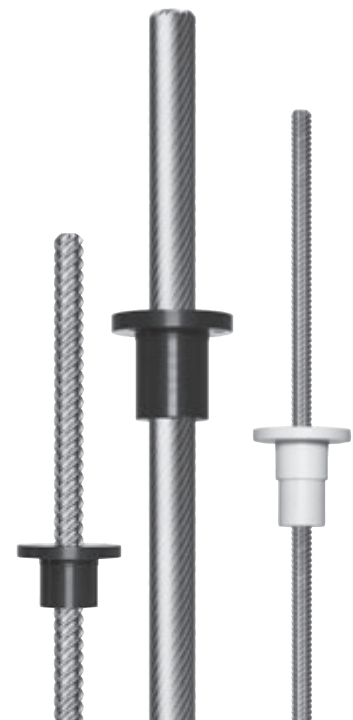
– Klüber Microlube GBU Y 131.

Applications

The Eichenberger high-helix lead screws are suitable for a variety of applications. For short strokes, they are a substitute for drive belts due to their low production cost. In addition, they are perfectly suitable as substitutes for hydraulic and pneumatic cylinders. Indeed, they allow low-friction acceleration as well as free positioning and operate without secondary energy sources. When appropriate, they are also ideal alternatives to trapezoidal or ball screws due to high efficiency and a convincing cost-performance ratio.

Typical applications are:

- Drives for doors, gates and windows
- Handling systems
- Graphics machinery
- Drives for valves and dampers
- Climate control systems
- Medical devices
- Textile machines
- Food and packaging industries
- Steering actuators
- Electronics industry etc.



The following are the relevant calculations which underly high-helix screw design and safe operation.

Calculations at dynamic load:

Critical rotational speed n_{per}

Permissible rotational speeds must differ substantially from the screw's own frequency.

$$n_{per} = K_D \cdot 10^6 \cdot \frac{d_2}{l_a^2} \cdot S_n \text{ [min}^{-1}\text{]}$$

n_{per} = permissible rotational speed [min⁻¹]

K_D = characteristic constant as a function of bearing configuration

→ see below

d_2 = core diameter [mm]

l_a = bearing distances [mm]

→ see opposite

(always include maximum allowable l_a in calculation)

S_n = safety factor

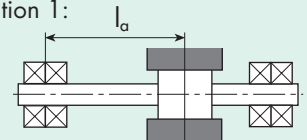
usually $S_n = 0.5 \dots 0.8$ [-]

Configuration 1:

fixed –

fixed

$K_D = 276$

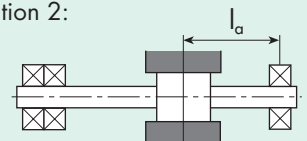


Configuration 2:

fixed –

simple

$K_D = 190$

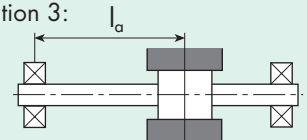


Configuration 3:

simple –

simple

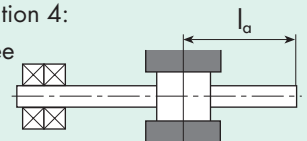
$K_D = 122$



Configuration 4:

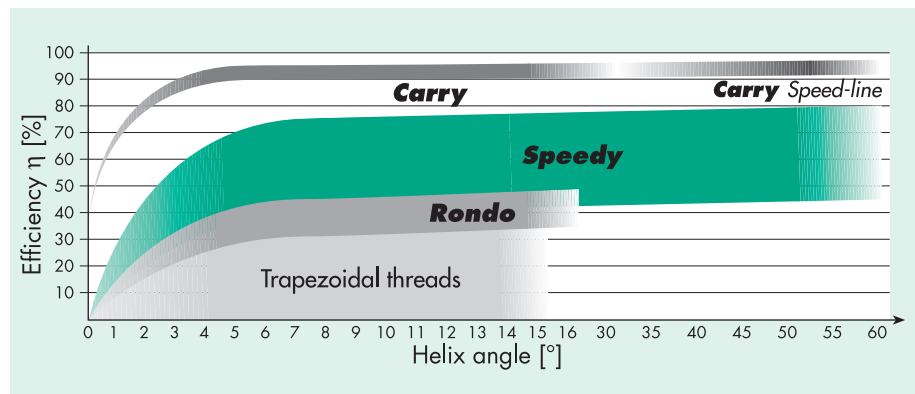
fixed – free

$K_D = 43$



Efficiency η_p (practical)

The efficiency η depends on the helix angle and reaches values from ~0.5 to 0.75.





Driving torque M

Depends upon the type of power transmission.

Case 1: torque → linear movement

$$M_a = \frac{F_a \cdot p}{2000 \cdot \pi \cdot \eta} \text{ [Nm]}$$

Case 2: axial force → torque

$$M_e = \frac{F_a \cdot p \cdot \eta'}{2000 \cdot \pi} \text{ [Nm]}$$

M_a = input torque [Nm]

M_e = output torque [Nm]

F_a = axial force [N]

η = efficiency [%]

η' = corrected efficiency [%]

p = pitch [mm]

Input performance P

$$P = \frac{M_a \cdot n}{9550} \text{ [kW]}$$

P = input performance [kW]

n = rotational speed [min^{-1}]

A safety margin of 20 % is recommended when selecting drives.

Basic calculations

Maximum authorized load depending on speed

$$F_{\text{per.}} = C_0 \cdot f_L \text{ [N]}$$

C_0 = static load rate [N]

f_L = load factor [–] for POM-C nuts

circumferential speed v_C [m/min]	load factor f_L [–]
5	0.95
10	0.75
20	0.45
30	0.37
40	0.12
50	0.08

Example

Parameters:

Speedy 10/50 with non-preloaded POM-C nut, $d_0 = 10$ mm, $p = 50$ mm and $C_0 = 1250$ N;
required moving speed $v_s = 200$ mm/sec.

We need to find: $F_{\text{per.}}$

We calculate n [min^{-1}],

$$n = \frac{v_s \text{ [mm/sec]} \cdot 60}{p \text{ [mm]}}$$

$$= \frac{200 \cdot 60}{50} = 240 \text{ min}^{-1}$$

circumferential speed v_C [m/min]

$$v_C = \frac{d_0 \text{ [mm]} \cdot \pi \cdot n \text{ [min}^{-1}\text{]}}{1000}$$

$$= \frac{10 \cdot \pi \cdot 240}{1000} = 7.53 \text{ m/min}$$

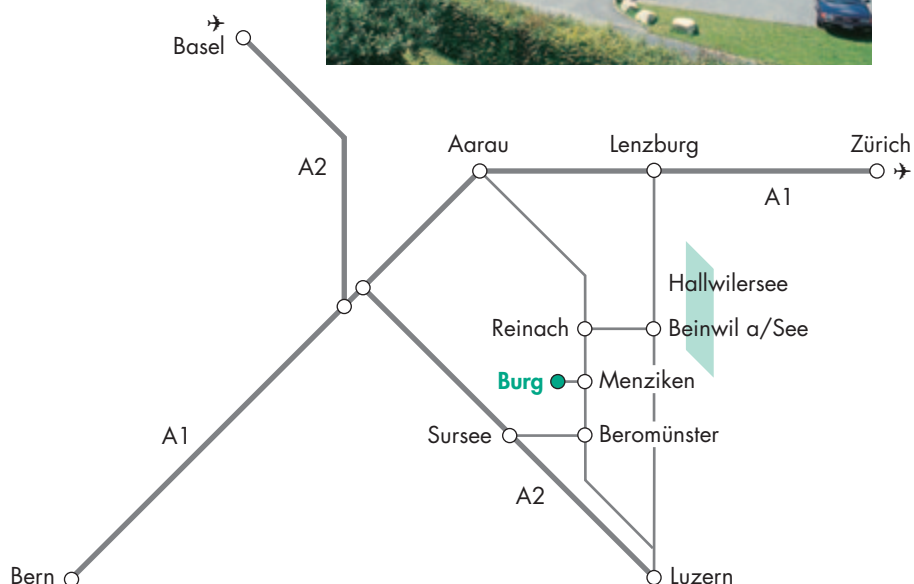
and find load factor f_L in above table:

f_L at v_C of 7.53 m/min ≈ 0.85 [–]

It follows:

$$F_{\text{per.}} = C_0 \cdot f_L = 1250 \cdot 0.85 = 1062.5 \text{ N}$$

In other words, the maximum load for a Speedy 10/50 at $v_s = 200$ mm/sec.
(→ $n = 240 \text{ min}^{-1}$) is 1060 N.



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