Eichenberger Gewinde

NEW: **Speedy** and **Rondo**
partly available in aluminum

100% Swiss made

Main Catalogue

Carry ball screws
Carry ***Speedline*** high-helix ball screws
Speedy high-helix lead screws
Rondo round thread lead screws

A company of the Festo Group

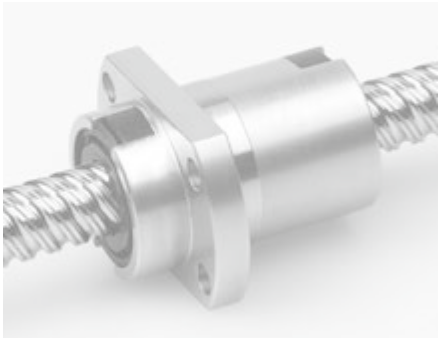
Summary description

Carry ball screws

Due to their premium quality and precision, the rolled Carry ball screws are suitable for all linear applications where heavy loads need to be transferred with optimum efficiency.

– ø 4–40 mm
– p 1–40 mm
– for high loads at medium moving speeds

pages 4/5 and 6–41



Carry Speed line high-helix ball screws

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

– ø 8–25 mm
– p 10–50 mm
– for medium loads at high moving speeds

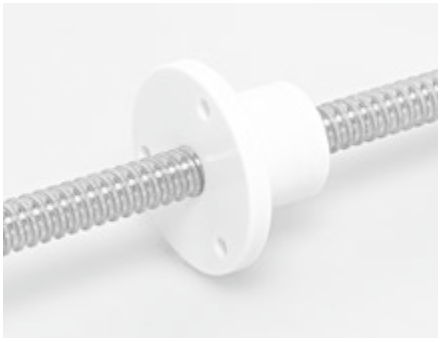
pages 4/5 and 42–51

Speedy high-helix lead screws

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

– ø 4–36 mm
– p 4–200 mm
– for low loads at high moving speeds
– slide screw unit (steel, aluminium on request)

pages 52/53 and 54–77



Rondo round thread lead screws

The alternative to trapezoidal screws with remarkable efficiency.

– ø 6–16 mm
– p 2–5 mm
– for medium loads at medium moving speeds
– slide screw unit (steel, aluminium on request)

pages 52/53 and 78–84

Slide lead screw product range

▲ = standard range ✷ = on request [2] = also available with left-hand thread

type d_0 / p_0	Rondo round thread	Speedy inch thread	Speedy fine-pitch thread	Speedy standard thread	type d_0 / p_0
					
4 / 10			▲		4 / 10
4.96 / 16.25			▲		4.96 / 16.25
5 / 5			▲		5 / 5
5 / 20			▲ [2]		5 / 20
6 × 2	▲ [2]				6 × 2
6 / 25			▲		6 / 25
6.35 / 6.35		▲			6.35 / 6.35
6.35 / 12.7		▲			6.35 / 12.7
6.35 / 25.4		▲			6.35 / 25.4
7.5 / 7.5			▲		7.5 / 7.5
7.94 / 12.7		▲			7.94 / 12.7
8 × 2	▲ [2]				8 × 2
8 / 4				▲	8 / 4
8 / 10				▲ [2]	8 / 10
8 / 12				▲	8 / 12
8 / 15				▲	8 / 15
8 / 30			▲ [2]		8 / 30
8 / 38				▲	8 / 38
9 / 20				▲	9 / 20
9.7 / 25.4		▲ [2]			9.7 / 25.4
10 × 3	▲ [2]				10 × 3
10 / 10			▲		10 / 10
10 / 12				▲ [2]	10 / 12
10 / 15				▲	10 / 15
10 / 35			▲ [2]		10 / 35
10 / 50				▲ [2]	10 / 50
11 / 40			▲		11 / 40
11 / 60				▲	11 / 60
11.2 / 30.5		▲			11.2 / 30.5
12 × 3	▲ [2]				12 × 3
12 × 4	▲ [2]				12 × 4
12 × 5	▲				12 × 5
12 / 15				▲ [2]	12 / 15
12 / 25				▲ [2]	12 / 25
12 / 45			▲ [2]		12 / 45
12.5 / 12.5			✷		12.5 / 12.5
12.8 / 35.6		▲			12.8 / 35.6
13 / 20				▲	13 / 20
13 / 70				▲ [2]	13 / 70

14 × 3	▲ 2)				14 × 3
14 × 4	▲ 2)				14 × 4
14 / 8				▲	14 / 8
14 / 18				▲ 2)	14 / 18
14 / 30				▲ 2)	14 / 30
14 / 40				▲	14 / 40
14.3 / 40.6		▲ 2)			14.3 / 40.6
15 / 20				▲ 2)	15 / 20
15 / 80				▲ 2)	15 / 80
16 × 4	▲				16 × 4
16 × 5	▲ 2)				16 × 5
16 / 21				▲ 2)	16 / 21
16 / 25				▲	16 / 25
16 / 35				▲	16 / 35
16.0 / 45.7		✱			16.0 / 45.7
16 / 90				▲ 2)	16 / 90
17.6 / 50.8		▲			17.6 / 50.8
18 / 16				▲	18 / 16
18 / 24				▲ 2)	18 / 24
18 / 40				▲ 2)	18 / 40
18 / 100				▲ 2)	18 / 100
19 / 30				▲	19 / 30
20 / 12				▲	20 / 12
20 / 45				▲	20 / 45
21 / 27				▲	21 / 27
21 / 35				✱	21 / 35
22 / 20				▲	22 / 20
22 / 50				▲	22 / 50
22 / 120				▲	22 / 120
23 / 30				▲ 2)	23 / 30
24 / 40				✱	24 / 40
24 / 55				▲	24 / 55
25.7 / 76.2		▲ 2)			25.7 / 76.2
26 / 16				✱	26 / 16
26 / 24				▲	26 / 24
26 / 60				▲	26 / 60
27 / 45				✱	27 / 45
28 / 65				✱	28 / 65
30 / 28				▲	30 / 28
30 / 50				▲	30 / 50
30 / 70				▲	30 / 70
32 / 20				✱	32 / 20
32 / 75				✱	32 / 75
32.0 / 96.5		▲ 2)			32.0 / 96.5
34 / 32				✱	34 / 32
34 / 80				▲	34 / 80
36 / 200				▲	36 / 200
pages	80–83	70–73	68/69	56–67	pages

Content Speedy

Speedy high-helix lead screws

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

Order system Speedy

Example for complete high-helix lead screw — **SGS 18/100 SFM RH 350 G9 E M**

Type of lead screw
SGS = Speedy high-helix lead screw

Nominal size (d_0 / p_0) [mm]

Type of nut — for nut only
SFM = standard flange nut, non-preloaded, made of POM-C black [1)]
SFV = standard flange nut, axial-preloaded, made of POM-C black [1)]
SFT = standard flange nut, torsion-preloaded, made of EX100 white [6)]
SBM = standard flange nut, non-preloaded, made of bronze
SBV = standard flange nut, axial-preloaded, made of bronze [3)]
SBT = standard flange nut, torsion-preloaded, made of bronze [3)]
MSX = special design according to drawing

Right-hand / left-hand thread
RH = right-hand thread (standard)
LH = left-hand thread (→ see dimensional charts)

Lead screw overall length [mm] — for screw only
standard steel quality: X20Cr13 (1.4021) [1)]

Lead accuracy (class) — for screw only
G9 = ≤ 0.1 mm/300 mm (standard)
GX = lead accuracy upon specification

End machining — for screw only
O = no end machining (cut by grinding; screw and nut separate)
E = end machining according to drawing

Assembly
G = screw and nut separate (standard)
M = screw and nut assembled according to drawing/specified orientation

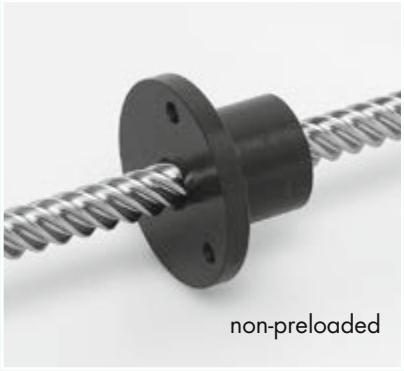
[1)] other materials on request
[3)] only on request
[6)] available for square pitches and larger

Example for screw only — **SGS 18/100 RH 350 G9 O G**

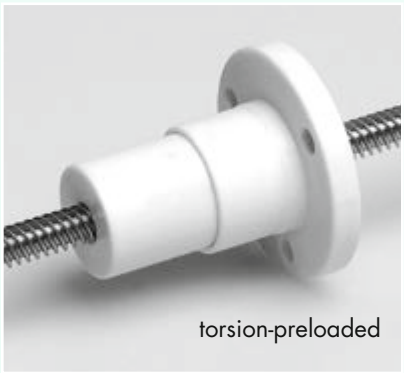
Example for nut only — **SGS 18/100 SFM RH G**

Speedy with standard thread

Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

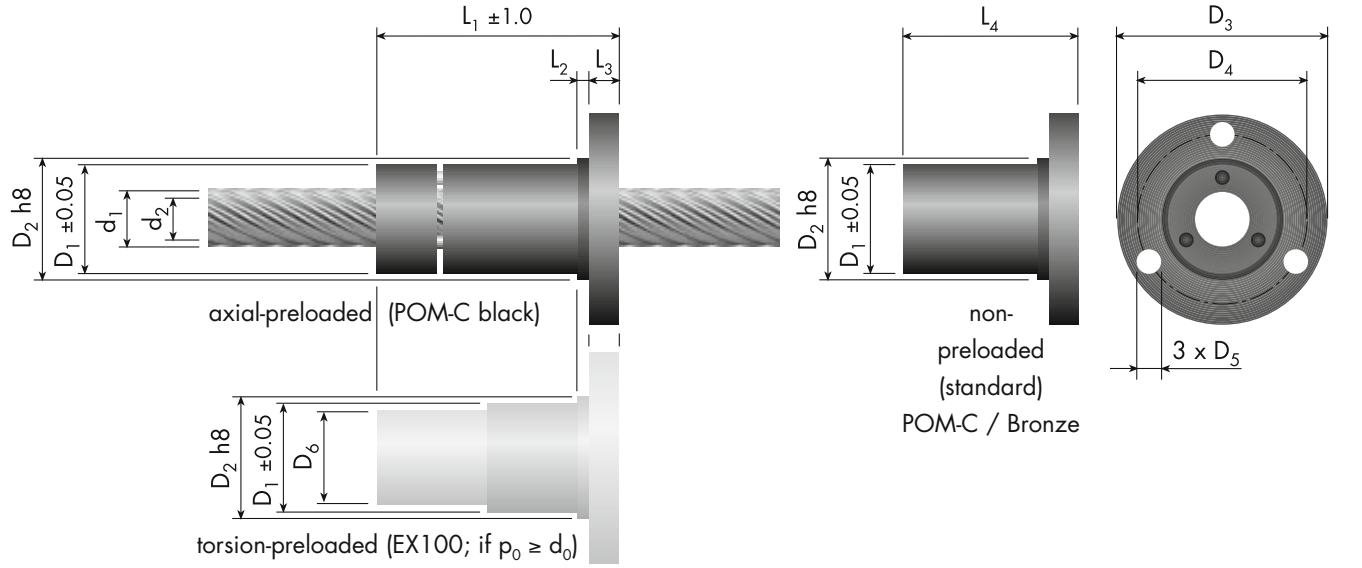
Legend

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (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
Environmental management ISO 14001

Speedy with standard thread (1/6)

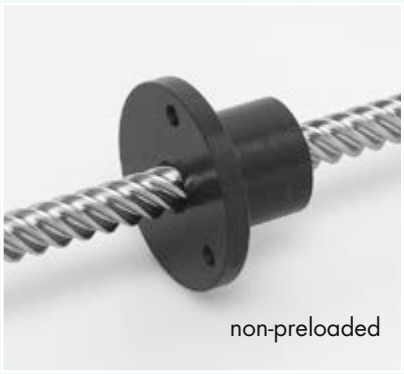


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
8 / 4 [6]	7.9	5.5	4	2	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	950
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
8 / 38	8.0	5.7	38	8	23.5	24	42	32	4.2	21.5	38	3	5	25 / 18	1 000
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

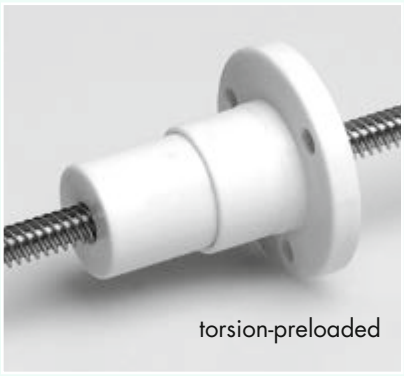
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (2.1052)

3) = only on request
6) = not available with torsion-preload

Special designs available on request.
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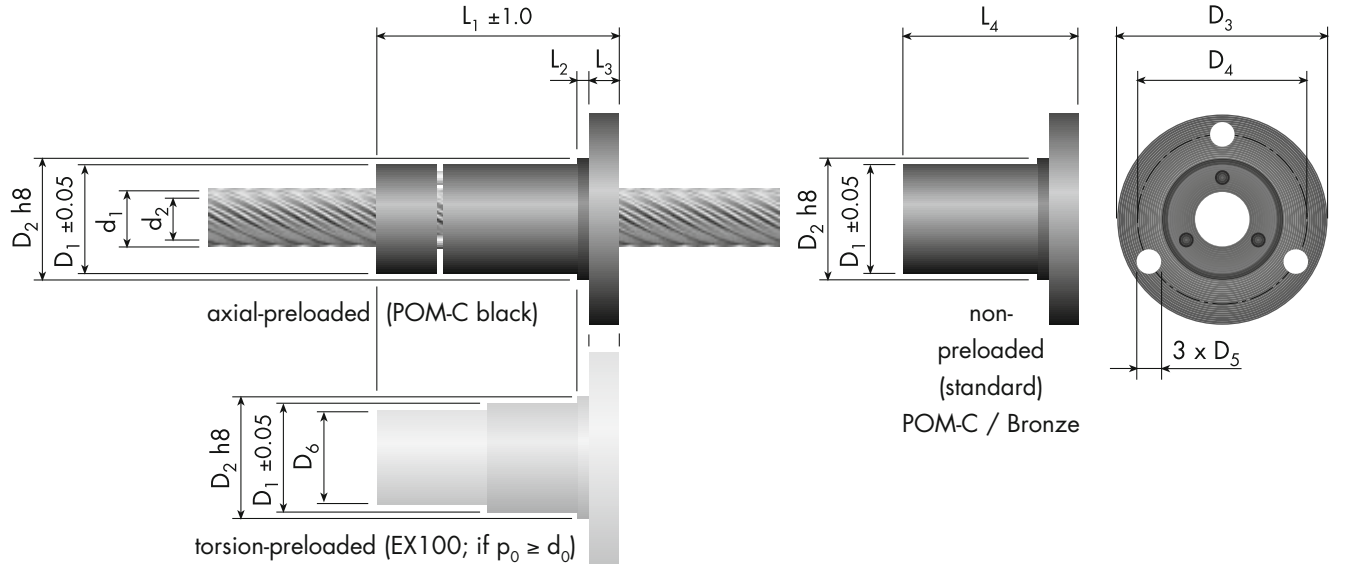
Quality management ISO 9001
Environmental management ISO 14001

Speedy with standard thread (2/6)

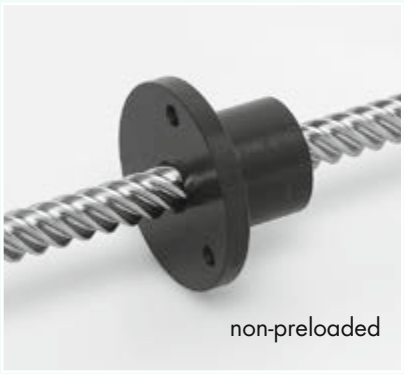


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
10 / 50	10.0	7.4	50	10	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30	1 250
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
14 / 40	14.0	10.9	40	5	25.5	26	46	36	5.1	23.5	58	3	7	42 / 30	1 800
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

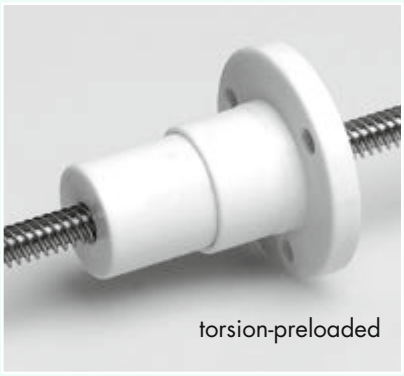
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (2.1052)

3) = only on request
6) = not available with torsion-preload

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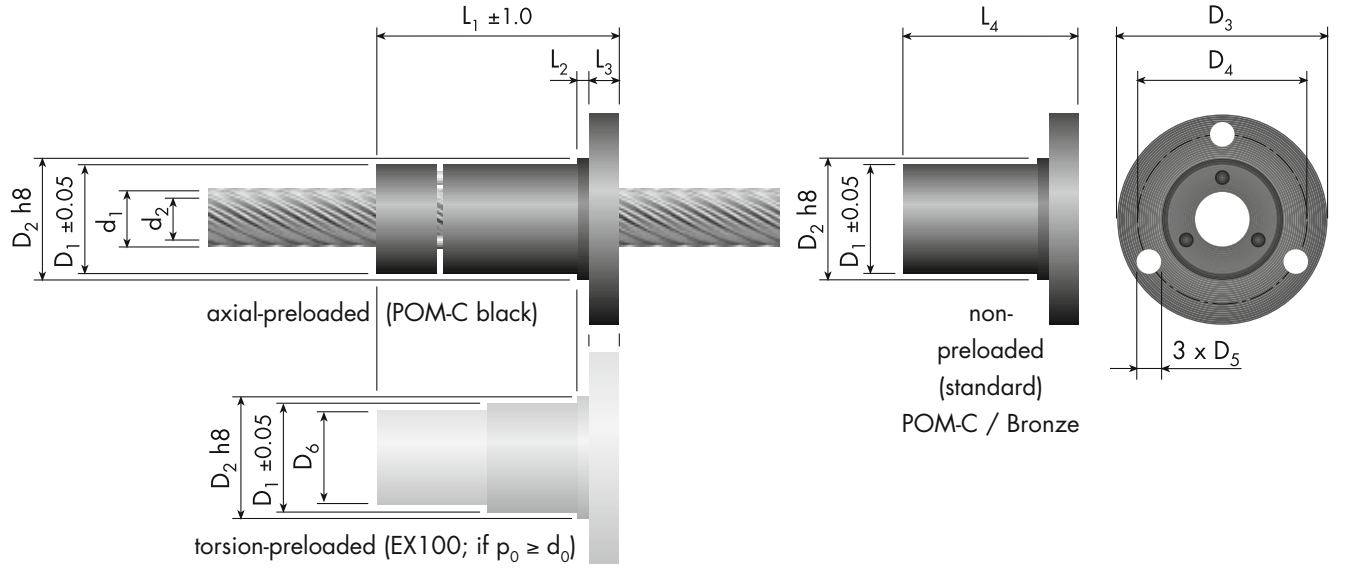
Quality management ISO 9001
Environmental management ISO 14001

Speedy with standard thread (3/6)

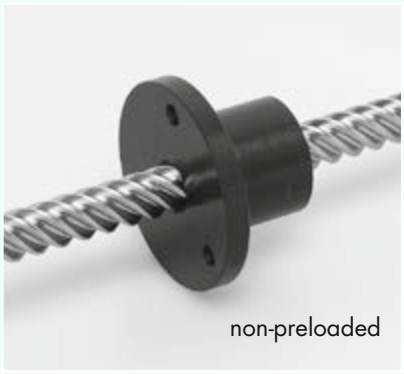


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
15 / 20	15.2	12.5	20	8	29.5	30	49	39	5.1	27	58	3	7	42 / 30	1 600
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

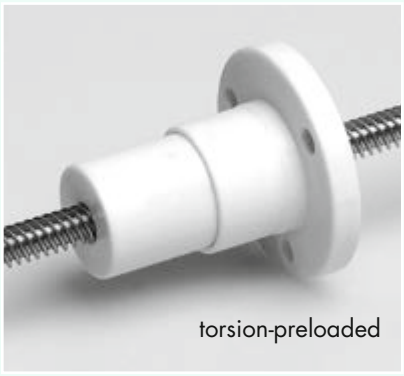
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

Speedy 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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (2.1052)

3) = only on request
6) = not available with torsion-preload

Special designs available on request.
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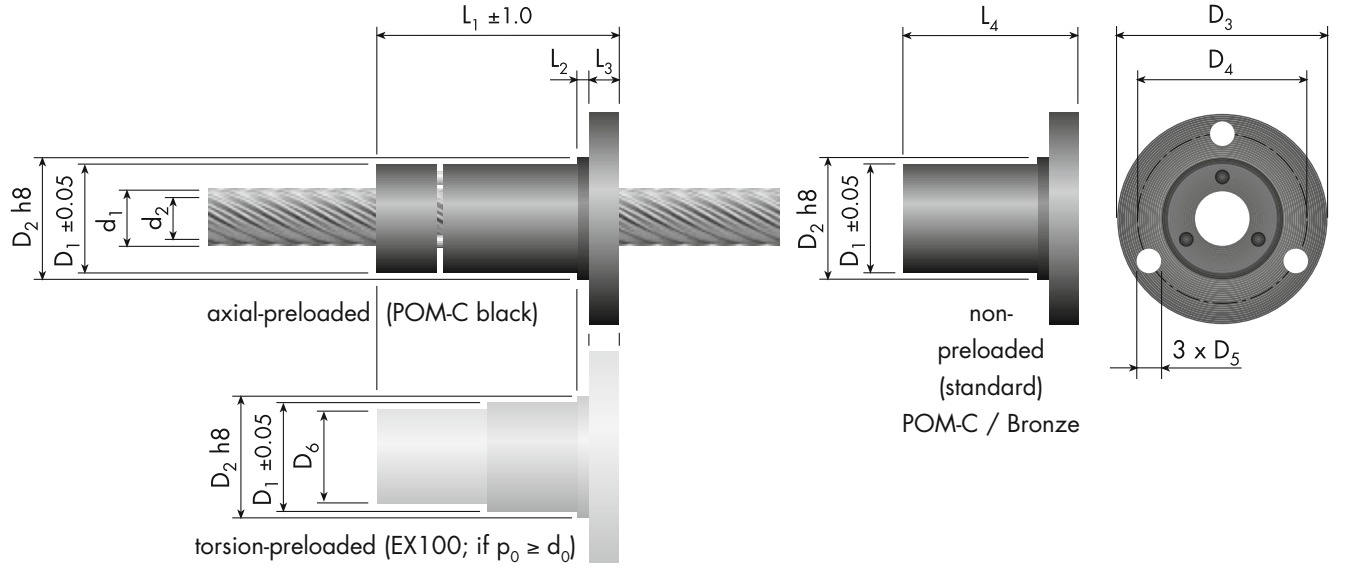
Quality management ISO 9001
Environmental management ISO 14001

Speedy with standard thread (4/6)

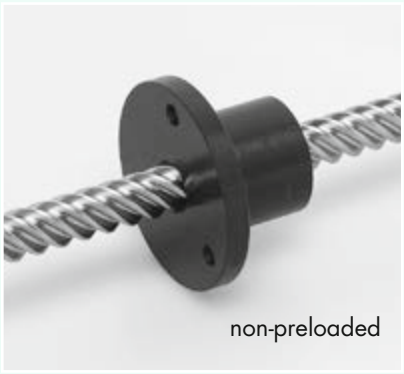


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
20 / 12 [6]	20.0	15.8	12	3	35.5	36	59	47	6.2	33	64	5	8	46 / 32	1 200
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
22 / 120	22.5	19.8	120	24	35.5	36	59	47	6.2	33	64	5	8	46 / 32	3 000
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

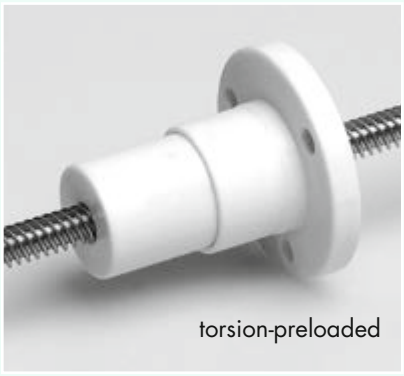
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

Speedy with standard thread

Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

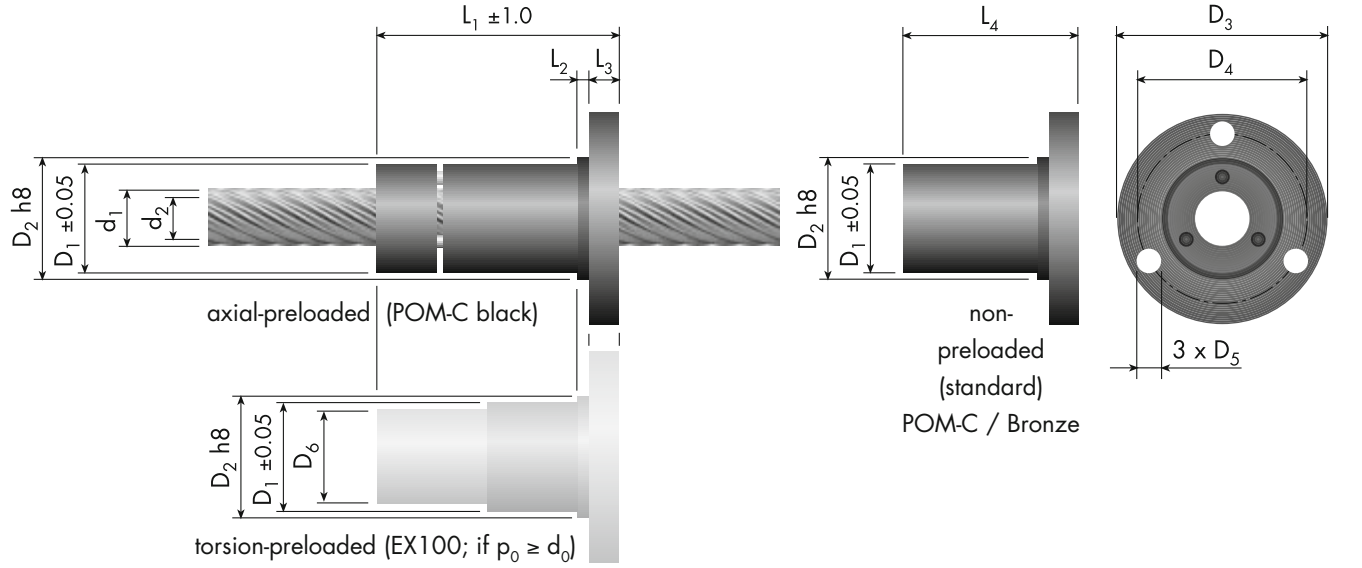
Legend

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (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
Environmental management ISO 14001

Speedy with standard thread (5/6)

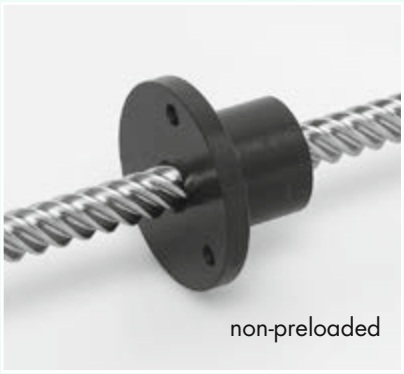


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
26 / 16 [3) 6)]	26.0	21.8	16	4	41.5	42	64	53	6.2	39	71	5	8	50 / 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

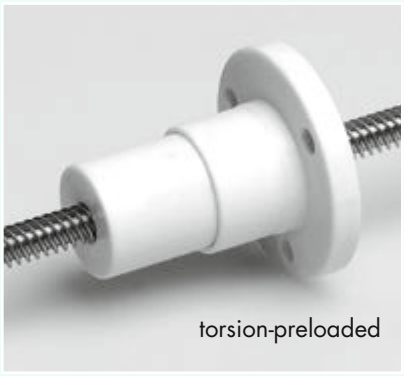
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

Speedy with standard thread

Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

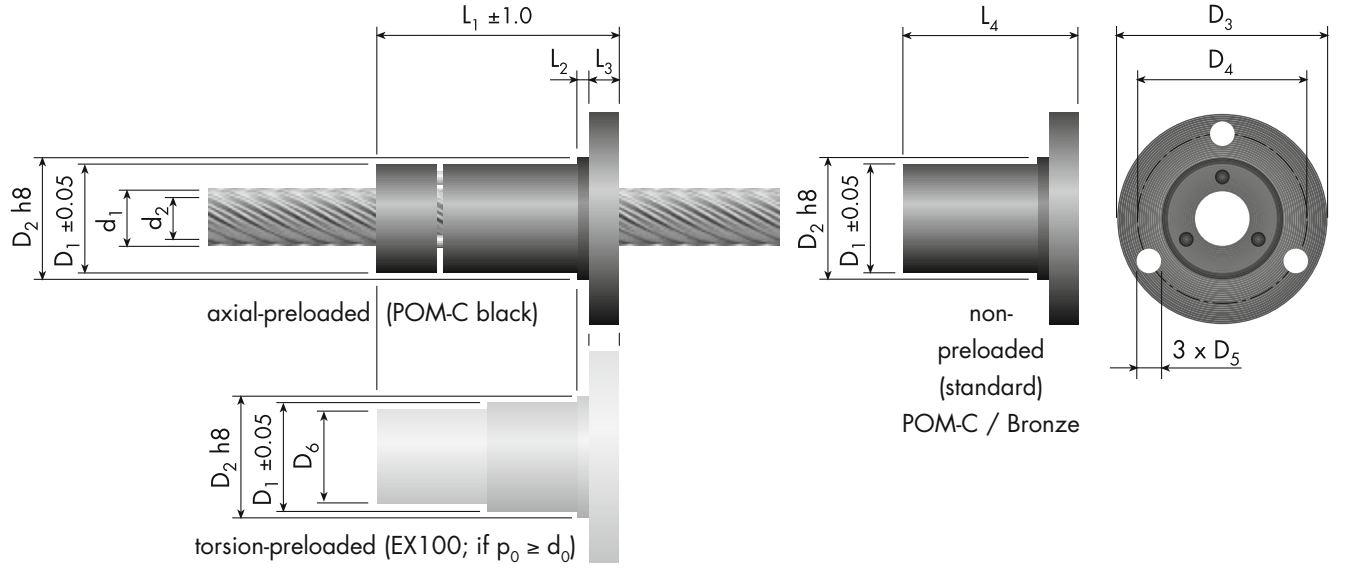
Legend

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (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
Environmental management ISO 14001

Speedy with standard thread (6/6)

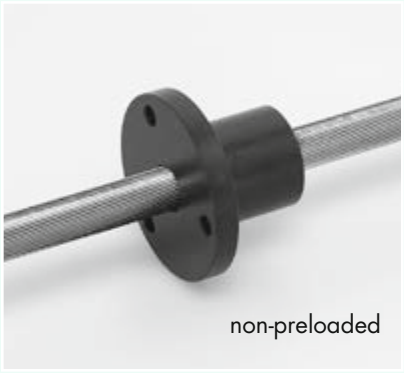


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
32 / 20 [3]	32.0	27.8	20	5	49.5	50	80	65	9.0	—	—	10	12	70 / 50	2000
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

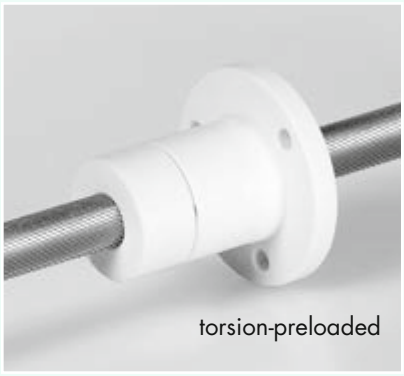
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

Speedy with fine-pitch thread

Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

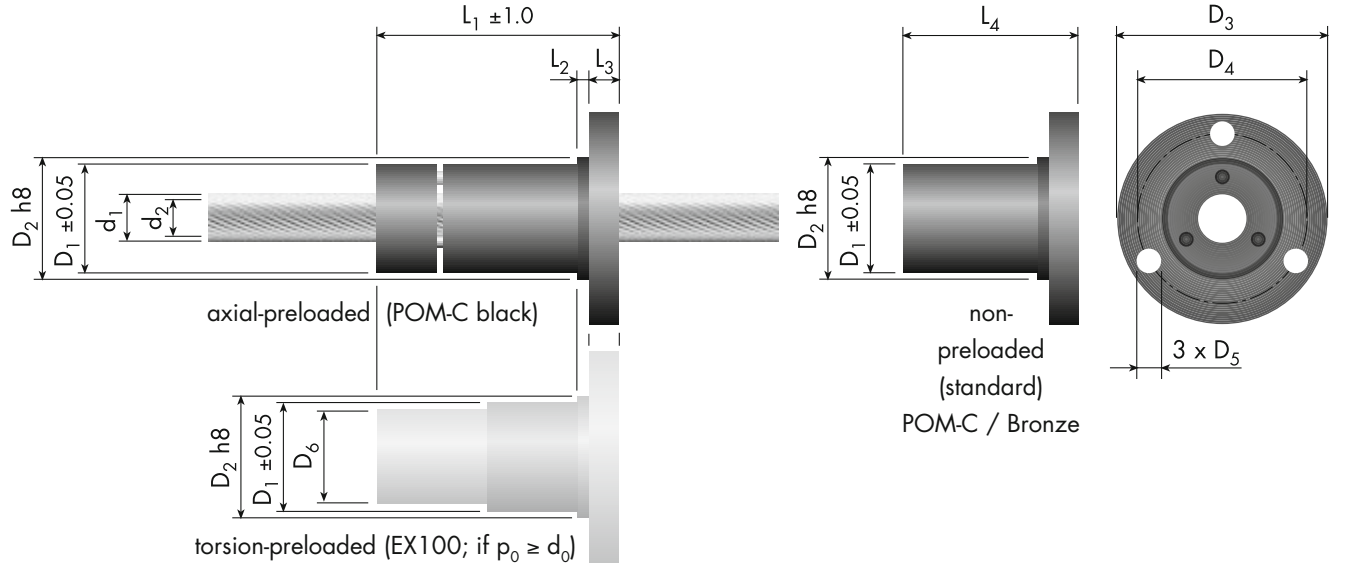
Legend

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (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
Environmental management ISO 14001

Speedy with fine-pitch thread

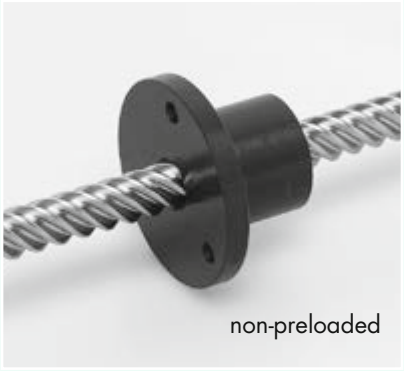


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
4 / 10	4.0	3.0	10	8	11.5	12	28	18	3.2	—	—	3	4	20 / 15	150
4.96 / 16.25	5.0	4.0	16.25	13	11.5	12	28	18	3.2	—	—	3	4	20 / 15	220
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

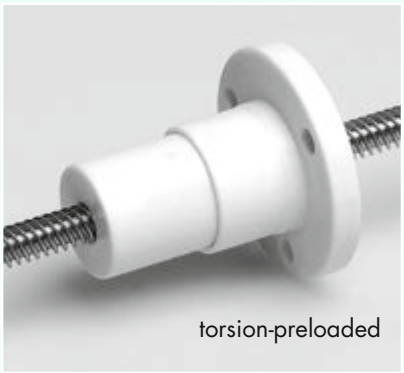
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

Speedy with inch thread

Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

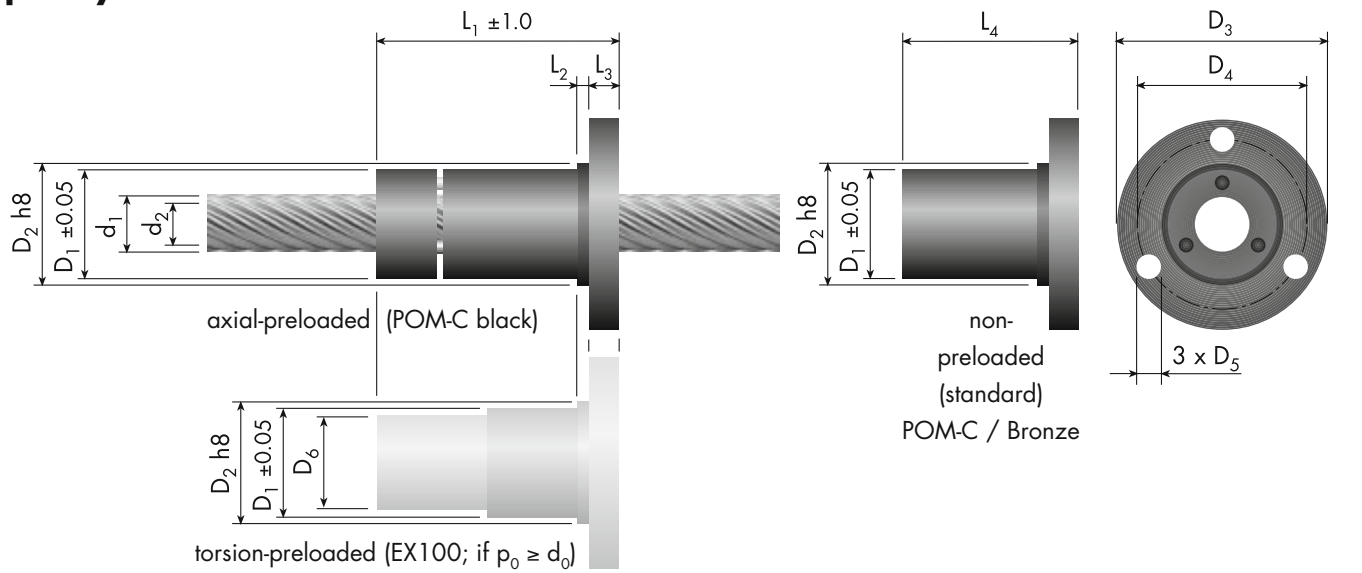
Legend

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (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
Environmental management ISO 14001

Speedy with inch thread (1/2)

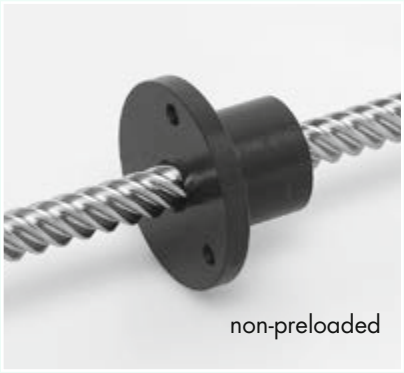


Speedy	Dimensions														Load rates
	Screw				Nut										
d_0 / p_0	d_1	d_2	p	i	D_1 ±0.05	D_2 h8	D_3	D_4 hole circle	D_5	D_6	L_1	L_2	L_3	L_4 POM / B	C_{stat} for POM/EX100
mm	mm				mm										N
right-hand threads															
6.35 / 6.35	6.4	4.4	6.35	4	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	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	8	20.5	21	38	29	4.2	18.5	38	3	5	25 / 18	800
6.35 / 25.4	6.1	4.4	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
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

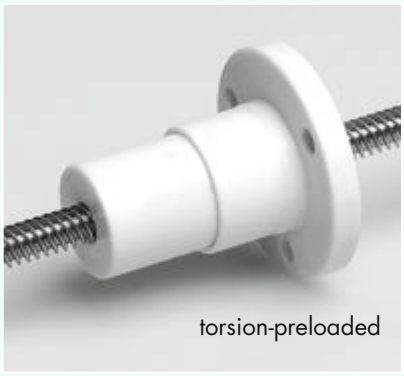
The CAD data corresponding to the types shown above are available at **www.gewinde.ch**

Speedy with inch thread

Standard flange nut, non-preloaded/preloaded



non-preloaded



torsion-preloaded

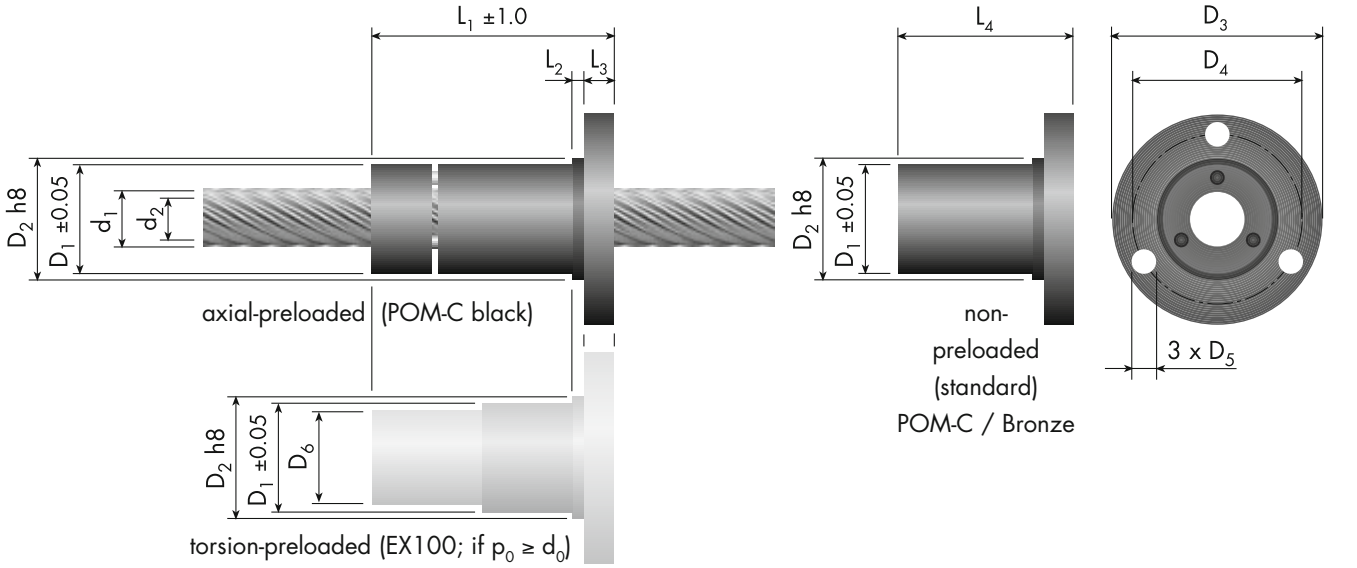
Legend

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** × $C_{stat\ POM/EX100}$)
B = bronze CuSn12 (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
Environmental management ISO 14001

Speedy with inch thread (2/2)



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
mm	mm				mm										N
right-hand threads															
25.7 / 76.2	25.7	24.0	76.20	15	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2800
32.0 / 96.5	32.2	29.0	96.52	19	49.5	50	80	65	9.0	—	—	10	12	70 / 50	4600
left-hand threads															
25.7 / 76.2	25.7	24.0	76.20	15	41.5	42	64	53	6.2	39	71	5	8	50 / 35	2800
32.0 / 96.5	32.2	29.0	96.52	19	49.5	50	80	65	9.0	—	—	10	12	70 / 50	4600

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

Basic design / Materials / Precision

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

– standard: stainless steel
  X20Cr13 (1.4021)
– on request: other steel qualities, i.e.
  X2CrNiMo17-12-2 (1.4404)
  or
  X10CrNiS18-09 (1.4305)
– aluminium on request

Nut

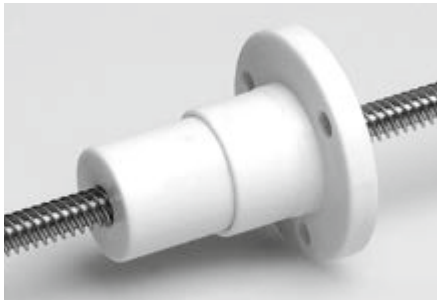
– non-preloaded: POM-C black
– preloaded:
  - axial-preloaded: POM-C black
  - torsion-preloaded: EX100 white
    (if $p_0 \geq d_0$)
– on request: iglidur® J *
– bronze CuSn12 (2.1052)
– other materials on request

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 / EX100	–40 to +60 °C
– iglidur® J	–50 to +90 °C
– bronze	–40 to +200 °C

Lead accuracy

Standard:
– G9 ≙ ≤0.1 mm/300 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 76).

* iglidur® is a registered trademark of igus® GmbH

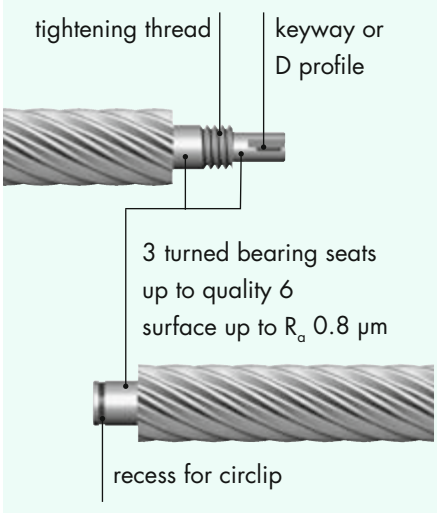
Factory length / Handling / Lubrication

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.

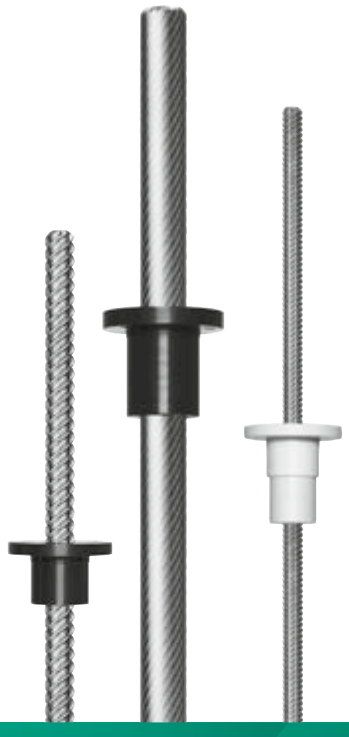
Please consult lubrication recommendation before mounting or operating Speedy lead screws.

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:

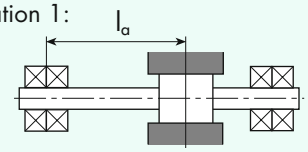
Critical rotational speed n_{per}

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

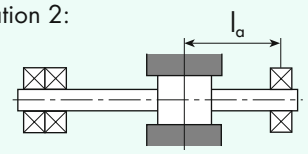
$$n_{per} = K_D \cdot 10^6 \cdot \frac{d_2}{l_a^2} \cdot S_n \ [min^{-1}]$$

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…0.8 [–]

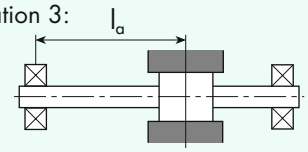
Configuration 1:
fixed – fixed
K_D = 276



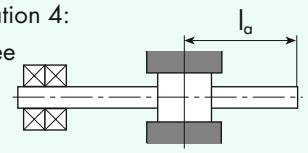
Configuration 2:
fixed – simple
K_D = 190



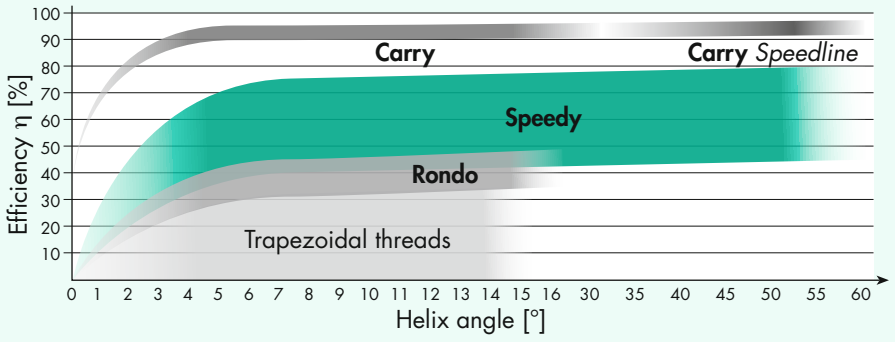
Configuration 3:
simple – simple
K_D = 122



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

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

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: $F_{per.}$

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:

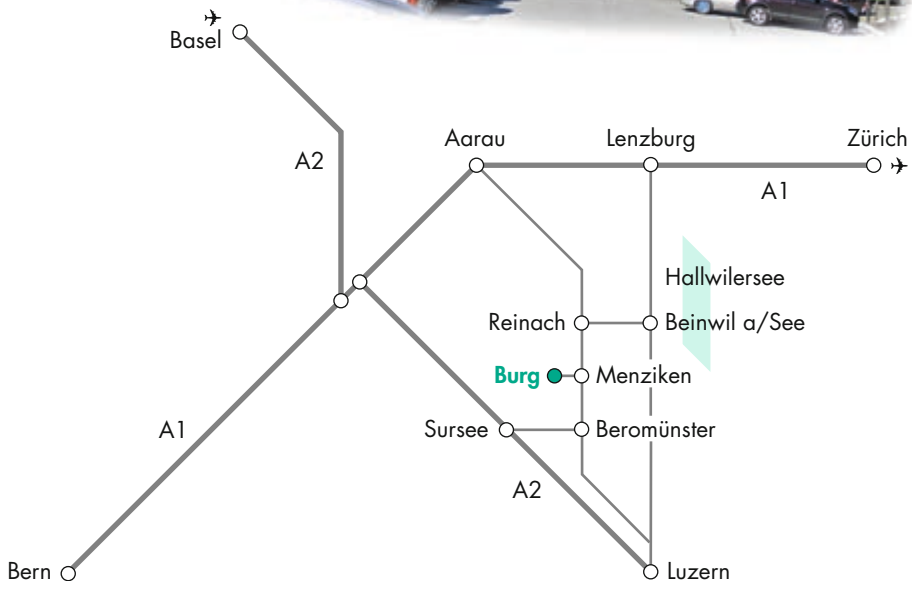
f_L at v_C of 7.53 m/min ≈ 0.85 [–]

It follows:

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

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

Eichenberger Gewinde



When in Burg, follow the signs to Eichenberger Gewinde.

Map and directions can be found on our website
www.gewinde.ch → Where to find us

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