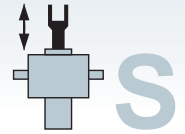
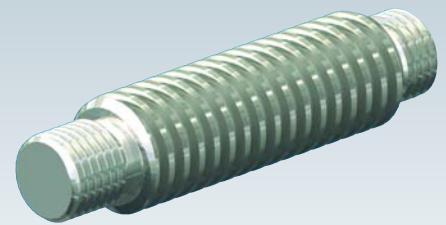


## Abbreviations:

Tr	Trapezoidal screw	KGT	Ball screw
AS	Escape protection	KAR	Pivot bearing plate
BF	Fixing flange	KGK	Rod end
ES	Limit switch	SLK	Pivot bearing end
FBR	Bellows fixing ring	ZD	Compressed length
GK	Forked end		



## Length calculation – screw, translating version S

(The length calculation is identical for Z and GSZ)

GSZ-2 to Z-150:		GSZ-2	Z-5	Z-10	Z-25	Z-35	Z-50	Z-50/Tr50	Z-100	Z-150
Tr basic length	Tr	118	139	161	180	219	240	263	338	342
KGT basic length	KGT	-	16x05 203	25x05 240	32x05 272	-	40x05 324	-	50x10 <sup>3)</sup> 420	63x10 <sup>5)</sup> 432
		-	16x10 224	25x10 260	32x10 282	-	40x10 324	-	50x20 <sup>3)</sup> 460	63x20 <sup>6)</sup> 506
		-	-	25x25 330	32x20 312	-	40x20 354	-	50x10 <sup>4)</sup> 456	63x10 <sup>7)</sup> 460
		-	-	25x50 460	32x40 382	-	40x40 414	-	50x20 <sup>4)</sup> 496	63x20 <sup>7)</sup> 500
		-	-	-	-	-	-	-	50x40 <sup>4)</sup> 576	63x40 <sup>7)</sup> 580
		-	-	-	-	-	-	-	-	63x60 <sup>7)</sup> 660
Tr basic length with safety nut	Tr	-	-	219	239	280	305	-	411	423
Escape/rotation protection AS/VS	Tr/KGT	15	15	20	20	30	30	30	30	30
Limit switch ES <sup>2)</sup>	Tr	43	43	45	45	59	55	55	45	45
ES <sup>2)</sup> and pivot bearing plate KAR	Tr	65	64	65	69	85	80	80	90	95
Limit switch ES <sup>2)</sup>	KGT	-	16x05 38	25x05 40	32x05 40	-	40x05 50	-	50x10 45	63x10 45
		-	16x10 28	25x10 30	32x10 35	-	40x10 50	-	50x20 30	63x20 30
		-	-	25x25 20	32x20 20	-	40x20 35	-	50x40 30	63x40 30
		-	-	25x50 20	32x40 20	-	40x40 30	-	-	63x60 30
ES <sup>2)</sup> and pivot bearing plate KAR	KGT	-	16x05 59	25x05 60	32x05 64	-	40x05 75	-	50x10 90	63x10 95
		-	16x10 49	25x10 50	32x10 59	-	40x10 75	-	50x20 70	63x20 75
		-	-	25x25 20	32x20 44	-	40x20 60	-	50x40 30	63x40 35
		-	-	25x50 20	32x40 20	-	40x40 30	-	-	63x60 30
Bellows with bellows fixing ring (GK/KGK) <sup>1)</sup>	ZD-1	ZD-2	ZD+1	ZD+5	ZD+10	ZD+10	ZD+8	ZD-2	ZD-2	
Bellows without bellows fixing ring (BF/SLK) <sup>1)</sup>	ZD-18	ZD-22	ZD-24	ZD-26	ZD-36	ZD-36	ZD-40	ZD-50	ZD-22	
Bellows and KAR with FBR (GK/KGK) <sup>1)</sup>	ZD+32	ZD+31	ZD+28	ZD+46	ZD+63	ZD+63	ZD+81	ZD+60	ZD+68	
Bellows and KAR without FBR (BF/SLK) <sup>1)</sup>	ZD+15	ZD+11	ZD+3	ZD+15	ZD+17	ZD+17	ZD+33	ZD+12	ZD+48	

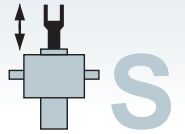
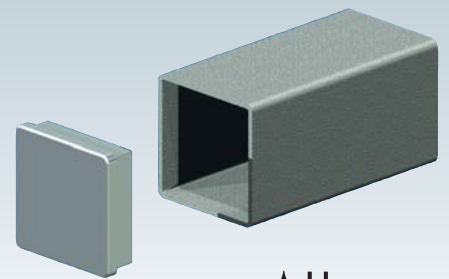
Z-250 to Z-1000:		Z-250	Z-350	Z-500	Z-750	Z-1000
Tr basic length	Tr	370	424	552	619	643
KGT basic length	KGT	80x10 561	100x20 663	125x25 823	140x25 976	160x25 1024
		80x20 601	100x40 743	125x40 883	140x40 1036	160x40 1084
		80x40 681	100x60 823	125x60 963	140x60 1116	160x60 1164
		80x60 761	100x80 943	125x80 1043	140x80 1196	160x80 1244
Tr basic length with safety nut		507	-	-	-	-
Escape/rotation protection AS/VS	Tr/KGT	30	35	40	40	40
Limit switch ES <sup>2)</sup>	Tr	43	46	40	48	48
Limit switch ES <sup>2)</sup>	KGT	80x10 43	100x20 35	125x25 40	140x25 40	160x25 40
		80x20 30	100x40 35	125x40 40	140x40 40	160x40 40
		80x40 30	100x60 35	125x60 40	140x60 40	160x60 40
		80x60 30	100x80 35	125x80 40	140x80 40	160x80 40
Bellows with bellows fixing ring (GK/KGK) <sup>1)</sup>		ZD-2	ZD-2	ZD-22	ZD-22	ZD-22
Bellows without bellows fixing ring (BF/SLK) <sup>1)</sup>		ZD-22	ZD-22	ZD-42	ZD-42	ZD-42

Safety distances are already included in the basic lengths!

(Tr screws: 10 mm up to Z-50, 20 mm for Z-100 to Z-500, 40 mm for Z-750 and Z-1000)

- The value will be added to or subtracted from the ZD dimension of the bellows depending on the sign and the result then added to the screw length. Applicable only to Tr single-pitch screws, not to double-pitch and KGT screws.
- Limit switches ES are always used in combination with rotation protection VS (VS is included in the extension).
- KGT 50: L6=82
- KGT 50: L6=118
- KGT 63: L6=90
- KGT 63: L6=124
- KGT 63: L6=118

Screw extension for spiral spring cover SF: Since the extension for spiral spring covers varies according to the fitting, this variant must be determined from a drawing. We would be pleased to prepare this drawing for you.



## Length Calculation – protective tube SRO, translating version S

(The length calculation is identical for Z and GSZ)

GSZ-2 to Z-150:		GSZ-2	Z-5	Z-10	Z-25	Z-35	Z-50	Z-50/Tr50	Z-100	Z-150
Tr basic length <sup>1)</sup>	Tr	47	46	49	53	57	62	62	82	87
KGT basic length <sup>1)</sup>	KGT	–	16x05 56	25x05 59	32x05 63	–	40x05 72	–	50x10 82	63x10 87
		–	16x10 76	25x10 79	32x10 73	–	40x10 72	–	50x20 122	63x20 127
		–	–	25x25 149	32x20 103	–	40x20 102	–	50x40 202	63x40 207
		–	–	25x50 279	32x40 173	–	40x40 162	–	–	63x60 287
Escape/rotation protection AS/VS	Tr/KGT	15	15	20	20	30	30	30	30	30
Limit switch ES <sup>3)</sup>	Tr	70	73	72	72	86	82	82	62	62
ES <sup>3)</sup> and pivot bearing plate KAR	Tr	92	94	92	96	112	107	107	107	112
Limit switch ES <sup>3)</sup>	KGT	–	16x05 63	25x05 62	32x05 62	–	40x05 72	–	50x10 62	63x10 62
		–	16x10 43	25x10 42	32x10 52	–	40x10 72	–	50x20 30	63x20 30
		–	–	25x25 20	32x20 22	–	40x20 42	–	50x40 30	63x40 30
		–	–	25x50 20	32x40 20	–	40x40 30	–	–	63x60 30
ES <sup>3)</sup> and pivot bearing plate KAR	KGT	–	16x05 84	25x05 82	32x05 86	–	40x05 97	–	50x10 107	63x10 112
		–	16x10 64	25x10 72	32x10 76	–	40x10 97	–	50x20 70	63x20 75
		–	–	25x25 20	32x20 46	–	40x20 67	–	50x40 30	63x40 35
		–	–	25x50 20	32x40 20	–	40x40 30	–	–	63x60 30

Z-250 to Z-1000 <sup>4)</sup> :		Z-250	Z-350	Z-500	Z-750	Z-1000
Tr basic length <sup>1)</sup>	Tr	92	107	157	157	157
KGT basic length <sup>1)</sup>	KGT	80x10 92	100x20 147	125x25 177	140x25 177	160x25 177
		80x20 132	100x40 227	125x40 237	140x40 237	160x40 237
		80x40 212	100x60 307	125x60 317	140x60 317	160x60 317
		80x60 292	100x80 387	125x80 397	140x80 397	160x80 397
Escape/rotation protection AS/VS	Tr/KGT	30	35	40	40	40
Limit switch ES <sup>3)</sup>	Tr	58	59	40	48	48
Limit switch ES <sup>3)</sup>	KGT	80x10 58	100x20 35	125x25 40	140x25 40	160x25 40
		80x20 30	100x40 35	125x40 40	140x40 40	160x40 40
		80x40 30	100x60 35	125x60 40	140x60 40	160x60 40
		80x60 30	100x80 35	125x80 40	140x80 40	160x80 40

CAUTION: minimum stroke with limit switch ES<sup>2)</sup>:

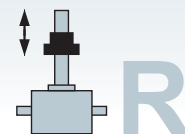
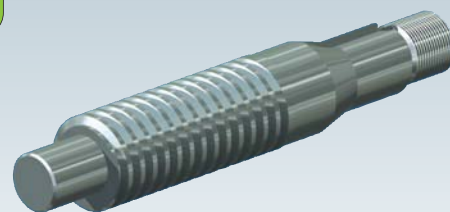
GSZ-2 to Z-150:	GSZ-2	Z-5	Z-10	Z-25	Z-35	Z-50	Z-50/Tr50	Z-100	Z-150
minimum stroke with limit switch ES	53	50	51	51	41	42	42	42	42
minimum stroke with ES and lubrication strip SL	123	120	121	121	111	112	112	112	112

Z-250 to Z-1000:	Z-250	Z-350	Z-500	Z-750	Z-1000
minimum stroke with limit switch ES	47	42	46	46	46
minimum stroke with ES and lubrication strip SL	117	112	116	116	116

- 1) Basic length of the protective tube without a cap.  
The cap height is 5 mm.
- 2) If a shorter stroke than specified is required, the limit switches and lubrication strip may be fitted on different faces.
- 3) Limit switches ES are always used in combination with rotation protection VS (VS is included in the extension).
- 4) Z-250 - Z-1000:
  - only screw, or screw with escape protection AS (round protective tube)
  - with rotation protection VS or VS + limit switch ES (square protective tube)

## Abbreviations:

Tr	Trapezoidal screw
KGT	Ball screw
KAR	Pivot bearing plate



## Length Calculation – screw, rotating version R

(The length calculation is identical for Z and GSZ)

GSZ-2 to Z-150:	GSZ-2		Z-5		Z-10		Z-25		Z-35		Z-50		Z-100		Z-150	
Tr basic length without journal	78		86		102		114		132		148		222		250	
Tr basic length with journal (= standard for opposed bearing plate GLP)	90		101		122		139		162		178		267		305	
Tr basic length increased screw with journal <sup>1)</sup>	93		106		127		144		177		193		277		325	
KGT basic length with journal <sup>2)</sup>	16x05	100	16x05	111	25x05	132	32x05	149	40x05	172	40x05	188	50x10	267	63x10	305
	16x10	120	16x10	131	25x10	152	32x10	159	40x10	172	40x10	188	50x20	307	63x20	345
					25x25	222	32x20	189	40x20	202	40x20	218	50x40	387	63x40	425
					25x50	352	32x40	259	40x40	262	40x40	278	50x50	427	63x60	505
KGT basic length increased screw with journal <sup>1)2)</sup>			25x05	116	32x05	137	40x05	154	50x10	197	50x10	213	63x10	277	80x10	325
			25x10	136	32x10	147	40x10	154	50x20	237	50x20	253	63x20	317	80x20	365
			25x25	206	32x20	177	40x20	184	50x40	317	50x40	333	63x40	397	80x40	445
			25x50	336	32x40	247	40x40	244	50x50	357	50x50	373	63x60	477	80x60	525
KGT basic length without journal <sup>2)</sup>	16x05	88	16x05	96	25x05	112	32x05	124	40x05	142	40x05	158	50x10	222	63x10	250
	16x10	108	16x10	116	25x10	132	32x10	134	40x10	142	40x10	158	50x20	262	63x20	290
					25x25	202	32x20	164	40x20	172	40x20	188	50x40	342	63x40	370
					25x50	332	32x40	234	40x40	232	40x40	248	50x50	382	63x60	450
KGT basic length increased screw without journal <sup>1)2)</sup>			25x05	96	32x05	112	40x05	124	50x10	152	50x10	168	63x10	222	80x10	250
			25x10	116	32x10	122	40x10	124	50x20	192	50x20	208	63x20	262	80x20	290
			25x25	186	32x20	152	40x20	154	50x40	272	50x40	288	63x40	342	80x40	370
			25x50	316	32x40	222	40x40	214	50x50	312	50x50	328	63x60	422	80x60	450
Flange nut FM	35		35		44		46		66		66		-		90	
Duplex nut DM	45		45		45		50		70		70		90		115	
Self-aligning nut PM	-		78		83		95		129		129		190		210	
Greaseless duplex nut FFDMM	-		53		53		59		85		85		-		-	
DM + safety nut SIFA	70		70		84		95		133		133		173		211	
PM + safety nut SIFA	-		123		128		158		212		212		298		330	
1. Bellows <sup>3)</sup>	ZD-10		ZD-12		ZD-12		ZD-10		ZD-12		ZD-12		ZD-22		ZD-22	
2. Bellows <sup>3)</sup>	ZD-10		ZD-10		ZD-14		ZD-15		ZD-15		ZD-15		ZD-20		ZD-30	
KAR screw face and 1st bellows <sup>3)</sup>	ZD+23		ZD+21		ZD+15		ZD+31		-		-		-		-	
KGT flange nut KGF	add the respective nut length															

Z-250 to Z-1000:	Z-250		Z-350		Z-500		Z-750		Z-1000	
Tr basic length without journal	265		288		366		417		438	
Tr basic length with journal (= standard for opposed bearing plate GLP)	340		388		486		537		613	
Tr basic length increased screw with journal <sup>1)</sup>	365		408		486		592		-	
KGT basic length with journal <sup>2)</sup>	80x10	340	100x20	428	125x25	506	140x25	557	160x25	633
	80x20	380	100x40	508	125x40	566	140x40	617	160x40	693
	80x40	460	100x60	588	125x60	646	140x60	697	160x60	773
	80x60	540	100x80	668	125x80	726	140x80	777	160x80	853
KGT basic length without journal <sup>2)</sup>	80x10	265	100x20	328	125x25	386	140x25	437	160x25	458
	80x20	305	100x40	408	125x40	446	140x40	497	160x40	518
	80x40	385	100x60	488	125x60	526	140x60	577	160x60	598
	80x60	465	100x80	568	125x80	606	140x80	657	160x80	678
Duplex nut DM	140		160		180		220		320	
Self-aligning nut PM	224		275		-		-		-	
DM + safety nut SIFA	250		270		303		365		500	
PM + safety nut SIFA	369		455		-		-		-	
1. Bellows <sup>3)</sup>	ZD-22		ZD-22		-		-		-	
2. Bellows <sup>3)</sup>	ZD-40		ZD-60		-		-		-	
KGT flange nut KGF	add the respective nut length									

Safety distances are already included in the basic lengths (2x: 1x above and 1x underneath)!  
(Tr screws: 10 mm up to Z-50, 20 mm for Z-100 to Z-500, 40 mm for Z-750 and Z-1000)

- When using a larger diameter screw, select the components for the next size gearbox (Z-10 increased screw has a screw Tr 30x6 which means component Z-25 - this is then the calculated screw extension for size 25).
- The basic length for KGT screws includes the safety clearance L3 shown on the gearbox dimension sheet. The nut length must then be added to this.
- The value will be added to or subtracted from the ZD (compression) dimension of the bellows depending on the sign and the result then added to the screw length. Applicable only to Tr single-pitch screws, not to double-pitch and ball screws.

**Screw extension for spiral spring cover SF:**  
Since the extension for spiral spring covers varies according to the fitting, this variant must be determined from a drawing. We would be pleased to prepare this drawing for you.

# Ordering code

Gearbox type	Size	Version	Drive ratio	Screw version	Screw Ø / pitch	Number of screw starts, material	Stroke	List of accessories
[ ] - [ ]	[ ] - [ ]	[ ] - [ ]	[ ] - [ ]	[ ] - [ ]	[ ] - [ ]	[ ] - [ ]	H - [ ]	[ ] - [ ]
Z GSZ	2 5 10 25 35 50 100 150 250 350 500 750 1000	S Translating version  R Rotating version	N Normal e.g. i = 4:1  L Low speed e.g. i = 16:1	Tr Trapezoidal screw (not stated = Tr)  Tr/SIFA Tr with safety nut SIFA OP EL ELV ELD NO  KGT Ball screw	Tr 1804 2004 ...  KGT 1605 1610 ...	1 single-pitch (not stated = single-pitch)  2* double-pitch  I INOX (stainless steel)  LH* left-handed	Stroke H + stroke in mm	List of accessories (in any sequence) see Section 4

\*is available but not ex stock.  
Lead time on request

**i** For enquiries or orders you may optionally:  
 - either list the parts individually  
 - or define the complete screw jack in an ordering code in the format specified here

**Ordering example:**

Z-10-SN-Tr-2004-1-H 300-FB390-VS-BF

Z	10	SN	Tr	2004	1	H	300	FB390	VS	BF
Gearbox, type	Size	Version S or R	Drive ratio N or L	Screw version	Screw diameter, screw pitch	Number of starts	Stroke	List of accessories (in any sequence)		

