

Connecting shaft KSK

FESTO



Characteristics

At a glance

In many applications, electric axes are combined to form multi-axis systems. When designing gantry systems with a medium centre distance between the axes and heavy loads, it is particularly important that the two basic axes are actuated synchronously. For these systems, two axes with toothed belt drive are generally coupled with a shared motor and synchronised using a connecting shaft.

- For synchronising toothed belt axes and cantilever axes
- For torsion-resistant transmission of the necessary torque
- For slip-free transmission of an identical feed speed
- To compensate for tolerances and misalignments between the two axes

Type code

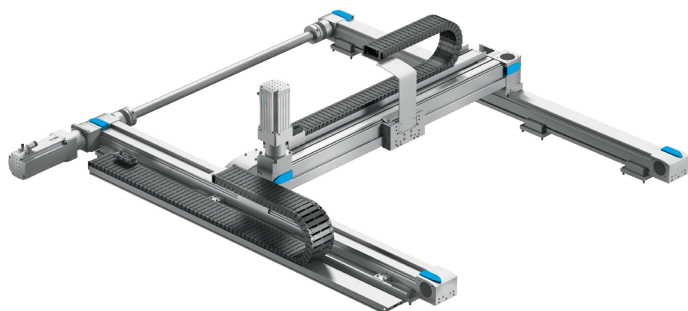
001	Series	
KSK	Connecting shaft	
002	Product version	
	Standard	
A	Deviating design	

003	Size [mm]	
50	50	
70	70	
80	80	
120	120	
185	185	

004	Nominal length [mm]	
...	200 ... 2000 mm	

Datasheet

Allocation axis -> connecting shaft



Allocation

Axis -> Connecting shaft

EGC-50-TB -> KSK-50

EGC-70-TB -> KSK-70

EGC-80-TB -> KSK-80

EGC-120-TB -> KSK-120

EGC-185-TB -> KSK-185

ELGD-TB-KF-60 -> KSK-80

ELGD-TB-KF-80 -> KSK-80

ELGD-TB-KF-120 -> KSK-120

ELGD-TB-KF-WD-100 -> KSK-70

ELGD-TB-KF-WD-120 -> KSK-80

ELGA-TB-70 -> KSK-A-70

ELGA-TB-80 -> KSK-80

ELGA-TB-120 -> KSK-120

ELGA-TB-150 -> KSK-185

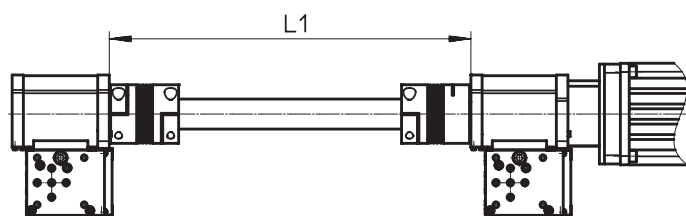
ELCC-TB-KF-60 -> KSK-80

ELCC-TB-KF-70 -> KSK-80

ELCC-TB-KF-90 -> KSK-120

ELCC-TB-KF-110 -> KSK-185

General information



Nominal length L1 = Clear width between the drive covers

The total mass is calculated as follows: $m = m_0 + m_L \cdot L_1$ The moment of inertia is calculated as follows: $J = J_0 + J_L \cdot L_1$

General technical data

Size	50	70	80	120	185
Product version	Standard []		Deviating design [A]	Standard []	
Nominal length	200 ... 2,000 mm			250 ... 2,000 mm	350 ... 2,000 mm
Max. axial offset	2 mm				5 mm
Mass moment of inertia J ₀	0.34 kgcm ²	0.35 kgcm ²	1.61 kgcm ²	1.59 kgcm ²	13.9 kgcm ²
Mass moment of inertia J _L per metre nominal length	0.34 kgcm ²		0.8 kgcm ²		3.33 kgcm ²
Basic weight with 0 mm stroke	280 g	290 g	540 g	530 g	2,280 g
Additional weight per metre nominal length	320 g		480 g		800 g
Mounting position ¹⁾	Horizontal				
Mounting diameter 1	8 mm		15 mm		25 mm
Mounting diameter 2	8 mm		15 mm		25 mm

1) Vertical on request

Datasheet

Operating and environmental conditions

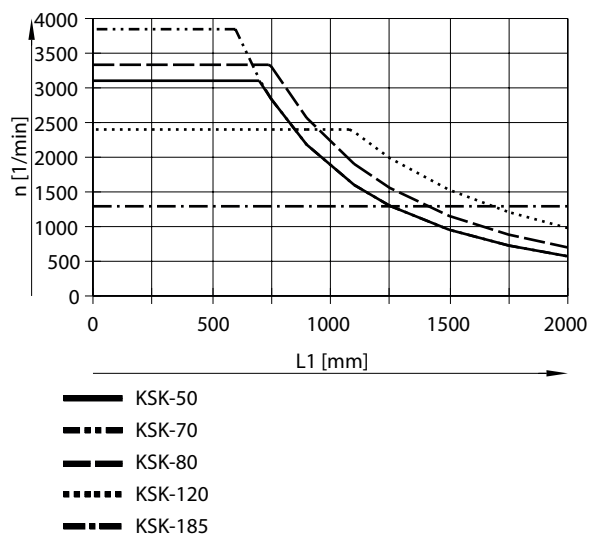
Ambient temperature	-10 ... 60°C
Relative air humidity	0 - 95%
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress

1) More information www.festo.com/x/topic/crc.

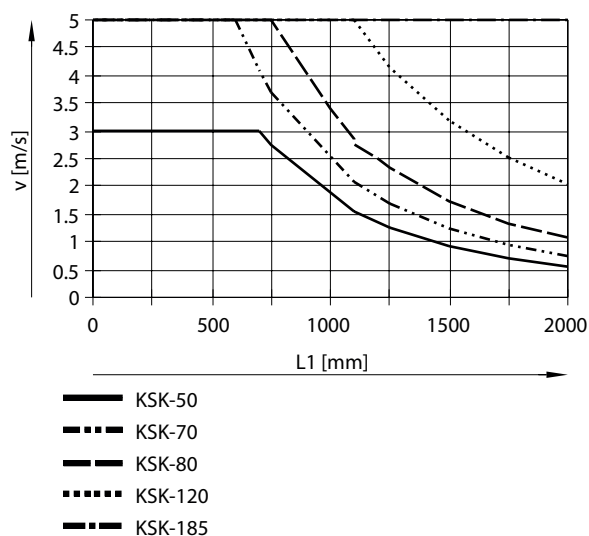
Materials

Material coupling	High-alloy steel, Anodised wrought aluminium alloy
Pipe material	High-alloy stainless steel
Drive shaft adapter material	Quenched and tempered steel
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364 zone III

Max. speed n as a function of nominal length L_1 for EGC-TB-KF

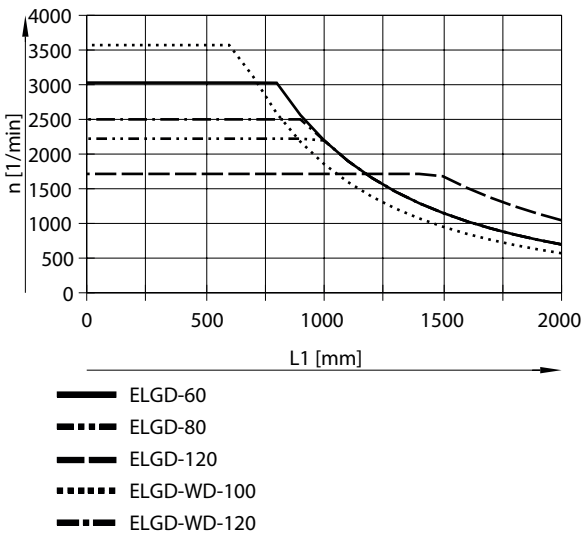


Max. speed v as a function of nominal length L_1 for EGC-TB-KF

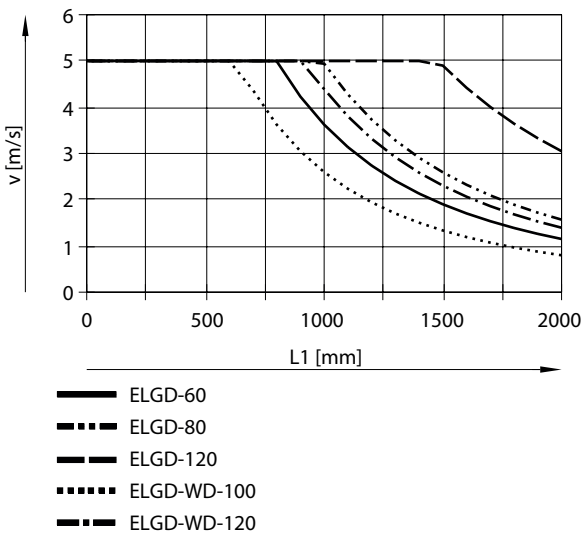


Datasheet

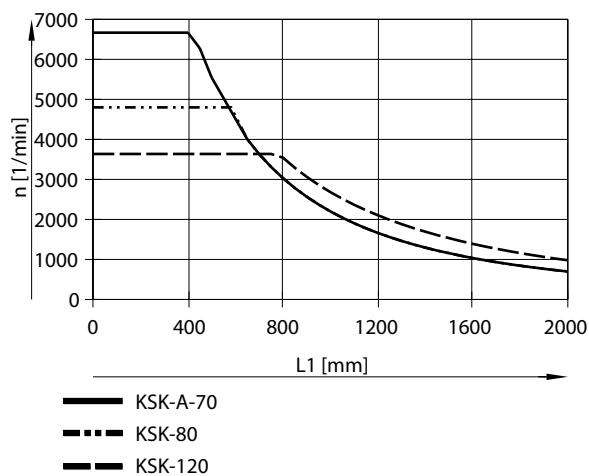
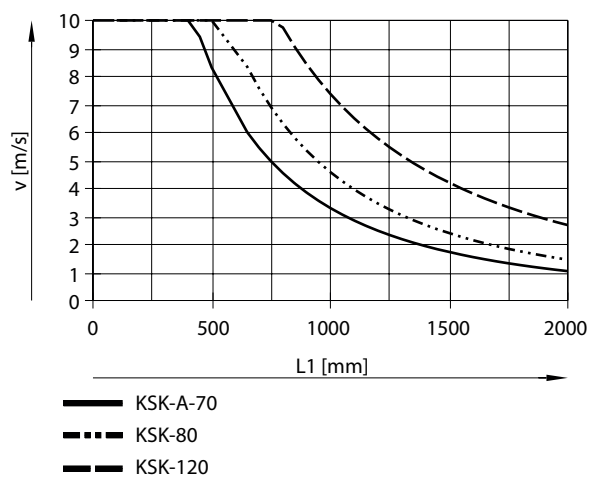
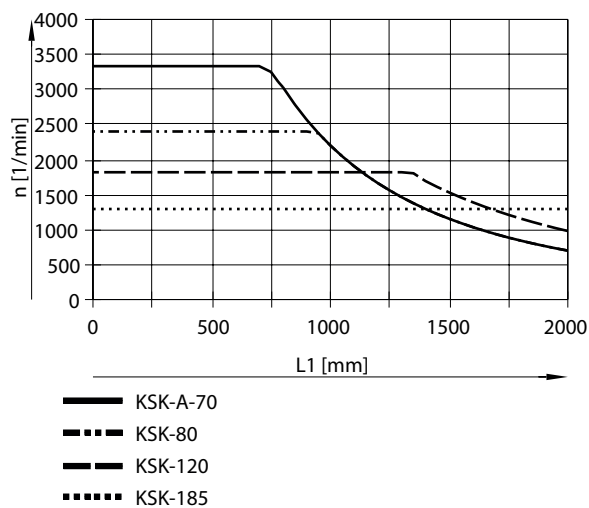
Max. speed n as a function of nominal length L1 for ELGD-TB-KF



Max. speed v as a function of nominal length L1 for ELGD-TB-KF

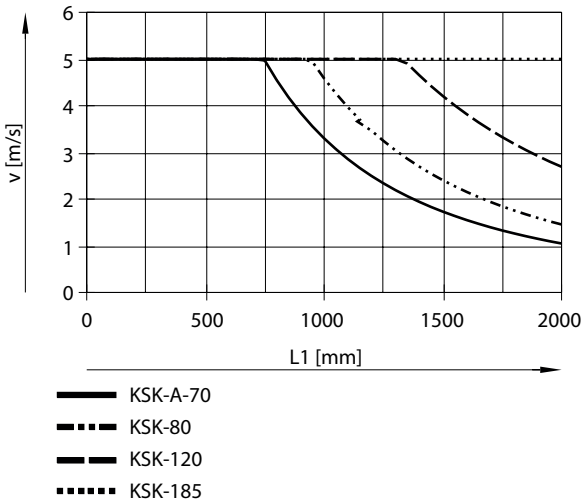


Datasheet

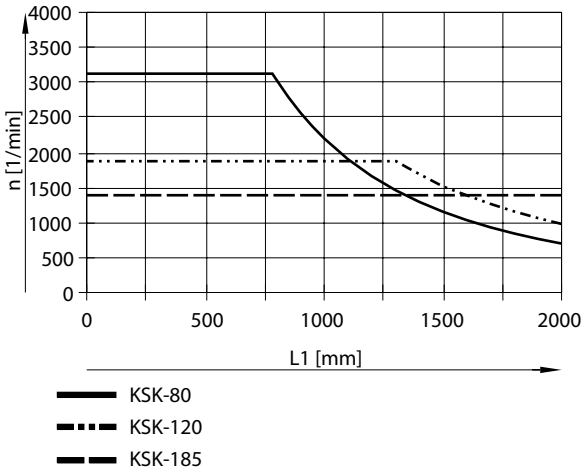
Max. speed n as a function of nominal length L_1 for ELGA-TB-RFMax. speed v as a function of nominal length L_1 for ELGA-TB-RFMax. speed n as a function of nominal length L_1 for ELGA-TB-KF

Datasheet

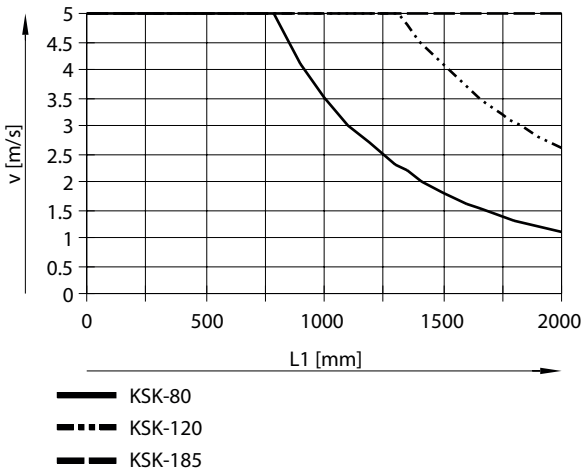
Max. speed v as a function of nominal length L1 for ELGA-TB-KF



Max. rotational speed n as a function of nominal length L1 for ELCC-TB-KF



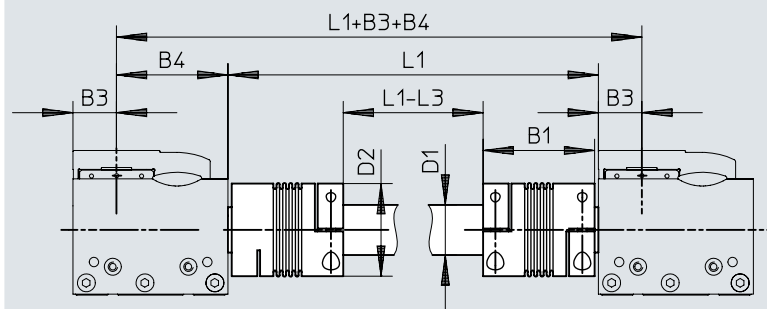
Max. speed v as a function of nominal length L1 for ELCC-TB-KF



Dimensions

Dimensions – Internal/external guide for EGC-TB-KF

Download CAD data www.festo.com

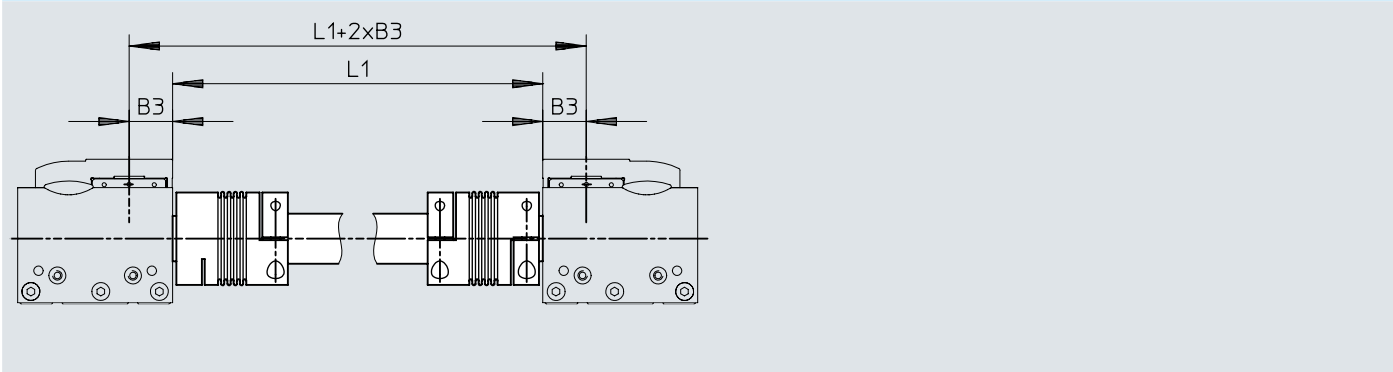


		B1	B3	B4	D1 Ø	D2 Ø	L1	L3
KSK-50	EGC-50-TB-...	50	12,5	35,5	21,27	40	1)	102,2
KSK-70	EGC-70-TB-...	50	17,5	51,5	21,27	40		103,7
KSK-80	EGC-80-TB-...	59	23	59	26,52	49		122
KSK-120	EGC-120-TB-...	94	35	85	41,6	81		192
KSK-185	EGC-185-TB-...	111	55	131	65,4	110		228

1) Clear width between the drive covers

Dimensions

Dimensions – Internal guide for EGC-TB-KF Download CAD data www.festo.com

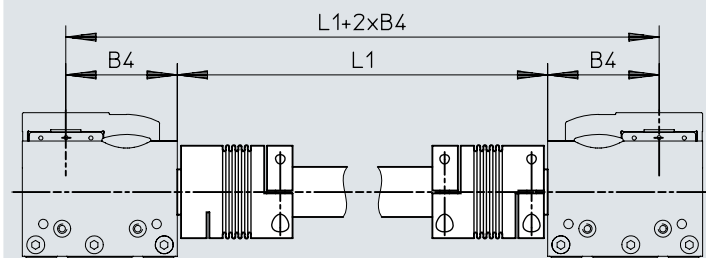


		B3	L1
KSK-50	EGC-50-TB-...	12,5	1)
KSK-70	EGC-70-TB-...	17,5	
KSK-80	EGC-80-TB-...	23	
KSK-120	EGC-120-TB-...	35	
KSK-185	EGC-185-TB-...	55	

1) Clear width between the drive covers

Dimensions

Dimensions – External guide for EGC-TB-KF

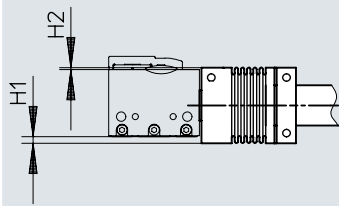
[Download CAD data](http://www.festo.com)


		B4	L1
KSK-50	EGC-50-TB-...	35,5	1)
KSK-70	EGC-70-TB-...	51,5	
KSK-80	EGC-80-TB-...	59	
KSK-120	EGC-120-TB-...	85	
KSK-185	EGC-185-TB-...	131	

1) Clear width between the drive covers

Dimensions

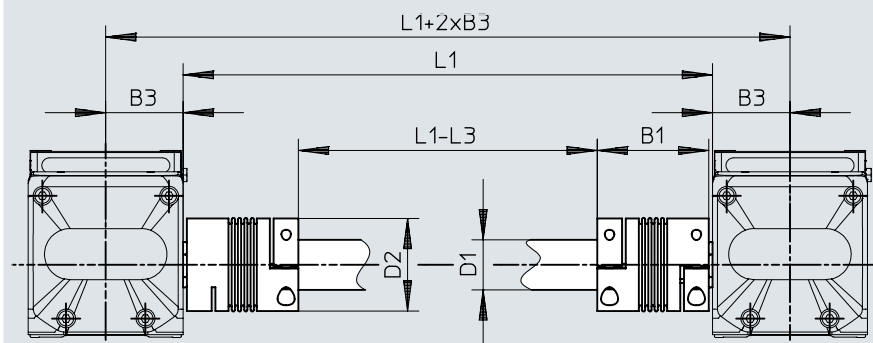
Dimensions – Projection of the coupling with the EGC-TB-KF [Download CAD data](#) www.festo.com



		H1	H2
KSK-50	EGC-50-TB-...	4	1
KSK-70	EGC-70-TB-...	–	–
KSK-80	EGC-80-TB-...	–	–
KSK-120	EGC-120-TB-...	–	1
KSK-185	EGC-185-TB-...	–	–

Dimensions

Dimensions – Internal/external guide for ELGD-TB-KF

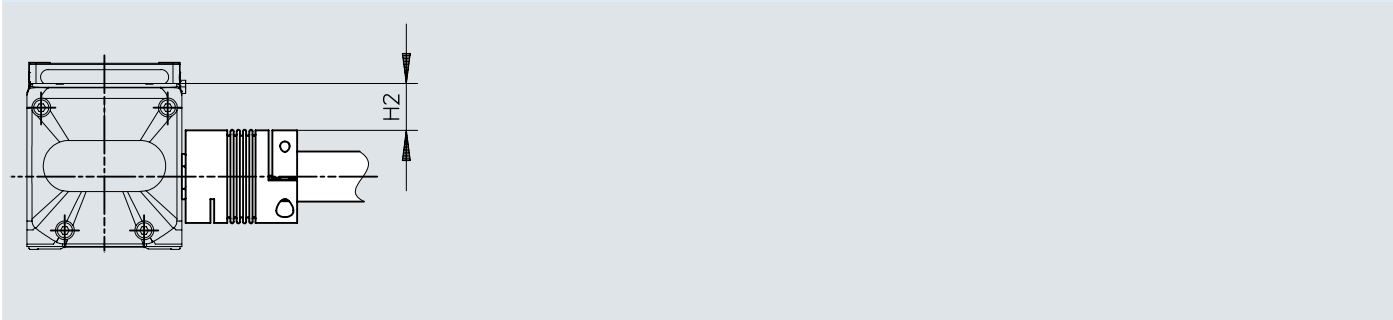
[Download CAD data](#) www.festo.com


		B1	B3	D1 Ø H7	D2 Ø	L1	L3
KSK-80	ELGD-TB-KF-60-...	59	31	26,5	49	1)	121,7
KSK-80	ELGD-TB-KF-80-...	59	41	26,5	49		122
KSK-120	ELGD-TB-KF-120-...	94	61,5	41,6	81		192
KSK-70	ELGD-TB-KF-WD-100-...	50	51	21,27	40		103,4
KSK-80	ELGD-TB-KF-WD-120-...	59	61,5	26,5	49		122

1) Clear width between the drive covers

Dimensions

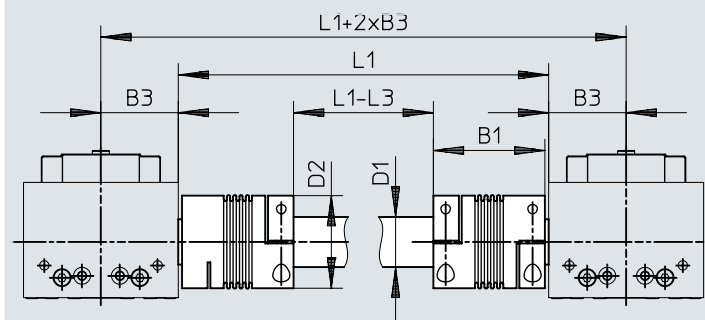
Dimensions – Distance to coupling ELGD-TB-KF [Download CAD data](#) www.festo.com



		H2
KSK-80	ELGD-TB-KF-60-...	12,9
KSK-80	ELGD-TB-KF-80-...	24,8
KSK-120	ELGD-TB-KF-120-...	21,8
KSK-70	ELGD-TB-KF-WD-100-...	14,5
KSK-80	ELGD-TB-KF-WD-120-...	14,4

Dimensions

Dimensions – Internal/external guide for ELGA-TB-RF

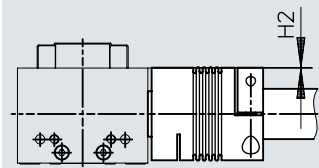
[Download CAD data](#) www.festo.com


		B1	B3	D1 ø H7	D2 ø	L1	L3
KSK-A-70	ELGA-TB-RF-70-...	59	34,5	26,52	49	1)	122
KSK-80	ELGA-TB-RF-80-...	59	41	26,52	49		122
KSK-120	ELGA-TB-RF-120-...	94	60	41,6	81		192

1) Clear width between the drive covers

Dimensions

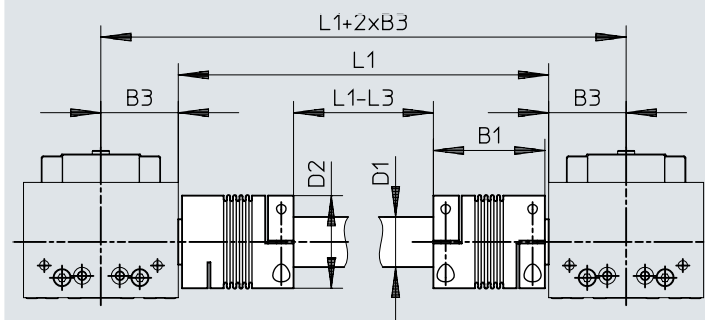
Dimensions – Projection of the coupling with the ELGA-TB-RF [Download CAD data](#) www.festo.com



		H2
KSK-A-70	ELGA-TB-RF-70-...	0,2
KSK-80	ELGA-TB-RF-80-...	–
KSK-120	ELGA-TB-RF-120-...	–

Dimensions

Dimensions – Internal/external guide for ELGA-TB-KF

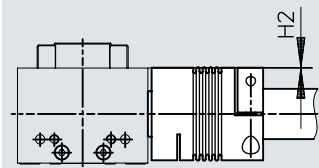
[Download CAD data](#) www.festo.com


		B1	B3	D1 Ø H7	D2 Ø	L1	L3
KSK-A-70	ELGA-TB-KF-70-...	59	34,5	26,52	49	1)	122
KSK-80	ELGA-TB-KF-80-...	59	41	26,52	49		122
KSK-120	ELGA-TB-KF-120-...	94	60	41,6	81		192
KSK-185	ELGA-TB-KF-150-...	111	77	65,4	110		228

1) Clear width between the drive covers

Dimensions

Dimensions – Projection of the coupling with the ELGA-TB-KF [Download CAD data](#) www.festo.com



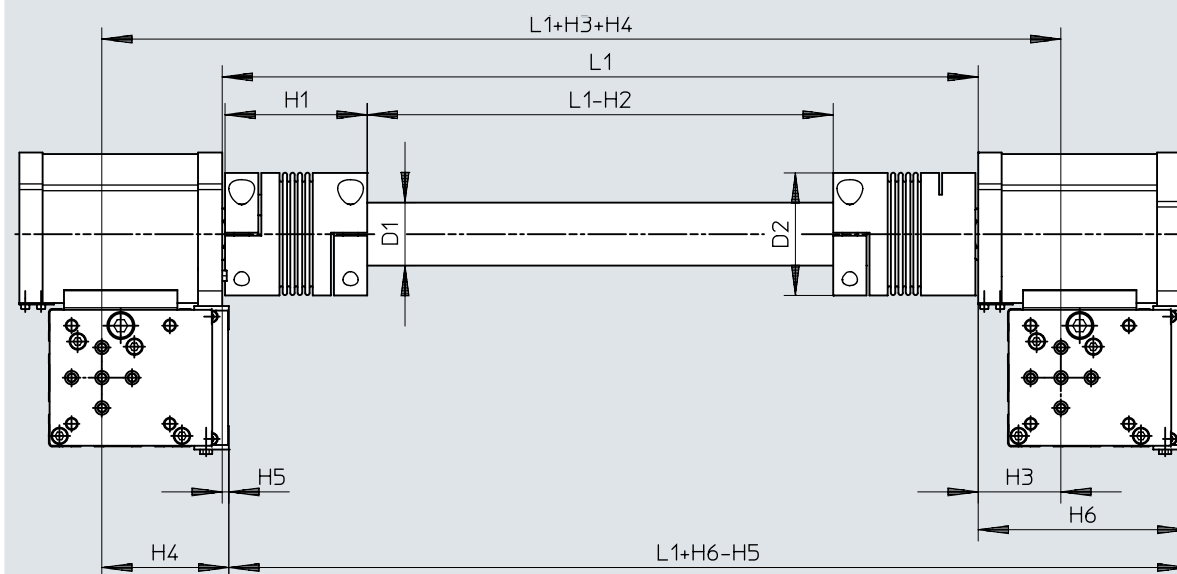
		H2
KSK-A-70	ELGA-TB-KF-70-...	0,2
KSK-80	ELGA-TB-KF-80-...	–
KSK-120	ELGA-TB-KF-120-...	–
KSK-185 ²⁾	ELGA-TB-KF-150-...	–

1) Clear width between the drive covers
2) For ELGA-TB-KF-150

Dimensions

Dimensions – Similar axis mounting surfaces with the ELCC-TB-KF

Download CAD data www.festo.com

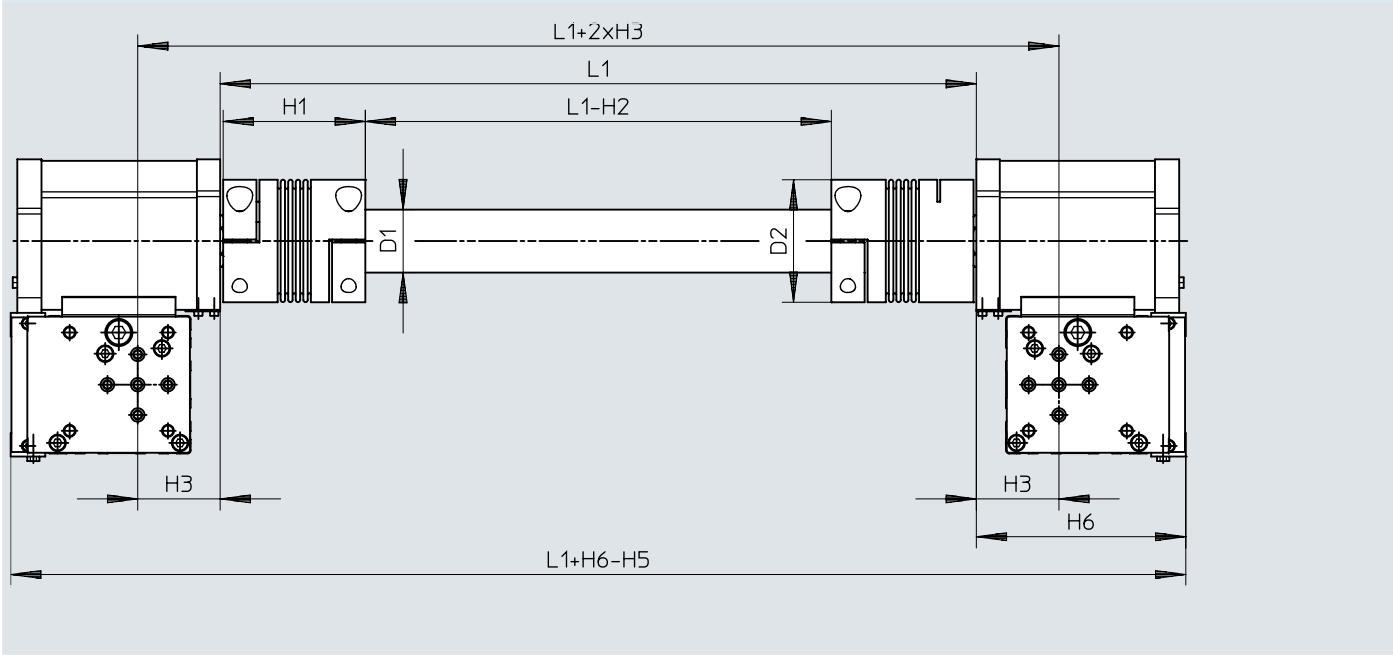


		D1 Ø H7	D2 Ø	H1	H2	H3	H4	H5	H6	L1
KSK-80	ELCC-TB-KF-60-...	26,6	49	59	122	43,1	27,1	8,5	78,6	1)
	ELCC-TB-KF-70-...	26,6	49	59	122	48	53,5	10,5	112	
KSK-120	ELCC-TB-KF-90-...	41,7	81	94	192	54,6	79,6	4,4	138,6	
KSK-185	ELCC-TB-KF-110-...	65,5	110	111	228	73,6	85,6	11,4	170,6	

1) Clear width between the contact surfaces

Dimensions

Dimensions – Axis mounting surfaces facing outwards with the ELCC-TB-KF Download CAD data www.festo.com



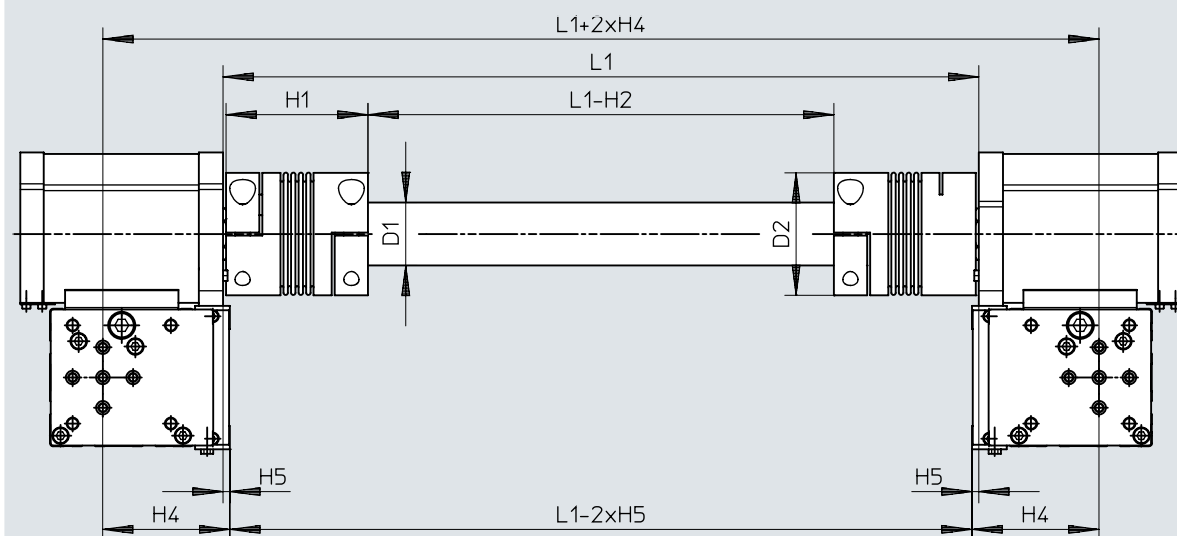
		D1 Ø H7	D2 Ø	H1	H2	H3	H5	H6	L1
KSK-80	ELCC-TB-KF-60-...	26,6	49	59	122	43,1	8,5	78,6	1)
	ELCC-TB-KF-70-...	26,6	49	59	122	48	10,5	112	
KSK-120	ELCC-TB-KF-90-...	41,7	81	94	192	54,6	4,4	138,6	
KSK-185	ELCC-TB-KF-110-...	65,5	110	111	228	73,6	11,4	170,6	

1) Clear width between the contact surfaces

Dimensions

Dimensions – Axis mounting surfaces facing each other with the ELCC-TB-KF

Download CAD data www.festo.com



		D1 ø H7	D2 ø	H1	H2	H4	H5	L1
KSK-80	ELCC-TB-KF-60-...	26,6	49	59	122	27,1	8,5	1)
	ELCC-TB-KF-70-...	26,6	49	59	122	53,5	10,5	
KSK-120	ELCC-TB-KF-90-...	41,7	81	94	192	79,6	4,4	
KSK-185	ELCC-TB-KF-110-...	65,5	110	111	228	85,6	11,4	

1) Clear width between the contact surfaces

Ordering data

Order information

The nominal length L1 must be specified in the type code when ordering. The nominal length L1 here refers to the clear width between the drive covers.

Order example:

Two toothed belt axes ELGD-TB-KF-80-... are to be connected with a connecting shaft, nominal length L1 = 1000 mm.

The following connecting shaft is required:

Type: KSK-80-1000

Part number 562521

KSK-...				
	Size	Nominal length	Part no.	Type
	50	200 ... 2000 mm	563710	KSK-50-
	70		562520	KSK-70-
	80		2261462	KSK-A-70-
	120	250 ... 2000 mm	562521	KSK-80-
	185	350 ... 2000 mm	562522	KSK-120-
			562523	KSK-185-