



- Bellows and internal gear couplings
- Force-locked and backlash-free torque transmission
- Connecting shafts
- Synchronisation of toothed belt axes

Accessories for electrical positioning systems

Key features

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At a glance

Bellows couplings

5 / 2.3-3

- The one-piece bellows coupling is suitable for force-locked and backlash-free transmission of low and medium torque between electric motors and axes
- Sizes: 15 and 19 mm
- System product for positioning applications



Internal gear couplings

5 / 2.3-3

- The three-part internal gear coupling is suitable for force-locked and backlash-free transmission of high torques between electric motors and axes
- Sizes: 30, 40, 65 mm
- System product for positioning applications



Connecting shafts

5 / 2.3-8

- For synchronisation of toothed belt axes
- For torsion-resistant transmission of torques
- For slip-free transmission of an identical feed speed to a second axis
- Sizes: 25, 40, 63 mm



Couplings KSE

Type code

Type code

KSE – 19 – 24 – D06 – D09

Type

KSE	Bellows coupling
	Internal gear coupling

Diameter (∅) [mm]

15	∅ 15 mm
19	∅ 19 mm
30	∅ 30 mm
40	∅ 40 mm
65	∅ 65 mm

Overall length

22	22 mm
24	24 mm
35	35 mm
66	66 mm
90	90 mm

Hole D1

Hole D2

Couplings KSE

Selection aid

FESTO

Electro-mechanical drives	Couplings	Hole for drive shaft			Transferable torque ²⁾
		Type	D1 Ø H7 [mm]	D2 Ø H7 [mm]	
Size	Type				[Nm]
Toothed belt axes DGE-...-ZR...					
8	KSE-15-22-D04-D05	4 ¹⁾	5	9	1
	KSE-15-22-D04-D07	4 ¹⁾	7	10	1
12	KSE-15-22-D04-D05	4 ¹⁾	5	9	1
	KSE-15-22-D04-D07	4 ¹⁾	7	10	1
	KSE-15-22-D04-D09	4 ¹⁾	9	10	1
18	KSE-19-24-D06-D06,35	6 ¹⁾	6.35	12	1.5
	KSE-19-24-D06-D09	6 ¹⁾	9	12	1.5
25	KSE-30-35-D06,35-D08	8	6.35	12	6.3
	KSE-30-35-D08-D11	8	11	12	6.8
	KSE-30-35-D08-D12	8	12	12	6.8
40	KSE-40-66-D15-D19	15	19	20	21.2
	KSE-40-66-D15-D20	15	20	20	21.2
	KSE-40-66-D15-D24	15	24	24	16.2
	KSE-40-66-DXX-D15	15	3)	20	-
63	KSE-65-90-D24-D25	24	25	38	64
	KSE-65-90-DXX-D25	25	3)	38	-
Spindle axes DGE-...-SP...					
18	KSE-15-22-D05-D05	5 ¹⁾	5	9	1
	KSE-15-22-D05-D07	5 ¹⁾	7	10	1
	KSE-15-22-D05-D09	5 ¹⁾	9	10	1
25	KSE-30-35-D06-D06,35	6	6.35	12	6.3
	KSE-30-35-D06-D09	6	9	12	6.3
40	KSE-30-35-D11-D12	12	11	12	7.5
	KSE-40-66-D11-D12	12	11	20	19.5
	KSE-40-66-D12-D19	12	19	20	19.8
63	KSE-40-66-D19-D20	20	19	20	23.1
	KSE-40-66-D20-D20	20	20	20	23.6
	KSE-40-66-DXX-D20	20	3)	24	-
Boom axes DGEA-...-ZR					
18	KSE-30-35-D08-D11	8	11	12	6.8
25	KSE-40-66-D11-D11	11	11	20	19.5
	KSE-40-66-D11-D12	11	12	20	19.5
40	KSE-40-66-D15-D20	15	20	20	19.5
	KSE-65-90-D15-D24	15	24	38	57

- 1) Tolerance field g6
- 2) For drive shafts with tolerance field h6
- 3) Must be drilled by the user

Couplings KSE

Technical data

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Bellows coupling KSE

∅ - Diameter
15 and 19 mm



General technical data		
∅	15	19
Mass moment of inertia [kg mm ²]	0.13	0.47
Tightening torque for locking screw [Nm]	1.5	1.5
Weight [g]	6	12
Materials	Hubs	Aluminium
	Bellows	Stainless steel

Dimensions Download CAD data → www.festo.com/en/engineering

Type	D1 ∅ H7	D2 ∅ H7	D3 ∅	D4	L1	L2	L3	X
KSE-15-22-D04-D05	4	5	15	M3	22	6.5	2	-
KSE-15-22-D04-D07	4	7	15	M3	22	6.5	2	-
KSE-15-22-D04-D09	4	9	15	M3	22	6.5	2	-
KSE-15-22-D05-D05	5	5	15	M3	22	6.5	2	-
KSE-15-22-D05-D07	5	7	15	M3	22	6.5	2	-
KSE-15-22-D05-D09	5	9	15	M3	22	6.5	2	-
KSE-19-24-D06-D06,35	6	6.35	19	M3	24	7.5	2	120
KSE-19-24-D06-D09	6	9	19	M3	24	7.5	2	120

Ordering data		
∅ [mm]	Part No.	Type
15	530 084	KSE-15-22-D04-D05
	184 260	KSE-15-22-D04-D07
	184 262	KSE-15-22-D04-D09
	530 085	KSE-15-22-D05-D05
	184 261	KSE-15-22-D05-D07
	529 953	KSE-15-22-D05-D09
	19	530 086
184 263		KSE-19-24-D06-D09

Couplings KSE

Technical data



Internal gear coupling KSE

∅ - Diameter
30, 40 and 65 mm



General technical data				
∅		30	40	65
Mass moment of inertia	[kg mm ²]	6.1	42.3	417
Tightening torque for locking screw	[Nm]	2.9	10.5	25
Weight	[g]	45	139	535
Materials	Hubs	Aluminium		
	Internal gear	Polyurethane		

Dimensions Download CAD data → www.festo.com/en/engineering

KSE-30

KSE-40

KSE-65

1) Compress coupling to specified length only
2) Min. installation ∅

Type	D1 ∅ H7	D2 ∅ H7
KSE-30-35-D06-D06,35	6	6.35
KSE-30-35-D06,35-D08	6.35	8
KSE-30-35-D06-D09	6	9
KSE-30-35-D08-D08	8	8
KSE-30-35-D08-D10	8	10
KSE-30-35-D08-D11	8	11
KSE-30-35-D08-D12	8	12
KSE-30-35-D11-D12	11	12
-		
-		
-		
-		

Type	D1 ∅ H7	D2 ∅ H7
KSE-40-66-D11-D11	11	11
KSE-40-66-D11-D12	11	12
KSE-40-66-D12-D19	12	19
KSE-40-66-D15-D16	15	16
KSE-40-66-D15-D19	15	19
KSE-40-66-D15-D20	15	20
KSE-40-66-D15-D24	15	24
KSE-40-66-D16-D20	16	20
KSE-40-66-D19-D20	19	20
KSE-40-66-D20-D20	20	20
KSE-40-66-DXX-D15 ¹⁾	XX	15
KSE-40-66-DXX-D20 ¹⁾	XX	20

Type	D1 ∅ H7	D2 ∅ H7
KSE-65-90-D15-D24	15	24
KSE-65-90-D24-D25	24	25
KSE-65-90-D25-D28	25	28
KSE-65-90-DXX-D25 ¹⁾	XX	25
-		
-		
-		
-		
-		
-		
-		

1) Hubs predrilled to ∅5 mm

Couplings KSE

Technical data

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Ordering data		
∅ [mm]	Part No.	Type
30	530 087	KSE-30-35-D06-D06,35
	530 088	KSE-30-35-D06,35-D08
	530 941	KSE-30-35-D06-D09
	123 044	KSE-30-35-D08-D08
	123 050	KSE-30-35-D08-D10
	123 042	KSE-30-35-D08-D11
	123 043	KSE-30-35-D08-D12
	123 051	KSE-30-35-D11-D12
40	176 036	KSE-40-66-DXX-D15
	176 037	KSE-40-66-DXX-D20
	530 090	KSE-40-66-D11-D11
	525 864	KSE-40-66-D11-D12
	529 952	KSE-40-66-D12-D19
	123 846	KSE-40-66-D15-D16
	123 844	KSE-40-66-D15-D19
	123 845	KSE-40-66-D15-D20
	176 033	KSE-40-66-D15-D24
	123 848	KSE-40-66-D16-D20
	123 847	KSE-40-66-D19-D20
	123 849	KSE-40-66-D20-D20
65	179 038	KSE-65-90-DXX-D25
	530 940	KSE-65-90-D15-D24
	123 852	KSE-65-90-D24-D25
	123 854	KSE-65-90-D25-D28

Connecting shafts KSK

Key features and type code



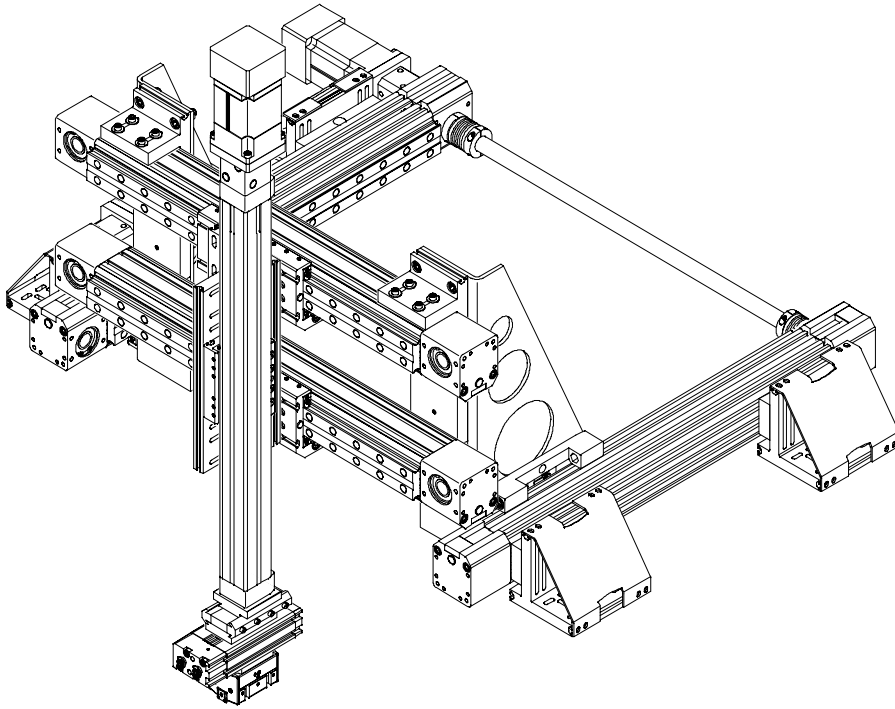
At a glance

Electrical axes DGE-... are often combined to form multi-axis systems. It is particularly important when realising gantry systems with a long gantry axis

and heavy loads that the two basic axes be driven synchronously. For these systems, two axes with toothed belt drive are generally coupled with a

shared motor and synchronised using a connecting shaft.

Connecting shafts are available for sizes 25, 40 and 63.



Type code

		KSK	—	25	—	800
Type						
KSK	Connecting shaft					
Size						
25	for toothed belt axis DGE-25-...-ZR-KF					
40	for toothed belt axis DGE-40-...-ZR-KF					
63	for toothed belt axis DGE-63-...-ZR-KF					
Centre-to-centre distance between the axes						

Connecting shafts KSK

Technical data



Ø - Size
25, 40 and 63 mm



General technical data				
Size		25	40	63
Moment of inertia if L1 = 0 mm	[kg cm ²]	0.31	1.47	13.10
Moment of inertia per 1 m L1	[kg cm ² /m]	0.34	0.80	3.35
Max. permissible axial offset	[mm]	±2		
Basic weight if L1 = 0 mm	[kg]	0.22	0.36	1.8
Additional weight per 1 m L1	[kg/m]	0.32	0.48	0.8

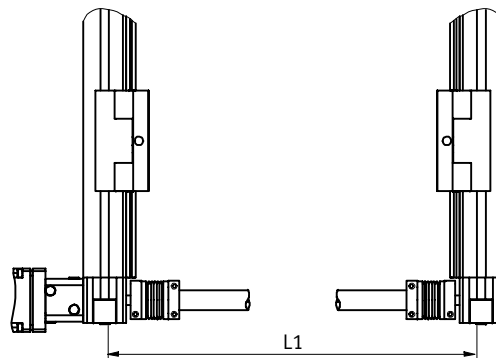
Operating and environmental conditions				
Size		25	40	63
Ambient temperature	[°C]	-10 ... +40		
Corrosion resistance class CRC ¹⁾		2		
Materials	Hubs	Wrought aluminium alloy		
	Bellows	High-alloy steel		
Materials	Connecting tube	High-alloy steel		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Distance (centre-to-centre distance L1) between the axes

A connecting shaft consists of a connecting tube with two couplings attached to its ends. The connecting shaft transmits the required torque, and thus avoids misalignment between the axes. It also ensures

slip-free transmission, resulting in identical travel at both axes. The centre-to-centre distance between the two axes must be entered under distance (see table).



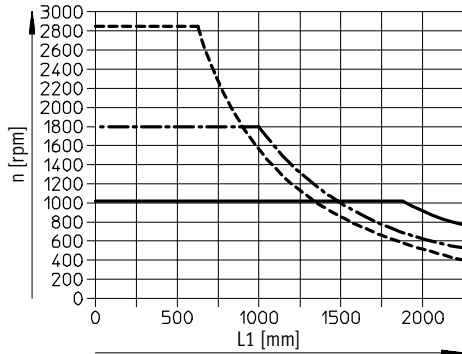
Size		25	40	63
L1 _{min.}	[mm]	200	250	350
L1 _{max.}	[mm]	2 000	2 000	2 000

Connecting shafts KSK

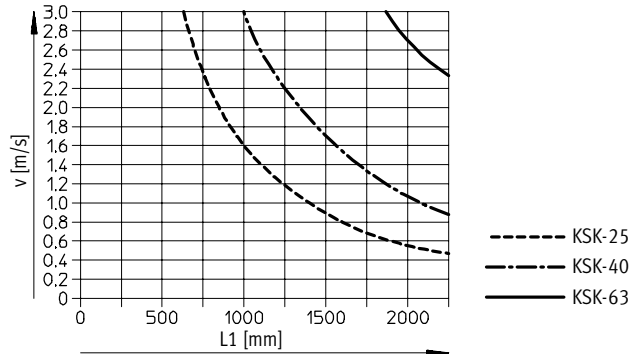
Technical data



Max. rpm [n] as a function of the centre-to-centre distance L1

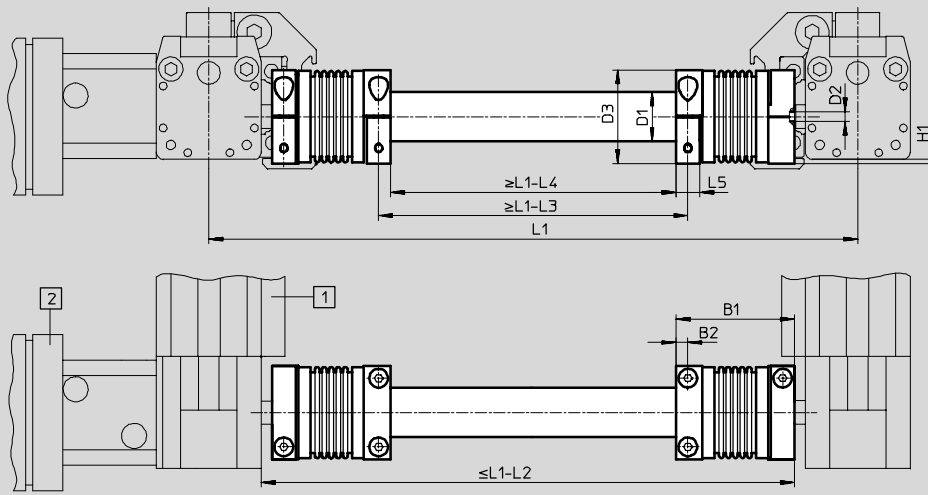


Max. axis velocity [v] as a function of the centre-to-centre distance L1



Dimensions

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Type	B1	B2	D1 ∅	D2 ∅	D3 ∅	H1	L1	L2	L3	L4	L5
KSK-25-...	50	5.1	21.27	8	40	1.6	Required centre-to-centre distance between the axes	51.4	133.6	156.4	10.2
KSK-40-...	59	6.5	26.52	15	49	2.5		71.4	164.4	194.6	13.1
KSK-63-...	94	10.8	41.6	25	81	6		114.6	261.4	305.6	21.6

Ordering data

Type	Part No.	Type
KSK-25	196 587	KSK-25-...
KSK-40	196 588	KSK-40-...
KSK-63	196 589	KSK-63-...

- - Note

Specify the centre-to-centre distance L1 in the type code when ordering.

Ordering example:
Two toothed belt axes DGE-40-ZR are to be linked using a connecting shaft and a centre-to-centre distance L1 = 1 000 mm

The following connecting shaft must be ordered:
Type: KSK-40-1 000
Part No.: 196 588