

## Piston rod attachments

**FESTO**



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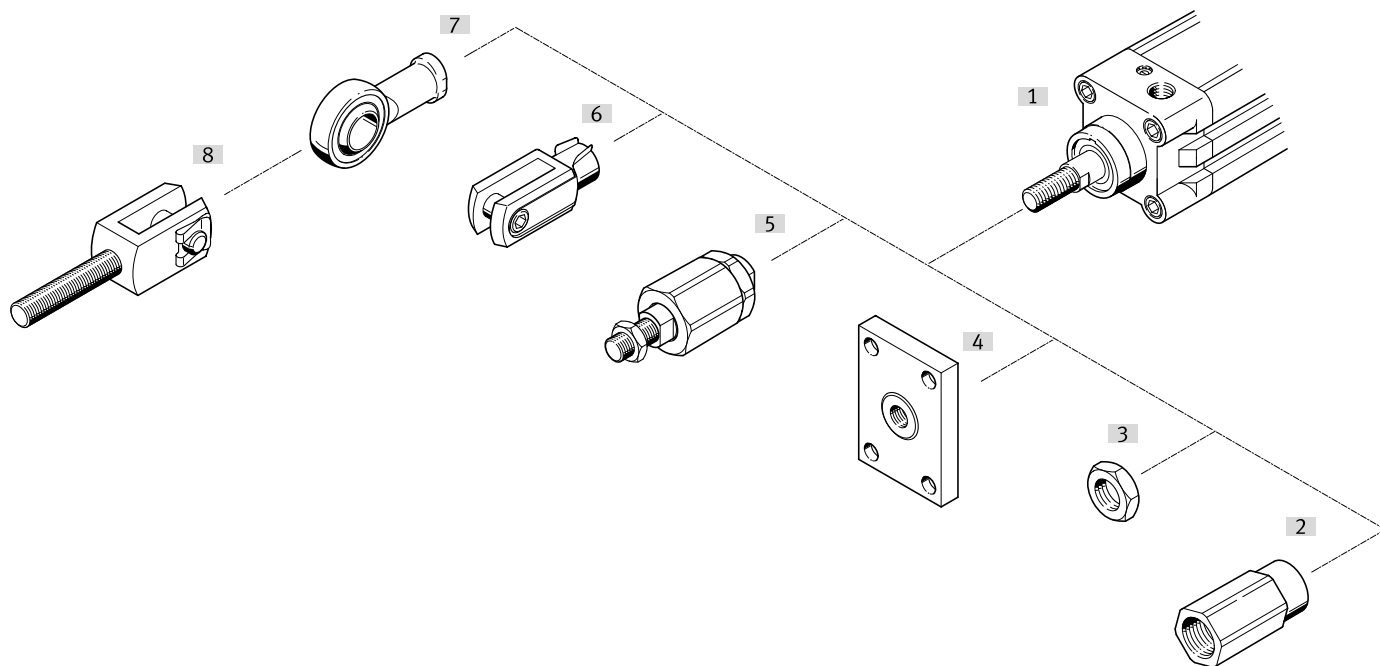
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Simply good: Expected high Festo quality  
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The Core Range offers you the best value for your automation tasks.



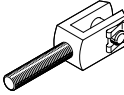
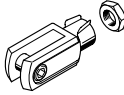
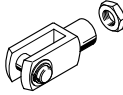
Just look  
for the  
star!

Peripherals overview

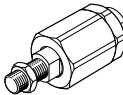
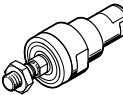






Mounting attachments and accessories		Description
[1]	Cylinders with piston rod	The piston rod attachments are mounted on the piston rod of the cylinder.
[2]	Adapter AD	Specially for through, hollow piston rods, e.g. for connecting suction cups.
[3]	Hex nut MSK	Based on and/or corresponds to ISO 8675.
[4]	Coupling piece KSG	The coupling pieces connect the piston rod end of all cylinder types to the machine parts to be moved. They compensate for radial misalignments up to $\pm 1$ mm.
	Coupling piece KSZ	For cylinders with non-rotating piston rods. This coupling piece ensures the cylinder has a stable connection to the component being moved in order to compensate for radial deviation.
[5]	Self-aligning rod coupler FK	The rod couplers connect the piston rod end of all cylinder types to the machine parts to be moved. This compensates for radial and angular deviations (misalignment).
	Self-aligning rod coupler CRFK	Corrosion and acid-resistant design.
[6]	Rod clevis SG	This rod clevis is fitted to the threaded front end of the piston rod and permits a swivelling movement of the cylinder in one plane. Corresponds to ISO 8140 or DIN 71752.
	Rod clevis CRSG	Corrosion and acid-resistant design. Corresponds to ISO 8140 or DIN 71752.
[7]	Rod eye SGS	The swivel bearing of the rod eyes are maintenance free. Correspond to ISO 12240-4 dimensional series K.
	Rod eye CRSGS	Corrosion and acid-resistant design. Correspond to ISO 12240-4 dimensional series K.
[8]	Rod clevis SGA	Rod clevises are used in combination with the rod eye SGS for spherical connection of cylinders.

Product range overview

Piston rod attachments		Rod eye		Rod clevis		
Piston rod thread		SGS-...	CRSGS-...	SGA-... <sup>1)</sup>	SG-...	CRSG-...
Outside	Inside					
M4		■	-	-	■	-
M6		■	■	-	■	■
M8		■	■	-	■	■
M10		■	-	-	■	-
M10x1.25		■	■	■	■	■
M12		■	-	■	■	-
M12x1.25		■	■	■	■	■
M16		■	-	■	■	-
M16x1.5		■	■	■	■	■
M20x1.5		■	■	■	■	■
M27x2		■	■	■	■	■
M36x2		■	-	-	■	-
M42x2		■	-	-	■	-
M48x2		■	-	-	■	-
→ Page/Internet		4	6	7	8	10

1) Only to be attached to the piston rod in conjunction with rod eye SGS

Piston rod attachments		Self-aligning rod coupler		Coupling piece		Hex nut	Adapter
Piston rod thread		FK-...	CRFK-...	KSG-...	KSZ-...	MSK-...	AD-...
Outside	Inside						
M4		■	-	-	-	-	-
M6		■	-	-	■	-	■
M8		■	-	-	■	-	■
M10		■	-	-	-	-	-
M10x1.25		■	■	■	■	■	■
M12		■	-	-	-	-	-
M12x1.25		■	■	■	■	■	■
M16		■	-	-	-	-	-
M16x1.5		■	■	■	■	■	-
M20x1.5		■	■	■	■	-	-
M27x2		■	-	■	-	-	-
M36x2		■	-	-	-	-	-
M42x2		-	-	-	-	-	-
M48x2		-	-	-	-	-	-
	M4	■	-	-	-	-	-
	M5	■	-	-	-	-	-
	M6	■	-	-	-	-	-
	M8	■	-	-	-	-	-
	M10	■	-	-	-	-	-
	M12	■	-	-	-	-	-
	M16	■	-	-	-	-	-
→ Page/Internet		11	12	14	15	16	17

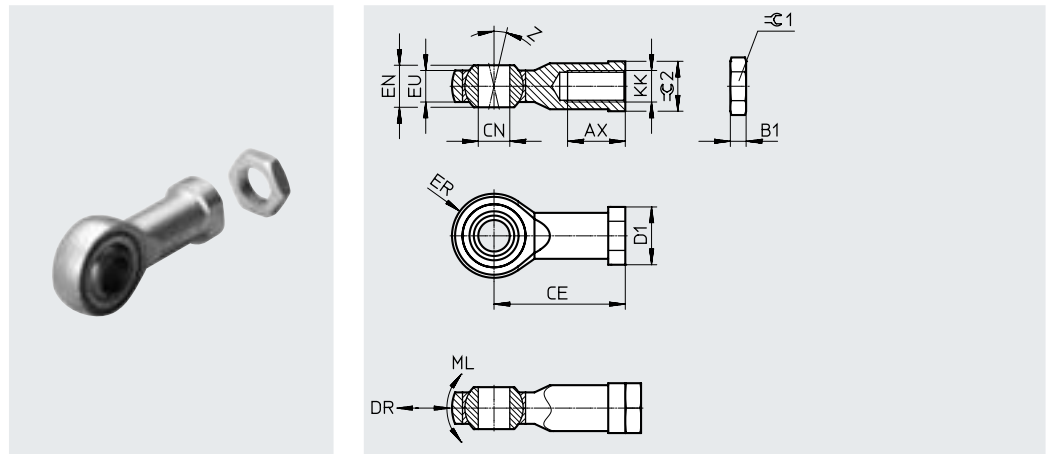
## Datasheet

### Rod eye SGS

Scope of delivery:  
1 rod eye, 1 hex nut to DIN 439

Material:  
Galvanised steel

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L



#### Dimensions and ordering data

KK	AX	B1	CE	CN ∅ H7	D1 ∅	DR <sup>1)</sup> max. [μm]	ER ±0.5	EN	EU
<b>M4</b>	10 -2	2.2	27±1.2	5	12	34	9	8	6
<b>M6</b>	12 -2	3.2	30±1.2	6	14	34	10	9	6.8
<b>M8</b>	16 -2	4	36±1.2	8	17	40	12	12	9
<b>M10</b>	20 -2	5	43±1.2	10	20	40	14	14	10.5
<b>M10x1.25</b>									
<b>M12</b>	22 -2	6	50±1.2	12	23	45	16	16	12
<b>M12x1.25</b>									
<b>M16</b>	28 -2	8	64±1.2	16	29	45	21	21	15
<b>M16x1.5</b>									
<b>M20x1.5</b>	33 -2	10	77±1.7	20	37	55	25	25	18
<b>M27x2</b>	51 -2	13.5	110±1.7	30	52	55	35	37	25
<b>M36x2</b>	56 +2	18	125±2.1	35	60	60	40	43	28
<b>M42x2</b>	60 +2	21	142±2.1	40	69	60	45	49	33
<b>M48x2</b>	65 +2	24	160±2.1	50	78	60	58	60	45

1) Max. play DR up to max. friction torque ML possible.

## Datasheet

KK	ML <sup>2)</sup> max. [Nm]	Z [°]	⊖1	⊖2	ISO 12240-4 Dimensional series K	CRC <sup>3)</sup>	Weight [g]	Part no.	Type
<b>M4</b>	0.1	13	7	9	–	1	21	<b>9253</b>	<b>SGS-M4</b>
<b>M6</b>	0.13	13	10	11	■	1	29	★ <b>9254</b>	<b>SGS-M6</b>
<b>M8</b>	0.18	13	13	14	■	1	53	★ <b>9255</b>	<b>SGS-M8</b>
<b>M10</b>	0.23	13	17	17	■	1	88	<b>9256</b>	<b>SGS-M10</b>
<b>M10x1.25</b>					–	1	87	★ <b>9261</b>	<b>SGS-M10x1.25</b>
<b>M12</b>	0.28	13	19	19	■	1	131	<b>9257</b>	<b>SGS-M12</b>
<b>M12x1.25</b>					–	1	129	★ <b>9262</b>	<b>SGS-M12x1.25</b>
<b>M16</b>	0.4	15	24	22	■	1	263	<b>9258</b>	<b>SGS-M16</b>
<b>M16x1.5</b>					–	1	259	★ <b>9263</b>	<b>SGS-M16x1.5</b>
<b>M20x1.5</b>	0.55	15	30	30	■	1	464	★ <b>9264</b>	<b>SGS-M20x1.5</b>
<b>M27x2</b>	0.85	15	41	41	–	1	1333	<b>10774</b>	<b>SGS-M27x2</b>
<b>M36x2</b>	1	15	55	50	■	1	2084	<b>10775</b>	<b>SGS-M36x2</b>
<b>M42x2</b>	1.2	15	65	55	■	1	3132	<b>10776</b>	<b>SGS-M42x2</b>
<b>M48x2</b>	1.5	12	75	65	■	1	5498	<b>10777</b>	<b>SGS-M48x2</b>

2) Max. friction torque ML up to max. play DR possible.

3) In the area of the ball: CRC 0

More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

Festo Core Range



Generally ready for shipping ex works in 24 hours

Generally ready for shipping ex works in 5 days

## Datasheet

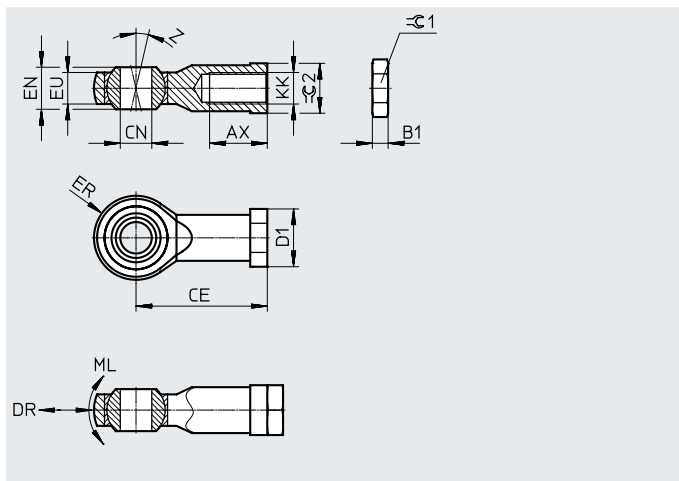
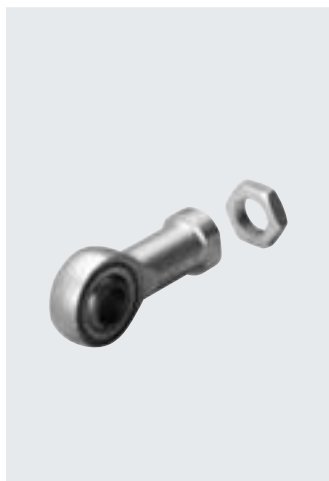
### Rod eye CRSGS

Scope of delivery:  
1 rod eye, 1 hex nut to DIN 439

Material:  
High-alloy steel

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L

Recommended for production systems  
for manufacturing lithium-ion batteries.



#### Dimensions and ordering data

KK	AV	B1	CE	CN ∅ H7	D1 ∅	DR <sup>1)</sup> max. [μm]	EF ±0.5	EN	EU
	-2								
<b>M6</b>	12	3.2	30±1.2	6	13	34	10	9	6.8
<b>M8</b>	16	4	36±1.2	8	16	40	12	12	9
<b>M10x1.25</b>	20	5	43±1.2	10	19	40	14	14	10.5
<b>M12x1.25</b>	22	6	50±1.2	12	22	45	16	16	12
<b>M16x1.5</b>	28	8	64±1.2	16	27	45	21	21	15
<b>M20x1.5</b>	33	10	77±1.7	20	34	55	25	25	18
<b>M27x2</b>	51	13.5	110±1.7	30	50	55	35	37	25

KK	ML <sup>2)</sup> max. [Nm]	Z [°]	≈G1	≈G2	ISO 12240-4 Dimensional series K	CRC <sup>3)</sup>	Weight [g]	Battery man- ufacturing <sup>4)</sup>	Part no.	Type
<b>M6</b>	0.18	13	10	11	■	3	29	F5a	<b>195580</b>	<b>CRSGS-M6</b>
<b>M8</b>	0.23	13	13	14	■	3	53	F5a	<b>195581</b>	<b>CRSGS-M8</b>
<b>M10x1.25</b>	0.23	13	17	17	-	3	87	F5a	<b>195582</b>	<b>CRSGS-M10x1.25</b>
<b>M12x1.25</b>	0.28	13	19	19	-	3	129	F5a	<b>195583</b>	<b>CRSGS-M12x1.25</b>
<b>M16x1.5</b>	0.4	15	24	22	-	3	259	F5a	<b>195584</b>	<b>CRSGS-M16x1.5</b>
<b>M20x1.5</b>	0.55	15	30	30	■	3	464	F5a	<b>195585</b>	<b>CRSGS-M20x1.5</b>
<b>M27x2</b>	0.85	15	41	41	-	3	1333	F5a	<b>195586</b>	<b>CRSGS-M27x2</b>

1) Max. play DR up to max. friction torque ML possible.

2) Max. friction torque ML up to max. play DR possible.

3) In the area of the ball: CRC 1

More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

4) F5a: Metals with more than 5% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.

More information: [www.festo.com/x/topic/bat](http://www.festo.com/x/topic/bat)

## Datasheet

### Rod clevis SGA

Scope of delivery:

1 rod clevis, 1 pivot pin,  
1 retaining clip

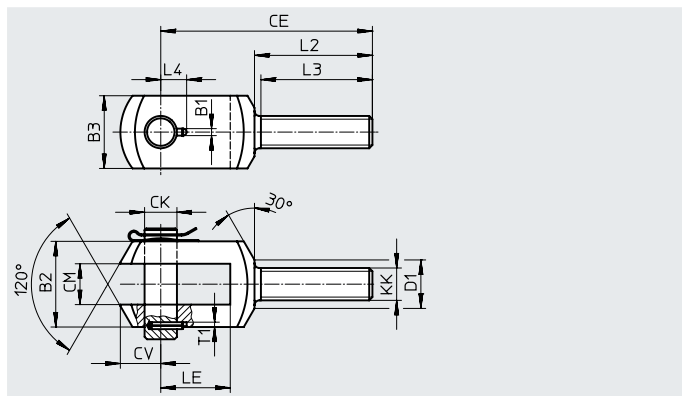
Material:

Galvanised steel

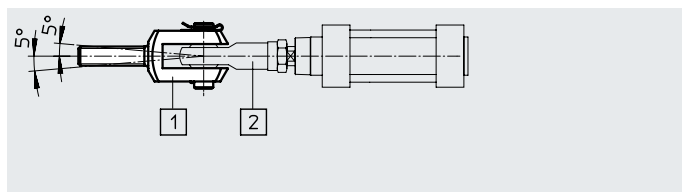
RoHS-compliant

LABS (PWIS) conformity:

VDMA24364-B2-L



The rod clevis SGA [1] is used in combination with the rod eye SGS [2] (→ page 4) for spherical connection of cylinders.



#### Dimensions and ordering data

KK	B1	B2	B3	CE	CK ∅ F7/h9	CM B12	CV	D1 ∅
		d12						
<b>M10x1.25</b>	3.3	28	20	78	10	14	12	18
<b>M12</b>	4.3	30	25	92	12	16	16	19
<b>M12x1.25</b>								
<b>M16</b>	4.3	40	35	108	16	21	21	24
<b>M16x1.5</b>								
<b>M20x1.5</b>	4.3	50	40	131	20	25	25	30
<b>M27x2</b>	6.3	67	60	168	30	37	32	38
<b>M36x2</b>	6.3	78	70	211	35	43	39	48

KK	L2	L3	L4	LE	T1	CRC <sup>1)</sup>	Weight [g]	Part no.	Type
<b>M10x1.25</b>	53	50	11	20	3	1	129	<b>32954</b>	<b>SGA-M10x1.25</b>
<b>M12</b>	58	55	12	26	3	1	222	<b>6523</b>	<b>SGA-M12</b>
<b>M12x1.25</b>						1	222	<b>10767</b>	<b>SGA-M12x1.25</b>
<b>M16</b>	65	62	14	31	3	1	512	<b>6524</b>	<b>SGA-M16</b>
<b>M16x1.5</b>						1	512	<b>10768</b>	<b>SGA-M16x1.5</b>
<b>M20x1.5</b>	73	69	16	43	3	1	954	<b>10769</b>	<b>SGA-M20x1.5</b>
<b>M27x2</b>	98	92	24	54	5	1	2189	<b>10770</b>	<b>SGA-M27x2</b>
<b>M36x2</b>	121	115	26.5	72	5	1	3938	<b>10771</b>	<b>SGA-M36x2</b>

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

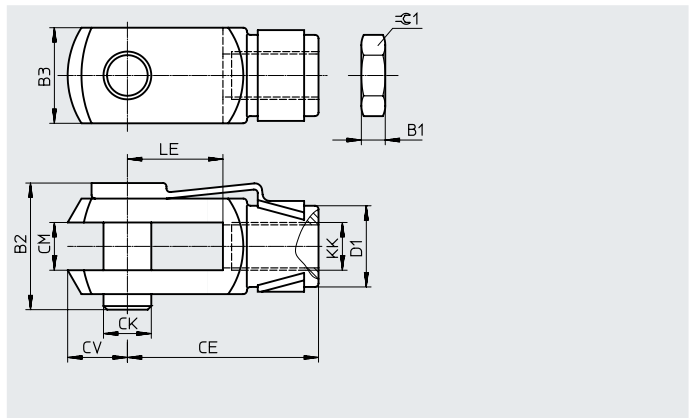
## Datasheet

### Rod clevis SG

Scope of delivery:  
1 rod clevis, 1 clevis pin, 1 hex nut  
(M4: DIN 934,  
M6 ... M16: DIN 439)

Material:  
Galvanised steel

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L



#### Dimensions and ordering data

KK	B1	B2	B3	CE	CK ∅	CM	CV	D1 ∅
<b>M4</b>	3.2	11.1	8	16±0.3	4h11	4B13	5	8
<b>M6</b>	3.2	16.2	12	24±0.3	6h11	6B13	7	10
<b>M8</b>	4	21.6	16	32±0.4	8h11	8B13	10	14
<b>M10</b>	5	26	20	40±0.4	10h11	10B13	12	18
<b>M10x1.25</b>								
<b>M12</b>	6	31.1	24	48±0.4	12h11	12+0.7/+0.15	14	20
<b>M12x1.25</b>								
<b>M16</b>	8	39.5	32	64±0.4	16h11	16+0.7/+0.15	19	26
<b>M16x1.5</b>								

KK	LE ±0.5	≈G1	ISO 8140	DIN 71752	CRC <sup>1)</sup>	Weight [g]	Part no.	Type
<b>M4</b>	8	7	—	■	1	10	6532	SG-M4
<b>M6</b>	12	10	■	■	1	22	★ 3110	SG-M6
<b>M8</b>	16	13	■	■	1	53	★ 3111	SG-M8
<b>M10</b>	20	17	—	■	1	104	2674	SG-M10
<b>M10x1.25</b>		17	■	■	1	103	★ 6144	SG-M10x1.25
<b>M12</b>	24	19	—	■	1	168	2675	SG-M12
<b>M12x1.25</b>		19	■	■	1	166	★ 6145	SG-M12x1.25
<b>M16</b>	32	24	—	■	1	376	2676	SG-M16
<b>M16x1.5</b>			■	■	1	375	★ 6146	SG-M16x1.5

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)



## Datasheet

### Rod clevis SG

#### Scope of delivery:

1 rod clevis, 1 bolt,  
1 retaining ring, 1 hex nut (DIN 439)

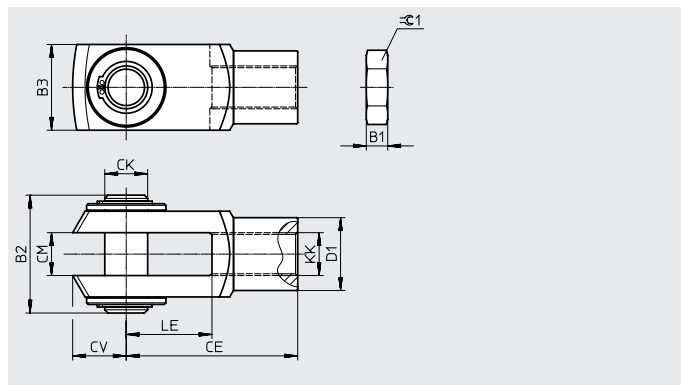
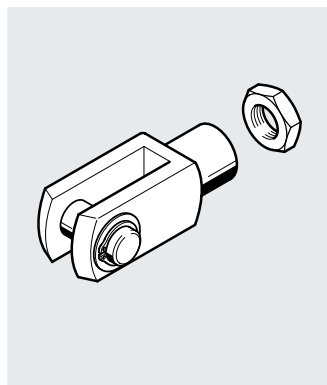
#### Material:

Galvanised steel

#### RoHS-compliant

LABS (PWIS) conformity:

VDMA24364-B2-L



#### Dimensions and ordering data

KK	B1	B2	B3	CE	CK ∅	CM	CV	D1 ∅
<b>M20x1.5</b>	10	55	40	80±0.4	20e8	20+0.7/+0.15	25	34
<b>M27x2</b>	13.5	73	55	110±0.4	30e8	30+0.7/+0.15	38	48
<b>M36x2</b>	18	93	70	144±0.4	35e8	35+0.7/+0.15	44	60
<b>M42x2</b>	21	111	85	168±0.4	40e8	40+0.7/+0.15	64	70
<b>M48x2</b>	24	121.5	90	192±0.4	50e8	50+0.7/+0.15	73	80

KK	LE ±0.5	≈C1	ISO 8140	CRC <sup>1)</sup>	Weight [g]	Part no.	Type
<b>M20x1.5</b>	40	30	■	1	793	★ 6147	SG-M20x1.5
<b>M27x2</b>	54	41	■	1	2135	14987	SG-M27x2-B
<b>M36x2</b>	72	55	■	1	4320	9581	SG-M36x2
<b>M42x2</b>	84	65	■	1	7520	9582	SG-M42x2
<b>M48x2</b>	96	75	■	1	10029	9583	SG-M48x2

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

Festo Core Range



Generally ready for shipping ex works in 24 hours



Generally ready for shipping ex works in 5 days

## Datasheet

### Rod clevis CRSG

**Scope of delivery:**

1 rod clevis, 1 pivot pin, 1 hex nut to DIN 439

**Material:**

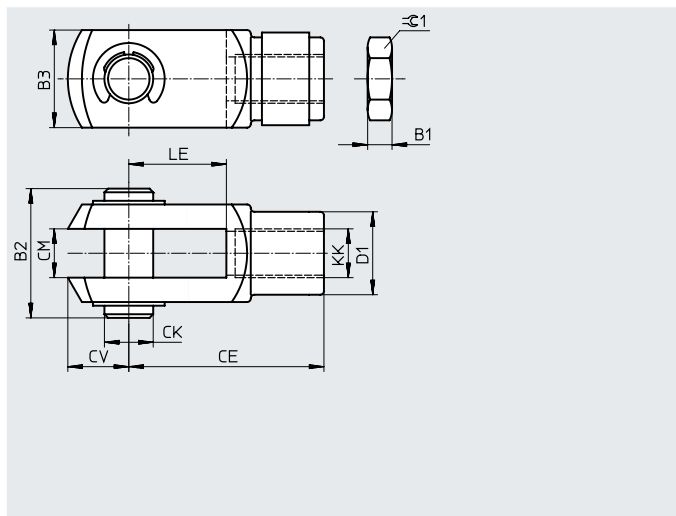
High-alloy steel

**RoHS-compliant**

LABS (PWIS) conformity:

VDMA24364-B2-L

Recommended for production systems for manufacturing lithium-ion batteries.



Dimensions and ordering data								
KK	B1	B2	B3	CE	CK ∅	CM	CV	D1 ∅
<b>M4</b>	2.2	11.5	8	16±0.3	4 h11	4 B13	5	8
<b>M6</b>	3.2	19	12	24±0.3	6 e8	6 B13	7	10
<b>M8</b>	4	24	16	32±0.4	8 e8	8 B13	10	14
<b>M10x1.25</b>	5	27	20	40±0.4	10 e8	10 B13	12	18
<b>M12x1.25</b>	6	33	24	48±0.4	12 e8	12	14	20
<b>M16x1.5</b>	8	43	32	64±0.4	16 e8	16	19	26
<b>M20x1.5</b>	10	53	40	80±0.4	20 e8	20	25	34
<b>M27x2</b>	13.5	70	55	110±0.4	30 e8	30	38	48

KK	LE ±0.5	≈G1	ISO 8140	DIN 71752	CRC <sup>1)</sup>	Weight [g]	Battery production <sup>2)</sup>	Part no.	Type
<b>M4</b>	8	7	■	■	1	8	F5a	<b>8165295</b>	<b>CRSG-M4</b>
<b>M6</b>	12	10	■	■	4	25	F5a	<b>13567</b>	<b>CRSG-M6</b>
<b>M8</b>	16	13	■	■	4	55	F5a	<b>13568</b>	<b>CRSG-M8</b>
<b>M10x1.25</b>	20	17	■	■	4	110	F5a	<b>13569</b>	<b>CRSG-M10x1.25</b>
<b>M12x1.25</b>	24	19	■	■	4	180	F5a	<b>13570</b>	<b>CRSG-M12x1.25</b>
<b>M16x1.5</b>	32	24	■	■	4	395	F5a	<b>13571</b>	<b>CRSG-M16x1.5</b>
<b>M20x1.5</b>	40	30	■	—	4	800	F5a	<b>13572</b>	<b>CRSG-M20x1.5</b>
<b>M27x2</b>	54	41	■	—	4	1900	F5a	<b>185361</b>	<b>CRSG-M27x2</b>

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) F5a: Metals with more than 5% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.  
More information: [www.festo.com/x/topic/bat](http://www.festo.com/x/topic/bat)

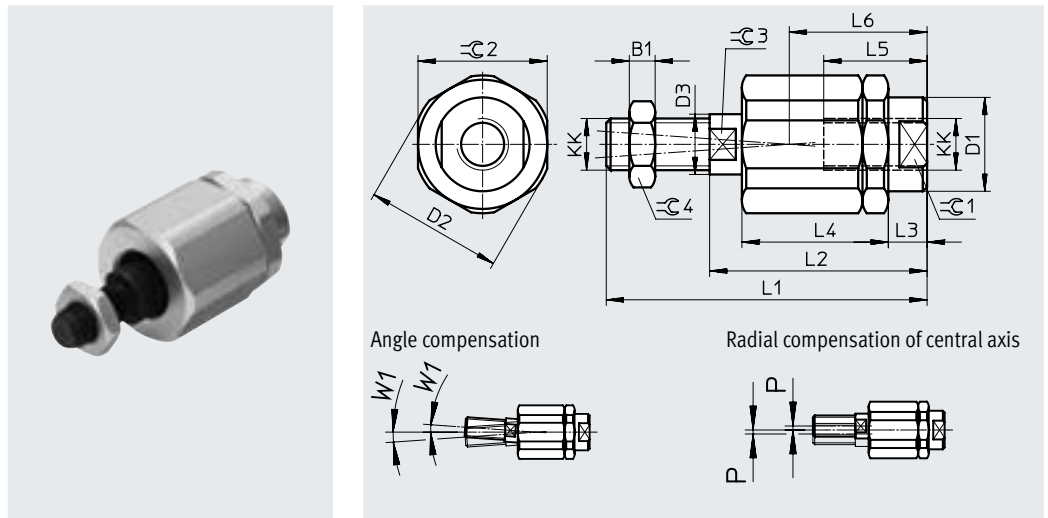
# Datasheet

## Self-aligning rod coupler FK

Scope of delivery:  
1 self-aligning rod coupler, 1 hex nut to  
DIN 439

Material:  
Housing, bushing: Steel  
Nut: Galvanised  
Spherical washer, ball pin:  
Case-hardened steel

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L



Dimensions and ordering data													
KK	B1	D1 ∅	D2 ∅	D3 ∅	L1	L2	L3	L4	L5	L6	W1 [°]	≅C1	≅C2
M4	2.2	–	–	3.8	33	24	4.5	16.5	12.5	16	4	11	11
M5	2.7	8.5	14.5	5.8	38.5	25	4.4	17.5	11.5	15.7	4	7	13
M6	3.2	8.5	14.5	5.8	37	25	4.4	17.5	11.5	15.7	4	7	13
M8	4	12.5	19	7.8	49	34	6	23.5	14	20.5	4	10	17
M10	5	21.4	32.5	13.8	67.5	49.5	9	34	23	31	4	19	30
M10x1.25					69.5						4		
M12	6	21.4	32.5	13.8	70.5	49.5	9	34	23	31	4	19	30
M12x1.25					74.5						50.5		
M16	8	33.8	45	22	97	71	10	53	32	44.5	4	30	41
M16x1.5					103						4		
M20x1.5	10	33.8	45	22	120	80	19	53	41	53.5	4	30	41
M27x2	13.5	62	62	28	157	103	12.2	79	42	62.5	4	55	55
M36x2	18	80	80	38	251	179	22	136	78	110	4	75	75

KK	≅C3	≅C4	Max. permissible ten- sile and compressive load [N]	Axial play [mm]	Radial compensa- tion P [mm]	CRC <sup>1)</sup>	Weight [g]	Part no.	Type
M4	3.2	7	750	0.04 ... 0.2	±0.5	2	17	6528	FK-M4
M5	5	8	1200	0.04 ... 0.2	±0.5	2	23	30984	FK-M5
M6	5	10	1200	0.04 ... 0.2	±0.5	2	24	★ 2061	FK-M6
M8	7	13	2500	0.04 ... 0.2	±0.5	2	56	★ 2062	FK-M8
M10	12	17	5000	0.05 ... 0.25	±0.7	2	236	2063	FK-M10
M10x1.25			5000	0.05 ... 0.25	±0.7	2	236	★ 6140	FK-M10x1.25
M12	12	19	5000	0.05 ... 0.25	±0.7	2	242	2064	FK-M12
M12x1.25			5000	0.05 ... 0.25	±0.7	2	245	★ 6141	FK-M12x1.25
M16	19	24	10000	0.05 ... 0.25	±1	2	706	2065	FK-M16
M16x1.5			10000	0.05 ... 0.25	±1	2	709	★ 6142	FK-M16x1.5
M20x1.5	19	30	10000	0.05 ... 0.25	±1	2	792	★ 6143	FK-M20x1.5
M27x2	24	41	30000	0.05 ... 0.25	±1	2	2129	10485	FK-M27x2
M36x2	32	55	40000	0.05 ... 0.25	±1	2	6076	10746	FK-M36x2

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

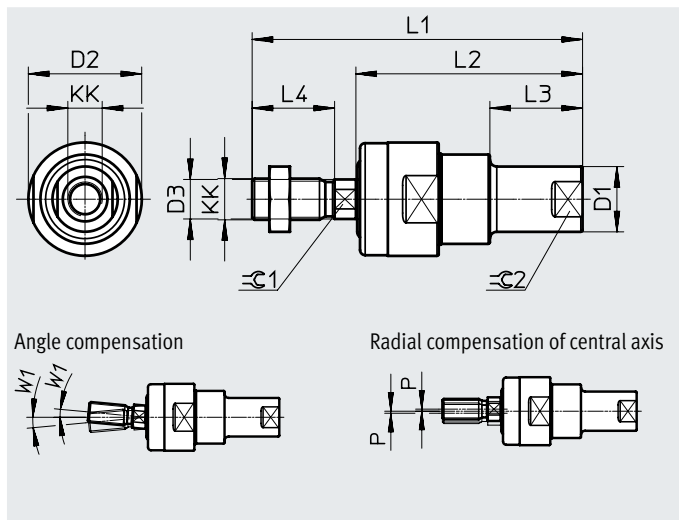
## Datasheet

### Self-aligning rod coupler CRFK

Scope of delivery:  
1 self-aligning rod coupler

Material:  
Housing, threaded bolt, nut: High-alloy stainless steel  
Cap: EPDM

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L



Dimensions and ordering data										
KK	D1 ∅	D2 ∅	D3 ∅	L1	L2	L3	L4	W1 [°]	⌀C1	⌀C2
<b>M10x1.25</b>	19	33	11.5	94	66	27	22	5	10	16
<b>M12x1.25</b>	19	33	11.5	96	66	27	24	5	10	16
<b>M16x1.5</b>	27	47	16	129	89	32	32	5	14	22
<b>M20x1.5</b>	35	57	21	165	114	40	40	5	18	30

KK	Max. permissible tensile and compressive load [N]	Axial play [mm]	Radial compensation P [mm]	Ambient temperature [°C]
<b>M10x1.25</b>	2100	0.01 ... 0.03	±1	-20 ... +100
<b>M12x1.25</b>	2100	0.01 ... 0.03	±1	-20 ... +100
<b>M16x1.5</b>	5600	0.01 ... 0.03	±1	-20 ... +100
<b>M20x1.5</b>	13800	0.01 ... 0.03	±1	-20 ... +100

KK	CRC <sup>1)</sup>	Weight [g]	Part no.	Type
<b>M10x1.25</b>	4	230	<b>2305778</b>	<b>CRFK-M10x1.25</b>
<b>M12x1.25</b>	4	230	<b>2305779</b>	<b>CRFK-M12x1.25</b>
<b>M16x1.5</b>	4	670	<b>2490673</b>	<b>CRFK-M16x1.5</b>
<b>M20x1.5</b>	4	1280	<b>2545677</b>	<b>CRFK-M20x1.5</b>

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

# Datasheet

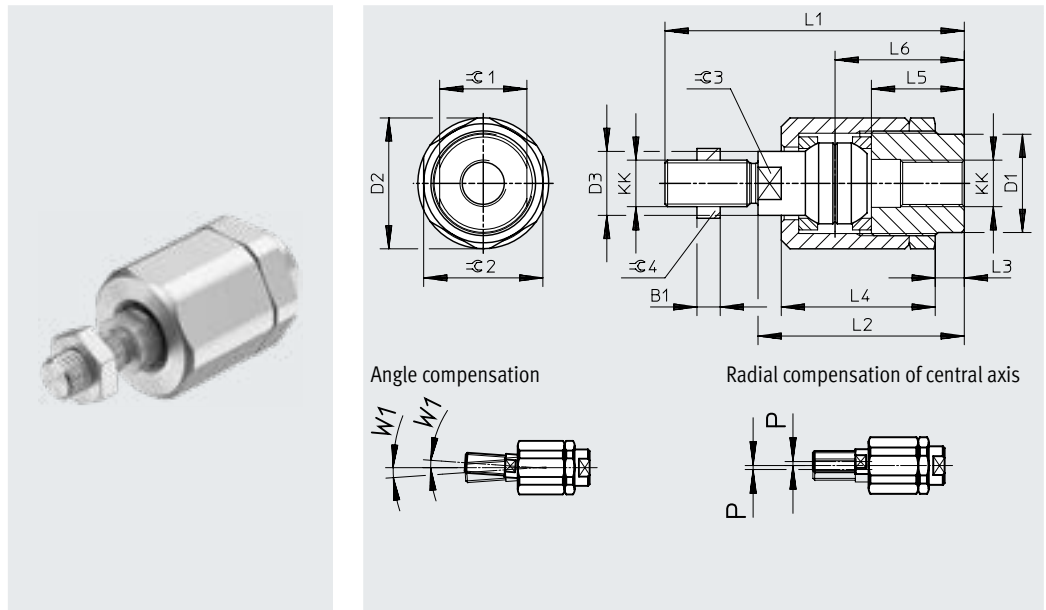
## Self-aligning rod coupler DARP

Scope of delivery:  
1 self-aligning rod coupler, 1 hex nut to  
DIN 439

Material:  
Housing, bushing, nut: High-alloy  
stainless steel  
Spherical washer, ball stud: Case-hard-  
ened steel

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L

Recommended for production systems  
for manufacturing lithium-ion batter-  
ies.



Dimensions and ordering data													
KK	B1	D1 ∅	D2 ∅	D3 ∅	L1	L2	L3	L4	L5	L6	W1 [°]	∅1	∅2
M4	2.2	–	–	3.8	33	24	4.5	16.5	12.5	16	4	11	11
M5	2.7	8.5	14.5	5.8	38.5	25	4.4	17.5	11.5	15.7	4	7	13
M6	3.2				37						4		
M8	4	12.5	19	7.8	49	33.5	6	23.5	14	20.5	4	10	17
M10x1.25	5	21.4	32.5	13.8	69.5	49.5	7	36	23	31	4	19	30
M12x1.25	6				74.5						50.5		
M16x1.25	8	33.8	45	22	103	71	10	53	32	44.5	4	30	41
M20x1.25	10				120						80		

KK	∅3	∅4	Max. permissible tensile and compres- sive load [N]	Axial play [mm]	Radial compensa- tion P [mm]	CRC <sup>1)</sup>	Weight [g]	Battery man- ufacturing <sup>2)</sup>	Part no.	Type
M4	3.2	7	750	0.04 ... 0.2	±0.5	2	17	F5a	8170110	DARP-M4-F
M5	5	8	1000	0.04 ... 0.2	±0.5	2	24	F5a	8170112	DARP-M5-F
M6		10	1000	0.04 ... 0.2	±0.5	2	25	F5a	8170115	DARP-M6-F
M8	7	13	2500	0.04 ... 0.2	±0.5	2	58	F5a	8170116	DARP-M8-F
M10x1.25	12	17	5000	0.05 ... 0.25	±0.7	2	236	F5a	8170119	DARP-M10P-F
M12x1.25		19	5000	0.05 ... 0.25	±0.7	2	244	F5a	8170120	DARP-M12P-F
M16x1.25	19	24	10000	0.05 ... 0.25	±1	2	712	F5a	8170121	DARP-M16P-F
M20x1.25		30	10000	0.05 ... 0.25	±1	2	796	F5a	8170124	DARP-M20P-F

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)  
 2) F5a: Metals with more than 5% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.  
 More information: [www.festo.com/x/topic/bat](http://www.festo.com/x/topic/bat)

## Datasheet

## Coupling piece KSG

The coupling piece connects the piston rod thread of all cylinder types to the machine parts to be moved. It compensates for radial deflections of up to 1 mm.

Scope of delivery:

1 flange plate, 1 threaded coupling

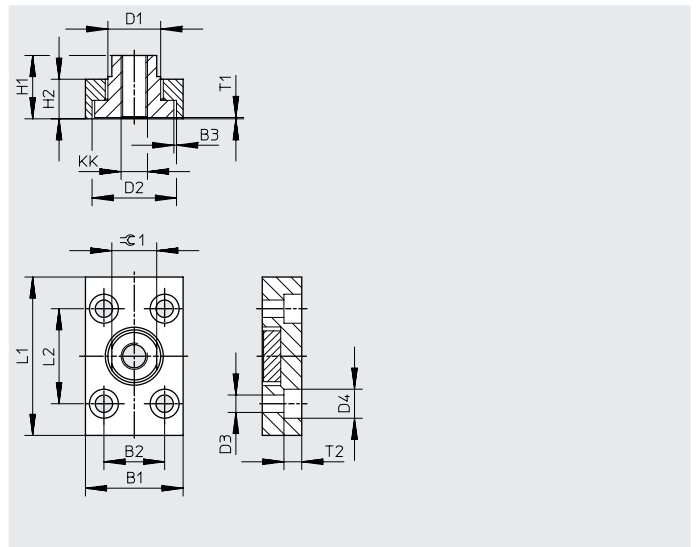
Material:

Galvanised steel

RoHS-compliant

LABS (PWIS) conformity:

VDMA24364-B2-L



## Dimensions and ordering data

KK	B1	B2	B3 Max. radial play	D1 ∅	D2 ∅	D3 ∅ H13	D4 ∅ H13	H1	H2	L1	L2
<b>M10x1.25</b>	37	23	1	20	32	6.6	11	24	15	60	36
<b>M12x1.25</b>	56	38	1	25	42	9	15	30	20	60	42
<b>M16x1.5</b>	80	58	1	30	52	11	18	32	20	80	58
<b>M20x1.5</b>	90	65	1	40	62	14	20	35	20	90	65
<b>M27x2</b>	90	65	1	40	62	14	20	35	20	90	65

KK	T1 Min. axial play	T2 +0.4 -0	⌀c1 h13	Max. tightening torque <sup>1)</sup> [Nm]	CRC <sup>2)</sup>	Weight [g]	Part no.	Type
<b>M10x1.25</b>	0.5	6.8	17	9.9	1	229	<b>32963</b>	<b>KSG-M10x1.25</b>
<b>M12x1.25</b>	0.5	9	19	24	1	447	<b>32964</b>	<b>KSG-M12x1.25</b>
<b>M16x1.5</b>	0.5	11	24	47	1	882	<b>32965</b>	<b>KSG-M16x1.5</b>
<b>M20x1.5</b>	0.5	13	36	82	1	1083	<b>32966</b>	<b>KSG-M20x1.5</b>
<b>M27x2</b>	0.5	13	36	82	1	1143	<b>32967</b>	<b>KSG-M27x2</b>

1) For retaining screws with regular thread/strength class 8.8.

2) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## Datasheet

### Coupling piece KSZ

for non-rotating piston rods with male thread

This coupling piece provides a non-rotating cylinder with stability when connecting it with a component, without needing to turn the cylinder or the component.

Scope of delivery:

1 flange plate, 1 threaded coupling

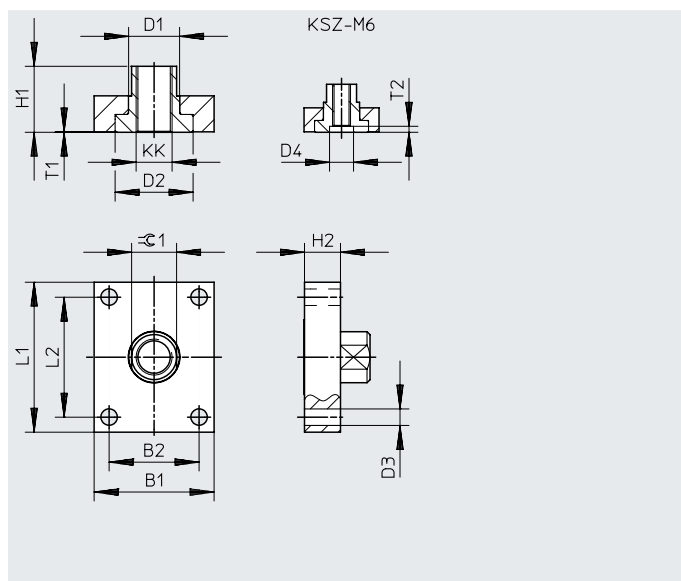
Material:

Galvanised steel

RoHS-compliant

LABS (PWIS) conformity:

VDMA24364-B2-L



Dimensions and ordering data												
KK	B1	B2	D1 $\varnothing$	D2 $\varnothing$	D3 $\varnothing$ H13	D4 $\varnothing$	H1	H2	L1	L2	T1	T2
<b>M6</b>	25	15	12	18	5.5	8	16	8	30	20	0.1	2
<b>M8</b>	30	20	14	20	5.5	–	22	8	35	25	0.1	–
<b>M10x1.25</b>	35	25	17	26	5.5	–	20	10	40	30	0.1	–
<b>M12x1.25</b>	40	30	17	26	5.5	–	22	12	50	40	0.1	–
<b>M16x1.5</b>	45	33	22	34	6.6	–	25	12	60	48	0.1	–
<b>M20x1.5</b>	50	35	30	44	9	–	32	15	72	57	0.1	–

KK	$\varnothing C1$ h13	Max. tightening torque <sup>1)</sup> [Nm]	Max. tightening torque <sup>2)</sup> [Nm]	Max. tightening torque <sup>3)</sup> [Nm]	CRC <sup>4)</sup>	Weight [g]	Part no.	Type
<b>M6</b>	10	5.9	6.9	2.1	1	45	<b>36123</b>	<b>KSZ-M6</b>
<b>M8</b>	13	5.9	16	5	1	70	<b>36124</b>	<b>KSZ-M8</b>
<b>M10x1.25</b>	15	5.9	34	12	1	110	<b>36125</b>	<b>KSZ-M10x1.25</b>
<b>M12x1.25</b>	15	5.9	61	22	1	180	<b>36126</b>	<b>KSZ-M12x1.25</b>
<b>M16x1.5</b>	19	9.9	148	57	1	246	<b>36127</b>	<b>KSZ-M16x1.5</b>
<b>M20x1.5</b>	27	24	296	120	1	418	<b>36128</b>	<b>KSZ-M20x1.5</b>

1) For retaining screws with regular thread/strength class 8.8.

2) For lock nut on the piston rod

3) Transferable torque of coupling with friction coefficient =  $\mu$  0.1 and 10x safety with max. permissible tightening torque

4) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

### Note

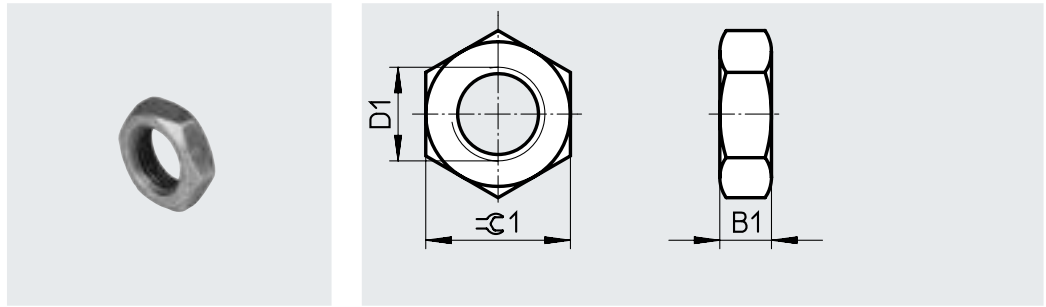
The torque on the coupling piece must not exceed the permissible torque on the cylinder. The retaining screws must be evenly tightened.

## Datasheet

## Hex nut MSK

Material:  
Galvanised steel

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L



## Dimensions and ordering data

D1	B1	≈C1	Conforms to ISO 8675	Based on ISO 8675	CRC <sup>1)</sup>	Weight [g]	Part no.	Type	PU <sup>2)</sup>
<b>M10x1.25</b>	5	17	–	■	2	7	<b>189005</b>	<b>MSK-M10x1.25</b>	10
<b>M12x1.25</b>	6	19	–	■	2	9	<b>189006</b>	<b>MSK-M12x1.25</b>	10
<b>M16x1.5</b>	8	24	■	–	2	18	<b>189007</b>	<b>MSK-M16x1,5</b>	10

1) More information: [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

2) Packaging unit.

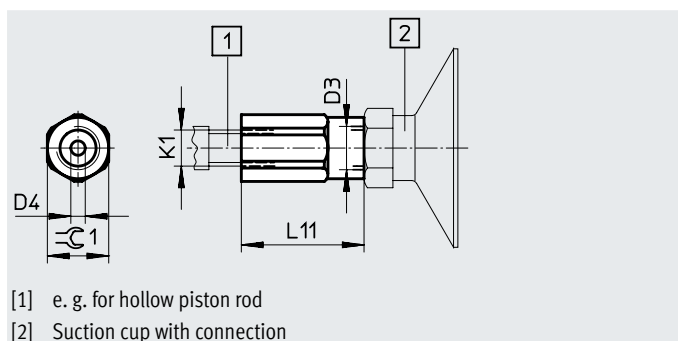


## Datasheet

### Adapter AD

Material:  
Anodised aluminium

RoHS-compliant  
LABS (PWIS) conformity:  
VDMA24364-B2-L



#### Dimensions and ordering data

K1	D3	D4 ∅	L11	r1	Weight [g]	Part no.	Type
M6	M5	2.3	27	10	6	157328	AD-M6-M5
M6	G1/8	2.3	27	13	9	157329	AD-M6-1/8
M6	G1/4	2.3	30	17	17	157330	AD-M6-1/4
M8	G1/8	3.2	29	13	8	157331	AD-M8-1/8
M8	G1/4	3.2	32	17	16	157332	AD-M8-1/4
M10x1.25	G1/8	4	31	13	10	157333	AD-M10x1.25-1/8
M10x1.25	G1/4	4	34	17	16	157334	AD-M10x1.25-1/4
M12x1.25	G1/4	6	34	17	28	160256	AD-M12x1.25-1/4
M12x1.25	G3/8	6	37	22	14	160257	AD-M12x1.25-3/8