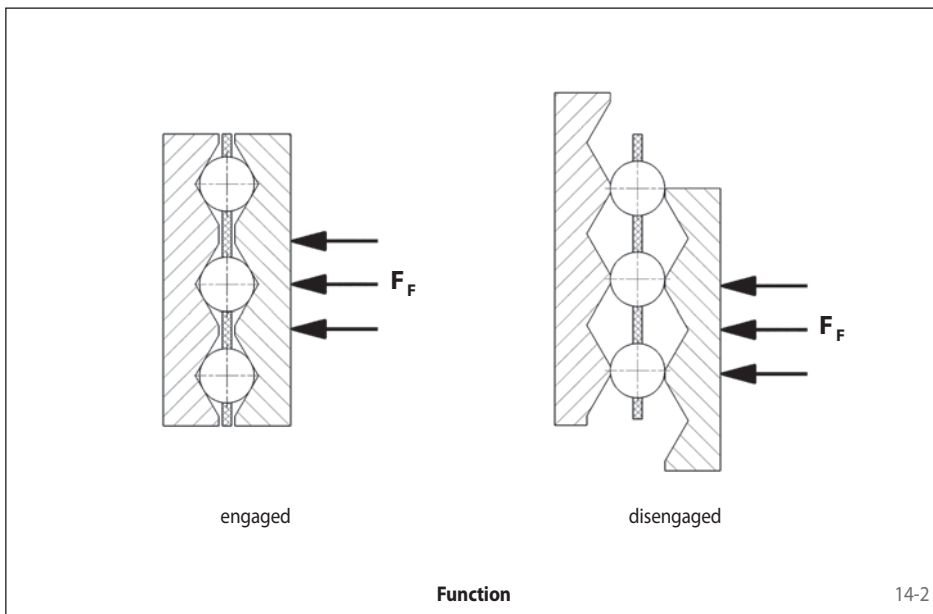


### Advantages

- Very high response accuracy through the ball principle
- Integrated fixed bearing
- Keyway in connecting flange for maximum load capacity
- Calibrated micro adjustment of torque setting possible, even post-installation
- Cost effective



### The Ball Principle

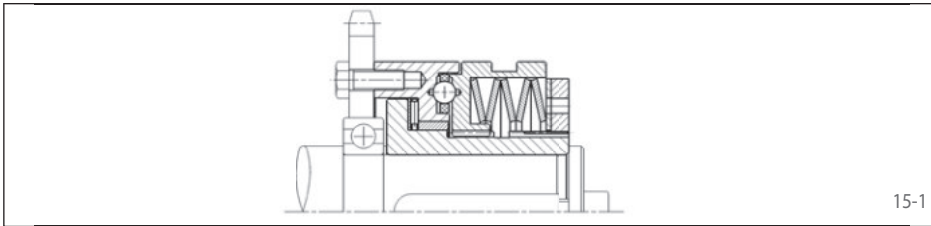
The torque is transmitted via balls which are pressed into detents via Belleville springs. When the preset limit torque has been reached the balls rise out of their seatings and slot into the nearest respective detent – until the overload has been eliminated. This characteristic, together with the special geometry of the detent gives the SIKUMAT® a very high response accuracy.

### Function

- When the preset limit torque has been reached the SIKUMAT® ratchets.
- Automatic re-engagement of the SIKUMAT® after the overload has been eliminated.
- The overload can be indicated by a proximity switch. This means that the drive can be switched off immediately or another control function can be activated.

### Types

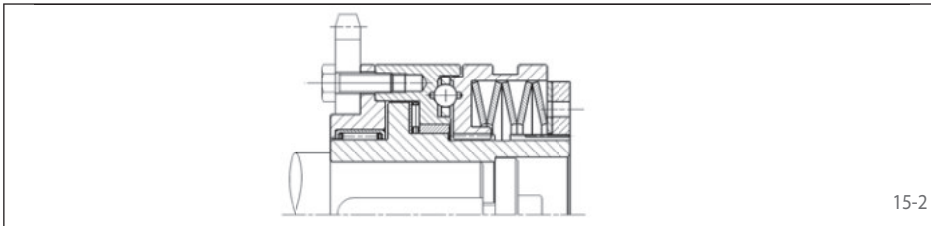
#### Series SG - Basic version with flange connection



For attaching chain wheels, belt pulleys, gear wheels etc. Bearing of attached component on the shaft to be provided by the customer.

Page 16

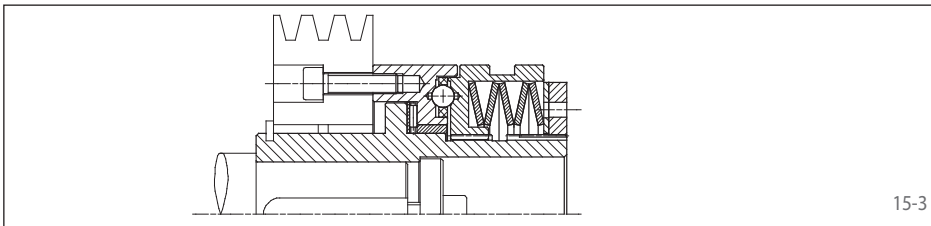
#### Series SGR - with short hub and integral needle bearing



With short hub and needle bearing for narrow components to be connected

Page 17

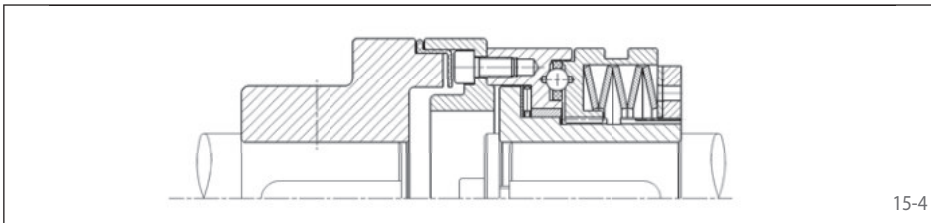
#### Series SGG - with long hub



With long hub for wide components to be connected. Bearing of the attached component in the form of plain or needle bearing to be provided by the customer.

Page 18

#### Series SGE - with flexible shaft coupling



For flexible connection of two shafts. The flexible elements are oil-proof.

Page 19

### Notes

#### Torque setting

If requested, the limit torque can be set at the factory. Setting or modification of the limit torque can also be carried out by the customer. See operating instructions for further details.

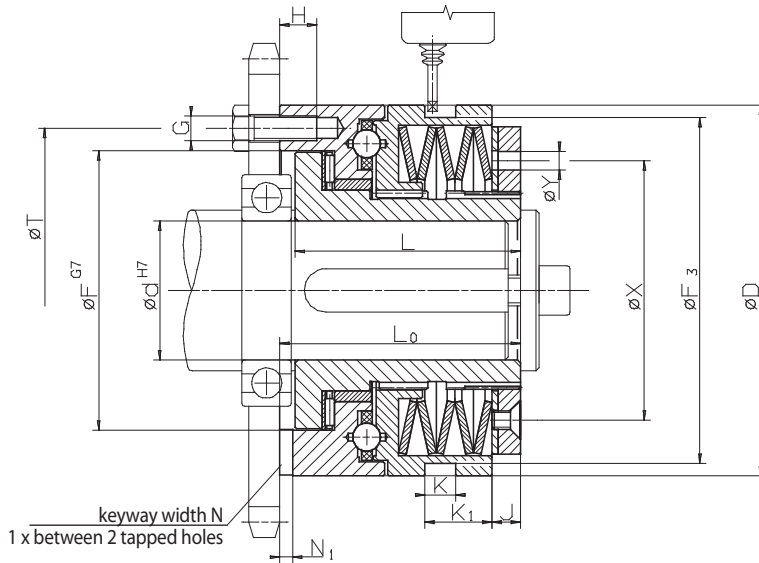
#### Proximity switch

The overload can be indicated by a non-contact or a mechanical proximity switch. Further details on pages 62 and 63

# Ratcheting SIKUMAT® SG

with balls

Basic version with flange connection



Z = number of tapped holes G on pitch circle T · Installation must be shut down as soon as torque limiter responds

16-1

## Technical Data

Type	Art.-No.	Torque type 1			Torque type 2			Torque type 3			Torque type 4		
		Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number
SG 32.x	4478-020xxx	2,5 - 5	3300	001	5 - 10	3300	002	10 - 20	1800	003	20 - 40	1800	004
SG 40.x	4478-025xxx	6 - 12	2900	001	12 - 25	2900	002	25 - 55	1450	003	55 - 100	1450	004
SG 55.x	4478-035xxx	12 - 25	2400	001	25 - 50	2400	002	50 - 120	1200	003	120 - 200	1200	004
SG 65.x	4478-045xxx	25 - 50	2000	001	50 - 100	2000	002	100 - 250	1000	003	200 - 450	1000	004
SG 80.x	4478-055xxx	50 - 100	1600	001	100 - 200	1600	002	200 - 500	850	003	500 - 1000	850	004
SG 90.x	4478-065xxx	85 - 250	1400	001	230 - 600	1400	002	300 - 1000	700	003	600 - 2000	700	004

## Dimensions

Type	Art.-No.	Bore d		D	F	F <sub>3</sub>	G	H	J	K	K <sub>1</sub>	L	L <sub>0</sub>	N	N <sub>1</sub>	T	X	Y	Z	Engage-ment travel
		min. mm	max. mm																	
SG 32.x	4478-020xxx	7	20	55	41	50	M 5	6,5	3	9	13,5	35	38,5	6	3,1	48	38,5	5	6	1,4
SG 40.x	4478-025xxx	10	25	82	60	72,5	M 5	8	6	9	14,5	48	52	6	3,1	70	54	6	6	2,3
SG 55.x	4478-035xxx	14	35	100	78	90,5	M 6	10	6	9	15	56	61	8	3,6	89	70	6	6	2,4
SG 65.x	4478-045xxx	18	45	120	90,5	112	M 8	12	8,5	10	22,5	72	78	10	4,1	105	84	6	6	2,7
SG 80.x	4478-055xxx	24	55	146	105	140	M 10	15	11	9	25	93,5	100	12	4,1	125	108	7	6	3,7
SG 90.x	4478-065xxx	30	70 <sup>1)</sup>	176	120,5	170	M 12	17	12	9	30	107	113,5	14	4,6	155	129	10	6	4,6

Keyway as per DIN 6885, page 1 · Tolerance of keyway width JS9  
<sup>1)</sup>Keyway as per DIN 6885, page 3 · Tolerance of keyway width JS9

## Example for Ordering

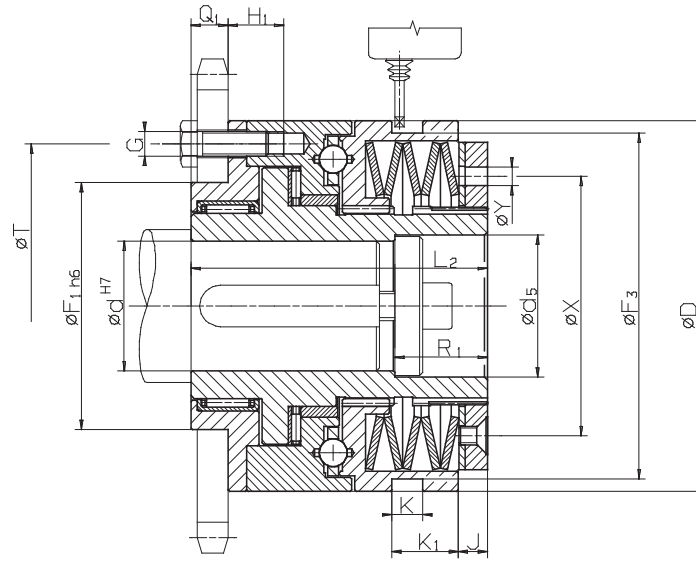
Type	Art.-No.	Preset limit torque	Bore d	with proximity switch
SG 32. 2	4478-020 002	7 Nm	12 mm	See pages 62 and 63

└─┬─┘  
Torque type

└─┬─┘  
End number

# Ratcheting SIKUMAT® SGR

with balls  
with short hub and integral needle bearing



Z = number of tapped holes G on pitch circle T · Installation must be shut down as soon as torque limiter responds

17-1

## Technical Data

Type	Art.-No.	Torque type 1			Torque type 2			Torque type 3			Torque type 4		
		Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number
SGR 32.x	4478-920xxx	2,5 - 5	3300	001	5 - 10	3300	002	10 - 20	1800	003	20 - 40	1800	004
SGR 40.x	4478-925xxx	6 - 12	2900	001	12 - 25	2900	002	25 - 55	1450	003	55 - 100	1450	004
SGR 55.x	4478-935xxx	12 - 25	2400	001	25 - 50	2400	002	50 - 120	1200	003	120 - 200	1200	004
SGR 65.x	4478-945xxx	25 - 50	2000	001	50 - 100	2000	002	100 - 250	1000	003	200 - 450	1000	004
SGR 80.x	4478-955xxx	50 - 100	1600	001	100 - 200	1600	002	200 - 500	850	003	500 - 1000	850	004
SGR 90.x	4478-965xxx	85 - 250	1400	001	230 - 600	1400	002	300 - 1000	700	003	600 - 2000	700	004

## Dimensions

Type	Art.-No.	Bore d		d <sub>5</sub>	D	F <sub>1</sub>	F <sub>3</sub>	G	H <sub>1</sub>	J	K	K <sub>1</sub>	L <sub>2</sub>	Q <sub>1</sub>	R <sub>1</sub>	T	X	Y	Z	Engage-ment travel
		min. mm	max. mm																	
SGR 32.x	4478-920xxx	7	20	21	55	38	50	M 5	11,5	3	9	13,5	51,5	8	15	48	38,5	5	6	1,4
SGR 40.x	4478-925xxx	10	25	26	82	50	72,5	M 5	16	6	9	14,5	70	10	20	70	54	6	6	2,3
SGR 55.x	4478-935xxx	14	35	36	100	60	90,5	M 6	15	6	9	15	78	12	25	89	70	6	6	2,4
SGR 65.x	4478-945xxx	18	45	46	120	80	112	M 8	18	8,5	10	22,5	96	12	30	105	84	6	6	2,7
SGR 80.x	4478-955xxx	24	55	56	146	100	140	M 10	23,5	11	9	25	124,5	16	30	125	108	7	6	3,7
SGR 90.x	4478-965xxx	30	70 <sup>1)</sup>	66	176	120	170	M 12	25,5	12	9	30	140	18	30	155	129	10	6	4,6

Keyway as per DIN 6885, page 1 · Tolerance of keyway width JS9  
<sup>1)</sup>Keyway as per DIN 6885, page 3 · Tolerance of keyway width JS9

## Example for Ordering

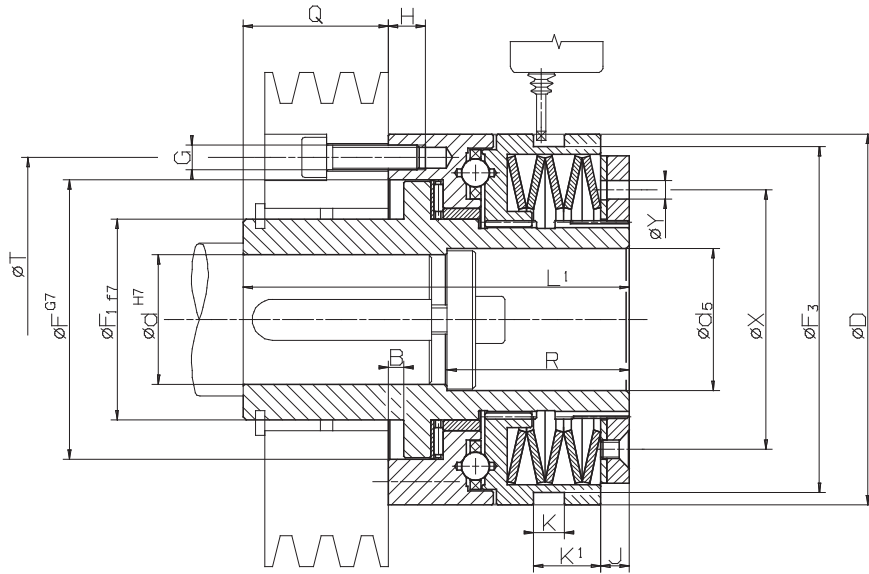
Type	Art.-No.	Preset limit torque	Bore d	with proximity switch
SGR 32. 2	4478-920 002	7 Nm	12 mm	See pages 62 and 63

└─┬─┘  
Torque type

└─┬─┘  
End number

# Ratcheting SIKUMAT® SGG

with balls  
with long hub



Z = number of tapped holes G on pitch circle T · Installation must be shut down as soon as torque limiter responds

18-1

## Technical Data

Type	Art.-No.	Torque type 1			Torque type 2			Torque type 3			Torque type 4		
		Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number
SGG 32.x	4478-120xxx	2,5 - 5	3300	001	5 - 10	3300	002	10 - 20	1800	003	20 - 40	1800	004
SGG 40.x	4478-125xxx	6 - 12	2900	001	12 - 25	2900	002	25 - 55	1450	003	55 - 100	1450	004
SGG 55.x	4478-135xxx	12 - 25	2400	001	25 - 50	2400	002	50 - 120	1200	003	120 - 200	1200	004
SGG 65.x	4478-145xxx	25 - 50	2000	001	50 - 100	2000	002	100 - 250	1000	003	200 - 450	1000	004
SGG 80.x	4478-155xxx	50 - 100	1600	001	100 - 200	1600	002	200 - 500	850	003	500 - 1000	850	004
SGG 90.x	4478-165xxx	85 - 250	1400	001	230 - 600	1400	002	300 - 1000	700	003	600 - 2000	700	004

## Dimensions

Type	Art.-No.	Bore d		d <sub>5</sub>	B	D	F	F <sub>1</sub>	F <sub>3</sub>	G	H	J	K	K <sub>1</sub>	L <sub>1</sub>	Q	R	T	X	Y	Z	Engage-ment travel
		min. mm	max. mm																			
SGG 32.x	4478-120xxx	7	20	21	4	55	41	28	50	M 5	6,5	3	9	13,5	66	27,5	25,5	48	38,5	5	6	1,4
SGG 40.x	4478-125xxx	10	25	26	4	82	60	38	72,5	M 5	8	6	9	14,5	83	33	35	70	54	6	6	2,3
SGG 55.x	4478-135xxx	14	35	36	5	100	78	52	90,5	M 6	10	6	9	15	100	39	45	89	70	6	6	2,4
SGG 65.x	4478-145xxx	18	45	46	5	120	90,5	65	112	M 8	12	8,5	10	22,5	125	47	59	105	84	6	6	2,7
SGG 80.x	4478-155xxx	24	55	56	6,5	146	105	78	140	M 10	15	11	9	25	152,5	52,5	60	125	108	7	6	3,7
SGG 90.x	4478-165xxx	30	70 <sup>1)</sup>	66	6,5	176	120,5	90	170	M 12	17	12	9	30	171	57,5	60	155	129	10	6	4,6

Keyway as per DIN 6885, page 1 · Tolerance of keyway width JS9  
<sup>1)</sup>Keyway as per DIN 6885, page 1 · Tolerance of keyway width JS9

## Example for Ordering

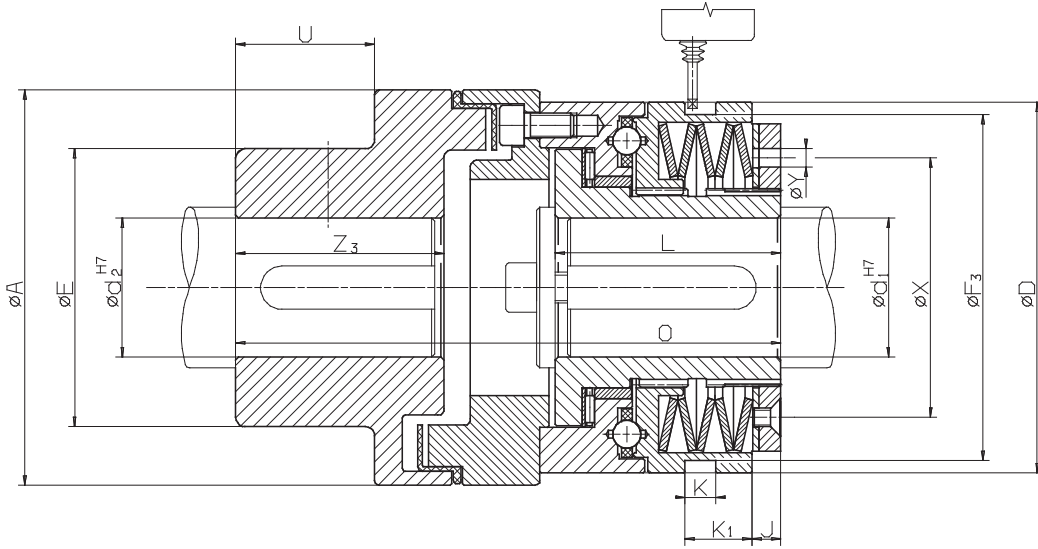
Type	Art.-No.	Preset limit torque	Bore d	with proximity switch
SGG 32. 2	4478-120 002	7 Nm	12 mm	See pages 62 and 63

└─┬─┘  
Torque type

└─┬─┘  
End number

# Ratcheting SIKUMAT® SGE

with balls  
with flexible shaft coupling



Installation must be shut down as soon as torque limiter responds

19-1

## Technical Data

Type	Art.-No.	Torque type 1			Torque type 2			Torque type 3			Torque type 4		
		Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number	Limit torque Nm	max. speed min <sup>-1</sup>	End number
SGE 32.x	4478-620xxx	2,5 - 5	3300	001	5 - 10	3300	002	10 - 20	1800	003	20 - 40	1800	004
SGE 40.x	4478-625xxx	6 - 12	2900	001	12 - 25	2900	002	25 - 55	1450	003	55 - 100	1450	004
SGE 55.x	4478-635xxx	12 - 25	2400	001	25 - 50	2400	002	50 - 120	1200	003	120 - 200	1200	004
SGE 65.x	4478-645xxx	25 - 50	2000	001	50 - 100	2000	002	100 - 250	1000	003	200 - 450	1000	004
SGE 80.x	4478-655xxx	50 - 100	1600	001	100 - 200	1600	002	200 - 500	850	003	500 - 1000	850	004
SGE 90.x	4478-665xxx	85 - 250	1400	001	230 - 600	1400	002	300 - 1000	700	003	600 - 2000	700	004

## Dimensions

Type	Art.-No.	Bore $d_1$		$d_2$ max. mm	A mm	E mm	D mm	$F_3$ mm	J mm	K mm	$K_1$ mm	L mm	O mm	U mm	X mm	Y mm	$Z_3$ mm	Engage- ment travel mm
		min. mm	max. mm															
SGE 32.x	4478-620xxx	7	20	30	67	46	55	50	3	9	13,5	35	86	15	38,5	5	28	1,4
SGE 40.x	4478-625xxx	10	25	50	112	79	82	72,5	6	9	14,5	48	137,5	38	54	6	58	2,3
SGE 55.x	4478-635xxx	14	35	50	112	79	100	90,5	6	9	15	56	147	38	70	6	58	2,4
SGE 65.x	4478-645xxx	18	45	60	128	90	120	112	8,5	10	22,5	72	176,5	45	84	6	67	2,7
SGE 80.x	4478-655xxx	24	55	60	148	90	146	140	11	9	25	93,5	211,5	45	108	7	67	3,7
SGE 90.x	4478-665xxx	30	70 <sup>1)</sup>	70	177	107	176	170	12	9	30	107	242,5	52	129	10	75	4,6
SGE 90.4	4478-665xxx	30	70 <sup>1)</sup>	90	198	140	176	170	12	9	30	107	272	52	129	10	75	4,6

Keyway as per DIN 6885, page 1 - Tolerance of keyway width JS9

<sup>1)</sup> Keyway as per DIN 6885, page 1 - Tolerance of keyway width JS9

## Example for Ordering

Type	Art.-No.	Preset limit torque	Bore $d_1$	Bore $d_2$	with proximity switch
SGE 32. 2	4478-620 002	7 Nm	12 mm	25 mm	See pages 62 and 63

└─┬─┘  
Torque type

└─┬─┘  
End number

**Morskate®**



Any questions? Please contact us.

**Morskate Aandrijvingen BV**

Oosterveldsingel 47A  
7558 PJ Hengelo (Ov)  
The Netherlands

NL

T +31 (0)74 - 760 11 11  
info@morskateaandrijvingen.nl  
www.morskateaandrijvingen.nl

DE

T +49 692 - 222 34 95  
info@morskateantriebstechnik.de  
www.morskateantriebstechnik.de

EN

T +31 (0)74 - 760 11 11  
info@morskatedrivetechnology.com  
www.morskatedrivetechnology.com