

Ratcheting SIKUMAT® SC ...

with screw faces

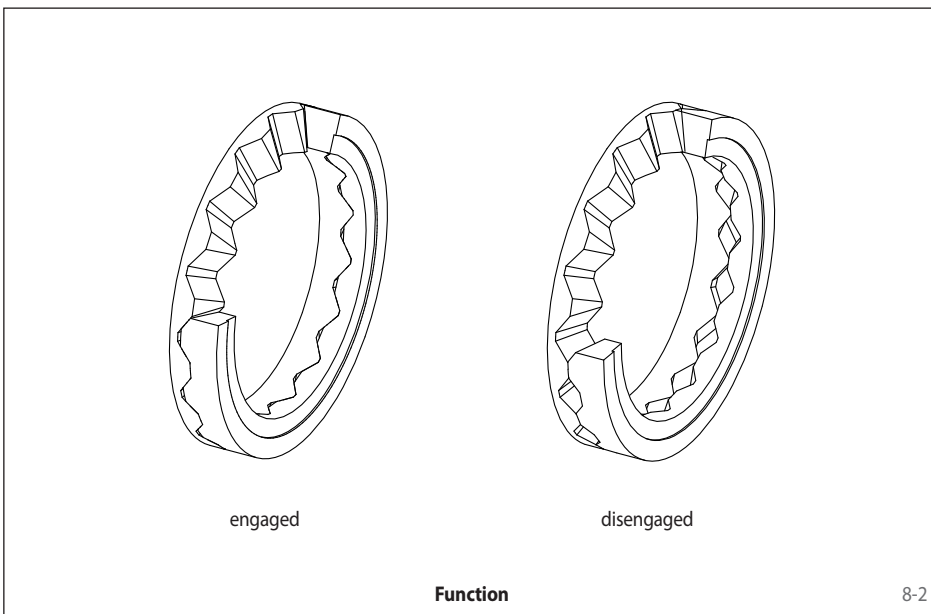


Advantages

- Excellent robustness through surface contact during the disengaging process – therefore maximum life
- Fully enclosed with integral bearing – therefore maintenance-free
- Adjustment of limit torque setting according to the number of active springs – not through modification of spring pressure

The Screw Face Principle

Torque transmission is effected through screw-shaped radial serrations in the input and output part, which are pressed together by spring force. Like the thread sides of a screw have edge contact with the nut during turning, so the toothed flanks of the SIKUMAT® retain their surface contact even during the torque disengaging process. This characteristic gives the SIKUMAT® an extremely high resistance against wear and therefore a long operating life.



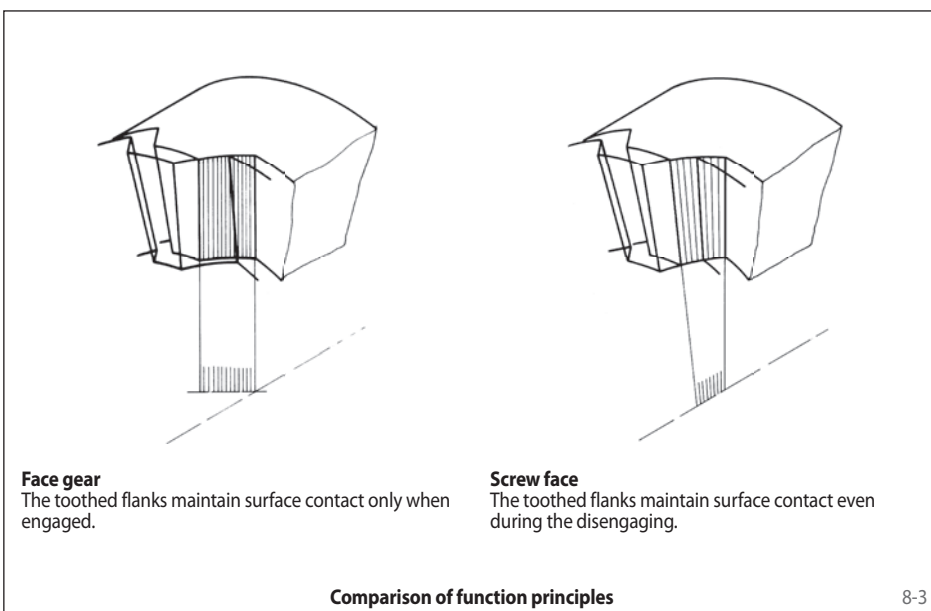
engaged

disengaged

Function

Function

- When the preset limit torque has been reached the SIKUMAT® ratchets.
- After elimination of the overload the SIKUMAT® re-engages automatically.
- The overload can be indicated by the special proximity switch for the ratcheting SIKUMAT® with screw faces, thus either causing the drive to be switched off instantly or another control function to be activated.



Face gear

The toothed flanks maintain surface contact only when engaged.

Screw face

The toothed flanks maintain surface contact even during the disengaging.

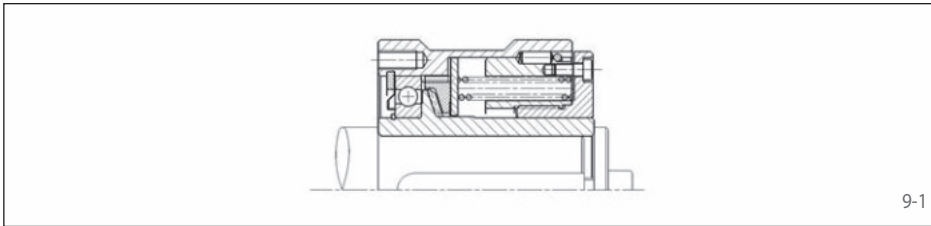
Comparison of function principles

Ratcheting SIKUMAT® SC ...

with screw faces

Types

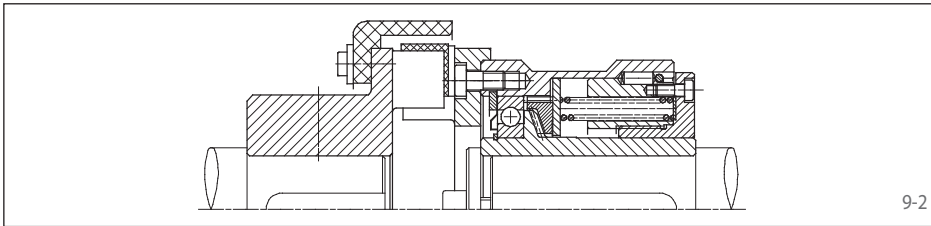
Series SC - Basic version with flange connection



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

Page 10

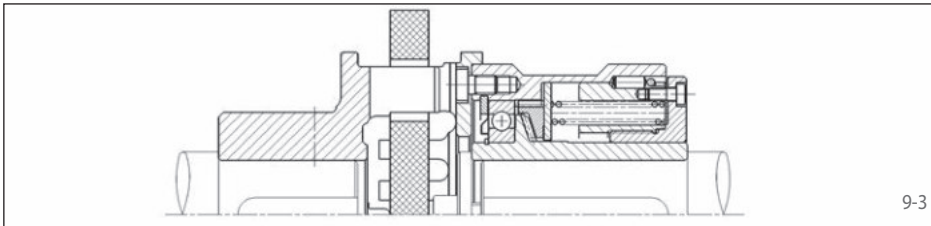
Series SCE - with flexible shaft coupling



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

Page 11

Series SCL - with torsionally rigid shaft coupling



For torsionally rigid connection of two shafts. Possibility to compensate for large radial and angular displacements.

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Notes

Torque setting

Normally the limit torque is set at the factory. Setting or modification of the limit torque can be carried out by the customer but no unauthorised adjustment should be made by the machine operator. See operating instructions for further details.

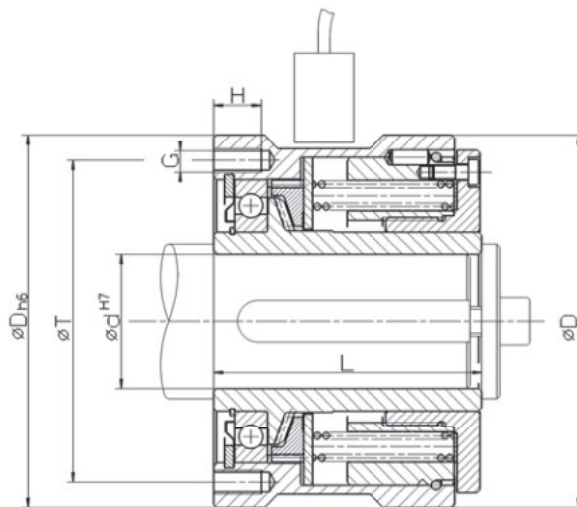
Proximity switch

The proximity switch for the ratcheting SIKUMAT® with screw faces indicates overload by non-contact means with an inductive proximity switch. See page 13 for details.

Ratcheting SIKUMAT® SC

with screw faces

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

10-1

Technical Data

| Type | Art.-No. | Torque type 1 | | | Torque type 2 | | |
|---------|-------------|-----------------|------------------------------|------------|-----------------|------------------------------|------------|
| | | Limit torque Nm | max. speed min ⁻¹ | End number | Limit torque Nm | max. speed min ⁻¹ | End number |
| SC 35.x | 4472-004xxx | 15 - 85 | 1500 | 000 | 6 - 38 | 1500 | 100 |
| SC 45.x | 4472-005xxx | 20 - 125 | 1500 | 000 | 9 - 55 | 1500 | 100 |
| SC 60.x | 4472-006xxx | 45 - 335 | 1500 | 000 | 14 - 100 | 1500 | 100 |

Dimensions

| Type | Art.-No. | Bore d | | | D | G | H | L | T | Z | Engage-ment travel mm |
|---------|-------------|---------|-----------------------|-----------------------|-----|-----|----|----|-----|---|-----------------------|
| | | min. mm | max. ¹⁾ mm | max. ²⁾ mm | | | | | | | |
| SC 35.x | 4472-004xxx | 7 | 22 | 25 | 82 | M 5 | 10 | 56 | 70 | 6 | 1,6 |
| SC 45.x | 4472-005xxx | 9 | 30 | 32 | 100 | M 6 | 12 | 71 | 90 | 6 | 2,0 |
| SC 60.x | 4472-006xxx | 14 | 42 | 45 | 125 | M 8 | 16 | 90 | 108 | 6 | 2,5 |

¹⁾Keyway as per DIN 6885, page 1

²⁾Keyway as per DIN 6885, page 3

Tolerance of keyway width P9

Example for Ordering

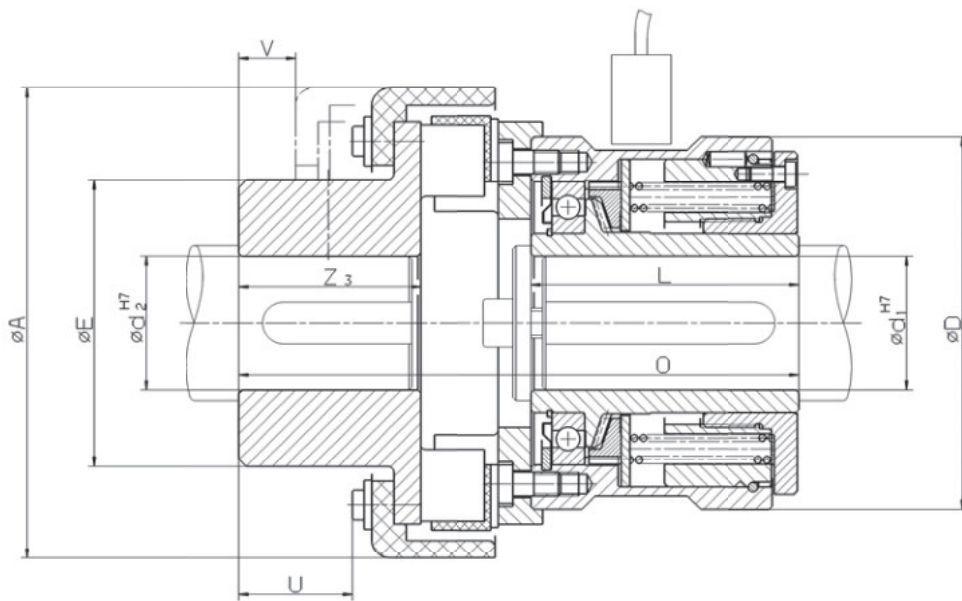
| Type | Art.-No. | Preset limit torque | Bore d | with proximity switch |
|----------|--------------|---------------------|--------|-----------------------|
| SC 35. 2 | 4472-004 100 | 7 Nm | 12 mm | See page 13 |

Torque type

End number

Ratcheting SIKUMAT® SCE

with screw faces
with flexible shaft coupling



Installation must be shut down as soon as torque limiter responds

11-1

Technical Data

| Type | Art.-No. | Torque type 1 | | | Torque type 2 | | |
|----------|-------------|-----------------|------------------------------|------------|-----------------|------------------------------|------------|
| | | Limit torque Nm | max. speed min^{-1} | End number | Limit torque Nm | max. speed min^{-1} | End number |
| SCE 35.x | 4472-604xxx | 15 - 85 | 1500 | 000 | 6 - 38 | 1500 | 100 |
| SCE 45.x | 4472-605xxx | 20 - 125 | 1500 | 000 | 9 - 55 | 1500 | 100 |
| SCE 60.x | 4472-606xxx | 45 - 335 | 1500 | 000 | 14 - 100 | 1500 | 100 |

Dimensions

| Type | Art.-No. | Bore d_1 | | | Bore d_2 | | A | D | E | L | O | U | V | Z_3 | Engage-ment travel |
|----------|-------------|------------|-----------------------|-----------------------|------------|-----------------------|-----|-----|----|----|-----|----|----|-------|--------------------|
| | | min. mm | max. ¹⁾ mm | max. ²⁾ mm | max. mm | max. ¹⁾ mm | | | | | | | | | |
| SCE 35.x | 4472-604xxx | 7 | 22 | 25 | 10 | 45 | 114 | 82 | 72 | 56 | 131 | 28 | 19 | 48 | 1,6 |
| SCE 45.x | 4472-605xxx | 9 | 30 | 32 | 10 | 50 | 127 | 100 | 78 | 71 | 151 | 31 | 20 | 52 | 2,0 |
| SCE 60.x | 4472-606xxx | 14 | 42 | 45 | 20 | 60 | 158 | 125 | 96 | 90 | 188 | 39 | 21 | 61 | 2,5 |

¹⁾ Keyway as per DIN 6885, page 1

²⁾ Keyway as per DIN 6885, page 3

Tolerance of keyway width P9

Example for Ordering

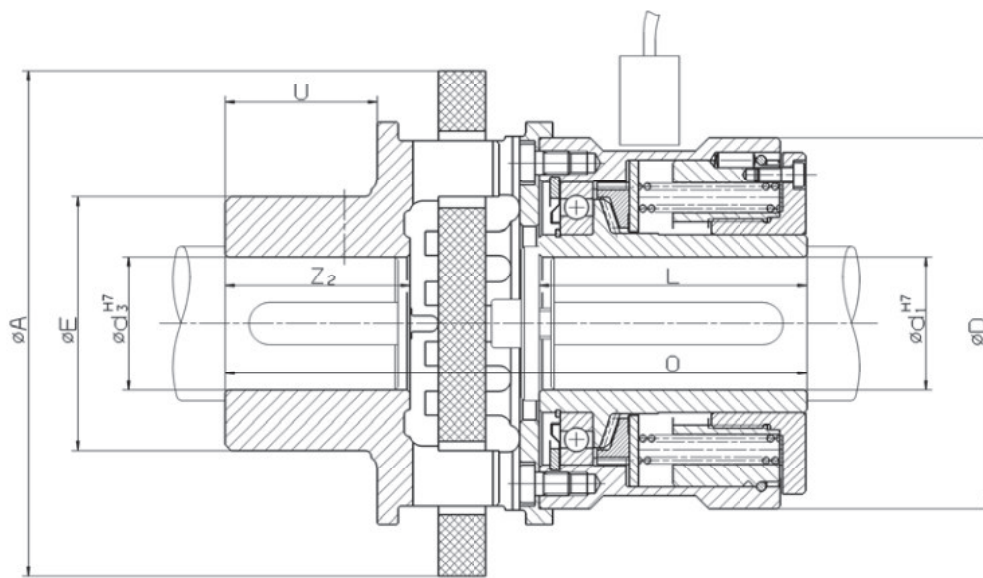
| Type | Art.-No. | Preset limit torque | Bore d_1 | Bore d_2 | with proximity switch |
|-----------|--------------|---------------------|------------|------------|-----------------------|
| SCE 35. 2 | 4472-604 100 | 7 Nm | 12 mm | 15 mm | See page 13 |

└─┬─┘
Torque type

└─┬─┘
End number

Ratcheting SIKUMAT® SCL

with screw faces
with torsionally rigid shaft coupling



Installation must be shut down as soon as torque limiter responds

12-1

Technical Data

| Type | Art.-No. | Torque type 1 | | | Torque type 2 | | |
|----------|-------------|-----------------|------------------------------|------------|-----------------|------------------------------|------------|
| | | Limit torque Nm | max. speed min ⁻¹ | End number | Limit torque Nm | max. speed min ⁻¹ | End number |
| SCL 35.x | 4472-404xxx | 15 - 85 | 1500 | 000 | 6 - 38 | 1500 | 100 |
| SCL 45.x | 4472-405xxx | 20 - 125 | 1500 | 000 | 9 - 55 | 1500 | 100 |
| SCL 60.x | 4472-406xxx | 45 - 335 | 1500 | 000 | 14 - 100 | 1500 | 100 |

Dimensions

| Type | Art.-No. | Bore d ₁ | | | Bore d ₃ | | A | D | E | L | O | U | Z ₂ | Engage-ment travel |
|----------|-------------|---------------------|-----------------------|-----------------------|---------------------|-----------------------|-----|-----|----|----|-----|----|----------------|--------------------|
| | | min. mm | max. ¹⁾ mm | max. ²⁾ mm | max. mm | max. ¹⁾ mm | | | | | | | | |
| SCL 35.x | 4472-404xxx | 7 | 22 | 25 | 16 | 35 | 110 | 82 | 53 | 56 | 133 | 33 | 42 | 1,6 |
| SCL 45.x | 4472-405xxx | 9 | 30 | 32 | 20 | 42 | 135 | 100 | 66 | 71 | 162 | 41 | 53 | 2,0 |
| SCL 60.x | 4472-406xxx | 14 | 42 | 45 | 30 | 50 | 160 | 125 | 85 | 90 | 196 | 51 | 62 | 2,5 |

¹⁾ Max. bore diameter for keyways as per DIN 6885, p. 1

²⁾ Max. bore diameter for keyways as per DIN 6885, p. 3

Tolerance of keyway width P9

Example for Ordering

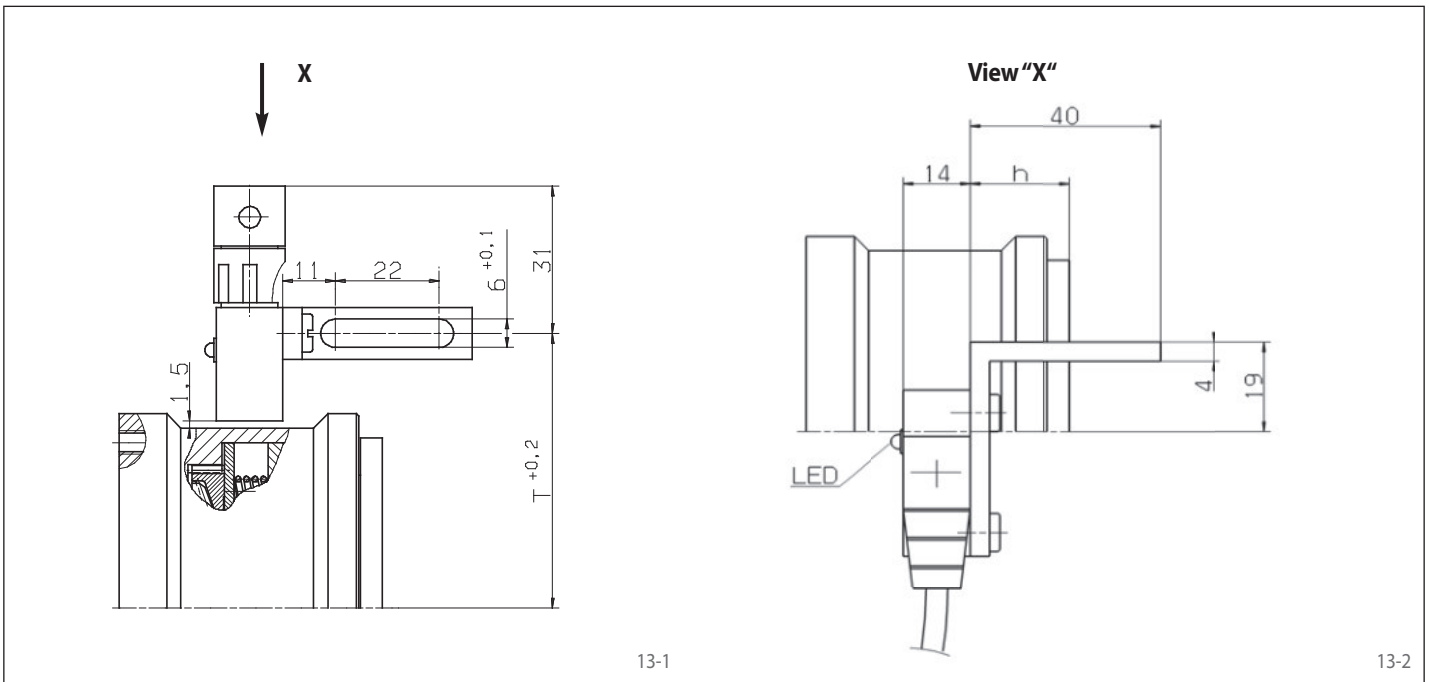
| Type | Art.-No. | Preset limit torque | Bore d ₁ | Bore d ₃ | with proximity switch |
|-----------|--------------|---------------------|---------------------|---------------------|-----------------------|
| SCL 35. 2 | 4472-404 100 | 7 Nm | 12 mm | 20 mm | See page 13 |

Torque type

End number

Proximity switch

for Ratcheting SIKUMAT® with screw faces



| Type | Art.-No. |
|--|--------------------|
| Proximity switch with plug connection | 3504-000097-B024VG |
| Attaching plug, 90°, incl. 2 m PVC cable | 2504-000001-A00002 |

| Size | T mm | h mm |
|------|------|------|
| 35 | 57,5 | 21 |
| 45 | 65,0 | 32 |
| 60 | 77,5 | 47 |

Effect

The proximity switch's response to an overload is to react on the switching disc located internally. During normal operation the proximity switch is closed, the yellow LED is illuminated. The switching disc moves as the preset limit torque is reached. The proximity switch opens and the yellow LED goes out. A speed-dependent switching sequence is triggered at the output end of the limit sensor.

Technical Data

| | |
|-----------------------------|-----------------|
| Operating voltage: | 24 V DC ±20% |
| Output: | PNP-Transistor |
| Max. switching current: | 200 mA |
| Internal power consumption: | 10 mA |
| Protection type: | IP 67 |
| Ambient temperature: | -25° ... +75° C |
| Dimensions (HxLxW): | 23x35x14 mm |

Notes

The proximity switch is supplied with an aluminium support bracket which is fastened with 2 screws M 6 according to the drawing. The fastening must be non-oscillating. Once installed, the torque limiter's maximum permissible axial movement towards the proximity switch is 0,2 mm.

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