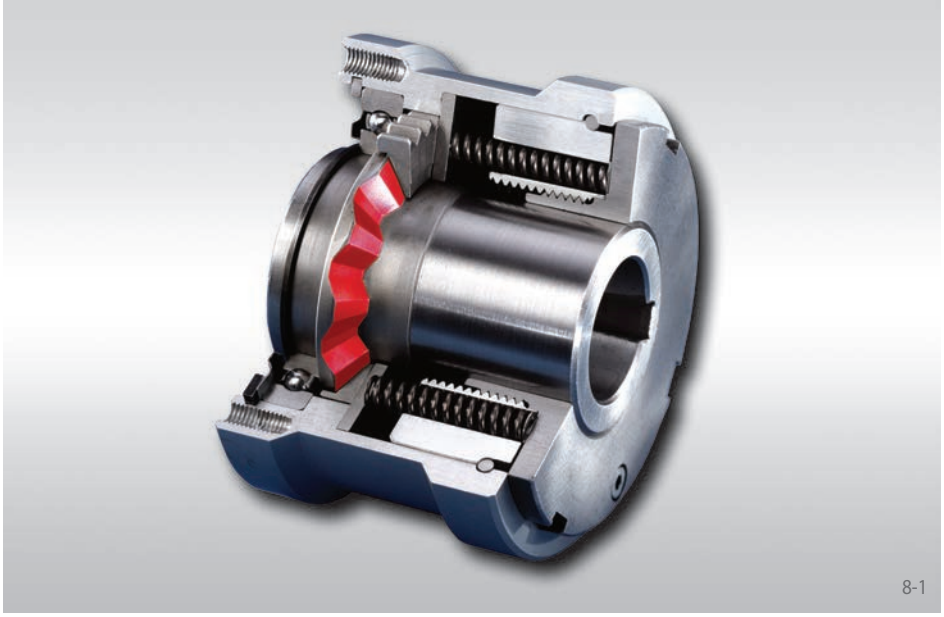
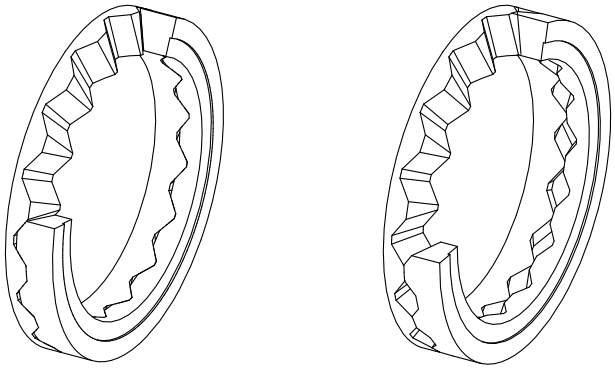


8-1

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

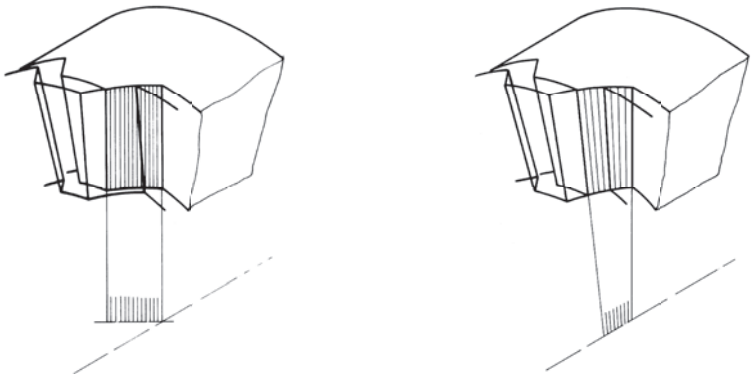


engaged disengaged

Function 8-2

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.



Face gear
The toothed flanks maintain surface contact only when engaged.

Screw face
The toothed flanks maintain surface contact even during the disengaging.

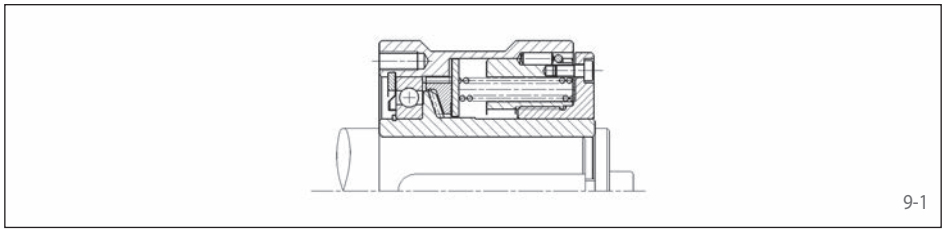
Comparison of function principles 8-3

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.

Types

Series SC - Basic version with flange connection

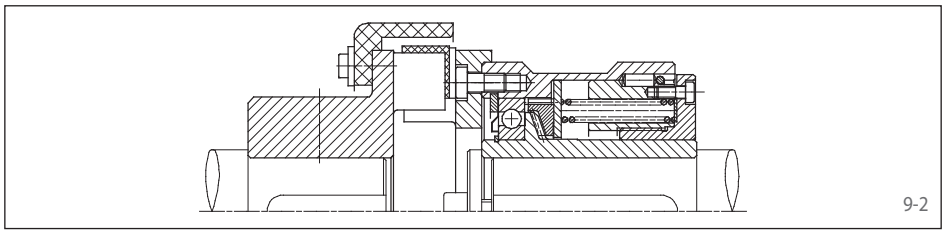


9-1

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

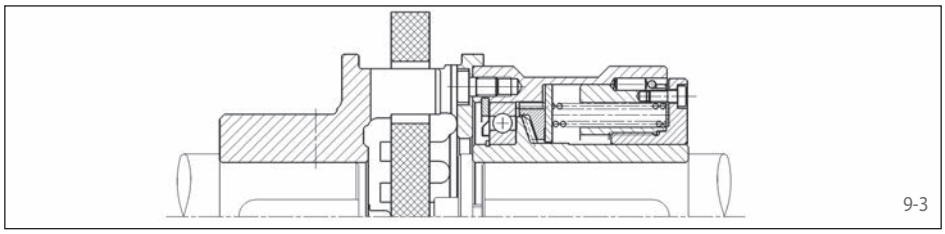


9-2

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

Page 11

Series SCL - with torsionally rigid shaft coupling



9-3

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

Page 12

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.

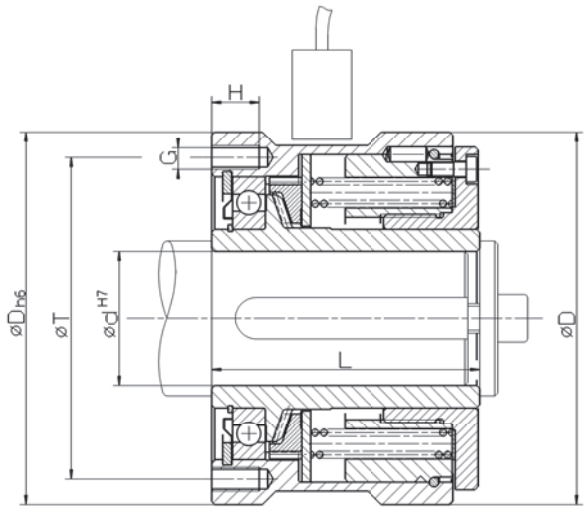
Proximity switch

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

RINGSPANN®

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	1 500	000	6 - 38	1 500	100
SC 45.x	4472-005xxx	20 - 125	1 500	000	9 - 55	1 500	100
SC 60.x	4472-006xxx	45 - 335	1 500	000	14 - 100	1 500	100

Dimensions

Type	Art.-No.	Bore d			D	G	H	L	T	Z	Engage-ment travel
		min. mm	max.[1] mm	max.[2] mm	mm		mm	mm	mm		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

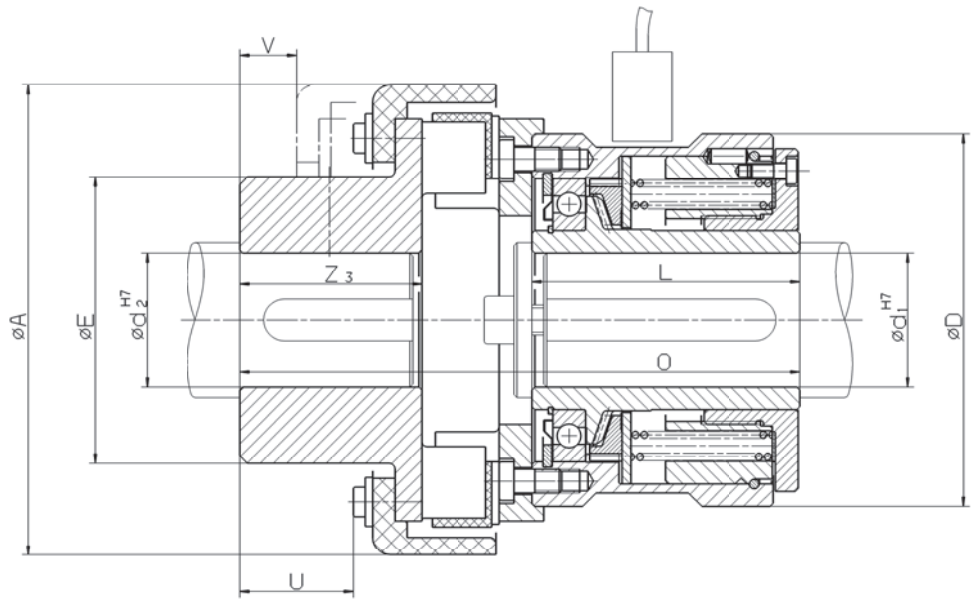
Example for Ordering

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

RINGSPANN®

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	1 500	000	6 - 38	1 500	100
SCE 45.x	4472-605xxx	20 - 125	1 500	000	9 - 55	1 500	100
SCE 60.x	4472-606xxx	45 - 335	1 500	000	14 - 100	1 500	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	min. mm	max.[1] mm	mm	mm	mm	mm	mm	mm	mm	mm	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

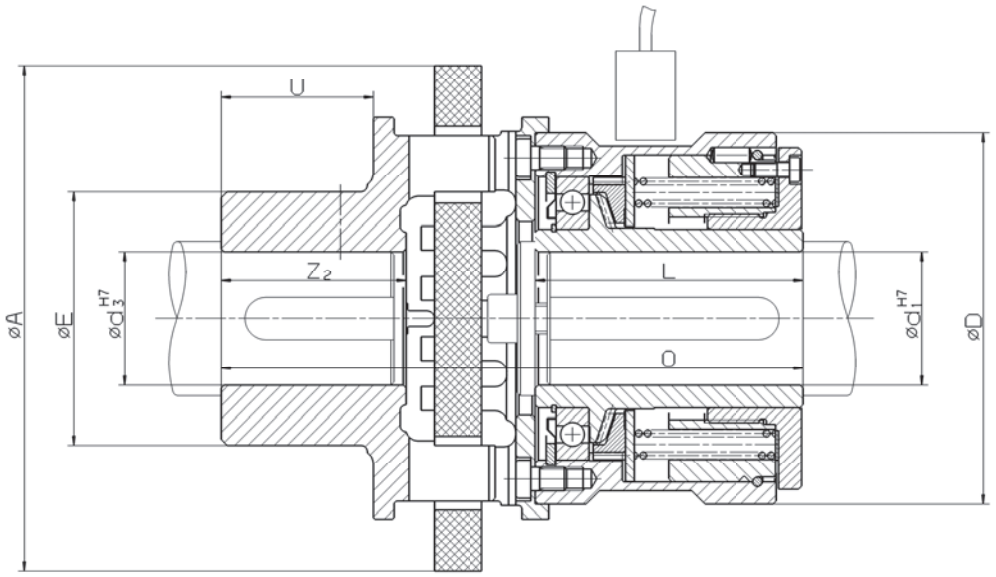
Example for Ordering

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

RINGSPANN®

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	min. mm	max.[1] mm	mm	mm	mm	mm	mm	mm	mm	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

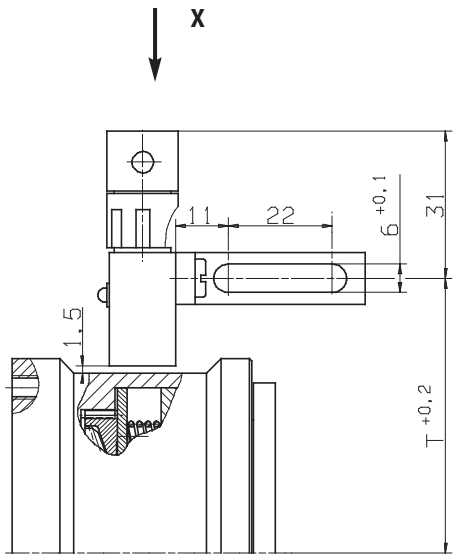
[1] Max. bore diameter for keyways as per DIN 6885, p. 1
[2] Max. bore diameter for keyways as per DIN 6885, p. 3
Tolerance of keyway width P9

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				

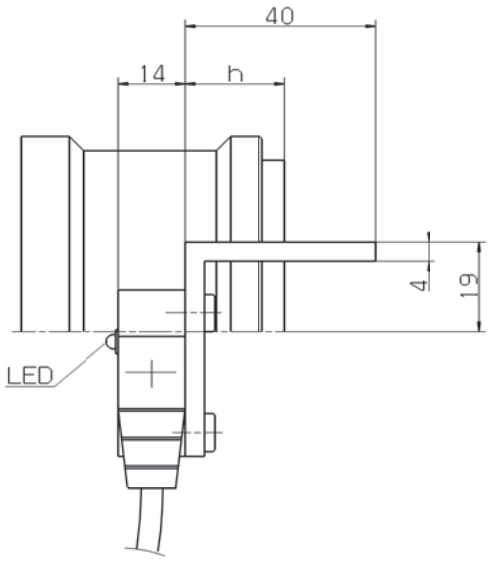
Proximity switch

for Ratcheting SIKUMAT® with screw faces



13-1

View "X"



13-2

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
Ambienttemperature:	-25° ... +75° C
Dimensions (H x L x W):	23 x 35 x 14 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.