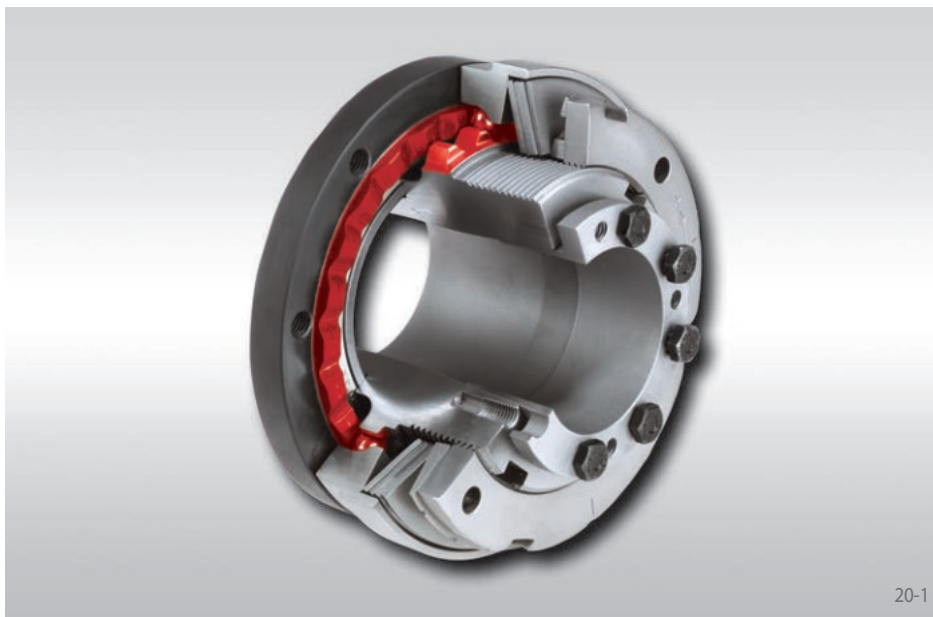


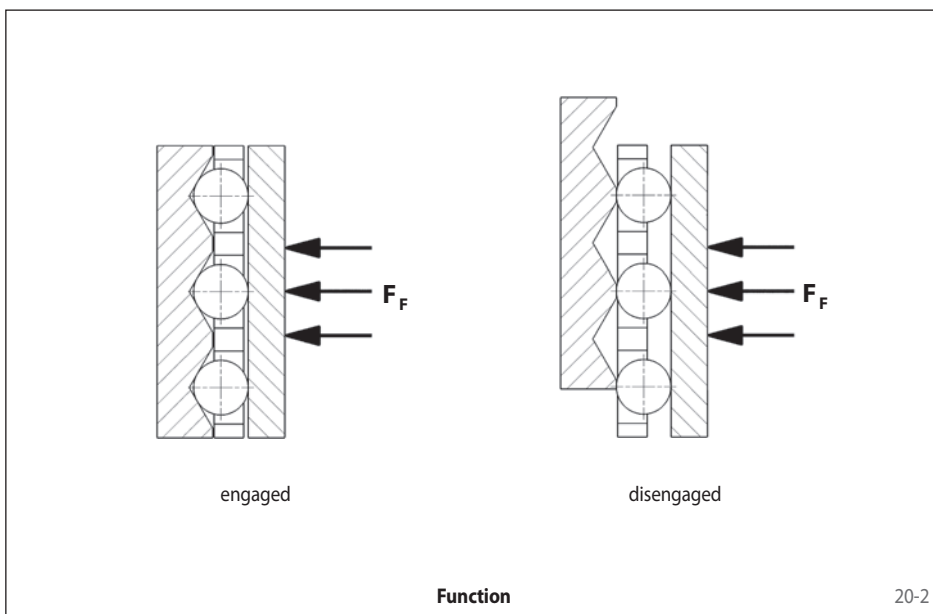
# Ratcheting SIKUMAT® ST ... – Backlash free

with balls



## Advantages

- Backlash free in both directions of rotation
- Compact design
- Integral ball bearing for supporting the component to be connected
- Very high response accuracy through the ball principle
- Simple and backlash free fastening onto shaft with integral cone clamping element
- Calibrated micro adjustment of torque setting possible, even post-installation



## The Ball Principle - Backlash free

The torque is transmitted via balls which are pressed into V-shaped grooves. The grooves are arranged axially on the output side and radially on the input side, which means that torque can be transmitted backlash free in both directions of rotation. As the preset limit torque is reached, the balls rise out of the axial grooves and ratchet into the respective next axial groove – until the overload has been eliminated. The negative characteristic disc springs give extremely fast, accurate and consistent overload protection.

## Function

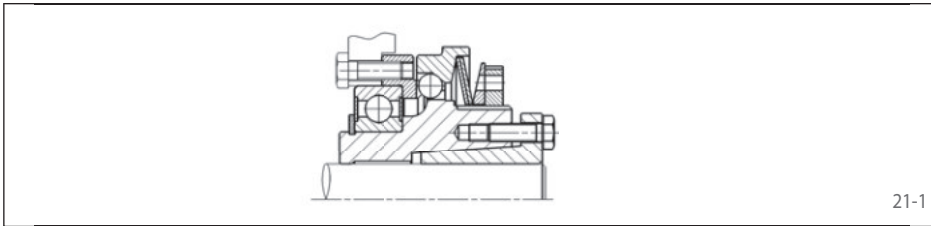
- When the preset limit torque has been reached the SIKUMAT® ratchets through.
- Automatic re-engagement of the SIKUMAT® after the overload has been eliminated.
- The overload can be indicated by a proximity switch. This means that the drive can be switched off immediately or another control function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

# Ratcheting SIKUMAT® ST ... – Backlash free

with balls

## Types

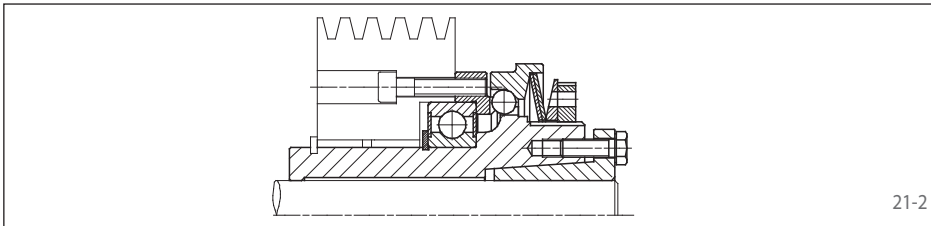
### Series ST - Basic version with flange connection



For attaching chain wheels, belt pulleys, gear wheels etc. Support of the component to be connected directly on the integral ball bearing.

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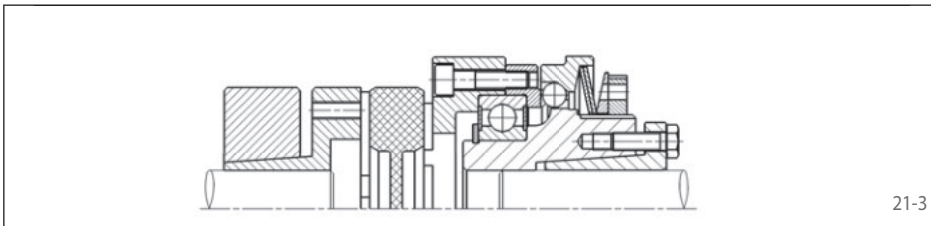
### Series STG - with long hub



With long hub for wide components to be connected. Support of the component to be connected directly on the integral ball bearing; additional radial bearing to be provided by the customer.

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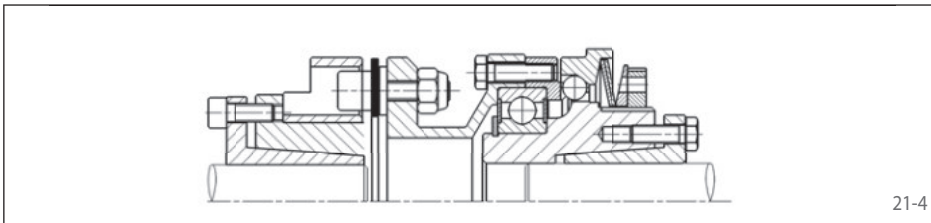
### Series STE - with flexible shaft coupling



For flexible connection of two shafts.

Page 24

### Series STL - with torsionally rigid shaft coupling



For rigid connection of two shafts.

Page 25

## 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.

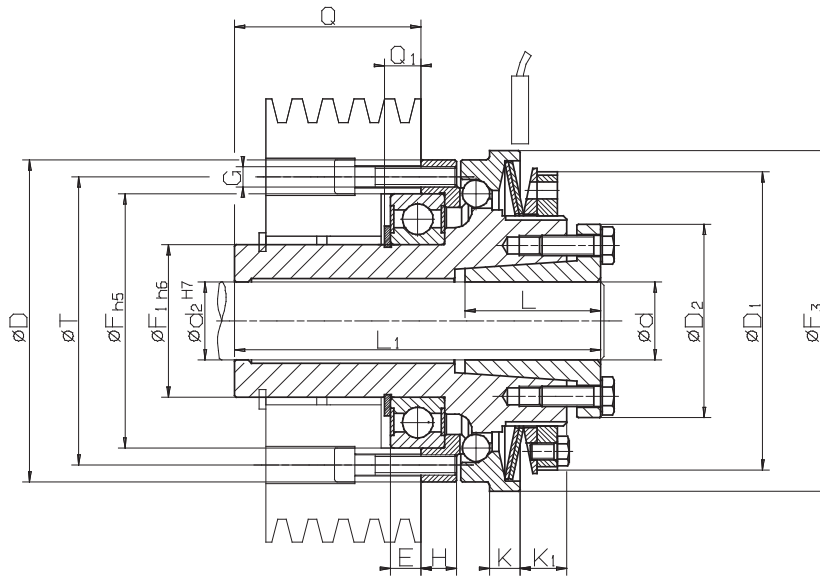
### Proximity switch

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



# Ratcheting SIKUMAT® STG – Backlash free

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

23-1

## Technical Data

Type	Art.-No.	Torque type 1			Torque type 2			Torque type 3		
		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
STG 30.x	4479-125xxx	5 - 14	4000	001	10 - 28	4000	002	20 - 60	4000	003
STG 40.x	4479-130xxx	9 - 27	3000	001	18 - 54	3000	002	38 - 115	3000	003
STG 45.x	4479-140xxx	19 - 60	2500	001	38 - 125	2500	002	70 - 255	2500	003
STG 55.x	4479-150xxx	35 - 110	2000	001	80 - 220	2000	002	160 - 440	2000	003
STG 65.x	4479-160xxx	80 - 185	1200	001	160 - 370	1200	002	320 - 740	1200	003

## Dimensions

Type	Art.-No.	Bore d*		D	D <sub>1</sub>	D <sub>2</sub>	E	F	F <sub>1</sub>	F <sub>3</sub>	G	H	K	K <sub>1</sub>	L	L <sub>1</sub>	Q	Q <sub>1</sub>	T	Z	Engage-ment travel
		min. mm	max. mm																		
STG 30.x	4479-125xxx	10	20	65	63	40,5	5	47	30	70	M 4	7,5	7	12	26	72	33	6,5	56	8	1,2
STG 30.x	4479-125xxx	19	25	65	63	42	5	47	30	70	M 4	7,5	7	12	26	72	33	6,5	56	8	1,2
STG 40.x	4479-130xxx	15	30	80	77	57	7	62	40	85	M 5	8	8	12	31	88	43	8,75	71	8	1,5
STG 45.x	4479-140xxx	19	30	95	88	57	9	75	45	100	M 6	10,5	9	14	40	108	55	11,5	85	8	1,8
STG 45.x	4479-140xxx	32	40	95	88	64	9	75	45	100	M 6	10,5	9	14	31	108	55	11,5	85	8	1,8
STG 55.x	4479-150xxx	32	50	110	100	73,5	10	90	55	115	M 6	12	10	16	29	124	67	13	100	8	2,0
STG 65.x	4479-160xxx	32	50	130	122	73,5	10	100	65	135	M 8	12	12	21	29	140	73	14	116	8	2,2
STG 65.x	4479-160xxx	55	60	130	122	89	10	100	65	135	M 8	12	12	21	45,5	141	73	14	116	8	2,2

Diameter d<sub>2</sub> at the end of the long hub is equal to the selected diameter d and serves as an additional centering.

\*Available bore diameters d: 10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55 and 60 mm.

## Example for Ordering

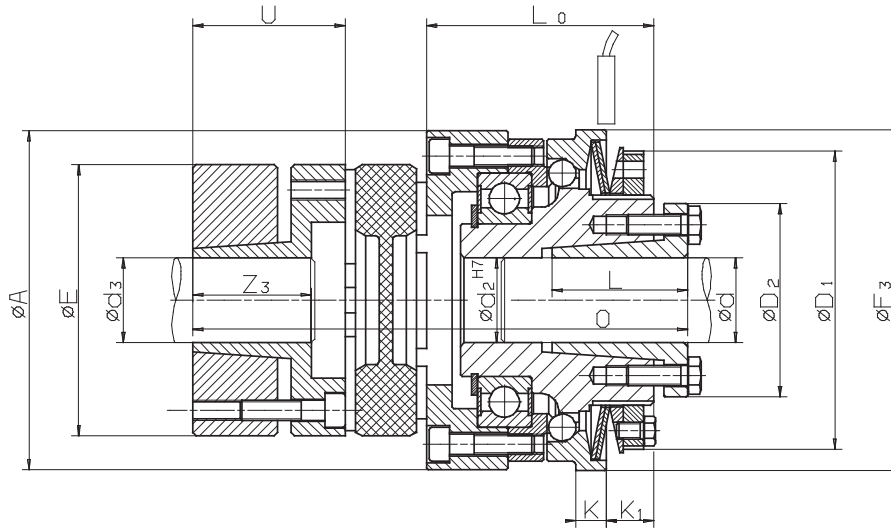
Type	Art.-No.	Preset limit torque	Bore d	with proximity switch
STG 65. 1	4479-160 001	90 Nm	60 mm	See pages 62 and 63

└  
Torque type

└  
End number

# Ratcheting SIKUMAT® STE – Backlash free

with balls  
with flexible shaft coupling



Installation must be shut down as soon as torque limiter responds

24-1

## Technical Data

Type	Art.-No.	Torque type 1			Torque type 2			Torque type 3		
		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
STE 30.x	4479-625xxx	5 - 14	4000	001	10 - 28	4000	002	20 - 60	4000	003
STE 40.x	4479-630xxx	9 - 27	3000	001	18 - 54	3000	002	38 - 115	3000	003
STE 45.x	4479-640xxx	19 - 60	2500	001	38 - 125	2500	002	70 - 255	2500	003
STE 55.x	4479-650xxx	35 - 110	2000	001	80 - 220	2000	002	160 - 440	2000	003
STE 65.x	4479-660xxx	80 - 185	1200	001	160 - 370	1200	002	320 - 740	1200	003

## Dimensions

Type	Art.-No.	Bore d*		Bore d <sub>3</sub> **		A	D <sub>1</sub>	D <sub>2</sub>	E	F <sub>3</sub>	K	K <sub>1</sub>	L	L <sub>0</sub>	O	U	Z <sub>3</sub>	Engage-ment travel
		min. mm	max. mm	mm	mm													
STE 30.x	4479-625xxx	10	20	15	28	70	63	40,5	55	70	7	12	26	47	102	30	30	1,2
STE 30.x	4479-625xxx	19	25	15	28	70	63	42	55	70	7	12	26	47	102	30	30	1,2
STE 40.x	4479-630xxx	15	30	15	38	85	77	57	65	85	8	12	31	54,5	119,5	35	35	1,5
STE 45.x	4479-640xxx	19	30	20	45	100	88	64	80	100	9	14	40	67	146	45	45	1,8
STE 45.x	4479-640xxx	32	40	20	45	100	88	64	80	100	9	14	31	67	146	45	45	1,8
STE 55.x	4479-650xxx	32	50	25	50	115	100	73,5	95	115	10	16	29	73	159	50	50	2,0
STE 65.x	4479-660xxx	32	50	30	55	135	122	73,5	105	135	12	21	29	87	182	56	56	2,2
STE 65.x	4479-660xxx	55	60	30	55	135	122	89	105	135	12	21	45,5	87	182	56	56	2,2

Hub bore diameter d<sub>2</sub> is equal to the selected diameter d and serves as an additional centering guide.

\*Available bore diameters d: 10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55 and 60 mm.

\*\*Available bore diameters d<sub>3</sub>: 15, 16, 19, 20, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50 and 55 mm.

## Example for Ordering

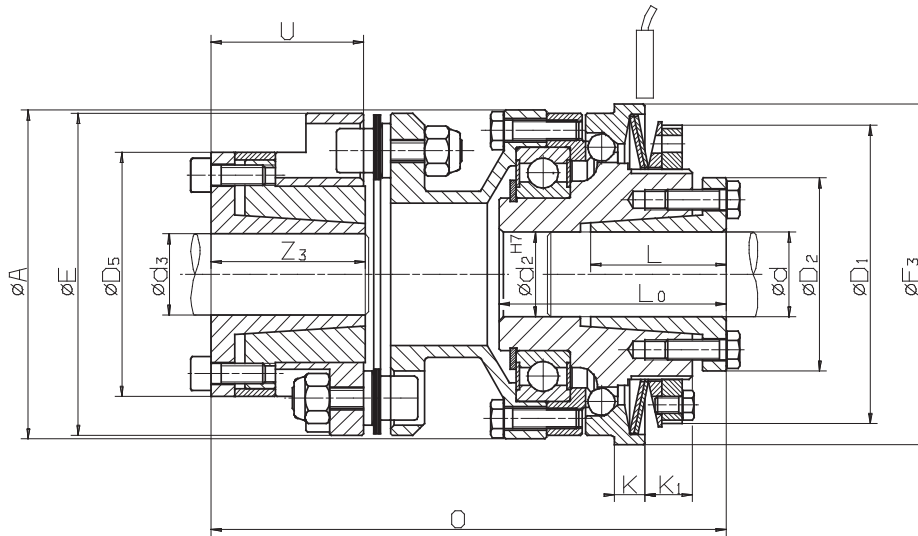
Type	Art.-No.	Preset limit torque	Bore d	Bore d <sub>3</sub>	with proximity switch
STE 30. 1	4479-625 001	10 Nm	12 mm	20 mm	See pages 62 and 63

Torque type

End number

# Ratcheting SIKUMAT® STL – Backlash free

with balls  
with torsionally rigid shaft coupling



Installation must be shut down as soon as torque limiter responds

25-1

## Technical Data

Type	Art.-No.	Torque type 1			Torque type 2			Torque type 3		
		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
STL 30.x	4479-425xxx	5 - 14	4000	001	10 - 28	4000	002	20 - 60	4000	003
STL 40.x	4479-430xxx	9 - 27	3000	001	18 - 54	3000	002	38 - 115	3000	003
STL 45.x	4479-440xxx	19 - 60	2500	001	38 - 125	2500	002	70 - 255	2500	003
STL 55.x	4479-450xxx	35 - 110	2000	001	80 - 220	2000	002	160 - 440	2000	003
STL 65.x	4479-460xxx	80 - 185	1200	001	160 - 370	1200	002	320 - 740	1200	003

## Dimensions

Type	Art.-No.	Bore d*		Bore d <sub>3</sub> **		A	D <sub>1</sub>	D <sub>2</sub>	D <sub>5</sub>	E	F <sub>3</sub>	K	K <sub>1</sub>	L	L <sub>0</sub>	O	U	Z <sub>3</sub>	Engage-ment travel
		min. mm	max. mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
STL 30.x	4479-425xxx	10	20	11	20	65	63	40,5	42	53	70	7	12	26	47	95,5	25,5	26,5	1,2
STL 30.x	4479-425xxx	19	25	11	20	65	63	42	42	53	70	7	12	26	47	95,5	25,5	26,5	1,2
STL 40.x	4479-430xxx	15	30	15	30	80	77	57	58	72	85	8	12	31	56	114,5	33	31	1,5
STL 45.x	4479-440xxx	19	40	19	30	97	88	64	58	72	100	9	14	40	67	128	33	31	1,8
STL 45.x	4479-440xxx	19	40	24	42	97	88	64	72	89	100	9	14	31	67	150	44,5	45	1,8
STL 55.x	4479-450xxx	32	50	24	42	111	100	73,5	72	89	115	10	16	29	73	153,5	44,5	45	2,0
STL 65.x	4479-460xxx	32	50	32	42	131	122	73,5	79	118	135	12	21	29	85	163,5	35	29	2,2
STL 65.x	4479-460xxx	55	60	45	60	131	122	89	92	118	135	12	21	45,5	86	172,5	44	44	2,2

Hub bore diameter d<sub>2</sub> is equal to the selected diameter d and serves as an additional centering guide.

\*Available bore diameters d: 10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50, 55 and 60 mm.

\*\*Available bore diameters d<sub>3</sub>: 15, 16, 19, 20, 24, 25, 28, 30, 32, 35, 38, 40, 42, 45, 48, 50 and 55 mm.

## Example for Ordering

Type	Art.-No.	Preset limit torque	Bore d	Bore d <sub>3</sub>	with proximity switch
STL 55. 3	4479-450 003	420 Nm	45 mm	35 mm	See pages 62 and 63

Torque type

End number

**Morskate®**



Any questions? Please contact us.

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