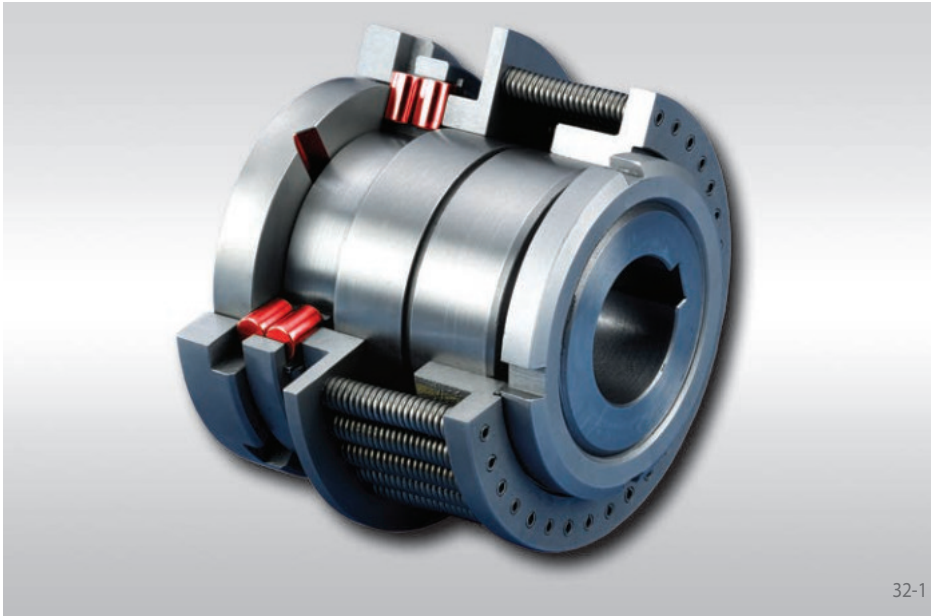


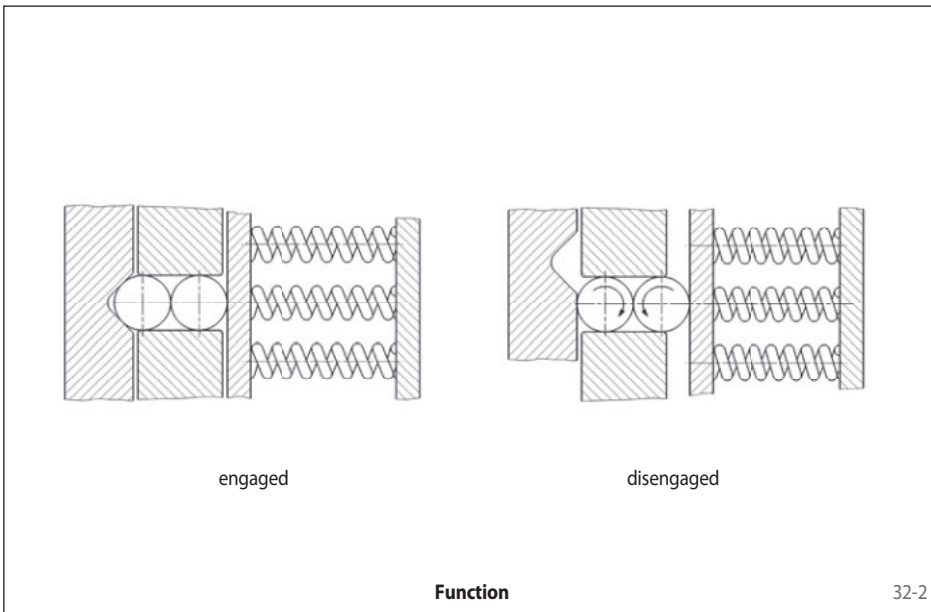
Synchronous Ratcheting SIKUMAT® SA ...

with double rollers



Advantages

- High degree of consistency of limit torque over the duration of operation through double roller principle
- Synchronous re-engagement after 360°
- Torques up to 10 000 Nm
- For shaft diameters up to 125 mm



The Double Roller Principle

The torque is transmitted via six pairs of rollers which are pressed by coil springs into detents. When the preset limit torque has been reached, the rollers move against the spring force up the sloping surface and disengage. This characteristic combined with the particular geometry of the detents provide a high degree of consistency to the limit torque of the SIKUMAT® over the duration of the operating period. Re-engagement is effected synchronously after 360° due to the asymmetrical division of the detents.

engaged

disengaged

Function

Function

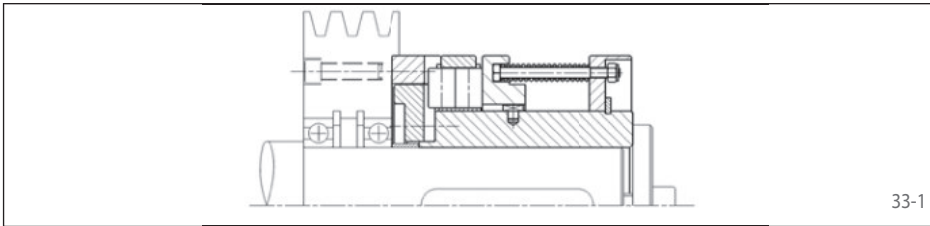
- When the preset limit torque has been reached the SIKUMAT® ratchets.
- Following elimination of overload automatic synchronous re-engagement of the SIKUMAT® to the starting position after 360°.
- The overload can be indicated by a proximity switch. This means that the drive can be switched off immediately or another control function can be activated.

Synchronous Ratcheting SIKUMAT® SA ...

with double rollers

Types

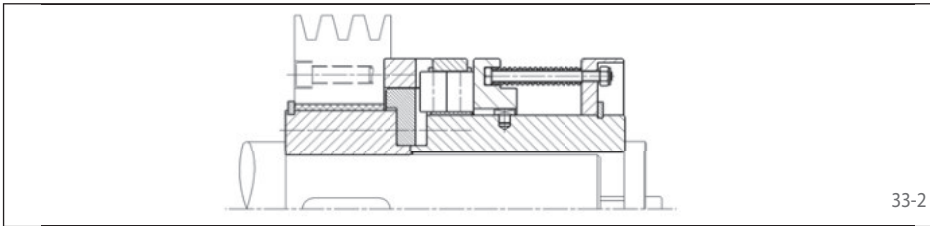
Series SA - Basic version with flange connection



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

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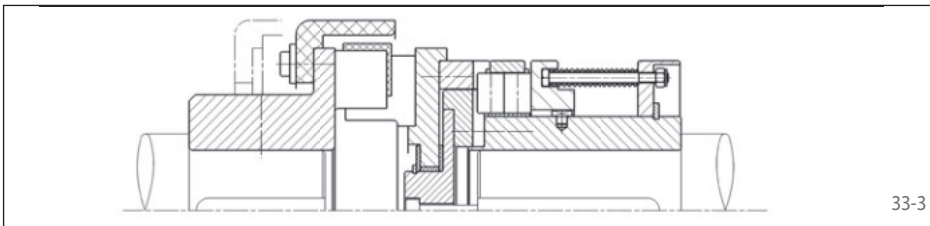
Series SAG - with long hub



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

Page 35

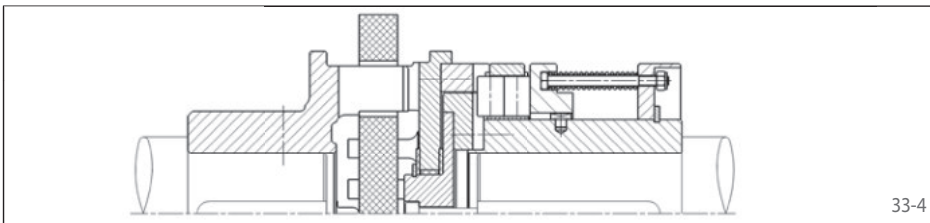
Series SAE - with flexible shaft coupling



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

Page 36

Series SAL - with torsionally rigid shaft coupling



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

Page 37

Notes

Torque setting

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

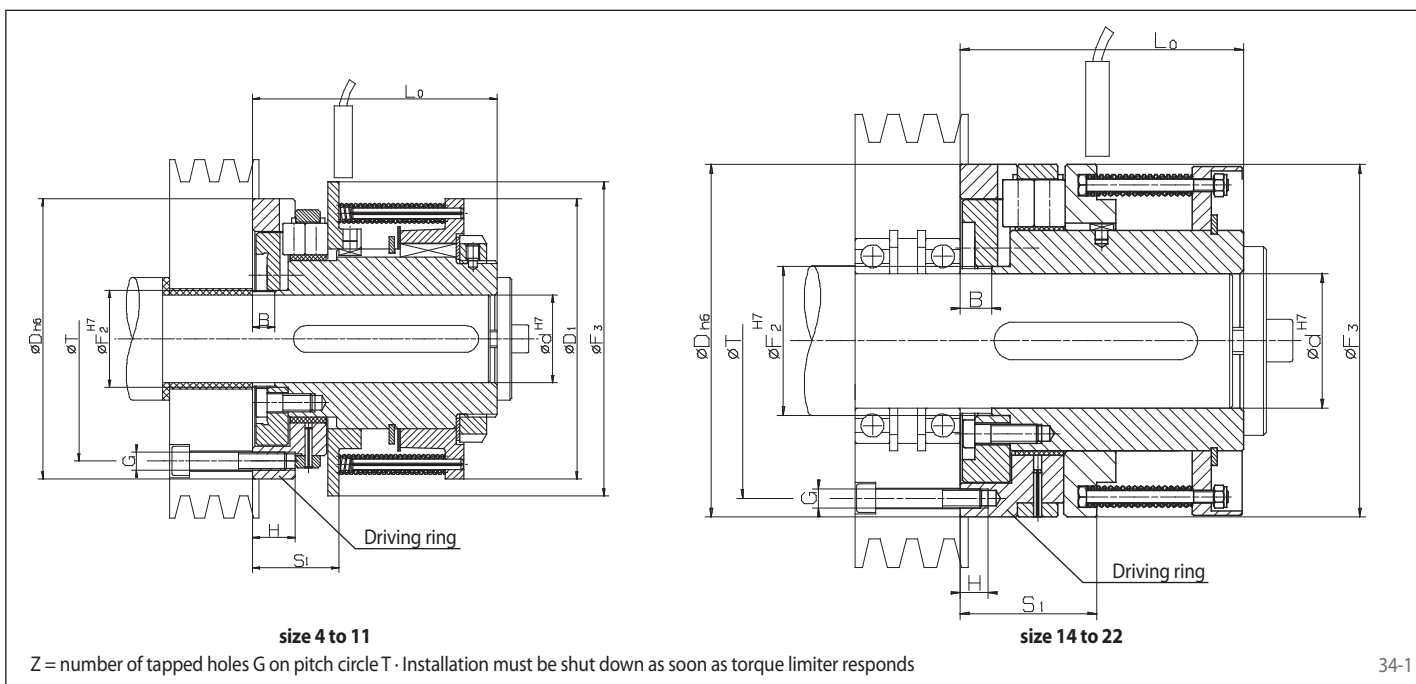
Proximity switch

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

Synchronous Ratcheting SIKUMAT® SA

with double rollers

Basic version with flange connection



34-1

Technical Data

Type	Art.-No.	Limit torque	max. speed
		Nm	min ⁻¹
SA 4	4470-004800	7 - 80	1500
SA 7	4470-007800	26 - 310	800
SA 11	4470-011800	105 - 1250	500
SA 14	4470-014800	210 - 2500	400
SA 18	4470-018800	420 - 5000	315
SA 22	4470-022800	840 - 10000	250

Dimensions

Type	Art.-No.	Bore d		B	D	D ₁	F ₂	F ₃	G	H	L ₀	S ₁	T	Z	Engage-ment travel
		min. mm	max. mm												
SA 4	4470-004800	9	25	8	80	80	27	90	M 6	11	71	24	71	3	1,6
SA 7	4470-007800	25	40	10	125	125	43	140	M 8	19	109	38	109	3	2,5
SA 11	4470-011800	30	65	15	180	200	75	212	M 10	16	175	61	160	6	4,0
SA 14	4470-014800	50	80	20	224	-	95	224	M 12	18	180	87	200	6	5,0
SA 18	4470-018800	65	100	24	280	-	118	280	M 16	25	224	110	250	6	6,2
SA 22	4470-022800	80	125	30	355	-	150	355	M 20	30	280	140	315	6	8,0

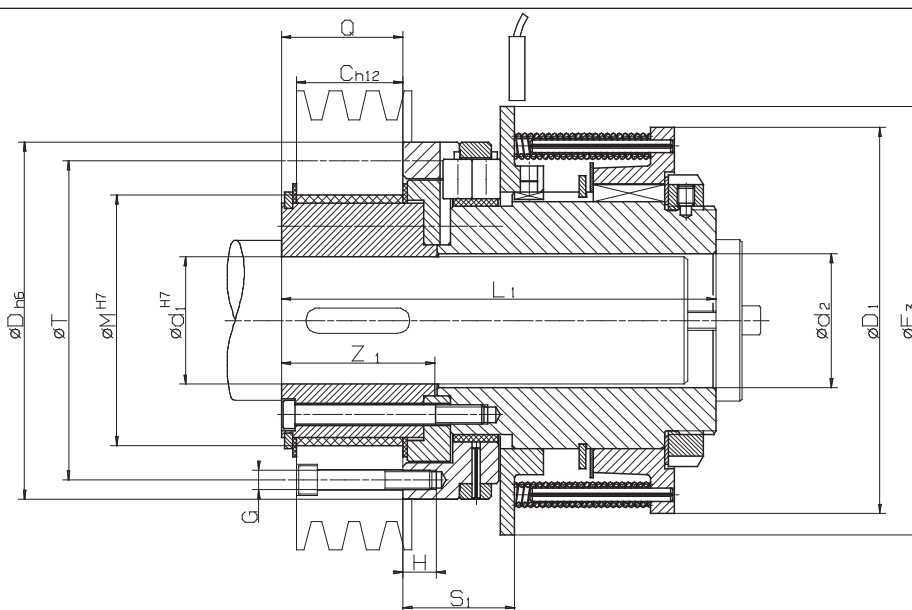
Keyway as per DIN 6885, page 1 · Tolerance of keyway width P9

Example for Ordering

Type	Art.-No.	Preset limit torque	Bore d	with proximity switch
SA 4	4470-004 800	9 Nm	12 mm	See pages 62 and 63

Synchronous Ratcheting SIKUMAT® SAG

with double rollers
with long hub



illustrated: size 4 to 11

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

35-1

Technical Data

Type	Art.-No.	Limit torque	max. speed
		Nm	min ⁻¹
SAG 4	4470-104800	7 - 80	1500
SAG 7	4470-107800	26 - 310	800
SAG 11	4470-111800	105 - 1250	500
SAG 14	4470-114800	210 - 2500	400

Dimensions

Type	Art.-No.	Bore d ₁		C	D	D ₁	F ₃	G	H	L ₁	M	Q	S ₁	T	Z	Z ₁	Engage-ment travel
		min. mm	max. mm														
SAG 4	4470-104800	9	25	25	80	80	90	M 6	11	103	55	32	24	71	3	39	1,6
SAG 7	4470-107800	25	40	40	125	125	140	M 8	19	155	80	46	38	109	3	55	2,5
SAG 11	4470-111800	40	65	63	180	200	212	M 10	16	250	120	75	61	160	6	87	4,0
SAG 14	4470-114800	50	80	80	224	224	224	M 12	18	275	155	95	87	200	6	109	5,0

Bore d₂ is 0,2...0,5 mm larger than d₁ for sizes 4 - 7

Bore d₂ is 0,5...1,0 mm larger than d₁ for sizes 11 - 14

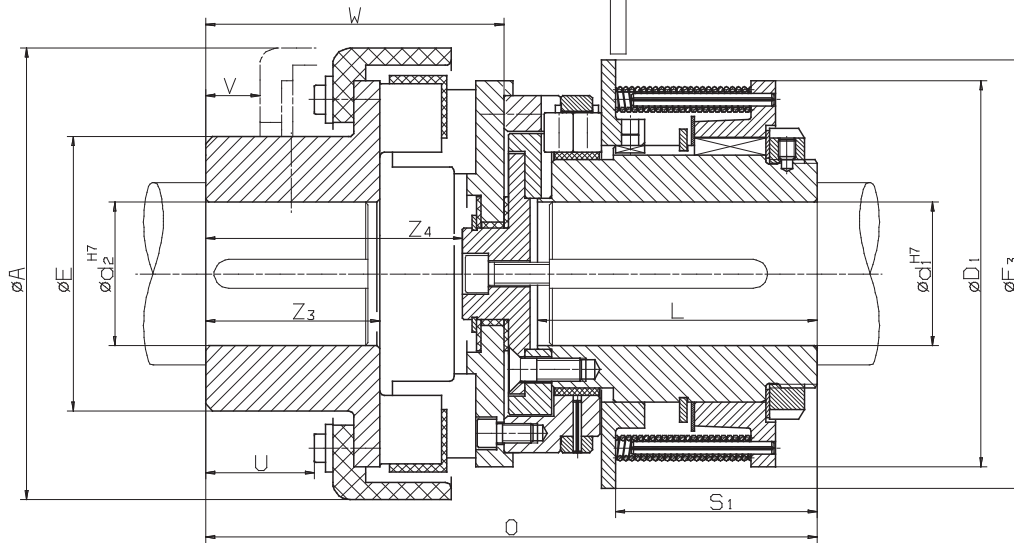
Keyway as per DIN 6885, page 1 · Tolerance of keyway width P9

Example for Ordering

Type	Art.-No.	Preset limit torque	Bore d ₁	with proximity switch
SAG 4	4470-104 800	27 Nm	16 mm	See pages 62 and 63

Synchronous Ratcheting SIKUMAT® SAE

with double rollers
with flexible shaft coupling



illustrated: size 4 to 11

Installation must be shut down as soon as torque limiter responds

36-1

Technical Data

Type	Art.-No.	Limit torque	max. speed
		Nm	min ⁻¹
SAE 4	4470-604800	7 - 80	1500
SAE 7	4470-607800	26 - 310	800
SAE 11	4470-611800	105 - 1250	500
SAE 14	4470-614800	210 - 2500	400
SAE 18	4470-618800	420 - 5000	315
SAE 22	4470-622800	840 - 10000	250

Dimensions

Type	Art.-No.	Bore d ₁		Bore d ₂		A	D ₁	F ₃	E	L	O	S ₁	U	V	W	Z ₃	Z ₄	Engage-ment travel
		min. mm	max. mm	min. mm	max. mm													
SAE 4	4470-604800	9	25	5	45	114	80	90	72	63	146	47	28	19	75	41	63	1,6
SAE 7	4470-607800	25	40	20	60	158	125	140	96	99	221	71	39	21	112	61	97	2,5
SAE 11	4470-611800	30	65	25	80	230	180	212	130	160	318	114	49	21	143	82	124	4,0
SAE 14	4470-614800	50	80	45	100	294	224	224	160	160	359	93	56	17	179	97	153	5,0
SAE 18	4470-618800	65	100	60	120	330	280	280	195	200	430	114	80	25	206	116	179	6,2
SAE 22	4470-622800	80	125	75	160	432	355	355	255	250	563	140	104	31	283	160	247	8,0

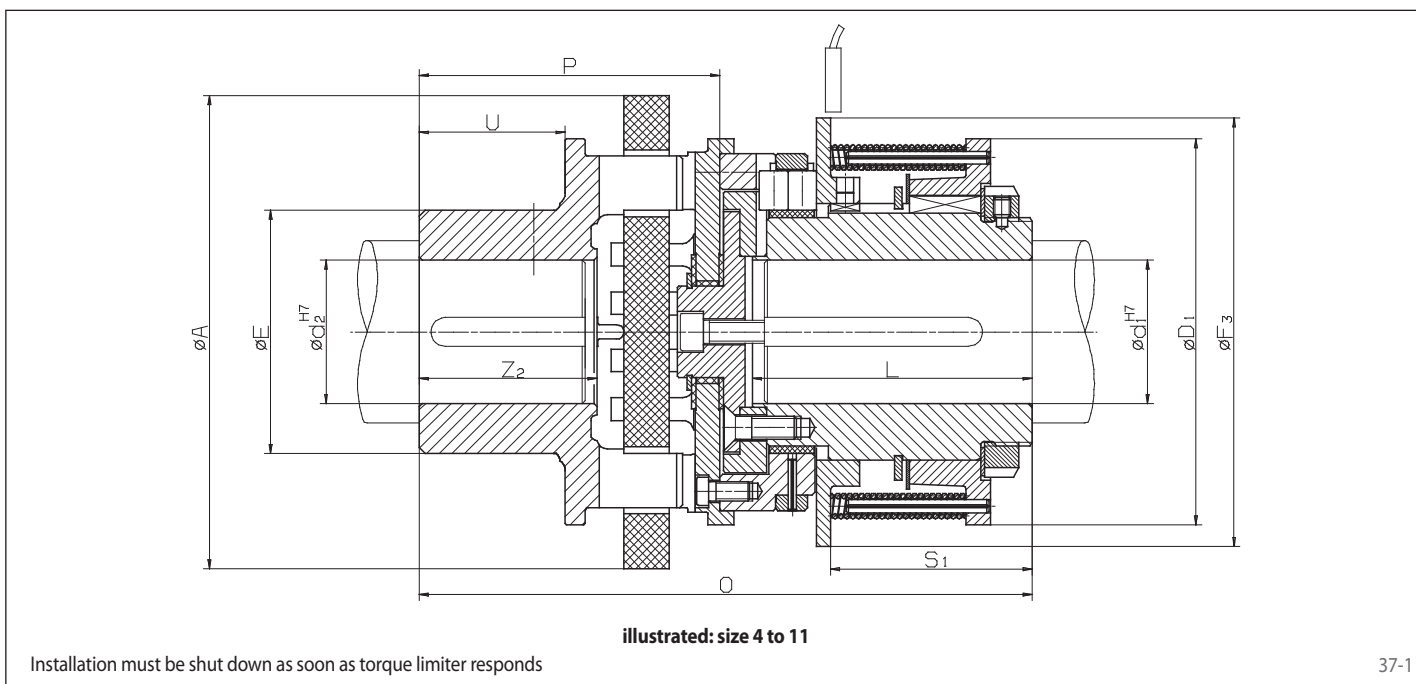
Keyway as per DIN 6885, page 1 · Tolerance of keyway width P9

Example for Ordering

Type	Art.-No.	Preset limit torque	Bore d ₁	Bore d ₂	with proximity switch
SAE 4	4470-604 800	40 Nm	29 mm	40 mm	See pages 62 and 63

Synchronous Ratcheting SIKUMAT® SAL

with double rollers
with torsionally rigid shaft coupling



37-1

Technical Data

Type	Art.-No.	Limit torque	max. speed
		Nm	min ⁻¹
SAL 4	4470-404800	7 - 80	1500
SAL 7	4470-407800	26 - 310	800
SAL 11	4470-411800	105 - 1250	500
SAL 14	4470-414800	210 - 2500	400
SAL 18	4470-418800	420 - 5000	315
SAL 22	4470-422800	840 - 10000	250

Dimensions

Type	Art.-No.	Bore d_1		Bore d_2		A	D_1	E	F_3	L	O	P	U	S_1	Z_2	Engage-ment travel
		min. mm	max. mm	min. mm	max. mm											
SAL 4	4470-404800	9	25	16	35	110	80	53	90	63	148	77	33	47	42	1,6
SAL 7	4470-407800	25	40	30	50	160	125	85	140	99	214	105	51	71	62	2,5
SAL 11	4470-411800	30	65	50	90	250	200	150	212	160	335	160	81	114	100	4,0
SAL 14	4470-414800	50	80	60	110	315	224	175	224	160	384	204	101	93	124	5,0
SAL 18	4470-418800	65	100	60	110	315	280	175	280	200	462	238	101	114	124	6,2
SAL 22	4470-422800	80	125	75	140	400	355	216	355	250	600	320	130	140	160	8,0

Permissible radial displacement $0,015 \times \varnothing A$ · Permissible angular displacement max. 3°
Keyway as per DIN 6885, page 1 · Tolerance of keyway width P9

Example for Ordering

Type	Art.-No.	Preset limit torque	Bore d_1	Bore d_2	with proximity switch
SAL 4	4470-404 800	13 Nm	13 mm	17 mm	See pages 62 and 63

Morskate®



Any questions? Please contact us.

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