

Backlash-free Servo-insert Couplings Product Range

Special Features

- Backlash free
- Simple, plug-in mounting
- Vibration damping
- Compensation of radial, axial and angular misalignment
- Transmission of torque values

between 0.5 and 650 Nm

Common Applications

- Encoder
- Precision drives
- Feed drives
- Grinding and milling spindles

- Machine tools
- Packaging Machines
- Industrial robots
- Transfer lines
- Multi-spindle heads
- Wood processing equipment
- Textile machinery

- Conveying equipment
- Linear motion
- Measuring equipment and controls
- Test rigs...

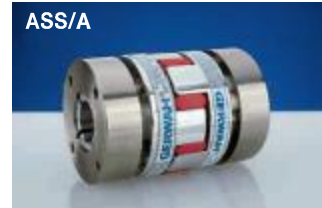
EK/GS miniature



Miniature Servo-insert Coupling with set screw style hubs

Servo-insert Coupling with shrink disc style hubs

ASS/A



DK/GS



Servo-insert Coupling with clamping style hubs and single slit

High Speed Servo-insert Coupling with shrink disc style hubs for short spindles acc. to DIN 69002

ASS/A-P



ADS



Servo-insert Coupling with clamping style hubs and dual slits

Combination Servo-insert Coupling and zero backlash torque limiter

DMK/ADS



ADS/R



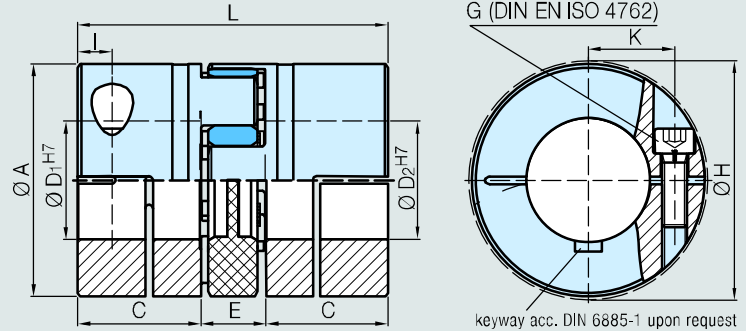
Servo-insert Coupling – interchangeable with competitor's

Combination Servo-insert Coupling and zero backlash ball detent torque limiter

DXK/ADS



Backlash-free Servo-insert Coupling Type ADS



Technical data Type ADS

Type			14	19	24	28	38	42	48
Nominal torque	(Nm)	T _{KN} (92ShA)	12,5	17	60	160	325	450	525
Moment of inertia of coupling	(10 ⁻⁶ kgm ²)	J ¹⁾	0,0057	0,036	0,15	0,33	1,04	6,1	14,6
Tightening torque of screws	(Nm)	MA	5	10	18	43	84	84	145
Weight per hub	(app. kg)	m	0,018	0,07	0,15	0,24	0,45	2,06	2,6
Max. Speed	(rpm)	n _{max}	13000	10000	7000	6000	5000	4000	3600
Standard shore hardness			98 SH A (red)						

Dimensions (mm) Type ADS

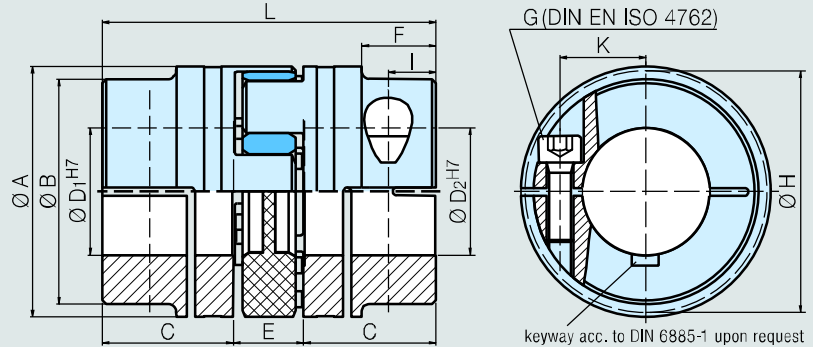
Type		14	19	24	28	38	42	48	
L		35	66	78	90	114	126	140	
A		30	40	55	65	80	95	105	
C		11	25	30	35	45	50	56	
Ø D ₁ ^{H7} / Ø D ₂ ^{H7}	min. - max.	10-14	10-20	20-28	24-35	32-44	35-50	40-60	
K		10,5	15	20	24	30	35	40	
E		13	16	18	20	24	26	28	
I		5	6	10	11	13	14	15	
G (DIN EN ISO 4762)		M4	M5	M6	M8	M10	M10	M12	
H (clearance diameter)		34	45	57	70	89	96	110	
Hub material		aluminium alloy						steel	

Bore range D1/D2 and corresponding transmissible torque values (Nm) of the coupling

Type	Ø 10	Ø 11	Ø 13	Ø 14	Ø 16	Ø 18	Ø 19	Ø 20	Ø 24	Ø 25	Ø 28	Ø 30	Ø 32	Ø 35	Ø 38	Ø 40	Ø 42	Ø 44	Ø 48	Ø 50	Ø 60
14	12,5	12,5	12,5	12,5																	
19	17	17	17	17	17	17	17	17													
24								60	60	60	60										
28									160	160	160	160									
38													160	160	160						
42													325	325	325	325	325	325			
48														415	427	435	443	450	450	450	
																525	525	525	525	525	525

¹⁾ The moment of inertia and the weight (mass) are calculated with reference to the largest bore size.

Backlash-free Servo-insert Coupling Type ADS/R



Technical data Type ADS/R

Type			14	19	24	28	38	42	48
Nominal torque	(Nm)	TKN (92ShA)	12,5	17	60	160	325	450	525
Moment of inertia of coupling	(10 ⁻⁶ kgm ²)	J ¹⁾	0,0057	0,036	0,15	0,33	0,96	4,92	8,26
Tightening torque of screws	(Nm)	MA	1,5	11	11	25	25	69	120
Weight per hub	(app. kg)	m	0,018	0,07	0,15	0,22	0,45	1,78	2,4
Max. speed	(rpm)	n _{max}	13000	10000	7000	6000	5000	4000	3600
Standard shore hardness			98 SH A (red)						

Dimensions (mm) Type ADS/R

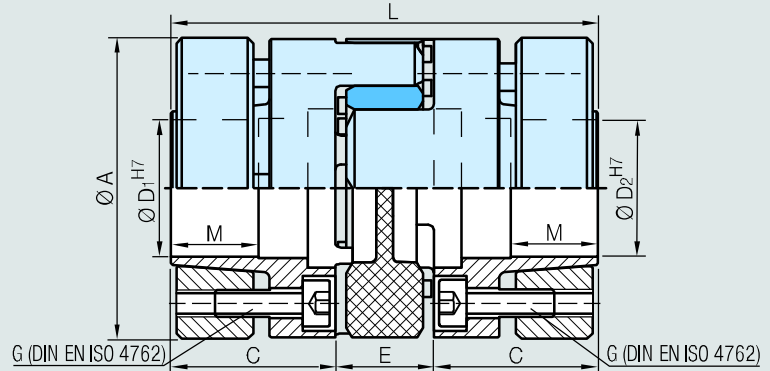
Type			14	19	24	28	38	42	48	
L			35	66	78	90	114	126	140	
A			30	40	55	65	80	95	105	
B			only for sizes 42 and 48						85	95
C			11	25	30	35	45	50	56	
Ø D ₁ H7 / Ø D ₂ H7		min. - max.	5-16	8-20	10-28	14-38	15-45	20-48	25-55	
F			only for sizes 42 and 48						28	32
K			11	14,5	20	24,5	30	32,5	36	
E			13	16	18	20	24	26	28	
I			5	12	10,5	11,5	15,5	18	21	
G (DIN EN ISO 4762)			M3	M6	M6	M8	M8	M10	M12	
H (clearance diameter)			32,2	46	57	71	83	91	104,5	
Hub material			aluminium alloy						steel	

Bore range D1/D2 and corresponding transmissible torque values (Nm) of the coupling

Type	Ø11	Ø14	Ø16	Ø18	Ø19	Ø20	Ø24	Ø25	Ø28	Ø30	Ø32	Ø35	Ø38	Ø40	Ø42	Ø45	Ø48	Ø50	Ø55
14	5,6	6,1	6,5																
19	17	17	17	17	17	17													
24	22	45	47	49	50	51	54	55	57										
28		46	68	97	98	100	105	107	111	114	117	121	126						
38			68	99	114	116	121	123	127	130	133	137	141	144	147	152			
42						134	230	261	301	308	314	324	333	340	346	356	366		
48								261	366	450	494	508	522	525	525	525	525	525	525

1) Moment of inertia and weight (mass) are calculated with reference to the largest bore size.
Hub design: up to size 19 one slit, from size 24 up two slits.

Backlash-free Servo-insert Coupling Type ASS/A



Technical data Type ASS/A

Type			14	19	24	28	38	42	48
Nominal torque	(Nm)	TKN (92ShA)	12,5	17	60	160	325	450	525
Moment of inertia of coupling	(10 ⁻⁶ kgm ²)	J ¹⁾	0,014	0,063	0,26	0,63	1,96	6,43	10,54
Tightening torque of screws	(Nm)	MA	1,8	3	6	6	10	35	69
Weight per hub	(app. kg)	m	0,049	0,12	0,28	0,45	0,95	2,3	3,08
Max. speed	(rpm)	n _{max}	25400	19000	13800	11700	9550	8050	7200
Standard shore hardness			98 SH A (red)						

Dimensions (mm) Type ASS/A

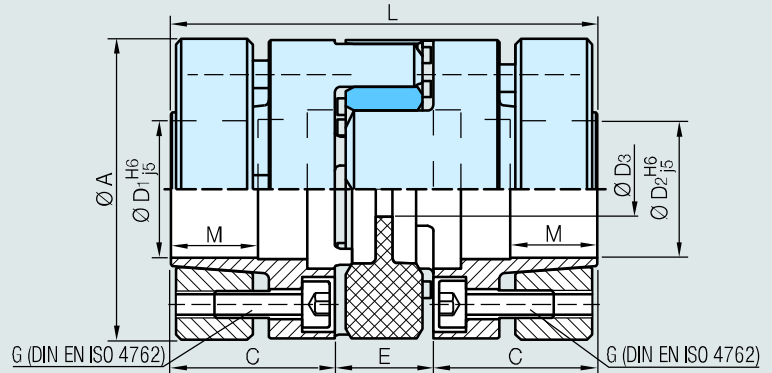
Type		14	19	24	28	38	42	48	
L		50	66	78	90	114	126	140	
A		32	40	55	65	80	95	105	
C		18,5	25	30	35	45	50	56	
Ø D ₁ ^{H7} / Ø D ₂ ^{H7}	min. - max.	6-14	10-20	11-25	15-36	20-41	27-50	30-55	
E		13	16	18	20	24	26	28	
G (DIN EN ISO 4762)		4xM3	6xM4	4xM5	8xM5	8xM6	4xM8	4xM10	
M		11	14	16	21	28	28	30	
Hub material		aluminium alloy						steel	

Bore range D1/D2 and corresponding torque values (Nm) of the coupling

Type	Ø 6	Ø 10	Ø 11	Ø 13	Ø 14	Ø 15	Ø 17	Ø 19	Ø 20	Ø 24	Ø 25	Ø 27	Ø 30	Ø 32	Ø 36	Ø 38	Ø 41	Ø 42	Ø 44	Ø 48	Ø 50	Ø 55
14	3,6	12,5	12,5	12,5	12,5																	
19		17	17	17	17	17	17	17	17													
24			22	37	46	56	60	60	60	60	60											
28						56	68	114	134	160	160	160	160	160								
38									134	230	261	325	325	325	325	325	325					
42												329	450	450	450	450	435	450	450	450	450	
48													450	525	525	525	525	525	525	525	525	525

¹⁾ Moment of inertia and weight (mass) are calculated with reference to the largest bore size.

Backlash-free Servo-insert Coupling Type ASS/A-P



Technical data Type ASS/A-P

Type			14	19	24	28	38	42	48
Nominal torque	(Nm)	T _{KN} (92ShA)	12,5	17	60	160	325	450	525
Moment of inertia of coupling	(10 ⁻⁶ kgm ²)	J ¹⁾	0,022	0,092	0,41	0,87	2,7	6,5	10,6
Tightening torque of screws	(Nm)	MA	1,9	3	8,5	8,5	14	35	69
Weight per hub	(app. kg)	m	0,08	0,19	0,44	0,64	1,32	2,23	3,09
Max. speed	(rpm)	n _{max}	31800	23800	17300	14700	11900	10000	9100
Standard shore hardness			98 SH A (red)						

Dimensions (mm) Type ASS/A-P

Type	14	19	24	28	38	42	48
L	50	66	78	90	114	126	140
A	32	40	55	65	80	95	105
C	18,5	25	30	35	45	50	56
Ø D ₁ ^{H6} / Ø D ₂ ^{H6}	14	19	25	35	40	42	45
Ø D ₃	8,5	9,5	12,5	14,5	16,5	18,5	20,5
E	13	16	18	20	24	26	28
G (DIN EN ISO 4762)	4xM3	6xM4	4xM5	8xM5	8xM6	4xM8	4xM10
M	11	14	16	21	28	28	30
Hub material	steel						

Transmissible torque capacity of the coupling (Nm)

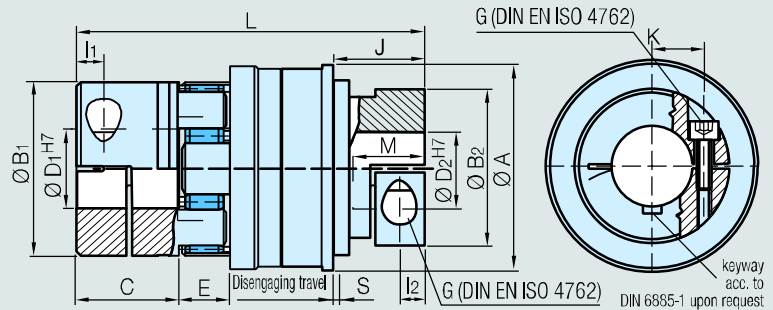
Typ	Ø 14	Ø 19	Ø 25	Ø 35	Ø 40	Ø 42	Ø 45
14	12,5						
19		17					
24			60				
28				160			
38					325		
42						450	
48							525

Clamping hub material: alloy steel

Push-off threads between the locking screws for size G

Dynamically balanced to G 6.3 specification according to ISO 1940-1.

Backlash-free Safety Coupling Type DMK/ADS



Technical data Type DMK/ADS

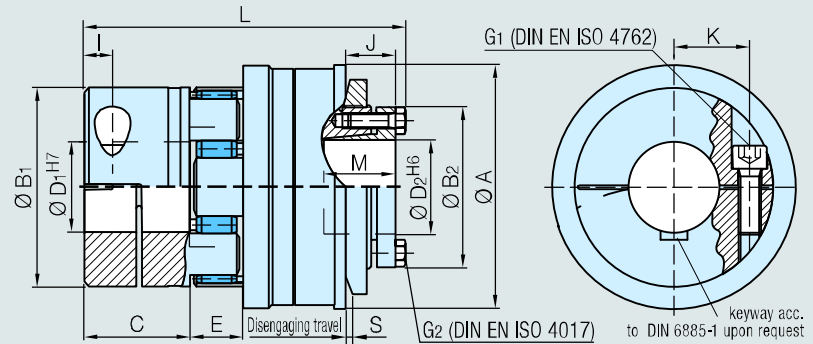
Type			14	19	24	28	38	42
Disengaging torque adjustable	(Nm)	TkN version a	2-5	5-15	12-35	25-75	30-140	140-350
		TkN version b	5-10	15-20 ¹⁾	20-70 ¹⁾	65-150	100-300	250-500
Moment of inertia	(10 ⁻³ kgm ²)	J Hub side	0,05	0,1	0,32	0,8	3	5
		J Elastomer side	0,006	0,036	0,15	0,33	1,04	3,1
Weight	(appr. kg)	m	0,35	0,5	1,4	2,8	4,6	7,5
Tightening torque of retaining screws	(Nm) MA	G1	5	10	18	43	84	145
		G2	6	15	25	49	100	145
Max. speed	(rpm)	n _{max}	11450	8950	7000	6000	5000	3600
Disengaging travel	(mm)	S	0,7	1,2	1,8	2	2	2
Spider shore hardness			98 SH A (red)					

Dimensions (mm) Type DMK/ADS

Type		14	19	24	28	38	42
L		68	96	124	143	162	185
A		50	65	75	95	115	129
C		11	25	30	35	45	56
→ D ₁ ^{H7}	min. - max.	9-14	10-20	20-28	24-35	32-44	40-60
→ D ₂ ^{H7}	min. - max.	8-14	12-20	20-23	24-35	32-40	40-50
K		10,5	15	20	24	30	40
E		13	16	18	20	24	28
I 1		5	6	10	11	13	15
I 2		5,5	7,5	10	11	13	13
G 1 (DIN EN ISO 4762)		M4	M5	M6	M8	M10	M12
G 2 (DIN EN ISO 4762)		M5	M6	M8	M10	M12	M12
B 1		30	40	55	65	80	105
B 2		45	56	55	76	92	92
J		19	21	36	42	48	46
M		39	51	28,5	32,5	37	37,5
Hub material	elastomer side/hub side	Al/Al	Al/Al	Al/Al	Al/St	St/St	St/St

¹⁾ To obtain the maximum adjustment range for type b, use spider with 64Sh D. ²⁾ al = aluminum alloy, st = Steel
A mechanical or electrical device sensing the position of the steel ring is necessary for torque limiters DMK/ADS (disengaging travel). In case of overload the drive must be switched off.

Backlash-free Safety Coupling Type DXK/ADS



Technical data Type DXK/ADS

Type			14	19	24	28	38	42
Disengaging torque adjustable	(Nm)	TkN version a	2-5	5-15	12-35	25-75	70-160	90-250
		TkN version b	5-10	15-20 ¹⁾	30-70 ¹⁾	65-150	150-300	200-500
Moment of inertia	(10 ⁻³ kgm ²)	J Hub side	0,064	0,23	0,88	1,52	5,41	7,84
		J Elastomer side	0,006	0,036	0,15	0,33	1,04	3,1
Weight	(appr. kg)	m	0,28	0,58	1,1	1,7	3,7	4,4
Tightening torque of retaining screws	(Nm)	G1	5	10	18	43	84	145
		G2	3	5	8,5	14	18	25
Max. speed	(rpm)	n _{max}	11450	8950	7000	6000	5000	3600
Disengaging travel	(mm)	S	0,7	1,2	1,2	2	2	2
Spider shore hardness			98 SH A (red)					

Dimensions (mm) Type DXK/ADS

Type			14	19	24	28	38	42
L			66,5	88,5	111	123	151	170
A			50	65	80	95	119	130
C			11	25	30	35	45	56
→ D ₁ ^{H7}	min. - max.		9-14	10-20	20-28	24-35	32-44	40-60
→ D ₂ ^{H6}	min. - max.		8-16	12-20	12-25	21-35	30-45	35-50
K			10,5	15	20	24	30	40
E			13	16	18	20	24	28
I			5	6	10	11	13	15
G 1 (DIN EN ISO 4762)			M4	M5	M6	M8	M10	M12
G 2 (DIN EN ISO 4762)			6xM4	6xM4	6xM6	6xM6	6xM8	6xM8
B 1			30	40	55	65	80	105
B 2			34	41,5	50	62	76	85
J			15	16	17	20	26	26
M			16	20	25	30	35	38
Hub material		elastomer side	Al	Al	Al	Al	St	St

¹⁾ To obtain the maximum adjustment range for type b, use spider with 64Sh D. ²⁾ al = aluminum alloy, st = steel
A mechanical or electrical device sensing the position of the steel ring is necessary for torque limiters DMK/ADS (Disengaging travel). In case of overload the drive must be switched off.

Backlash-free Servo-insert Coupling Assembly Instructions

Installation

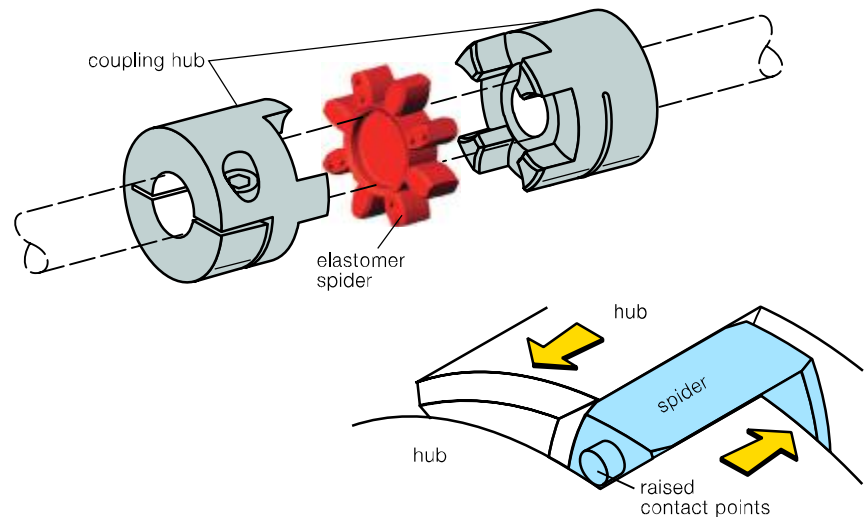
Clean and degrease both shaft surface and coupling hub bores. Re-check shaft diameters and coupling bores for proper tolerances.

Slide a coupling hub onto each shaft and proceed to torque the screws of one clamp ring or shrink disc after checking axial dimensions. Refer to the technical data to assure correct screw tightening torque.

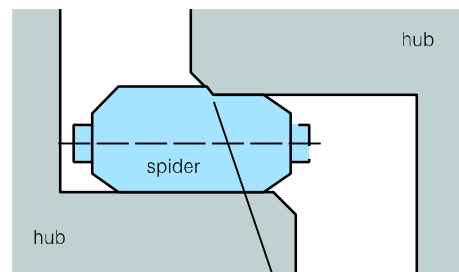
Firmly press elastomer spider into one of the two hubs. Because of the interference fit, the force necessary to install the spider may be quite high, therefore a PU tolerant grease such as Vaseline may be applied to ease assembly. The edges of the spider and the jaws of the coupling hubs are both chamfered to ease assembly.

Raised contact points visible on the front and back side of the elastomer spider help maintain proper spacing between the two hubs assuring electrical isolation and full angular misalignment capabilities.

Carefully push the coupling hubs together while maintaining the necessary spacing, tighten the screws of the remaining clamp ring or shrink disc to the recommended torque. The function of the gap is to prevent the coupling hubs from restraining the axial movement of the spider. This ensures optimum life of the coupling and spider.

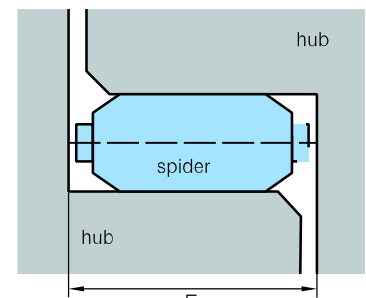


While mounting



elastic deformation

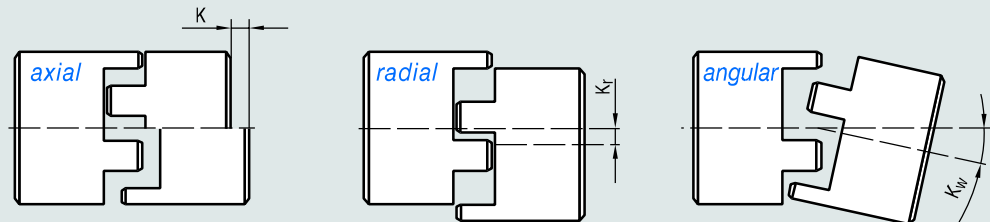
Backlash free after final assembly preloaded



E

Backlash-free Servo-insert Coupling Assembly Instructions

Types of misalignment



Alignment

The picture above shows the (3) types of misalignment. The mounted coupling needs to be aligned. The more accurate the initial alignment, the better the coupling can absorb additional misalignment during operation, thereby assuring optimum lifetime and quiet running conditions. If all (3) types of misalignment occur simultaneously, each type must not reach the maximum allowable value.

The combined impact of the actual misalignment types, expressed as a percentage of the maximum allowable value,

must not exceed 100%. The diagram below shows the combined misalignment.

Removal

Remove the locking screws, e.g. on the motor. Pull the drive unit, including the jaw coupling apart. Inspect the spider for wear and if necessary, insert a new spider or one with a different shore hardness.

After loosening the keyless clamp ring or shrink disc, the hubs can be removed.

Please contact us for detailed installation and removal instructions.

Misalignments

Typ	elast. Spider	Shore-scale	Misalignment type		
			mm axial $\Delta Ka^1)$	mm radial ΔKr	scale angular ΔKw
5	80	A	+0,4	0,12	1,1°
	92	A	-0,2	0,06	1,0°
	98	A	-0,2	0,04	0,9°
7	80	A	+0,6	0,15	1,1°
	92	A	+0,6	0,10	1,0°
	98	A	-0,3	0,06	0,9°
	64	D	-0,3	0,04	0,8°
9	80	A	+0,8	0,19	1,1°
	92	A	+0,8	0,13	1,0°
	98	A	-0,4	0,08	0,9°
	64	D	-0,4	0,05	0,8°
14	80	A	+1,0	0,21	1,1°
	92	A	+1,0	0,15	1,0°
	98	A	-0,5	0,09	0,9°
	64	D	-0,5	0,06	0,8°
19	80	A	+1,2	0,15	1,1°
	92	A	+1,2	0,10	1,0°
	98	A	-0,5	0,06	0,9°
	64	D	-0,5	0,04	0,8°
24	92	A	+1,4	0,14	1,0°
	98	A	-0,5	0,10	0,9°
	64	D	-0,5	0,07	0,8°
28	92	A	+1,5	0,15	1,0°
	98	A	-0,7	0,11	0,9°
	64	D	-0,7	0,08	0,8°
38	92	A	+1,8	0,17	1,0°
	98	A	-0,7	0,12	0,9°
	64	D	-0,7	0,09	0,8°
42	92	A	+2,0	0,19	1,0°
	98	A	-1,0	0,14	0,9°
	64	D	-1,0	0,10	0,8°
48	92	A	+2,1	0,23	1,0°
	98	A	-1,0	0,16	0,9°
	64	D	-1,0	0,11	0,8°

¹⁾ The Ka values need to be added to the dimension L of the coupling selected

