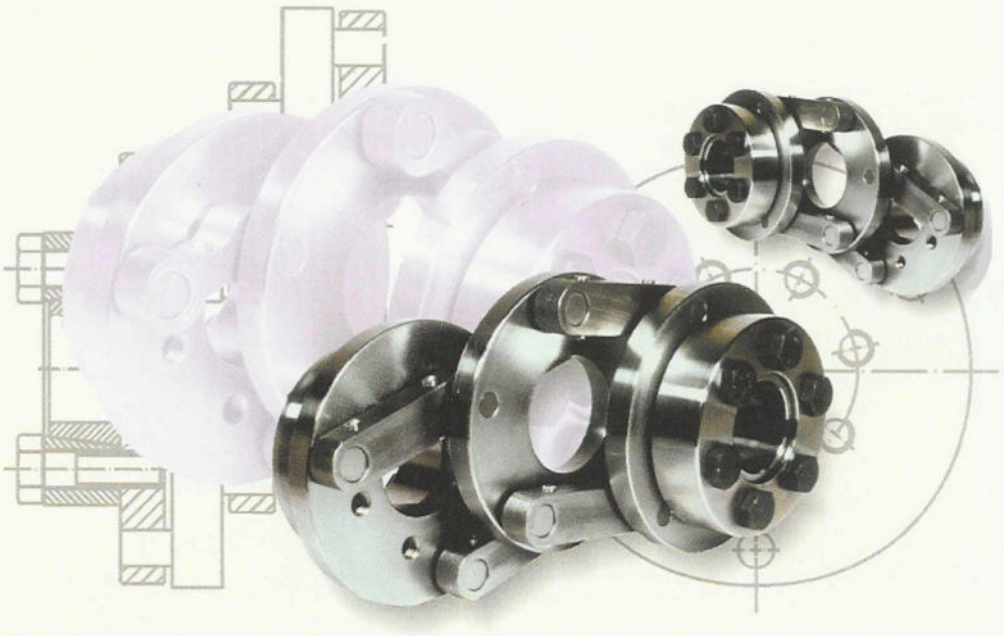
SCHMIDT-KUPPLUNG GmbH

SCHMIDT-KUPPLUNG®

(OFF - SET)



C O U P L I N G S

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Schmidt-Kupplung®

APPLICATION

The Schmidt-Kupplung® is a compact, torsionally stiff performance shaft coupling for large, variable radial shaft displacement. Through its modular construction, torque transmission and radial offset capacity can be optimized for each application.

TECHNICAL FEATURES and BENEFITS TO THE USER

Constant Angular Velocity

The Schmidt-Kupplung® transmits torque under constant angular velocity at all possible offsets.

No Side Loads

Torque is transmitted exclusively via compression and tension by the coupling links. This well-balanced system transmits torque without adding side loads to the drive. Moreover, the Schmidt-Kupplung® will not transmit radial vibration from the drive to the driven shaft.

Torsionally Stiff

The well-balanced dimensions of the components and the large effective radius of the links give the Schmidt-Kupplung® exceptional torsional stiffness.

Compact Design

The coupling design of three discs and two sets of links requires very little floor space.

Very large Misalignment Capacity

The radial misalignment capacity is, compared to other shaft couplings, very large. The radial misalignment capacity depends on the length of the coupling links. Each basic size of coupling can accommodate at least three different lengths of coupling links.

Easy Installation

By choosing the appropriate shaft-hub connection, a drop-out installation of the coupling is possible.

Modular Construction

The Schmidt-Kupplung® is available in six basic sizes for various performance levels. Within each size at least three different maximum offsets are available. There are also three different shaft-hub connections available.
The Schmidt-Kupplung® has three coupling links per set. For more performance in the same envelope, couplings with four or more links are also available.

Absorbs Radial Vibration

Design Advantage

Due to the large effective radius of the coupling links the Schmidt-Kupplung® maintains very low backlash. The needle bearings can be pre-loaded for "zero-backlash" conditions.

Function

Power is transmitted via two identical sets of coupling links connected by a middle disc. Each set of coupling links consists of three links that always remain parallel to another. The coupling links are distributed evenly on the bolt circle (3×120°) and in rotation transmit force alternately in tension and compression assuring a well-balanced system. The action of the needle bearings in the coupling links insures that the shaft bearings incur no side loads. Variable shaft displacement is accommodated by motion of the middle disc. Each set of coupling links rotates symmetrically about the middle disc.
Since the coupling links remain parallel, the drive and the driven shaft always have the same angular velocity.

MODELS

NSB 4

Torque capacity of up to 200 Nm
Lnear range of up to 150 mm
Page 6

NSB 7
NSB 10

Torque capacity of up to 1.350 Nm
Linear range of up to 390 mm
Page 8

NSB 13
NSB 16

Torque capacity of up to 4.100 Nm
Linear range of up to 500 mm
Page 10

NSB 20

Torque capacity of up to 12.900 Nm
Linear range of up to 500 mm
Page 12

SELECTION PROCEDURE

SELECTION

Information required

All information refers to operational conditions:

- Operating life
- Service factor (see table)
- Continuous torque: T_N
- Peak torque: T_S
- RPM: n_N
- Axial misalignment: ΔW_a
- Radial misalignment: ΔW_r
- Linear range of shaft displacement: ΔW_v
- Angular misalignment: ΔW_w
- Shaft diameter
- Space limitation

Service factors

Load	Service factor
uniform	1,0
light shocks	1,5
medium shocks	2,0
heavy shocks	2,5

Selection

1. Determine the performance and service factors.

2. Calculate the design torque:

   T_N × performance factor × service factor

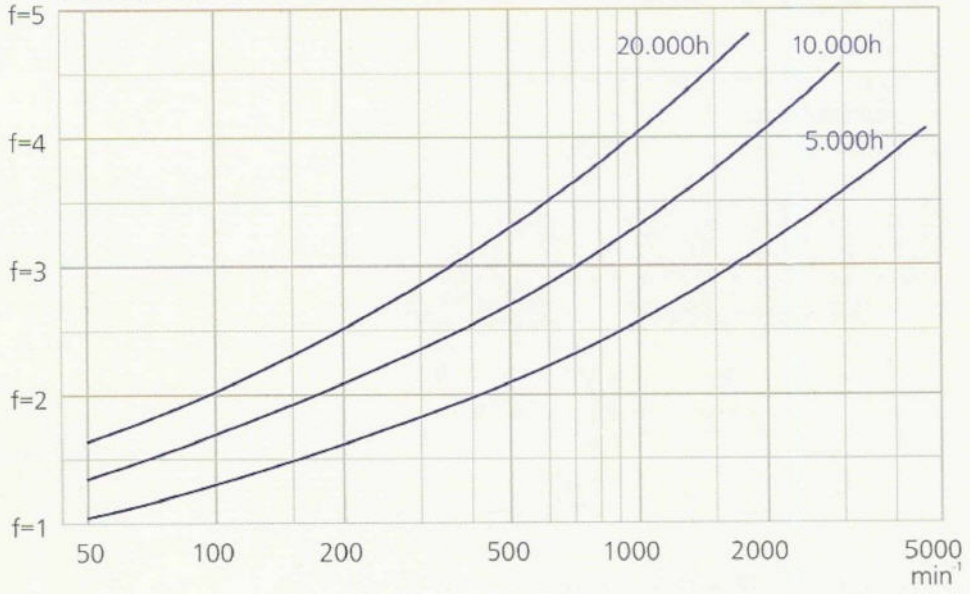
3. Choose a coupling so that:
   - Design torque < continuous rated torque T_{KN}
   - RPM: $n_N < n_{max}$
   - Linear range: $\Delta W_v < \Delta K_v$
   - Radial misalignment: $\Delta K_{r\,min} < \Delta W_r < \Delta K_r$
   - Angular misalignment: $\Delta W_w < \Delta K_w$
   - Axial misalignment: $\Delta W_a < \Delta K_a$

4. Check to be sure that the coupling fits the required dimensions such as available space envelope and bore sizes.

5. If the coupling size and type meet the torque, misalignment, and space envelope criteria, selection of a Schmidt-Kupplung® is complete.

6. If no Schmidt-Kupplung® is found that meets these criteria, consult the factory. We will work with you to meet your needs.

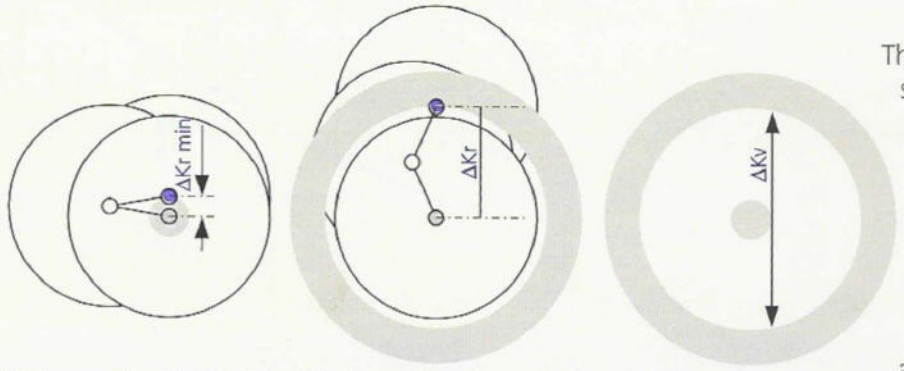
Performance factor



LEGEND

T_{KN}	Continuous Torque Rating of the Coupling	Nm
$T_{K\,max}$	Maximum Torque Capacity of the Coupling	Nm
n_{max}	Maximum Speed of the Coupling	1/min
ΔK_v	Maximum Linear Range of the Coupling	mm
$\Delta K_{r\,min}$	Minimum Radial Misalignment Capacity of the Coupling	mm
ΔK_r	Maximum Radial Misalignment Capacity of the Coupling	mm
ΔK_a	Maximum Axial Misalignment Capacity of the Coupling	mm
ΔK_w	Maximum Angular Misalignment Capacity of the Coupling	°
C_T	Torsional Stiffness of the Coupling	kNm/rad
J	Moment of Inertia of the Coupling	kg cm²
m	Weight of the Coupling	kg
T_N	Continuous Torque	Nm
T_S	Peak Torque	Nm
n_N	Shaft RPM	1/min
ΔW_v	Maximum Linear Range of Shaft Displacement	mm
ΔW_r	Maximum Radial Shaft Misalignment	mm
ΔW_a	Maximum Axial Shaft Misalignment	mm
ΔW_w	Maximum Angular Shaft Misalignment	°
ØE	Coupling Diameter	mm
$ØE_R$	Swing Diameter of the Coupling	mm
L	Coupling Length	mm
ØP	Hub Diameter	mm
K	Total Hub Length	mm
H	Disc Thickness	mm
N	Hub Length	mm
Ød	Bore Diameter	mm
ØF	Bolt Circle Diameter	mm
Skg	Number of Counter Bores × Bolt Size	
α β	Spacing of the Fixing Holes	°

Misalignment possibilities



Minimum Coupling Radial Misalignment Capacity

Maximum Coupling Radial Misalignment Capacity

Maximum Coupling Linear Range

The annulus between the two shaded circles is the recommended operational area for shaft displacement. The maximum linear range of the coupling ΔK_v can be achieved when the drive shaft and the driven shaft are offset by $\Delta K_{r\,min}$ the minimum radial misalignment capacity of the coupling.

● Center of the Drive Shaft
○ Center of the Middle Disc
◎ Center of the Drive Shaft

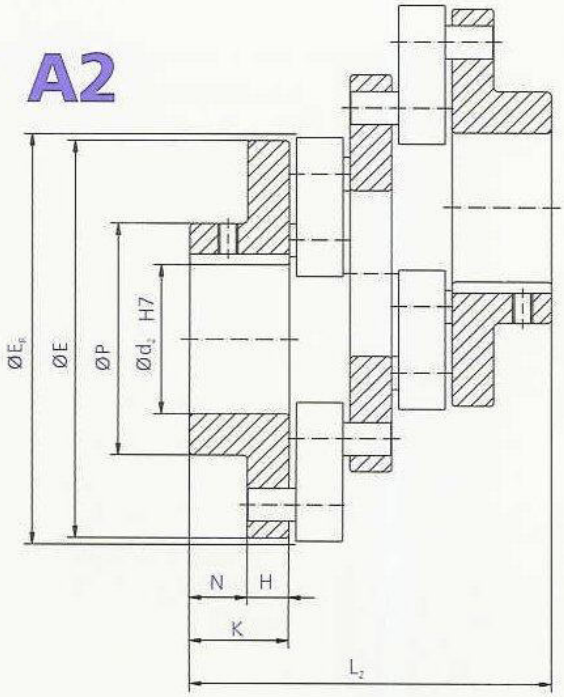
SCHMIDT-KUPPLUNG

PERFORMANCE

- Low torque capacity
- Air-gap seal
- Light weight and low moment of inertia
- Space saving
- Variable shaft displacement
- Constant velocity
- Absorbs radial vibration
- No side loads

- A2: standard hubs with keyway
- A1: for Flange Mounting
- SP: for Locking Assembly

- Order example:
  NFB 4.2.6/3 A1 A2Ø20N

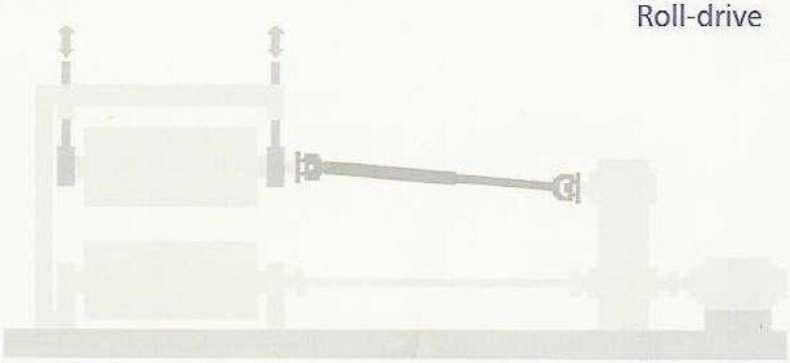


NSB

	T_{KN} Nm	$T_{K\,max}$ Nm	n_{max} 1/min	ΔK_V mm	$\Delta K_{r\,min}$ mm	ΔK_r mm	ΔK_a mm	ΔK_W °	C_T kNm/rad	J kg cm²	m kg
4.2.5/3	35	65	3.100	45	6	23	1	0,8	7	1,5	0,39
4.2.5/4	45	90	3.100	45	6	23	1	0,5	10	1,8	0,41
4.2.6/3	45	85	2.800	45	6	23	1	0,8	10	2,8	0,53
4.2.6/4	60	115	2.800	45	6	23	1	0,5	13	3,1	0,56
4.2.8/5	110	210	2.400	45	6	23	1	0,5	24	8,8	0,93
4.5.6/3	45	85	1.900	95	13	50	1	0,8	10	3,1	0,55
4.5.8/5	110	210	1.600	95	13	50	1	0,5	24	9,1	1,25
4.8.8/3	65	126	1.300	151	21	79	1	0,5	14	8,9	1,08

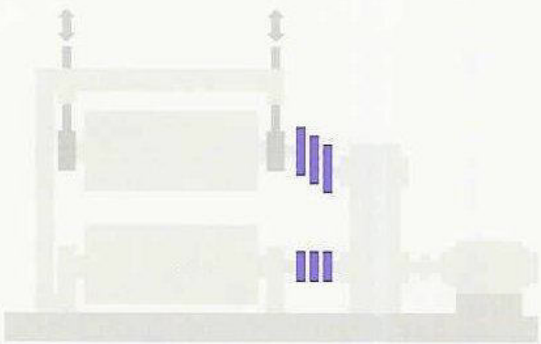
▶ Favored

Roll-drive



Double universal joint cardan shaft

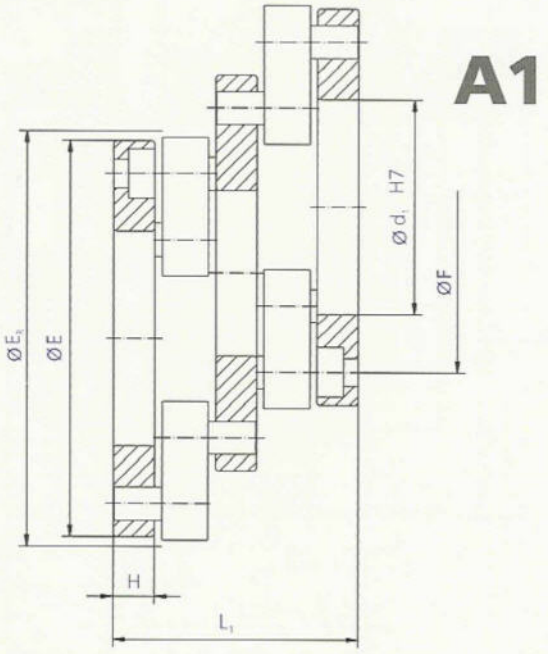
- very long
- more back-lash
- lower torsional stiffness

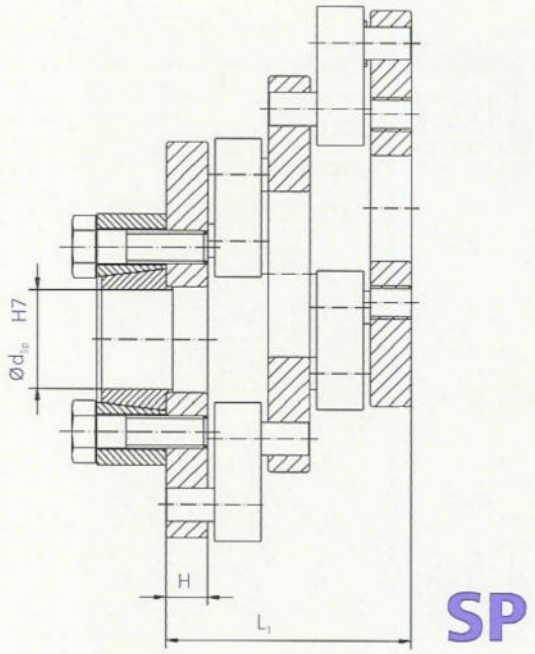


Schmidt-Kupplung®

- compact
- less back-lash
- higher torsional stiffness

DIMENSIONS



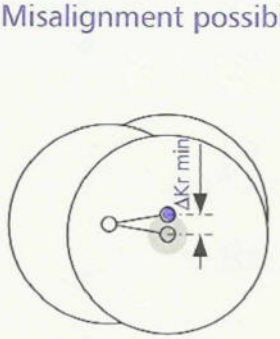


NSB

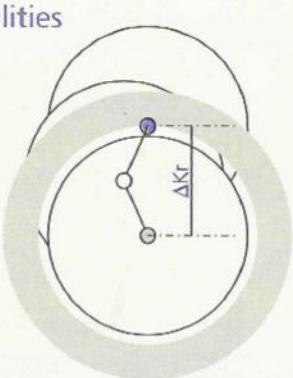
	ØE	ØER	H	L2	ØP	K	N	Ød2 max	L1	ØdSP max	Ød1	ØF	Skg
▶ 4.2.5/3	50	52	8	60	50	16	8	30	44	16	22	35	3×M6
4.2.5/4	50	52	8	60	50	16	8	30	44	20	22	35	3×M6
▶ 4.2.6/3	60	62	8	60	60	16	8	40	44	30	25	45	3×M6
4.2.6/4	60	62	8	60	60	16	8	40	44	20	25	45	4×M6
4.2.8/5	82	84	8	78	50	25	17	30	44	35	40	67	5×M6
▶ 4.5.6/3	60	62	8	60	60	16	8	40	44	30	25	45	3×M6
4.5.8/5	82	84	8	78	50	25	17	30	44	35	40	67	5×M6
4.8.8/3	82	84	8	68	50	20	12	30	44	40	40	67	3×M6

▶ Favored

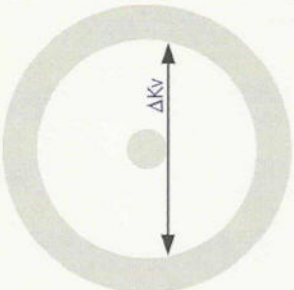
Misalignment possibilities



Minimum Coupling Radial Misalignment Capacity



Maximum Coupling Radial Misalignment Capacity



Maximum Coupling Linear Range

The annulus between the two shaded circles is the recommended operational area for shaft displacement. The maximum linear range of the coupling ΔK_v can be achieved when the drive shaft and the driven shaft are offset by $\Delta K_{r\,min}$ the minimum radial misalignment capacity of the coupling.

- Center of the Drive Shaft
- Center of the Middle Disc
- Center of the Drive Shaft

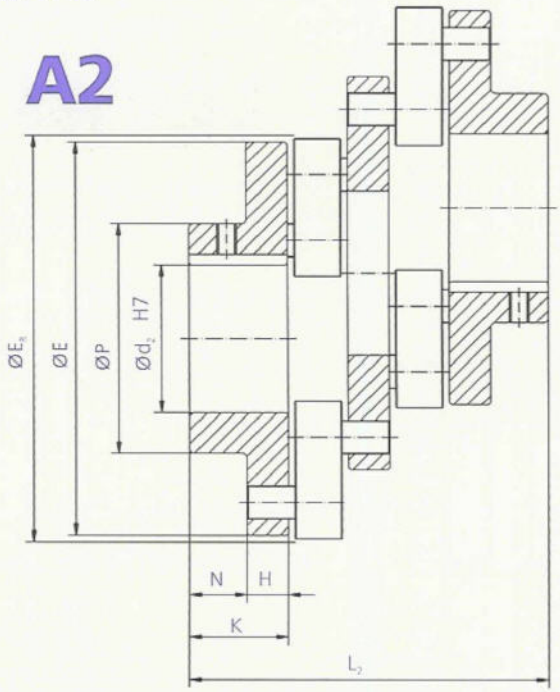
PERFORMANCE

- Medium torque capacity
- Space saving
- Variable shaft displacement
- Constant velocity
- Absorbs radial vibration
- No side loads

- A2: standard hubs with keyway
- A1: for Flange Mounting
- SP: for Locking Assembly

- Order example:
  NFB 7.7.12/3 SPØ25 SPØ40

A2

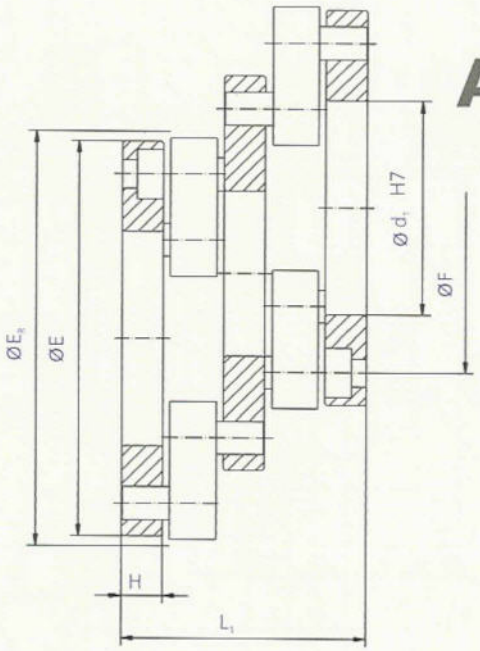


NSB

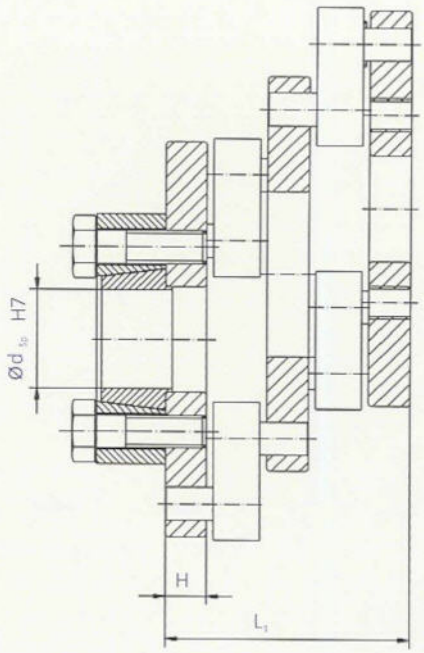
	T_{KN} Nm	$T_{K\,max}$ Nm	n_{max} 1/min	ΔK_V mm	$\Delta K_{r\,min}$ mm	ΔK_r mm	ΔK_a mm	ΔK_W °	C_T kNm/rad	J kg cm²	m kg
7.3.7/3	110	210	3.500	64	9	34	1	0,8	24	7,5	1,1
▸ 7.3.9/3	150	290	3.100	64	9	34	1	0,8	33	21,5	1,7
7.3.9/4	200	385	3.100	64	9	34	1	0,5	44	23	1,8
7.3.9/5	250	490	3.100	64	9	34	1	0,5	56	25	2,0
▸ 7.3.12/3	210	410	2.700	64	9	34	1	0,8	47	60	2,8
7.3.12/4	280	550	2.700	64	9	34	1	0,5	63	61	2,9
7.3.12/5	350	690	2.700	64	9	34	1	0,5	79	63	3,0
▸ 7.7.9/3	150	290	2.200	126	17	66	1	0,8	33	24	1,9
▸ 7.7.12/3	210	410	1.900	126	17	66	1	0,8	47	61	2,9
7.7.12/4	280	550	1.900	126	17	66	1	0,5	63	63	3,0
7.7.12/5	350	690	1.900	126	17	66	1	0,5	79	65	3,2
▸ 7.12.12/3	210	410	1.500	216	30	114	1	0,5	47	78	3,7
7.20.17/3	290	620	1.000	360	50	190	1	0,5	71	285	7,0
▸ 10.5.10/3	280	550	2.500	100	14	53	1	0,5	63	52	3,6
▸ 10.5.12/3	360	710	2.300	100	14	53	1	0,5	81	95	4,5
10.5.12/4	480	945	2.300	100	14	53	1	0,5	108	105	5,0
▸ 10.5.14/3	440	865	2.100	100	14	53	1	0,5	99	160	5,8
10.5.14/4	590	1.155	2.100	100	14	53	1	0,5	132	175	6,3
10.5.16/4	700	1.365	2.000	100	14	53	1	0,5	156	295	7,4
▸ 10.9.12/3	360	710	1.800	162	22	85	1	0,5	81	107	5,1
▸ 10.9.14/3	440	865	1.700	162	22	85	1	0,5	99	175	6,3
10.9.14/4	590	1.155	1.700	162	22	85	1	0,5	132	187	6,8
10.9.16/4	700	1.365	1.600	162	22	85	1	0,5	156	304	8,0
▸ 10.12.14/3	440	865	1.500	216	30	114	1	0,5	99	187	6,8
10.12.16/4	700	1.365	1.400	216	30	114	1	0,5	156	313	8,6
10.22.20/3	680	1.340	900	396	55	209	1	0,3	154	790	13,0

▸ Favored

DIMENSIONS



A1



SP

NSB

	ØE	ØE$_R$	H	L$_2$	ØP	K	N	Ød$_2$ max	L$_1$	Ød$_{SP}$ max	Ød$_1$	ØF	Skg
7.3.7/3	70	74	12,5	94	70	22,5	10	30	74	30	25	48	3×M8
▸ 7.3.9/3	90	94	12,5	104	56	27,5	15	36	74	40	45	70	3×M8
7.3.9/4	90	94	12,5	104	56	27,5	15	36	74	30	45	70	4×M8
7.3.9/5	90	95	12,5	104	56	27,5	15	36	74	35	45	71	5×M8
▸ 7.3.12/3	120	124	12,5	104	70	27,5	15	40	74	70	50	98	3×M8
7.3.12/4	120	124	12,5	104	70	27,5	15	40	74	55	50	98	4×M8
7.3.12/5	120	124	12,5	104	70	27,5	15	40	74	55	50	100	5×M8
▸ 7.7.9/3	90	94	12,5	104	56	27,5	15	36	74	40	45	70	3×M8
▸ 7.7.12/3	120	124	12,5	104	70	27,5	15	40	74	70	50	98	3×M8
7.7.12/4	120	124	12,5	104	70	27,5	15	40	74	55	50	98	4×M8
7.7.12/5	120	124	12,5	104	70	27,5	15	40	74	55	50	100	5×M8
▸ 7.12.12/3	120	124	12,5	104	70	27,5	15	40	74	70	50	98	3×M8
7.20.17/3	170	170	12,5	124	90	37,5	25	50	74	100	60	148	3×M8
▸ 10.5.10/3	100	100	17	143	53	38	21	36	101	40	40	70	3×M12
▸ 10.5.12/3	120	120	17	143	70	38	21	40	101	40	50	90	3×M12
10.5.12/4	120	120	17	143	70	38	21	40	101	60	50	90	4×M12
▸ 10.5.14/3	140	140	17	143	80	38	21	50	101	60	50	110	3×M12
10.5.14/4	140	140	17	143	80	38	21	50	101	60	50	110	4×M12
10.5.16/4	160	160	17	143	80	38	21	50	101	80	60	130	4×M12
▸ 10.9.12/3	120	120	17	143	70	38	21	40	101	40	50	90	3×M12
▸ 10.9.14/3	140	140	17	143	80	38	21	50	101	60	50	110	3×M12
10.9.14/4	140	140	17	143	80	38	21	50	101	80	50	110	4×M12
10.9.16/4	160	160	17	151	80	42	25	50	101	80	60	130	4×M12
▸ 10.12.14/3	140	140	17	143	80	38	21	50	101	60	50	110	3×M12
10.12.16/4	160	160	17	151	80	42	25	50	101	80	60	130	4×M12
10.22.20/3	200	200	17	151	80	42	25	50	101	125	80	170	3xM12

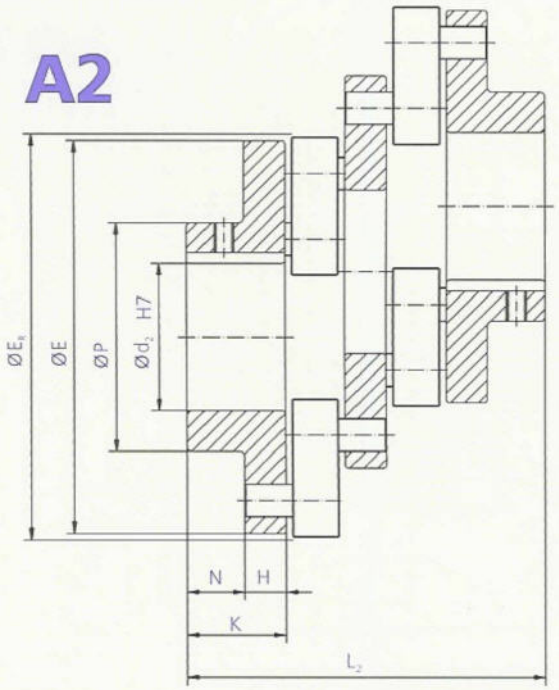
▸ Favored

PERFORMANCE

- High torque capacity
- Space saving
- Variable shaft displacement
- Constant velocity
- Absorbs radial vibration
- No side loads

- A2: standard hubs with keyway
- A1: for Flange Mounting
- SP: for Locking Assembly

- Order example:
  NFB 13.9.16/3 SPØ40 SPØ50

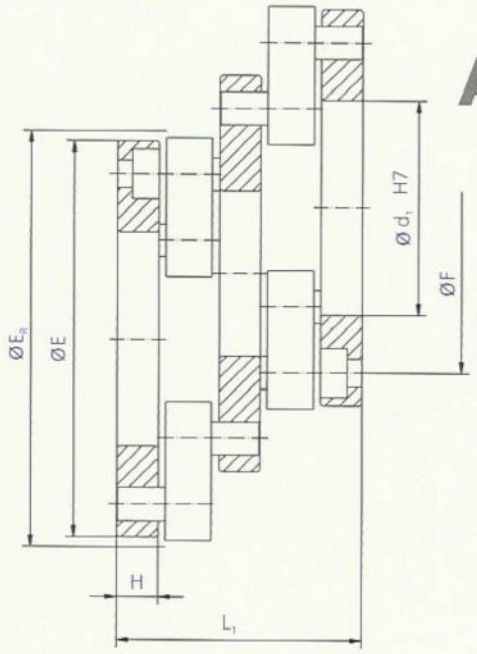


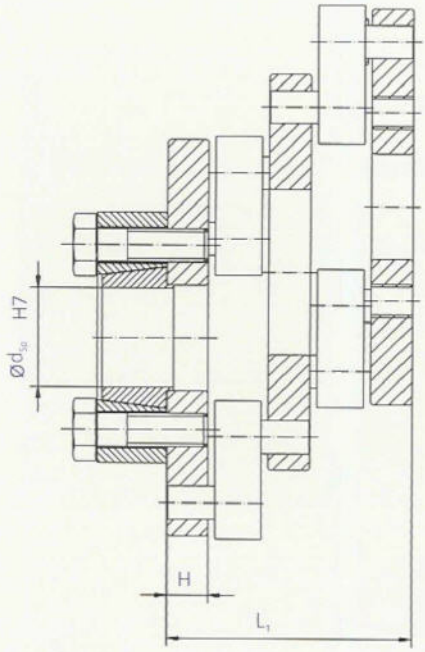
NSB

	T_{KN} Nm	$T_{K\,max}$ Nm	n_{max} 1/min	ΔK_V mm	$\Delta K_{r\,min}$ mm	ΔK_r mm	ΔK_a mm	ΔK_W °	C_T kNm/rad	J kg cm²	m kg
▶ 13.6.14/3	630	1.240	1.700	122	17	64	1	0,5	142	275	9,8
▶ 13.6.16/3	760	1.485	1.600	122	17	64	1	0,5	170	450	12,4
13.6.16/4	1.010	1.980	1.600	122	17	64	1	0,5	227	475	13
13.6.19/3	950	1.820	1.500	122	17	64	1	0,5	209	855	16,5
13.6.19/5	1.580	3.095	1.500	122	17	64	1	0,5	355	910	17,5
▶ 13.9.14/3	630	1.240	1.500	162	22	85	1	0,5	142	285	10
▶ 13.9.16/3	760	1.485	1.400	162	22	85	1	0,5	170	460	12,5
13.9.16/4	1.010	1.980	1.400	162	22	85	1	0,5	227	480	13,2
13.9.19/3	950	1.820	1.300	162	22	85	1	0,5	209	865	17
13.9.19/5	1.580	3.095	1.300	162	22	85	1	0,5	355	920	18
▶ 13.12.16/3	760	1.485	1.200	216	30	114	1	0,5	170	465	12,7
13.12.19/3	950	1.820	1.100	216	30	114	1	0,5	209	875	17
13.15.19/3	950	1.820	1.000	270	37	142	1	0,5	209	930	18
13.24.23/3	1.200	2.350	700	432	60	228	1	0,3	269	2.040	26
16.7.16/3	1.130	2.200	1.500	129	18	68	1	0,5	252	550	15
16.7.18/3	1.320	2.580	1.400	129	18	68	1	0,5	296	850	18
16.7.20/3	1.520	2.965	1.300	129	18	68	1	0,5	340	1.265	22
16.10.16/3	1.130	2.200	1.200	180	25	95	1	0,5	252	585	16
16.10.18/3	1.320	2.580	1.200	180	25	95	1	0,5	296	885	19
16.10.20/3	1.520	2.965	1.100	180	25	95	1	0,5	340	1.310	22,5
16.13.18/3	1.320	2.580	1.000	234	32	123	1	0,5	296	910	20
16.13.20/3	1.520	2.965	1.000	234	32	123	1	0,5	340	1.355	23
16.18.20/3	1.520	2.965	800	320	44	169	1	0,5	340	1.540	26
16.28.26/3	2.100	4.110	600	504	70	266	1	0,3	471	4.070	44

▶ Favored

DIMENSIONS





NSB

	ØE	ØE$_R$	H	L$_2$	ØP	K	N	Ød$_2$ max	L$_1$	Ød$_{SP}$ max	Ød$_1$	ØF	Skg	α, β
13.6.14/3	140	143	26	162	77	40	14	50	134	60	55	100	3×M16	
13.6.16/3	158	163	26	170	90	44	18	60	134	70	60	120	3×M16	
13.6.16/4	158	164	26	170	90	44	18	60	134	70	60	120	4×M16	
13.6.19/3	190	190	26	192	110	55	29	70	134	60	70	150	3×M16	
13.6.19/5	190	193	26	192	110	55	29	70	134	80	70	150	5×M16	
13.9.14/3	140	143	26	162	80	40	14	50	134	60	55	100	3×M16	
13.9.16/3	158	163	26	170	90	44	18	60	134	70	60	120	3×M16	
13.9.16/4	158	164	26	170	90	44	18	60	134	70	60	120	4×M16	
13.9.19/3	190	190	26	192	110	55	29	70	134	60	70	150	3×M16	
13.9.19/5	190	193	26	192	110	55	29	70	134	80	70	150	5×M16	
13.12.16/3	158	163	26	170	90	44	18	60	134	70	60	120	3×M16	
13.12.19/3	190	190	26	192	110	55	29	70	134	60	70	150	3×M16	
13.15.19/3	190	190	26	192	110	55	29	70	134	60	70	150	3×M16	
13.24.23/3	230	230	26	202	120	60	34	80	134	125	100	190	3×M16	
16.7.16/3	158	164	31	185	80	46	15	50	155	70	60	115	6×M16	32, 88
16.7.18/3	180	184	31	195	90	51	20	60	155	70	70	135	6×M16	30, 90
16.7.20/3	200	204	31	215	110	61	30	70	155	90	80	155	6×M16	30, 90
16.10.16/3	158	164	31	185	80	46	15	50	155	70	60	115	6×M16	32, 88
16.10.18/3	180	184	31	195	90	51	20	60	155	70	70	135	6×M16	30, 90
16.10.20/3	200	204	31	215	110	61	30	70	155	90	80	155	6×M16	30, 90
16.13.18/3	180	184	31	195	90	51	20	60	155	70	70	135	6×M16	30, 90
16.13.20/3	200	204	31	215	110	61	30	70	155	90	80	155	6×M16	30, 90
16.18.20/3	200	204	31	215	110	61	30	70	155	90	80	155	6×M16	30, 90
16.28.26/3	260	264	31	215	120	61	30	80	155	110	80	130	6×M16	30, 90

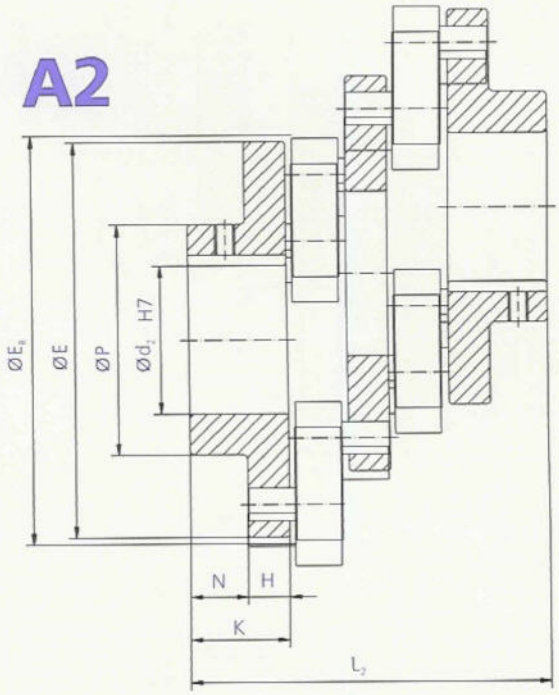
▸ Favored

PERFORMANCE

- Very high torque capacity
- Space saving
- Variable shaft displacement
- Constant velocity
- Absorbs radial vibration
- No side loads

- A2: standard hubs with keyway
- A1: for Flange Mounting
- SP: for Locking Assembly

- Order example:
  NFB 20.12.25/3 A1 A1

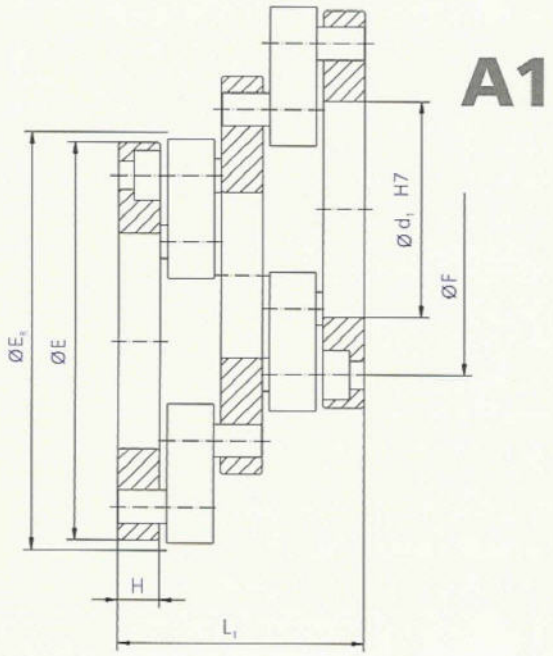


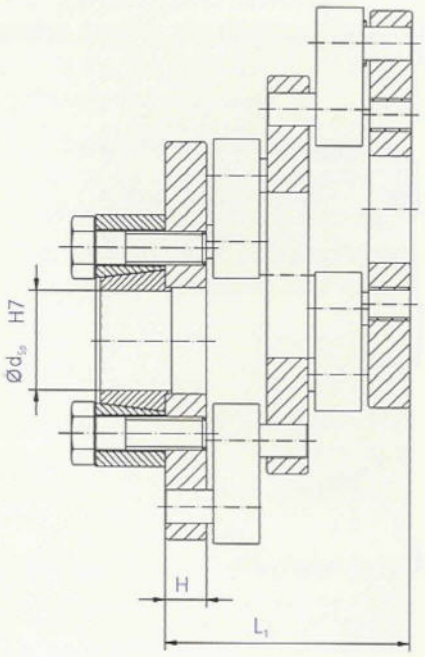
NSB

	T_{KN} Nm	$T_{K\,max}$ Nm	n_{max} 1/min	ΔK_V mm	$\Delta K_{r\,min}$ mm	ΔK_r mm	ΔK_a mm	ΔK_w °	C_T kNm/rad	J kg cm²	m kg
▶ 20.9.20/3	2.160	4.220	1.200	162	22	85	2	0,3	484	1.500	26
20.9.20/4	2.880	5.620	1.200	162	22	85	2	0,3	644	1.600	28
▶ 20.9.25/3	2.875	5.625	1.000	162	22	85	2	0,3	645	3.400	37
20.9.25/4	3.830	7.500	1.000	162	22	85	2	0,3	860	3.700	41
20.9.25/5	4.800	9.380	1.000	162	22	85	2	0,3	1.075	4.000	43
20.9.28/6	6.610	12.940	1.000	162	22	85	2	0,2	1.483	5.600	43
▶ 20.12.20/3	2.160	4.220	1.000	219	30	115	2	0,3	484	1.700	30
▶ 20.12.25/3	2.875	5.625	900	219	30	115	2	0,3	645	3.500	38
20.12.25/4	3.830	7.500	900	219	30	115	2	0,3	860	3.750	41
20.12.25/5	4.800	9.380	900	219	30	115	2	0,3	1.075	4.080	45
20.12.28/6	6.610	12.940	800	219	30	115	2	0,2	1.483	8.700	52
▶ 20.15.20/3	2.160	4.220	900	270	37	142	2	0,3	484	1.850	32
▶ 20.15.25/3	2.875	5.625	800	270	37	142	2	0,3	645	3.650	40
20.15.25/4	3.830	7.500	800	270	37	142	2	0,3	860	4.100	44
20.29.28/3	3.300	6.470	500	522	72	275	2	0,2	742	6.800	59

▶ Favored

DIMENSIONS





NSB

	ØE	ØE$_R$	H	L$_2$	ØP	K	N	Ød$_2$ max	L$_1$	Ød$_{SP}$ max	Ød$_1$	ØF	Skg	α, β
▸ 20.9.20/3	200	200	33	236	110	53	20	70	196	80	80	150	6×M20	30, 90
20.9.20/4	200	200	33	236	110	53	20	70	196	70	80	150	4×M20	90
▸ 20.9.25/3	250	250	33	266	120	68	35	80	196	110	100	200	6×M20	60
20.9.25/4	250	250	33	266	120	68	35	80	196	110	100	200	8×M20	30, 60
20.9.25/5	250	250	33	276	120	73	40	80	196	110	100	200	10×M20	22, 50
20.9.28/6	280	280	33	322	150	96	63	95	196	125	150	230	12×M20	18, 42
▸ 20.12.20/3	200	200	33	236	110	53	20	70	196	80	80	150	6×M20	30, 90
▸ 20.12.25/3	250	250	33	266	120	68	35	80	196	110	100	200	6×M20	60
20.12.25/4	250	250	33	266	120	68	35	80	196	110	100	200	8×M20	30, 60
20.12.25/5	250	250	33	276	120	73	40	80	196	110	100	200	10×M20	22, 50
20.12.28/6	280	280	33	322	150	96	63	95	196	125	150	230	12×M20	18, 42
▸ 20.15.20/3	200	200	33	236	110	53	20	70	196	80	80	150	6×M20	30, 90
▸ 20.15.25/3	250	250	33	266	120	68	35	80	196	110	100	200	6×M20	60
20.15.25/4	250	250	33	266	120	68	35	80	196	110	100	200	8×M20	30, 60
20.29.28/3	280	280	33	266	120	68	35	80	196	100	100	230	6×M20	60

▸ Favored

ORDERING PROCEDURE

1. Use the selection procedure to choose a coupling.
   Example: NSB 7.3.9/3
2. Specify bore size and hub design.

Hub Designs

A1: for Flange Mounting. Bolt size and bolt circle are found in the dimensions table.

A2: Standard Hub with keyway DIN 6885/1. Specify bore size. Note the maximum value in the dimension table $Ød_2$.
Example: A2Ø40N

SP: for Locking Assembly. Specify bore size. Note the maximum value in the dimension table $Ød_{SP}$.
Example: SPØ32

Examples

- NSB 7.7.12/3 A1 A1
- NSB 7.7.12/3 A1 A2Ø25N
- NSB 7.7.12/3 SPØ30 SPØ40

Service factors

Load	Service factor
uniform	1,0
light shocks	1,5
medium shocks	2,0
heavy shocks	2,5

If the standard couplings listed in the catalog do not meet your requirements, consult the factory. We will work with you to meet your needs.

Many factors influence a coupling's operating life. The influence of torque, RPM and misalignment are discussed in the following.

Torque

The maximum torque $T_{K\,max}$ should not be exceeded. The design torque is calculated as follows:

T_N × Performance Factor × Service factor

The torque carrying capacity decreases as coupling speed increases. For complex applications consult the factory.

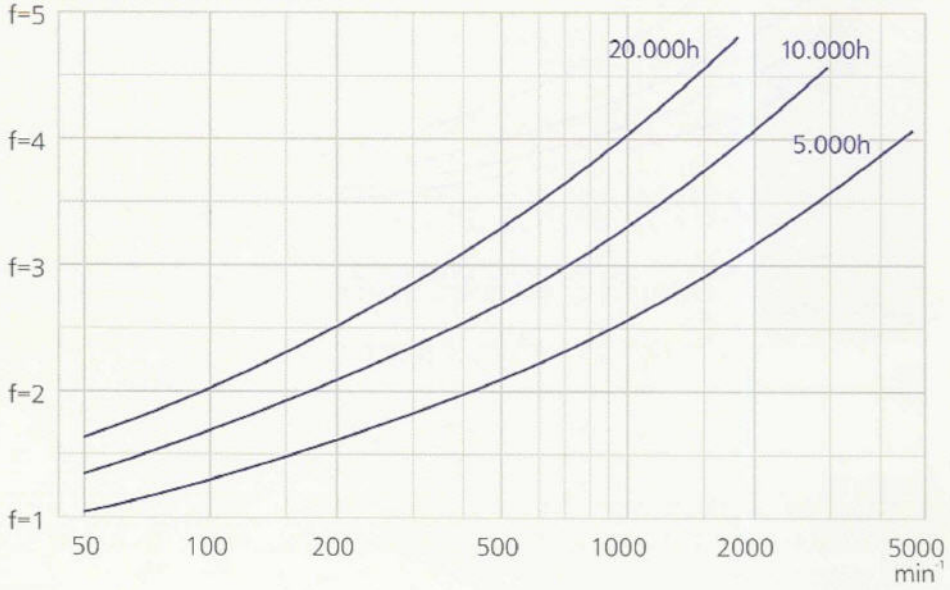
RPM

Due to the design of the Schmidt-Kupplung®, higher speeds lead to higher stress on the coupling. The maximum speed should not be exceeded.

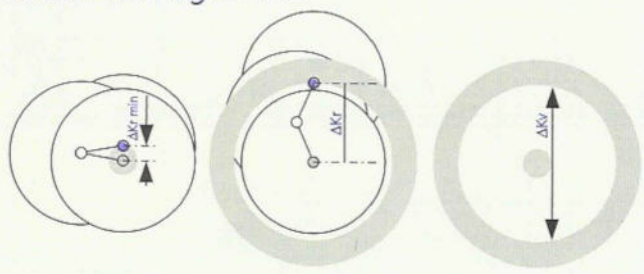
Angular misalignment

Angular misalignment has an effect on the operating life of the Schmidt-Kupplung®. The angular misalignment must always remain within the values given.

Performance factor



Radial misalignment



Minimum Coupling Radial Misalignment Capacity | Maximum Coupling Radial Misalignment Capacity | Maximum Coupling Linear Range

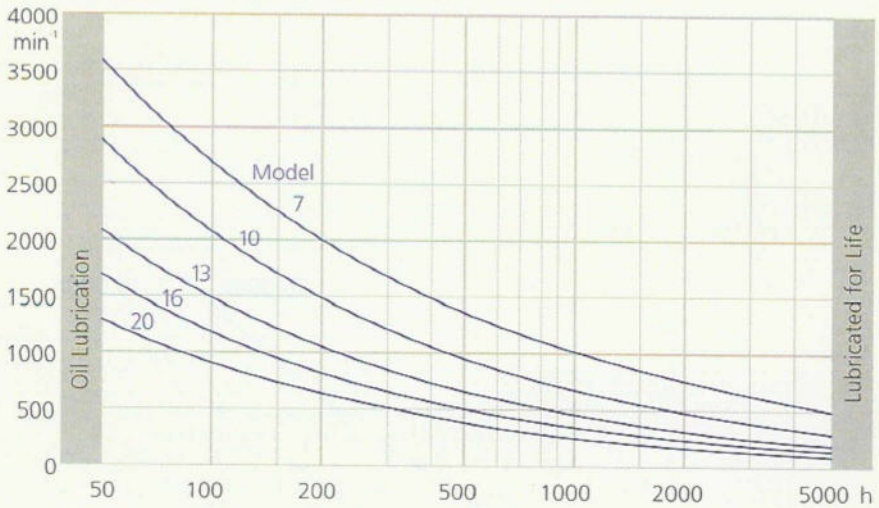
Page 5 provides more information

Radial shaft displacement has no direct effect on the operating life of the Schmidt-Kupplung®.
At no time should the drive shaft and the driven shaft be offset by more than ΔK_r or less than $\Delta K_{r\,min.}$
If the catalog values do not fit your application, consult the factory. We can design a coupling that will.

Axial misalignment

The axial space available for the Schmidt-Kupplung® must be at least the coupling length L. The capacity to compensate for thermal expansion and assembly tolerances is given by the value ΔK_a.
An operating length close to L is beneficial.
The Schmidt-Kupplung® is axially free. This can be used when an axial assembly is advantageous

Lubrication periods



Lubrication

The Schmidt-Kupplung®, except for size NSB 4, has a lubrication fitting for regreasing.

Adequate lubrication is required for full operating life. The Schmidt- Kupplung®, should be regreased exclusively with Klüber NBU12300KP. Mixing lubrication is not recommended and will reduce coupling operating life.

Environmental contamination can have a negative effect on the lubrication. Dirt, fibers and such should be kept away from the coupling. When necessary special seals are available.

The couplings are designed for operating temperatures of up to 120°C. For higher temperatures consult the factory, special seals and lubrication are necessary.

Copyrights

Caution

Failure, improper selection, or improper use of these products can cause malfunctions in connected equipment. Malfunctions in connected equipment can cause failure in these products.

Information in this catalog provides product options for further investigation by users having technical expertise. The user must analyze all aspects of the application and review the information regarding the product in the current product catalog. Due to the variety of applications for these products and the diversity of operating conditions that may prevail, the user, through its own analysis and testing, is solely responsible for making the final selection of these products and assuring that all performance, safety and warning requirements relevant to the application are met.

The specifications, availability and pricing of products described in this catalog are subject to change without notice.

PRODUCTS

PRODUCT LINES

CONTROLFLEX®

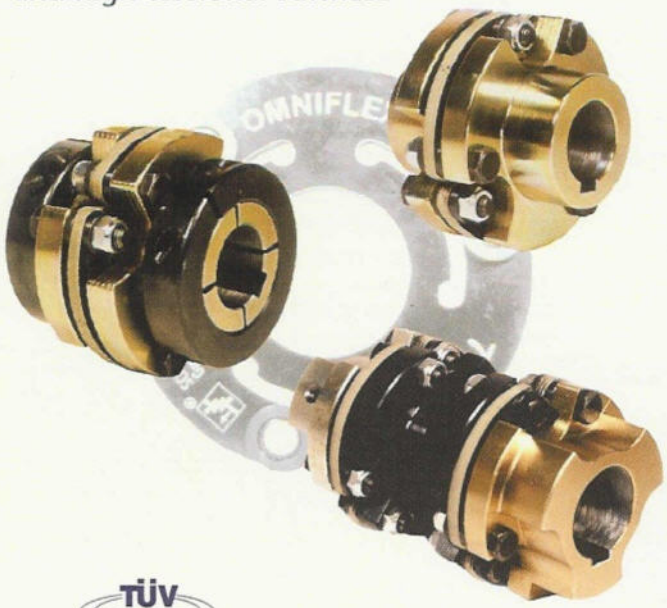
The ideal coupling
for shaft encoders

SEMIFLEX®

Compact design with high
misalignment capacity and
high torsional stiffness

OMNIFLEX® CD®

Composite-disc coupling
with high misalignment capacity
and high torsional stiffness



TÜV CERT
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