OK shaft couplings

Contents

The clever connection

When using OK couplings for shaft connections, you are gaining benefit from the advantages of our powerful oil injection method.

Preparation of the shaft is simple. There are no keyways to machine, no taper and no thrust ring.

When mounting OK coupling, a thin inner sleeve with a tapered outer diameter, slides onto the shaft. A thick outer sleeve with a matching tapered inner surface, fits onto the inner sleeve.

Ordinary mineral oil is then injected between the sleeves. A built-in hydraulic jack drives the outer sleeve up the taper of the inner sleeve.

When the outer sleeve has reached its final position, an interference fit is created just as if the outer sleeve had been heated and shrunk on. But no heat is required, and the coupling can be removed as easily as it was mounted.

This powerful use of friction enables the OK coupling to transmit torque and axial loads over the entire area of the shaft. There are no stress raisers at the keyway. And no fretting when high shock or reversing loads exist.

OK couplings explained

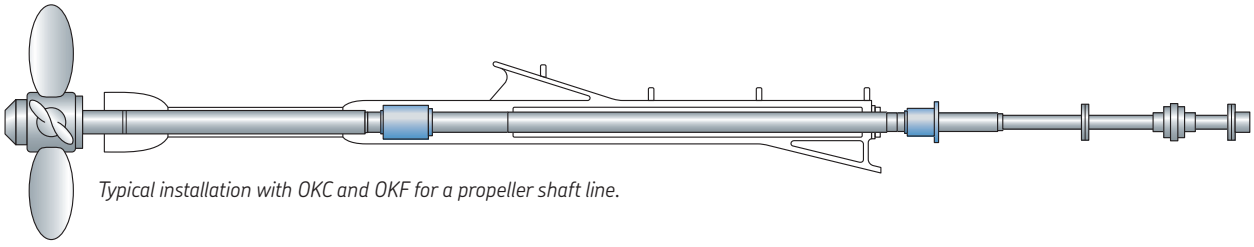
With the OKC and OKF couplings, SKF presents benefits impossible to achieve with traditional couplings. The simplicity of mounting and dismounting, and the high torque transmission capacity characterised by OK couplings, are achieved using a powerful friction joint. The six stages below illustrate this principle.

Up till 2016 more than 50 000 couplings have been delivered for use in many various applications.

The OKC coupling (see Fig.1, page 5) has been on the market since the early 1940s. OKC couplings are the standard for many well-known controllable pitch propeller manufacturers in the world, but are also used for other applications such as rolling mills, pumps, diesel engines, etc.

The OKF coupling (see Fig.2, page 5) was developed to create a simple connection between a cylindrical shaft and engines or gearboxes having a flange at the thrust shaft. The OKF coupling is available with or without a built-in tool for mounting / dismounting. Since the coupling is mounted on a cylindrical shaft and not fixed by keyways, it can easily be adjusted axially and rotated to the desired position.

The OK coupling's higher torque capacity is due to the entire contact surface transmitting torque, unlike that of conventional couplings. Since there is no need for keyways, the dimensions of the shafts and couplings can be reduced. The OK coupling ensures a simplified mounting and dismounting procedure. Very large couplings, which previously could only be shrunk on after heating, can now be assembled cold with the OK method.



Typical installation with OKC and OKF for a propeller shaft line.

Six steps for mounting and dismounting

1 The coupling is put into position. High pressure injectors are connected to A, and a low pressure injector is connected to the hydraulic chamber B.

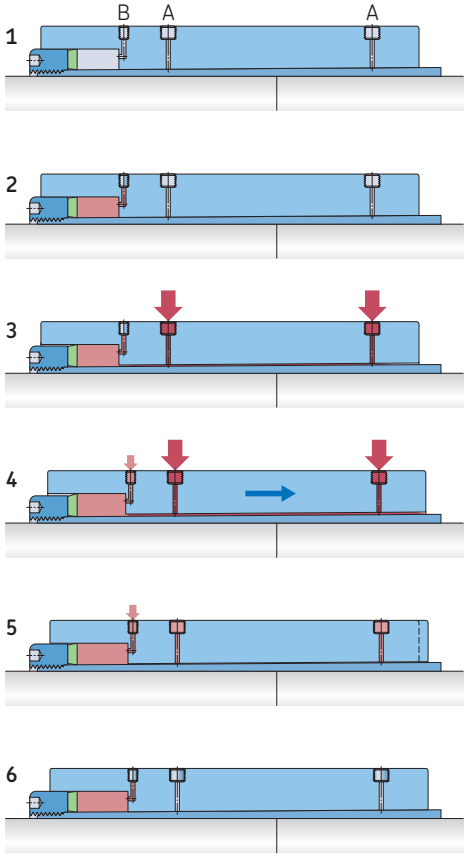
2 Oil is then pumped oil to the hydraulic chamber, until oil escapes at the open 1/4" hole (1/2" for larger couplings) without any air bubbles, and the hole is closed with a plug.

3 Oil is injected into A under high pressure, which builds up an oil film between the inner and outer sleeves, eliminating metallic contact and reducing friction forces.

4 When there is a good oil film between the sleeves, oil leaks out at the thick end of the inner sleeve. Oil is then pumped into B and the outer sleeve starts moving up the taper. Oil is continuously injected between the sleeves (A), in order to avoid metallic contact.

5 The coupling will reach its final position when the outer diameter of the coupling has grown by a predetermined value. The oil pump is stopped, but pressure in B must remain. Pressure in A is released.

6 When oil has drained from the contact surfaces of the two sleeves and friction has been restored, low pressure B is released. All oil connections are plugged. The exposed parts of the coupling should be covered with a rust preventive and then the coupling is ready for years of trouble-free operation.



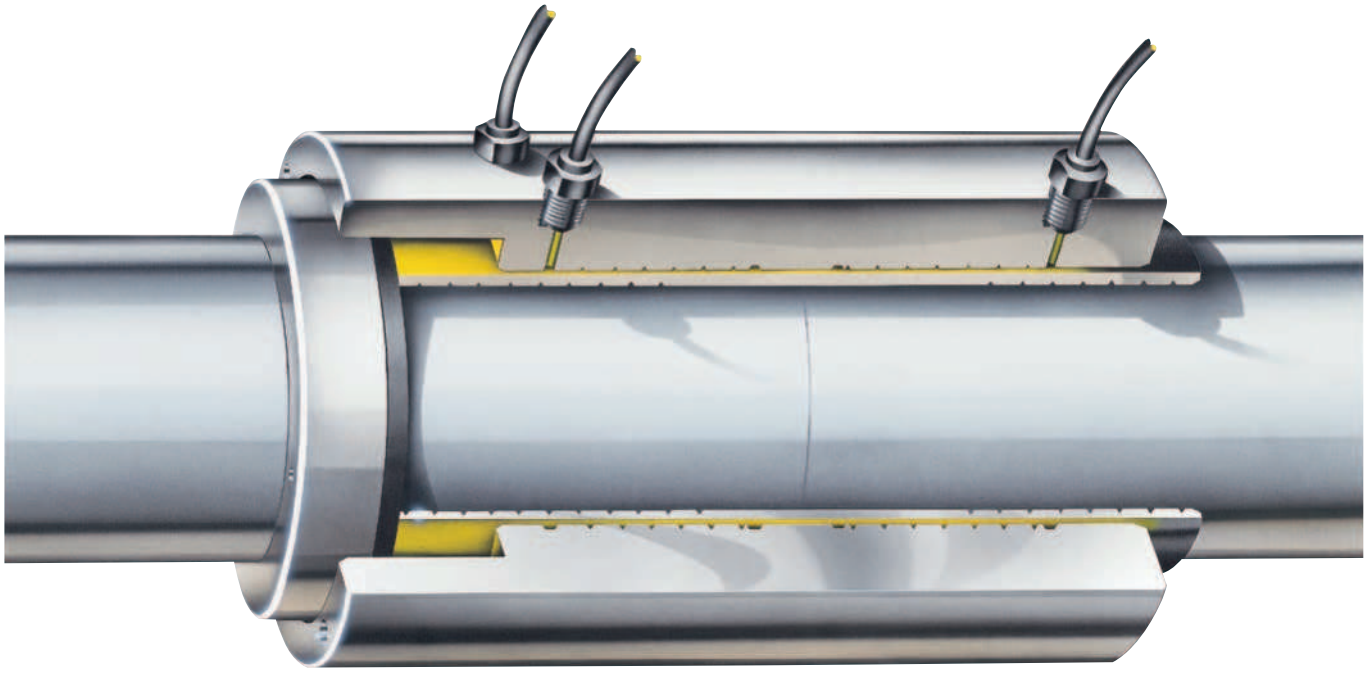


Fig. 1 Hydraulic Coupling – OKC

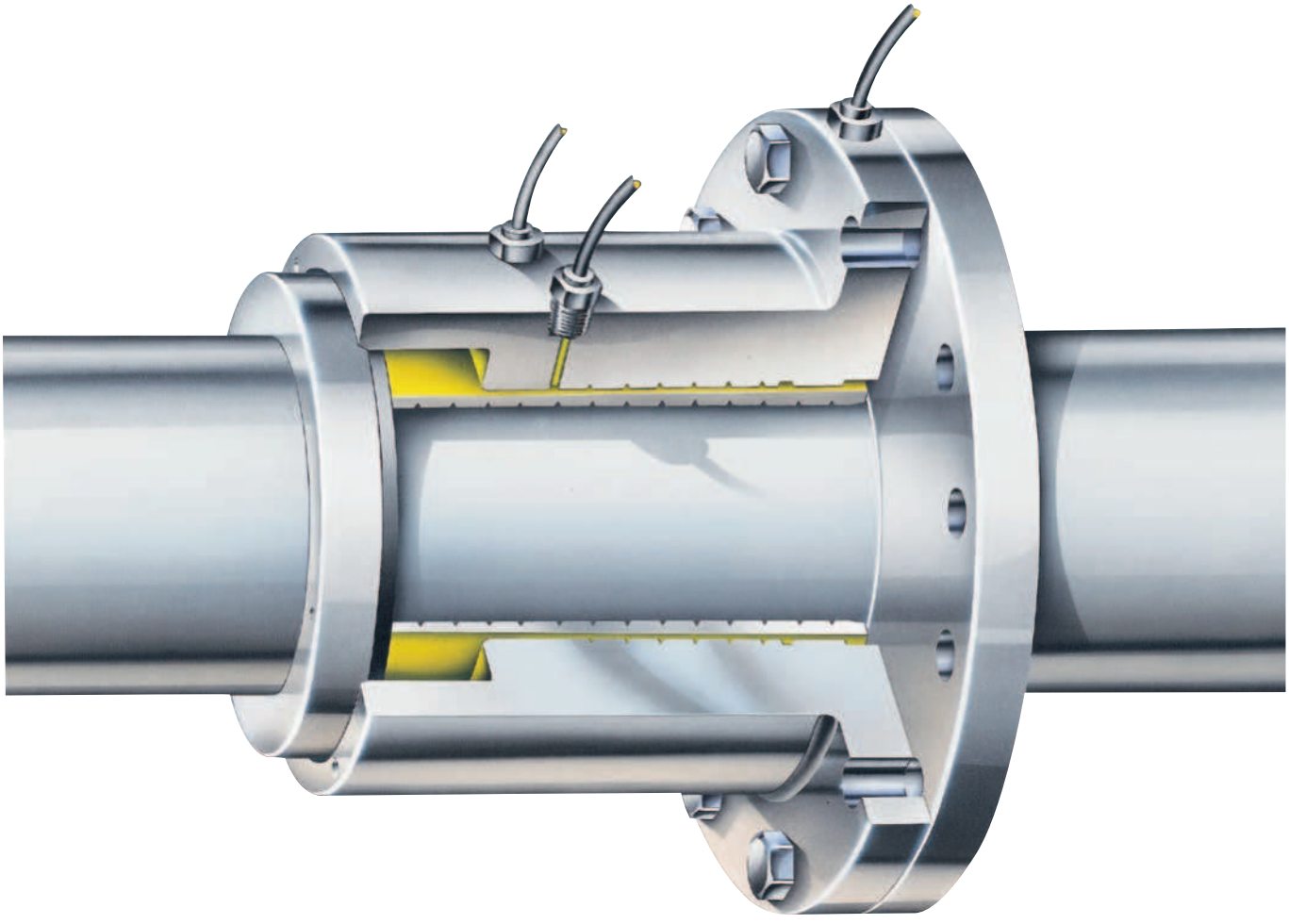


Fig. 2 Flange Coupling – OKF

OKCX and OKFX – friction-coated shaft couplings from SKF

The OKCX and OKFX are friction-coated couplings that facilitate the finding of new creative solutions for the shaft line, while taking full advantage of time-saving SKF oil injection technology in areas where previously this has not been possible.

The couplings are a milestone in the development of advanced technology, and have strengthened SKF Coupling Systems' position as the world leader in shaft connections based on the SKF oil injection method.

Thanks to the increased transmission capacity, it is possible to make substantial cost-savings in the shaft line using the OKCX or OKFX. Large flange couplings can be replaced. Costly reinforcement sleeves can be avoided. These are just two examples demonstrating that the OKCX and the OKFX are not merely clever connections with a quick payback.

The inner sleeve of each coupling is coated with carbides utilizing advanced plasma technology. This coating increases the friction considerably and gives the OKCX and OKFX couplings a number of advantages over other current techniques.

Increased torque capacity means safer connections

Since the torque capacity is some 50% higher, these new couplings can withstand heavy shock forces and fast rotation switches. It is therefore possible to take advantage of the time-saving, oil injection method in transmissions where previously it was difficult, for instance, in large heavily loaded shafts.

A compact coupling that optimizes shaft design

OKCX and OKFX are strong couplings transferring higher torque, which makes it possible to optimize the design of shaft lines. The shaft diameter can be reduced and the coupling diameter can also be reduced and its length shortened.

Reduced coupling pressure creates opportunities for innovative solutions

Since the friction is higher, the surface pressure of the coupling can be reduced. This is particularly valuable when hollow shafts are connected. And because reinforcement sleeves are therefore not necessary, this can result in significant cost and production savings.

- 50% higher torque capacity
- Less weight
- Smaller dimensions
- Less shaft pressure
- Savings in shaft design and preparation
- Savings in cost of mounting and dismounting
- Savings in shorter downtimes
- Savings in ease of maintenance

Exchange connections in FPP shaft lines

Thanks to increased torque transmission capacity, the OKCX coupling creates new opportunities to replace troublesome flange couplings in FPP shaft lines.

The OKCX coupling enables cost-savings in shaft preparation, mounting and dismounting of couplings and, while cutting on docking time.

- No bolts and flanges
- Straight shafts
- Simpler installation procedures
- Shorter periodic maintenance

With the OKCX coupling, you can replace flange couplings, saving time and money.

Major cost savings in CPP shaft lines

The OKCX shaft coupling is designed to reduce contact pressure, eliminating the need for costly reinforcement sleeves in hollow shafts.

Compared with a standard coupling, the OKCX coupling can transmit a higher torque but with a slimmer design, offering the added benefits of reduced weight and enabling space savings.

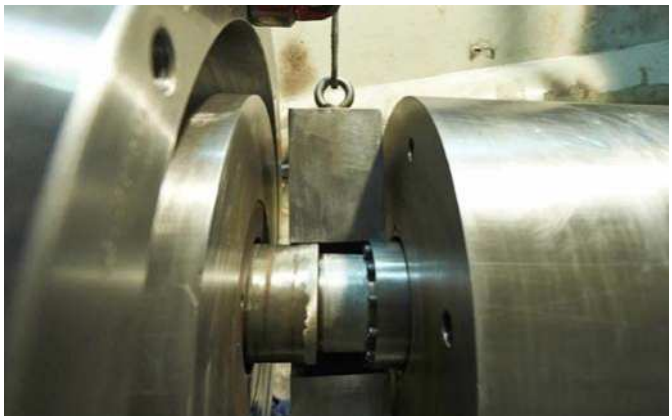
- No cost for reinforcement sleeves
- No cost for preparation of sleeves
- No cost for installation of sleeves
- No cost for final machining of coupling seatings

With the OKCX coupling, you avoid reinforcement sleeves and make major cost savings in the shaft line.

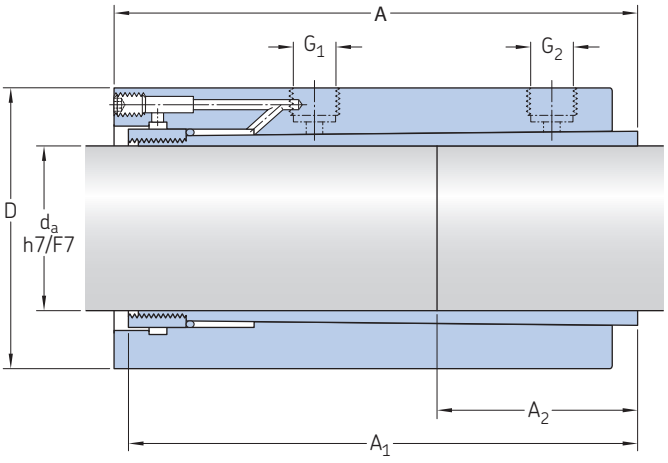
More than 50 000 connections

OK couplings are used whenever you need to transmit high torque - on land and at sea. They create opportunities to save money and increase operational time, thanks to reduced mounting and dismounting times as compared with conventional couplings. And with OK couplings, shaft design can also be simplified and the shaft diameter reduced.

It is easy to see why more than 50 000 shafts all over the world have been connected with OK couplings.

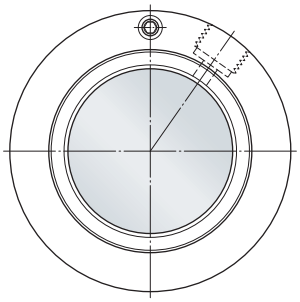


OKC 045 – 090



BSP 1/4" = G 1/4
BSP 3/4" = G 3/4

Couplings in sizes OKC 70 – OKC 90 are provided with an extra injection hole G2.

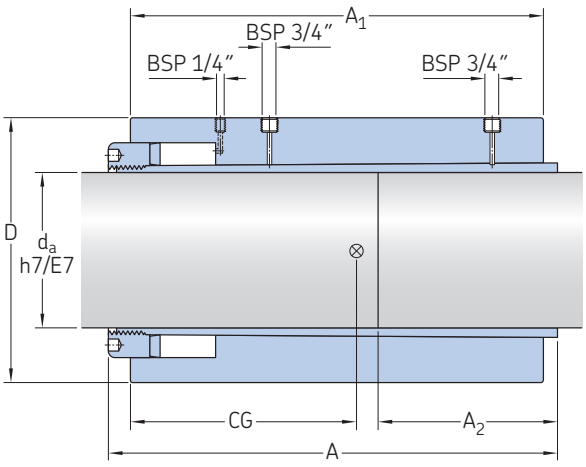


Dimensions								Mass		Designation[1]
d_a	D	A	A_1	A_2	Δ[2]	G1	G2		$M_{t\ max.}$[3]	
mm								kg	kNm	–
45	80	125	113	45	0,085	1/4"	–	3,1	2,06	**OKC 045**
50	85	135	123	49,5	0,10	1/4"	–	3,7	2,95	**OKC 050**
55	92	146	134	54,5	0,11	1/4"	–	4,7	3,90	**OKC 055**
60	100	155	144	58,5	0,12	1/4"	–	5,8	4,90	**OKC 060**
65	108	168	156	64,5	0,13	1/4"	–	7,3	6,50	**OKC 065**
70	115	176	165	68	0,135	1/4"	1/4"	8,6	8,00	**OKC 070**
75	120	189	178	73,5	0,15	1/4"	1/4"	9,8	10,00	**OKC 075**
80	130	203	192	80	0,16	3/4"	1/4"	12,6	12,30	**OKC 080**
85	138	210	199	83	0,165	3/4"	1/4"	14,5	14,50	**OKC 085**
90	145	222	212	88,5	0,17	3/4"	1/4"	18,1	16,90	**OKC 090**

[1] Couplings for shafts of intermediate diameters are, for instance, designated OKC 58.
[2] Increase of outer diameter, D, after mounting.
[3] The safety factor referred to on page 23 must be applied to obtain the permissible torque.

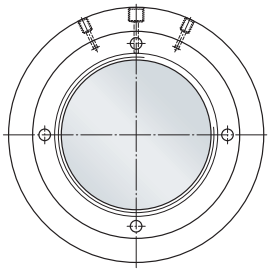
NOTES: Required free length on one shaft for installation A+75 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKC 100 – 190



BSP 1/4" = G 1/4
BSP 3/4" = G 3/4

Couplings in sizes OKC 180 – OKC 190 are provided with two injection holes

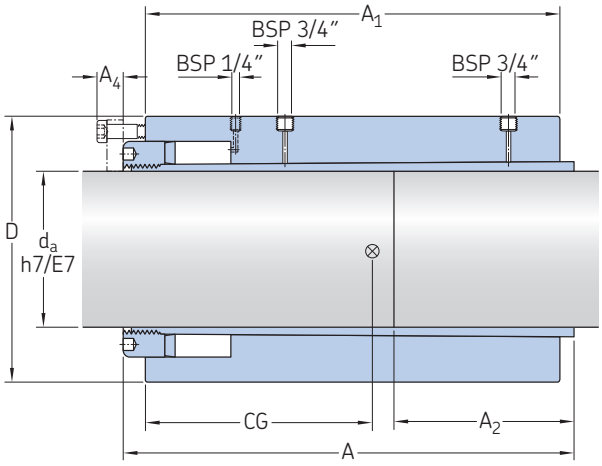


Dimensions							Mass	Mass of moment of inertia		Designation[1]
d_a	D	A	A_1	A_2	Δ[2]	CG[3]			M_t max.[4]	
mm							kg	kgm^2	kNm	–
100	170	275	260	108	0,16	135	30	0,14	26,0	**OKC 100**
110	185	296	280	118	0,17	144,5	38	0,2	34,6	**OKC 110**
120	200	322	300	130	0,18	154	48	0,3	44,9	**OKC 120**
130	215	344	325	140	0,21	167,5	58	0,45	57,1	**OKC 130**
140	230	373	350	150	0,23	180	71	0,63	71,3	**OKC 140**
150	250	396	370	162	0,23	190	91	0,94	87,7	**OKC 150**
160	260	420	395	172	0,27	203	101	1,2	107	**OKC 160**
170	280	442	415	182	0,27	213	125	1,6	128	**OKC 170**
180	300	475	445	195	0,28	229	155	2,3	152	**OKC 180**
190	310	505	475	205	0,31	244,5	175	2,8	179	**OKC 190**

1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 58.
2) Increase of outer diameter, D, after mounting.
3) CG = Center of gravity.
4) The safety factor referred to on page 23 must be applied to obtain the permissible torque.

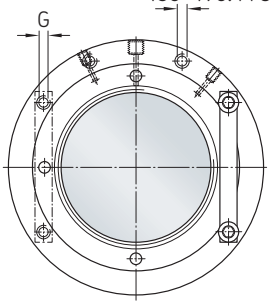
NOTES: Required free length on one shaft for installation A+75 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKC 200 – 400



Couplings OKC 300 – OKC 490 have threaded holes for lifting at both ends.

Thread OKC 300–380: M 20x2,5
390–440: M 24x3
450–490: M 30x3,5



BSP 1/4" = G 1/4
BSP 3/4" = G 3/4

Dimensions									Mass	Mass of moment of inertia		Designation[1]
d_a	D	A	A_1	A_2	A_4	Δ[2]	GC[3]	G			M_t max.[4]	
mm									kg	kgm²	kNm	–
200	330	525	500	215	30	0,31	256,5	M12-(4x)	215	3,8	208	**OKC 200**
210	340	550	520	225	30	0,35	266,5	M12-(4x)	230	4,5	241	**OKC 210**
220	360	575	540	235	30	0,35	276	M12-(4x)	265	5,9	277	**OKC 220**
230	370	600	565	250	30	0,38	291	M12-(4x)	285	6,7	317	**OKC 230**
240	380	620	585	260	30	0,38	300	M12-(4x)	330	8,7	360	**OKC 240**
250	400	645	610	270	30	0,41	314	M12-(4x)	350	9,9	407	**OKC250**
260	420	670	635	280	30	0,42	327	M12-(4x)	410	12,6	457	**OKC 260**
270	440	690	655	290	30	0,42	337,5	M12-(4x)	470	15,8	512	**OKC 270**
280	450	715	680	300	30	0,46	350,5	M12-(4x)	510	17,8	571	**OKC 280**
290	470	740	700	315	30	0,46	361	M12-(4x)	580	21,9	634	**OKC 290**
300	480	773	730	325	27	0,50	374,5	M16-(4x)	625	24,7	702	**OKC 300**
310	500	793	750	335	27	0,50	384,5	M16-(4x)	700	30,0	775	**OKC 310**
320	520	818	770	345	27	0,50	394	M16-(4x)	790	36,3	852	**OKC 320**
330	530	843	795	355	27	0,54	407,5	M16-(4x)	830	40,1	935	**OKC 330**
340	550	863	815	365	27	0,54	417,5	M16-(4x)	930	48,0	1 020	**OKC 340**
350	560	888	840	375	27	0,57	430,1	M16-(4x)	980	52,8	1 120	**OKC 350**
360	580	908	860	385	27	0,58	441,5	M16-(4x)	1 080	62,0	1 220	**OKC 360**
370	600	928	880	395	27	0,58	451,5	M16-(4x)	1 190	73,4	1 320	**OKC 370**
380	610	958	905	410	27	0,61	465	M16-(4x)	1 250	80,0	1 430	**OKC 380**
390	630	983	925	420	27	0,62	474,5	M16-(4x)	1 370	93,7	1 550	**OKC 390**
400	640	1 003	950	430	27	0,65	488	M16-(4x)	1 440	101,6	1 670	**OKC 400**

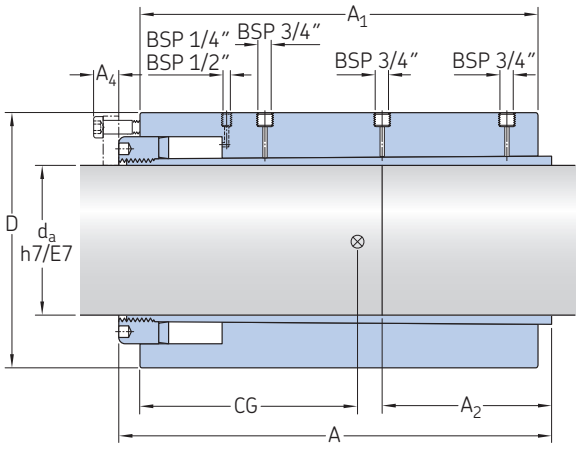
1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 58.
2) Increase of outer diameter, D, after mounting.
3) CG = Center of gravity.
4) The safety factor referred to on page 23 must be applied to obtain the permissible torque.

NOTES: Required free length on one shaft for installation A+75 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKC 410 – 490

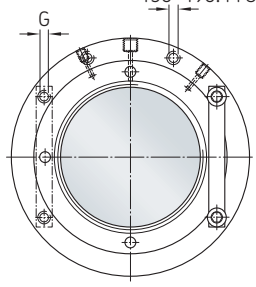
Dimensions									Mass	Mass of moment of inertia		Designation[1]
d_a	D	A	A_1	A_2	A_4	Δ[2]	GC[3]	G			M_t max.[4]	
mm									kg	kgm²	kNm	–
410	660	1 028	975	440	27	0,66	501,5	M16-(4x)	1 580	118,4	1 800	**OKC 410**
420	680	1 053	995	450	27	0,67	511	M16-(4x)	1 730	137	1 930	**OKC 420**
430	690	1 073	1 015	460	27	0,69	521	M16-(4x)	1 800	147,2	2 070	**OKC 430**
440	710	1 098	1 040	470	27	0,69	534,5	M16-(4x)	1 960	169,5	2 220	**OKC 440**
450	720	1 123	1 065	485	27	0,74	548,5	M16-(4x)	2 050	182,4	2 370	**OKC 450**
460	740	1 148	1 085	495	27	0,74	558	M16-(4x)	2 200	208,3	2 530	**OKC 460**
470	750	1 170	1 110	505	27	0,77	570	M16-(4x)	2 290	224,2	2 700	**OKC 470**
480	760	1 195	1 135	515	27	0,80	582,5	M16-(4x)	2 360	240	2 880	**OKC 480**
490	780	1 215	1 155	525	27	0,81	591,5	M16-(4x)	2 530	273	3 060	**OKC 490**

OKC 500 – 520



Couplings OKC 300 – OKC 490 have threaded holes for lifting at both ends.

Thread OKC
300–380: M 20x2,5
390–440: M 24x3
450–490: M 30x3,5



BSP 1/4" = G 1/4
BSP 3/4" = G 3/4

Dimensions									Mass	Mass of moment of inertia		Designation [1]
d_a	D	A	A_1	A_2	A_4	Δ[2]	CG[3]	G			M_t max.[4]	
mm									kg	kgm²	kNm	–
500	790	1 240	1 175	535	42	0,84	600,5	M20-(4x)	2 610	291	26,0	**OKC 500**
510	810	1 265	1 200	545	42	0,86	613,5	M20-(4x)	2 820	330	34,6	**OKC 510**
520	830	1 290	1 225	560	42	0,86	627,5	M20-(4x)	3 060	372,2	44,9	**OKC 520**

1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 58.
2) Increase of outer diameter, D, after mounting.
3) CG = Center of gravity.
4) The safety factor referred to on page 23 must be applied to obtain the permissible torque.

NOTES: Required free length on one shaft for installation A+75 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

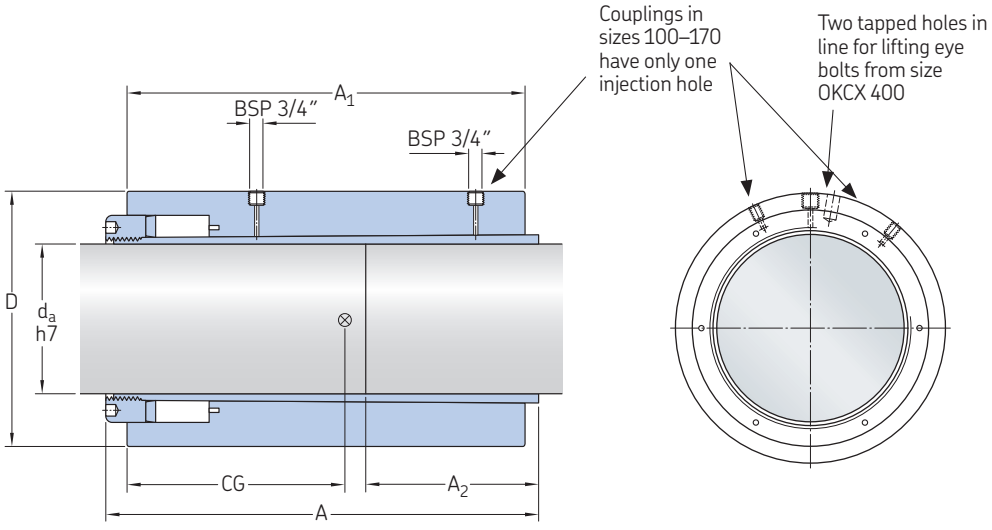
OKC 530 – 1000

Dimensions									Mass	Mass of moment of inertia		Designation[1]
d_a	D	A	A_1	A_2	A_4	Δ[2]	CG[3]	G			M_t max.[4]	
mm									kg	kgm²	kNm	–
530	840	1 315	1 250	570	42	0,89	641	M20-(4x)	3 140	396	3 870	**OKC 530**
540	860	1 340	1 275	580	42	0,89	648,5	M20-(4x)	3 400	445	4 100	**OKC 540**
550	870	1 360	1 295	590	42	0,93	658,5	M20-(4x)	3 520	471	4 330	**OKC 550**
560	890	1 385	1 315	600	42	0,93	669,5	M20-(4x)	3 760	487	4 570	**OKC 560**
570	900	1 405	1 335	610	42	0,97	683,5	M20-(4x)	3 840	556	4 820	**OKC 570**
580	920	1 425	1 360	620	42	0,96	693	M20-(4x)	4 150	619	5 080	**OKC 580**
590	930	1 455	1 385	635	42	0,99	712	M20-(4x)	4 270	653,3	5 340	**OKC 590**
600	940	1 480	1 410	645	42	1,02	719,5	M20-(4x)	4 400	692	5 620	**OKC 600**
610	960	1 500	1 430	655	42	1,03	734	M20-(4x)	4 680	761	5 900	**OKC 610**
620	970	1 525	1 455	665	42	1,06	749	M20-(4x)	4 840	808	6 200	**OKC 620**
630	990	1 545	1 475	675	42	1,06	752	M20-(4x)	5 140	894	6 500	**OKC 630**
640	1 010	1 570	1 495	685	42	1,07	767,8	M20-(4x)	5 460	985,2	6 820	**OKC 640**
650	1 020	1 595	1 520	695	42	1,10	781	M20-(4x)	5 620	1 037	7 140	**OKC 650**
660	1 040	1 625	1 545	710	42	1,11	791,5	M20-(4x)	5 940	1 137	7 480	**OKC 660**
670	1 050	1 650	1 575	720	42	1,14	811,5	M20-(4x)	6 150	1 202,5	7 820	**OKC 670**
680	1 070	1 670	1 590	730	42	1,14	817	M20-(4x)	6 480	1 317	8 180	**OKC 680**
690	1 080	1 695	1 615	740	42	1,18	831	M20-(4x)	6 670	1 380,3	8 540	**OKC 690**
700	1 090	1 720	1 640	750	42	1,21	845	M20-(4x)	6 830	1 445,9	8 920	**OKC 700**
710	1 100	1 745	1 665	760	42	1,24	5)	M20-(4x)	7 010	6)	9 310	**OKC 710**
720	1 120	1 765	1 680	770	42	1,25	5)	M20-(4x)	7 390	6)	9 700	**OKC 720**
730	1 130	1 790	1 700	785	42	1,28	5)	M20-(4x)	7 550	6)	10 100	**OKC 730**
740	1 150	1 815	1 730	795	42	1,28	5)	M20-(4x)	7 990	6)	10 600	**OKC 740**
750	1 160	1 835	1 750	805	42	1,32	5)	M20-(4x)	8 180	6)	11 000	**OKC 750**
760	1 180	1 860	1 770	815	42	1,32	5)	M20-(4x)	8 660	6)	11 400	**OKC 760**
770	1 190	1 886	1 795	825	42	1,36	5)	M20-(4x)	8 860	6)	11 800	**OKC 770**
780	1 210	1 910	1 815	835	42	1,36	5)	M20-(4x)	9 330	6)	12 300	**OKC 780**
790	1 220	1 930	1 840	845	42	1,39	5)	M20-(4x)	9 530	6)	12 800	**OKC 790**
800	1 240	1 960	1 865	860	42	1,39	5)	M20-(4x)	10 170	6)	13 300	**OKC 800**
820	1 260	2 015	1 920	880	42	1,47	5)	M20-(4x)	10 520	6)	14 300	**OKC 820**
840	1 300	2 055	1 960	900	42	1,47	5)	M20-(4x)	11 560	6)	15 400	**OKC 840**
860	1 330	2 105	2 005	920	42	1,51	5)	M20-(4x)	12 370	6)	16 500	**OKC 860**
880	1 360	2 155	2 055	945	42	1,54	5)	M20-(4x)	13 230	6)	17 700	**OKC 880**
900	1 390	2 200	2 100	965	42	1,58	5)	M20-(4x)	14 020	6)	18 900	**OKC 900**
920	1 430	2 245	2 145	985	42	1,59	5)	M20-(4x)	15 290	6)	20 200	**OKC 920**
940	1 460	2 295	2 190	1 010	42	1,62	5)	M20-(4x)	16 270	6)	21 600	**OKC 940**
960	1 490	2 340	2 235	1 030	42	1,66	5)	M20-(4x)	17 270	6)	23 000	**OKC 960**
980	1 520	2 385	2 280	1 050	42	1,69	5)	M20-(4x)	18 310	6)	24 400	**OKC 980**
1 000	1 550	2 430	2 325	1 070	42	1,73	5)	M20-(4x)	19 390	6)	26 000	**OKC 1000**

1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 58.
2) Increase of outer diameter, D, after mounting.
3) CG = Center of gravity.
4) The safety factor referred to on page 23 must be applied to obtain the permissible torque.
5) Specific CG for every coupling
6) Specific for every coupling

NOTES: Required free length on one shaft for installation A+100 mm
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKCX 100 – 210



d_a	D	A	A_1	A_2	Δ[2]	CG[3]	Mass	Mass moment of inertia	M_t max.[4]	Designation[1]
mm							kg	kgm^2	kNm	–
100	185	369	357	165	0,11	185	51	0,3	33	**OKCX 100**
110	195	370	358	165	0,12	186	55	0,	44	**OKCX 110**
120	205	373	360	165	0,14	187	59	0,4	56	**OKCX 120**
130	220	404	391	180	0,15	203	73	0,6	72	**OKCX 130**
140	230	412	393	181	0,17	203	79	0,7	89	**OKCX 140**
150	240	426	407	186	0,21	210	85	0,9	110	**OKCX 150**
160	250	438	418	190	0,23	216	92	1,0	133	**OKCX 160**
170	260	450	430	196	0,26	222	100	1,2	160	**OKCX 170**
180	270	462	441	200	0,28	227	107	1,4	189	**OKCX 180**
190	285	509	483	220	0,29	247	131	1,9	223	**OKCX 190**
200	300	522	500	226	0,31	257	150	2,4	260	**OKCX 200**
210	310	539	511	235	0,34	263	160	2,8	301	**OKCX 210**

1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 58.
2) Increase of outer diameter, D, after mounting.
3) CG = Center of gravity.
4) The safety factor referred to on page 23 must be applied to obtain the permissible torque.

NOTES: Required free length on one shaft for installation A+75 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

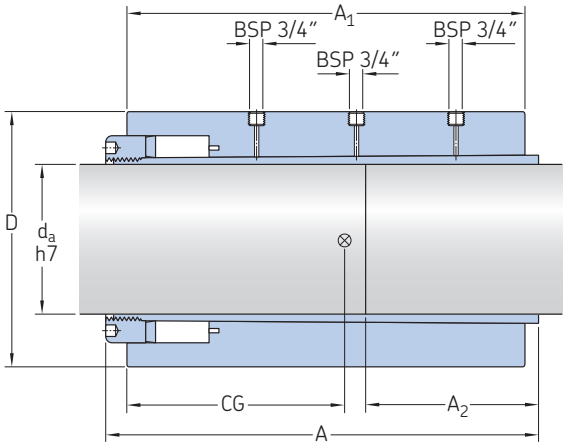
OKCX 220 – 490

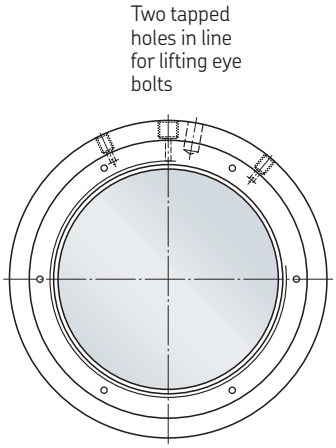
d_a	D	A	A_1	A_2	Δ[2]	CG[3]	Mass	Mass moment of intertia	M_t max.[4]	Designation[1]
mm							kg	kgm^2	kNm	–
220	320	552	523	240	0,37	269	170	3,2	346	**OKCX 220**
230	335	564	535	245	0,38	276	191	3,9	395	**OKCX 230**
240	345	587	557	256	0,41	287	206	4,5	448	**OKCX 240**
250	355	599	569	261	0,44	294	218	5,1	507	**OKCX 250**
260	365	634	602	276	0,47	310	238	6,0	570	**OKCX 260**
270	380	654	622	285	0,48	320	268	7,3	638	**OKCX 270**
280	390	667	634	290	0,51	326	282	8,1	712	**OKCX 280**
290	400	679	646	295	0,55	333	296	9,0	791	**OKCX 290**
300	425	701	665	306	0,51	341	364	12,3	875	**OKCX 300**
310	435	720	683	315	0,55	353	383	13,6	966	**OKCX 310**
320	445	764	726	336	0,57	375	419	15,7	1 070	**OKCX 320**
330	460	775	737	341	0,59	381	456	18,2	1 170	**OKCX 330**
340	470	788	749	346	0,62	387	475	19,9	1 280	**OKCX 340**
350	480	801	761	351	0,66	393	495	21,8	1 390	**OKCX 350**
360	495	822	782	361	0,67	404	543	25,4	1 520	**OKCX 360**
370	505	835	794	365	0,71	410	564	27,6	1 650	**OKCX 370**
380	515	857	816	376	0,73	422	593	30,3	1 780	**OKCX 380**
390	530	869	827	380	0,75	428	641	34,6	1 930	**OKCX 390**
400	540	893	850	391	0,80	438	675	38,1	2 080	**OKCX 400**
410	550	933	889	411	0,84	461	720	42,3	2 240	**OKCX 410**
420	565	944	900	416	0,85	467	773	47,8	2 410	**OKCX 420**
430	575	967	922	426	0,88	478	809	52,1	2 580	**OKCX 430**
440	585	990	944	436	0,92	489	845	56,5	2 770	**OKCX 440**
450	600	1 001	955	441	0,93	495	905	63,5	2 960	**OKCX 450**
460	610	1 015	968	446	0,98	502	935	68,1	3 160	**OKCX 460**
470	620	1 037	990	456	1,01	514	974	73,6	3 370	**OKCX 470**
480	635	1 051	1 001	460	1,03	518	1 042	82,4	3 590	**OKCX 480**
490	645	1074	1 023	470	1,07	529	1 084	88,8	3 820	**OKCX 490**

[1] Couplings for shafts of intermediate diameters are, for instance, designated OKCX 100.
[2] Increase of outer diameter, D, after mounting.
[3] CG = Center of gravity.
[4] The safety factor referred to on page 23 must be applied to obtain the permissible torque.

NOTES: Required free length on one shaft for installation A+75 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKCX 500 – 690



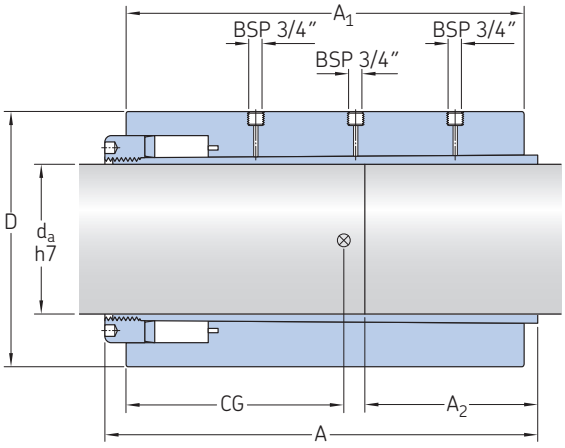


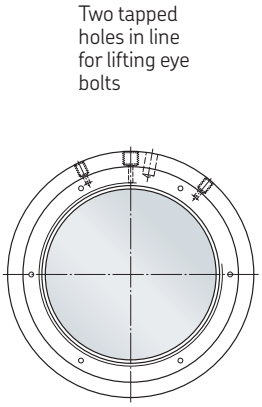
d_a	D	A	A_1	A_2	Δ[2]	CG[3]	Mass	Mass moment of inertia	M_t max.[4]	Designation[1]
mm							kg	kgm^2	kNm	–
500	665	1 083	1 032	475	1,04	534	1 195	103,2	4 060	**OKCX 500**
510	680	1 122	1 064	496	1,04	551	1 298	117,1	4 300	**OKCX 510**
520	690	1 144	1 086	506	1,07	562	1 347	125,5	4 560	**OKCX 520**
530	700	1 157	1 098	475	1,12	568	1 385	133,2	4 830	**OKCX 530**
540	710	1 179	1 120	496	1,15	580	1 436	142,5	5 110	**OKCX 540**
550	725	1 191	1 131	506	1,17	585	1 521	157,2	5 400	**OKCX 550**
560	735	1 213	1 153	535	1,20	597	1 575	167,8	5 700	**OKCX 560**
570	750	1 226	1 165	541	1,22	604	1 667	184,6	6 010	**OKCX 570**
580	760	1 248	1 187	550	1,25	615	1 724	196,6	6 330	**OKCX 580**
590	770	1 262	1 200	556	1,30	622	1 769	207,7	6 660	**OKCX 590**
600	785	1 283	1 220	556	1,29	631	1 886	229,7	7 000	**OKCX 600**
610	795	1 311	1 242	581	1,33	643	1 950	244,3	7 360	**OKCX 610**
620	810	1 322	1 253	585	1,35	649	2 065	266,9	7 730	**OKCX 620**
630	820	1 345	1 275	595	1,39	660	2 121	283,0	8 110	**OKCX 630**
640	835	1 388	1 317	615	1,39	681	2 288	315,9	8 500	**OKCX 640**
650	845	1 411	1 339	625	1,42	693	2 358	334,4	8 900	**OKCX 650**
660	855	1 418	1 342	625	1,48	693	2 398	349,0	9 320	**OKCX 660**
670	870	1 439	1 363	636	1,52	704	2 538	381,7	9 750	**OKCX 670**
680	880	1 462	1 385	645	1,53	716	2 613	403,1	10 200	**OKCX 680**
690	895	1 481	1 404	656	656	725	2 758	439,4	10 700	**OKCX 690**

[1] Couplings for shafts of intermediate diameters are, for instance, designated OKCX 100.
[2] Increase of outer diameter, D, after mounting.
[3] CG = Center of gravity.
[4] The safety factor referred to on page 23 must be applied to obtain the permissible torque.

NOTES: Required free length on one shaft for installation A+100 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKCX 700 – 900



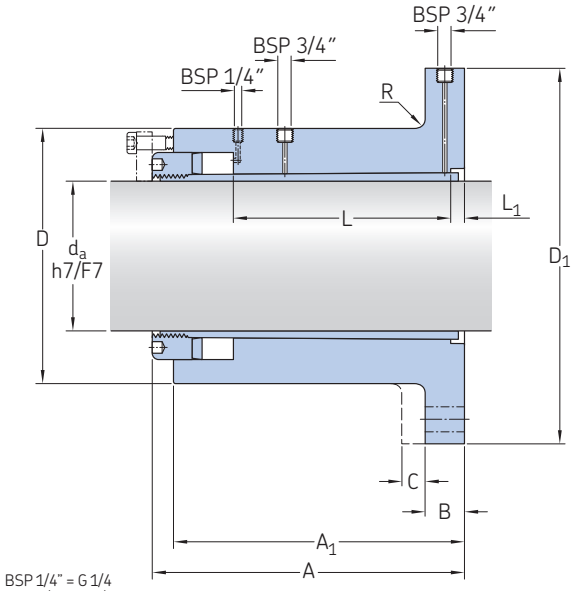


d_a	D	A	A_1	A_2	Δ[2]	CG[3]	Mass	Mass moment of inertia	M_t max.[4]	Designation[1]
mm							kg	kgm^2	kNm	–
700	905	1 506	1 428	665	1,58	738	2 838	463,4	11 200	**OKCX 700**
710	920	1 512	1 434	670	1,57	743	2 960	498,8	11 600	**OKCX 710**
720	935	1 525	1 446	676	1,59	750	3 101	539,9	12 100	**OKCX 720**
730	945	1 548	1 468	685	1,63	761	3 188	567,2	12 610	**OKCX 730**
740	960	1 569	1 489	695	1,64	772	3 356	615,2	13 200	**OKCX 740**
750	970	1 583	1 502	701	1,68	779	3 425	642,4	13 700	**OKCX 750**
760	985	1 604	1 523	711	1,69	790	3 602	695,6	14 300	**OKCX 760**
770	995	1 617	1 535	716	1,73	796	3 671	725,1	14 800	**OKCX 770**
780	1 005	1 640	1 557	725	1,77	807	3 768	760,8	15 380	**OKCX 780**
790	1 020	1 651	1 568	730	1,78	813	3 929	816,0	15 980	**OKCX 790**
800	1 035	1 672	1 588	740	1,78	822	4 128	881,5	16 600	**OKCX 800**
810	1 045	1 722	1 632	766	1,81	846	4 293	936,4	17 300	**OKCX 810**
820	1 060	1 733	1 642	770	1,82	851	4 470	1 001,7	17 900	**OKCX 820**
830	1 070	1 746	1 655	776	1,86	858	4 551	1 041,3	18 530	**OKCX 830**
840	1 085	1 767	1 675	785	1,87	868	4 765	1 119,3	19 210	**OKCX 840**
850	1 095	1 782	1 688	790	1,92	874	4 853	1 163,4	19 900	**OKCX 850**
860	1 110	1 814	1 718	805	1,92	889	5 109	1 256,7	20 700	**OKCX 860**
870	1 120	1 828	1 731	811	1,96	896	5 198	1 304,3	21 400	**OKCX 870**
880	1 130	1 842	1 744	816	2,01	903	5 289	1 353,5	22 100	**OKCX 880**
890	1 145	1 862	1 764	825	2,02	913	5 525	1 449,4	22 850	**OKCX 890**
900	1 160	1 874	1 775	831	2,02	918	5 743	1 544,4	23 630	**OKCX 900**

1) Couplings for shafts of intermediate diameters are, for instance, designated OKCX 100.
2) Increase of outer diameter, D, after mounting.
3) CG = Center of gravity.
4) The safety factor referred to on page 23 must be applied to obtain the permissible torque.

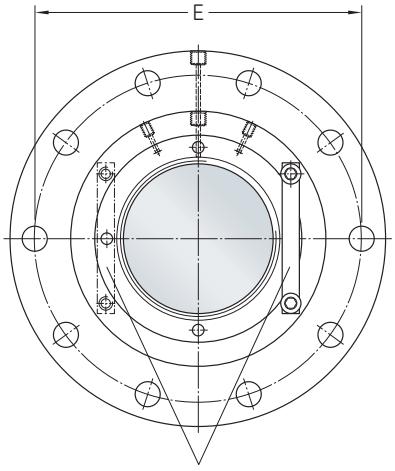
NOTES: Required free length on one shaft for installation A+100 mm.
All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKF 100 – 300



BSP 1/4" = G 1/4
BSP 3/4" = G 3/4

The pitch circle is evaluated from:
E = D1 – (1.6 x bolt diameter)



Lock levels from size OKF 300

Suitable Supergrip bolt size	Dimensions										Mass		Designation[1]
	d_a	D	D_1	A	A_1	B	R	L	L_1	C		M_t max.[2]	
	mm										kg	kNm	–
	100	165	235	191	188	40	8	120	15	17,5	25	26,0	**OKF 100**
	110	175	260	210	197	40	9	135	15	18,5	29	34,6	**OKF 110**
	120	195	285	220	206	40	10	145	15	19,0	39	44,9	**OKF 120**
	130	205	305	244	230	40	10	165	15	21,5	46	57,1	**OKF 130**
	140	225	325	255	235	40	11	170	15	22,0	56	71,3	**OKF 140**
	150	240	345	266	246	40	12	180	15	23,0	66	87,7	**OKF 150**
	160	255	365	278	257	40	13	195	15	24,5	77	107	**OKF 160**
	170	265	390	295	274	40	14	205	15	26,0	87	128	**OKF 170**
	180	290	415	310	288	40	14	215	15	26,5	108	152	**OKF 180**
	190	295	435	338	311	40	15	230	18	29,5	118	179	**OKF 190**
	200	315	455	348	320	40	16	240	18	30,0	138	208	**OKF 200**
	210	325	475	362	338	42	17	250	18	31,5	153	241	**OKF 210**
	220	345	495	378	353	44	18	265	18	31,5	180	277	**OKF 220**
	230	350	500	390	365	46	18	275	18	34,5	184	317	**OKF 230**
	240	370	525	402	376	48	19	285	18	34,5	216	360	**OKF 240**
OKBS 40	250	380	555	418	392	50	20	300	18	36,0	238	407	**OKF 250**
	260	400	575	436	408	52	21	310	22	38,0	275	457	**OKF 260**
	270	420	595	452	424	54	22	325	22	38,0	316	512	**OKF 270**
	280	430	605	464	435	56	22	335	22	40,0	335	571	**OKF 280**
	290	445	620	476	447	58	23	345	22	41,5	364	634	**OKF 290**
	300	460	635	498	463	60	24	360	22	42,0	399	702	**OKF 300**

[1] Couplings for shafts of intermediate diameters are, for instance, designated OKF 100.
[2] The safety factor referred to on page 23 must be applied to obtain the permissible torque.

All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

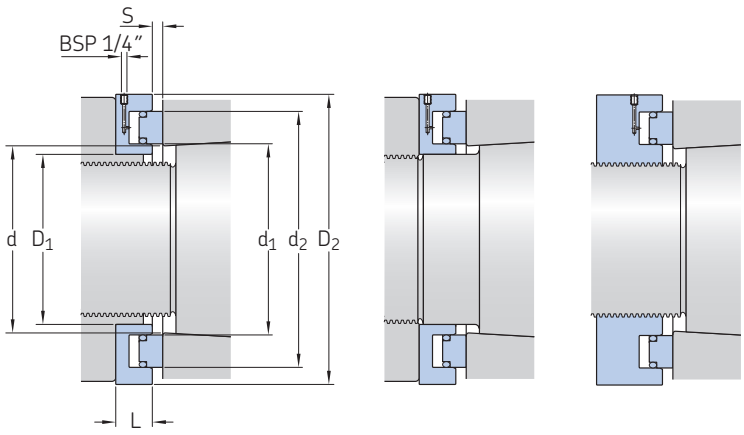
OKF 310 – 700

Suitable Supergrip bolt size	Dimensions										Mass		Designation[1]
	d_a	D	D_1	A	A_1	B	R	L	L_1	C		M_t max.[2]	
	mm										kg	kNm	–
OKBS 50	310	475	675	510	479	62	25	370	22	43,5	451	775	**OKF 310**
	320	495	695	526	494	64	26	380	25	44,5	508	852	**OKF 320**
	330	505	705	544	512	66	26	395	25	46,5	537	935	**OKF 330**
	340	525	730	555	522	68	27	405	25	47,0	599	1 020	**OKF 340**
	350	530	735	572	538	70	28	420	25	49,0	615	1 120	**OKF 350**
	360	550	760	584	550	72	29	430	25	50,0	680	1 220	**OKF 360**
OKBS 60	370	570	810	595	560	74	30	440	25	50,5	770	1 320	**OKF 370**
	380	580	820	612	577	76	30	455	25	51,5	805	1 430	**OKF 380**
	390	600	840	624	588	78	31	465	25	52,5	885	1 550	**OKF 390**
	400	610	855	648	611	80	32	480	25	54,0	930	1 670	**OKF 400**
	410	630	875	660	627	82	33	490	30	55,5	1 030	1 800	**OKF 410**
	420	640	890	672	639	84	34	500	30	57,5	1 070	1 930	**OKF 420**
OKBS 70	430	655	935	688	654	86	34	515	30	58,0	1 170	2 070	**OKF 430**
	440	675	855	700	665	88	35	525	30	58,5	1 270	2 220	**OKF 440**
	450	685	970	716	681	90	36	540	30	60,5	1 330	2 370	**OKF 450**
	460	700	985	728	692	92	37	550	30	61,5	1 410	2 530	**OKF 460**
	470	715	1 000	740	703	94	38	560	30	62,5	1 480	2 700	**OKF 470**
	480	720	1 005	758	717	96	38	570	30	65,0	1 510	2 880	**OKF 480**
	490	740	1 030	770	728	98	39	580	30	66,0	1 630	3 060	**OKF 490**
	500	750	1 040	790	748	100	40	600	30	67,0	1 700	3 250	**OKF 500**
OKBS 80	510	770	1 090	810	766	102	41	610	35	69,5	1 870	3 450	**OKF 510**
	520	790	1 115	820	776	104	42	620	35	70,0	2 020	3 660	**OKF 520**
	530	800	1 125	834	789	106	42	630	35	72,0	2 080	3 870	**OKF 530**
	540	815	1 145	845	800	108	43	640	35	73,5	2 190	4 100	**OKF 540**
	550	825	1 155	868	822	110	44	660	35	74,5	2 270	4 330	**OKF 550**
	560	845	1 175	878	832	112	45	670	35	75,0	2 420	4 570	**OKF 560**
	570	855	1 190	890	843	114	46	680	35	77,0	2 510	4 820	**OKF 570**
OKBS 90	580	875	1 235	900	853	116	46	690	35	77,0	2 710	5 080	**OKF 580**
	590	885	1 245	914	866	118	47	700	35	79,0	2 780	5 340	**OKF 590**
	600	895	1 260	926	877	120	48	710	35	81,0	2 860	5 620	**OKF 600**
	610	910	1275	938	888	122	49	720	35	82,0	2 880	5 900	**OKF 610**
	620	920	1 290	950	900	124	50	730	35	84,0	3 070	6 200	**OKF 620**
	630	940	1 310	962	911	126	50	740	35	84,5	3 230	6 500	**OKF 630**
	640	960	1 330	990	938	128	51	760	40	85,5	3 510	6 820	**OKF 640**
	650	970	1 345	1 004	951	130	52	770	40	87,5	3 600	7 140	**OKF 650**
OKBS 100	660	990	1 395	1 018	961	132	53	780	40	88,0	3 750	7 480	**OKF 660**
	670	995	1 410	1 030	973	134	54	790	40	91,0	3 930	7 820	**OKF 670**
	680	1 015	1 420	1 042	984	136	54	800	40	91,5	4 130	8 180	**OKF 680**
	690	1 025	1 435	1 054	996	138	55	810	40	93,5	4 230	8 540	**OKF 690**
	700	1 035	1 445	1 068	1 009	140	56	820	40	96,0	4 330	8 920	**OKF 700**

[1] Couplings for shafts of intermediate diameters are, for instance, designated OKF 100.
[2] The safety factor referred to on page 23 must be applied to obtain the permissible torque.

All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

OKTC 245 – 790



Dimensions d	D_1	d_1	d_2	D_2	L	S_{max}	Max. force	Mass	Designation
mm							kN (at 70 MPa)	kg	–
260–275	245	275	340	390	55	15	2 195	31	**OKTC 245**
275–295	265	295	365	415	55	15	2 540	35	**OKTC 265**
295–315	285	315	385	435	55	15	2 690	37	**OKTC 285**
315–335	305	335	415	465	55	15	3 295	42	**OKTC 305**
335–365	325	365	445	510	70	20	3 560	66	**OKTC 325**
365–385	345	385	470	535	70	20	3 995	72	**OKTC 345**
385–405	365	405	495	560	70	20	4 450	77	**OKTC 365**
405–425	385	425	520	585	70	20	4 935	84	**OKTC 385**
425–445	405	445	545	610	70	20	5 440	90	**OKTC 405**
445–465	425	465	570	635	70	20	5 975	96	**OKTC 425**
465–485	445	485	595	660	70	20	6 530	103	**OKTC 445**
485–505	465	505	620	685	70	20	7 110	110	**OKTC 465**
505–525	485	525	645	710	70	20	7 715	116	**OKTC 485**
525–545	505	545	670	735	70	20	8 350	123	**OKTC 505**
545–565	525	565	695	760	70	20	9 005	130	**OKTC 525**
565–595	545	595	725	805	90	25	9 430	195	**OKTC 545**
595–615	565	615	750	830	90	25	10 130	205	**OKTC 565**
615–635	585	635	775	855	90	25	10 850	216	**OKTC 585**
635–655	605	655	800	880	90	25	11 595	226	**OKTC 605**
655–675	625	675	825	905	90	25	12 370	238	**OKTC 625**
675–695	645	695	860	940	90	25	14 105	260	**OKTC 645**
695–720	670	720	885	965	90	25	14 560	267	**OKTC 670**
720–740	690	740	915	995	90	25	15 920	285	**OKTC 690**
740–770	720	770	955	1 050	100	30	17 545	360	**OKTC 720**
770–800	750	800	985	1 080	100	30	18 155	372	**OKTC 750**
800–820	770	820	1 010	1 105	100	30	19 115	387	**OKTC 770**
820–840	790	840	1 035	1 130	100	30	20 100	402	**OKTC 790**

This list is designed as a guide. If the ring you require is not listed, please contact your closest distributor, and we will design a ring for you on receipt of the following information:

1 Dimensions of propeller boss.
2 Maximum power, kW.
3 Speed, r/min.
4 Safety factor.
5 Modulus of elasticity for boss and shaft respectively, N/mm^2.
6 Temperature coefficient of linear expansion for boss and shaft respectively.
7 Yield point for shaft and boss, N/mm^2.

If drive-up force and drive-up length are being calculated by the customer, that information together with the propeller shaft thread and the small inner diameter of the propeller boss only are required. All couplings are customized, based on the individual requirements. Use the checklist for obtaining a specific offer, see page 21.

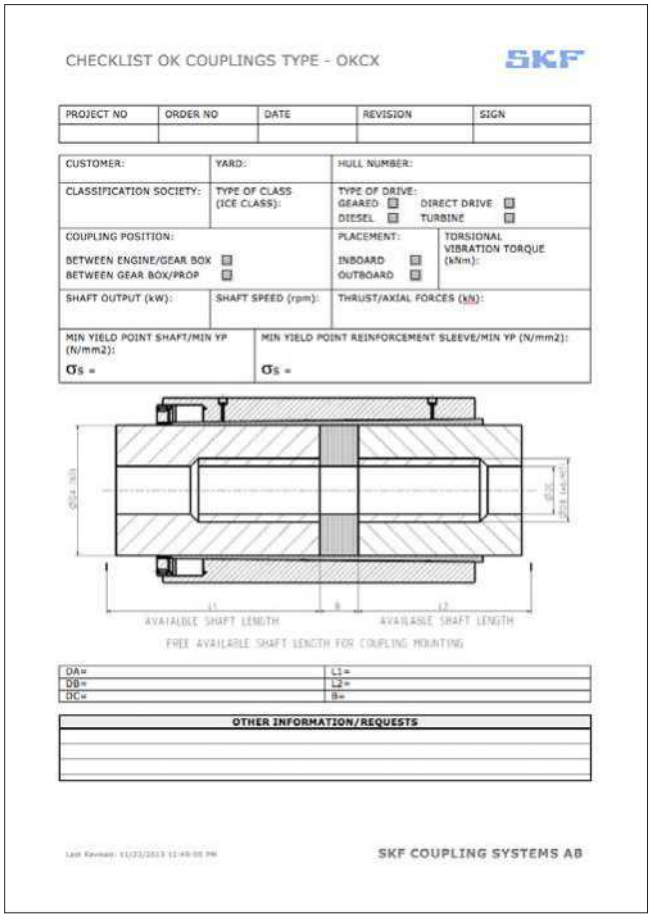
Your individual offer

All OK couplings and SKF Supergrip Bolts are tailor-made to the customer's individual design requirements. Furthermore, production is project based, which means that every project is assigned its own project number that is stored in the database.

To obtain an individual offer, the following information is required.

1. To design an OK coupling:
- Power [kW]
- Shaft speed [rpm]
- Shaft material and diameter
- Thrust/axial thrust [kN]
- Torsional vibration torque [kNm]
- Classification society
- Type of drive
- Placement

2. To design an SKF Supergrip Bolt:
- Number of bolts
- Engine output [kW]
- Shaft speed [rpm]
- Design of bolt/sleeve
- Flange dimensional measurements



CHECKLIST OK COUPLINGS TYPE - OKCX

SKF

PROJECT NO	ORDER NO	DATE	REVISION	SIGN

CUSTOMER:	YARD:	HULL NUMBER:
CLASSIFICATION SOCIETY:	TYPE OF CLASS (ICE CLASS):	TYPE OF DRIVE: GEARED ☐ DIRECT DRIVE ☐ DIESEL ☐ TURBINE ☐
COUPLING POSITION: BETWEEN ENGINE/GEAR BOX ☐ BETWEEN GEAR BOX/PROP ☐		PLACEMENT: INBOARD ☐ OUTBOARD ☐ / TORSIONAL VIBRATION TORQUE (kNm):
SHAFT OUTPUT (kW):	SHAFT SPEED (rpm):	THRUST/AXIAL FORCES (kN):
MIN YIELD POINT SHAFT/MIN YP (N/mm2): σs =	MIN YIELD POINT REINFORCEMENT SLEEVE/MIN YP (N/mm2): σs =	

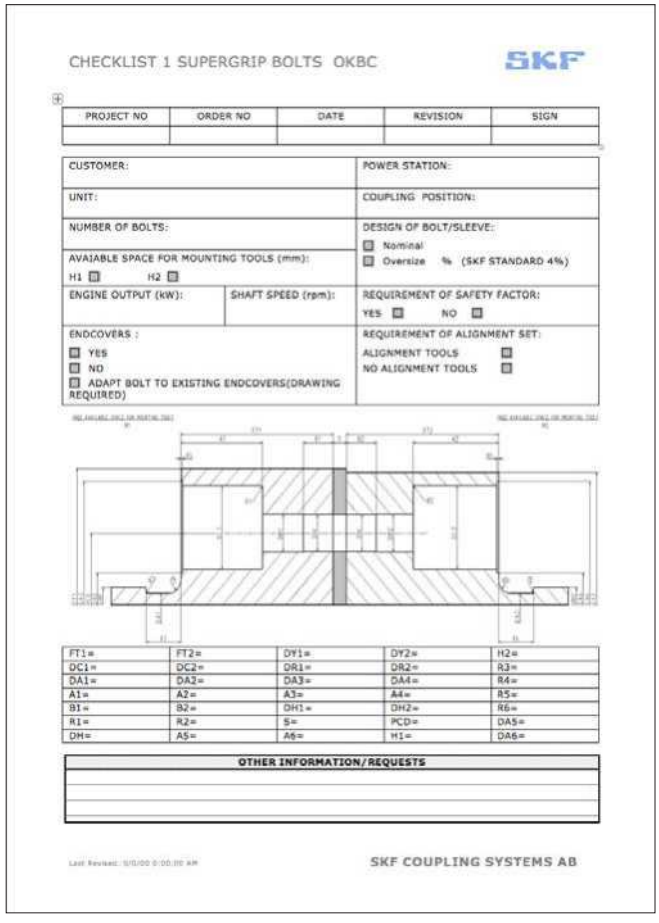
AVAILABLE SHAFT LENGTH — AVAILABLE SHAFT LENGTH

FREE AVAILABLE SHAFT LENGTH FOR COUPLING MOUNTING

DA=	L1=
DB=	L2=
DC=	B=

OTHER INFORMATION/REQUESTS

SKF COUPLING SYSTEMS AB



CHECKLIST 1 SUPERGRIP BOLTS OKBC

SKF

PROJECT NO	ORDER NO	DATE	REVISION	SIGN

CUSTOMER:	POWER STATION:
UNIT:	COUPLING POSITION:
NUMBER OF BOLTS:	DESIGN OF BOLT/SLEEVE: Nominal ☐ Oversize ☐ % (SKF STANDARD 4%)
AVAIABLE SPACE FOR MOUNTING TOOLS (mm): H1 ☐ H2 ☐	
ENGINE OUTPUT (kW): / SHAFT SPEED (rpm):	REQUIREMENT OF SAFETY FACTOR: YES ☐ NO ☐
ENDCOVERS : YES ☐ NO ☐ ADAPT BOLT TO EXISTING ENDCOVERS(DRAWING REQUIRED) ☐	REQUIREMENT OF ALIGNMENT SET: ALIGNMENT TOOLS ☐ NO ALIGNMENT TOOLS ☐

FT1=	FT2=	DY1=	DY2=	H2=
DC1=	DC2=	DR1=	DR2=	R3=
DA1=	DA2=	DA3=	DA4=	R4=
A1=	A2=	A3=	A4=	R5=
B1=	B2=	DH1=	DH2=	R6=
R1=	R2=	S=	PCD=	DA5=
DH=	A5=	A6=	H1=	DA6=

OTHER INFORMATION/REQUESTS

SKF COUPLING SYSTEMS AB

Please refer to our checklist, which contains all necessary information for our technical department. The checklist can be found at www.couplings.skf.com or contact the SKF Coupling Systems team via email: skf.coupling.systems@skf.com.

Tailor-made OK couplings

Besides offering the standard series of OK couplings, SKF Coupling Systems also design and manufacture "tailor-made" OK couplings for shaft diameters from 100 mm upwards. Below are some examples:

Flange couplings with oil chamber under the flange and Supergrip bolts combination for limited space.

Double sleeve arrangement for bearing installation.

Hub for gear couplings.

Oil power shrink disc couplings.

Double flange couplings.

Power transmission capacity

Torque transmitted by the OKC coupling is directly proportional to the surface pressure between the inner sleeve of the coupling and the shaft after the outer sleeve has been driven up axially. The necessary drive-up, which is reached when the diameter of the outer sleeve has increased by dimension Δ for OKC and OKCS couplings, and the stated drive-up length for OKF couplings as given in the previous tables, will ensure a pressure of 120 N/mm² for OKC couplings, and 100 N/mm² for OKF couplings.

The safety factor f table lists the maximum torque which can be transmitted, and is calculated using the equation:

If the coupling is subjected to axial forces, their effect on the power transmission capacity is generally insignificant. The transmissible torque is obtained from the equation below, to the right:

$$M_{tmax} = \frac{\pi \cdot d_a^2 \cdot B \cdot p \cdot \mu}{2 \cdot 10^3}$$

where:

M_{tmax}	maximum transmissible torque, Nm
d_a	shaft diameter, mm
B	effective pressure length (equal to d_a for OKC) in mm
p	minimum surface pressure between shaft and inner sleeve in N/mm² – 120 N/mm² for OKC and OKCS – 100 N/mm² for OKF
μ	coefficient of friction (0,14)

$$M_t = \sqrt{M_{tmax} - \left[\frac{F_a \cdot d_a}{2 \cdot 10^3}\right]^2}$$

where:

M_{tmax}	maximum transmissible torque, Nm
F_a	axial force, N
d_a	shaft diameter, mm

The permissible torque is obtained from:

$$M = \frac{M_{tmax} \text{ or } M_t}{f}$$

where:

M	permissible torque, Nm
M_{tmax}	maximum transmissible torque, Nm
M_t	transmissible torque, Nm
f	safety factor, which can be selected from the table below

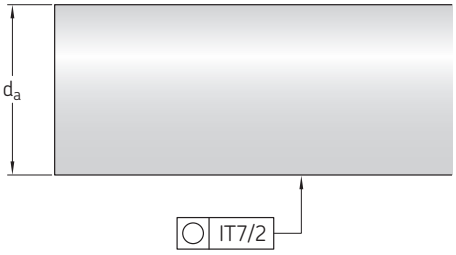
Safety factor f

Type of power source	Type of load on the driven machine		
	Uniform load	**Moderate shock loads**	**Heavy shock loads**
	Centrifugal pumps Fans Light conveyors Turbo compressors Agitators	Piston compressors Small piston pumps Cutting tool machines Packeting machines Wood working machines	Excenter presses Draw benches Plane machines Large piston compressors
Electric motor, turbine	2,0–2,25	2,25–2,5	2,5–2,75
Multiple cylinder piston engine	2,25–2,5	2,5–2,75	2,75–3,0
Single cylinder piston engine	2,75–3,0	3,0–3,25	3,25–4,0

Where the coupling is intended for marine applications, the safety factor has to be selected according to the rules of the referred classification society.

Shafts

To facilitate shaft alignment for OKC and OKCS couplings, one of the shafts should be so designed that the coupling can be slid along it far enough to expose the outermost part of the coupling seating. Surface roughness is to be within R_a 2,5 µm. ISO tolerance h8 applies to coupling seatings from 25–90 mm. ISO tolerance h7 is used for larger diameters.



Shaft diameter d_a		Tolerance h7 deviation		Cylindric tolerance ⌭ IT7/2
over	to	upper	lower	
mm		µm		µm
45	50	0	–25	12,5
50	80	0	–30	15
80	120	0	–35	17,5
100	120	0	-35	17,5
120	180	0	-40	20
180	250	0	-46	23
250	315	0	-52	26
315	400	0	-57	28,5
400	500	0	-63	31,5
500	630	0	-70	35
630	800	0	-80	40
800	1 000	0	-90	45

Conversion tables

Conversions: millimetre to inch

Shaft diameter d_a				Tolerance h7 deviation			
over	to	over	to	upper	lower	upper	lower
mm		inch		mm		inch	
45	50	1.771	1.968	0	–0,025	0	–0.000984
50	80	1.968	3.149	0	–0,030	0	–0.001181
80	120	3.149	4.724	0	–0,035	0	–0.001378
120	180	4.724	7.087	0	–0,040	0	–0.001575
180	250	7.087	9.843	0	–0,046	0	–0.001811
250	315	9.843	12.402	0	–0,052	0	–0.002047
315	400	12.402	15.748	0	–0,058	0	–0.002244
400	500	15.748	19.685	0	–0,063	0	–0.002480
500	630	19.685	24.803	0	–0,070	0	–0.002756
630	800	24.803	31.496	0	–0,080	0	–0.003150
800	1 000	31.496	39.370	0	–0,090	0	–0.003543

Length	1 mm = 0,03937 in. 1 in = 25,4 mm
Mass	1 kg = 2,205 lb 1 lb = 0,4536 kg
Force	1 N = 0,225 lbf 1 lbf = 4,45 N
Torque	1 Nmm = 0,00885 in.lbf 1 Nm = 8,85 in.lbf 1 lbf.in = 113 Nmm = 0,113 Nm 1 lbf.ft = 1356,23 Nmm = 1,35623 Nm
Power	1 W = 0,00136 HP 1 HP = 736 W
Pressure	1 MPa = 1 N/mm² = 145 psi 1 psi = 0,007 N/mm² = 0,007 Mpa
Kinematic viscosity	1 mm²/s = 1 cSt
Temperature	0 °C = 32 °F °F = 1,8 × °C + 32

Hollow shafts for OKC couplings

The outer sleeve must be driven further up with hollow shafts than with solid ones if the same pressure and power transmission capacity are to be achieved. The shafts must also be reinforced by means of sleeves shrunk into recess turned beneath the coupling seatings. This will prevent the stresses, which arise in the shaft material when the coupling has been mounted, from exceeding the permissible value.

The reinforcement sleeve should be made of toughened steel with a yield point of at least 850 N/mm^2. The length of the sleeves should be 15 mm longer than the pressure length (= A_2 - A_3 + 15 mm). The outside diameter, the required interference between the sleeves and the shafts, and the increase in the drive-up distance (the reduction in dimension A_3) can be obtained from the table below for various values of diameter ratio d_c/d_a.

Suitable tolerance ranges for the outside diameter of the sleeves and the recesses in the shafts are IT6 and IT7 respectively. Note that the coupling seatings should be machined to the prescribed diameter tolerance only after the reinforcement sleeves have been fitted.

$\frac{d_c}{d_a}$	$\frac{d_b}{d_a}$	$\frac{\delta}{d_a}$	$\frac{R}{d_a}$
0,10	0,38	0,0006	0,001
0,15	0,41	0,0008	0,002
0,20	0,45	0,0009	0,004
0,25	0,48	0,0011	0,006
0,30	0,49	0,0013	0,009
0,35	0,51	0,0015	0,013
0,40	0,54	0,0017	0,018
0,45	0,58	0,0019δ	0,024
0,50	0,62	0,0021	0,031
0,55	0,67	0,0023	0,040

Example: An OKC coupling is to be mounted on shafts with an outside diameter of 400 mm and a bore of 120 mm.

i.e. $\frac{d_c}{d_a} = \frac{120}{400} = 0,3$

The outside diameter of the reinforcement sleeve is obtained from:

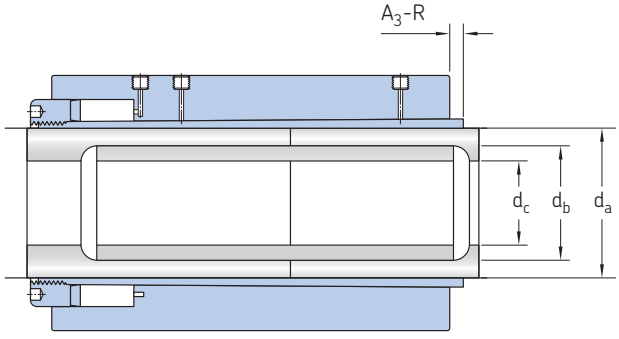
$\frac{d_b}{d_a} = 0,49$ i.e. $d_b = 196$ mm.

The interference d is obtained from:

$\frac{\delta}{d_a} = 0,0013$ i.e. $\delta = 0,25$ mm.

The increase in drive-up distance, R, is obtained from the ratio:

$\frac{R}{d_a} = 0,009$.



With hollow shafts whose diameter ratio exceeds 0,55, the normal pressure and transmitted torque cannot be fully achieved. In such cases, please consult us or your local representative.

Hollow shafts for OKF couplings

For OKF couplings mounted on hollow shafts, please contact your local representative.

Modular equipment for mounting and dismounting

TMHK 35

Suitable for OKC 045 - OKC 090
1 Tool case 728245/3A
1 Injector 226400 with spares
1 Adapter block 226402
1 Nipple 228027E
1 Pressure pipe 728017A/2000 (for OKC 80 - 90)
1 Pressure pipe 227958A (for OKC 80 - 90)
Mass: 12 kg

TMHK 36

Suitable for OKC 100 - OKC 170 and OKCS 178 - OKCS 360
1 Tool case 728245/3A
1 Oil injector 226400
1 Hand operated pump TMJL 50
1 Set of hex keys
1 Spare parts set for injector 226400
Mass: 19 kg

TMHK 37

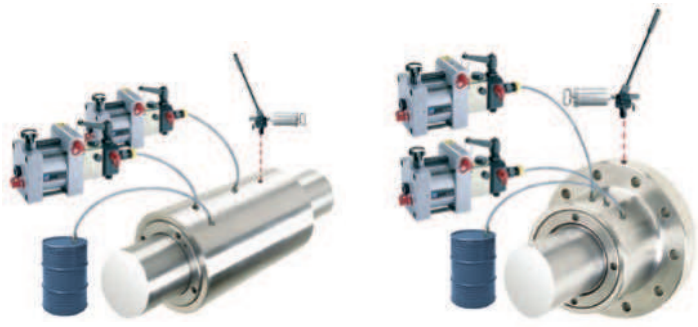
Suitable for OKC 180 - OKC 250 and OKF 100 - OKF 300
1 Tool case 728245/3A
2 Oil injectors 226400
1 Hand operated pump TMJL 50
1 Pipe 227958A
1 Adapter block 226402
1 Set of hex keys
1 Spare parts set for injector 226400
Mass: 28,1 kg
Set TMHK 38 can also be used for these coupling sizes. The set contains a hydraulic pump driven by compressed air which enables the coupling to be mounted more quickly.

TMHK 38

Suitable for OKC 180 - OKC 490 and OKF 300 - OKF 700
1 Air-driven pump set THAP 030/SET
1 Return hose 729147A
2 Oil injectors 226400
1 Set of hex keys
1 Spare parts set for injector 226400
Mass: 32,1 kg

TMHK 38S

Suitable for OKC 180 - OKC 490 and OKF 300 - OKF 700
1 Air-driven pump set THAP 030/SET
1 Return hose 729147A
1 Air-driven pump THAP 300E
1 Oil injector 226400
1 Set of hex keys
1 Spare parts set for injector 226400
Mass: 76,2 kg including weight of pallet



TMHK 39

Suitable for OKC 500 and larger
1 Air-driven pump set THAP 030/SET
1 Return hose 729147A
3 Oil injectors 226400
1 Set of hex keys
1 Spare parts set for injector 226400
Mass: 35,1 kg
This set is intended for use on board ships where dismounting and mounting are only carried out infrequently. For shipyards and workshops, sets TMHK 40 or TMHK 41 with an air-driven high pressure pump are recommended.

TMHK 40

Suitable for OKC 500 and larger
1 Air-driven pump set THAP 030/SET
1 Return hose 729147A
1 Air-driven pump THAP 300E
2 Oil injectors 226400
1 Set of hex keys
1 Spare parts set for injector 226400
Mass: 78,2 kg including weight of pallet
This set or also set TMHK 41 are recommended for shipyards and workshops. The air-driven high pressure pump simplifies works considerably.

TMHK 41

Suitable for OKC 500 and larger
1 Air-driven pump set THAP 030/SET
1 Return hose 729147A
3 Air-driven pumps THAP 300E
1 Set of hex keys
Mass: 126,7 kg including weight of pallet
This pump set is recommended for shipyards and workshops.

Oil

The mineral motor oil to be used for the pump and the injectors should have a viscosity of 300 mm²/s (300 cSt) at the temperature of the coupling. This viscosity will generally be obtained with sufficient accuracy if the oil is chosen according to the table below.

Temperature range		Viscosity
0–8 °C	mineral motor oil	SAE 10 W
8–18 °C	mineral motor oil	SAE 20 W
18–27 °C	mineral motor oil	SAE 30 W
27–32 °C	mineral motor oil	SAE 40 W
32–38 °C	mineral motor oil	SAE 50 W

Approved by all leading classification societies

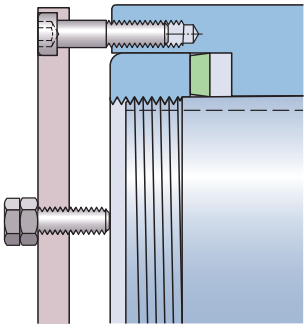
Connecting rigid shafts with OK couplings is a time-saving solution that has been used on land and at sea for more than fifty years. The couplings are well known all over the world for their high quality, creative design and operational safety.

In the production line, each step is carefully controlled and the finished couplings are subjected to a rigid final inspection regarding dimensions and steel quality before delivery. The couplings are also approved by all major classification societies, for example Det Norske Veritas.

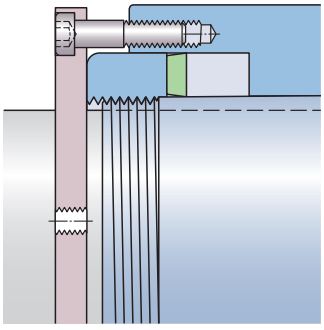

DET NORSKE VERITAS
TYPE APPROVAL CERTIFICATE
Shaft Coupling
OKC 100 - 1000 , OKCX 100-900
SKF Coupling Systems AB
HOFORS, Sweden

Locating device for outer sleeve and nut

All OKC couplings for shafts with diameter 200 mm or larger and OKF couplings for shafts with diameter 300 mm or larger are equipped with lock levers. This device prevents the outer sleeve from being inadvertently driven up on the inner sleeve during transport, and when the coupling is being mounted or dismounted. The lock levers also lock the nut after the coupling has been installed.



Locating device before mounting



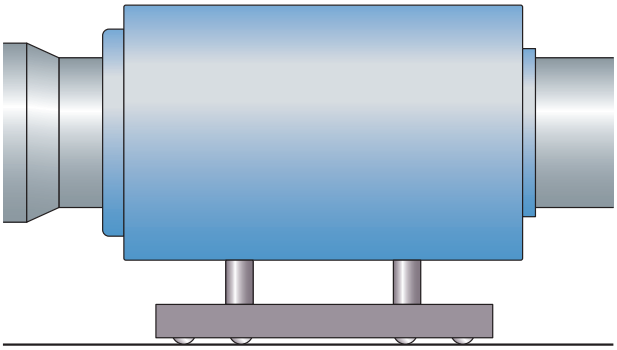
Locating device after mounting

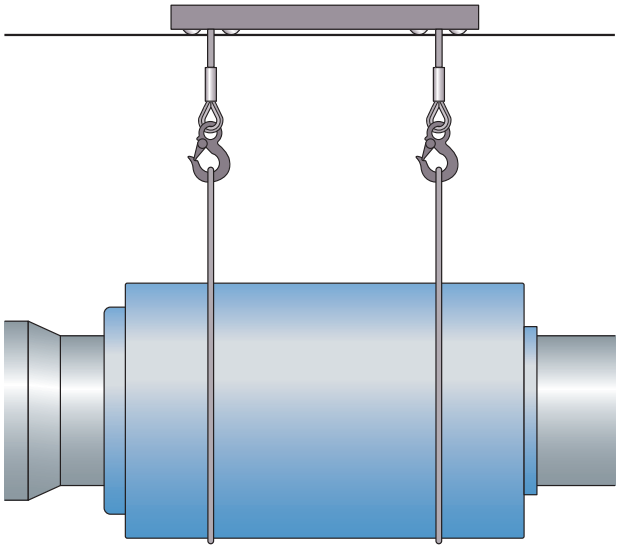
Mounting arrangements for OKC couplings

To facilitate the mounting and dismounting of large OKC couplings, it is advisable to use some type of lifting arrangement. The two arrangement options shown bellow will also allow radial shaft alignment. In both cases the carriages should move in line with the shafts.

OPTION I

A wheeled carriage is provided with two hydraulic jacks, positioned as shown. This allows the coupling to be adjusted as required.





OPTION II

An overhead carriage with two fixed chain blocks is positioned above the coupling. Lifting ropes are positioned as shown, giving the required adjustment, or alternatively, lifting eyebolts can be used from size OKC ≤ 400.

The SKF Supergrip Bolt cuts downtime

At a time when maintenance cost efficiency in heavy industries is a make-or-break factor in operational economy, the time-saving SKF Supergrip concept can cut costs dramatically.

When you connect your couplings with SKF Supergrip Bolts, there is no uncertainty about the length of downtime for removing the bolts. No worry about whether the bolts have jammed or seized in the holes. You know that once the tension and expansion pressure have been released, each bolt will slide out as easily as it went in.

Ninety percent reduction in downtime

A study released by the Swedish State Power Board on the comparison of individually fitted bolts with Supergrip bolts showed a 90% reduction in the time required to disassemble and reassemble the couplings of two turbo sets (eight couplings).

The unit equipped with SKF Supergrip Bolts was reconnected to the power grid 48 hours earlier than the unit with conventional bolts. Total savings were 19 200 000 kWh (48 hours x 400 MW).

Oil injection method

SKF Supergrip Bolts are a superior solution for connecting rotating flange couplings. Compared with traditional bolt systems, SKF Supergrip Bolts are easier to install and remove, take much less time and hold the coupling halves together much more securely.

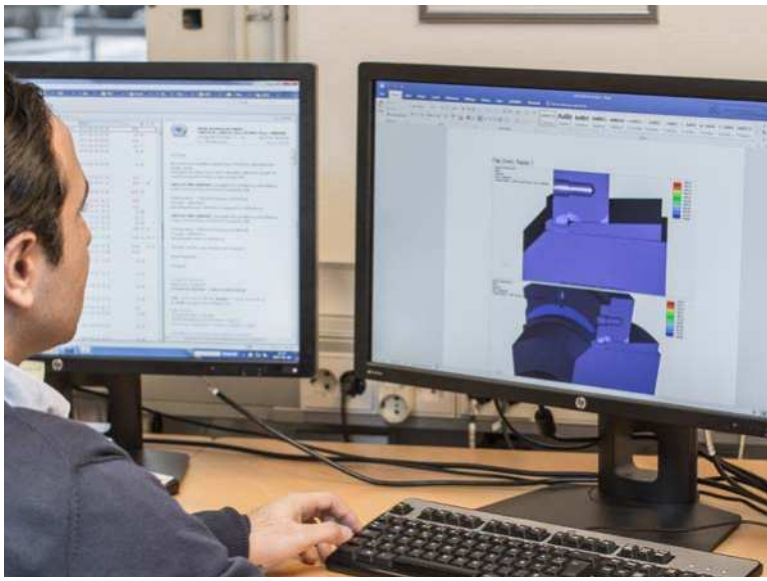
The torque in a coupling connected with SKF Supergrip Bolts is transmitted in two ways: by shear strength of the expanded bolt in the hole, and by the friction effect at the flange faces created by pre-loading the bolt.

Designed specifically for such high-torque applications as propeller shafts, rudder assemblies and turbo generators, the SKF Supergrip Bolt offers significant advantages.

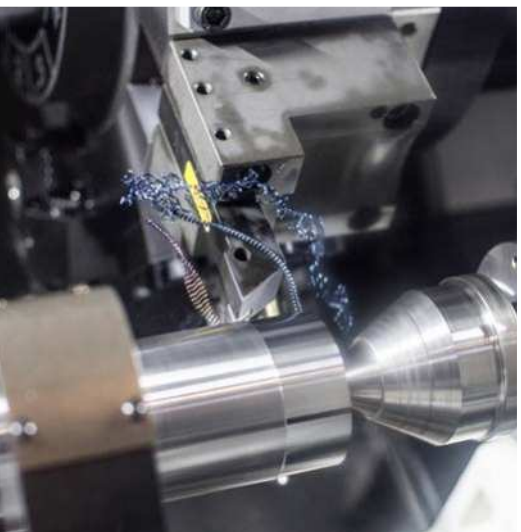
With simplified machining of the holes and no grinding of the bolts, this eliminates the need for re-reaming and re-honing. In addition, the bolts are designed to be inserted and removed with an initial clearance fit, thus there is no risk of seizure.

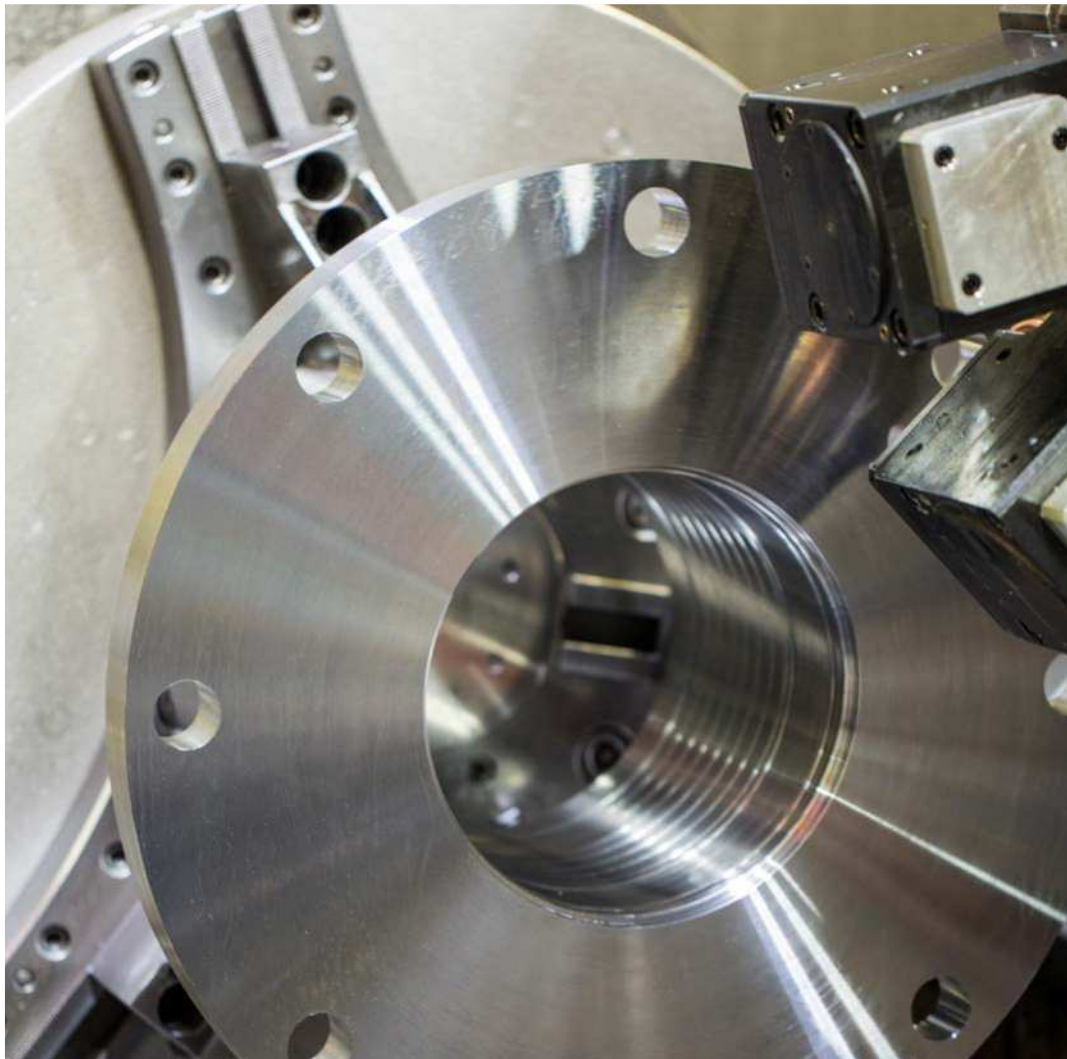
So it's easy to see why we have delivered some 150 000 bolts over the years!

For more detailed information and design recommendations, please request our SKF Supergrip Bolt brochure.



OK couplings are manufactured in modern NC-controlled equipment utilizing CAD/CAM technology. Our most important resource however is well-trained staff with extensive experience in the design and manufacture of precision engineering products.





SKF Coupling Systems AB was established in the early 1940s when SKF's Chief Engineer, Erland Bratt, invented the SKF oil injection method. As a result of continuous development, SKF is currently a world leader, in selected market niches.

Our business concept is to develop, produce and supply, products based on the SKF oil injection method. These products significantly reduce downtime and decrease maintenance costs of the capital intensive equipment in which they are used.

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