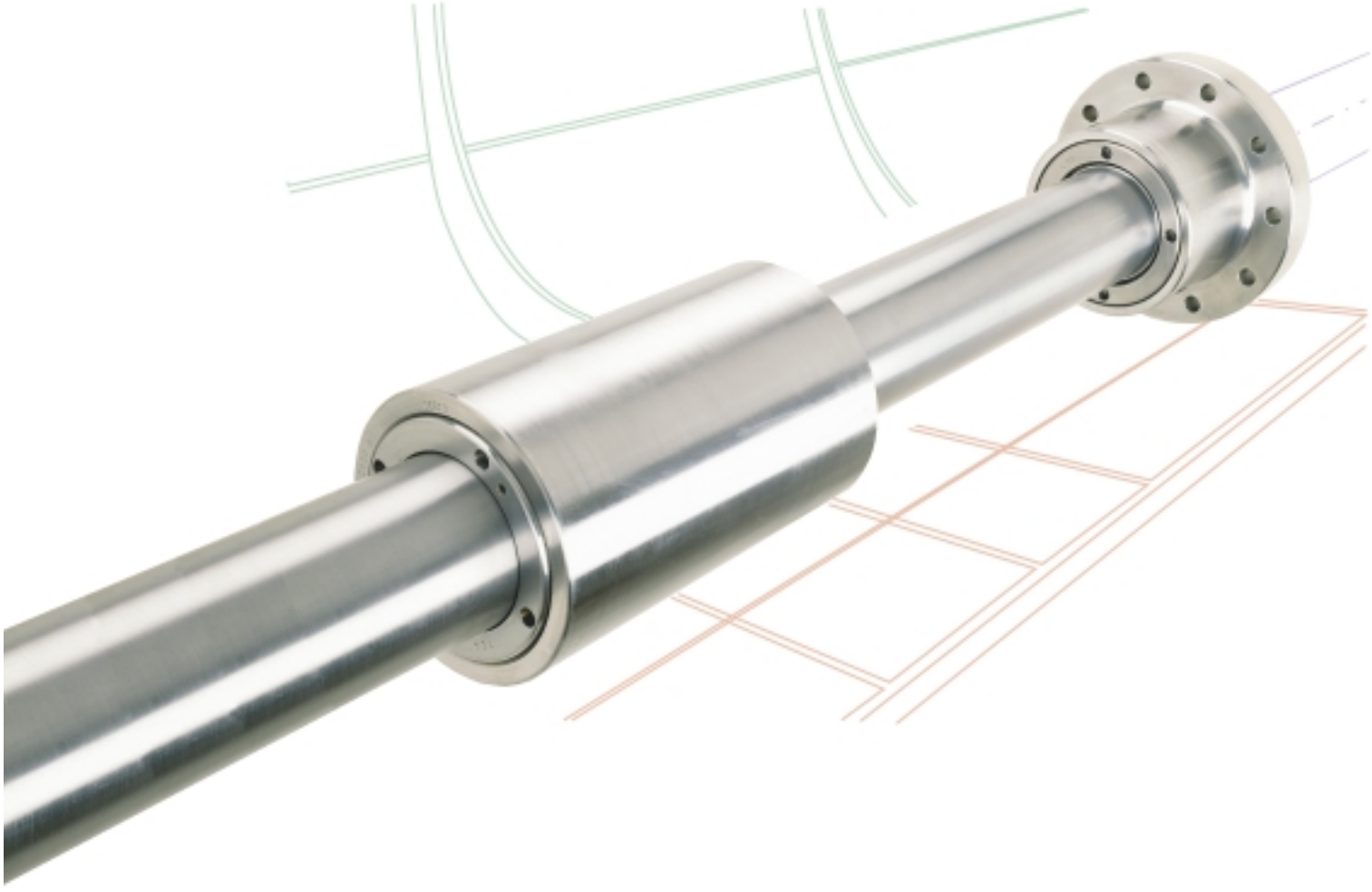
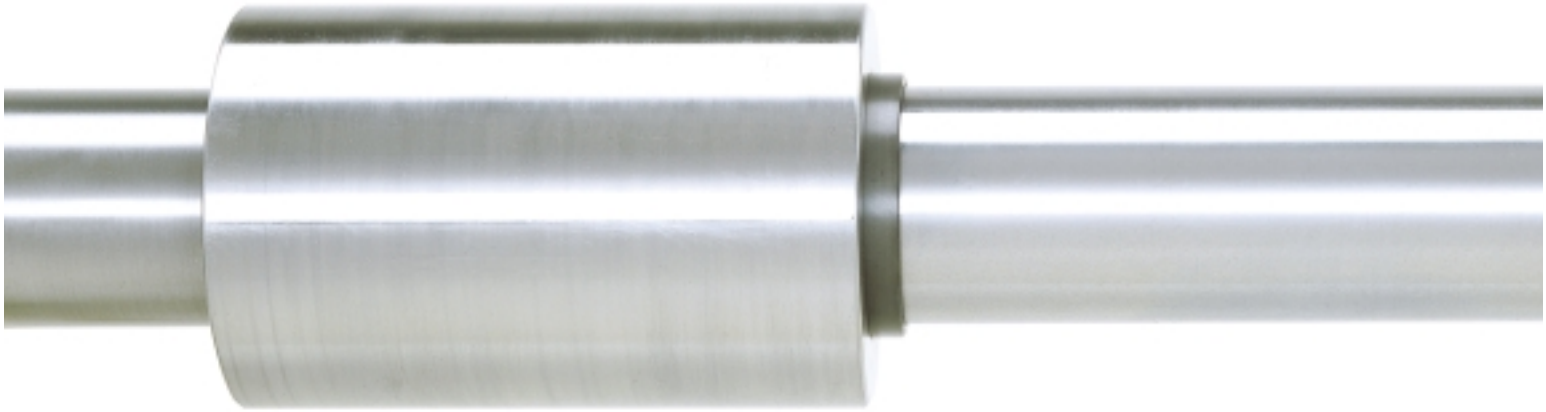
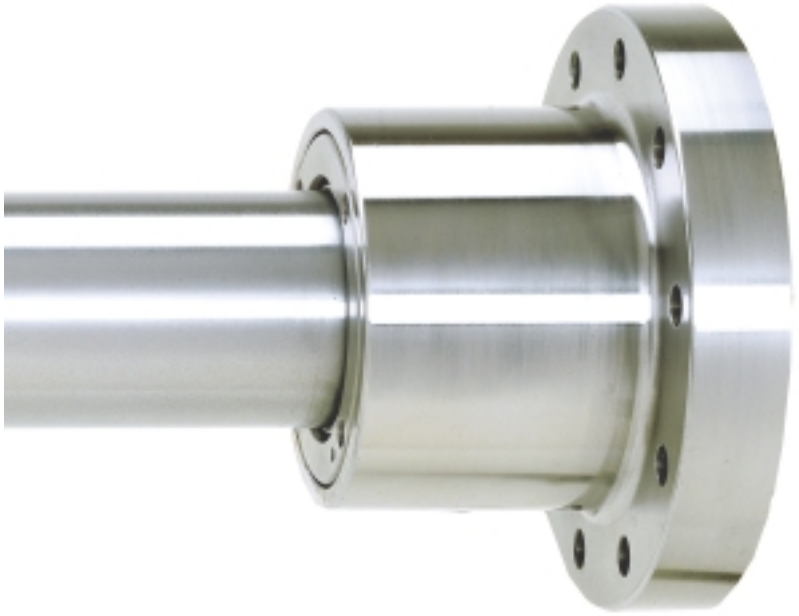


OK Shaft Couplings from SKF



Contents

The oil injection method used in our OK couplings was developed by us in the early 1940's. Since that more than 30,000 couplings have been supplied to ships, power installations, etc all over the world.
The OK couplings are manufactured in modern NC-controlled equipment utilizing CAD/CAM-technology. Our most important resource is, however, a well-trained staff with a long experience and tradition of manufacturing precision engineering products.



When using the OK couplings for shaft connections, you take advantage of our powerful oil injection method.

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

When mounting the 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 on to 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.

THE CLEVER CONNECTION

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.

Make it the Clever Way!
Let the OK Coupling work for you.
You'll save both time and money!

The OK Couplings explained

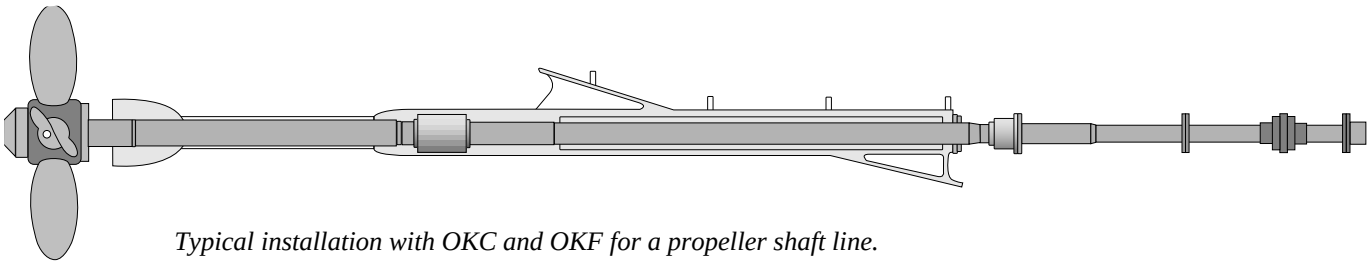
With the OKC and OKF couplings Ovako presents benefits impossible to achieve with traditional couplings. The simplicity of mounting and dismounting and the high torque transmission capacity characterised by the OK couplings are achieved using a powerful friction joint. The five stages below illustrate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

The OKC coupling (see figure 1 on page 5) has been on the market since the early 40's. Up to 1999 over 30,000 couplings have been delivered for use in marine propeller shafts. OKC couplings are the standard with many wellknown Controllable Pitch Propeller manufacturers in the world, but are also used for other applications such as rolling mills, pumps, diesel engines, etc.

The OKCS coupling evolved from a special design for engine builders where the torque requirements were less stringent compared to the shaft diameter.

The OKF coupling (see figure 2 at page 5) was developed to create a simple connection between a cylindrical shaft and engines or gearboxes having a flanged at the thrust shaft. The OKF coupling is available with or without a hydraulic unit 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 obtained due to the entire contact surface transmits torque as oppposed to conventional couplings. Since there is no need for keyways, the dimensions of the shafts and the couplings can be reduced. The OK coupling assures 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.

And this is what happens...

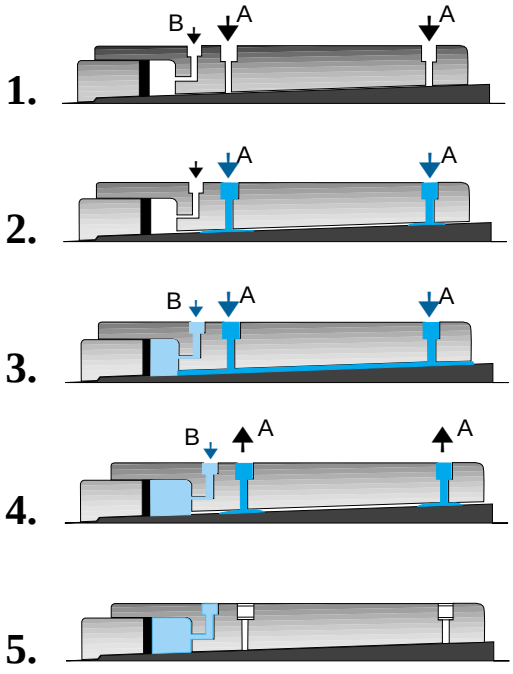
1. The coupling is put into position. High pressure injectors are connected to A, and a low pressure pump to the hydraulic chamber B.

2. Oil is injected into A under high pressure, building up an oil film between the inner and outer sleeve, eliminating metallic contact and reducing friction forces.

3. When there is a good oil film between the sleeves, oil leaks out at the thick end of the inner sleeve. Oil is 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.

4. The coupling has reached its final position when the outer diameter of the coupling has grown by a pre-determined value. The oil pump is stopped, but pressure in B must remain. Pressure in A is released.

5. 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 are covered with a rust preventive and the coupling is ready for years of trouble-free operation.



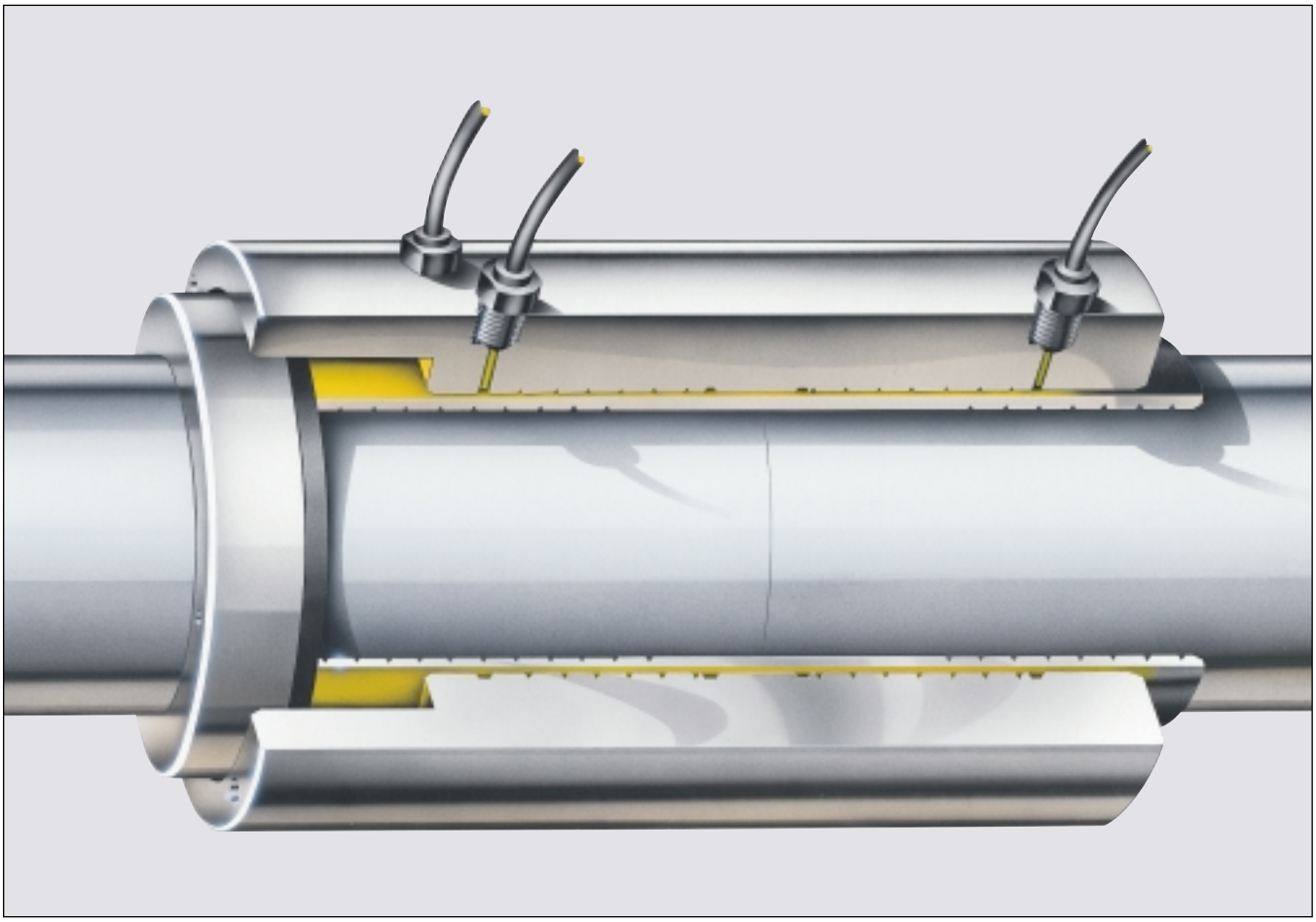
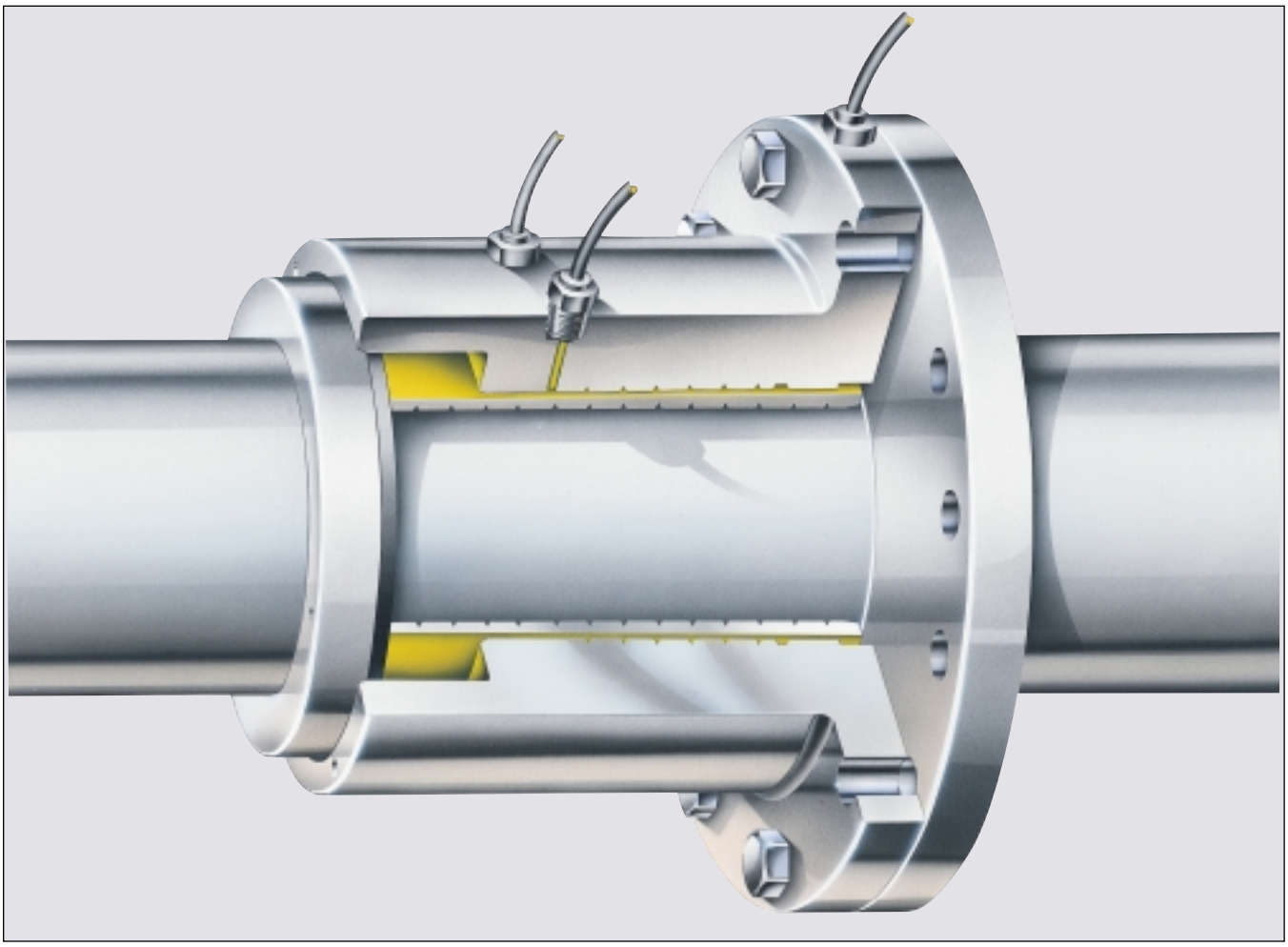
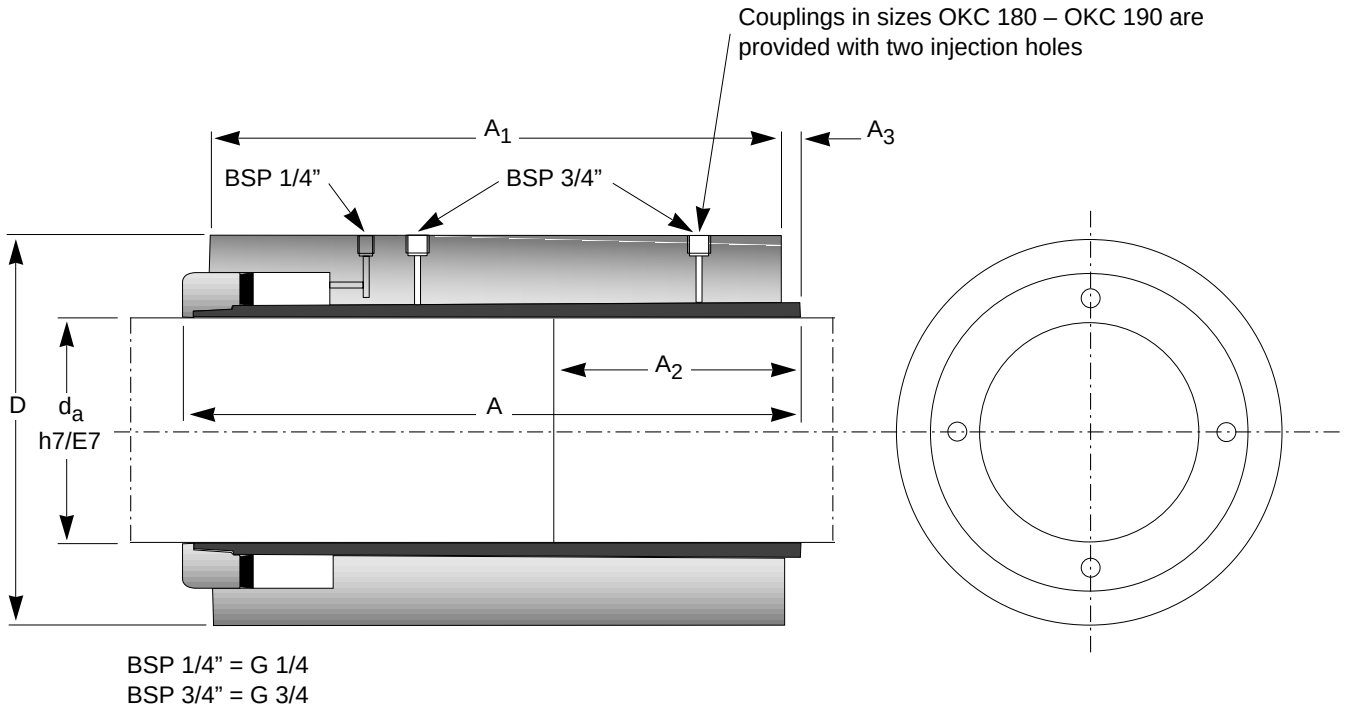


Figure 1. The OKC coupling.



Shaft Couplings

OKC 100 – OKC 190



BSP 1/4” = G 1/4
BSP 3/4” = G 3/4

Designation[1]	d_a mm	D mm	A mm	A_1 mm	A_2 mm	A_3[2] mm	Δ[3] mm	Mass kg	$M_{t\ max.}$[4] kNm
OKC 100	100	170	275	260	108	8	0.16	30	26.0
OKC 110	110	185	296	280	118	8	0.17	38	34.6
OKC 120	120	200	322	300	130	10	0.18	48	44.9
OKC 130	130	215	344	325	140	10	0.21	58	57.1
OKC 140	140	230	373	350	150	10	0.23	71	71.3
OKC 150	150	250	396	370	162	12	0.23	91	87.7
OKC 160	160	260	420	395	172	12	0.27	101	107
OKC 170	170	280	442	415	182	12	0.27	125	128
OKC 180	180	300	475	445	195	15	0.28	155	152
OKC 190	190	310	505	475	205	15	0.31	175	179

1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 148.

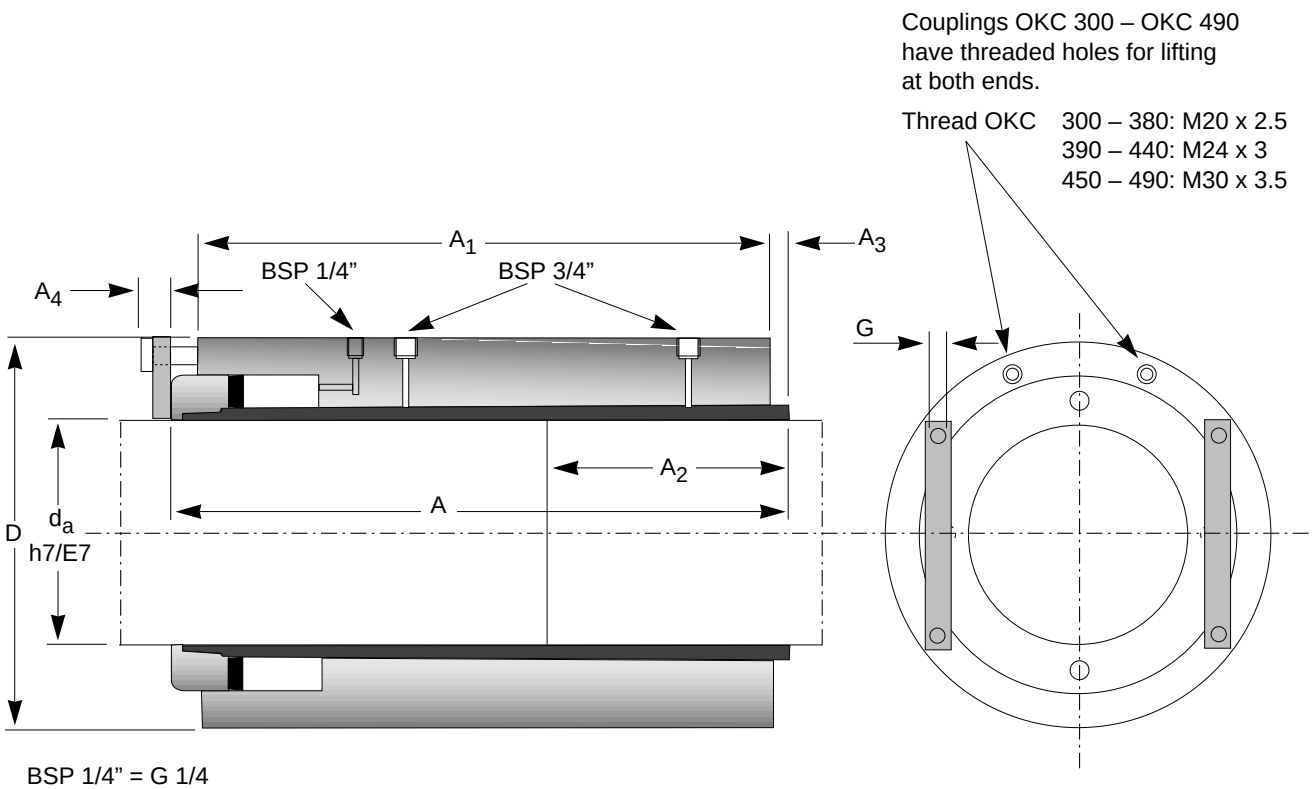
2) May be slightly greater or smaller when Δ is reached, depending on how the tolerance of coupling seatings and coupling bore have been used. See also Mounting Instructions, page 20.

3) Increase of outer diameter, D, after mounting.

4) The safety factor referred to on page 15 must be applied to obtain the permissible torque.

Shaft Couplings

OKC 200 – OKC 490



BSP 1/4” = G 1/4
BSP 3/4” = G 3/4

Designation[1]	d_a mm	D mm	A mm	A_1 mm	A_2 mm	A_3[2] mm	A_4 mm	Δ[3] mm	G	Mass kg	$M_{t\ max.}$[4] kNm
OKC 200	200	330	525	500	215	15	30	0.31	M12-(4x)	215	208
OKC 210	210	340	550	520	225	15	30	0.35	M12-(4x)	230	241
OKC 220	220	360	575	540	235	15	30	0.35	M12-(4x)	265	277
OKC 230	230	370	600	565	250	20	30	0.38	M12-(4x)	285	317
OKC 240	240	390	620	585	260	20	30	0.38	M12-(4x)	330	360
OKC 250	250	400	645	610	270	20	30	0.41	M12-(4x)	350	407
OKC 260	260	420	670	635	280	20	30	0.42	M12-(4x)	410	457
OKC 270	270	440	690	655	290	20	30	0.42	M12-(4x)	470	512
OKC 280	280	450	715	680	300	20	30	0.46	M12-(4x)	510	571
OKC 290	290	470	740	700	315	25	30	0.46	M12-(4x)	580	634
OKC 300	300	480	773	730	325	25	27	0.50	M16-(4x)	625	702
OKC 310	310	500	793	750	335	25	27	0.50	M16-(4x)	700	775
OKC 320	320	520	818	770	345	25	27	0.50	M16-(4x)	790	852
OKC 330	330	530	843	795	355	25	27	0.54	M16-(4x)	830	935
OKC 340	340	550	863	815	365	25	27	0.54	M16-(4x)	930	1020
OKC 350	350	560	888	840	375	25	27	0.57	M16-(4x)	980	1120
OKC 360	360	580	908	860	385	25	27	0.58	M16-(4x)	1080	1220
OKC 370	370	600	928	880	395	25	27	0.58	M16-(4x)	1190	1320
OKC 380	380	610	958	905	410	30	27	0.61	M16-(4x)	1250	1430
OKC 390	390	630	983	925	420	30	27	0.62	M16-(4x)	1370	1550
OKC 400	400	640	1003	950	430	30	27	0.65	M16-(4x)	1440	1670

Continued

Shaft Couplings

OKC 200 – OKC 490

Continued

Designation[1]	d_a mm	D mm	A mm	A_1 mm	A_2 mm	A_3[2] mm	A_4 mm	Δ[3] mm	G	Mass kg	$M_{t\ max.}$[4] kNm
OKC 410	410	660	1028	975	440	30	27	0.66	M16-(4x)	1580	1800
OKC 420	420	680	1053	995	450	30	27	0.67	M16-(4x)	1730	1930
OKC 430	430	690	1073	1015	460	30	27	0.69	M16-(4x)	1800	2070
OKC 440	440	710	1098	1040	470	30	27	0.69	M16-(4x)	1960	2220
OKC 450	450	720	1123	1065	485	35	27	0.74	M16-(4x)	2050	2370
OKC 460	460	740	1148	1085	495	35	27	0.74	M16-(4x)	2200	2530
OKC 470	470	750	1170	1110	505	35	27	0.77	M16-(4x)	2290	2700
OKC 480	480	760	1195	1135	515	35	27	0.80	M16-(4x)	2360	2880
OKC 490	490	780	1215	1155	525	35	27	0.81	M16-(4x)	2530	3060

1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 299.

2) May be slightly greater or smaller when Δ is reached, depending on how the tolerance of coupling seatings and coupling bore have been used. See also Mounting Instructions, page 20.

3) Increase of outer diameter, D, after mounting.

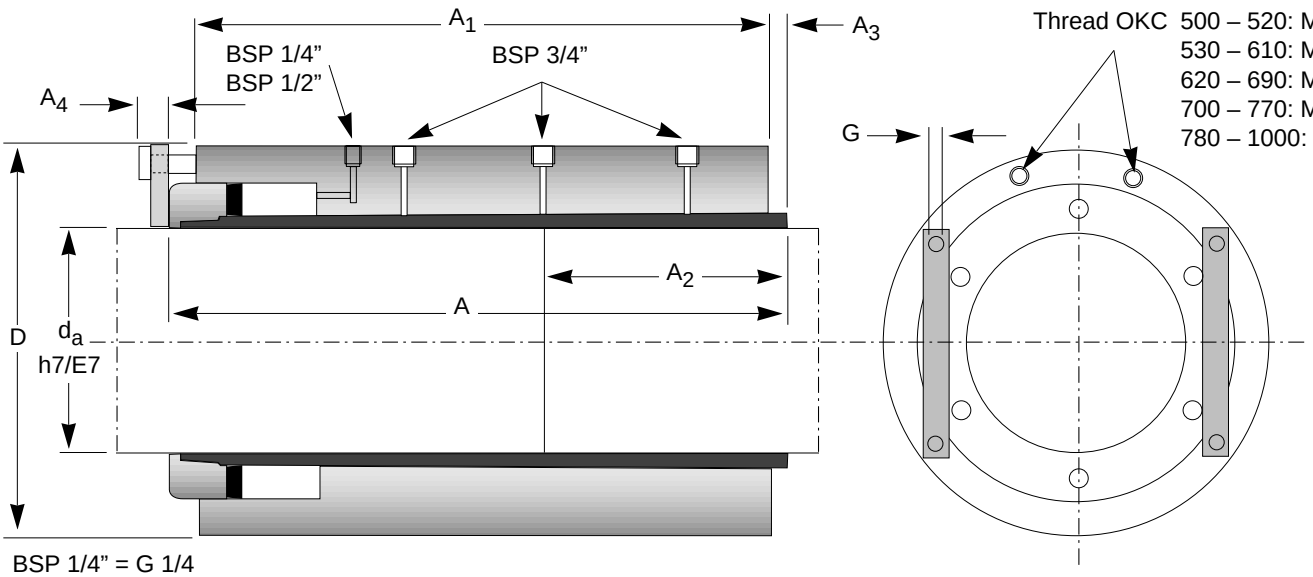
4) The safety factor referred to on page 15 must be applied to obtain the permissible torque.

Shaft Couplings

OKC 500 – OKC 1000

Couplings OKC 500 – OKC 1000 have threaded holes for lifting at both ends

Thread OKC 500 – 520: M30 x 3.5
530 – 610: M36 x 4
620 – 690: M42 x 4.5
700 – 770: M48 x 5
780 – 1000: M64 x 6



BSP 1/4” = G 1/4
BSP 3/4” = G 3/4
BSP 1/2” = G 1/2

Designation[1]	d_a mm	D mm	A mm	A_1 mm	A_2 mm	A_3[2] mm	A_4 mm	Δ[3] mm	G	Mass kg	$M_{t\ max.}$[4] kNm
OKC 500	500	790	1240	1175	535	35	42	0.84	M20-(4x)	2610	3250
OKC 510	510	810	1265	1200	545	35	42	0.86	M20-(4x)	2820	3450
OKC 520	520	830	1290	1225	560	40	42	0.86	M20-(4x)	3060	3660

Continued

Shaft Couplings

OKC 500 – OKC 1000

Continued

Designation[1]	d_a mm	D mm	A mm	A_1 mm	A_2 mm	A_3[2] mm	A_4 mm	Δ[3] mm	G	Mass kg	M_t max.[4] kNm
OKC 530	530	840	1315	1250	570	40	42	0.89	M20-(4x)	3140	3870
OKC 540	540	860	1340	1275	580	40	42	0.89	M20-(4x)	3400	4100
OKC 550	550	870	1360	1295	590	40	42	0.93	M20-(4x)	3520	4330
OKC 560	560	890	1385	1315	600	40	42	0.93	M20-(4x)	3760	4570
OKC 570	570	900	1405	1335	610	40	42	0.97	M20-(4x)	3840	4820
OKC 580	580	920	1425	1360	620	40	42	0.96	M20-(4x)	4150	5080
OKC 590	590	930	1455	1385	635	45	42	0.99	M20-(4x)	4270	5340
OKC 600	600	940	1480	1410	645	45	42	1.02	M20-(4x)	4400	5620
OKC 610	610	960	1500	1430	655	45	42	1.03	M20-(4x)	4680	5900
OKC 620	620	970	1525	1455	665	45	42	1.06	M20-(4x)	4840	6200
OKC 630	630	990	1545	1475	675	45	42	1.06	M20-(4x)	5140	6500
OKC 640	640	1010	1570	1495	685	45	42	1.07	M20-(4x)	5460	6820
OKC 650	650	1020	1595	1520	695	45	42	1.10	M20-(4x)	5620	7140
OKC 660	660	1040	1625	1545	710	50	42	1.11	M20-(4x)	5940	7480
OKC 670	670	1050	1650	1575	720	50	42	1.14	M20-(4x)	6150	7820
OKC 680	680	1070	1670	1590	730	50	42	1.14	M20-(4x)	6480	8180
OKC 690	690	1080	1695	1615	740	50	42	1.18	M20-(4x)	6670	8540
OKC 700	700	1090	1720	1640	750	50	42	1.21	M20-(4x)	6830	8920
OKC 710	710	1100	1745	1665	760	50	42	1.24	M20-(4x)	7010	9310
OKC 720	720	1120	1765	1680	770	50	42	1.25	M20-(4x)	7390	9700
OKC 730	730	1130	1790	1700	785	55	42	1.28	M20-(4x)	7550	10100
OKC 740	740	1150	1815	1730	795	55	42	1.28	M20-(4x)	7990	10600
OKC 750	750	1160	1835	1750	805	55	42	1.32	M20-(4x)	8180	11000
OKC 760	760	1180	1860	1770	815	55	42	1.32	M20-(4x)	8660	11400
OKC 770	770	1190	1886	1795	825	55	42	1.36	M20-(4x)	8860	11800
OKC 780	780	1210	1910	1815	835	55	42	1.36	M20-(4x)	9330	12300
OKC 790	790	1220	1930	1840	845	55	42	1.39	M20-(4x)	9530	12800
OKC 800	800	1240	1960	1865	860	60	42	1.39	M20-(4x)	10070	13300
OKC 820	820	1260	2015	1920	880	60	42	1.47	M20-(4x)	10520	14300
OKC 840	840	1300	2055	1960	900	60	42	1.47	M20-(4x)	11560	15400
OKC 860	860	1330	2105	2005	920	60	42	1.51	M20-(4x)	12370	16500
OKC 880	880	1360	2155	2055	945	65	42	1.54	M20-(4x)	13230	17700
OKC 900	900	1390	2200	2100	965	65	42	1.58	M20-(4x)	14020	18900
OKC 920	920	1430	2245	2145	985	65	42	1.59	M20-(4x)	15290	20200
OKC 940	940	1460	2295	2190	1010	70	42	1.62	M20-(4x)	16270	21600
OKC 960	960	1490	2340	2235	1030	70	42	1.66	M20-(4x)	17270	23000
OKC 980	980	1520	2385	2280	1050	70	42	1.69	M20-(4x)	18310	24400
OKC1000	1000	1550	2430	2325	1070	70	42	1.73	M20-(4x)	19390	26000

1) Couplings for shafts of intermediate diameters are, for instance, designated OKC 505.

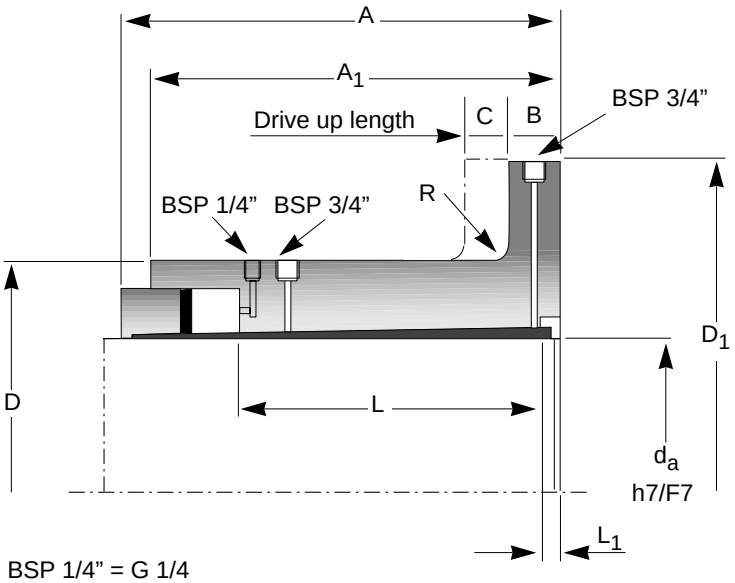
2) May be slightly greater or smaller when Δ is reached, depending on how the tolerance of coupling seatings and coupling bore have been used. See also Mounting Instructions, page 20.

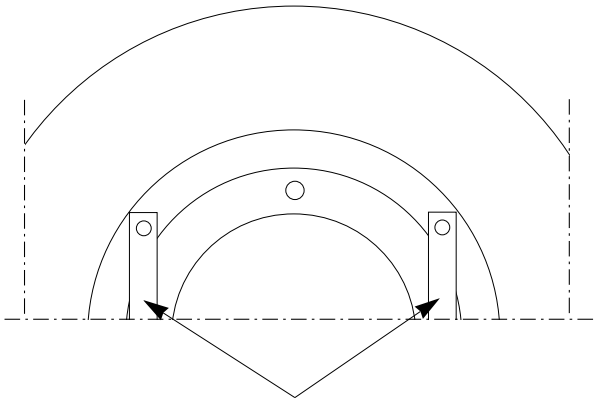
3) Increase of outer diameter ,D, after mounting.

4) The safety factor referred to on page 15 must be applied to obtain the permissible torque.

Flange Couplings

OKF 100 – OKF 700





Lock levels from size OKF 300

BSP 1/4” = G 1/4
BSP 3/4” = G 3/4

The pitch circle is evaluated from:
$E = D_1 – (1.6 \times \text{bolt diameter})$

Designation	d_a	D	D_1	A	A_1	B	R	L	L_1	C	Mass	$M_{t\ max.}$ [1)]	Suitable Supergrip Bolt size
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	kNm	
OKF 100	100	165	235	191	188	40	8	120	15	17.5	25	26.0	
OKF 110	110	175	260	210	197	40	9	135	15	18.5	29	34.6	
OKF 120	120	195	285	220	206	40	10	145	15	19.0	39	44.9	
OKF 130	130	205	305	244	230	40	10	165	15	21.5	46	57.1	
OKF 140	140	225	325	255	235	40	11	170	15	22.0	56	71.3	
OKF 150	150	240	345	266	246	40	12	180	15	23.0	66	87.7	
OKF 160	160	255	365	278	257	40	13	195	15	24.5	77	107	
OKF 170	170	265	390	295	274	40	14	205	15	26.0	87	128	
OKF 180	180	290	415	310	288	40	14	215	15	26.5	108	152	
OKF 190	190	295	435	338	311	40	15	230	18	29.5	118	179	
OKF 200	200	315	455	348	320	40	16	240	18	30.0	138	208	
OKF 210	210	325	475	362	338	42	17	250	18	31.5	153	241	
OKF 220	220	345	495	378	353	44	18	265	18	31.5	180	277	
OKF 230	230	350	500	390	365	46	18	275	18	34.5	184	317	
OKF 240	240	370	525	402	376	48	19	285	18	34.5	216	360	
OKF 250	250	380	555	418	392	50	20	300	18	36.0	238	407	OKBS 40
OKF 260	260	400	575	436	408	52	21	310	22	38.0	275	457	
OKF 270	270	420	595	452	424	54	22	325	22	38.0	316	512	
OKF 280	280	430	605	464	435	56	22	335	22	40.0	335	571	
OKF 290	290	445	620	476	447	58	23	345	22	41.5	364	634	
OKF 300	300	460	635	498	463	60	24	360	22	42.0	399	702	

[1)] The safety factor referred to on page 15 must be applied to obtain permissible torque.

Flange Couplings

OKF 100 – OKF 700

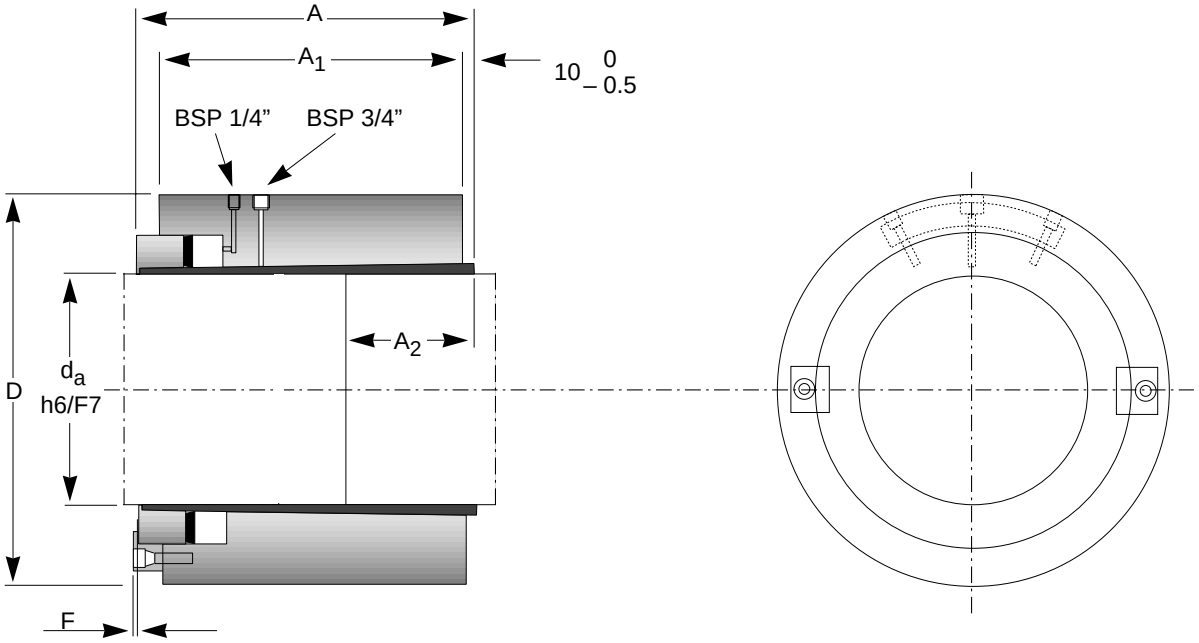
Continued

Desig-nation	d_a	D	D_1	A	A_1	B	R	L	L_1	C	Mass	$M_{t\ max.}$[1)]	Suitable Supergrip Bolt size
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	kNm	
OKF 310	310	475	675	510	479	62	25	370	22	43.5	451	775	
OKF 320	320	495	695	526	494	64	26	380	25	44.5	508	852	
OKF 330	330	505	705	544	512	66	26	395	25	46.5	537	935	
OKF 340	340	525	730	555	522	68	27	405	25	47.0	599	1020	OKBS 50
OKF 350	350	530	735	572	538	70	28	420	25	49.0	615	1120	
OKF 360	360	550	760	584	550	72	29	430	25	50.0	680	1220	
OKF 370	370	570	810	595	560	74	30	440	25	50.5	770	1320	
OKF 380	380	580	820	612	577	76	30	455	25	51.5	805	1430	
OKF 390	390	600	840	624	588	78	31	465	25	52.5	885	1550	
OKF 400	400	610	855	648	611	80	32	480	25	54.0	930	1670	OKBS 60
OKF 410	410	630	875	660	627	82	33	490	30	55.5	1030	1800	
OKF 420	420	640	890	672	639	84	34	500	30	57.5	1070	1930	
OKF 430	430	655	935	688	654	86	34	515	30	58.0	1170	2070	
OKF 440	440	675	955	700	665	88	35	525	30	58.5	1270	2220	
OKF 450	450	685	970	716	681	90	36	540	30	60.5	1330	2370	
OKF 460	460	700	985	728	692	92	37	550	30	61.5	1410	2530	
OKF 470	470	715	1000	740	703	94	38	560	30	62.5	1480	2700	OKBS 70
OKF 480	480	720	1005	758	717	96	38	570	30	65.0	1510	2880	
OKF 490	490	740	1030	770	728	98	39	580	30	66.0	1630	3060	
OKF 500	500	750	1040	790	748	100	40	600	30	67.0	1700	3250	
OKF 510	510	770	1090	810	766	102	41	610	35	69.5	1870	3450	
OKF 520	520	790	1115	820	776	104	42	620	35	70.0	2020	3660	
OKF 530	530	800	1125	834	789	106	42	630	35	72.0	2080	3870	
OKF 540	540	815	1145	845	800	108	43	640	35	73.5	2190	4100	OKBS 80
OKF 550	550	825	1155	868	822	110	44	660	35	74.5	2270	4330	
OKF 560	560	845	1175	878	832	112	45	670	35	75.0	2420	4570	
OKF 570	570	855	1190	890	843	114	46	680	35	77.0	2510	4820	
OKF 580	580	875	1235	900	853	116	46	690	35	77.0	2710	5080	
OKF 590	590	885	1245	914	866	118	47	700	35	79.0	2780	5340	
OKF 600	600	895	1260	926	877	120	48	710	35	81.0	2860	5620	
OKF 610	610	910	1275	938	888	122	49	720	35	82.0	2880	5900	
OKF 620	620	920	1290	950	900	124	50	730	35	84.0	3070	6200	OKBS 90
OKF 630	630	940	1310	962	911	126	50	740	35	84.5	3230	6500	
OKF 640	640	960	1330	990	938	128	51	760	40	85.5	3510	6820	
OKF 650	650	970	1345	1004	951	130	52	770	40	87.5	3600	7140	
OKF 660	660	990	1395	1018	961	132	53	780	40	88.0	3750	7480	
OKF 670	670	995	1410	1030	973	134	54	790	40	91.0	3930	7820	
OKF 680	680	1015	1420	1042	984	136	54	800	40	91.5	4130	8180	OKBS 100
OKF 690	690	1025	1435	1054	996	138	55	810	40	93.5	4230	8540	
OKF 700	700	1035	1445	1068	1009	140	56	820	40	96.0	4330	8920	

1) The safety factor referred to on page 15 must be applied to obtain the permissible torque.

Shaft Couplings

OKCS 178 – OKCS 360



BSP 1/4” = G 1/4
BSP 3/4” = G 3/4

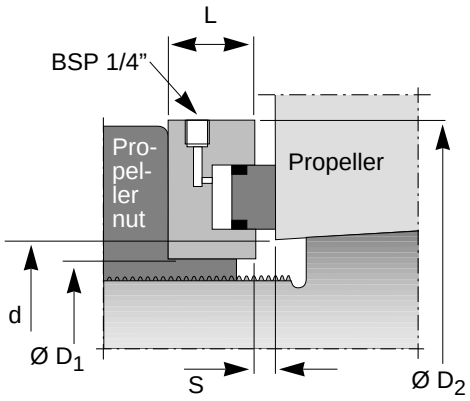
Designation[1]	d_a mm	D mm	A mm	A_1 mm	A_2 mm	F mm	Mass kg	$M_{t\ max.}$[2] kNm
OKCS 178	178	310	282	244	105	8	98	65
OKCS 210	210	350	331	295	127.5	8	166	110
OKCS 214	214	365	345	308	132	8	170	118.6
OKCS 230	230	400	348	315	134.5	8	209	141
OKCS 250	250	420	364	328	140	8	231	180
OKCS 270	270	460	386	350	149	8	300	225
OKCS 300	300	510	426	385	164	9	406	301.8
OKCS 310	310	525	446	400	170	9	429	338.8
OKCS 330	330	560	457	410	177	9	521	391.5
OKCS 360	360	600	493	455	190	9	635	525

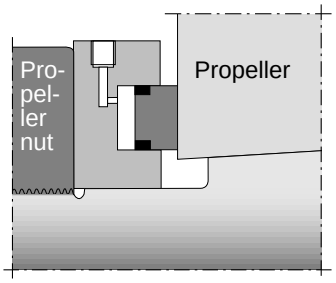
[1] Couplings for shafts of intermediate diameters are, for instance, designated OKCS 215.

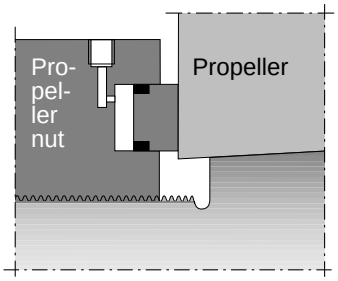
[2] The safety factor referred to on page 15 must be applied to obtain the permissible torque

Hydraulic Rings and Propeller Nuts

OKTC 245 – OKTC 790







Nut with integrated thread is designated OKTH.

Designation	d mm	D_1 mm	D_2 mm	L mm	$S_{max.}$ mm	Max. force kNm (at 70 MPa)	Mass kg
OKTC 245	260 – 275	245	390	55	15	2090	31
OKTC 265	275 – 295	265	415	55	15	2400	35
OKTC 285	295 – 315	285	435	55	15	2730	37
OKTC 305	315 – 335	305	465	55	15	3175	42
OKTC 325	335 – 365	325	510	70	20	3555	66
OKTC 345	365 – 385	345	535	70	20	3955	72
OKTC 365	385 – 405	365	560	70	20	4375	77
OKTC 385	405 – 425	385	585	70	20	4820	84
OKTC 405	425 – 445	405	610	70	20	5400	90
OKTC 425	445 – 465	425	635	70	20	5890	96
OKTC 445	465 – 485	445	660	70	20	6400	103
OKTC 465	485 – 505	465	685	70	20	6940	110
OKTC 485	505 – 525	485	710	70	20	7490	116
OKTC 505	525 – 545	505	735	70	20	8220	123
OKTC 525	545 – 565	525	760	70	20	8820	130
OKTC 545	565 – 595	545	805	90	25	9440	195
OKTC 565	595 – 615	565	830	90	25	10090	205
OKTC 585	615 – 635	585	855	90	25	10760	216
OKTC 605	635 – 655	605	880	90	25	11620	226
OKTC 625	655 – 675	625	905	90	25	12330	238
OKTC 645	675 – 695	645	940	90	25	13830	260
OKTC 670	695 – 720	670	965	90	25	14610	267
OKTC 690	720 – 740	690	995	90	25	15930	285
OKTC 720	740 – 770	720	1050	100	30	17290	360
OKTC 750	770 – 800	750	1080	100	30	18160	372
OKTC 770	800 – 820	770	1105	100	30	19050	387
OKTC 790	820 – 840	790	1130	100	30	20200	402

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 the receipt of the following information:

a. Dimensions of propeller boss.

b. Maximum power, kW.

c. Speed, r/min.

d. Safety factor.

e. Modulus of elasticity for boss and shaft respectively, N/mm^2.

f. Temperature coefficient of linear expansion for boss and shaft respectively.

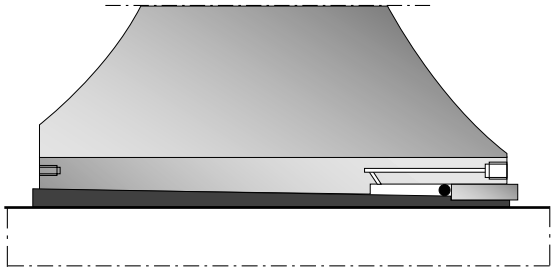
g. Yield point for shaft and boss, N/mm^2.

If drive-up force and drive-up length is being calculated by customer that information together with the propeller shaft thread and the small inner diameter of the propeller boss only are required.

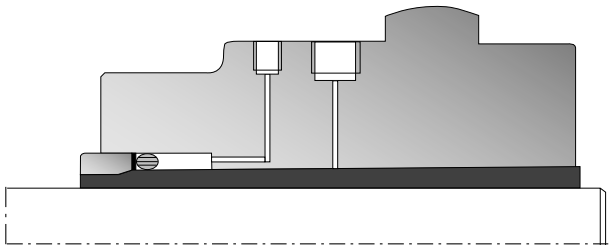
SKF Pump 728619 is recommended for the ring as well as for injecting oil in the propeller hub. For sizes OKTC 505

Tailor made OK Couplings

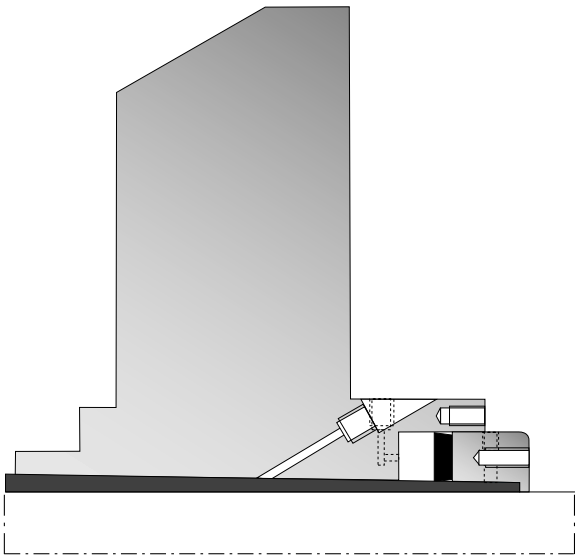
Besides standard series of OK couplings, Ovako Couplings design and manufacture “tailor made” OK couplings for shaft diameter from 100 mm. The drawings show some examples.



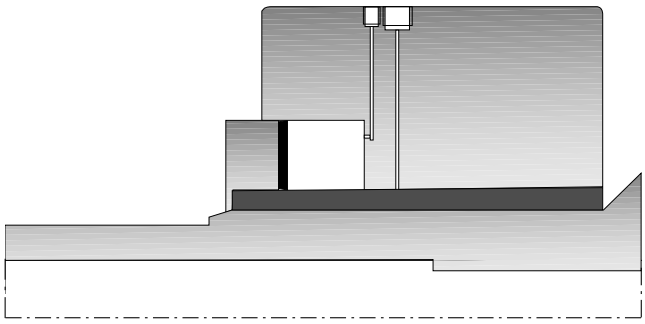
Double sleeves system OKD for keyless connections of large hubs.



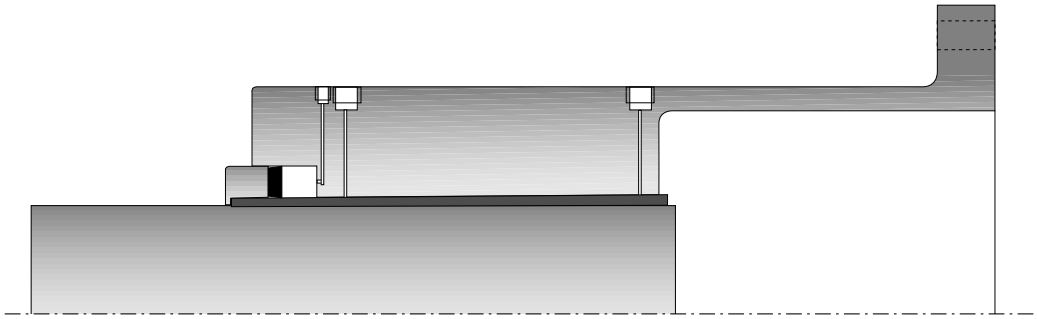
Integrated OK coupling system in existing gear hubs.



Specifically designed hub according to customer request.



Shrink disc couplings OKCK.



Flange couplings OKFA and OKFB with special designed flanges.

Power transmission capacity

Torque transmitted by the OKC coupling is directly proportianal 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 given in the tables, will ensure a pressure of 120 N/mm² for OKC couplings, and 100 N/mm² for OKF couplings.

The table list the maximum torque which can be transmitted calculated using the equation:

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

where:

$M_{tmax.}$	maximum transmissible torque, Nm
d_a	shaft diameter, mm
B	effective pressure length (equal to d_a) in mm
p	min 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)

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:

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

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 at different loads

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 – 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
Single cylinder piston engine	2.75 – 3	3 – 3.25	3.25 – 4

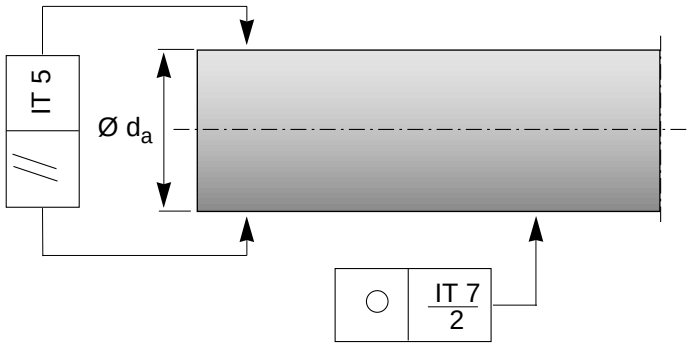
When the couplings is intended for marine applications, the safety factor has to be selected according to the rules of the reffered classification society.

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		**Circularity** ○ IT7/2	**Parallelism** // IT5
over	to	upper	lower		
mm	mm	µm	µm	µm	µm
100	120	0	– 35	17.5	15
120	180	0	– 40	20	18
180	250	0	– 46	23	20
250	315	0	– 52	26	23
315	400	0	– 57	28.5	25
400	500	0	– 63	31.5	27
500	630	0	– 70	35	29
630	800	0	– 80	40	32
800	1000	0	– 90	45	35

Conversion tables

Conversion: millimetre to inch

Shaft diameter d_a				**Tolerance h7 deviation**			
Millimetre		Inch		Millimetre		Inch	
over	to	over	to	upper	lower	upper	lower
100	120	3.937	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	1000	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/mm^2 = 145 psi 1 psi = 0.007 N/mm^2 = 0.007 MPa
Kinematic viscosity	1 mm^2/s = 1 cSt
Temperature	0 ° C = 32 °F °F = 1.8 x °C + 32

Hollow shafts for OKC Couplings

The outer sleeve must be driven further up with hollow shafts rather 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/mm². 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.

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

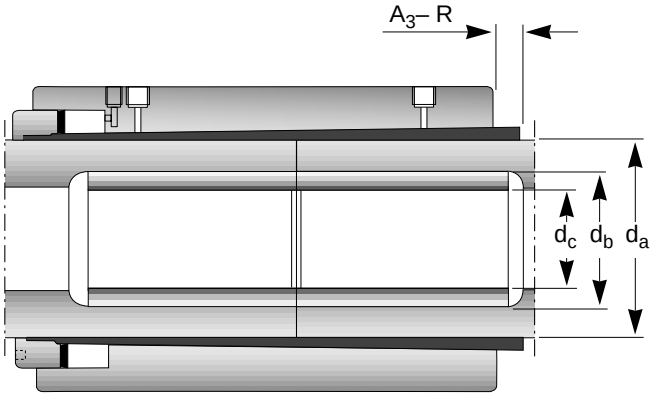
i.e. $\frac{d_c}{d_a} = \frac{120}{400} = 0.3$

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 δ is obtained from $\frac{\delta}{d_b} = 0.0013$, i.e. $\delta = 0.25$ mm

The increase in drive-up distance, R, is obtained from the ratio $\frac{R}{d_a} = 0.009$. Thus dimension A_3 in the table on page 7 (30 mm) must be reduced by 3.6 mm.

$\frac{d_c}{d_a}$	$\frac{d_b}{d_a}$	$\frac{\delta}{d_b}$	$\frac{R}{d_a}$
0.1	0.38	0.0006	0.001
0.15	0.41	0.0008	0.002
0.2	0.45	0.0009	0.004
0.25	0.48	0.0011	0.006
0.3	0.49	0.0013	0.009
0.35	0.51	0.0015	0.013
0.4	0.54	0.0017	0.018
0.45	0.58	0.0019	0.024
0.5	0.62	0.0021	0.031
0.55	0.67	0.0023	0.040



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 OKCS and OKF Couplings

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

Oil

The oil to be used for the hydraulic 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.

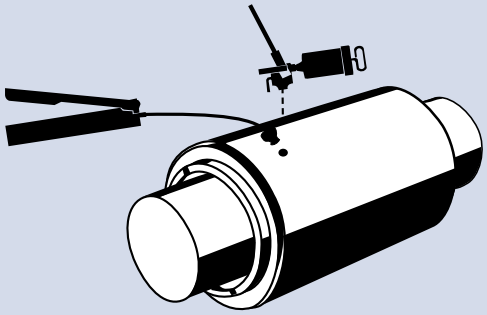
Temperature range	Viscosity
0 – 8 °C	SAE 10 W
8 – 18 °C	SAE 20 W
18 – 27 °C	SAE 30 W
27 – 32 °C	SAE 40 W
32 – 38 °C	SAE 50 W

Modular equipment for mounting and dismounting

TMHK 36

Suitable for OKC 100 – OKC 170 and OKCS 178 – OKCS 360

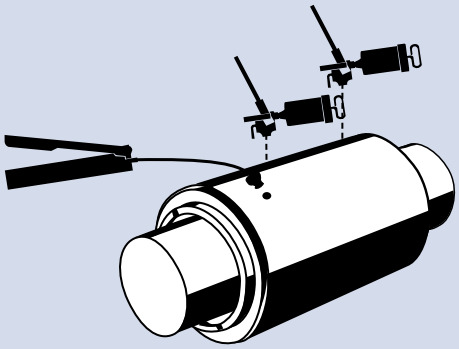
1 Tool case 728245-3
1 Oil injector 226400
1 Hand operated pump TMJL 50
1 Set of hex keys
1 Spare parts for injector 226400
Mass: 19 kg

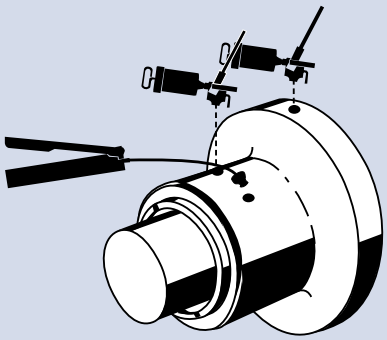


TMHK 37

Suitable for OKC 180 – OKC 250 and OKF 100 – OKF 300

1 Tool case 728245-3
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 for injector 226400
Mass: 28.1 kg



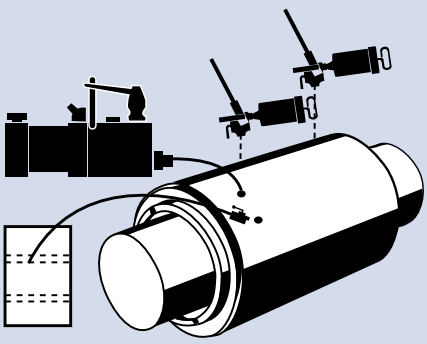


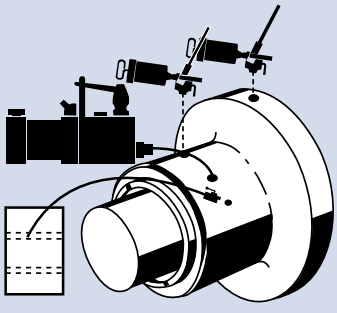
Set TMHK 38 can also be used for these coupling sizes.
The set contains a hydraulic pump driven by compressed air which enables the coupling to be mounted more quickly.

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 for injector 226400
Mass: 32.1 kg

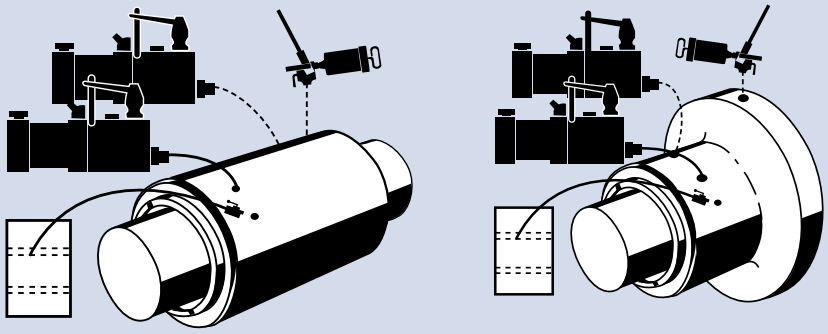




TMHK 38S

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 300
1 Oil injector 226400
1 Set of hex keys
1 Spare parts for injector 226400
Mass: 76.2 kg including weight of pallet

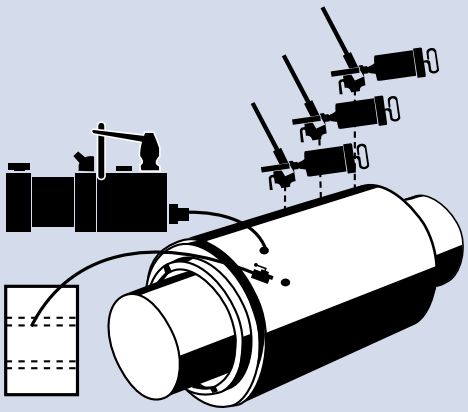


TMHK 39

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 for injector 226400
Mass: 35.1 kg

This set is intended for use on board ship where dismounting and mounting is only carried out infrequently. For shipyards and workshops sets TMHK 40 or TMHK 41 with an air-driven high pressure pump are recommended.

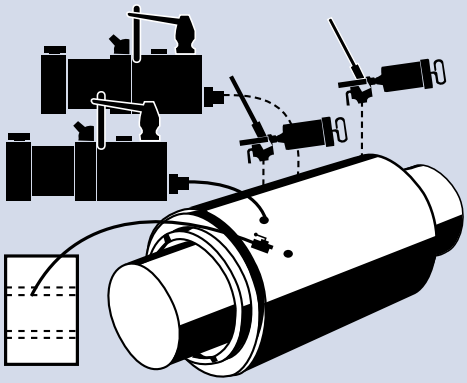


TMHK 40

Suitable for OKC 500 and larger

1 Air-driven pump set THAP 030/SET
1 Return hose 729147A
1 Air-driven pump THAP 300
2 Oil injectors 226400
1 Set of hex keys
1 Spare parts 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.

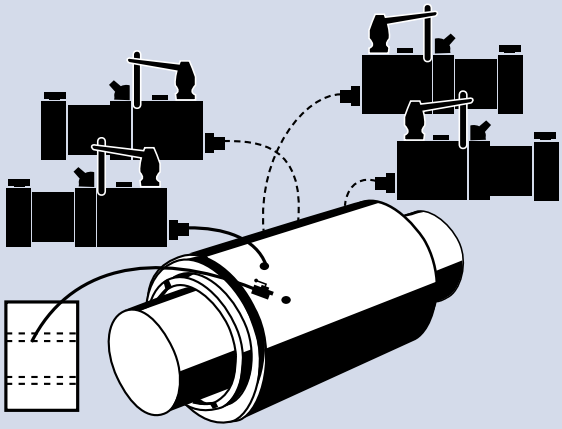


TMHK 41

Suitable for OKC 500 and larger

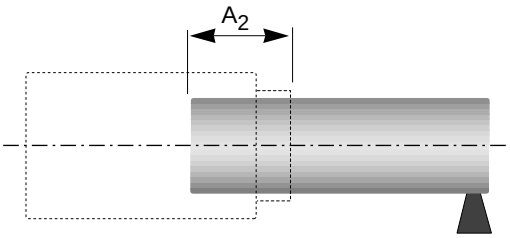
1 Air-driven pump set THAP 030/SET
1 Return hose 729147A
3 Air-driven pumps THAP 300
1 Set of hex keys
Mass: 126.7 kg including weight of pallet

This pump set is recommended for shipyards and workshops.



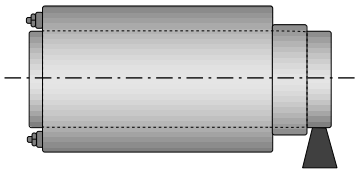
Mounting of OKC and OKCS Couplings

1 Remove any burrs on the coupling seatings on the shafts. Clean and wash the inner sleeve bore and the coupling seatings with white spirit, so that the anti-corrosive agent is removed. Ensure that the seatings have been machined to the correct tolerances. Mark off the dimension A_2 on one of the shafts to indicate the position of the large end of the inner sleeve; this dimension is given on pages 6 – 9 and 12.

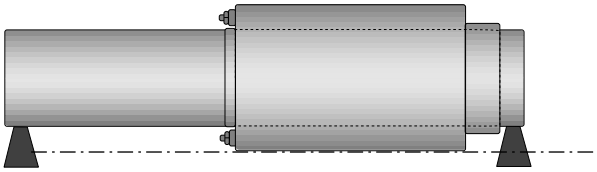


2 Fit the lock levers for couplings larger than OKC 200. Suspend the coupling opposite the shaft on which dimension A_2 has been marked off, ensuring that the large end of the inner sleeve faces this shaft and that the injector connection holes are at the top. Coat this seating with thin mineral oil. Slide the coupling on, guiding it carefully to prevent it from becoming misaligned and damaging the shaft. Push the coupling on until sufficient seating emerges so that the shafts may be aligned accurately.

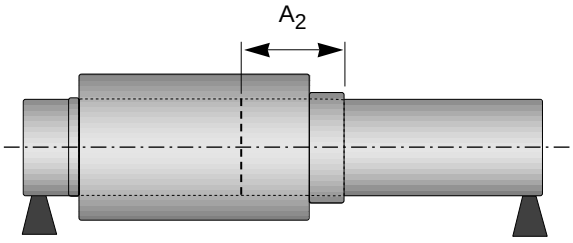
Note: during this process the coupling must not weigh upon the shaft.



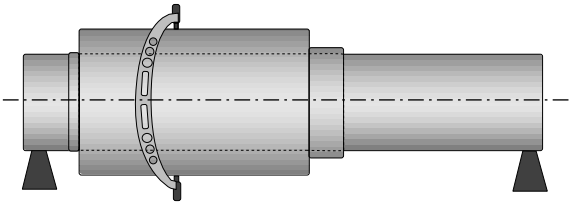
3 Bring both shafts together and align them with precision, vertically and horizontally. The shafts should be supported close to the coupling. Use a straight edge to check the alignment. The shaft ends should be in contact, but a gap of not more than 1% of the shaft diameter is acceptable. During alignment make sure that the coupling does not weigh on the shaft.



4 Coat the seating on the other shaft with thin mineral oil. Make sure that the coupling does not weigh on the shafts and slide the coupling back along the shafts until the large end face of the inner sleeve coincides with the marking referred to in paragraph 1.
The lock levers should now be removed.

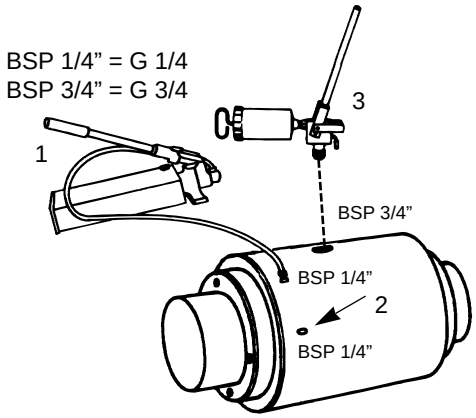


5 When mounting the coupling for the first time, measure the diameter of the outer sleeve accurately over both shafts using a micrometer.



6 Valid only for the Couplings OKC 100 – OKC 170 and OKCS 178 – OKCS 360

Connect the hydraulic pump 1 and pump oil into the hydraulic unit until air free oil escapes through the vent hole 2. Stop pumping and close the hole. Connect the injector 3 and inject oil between the coupling sleeves until it emerges at the large end of the inner sleeve. Start operating pump 1 again, thus driving up the outer sleeve. If the oil leaks through the sealing ring, apply a blast of compressed air to vent hole 2. During the entire drive-up process the injection of oil between the sleeves should be continued in order to maintain the oil film. Drive-up is complete when the diameter of the outer sleeve has increased by the dimension Δ given on page 6. Vent and drain oil before measuring Δ. The dimension A_3 may be used as a rough indication of the position the sleeve must take to ensure this expansion. If, after the first drive-up, a note is made of the exact final position of the outer sleeve, it will be unnecessary to measure dimension Δ subsequently. Open the pressure reduction valve on the injector to release the oil between the sleeves. This takes about 5 minutes. The oil pressure in the hydraulic unit must not be reduced until this has been done. Disconnect the injector and the pump, but let the oil remain in the hydraulic unit. Seal the oil ducts with the appropriate plugs.



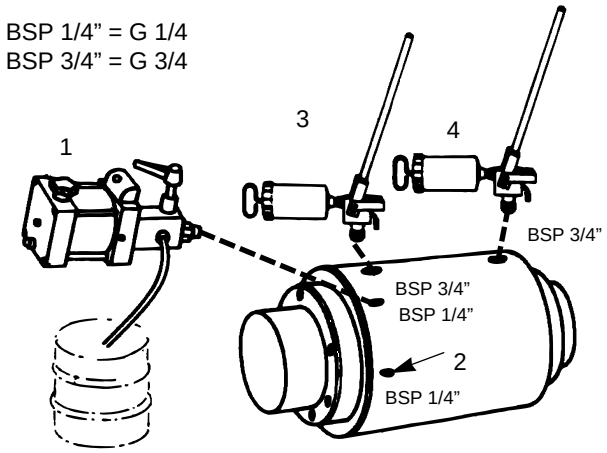
For OKC 100 – OKC 170: After the initial mounting operation, release the horizontal grub screws, and then tighten the coupling nut firmly. Retighten the grub screws.

For OKC 210 – OKC 330: After the initial mounting operation, tighten the nut firmly. Remove the screw in the center of each lock lever. Position the lock levers to lock the nut, and fasten them.

Coat the exposed parts of the coupling seatings and the inner sleeve with rust preventive; this will also prevent moisture from penetrating beneath the coupling.

6 Valid only for Couplings OKC 180 – OKC 490

Slacken the vent hole screw 2. Connect the hydraulic pump 1 and pump oil into the hydraulic unit until air free oil escapes through the vent hole 2. Stop pumping and close the hole. Connect the injectors 3 and 4 and start injecting oil using injector 3. When oil emerges all around the periphery at the large end of the inner sleeve, start injection with injector 4. After injecting oil with both injectors for a couple of minutes, start the hydraulic pump 1, thus driving up the outer sleeve. If oil leaks through the sealing ring, apply a blast of compressed air to vent hole 2. The injection of oil between the sleeves should be continued during the entire drive-up process in order to maintain the oil film. Drive-up is complete when the diameter of the outer sleeve has increased by the dimension Δ given on pages 6 – 8. Vent and drain oil before measuring Δ. The dimension A_3 may be used as a rough indication of the position the sleeve must take to ensure this expansion. If, after the first drive-up, a note is made of the exact final position of the outer sleeve, it will be unnecessary to measure dimension Δ subsequently. Open the pressure reduction valve on the injectors to release the oil between the sleeves. This takes about ten minutes. The oil pressure in the hydraulic unit must not be reduced until this has been done. Disconnect the injectors and the pump, but let the oil remain in the hydraulic unit. Seal the oil ducts with the appropriate plugs.



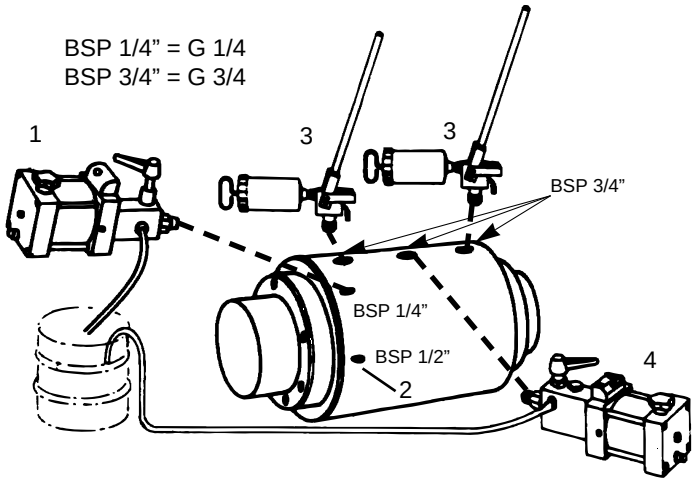
For OKC 180 – OKC 190: After the initial mounting operation, release the horizontal grub screws, and then tighten the coupling nut firmly. Retighten the grub screws.

For OKC 200 and larger: After the initial mounting operation, tighten the nut firmly. Remove the screw in the center of each lock lever. Position the lock levers to lock the nut, and fasten them.

Coat the exposed parts of the coupling seatings and the inner sleeve with rust preventive; this will also prevent moisture from penetrating beneath the coupling.

6 **Valid only for Couplings OKC 500 – OKC 1000**

Slacken the vent hole screw 2. Connect the hydraulic pump 1 and pump oil into the hydraulic unit until air free oil escapes through the vent hole 2. Stop pumping and close the hole. Connect the injectors 3 and 4 and start injecting oil using injector 4. When oil emerges all around the periphery at the large end of the inner sleeve, start injection also with both injectors 3. After injecting oil with all injectors for a couple of minutes, start the hydraulic pump 1, thus driving up the outer sleeve. If the oil leaks through the sealing ring, apply a blast of compressed air to vent hole 2. The injection of oil between the sleeves should be continued during the entire drive-up process in order to maintain the oil film. Drive-up is complete when the dimeter of the outer sleeve has increased by the dimension Δ given on pages 8 – 9. Vent and drain oil before measuring Δ. The dimension A_3 may be used as a rough indication of the position the sleeve must take to ensure this expansion. If, after the first drive-up, a note is made of the exact final position of the outer sleeve, it will be unnecessary to measure dimension Δ subsequently. Open the pressure reduction valve on the injectors to release the oil between the sleeves. This takes about 15 minutes. The oil pressure in the hydraulic unit must not be reduced until this has been done. Disconnect the injectors and the pump, but let the oil remain in the hydraulic unit. Seal the oil ducts with the appropriate plugs. After the initial mounting operation, tighten the nut firmly. Remove the screw in the center of each lock lever. Position the lock levers to lock the nut, and fasten them.



Wether you use set TMHK 39, TMHK 40 or TMHK 41 procede in the same way.

Coat the exposed parts of the coupling seatings and the inner sleeve with rust preventive; this will also prevent moisture from penetrating beneath the coupling.

Dismounting OKC and OKCS Couplings

1 Support the shafts on both sides of the coupling. Unfasten the levers that lock the nut.

2 Connect the pump and the injectors as for mounting. For couplings larger than OKC 490, connect also the return pipe to the vent hole 2. Pump oil into the hydraulic unit until air-free oil escapes through the vent hole 2. Stop pumping and close the hole. Continue pumping to pressurize the hydraulic chamber. If oil leaks through the sealing ring, apply a blast of compressed air to vent hole 2. Using the injector, force oil between the coupling sleeves until it emerges all around the periphery at the large end of the inner sleeve. Start operating the injector closest to the hydraulic unit.

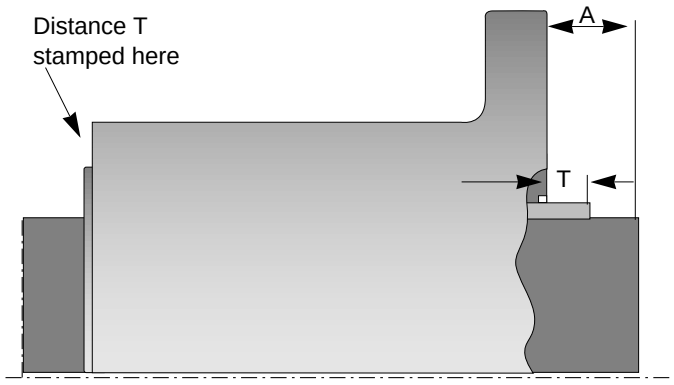
3 Open the return valve on the pump just enough to allow the outer sleeve to slide slowly down the inner sleeve. The injection of oil between the sleeves should be continued during the entire dismounting process in order to maintain the oil film. One way of facilitating the release of the outer sleeve is to drive it a very short distance further up using the pump. Also by using oil of a thicker type in the injectors the release is facilitated.

4 For OKC 200 and larger: Fit the screw in the center hole of each lock lever, and tighten against the nut.
Clean the shafts adjacent to the coupling, make sure that the shafts are aligned and slide the coupling completely on to one shaft. Make sure that hte coupling does not weigh on the shafts. The pump connection hole and the vent hole must be closed whilst the coupling is being moved: the oil in the hydraulic unit will then transmit the force and the sealing ring will not be damaged.

Mounting instructions OKF Flange Couplings

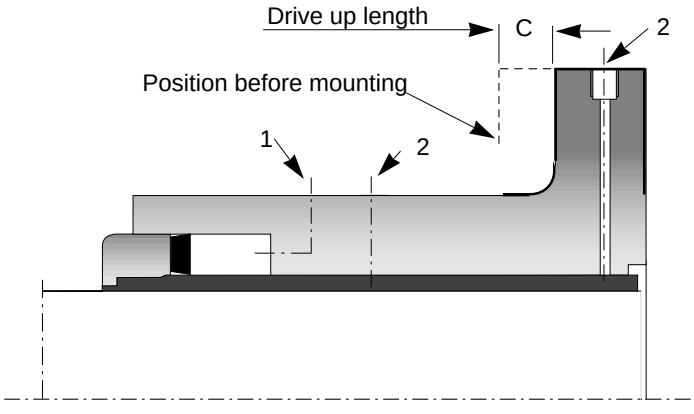
1 Remove any burrs on the coupling seating on the shaft. Clean and wash the inner sleeve bore and the coupling seating with white spirit, so that the anticorrosive agent is removed. Ensure that the seating has been machined to the correct tolerances.

2 Fit the lock levers for couplings larger than OKF 300. Align the coupling with the shaft, ensuring that the injector connection holes face upwards. To prevent misalignment and damage to the seating, guide the coupling carefully and slide it onto the shaft. Make sure that the coupling does not weigh on the shafts. Check the dimension T to ensure that complete contact is achieved between the tapered mating surfaces. Then push the coupling along until the distance between the flange and the end of the shaft is A mm. This is the position where the drive-up operation is to begin.



The dimension “A” may vary between
$A_{min.}$ = stamped T dimension
$A_{max.}$ = Drive up distance – 1 mm

3 Remove the lock levers. Unscrew and remove the two plugs, item 1. Connect the hydaulic pump to one of the holes. The other hole is left open to serve as a vent. Then pump oil into the hydraulic unit until there are no bubbles of air in the oil escaping through the vent, stop pumping and close the hole. Unscrew and remove the plugs, item 2, and connect the two injectors. Work the injectors until oil emerges at the flange face. Start operating the pump connected to 1 again, thus driving up the outer sleeve. Continue to inject oil between the sleeves during the entire drive-up operation in order to maintain the oil film between the tapered mating surfaces. The drive-up is completed when the dimension C is reached.



1. One BSP 1/4 connection hole for pump and one BSP 1/4 vent hole for air release
2. BSP 3/4 holes for injectors

4 Open the pressure reduction valve on each of the injectors to release the oil between the sleeves. Disconnect the injectors. Wait ten minutes and then release the oil pressure in the hydraulic unit and disconnect the oil supply pipe. Reinsert the plugs in the holes.

For couplings OKF 100 – OKF 290: After the initial mounting operation, release the horizontal grub screws and then tighten the coupling nut firmly. Retighten the grub screws.

For OKF 300 and larger: After the initial mounting operation, tighten the nut firmly, remove the screw into the center of each lock lever. Position the lock levers to lock the nut, and fasten them.

Dismounting instructions of OKF Flange Couplings

1 Connect the hydraulic pump and the injectors as for mounting. Pump oil into the hydraulic unit until air-free oil escapes through the vent hole 1. Stop pumping and close the hole. Set the oil pressure in the hydraulic unit to about 20 MPa.

If the oil leaks through the sealing ring, apply a blast of compressed air to vent hole 1. See figure on page 23.

Start injecting oil between the sleeves with the injector on the flange, until oil emerges between the sleeves all round. Then operate both injectors for a few minutes.

2 Open the return valve on the pump so that the outer sleeve slides back. The injection of oil between the sleeves should be continued during the entire dismounting process in order to maintain the oil film. Should the sleeve not move, close the return valve and press oil into the hydaulic chamber once again. Change the oil in the injectors for a thicker type and try again.

3 For OKF 300 and larger: Fit the screw in the center hole of each lock lever, and tighten against nut.

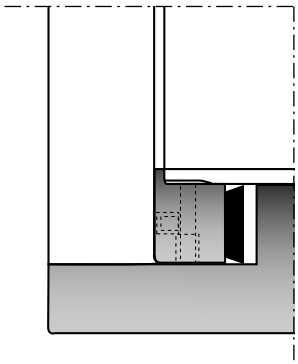
Guide the coupling carefully as it is slid off the shaft. Make sure that it does not weigh on the shaft.

Disassembling the coupling

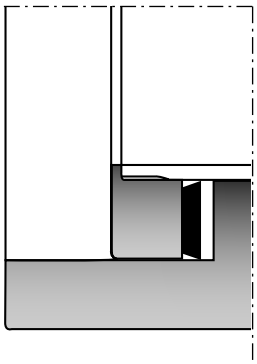
The OKF coupling is a unit which should normally not be disassembled. However, should it become necessary to do so, the nut must be removed first. The rubber sealing ring must also be removed before the coupling sleeves are separated, otherwise it may obstruct disassembly and thus be damaged. Remove it carefully using a tool with rounded edges. When the coupling sleeves have been reassembled, the sealing is fitted carefully, positioned as shown in the figure. It must be passed over the thread on the inner sleeve and pushed some distance up on the taper. Then, once the nut has been screwed on, the sealing ring is brought into position against the nut by applying a blast of compressed air through the oil supply hole.

For OKF 100 – OKF 290: The nut is locked by a rubber plug which is compressed by a horizontal grub screw so that it penetrates into the threads of the inner sleeve; the screw must be slackened off.

OKC 100 – OKC 190
OKF 100 – OKF 290

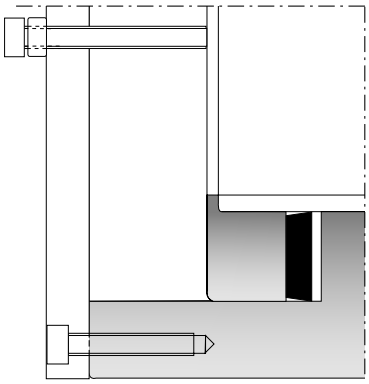


OKC 200 and larger
OKCS 178 and larger
OKF 300 and larger

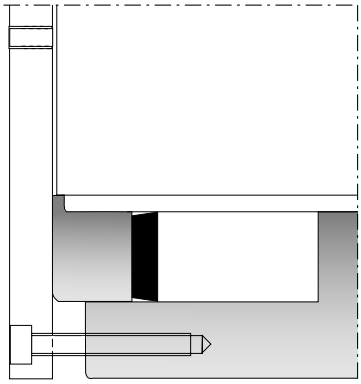


Locating device for outer sleeve

All OKC couplings for shafts with diameters over 200 mm and OKF couplings for shafts with diameter over 300 mm are equipped with lock levers, which prevent the outer sleeve from being driven up unintentionally on the inner sleeve during transport and when the coupling is being mounted or dismounted. The lock levers also lock the nut when the coupling has been installed.



Locating device before mounting



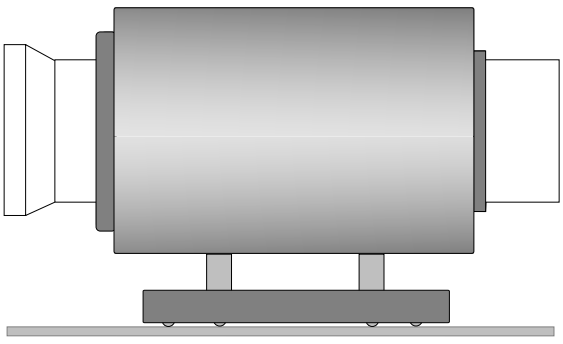
Locating device after mounting

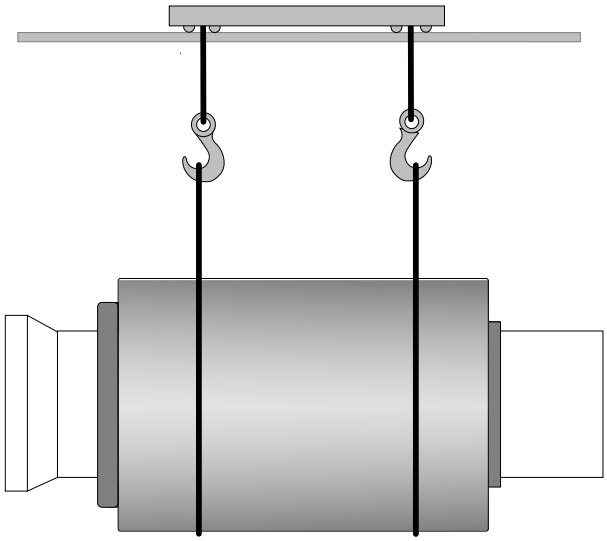
Mounting arrangements for OKC Couplings

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

OPTION I

A wheeled cariage 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.

The Supergrip Bolt cuts down on downtime

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

When you connect your couplings with 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 has been released, each bolt will slide out as easily as it went in.

90-percent reduction of downtime

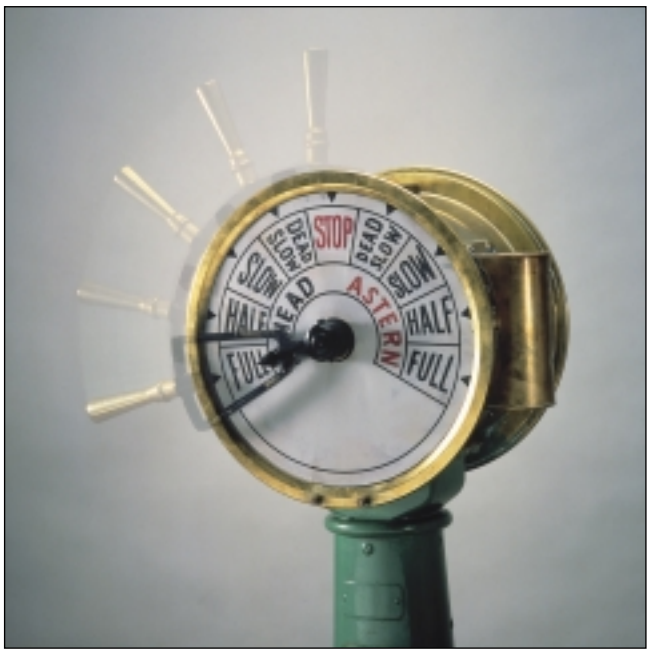
A study released by the Swedish State Power Board on the comparison of individually fitted bolts with Supergrip bolts showed a 90-percent reduction in the time required to disassemble and reassemble the couplings of two turbo sets (eight couplings).

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

Oil Injection Technology

The Supergrip bolts are a superior solution for connecting rotating flange couplings. Compared with traditional bolt systems, 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 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, turbo generators, the Supergrip bolt offers significant advantages.

Simplified machining of the holes and no grinding of the bolts. You eliminate re-reaming and re-honing. The bolts are designed to be inserted and removed with an initial clearance fit. There is no risk of seizure.

For more detailed information and design recommendations, please ask for our Supergrip brochure.

Our track record in Torque Transmission

The innovative OK Coupling, which only requires a cylindrical shaft, is based on the principle of transmitting torque by applying a powerful interference fit with the oil injection method. Mounting and dismounting takes only a fraction of the time required with the conventional devices.

The same advanced design has now been applied to the coupling bolt. The Supergrip Bolts represent a ‘‘quantum leap’’ in improving the technology of connecting rotating flange couplings. They are already on the job – on land and at sea – delivering performance that supports the claim that they are better than any other coupling bolt available on the market.

For instance, the cruise ship “Grand Princess” (below) is equipped with two OKC 500. The two shaftlines are connected with 124 Supergip Bolts in size range OKBS76x315 to OKBS50x140.

Photo courtesy of Fincantieri

OKC and OKCS Shaft Couplings
OKF Flange Couplings
OKTC Hydraulic Rings and Propeller Nuts
from
Ovako Couplings

OVAKO COUPLINGS AB

S-813 82 Hofors, Sweden.
Tel: +46 290 250 00. Fax:+46 290 282 70
E-mail: ovakocouplings@skf.com

Publication OK-1/GB 03.00