## DOCUMENTATION SHEET

Propulsion Equipment Coupling type RDC





Yacht equiped with RDC



RDC



RDC mounted

### General

The range of Rubber Design Couplings (RDC) were designed specially to fit the most common propeller shaft diameters. The simple design provides a powerful friction joint for high torque transmission, combined with effortless mounting and dismounting features using oil injection technology.

Although originally used by Rubber Design for propeller shaft installations in yachts, the couplings are particularly versatile and can be equally used for pumps, turbines, compressors and generators. For applications like mining equipment, wind turbines, heavy machining and other shaft connections exposed to high torque transmission. A range of couplings is available in steel or stainless steel ranging from 100mm to 400mm. Custom-built sizes are also an option.

### How the RDC works

The Rubber Design Coupling (RDC) is a mechanical shaft connection, which can be mounted and dismounted hydraulically.

The RDC consists of 2 conical sleeves made of high quality steel. The sleeves have matching tapered sides on each sleeve, the inner sleeve is tapered on the outside and the outer sleeve has a tapered inside. Hydraulic pressure is used to build up an oil film between the sleeves to eliminate metallic contact. The inner sleeve has a nut with a seal, it seals an annular chamber. Low oil pressure is built up in this chamber to press the outer sleeve up the taper of the inner sleeve. When the outer sleeve has reached its pre-determined value, pressure is released between the sleeves, creating a solid connection between the two shafts. The connection is now capable of transmitting high torque loads.

### Expertise & Quality

In the last 25 years Rubber Design gained much experience in mounting, and supplying propeller shaft installations for the exclusive yacht building industry. All Rubber Design Couplings are developed and made in house. They are cost effective and of the highest quality. In Rubber Design 's Research & Development department, all components used are first modeled and examined using finite element analysis tools. The finished products are then thoroughly tested using destructive and non-destructive tests for both custom and standard products.

### Shafts

To ease the shaft alignment for RDC couplings the shafts should be so designed that the coupling can be slid along it. The surface roughness has to be within Ra 2.5  $\mu$ m, with a ISO tolerance of E7.

See reverse side for more detailed information.





# Rubber Design vibration and noise control



ТҮРЕ	d (mm)	D [mm]	L1 [mm]	L2 [mm]	L3 (mm)	L4 [mm]	∆ [mm]		Mass kg		Mt max [kNm]
RDC 100	100	165	285	265	110	10	0.16		30		21,5
RDC 110	110	175	305	285	120	10	0.17		38		
RDC 120	120	185	325	305	130	10	0.18		48		
RDC 130	130	195	345	325	140	10	0.21		58		
RDC 140	140	220	365	345	155	15	0.23		71		
RDC 150	150	240	386	370	160	10	0.23		91		
RDC 160	160	250	408	395	170	10	0.27		101		
RDC 170	170	270	426	415	180	10	0.27		125		
RDC 180	180	290	456	435	190	10	0.28	155			147,6
RDC 190	190	300	490	475	200	10	0.31	175			167,5
RDC 200	200	330	510	495	215	15	0.31	215			197,6
TYPE	d [mm]	D [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	∆ [mm]	A4 [mm]	G	Mass kg	Mt max [kNm]
RDC 200	200	330	510	495	215	15	0.31	30	M12-(4x)	215	197,6
RDC 210	210	330	522	512	220	10	0.35	30	M12-(4x)	230	232
RDC 220	220	350	550	520	235	15	0.35	30	M12-(4x)	265	274,1
RDC 230	230	360	570	540	245	15	0.38	30	M12-(4x)	285	315,7
RDC 240	240	380	590	560	255	15	0.38	30	M12-(4x)	330	359,7
RDC 250	250	390	610	580	265	15	0.41	30	M12-(4x)	350	410,7
RDC 260	260	400	630	600	275	15	0.42	30	M12-(4x)	410	456,3
RDC 270	270	430	660	620	285	15	0.42	30	M12-(4x)	470	501,8
RDC 280	280	440	680	640	295	15	0.46	30	M12-(4x)	510	563,7
RDC 290	290	460	700	660	315	25	0.46	30	M12-(4x)	580	630,4
RDC 300	300	470	720	680	325	25	0.50	27	M16-(4x)	625	702
RDC 310	310	500	740	700	335	25	0.50	27	M16-(4x)	700	778,7
RDC 320	320	510	760	720	345	25	0.50	27	M16-(4x)	790	851,7
RDC 330	330	520	780	740	355	25	0.54	27	M16-(4x)	830	938,7
RDC 340	340	540	800	760	365	25	0.54	27	M16-(4x)	930	1025,6
RDC 350	350	550	820	780	375	25	0.57	27	M16-(4x)	980	1123,9
RDC 360	360	560	840	800	385	25	0.58	27	M16-(4x)	1080	1228,1
RDC 370	370	570	860	820	395	25	0.58	27	M16-(4x)	1190	1338,4
RDC 380	380	580	885	840	410	30	0.61	27	M16-(4x)	1250	1455,1
RDC 390	390	600	905	860	420	30	0.62	27	M16-(4x)	1370	1575,6
RDC 400	400	620	925	880	430	30	0.65	27	M16-(4x)	1440	1705,5





Tension in coupling



Production equipment

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