

Flexible Shaft Couplings



- For engines 5 to 1500 HP
- Reduces engine noise and vibration transmission
- Fail safe design
- Bolts between existing shaft flanges
- Requires no machining
- Simple to install
- Simple to periodically check alignment
- Wide range of stock
- Accepts propeller thrust
- Impervious to salt water, diesel and lubrication oils
- Fast installation time
- Electrical continuity available
- Worldwide availability
- Competitively priced

R & D Marine has developed a wide range of competitively priced Flexible Couplings to fit all major installations.

The R & D Flexible Couplings reduce engine noise, vibration transmission and are designed to accept propeller thrust, a separate thrust bearing and bulk head are not required.

The couplings are made from a polyester elastomer which is not affected by salt water, diesel and lubrication fluids.

If electrical continuity is required an earthing connector can be fitted in the centre of most Flexible Couplings.

Installation is quick and easy as the R & D Coupling requires no machining and comes supplied with bolts to connect between the two existing shaft flanges.

Checking alignment on installation and during service checks is quick and easy using the red cone headed bolt.

Products are available ex-stock and worldwide through our distribution network.

R & D Marine Flexible Shaft Couplings

How to Select (details required)

1. Engine horse power and Engine Speed
2. Gearbox type and reduction ratio
3. Gearbox flange details. Diameter of flange. Diameter of register. Pitch circle diameter of fixing holes. Size and quantity of holes
(Pitch circle diameter is the distance between the centre of hole at 12 O'clock position to the centre of the hole at 6 o'clock)

Example

1. Ford 150 HP at 2500 RPM
2. Borg Warner Velvet Drive 72C 2:1 Reduction
3. 5" Flange, 2.500 dia Register, 4.250 PCD, 4 off holes 0.437 diameter

To calculate Power of coupling required.

$$\frac{\text{Horse Power of Engine} \times \text{Reduction Ratio} \times 100}{\text{Engine Speed}} = \text{HP}/100\text{rpm}$$

$$\frac{150 \times 2 \times 100}{2500} = 12 \text{ HP}/100 \text{ rpm} \quad \text{Coupling Required 910-009 Borg Warner}$$

The R & D 910 Series couplings consist of a contoured flexible disc moulded in tough yet resilient new type Polyester Elastomer. The contoured disc gives clearance for bolt heads, and is able to flex freely to take up any temporary misalignment of the engine and shaft, due to flexing of the boat structure or the engine moving on its rubber vibration isolation mountings. Forward thrust is taken in compression on the disc between the two half couplings and reverse thrust is taken again in compression on the disc between the two fail safe straps. In the unlikely event of a disc failure, the steel straps make the coupling fail safe and ensure drive is maintained in both forward and reverse.

Couplings as standard are non-conducting but we can supply a silver impregnated rubber element to fit in the centre of the coupling between the two fail safe straps to give continuity if required.

Flexible Coupling Information

Flexible Coupling	Manufacturer	Gearbox Flange Dimensions						Flexible Coupling Details										
		Diameter		No Bolts	Nom Dia Of Holes		Bolt Pitch Circle		Register		Diameter		Length	Bolt Dia	Capacity /100 rpm	Ref		
		mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch					kW	HP
910-001	B/W, PRM, ZF-Hurth, Technodrive	101.6	4.00	4	10.0	0.39	82.55	3.25	63.5	2.50	114.3	4.5	32.5	1.28	M10	3.73	5	
910-002	Yanmar	101.6	4.00	4	10.0	0.39	78.00	3.07	50.0	1.97	114.3	4.5	32.5	1.28	M10	2.24	3	
910-003	B/W, PRM, ZF-Hurth, Twin Disc	146.0	5.75	6	12.7	0.50	120.6	4.75	76.2	3.00	152.4	6.0	47.5	1.87	1/2 UNF	14.92	20	X O
910-004	B/W, PRM, ZF-Hurth	101.6	4.00	4	10.0	0.39	82.55	3.25	63.5	2.50	114.3	4.5	35.6	1.40	M10	5.97	8	
910-005	Paragon	101.6	4.00	4	9.7	0.38	82.55	3.25	66.7	2.63	114.3	4.5	34.5	1.35	3/8 UNF	5.22	7	
910-006	Twin Disc, ZF-Hurth	146.0	5.75	6	16.0	0.63	120.6	4.75	76.2	3.00	152.4	6.0	47.5	1.87	1/2 UNF	14.92	20	O X O
910-007	Volvo	101.6	4.00	4	10.0	0.39	80.0	3.15	60.0	2.36	114.3	4.5	43.7	1.72	M10	2.24	3	
910-009	B/W, PRM, ZF-Hurth, Volvo	127.0	5.00	4	11.2	0.44	107.9	4.25	63.5	2.50	143.0	5.63	45.0	1.77	7/16 UNF	9.69	13	X O
910-012	Yanmar	127.0	5.00	4	10.0	0.39	100.0	3.93	65.0	2.56	135.0	5.31	45.0	1.77	M10	7.46	10	
910-013	Bukh	90.0	3.54	4	8.1	0.32	74.5	2.93	47.0	1.85	114.3	4.5	32.5	1.28	M8	2.24	3	
910-014	B/W, PRM, ZF-Hurth, Technodrive	101.6	4.00	4	10.0	0.39	82.55	3.25	63.5	2.50	114.3	4.5	32.5	1.28	M10	2.24	3	
910-015	Self Change 350HD	222.2	8.75	6	11.2	0.44	190.5	7.50	152.4	6.00	222.2	8.75	44.5	1.75	7/16 UNF	32.1	43	O
910-016	Self Change 700HD	260.4	10.25	6	16.0	0.63	228.6	9.00	152.4	6.00	276.4	10.88	58.0	2.28	5/8 UNF	48.47	65	X O
910-017	Twin Disc	184.2	7.25	6	19.0	0.75	152.4	6.00	95.25	3.75	190.5	7.5	60.7	2.39	5/8 UNF	29.84	40	O X O
910-018	PRM	184.2	7.25	6	16.0	0.63	152.4	6.00	95.25	3.75	190.5	7.5	60.7	2.39	5/8 UNF	29.84	40	X O
910-019	Volvo	101.6	4.00	4	10.0	0.39	80.0	3.15	60.0	2.36	114.3	4.5	32.5	1.28	M10	2.24	3	
910-020	Volvo	101.6	4.00	4	10.0	0.39	80.0	3.15	60.0	2.36	114.3	4.5	32.5	1.28	M10	3.73	5	
910-021	Enfield, Sonic	101.6	4.00	2	11.2	0.44	76.0	3.00	---	---	108.0	4.25	41.7	1.64	7/16 UNF	1.87	2.5	
910-022	Twin Disc	228.6	9.00	8	22.6	0.89	190.5	7.50	152.4	6.00	222.2	8.75	44.5	1.75	1/2 UNF	48.47	65	O X O
910-024	Twin Disc	266.7	10.5	8	25.4	1.00	222.2	8.75	127.0	5.00	276.4	10.88	56.7	2.23	5/8 UNF	63.38	85	O X O
910-025	B/W, PRM, ZF-Hurth, Twin Disc	146.0	5.75	6	12.7	0.5	120.6	4.75	76.2	3.00	152.4	6.0	49.8	1.96	1/2 UNF	20.88	28	X O
910-026	Twin Disc	146.0	5.75	6	16.0	0.63	120.6	4.75	76.2	3.00	152.4	6.0	49.8	1.96	1/2 UNF	20.88	28	O X O
910-027	ZF W320 320A	225	8.86	8	17.0	0.67	196	7.72	140	5.51	228.6	9.0	44.5	1.75	1/2 UNF	48.47	65	O
910-028	Bukh	90.0	3.54	4	8.1	0.32	74.5	2.93	47.0	1.85	114.3	4.5	32.5	1.28	M8	3.73	5	
910-029	B/W, ZF-Hurth, Volvo	127.0	5.00	4	11.2	0.44	107.9	4.25	63.5	2.50	143.0	5.63	52.4	2.06	7/16 UNF	14.92	20	O
910-030		292.1	11.5	8	25.4	1.00	247.6	9.75	152.4	6.00	292.1	11.5	58.4	2.30	5/8 UNF	89.48	120	O X O
910-032	B/W, PRM, ZF-Hurth, Twin Disc	146.0	5.75	6	12.7	0.5	120.6	4.75	76.2	3.00	152.4	6.0	55.4	2.18	1/2 UNF	27.6	37	
910-033	Twin Disc, ZF-Hurth	146.0	5.75	6	16.0	0.63	120.6	4.75	76.2	3.00	152.4	6.0	55.4	2.18	1/2 UNF	27.6	37	O
910-034	Open Centre V Drive	127.0	5.00	4	11.2	0.44	107.9	4.25	63.5	2.50	143.0	5.63	45.0	1.77	7/16 UNF	8.95	12	#
910-035		340.0	13.38	8	25.4	1.00	295.3	11.63	152.4	6.00	348.0	13.7	108.0	4.25	5/8 UNF	119.3	160	O
910-036	Twin Disc	127.0	5.00	4	10.0	0.39	104.8	4.13	63.5	2.50	143.0	5.63	45.0	1.77	M10	7.46	10	
910-037	Yanmar	130.0	5.12	4	12.3	0.48	107.9	4.25	63.5	2.50	143.0	5.63	51.1	2.01	7/16 UNF	9.69	13	
910-038	Taipeoungyang TK 250	178.0	7.00	6	14.3	0.56	152.0	5.99	100	3.937	190.5	7.50	63.3	2.49	M14	41.0	55	
910-039	Twin Disc	184.2	7.25	6	19.0	0.75	152.4	6.00	95.25	3.75	190.5	7.50	63.3	2.49	5/8 UNF	41.0	55	O
910-040	PRM	184.2	7.25	6	16.0	0.63	152.4	6.00	95.25	3.75	190.5	7.50	63.3	2.49	5/8 UNF	41.0	55	
910-041		292.1	11.5	8	25.4	1.00	247.6	9.75	152.4	6.00	292.1	11.5	58.4	2.30	5/8 UNF	104.4	140	O
910-042	Dong-I DMT 170HL	287.2	11.3	6	25.1	0.98	240.0	9.45	160.0	6.30	292.1	11.5	58.4	2.30	5/8 UNF	67.0	90	O
910-043	Yanmar	101.6	4.00	4	10.0	0.39	78.0	3.07	50.0	1.97	114.3	4.5	32.5	1.28	M10	3.73	5	
910-044	B/W, PRM, ZF-Hurth, Volvo	127.0	5.00	4	11.2	0.44	107.9	4.25	63.5	2.50	143.0	5.6	45.0	1.77	7/16 UNF	5.97	8	
910-045		340.0	13.38	8	25.4	1.00	295.3	11.63	152.4	6.00	348.0	13.7	108.0	4.25	3/4 UNF	171.5	230	O
910-046	Allison M25	228.6	9.00	8	19.0	0.75	190.5	7.50	152.4	6.00	222.2	8.75	44.5	1.75	1/2 UNF	48.47	65	O
910-047	Dong-I DMT 260H	292.1	11.5	6	21.0	0.826	240.0	9.45	150.0	5.905	292.1	11.5	58.4	2.30	5/8 UNF	67.0	90	O
910-048	Twin Disc MG 5111 SC	228.6	9.00	6 (8)	22.6	0.89	190.5	7.50	152.4	6.00	222.2	8.75	62.7	2.47	1/2 UNF	48.47	65	O X O
910-049	ZF 325-1A Volvo Flange	205.0	8.07	10	18.0	0.71	170.0	6.69	140.0	5.51	223.0	8.78	124.0	4.88	M18	56	75	
910-050	Twin Disc 510A/5114A	230.0	9.00	8	22.6	0.89	190.5	7.50	152.4	6.00	230.0	9.00	101.6	4.0	1/2 UNF	63.38	85	O
910-051	Twin Disc MG 521	279.4	11.00	8	19.0	0.75	241.3	9.50	152.4	6.00	260.4	11.25	58.4	2.30	5/8 UNF	89.48	120	O
910-052	Lister	120.7	4.75	6	11.2	0.44	98.5	3.88	63.5	2.50	150.9	5.94	69.9	2.75	7/16 UNF	7.46	10	
910-053	Dong-I DMT 150H	218	8.58	6	20.0	0.79	180.0	7.09	140.0	5.51	222.2	8.75	45.0	1.77	1/2 UNF	35.8	48	O
910-054	Open Centre V Drive	146.0	5.75	6	12.7	0.50	120.6	4.75	76.2	3.00	152.4	6.0	47.5	1.87	1/2 UNF	17.9	24	
910-055	Open Centre V Drive	127.0	5.00	4	11.2	0.44	107.9	4.25	63.5	2.50	143.0	5.63	45.0	1.77	7/16 UNF	5.2	7	#
910-057	B/W, Hurth, Volvo	127.0	5.00	4	11.2	0.44	107.9	4.25	63.5	2.50	143.0	5.63	52.4	2.06	7/16 UNF	18.64	25	
910-058	Dong-I DMT 70T, 90T, 100T	178.0	7.00	6	16.0	0.63	152.0	5.98	100.0	3.94	190.5	7.50	63.3	2.49	5/8 UNF	41.0	55	
910-059	Volvo	101.6	4.00	4	10.0	0.39	80.0	3.15	60.0	2.36	114.3	4.5	35.6	1.40	M10	5.96	8	
910-060	TMP	112.8	4.44	2	11.2	0.44	81.0	3.19	---	---	112.8	4.44	38.1	1.50	7/16 UNF	2.42	3.25	
910-061	Open Centre V Drive	127.0	5.00	4	11.2	0.44	107.9	4.25	63.5	2.50	143.0	5.63	52.6	2.07	7/16 UNF	14.16	19	
910-062	Dong-I DMT 140H	198.0	7.80	6	16.0	0.63	170.0	6.69	130.0	5.118	210.0	8.27	48.2	1.90	M16	47.0	63	

O These couplings are fitted with a shouldered bush to locate in the gearbox flange

X These flexible couplings have been approved by LLOYDS REGISTER OF SHIPPING

O These flexible couplings have been approved by BUREAU VERITAS

For the Hurth HBW 150 V Gearbox an adaptor 202-351 is required (22.3 mm 0.875" long)

For the IRM 220A Gearbox, we can supply adapter plate 202-384 (54mm 2.125" long) and for the Twin Disc 502 Gearbox, adapter plate 202-148 (54mm 2.125" long) that bolt onto flexible coupling 910-003, 910-025 or 910-032 and with half coupling 202-037 or 202-054, alternatively clamp type 202-176 or 202-178

$$\text{HP} \times 0.7457 = \text{KW}$$

$$\text{KW} \times 1.341 = \text{HP}$$

Coupling Selection Guide

ALLISON

M25 9" Flange 910-046

BORG WARNER

4" Flange 910-001, 910-004, 910-014

70C
71C
500
1000
1500

5" Flange 910-009(BW) 910-029, 910-044(BW), 910-057

71C
72C
5000

6" Flange 910-003, 910-025, 910-032

73C
7000

BUKH

4" Flange 910-013, 910-028

DONG I

DMT 70T 178 mm Flange 910-058

DMT 90T

DMT 100T

DMT 140H 198 mm Flange 910-062

DMT 150H 218 mm Flange 910-053

DMT 170HL 287 mm Flange 910-042

DMT 260H 292 mm Flange 910-047

ENFIELD and SONIC DRIVES

2 Bolt 910-021

LISTER

4 1/2" Flange 910-052

NEWAGE PRM

S= Shallow Case, D= Deep Case

4" Flange 910-001, 910-004, 910-014

Delta

80

120

150

5" Flange 910-009(PR) 910-044(PR)

101 910-029

140

160

260

6" Flange 910-003, 910-025, 910-032

175

265

301

302

310

401

402

500

750

601 3:1

1000 3:1

7 1/2" Flange 910-018, 910-040

601 4:1

1000 4:1

1200S

1500S

1750S

10 1/2" Flange 910-024

1200D

1500D

1750D

PARAGON

4" Flange 910-005

SELF CHANGE GEARS

8 3/4" Flange 910-015

350HD

10 3/4" Flange 910-016

700

TAIPEOUNGYANG

178 mm Flange 910-038

TK250

TECHNODRIVE

4" Flange 910-001, 910-004, 910-014

TMC30

TMC40

TMC50

TMC60

TM260

5" Flange 910-009(PR) 910-029

TM93 910-044(PR)

TM93A

TM170

TM170A

TM345

TM345A

TM485A

TM545A

TM880A

6" Flange 910-006, 910-026, 910-033

TM130B

TM200B up to 1.28: 1

TM265

TM265A

7 1/4" Flange 910-018

TMC200B up to 4.48: 1

TM1200A

TMP

2 Bolt 910-060

5" Flange 910-009(PR) 910-044(PR)

12000

TWIN DISC

SC= Shallow Case, DC= Deep Case

4" Flange 910-001, 910-004, 910-014

MG 340

MG 360

MG5010SC

MG5011SC

MG5010V

4 3/4" Flange Adaptor 202-148 with

MG502-I 910-003, 910-025, 910-032

MG502-V

5" Flange 4 1/2 PCD 910-036

MG5010A

MG5011A

5" Flange 4 1/2 PCD 910-009(PR) 910-044(PR)

MG5005A 910-029, 910-057

MG5012SC

MG5015A

MG5020SC

MG5055A

6" Flange 910-006, 910-026, 910-033

MG5010DC

MG5050

MG5050-V

MG5050-A

MG5061SC

MG5061-A

MG5061V

MG5062V

MG506-1

MG506A-1

MG507-1

MG507A-1

MG5075IV

MG5075-A

MG5075SC

7 1/2" Flange 910-017, 910-039

MG506DC

MG5065A

MG507-1

MG507-1SC

MG507-2SC

MG507A-2

MG5075A needs adaptor 202-356

MG5075SC

MG5075IV

MG5081SC

MG5081A needs adaptor 202-356

MG5082A

MG5082SC

MG5085SC needs adaptor 202-356

MG5085A needs adaptor 202-356

MG5090A

MG509SC

MG509U

MG5091SC

MG5095A

MGX5095A

TWIN DISC cont'd

9" Scalloped Flange 910-048

MG5111SC

MG5114SC

9" Flange 910-022, 910-050

MG510SC

MG510A

MG5111A

MG5114A

MG5111V,

MG5114V,

MG514CU

MG514U

MG5135A

10 1/2" Flange 910-024

MG5091DC

MG509DC

MG510DC

MG5111DC

MG5114DC

MG5113

MG514

VOLVO

4" Flange 910-007

MS

RB

4" Flange 910-019, 910-020, 910-059

MS 2

MS 10

MS 15

MS25

5" Flange 910-009(VO), 910-029

MS 3 910-044(VO), 910-057

MS4

MS5

HS25A

HS45A

HS63A

YANMAR (KANZAKI)

4" Flange 78mm PCD 910-002

KBW10 910-043

KM2

KM3

KM35

5" Flange 100mm PCD 910-012

KBW20

KBW21

KM4

KM4A

KMH4A

5 1/2" Flange 4 1/2 PCD 910-009, 910-029, 910-037

KM40 910-057

KM5

KMH50

6" Flange 910-006, 910-026, 910-033

KMH6

KMH60

ZF-HURTH

4" Flange 910-001, 910-004, 910-014

HBW HSW ZF

35

40

50

100

125H

12

125

150

150A

250

250H

250A

25

25A

25MA

30M

45A 1.25:1

45D

45C

4 3/4" Adaptor 202-384 with 910-003

910-025, 910-032

IRM ZF

220A-1 220A

225A

ZF HURTH cont'd

5" Flange 910-009(PR), 910-029

910-044(PR), 910-057

HBW HSW ZF

360

450H2

450A2 45A

450D 45C

630H1 63

630A1 63A

630D 63C

88C

90TS

90ATS

110TS

6" Flange 13.2 mm bolt holes 910-003,

910-025, 910-032

ZF

45

6" Flange 16.3mm bolt holes 910-006,

910-026, 910-033

HSW IRM ZF

800A2 80A

800A3 80-1A

85A

220PL 220 needs adaptor

202-329

280A

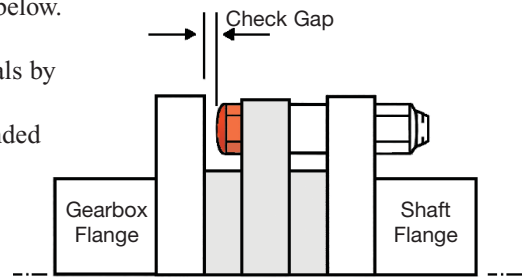
280-1

280V-LD 280-1A

280PL 280IV

INSTALLATION PROCEDURE FOR R & D MARINE COUPLINGS

1. Roughly align engine and stern gear without flexible coupling i.e. only two rigid half couplings pushed together.
2. Bolt "R & D Marine" coupling between the two rigid couplings. Tightening details as below.
3. Check alignment of engine by placing feeler gauges between the **RED CONE HEADED BOLT** and the rigid half coupling. Repeat for the **SAME** bolt at 90° intervals by rotating the shaft.
4. If the gap is the same in all four positions, the engine is accurately aligned. Recommended minimum to maximum gap difference: 0.25 mm / 0.010 inch.
5. Run installation to bring engine compartment to working temperature.
Re-check torque settings.



Recommended tightening torque:

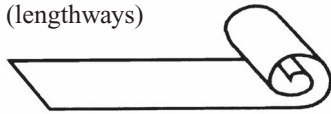
M8 - 27 Nm *20 lbsft* 3/8 UNF - 40 Nm *30 lbsft* M10 - 61 Nm *45 lbsft* 7/16 UNF - 81 Nm *60 lbsft* M12 - 108 Nm *80 lbsft*
 1/2 UNF - 100 Nm *75 lbsft* 5/8 UNF - 210 Nm *155 lbsft* M18 - 338 Nm *250 lbsft* 3/4 UNF - 366 Nm *270 lbsft*

EARTHING CONNECTORS

'R & D Marine' Earthing Connector consists of a silver impregnated rubber strip, which when fitted through the axis of the coupling between the two fail safe straps gives electrical continuity. R & D have sizes to fit most 910 series couplings.

INSTALLATION PROCEDURE FOR R&D EARTHING CONNECTORS

1. While carrying out the following procedure, ensure that the connector is not contaminated by grease or dirt.
2. Before fitting the coupling into the drive train, remove 2 off bolts holding one of the fail safe straps.
3. Remove the fail safe strap to uncover the hole in the centre of the coupling.
4. Roll up the earthing connector (lengthways) as tight as possible.



5. Push into the hole previously uncovered by removing the strap as far as possible.
6. Replace the fail safe strap ensuring that the connector is not damaged, replace 2 off bolts.
7. Fit the coupling as per the installation instructions.
8. Check electrical continuity on installation and thereafter at three to six month intervals.

R & D Marine Earthing Connector Application Guide		
Part No	Size (mm)	To Suit Coupling
103-036	9 x 57	910-021
103-037	11 x 57	910-001, 002, 007, 013, 014, 019, 020, 028, 043
103-038	15 x 57	910-004, 005
103-039	17 x 57	910-003, 006, 009, 012, 036, 037, 044, 052
103-040	19 x 57	910-017, 018, 025, 026
103-041	23 x 57	910-029, 039, 040
103-042	25 x 57	910-032, 033
103-043	15 x 75	910-015, 016, 022, 024, 046, 048, 053
103-044	17 x 75	910-030, 041, 042, 047, 051
103-053	19 x 75	910-062



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