

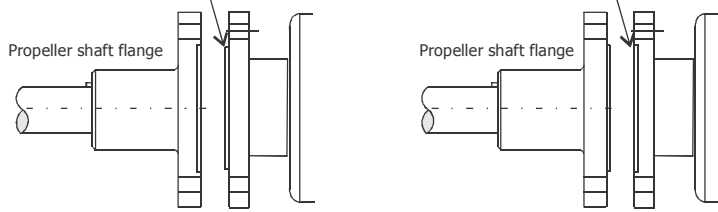
IsoFlex Flexible Disc Couplings: Installation Notes (Rev 3)

Flange Types

Male spigot gearbox flange denoted Type M
 Female spigot gearbox flange, denoted Type F.
 The spigot of the flanges (sometimes referred to as a 'pilot' or 'index ring') maintains the concentricity of the power transmission shafts.

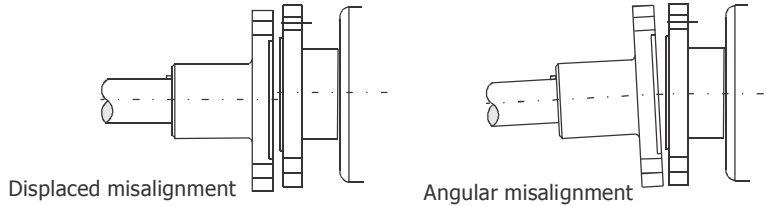
Male spigot gearbox flange type (M)

Female spigot gearbox flange type (F)



Flange misalignment

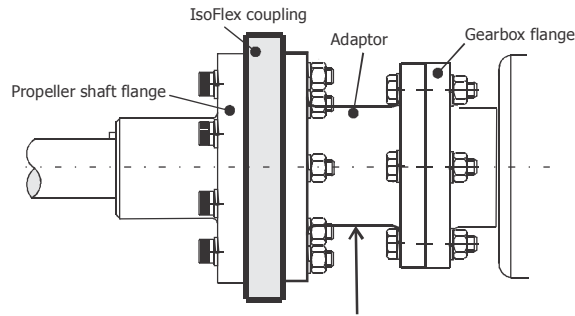
It is important to check for any misalignment of the gearbox and propeller shaft flanges. Noting that both 'displaced' and 'angular' misalignment can be present concurrently, and need to be minimised (maximum allowable between flanges of 0.004", 0.10mm) as this will impose stresses on the coupling and therefore reduce the service life. Heat build-up in the coupling is an indicator of misalignment being present in the system.



Adaptors

Some applications require an adaptor (cotton reel) to be fitted to the output flange of the gearbox to clear any obstructions (eg. oil pumps), and/or to accommodate a differential bolt pattern between the output flange and the required coupling.

Important Note: It is critically important to measure the spigot depths and heights to ensure that there is a minimum clearance of 0.020" (0.5mm), ie: none of the spigots shall ever 'bottom out'.



Note: It is recommended that Adaptors be manufactured by Marine Engineering companies, from '1040 grade steel' or equivalent and machined to the correct industry tolerances and bolt hole clearances and checked for fit and run-out.

Torque Calculation

To determine the engine/gearbox approximate output torque in Nm, use this formula:-

$$\text{Output Torque [Nm]} = \frac{\text{Engine Power (KW)} \times 9550 \times \text{Reduction Ratio}}{\text{Engine RPM}} \quad \text{or} \quad \text{Output Torque [Nm]} = \frac{\text{Engine Power (HP)} \times 7124 \times \text{Reduction Ratio}}{\text{Engine RPM}}$$

Conversion factors:

1 lb-ft = 1.356 Nm	1 hp = 0.746 kW
1 Nm = 0.7376 lb-ft	1 kW = 1.34 hp

Dimensions

As gearbox manufacturer's dimensions and specifications are subject change, it is necessary to check all dimensions to ensure fit and suitability of the coupling.

All IsoFlex couplings are manufactured from engineering grade polymers. Although these materials are thermosetting polymers, there may be dimensional changes from those specified, depending on ambient temperature conditions.

Tolerances

Tolerance on all machined spigots = +/- 0.002" (+/- 0.05mm) @ 25 degC ambient temperature.

All other dimensions: +/- 0.020" (+/- 0.5mm) @ 25 degC ambient temperature.

Electrical Isolation

IsoFlex polymer disc couplings electrically isolate the propeller & shaft from the engine & gearbox.

If a secure electrical connection is required from the engine to the propeller, a stainless steel Bonding Coil Spring can be fitted. - (optional)

Bolt assembly torques & high tensile grades

Coupling bolt size	Recommended assembly torque		High Tensile Grade AS 2465 / AS 1110
	N-m	lb-ft	
M8	14	10	Grade 5 / Class 8.8
M10	42	31	Grade 5 / Class 8.8
M12	46	34	Grade 8 / Class 10.9
M14	85	60	Grade 8 / Class 10.9
M16	112	83	Grade 8 / Class 10.9
M20	200	150	Grade 8 / Class 10.9

Coupling bolt size	Recommended assembly torque		High Tensile Grade AS 2465 / AS 1110
	N-m	lb-ft	
3/8"	27	20	Grade 5 / Class 8.8
7/16"	43	32	Grade 5 / Class 8.8
1/2"	63	47	Grade 8 / Class 10.9
3/4"	210	155	Grade 8 / Class 10.9
7/8"	278	206	Grade 8 / Class 10.9
1"	338	250	Grade 8 / Class 10.9

Note: Over tensioning of the propeller shaft flange bolts may cause internal damage, rendering the coupling unserviceable.