

# Torque Rating Calculation

## Questions?

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Use this document to assist you in determining the “maximum allowable” torque rating of your engine/transmission.

### Conversion factors:

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

To determine the appropriate engine/gearbox output torque in ft-lbs, use one of the formulae below:

To determine the appropriate engine/gearbox output torque in Nm, use one of the formulae below:

$$\text{Torque (ft-lb)} = \frac{(\text{Engine power (hp)} \times 5252 \times \text{gear reduction ratio})}{\text{Engine RPM}}$$

$$\text{Torque (Nm)} = \frac{(\text{Engine power (hp)} \times 7124 \times \text{gear reduction ratio})}{\text{Engine RPM}}$$

$$\text{Torque (ft-lb)} = \frac{(\text{Engine power (kW)} \times 7038 \times \text{gear reduction ratio})}{\text{Engine RPM}}$$

$$\text{Torque (Nm)} = \frac{(\text{Engine power (kW)} \times 9550 \times \text{gear reduction ratio})}{\text{Engine RPM}}$$

$$\text{Torque (ft-lb)} = 0.737 \times \text{Torque (Nm)}$$

$$\text{Torque (Nm)} = 1.356 \times \text{Torque (ft-lb)}$$

Once you have identified maximum output torque for your application, see the definitions below to determine which description of normal operation best fits your vessel.

#### Pleasure Craft

Planing hulls where full throttle operation is less than 5% of total operational time. Couplings for these vessels are rated to operate at 85% of maximum allowable working torque.

#### Medium Duty Craft

Pleasure or commercial craft (planing, semi-displacement or multi-hulls) such as patrol boats, charter fishing boats, etc. Couplings for these vessels are rated to operate at 75% of maximum allowable working torque.

#### Heavy Duty Craft

Commercial craft (heavy displacement, semi-displacement or multi-hulls in commercial operation) such as trawlers, ferries, etc. Couplings for these vessels are rated to operate at 50% of maximum allowable working torque.

Refer to the torque charts in the Isoflex Coupling Catalog (pages 11, 13, 15 and 16).

Note the torque rating in the chart which matches:

- 1) The Isoflex coupling that fits your dimensional characteristics, and
- 2) The type of “craft” you operate (given the above descriptions).

If the Isoflex torque rating in the chart is **equal to or higher than the torque rating** produced by your drive train, you can now order your Isoflex coupling.

If the Isoflex torque rating in the chart is **lower than the torque rating** produced by your drive train, please contact Isoflex.