



MINIMIZING VIBRATION



APPLICATIONS: MARINE

DEFENSE

INDUSTRIAL

COMMERCIAL

SEISMIC

GEARguard

FLEX COUPLINGS

INSTALL A FLEXIBLE COUPLING IF YOU WANT TO:

- Reduce the chance of damage to your engine and transmission. Under normal circumstances, a sacrificial flexible coupling should fail before this damage occurs.
- Isolate and minimize drive line vibration, propeller pulse and gear chatter. The result is a much quieter boating experience.
- Enhance drive bearing service life by reducing wear.
- Assist engine mounts to do their job by allowing controlled engine movement.
- Help alleviate thrust-induced drive line misalignment.

GEARguard

FLEX COUPLINGS

INSTALL AN ISOFLEX GEARguard COUPLING BECAUSE:

- IsoFlex has developed a specialized machining technique to eliminate run-out and consequent vibration.
- With IsoFlex internal hex-shaped fittings, the possibility of inserts turning in the coupling is minimized.
- IsoFlex couplings are easy to install. No cutting is required and your boat can remain in the water.
- IsoFlex takes the guesswork out of selecting the right coupling for your application. Please follow the “How to Measure” instructions beginning on page 5.
- Most 8-Bolt, 10-Bolt and large 6-Bolt couplings have been designed with precision machined steel index rings which maximize dimensional stability and minimize run-out.



CATALOG

CONTENTS

I have a coupling I would like to replace.

Please turn to pages 17 through 19 for cross reference charts.

Here you will find the correct GEARguard coupling to replace a Globe DriveSaver and other commonly used couplings.

I have my transmission information. Which coupling do I need?

Please turn to pages 20 through 23 for cross reference charts.

Here you will find the correct GEARguard coupling to use with a variety of transmissions, organized by manufacturer.

Will it fit?

If you do not find a cross reference “fit”, please turn to pages 5 through 9 for step-by-step measurement instructions.

Once you have completed this information describing your gearbox flange, you can refer to page 10 for 4-Bolt coupling information, page 12 for 6-Bolt coupling information, page 14 for 8-Bolt coupling information and page 16 for 10-Bolt coupling information.

Will it work?

IsoFlex Technologies strongly suggests that you calculate the torque rating for your specific installation.

Please turn to pages 7 and 8 for instructions on how to calculate the torque rating of your current drive train.

Then proceed to page 11 for the corresponding torque ratings of IsoFlex 4-Bolt couplings, page 13 for 6-Bolt torque ratings, page 15 for 8-Bolt couplings and page 16 for 10-Bolt couplings.

As long as your torque rating is less than or equal to that of the IsoFlex coupling you wish to order, your IsoFlex product should work perfectly. If your torque exceeds that of the posted IsoFlex rating for your coupling, please contact IsoFlex or Tides Marine to discuss a custom coupling.

How do I install it?

Please turn to pages 24 through 28 to read a general set of installation instructions. Instructions specific to your IsoFlex GEARguard coupling are included with each product.

GEARguard

FLEX COUPLINGS

HOW TO

MEASURE:



1. Bolt Circle Diameter:

2. Number of Bolt Holes

in the Gearbox Flange: _____

3. Size of Bolt Holes

in the Gearbox Flange: _____

Before ordering, you will need to examine your current *gearbox flange* and propeller shaft flange. In order to determine the following information, it will be necessary to remove all of the bolts from the flanges. Slide the propeller shaft flange aft of the *gearbox flange* approximately 2". All measurements are best taken with a caliper. (Record your findings in the measurement box on each page).

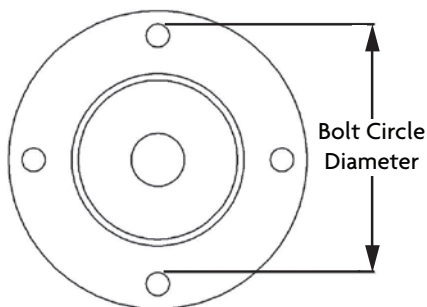
1. Bolt Circle Diameter - 4-Bolt, 6-Bolt and 8-Bolt Flanges

In each *gearbox flange*, you should find that the hole pattern aligns one hole directly across from another on the opposite side of the flange. Measure the outside edge of one hole to the inside edge of the hole directly across from it. This is the bolt circle diameter. It is always a good idea to measure two different sets of holes and compare results.

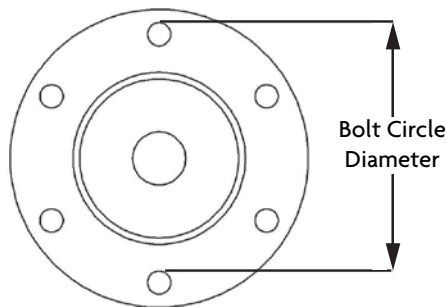
2. Count number of bolt holes in the *gearbox flange*.

3. Size of Bolt Holes in the Flange Diameter

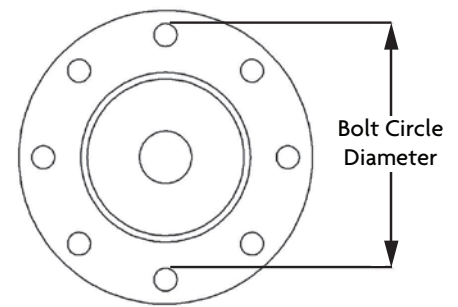
Simply measure the inside diameter of one or more of the holes in the *gearbox flange* and record result here.



**4-Bolt
Gearbox Flange**



**6-Bolt
Gearbox Flange**



**8-Bolt
Gearbox Flange**

HOW TO

MEASURE: 2

Gearbox Flange Index Ring Type -
Male or Female: _____

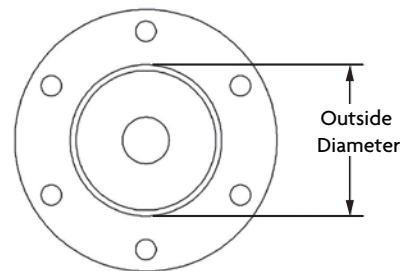
4. Gearbox Flange Index Ring Outside
Diameter/Male: _____

5. Gearbox Flange Index Ring Inside
Diameter/Female: _____

6. Propeller Shaft Flange Thickness:

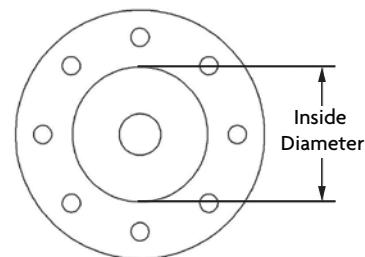
4. Index Ring Diameter - Male

Using a caliper, measure the outside diameter of the metal index ring on the face of the gearbox flange.



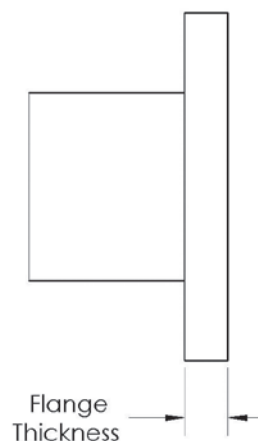
5. Index Ring Diameter - Female

Using a caliper, measure the inside diameter of the circular cavity in the center of the gearbox flange.



6. Propeller Shaft Flange Thickness

Using a caliper, measure the propeller shaft flange thickness at its edge. If the bolts you received with your coupling are too short for the flange thickness, please call Tides Marine.



GEARguard

FLEX COUPLINGS

HOW TO MEASURE: 3

9. Drive Train Measurements:

A. Propeller clearance from rudder:

B. Propeller clearance from strut:

10. Maximum Torque Calculation:

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

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

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

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

9. Drive Train Measurements

In some instances, the propeller shaft may have to be trimmed before installing the IsoFlex coupling. There are two reasons for this:

A. Propeller Clearance from Rudder

According to naval architecture guidelines, the rudder should be at least 20% of the propeller shaft diameter aft of the propeller for proper water flow off the prop and onto the rudder. This should minimize vibration and cavitation on the rudder.

B. Propeller Clearance from Strut

Just as important, the front end of the propeller should be no more than one shaft diameter aft of the strut. This is to prevent shaft vibration. The exposed shaft may be a bit longer to accommodate a shaft zinc, but that is all.

10. Torque Calculation

For the GEARguard coupling to work correctly, it must first be strong enough to meet the torque rating of your installation. That is, it must be able to carry the torque loads generated by the engine/transmission during normal operation.

Before installing any drive line coupling, you should first determine the “maximum allowable” torque rating of your engine/transmission. Published documentation for torque rating usually states the most conservative continuous torque rating. However, IsoFlex suggests that you take the time to calculate the rating for your specific installation.

Please use any of the formulae below to complete this calculation, noting the result in ft-lbs or Nm.

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

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

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

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



HOW TO MEASURE: 4

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.

Next, go to the torque charts on 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 GEARguard coupling.

If the IsoFlex torque rating in the chart is lower than the torque rating produced by your drive train, please contact IsoFlex or Tides Marine. IsoFlex may be able to produce a High Torque (HT) coupling for your installation.

GEARguard

FLEX COUPLINGS

GENERAL COMMENTS

Dimensions

As gearbox manufacturers' dimensions and specifications are subject to 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 thermoset polymers, there may be dimensional changes from those specified, depending upon ambient temperature conditions.

Tolerances

The tolerance on all IsoFlex machined index rings is ± 0.002 " (± 0.05 mm) @ 25°C (77° F) ambient temperature.

All other dimensions: ± 0.020 " (± 0.5 mm) @ 25°C (77° F) ambient temperature.

INSTALLATION NOTE: Electrical Isolation

The IsoFlex GEARguard couplings electrically isolate the propeller shaft from the engine and gearbox. If you wish to connect the shaft to the engine, an internal coil spring (option available through IsoFlex) may be fitted.

NOTE: T-Bushings

In the charts on page 12, the couplings marked in red are sold with T-bushings sized to fit the bolt holes in the gearbox / propeller shaft flanges.

In some instances, the size of the original bolts used to connect the gearbox flange and the propeller shaft flange are too large to fit within the space constraints of the bolt circle diameter of the IsoFlex flexible couplings. Flexible couplings require twice the number of bolts than the original installation to accommodate the flanges on either side of the coupling.

When this occurs, IsoFlex (per industry guidelines) reduces the diameter size of its assembly bolts. These high-tensile yet smaller diameter replacement bolts will fit loosely within the existing bolt holes of each flange. Accordingly, IsoFlex provides steel, zinc-plated T-bushings to insert in the holes of both flanges. This approach assures that the smaller diameter, high-tensile assembly bolts fit snugly in each flange.

Bolt Assembly Torque Guide & High Tensile Grades

| Coupling bolt size | Recommended assembly torque | | High Tensile Grade | |
|--------------------|-----------------------------|-----|--------------------|--------|
| | Ft-lbs | Nm | Imperial | Metric |
| 8mm | 10 | 14 | | 10.9 |
| 10mm | 31 | 42 | | 10.9 |
| 12mm | 34 | 46 | | 10.9 |
| 14mm | 65 | 88 | | 10.9 |
| 16mm | 83 | 112 | | 10.9 |
| 20mm | 150 | 200 | | 10.9 |
| 3/8" | 20 | 27 | Grade 5 | |
| 7/16" | 32 | 43 | Grade 5 | |
| 1/2" | 47 | 63 | Grade 8 | |
| 3/4" | 155 | 210 | Grade 8 | |
| 7/8" | 206 | 278 | Grade 8 | |
| 1" | 250 | 338 | Grade 8 | |

NOTE:

Over-tensioning ANY of the bolts during assembly (see torque charts above and on page 28 for guidelines) may cause internal damage to the IsoFlex coupling. In extreme cases, the steel inserts may become distorted or spin within the coupling. The result is a coupling that will not function properly.



GEARguard

COUPLINGS



4 BOLT - DIMENSIONS

| Imperial | | | | | | | |
|-------------------|-------------------------------------|--------------------------|--------------------------------|------------------------------------|-----------------------------------|----------------------------------|----------------------------|
| MODEL | GEARBOX FLANGE BOLT CIRCLE DIAMETER | GEARBOX FLANGE BOLT SIZE | GEARBOX FLANGE INDEX RING TYPE | GEARBOX FLANGE INDEX RING DIAMETER | ISOFLEX COUPLING OUTSIDE DIAMETER | ISOFLEX COUPLING INSIDE DIAMETER | ISOFLEX COUPLING THICKNESS |
| IC-4200-90 | 3.07 | 10mm | F | 1.97 | 4.92 | 1.38 | 0.98 |
| IC-4300-95 | 3.25 | 3/8" | F | 2.50 | 4.92 | 1.38 | 0.98 |
| IC-4400-95 | 3.94 | 10mm | F | 2.56 | 5.71 | 1.97 | 0.98 |
| IC-4500-95 | 4.25 | 7/16" | F | 2.50 | 5.91 | 1.77 | 1.13 |
| IC-4500-HT | 4.25 | 7/16" | F | 2.50 | 5.91 | 1.77 | 1.13 |
| IC-4550-95 | 4.25 | 7/16" | F | 2.50 | 5.91 | 1.77 | 1.13 |
| IC-4550-HT | 4.25 | 7/16" | F | 2.50 | 5.91 | 1.77 | 1.13 |
| IC-4600-95 | 3.15 | 10mm | M | 2.36 | 4.92 | 1.38 | 0.98 |
| IC-4700-95 | 3.75 (Rect) | 7/16" | F | 2.75 | 5.31 | 1.97 | 1.26 |
| IC-4800-95 | 3.125 (Rect) | 3/8" | F | 2.38 | 4.92 | 1.38 | 0.98 |
| IC-4900-95 | 4.75 (Rect) | 1/2" | F | 3.75 | 6.89 | 1.97 | 1.44 |

| Metric | | | | | | | |
|-------------------|-------------------------------------|--------------------------|--------------------------------|------------------------------------|-----------------------------------|----------------------------------|----------------------------|
| MODEL | GEARBOX FLANGE BOLT CIRCLE DIAMETER | GEARBOX FLANGE BOLT SIZE | GEARBOX FLANGE INDEX RING TYPE | GEARBOX FLANGE INDEX RING DIAMETER | ISOFLEX COUPLING OUTSIDE DIAMETER | ISOFLEX COUPLING INSIDE DIAMETER | ISOFLEX COUPLING THICKNESS |
| IC-4200-90 | 78.00 | 10mm | F | 50.00 | 125.00 | 35.00 | 25.00 |
| IC-4300-95 | 82.55 | 3/8" | F | 63.50 | 125.00 | 35.00 | 25.00 |
| IC-4400-95 | 100.00 | 10mm | F | 65.00 | 145.00 | 50.00 | 25.00 |
| IC-4500-95 | 107.95 | 7/16" | F | 63.50 | 150.00 | 45.00 | 28.60 |
| IC-4500-HT | 107.95 | 7/16" | F | 63.50 | 150.00 | 45.00 | 28.60 |
| IC-4550-95 | 107.95 | 7/16" | F | 63.50 | 150.00 | 45.00 | 28.60 |
| IC-4550-HT | 107.95 | 7/16" | F | 63.50 | 150.00 | 45.00 | 28.60 |
| IC-4600-95 | 80.00 | 10mm | M | 60.00 | 125.00 | 35.00 | 25.00 |
| IC-4700-95 | 95.25 (Rect) | 7/16" | F | 69.85 | 135.00 | 50.00 | 32.00 |
| IC-4800-95 | 79.38 (Rect) | 3/8" | F | 60.33 | 125.00 | 35.00 | 25.00 |
| IC-4900-95 | 120.65 (Rect) | 1/2" | F | 95.25 | 175.00 | 50.00 | 36.50 |

GEARguard

COUPLINGS

4 BOLT - WORKING TORQUE RATINGS

Imperial (ft-lb)

| MODEL | HEAVY DUTY | MEDIUM DUTY | PLEASURE CRAFT |
|------------|------------|-------------|----------------|
| IC-4200-90 | 360 | 540 | 615 |
| IC-4300-95 | 360 | 540 | 615 |
| IC-4400-95 | 360 | 540 | 615 |
| IC-4500-95 | 490 | 725 | 830 |
| IC-4500-HT | 855 | 1280 | 1445 |
| IC-4550-95 | 315 | 470 | 535 |
| IC-4550-HT | 650 | 975 | 1105 |
| IC-4600-95 | 270 | 405 | 465 |
| IC-4700-95 | 435 | 650 | 725 |
| IC-4800-95 | 225 | 335 | 380 |
| IC-4900-95 | 870 | 1300 | 1445 |

Metric (Nm)

| MODEL | HEAVY DUTY | MEDIUM DUTY | PLEASURE CRAFT |
|------------|------------|-------------|----------------|
| IC-4200-90 | 500 | 750 | 850 |
| IC-4300-95 | 500 | 750 | 850 |
| IC-4400-95 | 500 | 750 | 850 |
| IC-4500-95 | 675 | 1000 | 1150 |
| IC-4500-HT | 1180 | 1770 | 2000 |
| IC-4550-95 | 435 | 650 | 740 |
| IC-4550-HT | 900 | 1350 | 1530 |
| IC-4600-95 | 375 | 560 | 640 |
| IC-4700-95 | 600 | 900 | 1000 |
| IC-4800-95 | 310 | 465 | 525 |
| IC-4900-95 | 1200 | 1800 | 2000 |

GEARguard

COUPLINGS

6 BOLT - DIMENSIONS



| Imperial | | | | | | | |
|--------------------|-------------------------------------|--------------------------|--------------------------------|------------------------------------|-----------------------------------|----------------------------------|----------------------------|
| MODEL | GEARBOX FLANGE BOLT CIRCLE DIAMETER | GEARBOX FLANGE BOLT SIZE | GEARBOX FLANGE INDEX RING TYPE | GEARBOX FLANGE INDEX RING DIAMETER | ISOFLEX COUPLING OUTSIDE DIAMETER | ISOFLEX COUPLING INSIDE DIAMETER | ISOFLEX COUPLING THICKNESS |
| IC-6000-95 | 3.88 | 7/16" | M | 2.50 | 5.91 | 1.97 | 1.25 |
| IC-6000-HT | 3.88 | 7/16" | M | 2.50 | 5.91 | 1.97 | 1.25 |
| IC-6100-95 | 4.75 | 1/2" UNC | M | 3.00 | 6.30 | 2.36 | 1.50 |
| IC-6125-95 | 4.75 | 1/2" UNC | F | 3.00 | 6.30 | 2.36 | 1.50 |
| IC-6150-95 | 4.75 | 16mm SHCS | M | 3.00 | 6.30 | 2.36 | 1.50 |
| IC-6300-95 | 6.00 | 16mm SHCS | M | 3.75 | 8.35 | 2.87 | 1.50 |
| IC-6300-IV | 6.00 | 16mm SHCS | M | 3.75 | 8.35 | 2.87 | 1.50 |
| IC-6400-95 | 6.00 | 16mm SHCS | M | 3.75 | 7.68 | 2.87 | 1.50 |
| IC-6400-HT | 6.00 | 16mm SHCS | M | 3.75 | 7.68 | 2.87 | 1.50 |
| IC-6500-95* | 10.24 | 3/4" UNC | M | 6.69 | 12.99 | 3.74 | 1.77 |
| IC-6600-95* | 8.07 | 16mm SHCS | M | 5.12 | 10.24 | 3.74 | 1.50 |

| Metric | | | | | | | |
|--------------------|-------------------------------------|--------------------------|--------------------------------|------------------------------------|-----------------------------------|----------------------------------|----------------------------|
| MODEL | GEARBOX FLANGE BOLT CIRCLE DIAMETER | GEARBOX FLANGE BOLT SIZE | GEARBOX FLANGE INDEX RING TYPE | GEARBOX FLANGE INDEX RING DIAMETER | ISOFLEX COUPLING OUTSIDE DIAMETER | ISOFLEX COUPLING INSIDE DIAMETER | ISOFLEX COUPLING THICKNESS |
| IC-6000-95 | 98.43 | 7/16" | M | 63.50 | 150.00 | 50.00 | 31.75 |
| IC-6000-HT | 98.43 | 7/16" | M | 63.50 | 150.00 | 50.00 | 31.75 |
| IC-6100-95 | 120.65 | 1/2" UNC | M | 76.20 | 160.00 | 60.00 | 38.10 |
| IC-6125-95 | 120.65 | 1/2" UNC | F | 76.20 | 160.00 | 60.00 | 38.10 |
| IC-6150-95 | 120.65 | 16mm SHCS | M | 76.20 | 160.00 | 60.00 | 38.10 |
| IC-6300-95 | 152.40 | 16mm SHCS | M | 95.25 | 212.00 | 73.00 | 38.10 |
| IC-6300-IV | 152.40 | 16mm SHCS | M | 95.25 | 212.00 | 73.00 | 38.10 |
| IC-6400-95 | 152.40 | 16mm SHCS | M | 95.25 | 195.00 | 73.00 | 38.10 |
| IC-6400-HT | 152.40 | 16mm SHCS | M | 95.25 | 195.00 | 73.00 | 38.10 |
| IC-6500-95* | 260.00 | 3/4" UNC | M | 170.00 | 330.00 | 95.00 | 45.00 |
| IC-6600-95* | 205.00 | 16mm SHCS | M | 130.00 | 260.00 | 95.00 | 38.10 |

GEARguard

COUPLINGS

6 BOLT - WORKING TORQUE RATINGS

Imperial (ft-lb)

| MODEL | HEAVY DUTY | MEDIUM DUTY | PLEASURE CRAFT |
|------------|------------|-------------|----------------|
| IC-6000-95 | 670 | 990 | 1140 |
| IC-6000-HT | 980 | 1460 | 1700 |
| IC-6100-95 | 1800 | 2700 | 3070 |
| IC-6125-95 | 1800 | 2700 | 3070 |
| IC-6150-95 | 1800 | 2700 | 3070 |
| IC-6300-95 | 2600 | 3900 | 4430 |
| IC-6300-IV | 2600 | 3900 | 4430 |
| IC-6400-95 | 2170 | 3250 | 3700 |
| IC-6400-HT | 3280 | 4780 | 5400 |
| IC-6500-95 | 6470 | 9700 | Use Medium |
| IC-6600-95 | 4340 | 6500 | Use Medium |

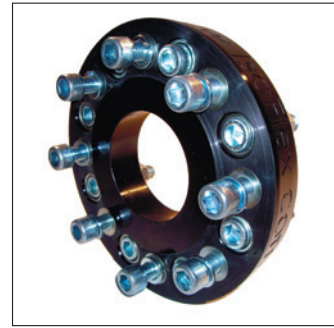
Metric (Nm)

| MODEL | HEAVY DUTY | MEDIUM DUTY | PLEASURE CRAFT |
|------------|------------|-------------|----------------|
| IC-6000-95 | 925 | 1375 | 1575 |
| IC-6000-HT | 1350 | 2020 | 2350 |
| IC-6100-95 | 2500 | 3750 | 4250 |
| IC-6125-95 | 2500 | 3750 | 4250 |
| IC-6150-95 | 2500 | 3750 | 4250 |
| IC-6300-95 | 3600 | 5400 | 6120 |
| IC-6300-IV | 3600 | 5400 | 6120 |
| IC-6400-95 | 3000 | 4500 | 5100 |
| IC-6400-HT | 4400 | 6600 | 7480 |
| IC-6500-95 | 8950 | 13400 | Use Medium |
| IC-6600-95 | 6000 | 9000 | Use Medium |

GEARguard

COUPLINGS

8 BOLT - DIMENSIONS



| Imperial | | | | | | | |
|-------------------|-------------------------------------|--------------------------|--------------------------------|------------------------------------|----------------------------------|---------------------------------|---------------------------|
| MODEL | GEARBOX FLANGE BOLT CIRCLE DIAMETER | GEARBOX FLANGE BOLT SIZE | GEARBOX FLANGE INDEX RING TYPE | GEARBOX FLANGE INDEX RING DIAMETER | ISOFLX COUPLING OUTSIDE DIAMETER | ISOFLX COUPLING INSIDE DIAMETER | ISOFLX COUPLING THICKNESS |
| IC-8100-95 | 7.50 | 16mm SHCS | M | 6.00 | 10.83 | 3.74 | 1.50 |
| IC-8100-HT | 7.50 | 16mm SHCS | M | 6.00 | 10.83 | 3.74 | 1.50 |
| IC-8200-95 | 7.50 | 16mm SHCS | M | 6.00 | 9.53 | 3.74 | 1.50 |
| IC-8200-HT | 7.50 | 16mm SHCS | M | 6.00 | 9.53 | 3.74 | 1.50 |
| IC-8300-95 | 6.00 | 16mm SHCS | M | 3.75 | 7.68 | 2.87 | 1.50 |
| IC-8400-95 | 7.87 | 16mm SHCS | M | 4.33 | 10.83 | 2.95 | 1.50 |
| IC-8400-HT | 7.87 | 16mm SHCS | M | 4.33 | 10.83 | 2.95 | 1.50 |
| IC-8534-95 | 8.75 | 3/4" UNC | M | 5.00 | 12.40 | 2.95 | 1.77 |
| IC-8600-95 | 9.06 | 20mm | M | 5.91 | 12.40 | 3.94 | 1.77 |
| IC-8690-95 | 9.00 | 3/4" UNC | M | 6.00 | 11.81 | 3.74 | 1.77 |
| IC-8695-95 | 9.50 | 3/4" UNC | M | 6.00 | 12.99 | 3.74 | 1.77 |
| IC-8695-HT | 9.50 | 3/4" UNC | M | 6.00 | 12.99 | 3.74 | 1.77 |
| IC-8700-95 | 11.02 | 7/8" UNC | F | 7.87 | 13.98 | 2.95 | 1.97 |
| IC-8800-95 | 13.39 | 1" UNC | M | 7.09 | 17.91 | 5.12 | 2.36 |

| Metric | | | | | | | |
|-------------------|-------------------------------------|--------------------------|--------------------------------|------------------------------------|----------------------------------|---------------------------------|---------------------------|
| MODEL | GEARBOX FLANGE BOLT CIRCLE DIAMETER | GEARBOX FLANGE BOLT SIZE | GEARBOX FLANGE INDEX RING TYPE | GEARBOX FLANGE INDEX RING DIAMETER | ISOFLX COUPLING OUTSIDE DIAMETER | ISOFLX COUPLING INSIDE DIAMETER | ISOFLX COUPLING THICKNESS |
| IC-8100-95 | 190.50 | 16mm SHCS | M | 152.40 | 275.00 | 95.00 | 38.10 |
| IC-8100-HT | 190.50 | 16mm SHCS | M | 152.40 | 275.00 | 95.00 | 38.10 |
| IC-8200-95 | 190.50 | 16mm SHCS | M | 152.40 | 242.00 | 95.00 | 38.10 |
| IC-8200-HT | 190.50 | 16mm SHCS | M | 152.40 | 242.00 | 95.00 | 38.10 |
| IC-8300-95 | 152.40 | 16mm SHCS | M | 95.25 | 195.00 | 73.00 | 38.10 |
| IC-8400-95 | 200.00 | 16mm SHCS | M | 110.01 | 275.00 | 75.00 | 38.10 |
| IC-8400-HT | 200.00 | 16mm SHCS | M | 110.01 | 275.00 | 75.00 | 38.10 |
| IC-8534-95 | 222.25 | 3/4" UNC | M | 127.00 | 315.00 | 75.00 | 45.00 |
| IC-8600-95 | 230.00 | 20mm | M | 150.01 | 315.00 | 100.00 | 45.00 |
| IC-8690-95 | 228.60 | 3/4" UNC | M | 152.40 | 300.00 | 95.00 | 45.00 |
| IC-8695-95 | 241.30 | 3/4" UNC | M | 152.40 | 330.00 | 95.00 | 45.00 |
| IC-8695-HT | 241.30 | 3/4" UNC | M | 152.40 | 330.00 | 95.00 | 45.00 |
| IC-8700-95 | 280.00 | 7/8" UNC | F | 200.00 | 355.00 | 75.00 | 50.00 |
| IC-8800-95 | 340.00 | 1" UNC | M | 180.01 | 455.00 | 130.00 | 60.00 |

GEARguard

COUPLINGS

8 BOLT - WORKING TORQUE RATINGS

Imperial (ft-lb)

| MODEL | HEAVY DUTY | MEDIUM DUTY | PLEASURE CRAFT |
|------------|------------|-------------|----------------|
| IC-8100-95 | 4950 | 7430 | Use Medium |
| IC-8100-HT | 6150 | 9220 | Use Medium |
| IC-8200-95 | 3250 | 4880 | Use Medium |
| IC-8200-HT | 5700 | 8570 | Use Medium |
| IC-8300-95 | 2170 | 3250 | 3700 |
| IC-8400-95 | 5060 | 7600 | Use Medium |
| IC-8400-HT | 7600 | 11400 | Use Medium |
| IC-8500-95 | 6150 | 9220 | Use Medium |
| IC-8534-95 | 6150 | 9220 | Use Medium |
| IC8600-95 | 6250 | 9380 | Use Medium |
| IC-8690-95 | 6250 | 9380 | Use Medium |
| IC-8695-95 | 6500 | 9770 | Use Medium |
| IC-8695-HT | 9650 | 14500 | Use Medium |
| IC-8700-95 | 7250 | 10850 | Use Medium |
| IC-8800-95 | 16300 | 24500 | Use Medium |

Metric (Nm)

| MODEL | HEAVY DUTY | MEDIUM DUTY | PLEASURE CRAFT |
|------------|------------|-------------|----------------|
| IC-8100-95 | 6850 | 10275 | Use Medium |
| IC-8100-HT | 8500 | 12750 | Use Medium |
| IC-8200-95 | 4500 | 6750 | Use Medium |
| IC-8200-HT | 7900 | 11850 | Use Medium |
| IC-8300-95 | 3000 | 4500 | 5100 |
| IC-8400-95 | 7000 | 10500 | Use Medium |
| IC-8400-HT | 10500 | 15750 | Use Medium |
| IC-8500-95 | 8500 | 12750 | Use Medium |
| IC-8534-95 | 8500 | 12750 | Use Medium |
| IC8600-95 | 8650 | 12975 | Use Medium |
| IC-8690-95 | 8650 | 12975 | Use Medium |
| IC-8695-95 | 9000 | 13500 | Use Medium |
| IC-8695-HT | 13350 | 20100 | Use Medium |
| IC-8700-95 | 10000 | 15000 | Use Medium |
| IC-8800-95 | 22500 | 33750 | Use Medium |

GEARguard

COUPLINGS

10 BOLT - DIMENSIONS

| Imperial | | | | | | | |
|---------------------------|----------------------|---------------|-----------------|---------------------|---------------------------------|--------------------------------|------------------------|
| MODEL | BOLT CIRCLE DIAMETER | SIZE OF BOLTS | INDEX RING TYPE | INDEX RING DIAMETER | GEARBOX FLANGE OUTSIDE DIAMETER | GEARBOX FLANGE INSIDE DIAMETER | ISOFLEX PART THICKNESS |
| IC-10325-HT | 6.69 | 14mm SHCS | M | 5.51 | 8.35 | 2.95 | 1.77 |
| *0.70" T-bushing included | | | | | | | |
| Metric | | | | | | | |
| IC-10325-HT | 170.00 | 14mm SHCS | M | 140.00 | 212.00 | 75.00 | 45.00 |
| *18mm T-bushing included | | | | | | | |

10 BOLT - WORKING TORQUE RATINGS

| Imperial (ft-lb) | | | |
|------------------|------------|-------------|----------------|
| MODEL | HEAVY DUTY | MEDIUM DUTY | PLEASURE CRAFT |
| IC-10325-HT | 3600 | 5400 | 6150 |
| Metric (Nm) | | | |
| IC-10325-HT | 5000 | 7500 | 8500 |

RED =sold with Bushing Kits.

COUPLING CROSS REFERENCE *GLOBE DRIVESAVER TO ISOFLEX*

| DRIVESAVER | ISOFLEX | COMMENTS |
|------------|------------|--------------------|
| 303 | n/a | |
| 353 | n/a | |
| 354 | n/a | |
| | | |
| 404 | n/a | |
| 404A | IC-4300-95 | |
| 404AC | IC-4300-95 | 2 5/8" Pilot Req'd |
| 404V | IC-4600-95 | |
| 404S | n/a | |
| 424Y | IC-4200-95 | |
| 4756 | IC-6000-95 | |
| 4756PR | IC-6000-HT | |
| 454 | n/a | |
| | | |
| 504 | IC-4500-95 | |
| | | |
| 504A | n/a | |
| 504AC | n/a | |
| 504PR | IC-4500-HT | |
| 504H | IC-4550-95 | |
| 504HPR | IC-4550-HT | |
| 524Y | IC-4400-95 | |
| 554 | n/a | |
| | | |
| 908 | IC-8100-95 | Iso 1/2" Thicker |
| 908PR | IC-8100-95 | Iso 1/2" Thicker |
| 908S | IC-8200-95 | Iso 1/2" Thicker |
| n/a | IC-8200-HT | Iso 1/2" Thicker |
| 908AC | n/a | |

| DRIVESAVER | ISOFLEX | COMMENTS |
|------------|-------------|----------------------|
| 1058 | IC-8534-95 | |
| | | |
| 1108 | IC-8695-95 | |
| 1108A | IC-8690-95 | |
| | | |
| 1308 | n/a | |
| | | |
| 4756 | IC-6000-95 | |
| | | |
| 5756 | IC-6100-95 | Male Index Ring |
| 5756A | IC-6125-95 | Female Index Ring |
| 5756APR | IC-6125-HT | Female Index Ring |
| 5756AZF | IC-6100-95 | Male Index Ring |
| 5756AZFPR | IC-6100-HT | Male Index Ring |
| 5756B | IC-6150-95 | Iso 16mm Bolts |
| | | No Bushing Kit Req'd |
| | | |
| 6256 | n/a | |
| | | |
| 7256 | IC-6300-95 | |
| 7256PR | IC-6300-HT | |
| 7258ZPR | IC-8300-HT | |
| 7306Z | IC-6400-95 | |
| | | |
| 8078Z | n/a | |
| 8010Z | IC-10325-95 | Iso .27" Thicker |
| 8858Z | n/a | |
| | | |
| | | |

ALWAYS CHECK TORQUE RATINGS

COUPLING CROSS REFERENCE

POLY FLEX TO ISOFLEX

| POLY FLEX | ISOFLEX | COMMENTS |
|-----------------|------------|-----------------------|
| 305 | IC-3100-95 | Toyota Previa - 12mm |
| 306 | IC-3200-95 | Toyota Previa - 14mm |
| | IC-3300-95 | Toyota Previa- Diesel |
| | | |
| 424(90) | IC-4200-90 | |
| 434(90)/(95) | IC-4300-95 | |
| 464(90)/(95) | IC-4600-95 | |
| 484(90)/(95) | IC-4800-95 | |
| | | |
| 524(90)/(95) | IC-4500-95 | |
| 524FRL | IC-4550-95 | |
| 534(90)/(95) | IC-4400-95 | |
| 546(95) | IC-6000-95 | |
| 547(90)/(95) | IC-4700-95 | |
| | | |
| 616-1/2 Bolts-M | IC-6100-95 | |
| 616-1/2 Bolts-F | IC-6125-95 | |
| 616-5/8 Bolts | IC-6150-95 | |
| 656 | IC-6150-95 | |
| | | |
| 1550 | IC-4900-95 | |

| POLY FLEX | ISOFLEX | COMMENTS |
|----------------|------------|-------------------|
| 2308 | IC-8600-95 | |
| 2808 | IC-8700-95 | |
| 3408 | IC-8800-95 | |
| | | |
| 7206-5/8 Bolts | IC-6300-95 | |
| 7206-3/4 Bolts | IC-6300-95 | + 19mm T-Bushings |
| 7606 | IC-6400-95 | |
| 7606-3/4 Bolts | IC-6400-95 | + 19mm T-Bushings |
| 7608 | IC-8300-95 | |
| | | |
| 9114 | IC-8200-95 | |
| 9114 | IC-8200-95 | + 22mm T-Bushings |
| 9114 3+3 IRM | IC-8200-95 | |
| 9858 5/8 | IC-8100-95 | + 22mm T-Bushings |
| 9858 3/4 | IC-8100-95 | + 19mm T-Bushings |
| 9934 | IC-8400-95 | |
| | | |
| 10834 | IC-8534-95 | |
| 11834A | IC-8690-95 | |
| 11834 | IC-8695-95 | |
| | | |

ALWAYS CHECK TORQUE RATINGS

COUPLING CROSS REFERENCE

R&D TO ISOFLEX

| R&D | ISOFLEX | COMMENTS | ISOFLEX COUPLING THINNER BY INCHES |
|-----------|--------------|--------------------|------------------------------------|
| RA900-003 | IC-6000-95 | | |
| 910-001 | IC-4300-95 | | 0.30 |
| 910-002 | IC-4200-95 | | 0.30 |
| 910-005 | IC-4300-95 | Special Index Ring | 0.37 |
| 910-006 | IC-6150-95 | | 0.37 |
| 910-007 | IC-4600-95 | | 0.74 |
| 910-009 | IC-4500-95 | | 0.65 |
| | | | |
| 910-012 | IC-4400-95 | | 0.79 |
| 910-013 | n/a | | n/a |
| 910-014 | IC-4300-95 | | 0.30 |
| 910-015 | n/a | | n/a |
| 910-016 | n/a | | n/a |
| 910-017 | IC-6400-95 | + 19mm T-Bushings | 0.89 |
| 910-018 | IC-6400-95 | | 0.89 |
| 910-019 | IC-4600-95 | | 0.30 |
| | | | |
| 910-020 | IC-4600-95 | | 0.30 |
| 910-021 | n/a | | n/a |
| 910-022 | IC-8200-95 | +22mm T-Bushings | 0.25 |
| 910-024 | IC-8534-95 | + 1" T-Bushings | 0.46 |
| 910-025 | IC-6100-95 | Male Index Ring | 0.46 |
| | OR | | |
| | IC-6125-95 | Female Index Ring | 0.68 |
| 910-026 | IC-6150-95 | | 0.46 |
| 910-027 | n/a | | 0.00 |
| 910-028 | n/a | | 0.00 |
| 910-029 | IC-4500-HT | | 0.94 |
| 910-030 | n/a | | n/a |
| 910-032 | IC-6125-95/a | Female Index Ring | 0.68 |

| R&D | ISOFLEX | COMMENTS | ISOFLEX COUPLING THINNER BY INCHES |
|---------|------------|-------------------|------------------------------------|
| 910-033 | IC-6150-95 | | 0.68 |
| 910-034 | IC-4500-95 | | 0.65 |
| 910-035 | n/a | | n/a |
| 910-036 | n/a | | n/a |
| 910-037 | IC-4500-95 | | 0.89 |
| 910-038 | n/a | | n/a |
| 910-039 | IC-6400-95 | + 19mm T-Bushings | 0.99 |
| | | | |
| 910-040 | IC-6400-95 | | 0.99 |
| 910-041 | n/a | | n/a |
| 910-042 | n/a | | n/a |
| 910-043 | IC-4200-90 | | 0.30 |
| 910-044 | IC-4500-95 | | 0.65 |
| 910-045 | n/a | | n/a |
| 910-046 | IC-8100-95 | + 22mm T-Bushings | 0.25 |
| 910-047 | n/a | | n/a |
| 910-048 | IC-8100-95 | + 22mm T-Bushings | 0.97 |
| 910-049 | n/a | | n/a |
| | | | |
| 910-050 | IC-8200-95 | + 22mm T-Bushings | 2.50 |
| 910-051 | IC-8695-95 | | 0.53 |
| 910-052 | IC-6000-95 | | 1.49 |
| 910-053 | n/a | | n/a |
| 910-054 | IC-6100-95 | Male Index Ring | 0.37 |
| | OR | | |
| | IC-6125-95 | Female Index Ring | 0.68 |
| 910-055 | IC-4300-95 | | 0.79 |
| 910-057 | IC-4500-HT | | 0.94 |
| 910-058 | n/a | | n/a |
| 910-059 | IC-4600-95 | | 0.42 |

ALWAYS CHECK TORQUE RATINGS

NOTE: Due to design parameters, R&D Couplings are usually quite a bit thicker than the comparable IsoFlex GEARguard Coupling. Please note these differences in the chart above before ordering. Installing the IsoFlex GEARguard Coupling may require other modifications to drive line components.

TRANSMISSION CROSS REFERENCE

TWIN DISC TO ISOFLEX

| TWIN DISC | ISOFLEX COUPLING | COMMENTS |
|---|--------------------------------|-----------------------------------|
| MG340, MG360, MG5010SC, MG5011SC, MG5010V | IC-4300-95 | |
| MG5005A, MG5012C, MG5015A, MG5020SC and MG5055A | IC-4500-HT | |
| MG502-1,502,502A, 502V | IC-6000-95 | |
| MG506, 506-1, 506-1A, 506SC, 5061, 5061A, 5062V | IC-6150-95 OR IC-6300-95 | + Adaptor |
| MG506DC | IC-6400-95 | |
| MG507, MG507A-1 w/ 6" Flange | IC-6150-95 | |
| MG507, MG507A-1 w/ 7 1/4" Flange | IC-6400-95 | + 19mm T-Bushings |
| MG507SC | IC-6150-95 | + 19mm T-Bushings |
| MG507-2, MG507A-2 | IC-6400-95 | + 19mm T-Bushings |
| MG509SC | IC-6400-95 | + 19mm T-Bushings |
| MG509DC, MG509CP | IC-6400-95 | + 19mm T-Bushings |
| MG510, MG510A, MG510SC | IC-8100-95 OR IC-8500-95 | +22mm T-Bushings + Adaptor |
| MG510DC | IC-8500-95 | + 25mm T-Bushings |
| MG511, MG512, MG513, MG514SC | IC-8500-95 | + 25mm T-Bushings |
| MG514DC, MG516DC MG518, MG520, MG530, MG540 | Contact IsoFlex | |
| MG5010A, MG5011A and MG5011SC | IC-4500 | + Adaptor |
| MG5010DC, MG5050V | IC-6150-95 | |

| TWIN DISC | ISOFLEX COUPLING | COMMENTS |
|---|--------------------------------|--|
| MG5050A, MG5050SC | IC-6150-95 | |
| MG5050 | IC-6150-95 | + Adaptor |
| MG5061A, MG1061SC, MG5062V | IC-6150-95 | |
| MG5065A, MG5065SC | IC-6400-95 | + 19mm T-Bushings |
| MG5075A 6" Flange | IC-6150-95 | |
| MG5075A with 7 1/4" Flange | IC-6400-95 | + 19mm T-Bushings |
| MG5075SC | IC-6400-95 | + 19mm T-Bushings |
| MG5081, 5081A, MG5082A and MG5082SC | IC-6400-95 OR IC-8100-95 | + 19mm T-Bushings + 22mm T-Bushings |
| MG 5085,5085A, 5085SC, MG 5090A, 5091, 5091A | IC-6400-95 OR IC-8100-95 | + 19mm T-Bushings + 22mm T-Bushings |
| MG5095A, MGX5095A | IC-6450-95 | Plus Special 20mm T-Bushings |
| MG5091DC, MG509DC, MG5111DC, MG5114DC, MG5113 and MG514DC | IC-8500-95 | + 25mm T-Bushings |
| MG5111DC, 5111A, | IC-8100-95 | + 22mm T-Bushings |
| MG5114A | IC-8200-95 | + 22mm T-Bushings |
| MG5114SC | IC-8200-95 | + 22mm T-Bushings |
| MG5114DC | IC-8100-95 | + 25mm T-Bushings |
| MG5135A | IC-8100-95 | + 22mm T-Bushings |
| MG5141SC | IC-8100-95 | + 25mm T-Bushings |
| MG5145A, MGX5145A and MGX5147A | IC-8400-HT | + 24mm T-Bushings |
| MGX5095A | IC-6400-95 | Plus Special 20mm T-Bushings |

Twin Disc Note: Check torque ratings, especially on commercial applications. Bolt lengths may vary on the MGX transmission models as the pick-up ring on flange dictates. MG5081 may have interference from oil pump - check with IsoFlex.

TRANSMISSION CROSS REFERENCE *ZF TO ISOFLEX*

| ZF | ISOFLEX COUPLING | COMMENTS |
|--|------------------|-----------------|
| 5M,10M,12,12M,15M,15MA, 15MIV, 25M25MA, 30M, 25 and 25A | IC-4300-95 | |
| 45A, 450D, 45C w/ 4" Flange | IC-4300-95 | |
| 41, A2/A3, 45A | IC-4550-HT | |
| 50A2/A3, 63,63A/IV HSW630V, ZF901VTS | IC-4500-95 | or IC-4500-HT |
| HSW800A2, HSW800A3 and 45-1 with 6" Flange | IC-6100-95 | |
| 80A, 85, 85IV | IC-6150-95 | |
| 220A | IC-6000-95 | or IC-6000-HT |
| 220V | IC-6300-95 | |
| HSW220V-2, 800V1, 800V2, ZF1101VTS, 220IV, 80IV and 80-1IV | IC-6100-95 | |
| 280IV, 280-1, 280-1A, 285A, 285IV, 286IV, 301A and 301C | IC-6150-95 | |
| HSW800A2, HSW800A3, 220, 280A and 280 | IC-6150-95 | |
| 220 | IC-6150-95 | Spacer Required |
| 300TS, 300-ITS, 300ATS, 300-IATS, 300VTS, 110ATS and 110IVTS | IC-6150-95 | |
| 220PL, 280V-LD, 280PL, 301PL-2 and 301A-2 | IC-6150-95 | |

| ZF | ISOFLEX COUPLING | COMMENTS |
|--|------------------|---------------------|
| 302IV, 304A,304C, 305-1 | IC-8300-95 | |
| 305-2, 305-2A (10 Bolt) | IC-6300-95 | + Adaptor |
| 310A, 31I, 31IA | IC-8300-95 | Using 8-bolt flange |
| 302, 310, 31I, 31IA - all using a 10-bolt flange | IC-6300-95 | + Adaptor |
| 320,320A, 320PL | IC-8500-95 | + Adaptor |
| 325-1, 325-1A - 10 Bolt | IC-10325-HT | |
| 325-1, 325-1A - 12 Bolt | IC-8200-95 | + Adaptor |
| 350, 350A, 350V - 10 Bolt | IC-10325-HT | |
| 350, 350A, 350V - 12 Bolt | IC-8200-95 | + Adaptor |
| 350, 350A, 350IV, 350V (8 Bolt) | IC-8100-95 | + Adaptor |
| 360, 360A - 10 Bolt | IC-10325-HT | |
| 360, 360A - 12 Bolt | IC-8200-95 | + Adaptor |
| 500A, 500IV, | IC-8500-95 | + Adaptor |
| 510A | IC-8500-95 | + Adaptor |
| 550, 550A, 550V | IC-8500-95 | + Adaptor |
| 665, 665A, 665V | IC-8500-95 | + Adaptor |
| 2000, 2000A, 2000V | Contact IsoFlex | |
| 2050, 2050A, 2050V | Contact IsoFlex | |
| | | |

Notes: Check torque in commercial applications. Flanges may vary depending on package or factory of origin's variations. New ZF25A may interfere with oil pump - IsoFlex coupling requires OD machining.

TRANSMISSION CROSS REFERENCE

OTHER MANUFACTURERS

| MANUFACTURER/ MODEL | ISOFLEX COUPLING | COMMENTS |
|--|------------------|---------------------|
| ALLISON | | |
| Alison M25 | IC-8150-95 | |
| Allison M | IC-6300-95 | |
| Allison MH | IC-8150-95 | |
| BORG WARNER | | |
| BW70C | IC-4300-95 | |
| BW71C 4" | IC-4300-95 | |
| BW500 | IC-4300-95 | |
| BW1000 | IC-4300-95 | |
| BW1500 | IC-4300-95 | |
| BW71C 5" | IC-4500-95 | |
| BW72C 5" | IC-4500-95 | |
| BW VELVET DRIVE 5000A | IC-4500-95 | |
| BW73C 6" | IC-6100-95 | |
| BW 7000 SERIES | IC-6100-95 | |
| NOTE: Borg Warner is now part of ZF Group | | |
| CAPITOL | | |
| 7700 and many others | IC-8100-95 | |
| HARDY SPICER | | |
| SHAFT | | |
| 1310 | IC-4800-95 | |
| 1350 | IC-4700-95 | |
| 1410 | IC-4700-95 | |
| 1480 | IC-4900-95 | |
| 1510 | IC-4900-95 | |
| 1550 | IC-4900-95 | |
| 1610 | TBA | |
| 1710 | TBA | |
| HURTH | | |
| HBW/HSW 5, 10, 35, 40, 50, 100, 125 | IC-4300-95 | |
| HSW 150, 150A, 220, 250 | IC-4300-95 | |
| HSW 360, 360A, 400, 450, | IC-4500-95 | |
| | | 450A - need Adaptor |
| HSW 600, 630, 630A1, 630H | IC-4500-95 | |
| HSW 800A | IC-6100-95 | |
| Note: If the model you are looking for is not here, please check the ZF Cross Reference. | | |

| MANUFACTURER/ MODEL | ISOFLEX COUPLING | COMMENTS |
|--------------------------------|-----------------------------|---------------|
| NEWAGE PRM | | |
| 101, 140, 160, 260 | IC-4500-90 | |
| 175, 265, 310, 401, 402, | IC-6125-95 | |
| 601 6" Flange | IC-6125-95 | |
| 1000 6" Flange | IC-6125-95 | |
| 601, 1000 4:1, 1200S, 1500S, | IC-6300-95 | |
| 1500S, 1750S | IC-6300-95 | 7 1/4" Flange |
| PRM DELTA | IC-4300-95 | |
| PRM 80 | IC-4300-95 | |
| PRM 120, 150 | IC-4300-95 | |
| PRM 260, 500 | IC-6125-95 | |
| PRM 750 | IC-6125-95 | |
| PRM 1000 | IC-6150-95 | |
| PRM 1200D, 1500D, 1750D | IC-8534-95 + 1" Bushing Kit | |
| PRM 1000 DROP CENTRE 4:1 | IC-6300-95 | |
| NICO NAGATA | | |
| MGN 17B | TBA | |
| MGN 36 | TBA | |
| MGN 46L | TBA | |
| MGN 56B | TBA | |
| MGN 56E | TBA | |
| MGN 76B1 | TBA | |
| MGN 80E | TBA | |
| MGN133 | TBA | |
| PARAGON | | |
| 4" Flange - 2.63" Spigot Req'd | IC-4300-SP | |
| TECHNODRIVE | | |
| TMC30, TM40P, TMC50, | | |
| TMC60 (All w/ 4" Flange) | IC-4300-95 | |
| TMC60E | IC-4300-95 | |
| TM260 4" Flange | IC-4300-90 | |
| TMC93, 93A | IC-4500-95 | |
| TMC345, 345A | IC-4500-95 | |
| TMC485, 545A, | IC-4500-95 | |
| TM170, 170A * | IC-4500-HT | |
| TM880A * | IC-4500-HT | |
| TM130B, | IC-6150-95 | |

TRANSMISSION CROSS REFERENCE

OTHER MANUFACTURERS

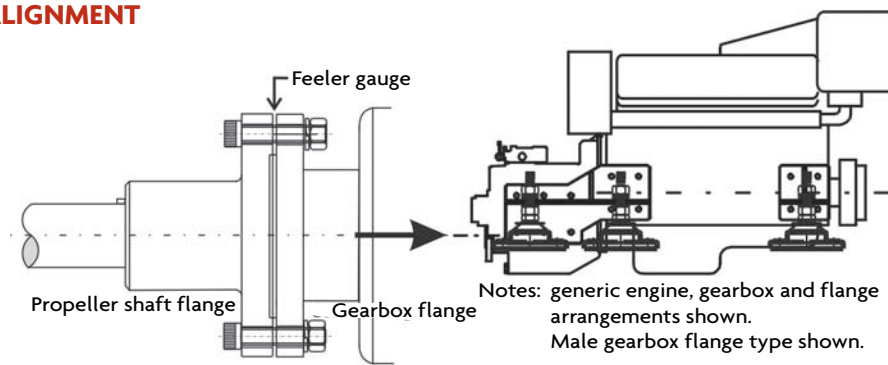
| MANUFACTURER/ MODEL | ISOFLEX COUPLING | COMMENTS |
|---|------------------|----------|
| TECHNODRIVE (CONT.) | | |
| TM260, 265A | IC-6150-95 | |
| TCM200B | IC-6400-95 | |
| TM360 ** | IC-8400-95 | |
| TM1200A | IC-8300-95 | |
| * Check Torque Calculations ** Check Pump Clearance | | |
| VOLVO | | |
| MS, MS2, MS10, MS15, | IC-4600-95 | |
| MS25 and RB | IC-4600-95 | |
| MD10A | IC-4600-95 | |
| 2000 SERIES | IC-4600-95 | |
| MD7A,11C,38 | IC-4600-95 | |
| MS3, MS4, MS4A, MS5 | IC-4500-95 | |
| HS25A, HS45A, HS63A | IC-4500-HT | |
| YANMAR / KANSAKI | | |
| YSE8,YSME8,YSBE8, | | |
| YSE12, YSMW12, YSBE12 | IC-4200-90 | |
| 20M,20H,20G | IC-4200-90 | |
| JH-2-TF | IC-4200-90 | |
| 30M,30H, 30G 4" flange | IC-4200-90 | |
| 30M,30H, 30G 5" flange | IC-4400-95 | |
| KBW10 | IC-4200-90 | |
| KM2P-1 | IC-4200-90 | |
| KM35A-2 | IC-4200-90 | |
| KM35P | IC-4200-90 | |
| KBW20, KBW21 | IC-4400-95 | |
| KM4, KMH4, KMH4A | IC-4400-95 | |
| KM4A-2 | IC-4400-95 | |
| KM5, KM5A | IC-4550-95 | |
| KMH40 | IC-4550-95 | |
| KMH50A | IC-4500-HT | |
| KMH50V | IC-4500-HT | |
| KMH60A/61A | IC-6155-95 | |
| KMH60V | IC-6150-95 | |
| LH SERIES | IC-4500-95 | |
| YXH160 | IC-6600-95 | |
| YXH180 | IC-6500-95 | |
| YXH240 | IC-6500-95 | |
| Note: KMH50 Transmission can see 1600Nm. Option is to use SAE #3 Flange with IC-6150-95. | | |

GEARguard INSTALLATION INSTRUCTIONS

GENERAL

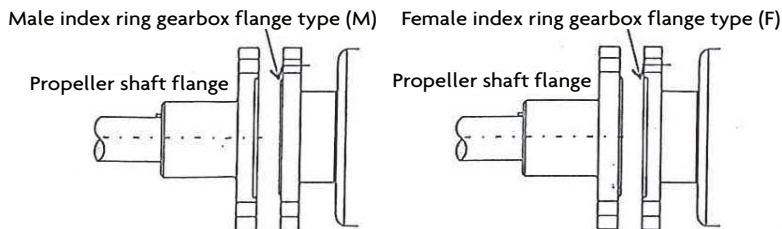
THE FOLLOWING “GENERAL” INSTALLATION INSTRUCTIONS COVER THE 4-BOLT, 6-BOLT AND 8-BOLT COUPLINGS. EACH COUPLING SHIPS WITH ITS OWN MODEL-SPECIFIC SET OF INSTRUCTIONS.

STEP 1. CHECK FOR ALIGNMENT



- Check existing alignment of flanges.
- Loosen the gearbox and propeller shaft flange bolts just enough to insert a feeler gauge between the flanges around the entire circumference of the parts.
- Align the flanges (using the adjusting nuts on the engine mounts) to within .003” (.07mm) around the circumference of the flanges.

STEP 2. MEASURE THE INDEXING SURFACES – ISOFLEX COUPLING AND GEARBOX FLANGE



The index ring of the flanges (sometimes referred to as ‘spigot’ or ‘pilot’) maintains the concentricity of the power transmission shafts.

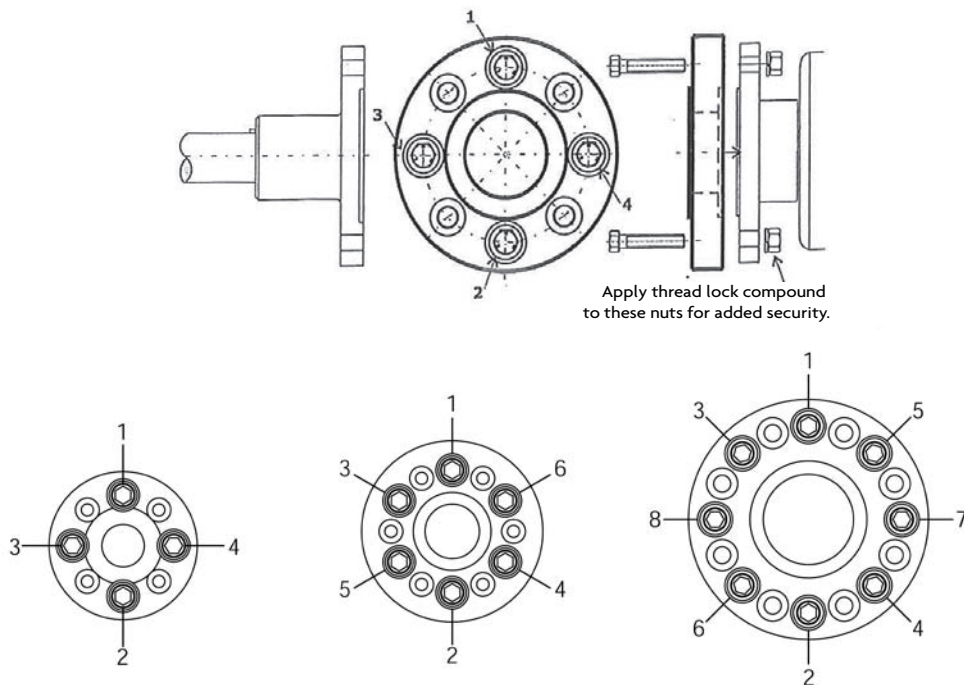
- Remove the flange bolts and separate the flanges from each other to a distance that allows you to position the IsoFlex coupling between the flanges.
- If the gearbox flange has a female index ring, press the male index ring of the IsoFlex coupling into the gearbox flange. The surface of the coupling should fit tightly against the gearbox flange. There should be no visible gaps between the mating surfaces.

GEARguard

INSTALLATION INSTRUCTIONS **GENERAL**

- Next, press the female index ring of the IsoFlex coupling over the male index ring on the propeller shaft flange. Once again, there should be no visible gaps between the mating surfaces.
- If the IsoFlex coupling “stands away” from either flange in the drive train, the index rings have “bottomed out” which means the coupling will not function correctly. Stop the installation and call IsoFlex or Tides Marine for assistance.

STEP 3. CONNECT GEARGUARD COUPLING TO GEARBOX FLANGE



- Hold the IsoFlex coupling against the gearbox flange, mating the index features of both parts. Rotate the coupling to align the countersunk T-bushings in the coupling with the holes in the gearbox flange. Insert the “**longer**” bolts into the countersunk T-bushings and through the gearbox coupling. Place the lock washers over the bolts and affix the nuts. Apply some sort of thread lock liquid/paste (LOCTITE) to the threads before securing the nuts.
- Tighten these bolts to the required torque in two steps.

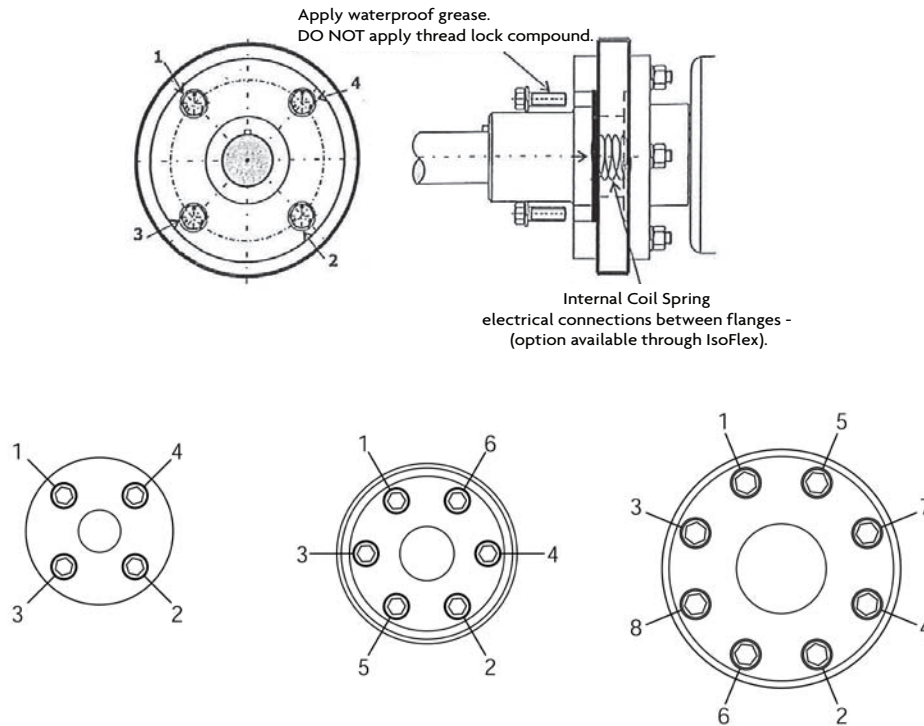
4-BOLT COUPLINGS, 6-BOLT COUPLINGS, 8-BOLT COUPLINGS

First, tighten (in the sequence shown in the drawing above) to half of the recommended torque rating for the bolts in your coupling. Then tighten (using this same sequence) to the final recommended torque rating. Lock washers should be fully compressed.

GEARguard

INSTALLATION INSTRUCTIONS GENERAL

STEP 4. CONNECT THE PROPELLER SHAFT FLANGE TO THE GEARGUARD COUPLING



- Fit the propeller shaft flange to the IsoFlex coupling, rotating the propeller flange to align the remaining threaded inserts with the holes in the propeller shaft coupling.
To make it easier to remove the propeller shaft coupling in the future, apply a thin layer of waterproof grease to the threads before securing the bolts into the coupling.
- Place lock washers onto the “shorter” bolts. Insert the bolts (with lock washers) through the propeller shaft coupling and thread into the threaded inserts in the IsoFlex coupling.
- Tighten these bolts to the required torque in two steps.

4-BOLT COUPLINGS, 6-BOLT COUPLINGS, 8-BOLT COUPLINGS

First, tighten (in the sequence shown in the drawing above) to half of the recommended torque rating for the bolts in your coupling. Then tighten (using this same sequence) to the final recommended torque rating. Lock washers should be fully compressed.

NOTE: Over-tensioning ANY of the bolts during assembly (see torque charts on pages 9 and 28 for guidelines) may cause internal damage to the IsoFlex coupling. In extreme cases, the steel inserts may become distorted or spin within the coupling. The result is a coupling that will not function properly.

STEP 5. CHECK FOR RUN-OUT

Slowly rotate the shaft by hand with a dial indicator on the gearbox output flange – then the propeller flange. Run-out of approximately .004” (.01mm) is acceptable for most power transmission applications.

GEARguard

INSTALLATION INSTRUCTIONS

GENERAL

STEP 6. SEA TRIALS

Check the GEARguard coupling for heat build-up after 2 hours of sea trials. If the coupling is noticeably hotter than the gearbox flange (or if bolts have become loose), this is an indication that the flanges are misaligned. This needs to be corrected to avoid any damage to the coupling or other drive line components.

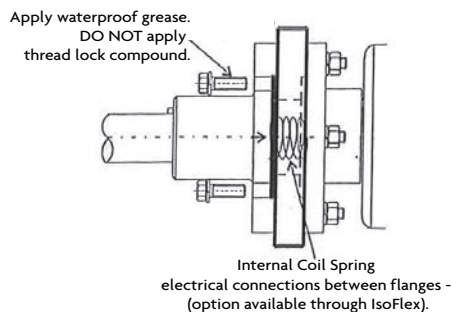
STEP 7. RE-CHECK ASSEMBLY BOLTS IN THE PROPELLER FLANGE.

After approximately 15 hours of operation, re-check the bolts in the propeller shaft flange for torque accuracy.

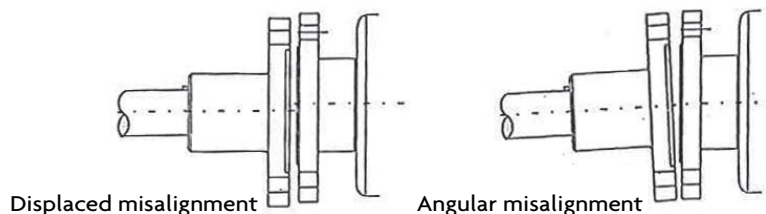
ADDITIONAL INSTALLATION NOTES

A. Electrical Isolation

The IsoFlex GEARguard couplings electrically isolate the propeller shaft from the engine and gearbox. If you wish to connect the shaft to the engine, an internal coil spring (option available through IsoFlex) may be fitted as shown below.



B. Flange Misalignment



It is very important to check for misalignment of the gearbox and propeller shaft flanges. Both “displaced” and “angular” misalignment can be present in your installation. Please see diagrams above.

These types of misalignment should be minimized (maximum allowable between flanges being .004” or .010mm). Otherwise, service life of the IsoFlex GEARguard coupling will be noticeably reduced.

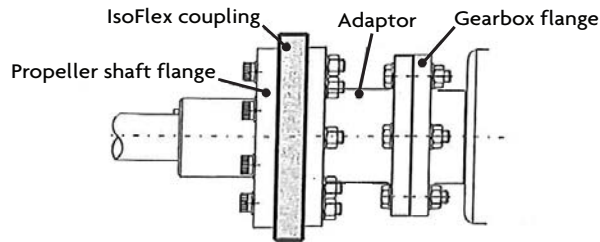
During normal operation, heat build-up in the coupling is an indicator that the system is misaligned.

GEARguard

INSTALLATION INSTRUCTIONS

GENERAL

C. Adaptors



Some applications require an adaptor (sometimes referred to as a cotton reel or spool) to be fitted to the output flange of the gearbox. This adaptor will 1) move the GEARguard coupling far enough aft to clear any obstructions near the back of the engine (oil pumps, etc.) and 2) permit a different bolt pattern between the output flange and the required coupling.

Note the diagram above.

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

If your installation requires an adaptor, IsoFlex recommends that it be manufactured by a marine engineering company from 1040 grade steel or equivalent and machined to industry tolerances and bolt hole clearances. Please check carefully for fit and run-out once installed.

D. Dimensions and Tolerances

As gearbox manufacturers' dimensions and specifications are subject to change, it is necessary to check all dimensions to ensure the GEARguard coupling fits and works correctly.

All IsoFlex couplings are manufactured from engineering-grade polymers (thermoplastics). As a result, dimensional changes may occur depending upon ambient operating conditions.

Tolerances on all machined index rings: +/- .002" (+/- .05mm) @ 25° C.

All other dimensions: +/- .020" (+/- .5mm) @ 25°C.

E. Bolt Kits - Recommended Assembly Torque

| Imperial | | | |
|--------------------|-----------------------------|-----|---|
| Coupling Bolt Size | Recommended Assembly Torque | | High Tensile Grade AS 2465 / AS 1110 |
| | ft-lbs | Nm | |
| 3/8" | 20 | 27 | Grade 5 / Class 8.8 |
| 7/16" | 32 | 43 | Grade 5 / Class 8.8 |
| 1/2" | 47 | 63 | Grade 8 / Class 10.9 |
| 3/4" | 155 | 210 | Grade 8 / Class 10.9 |
| 7/8" | 206 | 278 | Grade 8 / Class 10.9 |
| 1" | 250 | 338 | Grade 8 / Class 10.9 |

| Metric | | | |
|--------------------|-----------------------------|-----|---|
| Coupling Bolt Size | Recommended Assembly Torque | | High Tensile Grade AS 2465 / AS 1110 |
| | ft-lbs | Nm | |
| 8mm | 10 | 14 | Grade 5 / Class 8.8 |
| 10mm | 31 | 42 | Grade 5 / Class 8.8 |
| 12mm | 34 | 46 | Grade 8 / Class 10.9 |
| 14mm | 65 | 88 | Grade 8 / Class 10.9 |
| 16mm | 83 | 112 | Grade 8 / Class 10.9 |
| 20mm | 150 | 200 | Grade 8 / Class 10.9 |

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MINIMIZING VIBRATION

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IsoFlex Coupling U.S. (Rev. 4/17/12)

GEARguard

FLEX COUPLINGS