PRODUCT INFORMATION

GEARCASES

Gear Housings Made From Gray Cast Iron Versus Ductile Iron

The majority of the gear reducers produced in the power transmission industry are made from gray cast iron.

This pertains mostly to reducers with a torque capability between 100 lb-in and 500,000 lb-in.

Reducer housings above 500,000 lb-in are usually made from welded steel. Steel is used because the cost to produce a large steel welded housing will be less than a large casted housing.

Gray cast iron has an excellent ability to dampen vibrations which often occur in power transmission applications. Dampening of vibrations increases the life of the bearings and gears.

A properly designed gear housing has a great deal of strength. This pertains especially to the way the housings are casted. Equal wall thickness throughout the housing reduces stresses and increases strength.

Eurodrive's housings are made from a gray cast iron: Class 30. The Class 30 indicates the cast iron has a minimum tensile strength of 30,000 psi.

Ductile iron, also called nodular iron due to its contents of graphite nodules in its structure, is a cast iron which has magnesium added to it as an alloying element. The added magnesium makes the ductile iron stronger and stiffer than gray iron and more shock resistant.

The tensile strength of ductile iron can be 2 to 4 times higher than gray iron depending on the grade of ductile iron used.

Ductile iron is used where heavy shock loads could cause a fracture to a gear housing in very low temperatures.

Gray cast iron loses a great deal of its shock absorbing strength in very low temperature environments. For this reason, design engineers may specify ductile iron.

Eurodrive can offer ductile iron housings with a tensile strength of 57,000 psi.

The housings, flanges, etc., are not stock items and must be brought in as special items. Delivery is approximately 20-22 weeks.