Dura-Bar®
Continuous Cast Iron Bar Stock

Application

Planetary Gear

Industry	Transportation
Dura-Bar Grade	65-45-12 Ductile Iron
Original Material	Heat Treated 8620 Alloy Steel
Problems Solved	Cost Reduction, Machining Cycle Time, Heat Treat Cycle

Why are gear applications a perfect fit for converting to Dura-Bar ductile iron? **REDUCED COSTS**.

Gears made from Dura-Bar instead of steel provide numerous bottom line benefits to the end customer.

Bottom Line Benefit #1: Machinability. Dura-Bar's machining advantages compared to steel represents a significant reduction in manufacturing costs. On average, 30% reduction in cycle times are realized using Dura-Bar over a conventional, mild carbon steel. Gear machining is time intensive and using Dura-Bar continuous cast ductile iron can optimize the process, cutting cycle times and increasing shop capacity.

Bottom Line Benefit #2: Heat Treatment. Using Dura-Bar continuous cast ductile iron takes a big step—carburization—out of the heat treat process. As with most mild carbon steels, a carburization process needs to take place prior to heating and quenching as there is not enough carbon within steels to harden the material effectively. Dura-Bar typically has 3% carbon by weight percentage (as opposed to steels which normally has well below 1%) allowing the material to skip the carburization process and go straight to the heat and quench processes. This omitted carburization step reduces both time and money in the manufacture of a gear.

More Bottom Line Benefits: Inherent material advantages. There are also additional cost reductions not related to manufacturing costs. For example, converting steel to Dura-Bar ductile iron for gear applications can also reduce noise and vibration, and also reduces wear. Graphite inclusions in Dura-Bar 65-45-12 ductile iron attenuates sound and vibrations typically occurring in gear systems. The graphite also acts as a solid-state lubricant between the mating faces of the gear teeth, thus reducing friction and consequently, wear on the tooth surface. The reduced noise and vibration along with reduced wear resistance represent inherent and supplemental advantages when converting to Dura-Bar.

These Dura-Bar "bottom line benefits" are real and prove once again, that Dura-Bar ductile iron is the ultimate material for gear applications!

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zero defect guarantee