

GEARING

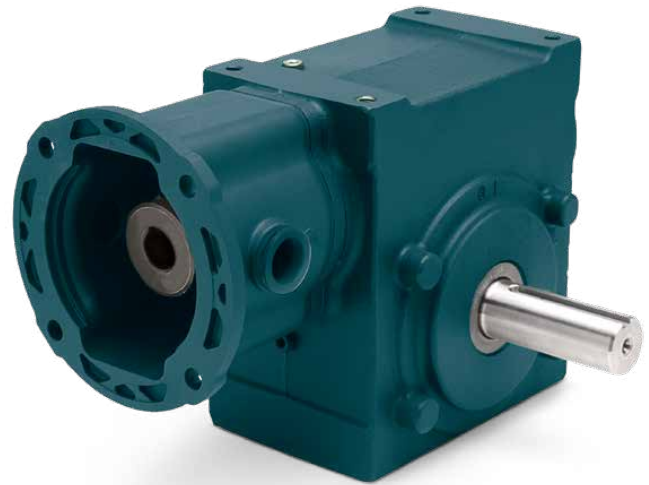
Get Tigear[®] Tough

Engineered with strength in design

Tigear stands for “tough industrial gear”

For over 75 years, Dodge[®] has been the benchmark for gearbox life in demanding applications. Tigear-2 is built to our uncompromising design standard—being the toughest worm gearbox on the market.

Decades of proven performance and reliability have demonstrated Tigear-2 is engineered for best-in-class life. Through competitive testing and analysis in our Innovation Center, we confirmed that Tigear-2 outlasts the competition. Following our gearboxes’ exceptional test results, we have increased the ratings for Tigear-2 to match its superior design and performance!



Testing summary

We rigorously tested and examined Tigear-2 against two competitive manufacturers. Three gearboxes from each manufacturer were tested in a controlled, consistent environment. Once testing was complete, each tested gearbox and gearboxes in additional sizes were disassembled and evaluated—demonstrating significant design differences between Tigear-2 and other manufacturers.

Testing parameters



	Tigear-2	Competitor B	Competitor C
Case size	20	21	821
Center distance	2.00 in	2.06 in	2.06 in
Ratio	15:1	15:1	15:1
Test input horsepower	3.38 hp (200 percent of 1.69 hp catalog rating)	3.38 hp (197 percent of 1.72 hp catalog rating)	3.38 hp (179 percent of 1.88 hp catalog rating)

Oil: Highest quality offered by the manufacturer

Run time: 500 hours or until failure, whichever came first

Design observations

Worm shaft

The quality and strength of the worm shaft are exceptionally important in gearbox design as it operates at motor speed where the torque path begins. A stronger worm shaft experiences less deflection, wear, and stress for longer component life.

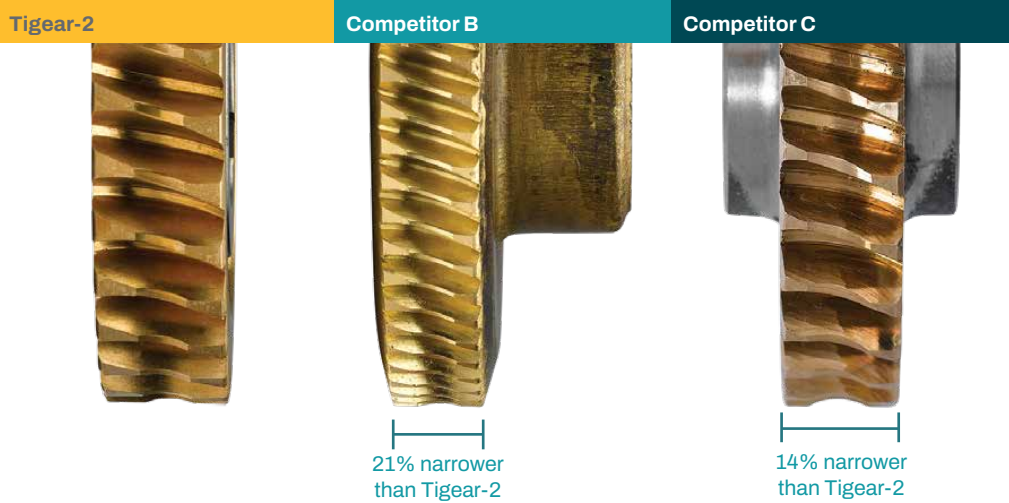


The outside diameter of the Tigear-2 worm shaft is consistent across its entire length with 20 to 30 percent more steel compared to Competitor B and Competitor C, which show a reduction in cross section. This allows Tigear-2 to have increased strength and subsequent longer component life.

Note: worm shafts shown are actual size of examined components

Worm gear

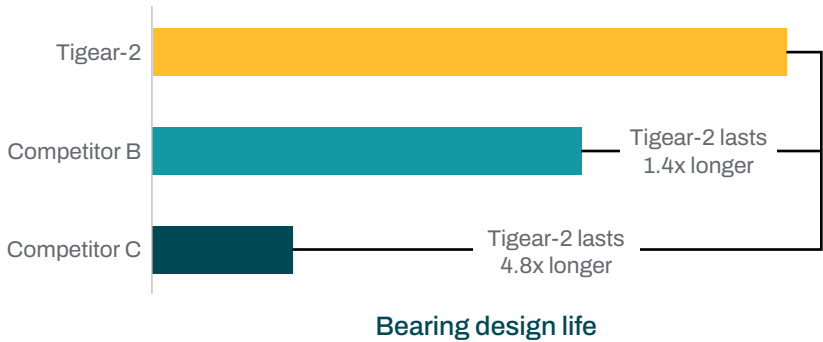
The worm gear transmits gearbox output torque and typically wears at a faster rate than the worm shaft. Optimized geometry and high-quality materials used in worm gear design will help maximize the overall life of the gearbox.



The Tigear-2 worm gear's premier quality and wider face width provide significantly better strength than the narrower Competitor B and Competitor C designs.

Input shaft bearings

The input shaft bearings are critical to long gearbox service life as they run at motor speed, enduring the axial and radial loads from the worm shaft. Using the industry standard L10 calculation for bearing life, the chart displays how much longer the Dodge bearings will last over the competition.

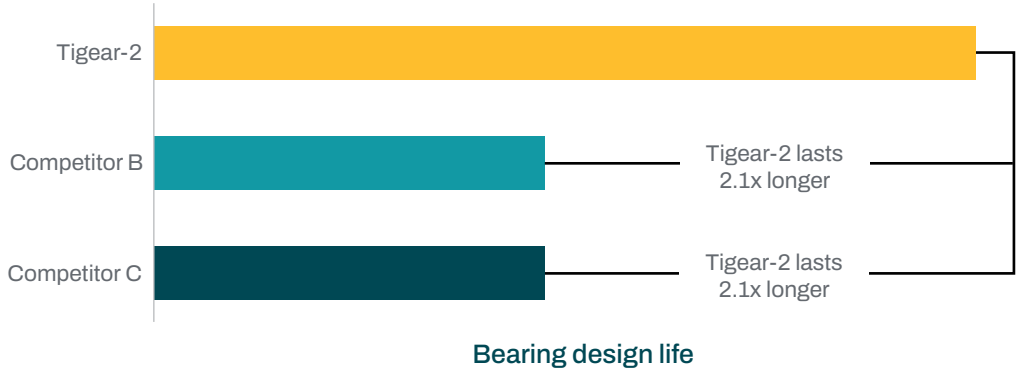


Tigear-2 Competitor B Competitor C

Note: bearings shown are actual size of examined components

Output shaft bearings

Overhung loads from belt-driven systems can pose a challenge for worm gearboxes. Tigear-2 utilizes tapered roller bearings on the output shaft for best-in-class capability to withstand overhung loads for long-lasting operation. The chart exhibits the distinct difference in output shaft bearing design life of Tigear-2 when compared to the competition.



Bearing design life

Test results

True to its reputation, the test results prove Tigear-2 is engineered to provide uncompromising, industry-leading performance and product life.

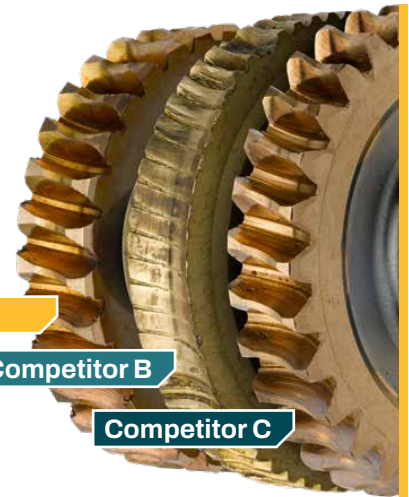
- **Tigear-2:** all gearboxes met the entire 500-hour test without measurable wear
- **Competitor B:** all gearboxes failed at an average run time of 174 hours, and each unit displayed nearly complete wear of worm gear teeth
- **Competitor C:** all gearboxes ran for the testing period, but each unit displayed a noticeable wear step on the worm gear—indicating reduced life

Once the 500-hour comparative test concluded, we continued to test Tigear-2 at 200 percent load where it ran for over 3,000 hours—refusing to fail.

Tigear-2

Competitor B

Competitor C



Increased ratings to match superior performance

Tigear-2's design exemplifies the Dodge philosophy of going the extra mile to build products that last the longest. **Competitive testing shows the Dodge solution is truly Tigear Tough, and as a result, we have increased the ratings for Tigear-2 to match its engineered design and performance.**

The newly published Tigear-2 ratings apply to all versions of Tigear-2, including E-Z Kleen® and FoodSafe™. The increased ratings have been confirmed via industry-standard design principles as well as through extensive dynamic and thermal testing—each backed by our engineering, manufacturing, and customer service excellence.

Scan to see just how impressive the new, increased Tigear-2 ratings are!



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