GENERAL SPECIFICATIONS for DODGE TIGEAR-2 Speed Reducers

The speed reducer shall be a single reduction worm gear reducer incorporating three input configurations - a quill style for direct attachment of electric motors, a separate keyed input shaft suitable for flexible coupling to a footed motor or belt and pulley input configuration and a motor adapter style input that employs a three-piece coupling to connect electric motors to the reducer. These input configurations shall be available in both solid and hollow output shaft designs. The reducer shall be manufactured in the United States of America.

TIGEAR-2 Quill Input
with hollow output shaft

Gearing

Worm gear geometry shall be highly optimized for rating and efficiency and precision manufactured with a single enveloping design.

The gear set shall consist of a hardened steel worm shaft. The worm gear shall be a fine grain, copper-tin bronze -specially alloyed for superior durability and wear resistance. All units shall have the worm gear set properly centered during assembly to produce an optimum contact pattern.

Gear design and power transmission ratings conform to globally accepted rating standards.

TIGEAR-2 Separate input
with solid output shaft

Castings

The gear case and bearing housing shall be manufactured from Class 30 gray iron. The optional bolt-on base, motor flange and other accessories shall be available either in cast iron, aluminum or steel.

A riser block kit, designed for mounting to the top surface, shall be available to provide a method for avoiding a mounting arrangement that would position the input shaft below the level of the output shaft.

The reducer shall be sealed with no direct passage from the oil sump to the ambient atmosphere - (a closed system). This ventless design ensures no contamination of lubricant from external environment.

TIGEAR-2 Three-Piece Coupled input
with solid output shaft

Lubrication

The standard lubrication shall be a synthetic type that is suitable for USDA Class H1 environments. The manufacturer must state in writing that the lubrication shall require no periodic changing. Alternate synthetic lubricants made from the same base material as the standard shall be available to accommodate extreme temperature applications.

All reducers shall be factory filled by the manufacturer with the proper volume of synthetic lubricant so that the reducer can be applied in any approved mounting position without any modifications to the reducer.

Bearings

Output shafts shall incorporate tapered roller bearings shimmed for proper running clearances and be designed for maximizing over hung load rating.

Sealing

Oil seals shall be made of premium materials and shall operate on plunge ground seal journals having an 8-17 Ra, 65-115 Rz micro finish. Seals made using Nitrile or Fluoroelastomer materials are not acceptable.

Oil seals shall have a minimum temperature range of -40° to 300° F. (-40° to 149° C).

All sealing-joints, except fill plug, shall be o-rings. Reducers shall incorporate no silicone rubber sealant of any kind.

Hardware

All fasteners shall be minimum Grade 5 and have locking provisions. Motor mounting bolts and input/output keys shall be provided.

External Conditions

When properly service factored to account for the thermal limitations of the reducer, the standard construction shall be suitable for use in ambient temperatures from -10° F to +165° F.

The thermal ratings listed on selection pages are based on the gear unit continuously operating in an ambient temperature of 75° F. For the ambient condition above 75° F, the derating factor needs to be applied to the thermal rating, or contact DODGE Application Engineering.

When used without the optional aluminum bolt-on foot the reducer shall be BISSC certified.

Washdown operating environments shall be addressed with a special coated gear case incorporating stainless steel hardware and stainless steel output shaft.

Severe washdown operating environments shall be addressed with a stainless steel gear case incorporating stainless steel hardware and stainless steel output shaft.

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