The worm gear reducer shall be made available with six input options and shall have the ability to be supplied with single and double reduction.

The input options shall consist of the following:

- Quill input adaptor to allow for connection to electric motors, utilizing a keyed hollow shaft suitable for direct attachment to a motor. The hollow motor input shaft shall be factory coated with an anti-seize lubricant.
- Coupled input adaptor to allow for the use of a flexible coupling to connect electric motors to the reducer.
- Hydraulic and servo motor input adaptors must be available.
- Non-Motorized and metric input adaptors must also be available.
- Solid input shafts shall be supplied with a key and can be used with a pulley and belt configuration.

The housings and covers shall be made of cast iron. All metal mating surfaces including, the input and output covers and motor adaptor flanges, shall be sealed with O-rings. The housings shall be designed with internal and external ribs and reinforced areas to handle the dynamic and static loads the reducers will experience during operation. Optional bolt on items such as bases, torque arms and brackets shall be made of steel.

The reducer and all add-on components shall be coated with an 8 mil (minimum) thick epoxy coating system. The epoxy coating shall have a minimum 60% solids loading when wet. Prior to coating, the reducer shall be prepared in a three stage hot iron phosphate dip process. The three stages shall consist of a hot iron phosphate dip, and rinse dip and a rust preventative dip. The coating system must be a 2 part, direct to metal epoxy and must achieve an 8 mils dry thickness, minimum. The coating system shall exceed a 1,000 hour salt spray test per ASTM B-117 with no signs of degradation.

The input worm gear shall be made of alloy steel that is case hardened to a minimum Rockwell-C (RC) of 58.

The reducers shall be filled and shipped with Mobil Glygoyle 460 polyalkylene glycol (PAG) synthetic lubrication (exception for Drywell reducers). The lubricant shall conform to NSF H1 (formerly USDA) certification. The bearings and reducer gears shall be splash lubricated.

Tapered roller bearings shall be utilized on the output shaft and either tapered roller or ball bearings shall be used on the input shafts. The bearings shall provide a minimum of 10,000 (6,250 L10) hour average life. A crush ring shall be utilized to ensure the proper positioning of the output shaft taper roller bearings. The use of the crush ring allows for the automatic setting of the end play, 0" to 0.002", of the taper roller bearings.

The reducers with quill input adaptors shall include hydrogenated acrylonitrile butadiene rubber (HNBR) or fluoroelastomer (aka Viton®) seals on the input shaft. The seals shall have a minimum temperature range of -40 to 300°F (-40 to 149°C). Shafts are to be center ground and then plunge ground to provide a seal surface of 16 to 20 micro inches Ra.

Reducers shall not include any silicon rubber of any type.

Fasteners shall be a minimum of Grade 5 except for the base mounting bolts shall be a minimum of Grade 8.

The reducer shall be supplied with multiple drain, fill and vent holes located in manner that facilitates maintenance and ventilation. The multiple holes allow for the reducer to be installed in all possible mounting positions including worm low. The drain and fill holes shall be shipped with threaded pipe plugs installed that are coated with a sealant and thread locking compound. The plugs shall be square head external type.

All reducers must be air pressure tested with a mass flow tester at 8 psi prior to shipment with no leak paths evident.

Motor adaptor flanges shall have threaded push off holes to facilitate the removal of motors. The holes shall have cast iron reinforcing boss pads that have minimum 1.5 times the number of threads than the hole diameter.

All hollow shaft models shall be supplied with symmetrical output shafts. The output shafts shall have puller slots machined into them to allow for removal of the reducer from the mounting shaft. The slots are designed for use with a hub puller. The hollow shafts shall have two (2) set screws set 65° apart to allow for maximum torque gripping transfer. Stainless steel output shafts shall be made available upon request.