680

Omega
The Ultimate Lubricant

DESCRIPTION:

Omega 680 is a high-performance lubricant designed exclusively for Worm Gear applications and performs two major functions of paramount importance to ensure proper operation, efficiency and "maintain-ability":

* Omega 680 reduces friction and wear; this improves the mechanical efficiency of Worm Gear sets and helps extend gear life to an unprecedentedly high degree.

* Omega 680 acts as a highly efficient lubricating medium that reduces friction temperature and thereby keeps heat build-up away from the contact area of Worm Gear Sets. This heat reduction property keeps gear sets operating for longer periods and avoids heat distortion of both the steel worm and bronze gear sets found in most Worm Gears.

ENERGY SAVING:

Omega 680 improves efficiency of Worm Gear sets by at least 5%, and more usually 7-8% (based on test measurements between input torque and output torque). In order to illustrate the energy savings possible, it is known that if efficiency of worm gears were increased by a mere 3%, U.S. industry could save 6 billion dollars annually! Therefore, on even the smallest piece of equipment, over its lifetime, using Omega 680 can provide great energy savings.

Worm gears, by their design, lose about 75% of their potential output power due to heat generated by sliding friction. Other factors that cause inefficiency are hydrodynamic oil churning, bearing friction and other related friction losses. Omega 680 contains special colloidal dispersants that remain in suspension throughout the lubricant to help overcome these friction losses, while providing exceptional protection to the metal gear parts coming into contact with it.

SUPERIOR EFFICIENCY:

Omega 680 High Performance Worm Gear Lubricant provides several important benefits which are here summarized:

- Used on new gear sets, Omega 680 significantly reduces the "break-in" time required to attain optimum operating temperature. By introducing Omega 680 from "new", metal gouging and abrasion can virtually be eliminated, and thereby improve gear set operating life dramatically. Metal Shearing and chipping off due to "newness" can be prevented, and thus wearing down of mating metal surfaces is gradual and non-damaging.
- Omega 680 reduces steady-state gear set operating temperatures, reducing the likelihood of metal fatigue and distortion, plus improving operating efficiency and effective lubricant life. Another advantage is the maintaining of constant lubricant viscosity without introducing power-robbing fluid drag.
- Power transmission efficiency is significantly improved due to Omega 680's ability to drastically reduce sliding friction losses and to provide a similar level of output power from less energy input.

Omega 680's specialized colloidal supplements remain thoroughly dispersed and in suspension throughout the lubricant's service life and thereby eliminates flocculation and settling at the bottom of the sump. An added advantage with Omega 680 is quieter gear operation.

LOWERS OPERATING TEMPERATURE:

Omega 680's super low coefficient of friction and superior dispersion characteristics lower operating temperatures of Worm Gear Sets dramatically. This feature, in turn, extends the life of gear sets and keeps them operating efficiently with minimal wear. Parts replacement and wear and tear can therefore virtually be eliminated by exclusively using Omega 680. In tests, Omega 680 can provide up to a 20% lowering of operating temperature of Worm Gear Sets. Lowered temperatures, in turn lessen the possibility of oxidation and help keep the oil at the optimum viscosity instead of thinning out with rise in temperature.

RECOMMENDED APPLICATIONS:

- Specially designed for use in enclosed worm gears operating at moderate to high speeds and temperatures.
- Suitable for worm gear sets requiring strong resistance to oxidation and thermal degradation, and the build-up of harmful deposits caused by extreme temperatures.
- OMEGA 680 protects against rust and corrosion and offers outstanding film strength and superior lubricity.
- Also ideal for lubricating all types of bevel and spur gears, plain and rolling bearings.

TYPICAL DATA:

TEST	ASTM TEST METHOD	TEST RESULT	
		SAE 90	SAE 140
ISO Viscosity Grade	D-2422	220	460
Appearance	Visual	Black Opaque and Tacky	Black Opaque and Tacky
Density, Kg/L @ 15°C	D-1298	0.893	0.901
Viscosity, cSt @ 40°C	D-445	220	460
Viscosity, cSt @ 100°C	D-445	21.3	30.7
Viscosity Index	D-2270	115	110
Flash Point, COC, °C(°F)	D-92	264(507)	266(511)
Pour Point, °C(°F)	D-97	-22(-7.6)	-20(-4)
Total Base Number, mg KOH/g	D-2896	8.2	8.2
Carbon Residue, Conradson, % Mass *	D-524	0.08	0.08
Foaming Characteristics -			
All Sequences, After Settling	D-892	Nil	Nil
Rust Prevention Characteristics -			
Salt Water, 48 Hours	D-665	Pass	Pass
Ash, Sulphated, % Mass	D-874	1.65	1.65

* In excess of ash content