



**Care and Feeding of Indmar Engines  We are just about ready to enter a new boating season.  There was a recent article in Boating Industry titled “Americans still confused about ethanol fuel choices.” A link to the article follows:** [http://boatingindustry.com/news/2017/03/17/survey-americans-still-confused-about-ethanol-fuel-choices/](http://indmar.us1.list-manage.com/track/click?u=6f397349a9b0e3a25a9d7bc8d&id=df54cd8bad&e=b446d75afc) **To help ensure that your end user customers have a successful and trouble-free experience we are issuing this reminder regarding of the “care and feeding” of an Indmar Engine.  While it is always preferable to use fuel that does not contain alcohol, all current Indmar engines are designed to operate on E10 (10% maximum ethanol) fuel. Any fuel containing more than 10% ethanol is not only unacceptable to use but is also illegal to use in a boat.  When fuel containing alcohol is exposed to water, the alcohol in the fuel more readily mixes the water and actually creates a cloudy layer of water/alcohol mixture in the bottom of the fuel tank and a layer of gasoline on the top. Because the gasoline layer has had some or all of the alcohol removed from it, the remaining fuel will be of lower octane because alcohol in the fuel raises the octane. Since fuel is pulled from the bottom of the tank, the first liquid that the fuel pump is going to push into the engine’s fuel system is going to be a mixture of alcohol and water that will not burn. There are no chemical solutions that will reverse this condition. The tank will have to be drained and the contents disposed of and the fuel system, fuel lines, injectors, etc., will have to be flushed with clean fuel to get the alcohol/water solution out of the system.  Make sure that the customer understands which octane fuel the engine requires. Our engines, except for the 460 Model and the Supercharged 575 are designed to run on mid-range (89 octane) fuel. The 460 and SC575 are designed to run on Premium (91-93 octane) fuel. Using fuel with too low octane rating will reduce the performance in the engine and may cause catastrophic engine damage that is not covered by Indmar’s Limited Warranty. There are no substitutes for the correct octane fuel. Octane booster chemicals that are available at auto parts stores are not enough to raise 87 octane fuel to 89 octane or to raise 89 octane to 91.  When using fuel containing alcohol, we recommend that the customer buy fuel in smaller quantities that they will consume during a weekend of boating. Fuel degrades pretty quickly and the engine operates better on fresh fuel. Use fuel stabilizer to treat any remaining fuel to reduce the degradation. Recommend to the customer that they buy fuel from a busy station that sells lots of fuel. There will be a better chance that the fuel will be fresh.   Indmar recommends purchasing fuel from a supplier that advertises that the fuel meets “TOP TIER” specifications. This fuel has additives and detergents that will reduce the buildup of deposits in the engine. For a current list of gasoline retailers supplying TOP TIER gasoline, go to** [www.toptiergas.com](http://indmar.us1.list-manage.com/track/click?u=6f397349a9b0e3a25a9d7bc8d&id=936e7ccf54&e=b446d75afc) **and click on LICENSED BRANDS.  Don’t run out of fuel! The fuel pump that supplies the high pressure fuel required by the engine is cooled and lubricated by the fuel that is being pumped. Any time the boat runs out of fuel, the pump is not being cooled and lubricated properly and sustains a certain amount of damage. If the fuel “runs dry’ a number of times, the damage to the pump will be cumulative, resulting in an expensive fuel pump failure.  If an engine fails and it is determined that the failure was due to improper fuel with too low of an octane rating, too much alcohol, or both; the failure will not be covered by the Indmar Limited Warranty.  The oil in the oil pan of the engine is the “life-blood” that protects internal engine components. The oil requirements are different for specific engines. The 360, 400 and 440 models use at minimum a synthetic blend or fully synthetic 5W30 meeting the API rating SN. The new 460 and the Super Charged 575 must use fully synthetic 15W50 meeting the API SN rating. The first oil change needs to be done at between 10 and 20 hours and every 75 hours or annually, whichever comes first, after that. If an engine fails and it is determined that the failure was due to improper maintenance or oil, the failure will not be covered by the Indmar Limited Warranty.  Make sure that you and your sales people spend time during delivery of a new boat to ensure the customer understands this critical information.**

**Team MB / Indmar**