

FREQUENTLY ASKED QUESTIONS REGARDING OIL SELECTION FOR 2-STROKE CYCLE ENGINES.

Q. I have an old 2-cycle engine, can I use non-detergent 30 or 40 weight oils, or do I have to use a 2-cycle oil?

A. No matter how old, 2-cycle engines perform better and longer with oils specifically designed for that use. 2-cycle oils will be consumed during combustion in the piston chamber. Therefore, must be formulated with specific additive chemistry and base oils. This combination produces minimal ash on exhaust ports. Most are also pre-diluted for easier mixing and fluidity through injectors with variable rate oiling (VRO's) systems.

Q. With so many different brands and types of 2-cycle oils on the market, how do I know which one is right for my engine?

A. There are two basic categories of 2-cycle engines: liquid and air cooled. The liquid cooled category includes outboard boat motors and many personal watercraft. The air-cooled category includes lawn mowers, generators, pumps, chain saws, motorcycles, weed trimmers, ATV's, snowmobiles and some personal watercraft. 2-cycle oils for water-cooled engines are labeled with a symbol from NMMA (National Marine Manufacturers Association) and are given the designation TC-W3. Many 2-cycle air-cooled engine oils are marked with ISO GD, GC, GB; JASO FC, FB or FA; and/or with the API TC designation. "TC" means 2-cycle, "W" means water cooled and "3" designates the third and latest generation of outboard 2-cycle oils.

Q. I heard there are new 2-cycle oils for my air-cooled 2-cycle engines.

A. Recently two new International designations for 2-cycle engines have been introduced. From Europe the ISO "Global" system, and from Japan the JASO system.

- Global "GD" is internationally recognized as the highest quality air-cooled 2-cycle oil available. It is a synthetic or semi-synthetic, extreme temperature/anti-scuff/lubricity, low smoke, low ash oil. There is no comparable JASO or API product.

- Global "GC" is equivalent to JASO "FC," Japan's highest quality 2-cycle oil. In Japan these oils may also be referred to as "Genuine" oils. These oils are high lubricity/detergent, low smoke, semi-synthetic, low ash oils.

- Global "GB," Europe's lowest quality 2-cycle oil, is equivalent to JASO "FB." It is generally accepted that North America's API TC rated oils are equivalent to these oils. These oils do not require any synthetic to meet specifications.

- JASO "FA" rated oils are used in Pacific Rim countries and are the lowest rated Japanese 2-cycle oils. They are medium to high ash mineral oils with limited lubricity or detergency.

If no designation is shown on your oil container, read the label closely or question the seller to be sure the oil qualifies for the application you intend.

Q. Are all 2-cycle oils for my engine merchandised the same?

A. No. But if you select an oil designed for your engine style, with an NMMA, ISO Global, JASO or API identification discussed above, you are less likely to make the wrong choice. Oils passing NMMA requirements for TC-W3 will display the symbol and indicate a license number somewhere on the package. If not shown, the oil may have failed or not been submitted to this test procedure. In the absence of a designation or license symbol, consult with an oil supplier technical service representative.

Q. My mechanic or dealer tells me I must use only the brand sold by him which matches the brand of engine I have or my warranty will be void. Is this true?

A. THE ANSWER IS NO! You are not limited to the purchase of only their brand of oil. For example, you buy a new outboard engine and you want to buy an oil such as *SHIPMATE* Outboard instead of the OEM brand. On the *SHIPMATE* label you will find the proper API designation and NMMA symbol. This indicates the oil has been pre-approved and licensed by the same OEM which built the engine and is fully approved for warranty use. An owner's manual will tell you to look for oils with the NMMA symbol. The warranty statement in the manual is the only warranty which is official and mechanic or dealer has no authority to supersede this statement. Finally, *FEDERAL LAW PROHIBITS SUCH ACTIONS* unless the mechanic or dealer can prove to the FTC that, (1) no one else has an oil which will work, or (2) they must provide the oil to you free of charge for the required warranty period.

Q. I have heard that all "red" 2-cycle oil should be avoided. Why is that?

A. Color is an identifier only. Oil manufacturers have a choice of colors for 2-cycle oils and some choose not to dye the oil at all. Color is used to help determine if the fuel:oil mix has been made but has no bearing on its application or quality. *SHIPMATE* Outboard and ARCTIC BLUE Injector oils, for example, are blue.

Q. I still have some TC-WII oil left. Can I use it?

A. Although NMMA certified, TC-WII oils are warranty approved for outboard engines built prior to 1992 we do not recommend their use for any application. NMMA's testing criteria did not account for certain problem's encounter in the field. Although not all TC-WII oils experienced trouble, a new TC-W3 specification was quickly established, and included additional tests to eliminate these problems. This category insures greater protection against high temperature wear, gelling problems and the adverse effects of common, low grade "pipeline" gasoline.

Q. My owner's manual says that I should use twice as much oil if I use any brand of oil other than theirs. Why do I have to use twice as much?

A. There is no industry information which readily supports the theory, and usually nothing from the manufacturer to support the statement. In all probability, if you are using the appropriate 2-cycle oil, such practice will cause an excess of unburned oil in the combustion chamber leading to "ring coking" and premature failure. For all GOA oils, we recommend exactly the same fuel:oil mix as recommended by the manufacturer for its brand.

Q. I always put in a little extra oil each time so I can be sure I'm protected, or there's always a little left, so I just dump it in. You're saying this not good for my engine?

A. As in the previous question, you should always mix the fuel:oil ratios exactly as the manufacturer recommends. Adding too much oil can lead to early ring sticking and too little may result in a lack of lubrication, mainly piston scuffing.

Q. I pull two sets of skis and use my boat commercially, shouldn't I use extra oil?

A. Again, outboard engines are designed to work hard and work better when under a load. Over-oiling is not necessary and will not extend engine life. Variable Rate Oiling (VRO) systems were designed to deal with these wide differences in how consumers use high horsepower 2-cycle engines, and supply the correct oil:fuel mixture required for each specific output.

Q. I had engine damage judged to be from lack of lubrication. Could it be the VRO system or the oil? Should I change oil brands?

A. Probably neither. If there was a one-time occurrence of "no oil" or "too little oil" which caused engine damage the oil itself would not be the problem. Only if it were the wrong oil for the application. A fully approved oil used in the right ratio will lubricate properly regardless of brand or color. VRO systems might possibly malfunction, but when repaired, are precise in delivering the proper oil. Using a qualified oil and properly functioning VRO system is always best.

Q. I heard that some gasolines are causing many of the problems with 2-cycle engines. I was also told that if I put additive X in the gas:oil, it would solve the problem. Will this work, or are they necessary?

A. As discussed above, problems and concerns reported by engine makers and mechanics with regard to gasoline quality have been addressed by the TC-W3 specification. Mixing additives which are not specifically designed to correct a specific problem, or just as a preventive measure, may interfere with the total designed performance of the fuel:oil. There are already additives in both the fuel and oil. Additional unknown chemistries could unbalance their design benefits and may void the engine warranty. Consult with your fuel:oil supplier, engine manufacturers, or both, before making such a decision.

Q. My brother says he has always uses "brand X" 2-cycle oil and has never had a problem. My other brother says he used same brand but had nothing but problems. Why is this? Who is right?

A. Probably both. Two different people with the same make and model engine can experience very different results. Differences can include non-oil related mechanical failures, type of service, maintenance, contamination, etc. 2-cycle oils are many times credited or blamed for things which may not be an oil function. For example, if your brother used the same oil in the same type of engine but didn't mix carefully, results may differ greatly.

Q. I switched from "brand X" to "brand Y" and in less than five minutes experienced engine failure. Did "brand Y" have a bad batch? Will "brand Y" oil work in my type engine? My mechanic said he had heard of such things before. Where do I send the bill?

A. These are typical "panic questions" asked when a sudden, unexplained engine failure occurs. Most often at the stage these questions are asked, the engine has not yet been opened. If a failure occurs, the first step is to have service technician, trained and certified for that engine, determine the exact and total nature of the failure. Most non-oil related problems are recognized by the mechanic. If not, save all damaged parts and a sample of the fuel:oil mix. If not serviced by the dealer, contact your engine manufacturer customer services department for whatever advice they can offer. Also, you may wish to call your fuel:oil supplier customer services. With the information gained at this point, someone probably has already answered all your questions. There are a few points you may wish to consider for possible future reference. If it happens quickly, it is probably not oil related (*TOTAL LACK OF OIL IS HUMAN ERROR*). Oil companies perform many quality checks, so your chance of winning a lottery is probably greater than a so called "bad batch" of oil. So, try to avoid the panic question and you will probably find a better answer to your problem.

Q. Who certifies 2-cycle oils for sale?

A. For 2-cycle oils identified as TC-W3, the NMMA licenses a supplier based on data submitted from test procedures. For oils labeled GD, GC or GB, claims are made based on guidelines defined by the International Standards Organization (ISO), Combined European Community (CEC), Japanese Automobile Standards Organization (JASO), and the American Society of Testing Materials (ASTM). For oils labeled FC, FB or FA, claims are made based on guidelines defined by Japanese Automobile Standards Organization (JASO). For oils labeled TC, claims are made based on guidelines defined by API. For oils not labeled, you have only the claims made on the container or accompanying literature. In short, there is no monitoring authority for entry into the marketplace, so consider trust in a supplier brand or proven performance when making a decision to buy.