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Carburetor Identification, Troubleshooting, and Repair**ENGINES & TRANSMISSIONS**Table of Contents**Introduction**1**Engine Troubleshooting**1**Fuel Recommendations**2**Storage**2**High Altitude Jet** For Emissionized Carburetors **3****High Altitude Carburetor Kits for Fixed Main Carburetors**4**Throttle Control Brackets, Governors, and RPM Adjustments**5**How to Identify a TecumsehPower Carburetor** 5**10Non-TecumsehPower Carburetors**10**Diaphragm Carburetors** 10**1Carburetor Cleaning Series** 11**12** **DOESMISSTIONS**1**7Pre-sets and Adjustments (Non-Emission)** 18**20Troubleshooting TecumsehPower Carburetors** 23**Troubleshooting Carburetion Chart** 21**22Troubleshooting TecumsehPower Carburetors** 23**Troubleshooting Carburetion TC Charts** 24**25Troubleshooting Walbro and Tillotson Carburetors** 26**Metering System** 26**Service Carburetor Information** 27**28Using the Computer Parts Look Up System** 29**Flow Adjustment Procedure** 30**Carburetor Service Tips** 30**33Pump Fuel Service** 34**Fuel Filters** 35**Failure Analysis** 36**38INTRODUCTION**This troubleshooting book is designed as a quick reference for carburetor problems and an aid in identifying failures and their possible causes. 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Interchange bow nuts.Reuse gaskets and O rings.ENGINE TROUBLESHOOTINGWhen troubleshooting a carburetor, always vent or gaskets should not be overlooked. The carburetor depends on the proper operation of the engine to do its job. The first step in troubleshooting is to determine if you have a carburetor or an engine problem. In order for the engine to operate properly, the following items need to be checked first:Make sure there is a sufficient amount of clean, fresh fuel in the tank.**Check spark plug for proper reach, gap and condition. Replace, if needed, or in question. Perform an ignition test using spark tester part number 670366 to assure that you have a crisp spark.****NOTE**Older point ignitions models check for proper ignition timing according to the Technicians handbook.**Check for fuel flow restrictions into the carburetor. Deteriorated fuel line, and fuel cap venting is some of the more common restrictions.** TecumsehPower uses a stainless steel 75-micron filter screen molded into most tanks. It is extremely rare for this area to become restricted and should be checked last.**Check compression** by first disconnecting the spark plug lead and ground it to prevent start-up. Next, turn the engine over by hand. A definite resistance should be noticed on the compression stroke. Using a cylinder leak down tester is also possible. After these basic checks have been performed and you are satisfied with the engines condition, attempt to start it. If it does not start, remove the spark plug and check its condition. If it is dry, you can assume there is a problem with the carburetor or the fuel system. Continue by troubleshooting the carburetor.**FUEL RECOMMENDATIONS** TecumsehPower strongly recommends the use of fresh clean unleaded regular gasoline in all engines. Unleaded gasoline burns cleaner extends engine life and promotes better starting by reducing the build up of combustion chamber deposits. It is reformulated fuel containing no more than 10% Ethanol, 1.5% MTBE, 15% ETBE or premium gasoline can be used if unleaded regular gasoline is not available. **Lead**ed fuel may be used in countries where unleaded fuel is not available. **NEVER USE FUEL CONTAINING METHANOL. STORAGING THE ENGINE IS TO BE UNUSED FOR 30 DAYS OR MORE** WARNING Gasoline (Fuel) vapors are highly flammable and can explode. Fuel vapors can spread and be ignited by a spark or flame may feed away from the engine. To prevent injury or death from fuel fires, follow these instructions:Never store the engine with fuel in the fuel tank inside a building with potential sources of ignition such as hot water and space heaters, clothes dryer, electric motors, etc.Gasoline can become unstable in less than 30 days and form deposits that can impede proper fuel flow and engine operation. To prevent deposits from forming, all gasoline must be removed from the fuel tank and carburetor. An acceptable alternative to removing all gasoline is adding a fuel stabilizer such as TecumsehPower Ultra-Fresh part number 73024G to the gasoline. Fuel stabilizer should be added to the fuel tank or storage container. Always follow the mix ratio found on the stabilizer container. Run the engine at least 10 minutes after adding the stabilizer to allow it to reach the carburetor.**Draining the Fuel System** DO NOT attempt to pour fuel from engine or siphon fuel from bowl. Empty fuel tank by using a commercially available suction device designed for use with gasoline. Then run the engine until any remaining fuel is consumed. Doing so may result in death or serious injury. **WARNING** Drain the fuel into an approved container outdoors, and away from any open flame or combustion source. Be sure the engine is cool. **CAUTION** **NOTE** Diesel gasoline has been used, put a small amount of unleaded gasoline into fuel tank and repeat preceding instructions. Then run the engine until fuel is used up. Oil Cylinder BoreRemove the spark plug wire from the spark plug. **NOTE:** Always ground the plug wire when disconnected. Pull the starter handle slowly until resistance is felt from compression pressure, then stop. Slowly reverse starter tension to reverse the engine from reversing duty to compression pressure.Remove the spark plug, squirt 1/2 ounce (15 ml) of clean engine oil into the spark plug hole.Cover the spark plug hole with a shop towel and crank the engine over slowly, several times.Replace the spark plug and tighten. Pull the starter handle as performed in step #1. The piston position blocks the cylinder ports on 2 cycle engines or closes the valves on 4 cycle engines, preventing air from entering and oil from leaving the cylinder bore during storage.Re-connect the spark plug wire on the spark plug.**HIGH ALTITUDE JETFOR EMISSIONIZED CARBURETOR**The following list of altitude compensation jets is being provided for use with emission grade carburetors at elevations between 6,000 and 11,000 feet (1,824 to 3,344 meters). This list applies only to engines which are identified as compliant with CARB (California Air Resources Board) or EPA US Environmental Protection Agency) regulations. 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