

The Model 4425 Evinrude Sportsman

End Of The Line For A Popular Small Outboard

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The 1.5 horsepower Evinrude Sportsman that was produced from 1948-51 probably seems like a rather unremarkable specimen when compared to more glamorous and powerful engines that had been produced both before and after it. However, if one takes a moment to consider some of the facts and figures that are connected to it, perhaps this little outboard deserves more respect than just a mere passing glance. Admittedly, this motor also is a bit of a personal interest item for yours truly, as it was the first outboard that I have any memories of from when I was a youngster, and also provided the stimulus for getting involved in antique outboards when I reached an age where I was (allegedly) more mature. My father bought a used model 4425 in the early 50's, and the search for parts to help with its revival in 1991 helped spark an addiction to old iron.

The very first version of the Evinrude Sportsman was the model 4091 that appeared in 1935, and represented one of the first new motor developments marketed by OMC in the post-Ole Evinrude era after his passing the year previous. At the time of its introduction, the 24 ½ pound one-and-a-half horsepower motor was touted as the first outboard to use a reed valve induction system (the operation instructions and parts list booklet actually refers to it as a reed check-valve). Light, compact, and easy to carry, it made great use of aluminum alloys in its construction. With the fuel-metering device built integral with the gas tank, it eliminated the need for an external fuel line. The reed valve arrangement on top of the motor allowed the operator easy access if service was needed. The "Hooded Power" design featured a one-piece aluminum cowling that wrapped around the flywheel and completely covered the cylinder assembly, and gave the little kicker a clean sculpted appearance on its exterior. It was lightweight enough to hang on the stern of a canoe and was advertised as being able to propel a boat at speeds reaching seven MPH. Subsequent models of the Sportsman were upgraded to 1.6 HP in 1937 when the reed check valve was replaced by a more commonly used poppet valve type of carburetor mounted directly to the crankcase opening. In 1938, the output rating was bumped up to 2 HP; this is where the Sportsman horsepower rating remained until the 1.5 horsepower model 4425 Sportsman was introduced at the New York Boat Show in January of 1948. It weighed 30 pounds and sold for \$98.50. The 4426 model was 5" longer and weighed 31 pounds at a price of \$103.50. Some of the 1947 Sportsman motors (models 4414 & 4416 were the standard Sportsman, the 4415 & 4417 were the 5-inch longer models) used the "Fisherman's Drive" angled lower unit design, and some came with a standard 90 degree gear-foot, but in 1948 OMC went exclusively with the fisherman lower unit.

Looking at the model 4425 Sportsman, on the surface we see a seemingly plain little outboard. It's a fully shrouded motor, with the basic colour scheme being silver with bluish-green coloured accents appearing on the tank as well as highlighting the letters and markings on the front face of the lower cowls. White-tinted decals spelled out the word "Evinrude" on each side of the curved gas tank panels, and the tank trim ring and rear grab handle were left as bare aluminum. The timer advance lever and choke control knob were typically painted black. The motors used a stamped steel tiller arm assembly with a rubber handgrip, and the tiller could be locked in the down position to make it more compact for storage. Everything below the powerhead, including the transom bracket, mid-housing, lower unit, and propeller, was painted silver. The motor ID plate was riveted to the transom bracket in the recessed area between the thumbscrews, and normally has a bluish-green background with silver lettering. Information available to us states the following; for the 1948 year, motors were identified by serial numbers up to 13000, 1949 numbers ran from 13001 and up, and the 1950-51 motors had the letter "C" following the serial number digits.

Examination shows that the Evinrude model 4425 possessed several definitive refinements that set it apart from its predecessors in the Sportsman line. These features included the following;

- ✓ Recoil starter mechanism of modern design
- ✓ Float feed carburetor with choke capability and improved reed valve induction
- ✓ Improved "Fisherman's Drive" lower unit that used an anti-friction bearing on the driveshaft
- ✓ Oil used for gear-case lubrication instead of grease
- ✓ Streamlined motor shroud profile with a door that hid the fuel filler plug
- ✓ Positive lever-type fuel shut off with check valves and a diaphragm
- ✓ Two-piece die cast aluminum gasoline tank with built-in grab handle
- ✓ Locking flip up/down tiller handle



Figure 1 - Model 4425 Evinrude Sportsman 1.5 HP. (Illustration courtesy of Garry Spencer)

The Sportsman powerhead had a bore of 1-5/8" (one inch and five-eighths) and stroke of 1-1/2" (one inch and one-half), which was also identical to the 3.3 HP Sportwin bore & stroke. Piston displacement was the grand total of 3.11 cubic inches, developing 1.5 horsepower at 4,000 RPM. The fuel tank held half a gallon of fuel mix, enough to allow the Sportsman to run for approximately an hour between refills. A 24:1 fuel to oil ratio was recommended, or one-third of a pint of SAE 30 wt. non-detergent oil to one gallon of unleaded (Marine white) gas. This could be reduced to one-quarter of a pint per gallon for trolling, or 32:1.

Basic powerhead construction consisted of an aluminum die-cast crankcase with bronze bushing inserts used to support the crankshaft. The main crankcase chamber and lower support tube section was cast as one piece, and incorporated an internal passageway that was used to carry water from the lower unit to the powerhead. With this particular crankcase arrangement, only the top crankcase cover was removable. The lower crankcase bearing itself could be removed from its housing for replacement, but this operation required a more complex and labour intensive method than removing the top bushing, which involved merely removing three retaining screws then pulling the bearing carrier upwards and over the crankshaft neck. The front (or operator side) of the crankcase is covered by the reed valve plate and carburetor assembly; the aluminum cylinder assembly (with an iron cylinder sleeve) fastened onto the rearward facing side of the crankcase. Cast bosses on both sides of the crankcase housing were machined to accept bolts for gas tank support brackets or side cowl retaining screws, while the cylinder casting had extensions protruding from the top to support the rear portion of the gas tank. With the exception of hex-head bolt on the tank support bracket bolts, or hex nuts on the carburetor mounting flange, tiller bar bracket, and the flywheel, just about every remaining fastener on the rest of the motor can be removed or tightened with an ordinary flat-blade screwdriver, how can it get any simpler than that eh?

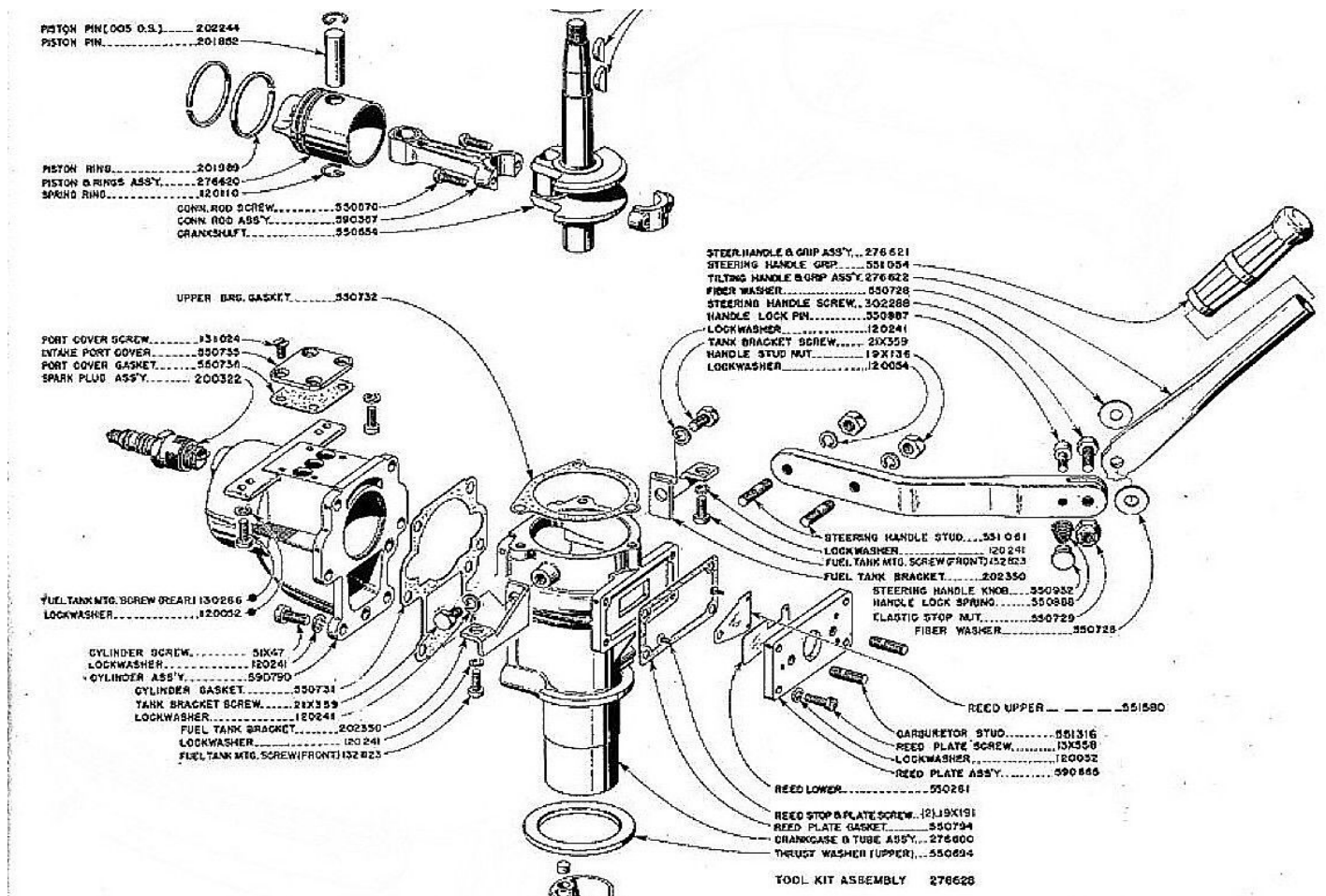


Figure 2 - View of major powerhead components

The cylinder construction involved the unusual implementation of a length of copper tubing wrapped around the grey iron cylinder sleeve; the copper tube was actually the water jacket, and it was thought this design would eliminate corrosion concerns in the cooling water passages. The tubing-wrapped sleeve was then inserted into a die-cast mold to be sealed inside an aluminum casting. Inhabiting the cylinder bore was an aluminum piston using two cast-iron rings of one-eighth inch (.125") height. The connecting rod was aluminum with a bronze-bearing insert on the thrust surface. The reciprocating assembly, although very light, was quite durable if fed the proper diet of oil.

For carburetion, the Sportsman used a float-feed Tillotson MD11A carburetor with a spring-loaded choke butterfly, an upgrade over the primer-lever equipped poppet valve mixers typically used up until 1947. Entrance of fuel to the crankcase was governed by a reed-plate assembly, which was re-introduced for 1948 but now installed in a more conventional location between the carburetor and crankcase instead of on top of the motor like in 1935-36. The transfer ports that directed the compressed fuel vapors traveling from the crankcase to the combustion chamber were located on the top of the cylinder. On the exhaust stroke, burnt gases exited out the bottom of the cylinder casting into an enclosed chamber where they were steered downward through the pump housing to the lower unit, thence out under the surface of the water through the exhaust vent openings that were located in the anti-cavitation plate in such a manner as to feed the flow of exhaust into the prop wash.

Ignition was supplied by a new magneto design using a removable non-ferrous metal rotor containing Alnico magnetic inserts. This rotor fit onto the crankshaft taper and was keyed in place to maintain proper orientation. The rotor revolved inside of the coil laminations in order to produce the electro-magnetic field necessary for generating a spark. The flywheel itself was cast aluminum, and contained no magnetic properties whatsoever. This system differed from previously used magnetos, where the magnets were normally contained in the perimeter of the flywheel, thus the magnets rotated around the outside of the coil laminations. Ignition points were held in a small cast aluminum bracket and were actuated by the motion of a fiber rod that rode on the crankshaft neck. A handy point gap-measuring tool was supplied in a kit with each motor sold. Spark plug was specified as a Champion J6J.

The "Fisherman's Drive" gear-foot was the very latest iteration of the angled weedless lower unit, the first version of which had been introduced on the 1935 Evinrude Fisherman models 4092 and 4121. The Sportsman gear-foot was the same as the one used on the larger displacement Sportwin except it had a lower gear ratio and less pitch on the prop. These were direct-drive units that relied on the motor being able to rotate 360 degree in order to provide reverse capability. The gear-foot possessed a number of engineering changes representing significant advances for motors of this size. The Sportsman had bragging rights as the first small outboard to feature an anti-friction pinion bearing and was the first Evinrude to use neoprene seals around the shafts and oil in the gear-case for lubrication. It did not use a prop nut, but instead had a neoprene cap that snapped into place over the end of the propshaft and served as a shear-pin retainer. It also used rubberized water pump impellers; yes, that's plural, a pair of impellers are incorporated into the water pump for this motor. If you ever have the opportunity to examine this fragile-looking part, with its three spindly curved vanes, you would not be alone if you wondered aloud how the impellers ever stood up to the rigors of supplying cooling water to the powerhead. These flexible impellers replaced the commonly used metal impellers of previous models. The metal parts used in older vintage motors probably give the impression of being a more durable component, but the modernized water pump parts seemed to work just fine. When in operation, the cooling water was conducted up to the powerhead via inner passageways contained within the tower or pump housing which connected with the water passage in the crankcase casting, then to the cylinder. After exiting the cylinder region, the water was dispensed out through narrow slots that were visible on the sides of the pump housing above the water line.

For 1948, the look of the powerhead shrouding was all new, and featured styling contributions from renowned designer Raymond Loewy. With regards to the latest OMC developments in powerhead outerwear, lets start by mentioning the starter. The upgraded rewind assembly was perfected by Clay Conover at Johnson to be used on the new outboards planned by OMC that were to have auto-rewind starters as standard equipment. The 1948 versions of the Sportsman and its big brother 3.3 HP Sportwin (model 4423) motors saw the elimination of cord starting as an option on these newly redesigned motors, as both were only available with the "Simplex" recoil starter. This apparatus had spring-loaded pawls that swung out and engaged the starter ratchet only when the rope was being pulled. These pawls were confined to the starter pulley assembly, a significant improvement over previous rewind starters with the pawls fastened to the top of the spinning flywheel where they and the fragile retainer springs that held them in place were always subject to the whims of varying centrifugal forces.

LIST OF PARTS FOR EVINRUDE SPORTSMAN MOTOR SIMPLEX STARTER

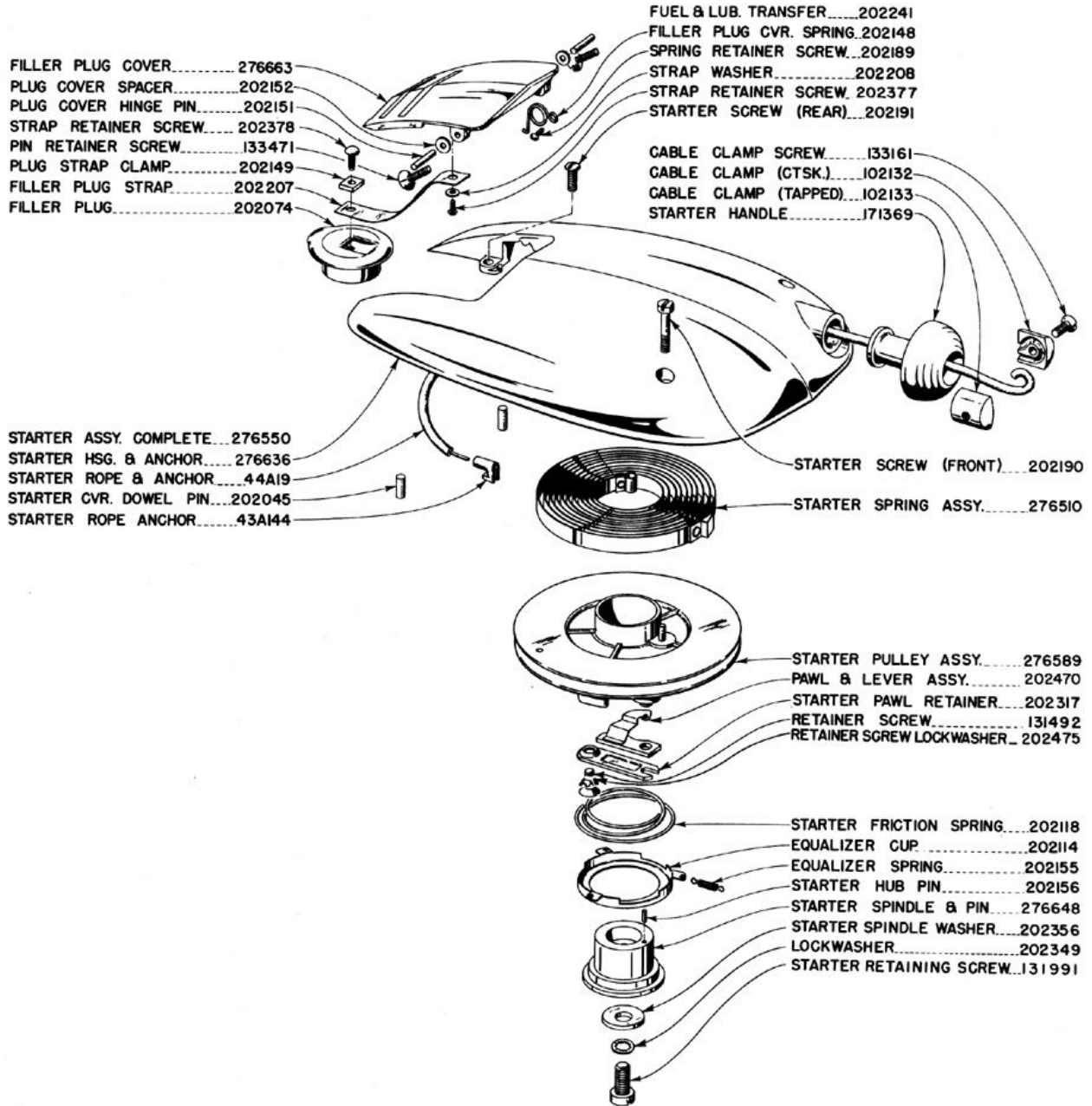


Figure 3 – Rewind Starter Assembly

LIST OF PARTS FOR EVINRUDE SPORTSMAN MOTOR GASOLINE TANK—GASOLINE LINE

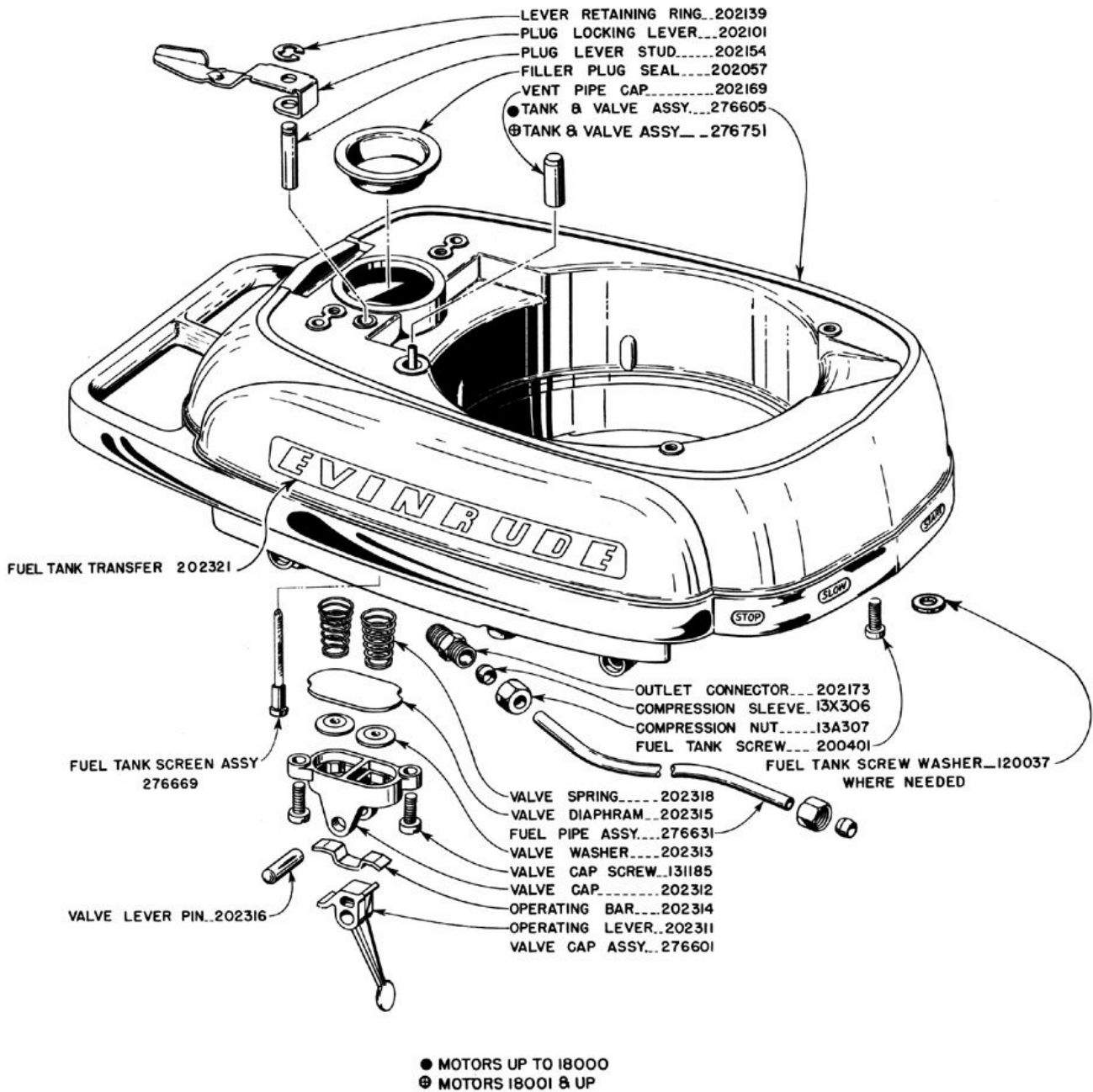


Figure 4 – Two-piece gas tank assembly and associated parts. Note the fuel shut-off lever assembly

The illustrations show how the recoil assembly was arranged on top of the two-piece cast aluminum gas tank, which completely surrounded the flywheel. Filling the gas tank required a different method than most other motors. Instead of the more typically seen aluminum or Bakelite cap that was tightened onto a threaded spigot or filler neck that protruded from the gas tank, there was a hinged hatch cover located at the rear of the recoil housing, and lifting this door afforded the operator access to the tank filler plug. The hatch cover was held in either the fully closed or fully open position by means of tension provided by a pre-loaded spring. Opening the hatch cover exposed the neoprene fuel tank filler plug, which fit into a grommet that helped seal the tank opening, with the plug secured in place by means of a pivoting lever that had to be swung out of the way in order to allow refueling. As a preventive measure against losing the filler plug, a woven strap tethered it to the underside of the hatch cover, which was the same surface where you would find the starting and oiling instruction decal. Thus, the instructions were in plain view for easy reference come refueling time, although some of us might need to put on a good pair of glasses to read that small font, but they did manage to squeeze the instructions in there. Its debatable if this type of fuel tank accessibility was really an improvement over the prior design, but with the hatch closed it definitely provided a far more sleek and streamlined appearance to the gas tank exterior. At any rate, refilling the tank even while in the boat was a simple chore, made easier by the fact that the Sportsman motor could rotate 360 degrees, so it was not necessary to have to reach over the top of the motor to pour in the fuel.

The two-piece shroud that covered the lower portion of the powerhead was easily removable if maintenance procedures were in order, as each half-shroud was held in place by two slotted screws on each exterior side of the powerhead. With the lower shrouds out of the way, it was possible to service the spark plug, carburetor and fuel shut-off valve. Removal of the rewind starter was accomplished by taking out the four screws (two in front, two underneath the fuel hatch), permitting the operator to access a hole in the flywheel through which the ignition points could receive basic cleaning and adjustment. If further access to the magneto was desired, the flywheel could be pulled off the crank with the gas tank still in place, although it could be considerably easier to properly service the mag by getting the fuel tank out of the way altogether. This is accomplished by removing four more screws and disconnecting the fuel line and. Without the need for any special tools (well, maybe a flywheel puller and adjustable wrench) it is possible to take a screwdriver in hand and commence to turning a very nice and complete and running motor into a totally inactive pile of individual parts in about half an hour. Of course, the flip side of that is that with the Sportsman you could reverse the process every bit as easily.

Performance wise, the Sportsman does about what you'd expect from a motor of this displacement and output. In other words, don't plan on being in a hurry to get somewhere. The combination of RPM's, gear ratio, little dinky propeller and the angled propshaft do not equate into a method of transportation that is going to produce forward progress of any consequence. In lieu of a GPS for speed verification, save some money and try using a sundial instead. However, bear in mind that this was marketed as a fisherman's motor to be used for trolling, a lightweight easy-to-haul outboard that didn't take up a lot of space; these were needs which were more than adequately served by the Sportsman. The powerhead stood up well as long as they were fed a proper diet of good oil, and usually these motors, if found today, can be made operational with a minimum level of skill and dedication. It does have some quirks, as the fuel shut-off petcock diaphragm does not always seal up the way its supposed to, which can lead to fuel leakage during storage, and the choke knob mechanism can hang up on the edge of the shrouds if the tension spring thing doesn't keep it in the right position, but these are minor issues that are easily dealt with.

The Evinrude stable was revamped in 1952, resulting in a shift in the smaller motors that were offered for sale. The Sportsman was phased out altogether, while the Sportwin was replaced by the 3 HP Lightwin, which went on to become a durable and respected member of the Evinrude line-up throughout the balance of the 1950's and beyond. The Sportwin name was revived and bestowed upon a new 10 HP twin in 1956, but the Sportsman title would not be used again, ending its presence in the Evinrude showroom after a period that spanned 16 years (minus the war years of 1943-45). During its era, the Sportsman was a popular seller and today there are literally thousands of all versions of these motors surviving. The combination of simplicity, availability, and reliability makes it a good motor choice for beginners in the collecting hobby, not to mention that these same factors combine to make it an economical acquisition as well. The variety of shroud and gas tank configurations that the Sportsman went through in its lifetime provides us with a snapshot of how the small Evinrude motor evolution progressed before, during and after the war years. Though small in stature, and not considered as a particularly special motor, the model 4425 Sportsman nonetheless ushered in an impressive number of improvements in small outboard design, and its styling helped set the table for the bigger Evinrudes that followed and enjoyed great success and recognition in the 1950's.

LIST OF PARTS FOR EVINRUDE SPORTSMAN PUMP BODY—GEAR HOUSING

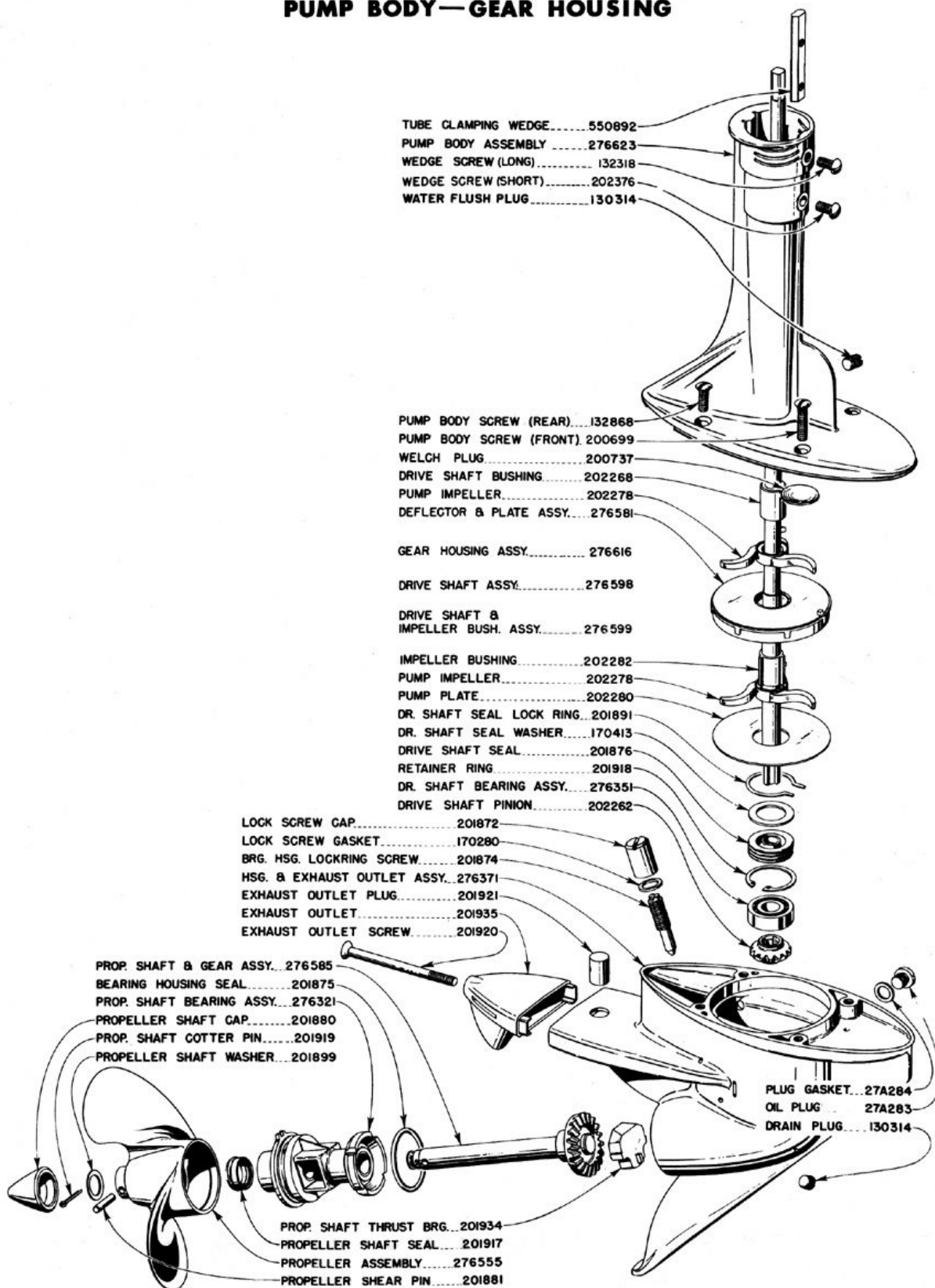


Figure 4 - Lower Unit and Pump Housing Assembly



Model 4425 Evinrude Sportsman, purchased used by Stan Scratch in the early 1950's for \$25. Serial number of 50556 dates this as a 1949 model. The tank decals disappeared long ago, but it still runs just as well without them.

As for the personal significance of this very ordinary little motor, due to circumstances far beyond my control, I decided to try and rebuild Dad's worn-out Sportsman in 1991 after it had hung on a rafter in a barn for over a decade. To finish it, I needed three little parts, the choke knob, lever and spring. At this point, I had not yet discovered the AOMCI and had no idea that people even collected old motors, or that there was even a club for enthusiasts of that sort of activity. Searching all over locally yielded nothing in the way of parts, but I did get a name for a possible parts source; a local collector by the name of Bob Skinner. So, I called him up and made arrangements for a visit to see if he could help out with the last piece of the Sportsman puzzle. The next thing I knew, my wife/therapist was telling me that I was beyond redemption as far as collecting this old iron stuff was concerned. Of course, there was much more to it, and I could probably squeeze another eight pages out of that story, but I'll spare you from all that. So, till next time, may your filler plug stay strapped in and the weeds stay off your gear-foot, and good luck with your old iron eh™.

Acknowledgement – Thanks to Garry Spencer for providing the parts list scans and technical information.

