

THE EVINRUDE TWIN CYLINDER INBOARD MODEL DDR

By J. L. Smith

The Evinrude inboard motors were first produced in 1916 and their manufacture was continued until 1927. The single cylinder Model CC was simply an adaptation of the powerhead of the familiar cast iron Detachable Row Boat Motor. As the Model CCV, it had a water pump attached to act as a pressure pumper. The Model DD used a cast integral cylinder block to house two pistons, in line and firing alternately. Bore and stroke remained the same, that is 2-5/8"x2-1/2". Connecting rods were of bronze, pistons cast iron, and each carried three pretty hefty rings 3/16" wide and 3/32" thick.

The idea of adapting outboard powerheads for inboard use was not uncommon. In the single cylinder configuration, Waterman, Lockwood Ash and Caille Perfection Motor Company did the same during this period. The latter also made a few for Sears of Chicago under the brand name Motorgo. The motors were recommended for small craft, and the instruction and parts book for the Evinrude shows a 104 pound twin installed in a canoe!

The Model DD (thought to mean direct drive) drove the propeller shaft through a universal joint directly from the crankshaft while the Model DDR (direct drive reverse) had a gear box bolted between the crankshaft and propeller shaft. The three position control handle featured neutral at centre plus a forward and reverse position. The reverse gear for the sample motor shown was made by the Carlyle Johnson Machine Company, Manchester, Connecticut and bears a patent number for the year 1911. The input and output shaft each have a gear with a total of six other gears acting in planetary style. This adds an additional 21 pounds to the regular model.

During an inspection of the motor, we note that lubrication of the main bearings is assisted by grease cups, pressure of grease being kept up by turning down grease cup covers. Since operation is two cycle, general lubrication is achieved by mixing oil with gasoline. At the rear of the block can be seen the water pump for cooling purposes. It runs from an eccentric on the crankshaft and features a plunger pump with ball check valves.

The spark plugs are an early design with 7/8" base. Ignition is by a self-contained magneto although the sample motor has been altered for battery ignition. A starter drum bolted to the flywheel accommodates a rope, although one would have to pull upwards rather than forward. Original installation carburetor was apparently a four ball Kingston, although the sample motor has a bronze Jones Compact made by the Gen V Company of Brooklyn, N.Y. The parts book lists a Zenith carburetor as used on the 1925 model, but a different one again for 1926 and 1927. In regard to this parts book it is interesting to note some of the prices: \$35.00 for cylinder and crankcase assembly, a carburetor complete \$12.00, and a gas tank with all necessary fittings for \$7.25. Each page has the notation "A minimum charge of 15¢ will be made on all orders amounting to less than that amount."

Gas tanks, of course, were separate from the engine and were mounted to the boat with brackets or straps. To assist in the starting, each cylinder has a brass priming cup. Induction of fuel is by a three port sys-

tem with cylinder intake passage and ports cast into the port wall. The carburetor is also mounted on the port side and fuel from it is conveyed

through a circular passage between the two cylinders to a housing cast integral on the starboard side. This housing is cleverly designed to act both as an exhaust and intake manifold and has a partition cast internally to divide the two. It projects a circular hump running the length of the block and has letters forming the word 'EVINRUDE' cast onto it. The upper portion approximates the exhaust ports and connects with discharge exhaust tubing and muffler to the rear. Since only the cylinder block is water-cooled, there were probably many painful burns experienced by accidental contact with the exhaust system.

Several pages at the end of the parts book are devoted to accessories required for operation of the engine... gas tanks and tubing, rudder, mufflers and tubing, steering wheel, propeller, shafts, logs, etc. By viewing this complicated paraphernalia, it is readily understood why the simplicity of the outboard motor quickly attained favor. Following the last models in 1927, the company devoted its attention strictly to the outboards - returning only in recent years to the stern drive units.

The sample motor located in Niagara Falls, Ontario, had been stored in the basement of the owner's home for 30 years. Following his decease, his widow prepared to sell her home and move to an apartment in a different town. She was desirous of disposing of this machine, and when I offered \$75.00 it was readily accepted. It has serial number DDR 66722. An inquiry for its exact year of manufacture was directed recently to the Evinrude Company of Milwaukee. Mr. John Pfeil, product service supervisor, reported that many of their records were destroyed through an unfortunate incident several years ago, and he regretted being unable to supply this information. However, it's probable that the engine remained basically unchanged during its years of manufacture with possibly only peripheral changes in regard to magneto and carburetor.

Discontinuation of motors in the inboard field was probably a wise decision on the part of the management in view of the increasing success of their outboard models and the existing competitive situation for marine inboard engines.

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