

FISHER-PIERCE BEARCAT 85 HORSEPOWER OUTBOARD ENGINE
OWNER'S INFORMATION (PRELIMINARY)

Antique Boat Museum

FISHER-PIERCE *Bearcat inc.*

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PART I

Please read this page before first operating the new Bearcat 85 HP outboard engine you have just purchased.

(We don't necessarily expect you to read either the red Owners Manual nor yet the supplementary notes on the following pages. If you save this reading for a "when all else fails" basis - we will understand! If your dealer has conscientiously served you all may yet be well! This page is different. Read it now).

Did your dealer run the boat and engine combination with a tachometer to make certain of the correct propeller choice? What pitch did he choose and what RPM resulted? Take note of each and remember. For optimum performance RPM must be from 5250 to 5750 RPM at full throttle with the boat in light trim.

Throttle linkage adjustments - must be right to make sure throttle is fully open at full speed settings, fully closed at idle. Remove the engine cover or ask your dealer to do so:-

-- With the ignition switch off, push throttle control to full ahead position. If there is resistance because the stopped engine won't shift gears, touch starter instantaneously or turn flywheel a few degrees. With throttle control fully advanced look inside carburetors. The nearest vane is the choke and the throttle is the vane further inside. Both should be almost exactly horizontal allowing maximum air flow.

-- Return throttle control to neutral. Not only should throttle butterfly vanes appear tightly closed but the spring visible on the forward right side of the motor at the end of the throttle push rod should be slightly compressed showing space on the opposite side of the connection fitting between same and the lock nut. This guarantees closure of throttles in coordination with shift control.

Engine idle adjustments should have been carefully made by your dealer. Engine should idle about 700 RPM steadily and smoothly. Mixture adjustment screws atop carburetors control fuel, not air, and closing them clockwise gives leaner mixture. To recheck, first unscrew one quarter or one-half turn for extra rich. Engine should slow down or remain constant. Turn clockwise 1/8 turn at a time for leaner mixture. Engine should speed up at some point then stumble when the point is passed. From the optimum points, unscrew a trifle for slight rich setting. Too rich causes rough idle and smoke. Once mixture is correctly set, throttle stop screws determine idle speed. (Note: unless familiar with these things have them done by your dealer's mechanic).

2-7 Hi-Lo Regulator Switch

No such switch is employed on the 85. Instead, the engine is equipped with the solid-state voltage regulator control which will limit the charge to very small levels when the battery is fully charged. It is associated with a solid-state rectifier both mounted on a small auxiliary plate on the starboard side of the engine.

NOTE: With this arrangement, the alternator windings under the flywheel remain alive at plus twelve volts, even when the engine is shut down, which is not true in the case of the 55. In both engines, twelve volts remain connected to the battery side of the start solenoid. It is desirable to disconnect the positive battery lead when the boat will be left idle for some time. This is in the interest of minimizing electrical corrosion.

Manual Section Three

3-4 By-Pass Cooling System

Systems on the two engines are virtually the same with the single exception that the 85, having an aluminum block, does not retain water on shut down, but drains through the telltale. This drain being of small size takes a minute or more. When starting the engine, the telltale flow should be almost instantaneous. If it stops after the engine has been running, unless it is obstructed, it means the block is devoid of cooling water from a failure of some sort, and the engine should be shut down immediately. In this case, the red warning light referred to in 5-1 should already have lit. If a plugged telltale is suspected, a piece of heavy monofilament fishline, wire or the like can be inserted, or one can blow with the mouth until bubbling is heard inside (do not remove the restrictor, which is necessary to avoid overcooling and oil dilution when low speed running is the rule).

Manual Section Four

4-4 Periodic Maintenance Chart

Valve clearance information differs. The requirements are: intake .005" to .007"; exhaust .013" to .015". Checking valve clearance at the end of each operating season is recommended if the engine is extensively used -- may safely be postponed to the second annual lay up if the engine is used only the normal 100 to 150 hours per year. Done carelessly, it could cause trouble, but well done timely it can considerably postpone the time before required valve overhaul. Access for checking requires lifting powerhead.

Manual Section Five

Emergency Trouble Shooting

Wiring diagram is the same for the 85 with the exception of the rectifier/alternator system, which on the Bearcat 85s are connected through vendor-supplied plugs, which preclude ambiguity.

Tilt Up. If engine will remain tilted for some time or overnight, wait a minute or two after shutting down to permit oil to drain out of cylinder and crankshaft area, otherwise a cup or so may lodge inside a cylinder gradually draining past the rings into the combustion chamber and cause dangerous liquid lock when next starting is attempted.

Paint Scorch on inner manifold parts - a visible yellowing or brownish tint - is normal. The water temperature sensing switch will not indicate overheat unless water supply fails, sending temperature in this area above normal.

PART II

These notes supplement or correct those sections in the 55 horsepower Owner's Manual, which do not apply to the 85, with the exception of the Figure 1 and 2 illustrations, for which counterparts are not yet ready. Owners are advised to read the printed manual, noting the section references herein, which should be read as substitutes or supplements to the corresponding section references in the manual.

Manual Section One

1-2 Engine Cover

Superficially the same. There is a difference in the "grip" for removal or reinstallation of the cover for the 85. The 55 requires raising of the front to engage the lugs at the back. The 85 is put in position horizontally a fraction of an inch forward of the intended location. The lugs will then drop straight down into their corresponding openings when the cover may be smartly nudged straight to the rear, properly engaging the lugs and permitting the front to drop down the final inch or so into the latch.

1-3 Hoisting and Handling

The 85 has two lifting eyes from which the engine may be hoisted either with a long chain bridle or the special hoisting spreader provided to dealers. Do not use a low bridle which will cause excessive strain on the lifting eyes and possible bending of the plate to which they are attached.

1-5 Filling the Crankcase Sump

SAE 40 motor oil, medium detergent marked for Service MS is required in the 85. If the oil filter is empty when the sump is filled, an extra pint will be required to bring oil level up to the full mark after the engine has run and filled the filter case.

1-6 Propeller Selection

The 85 has a top permissible rpm of 5750, slightly lower than the 55. It is a serious mistake to use this engine without a tachometer, since the small additional investment permits selecting a propeller to develop maximum horsepower and acceleration, yet avoid danger of over-speed.

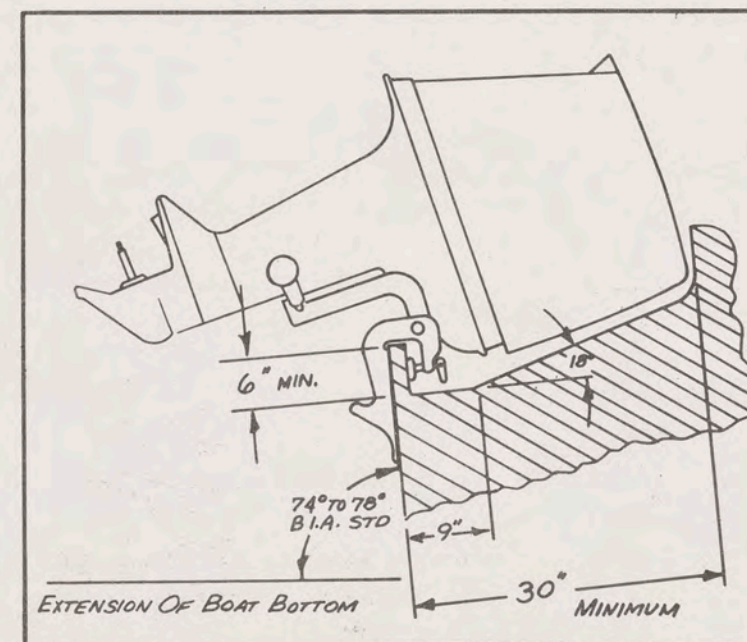
Commonly on planing boats formerly powered with 55 horsepower Bearcats, a propeller of one or two inches more pitch will be used with the 85. On a 16'7" Boston Whaler where a 10" pitch gives 6000 rpm with a 55 horsepower Bearcat, a 12" pitch propeller gives 5500 rpm with an 85. (The prop shaft of the 85 runs 20% faster, also.)

Whether or not a tachometer is fitted on your boat, do not accept delivery without knowing that your dealer has checked the propeller and boat operation with a tachometer and know the results yourself. The higher rpm figures should prevail with light loads in order to get best performance when the loads are heavier.

Manual Section Two

2-4 Mounting the Motor on the Transom

The appended diagram refers to a problem improperly dealt with on some boats. The splash board or bulkhead forward of the motor well in some cases interferes with tilt up of the motor, which besides being dangerous to a possible casual arm, will, in an emergency tilt up, break the expensive engine cover or prevent latch up when you desire to leave the motor in a tilted position with the boat at moorings. The diagram gives controlling dimensions that must be adhered to. Boating Industry Association standards for engines 90 horsepower and up are required for the 85, and conform to the drawing.



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Upon printing of the final Owner's Manual, all registered owners of Bearcat 85's will receive them at the registered address.

As one of the first Bearcat 85 owners we want you to be in touch with the factory on any occasion which seems to justify it. If you or your dealer is in any doubt on any matter of significance, a telephone call is in order, and will be welcome.