



**Service Replacement Engine
Operator's Guide**

5.7L With Fuel and Spark

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Dear Barr Marine Engine Owner,

Congratulations on selecting the finest marine inboard/sterndrive replacement engine for your boat. Barr Marine engines are specially built for us by Indmar Products Co., Inc., the world's largest builder of inboard engines for the marine industry. The quality of the engines and the support from Indmar make these engines an excellent choice for you, the re-power customer.

Please take a few minutes to familiarize yourself with the specifications and maintenance procedures for your engine that are contained in this manual. Please make sure to fill out the owner's registration information for your engine and return it to Indmar at the address indicated.

Each Barr Marine Engine Comes Equipped With the Following:

- Water Circulating Pump
- Spark Plugs
- Spark Plug Wires
- Fuel Pump (Electric)
- Fuel Pump Safety Switch
- Fuel Line (Pump to Carburetor)
- HEI Electronic Distributor
Timing Shunt
- Ignition Coil
- Coil to Distributor Jumper
- Oil Filter
- Flywheel (Bottom Mount Starter)

To Complete the Installation, the Installer Must Add the Following:

- Exhaust Manifolds
- Thermostat Housing and Thermostat
- Starter
- Flame Arrestor
- Engine Wiring Harness
- Flywheel Housing
- Engine Mounts
- Raw Water Pump
- Cooling Hoses
- Oil Pressure Sender
- Temperature Sender
- Fuel Inlet Fitting
- Alternator
- Pulleys and Accessory Drive Belt
- Dipstick and Dipstick Tube
- PCV Valve and Breather Tube

Indmar Base Engine - Specifications

Number of Cylinders	V-8
Displacement	350 CI (5.7L)
Bore/Stroke	4.0012 x 3.480 in (101.63 x 88.39 mm)
Compression Ratio	9.4:1
Compression Pressure (Note 1)	Minimum 100 PSI (690 kPa)
Idle RPM in Neutral (Note 2)	650 + or - 50 RPM
Operating Range at WOT	4400-4800 RPM
Oil Pressure at Idle	4 PSI (41 kPa) Minimum - Hot
Oil Pressure at 2000 RPM	18 PSI (124 kPa) Minimum - Hot
Oil Filter	Oil Filter Pennzoil PZ3, AC PF25
Oil Requirements	15W40 Meeting API SJ/CH4/CG4 (Pennzoil Marine Recommended)
Fuel Pump Pressure	8 PSI Max (55.2 kPa)
Fuel Requirements	89 Octane (R+M)/2 or higher
Electrical System	12 Volt DC Negative Ground
Minimum Battery Requirements	650 cca/700 mca/120 Ah
Firing Order	1-8-4-3-6-5-7-2
Spark Plug Type	ACMR43LTS
Carburetor	Holley 4150 - 600 CFM (Overhaul kit 611015)

Notes

- 1) Minimum recorded compression in any one cylinder should not be less than 70% of the highest recorded cylinder. 2) Measured using an accurate shop tachometer at normal operating temperature. 3) Timing must be set using special procedures indicated. Special Tools required. 4) Always use dipstick to determine exact quantity of oil required. Do not fill above "FULL" mark.

Break-In

Taking care now to break-in your new Indmar engine is VERY important. When broken in properly, your engine will last longer, run better and require fewer repairs over its lifetime. Your new Indmar engine does not require an elaborate break-in procedure, just a little care and common sense for the first few hours.

Break-in Tips

Always let the engine warm up to normal operating temperature before accelerating.

Avoid fast accelerations and don't carry (or pull) a heavy load during this period.

Check the engine oil frequently. During the first 50 to 100 hours, the engine can use more oil than usual. Maintain oil at proper level but do not overfill.

Vary the boat speed during break-in. Do not run at the same RPM for very long. Observe gauge readings and check for loose mountings, fittings, nuts, bolts and clamps. Report any abnormal operation, noises or vibrations to your dealer.

Break-in Steps

1. For the first hour, do not exceed 2000 RPM; vary RPM continuously.
2. For the second hour, do not exceed 3000 RPM.
3. For the next 5 hours, do not exceed 4000 RPM.

After the first 10 hours of operation, take your boat to the dealer for its first engine oil and filter change and engine checkup. Your dealer is best equipped to check the engine immediately after break-in.

After break-in, your engine may be operated at any RPM within the limits for the engine. Your boat must be fitted with a propeller that will allow the engine to turn between 4400 and 4800 RPM at wide-open throttle with a normal load in the boat.

Engine Oil Requirements

Indmar uses and recommends Pennzoil Marine 15W-40 Marine Oil. If Pennzoil is not available, any 15W40 oil meeting the API specifications of SJ/CH4/CG4 is acceptable. If engine is to be used in conditions below 20 degrees F (-7 C) use 10W30 API SJ/CD motor oil.

Synthetic Oil

Synthetic oil that meets our requirements of 15W-40 SJ/CH4/CG4 is acceptable to use after 100 hours of operation with the recommended conventional oil. The use of synthetic oil does not change the requirement of 50 hour oil change intervals.

Maintenance Requirements

Item	Service	First 10 Hours	50 Hours	100 Hours	300 Hours or Annually	Every 2 years
Engine Oil and Filter	Change	X				
Spark Plugs	Replace				X	
Engine Timing	Check	X			X	
Spark Plug Wires	Inspect				X	
Engine Coolant*	Change					X
Fuel Filter*	Replace	X		X	X	
Flame Arrestor*	Clean			X		
Belts*	Inspect	X		X	X	
Shaft Alignment*	Check	X			X	
Raw Water Impeller*	Inspect			X	X	
Breather Hose*	Clean				X	
PCV Valve*	Replace				X	
Starter Bendix*	Lubricate		X		X	
* Not supplied by Indmar						

Carbureted Engine Timing Procedure

NOTE: Adjusting engine timing should not be attempted unless you have the proper tools and equipment. An improperly timed engine can be severely damaged. Do not attempt to start the engine unless the boat is in the water or an adequate supply of cooling water is applied directly to the cooling water intake.

Carbureted Engines

1. Install P/N 801012 timing shunt (plug with looped white wire and black wire shipped with each engine) into the plug on the distributor.
2. Attach an appropriate inductive pick-up timing light to the number one cylinder spark plug wire.
3. Start engine.
4. Connect the loose end of the black wire from the timing shunt to 12 volts positive.
5. Adjust the idle to 750-850 RPM by turning the idle stop screw on the carburetor.
6. Set timing to 8 degrees BTDC by loosening the distributor hold down bolt and rotating the distributor until the timing pointer indicates 8 degrees BTDC.
7. Disconnect timing shunt from 12 volts and remove plug from distributor.
8. Reset idle to 650 + or - 50 RPM for inboard engines and 1000 RPM for jet engines.

What Is Covered by Warranty

Any part(s) that fails as the result of defects in material and workmanship will be replaced at no charge to the customer under the terms of the Limited Product Warranty.

What Is Not Covered by Warranty

- Shop supplies used in performing warranty work (i.e. rags, sealants, lubricants, etc.).
- Incidental and consequential damages (storage charges, telephone or rental charges of any type, inconvenience or loss of time or income).
- Minor adjustments and tune-ups; including checking, cleaning or adjusting spark plugs, carburetor setting, filters, belts, controls and checking lubrication.
- Failure caused by neglect, lack of maintenance, accident, abnormal operation, improper installation, improper preparation, improper winterization, improper dealer set-up or improper service or normal wear and tear.
- Haul-out, launch, towing charges; removal and/or replacement of boat partitions or material because of boat design for necessary access to the Product.
- Transportation charges and/or travel time.
- Service requested by customer other than that necessary to satisfy the warranty obligation.
- Use of other than Indmar replacement parts and labor to install these parts when making warranty repairs.
- Oils, lubricants or fluids used in normal maintenance.
- Participation in or preparing for racing or other competitive activity.
- Starter motors and/or armatures or field coil assembly, which are damaged from excessive cranking condensation, or submersion.
- Water entering the engine via the intake or exhaust system or submersion
- Use of fuels and lubricants that are not suitable for use with or on the product
- Failure of any parts caused by lack of cooling water, which results from starting motor out of water or foreign materials blocking intake passages.
- Air freight, next-day or second-day air, or any special delivery fees, unless authorized by Indmar prior to ordering of parts.
- Certain parts may be tested on receipt by Indmar. Parts found to be free of defects will be returned to the dealer and no credit will be issued. If the part has already been credited, the dealer account will be debited.

Limited Warranty

Indmar Products Co., Inc., 5400 Old Millington Road, Millington, Tennessee 38053 ("Indmar") warrants marine propulsion engines sold by it (the "Product):

Repowers or installation in other than boats manufactured by an approved manufacturer (OEM)

- a. For a period of twelve (12) months commencing from the date of purchase or the date of commencement of the product use, whichever sooner occurs, in the case of non-commercial use. Or
- b. For a period of three (3) months commencing from the date of purchase or the date of commencement of the product use, whichever sooner occurs, in the case of commercial use.

This limited warranty is granted SOLELY upon the following terms

- a. Persons Applicable. This warranty is extended to the original retail purchaser or original lessor in the case of a leased boat. If the boat is sold or traded prior to the end of the warranty period, the remainder of the product warranty is transferable to the new owner or lessor. A fee of \$200.00 will be required to transfer the warranty. Warranties of any nature to any other person are hereby specifically excluded.
- b. Coverage. The product is warranted to be free from material defects in material and workmanship under normal use and service during the period of this Limited Warranty. Components that are "worn-out" from use are not covered under the terms of this warranty. If the product or defective part thereof is, upon examination, determined to be thus defective, Indmar shall repair or, at its sole option, provide a replacement of equivalent quality (new or rebuilt, at its option.) Indmar's sole obligation under this Limited Warranty is to repair or at its sole option, to provide a replacement of equivalent quality (new or rebuilt, at its option).
- c. Procedure. Within 10 days from the date of purchase by the original retail purchaser of the product or beginning of lease period, the Indmar Warranty Registration Card must be properly completed and mailed to Indmar. In the case of a leased boat, a copy of the lease contract showing the length of the lease must also be supplied to Indmar. In the case of a warranty transfer to a subsequent owner or lessor, the new owner/lessor information along with a check for \$200.00 made payable to Indmar Warranty Transfer must be sent within 60 days of transfer. Any transfer must be approved by Indmar. In the case of transfer of a leased boat, a copy of the lease contract showing the length of the lease must also be included. No warranty claims will be honored without prior receipt of the Indmar Warranty Registration Card. For warranty claims to be asserted hereunder, the Product or defective part thereof, together with a written notice of itemized defects must be returned to the retailer from whom the product was purchased or to any other convenient Indmar dealer. To obtain the location of an authorized Indmar dealer or service center in your area, write to Indmar requesting such information. In the event that the local Indmar dealer is unable to remedy a warranted defect in the Product, the Product or defective part thereof,

together with a written notice of itemized defects, must be returned to Indmar with freight and insurance charges prepaid. All insurance and freight charges and return charges by Indmar of the Product (or its substitute) to the retail purchaser shall be paid by the purchaser. Expenses for labor incurred by Indmar in the repair of any warranted product shall be paid by the retail purchaser or lessor to the extent that such expenses for labor exceed the specified service rates of Indmar in effect at the date of purchase by Indmar. A schedule of service rates of Indmar may be obtained from any authorized Indmar dealer.

- d. Trade Accessories. No warranty of any character is made with respect to trade accessories not manufactured by Indmar.
- e. Voiding Warranty. This warranty is specifically voided and shall NOT apply under the following conditions
 - i. When the product or any part thereof is subjected to accident, alteration, modifications, abuse, misuse, neglect, or improper maintenance.
 - ii. When the product is serviced by unauthorized persons; or
 - iii. When damage to the product results from causes not arising from defects in material and/or workmanship.

THE WARRANTY STATED ABOVE IS A LIMITED WARRANTY AND IT IS THE ONLY WARRANTY MADE BY INDMAR. INDMAR DOES NOT MAKE ANY OTHER WARRANTIES EXPRESS OR IMPLIED. THERE ARE EXPRESSLY EXCLUDED ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. INDMAR SHALL HAVE NO LIABILITY WITH RESPECT TO ITS OBLIGATIONS UNDER THIS WARRANTY OR OTHERWISE FOR CONSEQUENTIAL, EXEMPLARY, INCIDENTAL OR PUNITIVE DAMAGES EVEN IF IT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE STATED EXPRESS WARRANTY IS IN LIEU OF ALL LIABILITIES OR OBLIGATIONS OF INDMAR FOR DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE DEVELOPMENT, DELIVERY, USE, OR PERFORMANCE OF THE [PRODUCT. IN](#) ANY EVENT THE LIABILITY OF INDMAR FOR ANY REASON AND UPON ANY CAUSE OF ACTION WHATSOEVER SHALL BE LIMITED TO THE AMOUNT THEN PREVIOUSLY PAID FOR THE PRODUCT.

Indmar does not authorize any person, firm or corporation to alter this Limited Warranty or create any other obligation relating to the product. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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Old Millington Road Millington,
Tennessee 38053

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901-353-9930 Phone
901-358-4292 Fax

Engine Serial Number: EC _____

Indmar warrants each remanufactured or new base engine to be free from defects in material and workmanship for a period of 12 months from the date the unit is put into service.

This warranty does not cover the external components that were transferred from the original engine to the new base engine nor does it cover damage to the engine caused by any of the external components that were part of the original engine package.

Please fill out the following form and fax or mail it back to Indmar. Keep a copy as your proof of ownership/registration.

Owner's Name: _____ Address: _____

Date engine put into service: _____

Type of Boat: _____ Model: _____

Configuration: _____ V-Drive _____ In Line _____ Stern Drive _____

Carbureted _____ TBI _____ Multiport EFI _____

Model of original engine: _____