

Product Service Update 2011[®]



IMPORTANT
Technicians must complete
2011 Update Exam at
<http://exams.evinrude.com>.
(North American dealers
must complete exam by
May 20, 2011)

EVINRUDE[®]
E-TEC[®]



Product Service Update

BRP US Inc.
Technical Publications
300 Sea Horse Drive
Waukegan, Illinois 60085 United States

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GENERAL INFORMATION



CONTACT INFORMATION

Dealers outside of North America should contact their regional office. Refer to **Dealers – Outside North America (BRP International Offices)** on p. 7.

Dealers – North America

North American dealers should use the following contact information.

Technical Support

After Sales Support
250 Sea Horse Drive
Waukegan, IL 60085
Ph: 1-800-888-4662 (Authorized Dealers only)
Fax: 1-847-689-6902 (Authorized Dealers only)

Warranty Administration Support

After Sales Support
250 Sea Horse Drive
Waukegan, IL 60085
Ph: 1-800-888-4662 (Authorized Dealers only)
Fax: 1-847-689-7235 (Authorized Dealers only)

Consumer Support

BRP US Inc. Customer Support Services
250 Sea Horse Drive
Waukegan, IL 60085
Ph: 1-847-689-7090 (Non-authorized dealers/consumers)
Fax 1-847-689-6902 (Non-authorized dealers/consumers)

Parts & Accessories Support

North American dealers may call 1-800-888-4662 for technical assistance with parts and accessories.

- Select option 3 for ordering assistance, pricing, and back order or returns information.
- Select option 6 for service parts issues, or application and warranty questions.

To speed up the process, have your dealer number, the engine model number, part number and invoice date available.

Technical Training Support

For questions regarding technical training, contact the Technical Training Center.

Technical Training Center
250 Sea Horse Drive
Waukegan, IL 60085
Ph: 1-847-689-7500
Fax: 1-847-689-7510

Dealers – Outside North America (BRP International Offices)

AUSTRALIA

Bombardier Recreational Products Australia Pty Limited
56 Canterbury Road
Bankstown 2200
New South Wales, Australia
Phone: +612 9794 6600

BENELUX

BRP Europe
Skaldenstraat 125
B-9042 Gent Belgium
Phone: +32 9 218 26 00

BRAZIL

Bombardier Recreational Products do Brasil
Rodovia Anhanguera Km 104 - Loteamento Tecno Park
Condominio Empresarial AZTech
Avenida James Clerck Maxwell, 280 Modulo 04
Campinas, SP 13069-380 Brasil
Phone +55 19 3716 8600

CARIBBEAN AND LATIN AMERICA

BRP US Inc.
1600 Sawgrass Corporate Parkway, Suite 150
Sunrise FL 33323
954-846-1442

EUROPE, MIDDLE EAST AND AFRICA

BRP International Division
5-7 CH Chemin du Messidor
Lausanne Switzerland
Phone: +41 21 318 78 00

FRANCE

Bombardier Recreational Products France
Les Jardins de la Duranne Bâtiment C
510 rue René Descartes
F - 13857, Aix en Provence France
Phone: +33 4 42 94 25 00

GERMANY

BRP Germany GmbH
Itterpark 11
D-40724 Hilden
Germany
Phone: +49 2103 960 680

JAPAN

BRP Japan Limited
15/F Parale Mitsui Building
8 Higashadi-Cho, Kawasaki-Ku
Kawasaki 210-0005
Phone: +81 44 200 1431

NEW ZEALAND

BRP New Zealand
7-11 Arwen Place
East Tamaki
Auckland 2130
Phone: +64 9 274 5718

SPAIN

BRP Recreational Products Spain S.L.
c/ Bertrán i Musitu 99-101
Edificio Brasil
08840 Viladecans-Barcelona Spain
Phone: +34 93 636 10 97

UK AND IRELAND

BRP Recreational Products UK Ltd
4 Brunel Close
Ebblake Industrial Estate
Verwood Dorset UK BH31 6BA
Phone: +44 1202 812 100



WARRANTY INFORMATION – NORTH AMERICA

North American dealers should use the following information.

Warranty Allowance Claims

All warranty allowance claims should be entered online when possible. When a written warranty Allowance Request Form, P/N 773629, is required it should be mailed to:

BRP US Inc.
After Sales Support
P.O. Box 597
Sturtevant, WI 53177

Warranty parts returned with a Warranty Allowance Request Form, P/N 773629, should be shipped to:

U.S. dealers ship to:

BRP US Inc.
After Sales Support
300 Sea Horse Drive Dock 5
Waukegan, IL 60085

Canadian dealers ship to:

BRP Warranty Returns – Waukegan
c/o Affiliated Global Logistics
500 Carlingview Drive
Etobicoke, ON M9W 5R3

Prior Authorization Required for Parts and Accessories Warranty

If a replacement part or a dealer-rebuild fails, contact *Evinrude/Johnson* After Sales Support. Dealers are not authorized to rebuild assemblies without prior authorization.

Have your dealer number, the engine model and serial number, part number and invoice date available.

Certain parts or assemblies may require additional documentation:

- BRP invoice for the assembly
- installation work order
- previous work order for original repair
- sales receipt (over the counter sales)

Refer to “Parts and Accessories Claims” in the current **Warranty Procedures Manual**.

B.E.S.T. Warranty

As outboards enter the service period of a *B.E.S.T.* contract, there are several requirements that dealers and customers should be aware of:

- A 300 hour service (or 3 year inspection) on every outboard
- An inspection report must be provided before any *B.E.S.T.* contract repairs are performed
- Engine must have less than 1000 hours
- There is a \$50.00 deductible for each *B.E.S.T.* contract repair
- Dealers must qualify all engine repairs for outboards with *B.E.S.T.* coverage

Refer to **Administrative Bulletin 2010-04(A)** for complete details and coverage checklist.

WARRANTY INFORMATION – OUTSIDE OF NORTH AMERICA

Dealers outside of North America should contact their regional office for processing of warranty allowance claims, or returning parts. Refer to **Dealers – Outside North America (BRP International Offices)** on p. 7.

Predelivery Checklist Included in Shipping Crate

A Predelivery Checklist is now included in the shipping crate (owner's package) of all *Evinrude E-TEC* outboards. A pack of ten (10) predelivery checklist forms, P/N 5008381, is available through *Evinrude/Johnson Genuine Parts*.

Dealers are REQUIRED to perform a complete predelivery inspection on each outboard. Dealers MUST keep predelivery checklists on file for a minimum of seven years.

Refer to **Predelivery Bulletin 2010-01(D)** for complete details.



FIELD SERVICE AND TRAINING

Dealers outside of North America should contact their regional office. Refer to **Dealers – Outside North America (BRP International Offices)** on p. 7.

Dealers – North America

Technical Service Representatives – Applications Engineers (TSR-AE's)

TSR-AE's support both Dealer and OEM Partners. TSR-AE technical support visits are coordinated through the After Sales Support Call Center. Dealer and OEM Technicians should first contact the After Sales Support Center Team to resolve technical issues. Contact them at 1-800-888-4662 and follow the prompts.

TSR-AE's provide the following dealer support:

- Service department development assistance (Service Evaluations and goal setting)
- Feedback reports for product and business trends
- Technical support of BRP Outboard Engine products
- Customer Relations
- Serve as instructors at Dallas, Tacoma and Laval Training Centers

TSR's provide the following OEM partner support:

- All aspects of rigging, technical training to ensure safety and maximum performance for BRP powered boats
- Feedback reports for product and business trends
- Preparation and distribution of Performance Reports

Training

Schedule training online (www.DealerPort.com). For questions contact the Technical Training Center.

Training courses are offered at the following locations:

- Waukegan, Illinois
- Morrow, Georgia
- Tacoma, Washington
- Laval, Quebec
- Dallas, Texas

Technician Certification

Technicians who achieved "Certified" status between June 2005 and June 2006 must attend the Outboard Certification Course by May 30, 2011. Certified status WILL EXPIRE soon for technicians who fall into this category.

Technicians who achieved "Certified" status prior to June 2005 were required to return in prior training seasons. Certified status is EXPIRED for technicians who fall into this category. They should return as soon as possible to recertify.

Master Technician Program

Technicians desiring Master Technician status MUST:

1. Maintain Certified status for at least 4 years (no lapses).
2. Successfully complete all updates by the due date.
3. Complete Outboard Certification Course in 4.5 days or less.
4. Upon successful completion of the Outboard Certification Course, technicians who meet the qualifications, and who are approved by their instructor(s) will be given the opportunity to take the Master Technician exam.
5. Complete the 50 question exam with a minimum score of 90%. The exam may include questions on ANY outboards sold or marketed by BRP.

To maintain Master Technician status, technicians MUST:

- Complete all distance learning updates by the due date.
- Return for hands-on training when required. See **Technician Certification** on p. 10.
- When returning to the Outboard Certification Course, technicians must complete the course and pass Master Technician exam as outlined in steps 3 through 5 above.

If a technician allows their Certification to lapse, Master Technician status is lost.

A technician can take a missed exam at any time to have Certified status reinstated. However, Master Technician status can only be reinstated by again meeting the qualifications listed in steps 1 through 5 above.

TECHNICAL PUBLICATIONS

Changes to Service Manual Set

Please note the following changes to the 2011 Service Manuals and Service Manual Sets:

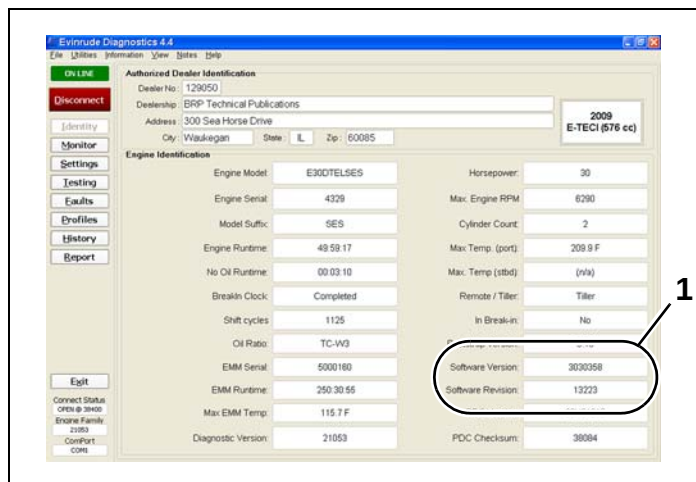
- The Installation and Predelivery section has been removed from individual service manuals.
- The Special Tools section has been removed from individual service manuals.
- The 2011 Installation and Predelivery Guide has been added to the Service Manual Set. Additional Installation and Predelivery Guides may be ordered using P/N 5008506.
- The 2011 Special Tool Guide has been added to the Service Manual Set.

IMPORTANT: The 2011 Special Tool Guide, P/N 5008526, contains tools for current *Evinrude E-TEC* product only. Dealers should retain a copy of the 2010 Special Tools Guide, P/N 5007858, or a prior Special Tools Guide as a reference of tools for older outboard products.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



2011 PRODUCT IMPROVEMENTS



1. Engine management software version and revision

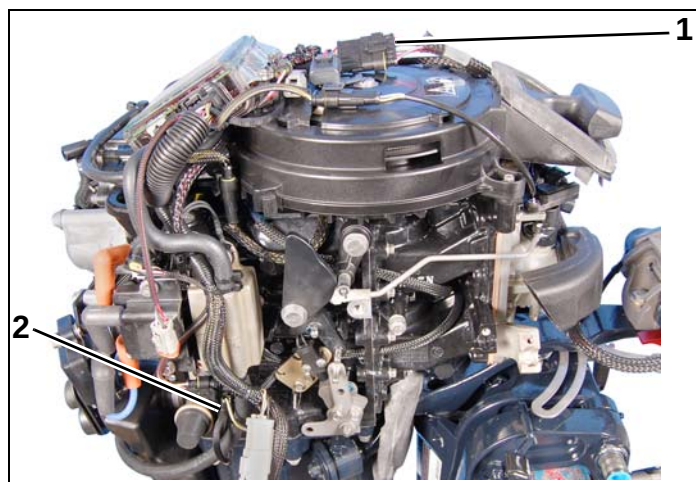
15 – 90 HP INLINE MODELS

Engine Management Software 15 – 30 HP Models

Engine management software has been developed to improve emissions and reduce fuel consumption on 15 – 30 HP models.

Update engine management software on engines with serial numbers 5283875 to 5289986.

Refer to **Warranty Bulletin 2010-09(W)**.



1. 6-pin AMP connector (tiller harness)
2. 2-pin AMP connector (neutral switch)

Engine Wiring Harness Change 15 – 30 HP Models

Evinrude E-TEC 15 – 30 HP (C, H, R, and S-suffix) model outboards have a new engine wiring harness to support changes to the *Touch Troll* and neutral switches.

The *Touch Troll* switch connector has been eliminated. Wiring for the *Touch Troll* switch has been relocated to a new 6-pin AMP connector of the tiller harness. The neutral switch has a dedicated 2-pin AMP connector, similar to other *Evinrude E-TEC* models.

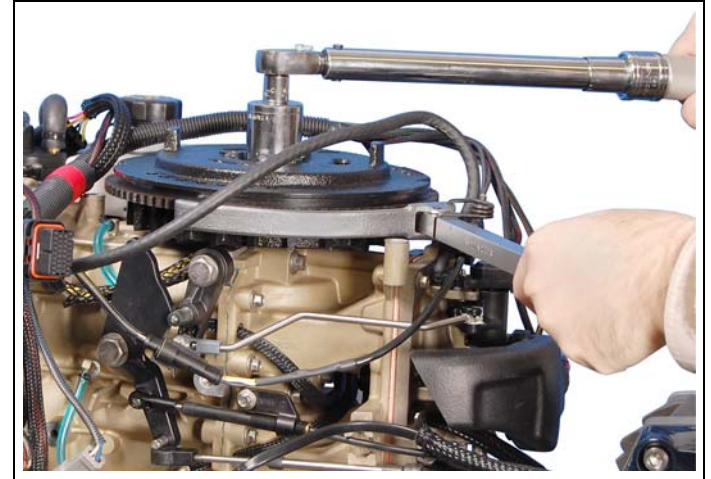
2011 PRODUCT IMPROVEMENTS

New Flywheel Torque Specification 15 – 30 HP Models

When servicing flywheels on *Evinrude E-TEC* 15 – 30 HP outboards, torque the flywheel nut to 66 to 70 ft. lbs (90 to 95 N·m).

IMPORTANT: Torque the flywheel using the correct flywheel holder. To prevent damage to the crankcase or the cylinder block, DO NOT allow the flywheel holder to rest against the mounting boss for the recoil starter.

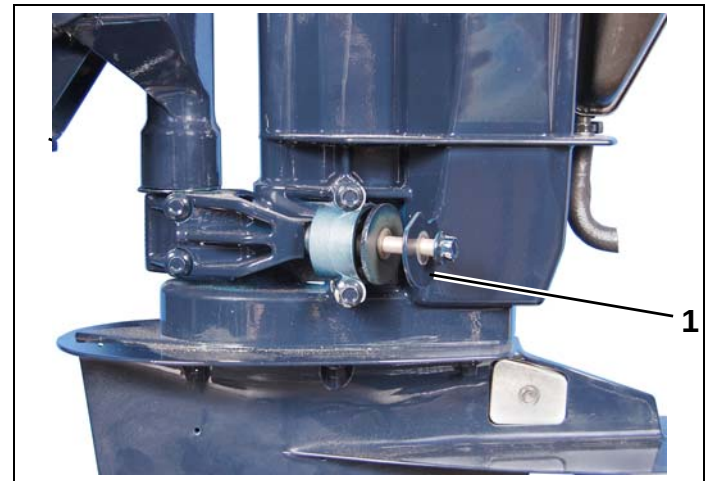
Also refer to **Service Bulletin 2010-08(S)**, or the **2011 Service Manual**.



Lower Mount 15 – 30 HP Models

A bump stop washer, P/N 353674, was added to the lower mount on 15 – 30 HP models. This change improves impact protection, and provides common service parts and procedures for all 15 – 30 HP models.

Refer to the correct **Service Manual** for lower mount service procedures.



1. Bump stop washer



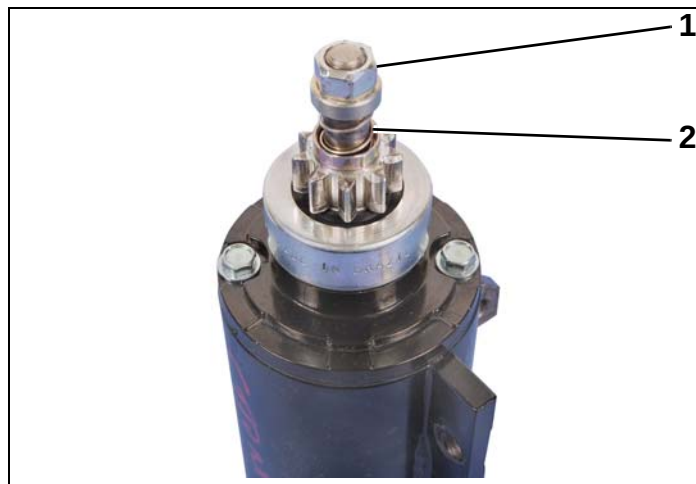
1. Vent

Oil Cap Assembly, 15 – 90 HP Models

The oil cap used on 15 – 90 HP models has changed.

The oil cap has a redesigned vent valve, to help prevent oil from leaking out of the vent while the engine is tilted.

Oil cap assembly, P/N 5008406, replaces oil cap assembly, P/N 5007256, and services 2009 and newer 15 – 30 HP models and 2010 and newer 40 – 90 HP (F-suffix) models.



1. Nut
2. Spring

Electric Starter Motor Change 40 – 65 HP Models

The electric starter motor used on *Evinrude E-TEC* 40 – 65 HP models has been changed.

The starter features a new nut and spring to retain the drive gear. Previously, the drive gear was retained with a clip, spring and spacers. This change improves the durability of the starter and provides common service for all 15 – 65 HP models.

The electric starter motor, P/N 587045, services all 2004 and newer 15 – 65 HP models.

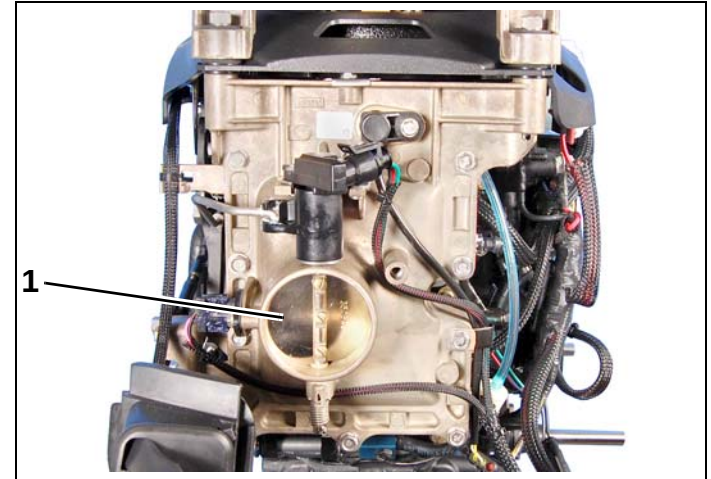
2011 PRODUCT IMPROVEMENTS

Throttle Body Assembly 40 – 65 HP Models

A new throttle body assembly is used on all 40 – 65 HP models.

The throttle body assembly features a nickel-plated throttle valve, which improves corrosion resistance and durability. The new throttle valve is silver in color, while the previous throttle valve was gold in color.

The new throttle body assembly, P/N 5008407, services all 2004 and newer 40 – 65 HP models.



1. Throttle valve

Exhaust Housings 40 – 65 HP Models

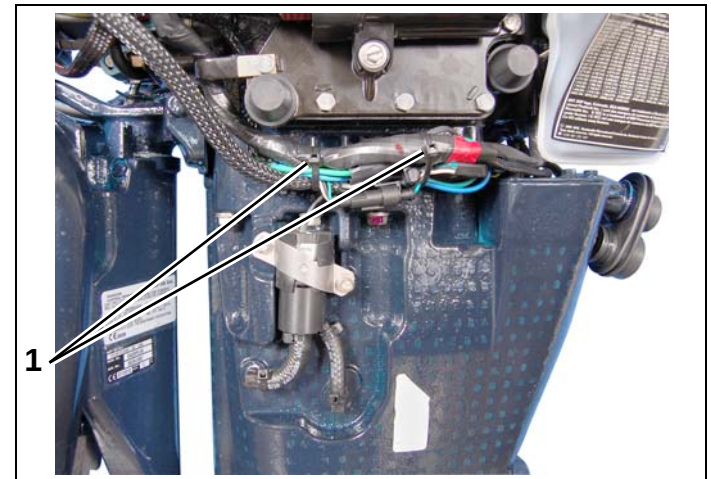
A change was made to the exhaust housing for 40 – 65 HP models.

Retainer tabs have been added to the exhaust housing to better secure the engine wiring harness. Tie straps are now used to secure the engine wiring harness, rather than the previous “J-clamps.”

This change also makes it easier to reinstall and secure the engine wiring harness when servicing the engine.

Exhaust housing, P/N 5008275, services 2006 and newer 40 – 50 HP models.

Exhaust housing, P/N 5008274, services 2006 and newer 60 – 65 HP models.



Exhaust Housing

1. Tie straps



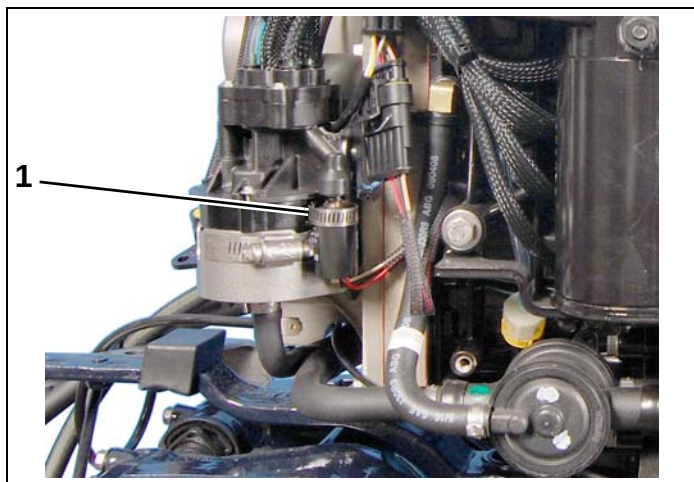
115 – 300 HP 60°/90° V4/V6 MODELS

Lower Engine Covers 115 – 200 HP 60° Models

Lower engine covers for 115 – 200 HP 60° models have been changed. The lower engine covers feature a new fastener insert that reduces the risk of cracking the lower engine covers during removal and installation.

Service parts for older product will supersede to new part numbers. Refer to the correct **Parts Catalog** for parts ordering information.

Note: Do not use power/impact tools to tighten lower engine cover screws.



1. Clamp, oil sensor to housing, P/N 982115

Oil Pressure Sensor 115 – 300 HP Models

Clamp, P/N 982115, is now used to retain the oil pressure sensor to the oil pump housing on all V4 and V6 models.

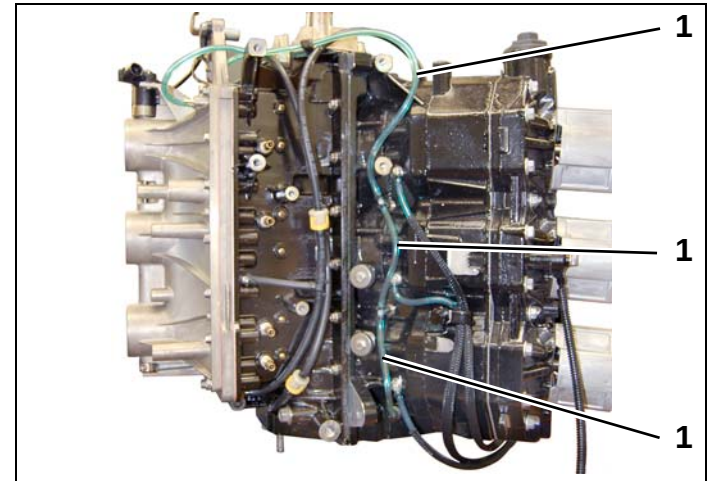
This change improves the retention of the oil pressure sensor and provides common service parts for these models.

2011 PRODUCT IMPROVEMENTS

Oil Recirculation System Hoses 200 – 300 HP 90° V6 Models

Oil recirculation hoses on all 200 – 300 HP 90° V6 models have been changed from black rubber to the blue hose used for oil distribution.

This change provides a common service part (P/N 778708) for the oil distribution and recirculation hose for these models.



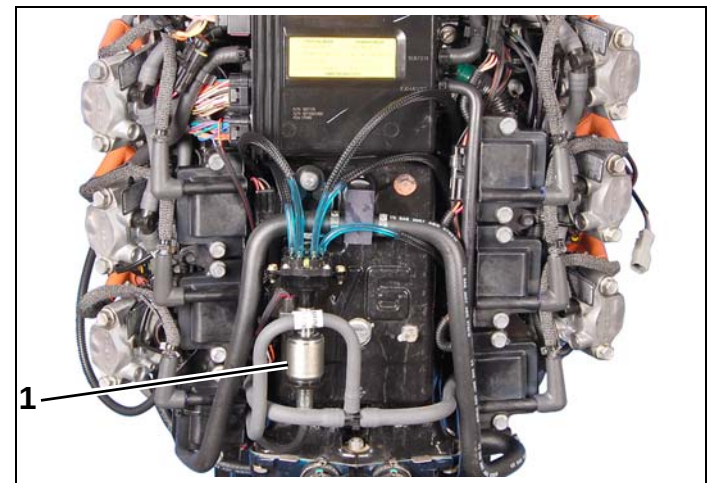
1. Recirculation hoses

Rear Oiling System 250 – 300 HP 90° (3.4 L) Models

A new rear oil pump replaces the rear oil manifold on 250 – 300 HP (3.4 L) models. The oil pump is a positive displacement oil pump which supplies oil to each piston.

IMPORTANT: Correct oil priming procedure is required when installing a new engine, or after servicing the oil system on 3.4 L engines that use this oil pump. Refer to **Predelivery Bulletin 2010-02(D)** or the **2011 Service Manual** for the correct oil priming procedure.

The rear oil pump requires a new *EMM*, engine wiring harness and engine management software. For this reason this oil pump CANNOT be fitted to older engines.



1. Rear oil pump



1. Shift switch

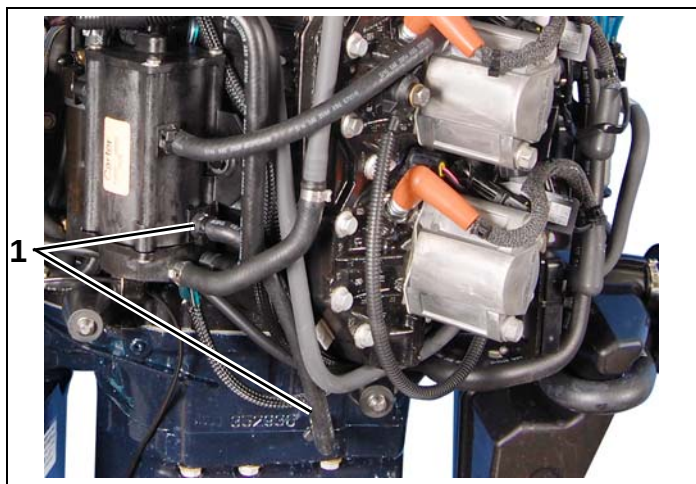
Shift Switch 200 – 300 HP 90° V6 Models

Shift switch, P/N 586861, has been relocated from the shift linkage to the cylinder and crankcase. This change improves the operation of the shift switch.

A new *EMM* and engine management software allow the shift switch to perform the following functions:

- Start in gear protection – prevents the starter motor from operating if the shift lever is not in NEUTRAL.
- Shift interrupt – reduces shift effort when the engine is shifted out of gear.
- Neutral rpm limit – limits engine speed to approximately 1100 rpm when shift lever is in NEUTRAL position.

Note: DE model engines (*ICON* Electronic Shift and Throttle) do not have the shift switch. Also see **ICON Conversion Kit Installation 200 – 300 HP 90° V6 Models** on p. 49.



1. Cooling water hose

Cooling System Change 250 – 300 HP 90° V6 (3.4 L) Models

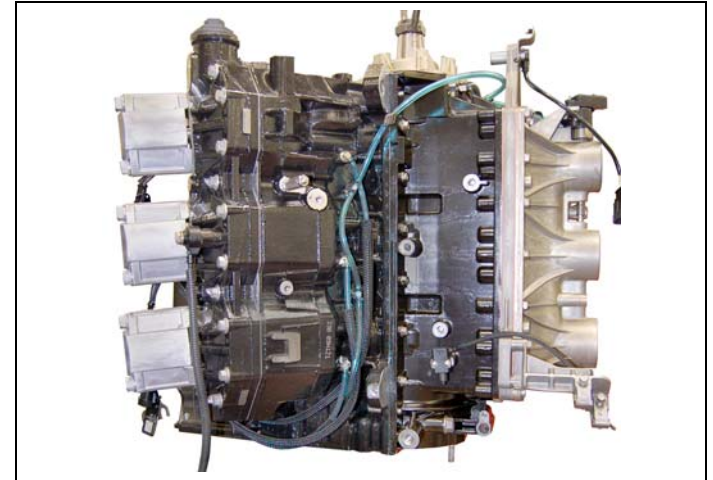
The cooling water hose from the vapor separator outlet to the exhaust adapter has been relocated to the exhaust emission test port of the exhaust adapter.

This change improves water pressure to the powerhead and provides additional water to cool the propeller hub.

Powerhead Change 200 – 300 HP 90° V6 Models

The following changes have been made to improve powerhead durability:

- Piston splash port and dome have been redesigned to improve durability of the piston.
- Piston ring locating pins have been changed to reduce locating pin migration.
- Cylinder sleeve oil grooves redesigned to provide consistent oil flow to piston skirt.



L2-Type Gearcase (.58 Ratio) Replaced by M2-Type Gearcase (.54 Ratio) on 225 – 300 HP 90° Models

The L2-Type gearcase (with .58 gear ratio) has been replaced by the M2-Type gearcase (with .54 gear ratio) on all 225 – 300 HP models.

The larger gear set used in the M2-Type gearcase improves durability. Front water inlets provide additional cooling water for the powerhead and can boost water pressure in excess of 40 psi (275 kPa).

Also see **Exhaust Housing to Gearcase Alignment Pins** on p. 38.

Additional benefits of the M2-Type gearcase:

- Improved acceleration due to (.542) (1.85:1) gear ratio.
- Front and side water inlets.
- Wider propeller selection available to optimize performance.



M2-Type Gearcase
1. Front water inlet
2. Side water inlet



1. Strengthening ribs

Exhaust Grommet 115 – 300 HP Models

A new exhaust grommet is used on all V4 and V6 models.

The new exhaust grommet features ribs to strengthen the grommet and reduce flexing around the insert area. This improves retention of the overboard indicator hose.

When installing an exhaust grommet, clean and dry all parts. Make sure the *Oet-iker* clamp that retains the overboard indicator hose is correctly positioned. Refer to the appropriate **Service Manual** for installation instructions.

Exhaust grommet, P/N 5008518 services all 2005 and newer 115 – 300 HP *Evinrude E-TEC* models.



Fuel Rail (Typical)

Fuel Hoses – All Models

New and revised U.S. Environmental Protection Agency (U.S. EPA) regulations have resulted in a number of changes to fuel hoses.

New fuel rails are used on all 40 – 300 HP models. The new fuel rails are constructed with a three layers of material to meet the U.S. EPA requirements for evaporative emissions.

Service parts for older product will supersede to new part numbers. Refer to the appropriate **Parts Catalog** for correct parts ordering information.



SERVICE INFORMATION

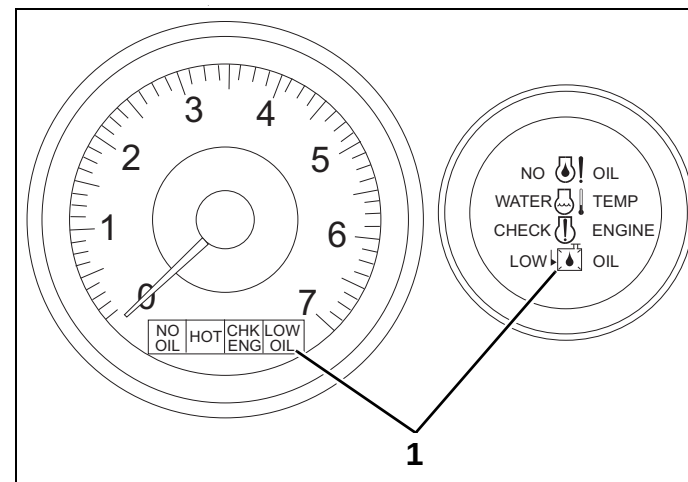


15 – 30 HP MODELS

SystemCheck Warnings

Due to the limited number of circuit inputs and outputs to the *EMM*, 15 – 30 HP models have limited warnings when a *SystemCheck* gauge is installed. These models only provide tachometer signal and the LOW OIL warning to a *System-Check* gauge.

Refer to the **Operator's Guide** for a complete explanation of warning system functions.



Typical *SystemCheck* Gauges
1. LOW OIL warning

Engine Overheat Damage

If a customer reports a loss of performance, use *Evinrude Diagnostics* software to check for the following:

- Code 31; Engine temperature over range
- Code 40; Engine temperature above range – Low speed
- Code 43; Engine temperature above range
- Recorded maximum engine temperature

If any of these service codes are stored, and the maximum engine temperature is over 248°F (120°C), remove the gearcase. Inspect the water pump and the exhaust housing megaphone for engine overheat damage.

Loss of performance will result from a damaged exhaust housing megaphone. The megaphone can be damaged when a significant loss of water flow occurs.

Note: Engine damage due to overheat conditions is NOT covered by the BRP Limited Warranty. Customers should contact their insurance company to file a claim for financial assistance in the repair.



Exhaust Housing Megaphone



Water Pump Repair Kit, 15 – 30 HP M0odels

Water Pump Impeller Kit, P/N 5008185

Water Pump Impeller Kit, P/N 5008185, is included with Water Pump Repair Kit, P/N 5008191, for service of 15 – 30 HP models. The water pump impeller kit contains a new pressure relief valve spring, P/N 355169, and a new thermostat spring, P/N 355209.

A change to the water pump impeller material improves the performance of the water pump. This change affects engine water pressure and REQUIRES stronger pressure relief valve and thermostat springs.

IMPORTANT: REPLACE the pressure relief valve and thermostat springs when installing a water pump repair kit, or a water pump impeller kit in any 2010 or older 15 – 30 HP model.

NOTICE Failure to install the impeller assembly and springs as a set can result in:

- A cold running engine, if the impeller is installed without the pressure relief valve and thermostat springs.
- An engine overheat, if the pressure relief valve and thermostat springs are installed without the new impeller.



75 – 90 HP (1.3L) MODELS

Installation of Oil Pump Assembly

The problem: After installing a replacement oil pump assembly, the LOW OIL warning light remains on even though the oil tank is full.

The cause: Incorrect installation can result in the low oil switch being held “ON” by the oil pick up assembly.

The fix: Be sure to install the oil pump pick up assembly straight into oil tank. Refer to the correct **Service Manual** for installation instructions. Make sure the oil pick up assembly is positioned in front of oil tank baffle. This will prevent interference with the LOW OIL switch.



1. Oil pick up assembly
2. Oil tank baffle

115 – 300 HP 60°/90° V4/V6 MODELS

Exhaust Back Pressure Fitting

A blocked exhaust back pressure fitting can result in difficult starting or other run quality symptoms.

Use the Data Log feature of *Evinrude Diagnostic* software to monitor the exhaust back pressure on an engine that is difficult to start, or runs poorly.

Normally, exhaust back pressure readings are erratic. If the data log shows readings which tend to be linear, check the back pressure sensor.

Remove the fitting and inspect for damage or blockage. Replace if damaged.

Clean or replace the exhaust back pressure fitting if it is blocked. Clean it by soaking in *Engine Tuner*. After soaking use an appropriate size pick, or drill bit to open blocked holes.



Exhaust Back Pressure Fitting



200 – 300 HP 90° V6 MODELS

Ordering Replacement Gearcases

The L2-Type gearcase with the .58 (1.71:1) gear ratio is no longer available. Use an M2-Type gearcase with the .54 (1.85:1) gear ratio if replacement is needed.

Because a gearcase conversion kit is required, existing part numbers do not supersede. Dealers who enter an order for a .58 gear ratio L2-Type gearcase will receive an invoice with a “Note” to call the After Sales Service Department. This will result in delays receiving the correct replacement gearcase.

Order the following parts:

- Select the correct M2-Type replacement gearcase.
Refer to the **Parts Catalog** for replacement gearcase part numbers.
- Select the correct gearcase conversion kit –
 - order P/N 5008535, for 20 inch models.
 - order P/N 5008536, for 25 inch models.

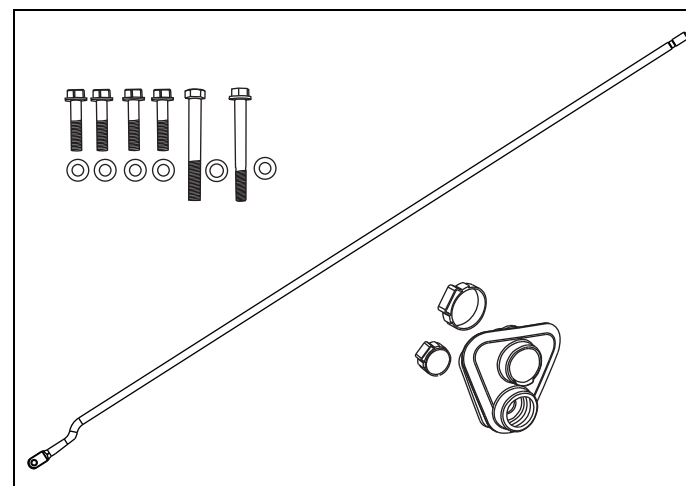
Gearcase conversion kits include the correct shift rod, a new exhaust grommet, new gearcase mounting screws and installation instructions.

Refer to the installation instructions for the following:

- Exhaust grommet and *Oetiker* clamp installation.
- Shift rod installation and shift rod height adjustment.
- Correct water inlet screen selection.
- Correct trim tab selection and installation.
- Gearcase mounting screw torque.
- The change of gear ratio requires a change of propeller pitch.



M2-Type Gearcase



Gearcase Conversion Kit (Typical)

MAINTENANCE

Maintenance Recommendations – 26 Point Inspection Checklist

Use the 26 Point Inspection Checklist to explain required service for the *Evinrude E-TEC* 300 hour/3 year service, and to help “sell” a maintenance plan to your customer.

The parts department can use the checklist to stock service supplies. Service technicians can use the checklist to check off service items as they are completed.

Description	Engine Care Product	Every 300 hours or 3 years ⁽¹⁾
Emergency stop circuit and lanyard (check operation)		X
Controls, steering and tilting; check operation		X
Engine mounting hardware, re-tighten		X
Fasteners, tighten any loosened components		X
Water intake screens, check condition		X
Cooling system; check water pump indicator		X
Anticorrosion anodes, check condition		X
Gearcase, check condition		X
Propeller, check condition		X
Fuel and oil systems, inspect and repair leaks		X
Check battery connections and condition		X
Access <i>EMM</i> information (resolve any service codes)		X
Electrical and ignition wires (inspect for wear or chafing)		X

Description	Engine Care Product	Every 300 hours or 3 years ⁽¹⁾
Fuel filter, replace ⁽²⁾		X
Gearcase lubricant, replace	A	X
Spark plugs, inspect or replace ⁽³⁾		X
Thermostats, inspect and check operation ⁽³⁾		X
Grease fittings, lubricate	C	X
Power trim/tilt and fluid level, inspect	B	X
Propeller shaft splines, inspect and lubricate ⁽⁴⁾	C	X
Starter pinion shaft, inspect and lubricate ⁽⁴⁾	D	X
Control cables, inspect and adjust		X
Steering cable, inspect and lubricate		X
Water pump, inspect / replace		X
Exhaust back pressure fitting (if equipped)		X
Oil filters remote tank / engine (115 – 300 HP models)		X

(1) Average recreational use. Commercial use, heavy use or use in salt or polluted water requires more frequent inspection and maintenance.

(2) Boat mounted fuel water separating filters should be replaced annually

(3) Emission-related component.

(4) Annually in salt water applications

A – *HPF Pro* Gearcase Lubricant

B – Trim and Tilt Fluid, use Biodegradable Fluid on single ram hydraulic systems, use Power Trim and Tilt Fluid on three ram hydraulic systems

C – *Triple Guard* Grease

D – Use Starter Bendix Lube only

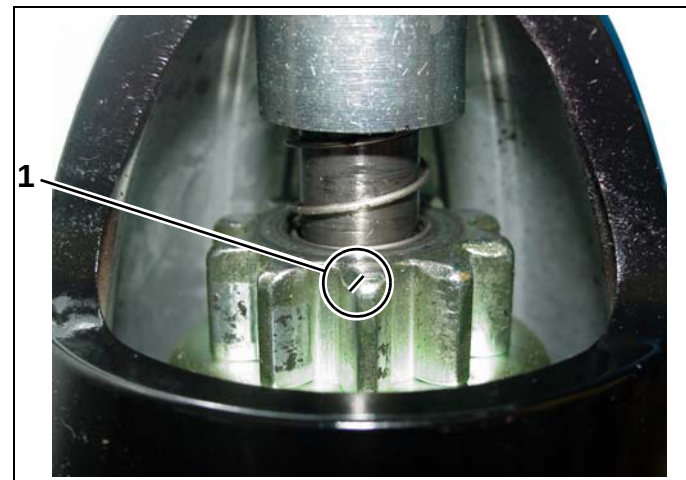


ELECTRICAL SYSTEM

Starter Drive Gear Engagement, 115 – 300 HP Models

The problem: A limited quantity of starter drive gears may be machined with the wrong chamfer (beveled edge) on the teeth of the gears. If this condition exists, the starter drive gear (bendix) may not engage the ring gear of the flywheel and the starting process can fail. Service replacement starter motor assemblies, P/N 586957 and P/N 586890, could experience this issue.

The Fix: Remove starter motor assembly and identify the chamfer on the teeth of the starter drive gear. Refer to **Warranty Bulletin 2010-08(W)**, for complete instructions.



1. Chamfer

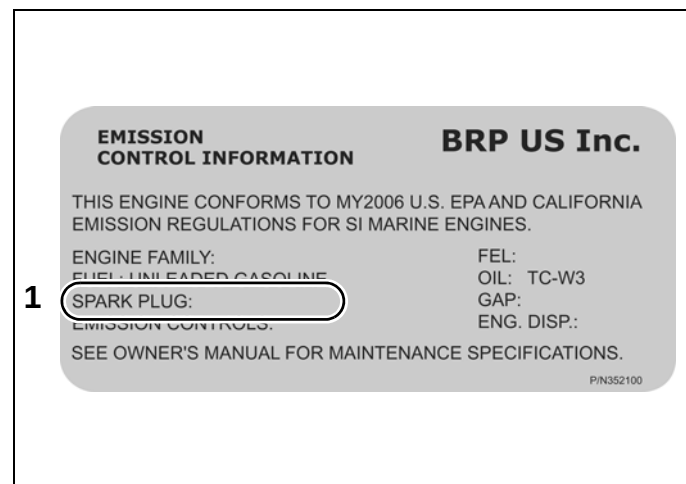
FAQ: Spark Plugs – All Models

The Service Teams are frequently asked if it is permissible to substitute spark plugs. the answer is NO, unless there is an APPROVED substitution.

At this time, the only approved substitution is 2005 – 2006 *Evinrude E-TEC* 200 – 250 HP 90° V6 (3.3 L) models.

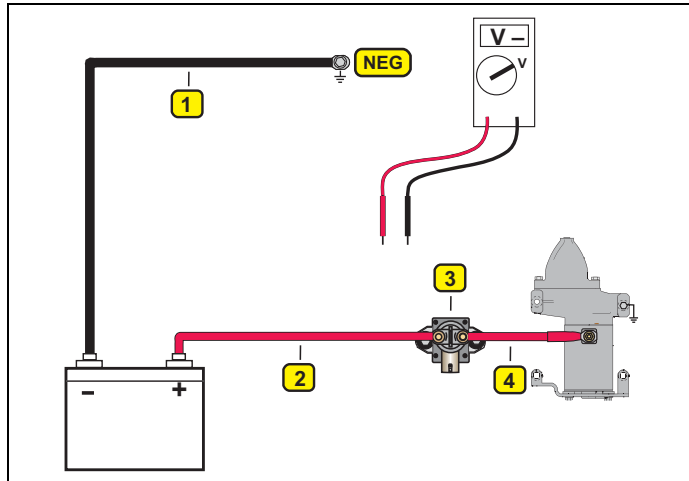
U.S. EPA regulations prohibit modification to any system, that could effect the engine's exhaust emissions level. This includes spark plugs. Engine emission certification REQUIRES only approved spark plugs be used in the engine.

Refer to the **Evinrude E-TEC Spark Plug Service Chart** on p. 68, the appropriate Parts Catalog, or the Emissions Control Information (ECI) Label on the swivel bracket of the outboard for correct spark plug information.



ECI Label

1. Spark plug information



1. Negative battery cable
2. Positive battery cable
3. Solenoid
4. Starter cable

Voltage Drop Test

A voltage drop test is an effective and easy to perform electrical test. The purpose of this test is to make sure the load in the circuit consumes the maximum amount of voltage. An excessive voltage drop in a circuit will result in the load not performing at its maximum potential.

Use a digital voltmeter to measure the voltage drop on each section of the start circuit. Always connect the voltmeter leads with the positive (+)/red lead closest to the positive terminal and the negative (-)/black lead closest to the negative terminal of the battery.

If any voltage reading is greater than 0.5 VDC check that connections are clean, tight and free of corrosion. Clean or replace any corroded or damaged cables or connections.

Note: Disconnect the Crankshaft Position Sensor (CPS) to prevent the engine from starting.

STEP 1: Connect voltmeter positive (+) lead to the terminal for the negative (-) battery cable at powerhead. Connect voltmeter negative (-) lead to negative (-) battery post.

- Activate starter motor and observe voltage reading.

STEP 2: Connect positive (+) lead to battery positive (+) terminal. Connect negative (-) lead to starter solenoid terminal.

- Activate starter motor and observe voltage reading.

STEP 3: First, activate starter motor. Connect positive (+) lead to starter solenoid terminal. Connect negative (-) lead to opposite starter solenoid terminal.

- Observe voltage reading.

STEP 4: Connect positive (+) lead to starter cable of solenoid terminal. Connect negative (-) lead to starter motor terminal.

- Activate starter motor and observe voltage reading.



Inductive Ignition System

The inductive (IDI) ignition system provides ignition spark with a fast rise time and a long, continuous duration spark, compared to the multi-strike cd ignition used on older models. The benefit is a smoother running engine under a variety of load conditions.

The inductive ignition uses an ignition coil which contains an internal circuit board to control current flow through the primary winding.

How it works: System voltage (55 volts) is supplied through the white/red wire to the primary winding. Ground is provided through the black wire to the circuit board and to the coil primary. The *EMM* provides a low voltage control signal through orange wire to the circuit board.

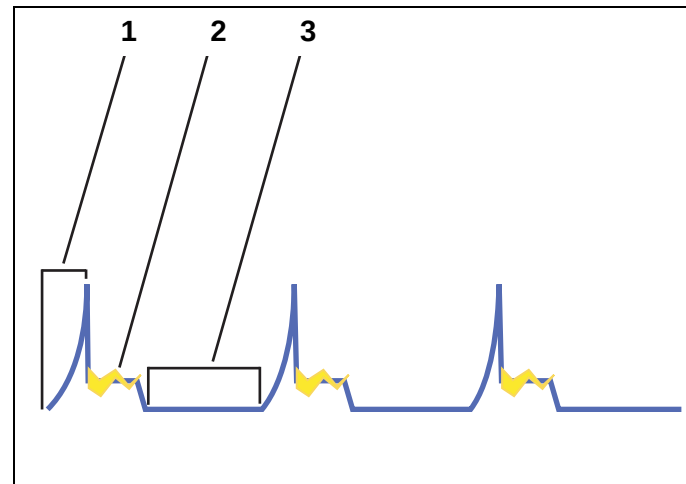
When the circuit board receives the control signal, it momentarily stops current flow through the coil primary winding. The surrounding magnetic field collapses, creating high voltage in the coil secondary winding.

IDI Ignition Coil Tests: Because the ignition coil contains an internal circuit board, there are no simple ignition coil tests available.

Before replacing an ignition coil, be sure:

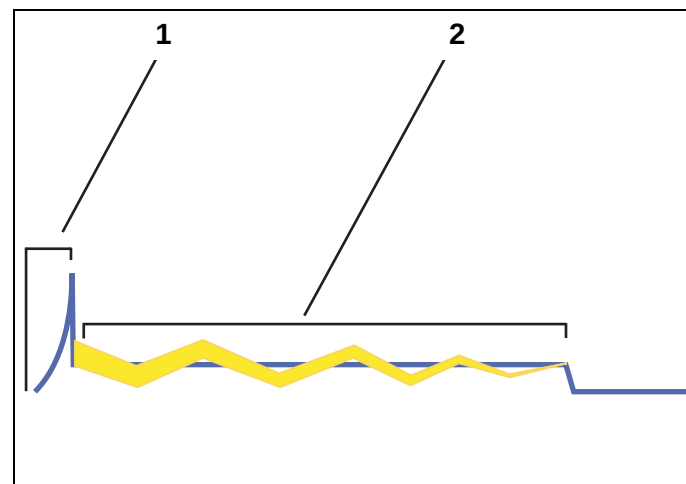
- 55 V is supplied to the white/red wire of the ignition coil connector.
- A control signal is present on the orange wire of the ignition coil connector. Refer to **Ignition Control Circuit Tests** in the appropriate service manual.
- The black wire of the ignition coil connector provides continuity to ground.
- The secondary spark plug lead provides continuity.

Refer to **Ignition Output Tests** in the appropriate service manual for other ignition system test procedures.



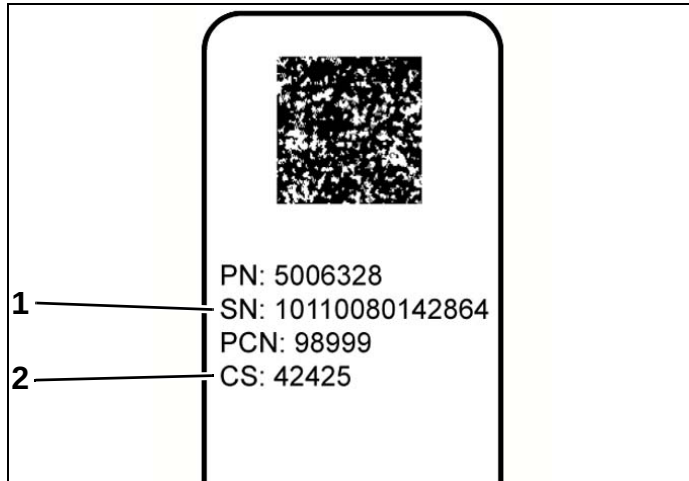
CDI Multi - Strike Ignition

1. Fast rise time
2. Short spark duration
3. No spark in gap



Evinrude E-TEC IDI

1. Fast rise time
2. Long spark duration



Injector Serial Number Label

1. Serial number
2. Checksum number

FUEL SYSTEM

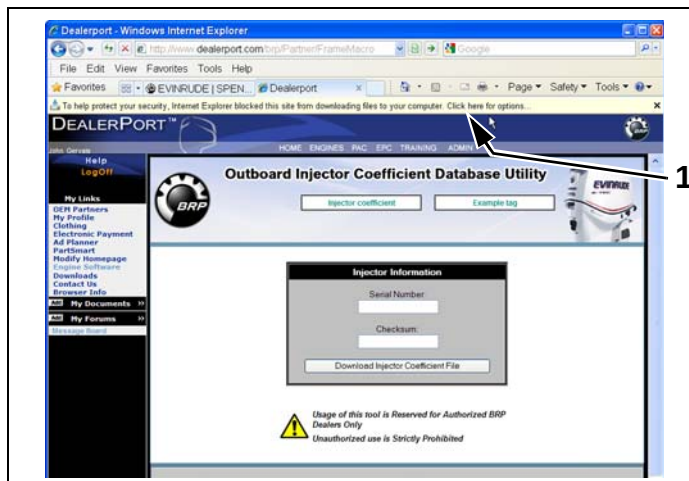
Injector Coefficient Database

Dealers can now download the coefficient files for new service fuel injectors from a database available on the internet.

This process eliminates the need for a 3.5 inch floppy drive on the service laptop computer and the problems created when the disk is packaged with a service fuel injector is damaged.

Refer to the serial number label attached to the fuel injector electrical connector. ACCURATELY record the 14-digit Serial Number (SN) and the 5-digit Checksum (CS) number from the injector serial number label.

Log on to *DealerPort* or *BossWeb* to download injector coefficient files from the internet. Refer to **Service Bulletin 2010-07(S)** for complete instructions. A copy of this bulletin is packaged with each service fuel injector.



1. Click here for options

Internet Browser Blocks Download of Injector Coefficient File

The problem After entering injector serial number and checksum, nothing happens after pressing the “Download Injector Coefficient File” button.

The cause: Internet browser security settings are blocking download of the coefficient file and displays a security message bar above the screen.

The fix: Click on the security message bar that reads “Click here for options.”

Select “Download File” to start the download process.



Fuel Issues

Reports received by the After Sales Department indicate fuel related problems persist in areas where alcohol extended fuels are used.

These problems include:

- Excessive alcohol content in fuel
- Water or other contaminants in the fuel tank
- Phase separation

These problems can result in:

- Corrosion of fuel system metal parts
- Deteriorated fuel hoses
- Blockage in the fuel system
- Engine damage

As part of routine maintenance, inspect fuel hoses from the tank to the outboard. Make sure fuel supply hoses have not deteriorated. Replace deteriorated fuel hoses. Routine inspection of fuel hoses can help prevent expensive repairs.

Refer **Service Bulletin 2006-06(S)** and to the 2008 and 2009 **Product Service Update** books for additional information and recommendations.

These problems can occur with all brands and types of outboards and are related to fuel blending, contaminants, and atmospheric conditions.



Deteriorated fuel hose and primer bulb



Blockage in the fuel system



1. Rear oil injection pump

OILING SYSTEM

Code 36; Rear Oil Injection Pump Circuit OPEN

Code 36 is a new service code for *Evinrude E-TEC* 250 – 300 HP 90° V6 (3.4L) models with the new rear oil pump. The rear oil pump is powered by the 12 V electrical circuit. The *EMM* controls pump operation by rapidly connecting and disconnecting the pump's internal coil to ground.

Refer to the 2011 **Service Manual** for code description.

Possible Causes: Damaged wire harness or electrical connector between *EMM* and oil pump. Failed internal coil of oil pump. Failed circuit in *EMM*.

Troubleshooting procedure: Use the correct service manual to check the following:

- Rear oil pump voltage and control signal. Refer to **Cylinder Oil Pump Voltage Tests**.
- Oil injection pump circuit resistance. Refer to **Cylinder Oil Pump Resistance Test**.



COOLING SYSTEM

Gearcase Flushing Adapter

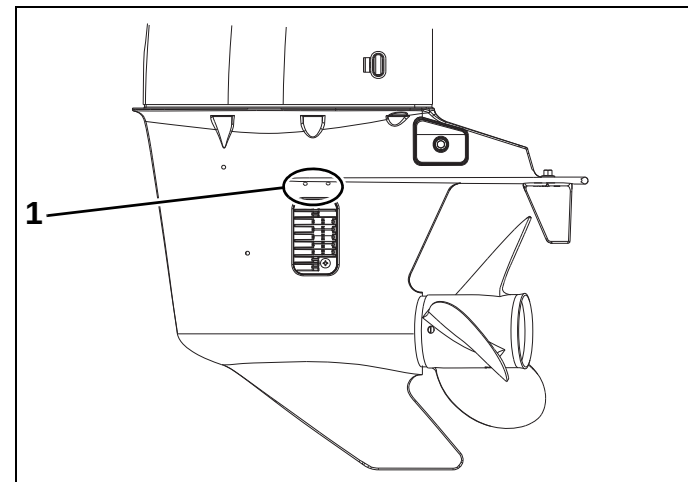
Cover auxiliary water inlet holes on the gearcase when a gearcase flushing adapter is used to flush the outboard. If auxiliary water inlet holes on the gearcase are not covered, water can drain from them, resulting in engine overheating.

To insure enough water travels to the powerhead from the water intakes, temporarily cover auxiliary water inlets as follows:

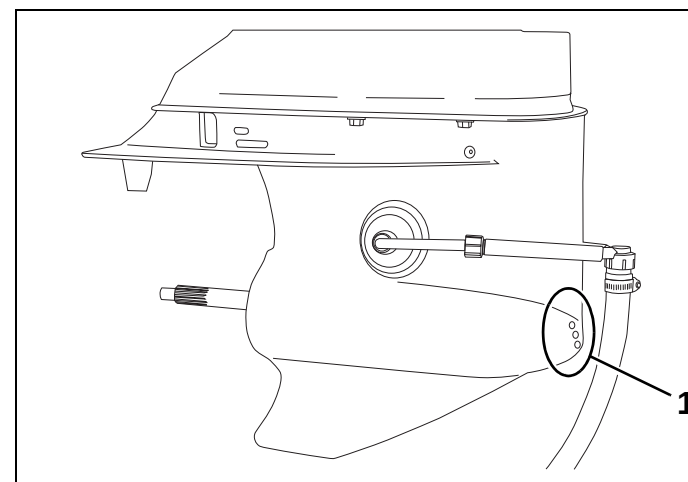
15 – 30 HP Models – Temporarily cover the two small auxiliary water inlet holes on each side of the gearcase with waterproof tape.

150 – 300 HP Models (equipped with an M2-Type gearcase) – Temporarily cover the six auxiliary water inlet holes on the front of the gearcase with waterproof tape.

Be sure to remove waterproof tape from auxiliary water inlets when flushing is complete.



15 – 30 HP Models
1. Auxiliary water inlets



150 – 300 HP Models (M2-Type Gearcase)
1. Auxiliary water inlets

TRIM AND TILT

Single Piston Hydraulic Trim and Tilt Assemblies

Identification

Dealers must correctly identify single piston hydraulic trim and tilt assemblies to order the correct service parts.

The single piston hydraulic trim and tilt assembly is used on 75–90 HP (20 inch) models in 2005 and on 115–130 HP V4 (20 inch) models in 2007.

Hydraulic Trim and Tilt Assembly, P/N 5005756 superseded to P/N 5007776, starting in 2008.

Some service parts for these hydraulic trim and tilt assemblies are NOT interchangeable. Use the table below and the appropriate **Parts Catalog** to correctly identify the hydraulic trim and tilt assembly.

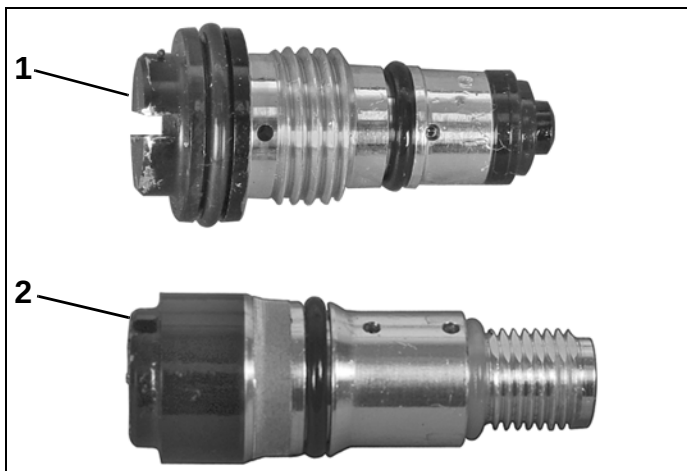
Model Year	Models	Hydraulic Trim and Tilt Assembly P/N	Manifold Description	Use Parts Catalog
2005–2008	75 – 90	5005756	Painted Gloss Black	2005–2008
2007–2008	115 – 130			2007–2008
2009 & newer	75 – 90	5007776	Anodized Flat Black	2009 or newer
	115 – 130			2009 or newer

Manual Release Issue

If a hydraulic trim and tilt assembly, P/N 5007776, cannot be lifted manually, replace the manual release valve, P/N 5007782. The replacement manual release valve is identified by its red anodized color.



Hydraulic Trim and Tilt Assembly
1. P/N 5007776, Black anodized manifold



Manual Relief Valves
1. P/N 5006321, use in hydraulic trim and tilt assembly, P/N 5005756
2. P/N 5007782 (red anodized), use in hydraulic trim and tilt assembly, P/N 5007776



GEARCASE

Exhaust Housing to Gearcase Alignment Pins

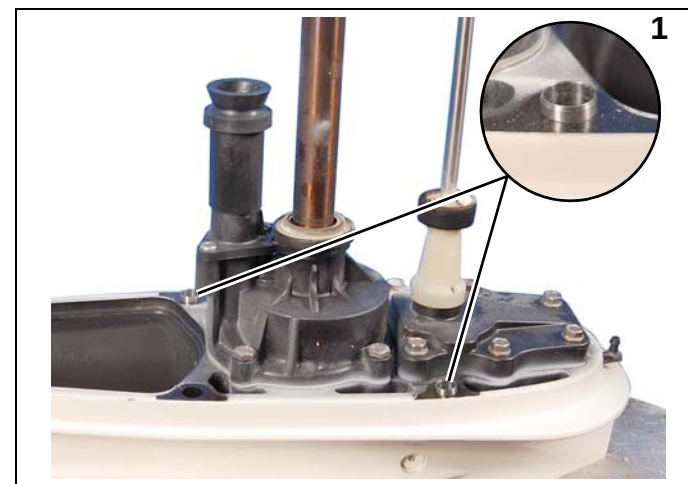
Current production M2-Type gearcases are fitted with exhaust housing to gearcase alignment pins, P/N 350943.

If installing a replacement M2-Type gearcase on a 2008 or older engine, inspect the exhaust housing. Make sure it is machined to accept the exhaust housing to gearcase alignment pins.

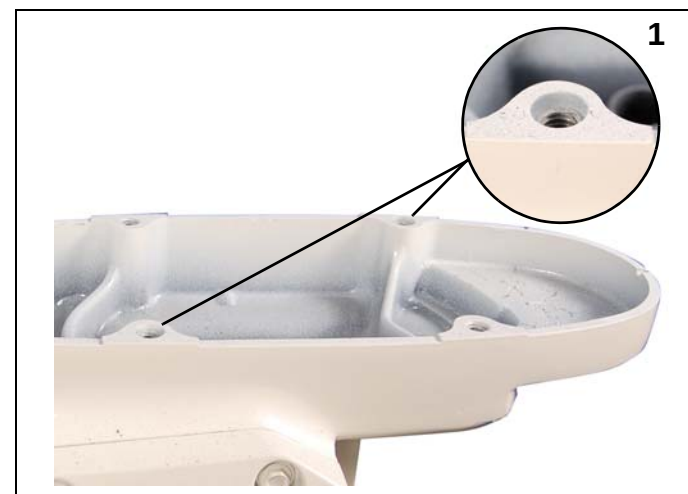
If the exhaust housing is not machined to accept the alignment pins, remove the alignment pins from the replacement gearcase.

NOTICE Failure to remove the exhaust housing to gearcase alignment pins can damage the exhaust housing mounting flange and prevent correct installation of the gearcase.

Use Gearcase Alignment Kit, P/N 5007231 to accurately align gearcase housing to exhaust housing on engines where the exhaust housing is not machined to accept the alignment pins.



1. Exhaust housing to gearcase alignment pins



Exhaust Housing

1. machined to accept exhaust housing to gearcase alignment pins



EVINRUDE DIAGNOSTICS SOFTWARE



IMPROVEMENTS AND CHANGES

New Software Version 5.1

Evinrude Diagnostics software is a Windows based diagnostic tool developed for *Evinrude E-TEC* outboards. The latest version will communicate with DI engines back to 1997.

Model year changes require the release of new software versions. Version 5.1 is required for model year 2012 and older.

New diagnostics software (version 5.1, P/N 5008689) automatically shipped to all authorized U.S. and Canadian service dealers as part of the North American Essential Tools and Software Program. Existing dealers are charged a reduced price for this software as an annual software license renewal and update.

Evinrude Diagnostics software version 5.1 Minimum Hardware Requirements:

- Personal Computer: IBM-compatible laptop computer.
- Operating System: *Microsoft Windows 7, Vista, XP, 2008* or 2003.
- CPU Speed: *Pentium II 133 MHz* or higher.
- Memory: 64 megabyte or more.
- Hard disk: 40 megabyte or more of free space.
- Floppy drive: necessary for injector coefficient file installations, but not required if user has internet access to *DealerPort* or *BOSSWeb*.

Refer to **Service Bulletin 2010-07(S)**.

- Display resolution: 800 x 600 (1024 x 768 preferred), font size 96 dpi.
- Interface Port:
 - Computer RS-232 (9-pin) Serial Port.
 - USB to RS-232 (9-pin) Serial Adapter: Configured to ComPort 1 through 9.
 - CardBus/PCMCIA to RS-232 (9-pin) Serial Adapter: Configured to ComPort 1 through 9.
- Communications Cable: Use Interface Cable, P/N 437955.

IMPORTANT: Version 5.1 software **MUST** be installed using the program CD, P/N 5008689. Version 5.1 software is **NOT** available online.



Evinrude Diagnostics software (version 5.1)

EVINRUDE DIAGNOSTICS SOFTWARE

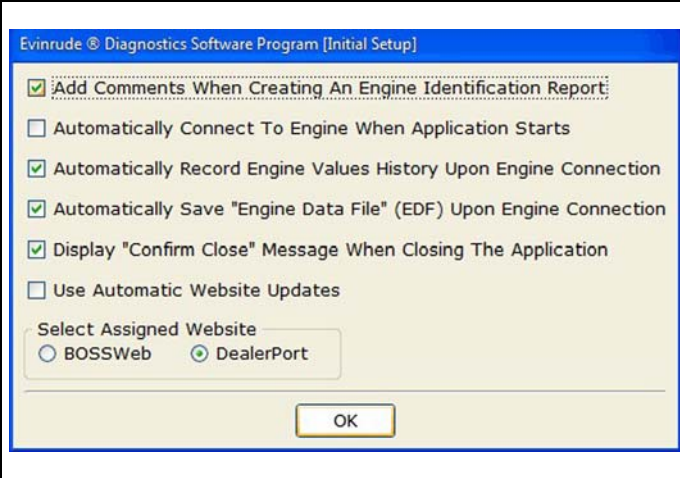
Important Information for *Evinrude Diagnostics* Software Version 5.1 Program Installation

Initial Setup

The first time the program is run, an Initial Setup form will appear. Initial setup items are set to default conditions. Possible changes are as follows:

- Unless directed by BRP do not uncheck "Automatically Save Engine Data File (EDF) Upon Engine Connection".
- If computer normally has an internet connection then check the "Use Automatic Website Updates".
- Verify assigned website (*DealerPort* or *BossWeb*, depending on your subscription service).

Changes to these selections may be made at any time, by selecting the "Tools" menu and selecting "Options".



The screenshot shows the 'Evinrude ® Diagnostics Software Program [Initial Setup]' dialog box. It contains several checkboxes: 'Add Comments When Creating An Engine Identification Report' (checked), 'Automatically Connect To Engine When Application Starts' (unchecked), 'Automatically Record Engine Values History Upon Engine Connection' (checked), 'Automatically Save "Engine Data File" (EDF) Upon Engine Connection' (checked), 'Display "Confirm Close" Message When Closing The Application' (checked), and 'Use Automatic Website Updates' (unchecked). Below these is a section 'Select Assigned Website' with two radio buttons: 'BOSSWeb' (unchecked) and 'DealerPort' (checked). An 'OK' button is at the bottom right.

Initial Setup

Software Registration

Software registration is required to run this program.

- After the Initial Setup is complete, the program will check for a prior version of *Evinrude Diagnostics* registration. If prior version registration information is found, *Evinrude Diagnostics* version 5.1 will automatically use the existing registration information.
- If a prior version is not found, the user MUST complete the registration, Enter your dealer number, dealership name, address and country. An internet connection is NOT needed to complete this registration.

Note: Registration information is only used for identification purposes on printed reports.



The screenshot shows the 'Software Registration For Dealer/User' dialog box. It contains several text input fields: 'Number:', 'Name:', 'Address:', 'City:', 'State/Province:', 'Zip/Postal Code:', and 'Country:'. There is a BRP logo on the right side. At the bottom are 'OK' and 'Cancel' buttons. A status bar at the bottom says '"ALL FIELDS" must be completed...'

Software Registration

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



***EVINRUDE ICON* REMOTE CONTROL SYSTEM**



ICON KITS

ICON Rigging Kits

ICON rigging kits are designed to make rigging kit selection an easy three or four step process. Refer to the **ICON Rigging Kit Selection Chart** on p. 45, for rigging kit selection.

Each ICON rigging kit includes all the boat related ICON components needed to rig a single station or an optional second station, plus the appropriate ICON remote control for the number of engines installed on the boat.



ICON Rigging Kit

ICON Conversion Kits

ICON Conversion Kits add digital electronic shift and throttle control to 2008 and newer Evinrude E-TEC 150 – 300 HP models. To add digital electronic shift and throttle control to an Evinrude E-TEC outboard, order:

- ICON Conversion Kit, P/N 764979, for 200 – 300 HP 90° V6 models.
- ICON Conversion Kit, P/N 765304, for 150 – 200 HP 60° V6 models.

ICON conversion kits must be:

- installed by a dealer using *Evinrude Diagnostics* software.
- used on a boat equipped with an ICON remote control network.
- used with ICON, I-Command, or other NMEA 2000 compliant CANbus instruments.

Update engine management software on 2008 – 2010 engines to ensure ICON compatibility. Refer to the **Installation Instructions** provided with the kit.

Note: 2007 and older models are NOT compatible with the ICON remote control system.



ICON Conversion Kit

EVINRUDE ICON REMOTE CONTROL SYSTEM

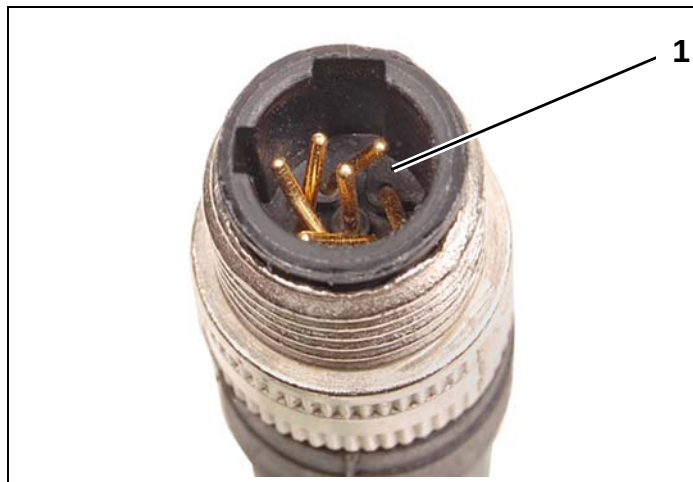
ICON RIGGING KIT SELECTION CHART

Step 1: Select number of engines.	1		2	3	4	5
Step 2: Select appropriate remote control.	Concealed Side Mount	Single Lever Binnacle Mount	Dual Lever Binnacle Mount			
Step 3: Order P/N for main or single station rigging kit.	Rigging Kit P/N 764990	Rigging Kit P/N 764980	Rigging Kit P/N 764982	Rigging Kit P/N 764984	Rigging Kit P/N 764986	Rigging Kit P/N 764988
Main Station Rigging Kits include:						
ICON Remote Control, P/N	765412	765381	765382	765383	765384	765385
Master Power/Key Switch, P/N	765371	765373	765374	765371	765371	765371
Start/Stop Switch Panel, P/N	765378	-		765375	765376	765377
Trim Switch Panel, P/N	-			765388	765389	765390
Network Power Cable, P/N	764921					
ICON Gateway Module Kit, P/N	764922					
ICON Accessory Power Relay, P/N	765296					
ICON Hubs (2), P/N	764943					
Buss Cable Extension 15ft (4.57m), P/N (Kit includes 1 buss cable per engine)	764948					
Buss Cable Backbone 20ft (6.1m), P/N	764950		-			
Buss Cable Backbone 25ft (7.4m), P/N	-		764951			
Engine Identity Plug ID#1, P/N	-		764916			
Engine Identity Plug ID#2, P/N	-			764917		
Engine Identity Plug ID#3, P/N	-				764918	
Engine Identity Plug ID#4, P/N	-					764919
ICON Remote Control User's Guide	765410	764954				
Installation Instructions included:						
ICON Remote Controls, P/N	355248	355084				
ICON Switch Panels, P/N	355085	355085				
ICON Gateway Module & Cable Kit, P/N	355086	355086				
ICON Accessory Power Relay Kit, P/N	355087	355087				
ICON Quick Connect Guide, P/N	765409	764953				

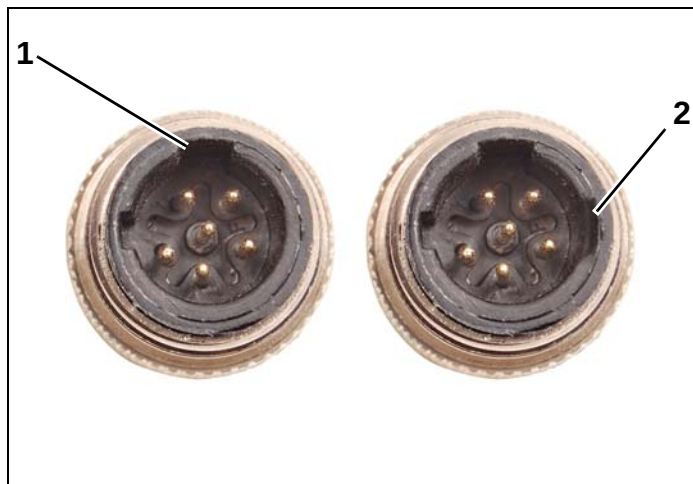


Step 4 (optional): Order P/N for second station rigging kit.	Concealed Side Mount Rigging Kit Not Available	Rigging Kit P/N 764981	Rigging Kit P/N 764983	Rigging Kit P/N 764985	Rigging Kit P/N 764987	Rigging Kit P/N 764989
Second Station Rigging Kits Include:						
ICON Remote Control, P/N	–	765381	765382	765383	765384	765385
Emergency Stop Switch Panel, P/N	–	765379	765380	765372	765372	765372
Start/Stop Switch Panel, P/N	–	–		765375	765376	765377
Trim Switch Panel, P/N	–	–		765388	765389	765390
Buss Cable Extension 15ft (4.57m), P/N	–	764948				
Buss Cable Extension 20ft (6.1m), P/N	–	–		764949		
Installation Instructions included:						
ICON Remote Controls, P/N	–	355084				
ICON Switch Panels, P/N	–	355085				
ICON Quick Connect Guide, P/N	–	764953				

EVINRUDE ICON REMOTE CONTROL SYSTEM



1. Damaged pins



1. Groove
2. Extra groove in the misaligned connector

ICON INSTALLATION TIPS

Buss Cable Issues

Incorrect alignment and assembly of *ICON* buss cables can result in a non-functional *ICON* network. Use the following information to avoid network communication issues.

Assemble connectors dry. Do NOT use *Electrical Grease* on this style connector.

Visually check the alignment and assembly of connectors. Align tabs and sockets of the female connector to the grooves and pins of the male connector. Tighten locking rings of connectors finger-tight.

Do not rotate the connectors to align pins to sockets. This can damage the pins of the connector. A damaged connector can cause an electrical short in the network, resulting in a failed 3 Amp fuse at the master power key switch.

It is possible for the pins of one connector to enter the sockets of the other connector when the tabs and grooves of the connector are misaligned. This damages the connector housing and makes an extra groove in the misaligned connector.

Misaligned connectors can cause the 3 Amp fuse at the master power key switch to blow and disrupt or eliminate communication on the network.

Improper network communication can create non-recoverable fault codes and activate *S.A.F.E.*



150 – 200 HP 60° V6 Models, Code 152; Shift Actuator Motion Fault

The problem: After installing an *ICON* conversion kit, P/N 765304, on a 150 – 200 HP 60° V6, Code 152; Shift Actuator Motion Fault occurs when the engine is shifted into forward gear, due to incorrect shift actuator calibration.

The fix: Use *Evinrude Diagnostic* software (version 4.0 or higher) to verify shift actuator calibration. Refer to the installation instructions provided with the conversion kit.

If the problem persists, perform the following adjustment:

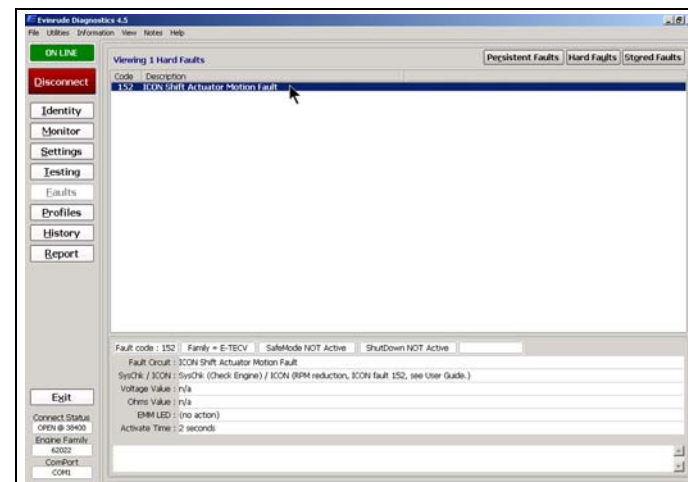
- Turn the master power key switch to the ON position.
- Position control levers to the NEUTRAL detent.
- Move the control lever to the FORWARD detent.
- Manually turn the propeller shaft to confirm FORWARD gear engagement.
- Move the control lever to the REVERSE detent. Manually turn the propeller shaft to confirm REVERSE gear engagement.
- Move the control lever to the NEUTRAL detent. Rotate the propeller shaft back and forth to ensure the face of the clutch dog does not contact FORWARD or REVERSE gear.

If gear engagement is NOT correct, a shift actuator motion fault can occur when the control lever is moved to FORWARD or REVERSE.

Use *Evinrude Diagnostic* software “Settings” screen and select the “EST Calibration” tab. Use the “Nudge” buttons to adjust the shift stroke to the forward or backward direction. Be sure to press the “Save” button after completing the adjustment.

After using the “Nudge” feature, repeat the gear verification process.

Note: Do NOT preload the shift actuator calibration toward FORWARD gear on outboards with a counter rotation gearcase.



Code 152; Shift Actuator Motion Fault

EVINRUDE ICON REMOTE CONTROL SYSTEM

***ICON* Conversion Kit Installation 200 – 300 HP 90° V6 Models**

When installing an *ICON* conversion kit on 2011 and newer 200 – 300 HP 90° V6 models the shift switch must be removed. Install protective cover, P/N 586821, on shift switch connector of the engine harness.

Refer to the installation instructions provided with *ICON* conversion kit, P/N 764979.



1. Neutral switch



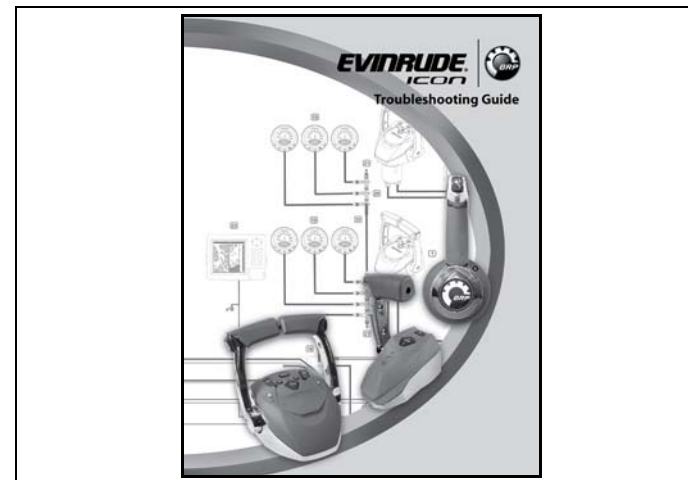
ICON SERVICE TIPS

ICON Troubleshooting Guide, P/N 356076

The *ICON* Troubleshooting Guide, P/N 356076, will automatically ship to all authorized U.S. and Canadian service dealers.

The *ICON* Troubleshooting Guide contains installation tips to help avoid common problems. Simple, effective troubleshooting flow charts are also included to help dealers efficiently troubleshoot and make repairs to an *ICON* network.

Additional copies may be ordered from *Evinrude/Johnson Genuine Parts and Accessories*.



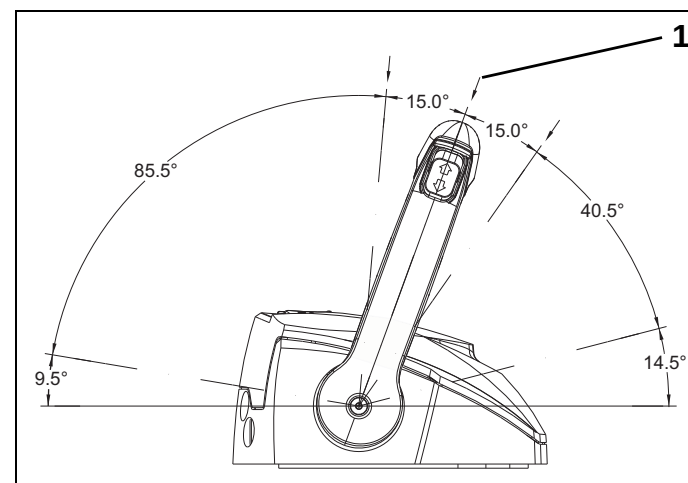
ICON Troubleshooting Guide

Remote Control Neutral Position

Before attempting to change *ICON* network settings, set shift and throttle calibration adjustments, or perform troubleshooting steps:

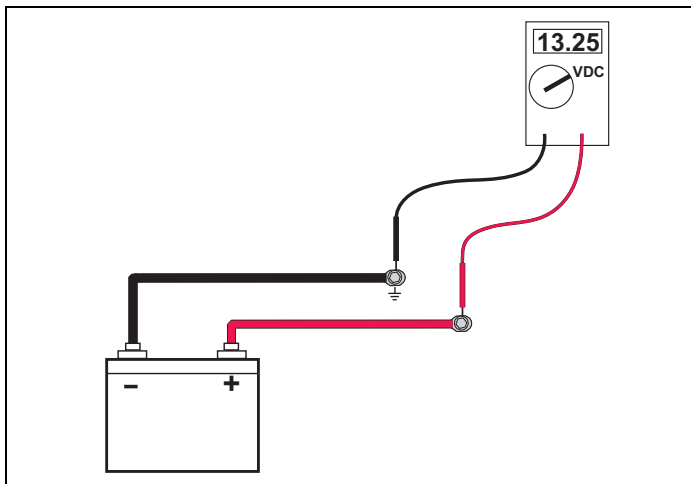
- Turn master power/key switch to the ON position (engine OFF)
- Place control lever(s) in the NEUTRAL position

Failure to follow these steps could result in false warnings or service codes, or can disrupt network communication.



1. Neutral position

EVINRUDE ICON REMOTE CONTROL SYSTEM



Battery Voltage

Battery voltage of 13.25 VDC or higher is required for stable *ICON* network operation. Inconsistent voltage on the *ICON* network can effect operation.

Use *Evinrude Diagnostics* software “Monitor” screen or a *NMEA 2000* gauge (*I-Command* or *ICON*) to monitor voltage. Perform the following steps if *ICON* network voltage is below 13.25 VDC.

Identify which battery is powering the *ICON* network. Test battery connections and charge. Run the engine connected to the battery for the *ICON* network or use a battery charger to support the battery voltage.

Visually inspect the 3A fuse for the master power key switch and the 10A fuse for the power supply cable. Check network voltage at the 10A fuse of the *ICON* power supply cable.

Look for an Accessory Power Relay Kit, P/N 765296, in the *ICON* network. This (optional) power relay kit connects to one of the 6-port hubs and is required to power any accessory controlled by the master power key switch.

Connect only the positive lead of an accessory to the terminal board provided with the accessory power relay kit. Do NOT connect accessory wiring to the master power key switch.



Accessory Power Relay Kit



Failed 3 Amp Fuse (Master Power/Key Switch)

A failed 3 amp fuse for the master power/key switch is normally caused by one of the following:

- Failed or damaged master power/key switch
- Damaged master power/key switch wire harness
- Damaged or faulty buss cable or back bone cable
- Damaged or faulty hub

Follow these steps to troubleshoot a failed 3 amp fuse:

Step 1: Inspect master power/key switch for damage. Test key switch function with an ohm meter. Refer to **MWS Key Switch Diagram** in the service manual.

Step 2: Inspect master power/key switch wire harness for damage or short circuit.

Repair or replace damaged master power/key switch or wire harness. If the master power key switch or wire harness is not damaged or the fuse fails again, continue with Step 3.

Step 3: Turn the master power/key switch OFF. Replace 3 amp fuse.

Step 4: Disconnect ALL hubs, the back bone cable and buss cables (including buss cables for ESM, gateway module and accessory power relay) from the *ICON* network.

Step 5: Reconnect one hub or buss cable to the *ICON* network.

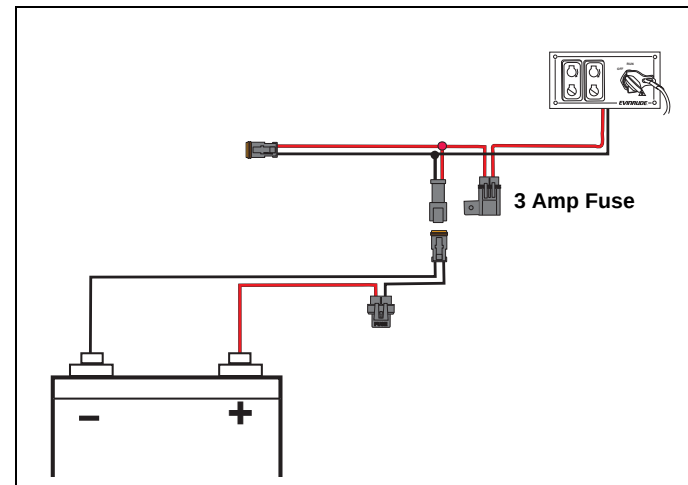
Step 6: Turn master power/key switch ON.

Step 7: If the fuse does not fail, turn the master power/key switch OFF. Repeat steps 5 through 7 until the faulty hub or cable is reconnected and the 3 amp fuse fails.

Repair or replace the hub or buss cable that causes the 3 amp fuse to fail.

Step 9: Replace 3 amp fuse.

Verify remaining hubs or buss cables are not faulty. Repeat steps 5 through 9 until all hubs and buss cables are reconnected to the *ICON* network.



1.



I-COMMAND



I-COMMAND INFORMATION

Instancing

I-Command digital gauges with software version 2.1 or higher, support up to five engines and eight fuel tanks.

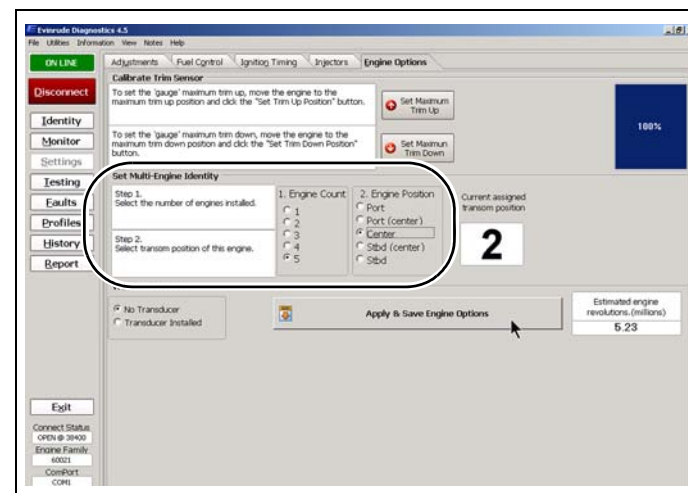
A *NMEA 2000* network can be configured to support many instances of duplicate or similar devices on the same network. Additional devices must be added through careful network configuration. Instance numbers are used to represent similar devices on a common network.

When adding devices to the *NMEA 2000* network:

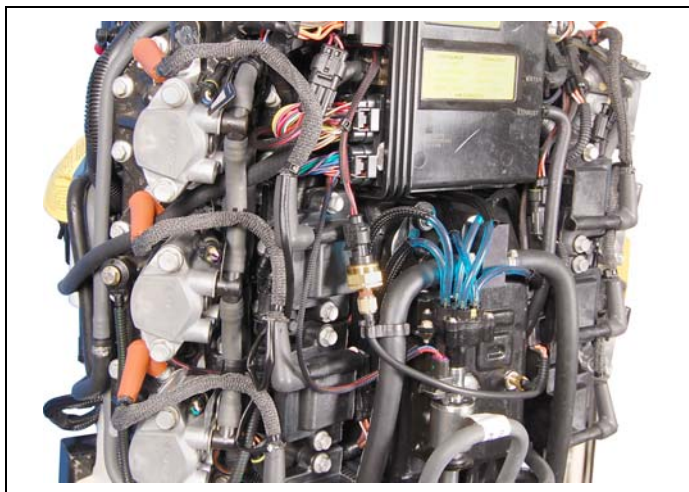
- Unconfigured devices **MUST** be added one device at a time.
- Preconfigured device kits can be added to the network all at one time.
- In either case, if a device is associated with an engine the device instance number **MUST** match the engine instance number.

Number of Outboards	Engine / Device Association				
	Port	Port Center	Center	Starboard Center	Starboard
	Instance Numbers				
1	0				
2	0				1
3	0		1		2
4	0	1		2	3
5	0	1	2	3	4

Use *Evinrude Diagnostics* software to confirm engine instance, or transom position.



Engine Instance (Transom Position) Information

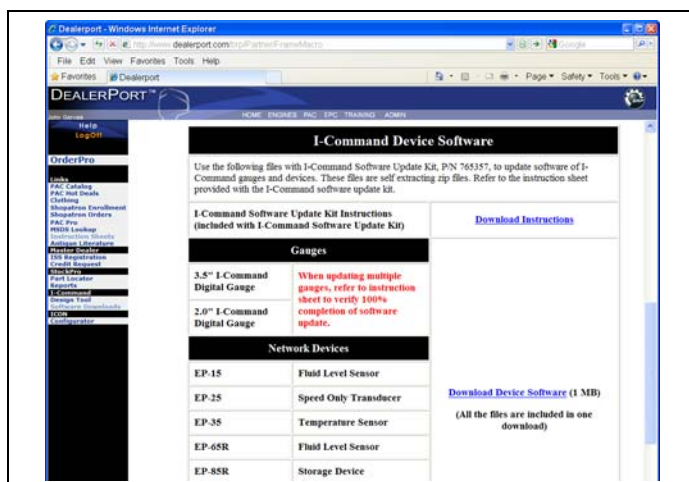


***I-Command* Water Pressure Sensor Kit, P/N 5008300**

Use this kit to provide water pressure data to *I-Command* or other instruments on a NMEA 2000 network. Install this kit on *Evinrude E-TEC* 115 – 300 HP outboards only.

The water pressure sensor used in this kit is capable of providing water pressure readings from 0 to 30 psi (0 to 206 kPa).

Refer to the installation instructions provided with the kit for correct installation. The water pressure sensor **MUST** be installed in a vertical position. Hose installation **MUST** provide complete drainage of water from the sensor.



DealerPort

Software for *I-Command* Devices

Software is available to update *I-Command* digital gauge and device software.

Log into *DealerPort* (www.dealerport.com) or *BOSSWeb* (www.boss-web.brp.com) to download the latest *I-Command* software and information.

Refer to **I-Command Software Update Kit, P/N 765357** on p. 63.



I-Command Bulletins

This list of bulletins provides a reference to specific *I-Command* issues.

Bulletin Number	Subject	Affected Models	Problem
2006-04(P)	<i>I-Command</i> Classic Instruments	All <i>I-Command</i> Classic instruments with date codes prior to and including date code 089/06 are suspect.	Certain <i>I-Command</i> Classic instruments may accumulate moisture internally and experience excessive lens fogging. Instruments with an accumulation of internal moisture should be replaced.
2006-04(S)	<i>Evinrude E-TEC</i> CAN-Bus Software Update	All <i>Evinrude E-TEC</i> 115–250 HP outboards using CANBus network communications.	<i>NMEA 2000 Lowrance</i> † depth-finders and GPS units can interfere with engine management module (EMM) functions on certain <i>Evinrude E-TEC</i> outboards during certain CANBus communication modes.
2007-01(P)	<i>I-Command</i> Network Connector(s)	2005 & newer 200 - 250 HP 90° V6 2007 & newer 115 - 200 HP 60° V4/V6 2008 & newer 40 - 90 HP	This bulletin provides information related to a change in <i>I-Command</i> network connectors. (Blue to Red connectors)
2008-01(P)	<i>I-Command</i> and <i>NMEA 2000</i> Network Connectors	ALL	This bulletin provides information related to the differences in <i>I-Command</i> compatible DeviceNet-style connectors.
2008-03(P)	<i>I-Command</i> Water Pressure Sensor Kits	ALL	This bulletin provides information related to the selection and installation of <i>I-Command</i> water pressure sensors kits.
2008-04(P)	<i>I-Command</i> Fuel Level Converter Kits	ALL	This bulletin provides information related to the configuration of <i>I-Command</i> fuel level converters.
2010-01(P)	<i>I-Command</i> Digital Gauges	ALL	This bulletin provides recommended service procedures and information to update software and to submit warranty allowance requests.



PARTS AND ACCESSORIES



P&A INFORMATION

Tiller Handle Kits *Evinrude E-TEC 15 – 30 HP Models*

Tiller Handle Kits for 15 – 30 HP models are available as follows:

Model Year	Color	Blue	White	Note
2009–2010		5007834	not available	5-pin electrical connector
2011 & newer		5008256	5008237	6-pin electrical connector

Uses a 5-pin electrical connector. The neutral switch is attached. Refer to the 2009 or 2010 **Accessory Parts Catalog** for parts information.

Uses a 6-pin electrical connector. Refer to the 2011 **Parts Catalog** for order information. Refer to the 2011 **Accessory Parts Catalog** for service parts information.

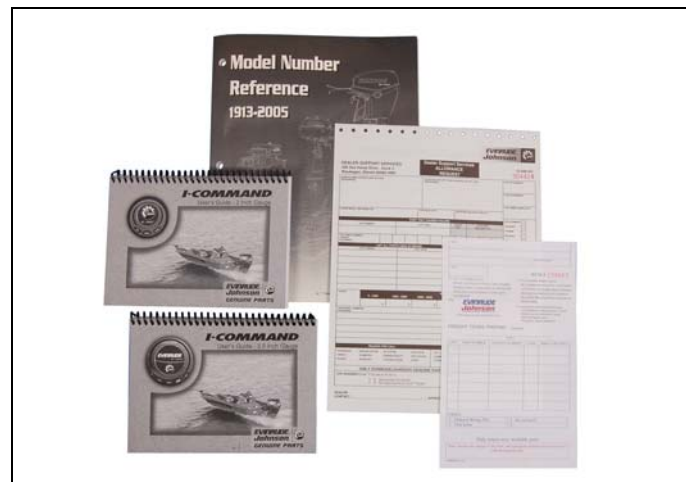
Tiller handle kits for 2009/10 models are not interchangeable with 2011 model.

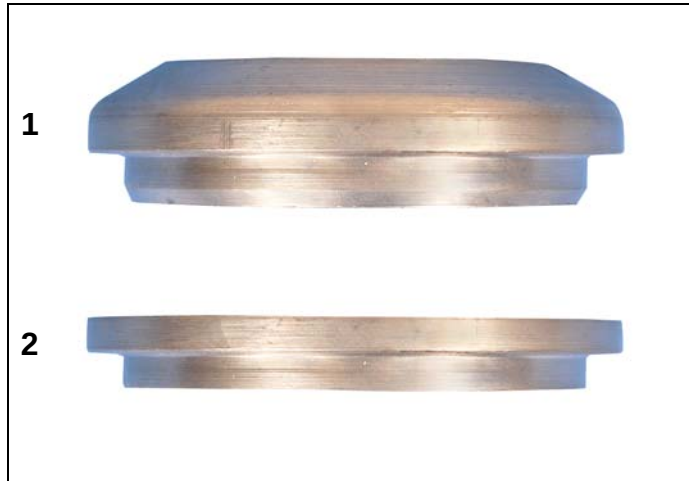
Frequently Requested Part Numbers

The following items are frequently requested part numbers and should be ordered as needed:

- Predelivery Checklist, P/N 5008381, 10/pack
- Warranty Allowance Requests (warranty claim forms), P/N 773629, 25/pack
- RCM Form (form for return of unused, saleable parts), P/N 11111, 10/pack
- Model Year Reference Guide, P/N 5006145
- 2011 Predelivery and Installation Guide, P/N 5008506 *
- *ICON* Installation Guide, P/N 764952 *
- *I-Command* Users Guide, P/N 355917 (3.5 inch) *
- *I-Command* Users Guide, P/N 355918 (2 inch) *
- *I-Command* Product Selection Guide, P/N 764677 *

* Available for download from *DealerPort* or *BossWeb*.





1. BRP thrust bushing
2. Competitor's thrust bushing

Propeller Shaft Failures

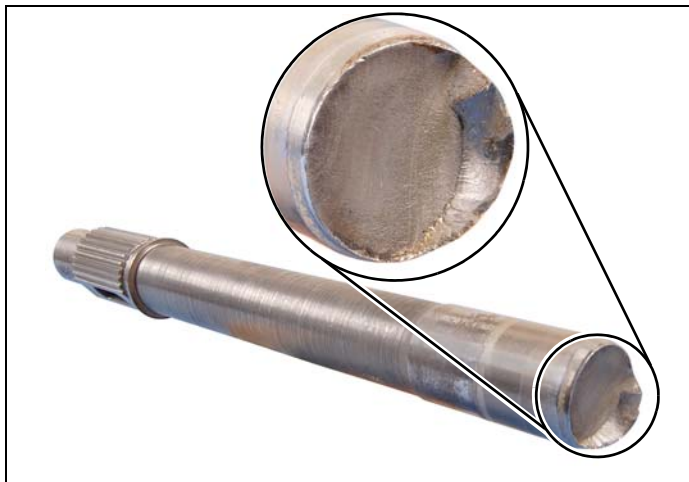
Propeller shaft failures can occur when incorrect propeller hardware is installed.

The thrust bushing provided with some competitor's propeller and removable hub kits may be significantly thinner than the thrust bushing provided with BRP propeller kits.

The surface area of the thrust bushing which contacts the propeller shaft does not provide sufficient clamp load after the propeller hardware and propeller are installed.

Insufficient clamp load causes the propeller to loosen and can result in scoring of the propeller shaft by the thrust bushing. The area that is scored by the thrust bushing will weaken. Because the loose propeller puts an abnormal amount of stress on the propeller shaft, the failure occurs at the weak point created by the insufficient clamp load on the thrust bushing. This type of failure also results in the loss of the propeller and propeller hardware.

Note: Incorrect installation of any manufacturer's propeller and propeller hardware that results in the failure of the propeller shaft is not a condition which will be covered under the BRP Limited Warranty.



Propeller Shaft Failure

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SERVICE TOOLS



NEW SERVICE TOOLS

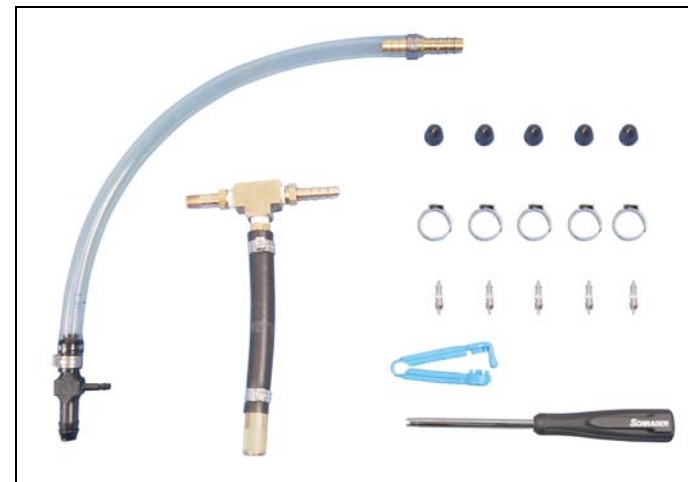
New service tools have been developed for 2011 Model Year outboards. New tools were announced in Service Bulletin 2010-09(S).

Fuel Flow Test Kit, P/N 5008371

The Fuel Flow Test Kit, P/N 5008371, is used to check a boat's fuel system for fuel flow restrictions and air leaks without having to start the outboard or run the vessel through the water. Developed for *Evinrude E-TEC* 115 – 300 HP outboards.

This tool was shipped automatically as part of the essential tool program.

Refer to **Service Bulletin 2010-09(S)** and the instructions for additional information.



Fuel Flow Test Kit, P/N 5008371

***I-Command* Software Update Kit, P/N 765357**

Use *I-Command* Software Update Kit, P/N 765357, to update *I-Command* digital gauge software.

Software to run the update kit is available for use with Windows XP or Windows Vista/Windows 7.

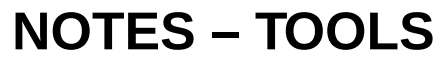
Log into *DealerPort* (www.dealerport.com) or *BOSSWeb* (www.boss-web.brp.com) to download the latest *I-Command* software and information.

This tool was shipped automatically as part of the essential tool program.

Refer to **Parts and Accessories Bulletin 2010-01(P)** or the instruction sheet provided with the kit.



I-Command Software Update Kit, P/N 765357



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



REFERENCE



PAINT

Paint codes have been added to the paper parts catalogs and to the Electronic Parts Catalogs (EPC) for the 2011 model year.

Color	Spray Can	PPG Paint Code Paint / Catalyst	Application
PRIMER	777172	—	Midsection & Gearcase
PRIMER (Gray)	—	W42650 / W29741	Use for white engines
PRIMER (Black)	—	SEP61993 / W29585	Use for blue engines
BLACK (Gloss)	777179	W28610 / W28792	Engine cylinder/crankcase
BLACK (Military)	351066	W43653 / W26790	Covers, Midsection, & Gearcase
WHITE	777171	W28502 / W45315	Base coat
CLEARCOAT	772414	W29461 / W26790	Use with base coat on upper & lower engine covers
BLUE (<i>Evinrude E-TEC</i>)	351907	SAC61243 / W45315	Base coat

ELECTRICAL INFORMATION

Battery Cable Length Guide

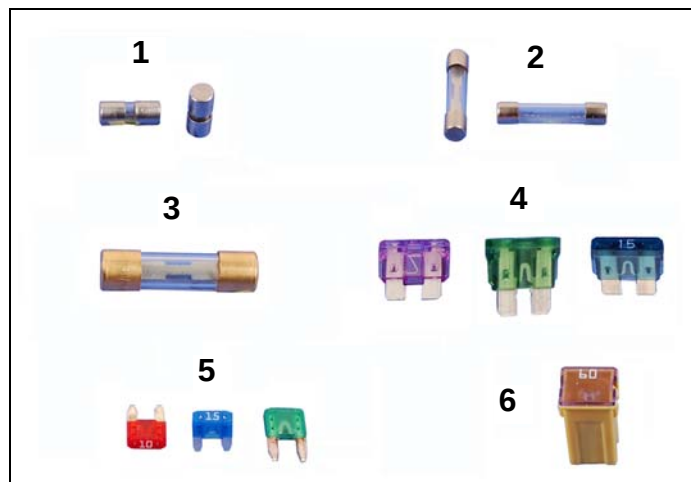
Battery cable must be of the correct gauge to carry the electrical current required to start the outboard. Use the chart below to select the correct gauge battery cable.

Battery Cable Length	Outboard Model	
	15–30 HP	40–300 HP
1 to 10 Ft. (.3 to 3 m)	6 Gauge	4 Gauge
11 to 15 Ft. (3.4 to 4.6 m)	4 Gauge	2 Gauge
16 to 20 Ft. (4.9 to 6.1 m)	2 Gauge	1 Gauge

Battery Recommendations

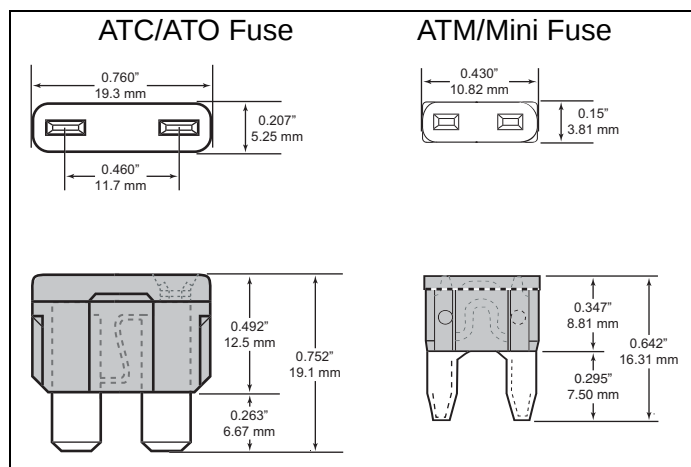
Each outboard requires its own starting battery. Use the chart below to select a battery that meets or exceeds the minimum requirements.

Outboard Model	Battery Rating
115–300 HP	675 CCA (845 MCA), or 800 CCA (1000 MCA) below 32°F (0°C) 107 amp-hr in extreme applications
15–90 HP	640 CCA (800 MCA), or 800 CCA (1000 MCA) below 32° F (0° C) 107 amp-hr in extreme applications



Fuse Types

1. AGA
2. AGC/SFE
3. AGU
4. ATC/ATO
5. ATM/Mini
6. JT



Fuse Dimension Diagram

FUSES

The chart below list all fuses available from *Evinrude/Johnson Genuine Parts and Accessories*.

Fuse P/N	Fuse Type	Amp Rating	Fuse Color	Fuse Dimensions (Length x Diameter)	Package Qty
114509	AGA	3	Glass	0.625 x 0.25	1
512129	AGA	5	Glass	0.625 x 0.25	5
510884	AGA	20	Glass	0.625 x 0.25	10
5031911	AGA	25	Glass	0.625 x 0.25	1
511386	AGA	30	Glass	0.625 x 0.25	1
123852	AGC	1	Glass	1.25 x 0.25	1
5030348	AGC	20	Glass	1.25 x 0.25	1
512672	AGU	40	Glass	1.5 x 0.411	1
3850985	AGU	50	Glass	1.5 x 0.411	1
982019	AGU	50	Glass	1.5 x 0.411	10
763640	ATC/ATO	1	Black	See Fuse Dimension Diagram	1
764538	ATC/ATO	3	Violet		1
763641	ATC/ATO	5	Tan		10
967545	ATC/ATO	10	Red		1
5032215	ATC/ATO	15	Blue		1
514021	ATC/ATO	20	Yellow		5
5032230	ATC/ATO	30	Green		1
514764	ATM/Mini	5	Tan		5
514766	ATM/Mini	10	Red		5
514767	ATM/Mini	15	Blue		1
514768	ATM/Mini	20	Yellow		1
5032630	ATM/Mini	30	Green		1
5033633	JT	60	Yellow		1
304980	SFE	20	Glass	1.25 x 0.25	1



EVINRUDE E-TEC SPARK PLUG SERVICE CHART

Model	2004	2005	2006	2007	2008	2009	2010	2011
15 H.O. – 30 HP						QC10WEP	QC10WEP	QC10WEP
40 – 50 HP	QC12PEP†	QC12PEP†	QC12PEPB†	QC12PEPB†	QC10WEP	QC10WEP	QC10WEP	QC10WEP
60 – 65 HP	QC12PEP†	QC12PEP†	QC12PEPB†	QC12PEPB†	QC10WEP	QC10WEP	QC10WEP	QC10WEP
75 – 90 HP	QC12PEP†	QC12PEP†	QC12PEPB†	QC12PEPB†	QC10WEP	QC10WEP	QC10WEP	QC10WEP
115 – 130 HP 60° V4				QC10PEPB†	QC10WEP	QC10WEP	QC10WEP	QC10WEP
150 – 200 HP 60° V6				QC10PEPB†	QC10WEP	QC10WEP	QC10WEP	QC10WEP
200 – 250 HP 90°V6 (3.3L)		QC10WEP*	QC10WEP*	QC10WEP	QC10WEP**	QC8WEP	QC8WEP	QC8WEP
250 HO – 300 HP 90°V6 (3.4L)					QC8WEP	QC8WEP	QC8WEP	QC8WEP

† DO NOT substitute spark plugs on these models.

* QC10WEP may be substituted for QC10PEPB on 2005/2006 200 - 250 HP 90° V6 models.

** H suffix models use QC8WEP

Spark Plug Part Numbers

Spark Plug	P/N		
	(4-pack)	(6-pack)	(24-pack)
QC12PEP		5001866	775983
QC12PEPB		5006525	763689
QC10WEP	5007419		764643
QC8WEP	5007597		
QC10PEPB		5006308	778874

EMM SERVICE CHART

EMMs cannot be ordered as a regular parts order, since they must be programmed before shipping.

BEFORE ordering a replacement *EMM*:

- Review Administrative Bulletin 2009-02(A) for the policies and procedures for the Warranty Replacement of *Evinrude E-TEC EMMs*.
- Review Parts and Accessories Bulletin 2008-02(P) for the policies and procedures for Service Replacement of *Evinrude E-TEC EMMs*.

Model	2004	2005	2006 - 2007	2008	2009	2010	2011
15 – 30 HP					587062	587062	587062
40 – 50 HP	586759	586759	586759	586968	586968	586968	586968
60 – 65 HP		586759	586862	586970	586970	586970	586970
75 – 90 HP	586759	586759	586759	586970	586970	586970	586970
115 HP 60° V4			586867	586982	586982 ¹		
115 – 130 HP 60° V4					587048 ²	587048	587067
150 – 200 HP 60° V6			586707	586982	587048	587048	587067
200 – 250 HP 90° V6 (3.3 L)		586707	586707	586982	587048	587048	587067
250 – 300 HP 90° V6 (3.4 L)				586982	587048	587048	587115

Notes:

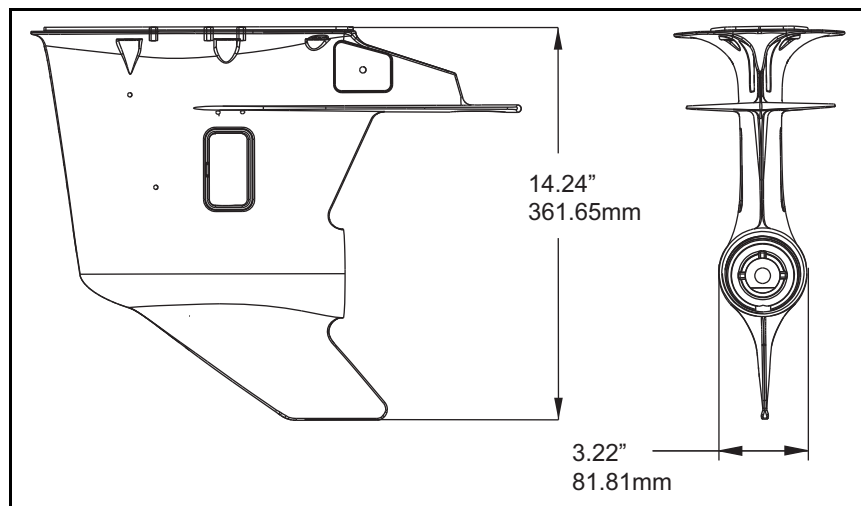
1. 2009 115 HP F suffix ONLY
2. 2009 115 H.O. and 130 HP

IMPORTANT: Do NOT install an *EMM* from a newer engine on an older engine. Changes in the newer models will result in damage to the *EMM* if installed on an older engine.

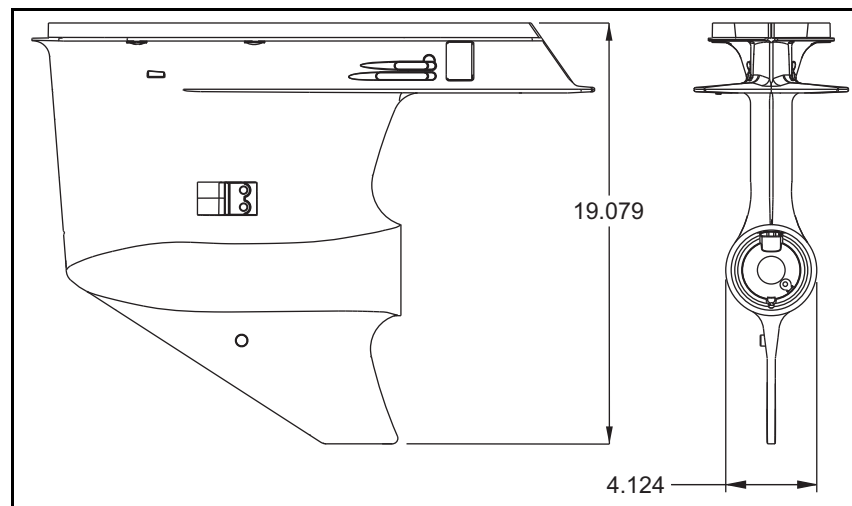


EVINRUDE E-TEC GEARCASE LINE DRAWINGS

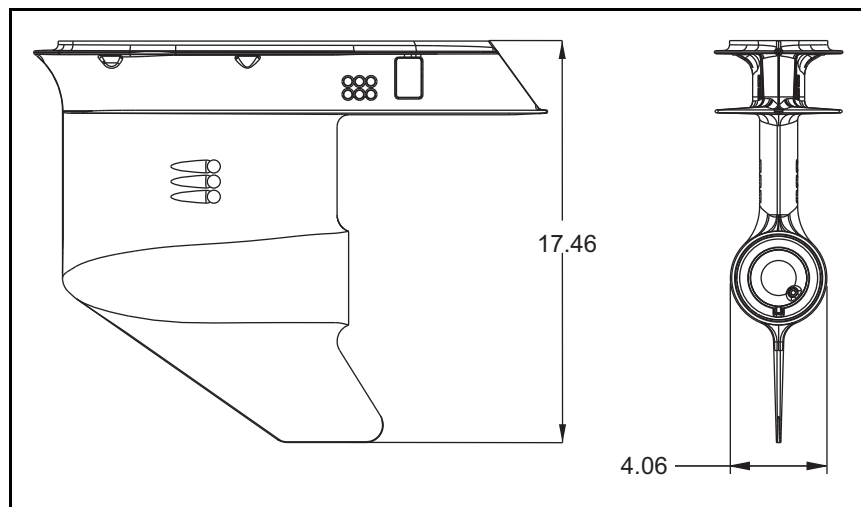
H-Type: 15 H.O. – 30 HP, I2



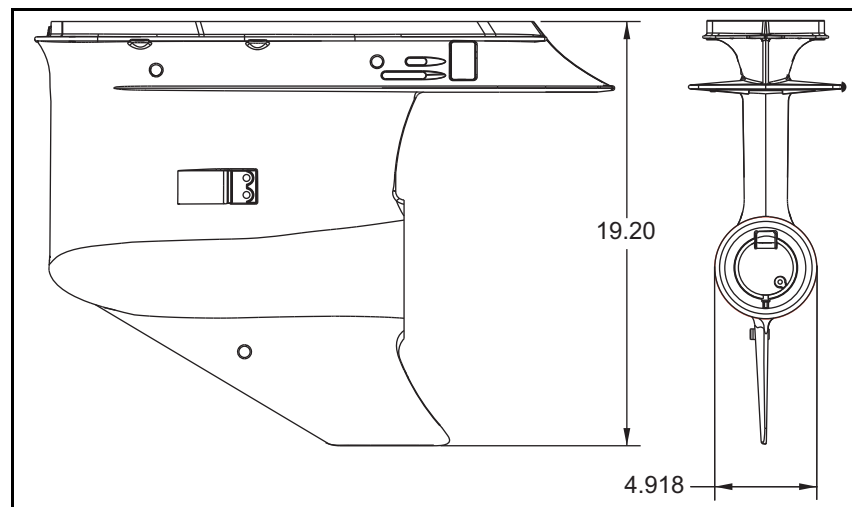
S-Type: 75 – 90 HP (20 inch), I3 and
S2 Type: 115 – 130 HP (20 inch), V4



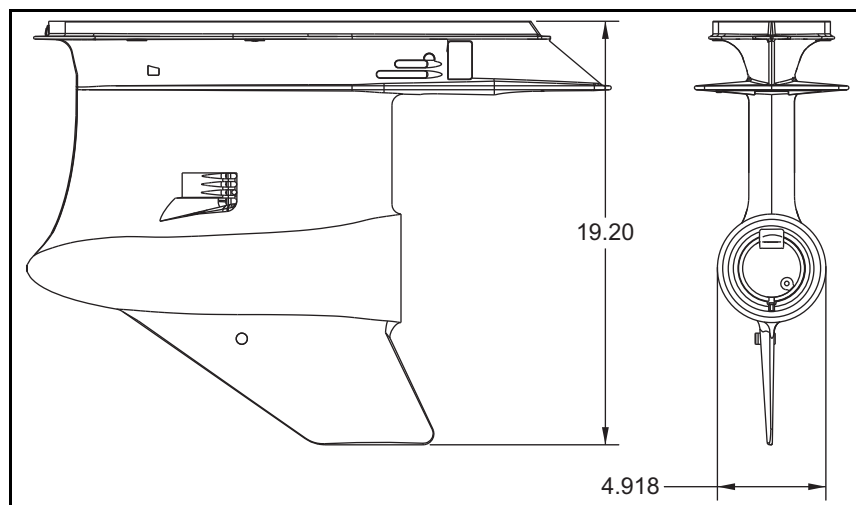
F-Type: 40 – 65 HP, I2



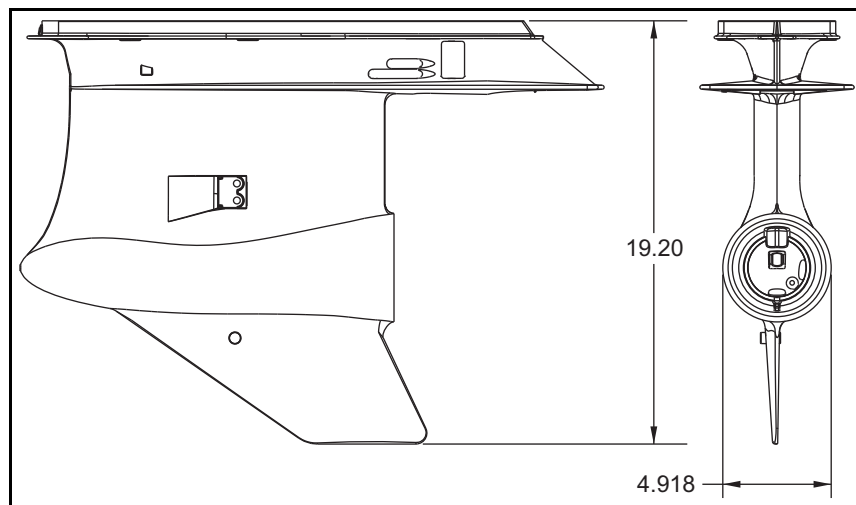
O-Type: 90 – 130 HP (25 inch), I3 & V4 and
150 – 200 HP (20 inch), 60° V6



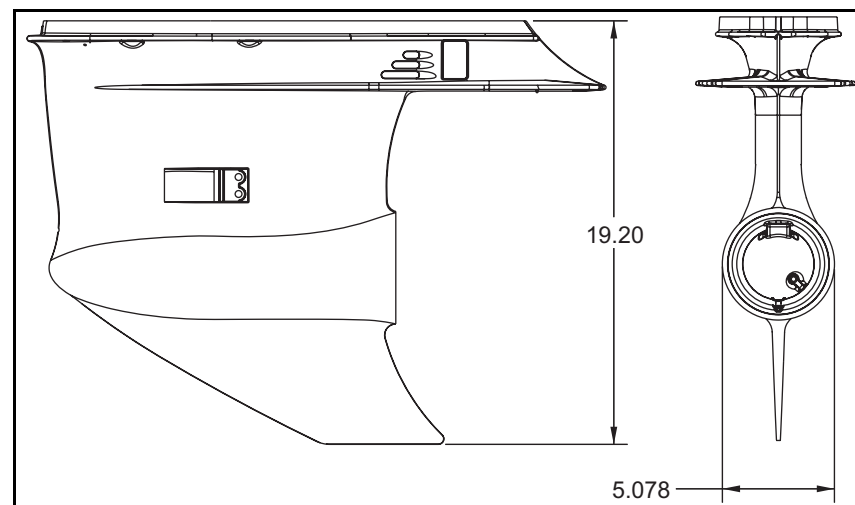
L-Type: No longer produced



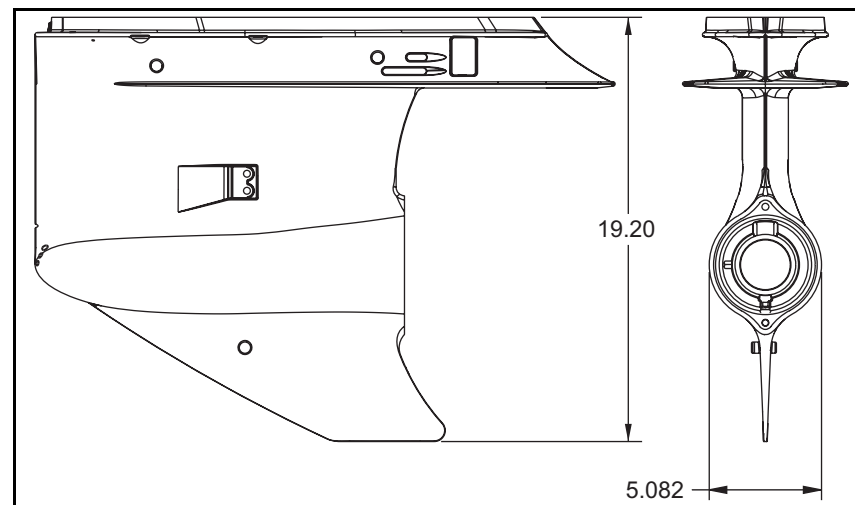
L2-Type: 150 H.O. 60° V6 (20 inch) and
200 H.O. 90° V6 (3.3L) (20 inch)



M-Type: No longer produced



M2-Type: 150 – 200 HP 60° V6 (25 inch) and
200 – 300 HP 90° V6 (20 & 25 inch)





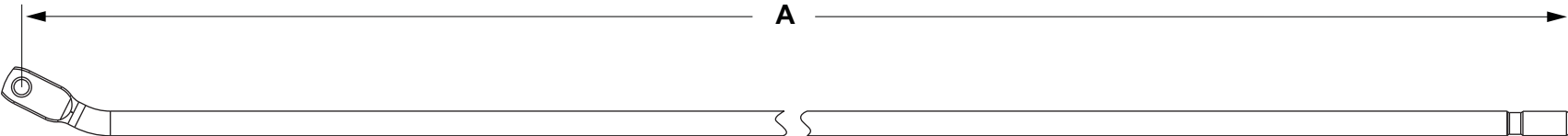
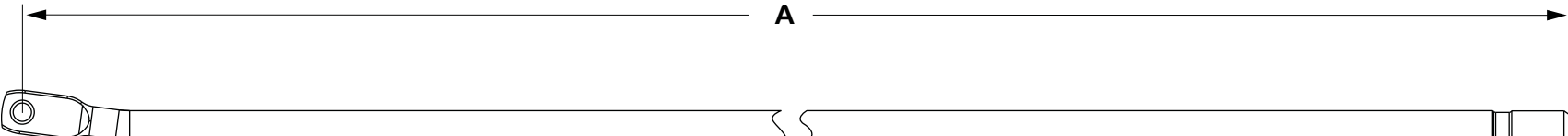
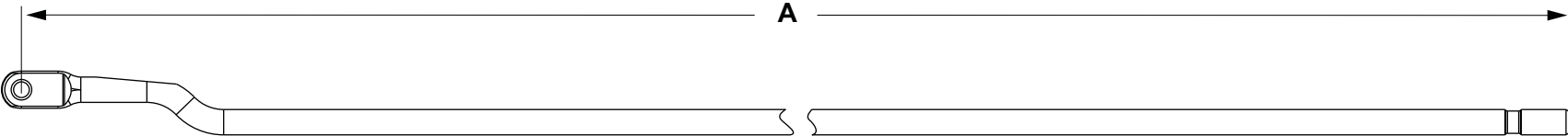
2011 *EVINRUDE E-TEC* GEARCASE APPLICATION CHART

Type	Assembly Part No.	Color	Model Family	Shaft Length	Gear Ratio	Gear Set	Reverse Gear	Oil Capacity
H-Type	5008162	Blue	15 H.O. – 30 HP	15" 20" 25"	13:28 (.465) 2.15:1	392475 (F), 351147 (P)	327655	11 oz (325 ml)
	5008214	White	15 H.O. – 30 HP	15" 20" 25"	13:28 (.465) 2.15:1	392475 (F), 351147 (P)	327655	11 oz (325 ml)
F-Type	5006558	Blue	40 – 60HP	20"	12:32 (.375) 2.67:1	398522 (F,P)	318353	21 oz (620 ml)
	5007628	White	40 – 60HP	20"	12:32 (.375) 2.67:1	398522 (F,P)	318353	21 oz (620 ml)
	5006126	Blue	65 Comm	22.5"	12:32 (.375) 2.67:1	398522 (F,P)	318353	21 oz (620 ml)
S-Type	5006555	Blue	75 – 90 HP	20"	13:26 (.500) 2:1	436746 (F,P)	345992	31.6 oz (935 ml)
	5006426	White	75 – 90 HP	20"	13:26 (.500) 2:1	436746 (F,P)	345992	31.6 oz (935 ml)
S2-Type	5006326	Blue	60° V4	20"	13:26 (.500) 2:1	5006311 (F,P)	352319	31.6 oz (935 ml)
	5006520	White	60° V4	20"	13:26 (.500) 2:1	5006311 (F,P)	352319	31.6 oz (935 ml)
O-Type	5007023	White	75 – 90 HP	25"	12:27 (.444) 2.25:1	435123 (F,P)	336574	32.8 oz (970 ml)
	5007334	Blue	60° V4	25"	12:27 (.444) 2.25:1	435123 (F,P)	336574	32.8 oz (1250 ml)
	5007023	White	60° V4	25"	12:27 (.444) 2.25:1	435123 (F,P)	336574	32.8 oz (970 ml)
	5006554	Blue	60° V6	20"	14:26 (.538) 1.86:1	5004218 (F,P,R)	336561	33.1 oz (980 ml)
	5007134	White	60° V6	20"	14:26 (.538) 1.86:1	5004218 (F,P,R)	336561	33.1 oz (980 ml)
CORO	5007594	White	60° V4	25"	12:27 (.444) 2.25:1	435932 (F,P)	431702	

Type	Assembly Part No.	Color	Model Family	Shaft Length	Gear Ratio	Gear Set	Reverse Gear	Oil Capacity
M2-Type	5007705	Blue	60° V6	25"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
	5007669	White	60° V6	25"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
	5007705	Blue	90° V6 (3.3L)	20"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
	5007705	Blue	225 HP 90° V6 (3.3L)	20"/25"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
	5007669	White	225 HP 90° V6 (3.3L)	20"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
	5007705	Blue	250 H.O. 90° V6 (3.4L)	20"/25"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
	5007669	White	90° V6 (3.3L)	20"/25"/30"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
	5007669	White	90° V6 (3.4L)	25"/30"	13:24 (.542) 1.85:1	5007389 (F,P,R)	347373	38.9 oz (1150 ml)
CORO	5007670	White	60° V6	25"	13:24 (.542) 1.85:1	5007388 (F,P,R)	5008224	35.8 oz (1060 ml)
	5007670	White	90° V6 (3.3L)	25"/30"	13:24 (.542) 1.85:1	5007388 (F,P,R)	5008224	35.8 oz (1060 ml)
	5007670	White	90° V6 (3.4L)	25"/30"	13:24 (.542) 1.85:1	5007388 (F,P,R)	5008224	35.8 oz (1060 ml)
L2-Type	5007668	Blue	60° V6	20"	14:26 (.538) 1.86:1	5007663 (F,P)	353544	32.5 oz (960 ml)
	5007706	White	60° V6	20"	14:26 (.538) 1.86:1	5007663 (F,P)	353544	32.5 oz (960 ml)
	5007668	Blue	200 H.O. 90° V6 (3.3L)	20"/25"	14:26 (.538) 1.86:1	5007663 (F,P)	353544	32.5 oz (960 ml)
	5007706	White	200 H.O. 90° V6 (3.3L)	20"	14:26 (.538) 1.86:1	5007663 (F,P)	353544	32.5 oz (960 ml)



EVINRUDE E-TEC SHIFT ROD CHART

Model	Year	Shaft Length	Gearcase Type	Gear Ratio	Shift Rod P/N	Height Adjustment (±1/2 turn)	Shift Rod Dimension (A)
75 – 90 HP	2004-2011	20	S	.50	351179	21 1/4 in (53.975 cm)	31.0 in (78.74 cm)
	2004-2005	25	O	.44	351180	26 1/4 in (66.675 cm)	36.0 in (91.44 cm)
	2006-2011	25	O	.44	352886	26 1/4 in (66.675 cm)	35.85 in (91.05 cm)
							
115 – 130 HP	2007-2011	20	S2	.50	350464	20 15/16 in (53.20 cm)	30.57 in (77.65 cm)
	2007-2011	25	O	.44	352957	25 15/16 in (65.90 cm)	35.55 in (90.29 cm)
150 – 200 HP 60° V6	2007-2011	20	L / L2	.54	350464	20 15/16 in (53.20 cm)	30.57 in (77.65 cm)
	2007-2011	20	O	.54	350464	20 15/16 in (53.20 cm)	30.57 in (77.65 cm)
	2007-2011	25	M / M2	.54	352808	25 15/16 in (65.90 cm)	35.32 in (89.71 cm)
							
200 – 300 HP 90° V6	2005-2011	20	L / L2	.54 / .58	329864	21 29/32 in (55.60 cm)	31.49 in (79.98 cm)
	2005-2010	25	L / L2	.54 / .58	329865	26 29/32 in (68.30 cm)	36.49 in (92.68 cm)
	2005-2011	20	M / M2	.54	347300	21 29/32 in (55.60 cm)	31.25 in (79.37 cm)
	2005-2011	25	M / M2	.54	347301	26 29/32 in (68.30 cm)	36.25 in (92.07 cm)
	2005-2011	30	M / M2	.54	347391	31 29/32 in (81.00 cm)	41.25 in (104.77 cm)
							

EXTERNAL WATER SCREENS AND APPLICATIONS

This chart lists standard and available optional water screens. For applications which may require additional cooling water, select optional water screens based on the type of application.

M-Type, M2-Type and L2-Type Gearcases				
Water Screen Kit †	Port	Starboard	Height	Application
High Performance, P/N 5005124 (L2 Standard)	348479	348480	Flush	High Speed (over 60 MPH)
High Flow, P/N 5005063	350264	350265	0.060	General
Ultra High Flow, P/N 5006337 (M2 Standard)	350946	350945	0.160	Aerated
Ultra High Flow +1/4, P/N 5007081	350790	350791	0.410	Severely aerated
Screws, P/N 337061				
† Note: Kits include both screens, screws and instruction sheet.				
O-Type Gearcase				
Individual Water Screens ††	Port	Starboard	Height	Application
Standard	337778	337778	0.023	General
Optional	339247	339247	0.055	Aerated
Screws, P/N 337061				
†† Note: Screens are symmetrical, use two per outboard.				
S-Type and S2-Type Gearcases				
Individual Water Screens ††	Port	Starboard	Height	Application
Standard (through 2006)	340495	340495	Flush	General
Standard (2007 and newer)	337778	337778	0.058	Aerated / Weedy
Optional	339247	339247	0.200	Severely aerated
Screws, P/N 340665				

†† **Note:** Screens are symmetrical, use two per outboard.



2011 RPM QUICK REFERENCE CHART

Model	Recommended Operating Range	Optimum RPM Range	RPM @ Rated HP
15 H.O.	5500 – 6100	5400 – 5800	5800
25 HP	5500 – 6100	5400 – 5800	5800
30 HP	5500 – 6100	5400 – 5800	5800
40 HP	5000 – 6000	5400 – 5600	5500
50 HP	5500 – 6000	5600 – 5750	5750
60 HP	5500 – 6000	5600 – 5750	5750
65 HP Commercial	5500 – 6000	5600 – 5750	5750
75 HP	4500 – 5500	5000 – 5200	5000
90 HP	4500 – 5500	5000 – 5200	5000
115 – 130 HP 60° V4	5500 – 6000	5500 – 5750	5750
150 HP/150 H.O. 60° V6	4850 – 5850	5500 – 5600	5350
175 HP 60° V6	4850 – 5850	5500 – 5600	5350
200 HP 60° V6	4850 – 5850	5600 – 5850	5350
200 H.O. 90° V6 (3.3L)	4500 – 5800	5500 – 5700	5150
225 HP/225 H.O. 90° V6 (3.3L)	4500 – 5800	5500 – 5700	5150
250 HP 90° V6 (3.3L)	4500 – 5800	5500 – 5700	5150
250 H.O. 90° V6 (3.4L)	4500 – 6000	5500 – 5850	5250
300 HP 90° V6 (3.4L)	5000 – 6000	5500 – 5850	5500

How to Use the RPM Quick Reference Chart

When selecting a propeller for an outboard and boat application, refer to the recommended wide open throttle operating range for the outboard model.

When determining propeller selection, choose a propeller that will best suit the customer's needs. For example:

- choose a higher pitch propeller for low-to-mid rpm for light load cruising.
- choose a lower pitch propeller to attain top rpm for water skiing or other high load applications.

For best overall performance choose a propeller that allows the outboard to run in the optimum rpm range, which is usually the point of peak horsepower.

Remember, only a thorough water test will determine which propeller works best for a particular application.

2011 WATER PRESSURE CHART

This chart lists typical water pressure readings for 2011 model outboards for boat speeds up to 50 mph (80 kph/43 knots) and is provided as a general guide for use when troubleshooting over-heating or over-cooling issues.

Water pressure readings can vary depending on water inlet screen type, hull design, set up, and operating conditions.

RPM	Idle	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500
Model	Water Pressure (psi/kpa)										
40 – 65 HP	4-5 (27-34)	5-6 (34-41)	7-9 (48-62)	10-11 (68-75)	14-15 (96-103)	15-17 (103-117)	16-18 (110-124)	16-18 (110-124)	14-16 (96-110)	12-14 (82-96)	10-12 (68-82)
75 – 90 HP	5-6 (34-41)	10-11 (68-75)	12-14 (82-96)	15-17 (103-117)	16-18 (110-124)	16-18 (110-124)	13-15 (89-103)	15-17 (103-117)	16-18 (110-124)	19-21 (131-144)	20-22 (137-151)
115 – 130 HP 60° V4	5-6 (34-41)	9-10 (62-68)	12-14 (82-96)	15-17 (103-117)	18-20 (124-137)	20-21 (137-144)	20-22 (137-151)	21-23 (144-158)	21-23 (144-158)	21-23 (144-158)	21-23 (144-158)
150 – 200 HP 60° V6	4-5 (27-34)	9-11 (62-75)	14-16 (96-110)	17-19 (117-131)	19-21 (131-144)	20-22 (137-151)	20-22 (137-151)	21-23 (144-158)	22-24 (151-165)	23-25 (158-172)	24-26 (165-179)
200 – 250 HP 90° V6 (3.3L)¹	3-5 (27-34)	7-9 (48-62)	8-10 (55-68)	9-11 (62-75)	10-12 (68-82)	11-13 (75-89)	12-14 (82-96)	13-15 (89-103)	14-16 (96-110)	15-17 (103-117)	16-18 (110-124)
250 HO – 300 HP 90° V6 (3.4L)¹	4-6 (27-41)	7-11 (48-75)	9-12 (62-82)	10-14 (68-96)	12-15 (82-103)	14-16 (96-110)	15-18 (103-124)	16-19 (110-131)	18-20 (124-137)	18-25 (124-172)	20-30 (137-207)

Notes:

1. Water pressure readings in excess of 40 psi (275 kpa) are possible for these models at boat speeds above 50 MPH (80 KPH/43 knots).



SERVICE LITERATURE

2011

Description	English Operator's Guide	French Operator's Guide	Parts Catalog	English Service Manual	French Service Manual
Evinrude Models					
15 - 30 HP	215992	215993	5008317	5008326	5008327
40 - 60 HP	215994	215995	5008318	5008328	5008329
65 HP Commercial	216018	216019	5008318	5008328	5008329
55 HP MFE	215996	215997	5008319	5008330	5008331
75 - 90 HP	215998	215999	5008320	5008328	5008329
115 - 130 HP 60° V4	216000	216001	5008321	5008332	5008333
150 - 200 HP 60° V6	216000	216001	5008322	5008332	5008333
200 - 300 HP 90° V6	216002	216003	5008323	5008334	5008335

Literature Sets	
2011 Illustrated Parts & Accessory Catalog	5008324
2011 Parts Catalog Set – Paper	5008325
2011 Service Manual Set – English	5008340
2011 Service Manual Set – French	5008341
2011 Service Manual CD – English	5008336
2011 Service Manual CD – French	5008337

Reference	
2011 Flat Rate Guide – English	5008492
2011 Flat Rate Guide – French	5008493
2011 Warranty Procedures – English	5008494
2011 Warranty Procedures – French	5008495
2011 Product Service Update – English	5008496
2011 Product Service Update – French	5009497
2011 Update CD – English	355838
2011 Update CD – French	355839
Special Tools Catalog	5008526
Predelivery & Installation – All Models – English	5008506
Predelivery & Installation – All Models – French	5008507
Predelivery & Installation – All Models – Spanish	5008508

2010

Description	English Operator's Guide	French Operator's Guide	Parts Catalog	English Service Manual	French Service Manual
Evinrude Models					
25 - 30 HP	215932	215933	5007997	5008146	5008147
40 - 60 HP	215920	215921	5007998	5008148	5008149
65 HP Commercial	215922	215923	5007998	5008148	5008149
75/90 HP	215926	215927	5008000	5008148	5008149
115 - 130 HP 60° V4	215928	215929	5008001	5008152	5008153
150 - 200 HP 60° V6	215928	215929	5008002	5008152	5008153
200 - 300 HP 90° V6	215930	215931	5008003	5008154	5008155

Literature Sets	
2010 Illustrated Parts & Accessory Catalog	5008005
2010 Parts Catalog Set – Paper	5008004
2010 Service Manual Set – English	5008158
2010 Service Manual Set – French	5008159
2010 Service Manual CD – English	5008156
2010 Service Manual CD – French	5008157

Reference	
2010 Special Tools Catalog	5007858
2010 Flat Rate Guide – English	5007856
2010 Flat Rate Guide – French	5007860
2010 Warranty Procedures – English	5008129
2010 Warranty Procedures – French	5008130
2010 Product Service Update – English	5008168
2010 Product Service Update – English	5008169
2010 Update CD – English	355139
2010 Update CD – French	355140
Predelivery & Installation – All Models – English	5007857
Predelivery & Installation – All Models – French	5007861



BULLETINS

2010 Bulletin Index

Bulletin Number	Models	Subject / Description
Administrative (A)		
2010-01(A)	2010 Model Year Outboard Engines	Inbox Components
2010-02(A)	<i>Evinrude ICON</i>	Flat Rate Table
2010-03(A)	ALL	EPA Campaign Label
2010-04(A)	ALL	BEST Warranty
Predelivery (D)		
2010-01(D)	ALL	Predelivery Checklist
2010-02(D)	2011 <i>Evinrude E-TEC</i> 250 – 300 HP (3.4 L) Outboards	New Installation and Predelivery Procedure
Parts and Accessories (P)		
2010-01(P)	<i>I-Command</i> Digital Gauges	Updating Software
Service (S)		
2010-01(S)	2009 <i>Evinrude E-TEC</i> 75 – 90 HP Outboards	Incorrect Wiring Diagram in Service Manual, P/N 5007811
2010-02(S)	<i>Evinrude E-TEC</i> 15 – 300 HP Outboards	Damaged Wiring Resulting from Improper Rigging or Faulty Connections
2010-03(S)	<i>Evinrude E-TEC</i> 75-90 HP Outboards	Gearcase Alignment Gauge Kit, P/N 5006349 Replaces Service Bulletin 2004-09(S)
2010-04(S)	<i>Evinrude E-TEC</i> 15 – 300 HP Outboards	Warranty Powerhead Identification
2010-05(S)	<i>Evinrude E-TEC</i> 150 – 200 HP 60° V6 Outboards	Oil Distribution Hose Routing
2010-06(S)	ALL	Operation in Oil Contaminated Water
2010-07(S)	<i>Evinrude E-TEC</i> 15 – 300 HP outboards, 1999 – 2001 <i>Evinrude Ficht</i> 75 – 250 HP outboards, and 2002–2006 <i>Evinrude DI</i> 75 – 250 HP outboards	Injector Coefficient Database
2010-08(S)	<i>Evinrude E-TEC</i> 15 – 30 HP Outboards	Torque Change for Flywheel Nut
2010-09(S)	ALL	New Service Tools – 2011 Model Year
2010-10(S)	<i>Evinrude E-TEC</i> 40 – 90 HP Outboards	Installing Replacement Lower Engine Covers

Bulletin Number	Models	Subject / Description
Warranty (W)		
2010-01(W)	2010 <i>Evinrude E-TEC</i> 75 HP – 130HP Outboards	Trim and Tilt Hydraulic Assembly Replacement
2010-02(W)	2010 <i>Evinrude E-TEC</i> 115 – 300 HP Outboards	Oil Pump Assembly Replacement and Oil Hose Routing
2010-03(W)	2009 and 2010 <i>Evinrude E-TEC</i> 15 – 65 HP, and 2009 <i>Evinrude</i> MFE 55 HP Outboards	EPA CAMPAIGN: Fuel Hose and Primer Bulb Assembly Replacement
2010-04(W)	2010 and 2011 <i>Evinrude E-TEC</i> 40 - 90 HP Outboards	SAFETY CAMPAIGN: Incorrectly Installed Clamps on Fuel Hoses
2010-05(W)	2011 <i>Evinrude E-TEC</i> 200 HP – 250 HP 90° V6 (3.3 L) Outboards	Shift Lever Cam
2010-06(W)	2011 <i>Evinrude E-TEC</i> 15 – 30 HP Outboards	Shift Lever Screws
2010-07(W)	This bulletin was not issued.	
2010-08(W)	2010 and 2011 <i>Evinrude E-TEC</i> 115 – 300 HP Outboards	Starter Drive Gear Engagement
2010-09(W)	2011 <i>Evinrude E-TEC</i> 15 – 30 HP Outboards	EPA CAMPAIGN: Engine Management Software Update



NOTES – REFERENCE

[illegible]



APPENDIX



TOPIC REFERENCE INDEX

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APPENDIX

The table provides a reference to information presented in previous Product Service Updates.

Model	Topic	Where to Find (Book Year /Section)	Other References
15 – 30	Flywheel servicing	2010 - Service Tips	
15 – 30	Water pump servicing	2010 - Service Tips	
25 – 30	New model rigging information	2009 - Rigging	Predelivery Bulletin 2008-02(D)
25 – 30	New model warning system information	2009 - Rigging	
25 – 30	Step required to install battery charge module	2009 - Diagnostic Software	
25 – 30	EMM Light Emitting Diodes (LEDs)	2009 - Engine Management Module	
25 – 30	Code 120; Oil level switch open circuit detected	2009 - Service Codes	
25 – 30	Fuel injector seal kits	2009 - Fuel System	
25 – 30	Fuel injector and vapor separator servicing, new procedure	2009 - Fuel System	Service Bulletin 2008-07(S)
25 – 30	Oil recirculation diagram (new model)	2009 - Oiling Systems	
25 – 30	New accessory kits for <i>Evinrude E-TEC</i> 25/30 HP	2009 - Parts & Accessories	
40	Tilt assist kit for manual tilt models	2008 - Parts & Accessories	
40	Rope start models - revised oil pump wire harness routing	2009 - Ignition & Electrical	
40 – 60	Water pump o-ring eliminated	2008 - Cooling System	
40 – 60	Vented water pump housing	2008 - Cooling System	
40 – 60	Melted propeller hardware or <i>Hydrex</i> exhaust ring	2008 - Cooling System	
40 – 60	Cover design change	2008 - Engine Covers	
40 – 60	Oil recirculation changes 2004/2005 to 2006 & newer	2008 - Oiling System	
40 – 60	New trim and tilt assembly, P/N 5007774 - manual relief valve improved	2009 - Midsection	
40 – 90	Engine idle temperature	2008 - Cooling System	Service Bulletin 2006-07(S)
40 – 90	Engine cover material	2008 - Engine Covers	
40 – 90	Spark plug replacement - inductive ignition models	2008 - Ignition & Electrical	
40 – 90	Spark plug life	2008 - Ignition & Electrical	Service Bulletin 2006-07(S)



Model	Topic	Where to Find (Book Year /Section)	Other References
40 – 90	Starter mounting screw installation	2008 - Ignition & Electrical	
40 – 90	Exhaust relief muffler filter service	2008 - Midsection	
40 – 90	Oil to fuel hose eliminated	2008 - Oiling System	
40 – 90	Service oil pump assemblies 2007 & older	2008 - Oiling System	
40 – 90	Service oil pump assemblies 2008 & newer	2008 - Oiling System	
40 – 90	Rigging grommet installation tip	2008 - Rigging	
40 – 90	Code 117; Critical low oil level - 2008 & newer models	2008 - Service Codes	
40 – 90	Air bubbles in oil line	2009 - Oiling Systems	
40 – 90	Lower motor cover installation	2008 - Engine Covers	
40 – 90	Repairing scratches to motor covers	2008 - Engine Covers	
40 – 90	Inductive ignition information	2008 - Ignition & Electrical	
40 – 90	Inductive ignition testing	2008 - Ignition & Electrical	
40 – 90	Code 38; Oil pressure feedback not detected	2008 - Service Codes	
40 – 90	Change to flywheel service procedures	2009 - Ignition & Electrical	
40 – 90	New oil tank and oil pump assemblies	2010 - Product Improvements	
40 – 90	Neutral switch	2010 - Product Improvements	
40 – 90	Installing a second battery	2010 - Service Tips	
40 – 115	Single ram trim and tilt assemblies	2008 - Midsection	
40 – 115	Tiller kits	2008 - Parts & Accessories	
40 – 115	<i>SystemCheck</i> gauge recommendation	2008 - Parts & Accessories	
40 – 115	Steering friction kit	2008 - Parts & Accessories	
40 – 115	Missing on acceleration - propeller	2008 - Rigging	
40 – 200	Inline and 60° V Models - Cylinder Head Changes	2010 - Service Tips	
40 – 300	Longer engine mounting screws	2009 - Rigging	Parts & Accessories Bulletin 2008-05(P)
40 – 300	Cylinder head temperature sensor installation change	2009 - Ignition & Electrical	Service Bulletin 2008-01(S)
40 – 300	TNT models - Melted wiring and bonding wires	2009 - Ignition & Electrical	
40 – 300	Fuel injector seal kits	2009 - Fuel System	
40 – 300	Vapor separator filter, P/N 354190, now available	2009 - Fuel System	

Model	Topic	Where to Find (Book Year /Section)	Other References
60 – 65	Water valve operation	2008 - Midsection	
60 – 65	Water valve tests	2008 - Midsection	
65	Tilt assist kit for manual tilt models	2008 - Parts & Accessories	
75 – 90	Oil recirculation changes 2004/2005 to 2006 & newer	2008 - Oiling System	
75 – 90	Upper mount screw change and service tip	2008 - Powerhead	
75 – 90	2008 and newer - Changes to temperature monitoring	2009 - Engine Management Software	
75 – 90	New starter motor	2010 - Product Improvements	
75 – 130	New trim and tilt assembly, P/N 5007776 - manual relief valve improved	2009 - Midsection	
75 – 250	External water screen chart	2008 - Cooling System	
75 – 250		2009 - Cooling System	
75 – 300	Code 40; Engine overheat, low speed (port or single)	2009 - Service Codes	
75 – 300	Driveshaft bearing housing change to o-ring	2009 - Gearcase	
75 – 300	Code 70; Engine overheat, low speed (starboard)	2009 - Service Codes	
75 – 300	O-ring, P/N 314728, supersedes to P/N 354731	2010 - Product Improvements	
90	Manual tilt midsection not compatible with trim and tilt	2008 - Midsection	
90 – 250	Water pump grommet and seal application	2008 - Cooling System	
115	S2-Type Gearcase - information	2008 - Gearcase	
115	Exhaust valve operation	2008 - Midsection	
115	Exhaust valve testing	2008 - Midsection	
115	Exhaust valve relay module testing	2008 - Midsection	
115	Over-oiling issue	2009 - Oiling Systems	
115 – 130	How to identify S2-type gearcase	2009 - Gearcase	
115 – 130	Oil recirculation changes 2008 & older/2009 & newer	2009 - Oiling Systems	
115 – 130	S2-Type gearcase - Pinion screw torque	2009 - Gearcase	
115 – 130	S2-Type gearcase - Stuck driveshaft	2009 - Gearcase	
115 – 130	Air Intake and Air Silencer	2010 - Product Improvements	
115 – 200	60° models only - Melted propeller hub, modification to help prevent	2008 - Cooling System	
115 – 200	60° models only - Steering arm to cover bumper	2008 - Engine Covers	
115 – 200	60° models only - Rear oil manifold; multi-point oiling	2008 - Oiling System	



Model	Topic	Where to Find (Book Year /Section)	Other References
115 – 200	Oil to fuel hose eliminated	2008 - Oiling System	
115 – 200	60° models - Water separating fuel filter kit	2008 - Parts & Accessories	
115 – 200	60° models - revised oil hose routing	2008 - Powerhead	
115 – 200	60° models - Upper mount screw change and service tip	2008 - Powerhead	
115 – 200	60° models - Powerhead replacement kits have revised oil hose routing	2009 - Powerhead	
115 – 200	60° models - New flywheel cover	2009 - Rigging	
115 – 200	60° models - Ignition coil mounting bracket, mounting location changed	2009 - Ignition & Electrical	
115 – 200	60° models - Starter cable service kit, improves starting	2009 - Ignition & Electrical	
115 – 200	60° models - water separating fuel filter added to 2009 models	2009 - Fuel System	
115 – 200	60° models - vapor separator, P/N 5006084, pressure test port changed	2009 - Fuel System	
115 – 200	60° models - Rear oil manifold bracket	2009 - Oiling Systems	
115 – 200	60° models - Improved shift lever, eliminates lost motion	2009 - Gearcase	
115 – 200	60° models only - Oil filter installation	2008 - Rigging 2009 - Rigging	
115 – 200	60° models only - Flywheel Stud	2010 - Product Improvements	
115 – 250	60° V4 and 60° V6/90° V6 starter motors are different	2008 - Ignition & Electrical	
115 – 250	60° V4 and 60° V6/90° V6 starter motors differences and changes	2009 - Ignition & Electrical	
115 – 250	Exhaust relief muffler not serviceable	2008 - Midsection	
115 – 250	Oil switch improvement	2008 - Oiling System	
115 – 250	Auxiliary battery charge kit	2008 - Parts & Accessories	
115 – 250	Trim switch extension kit	2008 - Parts & Accessories	
115 – 250	Exhaust back pressure sensor damage	2008 - Powerhead	
115 – 250	Code 38 issue	2008 - Rigging	
115 – 300	2008 and newer - Service fuel injector electrical connectors	2009 - Fuel System	
115 – 300	Code 77; Start assist circuit over current detected - false setting	2009 - Service Codes	

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Model	Topic	Where to Find (Book Year /Section)	Other References
115 – 300	New engine wiring harnesses	2009 - Ignition & Electrical	
115 H.O. – 130	New water pump kit, P/N 5007556	2009 - Cooling Systems	
115 H.O. – 130	New impeller housing, P/N 5007554	2009 - Cooling Systems	
115 H.O. – 130	V4 Exhaust adapter improvements	2009 - Midsection	
115 H.O. – 300	EMM changes	2009 - Engine Management Module	
115 H.O. – 300	Inductive ignition new on these models	2009 - Ignition & Electrical	
150 – 200	60° models only - Air silencer change can improve performance	2008 - Fuel System	
150 – 200	60° models - Powerhead alignment	2009 - Powerhead	
150 – 200	60° models - New inner exhaust housing, P/N 354148, improved water flow	2009 - Midsection	
150 – 250	M2-Type Gearcase - information	2008 - Gearcase	
150 – 250	L2-Type Gearcase - information	2008 - Gearcase	
150 – 250	Forward gear and bearing changes	2008 - Gearcase	
150 – 250	Propeller shaft bearing housing retainer tabs	2008 - Gearcase	
150 – 250	White "Stars and Stripes" decal kits	2008 - Parts & Accessories	
150 – 250	"Stars and Stripes" decal kits	2009 - Parts & Accessories	
150 – 300	How to identify L2-type gearcase	2009 - Gearcase	
150 – 300	Powerhead installation, apply Permatex #2 to gasket area	2009 - Powerhead	
200 – 250	90° models - New trim and tilt assembly	2008 - Midsection	
200 – 250	Engine idle temperature	2008 - Cooling System	
200 – 250	Thermostat venting	2008 - Cooling System	Service Bulletin 2005-03(S)
200 – 250	Melted propeller hub, modifications to help prevent	2008 - Cooling System	Service Bulletin 2005-04(S)
200 – 250	Fuel inlet hose clip	2008 - Engine Covers	Warranty Bulletin 2005-01(W)
200 – 250	DI models only - Alternate spark plug for extended low speed operation	2008 - Ignition & Electrical	



Model	Topic	Where to Find (Book Year /Section)	Other References
200 – 250	Spark plug life	2008 - Ignition & Electrical	Service Bulletin 2005-05(S)
200 – 250			Service Bulletin 2006-02(S)
200 – 250	Oil to fuel hose eliminated	2008 - Oiling System	
200 – 250	90° models - Oil recirculation changes 2004-2006 to 2007 & newer	2008 - Oiling System	
200 – 250	90° models - Flushing adapter	2008 - Parts & Accessories	
200 – 250	90° models - Powerhead replacement kits	2008 - Powerhead 2009 - Powerhead	
200 – 250	2005 models - Oil priming issue	2008 - Rigging	Service Bulletin 2004-02(D)
200 – 250	90° models - Adapter kit, P/N 5007589	2009 - Midsection	
200 – 250	90° (3.3 L) models - Adapter, P/N 5001496	2009 - Midsection	
200 – 250	Issue with flushing adapter, P/N 775385	2009 - Cooling System	
200 – 250	Knock sensors added to these models	2010 - Product Improvements	
200 – 250	3.3 L Models - Water plate, P/N 347251	2010 - Service Tips	
200 – 300	90° models - Ignition coil mounting location, coil damage	2009 - Ignition & Electrical	
200 – 300	90° models - Pinched oil lines	2009 - Oiling Systems	
200 – 300	90° models - Powerhead to adapter gaskets different	2009 - Midsection	
200 – 300	90° models - Trim and tilt assembly improvements	2009 - Midsection	
200 – 300	90° models - New pinion bearing, P/N 5007751	2009 - Gearcase	
200 – 300	90° models - Trim Limit Rod, P/N 354185	2010 - Product Improvements	
250 H.O.	Important engine management software update	2009 - Engine Management Software	Warranty Bulletin 2008-04 (W)
250 H.O.	Water pump installation	2009 - Cooling Systems	Warranty Bulletin 2008-04(W)
250 H.O. – 300	Important engine management software update	2009 - Engine Management Software	Warranty Bulletin 2008-06 (W)
250 H.O. – 300	Codes 1 through 6: Excessive knock detected	2009 - Service Codes	

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Model	Topic	Where to Find (Book Year /Section)	Other References
250 H.O. – 300	Codes 7 and 8; Knock sensor open circuit detected	2009 - Service Codes	
250 H.O. – 300	Knock sensors added to these models	2009 - Ignition & Electrical	
250 H.O. – 300	New water pump kit, P/N 5007972	2009 - Cooling Systems	
250 H.O. – 300	New impeller housing, P/N 5007968	2009 - Cooling Systems	
250 H.O. – 300	Temperature sensor and clamp servicing	2009 - Cooling Systems	Warranty Bulletin 2008-02(W)
250 H.O. – 300	New water pump kit, P/N 5007972	2009 - Cooling Systems	
250 H.O. – 300	New impeller housing, P/N 5007968	2009 - Cooling Systems	
250 H.O. – 300	Temperature sensor and clamp servicing	2009 - Cooling Systems	Warranty Bulletin 2008-02(W)
250 H.O. – 300	Melted propeller hub with gearcase seals pushed out, tip to check for blocked cooling water passage	2009 - Cooling Systems	
250 H.O. – 300	90° (3.4 L) models F suffix - Adapter, P/N 5007973	2009 - Midsection	
250 H.O. – 300	90° (3.4 L) models C or S suffix - Adapter, P/N 5007971	2009 - Midsection	
300	Important engine management software update	2009 - Engine Management Software	Warranty Bulletin 2008-03 (W)
300	M2-Type gearcase, alignment pins	2009 - Gearcase	
4-stroke	4-Stroke accessories and service kits	2009 - Parts & Accessories	
All	Overboard indicator requirements	2008 - Cooling System 2009 - Cooling System	
All	2008 Water pressure chart	2008 - Cooling System	
All	2009 Water pressure chart	2009 - Cooling System	
All	Pressure relief valve improvement	2008 - Cooling System	
All	Melted propeller hub, modifications to help prevent	2008 - Cooling System 2009 - Cooling System	
All	EMM LEDs	2008 - Engine Management Module	
All	2008 EMM not compatible with older engines	2008 - Engine Management Module	
All	Fuel injectors - Ball In Plunger (BIP)	2008 - Fuel System	
All	Unleaded gasoline	2008 - Fuel System 2009 - Fuel System	Service Bulletin 2006-06(S)
All	Alcohol extended fuels	2009 - Fuel System	



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All	Fuel related problem prevention	2009 - Fuel System	
All	Fuel contamination	2008 - Fuel System	
All	Fuel additives	2008 - Fuel System	
All	Fuel system maintenance	2008 - Fuel System 2009 - Fuel System	
All	Fuel flow compensation	2008 - Fuel System	
All	Do NOT mix and match fuel injectors - Nozzle and seat angles	2008 - Fuel System	
All	Injector service kit - Fuel injector crush ring	2008 - Fuel System	
All	Fuel pressure test fittings changed	2008 - Fuel System	
All	Relieving fuel system pressure	2008 - Fuel System	
All	Fuel pressure gauge kits	2008 - Fuel System	
All	Fuel lift pump	2008 - Fuel System	
All	Fuel pressure and vacuum tests	2008 - Fuel System	
All	Fuel control adjustment not available	2008 - Fuel System	
All	2008 Gearcase application chart	2008 - Gearcase	
All	2009 Gearcase application chart	2009 - Gearcase	
All	Gearcase identification chart	2009 - Gearcase	
All	How to identify gear ratios	2009 - Gearcase	
All	Spark plug chart	2008 - Ignition & Electrical 2009 - Ignition & Electrical	
All	Spark plug life	2008 - Ignition & Electrical	Service Bulletin 2006-01(S)
All	No lubricant on TPS linkage	2008 - Ignition & Electrical	
All	TPS installation tip	2008 - Ignition & Electrical	
All	TPS calibration	2008 - Ignition & Electrical 2009 - Ignition & Electrical	
All	Starter motor service parts	2008 - Ignition & Electrical 2009 - Ignition & Electrical	
All	Neutral switch and shift interrupt switch functions	2008 - Ignition & Electrical	
All	Circuit testing with inductive pick-up timing light	2008 - Ignition & Electrical	

Model	Topic	Where to Find (Book Year /Section)	Other References
All	Oil requirements	2008 - Oiling System 2009 - Oiling System	
All	Oil type setting	2008 - Oiling System	
All	Powerhead identification tag	2008 - Powerhead 2009 - Powerhead	
All	Powerhead rebuilding	2008 - Powerhead	
All	Engine model number on serial number tag different than model number stored in EMM	2008 - Powerhead 2009 - Powerhead	
All	Connecting rod screw installation	2008 - Powerhead	
All	Improper Gel-Seal II application	2008 - Powerhead	
All	Checklist to return outboard to service after powerhead replacement/rebuild	2008 - Powerhead 2009 - Powerhead	
All	Break-in oil cycle	2008 - Powerhead 2009 - Powerhead	
All	Different WOT rpm on multiple engine applications - propeller	2008 - Rigging	OMC Service Bulletin 2092
All	Poor acceleration - propeller	2008 - Rigging	
All	Stern bracket alternate mounting holes eliminated	2008 - Rigging	
All	Key switch accessory circuit (Amperage limit)	2008 - Rigging 2009 - Rigging	
All	Key switch orientation (water drain)	2008 - Rigging 2009 - Rigging	
All	Flywheel cover isolator installation	2008 - Rigging	
All	Lower motor cover installation	2008 - Rigging	
All	Cable retainer clips - proper installation	2008 - Rigging	
All	Oil priming tip	2008 - Rigging	
All	Tie bar adjustment	2008 - Rigging	
All	RPM Quick reference chart	2008 - Rigging	
All	Throttle cable adjustment	2008 - Rigging 2009 - Rigging	
All	Code 11; TPS out of idle range	2008 - Service Codes	



Model	Topic	Where to Find (Book Year /Section)	Other References
All	Code 17; 55 volt circuit below range	2008 - Service Codes	
All	Code 37; Water in fuel	2008 - Service Codes	
All	Code 97; Intermittent switched B+ detected	2008 - Service Codes	
All	RPM Quick reference chart	2009 - Rigging	
All	How to use RPM quick reference chart	2009 - Rigging	
All	Oetiker clamp selection	2009 - Rigging	
All	Oetiker clamp selection chart	2009 - Rigging	
All	Freeze frame data feature	2009 - Diagnostic Software	
All	Changes to profile screens	2009 - Diagnostic Software	
All	Two-minute history report, new feature on v 3.0	2009 - Diagnostic Software	
All	Changes to fuel control feature	2009 - Diagnostic Software	
All	Stop break-in feature removed	2009 - Diagnostic Software	
All	Ignition voltage display - inductive ignition models	2009 - Diagnostic Software	
All	Error message - Windows NT v 5.0	2009 - Diagnostic Software	
All	Error message - Invalid Chipset	2009 - Diagnostic Software	
All	Diagnostic power supply, P/N 587005	2009 - Diagnostic Software	
All	EMM service chart	2009 - Engine Management Module	
All	Codes 81 through 86; Ignition timing circuit open detected	2009 - Service Codes	
All	Code 97; Intermittent switched B+ detected	2009 - Service Codes	
All	Codes 101 through 106; Ignition timing circuit short detected	2009 - Service Codes	
All	New crankshaft position sensor, P/N 587014	2009 - Ignition & Electrical	
All	Troubleshooting 5 volt sensor circuit	2009 - Ignition & Electrical	
All	Change to starter solenoid servicing	2009 - Ignition & Electrical	Service Bulletin 2008-04(S)
All	Corrosion	2009 - Ignition & Electrical	
All	Galvanic corrosion	2009 - Ignition & Electrical	
All	Stray current corrosion	2009 - Ignition & Electrical	
All	Corrosion protection testing	2009 - Ignition & Electrical	
All	Fuel control adjustment not available	2009 - Fuel System	
All	Check fuel injectors when water found in fuel	2009 - Fuel System	

Model	Topic	Where to Find (Book Year /Section)	Other References
All	<i>Evinrude / Johnson XD-100</i> outboard oil	2009 - Oiling Systems	
All	<i>Evinrude / Johnson XD-50</i> outboard oil	2009 - Oiling Systems	
All	<i>Evinrude / Johnson XD-30</i> outboard oil	2009 - Oiling Systems	
All	Oil type setting, H.O. models <i>XD-100</i> setting not available	2009 - Oiling Systems	
All	Oil type setting, use TCW-3 setting with <i>XD-100</i> oil (extreme applications)	2009 - Oiling Systems	
All	Multi-point oiling	2009 - Oiling Systems	
All	Tip to check for aerated cooling water	2009 - Cooling Systems	
All	Mounting screw torque	2009 - Gearcase	
All	Gear oil smell	2009 - Gearcase	
All	Propeller shaft bearing housings	2010 - Product Improvements	
All	Use of electrical grease	2010 - Service Tips	
All	Electrical test adaptors	2010 - Service Tips	
All	Water vapor from exhaust relief	2010 - Service Tips	
All	Engine cover care	2010 - Service Tips	
ICON Control	Features	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON rigging kits	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON conversion kits	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON rigging kit selection chart	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON remote control system installation	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	Master power/key switch	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	Dual lever binnacle mount remote controls	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON buss cables	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	Engine identity	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	Setting up multiple engine applications	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	Station Protect	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON Remote control system and engine management software	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON remote control trim plates	2010 - <i>Evinrude ICON</i> Remote Control	
ICON Control	ICON accessory power relay	2010 - <i>Evinrude ICON</i> Remote Control	



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<i>ICON</i> Control	<i>ICON</i> gateway module	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	<i>ICON</i> hubs (6-port)	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Shift and throttle actuator calibration	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	<i>ICON</i> switch panels	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 107; Control communication error	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 108; <i>ICON</i> failsafe mode	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 109; Control hardware fault	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 110; Trim switch module communication fault	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 111; Electronic servo-module communication fault	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 149; Throttle actuator sensor fault	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 150; Throttle actuator motion fault	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 151; Shift actuator sensor fault	2010 - <i>Evinrude ICON</i> Remote Control	
<i>ICON</i> Control	Code 152; Shift actuator motion fault	2010 - <i>Evinrude ICON</i> Remote Control	
<i>I-Command</i>	Fuel Level Does Not Display	2008 - Rigging	
<i>I-Command</i>	Alternator voltage incorrect display	2008 - Rigging	
<i>I-Command</i>	Trim level does not display or is inaccurate	2008 - Rigging	
<i>I-Command</i>	<i>I-Command</i> digital product selection guide	2009 - <i>I-Command</i>	
<i>I-Command</i>	<i>I-Command</i> network design and gauge simulator tool	2009 - <i>I-Command</i>	
<i>I-Command</i>	Network tester kit, P/N 765023	2009 - <i>I-Command</i>	
<i>I-Command</i>	GPS Head Unit Kit, P/N 764592	2009 - <i>I-Command</i>	
<i>I-Command</i>	Device-net style connectors	2009 - <i>I-Command</i>	Parts & Accessories Bulletin 2008-01(P)
<i>I-Command</i>	Water pressure sensor kit, P/N 5006214	2009 - <i>I-Command</i>	
<i>I-Command</i>	Water pressure sensor kit, P/N 764195	2009 - <i>I-Command</i>	
<i>I-Command</i>	Pre-programmed water pressure sensor kits	2009 - <i>I-Command</i>	Parts & Accessories Bulletin 2008-03(P)
<i>I-Command</i>	Pre-programmed fuel level converter kits	2009 - <i>I-Command</i>	Parts & Accessories Bulletin 2008-04(P)
<i>I-Command</i>	Fluid level converter kit, P/N 764166	2009 - <i>I-Command</i>	
<i>I-Command</i>	How to set up fuel management options	2009 - <i>I-Command</i>	
<i>I-Command</i>	<i>I-Command</i> gauge installation (dashboard hole size)	2009 - <i>I-Command</i>	

Model	Topic	Where to Find (Book Year /Section)	Other References
<i>I-Command</i>	How to reset <i>I-Command</i> gauge to factory default settings	2009 - <i>I-Command</i>	
<i>I-Command</i>	Avoid radar antenna when installing GPS module	2009 - <i>I-Command</i>	
<i>I-Command</i>	Fuel level sender resistance different in North America and Europe	2009 - <i>I-Command</i>	
<i>I-Command</i>	Installing oil level converter kit	2009 - <i>I-Command</i>	
<i>I-Command</i>	Low battery voltage when configuring fuel level converter	2009 - <i>I-Command</i>	
<i>I-Command</i>	Instancing	2010 - <i>I-Command</i>	
<i>I-Command</i>	<i>I-Command</i> and 15 – 90 HP models	2010 - <i>I-Command</i>	
<i>I-Command</i>	Power supply kits, P/N 764157 or P/N 764159	2010 - <i>I-Command</i>	
<i>I-Command</i>	Warranty procedures for <i>I-Command</i> digital gauges	2010 - <i>I-Command</i>	
<i>I-Command</i>	<i>I-Command</i> bulletins	2010 - <i>I-Command</i>	
P&A	OMS rebuild kits available	2009 - Parts & Accessories	
P&A	Water separating fuel filter gasket issue	2009 - Parts & Accessories	
P&A	OMS replacement checklist	2009 - Parts & Accessories	
P&A	TBX Torsion bushing damage	2009 - Parts & Accessories	
P&A	Rectifier/regulator, no purple wire	2009 - Parts & Accessories	Parts & Accessories Bulletin 2001-01(P)
P&A	Frequently requested part numbers	2010 - Parts & Accessories	
P&A	Reverse gear availability	2010 - Parts & Accessories	
Propeller	<i>Hydrus</i> propeller exhaust ring	2009 - Rigging	Parts & Accessories Bulletin 2005-01(P)
Propeller	Gear ratio and propeller selection (.54 vs. .58 ratio gearcases)	2009 - Rigging	
Propeller	Demo-prop program	2009 - Parts & Accessories	
Propeller	Propellers for 15 – 30 HP models	2010 - Parts & Accessories	
Propeller	New aluminum propellers	2010 - Parts & Accessories	
Propeller	Installation tip: Interchangeable hub propeller	2010 - Parts & Accessories	
Propeller	Identifying correct propeller part numbers	2010 - Parts & Accessories	
Software	PC Specifications for diagnostic software	2008 - Diagnostic Software 2009 - Diagnostic Software	
Software	USB to serial adapters for diagnostic software	2008 - Diagnostic Software	



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Software	New USB to serial adapters for diagnostic software	2009 - Diagnostic Software	
Software	USB to serial adapter set up	2008 - Diagnostic Software	
Software	<i>Evinrude Diagnostic</i> software program update, v 2.0	2008 - Diagnostic Software	
Software	<i>Evinrude Diagnostic</i> software program update, v 3.0	2009 - Diagnostic Software	Service Bulletin 2008-05(S)
Software	<i>Evinrude Diagnostic</i> software program update, v 4.0	2010 - Evinrude Diagnostic Software	
Software	Software versions and revisions	2008 - Engine Management Software 2009 - Engine Management Software	
Software	Software revision updates	2008 - Engine Management Software 2009 - Engine Management Software	
Software	Software revision number changes	2008 - Engine Management Software 2009 - Engine Management Software	
Software	Software version updates	2008 - Engine Management Software 2009 - Engine Management Software	
Software	Inline update - adds TPS calibration	2008 - Engine Management Software	
Software	Inline update 2 - adds TPS calibration and improved calibrations	2009 - Engine Management Software	
Software	<i>I-Command</i> and engine management software updates	2009 - Engine Management Software	
Software	Mismatch error received during software upload	2008 - Engine Management Software	
Software	90° V6 software update - dual temperature monitoring	2008 - Engine Management Software	Warranty Bulletin 2007-01(W)
Software	Fuel adjustment feature not available	2008 - Engine Management Software	
Software	Data Logging	2010 - Evinrude Diagnostic Software	
Software	Understanding Knock Profiles	2010 - Evinrude Diagnostic Software	
Stern Drive	Stern drive parts inquiries	2009 - Parts & Accessories	

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Tools	Gearcase alignment pin kit	2008 - Gearcase	Service Bulletin 2006-03(S)
Tools	S-2 driveshaft tools	2008 - Gearcase	Service Bulletin 2005-06(S)
Tools	60° models - Powerhead alignment tool	2008 - Powerhead	Service Bulletin 2006-03(S)
Tools	New tools for M2-Type and L2-Type gearcases	2009 - Gearcase	Service Bulletin 2008-03(S)
Tools	Propeller shaft seal tools, allow replacement of seals without gearcase disassembly	2009 - Gearcase	Service Bulletin 2008-02(S)
Tools	Gearcase alignment gauge	2008 - Gearcase	Service Bulletin 2004-011(S)
Tools	Enigne lift kit, P/N 354717	2010 - Service Tools	Predelivery Bulletin 2008-02(D)
Tools	Stator test adaptor, P/N 354719	2010 - Service Tools	Service Manual
Tools	Diagnostic power supply, P/N 587005	2010 - Service Tools	Service Manual
Tools	Accessory power cable kit, P/N 5008092	2010 - Service Tools	
Tools	Bearing Installers, P/N 321428 and P/N 335820	2010 - Service Tools	
Tools	Alignment gauge puller, P/N 354718	2010 - Service Tools	Service Manual
Tools	Wrist pin retainer tool, P/N 354720	2010 - Service Tools	Service Manual



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