Cleanliness and Care of Outboard Motor

A marine power product is a combination of many machined, honed, polished and lapped surfaces with tolerances that are measured in the ten thousands of an inch. When any product component is serviced, care and cleanliness are important. Throughout this manual, it should be understood that proper cleaning, and protection of machined surfaces and friction areas is a part of the repair procedure. This is considered standard shop practice even if not specifically stated.

Whenever components are removed for service, they should be retained in order. At the time of installation, they should be installed in the same locations and with the same mating surfaces as when removed.

Before raising or removing and outboard engine from a boat, the following precautions should be adhered to:

(1) Check that flywheel is secured to end of crankshaft with a locknut and lifting eye is threaded into flywheel a minimum of 5 turns.

(2) Connect a hoist of suitable strength to the lifting eye.

In addition, personnel should not work on or under an outboard which is suspended. Outboards should be attached to work stands, or lowered to ground as soon as possible.

We reserve the right to make changes to this manual without prior notification.

Refer to dealer service bulletins for other pertinent information concerning the products described in this manual.

Service Manual Outline

Section 1 - General Information & Specifications

Section 2 - Electrical & Ignition

Section 3 - Fuel System & Carburetion

Section 4 - Powerhead

Section 5 - Mid-Section

Section 5A - Gear Housing (Non-Shifting)

Section 5B - Gear Housing (Shiftable-F/N)

Section 6 - Rewind Starter Assembly

Notice

Throughout this publication, “Dangers”, “Warnings” and “Cautions” (accompanied by the International HAZARD Symbol ⚠) are used to alert the mechanic to special instructions concerning a particular service or operation that may be hazardous if performed incorrectly or carelessly. **OBSERVE THEM CAREFULLY!**

These “Safety Alerts” alone cannot eliminate the hazards that they signal. Strict compliance to these special instructions when performing the service, plus “Common Sense” operation, are major accident prevention measures.

⚠ DANGER

DANGER - Immediate hazards which WILL result in severe personal injury or death.

⚠ WARNING

WARNING - Hazards or unsafe practices which COULD result in severe personal injury or death.

⚠ CAUTION

Hazards or unsafe practices which could result in minor personal injury or product or property damage.

Notice to Users of This Manual

This service manual has been written and published by the service department of Mercury Marine to aid our dealers’ mechanics and company service personnel when servicing the products described herein.

It is assumed that these personnel are familiar with the servicing procedures of these products, or like or similar products manufactured and marketed by Mercury Marine, that they have been trained ing the recommended servicing procedures of these products which includes the use of mechanics’ common hand tools and the special Mercury Marine or recommended tools from other suppliers.

We could not possibly know of and advise the service trade of all conceivable procedures by which a service might be performed and of the possible hazards and/or results of each method. We have not undertaken any such wide evaluation. Therefore, anyone who uses a service procedure and/or tool, which is not recommended by the manufacturer, first must completely satisfy himself that neither his nor the products safety will be endangered by the service procedure selected.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. As required, revisions to this manual will be sent to all dealers contracted by us to sell and/or service these products.

It should be kept in mind, while working on the product, that the electrical system and ignition system is capable of violent and damaging short circuits or severe electrical shocks. When performing any work where electrical terminals could possibly be grounded or touched by the mechanic, the battery cables should be disconnected at the battery.

Any time the intake or exhaust openings are exposed during service they should be covered to protect against accidental entrance of foreign material which could enter the cylinders and cause extensive internal damage when the engine is started.

It is important to note, during any maintenance procedure replacement fasteners must have the same measurements and strength as those removed. Numbers on the heads of the metric bolts and on the surfaces of metric nuts indicate their strength. Customary bolts use radial lines for this purpose, while most customary nuts do not have strength markings. Mismatched or incorrect fasteners can result in damage or malfunction, or possibly personal injury. Therefore, fasteners removed should be saved for reuse in the same locations whenever possible. Where the fasteners are not satisfactory for re-use, care should be taken to select a replacement that matches the original.

GENERAL INFORMATION AND SPECIFICATIONS

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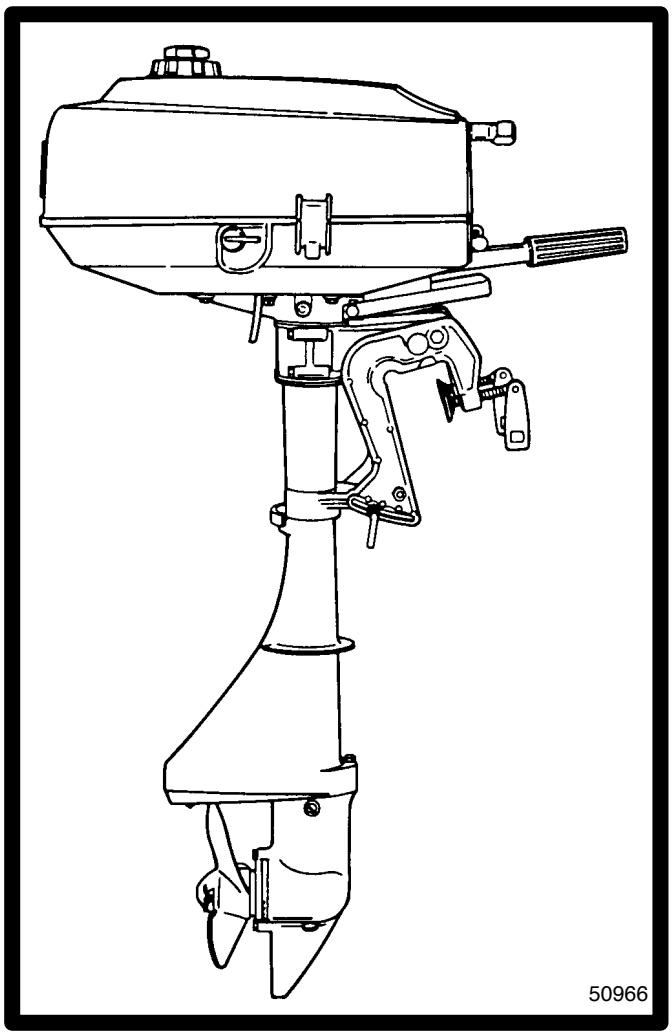

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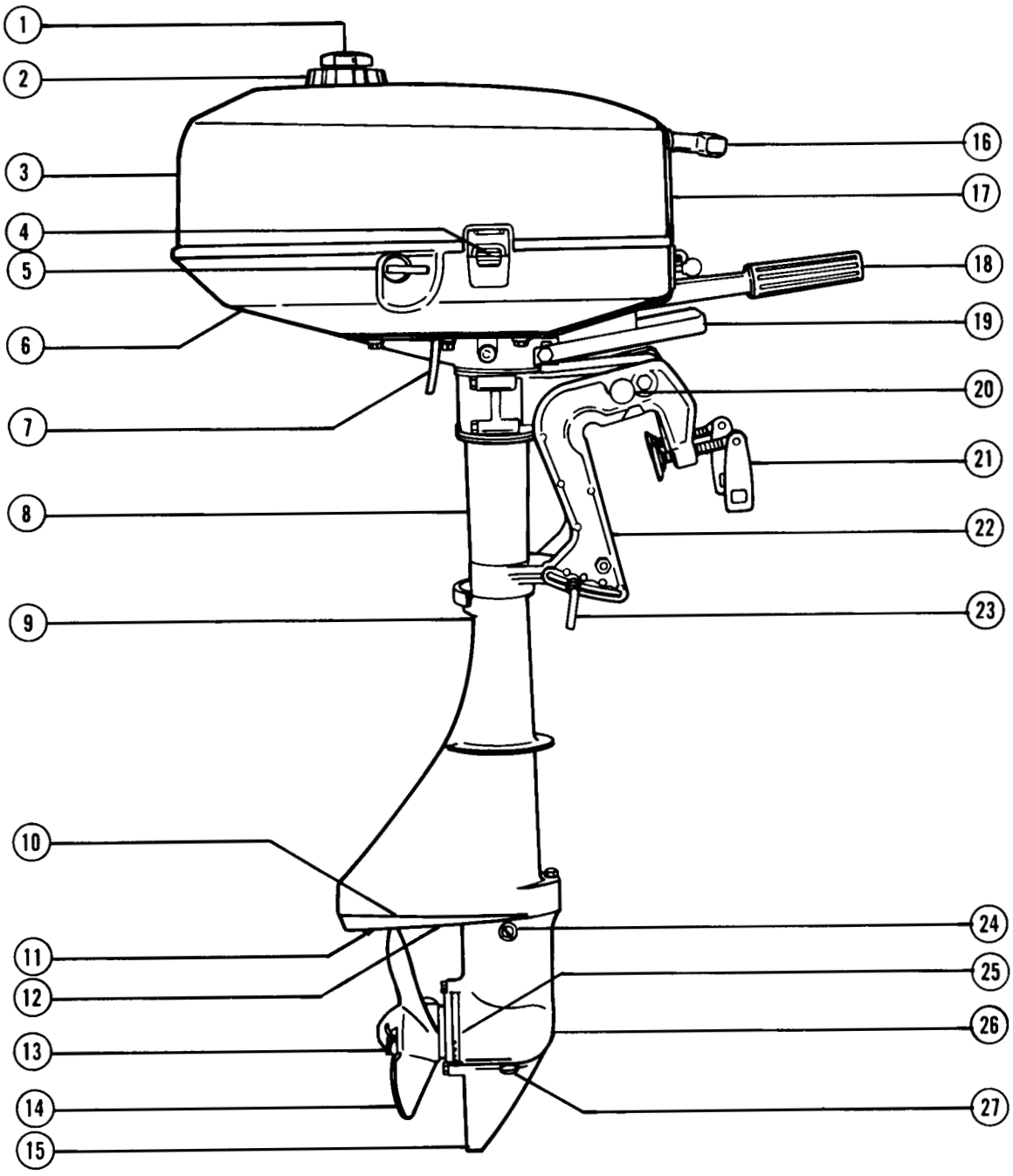
Motors Parts Identification



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1 - Air Vent Knob
2 - Fuel Tank Cap
3 - Cowl
4 - Cowl Latch (Model 2.5/3.0/3.3)
5 - Fuel Cock Knob
6 - Spark Plug Access Door
7 - “Tell-Tale” Outlet
8 - Driveshaft Housing
9 - Exhaust Relief Outlet
10- Anti-Ventilation Plate
11- Exhaust Outlet
12- Anodic Plate
13- Cotter Pin
14- Propeller
15- Skeg
16- Starter Handle
17- Control Panel
18- Tiller Handle
19- Lift Handle
20- Tilt Lock Pin
21- Clamp Screw (2)
22- Clamp Bracket (2)
23- Tilt Angle Adjustment Pin
24- OIL LEVEL Plug
25- Cooling Water Intake
26- Gear Housing
27- OIL FILL Plug

General Specifications

NOTE: Other specifications (torque, etc) are listed in the respective sections.

Dimensions

Overall Length w/Tiller Handle ..... 23-1/4 in.(591mm)

Overall Width ..... 8-1/2 in.(215mm)

Overall Height (Short Shaft) ..... 38 in. (965mm)

Recommended Boat Transom Height .. 15 in. (381mm)

Weight (Short Shaft) ..... 27.5 lb. (12.5kgs)

Powerhead

Horsepower (Model 2.2) ..... 2.2 @ 5000 RPM

Kilowatts* ..... 1.6 @ 5000 RPM

Horsepower (Model 2.5) ..... 2.5 @ 5000 RPM

Kilowatts* ..... 1.9 @ 5000 RPM

Horsepower (Model 3.0) ..... 3.0 @ 5000 RPM

Kilowatts* ..... 2.2 @ 5000 RPM

Horsepower (Model 3.3) ..... 3.3 @ 5000 RPM

Kilowatts* ..... 2.5 @ 5000 RPM

RPM Range at Full Throttle

Model 2.2 ..... 4200 - 5200

Model 2.5 ..... 4000 - 5000

Model 3.0 ..... 4500 - 5500

Model 3.3 ..... 4500 - 5500

Type ..... Two-Stroke Cycle

Number of Cylinders 1

Displacement ..... 4.6 cu. in. (74.6cc)

Bore ..... 1.85 in. (47mm)

Dia. 0.5mm Oversized ..... 1.869 in. (47.5mm)

Out of Round (Max.) ..... 0.002 in. (0.05mm)

Taper (Max.) ..... 0.002 in. (0.05mm)

Crankshaft

Runout (Max.) ..... 0.001 in. (0.05mm)

Connecting Rod Deflection ... 0.022 in. to 0.056 in. (0.6mm to 1.5mm)

Stroke ..... 1.69 in. (43mm)

Intake System ..... Reed Valve

Reed Block

Reed Stop Opening ..... 0.236 in. to 0.244 in. (6mm to 6.2mm)

Scavenging System ..... Loop Charge

Exhaust System ..... Thru-Prop

Lubrication System ..... Pre-Mixed Gasoline and Oil

Cooling System ..... Water-Cooled

Starting System ..... Manual Start

*Measured at the propeller shaft in accordance with ICOMIA 28

Fuel System

Carburetor ..... Center Bowl Gravity Feed

Float Level (All Models) ..... 0.090 in. (from gasket) (2.0mm) Ref. Section 3

Main Jet (Model 2.2) ..... #96

Main Jet (Model 2.5) ..... #92

Main Jet (Model 3.0) ..... #92

Main Jet (Model 3.3) ..... #94

Idle RPM ..... 900 - 1000

Fuel ..... Pre-Mixed Gasoline and Oil

Recommended Gasoline ..... Automotive Leaded or Lead-Free Gasoline

Recommended Oil ..... Quicksilver 2-Cycle Outboard Oil

Gasoline/Oil Ratio ..... 50:1 (Including Break-In)

Integral Fuel Tank Capacity

U.S. Gallons 0.375

Imperial Gallons 0.3

Liters 1.4

Ignition System

Ignition Type (Models 2.0/2.5/3.0) .. Flywheel Magneto

Spark Plug (All Models) ..... NGK BPR6HS-10 or Champion RL87YC

Spark Plug Gap ..... 0.040 in. (1.0mm)

Breaker Point Gap ..... 0.012 - 0.016 in. (0.3mm - 0.4mm)

Primary Ignition Coil Test ..... 1.5 Ohms

Condenser Capacity ..... 0.22mF - 0.28mF

Secondary Ignition Coil Test

Primary Winding Resistance .... 0.81 - 1.09 Ohms

Secondary Winding Resistance .. 4250 - 5750 Ohms

Ignition Type [1993 Models (2.5/3.3)] ..... Capacitor Discharge

Test Specifications ..... Refer to DVA Chart