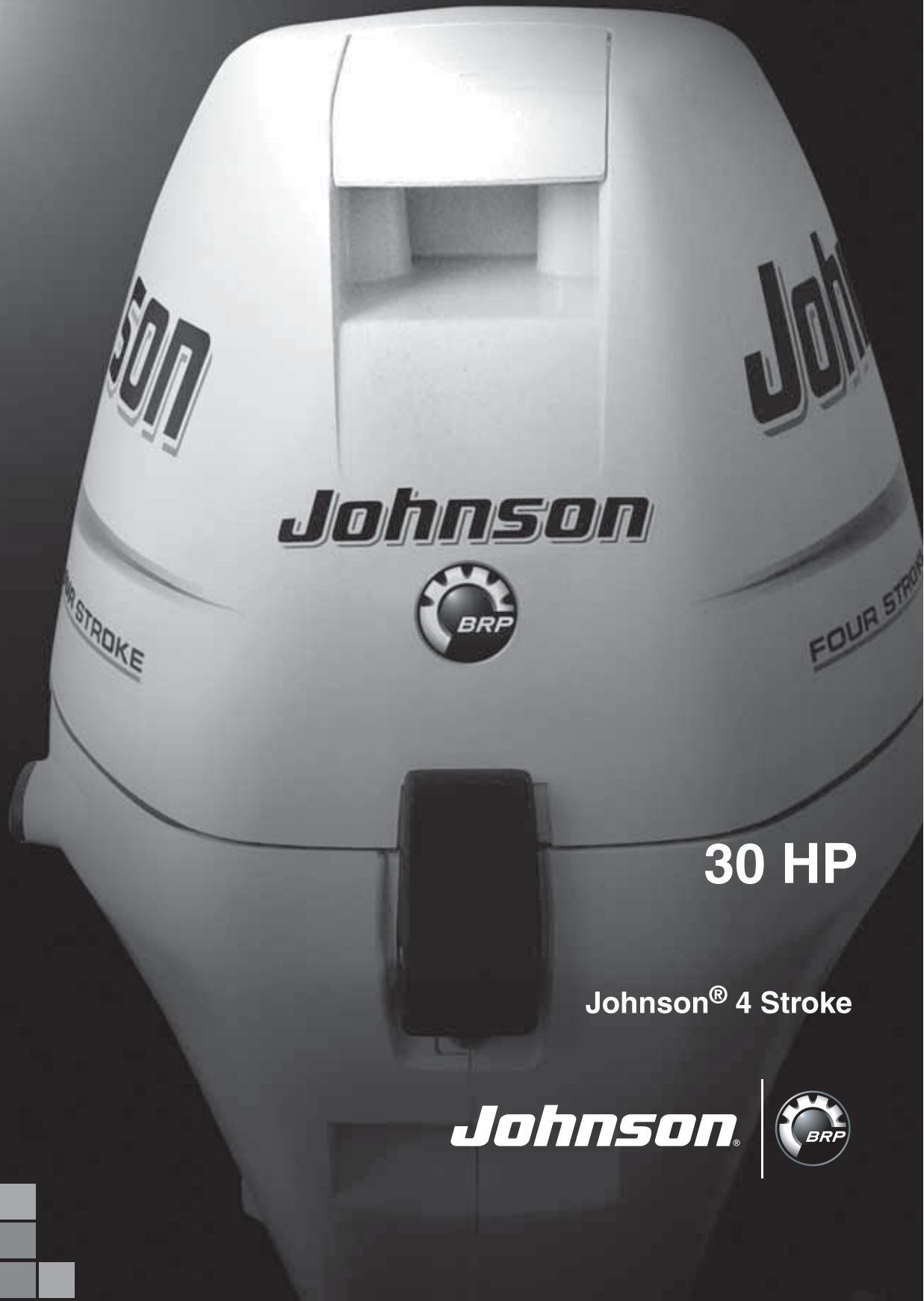


2007 Service Manual



30 HP

Johnson® 4 Stroke

Johnson



BRP US Inc.
Technical Publications
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Waukegan, Illinois 60085 United States

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SAFETY INFORMATION



Before working on any part of the outboard, read the SAFETY section at the end of this manual.

This manual is written for qualified, factory-trained technicians who are already familiar with the use of *Evinrude®/Johnson®* Special Tools. This manual is not a substitute for work experience. It is an organized guide for reference, repair, and maintenance of the outboard(s).

This manual uses the following signal words identifying important safety messages.

	DANGER	
Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.		

	WARNING	
Indicates a potentially hazardous situation which, if not avoided, CAN result in severe injury or death.		

	CAUTION	
Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate personal injury or property damage. It also may be used to alert against unsafe practices.		

IMPORTANT: Identifies information that will help prevent damage to machinery and appears next to information that controls correct assembly and operation of the product.

These safety alert signal words mean:

ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

Always follow common shop safety practices. If you have not had training related to common shop safety practices, you should do so to protect yourself, as well as the people around you.

It is understood that this manual may be translated into other languages. In the event of any discrepancy, the English version shall prevail.

To reduce the risk of personal injury, safety warnings are provided at appropriate times throughout the manual.

DO NOT make any repairs until you have read the instructions and checked the pictures relating to the repairs.

Be careful, and never rush or guess a service procedure. Human error is caused by many factors: carelessness, fatigue, overload, preoccupation, unfamiliarity with the product, and drugs and alcohol use, to name a few. Damage to a boat and outboard can be fixed in a short period of time, but injury or death has a lasting effect.

When replacement parts are required, use *Evinrude/Johnson Genuine Parts* or parts with equivalent characteristics, including type, strength and material. Using substandard parts could result in injury or product malfunction.

Torque wrench tightening specifications must be strictly followed. Replace any locking fastener (locknut or patch screw) if its locking feature becomes weak. Definite resistance to turning must be felt when reusing a locking fastener. If replacement is specified or required because the locking fastener has become weak, use only authorized *Evinrude/Johnson Genuine Parts*.

If you use procedures or service tools that are not recommended in this manual, YOU ALONE must decide if your actions might injure people or damage the outboard.



DANGER



Contact with a rotating propeller is likely to result in serious injury or death. Assure the engine and prop area is clear of people and objects before starting engine or operating boat. Do not allow anyone near a propeller, even when the engine is off. Blades can be sharp and the propeller can continue to turn even after the engine is off. Remove propeller before servicing and when running the outboard on a flushing device.

DO NOT run the engine indoors or without adequate ventilation or permit exhaust fumes to accumulate in confined areas. Engine exhaust contains carbon monoxide which, if inhaled, can cause serious brain damage or death.



WARNING



Wear safety glasses to avoid personal injury, and set compressed air to less than 25 psi (172 kPa).

The motor cover and flywheel cover are machinery guards. Use caution when conducting tests on running outboards. **DO NOT** wear jewelry or loose clothing. Keep hair, hands, and clothing away from rotating parts.

During service, the outboard may drop unexpectedly. Avoid personal injury; always support the outboard's weight with a suitable hoist or the tilt support bracket during service.

To prevent accidental starting while servicing, disconnect the battery cables at the battery. Twist and remove all spark plug leads.

The electrical system presents a serious shock hazard. **DO NOT** handle primary or secondary ignition components while outboard is running or flywheel is turning.

Gasoline is extremely flammable and highly explosive under certain conditions. Use caution when working on any part of the fuel system.

Protect against hazardous fuel spray. Before starting any fuel system service, carefully relieve fuel system pressure.

Do not smoke, or allow open flames or sparks, or use electrical devices such as cellular phones in the vicinity of a fuel leak or while fueling.

Keep all electrical connections clean, tight, and insulated to prevent shorting or arcing and causing an explosion.

Always work in a well ventilated area.

Replace any locking fastener (locknut or patch screw) if its locking feature becomes weak. Definite resistance to tightening must be felt when reusing a locking fastener. If replacement is indicated, use only authorized replacement or equivalent.

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INTRODUCTION

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INTRODUCTION

MODELS COVERED IN THIS MANUAL

MODELS COVERED IN THIS MANUAL

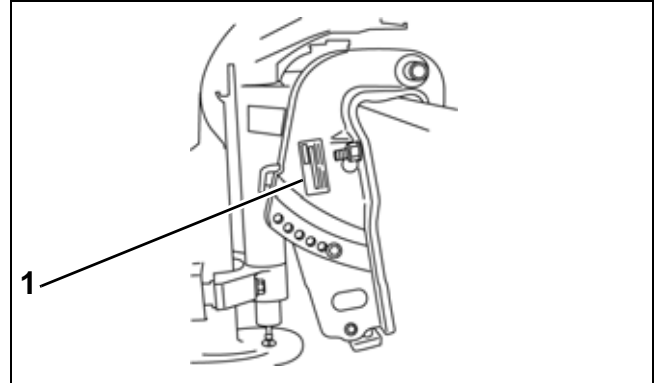
This manual covers service information on *Johnson* 30 HP 4-stroke models. Use this manual together with the proper Parts Catalog for part numbers and for exploded views of the outboard, which are a valuable aid to disassembly and reassembly.

This manual presents the U.S. values and dimensions first and the metric values and dimensions second, inside parentheses ().

Model Number	Start	Shaft	Steering
J30TEL4SUA	Electric	20in.	Tiller
J30PL4SUA	Electric	20in.	Remote

Identifying Model and Serial Numbers

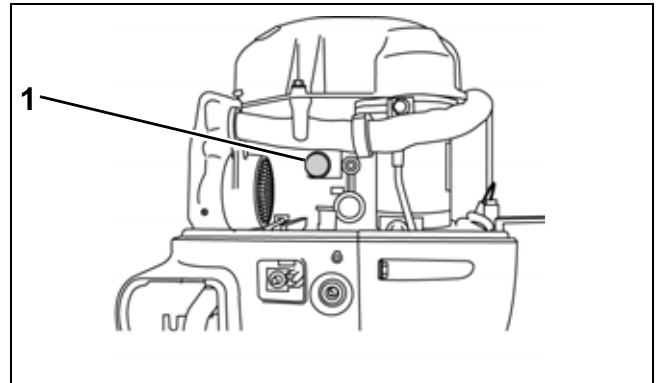
Outboard model and serial numbers are located on the swivel bracket and on the powerhead.



30 HP Swivel Bracket

1. Model and serial number

001968

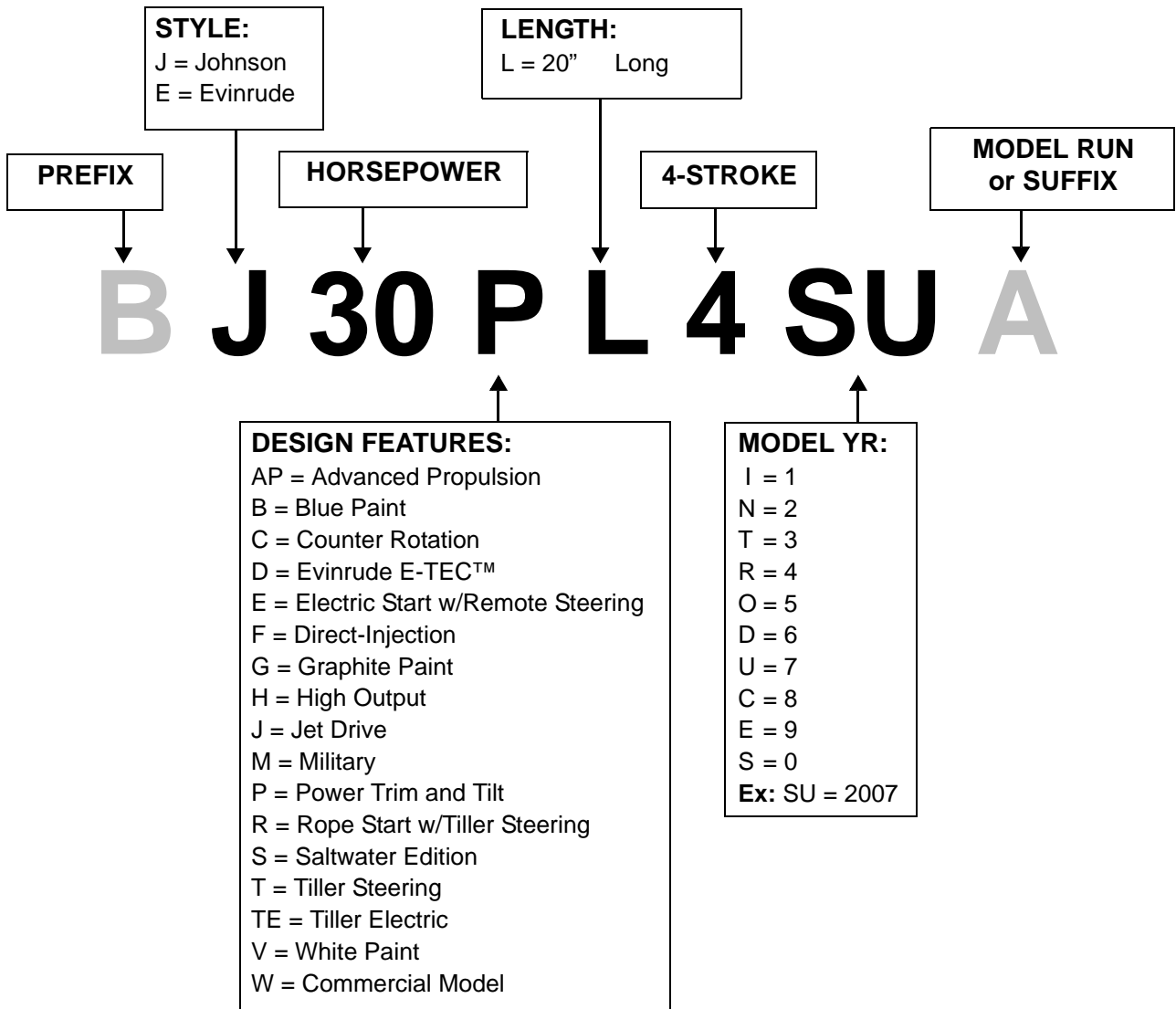


30 HP Powerhead

1. Serial number

001969

MODEL DESIGNATION



TYPICAL PAGE – A

GEARCASE SERVICE CHART

SERVICE CHART

60° V4 20 IN. MODELS

Subsection title indicates beginning of the subsection.

Italic subheading above Service Chart indicates pertaining models.

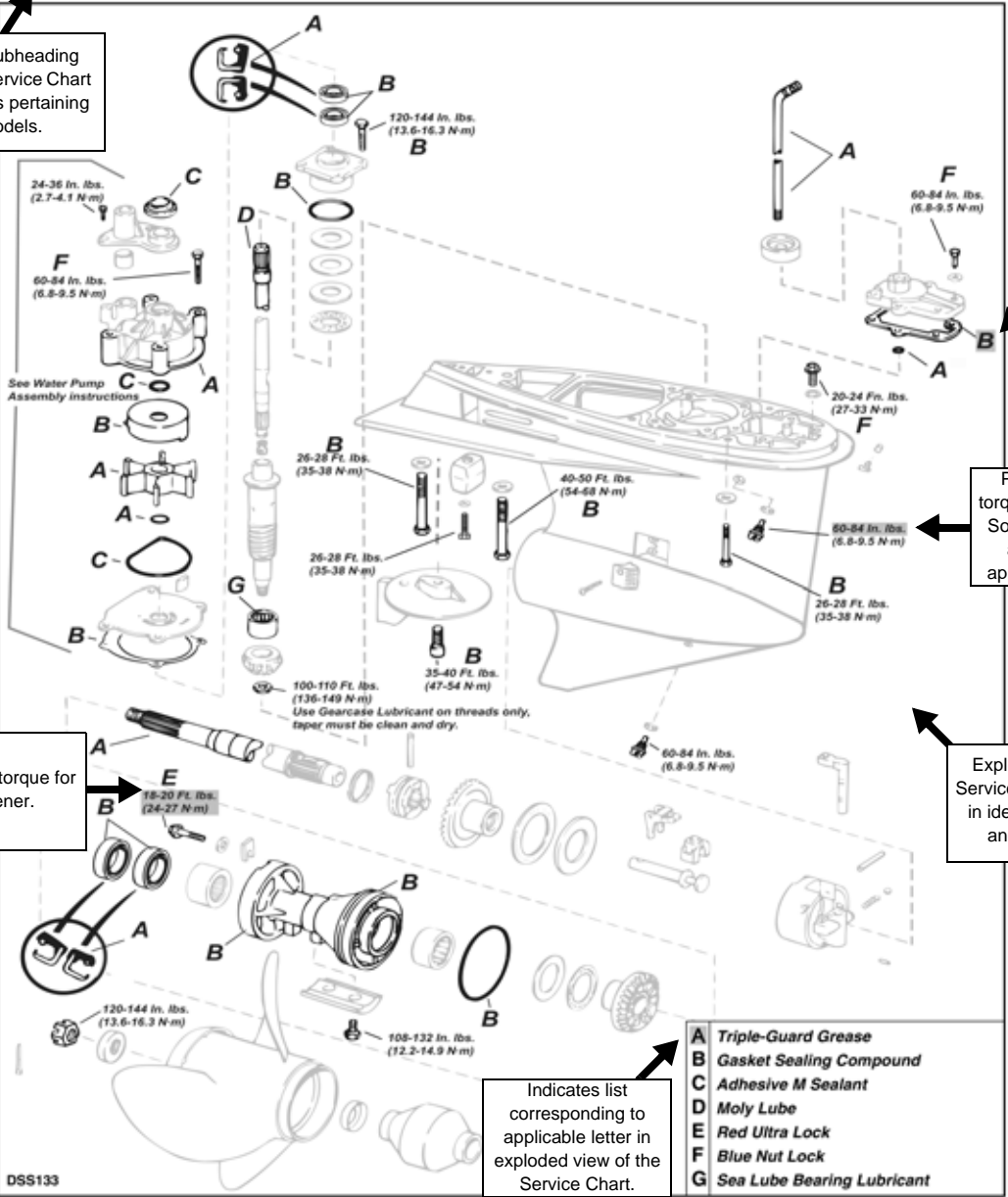
Bold letter indicates liquid product to be applied to a surface

Pay attention to torque specifications. Some units appear as in. lbs. Use appropriate torque.

Exploded view of Service Chart assists in identifying parts and positions

Tightening torque for a fastener.

Indicates list corresponding to applicable letter in exploded view of the Service Chart.



- A** Triple-Guard Grease
- B** Gasket Sealing Compound
- C** Adhesive M Sealant
- D** Moly Lube
- E** Red Ultra Lock
- F** Blue Nut Lock
- G** Sea Lube Bearing Lubricant

DSS133

TYPICAL PAGE – B

Section Title

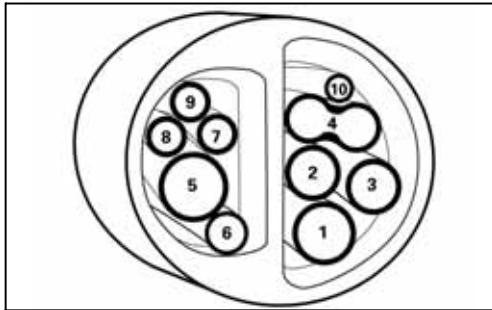
**INSTALLATION AND PREDELIVERY
OUTBOARD RIGGING PROCEDURE**

Subsection Title

Cable, Hose, and Wire Routing

Route all hoses, control cables, and wiring through a protective sleeve or conduit into the boat and through the grommet.

Refer to the following diagram to ensure proper positioning of rigging components in grommet.



000084

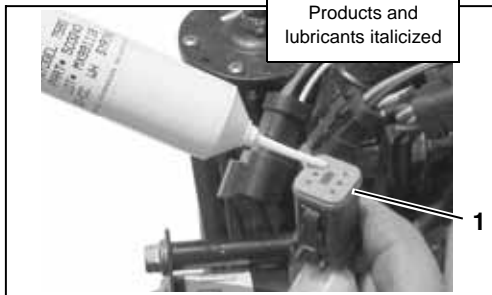
1. Fuel supply hose
2. Oil return hose
3. Oil supply hose
4. Battery cables
5. Main wire harness (MWS)
6. Throttle cable
7. Shift cable
8. Oil tank sending unit harness
9. Water pressure hose
10. Accessory charge wire

Model specific illustrations designated with image captions

Connect outboard main wire harness to boat main wire harness.

Before installing electrical connectors, check that the seal is in place. Clean off any dirt from connectors. Apply a light coat of *Electrical Grease™* to the seal. Push connectors together until latched.

Products and lubricants italicized



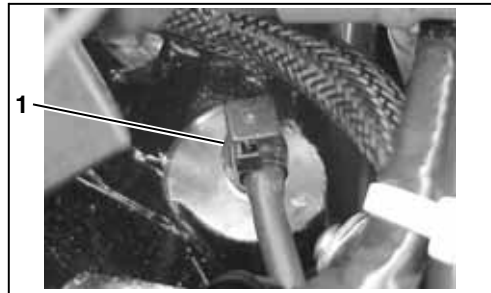
1. Seal

DP0824

If a water pressure gauge is to be used, install the water pressure hose fitting in the cylinder block. Use *Pipe Sealant with Teflon* (P/N 910048) on the threads of the hose fitting. Refer to installation instructions supplied with gauge.

Route the water pressure hose through cover grommet with oil tank sending unit harness. Route hose along battery cables toward the back of the powerhead. Use tie straps to fasten in place.

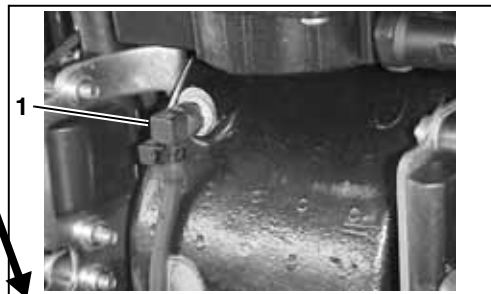
2



V4 Models

1. Water pressure fitting location: top, starboard side of cylinder/curcase assembly, below throttle position sensor.

DP0827



V6 Models

1. Water pressure fitting location: rear of cylinder/curcase assembly

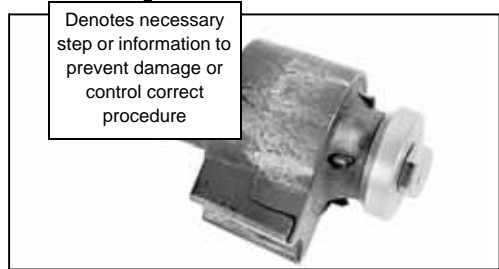
DP0828

If temperature gauge is to be used, route sending unit wire through grommet with hose for water pressure gauge. Follow the path of battery cables. Provide adequate length to reach cylinder head. Refer to installation instructions supplied with gauge.

TYPICAL PAGE – C

**POWERHEAD
INSTALLATION**

IMPORTANT: The motor mount, washer, and screw are serviced as an assembly. Do not disassemble.



39820

Installation

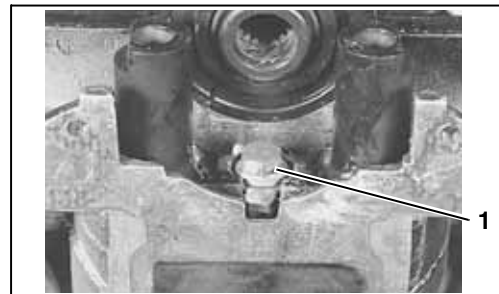
Place mount assemblies in position, with flats facing away from each other.



49557

Apply *Extreme Pressure Grease* to all sides of retainer and install between mounts.

Apply *Nut Lock* to retainer screw, install the screw, and torque to 15 to 20 ft. lbs. (20 to 27 N·m).



1. Mount retainer screw

49556

INSTALLATION

V4 MODELS

Install base gasket d
No. 2 or Gasket Sealin

Title in italics indicates a procedure concerning a particular model

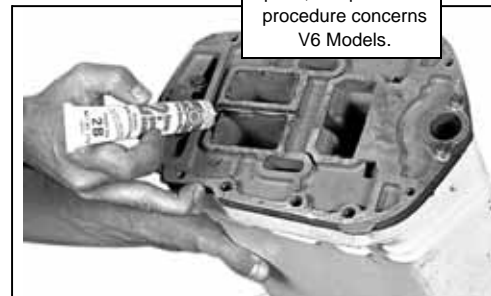
Permatex

V6 MODELS

Apply *Permatex No. 2* exhaust housing flange base gasket with *Gasket*

Title indicates the procedure specific to V4 Models is finished. From this point, this particular procedure concerns V6 Models.

inner a new d.



23079

ALL MODELS

Install a new base ga

Title indicates from this point, All Models are concerned

ensure

proper sealing, mating surfaces must be clean and free of oil, grease, and foreign matter.



23497

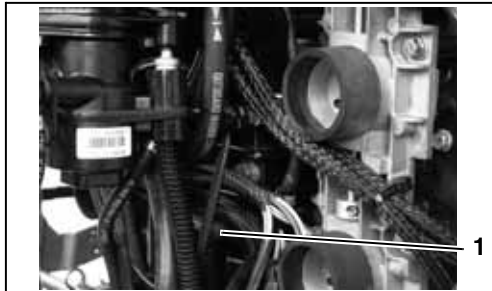
Coat the driveshaft splines with *Moly Lube*. Do not apply lubricant to end of driveshaft.

TYPICAL PAGE – D

OILING SYSTEM
COMPONENTS

Two pulse hoses connect the pump to pulse fittings on the front of the cylinder/crankcase.

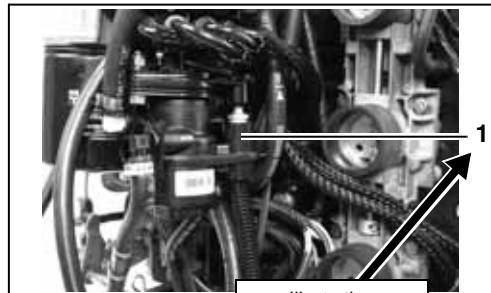
- **V4 Models** – cylinders 1 and 3
- **V6 Models** – cylinders 1 and 4



TYPICAL
1. Lower pulse hose
000721

Oil Pressure Switch

The oil pressure switch is located in the oil injector-manifold and reacts to changes in oil manifold pressure. The *EMM* supplies and monitors electrical current to the switch.



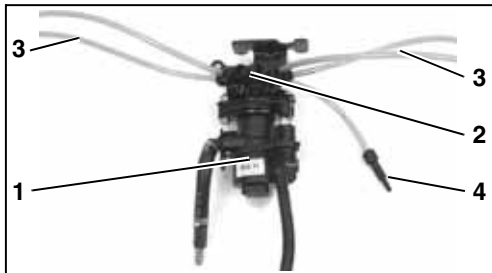
TYPICAL
1. Oil pressure switch
000723

Typical illustration for lower pulse hose of V4 or V6 Models
Oil Injector-Manifold
The injector-manifold distributes the oil supplied by the oil lift pump. A pressure-sensing switch monitors oil injection pressure.

Oil Injector-Manifold Components

- 40 V oil injector
- Oil distribution manifold
- Oil pressure switch
- Pressure regulator (oil return hose)
- Oil distribution hoses
- Oil to fuel check valve

Cross references direct readers to related topics



TYPICAL
1. Oil injector
2. Oil distribution manifold
3. Oil distribution hoses
4. Oil to fuel check valve
000722

The switch opens or closes at the following oil manifold pressures:

53 psi (365 kPa) (nominal) to close
43 psi (296 kPa) (nominal) to reopen

Refer to **Oil Pressure Switch Test** on p. 224.

Service Code 38

A faulty electrical circuit or an inoperative pressure switch activates service code 38 (no oil sensor feedback or lack of oil pressure) and the *EMM*:

Activates the <i>System Check</i> "NO OIL" light
Stores a service code
Initiates <i>S.L.O.W.</i>

Service Code 39

If no oil pressure is detected during startup, the *EMM* initiates an oil injector "recovery mode" to pressurize the system. If inadequate oil pressure is still detected after the recovery mode is completed, the *EMM*:

Activates the <i>System Check</i> "NO OIL" light
Stores a service code
Initiates <i>S.L.O.W.</i>

Illustration components numbered to correspond to image

8

Section tabs allow for quicker reference when thumbing through manual

INTRODUCTION

ABBREVIATIONS USED IN THIS MANUAL

ABBREVIATIONS USED IN THIS MANUAL

Units of Measurement

A	Amperes
amp-hr	Ampere hour
fl. oz.	fluid ounce
ft. lbs.	foot pounds
HP	horsepower
in.	inch
in. Hg	inches of mercury
in. lbs.	inch pounds
kPa	kilopascals
ml	milliliter
mm	millimeter
N·m	Newton meter
P/N	part number
psi	pounds per square inch
RPM	revolutions per minute
°C	degrees Celsius
°F	degrees Fahrenheit
ms	milliseconds
µs	microseconds
Ω	Ohms
V	Volts
VAC	Volts Alternating Current
VDC	Volts Direct Current

List of Abbreviations

ABYC	American Boat & Yacht Council
ATDC	after top dead center
AT	air temperature sensor
BPS	barometric pressure sensor
BTDC	before top dead center
CCA	cold cranking amps
CPS	crankshaft position sensor
DI	Direct-Injection
ECU	electronic control unit
EMM	engine management module
ICOMIA	International Council of Marine Industry Associations
MCA	marine cranking amps
MWS	modular wiring system
NMEA	National Marine Electronics Assoc.
NTC	negative temperature coefficient
PDP	power distribution panel
PTC	positive temperature coefficient
ROM	read only memory
S.A.F.E.™	speed adjusting failsafe electronics
SAC	start assist circuit
SAE	Society of Automotive Engineers
S.L.O.W.™	speed limiting operational warning
SYNC	synchronization
TDC	top dead center
TPS	throttle position sensor
WOT	wide open throttle
WTS	water temperature sensor

PRODUCT REFERENCE AND ILLUSTRATIONS

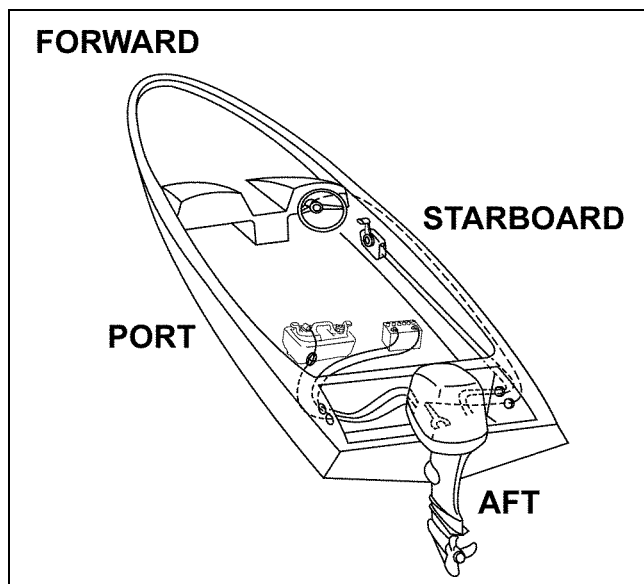
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The continuing accuracy of this manual cannot be guaranteed.

All photographs and illustrations used in this manual may not depict actual models or equipment, but are intended as representative views for reference only.

Certain features or systems discussed in this manual might not be found on all models in all marketing areas.

All service technicians must be familiar with nautical orientation. This manual often identifies parts and procedures using these terms.



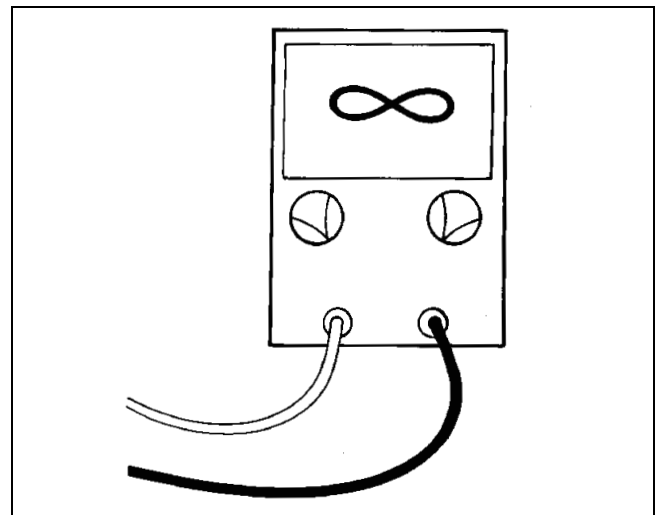
Nautical Orientation

SYMBOLS

Throughout this service manual, symbols are used to interpret electrical troubleshooting results or to assign values in drawings.

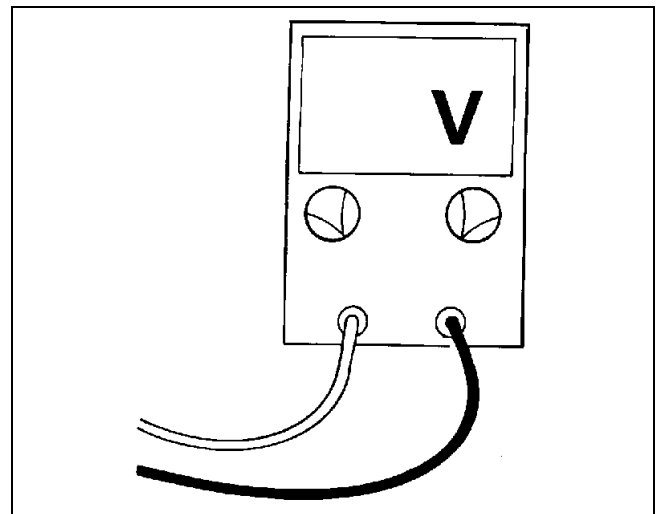
Electrical

When "∞" shows on the meter face, no continuity, or very high resistance, is indicated. The symbol is referred to as infinity.



DR4203

When "V" follows a value on the meter face, the procedure is measuring voltage.

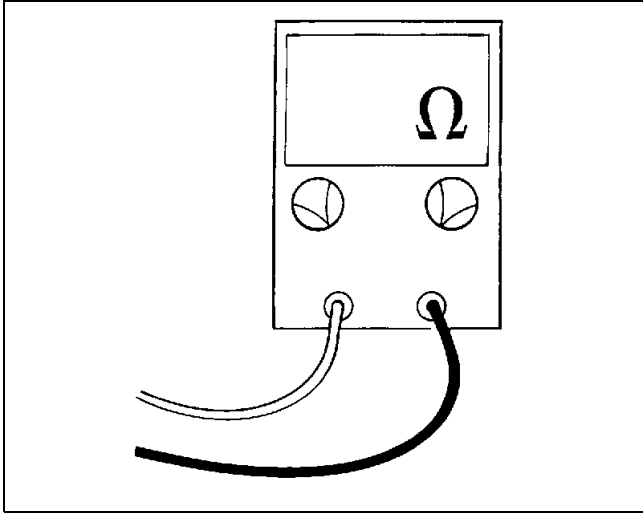


DR4204

INTRODUCTION

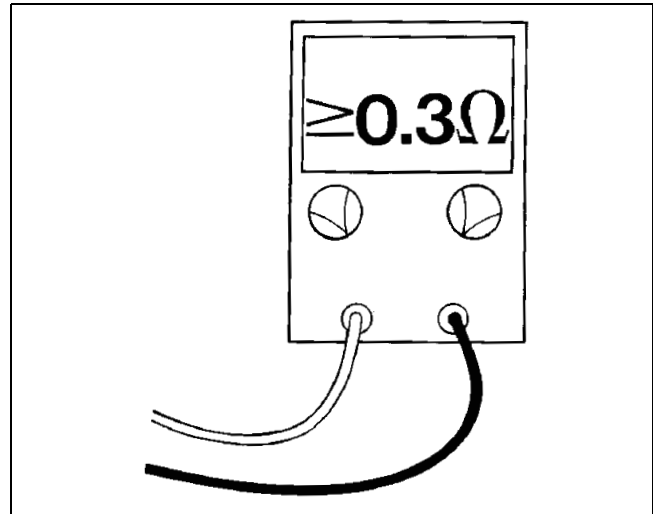
SYMBOLS

When “ Ω ” follows a value on the meter face, the procedure is measuring resistance. Ω is the symbol for ohm, the unit of measurement for resistance.



DR4205

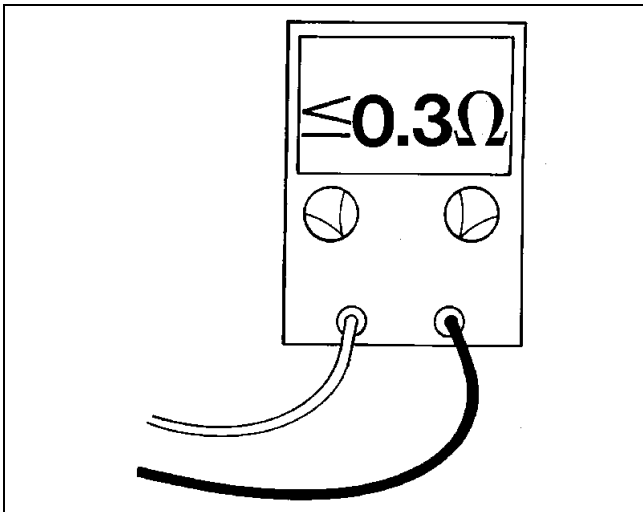
When “ \geq ” precedes a value on the meter face, the reading should be greater than, or equal to, the value shown.



DR4207

Values

When “ \leq ” precedes a value on the meter face, the reading should be less than, or equal to, the value shown.



DR4206