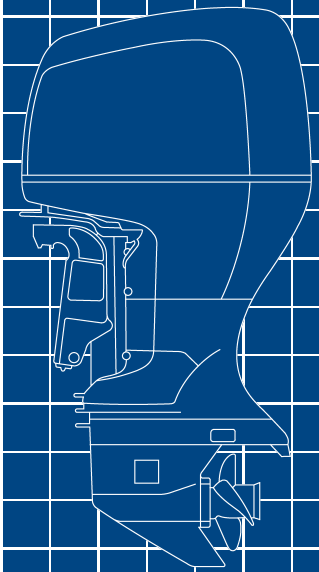
HONDA MARINE

BF200A•BF225A Owner's Manual

Click here to save this manual to your computer.



2006

⚠ WARNING: ⚠

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Keep this owner's manual handy, so you can refer to it at any time. This owner's manual is considered a permanent part of the outboard motor and should remain with the outboard motor if resold.

INTRODUCTION

Congratulations on your selection of a Honda outboard motor. We are certain you will be pleased with your purchase of one of the finest outboard motors on the market.

We want to help you get the best results from your new outboard motor and to operate it safely. This manual contains information on how to do that; please read it carefully.

As you read this manual you will find information preceded by a

NOTICE symbol. That information is intended to help you avoid damage to your outboard motor, other property, or the environment.

We suggest you read the warranty policy to fully understand its coverage and your responsibilities of ownership.

When your outboard motor needs scheduled maintenance, keep in mind that your Honda marine dealer is specially trained in servicing Honda outboard motors. Your Honda marine dealer is dedicated to your satisfaction and will be pleased to answer your questions and concerns.

Best Wishes,
Honda Motor Co., Ltd.

A FEW WORDS ABOUT SAFETY

Your safety and the safety of others are very important. And using this outboard motor safely is an important responsibility.

To help you make informed decisions about safety, we have provided operating procedures and other information on labels and in this manual. This information alerts you to potential hazards that could hurt you or others.

Of course, it is not practical or possible to warn you about all the hazards associated with operating or maintaining an outboard motor. You must use your own good judgment.

You will find important safety information in a variety of forms, including:

- **Safety Labels** — on the outboard motor.
- **Safety Messages** — preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION.

  These signal words mean:

  ⚠ DANGER — You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.

  ⚠ WARNING — You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.

  ⚠ CAUTION — You CAN be HURT if you don't follow instructions.

- **Safety Headings** — such as *IMPORTANT SAFETY INFORMATION.*
- **Safety Section** — such as *OUTBOARD MOTOR SAFETY.*
- **Instructions** — how to use this outboard motor correctly and safely.

This entire book is filled with important safety information — please read it carefully.

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IMPORTANT SAFETY INFORMATION

Honda BF200A/BF225A outboard motors are designed for use with boats that have a suitable manufacturer's power recommendation. Other uses can result in injury to the operator or damage to the outboard motor and other property.

Most accidents can be prevented if you follow all instructions in this manual and on the outboard motor. The most common hazards are discussed below, along with the best way to protect yourself and others.

Operator Responsibility

- It is the operator's responsibility to provide the necessary safeguards to protect people and property. Know how to stop the engine quickly in case of emergency. Understand the use of all controls.
- Stop the engine immediately if anyone falls overboard, and do not run the engine while the boat is near anyone in the water.
- Always stop the engine if you must leave the controls for any reason.
- Attach the emergency stop switch lanyard securely to the operator.
- Always wear a PFD (Personal Flotation Device) while on the boat.
- Familiarize yourself with all laws and regulations relating to boating and the use of outboard motors.
- Be sure that anyone who operates the outboard motor receives proper instruction.
- Be sure the outboard motor is properly mounted on the boat.
- Do not remove the engine cover while the engine is running.

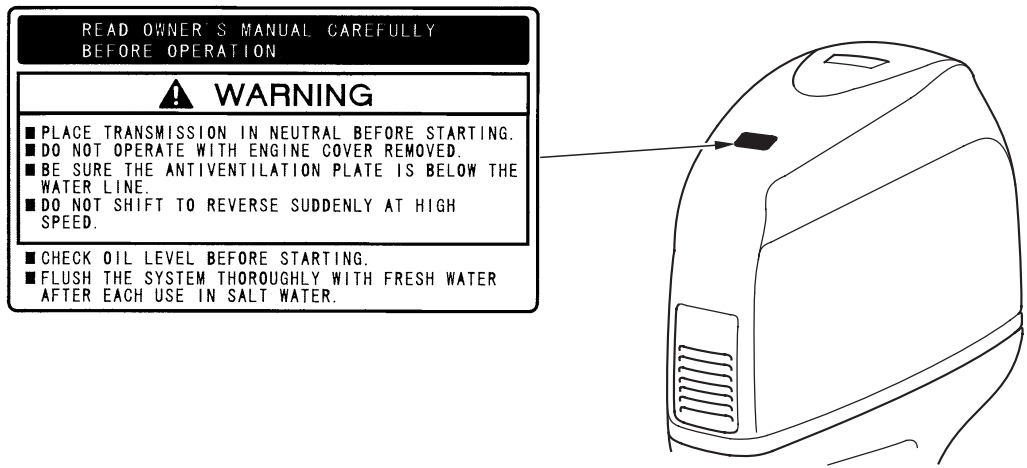
Refuel With Care

- Gasoline is extremely flammable, and gasoline vapor can explode. Refuel outdoors, in a well-ventilated area, with the engine stopped. Never smoke near gasoline, and keep other flames and sparks away.
- Refuel carefully to avoid spilling fuel. Avoid overfilling the fuel tank.
- After refueling, tighten the filler cap securely. If any fuel is spilled, make sure the area is dry before starting the engine.

Carbon Monoxide Hazard

Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gas. Never run the engine in a closed garage or confined area.

SAFETY LABEL LOCATION



The label shown here contains important safety information. Please read it carefully. This label is considered a permanent part of your outboard motor. If the label comes off or becomes hard to read, contact an authorized Honda marine dealer for a replacement.

CONTROLS AND FEATURES

CONTROL AND FEATURE IDENTIFICATION CODES

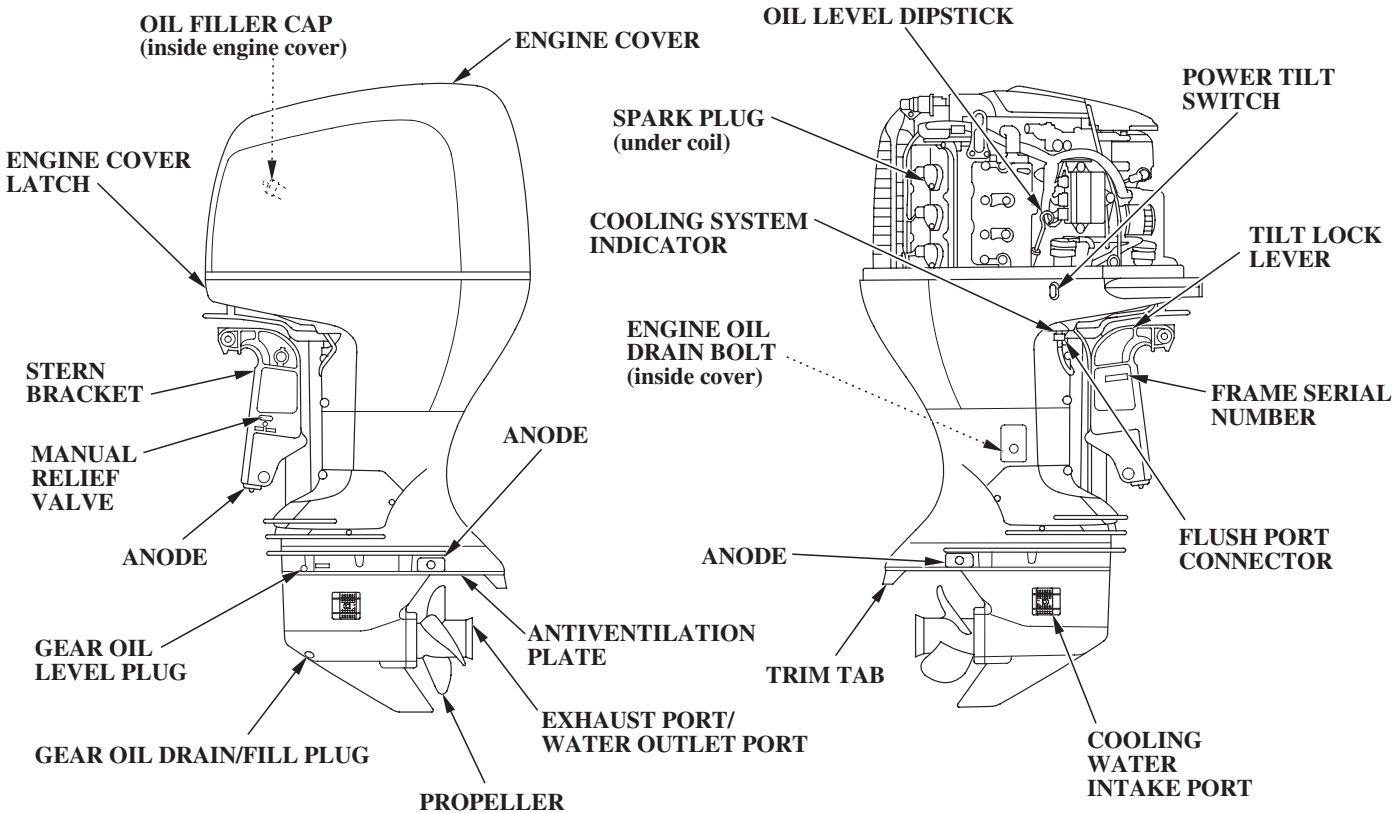
Model		BF200A					BF225A				
Type		LA	XA	XCA	XXA	XXCA	LA	XA	XCA	XXA	XXCA
Transom Height	20.0 in (508 mm)	●					●				
	25.0 in (635 mm)		●	●				●	●		
	30.0 in (762 mm)				●	●				●	●
Standard Rotating Propeller Shaft		●	●		●		●	●		●	
Counterrotating Propeller Shaft				●		●			●		●
Power Trim/Tilt		●	●	●	●	●	●	●	●	●	●

Refer to this chart for an explanation of the Type Codes used in this manual to identify control and feature applications.

TYPE CODE (example)
X C A

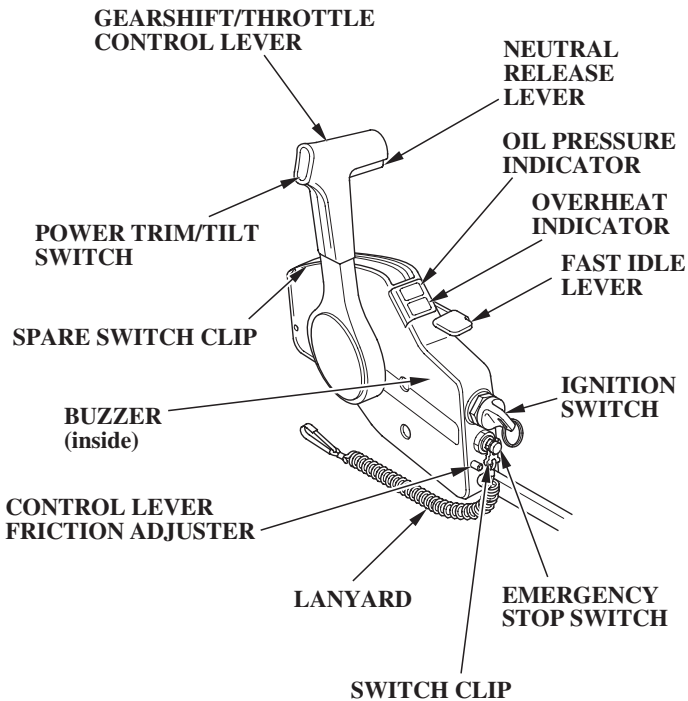
Destination
A: America
Rotating direction of propeller shaft
C: Counterrotating propeller shaft
None: Standard rotating propeller shaft
Transom Height
L: 20.0 in (508 mm), X: 25.0 in (635 mm), XX: 30.0 in (762 mm)

COMPONENT AND CONTROL LOCATIONS

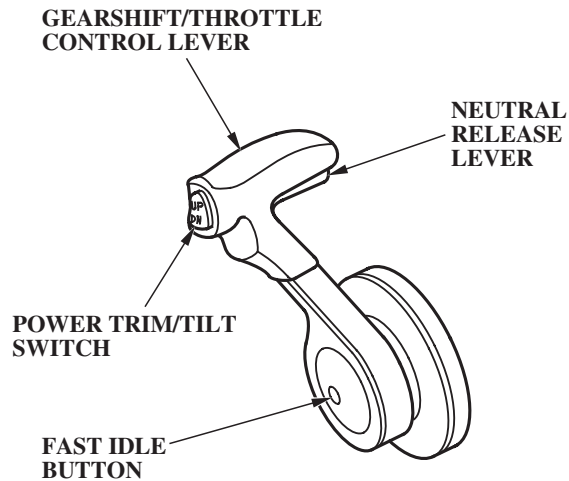


Remote Controls (optional equipment)

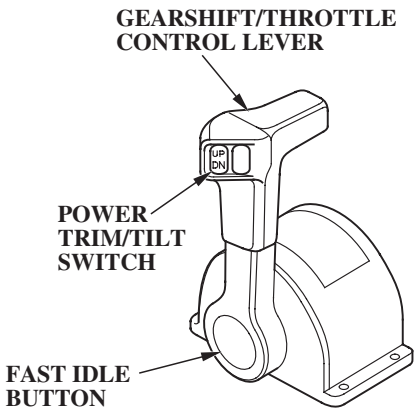
(SIDE-MOUNT REMOTE CONTROL)



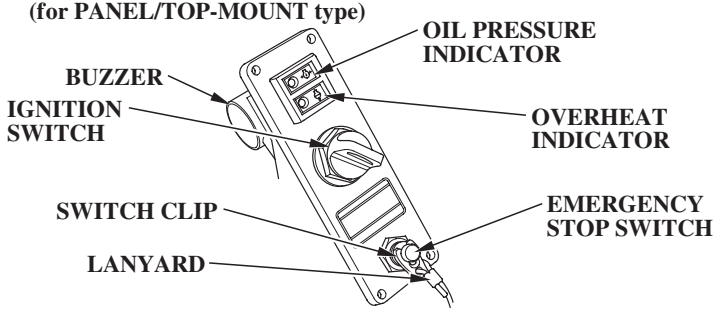
(PANEL-MOUNT REMOTE CONTROL)



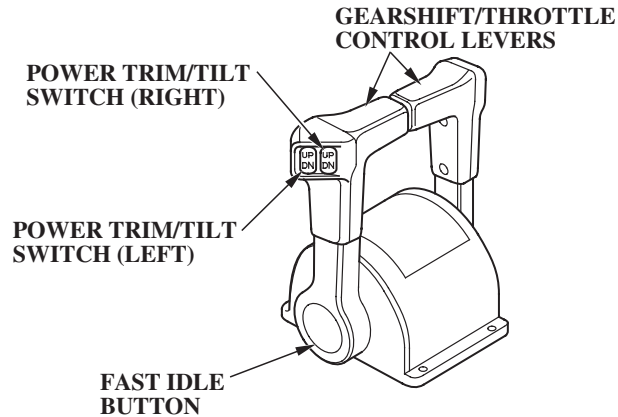
(SINGLE TOP-MOUNT REMOTE CONTROL)



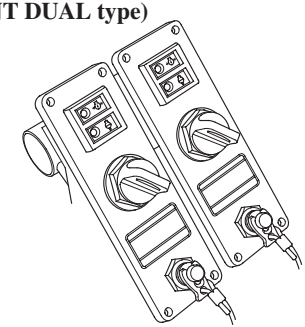
CONTROL PANEL
(for PANEL/TOP-MOUNT type)



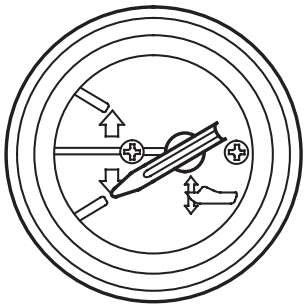
(DUAL TOP-MOUNT REMOTE CONTROL)



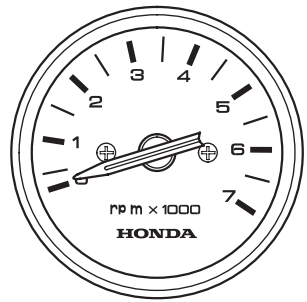
(for TOP-MOUNT DUAL type)



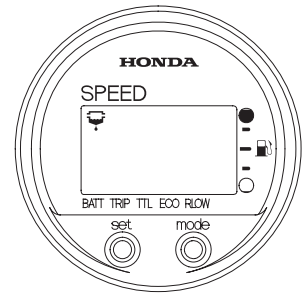
Trim Meter (optional equipment)



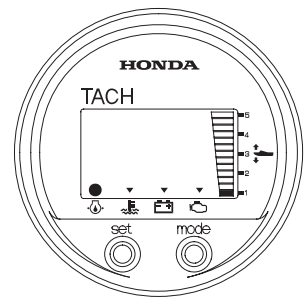
Tachometer (optional equipment)



Digital Speedometer (optional equipment)



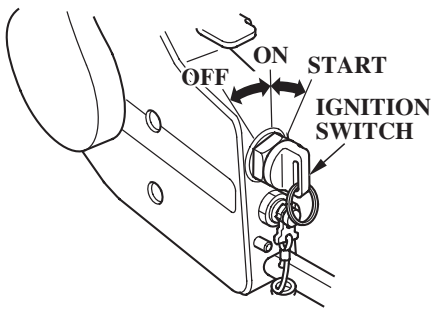
Digital Tachometer (optional equipment)



CONTROLS

Side Mount Type

Ignition Switch



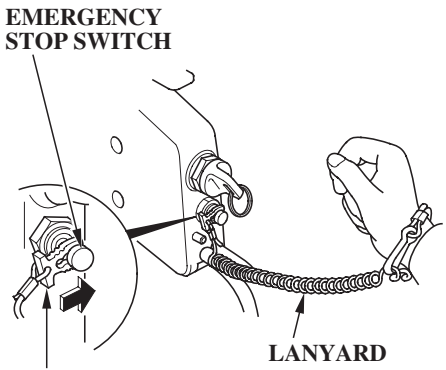
The ignition switch controls the ignition system and starter motor.

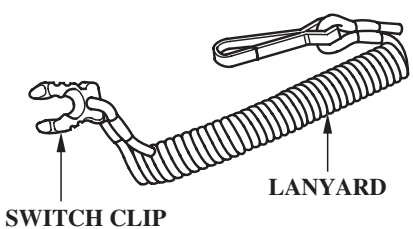
Turning the ignition switch key to the START position starts the engine. The key automatically returns to the ON position when released from the START position.

The ignition switch can be used to start the engine only when the control lever (p. 17) is in the N (neutral) position, and the switch clip is in the emergency stop switch.

Turning the ignition switch to the OFF position stops the engine.

Switch Clip and Emergency Stop Switch

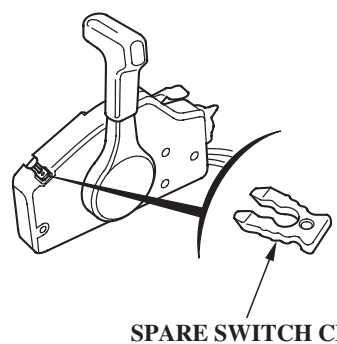




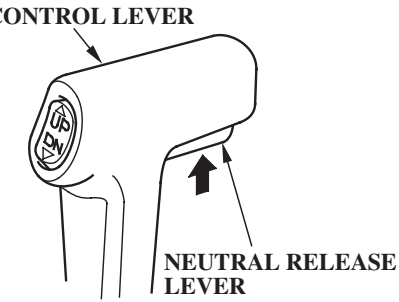
The switch clip must be inserted in the emergency stop switch in order for the engine to start and run. The lanyard must be attached to the operator's PFD (Personal Flotation Device) or worn around the wrist as shown.

When used as described, the emergency stop switch and lanyard system stops the engine if the operator falls away from the controls.

A spare switch clip is stored in a slot in the control housing (optional equipment).



Gearshift/Throttle Control Lever



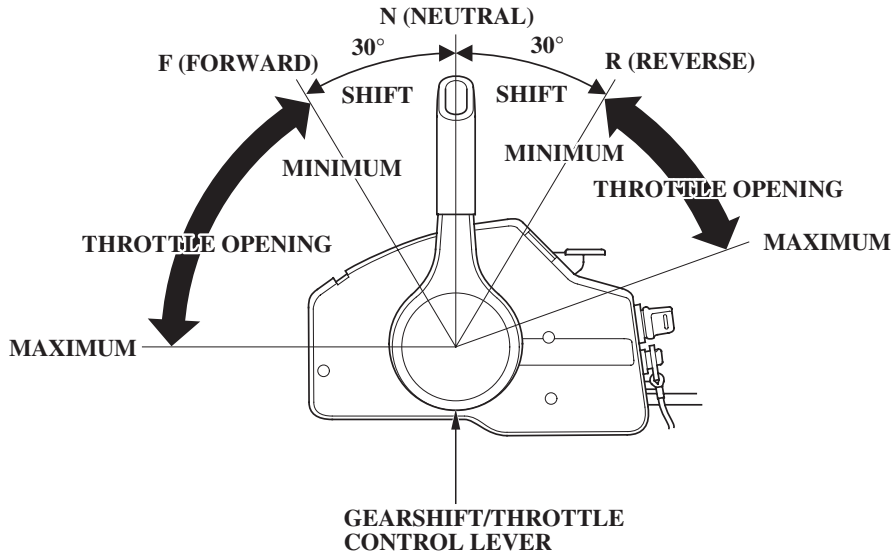
The gearshift/throttle control lever controls engine speed and selects F (forward), N (neutral), or R (reverse) gears.

Moving the control lever 30° from N (neutral) selects the gear, and further movement increases engine speed.

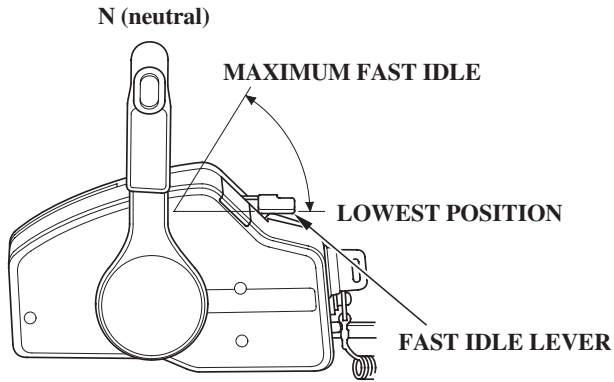
The control lever automatically locks itself in the N (neutral) position. To move the lever out of the N (neutral) position, you must squeeze the neutral release lever on the underside of the lever handle.

A friction adjuster near the base of the control lever(s) adjusts the operating resistance of the control lever(s).

Less friction allows easier control lever movement. More friction helps to hold a steady throttle setting while cruising.



Fast Idle Lever



The fast idle lever is only needed for starting carbureted outboard models. The BF200A and BF225A models use programmed fuel injection so, this lever will not be needed for starting.

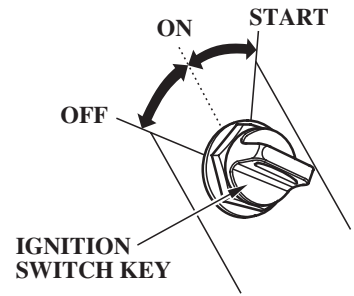
After the engine starts and if the outside temperature is below 41°F (5°C), the fast idle lever can be used to accelerate engine warm up.

The fast idle lever will not move unless the remote control lever is in the N (neutral) position. Conversely, the remote control lever will not move unless the fast idle lever is in the lowest position.

Lower the fast idle lever to the lowest position to decrease the fast idle.

Panel-Mount Type

Ignition Switch



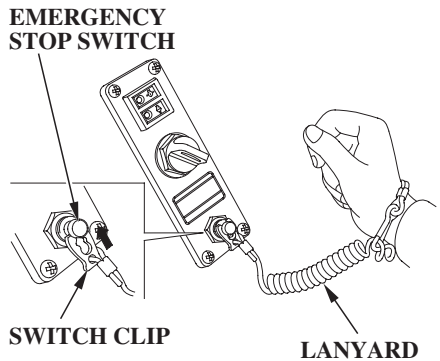
The ignition switch controls the ignition system and starter motor.

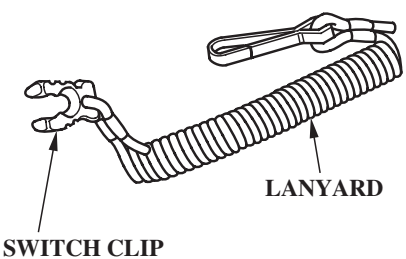
Turning the ignition switch key to the START position operates the starter motor. The key automatically returns to the ON position when released from the START position.

The ignition switch can be used to operate the starter motor only when the control lever (p. 21) is in the N (neutral) position, and the switch clip is in the emergency stop switch.

Turning the ignition switch to the OFF position stops the engine.

Switch Clip and Emergency Stop Switch

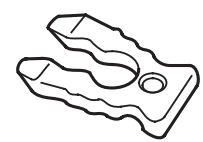




The switch clip must be inserted in the emergency stop switch in order for the engine to start and run. The lanyard must be attached to the operator's PFD (Personal Flotation Device) or worn around the wrist as shown.

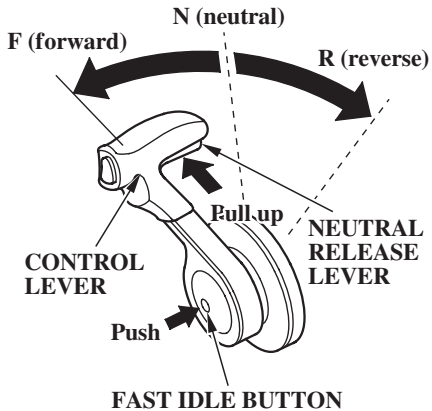
When used as described, the emergency stop switch and lanyard system stops the engine if the operator falls away from the controls.

A spare switch clip (optional equipment) can be stored in the tool bag.



SPARE SWITCH CLIP
(optional equipment)

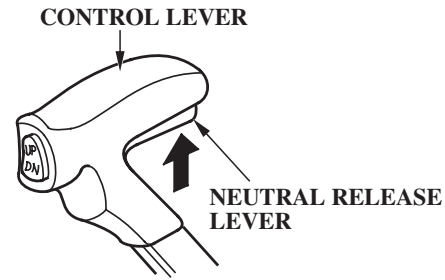
Fast Idle Button



By moving the control lever forward or reverse when the fast idle button is pushed in, the throttle opening will be increased without engaging the gears.

It is necessary to position the control lever in N (neutral) to push in the fast idle button.

Gearshift/Throttle Control Lever



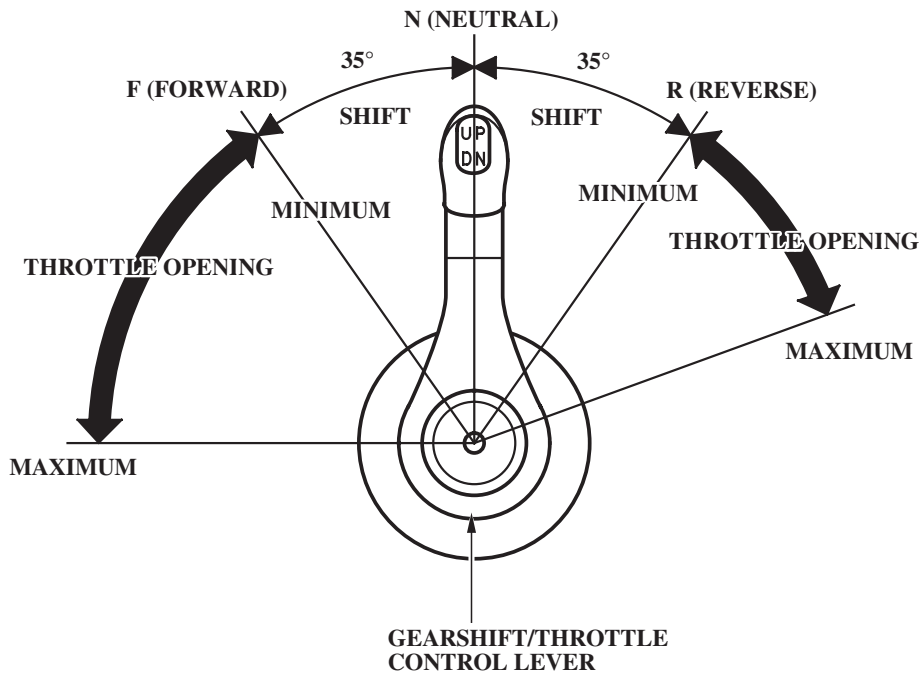
The gearshift/throttle control lever controls engine speed and selects F (forward), N (neutral), or R (reverse) gears.

Moving the control lever 35° from N (neutral) selects the gear, and further movement increases engine speed.

The control lever automatically locks itself in the N (neutral) position. To move the lever out of the N (neutral) position, you must squeeze the neutral release lever on the underside of the lever handle.

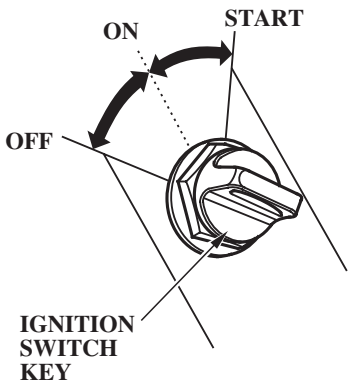
A friction adjuster near the base of the control lever adjusts the operating resistance of the control lever. Refer to p. 47 .

Less friction allows easier control lever movement. More friction helps to hold a steady throttle setting while cruising.



Top-Mount Type

Ignition Switch



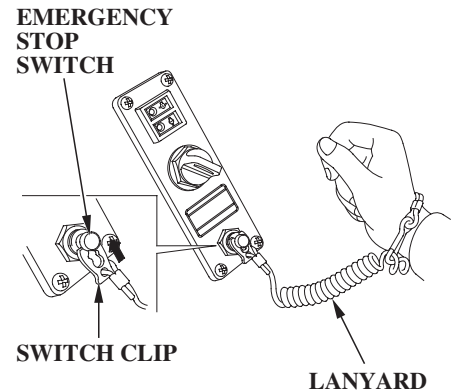
The ignition switch controls the ignition system and starter motor.

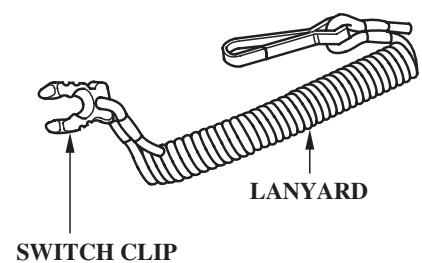
Turning the ignition switch key to the START position operates the starter motor. The key automatically returns to the ON position when released from the START position.

The ignition switch can be used to operate the starter motor only when the control lever (p. 24) is in the N (neutral) position, and the switch clip is in the emergency stop switch.

Turning the ignition switch to the OFF position stops the engine.

Switch Clip and Emergency Stop Switch

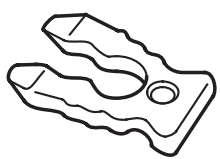




The switch clip must be inserted in the emergency stop switch in order for the engine to start and run. The lanyard must be attached to the operator's PFD (Personal Flotation Device) or worn around the wrist as shown.

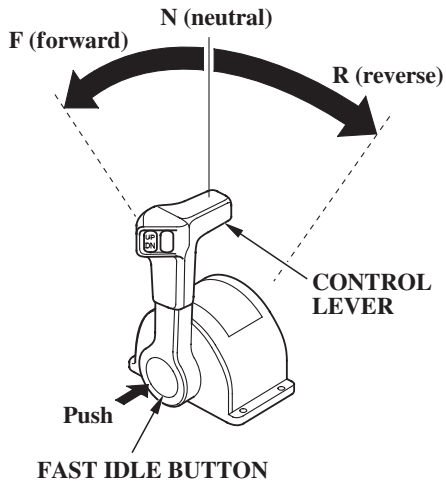
When used as described, the emergency stop switch and lanyard system stops the engine if the operator falls away from the controls.

A spare switch clip (optional equipment) can be stored in the tool bag.



SPARE SWITCH CLIP
(optional equipment)

Fast Idle Button



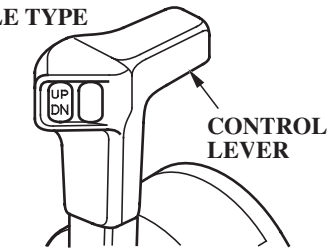
FAST IDLE BUTTON

By moving the control lever forward or reverse when the fast idle button is pushed in, the throttle opening will be increased without engaging the gears.

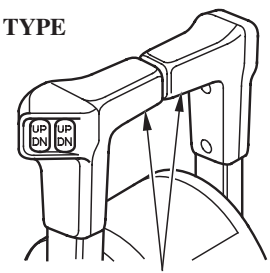
It is necessary to position the control lever in N (neutral) to push in the fast idle button.

Gearshift/Throttle Control Lever

SINGLE TYPE



DUAL TYPE

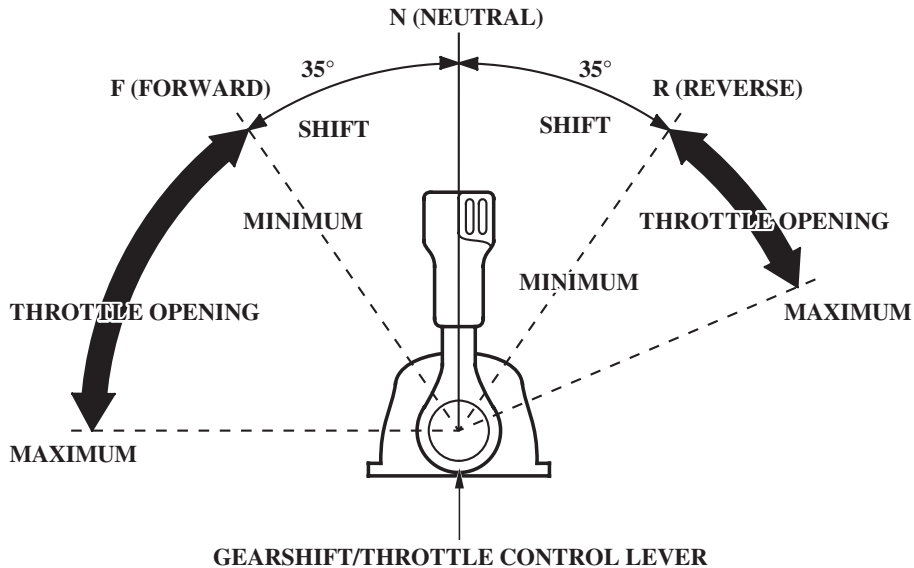


The gearshift/throttle control lever controls engine speed and selects F (forward), N (neutral), or R (reverse) gears.

Moving the control lever 35° from N (neutral) selects the gear, and further movement increases engine speed.

A friction adjuster inside the control box adjusts the operating resistance of the control lever(s).

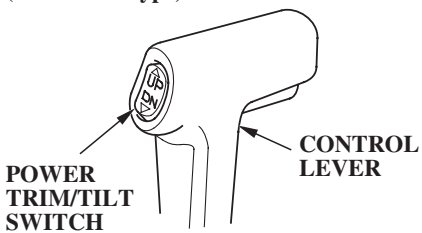
Less friction allows easier control lever movement. More friction helps to hold a steady throttle setting while cruising.



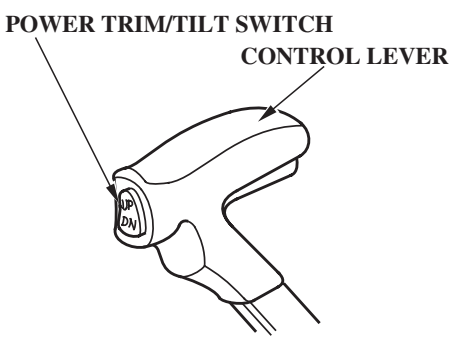
Common Controls

Power Trim/Tilt Switch

(side-mount type)

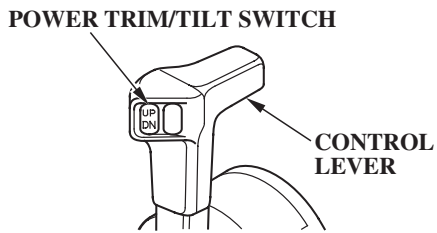


(panel-mount type)

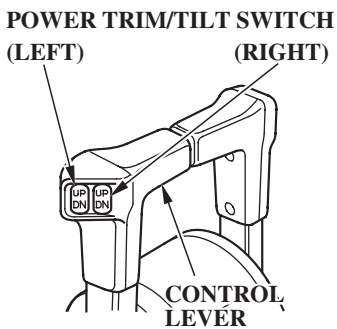


(top-mount type)

SINGLE TYPE



DUAL TYPE



The power trim/tilt switch is located on the control lever. It is a rocker switch with UP and DN (down) positions for changing the angle of the outboard motor.

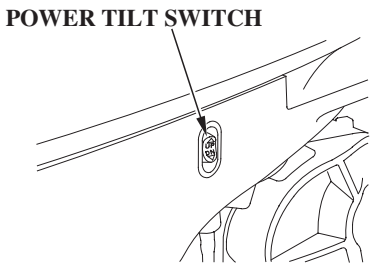
You can use the power trim/tilt switch anytime whether the boat is underway, stopped, or the ignition switch is in the OFF position. It is necessary for the ignition switch to be in the ON position for the trim meter to indicate the motor angle.

Trim the outboard motor to obtain the best performance and stability (p. 49).

Tilt the outboard motor for shallow water operation, beaching, launching, or mooring.

For dual mount outboards, tilt them up at the same time.

Power Tilt Switch

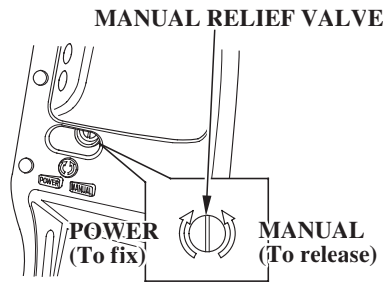


The power tilt switch is located on the engine pan. It is a rocker switch with UP and DN (down) positions for changing the angle of the outboard motor.

The power tilt switch will operate without turning the ignition switch ON.

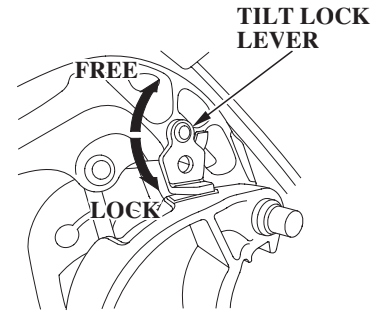
This switch is used with the engine stopped to raise the outboard motor for mooring, trailering or maintenance.

Manual Relief Valve



The outboard motor can be tilted manually after opening the manual relief valve. This allows the outboard motor to be tilted when no battery is connected.

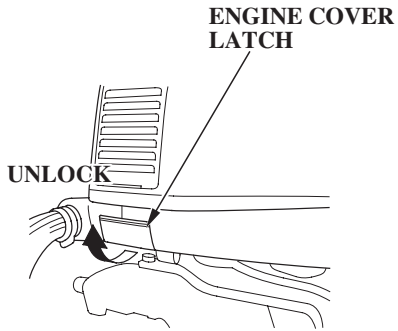
Tilt Lock Lever



The tilt lock lever is used to support the outboard motor in the fully-raised position.

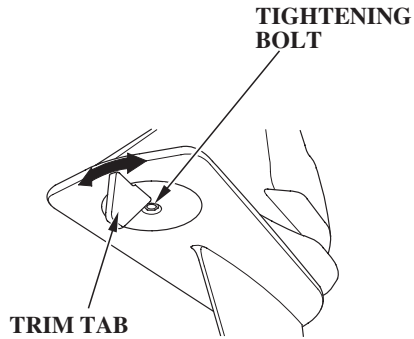
When the boat is to be moored for a long time, tilt the outboard motor as far as it will go. Then move the tilt lock lever to the LOCK position, and gently lower the outboard motor until the lever contacts the stern bracket.

Engine Cover Latch



The engine cover latch fastens the engine cover to the outboard motor.

Trim Tab



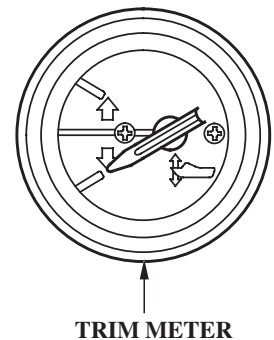
The trim tab compensates for ''torque steer,'' which is a reaction of the outboard motor to propeller rotation.

If uncompensated, torque steer would make the outboard motor tend to turn to one side.

When the trim tab is correctly adjusted (p. 58), steering effort is equal in either direction.

INSTRUMENTS

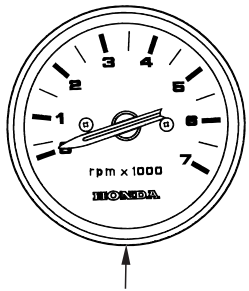
Trim Meter (optional equipment)



The trim meter has a range of −4° to 16° and indicates the trim angle of the outboard motor.

Refer to the trim meter when using the power trim/tilt switch to achieve the best performance from the boat.

Tachometer (optional equipment)

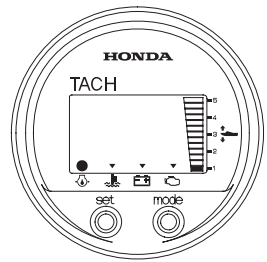


TACHOMETER

The tachometer shows engine speed in revolutions per minute.

Refer to the tachometer when using the throttle and power trim/tilt controls to achieve the best performance from the boat.

Digital Tachometer (optional equipment)

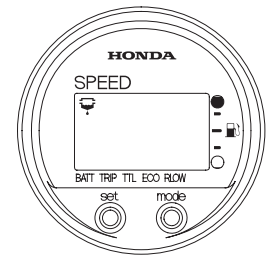


Digital Tachometer includes the following functions.

- Tachometer
- Hour Meter
- Trim Meter
- Oil pressure Indicator
- Overheat Indicator
- ACG Indicator
- PGM-FI Indicator

Refer to the Operation Guide included with each Digital Tachometer for operation information.

Digital Speedometer (optional equipment)



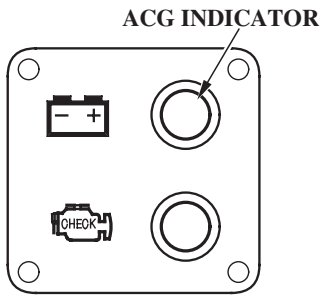
Digital Speedometer includes the following functions.

- Speedometer
- Fuel level Meter
- Volt Meter
- Tripmeter
- Fuel Integration Meter
- Fuel Economy Meter
- Fuel Flow Meter
- Water Separator Indicator

Refer to the Operation Guide included with each Digital Speedometer for operation information.

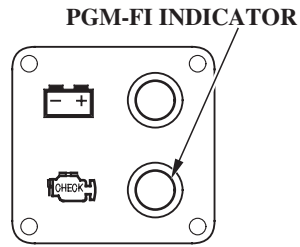
INDICATORS

Alternator (ACG) Indicator



The ACG indicator turns on and the buzzer sounds in one-second intervals when the charging system is faulty.

Programmed Fuel Injection (PGM-FI) Indicator



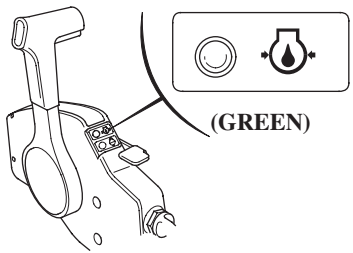
When the engine control system detects an PGM-FI malfunction, the PGM-FI indicator turns on and the buzzer sounds at one-second intervals.

Under normal conditions when the ignition key is turned on the following will occur:

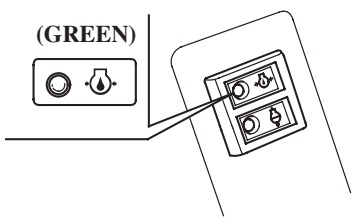
1. Both the PGM-FI indicator and ACG indicator will turn on.
2. The buzzer will beep twice.
3. The PGM-FI indicator will turn off shortly after the second beep.
4. The ACG indicator will turn off after the engine starts.

Oil Pressure Indicator

(side-mount type)



(panel-mount/top-mount types)



When the oil pressure indicator is lit, oil pressure is OK.

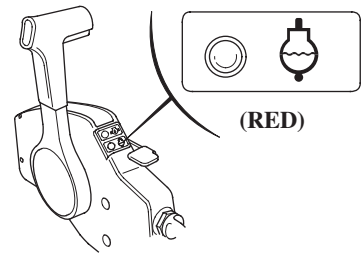
If oil pressure becomes low, the indicator will go off, and the engine protection system will limit engine speed. Refer to TAKING CARE OF UNEXPECTED PROBLEMS, on p. 90

All models are equipped with a buzzer that sounds continuously when the oil pressure indicator goes off.

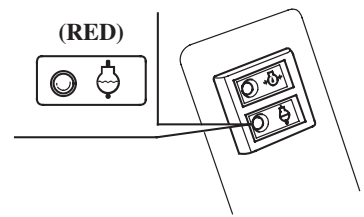
Low oil pressure indicates that the engine oil level is low, or that there is a problem with the engine lubrication system.

Overheat Indicator

(side-mount type)



(panel-mount/top-mount types)



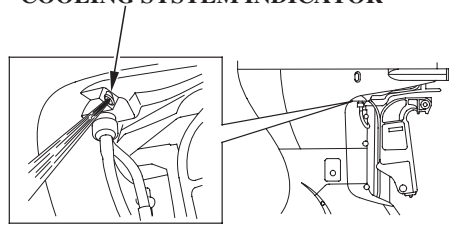
When the alert triggers, the overheat indicator comes on and the buzzer sounds a steady tone as the engine speed is reduced to 1,800 rpm. If the condition persists for another 20 seconds, the engine shuts off. Refer to TAKING CARE OF UNEXPECTED PROBLEMS, on p. 91

All models are equipped with a buzzer that sounds a steady tone when the overheat indicator comes on.

Engine overheating may be the result of clogged water intakes.

Cooling System Indicator

COOLING SYSTEM INDICATOR



Water should flow from the cooling system indicator while the engine is running. This shows that water is circulating through the cooling system.

If water stops flowing while the engine is running, it indicates a cooling system problem, such as clogged water intakes, which will cause engine overheating.

OTHER FEATURES

Water Separator Buzzer

The water separator buzzer sounds a rapid, repeating signal when water has accumulated in the water separator.

Overrev Limiter

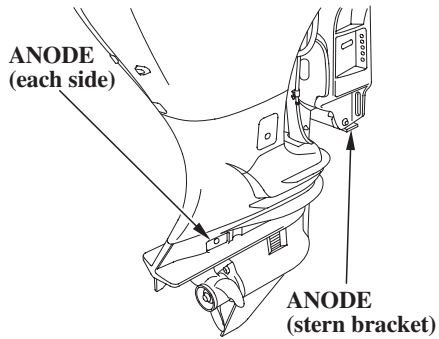
The engine is equipped with an overrev limiter to prevent the possibility of mechanical damage from excessive engine speed.

The overrev limiter may be activated during operation, limiting engine speed, if the outboard motor is trimmed or tilted excessively, or when propeller ventilation occurs during a sharp turn.

If the overrev limiter is activated, check the trim angle of the outboard motor.

Check to see if the correct propeller is installed.

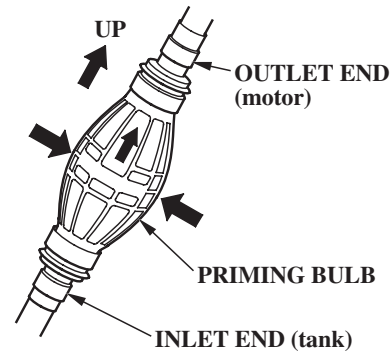
Anodes



The anodes are made of a sacrificial material that helps to protect the outboard motor from corrosion.

There are two anodes on the gear case, one on the stern bracket, and four small anodes in the water passages of the engine block.

Fuel Priming Bulb



A priming bulb is built into the fuel hose that connects the fuel tank to the outboard motor.

Before starting the engine, hold the priming bulb up in the direction of the arrow, then squeeze the priming bulb until it feels firm. This will ensure that fuel is supplied to the engine (p. 36).

ARE YOU READY TO GET UNDER WAY?

Your safety is your responsibility. A little time spent in preparation will significantly reduce your risk of injury.

Knowledge

Read and understand this manual. Know what the controls do and how to operate them.

Familiarize yourself with the outboard motor and its operation before you get under way. Know what to do in case of emergencies.

Familiarize yourself with all laws and regulations relating to boating and the use of outboard motors.

Safety

Always wear a PFD (Personal Flotation Device) while on the boat.

Attach the emergency stop switch lanyard securely to your PFD or to your wrist.

IS YOUR OUTBOARD MOTOR READY TO GO?

For your safety, and to maximize the service life of your equipment, it is very important to take a few moments before you operate the outboard motor to check its condition. Be sure to take care of any problem you find, or have your authorized Honda marine dealer correct it, before you operate the outboard motor.

⚠ WARNING

Improperly maintaining this outboard motor, or failing to correct a problem before operation, can cause a malfunction in which you could be seriously hurt or killed.

Always perform a preoperation inspection before each operation, and correct any problem.

Before beginning your preoperation checks, be sure the ignition switch is in the OFF position.

Safety Inspection

- Look around the outboard motor for signs of oil or gasoline leaks.
- Check that the fuel hose is undamaged and properly connected.
- Wipe up any spills before starting the engine.
- Check the stern bracket to be sure the outboard motor is securely installed.
- Check that all controls are operating properly.
- Replace any damaged parts.
- Check that all fasteners are in place and securely tightened.

Maintenance Inspection

- Check the engine oil level (p. 60). Running the engine with a low oil level can cause engine damage.
- Check to be sure the propeller is undamaged, and the castle nut is secured with the cotter pin (p. 75).
- Check that the anodes are securely attached to the gear case (p. 74) and are not excessively worn. The anodes help to protect the outboard motor from corrosion.
- Make sure the tool kit is onboard (p. 55). Replace any missing items.
- Check the fuel level in the fuel tank (p. 68).
- Check that the battery fluid is between the upper and lower levels, and the battery leads are connected securely.
- Check the water separator for water contamination (p. 72).

SAFE OPERATING PRECAUTIONS

To safely realize the full potential of this outboard motor, you need a complete understanding of its operation and a certain amount of practice with its controls.

Before operating the outboard motor for the first time, please review the *IMPORTANT SAFETY INFORMATION* on page 7 and the chapter titled *BEFORE OPERATION*.

For your safety, avoid starting or operating the engine in an enclosed area. Your engine's exhaust contains poisonous carbon monoxide gas which can collect rapidly in an enclosed area and cause illness or death.

BREAK-IN PROCEDURE

Break-in period: 10 hours

Proper break-in operation allows the moving parts to wear in smoothly for best performance and long service life.

First 15 minutes:

Run the engine at trolling speed. Use the minimum throttle opening necessary to operate the boat at a safe trolling speed.

Next 45 minutes:

Run the engine up to a maximum of 2,000 to 3,000 rpm, which is about 10% to 30% of maximum throttle opening.

Next 60 minutes:

Run the engine up to a maximum of 4,000 to 5,000 rpm, which is about 50% to 80% of maximum throttle opening.

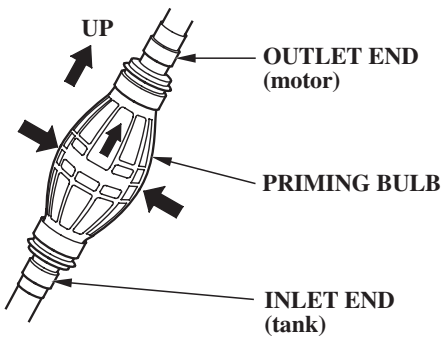
Short full-throttle bursts are OK, but do not operate the engine continuously at full throttle.

For boats that plane easily, bring the boat up on plane, and then reduce the throttle opening to the recommended rpm range.

Next 8 hours:

Do not run the engine at full throttle for more than 5 minutes at a time.

FUEL PRIMING



Hold the priming bulb up in the direction of the arrow, then squeeze the priming bulb several times until it feels firm, indicating that fuel has reached the engine.

Check to be sure there are no fuel leaks before starting the engine.

Do not squeeze the priming bulb when the engine is running.

⚠ WARNING

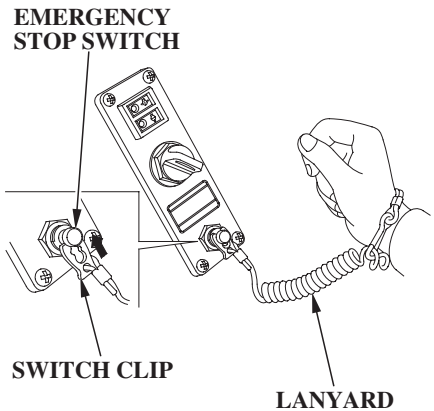
Gasoline is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.

- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

STARTING THE ENGINE

Side Mount Type

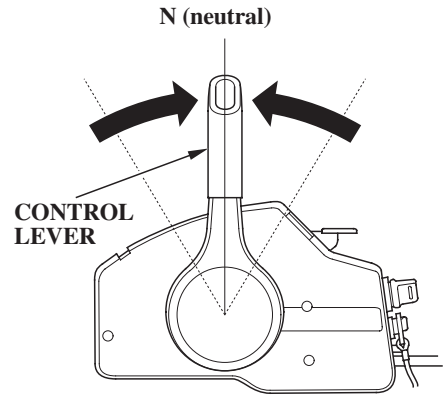


1. Put the emergency stop switch clip in the emergency stop switch, and attach the lanyard to your PFD (Personal Flotation Device) or to your wrist, as shown.

The engine will not start or run, unless the clip is in the switch.

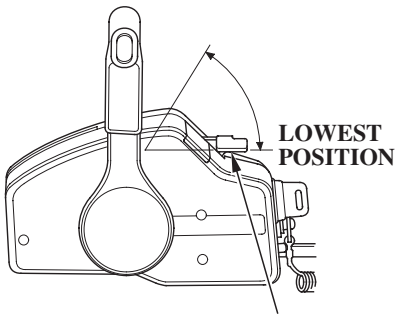
The emergency stop switch clip and lanyard system is a safety device that will stop the engine if you fall away from the controls while operating the boat.

Always attach the lanyard to your PFD, or to your wrist, before starting the engine.



2. Set the control lever in the N (neutral) position.

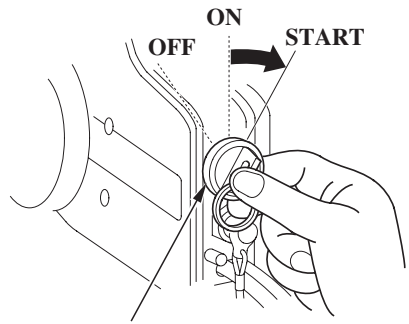
   The engine will not start if the F (forward) or R (reverse) gears are engaged.



3. Leave the fast idle lever in the OFF (fully lowered) position.

   Fast idle lever cannot be raised unless the control lever is in the N (neutral) position.

   The control lever cannot be moved away from the N (neutral) position unless the fast idle lever is lowered.



4. Turn the ignition switch key to the START position and hold it there until the engine starts.

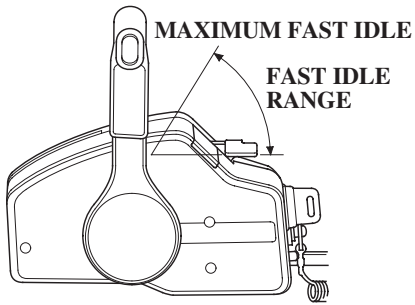
   When the engine starts, release the key, allowing it to return to the ON position.

   If the engine fails to start within 5 seconds, release the key and wait at least 10 seconds before operating the starter again.

NOTICE

- *Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.*

- *Turning the ignition switch key to the START position while the engine is running can damage the starter motor and flywheel.*



5. Before getting under way, allow the engine to warm up sufficiently to ensure good performance.

   Above 41°F (5°C), warm up the engine for 2 or 3 minutes.

   Below 41°F (5°C), warm up the engine for at least 10 minutes at 2,000 rpm. Raise the fast idle lever to achieve approximately 2,000 rpm.

NOTICE

If the engine is not properly warmed-up before raising the engine speed, the buzzer and overheat indicator may activate, and the engine speed will be automatically reduced.

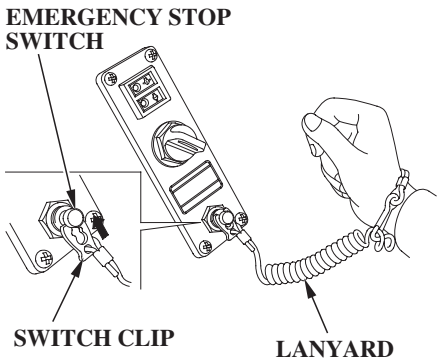
During the warm-up period, check the oil pressure indicator (p. 30), overheat indicator (p. 30), and cooling system indicator (p. 31).

If the indicators show any abnormal condition, immediately stop the engine and determine the cause of the problem. Refer to *TAKING CARE OF UNEXPECTED PROBLEMS* from p. 83 .

6. If the fast idle lever was used to warm up the engine, gradually lower the lever as the engine warms up.

   When the fast idle lever is fully lowered, the control lever can be moved away from the N (neutral) position.

Panel-Mount Type

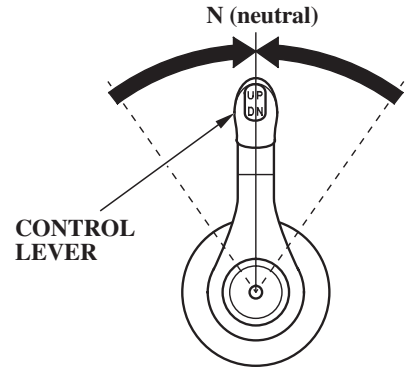


1. Put the emergency stop switch clip in the emergency stop switch, and attach the lanyard to your PFD (Personal Flotation Device) or to your wrist, as shown.

The engine will not start or run, unless the clip is in the switch.

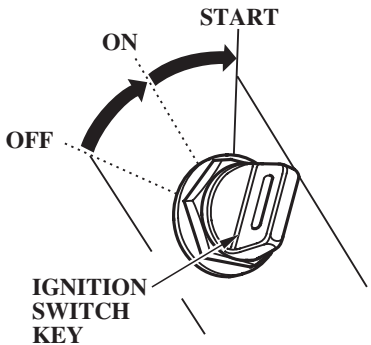
The emergency stop switch clip and lanyard system is a safety device that will stop the engine if you fall away from the controls while operating the boat.

Always attach the lanyard to your PFD, or to your wrist, before starting the engine.



2. Set the control lever in the N (neutral) position.

   The engine will not start if the F (forward) or R (reverse) gears are engaged.



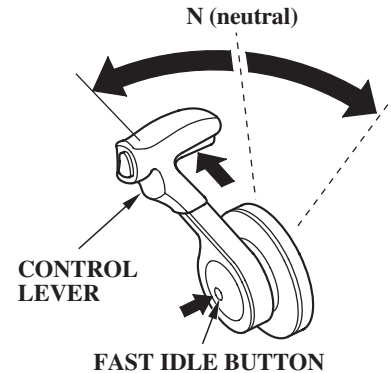
3. Turn the ignition switch key to the START position and hold it there until the engine starts.

   When the engine starts, release the key, allowing it to return to the ON position.

   If the engine fails to start within 5 seconds, release the key and wait at least 10 seconds before operating the starter again.

NOTICE

- *Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.*
- *Turning the ignition switch key to the START position while the engine is running can damage the starter motor and flywheel.*



4. Before getting under way, allow the engine to warm up sufficiently to ensure good performance.

   Above 41°F (5°C), warm up the engine for 2 or 3 minutes.

   Below 41°F (5°C), warm up the engine for at least 10 minutes at 2,000 rpm. Push the fast idle button then move the control lever forward or reverse to open the throttle and achieve approximately 2,000 rpm.

NOTICE

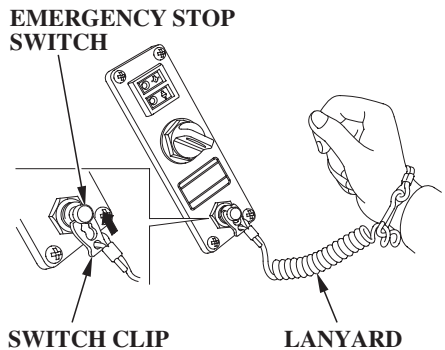
If the engine is not properly warmed-up before raising the engine speed, the buzzer and overheat indicator may activate, and the engine speed will be automatically reduced.

During the warm-up period, check the oil pressure indicator (p. 30), overheat indicator (p. 30), and cooling system indicator (p. 31).

If the indicators show any abnormal condition, immediately stop the engine and determine the cause of the problem. Refer to *TAKING CARE OF UNEXPECTED PROBLEMS* from p. 83 .

5. If the fast idle control was used to warm up the engine, gradually return the control lever to the N (neutral) position as the engine warms up.

Top-Mount Type

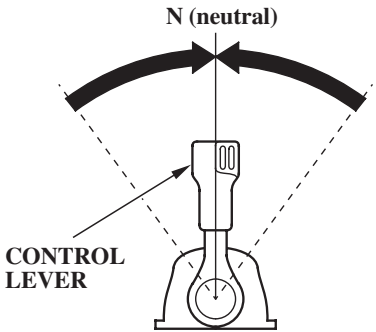


1. Put the switch clip in the emergency stop switch, and attach the lanyard to your PFD (Personal Flotation Device) or to your wrist, as shown.

The engine will not start or run, unless the clip is in the switch.

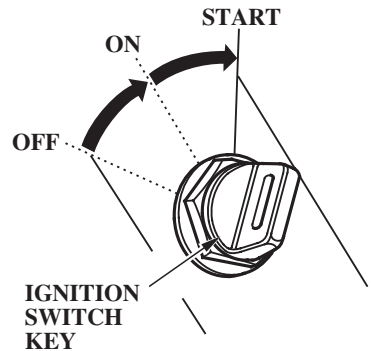
The emergency stop switch clip and lanyard system is a safety device that will stop the engine if you fall away from the controls while operating the boat.

Always attach the lanyard to your PFD, or to your wrist, before starting the engine.



2. Set the control lever in the N (neutral) position.

   The engine will not start if the F (forward) or R (reverse) gears are engaged.



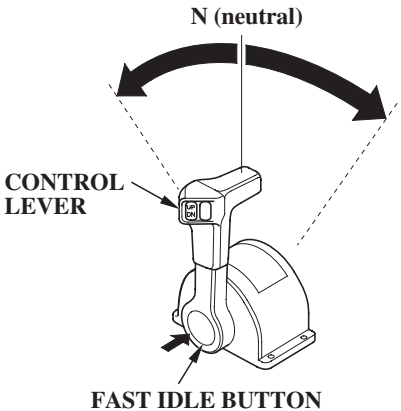
3. Turn the ignition switch key to the START position and hold it there until the engine starts.

   When the engine starts, release the key, allowing it to return to the ON position.

   If the engine fails to start within 5 seconds, release the key and wait at least 10 seconds before operating the starter again.

NOTICE

- *Using the electric starter for more than 5 seconds at a time will overheat the starter motor and can damage it.*
- *Turning the ignition switch key to the START position while the engine is running can damage the starter motor and flywheel.*



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   Above 41°F (5°C), warm up the engine for 2 or 3 minutes.

   Below 41°F (5°C), warm up the engine for at least 10 minutes at 2,000 rpm. Push the fast idle button then move the control lever forward or reverse to open the throttle and achieve approximately 2,000 rpm.

NOTICE

If the engine is not properly warmed-up before raising the engine speed, the buzzer and overheat indicator may activate, and the engine speed will be automatically reduced.

During the warm-up period, check the oil pressure indicator (p. 30), overheat indicator (p. 30), and cooling system indicator (p. 31).

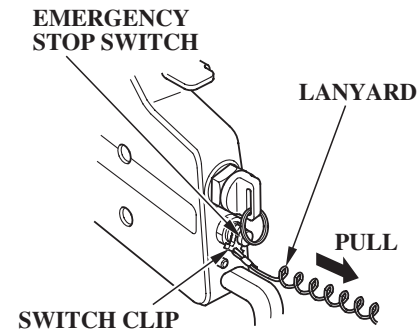
If the indicators show any abnormal condition, immediately stop the engine and determine the cause of the problem. Refer to *TAKING CARE OF UNEXPECTED PROBLEMS* from p. 83 .

5. If the fast idle control was used to warm up the engine, gradually return the control lever to the N (neutral) position as the engine warms up.

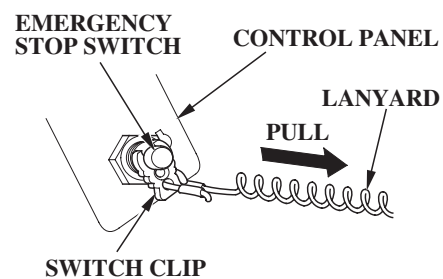
STOPPING THE ENGINE

Emergency Engine Stopping

Side Mount Type



Panel Mount/Top Mount Types

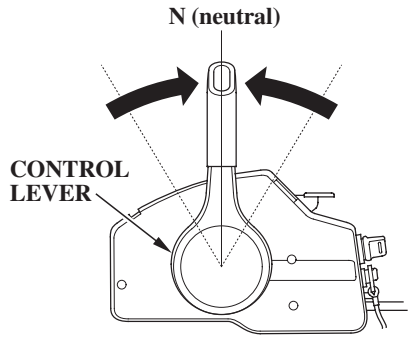


To stop the engine in an emergency, pull the clip out of the emergency stop switch by pulling the lanyard.

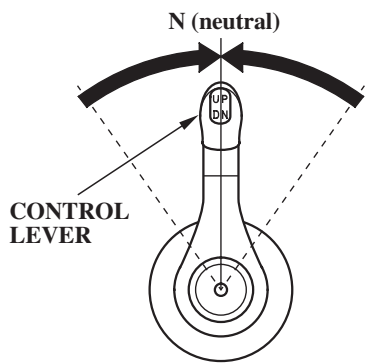
We suggest that you stop the engine this way occasionally to verify that the engine and emergency stop switch are operating properly.

Normal Engine Stopping

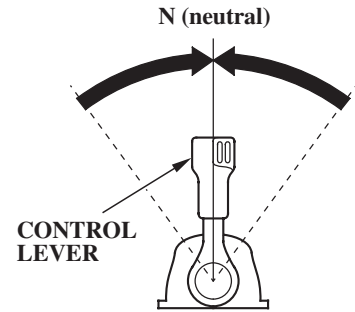
Side Mount Type



Panel Mount Type

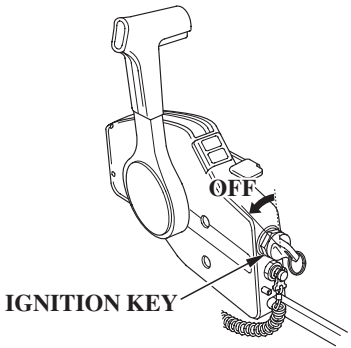


Top Mount Type

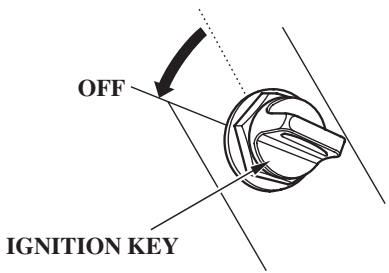


1. Move the control lever(s) to the N (neutral) position.

Side Mount Type



Panel Mount/Top Mount Types

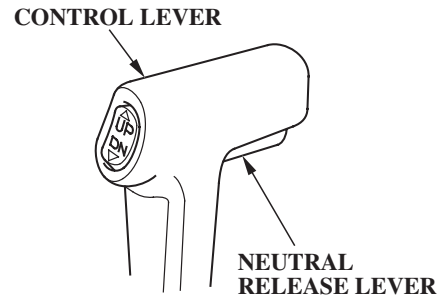


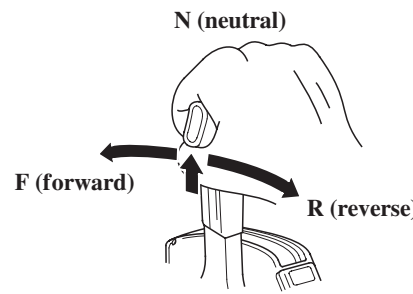
2. Turn the ignition switch key to the OFF position.

3. When the boat is not in use, remove and store the ignition key and the emergency stop switch clip and lanyard.

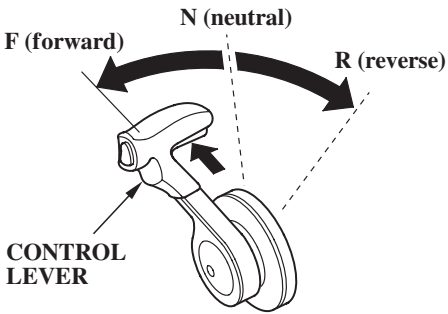
GEARSHIFT AND THROTTLE OPERATION

Side Mount Type

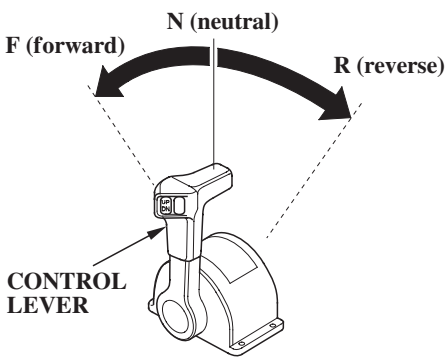




Panel Mount Type



Top Mount Type

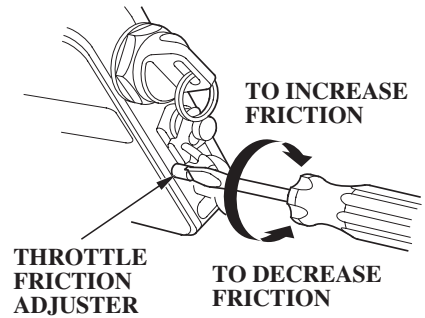


To shift gears, move the control lever to select F (forward), N (neutral) and R (reverse) gears.

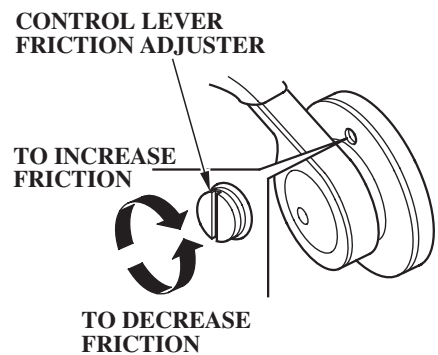
The control lever cannot be moved from the N (neutral) position unless the neutral release lever is squeezed (side-mount/panel-mount types).

Moving the control lever beyond the gear selection range increases engine speed.

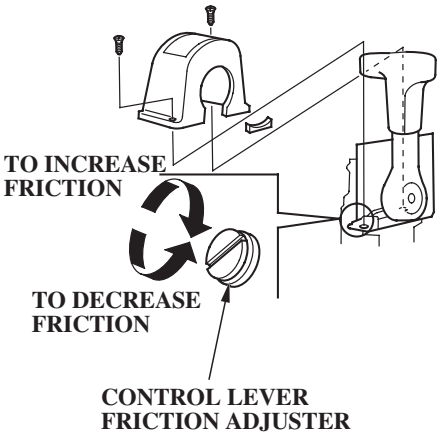
Side Mount Type



Panel-Mount Type



Top Mount Type



Adjust the throttle friction adjuster so the control lever will hold a constant throttle setting while cruising.

STEERING

Steer the boat in the same manner as an automobile.

CRUISING

Engine Speed

For best fuel economy, limit the throttle opening to 80%. Use the throttle friction control (p. 47 , 48) to help you hold a steady speed.

For rough water conditions or large waves, slow down to prevent the propeller from rising out of the water.

The engine is equipped with an overrev limiter to prevent the possibility of mechanical damage from excessive engine speed.

If, for example, the outboard motor is tilted excessively, or propeller ventilation occurs during a sharp turn, the engine may overrev, activating the overrev limiter.

If engine speed becomes unstable at high speed due to activation of the overrev limiter, reduce speed and check the trim angle of the outboard motor.

Trim

Use the power trim/tilt switch to trim the outboard motor for the best performance and stability.

You can use the power trim/tilt switch at any time, whether the boat is under way or stopped.

Press the UP or DN (down) side of the switch to adjust the angle of the outboard motor.

Refer to the trim meter (p. 27) for an indication of whether the motor is trimmed high or low.

It is necessary to trim the angle of the outboard motor to compensate for changes in boat load, weight distribution, water conditions, or propeller selection.

Under normal conditions, the boat will perform best when the antiventilation plate is level with the water.

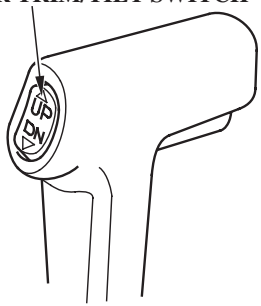
When cruising into a high wind, trim the outboard motor down slightly to level the boat and improve stability. With a tail wind, trim the outboard motor up slightly.

NOTICE

Excessive trim/tilt angle during operation can cause propeller ventilation, overheating, and water pump damage.

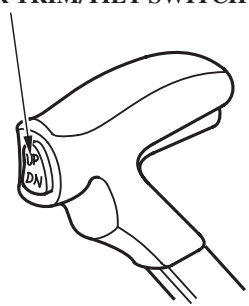
Side Mount Type

POWER TRIM/TILT SWITCH



Panel Mount Type

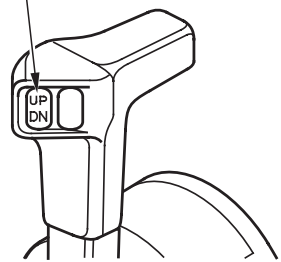
POWER TRIM/TILT SWITCH



Top Mount Type

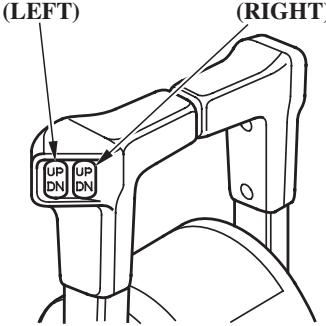
(single type)

POWER TRIM/TILT SWITCH

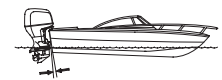


(dual type)

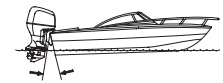
POWER TRIM/TILT SWITCH
(LEFT) **(RIGHT)**



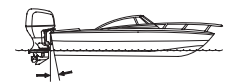
MOTOR TRIMMED TOO LOW



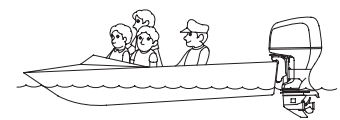
MOTOR TRIMMED TOO HIGH



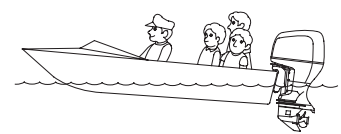
MOTOR TRIMMED CORRECTLY



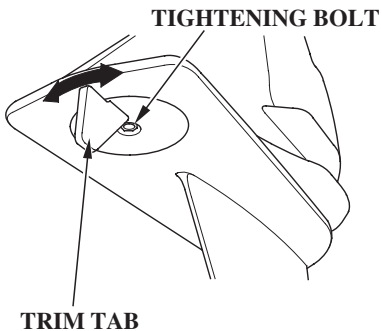
BOW TOO LOW DUE TO
1. LOAD IN THE FRONT
2. MOTOR TRIMMED TOO LOW



BOW TOO HIGH DUE TO
1. LOAD IN THE REAR
2. MOTOR TRIMMED TOO HIGH



If steering effort is not equal in both directions, adjust the trim tab to compensate for ‘‘torque steer,’’ which is the reaction of the outboard motor to propeller rotation.



Adjust the trim tab with the engine stopped. Loosen the bolt above the trim tab, turn the trim tab, then tighten the bolt securely.

When the trim tab is correctly adjusted, steering effort will be equal in both directions.

SHALLOW WATER OPERATION

When operating in shallow water, use the power trim/tilt switch (p. 49 — 50) to tilt the outboard motor, so the propeller and gear case won’t hit the bottom.

Proceed at low speed, and monitor water flow from the cooling system indicator (p. 31) to be sure the outboard motor is not tilted so high that the water intakes are out of the water.

NOTICE

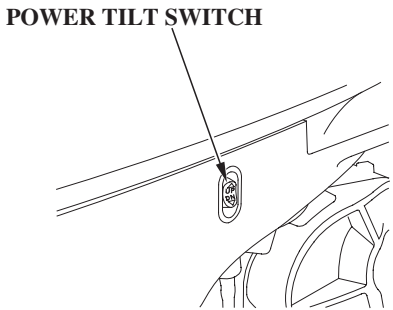
An excessive trim/tilt angle during operation can cause propeller ventilation, overheating, and water pump damage. This type of damage is not covered by the Distributor’s Limited Warranty (p. 108).

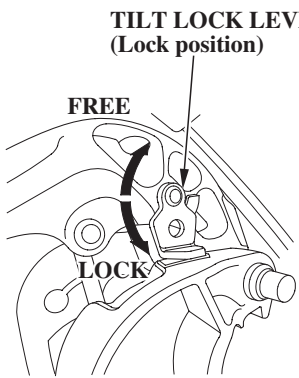
MOORING, BEACHING, LAUNCHING

To raise the outboard motor out of the water while the engine is stopped and the boat is moored, or for maximum clearance when beaching or launching, use the power tilt switch on the engine pan to tilt the outboard motor as far as it will go, move the tilt lock lever to the LOCK position, then gently lower the outboard motor until the lever contacts the stern bracket.

If more clearance is needed to swing the tilt lock lever into the LOCK position, rock the outboard motor forward slightly by pulling on the engine cover grip.

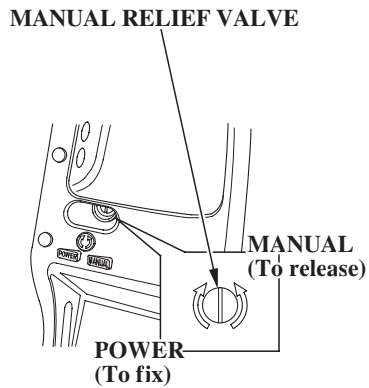
To lower the outboard motor, tilt up, move the tilt lock lever to the FREE position, then lower the outboard motor to the desired position.





NOTICE

Do not attempt to use the power tilt switch to tilt the outboard motor down while the tilt lock lever is in the lock position. Damage to the power tilt system may occur.



The outboard motor can also be tilted manually after opening the manual relief valve. This feature enables the outboard motor to be tilted or lowered when no battery is connected.

For manual tilting, use a screwdriver to turn the valve counterclockwise 1 or 2 turns. Close the valve firmly after positioning the engine.

Be sure the valve is closed before operating the outboard motor. If the valve is not closed, the outboard motor will tilt up when operated in reverse.

THE IMPORTANCE OF MAINTENANCE

Good maintenance is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution.

⚠ WARNING

Improperly maintaining this outboard motor, or failure to correct a problem before operation, can cause a malfunction in which you could be seriously hurt or killed.

Always follow the inspection and maintenance recommendations and schedules in this owner's manual.

To help you properly care for your outboard motor, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult, or require special tools, are best handled by professionals and are normally performed by a Honda technician or other qualified mechanic.

The maintenance schedule applies to normal operating conditions. If you operate your outboard motor under unusual conditions, consult an authorized Honda marine dealer for recommendations applicable to your individual needs and use.

Remember that your authorized Honda marine dealer knows your outboard motor best and is fully equipped to maintain and repair it.

To ensure the best quality and reliability, use only new, genuine Honda parts or their equivalents for repair and replacement.

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any marine engine repair establishment or individual, using parts that are ''certified'' to EPA standards.

MAINTENANCE SAFETY

Some of the most important safety precautions follow. However, we cannot warn you of every conceivable hazard that can arise in performing maintenance. Only you can decide whether or not you should perform a given task.

⚠WARNING

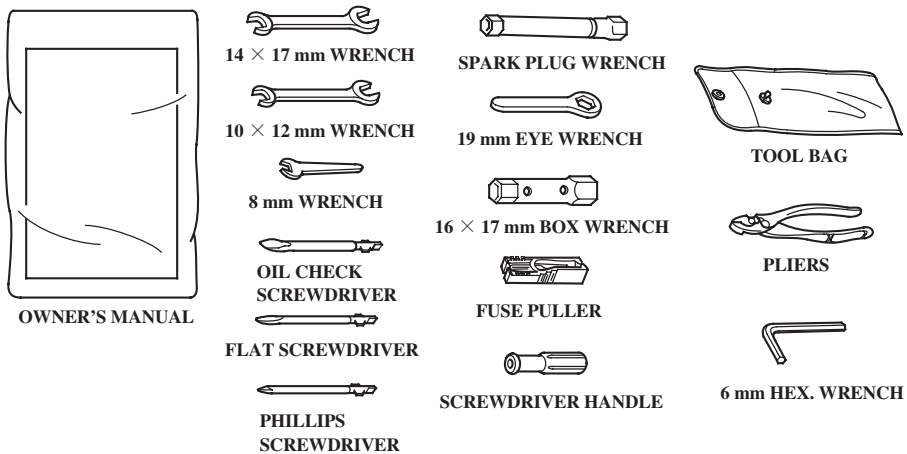
Failure to properly follow maintenance instructions and precautions can cause you to be seriously hurt or killed.

Always follow the procedures and precautions in the owner's manual.

Safety Precautions

- Make sure the engine is off before you begin any maintenance or repairs. This will eliminate several potential hazards:
  - **Carbon monoxide poisoning from engine exhaust.** Be sure there is adequate ventilation whenever you operate the engine.
  - **Burns from hot parts.** Let the engine and exhaust system cool before touching.
  - **Injury from moving parts.** Do not run the engine unless instructed to do so.
- Read the instructions before you begin, and make sure you have the tools and skills required.
- To reduce the possibility of fire or explosion, be careful when working around gasoline. Use only a nonflammable solvent, not gasoline, to clean parts. Keep cigarettes, sparks, and flames away from all fuel-related parts.
- Wear gloves when handling the propeller to protect your hands from sharp edges.

TOOL KIT and OWNER'S MANUAL



The tool kit can be used for simple maintenance procedures and emergency repairs. Keep these items on the boat, so they will always be available if you need them.

If your tool kit needs replacement, it is not available as a kit and each item must be ordered individually.

SPARE EMERGENCY STOP SWITCH CLIP (optional equipment)

Always carry a spare emergency stop switch clip onboard. The spare clip may either be stored in the tool bag or in an easily accessible location on the boat.

MAINTENANCE SCHEDULE

Follow the MAINTENANCE SCHEDULE table and service your outboard motor accordingly. Please note, a claim for warranty coverage will not be denied simply because the maintenance schedule for your outboard was not followed. However, any part(s) that fails specifically due to lack of maintenance, or improperly performed maintenance, would not be covered under the *Distributor's Limited Warranty*.

REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first. / ITEM		Each use	After use	First month or 20 hrs.	Every 6 months or 100 hrs.	Every year or 200 hrs.	Every 2 years or 400 hrs.
Engine oil	Check level	○					
	Change			○	○		
Gear case oil	Change			○ (2)	○ (2)		
Engine oil filter	Replace					○ (2)	
Timing belt	Check-adjust					○ (2)	
ACG belt	Check-adjust					○ (2)	
Throttle linkage	Check-adjust			○ (2)	○ (2)		
Idle speed	Check-adjust			○ (2)	○ (2)		
Valve clearance	Check-adjust					○ (2)	
Spark plug	Check					○	
	Clean					○ (2)	
	Replace						○

(1) Lubricate more frequently when used in salt water.
(2) These items should be serviced by an authorized Honda marine dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda shop manual for service procedures.
(3) For professional/commercial use, log hours of operation to determine proper maintenance intervals.
(4) When operating in salt water, turbid or muddy water, the engine should be flushed with clean water after each use.

REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first. / ITEM		Each use	After use	First month or 20 hrs.	Every 6 months or 100 hrs.	Every year or 200 hrs.	Every 2 years or 400 hrs.
Propeller and Cotter pin	Check	○					
Anode	Check	○					
Lubrication	Grease			○ (1)	○ (1)		
Water separator	Check	○					
Fuel filter	Check				○		
	Replace						○
Fuel filter (High pressure type)	Replace						○ (2)
Thermostat and thermostat cover	Check					○ (2)	
Fuel line	Check	○					
	Replace	Every 2 years (If necessary) (2)					
Battery and cable connection	Check level-tightness	○					
Bolts and Nuts	Check-tightness			○ (2)	○ (2)		
Crankcase breather tube	Check					○ (2)	
Cooling water passages	Clean		○ (4)				
Water pump	Check					○ (2)	

(1) Lubricate more frequently when used in salt water.
(2) These items should be serviced by an authorized Honda marine dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda shop manual for service procedures.
(3) For professional/commercial use, log hours of operation to determine proper maintenance intervals.
(4) When operating in salt water, turbid or muddy water, the engine should be flushed with clean water after each use.

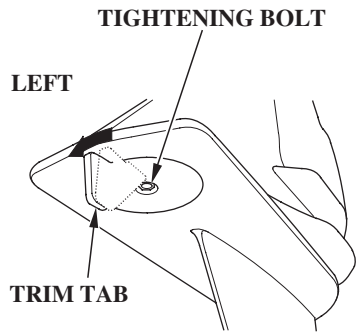
TRIM TAB ADJUSTMENT

The trim tab compensates for ‘‘torque steer’’ which is a reaction of the outboard motor to propeller rotation.

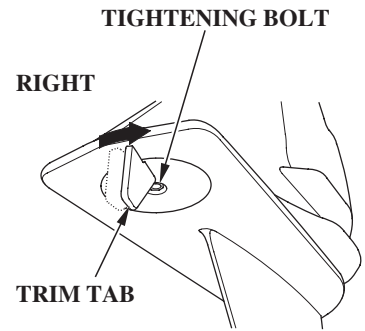
If uncompensated, torque steer would make the outboard motor tend to turn to one side.

When the trim tab is correctly adjusted, steering effort is equal in either direction.

If steering effort is unequal, loosen the trim tab bolt and adjust the angle of the trim tab. Retighten the trim tab bolt securely.



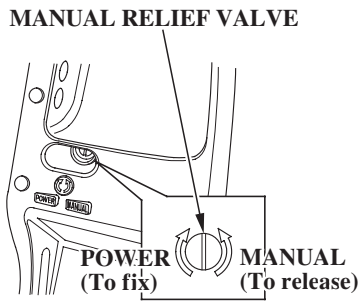
If less effort is required to make left turns, move the back of the trim tab left.



If less effort is required to make right turns, move the back of the trim tab right.

Adjust the trim tab in small increments, and retest steering effort with the boat evenly loaded and running at cruising speed.

MANUAL RELIEF VALVE

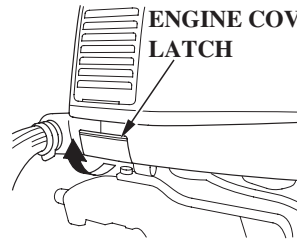


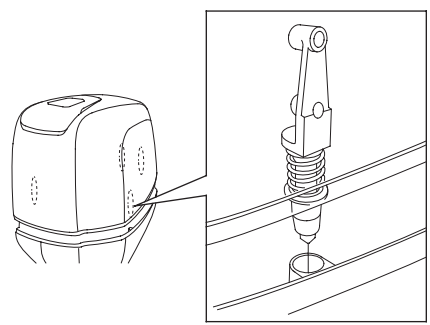
The outboard motor can be tilted manually after opening the manual relief valve. This feature enables the outboard motor to be tilted or lowered when no battery is connected.

For manual tilting, use a screwdriver to turn the valve counterclockwise 1 or 2 turns. Close the valve firmly after positioning the outboard motor.

Be sure the valve is closed before operating the outboard motor. If the valve is not closed, the outboard motor will tilt up when operated in reverse.

ENGINE COVER REMOVAL AND INSTALLATION





The engine cover latch fastens the engine cover to the outboard motor.

To remove the engine cover, pull the engine cover latch to the unlocked position, then lift the engine cover straight up from the outboard motor.

To install the engine cover, place the cover on the outboard motor, and push down evenly.

Lubricate the engine cover rubber sealing ring with silicone spray to make installation easier.

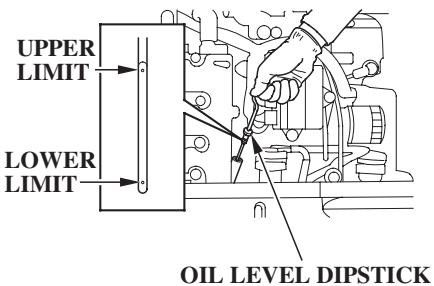
The cover should be tight at the mid-case point. If the cover is loose or difficult to secure, an adjustment may be necessary. Please see the shop manual or your Honda dealer for adjustment.

Engine Oil Level Check

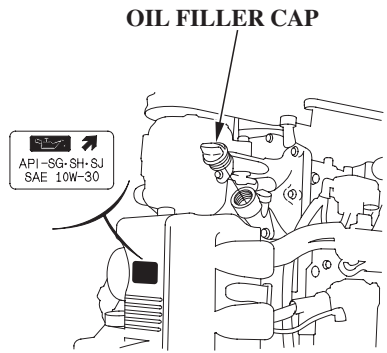
Check the engine oil level with the engine stopped and the outboard motor in the vertical position.

1. Unlock and remove the engine cover (p. 59).

2. Remove the dipstick and wipe it clean.



3. Insert the dipstick all the way in, then remove it and check the oil level shown on the dipstick.



4. If the oil level is low, remove the oil filler cap, and add oil to reach the upper limit mark shown on the dipstick. Use the oil recommended on p. 63 .

NOTICE

Running the engine with a low oil level can cause engine damage.

5. Install the oil filler cap and tighten it securely. Do not overtighten.

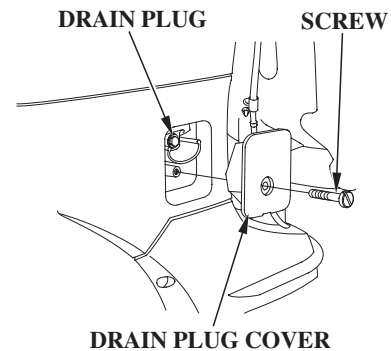
6. Install and lock the engine cover.

Engine Oil Change

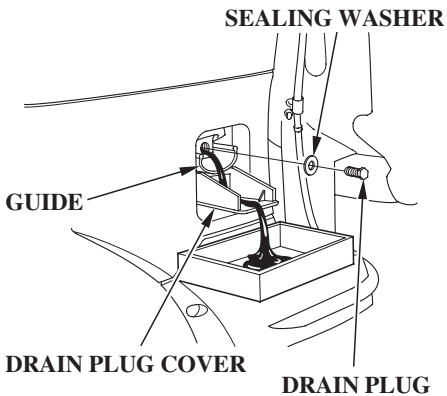
An engine oil evacuation/filling device may be used to remove/add the engine oil.

Drain the used oil while the engine is warm. Warm oil drains quickly and completely.

1. Unlock and remove the engine cover (p. 59).



2. Remove the screw from the oil drain plug cover, and remove the cover.



3. Set the drain plug cover under the guide.

4. Place a suitable container below the oil drain guide to catch the used oil, then remove the oil filler cap and the drain plug.

5. Allow the used oil to drain completely. Use a new sealing washer then reinstall the engine oil drain plug and washer. Tighten the drain plug securely.

NOTICE

Improper disposal of engine oil can be harmful to the environment. If you change your own oil, please dispose of the used oil properly. Put it in a sealed container, and take it to a recycling center. Do not discard it in a trash bin, dump it on the ground or down a drain.

6. Install the oil drain plug cover and secure it with the screw.

7. With the outboard motor in a vertical position, fill to the upper limit mark on the dipstick (p. 60) with the recommended oil.
   Engine oil refill capacity:
   Without oil filter change:
   8.0 US qt (7.6 ℓ)
   With oil filter change:
   8.2 US qt (7.8 ℓ)

8. Install the oil filler cap and tighten it securely.

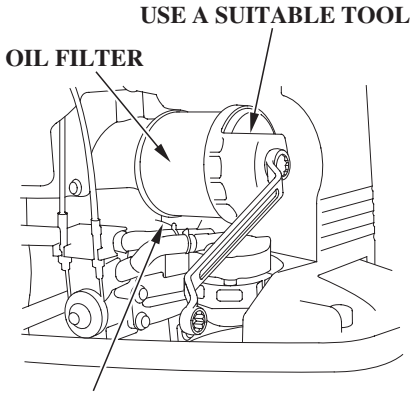
9. Install and lock the engine cover.

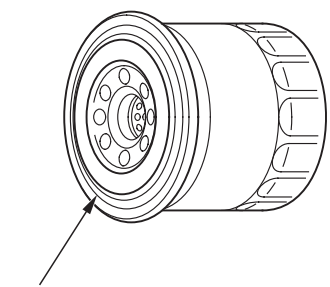
Oil Filter Change

1. Drain the engine oil, and reinstall the drain plug and oil drain cover (see Engine Oil Change on p. 60).

2. Tilt the outboard motor, and place a suitable container below the oil drain guide to catch the used oil.

3. Use a suitable tool to remove the oil filter, and throughly drain the filter into the used oil container.





4. Clean the oil filter mounting base, and coat the gasket of the new oil filter with clean engine oil.

   NOTICE

   Use only a genuine Honda oil filter or a filter of equivalent quality specified for your model. Using the wrong filter, or a non-Honda filter which is not of equivalent quality, may cause engine damage.

5. Screw on the new filter by hand until it contacts the engine, then use a suitable tool to tighten the filter an additional 7/8 turn.

   OIL FILTER TIGHTENING TORQUE:
   16 lbf·ft (22 N·m , 2.2 kgf·m)

6. Return the outboard motor to the vertical position, and fill the crankcase with the specified amount (p. 61) of the recommended oil.

7. Start the engine and check for leaks.

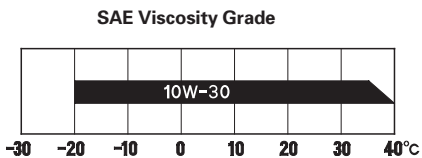
   NOTICE

   Running the engine without water can cause serious engine damage. If you are changing the oil filter while the outboard motor is out of the water, use commercially available Ear-muffs and a hose to supply water.

8. Stop the engine, and check the oil level as described on page 60 . If necessary, add oil to bring the oil level to the upper limit mark on the dipstick.

Engine Oil Recommendations

Oil is a major factor affecting performance and service life. Use 4-stroke automotive detergent oil.



SAE 10W-30 is recommended for general use.

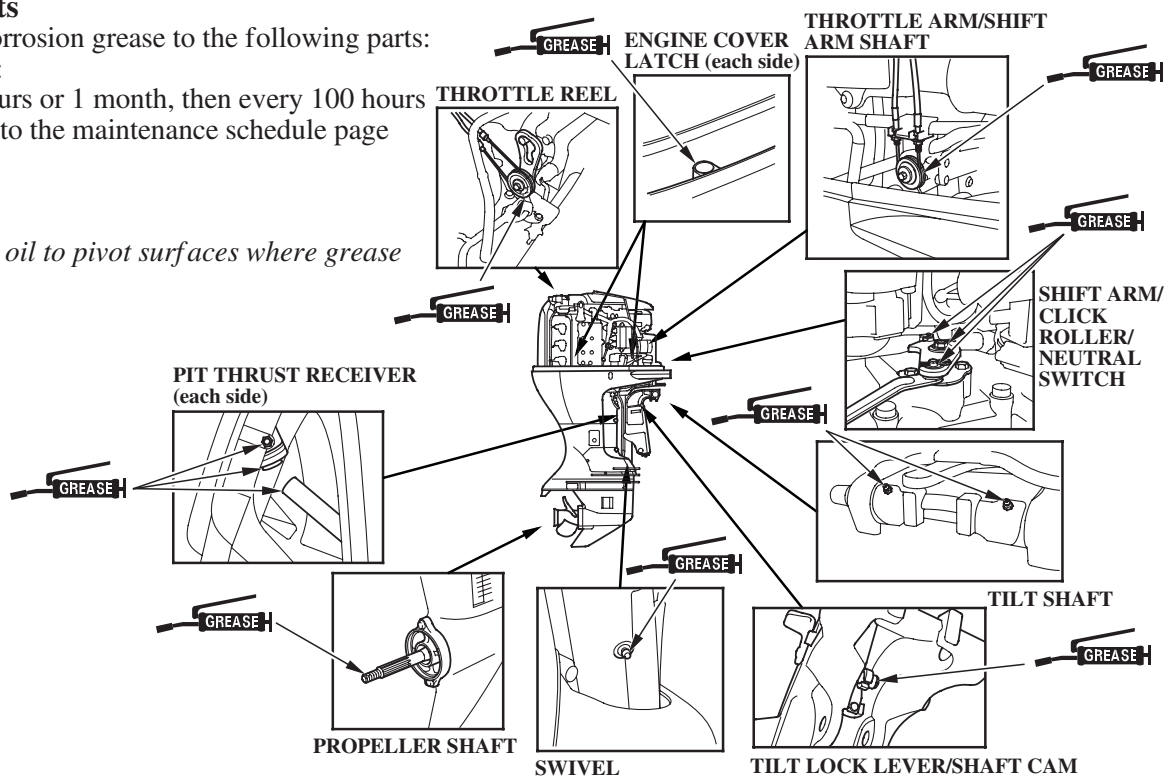
The SAE oil viscosity and service classification are in the API label on the oil container. Honda recommends that you use API SERVICE category SG, SH, SJ or SL oil with the ‘‘starburst’’ certification mark displayed on the container.

Lubrication Points

Apply marine anticorrosion grease to the following parts:
Lubrication interval:
After the first 20 hours or 1 month, then every 100 hours or 6 months. (Refer to the maintenance schedule page 56).

NOTICE

Apply anticorrosion oil to pivot surfaces where grease cannot penetrate.



Apply Honda Marine Corrosion Inhibitor (or equivalent) to all areas under the engine cover and any exposed metal surfaces except the belts.

Spark Plug Service

RECOMMENDED SPARK PLUGS:
IZFR6F11 (NGK)
VKJ20RZ-M11 (DENSO)

NOTICE

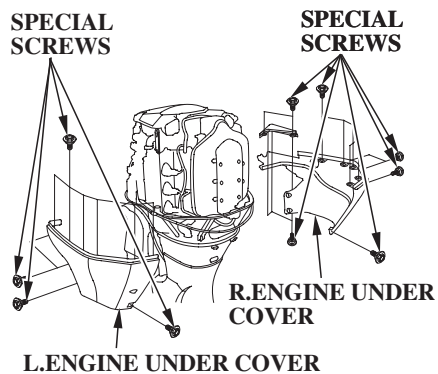
Incorrect spark plugs can cause engine damage.

This outboard motor uses spark plugs that have an iridium coated center electrode. Be sure to observe the following when servicing the spark plugs.

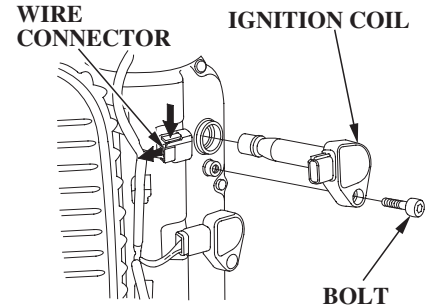
- Do not clean the spark plugs. If an electrode is contaminated with accumulated objects or dirt, replace the spark plug with a new one.
- Use only a ''wire-type feeler gauge'' to check the spark plug gap if necessary. To prevent damaging the iridium coating of the center electrode, never use a ''leaf-type feeler gauge.''
- Do not adjust the spark plug gap. If the gap is out of specification, replace the spark plug with a new one.

1. Disconnect the battery negative (−) terminal.

2. Unlock and remove the engine cover (p. 59).



3. Remove the twenty special screws, and remove the R. and L. engine under covers.

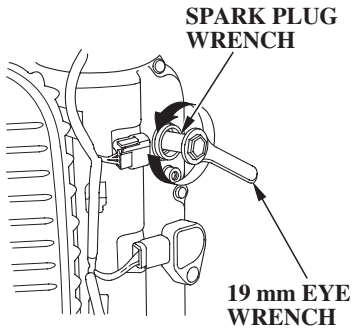


4. Disconnect the wire connector from the ignition coil by pushing on the lock tab and pulling on the connector. Pull on the plastic connector, not the wires.

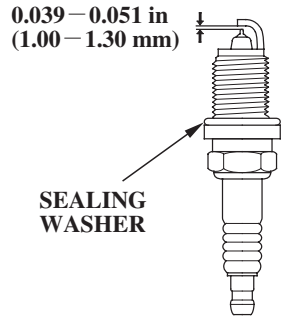
5. Use a 6 mm hex. wrench to remove the bolt holding the ignition coil. Remove the ignition coil by pulling it up slightly.

NOTICE

Do not strike or drop the ignition coil, or it may be damaged and require replacement.



6. Remove the spark plugs with a spark plug wrench and 19 mm wrench.



7. Inspect the spark plugs. Replace them if the electrodes are worn, or if the insulators are cracked or chipped.

8. Measure the spark plug electrode gap with a wire-type feeler gauge. The gap should be 0.039 − 0.051 inches (1.00 − 1.30 mm). If the gap is out of the specification, replace the plug with a new one. Never try to readjust the gap.

9. Install the spark plugs carefully, by hand, to avoid cross-threading.

10. After each spark plug seats, tighten with a spark plug wrench supplied in the tool kit to compress the sealing washer.

    If reinstalling used spark plugs, tighten 1/8 - 1/4 turn after the spark plugs seat.

    If installing new spark plugs, tighten 1/2 turn after the spark plugs seat.

NOTICE

Loose spark plugs can overheat and damage the engine. Overtightening the spark plugs can damage the threads in the cylinder head.

11. Install the ignition coil. Reinstall the bolt.

12. Push the wire connector onto the ignition coil. Make sure it locks in place.

13. Repeat this procedure for the other five spark plugs.

14. Reinstall the covers. When reinstalling the covers, make sure not to jam the wire harnesses between the covers and engine case.

REFUELING

Check the fuel level and refill if neccessary. Do not fill the fuel tank above the UPPER LIMIT. Refer to the boat manufacturer's instructions.

⚠ WARNING

Gasoline is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.
- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

Never refill the fuel tank inside a building where gasoline fumes may reach flames or sparks. Keep gasoline away from appliance pilot lights, barbecues, electric appliances, power tools, etc.

Spilled fuel is not only a fire hazard, it causes environmental damage. Wipe up spills immediately.

FUEL RECOMMENDATIONS

Use unleaded gasoline with a pump octane rating of 86 or higher.

Your outboard motor is certified to operate on unleaded gasoline. Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life.

Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

Occasionally you may hear a light ‘‘spark knock’’ or ‘‘pinging’’ (metallic rapping noise) while operating under heavy loads. This is no cause for concern.

If spark knock or pinging occurs at a steady engine speed, under normal load, change brands of gasoline. If spark knock or pinging persists, see an authorized Honda marine dealer.

NOTICE

Running the engine with persistent spark knock or pinging can cause engine damage.

Running the engine with persistent spark knock or pinging is misuse, and the *Distributor’s Limited Warranty* (p. 108) does not cover parts damaged by misuse.
For information regarding oxygenated fuels, please refer to page 96 .

Fuel Filter Inspection and Replacement

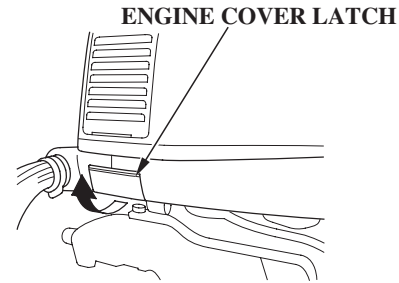
The fuel filter (inside the strainer cup) is located below the engine oil filter.

Water or sediment accumulated in the filter can cause loss of power or hard starting. To prevent engine malfunction, inspect the filter and replace when necessary.

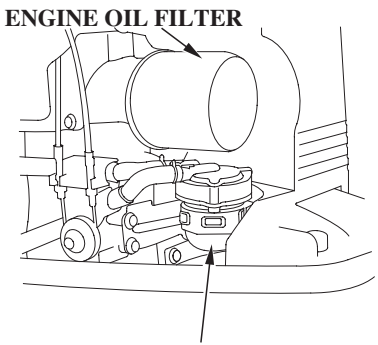
⚠ WARNING

Gasoline is highly flammable and explosive.

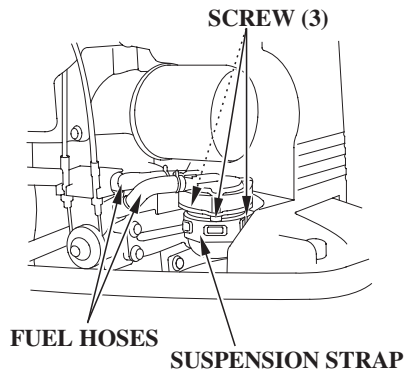
You can be burned or seriously injured when handling fuel.
- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.



1. Remove the engine cover.



2. Looking through the translucent strainer cup, check the fuel filter for water accumulation or sediment.



3. Remove the suspension strap from the strainer bracket, then remove the strainer assembly from the strap.
   Before removing the fuel filter, to prevent fuel leakage, place fuel hose clamps on the fuel hoses on each side of the fuel filter.

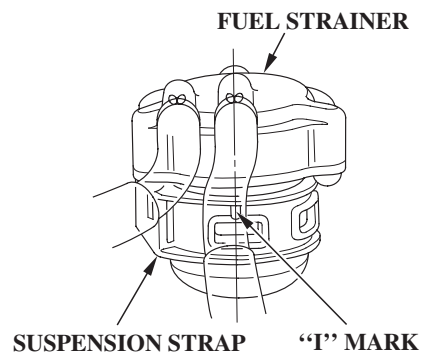
4. Remove the three screws and separate the fuel strainer cup from the strainer body.

5. Thoroughly clean the strainer cup, and replace with a new fuel filter.

6. Reassemble the strainer body and the cup.
   STRAINER TIGHTENING TORQUE:
   3.4 N·m (0.35 kgf·m , 2.5 lbf·ft)

7. Install the suspension strap to the fuel strainer.

8. Align the "I" mark on the suspension strap as shown below and install the fuel strainer to the bracket.

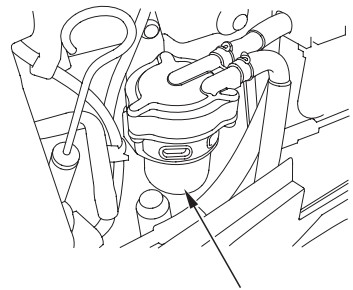


8. Prime the engine using the priming bulb (refer to page 36). Check for fuel leaks. Repair any fuel leaks if necessary.

If loss of power or hard starting are found to be caused by excessive water or sediment accumulation in the fuel filter, inspect the fuel tank.

Clean the fuel tank and tank filter if necessary. It may be necessary to drain the fuel tank completely and refill with fresh gasoline.

Water Separator Inspection and Service



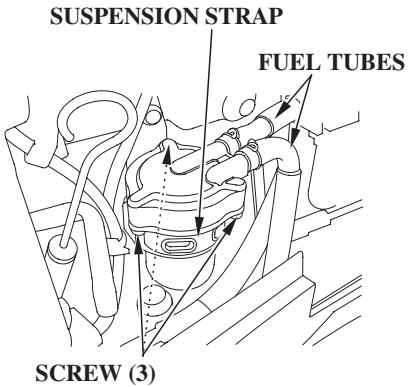
WATER SEPARATOR

The water separator is located beside the oil level dipstick. Water accumulation in the water separator can cause loss of power or hard starting. Check the water separator periodically. Clean it or consult with an authorized Honda marine dealer for cleaning.

⚠ WARNING

Gasoline is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.
- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.



1. Remove the engine cover (p. 59).

2. Remove the suspension strap from the water separator bracket.

3. Pinch the fuel tubes with tube clips to prevent fuel leakage.

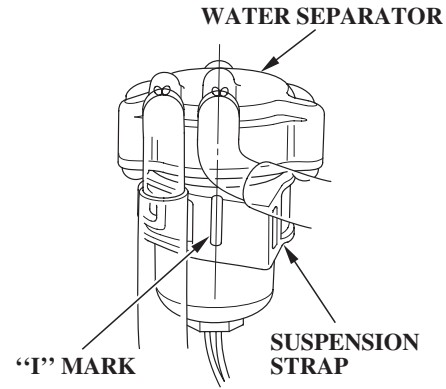
4. Remove the three screws and separate the water separator cup from the body.

5. Thoroughly clean the water separator cup.

6. Reassemble the water separator body and the cup.
   TIGHTENING TORQUE:
   3.4 N·m (0.35 kgf·m , 2.5 lbf·ft)

7. Align the "I" mark on the suspension strap as shown below and install the water separator to the bracket.

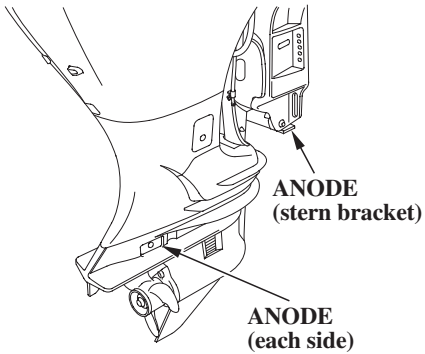
8. Squeeze and release the priming bulb to fill the vapor separator, and check for leaks.



If the buzzer sounds or water or sediment accumulation are found to be caused by excessive water or sediment accumulation in the fuel filter, inspect the fuel tank.

Clean the fuel tank and tank filter if necessary. It may be necessary to drain the fuel tank completely and refill with fresh gasoline.

Anode Replacement



The anodes are located on each side of the gearcase. They are made of a sacrificial material that helps to protect the outboard motor from corrosion.

Replace the anodes when they have been reduced to about half their original size, or if they are crumbling.

NOTICE

Painting or coating the anodes will defeat their purpose and will lead to rust and corrosion damage to the outboard motor. The anodes must be exposed to the water in order to protect the outboard motor.

Propeller Replacement

Before replacing the propeller, remove the clip from the engine stop switch to prevent any possibility of the engine being started while you are working with the propeller.

The propeller blades may have sharp edges, so wear heavy gloves to protect your hands.

Operating the outboard motor at higher altitudes will reduce available power. This may require decreasing the propeller pitch to maintain correct engine RPM.

Removal

1. Remove the cotter pin, unscrew the castle nut, remove the washer, then remove the propeller and thrust washer.

2. Inspect the propeller shaft for any fishing line or debris.

Installation

Some propeller brands require specific mounting hardware. Refer to your specific propeller manufacturer's instructions for proper installation.

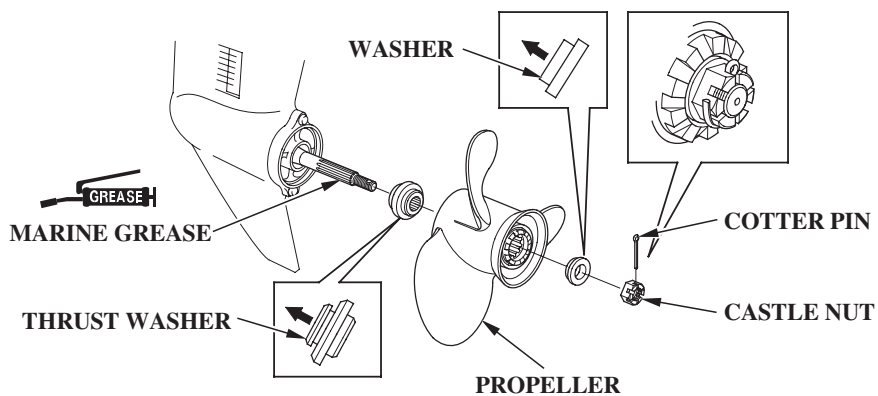
1. Apply marine grade grease to the propeller shaft and beveled surface of the thrust washer.

2. Install the propeller in the reverse order of removal.

NOTICE

- *Install the thrust washer with the grooved side toward the gear case.*

- *Use a genuine Honda cotter pin and bend the pin ends as shown.*



STORAGE

STORAGE PREPARATION

Proper storage preparation is essential for keeping your outboard motor troublefree and looking good. The following steps will help to keep rust and corrosion from impairing your outboard motor's function and appearance, and will make the engine easier to start when you use the outboard motor again.

Cleaning and Flushing

Thoroughly clean and flush the outboard motor with fresh water after operation in dirty water or salt water.

Touch up any damaged paint, and coat areas that may rust with Honda Corrosion Inhibitor, or equivalent. Lubricate controls with a silicone spray lubricant.

Cleaning

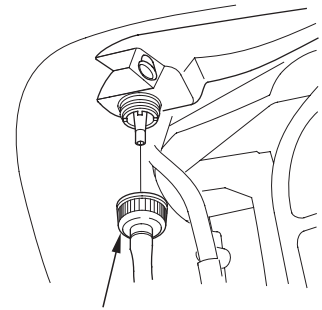
Wash the outside of the outboard motor with clean, fresh water, and flush the cooling system as follows.

Flushing With a Garden Hose

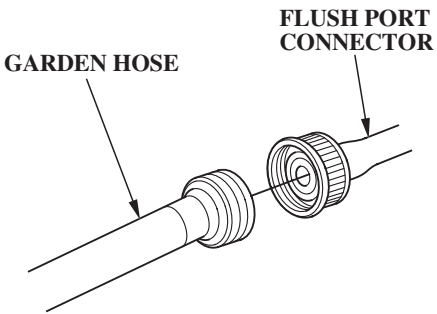
NOTICE

Do not run the motor when flushing the motor with a garden hose or the motor may be damaged.

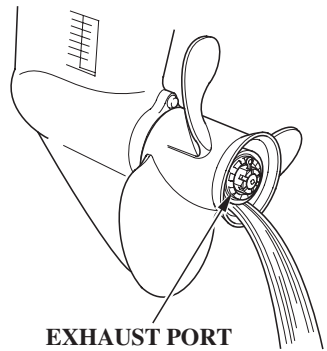
For safety, remove the emergency stop switch clip so the engine cannot be started while you are standing near the propeller.



1. Disconnect the flush port connector.



2. Connect the garden hose to the flush port connector.



3. Turn on the fresh water supply and flush the outboard motor for at least 10 minutes.

4. After flushing, disconnect the garden hose and reconnect the flush port connector.

Fuel

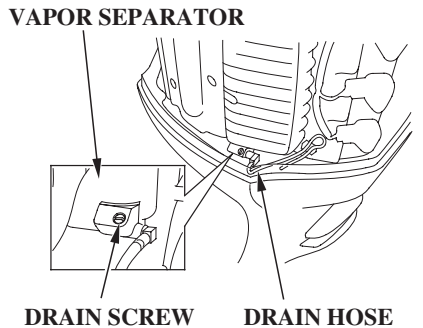
Gasoline will oxidize and deteriorate in storage. Old gasoline will cause hard starting, and it leaves gum deposits that clog the fuel system. If the gasoline in your fuel tank and vapor separator deteriorates during storage, you may need to have the vapor separator and other fuel system components serviced or replaced.

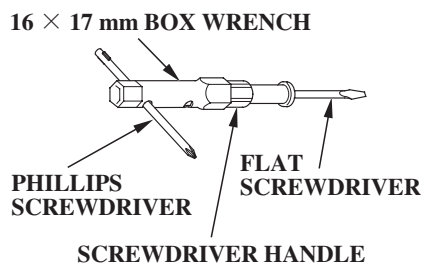
The length of time that gasoline can be left in your fuel tank and vapor separator without causing functional problems will vary with such factors as gasoline blend, your storage temperatures, and whether the fuel tank is partially or completely filled. The air in a partially filled fuel tank promotes fuel deterioration. Very warm storage temperatures accelerate fuel deterioration. Fuel deterioration problems may occur within a few months, or even less if the gasoline was not fresh when you filled the fuel tank.

The *Distributor's Limited Warranty* (p. 108) does not cover fuel system damage or engine performance problems resulting from neglected storage preparation.

You can avoid fuel deterioration problems by draining the fuel tank and vapor separator.

Drain the fuel into an approved fuel container.





1. Unhook the drain hose from the lower left of the head cover.
2. Set the end of the hose toward the outside of the engine undercase and below the level of the vapor separator drain screw.
3. Loosen the vapor separator drain screw by using the tool kits as shown in the above illustration.

⚠ WARNING

Gasoline is highly flammable and explosive.

You can be burned or seriously injured when handling fuel.
- Stop the engine and keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

4. With the outboard motor turned to the starboard side, tilt the motor up. Keep the end of the drain hose below the level of the vapor separator drain screw and watch for the fuel to start flowing out the drain hose.

5. After the fuel starts flowing out the drain hose, tilt the motor down and allow the siphon to finish draining the vapor separator.

6. After draining thoroughly, tighten the drain screw securely.

7. Clip the drain hose on the head cover.

8. Drain the fuel tank into an approved gasoline container, or if you need to store fuel in the fuel tank, you can extend fuel storage life by filling the fuel tank with fresh gasoline and adding a fuel stabilizer that is formulated for that purpose.

Engine Oil

1. Change the engine oil and the oil filter (p. 60 — 62).

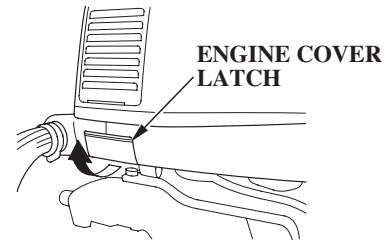
2. Remove the spark plugs (p. 65), and remove the clip from the emergency stop switch.

3. Pour a tablespoon (5 — 10 cm^3) of clean engine oil into each cylinder.

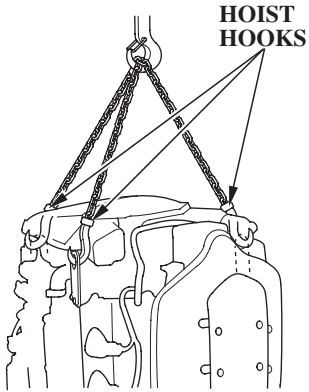
4. Rotate the engine a few revolutions to distribute the oil in the cylinders.

5. Reinstall the spark plugs (p. 66).

HOISTING THE OUTBOARD MOTOR



1. Unlock and remove the engine cover.



2. Attach the hoist hooks to the lifting eyes.

3. Disconnect the outboard motor from the boat, hoist the outboard motor, and move it to the storage area.

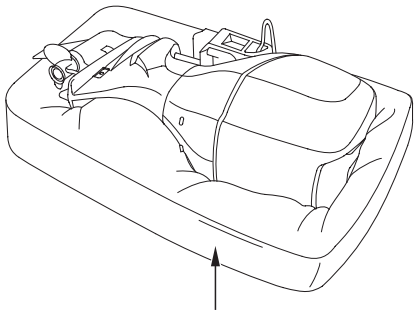
4. After the outboard motor is placed in storage and disconnected from the hoist, install the engine cover.

STORAGE PRECAUTIONS

Select a well-ventilated storage area. If possible, avoid storage areas with high humidity.

If storing a container of gasoline, store it away from any appliance that operates with a flame, such as a furnace, water heater, or clothes dryer. Also avoid any area with a spark producing electric motor, or where power tools are operated.

If the outboard motor will be removed from the boat for storage, we recommend storing it vertically by mounting it on a commercially available stand.



If it is necessary to store the outboard motor horizontally, drain the vapor separator (p. 77 — 78), and drain the engine oil (p. 60), before removing the outboard motor from the boat.

Rest the motor on a cushion of protective material.

Cover the outboard motor to keep out dust. Do not use sheet plastic as a dust cover. A nonporous cover will trap moisture, promoting rust and corrosion.

REMOVAL FROM STORAGE

Check your outboard motor as described in the *BEFORE OPERATION* chapter of this manual.

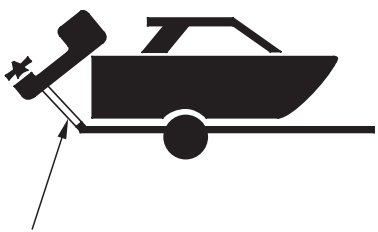
If the cylinders were coated with oil during storage preparation, the engine may smoke briefly at startup. This is normal.

TRANSPORTING

WITH OUTBOARD MOTOR INSTALLED ON BOAT

When trailering a boat with the outboard motor attached, leave the engine in the normal running position, if possible.

Use a motor support bar to prevent the outboard motor from moving while trailering the boat. Refer to the manufacturer's instructions for using a motor support bar.



MOTOR SUPPORT BAR (commercially available)

WITH OUTBOARD MOTOR REMOVED FROM BOAT

Secure the outboard motor in either the vertical or horizontal position shown on p. 80 — 81 .

ENGINE WILL NOT START	Possible Cause	Correction
1. Check emergency stop switch clip.	Clip not inserted in stop switch.	Insert clip in stop switch.
2. Check control positions.	Control lever not in neutral position.	Shift to neutral.
	Fast idle lever raised (side-mount type).	Leave fast idle lever OFF (p. 18).

ENGINE WILL NOT START (continued)	Possible Cause	Correction
3. Check fuel.	Out of fuel.	Refuel (p. 68).
	Fuel hose not primed.	Squeeze priming bulb (p. 32).
	Fuel filter or fuel tank filter clogged.	Replace fuel filters (p. 70).
	Bad fuel; boat stored without treating or draining gasoline, or refueled with bad gasoline.	Drain fuel tank and vapor separator (p. 77 — 78). Refill with fresh gasoline (p. 69).

ENGINE WILL NOT START (continued)	Possible Cause	Correction
4. Check battery.	Battery connections loose or corroded.	Clean and tighten battery connections.
	Battery discharged.	Recharge battery.
5. Check fuses.	Fuse(s) blown.	Replace fuse(s) (p. 88).
6. Remove and inspect spark plugs.	Spark plugs faulty, fouled or improperly gapped.	Replace spark plug (p. 65).
	Spark plugs wet with fuel (flooded engine).	Dry and reinstall spark plugs. Start engine with the throttle open.
7. Use starting procedure (p. 37), if engine still will not start then take outboard motor to an authorized Honda marine dealer, or refer to the shop manual.	Fuel system malfunction, fuel pump failure, ignition malfunction, stuck valves, starter malfunction, switch malfunction, or electrical problem in the starting circuit, etc.	Replace or repair faulty components as necessary.

HARD STARTING OR STALLS AFTER STARTING	Possible Cause	Correction
1. Check control positions.	Fast idle lever raised (side-mount type).	Leave fast idle lever OFF (p. 18).
2. Check fuel.	Fuel hose not primed. Fuel filter or fuel tank clogged.	Squeeze priming bulb (p. 32). Replace fuel filters (p. 70).
	Bad fuel; boat stored without treating or draining gasoline, or refueled with bad fuel.	Drain fuel tank and vapor separator (p. 77 — 78). Refill with fresh gasoline (p. 69).

HARD STARTING OR STALLS AFTER STARTING (continued)	Possible Cause	Correction
3. Remove and inspect spark plugs.	Spark plugs faulty, fouled or improperly gapped.	Replace spark plug (p. 65).
4. Take outboard motor to an authorized Honda marine dealer, or refer to the shop manual.	Fuel system malfunction, fuel pump failure, ignition malfunction, etc.	Replace or repair faulty components as necessary.

ENGINE OVERHEATS	Possible Cause	Correction
1. Check water intake screens.	Water intake screens clogged.	Clean water intake screens.
2. Take outboard motor to an authorized Honda marine dealer, or refer to the shop manual.	Faulty thermostat or water pump.	Replace or repair faulty components as necessary.

FUSES

Electric Starter Will Not Operate

The 10A, 15A, and 30A main fuses protect the electric starter relay and related circuits.

The 10A ③ main fuse protects the ignition switch and related circuits. If this fuse blows, the engine will not start or run, and the power trim/tilt switch will not activate the trim/tilt mechanism.

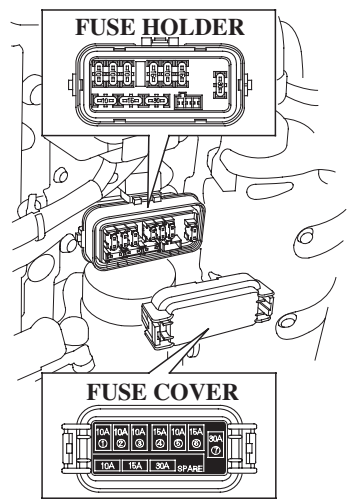
Battery Will Not Charge

A 150A ACG fuse protects the alternator circuit. If the ACG fuse blows, the engine will not charge the battery. Refer to *ACG Fuse* (p. 89).

Fuse Replacement

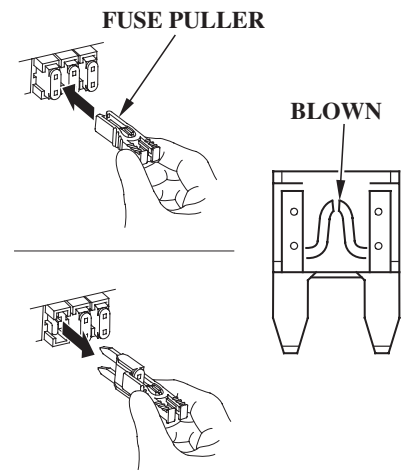
Main Fuse

1. Stop the engine.
2. Disconnect the battery.
3. Remove the engine cover.
4. Remove the fuse cover.



5. Use the fuse puller from the tool kit to remove the fuses. If a fuse is blown, install a replacement fuse of the same specified rating. The outboard motor is supplied with spare fuses in the fuse holder.

MAIN FUSE RATINGS:
10 A, 15 A, 30 A



6. Reinstall the fuse cover and the engine cover.

7. Reconnect the battery.

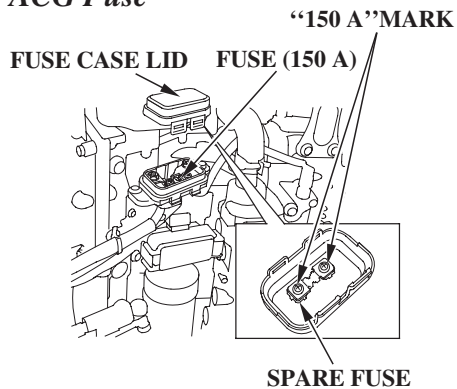
NOTICE

Never use a fuse with a rating greater than specified. Serious damage to the electrical system could result.

If a blown fuse is found, try to determine and correct the electrical problem that caused the blown fuse. An uncorrected electrical problem may cause the fuse to blow again.

If fuses continue to blow, take the outboard motor to an authorized Honda marine dealer for inspection and service or refer to the shop manual.

ACG Fuse



NOTICE

Disconnect the battery cable at the battery negative (-) terminal before replacing the fuse.
Failure to do so may cause a short circuit.

Replacement

1. Stop the engine.

2. Disconnect the battery.

3. Remove the engine cover.

4. Remove the fuse case lid.

5. Remove the old fuse by removing two 5 mm screws.

6. Install a new fuse with the ''150 A'' mark downward.

   ACG FUSE: 150 A

7. After finishing replacement, install the fuse case lid with its hook toward the engine side.

8. Be sure to check the fuse case lid is securely locked.

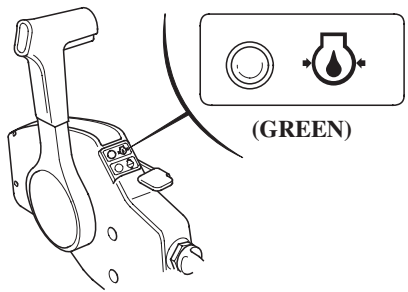
9. Install the engine cover.

10. Reconnect the battery.

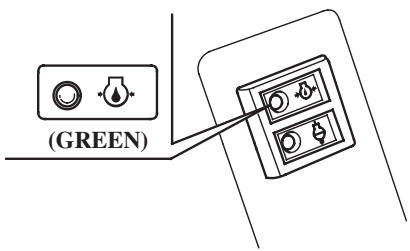
A spare fuse is located on the reverse side of the fuse case lid and tightened with two 3 mm screws.
When the new fuse is set as a spare fuse on the reverse side of the fuse case lid, set the fuse so that you can see the ''150 A'' mark on it.

OIL PRESSURE INDICATOR LIGHT GOES OFF AND ENGINE SPEED IS LIMITED

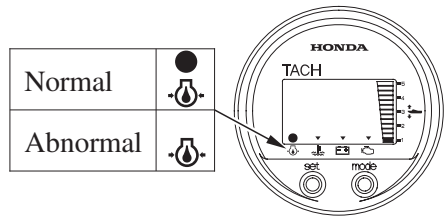
Side Mount Type



Panel Mount/Top Mount Types



Digital Tachometer



If oil pressure becomes low, the oil pressure indicator will go off, and the engine protection system limits engine speed. If you are at cruising speed, engine speed will decrease automatically.

The oil pressure indicator is also equipped with a buzzer that sounds when the oil pressure indicator goes off.

Low oil pressure may be the result of a low engine oil level, or there may be a problem with the engine lubrication system.

If the throttle is closed suddenly after full throttle operation, engine speed may drop below the specified idle rpm, and that could activate the engine protection system momentarily.

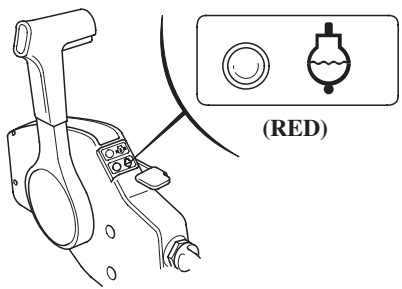
If low oil pressure activates the engine protection system, stop the engine, check the engine oil level (p. 60), and add oil if needed.

With the engine oil at the recommended level, restart the engine. If the lubrication system is OK, the oil pressure indicator should come on within 30 seconds, and the engine will respond normally to throttle control lever operation.

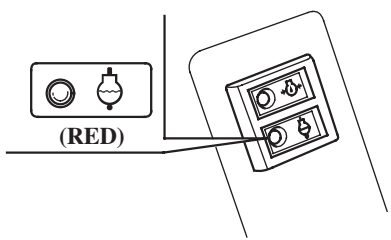
If the engine protection system remains activated after 30 seconds, return to the nearest boat landing, and have the outboard motor inspected by an authorized Honda marine dealer.

OVERHEAT INDICATOR COMES ON AND ENGINE SPEED IS LIMITED

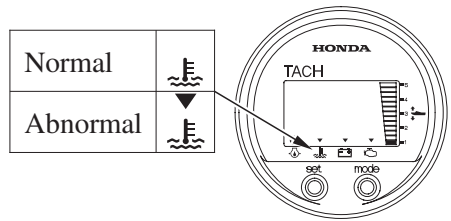
Side Mount Type



Panel Mount/Top Mount Types



Digital Tachometer



If the engine overheats, the overheat indicator will come on, and the engine will stop in 20 seconds after the engine protection system limits engine speed. If you are at cruising speed, engine speed will decrease automatically.

All types are equipped with a buzzer that sounds when the overheat indicator comes on.

Engine overheating may be the result of restricted water intake screens, or there may be a problem with the cooling system thermostat or water pump.

If the engine is stopped after running at full throttle, and then restarted soon afterward, that could activate the engine protection system momentarily.

COOLING SYSTEM INDICATOR

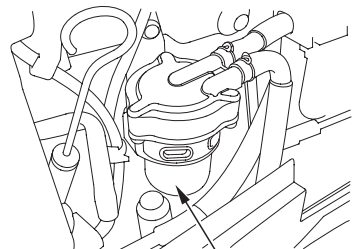
If overheating activates the engine protection system, idle the engine in neutral, and check the cooling system indicator.

If water is flowing from the cooling system indicator, continue idling for 30 seconds. If the cooling system is OK, the overheat indicator should go off within 30 seconds, and the engine will respond normally to throttle control lever operation.

If there is no water flowing from the cooling system indicator, stop the engine and check the discharge port first then tilt the outboard motor to inspect the water intake screens. If clogged, clean the water intake screens, return the outboard motor to the running position, restart the engine, and check the cooling system indicator again.

If there is still no water flowing from the cooling system indicator, or if the engine protection system remains activated after 30 seconds, return to the nearest boat landing, and have the outboard motor inspected by an authorized Honda marine dealer.

WATER SEPARATOR BUZZER SOUNDS



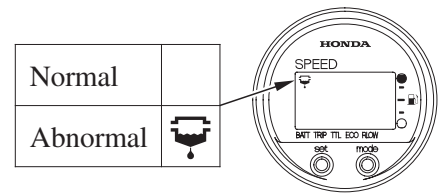
WATER SEPARATOR

When the water separator buzzer sounds (a rapid, repeating signal):

1. Check the water separator for water contamination. If water is accumulated, stop the engine, and clean the water separator following the instructions on pages 72 — 73 , or consult with an authorized Honda outboard motor dealer.

WATER SEPARATOR INDICATOR

Digital Speedometer



When the water separator indicator blinks:

Check the water separator for water contamination. If water is accumlated, stop the engine, and clean the water separator following the instructions on pages 72 — 73 , or consult with an authorized Honda marine dealer.

SUBMERGED MOTOR

A submerged outboard motor must be serviced immediately after it is recovered from the water in order to minimize corrosion.

If there is a Honda marine dearship nearby, take the motor to the dealer immediately. If you are far from a dealership, proceed as follows:

1. Remove the engine cover, and rinse the outboard motor with fresh water to remove salt water, sand, mud, etc.

2. Drain the vapor separator as described on p. 77 — 78 .

3. Change the engine oil and oil filter as described on p. 60 — 62 . If there was water in the engine crankcase, or if the used engine oil showed signs of water contamination, then a second engine oil change should be performed after running the engine for half an hour.

4. Remove the spark plugs (p. 65). Operate the starter to expel water from the engine's cylinder.

5. Put a teaspoon of engine oil into each spark plug hole to lubricate the inside of the cylinders. Reinstall the spark plugs.

   If the engine was running when it submerged, there may be mechanical damage, such as bent connecting rods. If the engine binds when cranked, do not attempt to run the engine until it has been repaired.

6. Attempt to start the engine (be sure the water level is at least 2 inches above the antiventilation plate).

NOTICE

Running the outboard motor without sufficient cooling water will damage the water pump and overheat the engine.

If the engine fails to start, remove the spark plugs and dry them, then reinstall the spark plugs and attempt to start the engine again.

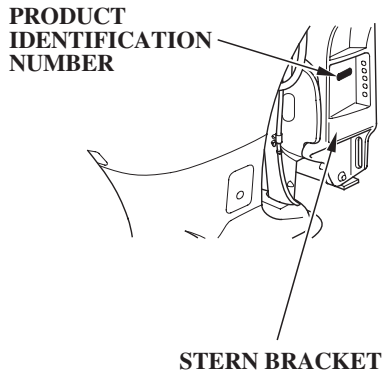
If the engine starts, and no mechanical damage is evident, continue to run the engine for a half hour or longer. Be sure the water level is at least two inches above the antiventilation plate to avoid overheating and water pump damage.

7. As soon as possible, take the outboard motor to an authorized Honda marine dealer for inspection and service.

TECHNICAL INFORMATION

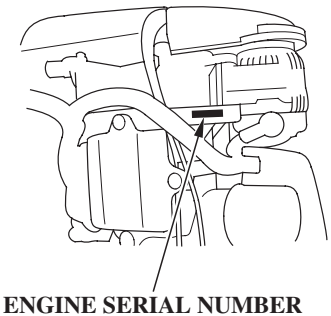
Serial Number Locations

Record the product identification number and engine serial number in the space provided on this page. You will need these numbers when ordering parts, and when making technical or warranty inquiries (p. 105).



The product identification number is stamped on a plate attached on the right stern bracket.

Product identification number:



The engine serial number is stamped on the upper right side of the motor.

Engine serial number:

Oxygenated Fuels

Some conventional gasolines are being blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use an oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirement.

Before using an oxygenated fuel, try to confirm the fuel's contents. Some states/provinces require this information to be posted on the pump.

The following are the EPA-approved percentages of oxygenates:

ETHANOL: ethyl or grain alcohol; 10% by volume.

You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name ''Gasohol''.

MTBE: Methyl Tertiary Butyl Ether; 15% by volume.

You may use gasoline containing up to 15% MTBE by volume.

METHANOL: methyl or wood alcohol; 5% by volume.

You may use gasoline containing up to 5% methanol by volume, as long as it also contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

If you notice any undesirable operating symptoms, try another service station, or switch to another brand of gasoline.

Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

Battery

For complete information, refer to the battery manufacturer's instructions.

Minimum Requirements

12V－110AH
(CCA800)

Emission Control System Information

Source of Emissions

The combustion process produces carbon monoxide, oxides of nitrogen, and hydrocarbons. Control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Honda utilizes various systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

PGM-FI System

The PGM-FI system uses sequential multiport fuel injection. It has three subsystems: Air Intake, Engine Control, and Fuel Control. The Engine Control Module (ECM) uses various sensors to determine how much air is going into the engine. It then controls how much fuel to inject under all operating conditions.

Ignition Timing Control System

The system constantly adjusts the ignition timing, reducing the amount of HC, CO and NOx produced.

The U.S. and California Clean Air Acts

EPA and California regulations require all manufacturers to furnish written instructions describing the operation and maintenance of emission control systems.

The following instructions and procedures must be followed in order to keep the emissions from your Honda engine within the emission standards.

Tampering and Altering

Tampering with or altering the emission control system may increase emissions beyond the legal limit. Among those acts that constitute tampering are:

- Removal or alteration of any part of the intake, fuel, or exhaust systems.
- Alterations that would cause the engine to operate outside its design parameters.

Problems That May Affect Emissions

If you are aware of any of the following symptoms, have your engine inspected and repaired by your servicing dealer.

- Hard starting or stalling after starting.
- Rough idle.
- Misfiring or backfiring under load.
- Afterburning (backfiring).
- Black exhaust smoke or high fuel consumption.

Replacement Parts

The emission control systems on your Honda engine were designed, built, and certified to conform with EPA and California emission regulations. We recommend the use of genuine Honda parts whenever you have maintenance done. These original-design replacement parts are manufactured to the same standards as the original parts, so you can be confident of their performance. The use of replacement parts that are not of the original design and quality may impair the effectiveness of your emission control system.

A manufacturer of an aftermarket part assumes the responsibility that the part will not adversely affect emission performance. The manufacturer or rebuilder of the part must certify that use of the part will not result in a failure of the engine to comply with emission regulations.

Maintenance

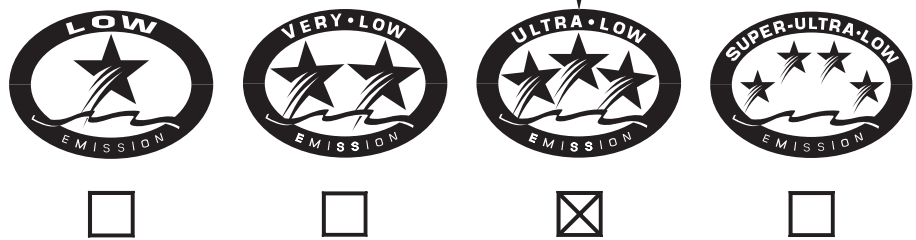
Follow the maintenance schedule on p. 56. Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load operation, or use in unusual conditions, will require more frequent service.

Star Label

A Star label was applied to this outboard motor in accordance with the requirements of the California Air Resources Board.

The Star Label means Cleaner Marine Engine

This engine has been certified as a:



The Symbol for Cleaner Marine Engines:

Cleaner Air and Water - for healthier lifestyle and environment.

Better Fuel Economy - burns up to 30 - 40 percent less gas and oil than conventional carbureted two-stroke engines, saving money and resources.

Longer Emission Warranty - protects consumer for worry free operation.

One Star Low Emission

The one-star label identifies engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2001 exhaust emission standards. Engines meeting these standards have 75% lower emissions than conventional carbureted two-stroke engines. These engines are equivalent to the U.S.EPA's 2006 standards for marine engines.

Two Stars Very Low Emission

The two-star label identifies engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2004 exhaust emission standards. Engines meeting these standards have 20% lower emissions than One Star-Low Emission engines.

Three Stars Ultra Low Emission

The three-star label identifies engines that meet the Air Resources Board's Personal Watercraft and Outboard marine engine 2008 exhaust emission standards or the Sterndrive and inboard marine engine 2003-2008 exhaust emission standards. Engines meeting these standards have 65% lower emissions than One Star-Low Emission engines.

Four Stars Super Ultra Low Emission

The four-star label identifies engines that meet the Air Resources Board's Sterndrive and Inboard marine engine 2009 exhaust emission standards. Personal Watercraft and Outboard marine engines may also comply with these standards. Engines meeting these standards have 90% lower emissions than One Star-Low Emission engines.

Cleaner Watercraft - Get the Facts
1-800-END-SMOG
www.arb.ca.gov

Specifications

MODEL	BF200A				
Description Code	BAEJ	BAEJ	BAFJ	BAEJ	BAFJ
Type	LA	XA	XCA	XXA	XXCA
Overall length	36.2 in (920 mm)				
Overall width	24.6 in (625 mm)				
Overall height	65.7 in (1,670 mm)	70.9 in (1,800 mm)		75.8 in (1,925 mm)	
Transom height	20.0 in (508 mm)	25.0 in (635 mm)		30.0 in (762 mm)	
Weight	578 lbs (262 kg)	589 lbs (267 kg)		600 lbs (272 kg)	
Rated power	149.1 kW (200 HP)				
Full throttle range	5,000－6,000 rpm				
Engine type	4 stroke SOHC 6-cylinder (V6)				
Displacement	211.7 cu-in (3,471 cm^3)				
Spark plug gap	0.039－0.051 in (1.00－1.30 mm)				

Starter system	Electric starter
Ignition system	Fully transistorized, battery ignition
Lubrication system	Trochoid pump pressure lubrication
Specified oil	Engine: API standard (SG, SH, SJ, SL) SAE 10W-30 Gear case: API standard (GL-4/5) SAE 90 outboard motor gear oil
Oil capacity	Engine: 8.0 US qt (7.6 ℓ) without oil filter change Gear case: 1.24 US qt (1.17 ℓ)
CARB star label	ULTRA · LOW EMISSION
D.C. output	12V－60A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	VKJ20RZ-M11 (DENSO) IZFR6F11 (NGK)
Fuel pump	Electric powered mechanical
Fuel	Automotive unleaded gasoline (86 pump octane or higher)
Gear change	Forward-Neutral-Reverse (dog type)
Steering angle	30° right and left
Trim angle (when transom angle is 12°)	－4° to 16°

Honda outboards are power rated in accordance with NMMA procedures and using the ICOMIA standard 28/23.

Specifications

MODEL	BF225A				
Description Code	BAGJ	BAGJ	BAHJ	BAGJ	BAHJ
Type	LA	XA	XCA	XXA	XXCA
Overall length	36.2 in (920 mm)				
Overall width	24.6 in (625 mm)				
Overall height	65.7 in (1,670 mm)	70.9 in (1,800 mm)		75.8 in (1,925 mm)	
Transom height	20.0 in (508 mm)	25.0 in (635 mm)		30.0 in (762 mm)	
Weight	582 lbs (264 kg)	593 lbs (269 kg)		604 lbs (274 kg)	
Rated power	167.8 kW (225 HP)				
Full throttle range	5,000－6,000 rpm				
Engine type	4 stroke SOHC VTEC 6-cylinder (V6)				
Displacement	211.7 cu-in (3,471 cm^3)				
Spark plug gap	0.039－0.051 in (1.00－1.30 mm)				

Starter system	Electric starter
Ignition system	Fully transistorized, battery ignition
Lubrication system	Trochoid pump pressure lubrication
Specified oil	Engine: API standard (SG, SH, SJ, SL) SAE 10W-30 Gear case: API standard (GL-4/5) SAE 90 outboard motor gear oil
Oil capacity	Engine: 8.0 US qt (7.6 ℓ) without oil filter change Gear case: 1.24 US qt (1.17 ℓ)
CARB star label	ULTRA · LOW EMISSION
D.C. output	12V－60A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	VKJ20RZ-M11 (DENSO) IZFR6F11 (NGK)
Fuel pump	Electric powered mechanical
Fuel	Automotive unleaded gasoline (86 pump octane or higher)
Gear change	Forward-Neutral-Reverse (dog type)
Steering angle	30° right and left
Trim angle (when transom angle is 12°)	－4° to 16°

Honda outboards are power rated in accordance with NMMA procedures and using the ICOMIA standard 28/23.

BF200A/BF225A Tune up

Spark plug gap	0.039－0.051 in (1.00－1.30 mm)	See page 66
Idle speed	650 ± 50 rpm	See shop manual
Valve clearance (cold)	Intake: 0.22 ± 0.02 mm Exhaust: 0.30 ± 0.02 mm	See shop manual
Other specifications	No other adjustments needed.	

CONSUMER INFORMATION

Honda Publications

These publications will give you additional information for maintaining and repairing your outboard motor. You may purchase them from your Honda marine dealer.

Shop Manual

This manual covers complete maintenance and overhaul procedures. It is intended to be used by a skilled technician.

Parts Catalog

This manual provides complete, illustrated parts lists.

Customer Service Information

Contacting Honda

Your owner's manual was written to cover most of the questions you might ask about your Honda. Any questions not answered in the owner's manual can be answered by your Honda dealer. If your dealer doesn't have an immediate answer, they should be able to get it for you.

If you have a difference of opinion with your dealer, please remember that each dealership is independently owned and operated. That's why it's important to work to resolve any differences at the dealership level. If the service personnel are unable to assist you, please discuss your concerns with the dealer management such as the Service Manager or Dealer Owner.

If you need to contact American Honda regarding your experiences with your Honda product or with your dealer, please send your comments to the following address:

American Honda Motor Co., Inc.
Marine Division
Customer Relations Office
4900 Marconi Drive
Alpharetta, GA 30005-8847
Telephone (770)497－6400
M-F 8:30am-7:00pm (Eastern Time Zone)

Please include the following information in your communication:

- Your name, address and telephone number (complete with area code)
- Model and complete serial number
- Date of purchase
- Name and location of selling dealer
- Name and location of servicing dealer (if different)
- A detailed description of your concerns

We will likely ask your Honda dealer to respond, or possibly acknowledge your comments directly.

Warranty Coverage

Your new Honda is covered by the following warranties:

- Distributor's Limited Warranty
- Emission Control Warranty

Please read the warranty statements contained in this manual. There are responsibilities, restrictions, and exclusions that apply to these warranties.

To obtain warranty service you must take your Honda outboard engine, together with proof of original retail purchase date, at your expense, to a Honda engine dealer or distributor authorized to sell that product in the United States, Puerto Rico, or the U.S. Virgin Islands.

It is important to realize that your warranty applies to defects in material or workmanship of your Honda. Your warranty coverage does not apply to narmal wear or deterioration associated with using your Honda outboard.

Your warranty coverage will not be voided if you choose to perform your own maintenance. However, you should have the proper tools and service information and be mechanically qualified. Failures that occur due to modifications, improper maintenance or service are not covered.

Warranty Service

Please remember that recommended maintenance interval servicing is not included in your warranty coverage. Additionally, your warranty does not apply to the normal wear of items (such as spark plugs, water pumps, etc.).

As the owner of a Honda product, your servicing dealer may ask you to authorize an inspection. If the problem is covered under warranty, your dealer will perform any warranty repairs for you at no cost. However, you may be responsible for additional non-warranty charges.

If you have questions about warranty coverage or the nature of the repair, it is best to talk to the service manager of your Honda dealer.

Sometimes, in spite of the best intentions of all concerned, a misunderstanding may occur. If you aren't satisfied with your dealer's handling of the situation, we suggest you discuss your problem with the appropriate member of the dealership's management team. If the problem has already been reviewed with the appropriate manager of the Service, Parts, or Sales department, contact the owner of the dealership or their designated representative.

Distributors Limited Warranty — 2006

This warranty is limited to Honda Outboard Motors distributed by American Honda Motor Co., Inc., Power Equipment Division, 4900 Marconi Drive, Alpharetta, Georgia 30005-8847.

PRODUCTS COVERED BY WARRANTY	LENGTH OF WARRANTY: (FROM DATE OF ORIGINAL PURCHASE)	
	NONCOMMERCIAL/ NONRENTAL	COMMERCIAL/ RENTAL
All Outboard Motors	36 Months	12 Months

TO QUALIFY FOR THIS WARRANTY:
The Honda Outboard Motor must be purchased from American Honda or a dealer authorized by American Honda to sell Honda Outboard Motors in the United States, Puerto Rico, or the U.S. Virgin Islands. This limited warranty applies to the first retail purchaser and each subsequent owner during the applicable warranty time period.

WHAT AMERICAN HONDA WILL REPAIR OR REPLACE UNDER WARRANTY:
American Honda will repair or replace, at its option, any part that is proven to be defective in material or workmanship under normal use during the applicable warranty time period. Warranty repairs and replacements will be made without charge for parts or labor. Anything replaced under warranty becomes the property of American Honda Motor Company, Inc. All parts replaced under warranty will be considered as part of the original product and any warranty on those parts will expire coincidentally with the original product warranty.

TO OBTAIN WARRANTY SERVICE:
You must take your Honda Outboard Motor and proof of the original purchase date, at your expense, to any dealer who is authorized to service Honda Outboard Motors in the United States, Puerto Rico, or the U.S. Virgin Islands, during the dealer's normal business hours. If you are unable to obtain warranty service, or are dissatisfied with the warranty service you receive, take the following steps: First, contact the owner of the dealership involved; normally this should resolve the problem. However, if you should require further assistance, write or call the Honda Marine Customer Relations. Please see *Customer Service Information* page 105 .

EXCLUSIONS:
THIS WARRANTY DOES NOT EXTEND TO THE FOLLOWING:

- CONDITIONS CAUSED BY LACK OF ROUTINE MAINTENANCE
- PARTS AFFECTED OR DAMAGED BY AN ACCIDENT AND/OR COLLISION
- NORMAL WEAR
- FUEL CONTAMINATION AND WATER ENTERING ENGINE THROUGH THE FUEL INTAKE, AIR INTAKE OR EXHAUST SYSTEM
- USE IN AN APPLICATION FOR WHICH THE OUTBOARD MOTOR WAS NOT DESIGNED, SUCH AS RACING OR COMPETITIVE USE OR ANY OTHER MISUSE OR NEGLECT
- INCORPORATION OF UNSUITABLE ATTACHMENTS OR PARTS
- THE UNAUTHORIZED ALTERATION, IMPROPER INSTALLATION, OR ANY CAUSES OTHER THAN DEFECTS IN MATERIAL OR WORKMANSHIP
- CORROSION TO STEERING SYSTEM OR ELECTRICAL COMPONENTS, CORROSION DUE TO ELECTROLYSIS, WATER BORN FOREIGN CHEMICALS, IMPROPER SERVICE OR CORROSION CAUSED BY DAMAGE OR ABUSE
- REIMBURSEMENT FOR TOWING CHARGES, IN AND OUT OF WATER CHARGES, OR TECHNICIAN TRAVEL TIME
- GROWTH OF MARINE ORGANISMS ON MOTOR SURFACES, EXTERNAL OR INTERNAL

DISCLAIMER OF CONSEQUENTIAL DAMAGE AND LIMITATION OF IMPLIED WARRANTIES:
AMERICAN HONDA DISCLAIMS ANY RESPONSIBILITY FOR LOSS OF TIME OR USE OF THE OUTBOARD, REVENUE, OR THE EQUIPMENT IN WHICH THE OUTBOARD IS INSTALLED, TRANSPORTATION, COMMERCIAL LOSS, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE. ANY IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

ACCESSORIES AND REPLACEMENT PARTS

This warranty is limited to Honda Power Equipment parts, accessories and apparel when distributed by American Honda Motor Co., Inc., 1919 Torrance Blvd., Torrance, California 90501-2746.

PRODUCTS COVERED BY WARRANTY	LENGTH OF WARRANTY: (FROM DATE OF ORIGINAL PURCHASE)	
	NONCOMMERCIAL/ NONRENTAL	COMMERCIAL/ RENTAL
Accessories	12 Months	3 Months
Replacement Parts	6 Months	3 Months

TO QUALIFY FOR THIS WARRANTY:

1. The accessories or replacement parts must be purchased from American Honda, or a dealer, distributor or distributor's dealer authorized by American Honda to sell those products in the United States, Puerto Rico, and the U.S. Virgin Islands.
2. You must be the first retail purchaser. This warranty is not transferable to subsequent owners.

WHAT AMERICAN HONDA WILL REPAIR OR REPLACE UNDER WARRANTY:

American Honda will repair or replace, at its option, any marine product accessories or replacement parts that are proven to be defective in material or workmanship under normal use during the applicable warranty time period. Anything replaced under warranty becomes the property of American Honda Motor Company, Inc. All parts replaced under warranty will be considered as part of the original product and any warranty on those parts will expire coincidentally with the original product warranty. Accessories and replacement parts, installed by a dealer who is authorized by American Honda to sell them, will be repaired or replaced under warranty without charge for parts or labor. If installed by anyone else, accessories and replacement parts will be repaired or replaced under warranty without charge for parts, but any labor charges will be the responsibility of the purchaser.

TO OBTAIN WARRANTY SERVICE:
You must take the Honda Outboard Motor product accessory or replacement part or the outboard motor or boat on which the accessory or replacement part is installed, and proof of purchase, at your expense, to any Honda Outboard Motor dealer in the United States, Puerto Rico, or the U.S. Virgin Islands who is authorized to sell that product, during the dealer's normal business hours.
If you are unable to obtain warranty service, or are dissatisfied with the warranty service you receive, take the following steps: First, contact the owner of the dealership or distributorship involved; normally this will resolve the problem. However, if you should require further assistance, write or call the Honda Marine Customer Relations Department of American. Please see *Customer Service Information* page 105.

THIS WARRANTY DOES NOT EXTEND TO ACCESSORIES OR PARTS AFFECTED OR DAMAGED BY ACCIDENT AND/OR COLLISION, NORMAL WEAR, USE IN AN APPLICATION FOR WHICH THE PRODUCT WAS NOT DESIGNED OR ANY OTHER MISUSE, NEGLECT, INCORPORATION OR USE OF UNSUITABLE ATTACHMENTS OR PARTS, UNAUTHORIZED ALTERATION, IMPROPER INSTALLATION, OR ANY CAUSES OTHER THAN DEFECTS IN MATERIAL OR WORKMANSHIP OF THE PRODUCT.

DISCLAIMER OF CONSEQUENTIAL DAMAGE AND LIMITATION OF IMPLIED WARRANTIES:

AMERICAN HONDA DISCLAIMS ANY RESPONSIBILITY FOR LOSS OF TIME OR USE OF THE HONDA OUTBOARD MOTOR, OR THE BOAT ON WHICH THE PRODUCT IS INSTALLED, TRANSPORTATION, COMMERCIAL LOSS, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE. ANY IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Emission Control System Warranty

Your new Honda outboard engine complies with both the U.S. EPA and State of California emission regulations. American Honda provides the same emission warranty coverage for outboard engines sold in all 50 states.

YOUR WARRANTY RIGHTS AND OBLIGATION

California
The California Air Resources Board and American Honda Motor Co., Inc. are pleased to explain the emission control system warranty on your 2001 and later Honda outboard engine. In California, new outboard engines must be designed, built and equipped to meet California's stringent anti-smog emission standards in addition to the U.S. EPA emissions standards.

Other States
In other areas of the United States your outboard engine must be designed, built and equipped to meet the U.S. EPA Emission Standard for spark ignited marine engines.

All States
American Honda Motor Co., Inc. must warranty the emission control system on your outboard engine for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your outboard engine. Where a warranty condition exists, American Honda Motor Co., Inc. will repair your outboard engine at no cost to you including diagnosis, parts and labor. Your emission control system may include such parts as the carburetor or fuel injection system and catalytic converter. Also included may be hoses, connectors and other emission-related assemblies.

MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:
The 2001 and later outboard engines are warranted for four years or 250 hours of operation, whichever comes first. However, warranty coverage based on the hourly period is only permitted for outboard engines equipped with appropriate hour meters. If any emission-related part on your outboard engine is defective under warranty, the part will be repaired or replaced by American Honda Motor Co., Inc.

OWNER'S WARRANTY RESPONSIBILITY:
As the outboard engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. American Honda Motor Co., Inc. recommends that you retain all receipts covering maintenance on your outboard engine, but American Honda Motor Co., Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance. As the outboard engine owner, you should, however, be aware that American Honda Motor Co., Inc. may deny you warranty coverage if your outboard engine or a part has failed due to abuse, neglect, improper maintenance, or unapproved modifications. You are responsible for presenting your outboard engine to a Honda Marine dealer as soon as a problem exists. The warranty repair should be completed in a reasonable amount of time, not to exceed 30 days. If you have any questions regarding your warranty rights and responsibilities, you should contact American Honda Motor Co., Inc., Marine Division Customer Relations Office. Please see *Customer Service Information* page 105.

WARRANTY COVERAGE:
Honda outboard engines manufactured after June 1,2000 are covered by this warranty for a period of four years or 250 operating hours, whichever comes first, from the date of delivery to the retail purchaser. This warranty is transferred to each subsequent purchaser for the duration of the warranty period. Warranty repairs will be made without charge for diagnosis, parts and labor. All defective parts replaced under this warranty become the property of American Honda Motor Co., Inc. A list of warranty parts is on the reverse side of this statement. Normal maintenance items, such as spark plugs and filters, that are on the warranted parts list are warranted up to their required replacement interval only. American Honda Motor Co., Inc. is also liable for damages to other engine components caused by a failure of any warranted part during the warranty period. Only Honda approved replacement parts will be used in the performance of any warranty repairs and they will be provided without charge to the owner. The use of replacement parts not equivalent to the original parts may impair the effectiveness of your engine's emission control system. If such a replacement part is used in the repair or maintenance of your engine, and an authorized Honda Marine dealer determines it is defective or causes a failure of a warranted part, your claim for your engine may be denied. If the part in question is not related to the reason that your engine requires repair, your claim will not be denied.

TO OBTAIN WARRANTY SERVICE:
You must take your Honda outboard engine, along with your sales registration card or other proof of original purchase date, at your expense, to any Honda Marine dealer who is authorized by American Honda Motor Co., Inc. to sell and service that Honda marine product during his normal business hours. Claims for repair or adjustment found to be caused solely by defects in material or workmanship will not be denied because the engine was not properly maintained and used. If you are unable to obtain warranty service, or are dissatisfied with the warranty service you received, contact the owner of the dealership involved. Normally this should resolve your problem. However, if you require further assistance, write or call the Honda Marine Customer Relations Office of American Honda Motor Co., Inc.

EXCLUSIONS:
FAILURES OTHER THAN THOSE RESULTING FROM DEFECTS IN MATERIAL OR WORKMANSHIP ARE NOT COVERED BY THIS WARRANTY. THIS WARRANTY DOES NOT EXTEND TO EMISSION CONTROL SYSTEMS OR PARTS WHICH ARE AFFECTED OR DAMAGED BY OWNER ABUSE, NEGLECT, IMPROPER MAINTENANCE, MISUSE, MISFUELING, IMPROPER STORAGE, ACCIDENT AND/OR COLLISION. THE INCORPORATION OF, OR USE OF, UNSUITABLE ATTACHMENTS, OR THE UNAUTHORIZED ALTERATION OF ANY PART. THIS WARRANTY DOES NOT COVER REPLACEMENT OF EXPENDABLE MAINTENANCE ITEMS MADE IN CONNECTION WITH REQUIRED MAINTENANCE SERVICE AFTER THE ITEM'S FIRST SCHEDULED REPLACEMENT AS LISTED IN THE MAINTENANCE SECTION OF THE PRODUCT OWNER'S MANUAL, SUCH AS: SPARK PLUGS AND FILTERS.

DISCLAIMER OF CONSEQUENTIAL DAMAGE AND LIMITATION OF IMPLIED WARRANTIES:
American Honda Motor Co., Inc. disclaims any responsibility for incidental or consequential damages such as loss of time or the use of outboard engine, or any commercial loss due to the failure of the equipment; and any implied warranties are limited to the duration of this written warranty. This warranty is applicable only where the California or U.S. EPA emission control system warranty regulation is in effect.

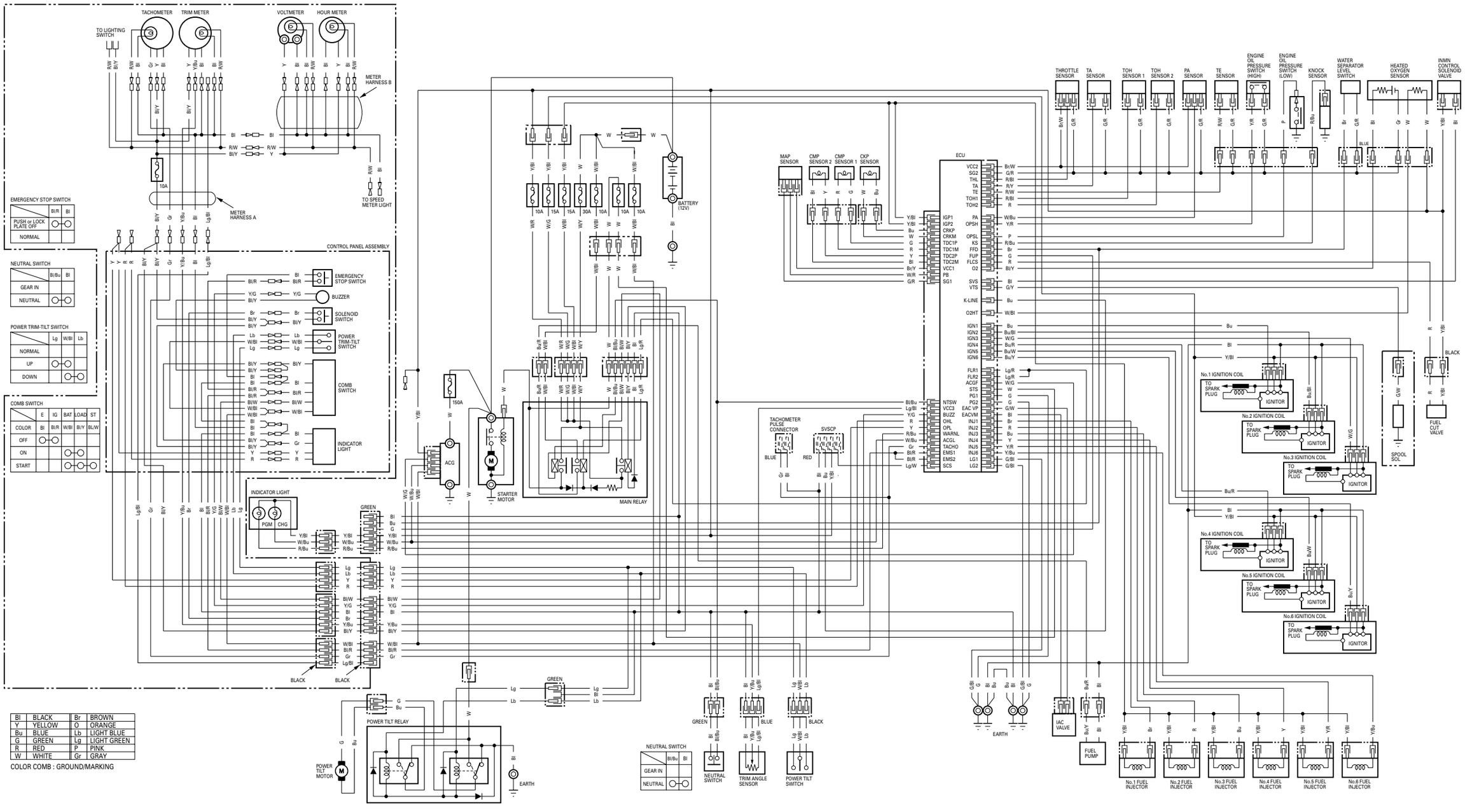
EMISSION CONTROL SYSTEM WARRANTY PARTS:

SYSTEMS COVERED BY THIS WARRANTY:	PARTS DESCRIPTION
Fuel Metering	Carburetor assembly, Throttle body, Fuel injector, Fuel pump, Fuel pressure regulator, Throttle position sensor, Intake air temperature sensor, Engine temperature sensor, Manifold absolute pressure sensor, Idle air control valve, Barometric pressure sensor, Fuel line solenoid valve, Intake manifold, Intake valves, and Oxygen sensor or Air fuel ratio sensor
Air Induction	Air intake duct, Crankcase breather tube, Positive crankcase ventilation valve, Vapor separator, Intake manifold tuning valve (Intake air bypass control valve)
Ignition	Flywheel magneto, Ignition pulse generator, Ignition coil assembly, Ignition control module, Engine control module, Crankshaft position sensor, Spark plug cap, Spark plug*, Knock sensor, and Camshaft position sensor
Lubrication system	Oil pump and internal parts
Crankcase Emission Control	Oil filler cap
Exhaust	Exhaust manifold and Exhaust valves
VTEC System	VTEC valve
Miscellaneous Parts	Tubing, fittings, seals, gaskets, and clamps associated with these listed systems.
*Covered up to the first required replacement only. See the Maintenance Schedule in the owner's manual.	

INDEX

WIRING DIAGRAM

SIDE-MOUNT REMOTE CONTROL TYPE (For Analogue Meter)



Bl	BLACK	Br	BROWN
Y	YELLOW	O	ORANGE
Bu	BLUE	Lb	LIGHT BLUE
G	GREEN	Lg	LIGHT GREEN
R	RED	P	PINK
W	WHITE	Gr	GRAY

COLOR COMB : GROUND/MARKING

WIRING DIAGRAM

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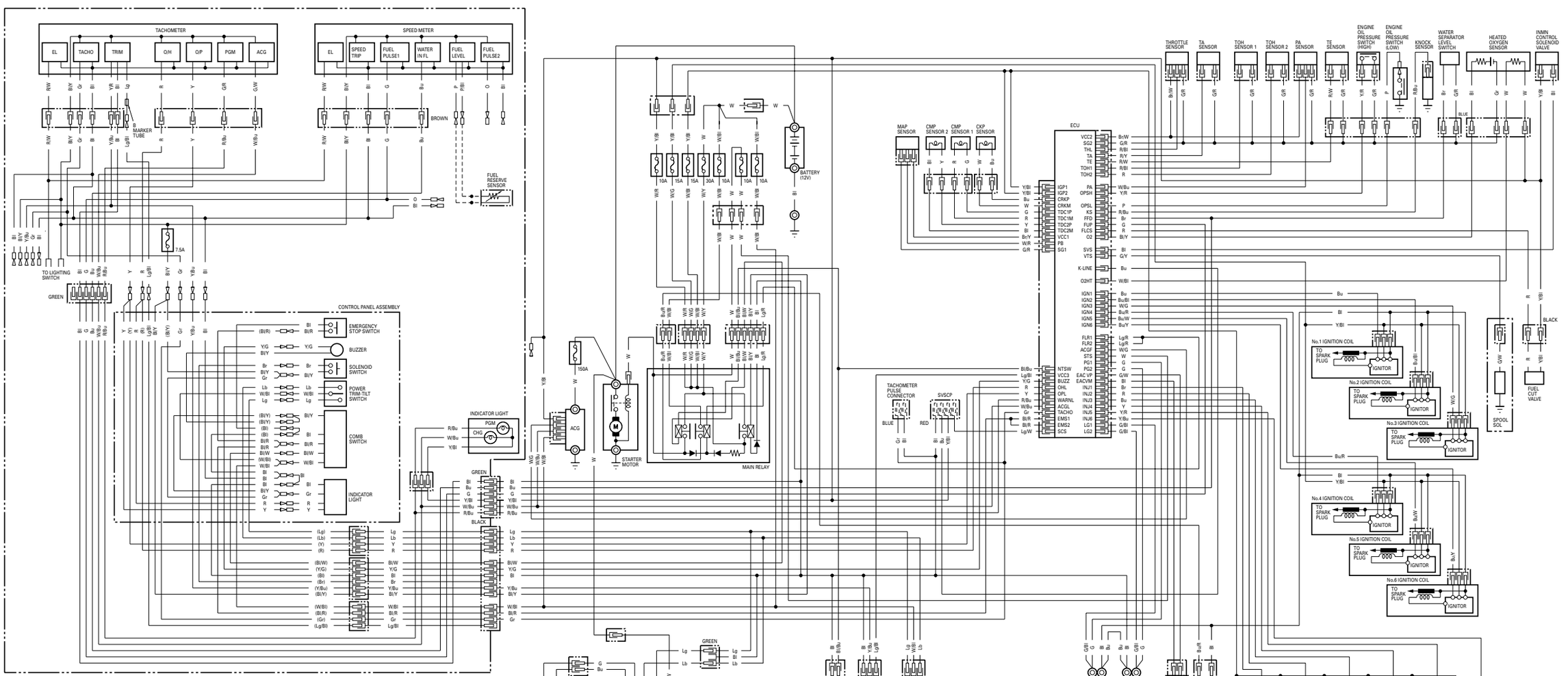

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Bu	BLUE	Lb	LIGHT BLUE
G	GREEN	Lg	LIGHT GREEN
R	RED	P	PINK
W	WHITE	Gr	GRAY

COLOR COMB : GROUND/MARKING

EMERGENCY STOP SWITCH

	Bl/R	Bl
PUSH or LOCK PLATE OFF		○
NORMAL	○	

NEUTRAL SWITCH

	Bl/Bu	Bl
GEAR IN		○
NEUTRAL	○	

POWER TRIM-TILT SWITCH

	Lg	W/Bl	Lb
NORMAL			
UP	○		
DOWN		○	

COMB SWITCH

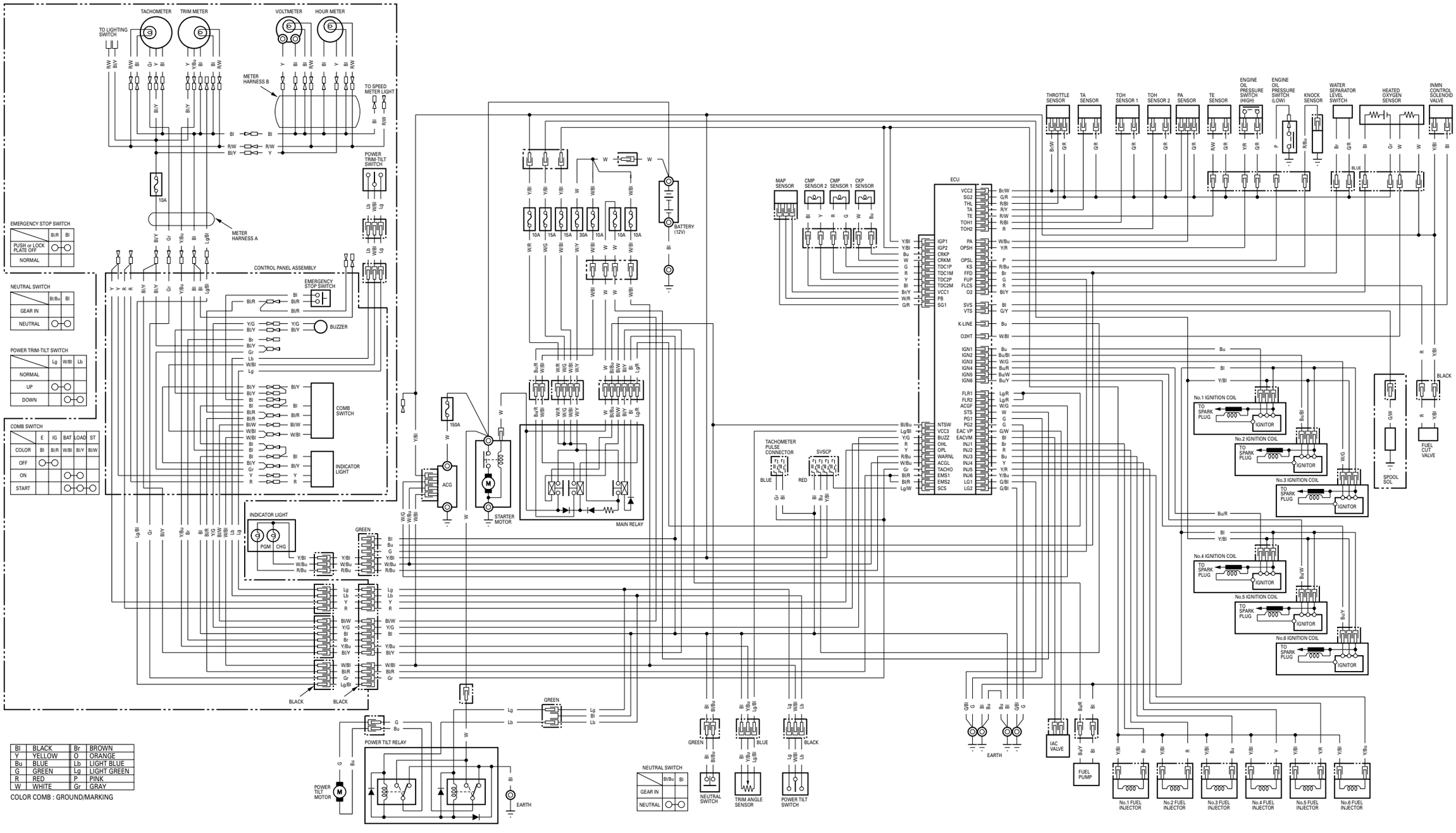
	E	IG	BAT	LOAD	ST
COLOR	Bl	Bl/R	W/Bl	Bl/Y	Bl/W
OFF	○				
ON				○	
START				○	○

NEUTRAL SWITCH

	Bl/Bu	Bl
GEAR IN		
NEUTRAL	○	

WIRING DIAGRAM

PANEL-MOUNT/TOP-MOUNT REMOTE CONTROL TYPES (For Analogue Meter)



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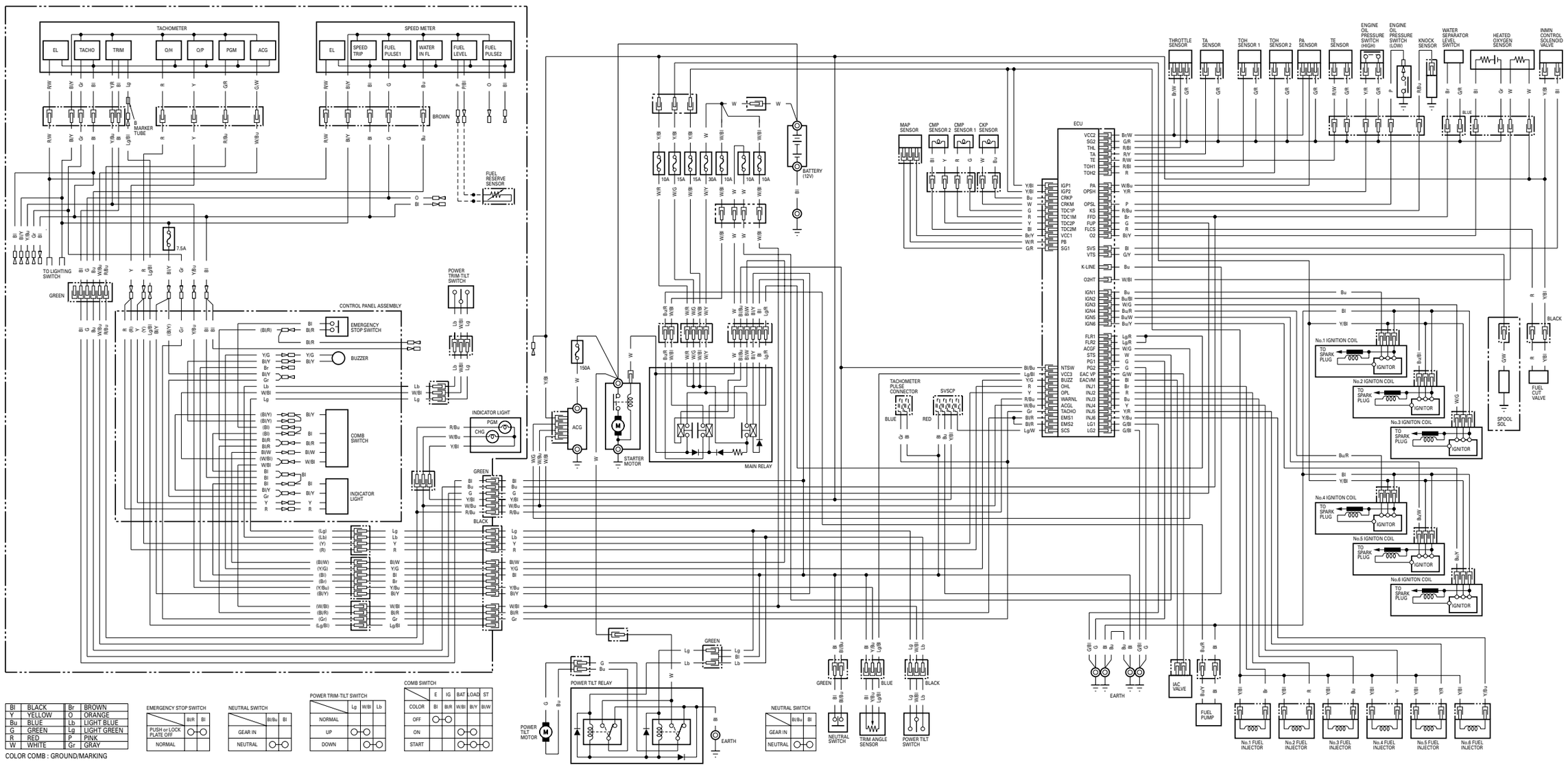
G	GREEN	Lg	LIGHT GREEN
R	RED	P	PINK
W	WHITE	Gr	GRAY

COLOR COMB : GROUND/MARKING

WIRING DIAGRAM

PANEL-MOUNT/TOP-MOUNT REMOTE CONTROL TYPES (For Digital Meter)



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Bu	BLUE	Lb	LIGHT BLUE
G	GREEN	Lg	LIGHT GREEN
R	RED	P	PINK
W	WHITE	Gr	GRAY

COLOR COMB : GROUND/MARKING

EMERGENCY STOP SWITCH

	Bl/R	Bl
PUSH or LOCK PLATE OFF		○
NORMAL	○	

NEUTRAL SWITCH

	Bl/Bu	Bl
GEAR IN		○
NEUTRAL	○	

POWER TRIM-TILT SWITCH

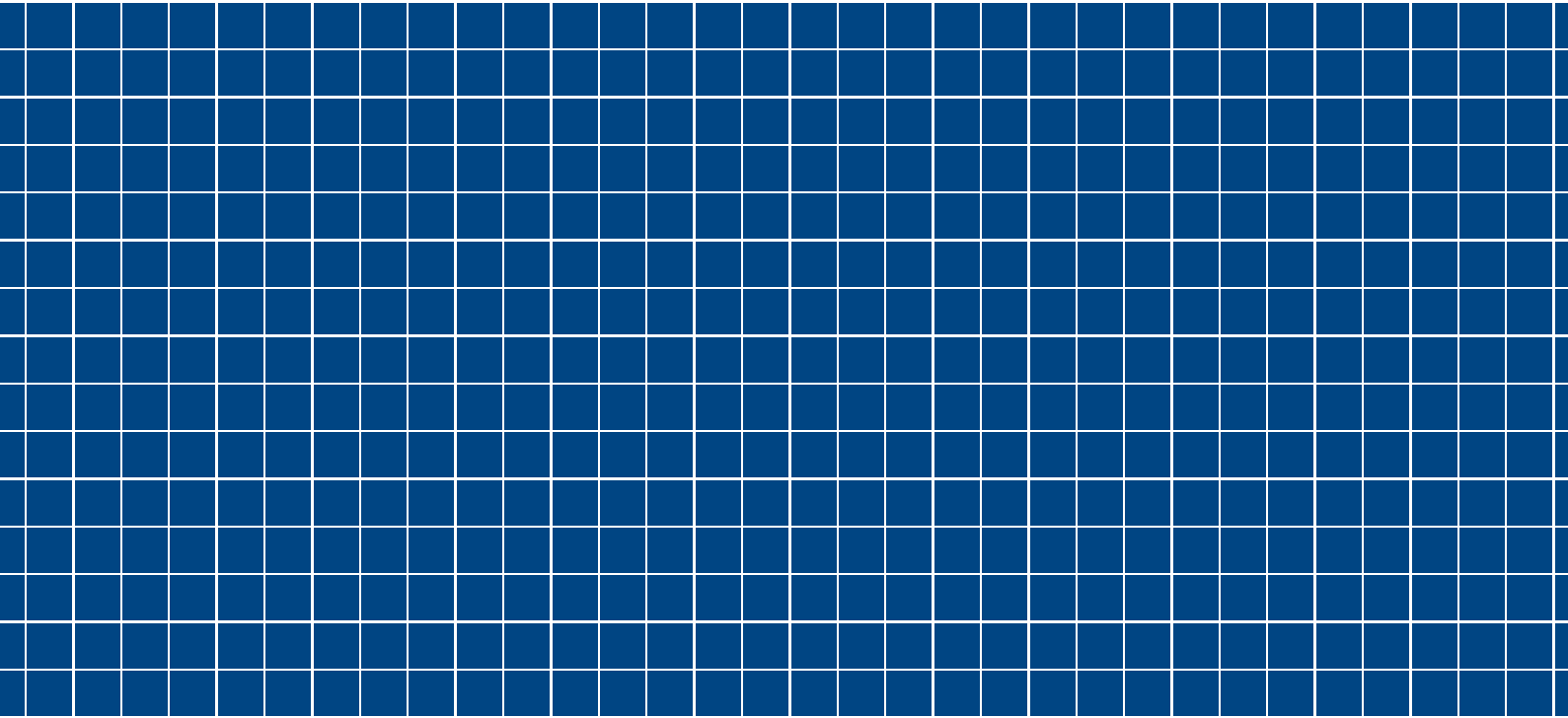
	Lg	W/Bl	Lb
NORMAL			
UP	○		
DOWN		○	

COMB SWITCH

	E	IG	BAT	LOAD	ST
COLOR	Bl	Bl/R	W/Bl	Bl/Y	Bl/W
OFF	○	○			
ON			○	○	
START			○	○	○

HONDA

The Power of Dreams



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