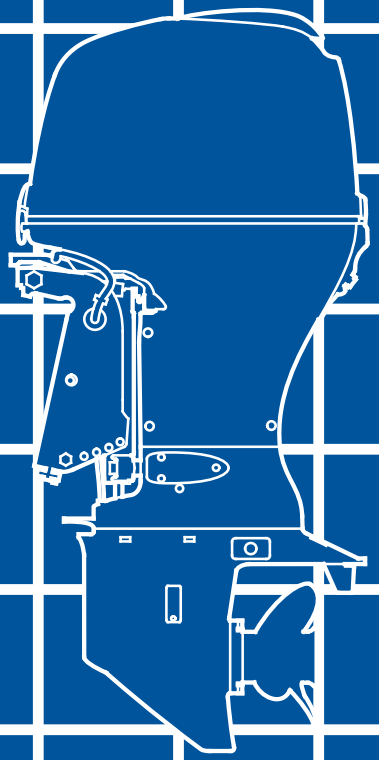
HONDA MARINE

BF75D•BF90D

OWNER'S MANUAL



ECOLOGY CONSCIOUS TECHNOLOGY

Thank you for purchasing a Honda Outboard Motor.

This manual covers operation and maintenance of the Honda BF75D/ 90D Outboard Motor.
All information in this publication is based on the latest product information available at the time of approval for printing.
Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.

This manual should be considered a permanent part of the Outboard Motor and should remain with it if it is resold.

Throughout this manual, you will see safety messages proceeded by the following words and symbols. Here's what they mean:

⚠DANGER
Indicates serious injury or death WILL result if instructions are not followed.

⚠WARNING
Indicates a strong possibility that serious personal injury or death may result if instructions are not followed.

⚠CAUTION
Indicates a possibility that personal injury or equipment damage could result if instructions are not followed.

NOTICE
Indicates that equipment or property damage could result if instructions are not followed.

NOTE: Gives helpful information.

If a problem should arise, or if you have any questions about the Outboard Motor, consult an authorized Honda Outboard Motor dealer.

⚠WARNING
Honda Outboard Motors are designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's Manual before operating the Outboard Motor. Failure to do so could result in personal injury or equipment damage.

Model		BF75D						BF90D					
Type		LHTD	LHTW	LRTD LRTW	LRTL LRTU	XRTW	XRTL XRTU	LHTD	LHTW	LRTD LRTW	LRTL LRTU	XRTD XRTL XRTW	XRTU
Shaft Length (Transom Height)	537 mm (21.1 in)	●	●	●	●			●	●	●	●		
	664 mm (26.1 in)					●	●					●	●
Tiller Handle		●	●					●	●				
Remote Control				●	●	●	●			●	●	●	●
Power Trim/Tilt		●	●	●	●	●	●	●	●	●	●	●	●
Trim meter		●	●	●	*	●	*	●	●	●	*	●	*
Tachometer		*	●	●	*	●	*	*	●	●	*	●	*

NOTE: Note that the types of the outboard motor differ according to the countries where they are sold.

BF75D/90D is provided with the following types according to the shaft length, control system, and tilt system.

*: Optional Equipment

TYPE CODE Example

L R T D

- D: Destination
  U, W: Europe, D: General Export, L: Australian
- T: Tilt system
  T: Power Trim/Tilt (with hydraulic assisted function)
- R: Control System
  H: Tiller Handle Control,
  R: Remote Control
- L: Shaft Length
  L: 537 mm (21.1 in) (Long Shaft),
  X: 664 mm (26.1 in) (Extra Long Shaft)

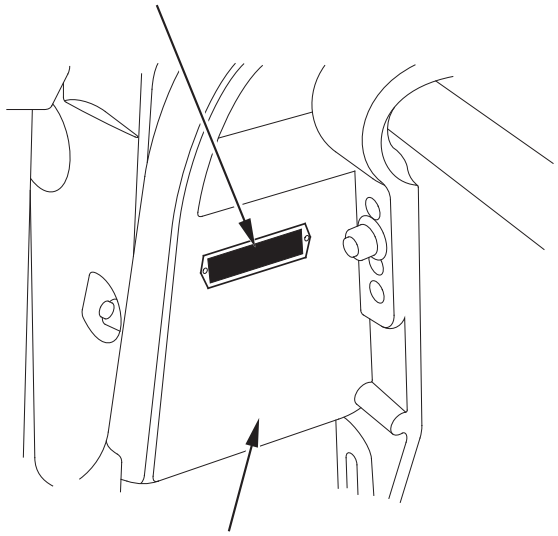
This Owner's Manual is using the following type names when it describes the operations special to a type.

Tiller handle type: H type
Remote control type: R type

The remote control type is classified into the following three categories according to the control box position.
Side-mount type: R1 type
Panel-mount type: R2 type
Top-mount type: R3 type

Check the type of your outboard motor and read this Owner's Manual thoroughly before operation.
Texts with no type indication are the information and/or procedures common to all types.

FRAME SERIAL NUMBER



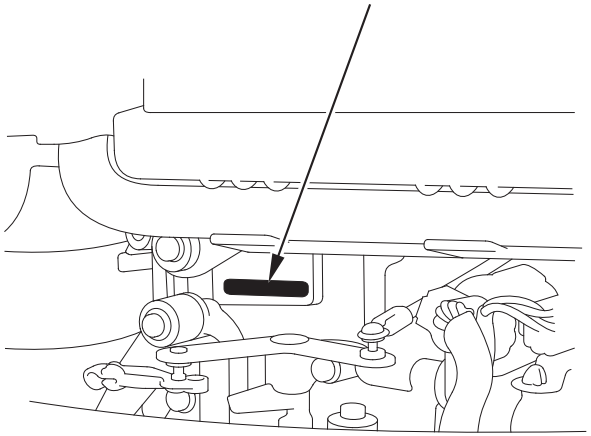
RIGHT STERN BRACKET

Record the frame and engine serial numbers for your reference. Refer to the serial numbers when ordering parts, and when making technical or warranty inquiries.

The frame serial number is stamped on the right stern bracket.

Frame serial number:

ENGINE SERIAL NUMBER



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

Engine serial number:

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SAFETY INFORMATION

For your safety and the safety of others, pay special attention to these precautions.

Operator Responsibility

- **Honda outboard motor is designed to give safe and dependable service if operated according to instructions.**
  Read and understand the Owner's Manual before operating the outboard motor. Failure to do so could result in personal injury or equipment damage.

- **Gasoline is harmful or fatal if swallowed. Keep the fuel tank out of reach of children.**
- **Gasoline is extremely flammable and is explosive under certain conditions. Refuel in a well-ventilated area with the engine stopped.**
- **Do not smoke or allow flames or sparks where the engine is refueled or where gasoline is stored.**
- **Do not overfill the fuel tank. After refueling make sure that the fuel filler cap is closed properly and securely.**
- **Be careful not to spill any fuel while refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled make sure that the area is dry before starting the engine.**

- Know how to stop the engine quickly in case of emergency. Understand the use of all controls.
- Do not exceed the boat manufacturer's power recommendation, and be sure that the outboard motor is properly mounted.
- Never permit anyone to operate the outboard motor without proper instruction.
- Before operating the outboard motor, familiarize yourself with all laws and regulations relating to boating and the use of outboard motors.
- Do not attempt to modify the outboard motor.
- Always wear a life-jacket when on board.
- Do not operate the outboard motor without the engine cover. Exposed moving parts can cause injury.
- Do not remove any guards, labels, shields, covers or safety devices; they are installed for your safety.
- Stop the engine immediately if anyone falls overboard.
- Do not run the motor while the boat is near anyone in the water.
- Attach the emergency stop switch lanyard securely to the operator.

The engine and exhaust system become very hot during operation and remain hot for a while after stopping. Contact with hot engine components can cause burns and may ignite some materials.

- Avoid touching a hot engine or exhaust system.
- Allow the engine to cool before performing maintenance or transporting.

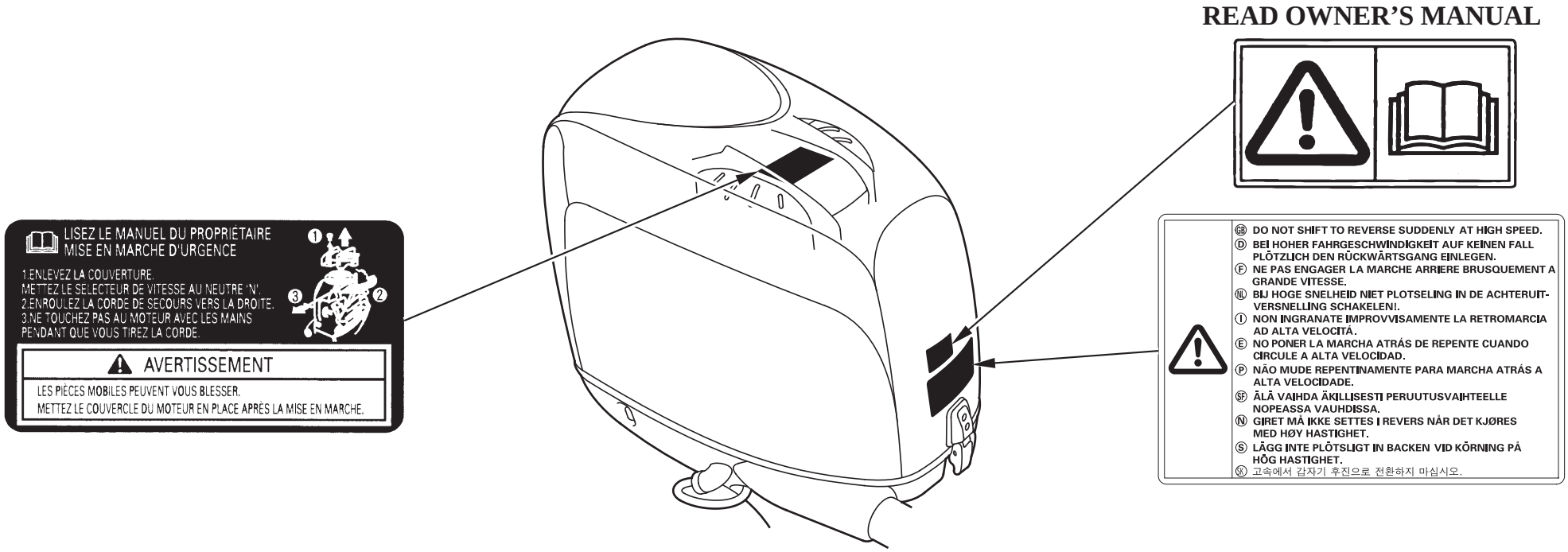
Carbon Monoxide Poisoning Hazard

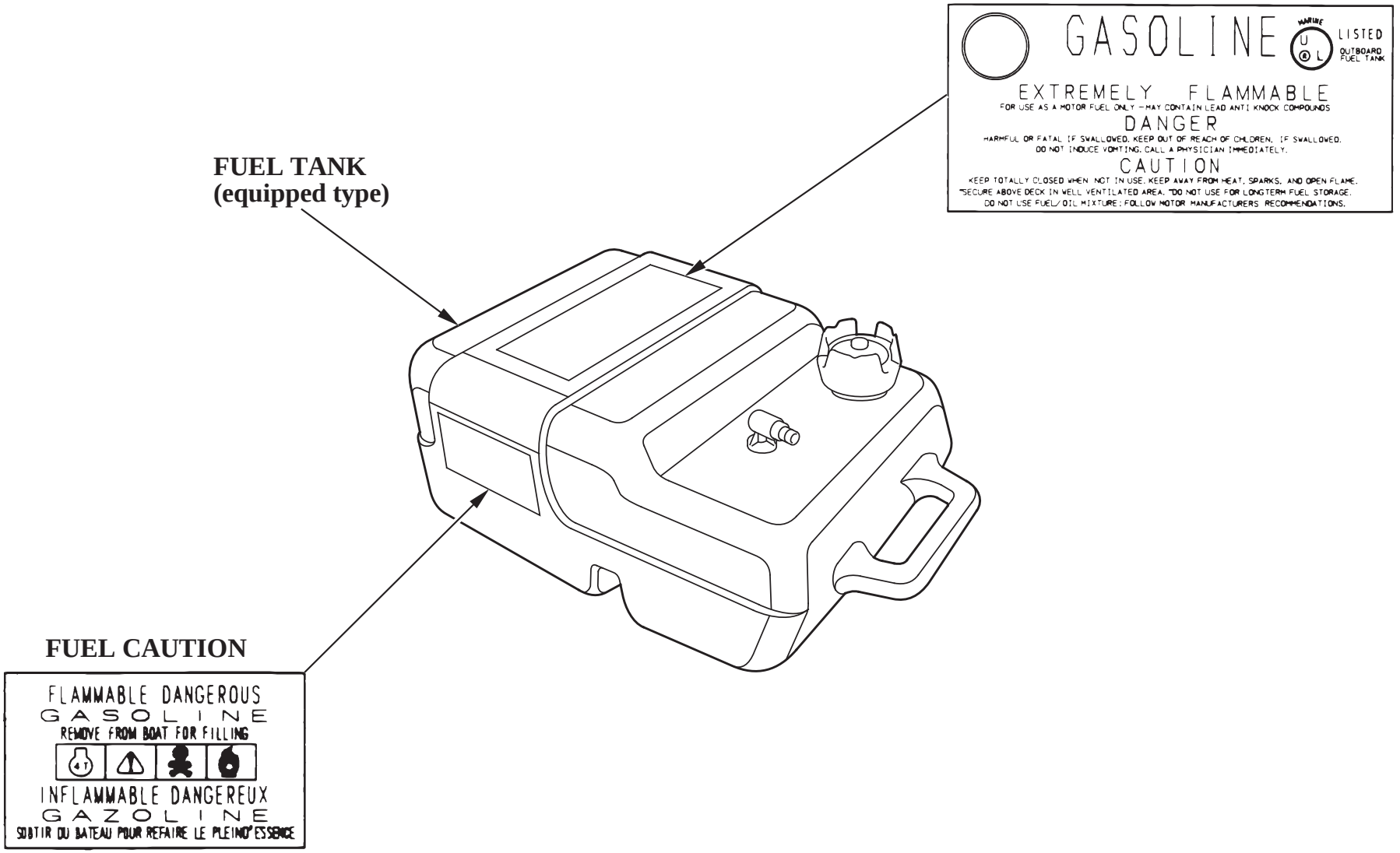
Exhaust contains poisonous carbon monoxide, a colorless and odorless gas. Breathing exhaust can cause loss of consciousness and may lead to death.

- If you run the engine in an area that is confined, or even partially enclosed, the air can become contaminated with a dangerous amount of exhaust gas. To keep exhaust gas from building up, provide adequate ventilation.

2. SAFETY LABEL LOCATIONS

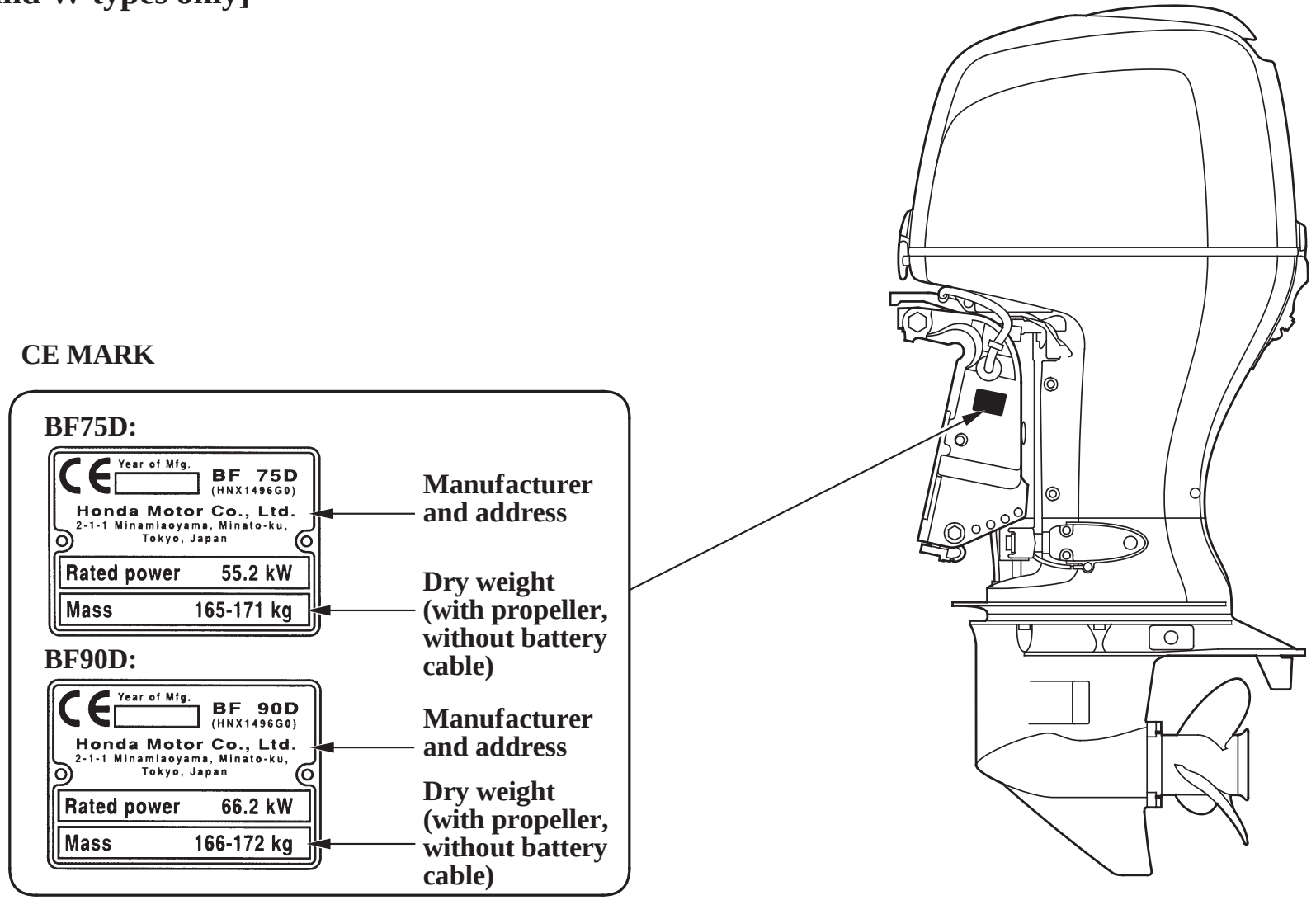
These labels are in the locations shown.
They warn you of potential hazards that can cause serious injury.
Read the labels and safety notes and precautions described in this manual carefully.
If a label comes off or becomes hard to read, contact your Honda outboard motor dealer for a replacement.



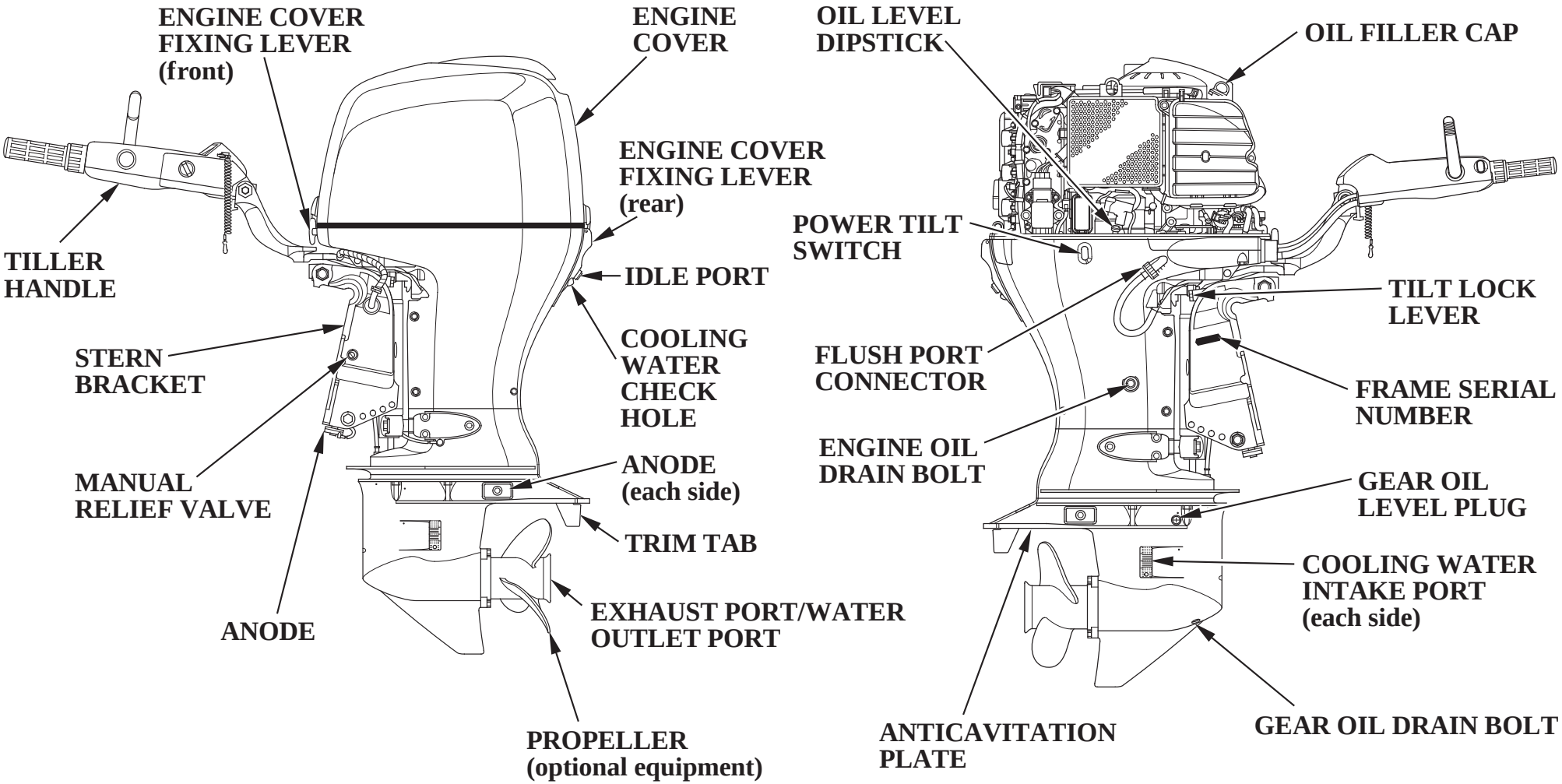

GASOLINE
MARINE
U
L
LISTED
OUTBOARD
FUEL TANK
EXTREMELY FLAMMABLE
FOR USE AS A MOTOR FUEL ONLY – MAY CONTAIN LEAD ANTI KNOCK COMPOUNDS
DANGER
HARMFUL OR FATAL IF SWALLOWED. KEEP OUT OF REACH OF CHILDREN. IF SWALLOWED,
DO NOT INDUCE VOMITING. CALL A PHYSICIAN IMMEDIATELY.
CAUTION
KEEP TOTALLY CLOSED WHEN NOT IN USE. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.
*SECURE ABOVE DECK IN WELL VENTILATED AREA; *DO NOT USE FOR LONGTERM FUEL STORAGE.
DO NOT USE FUEL/OIL MIXTURE; FOLLOW MOTOR MANUFACTURERS RECOMMENDATIONS.
FUEL TANK
(equipped type)
FUEL CAUTION
FLAMMABLE DANGEROUS
GASOLINE
REMOVE FROM BOAT FOR FILLING
INFLAMMABLE DANGEREUX
GAZOLINE
SORTIR DU BATEAU POUR REFAIRE LE PLEIN D'ESSENCE

SAFETY LABEL LOCATIONS

CE mark location
[U and W types only]

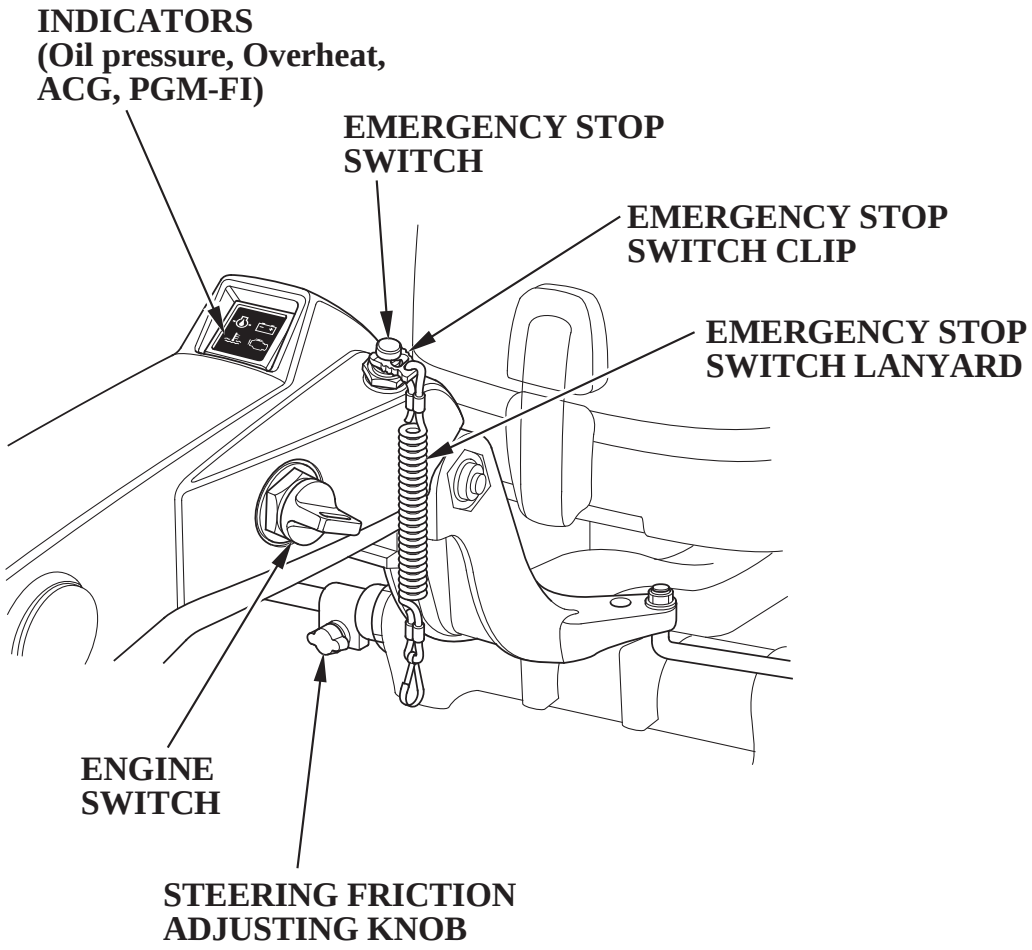


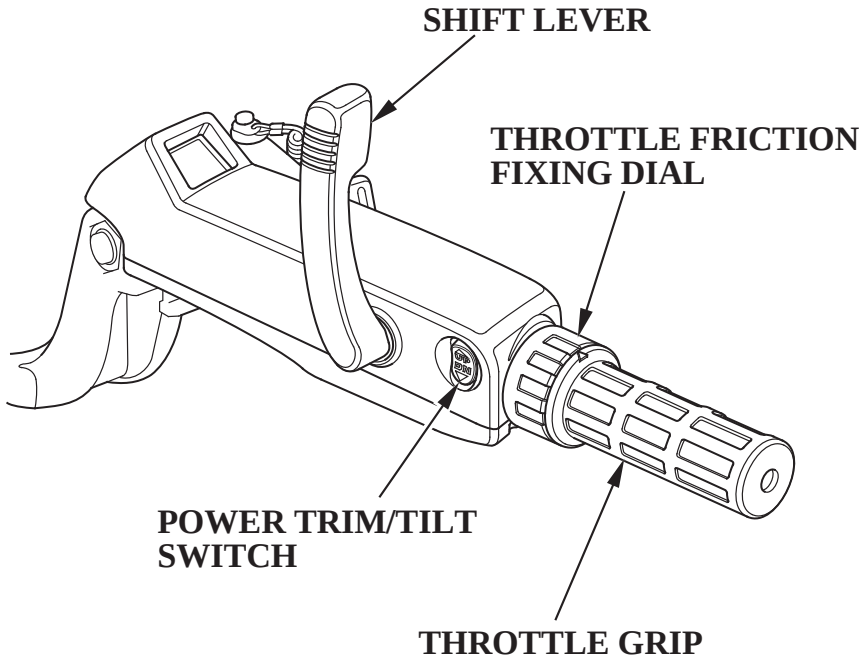
[H (Tiller Handle) type]



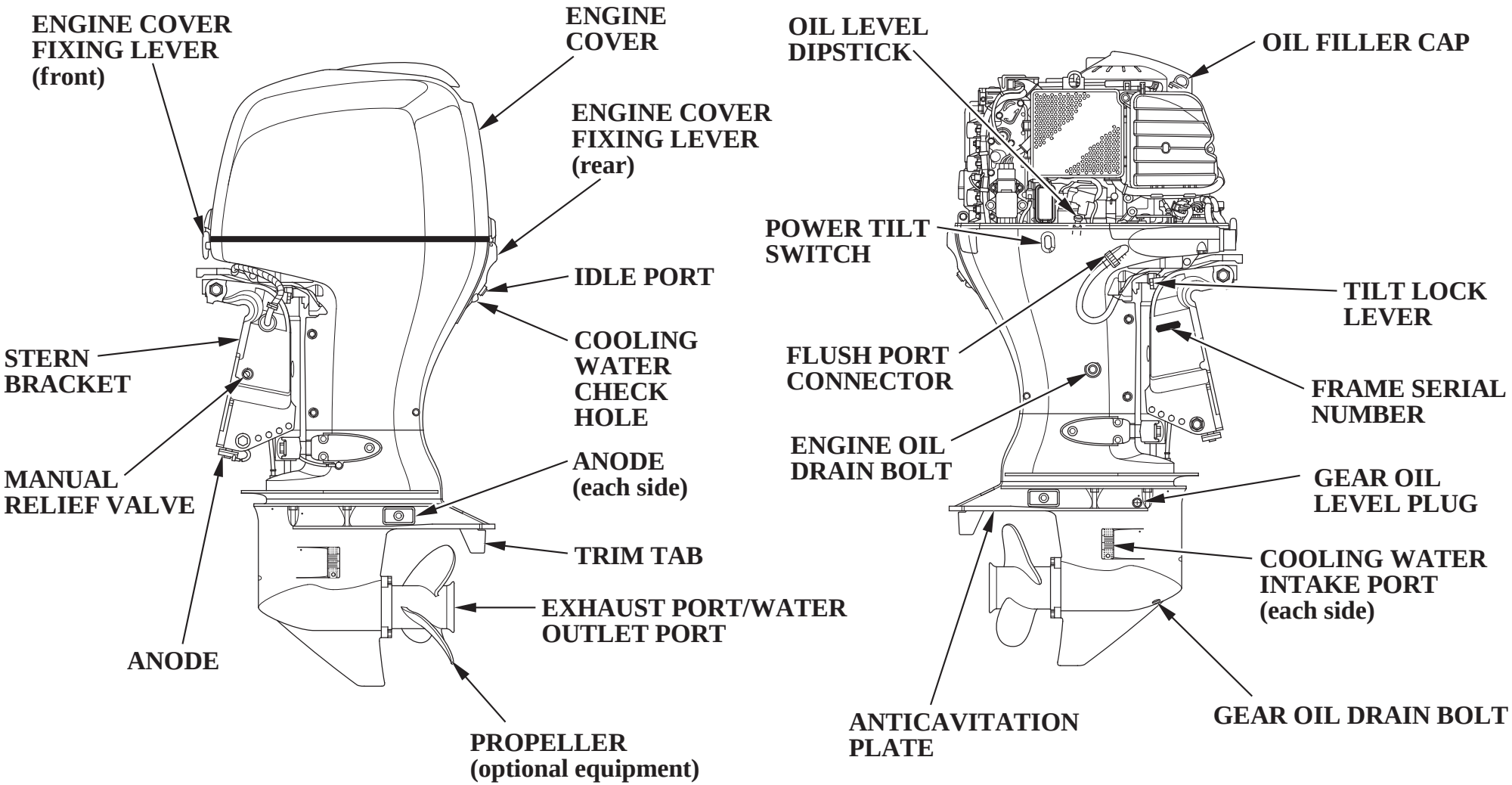
COMPONENT IDENTIFICATION

TILLER HANDLE





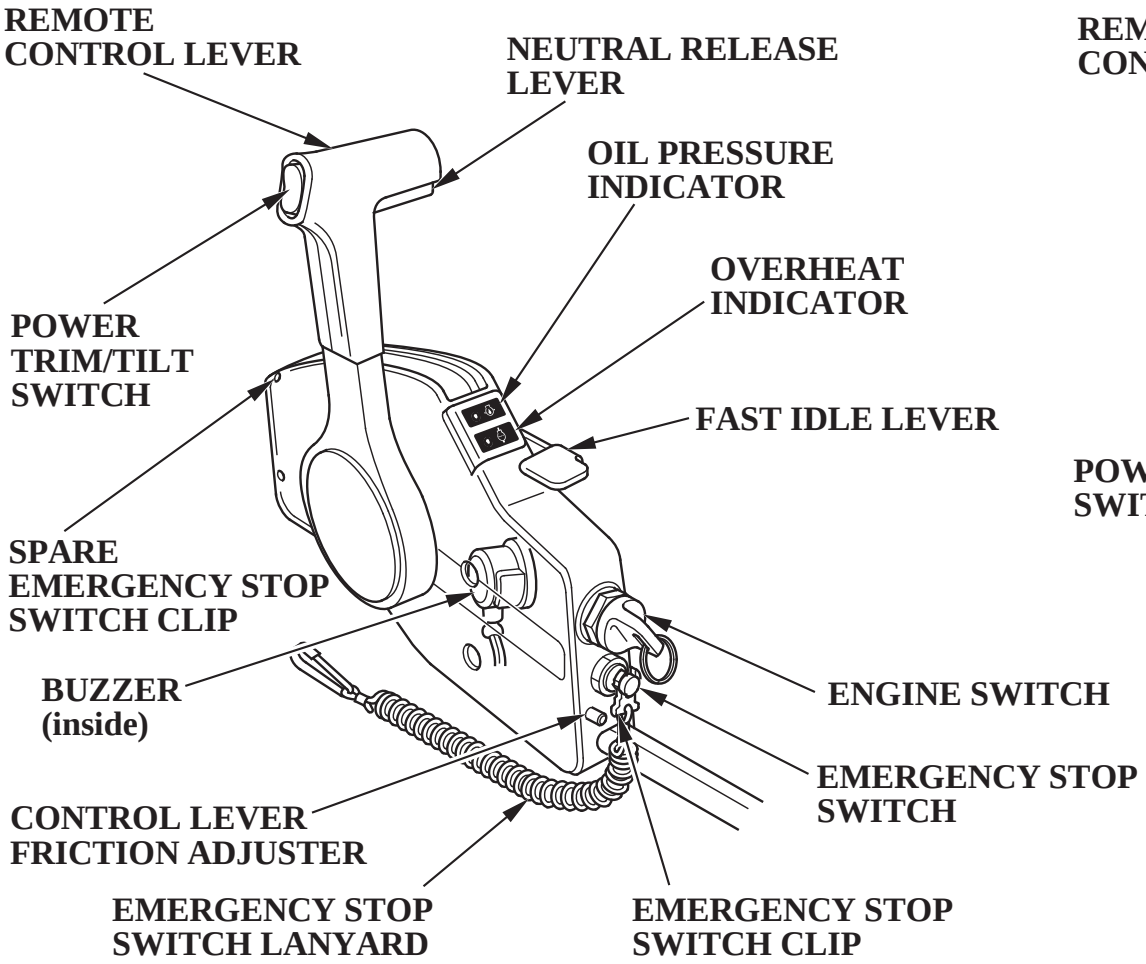
[R (Remote Control) type]



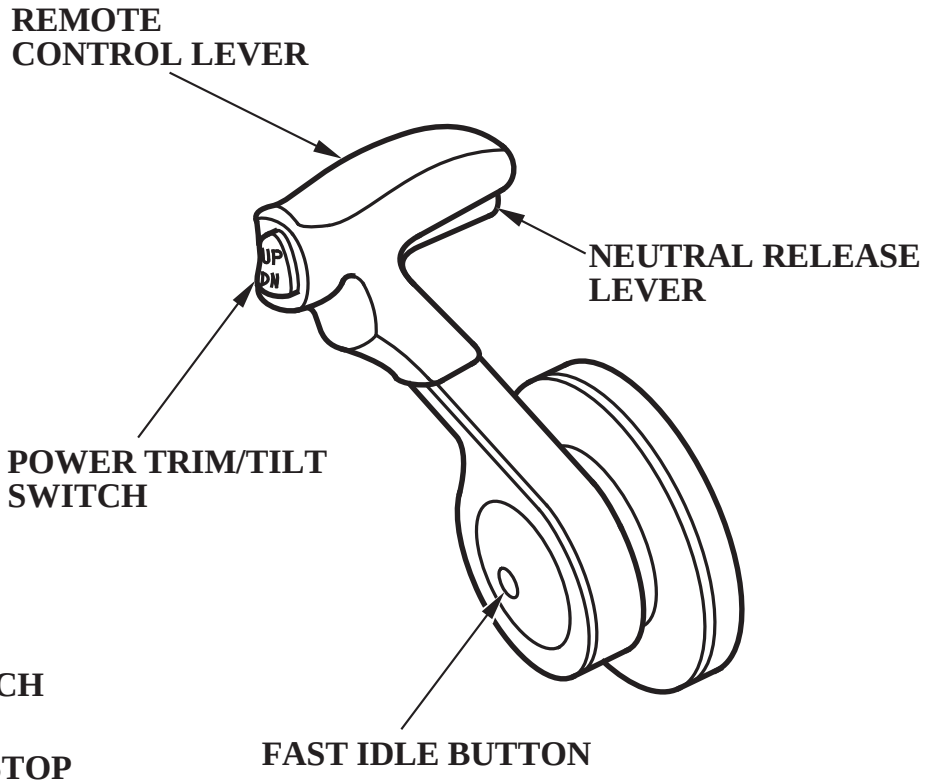
COMPONENT IDENTIFICATION

REMOTE CONTROL BOX
(equipped type or optional equipment)

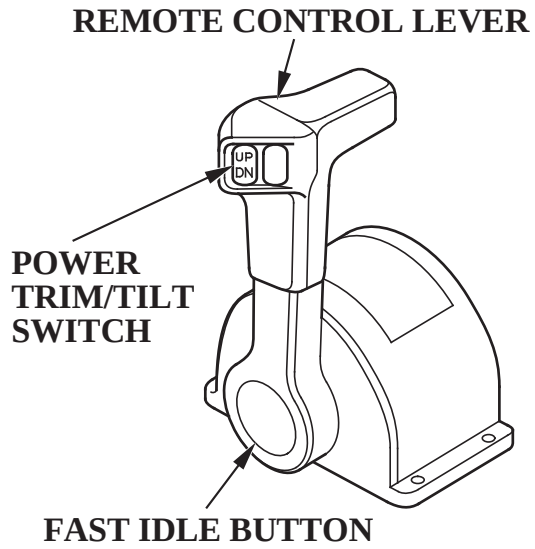
SIDE-MOUNT TYPE (R1 type)



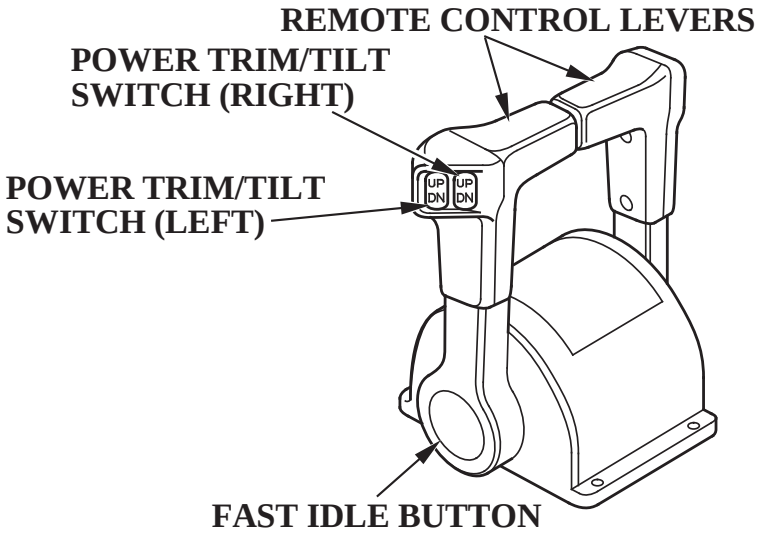
PANEL-MOUNT TYPE (R2 type)



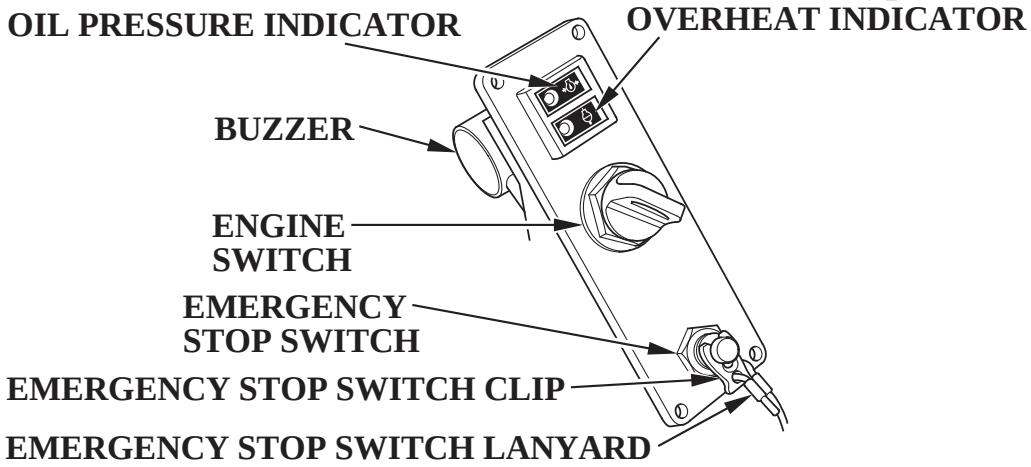
TOP-MOUNT TYPE (R3 type)
(SINGLE MOTOR TYPE)



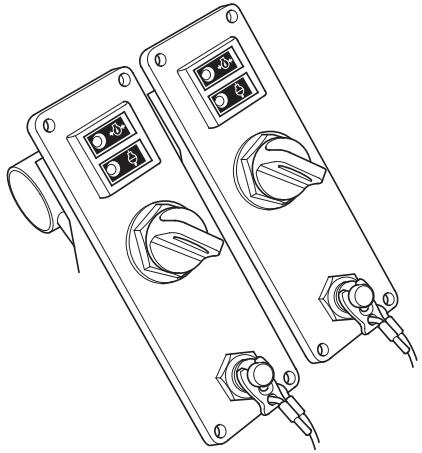
(DUAL MOTOR TYPE)



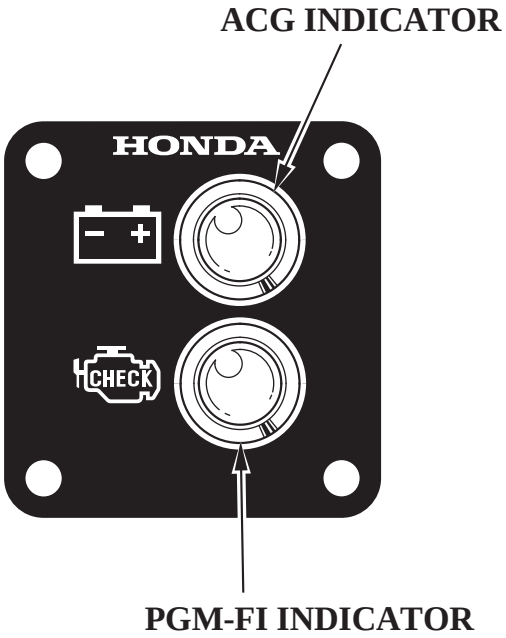
CONTROL PANEL (optional equipment)
(for PANEL-MOUNT, TOP-MOUNT SINGLE type)



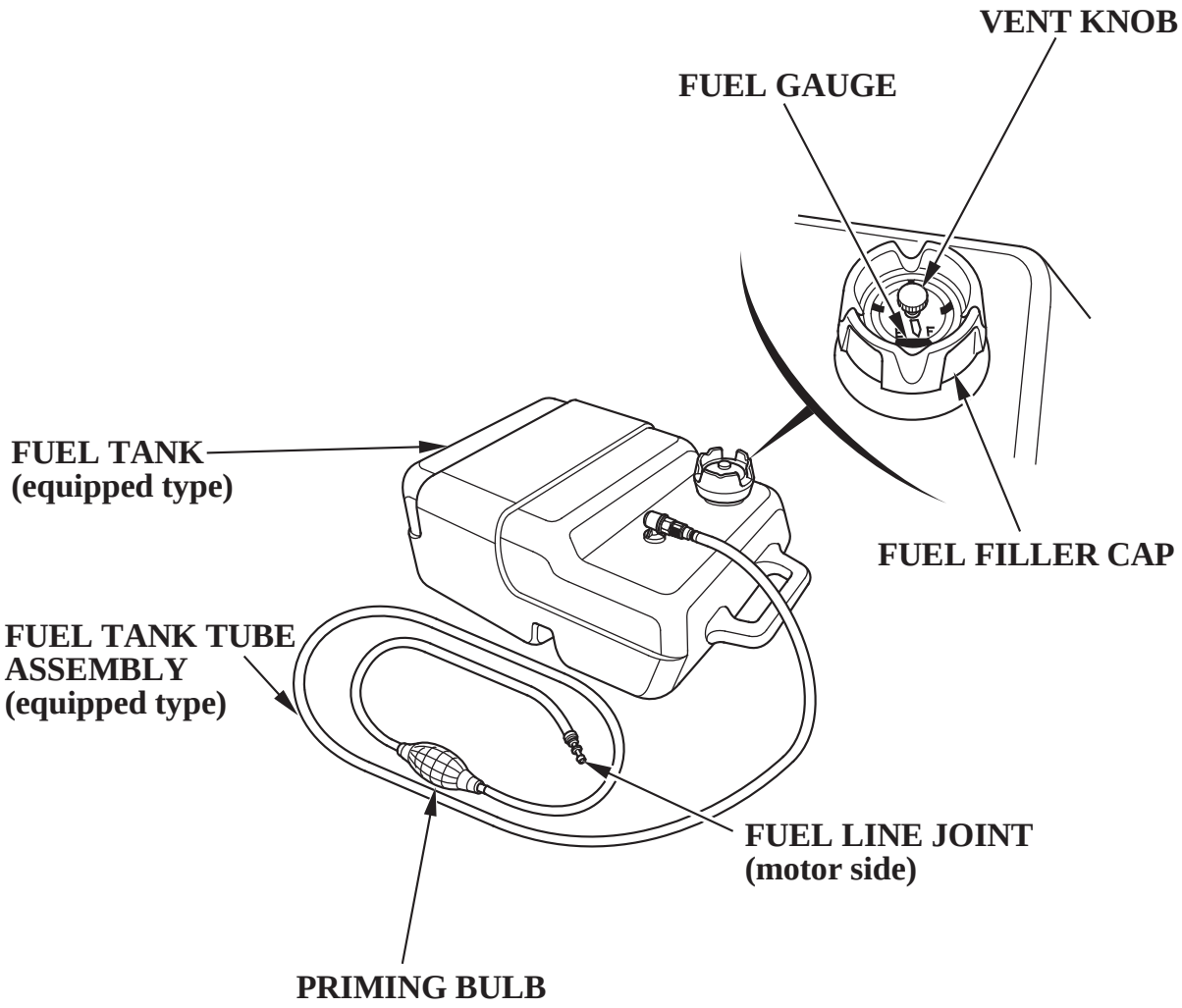
(for TOP-MOUNT DUAL type)

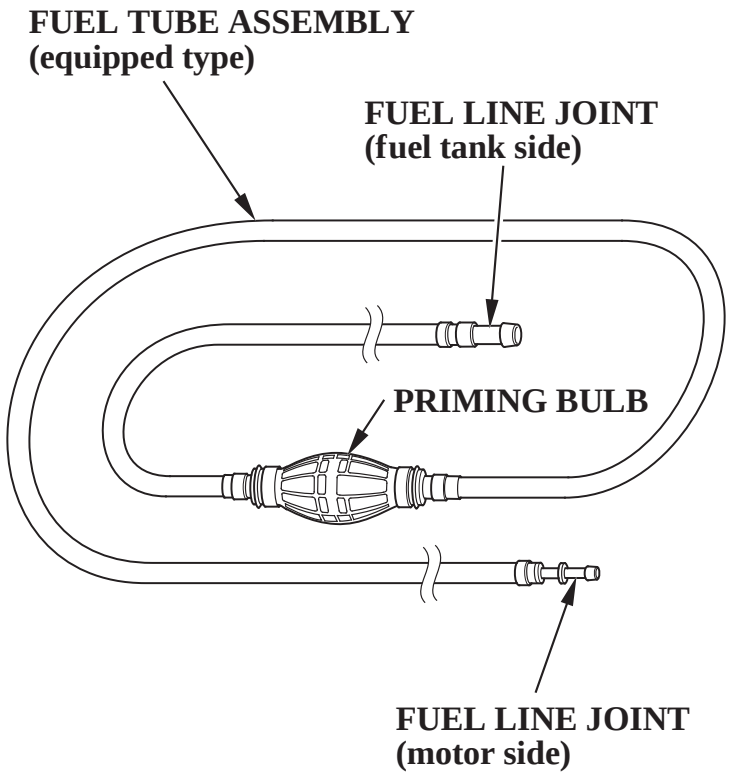


INDICATOR PANEL
(standard equipment)



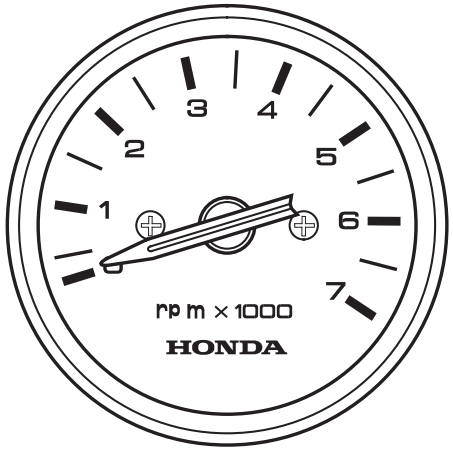
[Common]


VENT KNOB
FUEL GAUGE
FUEL TANK
(equipped type)
FUEL FILLER CAP
FUEL TANK TUBE
ASSEMBLY
(equipped type)
FUEL LINE JOINT
(motor side)
PRIMING BULB

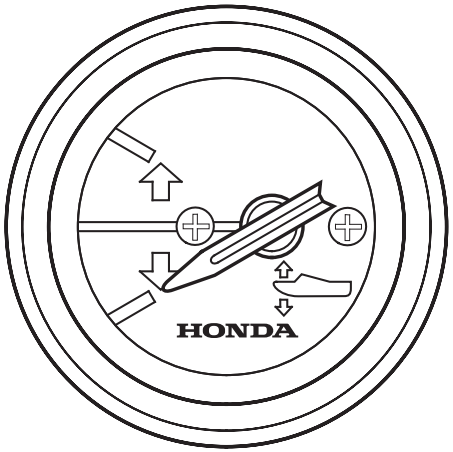

FUEL TUBE ASSEMBLY
(equipped type)
FUEL LINE JOINT
(fuel tank side)
PRIMING BULB
FUEL LINE JOINT
(motor side)

COMPONENT IDENTIFICATION

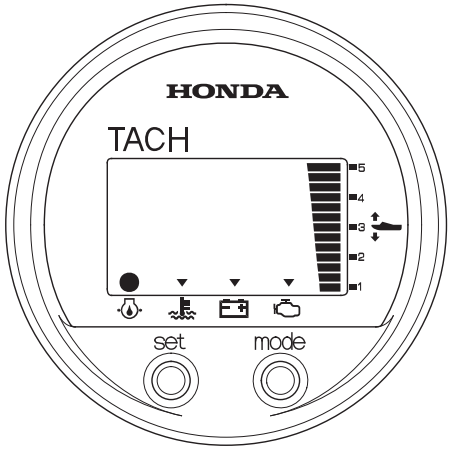
TACHOMETER (equipped type or optional equipment)



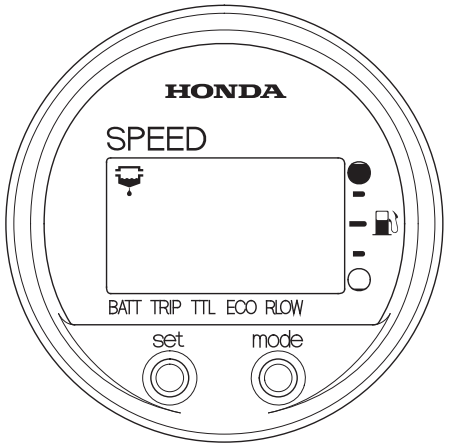
TRIM METER (equipped type or optional equipment)



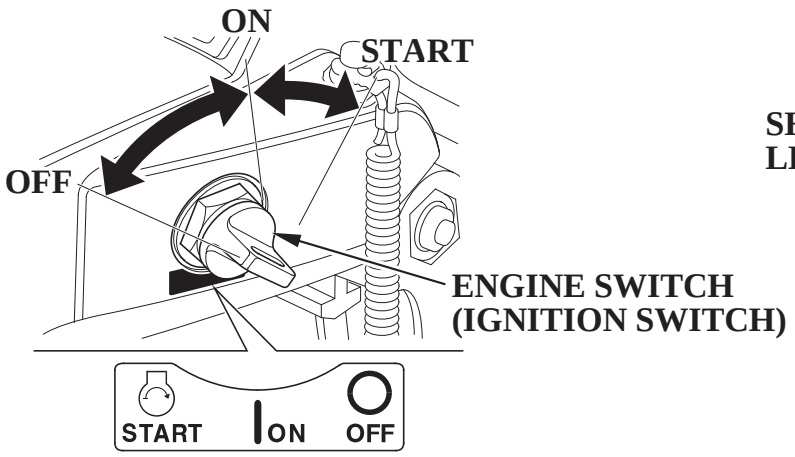
DIGITAL TACHOMETER (optional equipment: R type)



DIGITAL SPEEDOMETER (optional equipment: R type)



Engine Switch (Ignition Switch)

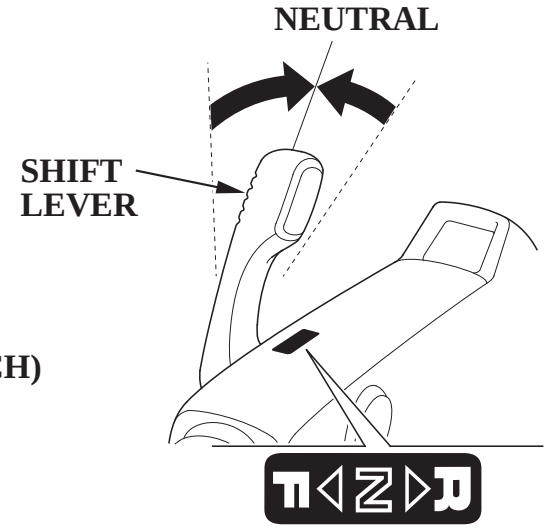


START ON OFF

This tiller handle is equipped with an automotive type ignition switch.

Key positions:

START:	to start the engine.
ON:	to run the engine after starting.
OFF:	to stop the engine (IGNITION OFF).



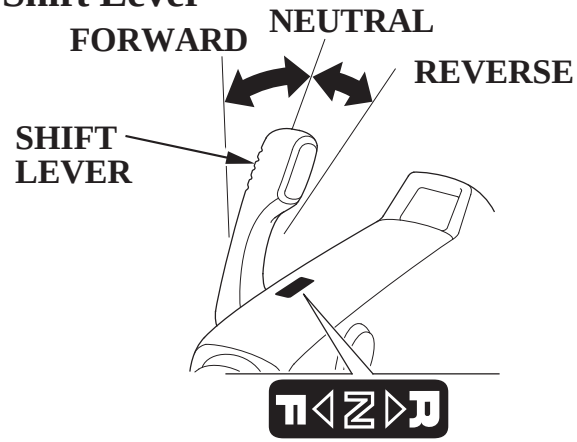
NEUTRAL

NOTICE

Do not leave the engine switch (ignition switch) ON (key in ON position) when the engine is not running as the battery will discharge.

NOTE:
The starter motor will not work unless the shift lever is in the NEUTRAL position.

Shift Lever



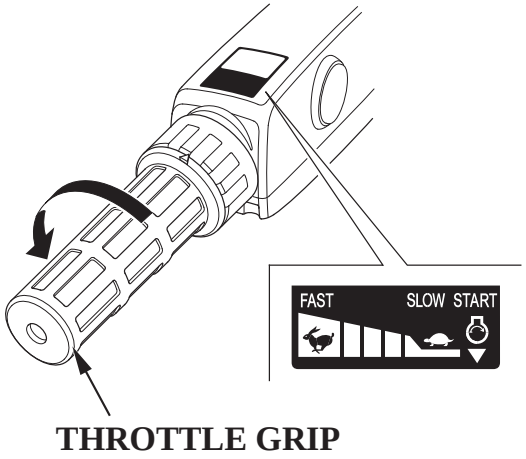
FORWARD REVERSE
NEUTRAL

Use the shift lever to run the boat in forward or reverse gear, or to cut off the engine power from the propeller. There are the three positions for the shift lever.

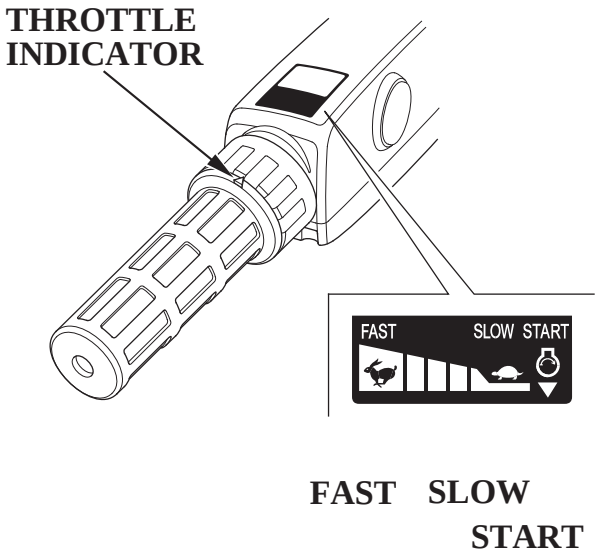
FORWARD:	The boat moves ahead.
NEUTRAL:	The engine power is cut off from the propeller. The boat does not move.
REVERSE:	The boat reverses.

CONTROLS AND FEATURES (H type)

Throttle Grip

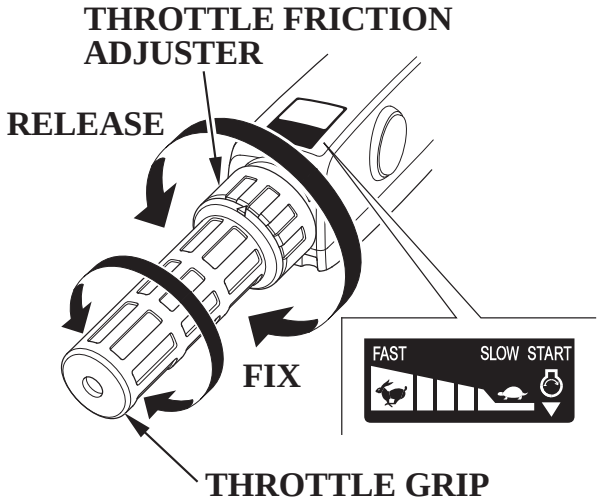


Turn the grip clockwise or counterclockwise to adjust the engine speed. Turning the grip in the direction shown by arrow increases the engine speed.



The curve on the grip indicates the engine speed.

Throttle Friction Adjuster

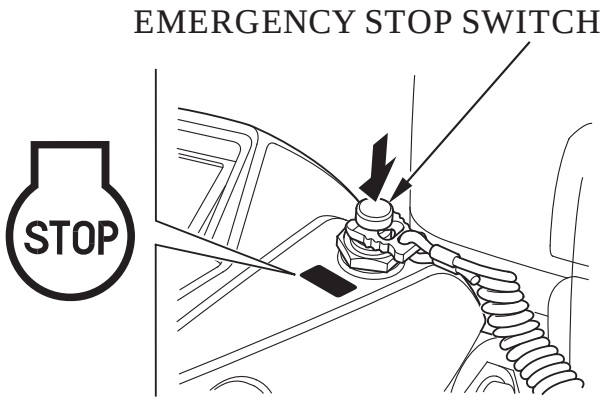


The throttle friction adjuster adjusts resistance to throttle grip rotation.

Turn the adjuster clockwise to increase friction for holding a throttle setting while cruising.

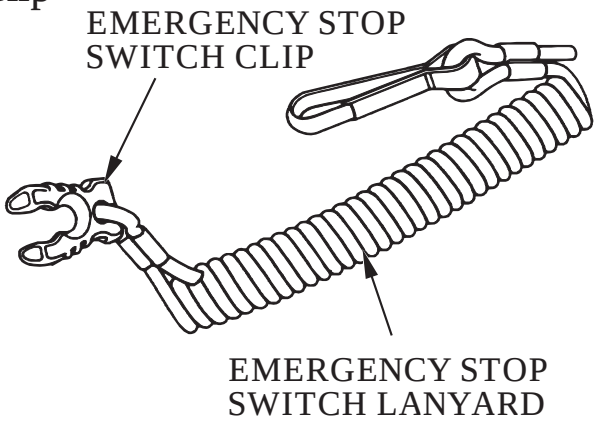
Turn the adjuster counterclockwise to decrease friction for easy throttle grip rotation.

Emergency Stop Switch



Press the emergency stop switch to stop the engine.

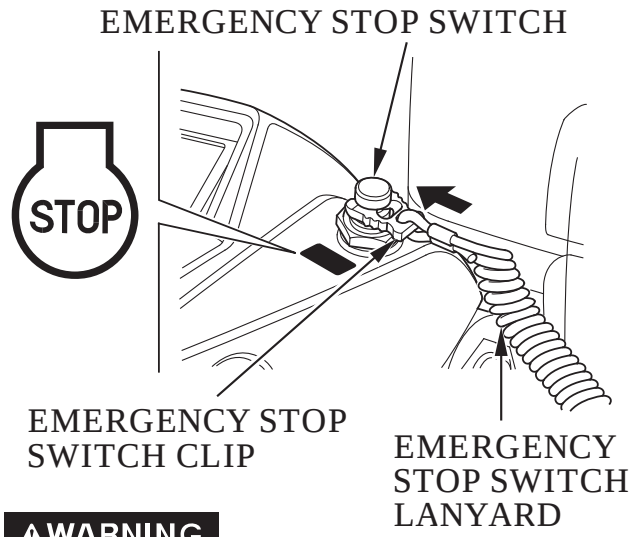
Emergency Stop Switch Lanyard/ Clip



The emergency stop switch lanyard is provided to stop the engine immediately when the operator falls overboard or away from the outboard motor.

The engine stops when the clip at the end of the emergency stop switch lanyard is pulled out of the emergency stop switch.

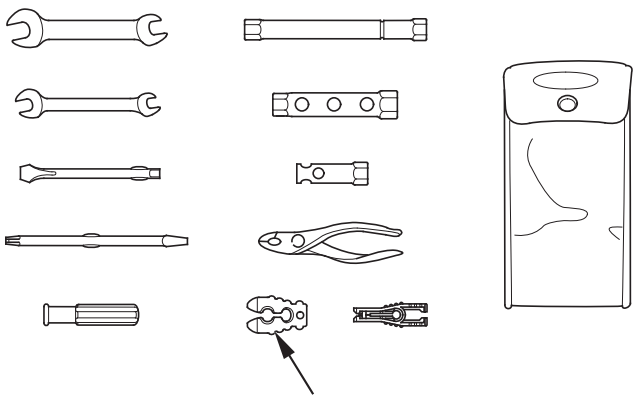
When operating the outboard motor, be sure to attach one end of the emergency stop switch lanyard securely to the operator.



⚠WARNING

If the emergency stop switch lanyard is not set, the boat might run out of control when the operator, for example, falls overboard and is not able to operate the outboard motor.

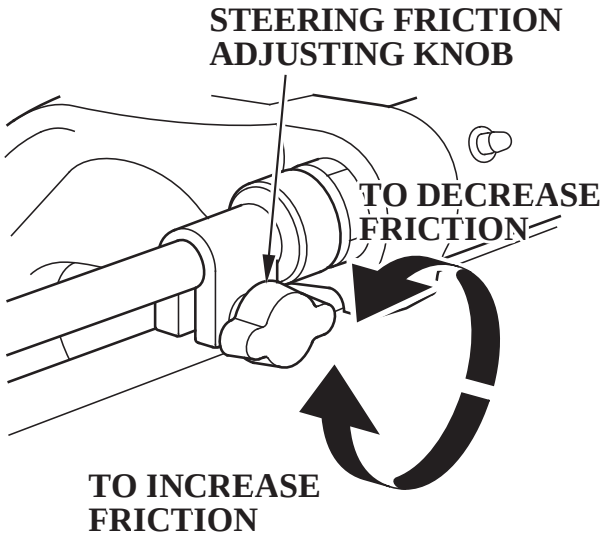
For the sake of the operator's and the passengers' safety, be sure to set the emergency stop switch clip located at one end of the emergency stop switch lanyard with the emergency stop switch. Attach the other end of the emergency stop switch lanyard securely to the operator.



NOTE:
The engine does not start unless the emergency stop switch clip is set on the emergency stop switch.

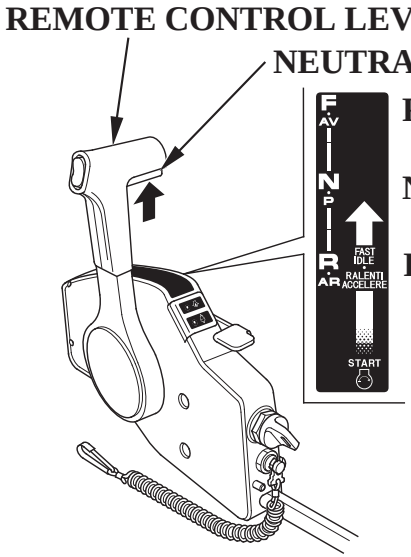
A spare emergency stop switch clip is provided in the tool bag (see page 117).
Use the spare emergency stop switch clip to make the disabled engine start when the emergency stop switch lanyard is not available as, for example, when the operator falls overboard.

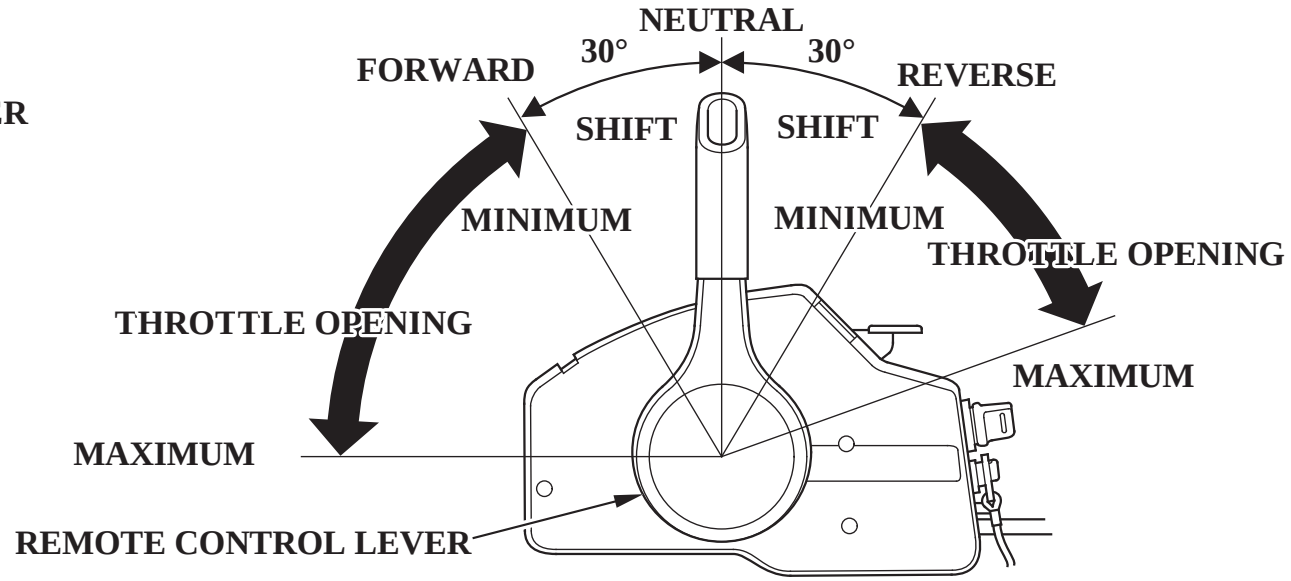
Steering Friction Adjusting Knob



Use the steering friction adjusting knob to adjust the tiller handle friction. Turning clockwise increases friction and turning it counterclockwise decreases friction.

Remote Control Lever (R1 type)





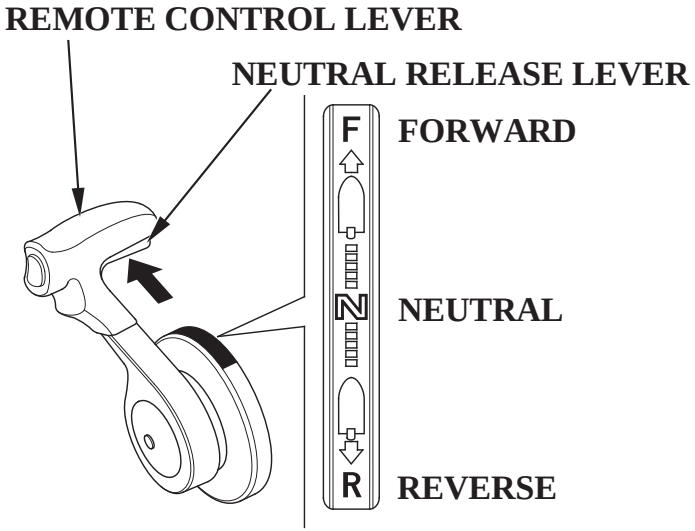
Shifting gear into forward, reverse, or neutral and the engine speed adjustment can be performed with the remote control lever.
It is necessary to pull up the neutral release lever to operate the remote control lever.

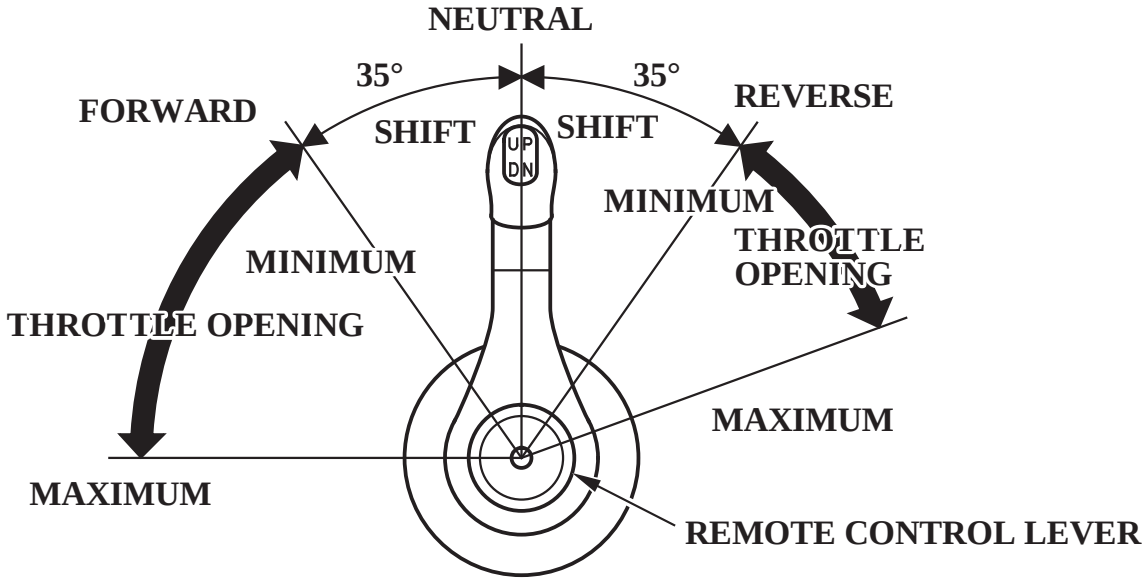
FORWARD:
Moving the lever to the FORWARD position (i.e. approximately 30° from the NEUTRAL position) engages the gear into forward. Moving the lever further from the FORWARD position will increase the throttle opening and the boat forward speed.

NEUTRAL:
Engine power is cut off from the propeller.

REVERSE:
Moving the lever to the REVERSE position (i.e. approximately 30° from the NEUTRAL position) engages the gear into reverse. Moving the lever further from the REVERSE position will increase the throttle opening and the boat reverse speed.

Remote Control Lever (R2 type)





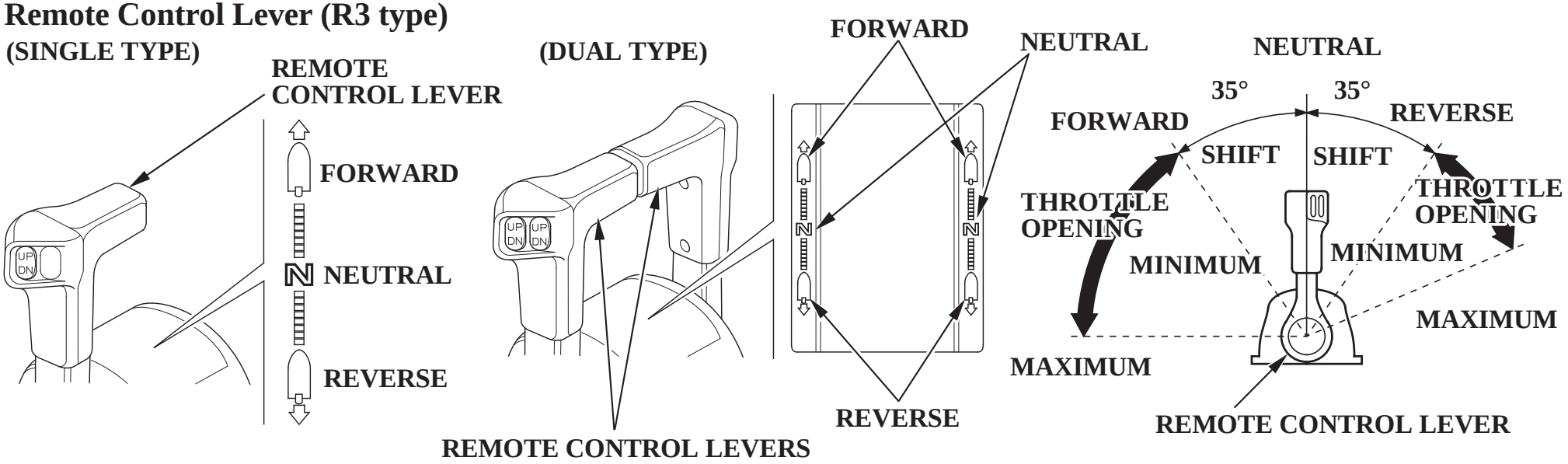
Shifting gear into forward, reverse, or neutral and the engine speed adjustment can be performed with the remote control lever.
It is necessary to pull up the neutral release lever to operate the remote control lever.

FORWARD:
Moving the lever to the FORWARD position (i.e. approximately 35° from the NEUTRAL position) engages the gear into forward. Moving the lever further from the FORWARD position will increase the throttle opening and the boat forward speed.

NEUTRAL:
Engine power is cut off from the propeller.

REVERSE:
Moving the lever to the REVERSE position (i.e. approximately 35° from the NEUTRAL position) engages the gear into reverse. Moving the lever further from the REVERSE position will increase the throttle opening and the boat reverse speed.

Remote Control Lever (R3 type)



Shifting gear into forward, reverse, or neutral and the engine speed adjustment can be performed with the remote control lever.

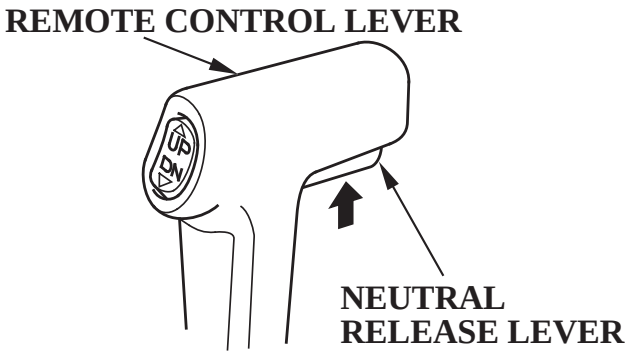
FORWARD:
Moving the lever to the FORWARD position (i.e. approximately 35° from the NEUTRAL position) engages the gear into forward. Moving the lever further from the FORWARD position will increase the throttle opening and the boat forward speed.

NEUTRAL:
Engine power is cut off from the propeller.

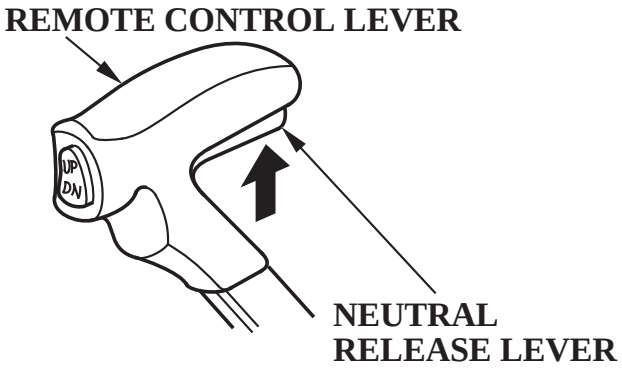
REVERSE:
Moving the lever to the REVERSE position (i.e. approximately 35° from the NEUTRAL position) engages the gear into reverse. Moving the lever further from the REVERSE position will increase the throttle opening and the boat reverse speed.

Neutral Release Lever

(R1 type)



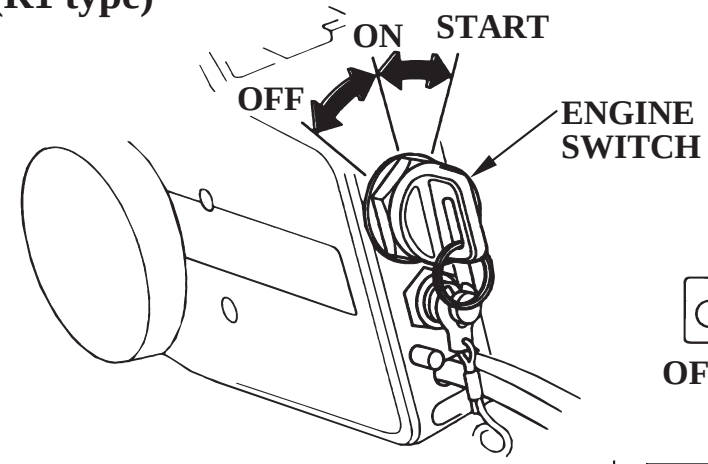
(R2 type)



The neutral release lever is set on the remote control lever to prevent an accidental operation of the remote control lever.
The remote control lever does not operate unless it is moved while pulling the neutral release lever up.

Engine Switch (Ignition Switch)

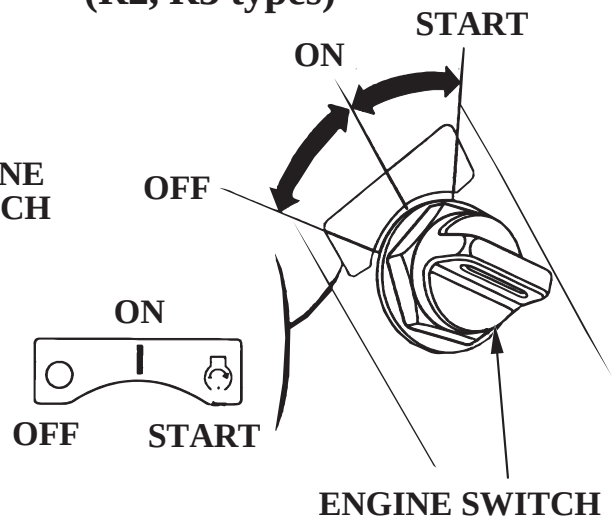
(R1 type)



This remote control is equipped with an automotive type ignition switch.
On the side-mount type (R1 type), the engine switch locates on your side near the remote control box.
On the panel-mount type (R2 type) and the top-mount type (R3 type), the engine switch locates at the center of the control panel.
Key positions:

START:	to start the engine.
ON:	to run the engine after starting.
OFF:	to stop the engine (IGNITION OFF).

(R2, R3 types)



NOTICE

Do not leave the engine switch (ignition switch) ON (key in ON position) when the engine is not running as the battery will discharge.

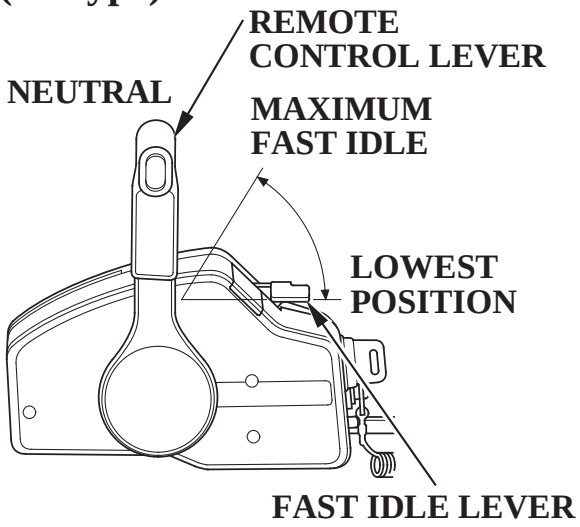
NOTE:
The starter motor will not work unless the remote control lever is in the NEUTRAL position, and the clip is in the emergency stop switch.

Fast Idle Lever (R1 type)/Fast Idle Button (R2, R3 types)

The fast idle lever/fast idle button is only needed for starting carbureted outboard models. The BF75D and BF90D 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 5°C (41 °F), the fast idle lever/fast idle button can be used to accelerate engine warm up.

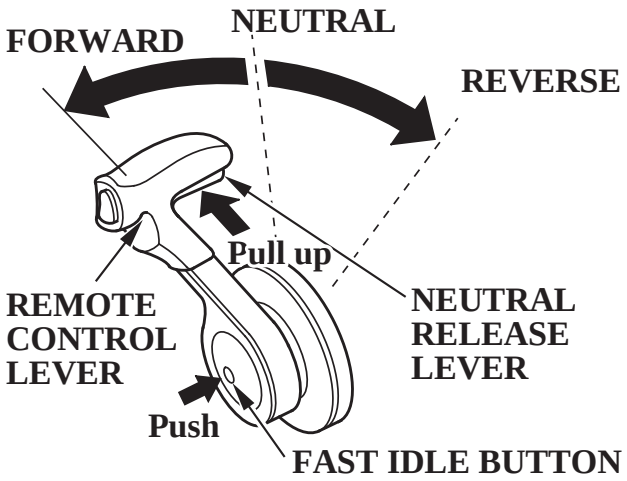
〈**Fast Idle Lever**〉
(R1 type)



The fast idle lever will not move unless the remote control lever is in the 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.

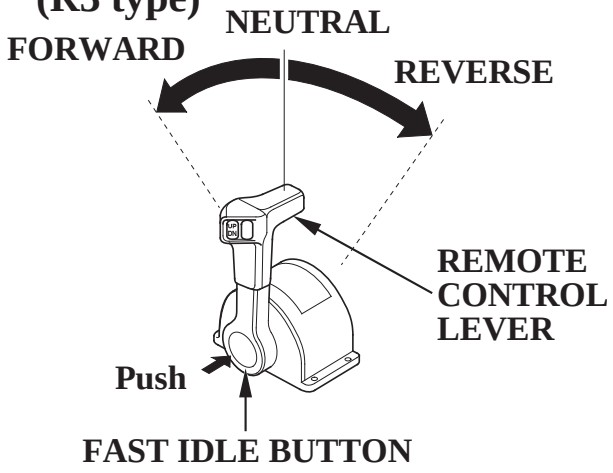
〈**Fast Idle Button**〉
(R2 type)



Pushing the fast idle button, turn the remote control lever forward. Keep turning the lever forward. The throttle opens and the engine speed increases after the lever passed the shift point.
Note that the gearshift mechanism does not function when the fast idle button is pushed once and then released after the remote control lever is moved.
The control lever does not operate unless the neutral release lever is pulled.

〈Fast Idle Button〉

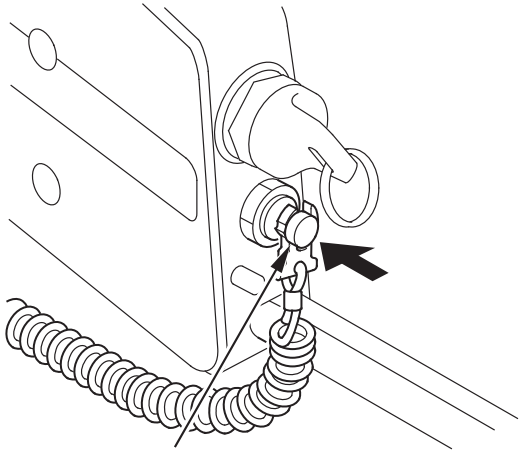
(R3 type)



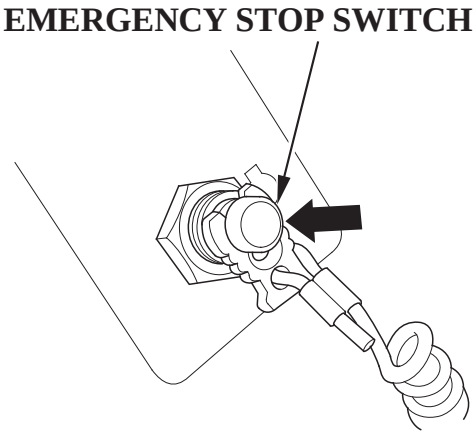
Use the fast idle button and the remote control lever to adjust the engine speed without gearshift when warming up the engine.
Pushing the fast idle button, turn the remote control lever forward. Keep turning the lever forward. The throttle opens and the engine speed increases after the lever passed the shift point.
Note that the gearshift mechanism does not function when the fast idle button is pushed once and then released after the remote control lever is moved.

Emergency Stop Switch

(R1 type)

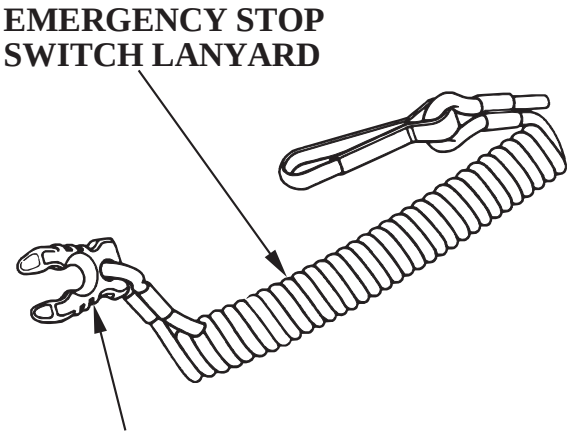


(R2, R3 types)



Press the emergency stop switch to stop the engine.

Emergency Stop Switch Lanyard/ Clip



The emergency stop switch lanyard is provided to stop the engine immediately in the event the operator should fall overboard or away from the controls.

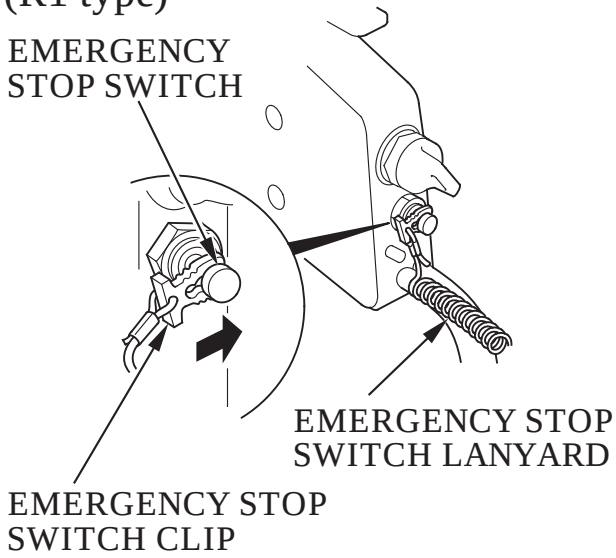
The emergency stop switch clip must be engaged with the emergency stop switch or the engine will not start. When the emergency stop switch clip becomes disengaged with the emergency stop switch the engine will stop immediately.

⚠WARNING

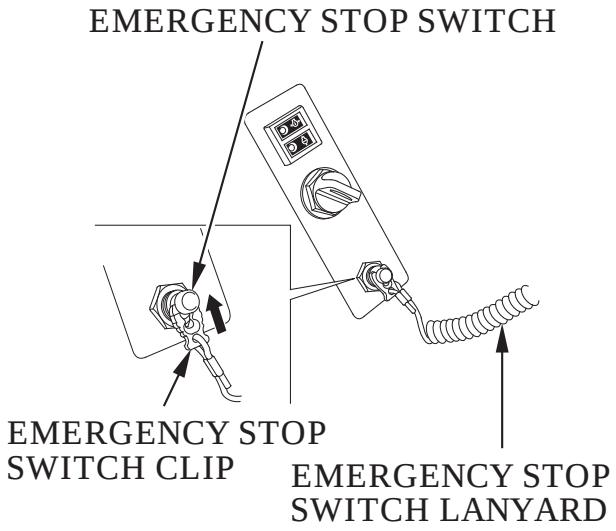
If the emergency stop switch lanyard is not set, the boat might run out of control when the operator, for example, falls overboard and is not able to operate the outboard motor.

For the sake of the operator's and the passenger's safety, be sure to set the emergency stop switch clip located at one end of the emergency stop switch lanyard with the emergency stop switch. Attach the other end of the emergency stop switch lanyard securely to the operator.

(R1 type)

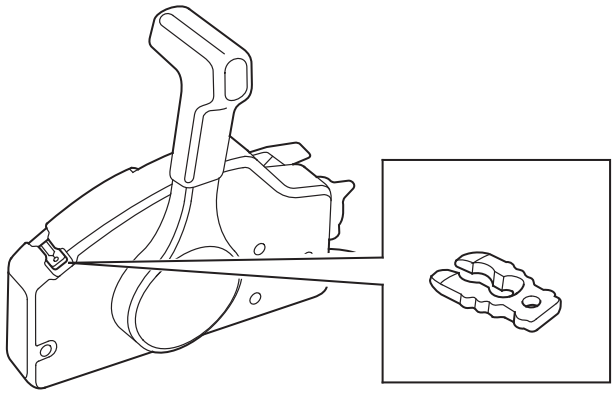


(R2, R3 types)



Spare Emergency Stop Switch Clip

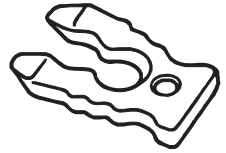
(R1 type)



SPARE EMERGENCY
STOP SWITCH CLIP

A spare emergency stop switch clip is provided on the remote control box.

(All types)



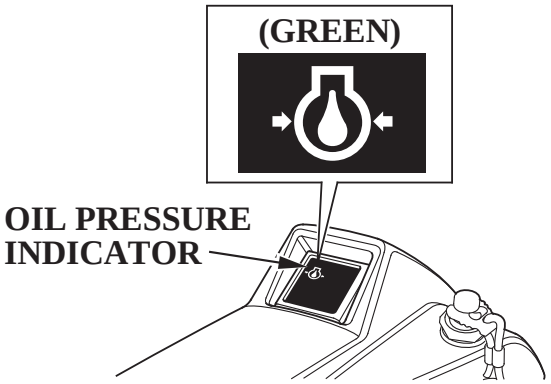
SPARE EMERGENCY
STOP SWITCH CLIP

A spare emergency stop switch clip is provided in the tool bag (see page 117).

Oil Pressure Indicator/Buzzer

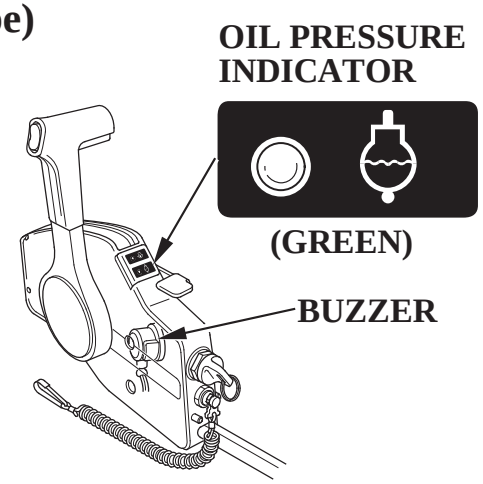
The oil pressure indicator turns off and the buzzer sounds when the oil level is low and/or the engine lubrication system is faulty.
The engine speed slows down gradually this time.

(H type)

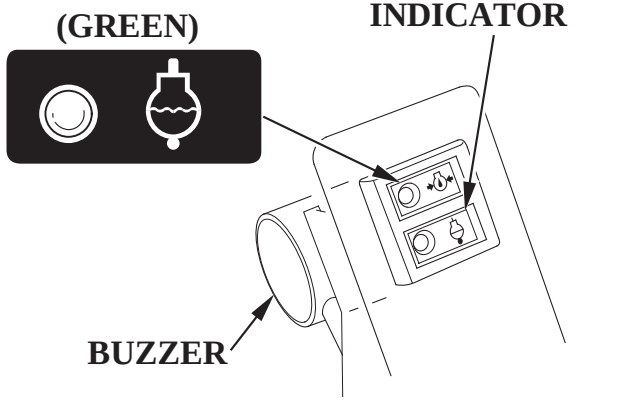


(internal organs the buzzer)

(R1 type)



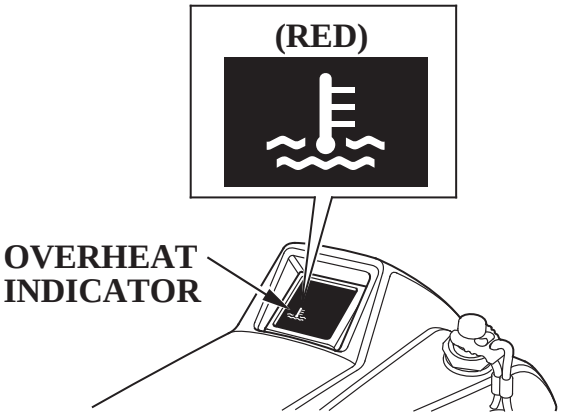
(R2, R3 types)



Overheat Indicator/Buzzer

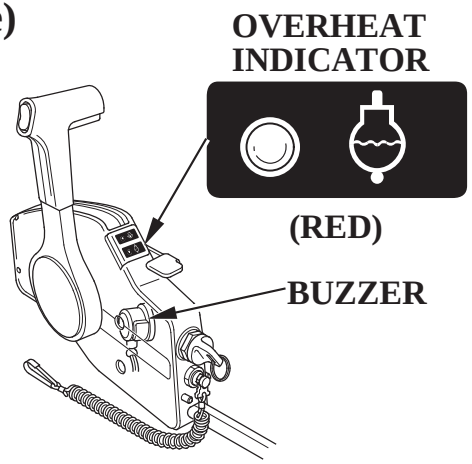
The overheat indicator turns on and the buzzer sounds when the engine cooling circuit is faulty. The engine speed slows down this time.

(H type)

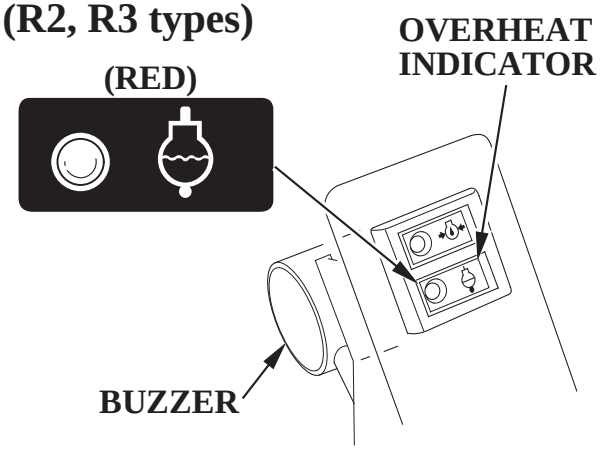


(internal organs the buzzer)

(R1 type)



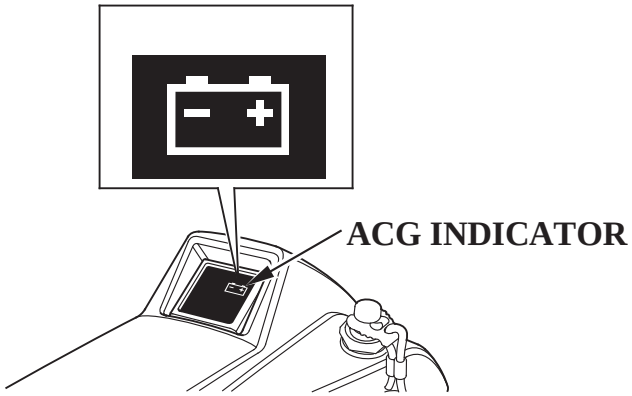
(R2, R3 types)



ACG Indicator/Buzzer

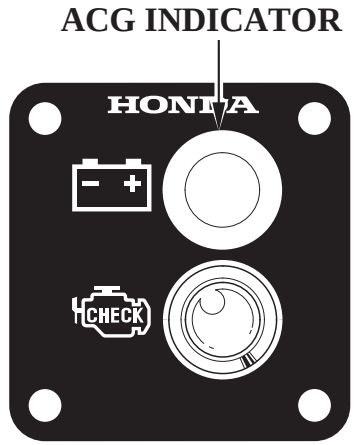
The ACG indicator turns on and the buzzer sounds when the charging system is faulty.

(H type)



(internal organs the buzzer)

(R type)

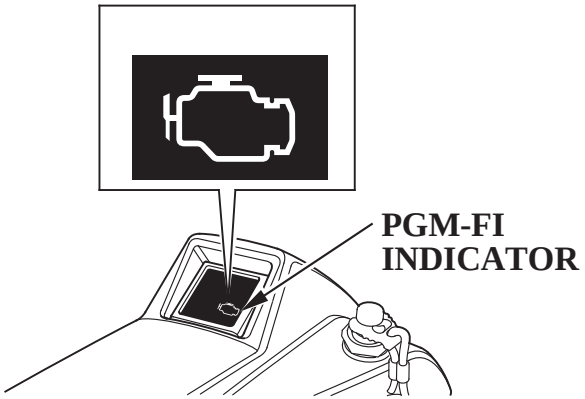


(indicator panel)

PGM-FI Indicator/Buzzer

The PGM-FI indicator turns on and the buzzer sounds when the engine control system is faulty.

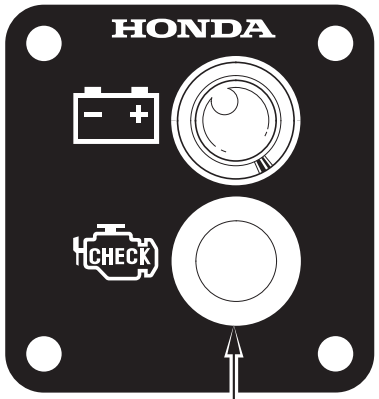
(H type)



(internal organs the buzzer)

(R type)

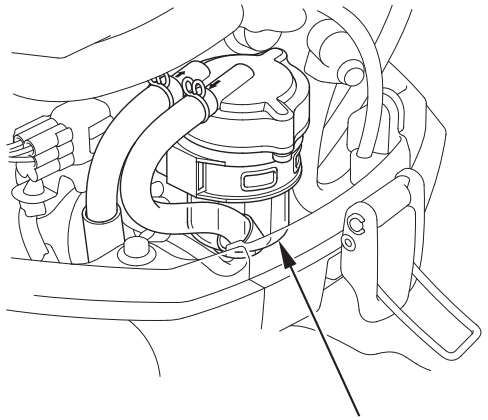
(indicator panel)



PGM-FI INDICATOR (RED)

Water Separator Buzzer

The water separator buzzer sounds when water has accumulated in the water separator.



Power Trim/Tilt Switch

Power Trim

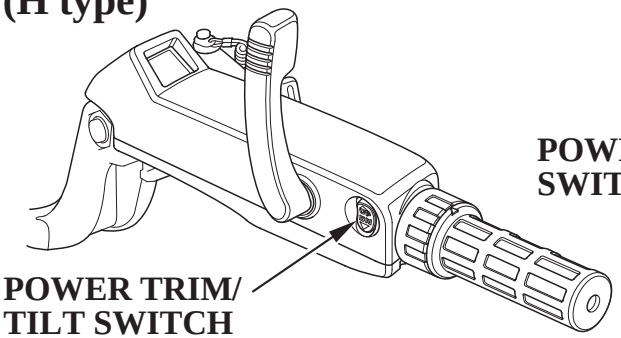
Press the power trim/tilt switch on the remote control lever to adjust the motor trim angle of −4° to 16° to maintain proper boat trim. The power trim/tilt switch can be operated while the boat is under way or while stopped.

By using the power trim/tilt switch the operator can change the trim angle of the motor to achieve maximum boat acceleration, speed, stability and maintain optimum fuel consumption.

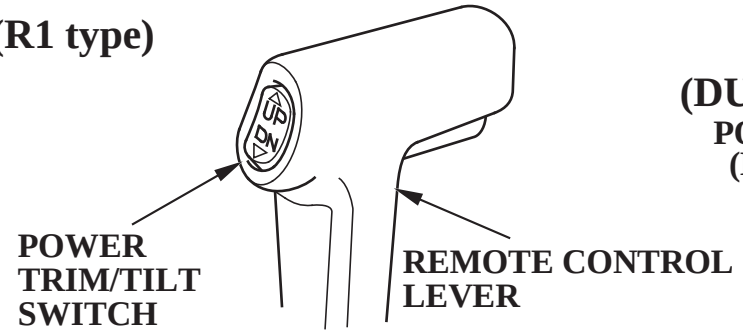
NOTE:

The motor trim angle of −4° to 16° is the angle when the outboard motor is installed on the boat at 12°.

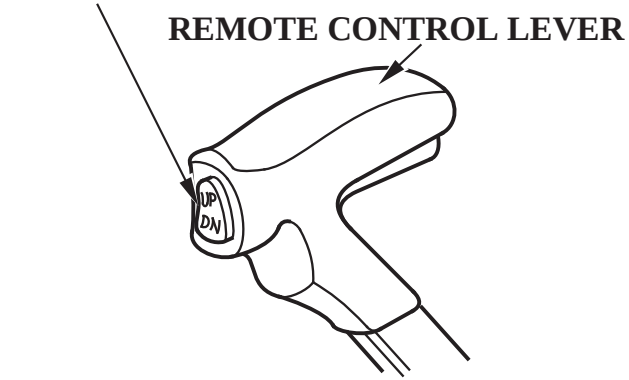
(H type)



(R1 type)

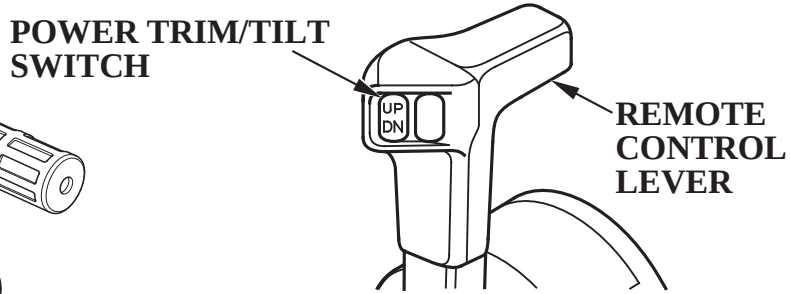


(R2 type)

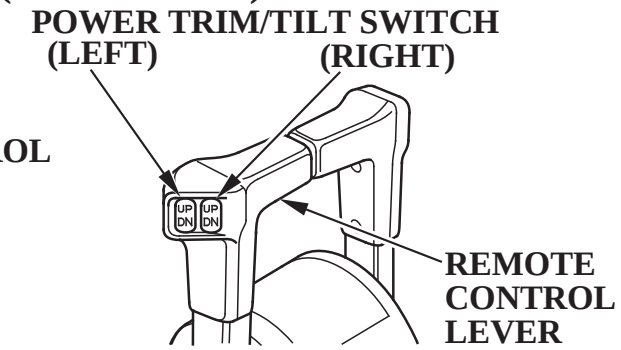


(R3 type)

(SINGLE TYPE)

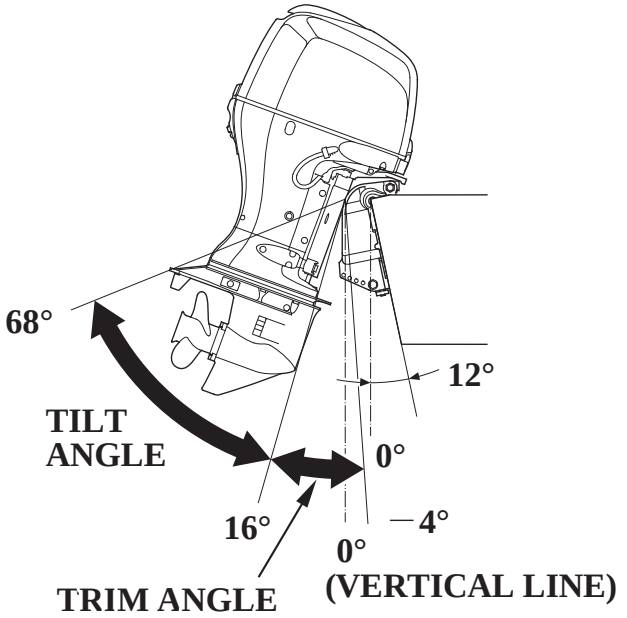


(DUAL TYPE)



NOTICE

Excessive trim/tilt angle during operation can cause the propeller to raise out of the water and cause propeller ventilation and engine over-revving. Excessive trim/tilt angle can also damage the water pump.



(when transom angle is 12°)

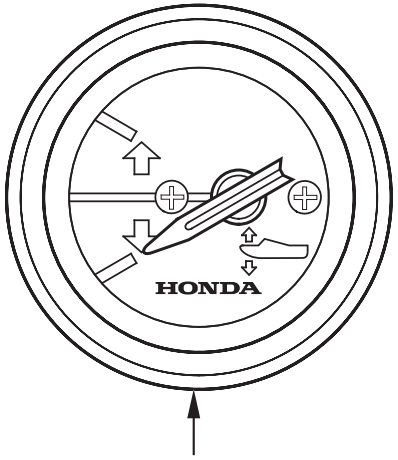
Power Tilt

Press the power trim/tilt switch to adjust the motor tilt angle of 16° to 68°.

By using the power trim/tilt switch the operator can change the tilt angle of the motor for shallow water operation, beaching, launching from a trailer, or mooring.

Please tilt up simultaneously, when you mount the dual type outboard motor.

Trim Meter (equipped type or optional equipment)

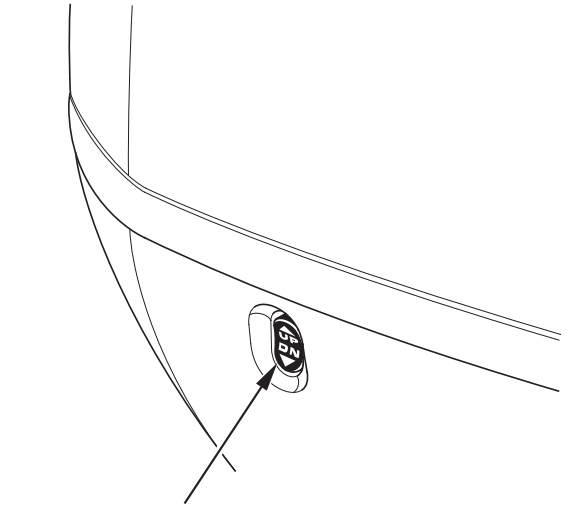


The trim meter has a range of −4° to 16° and indicates the trim angle of the outboard motor. Refer to the trim meter when using the power trim/tilt switch to achieve proper boat performance.

NOTE:

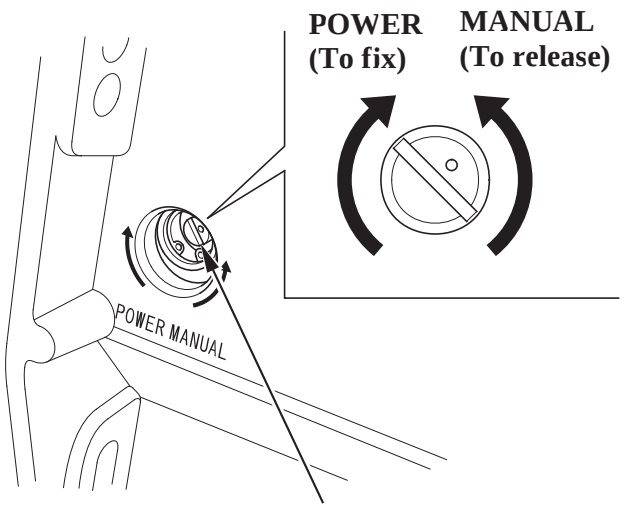
The motor trim angle of −4° to 16° is the angle when the outboard motor is installed on the boat at 12°.

Power Tilt Switch (motor pan)



The power tilt switch located on the motor pan is a convenience switch for tilting the motor for trailering, or preforming outboard maintenance. This power tilt switch should only be operated with the boat being stopped and motor off.

Manual Relief Valve



MANUAL RELIEF VALVE

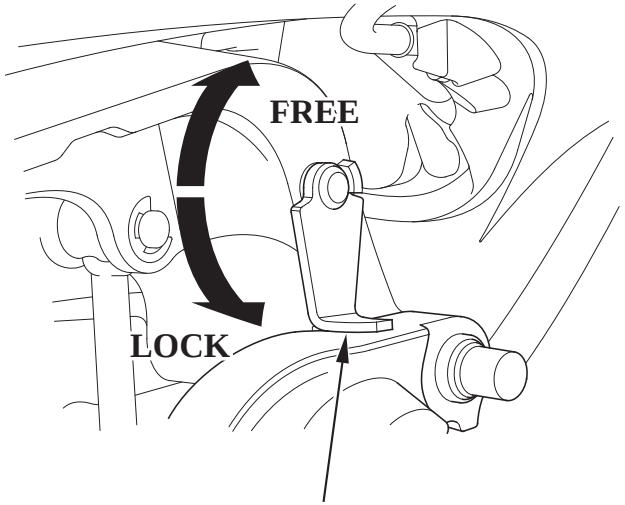
If the power trim/tilt switch will not tilt the outboard motor, the motor can be manually tilted up or down by opening the manual relief valve. To tilt the outboard motor manually, turn the manual relief valve under the left stern bracket no more than 1 or 2 turns counterclockwise using a screwdriver.

After tilting the motor, turn the manual relief valve clockwise securely.

Check that no person is under the outboard motor before carrying out this operation because if the manual relief valve is loosened (turned counterclockwise) when the outboard motor is tilted up, the outboard motor will suddenly tilt down.

The manual relief valve must be tightened securely before operating the motor or the motor could tilt up when operating in reverse.

Tilt Lock Lever

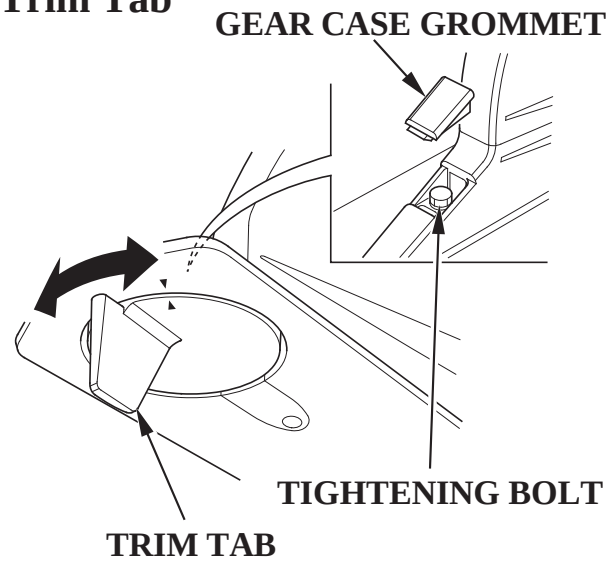


TILT LOCK LEVER

Use the tilt lock lever to raise the motor and lock it in the position when the boat is moored or anchored for a long time.

Tilt the motor as far as it goes and move the lock lever in the locking direction.

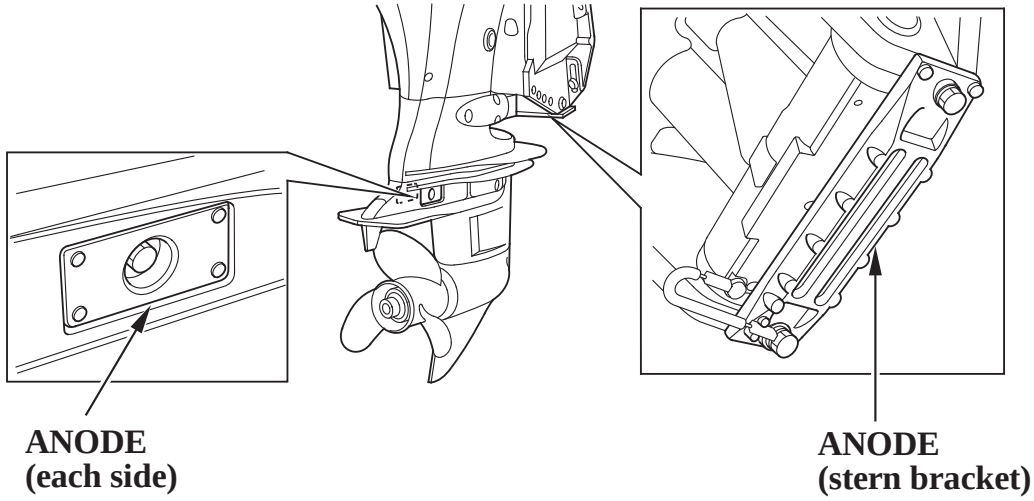
Trim Tab



If the steering wheel/handle is pulled to the side while running at full speed, adjust the trim tab so that the boat runs straight ahead.

Remove the gear case grommet. Loosen the tightening bolt and turn the trim tab right or left to adjust (see page 100).

Anode

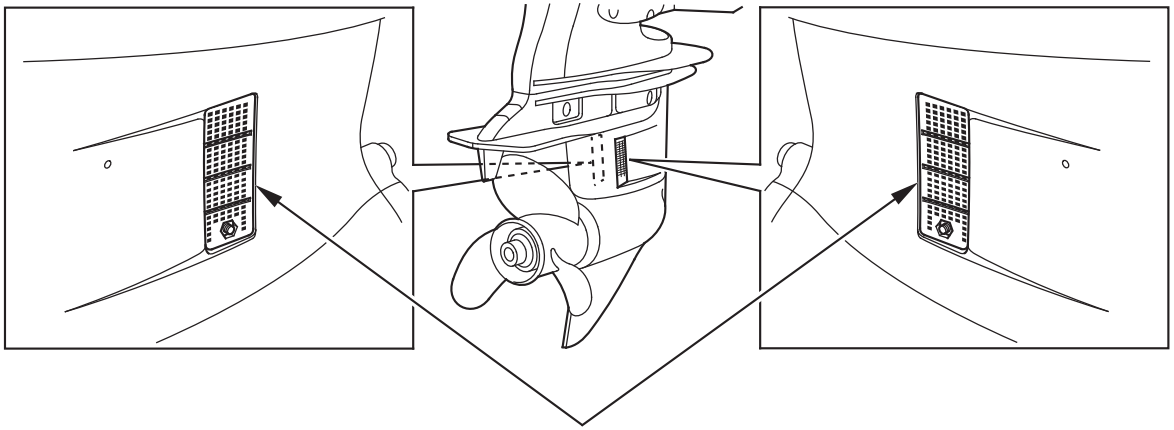


The anode metal is a sacrificed metal which protects the outboard from corrosion.

NOTICE

Do not paint the anode. It deteriorates the function of the anode metal, which can lead to rust and corrosion damage to the outboard motor.

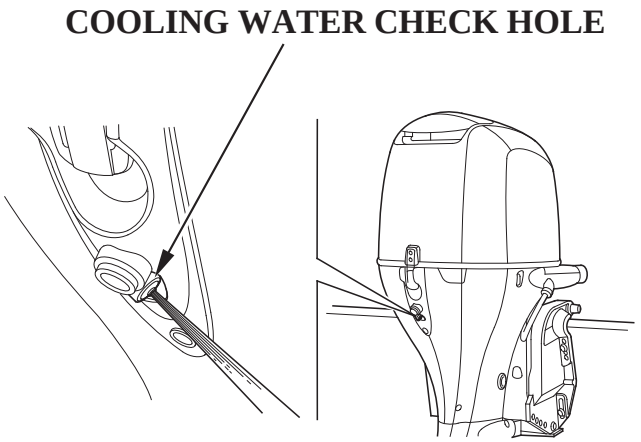
Cooling Water Intake Port



COOLING WATER INTAKE PORT (each side)

The engine cooling water is drawn into the engine through this port.

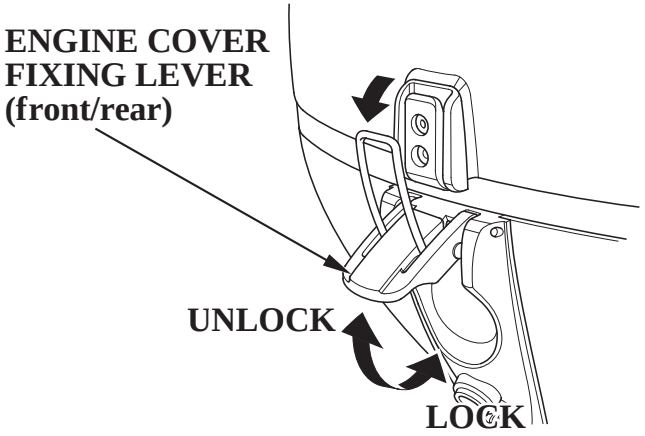
Cooling Water Check Hole



The cooling water is checked here to see whether it is circulating inside the engine properly.

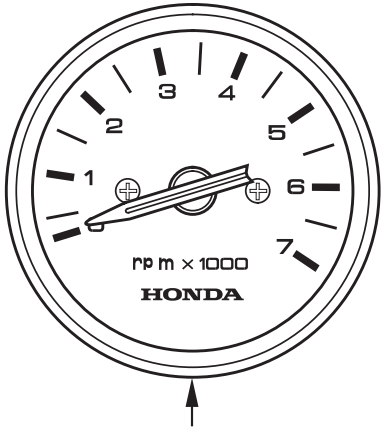
After starting the engine, check at the cooling water check hole whether the cooling water is circulating through the engine.

Engine Cover Fixing Lever (Front/Rear)



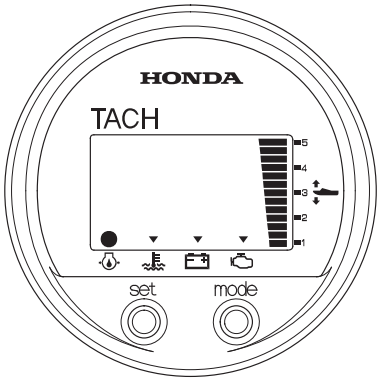
Latch/unlatch the engine cover fixing lever to install or remove the engine cover.

Tachometer (equipped type or optional equipment)



The tachometer shows the engine speed in revolutions per minute.

Digital Tachometer (optional equipment:R type)

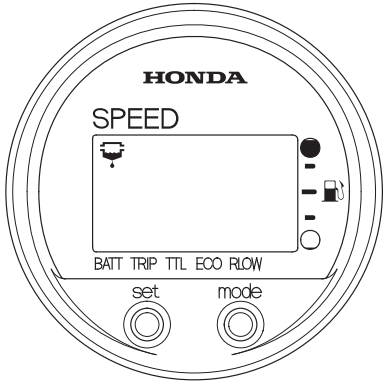


Digital Tachometer includes the following functions.

- 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:R type)

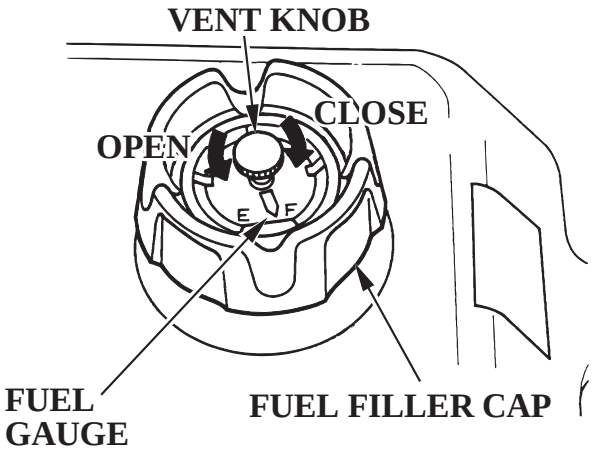


Digital Speedometer includes the following functions.

- 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.

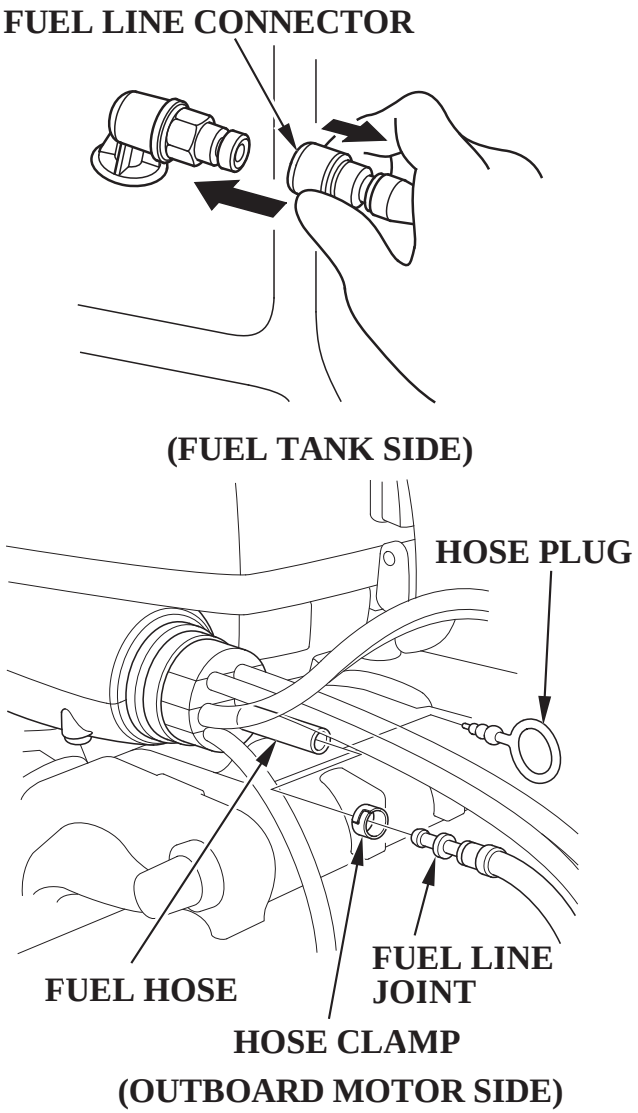
Fuel Filler Cap (equipped type) (with vent knob and Fuel Gauge)



The fuel filler cap vent knob controls air entering and leaving the fuel tank.

The fuel gauge is part of the fuel filler cap, and indicates the fuel level in the tank.
When refilling the fuel tank, turn the vent knob counterclockwise to open and remove the fuel filler cap.
Turn the vent knob clockwise and close it securely before transporting or storing the fuel tank.

Fuel Line Connector And Joint (equipped type)



The fuel line connector and joint are used to connect the fuel line between the fuel tank and the separate outboard motor.

NOTICE

Improperly installed outboard motor can result in the motor dropped into the water, boat not able to cruise straight ahead, engine speed not increase, and much fuel consumption.

We recommend that the outboard motor be installed by an authorized Honda outboard motor dealer. Consult the authorized Honda dealer in your area for the Y-OP (User Optional Parts)/equipments installation and operation.

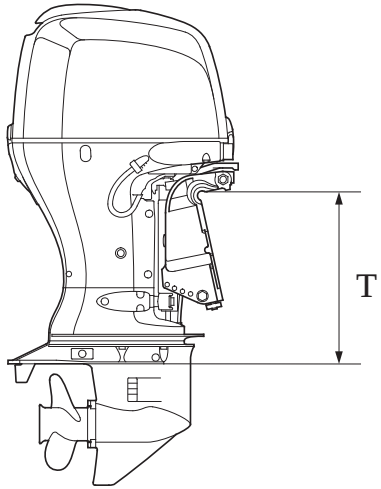
Applicable Boat
Select the boat suitable for the engine power.
Engine power:
BF75D: 55.2 kW (75 PS)
BF90D: 66.2 kW (90 PS)

Power recommendation is indicated on most of the boats.

⚠WARNING

Do not exceed the boat manufacturer's power recommendation. Damage and injury may result.

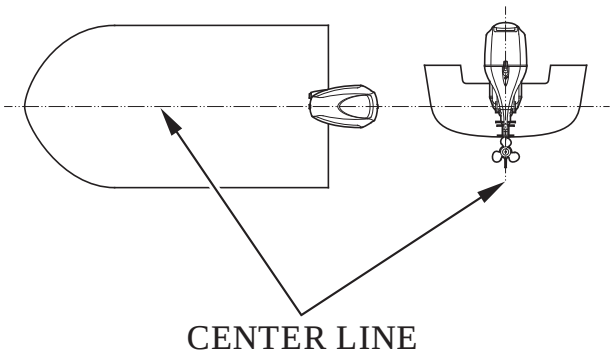
Transom Height



Type:	T (Motor Transom Height) 〈when transom angle is 12°〉
L:	537 mm (21.1 in)
X:	664 mm (26.1 in)

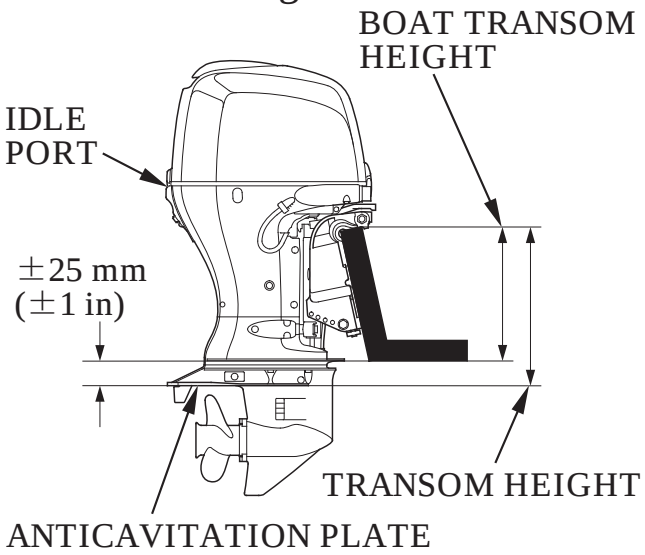
Select the outboard motor which is correct for the boat transom height of your boat.

Location

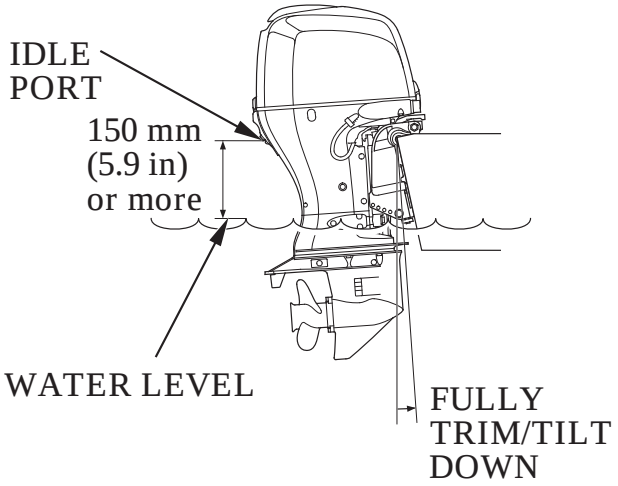


Install the outboard motor at the stern, at the center line of the boat.

Installation Height



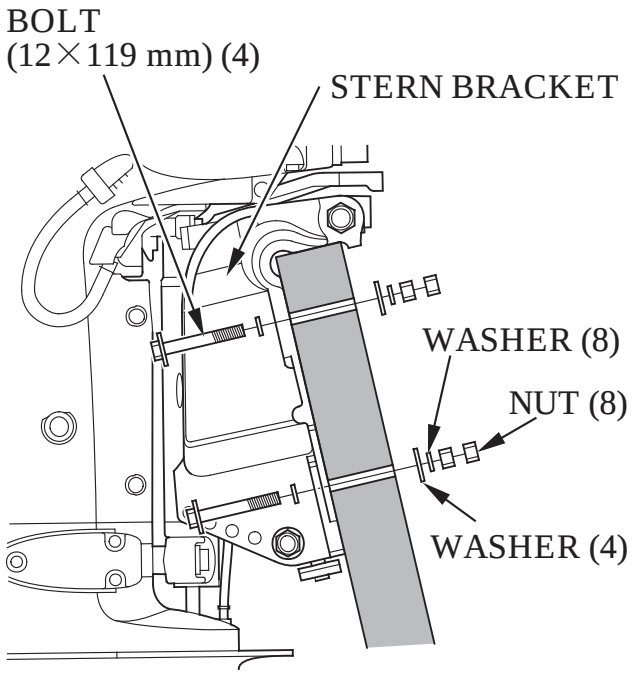
The anticavitation plate of the outboard motor should be ±25 mm (±1 in) below the bottom of the boat. The correct dimensions differ according to the type of the boats and the configuration of the bottom of the boats. Follow the manufacture's recommended installation height.



NOTICE

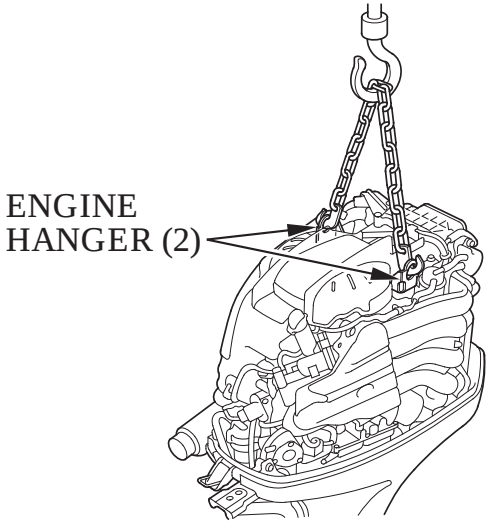
- The water level must be at least 100 mm (4 in) above the anticavitation plate, otherwise the water pump may not receive sufficient cooling water, and the engine will overheat.
- Adverse effect to the engine can occur if the installation position of the outboard motor is too low. Trim/tilt down the outboard motor with the boat fully loaded and stop the engine. Check that the idle port is 150 mm (5.9 in) or more above the water level.

Outboard Motor Installation



1. Apply the silicone sealant (Three Bond 1216 or equivalent) to the outboard motor mounting holes.
2. Set the outboard motor on the boat and secure with the bolts, washers, and nuts.

NOTE:
Standard torque:
55 N·m (5.6 kgf·m , 41 lbf·ft)
The standard torque is given just as a guideline. Torque of the nut can be different according to the material of the boat. Consult with an authorized Honda outboard motor dealer.

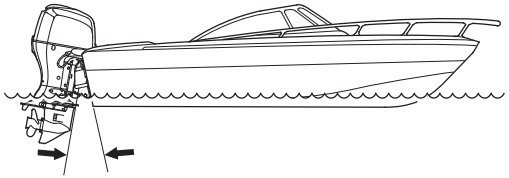


⚠CAUTION

Install the outboard motor securely. Loosely mounted outboard motor can result in accidental loss of the motor and damage and injury to the equipment and personnel.

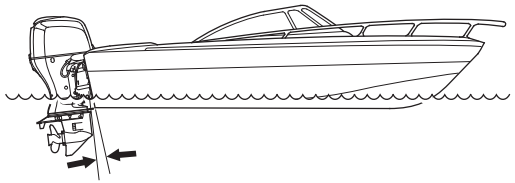
Before installing the outboard motor on the boat, hang the outboard motor with the hoist or equivalent devise by attaching the two engine hangers to the outboard.
Use the hoist which allowable load is 250 kg (551 lbs) or above.

Motor Angle Inspection (Cruising)



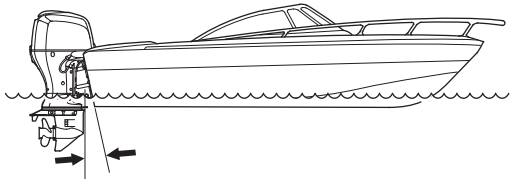
INCORRECT
CAUSES BOAT TO ‘‘SQUAT’’

Install the outboard motor at the best trim angle for stable cruising and maximum power.
Trim angle too large: Incorrect causes boat to ‘‘squat.’’



INCORRECT
CAUSES BOAT TO ‘‘PLOW’’

Trim angle too small: Incorrect causes boat to ‘‘plow.’’



CORRECT
GIVES MAXIMUM PERFORMANCE

The trim angle differs according to the combination of the boat, outboard motor, and propeller, and the operating conditions.

Adjust the outboard motor so that it is perpendicular to the water surface (i.e. axis of the propeller is parallel with the water surface).

Battery Connections
Use a battery which has CCA (COLD CRANKING AMPERES) 582A at −18° C (0° F) and a reserve capacity 229 minutes (12V 55Ah/5HR or 12V 65Ah/20HR) or more specifications.
The battery is an optional part (i.e. part to be purchased separately from the outboard motor).

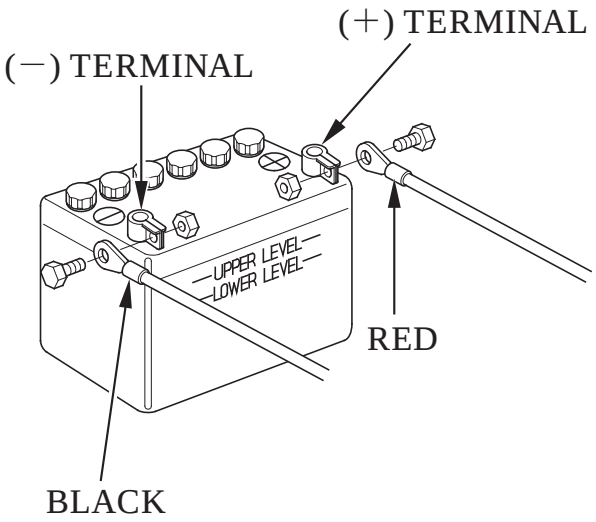
⚠WARNING

Batteries produce explosive gases: If ignited, an explosion can cause serious injury or blindness. Provide adequate ventilation when charging.

- CHEMICAL HAZARD: Battery electrolyte contains sulfuric acid. Contact with eyes or skin, even through clothing, may cause severe burns. Wear a faceshield and protective clothing.
- Keep flames and sparks away, and do not smoke in the area. ANTIDOTE: If electrolyte gets into your eyes, flush thoroughly with warm water for at least 15 minutes and call a physician immediately.
- POISON: Electrolyte is poison.
  ANTIDOTE:
  − External: Flush thoroughly with water.
  − Internal: Drink large quantities of water or milk. Follow with milk of magnesia or vegetable oil, and call a physician immediately.
- KEEP OUT OF REACH OF CHILDREN.

To protect the battery from mechanical damage and to prevent the battery from falling or tipping over, the battery must be:

- Installed in the correct size corrosion-resistant battery box.
- Properly secured in the boat.
- Secured in a location free from direct sunlight and water spray.
- Secured away from the fuel tank to avoid potential sparks near the fuel tank.



Connect the battery cables:

1. Connect the cable with the red terminal cover to the positive (+) terminal of the battery.
2. Connect the cable with the black terminal cover to the negative (−) terminal of the battery.

NOTE:
When the two outboard motors are mounted on a boat, connect a battery to the respective right and left outboard motors.

NOTICE

- Be sure to connect the (+) side battery cable first. When disconnecting the cables, disconnect the (−) side first then the (+) side.
- Unless the cables are properly connected to the terminals, the starter motor may fail to operate normally.
- Be careful to avoid connecting the battery in reverse polarity, as this will damage the battery-charging system in the outboard motor.
- Do not disconnect the battery cables while the engine is running. Disconnecting the cables while the engine is running, will damage the outboard motor's electrical system.
- Do not place the fuel tank near the battery.

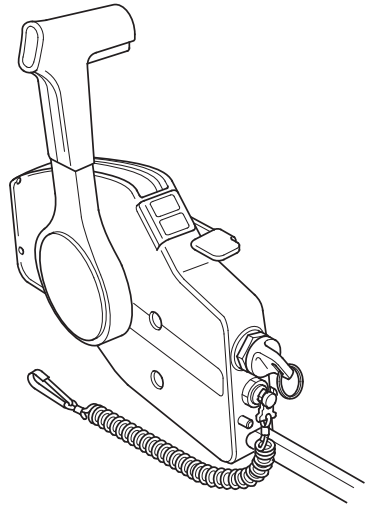
- Battery cable extension: Extending the original battery cable will cause the battery voltage to drop due to the increased length of the cable and number of connections. This voltage drop may cause the buzzer to sound momentarily when engaging the starter motor and may prevent the outboard from starting. If the outboard starts and the buzzer sounds momentarily, there may be barely sufficient voltage reaching the engine.

Remote Control Installation (equipped type or optional equipment)

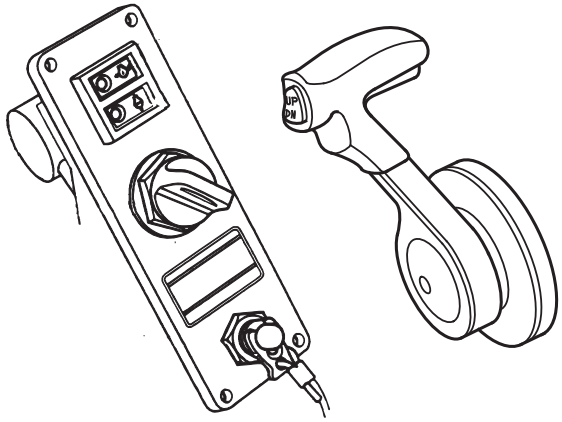
NOTICE

Improperly installed steering system, remote control box, and remote control cable, or installing those of the different types could cause unpredictable accident. Consult an authorized Honda outboard motor dealer for proper installation.

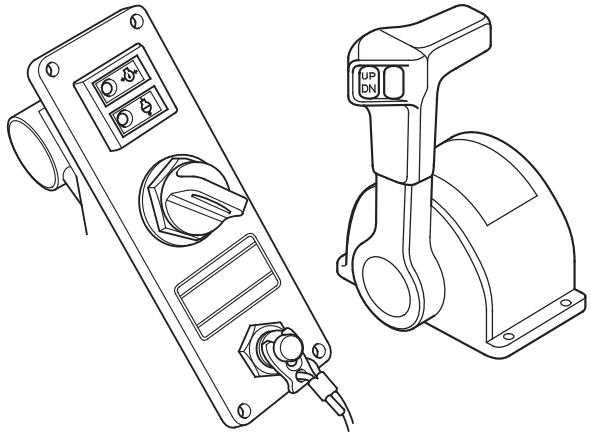
The control box is available in three types as shown.
Select the most suitable control box for your outboard motor considering the installation position, operationability, etc. of the control box.
See an authorized Honda outboard motor dealer for further information.



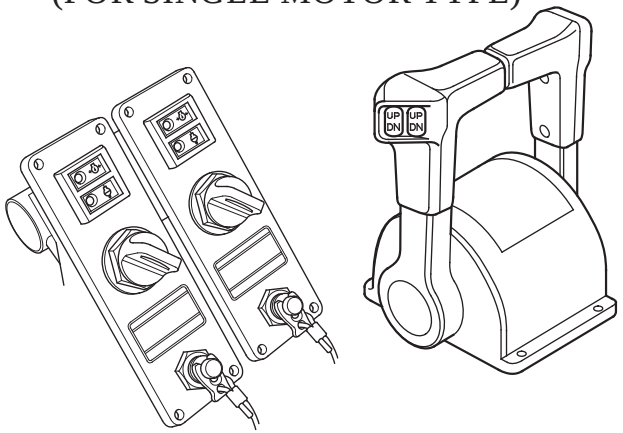
SIDE-MOUNT
TYPE CONTROL BOX



PANEL-MOUNT TYPE CONTROL
BOX AND SWITCH PANEL

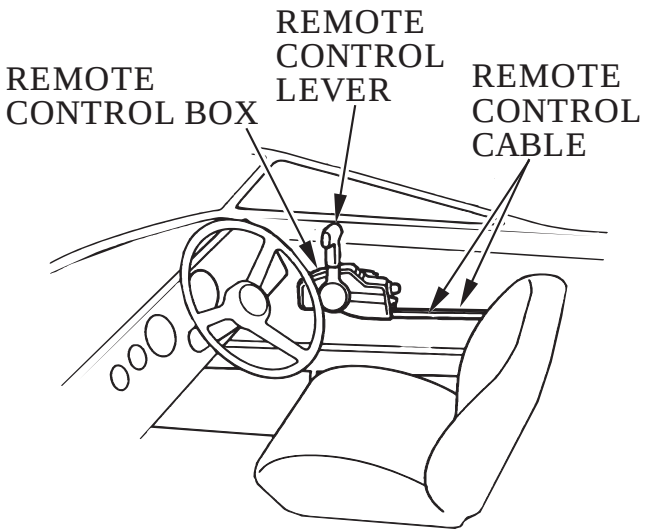


TOP-MOUNT TYPE CONTROL BOX
AND SWITCH PANEL
(FOR SINGLE MOTOR TYPE)



TOP-MOUNT TYPE CONTROL BOX
AND SWITCH PANEL
(FOR DUAL MOTOR TYPE)

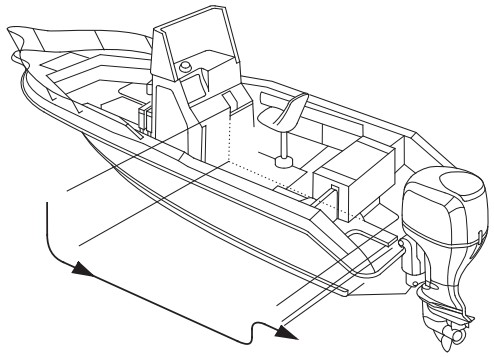
〈Remote Control Box Location〉



Install the remote control box in the position where is easy to operate the remote control lever and switches.
Be sure that there are no obstacles on the route of the control cable.

The control box position of the R2 type and the R3 type should be determined in the same manner.

〈Remote Control Cable Length〉



Measure the distance from the control box to the outboard motor along the cable routing.
Recommended cable length is 300－450 mm (11.8－17.7 in.) longer than the measured distance.
Set the cable along the pre-determined route and be sure that it is long enough to the route.
Connect the cable to the engine and be sure it is not kinked, bent sharp, pulled taut, or interfered while steering.

NOTICE

Do not bend the remote control cable as sharp as its route diameter is 300 mm (11.8 in.) or less, or it affects the service life of the cable and the remote control lever operation.

Propeller Selection

Select the adequate propeller so that the engine speed at full throttle is BF75D: 5,000 min^{-1} (rpm) to 6,000 min^{-1} (rpm). BF90D: 5,300 min^{-1} (rpm) to 6,300 min^{-1} (rpm) when the boat is loaded.

Engine speed varies according to the propeller size and the boat condition. Use of the outboard motor outside the full throttle speed range will adversely affect the engine and cause serious problem. Use of the correct propeller assures powerful acceleration, top speed, excellency in terms of economy and cruising comfort, and it assures longer engine life as well.

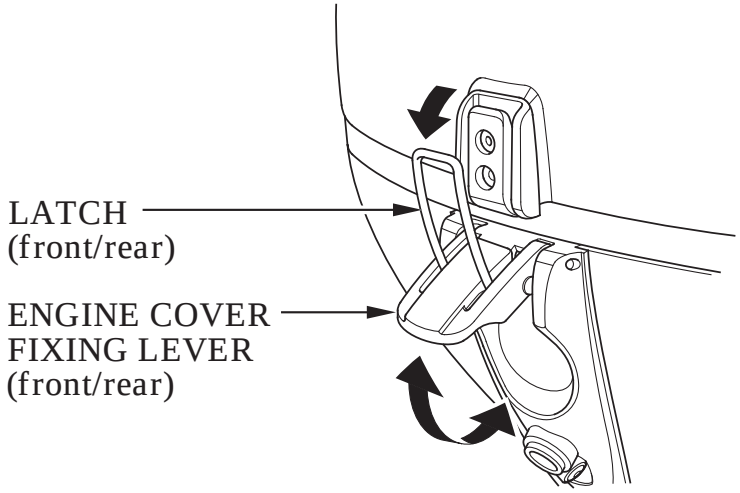
Consult with your authorized Honda outboard motor dealer for proper propeller selection.

BF75D/90D is 4-stroke, water cooled outboard motor which uses unleaded regular gasoline for fuel. It also requires the engine oil. Check the following before operating the outboard motor.

⚠CAUTION

Perform the following pre-operation checks with the engine stopped.

Engine Cover Removal/Installation



- To remove, raise the front and rear engine cover fixing levers and remove the engine cover.
- To install, set the engine cover, hook the front and rear latches, and push down the front and rear engine cover fixing levers.

⚠WARNING

Do not operate the outboard motor without the engine cover. Exposed moving parts can cause injury.

Engine Oil

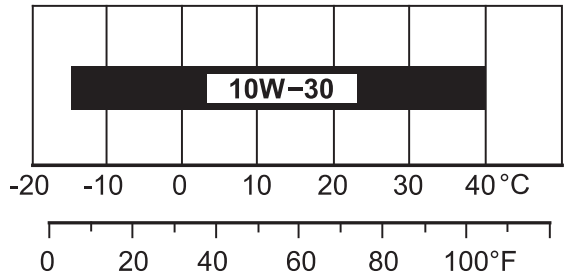
NOTICE

- Engine oil is a major factor affecting engine performance and service life. Nondetergent and low quality oils are not recommended, because they have inadequate lubricating properties.
- Running the engine with insufficient oil can cause serious engine damage.

〈Recommended oil〉

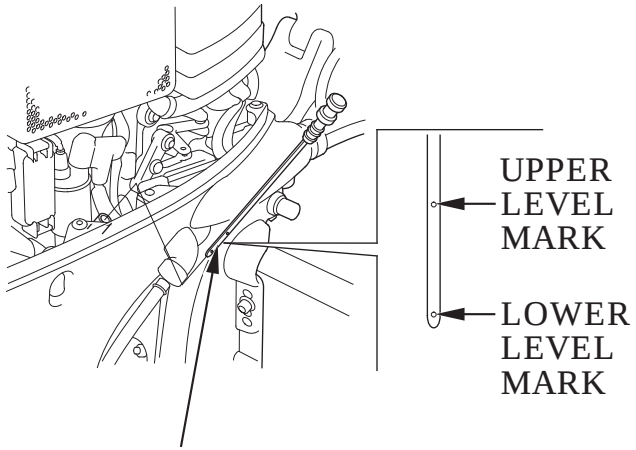
Use Honda 4-stroke oil or an equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for API Service Classification SG, SH or SJ. Motor oils classified SG, SH or SJ will show this designation on the container.

SAE 10W-30 is recommended for general use.



AMBIENT TEMPERATURE

〈Inspection and Refilling〉



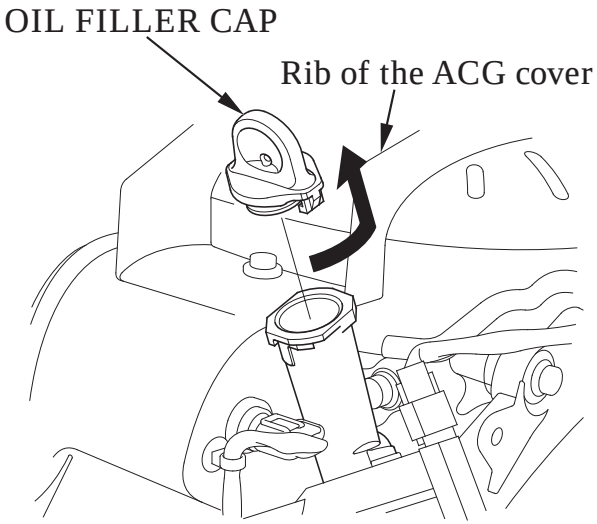
OIL LEVEL DIPSTICK

1. Position the outboard motor vertically, and remove the engine cover.
2. Remove the oil level dipstick and wipe with a clean rag.
3. Reinsert the dipstick all the way in, then pull it out and read the level. If near or below the lower level mark, remove the oil filler cap and fill to the upper level mark with the recommended oil. Tighten the oil filler cap and install the dipstick securely. Do not overtighten.

When the engine oil is contaminated or discolored, replace with the fresh engine oil (see page 120 for replacement interval and procedure).

Oil filler cap removal (Unlock):
1) Turn the oil filler cap 90° counterclockwise so the lug of the cap sets horizontally.
2) Pull the cap to remove it.

Oil filler cap installation (Lock):
1) Insert the oil filler cap into the oil filler port with the lug being set horizontally.
2) Turn the oil filler cap 90° clockwise so the lug of the cap is in line with the rib of the ACG cover. (It should click.)

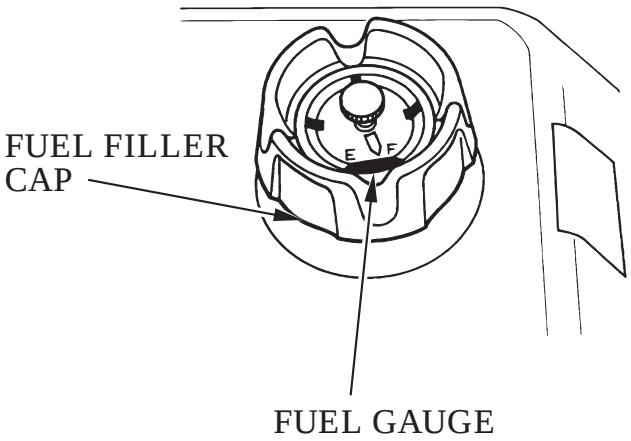


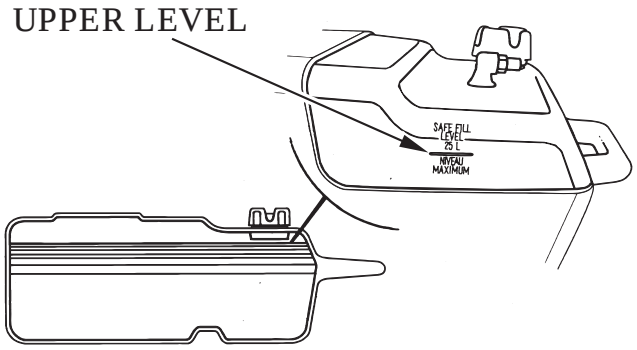
4. Install the engine cover and lock it securely.

NOTICE

Do not overfill the engine oil. Check the engine oil after refilling. Excessive engine oil as well as the insufficient oil could cause damage to the engine.

Fuel
(Fuel Tank equipped type)





Check the fuel gauge and refill the tank to the upper level mark if necessary. Do not fill the fuel tank above the UPPER level mark.

NOTE:
Open the vent knob before removing the fuel filler cap. When the vent knob is firmly closed, the cap will be difficult to remove.

Fuel tank capacity (separate tank):
25 ℓ (6.6 US gal , 5.5 Imp gal)

(Using the fuel tank mounted on the boat)
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.

Use unleaded gasoline with a Research Octane Number of 91 or higher (a Pump Octane Number of 86 or higher). Use of leaded gasoline may cause damage to the engine.

Never use an oil/gasoline mixture or dirty gasoline. Avoid getting dirt, dust or water in the fuel tank.

⚠WARNING

Gasoline is extremely flammable and is explosive under certain conditions.

- Refuel in a well-ventilated area with the engine stopped.
- Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
- Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely.
- Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.
- Avoid repeated or prolonged contact with skin or breathing of vapor.
  KEEP OUT OF REACH OF CHILDREN.

GASOLINE CONTAINING ALCOHOL

If you decide to use a gasoline containing alcohol (gasohol), be sure its octane rating is at least as high as that recommended by Honda. There are two types of “gasohol”: one containing ethanol, and the other containing methanol. Do not use gasohol that contains more than 10% ethanol. Do not use gasoline containing methanol (methyl or wood alcohol) that does not also contain cosolvents and corrosion inhibitors for methanol. Never use gasoline containing more than 5% methanol, even if it has cosolvents and corrosion inhibitors.

NOTE:

- Fuel system damage or engine performance problems resulting from the use of fuels that contain alcohol is not covered under the warranty. Honda cannot endorse the use of the fuels containing methanol since evidence of their suitability is as yet incomplete.
- Before buying fuel from an unfamiliar station, try to find out if the fuel contains alcohol, if it does, confirm the type and percentage of alcohol used. If you notice any undesirable operating symptoms while using gasoline that contains alcohol, or one that you think contains alcohol, switch to a gasoline that you know does not contain alcohol.

Propeller and Cotter Pin Inspection

⚠WARNING

The propeller blades are thin and sharp. Careless handling of the propeller can result in injury. When checking the propeller:

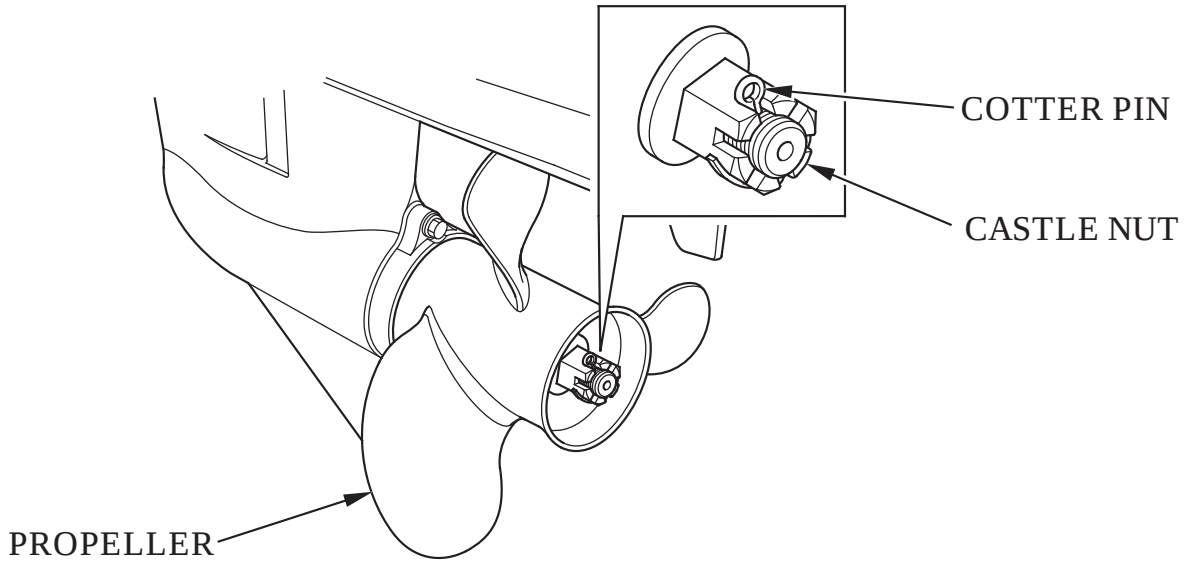
- Remove the emergency stop switch clip to prevent an accidental start of the engine.
- Wear heavy gloves.

Propeller rotates rapidly while cruising. Before starting the engine, check the propeller blades for damage and deformation and replace if necessary.

Obtain a spare propeller for the event of an unpredictable accident while cruising. If no spare propeller is available, return to the pier at low speed and replace (see page138).

Consult an authorized Honda outboard motor dealer for propeller selection.

Keep the spare washer, castle nut and cotter pin with you on your boat.



Engine speed varies according to the propeller size and the boat condition. Use of the outboard motor outside the full throttle speed range will adversely affect the engine and cause a serious problem. Use of the correct propeller assures powerful acceleration, top speed, excellency in terms of economy and cruising comfort, and it assures longer engine life as well.

Consult with your authorized Honda outboard motor dealer for proper propeller selection.

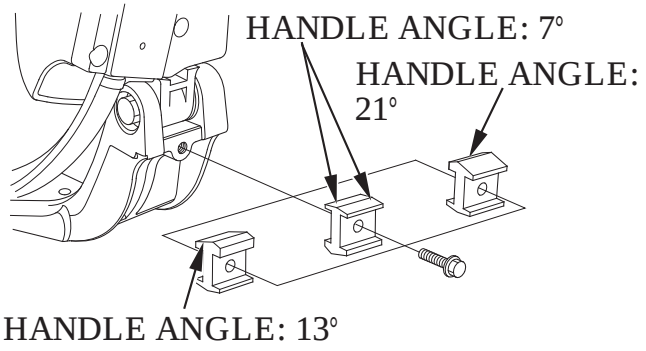
1. Check the propeller for damage, wear, or deformation.
   Replace whenever the propeller is faulty.
2. Check whether the propeller is installed properly.
3. Check the cotter pin for damage.

Tiller Handle Height/Angle Adjustment (H type)

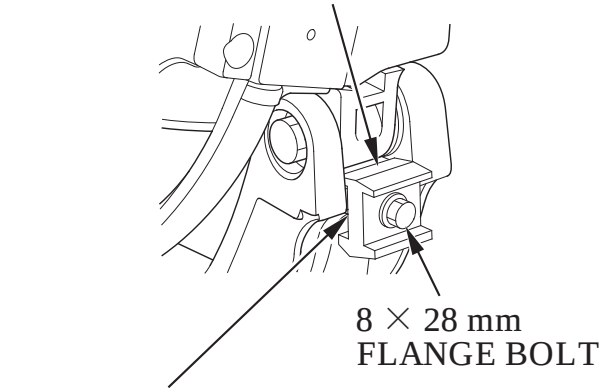
The tiller handle height and angle can be adjusted to three positions by changing the installation direction of the height adjustment block. Select a suitable height and angle for the operator and secure the block.

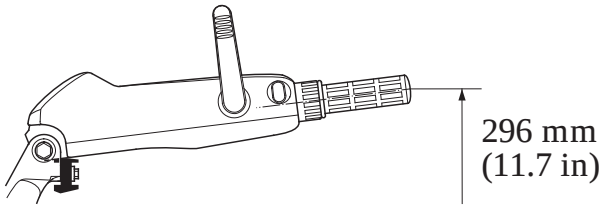
〈Height/Angle Adjustment Procedure〉

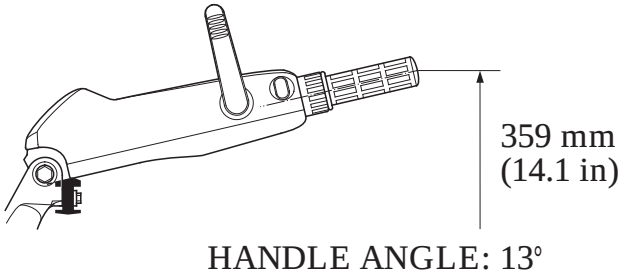
1. Raise the tiller handle and remove the 8 × 28 mm flange bolt and the height adjustment block.
2. Pull down the tiller handle. Determine the height adjustment block installation direction and secure the block with the 8 × 28 mm flange bolt.

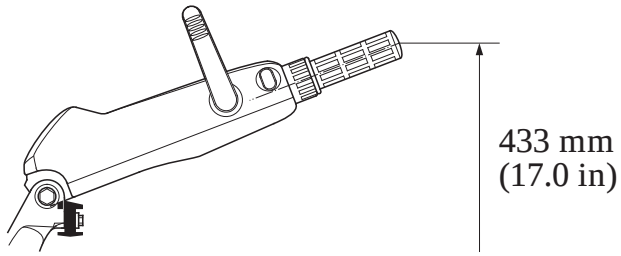


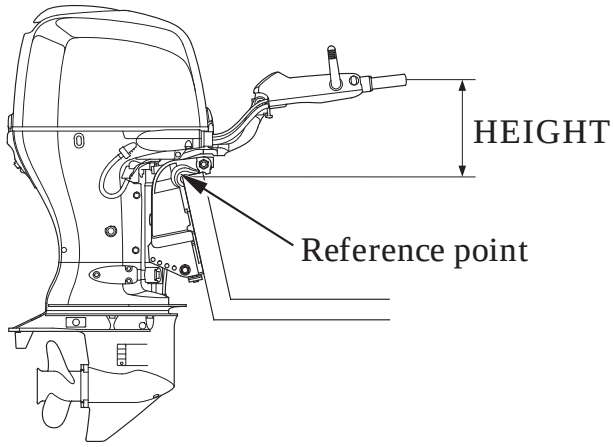
Install the height adjustment block so that the selected angle of the tiller handle is in this position.



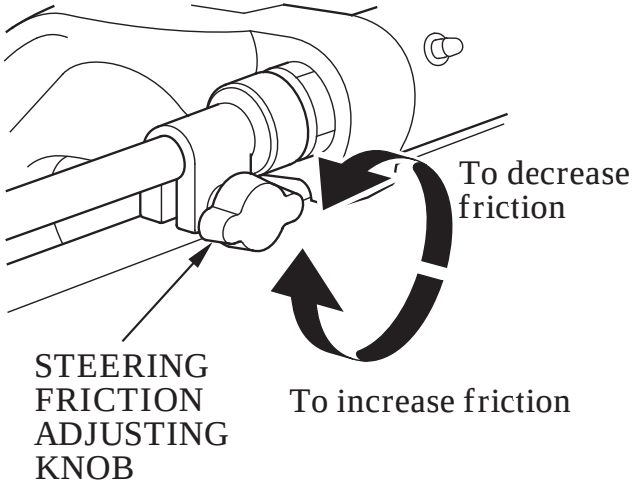








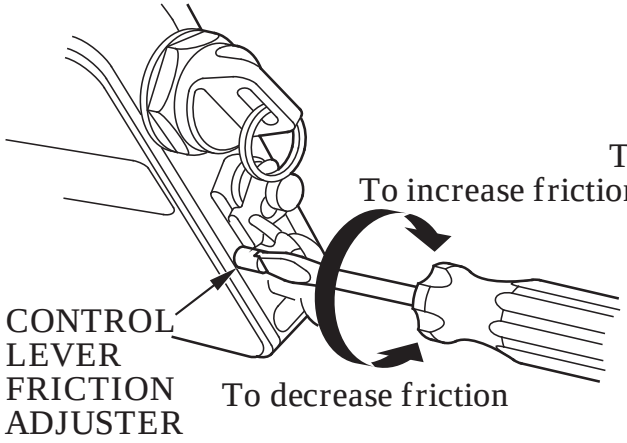
Steering Handle Friction (H type)



Check whether the handle moves smoothly.
For smooth steering, adjust the steering friction adjusting knob so that a slight drag is felt when turning.

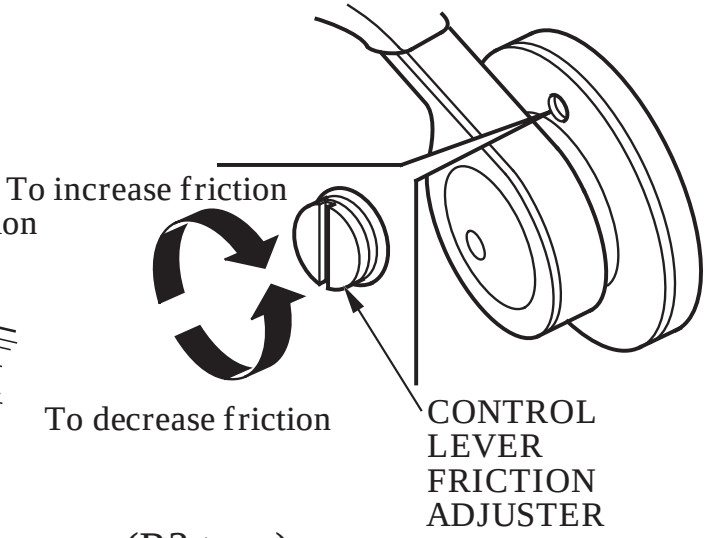
Remote Control Lever Friction

(R1 type)

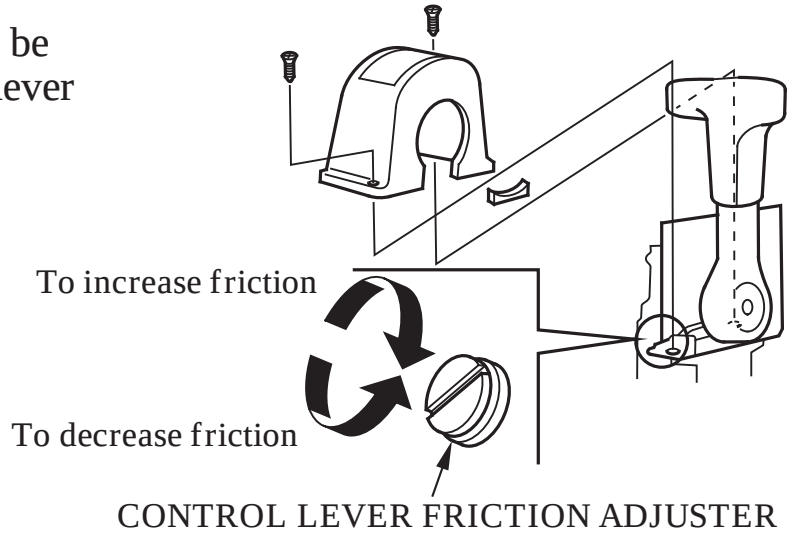


Check whether the remote control lever moves smoothly.
Friction of the control lever can be adjusted by turning the control lever friction adjuster right or left.

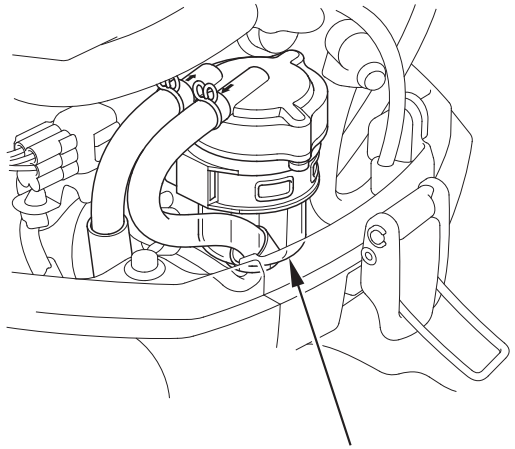
(R2 type)



(R3 type)



Water Separator



Water separator is located near by the engine cover fixing lever of the boat side. Check the water separator for water accumulation. Clean it or consult with an authorized Honda outboard motor dealer for clean (see page 127).

Battery

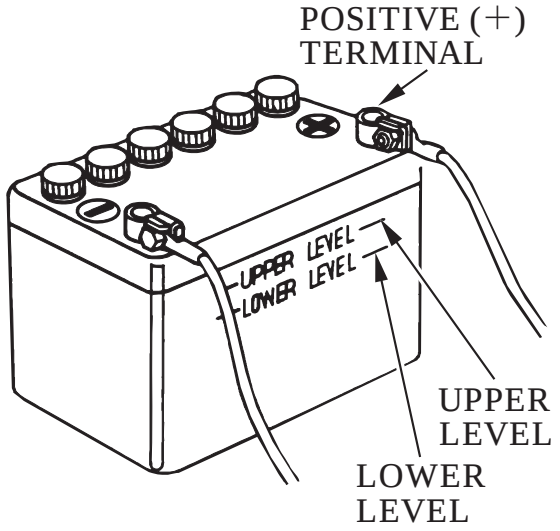
NOTICE

Battery handling differs according to the type of the battery and the instructions described below might not be applicable to the battery of your outboard. Refer to the battery manufacturer's instructions.

Battery Inspection

Check whether the battery fluid is between the upper and lower levels, and check the vent hole in the battery caps for clogging.
If the battery fluid is near or below the lower level, add the distilled water to the upper level (see page 134).

Check that the battery cables are connected securely.
If the battery terminals are contaminated or corroded, remove the battery and clean the terminals (see page 135).



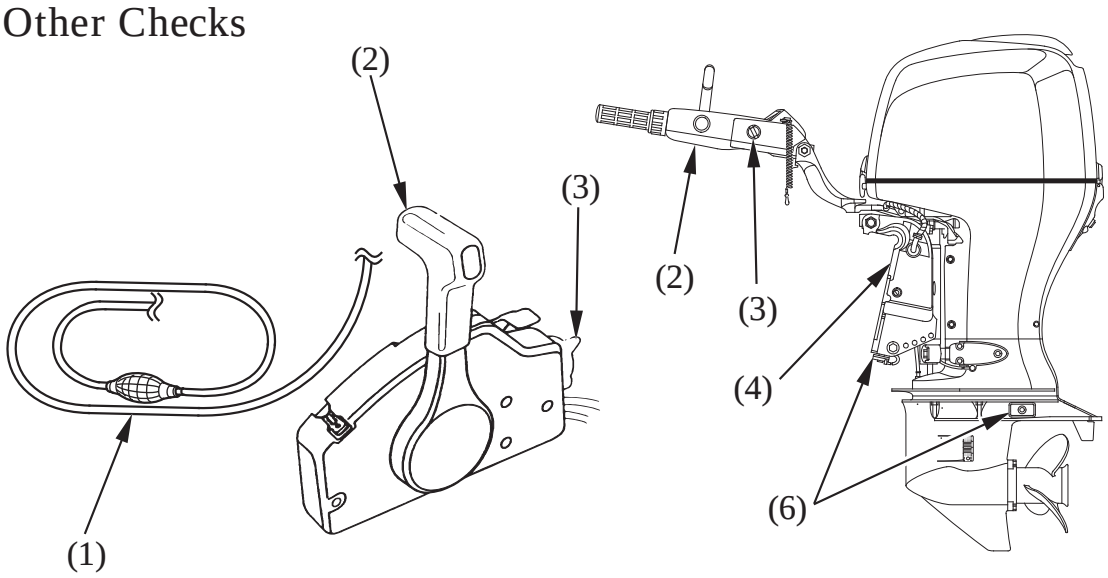
⚠WARNING

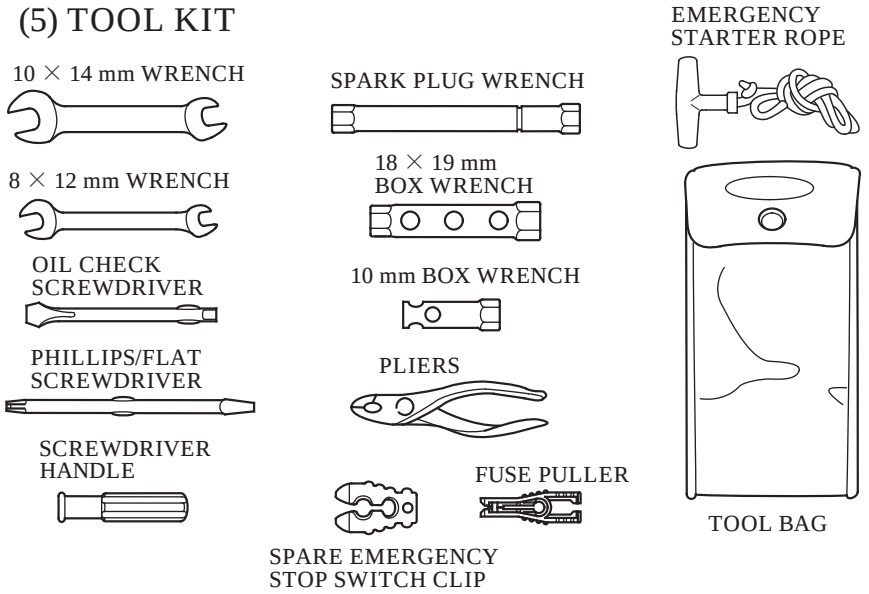
Batteries produce explosive gases: If ignited, an explosion can cause serious injury or blindness. Provide adequate ventilation when charging.

- CHEMICAL HAZARD: Battery electrolyte contains sulfuric acid. Contact with eyes or skin, even through clothing, may cause severe burns. Wear a faceshield and protective clothing.

- Keep flames and sparks away, and do not smoke in the area. ANTIDOTE: If electrolyte gets into your eyes, flush thoroughly with warm water for at least 15 minutes and call a physician immediately.
- POISON: Electrolyte is poison.
  ANTIDOTE:
  - External: Flush thoroughly with water.
  - Internal: Drink large quantities of water or milk. Follow with milk of magnesia or vegetable oil, and call a physician immediately.
- KEEP OUT OF REACH OF CHILDREN.

Other Checks





Check the following items:
(1)The fuel hose for kinking, collapsing or a loose connection.
(2)The tiller handle for loose installation, wobble or smooth operation (H type).
The remote control lever for smooth operation (R type).
(3)The switch for correct operation.
(4)The stern bracket for damage.
(5)The tool kit for missing spare parts and tools.
(6)The anode metal for damage, looseness or excessive corrosion.

The anode (sacrificed metal) helps to protect the outboard motor from corrosion damage; it must be exposed directly to the water whenever the motor is in use. Replace the anode metal when it has been reduced to approximately one half of its original size.

NOTICE

The possibility of corrosion damage is increased if the anode is painted over or allowed to deteriorate.

Parts/materials which should be installed on board:
(1)Owner's Manual
(2)Tool kit
(3)Spare parts: spark plugs, engine oil, spare propeller, castle nut, washer and cotter pin.
(4)Other parts/materials required by laws/regulations.

Fuel Line Connection

⚠WARNING

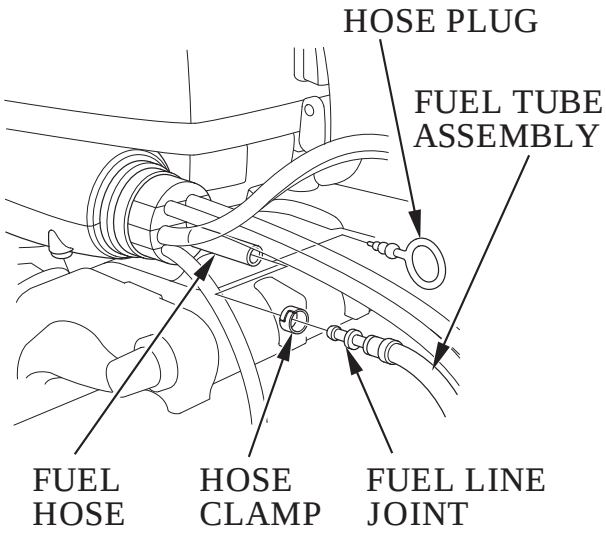
Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death.

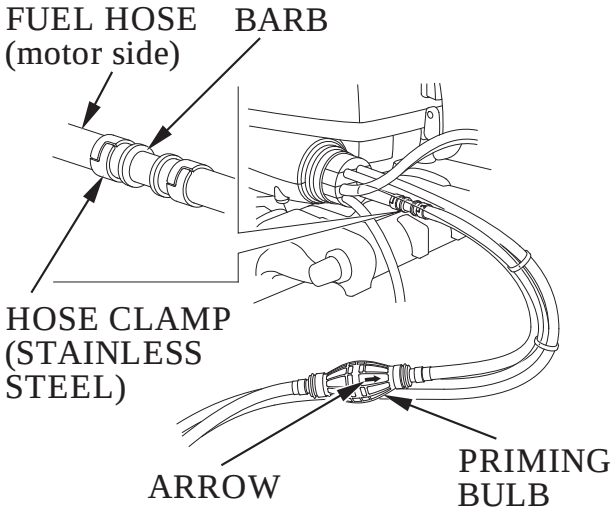
- Be careful not to spill fuel. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting, storing or transporting the engine.
- Do not smoke or allow flames or sparks where fuel is refueled or stored.

NOTE:

- Set the fuel tank securely so that it does not move or fall down while cruising.
- Position the fuel tank so the tank fuel line connector is no more than 1 m (3.3 feet) below the motor fuel line connector.
- Do not place the fuel tank more than 2 m (6.6 feet) away from the motor.
- Be sure that the fuel line is not kinked.

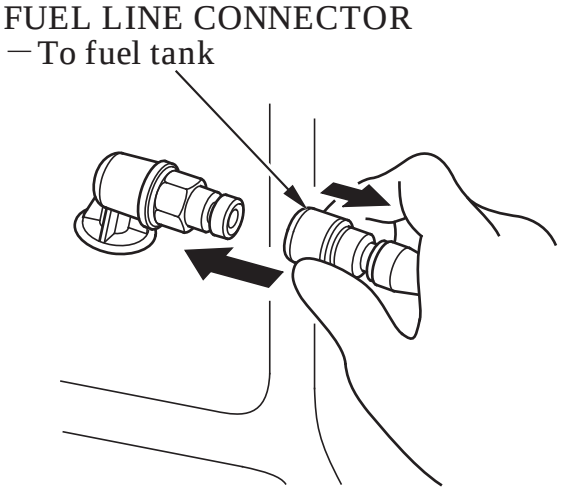
(Fuel Tank equipped type)





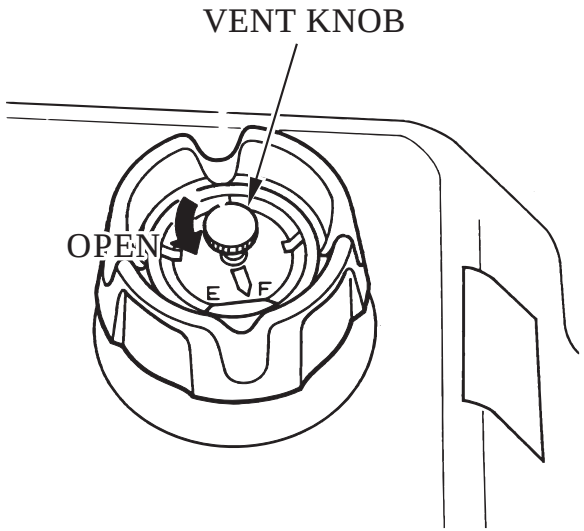
(OUTBOARD MOTOR SIDE)

1. Remove the hose plug from the engine side fuel hose. Insert the fuel line joint in the engine side fuel hose and secure it with the hose clamp. Make sure the arrow mark on the priming bulb points toward the engine side.
   - Store the hose plug in a secure place.



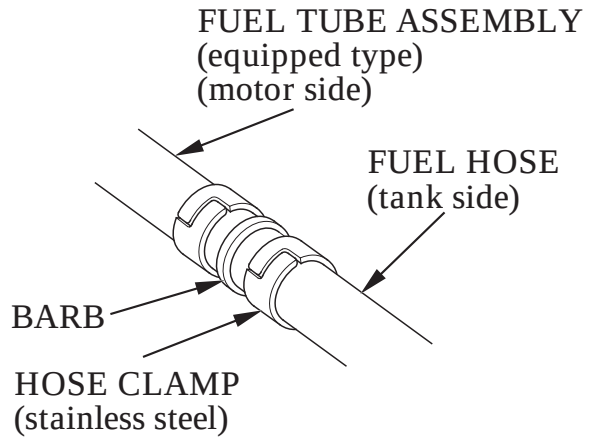
(FUEL TANK SIDE)

2. Connect the fuel line to the tank. Be sure the connector is securely latched.



3. Open the fuel cap vent knob 2 to 3 turns.

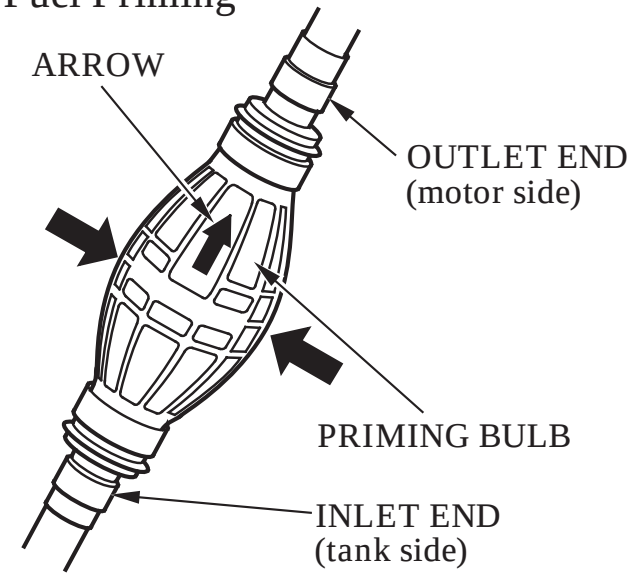
(Using the fuel tank mounted on the boat)



(FUEL TANK SIDE)

1. Remove the hose plug from the engine side fuel hose. Insert the fuel line joint into the engine side fuel hose and secure it with the hose clamp. (The procedure is the same as in the case of using a fuel tank equipped type. Refer to the previous page.)
2. Insert another fuel line joint up to the barb of the joint in the fuel tank side and secure it with the hose clamp (stainless steel type). Refer to the owner's manual for the boat.

Fuel Priming



Hold the priming bulb so that the outlet end is higher than the inlet (so that the arrow on the priming bulb points up), and squeeze it until it feels firm, indicating that fuel has reached the motor. Check for leaks.

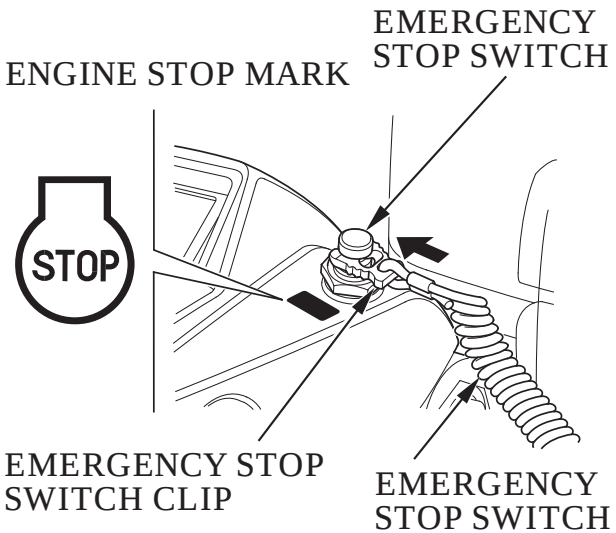
⚠WARNING

Be careful not to spill any fuel. Spilled fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

NOTICE

Do not touch the priming bulb with the engine running or when tilting up the outboard motor. The vapor separator could overflow.

Starting the Engine (H type)



⚠WARNING

The exhaust contains poisonous carbon monoxide. Do not start the engine in a poor ventilation area such as in a boat house.

NOTICE

To prevent damage to the outboard from overheating, never run the engine with the propeller out of water.

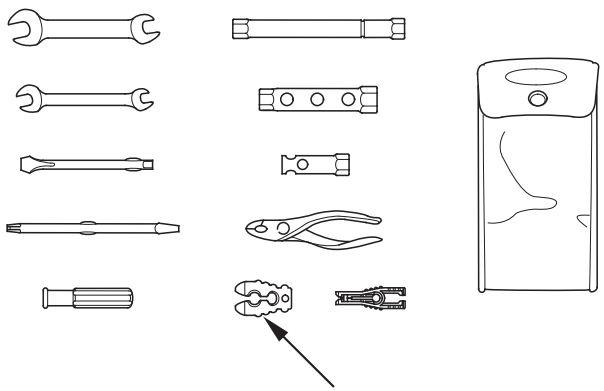
1. Insert the emergency stop switch clip at one end of the emergency stop switch lanyard into the emergency stop switch. Attach the other end of the lanyard securely to the operator.

⚠WARNING

If the operator does not attach the emergency stop switch lanyard, and is thrown from his seat or out of the boat, the out-of-control boat can seriously injure the operator, passengers, or bystanders. Always properly attach the lanyard before starting the motor.

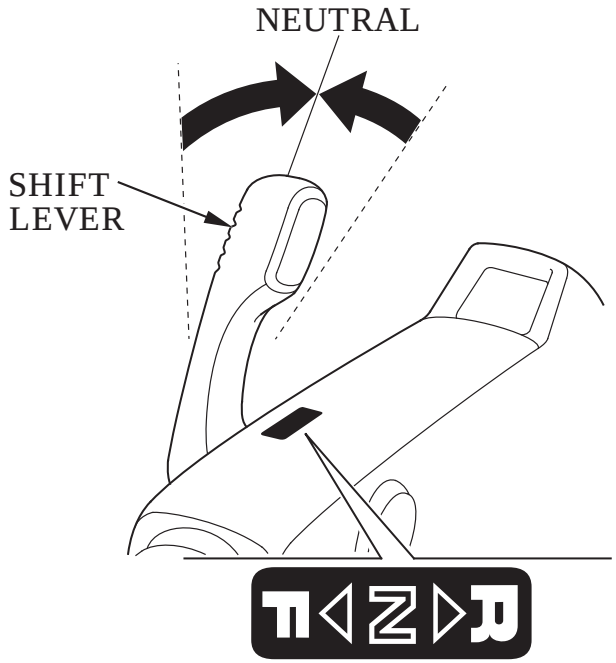
NOTE:

The engine will not start unless the emergency stop switch clip is engaged with the emergency stop switch.



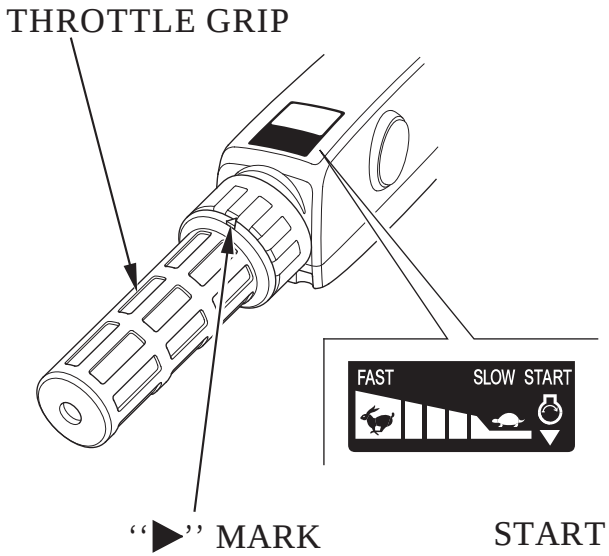
A spare emergency stop switch clip is provided in the tool bag (see page 117).

Use the spare emergency stop switch clip to make the disabled engine start when the emergency stop switch lanyard is not available as, for example, when the operator falls overboard.

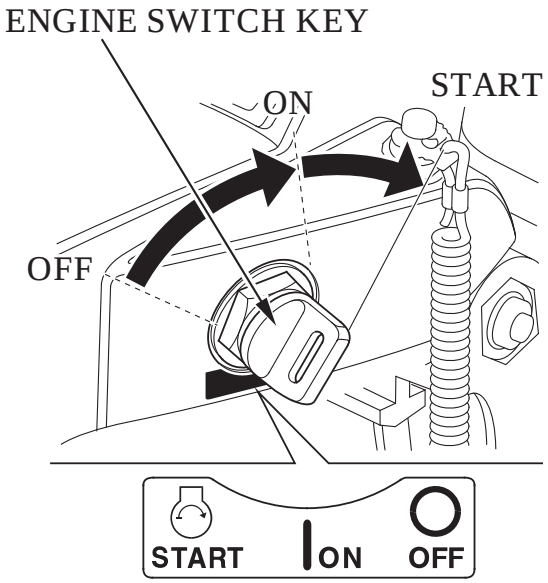


NEUTRAL

2. Move the shift lever to the NEUTRAL position. The engine does not start unless the shift lever is set in the NEUTRAL position.



3. Align the " " mark on the throttle grip with the projected end of the " ▶ " mark on the handle.



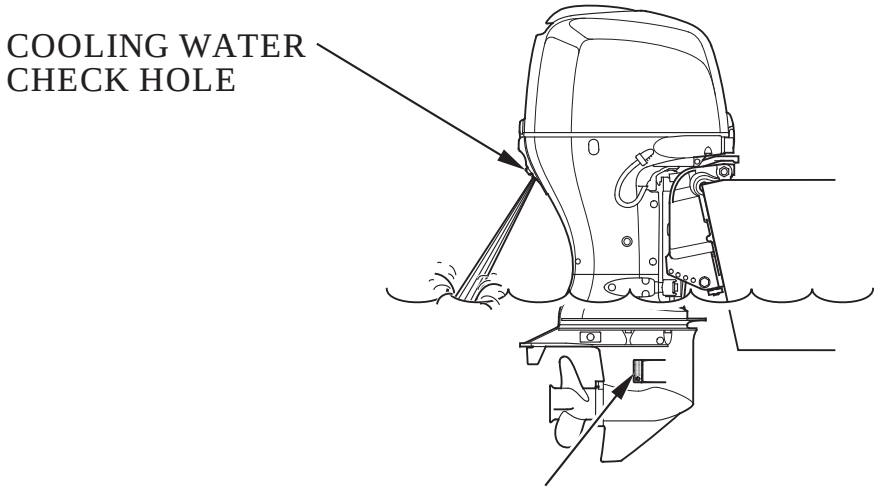
START ON

4. Turn the engine 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.

NOTICE

- The starter motor consumes a large amount of current. Do not therefore run it continuously for more than 5 seconds at a time. If the engine does not start within 5 seconds, wait at least 10 seconds before running the starter motor again.
- Do not turn the engine switch key to the START position while the engine is running.

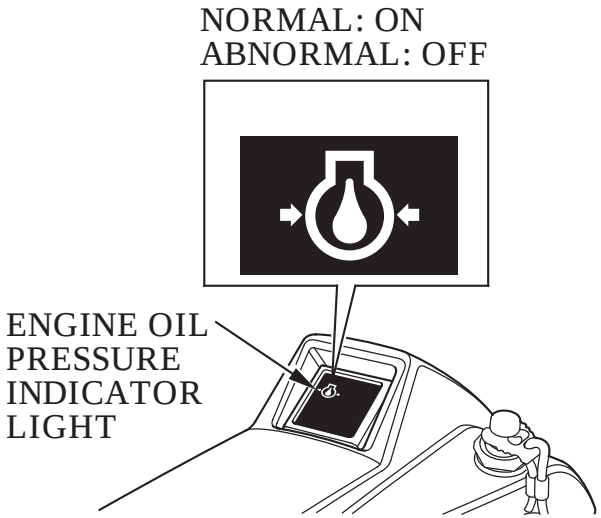
NOTE:
The "Neutral Starting System" prevents the engine from being started unless the control lever is set in the N (neutral) position even though the engine is cranked by the starting motor.



5. After starting, check whether the cooling water is flowing out of the cooling water check hole. Amount of water flowing out of the check hole might vary due to the thermostat operation, but this is normal.

NOTICE

If water does not flow out, or if steam comes out, stop the engine. Check to see if the screen in the cooling water intake port is obstructed and remove foreign materials if necessary. Check the cooling water check hole for clogging. If water still does not flow out, have your outboard motor checked by an authorized Honda outboard motor dealer. Do not operate the engine until the problem has been corrected.



6. Check to see if the oil pressure indicator light turns ON.
   If it does not turn on, stop the engine and perform the following inspections.
   1) Check the oil level (see page 53).
   2) If the oil level is normal and the oil pressure indicator light does not turn ON, consult with an authorized Honda outboard motor dealer.
7. Warm up the engine as follows:
   Above 5° C (41° F) — run the engine for at least 3 minutes.
   Below 5° C (41° F) — run the engine for at least 5 minutes at approx. 2,000 min^{-1} (rpm).
   Failure to completely warm up the engine will result in poor engine performance.

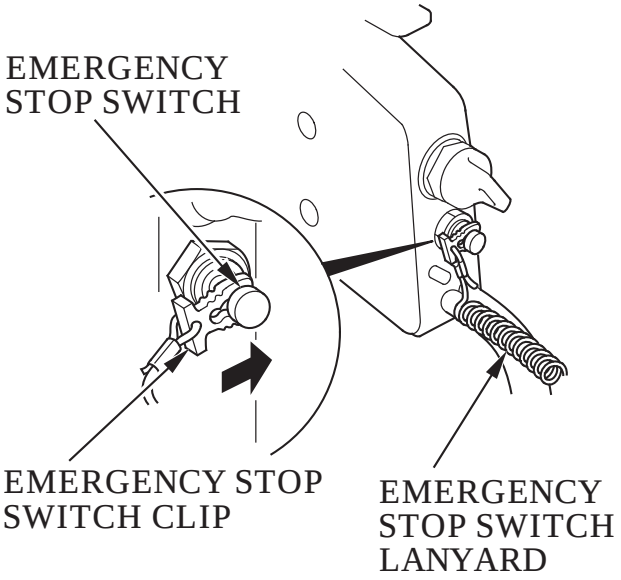
NOTICE

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

NOTE:
Before leaving the dock, check the operation of the emergency stop switch.

Starting the Engine (R type)

(R1 type)



⚠WARNING

The exhaust contains poisonous carbon monoxide. Do not start the engine in a poor ventilation area such as in a boat house.

NOTICE

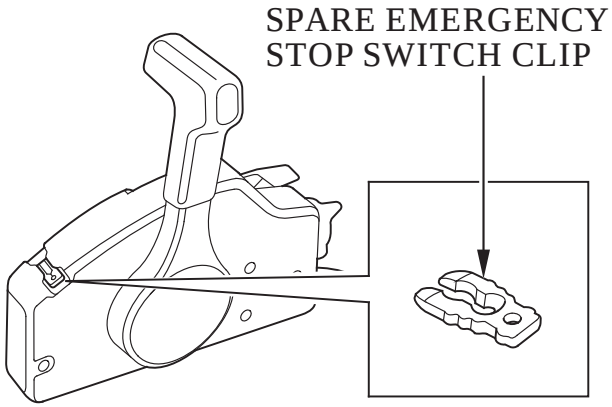
To prevent damage to the outboard from overheating, never run the engine with the propeller out of water.

1. Insert the emergency stop switch clip at one end of the emergency stop switch lanyard into the emergency stop switch. Attach the other end of the emergency stop switch lanyard securely to the operator.

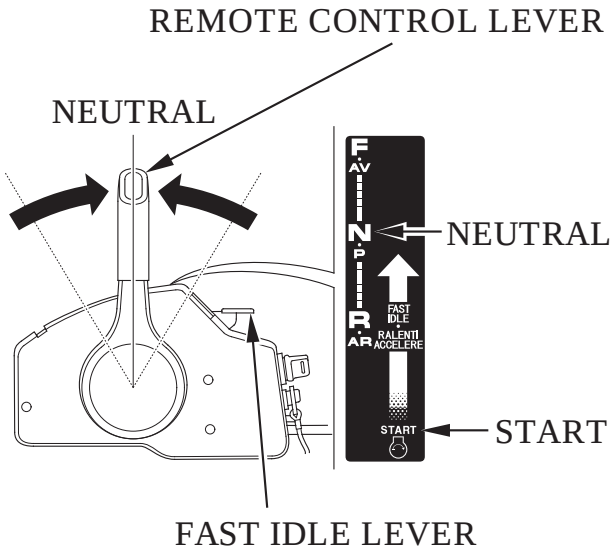
⚠WARNING

If the operator does not attach the emergency stop switch lanyard, and is thrown from his seat or out of the boat, the out-of-control boat can seriously injure the operator, passengers, or bystanders. Always properly attach the lanyard before starting the motor.

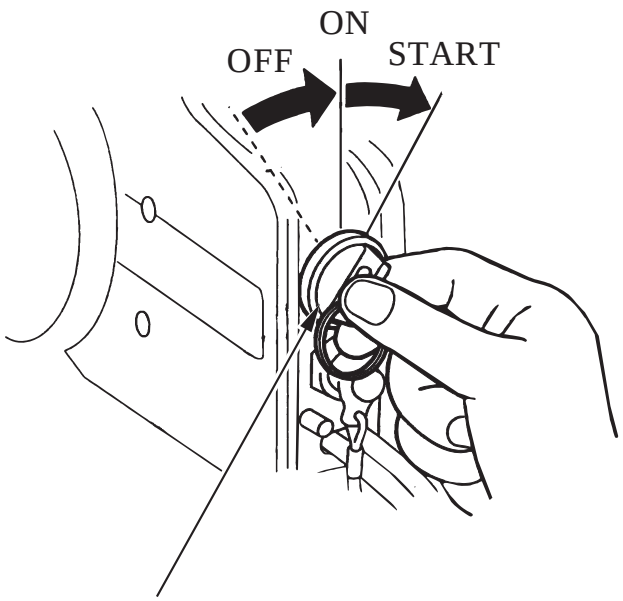
NOTE:
The engine will not start unless the emergency stop switch clip is engaged with the emergency stop switch.



A spare emergency stop switch clips are provided on the remote control box and in the tool bag (see page 117).



2. Set the control lever in the NEUTRAL position.
   The engine does not start unless the control lever is set in the NEUTRAL position.
3. Leave the fast idle lever in the START (fully lowered) position.



ENGINE SWITCH KEY

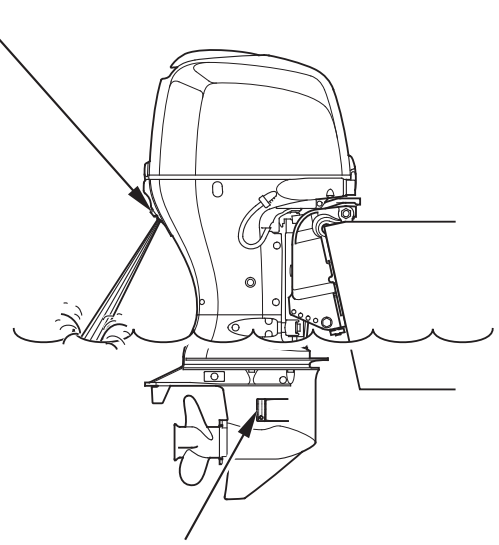
4. Turn the engine switch key to the START position and hold it there until the engine starts.
   When the engine starts, release the key, allowing it to return to the ON position.

NOTICE

- The starter motor consumes a large amount of current. Do not therefore run it continuously for more than 5 seconds at a time. If the engine does not start within 5 seconds, wait at least 10 seconds before running the starter motor again.
- Do not turn the engine switch key to the START position while the engine is running.

NOTE:
The "Neutral Starting System" prevents the engine from being started unless the control lever is set in the N (neutral) position even though the engine is cranked by the starting motor.

COOLING WATER
CHECK HOLE



COOLING WATER INTAKE PORT
(each side)

5. After starting, check whether the cooling water is flowing out of the cooling water check hole. Amount of water flowing out of the check hole might vary due to the thermostat operation, but this is normal.

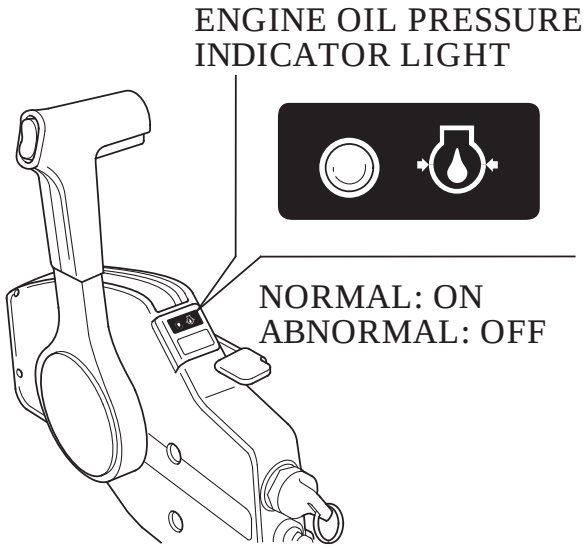
NOTICE

If water does not flow out, or if steam comes out, stop the engine. Check to see if the screen in the cooling water intake port is obstructed and remove foreign materials if necessary. Check the cooling water check hole for clogging. If water still does not flow out, have your outboard motor checked by an authorized Honda outboard motor dealer. Do not operate the engine until the problem has been corrected.

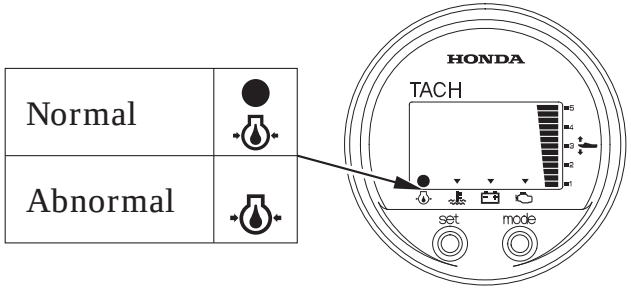
6. Check to see if the oil pressure indicator turns ON.

If it does not turn on, stop the engine and perform the following inspections.

1) Check the oil level (see page 53).
2) If the oil level is normal and the oil pressure indicator light does not turn ON, consult with an authorized Honda outboard motor dealer.



7. Warm up the engine as follows:
   Above 5° C (41° F) — run the engine for at least 3 minutes.
   Below 5° C (41° F) — run the engine for at least 5 minutes at approx. 2,000 min^{-1} (rpm).
   Failure to completely warm up the engine will result in poor engine performance.

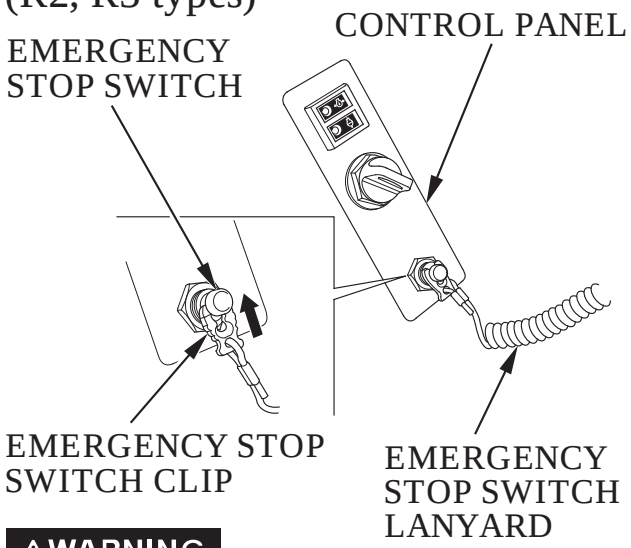


NOTICE

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

NOTE:
Before leaving the dock, check the operation of the emergency stop switch.

(R2, R3 types)



⚠WARNING

The exhaust contains poisonous carbon monoxide. Do not start the engine in a poor ventilation area such as in a boat house.

NOTICE

To prevent damage to the outboard from overheating, never run the engine with the propeller out of water.

NOTE:

When the boat is mounted with the two outboard motors, perform the following on the right and left engines respectively.

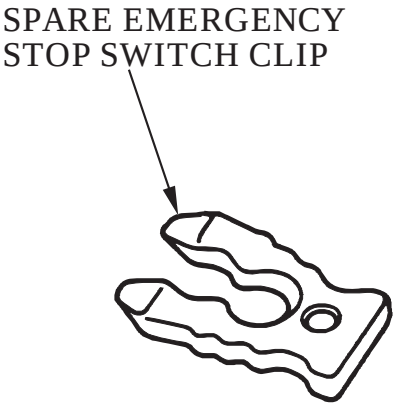
1. Insert the clip at one end of the emergency stop switch lanyard into the emergency stop switch. Attach the other end of the emergency stop switch lanyard securely to the operator. Be sure to install the emergency stop switch clip to the emergency stop switch on the remote control box as well as on the control panel.

⚠WARNING

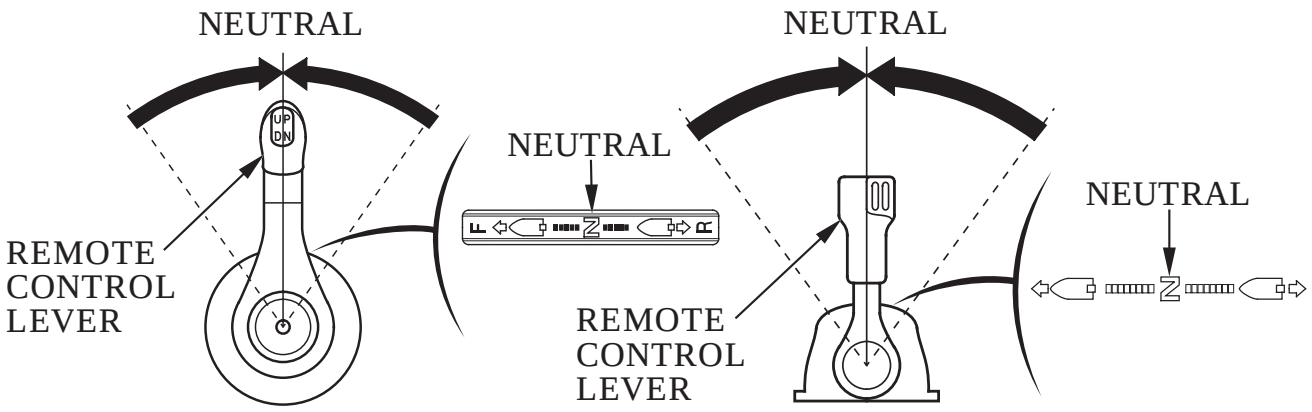
If the operator does not attach the emergency stop switch lanyard, and is thrown from his seat or out of the boat, the out-of-control boat can seriously injure the operator, passengers, or bystanders. Always properly attach the lanyard before starting the engine.

NOTE:

The engine does not start unless the clip is set on the emergency stop switch.

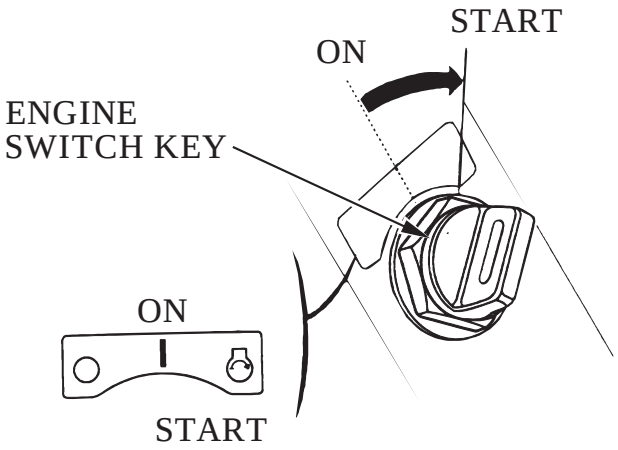


A spare emergency stop switch clip is provided in the tool bag (see page 117).



(R2 type) (R3 type)

2. Set the control lever in the NEUTRAL position.
   The engine does not start unless the control lever is set in the NEUTRAL position.



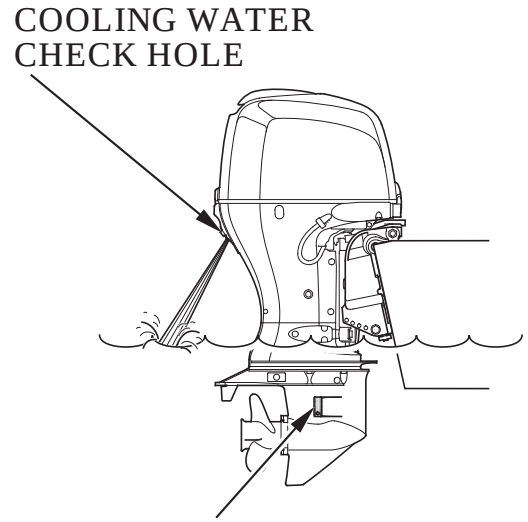
3. Turn the engine switch key to the START position and hold it there until the engine starts.
   When the engine starts, release the key, allowing it to return to the ON position.

NOTICE

- The starter motor consumes a large amount of current. Do not therefore run it continuously for more than 5 seconds at a time. If the engine does not start within 5 seconds, wait at least 10 seconds before running the starter motor again.
- Do not turn the engine switch key to the START position while the engine is running.

NOTE:
The "Neutral Starting System" prevents the engine from being started unless the control lever is set in the N (neutral) position even though the engine is cranked by the starting motor.

NOTE:
When the boat is mounted with the two outboard motors, perform the above procedure on the right and left outboard motors respectively.

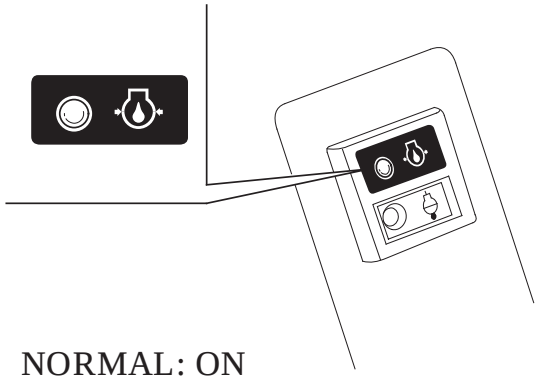


4. After starting, check whether the cooling water is flowing out of the cooling water check hole. Amount of water flowing out of the check hole might vary due to the thermostat operation, but this is normal.

NOTICE

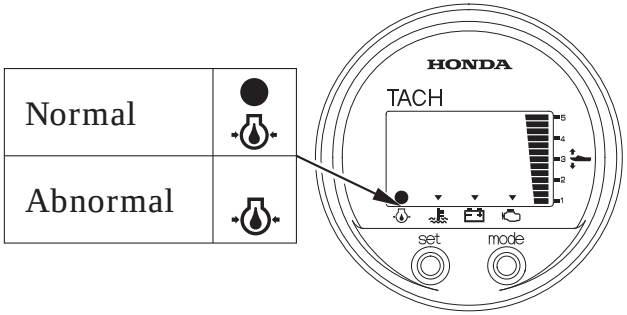
If water does not flow out, or if steam comes out, stop the engine. Check to see if the screen in the cooling water intake port is obstructed and remove foreign materials if necessary. Check the cooling water check hole for clogging. If water still does not flow out, have your outboard motor checked by an authorized Honda outboard motor dealer. Do not operate the engine until the problem has been corrected.

ENGINE OIL PRESSURE INDICATOR



NORMAL: ON
ABNORMAL: OFF

DIGITAL TACHOMETER



5. Check to see if the oil pressure indicator turns ON.

If it does not turn on, stop the engine and perform the following inspections.
1) Check the oil level (see page 53).
2) If the oil level is normal and the oil pressure indicator light does not turn ON, consult with an authorized Honda outboard motor dealer.

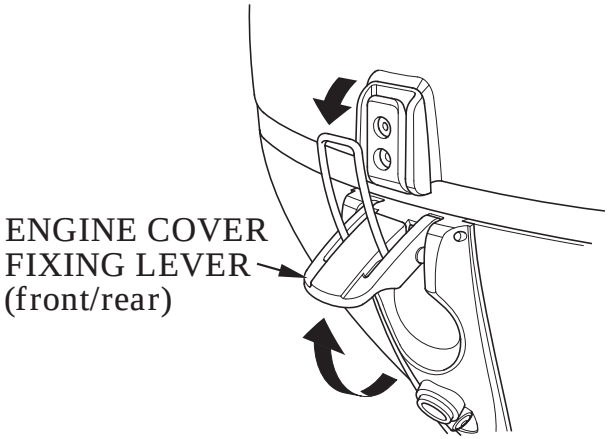
6. Warm up the engine as follows:
Above 5° C (41° F) — run the engine for at least 3 minutes.
Below 5° C (41° F) — run the engine for at least 5 minutes at approx. 2,000 min^{-1} (rpm).
Failure to completely warm up the engine will result in poor engine performance.

NOTICE

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

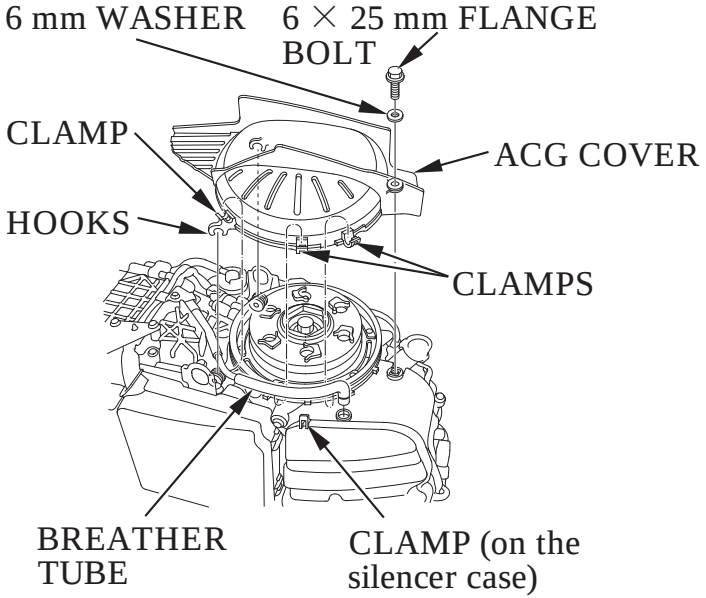
NOTE:
Before leaving the dock, check the operation of the emergency stop switch.

Emergency Starting



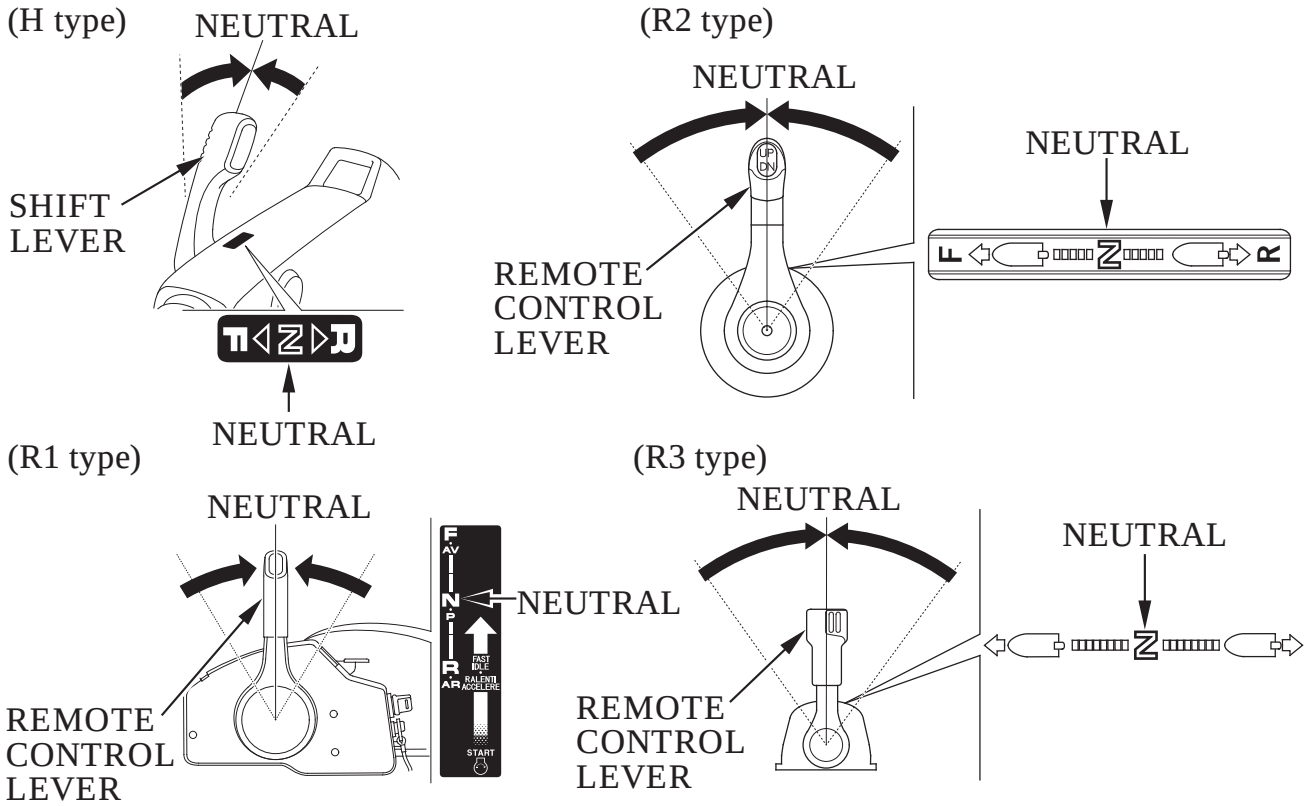
If the starting system does not operate properly for some reasons, the engine can be started using the emergency starter rope in the tool kit.

1. Turn the engine switch key to the OFF position.
2. Raise the front and rear fixing levers, and remove the engine cover.



3. Release the breather tube from the four clamps.
4. Remove 6 × 25 mm flange bolt and washer, then remove the ACG cover.
5. Secure the breather tube to the clamp of the silencer case.

NOTE:
Take care not to lose the bolt and washer.

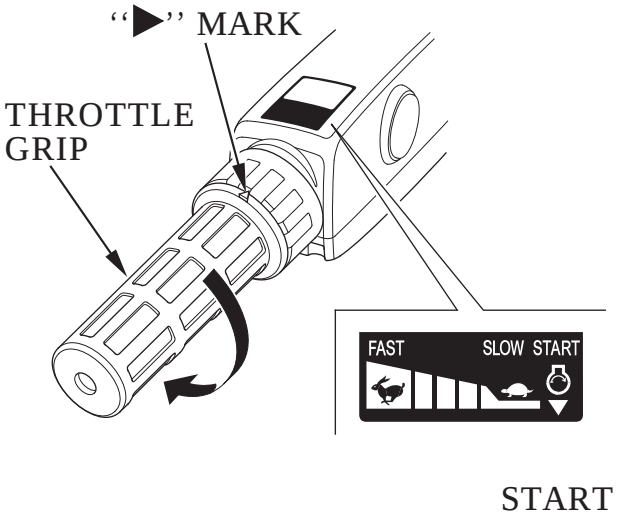


6. Set the shift lever or remote control lever is in the NEUTRAL position.

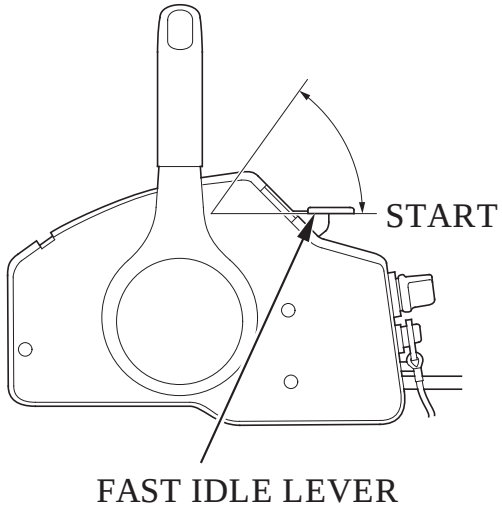
⚠WARNING

The Neutral Starting System'' will not work in emergency starting. Be sure to set the shift lever/control lever into the NEUTRAL position to prevent start-in-gear when starting the engine in emergency. Sudden unexpected acceleration could result in serious injury or death.

(H type)

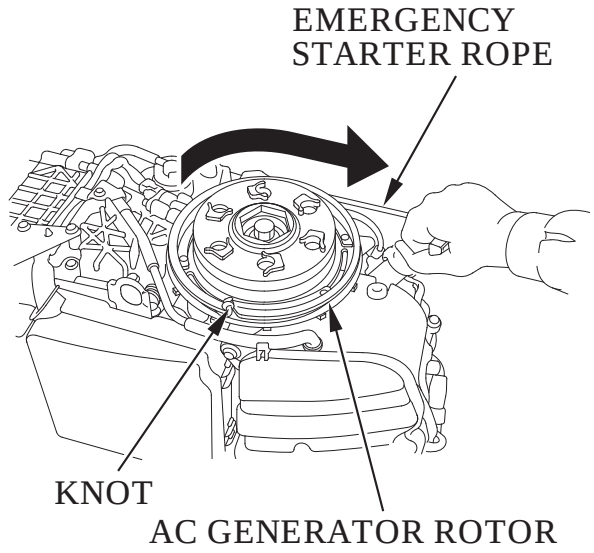


(R1 type)



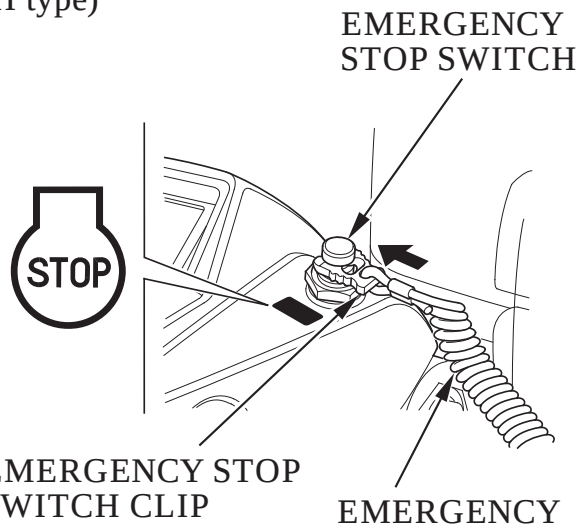
7. H type:
   Align the “ ” (start mark) on the throttle grip with the projected end of the “ ▶ ” mark on the tiller handle.

   R1 type:
   Leave the fast idle lever in the START (fully lowered) position.

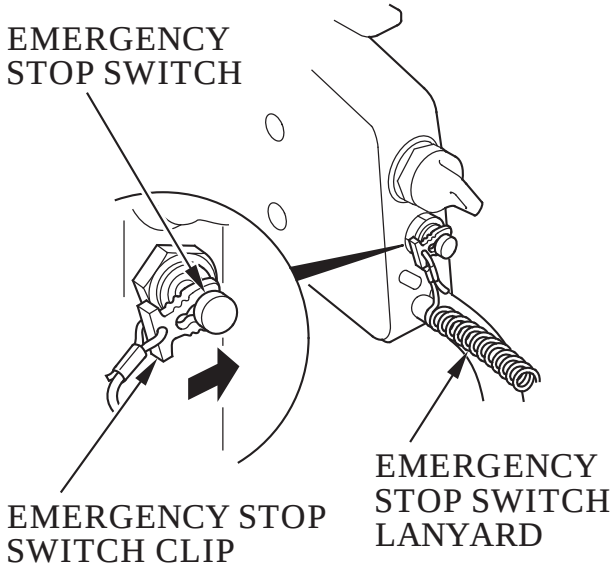


8. Set the AC generator rotor so the cutouts are on the right and left sides of the AC generator rotor as shown. Hook the knot at the end of the starter rope (accessory) against a cutout in the AC generator rotor and wind the starter rope one and half turns clockwise along the groove in the AC generator rotor.

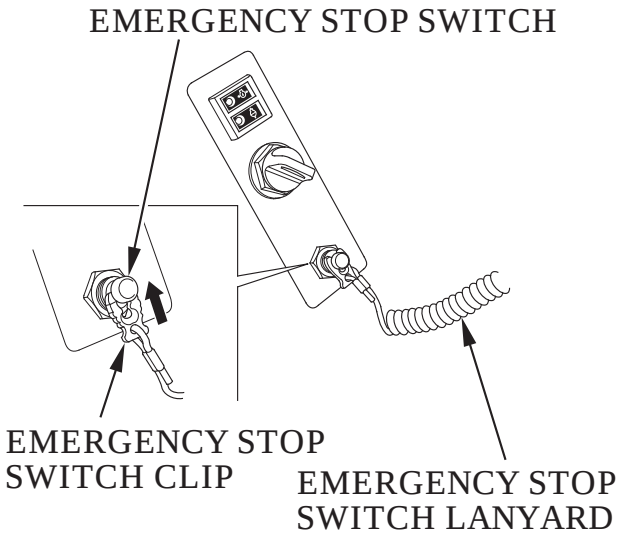
(H type)



(R1 type)



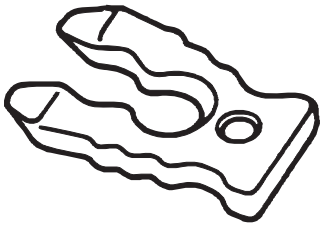
(R2, R3 type)



9. Insert the clip at the end of the emergency stop switch lanyard into the emergency stop switch. Attach the other end of the emergency stop switch lanyard securely to the operator.

NOTE:
The engine does not start unless the clip is set on the emergency stop switch.

SPARE EMERGENCY
STOP SWITCH CLIP

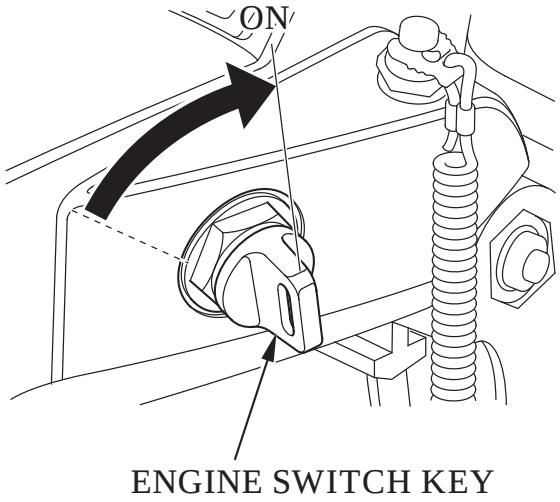


A spare emergency stop switch clip is provided;

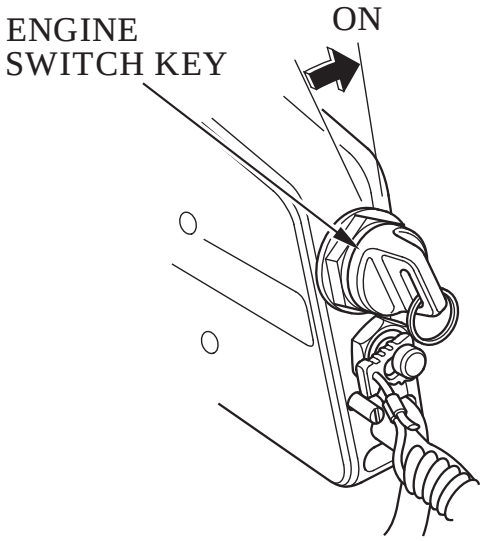
R1 type: on the remote control box (see page 31).

ALL types: in the tool bag (see page 117).

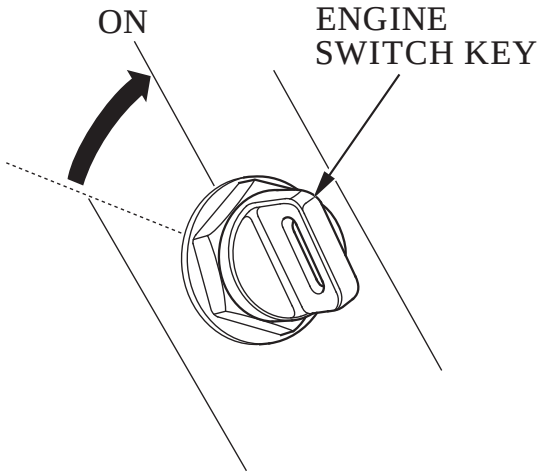
(H type)



(R1 type)



(R2, R3 types)



10. Turn the engine switch key to the ON position.

NOTICE

The propeller must be lowered into the water, running the outboard motor out of the water will damage the water pump and overheat the engine.

11. Pull the emergency starter rope lightly until resistance is felt, then pull briskly.

If the engine fails to start refer to Troubleshooting page 144.

⚠WARNING

Exposed moving parts can cause injury. Use extreme care when installing the engine cover. Do not operate the outboard motor without the engine cover.

12. Leave the AC generator cover off and install the engine cover. Lock the engine cover fixing levers. Attach the emergency stop switch lanyard securely to the operator and return to the closest boat landing. Contact your closest authorized Honda outboard motor dealer and have the outboard motor and the electrical system checked.

Break-in Procedure

Break-in period: 10 hours

Break-in operation allows the mating surfaces of the moving parts to wear evenly and thus ensures proper performance and longer outboard motor life.

Break-in your new outboard motor as follows.

First 15 minutes:

Run the outboard motor at trolling speed. Use the minimum amount of throttle opening necessary to operate the boat at a safe trolling speed.

Next 45 minutes:

Run the outboard motor up to a maximum of 2,000 to 3,000 min^{-1} (rpm) or 10% to 30% throttle opening.

Next 60 minutes:

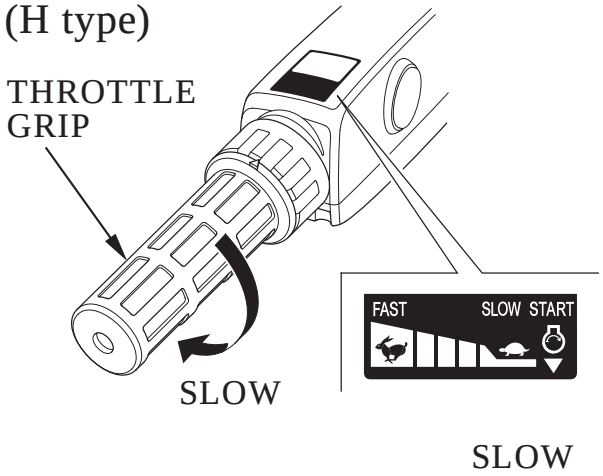
Run the outboard motor up to maximum of 4,000 to 5,000 min^{-1} (rpm) or 50% to 80% throttle opening. Short bursts of full throttle are acceptable but do not operate the motor continuously at full throttle.

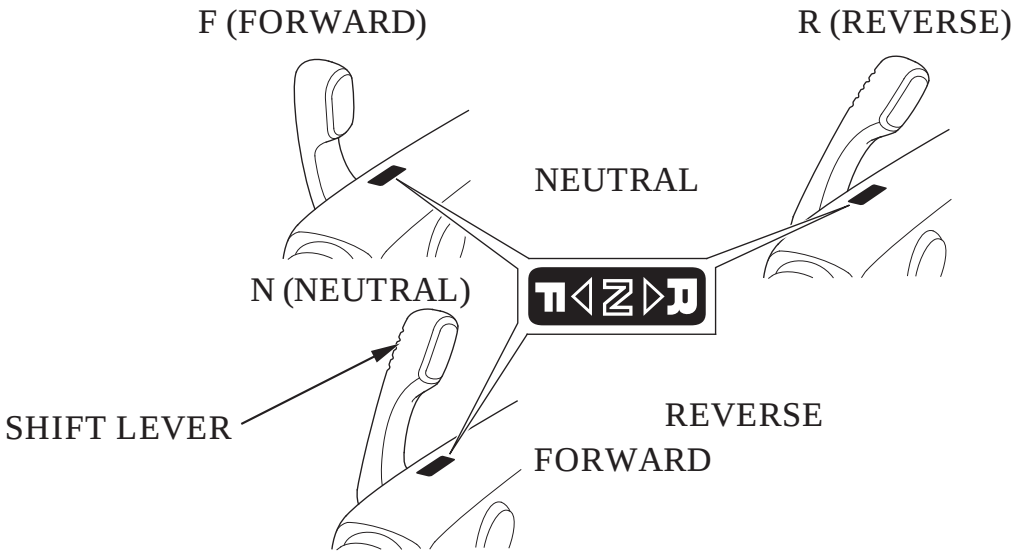
Next 8 hours:

Avoid continuous full throttle operation (100% throttle opening). Do not run the outboard motor at full throttle for more than 5 minutes at a time.

For boats that plane easily, bring the boat up on plane then reduce the throttle opening to the specified break-in settings called out above.

Gear Shifting (H type)





SLOW

The shift lever has 3 positions: FORWARD, NEUTRAL, and REVERSE.
An indicator at the base of the shift lever aligns with the icon attached at the tiller handle.

⚠CAUTION

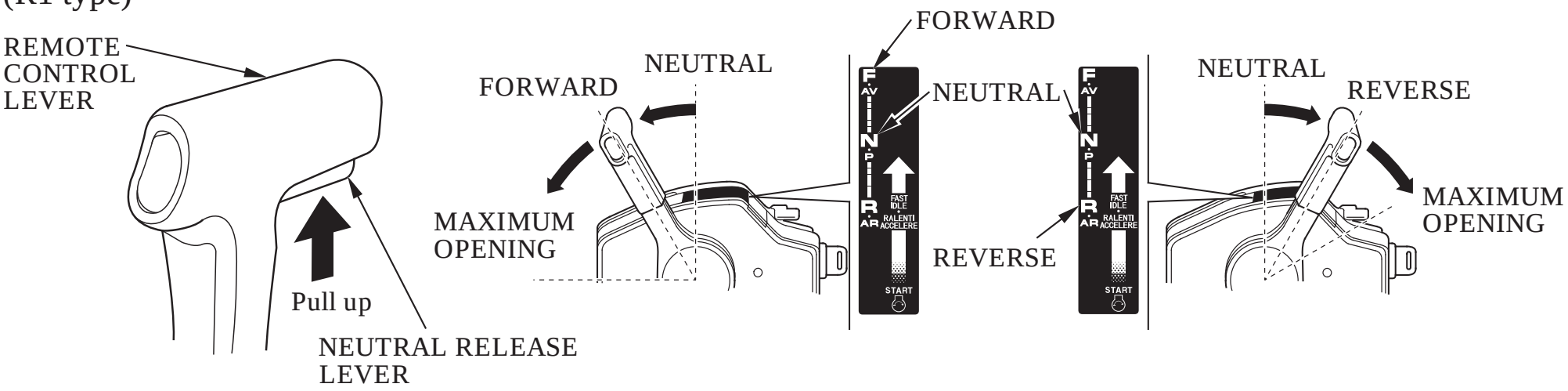
Be sure to perform the gearshift operation at a low engine speed. Shifting the gear at a high engine speed will damage the drive system. Be sure that the gear was shifted securely, then operate the throttle grip to raise the engine speed.

1. Align the pointer on the tiller handle with the SLOW position on the throttle grip to decrease engine speed.

NOTE:
The throttle mechanism is designed to limit throttle opening in REVERSE and NEUTRAL. Do not turn the throttle grip with force in the FAST direction. The throttle can be opened to FAST only in FORWARD gear.

2. Move the shift lever to engage the desired gear.

Gear Shifting
(R1 type)



⚠CAUTION

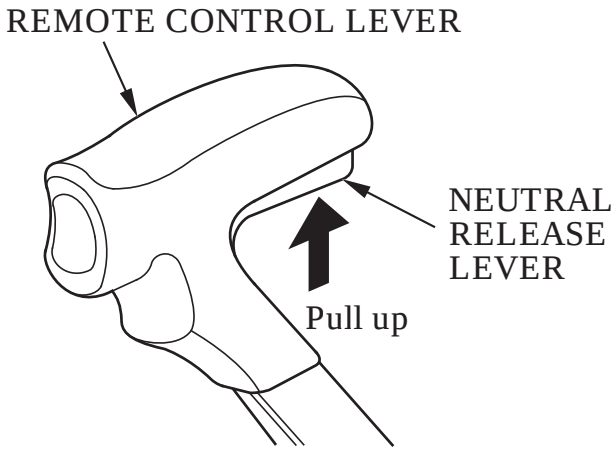
Avoid sharp and abrupt operation of the control lever. Operate it moderately. Operate the control lever and raise the engine speed after making sure that the gear was shifted securely.

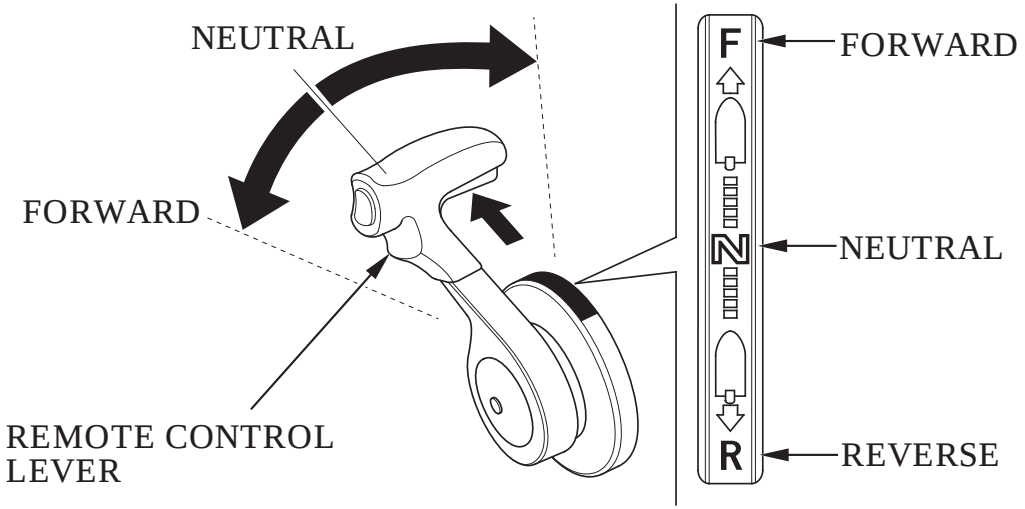
While pulling the neutral release lever, move the control lever approximately 30° toward the FORWARD or REVERSE position to engage the desired gear.

Moving the control lever further from approximately 30° will increase throttle opening and boat speed.

The control lever will not move unless the neutral release lever is pulled up.

Gear Shifting
(R2 type)





⚠CAUTION

Avoid sharp and abrupt operation of the control lever. Operate it moderately. Operate the control lever and raise the engine speed after making sure that the gear was shifted securely.

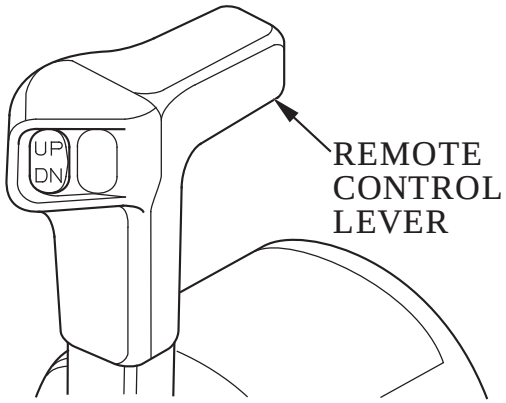
While pulling the neutral release lever, move the control lever approximately 35° toward the FORWARD or REVERSE position to engage the desired gear.

Moving the control lever further from approximately 35° will increase throttle opening and boat speed.

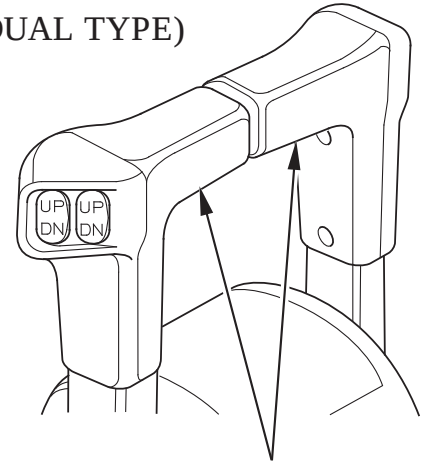
The control lever will not move unless the neutral release lever is pulled up.

Gear Shifting
(R3 type)

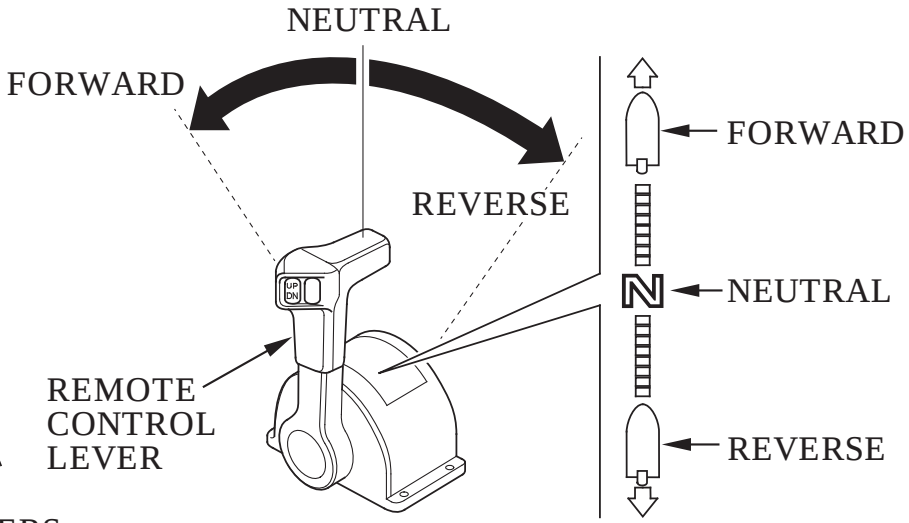
(SINGLE TYPE)



(DUAL TYPE)



REMOTE CONTROL LEVERS



⚠CAUTION

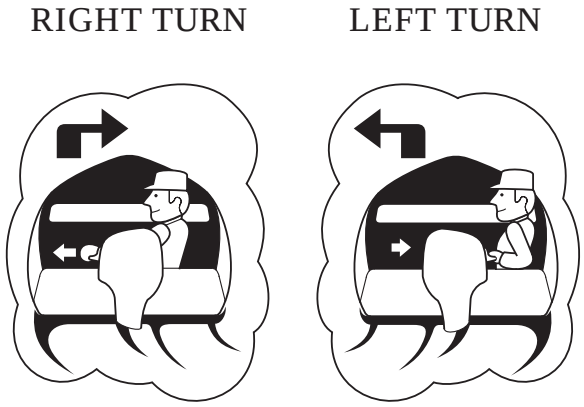
Avoid sharp and abrupt operation of the control lever. Operate it moderately. Operate the control lever and raise the engine speed after making sure that the gear was shifted securely.

Move the control lever(s) approximately 35° toward the FORWARD or REVERSE position to engage the desired gear.

When the boat is mounted with the two outboard motors, hold the control lever in the center as shown, and operate the right and left levers simultaneously.

Moving the control lever(s) further from approximately 35° will increase throttle opening and boat speed.

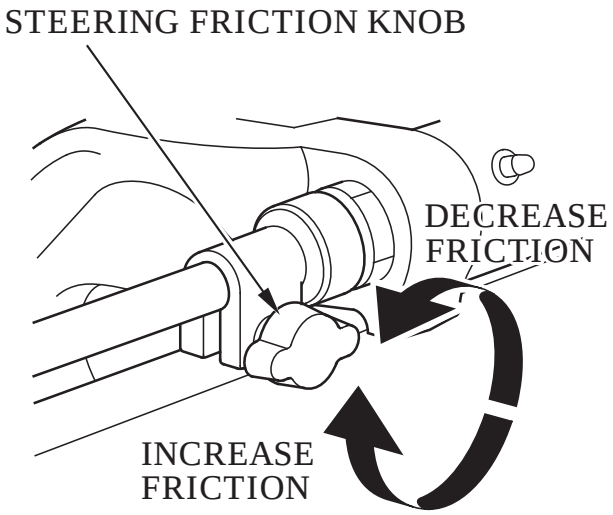
Steering
(H type)



Move the tiller handle to the left.

Move the tiller handle to the right.

Steer by moving the tiller handle opposite the direction you want the boat to turn.



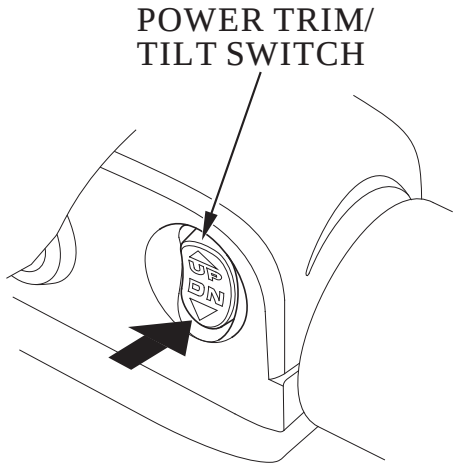
Use the steering friction knob to help hold a steady course while cruising.

Turn the knob clockwise to increase steering friction for holding a steady course.

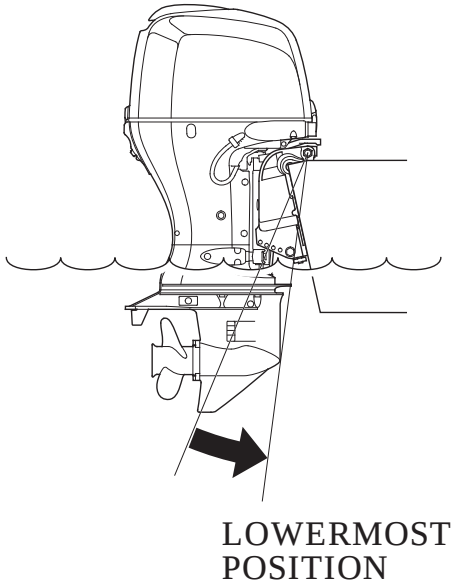
Turn the knob counterclockwise to decrease friction for easy turning.

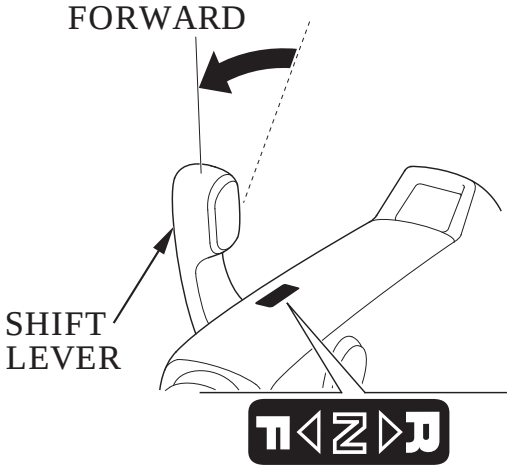
(R type)
Steer the boat in the same manner as an automobile.

Cruising (H type)

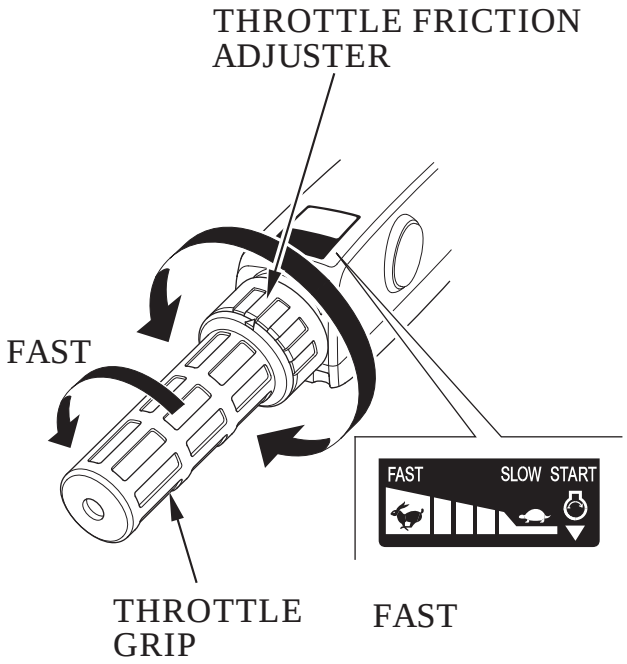


Press the DN (down) of the power trim/tilt switch and tilt the motor to the lowermost position.





1. With the shift lever in the FORWARD position.



2. Turn the throttle grip in the FAST direction to increase the speed. For the sake of fuel economy, open the throttle about 80%.

To hold the throttle at a steady setting, turn the throttle friction adjuster clockwise. To free the throttle grip for manual speed control, turn the friction adjuster counterclockwise.

NOTE:

- When cruising at full throttle, note that the engine speed must be in the range BF75D: between 5,000 min^{-1} (rpm) and 6,000 min^{-1} (rpm), BF90D: between 5,300 min^{-1} (rpm) and 6,300 min^{-1} (rpm).
- If you feel that the engine speed jumped up when the hull jumped or at ventilation, cruise the boat by returning the throttle to the slow speed side.
- See “Propeller Selection” (page 51) for a relation between the propeller and the engine speed.

⚠CAUTION

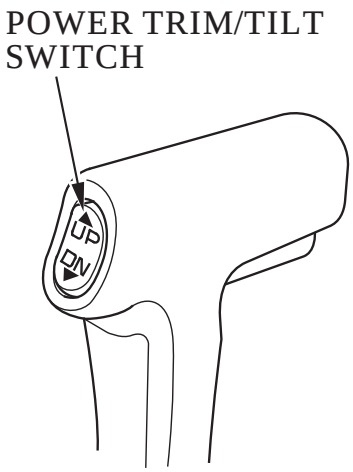
Do not operate without the engine cover. Exposed moving parts could cause injury; water may damage the engine.

NOTE:

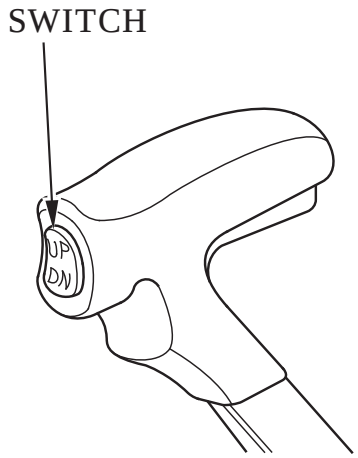
For best performance, passengers and equipment should be distributed evenly to balance the boat.

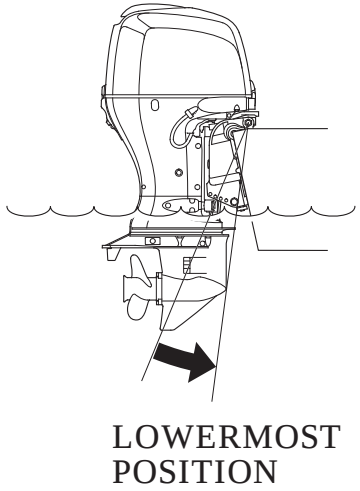
Cruising (R type)

(R1 type)

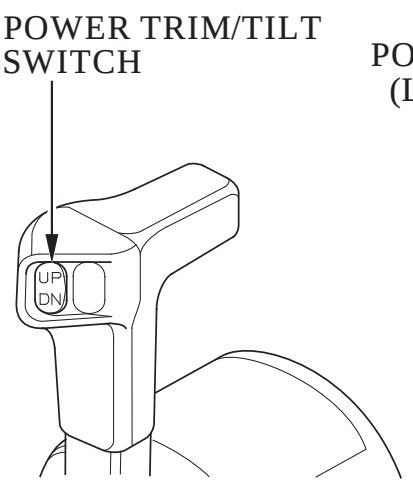


(R2 type)

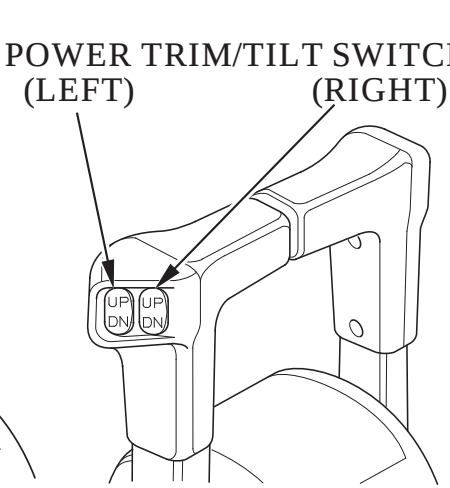




(R3 type)
(single type)



(dual type)

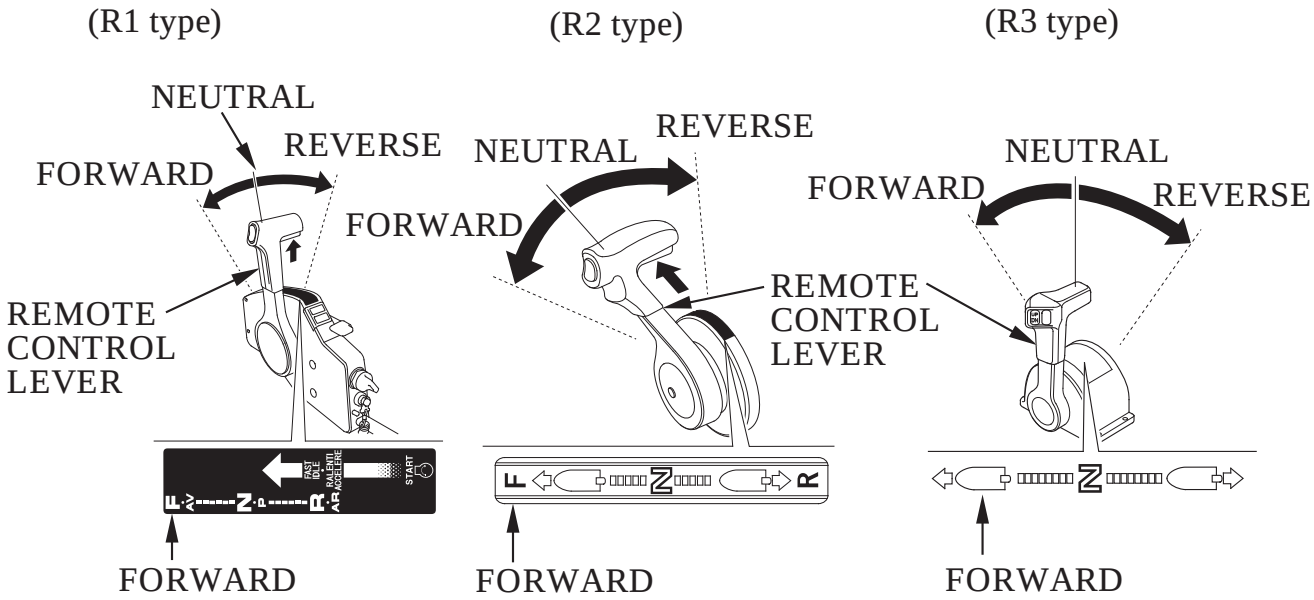


1. Press the DN (down) of the power trim/tilt switch and trim the motor at the lowermost position.

R3 type:
When the two outboard motors are mounted:

1) Press the DN (down) of the power trim/tilt switch on the control lever side and trim the outboard motors at the lowermost position.

2) With the outboard motors trimmed at the lowermost position, adjust the trim angle of the right and left outboard motors using the switch on the console side separately or using the switch on the control lever simultaneously.



2. Move the control lever from NEUTRAL toward FORWARD position.

   R1 type:
   Moving about 30° engages the gear. Moving the control lever further opens the throttle and increases the engine speed.

R2, R3 types:
Moving about 35° engages the gear. Moving the control lever further opens the throttle and increase the engine speed.

For the sake of fuel economy, open the throttle about 80%.

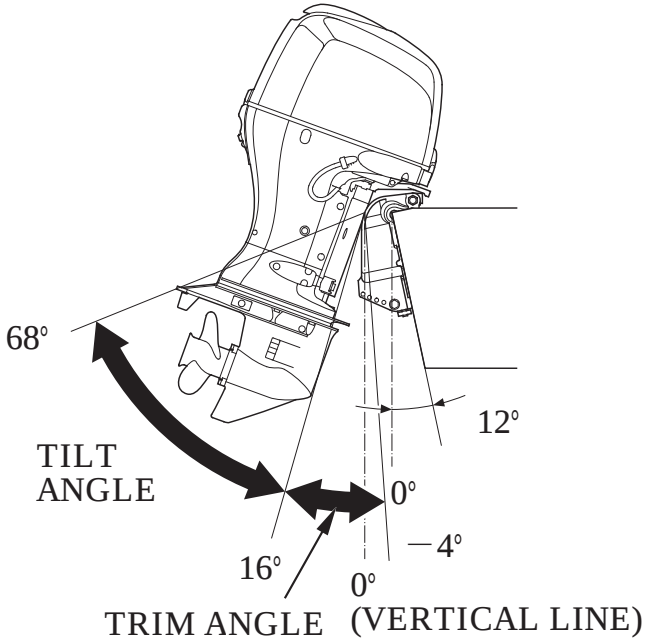
NOTE:
- When cruising at full throttle, note that the engine speed must be in the range BF75D: between 5,000 min^{-1} (rpm) and 6,000 min^{-1} (rpm), BF90D: between 5,300 min^{-1} (rpm) and 6,300 min^{-1} (rpm).
- If you feel that the engine speed jumped up when the hull jumped or at ventilation, cruise the boat by returning the throttle to the slow speed side.
- See “Propeller Selection” (page 51) for a relation between the propeller and the engine speed.

⚠CAUTION

Do not operate without the engine cover. Exposed moving parts could cause injury; water may damage the engine.

NOTE:
For best performance, passengers and equipment should be distributed evenly to balance the boat.

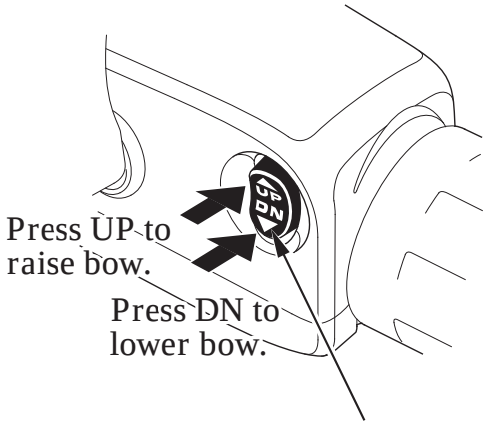
Trimming the Motor



(when transom angle is 12°)

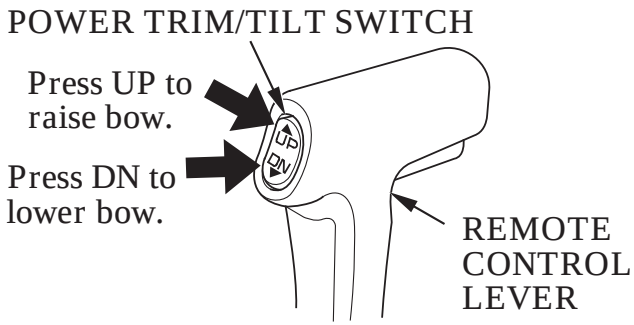
The BF75D/90D is equipped with the power trim/tilt system which can adjust the motor angle (trim/tilt angle) while cruising and mooring. The motor angle can also be adjusted while cruising and accelerating to obtain the maximum speed and optimum driveability and fuel economy.

(H type)

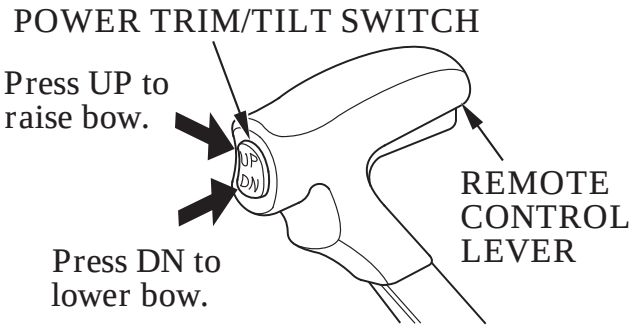


Press either UP or DN (down) of the power trim/tilt switch and tilt the motor to the best position in compliance with the cruising conditions.

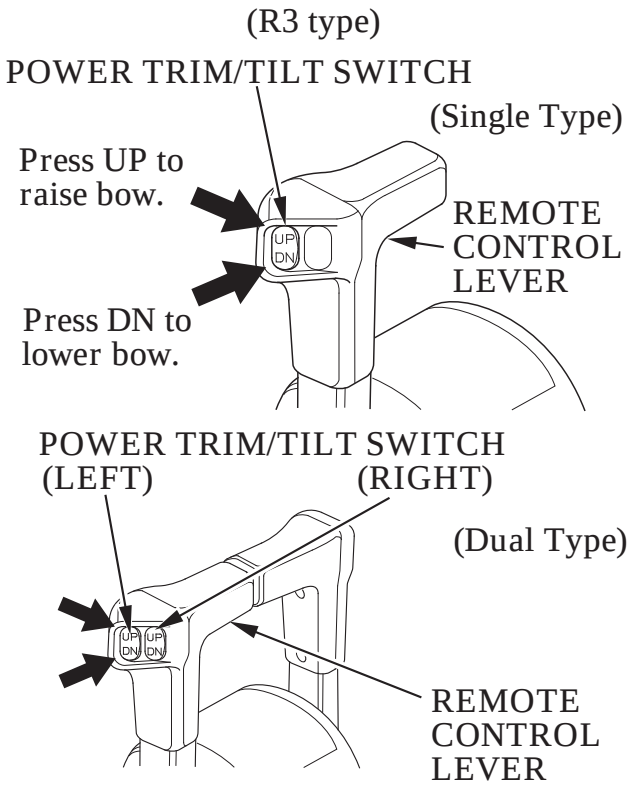
(R1 type)



(R2 type)



The power trim/tilt system operates when the switch is pressed, and it stops when the switch is released.
To trim up slightly, press on UP momentarily but securely.
To trim down slightly, press on DN (down) in the same manner.



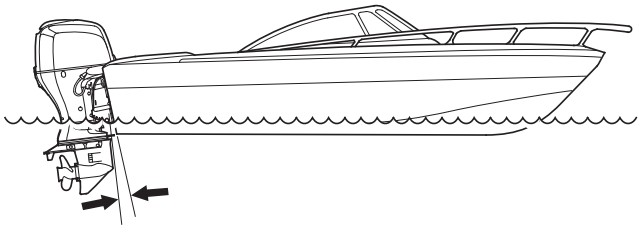
⚠CAUTION

- Improper trim angle results in unstable steering condition.
- Do not trim excessively while cruising through rough waves, or it may cause an accident.
- Excessive trim angle can result in cavitation and racing of the propeller, and trimming up the motor excessively can cause damage to the impeller pump.

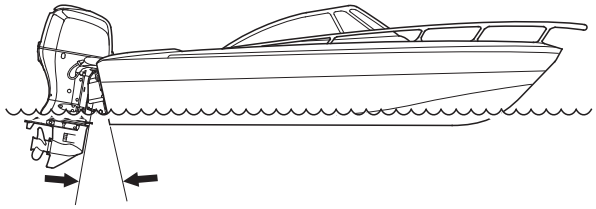
NOTE:

- Decrease the trim angle on high speed turns to reduce the possibility of propeller ventilation.
- Improper motor trim angle can result in an unstable steering condition.

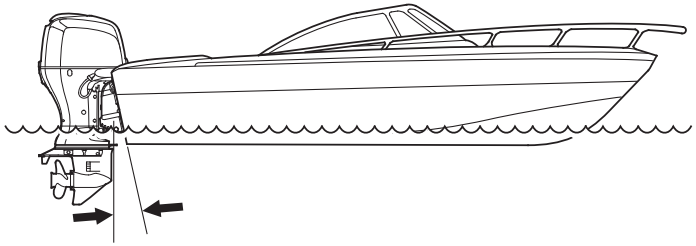
MOTOR TRIMMED TOO LOW



MOTOR TRIMMED TOO HIGH



MOTOR TRIMMED CORRECTLY



When cruising:

(A)Into a high wind, trim the motor down slightly to lever the bow and improve boat stability.

(B)With a tail wind, trim the motor up slightly to raise the bow and improve boat stability.

(C)Through rough waves, do not trim the motor too low or too high to avoid an unstable steering condition.

Trim Meter
(equipped type or optional equipment)

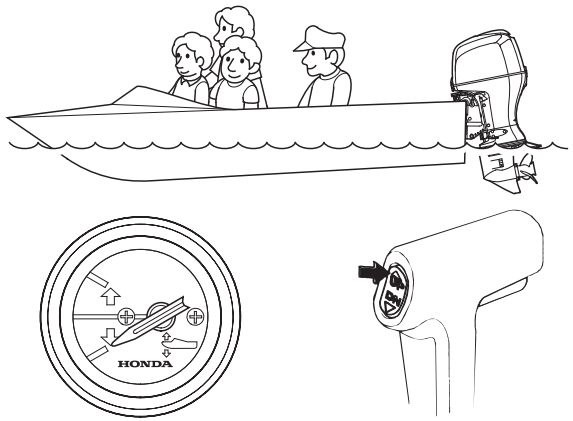
The trim meter indicates the trim angle of the motor. Refer to the trim meter, and press the UP or DN (down) portion of the power trim/tilt switch to adjust the motor trim angle to achieve boat performance and stability.

The illustration represents R1 type. Perform the same procedure for the other types.

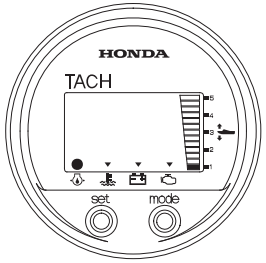
⚠WARNING

When the boat is mounted with the two outboard motors, adjust with the switch on the control lever side.
Adjustment with the switch on the console side will impair the balance between the right and left outboard motors, which adversely affects operationability and stability of the outboard motors.

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

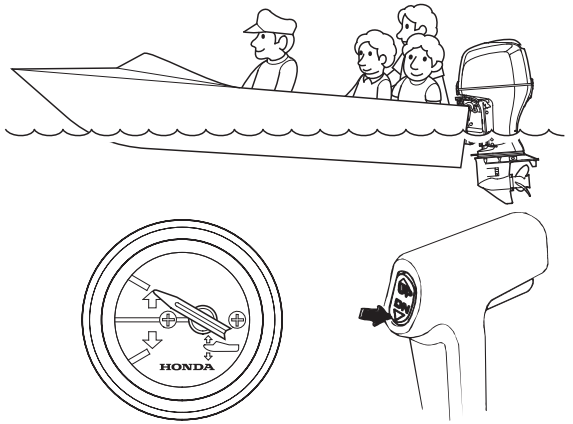


Digital Tachometer

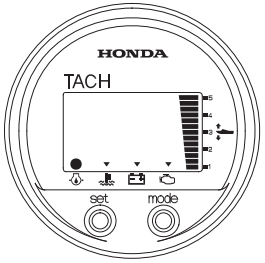


With the motor trimmed low the trim meter will read as shown. To raise the bow increase the motor trim angle by pressing the UP portion of the power trim/tilt switch.

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



Digital Tachometer



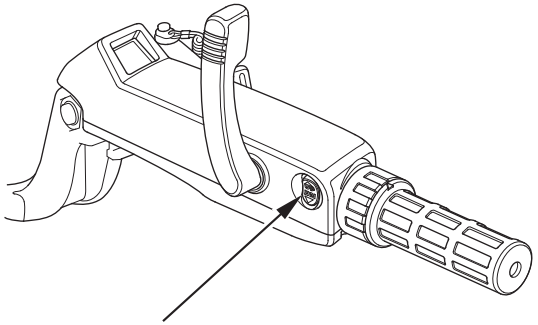
With the motor trimmed high the trim meter will read as shown. To lower the bow decrease the motor trim angle by pressing the DN (down) portion of the power trim/tilt switch.

Tilting the Motor

Tilt the motor to prevent the propeller and gear case from hitting the bottom when the boat is beached or stopped in shallow water.
Please tilt up simultaneously, when you mount the dual type outboard motor.

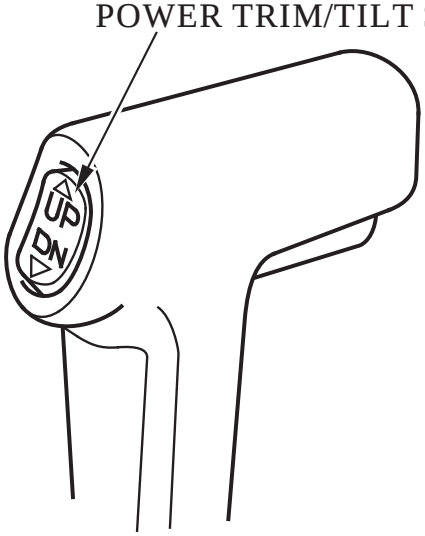
1. Move the remote control lever to the NEUTRAL position and stop the engine.
2. Press the UP of the power trim/tilt switch and tilt the motor to the best position in compliance.

(H type)

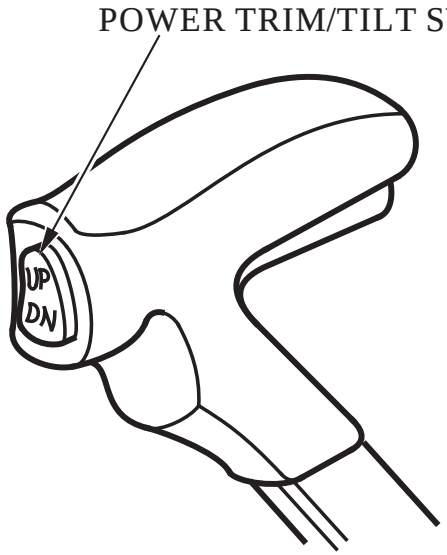


POWER TRIM/TILT SWITCH

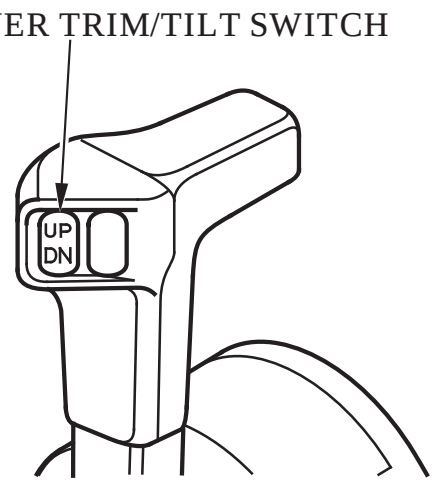
(R1 type)



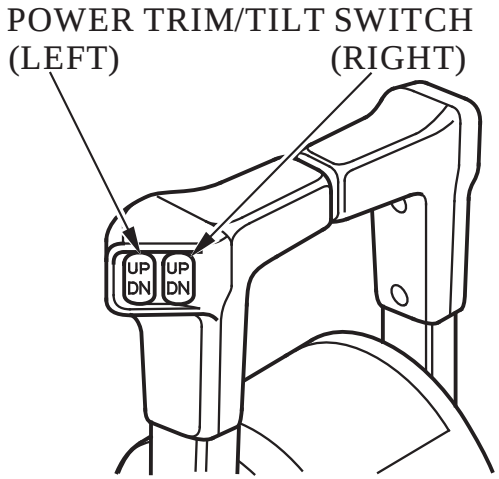
(R2 type)



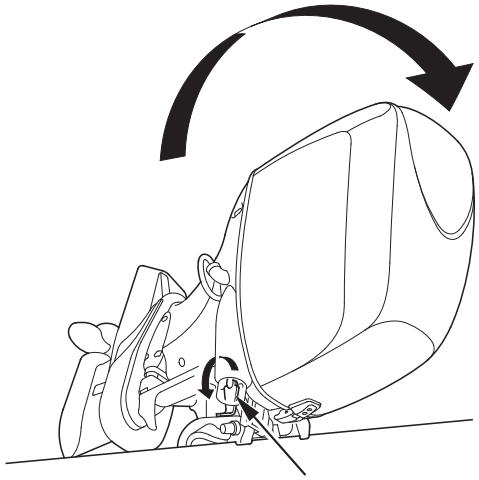
(R3 type)
(single type)



(dual type)

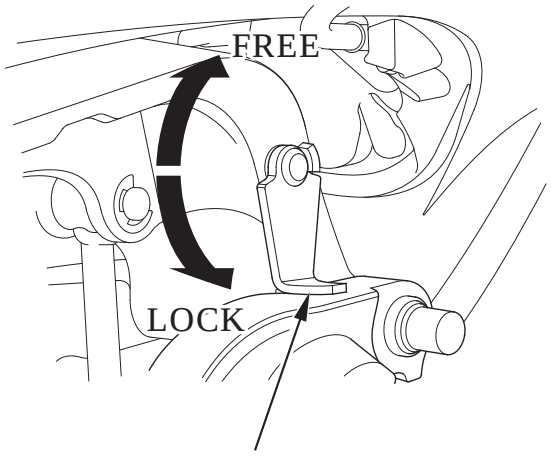


Moorage

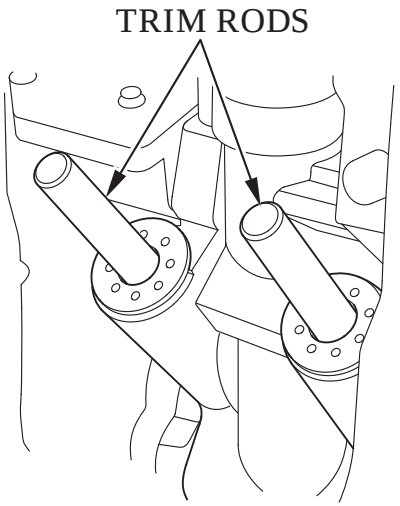


Tilt up the outboard motor using the tilt lock lever when mooring the boat. Shift the control lever into the NEUTRAL position and stop the engine before tilting up the outboard motor.

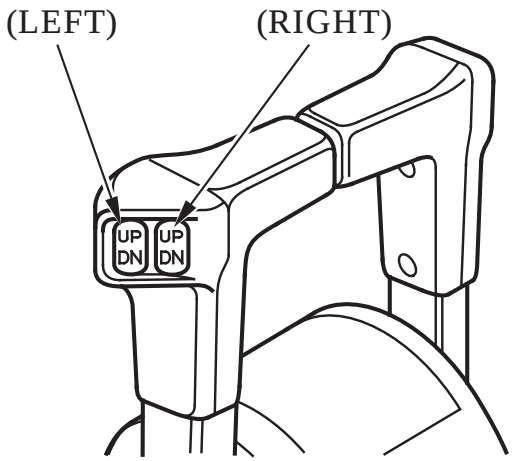
NOTE:
Before tilting up, hold the outboard motor in the position for one minute after stopping the engine to drain the water inside the engine.



1. Raise the motor as far as it goes using the power trim/tilt switch.
2. Move the tilt lock lever to the LOCK position and lower the outboard motor until the lock lever contacts the stern bracket.
3. Press the DN (down) of the power trim/tilt switch and fully shorten the trim rods.
4. To tilt down, raise the outboard motor as far as it goes using the power trim/tilt switch, move the tilt lock lever to the FREE position.

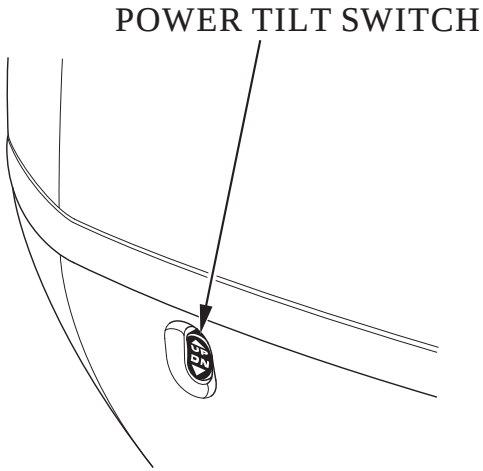


(R3 type) (DUAL TYPE)
POWER TRIM/TILT SWITCH



NOTE:
After tilting down the outboard motors, adjust the trim angle of the right and left outboard motors.

Power Tilt Switch

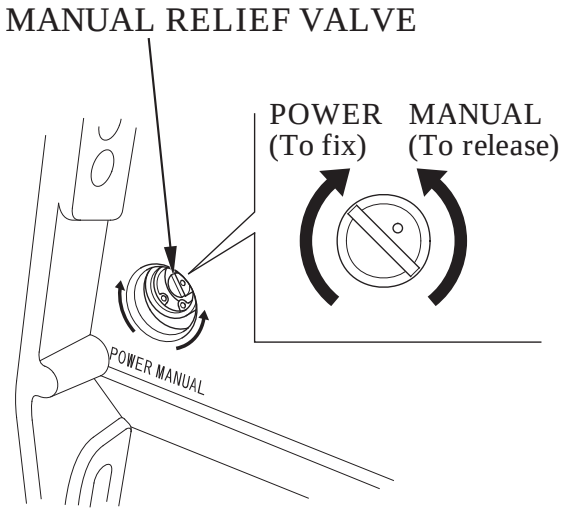


When you are away from the power trim/tilt switch on the control lever side, you can operate the power tilt switch on the outboard motor side. The switch operation is the same as that of the power trim/tilt switch on the control lever side.

⚠CAUTION

Do not operate this power tilt switch on the outboard motor while sailing.

Manual Relief Valve



When power trim/tilt system does not operate because of dead battery or faulty power trim/tilt motor, the outboard motor can be manually tilted up or down by operating the manual relief valve.
To tilt the outboard motor manually, turn the manual relief valve under the stern bracket 1 or 2 turns counterclockwise using a screwdriver.

NOTICE

Do not loosen the manual relief valve more than two turns, or the outboard motor cannot be tilted up when the manual relief valve is retightened.

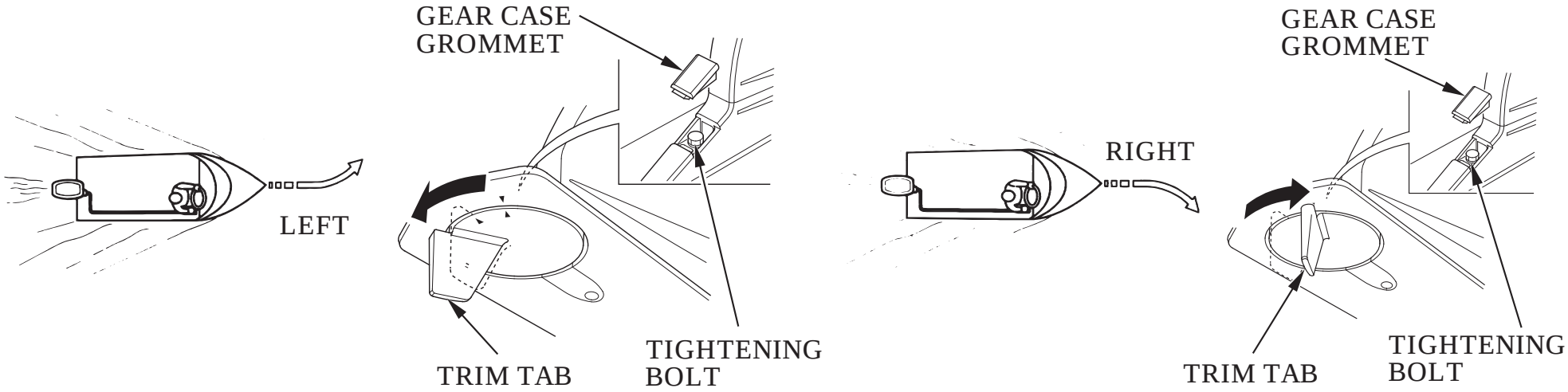
After tilting up/down manually, close the manual relief valve to lock the motor in the position.

Check that no person is under the outboard motor before carrying out this operation because if the manual relief valve is loosened (turned counterclockwise) when the outboard motor is tilted up, the outboard motor will suddenly tilt down.

⚠CAUTION

The manual relief valve must be tightened securely before operating the motor or the motor could tilt when operating in reverse.

Trim Tab Adjustment

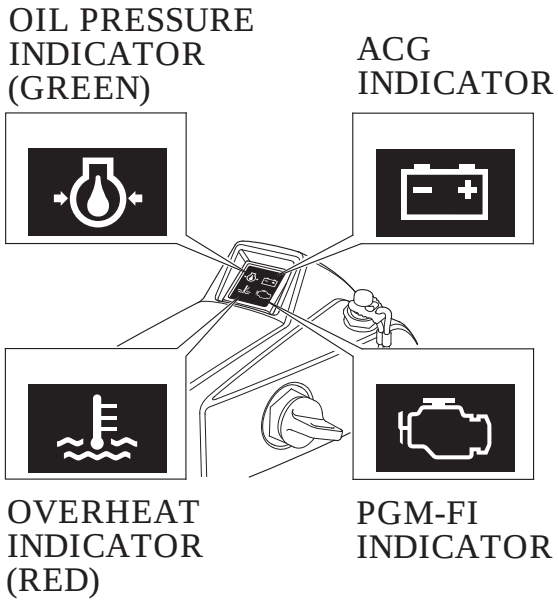


The trim tab is provided to adjust for "torque steer" which is a reaction of the propeller rotation or propeller torque. If during a high speed turn an unequal amount of effort is required to turn the boat right or left, adjust the trim tab so that an equal amount of effort is required.
Distribute the load evenly in the boat and run the boat in a straight course at full throttle. Slightly turn the steering wheel for both right and left turns to determine the amount of effort required.

Remove the gear case grommet and loosen the tightening bolt to adjust the trim tab. After adjustment, reinstall the grommet securely.
If less effort is required to make left turns:
Loosen the trim tab tightening bolt and turn the rear end of the trim tab toward the left. Tighten the bolt securely.

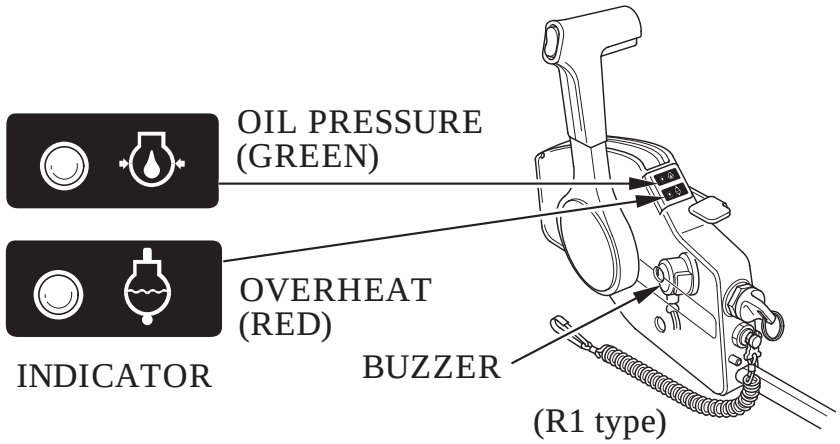
If less effort is required to make right turns:
Loosen the trim tab tightening bolt and turn the rear end of the trim tab toward the right. Tighten the bolt securely.
Make small adjustments at a time and retest. Incorrect trim tab adjustment can cause adverse steering.

Motor Protection System 〈Engine Oil Pressure, Overheat, Water Contamination, PGM-FI and ACG Warning Systems〉

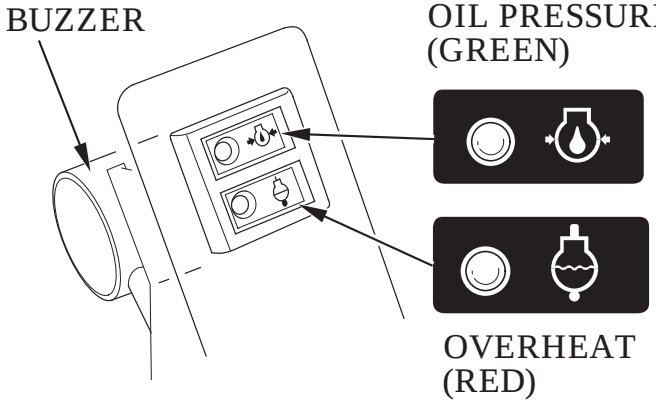


(internal buzzer)

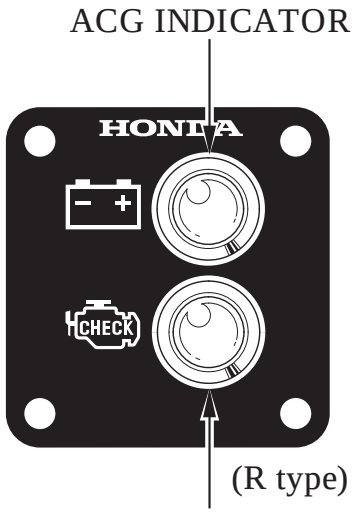
(H type)



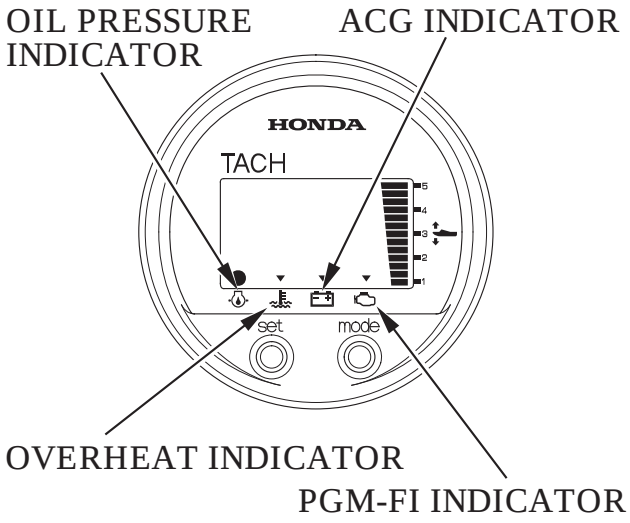
(R1 type)



(R2, R3 types)



DIGITAL TACHOMETER (R type)



If the engine oil pressure drops and/or the engine overheats, either or both warning systems could be activated.
When activated the engine speed will decrease gradually and the oil pressure indicator will turn OFF and the overheat indicator will turn ON.
A continuous buzzer will sound on all type.
The engine speed can not be increased with a larger throttle opening until the malfunction is corrected.
When the malfunction is corrected the engine speed will increase gradually.

If the engine overheats, the engine will stop in 20 seconds after the engine protection system will limit engine speed.

Each warning system of PGM-FI, ACG, oil pressure, overheat, and water contamination is activated as described in the following table.

System / Symptom	INDICATOR LIGHTS				BUZZER
	Oil pressure (Green)	Overheat (Red)	ACG (Red)	PGM-FI (Red)	CORRESPONDING SYSTEM
At starting	ON (2 sec)	ON (2 sec)	ON	ON (2 sec)	With the engine key turned on: ON (2 times)
During operation	ON	OFF	OFF	OFF	OFF
Low oil pressure	OFF	OFF	OFF	OFF	ON (continuously)
Overheat	ON	ON	OFF	OFF	ON (continuously)
ACG warning	ON	OFF	ON	OFF	alternating ON and OFF (at long intervals)
PGM-FI warning	ON*	OFF*	OFF	ON	alternating ON and OFF (at long intervals)
Water contamination	ON	OFF	OFF	OFF	alternating ON and OFF (at short intervals)

NOTE:

Some indicator and/or buzzer will be activated at the same time due to the occurrence of a malfunction.

*: Occasionally may blink due to the occurrence of a malfunction.

System / Symptom	INDICATOR					BUZZER
	Oil pressure Indicator (1)	Overheat Indicator (1)	ACG Indicator (1)	PGM-FI Indicator (1)	Water Separator Indicator (2)	CORRESPONDING SYSTEM
At starting	ON (2 sec)	ON (2 sec)	ON (2 sec)	ON (2 sec)	ON (2 sec)	With the engine key turned on: ON (2 times)
During operation	ON	OFF	OFF	OFF	OFF	OFF
Low oil pressure	OFF	OFF	OFF	OFF	OFF	ON (continuously)
Overheat	ON	ON	OFF	OFF	OFF	ON (continuously)
ACG warning	ON	OFF	ON	OFF	OFF	alternating ON and OFF (at long intervals)
PGM-FI warning	ON*	OFF*	OFF	ON	OFF	alternating ON and OFF (at long intervals)
Water contamination	ON	OFF	OFF	OFF	ON	alternating ON and OFF (at short intervals)

NOTE:

Some indicator and/or buzzer will be activated at the same time due to the occurrence of a malfunction.

*: Occasionally may blink due to the occurrence of a malfunction.

(1) The digital tachometer includes this function.

(2) The digital speedometer includes this function.

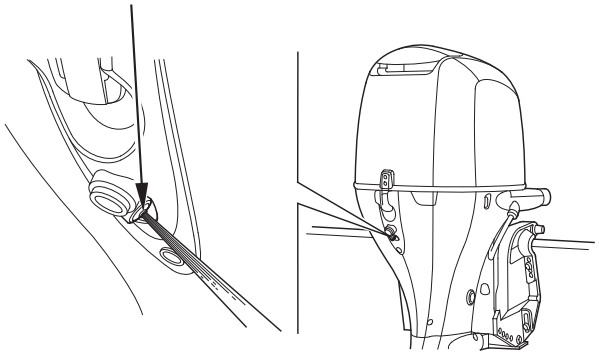
When the oil pressure warning system is activated:

1. Stop the engine immediately and check the engine oil level (see page 53).
2. If the oil is up to the recommended level, restart the engine. If the oil pressure warning system stops after 30 seconds, the system is normal.

NOTE:
If the throttle was closed suddenly after cruising at full throttle, the engine speed may drop below the specified idle speed. This could cause the oil pressure warning system to activate momentarily.

3. If the oil pressure warning system stays activated after 30 seconds, return to the closest boat landing and contact your closest authorized Honda outboard motor dealer.

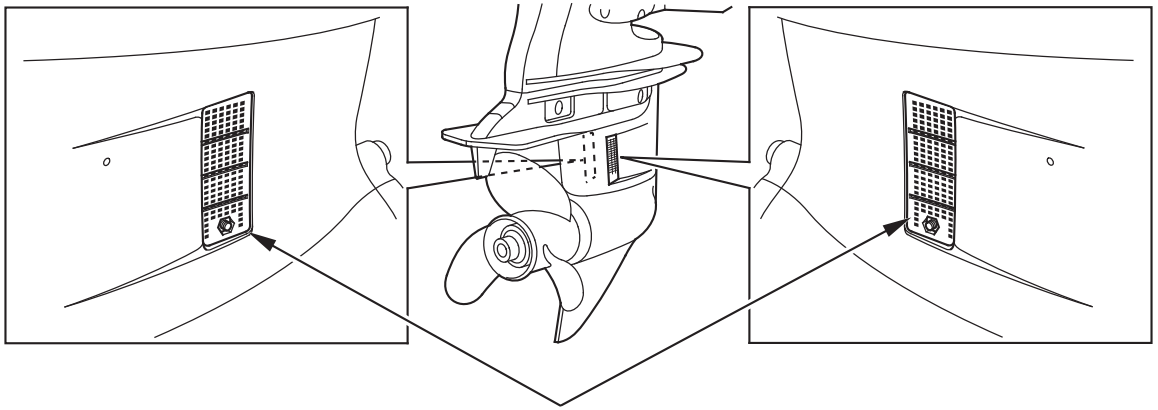
COOLING WATER CHECK HOLE



When the overheat warning system is activated:

1. Return the shift lever or remote control lever to the N (neutral) position immediately. Check to see if water is flowing out of the cooling water check hole.
2. If water is flowing out of the cooling water check hole, continue idling for 30 seconds. If the overheat warning system stops after 30 seconds the system is normal.

NOTE:
If the motor is turned off after running at full throttle, the engine temperature may rise above normal. If the motor is restarted, shortly after being turned off, the overheat warning system could be activated momentarily.



COOLING WATER INTAKE PORT
(each side)

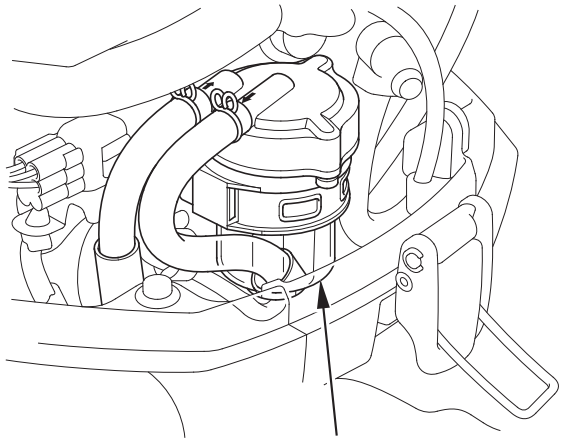
3. If the overheat warning system stays activated, stop the engine. Tilt up the motor and check the water intakes for obstructions. If there are no obstructions at the water intakes, return to the closest boat landing and contact your closest authorized Honda outboard motor dealer.

When the PGM-FI activated:

1. Consult with an authorized Honda outboard motor dealer.

When the ACG warning system is activated.

1. Check the battery (see page 134). If the battery is OK, consult with an authorized Honda outboard motor dealer.



When the water separator buzzer sounds:

1. Check the water separator for water contamination. If water is accumulated, clean them (see page 127).

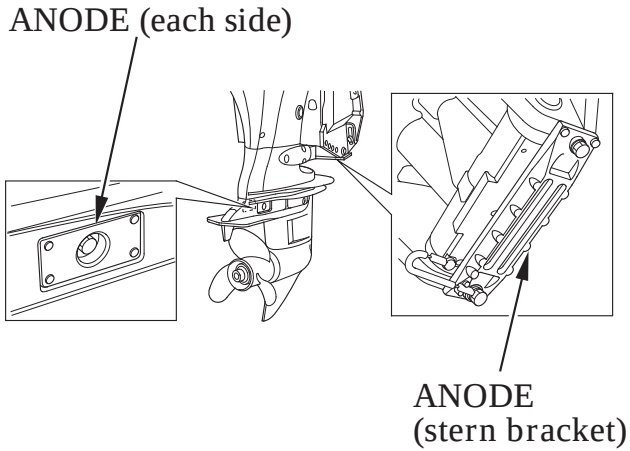
〈Over-rev Limiter〉

This outboard motor is equipped with an engine over-rev limiter which activates when the engine speed increases excessively. The over-rev limiter can be activated while cruising, tilting up the motor, or when ventilation occurs during a sharp turn.

When the over-rev limiter is activated:

1. Reduce the throttle opening immediately and check the trim angle.
2. If the trim angle is correct but the over-rev limiter stays activated, stop the engine, check the condition of the outboard motor, check to see if the correct propeller is installed and check it for damage.
   Correct or service as necessary, by contacting your authorized Honda outboard motor dealer.

〈Anode〉



The anode is a sacrificial material which helps to protect the outboard motor from corrosion.

NOTICE

Painting or coating the anode will lead to rust and corrosion damage to the outboard motor.

There are also 2 small sacrificial anodes in the water passages of the engine block.

Shallow Water Operation

NOTICE

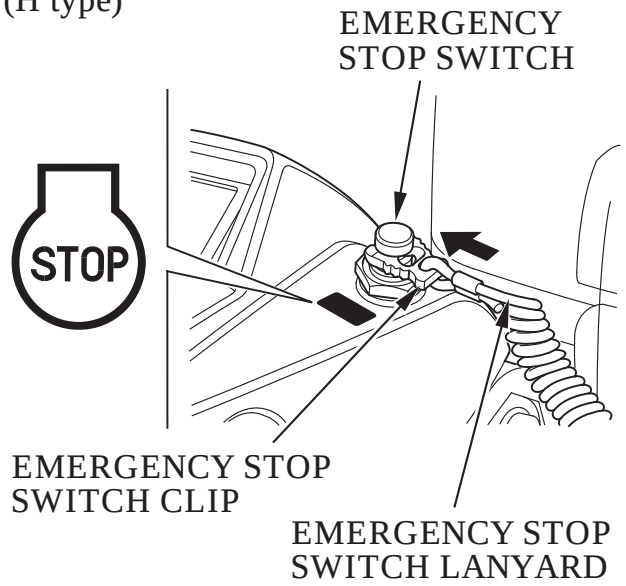
Excessive trim/tilt angle during operation can cause the propeller to raise out of the water and cause propeller ventilation and engine over-revving. Excessive trim/tilt angle can also damage the water pump and overheat the engine.

When operating in shallow water, tilt the motor up to prevent the propeller and gear case from hitting the bottom (see page 96). With the motor tilted up, operate the motor at low speed.

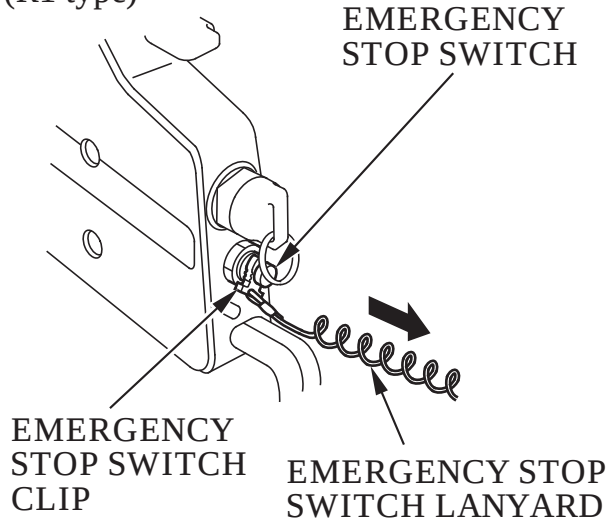
Monitor the cooling water check hole for water discharge. Be sure that the motor is not tilted so high that the water intakes are out of the water.

Emergency Engine Stop

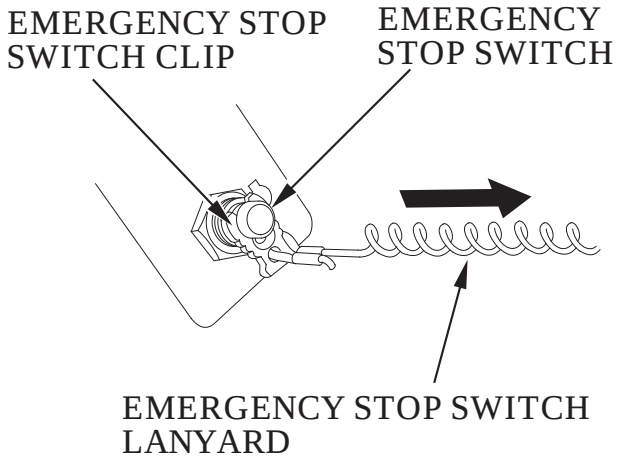
(H type)



(R1 type)



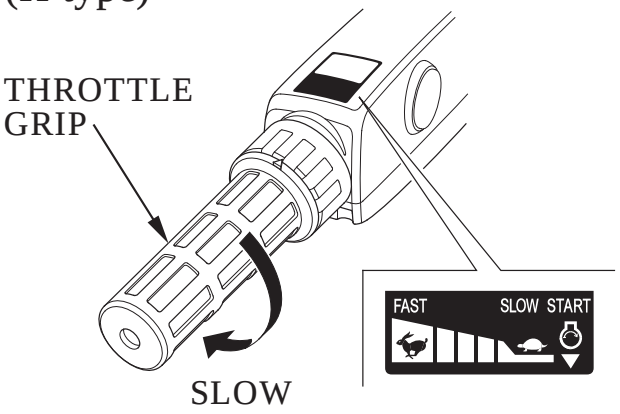
(R2, R3 types)



Pull the lanyard of the emergency stop switch and remove the emergency stop switch clip from the switch; this will stop the engine.

NOTE:
It is a good idea to stop the engine with the emergency stop switch lanyard from time to time to be sure that the emergency stop switch is operating properly.

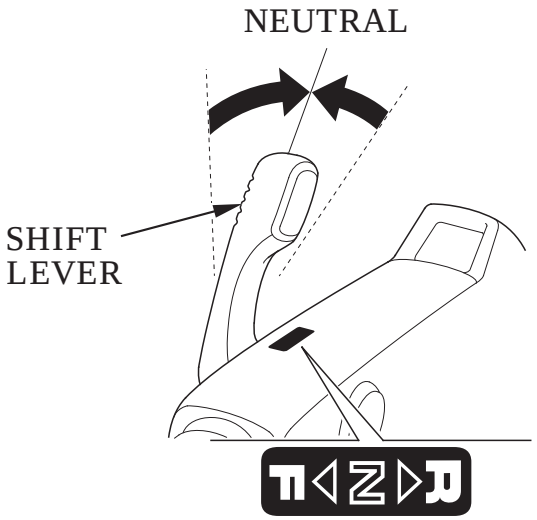
Normal Engine Stop
(H type)



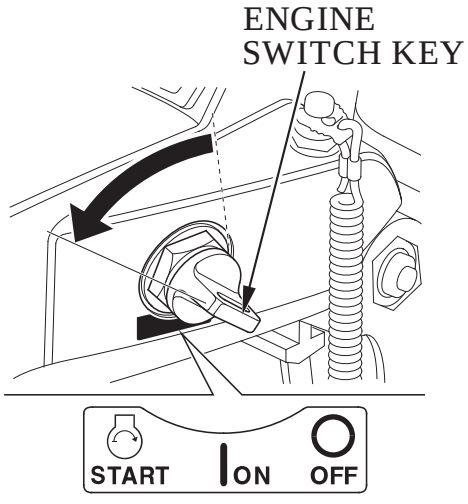
SLOW

1. Turn the throttle grip to SLOW position and move the shift lever to NEUTRAL.

NOTE:
After sailing with the throttle fully open, cool down the engine by running it at the idle speed for a few minutes.



NEUTRAL



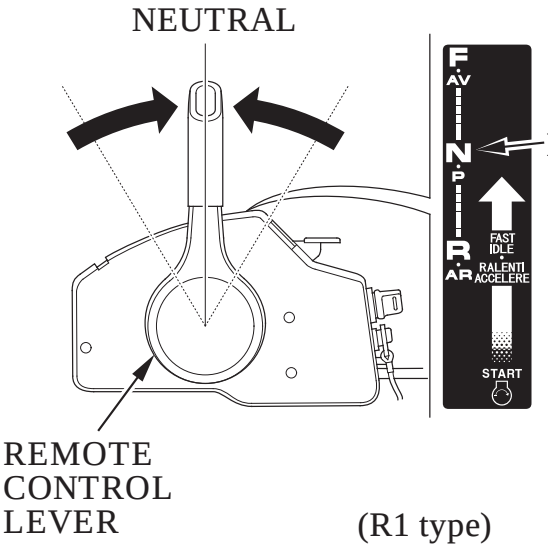
OFF

2. Turn the engine switch key to the OFF position to stop the engine.

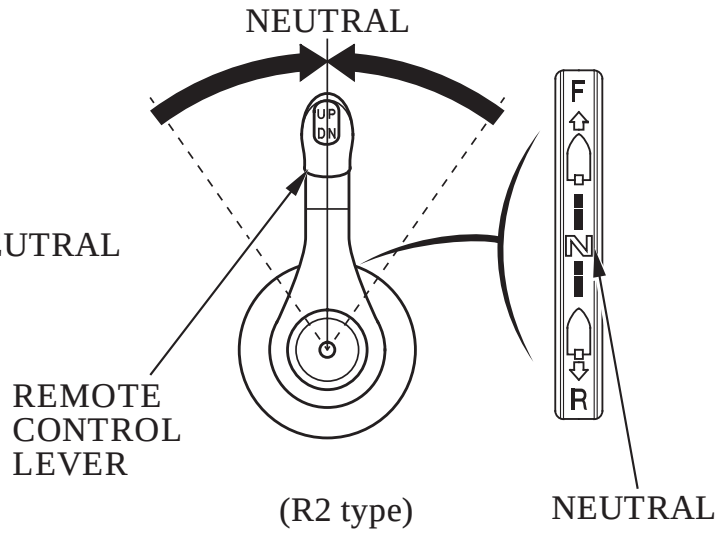
NOTE:
In the event that the engine does not stop when the engine switch is turned to OFF, push the emergency stop switch to stop the engine.

3. Remove the engine switch key and store it.

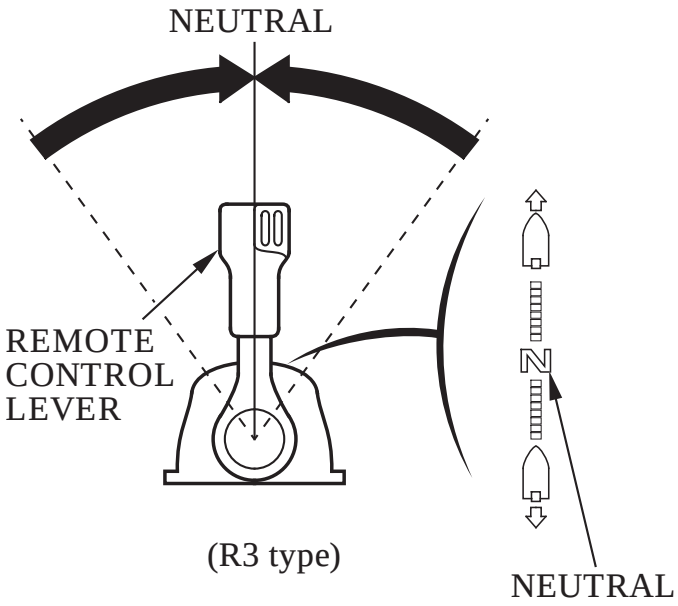
(R type)



(R1 type)



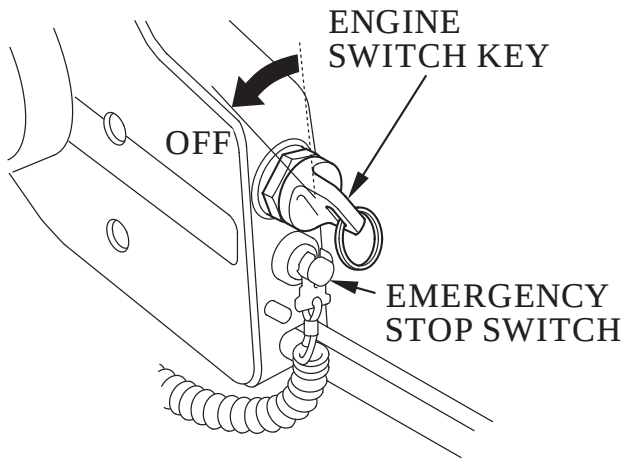
(R2 type)



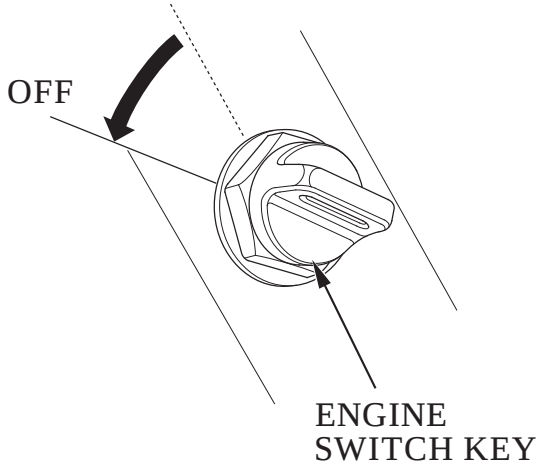
(R3 type)

1. Move the control lever to the NEUTRAL position.

NOTE:
After sailing with the throttle fully open, cool down the engine by running it at the idle speed for a few minutes.



(R1 type)



(R2, R3 types)

2. Turn the engine switch key to the OFF position to stop the engine.

NOTE:
In the event that the engine does not stop when the engine switch is turned to OFF, push the emergency stop switch to stop the engine.

3. Remove the engine switch key and store it.

Fuel Line Disconnection

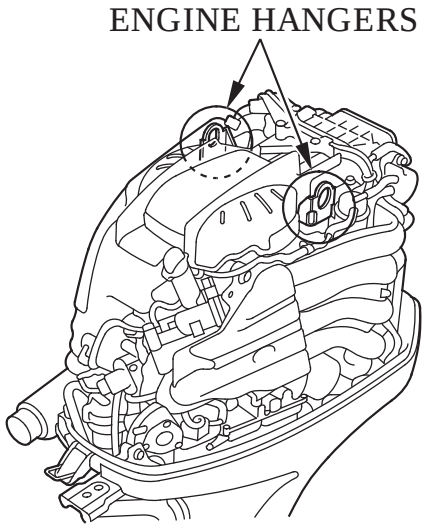
Before transporting the motor, disconnect and remove the fuel line.

⚠WARNING

Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death.

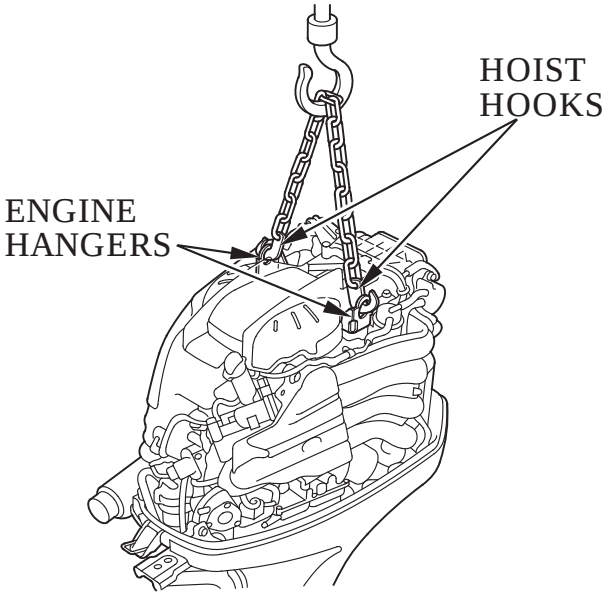
- Be careful not to spill fuel. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before storing or transporting the motor.
- Do not smoke or allow flames or sparks where fuel is drained or stored.

Transporting

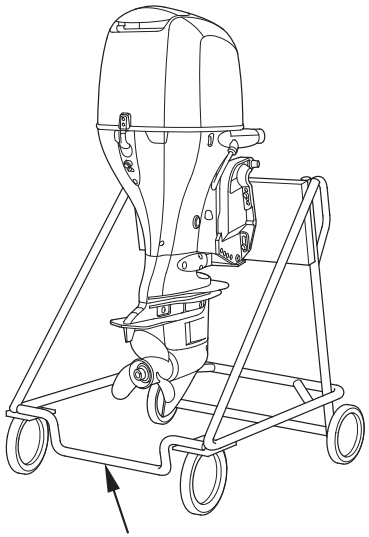


When transporting the outboard motor on a vehicle, perform the following.

1. Remove the engine cover.



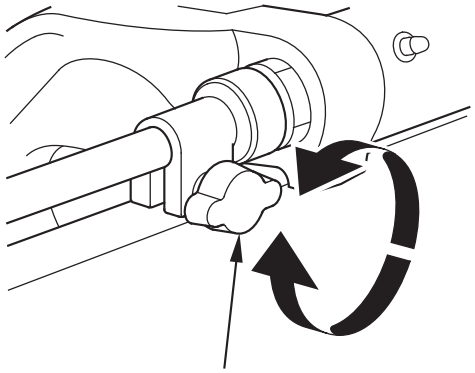
2. Set the hoist hooks against the two engine hangers and hang the outboard motor to remove it from the boat.



OUTBOARD MOTOR STAND

3. Secure the outboard motor on a outboard motor stand with the mounting bolts and nuts.
4. Remove the hoist hook and reinstall the engine cover.

Trailering
(H type)



STEERING FRICTION ADJUSTING KNOB

When trailering or transporting the boat with the motor attached, it is recommended that the motor remain in normal running position with the steering friction adjusting knob tightened securely.

(R type)
When trailering or transporting the boat with the motor attached, it is recommended that the motor remain in normal running position.

NOTICE

Do not trailer or transport the boat with the motor in the tilted position. The boat or motor could be severely damaged if the motor drops.

The motor should be trailered in the normal running position. If there is insufficient road clearance in this position, then trailer the motor in the tilted position using a motor support device such as a transom saver bar, or remove the motor from the boat.

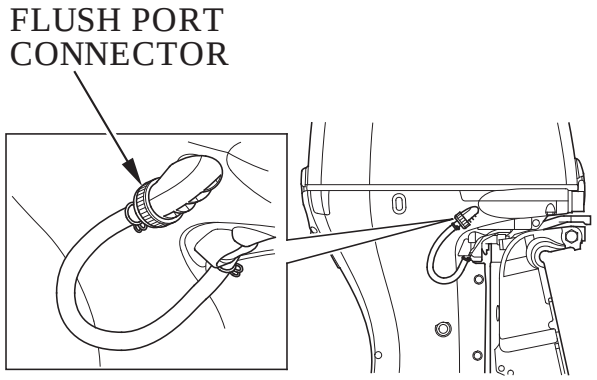
Thoroughly clean and flush the outboard motor with fresh water after operating in dirty water or salt water.

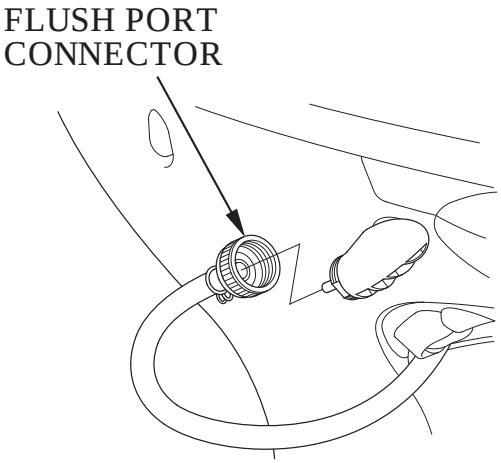
NOTICE

Do not apply water or corrosion inhibitor directly to the electrical components under the engine cover, such as the O2 sensor. If water or corrosion inhibitor penetrates these components, they may be damaged. Before applying a corrosion inhibitor, cover the O2 sensor (and belt, if applicable) with a protective material to prevent damage.

Shut off the engine before performing the cleaning and flushing.

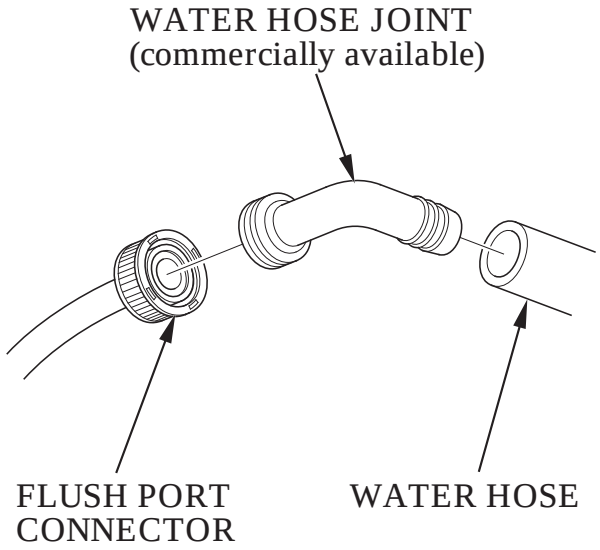
1. Clean and wash the outside of the outboard motor with fresh water.





2. Disconnect the flush port connector.
3. Screw the flush port connector onto the garden hose.
4. Turn on the fresh water supply and flush the outboard motor for at least 10 minutes.
5. After flushing, disconnect the garden hose and reconnect the flush port connector.

- When using the water hose joint:



Periodic maintenance and adjustment are important to keep the motor in the best operating condition. Service and inspect according to the MAINTENANCE SCHEDULE.

⚠WARNING

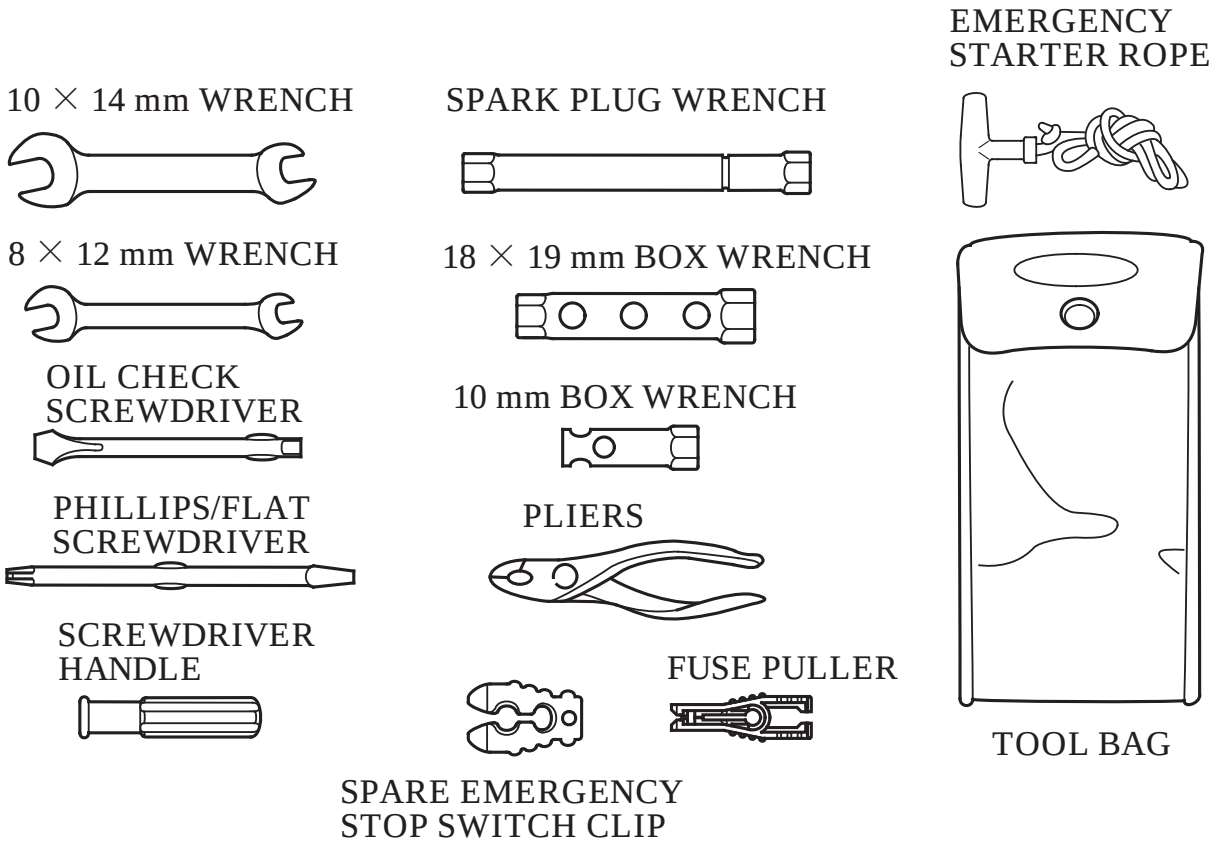
Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. Never run the engine in an enclosed or confined area. Exhaust contains poisonous carbon monoxide gas; exposure can cause loss of consciousness and may lead to death.
Be sure to reinstall the engine cover, if it was removed, before starting the engine. Lock the engine cover fixing lever securely (see page 52).

NOTICE

- If the engine must be run, make sure there is water at least 100 mm (4 in) above the anticavitation plate, otherwise the water pump may not receive sufficient cooling water, and the engine will overheat.
- Use only Honda Genuine parts or their equivalents for maintenance or repair. The use of replacement parts which are not of equivalent quality may damage the motor.

Tool Kit and Emergency Parts

The following tools and emergency starter rope, spare emergency stop switch clip are supplied with the outboard motor for maintenance, adjustment, and emergency repairs.



MAINTENANCE SCHEDULE

ITEM	REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first.	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.	Refer to page
Engine oil	Check level	○						53
	Change			○	○			120
Gear case oil	Change			○ (2)	○ (2)			———
Engine oil filter	Replace					○ (2)		———
Throttle linkage	Check-adjust			○ (2)	○ (2)			———
Idling speed	Check-adjust			○ (2)	○ (2)			———
Valve clearance	Check-adjust					○ (2)		———
Spark plug	Check					○		122
	Clean					○ (2)		———
	Replace						○	122
Propeller and cotter pin	Check	○						57
Anode	Check	○						62
Lubrication	Grease			○ (1)	○ (1)			125, 126
Water separator	Check	○						60

NOTE:

(1) Lubricate more frequently when used in salt water.

(2) These items should be serviced by an authorized Honda outboard motor 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.

ITEM	REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, which comes first.	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.	Refer to page
Fuel filter	Check				○			130
(Low pressure side)	Replace						○	131
Fuel filter	Check				○ (2)			———
(High pressure side)	Replace						○ (2)	———
Fuel tank and tank filter	Clean					○		132
Thermostat	Check					○ (2)		———
Fuel tube	Check	○						62
	Replace	Every 2 years (if necessary) (2)						———
Battery and cable connection	Check level-tightness	○						60, 134
Bolts and Nuts	Check-tightness			○ (2)	○ (2)			———
Breather tube	Check					○ (2)		———
Cooling water passages	Clean		○ (4)					———
Water pump	Check					○ (2)		———
Emergency stop switch	Check	○						———

NOTE:

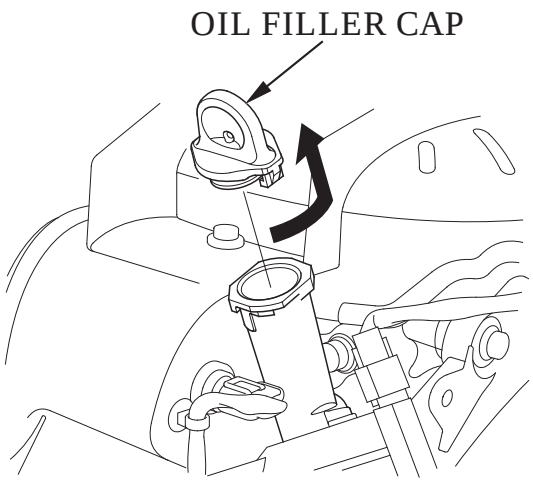
(1) Lubricate more frequently when used in salt water.
(2) These items should be serviced by an authorized Honda outboard motor dealer, unless you have the proper tools and are mechanically proficient. Refer to the Honda Shop Manual for service procedures.
(3) For professional commercial use, log hours 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.

Engine Oil
Insufficient or contaminated engine oil adversely affects the service life of the sliding and moving parts.

Oil change interval:
20 operating hours after the date of purchase or first month for initial replacement, then every 100 operating hours or 6 months.
Oil capacity:
4.2 ℓ (4.4 US qt , 3.7 Imp qt)
…when oil filter is not replaced
4.4 ℓ (4.6 US qt , 3.9 Imp qt)
…when oil filter is replaced

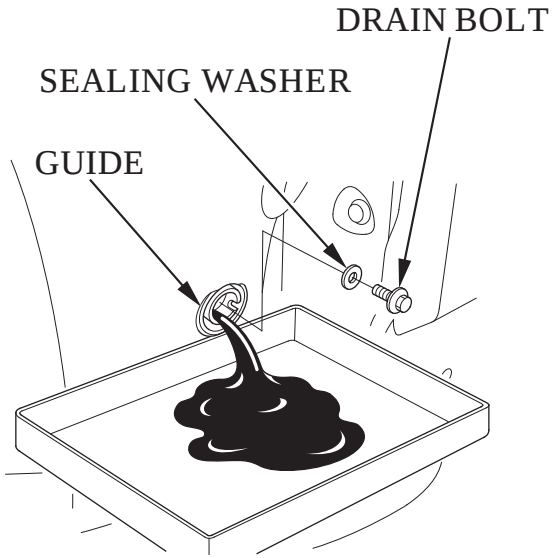
Recommended Oil:
SAE 10W-30 engine oil or equivalent, API Service classification SG, SH or SJ.

〈Engine Oil Replacement〉



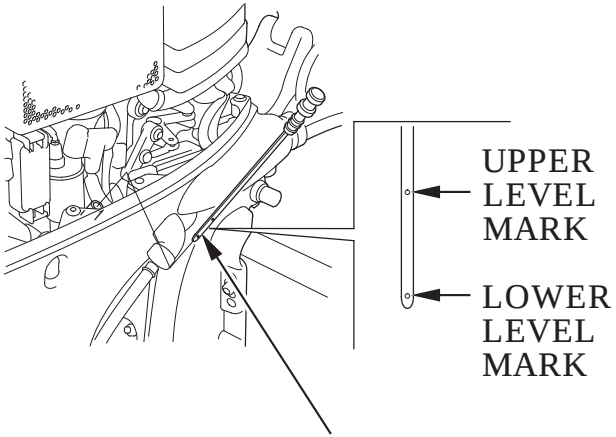
Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Position the outboard motor vertically, and remove the engine cover. Remove the oil filler cap (see page 54).



2. Place a suitable container under the guide.
3. Remove the engine oil drain bolt and sealing washer using the 12 mm wrench and drain the engine oil.

Install a new sealing washer and drain bolt and tighten bolt securely.



OIL LEVEL DIPSTICK

4. Refill to the upper level mark on the oil level dipstick with the recommended oil.
5. Install the dipstick securely.
6. Reinstall the oil filler cap securely. Do not overtighten (see page 54).
7. Install and lock the engine cover securely.

NOTE:
Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station for reclamation. Do not throw it in the trash or pour it on the ground.

Wash your hands with soap and water after handling used oil.

Spark Plugs

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

⚠CAUTION

The spark plug becomes very hot during operation and will remain hot for a while after stopping the engine. Allow the engine to cool before servicing the spark plug.

Check interval:
Every 200 hours or 12 months.

Replace interval:
Every 400 hours or 2 years

Recommended spark plug:
IZFR6K-11E (NGK)

NOTICE

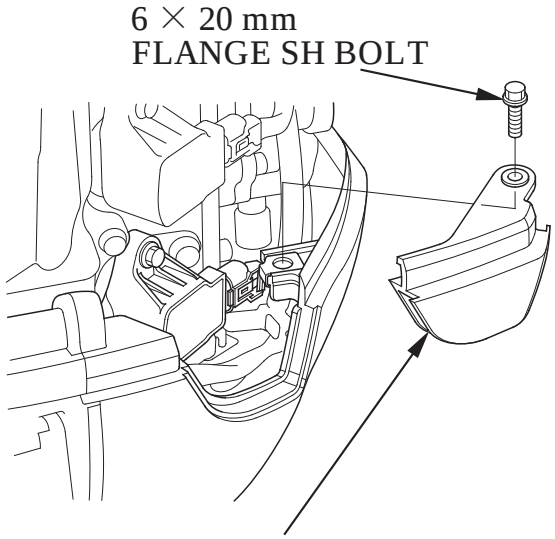
Use only the recommended spark plugs or equivalent. Spark plugs which have an improper heat range may cause engine damage.

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

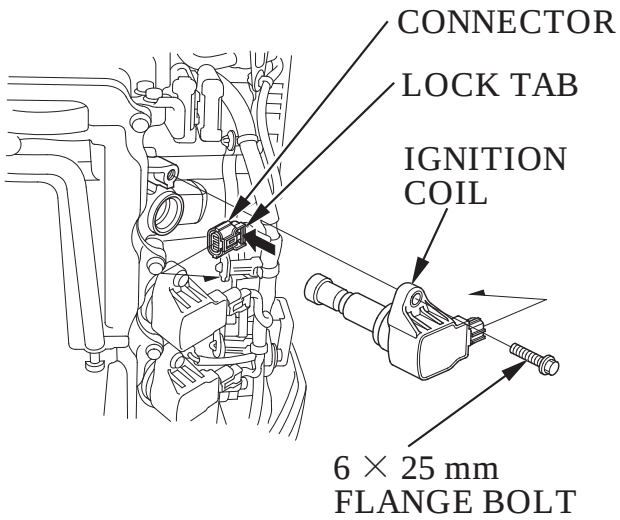
- Do not clean the spark plugs. If an electrode is contaminated with accumulated objects or dirt, replace the spark plug with a new one.
  The cleaning of the iridium spark plugs consult with an authorized Honda outboard motor dealer, unless the owner has the proper tools and is mechanically proficient.
- 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.

〈Inspection and Replacement〉

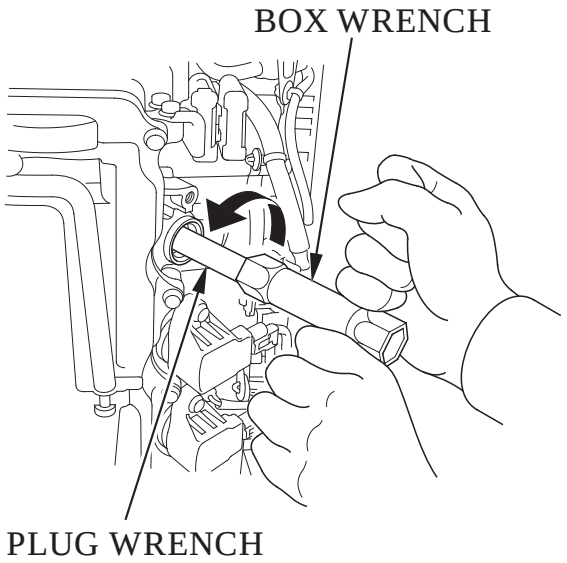
1. Disconnect the battery negative (−) terminal.
2. Unlock and remove the engine cover (see page 52).



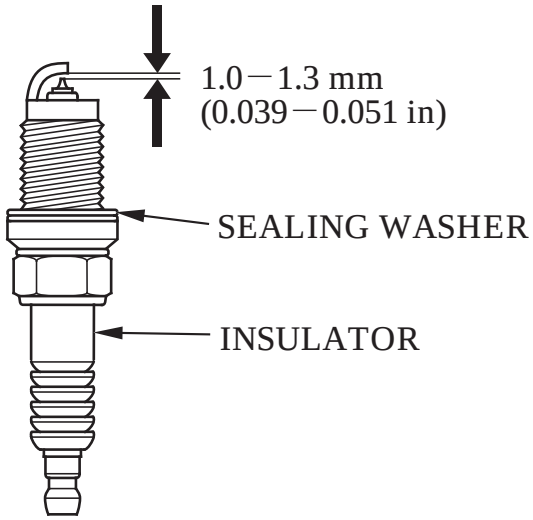
3. Remove the 6 × 20 mm flange SH bolt and remove the plug maintenance cover.



4. Remove the 6 × 25 mm flange bolt.
   Disconnect the connector by pushing the lock tab and remove the ignition coil.



5. Remove the spark plug using the plug wrench, box wrench and the Phillips®/flat-tip screwdrivers (accessories).
6. Check the electrodes for wear, the insulator for cracks and the sealing washer for damage. Replace the spark plug if necessary.



7. Measure the plug gaps with a wire-type feeler gauge.
   The gaps should be 1.0－1.3 mm (0.039－0.051 in). If the gap is out of the specification, replace the plug with a new one. Never try to readjust the gap.
8. Thread the plugs in by the plug wrench to prevent cross threading.
9. After the spark plugs are seated, tighten with a spark plug wrench and box wrench to compress the washers.

NOTE:
If installing new spark plugs, tighten 1/2 turn after the spark plugs seat to compress the washers.
If reinstalling used spark plugs, tighten 1/8－1/4 turn after the spark plugs seat to compress the washers.

NOTICE

The spark plugs must be securely tightened. An improperly tightened plug can become very hot and may cause engine damage.

10. Push the wire connector onto the ignition coil. Make sure it locks in place.
11. Install the ignition coil. Reinstall the bolt.
12. Repeat this procedure for the other three spark plugs.
13. Reinstall the covers. When reinstalling the covers, make sure not to jam the wire harnesses in between the covers and engine case.

Lubrication

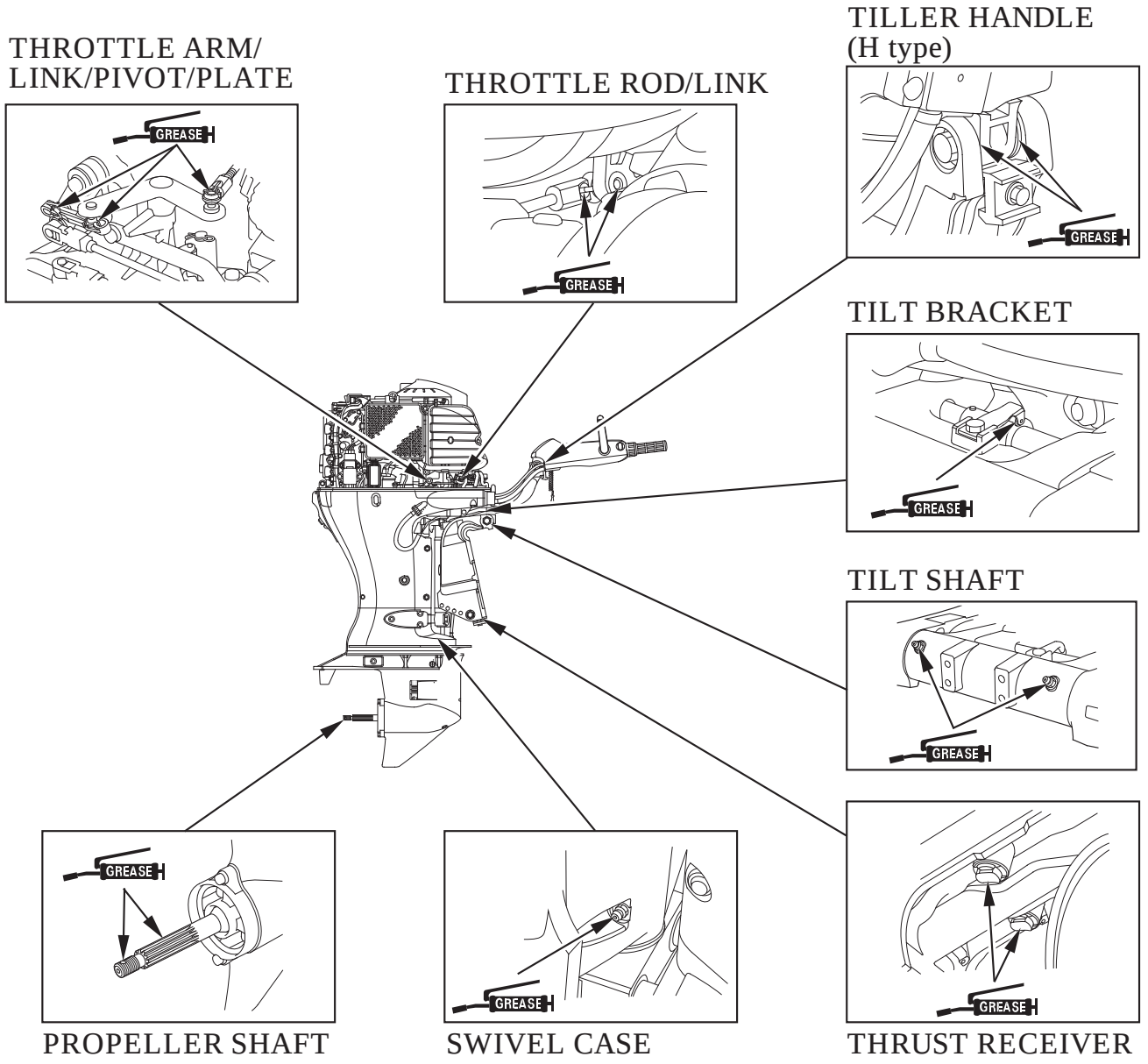
Wipe the outside of the engine with a cloth dipped in clean oil. Apply marine anticorrosion grease to the following parts:

Lubrication interval:

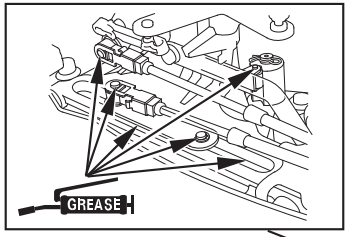
20 hours or a month after the date of purchase for initial lubrication, then every 100 hours or 6 months.

NOTE:

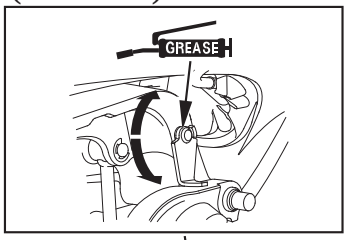
- Apply anticorrosion oil to pivot surfaces where grease cannot penetrate.
- Lubricate more frequently when used in salt water.



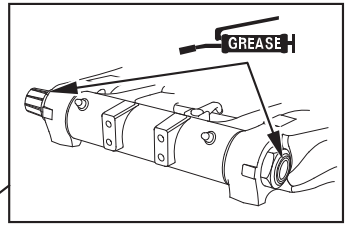
SHIFT LINK BRACKET/
SHIFT PIVOT/SHIFT ARM/
LINK PIN/PIVOT PLATE/
SLIDE PIVOT/
CLICK SPRING ROLLER



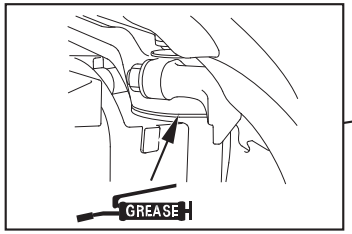
TILT LOCK LEVER
(each side)

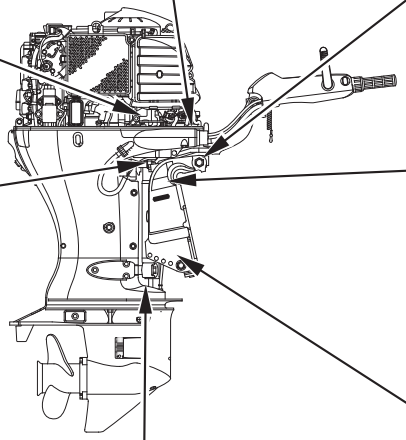


TILT SHAFT THREAD

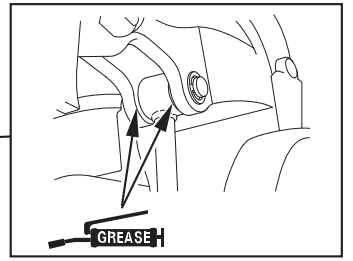


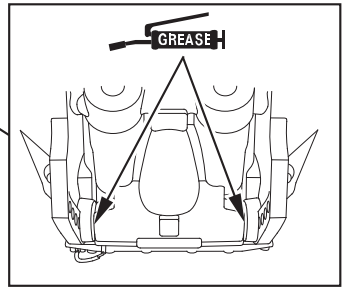
MOUNT FRAME



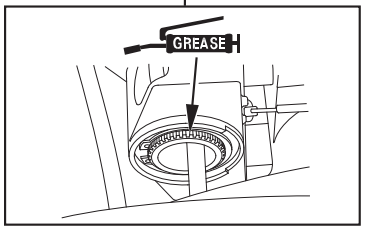


UPPER CYLINDER
PIN/BUSHING



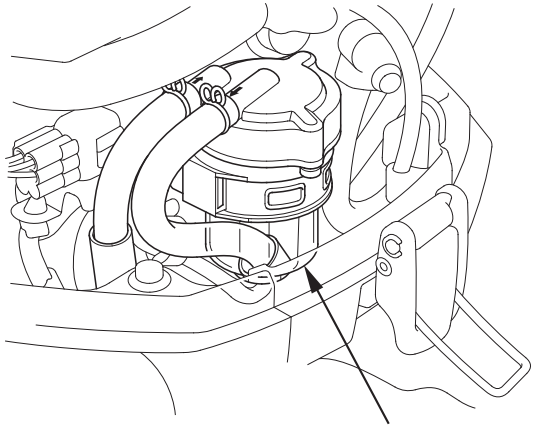


LOWER CYLINDER
BUSHING/COLLAR



SWIVEL SHAFT

Water Separator



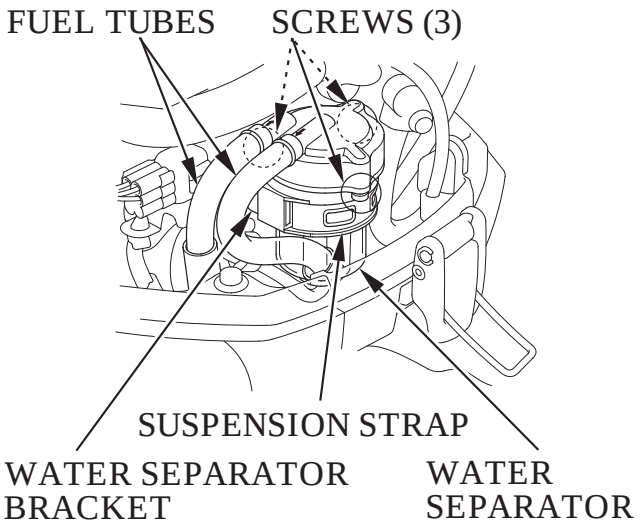
Water separator is located near by the engine cover fixing lever of the boat side. Water accumulation in the water separator can cause loss of power or hard starting. Check the water separator periodically. Clean it or consult with an authorized Honda outboard motor dealer for clean.

⚠WARNING

Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death. Do not smoke or allow flames or sparks in your working area. KEEP OUT OF REACH OF CHILDREN.

- Always work in a well-ventilated area.
- Be sure that any fuel drained from the outboard motor is stored in a safe container.
- Be careful not to spill fuel when cleaning the water separator. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

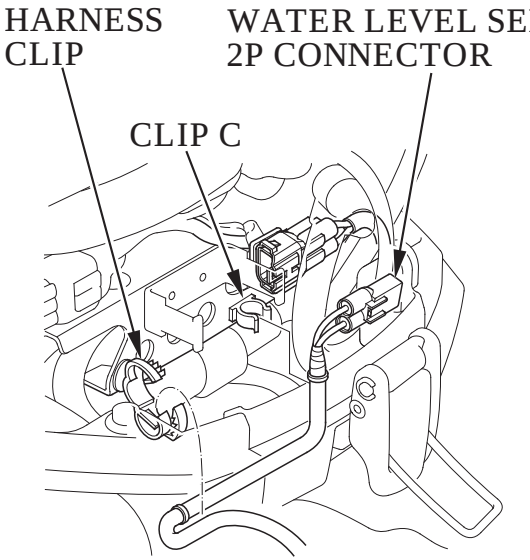
〈Cleaning〉



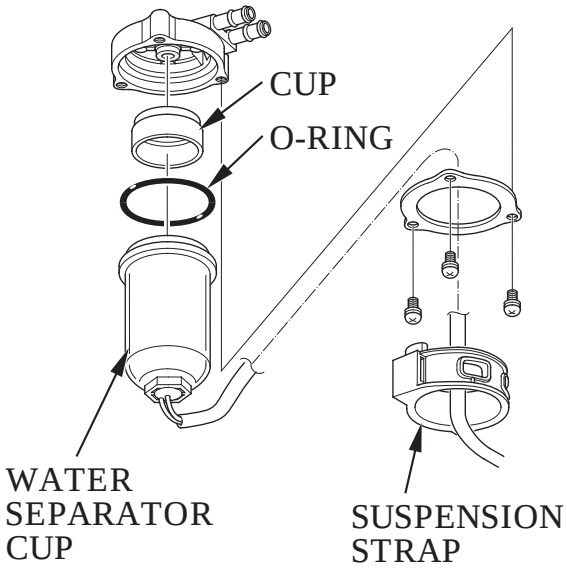
1. Remove the engine cover (see page 52).
2. Remove the suspension strap from the water separator bracket, then remove the strap from the separator assembly.

NOTICE

During removal of the water separator assembly, take care not to damage the wire harness with the water separator bracket.

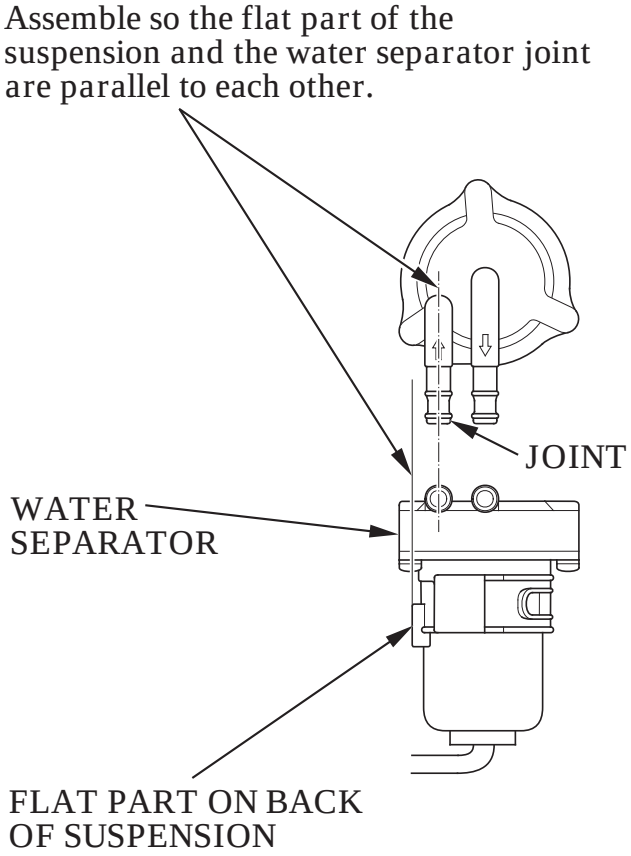


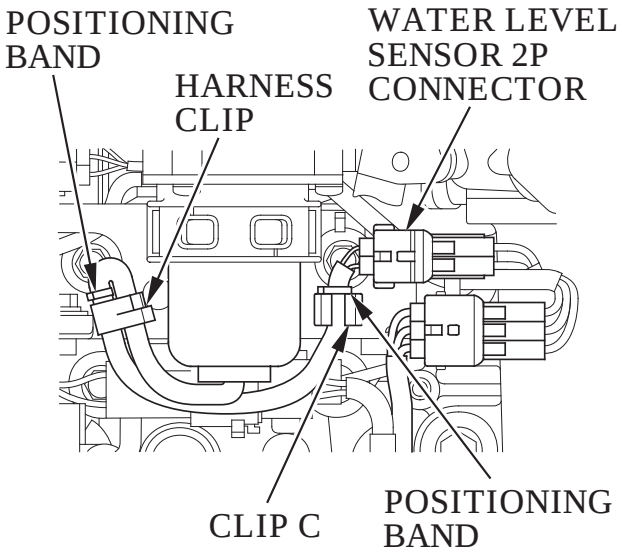
3. Open the harness clip and remove the harness from the clip C, then disconnect the water level sensor 2P connector.
4. Pinch the fuel tubes with tube clips to prevent fuel leakage.
5. Disconnect the fuel tubes from the water separator.



6. Remove the three screws and separate the water separator cup from the body.
7. Thoroughly clean the water separator cup.
8. Reassemble the water separator body and the cup.
   TIGHTENING TORQUE:
   3.4 N·m (0.35 kgf·m, 2.5 lbf·ft)

- Assemble so the flat part on the back of the suspension is parallel to the water separator joint as shown below.

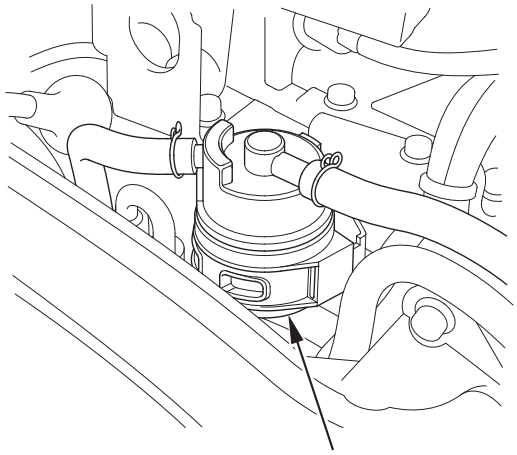




9. Connect the water level sensor 2P connector. Install the harness to the clip C and harness clip.
   Align the positioning bands on the harness with the end of the clip C and harness clip as shown above.
10. Reinstall the water separator in the reverse order of removal.
11. Squeeze and release the priming bulb to fill the vapor separator, and check for leaks.

NOTE:
If the buzzer sounds, water or sediment accumulation is found to be caused by excessive water or sediment accumulated in the water separator cup, inspect the fuel tank. Clean the fuel tank if necessary.

Fuel Filter



FUEL FILTER
(inside strainer cup)

The fuel filter (inside the strainer cup) is located between the fuel pump and the water separator. Water or sediment accumulated in the fuel filter can cause loss of power or hard starting. Check and replace the fuel filter periodically.

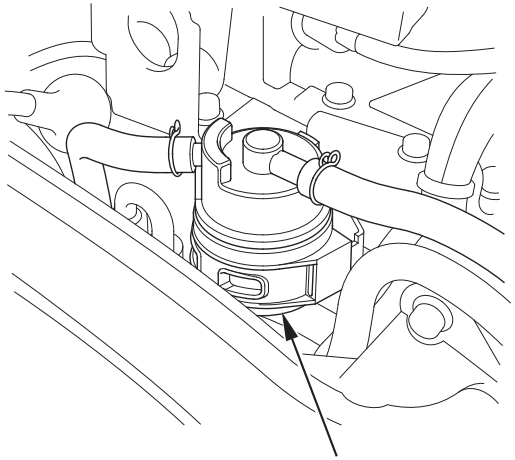
Inspection interval:
Every 100 operating hours or 6 months
Replacement interval:
Every 400 operating hours or 2 years

⚠WARNING

Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death. Do not smoke or allow flames or sparks in your working area. KEEP OUT OF REACH OF CHILDREN.

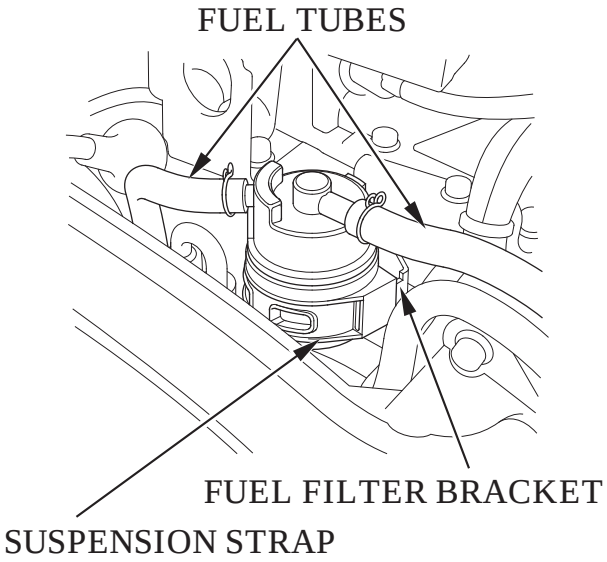
- Always work in a well-ventilated area.
- Be sure that any fuel drained from the outboard motor is stored in a safe container.
- Be careful not to spill fuel when replacing the filter. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

〈Inspection〉



1. Remove the engine cover (see page 52).
2. Looking through the translucent strainer cup, check the fuel filter for water accumulation and clogging.
   If necessary, replace the fuel filter with a new one.

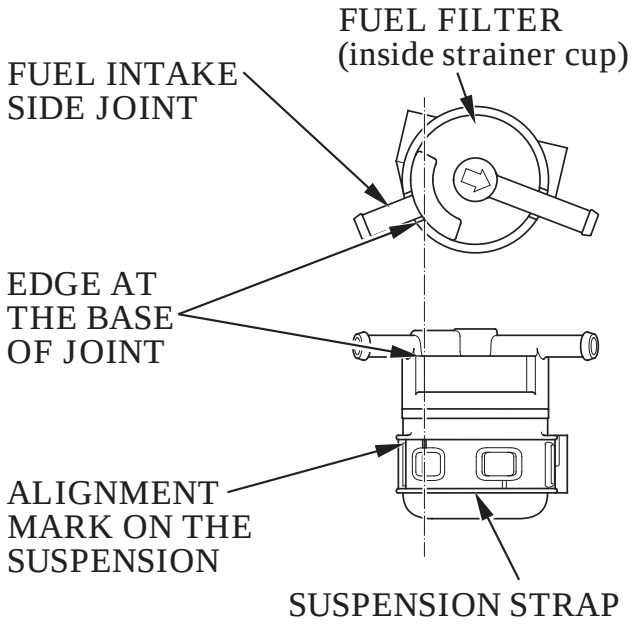
〈Replacement〉



1. Remove the suspension strap from the fuel filter bracket, then remove the strap from the fuel filter assembly.

NOTE:
Before removing the filter, pinch the fuel tubes on each side of filter using tube clips to prevent fuel leakage.

2. Disconnect the fuel tubes from the fuel filter.

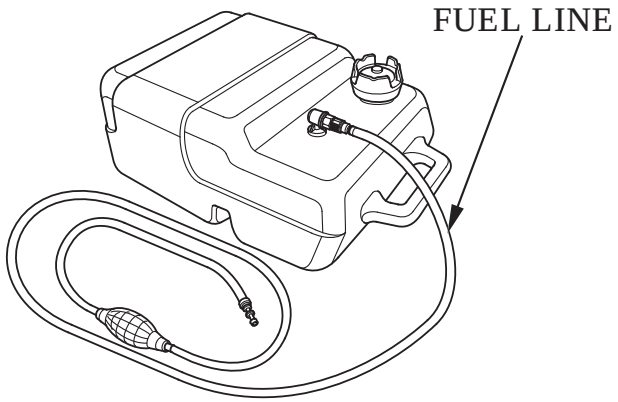


3. Install a new fuel filter in the reverse order of removal.
   Assemble the fuel filter with the strainer cup by aligning the edge at the base of the fuel intake side joint of the fuel filter with the alignment mark on the suspension as shown above.

4. Prime the engine using the priming bulb (see page 65). Check for fuel leaks. Repair any fuel leaks if necessary.

NOTE:
If loss of power or hard starting is found caused by excessive water or sediment accumulated in the fuel filter, inspect the fuel tank. Clean the fuel tank if necessary.

Fuel Tank and Tank Filter (equipped type)



Cleaning interval:
Every year or after every 200 hours of outboard motor operation.

〈Fuel Tank Cleaning〉

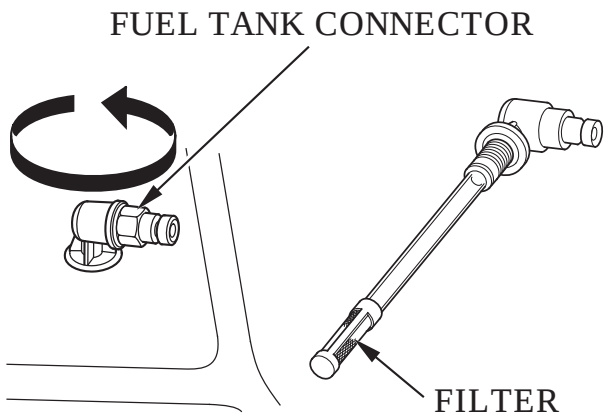
⚠WARNING

Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death. Do not smoke or allow flames or sparks in your working area. KEEP OUT OF REACH OF CHILDREN.

- Always work in a well-ventilated area.
- Be sure that any fuel drained from the fuel tank is stored in a safe container.
- Be careful not to spill fuel when cleaning the tank and filter. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

1. Disconnect the fuel line from fuel tank.
2. Empty the tank, pour in a small quantity of gasoline, and clean the tank thoroughly by shaking it. Drain and dispose of the gasoline properly.

〈Tank Filter Cleaning〉



1. Turn the fuel tank connector counterclockwise and remove the tank filter.
2. Clean the filter with non-flammable solvent. Replace the tank filter if necessary.
3. After cleaning, reinstall the tank filter and tank connector securely.

EMISSION CONTROL SYSTEM

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

Problems that May Affect Outboard Motor Emissions

If you are aware of any of the following symptoms, have the outboard motor inspected and repaired by your authorized Honda Dealer:

1. Hard starting or stalling after starting
2. Rough idle
3. Misfiring or backfiring during acceleration
4. Poor performance (driveability) and poor fuel economy

Battery

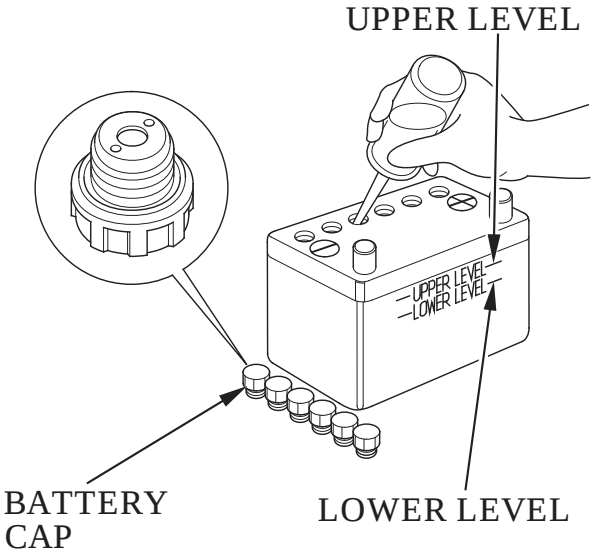
NOTICE

Battery handling differs according to the type of the battery and the instructions described below might not be applicable to the battery of your outboard. Refer to the battery manufacturer's instructions.

⚠WARNING

Batteries produce explosive gases: If ignited, an explosion can cause serious injury or blindness. Provide adequate ventilation when charging.

- CHEMICAL HAZARD: Battery electrolyte contains sulfuric acid. Contact with eyes or skin, even through clothing, may cause severe burns. Wear a faceshield and protective clothing.
- Keep flames and sparks away, and do not smoke in the area. ANTIDOTE: If electrolyte gets into your eyes, flush thoroughly with warm water for at least 15 minutes and call a physician immediately.
- POISON: Electrolyte is poison.
  ANTIDOTE:
  —External: Flush thoroughly with water.
  —Internal: Drink large quantities of water or milk. Follow with milk of magnesia or vegetable oil, and call a physician immediately.
- KEEP OUT OF REACH OF CHILDREN.



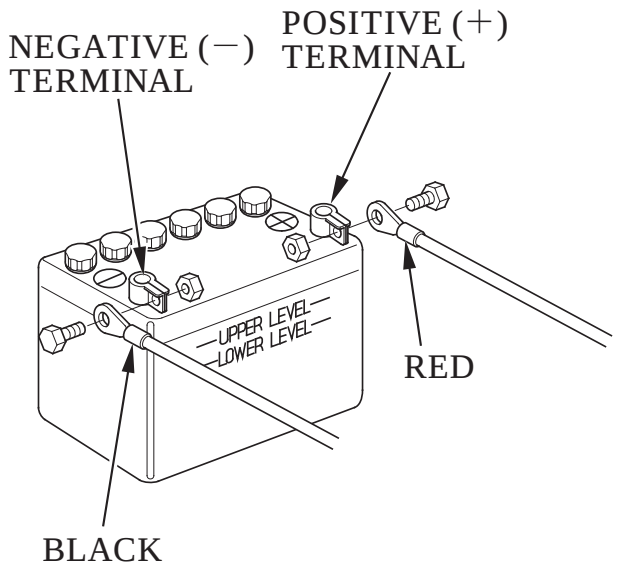
〈Battery Fluid Level〉

Check whether the battery fluid is between the upper and lower levels, and check the vent hole in the battery caps for clogging.

If the battery fluid is near or below the lower level, add the distilled water to the upper level.

〈Battery Cleaning〉

1. Disconnect the battery cable at the battery negative (−) terminal, then at the battery positive (+) terminal.
2. Remove the battery and clean the battery terminals and battery cable terminals with a wire brush or sand paper.
   Clean the battery with a solution of baking soda and warm water, taking care not to get the solution or water in the battery cells. Dry the battery thoroughly.

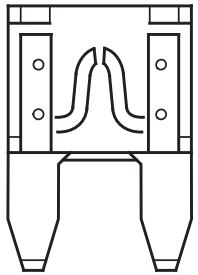


3. Connect the battery positive (+) cable to the battery positive (+) terminal, then the battery negative (−) cable to the battery negative (−) terminal. Tighten the bolts and nuts securely. Coat the battery terminals with grease.

⚠CAUTION

When disconnecting the battery cable, be sure to disconnect at the battery negative (−) terminal first. To connect, connect at the positive (+) terminal first, then at the negative (−) terminal. Never dis/connect the battery cable in the reverse order, or it causes a short circuit when a tool contacts the terminals.

Fuse

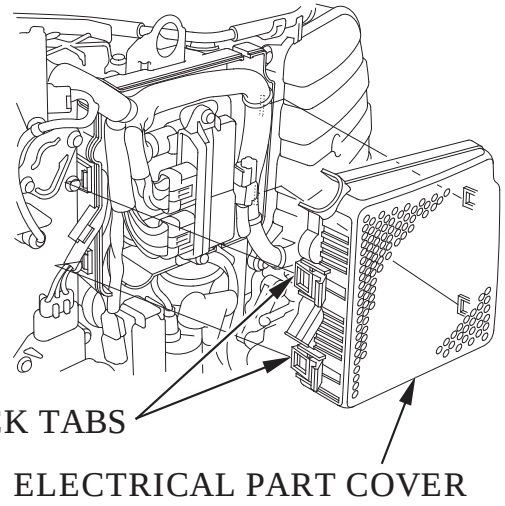


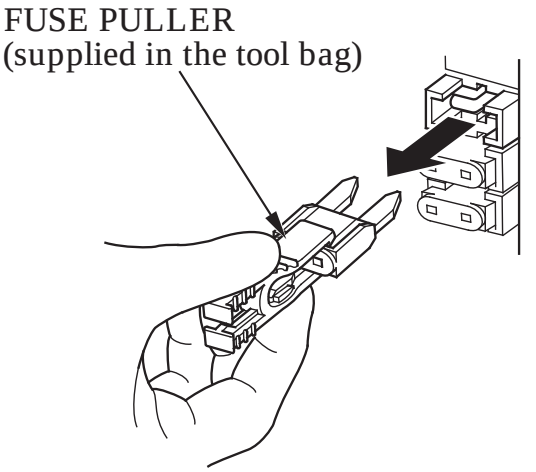
BLOWN FUSE

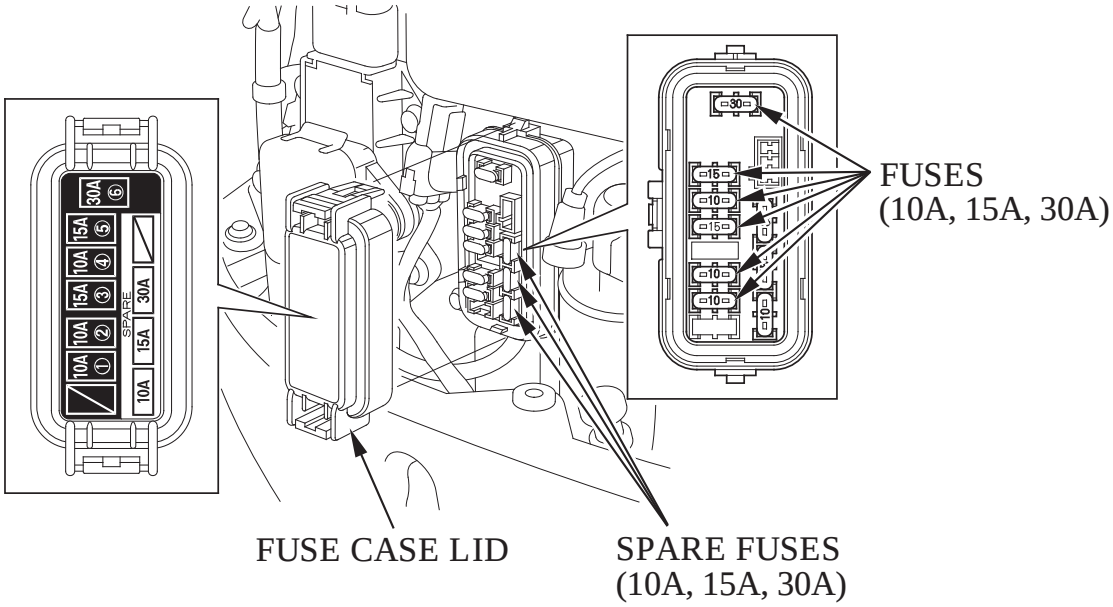
If the fuse blows, running the engine will not charge the battery. Before replacing the fuse, check the current ratings of the electrical accessories and ensure that there are no abnormalities.

⚠WARNING

- Never use a fuse with a different rating from that specified. Serious damage to the electrical system or a fire may result.
- Disconnect the battery cable at the battery negative (−) terminal before replacing the fuse.
  Failure to do so may cause a short circuit.







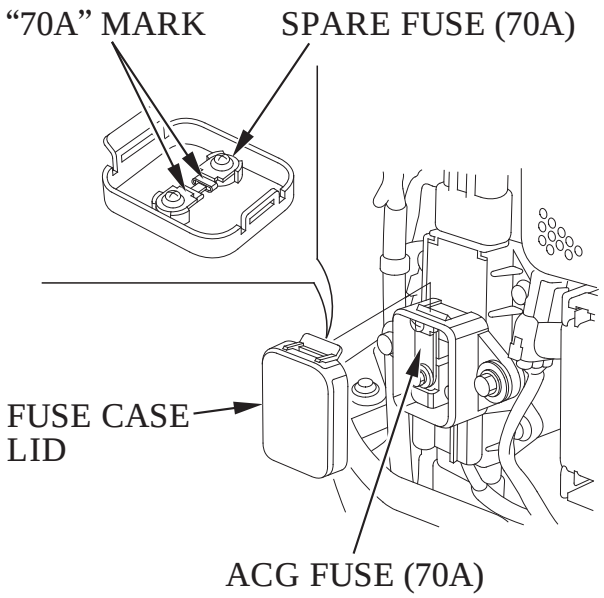
NOTICE

If the fuse is blown, check the cause, then replace the fuse with a spare fuse of the same rated capacity. Unless the cause is found, the fuse may blow again.

〈Replacement〉
1. Stop the engine.
2. Remove the engine cover.
3. Remove the electrical part cover.
4. Remove the fuse case lid and pull the old fuse out of the clip with the fuse puller supplied in the tool bag.
5. Push a new fuse into the clips.

DESIGNATED FUSE:
10A, 15A, 30A

ACG Fuse



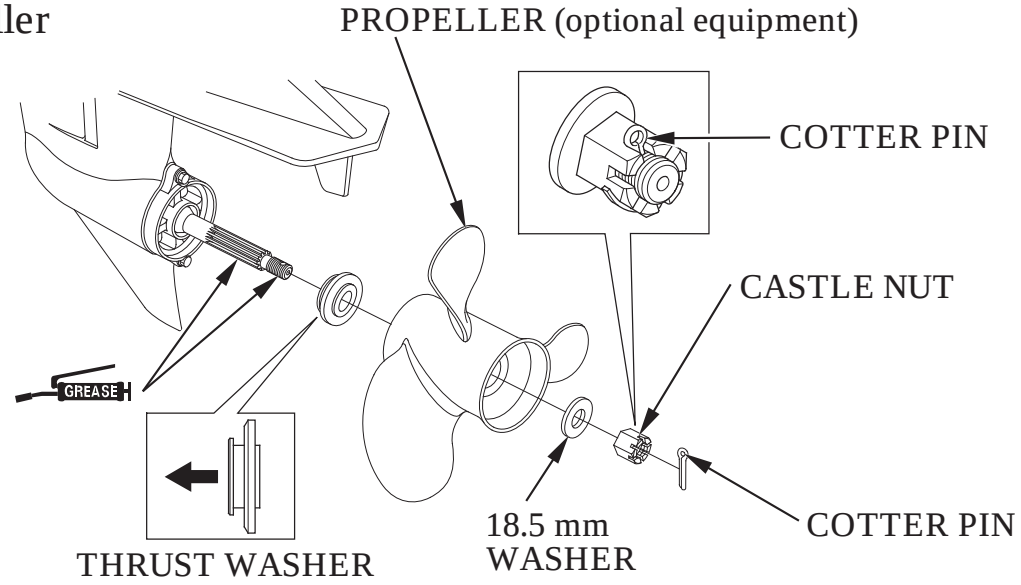
NOTICE

Disconnect the battery cable at the battery terminal before checking or replacing the ACG fuse.

〈Replacement〉
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 in set as a spare fuse on the reverse side of the fuse case lid, set the fuse so that you can see the "70A" mark on it.
1. Stop the engine.
2. Remove the engine cover.
3. Remove the electrical part cover.
4. Remove the fuse case lid.
5. Remove the old fuse by removing two 5 mm screws.
6. Install a new fuse with "70A" mark downward.
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.

DESIGNATED FUSE:
70A

Propeller



If the propeller is damaged by striking a rock, or other obstacle, replace the propeller as follows.

⚠WARNING

- When replacing, remove the emergency stop switch clip to prevent an accidental startup of the engine.
- The propeller is thin and sharp. To protect your hands, wear the heavy gloves during replacement.

Replacement

1. Remove the cotter pin then remove the 18 mm castle nut, washer, propeller and thrust washer.
2. Install the new propeller in the reverse sequence to removal.
3. Tighten the castle nut with your hand first until the propeller has no play. Then, tighten the castle nut again with a tool until the groove in the castle nut aligns with the cotter pin hole. (Note that this tool is not included in the tools that come together with the outboard motor.)

   CASTLE NUT
   TIGHTENING TORQUE:
   1 N·m (0.1 kgf·m, 0.74 lbf·ft)
   UPPER LIMIT OF TORQUE:
   44 N·m (4.5 kgf·m, 33 lbf·ft)

4. Be sure to replace the cotter pin with a new one.

NOTE:

- 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.

Submerged Motor

A submerged motor must be serviced immediately after it is recovered from the water in order to minimize corrosion.
If there is a Honda outboard motor dealer nearby, take the motor immediately to the dealer. If you are far from a dealer, proceed as follows:

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

NOTICE

If the motor 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 motor until it has been repaired.

2. Drain the vapor separator as described on page 141.
3. Change the engine oil (see page 120).
4. Remove the spark plugs (see page 122). Operate the starter to expel water from the engine's cylinder.
5. Pour a teaspoon of engine oil into each spark plug hole, then pull the emergency starter rope several times to lubricate the inside of the cylinders.
   Reinstall the spark plugs.
6. Install the engine cover and lock the fixing lever securely (see page 52).
7. Attempt to start the engine.
   - If the engine fails to start, remove the spark plugs, clean and dry the electrodes, then reinstall the spark plugs and attempt to start the engine again.
   - If there was water in the engine crankcase, or the used engine oil showed signs of water contamination, then a second engine oil change should be performed after running the engine for 1/2 hour.
   - If the engine starts, and no mechanical damage is evident, continue to run the engine for 1/2 hour or longer (be sure the water level is at least 100 mm (4 in) above the anticavitation plate).
8. As soon as possible, take the motor to a Honda outboard motor dealer for inspection and service.

For longer service life of the outboard motor, have your outboard motor serviced by an authorized Honda outboard motor dealer before storage. However, the following procedures can be performed by you, the owner, with a minimum of tools.

NOTE:
Gasoline spoils very quickly depending on factors such as light exposure, temperature and time.
In worst cases, gasoline can be contaminated within 30 days.
Using contaminated gasoline can seriously damage the engine (fuel system clogged, valve stuck).
Such damage due to spoiled fuel is disallowed from coverage by the warranty.
To avoid this please strictly follow these recommendations:

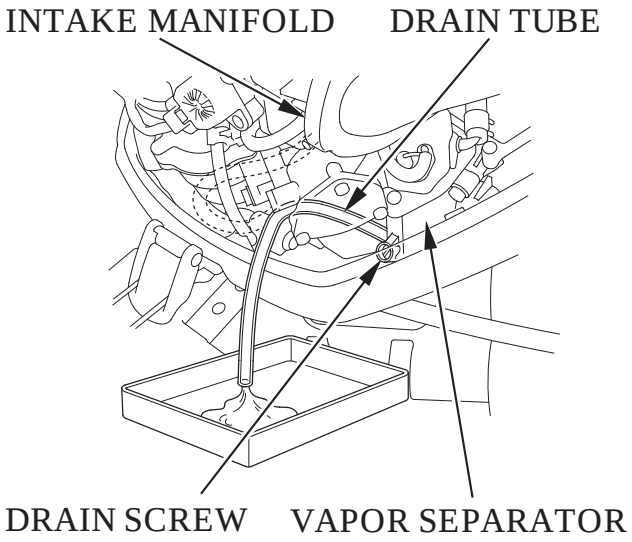
- Only use specified gasoline (see page 55).
- Use fresh and clean gasoline.
- To slow deterioration, keep gasoline in a certified fuel container.
- If long storage (more than 30 days) is foreseen, drain fuel tank and vapor separator.

Vapor Separator Draining

⚠WARNING

Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death. Do not smoke or allow flames or sparks in your working area. KEEP OUT OF REACH OF CHILDREN.

- Be careful not to spill fuel. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before storing or transporting the motor.
- Do not smoke or allow flames or sparks where fuel is drained or stored.



1. Remove the engine cover.
2. Release the drain tube from the projection of the intake manifold and bring the end of the drain tube out of the under cover.
3. Loosen the vapor separator drain screw.
4. Tilt up the outboard motor.
5. When the gasoline starts to flow out of the drain tube, tilt up the outboard motor and hold it in the position until the gasoline stops flowing. After draining the gasoline completely, return the outboard motor to the horizontal position.
   Catch the draining gasoline in a suitable container.
6. After draining, tighten the drain screw and secure the drain tube to the projection of the intake manifold.

Battery Storage

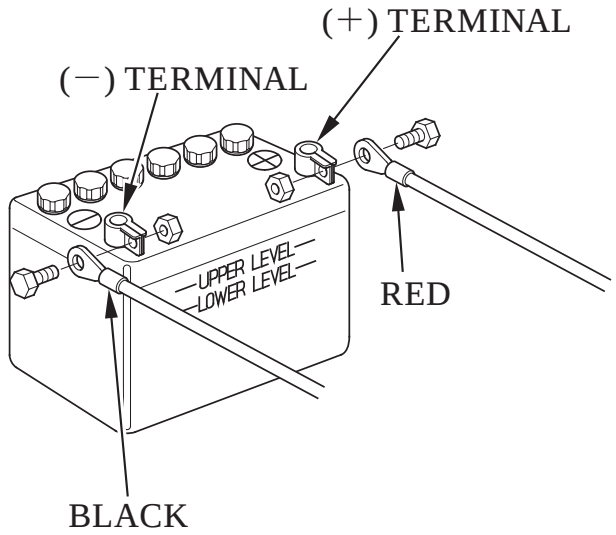
NOTICE

Battery handling differs according to the type of the battery and the instructions described below might not be applicable to the battery of your outboard. Refer to the battery manufacturer's instructions.

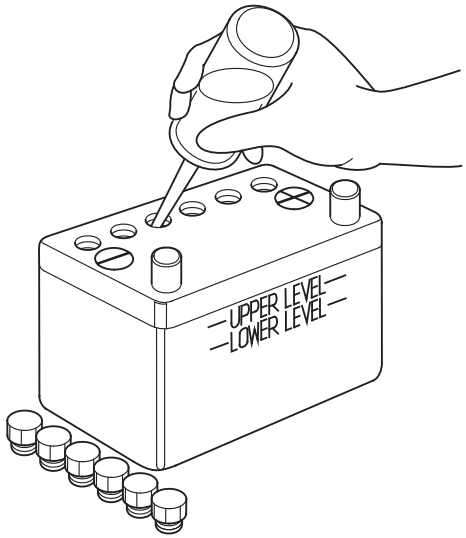
⚠WARNING

Batteries produce explosive gases: If ignited, an explosion can cause serious injury or blindness. Provide adequate ventilation when charging.

- CHEMICAL HAZARD: Battery electrolyte contains sulfuric acid. Contact with eyes or skin, even through clothing, may cause severe burns. Wear a faceshield and protective clothing.
- Keep flames and sparks away, and do not smoke in the area. ANTIDOTE: If electrolyte gets into your eyes, flush thoroughly with warm water for at least 15 minutes and call a physician immediately.
- POISON: Electrolyte is poison.
  ANTIDOTE
  —External: Flush thoroughly with water.
  —Internal: Drink large quantities of water or milk. Follow with milk of magnesia or vegetable oil, and call a physician immediately.
- KEEP OUT OF REACH OF CHILDREN.

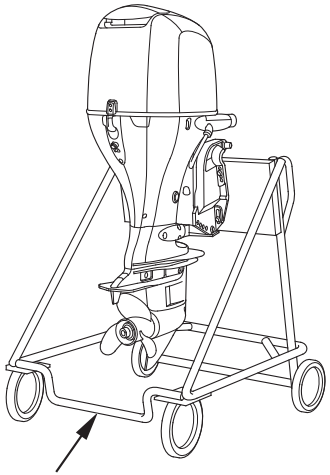


1. Disconnect the battery cable at the battery negative (−) terminal, then at the battery positive (+) terminal.
2. Remove the battery and clean the battery terminals and battery cable terminals with a wire brush or sand paper.
   Clean the battery with a solution of baking soda and warm water, taking care not to get the solution of water in the battery cells. Dry the battery thoroughly.



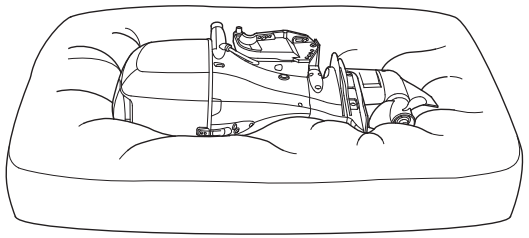
3. Fill the battery with distilled water to the upper level line. Never overfill the battery.
4. Store the battery on a level surface in a cool, dry, well ventilated place out of direct sunlight.
5. Once a month, check the specific gravity of the electrolyte and recharge as required to prolong battery life.

Outboard Motor Position



OUTBOARD MOTOR STAND

Transport and store the motor either vertically, as shown above. Attach the stern bracket to stand and secure the motor with bolts and nuts. Store the outboard motor in a well-ventilated area free from direct sunlight and humidity.



(Port side turned down as shown.)

⚠CAUTION

Do not place the outboard motor on its side during a prolonged period of storage. If you are obliged to place the outboard motor on its side, drain the engine oil, protect the outboard motor by wrapping it with the urethane material or the blanket as shown.

WARNING SYSTEM COMES ON

SYMPTOM	POSSIBLE CAUSE	REMEDY
Overheat warning system comes on: • Overheat indicator comes on. • Overheat warning buzzer sounds. • Engine speed decreases and stops at last. • Engine speed cannot be increased by opening the throttle. • Engine will stop in 20 seconds after engine speed is limited.	Cooling water intake port clogged.	Clean the cooling water intake port.
	Spark plugs have improper heat range.	Replace the spark plugs (see page 122).
	• Faulty water pump. • Thermostat clogged. • Faulty thermostat. • Cooling water passage clogged. • Exhaust gas invades cooling system.	Consult with an authorized Honda outboard motor dealer.
Oil pressure warning system comes on: • Oil pressure indicator does not come on. • Oil pressure warning buzzer sounds. • Engine speed decreases. • Engine speed cannot be increased by opening the throttle.	Shortage of engine oil	Add engine oil to the specified level (see page 53).
	Improper engine oil is used.	Change the engine oil (see page 120).

SYMPTOM	POSSIBLE CAUSE	REMEDY
Water separator warning system comes on: • Water separator warning buzzer sounds.	Water is accumulated in the water separator.	Clean the water separator (see page 127). Check the fuel tank and fuel line for water accumulation. If the buzzer sounds again, consult with an authorized Honda outboard motor dealer.
PGM-FI warning system comes on: • PGM-FI indicator comes on. • PGM-FI warning buzzer sounds intermittently.	PGM-FI warning system is faulty.	Consult with an authorized Honda outboard motor dealer.
ACG warning system comes on: • ACG indicator comes on. • ACG warning buzzer sounds intermittently.	Battery voltage is too high or low.	Check the battery (see page 134).
	Faulty ACG.	Consult with an authorized Honda outboard motor dealer.

15. SPECIFICATIONS

MODEL	BF75D		
Description Code	BBAJ		
Type	LHT	LRT	XRT
Overall length	904 mm (35.6 in)	746 mm (29.4 in)	
Overall width	646 mm (25.4 in)	449 mm (17.7 in)	
Overall height	1,566 mm (61.7 in)		1,693 mm (66.7 in)
Transom height (when Transom angle is 12°)	537 mm (21.1 in)		664 mm (26.1 in)
Dry weight *	171 kg (377 lbs)	165 kg (364 lbs)	171 kg (377 lbs)
Rated power	55.2 kW (75 PS)		
Full throttle range	5,000－6,000 min^{-1} (rpm)		
Engine type	4 stroke OHC in-line 4-cylinder		
Displacement	1,496 cm^3 (91.3 cu-in)		
Spark plug gap	1.0－1.3 mm (0.039－0.051 in)		
Remote control steering system	———	Motor-mounted, remote control	
Starter system	Electric starter		
Ignition system	Full transistor battery		
Lubrication system	Trochoid pump pressure lubrication		

Specified oil	Engine: API standard SG, SH, SJ SAE 10W-30 Gear case: API standard GL-4 SAE 90 outboard motor gear oil
Oil capacity	Engine: Without oil filter replacement: 4.2 ℓ (4.4 US qt , 3.7 Imp qt) With oil filter replacement: 4.4 ℓ (4.6 US qt , 3.9 Imp qt) Gear case: 0.95 ℓ (1.00 US qt , 0.84 Imp qt)
D.C. output	12 V－35 A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	IZFR6K-11E (NGK)
Fuel pump	Electric powered mechanical
Fuel	Automotive unleaded gasoline (91 research octane, 86 pump octane, or higher)
Gear shift	Dog type: Forward－Neutral－Reverse
Steering angle	30° right and left
Trim angle	－4° to 16° (when Transom angle is 12°)
Tilt up angle	68° (when Transom angle is 12°)
Transom angle	8°, 12°, 16°, 20°, 24°

* Without battery cable, with propeller
Honda outboards are power rated in accordance with ISO8665 (propeller shaft output).

MODEL	BF90D		
Description Code	BBCJ		
Type	LHT	LRT	XRT
Overall length	904 mm (35.6 in)	746 mm (29.4 in)	
Overall width	646 mm (25.4 in)	449 mm (17.7 in)	
Overall height	1,566 mm (61.7 in)		1,693 mm (66.7 in)
Transom height (when Transom angle is 12°)	537 mm (21.1 in)		664 mm (26.1 in)
Dry weight *	172 kg (379 lbs)	166 kg (366 lbs)	172 kg (379 lbs)
Rated power	66.2 kW (90 PS)		
Full throttle range	5,300－6,300 min^{-1} (rpm)		
Engine type	4 stroke OHC VTEC in-line 4-cylinder		
Displacement	1,496 cm^3 (91.3 cu-in)		
Spark plug gap	1.0－1.3 mm (0.039－0.051 in)		
Remote control steering system	———	Motor-mounted, remote control	
Starter system	Electric starter		
Ignition system	Full transistor battery		
Lubrication system	Trochoid pump pressure lubrication		

Specified oil	Engine: API standard SG, SH, SJ SAE 10W-30 Gear case: API standard GL-4 SAE 90 outboard motor gear oil
Oil capacity	Engine: Without oil filter replacement: 4.2 ℓ (4.4 US qt , 3.7 Imp qt) With oil filter replacement: 4.4 ℓ (4.6 US qt , 3.9 Imp qt) Gear case: 0.95 ℓ (1.00 US qt , 0.84 Imp qt)
D.C. output	12 V－35 A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	IZFR6K-11E (NGK)
Fuel pump	Electric powered mechanical
Fuel	Automotive unleaded gasoline (91 research octane, 86 pump octane, or higher)
Gear shift	Dog type: Forward－Neutral－Reverse
Steering angle	30° right and left
Trim angle	－4° to 16° (when Transom angle is 12°)
Tilt up angle	68° (when Transom angle is 12°)
Transom angle	8°, 12°, 16°, 20°, 24°

* Without battery cable, with propeller
Honda outboards are power rated in accordance with ISO8665 (propeller shaft output).

Noise and Vibration

MODELS	BF75D		BF90D	
CONTROL SYSTEM	H	R	H	R
Sound Pressure Level At Operator's Ear (98/37/EC, ICOMIA 39-94)	82dB	75dB	85dB	80dB
Vibration (98/37/EC, ICOMIA 38-94)	Not Exceed 2.5 (m/s^2) rms	Not Exceed 2.5 (m/s^2) rms	Not Exceed 2.5 (m/s^2) rms	Not Exceed 2.5 (m/s^2) rms

Reference to: ICOMIA Standard: as it specifies the engine operating conditions and measurement conditions.

16. MAJOR Honda DISTRIBUTOR ADDRESSES IN EUROPE

For further information, please contact Honda Customer Information Centre at the following address or telephone number:

AUSTRIA
Honda Austria Gesellschaft Mbh.
Hondastraße 1
2351 Wiener Neudorf
Tel. : +43 (0)2236 690 0
Fax : +43 (0)2236 690 480
http://www.honda.at

BELGIUM
Honda Motor Europe (North)
Doornveld 180-184
1731 Zellik
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Fax : +32 2620 10 01
http://www.honda.be
✉ BH_PE@HONDA-EU.COM

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Kirov Ltd.
49 Tsaritsa Yoana Blvd
1324 Sofia
Tel. : +359 2 93 30 892
Fax : +359 2 93 30 814
http://www.kirov.net
✉ honda@kirov.net

CANARY ISLANDS
Automocion Canarias, S.A.
Carretera General del Sur, KM. 8,8
38107 Santa Cruz de Tenerife
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Fax : +34 (922) 618 042
http://www.aucasa.com
✉ ventas@aucasa.com
✉ taller@aucasa.com

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22211 Vodice
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Fax : +385 22 44 05 00
http://www.honda-marine.hr

CYPRUS
Alexander Dimitriou & Sons Ltd.
162, Yiannos Kranidiotis Avenue
2235 Latsia, Nicosia
Tel. : + 357 22 715 300
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http://www.dimitriou.com

CZECH REPUBLIC
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U Zavodiste 251/8
15900 Prague 5 - Velka Chuchle
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http://www.hondamarine.cz

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Tima Products A/S
Tårnfalkevej 16 - Postboks 511
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http://www.tima.dk

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Fax : +358 (0)9 878 5276
http://www.brandt.fi

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Fax : +36 23 444 972
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Fax : +353 (0)1 456 6539
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ITALY
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Fax : +370 5 2765250
http://www.hondamarine.lt

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Mriehel QRM17
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Fax : +48 (22) 685 16 03
http://www.ariespower.com.pl

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Fax : +7 (0 95) 745 20 81
http://www.honda.co.ru

SLOVAK REPUBLIC (SLOVAKIA)
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Tel. : +421 2 32131112
Fax : +421 2 32131111
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http://www.hondapower.se

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http://www.honda.co.uk
✉ customer.servicepe@
honda-eu.com

CONTENTS

ABBREVIATIONS

Symbol	Part name
A/FSe	AIR FUEL RATIO SENSOR
ALT	ALTERNATOR
ALTFu	ALTERNATOR FUSE (70A)
Bat	BATTERY(12V)
BF90D	BF90D ONLY
BIMaT	BLACK MARKING TUBE
Bz	BUZZER
CKPSe	CRANK SENSOR
CoPaAs	CONTROL PANEL ASSEMBLY
DLC	DATA LINK CONNECTOR
EBTSe	EBT SENSOR
ECTSe1	ECT SENSOR 1
ECTSe2	ECT SENSOR 2
EmSw	EMERGENCY STOP SWITCH
F	FUEL
F In 1	No.1 FUEL INJECTOR
F In 2	No.2 FUEL INJECTOR
F In 3	No.3 FUEL INJECTOR
F In 4	No.4 FUEL INJECTOR
FP	FUEL PUMP
FReSe	FUEL RESERVE SENSOR
Fu	FUSE
Fus	FUSES
GND	GROUND
HRMe	HOUR METER
IACV	IAC VALVE
IATSe	IAT SENSOR
IgC 1	No.1 IGNITION COIL
IgC 2	No.2 IGNITION COIL
IgC 3	No.3 IGNITION COIL
IgC 4	No.4 IGNITION COIL
IgNr	IGNITER
IgSw	ENGINE SWITCH
KnSe	KNOCK SENSOR
Ma	MAIN
MAPSe	MAP SENSOR
MeHrnA	METER HARNESS A
MeHrnB	METER HARNESS B
MRL	PGM-FI MAIN RELAY
NSw	NEUTRAL SWITCH
OP	OPTIONAL
OP Sw(H)	OIL PRESSURE SWITCH (HIGH)
OP Sw(L)	OIL PRESSURE SWITCH (LOW)
PL	INDICATOR LAMP
PL(M/A)	INDICATOR LAMP (MIL, ALTERNATOR)
PL(Ov/OP)	INDICATOR LAMP (OVERHEAT, OIL PRESSURE)
PT/Tmo	POWER TRIM TILT MOTOR
PT/TSw	POWER TRIM TILT SWITCH
PTiRL	POWER TILT RELAY
PTiSw	POWER TILT SWITCH
RAOCV	ROCKER ARM OIL CONTROL VALVE
Re/Re	REGULATOR/ RECTIFIER
SpMe	SPEEDOMETER
St	STARTER
StMo	STARTER MOTOR

TDCSe	TDC SENSOR
THA	TILLER HANDLE ASSEMBLY
Tme	TACHOMETER
TMePCC	TACHOMETER PULSE CHECK CONNECTOR
ToLtSw	To LIGHT SWITCH
ToSP	To PLUG
ToSPMe	To SPEEDOMETER
TPSe	TP SENSOR
TrASe	TRIM ANGLE SENSOR
TRMe	TRIM METER
Vme	VOLTMETER
WLSw	WATER LEVEL SWITCH

WIRE COLOR CODE

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

SWITCH CONNECTIONS

IGNITION SWITCH

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

POWER TRIM/TILT SWITCH

	Lg	W/Bl	Lb
UP	○—○		
NORMAL			
DOWN		○—○	

EMERGENCY STOP SWITCH

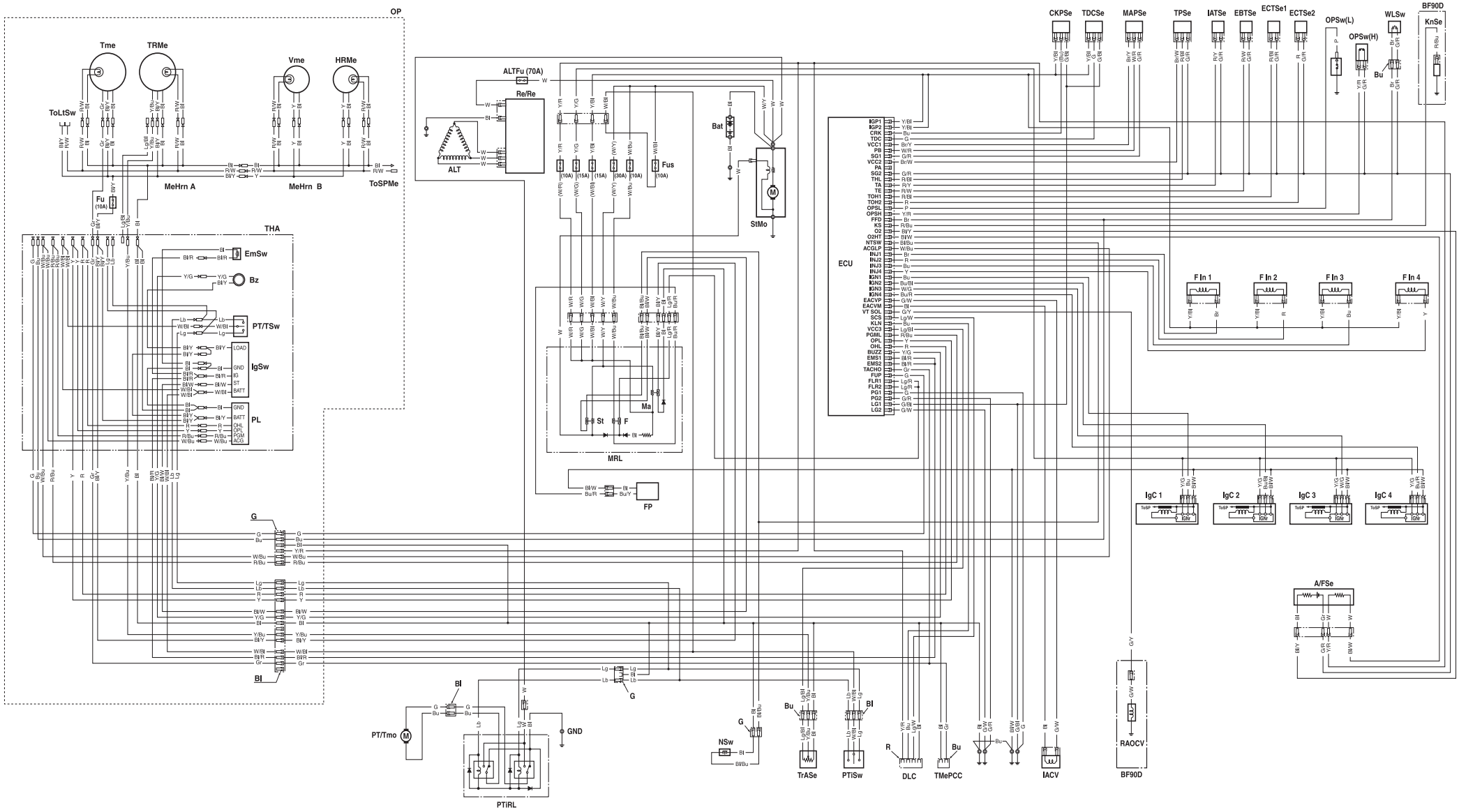
	Bl/R	Bl
PUSH or REMOVE SWITCH CLIP	○—○	
SWITCH CLIP SET		

NEUTRAL SWITCH

	Bl/Bu	Bl
NEUTRAL	○—○	
GEAR IN		

POWER TILT SWITCH

	Lg	W/Bl	Lb
UP	○—○		
NORMAL			
DOWN		○—○	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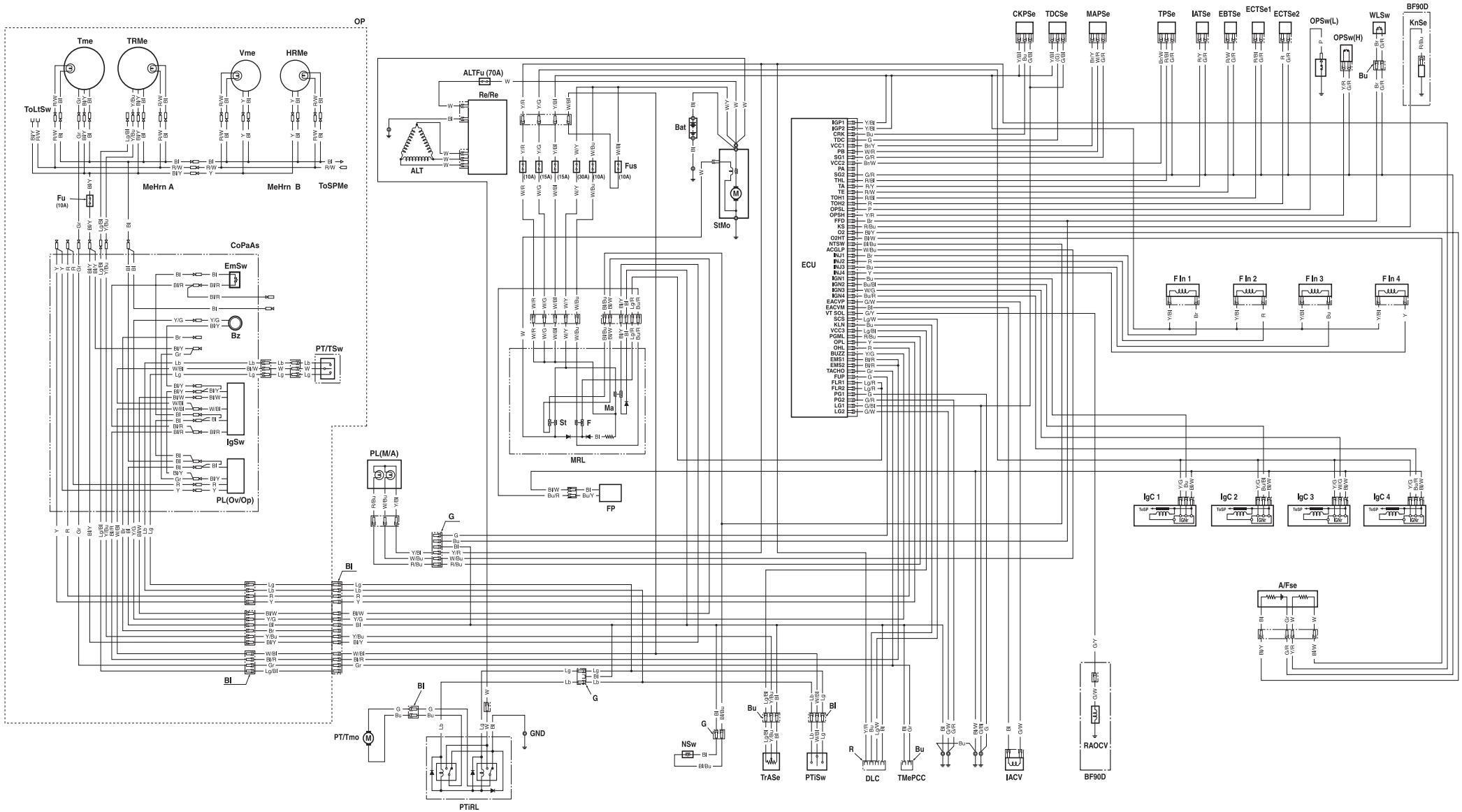
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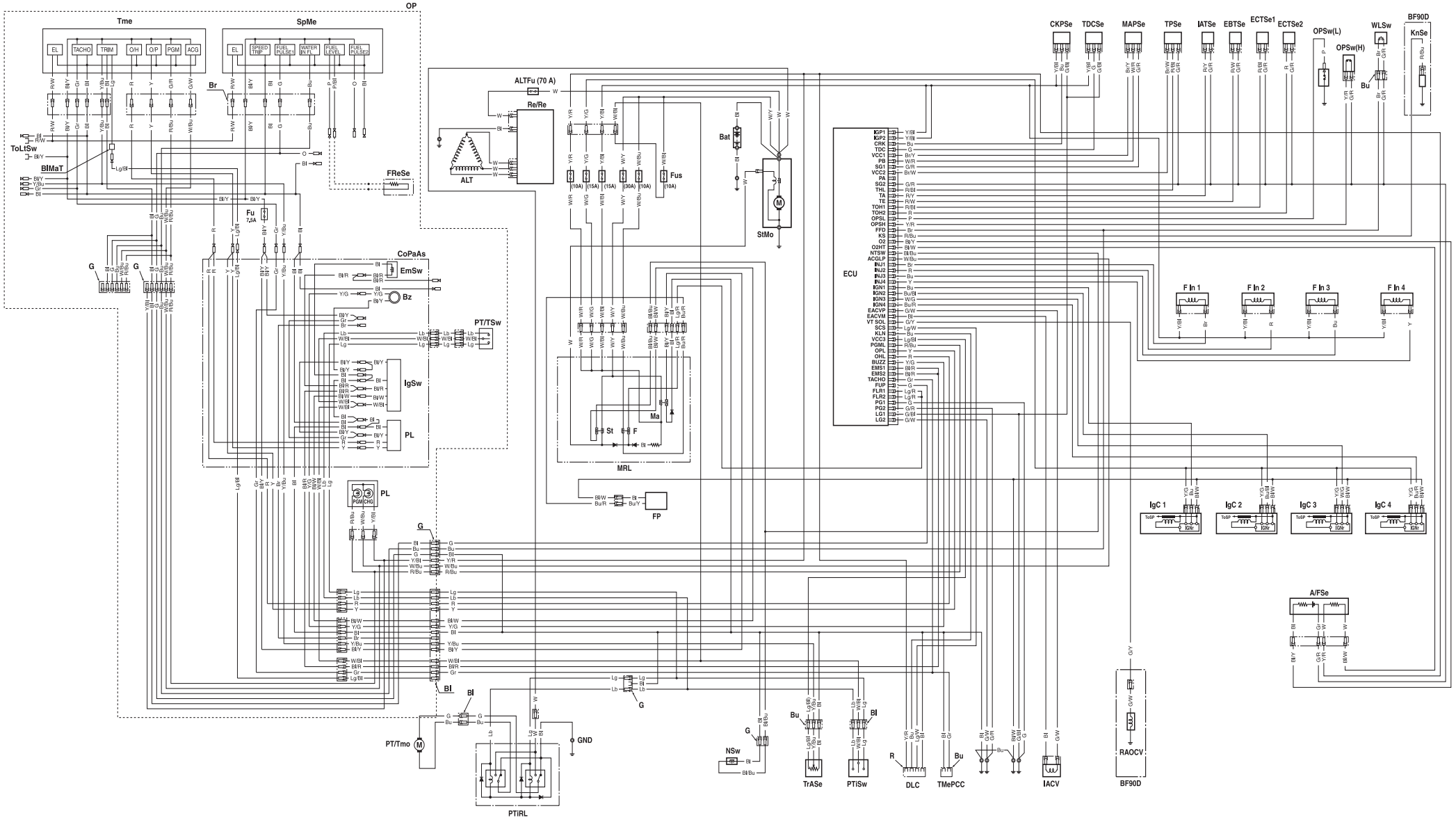
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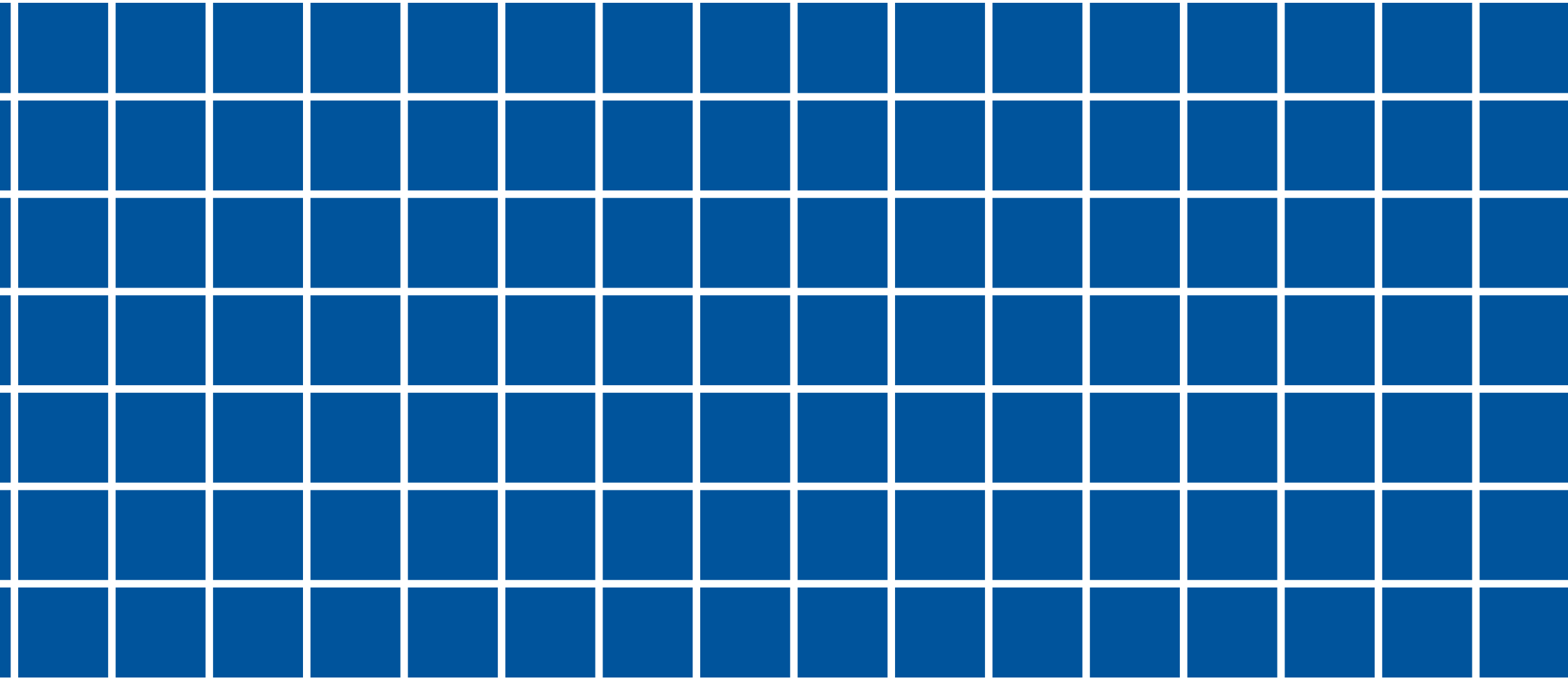
HONDA

The Power of Dreams



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