

# OWNER'S MANUAL

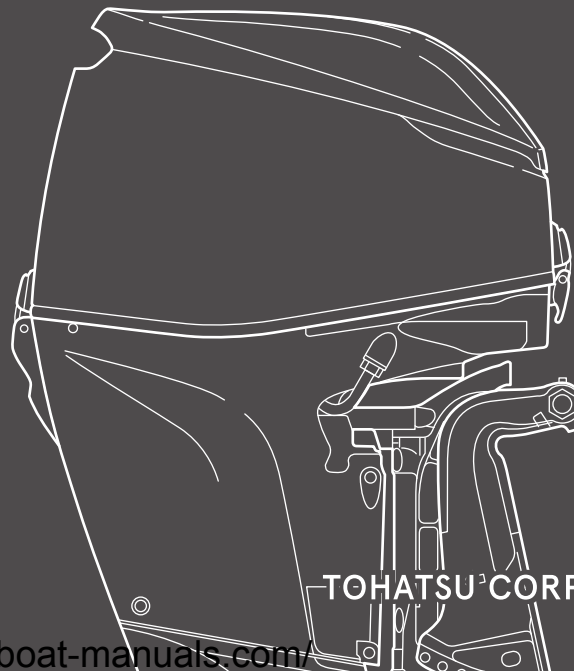
Original instructions



**TOHATSU**

Feel the Wind™

BFT 60A  
BFW 60A



TOHATSU CORPORATION



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Thank you for purchasing a TOHATSU Outboard Motor.

This manual covers operation and maintenance of the TOHATSU BFT60A/BFW60A Outboard Motor. All information in this publication is based on the latest product information available at the time of approval for printing. Tohatsu Corporation reserves the right to make changes at any time without notice and without incurring any obligation.

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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 preceded 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 TOHATSU Outboard Motor dealer.

**▲ WARNING**

**TOHATSU 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.**

- Have your dealer install the tiller handle.
- The illustration may vary according to the type.

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

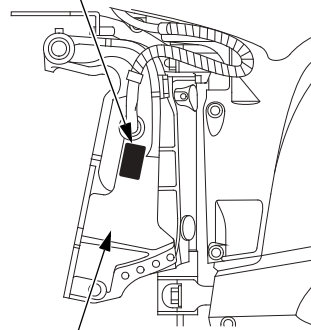
The remote control type is classified into the following three categories according to the control box position.

- Side-mount type
- Panel-mount type
- Top-mount type

This Owner's Manual describes with the side-mount type remote control box.

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



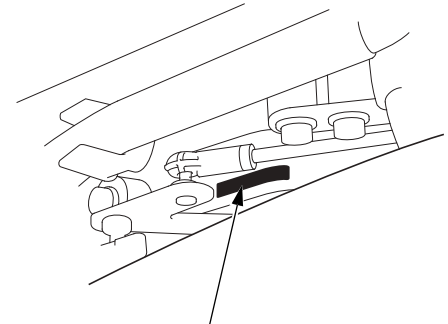
#### LEFT STERN BRACKET

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 a plate attached on the left side of the stern bracket.

Frame serial number:

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#### ENGINE SERIAL NUMBER

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

Engine serial number:

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## Control and Feature Identification Codes

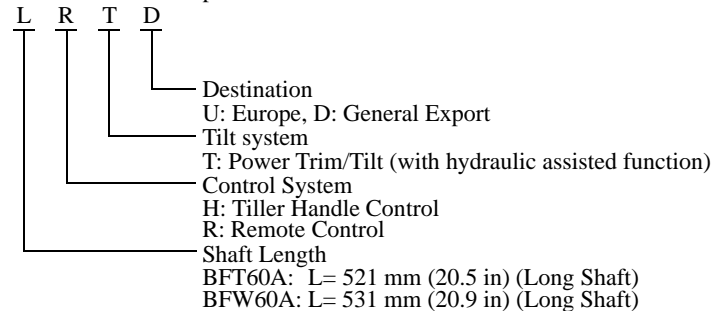
Model	BFT60A			BFW60A
	LRTD	LRTU	LHTD	LRTU
Shaft Length	●	●	●	●
Tiller Handle	*	*	●	*
Remote Control	*	*	*	*
Power Trim/Tilt	●	●	●	●
Trim Meter	*	*	—	*
Tachometer	*	*	*	*
Rudder Meter	*	*	—	*
Tilt Limit Mechanism	*	*	—	*
Portable Fuel Tank (25 L)	*	*	*	*
TRL (Trolling) Control Switch	*	*	●	*
50° Steering Angle Rod	*	*	—	*

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

BFT60A/BFW60A is provided with the following types according to the shaft length, control system, and tilt system.

\*: Optional Equipment

TYPE CODE Example



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# 1. SAFETY

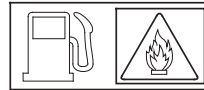
## SAFETY INFORMATION

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

### Operator Responsibility



- **TOHATSU 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.

# SAFETY



**Shift to the neutral position and then shift to the reverse position at low engine speed. Do not shift to the reverse position suddenly at high engine speed.**



**Moving parts can injure you. Install the engine cover after emergency starting the engine. Do not operate the outboard motor without the engine cover.**

- 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.
- Stop the engine immediately if anyone falls overboard.
- Do not run the engine while the boat is near anyone in the water.
- Attach the emergency stop switch lanyard securely to the operator.
- 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.

## Fire and Burn Hazards

Gasoline is extremely flammable, and gasoline vapor can explode. Use extreme care when handling gasoline. KEEP OUT OF REACH OF CHILDREN.

- Remove the fuel tank from the boat for refueling.
- Refuel in a well-ventilated area with the engine stopped. Keep flames and sparks away, and do not smoke in the area.
- Refuel carefully to avoid spilling fuel. Avoid overfilling the fuel tank (there should be no fuel in the filler neck). After refueling, tighten the fuel filler cap securely. If any fuel is spilled, make sure the area is dry before starting the engine.

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

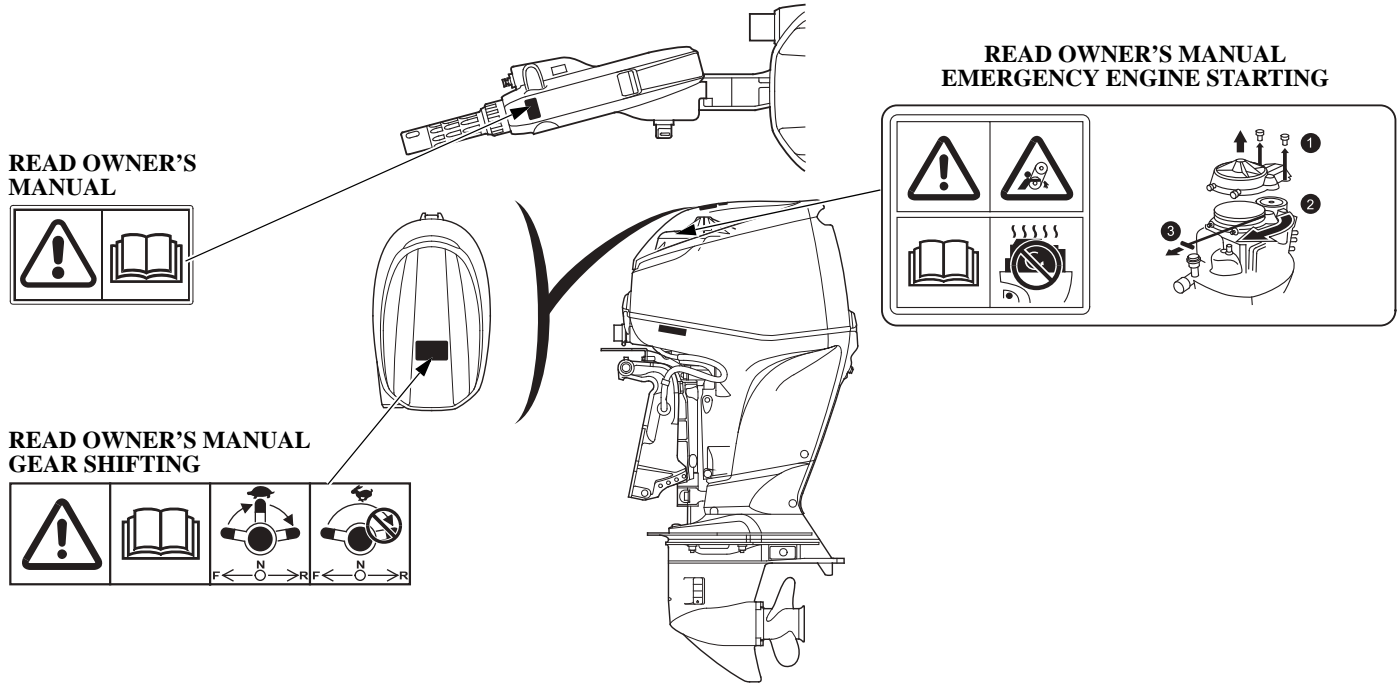
### [Equipped type]

These labels are in the locations shown.

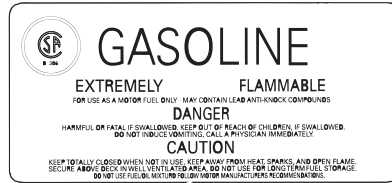
They warn you of potential hazards that can cause serious injury.

Read the labels and safety notes and precautions described in this manual carefully.

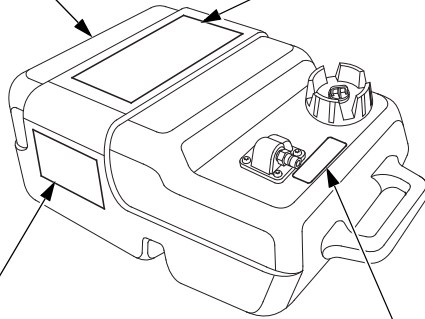
If a label comes off or becomes hard to read, contact your TOHATSU outboard motor dealer for a replacement.



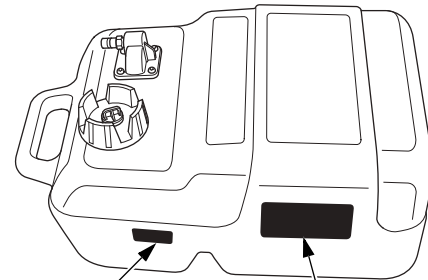
# SAFETY LABEL LOCATIONS



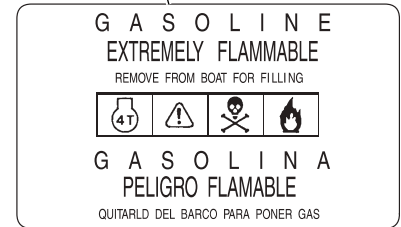
**PORTABLE FUEL TANK**



**FUEL CAUTION**



**FUEL CAUTION**

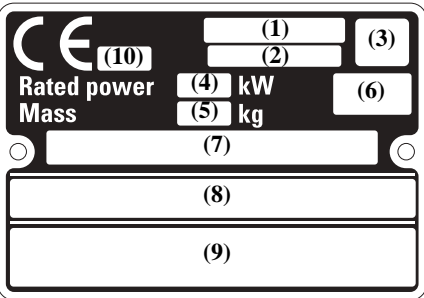


# SAFETY LABEL LOCATIONS

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## CE mark location [U type only]

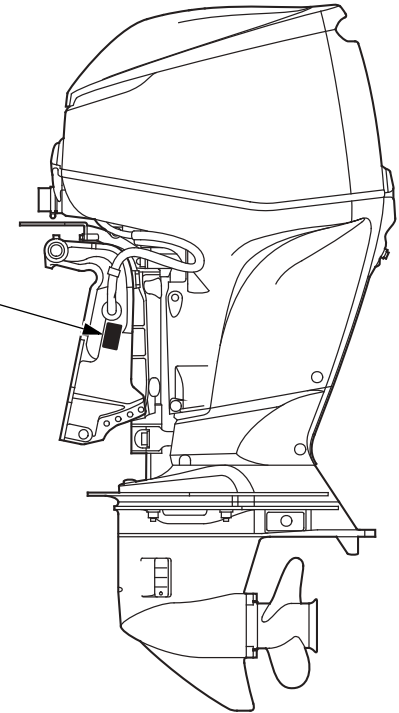
### CE MARK



(1) Model name  
(2) Engine family name  
(3) Year code  
(4) Rated power  
(5) Dry mass (weight) (with propeller, without battery cable)  
(6) Country of manufacture  
(7) Frame number  
(8) Manufacturer and address  
(9) Name and address of authorized representative  
(10) The identification number of the notified body

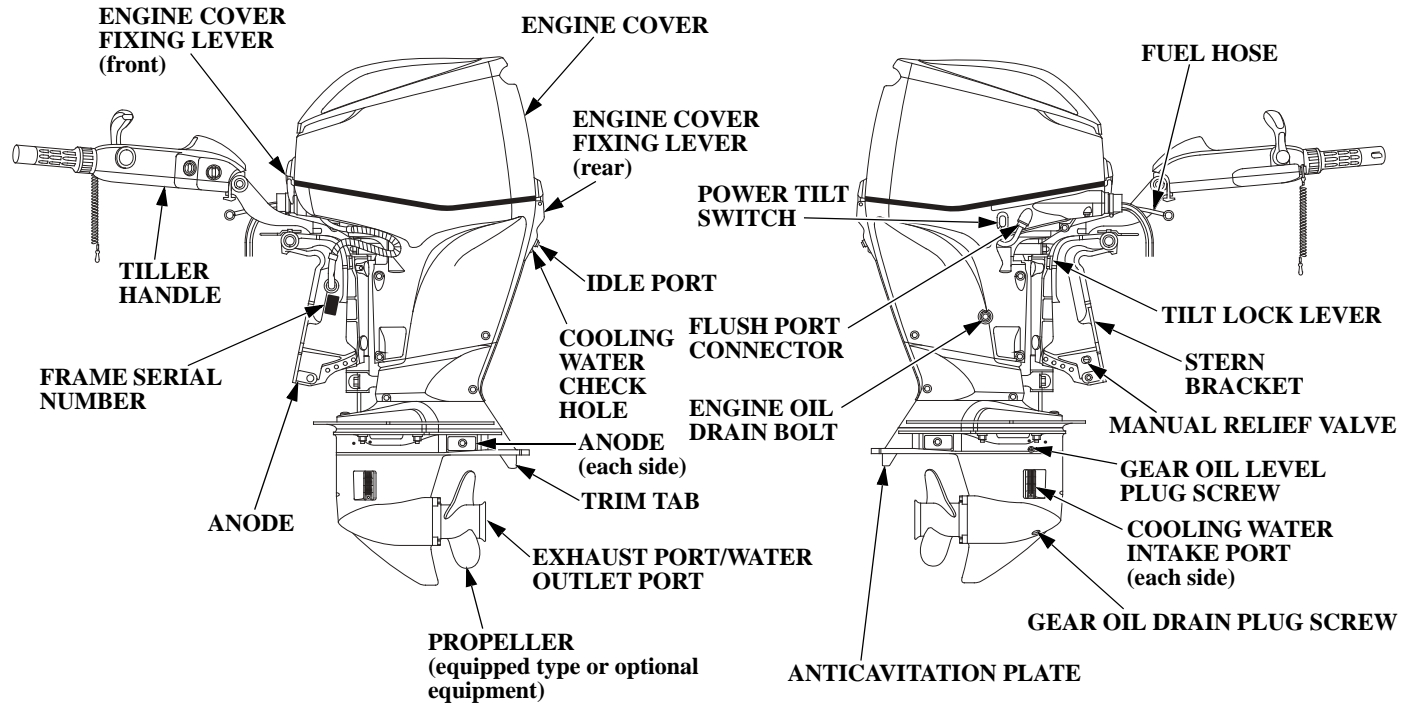
Year code	H	J	K	L	M	N
Year of manufacture	2017	2018	2019	2020	2021	2022

Name and address of manufacturer and authorized representative are written in the “EC Declaration of Conformity” CONTENT OUTLINE in this Owner’s Manual.



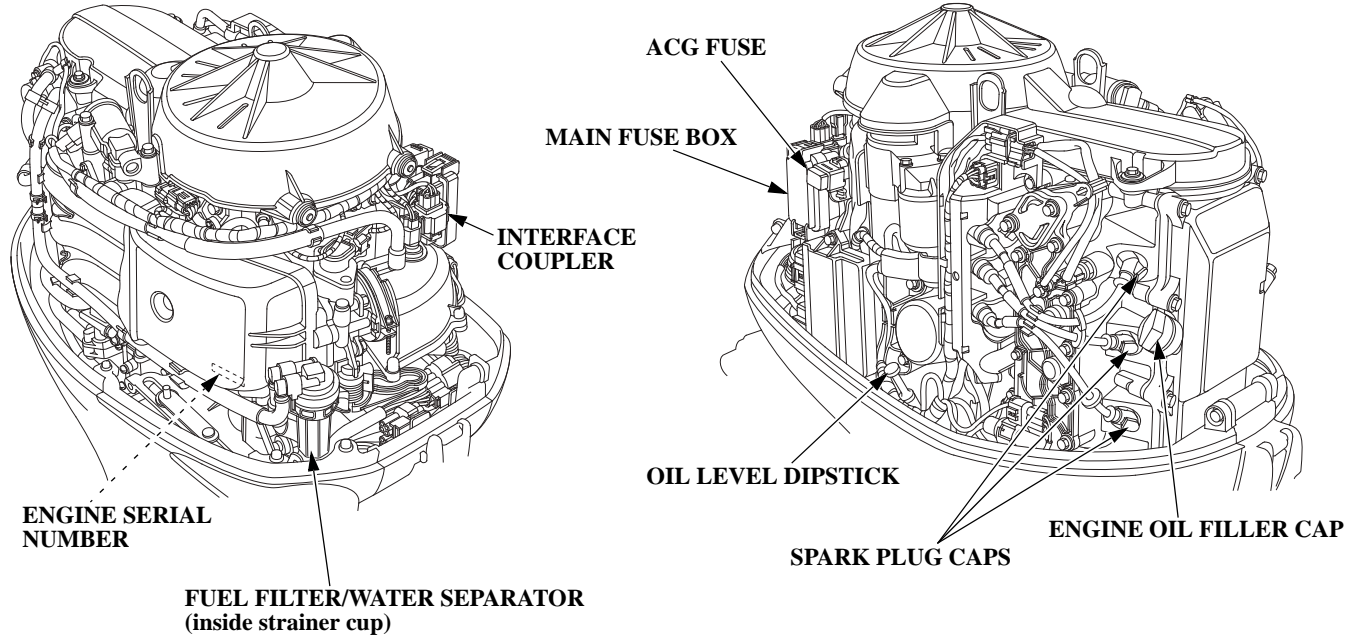
### 3. COMPONENT IDENTIFICATION

[H (Tiller Handle) type]



# COMPONENT IDENTIFICATION

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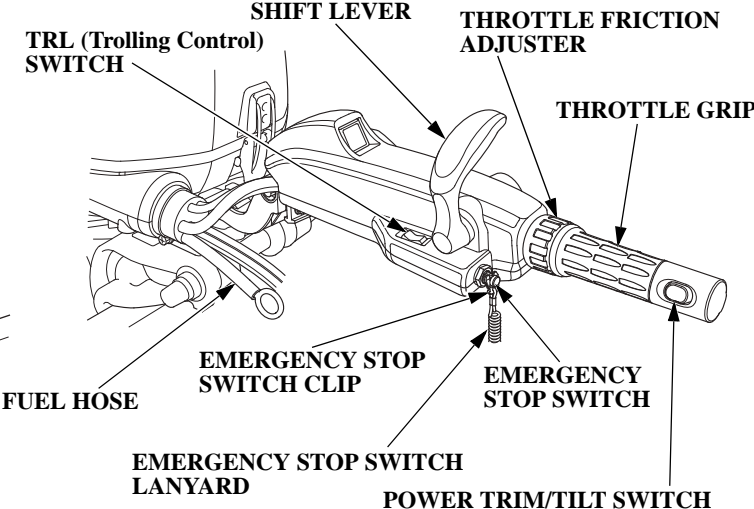
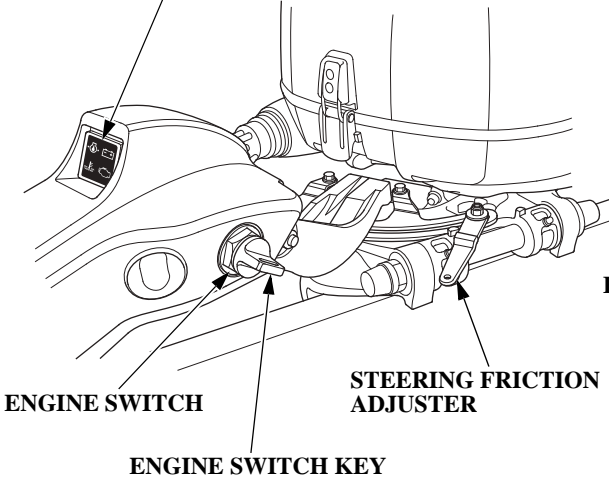





# COMPONENT IDENTIFICATION

## TILLER HANDLE

**INDICATORS**  
(Oil pressure, Overheat, ACG, PGM-FI)



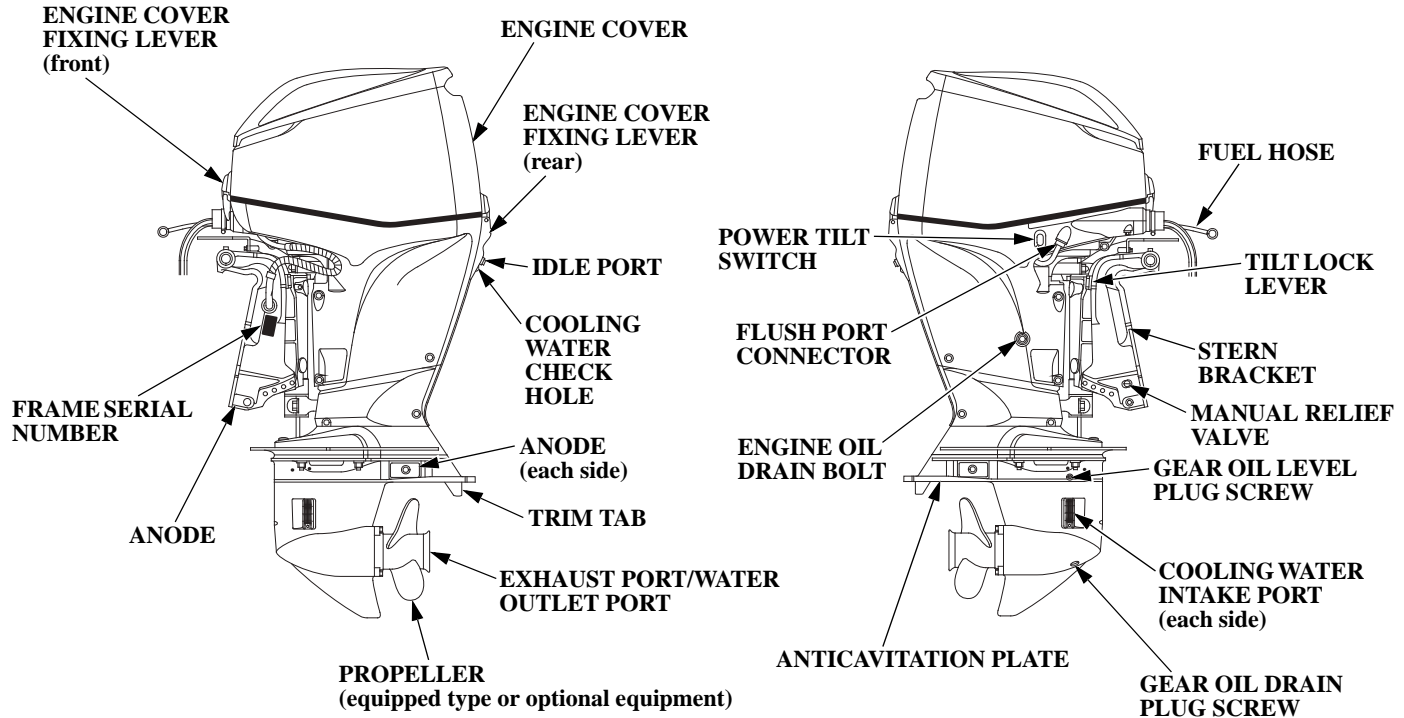
**SPARE EMERGENCY STOP SWITCH CLIP**



Store the spare emergency stop switch clip in the tool bag.

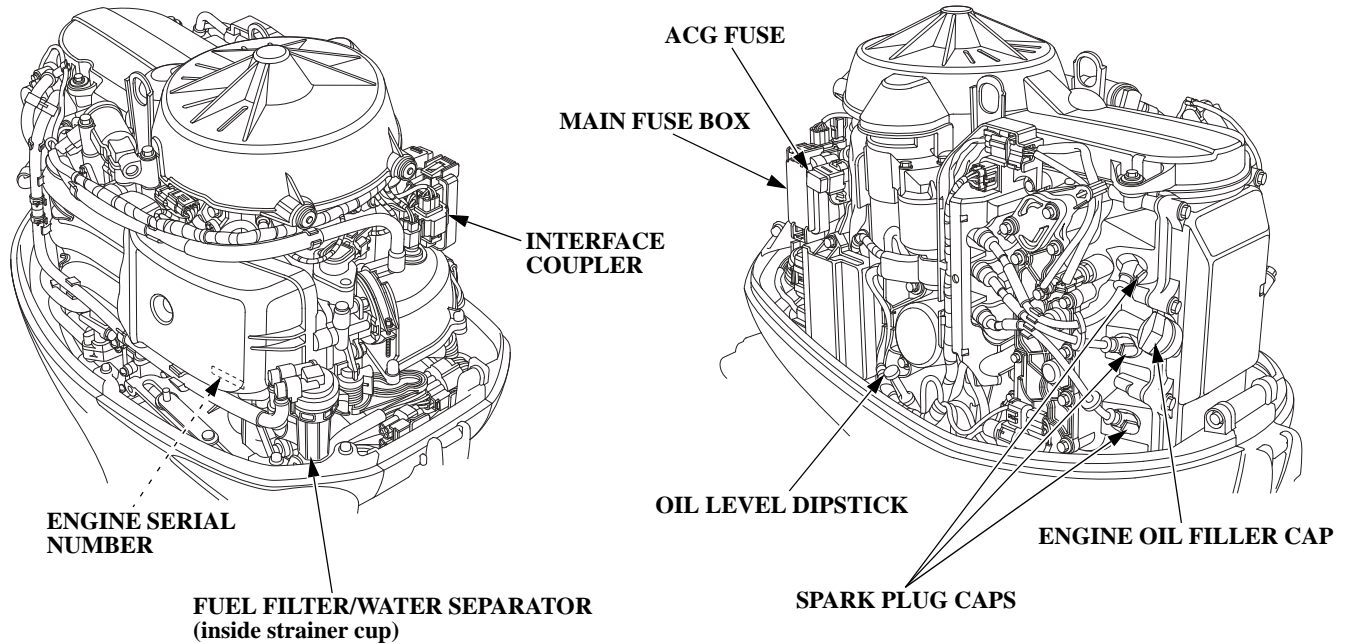
# COMPONENT IDENTIFICATION

[R (Remote Control) type]



# COMPONENT IDENTIFICATION

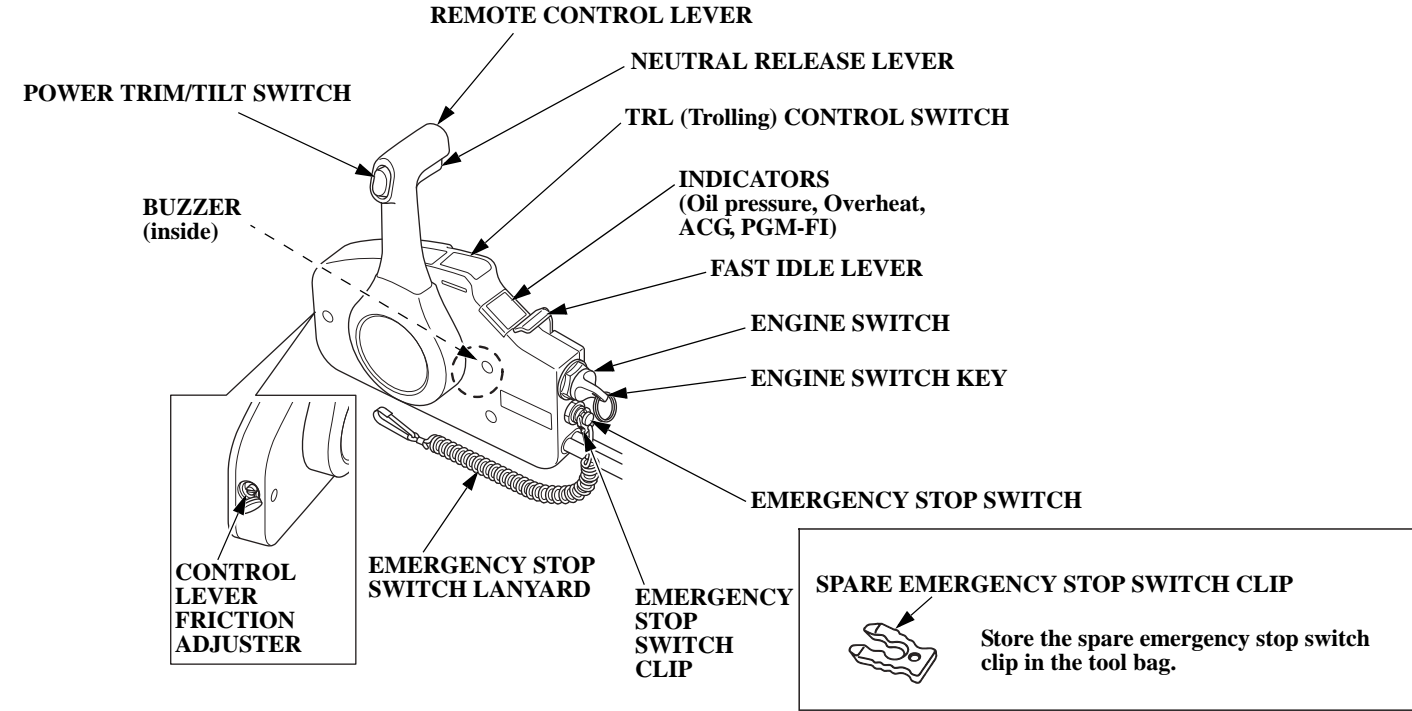
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# COMPONENT IDENTIFICATION

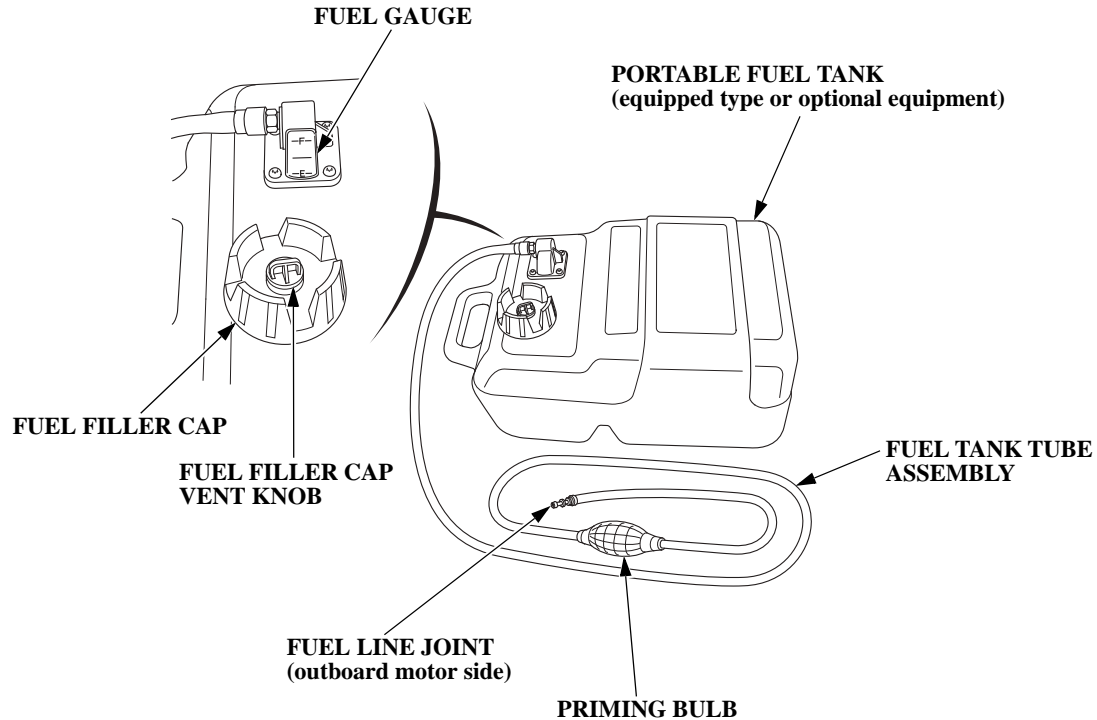
## REMOTE CONTROL BOX (R type) (equipped type or optional equipment)

### SIDE-MOUNT TYPE



# COMPONENT IDENTIFICATION

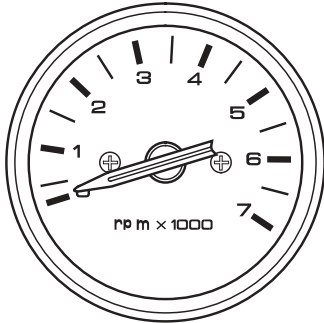
[Common]



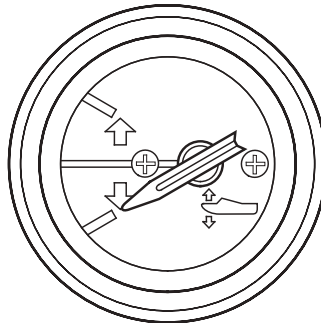
# COMPONENT IDENTIFICATION

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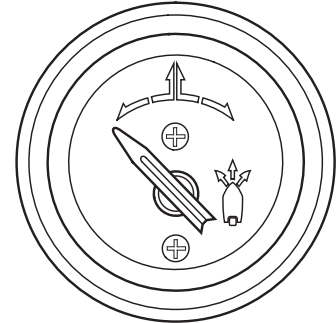
**TACHOMETER**  
(equipped type or optional equipment)



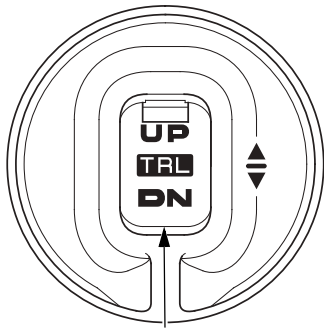
**TRIM METER**  
(equipped type or optional equipment)



**RUDDER METER**  
(optional equipment: R type)



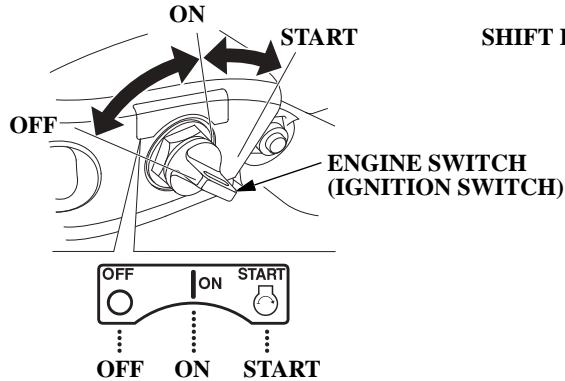
**TRL (Trolling Control) SWITCH PANEL**  
(optional equipment: R type)



**TRL (Trolling Control) SWITCH**

## 4. CONTROLS AND FEATURES (H type)

### Engine Switch (Ignition Switch)



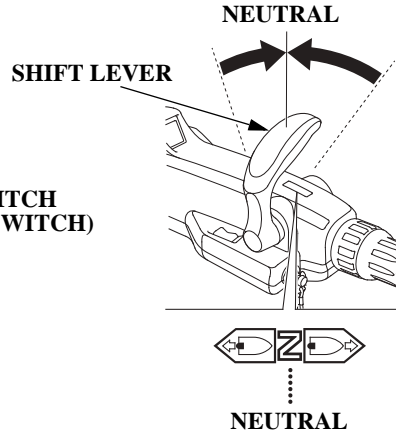
This tiller handle is equipped with an automotive type engine switch.

Key positions:

START: to start the engine.

ON: to run the engine after starting.

OFF: to stop the engine (IGNITION OFF).



#### NOTICE

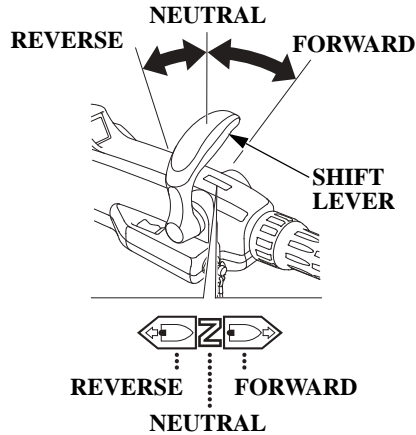
**Do not leave the engine switch (ignition switch) ON (key in ON position) when the engine is not running as the battery will discharge.**

#### NOTE:

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

# CONTROLS AND FEATURES (H type)

## Shift Lever

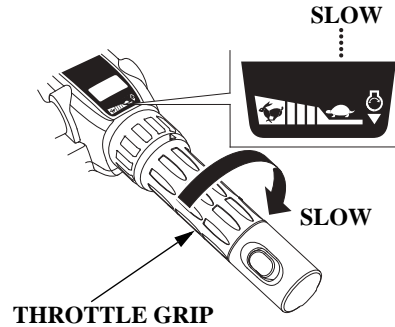


Use the shift lever to run the boat in forward or reverse gear, or to cut off the engine power from the propeller. There are three positions for the shift lever.

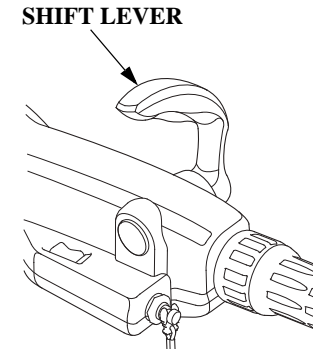
**FORWARD:** The boat moves ahead.

**NEUTRAL:** The engine power is cut off from the propeller. The boat does not move.

**REVERSE:** The boat reverses.



**NOTE:**  
The shift lever will not move unless the throttle grip is in the fully closed position.

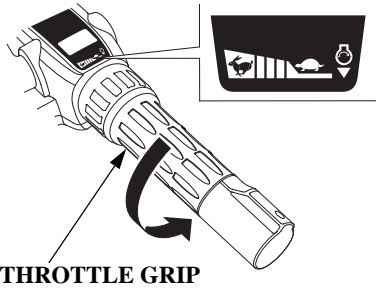


You can choose which side to have the shift lever installed. Consult your authorized TOHATSU outboard motor dealer.

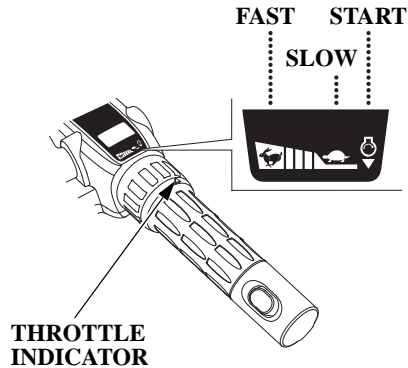


## CONTROLS AND FEATURES (H type)

### Throttle Grip

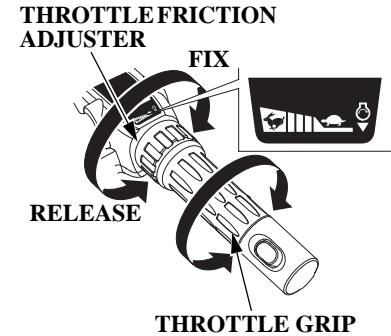


Turn the grip clockwise or counterclockwise to adjust the engine speed. Turning the grip in the direction shown by arrow increases the engine speed.



The curve on the grip indicates the engine speed.

### Throttle Friction Adjuster



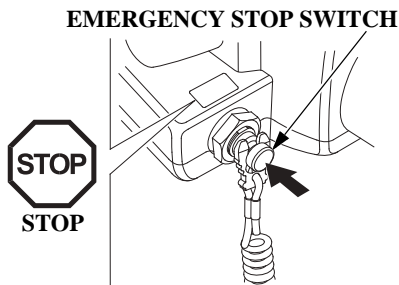
The throttle friction adjuster adjusts resistance to throttle grip rotation.

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.

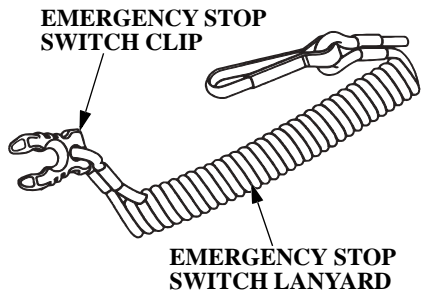
# CONTROLS AND FEATURES (H type)

## Emergency Stop Switch



Press the emergency stop switch to stop the engine.

## Emergency Stop Switch Lanyard/Clip

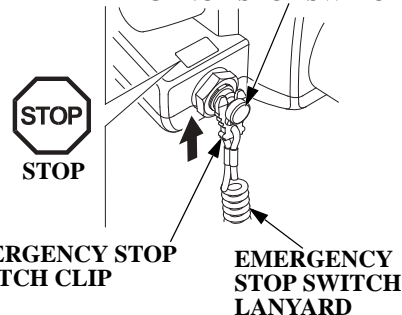


The emergency stop switch lanyard is provided to stop the engine immediately when the operator falls overboard or away from the outboard motor.

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.

## EMERGENCY STOP SWITCH

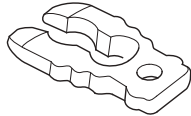


### ▲WARNING

**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.

## CONTROLS AND FEATURES (H type)



**SPARE EMERGENCY STOP SWITCH CLIP**

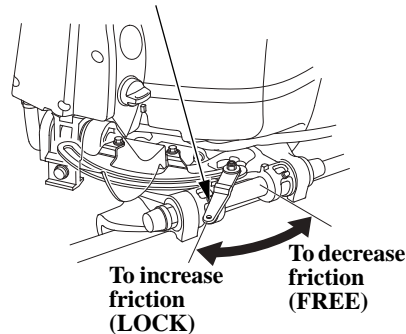
**NOTE:**

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

Store the spare emergency stop switch clip in the tool bag. 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 Adjuster

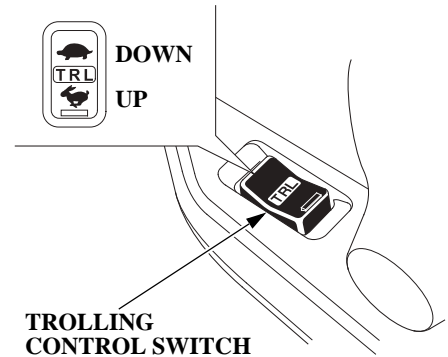
#### STEERING FRICTION ADJUSTER



The steering friction adjuster adjusts steering resistance.

Less friction allows the outboard motor to turn more easily. More friction helps to hold a steady course while cruising or to prevent the outboard motor from swinging while trailering the boat.

### TRL (Trolling) Control Switch



The engine speed can be adjusted with the trolling control switch when in trolling mode.

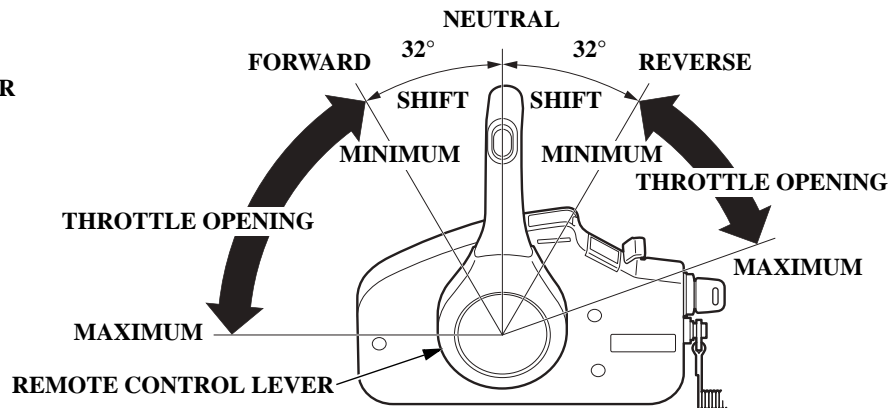
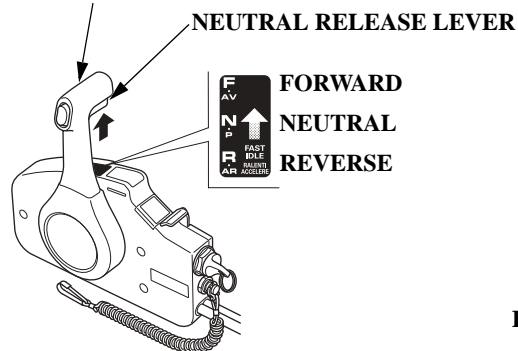
If you press and hold the TRL control switch while cruising with the throttle closed, the mode changes to trolling mode.

# CONTROLS AND FEATURES (R type)

## SIDE-MOUNT TYPE

### Remote Control Lever

#### REMOTE CONTROL LEVER



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 32° 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.

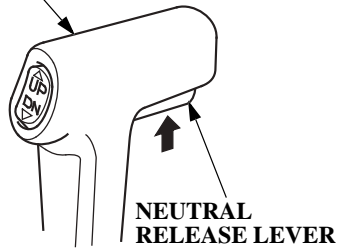
#### REVERSE:

Moving the lever to the REVERSE position (i.e. approximately 32° 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.

## CONTROLS AND FEATURES (R type)

### Neutral Release Lever

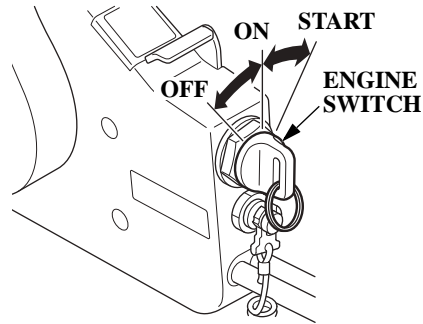
REMOTE CONTROL LEVER



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)



This remote control is equipped with an automotive type engine switch. On the side-mount type, the engine switch locates on your side near the remote control box.

Key positions:

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

#### 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:

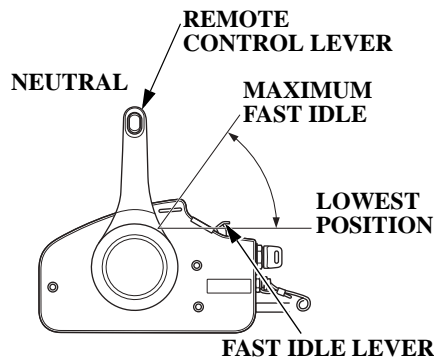
The starter motor will not work unless the remote control lever is in the NEUTRAL position, and the clip is in the emergency stop switch.

## CONTROLS AND FEATURES (R type)

### Fast Idle Lever

The fast idle lever is only needed for starting carbureted outboard models. The BFT60A and BFW60A models use programmed fuel injection so, this lever will not be needed for starting.

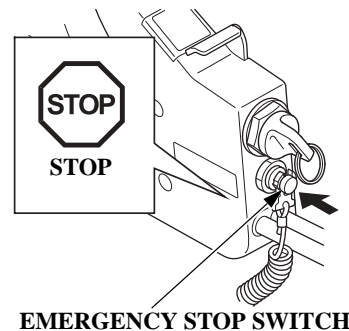
After the engine starts and if the outside temperature is below 5°C (41°F), the fast idle lever can be used to accelerate engine warm up.



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.

### Emergency Stop Switch

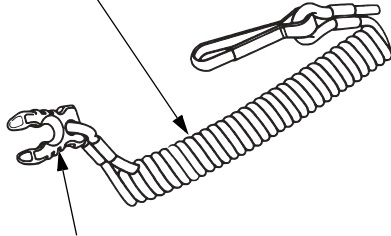


Press the emergency stop switch to stop the engine.

## CONTROLS AND FEATURES (R type)

### Emergency Stop Switch Lanyard/ Clip

EMERGENCY STOP  
SWITCH LANYARD



EMERGENCY STOP SWITCH CLIP

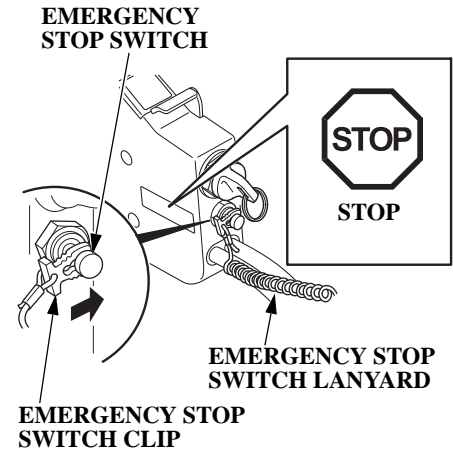
The emergency stop switch lanyard is provided to stop the engine immediately in the event the operator should fall overboard or away from the controls.

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.



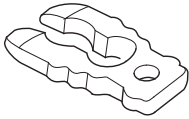
EMERGENCY  
STOP SWITCH

EMERGENCY STOP  
SWITCH LANYARD

EMERGENCY STOP  
SWITCH CLIP

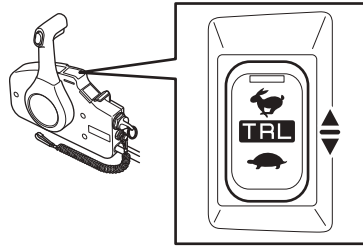
# CONTROLS AND FEATURES (R type)

## Spare Emergency Stop Switch Clip (optional equipment)



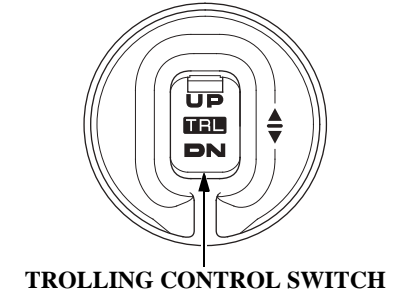
Store the spare emergency stop switch clip in the tool bag.

## TRL (Trolling) Control Switch



TROLLING CONTROL SWITCH

## Remote Control Box (Side-mount type)



TROLLING CONTROL SWITCH

## TRL (Trolling) Control Switch Panel (optional equipment: R type)

The engine speed can be adjusted with the trolling control switch when in trolling mode.

If you press and hold the TRL control switch while cruising with the throttle closed, the mode changes to trolling mode.



# CONTROLS AND FEATURES (Common)

## Power Trim/Tilt Switch

### Power Trim

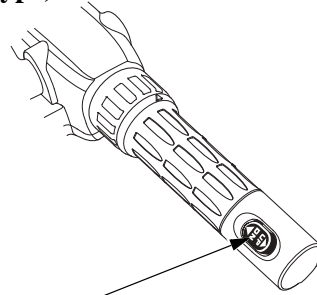
Press the power trim/tilt switch on the tiller handle or on the remote control lever to adjust the outboard motor trim angle of  $-4^{\circ}$  to  $16^{\circ}$  to maintain proper boat trim. The power trim/tilt switch can be operated while the boat is under way or while stopped.

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

### NOTE:

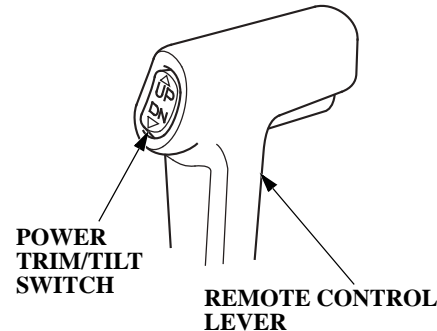
The outboard motor trim angle of  $-4^{\circ}$  to  $16^{\circ}$  is the angle when the outboard motor is installed on the boat at  $12^{\circ}$ .

(H type)



POWER TRIM/TILT SWITCH

(Side-mount type)

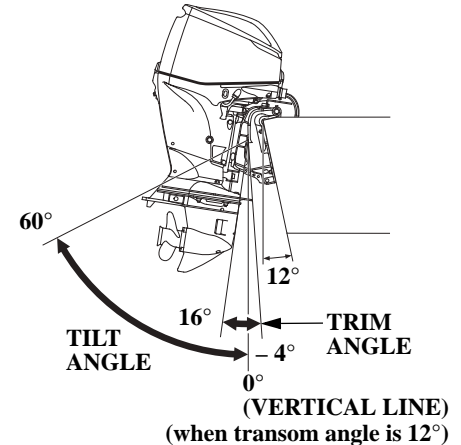


POWER TRIM/TILT SWITCH

REMOTE CONTROL LEVER

### 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.



$60^{\circ}$

$12^{\circ}$

$16^{\circ}$

TILT ANGLE

$-4^{\circ}$

TRIM ANGLE

$0^{\circ}$

(VERTICAL LINE)  
(when transom angle is  $12^{\circ}$ )

## CONTROLS AND FEATURES (Common)

### Power Tilt

Press the power trim/tilt switch to adjust the outboard motor tilt angle of 16° to 60°.

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

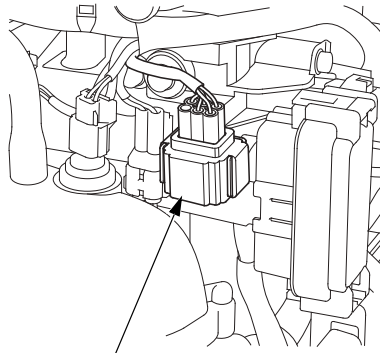
Please tilt up simultaneously, when you mount the dual type outboard motor.

### NOTE:

If your outboard motor is equipped with the tilt limit mechanism (optional equipment for R type), you can set the tilt limit angle. Contact your dealer for more information.

### NMEA Interface Coupler

The NMEA2000 interface coupler can provide information regarding engine speed, fuel consumption, and various warnings to an existing NMEA2000 network via an optional interface cable. Contact your dealer for more information.



**NMEA INTERFACE COUPLER**

### Operating Hour Notification System

This outboard motor engine counts the number of operating hours since the last periodic maintenance. When the next periodic maintenance is due, the engine notifies the NMEA2000 network, and a maintenance indication is displayed on an NMEA2000-compatible device.

After periodic maintenance is performed, reset the hour counter by:

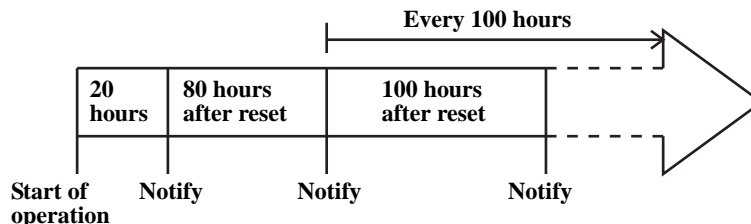
1. Stopping the engine.
2. Setting the gearshift at F or R.
3. Turning the ignition switch ON.  
The buzzer will sound once.
4. Pressing the emergency stop switch 5 times within 20 seconds.  
The buzzer will sound once when the hour counter is reset.

## CONTROLS AND FEATURES (Common)


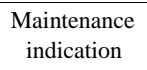
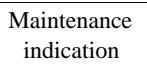
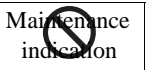
Periodic maintenance is required when either the operating hours or the time since last maintenance reaches the prescribed limit. Therefore, periodic maintenance may be required based on the number of months since the last maintenance before the alert based on engine operating hours displays (see Maintenance Schedule on page 113).

Reset the hour counter whenever maintenance is performed, whether based on the time interval or the number of operating hours.

### <Operating hour notification timing>



### <Display>

Steps	1	2	3	4
Outboard motor	—	Ignition switch ON	Start engine	Gear at F or R
Display	Switch ON	—	—	—
Maintenance indication on display	Not shown 	Shown 	Shown 	Not shown 

## CONTROLS AND FEATURES (Common)

---

NMEA2000-compatible display:

- Follow instructions for the display.
- If the display allows selection of notification to be preset, select "Notify" (or equivalent).
- Turn on the power supply to the display before turning on the ignition switch of the outboard motor.
- The indication may differ, depending on the type of display.

When "Periodic Maintenance" is indicated:

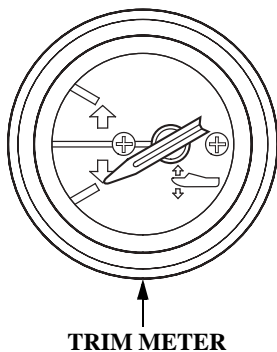
1. Have the periodic maintenance performed without delay after returning to port.
2. Reset the hour counter.  
If not reset, the maintenance indication will remain in the display, and the hour count until the next maintenance will be in error.

When the periodic maintenance is conducted before "Periodic Maintenance" is indicated, reset the hour counter.

If not reset, the hour count until the next maintenance will be in error.

## CONTROLS AND FEATURES (Common)

### Trim Meter (equipped type or optional equipment)

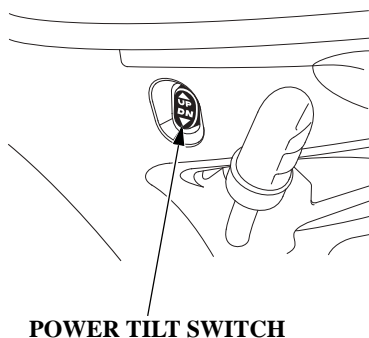


The trim meter has a range of  $-4^{\circ}$  to  $16^{\circ}$  and indicates the trim angle of the outboard motor. Refer to the trim meter when using the power trim/tilt switch to achieve proper boat performance.

#### NOTE:

The outboard motor trim angle of  $-4^{\circ}$  to  $16^{\circ}$  is the angle when the outboard motor is installed on the boat at  $12^{\circ}$ .

### Power Tilt Switch (outboard motor pan)



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

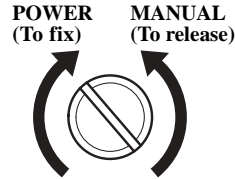
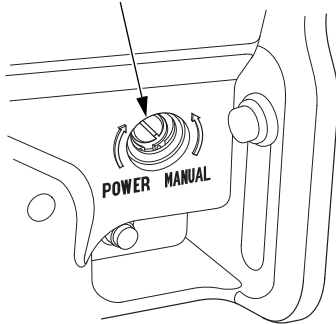
#### NOTE:

The tilt limit mechanism (optional equipment for R type) is not operated by the power tilt switch (motor pan). The tilt limit mechanism is operated with the power trim/tilt switch on the control lever side.

# CONTROLS AND FEATURES (Common)

## Manual Relief Valve

### MANUAL RELIEF VALVE



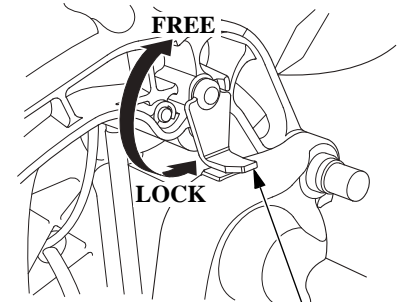
If the power trim/tilt switch will not tilt the outboard motor, the outboard motor can be manually tilted up or down by opening the manual relief valve. To tilt the outboard motor manually, turn the manual relief valve under the right stern bracket no more than three and a half turns counterclockwise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

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

Check that nobody is under the outboard motor before opening the manual relief valve. 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 outboard motor or the outboard motor could tilt up when operating in reverse.

## Tilt Lock Lever



TILT LOCK LEVER

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

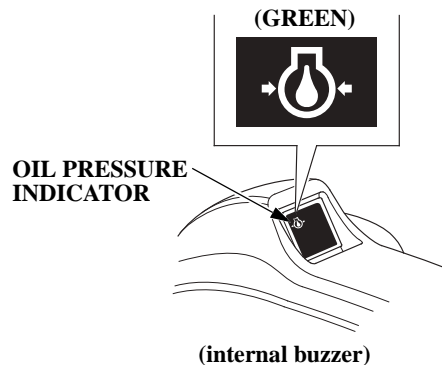
Tilt the outboard motor as far as it goes and move the lock lever in the locking direction.

## CONTROLS AND FEATURES (Common)

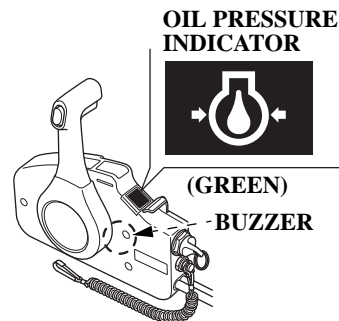
### Oil Pressure Indicator/Buzzer

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)



#### (Side-mount type)



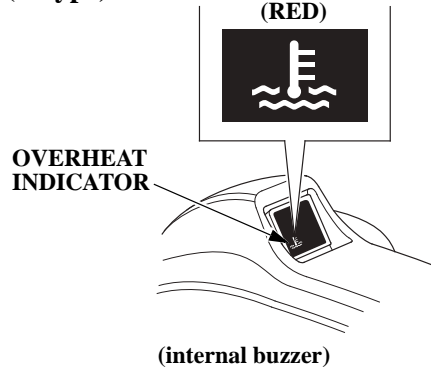
# CONTROLS AND FEATURES (Common)

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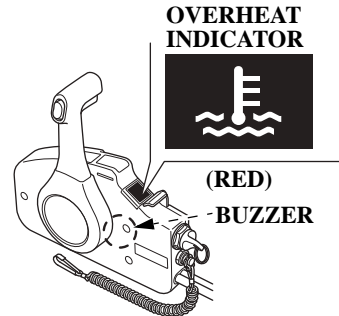
## Overheat Indicator/Buzzer

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)



(Side-mount type)



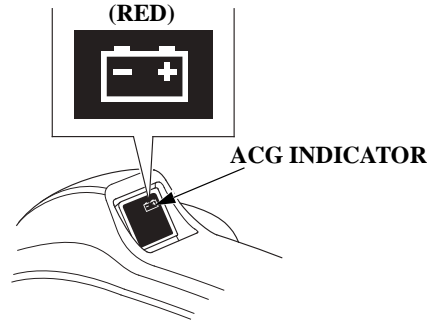


## CONTROLS AND FEATURES (Common)

### ACG Indicator/Buzzer

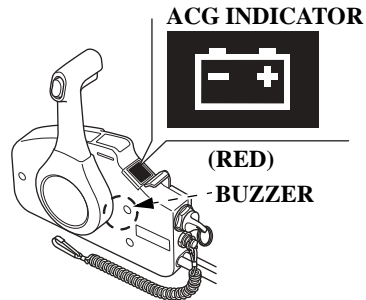
The ACG indicator turns on and the buzzer sounds when the charging system is faulty.

(H type)



(internal buzzer)

(Side-mount type)

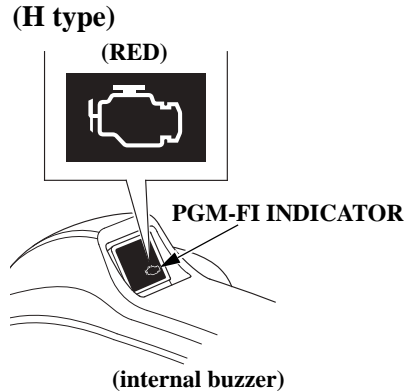


# CONTROLS AND FEATURES (Common)

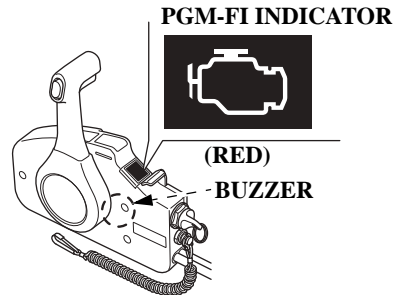
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## PGM-FI Indicator/Buzzer

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

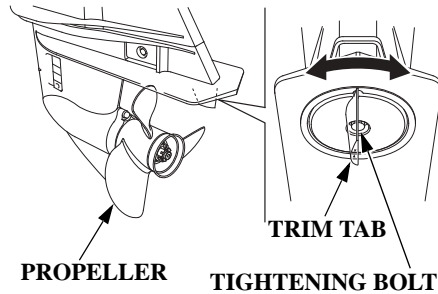


## **(Side-mount type)**



## CONTROLS AND FEATURES (Common)

### Trim Tab BFT60A model:

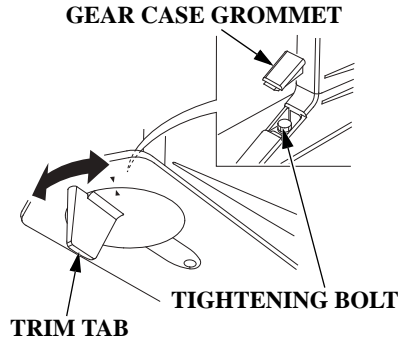


If the steering wheel/handle is pulled to the side while running at full speed, adjust the trim tab so that the boat runs straight ahead.

### BFT60A model:

Loosen the tightening bolt and turn the trim tab right or left to adjust (see page 95).

### BFW60A model:



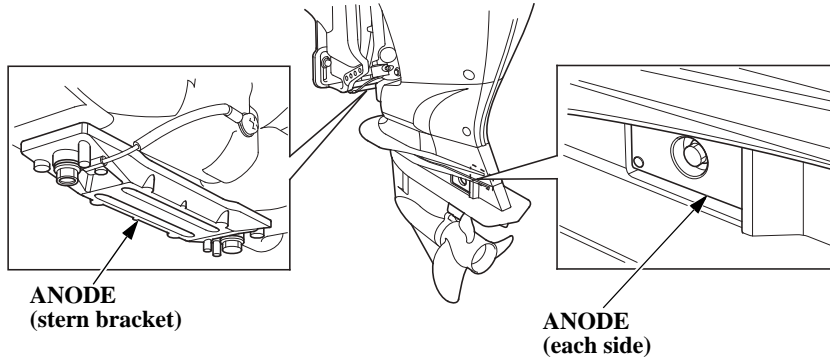
### BFW60A model:

Remove the gear case grommet. Loosen the tightening bolt and turn the trim tab right or left to adjust (see page 95).

## CONTROLS AND FEATURES (Common)

---

### Anode



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

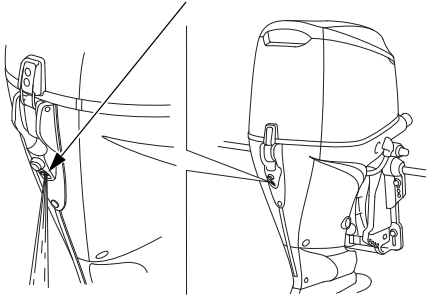
#### NOTICE

**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.**

## CONTROLS AND FEATURES (Common)

### Cooling Water Check Hole

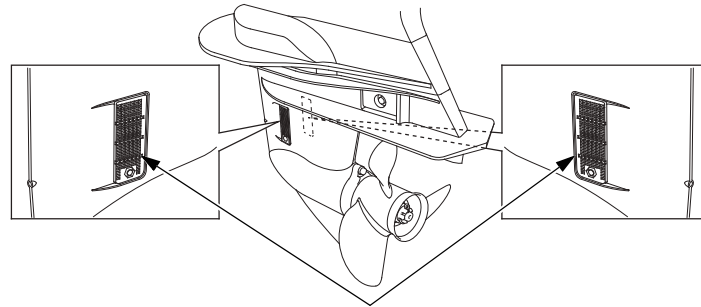
#### COOLING WATER CHECK HOLE



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.

### Cooling Water Intake Port

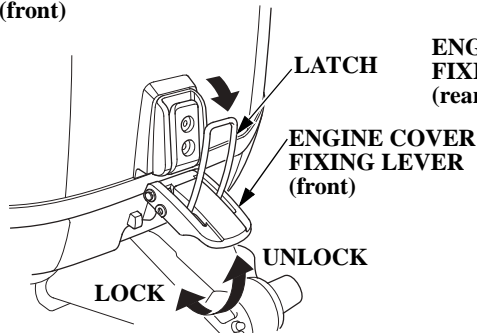


#### COOLING WATER INTAKE PORT

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

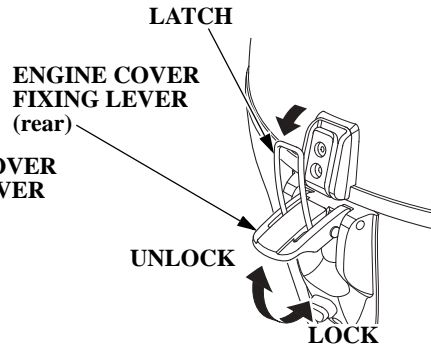
# CONTROLS AND FEATURES (Common)

## Engine Cover Fixing Lever (Front/Rear) (front)

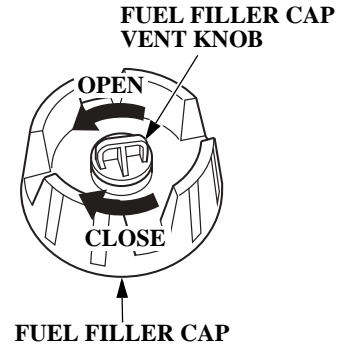


Latch/unlatch the engine cover fixing lever to install or remove the engine cover.

(rear)



## Fuel Filler Cap (equipped type) (with vent knob)

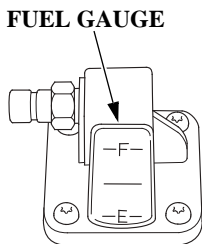


The fuel filler cap vent knob controls air entering and leaving the fuel tank.

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.

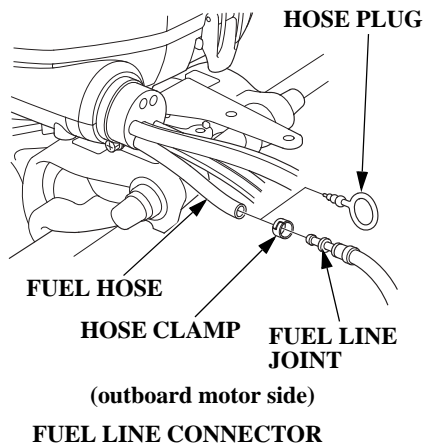
## CONTROLS AND FEATURES (Common)

### Fuel Gauge

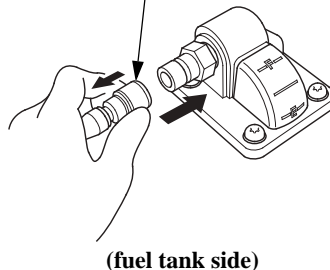


The fuel gauge indicates the fuel level in the tank.

### Fuel Line Connector And Joint (equipped type or optional equipment)

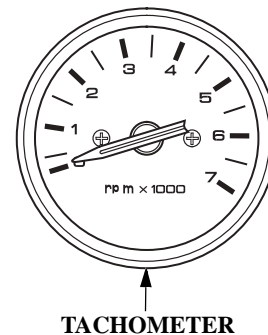


### FUEL LINE CONNECTOR



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

### Tachometer (equipped type or optional equipment)



The tachometer shows the engine speed in revolutions per minute.

## CONTROLS AND FEATURES (Common)

---

### Rudder Meter (optional equipment: R type)



The rudder meter shows the boat's travelling direction in accordance with the rudder angle.



## 5. INSTALLATION

### NOTICE

**Improperly installed outboard motor can result in the outboard 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 TOHATSU outboard motor dealer. Consult the authorized TOHATSU 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:**

**BFT60A:**

44.1 kW (60 PS)/5,500 min<sup>-1</sup> (rpm)

**BFW60A:**

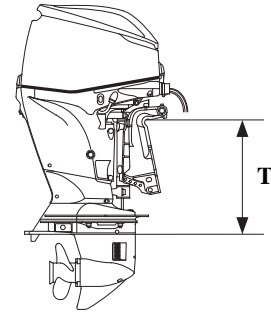
44.1 kW (60 PS)/5,500 min<sup>-1</sup> (rpm)

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

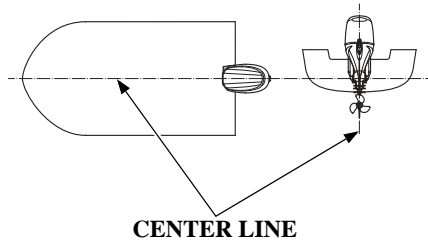


Model	Type:	T (Outboard Motor Transom Height) <when transom angle is 12°>
BFT60A	L:	521 mm (20.5 in)
BFW60A	L:	531 mm (20.9 in)

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

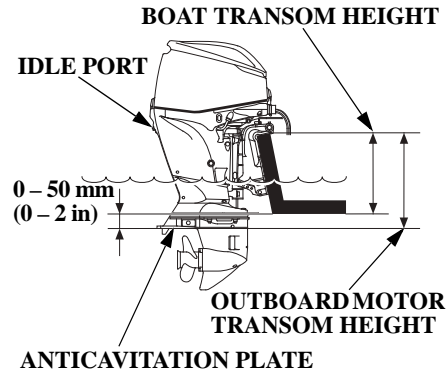
# INSTALLATION

## Location



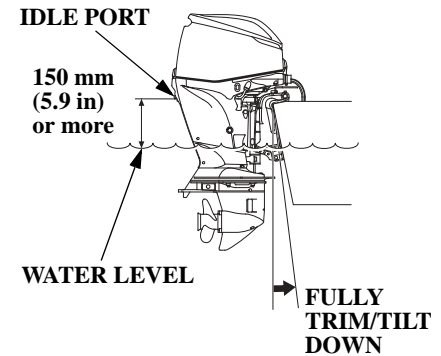
Install the outboard motor at the stern, at the center line of the boat.

## Installation Height



The anticavitation plate of the outboard motor should be 0 – 50 mm (0 – 2 in) below the bottom of the boat.

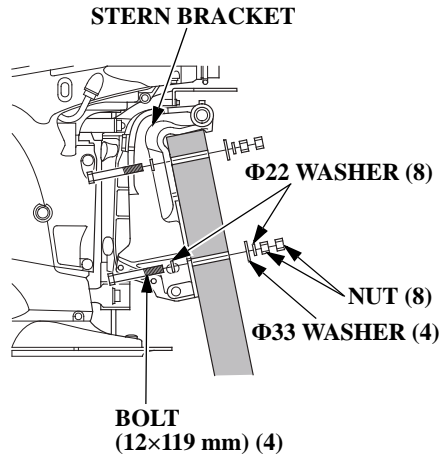
The correct dimensions differ according to the type of boat and the configuration of the bottom of the boat. Follow the manufacture's recommended installation height.



### 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



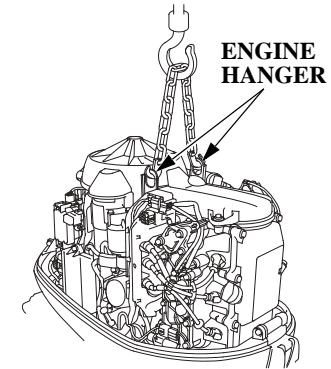
1. Apply the silicone sealant (Three Bond 1216 or equivalent) to the outboard motor mounting holes.
2. Set the outboard motor on the boat and secure with the bolts, washers, and nuts.

### NOTE:

#### Standard torque:

54 N·m (5.5 kgf·m, 40 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 TOHATSU outboard motor dealer.



### ▲ CAUTION

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

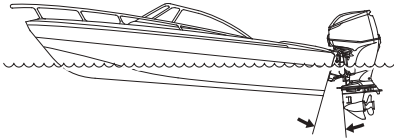
Before installing the outboard motor on the boat, hang the outboard motor with the hoist or equivalent devise by attaching the two engine hangers to the outboard.

Use the hoist which allowable load is 250 kg (551 lbs) or above.

# INSTALLATION

---

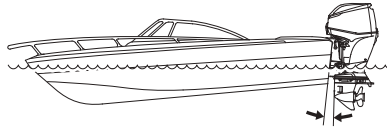
## Outboard Motor Angle Inspection (Cruising)



**INCORRECT**  
CAUSES BOAT TO “SQUAT”

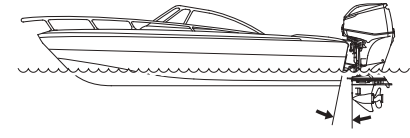
Install the outboard motor at the best trim angle for stable cruising and maximum power.

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) 420A at  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) and a reserve capacity 229 minutes (12V 52Ah/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.**

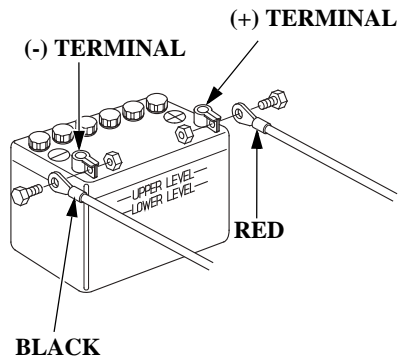
- **CHEMICAL HAZARD: Battery electrolyte contains sulfuric acid. Contact with eyes or skin, even through clothing, may cause severe burns. Wear a faceshield and protective clothing.**
- **Keep flames and sparks away, and do not smoke in the area. ANTIDOTE: If electrolyte gets into your eyes, flush thoroughly 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.

# INSTALLATION



## 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 more than one outboard motor is mounted on a boat, connect a battery to each respective 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

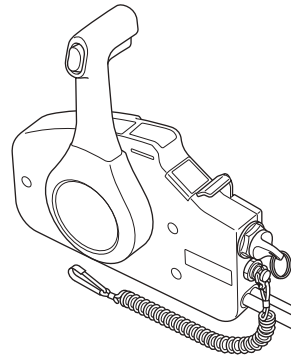
### NOTICE

**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 TOHATSU outboard motor dealer for proper installation.**

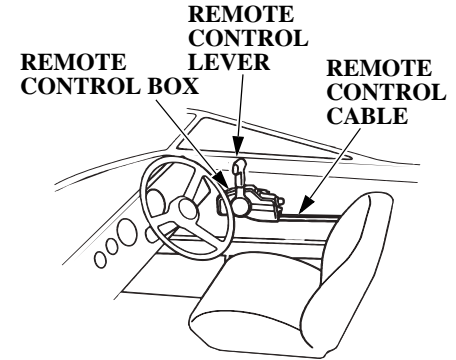
The control box is available in three types.  
Select the most suitable control box for your outboard motor considering the installation position, operationability, etc. of the control box.  
See an authorized TOHATSU outboard motor dealer for further information.

## SIDE-MOUNT TYPE REMOTE CONTROL BOX

(equipped type or optional equipment)



## <Remote Control Box Location>

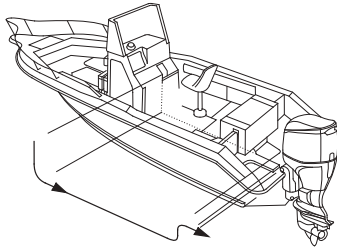


Install the remote control box in the position where is easy to operate the remote control lever and switches. Be sure that there are no obstacles on the route of the control cable.

The control box position of the other types should be determined in the same manner.

# INSTALLATION

## <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 predetermined 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 5,000 min<sup>-1</sup> (rpm) to 6,000 min<sup>-1</sup> (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 TOHATSU outboard motor dealer for proper propeller selection.



## 6. PRE-OPERATION CHECKS

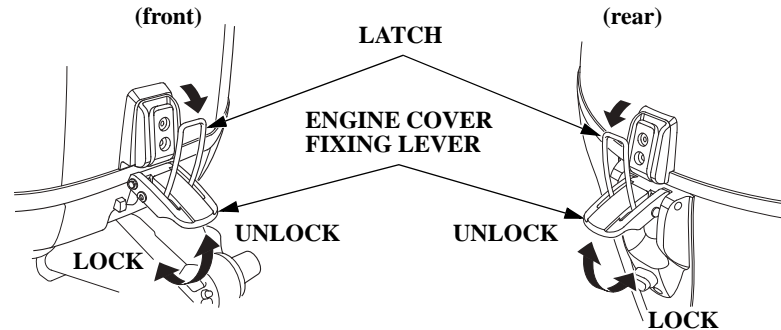
BFT60A/BFW60A is 4-stroke, water cooled outboard motor which uses unleaded gasoline for fuel. It also requires the engine oil. Check the following before operating the outboard motor.

### ▲ CAUTION

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

Before each use, look around and underneath the engine for signs of oil or gasoline leaks.

### 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.**

# PRE-OPERATION CHECKS

## Engine Oil

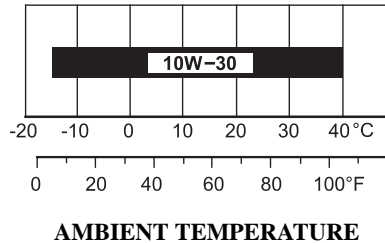
### NOTICE

- **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.**

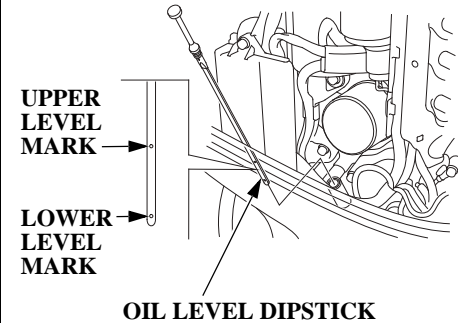
### <Recommended oil>

Use 4-stroke high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for API Service category 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.



### <Inspection and Refilling>



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.

# PRE-OPERATION CHECKS

When the engine oil is contaminated or discolored, replace with the fresh engine oil (see page 115 for replacement interval and procedure).

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.**

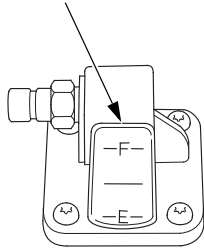
When you check the oil level with the dipstick, you might notice the engine oil appears milky or the oil level has increased. If you notice either condition, change the engine oil. See the following table for an explanation of these conditions.

Operating Method	Result	Effect
Running the engine below 3,000 rpm for more than 30% of the time so the engine does not warm up.	<ul style="list-style-type: none"><li>• Water condenses in the engine and mixes with the oil, resulting in a milky appearance.</li><li>• Unburned fuel mixes with the oil, increasing the volume of oil.</li></ul>	The engine oil deteriorates, becomes less efficient as a lubricant, and causes an engine malfunction.
Frequent starting and stopping without allowing the engine to warm up.		

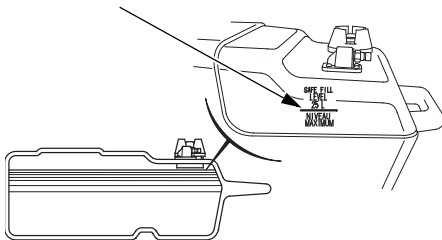
# PRE-OPERATION CHECKS

## Fuel (Portable Fuel Tank equipped type or optional equipment)

FUEL GAUGE



UPPER LEVEL



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.

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.

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

### **▲ 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 fuel filler 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 TOHATSU.

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 more than 5% methanol (methyl or wood alcohol) and that does not also contain co-solvents and corrosion inhibitors for methanol.

### **NOTE:**

- Fuel system damage or engine performance problems resulting from the use of gasoline that contains more alcohol than recommended is not covered under the warranty.
- Before buying gasoline from an unfamiliar station, first determine if the gasoline contains alcohol, if it does, find out the type and percentage of alcohol used. If you notice any undesirable operating symptoms while using a particular gasoline. Switch to a gasoline that you know contains less than the recommended amount of alcohol.

# PRE-OPERATION CHECKS

## Propeller and Cotter Pin Inspection

### ▲ WARNING

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

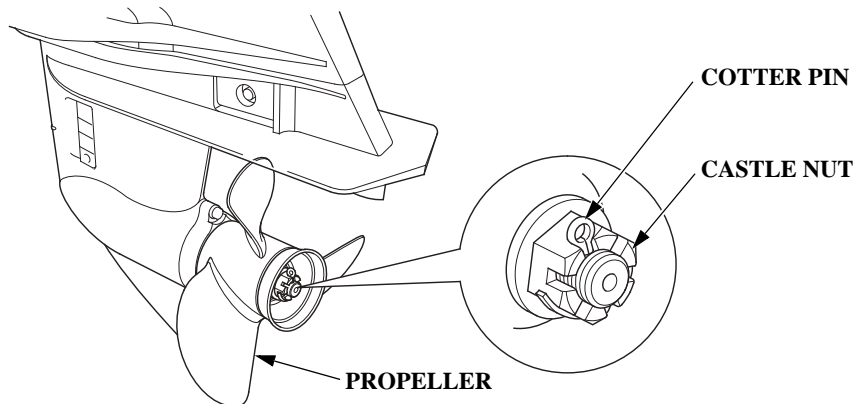
When checking the propeller:

- 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 page 130). Consult an authorized TOHATSU 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 TOHATSU 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.

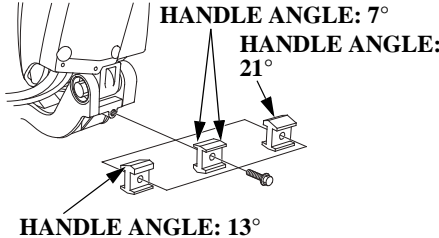
# PRE-OPERATION CHECKS

## Tiller Handle Height/Angle Adjustment (H type)

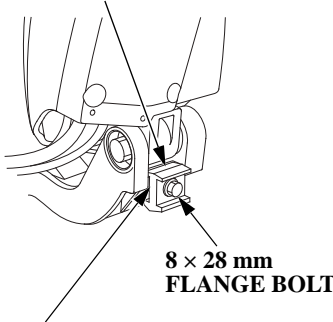
The tiller handle height and angle can be adjusted to three positions by changing the installation direction of the height adjustment block. Select a suitable height and angle for the operator and secure the block with the 8 × 28 mm flange bolt.

### <Height/Angle Adjustment Procedure>

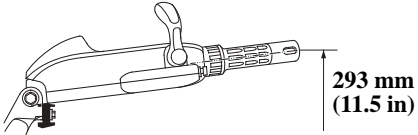
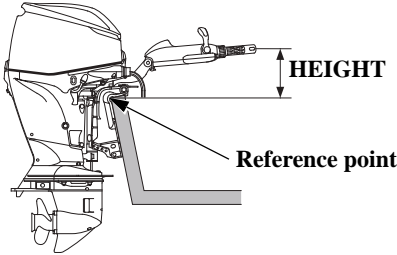
1. Raise the tiller handle and remove the 8 × 28 mm flange bolt and the height adjustment block.
2. Pull down the tiller handle. Determine the height adjustment block installation direction and secure the block with the 8 × 28 mm flange bolt.



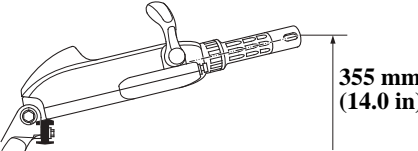
Install the height adjustment block so that the selected angle of the tiller handle is in this position.



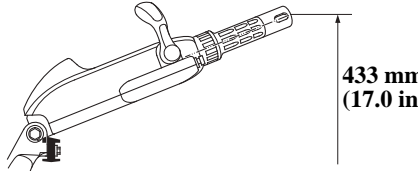
HEIGHT ADJUSTMENT BLOCK



HANDLE ANGLE: 7°



HANDLE ANGLE: 13°

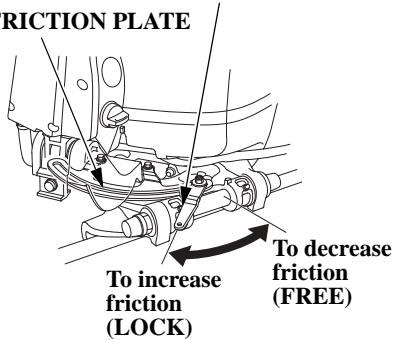


HANDLE ANGLE: 21°

# PRE-OPERATION CHECKS

## Steering Handle Friction (H type)

STEERING FRICTION ADJUSTER  
FRICTION PLATE



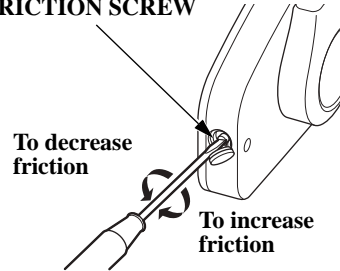
Check whether the handle moves smoothly.  
For smooth steering, adjust the steering friction adjuster so that a slight drag is felt when turning.

### NOTE:

Do not apply grease or oil on the friction plate. Grease or oil will reduce the friction of the adjuster.

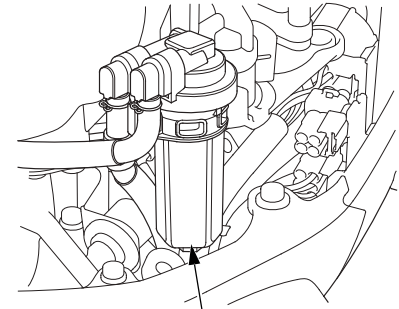
## Remote Control Lever Friction (Side-mount type)

CONTROL LEVER  
FRICTION SCREW



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.

## Fuel Filter/Water Separator



**FUEL FILTER/WATER SEPARATOR**  
(inside strainer cup)

Fuel filter/water separator is located near by the engine cover fixing lever of the boat side. Check the fuel filter/water separator. When water accumulated in the fuel filter/water separator, the red ring starts to float. Clean it or consult with an authorized TOHATSU outboard motor dealer for cleaning (see page 123).



# PRE-OPERATION CHECKS

## Battery

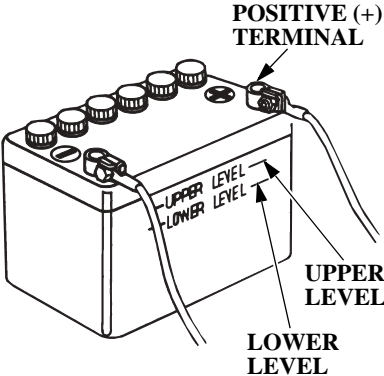
**NOTICE**

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 119).

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 119).



**▲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.**

# PRE-OPERATION CHECKS

## 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 switches for correct operation.
- (4) The stern bracket for damage or loose installation.
- (5) The tool kit for missing spare parts and tools.
- (6) The anode metal for damage, looseness or excessive corrosion.

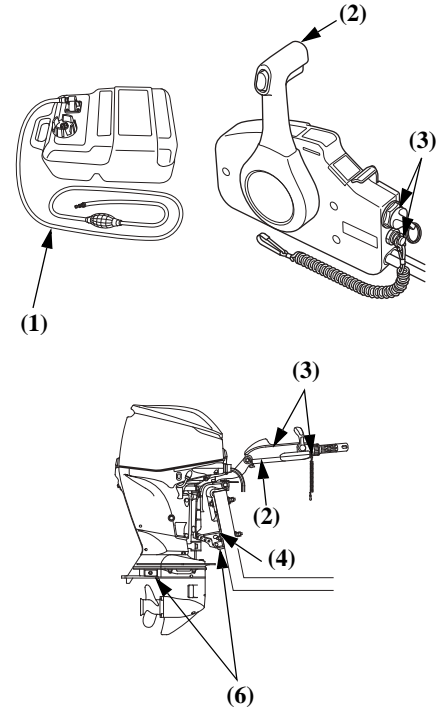
The anode (sacrificed metal) helps to protect the outboard motor from corrosion damage; it must be exposed directly to the water whenever the outboard motor is in use. Replace the anodes when they have been reduced to about two-thirds of their original size, or if they are crumbling.

### 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:

- Owner's Manual
- Tool kit
- Spare parts: spark plugs, engine oil, spare propeller, castle nut, spacer (BFT60A model only), washer, cotter pin.
- Spare emergency stop switch clip.
- Other parts/materials required by laws/regulations.



## 7. STARTING THE ENGINE

### Fuel Line Connection

#### ▲ WARNING

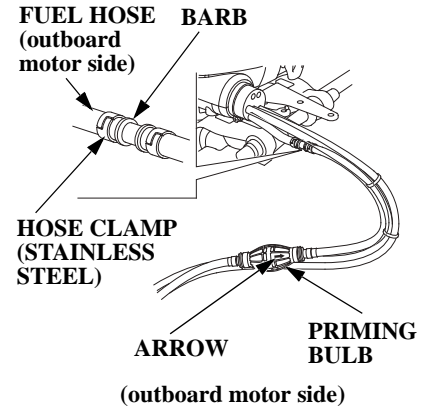
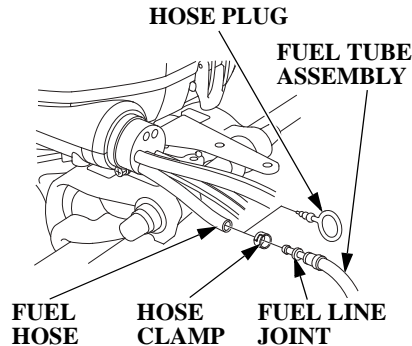
Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death.

- 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 outboard motor fuel line connector.
- Do not place the fuel tank more than 2 m (6.6 feet) away from the outboard motor.
- Be sure that the fuel line is not kinked.

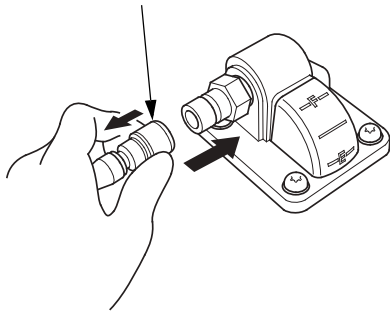
#### (Portable Fuel Tank equipped type or optional equipment)



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.

# STARTING THE ENGINE

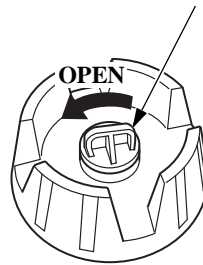
FUEL LINE CONNECTOR  
(TO FUEL TANK)



(fuel tank side)

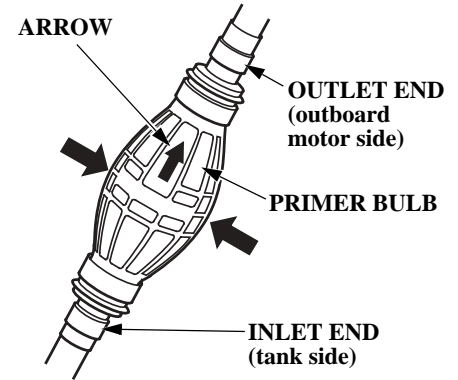
2. Connect the fuel tube assembly to the fuel tank.  
Be sure the fuel tube assembly connector is securely latched. Always disconnect the fuel line when storing or transporting the outboard motor.

FUEL FILLER CAP  
VENT KNOB



3. Turn the fuel filler cap vent knob counterclockwise all the way to open the vent.

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 outboard motor. Check for leaks.

**▲ WARNING**

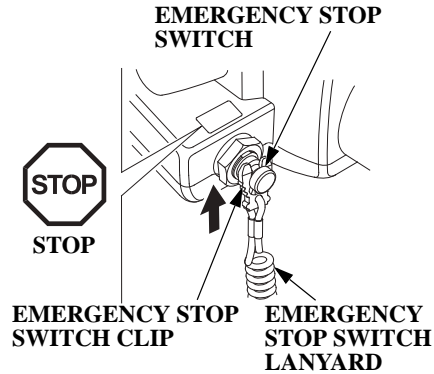
Be careful not to spill any fuel. Spilled fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

## 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.

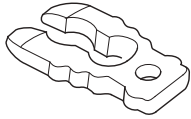
### ▲WARNING

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 engine.

### NOTE:

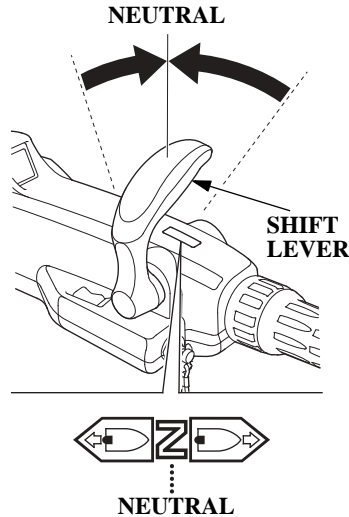
The engine will not start unless the emergency stop switch clip is engaged with the emergency stop switch.

# STARTING THE ENGINE

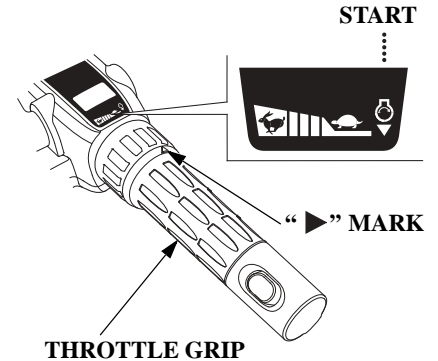


**SPARE EMERGENCY STOP SWITCH CLIP**

Store the spare emergency stop switch clip in the tool bag. 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.



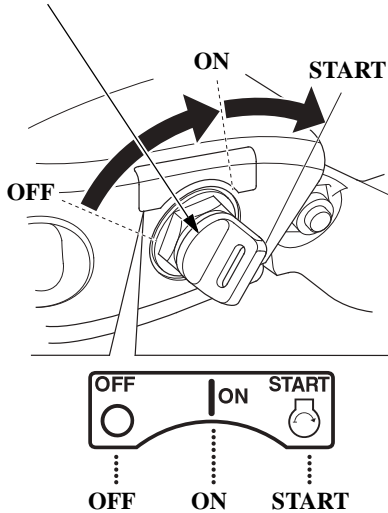
2. Move the shift lever to the NEUTRAL position. The engine does not start unless the shift lever is set in the NEUTRAL position.



3. Align the “⚙” (start mark) on the tiller handle with the projected end of the “►” mark on the throttle grip.

# STARTING THE ENGINE

## ENGINE SWITCH KEY



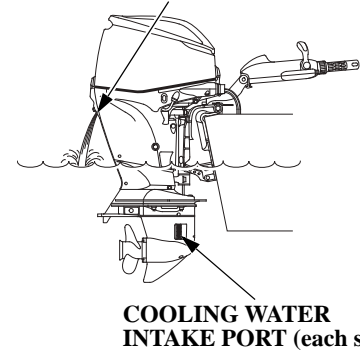
4. Turn the engine switch key to the START position and hold it there until the engine starts.  
When the engine starts, release the key, allowing it to return to the ON position.

## 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 engine.

## COOLING WATER CHECK HOLE

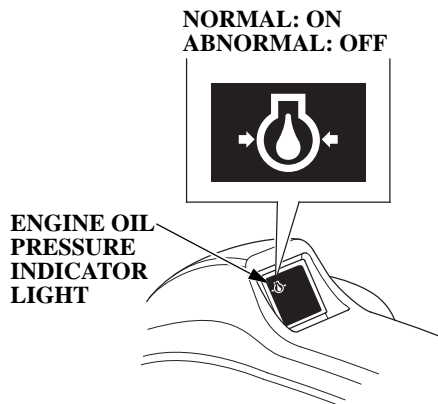


5. After starting, check whether the cooling water is flowing out of the cooling water check hole. Amount of water flowing out of the check hole might vary due to the thermostat operation, but this is normal.

## STARTING THE ENGINE

### 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 TOHATSU 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 56).
  - 2) If the oil level is normal and the oil pressure indicator light does not turn ON, consult with an authorized TOHATSU 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<sup>-1</sup> (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.
- The cooling system may freeze in areas where the temperature reaches 0°C (32°F) or below. Cruising at high speed without warming the engine up may cause engine damage.

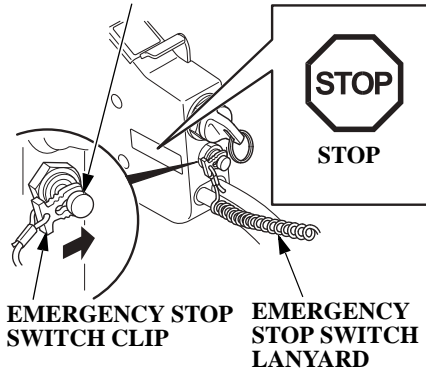
### NOTE:

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



## Starting the Engine (R type) (Side-mount type)

### EMERGENCY STOP SWITCH



#### ▲ 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.

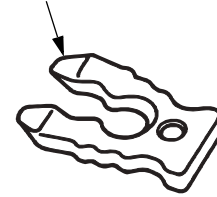
#### ▲ WARNING

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 engine.

#### NOTE:

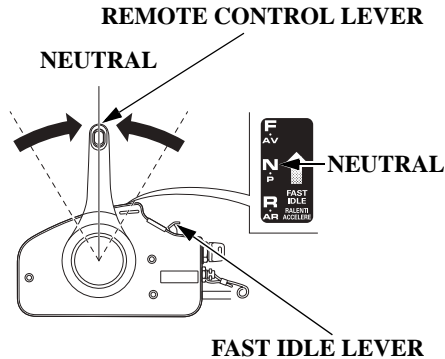
The engine will not start unless the emergency stop switch clip is engaged with the emergency stop switch.

### SPARE EMERGENCY STOP SWITCH CLIP (optional equipment)

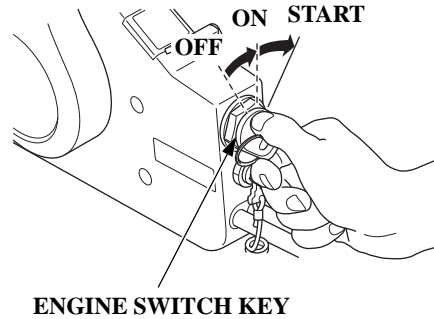


A spare emergency stop switch clip (optional equipment) can be stored in the tool bag (see page 112).

# STARTING THE ENGINE



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



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

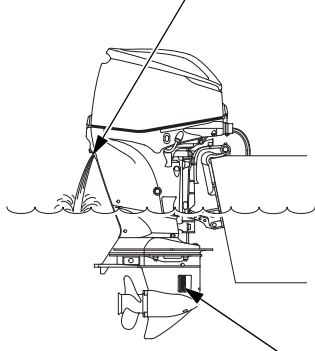
- The starter motor consumes a large amount of current. Do not therefore run it continuously for more than 5 seconds at a time. If the engine does not start within 5 seconds, wait at least 10 seconds before running the starter motor again.
- Do not turn the engine switch key to the START position while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

## STARTING THE ENGINE

### 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

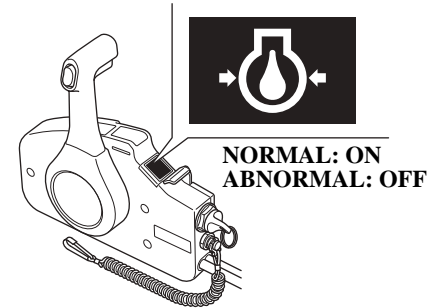
If water does not flow out, or if steam comes out, stop the engine. Check to see if the screen in the cooling water intake port is obstructed and remove foreign materials if necessary. Check the cooling water check hole for clogging. If water still does not flow out, have your outboard motor checked by an authorized TOHATSU 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 56).
- 2) If the oil level is normal and the oil pressure indicator light does not turn ON, consult with an authorized TOHATSU outboard motor dealer.

### ENGINE OIL PRESSURE INDICATOR LIGHT



# STARTING THE ENGINE

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<sup>-1</sup> (rpm).  
Failure to completely warm up the engine will result in poor engine performance.

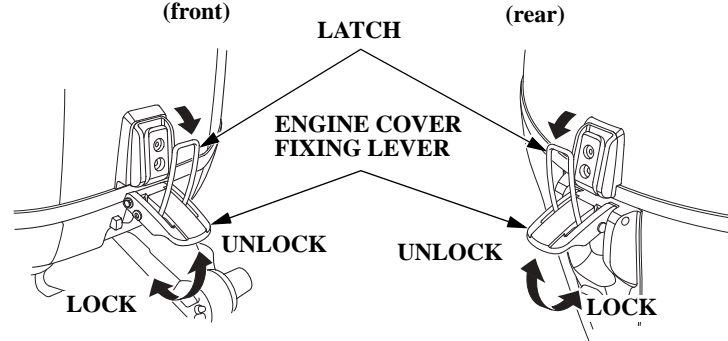
## NOTICE

- **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.**
- **The cooling system may freeze in areas where the temperature reaches 0°C (32°F) or below. Cruising at high speed without warming the engine up may cause engine damage.**

## NOTE:

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

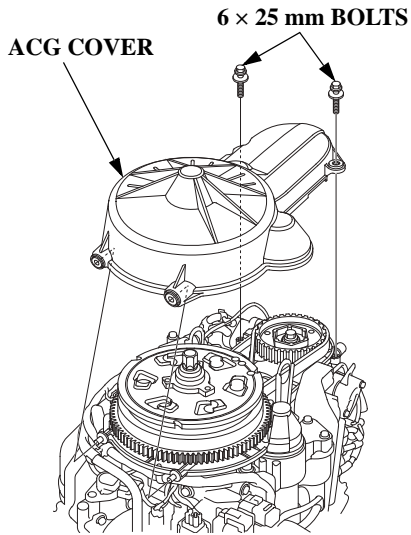
## Emergency Starting



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.

# STARTING THE ENGINE

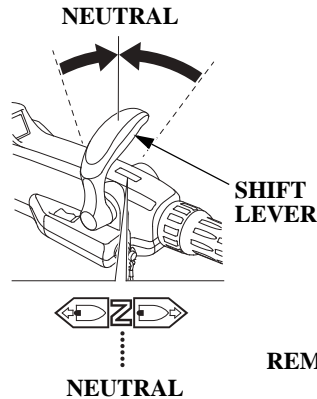


3. Remove the two 6 × 25 mm bolts, then remove the ACG cover.

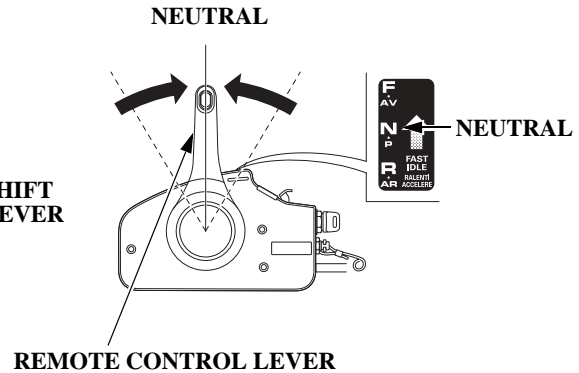
**NOTE:**

Take care not to lose the bolts.

(H type)



(Side-mount type)



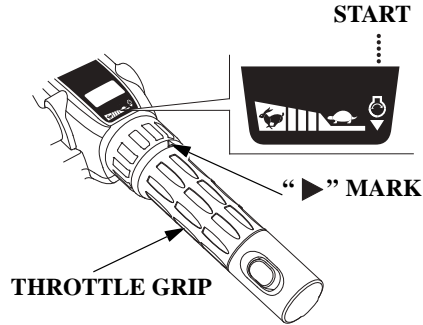
4. Set the shift lever or remote control lever is in the NEUTRAL position.

**▲WARNING**

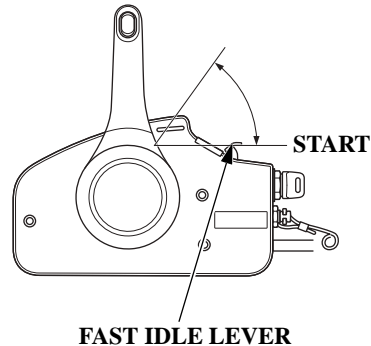
The “Neutral Starting System” will not work in emergency starting. Be sure to set the shift lever/control lever into the NEUTRAL position to prevent start-in-gear when starting the engine in emergency. Sudden unexpected acceleration could result in serious injury or death.

# STARTING THE ENGINE

(H type)



(Side-mount type)

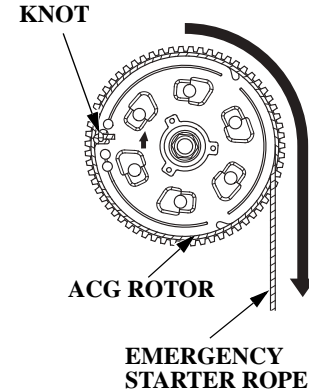


5. H type:

Align the "☪" (start mark) on the tiller handle with the projected end of the "▶" mark on the throttle grip.

Side-mount type:

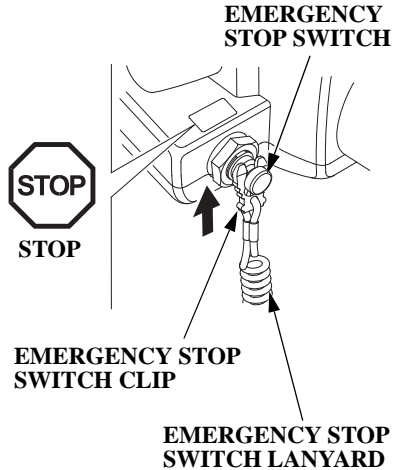
Leave the fast idle lever in the START (fully lowered) position.



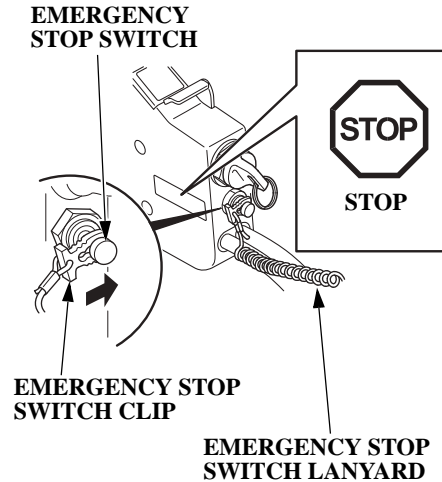
6. Set the ACG rotor so the cutouts are on the right and left sides of the ACG rotor as shown. Hook the knot at the end of the starter rope (accessory) against a cutout in the ACG rotor and wind the starter rope one and half turns clockwise along the groove in the ACG rotor.

# STARTING THE ENGINE

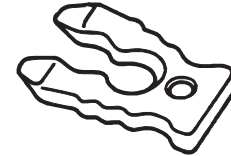
(H type)



(Side-mount type)



SPARE EMERGENCY STOP SWITCH CLIP



Store the spare emergency stop switch clip in the tool bag.

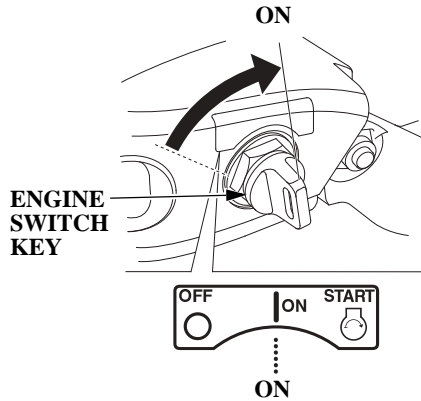
7. Insert the emergency stop switch clip at the end of the emergency stop switch lanyard into the emergency stop switch. Attach the other end of the emergency stop switch lanyard securely to the operator.

**NOTE:**

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

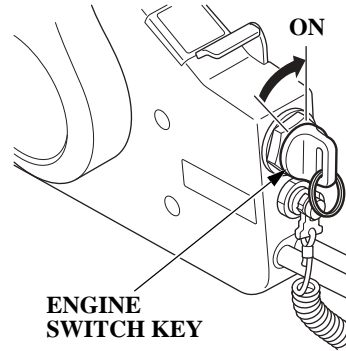
# STARTING THE ENGINE

(H type)



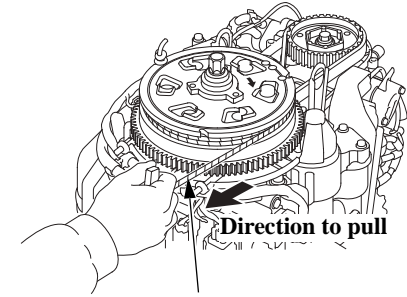
8. Turn the engine switch key to the ON position.

(Side-mount type)



## 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.**



EMERGENCY STARTER ROPE

9. Pull the emergency starter rope lightly until resistance is felt, then pull briskly in the direction of the arrow as shown above.

If the engine fails to start refer to Troubleshooting page 140.

## ▲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.**



10. Leave the ACG cover off and install the engine cover. Lock the engine cover fixing levers.
11. Attach the emergency stop switch lanyard securely to the operator and return to the closest boat landing.
12. After returning to the closest boat landing, contact your closest authorized TOHATSU outboard motor dealer and perform the following.
  - Have the electrical system checked.
  - Have your dealer reassemble the parts removed in the emergency starting procedure.

## 8. OPERATION

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### 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  $\text{min}^{-1}$  (rpm) or 10% to 30% throttle opening.

Next 60 minutes:

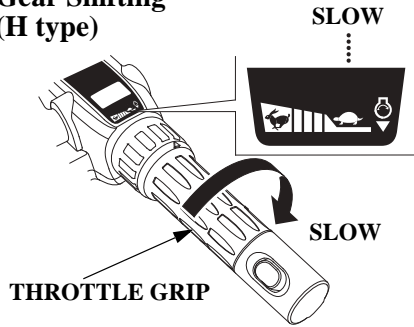
Run the outboard motor up to maximum of 4,000 to 5,000  $\text{min}^{-1}$  (rpm) or 50% to 80% throttle opening. Short bursts of full throttle are acceptable but do not operate the outboard motor continuously at full throttle.

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)

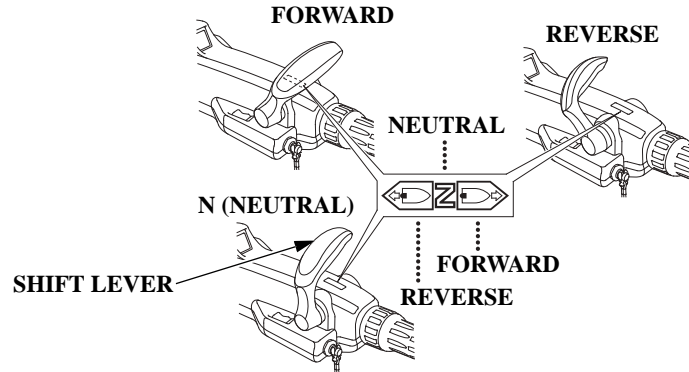


The shift lever has 3 positions: FORWARD, NEUTRAL, and REVERSE.

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

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

### 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.

# OPERATION

## Steering (H type)

**RIGHT TURN**



Move the tiller handle to the left.

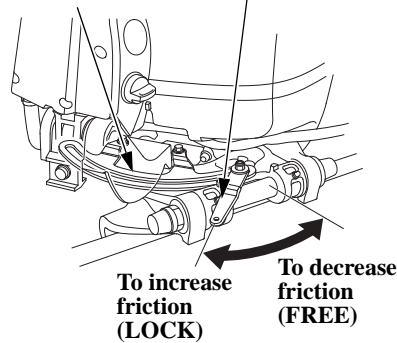
**LEFT TURN**



Move the tiller handle to the right.

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

## STEERING FRICTION ADJUSTER FRICTION PLATE



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

Move the adjuster to the **LOCK** direction to increase steering friction for holding a steady course.

Move the adjuster to the **FREE** direction to decrease friction for easy turning.

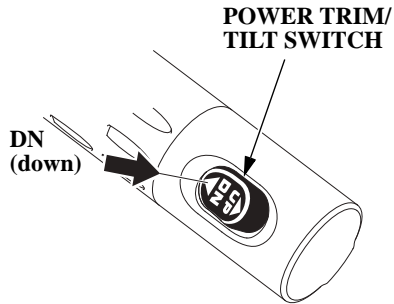
## NOTE:

Do not apply grease or oil on the friction plate. Grease or oil will reduce the friction of the adjuster.

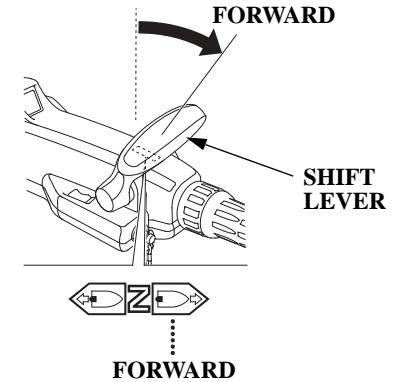
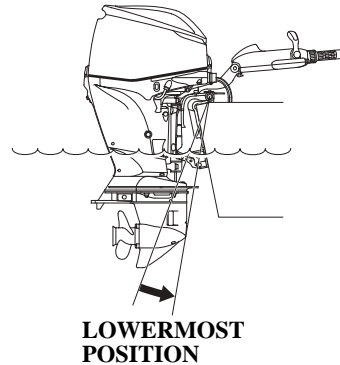
## (R type)

Steer the boat in the same manner as an automobile.

## Cruising (H type)



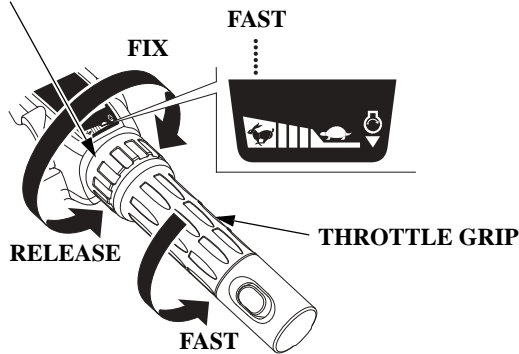
1. Press the DN (down) portion of the power trim/tilt switch and trim the outboard motor to the lowermost position.



2. With the shift lever in the FORWARD position.

# OPERATION

## THROTTLE FRICTION ADJUSTER



3. 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 between  $5,000 \text{ min}^{-1}$  (rpm) and  $6,000 \text{ min}^{-1}$  (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 54) for a relation between the propeller and the engine speed.

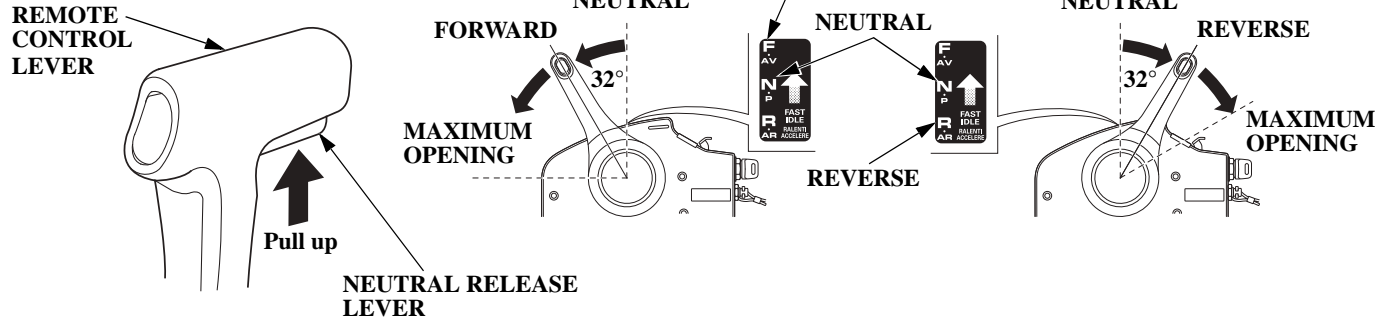
## ⚠ CAUTION

**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.

## Gear Shifting (R type) (Side-mount type)



### ⚠ CAUTION

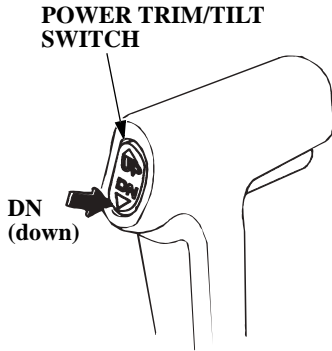
**Avoid sharp and abrupt operation of the remote control lever. Operate it moderately. Operate the remote control lever and raise the engine speed after making sure that the gear was shifted securely.**

While pulling the neutral release lever, move the remote control lever approximately 32° toward the FORWARD or REVERSE position to engage the desired gear. Moving the remote control lever further from approximately 32° will increase throttle opening and boat speed.

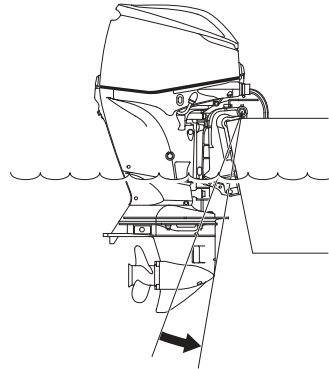
The remote control lever will not move unless the neutral release lever is pulled up.

# OPERATION

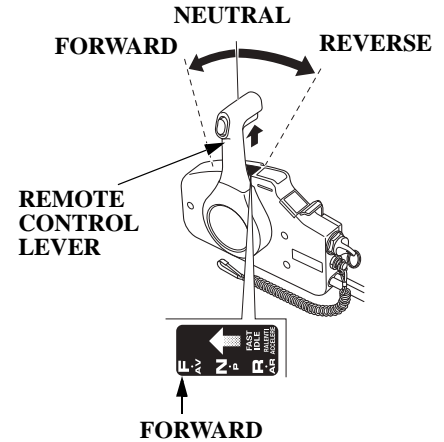
## Cruising (R type) (Side-mount type)



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



LOWERMOST POSITION



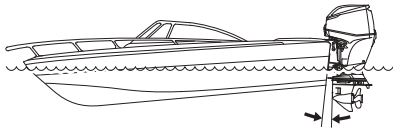
2. Move the remote control lever from NEUTRAL toward FORWARD position.

Moving about 32° engages the gear. Moving the remote control lever further opens the throttle and increases the engine speed.

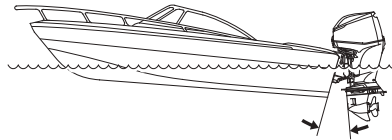
For the sake of fuel economy, open the throttle about 80%.



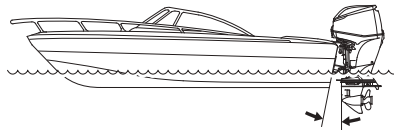
**OUTBOARD MOTOR TRIMMED TOO LOW**



**OUTBOARD MOTOR TRIMMED TOO HIGH**



**OUTBOARD MOTOR TRIMMED CORRECTLY**

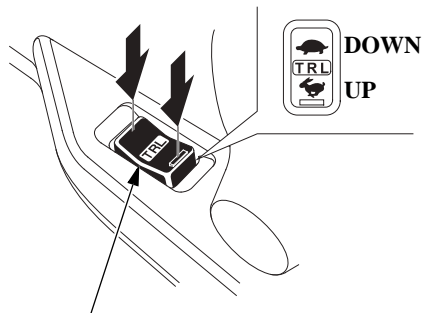


**When cruising:**

- (A) Into a high wind, trim the outboard motor down slightly to lower the bow and improve boat stability.
- (B) With a tail wind, trim the outboard motor up slightly to raise the bow and improve boat stability.
- (C) Through rough waves, do not trim the outboard motor too low or too high to avoid an unstable steering condition.

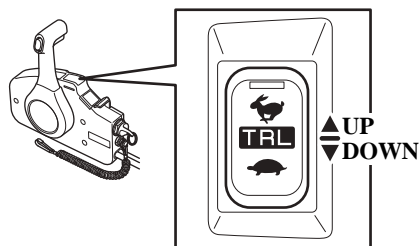
## OPERATION

### TRL (Trolling Control) Switch (H type)



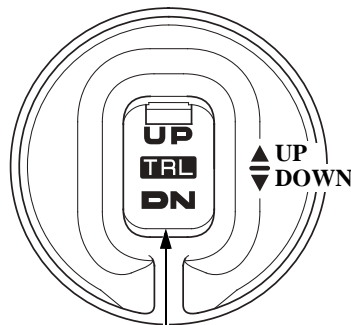
TRL (Trolling Control) SWITCH

### Remote Control Box (Side-mount type)



TRL (Trolling Control) SWITCH

### TRL (Trolling Control) Switch Panel (optional equipment: R type)



TRL (Trolling Control) SWITCH

DN: Reduce engine speed  
UP: Increase engine speed

After the engine has warmed up, keeping the UP or DN button pushed when cruising with the throttle fully closed, changes the mode to trolling mode.

A long buzz sounds once. When the mode is changed to trolling mode, the engine speed is  $850 \text{ min}^{-1}$  (rpm).

You can adjust the engine speed by  $50 \text{ min}^{-1}$  (rpm) every time you press the switch once. You will hear a short buzz.

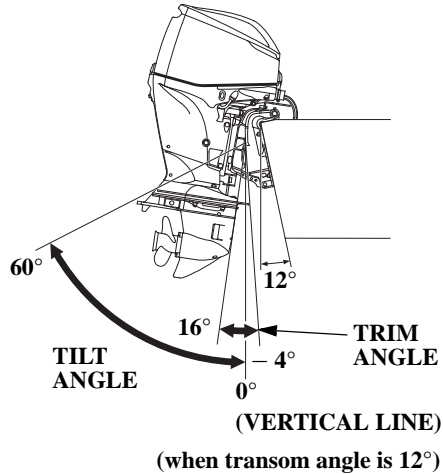
The engine speed can be adjusted within the range of  $750 - 1,000 \text{ min}^{-1}$  (rpm).

Continuing to press the switch will not decrease or increase the engine speed beyond the lower ( $750 \text{ min}^{-1}$  (rpm)) or higher ( $1,000 \text{ min}^{-1}$  (rpm)) limit.

If you try to do this, a short buzz sounds twice.

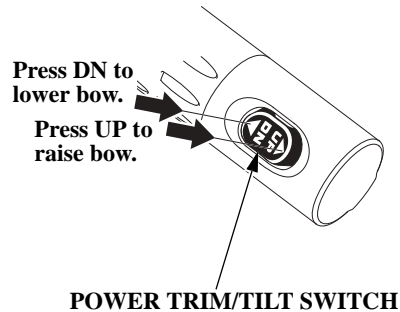
The throttle may be operated while in trolling mode. The trolling mode is cancelled when you reach  $3,000 \text{ min}^{-1}$  (rpm).

## Trimming the Outboard Motor



The BFT60A/BFW60A models are equipped with the power trim/tilt system which can adjust the outboard motor angle (trim/tilt angle) while cruising and mooring. The outboard motor angle can also be adjusted while cruising and accelerating to obtain the maximum speed and optimum driveability and fuel economy.

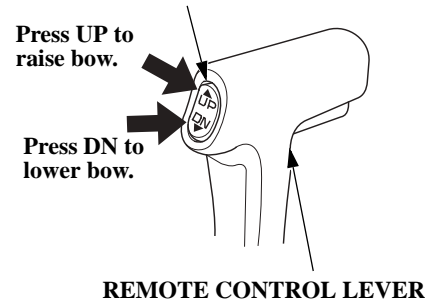
**(H type)**



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

**(Side-mount type)**

**POWER TRIM/TILT SWITCH**



## OPERATION

---

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 outboard motor excessively can cause damage to the water pump.**

### NOTE:

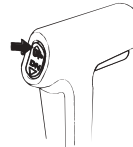
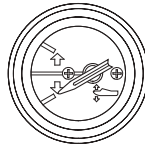
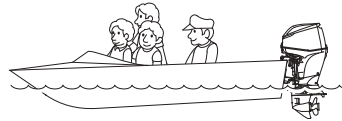
- Decrease the trim angle on high speed turns to reduce the possibility of propeller ventilation.
- Improper outboard motor trim angle can result in an unstable steering condition.

## Trim Meter (equipped type or optional equipment)

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

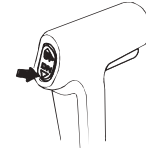
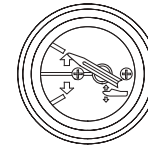
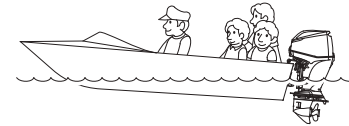
The illustration represents sidemount type. Perform the same procedure for the other types.

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



With the outboard motor trimmed low the trim meter will read as shown. To raise the bow increase the outboard 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. OUTBOARD MOTOR TRIMMED TOO HIGH**



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

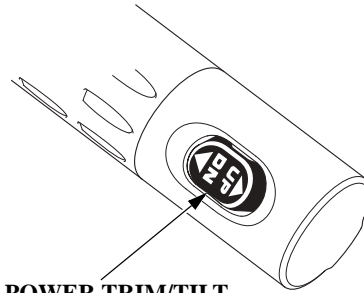
# OPERATION

## Tilting the Outboard Motor

Tilt the outboard 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 shift lever or 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 outboard motor to the best position in compliance.

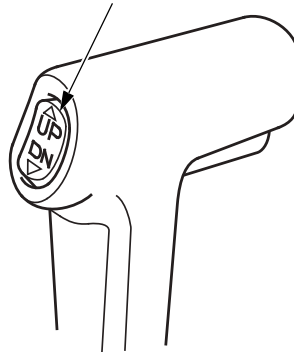
(H type)



**POWER TRIM/TILT SWITCH**

(Side-mount type)

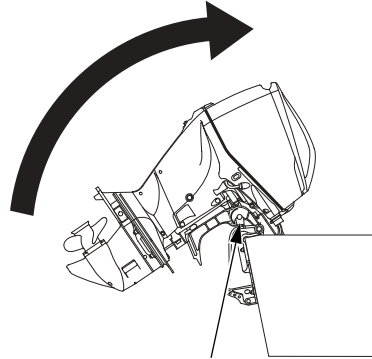
**POWER TRIM/TILT SWITCH**



### NOTE:

If your outboard motor is equipped with the tilt limit mechanism (optional equipment for R type), you can set the tilt limit angle. Contact your dealer for more information.

## Moorage



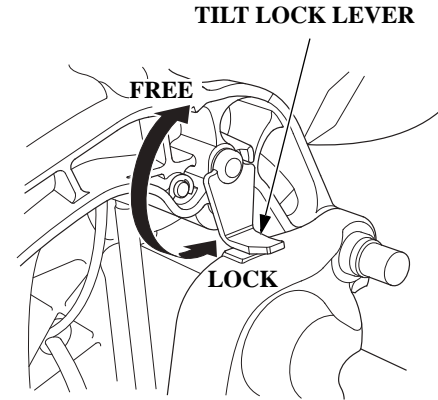
**TILT LOCK LEVER**

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

**NOTE:**

Before tilting up, leave the outboard motor in the running position for one minute after stopping the engine to drain the water from inside the engine.

Stop the engine and disconnect the fuel line from the outboard motor before tilting the outboard motor.

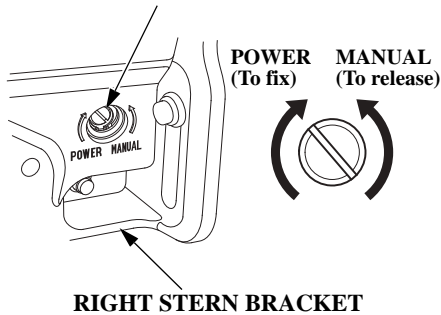


1. Raise the outboard motor as full as it goes using the power trim/tilt switch.
2. Move the tilt lock lever to the **LOCK** position and lower the outboard motor until the lock lever contacts the stern bracket.
3. To tilt down, raise the outboard motor as far as it goes using the power trim/tilt switch, move the tilt lock lever to the **FREE** position.

# OPERATION

## Manual Relief Valve

### 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 three and a half turns counterclockwise using a screwdriver.

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

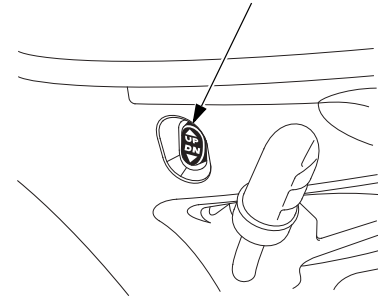
Check that nobody is under the outboard motor before opening the manual relief valve. If the manual relief valve is loosened (turned counterclockwise) when the outboard motor is tilted up, the outboard motor will suddenly tilt down.

### ▲ CAUTION

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

## Power Tilt Switch (outboard motor pan)

### POWER TILT SWITCH



When you are away from the power trim/tilt switch on the control lever or on the tiller handle 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 or on the tiller handle side.

### ▲ CAUTION

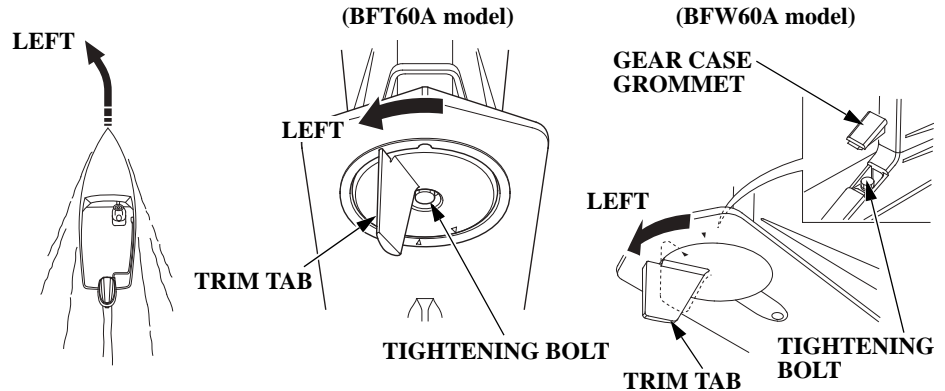
**Do not operate this power tilt switch on the outboard motor while sailing.**



## 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/handle for both right and left turns to determine the amount of effort required.

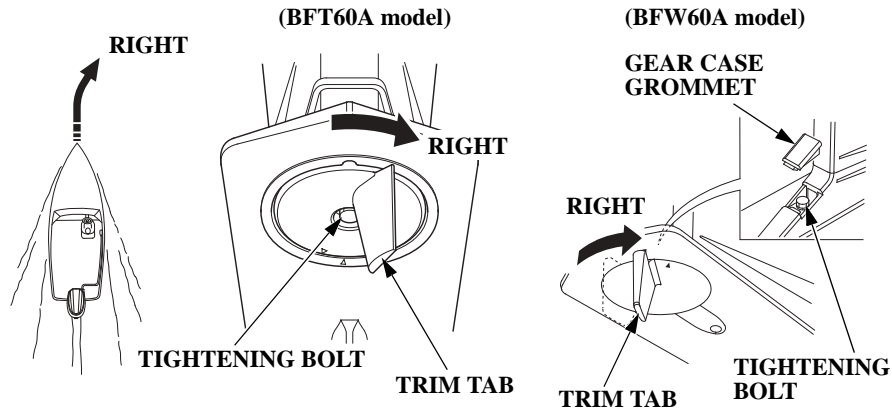


**BFT60A model:**  
Loosen the tightening bolt to adjust the trim tab.

**BFW60A model:**  
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.

# OPERATION

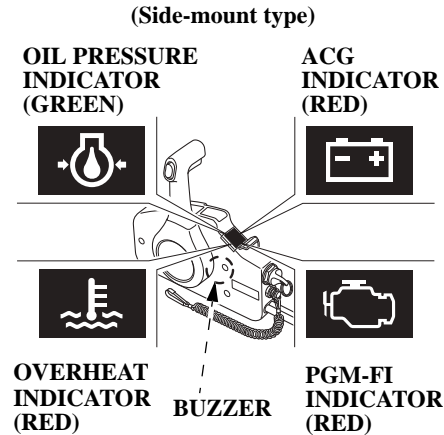
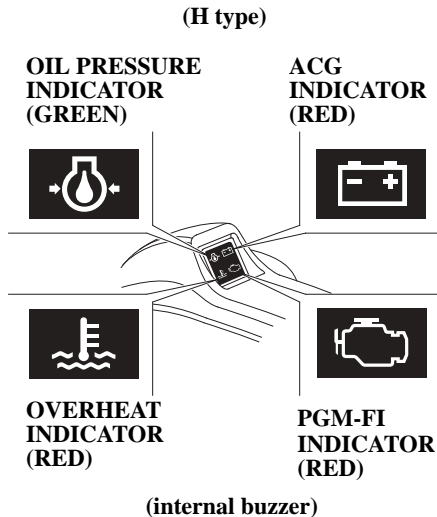


If less effort is required to make right turns:

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.

## Engine Protection System <Engine Oil Pressure, Overheat, PGM-FI and ACG Warning Systems>



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, and overheat is activated as described in the following table.

## OPERATION

Symptom \ System	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)

### 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.

When the oil pressure warning system is activated:

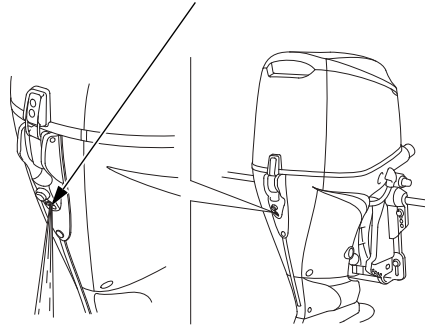
1. Stop the engine immediately and check the engine oil level (see page 56).
2. If the oil is up to the recommended level, restart the engine. If the oil pressure warning system stops after 30 seconds, the system is normal.

**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 TOHATSU outboard motor dealer.

**COOLING WATER CHECK HOLE**



When the overheat warning system is activated:

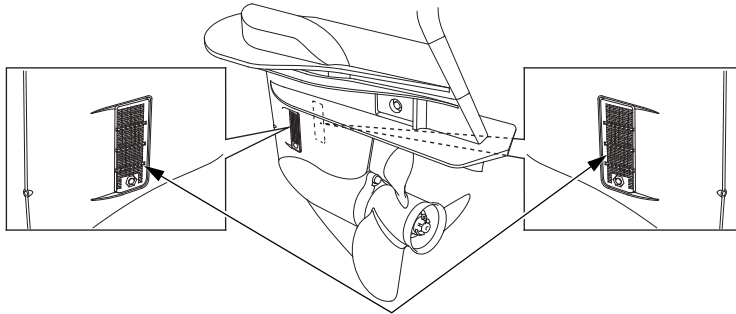
1. Return the shift lever or remote control lever to the N (neutral) position immediately. Check to see if water is flowing out of the cooling water check hole.
2. If water is flowing out of the cooling water check hole, continue idling for 30 seconds. If the overheat warning system stops after 30 seconds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

**NOTE:**

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

## OPERATION

---



**COOLING WATER INTAKE PORT**  
(each side)

3. If the overheat warning system stays activated, stop the engine. Tilt up the outboard 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 TOHATSU outboard motor dealer.

When the PGM-FI activated:

1. Consult with an authorized TOHATSU outboard motor dealer.

When the ACG warning system is activated.

1. Check the battery (see page 118).  
If the battery is OK, consult with an authorized TOHATSU outboard motor dealer.

## <Over-rev Limiter>

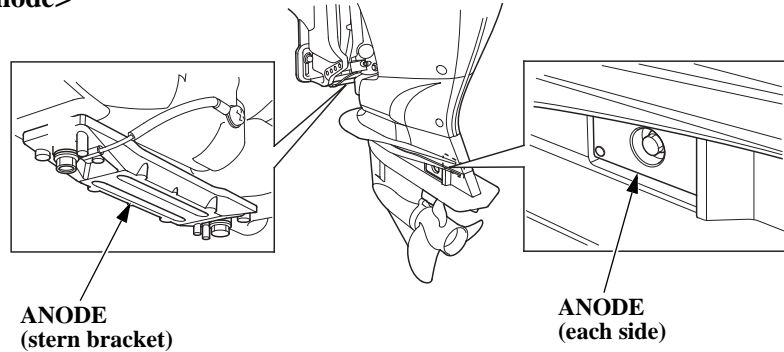
This outboard motor is equipped with an engine over-rev limiter which activates when the engine speed increases excessively. The over-rev limiter can be activated while cruising, tilting up the outboard motor, or when ventilation occurs during a sharp turn.

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 TOHATSU 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 4 small sacrificial anodes in the water passages of the engine block.

# OPERATION

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## 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 outboard motor up to prevent the propeller and gear case from hitting the bottom (see page 92). With the outboard motor tilted up, operate the outboard motor at low speed.

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

## Multiple Outboard Motors

On boats equipped with more than one outboard motor, all motors normally operate at the same time.

If one or more motor(s) is stopped while the other(s) is running, put the stopped motor in “N” (neutral) and tilt it up so its propeller is above the water’s surface.

If the propeller of the stopped motor is left in the water, it may turn as the boat moves through the water, causing a reverse flow of water from the exhaust side. This reverse flow will happen if the stopped engine’s propeller is in the water, its gearshift is in “R” (reverse), and the boat is moving forward. Reverse flow can cause an engine malfunction.

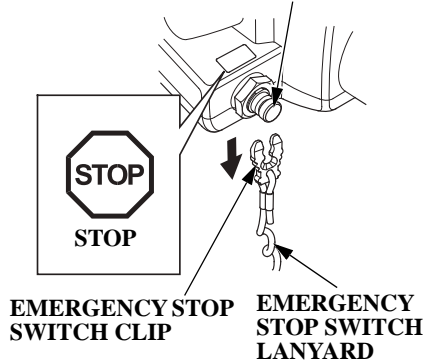


## 9. STOPPING THE ENGINE

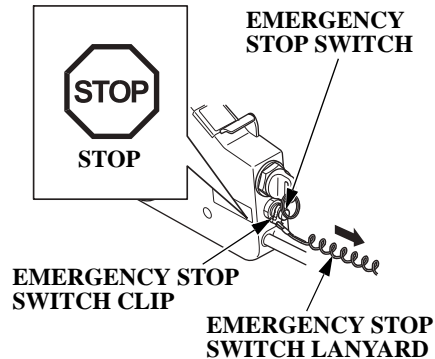
### Emergency Engine Stop

(H type)

#### EMERGENCY STOP SWITCH



(Side-mount type)



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

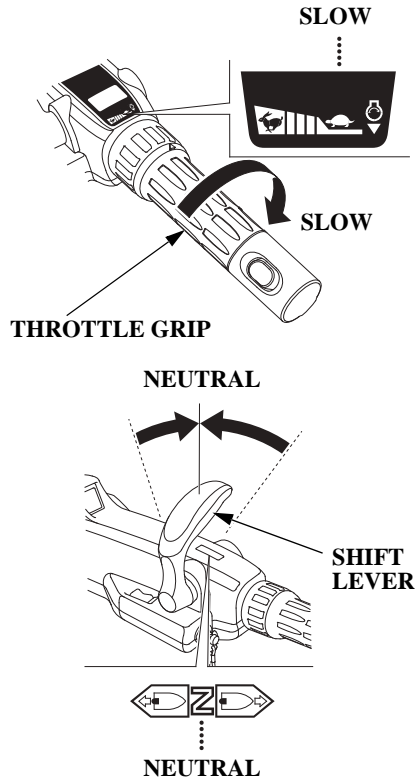
We suggest that you stop the engine this way occasionally to verify that the emergency stop switch is operating properly.

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

Turn the engine switch key to the OFF position after verifying the emergency stop switch operation.

# STOPPING THE ENGINE

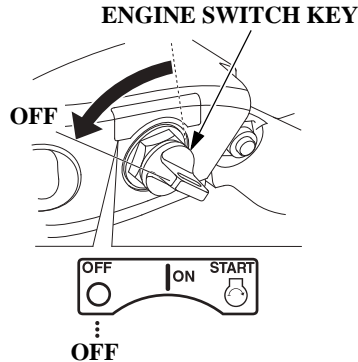
## Normal Engine Stop (H type)



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.



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 key is turned to **OFF**, pull the emergency stop switch clip out of the emergency stop switch by pulling the emergency stop switch lanyard (see page 103).

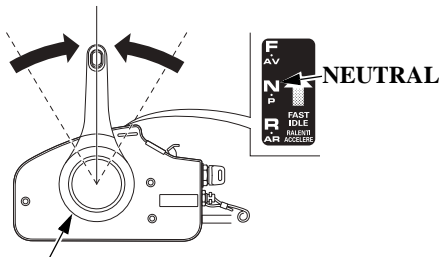
3. When the boat is not in use, remove and store the engine switch key and the emergency stop switch clip and emergency stop switch lanyard. If you are using a portable fuel tank, disconnect the fuel line if you will be storing or transporting the outboard motor.

## STOPPING THE ENGINE

(R type)

(Side-mount type)

NEUTRAL

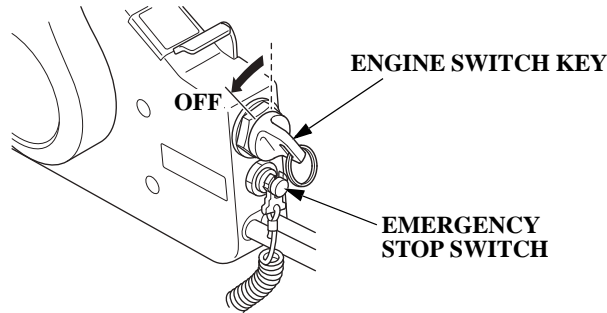


REMOTE CONTROL LEVER

1. Move the remote 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.



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 key is turned to OFF, pull the emergency stop switch clip out of the emergency stop switch by pulling the emergency stop switch lanyard (see page 103).

3. When the boat is not in use, remove and store the engine switch key and the emergency stop switch clip and emergency stop switch lanyard. If you are using a portable fuel tank, disconnect the fuel line if you will be storing or transporting the outboard motor.

## 10. TRANSPORTING

### Fuel Line Disconnection

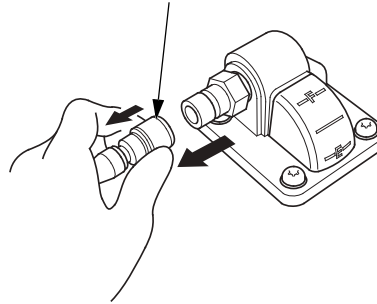
Before transporting the outboard motor, disconnect and remove the fuel line in the following procedure.

#### **▲WARNING**

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

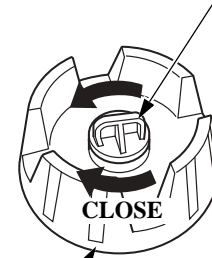
- **Be careful not to spill fuel. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before storing or transporting the outboard motor.**
- **Do not smoke or allow flames or sparks where fuel is drained or stored.**

FUEL LINE CONNECTOR



1. While pulling the fuel tube assembly connector cover, pull the fuel tube assembly connector to disconnect the fuel tube assembly connector from the fuel tank.

FUEL FILLER CAP VENT KNOB



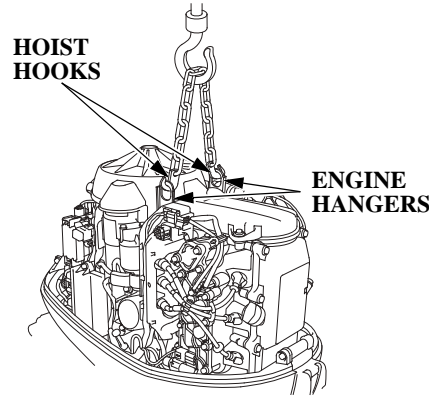
FUEL FILLER CAP

2. Close the fuel filler cap and vent knob securely.

## Transporting

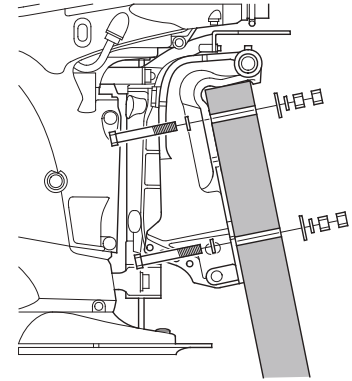
### ▲ WARNING

Do not carry the outboard motor by the engine cover. The engine cover can be unlatched and outboard motor can drop, resulting in an accidental injury and damage.



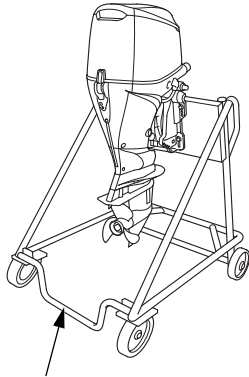
When transporting the outboard motor on a vehicle, perform the following.

1. Remove the engine cover (see page 55), and drain the vapor separator (see page 135).
2. Set the hoist hooks against the two engine hangers and hang the outboard motor to remove it from the boat.



3. Secure the outboard motor on an outboard motor stand with the mounting bolts and nuts.

# TRANSPORTING

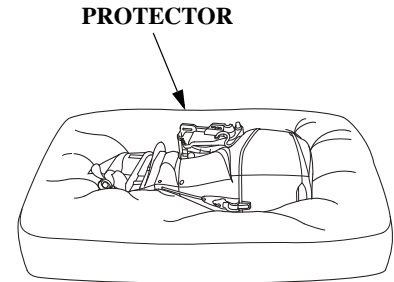


**OUTBOARD MOTOR STAND**

4. Remove the hoist hook and reinstall the engine cover.

## **⚠ CAUTION**

Before transporting the outboard motor horizontally, be sure to drain the gasoline and oil from the outboard motor as instructed on pages 115 and 135.

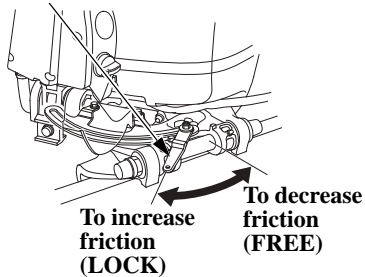


**(Starboard side turned down as shown.)**

When you place the outboard motor horizontally to transport, be sure to place sponge or clothes under the outboard motor to protect it from impact and damage.

## Trailer (H type)

### STEERING FRICTION ADJUSTER



When trailering or transporting the boat with the outboard motor attached always disconnect the fuel line from the portable fuel tank and move the steering friction lever locked position (see page 62).

## (R type)

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

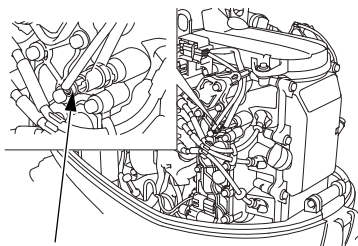
### NOTICE

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

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

## 11. CLEANING AND FLUSHING

After each use in salt water or dirty water, thoroughly clean and flush the outboard motor with fresh water.



HO2 SENSOR

### NOTICE

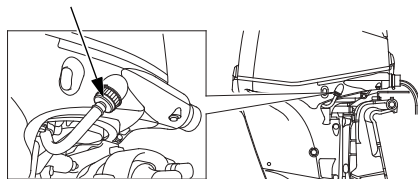
Do not apply water or corrosion inhibitor directly to the belt and electrical components under the engine cover, such as the timing belt or HO2 sensor. If water or corrosion inhibitor penetrates these components, they may be damaged. Before applying a corrosion inhibitor, cover the belt and HO2 sensor with a protective material to prevent damage.

110

Shut off the engine before performing the cleaning and flushing.

1. Disconnect the fuel line from the outboard motor.
2. Tilt down the outboard motor.
3. Clean and wash the outside of the outboard motor with fresh water.

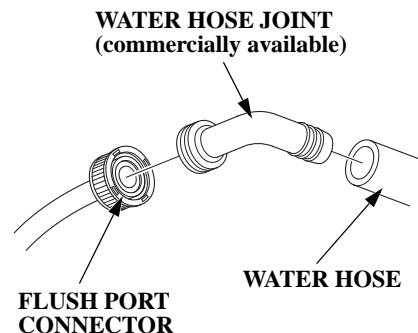
### FLUSH PORT CONNECTOR



FLUSH PORT CONNECTOR

4. Disconnect the flush port connector.
5. Screw the flush port connector onto the garden hose.
6. Turn on the fresh water supply and flush the outboard motor for at least 10 minutes.
7. After flushing, disconnect the garden hose and reconnect the flush port connector.
8. Tilt up the outboard motor and move the tilt lock lever to the LOCK position.

- When using the water hose joint:





Periodic maintenance and adjustment are important to keep the outboard 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 55).**

### **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 TOHATSU Genuine parts or their equivalents for maintenance or repair. The use of replacement parts which are not of equivalent quality may damage the outboard motor.**

# MAINTENANCE

## Tool Kit, Spare 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.

### <Spare Emergency Stop Switch Clip (optional equipment)>

A spare emergency stop switch clip is available from your outboard motor dealer.

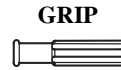
Always carry a spare emergency stop switch clip onboard. The spare clip may either be stored in the tool bag or in an easily accessible location on the boat.



OWNER'S MANUAL



FLAT SCREWDRIVER



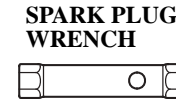
GRIP



FUSE PULLER



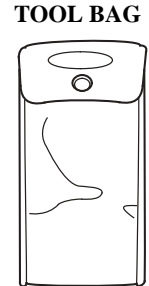
EMERGENCY STARTER ROPE



SPARK PLUG WRENCH



10 mm BOX WRENCH



TOOL BAG

## MAINTENANCE SCHEDULE

ITEM	REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first.	Each use	After use	First	Every	Every	Every	Refer to page
				month or 20 hrs.	6 months or 100 hrs.	year or 200 hrs.	2 years or 400 hrs.	
Engine oil	Check level	o						56
	Change			o	o			115
Gear case oil	Change			o (2)	o (2)			—
Engine oil filter	Replace					o (2)		—
Timing belt	Check-adjust					o (2)		—
Throttle linkage	Check-adjust			o (2)	o (2)			—
Idling speed	Check-adjust			o (2)	o (2)			—
Valve clearance	Check-adjust					o (2)		—
Spark plug	Check-adjust-Replace				o			116
Propeller and cotter pin	Check	o						60
Anode metal (Outside engine)	Check	o						64
Anode metal (Inside engine)	Check						o (2) (7)	—
Lubrication	Grease			o (1)	o (1)			121
Fuel tank and tank filter	Clean					o		126
Thermostat	Check					o (2)		—

- NOTE:** (1) Lubricate more frequently when used in salt water.  
 (2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the TOHATSU Service Manual for service procedures.  
 (3) For professional commercial use, log hours of operation to determine proper maintenance intervals.  
 (7) Replace the anodes when they have been reduced to about two-thirds of their original size, or if they are crumbling.

# MAINTENANCE

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
Fuel filter (Low pressure type)	Check	o (5)			o			123
	Replace						o	
Fuel filter (High pressure type)	Check				o (2)			—
	Replace						o (2)	—
Fuel line	Check	o (9)						64
	Replace		Every 2 years (If necessary) (2) (10)					
Battery and cable connection	Check level-tightness	o						63, 118
Bolts and Nuts	Check-tightness			o (2)	o (2)			—
Crankcase breather tube	Check					o (2)		—
Cooling water passages	Clean		o (4)					—
Water pump	Check					o (2)		—
Emergency stop switch	Check	o						—
Engine oil leak	Check	o						—
Each operation part	Check	o						—
Engine condition (6)	Check	o						—
Power Trim/Tilt	Check				o (2)			—
Shift Cable	Check-adjust				o (2) (8)			—

**NOTE:** (2) These items should be serviced by your servicing dealer, unless you have the proper tools and are mechanically proficient. Refer to the TOHATSU Service 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.

(5) Check for water and contamination.

(6) Upon starting, check for unusual engine sounds and cooling water flowing freely from the check hole.

(8) The user who performs shift operation frequently will recommend you exchange of a shift cable around three years.

(9) Check the fuel line for leaks, cracks, or damage. If it is leaking, cracked, or damaged, take it to your servicing dealer for replacement before using your outboard.

(10) Replace the fuel line if there are signs of leaks, cracks, or damage.

## 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:

2.6 L (2.7 US qt, 2.3 Imp qt)

...when oil filter is not replaced

2.7 L (2.9 US qt, 2.4 Imp qt)

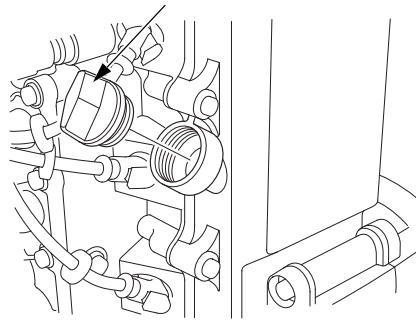
...when oil filter is replaced

### Recommended Oil:

SAE 10W-30 engine oil or equivalent, API Service category SG, SH or SJ.

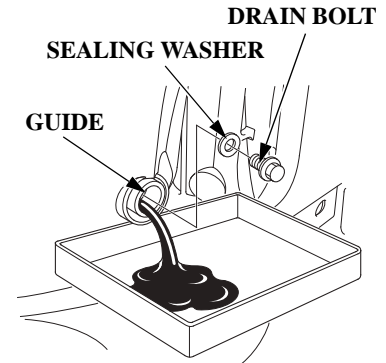
## <Engine Oil Replacement>

### OIL FILLER CAP



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.



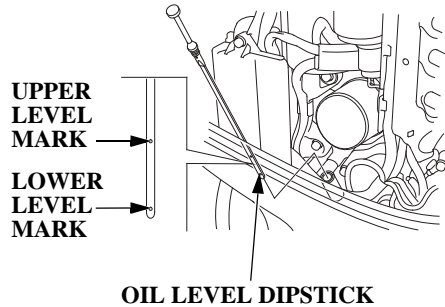
2. Place a suitable container under the guide.
3. Remove the engine oil drain bolt and sealing washer using the 12 mm wrench and drain the engine oil.

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

### DRAIN BOLT TIGHTENING TORQUE:

23 N·m (2.3 kgf·m, 17 lbf·ft)

# MAINTENANCE



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.
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, pour it on the ground or down a drain.

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-Adjust interval:

Every 100 operating hours or 6 months.

#### Replacement interval:

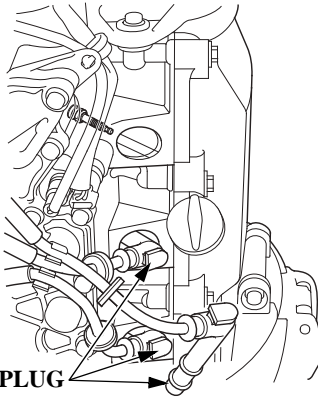
Every 100 operating hours or 6 months.

#### Recommended spark plug:

LMAR6C-9 (NGK)

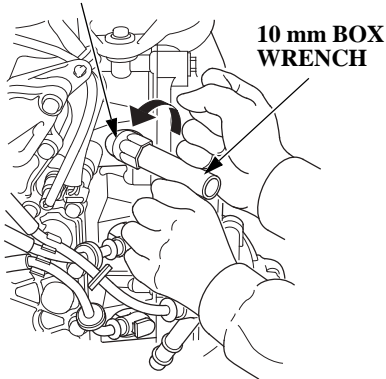
#### NOTICE

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



**SPARK PLUG  
CAP**

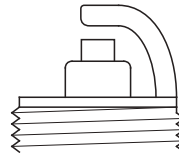
**SPARK PLUG WRENCH**



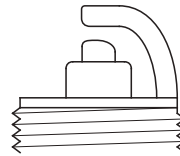
**10 mm BOX  
WRENCH**

1. Remove the engine cover.
2. Remove the spark plug caps.
3. Use the spark plug wrench, 10 mm box wrench and screwdriver supplied in the tool kit to loose the spark plugs.
4. Remove the 10 mm box wrench.
5. Use the spark plug wrench to remove the spark plugs.

**New plug**



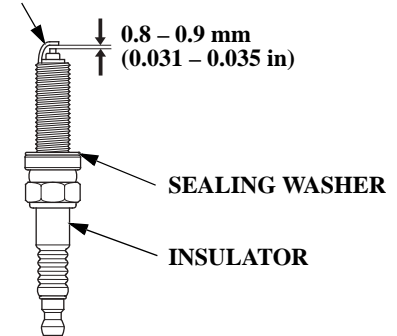
**Plug needing  
replacement**



6. Inspect the spark plugs.
  - (1) If the electrodes are heavily corroded or carbon-soiled, clean with a wire brush.

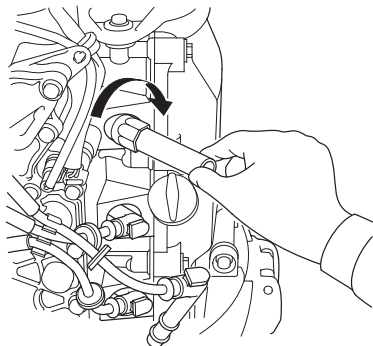
- (2) Replace a spark plug if the central electrode is worn. The spark plug can wear out in different ways. If the sealing washer shows signs of wear, or if the insulators are cracked or chipped, replace the spark plugs.

**SIDE ELECTRODE**



7. Measure the plug gaps with a wire-type feeler gauge. The gaps should be 0.8 – 0.9 mm (0.031 – 0.035 in). Correct as necessary by carefully bending the side electrode.

## MAINTENANCE



8. Thread the plugs in by hand to prevent cross threading.
9. After the spark plugs are seated, tighten with a spark plug wrench and 10 mm box wrench to compress the washers.

### SPARK PLUG TORQUE:

16 N·m (1.6 kgf·m , 12 lbf·ft)

### 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. Attach the spark plug caps.
11. Install and lock the engine cover securely.

## 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.**

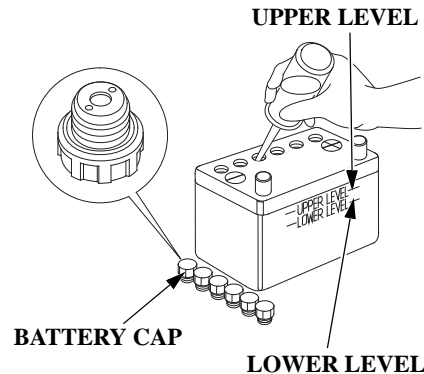
### ▲WARNING

**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.

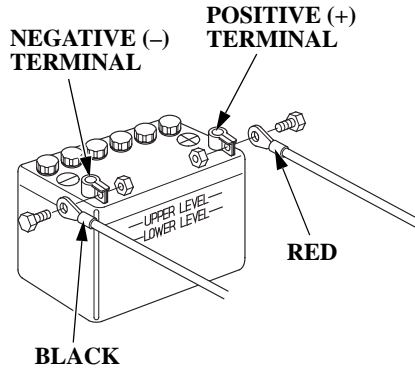
If the battery fluid is near or below the lower level, add the distilled water to the upper level.

### <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.

# MAINTENANCE



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.

## Lubrication

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

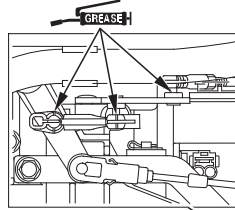
## Lubrication interval:

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

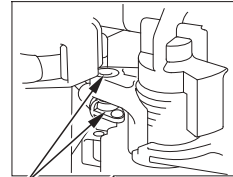
## NOTE:

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

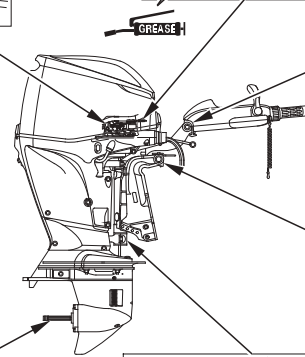
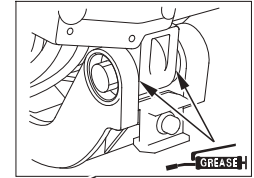
**THROTTLE ARM/  
LINK/PIVOT/PLATE**



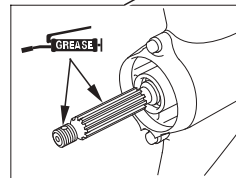
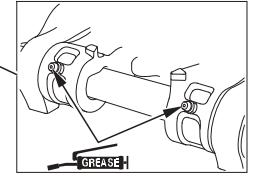
**THROTTLE ROD/LINK**



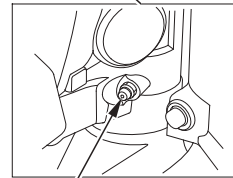
**TILLER HANDLE (H type)**



**TILT SHAFT**



**PROPELLER SHAFT**

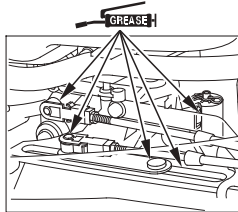


**LOWER SWIVEL CASE**

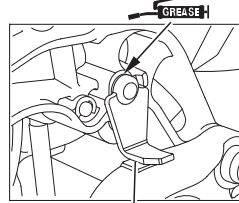
# MAINTENANCE

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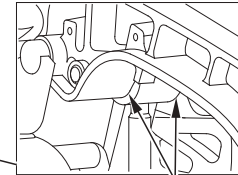
**SHIFT LINK BRACKET/  
SHIFT PIVOT/SHIFT ARM/  
LINK PIN/PIVOT PLATE/  
SLIDE PIVOT/  
CLICK SPRING ROLLER**



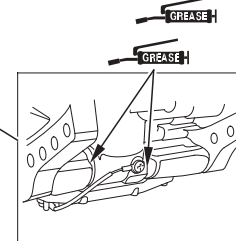
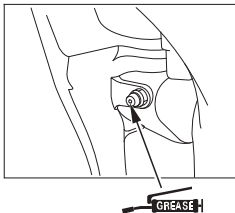
**TILT LOCK LEVER  
(each side)**



**UPPER CYLINDER  
PIN/BUSHING**



**UPPER SWIVEL CASE**



**LOWER CYLINDER  
BUSHING/COLLAR**

## Fuel Filter/Water Separator

The fuel filter (inside the strainer cup) is located under the engine cover near the engine cover latch on the boat side.

Water or sediment accumulation in the filter can cause loss of power or hard starting. To prevent engine malfunction, check and replace the fuel filter periodically.

A red ring float is located inside the strainer cup. It floats on top of the water and indicates how much water has accumulated in the strainer cup.

### Inspection interval:

Every 100 operating hours or 6 months.

### Replacement interval:

Every 400 operating hours or 2 years

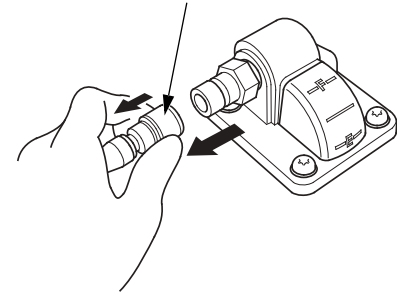
### ▲WARNING

**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.

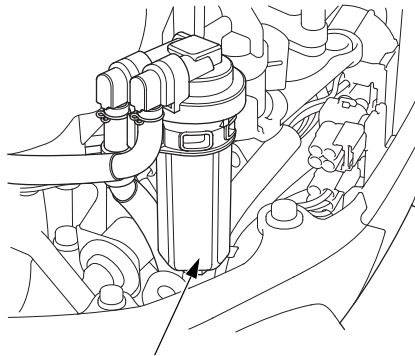
### <Inspection>

FUEL TUBE ASSEMBLY CONNECTOR



1. Disconnect the fuel tube assembly connector from the fuel tank (see page 106).
2. Remove the engine cover (see page 55).

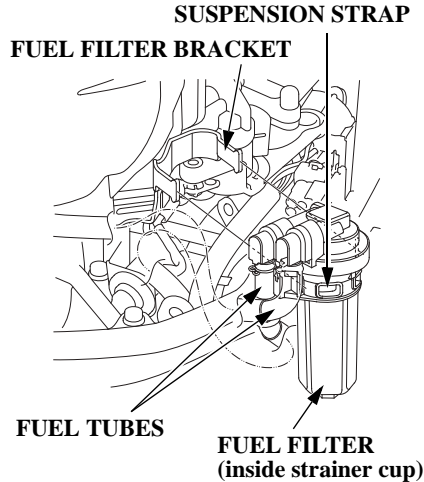
# MAINTENANCE



**FUEL FILTER**  
(inside strainer cup)

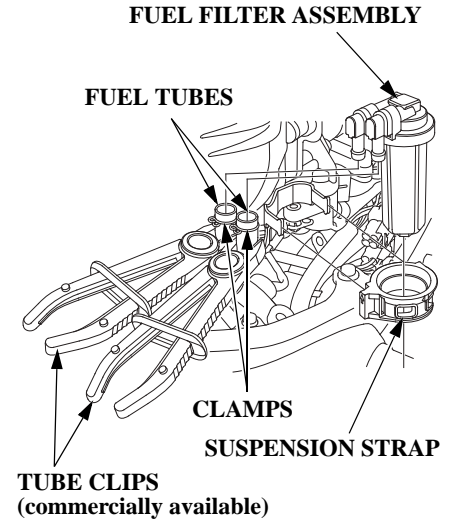
3. Looking through the translucent strainer cup, check the fuel filter for water accumulation and clogging.  
If necessary, clean the strainer cup and fuel filter or replace the fuel filter with a new one.

## <Replacement>

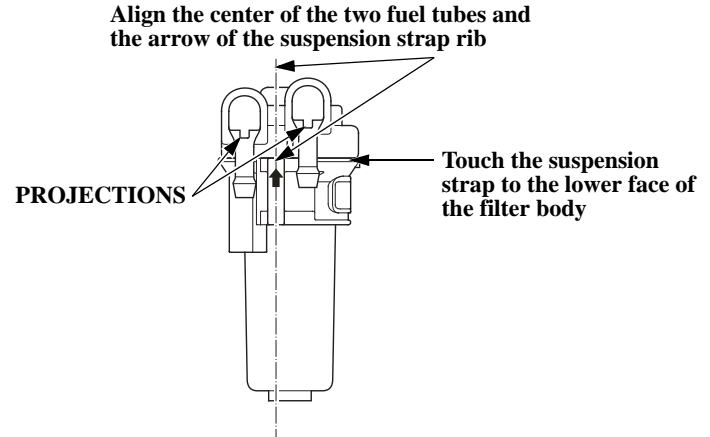
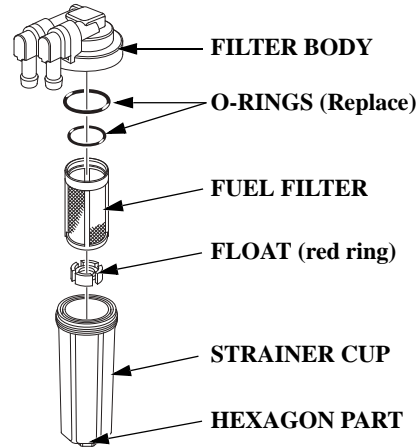


1. Remove the suspension strap from the fuel filter bracket, then remove the strap from the fuel filter assembly.

**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 assembly.



3. Turn the hexagon part to counterclockwise and separate the strainer cup from the filter body.
4. Thoroughly clean the strainer cup and fuel filter.  
If the fuel filter is clogged, replace it with a new one.

5. Install the fuel filter, O-rings and float.  
Re-assemble the filter body and the strainer cup using new O-rings.

**TIGHTENING TORQUE:**  
3.0 N·m (0.3 kgf·m, 2.2 lbf·ft)

6. Install the suspension strap to the fuel filter assembly as shown above.
7. Reinstall the fuel filter assembly and suspension strap in the original position.
8. Align the white paint on the fuel tubes and the projections of the filter body. Connect the fuel tubes to the fuel filter assembly securely with the clamps. Remove the tube clip used to close the fuel tubes.

## MAINTENANCE

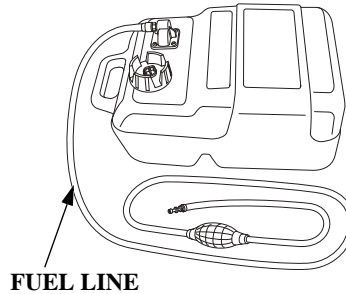
9. Connect the fuel tube assembly connector to the fuel tank and outboard motor securely. Turn the vent knob to OPEN side, squeeze and release the priming bulb to feed the fuel, (see page 66) and check for fuel leaks. Repair any fuel leaks if necessary.

### NOTE:

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

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

### Fuel Tank and Tank Filter (equipped type)



### Cleaning interval:

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

### <Fuel Tank Cleaning>

#### ▲WARNING

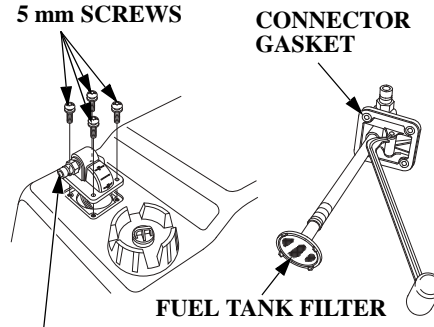
**Gasoline is extremely flammable, and gasoline vapor can explode, causing serious injury or death. Do not smoke or allow flames or sparks in your working area. KEEP OUT OF REACH OF CHILDREN.**

- 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 tube assembly connector from the 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>



### FUEL TANK FILTER JOINT (Fuel Hose Connector)

1. Remove the four 5 mm screws using a flat screwdriver, then remove the fuel hose connector and fuel tank filter from the tank.
2. Clean the filter in nonflammable solvent. Inspect the fuel tank filter and the connector gasket. Replace them if damaged.
3. Reinstall the filter and hose connector in the fuel tank. Tighten the four 5 mm screws 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 does not react in the same way, but it is toxic.

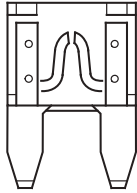
### Problems that May Affect Outboard Motor Emissions

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

# MAINTENANCE

## Fuse

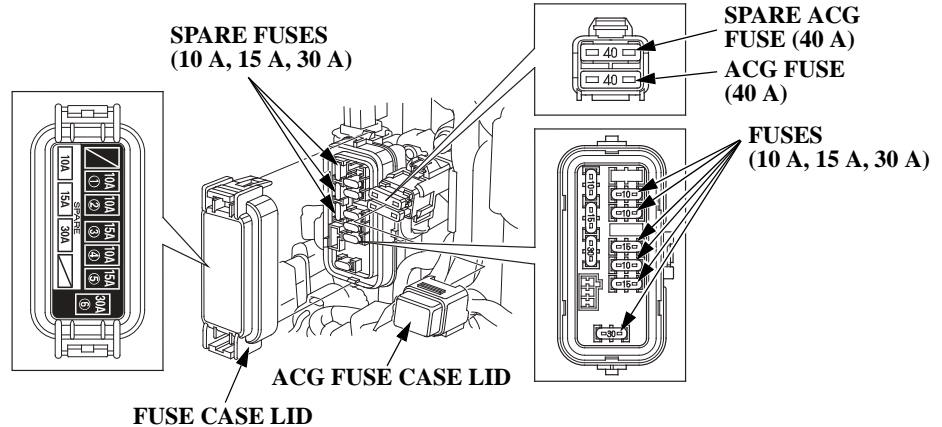


**BLOWN FUSE**

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.**



Fuse No.	Rating	Connected Components
	40 A	Alternator (regulator rectifier-battery charging)
(1)	10 A	Fuel pump (high pressure side)
(2)	10 A	Power trim/tilt relay, Main relay, Warning buzzer, Indicator, Starter solenoid switch, each meters
(3)	15 A	PGM-FI ECU, Fuel injectors, CKP sensor 1, 2
(4)	10 A	Data link connector, HO2 sensor heater, Indicator cable
(5)	15 A	PGM-FI ECU, Ignition coils
(6)	30 A	Gathered fuse (No.1, 3, 4, 5 Fuses)

## NOTICE

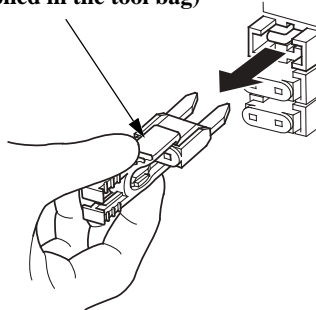
If the fuse is blown, check the cause, then replace the fuse with a spare fuse of the same rated capacity. Unless the cause is found, the fuse may blow again.

## Main Fuse

### <Replacement>

1. Stop the engine.
2. Remove the engine cover.

**FUSE PULLER**  
(supplied in the tool bag)



3. Remove the fuse case lid and pull the old fuse out of the clip with the fuse puller supplied in the tool bag.
4. Push a new fuse into the clips.

### DESIGNATED FUSE:

10 A, 15 A, 30 A

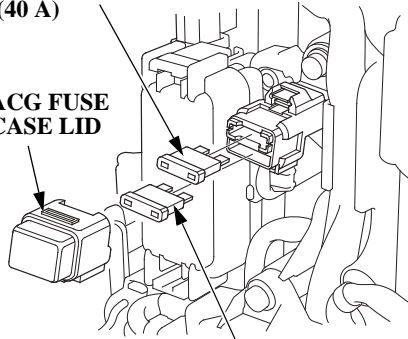
5. Reinstall the fuse case lid, and the engine cover.
6. Reconnect the battery.

## ACG Fuse

**SPARE ACG FUSE**  
(40 A)

**ACG FUSE CASE LID**

**ACG FUSE (40 A)**



## NOTICE

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

### <Replacement>

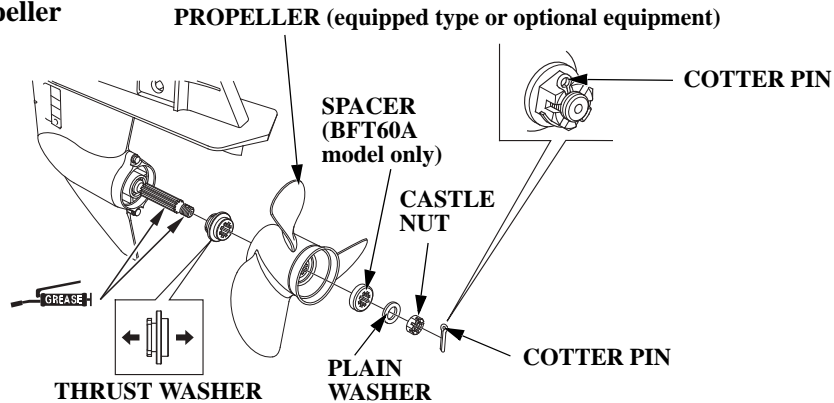
1. Stop the engine.
2. Remove the engine cover.
3. Remove the fuse case lid.
4. Remove the old fuse.
5. Install a new fuse with "40 A".
6. Be sure to check the fuse case lid is securely locked.

### DESIGNATED FUSE:

40 A

# MAINTENANCE

## 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.

### <Removal>

1. Remove the cotter pin, unscrew the castle nut, remove the spacer (BFT60A model only) and plain washer, then remove the propeller and thrust washer.
2. Inspect the propeller shaft for any fishing line or debris.

### <Installation>

1. Apply marine grade grease to the propeller shaft.
2. Install the thrust washer with the grooved side toward the gear case.
3. Install the propeller.
4. Install the spacer (BFT60A model only) and plain washer with as shown.
5. Lightly tighten the castle nut by hand or wrench until the propeller has no free play.
6. Tighten the castle nut using torque wrench.

### CASTLE NUT TIGHTENING TORQUE:

1 N·m (0.1 kgf·m, 0.74 lbf·ft)

7. Then using a torque wrench, tighten the castle nut until the first available groove in the castle nut aligns with the cotter pin hole. Do not tighten past the first alignment of the castle nut groove and the cotter pin hole.

**NOTICE**

**TIGHTENING TORQUE LIMIT:**

**BFT60A model**

34 N·m (3.5 kgf·m, 25 lbf·ft),

**BFW60A model**

44 N·m (4.5 kgf·m, 33 lbf·ft)

**Do not tighten the castle nut above the TIGHTENING TORQUE LIMIT or the propeller and shaft may be damaged.**

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

- Use a TOHATSU Genuine stainless steel cotter pin or equivalent cotter pin and bend the pin ends as shown the previous page.

Note that these wrenches are not included with the tool set that comes with the outboard motor. Contact your authorized TOHATSU outboard motor dealer for additional tool information.

# MAINTENANCE

## Submerged Outboard Motor

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

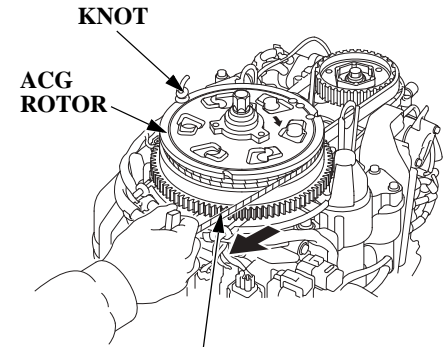
If there is a TOHATSU outboard motor dealer nearby, take the outboard motor immediately to the dealer. If you are far from a dealer, proceed as follows:

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

### NOTICE

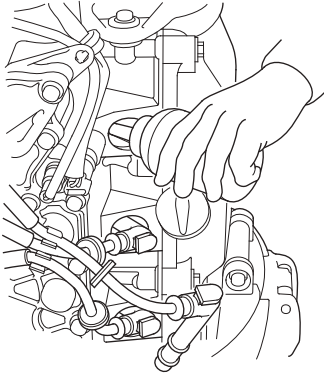
**If the outboard motor was running when it submerged, there may be mechanical damage, such as bent connecting rods. If the engine binds when cranked, do not attempt to run the outboard motor until it has been repaired.**

2. Drain the vapor separator as described on page 135.
3. Change the engine oil (see page 115).



EMERGENCY STARTER ROPE

4. Remove the spark plugs. Remove the ACG cover and wind the emergency starter rope following the emergency starting procedure (pages 74 through 78) and drain the water from the cylinder by pulling the emergency starter rope several times.



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 55).

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 outboard motor to a TOHATSU outboard motor dealer for inspection and service.

## 13. STORAGE

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

### Fuel

#### 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 58).
- 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.

#### **▲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 outboard motor.**
- **Do not smoke or allow flames or sparks where fuel is drained or stored.**

1. Check the fuel filter on the low pressure side. If there is water or any contamination inside, clean the

fuel strainer cup and fuel filter or change the fuel filter. (see page 123)

2. Drain the gasoline from the vapor separator. (see page 135)
3. Check that there is no water or any contamination mixed with the extracted gasoline.
4. If there is nothing mixed with the extracted gasoline, tighten the drain screw.
5. If there is water or contamination mixed with the extracted gasoline, proceed with the following steps.
  - 5-a. Tighten the drain screw.
  - 5-b. Set the outboard vertically and connect to a fuel tank of clean gasoline.
  - 5-c. Sending the fresh gasoline to the vapor separator through the priming valve, start the engine.

#### **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.**



### ⚠ CAUTION

Operate the priming valve after confirming the drain screw is tightened. When the drain screw is loose, gasoline will flow out.

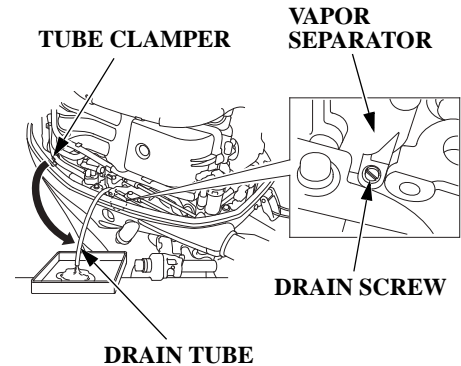
- 5-d. After starting the engine, hold in the idling position for 3 minutes.
- 5-e. Drain the gasoline from the vapor separator.
- 5-f. Check that there is no water or any contamination mixed with the extracted gasoline.
- 5-g. If there is water or contamination mixed with the extracted gasoline, repeat from step 5-a until there is nothing mixed with the extracted gasoline.

### 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 outboard motor.**
- **Do not smoke or allow flames or sparks where fuel is drained or stored.**



1. Disconnect the fuel tube assembly connector (see page 106).
2. Remove the engine cover.
3. Release the drain tube from the tube clasper of the high pressure fuel pipe and bring the end of the drain tube out of the engine under case.
4. Loosen the vapor separator drain screw.
5. Tilt up the outboard motor.

## STORAGE

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6. When the gasoline starts to flow out of the drain tube, tilt down the outboard motor and hold it in the position until the gasoline stops flowing.  
Catch the draining gasoline in a suitable container.
7. After draining, tighten the drain screw and secure the drain tube to the tube clamber of the high pressure fuel pipe.

### NOTE:

Before storing the outboard motor for a prolonged period, we recommend that you remove the fuel tube assembly connector from the fuel tank and operate the engine at 2,000 to 3,000  $\text{min}^{-1}$  (rpm) until it stops.

### Engine Oil

1. Change the engine oil (see pages 115 – 116).
2. Remove the spark plugs (see page 116), and remove the clip from the emergency stop switch.
3. Pour a tablespoon or teaspoon (5 – 10  $\text{cm}^3$ ) of clean engine oil into each cylinder.
4. Rotate the engine a few revolutions to distribute the oil in the cylinders.
5. Reinstall the spark plugs (see page 118).

## Battery Storage

### NOTICE

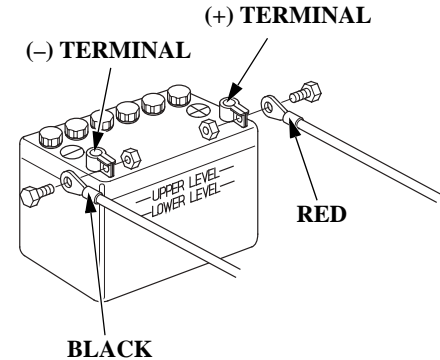
Battery handling differs according to the type of the battery and the instructions described below might not be applicable to the battery of your outboard motor. Refer to the battery manufacturer's instructions.

### ▲ WARNING

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

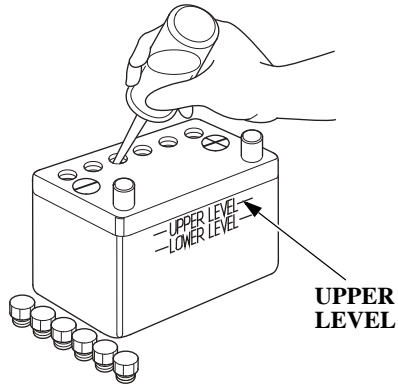
- **CHEMICAL HAZARD:** Battery electrolyte contains sulfuric acid. Contact with eyes or skin, even through clothing, may cause severe burns. Wear a faceshield and protective clothing.

- **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.**



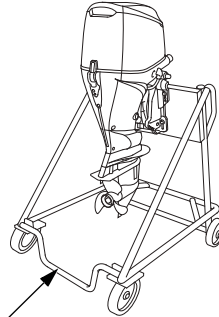
1. Disconnect the battery cable at the battery negative (-) terminal, then at the battery positive (+) terminal.
2. Remove the battery and clean the battery terminals and battery cable terminals with a wire brush or sand paper.  
Clean the battery with a solution of baking soda and warm water, taking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

# STORAGE



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.

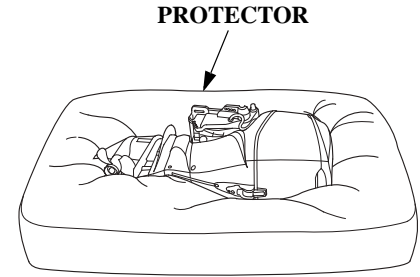
## Outboard Motor Position



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

### Vertical transport or storage:

Attach the stern bracket to a stand.



(Starboard side turned down as shown.)

### Horizontal transport or storage:

Rest the outboard motor on a cushion of protective material.

### ▲ WARNING

**Any other transport or storage position may cause damage or oil leakage.**

To protect the environment, do not dispose of this product, battery, engine oil, etc. carelessly by leaving them in the waste. Observe the local laws and regulations or consult your dealer for disposal.

## 15. TROUBLESHOOTING

### WARNING SYSTEM COMES ON

SYMPTOM	POSSIBLE CAUSE	REMEDY
Overheat warning system comes on: <ul style="list-style-type: none"> <li>• Overheat indicator comes on.</li> <li>• Overheat warning buzzer sounds.</li> <li>• Engine speed decreases and stops at last.</li> <li>• Engine speed cannot be increased by opening the throttle.</li> <li>• Engine will stop in 20 seconds after engine speed is limited.</li> </ul>	Cooling water intake port clogged.	Clean the cooling water intake port.
	Spark plugs have improper heat range.	Replace the spark plugs (see page 116).
	<ul style="list-style-type: none"> <li>• Faulty water pump.</li> <li>• Thermostat clogged.</li> <li>• Faulty thermostat.</li> <li>• Cooling water passage clogged.</li> <li>• Exhaust gas invades cooling system.</li> </ul>	Consult with an authorized TOHATSU outboard motor dealer.
Oil pressure warning system comes on: <ul style="list-style-type: none"> <li>• Oil pressure indicator does not come on.</li> <li>• Oil pressure warning buzzer sounds.</li> <li>• Engine speed decreases.</li> <li>• Engine speed cannot be increased by opening the throttle.</li> </ul>	Shortage of engine oil	Add engine oil to the specified level (see page 56).
	Improper engine oil is used.	Change the engine oil (see page 115).
PGM-FI warning system comes on: <ul style="list-style-type: none"> <li>• PGM-FI indicator comes on.</li> <li>• PGM-FI warning buzzer sounds intermittently.</li> </ul>	PGM-FI warning system is faulty.	Consult with an authorized TOHATSU outboard motor dealer.
ACG warning system comes on: <ul style="list-style-type: none"> <li>• ACG indicator comes on.</li> <li>• ACG warning buzzer sounds intermittently.</li> </ul>	Battery voltage is too high or low.	Check the battery (see page 118).
	Faulty ACG.	Consult with an authorized TOHATSU outboard motor dealer.

## 16. SPECIFICATIONS

MODEL	BFT60A	
Description Code	BBFJ	
Type	LHT	LRT
Overall length	851 mm (33.5 in)	777 mm (30.6 in)
Overall width	417 mm (16.4 in)	
Overall height	1,397 mm (55.0 in)	
Transom height (when Transom angle is 12°)	521 mm (20.5 in)	
Dry mass (weight)*	115 kg (254 lbs)	110 kg (243 lbs)
Rated power	44.1 kW (60 PS)	
Full throttle range	5,000 – 6,000 min <sup>-1</sup> (rpm)	
Engine type	4 stroke OHC in-line 3-cylinder	
Displacement	998 cm <sup>3</sup> (60.9 cu-in)	
Spark plug gap	0.8 – 0.9 mm (0.031 – 0.035 in)	
Steering control system	Tiller handle	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 Hypoid gear oil
Oil capacity	Engine: Without oil filter replacement: 2.6 L (2.7 US qt, 2.3 Imp qt) With oil filter replacement: 2.7 L (2.9 US qt, 2.4 Imp qt) Gear case: 0.43 L (0.45 US qt, 0.38 Imp qt)
D.C. output	12 V – 17 A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	LMAR6C-9 (NGK)
Fuel pump	Low pressure side: mechanical type High pressure side: electrical type
Fuel	Automotive unleaded gasoline (91 research octane, 86 pump octane, or higher)
Gear shift	Dog type (Forward – Neutral – Reverse)
Steering angle	50° right and left
Trim angle	– 4° to 16° (when Transom angle is 12°)
Tilt up angle	60° (when Transom angle is 12°)
Transom angle	8°, 12°, 16°, 20°, 24°

\* Without battery cable, with propeller

This TOHATSU outboard is power rated in accordance with ISO8665 (propeller shaft output).

# SPECIFICATIONS

MODEL	BFW60A
Description Code	BBFJ
Type	LRT
Overall length	792 mm (31.2 in)
Overall width	417 mm (16.4 in)
Overall height	1,453 mm (57.2 in)
Transom height (when Transom angle is 12°)	531 mm (20.9 in)
Dry mass (weight)*	119 kg (262 lbs)
Rated power	44.1 kW (60 PS)
Full throttle range	5,000 – 6,000 min <sup>-1</sup> (rpm)
Engine type	4 stroke OHC in-line 3-cylinder
Displacement	998 cm <sup>3</sup> (60.9 cu-in)
Spark plug gap	0.8 – 0.9 mm (0.031 – 0.035 in)
Steering control 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 Hypoid gear oil
Oil capacity	Engine: Without oil filter replacement: 2.6 L (2.7 US qt, 2.3 Imp qt) With oil filter replacement: 2.7 L (2.9 US qt, 2.4 Imp qt) Gear case: 0.95 L (1.00 US qt, 0.84 Imp qt)
D.C. output	12 V – 22 A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	LMAR6C-9 (NGK)
Fuel pump	Low pressure side: mechanical type High pressure side: electrical type
Fuel	Automotive unleaded gasoline (91 research octane, 86 pump octane, or higher)
Gear shift	Dog type (Forward – Neutral – Reverse)
Steering angle	50° right and left
Trim angle	– 4° to 16° (when Transom angle is 12°)
Tilt up angle	60° (when Transom angle is 12°)
Transom angle	8°, 12°, 16°, 20°, 24°

\* Without battery cable, with propeller

This TOHATSU outboard is power rated in accordance with ISO8665 (propeller shaft output).



# SPECIFICATIONS

## Noise and Vibration

MODEL	BFT60A		BFW60A	
CONTROL SYSTEM	T (Tiller handle)	R (Remote control)	T (Tiller handle)	R (Remote control)
Sound Pressure level at operator's ears (2006/42/EC, ICOMIA 39-94)	84 dB (A)	79 dB (A)	84 dB (A)	79 dB (A)
----- Uncertainty	3 dB (A)	1 dB (A)	2 dB (A)	1 dB (A)
Measured sound power level (Reference to EN ISO3744)	92 dB (A)	—	91 dB (A)	—
----- Uncertainty	3 dB (A)	—	2 dB (A)	—
Vibration level at hand arm (2006/42/EC, ICOMIA 38-94)	Not exceed 2.5 m/s <sup>2</sup>	Not exceed 2.5 m/s <sup>2</sup>	Not exceed 2.5 m/s <sup>2</sup>	Not exceed 2.5 m/s <sup>2</sup>
----- Uncertainty	—	—	—	—

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

## 17. "EC DECLARATION OF CONFORMITY" CONTENT OUTLINE

1) EC-DECLARATION OF CONFORMITY	
2) THE UNDERSIGNED, (13), REPRESENTING THE MANUFACTURER, HEREWITH DECLARES THAT THE PRODUCT IS IN CONFORMITY WITH THE PROVISIONS OF THE FOLLOWING EC-DIRECTIVES	
2006/42/EC, 2014/30/EU	
3) REFERENCE TO HARMONIZED STANDARDS:	
4) DESCRIPTION OF THE MACHINERY	
5) Generic denomination: Outboard engine 6) Function: Propulsion system 7) MAKE: Honda/Tohatsu	
8) TYPE:	9) SERIAL NUMBER:
<input type="text"/>	<input type="text"/>
10) Manufacturer: Honda Motor Co., Ltd. 2-1-1 Minamiaoyama Minato-ku Tokyo 107-8556 Japan	
11) Authorized representative and able to compile the technical documentation: Honda Motor Europe Ltd. Cain Road Bracknell, RG12 1HL United Kingdom	
12) SIGNATURE:	<input type="text"/>
13) NAME:	<input type="text"/>
14) TITLE:	<input type="text"/>
16) DATE:	<input type="text"/>
17) PLACE:	<input type="text"/>

# “EC DECLARATION OF CONFORMITY” CONTENT OUTLINE

<p>1) DECLARATION CE DE CONFORMITE 2) LE SOUSSIGNÉ, (13), REPRÉSENTANT DU CONSTRUCTEUR, DÉCLARE PAR LA PRÉSENTE QUE LE PRODUIT EST CONFORME AUX DISPOSITIONS DES DIRECTIVES CE SUIVANTES 3) REFERENCE AUX NORMES HARMONISÉES 4) DESCRIPTION DE MACHINE 5) Denomination générique: moteur hors-bord 6) Fonction : Système de propulsion 7) MARQUE 8) TYPE 9) NUMÉRO DI SERIE 10) CONSTRUCTEUR 11) Représentant autorisé et en charge des éditions de documentation techniques 12) SIGNATURE 13) NOM 14) TITRE 15) Directeur Qualité 16) DATE 17) LIEU</p>	<b>français ( FRENCH )</b>
<p>1) DICHIARAZIONE DI CONFORMITA' CE 2) IL SOTTOSCRITTO, (13), RAPPRESENTANTE DEL COSTRUTTORE, DICHIARA QUI DI SEGUITO CHE IL PRODOTTO E' CONFORME A QUANTO PREVISTO DALLE SEGUENTI DIRETTIVE COMUNITARIE 3) RIFERIMENTO ALLE NORME ARMONIZZATE 4) DESCRIZIONE DELLA MACCHINA 5) Denominazione generica: MOTORE FUORIBORDO 6) Funzione : Sistema di propulsione 7) MARCA 8) TIPO 9) NUMERO DI SERIE 10) FABBRICANTE 11) Rappresentante autorizzato e competente per la compilazione della documentazione tecnica 12) FIRMA 13) NOME 14) TITOLO 15) DIRETTORE DELLA QUALITA' 16) ADDI 17) LUOGO</p>	<b>italiano ( ITALIAN )</b>
<p>1) EG-KONFORMITÄTSERKLÄUNG 2) DER UNTERZEICHNER, (13), DER DEN HERSTELLER VERTRITT, ERKLÄRT HIERMIT, DAß DAS PRODUKT IN ÜBEREINSTIMMUNG MIT DEN BESTIMMUNGEN DER NACHSTEHENDEN EG-RICHTLINIEN IST 3) VERWEIS AUF HARMONISIERTE NORMEN 4) BESCHREIBUNG DER MASCHINE 5) Allgemeine Bezeichnung : Außenbordmotor 6) Funktion : Antriebsart 7) FABRIKAT 8) TYP 9) SERIEN NUMMER 10) HERSTELLER 11) Bevollmächtigter und in der Position, die technische Dokumentation zu erstellen 12) UNTERSCHIFT 13) NAME 14) TITEL 15) Qualitätssi Cherung 16) DATUM 17) ORT</p>	<b>deutsch ( GERMAN )</b>
<p>1) EG-VERKLARING VAN OVEREENSTEMMING 2) ONDERGETEKENDE, (13), VERTEGENWOORDIGER VAN DE FABRIKANT, VERKLAART HIERMEE DAT HET PRODUCT VOLDOET AAN DE BEPALINGEN VAN DE VOLGENDE EG-RICHTLIJNEN 3) REFERENTIE NAAR GEHARMONISEERDE NORMEN 4) BESCHRIJVING VAN DE MACHINE 5) Algemene benaming : buitenboordmotor 6) Functie : Aandrijfsysteem 7) FABRIKAT 8) TYPE 9) SERIEN UMMER 10) FABRIKANT 11) Gemachtigde van de fabrikant en in staat om de technische documentatie samen te stellen 12) HANDTEKENING 13) NAAM 14) TITEL 15) Directeur Kwaliteitszorg 16) DATUM 17) PLAATS</p>	<b>nederlands ( DUTCH )</b>
<p>1) ΕΚ-ΔΗΛΩΣΗ ΕΝΑΡΜΟΝΙΣΗΣ 2) Ο ΥΠΟΓΡΑΦΩΝ, (13), ΕΚΠΡΟΣΩΠΟΝΤΑΣ ΤΟΝ ΚΑΤΑΣΚΕΥΑΣΤΗ, ΔΙΑ ΤΟΥ ΠΑΡΟΝΤΟΣ ΔΗΛΩΝΕΙ ΟΤΙ ΤΟ ΠΡΟΪΟΝ ΒΡΙΣΚΕΤΑΙ ΣΕ ΕΝΑΡΜΟΝΙΣΗ ΜΕ ΤΙΣ ΠΡΟΒΛ ΕΨΕΙΣ ΤΩΝ ΚΑΤΩΘΙ ΟΔΗΓΙΩΝ ΤΗΣ ΕΕ 3) ΠΑΡΑΠΟΜΠΗ ΣΤΑ ΕΝΑΡΜΟΝΙΣΜΕΝΑ ΠΡΟΤΥΠΑ 4) ΠΕΡΙΓΡΑΦΗ ΜΗΧΑΝΗΜΑΤΟΣ 5) Γενική ονομασία : Εξωλέμβια μηχανή 6) Λειτουργία : Σύστημα Πρόωσης 7) ΕΡΓΟΣΤΑΣΙΟ ΚΑΤΑΣΚΕΥΗΣ 8) ΤΥΠΟΣ 9) ΑΡΙΘΜΟΣ ΣΕΙΡΑΣ 10) ΚΑΤΑΣΚΕΥΑΣΤΗΣ 11) Εξουσιοδοτημένος αντιπρόσωπος και είναι σε θέση να καταρτίσει τον τεχνικό φάκελο 12) ΥΠΟΓΡΑΦΗ 13) ΟΝΟΜΑ 14) ΤΙΤΛΟΣ 15) Υπεύθυνος Ποιότητας 16) ΗΜΕΡΟΜΗΝΙΑ 17) ΤΟΠΟΣ</p>	<b>Ελληνικά ( GREEK )</b>
<p>1) EF OVERENSSTEMMELSEERKLÆRING 2) UNDERTEGNEDE, (13), DER PEPRÆSENTERER FABRIKANTEN, ERKLÆRER HERMED AT PRODUKTET ER I OVERENSSTEMMELSE MED BESTEMMELSERNE I FØLGE EF DIREKTIVERNE 3) REFERENCE TIL HARMONISEREDE STANDARDER 4) BESKRIVELSE AF MASKINEN 5) FÆLLESBETEGNELSE : Utenbordsmotor 6) ANVENDELSE : Fremdrivningssystem 7) FABRIKANT 8) TYPE 9) SERIEN UMMER 10) FABRIKANT 11) AUTORISERET REPRÆSENTANT OG I STAND TIL AT UDARBEJDE DEN TEKNISKE DOKUMENTATION 12) SIGNATURE 13) NAVN 14) TITEL 15) Kvalitets Leder 16) DATO 17) STED</p>	<b>dansk ( DANISH )</b>

# “EC DECLARATION OF CONFORMITY” CONTENT OUTLINE

1) DECLARACIÓN DE CONFORMIDAD 2) EL ABAJO FIRMANTE, (13), EN REPRESENTACIÓN DE FABRICANTE, DECLARA QUE EL PRODUCTO ES CONFORME CON LAS DISPOSICIONES DE LAS SIGUIENTES DIRECTIVAS CE 3) REFERENCIA A ESTÁNDARES ARMONIZADOS 4) DESCRIPCIÓN DE LA MAQUINARIA 5) Denominación genérica : Motor fueraborda 6) Función : Sistema de propulsión 7) MARCA 8) TIPO 9) NÚMERO DE SERIE 10) FABRICANTE 11) Representante autorizado que puede compilar el expediente técnico 12) FIRMA 13) NOMBRE 14) CARGO 15) Director de calidad 16) FECHA 17) LUGAR	<b>español ( SPANISH )</b>
1)DECLARAÇÃO CE DE CONFORMIDADE 2) O ABAIXO ASSINADO, (13), EM REPRESENTAÇÃO DO FABRICANTE, PELA PRESENTE DECLARA QUE O PRODUTO ESTÁ EM CONFORMIDADE COM O ESTABELECIDO NAS SEGUINTE DIRECTIVAS COMUNITÁRIAS 3) REFERÊNCIA AS NORMAS HARMONIZADAS 4) DESCRIÇÃO DA MÁQUINA 5) Denominação genérica : Motor fora de borda 6) Função : Sistema propulsor 7) MARCA 8) TIPO 9) NÚMERO DE SÉRIE 10) FABRICANTE 11) Mandatário com capacidade para compilar documentação técnica 12) ASSINATURA 13) NOME 14) TÍTULO 15) Director de Qualidade 16) DATA 17) LOCAL	<b>português ( PORTUGUESE )</b>
1) EY-VAATIMUSTEN MUKAISUUSVAKUUTUS 2) ALLEKIRJOITANUT, (13), JOKA EDUSTAA VALMISTAJAA, VAKUUTTAA TÄTEN, ETTÄ TUOTE ON SEURAAVIEN EU-DIREKTIIVIEN VAATIMUSTEN MUKAINEN 3) VITTAUS YHTEISIIN STANDARDEIHIN 4) KUVAUS LAITTEESTA 5) Yleisarvomäärä : Peramoottori 6) Toiminto : Työntöjärjestelmä 7) MERKKI 8) MALLI 9) SARJANUMERO 10) VALMISTAJA 11) Valmistajan edustaja ja teknisten dokumenttien laatia 12) ALLEKIRJOITUS 13) NIMI 14) TITTELI 15) Laatupäällikkö 16) PÄIVÄMÄÄRÄ 17) PAIKKA	<b>suomi / suomen kieli ( FINNISH )</b>
1) ЕО-ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ 2) ДОЛУ ПОДШИСАЛИЯТ СЕ (13), ПРЕДСТАВЛЯВАЩ ДИСТРИБУТОРА, ДЕКЛАРИРА, ЧЕ ПРОДУКТА СЪОТВЕТСТВА НА ИЗСКВАНИЯТА НА СЛЕДНИТЕ ЕВРОПЕЙСКИ ДИРЕКТИВИ 3) СЪОТВЕТСТВИЕ С ХАРМОНИЗИРАНИТЕ СТАНДАРТИ 4) ОПИСАНИЕ НА АРТИКУЛА 5) Общо наименование : ИЗВЪН БОРДОВИ ДВИГАТЕЛ 6) Функция : Задвижваща система 7) МАРКА 8) ТИП 9) СЕРИЕН НОМЕР 10) ПРОИЗВОДИТЕЛ 11) Упълномощен представител и отговорник за съставяне на техническа документация 12) ПОДПИС 13) ИМЕ 14) ТИТЛА 15) МЕНИДЖЪР НА КАЧЕСТВОТО 16) ДАТА 17) МЯСТО	<b>български ( BULGARIAN )</b>
1) EG-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE 2) UNDERTECKNAD, (13), REPRESENTERANDE TILLVERKARE, FÖRSÄKRAR HÄRMED ATT PRODUKTEN ÖVERENSSTÄMMER MED BESTÄMMELSERNA I FÖLJANDE EG-DIREKTIVE 3) REFERERANDE TILL HARMONISERADE STANDARDER 4) BESKRIVNING AV UTRUSTNINGEN 5) Allmän benämning : Utomborosmotor 6) Funktion : Framdrivningssystem 7) MERKKI 8) TYPBETECKNING 9) SERIENUMER 10) TILLVERKARE 11) Auktoriserad representant och ska kunna sammanställa teknisk dokumentationen. 12) SIGNATUR 13) NAMN 14) TITEL 15) Kvalitetschef 16) DATUM 17) ORT	<b>svenska ( SWEDISH )</b>
1) DEKLARACJA ZGODNOSCI WE 2) NIŻEJ PODPISANY (13), REPREZENTUJĄCY PRODUCENTA, DEKLARUJE Z CAŁĄ ODPOWIEDZIALNOŚCIĄ, ŻE PRODUKT SPEŁNIA WYMAGANIA ZAWARTE W NASTĘPUJĄCYCH DYREKTYWACH UNIJNYCH 3) ZASTOSOWANE NORMY ZHARMONIZOWANE 4) OPIS URZĄDZENIA 5) Ogólne określenie : Silnik zaburtowy 6) Funkcja : Układ napędowy 7) MARKA 8) TYP 9) NUMERY SERyjNE 10) PRODUCENT 11) Upoważniony Przedstawiciel oraz osoba upoważniona do przygotowania dokumentacji technicznej 12) PODPIS 13) NAZWISKO 14) TYTUŁ 15) Menadżer Jakości 16) DATA 17) MIEJSCE	<b>polski ( POLISH )</b>

# “EC DECLARATION OF CONFORMITY” CONTENT OUTLINE

<p>1)MEGFELELŐSEGI NYILATKOZAT 2)ALULÍROTT (13), MINT A GYÁRTÓ KÉPVISELŐJE NYILATKOZIK, HOGY AZ ALABBI TERMÉK MINDENBEN MEGFELEL A KÖVETKEZŐ EC ELŐÍRÁSOK RENDELKEZÉSEINEK: 98/37/EC, 89/336/EEC-93/68/EC:  3)ÖSSZHANGBAN A KÖV. SZABVÁNYOKKAL 4)A GÉP LEÍRÁSA  5) Általános megnevezés : KÜLSŐ CSÓNAKMOTOR 6) Funkció : Hajtás rendszer  7) GYÁRTOTTA 8) TÍPUS 9) SORSZÁM 10) GYÁRTÓ 11) Meghatalmazott képviselője és képes összeállítani a műszaki dokumentációt.  12) ALÁÍRÁS 13) NÉV 14) BEOSZTÁS  15) MINŐSÉGI IGAZGATÓ 16) KELTEZÉS DÁTUMA 17) KELTEZÉS HELYE</p>	<b>magyar ( HUNGARIAN )</b>
<p>1)Prohlášení o shodě 2) ZÁSTUPCE VÝROBCE, (13), SVÝM PODPISEM POTVRZUJE, ŽE DANÝ VÝROBEK JE V SOULADU S NÁSLEDUJÍCÍMI SMĚRNICEMI A NORMAMI EVROPSKÉHO SPOLEČENSTVÍ:  3) ODKAZ NA HARMONIZOVANÉ NORMY: 4) POPIS VÝROBKU  5) Všeobecné označení : ZÁVĚSNÝ LODNÍ MOTOR 6) Funkce : Pohonný systém  7) ZNAČKA: 8) TYP: 9) VÝROBNÍ ČÍSLO: 10) VÝROBCE: 11) Zplnomocněný zástupce a osoba pověřená kompletací technické dokumentace  12) PODPIS: 13) JMÉNO: 14) POZICE 15) Manažer kvality 16) DATUM: 17) MÍSTO:</p>	<b>čeština ( CZECH )</b>
<p>1) ES VYHLÁSENIE O ZHODE 2) DOLUPODPÍSANÝ, (13), ZÁSTUPUJÚCI VÝROBCU, TÝMTO DEKLARUJE, ŽE PRODUKT JE V SÚLADE S USTANOVENIAMÍ NÁSLEDOVNÝCH SMERNÍČ ES  3) REFERENCIA K HARMONIZOVANÝM ŠTANDARDOM 4) IDENTIFIKÁCIA STROJOV  5) Druhové označenie : ZÁVESNÝ LODNÝ MOTOR 6) Funkcia : Systém pohonu  7) VÝROBCA/ZNAČKA 8) TYP 9) SÉRIOVÉ ČÍSLO  10) VÝROBCA 11) Autorizovaný zástupca schopný zostaviť technickú dokumentáciu 12) PODPIS 13) MENO 14) POZÍCIA  15) MANAŽÉR KVALITY 16) DÁTUM 17) MIÉSTO</p>	<b>slovenčina ( SLOVAK )</b>
<p>1) EF SAMSVARSAERKLERING 2) UNDERTEGNEDE, (13), SOM REPRESENTERER FABRIKANTEN, ERKLÆRER HERVED AT PRODUKTET ER I OVERENSSTEMMELSE MED BESTEMMELSENE I FØLGENDE EU DIREKTIV  3) REFERANSER TIL HARMONISEREDE STANDARDER 4) BESKRIVELSE AV MASKINEN  5) Felles benevnelse : Utenbordsmotor 6) Funksjon : Fremdrifts system  7) FABRIKANT 8) TYPE 9) SERIE NUMMER 10) FABRIKANT 11) Autorisert representant og i stand til å utarbeide den tekniske dokumentasjonen  12) SIGNATUR 13) NAVN 14) TITTEL 15) Kvalitetssjef 16) DATO 17) STED</p>	<b>norsk (NORWEGIAN)</b>
<p>1) DECLARATIE DE CONFORMITATE. 2) SUBSEM NATUL, (13), REPREZENTAND PE PRODUCATOR, DECLAR PRIN PREZE NTA CA PRODUSUL ESTE IN CONFORMITATE CU PREVEDERILE URMATOARELOR DIRECTIVE CE  3) REFERIRE LA STANDARDELE ARMONIZATE: 4) DESCRIEREA ECHIPAMENTULUI  5) Denumire generica : MOTOR IN AFARA BORDULUI (EXTERN) 6) Domeniu de utilizare : Sistem de propulsie  7) MARCA 8) TIPUL 9) NUMAR DE SERIE 10) PRODUCATOR 11) Reprezentant autorizat și abilitat să realizeze documentație tehnică  12) SEMNATURA 13) NUME 14) TITLUL 15) DIRECTOR DE CALITATE 16) DATA 17) LOCATIE</p>	<b>română (ROMANIAN)</b>
<p>1)EU VASTAVUSDEKLARATSIOON 2)ALLAKIRJUTANU, (13), ESINDADES TOOTJAT, DEKLAREERIB SIINKOHAL, ET TOODE ON VASTAVUSES JÄRGMISTE EC DIREKTIIVIDE SÄTETEGA  3)VIIDE ÜHTLUSTATUD STANDARDITELE: 4)MEHHANISMI KIRJELDUS  5)Üldnimetus : Pardaväliline mootor 6) Funktsiooon : Tõukurstiteem  7)VALMISTAJA: 8)TÜÜP: 9)SEERIANUMBER:  10)TOOTJA: 11) Volitatud esindaja, kes on pädev täitma tehnilist dokumentatsiooni 12)ALLKIRI: 13)NIMI: 14)AMET  15)Kvaliteedijuht 16)KUUPÄEV: 17)KOHT:</p>	<b>eesti ( ESTONIAN )</b>

# “EC DECLARATION OF CONFORMITY” CONTENT OUTLINE

<p>1) EK ATBILSTĪBAS DEKLARĀCIJA 2) ZEMĀK MINĒTAIS, (13), KĀ RAŽOTĀJA PĀRSTĀVIS AR ŠO APSTIPRINA, KA ŠIS PRODUKTS PILNĪBĀ ATBILST VISIEM STANDARTIEM, KAS ATRUNĀTI SEKOJOŠAJĀS EC-DIREKTĪVĀS</p> <p>3) Atsaucoties uz saskaņotajiem standartiem 4) Iekārtas apraksts</p> <p>5) Vispārējais nosaukums : Piekarināmais laivas dzinējs 6) Funkcija : Virzošā spēka sistēma</p> <p>7) Preču zīme 8) Tips 9) Sērijas numurs 10) Izgatavotājs 11) Autorizētais pārstāvis, kas spēj sastādīt tehnisko dokumentāciju 12) Paraksts</p> <p>13) Vārds, Uzvārds 14) Tituls 15) Kvalitātes vadītājs 16) Datums 17) Vieta</p>	<b>latviešu (LATVIAN)</b>
<p>1) EB ATITIKTĪES DEKLARĀCIJA 2) ŽEMIAUI PASIRAŠES, (13), ATSTOVAUJANTIS GAMINTOJĀ DEKLARUOJA KAD PRODUKTAS ATITINKA REIKALAVĪMUS PAGAL ŠĪŠ EB DIREKTĪVAS.</p> <p>3) NUORODA   HARMONIZUOTUS STANDARTUS. 4) MAŠINOS APRAŠYMAS.</p> <p>5) Bendras pavadinimas : PAKABINAMAS VARIKLIS 6) Funkcija : Varomasis būdas 7) MARKĖ.</p> <p>8) TIPAS 9) SERIJINIS NUMERIS. 10) GAMINTOJAS. 11) Įgaliotasis atstovas ir galintis sudaryti techninę dokumentaciją 12) PARASAS.</p> <p>13) V. PAVARDĖ 14) PAREIGOS 15) KOKYBĖS VADYBININKAS. 16) DATA. 17) VIETA</p>	<b>lietuvių kalba (LITHUANIAN)</b>
<p>1) ES-DEKLARACIJA O USTREZNOSTI 2) PODPISANI (13), PREDSTAVNIK PROIZVAJALCA, IZJAVLJAM DA IZDELKI USTREZAJO NASLEDNJIM DEKLARACIJAM</p> <p>3) SKLADNOST Z NASLEDNJIMI STANDARDI 4) OPIS IZDELKOV</p> <p>5) Vrsta stroja : Izvenkrmni motorji 6) Funkcija : Pogonski sistem</p> <p>7) PROIZVAJA 8) TIP 9) SERIJSKA ŠTEVILKA 10) PROIZVAJALEC</p> <p>11) Pooblašĉeni predstavnik ki lahko predloži tehniĉno dokumentacijo</p> <p>12) PODPIS 13) IME 14) FUNKCIJA 15) Direktor presoje 16) DATUM 17 ) KRAJ</p>	<b>slovenščina (SLOVENIAN)</b>
<p>1) EB-YFIRLYSING 2) UNDIRRITADUR HR. (13) LYSI FYRIR FYRIR HÓND FRAMLEIÐANDA AÐ VARAN UPPFYLLIR EFTIRFARANDI EC-TILSKIPANIR 3) TILVÍSUN UM HEILDARSTAÐAL 4) LÝSING Á VÉLBÚNAÐI</p> <p>5) Flokkur : Utanborðsmótorar 6) Virkni : knúningsafl kerfi 7) FRAMLEIÐSLA 8) GERÐ 9) SERÍAL NÚMER 10) FRAMLEIÐANDI</p> <p>11) Löggildir aðilar og fær um að taka saman tækniskjölin 12) UNDIRSKRIFT 13) NAFN 14) TITILL</p> <p>15) Skráningarstjóri 16) DAGSETNING 17) STAÐUR</p>	<b>Íslenska (ICELANDIC)</b>
<p>1) AT UYGUNLUK BEYANI 2) AŞAĖIDA İMZASI BULUNAN VE İMALATÇININ YETKİLİ TEMSİLCİSİ OLAN (13) ÜRÜNÜN ŞU AT YÖNETMELİKLERİNİN HÜKÜMLERİNE UYGUN OLDUĖUNU BEYAN EDER.</p> <p>3) UYUMLAŞTIRILMIŞ STANDARTLARA ATIF 4) MAKİNANIN TARIFI</p> <p>5) Flokkur : Diştan takma motor 6) Virkni : tahrik sistemi 7) MARKA 8) TIP</p> <p>9) SERİ NUMARASI 10) İMALATÇI 11) Teknik dosyayı hazırlamakla yetkili olan Toplulukta yerleşik yetkili temsilci</p> <p>12) İMZA 13) ADI 14) ÜNVANI 15) Homologasyon Yöneticisi 16) TARİH 17) YER</p>	<b>Türk (TURKISH)</b>
<p>1) EK-IZJAVA O SUKLADNOSTI 2) POTPIŠANI (13), PREDSTAVNIK PROIZVOĐAČA, IZJAVLJUJE DA JE PROIZVOD U SUKLADNOSTI S ODREDBAMA SLJEDEĆEG EK PROPISA</p> <p>3) REFERENCA NA USKLAĐENE NORME 4) OPIS STROJA</p> <p>5) Opća vrijednost : Vanbrodski motor 6) Funkcionalnost : Pogonski sustav</p> <p>7) IZRADIO 8) TIP</p> <p>9) SERIJSKI BROJ 10) PROIZVOĐAČ 11) Ovlaštení predstavnik i osoba za sastavljanje tehniĉke dokumentacije 12) POTPIS 13) IME</p> <p>14) TITULA 15) Upravitelj homologacije 16) DATUM 17) MJESTO</p>	<b>hrvatski (CROATIAN)</b>

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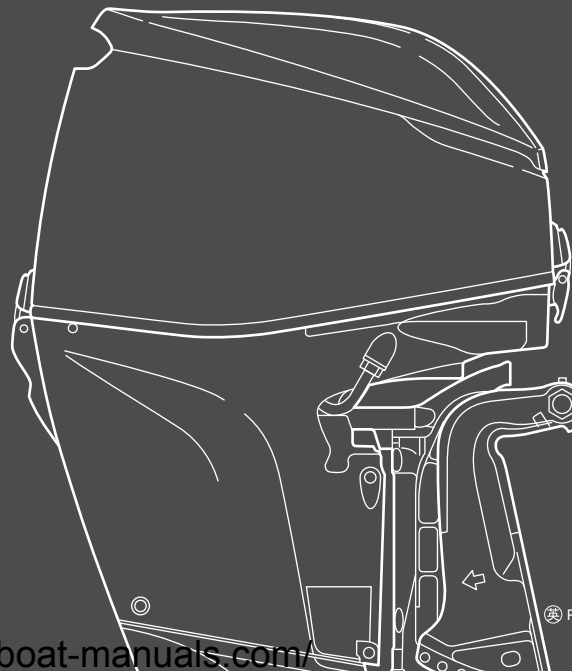
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