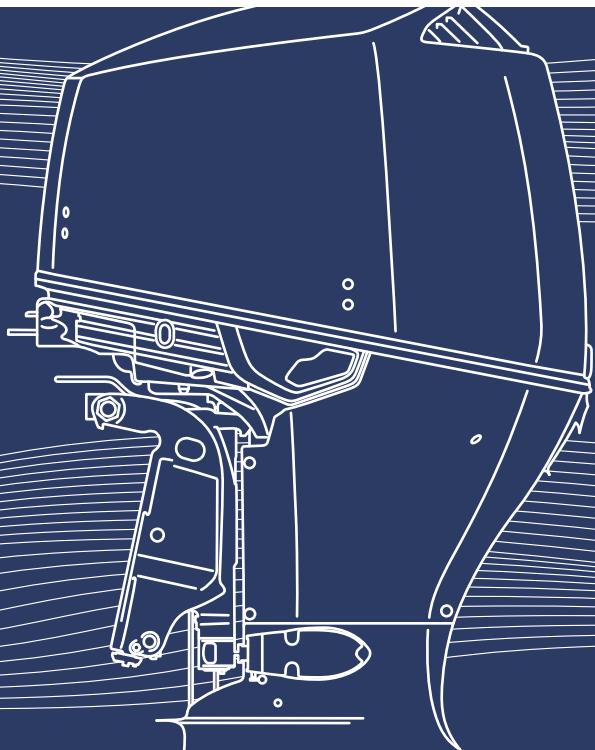




Owner's Manual
BF115J • BF135D •
BF150D



Original instructions

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Thank you for purchasing a Honda Outboard Motor.

This manual covers operation and maintenance of the Honda BF150D/BF135D/BF115J Outboard Motor. All information in this publication is based on the latest product information available at the time of approval for printing.

Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.

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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.

For information regarding the optional equipment, refer to the owner's manual that came with it.

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

▲ DANGER

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

▲ WARNING

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

▲ CAUTION

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

NOTICE

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

NOTE:

Gives helpful information.

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

▲ WARNING

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

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Control and Feature Identification Codes

Model	BF115J								BF135D								BF150D							
Type	LR□	LD□	XR□	XD□	XCR□	XCD□	LR□	LD□	LCR□	LCD□	XR□	XD□	XCR□	XCD□	LR□	LD□	LCR□	LCD□	XR□	XD□	XCR□	XCD□		
Transom 508 mm (20.0 in)	•	•					•	•	•	•					•	•	•	•						
Height 635 mm (25.0 in)			•	•	•	•					•	•	•	•					•	•	•	•	•	•
Standard Rotating Propeller Shaft	•	•	•	•			•	•			•	•			•	•			•	•			•	•
Counter-rotating Propeller Shaft					•	•			•	•			•	•			•	•					•	•
Mechanical wire	•		•		•		•		•		•		•		•		•		•		•		•	
Drive by Wire (DBW)			•		•		•		•		•		•		•		•		•		•		•	

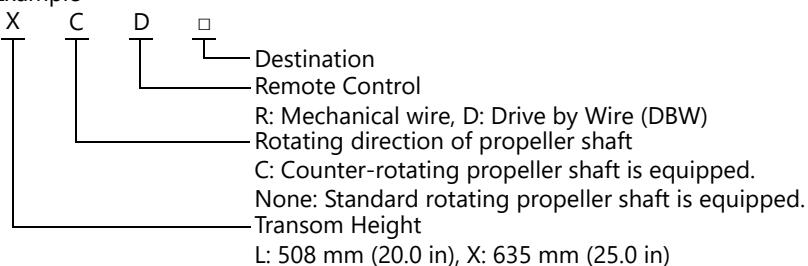
NOTE:

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

BF150D/BF135D/BF115J is provided with the following types according to the shaft length and the rotating direction of the propeller shaft.

TYPE CODE

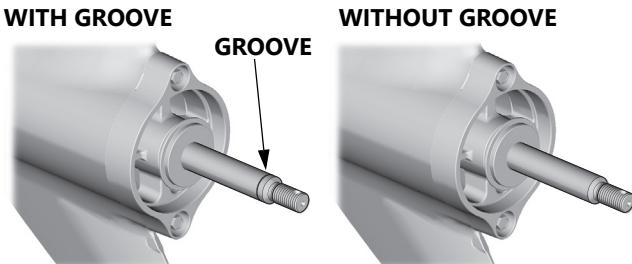
Example



How to Determine Which Direction the Propeller Shaft Rotates

The direction the propeller shaft rotates can be determined based on whether or not the propeller shaft has a groove.

- With groove: Counter-rotating
- Without groove: Standard rotating



Remote Control Types

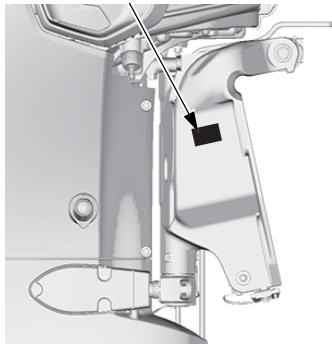
The remote control type is classified into the following five categories according to the control box position.

- Flush-mount type (DBW type): D1 type
- Top-mount type (DBW type): D2 type
- Side-mount type: R1 type
- Flush-mount type (Mechanical wire type): R2 type
- Top-mount type (Mechanical wire type): R3 type

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

Serial Number Locations

FRAME SERIAL NUMBER



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 to the right side of the stern bracket.

Frame serial number:

Engine serial number:

Trademarks

NMEA2000® is a registered trademark of National Marine Electronics Association, Inc.

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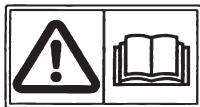
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1. SAFETY

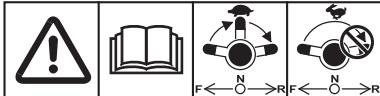
SAFETY INFORMATION

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

Operator Responsibility



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



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.

- 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 tank cap is closed properly and securely.
- Be careful not to spill any fuel while refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled make sure that the area is dry before starting the engine.
- Know how to stop the engine quickly in case of emergency. Understand the use of all controls.
- Do not exceed the boat manufacturer's power recommendation, and be sure that the outboard motor is properly mounted.
- Never permit anyone to operate the outboard motor without proper instruction.
- 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.

Burn Hazards

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 it.

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.

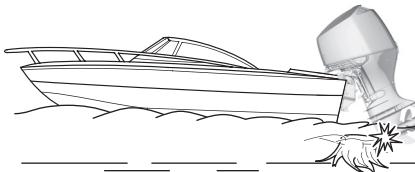
1. SAFETY

Be alert for underwater obstacles

In waters where there is a risk of collision with underwater obstacles or floating debris, reduce your speed and navigate with caution. If a collision occurs, the impact could lead to a serious accident or personal injury.

- Parts of the damaged outboard motor could come loose and be thrown into the boat
- Passengers could be thrown out due to sudden deceleration
- The outboard motor or hull could be damaged

If you hit an underwater obstacle while underway, stop the engine immediately and inspect the outboard motor for any problems. (See page 172) Continued use in a damaged condition may prevent safe cruise and lead to serious consequences.



2. SAFETY LABEL LOCATIONS

These labels are in the locations shown.

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

The labels are considered permanent parts of your outboard motor.

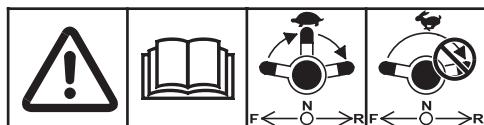
Read the labels and safety notes and precautions described in this manual carefully.

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

(Except for sporty white type)

READ OWNER'S MANUAL

GEAR SHIFTING



(Sporty white type)

READ OWNER'S MANUAL

GEAR SHIFTING

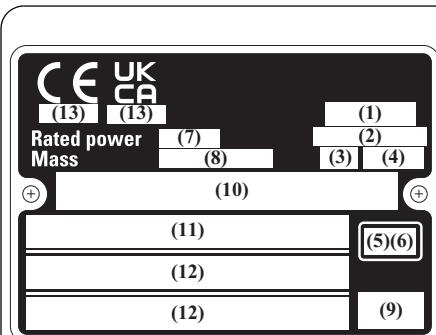


2. SAFETY LABEL LOCATIONS

CE MARK/UKCA MARK LOCATION [European types]

CE MARK/UKCA MARK

[Example : BF115J]



- (1) Model name
- (2) Engine family name
- (3) Minor model change code
- (4) Type name
- (5) Year code
- (6) Month code
- (7) Rated power
- (8) Dry mass (weight) (with propeller)
- (9) Country of manufacture
- (10) Frame serial number (Type and serial number of Declaration of Conformity)
- (11) Manufacturer and address
- (12) Name and address of authorized representative
- (13) Identification number of the notified body

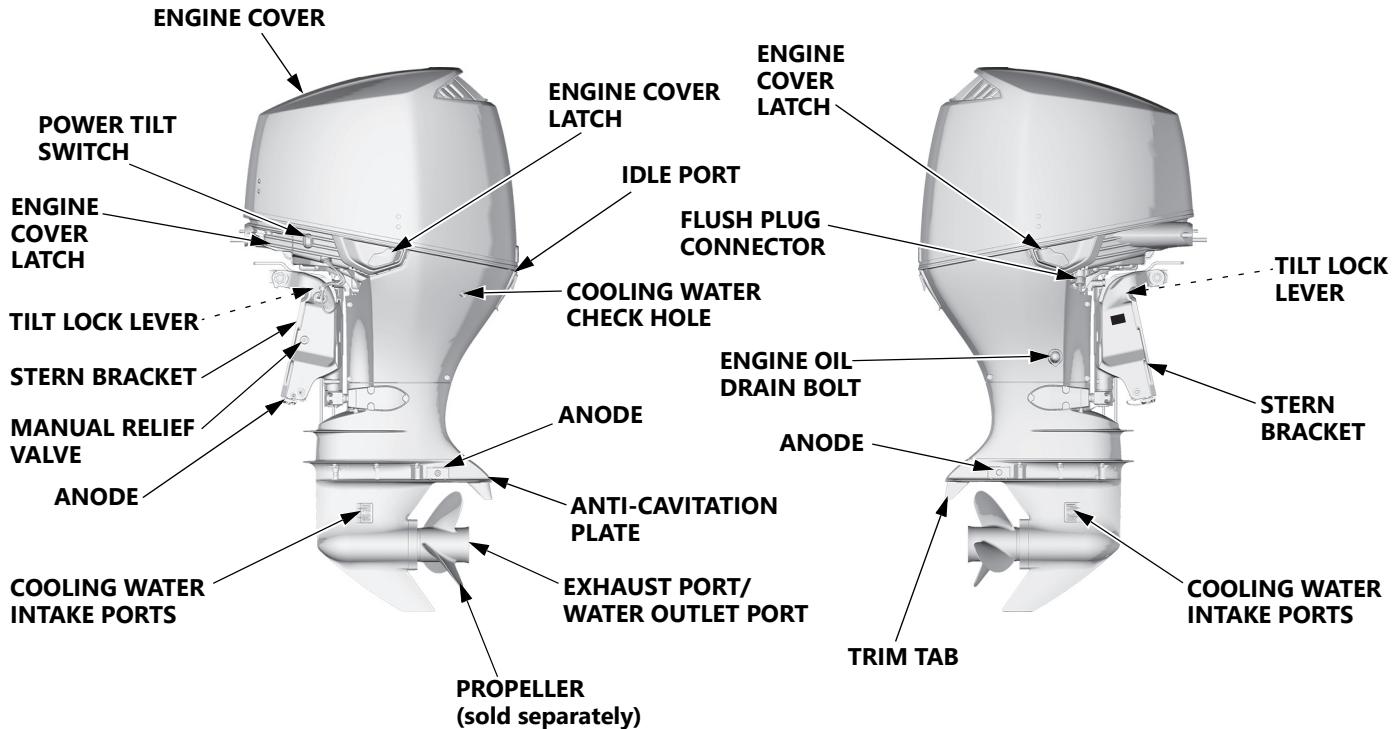


Year code	M	N	P	R	S	T	V	W	X	Y
Year of manufacture	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030

Month code	A	B	C	D	E	F	G	H	J	K	L	M
Month of manufacture	1	2	3	4	5	6	7	8	9	10	11	12

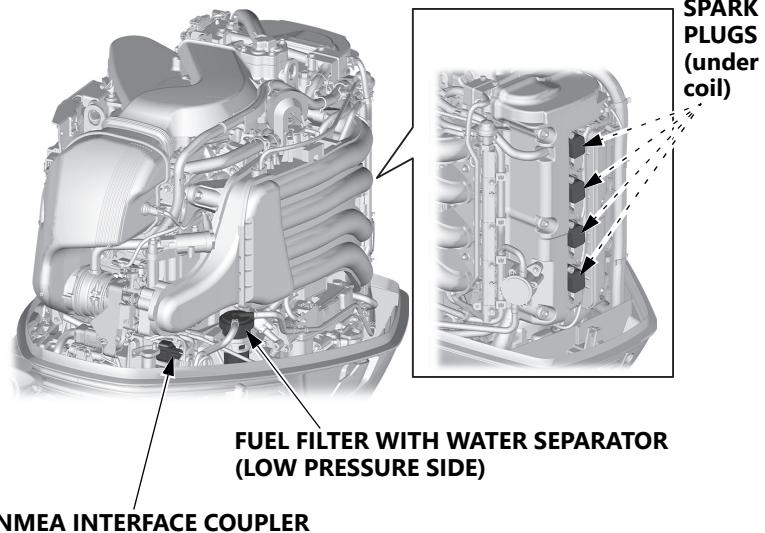
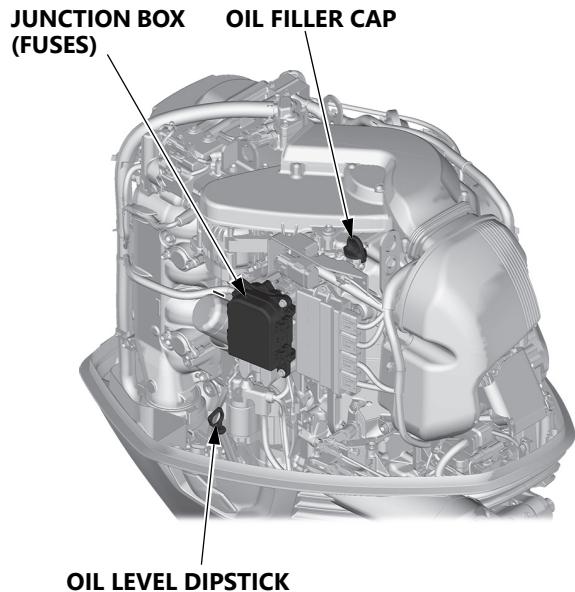
Name and address of manufacturer and authorized representative and importer are written in the "Declaration of Conformity" CONTENT OUTLINE in this Owner's Manual.

3. COMPONENT IDENTIFICATION



* Illustrations are based on X type

3. COMPONENT IDENTIFICATION

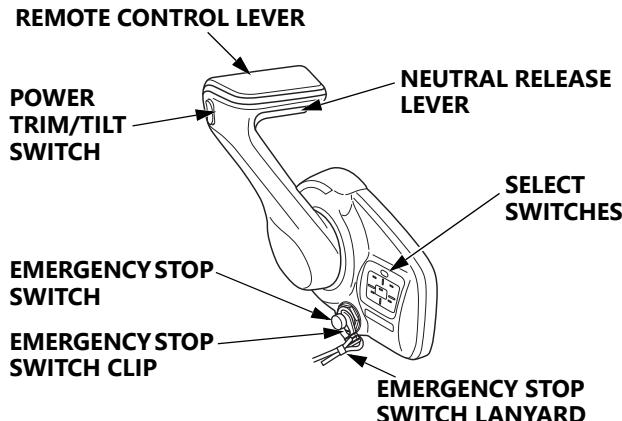


* The figure above shows the engine with the spark plug cover removed.

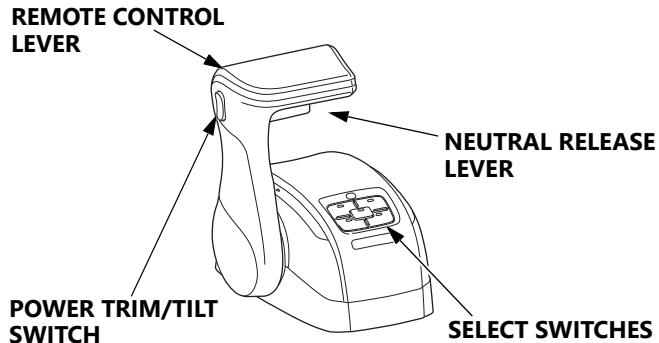
3. COMPONENT IDENTIFICATION

REMOTE CONTROL BOX for DBW type (optional equipment)

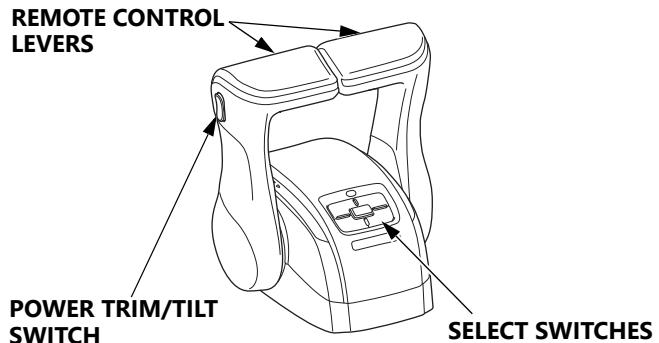
Flush-mount type (D1 type)



Top-mount type (D2 type) (Single outboard motor type)



(Dual outboard motors type)

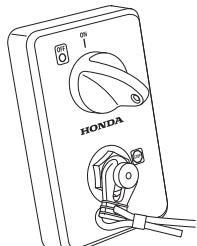
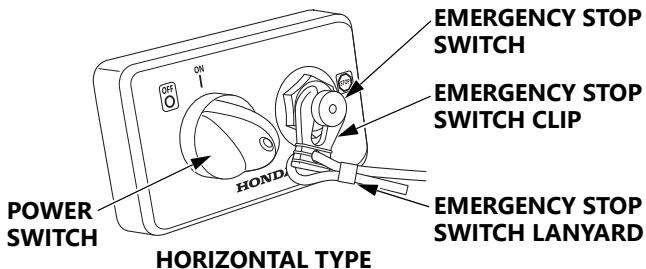


3. COMPONENT IDENTIFICATION

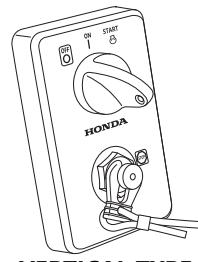
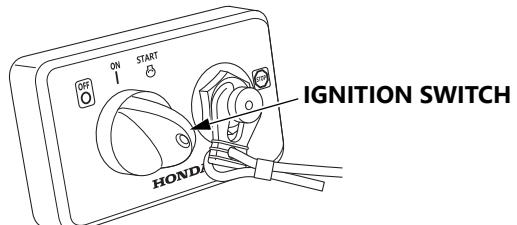
SWITCH PANEL for DBW type (optional equipment)

Key switch panel

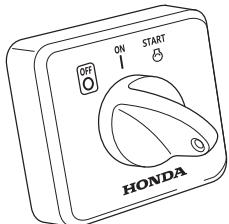
(Normal Key with START/STOP switch type)



(Normal Key without START/STOP switch type)



3. COMPONENT IDENTIFICATION



FLUSH-MOUNT TYPE (D1 TYPE)

NOTICE

- For the switch panel without emergency stop switch type, use it along with the flush-mount type remote control box.

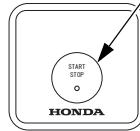
START/STOP switch panel

START/STOP SWITCH



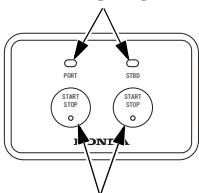
ALL ENGINE START FOR
MULTIPLE OUTBOARD
MOTORS

START/STOP SWITCH



SINGLE TYPE
OUTBOARD MOTOR

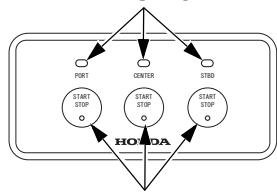
INDICATOR



START/STOP SWITCH

DUAL TYPE
OUTBOARD MOTOR

INDICATOR



START/STOP SWITCH

TRIPLE TYPE
OUTBOARD MOTOR

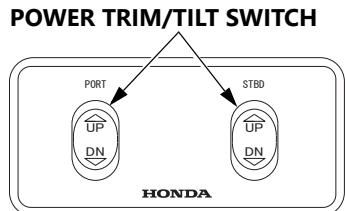
PORT: Port side engine

CENTER: Center engine

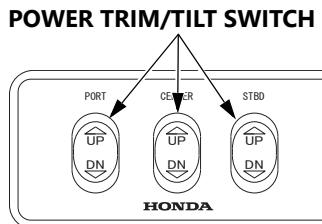
STBD: Starboard side engine

3. COMPONENT IDENTIFICATION

Power trim/tilt switch panel



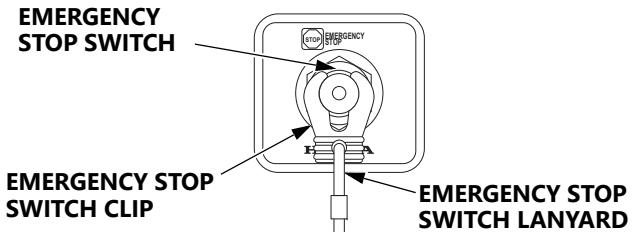
DUAL TYPE
OUTBOARD MOTOR



TRIPLE TYPE
OUTBOARD MOTOR

PORT: Port side engine
CENTER: Center engine
STBD: Starboard side engine

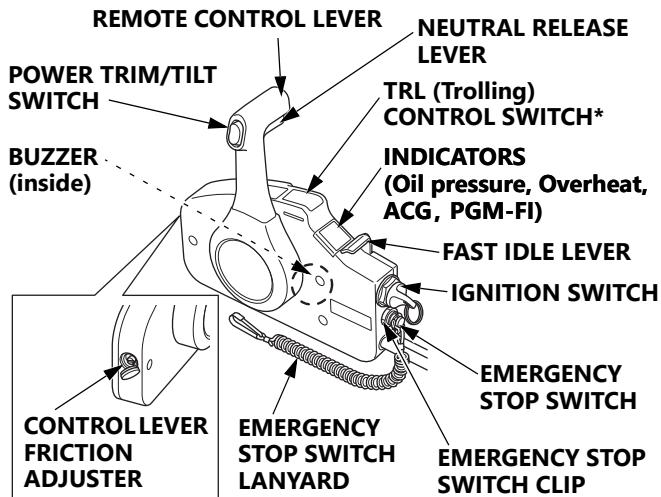
Emergency stop switch panel



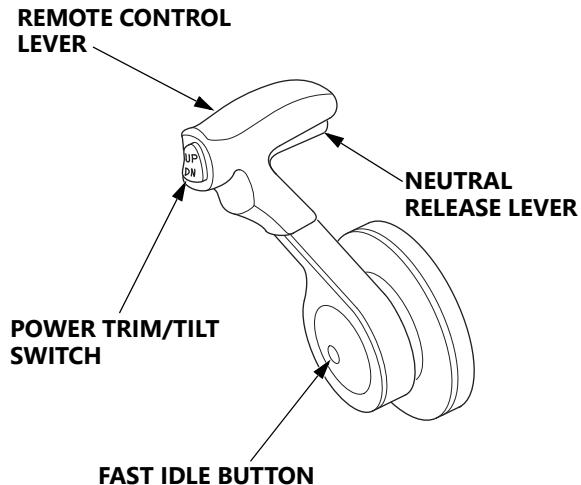
3. COMPONENT IDENTIFICATION

REMOTE CONTROL BOX for Mechanical wire type (optional equipment)

Side-mount type (R1 type)



Flush-mount type (R2 type)

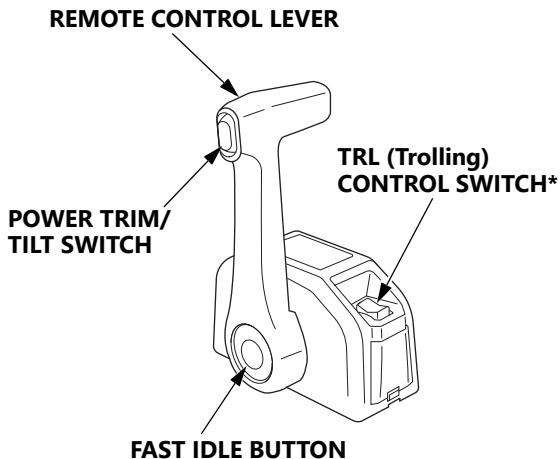


* For TRL (Trolling) control switch equipped type.

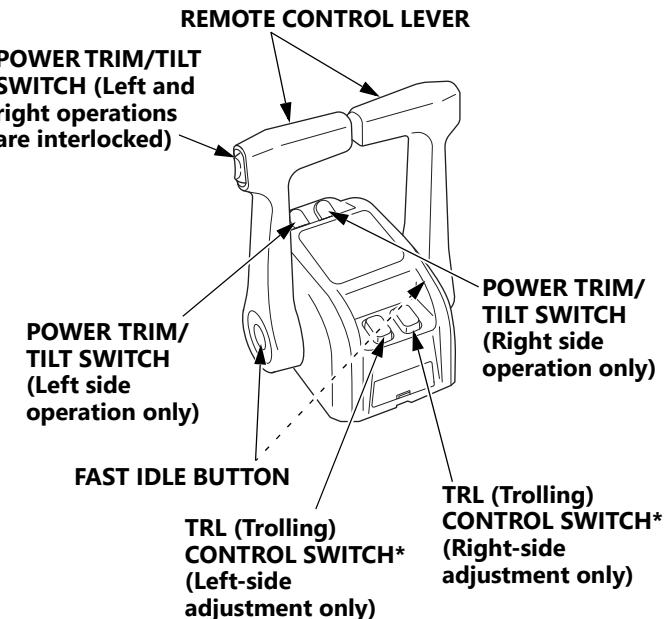
3. COMPONENT IDENTIFICATION

Top-mount type (R3 type)

(Single outboard motor type)



(Dual outboard motors type)

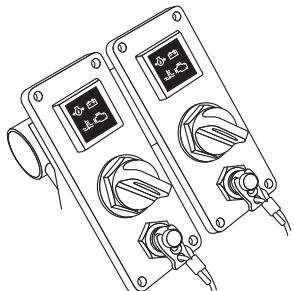
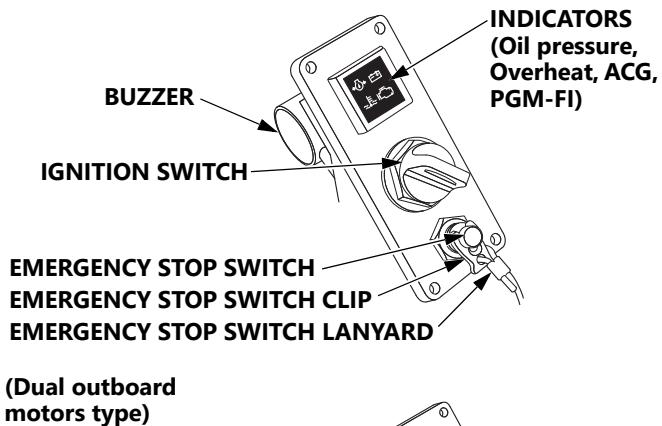


* For TRL (Trolling) control switch equipped type.

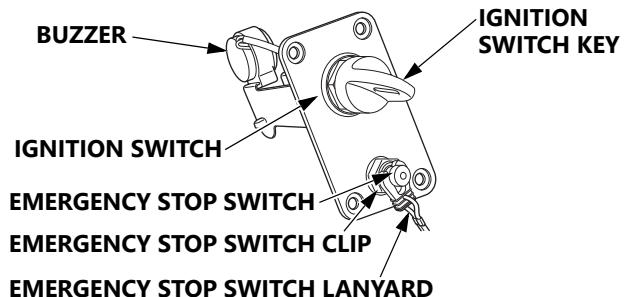
3. COMPONENT IDENTIFICATION

SWITCH PANEL for Mechanical wire type (optional equipment)

With indicators type

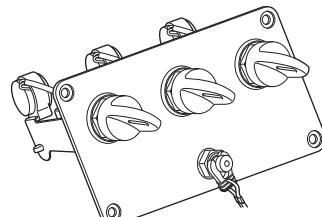
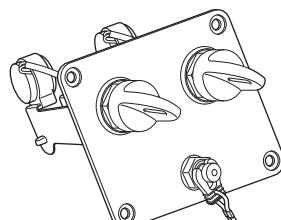


Without indicators type



(Dual outboard motors type)

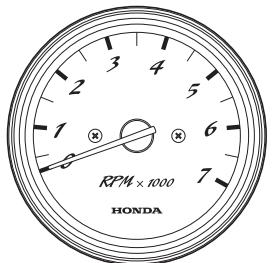
(Triple outboard motors type)



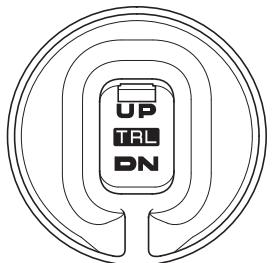
For the switch panel without indicators type, use it along with the NMEA2000®-compatible device.

3. COMPONENT IDENTIFICATION

TACHOMETER for Mechanical wire type (optional equipment)



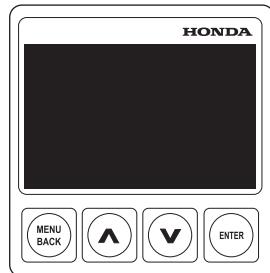
TRL (Trolling) CONTROL SWITCH PANEL (optional equipment)



MULTI-FUNCTION DISPLAY (optional equipment)

Refer to the attached instruction manual about handling.

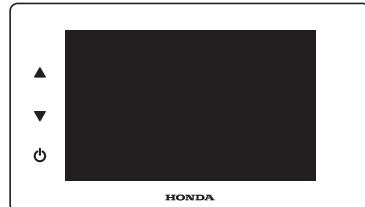
Display assy 4.3 (Ver.0.26~)



NOTICE

- Some functions are not available on multi-function displays with a software version earlier than "Ver. 0.26". Consult with an authorized Honda outboard motor dealer.

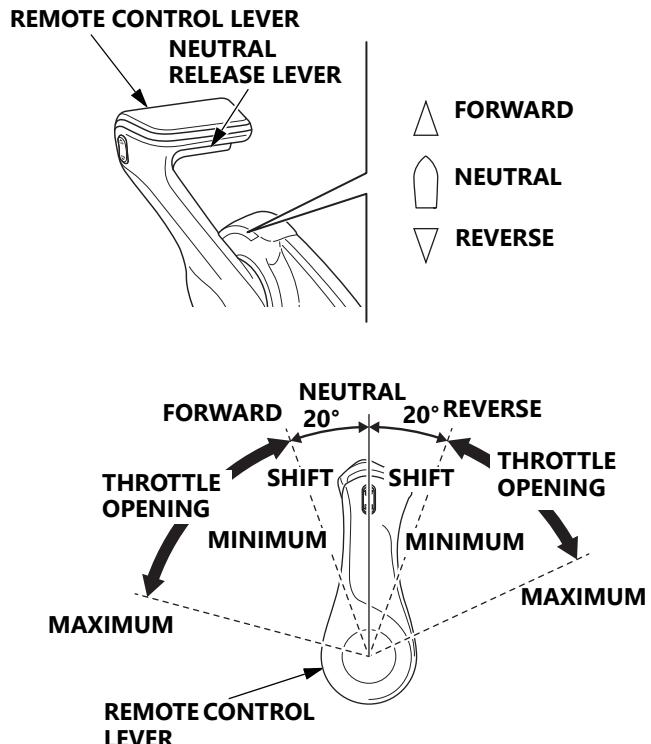
Display assy 7.0



4. CONTROLS AND FEATURES

REMOTE CONTROL LEVER (D1, D2 types)

D1 type



Shifting gear into forward, reverse, or neutral and 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 (approximately 20° 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's forward speed.

NEUTRAL:

Engine power is cut off from the propeller.

REVERSE:

Moving the lever to the REVERSE position (approximately 20° 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's reverse speed.

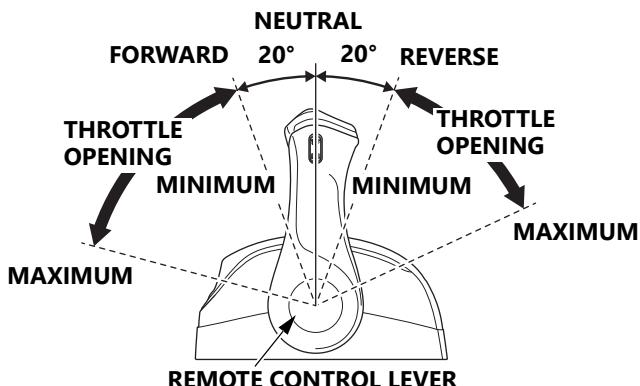
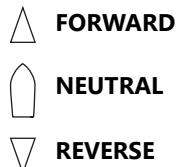
4. CONTROLS AND FEATURES

D2 type

Single type

REMOTE CONTROL LEVER

NEUTRAL RELEASE LEVER



Shifting gear into forward, reverse, or neutral and 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 (approximately 20° 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's forward speed.

NEUTRAL:

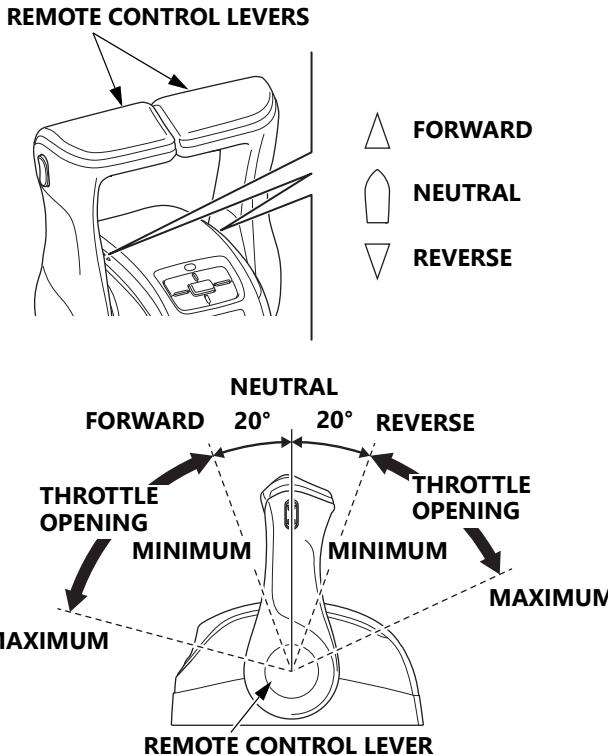
Engine power is cut off from the propeller.

REVERSE:

Moving the lever to the REVERSE position (approximately 20° 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's reverse speed.

4. CONTROLS AND FEATURES

Dual type



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

FORWARD:

Moving the lever to the FORWARD position (approximately 20° 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's forward speed.

NEUTRAL:

Engine power is cut off from the propeller.

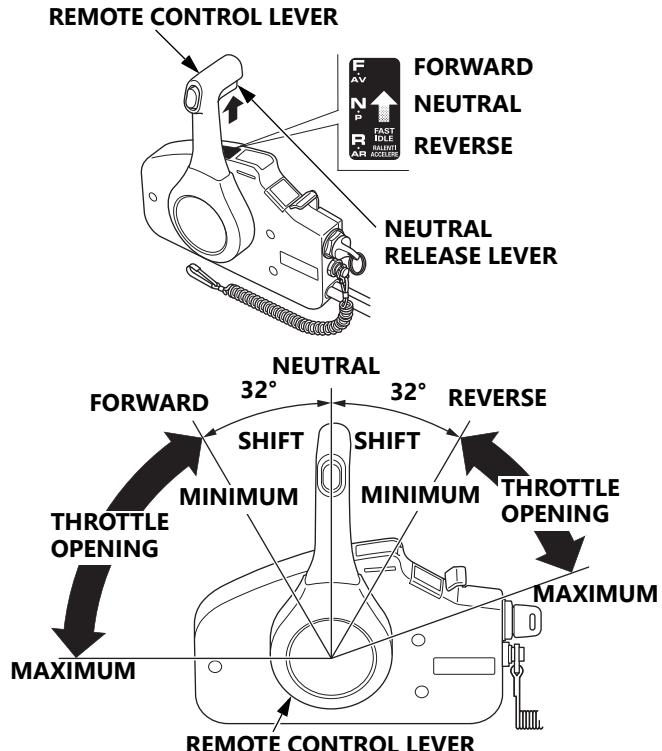
REVERSE:

Moving the lever to the REVERSE position (approximately 20° 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's reverse speed.

4. CONTROLS AND FEATURES

REMOTE CONTROL LEVER (R1, R2, R3 types)

R1 type



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

It is necessary to pull up the neutral release lever to operate the remote control lever.

FORWARD:

Moving the lever to the FORWARD position (i.e. approximately 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:

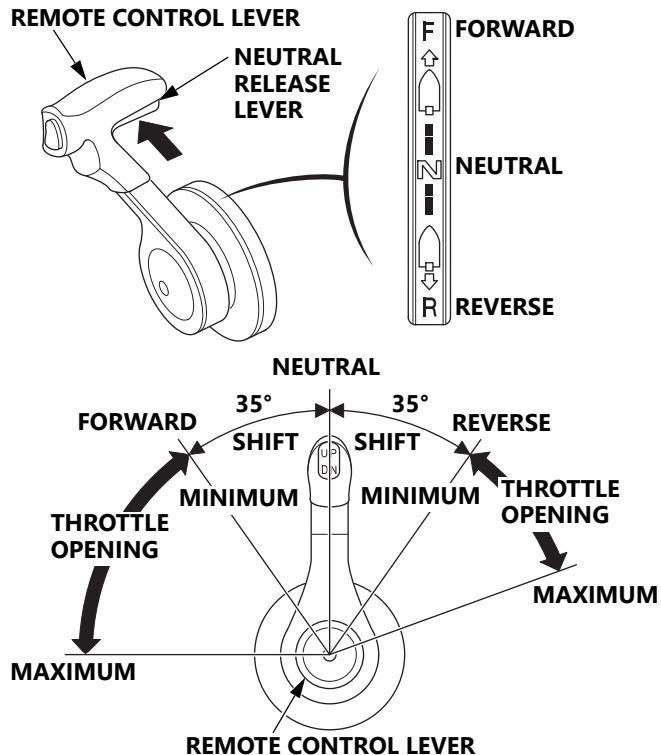
Engine power is cut off from the propeller.

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.

4. CONTROLS AND FEATURES

R2 type



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

It is necessary to pull up the neutral release lever to operate the remote control lever.

FORWARD:

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

NEUTRAL:

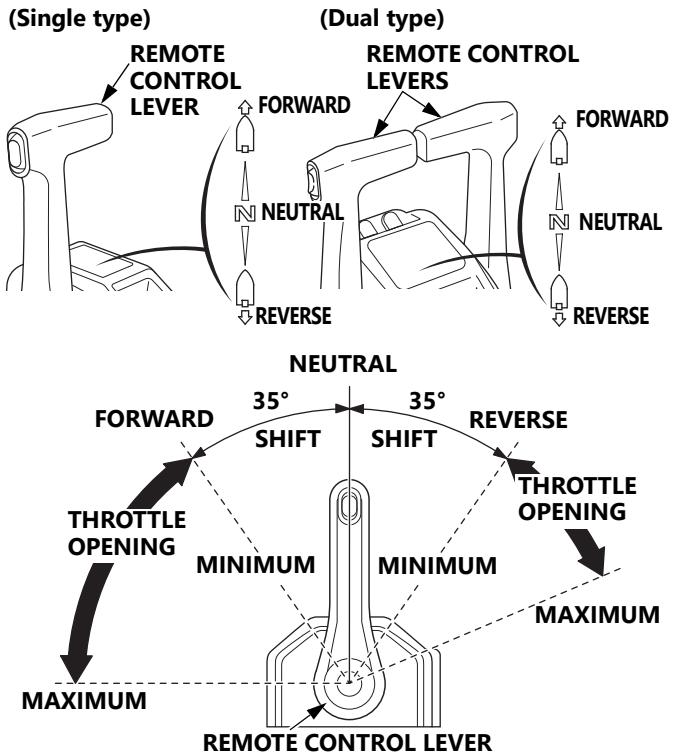
Engine power is cut off from the propeller.

REVERSE:

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

4. CONTROLS AND FEATURES

R3 type



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

FORWARD:

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

NEUTRAL:

Engine power is cut off from the propeller.

REVERSE:

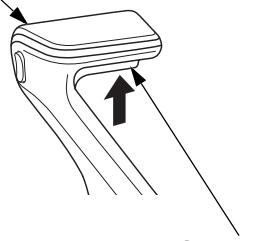
Moving the lever to the REVERSE position (i.e. approximately 35° from the NEUTRAL position) engages the gear into reverse. Moving the lever further from the REVERSE position will increase the throttle opening and the boat reverse speed.

4. CONTROLS AND FEATURES

NEUTRAL RELEASE LEVER

(D1 type)

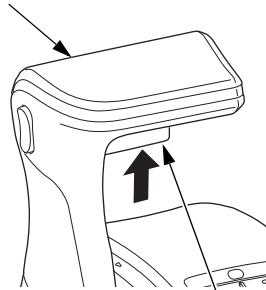
REMOTE CONTROL LEVER



NEUTRAL RELEASE LEVER

(D2 type)

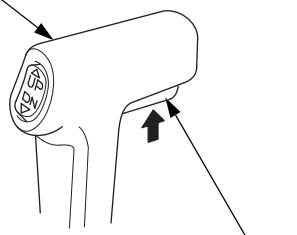
REMOTE CONTROL LEVER



NEUTRAL RELEASE LEVER

(R1 type)

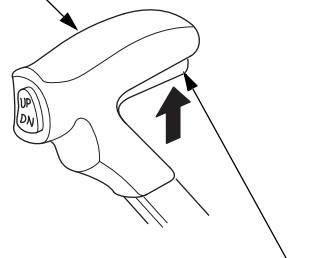
REMOTE CONTROL LEVER



NEUTRAL RELEASE LEVER

(R2 type)

REMOTE CONTROL LEVER



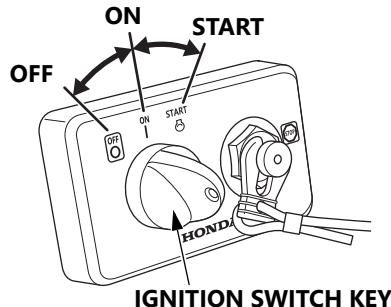
NEUTRAL RELEASE LEVER

The neutral release lever on the remote control lever is to prevent 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.

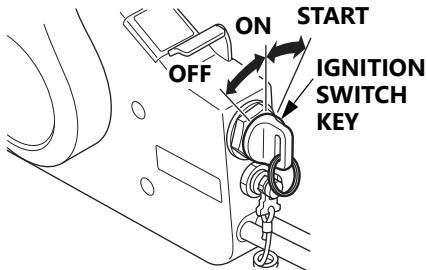
4. CONTROLS AND FEATURES

IGNITION SWITCH

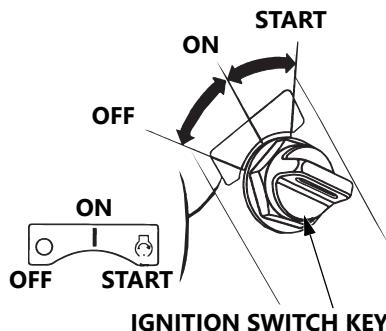
(D1, D2 without START/STOP Switch types)



(R1 type)



(R2, R3 type)



This control is equipped with an automotive type ignition switch. On the flush-mount type (D1 type), the top-mount type (D2 type), the ignition switch is located on the key switch panel. On the side-mount type (R1 type), the ignition switch locates on your side near the remote control box. On the flush-mount type (R2 type) and the top-mount type (R3 type), the ignition switch locates at the center of the switch panel.

Key positions:

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

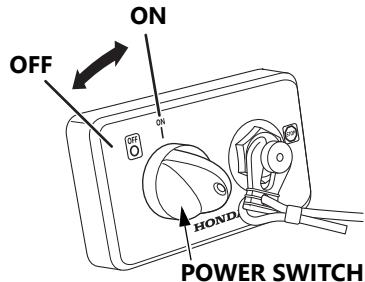
NOTICE

• Do not leave the 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.

POWER SWITCH



This control is equipped with a start/stop switch.

- ON: This position allows the engine to start and run.
- OFF: This position stops the engine (Ignition OFF).

NOTICE

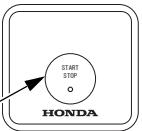
- Turn the power off after the engine is stopped. If the power is not turned off after the engine is stopped, the battery will continue to drain until it is depleted.

4. CONTROLS AND FEATURES

START/STOP SWITCH

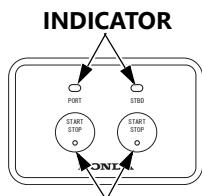


START/STOP SWITCH

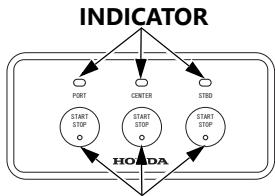


ALL ENGINE START FOR
MULTIPLE OUTBOARD
MOTORS

SINGLE TYPE
OUTBOARD MOTOR



START/STOP SWITCH



START/STOP SWITCH

DUAL TYPE
OUTBOARD MOTORS

TRIPLE TYPE
OUTBOARD MOTORS

To start the engine, be sure the power switch is in the ON position, and then press the start/stop switch button.

For boats with multiple outboard motors and equipped with the ALL ENGINE START/STOP switch, all motors can be started sequentially from the PORT side at the press of one button.

For boats equipped with multiple outboard motors and either the dual type or triple type start/stop switches, each outboard on the boat may be started individually and the corresponding indicator light will turn on after the engine has started.

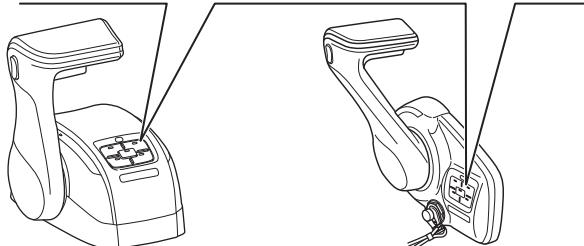
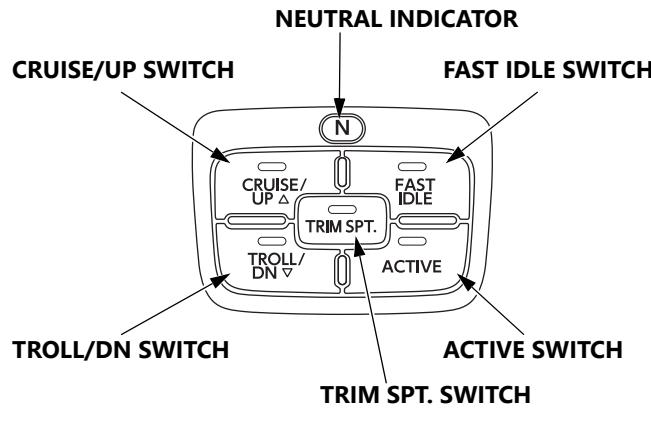
NOTE:

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.

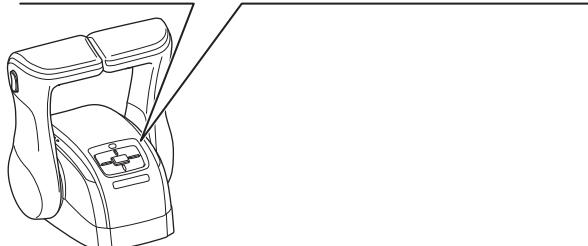
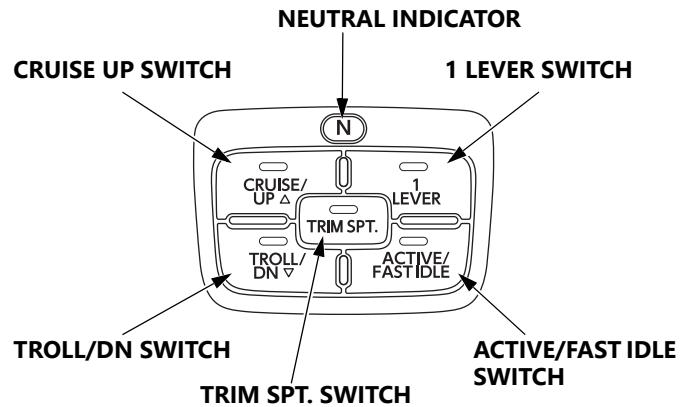
4. CONTROLS AND FEATURES

SELECT SWITCHES (D1, D2 types)

(D1 type, D2 type(Single type))



(D2 type (Dual type))



Select switches are used for operations in the fast idle mode, trolling control mode, one-lever mode, active mode, cruise control mode and trim support mode.

4. CONTROLS AND FEATURES

Indicators on select switches

Indicator	On	Flashing	Off
NEUTRAL	The remote control lever is in the NEUTRAL position	Fast idle mode is on	The remote control lever is in the FORWARD or REVERSE position
CRUISE/UP	Cruise control mode is on	Cruise control mode is paused	Cruise control mode is off
TROLL/DN	Trolling control mode is on	Trolling control mode is on And Fast idle mode is on	Trolling control mode is off
TRIM SPT.	Trim support mode is on	Trim support mode is paused	Trim support mode is off
FAST IDLE	-	Fast idle mode is on	Fast idle mode is off
ACTIVE	Active mode is on	-	Active mode is off
1 LEVER	One-lever mode is on	-	One-lever mode is off
ACTIVE/FAST IDLE	Active mode is on And Fast idle mode is off	Active mode is on And Fast idle mode is on	Active mode is off And Fast idle mode is off

ACTIVE Switch, ACTIVE/FAST IDLE Switch

For multiple station type, use the ACTIVE switch or ACTIVE/FAST IDLE switch to change the operating remote control (active mode).

If you press the ACTIVE switch or ACTIVE/FAST IDLE switch on the remote control you want to operate the outboard motors when all remote control levers are in the NEUTRAL position, the mode changes to active mode.

This allows the active remote control to control the engine. All other remote controls are switched off.

FAST IDLE Switch, ACTIVE/FAST IDLE Switch

If you press the FAST IDLE switch or ACTIVE/FAST IDLE switch on the remote control in active mode when the remote control lever is in the NEUTRAL position, the mode changes to the fast idle mode.

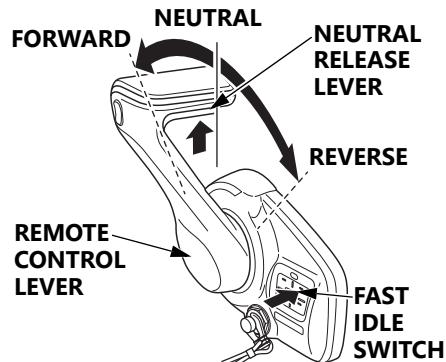
You can adjust the engine speed by lowering the remote control lever to the FORWARD or REVERSE side. In the case of dual top-mount remote control, the mode changes to the fast idle mode only for an engine whose remote control lever is in the NEUTRAL position.

The BF150D, BF135D and BF115J model uses programmed fuel injection, so this mode will not be needed for starting. After the engine starts and if the outside temperature is below 5°C (41°F), the fast idle mode can be used to accelerate engine warm-up.

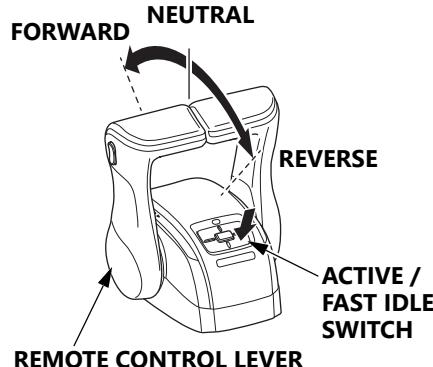
- You cannot turn on the fast idle mode without putting the remote control lever in the NEUTRAL position.
- If remote controls are mounted at two places, changing of fast idle mode can be done only with the remote control that is in active mode (see page 37).
- To release the fast idle mode, press the FAST IDLE switch or ACTIVE/FAST IDLE switch with all the remote control levers put in the NEUTRAL position.
- When fast idle mode is released, a short buzz sounds twice.

4. CONTROLS AND FEATURES

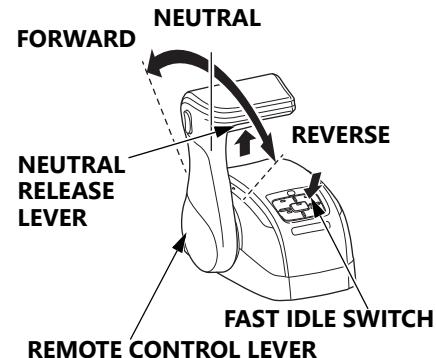
(D1 type)



(D2 type (Dual type))

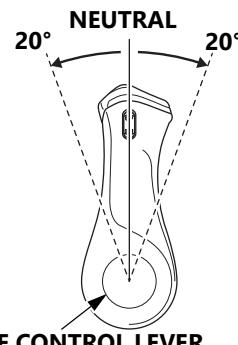


(D2 type(Single type))



TROLL/DN Switch

After the engine warms up, when the remote control levers are tilted from the NEUTRAL position to the FORWARD or REVERSE side by about 20° and the TROLL/DN switch of the remote control is pressed, the mode changes to trolling control mode.



The engine speed can be adjusted with the CRUISE/UP switch and TROLL/DN switch when in trolling control mode.

After the mode changes to the trolling control mode, the engine speed is 650 min^{-1} (rpm).

Engine speed adjusting range:

650 min^{-1} (rpm) to 900 min^{-1} (rpm) (in steps of 50 min^{-1} (rpm))

When in trolling control mode, trolling control mode is not released even if you put the remote control lever in the NEUTRAL position. By shifting from NEUTRAL to FORWARD or REVERSE again, the boat will cruise at the set engine speed.

⚠ CAUTION

While in trolling control mode, check whether the mode indicator is ON/OFF before shifting the remote control lever from the NEUTRAL position to the FORWARD or REVERSE position. Operating the remote control lever while trolling control mode is ON creates a risk of collision or injury due to an unexpected sudden start, which is caused by the engine starting to cruise at the speed set for trolling control mode, not by how far the throttle is opened.

- If the engine is not finished warming up, it cannot go into trolling mode. So, warm up the engine (see page 91).

- If remote controls are mounted at two places, the changing of trolling control mode can be done only with the remote control that is in active mode (see page 37).
- You can force the release of trolling control mode by using the remote control lever to increase the engine speed to $3,000\text{ min}^{-1}$ (rpm) or higher.
- To release the trolling control mode, press and hold the TROLL/DN switch.
- When the trolling control mode is released, a short buzz sounds twice.

4. CONTROLS AND FEATURES

1 LEVER Switch (For D2 type (Dual type))

Shifting gear and the engine speed adjustment of all the outboard motors can be performed with one remote control lever when in one-lever mode.

If you press the 1 LEVER switch on the remote control in active mode when all remote control levers are in the NEUTRAL position, the mode changes to one-lever mode.

- If remote controls are mounted at two places, the changing of one-lever mode can be done only with the remote control that is in active mode (see page 37).
- To release one-lever mode, press and hold the 1 LEVER switch with the remote control lever in the NEUTRAL position.

- When one-lever mode is released, a short buzz sounds twice.
- To use one-lever mode the next time you are boating, turn the engine switch or the power switch off while in one-lever mode so that the next time you go boating the one-lever mode will be on.

CRUISE/UP Switch

If you press the CRUISE/UP switch during cruising with all the remote control levers in the FORWARD position, the mode changes to the cruise control mode, which lets the boat cruise at a constant engine speed or velocity.

- Speed can only be adjusted in cruise control mode when equipped with GPS.

NOTICE

- **Operations may be inconsistent, depending on the GPS that you are using. Consult your dealer for more information about GPS.**

In the cruise control mode, pressing the CRUISE/UP switch increases the engine speed or velocity and pressing the TROLL/DN switch decreases it.

Engine speed adjusting range:

Engine speed at mode change
 $\pm 500 \text{ min}^{-1}$ (rpm) (in steps of
 50 min^{-1} (rpm))

Velocity adjusting range:

- Velocity at mode change $\pm 10 \text{ km/h}$ (in steps of 1.0 km/h)
- Velocity at mode change $\pm 5 \text{ miles/h}$ (in steps of 0.5 miles/h)
- Velocity at mode change $\pm 5 \text{ knots}$ (in steps of 0.5 knots)
- To select whether to adjust the engine speed or velocity in the cruise control mode, use a Honda multi-function display.
- If remote controls are mounted at two places, the changing of cruise control mode can be done only with the remote control that is in active mode (see page 37).

- The mode does not change to the cruise control mode in the following cases.
 - GPS has not been started (Velocity adjustment is selected in the multi-function display)
 - The trolling control mode is on
 - In the case of multiple outboard engines, when even one of the outboard engines has stopped
- The cruise control mode is stopped temporarily if you make a turn or turn the boat continuously.
- To release the cruise control mode, press and hold the CRUISE/UP switch.
- When the cruise control mode is released, a short buzz sounds twice.

- The cruise control mode is released forcibly in the following cases.
 - GPS error or disconnection (Velocity adjustment is selected in the multi-function display)
 - Engine stops or engine is abnormal (overheating, low oil pressure, etc.)
 - If the engine RPM or speed is unstable
 - Operate the remote control lever is moved beyond as set amount or shift to the opposite of the set amount.*

4. CONTROLS AND FEATURES

*: Operation of a set amount

- If you put the engine speed at $3,000 \text{ min}^{-1}$ (rpm), switch to cruise control mode, and use the CRUISE/UP switch to adjust to $3,500 \text{ min}^{-1}$ (rpm)
- The mode is forcibly released by operating the remote control lever to the FORWARD side to increase the engine speed to $3,500 \text{ min}^{-1}$ (rpm) or more.
- The mode is forcibly released immediately if the remote control lever is operated to the REVERSE side.

- If you put the engine speed at $3,000 \text{ min}^{-1}$ (rpm), switch to cruise control mode, and use the TROLL/DN switch to adjust to $2,500 \text{ min}^{-1}$ (rpm)
- When the remote control lever is operated to the REVERSE side and the engine speed exceeds $2,500 \text{ min}^{-1}$ (rpm), the mode is forcibly released.
- The mode is forcibly released immediately if the remote control lever is operated to the FORWARD side.
- The mode is forcibly released immediately by putting the remote control lever in NEUTRAL.

TRIM SPT. Switch

Pressing the TRIM SPT. switch changes the mode to the trim support mode, which automatically does trim operations according to the speed or engine RPM.

The conditions that control the trim operation (engine RPM and speed) and the trim angle pattern are set in the multi-function display.

For information about how to use the power trim/tilt switch, see page 47.

- If remote controls are mounted at two places, the changing of trim support mode can be done only with the remote control that is in active mode (see page 37).
- To release the trim support mode, press the TRIM SPT. switch.

4. CONTROLS AND FEATURES

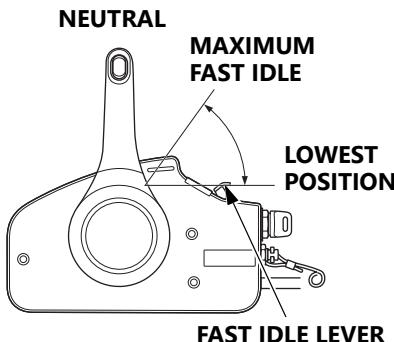
- When trim support mode is released, a short buzz sounds twice.

FAST IDLE LEVER (R1 type)/ FAST IDLE BUTTON (R2, R3 types)

The fast idle lever/fast idle button is only needed for starting carbureted outboard models. The BF115J, BF135D, and BF150D models use programmed fuel injection so, this lever will not be needed for starting.

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

Fast idle lever (R1 type)



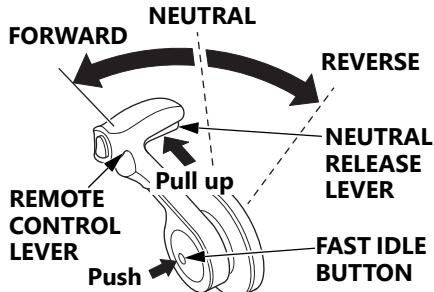
The fast idle lever will not move unless the remote control lever is in the NEUTRAL position.

Conversely, the remote control lever will not move unless the fast idle lever is in the lowest position.

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

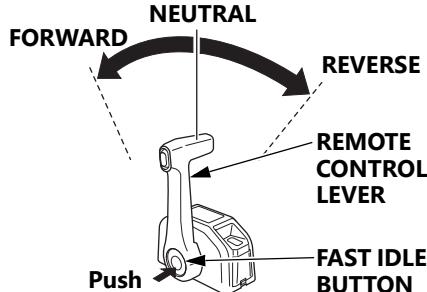
4. CONTROLS AND FEATURES

Fast idle button (R2 type)



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

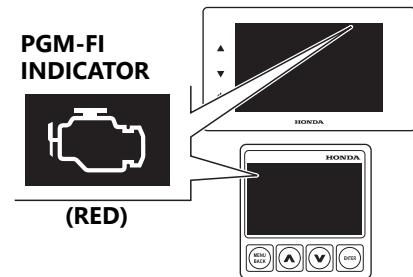
Fast idle button (R3 type)



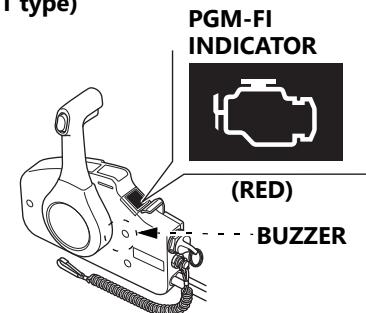
Use the fast idle button and the remote control lever to adjust the engine speed without gearshift when warming up the engine. Move the control lever forward whilst holding the fast idle button in. The throttle opens and the engine speed increases after the lever passed the shift point. Note that the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

PGM-FI INDICATOR/BUZZER (optional equipment)

(Multi-function Display)



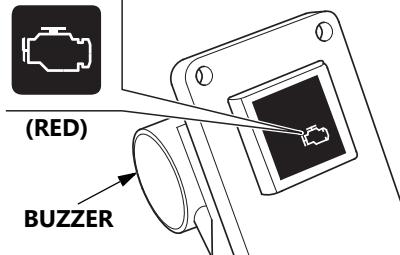
(R1 type)



4. CONTROLS AND FEATURES

(R2, R3 type (Switch panel with indicators type))

PGM-FI
INDICATOR



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

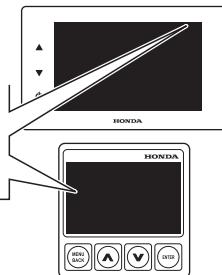
ACG INDICATOR/BUZZER (optional equipment)

(Multi-function Display)

ACG
INDICATOR

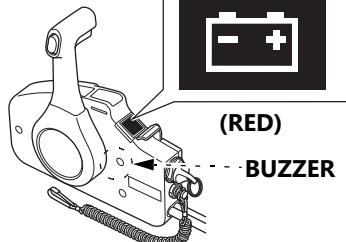


(RED)



(R1 type)

ACG
INDICATOR

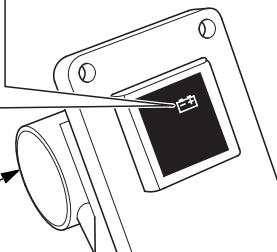


(R2, R3 type (Switch panel with indicators type))

ACG
INDICATOR



(RED)



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

4. CONTROLS AND FEATURES

LOW OIL PRESSURE INDICATOR/OIL PRESSURE INDICATOR/BUZZER (optional equipment)

(Multi-function Display)

LOW OIL PRESSURE INDICATOR



(RED)



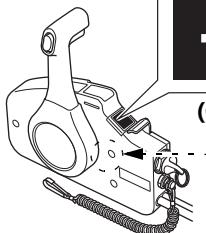
(R1 type)

OIL PRESSURE INDICATOR



(GREEN)

BUZZER



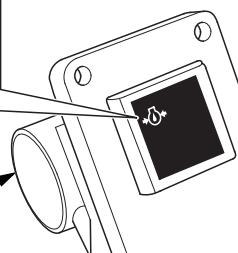
(R2, R3 type (Switch panel with indicators type))

OIL PRESSURE INDICATOR



(GREEN)

BUZZER



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

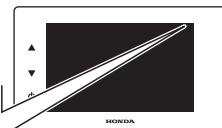
OVERHEAT INDICATOR/BUZZER (optional equipment)

(Multi-function Display)

OVERHEAT INDICATOR



(RED)



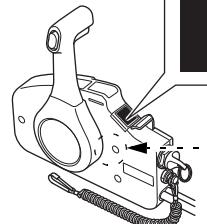
(R1 type)

OVERHEAT INDICATOR



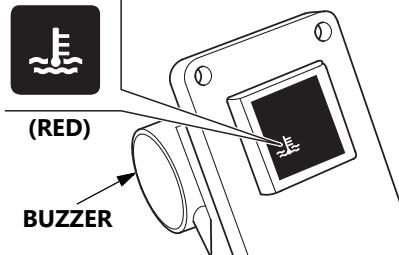
(RED)

BUZZER



(R2, R3 type (Switch panel with indicators type))

OVERHEAT INDICATOR



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

WATER SEPARATOR BUZZER

The water separator buzzer sounds (intermittent short sounds) when water has accumulated in the water separator.

POWER TRIM/TILT SWITCH

You can change the angle of the outboard motor.

- Press the switch on the "UP" side to increase the trim/tilt angle.
- Press the switch on the "DN" side to decrease the trim/tilt angle.
- Press the switch twice in succession to activate the automatic tilt. (D1, D2 types)

Power Trim

Press the power trim/tilt switch on the remote control lever to adjust the outboard motor trim angle 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.

For details about the power trim, see page 115.

4. CONTROLS AND FEATURES

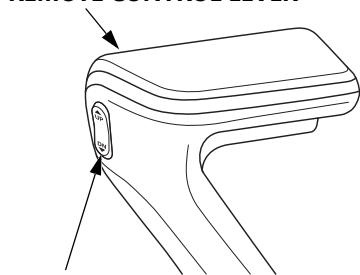
NOTICE

- 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.

Remote control box

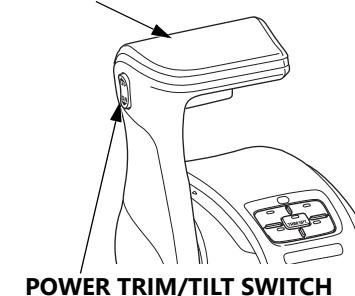
(D1 type)

REMOTE CONTROL LEVER



POWER TRIM/TILT SWITCH

(D2 type (Single type)) REMOTE CONTROL LEVER

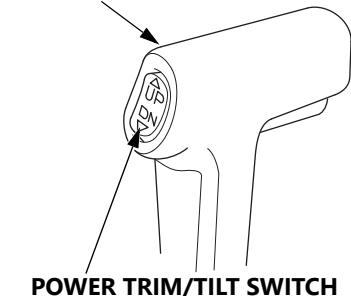


(D2 type (Dual type)) REMOTE CONTROL LEVERS

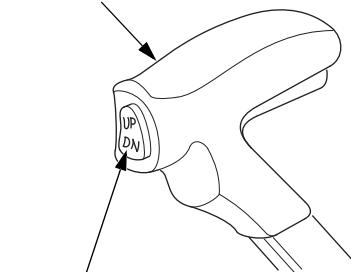


POWER TRIM/TILT SWITCH

(R1 type) REMOTE CONTROL LEVER



(R2 type) REMOTE CONTROL LEVER

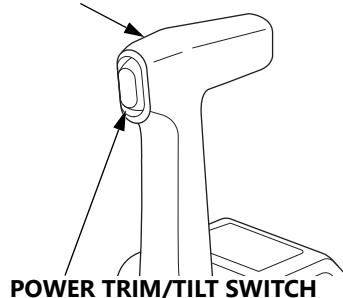


POWER TRIM/TILT SWITCH

4. CONTROLS AND FEATURES

(R3 type (Single type))

REMOTE CONTROL LEVER



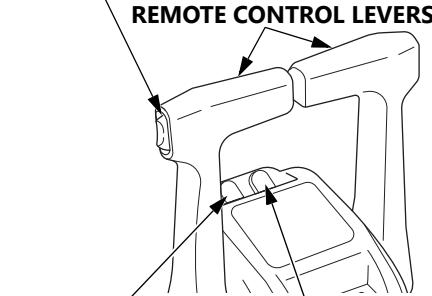
(R3 type (Dual type))

POWER TRIM/TILT SWITCH (Left and right operations are interlocked)

REMOTE CONTROL LEVERS

POWER TRIM/
TILT SWITCH
(Left side
operation only)

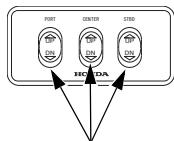
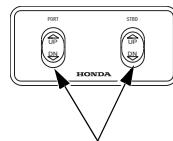
POWER TRIM/
TILT SWITCH
(Right side
operation only)



Power trim/tilt Switch panel

DUAL TYPE

TRIPLE TYPE



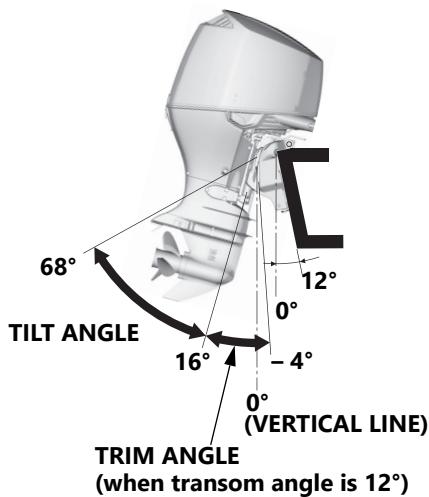
POWER TRIM/TILT SWITCH

NOTE:

For multiple outboard motors, the trim/tilt angle of all outboard motors is adjusted at the same time by using the power trim/tilt switch on the remote control lever and the trim/tilt angle of each outboard motor is adjusted by using each power trim/tilt switch on the remote control (R3 type only) or the panel.

4. CONTROLS AND FEATURES

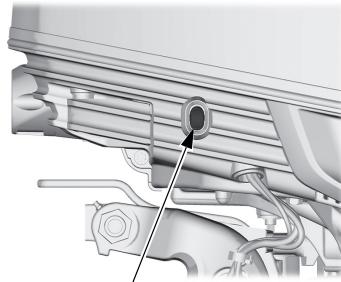
Power Tilt



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

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. When dual type outboard motors are mounted, tilt them up simultaneously. For details about the power tilt, see page 120.

POWER TILT SWITCH (outboard motor panel)



The power tilt switch located on the outboard motor panel is a convenience switch for tilting the outboard motor for trailering, or performing outboard maintenance.

- Press the switch on the "UP" side to increase the trim/tilt angle.
- Press the switch on the "DN" side to decrease the trim/tilt angle.

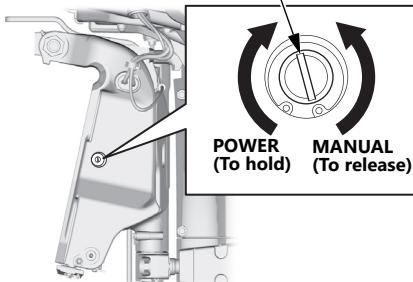
4. CONTROLS AND FEATURES

⚠ CAUTION

Do not operate the power tilt switch on the outboard motor cover while cruising. You can lose control of your balance, fall, and be injured by the moving outboard, propeller, or boat. Always use the remote control lever or the power trim/tilt switch on the switch panel while under way.

MANUAL RELIEF VALVE

MANUAL RELIEF VALVE



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

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

⚠ DANGER

Check that nobody is under the outboard motor before carrying out this operation because if the manual relief valve is loosened (turned counterclockwise) when the outboard motor is tilted up, the outboard motor will suddenly tilt down.

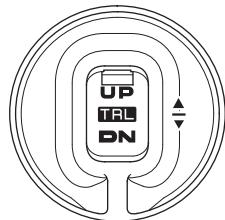
⚠ CAUTION

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

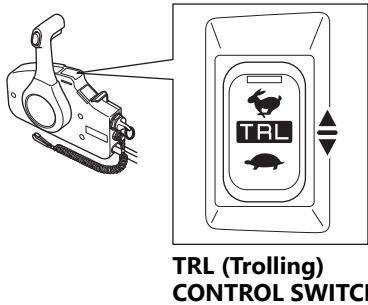
4. CONTROLS AND FEATURES

TRL (TROLLING) CONTROL SWITCH (R1, R2, R3 types (optional equipment))

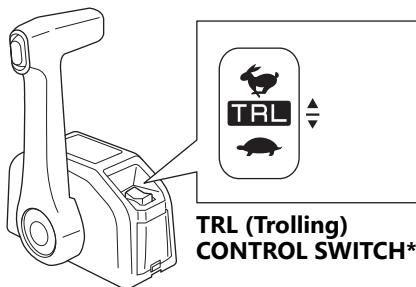
(TRL (trolling) control switch panel)



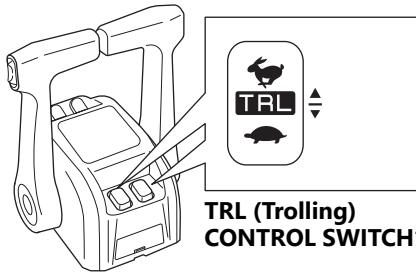
(R1 type)



(R3 type (Single type))



(R3 type (Dual type))



* For TRL (Trolling) control switch equipped type.

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

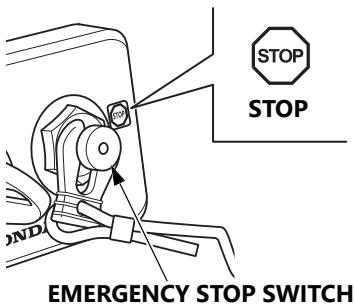
If you press and hold the TRL control switch while cruising with the throttle closed and the engine in gear, the mode changes to trolling mode.

4. CONTROLS AND FEATURES

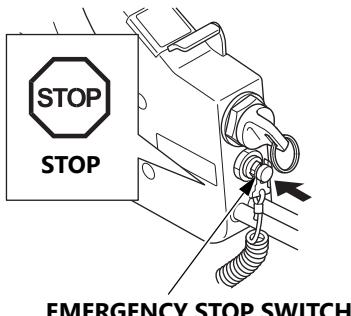
EMERGENCY STOP SWITCH

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.

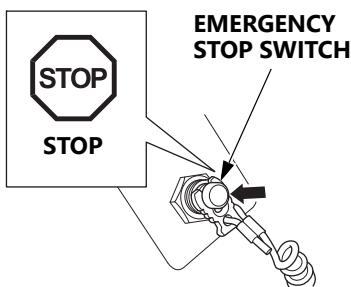
(D1, D2 types)



(R1 type)

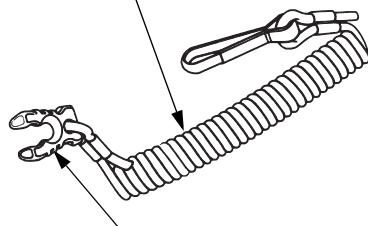


(R2, R3 types)



Emergency Stop Switch Lanyard/Clip

EMERGENCY STOP SWITCH LANYARD



EMERGENCY STOP SWITCH CLIP

The emergency stop switch clip must be engaged with the engine 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.

4. CONTROLS AND FEATURES

⚠ WARNING

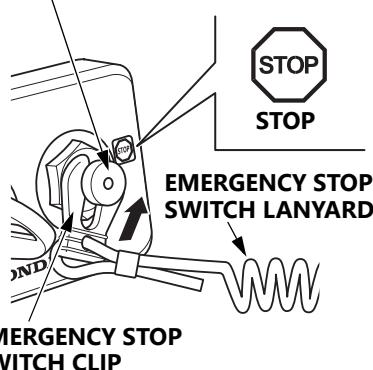
If the emergency stop switch lanyard is not set, the boat might run out of control when the operator, for example, falls overboard and is not able to operate the outboard motor.

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.

The emergency stop lanyard must be attached to the operator whenever the boat and engine is being operated.

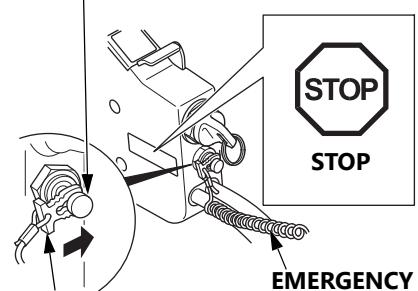
(D1, D2 types)

EMERGENCY STOP SWITCH



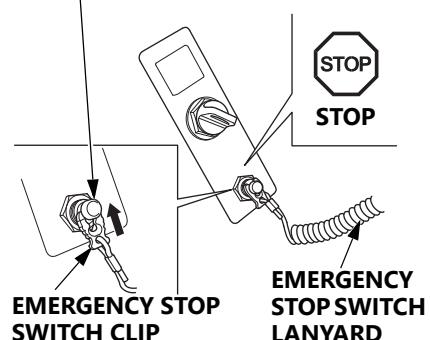
(R1 type)

EMERGENCY STOP SWITCH



(R2, R3 types)

EMERGENCY STOP SWITCH



Spare Emergency Stop Switch Clip (optional equipment)

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

A spare emergency stop switch clip can be stored in the tool bag (see page 148).

TILT LOCK LEVER



TILT LOCK LEVER (each side)

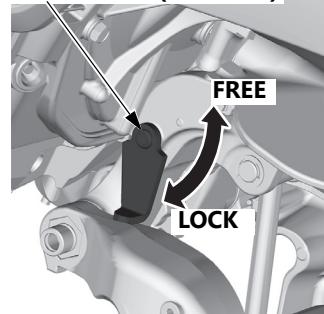
Use the tilt lock levers to raise the outboard motor and lock it in the position when the boat is moored or anchored for a long time (see page 122).

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

NOTICE

- Before tilting it up, leave the outboard motor in the running position for one minute after stopping the engine to drain the water from inside the engine.
- Be careful that while the outboard motor is tilted up that it does not collide with the pier or other boats.

TILT LOCK LEVER (each side)

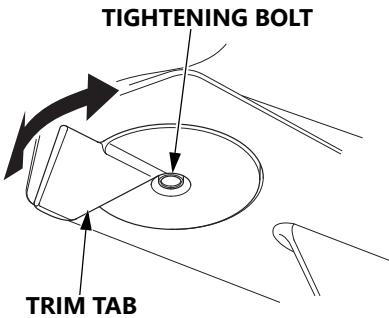


4. CONTROLS AND FEATURES

⚠ CAUTION

If you do not secure the outboard motor with the tilt lock levers after tilting it up to the highest position, then the hydraulic pressure of the power trim/tilt may decrease and cause the outboard motor to tilt down.

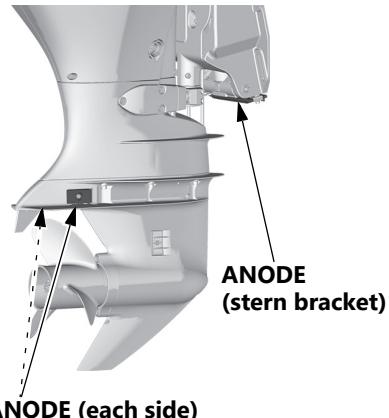
TRIM TAB



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

Loosen the tightening bolt and turn the trim tab right or left to adjust.

ANODES



ANODE (each side)

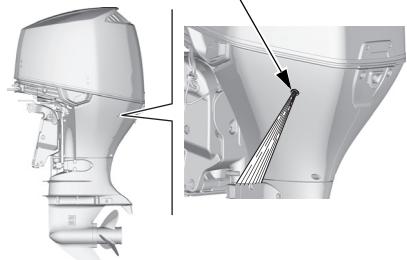
The anodes are a sacrificial material which helps to protect the outboard motor from corrosion.

NOTICE

- Do not paint the anode. Doing so reduces the function of the anode metal, which can lead to rust and corrosion damage to the outboard motor.

COOLING WATER CHECK HOLE

COOLING WATER CHECK HOLE

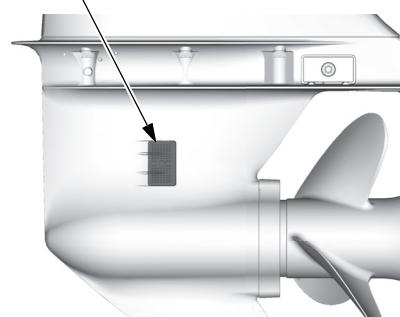


The cooling water is checked here to see whether it is circulating inside the engine properly.

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 (each side)

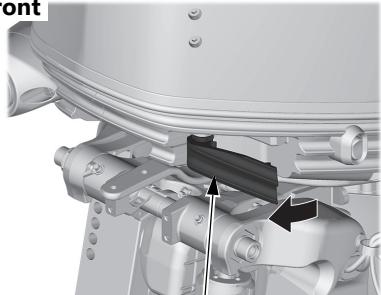


The engine cooling water is drawn into the engine through these ports.

4. CONTROLS AND FEATURES

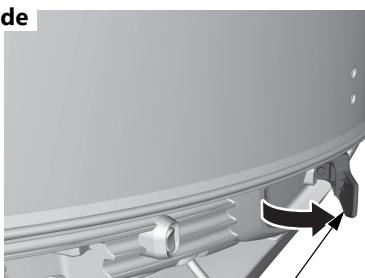
ENGINE COVER LATCHES

Front



ENGINE COVER LATCH

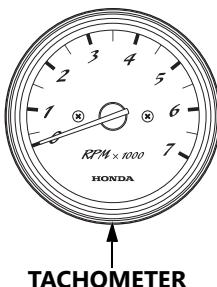
Side



ENGINE COVER LATCH (each side)

Pull the engine cover latches to remove the engine cover. (see page 73)

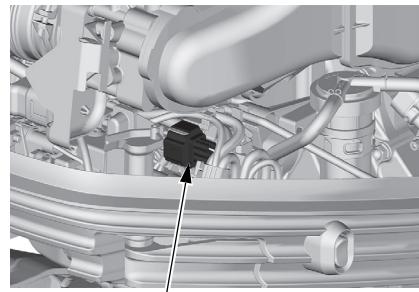
TACHOMETER (optional equipment)



TACHOMETER

The tachometer shows the engine speed in revolutions per minute.

NMEA INTERFACE COUPLER



NMEA INTERFACE COUPLER

The NMEA2000® interface coupler connects the outboard motor to the boat's NMEA2000® network through an interface cable and transmits information such as engine information and warnings to the control panel and gauges. Contact your dealer for more information.

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. Turn ON the power switch or ignition switch. (The buzzer will sound twice.)
2. Insert and remove the emergency stop switch clip five times within 20 seconds.
 - When reset, the buzzer will sound once.

NOTICE

- **The operating hours can be reset when all of the following conditions are met.**
 - The engine is stopped
 - The gearshift is in neutral
 - The gearshift/throttle control lever is in the NEUTRAL position
 - Buzzer is not sounding
 - Automatic tilt is not operating
- **If the operating hours are not reset, contact the authorized Honda outboard motor dealer.**

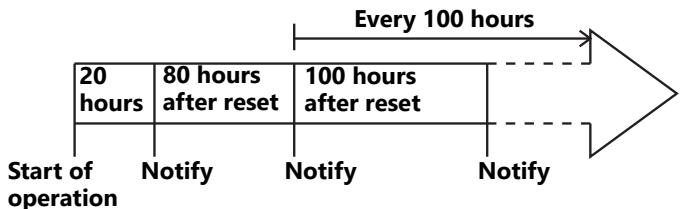
Periodic maintenance is required when either the operating hours or the time since last maintenance reaches the prescribed limit. Therefore, periodic maintenance may be required based on the number of months since the last maintenance before the alert

based on engine operating hours displays (see Maintenance Schedule on page 149).

4. CONTROLS AND FEATURES

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

Operating hour notification timing



Periodic maintenance display

- Notification about periodic maintenance is displayed on the multi-function display when the power switch or the engine switch is turned on.
- The notification for periodic maintenance remains displayed after the engine is started.
- The display disappears when the remote control lever is put in the FORWARD or REVERSE position.

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:

- Have the periodic maintenance performed without delay after returning to port.
- 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.

BATTERY SWITCH OFF

NOTIFICATION

This function alerts the operator that the boat's battery switch is OFF and must be turned to the ON position. If the battery switch is OFF, a buzzer will sound three times during the following situations.

- When starting the engine
- When using the power trim/tilt switch
- When turning the battery switch OFF while the ignition switch or power switch is ON

5. INSTALLATION

NOTICE

- Improperly installed outboard motor can result in the outboard motor dropping into the water, boat not being able to cruise straight ahead, engine speed not increasing, and extreme fuel consumption.**

We recommend that the outboard motor be installed by an authorized Honda outboard motor dealer.

Consult the authorized Honda dealer in your area for the Y-OP (User Optional Parts)/equipment installation and operation.

Applicable Boat

Select a boat suitable for the engine power.

Engine power:

BF115J: 84.6 kW (115 PS)

BF135D: 99.3 kW (135 PS)

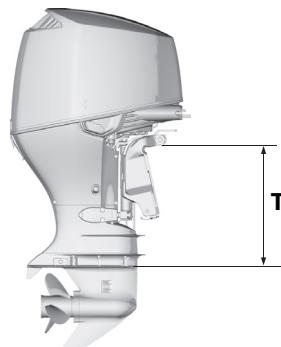
BF150D: 110.3 kW (150 PS)

Power recommendation is indicated on most of the boats.

WARNING

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

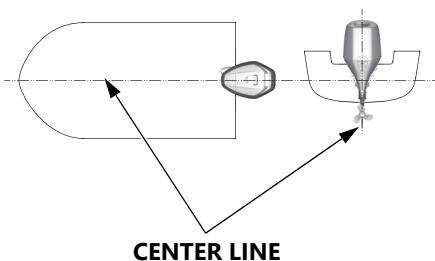
TRANSOM HEIGHT



Type:	T (Outboard Motor Transom Height) <when transom angle is 12°>
L:	508 mm (20.0 in)
X:	635 mm (25.0 in)

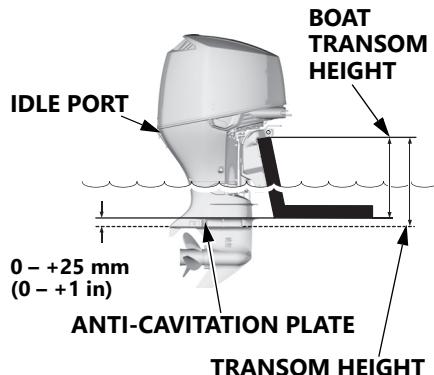
Select an outboard motor which is correct for the boat transom height of your boat.

LOCATION



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

INSTALLATION HEIGHT



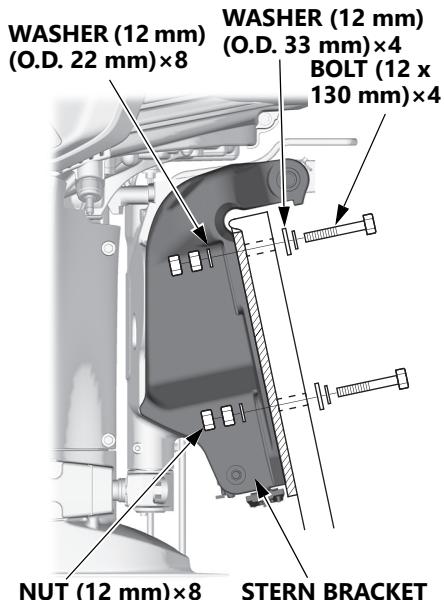
The anti-cavitation plate of the outboard motor should be within 0 – +25 mm (0 – +1 in) from the bottom of the boat. The correct dimensions differ according to the type of boat and the configuration of the bottom of the boat. Follow the manufacturer's recommended installation height.

NOTICE

- If the outboard motor is mounted too low, it may adversely affect the engine. Make sure that when the boat is fully loaded, and the engine is stopped, and the trim/tilt is all the way down, that the height from the water surface to the idle port is at least 100 mm.

5. INSTALLATION

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 lock nuts.

NOTE:

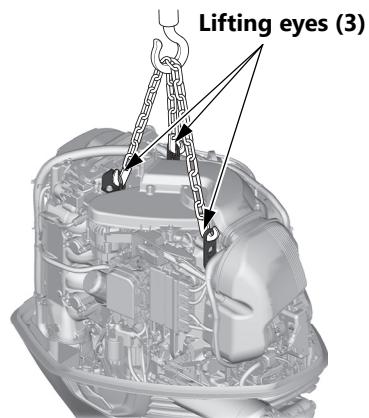
Standard torque:

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 Honda 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.

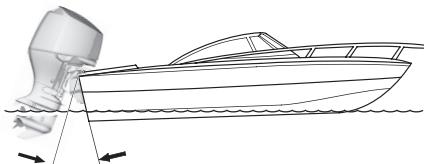


Before installing the outboard motor on the boat, hang the outboard motor with the hoist or equivalent devise by attaching the three lifting with an eyes to the outboard.

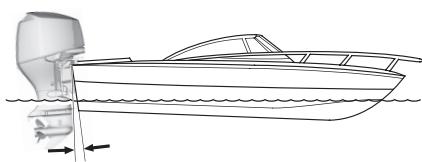
Use a hoist which allowable load is 250 kg (551 lbs) or above.

5. INSTALLATION

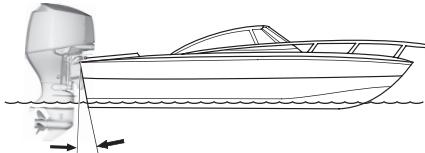
OUTBOARD MOTOR ANGLE INSPECTION (cruising)



**INCORRECT
CAUSES BOAT TO "SQUAT"**



**INCORRECT
CAUSES BOAT TO "PLOW"**



**CORRECT
GIVES MAXIMUM PERFORMANCE**

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

Trim angle too large: Incorrect causes boat to "squat."

Trim angle too small: Incorrect causes boat to "plow."

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) 622A at -18°C (0°F) and a reserve capacity 229 minutes (12V-64Ah/5HR or 80Ah/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.

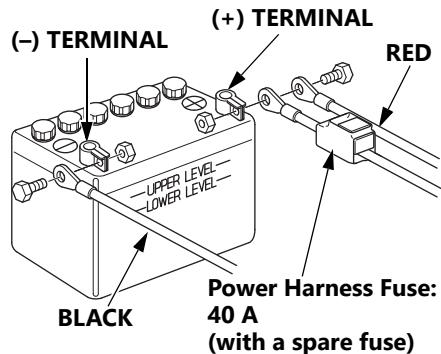
- **CHEMICAL HAZARD:**
Battery electrolyte contains sulfuric acid. Contact with eyes or skin, even through clothing, may cause severe burns. Wear a faceshield and protective clothing.

5. INSTALLATION

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

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

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



Connect the battery cables:

1. Turn the power switch or ignition switch to "OFF".
2. Connect the cable with the red terminal cover to the positive (+) terminal of the battery.
3. Connect the cable with the black terminal cover to the negative (-) terminal of the battery.
4. Confirm that the battery cables are securely connected to the terminals without looseness or rattling.

NOTE:

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

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.

Battery posts, terminals, and related accessories contain lead and lead compounds. Wash your hands after handling them.

5. INSTALLATION

REMOTE CONTROL INSTALLATION (optional equipment)

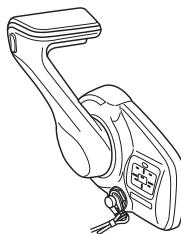
NOTICE

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

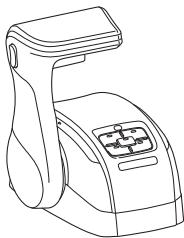
The control box is available in types as shown. Select the most suitable control box for your outboard motor considering the installation position, operability, etc. of the control box.
See an authorized Honda outboard motor dealer for further information.

DBW type

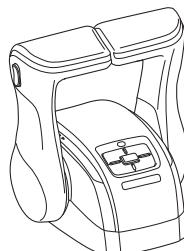
Remote Control Box



**FLUSH-MOUNT TYPE
CONTROL BOX**



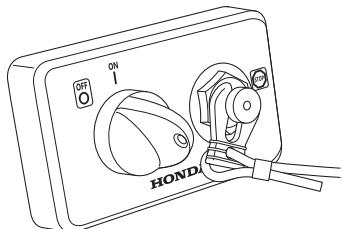
**TOP-MOUNT TYPE
CONTROL BOX
(FOR SINGLE OUTBOARD
MOTOR TYPE)**



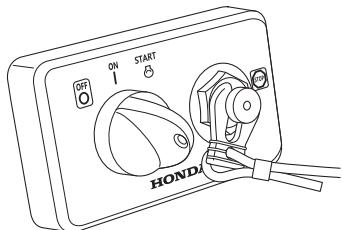
**TOP-MOUNT TYPE
CONTROL BOX
(FOR DUAL OUTBOARD
MOTOR TYPE)**

5. INSTALLATION

Key Switch Panel



NORMAL KEY WITH START/STOP SWITCH TYPE

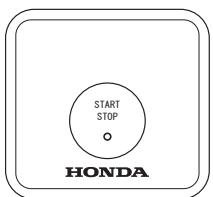


NORMAL KEY WITHOUT START/STOP SWITCH TYPE

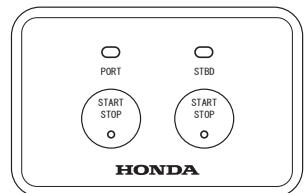
START/STOP Switch Panel



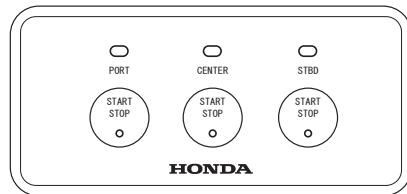
ALL ENGINE START
FOR MULTIPLE
OUTBOARD MOTORS



SINGLE TYPE/
OUTBOARD MOTOR



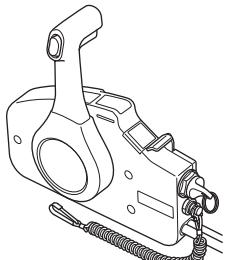
DUAL TYPE OUTBOARD MOTOR



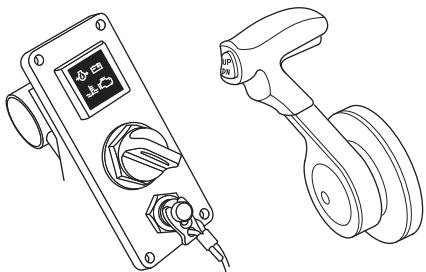
TRIPLE TYPE OUTBOARD MOTOR

5. INSTALLATION

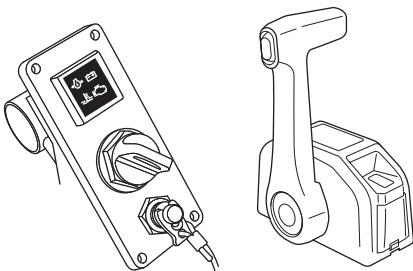
Mechanical wire type



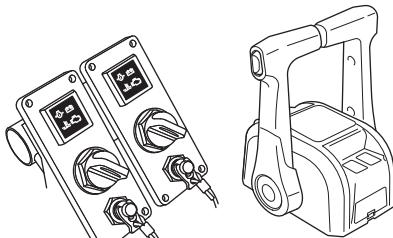
SIDE-MOUNT
TYPE CONTROL BOX



FLUSH-MOUNT TYPE CONTROL
BOX AND SWITCH PANEL

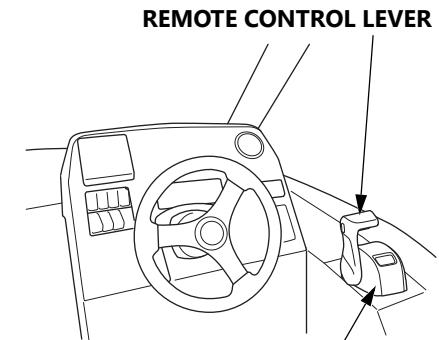


TOP-MOUNT TYPE CONTROL BOX
(FOR SINGLE OUTBOARD MOTOR
TYPE) AND SWITCH PANEL



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

Remote Control Box Location



REMOTE CONTROL BOX

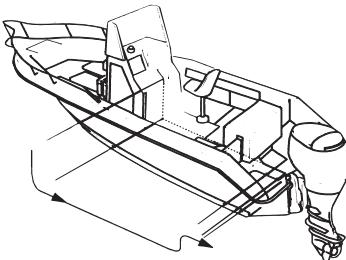
Install the remote control box in a position where it is easy to operate the remote control lever and switches.

Mechanical wire type:

Be sure that there are no obstacles on the route of the control cable.

The control box position of the D2 type, R1 type, R2 type and the R3 type should be determined in the same manner.

Remote Control Cable Length (Mechanical wire type)



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 in a radius less than 300mm (11.8in) or less, or it may effect the service life of the cable and the remote control lever operation.**

PROPELLER SELECTION

BF115J:

Select an appropriate propeller so that the engine speed at full throttle is $4,500 \text{ min}^{-1}$ (rpm) to $6,000 \text{ min}^{-1}$ (rpm) when the boat is loaded.

BF135D/BF150D:

Select an appropriate propeller so that the engine speed at full throttle is $5,000 \text{ min}^{-1}$ (rpm) to $6,000 \text{ min}^{-1}$ (rpm) when the boat is loaded.

Engine speed varies according to the propeller size and the boat condition.

Use of the outboard motor outside the full throttle speed range will adversely affect the engine and cause serious problems. Use of the correct propeller assures powerful

5. INSTALLATION

acceleration, top speed, excellence in terms of economy and cruising comfort, and it assures longer engine life as well. Consult with your authorized Honda outboard motor dealer for proper propeller selection.

FUEL LINE CONNECTION

Connect the fuel line to the tank and the outboard motor. Follow the boat manufacturer's instructions.

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 the engine.
- Keep heat, sparks, and flame away.

6. PRE-OPERATION CHECKS

BF115J/BF135D/BF150D is a 4-stroke, water cooled outboard motor which uses unleaded regular gasoline for fuel. It also requires engine oil. Check the following before operating the outboard motor.

⚠ CAUTION

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

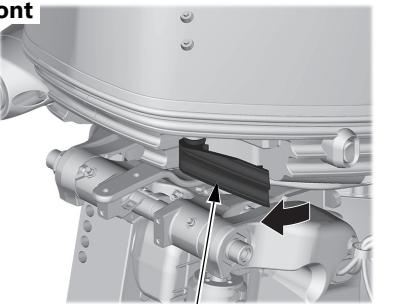
Before each use, look around and underneath the engine for signs of oil or gasoline leaks.

ENGINE COVER REMOVAL/INSTALLATION

Tilt up the outboard motor as necessary while removing or installing the engine cover.

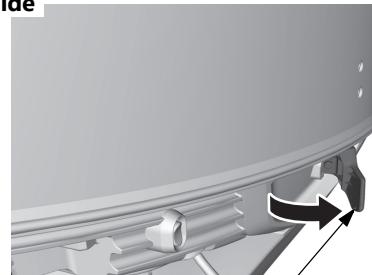
Removal

Front



ENGINE COVER LATCH

Side



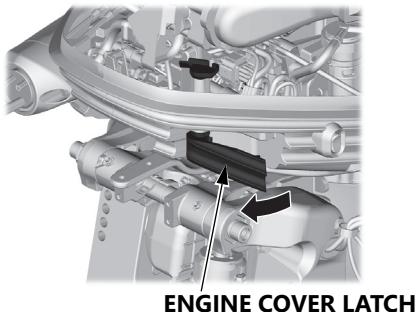
ENGINE COVER LATCH (each side)

1. Pull all the engine cover latches.
2. Lifting the engine cover by taking it up.

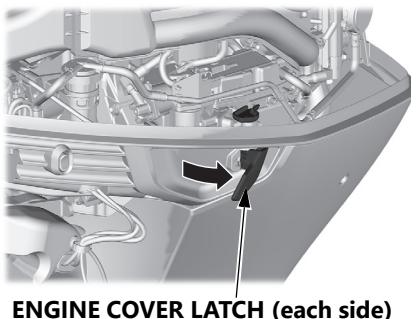
6. PRE-OPERATION CHECKS

Installation

Front

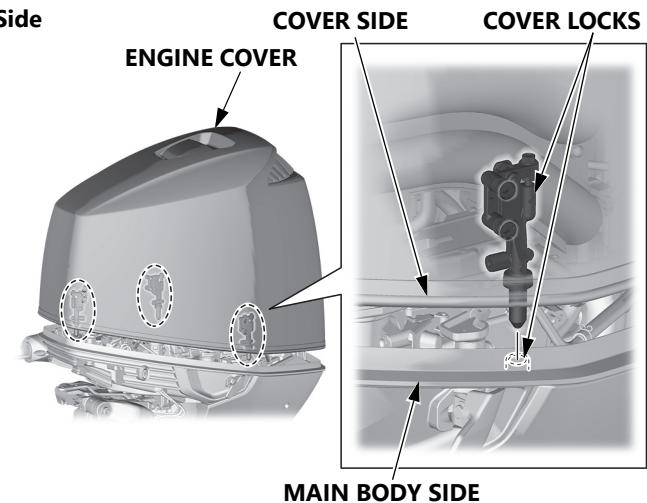


Side



1. Place the engine cover on the main body.

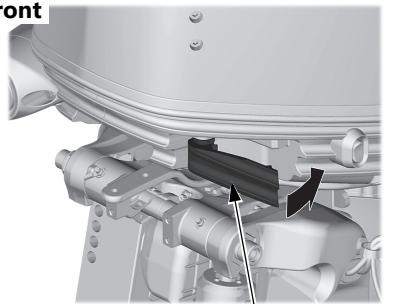
Side



2. Slide the engine cover so that the cover lock on the cover is mated with the lock in the main body.

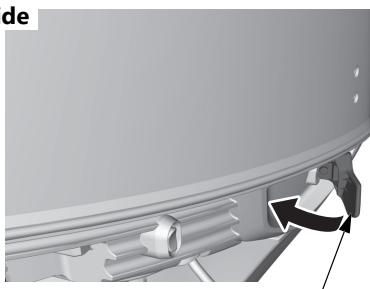
6. PRE-OPERATION CHECKS

Front



ENGINE COVER LATCH

Side



ENGINE COVER LATCH (each side)

3. Push the engine cover until any gap between the engine cover and main body is eliminated.

4. Push all the engine cover latches to lock them.
5. Check that the engine cover is securely installed.

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

The cover should be tight at the fully seated position. If the cover is loose or difficult to secure, an adjustment may be necessary. Please see the shop manual or your Marine dealer for adjustment.

⚠ WARNING

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

⚠ CAUTION

If the engine cover is not installed correctly, water may enter the engine cover and damage the engine. In addition, off the engine cover may blow when cruising at high speeds.

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.**

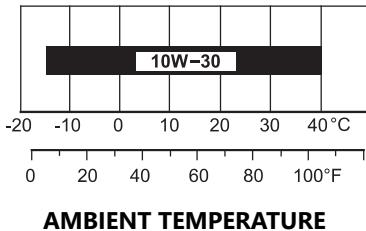
6. PRE-OPERATION CHECKS

Recommended oil

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

Motor oils classified SG, SH, SJ or SL will show this designation on the container.

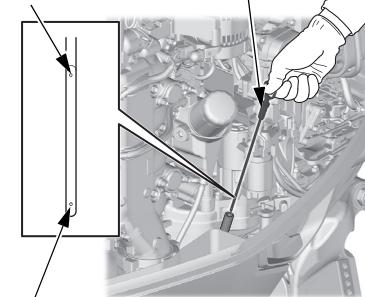
SAE 10W-30 is recommended for general use.



Inspection and Refilling

OIL LEVEL DIPSTICK

UPPER LEVEL MARK

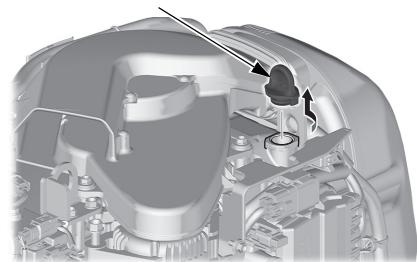


LOWER LEVEL MARK

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

1. Unlock and remove the engine cover (see page 73).
2. Remove the oil level dipstick by pulling it. Wipe the oil level dipstick clean.
3. Insert the dipstick all the way in, then remove it and check the oil level shown on the dipstick.

OIL FILLER CAP



4. If near or below the lower level mark, remove the oil filler cap and fill to the upper level mark with the recommended oil. Use the oil recommended on p. 76.
5. Insert the dipstick all the way in. Install the oil filler cap and tighten it securely. Do not overtighten.

6. PRE-OPERATION CHECKS

When the engine oil is contaminated or discolored, replace with the fresh engine oil (see page 151 for replacement interval and procedure).

6. 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 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.

NOTICE

Engine oil may deteriorate prematurely when used under certain conditions. Deteriorated engine oil can cause the outboard motor to malfunction, so if the outboard motor is used under the following conditions, change the engine oil at intervals of half the normal periodic maintenance time.

- **Frequent starting and stopping within a short period of less than 5 minutes.**
- **Running the engine at $3,000 \text{ min}^{-1}$ (rpm) or less for more than 30% of the time after changing the engine oil.**

6. PRE-OPERATION CHECKS

FUEL

Check the fuel level and refill if necessary. Do not fill the fuel tank above the UPPER LIMIT.

Refer to the boat manufacturer's instructions.

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

Never use gasoline that is stale, contaminated, or mixed with oil. Avoid getting dirt, dust or water in the fuel tank.

⚠ WARNING

Gasoline is extremely flammable and is explosive under certain conditions.

- Refuel in a well-ventilated area with the engine stopped.
- Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
- Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the 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 Honda. There are two types of "gasohol": one containing ethanol, and the other containing methanol.

Do not use gasohol that contains more than 10% ethanol.

Do not use gasoline containing 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.

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.

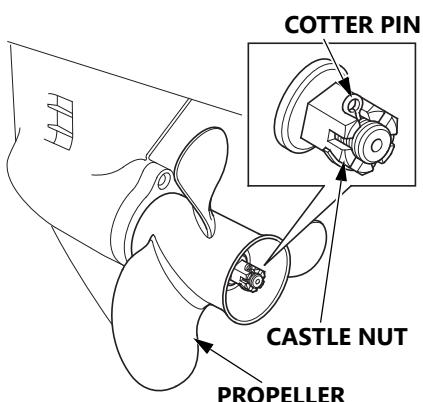
6. PRE-OPERATION CHECKS

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 it (see page 170).

Consult an authorized Honda outboard motor dealer for propeller selection.

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



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

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

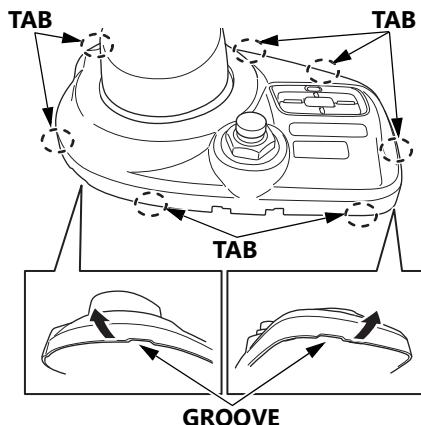
1. Check the propeller for damage, wear, or deformation. Replace whenever the propeller is faulty (see page 170).
2. Check whether the propeller is installed properly.
3. Check the cotter pin for damage.

REMOTE CONTROL LEVER FRICTION

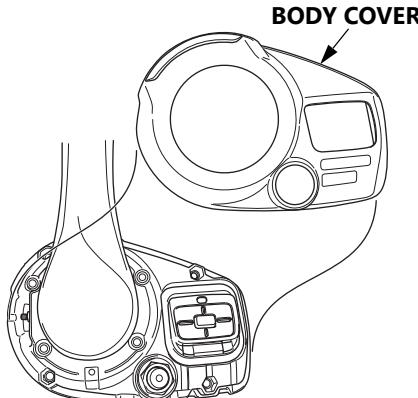
Adjust the control lever friction while the engine is stopped.

D1 type

1. Insert a screwdriver or similar tool into the grooves on the body cover and remove the tabs securing the body cover.

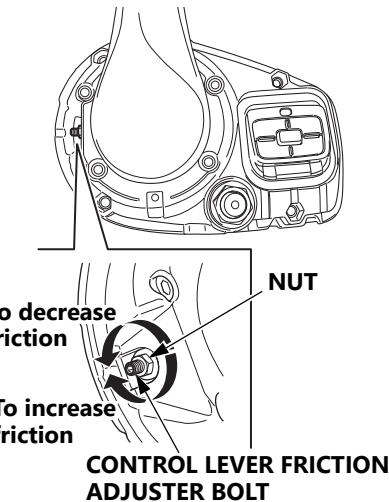


2. Remove the body cover.



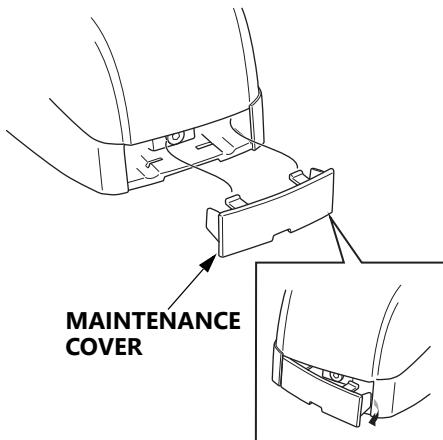
3. Loosen the nut.
4. Turning the control lever friction adjustment bolt clockwise (to the right) makes it heavier. Turning the bolt counterclockwise (to the left) makes it lighter.
5. Tighten the nut to lock the control lever friction adjustment bolt.

6. Attach the cover.

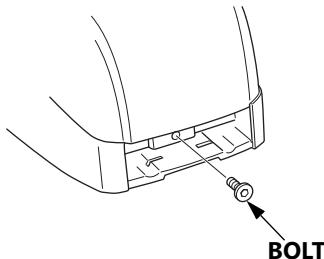


6. PRE-OPERATION CHECKS

D2 type

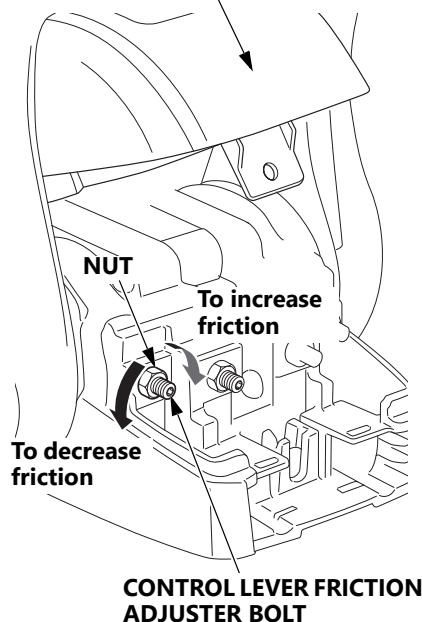


1. Remove the maintenance cover.



2. Remove the bolt.

REMOTE CONTROL COVER



3. Open the remote control cover.

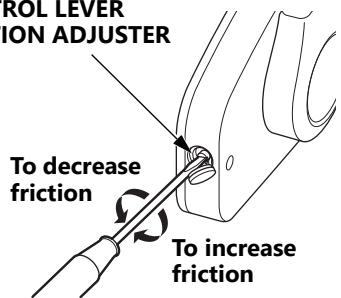
4. Loosen the nut.
5. Turning the control lever friction adjustment bolt clockwise (to the right) makes it heavier. Turning the bolt counterclockwise (to the left) makes it lighter.
6. Tighten the nut to lock the lever friction.
7. Reinstall the remote control cover.
8. Install and tighten the bolt.
9. Reinstall the maintenance cover.

6. PRE-OPERATION CHECKS

R1, R2, R3 types

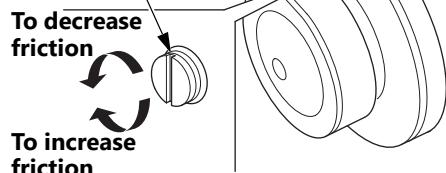
(R1 type)

CONTROL LEVER FRICTION ADJUSTER

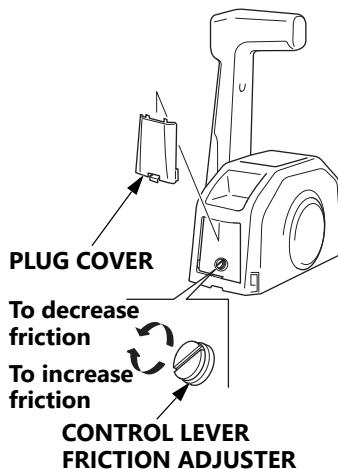


(R2 type)

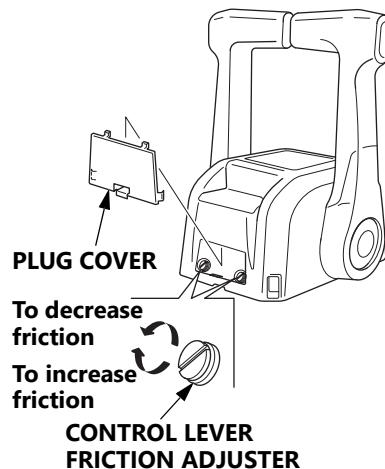
CONTROL LEVER FRICTION ADJUSTER



(R3 type (Single type))



(R3 type (Dual type))

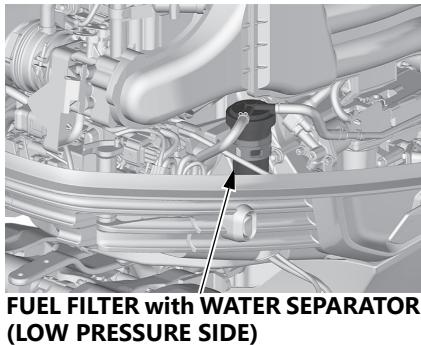


Check whether the remote control lever moves smoothly.

Friction of the lever can be adjusted by turning the control lever friction screw right or left.

6. PRE-OPERATION CHECKS

FUEL FILTER WITH WATER SEPARATOR (LOW PRESSURE SIDE)



FUEL FILTER with WATER SEPARATOR (LOW PRESSURE SIDE)

The fuel filter with water separator is located below the intake manifold. Check the fuel filter with water separator for water accumulation. If water has accumulated, drain it (see page 160).

CHECK FOR COOLANT LEAKS

Remove the engine cover and check for water in the outboard motor or evidence of leaks. If coolant is leaking, consult with an authorized Honda outboard motor dealer.

BATTERY

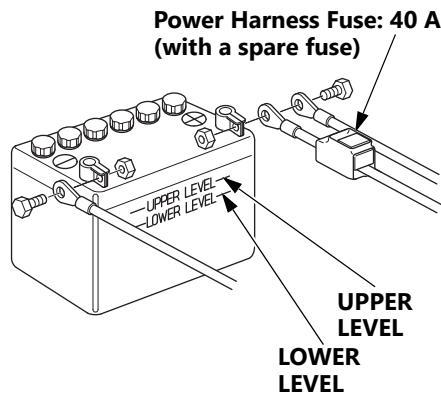
NOTICE

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

Battery Inspection

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 165).



6. PRE-OPERATION CHECKS

⚠ WARNING

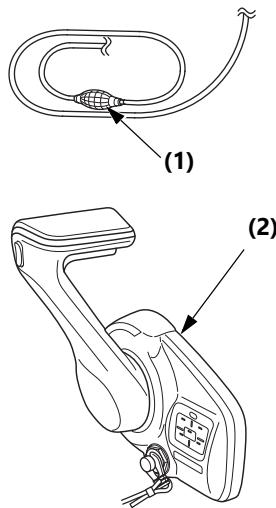
Batteries produce explosive gases: If ignited, an explosion can cause serious injury or blindness. Provide adequate ventilation when charging.

- **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 posts, terminals, and related accessories contain lead and lead compounds. Wash your hands after handling them.

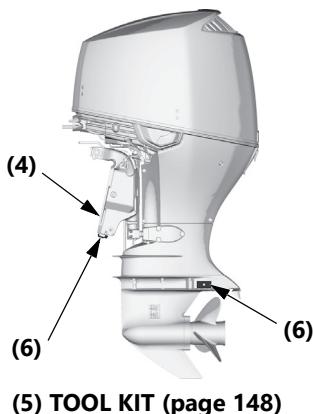
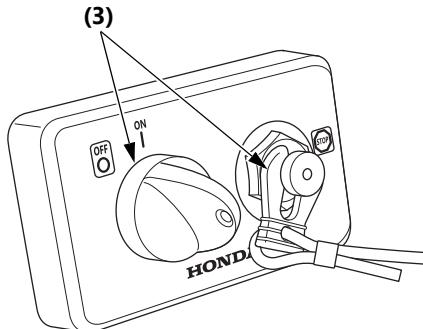
OTHER CHECKS



Check the following items:

1. The fuel hose for kinking, collapsing or a loose connection.
2. The remote control lever for smooth operation.

6. PRE-OPERATION CHECKS



3. The switches for correct operation.
4. The stern bracket for damage.
5. The tool kit for missing spare parts and tools (page 148).
6. The anode metal for damage, looseness or excessive corrosion.

The anode (sacrificial 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:

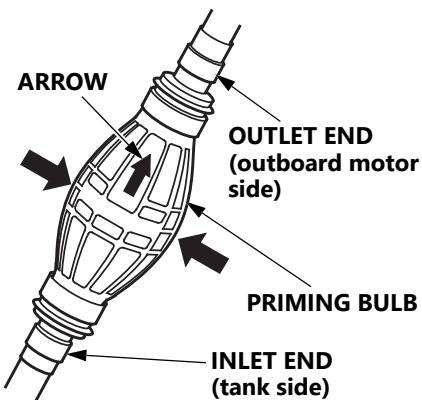
- Owner's Manual
- Tool kit
- Spare parts: spark plugs, engine oil, spare propeller, castle nut, washer and cotter pin.
- Spare emergency stop switch clip.
- Other parts/materials required by laws/regulations.

7. STARTING THE ENGINE

NOTICE

- Make sure the boat's battery switch is ON before turning ON the ignition switch or power switch. If the battery switch is OFF while attempting to start the engine, the buzzer will sound three times.

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.

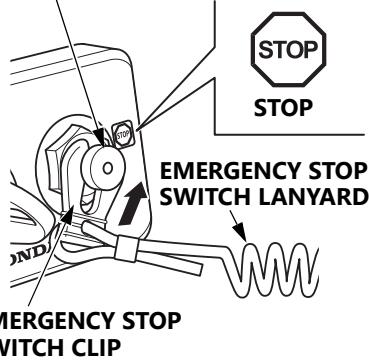
NOTICE

- 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

D1, D2 types

EMERGENCY STOP SWITCH



⚠ WARNING

Exhaust contains poisonous carbon monoxide which can cause unconsciousness and may lead to death. Never run the outboard motor in a boat house or other confined area.

7. STARTING THE ENGINE

NOTICE

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

NOTE:

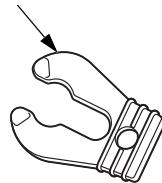
When the boat is equipped with two outboard motors, perform the following on the right and left engines respectively.

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 the 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.

EMERGENCY STOP SWITCH CLIP

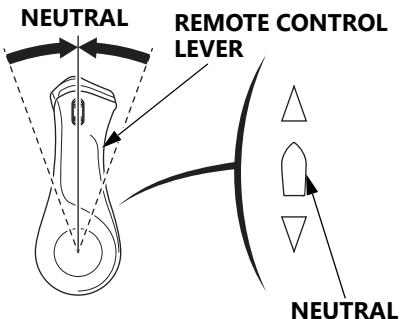


NOTE:

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

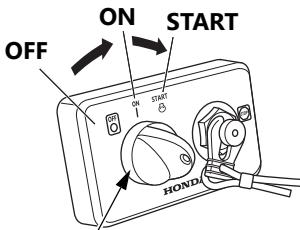
A spare emergency stop switch clip can be stored in the tool bag (see page 148).

7. STARTING THE ENGINE



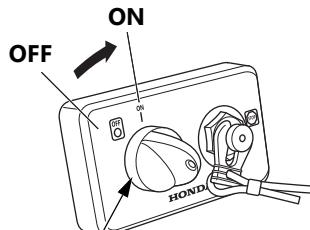
2. Set the control lever in the NEUTRAL position.
The engine does not start unless the control lever is set in the NEUTRAL position.

(Normal Key without START/STOP switch type)



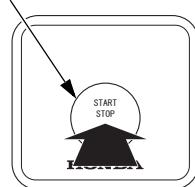
3. Turn the ignition switch key to the START position until the engine starts.
When the engine starts, release the key, allowing it to return to the ON position.
Go to step 5.

(Normal Key with START/STOP switch type)



3. Insert the key into the power switch and turn it to the ON position.

START/STOP SWITCH



4. Push the start/stop switch.

7. STARTING THE ENGINE

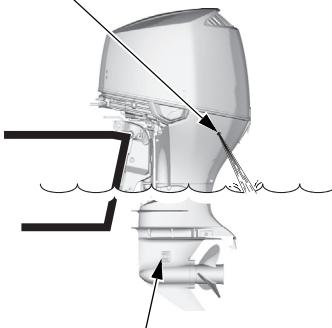
NOTE:

When the boat is equipped with two outboard motors, push the all engine start switch.

NOTICE

- The starter motor consumes a large amount of current. Do not run it continuously. If the engine does not start, wait at least 10 seconds before running the starter motor again.

COOLING WATER CHECK HOLE

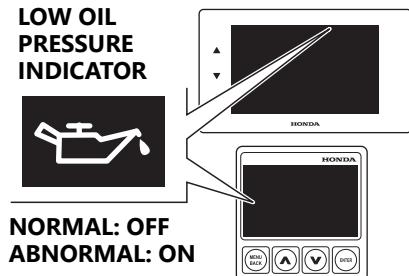


5. After starting, check whether the cooling water is flowing out of the cooling water check hole. The amount of water flowing out of the check hole might vary due to the thermostat operation, but this is normal.

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 outboard motor dealer. Do not operate the engine until the problem has been corrected.

7. STARTING THE ENGINE



6. Check to see if the low oil pressure indicator turns OFF. If it comes on, stop the engine and perform the following inspections.

- 1) Check the oil level (see page 76).
- 2) If the oil level is normal and the low oil pressure indicator comes on, consult with an authorized Honda outboard motor dealer.

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

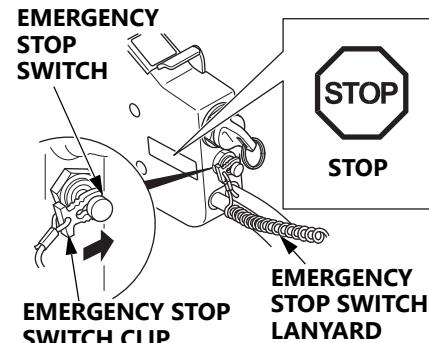
NOTICE

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

NOTE:

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

R1 type



WARNING

Exhaust contains poisonous carbon monoxide which can cause unconsciousness and may lead to death. Never run the outboard motor in a boat house or other confined area.

NOTICE

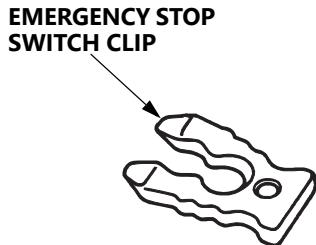
- **To prevent damage to the outboard from overheating, never run the engine with the propeller out of water.**

7. STARTING THE ENGINE

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 the 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.

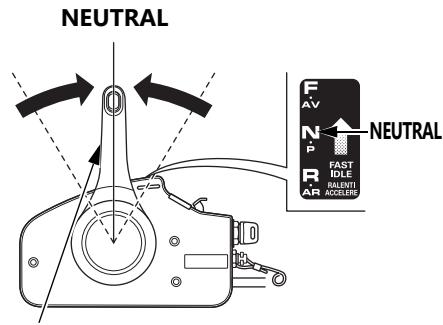


EMERGENCY STOP
SWITCH CLIP

NOTE:

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

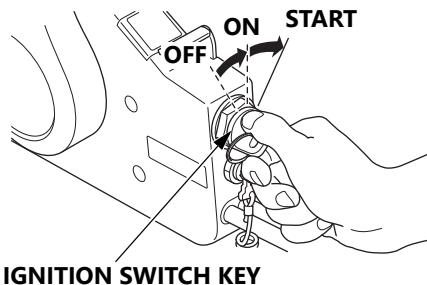
A spare emergency stop switch clip can be stored in the tool bag (see page 148).



REMOTE CONTROL LEVER

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

7. STARTING THE ENGINE



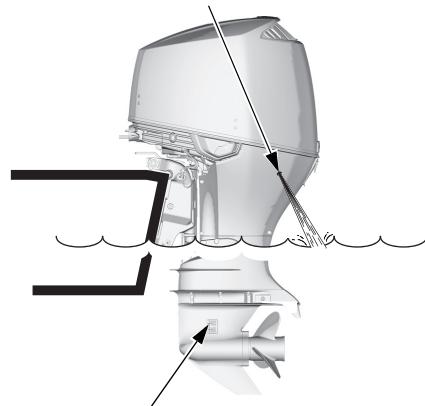
IGNITION SWITCH KEY

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

NOTICE

- The starter motor consumes a large amount of current. Do not run it continuously. If the engine does not start, wait at least 10 seconds before running the starter motor again.

COOLING WATER CHECK HOLE



COOLING WATER INTAKE PORT (each side)

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

7. STARTING THE ENGINE

NOTICE

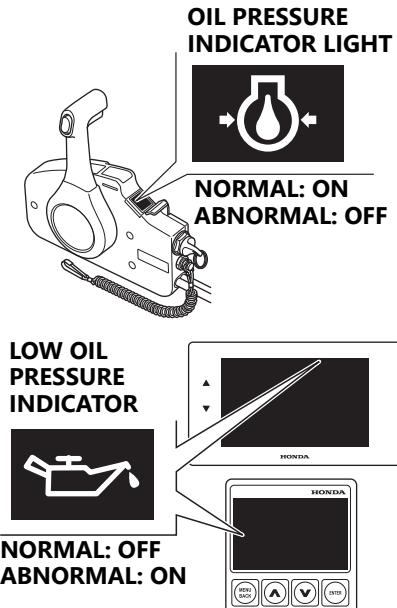
- If water does not flow out, or if steam comes out, stop the engine. Check to see if the screen in the cooling water intake port is obstructed and remove foreign materials if necessary. Check the cooling water check hole for clogging. If water still does not flow out, have your outboard motor checked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

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

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

- Check the oil level (see page 76).

- If the oil level is normal and the oil pressure indicator does not turn ON or the low oil pressure indicator turns ON, consult with an authorized Honda outboard motor dealer.



- 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 2,000 min⁻¹ (rpm).
Failure to completely warm up the engine will result in poor engine performance.

NOTICE

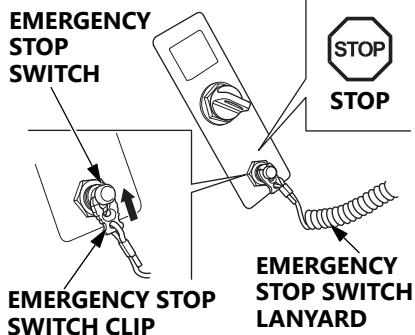
- If the engine is not properly warmed-up before raising the engine speed, the warning buzzer and overheat indicator may activate and the engine speed will be automatically reduced.**

NOTE:

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

7. STARTING THE ENGINE

R2, R3 types



⚠ WARNING

Exhaust contains poisonous carbon monoxide which can cause unconsciousness and may lead to death. Never run the outboard motor in a boat house or other confined area.

NOTICE

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

NOTE:

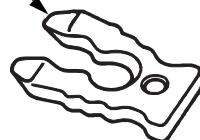
When the boat is mounted with the two outboard motors, perform the following on the right and left engines respectively.

1. Insert the 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 the 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.

EMERGENCY STOP SWITCH CLIP



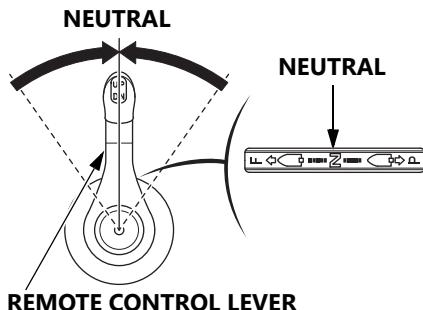
NOTE:

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

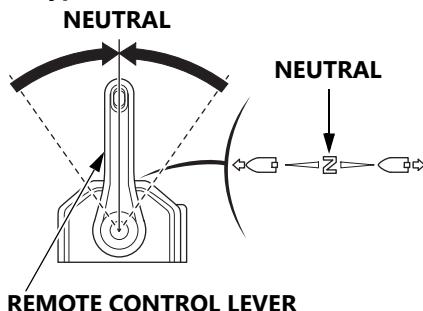
A spare emergency stop switch clip can be stored in the tool bag (see page 148).

7. STARTING THE ENGINE

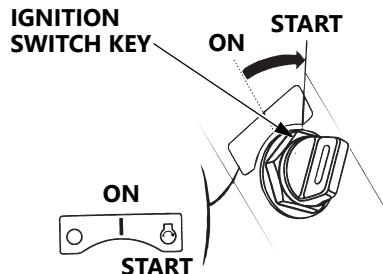
(R2 type)



(R3 type)



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



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

NOTICE

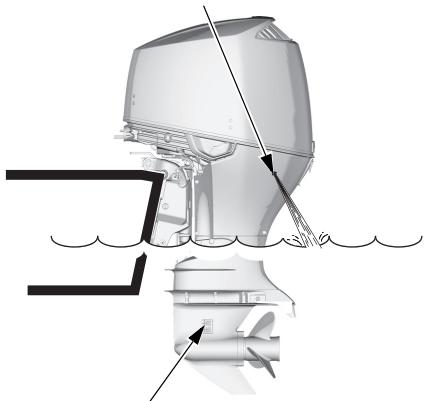
- The starter motor consumes a large amount of current. Do not run it continuously. If the engine does not start, wait at least 10 seconds before running the starter motor again.**

NOTE:

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

7. STARTING THE ENGINE

COOLING WATER CHECK HOLE

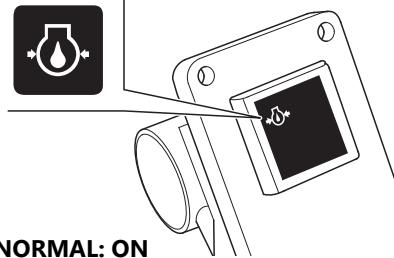


4. After starting, check whether the cooling water is flowing out of the cooling water check hole. Amount of water flowing out of the check hole might vary due to the thermostat operation, but this is normal.

NOTICE

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

ENGINE OIL PRESSURE INDICATOR



LOW OIL PRESSURE INDICATOR



7. STARTING THE ENGINE

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

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

- 1) Check the oil level (see page 76).
- 2) If the oil level is normal and the oil pressure indicator does not turn ON or the low oil pressure indicator turns ON, consult with an authorized Honda outboard motor dealer.

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

NOTICE

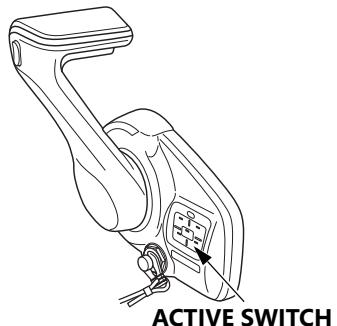
- **If the engine is not properly warmed-up before raising the engine speed, the warning buzzer and overheat indicator may activate and the engine speed will be automatically reduced.**

NOTE:

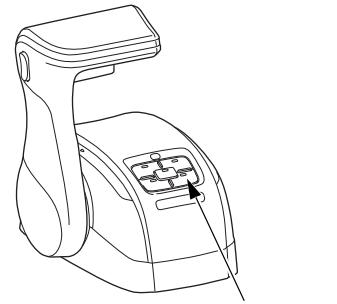
Before leaving the dock, check the operation of the emergency stop switch.

ACTIVE MODE (D1, D2 types)

(D1 type)

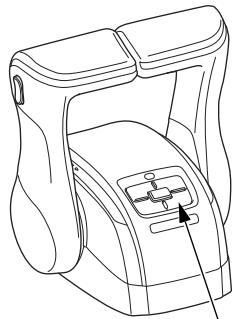


(D2 type (Single type))



7. STARTING THE ENGINE

(D2 type (Dual type))



ACTIVE/FAST IDLE SWITCH

For multiple station type, use the ACTIVE switch or ACTIVE/FAST IDLE switch to change the operating station (see page 37). If you press the ACTIVE switch or ACTIVE/FAST IDLE switch of the inactive station when all remote control levers are in the NEUTRAL position, you can operate the outboard motors using this station.

- To release the station selection, press the ACTIVE switch or ACTIVE/FAST IDLE switch of the remote control of the inactive station, with all the remote control levers put in the NEUTRAL position.

8. OPERATION

BREAK-IN PROCEDURE

Break-in period: 10 hours

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

Break-in your new outboard motor as follows.

First 15 minutes:

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

Next 45 minutes:

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

Next 60 minutes:

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

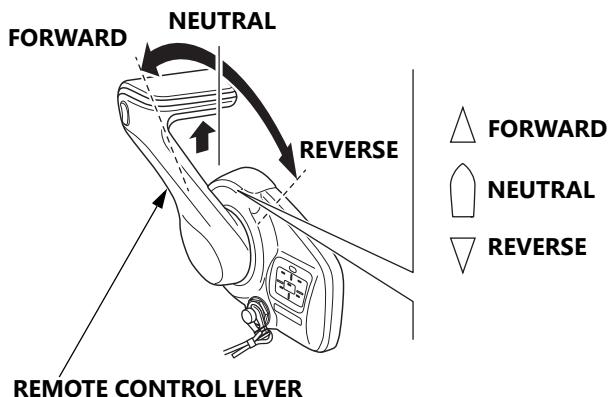
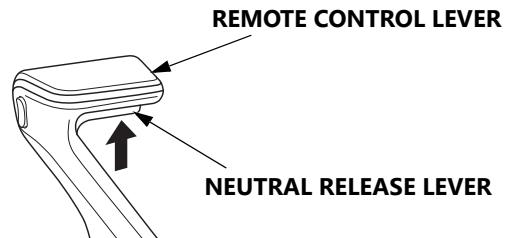
Next 8 hours:

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 described above.

GEAR SHIFTING (D1, D2 types)

D1 type



⚠ CAUTION

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

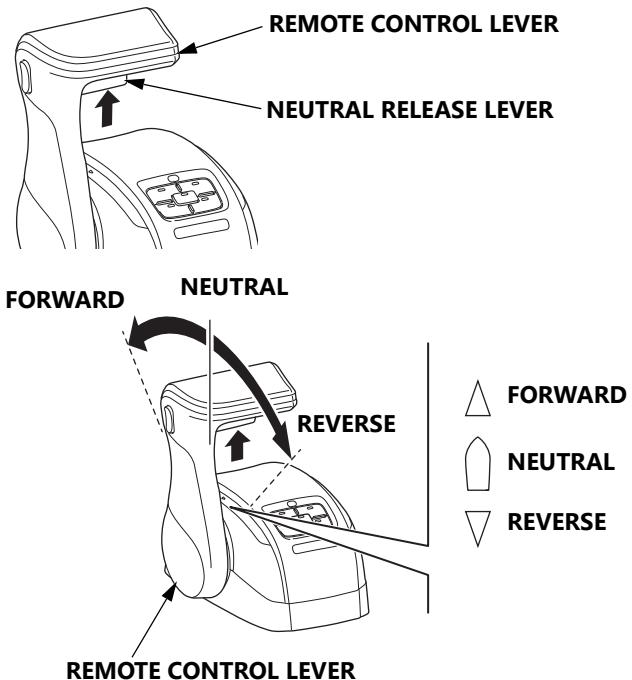
While pulling the neutral release lever, move the control lever approximately 20° toward the FORWARD or REVERSE position to engage the desired gear.

Moving the control lever further from approximately 20° will increase throttle opening and boat speed.

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

8. OPERATION

D2 type (Single type)



⚠ CAUTION

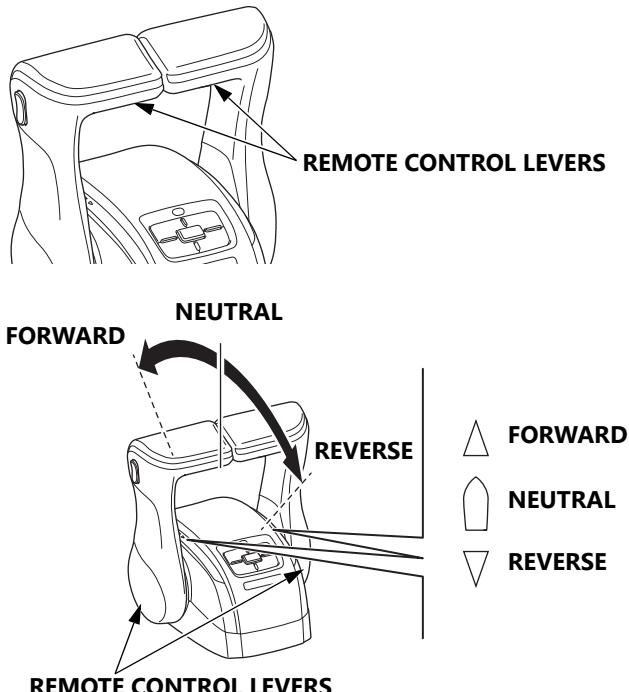
Avoid sharp and abrupt operation of the control lever. Operate it moderately. Operate the control lever and raise the engine speed after making sure that the gear was shifted securely.

While pulling the neutral release lever, move the control lever approximately 20° toward the FORWARD or REVERSE position to engage the desired gear.

Moving the control lever further from approximately 20° will increase throttle opening and boat speed.

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

D2 type (Dual type)



⚠ CAUTION

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

Move the control lever(s) approximately 20° toward the FORWARD or REVERSE position to engage the desired gear.

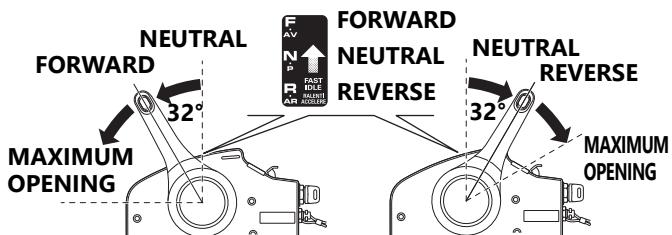
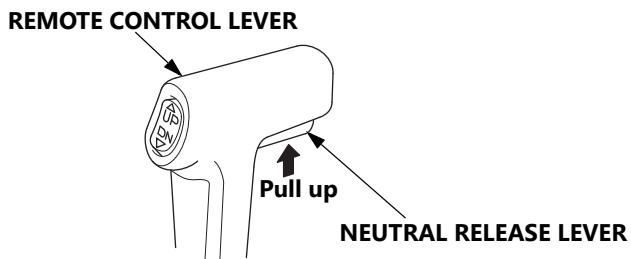
When navigating normally, operate the right and left levers simultaneously or operate in one-lever mode. (see one-lever mode on page 114).

Moving the control lever(s) further from approximately 20° will increase throttle opening and boat speed.

8. OPERATION

GEAR SHIFTING (R1, R2, R3 types)

R1 type



⚠ CAUTION

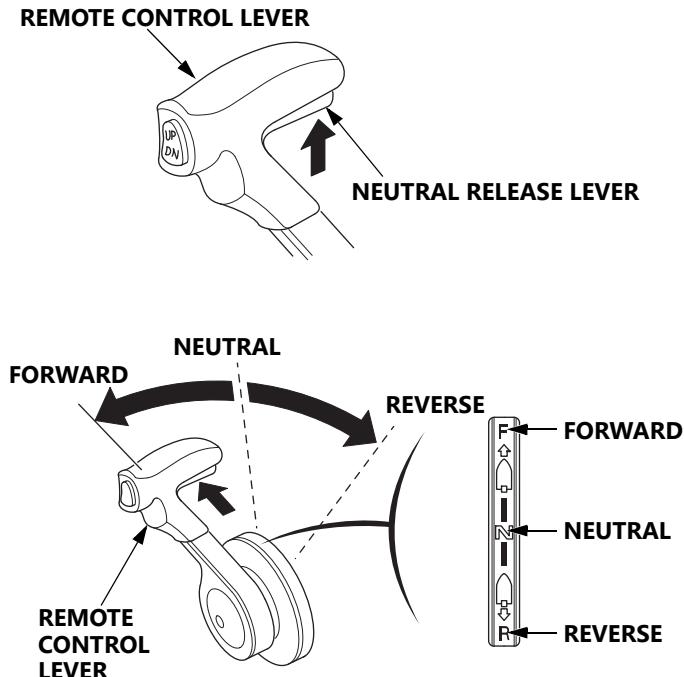
Avoid sharp and abrupt operation of the control lever. Operate it moderately. Operate the control lever and raise the engine speed after making sure that the gear was shifted securely.

While pulling the neutral release lever, move the control lever approximately 32° toward the FORWARD or REVERSE position to engage the desired gear.

Moving the control lever further from approximately 32° will increase throttle opening and boat speed.

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

R2 type



⚠ CAUTION

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

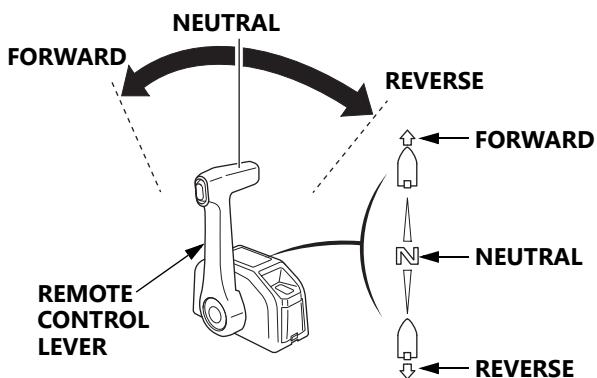
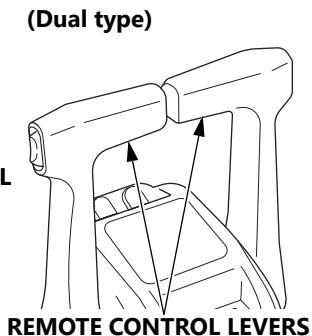
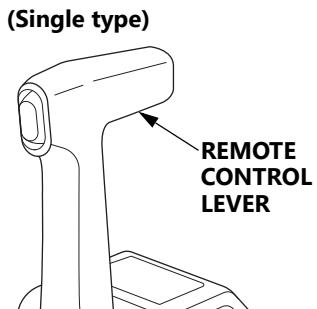
While pulling the neutral release lever, move the control lever approximately 35° toward the FORWARD or REVERSE position to engage the desired gear.

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

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

8. OPERATION

R3 type



⚠ CAUTION

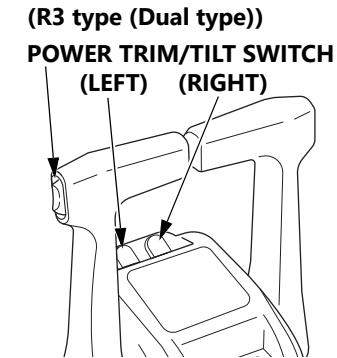
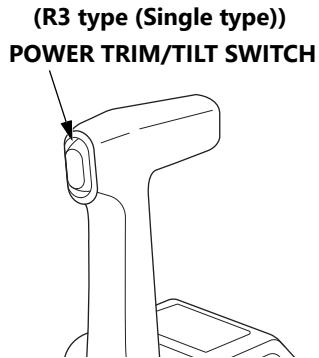
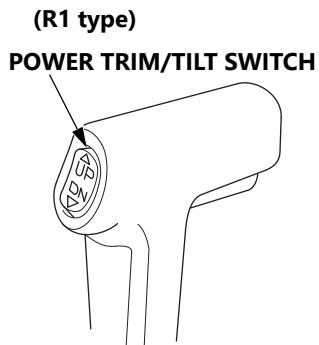
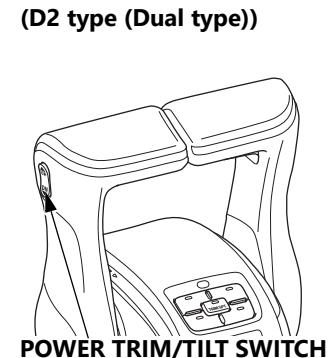
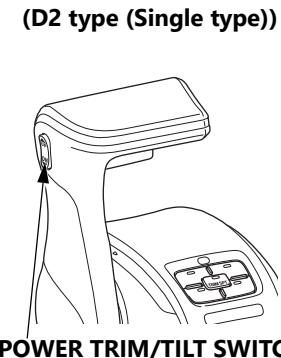
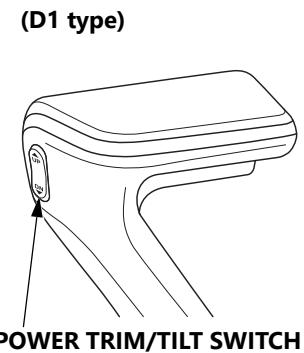
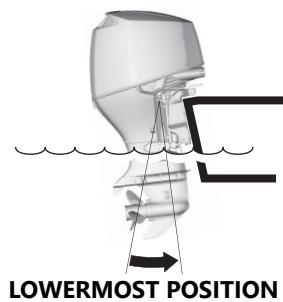
Avoid sharp and abrupt operation of the control lever. Operate it moderately. Operate the control lever and raise the engine speed after making sure that the gear was shifted securely.

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

When navigating normally on a boat with two outboard motors, hold the control lever in the center as shown, and operate the right and left levers simultaneously.

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

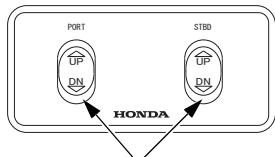
CRUISING



8. OPERATION

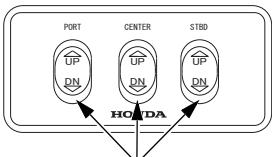
(POWER TRIM/TILT SWITCH PANEL)

DUAL TYPE



POWER TRIM/TILT SWITCH

TRIPLE TYPE



POWER TRIM/TILT SWITCH

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

D2 type:

When two or more outboard motors are mounted:

1. Press on the DN (down) of the power trim/tilt switch on the remote control lever and trim the outboard motors to the lowermost position.
2. With the outboard motors trimmed to the lowermost position, adjust the trim angle of each outboard motor using the switch on the panel.

R3 type:

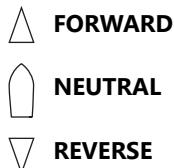
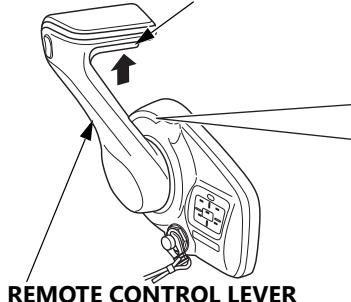
When the two outboard motors are mounted:

1. Press on the DN (down) of the power trim/tilt switch on the remote control lever and trim the outboard motors at the lowermost position.
2. With the outboard motors trimmed at the lowermost position, adjust the trim angle of the right and left outboard motors using the switch on the remote control lever simultaneously.

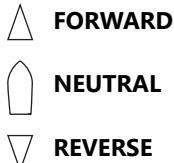
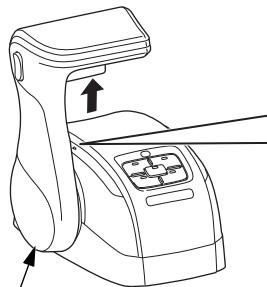
8. OPERATION

(D1 type)

NEUTRAL RELEASE LEVER

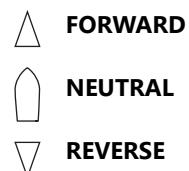
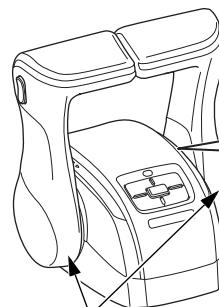


(D2 type (Single type))



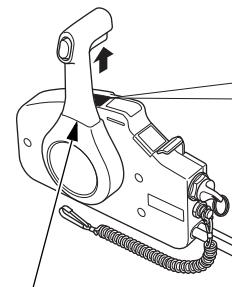
REMOTE CONTROL LEVER

(D2 type (Dual type))



REMOTE CONTROL LEVERS

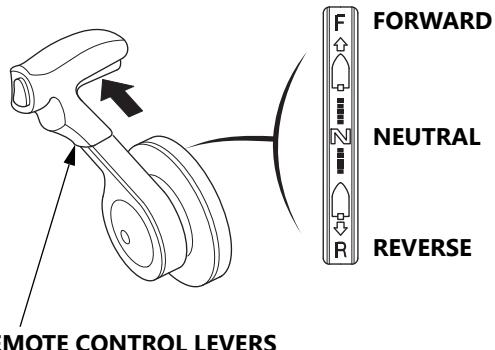
(R1 type)



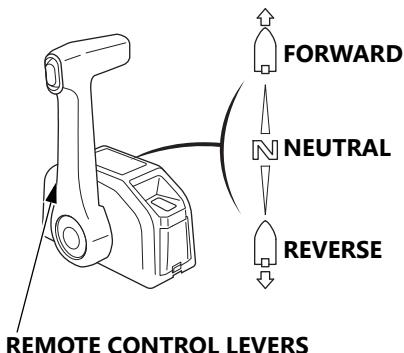
REMOTE CONTROL LEVERS

8. OPERATION

(R2 type)



(R3 type)



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

D1, D2 types:

Moving about 20° engages the gear. Moving the control lever further opens the throttle and increases the boat speed.

R1 type:

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

R2, R3 types:

Moving about 35° engages the gear. Moving the control lever further opens the throttle and increase the boat speed.

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

NOTE:

- BF115J:

When cruising at full throttle, note that the engine speed must be in the range between $4,500 \text{ min}^{-1}$ (rpm) and $6,000 \text{ min}^{-1}$ (rpm).

BF135D/BF150D:

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" (see page 71) for a relation between the propeller and the engine speed.

CAUTION

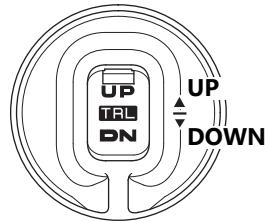
Do not operate without the engine cover. Exposed moving parts could cause injury; water may damage the engine.

NOTE:

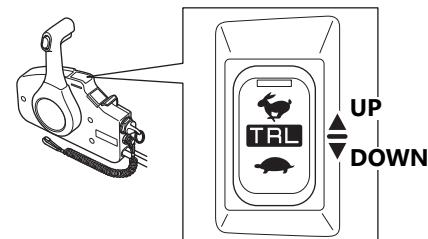
For best performance, passengers and equipment should be distributed evenly to balance the boat.

TRL (TROLLING) CONTROL SWITCH (R1, R2, R3 types(optional equipment))

(TRL (trolling) control switch panel)



(R1 type)

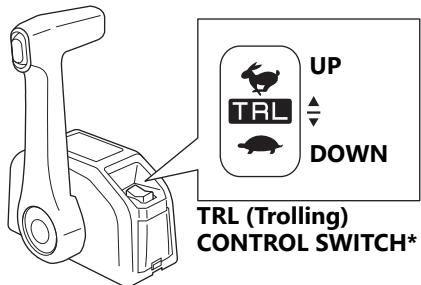


TRL (Trolling)
CONTROL SWITCH*

* For TRL (Trolling) control switch equipped type.

8. OPERATION

(R3 type (Single type))



UP: Increase engine speed
DN: Reduce engine speed

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

A long buzz sounds once.

When the mode is changed to trolling mode, the engine speed is 650 min^{-1} (rpm).

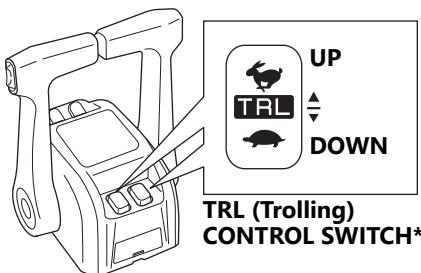
You can adjust the engine speed by 50 min^{-1} (rpm) every time you press the switch once. You will hear a short buzz.

The engine speed can be adjusted within the range of $650 - 900 \text{ min}^{-1}$ (rpm).

Continuing to press the switch will not decrease or increase the engine speed beyond the lower (650 min^{-1} (rpm)) or higher (900 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).

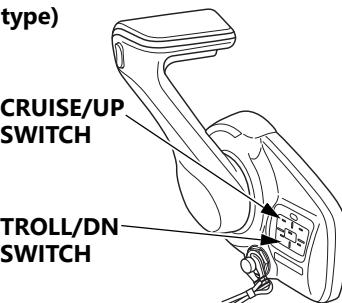
(R3 type (Dual type))



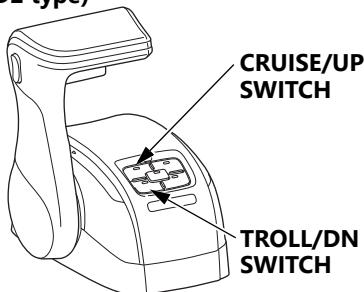
* For TRL (Trolling) control switch equipped type.

TROLLING CONTROL MODE (D1, D2 types)

(D1 type)



(D2 type)



TROLL/DN Switch:
Reduce engine speed
CRUISE/UP Switch:
Increase engine speed

After the engine warms up, when the remote control levers are tilted from the NEUTRAL position to the FORWARD or REVERSE side by about 20° and the TROLL/DN switch of the remote control is pressed, the mode changes to trolling control mode.

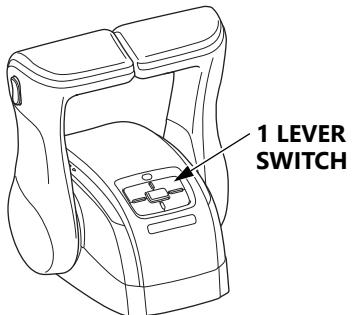
A long buzz sounds once. When the mode is changed to trolling mode, the engine speed is 650 min^{-1} (rpm). You can adjust the engine speed by 50 min^{-1} (rpm) every time you press the switch once. You will hear a short buzz. The engine speed can be adjusted within the range of $650 - 900 \text{ min}^{-1}$ (rpm).

Continuing to press the switch will not decrease or increase the engine speed beyond the lower (650 min^{-1} (rpm)) or higher (900 min^{-1} (rpm)) limit. If you try to do this, a short buzz sounds twice.

The throttle may be operated while in trolling control mode.

8. OPERATION

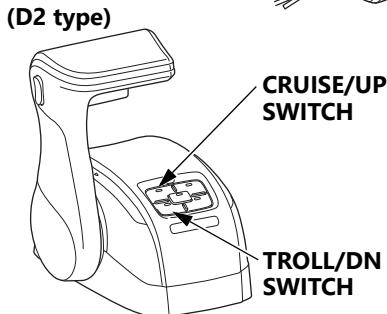
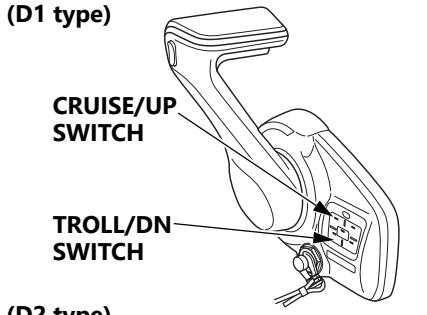
ONE-LEVER MODE (for D2 type (Dual type))



Shifting gear and the engine speed adjustment of all the outboard motors can be performed with one remote control lever when in one-lever mode.

If you press the 1 LEVER switch when all remote control levers are in the NEUTRAL position, the mode changes to one-lever mode. A long buzz sounds once.

CRUISE CONTROL MODE (D1, D2 types)



TROLL/DN Switch:
Reduce engine speed or velocity
CRUISE/UP Switch:
Increase engine speed or velocity

If you press the CRUISE/UP switch during cruising with all the remote control levers in the FORWARD position, the mode changes to the cruise control mode, which lets the boat cruise at a constant engine speed or velocity.

A long buzz sounds once.

- Boat speed can only be adjusted in cruise control mode when equipped with GPS.

You can adjust the engine speed or velocity by every time you press the switch once. You will hear a short buzz.

Continuing to press the switch will not decrease or increase the engine speed beyond the lower or higher limit.

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

Engine speed adjusting range:

Engine speed at mode change
 $\pm 500 \text{ min}^{-1}$ (rpm) (in steps of
 50 min^{-1} (rpm))

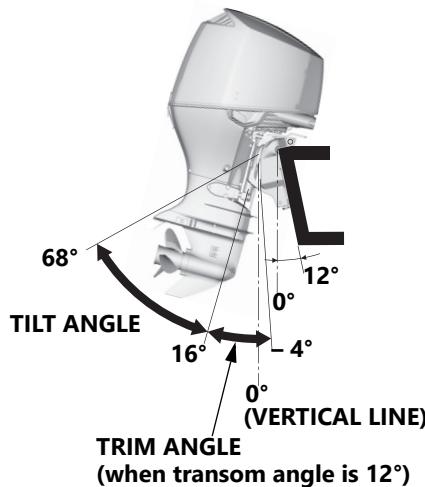
Velocity adjusting range:

- Velocity at mode change $\pm 10 \text{ km/h}$ (in steps of 1.0 km/h)
- Velocity at mode change $\pm 5 \text{ miles/h}$ (in steps of 0.5 miles/h)
- Velocity at mode change $\pm 5 \text{ knots}$ (in steps of 0.5 knots)

The cruise control mode is released forcibly in the following cases.

- GPS error or disconnection (Velocity adjustment is selected in the multifunction display)
- Operate the remote control lever a certain amount from the position for changing modes
- Engine stops or engine is abnormal (overheating, low oil pressure, etc.)
- If the engine RPM or speed is unstable

TRIMMING THE OUTBOARD MOTOR



NOTE:

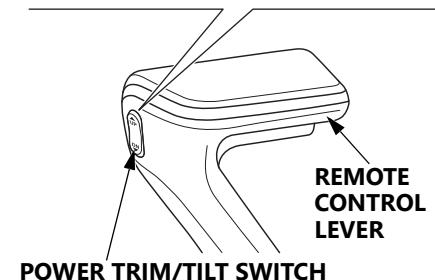
For multiple outboard motors, the trim/tilt angle of all outboard motors is adjusted at the same time by using the power trim/tilt switch on the remote control lever and the trim/tilt angle of each outboard motor is adjusted by using each power trim/tilt switch on the panel.

(D1 type)

Press UP to raise bow.



Press DN to lower bow.



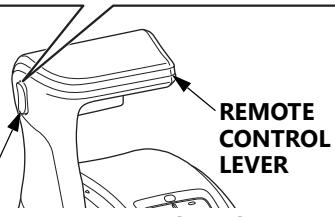
8. OPERATION

(D2 type (Single type))

Press UP to raise bow.



Press DN to lower bow.

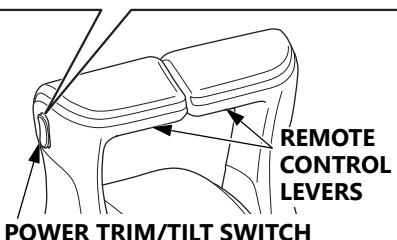


(D2 type (Dual type))

Press UP to raise bow.



Press DN to lower bow.



(R1 type)

POWER TRIM/TILT SWITCH

Press UP to raise bow.



Press DN to lower bow.

REMOTE CONTROL LEVER

(R2 type)

POWER TRIM/TILT SWITCH

Press UP to raise bow.



Press DN to lower bow.

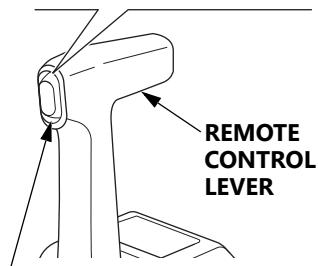
REMOTE CONTROL LEVER

(R3 type (Single type))

Press UP to raise bow.

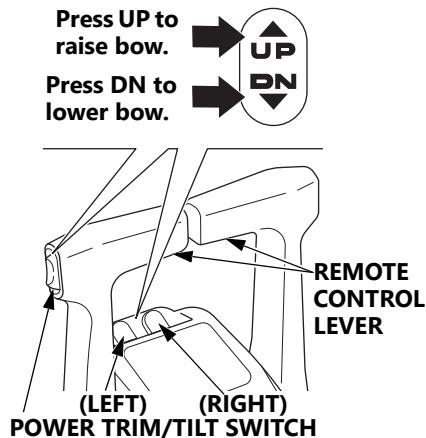


Press DN to lower bow.



8. OPERATION

(R3 type (Dual type))



Consult an authorized Honda Outboard Motor dealer for the method to adjust the tilt limit switch.

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

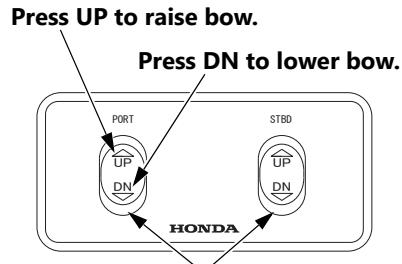
The power trim/tilt system operates when the switch is pressed, and it stops when the switch is released.

To trim up slightly, press on UP momentarily but firmly.

To trim down slightly, press on DN (down) in the same manner.

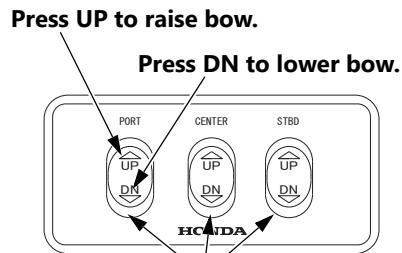
(Power trim/tilt Switch Panel)

DUAL TYPE



POWER TRIM/TILT SWITCH

TRIPLE TYPE



POWER TRIM/TILT SWITCH

8. OPERATION

NOTE:

For multiple outboard motors, the trim/tilt angle of all outboard motors is adjusted at the same time by using the power trim/tilt switch on the remote control lever and the trim/tilt angle of each outboard motor is adjusted by using each power trim/tilt switch on the remote control (R3 type only) or the panel.

⚠ WARNING

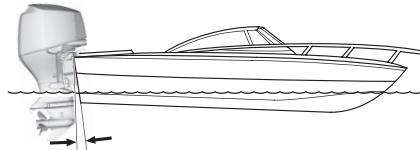
When the boat is equipped with two outboard motors, adjust with the switch on the control lever side. Adjustment with the switch on the console side will impair the balance between the right and left outboard motors, which adversely affects operability and stability of the outboard motors.

⚠ CAUTION

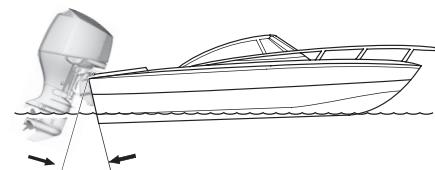
Improper trim angle results in unstable steering condition.

- Do not trim excessively while cruising through rough waves, or it may cause an accident.
- Excessive ventilation 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 and engine.

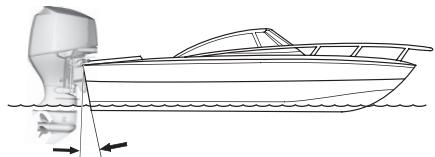
OUTBOARD MOTOR TRIMMED TOO LOW



OUTBOARD MOTOR TRIMMED TOO HIGH



OUTBOARD MOTOR TRIMMED CORRECTLY

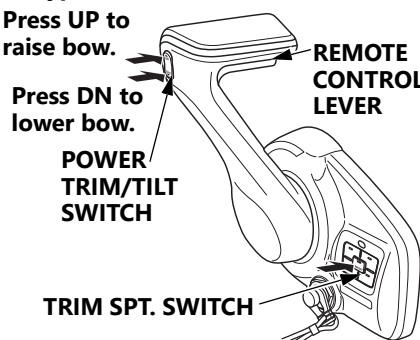
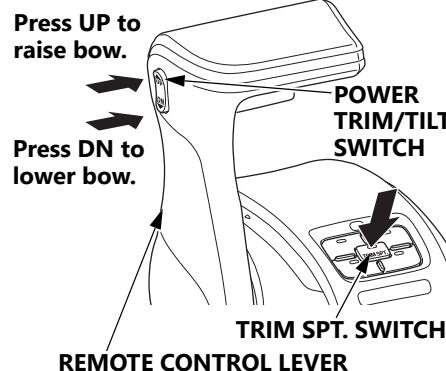


NOTE:

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

When cruising:

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

Trim Support Mode (D1, D2 types)**(D1 type)****(D2 type)**

Pressing the TRIM SPT. switch changes the mode to the trim support mode, which automatically does trim operations according to the speed or engine RPM.

Adjusting the trim angle to an optimum position automatically during acceleration or cruising improves acceleration performance, top speed, steering stability, fuel efficiency, etc.

The conditions that control the trim angle pattern is set in the Honda multi-function display.

8. OPERATION

You can finely adjust the trim angle manually while in trim support mode.

In the case of a single outboard motor, if you press the power trim/tilt switch of the remote control while in trim support mode, you can fine-tune the trim angle.

In the case of multiple outboard motors, if you press the power trim/tilt switch of the remote control in the trim support mode, you can fine-tune the trim angles of all the outboard motors simultaneously.

The finely adjusted angle is temporarily overwritten with the preset pattern, and returns to the pattern before overwriting when the trim support mode is released or the engine switch or power switch is turned off.

If you use the cruise control mode while in the trim support mode, the trim support mode is temporarily stopped.

The trim support mode is forcibly canceled in the following cases.

- Trim angle is adjusted beyond the trim area by the power trim/tilt switch
- GPS error or disconnection
- Engine malfunction (overheating, low oil pressure, etc.)
- Trim operation abnormality
- Accelerating or decelerating so quickly as to put a load on trim

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.

When dual type outboard motors are mounted on your boat, tilt them up at the same time.

NOTICE

- **Use the tilt lock lever when mooring for long periods of time.(see page 122)**

1. Move the shift lever or the control lever to the NEUTRAL position and stop the engine.
2. Press UP of the power trim/tilt switch and tilt the outboard motor to the best position according to cruising conditions.

8. OPERATION

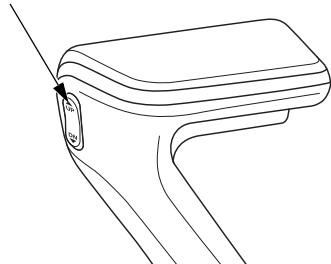
Pressing UP of the power trim/tilt switch of the remote control lever or power trim/tilt switch panel twice in succession tilts the outboard motor up to the set tilt angle automatically.

NOTICE

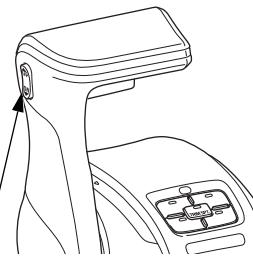
- **Do not tilt up the outboard motor before shutting off the engine, or it may cause malfunction.**

(D1 type)

POWER TRIM/TILT SWITCH

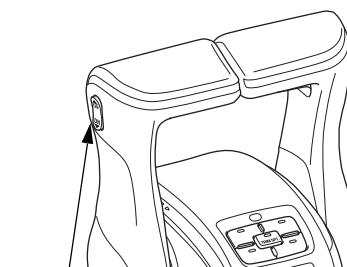


(D2 type (Single type))



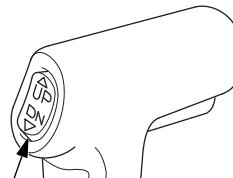
POWER TRIM/TILT SWITCH

(D2 type (Dual type))



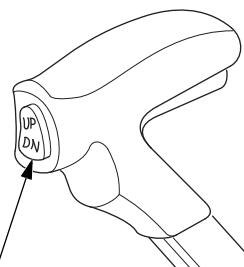
POWER TRIM/TILT SWITCH

(R1 type)



POWER TRIM/TILT SWITCH

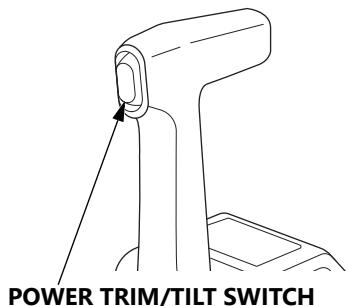
(R2 type)



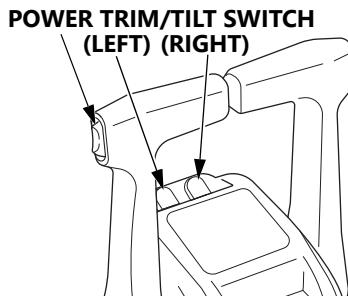
POWER TRIM/TILT SWITCH

8. OPERATION

(R3 type (Single type))

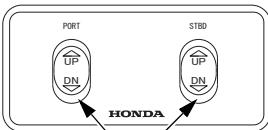


(R3 type (Dual type))

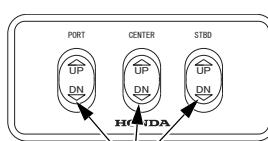


(Power trim/tilt switch panel)

DUAL TYPE



TRIPLE TYPE



NOTE:

For multiple outboard motors, the trim/tilt angle of all outboard motors is adjusted at the same time by using the power trim/tilt switch on the remote control lever and the trim/tilt angle of each outboard motor is adjusted by using each power trim/tilt switch on the panel.

Mooring



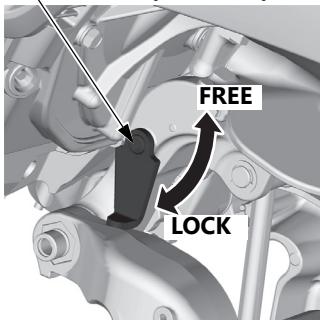
Tilt up the outboard motor and use the tilt lock levers when mooring the boat. Shift the remote control lever into the NEUTRAL position and stop the engine before tilting up the outboard motor.

NOTE:

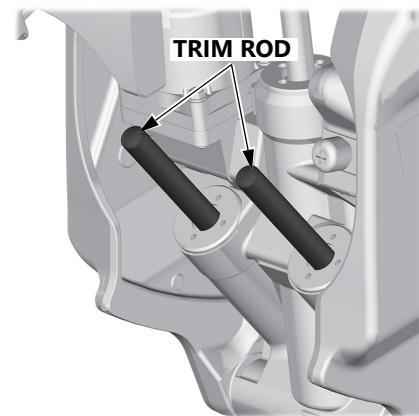
Before tilting it up, leave the outboard motor in the running position for one minute after stopping the engine to drain the water from inside the engine.

Stop the engine before tilting the outboard motor.

1. Tilt the outboard motor up to its highest position using the power trim/tilt switch (see page 47).
2. Move the tilt lock levers to the LOCK position and lower the outboard motor until the lock levers contact the stern bracket.

TILT LOCK LEVER (each side)**CAUTION**

If you do not secure the outboard motor with the tilt lock levers after tilting it up to the highest position, then the hydraulic pressure of the power trim/tilt may decrease and cause the outboard motor to tilt down.



3. Press DN (down) of the power trim/tilt switch and fully shorten the trim rods.
4. To tilt down, raise the outboard motor as far as it goes using the power trim/tilt switch, move the tilt lock levers to the FREE position, and lower the outboard motor to the designated position.

8. OPERATION

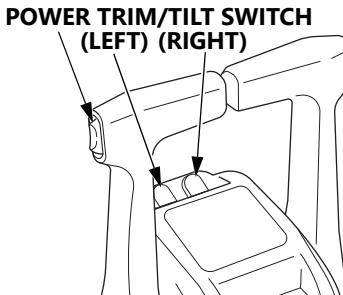
NOTICE

- **Do not start the engine while the tilt lock lever is locked. There is a risk of damaging the engine.**

Pressing DN of the power trim/tilt switch of the remote control lever or power trim/tilt switch panel twice in succession tilts the outboard motor down to the set tilt angle automatically (see page 42).

NOTE:

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



Automatic Tilt Mode (D1, D2 types)

If you press the power trim/tilt switch twice in succession while the boat is stopped, the automatic tilt mode is turned on, automatically tilting up or down the outboard motor.

When the "UP" side of the power trim/tilt switch is pressed twice in succession, the buzzer sounds once at a long interval, and the tilt is automatically raised to the preset tilt limit position. The buzzer continues to sound at short intervals while the outboard motor is tilted up.

When you press "DN" on the power trim/tilt switch twice in succession, the buzzer sounds once at a long interval, and the outboard motor is automatically tilted down to the preset tilt limit position. The buzzer continues to sound at short intervals while the outboard motor is tilted down.

Even during automatic tilting, automatic tilt will be forcibly canceled and the outboard motor will stop being tilted in the following cases.

- The power trim/tilt switch is pressed during automatic tilt operations
- The power tilt switch (outboard motor panel) is pressed and held in the opposite direction of the tilt direction during automatic tilt operations
- Any of the engines are started

- Any of the engines are abnormal (overheating, low oil pressure, etc.)

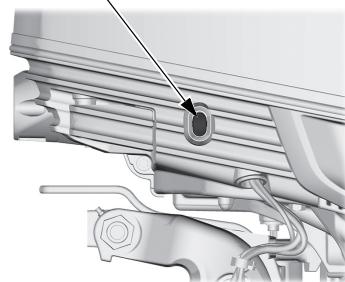
Before you can use the automatic tilt function, you need to set it in the Honda multi-function display.

For multiple outboard motors, the power trim/tilt switch on the remote control lever side can turn on the automatic tilt mode for all the outboard motors and the power trim/tilt switch on the power trim/tilt switch panel can turn on the automatic tilt mode for each individual outboard motor.

The power trim/tilt switch on the remote control lever side turns on the automatic tilt mode even if the power switch or engine switch is off.

Power Tilt Switch (outboard motor panel)

POWER TILT SWITCH



When you are away from the power trim/tilt switch on the control lever side, you can operate the power tilt switch on the outboard motor side.

- Press the switch on the "UP" side to increase the tilt angle.
- Press the switch on the "DN" side to decrease the tilt angle.

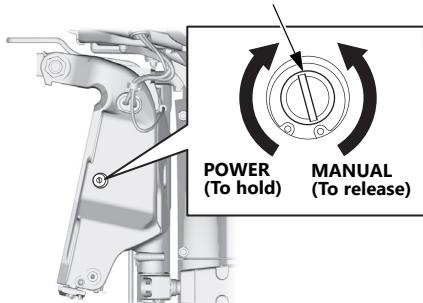
8. OPERATION

⚠ CAUTION

Do not operate this power tilt switch on the outboard motor while cruising. You can lose control of your balance, fall, and be injured by the moving outboard, propeller, or boat. Always use the remote control lever or the power trim/tilt switch on the switch panel while under way.

Manual Relief Valve

MANUAL RELIEF VALVE



If the power trim/tilt system does not work due to a dead battery or failure of the power trim/tilt motor, you can manually tilt down the outboard motor by operating the manual relief valve. To tilt the outboard motor manually, turn the manual relief valve under the stern bracket 1 or 2 turns counterclockwise using a screwdriver.

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

⚠ DANGER

Check that nobody is under the outboard motor before carrying out this operation because if the manual relief valve is loosened (turned counterclockwise) when the outboard motor is tilted up, the outboard motor will suddenly tilt down.

⚠ CAUTION

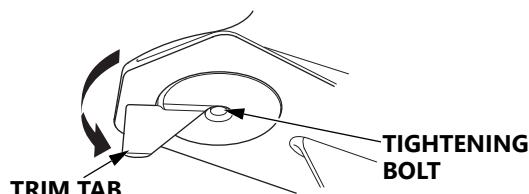
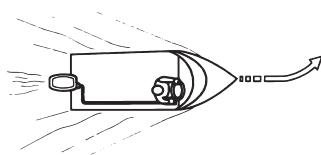
The manual relief valve must be tightened securely before operating the outboard motor otherwise the outboard motor could tilt when operating in reverse.

NOTICE

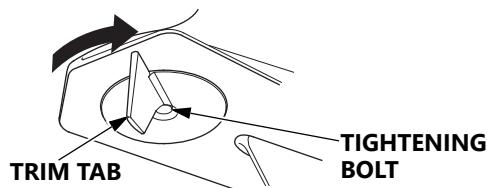
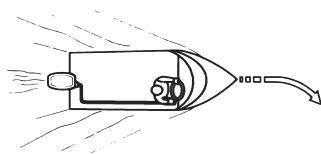
- **If there is not enough clearance to the ground, opening the manual relief valve may cause the outboard motor to contact the ground and be damaged.**

TRIM TAB ADJUSTMENT

(Left)



(Right)



The trim tab is provided to adjust for "torque steer" which is a reaction of the propeller rotation or propeller torque. If during a high speed turn an unequal amount of effort is required to turn the boat right or left, adjust the trim tab so that an equal amount of effort is required.

Distribute the load evenly in the boat and run the boat in a straight course at full throttle. Slightly turn the steering wheel for both right and left turns to determine the amount of effort required.

If less effort is required to make left turns:

Loosen the trim tab tightening bolt and turn the rear end of the trim tab toward the left. Tighten the bolt securely.

If less effort is required to make right turns:

Loosen the trim tab tightening bolt and turn the rear end of the trim tab toward the right. Tighten the bolt securely.

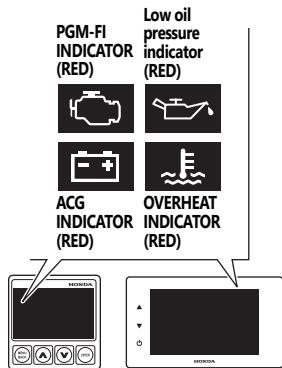
Make small adjustments at a time and retest. Incorrect trim tab adjustment can cause adverse steering.

8. OPERATION

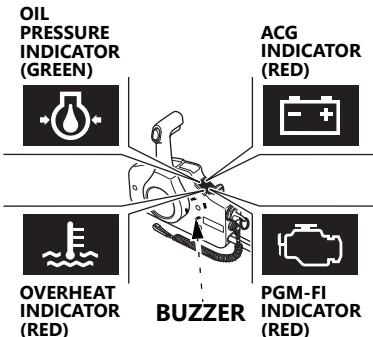
ENGINE PROTECTION SYSTEM

Engine Oil Pressure, Overheat, Water Contamination, PGM-FI and ACG Warning Systems

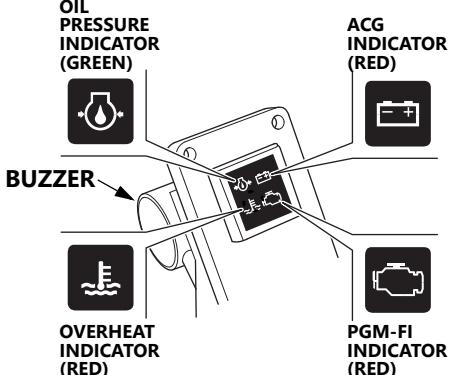
(Multi-function Display)



(R1 type)



(R2, R3 types (Switch panel with indicators type))



If the engine oil pressure drops and/ or the engine overheats, either or both warning systems could be activated.

When activated, the engine speed will decrease gradually and the low oil pressure indicator will turn ON or the oil pressure indicator will go off, and the overheat indicator will turn ON. A continuous buzzer will sound. The engine speed cannot 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 limits engine speed.

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

8. OPERATION

Display type

Multi-function Display

System Symptom	INDICATOR				BUZZER CORRESPONDING SYSTEM	WARNING LEVEL ^{*1}	Power Reduction ^{*2}
	Low oil pressure (Red)	Overheat (Red)	ACG (Red)	PGM-FI (Red)			
Normal	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Low oil pressure	ON	OFF	OFF	OFF	ON (continuously)	 Warning level 1	ON
Overheat	OFF	ON	OFF	OFF	ON (continuously)	 Warning level 1	ON
ACG warning	OFF	OFF	ON	OFF	Alternating ON and OFF (at long intervals)	 Warning level 2	OFF
PGM-FI warning	OFF	OFF	OFF	ON	Alternating ON and OFF (at long intervals) ^{*3}	 Warning level 2	OFF
Water contamination	OFF	OFF	OFF	OFF	Alternating ON and OFF (at short intervals)	 Warning level 2	OFF

Some indicators and/or buzzers may be activated at the same time due to the occurrence of a malfunction.

*1: Warning level 1 is displayed for errors that require special attention. Warning level 2 is displayed for other errors. For details, refer to the Multi-function Display manual.

*2: Refer to page 135 about power reduction.

*3: There are the following two types of buzzer sounds (intermittent long sound) caused by a PGM-FI error.

- If the PGM-FI warning indicator lights and the buzzer does not stop sounding: Return to port immediately without continuing your voyage. There is a risk of shift operation failure (see page 183), alert detection failure, or engine start failure.
- If the PGM-FI warning indicator lights and the buzzer sounds for only 10 seconds: Return to port as soon as possible because engine speed control and other functions will be limited.

R1, R2, R3 types

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

NOTE:

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

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

8. OPERATION

When the oil pressure warning system is activated:

1. Stop the engine immediately and check the engine oil level (see page 75).
2. If the oil is up to the recommended level, restart the engine. If the oil pressure warning system stops after 30 seconds, the system is normal.

NOTE:

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

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

COOLING WATER CHECK HOLE

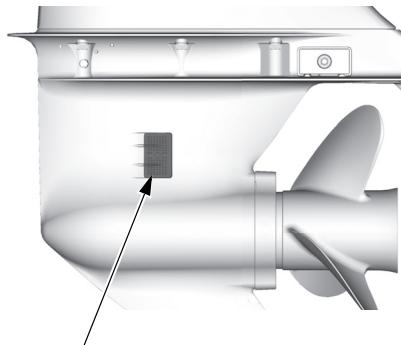


When the overheat warning system is activated:

1. Return the remote control lever to the 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.



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

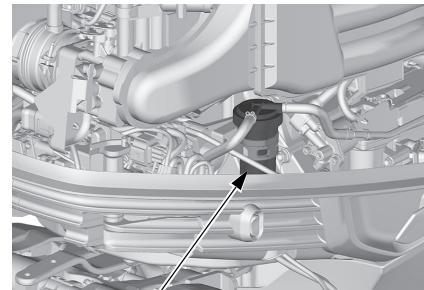
3. If the overheat warning system stays activated, stop the engine. Tilt up the outboard motor and check the water intakes for obstructions. If there are no obstructions at the water intakes, return to the closest boat landing and contact your closest authorized Honda outboard motor dealer.

When the PGM-FI is activated:

1. Consult with an authorized Honda outboard motor dealer.

When the ACG warning system is activated.

1. Check the battery (see page 84). If the battery is OK, consult with an authorized Honda outboard motor dealer.



WATER SEPARATOR

When the water separator buzzer sounds:

1. Check the water separator for water contamination. If water has accumulated, clean it out (see page 160).

8. OPERATION

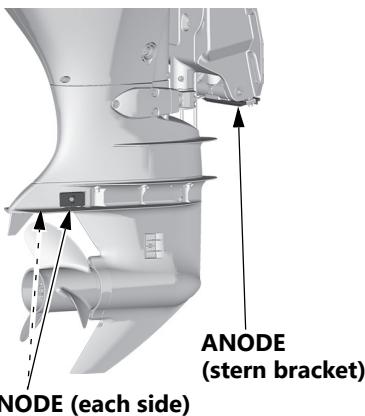
Over-rev Limiter

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 Honda outboard motor dealer.

Anodes



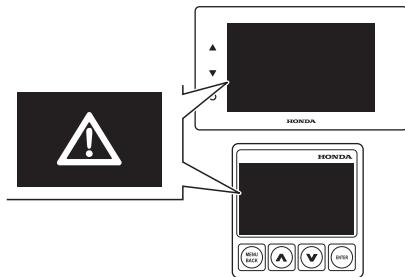
The anodes are a sacrificial material which helps to protect the outboard motor from corrosion.

NOTICE

- **Painting or coating the anodes will lead to rust and corrosion damage to the outboard motor.**

There are two anodes on the gear case, one on the stern bracket.

Power Reduction



This outboard motor is equipped with the power reduction system which activates when the outboard motor has a serious problem.

The power reduction system decreases the engine speed to protect the engine until the malfunction is corrected.

When one of the two systems of the remote control sensor is faulty, the power reduction system does not decrease the engine speed.

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 120). 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 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.

8. OPERATION

NOTICE

- If one outboard is down and another outboard is tilted all the way up, it may cause extreme steering angles that can cause the outboard cowlings to touch and damage each other.
- Never use the tilt lock lever if a stopped motor is tilted up. There is a risk of damaging the motor if you use the tilt lock lever while cruising.

TURNING WHEN MULTIPLE ENGINES ARE MOUNTED

When maneuvering in narrow waters, the action of the outboard motors allows the boat to turn more easily if you operate the left and right control levers separately.

Contact the dealer where you purchased your outboard motors

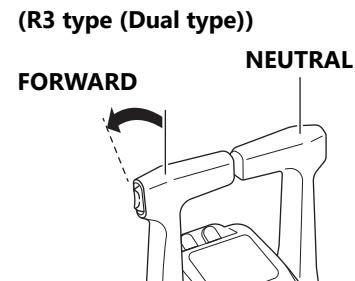
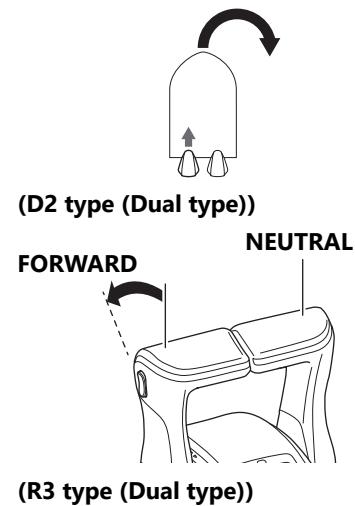
or an authorized Honda Outboard Motor dealer.

WARNING

When cruising normally, shift the left and right control levers at the same time.

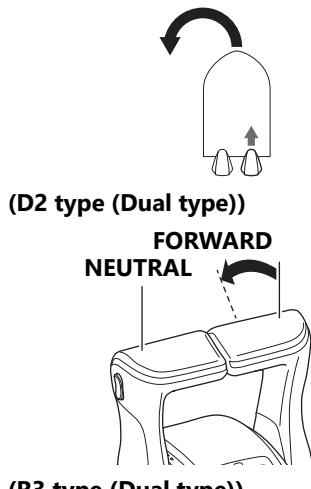
If you shift them one at a time, the boat may become unstable and capsize.

Turning right (forward)

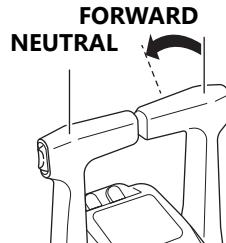


8. OPERATION

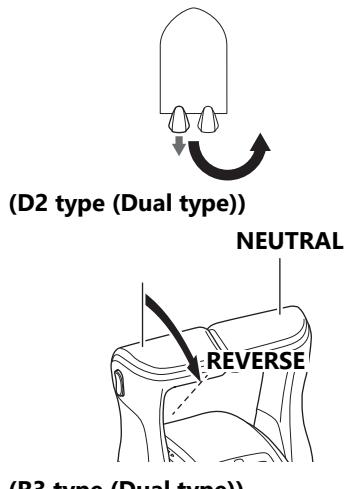
Turning left (forward)



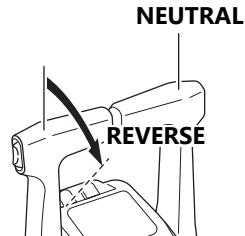
(R3 type (Dual type))



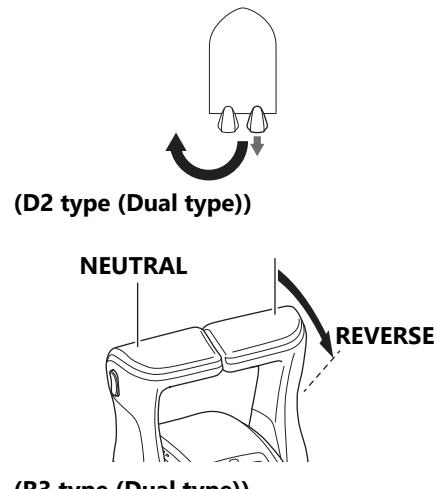
Turning right (reverse)



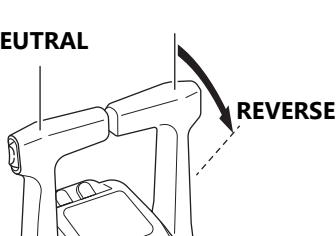
(R3 type (Dual type))



Turning left (reverse)



(R3 type (Dual type))

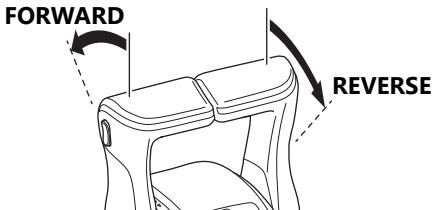


8. OPERATION

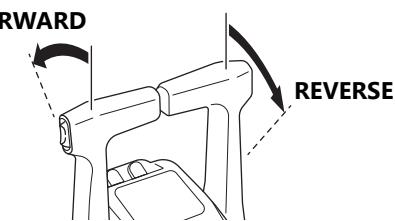
Turning right (spin)



(D2 type (Dual type))



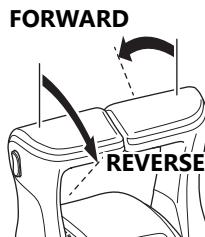
(R3 type (Dual type))



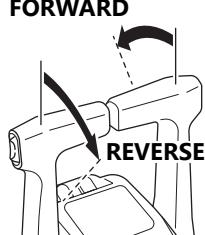
Turning left (spin)



(D2 type (Dual type))



(R3 type (Dual type))



In the following cases, the boat cannot be turned by operating the throttle.

- When only a single engine is mounted
- When using one-lever mode (D2 type (Dual type))

9. STOPPING THE ENGINE

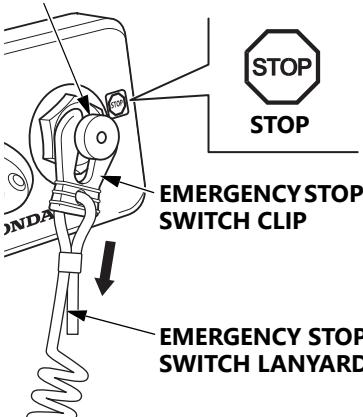
NOTICE

- After stopping the engine, be sure to turn OFF the ignition switch or power switch before turning OFF the boat's battery switch. If the battery switch is turned OFF while the ignition switch or power switch is ON, the buzzer will sound three times briefly.

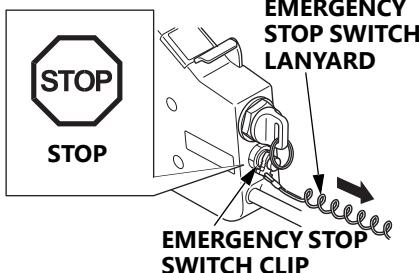
EMERGENCY ENGINE STOP

(D1, D2 types)

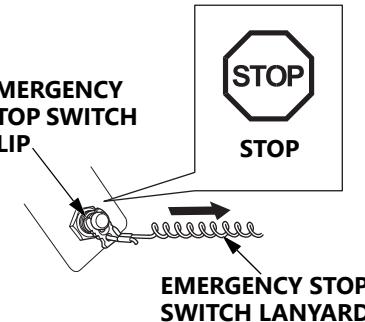
EMERGENCY STOP SWITCH



(R1 type)



(R2, R3 types)



Pull the emergency cord of the emergency stop switch to remove the lock plate from the switch; this will stop the engine.

If the emergency stop switch is activated while the engine is running, the engine will shut down abruptly and the boat will quickly decelerate, potentially causing occupants and objects to be thrown forward and/or overboard.

9. STOPPING THE ENGINE

If the emergency stop switch is activated, the emergency stop switch clip must be reinserted before the engine can be restarted.

NOTICE

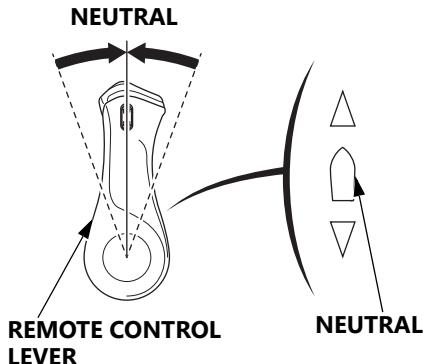
- **When you have stopped the engine with the emergency stop switch, be sure to turn off the ignition switch key or the power switch. Leaving the ignition switch key or power switch ON will drain the battery.**

NOTE:

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

NORMAL ENGINE STOP

Normal Key with START/STOP switch type

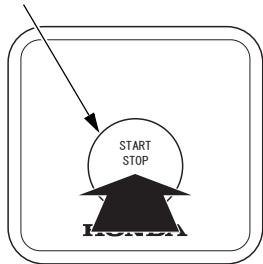


1. Move the remote control lever to the NEUTRAL position.

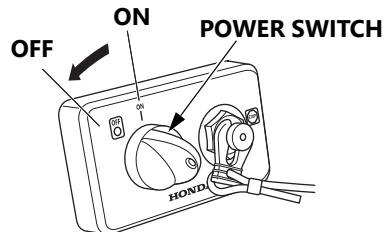
NOTE:

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

START/STOP SWITCH



2. Push the start/stop switch to stop the engine.



3. Turn the power switch to the OFF position, and then remove and store it.

9. STOPPING THE ENGINE

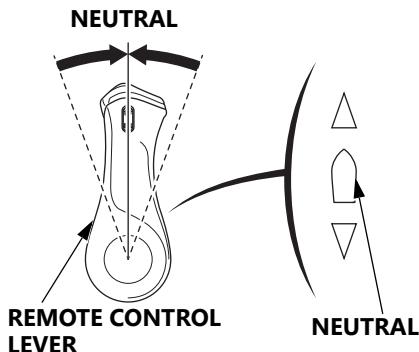
NOTE:

In the event that the engine does not stop when the power switch is turned to the OFF position, pull the emergency stop switch clip out of the emergency stop switch by pulling its lanyard (see page 139).

4. When the boat is not being used, remove and store the emergency stop switch clip and lanyard.

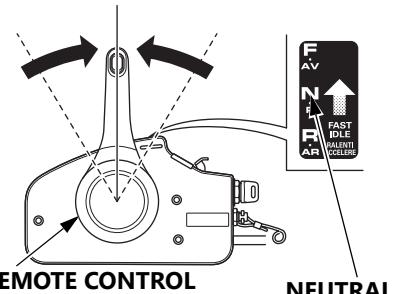
Normal Key without START/STOP switch type

(D1, D2 types)



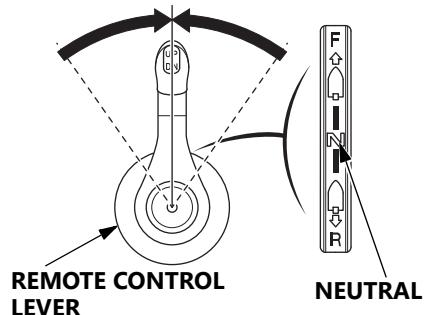
(R1 type)

NEUTRAL



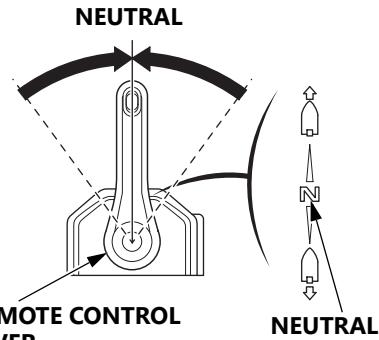
(R2 type)

NEUTRAL



9. STOPPING THE ENGINE

(R3 type)

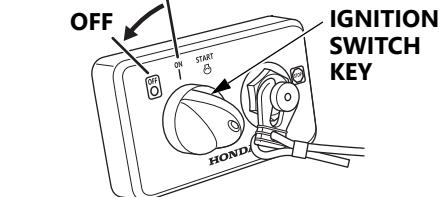


1. Move the remote control lever to the NEUTRAL position.

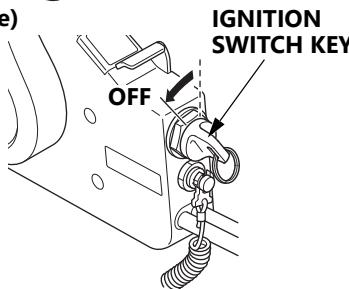
NOTE:

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

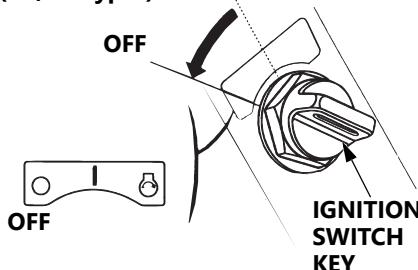
(D1, D2 types)



(R1 type)



(R2, R3 types)



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

NOTE:

In the event that the engine does not stop when the ignition switch key is turned to the OFF position, pull the emergency stop switch clip out of the emergency stop switch by pulling the its lanyard (see page 139).

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

10. TRANSPORTING

FUEL LINE DISCONNECTION

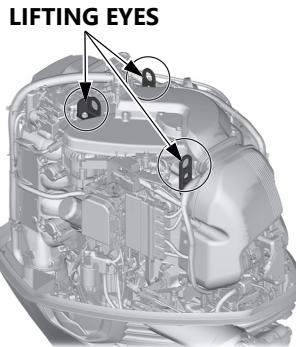
Before transporting the outboard motor, disconnect and remove the fuel line.

⚠ WARNING

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

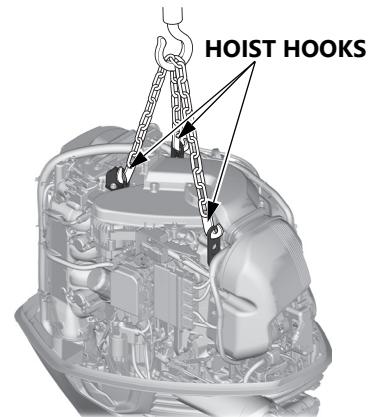
- Be careful not to spill fuel. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before the outboard motor is started.
- Keep heat, sparks, and flame away.

TRANSPORTING



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

1. Remove the engine cover (see page 73).



2. Set the hoist hooks against the lifting eyes and hang the outboard motor to remove it from the boat.

10. TRANSPORTING

OUTBOARD MOTOR STAND



3. Secure the outboard motor on an outboard motor stand with the mounting bolts and nuts.
4. Remove the hoist hook and reinstall the engine cover (see page 73).

TRAILERING

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.

NOTICE

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

Shut off the engine before performing the cleaning and flushing.

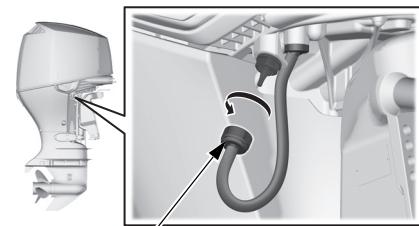


1. Tilt down the outboard motor.
2. Clean and wash the outside of the outboard motor with fresh water.

Cleaning of the outside of the outboard motor should be performed with the engine cover installed.

NOTICE

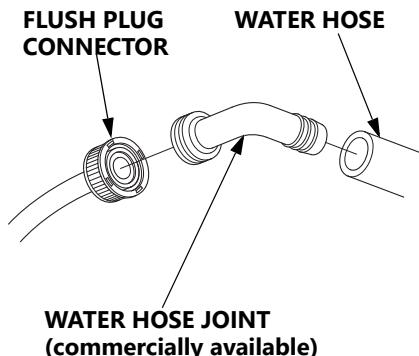
- **Be careful not to spray water into the air intake. If water penetrates inside the engine cover from the air intake, it may cause malfunction.**



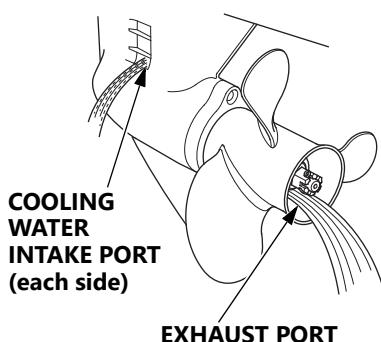
FLUSH PLUG CONNECTOR

3. Remove the flush plug connector from the outboard motor.
4. Install the water hose joint (commercially available).

11. CLEANING AND FLUSHING



5. Connect a fresh water hose to the water hose joint.



6. Turn on the fresh water supply and flush the outboard motor for at least 10 minutes. Check that water is draining from the cooling water check hole, the cooling water intake port and the exhaust port.

NOTICE

- **Do not start the engine while flushing, or it may cause malfunction.**

7. After flushing, remove the water hose and water hose joint and reinstall the flush plug connector.
8. Tilt up the outboard motor and move the tilt lock levers to the LOCK position (see page 55).

12. MAINTENANCE

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.

NOTICE

- **If the engine must be run, make sure there is water at least 100 mm (4 in) above the anti-cavitation plate, otherwise the water pump may not receive sufficient cooling water, and the engine will overheat.**
- **Use only Honda Genuine parts or their equivalents for maintenance or repair. The use of replacement parts which are not of equivalent quality may damage the outboard motor.**
- **If you hit an underwater obstacle while underway, stop the engine immediately and inspect the outboard motor for any problems. If there are any problems, proceed with extreme caution and slowly head for the**

nearest port. After arriving at the port, have the outboard motor inspected and any necessary repairs carried out by a dealer or service center before restarting the engine. Continued use in a damaged state may lead to serious consequences, such as further damage to the outboard motor or hull, or it may affect controls.

12. MAINTENANCE

TOOL KIT AND OWNER'S MANUAL

(Tool kit does not come with Counter Rotation Types)

The following tools and owner's manual 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



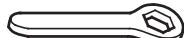
PHILLIPS SCREWDRIVER



GRIP



6 mm HEX. WRENCH



EYE WRENCH



SPARK PLUG WRENCH

MAINTENANCE SCHEDULE

ITEM	REGULAR SERVICE PERIOD (3) Perform at every indicated month or operating hour interval, whichever comes first.	Each use	After use	First month or 20 hrs.	Every 6 months or 100 hrs.	Every year or 200hrs.	Every 2 years or 400hrs.	Refer to page
Engine oil	Check level	o						75
	Change			o	o			151
Engine oil filter	Replace					o (2)		—
Gear case oil	Change			o (2)	o (2)			—
ACG belt	Check-adjust					o (2)		—
Throttle linkage and Control Cable (12)	Check-adjust			o (2)	o (2)			—
Valve clearance	Check-adjust					o (2) (9)		—
Spark plug (standard: iridium)	Check/Replace					o (10)		153 – 156
Spark plug (option: nickel)	Check				o			156
	Clean				o			
	Adjust				o			
	Replace				o (11)			
Propeller and cotter pin	Check	o						79
Anode metal (Outside engine)	Check	o				o (6)		56
Anode metal (Inside engine)	Check/Replace						o (2)	—
Idling speed	Check-adjust			o (2)	o (2)			—
Lubrication	Grease			o (1)	o (1)			157
Fuel filter with water separator (Low pressure side)	Check	o			o			161
	Replace						o	162
Fuel filter (High pressure side)	Replace						o (2)	—
Thermostat and thermostat cover	Check/Replace					o (2)		—
Fuel line	Check	o (8)						85
	Replace				Every 2 years (If necessary) (2)			—
Battery and cable connection	Check level-tightness	o						84, 164
Bolts and nuts	Check-tightness			o (2)	o (2)			—
Crankcase breather tube	Check					o (2)		—
Cooling water passages	Clean		o (4)					145
Cooling water leak	Check	o						84

12. 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 200hrs.	Every 2 years or 400hrs.	Refer to page
Water pump	Check					o (2)		—
Emergency stop switch	Check	o						139
Engine oil leak	Check	o						—
Each operation part	Check	o						—
Engine condition (5)	Check	o						—
Power Trim/Tilt	Check				o (2)			—
Shift Cable (12)	Check-adjust			o (2)	o (2) (7)			—

- (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 Honda Shop Manual for service procedures.
- (3) For professional commercial use, log hours of operation to determine proper maintenance intervals.
- (4) When operating in salt water, turbid or muddy water, the engine should be flushed with clean water after each use.
- (5) Upon starting, check for unusual engine sounds and cooling water flowing freely from the check hole.
- (6) When there is 1/3 or more consumption, consult your servicing dealer.
- (7) The user who performs shift operation frequently will recommend you exchange of a shift cable around three years.
- (8) 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.
- (9) If there are no problems such as increased tappet noise, idling instability/engine stalls, etc., there is no need for inspection.
- (10) If the electrodes of the iridium plugs are covered with dust, etc., replace them without cleaning. If it is worn out, replace it without adjusting the electrode clearance.
- (11) If the center electrode has rounded corners or the outer electrode is worn unevenly, replace it with a new one.
- (12) Mechanical wire type only.

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:

6.5 L (6.9 US qt, 5.7 Imp qt)

...When oil change

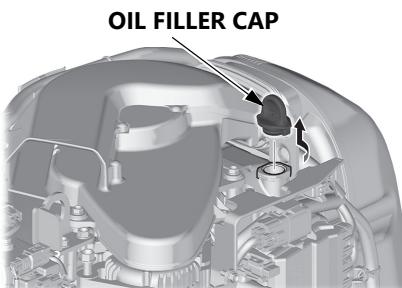
Recommended Oil:

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

Engine Oil Replacement

CAUTION

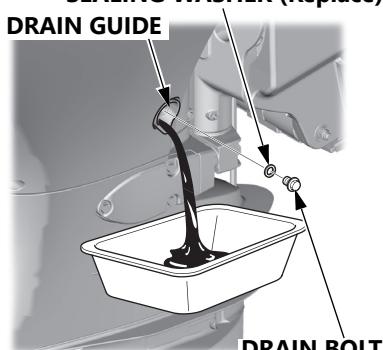
Immediately after the engine has been stopped, the temperature of the engine itself and the oil temperature is high, which may cause burns. Wait until the engine has cooled down before replacing the oil.



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 (see page 73).
2. Remove the oil filler cap.

SEALING WASHER (Replace)
OIL DRAIN GUIDE



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

12. MAINTENANCE

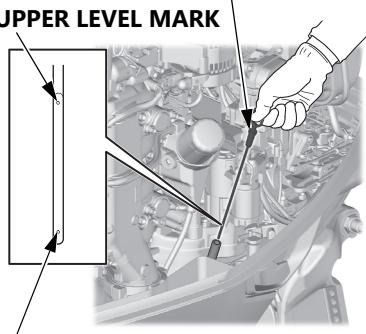
5. Install a new sealing washer and drain bolt, and tighten bolt securely.

TIGHTENING TORQUE:

23 N·m (2.3 kgf·m, 17 lbf·ft)

OIL LEVEL DIPSTICK

UPPER LEVEL MARK



LOWER LEVEL MARK

6. Refill to the upper level mark on the oil level dipstick with the recommended oil.

NOTICE

- **Always check the amount of oil after filling to avoid overfilling. Too little or too much oil can cause engine damage.**

7. Insert the dipstick all the way in.
8. Reinstall the oil filler cap securely. Do not overtighten.

NOTE:

Tighten the oil filler cap securely by hand. Loose tightening may cause oil leakage.

9. Install the engine cover and lock it securely.

NOTE:

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

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

SPARK PLUGS

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

⚠ CAUTION

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

NOTICE

- As the voltage required by a spark plug that is approaching the end of its life increases, it puts a strain on the ignition coil and other parts, which in turn affects engine performance. Spark plugs should be inspected and

replaced correctly according to the maintenance schedule

See page 156 for instructions on handling the Nickel spark plugs (optional parts).

Standard Spark Plug (Iridium)

Check/Replace interval:

Every 200 operating hours or every year.

Recommended spark plug:
IZFR6K11 (NGK)

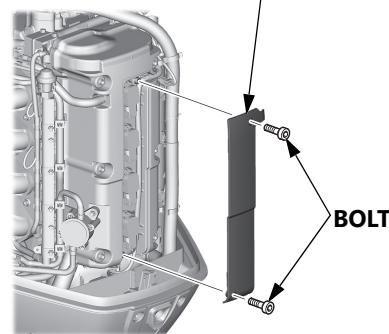
NOTICE

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

Inspection and Replacement

- Disconnect the battery negative (–) terminal.
- Unlock and remove the engine cover (see page 73).

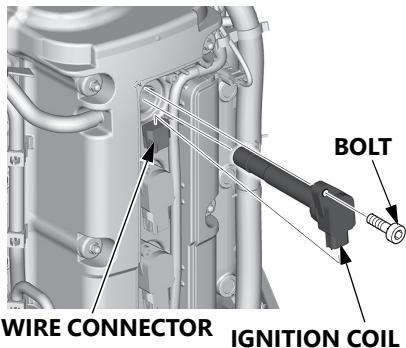
SPARK PLUG COVER



- Remove the two bolts with the 6 mm hex wrench, and remove the spark plug cover.

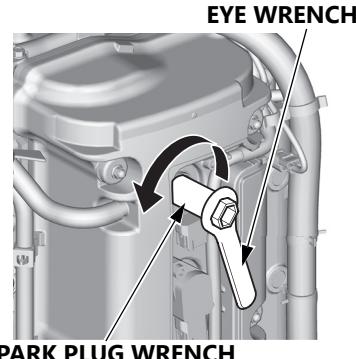
12. MAINTENANCE

4. Remove the bolt from the ignition coil. Rotate the ignition coil to a position that allows you to remove the wire connector easily.

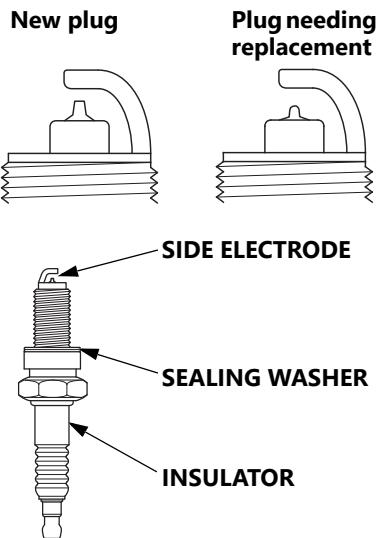


5. Disconnect the wire connector from the ignition coil by pushing on the lock tab and pulling on the connector. Pull on the plastic connector, not the wires.

6. Remove the ignition coil by pulling it up slightly. Take care not to bump or drop the ignition coil. Replace the ignition coil if it is dropped.

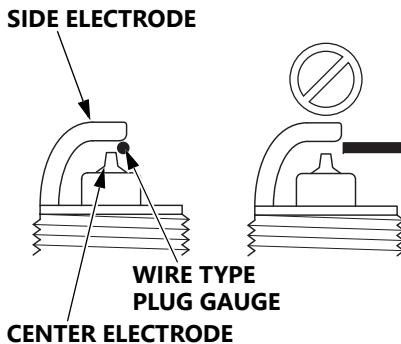


7. Use the spark plug wrench and eye wrench to remove the spark plugs.



8. Inspect the spark plugs.
1) If the electrodes are heavily corroded or carbon-soiled, replace the spark plug with a new one.

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.



Use a wire type plug gauge to measure the gap (spark gap) between the center electrode and the side electrode.

- Use a wire-type plug gauge to prevent damage to the iridium center electrode. Check that the $\Phi 1.3$ mm plug gauge does not fit into the gap. The gap should be 1.0 – 1.3 mm (0.039 – 0.051 inches).

9. These spark plugs have an iridium coated center electrode. Be sure to observe the following when servicing iridium spark plugs.

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

10. Thread the plugs in by hand to prevent cross threading.

12. MAINTENANCE

11. After the spark plugs are seated, tighten them with a spark plug wrench to compress the washers.

SPARK PLUG TORQUE:

16 – 20 N·m (1.6 – 2.0 kgf·m,
12 – 14 lbf·ft)

NOTE:

If you do not have a torque wrench, tighten as follows:

If installing new spark plugs, tighten them 1/2 turn after the spark plugs are seated to compress the washers.

If reinstalling used spark plugs, tighten them 1/8 – 1/4 turn after the spark plugs are seated to compress the washers.

NOTICE

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

12. Install the ignition coil.

Reinstall the bolt.

TIGHTENING TORQUE:

10 – 14 N·m (1.0 – 1.4 kgf·m,
7.2 – 10 lbf·ft)

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

14. Repeat this procedure for the other three spark plugs.

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

Optional Spark Plug (Nickel)

Check-clean/Replace interval:

Every 100 operating hours or 6 months.

Recommended spark plug:

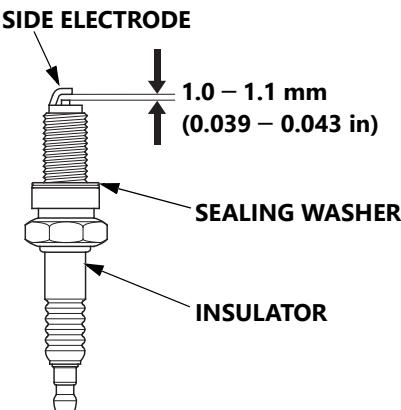
ZFR6K-11 (NGK)

NOTICE

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

Inspection and Cleaning

Installation and removal procedure of the Optional spark plugs are the same as the standard spark plugs.



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

Measure the plug gaps with a wire-type feeler gauge. The gaps should be 1.0 – 1.1 mm (0.039 – 0.043 in). Correct as necessary by carefully bending the side electrode.

Replacement

Replacement procedure of the Optional spark plugs are the same as the standard spark plugs.

LUBRICATION

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

Lubrication interval:

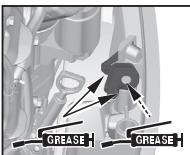
20 hours or a month after the date of purchase for initial lubrication, then every 100 hours or 6 months.

NOTE:

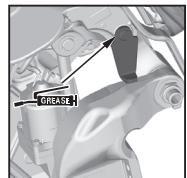
- Apply anticorrosion oil to pivot surfaces where grease cannot penetrate.
- Lubricate more frequently when used in salt water.

12. MAINTENANCE

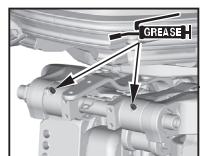
ENGINE COVER LOCK PLATE*



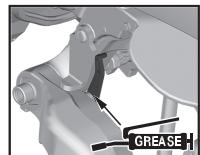
TILT LOCK LEVER (each side)



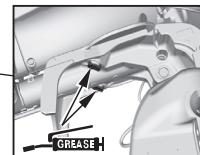
TILT SHAFT



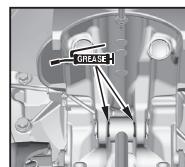
TRIM/TILT ANGLE SENSOR



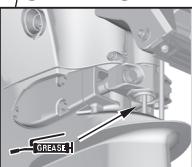
PTT THRUST RECEIVER



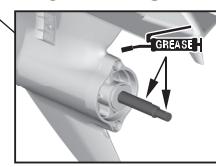
UPPER CYLINDER PIN/BUSH



SWIVEL SHAFT

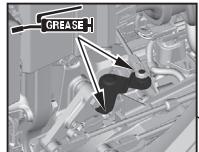


PROPELLER SHAFT

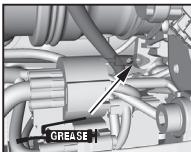


* Apply grease to the back of the engine cover lock plate as well.

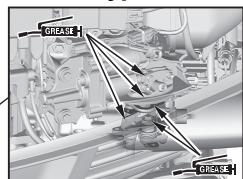
**THROTTLE LINK/
PIVOT/PLATE
(R1, R2, R3 types)**



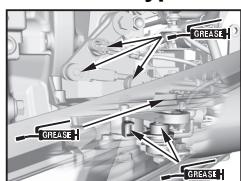
**THROTTLE ROD/LINK
(R1, R2, R3 types)**



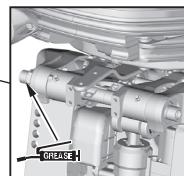
**SHIFT PIVOT/
BRACKET/SHIFT ARM/
CLICK ARM ROLLER
(D1, D2 types)**



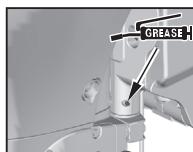
**THROTTLE ARM/
SHIFT ARM/PIVOT PLATE/
NEUTRAL SWITCH/
CLICK ARM ROLLER
(R1, R2, R3 types)**



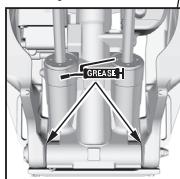
TIILT SHAFT THREAD



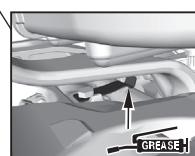
SWIVEL CASE



**LOWER CYLINDER
BUSH/COLLAR**

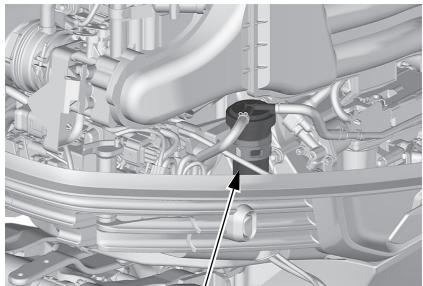


TIILT BRACKET



12. MAINTENANCE

FUEL FILTER WITH WATER SEPARATOR (LOW PRESSURE SIDE)



FUEL FILTER with WATER SEPARATOR (LOW PRESSURE SIDE)

Water or sediment accumulated in the fuel filter with water separator can cause loss of power or difficult starting. Check and replace the fuel filter with water separator periodically.

Clean the filter or consult with an authorized Honda outboard motor dealer for cleaning.

Inspection interval:

Every 100 operating hours or 6 months.

Replacement interval:

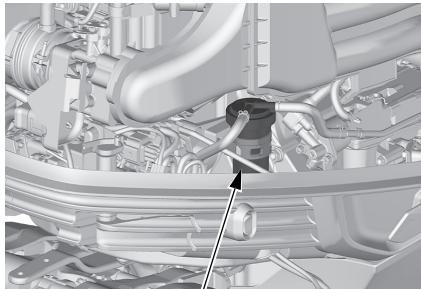
Every 400 operating hours or 2 years.

⚠ 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.

- 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.
- **KEEP OUT OF REACH OF CHILDREN.**

Inspection



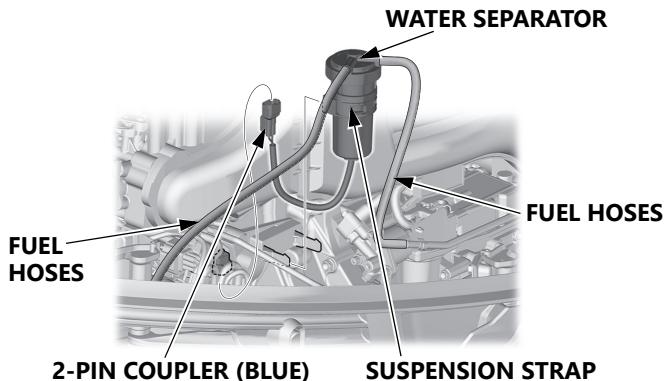
FUEL FILTER with WATER SEPARATOR (LOW PRESSURE SIDE)

1. Remove the engine cover (see page 73).
2. Looking through the translucent strainer cup, check for water accumulation and clogging.
If the fuel filter with water separator is clogged, refer to page 162 to remove the filter and clean it.

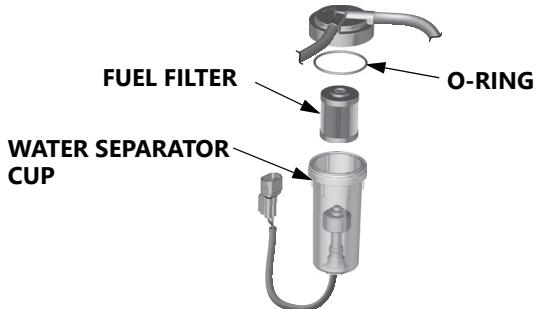
If water has collected in the fuel filter with water separator, refer to page 162 to remove the strainer cup and empty the water that is inside the cup.

12. MAINTENANCE

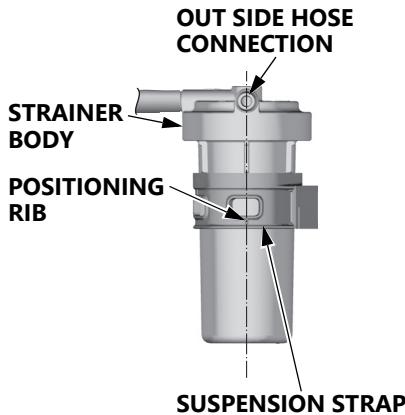
Replacement



1. Remove the engine cover (see page 73).
2. Remove the suspension strap from the fuel filter with water separator bracket.
3. Disconnect the 2-pin coupler (blue).
 - 1) Remove the 2-pin coupler (blue) from the bracket.
 - 2) Remove the harness from the clip.
 - 3) Disconnect the 2-pin coupler (blue).



4. Turn the fuel filter cup with water separator to the left to remove it, and then remove any water or sediment from inside the cup.
5. Thoroughly clean the cup. If the fuel filter is clogged, or has reached the end of its replacement period, replace it with a new one.
6. Reassemble the water separator in the reverse order of removal. Use a new O-ring.



7. When attaching the suspension strap to the fuel filter with water separator, align the positioning rib of the suspension strap with the OUT side hose connection in the strainer body, as shown in the diagram.
8. Prime the engine using the priming bulb (see page 87). Check for fuel leaks. Repair any fuel leaks if necessary.

NOTE:

If the buzzer sounds, water or sediment accumulation is found to be caused by excessive water or sediment accumulated in the fuel filter. Inspect the fuel tank and clean it if necessary.

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 outboard motor 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

12. MAINTENANCE

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 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.

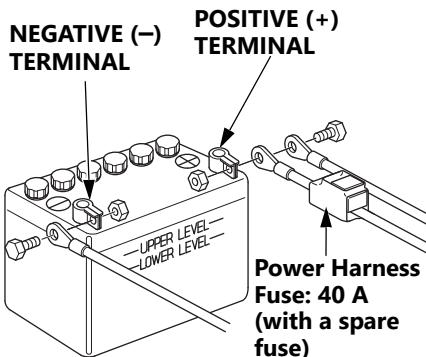
ANTIDOTE:

- 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.**

Battery posts, terminals, and related accessories contain lead and lead compounds. Wash your hands after handling them.

Battery Cleaning

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



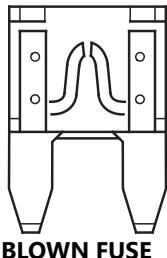
3. Connect the battery positive (+) cable to the battery positive (+) terminal, then the battery negative (–) cable to the battery negative (–) terminal. Tighten the bolts and nuts securely. Coat the battery terminals with grease.

CAUTION

When disconnecting the battery cable, be sure to disconnect at the battery negative (–) terminal first. To connect, connect at the positive (+) terminal first, then at the negative (–) terminal. Never disconnect or connect the battery cables in the opposite order, doing so could result in a short circuit if a tool contacts the terminals.

12. MAINTENANCE

FUSE



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

⚠ WARNING

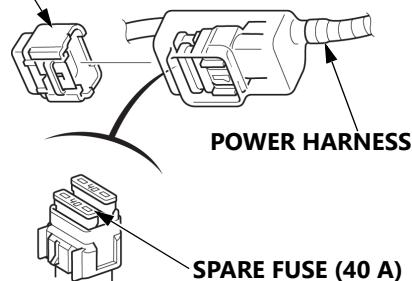
- Never use a fuse with a different rating from that specified. Serious damage to the electrical system or a fire may result.
- Disconnect the battery cable at the battery negative (–) terminal before replacing the fuse. Failure to do so may cause a short circuit.

NOTICE

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

Power Harness

FUSE HOLDER COVER



1. Stop the engine.
2. Disconnect the battery cable and the power harness.
3. Open the fuse holder cover.
4. Pull the old fuse out of the clip with the fuse puller supplied in the fuse box (see page 168).
5. Push a new fuse (40 A) into the clip.
6. Close the fuse cover.

Main Fuse

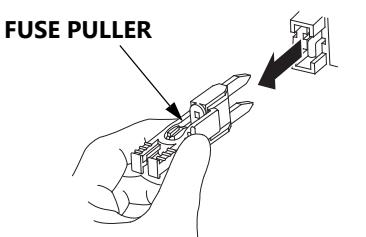
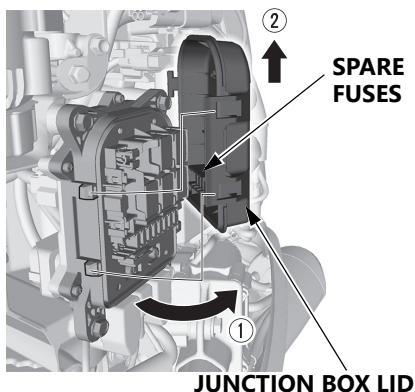
Replacement

A spare fuse is located on the reverse side of the junction box lid.

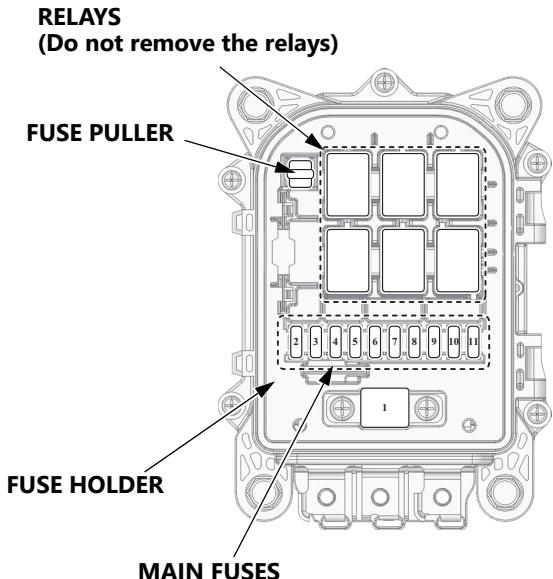
1. Stop the engine.
2. Remove the engine cover.
3. Remove the junction box lid.
 - 1) Open the junction box lid.
 - 2) Remove the junction box lid by lifting it.
4. Pull the old fuse out of the clip with the fuse puller supplied in the fuse holder. (see page 168).
 - If a fuse is blown, install a replacement fuse of the same specified rating.
5. Push a new fuse into the clips.
6. Reinstall the junction box lid, and the engine cover.
7. Reconnect the battery.

DESIGNATED FUSE:

- D1, D2 types: 7.5A, 10A, 15A, 30A
- R1, R2, R3 types: 10A, 15A, 30A



12. MAINTENANCE



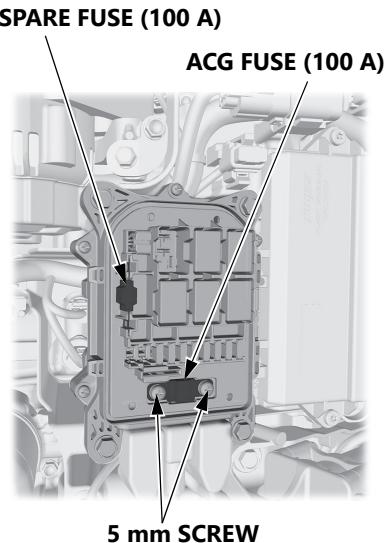
(D1, D2 types)

Fuse No.	Rating	Component(s) or Circuit(s) Protected
1	100 A	ACG, Battery
2	15 A	GROUND
3	7.5 A	Accessory
4	30 A	Main relay, Starter relay
5	7.5 A	Remote control system
6	30 A	Shift actuator
7	15 A	Throttle body
8	10 A	Fuel pump (High pressure side)
9	10 A	Sensors, ECU, DLC, SVS
10	15 A	Injectors, Ignition coils
11	15 A	Injectors, Ignition coils
	3 A	Power tilt switch, VST Relay

(R1, R2, R3 types)

Fuse No.	Rating	Component(s) or Circuit(s) Protected
1	100 A	ACG, Battery
4	30 A	Main relay, Starter relay
5	10 A	Remote control system
8	10 A	Fuel pump (High pressure side)
9	10 A	Sensors, ECU, DLC, SVS
10	15 A	Injectors, Ignition coils
11	15 A	Injectors, Ignition coils
	3 A	Power tilt switch, VST Relay

ACG Fuse



NOTICE

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

Replacement

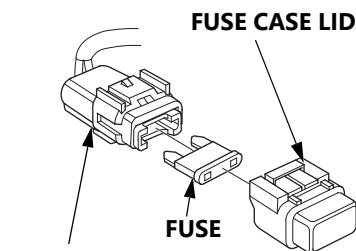
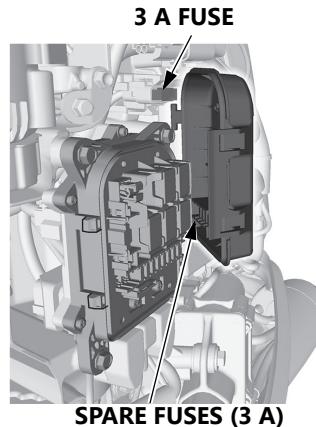
A spare fuse is located in the fuse holder.

1. Stop the engine.
2. Remove the engine cover.
3. Remove the junction box lid (see page 167).
4. Remove the old fuse by removing two 5 mm screws.
5. Install a new fuse by tightening two 5 mm screws.
6. Reinstall the junction box lid, and the engine cover.
7. Reconnect the battery.

DESIGNATED FUSE:

100 A

3 A Fuse



12. MAINTENANCE

Replacement

A spare fuse is located on the reverse side of the junction box lid.

1. Stop the engine.
2. Remove the engine cover.
3. Remove the junction box lid (see page 167).
4. Remove the fuse case from the bracket.
5. Remove the fuse case lid.
6. Pull the old fuse out of the fuse case with the fuse puller supplied in the fuse holder (see page 168).
7. Install a new fuse.
8. Be sure to check that the fuse case lid is securely locked.
9. Reinstall the fuse case into the bracket.
10. Reinstall the junction box lid, and the engine cover.
11. Reconnect the battery.

DESIGNATED FUSE:

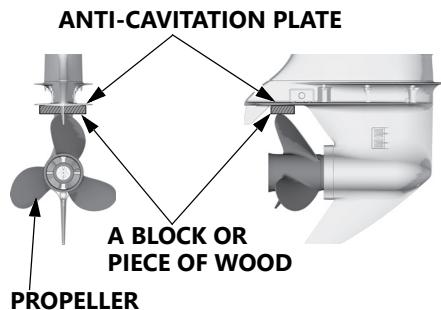
3 A

PROPELLER REPLACEMENT

⚠ WARNING

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

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



When replacing the propeller, put a suitable block or piece of wood between the propeller and the anti-cavitation plate to prevent the propeller from rotating.

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

Removal

1. Remove the cotter pin, unscrew the castle nut, remove the washer, and then remove the propeller and thrust washer.
2. Inspect the propeller shaft for any fishing line or debris.

Installation

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

1. Apply marine grade grease to the propeller shaft.
2. Install the thrust washer with the grooved side toward the gear case.
3. Install the propeller.
4. Install the washer as shown on the next page.
5. Lightly tighten the castle nut by hand or wrench until the propeller has no free play.
6. Tighten the castle nut using a torque wrench.

TIGHTENING TORQUE:

56 N·m (5.7 kgf·m, 41 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.

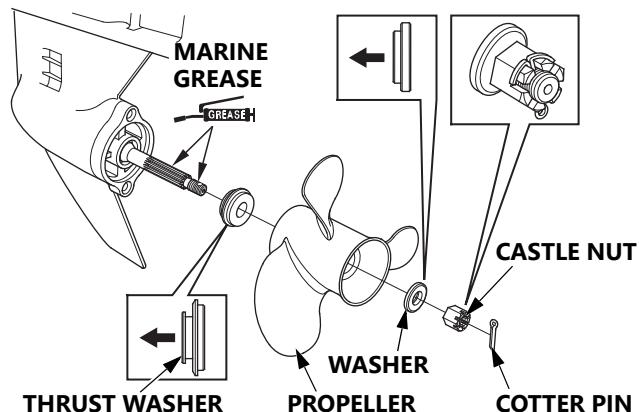
NOTICE

- **TIGHTENING TORQUE LIMIT: 128 N·m (13 kgf·m, 94 lbf·ft)**
Do not tighten the castle nut above the TIGHTENING TORQUE LIMIT, doing so can damage the propeller and shaft.

8. Be sure to replace the cotter pin with a new one.
 - Use a Honda Genuine stainless steel cotter pin or equivalent cotter pin to lock the pin in place and bend the pin ends.

12. MAINTENANCE

Note that the castle nut wrench is not included with the tool set that comes with the outboard motor. Contact your Honda outboard motor dealer for additional tool information.



WHEN COLLIDING WITH AN UNDERWATER OBSTACLE

If you hit an underwater obstacle while underway, stop the engine immediately and inspect the outboard motor for any damage. If there are any abnormalities or if you cannot determine whether there is an abnormality, proceed slowly to the nearest port with extreme caution. After arriving at the port, have the outboard motor inspected and any necessary repairs carried out by a dealer or service center before restarting the engine.

SUBMERGED OUTBOARD MOTOR

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

As soon as possible, take the outboard motor to a Honda outboard motor dealer for inspection and service.

Take the following measures until the outboard motor can be disassembled and serviced.

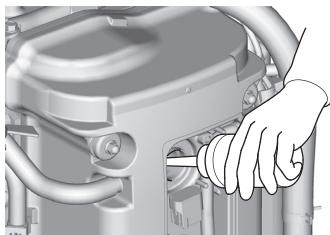
1. Remove the engine cover (see page 73), and rinse the outboard motor with fresh water to remove salt water, sand, mud, etc.
2. Drain the vapor separator (see page 176).

NOTICE

- **If the outboard motor was running when it submerged, there may be mechanical damage, such as bent connecting rods. Do not attempt to run the outboard motor until it has been inspected and repaired.**

3. Change the engine oil (see page 151).

4. Remove all spark plugs (see page 153), and remove the emergency stop switch clip from the emergency stop switch. Operate the starter to expel water from the engine's cylinder.



5. Put a teaspoon of engine oil into each spark plug hole to lubricate the inside of the cylinders.
Reinstall the spark plugs.
6. Install the engine cover and lock the latch securely (see page 74).
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 anti-cavitation plate).
- 8. As soon as possible, take the outboard motor to a 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 Honda 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 (clog the fuel system, cause sticking valves). Such damage caused by spoiled fuel is not covered by the warranty.

To avoid this please strictly follow these recommendations:

- Only use specified gasoline (see page 78).
- 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.

Storage Procedure

⚠ 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.

- 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.
- **KEEP OUT OF REACH OF CHILDREN.**

1. Remove the engine cover (see page 73).
2. Inspect the fuel filter with water separator (low-pressure side). If water has collected inside it or there is a clog, such as sediment in the cup, then remove the water or replace the filter (see page 162).
3. Drain the gasoline from the drain screw of the vapor separator (see page 176).
4. Confirm that there is no water or dirt mixed in with the gasoline that you remove.
5. Do the following operation if you find water or dirt mixed in with the gasoline that you remove.
 - 1) Confirm that the drain screw has been tightened.
 - 2) Keep the motor level as you connect a gas tank that has fresh gasoline.

- 3) Use the primer bulb to supply fresh gasoline to the vapor separator.

⚠ CAUTION

Always operate the primer bulb while the drain screw is tight. If the drain screw is loose, then gas will leak.

- 4) Start the engine and run it at idle for 1 minute.

NOTICE

- **Always start the engine under normal operating conditions (while the propeller is in the water). Never start it while the propeller is out of the water. Doing so will damage the engine.**

- 5) Drain the gasoline from the drain screw of the vapor separator (see page 176).

- 6) Confirm that there is no water or dirt mixed in with the gasoline that you remove.
- 7) If you find water or dirt in the gasoline that you remove, then repeat steps 1) to 6) until you can confirm there is no water or dirt.

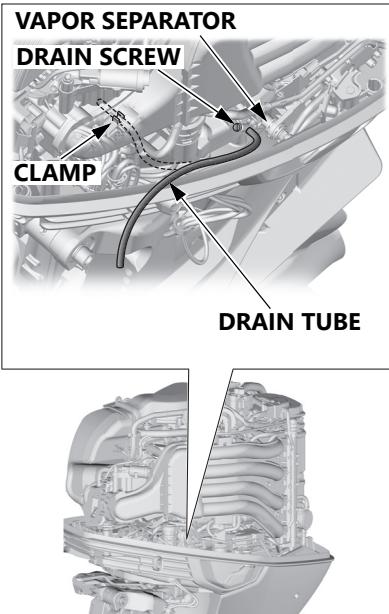
13. STORAGE

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.

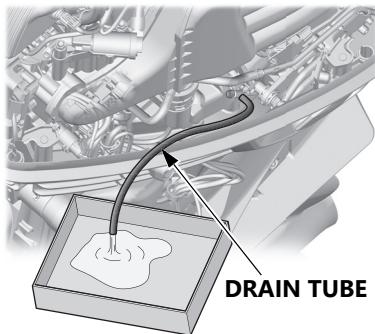
- Be careful not to spill fuel. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before storing or transporting the outboard motor.
- Do not smoke or allow flames or sparks where fuel is drained or stored.
- **KEEP OUT OF REACH OF CHILDREN.**



Drain the fuel into a suitable fuel container.

1. Remove the engine cover (see page 73).
2. Unhook the drain tube from the clamp.
3. Set the end of the tube toward the outside of the outboard motor. Draining the fuel becomes easier when the front end of the drain tube is as low as possible.
4. Loosen the vapor separator drain screw.
5. Tilt up the outboard motor.

6. After the fuel starts flowing out the drain tube, tilt the outboard motor down to the vertical position and allow the vapor separator to finish draining.



7. After draining thoroughly, tighten the drain screw securely.
8. Attach the drain hose on the clamp.

ENGINE OIL

1. Change the engine oil (see page 151).
2. Remove the emergency stop switch clip from the emergency stop switch, and remove the spark plugs (see page 153).
3. Pour 1 – 2 teaspoons (5 – 10 cm³) of clean engine oil into the cylinders.
4. Rotate the engine a few revolutions to distribute the oil in the cylinders.
5. Reinstall the spark plugs (see page 154).

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.

13. STORAGE

- Keep flames and sparks away, and do not smoke in the area.

ANTIDOTE: If electrolyte gets into your eyes, flush thoroughly with warm water for at least 15 minutes and call a physician immediately.

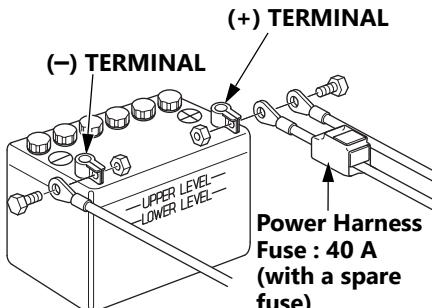
- **POISON:** Electrolyte is poison.

ANTIDOTE

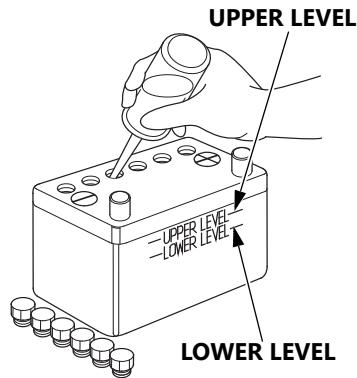
– External: Flush thoroughly with water.

– Internal: Drink large quantities of water or milk. Follow with milk of magnesia or vegetable oil, and call a physician immediately.

- **KEEP OUT OF REACH OF CHILDREN.**



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



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

OUTBOARD MOTOR POSITION



OUTBOARD MOTOR STAND

Transport and store the outboard motor vertically as shown above. Attach the stern bracket to a 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.



CAUTION

Do not place the outboard motor on its side during a prolonged period of storage. If you must put the outboard motor on its side to store it, drain the engine oil and then wrap the outboard motor in urethane material or a blanket to protect it as shown in the figure, and then store it starboard side down.

14. DISPOSAL

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

First, do the following inspections yourself. If any troubles remain after that, take the outboard motor to an authorized Honda Outboard Motor dealer. Do not casually disassemble the outboard motor.

WARNING SYSTEM COMES ON

SYMPTOM	POSSIBLE CAUSE	REMEDY
Overheat warning system comes on: <ul style="list-style-type: none">• Overheat indicator comes on.• Overheat warning buzzer sounds.• Engine speed decreases and stops.• Engine speed cannot be increased by opening the throttle.• Engine will stop in 20 seconds after engine speed is limited.	Cooling water intake port clogged.	Clean the cooling water intake port.
	Spark plug has improper heat range.	Replace the spark plug (see page 153 – 156).
Oil pressure warning system comes on: <ul style="list-style-type: none">• Low oil pressure indicator comes on.(Multi-function Display type)• Oil pressure indicator does not come on. (R1 type, R2, R3 types (Switch panel with indicators type))• Oil pressure warning buzzer sounds.• Engine speed decreases.• Engine speed cannot be increased by opening the throttle.	Shortage of engine oil	Add engine oil to the specified level (see page 75).
	Improper engine oil is used.	Change the engine oil (see page 151).

15. TROUBLESHOOTING

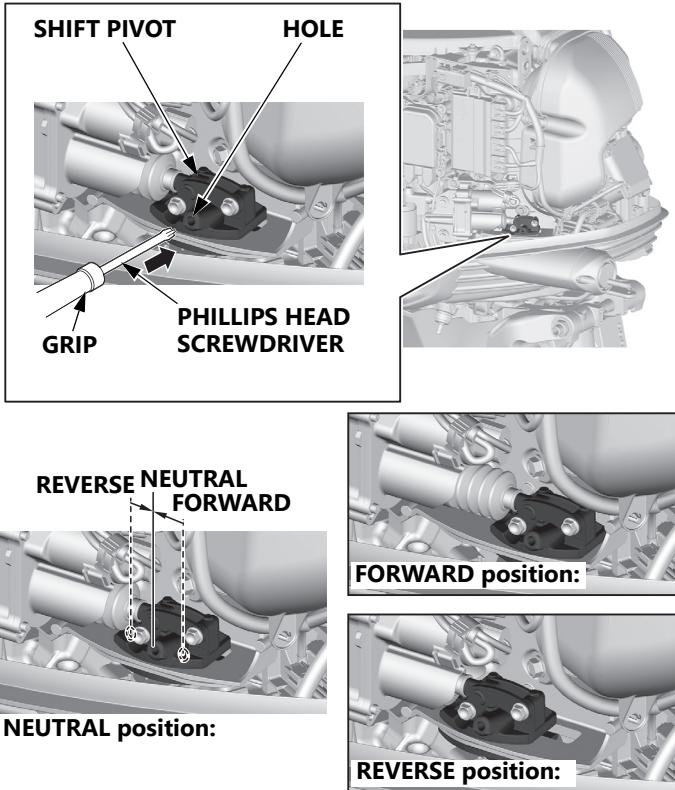
SYMPTOM	POSSIBLE CAUSE	REMEDY
Water separator warning system comes on: <ul style="list-style-type: none">• Water separator warning buzzer sounds.	Water has accumulated in the water separator.	Clean the water separator (see page 160). Check the fuel tank and fuel line for water accumulation. If the buzzer sounds again, consult with an authorized Honda outboard motor dealer.
PGM-FI warning system comes on: <ul style="list-style-type: none">• PGM-FI indicator comes on.• PGM-FI warning buzzer sounds intermittently.• Gear does not shift even if the remote control is operated	Error was detected in the DBW shift system.	Restart the engine. If the problem recurs, consult with an authorized Honda outboard motor dealer.
	Electrical damage or failure of DBW shift actuator.	Shift manually(see page 183). After returning to port, or if the problem persists, consult with an authorized Honda outboard motor dealer.
	PGM-FI warning system is faulty.	Consult with an authorized Honda outboard motor dealer.
	Mechanical damage or failure of DBW shift device.	
ACG warning system comes on: <ul style="list-style-type: none">• ACG indicator comes on.• ACG warning buzzer sounds intermittently.	Battery voltage is too high or low.	Check the battery (see page 84, 164).
	Faulty ACG.	Consult with an authorized Honda outboard motor dealer.

EMERGENCY GEAR SHIFTING (D1, D2 types)

If shifting cannot be performed with the control lever and the shift actuator is electrically damaged or malfunctioning, manual shifting may be available. Perform the shift operation according to the following procedure, return to port at low speed and consult your servicing dealer.

1. Set the remote control lever in the NEUTRAL position (see page 25-26).
2. Stop the engine (see page 139).
3. Remove the engine cover (see page 73).
4. Shift gear into neutral by inserting the phillips screwdriver with the grip of the tool kit (see page 148) into the hole of the shift pivot and moving the shaft.
5. Start the engine (see page 87).
6. Shift gear into FORWARD or REVERSE by moving the shift pivot with the Phillips head screwdriver with the grip from the tool kit.

After returning to port, stop the engine and anchor the boat.



16. SPECIFICATIONS

MODEL	BF115JK1					
Description Code	BBWJ					
Type	LR	LD	XR	XD	XCR	XCD
Overall length	913 mm (35.9 in)					
Overall width	618 mm (24.3 in)					
Overall height	1,688 mm (66.5 in)	1,815 mm (71.5 in)				
Transom height (when transom angle at 12°)	508 mm (20.0 in)	635 mm (25.0 in)				
Dry mass (weight)*	221 kg (487 lbs)	224 kg (494 lbs)	227 kg (500 lbs)	230 kg (507 lbs)		
Rated power	84.6 kW (115 PS)					
Full throttle range	4,500 – 6,000 min ⁻¹ (rpm)					
Engine type	4 stroke DOHC in-line 4-cylinder					
Displacement	2,354 cm ³ (143.6 cu-in)					
Spark plug gap	1.0 – 1.1 mm (0.039 – 0.043 in)					
Remote control steering system	Motor-mounted					
Starter system	Electric starter					
Ignition system	Full transistor battery					

Lubrication system	Trochoid pump pressure lubrication
Specified oil	Engine: API standard SG, SH, SJ, SL SAE 10W-30 Gear case: API standard GL-4 SAE 90 Hypoid gear oil
Oil capacity	Engine: 7.35 L (7.77 US qt, 6.47 Imp qt) (When oil change: 6.5 L (6.9 US qt, 5.7 Imp qt)) Gear case: 0.98 L (1.04 US qt, 0.86 Imp qt)
D.C. output	12V – 40A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	IZFR6K11 (NGK)
Fuel pump	High pressure side: Electromagnetic type Low pressure side: Mechanical type
Fuel	Unleaded gasoline (91 research octane, 86 pump octane, or higher)
Gear shift	Dog type (Forward – Neutral – Reverse)
Steering angle	30° right and left
Tilt angle (transom angle at 12°)	68° (Stageless)
Trim angle (transom angle at 12°)	– 4° to 16°

* Without battery cable, with propeller

Honda outboards are power rated in accordance with ISO8665 (propeller shaft output).

16. SPECIFICATIONS

MODEL	BF135DK1							
Description Code	BBVJ							
Type	LR	LD	LCR	LCD	XR	XD	XCR	XCD
Overall length	913 mm (35.9 in)							
Overall width	618 mm (24.3 in)							
Overall height	1,688 mm (66.5 in)			1,815 mm (71.5 in)				
Transom height (when transom angle at 12°)	508 mm (20.0 in)			635 mm (25.0 in)				
Dry mass (weight)*	221 kg (487 lbs)	224 kg (494 lbs)	227 kg (500 lbs)	224 kg (494 lbs)	227 kg (500 lbs)	230 kg (507 lbs)		
Rated power	99.3 kW (135 PS)							
Full throttle range	5,000 – 6,000 min ⁻¹ (rpm)							
Engine type	4 stroke DOHC in-line 4-cylinder							
Displacement	2,354 cm ³ (143.6 cu-in)							
Spark plug gap	1.0 – 1.1 mm (0.039 – 0.043 in)							
Remote control steering system	Motor-mounted							
Starter system	Electric starter							
Ignition system	Full transistor battery							

Lubrication system	Trochoid pump pressure lubrication
Specified oil	Engine: API standard SG, SH, SJ, SL SAE 10W-30 Gear case: API standard GL-4 SAE 90 Hypoid gear oil
Oil capacity	Engine: 7.35 L (7.77 US qt, 6.47 Imp qt) (When oil change: 6.5 L (6.9 US qt, 5.7 Imp qt)) Gear case: 0.98 L (1.04 US qt, 0.86 Imp qt)
D.C. output	12V – 40A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	IZFR6K11 (NGK)
Fuel pump	High pressure side: Electromagnetic type Low pressure side: Mechanical type
Fuel	Unleaded gasoline (91 research octane, 86 pump octane, or higher)
Gear shift	Dog type (Forward – Neutral – Reverse)
Steering angle	30° right and left
Tilt angle (transom angle at 12°)	68° (Stageless)
Trim angle (transom angle at 12°)	– 4° to 16°

* Without battery cable, with propeller

Honda outboards are power rated in accordance with ISO8665 (propeller shaft output).

16. SPECIFICATIONS

MODEL	BF150DK1							
Description Code	BBTJ							
Type	LR	LD	LCR	LCD	XR	XD	XCR	XCD
Overall length	913 mm (35.9 in)							
Overall width	618 mm (24.3 in)							
Overall height	1,688 mm (66.5 in)			1,815 mm (71.5 in)				
Transom height (when transom angle at 12°)	508 mm (20.0 in)			635 mm (25.0 in)				
Dry mass (weight)*	221 kg (487 lbs)	224 kg (494 lbs)	227 kg (500 lbs)	224 kg (494 lbs)	227 kg (500 lbs)	230 kg (507 lbs)		
Rated power	110.3 kW (150 PS)							
Full throttle range	5,000 – 6,000 min ⁻¹ (rpm)							
Engine type	4 stroke DOHC VTEC in-line 4-cylinder							
Displacement	2,354 cm ³ (143.6 cu-in)							
Spark plug gap	1.0 – 1.1 mm (0.039 – 0.043 in)							
Remote control steering system	Motor-mounted							
Starter system	Electric starter							
Ignition system	Full transistor battery							

Lubrication system	Trochoid pump pressure lubrication
Specified oil	Engine: API standard SG, SH, SJ, SL SAE 10W-30 Gear case: API standard GL-4 SAE 90 Hypoid gear oil
Oil capacity	Engine: 7.35 L (7.77 US qt, 6.47 Imp qt) (When oil change: 6.5 L (6.9 US qt, 5.7 Imp qt)) Gear case: 0.98 L (1.04 US qt, 0.86 Imp qt)
D.C. output	12V – 40A
Cooling system	Water cooling with thermostat
Exhaust system	Water exhaust
Spark plugs	IZFR6K11 (NGK)
Fuel pump	High pressure side: Electromagnetic type Low pressure side: Mechanical type
Fuel	Unleaded gasoline (91 research octane, 86 pump octane, or higher)
Gear shift	Dog type (Forward – Neutral – Reverse)
Steering angle	30° right and left
Tilt angle (transom angle at 12°)	68° (Stageless)
Trim angle (transom angle at 12°)	– 4° to 16°

* Without battery cable, with propeller

Honda outboards are power rated in accordance with ISO8665 (propeller shaft output).

16. SPECIFICATIONS

Noise and Vibration

MODEL	BF115JK1	BF135DK1	BF150DK1
CONTROL SYSTEM	R (Remote control)	R (Remote control)	R (Remote control)
Sound pressure level at operator's ears (2006/42/EC, ICOMIA 39-94)	80 dB (A)	80 dB (A)	82 dB (A)
Uncertainty	3 dB (A)	1 dB (A)	3 dB (A)
Measured sound power level (Reference to EN ISO3744)	90 dB (A)	90 dB (A)	92 dB (A)
Uncertainty	3 dB (A)	1 dB (A)	3 dB (A)
Vibration level at hand arm (2006/42/EC, ICOMIA 38-94)	–	–	–
Uncertainty	–	–	–

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

Compass safe distance

MODEL	BF115JK1	BF135DK1	BF150DK1
Compass safe distance (IEC 60945)	450 mm (17.7 in)		

DBW REMOTE CONTROL BOX, KEY SWITCH PANEL, CONTROL UNIT

17. MAJOR Honda DISTRIBUTOR ADDRESSES

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

For European

AUSTRIA

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2351 Wiener Neudorf
Tel.: +43 (0)2236 690 0
Fax: +43 (0)2236 690 480
<http://www.honda.at>
✉ HondataPP@honda.co.at

BELGIUM

Honda Motor Europe Ltd

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1731 Zellik
Tel.: +32 2620 10 00
Fax: +32 2620 10 01
<http://www.honda.be>
✉ bh_pe@honda-eu.com

CYPRUS

Powerline Products Ltd

Cyprus - Nicosia
Vasilias 18 2232 Latsia
Tel.: 0035799490421
✉ info@powerlinecy.com
<http://www.powerlinecy.com>

FINLAND

OY Brandt AB.

Tuupakantie 7B
01740 Vantaa
Tel.: +358 207757200
Fax: +358 9 878 5276
<http://www.brandt.fi>

BALTIC STATES (Estonia/Latvia/ Lithuania)

NCG Import Baltics OU

Meistri 12
13517 Tallinn
Harju County Estonia
Tel.: +372 651 7300
Fax: +372 651 7301
✉ info.baltic@nchgimport.com

BULGARIA

Premium Motor Ltd

Andrey Lyapchev Blvd no 34
1797 Sofia
Bulgaria
Tel.: +3592 423 5879
Fax: +3592 423 5879
<http://www.hondamotor.bg>
✉ office@hondamotor.bg

CZECH REPUBLIC

BG Technik cs, a.s.

U Zavodiste 251/8
15900 Prague 5 - Velka
Chuchle
Tel.: +420 2 838 70 850
Fax: +420 2 667 111 45
<http://www.honda-stroje.cz>

FRANCE

Honda Motor Europe Ltd

Division Produit d'Équipement
Parc d'activités de Pariest,
Allée du 1er mai
Croissy Beaubourg BP46, 77312
Marne La Vallée Cedex 2
Tel.: 01 60 37 30 00
Fax: 01 60 37 30 86
<http://www.honda.fr>
✉ espace-client@honda-eu.com

BELARUS

JV "Scanlink" Ltd.

Montazhnikov lane 4th, 5-16
Minsk 220019
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Tel.: +375172349999
Fax: +375172380404
✉ honda@scanlink.by

CROATIA

Fred Bobek d.o.o.

HONDA MARINE
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✉ centrala@honda-croatia.com

DENMARK

TIMA A/S

Ryttermarken 10
DK-3520 Farum
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Fax: +45 36 77 16 30
<http://www.tima.dk>

GERMANY

Honda Deutschland Niederlassung der Honda Motor Europe Ltd.

Hanauer Landstraße 222-224
D-60314 Frankfurt
Tel.: 01805 20 90
Fax: +49 (0)69 83 20 20
<http://www.honda.de>
✉ info@post.honda.de

17. MAJOR Honda DISTRIBUTOR ADDRESSES

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

For European (continued)

GREECE

Saracakis Brothers S.A.

71 Leoforos Athinon
10173 Athens
Tel.: +30 210 3497809
Fax: +30 210 3467329
<http://www.honda.gr>
✉ info@saracakis.gr

HUNGARY

MP Motor Co., Ltd.

Kamaraerdei ut 3.
2040 Budaors
Tel.: +36 23 444 971
Fax: +36 23 444 972
<http://www.hondakisgepek.hu>
✉ info@hondakisgepek.hu

IRELAND

Two Wheels Ltd

M50 Business Park, Ballymount
Dublin 12
Tel.: +353 1 4381900
Fax: +353 1 4607851
<http://www.hondaireland.ie>
✉ sales@hondaireland.ie

ISRAEL

Mayer's Cars and Trucks Co.Ltd. -

Honda Division

Shevach 5, Tel Aviv, 6777936
Israel
+972-3-6953162
✉ OrenBe@mct.co.il

ITALY

Honda Motor Europe Ltd

Via della Cecchignola, 13
00143 Roma
Tel.: +848 846 632
Fax: +39 065 4928 400
<http://www.hondaitalia.com>
✉ info.power@honda-eu.com

NORTH MACEDONIA

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HONDA MARINE
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Tel.: 00385 22 444336
Fax: 00385 22 440500
✉ centrala@honda-croatia.com

MALTA

The Associated Motors

Company Ltd.

New Street in San Gwakkin Road
Mriehel Bypass, Mriehel QRM17
Tel.: +356 21 498 561
Fax: +356 21 480 150
✉ mgalea@gasanzammit.com

NORWAY

KELLOX

Box 24, N-141
Trollåsveien 36, 14144
Trollåsen, Norway
Mobile: +47 47 80 90 00
Phone: +47 64 97 61 00
<http://kellox.no/>
✉ support@kellox.no

POLAND

Aries Power Equipment

Puławska 467
02-844 Warszawa
Tel.: +48 (22) 861 43 01
Fax: +48 (22) 861 43 02
<http://www.ariespower.pl>
<http://www.mojahonda.pl>
✉ info@ariespower.pl

PORTUGAL

GROW Productos de Força

Portugal

Rua Fontes Pereira de Melo, 16
Abrunheira, 2714-506 Sintra
Tel.: +351 211 303 000
Fax: +351 211 303 003
<http://www.grow.com.pt>
✉ geral@grow.com.pt

ROMANIA

Agrisorg SRL

Sacadat Str Principala
Nr 444/A Jud. Bihor
Romania
Tel.: (+4) 0259 458 336
✉ info@agrisorg.com

SERBIA & MONTENEGRO

Fred Bobek d.o.o.

HONDA MARINE
Put Gaćeleza 5b
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Tel.: 00385 22 444336
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✉ centrala@honda-croatia.com

17. MAJOR Honda DISTRIBUTOR ADDRESSES

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

For European (continued)

SLOVAK REPUBLIC

Honda Motor Europe Ltd
Slovensko, organizačná zložka
Prievozská 6 821 09 Bratislava
Tel.: +421 2 32131111
Fax: +421 2 32131112
<http://www.honda.sk>

SWEDEN

Honda Motor Europe Ltd filial

Sverige
Box 31002 - Långhusgatan 4
215 86 Malmö
Tel.: +46 (0)40 600 23 00
Fax: +46 (0)40 600 23 19
<http://www.honda.se>

✉ hpesinfo@honda-eu.com

SLOVENIA

Fred Bobek d.o.o.
HONDA MARINE
Put Gaćeleza 5b
HR 22211 Vodice
Tel.: 00385 22 444336
Fax.: 00385 22 440500
✉ centrala@honda-croatia.com

SPAIN & all Provinces

Greens Power Products, S.L.
Polígono Industrial Congost –
Av Ramon Ciurans nº2
08530 La Garriga - Barcelona
Tel.: +34 93 860 50 25
Fax: +34 93 871 81 80
<http://www.hondaencasa.com>

TURKEY

Anadolu Motor Uretim Ve

Pazarlama As

Sekerpinar Mah
Albayrak Sok No 4
Cayirova 41420
Kocaeli
Tel.: +90 262 999 23 00
Fax: +90 262 658 94 17
<http://www.anadolumotor.com.tr>

✉ antor@antor.com.tr

UKRAINE

Dnipro Motor LLC

3, Bondarsky Alley,
Kyiv, 04073, Ukraine
Tel.: +380 44 537 25 76
Fax: +380 44 501 54 27
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UNITED KINGDOM

Honda Motor Europe Ltd

Cain Road
Bracknell
Berkshire
RG12 1 HL
Tel.: +44 (0)845 200 8000
<http://www.honda.co.uk>

18. "UK DECLARATION OF CONFORMITY" CONTENT OUTLINE

1) UK-DECLARATION OF CONFORMITY

2) THE UNDERSIGNED, (13), REPRESENTING THE MANUFACTURER, HEREWITHE DECLARIES
THAT THE PRODUCT IS IN CONFORMITY WITH THE PROVISIONS OF THE FOLLOWING STATUTORY REQUIREMENTS

The Supply of Machinery (Safety) Regulations 2008	SI 2008 No. 1597
Electromagnetic Compatibility Regulations 2016	SI 2016 No.1091

3) REFERENCE TO DESIGNATED STANDARDS:

EN 61000-6-1: 2007, EN 55012:2007+A1:2009

4) DESCRIPTION OF THE MACHINERY

5) Generic denomination: Outboard engine 6) Function: Propulsion system 7) MAKE: Honda/Tohatsu

8) TYPE: 9) SERIAL NUMBER:

7) MAKE: Honda/Tohatsu

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:

12) SIGNATURE:

13) NAME:

14) TITLE

12)

13)

15)

16) DATE:

17) PLACE

19. "EC DECLARATION OF CONFORMITY" CONTENT OUTLINE

1) EC-DECLARATION OF CONFORMITY

2) THE UNDERSIGNED, (13), REPRESENTING THE MANUFACTURER, HEREWITNESS DECLARER
THAT THE PRODUCT IS IN CONFORMITY WITH THE PROVISIONS OF THE FOLLOWING EC-DIRECTIVES

2006/42/EC on machinery, 2014/30/EU on electromagnetic compatibility

3) REFERENCE TO HARMONIZED STANDARDS:

EN 61000-6-1: 2007, EN 55012:2007+A1:2009

4) DESCRIPTION OF THE MACHINERY

5) Generic denomination: Outboard engine 6) Function: Propulsion system 7) MAKE: Honda/Tohatsu

8) TYPE:

9) SERIAL NUMBER:

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 – Aalst Office
Wijngaardveld 1 (Noord V)
9300 Aalst - Belgium

12)

12) SIGNATURE:

12)
13)
15)

13) NAME:

14) TITLE

16) DATE:

16)

17) PLACE:

17)

19. "EC DECLARATION OF CONFORMITY" CONTENT OUTLINE

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

français (FRENCH)

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) ADDD 17) LUOGO

italiano (ITALIAN)

1) EG-KONFORMITÄTSERKLÄRUNG 2) DER UNTERZEICHNER, (13), DER DEN HERSTELLER VERTRITT, ERKLÄRT
HIERMIT, DAB 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) UNTERSCHİFT 13) NAME 14) TITEL 15) Qualitätsi Cherung 16) DATUM 17) ORT

deutsch (GERMAN)

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) TYP 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

nederlands (DUTCH)

1) ΕΚΔΗΛΩΣΗ 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 ΜΗΧΑΝΙΜΑΤΟΣ
5) Γενική ονομασία : Εξολόθριβα 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

Ελληνικά (GREEK)

1) EF OVERENSTEMMELSE SERKLAERING 2) UNDERTEGNEDE, (13), DER PEPRÆSENTERER FABRIKANTEN, ERKLÆRER
HERMED AT PRODUKTET ER I OVERENSTEMMELSE MED BESTEMMELSERNE I FØLGE EF DIREKTIVERNE
3) REFERENCE TIL HARMONISERDE STANDARDER 4) BESKRIVELSE AF MASKINEN
5) FÆLLESBETEGNELSE : Utensbordsmotor 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

dansk (DANISH)

19. "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 fuera borda 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	español (SPANISH)
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 SEGUINTEIS 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	português (PORTUGUESE)
1) EY-VAATIMUSTENKAUSUUSVAKUUTTAJA 2) ALLEKIRJOITTANUT, (13), JOKA EDUSTAA VALMISTAJAAN, VAKUUTTAÄÄ TÄTEN, ETTÄ TUOTE ON SEURAVIEN EU-DIREKTIIVIEN VAATIMUSTEN MUKAINEN 3) VITTAUS YHTEISIIN STANDARDEIHIN 4) KUVAUS LAITTEESTA 5) Yleisarvomääri : Peramootori 6) Toiminto : Työntöjärjestelmä 7) MERKKI 8) MALLI 9) SARJANUMERO 10) VALMISTAJA 11) Valmistajan edustaja ja teknisten dokumenttien laatta 12) ALLEKIRJOITUS 13) NIMI 14) TITTELI 15) Laatupäällikkö 16) PÄIVÄMÄÄRÄ 17) PAIKKA	suomi / suomen kieli (FINNISH)
1) ЕО-ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ 2) ДОЛУ ПОДПИСАЛИЯТ СЕ (13), ПРЕДСТАВЛЯВАЩ ДИСТРИБУТОРА, ДЕКЛАРИРА, ЧЕ ПРОДУКТ 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	български (BULGARIAN)
1) EG-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE 2) UNDERTECKNAD, (13), REPRESENTERANDE TILLVERKARE, FÖRSÄKRAR HÄRMED ATT PRODUKTEN ÖVERENSSTÄMMER MED BESTÄMMELSERNA I FÖLJANDE EG-DIREKТИVE 3) REFERERANDE TILL HARMONISERADE STANDARDER 4) BESKRIVNING AV UTRUSTNINGEN 5) Allmän benämning : Utombordosmotor 6) Funktion : Framdrivningssystem 7) MERKKI 8) TYPBETECKNING 9) SERIENUMMER 10) TILLVERKARE 11) Auktoriseraad representant och ska kunna sammantäcka teknisk dokumentationen. 12) SIGNATUR 13) NAMN 14) TITEL 15) Kvalitetschef 16) DATUM 17) ORT	svenska (SWEDISH)
1) DEKLARACJA ZGODNOŚCI 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 : Uklad 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	polski (POLISH)

19. "EC DECLARATION OF CONFORMITY" CONTENT OUTLINE

<p>1) MEGFELELŐSEGI NYILATKOZAT 2) ALULÍROTT (13), MINT A GYÁRTÓ KÉPVISELŐJE NYILATKOZIK, HOGY AZ ALÁBBI TERMÉK mindenben megfelel a következő EC előírások rendelkezéseinél: 98/37/EC, 89/336/EEC-93/68/EC: 3) ÖSSZHANGBAN A KÖV. SZABVÁNYOKKAL 4) GÉP LEIRÁSA 5) Általános megnevezés : KÜLSŐ CSÓNAKMOTOR 6) Funkció : Hajtás rendszer 7) GYÁRTOTTA 8) TÍPUS 9) SORSZAM 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>	magyar (HUNGARIAN)
<p>1) Prohlášení o shodě 2) ZÁSTUPCE VÝROBCE, (13), SVÝ PODPISEM POTVRZUJE, ŽE DANÝ VÝROBEK JE V SOULADU S NÁSLEDUJÍCÍMI SMĚRNICAMI 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) Zpříjemněný zástupce a osoba pověřená kompletací technické dokumentace 12) PODPIS: 13) JMÉNO: 14) POZICE 15) Manažer kvality 16) DATUM: 17) MÍSTO:</p>	česká (CZECH)
<p>1) ES VYHLÁSENIE O ZHODE 2) DOLUPODPLÍSANÝ, (13), ZASTUPUJÚCÍ VÝROBCU, TÝMTO DEKLARUJE, ŽE PRODUKT JE V SÚLADE S USTANOVENIAMI NÁSLEDOVNÝCH SMERNÍK ES 3) REFERENCIA K HARMONIZOVANÝM STANDARDOM 4) IDENTIFIKÁCIA STROJOV 5) Druhové označenie : ZÁVESNÝ LODNÝ MOTOR 6) Funkcia : Systém pohunu 7) VÝROBCA/ZNAČKA 8) TYP 9) SÉRIOVÉ ČÍSLO 10) VÝROBCA 11) Autorizovaný zástupca schopný zostaviť technickú dokumentáciu 12) PODPIS 13) MENO 14) POZÍCIA 15) MANAŽER KVALITY 16) DÁTUM 17) MÍSTO</p>	slovenčina (SLOVAK)
<p>1) ER SAM SVARSÆRKLERING 2) UNDERTEGNEDE, (13), SOM REPRESENTERER FABRIKANTEN, ERKLÆRER HERVED AT PRODUKTET ER I OVERENSSTEMMELSE MED BESTEMMELSENE I FØLGENDE EU DIREKTIV 3) REFERANSER TIL HARMONISERDE STANDARDE 4) BESKRIVELSE AV MASKINEN 5) Felles benevnelse : Utendørsmotor 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>	norsk (NORWEGIAN)
<p>1) DECLARATIE DE CONFORMITATE. 2) SUBSEM NATUL, (13), REPREZENTANT PE PRODUCATOR, DECLAR PRIN PREZE NTA CA PRODUSUL ESTE IN CONFORMITATE CU PREVEDERILE URMATOROARELOR DIRECTIVE CE 3) REFERIRE LA STANDARDELE ARMONIZATE: 4) DESCRIEREA ECHIPAMENTULUI 5) Denumire generică : 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 abilităt să realizeze documentație tehnică 12) SEMNATURA 13) NUME 14) TITLUL 15) DIRECTOR DE CALITATE 16) DATA 17) LOCATIE</p>	română (ROMANIAN)
<p>1) EU VASTAVUSDEKLARATSIOON 2) ALLAKIRJUTANU, (13), ESINDADES TOOTJAT, DEKLAREERIB SIINKOHAL, ET TOODE ON VASTAVUSES JÄRGMISTE EC DIREKTIIVIDE SÄTESTEGA 3) VIIDE ÜHTLUSTATUD STANDARDITELE: 4) MEEHANISM 5) KIRJELDUS 5) Üldnimetus : Pardaväline mootor 6) Funktsioon : Töökursustee 7) VALMISTAJA: 8) TÜÜP: 9) SEERIANUMBER: 10) TOOTJA: 11) Volitud esindaja, kes on pädev täitma tehnilist dokumentatsiooni 12) ALLKIRI: 13) NIMI: 14) AMET 15) Kvaliteedi juht 16) KUUPÄEV: 17) KOHT:</p>	eesti (ESTONIAN)

19. "EC DECLARATION OF CONFORMITY" CONTENT OUTLINE

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 3) Atsaucoties uz saskapotajiem standartiem 4) Iekārtas apraksts 5) Vispārējais nosukums : Piekarināmās laivas dzīnējs 6) Funkcija : Virzošā spēka sistēma 7) Preču zīme 8) Tips 9) Serijas numurs 10) Izgatavotājs 11) Autorizētās pārstāvis, kas spēj sastādīt tehnisko dokumentāciju 12) Paraksts 13) Vārds, Uzvārds 14) Tituls 15) Kvalitātes vadītājs 16) Datums 17) Vieta	latviešu (LATVIAN)
1) EB ATITIKTIES DEKLARĀCIJA 2) ŽĒMĀUI PASIRAŠES, (13), ATSTOVAUJANTIS GAMINTOJĀ DEKLARUOJA KAD PRODUKTAS ATITINKA REIKALAVIMUS PAGAL ŠĪAS EB DIREKTĪVAS. 3) NUORODA I HARMONIZUOTUS STANDARTUS. 4) MAŠINOS APRAŠYMAS. 5) Bendras pavadīmības : PAKABINAMAS VARIKLIS 6) Funkcija : Varomasis būdas 7) MARKĒ. 8) TIPAS 9) SERIJINIS NUMERIS. 10) GAMINTOJAS. 11) Īgalotasis atstovas ir galintis sudaryti techninę dokumentaciją 12) PARAŠAS. 13) V. PAVARDĒ 14) PAREIGOS 15) KOKYBĒS VADYBININKAS. 16) DATA. 17) VIETA	lietuvių kalba (LITHUANIAN)
1) ES-DEKLARACIJA O USTREZNOSTI 2) PODPISANI (13), PREDSTAVNIK PROIZVAJALCA, IZJAVLJAM DA IZDELKI USTREZAO NASLEDNIM DEKLARACIJAM 3) SKLADNOST Z NASLEDNJIMI STANDARDI 4) OPIS IZDELKOV 5) Vrsta stroja : Izvenkrmi motorij 6) Funkcija : Pogonski sistem 7) PROIZVAJAJA 8) TIP 9) SERIJSKA ŠTEVILKA 10) PROIZVAJALEC 11) Pooblaščeni predstavnik ki lahko predloži tehnično dokumentacijo 12) PODPIS 13) IME 14) FUNKCIJA 15) Direktor presoje 16) DATUM 17) KRAJ	slovenščina (SLOVENIAN)
1) EB-YFIRLYSING 2) UNDIRRITADUR HR, (13) LYSI YFIR FYRIR HOND FRAMLEIDANDA AD VARAN UPPFYLLIR EFTIRFARANDI EC-TILSKIPANIR 3) TILVÍSUN UM HEILDARSTADAL 4) LÝSING Á VÉLBÚNAÐI 5) Flokkur : Utanborðsmótorar 6) Virkni : knúningsafl kerfi 7) FRAM LEIÐSLA 8) GERD 9) SERIÁL NÚMER 10) FRAMLEIÐANDI 11) Löggiildir aðilar og fær um að taka saman tekniskjólin 12) UNDIRSKRIFT 13) NAFN 14) TITILL 15) Skráningstarstjóri 16) DAGSETNING 17) STAÐUR	íslenska (ICELANDIC)
1) AT UYGUNLUK BEYANI 2) AŞAĞIDA İMZASI BULUNAN VE İMALATÇININ YETKİLİ TEMSİLCİSİ OLAN (13) ÜRÜNÜN ŞU AT YÖNETMELİKLERİNİN HÜKÜMLERİNE UYGUN OLDUĞUNU BEYAN EDER. 3) UYUM LAŞTIRILMIŞ STANDARTLARA ATIF 4) MAKİNANIN TARİFİ 5) Flokkur : Diştan takma motor 6) Virkni : tahrîk sistemi 7) MARKA 8) TİP 9) SERİ NUMARASI 10) İMALATÇI 11) Teknik dosyayı hazırlamakla yetkili olan Toplulukta yerleşik yetkili temsilci 12) İMZA 13) ADI 14) ÜNVANI 15) Homologasyon Yöneticisi 16) TARİH 17) YER	Türk (TURKISH)
1)EK-IZJAVA O SUKLADNOSTI 2)POTPIŠANI (13), PREDSTAVNIK PROIZVODAČA, IZJAVLJUJE DA JE PROIZVOD U SUKLADNOSTI S ODREDBAMA SLJEDEĆEG EK PROPISA 3)REFERENCA NA USKLADENE NORME 4)OPIS STROJA 5)Opća vrijednost : Vanbrodski motor 6)Funkcionalnost : Pogonski sustav 7)IZRADIO 8)TIP 9)SERIJSKI BROJ 10)PROIZVODAČ 11) Ovlašteni predstavnik i osoba za sastavljanje tehničke dokumentacije 12) POTPIS 13) IME 14) TITULA 15) Upravitelj homologacije 16) DATUM 17) MJESTO	hrvatski (CROATIAN)

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Printed in Japan