

PREFACE

This instruction provides the proper information for set-up and pre-delivery inspection of the Honda Outboard Motor BF25D•BF30D. Proper set-up and pre-delivery inspection are essential for safe and reliable operation.

It is recommended that the Honda Outboard Motor BF25D•BF30D Shop Manual and Owner's Manual be referred to conjunction with these manuals for more detailed set-up instructions.

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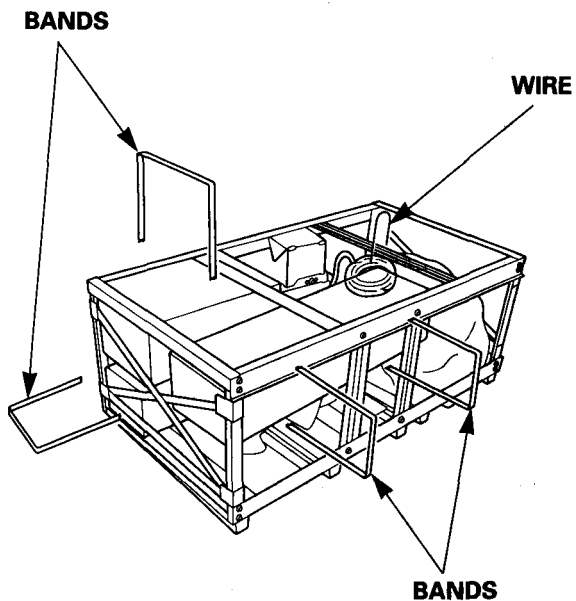
1. UNPACKING

CAUTION:

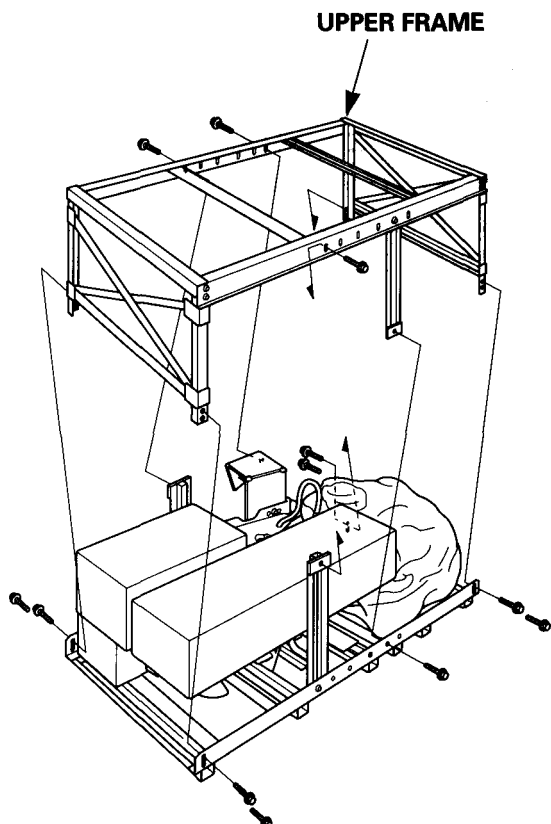
- Wear the gloves during unpacking to protect your hands with the burrs on the frame.
- Take care not to drop the parts contained in the container and do not damage the parts, either.

1) Cut the four bands.

2) Remove the wire that secures the cable.



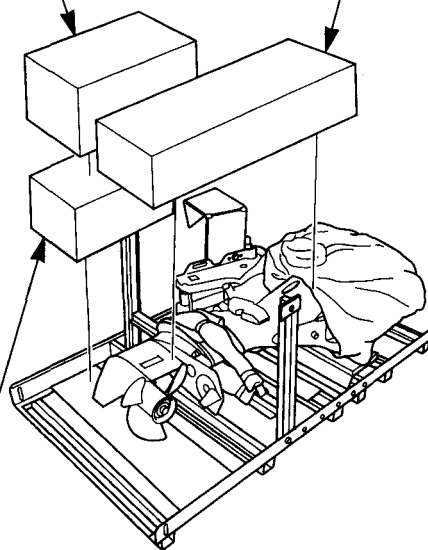
3) Remove the twelve bolts and remove the upper frame.



4) Remove the part boxes.

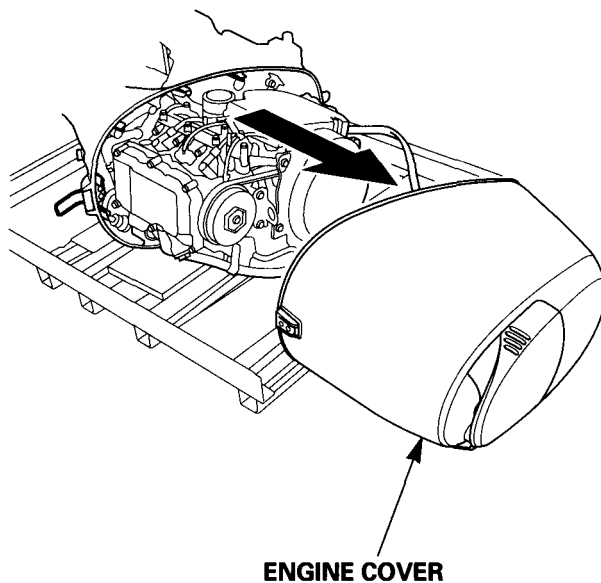
PARTS CONTAINED
IN THE PACKAGE
(FUEL TANK)

PARTS CONTAINED IN
THE PACKAGE
LONG TILLER HANDLE
(LONG TILLER HANDLE
TYPE ONLY)



PARTS CONTAINED IN THE PACKAGE

5) Remove the outboard motor's engine cover.



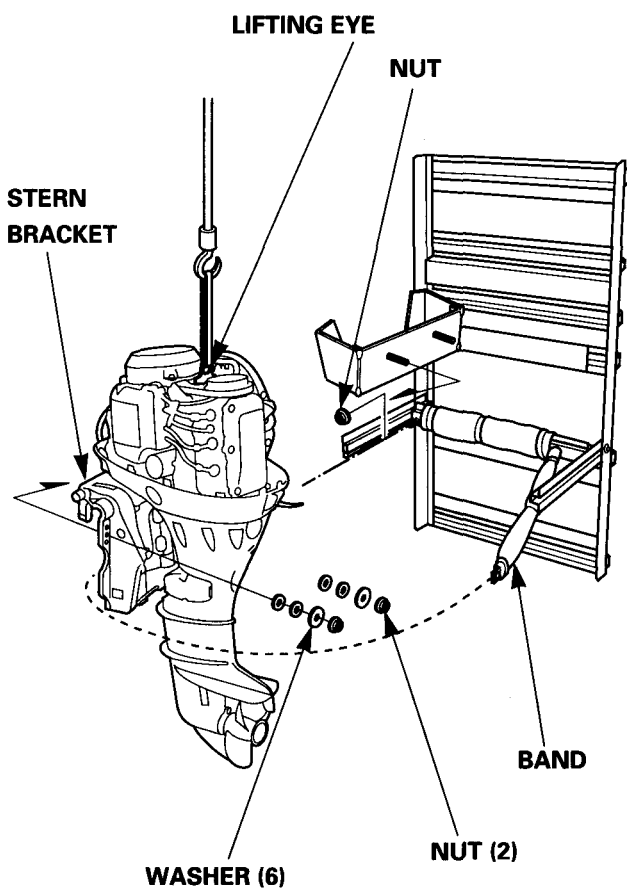
6) Attach the hoist to the lifting eye and lift up the outboard motor together with the frame to raise.

7) Release the band by removing the nut.

8) Remove the nuts and washers that secure the stern bracket, and remove the outboard motor from underside of the frame.

CAUTION:

- Use the hoist which allowable load is 250 kg or above.
- To prevent the hoist from swaying, support the outboard motor with care when lifting it up.
- Do not lower the hoist to place the outboard motor on the ground or table but hold it hang down from the hoist during the operation.



9) Check the parts included in the packing box against the Parts List (see page 44).

2. OUTBOARD MOTOR INSTALLATION

NOTE:

- For secure and safe sailing, install the outboard motor on the transom of the boat properly. Improperly install outboard motor result in the displaced outboard motor, lack of speed and stability, and poor fuel economy. In addition, the boat does not drive straight unless the outboard motor is installed properly.
- Install the outboard motor that conforms to the boat manufacturer's recommended horsepower. Never install an outboard motor which exceeds the recommended maximum horsepower of the boat.

MAXIMUM HORSEPOWER:

BF25D: 18.4 kW (25 PS)

BF30D: 22.1 kW (30 PS)

- Install the outboard motor so that it is perpendicular to the water surface (i.e. axis of the propeller is parallel with the bottom of the boat surface). When the transom angle is less than 4° (Except Power trim/tilt type and Gas-assisted tilt type), 8° (Power trim/tilt type and Gas-assisted tilt type), the outboard motor might not be perpendicular with the water surface.
- Install the outboard motor on the center of the transom securely. Be sure that the boat is well-balanced.
- The BF25D-BF30D outboard motor can be installed on the transom which board thickness is in the range from 35 — 57 mm (1.3 — 2.2 in).

INSTALLATION HEIGHT CHECK

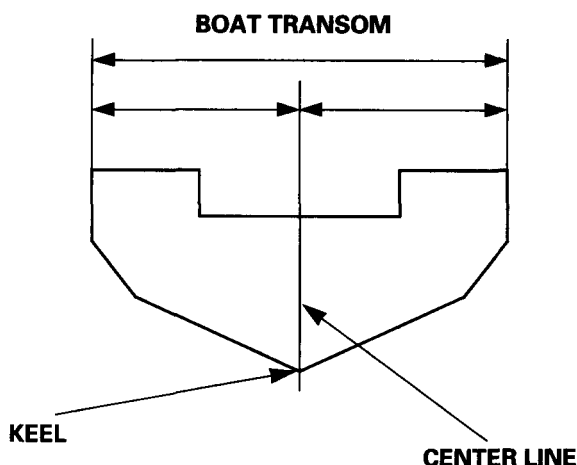
NOTE:

- The outboard motor installation height shall be 0 — 50 mm (0 — 2 in) when the transom height of the boat is subtracted from the transom height of the outboard motor. Note that this dimension is just the standard. Optimal installation height differs depending on the boat type and shape of the bottom of the boat. Refer to the boat maker's recommended installation height and determine the optimal installation height by test cruising the boat.
- If the outboard motor is installed at too low (deep) position;
 - It reduces operating stability.
 - It reduces high speed sailing performance.
 - Water splashed over the wash board can be jetted out and fan out the stern of the board.
 - It lacks airiness of the boat.
 - It gets heavy steering.
- If the outboard motor is installed at too high (shallow) position, it causes cavitation when sailing on the choppy water or sailing at high speed, and the boat does not sail smoothly.
- When testing the installation height on water, check the buoyancy by loading the boat fully. Check whether the auxiliary exhaust port is in the position where is sufficiently above the water surface so that the surged wave does not enter the engine when the engine stops with the boat fully loaded.

1) Draw the center line on the boat transom.

NOTE:

- The boat is symmetrical with respect to the keel. If the boat has no keel, measure the transom width and draw the center line.

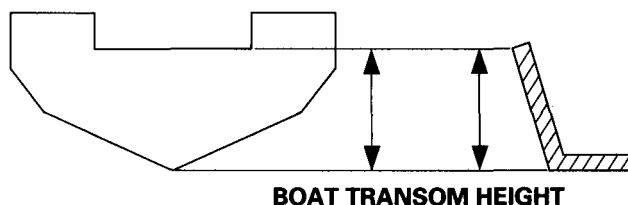


2) Measure the transom height of the boat.

WORKABLE TRANSOM HEIGHT:

S type: 381 — 431 mm (15.0 — 17.0 in)

L type: 502 — 552 mm (19.8 — 21.7 in)



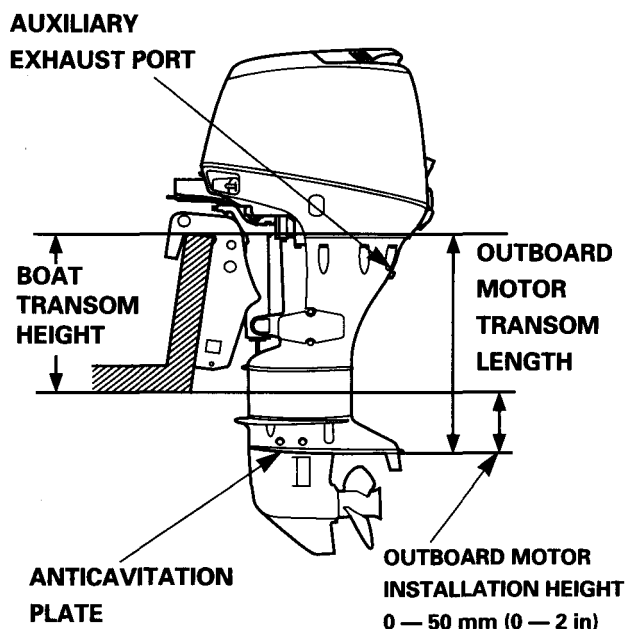
3) Calculate the outboard motor installation height.

- Outboard motor installation height must be in the range between 0 — 50 mm (0 — 2 in).
- Determine the outboard motor installation height by subtracting the boat transom height from the outboard motor transom length.

BF25D/BF30D TRANSOM LENGTH:

S type: 431 mm (17.0 in)

L type: 552 mm (21.7 in)



4) If the outboard motor installation height does not conform to the above specification, adjust the transom height of the boat.

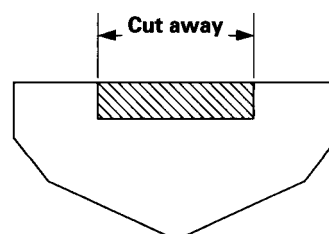
BOAT TRANSOM HEIGHT ADJUSTMENT

- If the outboard motor installation height is too low, attach wood block(s) to the top of the transom and increase the installation height by the amount it is required.
- If the outboard motor installation height is too high, reduce the height by planing down the top of the transom by the required amount.

NOTE:

- When increasing the installation height, attach the wood block(s) to the transom of the boat securely.
- Be sure to plane off the boat transom by the amount of the outboard motor width.

OUTBOARD MOTOR WIDTH



OUTBOARD MOTOR INSTALLATION

NOTE:

- Attach the steering cable to the outboard motor first, then install the outboard motor on the boat.

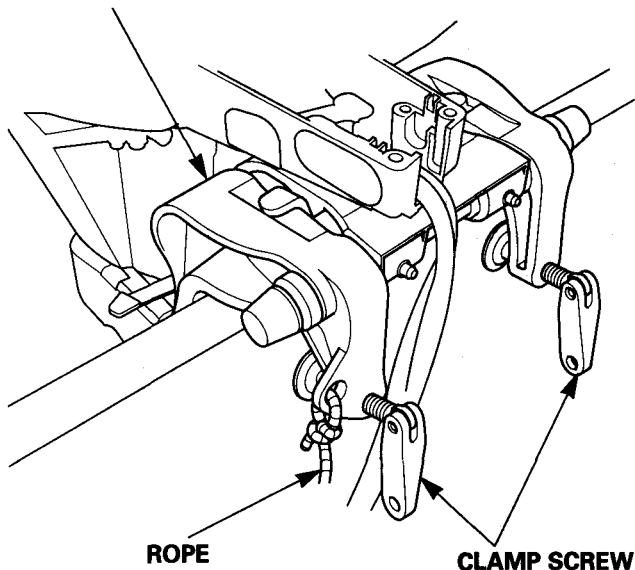
1) STANDARD HANDLE TYPE AND LONG TILLER HANDLE TYPE: Set the outboard motor onto the boat transom.

2) STANDARD HANDLE TYPE AND LONG TILLER HANDLE TYPE: Tighten the clamp screws securely and tie a rope through the hole in the stern bracket and secure the other end of the rope to the boat.

NOTE:

- To prevent the outboard motor from falling accidentally, secure the stern bracket to the transom board with mounting bolts, nuts and washers.

STERN BRACKET



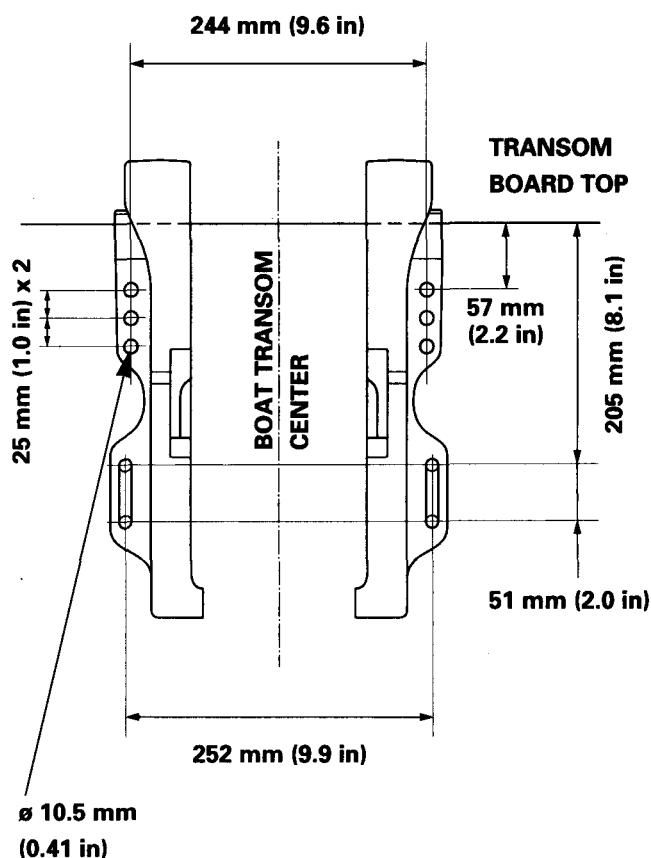
MOUNTING BOLTS INSTALLATION

- 1) Mark two installation hole points (four in total) on the transom of the boat at the right and left mirror image positions with the transom center line between.

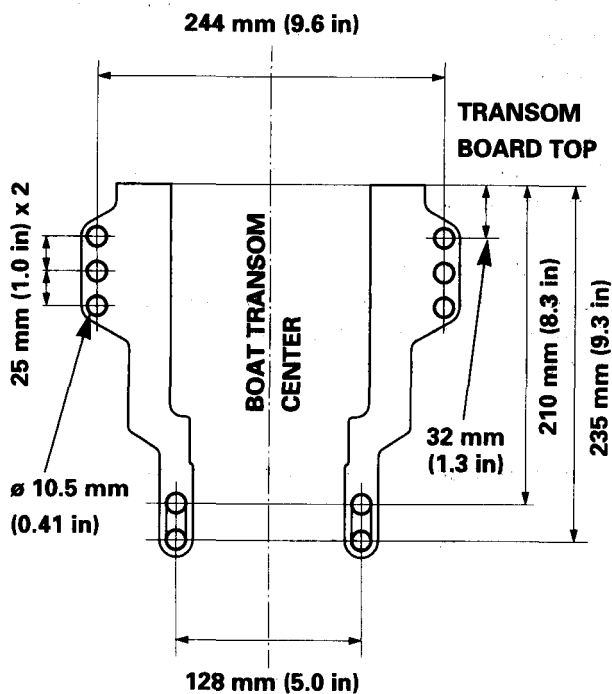
NOTE:

- Do not drill a hole in the wood block attached to the transom of the boat.
- Be sure that the upper bolt holes are not located above the position shown in the drawing (more than 25 mm (1.0 in) from top of the transom board).
- Drill the lower bolt holes so that mounting bolts contact the upper end of the stern bracket.

Power trim/tilt type and Gas-assisted tilt type:



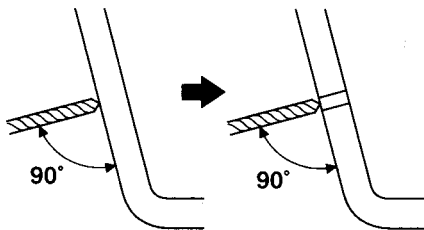
Except Power trim/tilt type and Gas-assisted tilt type:



- 2) Drill the pilot holes using a 3 — 5 mm (0.1 — 0.2 in) drill.
- 3) Drill the bolt holes precisely at the marked points with the 10.5 mm (0.41 in) drill bit.

NOTE:

Drill at right angles to the transom board.



- 4) Apply the sealing agent (silicone sealant) to the bolts and the bolt holes.
- 5) Remote control box type: Attach the outboard motor on the hull.

CAUTION:

If the outboard motor is the remote control type, connect the steering guide cable to the outboard motor before installation.

- 6) STANDARD HANDLE TYPE AND LONG TILLER
HANDLE TYPE:

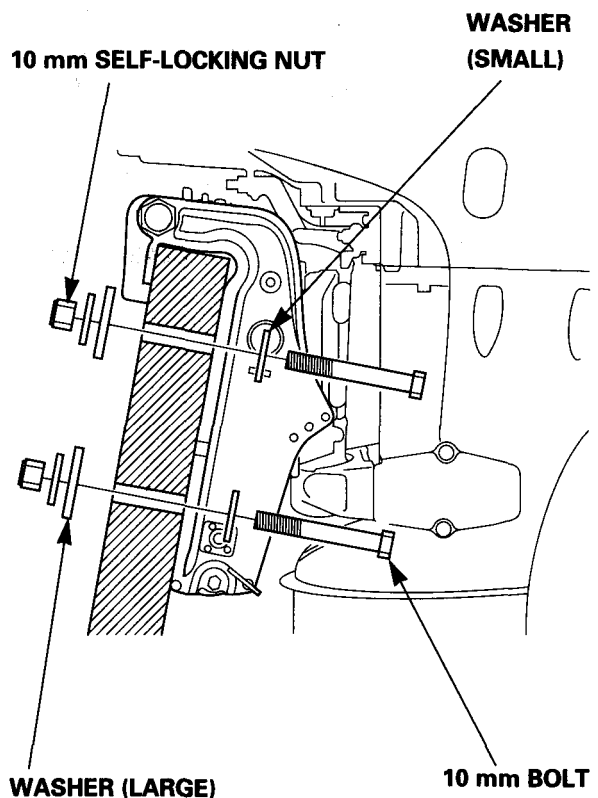
Secure the outboard motor with the commercially available four 10 mm bolts, eight 10 mm washers (small), four 10 mm washers (large) and the four 10 mm self-locking nuts.

REMOTE CONTROL BOX TYPE:

Secure the outboard motor with the four 10 mm bolts, eight 10 mm washers (small), four 10 mm washers (large) and the four 10 mm self-locking nuts that are contained in the kit securely.

CAUTION:

Insert the bolts from the outer side (outboard motor side) and secure them with the self-locking nuts from the hull side.

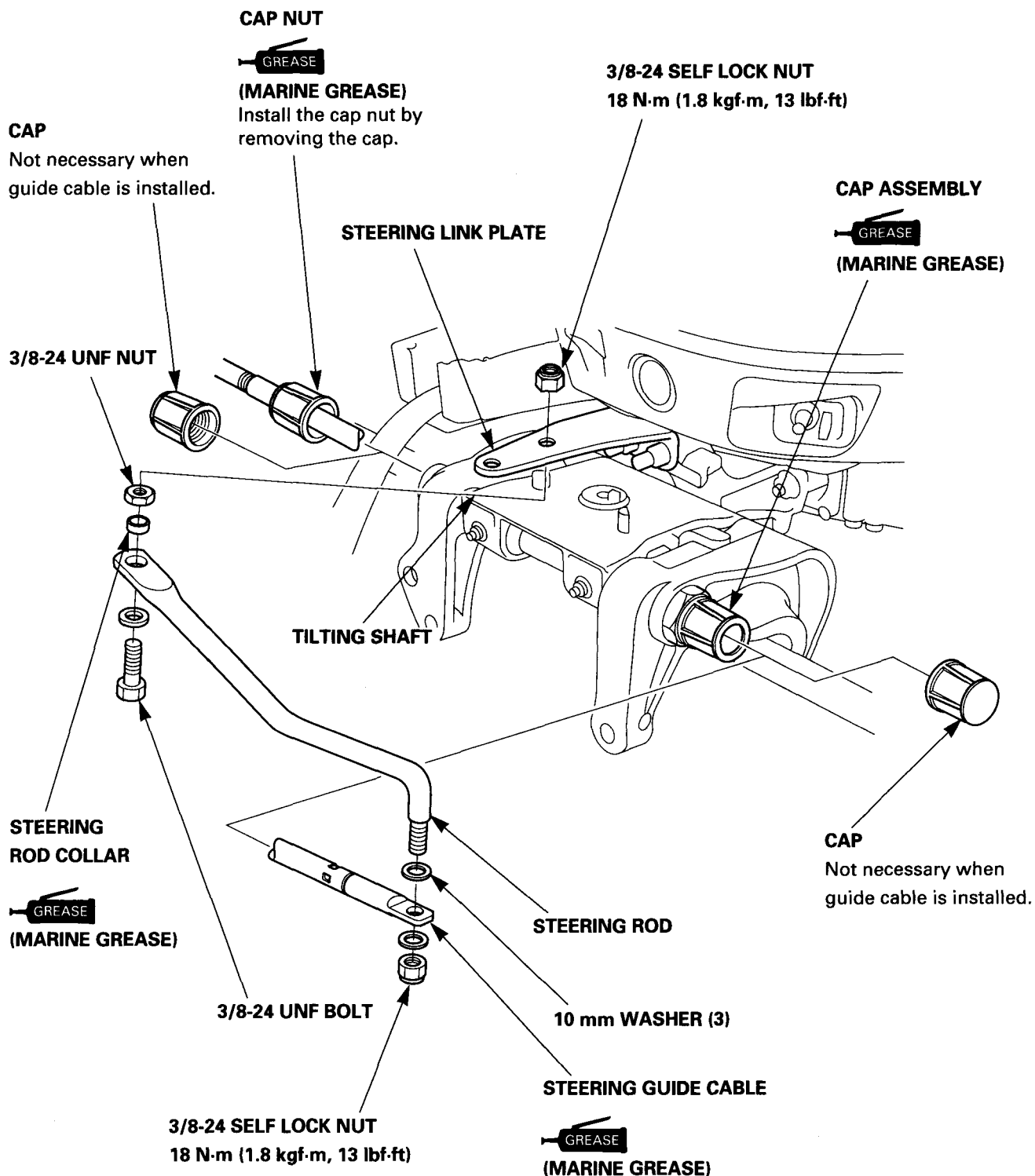


STEERING GUIDE INSTALLATION

• PUSH-PULL TYPE

NOTE:

- Attach the steering cable to the outboard motor first, then install the outboard motor on the boat.



- 1) Remove the cap from the tilting shaft.
- 2) Pass the steering guide cable through the tilting shaft and tighten the cap nut. Install the outboard motor on the hull.

NOTE:

Before installing the steering guide cable, apply marine grease to the sliding surface of the cable and the inner side of the cap assembly and cap nut.

STEERING GUIDE CABLE

GREASE
(MARINE GREASE)

CAP NUT

GREASE
(MARINE GREASE)

CAP ASSEMBLY

- 3) Apply the marine grease to the collar and to the sliding surface of the steering rod.
- 4) Attach the steering rod to the inner hole in the steering link plate and loosely tighten it with the 3/8-24 UNF bolt, washer, collar, nut and the self-locking nut.
- 5) Connect the steering rod to the steering guide cable with the 10 mm washers and self-locking nut.
- 6) Tighten the self-locking nuts to the specified torque.

Torque: 18 N·m (1.8 kgf·m, 13 lbf·ft)

3/8-24 SELF LOCK NUT
18 N·m (1.8 kgf·m, 13 lbf·ft)

COLLAR

GREASE
(MARINE GREASE)

INNER HOLE

STEERING GUIDE CABLE

3/8-24 UNF NUT

3/8-24 UNF BOLT

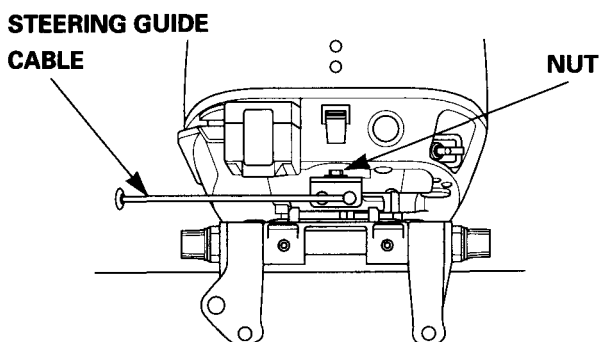
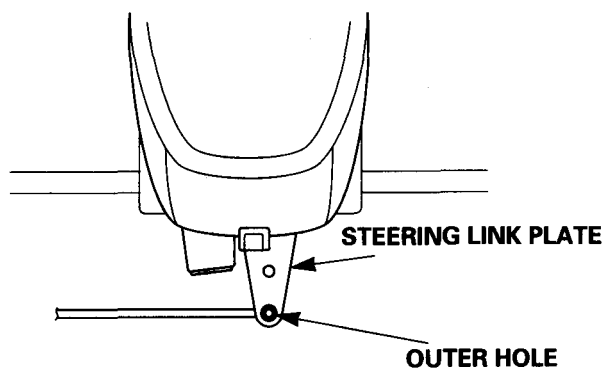
STEERING ROD

10 mm WASHER (3)

3/8-24 SELF LOCK NUT
18 N·m (1.8 kgf·m, 13 lbf·ft)

• **BALL-POST TYPE**

- Connect the steering guide cable to the outer hole in the steering link plate.

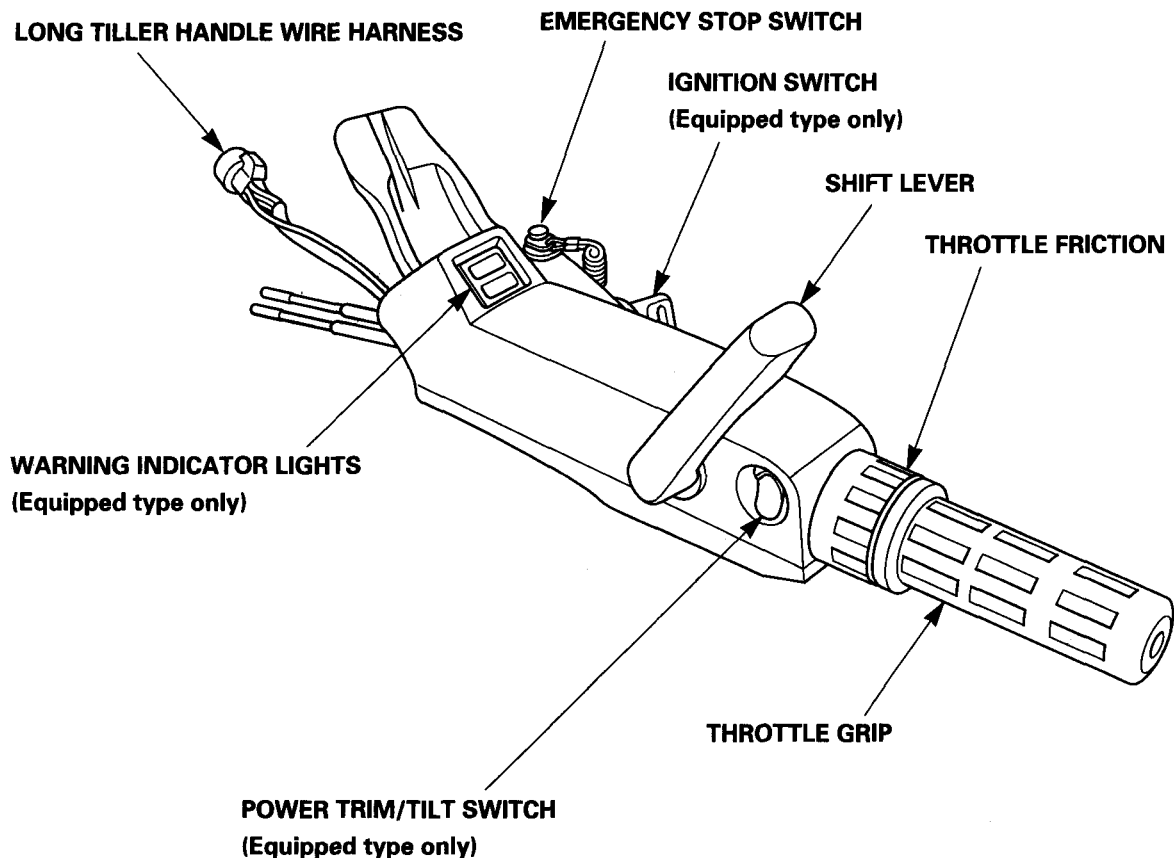


NOTE:

- After installation, turn the steering wheel right and left and bring the right and left steering angles equal by adjusting at the steering wheel side of the steering guide cable.
- For further information regarding the steering cable, refer to the boat manufacturer's operation manual.

3. LONG TILLER HANDLE

NAME AND FUNCTION OF EACH PART

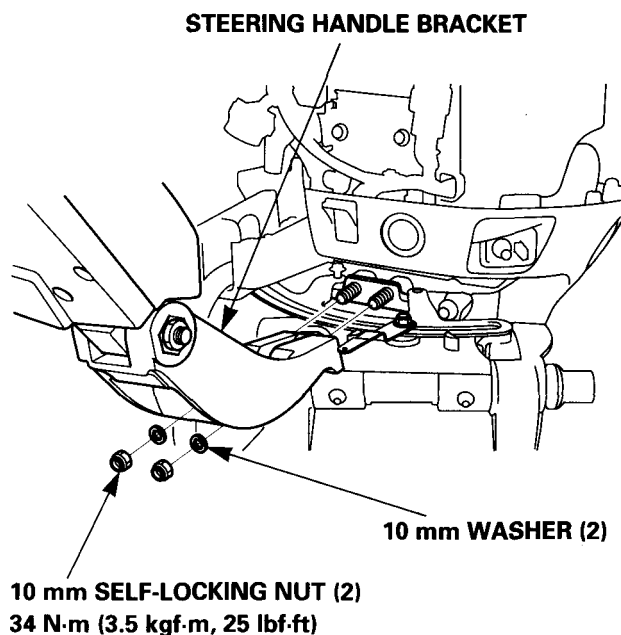


LONG TILLER HANDLE WIRE HARNESS	Wire harness that connects the long tiller handle to the outboard motor.
EMERGENCY STOP SWITCH	Use this switch to stop the engine in case of emergency.
IGNITION SWITCH..... (Equipped type only)	Use this switch to start and stop the outboard motor.
SHIFT LEVER	Use this switch to shift the gear.
THROTTLE GRIP.....	Use the throttle grip for throttle operation.
POWER TRIM/TILT SWITCH..... (Equipped type only)	Use this switch to tilt up/down and to trim up/down the outboard motor.
WARNING INDICATOR LIGHTS..... (Equipped type only)	Warning indicator lights indicates abnormal condition of the outboard motor. (Engine oil warning indicator light, overheat warning indicator light)
THROTTLE FRICTION	Use this switch to adjust the operation preload of the throttle grip.

STEERING HANDLE BRACKET INSTALLATION

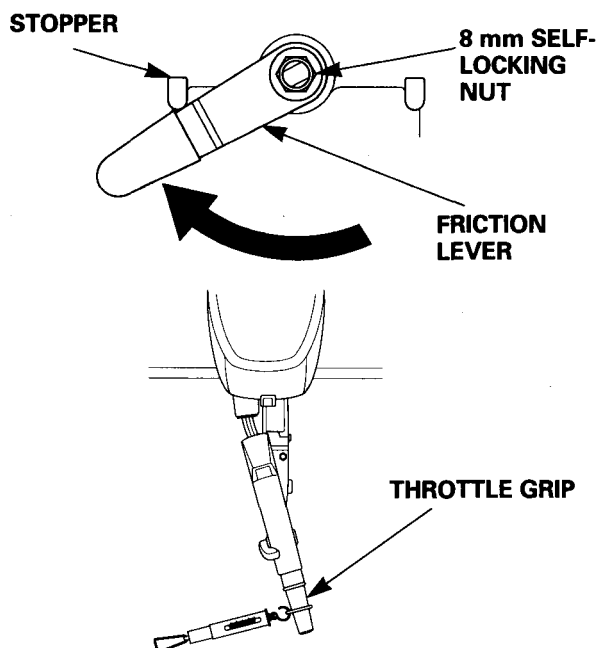
- 1) Turn the outboard motor either to the right or left and set the steering handle bracket end over the 10 mm stud bolts on the mount frame.
- 2) Install the two 10 mm washers and two 10 mm self locking nuts on the outboard motor and tighten the self-locking nuts to the specified torque.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)



STEERING FRICTION INSPECTION/ADJUSTMENT

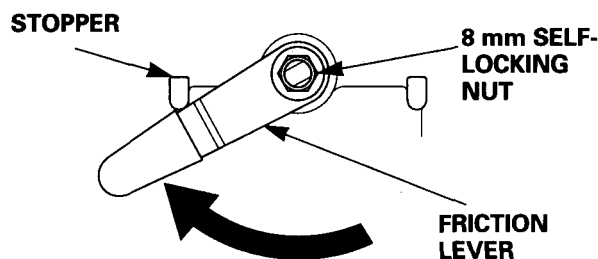
- 1) Set the friction lever in the lock position (i.e. move fully to the left until it contacts the stopper).
- 2) Apply the load of 100 N (10.0 kgf, 22.05 lbf) to the center of the long tiller handle throttle grip, and be sure that the long tiller handle does not move.



- 3) If the long tiller handle moves under the load of 100 N (10.0 kgf, 22.05 lbf) or below, set the friction lever in the lock position (i.e. move fully to the left until it contacts the stopper), and tighten the 8 mm self-locking nut to 8.5 N·m (0.85 kgf·m, 6.15 lbf·ft).
- 4) If the long tiller handle still moves under the load of 100 N (10.0 kgf, 22.05 lbf) or below after tightening the 8 mm self-locking nut to 8.5 N·m (0.85 kgf·m, 6.15 lbf·ft), check the friction block pad surface for contamination with grease.

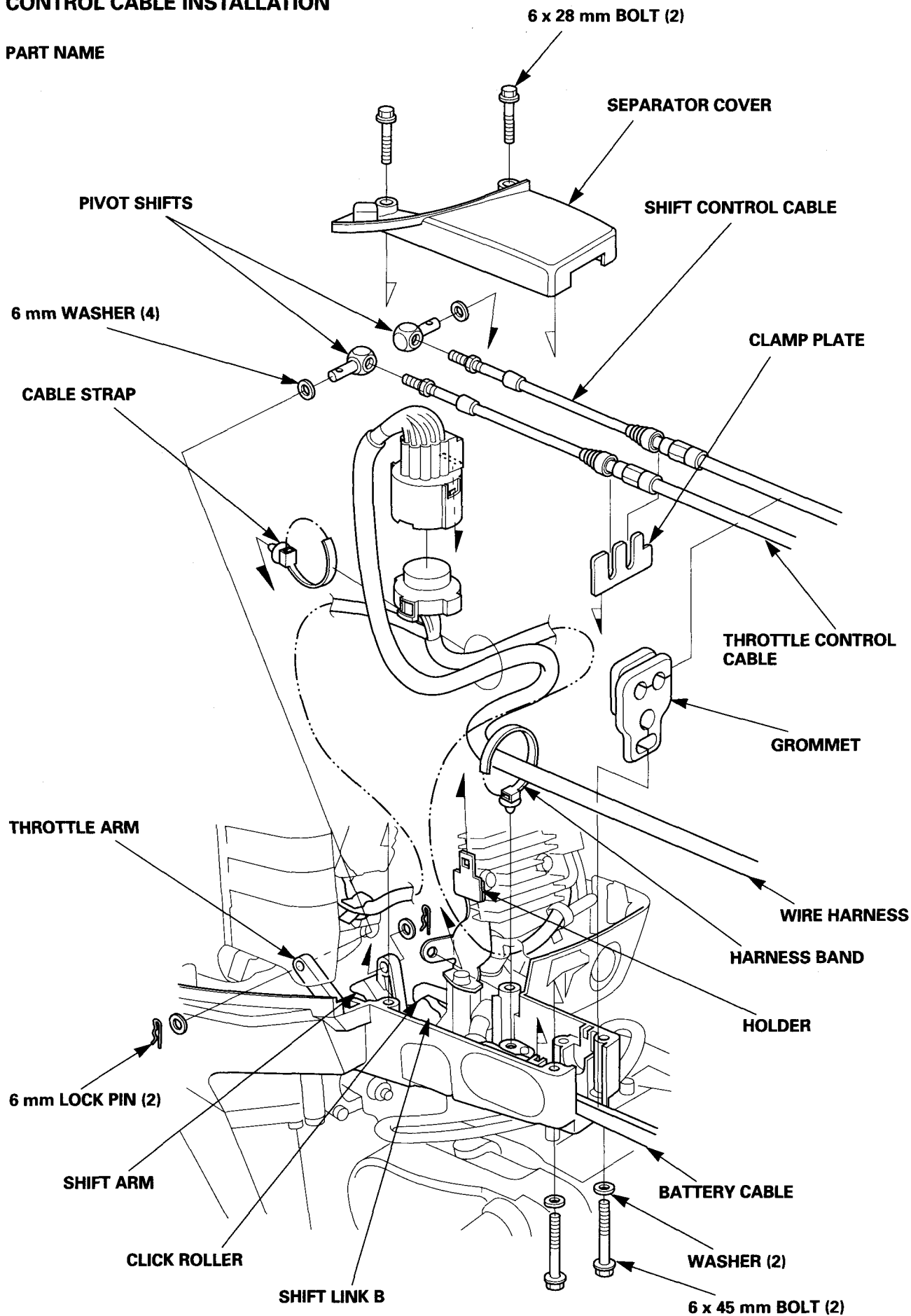
CAUTION:

If the friction block pad surface is contaminated with grease, clean and degrease the contaminated part.



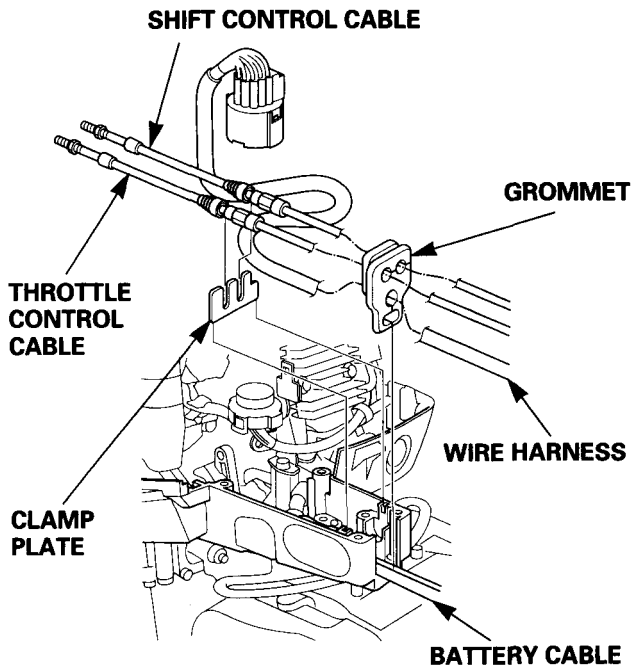
CONTROL CABLE INSTALLATION

PART NAME

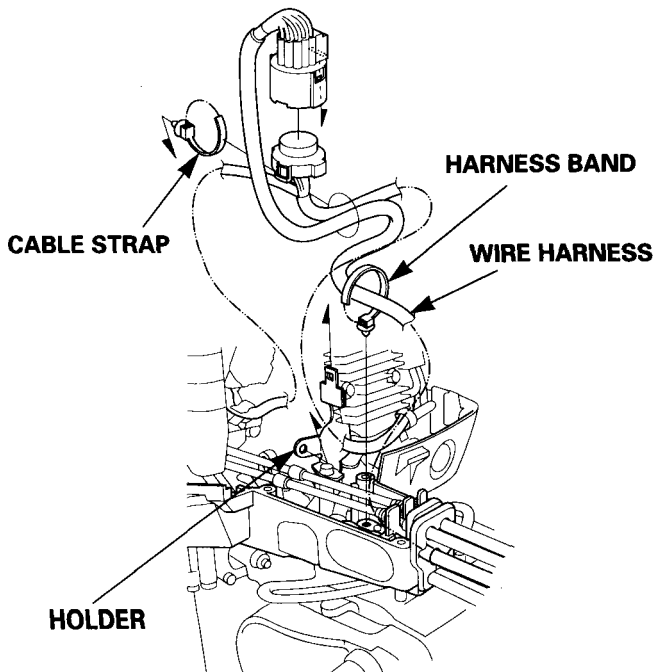


CONTROL CABLE INSTALLATION

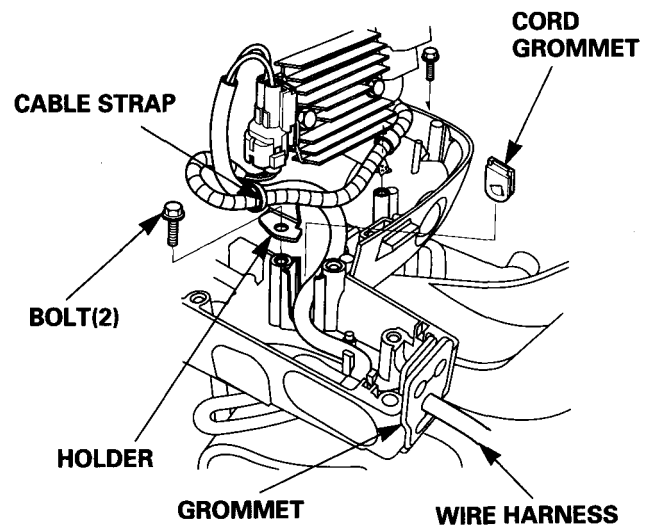
- 1) Pass the battery cable, throttle control cable, shift control cable and the wire harness through the grommet, and install the grommet in the outboard motor. (Electric starter type)
- 2) Install the clamp plate aligning the cutouts in the clamp plate with the grooves in the throttle control cable and shift control cable. (Electric starter type)



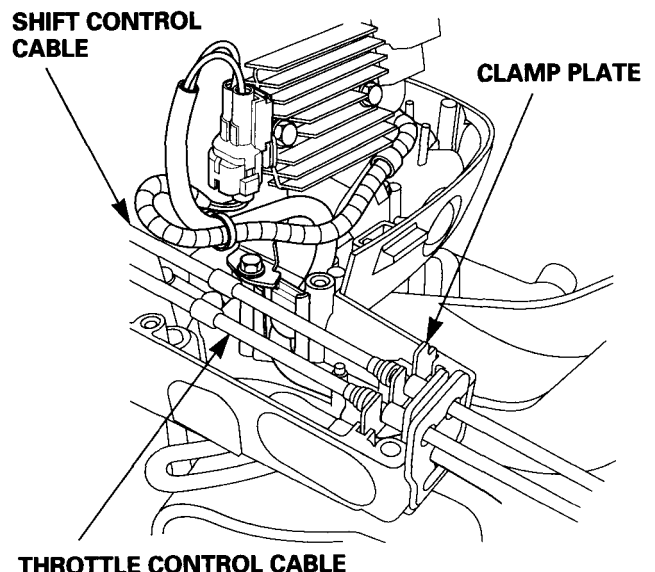
- 3) Connect the wire harness of the steering handle bracket side to the wire harness of the outboard motor side, and set them on the holder. (Electric starter type)
- 4) Secure the wire harness with the harness band and cable strap. (Electric starter type)



- 5) Remove the holder by removing the bolt from the outboard motor. Remove the cord grommet. (Recoil starter type)
- 6) Pass the wire harness of the steering handle bracket side through the grommet and install the grommet in the outboard motor. (Recoil starter type)
- 7) Route the wire harness of the steering handle bracket side as shown. Connect the wire harness of the steering handle bracket side and the wire harness of the outboard motor side together. (Recoil starter type)
- 8) Install the cord grommet and holder in the outboard motor and secure with the bolt. (Recoil starter type)
- 9) Set the wire harness connector on the holder. Secure the wire harness with the cable strap. (Recoil starter type)



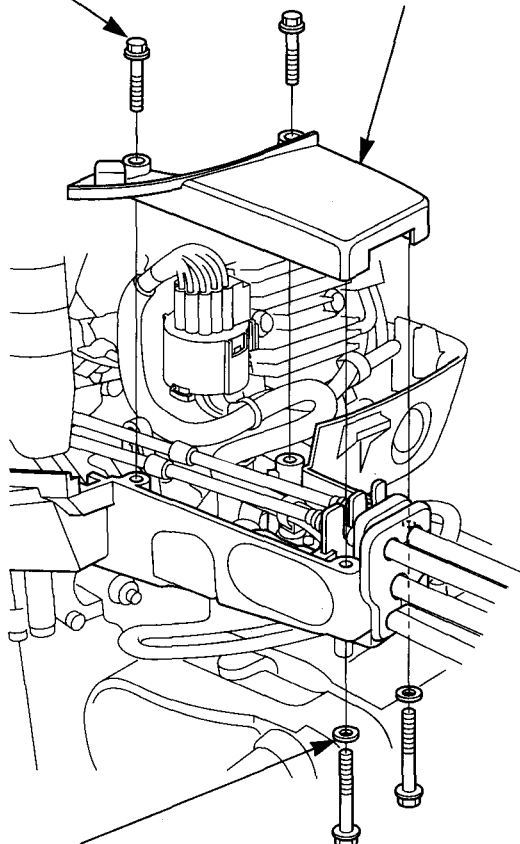
- 10) Pass the throttle control cable and shift control cable through the grommet. (Recoil starter type)
- 11) Install the clamp plate aligning the cutouts in the clamp plate with the grooves in the throttle control cable and shift control cable. (Recoil starter type)



- 12) Install the separator cover with the bolts and washers.

6 x 28 mm BOLT (2)

SEPARATOR COVER



WASHER (2)

6 x 45 mm BOLT (2)

- 13) Install the pivot shift on each control cable, and loosely tighten with the lock nut.

- Set each pivot shift at the position 5 mm (0.2 in) or more from the cable end as shown.
- Apply the marine grease to the pivot pins.

CONTROL CABLE

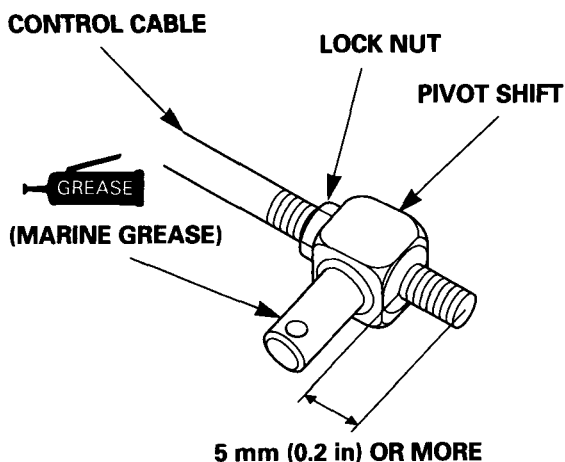
LOCK NUT

PIVOT SHIFT

GREASE

(MARINE GREASE)

5 mm (0.2 in) OR MORE

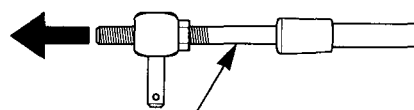
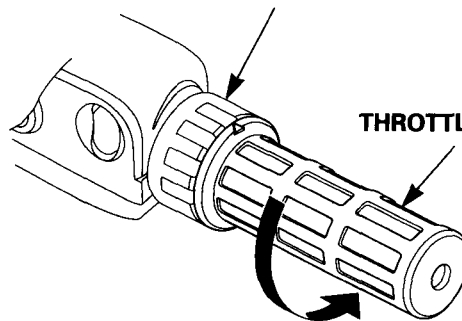


- 14) Move the throttle grip to the full open position and secure it with the throttle friction.

- 15) Pull the throttle control cable lightly and bring the cable free play to the longer side.

THROTTLE FRICTION

THROTTLE GRIP



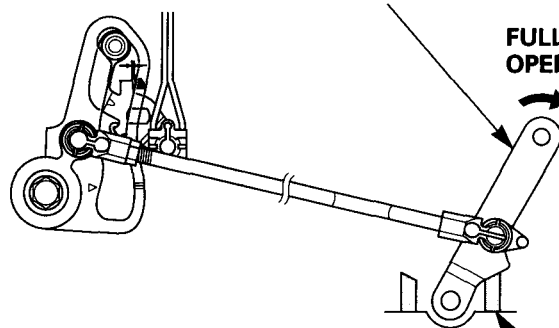
THROTTLE CONTROL CABLE

- 16) Move the throttle arm so it contacts lightly with the full open side stopper, and hold it in the position.

- 17) Turn the throttle control cable's pivot shift in or out and adjust its position so that it can be set on the throttle arm smoothly. After adjustment, tighten the lock nut securely.

THROTTLE ARM

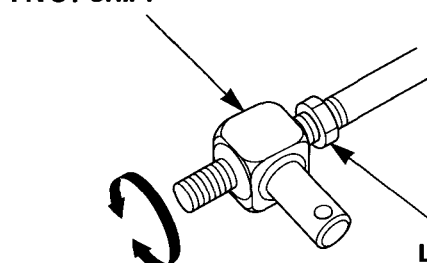
FULL OPEN



FULL OPEN SIDE STOPPER

PIVOT SHIFT

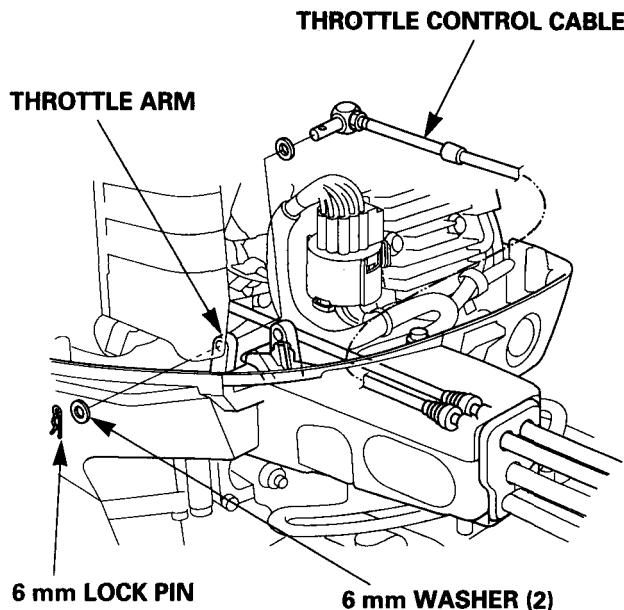
LOCK NUT



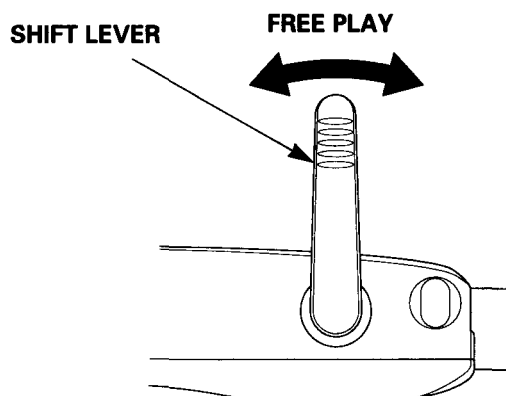
- 18) Connect the throttle control cable to the throttle arm and secure with the 6 mm washers and 6 mm lock pin.

CAUTION:

- Set the washers on both sides of each arm as shown.



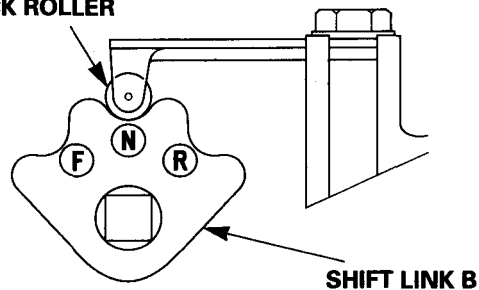
- 19) Set the shift lever in the "N" (Neutral) position and move it a couple of times back and forth within the range of free play.



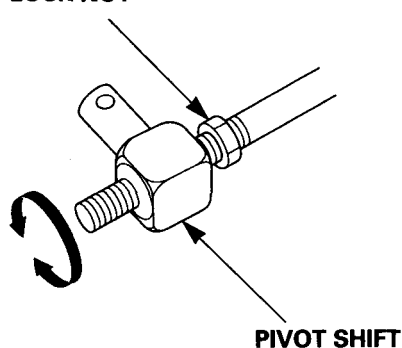
- 20) Set the shift link B in the "N" (Neutral) position.

- 21) Turn the shift control cable's pivot shift in or out and adjust its position so that it can be set on the shift arm smoothly. After adjustment, tighten the lock nut securely.

CLICK ROLLER



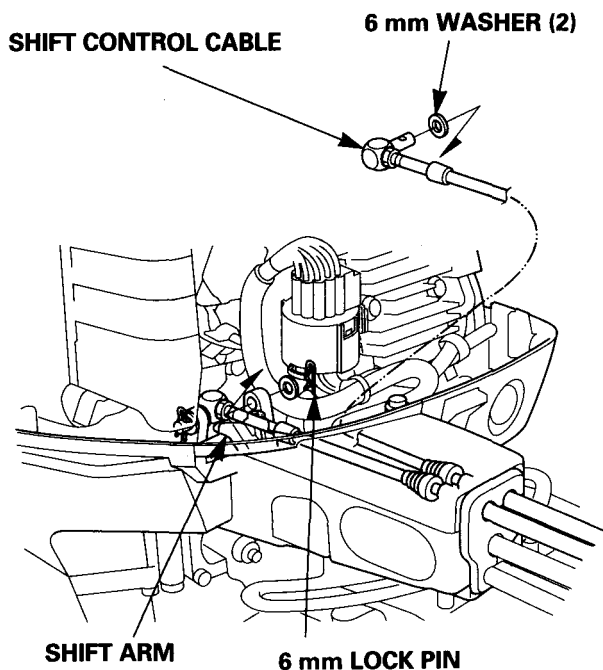
LOCK NUT



- 22) Connect the shift control cable to the shift arm and secure with the 6 mm washers and 6 mm lock pin.

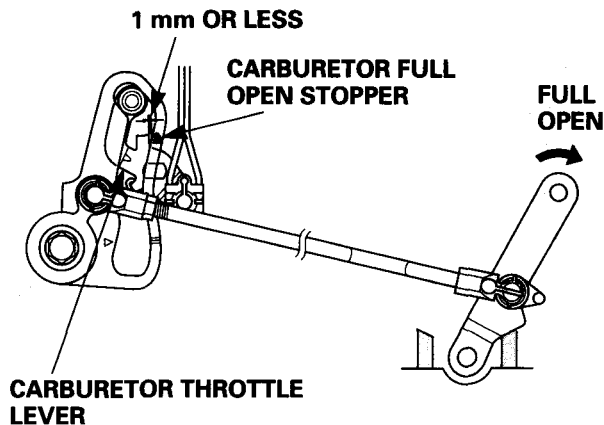
CAUTION:

- Set the washers on both sides of each arm as shown.



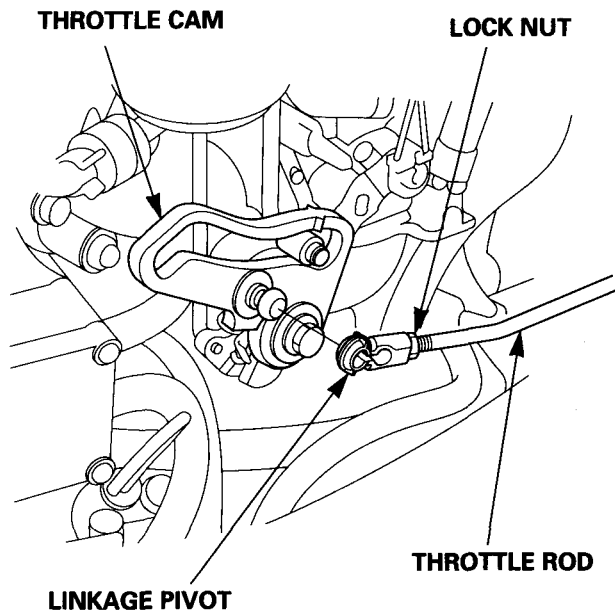
THROTTLE CONTROL CABLE ADJUSTMENT

- 1) Set the throttle grip in the full open position and be sure there is a gap of 1 mm or less between the carburetor throttle lever and carburetor full open stopper.



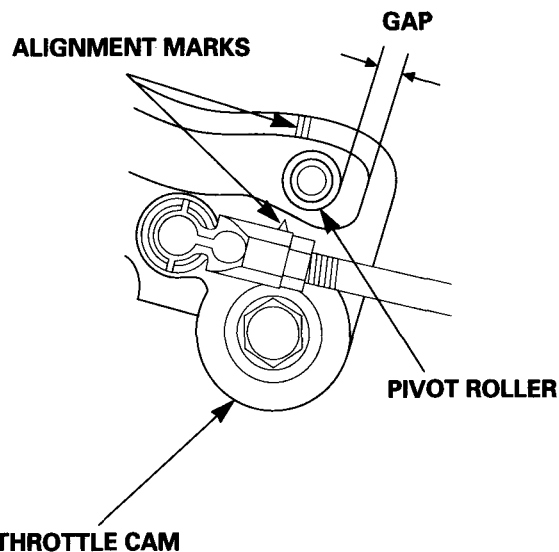
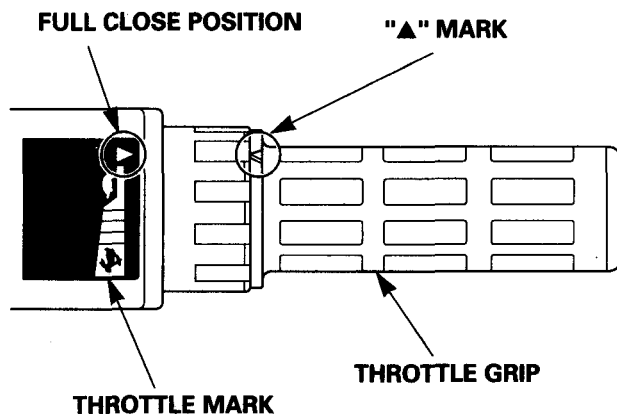
- 2) If the gap is more than 1 mm, adjust as follows.

- 1. Disconnect the throttle rod from the throttle cam. Loosen the lock nut and adjust by turning the linkage pivot.
- 2. After adjustment, tighten the lock nut and reconnect the throttle rod to the throttle cam.



- 3) With the throttle grip in the full close position (i.e. "▲" mark on the throttle grip is in alignment with the throttle mark's full close position), be sure that the throttle cam's alignment marks are behind the pivot roller center.

- 4) With the throttle grip in the position of the above step 3) and the throttle cam's alignment marks are behind the pivot roller center, be sure that there is a gap between the pivot roller and the front end of the throttle cam.

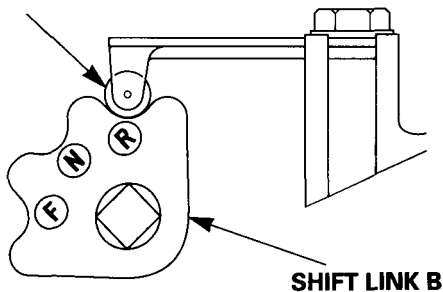


- 5) If the conditions of the previous steps 3) and 4) are not satisfied, remove the throttle rod from the throttle cam and adjust by loosening the lock nut and turning the linkage pivot.
- 6) After adjustment, tighten the lock nut and install the throttle rod on the throttle cam.
- 7) Check the steps 1), 3) and 4). If the conditions of the steps 1), 3) and 4) are not satisfied, readjust.
- 8) Be sure that the throttle grip moves smoothly and the carburetor throttle link moves smoothly from the full close position to the full open position.

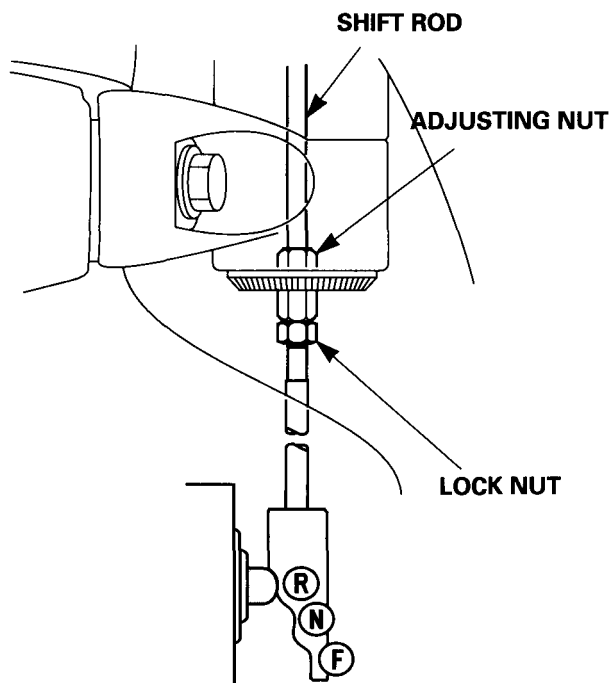
SHIFT CONTROL CABLE ADJUSTMENT

- 1) Disconnect the shift control cable from the shift arm.
- 2) Set the shift lever in the "R" (reverse) position and check whether the click roller is in the "R" position of the shift link B.

CLICK ROLLER



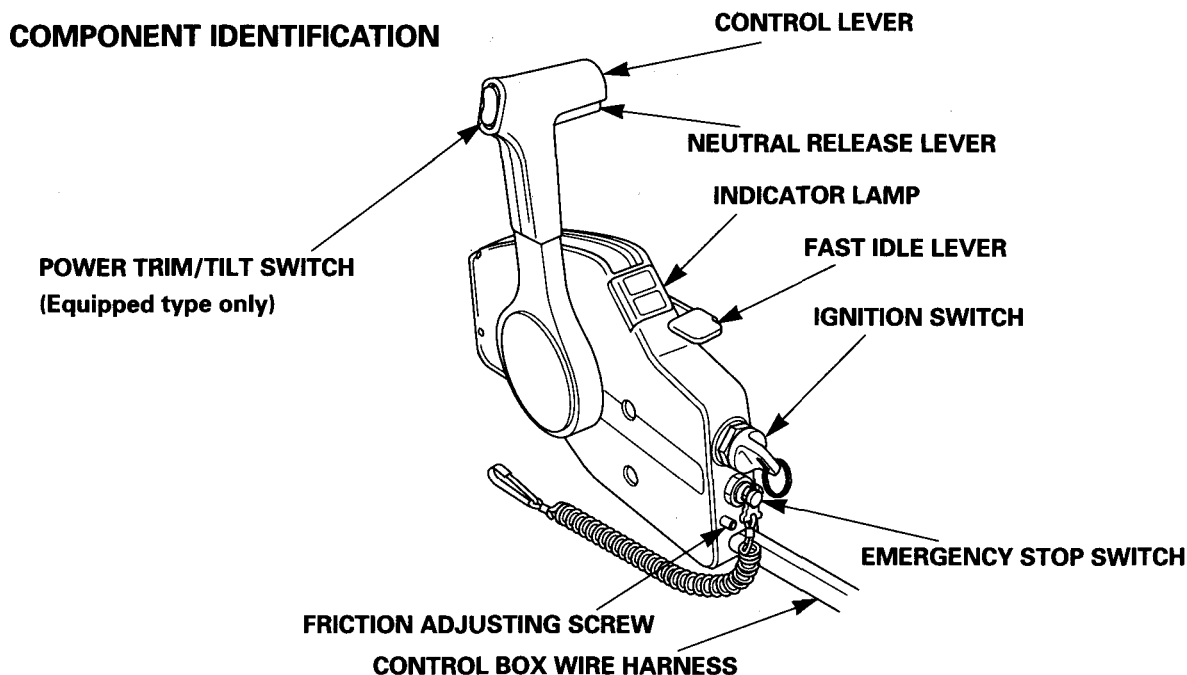
- 3) If the click roller is out of the specified position, loosen the lock nut on the shift rod and adjust by turning the adjusting nut until the click roller comes to the "R" position of the shift link B.
- 4) After adjustment, tighten the lock nut securely.



- 5) Set the shift lever in the "N" (Neutral) position and move it a couple of times back and forth within the range of free play (see page 14). Set the shift link B in the "N" (Neutral) position. Adjust the shift control cable length so its pivot shift can be installed on the shift arm smoothly. After adjustment, tighten the lock nut securely (see page 14).
- 6) Connect the shift control cable to the shift arm and tighten with the 6 mm washers and 6 mm lock pin (see page 14).
- 7) Operate the shift lever and be sure that the shift link B moves properly.
- 8) Reinstall the outboard motor cover.

4. REMOTE CONTROL BOX

COMPONENT IDENTIFICATION

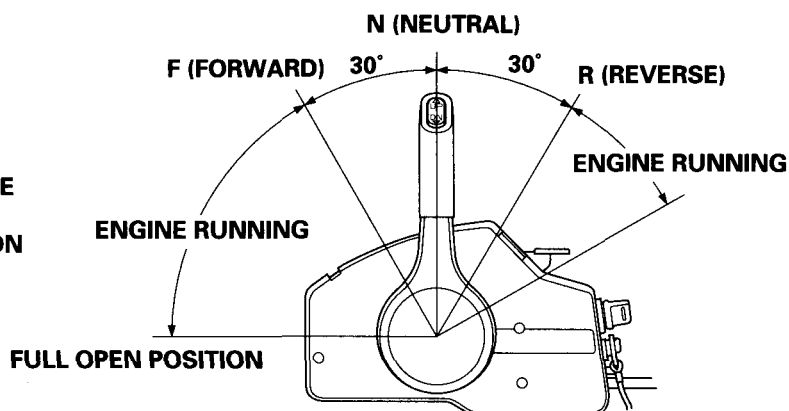
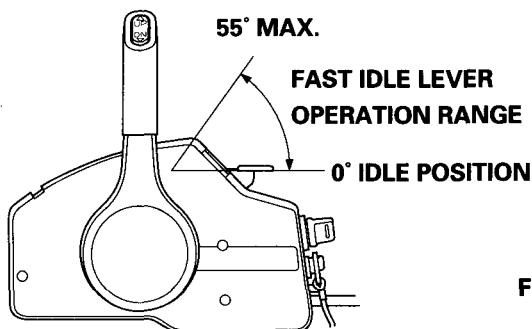


CONTROL BOX WIRE HARNESS

CONTROL LEVER	Controls gear selection and throttle opening position.
INDICATOR LAMP	Indicates the operating condition of the outboard motor. (Engine oil and overheat warning)
FAST IDLE LEVER	For engine warm-up and throttle opening adjustment when restart the warm engine.
IGNITION SWITCH	For starting and stopping the outboard motor.
EMERGENCY STOP SWITCH	Will be activated in case of an emergency stop, or when the operator falls overboard.
FRICTION ADJUSTING SCREW	Adjust the operating resistance of the control lever.
NEUTRAL RELEASE LEVER	To move the control lever out of the "N" (NEUTRAL) position, lift this lever up.
CONTROL BOX WIRE HARNESS	Wire connecting control box to outboard motor.
POWER TRIM/TILT SWITCH	Use this switch to tilt up/down and to trim up/down the outboard motor. (Equipped type only)

OPERATION

- The fast idle lever can be operated provided that the control lever is in the "N" (NEUTRAL) position.
- The engine speed increases with the fast idle lever in the range shown, which promotes warming up of the engine.
- Set the fast idle lever at the "Max." position after warming up and at restart of the engine.
- The control lever can be operated provided that the fast idle lever returned fully to the release position.



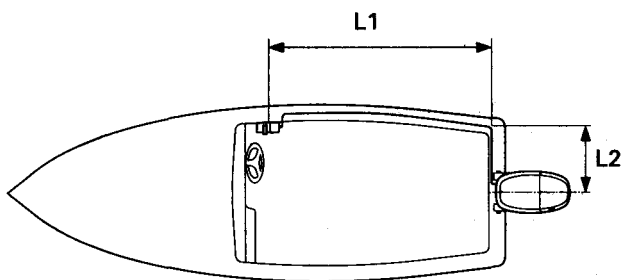
CONTROL CABLE SELECTION

- 1) Select a mounting location which allows easy access and unrestricted operation of the control lever, and make sure that there are no other parts obstructing the cables and all components between the remote control box and the outboard motor.

NOTE:

- The remote control box is normally mounted on the starboard side, but can be adapted to a reversed control lever position (port side installation).
 - Recommended position to install the control is close to the corner of the front seat with the control lever in the "N" (NEUTRAL) position.
 - The bottom of the remote control box should be at the same level as the upper surface of the seat.
 - Insert a shim between the box and the installation surface, if the play of the operating lever is insufficient.
- 2) Determine and select the remote control cable length.

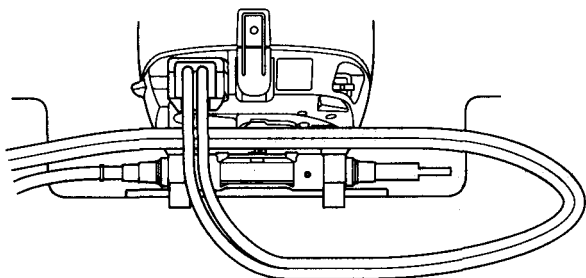
CABLE LENGTH: $L1 + L2 + 300 \text{ mm (12 in)}$



NOTE:

If the cable is routed around one outboard motor to the other side.

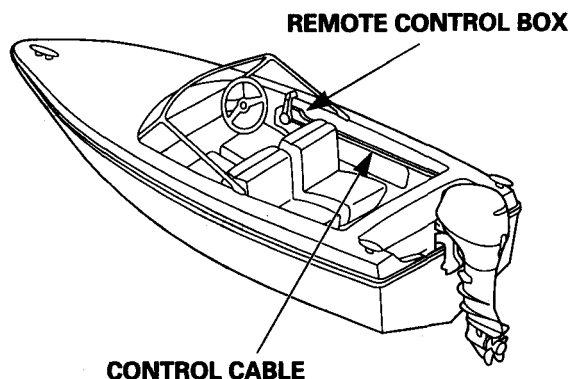
CABLE LENGTH: $L1 + L2 + 1,200 \text{ (48 in)}$



NOTE:

- The bending diameter of a cable must never be less than 400 mm (16 in).
- If the cable is routed in a tight arc, resistance on the control lever will increase, and a smooth throttle operation is no longer possible. This may lead to a loss of control over the craft.
- The cable length must be calculated in such a way that an unrestricted operation is possible, even if the outboard motors are tilted or turned to one side.
- If the cable length is insufficient, the cable must be replaced with the one that has correct length.

Installation Example



RECOMMENDED REMOTE CONTROL CABLES:

**MORSE 33C (widely used standard cable)
or 43XLC cable**

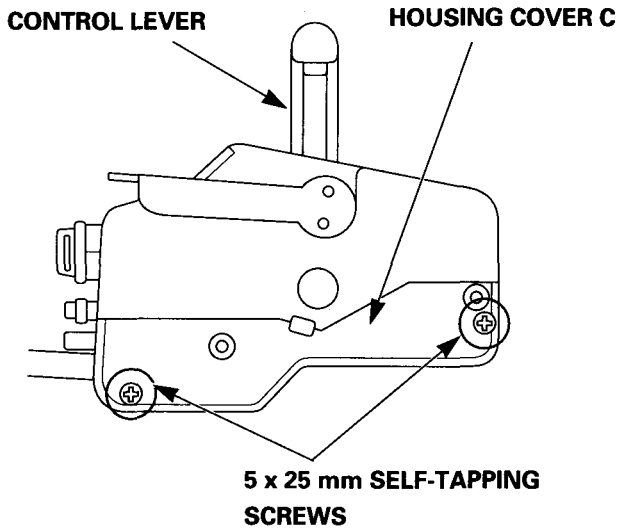
NOTE:

There are two types of cable end screws used: metric thread (M5 x 0.8 mm) and SAE thread (10-32 UNF-2A). Use the SAE type thread only.

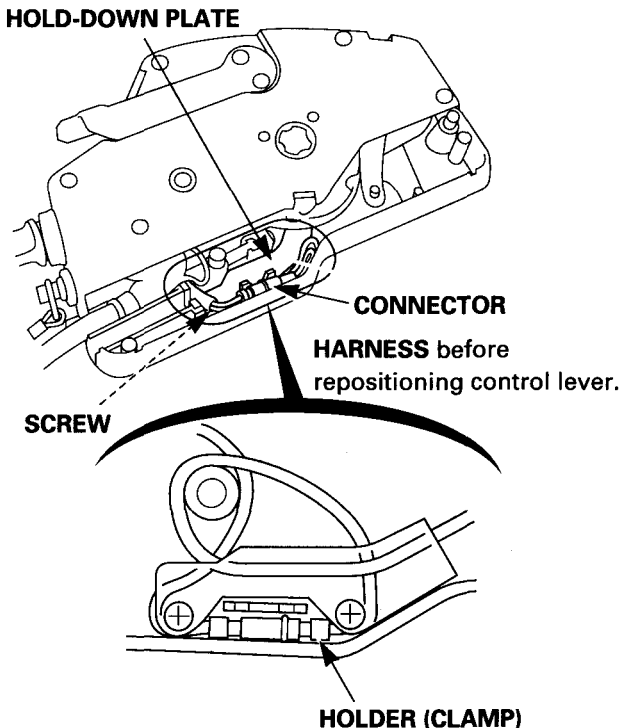
CONTROL LEVER DIRECTION CHANGE

This surface-mounted remote control box can be mounted on the right or left side by reversing the installation direction of the control lever.

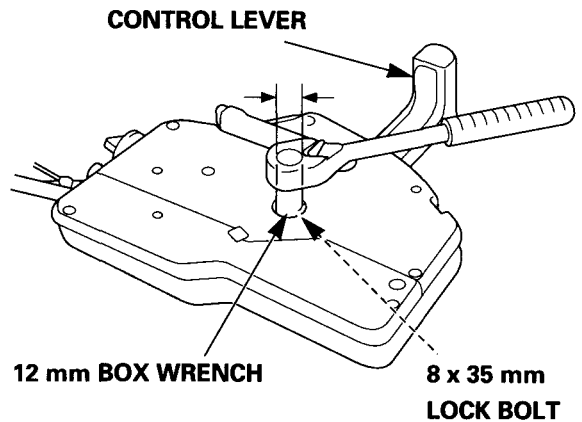
- 1) Remove the two screws and the housing cover C (Power trim/tilt type).



- 2) Remove the two screws and the hold-down plate (Power trim/tilt type).
- 3) Disconnect the switch wire connector (Power trim/tilt type).



- 4) Remove the remote control lever's 8 x 35 mm lock bolt using the 12 mm box wrench, and remove the remote control lever.



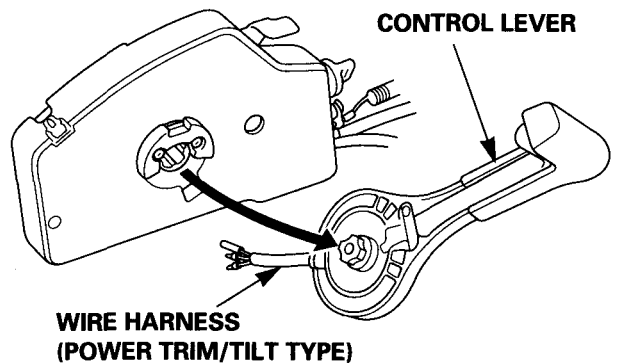
NOTE:

- Take care not to damage the power trim/tilt switch wire harness (Power trim/tilt type).
- Remove the 8 x 35 mm lock bolt with the remote control lever set in the neutral "N" (NEUTRAL) position.

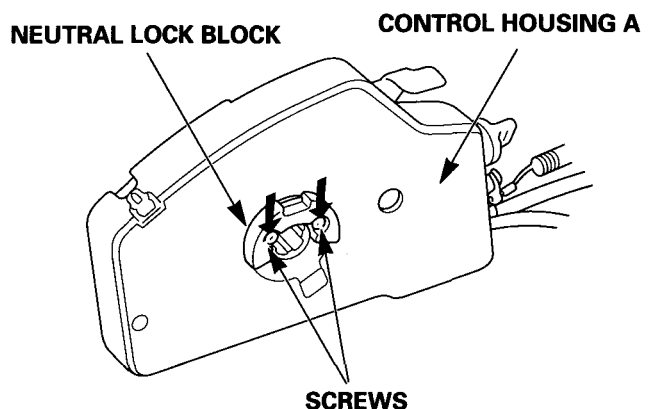
- 5) Remove the remote control lever from the remote control box.

NOTE:

- Take care not to damage the power trim/tilt switch wire harness (Power trim/tilt type).

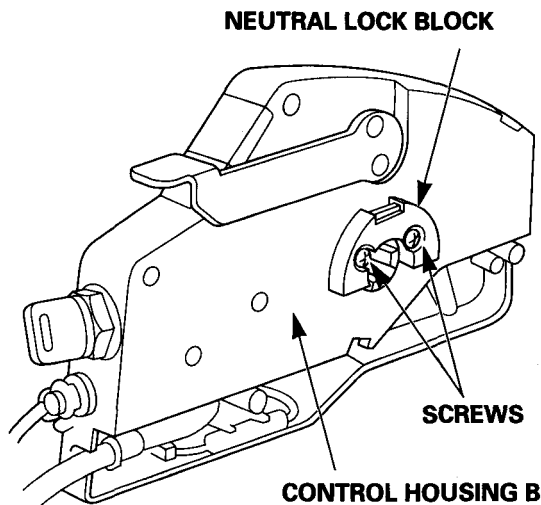


- 6) Remove the two screws and remove the neutral lock block from the control housing A.



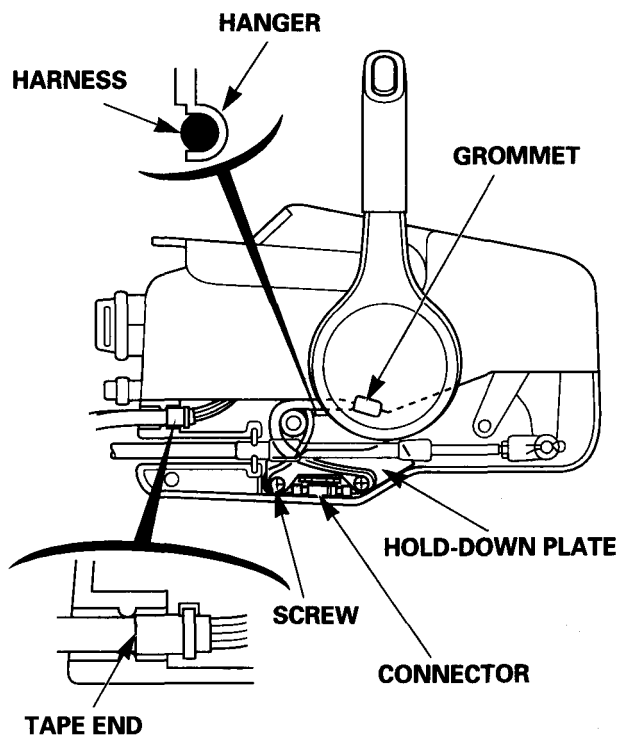
- 7) Assemble the neutral lock block with the control housing B and tighten the two screws.

Torque: 2 N·m (0.2 kgf·m, 1.4 lbf·ft)



- 8) Connect the switch wire connector (Power trim/tilt type).

- 9) Set the power tilt switch harness as shown. Install the hold-down plate and tighten the two screws (Power trim/tilt type).



NOTE:

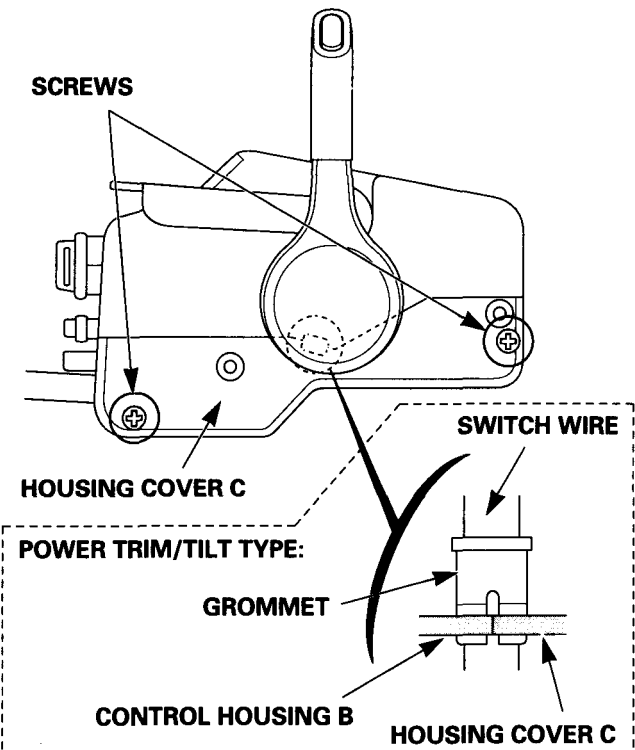
Repositioning power tilt type control lever must be made after installing the control cable (see page 21).

- 10) Tighten the housing cover C with the two screws.

Torque: 2 N·m (0.2 kgf·m, 1.4 lbf·ft)

NOTE:

- Set the switch wire grommet by aligning it with the cutout in the control housing B (Power trim/tilt type).
- Do not overtighten the screws.

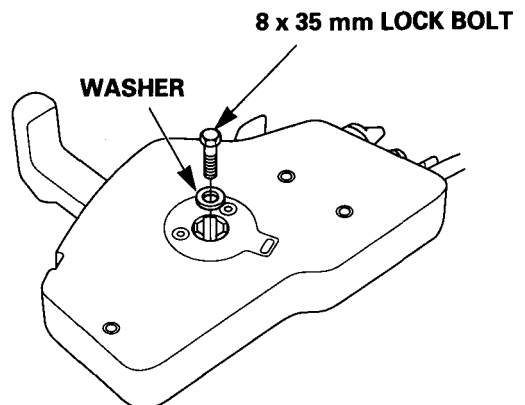


- 11) Install the remote control lever and tighten with the 8 x 35 mm lock bolt and washer.

Torque: 20 N·m (2.0 kgf·m, 14.5 lbf·ft)

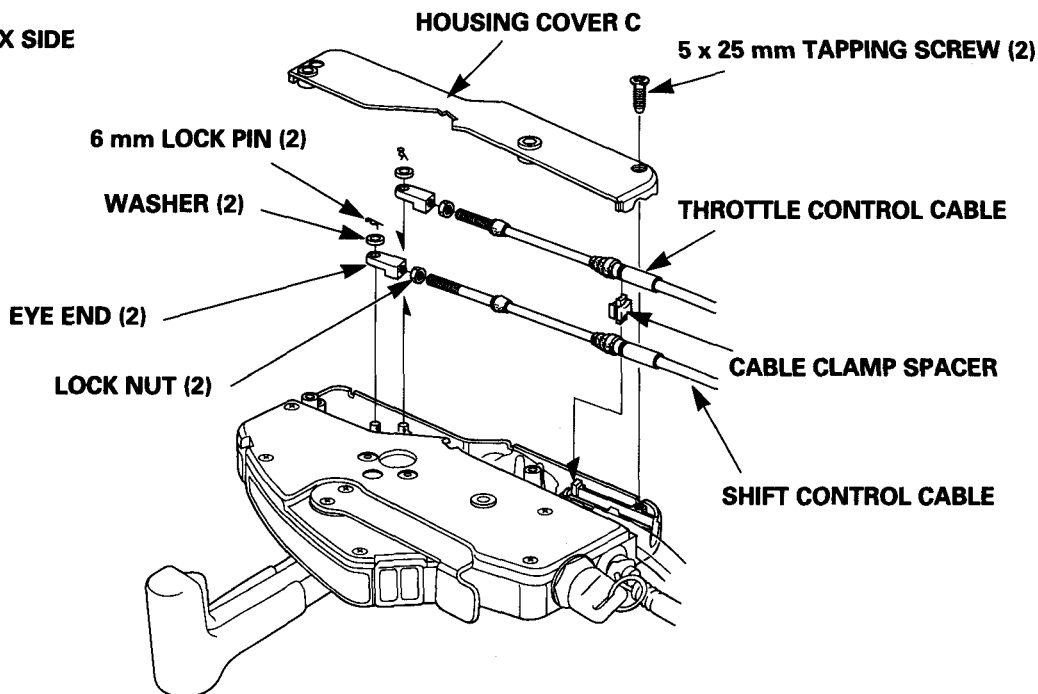
NOTE:

Install the remote control lever by setting it in the neutral "N" (NEUTRAL) position.



CONTROL CABLE INSTALLATION

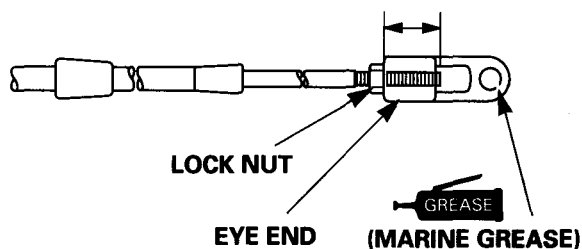
• CONTROL BOX SIDE



1) Remove the two 5 x 25 mm tapping screws and housing cover C.

2) Screw the lock nuts and eye ends more than 8 mm (0.3 in) onto the thread of the control cables and tighten the lock nuts securely to hold the pivots. Apply marine grease to the hole of the eye end.

More than 8 mm (0.3 in)

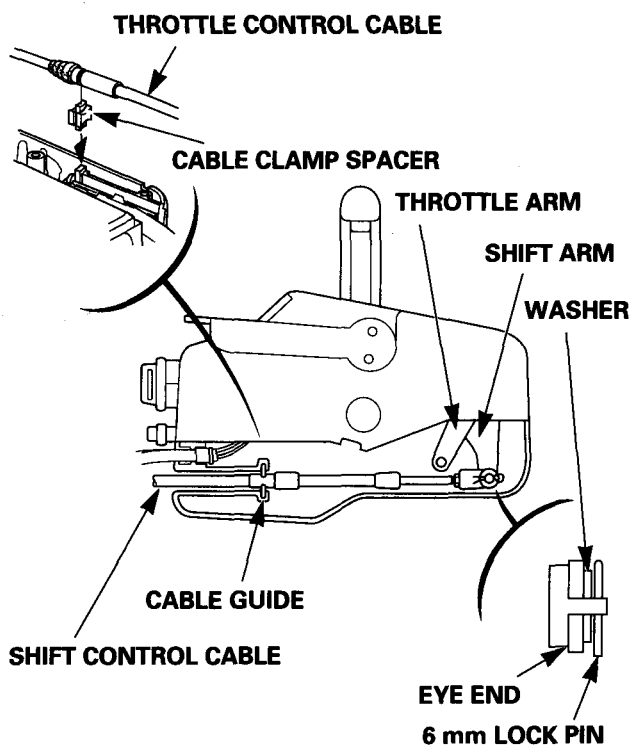


3) Install the shift control cable by aligning the groove of the control cable with the cable guide plate. Then connect the eye end to the shift arm pin using the washer and 6 mm lock pin.

NOTE:

Install the washer on the lock pin side.

4) Install the cable clamp spacer and throttle control cable by aligning the groove with the cable guide plate. Then connect the eye end to throttle arm pin using the washer and 6 mm lock pin.



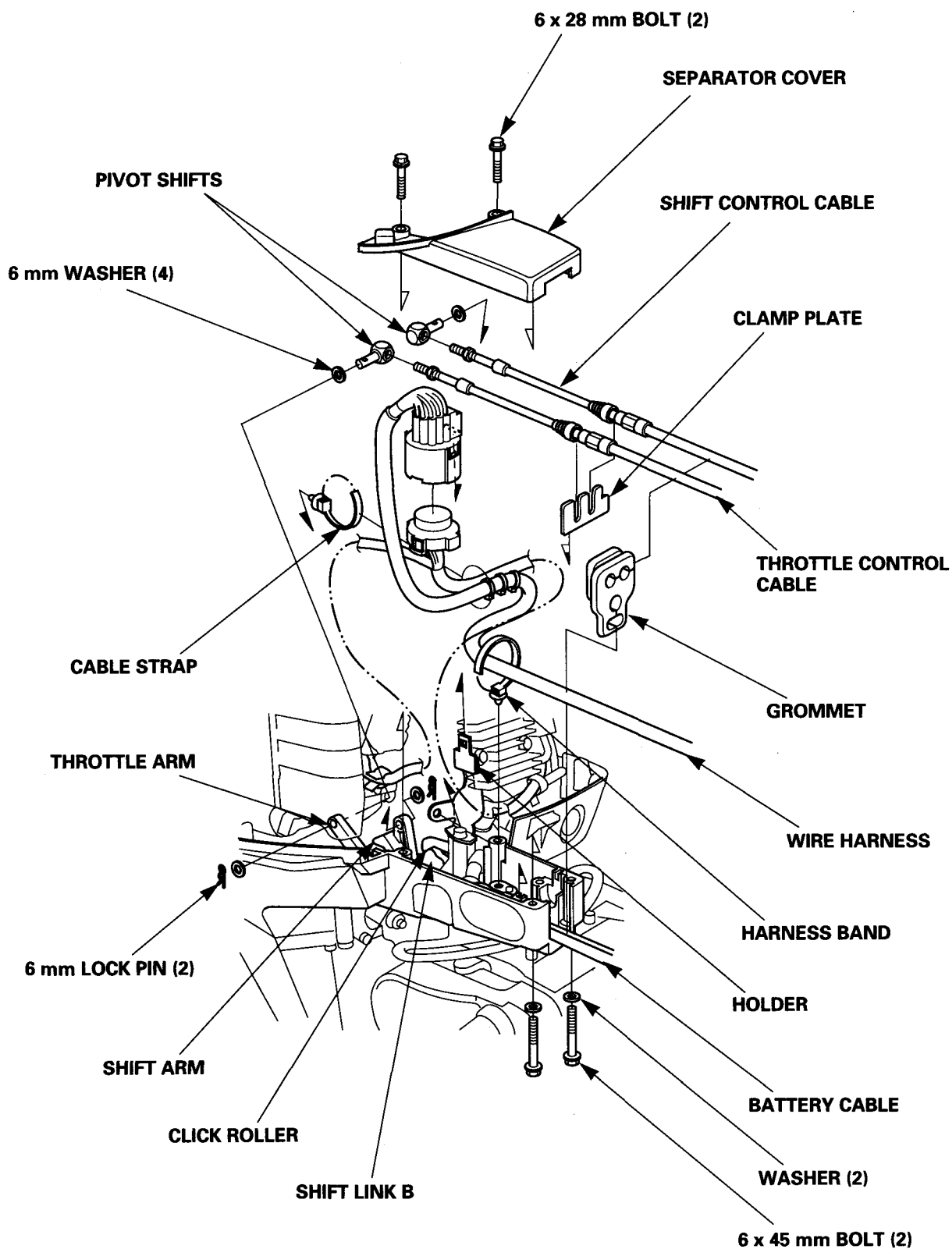
5) Reinstall the housing cover C and tighten the 5 x 25 mm tapping screws.

Torque: 2 N·m (0.2 kgf·m, 1.4 lbf·ft)

• OUTBOARD MOTOR SIDE

NOTE:

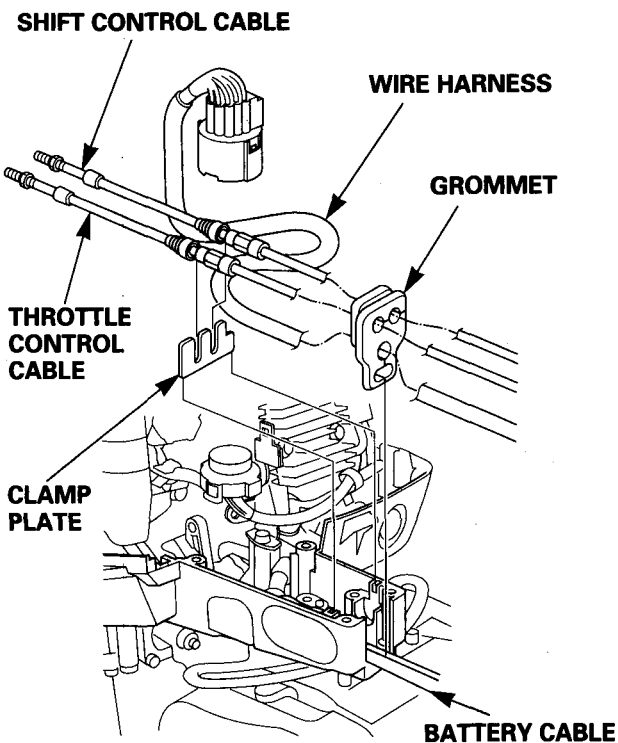
- After installing the control cable to the remote control box, install the control cable to the outboard motor.



1) Remove the outboard motor cover.

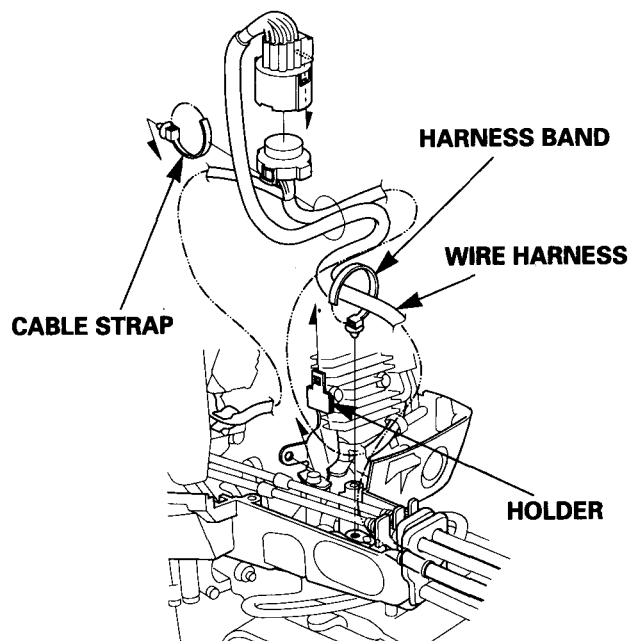
2) Pass the battery cable, throttle control cable, shift control cable and the control box side wire harness through the grommet, and install the grommet in the outboard motor.

3) Install the clamp plate aligning the cutouts in the clamp plate with the grooves in the throttle control cable and shift control cable.

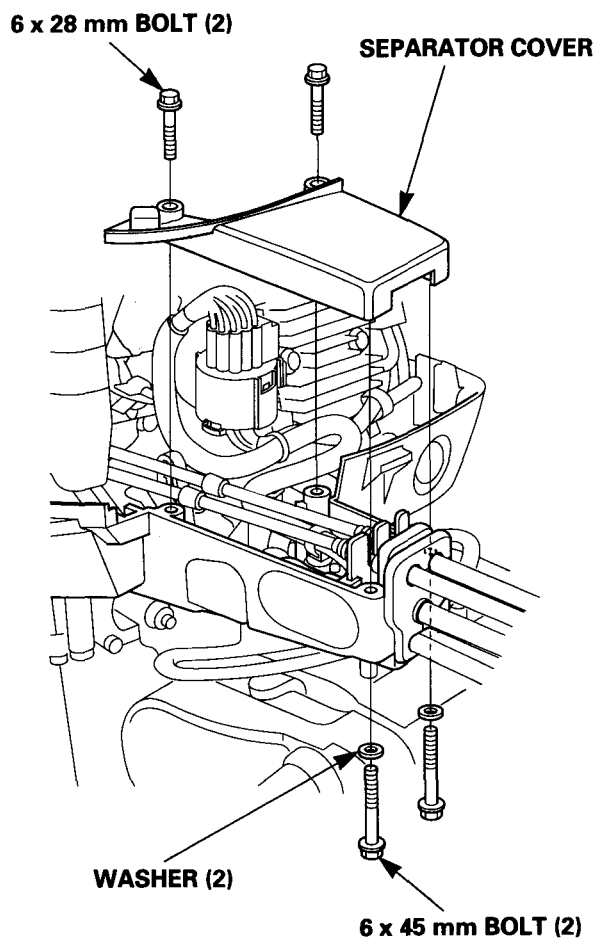


4) Secure the control box side wire harness with the harness clip.

5) Connect the wire harness of the control box side to the one of the outboard motor side, and set the harness joint on the holder.

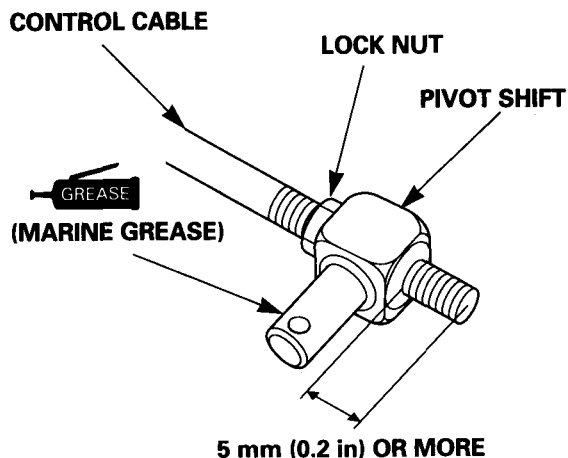


6) Install the separator cover with the bolts and washers.



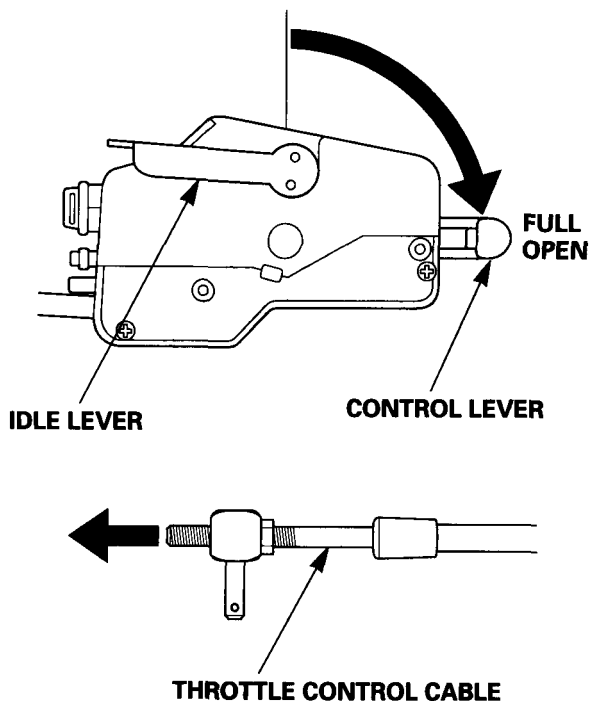
7) Install the pivot shift on each control cable, and loosely tighten with the lock nut.

- Set each pivot shift at the position 5 mm (0.2 in) or more from the cable end as shown.
- Apply the marine grease to the pivot pins.



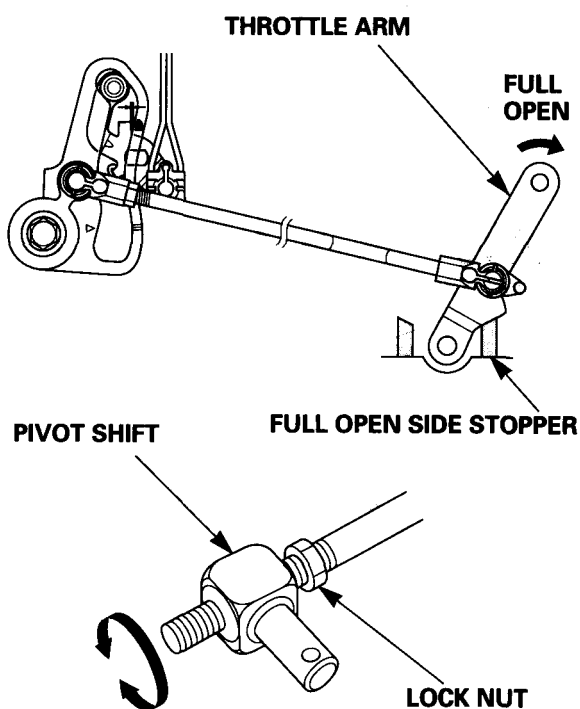
8) Set the control lever in the "F" (Forward) position, throttle arm in the full open position and the fast idle lever in the "Idle position" respectively

9) Pull the throttle control cable lightly and bring the cable free play to the longer side.



10) Move the throttle arm so it contacts lightly with the full open side stopper, and hold it in the position.

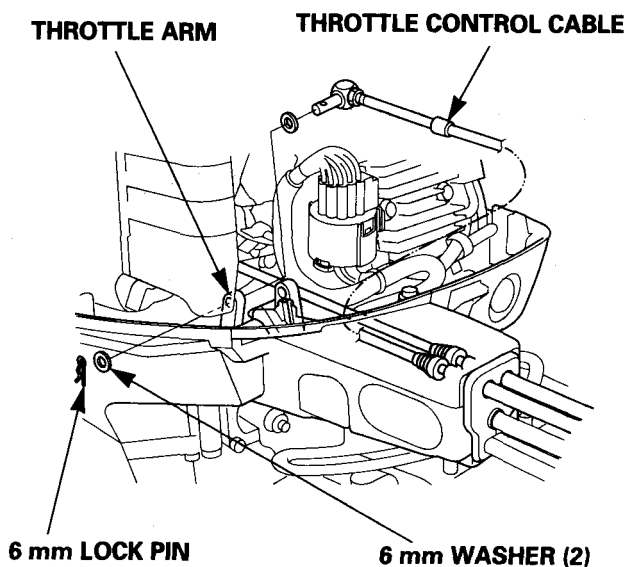
11) Turn the throttle control cable's pivot shift in or out and adjust its position so that it can be set on the throttle arm smoothly. After adjustment, tighten the lock nut securely.



12) Connect the throttle control cable to the throttle arm and secure with the 6 mm washers and 6 mm lock pin.

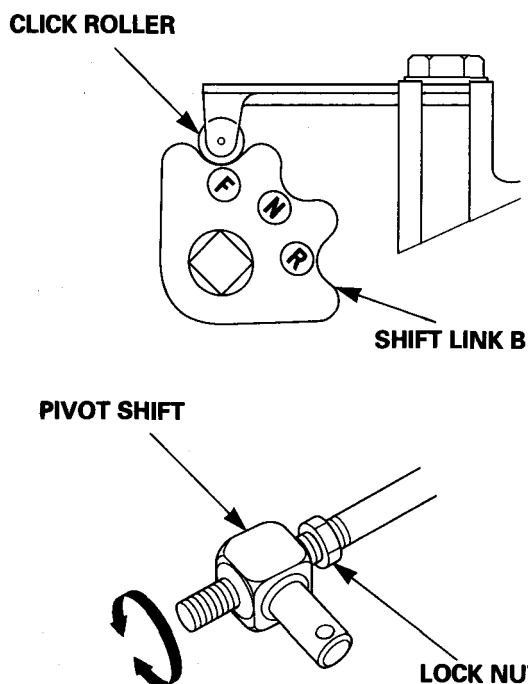
CAUTION:

• Set the washers on both sides of each arm as shown.



13) Set the shift link B in the "F" (Forward) position.

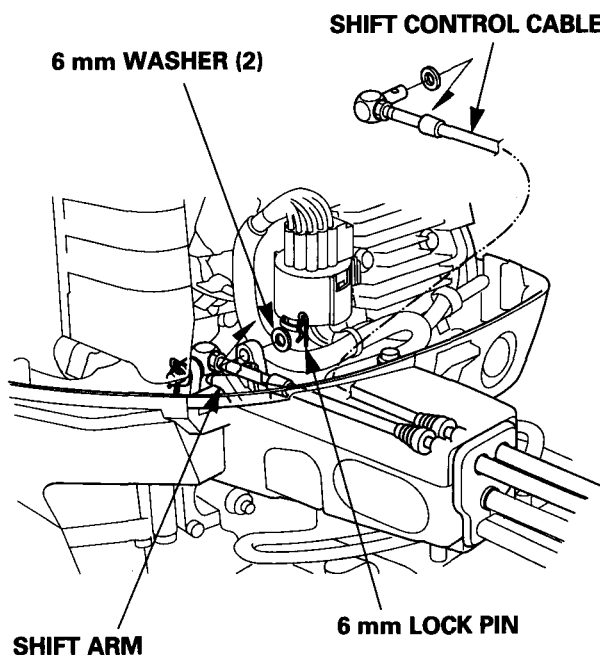
14) Turn the shift control cable's pivot shift in or out and adjust its position so that it can be set on the shift arm smoothly. After adjustment, tighten the lock nut securely.



- 15) Connect the shift control cable to the shift arm and secure with the 6 mm washers and 6 mm lock pin.

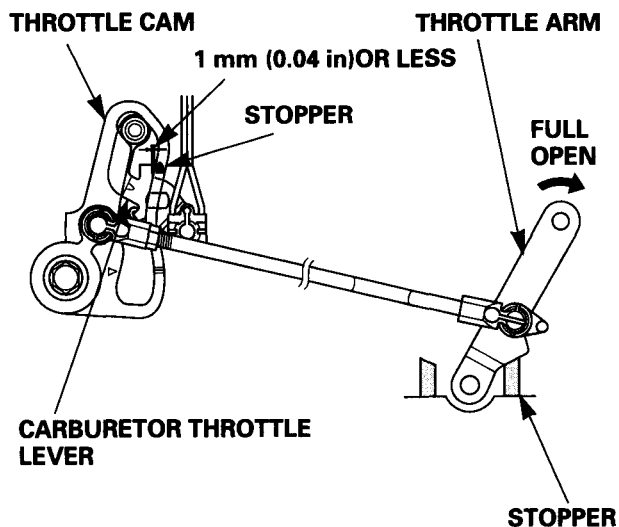
CAUTION:

- Set the washers on both sides of each arm as shown.



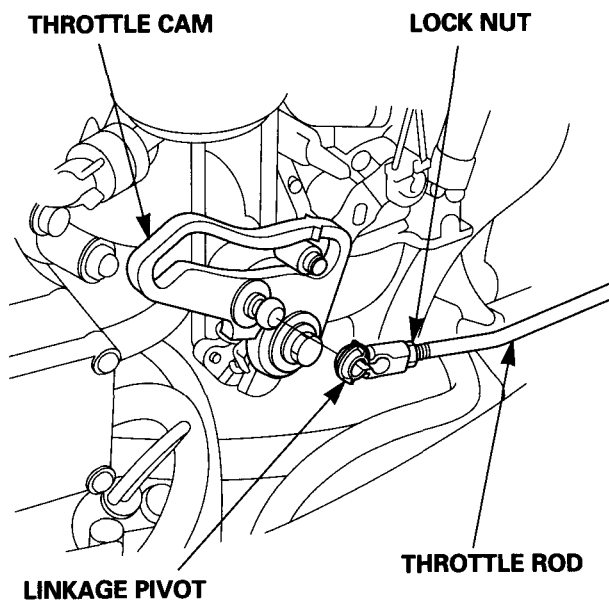
THROTTLE CONTROL CABLE ADJUSTMENT

- 1) Set the control lever in the "F" (Forward) position, throttle arm in the full open position and the fast idle lever in the "Idle position" respectively. Check whether there is a clearance of 1 mm (0.04 in) or below between the carburetor throttle lever and the carburetor full open stopper.

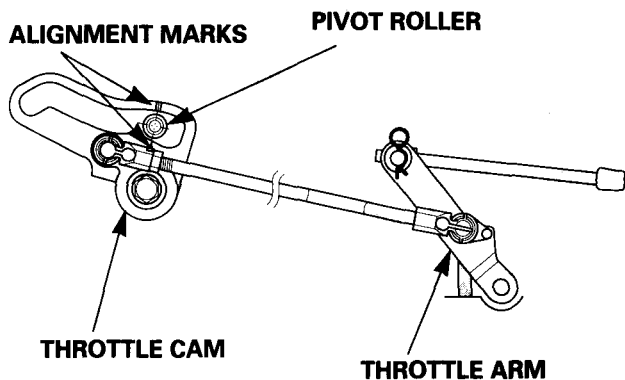


- 2) If the gap is more than 1 mm (0.04 in), adjust as follows.

- 1. Disconnect the throttle rod from the throttle cam. Loosen the lock nut and adjust by turning the linkage pivot.
- 2. After adjustment, tighten the lock nut and reconnect the throttle rod to the throttle cam.



- 3) With the control lever in the "N" (Neutral) position, be sure that the pivot roller center is in alignment with the alignment marks on the throttle cam.

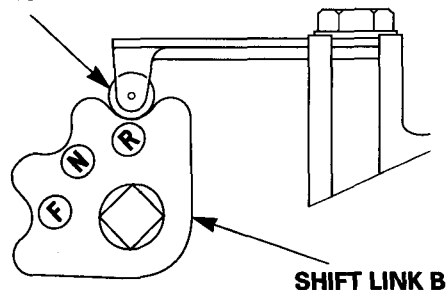


- 4) If the pivot roller center is out of alignment with the alignment marks, remove the throttle rod from the throttle cam and adjust by loosening the lock nut and turning the linkage pivot (see page 25).
- 5) After adjustment, tighten the lock nut and install the throttle rod on the throttle cam (see page 25).
- 6) Check the steps 1) and 3). If the conditions of the steps 1) and 3) are not satisfied, readjust.
- 7) Check whether the control lever moves smoothly and the carburetor throttle link moves smoothly from the full close to the full open positions.

SHIFT CONTROL CABLE ADJUSTMENT

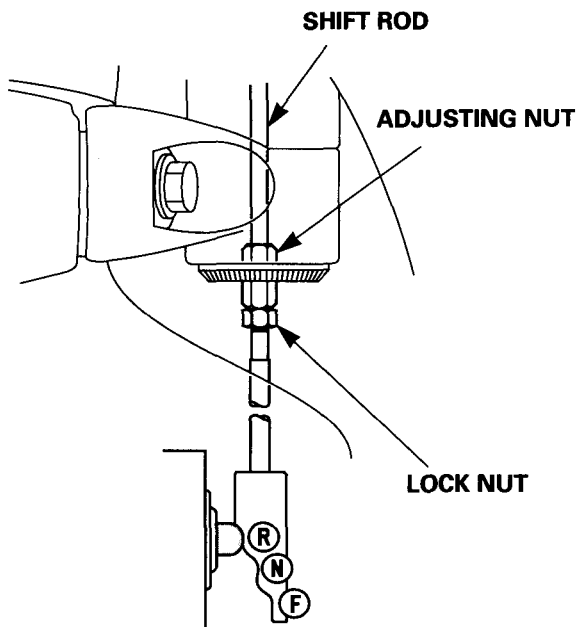
- 1) Disconnect the shift control cable from the shift arm.
- 2) Set the shift lever in the "R" (reverse) position and check whether the click roller is in the "R" position of the shift link B.

CLICK ROLLER



- 3) If the click roller is out of the specified position, loosen the lock nut on the shift rod and adjust by turning the adjusting nut until the click roller comes to the "R" position of the shift link B.

- 4) After adjustment, tighten the lock nut securely.

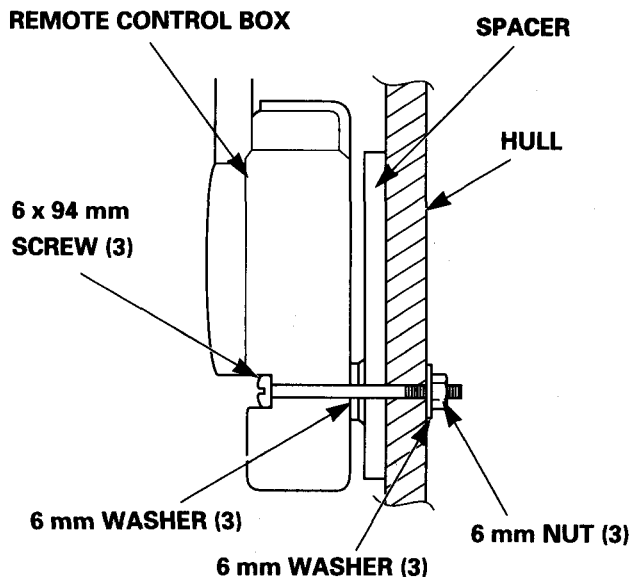


- 5) Set the control lever in the "F" (Forward) position, throttle arm in the full open position and the fast idle lever in the "Idle position" respectively (see page 24).
Set the shift link B in the "F" (Forward) position. Adjust the shift control cable length so its pivot shift can be installed on the shift arm smoothly. After adjustment, tighten the lock nut securely (see page 24).
- 6) Connect the shift control cable to the shift arm and tighten with the 6 mm washers and 6 mm lock pin (see page 25).
- 7) Operate the shift lever and be sure that the shift link B moves properly.
- 8) Reinstall the outboard motor cover.

REMOTE CONTROL BOX INSTALLATION

NOTE:

- After the control cable installation and adjustment, install the remote control box to the hull.
- Install the remote control box at the selected mounting location using the supplied parts.
- Set the control lever to the "N" (NEUTRAL) position when installing the remote control box.

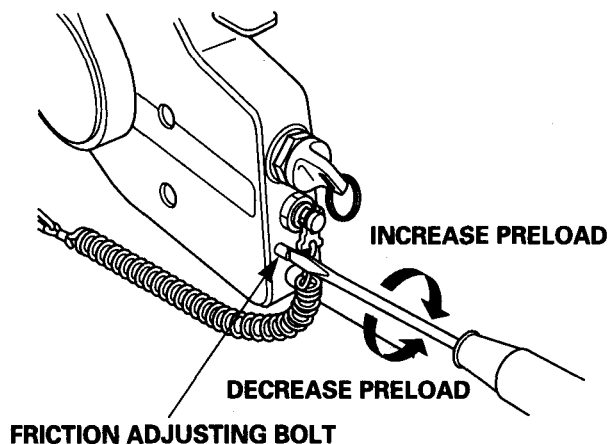


CONTROL LEVER PRE-LOAD ADJUSTMENT

- 1) The control lever pre-load can be adjusted by turning the friction adjustment bolt at the front of the remote control box.
- 2) Turning the bolt clockwise will increase the pre-load, turning it counterclockwise will decrease.

NOTE:

- Do not turn the adjusting bolt more than necessary.



OPERATION CHECK AFTER INSTALLATION

NOTE:

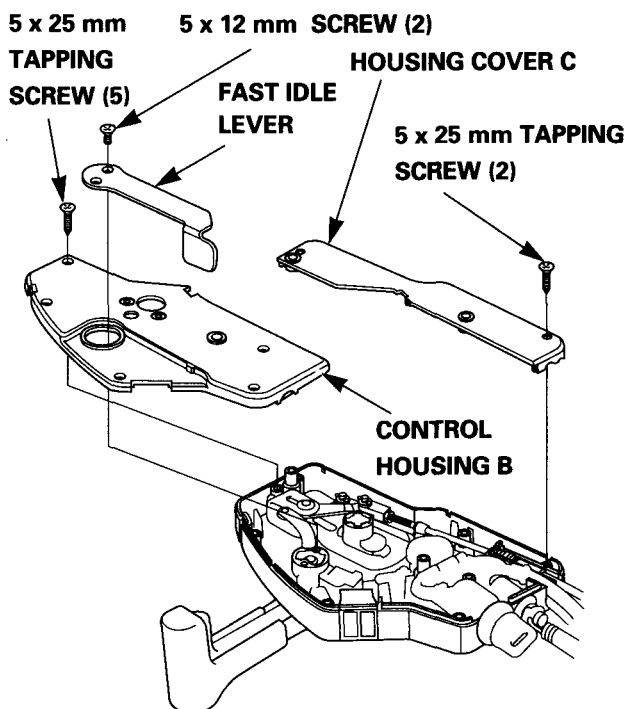
- Check whether the control cable is adjusted properly and there is no twist or bend in the cable.
- Check the control lever for smooth operation and check the control cable for smooth movement without restriction.

- 1) Set the control lever in the "F" (Forward) position (approx. 30°) and check whether the shift shaft is in the forward position.
- 2) Set the control lever in the "F" (Forward) full open position and check whether the carburetor throttle lever is in the full open position.
- 3) Return the control lever to the "N" (Neutral) position and check whether the carburetor throttle lever is in the full close position.
- 4) If the carburetor throttle lever does not move to the full open and/or full close position, adjust the throttle control cable again.
 - If the carburetor throttle rod and throttle control cable had been adjusted properly, the carburetor throttle lever should automatically move to full open/full close position accordingly by setting the control lever in the fully open/full close position. If the carburetor throttle lever is not in the proper position, adjust as follows.

-1 Remove the two 5 x 12 mm screws and remove the fast idle lever.

-2 Remove the five 5 x 25 mm self-tapping screws and remove the control housing B.

-3 Remove the two 5 x 25 mm tapping screws and remove the housing cover C.

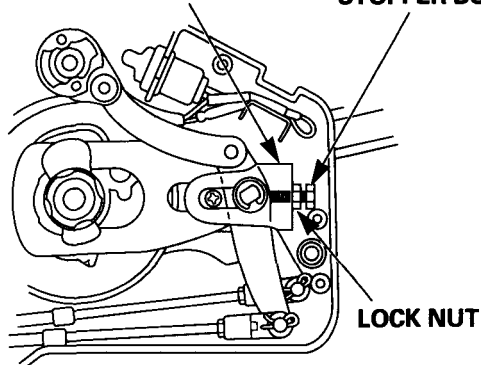


-4. Set the control lever in the throttle full open position.

-5. Loosen the lock nut on the link joint bracket, and adjust by turning the stopper bolt to bring the carburetor to full open.

LINK JOINT BRACKET

STOPPER BOLT



-6. Tighten the lock nut. Install the housing cover C, control housing B and the fast idle lever.

5. OPTIONAL EQUIPMENT

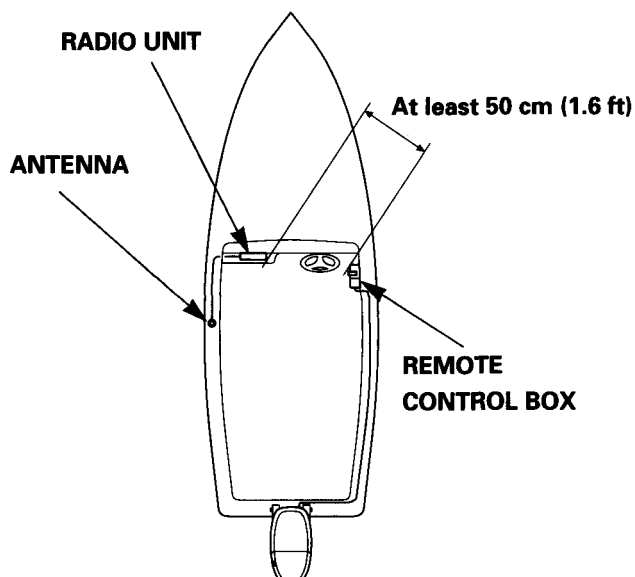
RADIO SYSTEM INSTALLATION PRECAUTION

NOTE:

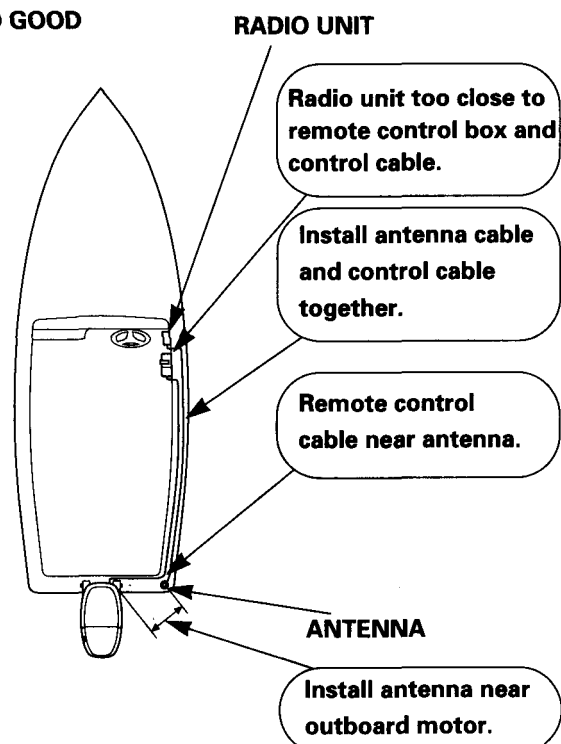
Radio wave is strong that it may damage the outboard motor. Carefully follow the installation instruction.

- Keep the antenna and the radio unit at least 50 cm (1.6 ft) away from the outboard motor, control cable and remote control box.
- Do not install the antenna cord and control cable tied up.
- Select a radio with its output power less than 10 W.

GOOD



NO GOOD



D-GPS INSTALLATION PRECAUTION

NOTE:

Carefully follow the installation instruction when install a D-GPS.

- 1) Keep the D-GPS unit and antenna at least 3 m (10 ft) away from the outboard motor.
- 2) Be sure to connect the ground system to the boat.

METER

INSTALLATION

Meters and other instruments should be installed on the dash board. If any other location is selected, it will be necessary to use a mounting plate with a thickness of 2 — 11 mm (0.04 — 0.44 in).

NOTE:

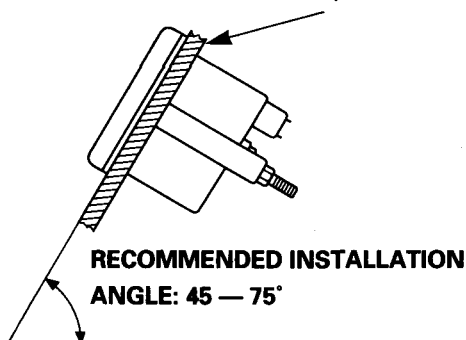
- If the mounting plate thickness exceeds 11 mm (0.44 in), the bracket must be modified accordingly (hour meters up to a thickness of 8 mm (0.31 in) can be installed).
- Tighten the mounting nuts evenly on both sides.

OPENING SIZE

Type	Opening Diameter
Tachometer	80.5 mm (3.17 in)
Hour Meter	50.4 mm (1.98 in)
Trim meter	52.5 mm (2.07 in)
Voltmeter	54.0 mm (2.13 in)

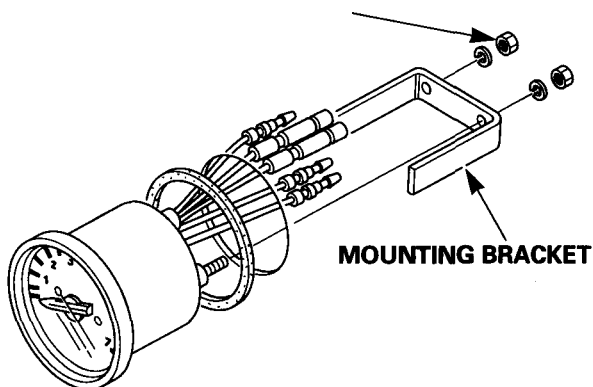
MOUNTING PANEL

THICKNESS: 2 — 11 mm (0.04 — 0.44 in)



MOUNTING NUT

MOUNTING BRACKET



METER WIRE HARNESS CONNECTION

Route and connect the wire harness properly as shown in the wiring diagram. Use the genuine Honda wire harness and modify it if necessary.

NOTE:

- Stake the lead wire against the terminal securely using the special tool.
- Use the 1.25 mm (0.05 in) dia. (AWG #6) lead wire to put them together. Solder the joint section and protect it by wrapping with a piece of insulation tape.

CAUTION:

- First, check whether the wire harnesses are connected as shown in the wiring diagram, then connect the battery and turn the power switch ON to check for proper condition of the electrical parts and wire harness.
- Wrap the free terminal with a piece of vinyl tape or equivalent to insulate them securely.
- Before reconnecting connectors, check them carefully to make sure that their terminals are not bent, exposed, or disconnected.
- If a terminal is oxidized or corroded, remove the oxidation or corrosion with nonconductive plastic scrub pad and contact cleaner before reconnecting it.
- Be sure to reconnect connectors by inserting them fully into their receptacles. Check locking connectors to be sure that locking devices are locked in place securely.
- Check insulators to make sure they surround their connectors completely. Do not fold up the mouths of insulators.
- Before reconnecting wire connectors, check them to make sure that the covers are not torn or broken, and that the gaps of female terminals are not overly expanded and loose.
- Do not break the coverings of wire harness. If the covering of wire harness is broken, either repair it with electrician's tape, or replace it.

METER WIRING DIAGRAM

Secure the free terminals on the harness by taping them around to prevent them from contacting any neighboring parts and the resulting short-circuit.



LIGHTING SWITCH

(Commercially available)

We recommend the

Toggle Switch No.1S

16970 manufactured by

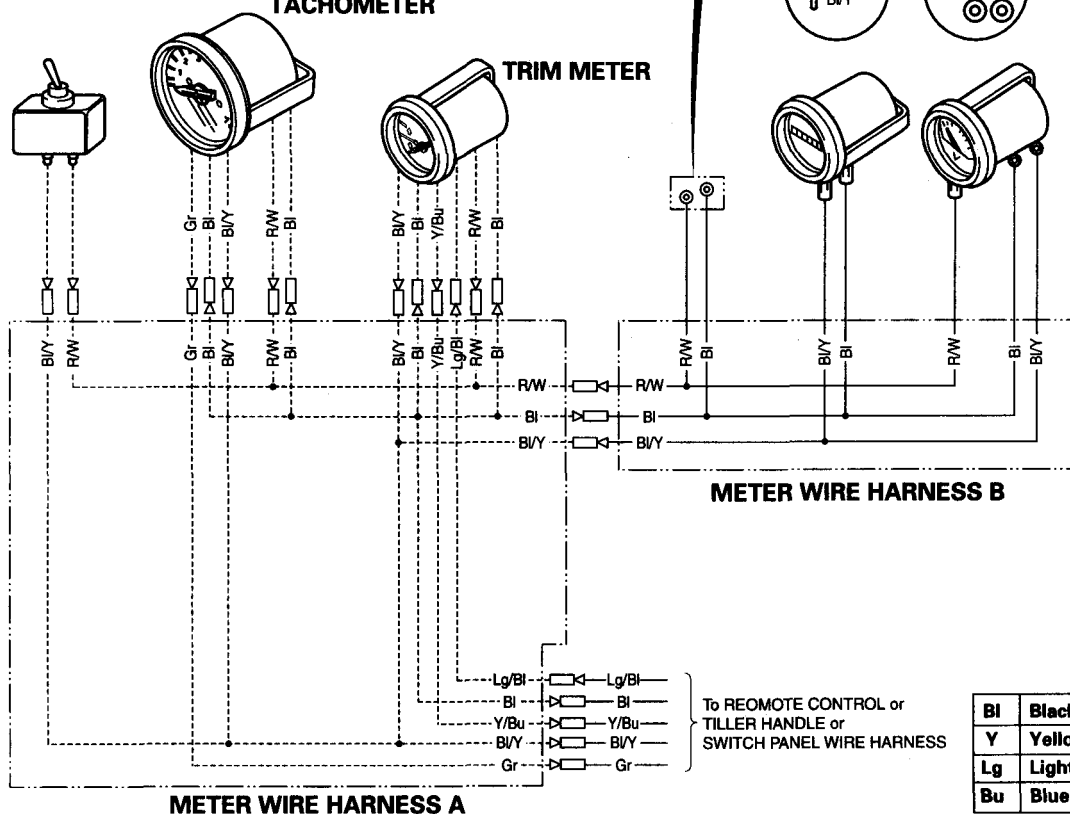
Teleflex of U.S.A.

TACHOMETER

TRIM METER

HOURLMETER

VOLTMETER



SWITCH PANEL

If your boat is equipped with a Binnacle or Flash mounting type remote control box, prepare the switch panel as follows to install the electrical parts and switches.

Part name

Ignition switch

Emergency stop switch

Indicator lamp

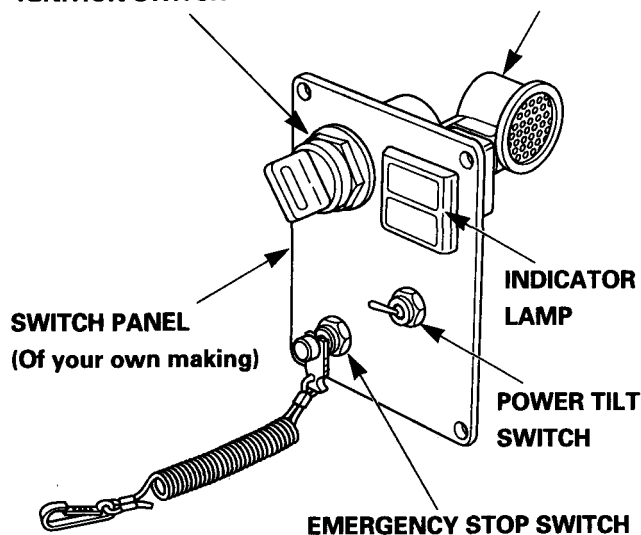
Buzzer

Power tilt switch (commercially available)

Control box wire harness

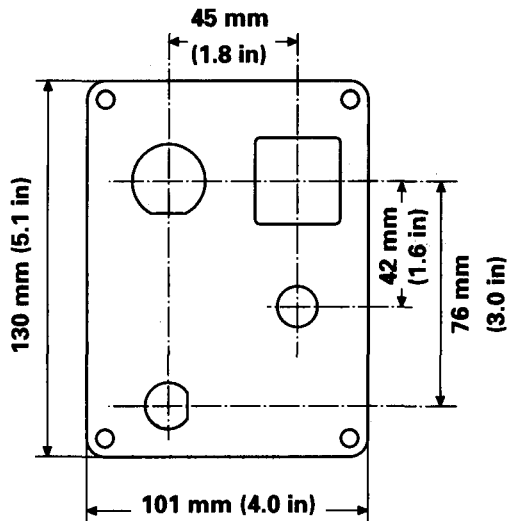
IGNITION SWITCH

WARNING BUZZER



RECOMMENDED SHAPE

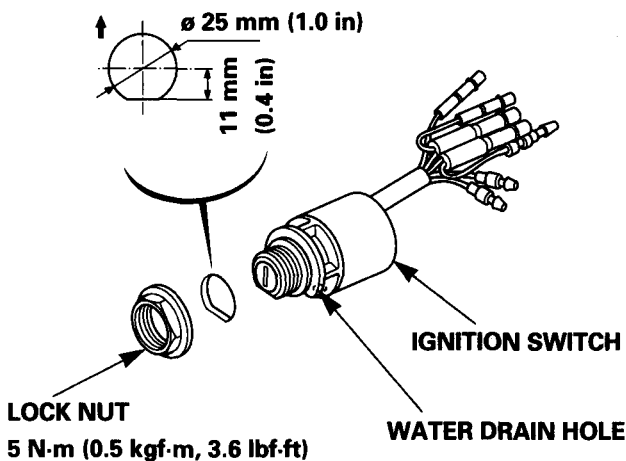
Use 3 mm (0.12 in) thick aluminum or stainless steel plate.



INSTALLATION

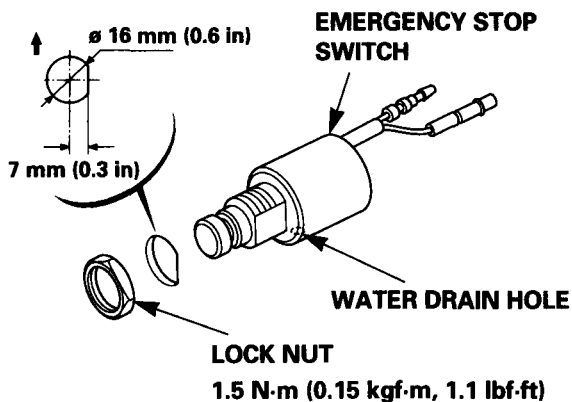
• IGNITION SWITCH

Drill the holes in the panel so that the switch can be installed with the drain hole facing down.

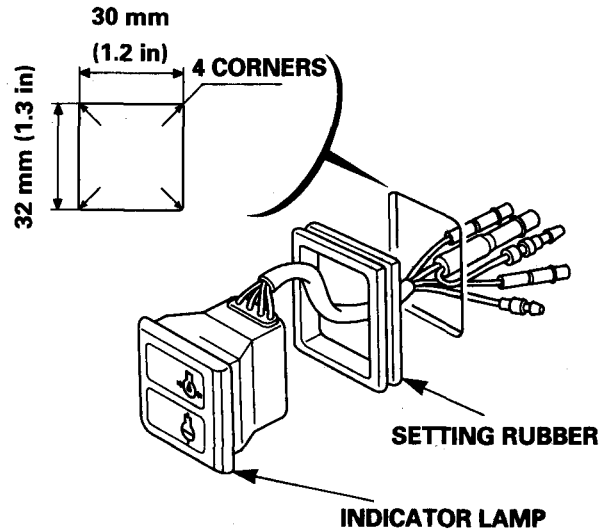


• EMERGENCY STOP SWITCH

Drill the holes in the panel so that the switch can be installed with the drain hole facing down.

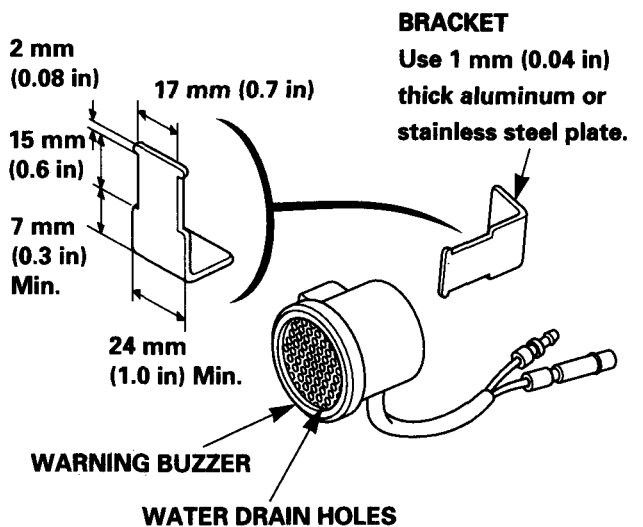


• INDICATOR LAMP



• WARNING BUZZER

Prepare the bracket of the dimensions shown, and install the warning buzzer with the drain hole toward down.



POWER TILT SWITCH INSTALLATION

Use a commercially available toggle switch.

Installation hole: 12 mm (0.5 in) in diameter

Connecting terminal: JIS PA

SWITCH WIRE HARNESS CONNECTION

Connect the wire harness as per the wiring diagram shown on the following page.

Use the control box wire harness. Modify or correct the wire harness as necessary.

NOTE:

- Stake the lead wire against the terminal securely using the special tool.
- Use the 0.5 — 1.25 mm (0.02 — 0.05 in) dia. lead wire to put them together. Solder the joint section and protect it by wrapping with a piece of insulation tape.

SWITCH PANEL WIRING DIAGRAM

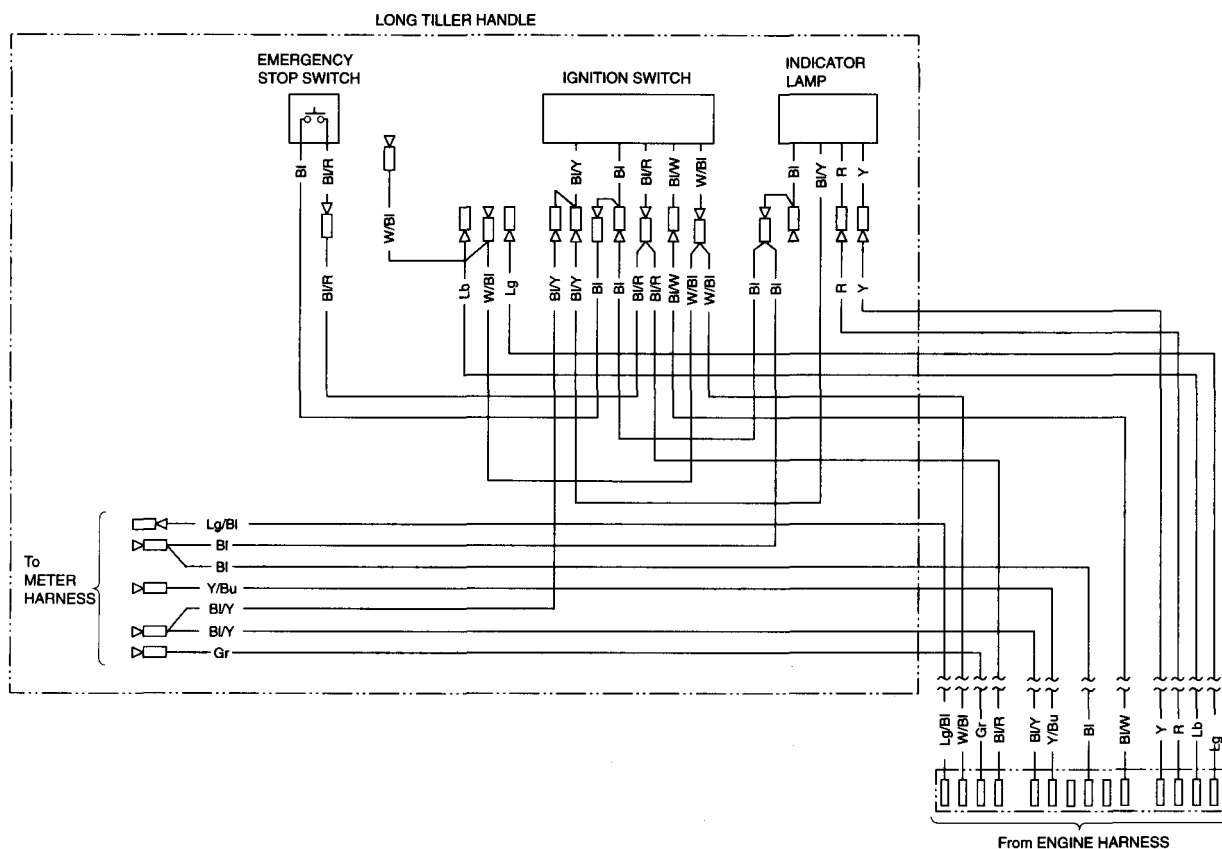
CAUTION:

- First, check whether the wire harnesses are connected as shown in the wiring diagram, then connect the battery and turn the power switch ON to check for proper condition of the electrical parts and wire harness.
- When the Honda recommended wire harness is used, connect the Black/Green and Light Green/Black terminals.
- Before reconnecting connectors, check them carefully to make sure that their terminals are not bent, exposed, or disconnected.
- Wrap the free terminal with a piece of vinyl tape or equivalent to insulate them securely.

- If a terminal is oxidized or corroded, remove the oxidation or corrosion with nonconductive plastic scrub pad and contact cleaner, before reconnecting it.
- Be sure to reconnect connectors by inserting them fully into their receptacles. Check locking connectors to be sure that locking device are locked in place securely.
- Check insulators to make sure they surround their connectors completely. Do not fold up the mouths of insulators.
- Before reconnecting wire connectors, check them to make sure that the covers are not torn or broken, and that the gaps of female terminals are not overly expanded and loose.
- Do not break the coverings of wire harness. If the covering of wire harness is broken, either repair it with electrician's tape, or replace it.

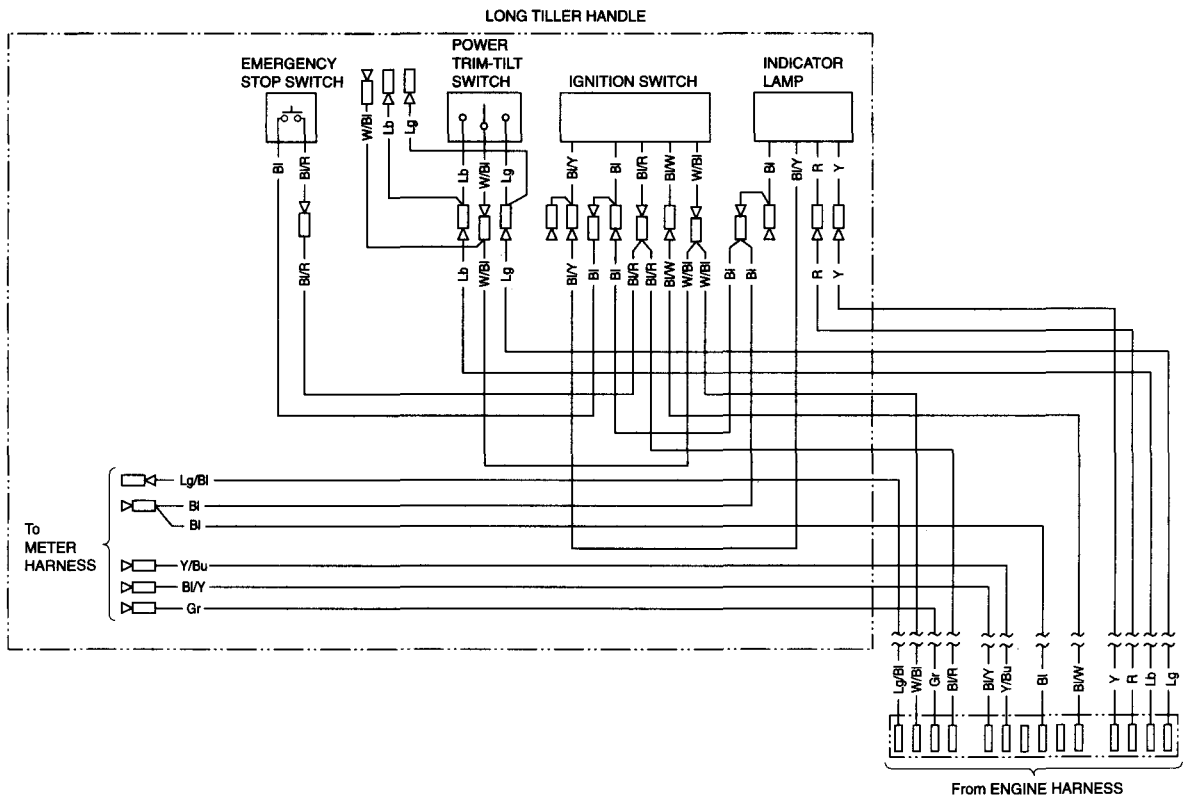
LONG TILLER HANDLE TYPE:

(Gas-assisted tilt type)



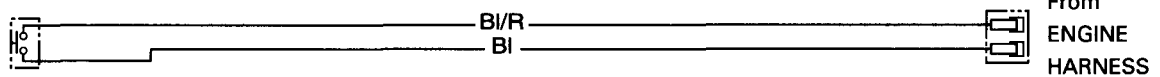
Bl	Black	Bu	Blue
Y	Yellow	Gr	Gray
G	Green	Lg	Light green
R	Red	Lb	Light blue
W	White	Br	Brown

LONG TILLER HANDLE TYPE:
(Power trim/tilt type)



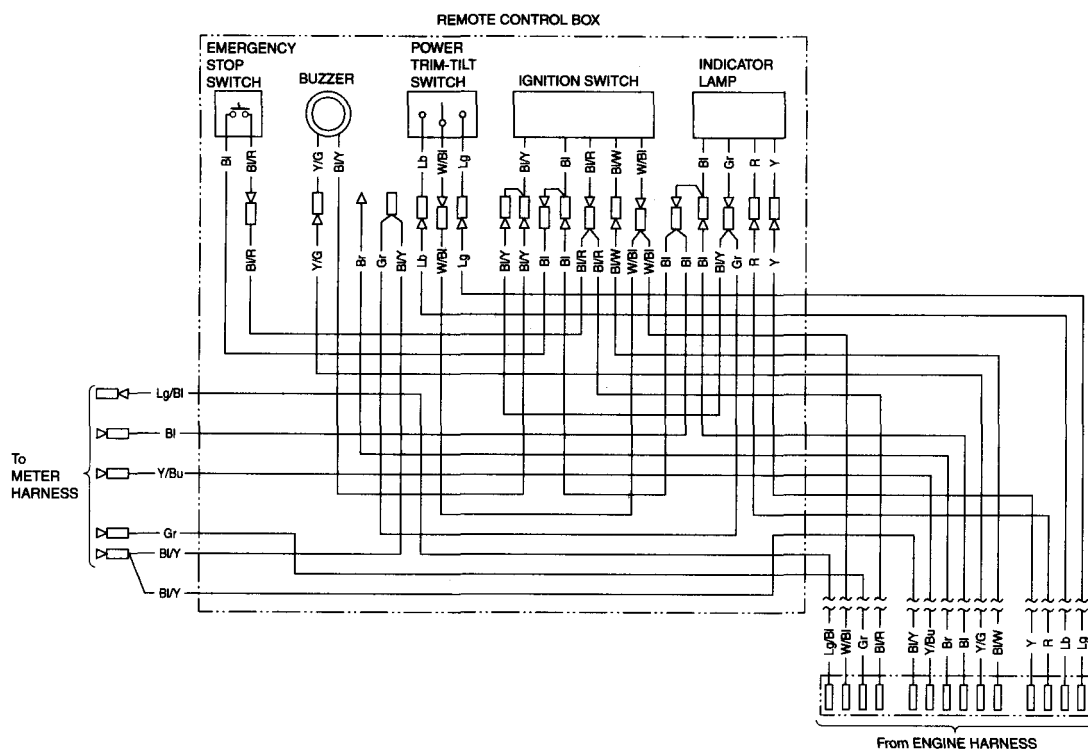
LONG TILLER HANDLE TYPE:
(Recoil starter type)

EMERGENCY STOP SWITCH



BI	Black	Bu	Blue
Y	Yellow	Gr	Gray
G	Green	Lg	Light green
R	Red	Lb	Light blue
W	White	Br	Brown

REMOTE CONTROL TYPE: (Power trim/tilt type)



Bl	Black	Bu	Blue
Y	Yellow	Gr	Gray
G	Green	Lg	Light green
R	Red	Lb	Light blue
W	White	Br	Brown

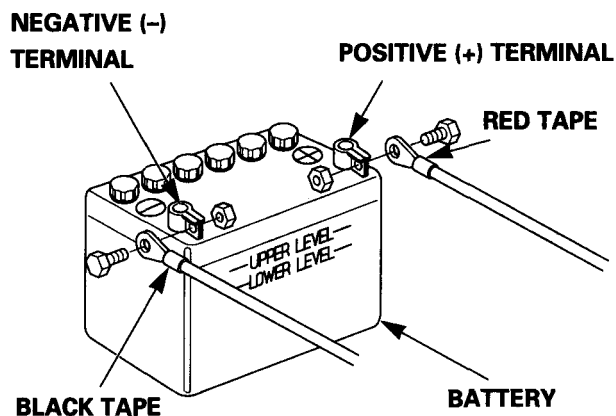
BATTERY

NOTE:

- Install the battery in a dry and well ventilated location.
- Minimum requirements: 12 V — 65 Ah/20 HR

CAUTION:

- When connecting the battery cable, be sure to connect the positive (+) terminal first. To disconnect, disconnect at the negative (-) terminal first, then at positive (+) terminal. Never dis/connect the battery cables in the reverse order.



6. PROPELLER

INSTALLATION

THRUST WASHER

INSTALLATION

- Install with the groove side facing to the gear case.

GEAR CASE

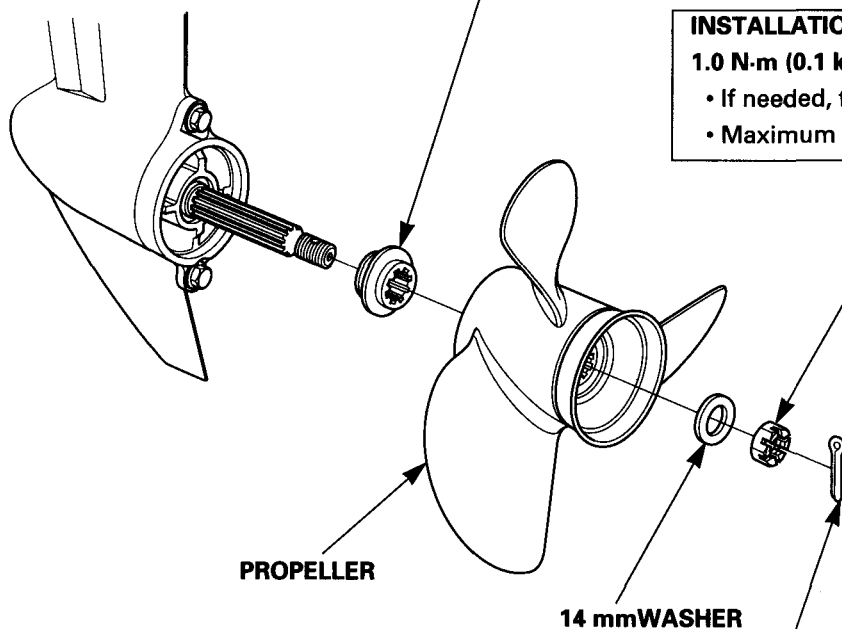


14 mm CROWN HEAD NUT

INSTALLATION

1.0 N·m (0.1 kgf·m, 0.7 lbf·ft)

- If needed, tighten it to align the hole with groove.
- Maximum torque: 34.3 N·m (3.5 kgf·m, 25.3 lbf·ft)



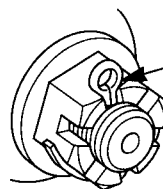
PROPELLER

14 mm WASHER

3 mm COTTER PIN

INSTALLATION

- Bend the pin as shown.
- Always use the genuine Honda or Honda recommended part (stainless steel).



3 mm COTTER PIN

SELECTION

Selection of the optimum propeller in regards to boat characteristics and outboard motor performance is of utmost importance. To ensure smooth acceleration, top speed, smooth handling and good fuel economy, select a propeller which is designed for your boat size and outboard motor output. Confirm that the boat reaches its top speed at full throttle and in the maximum engine speed.

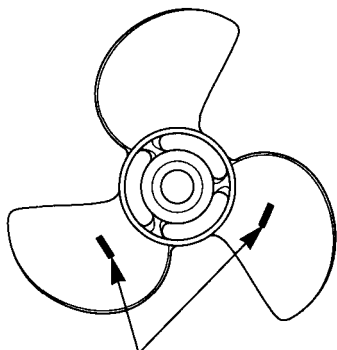
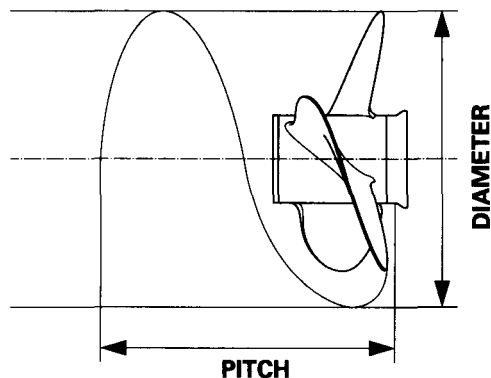
• DESIRABLE PROPELLER CHARACTERISTICS

- The ideal propeller should give top boating speed at moderate loads, with the throttle fully open, not exceeding the recommended engine speed.

RECOMMENDED MAXIMUM ENGINE SPEED:

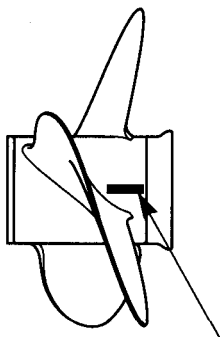
BF25D: 5,000 — 6,000 min⁻¹ (rpm)

BF30D: 5,000 — 6,000 min⁻¹ (rpm)



PROPELLER DIMENSIONS

Diameter (in) x Pitch (in)



PROPELLER DIMENSIONS

Diameter (in) x Pitch (in)

Pitch Advanced Distance during One Turn
(Visual Advanced Distance)

Pitch Ratio..... $\frac{P}{D}$ P: Pitch (mm)
D: Outer Diameter of Propeller

Slip Ratio

Visual Advanced Distance — $\frac{\text{Measured Distance} \times 100}{\text{Visual Advanced Distance}}$

- During running the actually advanced distance is reduced by about 10 — 15 % due to propeller display pitch.

- **PRECAUTION WHEN SELECTING A PROPELLER**

- The outboard motor must be installed vertically in relation to the bottom of the boat.
- Protect the propeller from foreign objects, and check regularly for damages and deformation, and aquatic plants wrapped around the propeller hub.
- Keep the bottom of the boat clean from shells, algae growth and dirt (they will cause a significant drop in top speed).
- When doing propeller checks select a calm day with little wave action.
- Avoid strong winds; the wind speed should be less than 2 — 3 m/s (0.001 — 0.002 miles/s).
- The boat should carry its average load (crew, load arrangement, ballast).
- Perform the propeller check under the above conditions.

- **REQUIRED TOOLS FOR ACCELERATION TEST**

- For this test a tachometer, stopwatch and speedometer should be prepared (if there is no speedometer available, measure the elapsed time between two fixed points, whose distance from each other is known, and calculate the speed).

- **TOP SPEED CANNOT BE REACHED AT FULL THROTTLE**

- In this case the propeller is not properly matched. Lower the propeller pitch by one size (1 — 2 inches), to avoid power loss and potential outboard motor damage.
- If it is necessary to lower the engine speed, select a propeller with a pitch one size larger.
- If the following cases occur, acceleration will improve and the life expectancy of the outboard motor will increase by lowering the propeller pitch.
 - at heavy loads (Crew, load, equipment, water skiing, etc.)
 - in places with high temperatures and high humidity
 - when using in higher elevations
 - when the boat bottom needs cleaning
 - when the area around the gear case is obstructed
 - when there is propeller damage.

NOTE:

- Do not use full throttle, but run the outboard motor with 70 — 80 % of full throttle, to increase outboard motor life and to ensure safe navigation.

Propeller Selection Chart Use the following table as the guide for propeller selection. Test run the outboard motor and check the maximum speed. If it is not in the recommended maximum speed range shown in the table, replace the propeller and test run again. Adjust to bring the maximum speed to the recommended speed range as needed.

Model	Propeller size Dia. x pitch [inch]	Speed (km/h)		Speed in the recommended engine speed range (km/h)							
		5,000 min ⁻¹ (rpm)	6,000 min ⁻¹ (rpm)	0	10	20	30	40	50	60	70
BF25D	10 x 8-1/4	4	25						Recommended engine speed range 5,000 – 6,000 min ⁻¹ (rpm)		
	9-3/4 x 9-7/8	14	32			H	C				
	9-1/4 x 12	26	45					B, D			
	9.9 x 9	17	32			C					
	9.9 x 10	21	37			C					
	9.9 x 11	28	44				B, F				
	9.9 x 12	30	47				B, D, F				
	9.9 x 13	37	54					A, G			

Model	Propeller size Dia. x pitch [inch]	Speed (km/h)		Speed in the recommended engine speed range (km/h)							
		5,000 min ⁻¹ (rpm)	6,000 min ⁻¹ (rpm)	0	10	20	30	40	50	60	70
BF30D	10 x 8-1/4	0	20						Recommended engine speed range 5,000 – 6,000 min ⁻¹ (rpm)		
	9-3/4 x 9-7/8	11	28			H					
	9-1/4 x 12	23	41					C, B			
	9.9 x 9	16	30			H					
	9.9 x 10	18	33				C				
	9.9 x 11	25	40				C				
	9.9 x 12	27	43				B, F				
	9.9 x 13	35	52					A, D, G			

Boat type and applicable size (length and weight)								
Boat type	Hull shape	Overall length (ft)	Weight (kg)	Sample				
				Code	Overall length (ft)	Weight (kg)	Presumed max. speed (km/h)	
							25 PS	30 PS
UTILITY		12 ~ 18	91 ~ 499	A	14	272	45	49
				B	17	181	38	41
INFLATABLE		11 ~ 14	59 ~ 204	C	12	127	27	30
FISHING		14 ~ 17	181 ~ 318	D	15	227	41	44
MOTOR BOAT		11 ~ 15	136 ~ 191	F	13	163	40	43
BASSBOAT		14 ~ 17	136 ~ 363	G	16	245	46	50
PONTOON		14 ~ 24	227 ~ 907	H	17	454	16	18

Operating weight of the sample boat hull used to calculate the estimated maximum speed of the boat was calculated by adding the weight of the crew, weight of the outboard motor, and the weight of the equipment (+ 100 kg) to the weight of the hull.

7. TRIM ANGLE ADJUSTMENT

NOTE:

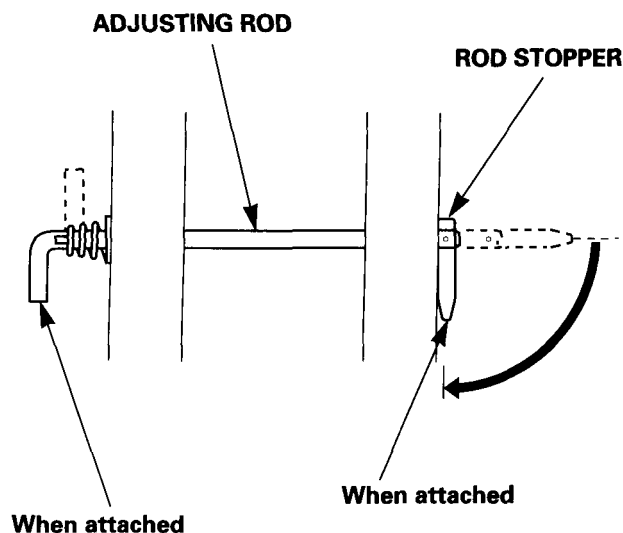
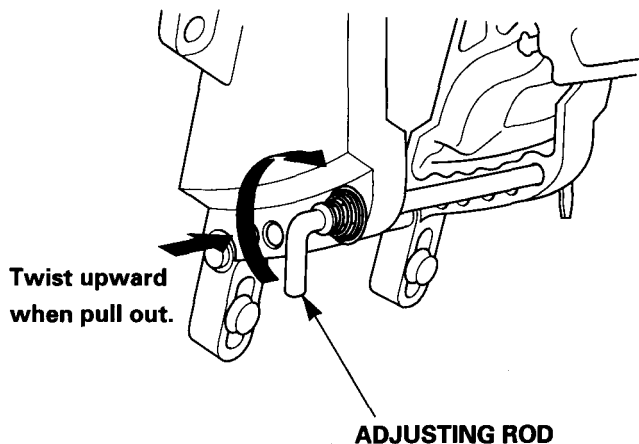
- Install the outboard motor so that the axis of the propeller is parallel with the water surface.

- 1) Push in the adjusting rod, then twist upward and pull it out to remove.
- 2) Adjust the outboard motor position so that the anti-ventilation plate is parallel to the bottom of the boat. Reposition the adjusting rod and secure it by folding the rod stopper down.

No. of adjustment positions:

5 positions: (4°, 8°, 12°, 16°, 20°)

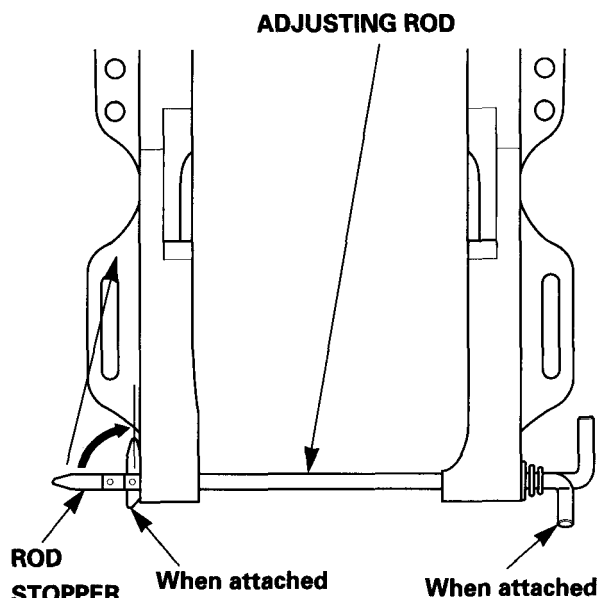
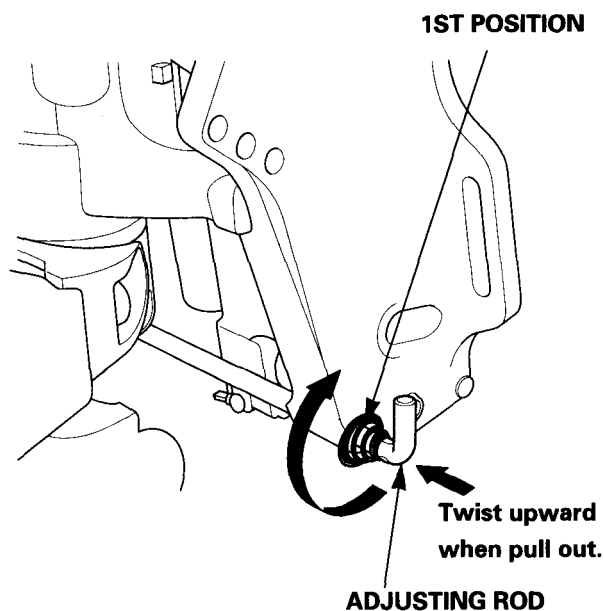
Except Power trim/tilt type and Gas-assisted tilt type:



Power trim/tilt type and Gas-assisted tilt type only:

No. of adjustment positions:

4 positions: (8°, 12°, 16°, 20°)

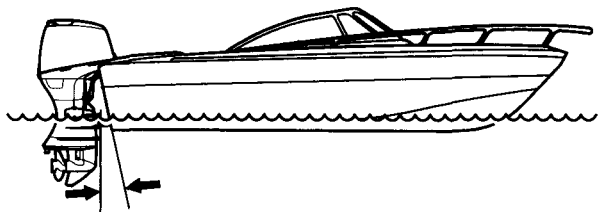


NOTE:

- The rod stopper of the adjusting rod must be at a 90 degree angle to the rod.
- After attaching make sure that the rod cannot come out, even if pulled.
- Adjust by repositioning the adjusting rod so that the anti-ventilation plate is parallel to the bottom of the boat.

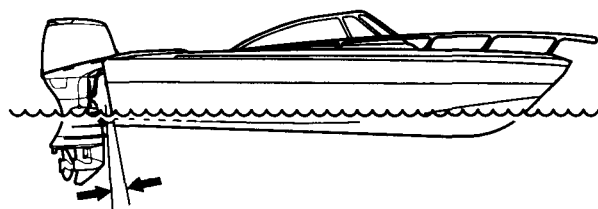
• CRUISING CHARACTERISTICS

< Correct >



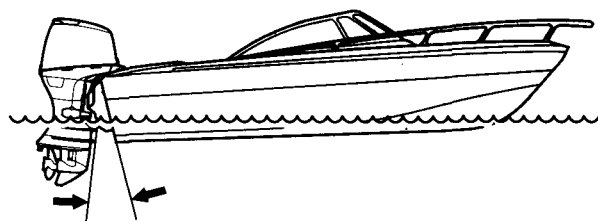
Most stable cruising and max. performance

< Too small >



Causes boat to plow

< Too large >



Causes boat to squat

8. PRE-DELIVERY INSPECTION

Check all items on the following list.

• ON LAND

☐ EXTERNAL APPEARANCE

- Check for Transport Damage.
- Check for paint scratches, touch-up if necessary.

☐ GEAR OIL

- Check for proper gear oil level.

OIL CAPACITY: Total: 0.27 lit. (0.285 US qt, 0.238 Imp qt)

☐ INSTALLATION LOCATION

- Check for correct installation location.
- Check the outboard motor installation height for correct.
- Check the mounting bolt for looseness.
- Has sealant been applied to the bolt holes and lock nuts?

☐ FUEL SYSTEM

- Check that the fuel line is connected securely.
- Check for water in the fuel.
- Make sure that the fuel tank is filled with fresh gasoline.

☐ STEERING SYSTEM

- Check the steering system for smooth operation.
- Make sure that the outboard motor does not interfere with the control cables, wire harness, and/or pipes, etc.

☐ REMOTE CONTROL SYSTEM

- Check the remote control box for proper operation.
- Make sure that the gear shift operates properly with the control lever.
- Check that the throttle link operates correctly with remote control lever in full throttle and with the fast idle lever in "N"(NEUTRAL).

☐ TILLER HANDLE CONTROL SYSTEM

- Check the tiller handle for proper operation.
- Make sure that the gear shift operates properly with the gearshift lever.
- Check that the throttle link operates correctly with the throttle grip in full throttle.

☐ ELECTRICAL SYSTEM

- Check the wire harness for proper connection.
- Check the battery connection for correctness.
- Make sure that the battery is installed securely.
- Make sure that the meters and switches are connected correctly.

☐ TILT MECHANISM

Power trim/tilt type:

- Check whether the outboard motor tilts up and down smoothly by operating the power trim/tilt switch.
- Check for abnormal motor sound during tilting up/down the outboard motor.
- Turn the steering wheel right and left with the outboard motor tilted up and check the cables and harnesses for interference.
- Tilt up the outboard motor and check whether the power tilt oil level is at or within the specified range.
- Tilt up the outboard motor fully and check whether the tilt stopper functions.

Gas-assisted tilt type:

- Operate the tilt lever and check whether the outboard motor tilts up and down smoothly.
- Tilt up the outboard motor and check whether it is held in the position by setting the tilt lever in the "Lock" position.
- Check whether the tilt stopper functions with the outboard motor set in the full tilt-up position.

☐ ENGINE OIL

- Check the engine oil level.

ENGINE OIL CAPACITY:

Total: 1.9 lit. (2.01 US qt, 1.67 Imp qt)

Change: 1.6 lit. (1.69 US qt, 1.41 Imp qt)

☐ PROPELLER

- Check for deformation (e.g. bend, etc.).
- Check for excessive wear.
- Check the castle nut for secure tightening.
- Check the cotter pin for any abnormality.

• IN THE WATER

☐ OUTBOARD MOTOR INSTALLATION

- Check that there is no water leak from the mounting bolt holes.
- Check the boat balanced.

☐ OUTBOARD MOTOR OPERATION

- Turn the ignition switch to START, make sure that the outboard motor starts.
- Check the engine noise.
- Check if cooling water flows out from the water checking port.
- Check that the outboard motor runs smoothly at idle.
- Snap and check the outboard motor response.
- Check the emergency engine stop switch for proper operation.

☐ LEAKS

- Make sure that there is no leaks from the fuel line connections.
- Check the outboard motor for water leaks.
- Check the exhaust system for gas leaks.

• DURING SEA TRIALS

☐ OUTBOARD MOTOR OPERATION

- Check the idle speed.

IDLE SPEED: $950 \pm 50 \text{ min}^{-1} \text{ (rpm)}$

- Check the gear shift operation with the remote control lever.
- Check the trolling speed.
- Go astern and check that the outboard motor does not tilt up and water does not overflow the transom.

☐ PROPELLER SELECTION

- Check the outboard motor speed under the user's operating condition.

OUTBOARD MOTOR SPEED:

BF25D: $5,000 - 6,000 \text{ min}^{-1} \text{ (rpm)}$

BF30D: $5,000 - 6,000 \text{ min}^{-1} \text{ (rpm)}$

- Make sure that there is no cavitation during turning.

• AFTER THE SEA TRIALS

- ☐ Check that there is no water in the gear oil.

- ☐ Check that there is no signs of fuel or oil leaks.

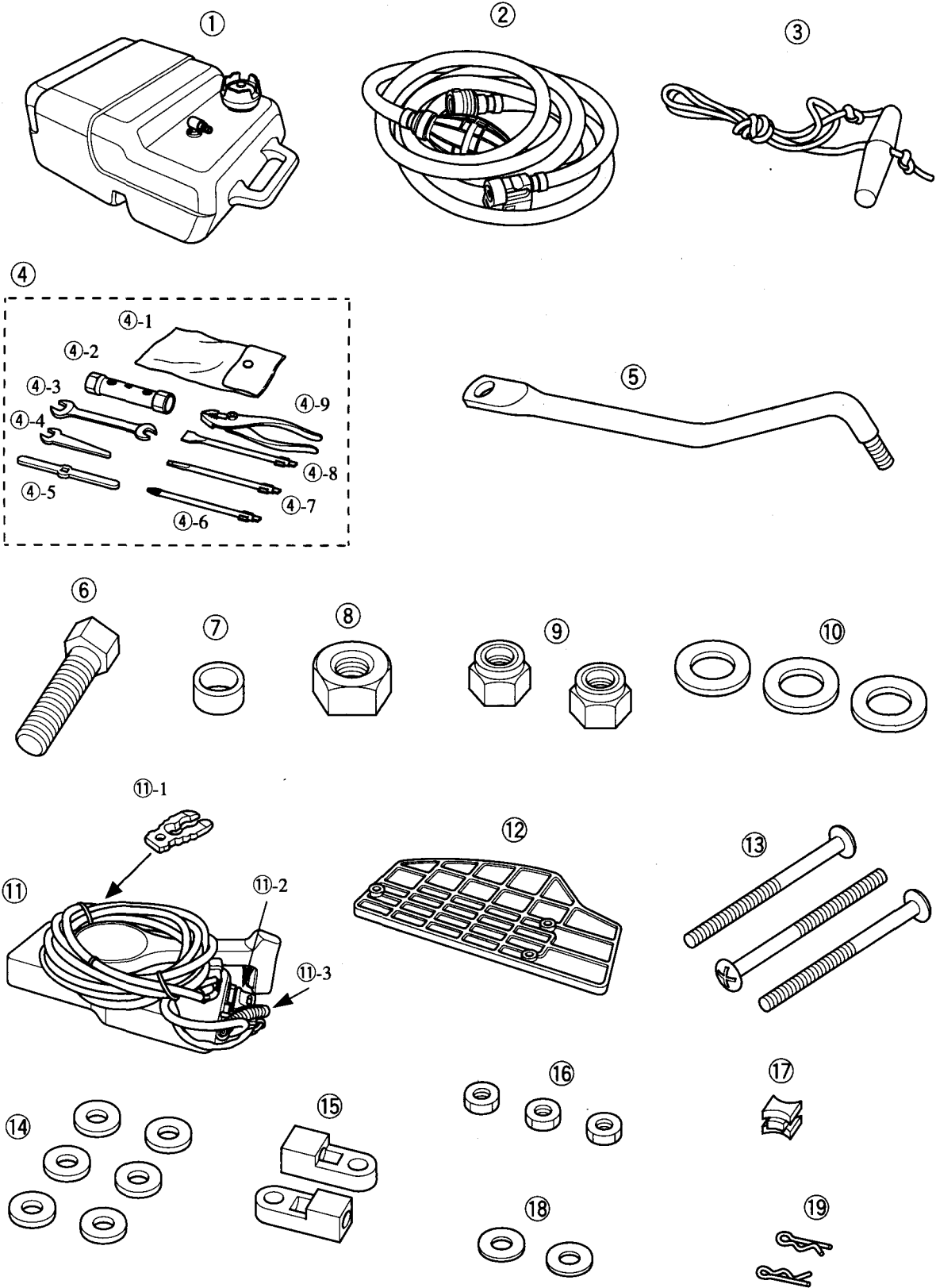
☐ Cleaning the Outboard Motor

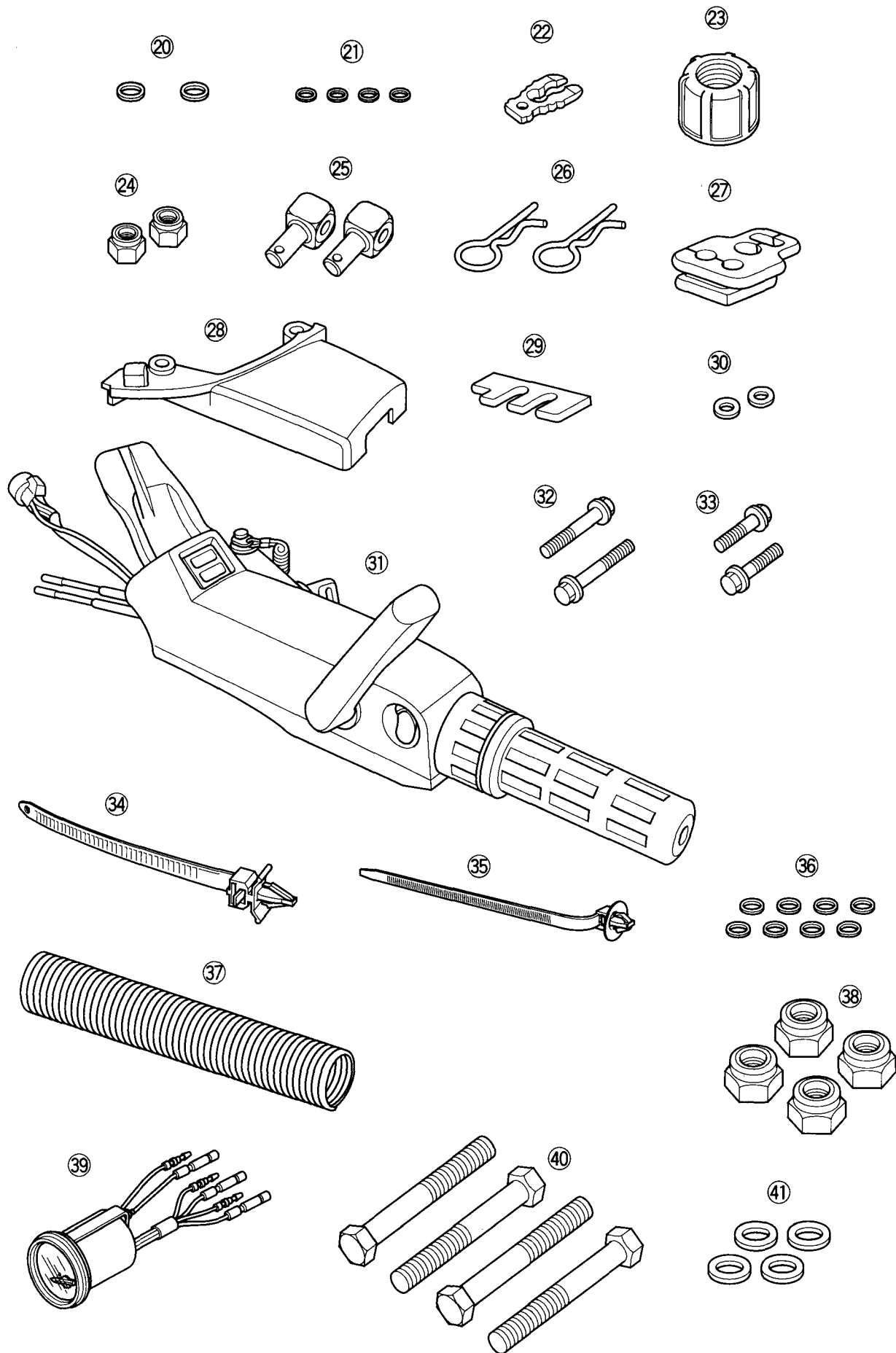
- Use a flushing kit to flush the cooling line with clean water, while the outboard motor is idling.
- Clean the engine outboard motor thoroughly with a cloth.
- Check the outboard external damages or defects, cracks.

9. BREAK-IN PROCEDURES

- The outboard motor break-in should be performed as follows, although it is usually done during the trial runs.
- For the initial 15 minutes: Run the outboard motor at idling or trolling speeds (i.e. the lowest possible speed).
- For the next 30 minutes: Run the outboard motor at 2,000 — 3,000 min⁻¹ (rpm) (with 10 % — 30 % of throttle).
- For the next to the second 60 minutes: Run the outboard motor at 4,000 — 5,000 min⁻¹ (rpm) (with 50 — 80 % of throttle).
- For the initial 10 hours: Avoid continuous full throttle (100 % throttle) operation for more than 5 minutes.

10. PARTS LIST





No.	Part name	BF25D				BF25D/BF30D					
		SHG	LHG	SRTG	LRTG	SGC	LGC	LRTC	SHGC	LHGC	SHD
①	Fuel tank assembly	1	1	1	1	1	1	1	1	1	1
②	Fuel tank tube assembly	1	1	1	1	1	1	1	1	1	1
③	Starter rope comp.	1	1	1	1	1	1	1	1	1	1
④	Tool kit	1	1	1	1	1	1	1	1	1	1
④-1	Tool bag	1	1	1	1	1	1	1	1	1	1
④-2	Plug wrench	1	1	1	1	1	1	1	1	1	1
④-3	10 x 12 mm spanner	1	1	1	1	1	1	1	1	1	1
④-4	8 mm single ended spanner	1	1	1	1	1	1	1	1	1	1
④-5	Handle bar	1	1	1	1	1	1	1	1	1	1
④-6	Screw driver (+)	1	1	1	1	1	1	1	1	1	1
④-7	Screw driver (-)	1	1	1	1	1	1	1	1	1	1
④-8	Oil check driver	1	1	1	1	1	1	1	1	1	1
④-9	Plier	1	1	1	1	1	1	1	1	1	1
⑤	Steering rod			1	1			1			
⑥	3/8-24 UNF bolt			1	1			1			
⑦	Collar			1	1			1			
⑧	3/8-24 UNF nut			1	1			1			
⑨	3/8-24 self lock nut			2	2			2			
⑩	10 mm washer			3	3			3			
⑪	Remote control box assembly			1	1			1			
⑪-1	Spare clip			1	1			1			
⑪-2	Engine switch key			1	1			1			
⑪-3	Emergency stop switch clip, curl cord			1	1			1			
⑫	Spacer			1	1			1			
⑬	6 x 94 mm screw (Black)			3	3			3			
⑭	6 mm washer			6	6			6			
⑮	Eye end			2	2			2			
⑯	6 mm nut			3	3			3			
⑰	Cable clamp spacer			1	1			1			
⑱	6 mm washer			2	2			2			
⑲	6 mm lock pin			2	2			2			
⑳	10 mm washer	2	2			2	2		2	2	2
㉑	6 mm washer	4	4	4	4	4	4	4	4	4	4
㉒	Spare clip	1	1			1	1		1	1	1
㉓	Cap assembly			1	1			1			
㉔	10 mm self lock nut	2	2			2	2		2	2	2
㉕	Pivot shift	2	2	2	2	2	2	2	2	2	2
㉖	6 mm lock pin	2	2	2	2	2	2	2	2	2	2
㉗	Grommet	1	1	1	1	1	1	1	1	1	1
㉘	Separator cover	1	1	1	1	1	1	1	1	1	1
㉙	Clamp plate	1	1	1	1	1	1	1	1	1	1
㉚	6 mm washer	2	2	2	2	2	2	2	2	2	2
㉛	Steering handle bracket assembly	1	1			1	1		1	1	1
㉜	6 x 45 mm bolt	2	2	2	2	2	2	2	2	2	2
㉝	6 x 28 mm bolt	2	2	2	2	2	2	2	2	2	2
㉞	Harness band	1	1	1	1	1	1	1	1	1	1
㉟	Cable strap	1	1	1	1	1	1	1	1	1	1
㊱	10 mm washer (small)			8	8			8			
㊲	Corrugated tube			1	1			1			
㊳	10 mm self lock nut			4	4			4			
㊴	Trim meter			1	1			1			
㊵	10 mm bolt			4	4			4			
㊶	10 mm washer (large)			4	4			4			

No.	Part name	BF25D/BF30D									
		LHD	LHTD	SRTD	LRTD	SHGD	LHGD	SHE	LHE	SRTE	LRTE
①	Fuel tank assembly	1	1	1	1	1	1	1	1	1	1
②	Fuel tank tube assembly	1	1	1	1	1	1	1	1	1	1
③	Starter rope comp.	1	1	1	1	1	1	1	1	1	1
④	Tool kit	1	1	1	1	1	1	1	1	1	1
④-1	Tool bag	1	1	1	1	1	1	1	1	1	1
④-2	Plug wrench	1	1	1	1	1	1	1	1	1	1
④-3	10 x 12 mm spanner	1	1	1	1	1	1	1	1	1	1
④-4	8 mm single ended spanner	1	1	1	1	1	1	1	1	1	1
④-5	Handle bar	1	1	1	1	1	1	1	1	1	1
④-6	Screw driver (+)	1	1	1	1	1	1	1	1	1	1
④-7	Screw driver (-)	1	1	1	1	1	1	1	1	1	1
④-8	Oil check driver	1	1	1	1	1	1	1	1	1	1
④-9	Plier	1	1	1	1	1	1	1	1	1	1
⑤	Steering rod			1	1					1	1
⑥	3/8-24 UNF bolt			1	1					1	1
⑦	Collar			1	1					1	1
⑧	3/8-24 UNF nut			1	1					1	1
⑨	3/8-24 self lock nut			2	2					2	2
⑩	10 mm washer			3	3					3	3
⑪	Remote control box assembly			1	1					1	1
⑪-1	Spare clip			1	1					1	1
⑪-2	Engine switch key			1	1					1	1
⑪-3	Emergency stop switch clip, curl cord			1	1					1	1
⑫	Spacer			1	1					1	1
⑬	6 x 94 mm screw (Black)			3	3					3	3
⑭	6 mm washer			6	6					6	6
⑮	Eye end			2	2					2	2
⑯	6 mm nut			3	3					3	3
⑰	Cable clamp spacer			1	1					1	1
⑱	6 mm washer			2	2					2	2
⑲	6 mm lock pin			2	2					2	2
⑳	10 mm washer	2	2			2	2	2	2		
㉑	6 mm washer	4	4	4	4	4	4	4	4	4	4
㉒	Spare clip	1	1			1	1	1	1		
㉓	Cap assembly			1	1					1	1
㉔	10 mm self lock nut	2	2			2	2	2	2		
㉕	Pivot shift	2	2	2	2	2	2	2	2	2	2
㉖	6 mm lock pin	2	2	2	2	2	2	2	2	2	2
㉗	Grommet	1	1	1	1	1	1	1	1	1	1
㉘	Separator cover	1	1	1	1	1	1	1	1	1	1
㉙	Clamp plate	1	1	1	1	1	1	1	1	1	1
㉚	6 mm washer	2	2	2	2	2	2	2	2	2	2
㉛	Steering handle bracket assembly	1	1			1	1	1	1		
㉜	6 x 45 mm bolt	2	2	2	2	2	2	2	2	2	2
㉝	6 x 28 mm bolt	2	2	2	2	2	2	2	2	2	2
㉞	Harness band	1	1	1	1	1	1	1	1	1	1
㉟	Cable strap	1	1	1	1	1	1	1	1	1	1
㊱	10 mm washer (small)			8	8					8	8
㊲	Corrugated tube			1	1					1	1
㊳	10 mm self lock nut			4	4					4	4
㊴	Trim meter			1	1					1	1
㊵	10 mm bolt			4	4					4	4
㊶	10 mm washer (large)			4	4					4	4

No.	Part name	BF25D/BF30D		BF30D
		SHGE	LHGE	SHTD
①	Fuel tank assembly	1	1	1
②	Fuel tank tube assembly	1	1	1
③	Starter rope comp.	1	1	1
④	Tool kit	1	1	1
④-1	Tool bag	1	1	1
④-2	Plug wrench	1	1	1
④-3	10 x 12 mm spanner	1	1	1
④-4	8 mm single ended spanner	1	1	1
④-5	Handle bar	1	1	1
④-6	Screw driver (+)	1	1	1
④-7	Screw driver (-)	1	1	1
④-8	Oil check driver	1	1	1
④-9	Plier	1	1	1
⑤	Steering rod			
⑥	3/8-24 UNF bolt			
⑦	Collar			
⑧	3/8-24 UNF nut			
⑨	3/8-24 self lock nut			
⑩	10 mm washer			
⑪	Remote control box assembly			
⑪-1	Spare clip			
⑪-2	Engine switch key			
⑪-3	Emergency stop switch clip, curl cord			
⑫	Spacer			
⑬	6 x 94 mm screw (Black)			
⑭	6 mm washer			
⑮	Eye end			
⑯	6 mm nut			
⑰	Cable clamp spacer			
⑱	6 mm washer			
⑲	6 mm lock pin			
⑳	10 mm washer	2	2	2
㉑	6 mm washer	4	4	4
㉒	Spare clip	1	1	1
㉓	Cap assembly			
㉔	10 mm self lock nut	2	2	2
㉕	Pivot shift	2	2	2
㉖	6 mm lock pin	2	2	2
㉗	Grommet	1	1	1
㉘	Separator cover	1	1	1
㉙	Clamp plate	1	1	1
㉚	6 mm washer	2	2	2
㉛	Steering handle bracket assembly	1	1	1
㉜	6 x 45 mm bolt	2	2	2
㉝	6 x 28 mm bolt	2	2	2
㉞	Harness band	1	1	1
㉟	Cable strap	1	1	1
㊱	10 mm washer (small)			
㊲	Corrugated tube			
㊳	10 mm self lock nut			
㊴	Trim meter			
㊵	10 mm bolt			
㊶	10 mm washer (large)			