

## PREFACE

This manual provides the proper information for set-up and pre-delivery inspection of the Honda Outboard Motor BF8D/BF9.9D/BF10D. Proper set-up and pre-delivery inspection are essential for safe and reliable operation. It is recommended that the Honda Outboard Motor BF8D/BF9.9D/BF10D Shop Manual and Owner's Manual be referred to conjunction with these manuals for more detailed set-up instructions.

This manual also covers the Honda Outboard Motors follow:

- BFP8D/BFP10D
- BF8B/BF10B
- BFP8B/BFP10B

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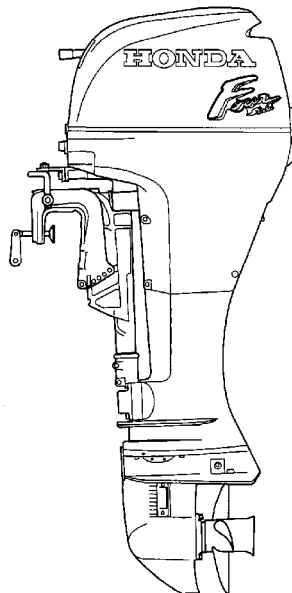
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SERVICE PUBLICATION OFFICE

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### ▲ WARNING TO DEALERS:

This manual provides the proper information for set-up and pre-delivery inspection of the Honda Outboard Motor BF8D-BF9.9D-BF10D. Proper set-up and pre-delivery inspection are essential for safe and reliable operation. It is recommended that the Honda Outboard Motor BF8D-BF9.9D-BF10D Shop Manual and Owner's Manual be referred to conjunction with these manuals for more detailed and set-up instructions.



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# 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: BF8D: 8.0 HP  
BF9.9D/BF10D: 9.9 HP**
- 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°, 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 BF8D/BF9.9D/BF10D 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

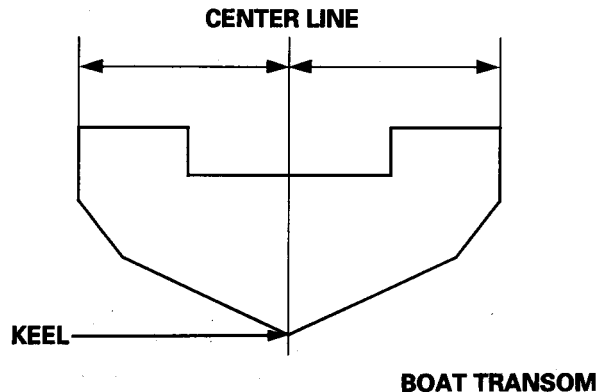
### NOTE:

- 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.
- 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.

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.



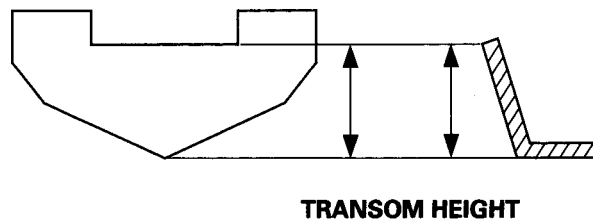
2. Measure the transom height of the boat.

### WORKABLE TRANSOM HEIGHT:

**S type: 383 – 433 mm (15.1 – 17.0 in)**

**L type: 513 – 563 mm (20.2 – 22.2 in)**

**X type: 653 – 703 mm (25.7 – 27.7 in)**



3. Calculate the installation height of the outboard motor.

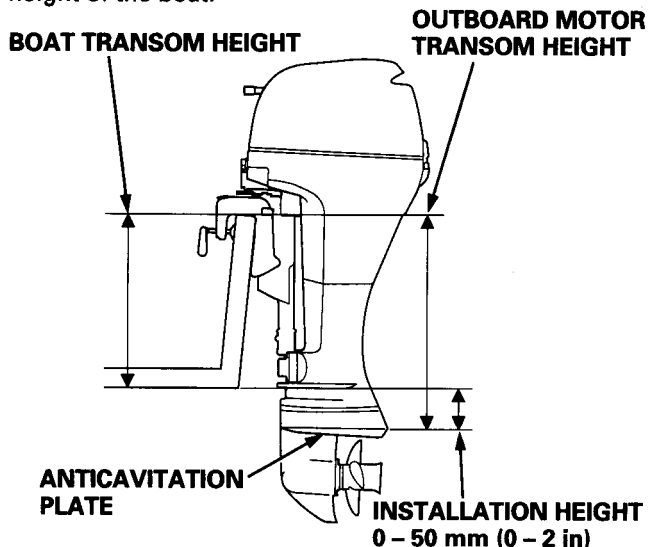
**BF8D/BF9.9D/BF10D TRANSOM HEIGHT:**

**S type: 433 mm (17.0 in)**

**L type: 563 mm (22.2 in)**

**X type: 703 mm (27.7 in)**

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

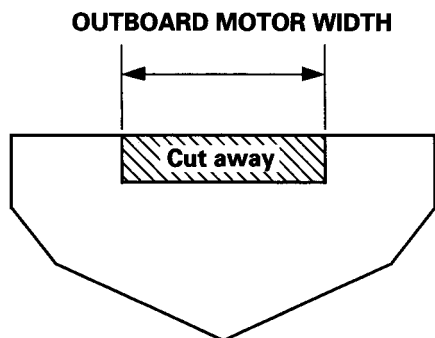


**BOAT TRANSOM HEIGHT ADJUSTMENT**

- 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 INSTALLATION**

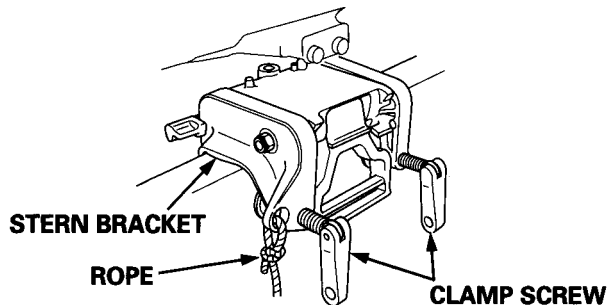
**NOTE:**

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

1. Set the outboard motor onto the boat transom.
2. 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.



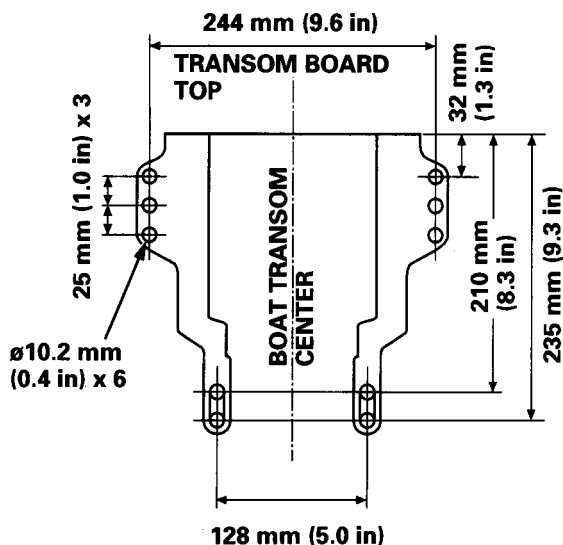
**MOUNTING BOLTS (COMMERCIALLY AVAILABLE) INSTALLATION**

**a. REMOTE CONTROL TYPE**

1. Mark four center marks for the bolt holes on the transom board, i.e. two marks at the both sides of the outboard motor installation lines respectively.

**NOTE:**

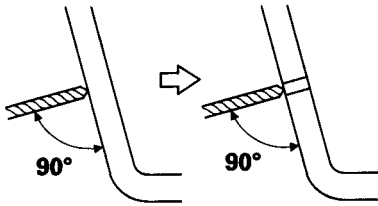
- Do not drill a hole in the wood block attached to the transom of the boat.
- Be sure that the upper bolt holes are not located above the position shown in the drawing (more than 32 mm/1.3 in from top of the transom board).
- Drill the lower bolt holes so that mounting bolts contact the upper end of the stern bracket.



2. Drill the pilot holes using a 3 - 5 mm (0.1 - 0.2 in) drill.
3. Finish drilling the holes using a 10.2 mm (0.4 in) drill correctly.

**NOTE:**

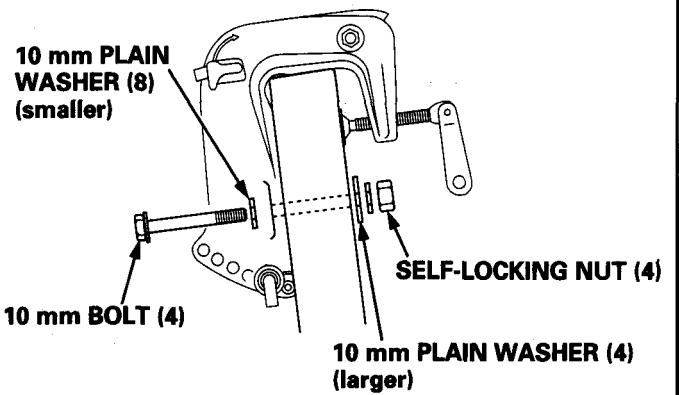
- Drill at right angles to the transom board.



4. Apply sealant (silicone sealant or equivalent) to the mounting bolts and bolt holes.
5. Secure the outboard motor using four bolts, eight smaller washers, four larger washers and four self lock nuts.

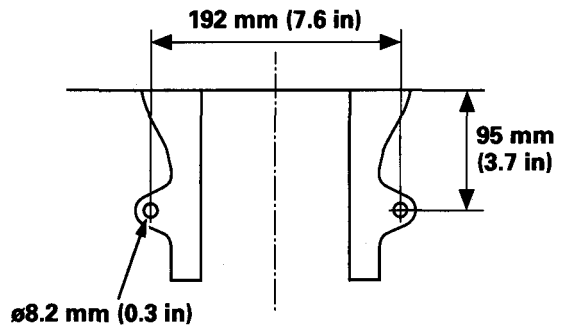
**NOTE:**

- Insert the bolts into the bolt holes from outside and tighten with the self locking nuts from inside of the boat.



**b. TILLER HANDLE TYPE**

1. Drill the holes using the same procedure of the remote control type.
2. Finish drilling the two holes using a 8.2 mm (0.3 in) drill correctly.

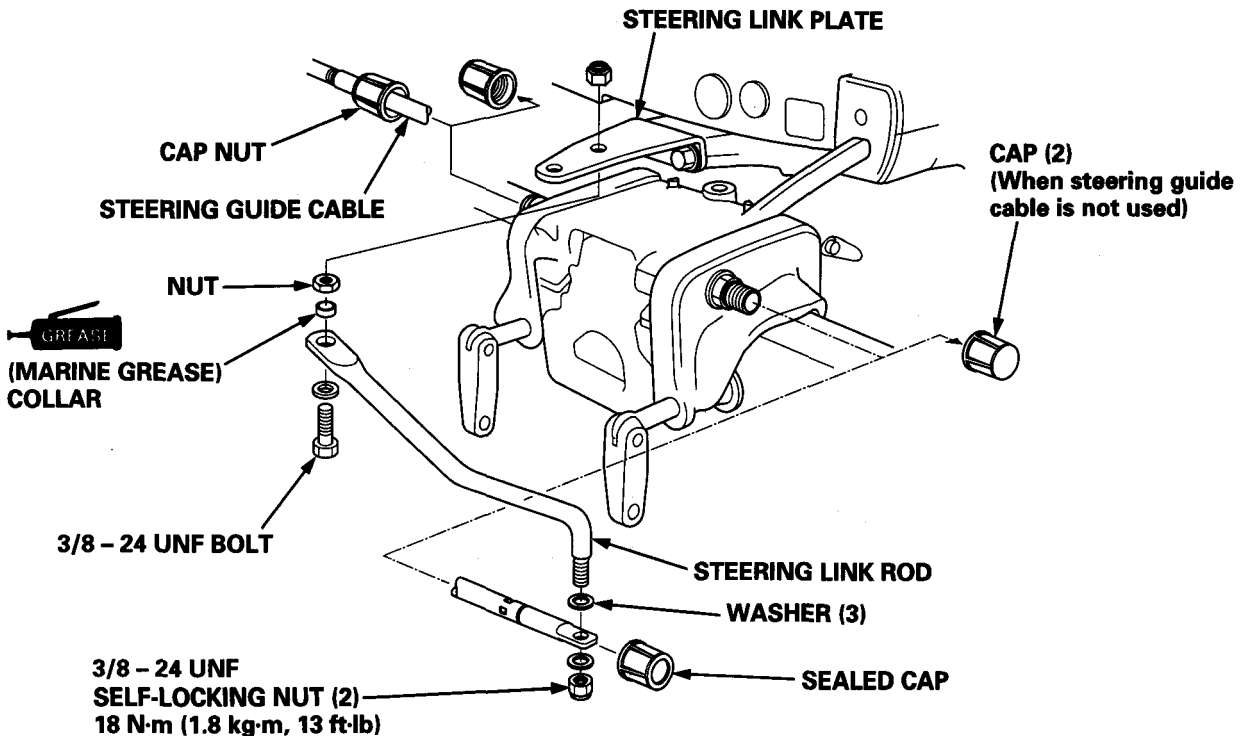


**STEERING GUIDE INSTALLATION**

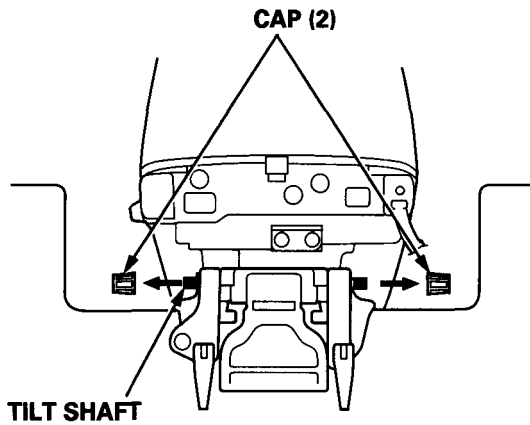
**• PUSH-PULL TYPE**

**NOTE:**

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



1. Remove the left and right caps from the tilt shaft.

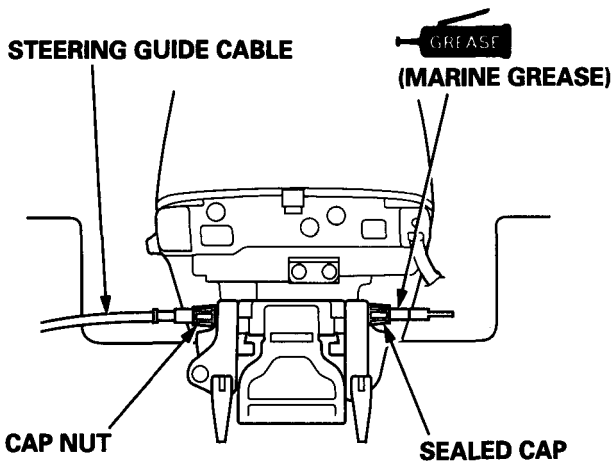


2. If the steering wheel is mounted on the starboard side, insert the steering cable through the hole in the tilt shaft on the starboard side and fix the cable with the cap nut.

**NOTE:**

- Apply marine grease to the cable before installation.

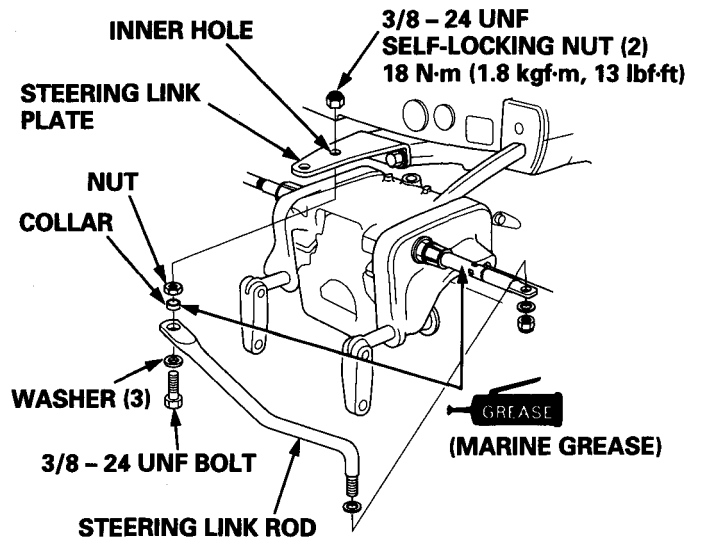
3. Install the sealed cap to the tilt shaft through the steering guide cable.



4. Install the steering link rod between the steering plate on the motor side and cable end using the bolt, washers, nuts, and collar as shown.

**NOTE:**

- Connect the steering link rod to the inside hole of the steering link plate.
- When connecting the link rod with the cable end, turn the outboard motor and steering wheel to the port side.
- Apply marine grease to the collar and sliding position of the link rod as shown before installation.

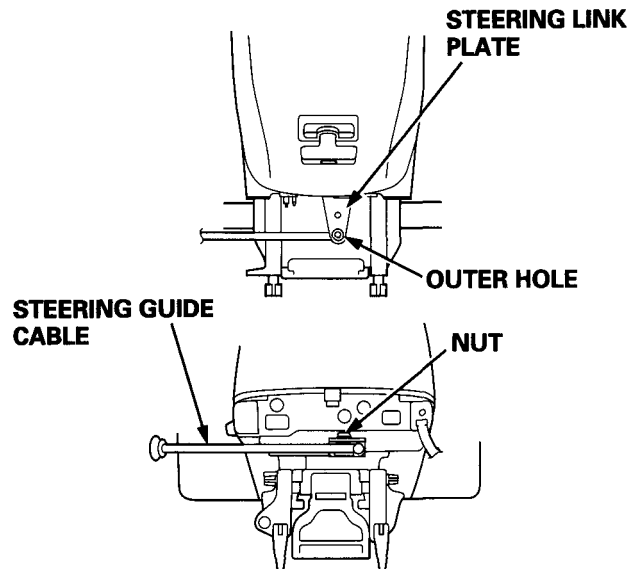


**NOTE:**

- Do not mount anything in the outer hole of the steering link plate.
- After attaching the cable turn the steering wheel to the right and left, checking the steering angle. If necessary, adjust at the steering cable side, until both angle are even.
- For further information regarding the steering cable refer to the boat manufacturer's operation manual.

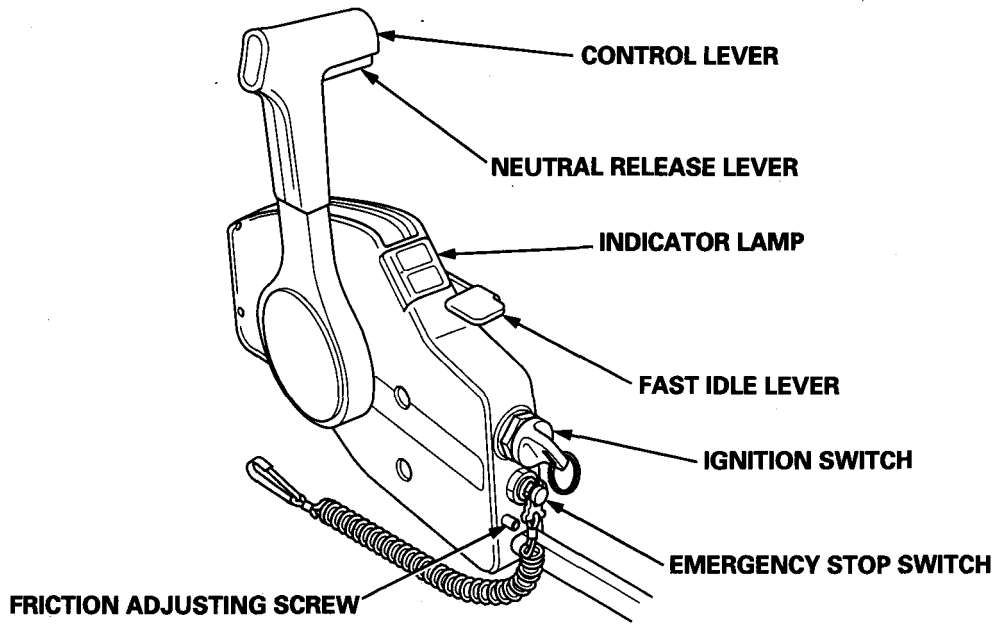
**• BALL-POST TYPE**

- Insert the steering cable into the outer hole of the steering link plate and fasten with a nut.



# REMOTE CONTROL BOX

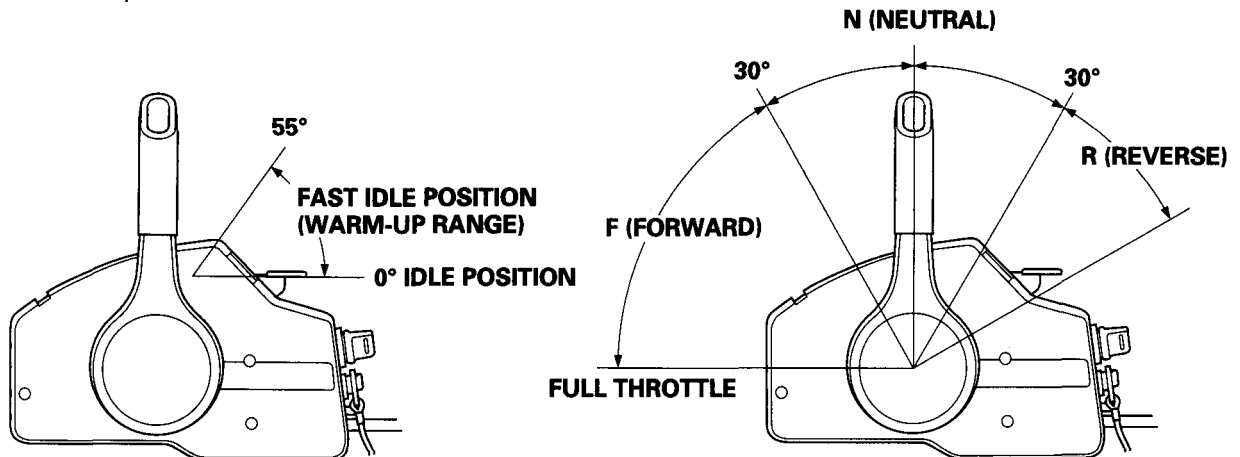
## COMPONENT IDENTIFICATION



- 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 neutral position, lift this lever up.

## OPERATION

- The fast idle lever function only when the control lever is in the neutral (N) position.
- The control lever cannot be moved, unless the fast idle lever has completely returned to its original position (idle position).
- Use the fast idle lever when restarting the warm engine and when warm-up the engine after the automatic choke operation.



## CONTROL CABLE SELECTION

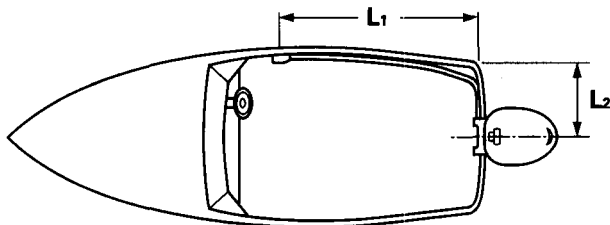
1. Select a mounting location which allows easy access and unrestricted operation of the control lever, and make sure that there are no other parts obstructing the cables and all components between the remote control box and the outboard motor.

### 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).
- It is recommended to mount the remote control box near a corner of the front seat; the control lever should be placed in the 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. Determining and select the remote control cable length.

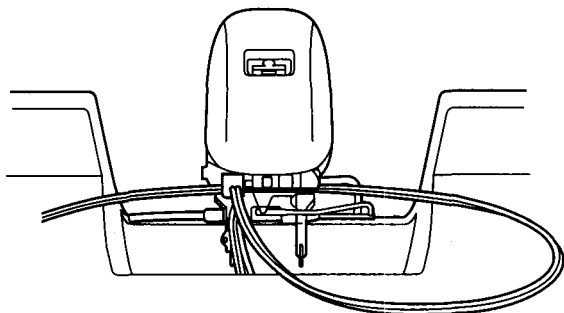
**CABLE LENGTH:  $L_1 + L_2 + 300$  mm (12 in)**



### NOTE:

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

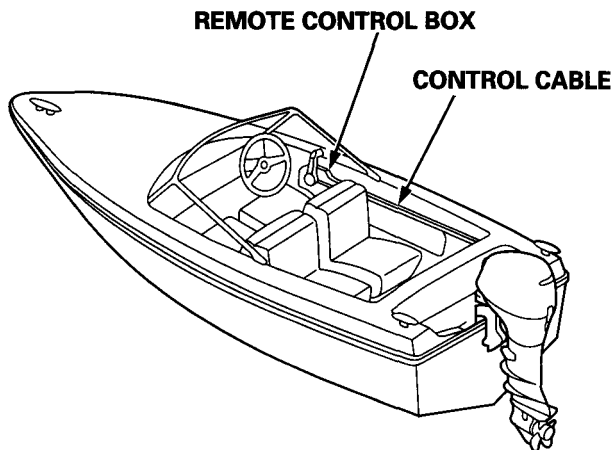
**CABLE LENGTH:  $L_1 + L_2 + 1200$  mm (48 in).**



### 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)**  
**.....33C "SUPREME"**  
**(DX version of 33C Standard)**

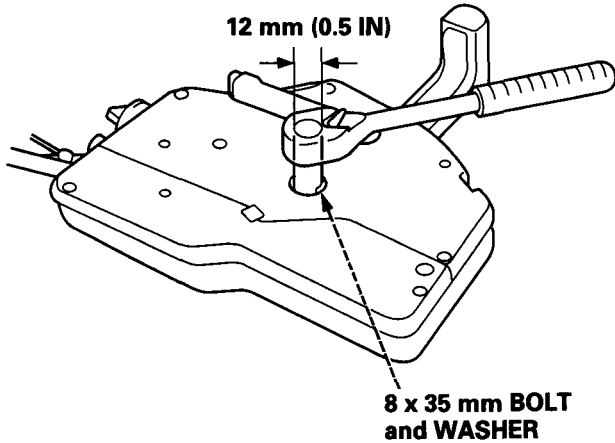
### NOTE:

- 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.

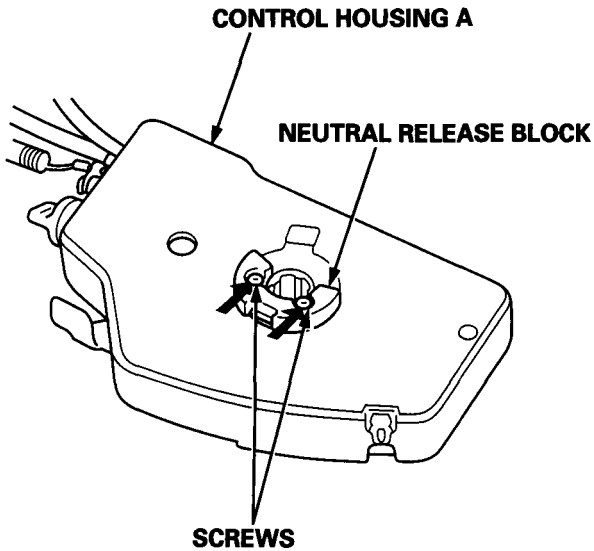
## CONTROL LEVER DIRECTION CHANGE

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. Set the control lever to "N" position.
2. Loosen the 8 x 35 mm bolt with a box wrench and remove the control lever.

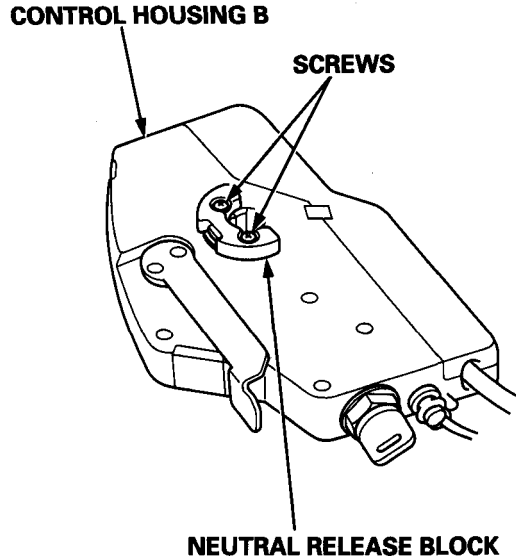


3. Remove the two screws and neutral release block from the control housing A.



4. Install the neutral release block to the control housing B and tighten the two screws.

**Torque: 2 N·m (0.2 kgf·m, 1 lbf·ft)**

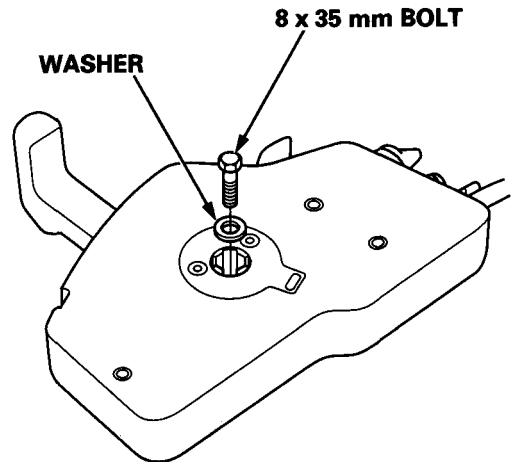


5. Install the control lever using the 8 x 35 mm bolt.

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

### NOTE:

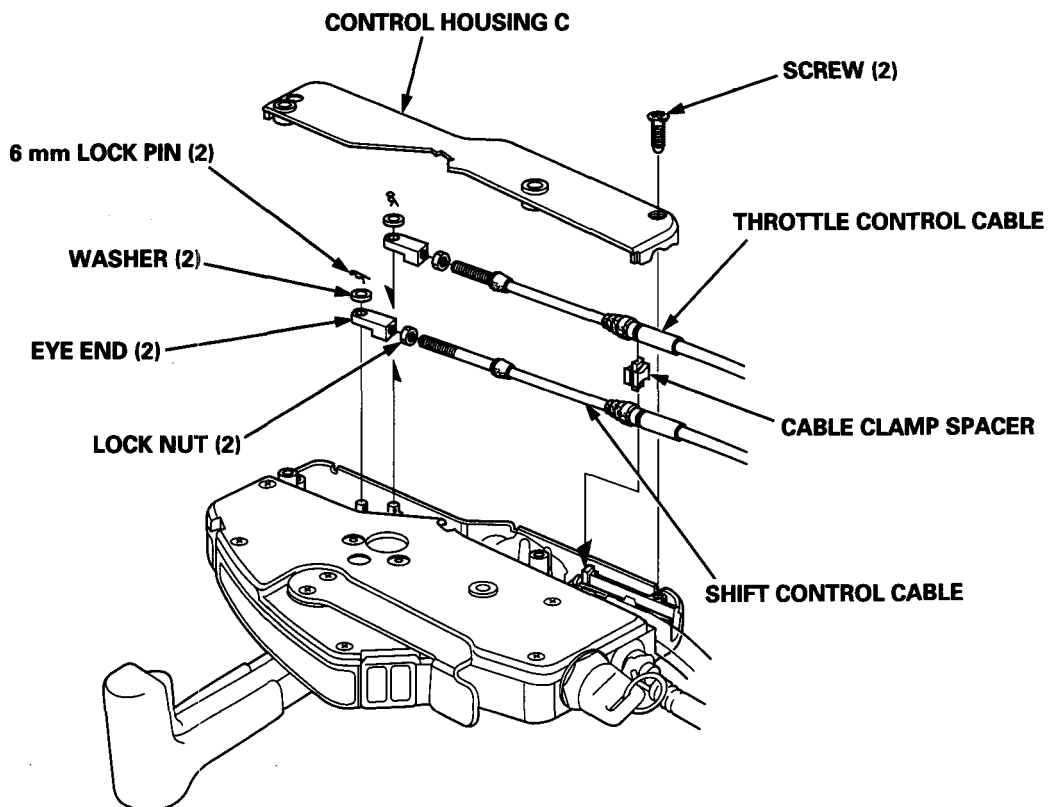
- Install the control lever with "N" position.





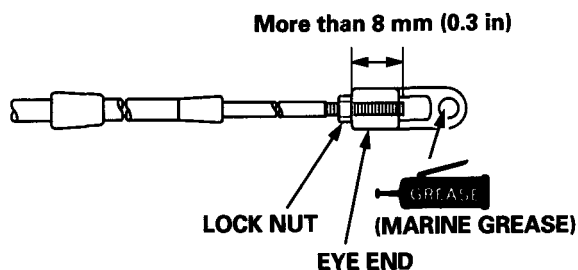
# REMOTE CONTROL CABLE INSTALLATION

## • REMOTE CONTROL BOX SIDE



1. Remove the two screws and control housing C.

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



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.

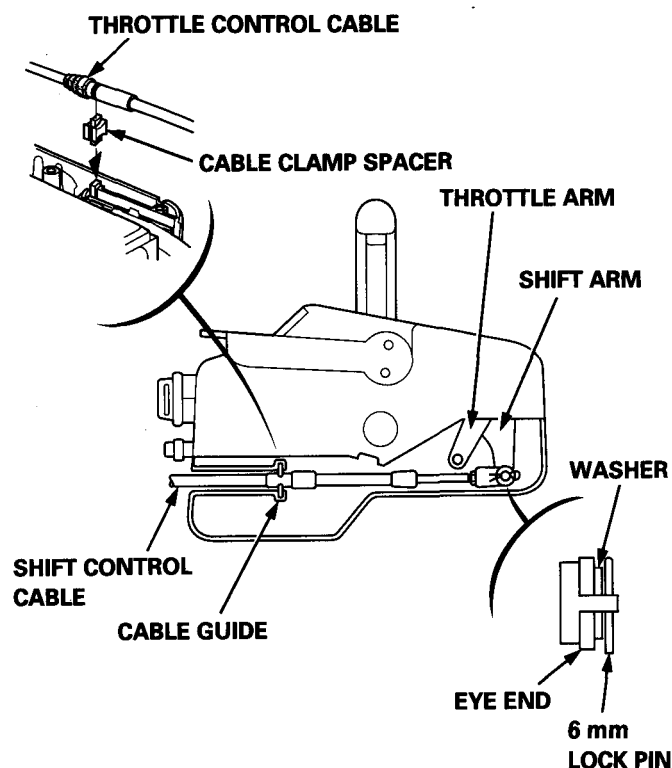
4. Install the cable clamp spacer and throttle control cable by aligning the groove with the cable guide plate. Then connect the eye end to throttle arm pin using the washer and 6 mm lock pin.

### NOTE:

- Install the washer on the lock pin side.

5. Reinstall the control housing C and tighten the screws.

**Torque: 2 N·m (0.2 kg·m, 1.4 ft·lb)**



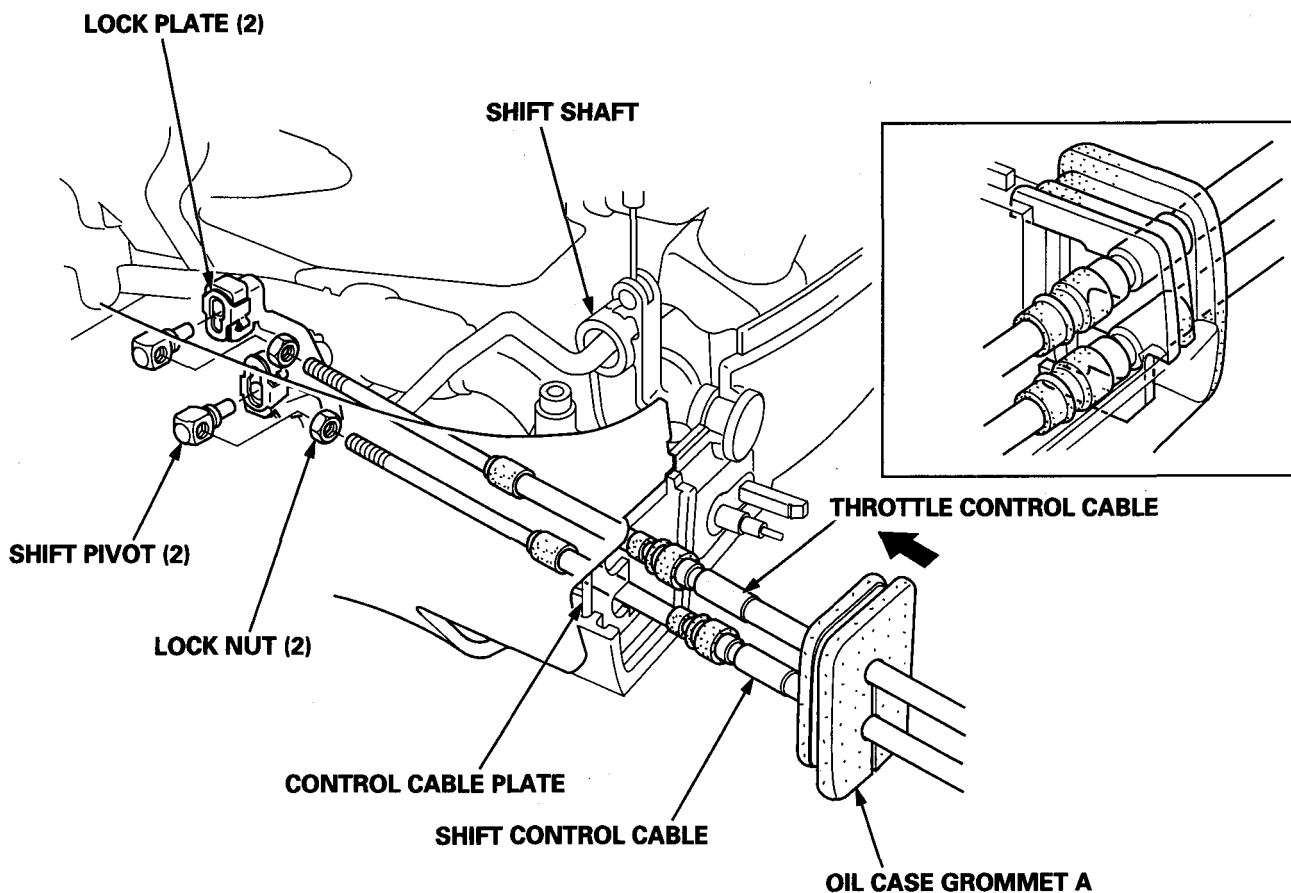
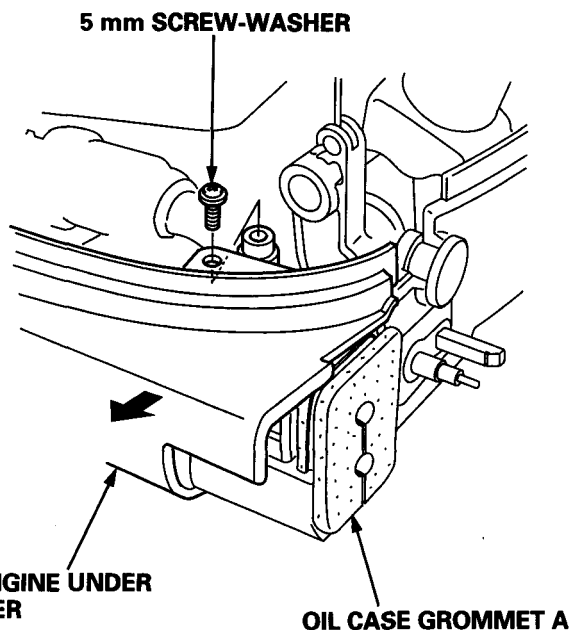
• **OUTBOARD MOTOR SIDE**

**a. REMOTE CONTROL CABLE**

**NOTE:**

- After installing the control cable to the remote control box, install the control cable to the outboard motor.
- Connect the control cable to the outboard motor with the remote control lever in "F" (FORWARD) full throttle position and free acceleration lever in fully closed position (idle).

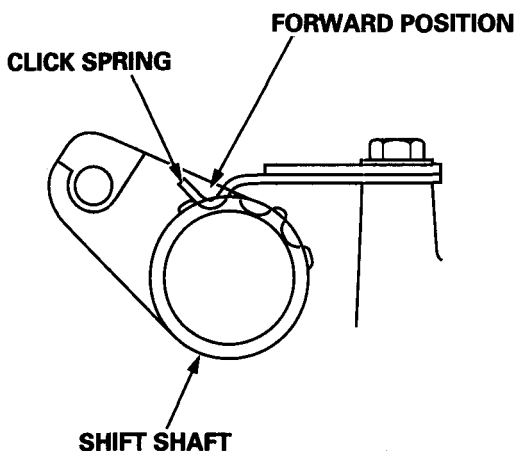
1. Remove the engine cover
2. Remove the 5 mm screw-washer and move the R. engine under cover outside about 10 mm (0.4 in). Take care not to damage the cover moving too much.
3. Temporary install the lock nut and shift pivot on each cable.



4. Remove the oil case grommet A, pass the control cables through the control cable plate to the outboard motor side.
5. Install each control cable with its groove into the control cable plate slit. Install the oil case grommet A.

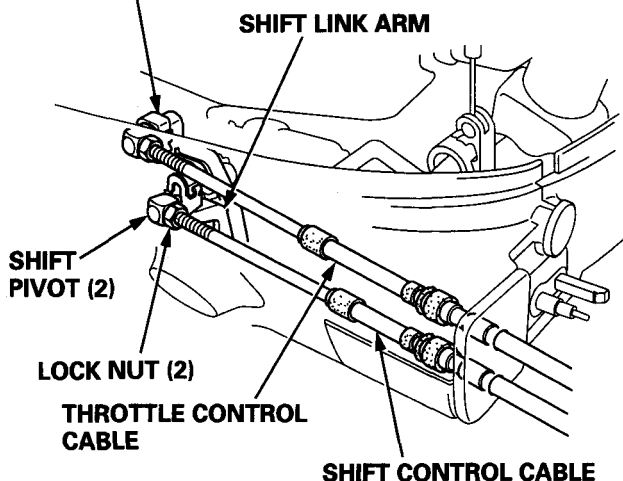
**CAUTION:**

The throttle control cable and the shift control cable use the same cables and they look the same. Move the remote control lever to identify each cable and place the throttle control cable upside.



6. Position the shift link arm in the forward (F) position, and adjust the position of the shift link arm and the shift control cable. Loosen the lock nut of the control cable and turn the shift pivot in or out to align the pivot pin with the shift link arm hole.
7. Set the throttle remote arm in the full throttle position, and adjust the throttle remote arm and the throttle control cable.
8. Tighten each cable lock nut. Be careful not to kink the cables.
9. Install the pivot pins into the shift and throttle arm holes and lock with the lock plates.

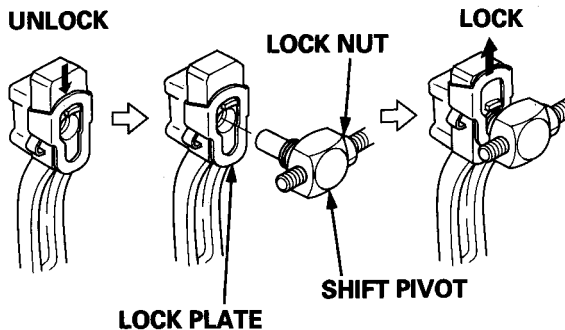
**THROTTLE REMOTE ARM**



**CAUTION:**

The throttle remote arm lock plate and the shift link arm lock plate are installed in the opposite direction. Be careful the direction when install them.

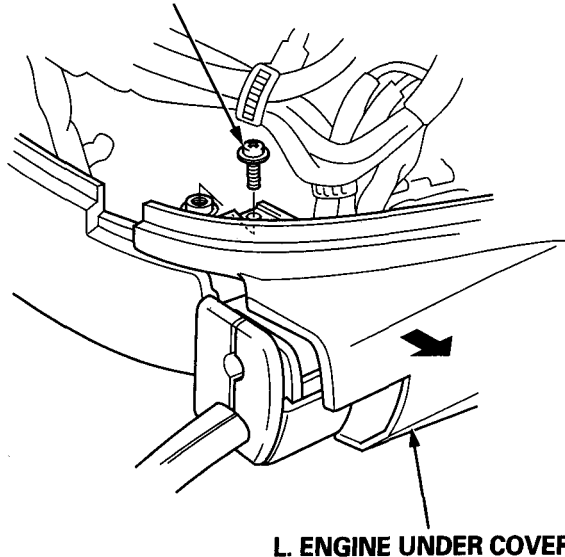
**THROTTLE REMOTE ARM**



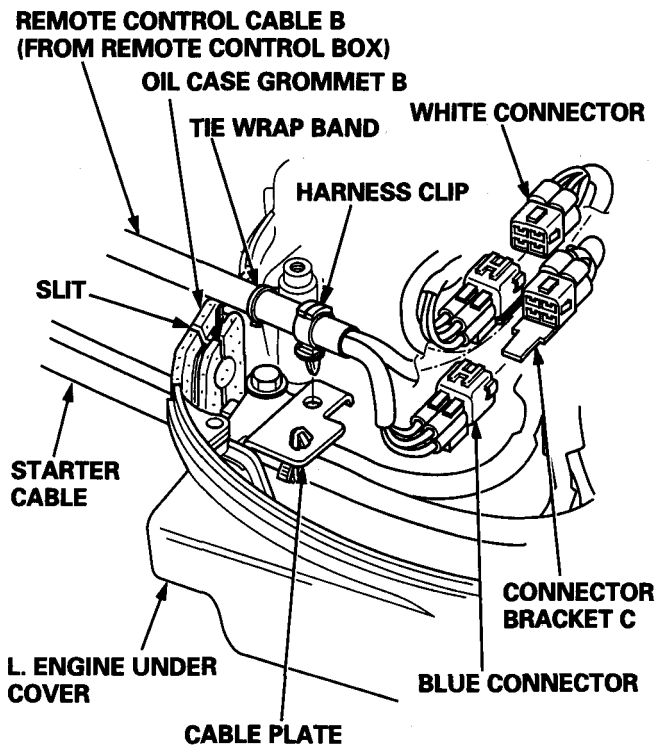
**b. REMOTE CONTROL CABLE B**

1. Remove the 5 mm screw-washer and move the L. engine under cover outside about 10 mm (0.4 in).

**5 mm SCREW-WASHER**



2. Pass the remote control cable B through the slit in the upper side of the oil case grommet B, and place the grommet in the original place.
3. Set the remote control cable B with the tie wrap band against the inside of the oil case grommet B.
4. Attach the harness clip on the cable plate to fix the control cable B. Connect the 4P blue connector and the 4P white connector to the connectors at the outboard motor side, then install the connectors on the connector bracket C.
5. Place the L. engine under cover in the original place and tighten the 5 mm screw-washer securely.



## CONTROL CABLE LENGTH ADJUSTMENT

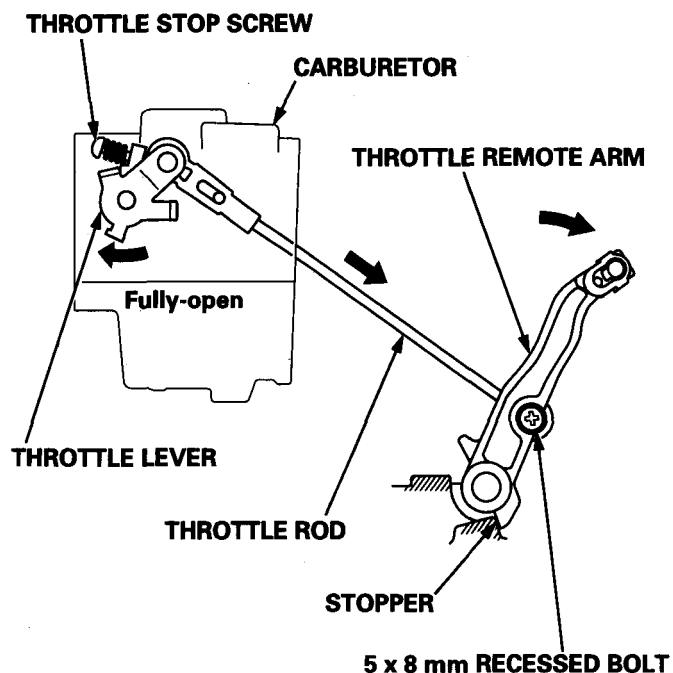
### NOTE:

Check that the throttle cable and the shift control cable are set in the correct position. If not, adjust the cables with the procedure follows.

#### • THROTTLE CABLE

1. Remove the R. engine under cover.
2. Remove the throttle control cable from the throttle remote arm.
3. Loosen the recessed bolt on the throttle remote arm.
4. Pull the throttle rod to the right to make the carburetor throttle valve fully-open, and push the throttle remote arm to the right against the stopper.

5. Tighten the recessed bolt securely.



6. With the control lever in the maximum forward (F) position and the fast idle lever in its original (idle) position, connect the throttle control cable and the throttle remote arm.
7. If the hole in the arm and pivot pin does not align, adjust by loosening the lock nut and turning the shift pivot in or out as required (page 11-7).
8. Move the control lever from the fully-open to the neutral (N) position and visually inspect the carburetor throttle lever also moves from the fully-open to the fully-closed (idle) position.

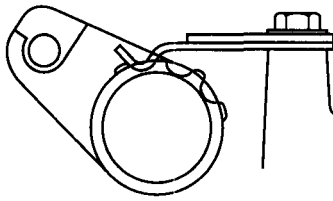
#### • SHIFT CONTROL CABLE

1. Remove the shift control cable from the shift link arm.
2. Set the shift shaft in the FORWARD position and set the control lever in the forward (F) position.
3. Connect the shift link arm and the shift control cable. If the hole in the arm and pivot pin does not align, adjust by loosening the lock nut and turning the shift pivot in or out as required (page 11-6).

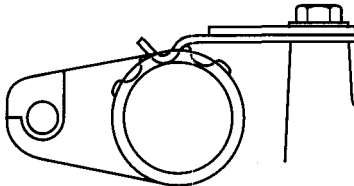
4. Set the control lever to the forward (F), neutral (N) and reverse (R) position, and visually inspect that the shift shaft position will also set in the forward, neutral and reverse position.

### SHIFT SHAFT POSITION

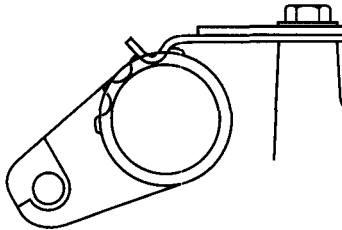
Forward (F)



Neutral (N)



Reverse (R)

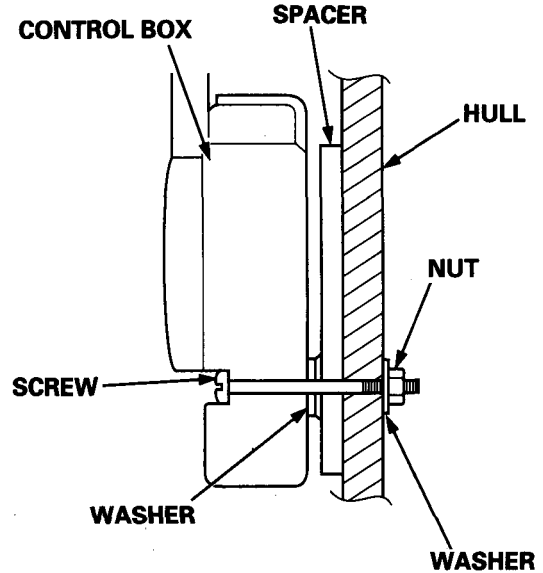


5. If the shift shaft position is not in place where it should be, repeat the step 3 and 4.
6. Move the control lever and check that the shift shaft moves smoothly and securely.
7. Install the R. engine under cover and engine cover.

## REMOTE CONTROL BOX INSTALLATION

### NOTE:

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



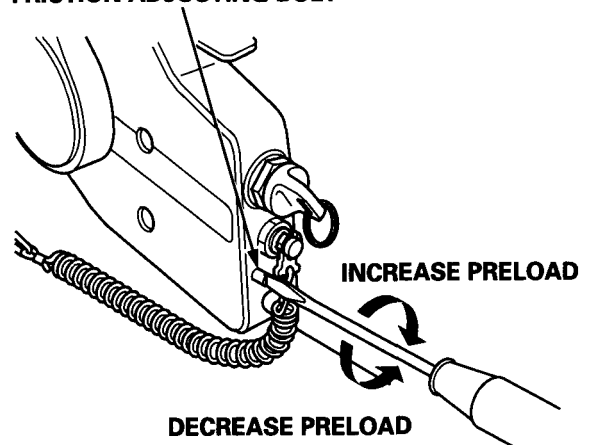
## CONTROL LEVER PRE-LOAD ADJUSTMENT

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.

### FRICITION ADJUSTING BOLT



## OPERATION CHECK AFTER INSTALLATION

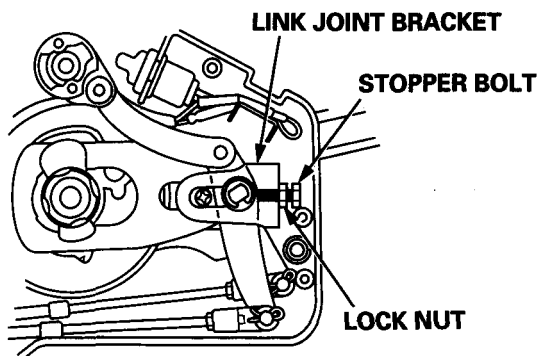
### NOTE:

- Before checking the operation of the remote control cable, make sure that the cable is correctly adjusted and that there are no kinks and sharp bends in the cable.
- Operate the remote control lever and check that the control cable should be moved smoothly.

1. Move the control lever to the first stop on the forward (F) side (about 30 degrees), check that the shift shaft is in the forward position.
2. Then move the control lever to the full throttle position at forward side, check that the carburetor throttle lever is in the fully-open position.
3. Returning the control lever to the neutral position (N), check that the carburetor throttle lever moves to the fully-closed position.
4. If this is not the case, readjust the throttle pivot shaft on the outboard motor side.

### NOTE:

- The remote control box is designed in such a way that if the standard adjustment setting of carburetor throttle rod and remote control cable are obtained, the forward full throttle point will be correctly and automatically set.
5. If the carburetor full throttle point cannot be obtained, adjust as following:
    - 1. Remove the fast idle lever, housing B and housing C.
    - 2. Move the control lever to full throttle position.
    - 3. Loosen the lock nut and turn the stopper bolt until it touches to the throttle lever with the carburetor and control lever in full throttle position.



- 4. Tighten the lock nut and reinstall the housing C, and B, and fast idle lever.

## OPTIONAL EQUIPMENT

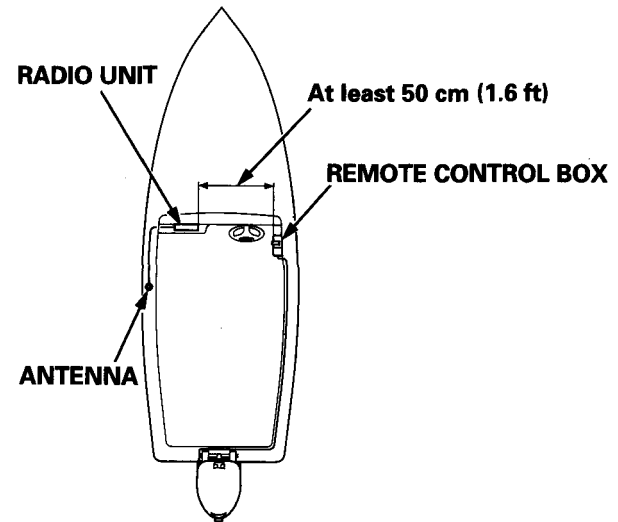
### RADIO UNIT INSTALLATION

#### NOTE:

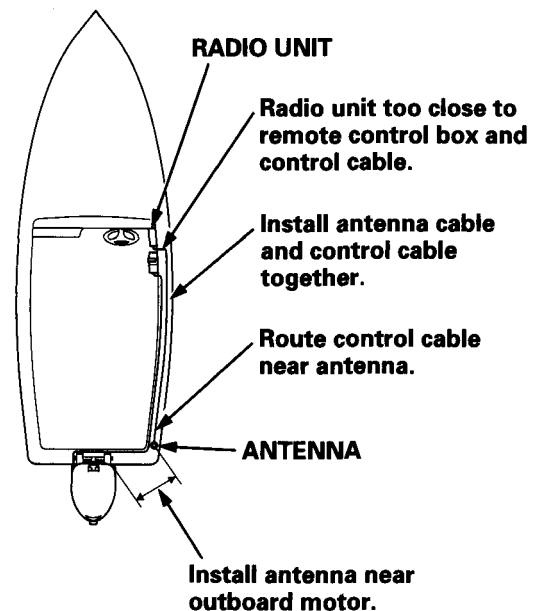
Radio wave is strong that it may damage the outboard motor. Carefully follow the installation instruction.

1. 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.
2. Do not install the antenna cord and control cable tied up.
3. Select a radio with its output power less than 10 W.

#### GOOD



#### NO GOOD



## D-GPS UNIT INSTALLATION

### 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

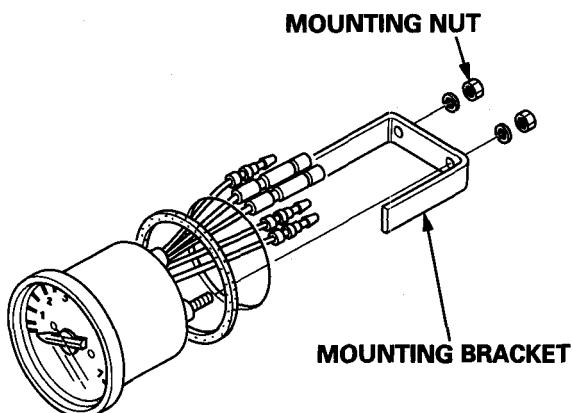
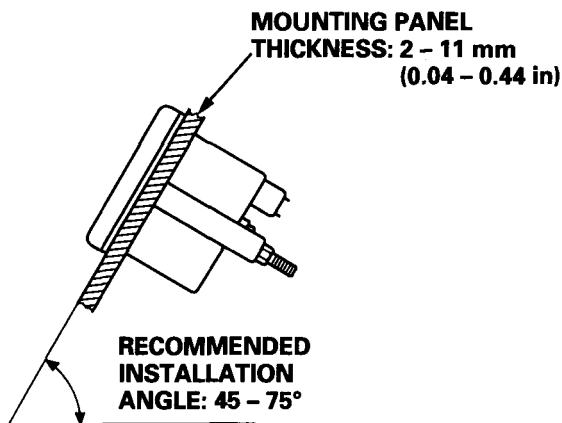
Meters and other instruments should be installed on the dash board. If any other location is selected, it will be necessary to use a mounting plate with a thickness of 2 – 11 mm (0.04 – 0.44 in).

### 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 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)
Voltmeter	54.0 mm (2.13 in)



## 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 dia. (AWG #6) lead wire to put them together. Solder the joint section and protect it by wrapping with a piece of insulation tape.

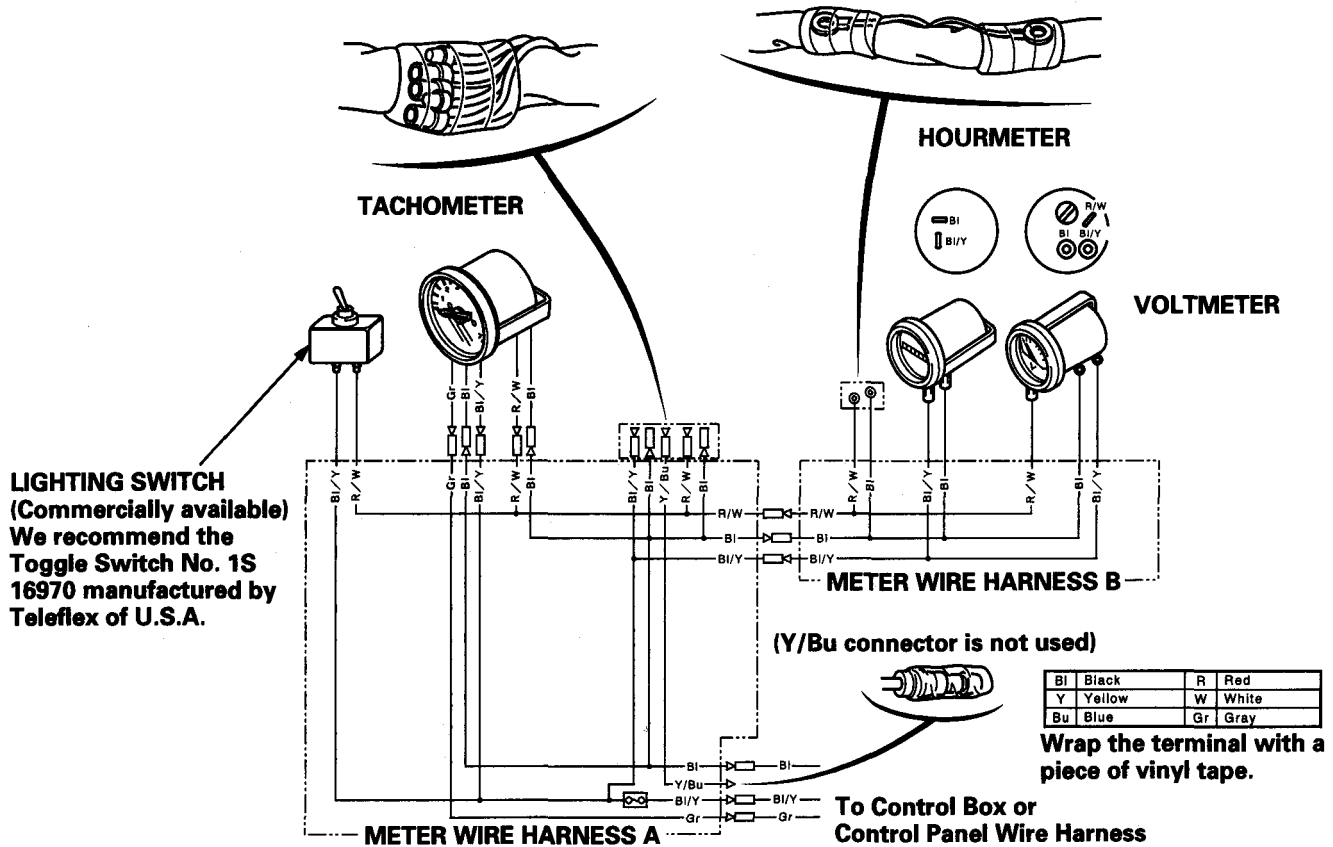
### CAUTION:

- 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 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.

## WIRING DIAGRAM

Wrap the free terminals with a piece of vinyl tape and hold them onto the wire harness as shown.

Wrap the each terminal to the wire harness with a piece of vinyl tape separately to avoid short circuit as shown.



## SWITCH PANEL

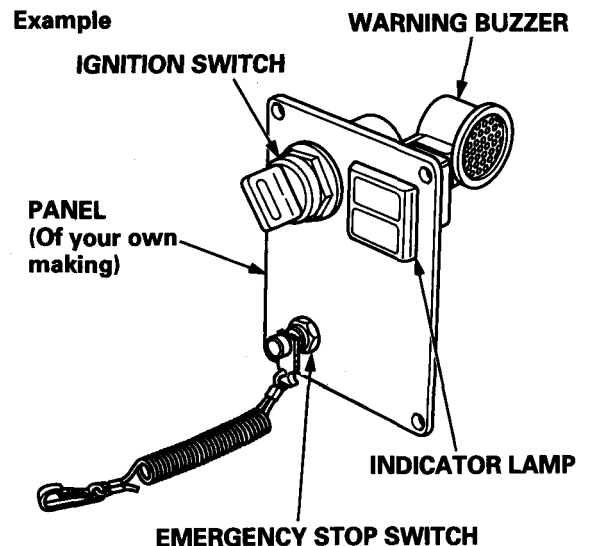
If your boat is equipped with a Binnacle or Flash mounting type remote control box, prepare the switch panel as follows to install the electrical parts and switches.

### NOTE:

- If you use this type switch panel, the trim warning system does not operate.

Part name

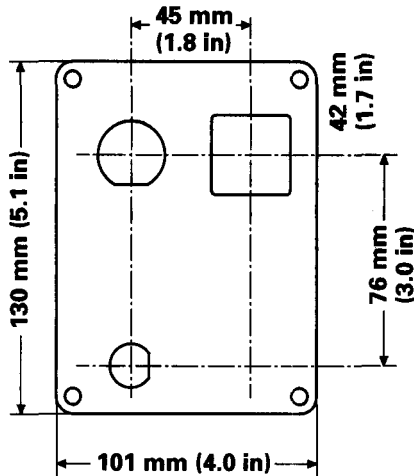
Ignition switch  
Emergency stop switch  
Indicator lamp  
Buzzer  
Remote control cable B





## RECOMMENDED SHAPE

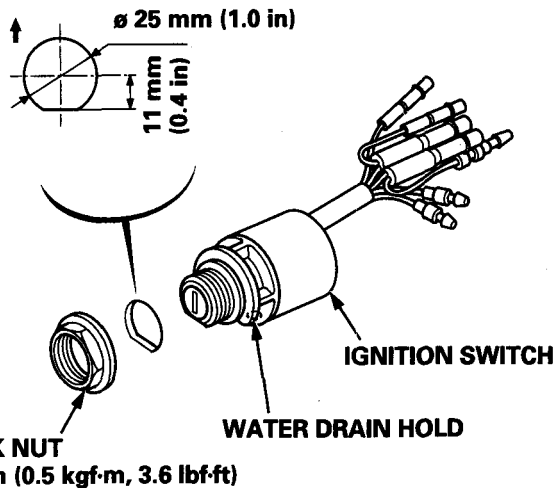
Use 3 mm (0.12 in) thick aluminum or stainless steel plate.



## INSTALLATION

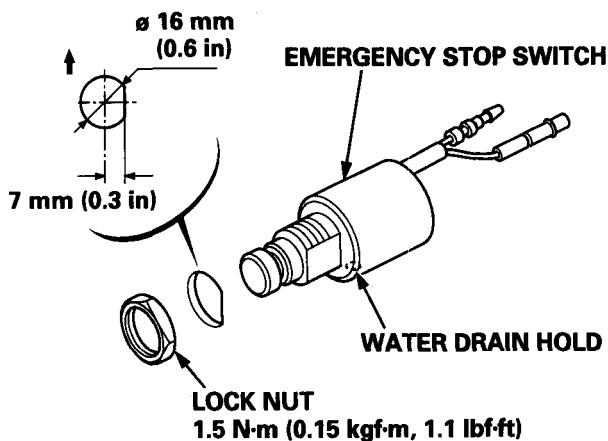
### • IGNITION SWITCH

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

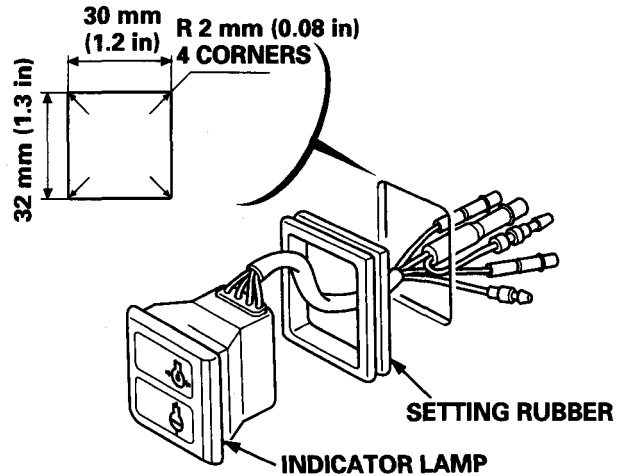


### • EMERGENCY STOP SWITCH

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

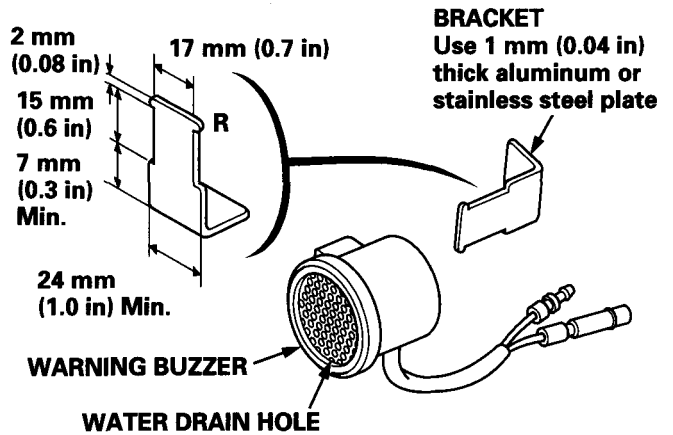


### • INDICATOR LAMP



### • WARNING BUZZER

Prepare the bracket of the recommended size and shape as shown, and install the warning buzzer as shown.



## WIRE HARNESS CONNECTION

Route and connect the wire harness properly as shown in the wiring diagram. Use the genuine Honda wire harness (P/N 32530-ZV5-000) and modify it if necessary.

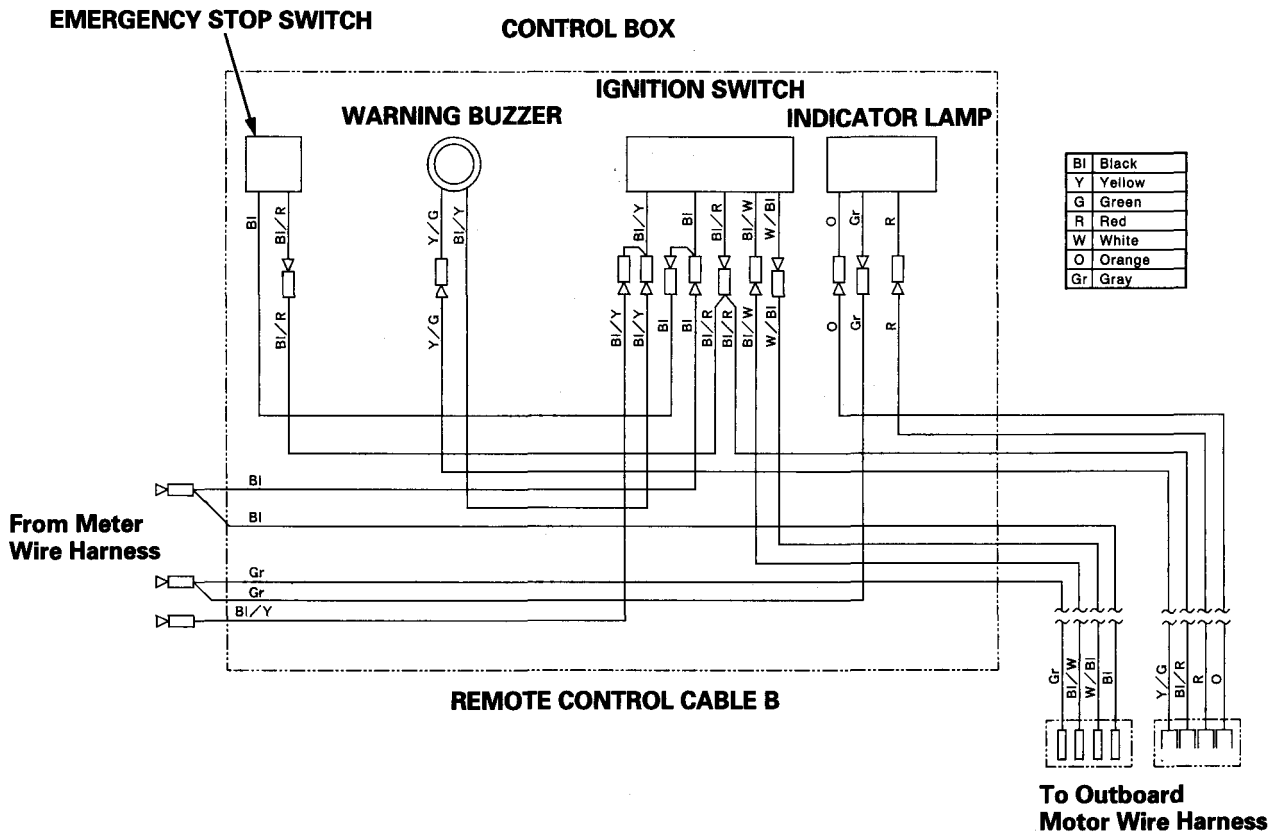
### NOTE:

- Stake the lead wire against the terminal securely using the special tool.
- Use the 0.5 – 1.25 mm dia. 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.
- 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.



**BATTERY**

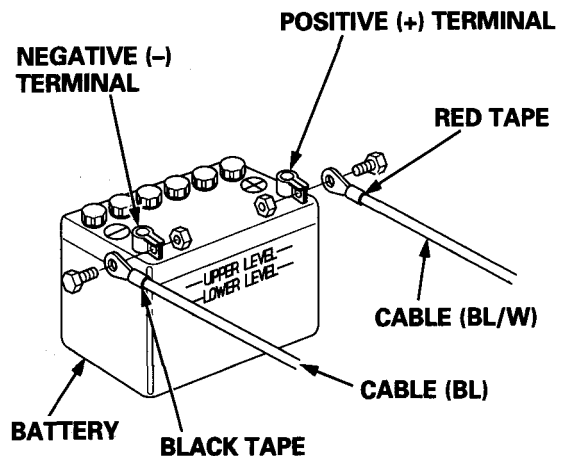
**NOTE:**

- Install the battery in a dry and well ventilated location.

Minimum requirements: 12 V – 35 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.



# PROPELLER

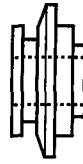
## INSTALLATION

### THRUST WASHER

#### INSTALLATION

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

GEAR CASE ←

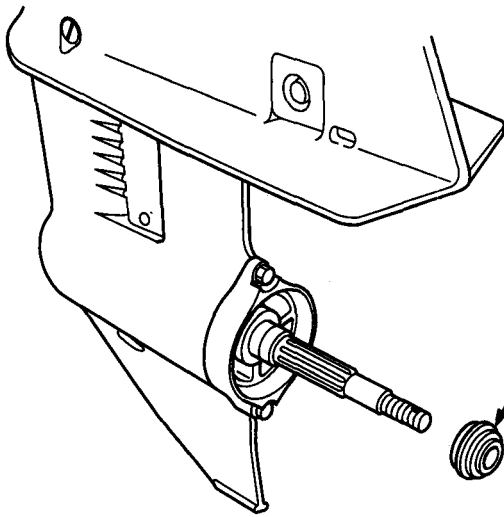


### 10 mm CROWN HEAD NUT

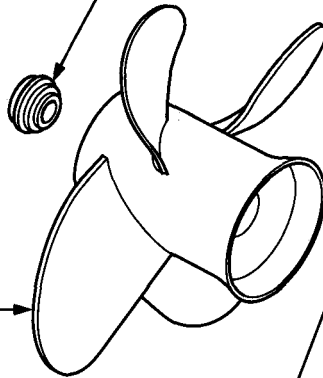
#### INSTALLATION

**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 →

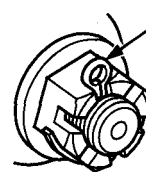


WASHER

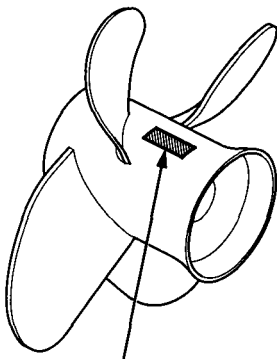
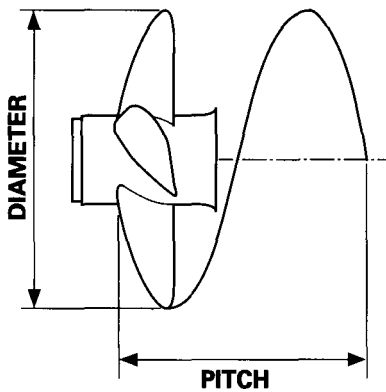
### 3 mm COTTER PIN

#### INSTALLATION

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



3 mm COTTER PIN



**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 .....  $\frac{\text{Visual Advanced Distance} - \text{Measured Distance}}{\text{Visual Advanced Distance}} \times 100$

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

## 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:

BF8D: 4,500 – 5,500 min<sup>-1</sup> (rpm)

BF9.9D/BF10D: 5,000 – 6,000 min<sup>-1</sup> (rpm)

### • 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 km/h (1.25 – 1.88 miles/h).
- 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).

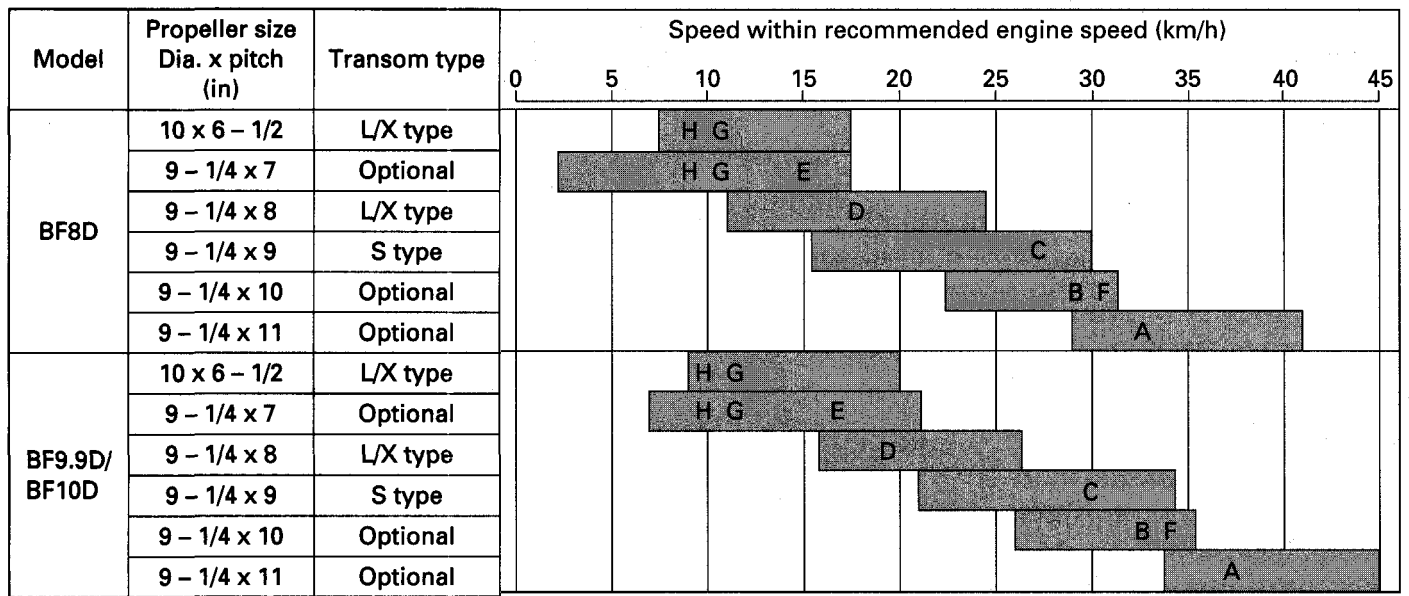
### • TOP SPEED CANNOT BE REACHED AT FULL THROTTLE

- 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, and
  - when there is propeller damage.

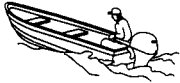


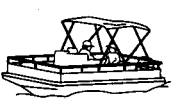
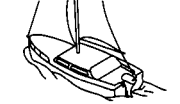
### NOTE:

- 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



### Boat type and applicable size (length and weight)

Boat type	Hull shape (Example)	Overall length (ft)	Weight (kg)	Sample				
				Code	Overall length (ft)	Weight (kg)	Presumed max. speed (km/h)	
							8 PS	9.9 PS
UTILITY		10 ~ 15	40 ~ 160	A	14	45	32.8	36.5
				B	12	68	29.3	32.6
				C	10	47	27.7	30.7
INFLATABLE		9 ~ 12	30 ~ 65	D	11	47	16.9	19.3
				E	9	45	15.4	17.6
FISHING		12 ~ 14	60 ~ 80	F	13	61	30.3	33.7
PONTOON		12 ~ 16	160 ~ 300	G	14	303	11.7	13.1
SAIL BOAT		18 ~ 24	230 ~ 2500	H	20	1268	9.2	10.3

# TRIM ANGLE ADJUSTMENT

## NOTE:

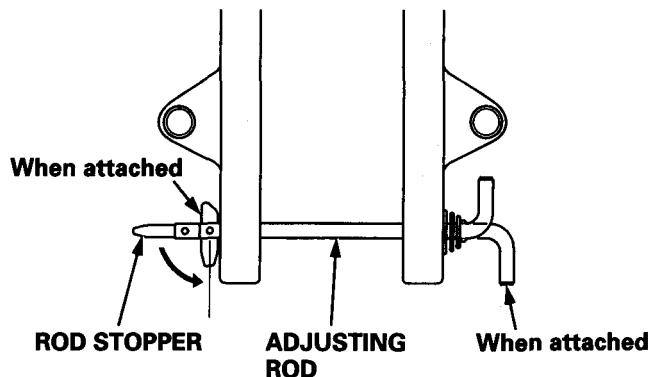
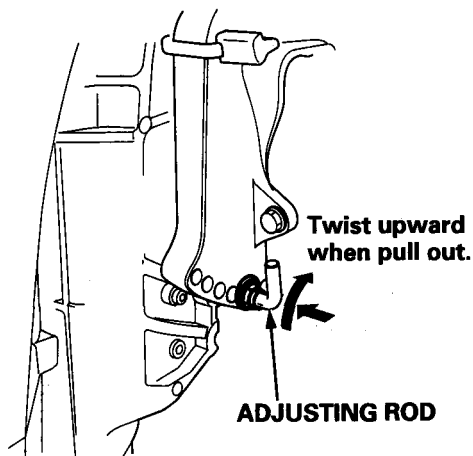
- Install the outboard motor so that the axis of the propeller is parallel with the water surface.

1. Push in the adjusting rod, then twist upward and pull out it to remove.
2. Insert the adjusting rod in a position which puts the outboard motor at a 90 degree angle; push the rod stopper down and attach it.

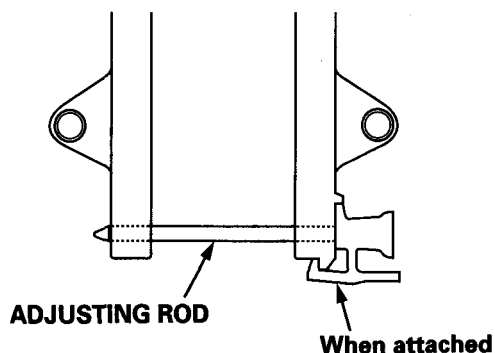
## ANGLE ADJUSTMENT:

5 Stages: (4°, 8°, 12°, 16°, 20°)

### X/Remote control type



### S/L Tiller handle type

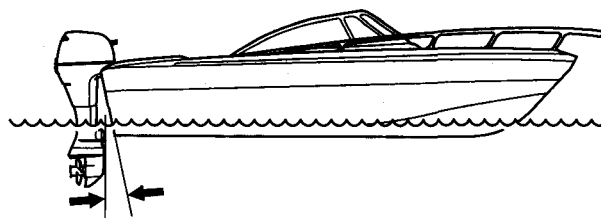


## NOTE:

- The rod stopper of the adjusting rod must be at a 90 degree angle to the rod. (X/Remote control type)
- After attaching make sure that the rod cannot come out, even if pulled.

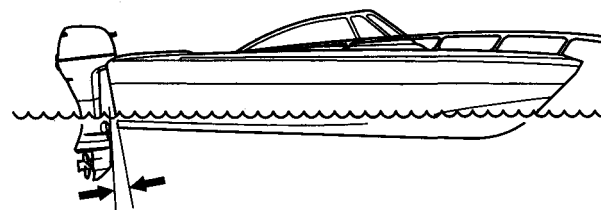
## • CRUISING CHARACTERISTICS

### <Correct>



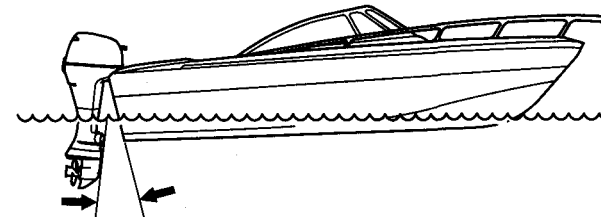
Most stable cruising and max. Performance

### <Too small>



Causes boat to plow

### <Too large>



Causes boat to squat

## 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: 0.285 ℓ (0.30 USqt, 0.25 Imp qt)  
Change: 0.26 ℓ (0.27 USqt, 0.23 Imp qt)

#### INSTALLATION LOCATION

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

#### FUEL SYSTEM

- Check that the fuel line is connected securely.
- 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 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.
- Make sure that the choke mechanism operates properly.

#### ELECTRICAL SYSTEM

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

#### ENGINE OIL

- Check the engine oil level.
- ENGINE OIL CAPACITY:  
Total: 1.3 ℓ (1.37 USqt, 1.14 Imp qt)  
Change: 1.0 ℓ (1.06 USqt, 0.88 Imp qt)

### • 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

- Check the choke for proper 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 that 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: 900 ± 50 min<sup>-1</sup> (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 users operating condition.

**OUTBOARD MOTOR SPEED:**

BF8D: 4500 – 5500 min<sup>-1</sup> (rpm)

BF9.9D/BF10D: 5000 – 6000 min<sup>-1</sup> (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 entire outboard motor thoroughly with a cloth.
- Check the outboard external damages or defects, cracks.

## **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<sup>-1</sup> (rpm) (with 10% Q 30% of throttle).
- For the next to the second 60 minutes: Run the outboard motor at 4,000 – 5,000 min<sup>-1</sup> (rpm) (with 50 – 80% of throttle).
- For the initial 10 hours: Avoid continuous full throttle (100% throttle) operation for more than 5 minutes.