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It may be necessary to refer to the chart below for reference purposes.

Model	Type	Shaft Length Short	Long	Tiller Handle	Remote Control	Gas Assisted Tilt	Power Trim/ Tilt	Tachometer	Trimmer
BF35A	SHA	•		•		•			
	LHA		•	•		•			
	LRA		•		•	•			
	LRTA		•		•		•	•	•
BF45A	SRTA	•			•		•	•	•
	LHA		•	•		•			
	LRA		•		•	•			
	LRTA		•		•		•	•	•

S = Short Shaft

L = Long Shaft

H = Tiller Handle

R = Remote Control

T = Power Trim/Tilt

SET-UP

While performing these procedures, use adequate safety equipment and protective apparel such as gloves, safety glasses or faceshield, and safety shoes.

1. Cut the straps and open the shipping carton. Remove the shipping braces.
2. Remove all loose parts from the carton, and check all loose parts against the following list.

† INCLUDED WITH ALL TYPES

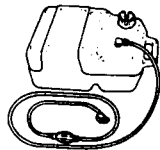
‡ INCLUDED ONLY WITH POWER TRIM/TILT TYPES

* INCLUDED WITH REMOTE CONTROL TYPES

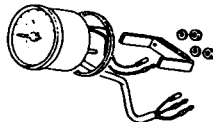
† Owner's Manual



† Fuel Tank, Hose and Primer Bulb



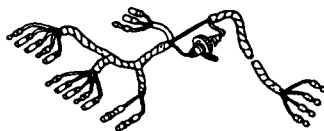
‡ Tachometer



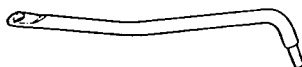
‡ Trim Meter



‡ Wire Harness "A"



* Steering Link Arm



* Stainless Nut, 3/8 x 24 UNF



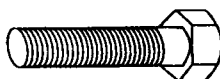
* 3 Stainless Plain Washers
10 mm



* Steering Link Arm Collar



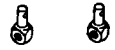
* Stainless Bolt, 3/8 x 24 UNF



* 2 Stainless Nylon Lock Nuts,
3/8 x 24 UNF



* 2 Pivot Shafts



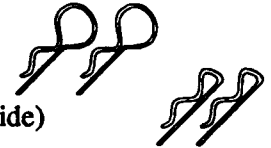
* 4 Flat Washers, 6 mm



* 4 Lock Pins, 6 mm

Large Loop (motor side)

Small Loop (control box side)



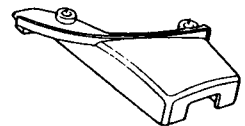
* Grommet



* Remote Control Cable Plate



* Separate Top Cover



* 4 Stainless Plain Washers,
6 mm



* 2 Stainless Bolts, 6 x 40 mm



* 2 Self-Tapping Bolts, 6 x 28 mm



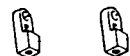
* 3 Phillips Head Screws
6 x 95 mm



* 3 Stainless Nuts, 6 mm



* 2 Cable Eye Ends



* Spacer Plate

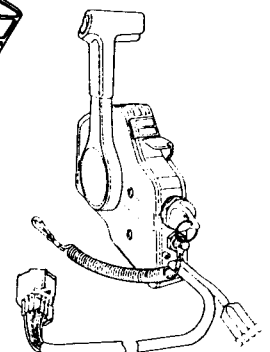


* Remote Control Box,
Includes:

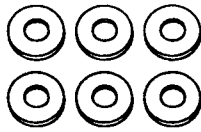
Ignition key

Emer. stop sw. lanyard

Spare emer. stop sw. clip



- * 6 Stainless Washers,
6 x 2 mm thick

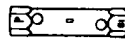
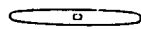
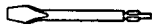
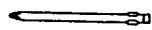
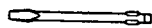
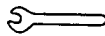
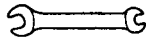
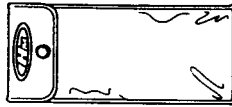


- * Cable Clamp Spacer



†TOOL KIT

- Tool bag
- Open end wrench,
10 x 12 mm
- Open end wrench,
8 mm
- Flat screw driver
- Phillips screw driver
- Oil check screw driver
- Pliers
- Screw driver handle
- Socket wrench,
18 x 19 mm
- Emergency starter rope

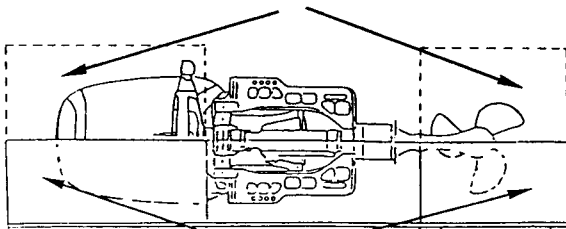


Note any damaged or missing parts:

- For parts lost or damaged in transit, file a **TRANSPORTATION CLAIM**.
(Refer to Section 13 of the Service Operations Manual)
- For parts left out by the factory, file a **WARRANTY CLAIM**.
(Refer to section 7 of the Service Operations Manual)

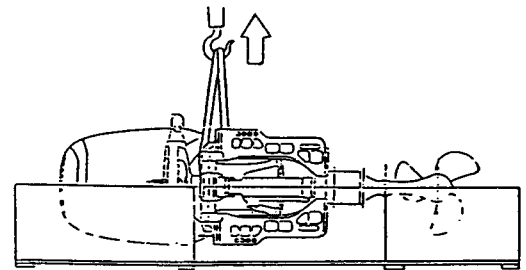
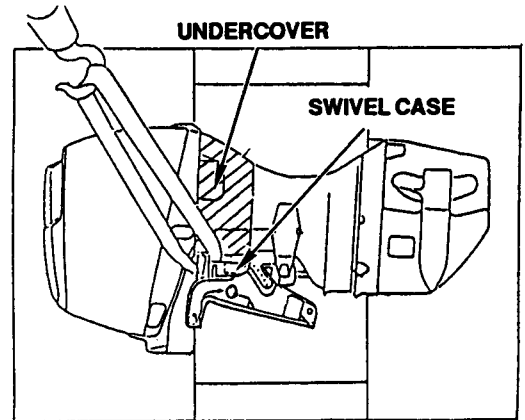
3. Remove the upper styrofoam which protects the engine cover and lower gear case.

UPPER STYROFOAM



LOWER STYROFOAM

4. Pass a lifting rope or strap between swivel case and undercover as shown. Use a hoist that has a lift capacity of at least 500 lbs. (227 kg) and lift the motor horizontally just enough to remove the engine cover.

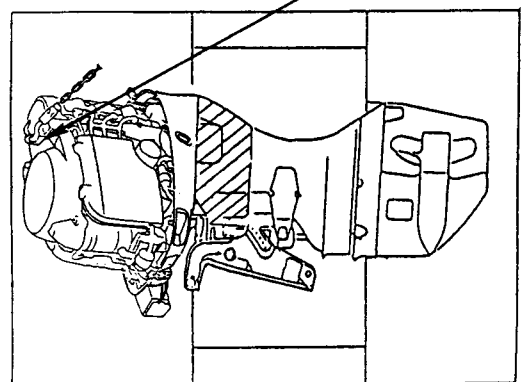


NOTICE

Do not pass the lifting rope or strap around the plastic undercover or the plastic undercover will be broken.

5. Lower the motor back into the styrofoam and connect the hook of the hoist to the engine hanger bracket as shown.

ENGINE HANGER BRACKET



6. Slowly lift the motor to the vertical position. While lifting the motor have an assistant support the gear case and lower the gear case from the styrofoam to the floor.

MOTOR INSTALLATION

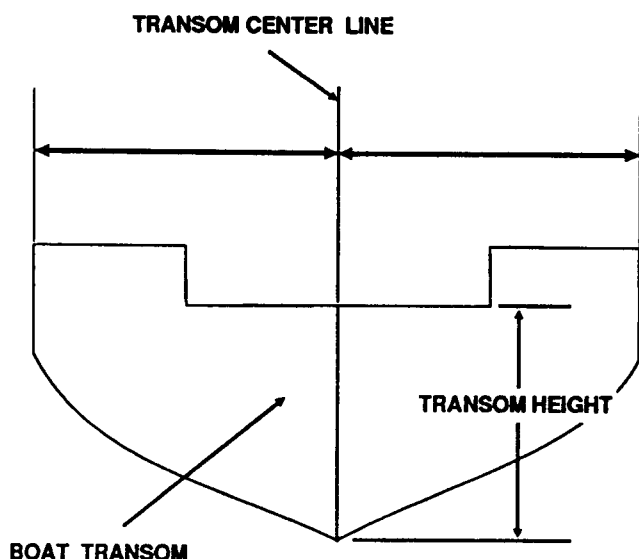
The BF35A and BF45A Outboard Motors are designed to be installed on transoms which have:

Thickness = 1-3/8 ~ 2-1/4 in. (35 ~ 57 mm)

Height = Short shaft: 14.8 ~ 16.3 in. (376 ~ 416 mm)

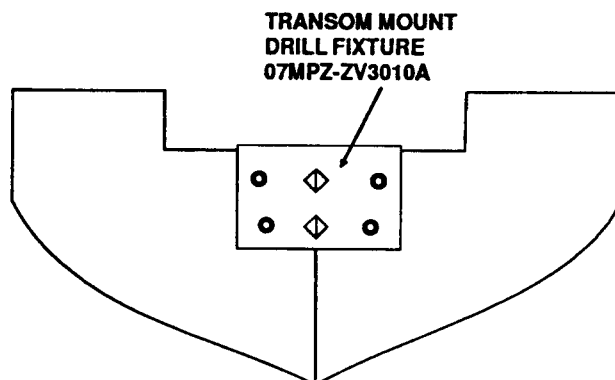
Long shaft: 19.0 ~ 20.5 in. (483 ~ 521 mm)

1. Measure across the transom to determine the transom center point and draw a vertical line. The vertical line should pass through the keel which is the lowest point on a "VEE" bottom boat.

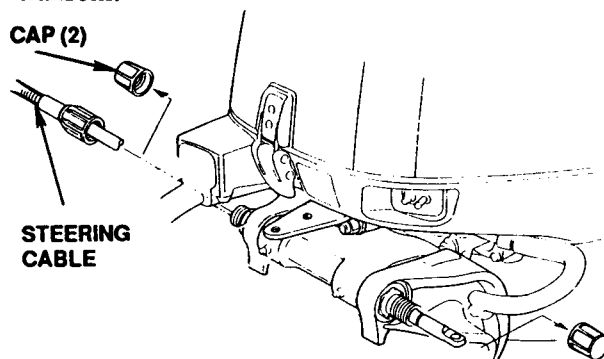


2. Rest the top flange of the special tool on the top of the transom. Align the upper and lower diamond cut out points of the special tool with the center line of the transom. Secure the special tool to the transom using two clamps. To protect the boat finish, place a wooden block or equivalent between the clamps and the boat. Verify that no damage will occur when the motor mounting holes are drilled. Look for any structural impediments such as bulkheads, braces, fuel cells, bilge pumps, or floor sections before drilling.

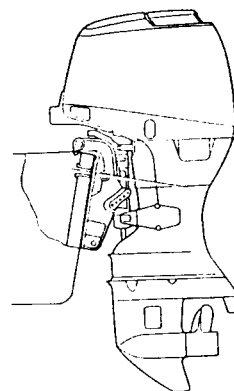
3. Ensure that there is adequate space for the nut and washer to bear on a flat surface. Wear safety glasses. Then use a 1/2" drill to drill the holes through the transom using the drill guides on the special tool. Use a vacuum cleaner to clean up after drilling.



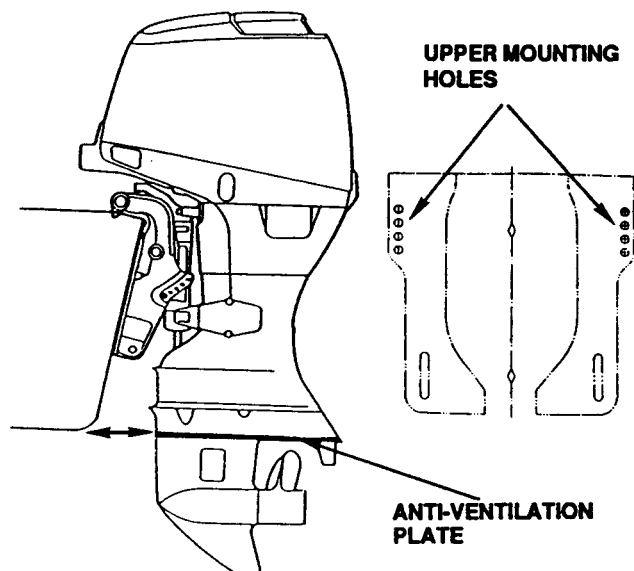
4. Remove the special tool and apply Honda silicone liquid gasket P/N 08718-0001 or equivalent sealant to the bolt holes of the transom.
5. Remove the caps from the steering/tilt tube. Apply anti-corrosion grease to the steering cable and install the steering cable through the steering/tilt tube on the front of the motor. Do this before final placement of the motor on the transom.



6. Position the motor on the center line and line up the drilled holes in the transom with the holes in the stern bracket.



- Verify that the motor height is correct. The anti-ventilation plate should be even with the lowest point on the keel. The motor can be raised easily by using a lower set of upper mounting holes.



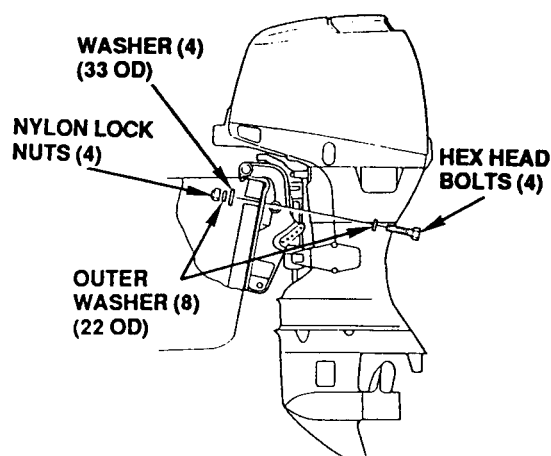
- Secure the motor to the transom using the optional Installation Kit P/N 06413-ZV5-000. The bolts must have sufficient thread length to tighten down against the transom and have two or three threads past the end of the nylon lock nut.

Installation Kit Contents

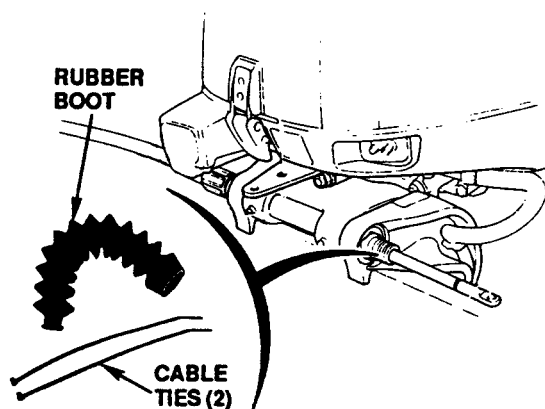
Qty.	Description	Specification in mm
4	Hex head bolts	12 x 1.25 x 100
4	Nylon lock nuts	12 x 1.25
8	Washers	12.5 ID x 22 OD x 2 thk.
4	Washers	12.5 ID x 33 OD x 3 thk.

NOTICE

To avoid an interference problem between the outer washers on the stern bracket and the mounting area recess of the stern bracket, the washers must not exceed 7/8" (22 mm) OD.



- Install a commercially available steering cable protector (eg. rubber boot or equivalent) over the steering cable.

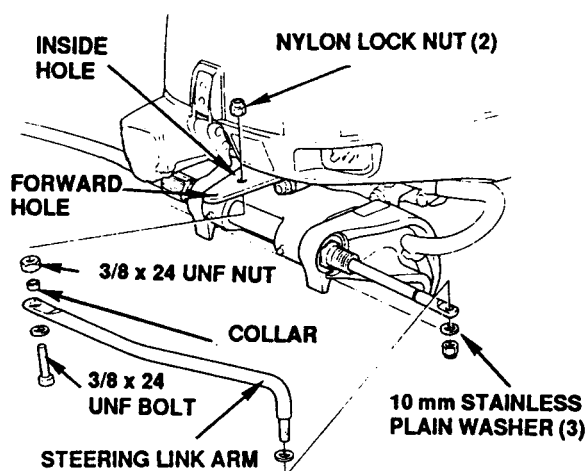


- Grease all steering pivot points.

STEERING LINK ARM/CABLE INSTALLATION

The steering link arm must be secured between the steering plate and steering cable using the bolt, washers, nuts, and collar as shown. Both the bolt and the nylon lock nuts used at each end of the steering link arm must be in good condition and tightened as follows.

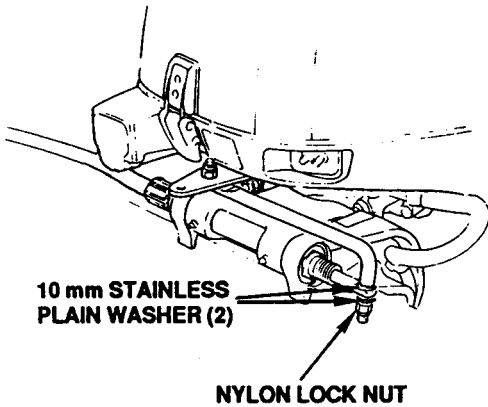
- Install the steering link arm into the inside hole of the steering plate using the bolt, washer, nuts, and collar as shown. Lightly seat the inner nut against the collar then thread the bolt into the steering plate and tighten securely. Hold the bolt and tighten the nylon lock nut to 20 ft-lb (27.1 N•m).



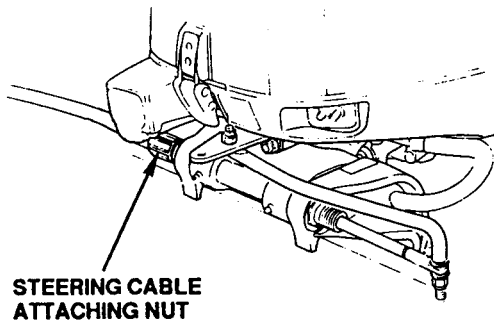
NOTE

If the steering cable enters the tilt/steering tube from the port side, use the forward hole. Otherwise do not mount anything in the forward hole of the steering plate. This hole is usually used for dual motor installations.

- Turn the steering wheel to extend the steering cable out of the steering/tilt tube. Install the steering link arm into the steering cable end using the washers and lock nut as shown. Turn the steering wheel to retract the steering cable into the steering/tilt tube. Tighten the lock nut to a torque of 7-8 ft-lb (8-11 N•m) then loosen the lock nut 1/8 turn.



- Tighten the steering cable attaching nut onto the steering/tilt tube until the steering cable end play is removed. Torque the steering cable attaching nut to 10 ft-lb (14 N•m).



NOTE

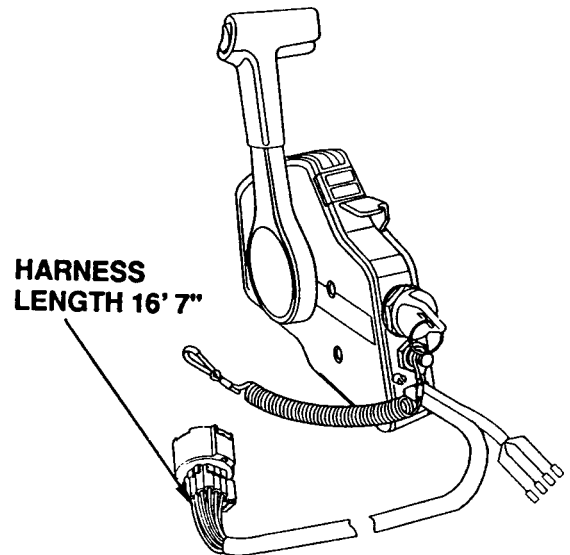
- After the steering cable attaching nut is torqued, there should be no end play between the outer steering cable and the steering/tilt tube.
 - For further information regarding the steering cable refer to the boat manufacturer's operation manual.
- Directly after the steering link arm and steering cable installation verify the following:
 - The motor will turn in the proper direction when the steering wheel is turned right and left. If the steering is reversed, correct at the steering box.

- The steering angle of the motor is equal by turning the steering wheel full right and full left. If the motor steering angles are not equal:
 - Major corrections can be made at the steering box (refer to the steering box or steering cable manufacturer's instructions).
 - Minor corrections can be made by moving the steering/tilt tube laterally (refer to the Shop Manual).

Make the steering angles equal as necessary.

- The steering cable and/or steering link arm do not come in contact with any part of the boat when the steering wheel is turned full left and full right at all tilt angles. Correct as necessary and check again.

REMOTE CONTROL BOX LOCATION



Select a mounting location which allows easy access and unobstructed and comfortable operation of the remote control lever. Make sure there are no cable obstructing components between the remote control box and the outboard motor.

NOTE

- The remote control box is normally mounted on the starboard side of the gunnel. The control lever can be reversed to accommodate port side or starboard helm/console installation.
- It is recommended to mount the remote control box near a corner of the front seat.
- Position the spacer plate between the control box and the installation surface.

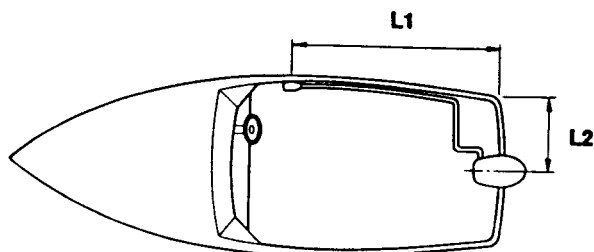
REMOTE CONTROL CABLE SELECTION

1. Determine the remote control cable length.

$L1 + L2 + 12" (300 \text{ mm}) = \text{Control Cable Length}$

Note

Always round off the control cable length to the next highest standard length.



Recommended Remote Control Cables:

MORSE

33C STANDARD TYPE

33C SUPREME TYPE

(Deluxe version of 33C Standard type)

or

TELEFLEX

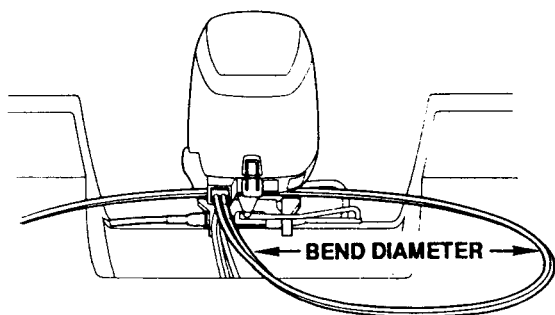
3300 STANDARD TYPE

3300 HP TYPE

NOTE

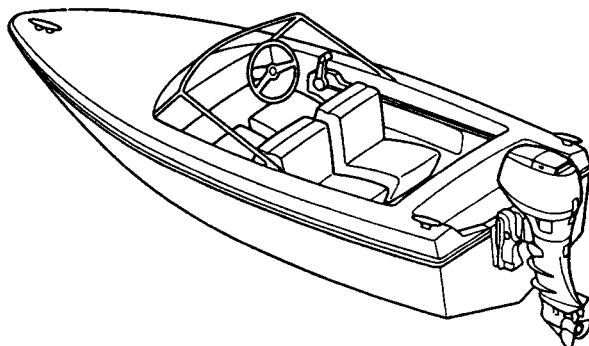
Both cable ends have a 10-32 UNF-2 SAE thread and 3 inches of inner cable travel.

2. Different types of control cables have different minimum bend radii. Follow the cable manufacturer's minimum bend radius recommendations. If the cables selected have a minimum bend radius of 8 inches, there should be at least a 16 in. (400 mm) bend diameter at the motor. The cable length must be calculated in such a way that unrestricted operation is possible, even when the outboard motor is fully tilted UP and turned from full left to full right. If the cable length is insufficient, the cable must be replaced with the correct length.



3. If the cables are routed in a tight arc, resistance on the control lever will increase, and smooth throttle operation will not be possible.

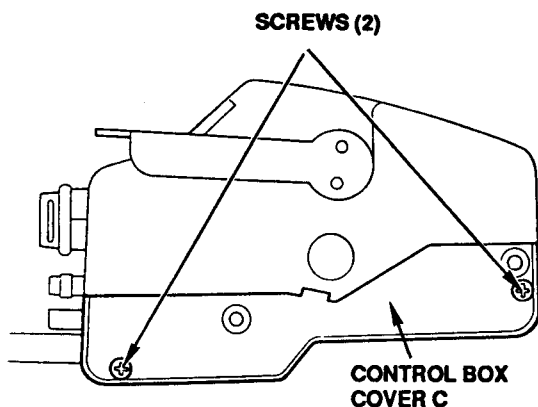
Installation Example



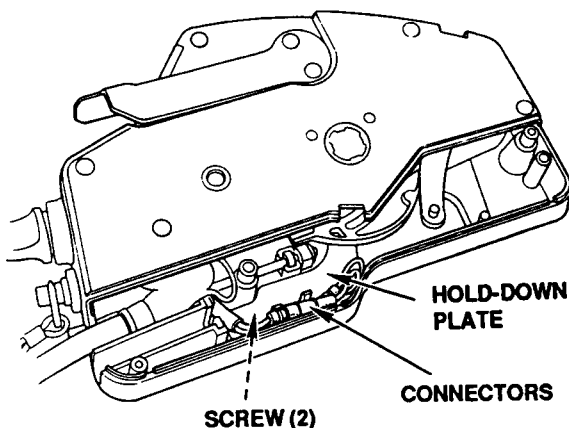
REVERSING THE CONTROL LEVER

This surface-mounted remote control box can be mounted on the starboard or port side by reversing the control lever.

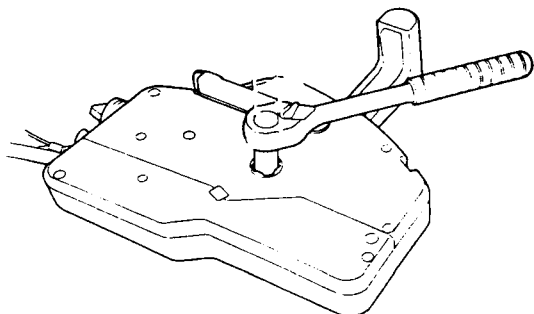
1. Remove the two screws and the control box cover C.



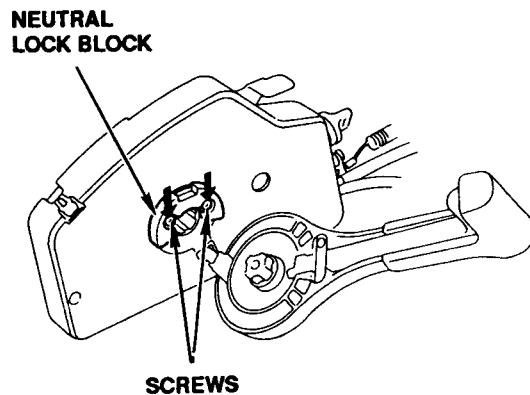
2. Remove the two screws and hold-down plate.
3. Disconnect the power trim/tilt switch wire connectors.



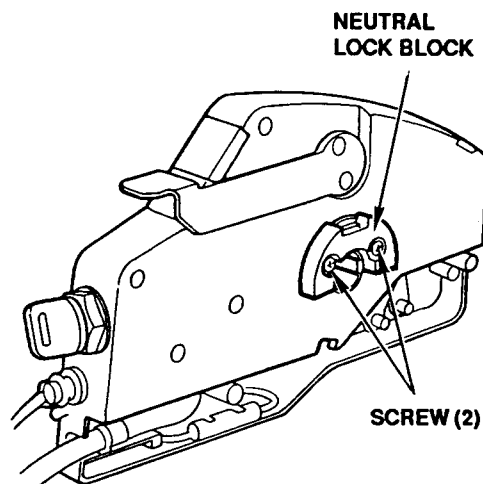
4. Put the control lever into the neutral position. Remove the 8 mm control lever lock bolt with a 1/2" (12 mm) socket and separate the control lever from the control box. Do not damage the power trim/tilt switch wire harness.



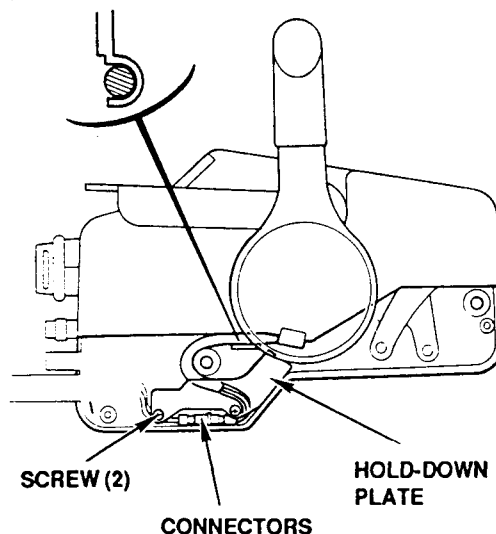
5. Remove the two screws and the neutral lock block from the remote control box housing A.



6. Install the neutral lock block on the control box cover B and tighten the two screws securely.

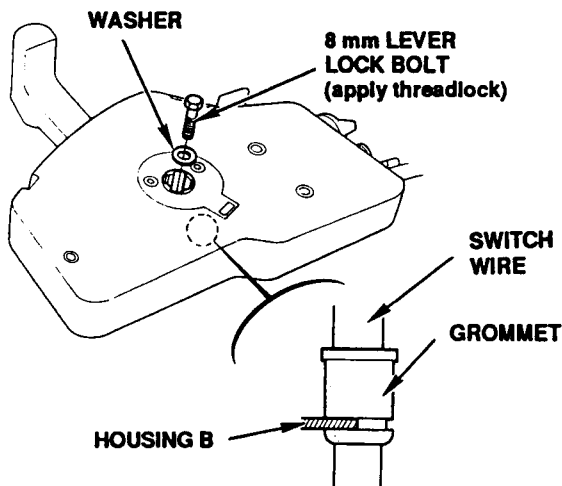


7. Route the power trim/tilt switch wire harness as shown and install the hold-down plate and tighten the two screws. Connect the switch wire connectors.



8. With the control lever installed in the neutral position, apply one drop of Hondalock 1 threadlock P/N 08713-0001 to the threads of the 8 mm control lever lock bolt. Install and tighten the 8 mm control lever lock bolt.

Torque: 14.5 ft-lb (2.0 kg-m)

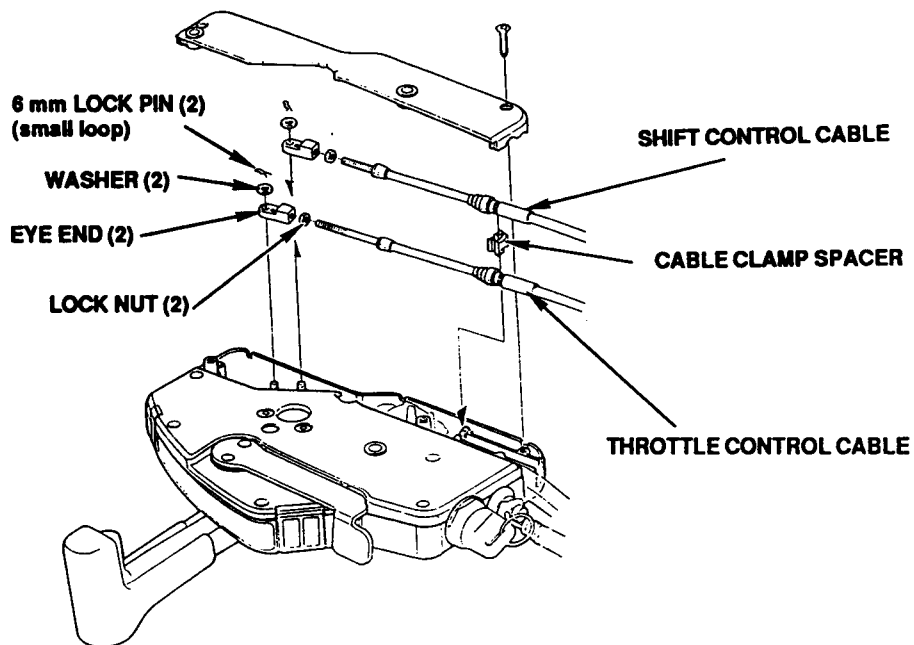


NOTE

Position the switch wire grommet in the control housing B securely by aligning the groove in the housing cutout.

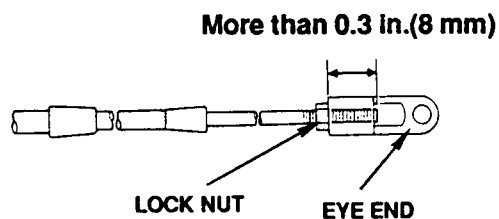
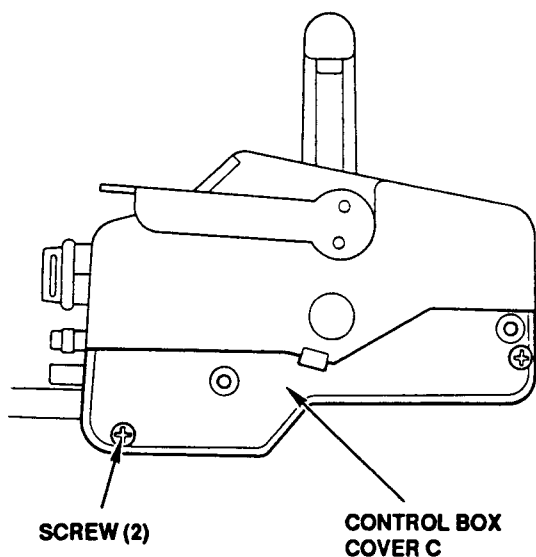
REMOTE CONTROL CABLE /BOX INSTALLATION

• Remote Control Cable (control box side)



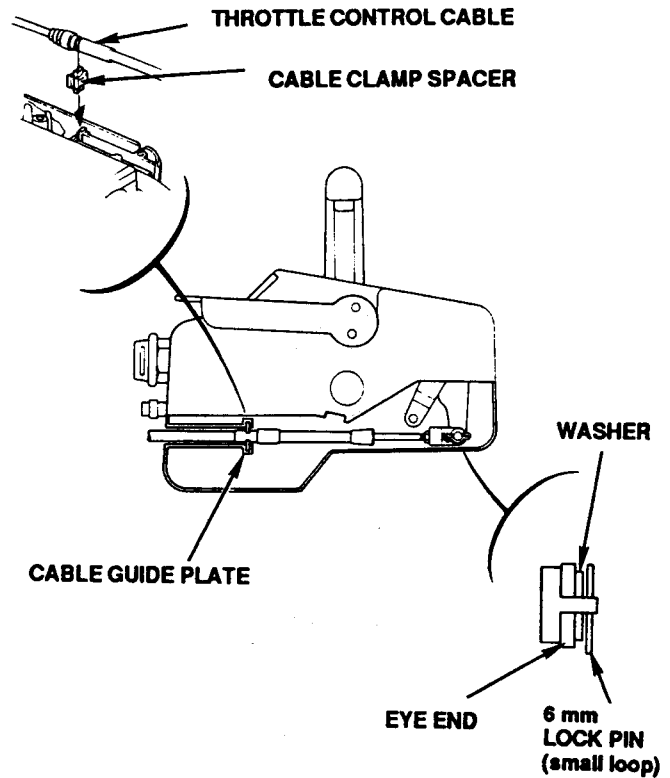
1. Remove the two screws and control box cover C.

2. Screw the lock nuts and eye ends at least 0.3 inches (8 mm) onto the threads of the remote control cables and tighten the lock nuts securely to hold the pivots. Apply marine grease to the holes in the eye ends.



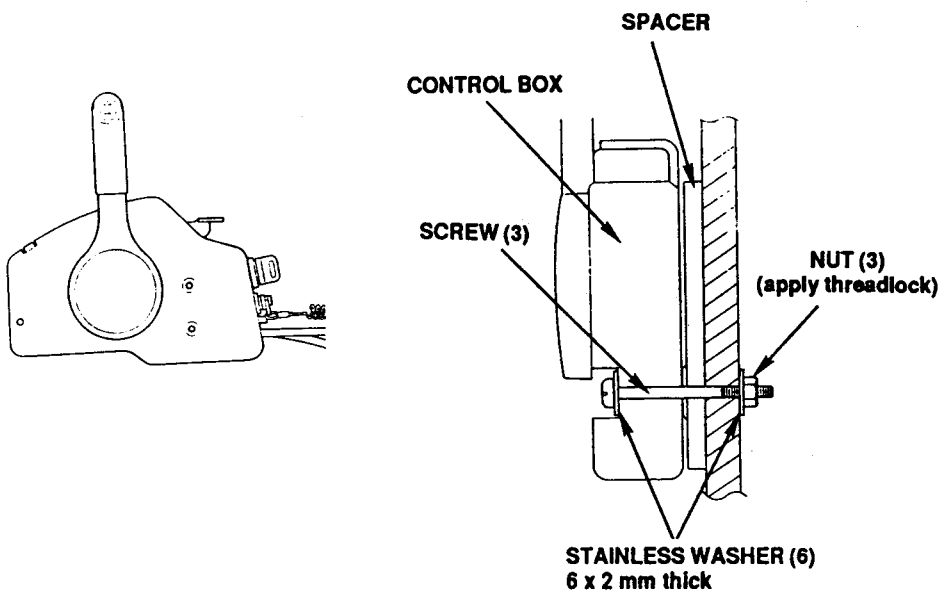
3. Install the shift control cable by aligning the groove of the cable with the cable guide plate. Then connect the eye end to the shift arm pin using the washer and 6 mm lock pin.
4. Install the cable clamp spacer and throttle control cable by aligning the groove of the cable guide plate. Then connect the eye end to the throttle arm pin using the washer and 6 mm lock pin. Install the washer on the lock pin side.
5. Install control box cover C and tighten the screws securely.

NOTICE Overtightening the mounting screws can damage or distort the control box.



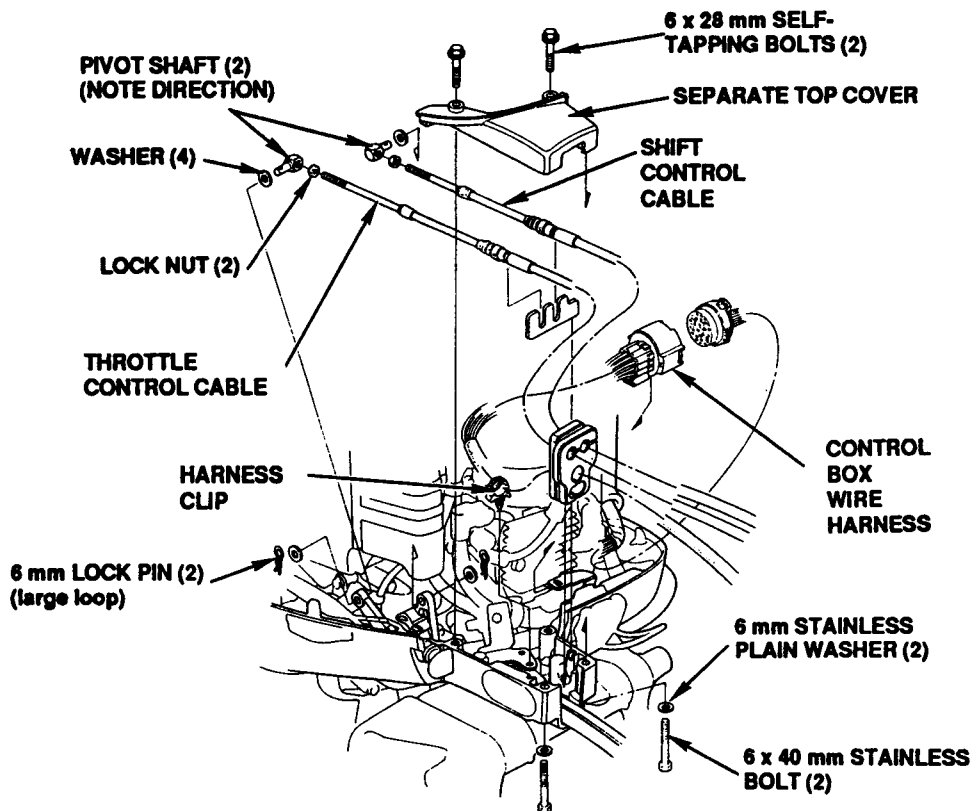
• Remote Control Box

Put the control lever in the neutral position and install the control box at the selected mounting location (refer to page 6). Apply one drop of Hondalock 1 threadlock P/N 08713-0001 to the threads of the nuts then tighten the nuts securely.

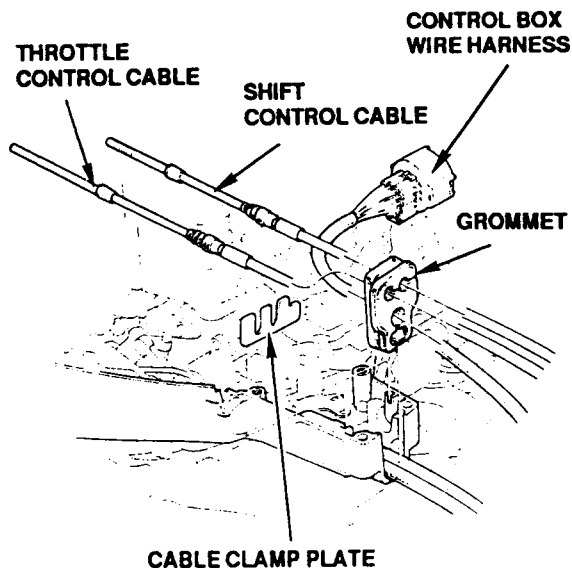
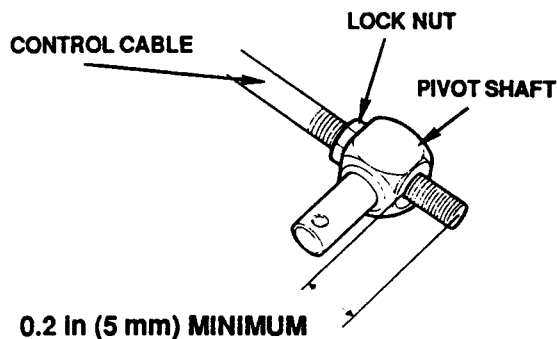


• Remote Control Cable (motor side)

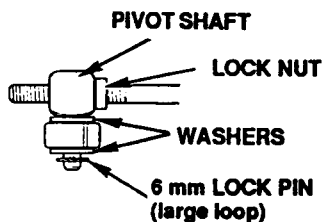
1. Connect the control cables to the outboard motor with the remote control lever in the neutral position and the choke/fast idle lever in the lowest (idle) position.



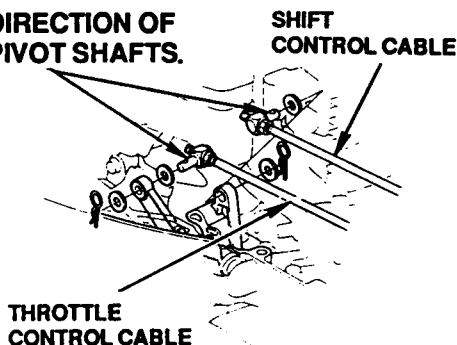
2. Pass the control box wire harness and control cables through the grommet as shown.
3. Screw the pivot shafts onto the threaded portions of the throttle and shift cables as shown.
4. Attach the cable clamp plate to both control cables by aligning the grooves in the cables with grooves in the cable clamp plate. Then install them into the engine undercase.



5. Verify that the shift arm on the outboard motor is in the neutral position, and that the control lever at the remote control box is in the neutral position.
6. Apply marine grease to the pins of the pivot shaft.
7. Connect the control cables to the shift arm and throttle arm using the 6 mm washers and lock pins as shown. Use the 6 mm washers on both sides of the arm as shown. Tighten the lock nuts securely.



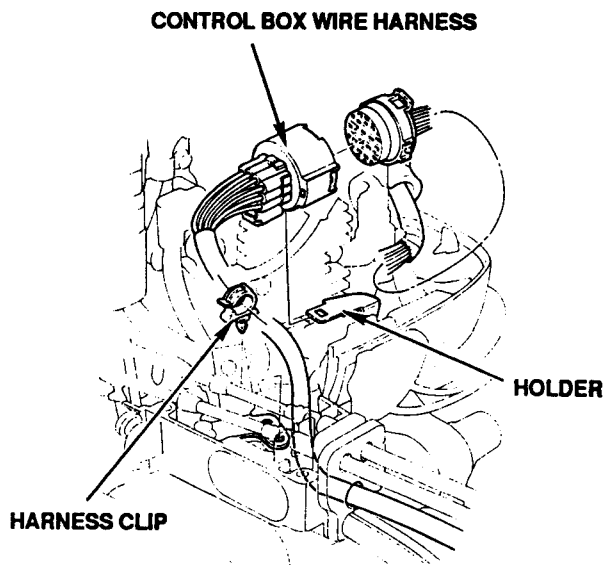
NOTE: DIRECTION OF PIVOT SHAFTS.



NOTE

If the hole in the shift arm and the pivot shaft do not align, adjust by turning the pivot shaft in or out as necessary.

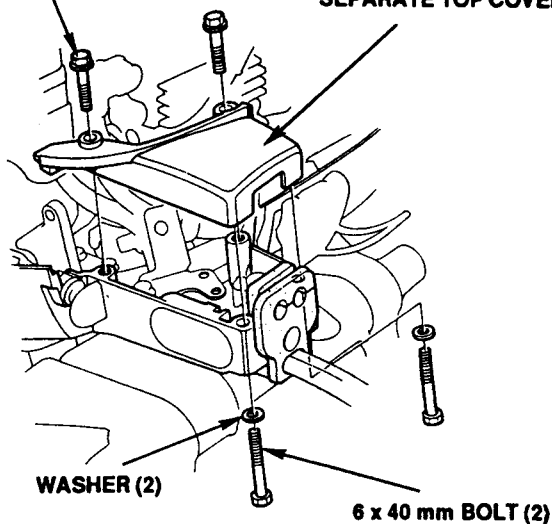
8. Connect the control box wire harness to the outboard motor wire harness and attach the connector to the holder.
9. Secure the control box wire harness with the harness clip.



10. Install the separate top cover and tighten the bolts securely.

6 x 28 mm SELF-TAPPING BOLT (2)

SEPARATE TOP COVER

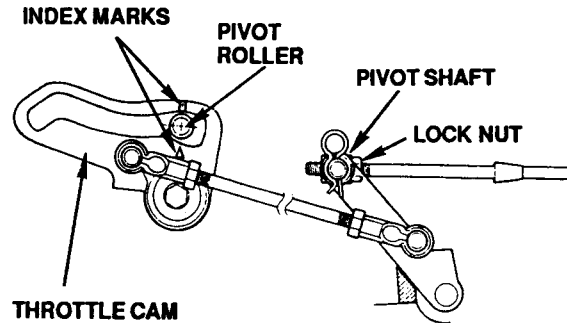
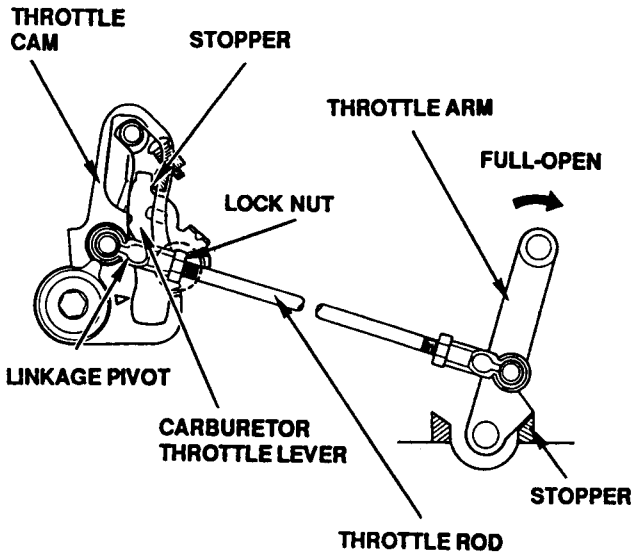


REMOTE CONTROL CABLE ADJUSTMENT

• Throttle Control Cable

1. Put the remote control lever in the neutral position. Disconnect the throttle control cable from the throttle arm.
2. Move the throttle arm to the fully-open position until it touches the stopper and verify that the carburetor throttle lever touches the stopper at the fully-opened position.
3. If not, loosen the lock nut, disconnect the throttle rod from the throttle cam and adjust the throttle rod length by turning the linkage pivot.

6. Verify that the center of the pivot roller aligns with the index marks on the throttle cam.
7. If not, loosen the throttle control cable lock nut, disconnect the throttle control cable and turn the pivot shaft until adjustment is correct.

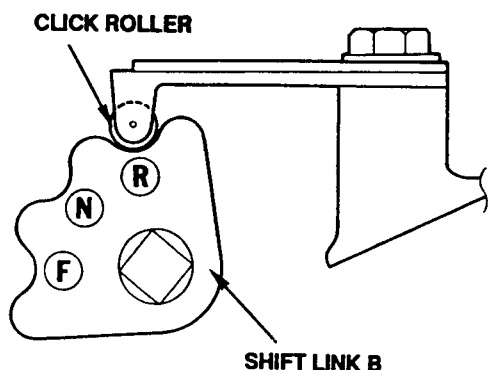


4. After the adjustment, connect the throttle rod to the throttle cam and tighten the lock nut securely.
5. Reconnect the throttle control cable to the throttle arm.

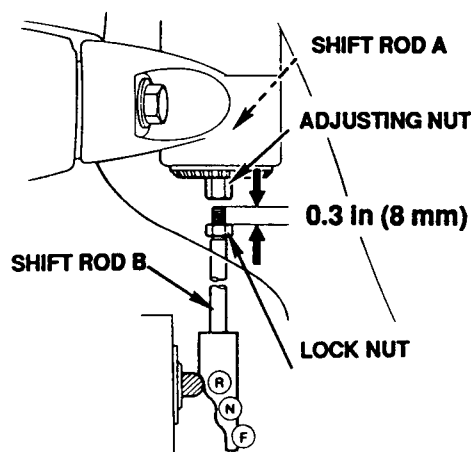
8. After the adjustment, reconnect the throttle control cable and tighten the lock nut securely.
9. Move the remote control lever and verify the following:
 - The control lever moves smoothly into all positions.
 - The carburetor throttle lever moves smoothly without binding from the fully-opened to the fully-closed position.

• Shift Control Cable

1. Move the remote control lever to the "R" reverse position. Disconnect the shift control cable from the shift arm. Visually inspect that the click roller is in the center of the groove on the shift link B at the (R) mark.

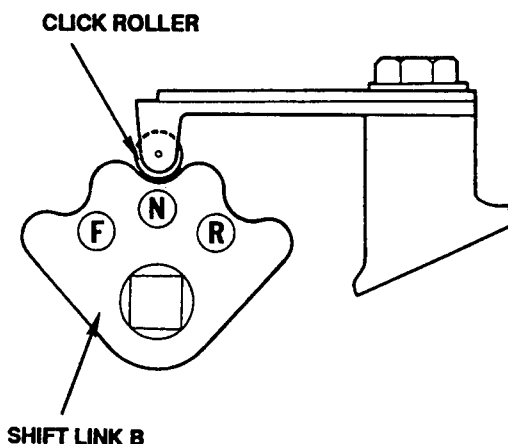


2. If not, loosen the lock nut and adjusting nut connecting shift rod A to shift rod B.



3. Disconnect shift rod A from shift rod B by backing off the adjusting nut. Back off the adjusting nut until it is approximately 3 mm above the top of shift rod B.
4. Turn the lock nut on shift rod B to obtain 0.30 inch (8 mm) between the lock nut and the top of shift rod B as shown.
5. Thread the adjusting nut onto shift rod B until the adjusting nut comes in contact with the lock nut. When the adjusting nut contacts the lock nut, tighten the lock nut and adjusting nut together.

6. Reconnect the shift control cable to the shift arm. Put the remote control lever in the neutral position.
7. Verify that the click roller sits in the N groove of the shift link B.
8. If not, loosen the shift control cable lock nut, disconnect the shift control cable and turn the pivot shaft until the adjustment is correct.
9. After the adjustment, reconnect the shift control cable and tighten the lock nut securely.



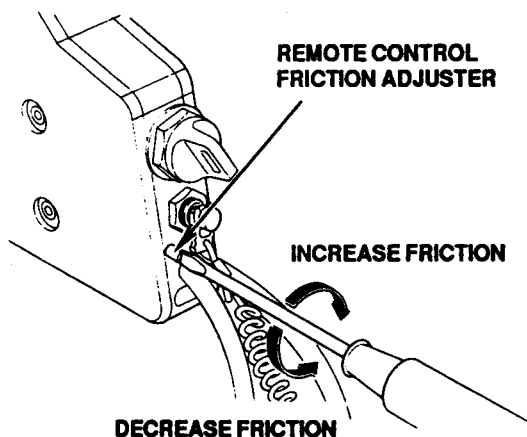
10. Verify the remote control lever moves smoothly into all positions.

CONTROL LEVER FRICTION ADJUSTMENT

The control lever friction can be adjusted by turning the friction adjuster at the front of the remote control box.

Turning the adjuster clockwise will increase the control lever friction, turning it counterclockwise will decrease the control lever friction.

Adjust the friction adjuster so that a slight amount of drag is felt. The remote control lever should move smoothly and freely.

**OPERATIONAL CHECK**

Before checking the operation of the remote control cables, make sure that the cables are correctly adjusted and that there are no kinks or sharp bends in the cables.

Operate the remote control lever and verify that the control cables move smoothly.

- **Shift Control Cable**

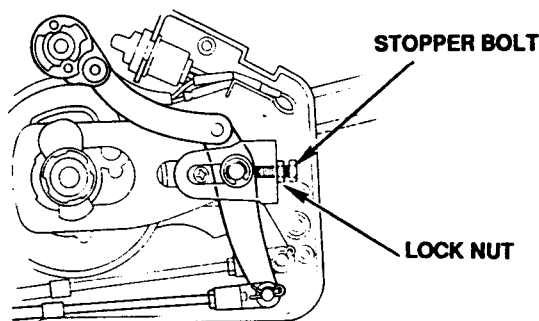
1. Move the control lever into forward gear approximately 30° from neutral, verify that the click roller is in groove F of shift link B (refer to page 15).
2. Then move the control lever to full throttle position in the forward gear position, verify that the throttle is actuated and the carburetor throttle lever is in the fully-open position.
3. Returning the control lever to the neutral position, verify that the carburetor throttle lever moves to the fully-closed position.
4. If not, readjust the throttle control cable pivot shaft at the motor side (refer to page 14).

- **Throttle Control Cable**

The remote control box is designed in such a way that when the carburetor throttle rod and throttle control cable are adjusted to the standard adjustment setting, the forward full throttle point will be correctly and automatically set.

If the carburetor full throttle point cannot be obtained, adjust the following:

1. Remove the choke/fast idle lever, control housing cover B and control housing cover C.
2. Move the control lever to full throttle position.
3. Loosen the lock nut and turn the stopper bolt until it touches the throttle lever. The carburetor and control lever must be in the full throttle position.



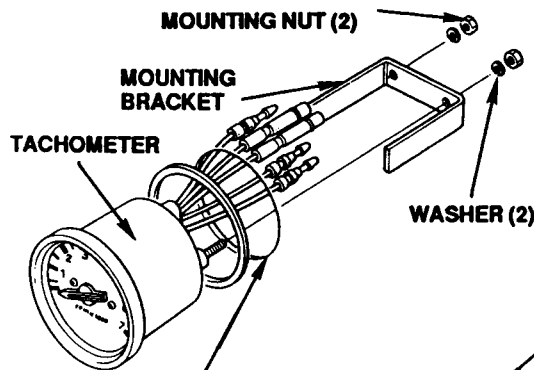
4. Tighten the lock nut and reinstall the control housing cover C, and B, and choke/fast idle lever.

METERS (Power Trim/Tilt Type)

Meters should be installed on an instrument panel with a thickness of 0.04 ~ 0.44 in. (2 ~11 mm). If the instrument panel thickness exceeds 0.44 in. (11 mm), the mounting bracket must be modified accordingly. Tighten the mounting nuts evenly on both sides.

Wear safety glasses. Drill the correct hole size for the meters as shown below. Use a vacuum cleaner to clean up after drilling.

Meter	Hole Saw Size
Tachometer	3-1/8 in. or 80.5 mm
Trim Meter	2-1/8 in. or 54 mm
Speedometer	3-3/8 in. or 86 mm
Hour Meter	2-1/8 in. or 54 mm
Volt Meter	2-1/8 in. or 54 mm



If a standard 3-3/8 in. hole is already drilled in the instrument panel, it will be necessary to shim the OD of the tachometer and spread the mounting bracket before installation.

Wire Harness Connections

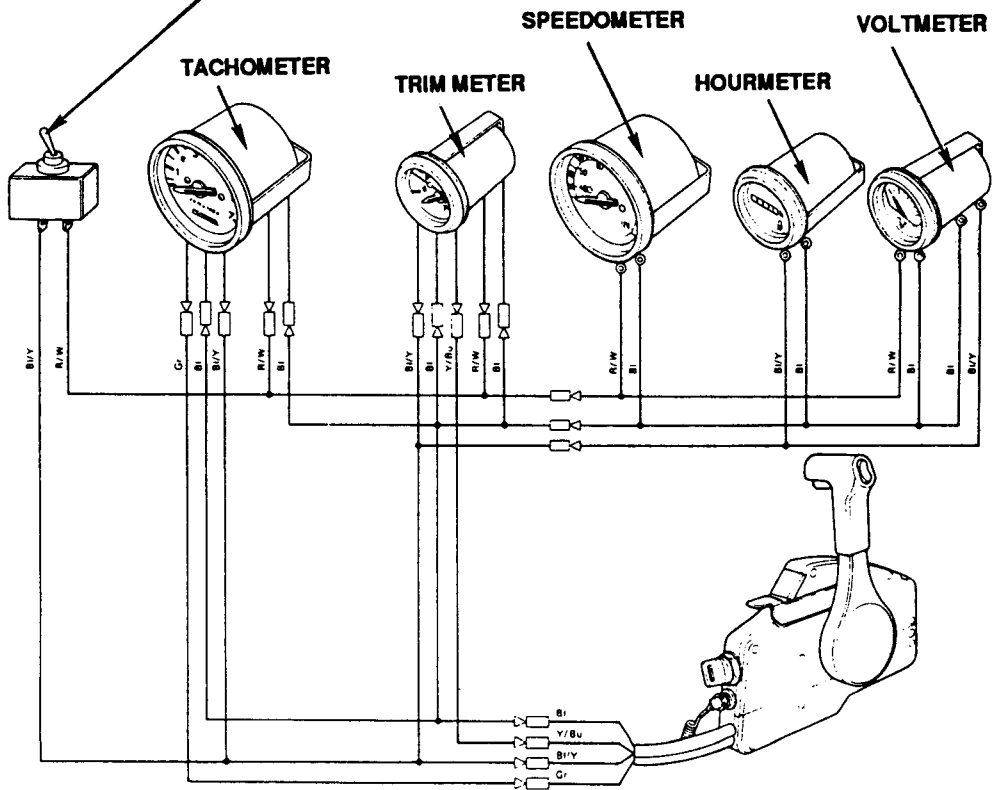
Route and connect the wire harness properly as shown in the wiring diagram. Use the genuine Honda wire harness provided with the Power Trim/Tilt Types.

NOTE

- Be sure the connectors are fully inserted into their receptacles. Check the locking connectors to be sure that the locking portion is locked in place.
- Check the insulators to make sure they surround their connectors completely. Do not allow the lips of the insulators to fold up and expose the connector.
- Do not break the coverings of the wire harness. If the covering of the wire harness is broken, either repair it with electrician's tape, or replace it.

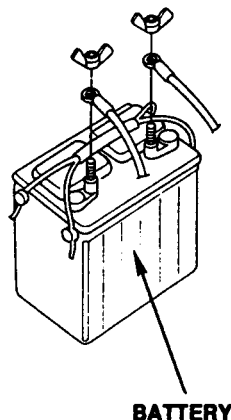
LIGHT SWITCH

Recommended commercially available Toggle Switch No. 1S 16970 manufactured by Teleflex or equivalent.



BATTERY

Minimum requirements: 12V-70AH marine cranking battery.



1. Install the battery in the correct size corrosion-resistant battery box in a dry, well ventilated location.
2. Connect the positive (+) battery cable first, then connect the negative (-) battery cable. Tighten the cable nuts securely.
3. Coat the battery terminal ends with marine grease.
4. Secure the corrosion-resistant battery box properly in the boat. To keep potential sparks away from the fuel tank, do not secure the battery near the fuel tank.

PROPELLER

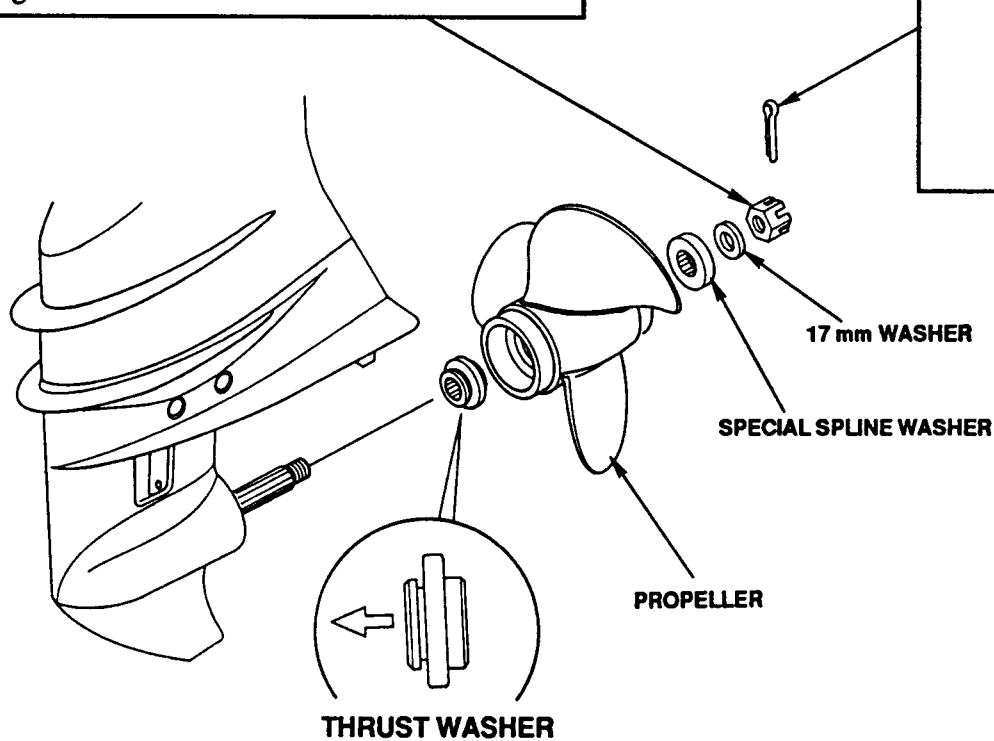
Installation

16 mm CASTLE NUT

When installing the nut, hand tighten it until the 4 mm cotter pin can be installed. If necessary, tighten the nut just enough to align the hole with the groove in the nut.

4 mm COTTER PIN

Bend the cotter pin as shown and always use a genuine Honda or equivalent 4 mm stainless steel cotter pin.



Install with the groove side facing the gear case as shown.

Selection

Selection of the optimum propeller for boat characteristics and outboard motor performance is of utmost importance.

To ensure smooth acceleration and handling, top speed, and good fuel economy select a propeller which is designed for the boat size and outboard motor.

Confirm that the boat will reach its top speed with the engine at full throttle and maximum rpm.

Desirable Propeller Characteristics

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

Maximum Recommended Engine rpm

BF35A: 4600 ~ 5600 rpm

BF45A: 5000 ~ 6000 rpm

Before Selecting a Propeller the following must be checked and adjusted as necessary.

- The outboard motor must be installed vertically in relation to the bottom of the boat (adjust the trim angle as needed to achieve proper boat plane).
- Adjust the trim tab, so that the boat has neutral steering.
- Protect the propeller from foreign objects, and check regularly for damage and deformation, and aquatic plants wrapped around the propeller hub.
- Keep the bottom of the boat clean and free of algae and other growth (this 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 10 miles/h (15km/h).
- The boat should carry its average load (crew, load arrangement).

Required Tools for Acceleration Test

For this test a tachometer, stopwatch and speedometer should be used (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).

If maximum rpm cannot be reached at full throttle, the propeller may not be properly matched to the boat.

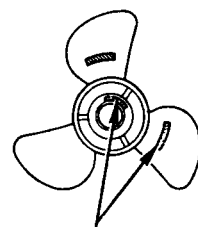
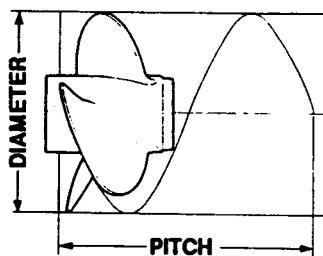
Run the boat up to full speed and check the engine rpm. If the engine rpm is above or below the maximum recommended engine rpm the propeller can be changed as follows:

- To increase the engine rpm, select a propeller with a smaller pitch.

NOTICE

To avoid power loss and potential outboard motor damage do not exceed the maximum recommended engine rpm.

- To decrease the engine rpm, select a propeller with a larger pitch.



PROPELLER DIMENSIONS
Diameter x Pitch

Under the following conditions, acceleration will improve and the life expectancy of the outboard motor will increase if the propeller pitch is decreased.

- Heavy loads (Crew, load, equipment, water skiing, etc.)
- When used at higher elevations
- When the boat bottom needs cleaning

It is not recommended to run the outboard motor at continuous full throttle. Run the outboard motor at 70 - 80% of full throttle, to increase outboard motor life and optimize fuel economy.

Optional Three Blade Aluminum Propellers

Size (dia. x pitch)	Part Number
11-1/2 x 12 in.	58130-ZV5-850ZA
11-3/4 x 10 in.	58130-ZV5-860ZA
11-1/2 x 14-1/4 in.	58130-ZV5-870ZA

TRIM ANGLE and TRIM TAB ADJUSTMENT

Refer to the Owner's Manual.

OPTIONAL PARTS

Description	Part Number
12V 10 amp charge coil kit	06320-ZV5-910

NOTE

The optional parts shown below can only be applied to remote control types. The speedometer kit can be applied to the tiller handle types but there will not be a provision for the instrument light connection.

Speedometer kit	06372-ZV5-910
Hour Meter	39700-ZV5-911
Volt Meter	37450-ZV5-911
Meter Wire Harness "B"	32550-ZV5-910

PRE-DELIVERY SERVICE CHECK LIST

Check all items on the following list. Refer to the Owner's Manual or Shop Manual for specifications and detailed procedures. Test every unit to be sure it is functioning properly.

On Land

- ☐ After completing the Pre-Delivery Service and Operation check lists, fill out the **HONDA MARINE - Delivery Check List (#TM023)**. Give the yellow copy to the customer.

- **External Appearance**

- ☐ Check for paint scratches, touch-up if necessary.

- **Installation Location**

- ☐ Check for correct installation location.
- ☐ Check the outboard motor for the correct installation height.
- ☐ Make sure the motor mount bolts are tight.
- ☐ Check to be sure sealant has been applied to the transom mounting bolt holes.

- **Gear Oil**

- ☐ Check for proper gear oil level. Make sure the oil level and drain plugs are tight.
OIL CAPACITY: 0.55 US qt. (0.52 lit.)

- **Fuel System**

- ☐ Check to be sure the fuel lines are connected securely.
- ☐ Make sure the fuel tank is full of fresh gas.
- ☐ Check for fuel leaks, repair immediately if necessary.

- **Steering System**

- ☐ Check the steering system for smooth operation.
- ☐ Make sure that the outboard motor does not interfere with the steering cable and/or link arm, control cables, wire harness etc., when the steering wheel is turned full left and full right and with the motor in all tilt positions.

- **Remote Control System**

- ☐ Check the remote control box for proper operation.
- ☐ Make sure the control lever selects forward, neutral, and reverse gears.

- ☐ Check to be sure the throttle linkage operates smoothly with the remote control lever at the full throttle position. The choke/fast idle lever must be in the idle position.

- ☐ Make sure the choke mechanism operates properly.

- **Tiller Handle System**

- ☐ Check the tiller handle for proper operation.
- ☐ Make sure that the gearshift lever selects forward, neutral, and reverse gears.
- ☐ Check that the throttle linkage operates smoothly with the throttle grip at the full throttle position.
- ☐ Make sure the choke mechanism operates properly.

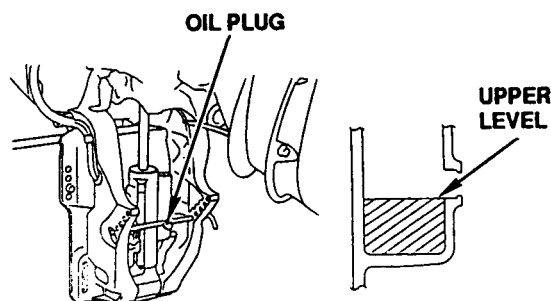
- **Electrical System**

- ☐ Check the wire harness for proper connections.
- ☐ Check the battery connections for correct polarity and tightness.
- ☐ Make sure that the battery is fully charged and installed securely.
- ☐ Make sure that the meters and switches are connected correctly.

- **Tilt Mechanism**

(Power Trim/Tilt Type)

- ☐ Check the power tilt oil level. Tilt up the outboard motor to full tilt UP position and lock it in place with the tilt lock lever. Remove the oil plug and be sure the oil level is up to the oil filler port. Install the oil plug and O-ring securely. Recommended Oil: DEXRON® type Automatic Transmission Fluid (ATF).



- ☐ Push the Power Trim/Tilt switch, and make sure that the outboard motor tilts UP and DOWN smoothly.
- ☐ Check the power tilt motor for abnormal noise while tilting the outboard motor UP and DOWN.

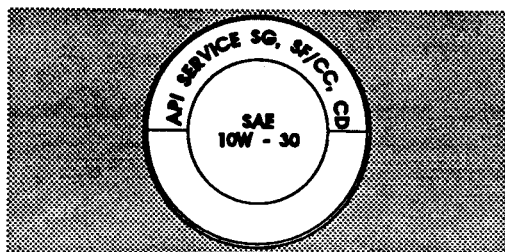
- ☐ Make sure that the trim meter indicates DOWN when the outboard motor is in the tilt down position.
- ☐ Operate the steering wheel with the outboard motor in the tilt UP position, and check to be sure that the cables, harnesses, boat splashwell, etc. do not interfere with the outboard motor.
- ☐ Check the operation of the manual relief valve.
- ☐ Make sure that the tilt lock lever will drop into the LOCK position when the motor is in the full tilt UP position.

(Gas Assisted Tilt Type)

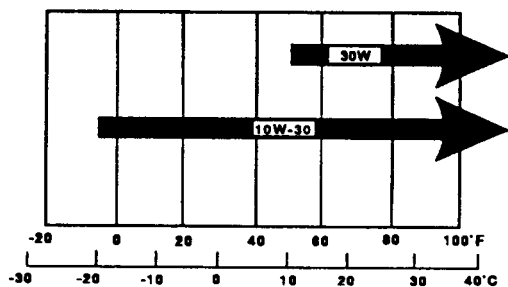
- ☐ Put the tilt lever in the FREE position, make sure that the outboard motor can be tilted up and down smoothly.
- ☐ Make sure that the tilt lock lever will drop into the LOCK position when the motor is in the full tilt UP position.

• Engine Oil

- ☐ Check the engine oil level.
Engine Oil Capacity: 2.11 US qt. (2.0 lit.)
Recommended Oil
You can determine an oil's SAE viscosity and Service Classification from the API Service label on the oil container. It should look like this:



The numbers in the middle tell you the oil's SAE viscosity or weight. Select the oil for your motor according to this chart:



An oil with a viscosity of 10W-30 is preferred. You may use a 30W oil if the climate in your area is within the temperature range shown on the chart.

• All Nuts, Bolts, & Other Fasteners

- ☐ Check security and tighten if necessary.

OPERATION CHECK LIST

In The Water

• Outboard Motor Installation

- ☐ Check that there are no water leaks from the motor mounting bolt holes.
- ☐ Check for balanced weight distribution in the boat.

• Outboard Motor Operation

- ☐ Check the choke for proper operation.
- ☐ Check the neutral switch for proper operation.
- ☐ Turn the ignition switch to START (Remote Control Types) or push the starter button (Tiller Handle Types), make sure that the outboard motor starts.
- ☐ Check the outboard motor for any abnormal noise.
- ☐ Check to be sure cooling water flows out of the cooling system indicator.

After the engine warms up:

- ☐ Make sure the outboard motor returns smoothly to idle.
- ☐ Check the idle speed
Idle Speed : 950 ± 50 rpm (in neutral)
- ☐ Snap the throttle and check the engine response.
- ☐ Check the emergency engine stop switch for proper operation.

• Leaks

- ☐ Make sure that there are no leaks from the fuel lines or connections. Repair immediately if necessary.
- ☐ Check the outboard motor for water/oil leaks. Repair if necessary.

During Sea Trials

• Outboard Motor Operation

- ☐ Check the gearshift operation with the remote control or gearshift lever.
- ☐ Check the motor operation at trolling speed. Use the minimum amount of throttle opening necessary to operate the boat at a safe trolling speed for 15 minutes.

• Propeller Selection

- ☐ Check the motor rpm with the boat under way. Avoid continuous full throttle operation (100% throttle opening). Do not run the outboard motor at full throttle for more than 2 minutes at a time.
Maximum Recommended Engine rpm
BF35A: 4600 ~ 5600 rpm
BF45A: 5000 ~ 6000 rpm
- ☐ Check the power trim/tilt operation during cruising.
- ☐ Make sure that there is no propeller ventilation in a straight line. There is the possibility of some propeller ventilation when turning at full throttle with the motor trimmed out.

After Sea Trials

• Check & Clean the Outboard Motor

- ☐ Check that there is no water in the gear oil.
- ☐ Check that there are no signs of fuel, oil or water leaks. Repair if necessary.
- ☐ Use a flushing kit to flush the cooling system with clean water after running in salty or dirty water. Run the outboard motor at idle during flushing for approximately 10 minutes.
- ☐ Clean the entire outboard motor thoroughly with a cloth.
- ☐ Check the outboard motor for external damage, defects, or cracks.

Break-In Procedure

Break-in period 10 hours

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

First 15 minutes:

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

Next 45 minutes:

Run the outboard motor up to a maximum of 2,000 to 5,000 rpm or 50% to 80% throttle opening. Short bursts of full throttle are acceptable but do not operate the motor continuously at full throttle.

Next 8 hours:

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

NOTE:

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

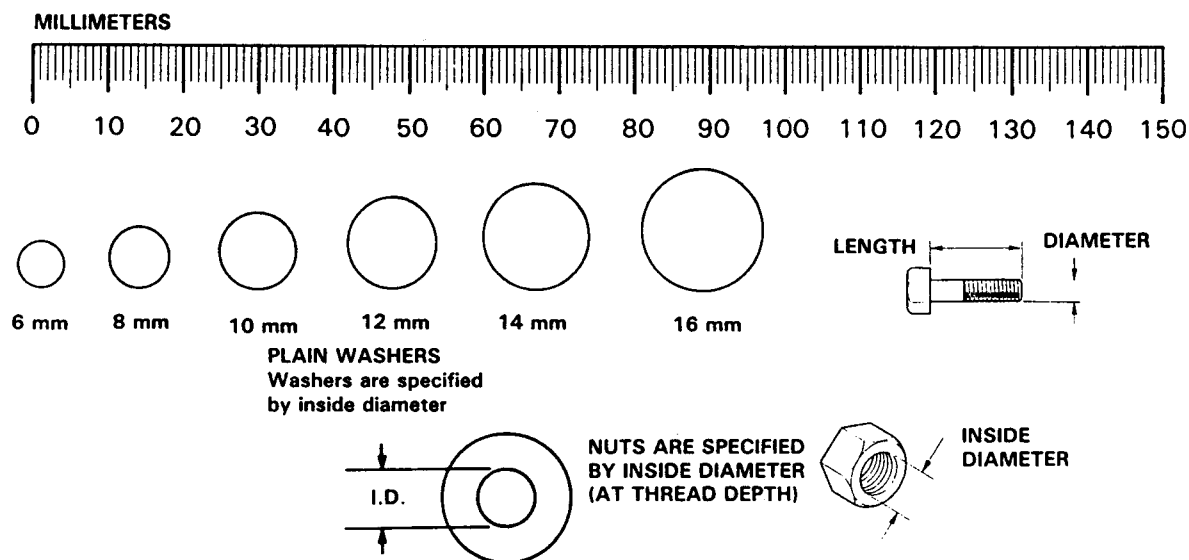
Set-Up/Installation and Pre-Delivery Service must be performed by an authorized Honda Marine dealer. These instructions are provided for dealer use only.

FOLLOW THESE INSTRUCTIONS CAREFULLY. Proper Set-Up/Installation and Pre-Delivery Service are essential for safe, reliable operation. Your customer expects his Honda Outboard Motor to be correctly set-up, installed, adjusted, and ready for use. Test the Outboard Motor to be sure it is functioning properly. Fill out the **HONDA MARINE - Delivery Check List (#TM023)** and give the yellow copy to the customer.

DO NOT OVER POWER THE BOAT

Do not install an Outboard Motor that exceeds the recommended maximum horsepower of the boat. Refer to the boat certification plate for the maximum recommended horsepower of the boat. For most boat applications, the motor should have a horsepower which provides 80% of the maximum recommended horsepower for the boat. If the certification plate information is not available, contact the boat dealer.

How to measure hardware and components:



NUT AND BOLT DIAMETER	STANDARD TORQUE VALUES		
	ft-lb	kg-m	N•m
6 mm flange nuts and bolts	8.0	1.1	11
8 mm flange nuts and bolts	16.0	2.2	22