

YAMAHA

OWNER'S MANUAL



outboard
motor

9.9D / 9.9DE

15D / 15DE

A 510*

9.9D/9.9DE/15D/15DE

OWNER'S MANUAL

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1st Edition, May 1984

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Printed in Japan

TO THE OWNER

Thank you for choosing a Yamaha outboard motor. This manual contains the information required for proper maintenance, care and operation. A thorough understanding of these simple instructions will help you to obtain maximum enjoyment from your new Yamaha.

- * Specifications given in this manual may be subject to change without prior notice.

Yamaha Motor Co., Ltd

A-200

WARNING:

- **Before operating this outboard motor, familiarize yourself with the regulations set forth by your state in relation to outboard motor operation.**
- **Gasoline is highly inflammable and explosive. Handle it with special care.**
- **Never attempt to modify this outboard motor.**
- **Be sure to wear life jackets on board.**
- **Exercise special care to protect the environment.**

A 300

IMPORTANT:

Before operating this outboard motor, read this Owner's Manual thoroughly and carefully. It will give you a good grasp of the engine's characteristics and the technical information required for safe operation.

Particularly important information is distinguished in this manual by the following notations:

NOTE:

A NOTE provides key information to make procedures easier or clearer.

CAUTION:

A CAUTION indicates special procedures that must be followed to avoid damage to the outboard motor.

WARNING:

A WARNING indicates special procedures that must be followed to avoid personal injury or damage to the unit.

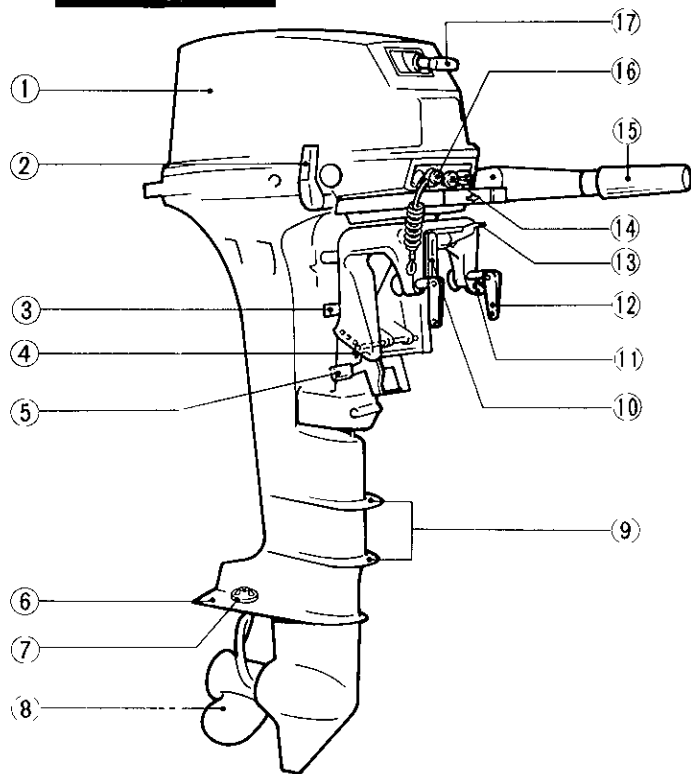
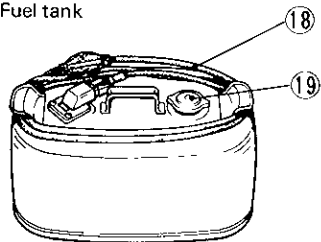
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LOCATION OF MAIN COMPONENTS

9.9D/15D

Fuel tank



Y 650
① Top cowling

Y-090
② Shift handle

Y-620
③ Tilt up lever

Y-590
④ Tilt pin

Y-065
⑤ Shallow water lever

V 090
⑥ Anti-cavitation plate

V-080
⑦ Anode

X-600
⑧ Propeller

Y-235
⑨ Splash board

V-505
⑩ Carrying handle

Y 020
⑪ Safety rope attachment

Y 680
⑫ Transom clamp handle

X-960
⑬ Reverse lock

V-560
⑭ Choke knob

Y-360
⑮ Steering handle/throttle control

V 905
⑯ Emergency stop switch

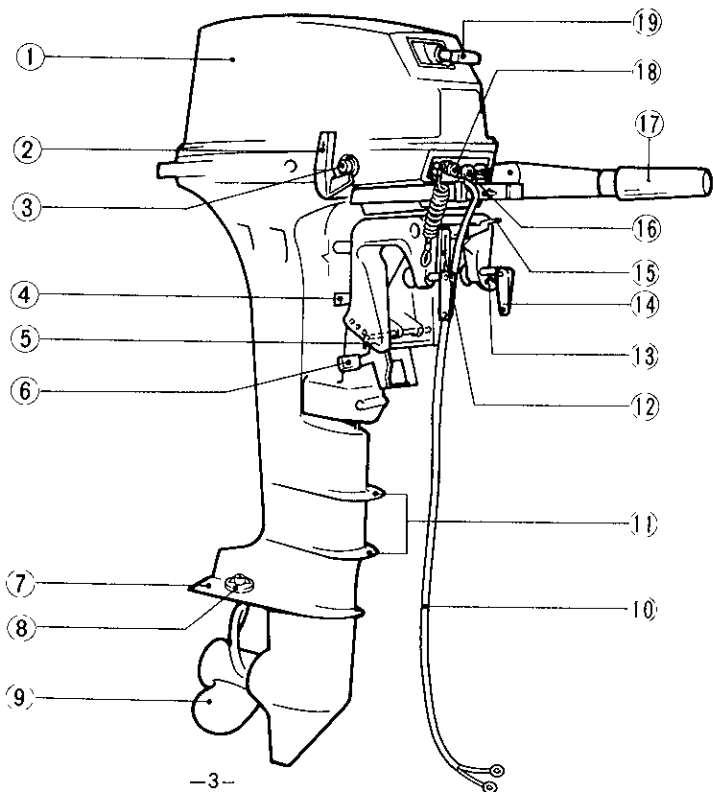
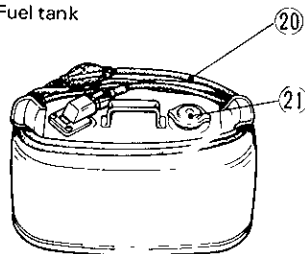
Y-280
⑰ Recoil starter handle

W-165
⑱ Fuel line

Y-510
⑲ Fuel tank cap

9.9DE/15DE

Fuel tank



Y 650
① Top cowling

Y 090
② Shift handle

Y 255
③ Starter button

Y-620
④ Tilt up lever

Y-590
⑤ Tilt pin

Y 065
⑥ Shallow water lever

V-090
⑦ Anti-cavitation plate

V-080
⑧ Anode

X 600
⑨ Propeller

V-260
⑩ Battery wire

Y-235
⑪ Splash board

V 505
⑫ Carrying handle

Y-020
⑬ Safety rope attachment

Y-680
⑭ Transom clamp handle

X-960
⑮ Reverse lock

V 560
⑯ Choke knob

Y-360
⑰ Steering handle/throttle control

V-905
⑱ Emergency stop switch

Y 280
⑲ Recoil starter handle

W-165
⑳ Fuel line

Y-510
㉑ Fuel tank cap

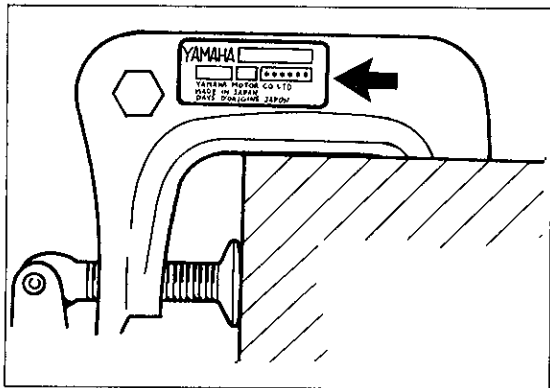
SPECIFICATIONS

| Item \ Model | Unit | YAMAHA 9.9D/9.9DE | YAMAHA 15D/15DE |
|--------------------------------|---------------------------------|---|---|
| DIMENSIONS | | | |
| •Overall length | mm (in) | 580 (22.84) | 580 (22.84) |
| •Overall width | mm (in) | 330 (13) | 330 (13) |
| •Overall height | mm (in) | S = 1,030 (40.55) | S = 1,030 (40.55) |
| •Boat transom height | mm (in) | S = 381 (15), L = 508 (20) | S = 381 (15), L = 508 (20) |
| •Weight | kg (lb) | 9.9D S = 37.5 (82.7) 9.9DE S = 39.5 (87.1) | 15D S = 37.5 (82.7) 15DE S = 39.5 (87.1) |
| PERFORMANCE | | | |
| •Full throttle operating range | r/min (RPM) | 4,500 ~ 5,500 | 4,500 ~ 5,500 |
| •Maximum output | kW (HP)/min ⁻¹ (RPM) | 7.3 (9.9)/5,000 | 11.0 (15.0)/5,500 |
| •Idle speed | r/min (RPM) | 850 ~ 950 | 850 ~ 950 |
| ENGINE | | | |
| •Type | | Two stroke | Two stroke |
| •Number of cylinders | | 2 | 2 |
| •Bore and stroke | mm (in) | 56 × 50 (2.21 × 1.97) | 56 × 50 (2.21 × 1.97) |
| •Total piston displacement | cm ³ (cu. in.) | 246 (15) | 246 (15) |
| •Cooling system | | Water | Water |
| •Ignition system | | CDI | CDI |

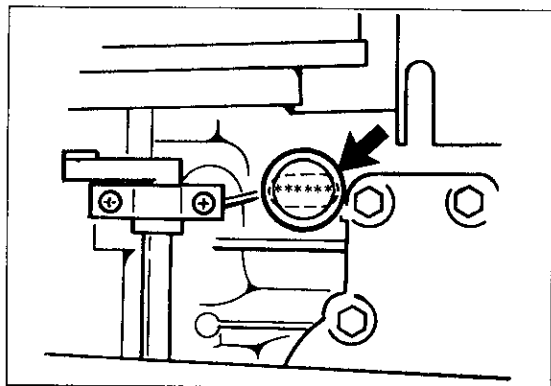
| Item \ Model | Unit | YAMAHA 9 9D/9.9DE | YAMAHA 15D/15DE |
|--|---------------------------------------|---|---|
| <ul style="list-style-type: none"> • Spark plug • Spark plug gap | NGK mm (in) | B-7HS10 0.9 ~ 1.0 (0.035 ~ 0.039) | B-7HS10 0.9 ~ 1.0 (0.035 ~ 0.039) |
| DRIVE UNIT | | | |
| <ul style="list-style-type: none"> • Gear shifting • Gear ratio | | Forward-Neutral-Reverse 2.08 (27/13) | Forward-Neutral-Reverse 2.08 (27/13) |
| FUEL AND OIL | | | |
| <ul style="list-style-type: none"> • Fuel • Recommended oil • Fuel-oil ratio • Fuel tank capacity • Gear oil capacity | L (US gal) cm ³ (US oz) | Regular gasoline Yamaha outboard motor oil 100 : 1 24 (6.34) 185 (6.25) | Regular gasoline Yamaha outboard motor oil 100 : 1 24 (6.34) 185 (6.25) |

OUTBOARD MOTOR IDENTIFICATION**Outboard motor serial number**

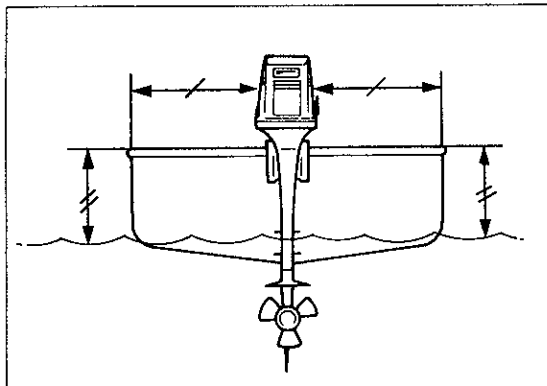
The outboard motor serial number is stamped on the plate attached to the port side of the clamp bracket

**Engine serial number**

The engine serial number is stamped on the port side of the cylinder body

**NOTE.**

Both outboard motor and engine serial numbers are important when you want to have service performed or place an order for parts. Please take note of the numbers.

ENGINE MOUNTING**WARNING:**

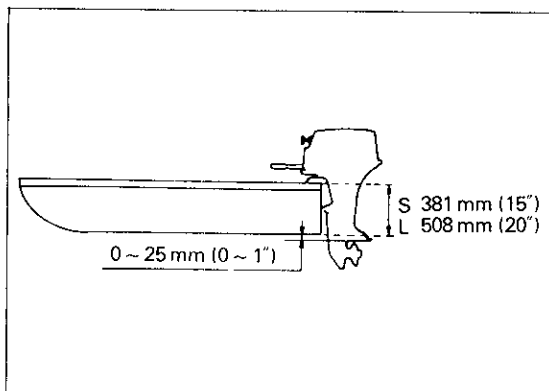
Never equip a boat with an outboard motor whose power exceeds the maximum rating shown on the capacity plate. Over-powering the boat may cause severe instability. If the boat has no capacity plate, consult your Yamaha dealer or the boat manufacturer.

Mounting position

The outboard motor must be mounted on the boat center line (keel line), and the boat must be well balanced so that the drafts are on the same level both on the starboard and the port side. Otherwise, the boat will be very hard to steer. For boats without keel or which are asymmetrical, consult your Yamaha dealer.

Mounting height

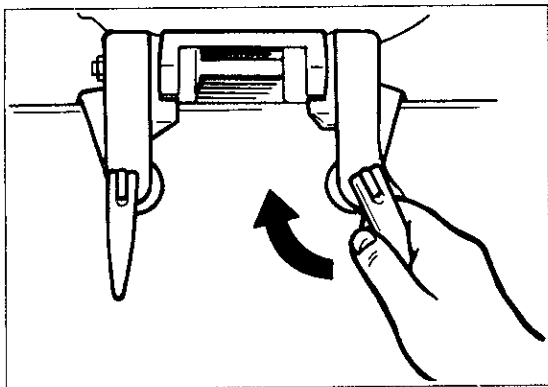
To run your boat with maximum efficiency, water resistance to the boat hull and outboard motor must be minimized. The mounting height of the outboard motor greatly affects the water resistance. If the mounting height is high, cavitation tends to occur, thus reducing propulsion by the engine. If the propeller tips are too high, they cut the air and the engine speed rises abnormally, thus causing the engine to overheat. If the mounting height is too low, splash resistance will increase and thereby reduce engine efficiency. The engine should be mounted so that the anti-cavitation plate is between the bottom of the boat and a level 25 mm (1") below it.

**WARNING:**

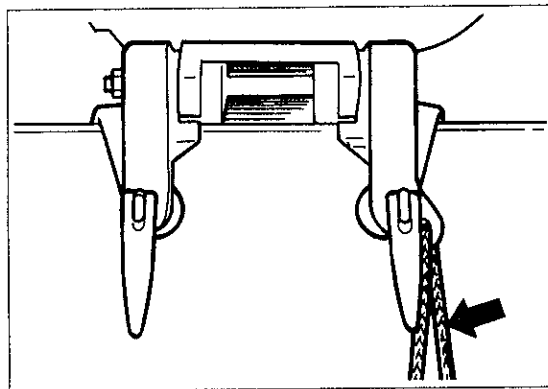
The mounting height varies depending on the purpose of the boat and the outboard motor. The proper height should thus be determined by making test-runs.

Clamp

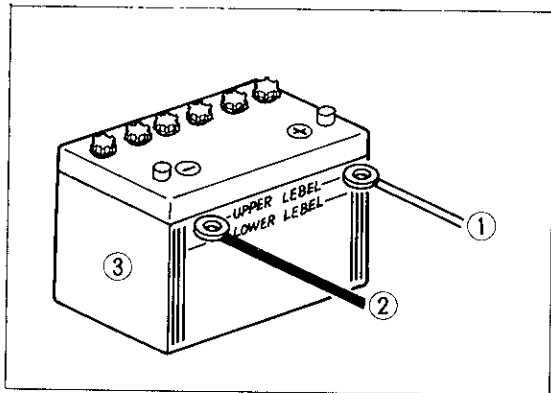
Place the outboard on the transom so that it is positioned as close to the center as possible. Tighten the clamp screws evenly and securely. Occasionally check the screws for tightness during operation.

**WARNING:**

Be sure to tighten the transom clamp screws securely. Check the tightness of the screws while the motor is in operation because they can work loose due to engine vibration. Loose clamp screws may allow the engine to fall off into the water or cause serious injury.



When the boat makes a sharp turn with loose clamp screws, the engine may fall off into the water. The use of a safety chain or cable is recommended. Attach one end to the safety attachment (beside clamp screw) and the other to a secure mounting point on the boat.



F 700

Battery mounting **9.9DE/15DE**

WARNING:

When installing or removing electrical parts, be sure to disconnect the battery wires from the battery terminals

The battery should be securely mounted in a dry, vibration-free location in the boat. The battery should be a 12V, 144 kC (40AH)

To wire the battery, connect the red lead to the positive terminal of the battery and the black lead to the negative terminal

When removing or installing the battery, proceed as follows

- | | |
|--------------|--|
| Removal | Disconnect the negative terminal side (black lead) first |
| Installation | Connect the positive terminal side (red lead) first |

- ① Red lead ② Black lead ③ Battery

CAUTION:

- 1 If leads are incorrectly connected, starting failures may result
- 2 If the battery connections are reversed, the rectifier will be damaged

WARNING:

The battery fluid (electrolyte) is corrosive. If it gets in your eyes or on your skin, immediately wash the area with water and see your doctor. If the fluid spills on or around the engine, thoroughly wash it away. When the battery is being charged, explosive hydrogen gas is produced. The battery should therefore be charged in a well-ventilated area.

FUEL AND LUBRICATION OIL**WARNING:**

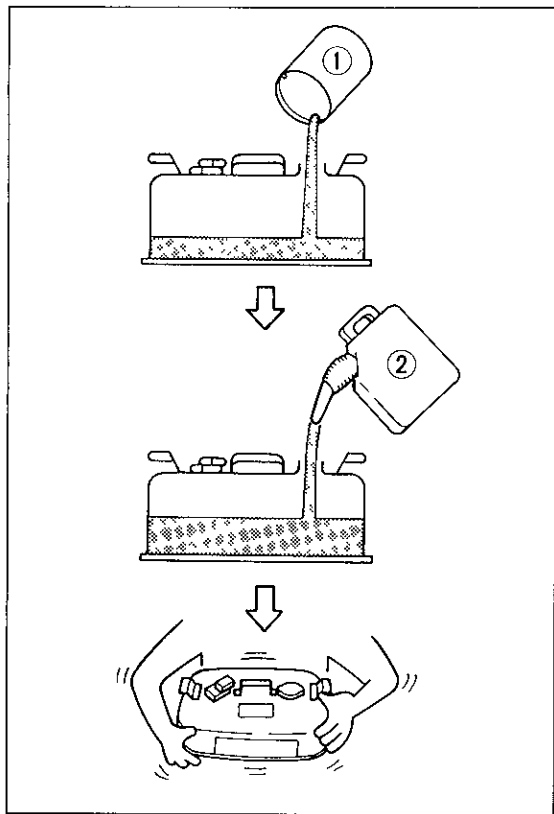
- Gasoline is highly inflammable and explosive. When mixing gasoline with oil or when refuelling, refrain from smoking and keep away from open flames or sparks
- When refuelling, be sure to stop the engine. Also take care not to spill gasoline or oil
- Be sure to wipe off any gasoline or oil spilt on board immediately and thoroughly with dry rags
- Never fill the fuel tank to more than the specified level. Safe filling level is 5 mm (0.2 inch) below bottom of filler neck
- After filling, tighten the tank filler cap securely
- The mixing of fuel must be done offboard in a well-ventilated area

| | |
|-----------------|--|
| Fuel | Regular gasoline |
| Lubrication oil | YAMAHA outboard motor oil or an equivalent two stroke outboard motor oil which meets the BIA rating TC-W |

Mixing ratio

| | Gasoline | Oil |
|------------------------------|----------|-----|
| Break-in period 1st 24 l | 25 | 1 |
| After break-in After 24 l | 100 | 1 |

Fuel tank capacity 24 liters (6.34 US gal)



Mixture

- 1) First pour oil into the fuel tank, and then gasoline
- 2) Mix the fuel thoroughly by shaking the fuel tank

CAUTION:

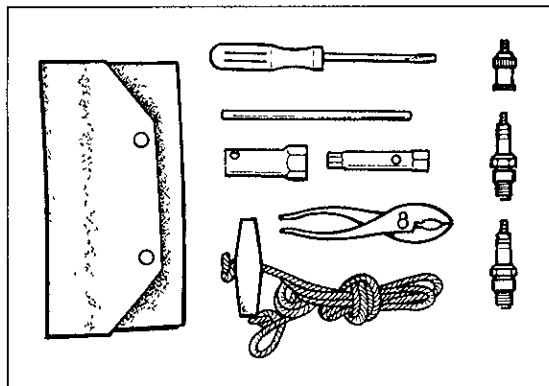
- Avoid using any oil other than that designated
 - Always use new gasoline
 - Use a thoroughly blended fuel-oil mixture
 - If the mixture is not thoroughly blended or the mixing ratio is incorrect, the following problems will occur
- | | |
|----------------|---|
| Low oil ratio | Due to lack of oil, major engine trouble such as seizure will result |
| High oil ratio | Fouled spark plugs, smoky exhaust, or heavy carbon deposits will result |

① Oil

② Gasoline

OPERATIONAL INSTRUCTIONS**Starting**

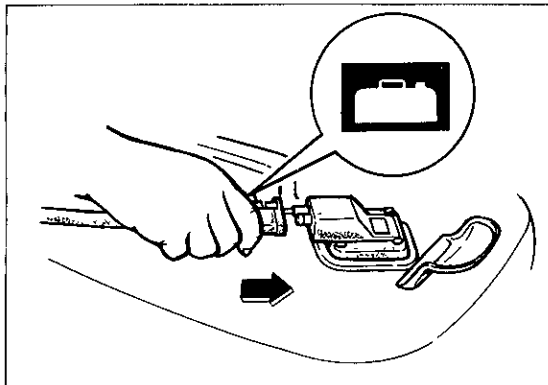
Before cranking the engine

**WARNING:**

Before starting the engine, make sure the boat is tightly tied to the jetty and can be steered clear of any obstacles. Also check to see that the throttle grip and shift handle operate smoothly.

CAUTION:

- Don't start the engine out of water
- Check that there is sufficient fuel in the tank
- The fuel tank should be placed on a flat area in the bottom of the boat
- Prior to operation, check to see that the necessary service tools and spare parts are on the boat
- The fuel line should be routed in such a way as to prevent any kinks or sharp bends and to allow full steering movement. Do not allow fuel line to contact sharp objects or to become pinched

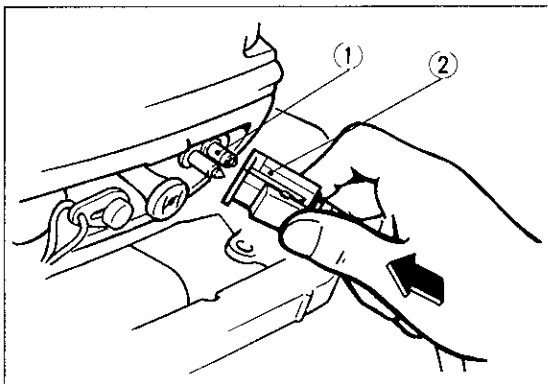


- 1) Firmly connect fuel hose connector 2 (positioned on the tank mark side) to the fuel tank

WARNING:

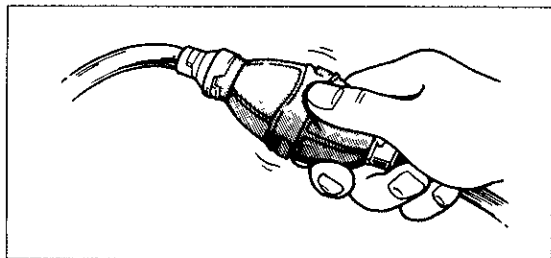
When inserting the fuel joint into the fuel tank, vaporized gasoline will squirt out of the air bleeding hole.

Gasoline is highly inflammable and explosive under certain conditions. Refrain from smoking and keep away from open flames or sparks when inserting the fuel joint.

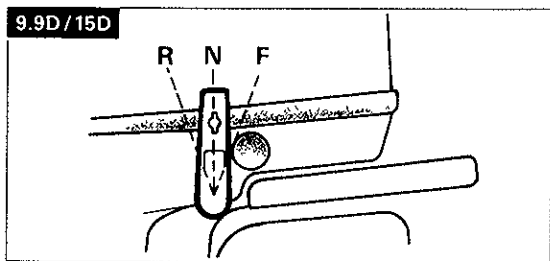


- 2) Firmly connect fuel hose connector 2 to fuel hose connector 1 on the motor

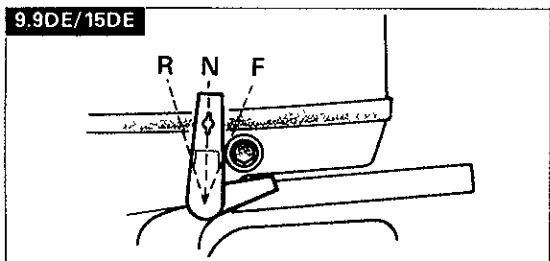
- ① Fuel hose connector 1
- ② Fuel hose connector 2



- 3) Squeeze the primer bulb until firm pressure is felt

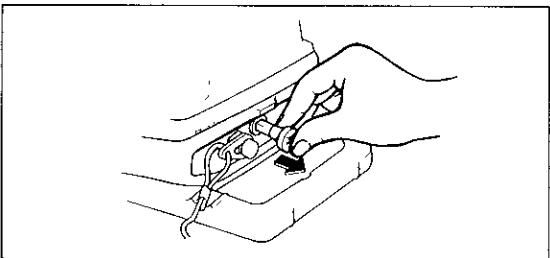
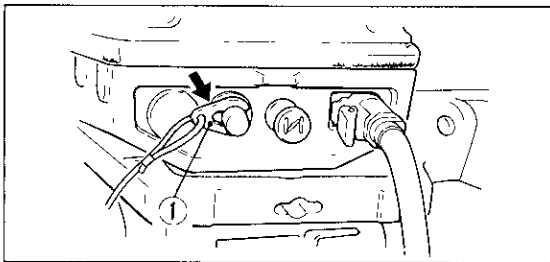
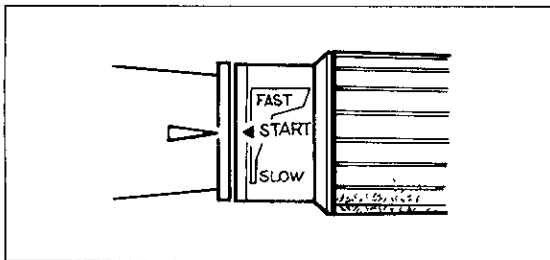


- 4) Place the shift handle in neutral (N)



CAUTION:

The engine may only be started when the shift handle is in the "N" position



- 5) Place the throttle grip in "START" position (The throttle opening must be adjusted slightly according to the engine temperature)

- 6) Install the lock plate firmly onto the emergency stop switch
Tie the rope attached to the lock plate to your wrist

NOTE

The emergency stop switch is provided for the safety of the operator. When the lock plate is pulled out from the emergency stop switch, the engine stops immediately. The engine will not start when the lock plate is removed.

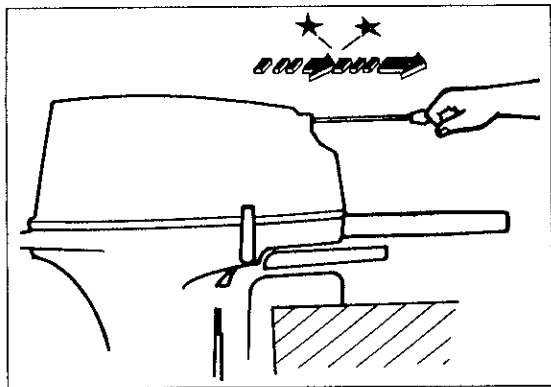
Should the operator fall off the boat or lean too far over one side, the lock plate will pull out causing the engine to stop.

- ① Lock plate

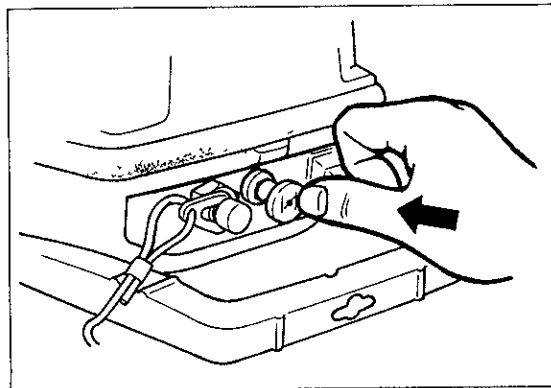
- 7) Pull the choke knob out completely

NOTE

If the engine is warm do not use the choke

Cranking the engine

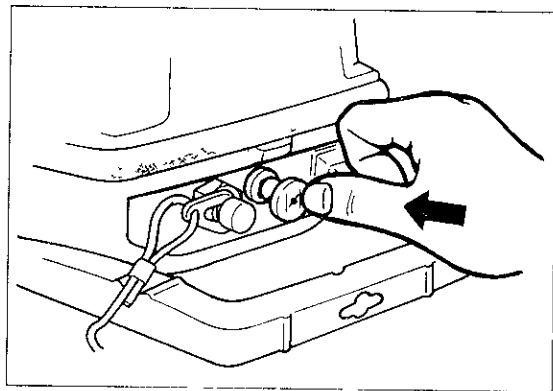
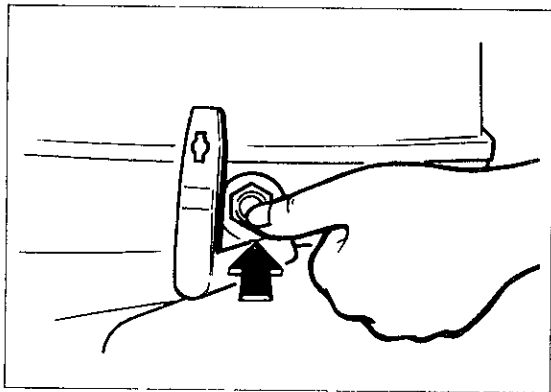
- 1) When the engine is ready for starting, slowly pull the starter handle.
- 2) When engagement of the mechanism is felt, finish the stroke with a strong pull and the engine will start
- 3) After the engine has started, allow the starter handle to return slowly to its home position without letting go



- 4) If the choke knob has been pulled out, return it slowly to its home position so that the engine does not stop

NOTE:

Should the engine fail to start on the first pull, repeat the above procedure several times. In the event that the engine will not start, refer to the section on TROUBLESHOOTING



9.9DE/15DE

- 1) Push the starter button, and the starting motor will start
- 2) After making sure the engine has started, release your hand from the starter button immediately. The starter button returns to its home position automatically.

CAUTION:

- 1 Never push the starter button while the engine is running
- 2 Do not keep the starting motor turning for more than 5 seconds. If the engine will not start after 5 seconds of cranking, release your hand from the starter button, and crank the engine again after an interval of 10 seconds.

If the starting motor is turned continuously for more than five seconds, the battery will be quickly discharged, thus making it impossible to start the engine.

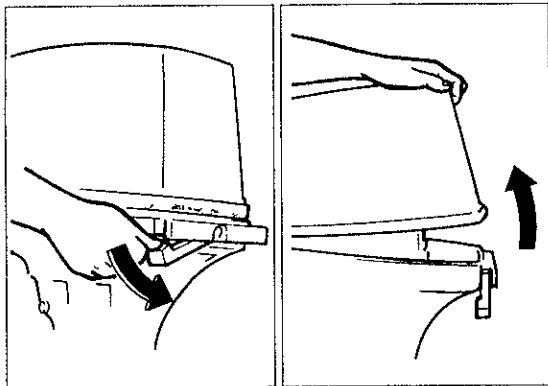
- 3) Return the choke knob (it has been pulled) slowly to the home position.

Emergency starting in starting system trouble

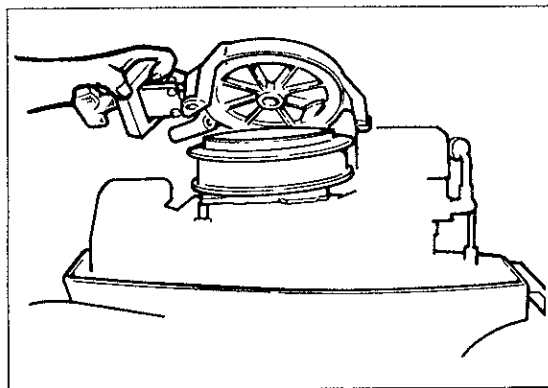
If it is impossible to start the engine due to starting system trouble, the engine can be started using the emergency starter rope

WARNING:

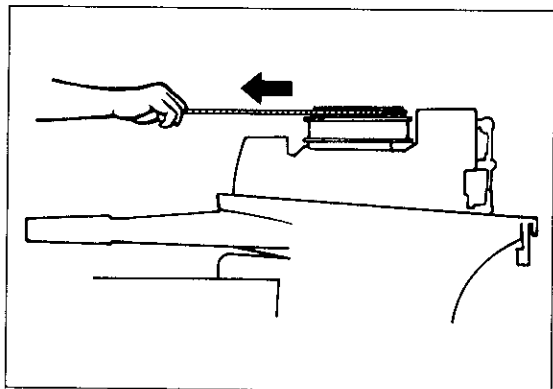
When the engine is started with an emergency rope, the start-in-gear protection system will not work. Be sure to check that the gear is in Neutral. Otherwise the boat may lurch ahead or astern, causing serious damage or personal injury



- 1) Remove the top cowling by depressing the latch at the rear of the cowling. Lift up and back to remove.



- 2) Remove the starter by removing the 3 bolts securing the rewind mechanism to the flywheel.



- 3) Insert the knotted end of the rope into the notch in the flywheel rotor. Wind the rope 2 or 3 turns in a clockwise direction, then pull to start. Repeat if necessary.

WARNING:

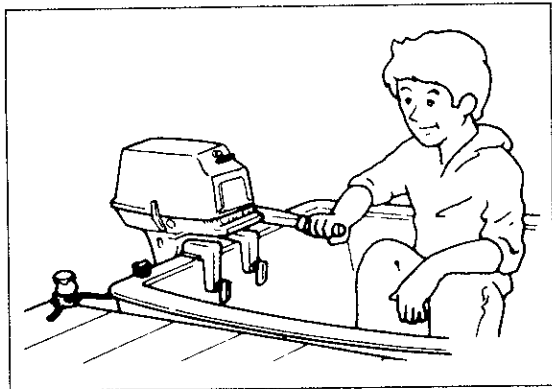
When starting or operating the engine, never touch the ignition coil, high-tension wire, spark plug cap or any other electrical parts to which high voltage is applied.

WARNING:

When pulling the emergency starter rope, be sure to keep loose clothing and other objects away from the engine.

A rotating flywheel is very dangerous. Never attempt to install the top cowling on the engine when it is in operation.

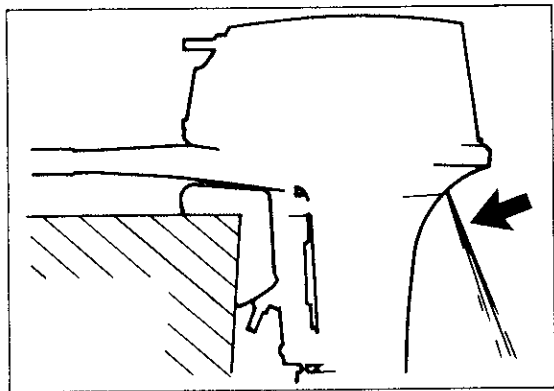
Proceed to the nearest port to get the starting system repaired as quickly as possible. Take care that no water splashes onto the flywheel.



H-300

Engine Warm-up

Before beginning operation, the engine should be warmed up at idle speed for three minutes. Failure to do so will shorten the life of the engine.



Make sure that water runs out from the cooling water pilot holes.

CAUTION:

If water does not run out during operation, the motor may overheat and be seriously damaged. Should this occur, stop the engine, and check that the water inlet on the lower casing is not blocked. (If not, take the engine to your nearest Yamaha dealer.)

Break-in

A period of break-in is required to allow the mating surfaces of all moving parts to wear evenly when new. This procedure will ensure proper performance and longer the engine life.

(1) Mixing ratio on first tankful

| | | | |
|----------|-----|----|---|
| Gasoline | Oil | 25 | 1 |
|----------|-----|----|---|

(2) Procedure

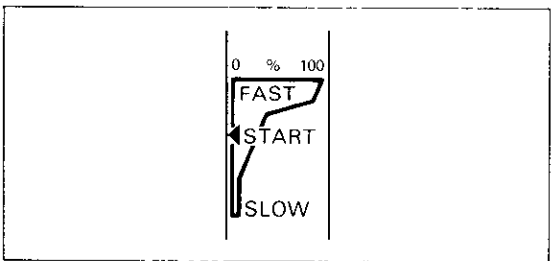
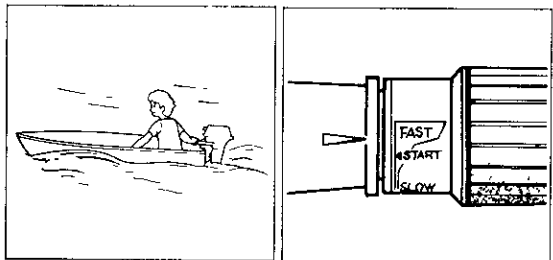
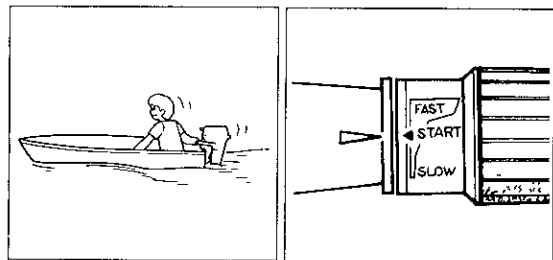
- a Run the engine at trolling speeds (the lowest possible speed) for the first five minutes
- b Next, slowly open the throttle up to 1/2
- c Continue operation with half-throttle or less until fuel is exhausted
- d After first tankful, go to 100 1

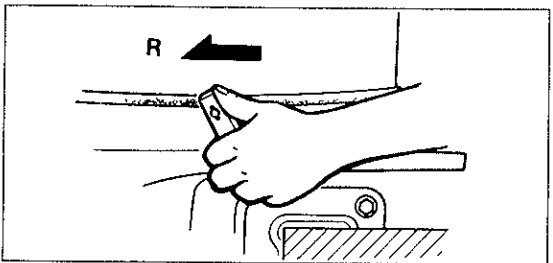
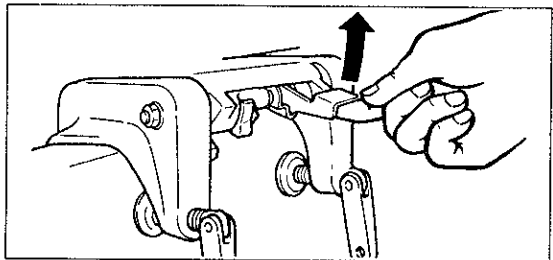
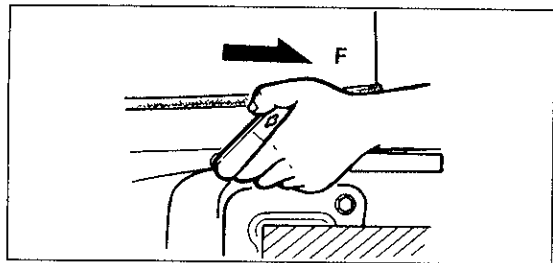
CAUTION:

Failure to follow the break-in operating procedure may result in severe engine damage

NOTE

A fuel consumption curve is shown on the throttle indicator. By referring to this curve, determine the best throttle position for the use you wish to make of the boat





H 530

Gear Selection (Forward and Reverse)

WARNING:

Should the engine hit an underwater obstacle, be sure to check the gear case and brackets for damage.

A. Forward (F)

Turn the shift handle to "F" quickly and firmly

B Reverse (R)

1) Lock the reverse lock

WARNING:

When operating in **REVERSE**, be sure to set the reverse lock to **LOCK** and keep the throttle at 1/2 or less. If this is not done, the reverse lock mechanism will not prevent the engine from lifting out of the water and loss of control may occur, possibly causing injury to the passengers.

2) Turn the shift handle to "R" quickly and firmly

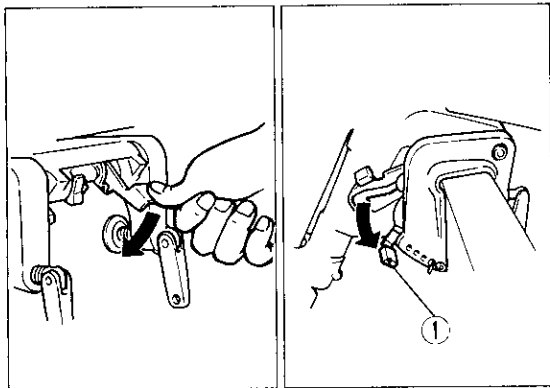
CAUTION:

To change the boat direction from forward to reverse or vice versa, close the throttle first so that the engine idles (or runs at low speeds)

CAUTION:

For additional safety, the throttle is designed not to open more than 1/2 when the motor is in "NEUTRAL". Never attempt to force the throttle open more than 1/2

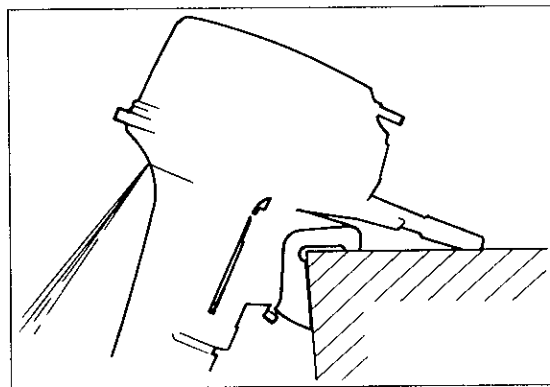
Shallow water cruising

**WARNING:**

In shallows, run the boat at trolling speed or thereabouts. The reverse lock will not operate and may thus cause the engine to lift out of the water and the boat to lose control when the lower casing hits an underwater obstacle. Personal injury may result when the engine is operating in reverse, as it can easily be lifted by the force of reverse thrust.

To cruise in shallows, proceed as follows

- 1 Push down the reverse lock to RELEASE
- 2 Slightly tilt up the engine and pull the shallow water lever toward you

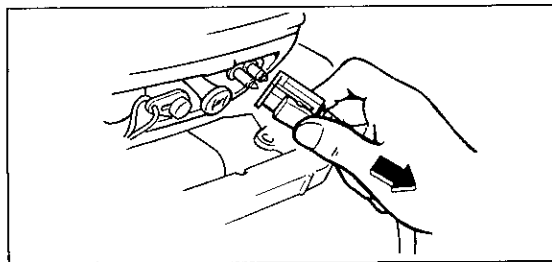
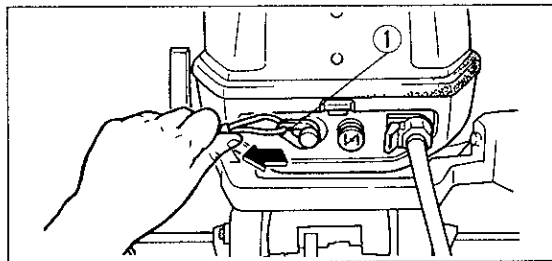
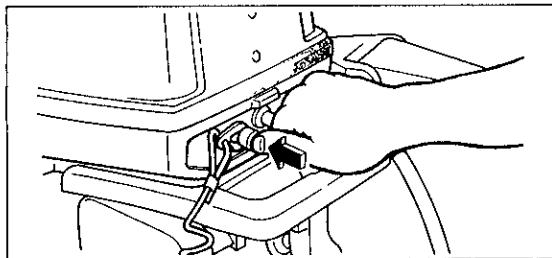


- ① Shallow water lever

NOTE

If the engine is tilted up completely, the reverse lock automatically returns from RELEASE to LOCK and thus the shallow water lever becomes ineffective.

- 3 To push back the shallow water lever, slightly tilt up the engine, set the reverse lock to LOCK, and slowly tilt the engine down



H-623

Stopping the engine

- 1) Turn the throttle grip to the fully closed
- 2) Place the shift handle in the neutral
- 3) To stop the engine, push the emergency stop switch button or pull out the lock plate
- 4) After stopping the engine, remove the fuel hose

CAUTION:

Before stopping the engine, reduce the engine temperature by running it at idle or low speeds for 2 or 3 minutes

- ① Lock plate

H-900

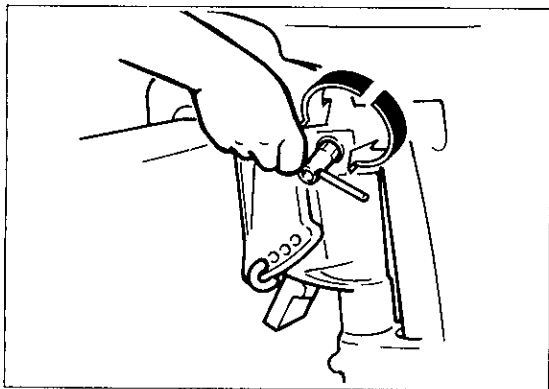
Operation in turbid water

It is strongly recommended that the optional chrome-plated water pump kit be installed if the outboard is to be used in turbid water conditions

H 910

Operation in salt water

After operating in salt water, wash out the cooling water passage with fresh water. Otherwise, the cooling water passage may clog up with salt collections. For washing, refer to "Cleaning the water intake passages" in the "OFF-SEASON STORAGE" section



H 710

ADJUSTMENTS

Steering friction adjustment

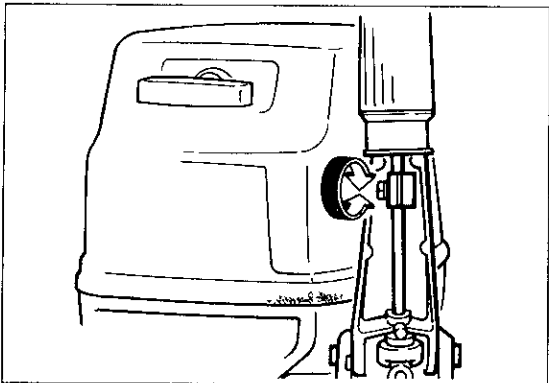
The tension of the steering friction can be adjusted by turning the adjusting bolt attached to the swivel bracket

To increase tension

Turn the adjusting bolt clockwise

To decrease tension

Turn the adjusting bolt counterclockwise



H 730

Adjustment of throttle twist grip friction

The throttle twist grip has an adjustable friction device. The friction device is located in the steering handle, and friction can be adjusted by tightening or loosening the friction bolt

To increase tension

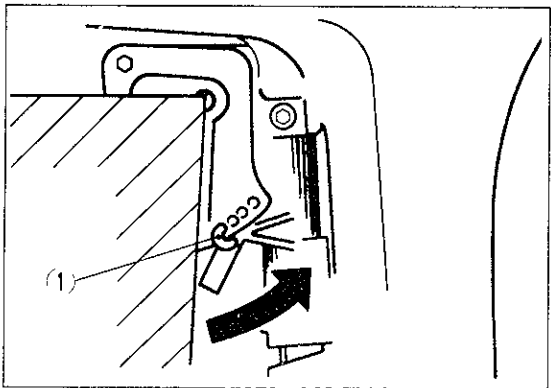
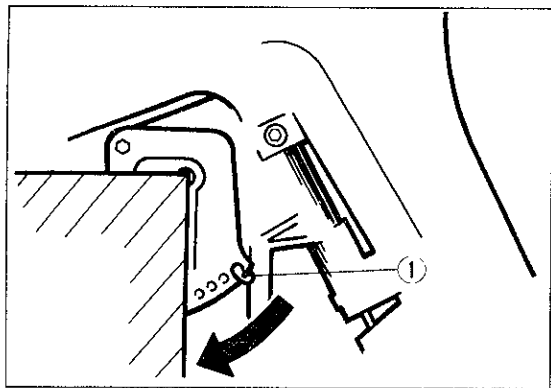
Turn the friction bolt clockwise

To decrease tension

Turn the friction bolt counterclockwise

Trim angle adjustment

To maintain steering stability and good performance, always maintain correct trim angle. The appropriate trim angle varies depending on the combination of the boat, engine, and propeller, as well as operating conditions, but it is safe to say that when the trim is 3° to 5° by stern, the boat is in a stable trim. If the trim angle is too large, the buoyancy center of the boat will shift toward the stern. If this happens and the stability moment at the bow is great, the boat will tend to "porpoise," possibly causing the operator and passengers to be thrown overboard. If the trim angle is too small, the bow will "plow," thus making the boat unstable. To adjust the trim angle, remove the tilt pin from the stern bracket assembly and, while tilting the motor, reposition the pin in the desired hole.

**WARNING:**

When mounting the outboard motor on a boat, be sure to make a test-run and set the proper trim angle.

① Tilt pin

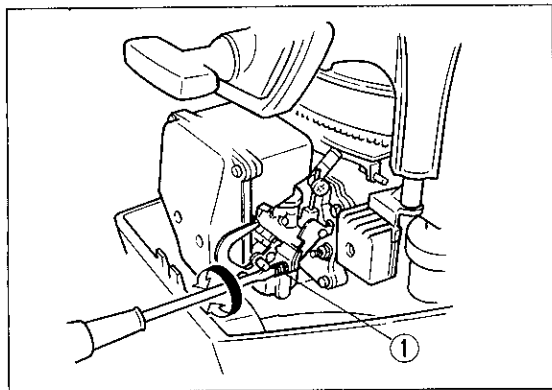
NOTE.

When operating against a strong wind, it is advisable to make the trim angle slightly smaller than the standard for steering stability. If the wind is favorable, the trim angle should be increased for better steering stability.

F-301

NOTE

To lower the bow, move pin towards the mounting plate.
To raise the bow, move pin towards the engine.



Idle speed adjustment

- 1) Start the engine, and warm it up for a few minutes
- 2) Set the idle speed to the specified by adjusting the throttle stop screw (see "SPECIFICATIONS" preceding)

To increase the idle speed

Turn the throttle stop screw clockwise

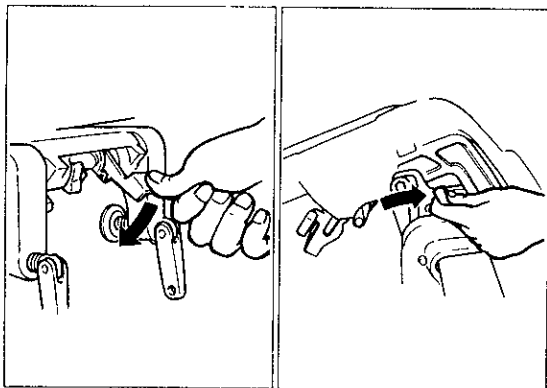
To decrease the idle speed

Turn the throttle stop screw counterclockwise

- ① Throttle stop screw

TILT UP AND MOORING

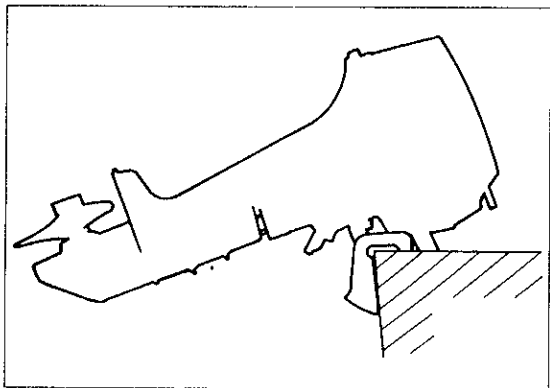
If the engine will be stopped for some time, or if the boat is moored in shallows, the engine should be tilted up. This protects the propeller and lower casing from damage by rocks or any other underwater obstacle when the tide is ebbing, and from fast corrosion by salt water.

**WARNING:**

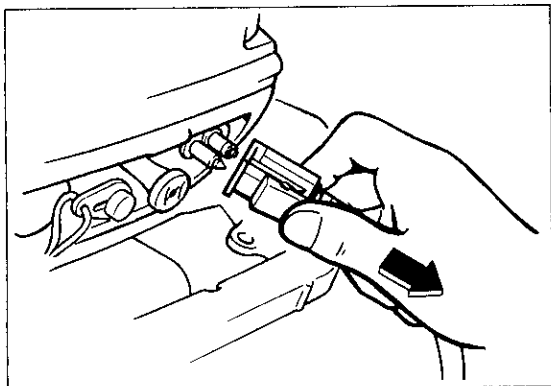
When transporting the engine or keeping it tilted up for more than a few minutes, be sure to disconnect the fuel line linking the engine to the fuel tank. Otherwise, fuel may leak out.

CAUTION:

- 1 Do not tilt up the engine by pushing the steering handle, as you may break it off.
- 2 Make sure the power unit is kept higher than the propeller at all times, otherwise water may run into the engine and damage it.

**Tilt up**

- 1) Push the reverse lock down to **RELEASE**
- 2) Hold the rear of the engine with one hand, tilt it up, and pull the tilt stop lever toward you so the machine can be kept in "tilt up" position.

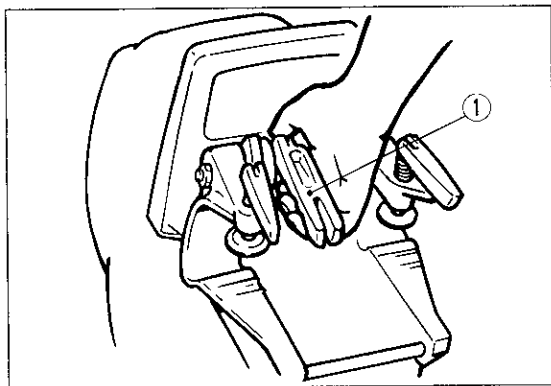


3) Remove the fuel joint from the engine

9.9DE/15DE

CAUTION:

When the engine is not used for a long period of time, the battery wires (positive and negative) should be disconnected from the battery



I 100

Carrying handle

The Yamaha outboard motors, 9 9D(E) and 15D(E), are equipped with a carrying handle. Please use it when carrying the motor.

① Carrying handle

PERIODIC MAINTENANCE

In the following check-up list, the mark (●) indicates the check-ups which may be done by yourself

The mark (○) indicates work to be carried out by your Yamaha dealer

| Check Point | | Time interval | | | | | Procedure |
|--------------------------|--------------------|---------------------------|----------------------------|-----------------------------|--|--|---|
| | | 10 hours or 1 month | 50 hours or 3 months | 100 hours or 6 months | Every 100 hours or every 6 months | Off season (after the boating season) | |
| Fuel system | Carburetor setting | ○ | ○ | ○ | ○ | ○ | |
| | Fuel filter | ● | ● | ● | ● | ● | Cleaning of filter |
| | Fuel hose | | | ● | ● | ● | Checking for fuel leakage |
| | Fuel tank | ● | ● | ● | ● | ● | Cleaning of tank interior |
| | Fuel tank strainer | ● | ● | ● | ● | ● | Cleaning of strainer |
| Electric system | Spark plug | ● | ● | ● | ● | ● | Spark plug gap 0.9 ~ 1.0 mm (0.035 ~ 0.039") |
| | Ignition timing | ○ | | ○ | ○ | ○ | |
| | Battery | ○ | ○ | ○ | ○ | ○ | Check specific gravity |
| Lower unit | Propeller | ● | ● | ● | ● | ● | Checking for damage to blades |
| | Gear oil | Replacement ● | ● | ● | ● | Replacement ● | Checking for leaking in of water |
| | Anode | ● | ● | ● | ● | ● | Checking for wear |
| Retighten bolts and nuts | | ○ | | ○ | ○ | ○ | |
| Outboard motor body | | ● | ● | ● | ● | ● | Checking for damage to exterior |
| Grease | | | ● | ● | ● | ● | Greasing |

NOTE The time intervals specified in this chart are based on general use and may vary depending on operating conditions

○ Fuel system

WARNING:

Gasoline is highly inflammable and explosive
Handle it with special care

Fuel line

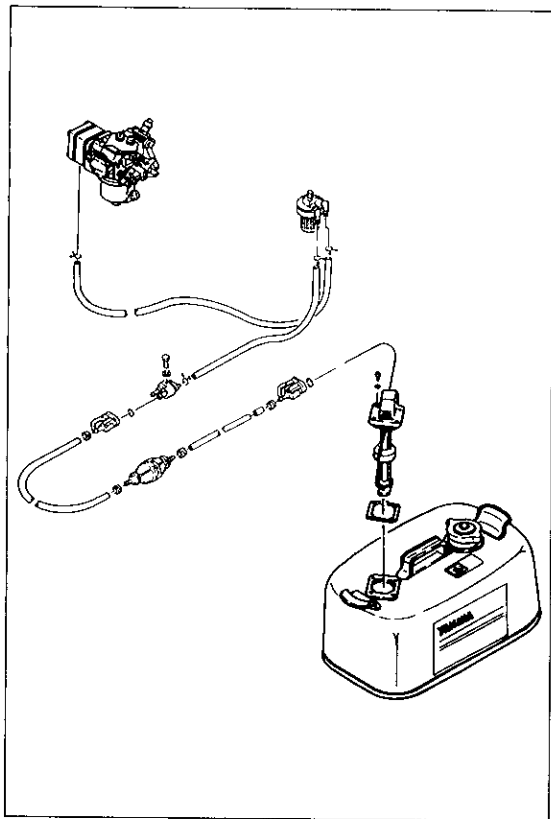
Check the fuel line for leaks, cracks, faults. If any problem is found, do the necessary repairing or replacing. If no cause can be found, ask your nearest Yamaha dealer.

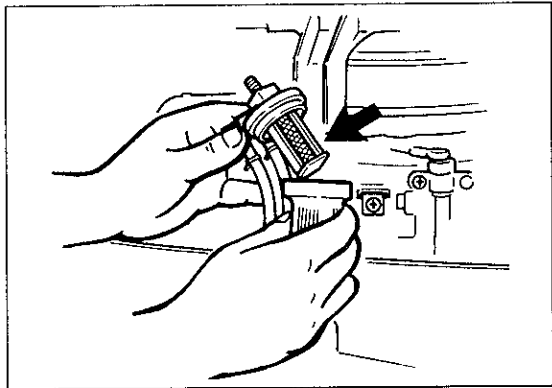
Checking points

- 1 Carburetor leakage
- 2 Fuel pump fault or leakage
- 3 Fuel tank leakage
- 4 Fuel hose joints leakage
- 5 Fuel hoses crack or any damage
- 6 Fuel filter leakage
- 7 Fuel connectors fault
- 8 Primer bulb fault or crack

WARNING:

Failure to check for fuel leakage may result in fire
or explosion





J-255

Cleaning the fuel filter

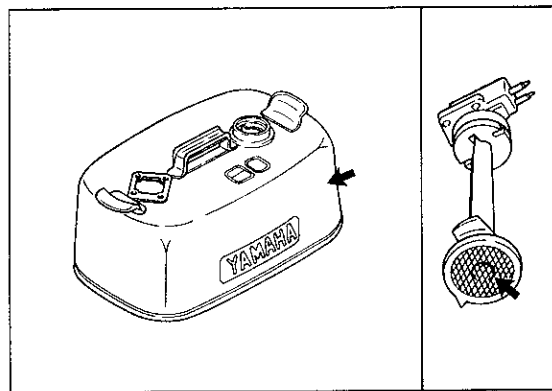
Remove the filter cup, remove the filter and wash it in suitable cleaning solvent

NOTE.

Be careful not to lose the O-ring. Without the O-ring, fuel leakage may occur

WARNING:

When cleaning the fuel filter be sure to stop the engine. Also refrain from smoking and keep away from open flames or sparks



J-275

Cleaning the fuel tank and strainer

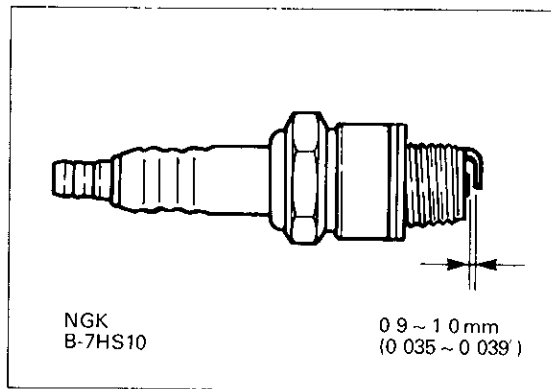
Fuel tank

Add a small quantity of suitable cleaning solvent to the fuel tank and thoroughly clean the tank interior by shaking the tank. After cleaning, drain off the cleaning solvent completely.

Fuel tank strainer.

Thoroughly clean the strainer on the end of the suction pipe with suitable cleaning solvent.

○ Electrical system

**WARNING:**

While starting or operating the engine, never touch the ignition coil, high-tension wire, spark plug cap, or any other electrical parts to which high voltage is applied

Spark plug inspection

The spark plug is an important engine component and is easy to inspect. The condition of the spark plug can indicate something of the condition of the engine.

For example, if the center electrode porcelain is very white, this could indicate an intake tract air leak or carburetion problem for that cylinder.

Do not attempt to diagnose any problems yourself. Instead, take the outboard motor to a Yamaha dealer.

You should periodically remove and inspect the spark plug because heat and deposits will cause the spark plug to slowly break down and erode. If electrode erosion becomes excessive, or if carbon and other deposits are excessive, you should replace the spark plug with a proper type plug.

Standard spark plug NGK B-7HS10

Before installing the spark plug, measure the electrode gap with a wire thickness gauge, adjust the gap to specification as necessary

Spark plug gap 0.9 ~ 1.0 mm (0.035 ~ 0.039 in)

When installing the plug, always clean the gasket surface and use a new gasket. Wipe off any grime from the threads, and torque the spark plug properly

Spark plug torque
20 Nm (2.0 m kg, 14 ft lb)

NOTE

If a torque wrench is not available when you are installing a spark plug, a good estimate of the correct torque is 1/4 to 1/2 turns past finger tight. Have the spark plug torqued to the correct value as soon as possible with a torque wrench

WARNING:

When installing or removing a spark plug, be careful not to damage the insulator

J-347

CAUTION:

When installing the spark plug, make sure the terminal is not loose. If loose, be sure to tighten completely before installing the plug. It is advisable to use a spark plug integrated with the terminal

J 380 **9.9DE/15DE**

Battery maintenance and fluid replenishing

A poorly maintained battery will deteriorate quickly. The battery fluid should be checked at least once a month.

- 1 The level should be between the upper and lower level marks. Use only distilled water if refilling is necessary.

CAUTION:

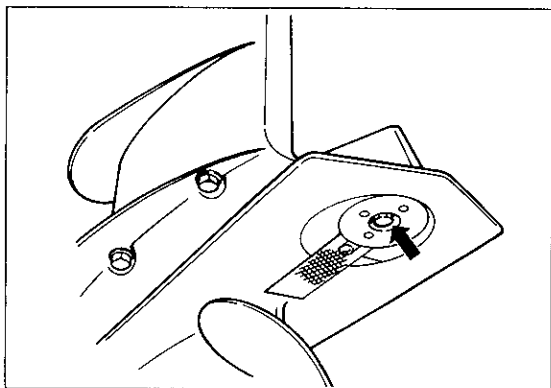
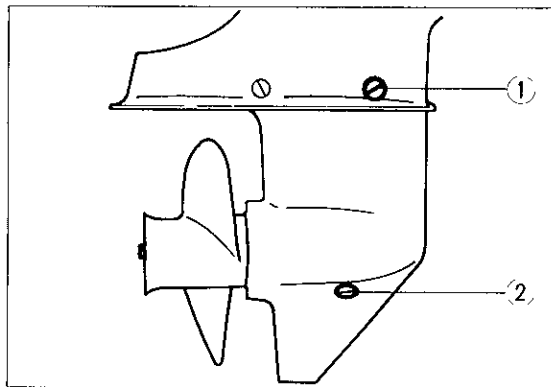
Normal tap water contains minerals which are harmful to a battery, therefore, refill only with distilled water

- 2 Always make sure the battery is charged sufficiently. It is advisable to install a voltmeter for better battery maintenance.

J 360

Emergency stop switch

Keep the emergency stop switch in good working order. Before starting the engine, check the switch. If faulty, have it repaired by your nearest Yamaha dealer.



J-800

○ **Lower unit**

Changing the gear oil

Place an empty oil can under the lower casing and remove the lower oil drain plug using a slotted-head screwdriver. Next, remove the upper oil level plug. With the outboard in an upright position, using a flexible or pressurized filling device, inject outboard motor hypoid gear oil SAE 90 into the lower oil drain plug hole. When the oil begins to flow out of the upper oil level plug hole, insert and tighten the plug. Next, screw in the lower oil drain plug.

CAUTION:

Replace the gear oil after the first 10 hours of operation and check the oil every 100 hours thereafter. If the gear oil becomes "milky," consult a Yamaha dealer.

- ① Oil level plug ② Oil drain plug

J 850

Anode

The lower unit is protected from corrosion with an anode (zinc) installed. If the anode is worn more than 2/3, replace it.

J 450

○ **Coating of the bottom of a boat**

Avoid coating the boat bottom with anti-fouling paint containing copper. Such anti-fouling paint will corrode the engine faster.

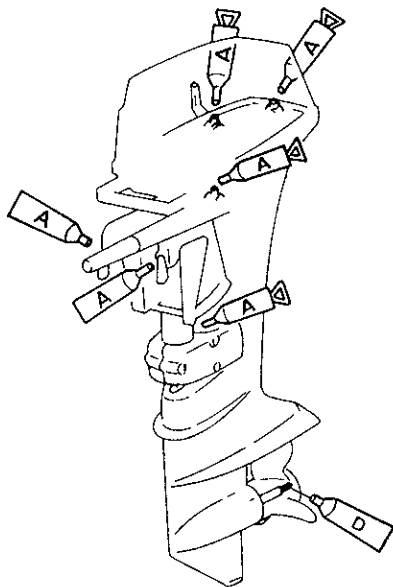
J 600

○ **Replacement parts**

Whenever the replacement of parts is necessary, be sure to use genuine Yamaha parts or equivalents of the same type and of equal strength and material. Any inferior quality part can malfunction and the resulting loss of control may endanger the operator and passengers.

J-100

○ **Greasing points**



YAMAHA Grease A



YAMAHA Grease D

OFF-SEASON STORAGE

When storing your engine for a long period of time (for example, after the boating season is over), we recommend you have your engine checked by a Yamaha dealer

The following check-ups and service you may perform yourself

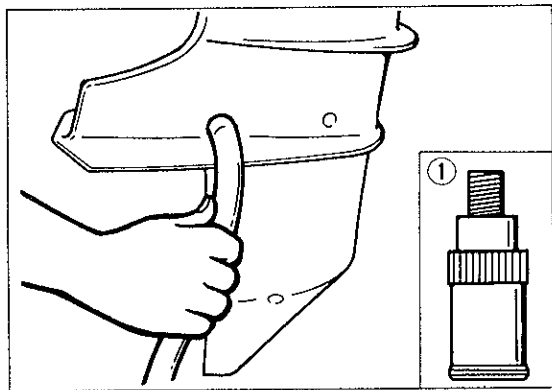
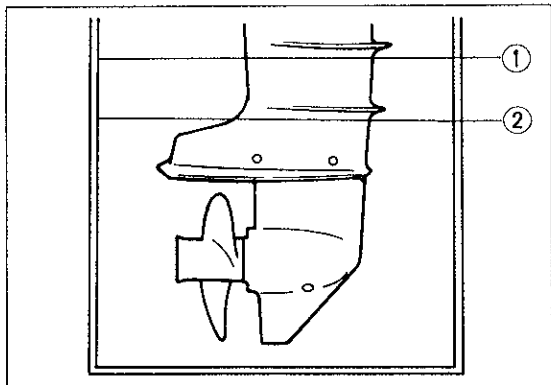
- Cooling system
 - Wash the cooling water passages with fresh water
- Fuel system
 - a Idle the engine until the carburetor is drained off
 - b Wash the fuel filter in suitable cleaning solvent
Refer to "Cleaning the fuel filter" in the "PERIODIC MAINTENANCE" section
 - c Wash the fuel tank interior and strainer with suitable cleaning solvent
Refer to "Cleaning the fuel tank and strainer" in the "PERIODIC MAINTENANCE" section
- Lubrication system
 - a Replace the gear oil
Refer to "Changing the gear oil" in the "PERIODIC MAINTENANCE" section
 - b Add 5 to 10 cm³ of outboard motor oil through the spark plug holes in the cylinders
 - c Apply grease to the specified places
Refer to "Greasing points" in the "PERIODIC MAINTENANCE" section

9.9DE/15DE

- Electrical system
 - Store the battery in a cool, dark place

CAUTION:

For long periods of storage, the outboard motor should be placed on a stand or with its front facing downward
Avoid direct sunlight and humidity



○ **Cleaning the water intake passages**

- a Install the outboard motor on the water tank and add water up to above the anti-cavitation plate

Next, shift into **NEUTRAL**, start the engine and run it at low speed for a few minutes

CAUTION:

When the fresh water level is below the anti-cavitation plate or when water supply is insufficient, engine seizure may occur

- ① Water surface ② Lowest water level

- b Remove the screw located beside the "WASH" mark on the lower casing, install the water check plug (accessory), and connect it to a water faucet

- ① Water check plug

Next, shift into **NEUTRAL**, start the engine while supplying water and run it at low speed for a few minutes

CAUTION:

Never operate the engine even momentarily without running cooling water. Either the water pump will become damaged or the engine will overheat. Before starting the engine, be sure to install the water check plug and feed water.

WARNING:

When using the water check plug, be sure to remove the propeller for safety.

K 410

○ **Storage of the battery** **9.9DE/15DE**

- 1 When the outboard motor will not be used for month or longer, remove the battery and store it in a cool, dark place. Completely recharge the battery before reusing it.
- 2 If the battery will be stored for a longer period than the above, check the specific gravity of the fluid at least once a month and recharge the battery when it is too low.

NOTE

Follow the manufacturer's instructions for battery details

J-520

○ **Transportation of an outboard motor**

- **Transporting an outboard motor mounted on a boat**
When transporting an outboard motor mounted on a boat, avoid tilting it up as the tilt lever could be damaged by trailer vibration.
To protect the motor from damage, slightly raise the lower case off the ground by tilting the motor, and insert a piece of wood between the clamp and swivel brackets. Rope the lower case to the trailer so that it will not lift and the wooden piece will not fall off during transportation.
- **Transporting an outboard motor not mounted on a boat**
When transporting the engine, place it with the shift handle facing upward to protect the handle from damage.

L 110

PROPELLER SELECTION

The propeller is one of the most critical elements in the performance of an outboard. Selection of an incorrect propeller can adversely affect the performance, and it could seriously damage the motor.

A Yamaha outboard is equipped with a propeller that has been selected to perform well in a variety of applications. There may be uses, however, where a propeller with a different diameter or pitch would work better. For greater load of operation, a smaller-pitch propeller is suited because it can maintain proper engine rpm. Likewise, a large-pitch propeller is suited for smaller load of operation. The engine speed changes greatly depending on the propeller size and boat load. If the engine speed is extremely low or high, it will adversely affect the engine. For this reason Yamaha dealers stock a variety of propellers and can install a suitable propeller on your outboard. Consult your dealer when selecting a proper propeller for your particular application.

WARNING:

When removing or installing the propeller, shift into NEUTRAL and remove the spark plug caps. Otherwise, the engine may start suddenly resulting in a serious injury or accident. It is a good practice to insert a piece of wood between the anti-cavitation plate and the propeller to lock the propeller. This protects your hands from the propeller blades.

SUBMERGED MOTOR

An accidentally submerged motor must be completely overhauled as soon as possible. If not, rust and corrosion will develop. If your engine should be accidentally submerged, the following steps should be taken as emergency measures:

- 1) Bring the engine up out of the water as quickly as possible.
- 2) Wash it with fresh water. All salt, mud and seaweed should be completely removed.
- 3) Remove the spark plugs and drain the water from the cylinders through the spark plug holes. Also drain the carburetor and fuel line.
- 4) Pour engine oil into the motor through the spark plug holes and carburetor while turning the engine over repeatedly by operating the starter, so that oil spreads out over the surfaces of engine inner parts.
- 5) Have the engine overhauled by your Yamaha dealer as soon as possible.



TROUBLESHOOTING

Problem situations with your outboard motor can in most cases be prevented by ensuring proper, scheduled maintenance. Many problems result from careless handling and abuse. The situations listed and their possible causes are intended to assist the operator in identifying and rectifying such problems. Should you continue to experience any difficulties after following these procedures, please contact your Yamaha dealer.

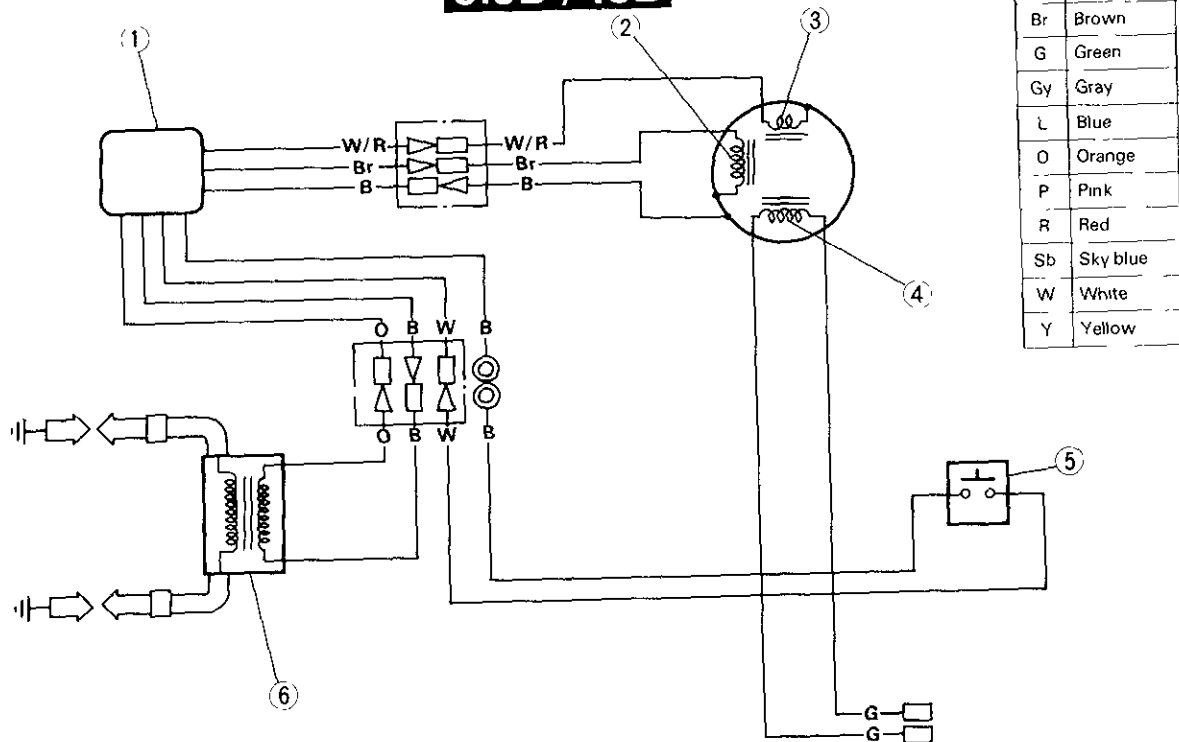
- A The engine will not start
- B The engine runs irregularly or stalls
- C The engine idles roughly
- D The engine runs too fast
- E The engine runs too slow
- F The boat speed is too low

| | A | B | C | D | E | F | Possible Cause |
|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|
| | <input type="radio"/> | <input type="radio"/> | | | | | Fuel tank is empty |
| | <input type="radio"/> | <input type="radio"/> | | | | | Fuel hoses are connected incorrectly |
| | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | | <input type="radio"/> | | Fuel hose is flattened or kinked |
| | | <input type="radio"/> | <input type="radio"/> | | <input type="radio"/> | | Fuel filter is clogged |
| | | <input type="radio"/> | <input type="radio"/> | | <input type="radio"/> | | Fuel contains oil other than specified |
| | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | | <input type="radio"/> | | Spark plug is fouled or defective |
| | | <input type="radio"/> | <input type="radio"/> | | <input type="radio"/> | | Spark plug is incorrect in heat range |
| | | | | <input type="radio"/> | | <input type="radio"/> | Cavitation takes place |
| | | | | <input type="radio"/> | | <input type="radio"/> | Propeller is damaged |
| | | | | <input type="radio"/> | | <input type="radio"/> | Tilt pin position is incorrect |
| | | | | | | <input type="radio"/> | Loads on boat are improperly distributed |
| | | | | | | <input type="radio"/> | Transom is too low |
| | | | | <input type="radio"/> | | <input type="radio"/> | Transom is too high |
| | | | | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Propeller is incorrect in pitch or diameter |
| Models with electric starter | <input type="radio"/> | | | | | | Starter motor is faulty |
| | <input type="radio"/> | | | | | | Wiring or wire connections are faulty |
| | <input type="radio"/> | | | | | | Battery is undercharged |

O-000
WIRING

9.9D / 15D

O 010



V-515
① CDI unit

V-905
⑤ Emergency stop switch

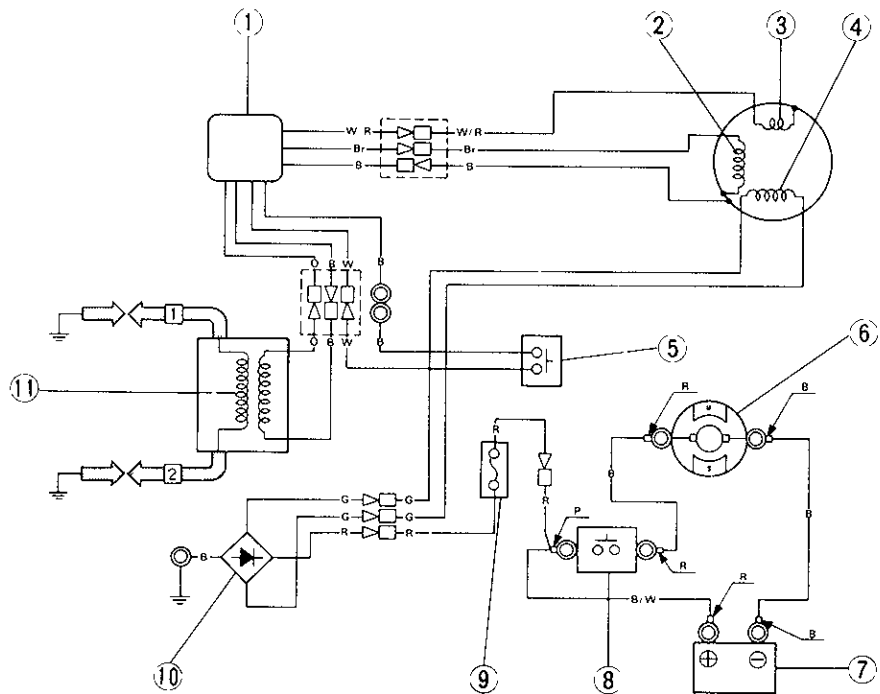
V 535
② Charge coil

W 505
⑥ Ignition coil

X 660
③ Pulser coil

W 820
④ Lighting coil

9.9DE/15DE



O 010

| | |
|----|----------|
| B | Black |
| Br | Brown |
| G | Green |
| Gy | Gray |
| L | Blue |
| O | Orange |
| P | Pink |
| R | Red |
| Sb | Sky blue |
| W | White |
| Y | Yellow |

V-515
① CDI unit

V-905
⑤ Emergency stop switch

W 235
⑨ Fuse

V 535
② Charge coil

Y-315
⑥ Starting motor

X-800
⑩ Rectifier

X 660
③ Pulser coil

V-235
⑦ Battery

W-505
⑪ Ignition coil

W 820
④ Lighting coil

Y-255
⑧ Starter button



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