YAMAHA

E

outboard motor

20C/25D/25G

OWNER'S MANUAL

6A9-28199-24

A-160S

IDENTIFICATION NUMBERS RECORD

1. OUTBOARD MOTOR NUMBER:

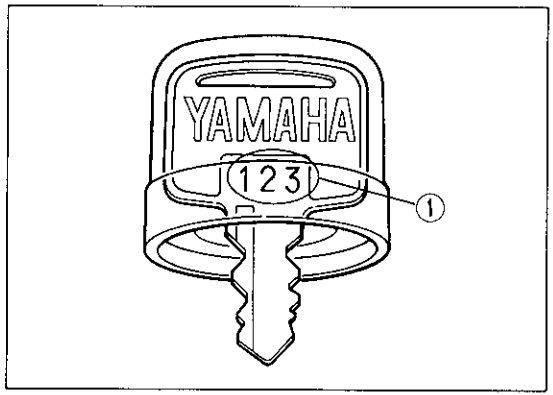
YAMAHA	MODEL
CODE	SERIAL No.

2. ENGINE NUMBER:

Record your outboard motor and engine numbers in the spaces provided to assist you in ordering spare parts from your Yamaha dealer or for reference in case your outboard motor is stolen. (See page 19)

3. KEY NUMBER:

Your key identification number is stamped on your key as shown in the illustration. Record this number in the space provided for reference if you need a new key.



① Key number

A-100S*

20C/25D/25G
OWNER'S MANUAL

1st Edition, May 1986

Printed in Japan

A-3500

There are the following differences in specifications between the 20-hp and 25-hp series

Item \ Model	20CM	20CE	25DM	25DE	25GM	25GEM
Starting system	Manual start	Electric start (Manual start)	Manual start	Electric start (Manual start)	Manual start	Electric start (Manual start)
Control system	Manual control	Remote control (Manual control)	Manual control	Remote control (Manual control)	Manual control	Manual control

TO THE OWNER

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

IMPORTANT

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

In this Owner's Manual particularly important information is distinguished in the following ways

NOTE.

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

CAUTION:

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

WARNING:

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

WARNING-SAFETY

1. **Before operating this outboard motor, familiarize yourself with local laws and regulations relating to the use of outboard motors**
2. **Petrol (gasoline) is highly flammable, and its vapours are flammable and explosive. Handle and store petrol with special care.**
3. **Do not attempt to modify this outboard motor**
4. **Always wear a life-jacket on board**
5. **Respect and protect the natural environment**

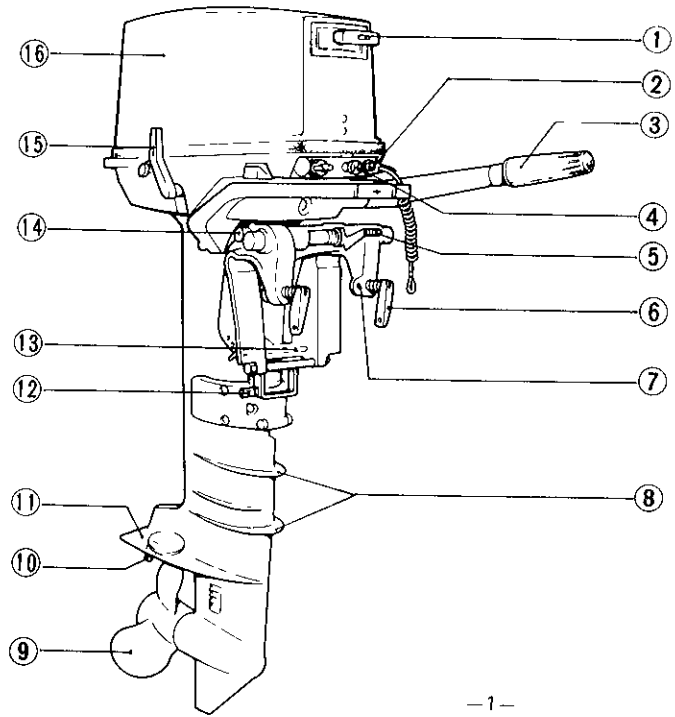
* Because we have a policy of constant product improvement, the product may not be exactly as described in this Owner's Manual, and specifications may be subject to change without prior notice

Yamaha Motor Co , Ltd

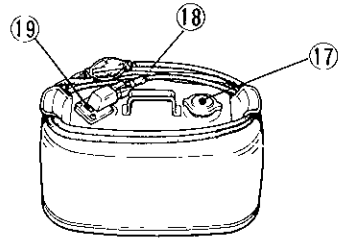
CONTENTS

GENERAL INFORMATION
LOCATION OF MAIN COMPONENTS

20CM/25DM/25GM



Fuel tank



① Recoil starter handle

② Emergency stop switch

③ Throttle-control/steering-handle

④ Choke knob

⑤ Tilt-lock lever

⑥ Transom clamp handle

⑦ Rope attachment

⑧ Splash board

⑨ Propeller

⑩ Trim tab

⑪ Anti-cavitation plate

⑫ Shallow water lever

⑬ Trim angle adjusting-rod

⑭ Tilt support knob

⑮ Gear shift lever

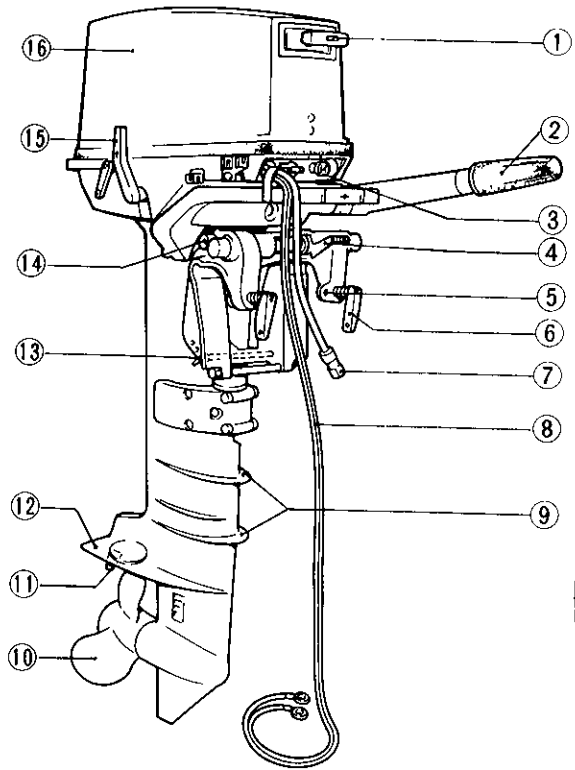
⑯ Top cowling

⑰ Fuel tank cap

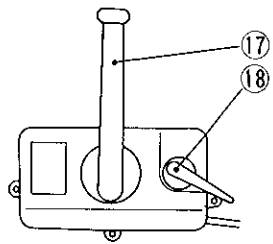
⑱ Fuel-line

⑲ Fuel meter

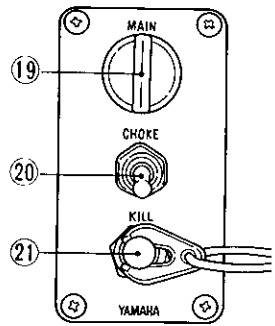
20CE/25DE



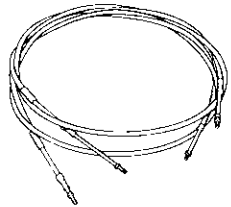
Remote control box



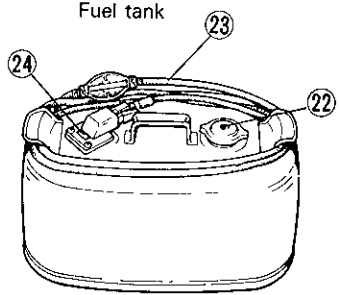
Switch panel



Remote control cable



Fuel tank



① Recoil starter handle

② Throttle-control/steering-handle

③ Choke knob

④ Tilt-lock lever

⑤ Rope attachment

⑥ Transom clamp handle

⑦ Wiring-harness

⑧ Battely lead

⑨ Splash board

⑩ Propeller

⑪ Trim tab

⑫ Anti-cavitation plate

⑬ Trim angle adjusting-rod

⑭ Tilt support knob

⑮ Gear shift lever

⑯ Top cowling

⑰ Remote control lever

⑱ Neutral throttle lever

⑲ Main switch

⑳ Choke switch

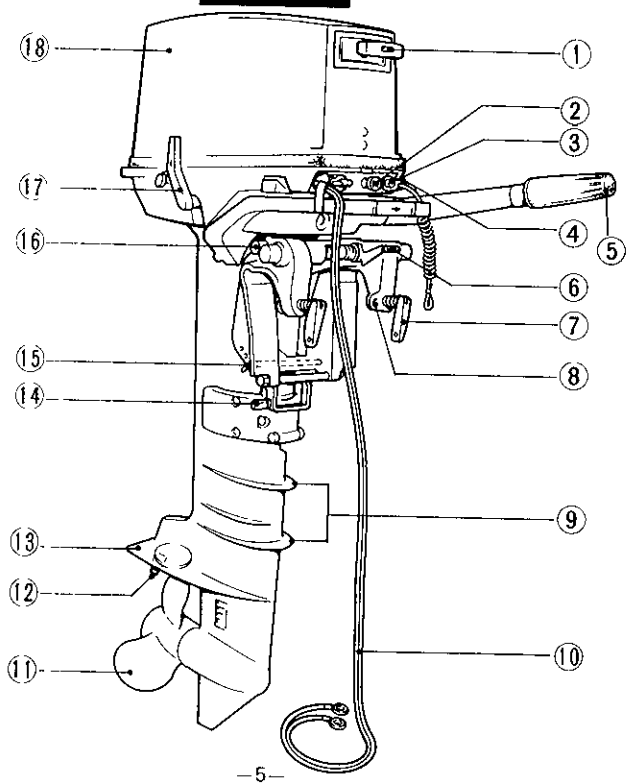
㉑ Emergency stop switch

㉒ Fuel tank cap

㉓ Fuel-line

㉔ Fuel meter

20GEM



① Recoil starter handle

② Choke knob

③ Emergency stop switch

④ Starter switch

⑤ Throttle-control/steering-handle

⑥ Tilt-lock lever

⑦ Transom clamp handle

⑧ Rope attachement

⑨ Splash board

⑩ Battery lead

⑪ Propeller

⑫ Trim tab

⑬ Anti-cavitation plate

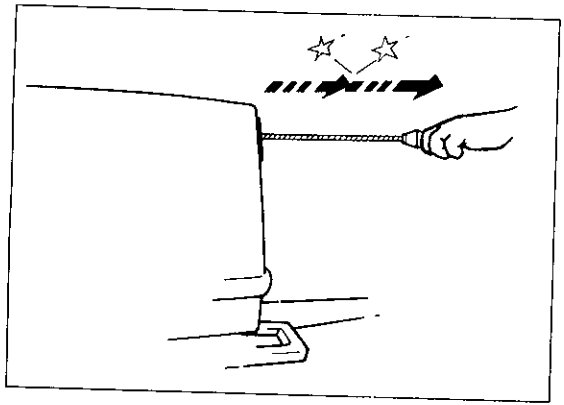
⑭ Shallow water lever

⑮ Trim angle adjusting-rod

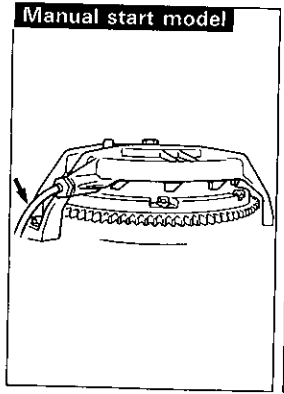
⑯ Tilt support knob

⑰ Gear shift lever

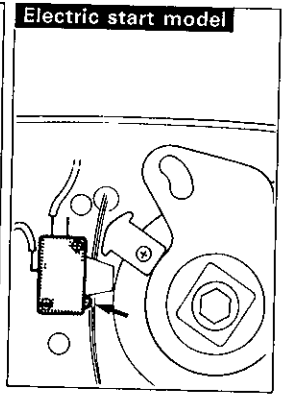
⑱ Top cowling



Manual start model



Electric start model



A-550S

CONTROL FUNCTIONS

B-950S

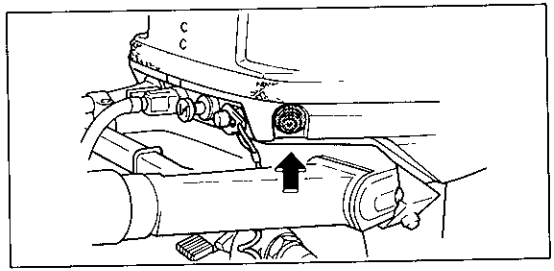
Recoil starter handle

Pulling this handle vigorously cranks the engine to start

B-100S

Start-in-gear protection device

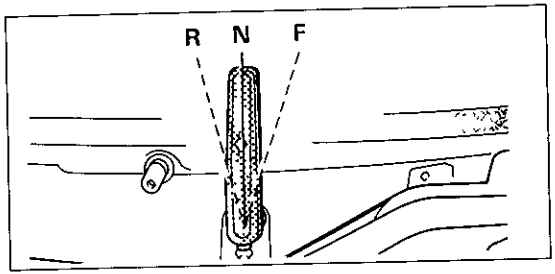
This feature permits the engine to be started only when it is Neutral Always select Neutral before attempting to start the engine



B-600S **25GEM**

Starter-switch

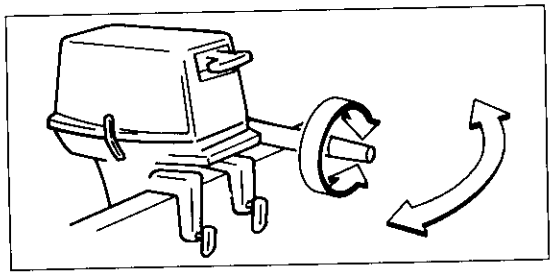
Pushing this button energises the starter-motor and starts the engine



B-200S

Gears - selecting forward and reverse

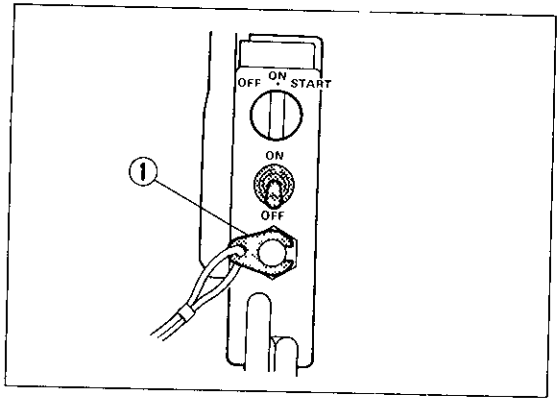
Turning the gear shift lever towards you engages the clutch with the forward gear so that the boat moves ahead Turning the lever away from you engages the reverse gear so that the boat moves astern

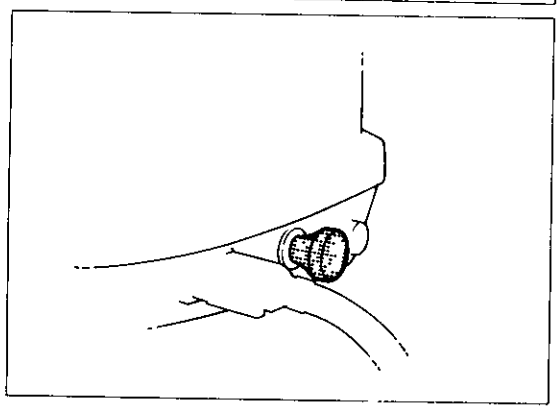


B-250S

Throttle-control/steering-handle

Turn the grip to adjust the throttle, and move it sideways to adjust the steering angle





B-550S

Emergency stop switch

This feature is provided for the safety of the operator When the lock-plate is pulled out from the emergency stop switch, the ignition circuit opens and stops the engine immediately Should the operator fall overboard or lean too far over the side, the line attached to his wrist will pull the lock-plate out and stop the engine

NOTE

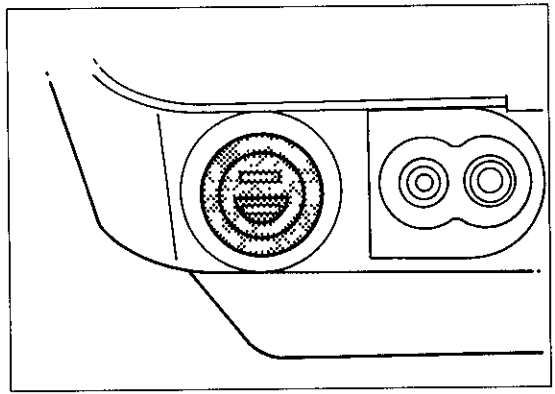
The engine cannot be started with the lock-plate removed

① Lock-plate

B 860S

Choke knob

Pulling this knob (setting it to ON) supplies a rich mixture required to start the engine

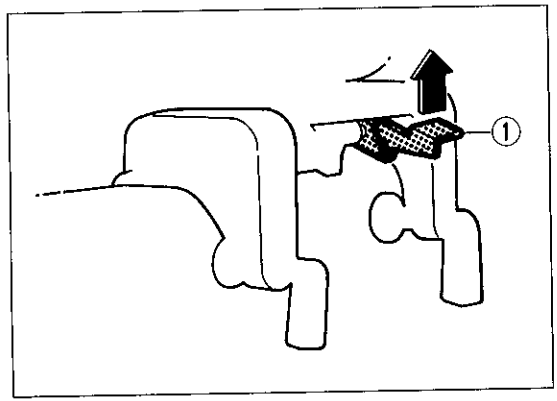


B 800S* **20CM/25DM**

2P connector

AC12V-80W power is delivered through this connector When using it, keep in mind the following points

1 Use a genuine Yamaha connector
2 To connect lighting equipment, it must be connected through a voltage regulator whose specifications are appropriate for 12V-80W power If lighting equipment has to be connected directly, its capacity must be more than 12V-80W; otherwise, the bulb could be burnt out
3 Never connect a battery directly for charging Be sure to connect it through a rectifier
4 When the connector is not used, place the cap on it

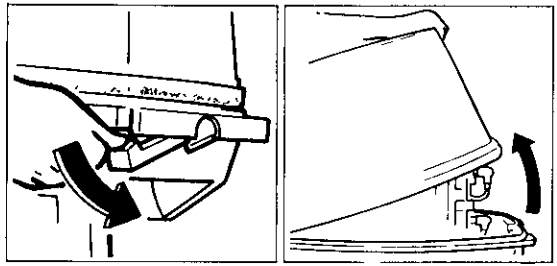


B-350S

Tilt-lock mechanism

The tilt-lock mechanism is used to prevent reverse thrust from the propeller lifting the outboard motor when going astern To operate it, set the tilt-lock lever in the up position To release it, push the tilt-lock lever down

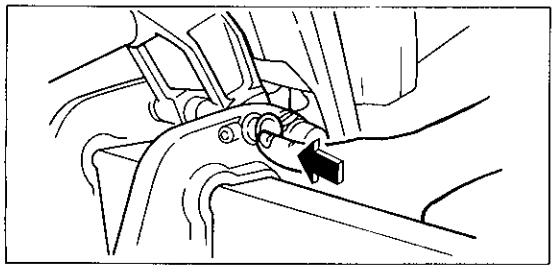
① Tilt-lock lever



B-500S

Cowling lock lever

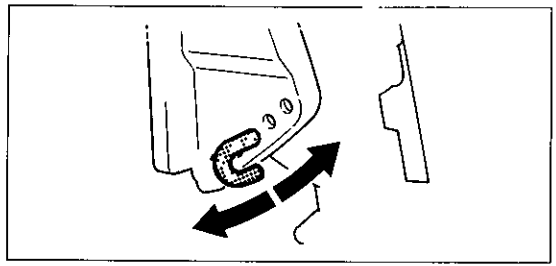
The top cowling can be removed by pushing the cowling lock lever downward. After replacing the cowling, lock it again by moving the lever upward.



B 400S

Tilt support knob

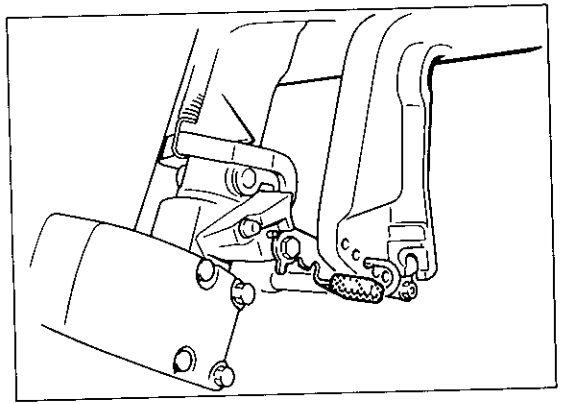
To keep the outboard motor in the tilted-up position, move the tilt support knob under the swivel-bracket.



B 450S

Trim angle adjusting-rod

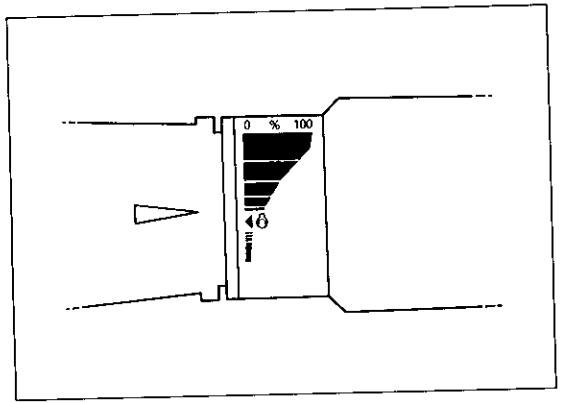
The trim angle can be adjusted by changing the position of the trim angle adjusting-rod.



B-750S

Shallow water lever

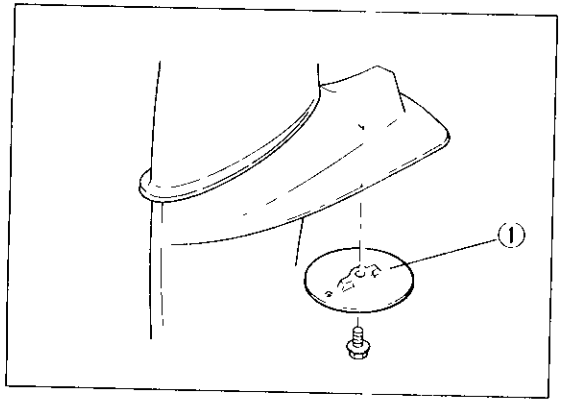
This lever is used to turn up the outboard motor in shallows.



C-350S

Throttle indicator

On the throttle indicator a fuel consumption curve is shown By referring to this curve, determine the throttle position according to the purpose of sailing



C 400S

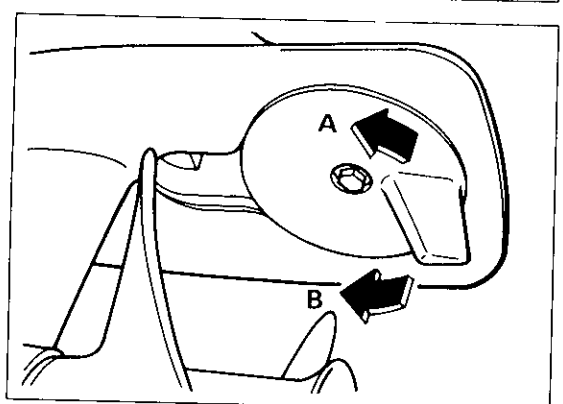
Trim tab

The trim tab should be adjusted so that the steering control can be turned to either the right or left by applying the same amount of force

WARNING:

An improperly adjusted trim tab will cause loss of control Test run to determine proper adjustment

① Trim tab

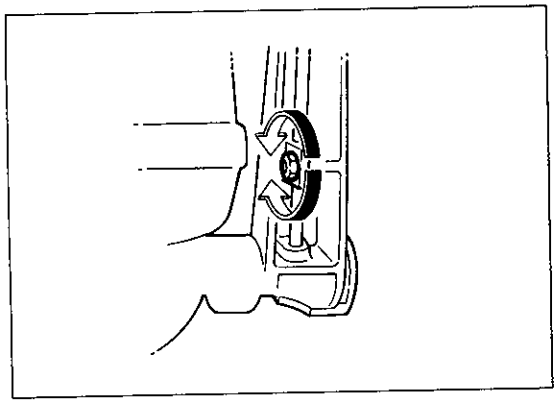


A When the boat tends to veer to port
Turn the rear end of trim tab to the left (port side) "A" in the figure

B When the boat tends to veer to starboard
Turn the rear end of trim tab to the right (starboard side) "B" in the figure

CAUTION:

The trim tab also serves as an anode to protect the engine from electrochemical corrosion. Never paint the trim tab as it will become ineffective as an anode



C-120S

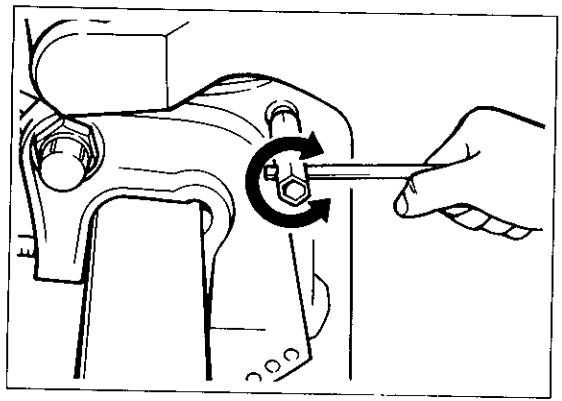
Throttle-control adjustment

Resistance to the operation of the throttle-grip is provided by a friction device located within the steering handle, and this can be adjusted by an adjusting-bolt

To increase the resistance·
Turn the adjusting-bolt clockwise

To decrease the resistance
Turn the adjusting-bolt anti-clockwise

When constant speed is required, tighten the adjusting-bolt to maintain the required throttle setting



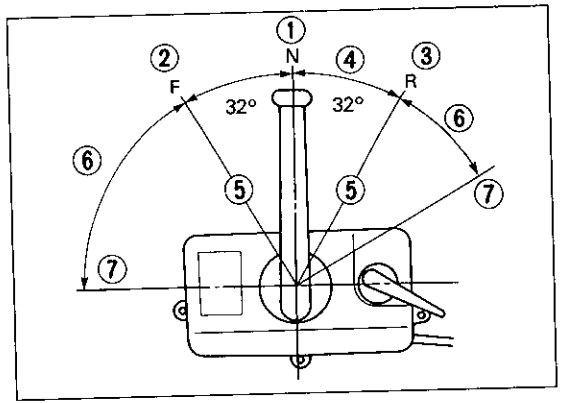
C 150S

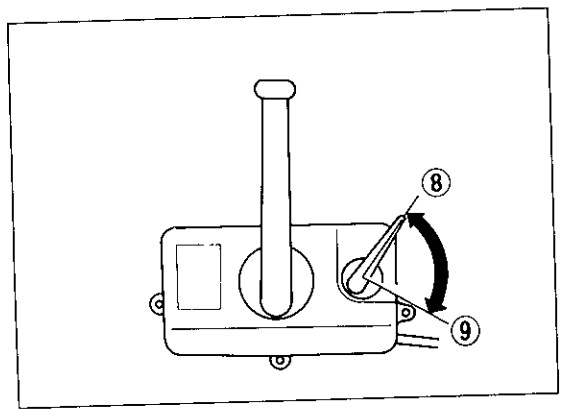
Steering adjustment

Resistance to steering movement is provided by a friction device, and this can be adjusted by means of the adjusting-bolt on the swivel-bracket

To increase resistance
Turn the adjusting-bolt clockwise

To decrease resistance
Turn the adjusting-bolt anti-clockwise





B 700S

Remote control box

This feature enables both the clutch and the throttle to be actuated by the remote control lever

Remote control lever

To engage Forward or Reverse gear from Neutral gear position, turn the remote control lever forward or backward through approximately 32 degrees (the detent position), whereupon the boat will commence to move forward or backward Turning the lever further downward opens the throttle

① Neutral
② Forward
③ Reverse
④ Shift
⑤ Fully closed
⑥ Throttle
⑦ Fully open

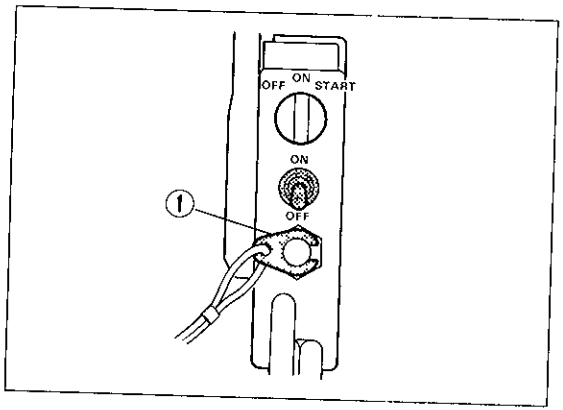
Neutral throttle lever

To open the throttle without shifting into either driving gear, place the control-lever in the Neutral position and turn the neutral throttle lever upward

CAUTION:

The neutral throttle lever can only be operated when the remote control lever is in the Neutral position. The remote control lever can only be operated when the neutral throttle lever is in the closed position

⑧ Fully open
⑨ Fully closed



C 300S

Switch panel

Main switch
The main switch controls the ignition system, its operation is described below

OFF
Electrical circuits switched off (The key can be removed)

ON
Electrical circuits switched on. (The key cannot be removed)

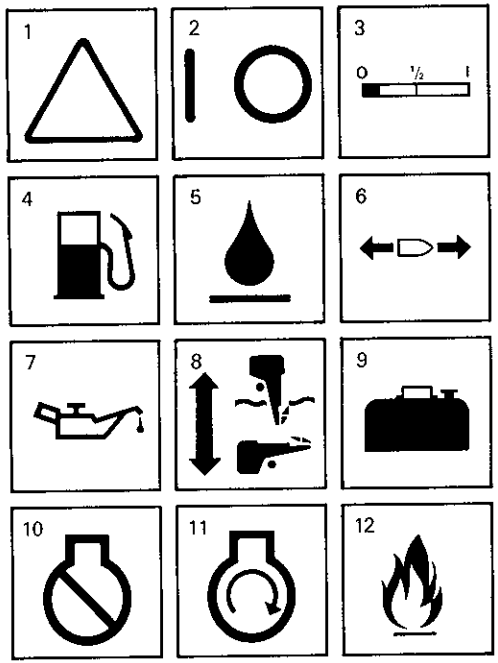
START
Starter-motor will turn and start engine (When the key is released, it returns automatically to "ON")

Choke switch (for remote control)
Pushing this knob upward (setting to ON) supplies a rich mixture required to start the engine When released, it returns to OFF automatically

Emergency stop switch
This feature is provided for the safety of the operator When the lock-plate is pulled out from the emergency stop switch, the ignition circuit opens and stops the engine immediately Should the operator fall overboard or lean too far over the side, the line attached to his wrist will pull the lock-plate out and stop the engine

NOTE
The engine cannot be started with the lock-plate removed

① Lock-plate



C 500S

SYMBOLS

1 A serious risk is present
Read and follow the instructions before operating

2 Electrical switch functions - ON, OFF

3 Empty - Half full - Full

4 Engine fuel

5 Fluid level

6 Gear shift lever for selecting Forward-Neutral-Reverse

7 Oil lubrication point

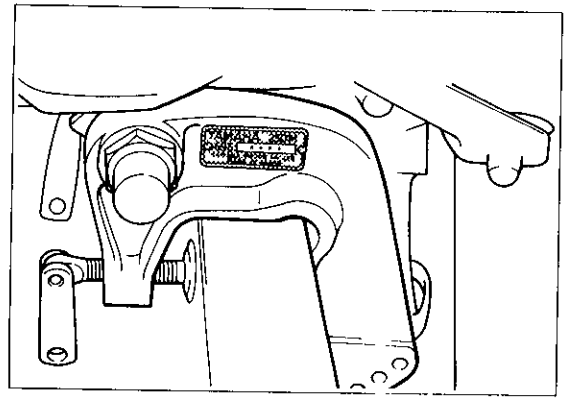
8 Outboard motor tilt movement

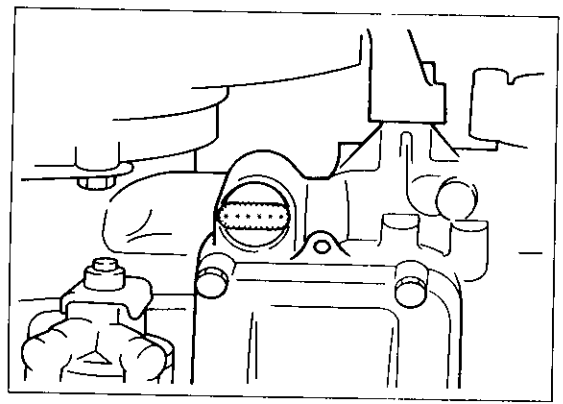
9 Portable petrol fuel container

10 Position of throttle-control device for stopping motor

11 Starter-switch for engine

12 Warning against fire hazard





C 600S

SERIAL NUMBERS

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

IMPORTANT:

Quote both serial numbers when asking for a service to be carried out or when ordering parts Keep note of these numbers

COATING OF THE BOAT BOTTOM

Anti-fouling paints containing copper should not be used for coating the boat bottom, as such products tend to cause more rapid engine corrosion

OPERATION IN SALT WATER

After operating in salt water, wash out the cooling-water passages with fresh water to prevent them from becoming clogged-up with salt deposits

OPERATION IN TURBID WATER

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

REPLACEMENT PARTS

If replacement parts are necessary, use only genuine Yamaha parts or equivalents of the same type and of equivalent strength and materials Any part of inferior quality may malfunction, and the resulting loss of control could endanger the operator and passengers

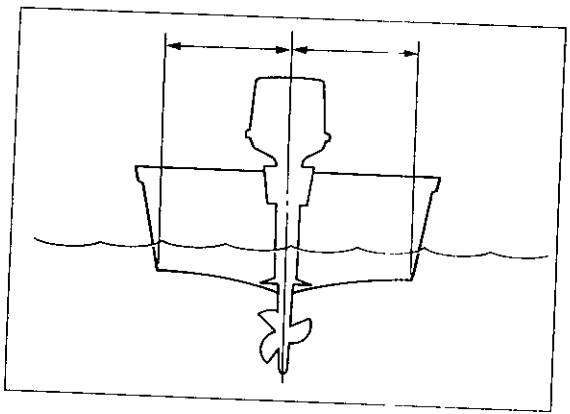
RIGGING

OUTBOARD MOTOR MOUNTING

Mount the outboard motor on the centre-line (keel-line) of the boat, and ensure that the boat itself is well balanced Otherwise, the boat will be hard to steer For boats without a keel or which are asymmetrical, consult your Yamaha dealer

WARNING:

Do not fit an outboard motor of a power output greater than the maximum rating shown on the capacity plate of the boat, as over-powering may cause severe instability If the boat has no capacity plate, consult your Yamaha dealer or the boat manufacturer

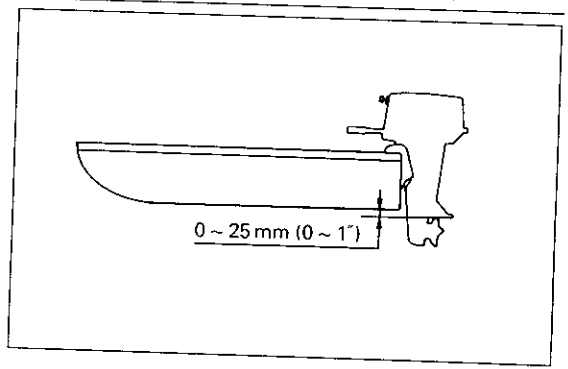


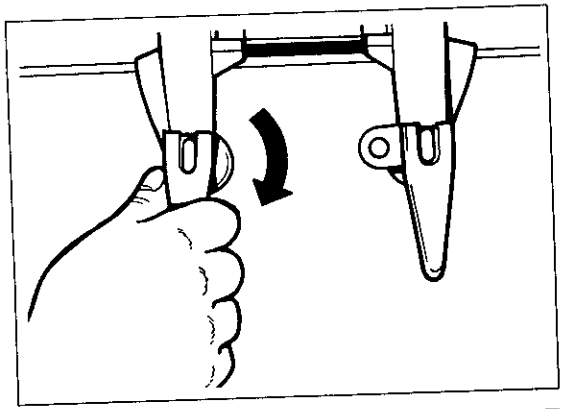
MOUNTING HEIGHT

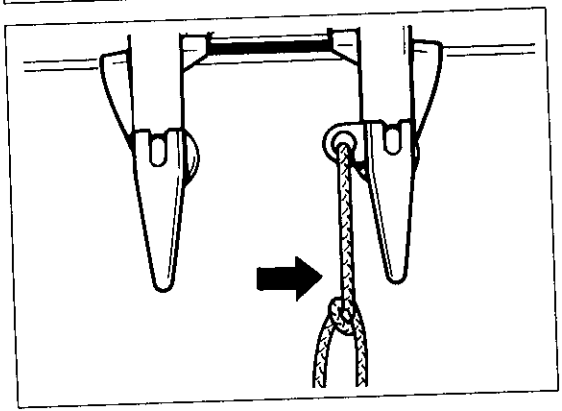
To run your boat at optimum efficiency, the water-resistance (drag) of the boat and outboard motor must be made as little as possible The mounting-height of the outboard motor greatly affects the water-resistance If the mounting-height is too high, cavitation tends to occur, thus reducing the propulsion, and if the propeller tips cut the air, the engine speed will rise abnormally and cause the engine to overheat If the mounting-height is too low, the water-resistance will increase and thereby reduce engine efficiency Mount the engine so that the anti-cavitation plate is between the bottom of the boat and a level 25 mm (1") below it

WARNING:

The optimum mounting height of the outboard motor is affected by the purpose of the boat and the outboard motor, and may be determined by making test runs







D-110S

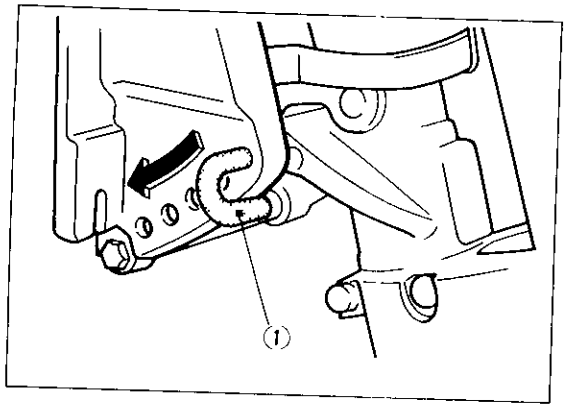
CLAMPING THE OUTBOARD MOTOR

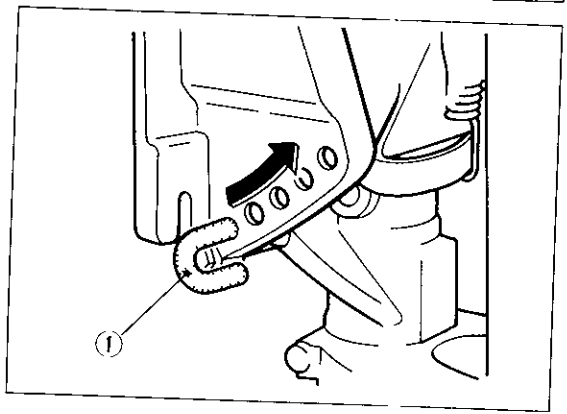
1) Place the outboard on the transom so that it is positioned as close to the centre as possible. Tighten the clamp-screws evenly and securely. Check the clamp-screws for tightness occasionally during operation of the motor as they can work loose due to engine vibration. Loose clamp-screws could allow the motor to fall off into the water (for example, when the boat makes a sharp turn), or could cause serious injury.

2) The use of a safety-chain or safety-cable is recommended. Attach one end to the safety-chain fixing-point (located beside the clamp-screw) and the other end to a secure mounting-point on the boat.

WARNING:

Ensure the transom clamp screws are tightened securely, and occasionally check their tightness while the motor is in operation.





D 200S

TRIM ANGLE

To ensure steering stability and good performance, it is essential to have the correct trim angle If the trim angle is made too great, the buoyancy centre of the boat will shift towards the stern In this condition, and if the stability moment at the bow is large, the boat will tend to 'porpoise', and could cause the operator and passengers to be thrown overboard If the trim angle is insufficient, the bow may 'plough', making the boat unstable

To adjust the trim angle, remove the adjusting-rod from the stern bracket assembly, and - while tilting the motor - reposition the rod in the desired hole The appropriate trim angle depends on the combination of boat, engine and propeller, as well as on the operating conditions, but generally the boat will be in stable trim when the trim angle is 3 degrees to 5 degrees by the stern

① Trim angle adjusting-rod

WARNING:

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

NOTE

- To obtain better steering stability when operating against a strong wind, it is advisable to reduce the trim angle slightly Conversely, if the wind is favourable, the trim angle may be slightly increased to improve the steering stability
- To lower the bow, move the rod towards the mounting-plate To raise the bow, move the rod towards the engine

D-410S*

Electric start model

BATTERY MOUNTING

Connecting the battery

WARNING:

Before connecting or disconnecting the battery leads, turn off the main switch and remove the switch key to avoid risks of electric shock, fire or explosion.

Mount the battery securely in a dry, well-ventilated, vibration-free location in the boat
Recommended battery type
12V, type 144 kC (40 AH)

Connect the RED lead to the POSITIVE (+) terminal first, then connect the BLACK lead to the NEGATIVE (−) terminal

① Red lead
② Black lead
③ Battery

Disconnecting the battery

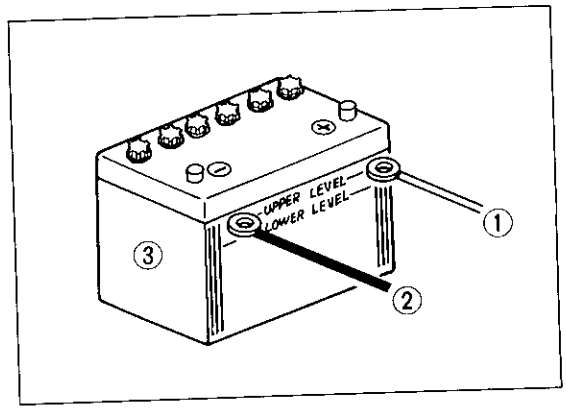
Disconnect the BLACK lead from the NEGATIVE (−) terminal first, then disconnect the RED lead from the POSITIVE (+) terminal

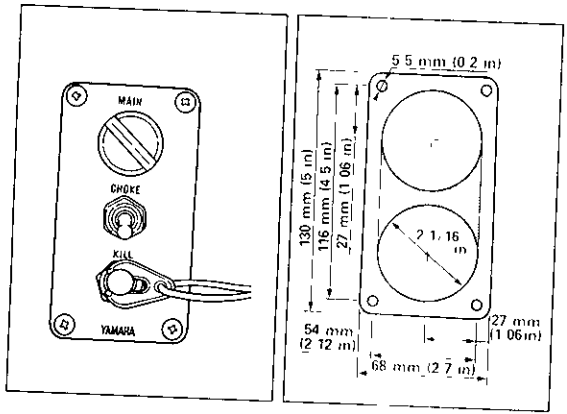
CAUTION:

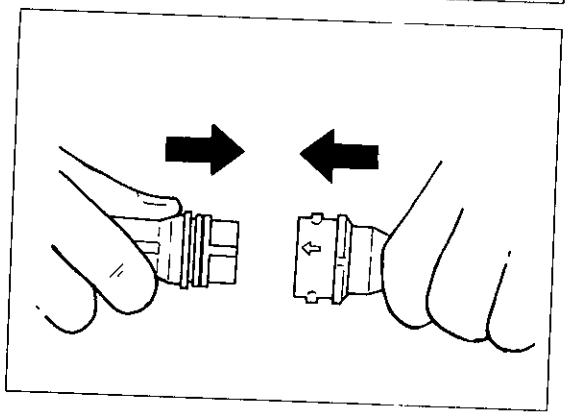
1 **If the battery leads are not correctly connected with low-resistance clean metal-to-metal contact, the engine will not start**
2 **Reversal of the leads will damage the rectifier.**

WARNING:

The battery fluid (electrolyte) is toxic and corrosive Avoid all contact with the eyes and skin. First Aid for battery fluid splashed in the eye WITHOUT DELAY, irrigate the eye with large quantities of fresh water, holding the eye open with the fingers if its is closed during a pain spasm; continue irrigating for 5 minutes, and then seek urgent medical aid. A battery on charge gives off hydrogen gas which is flammable and explosive, and can cause suffocation in confined spaces; therefore mount the battery in a well-ventilated area, and keep away from open flames and sparks







*D 300S

SWITCH PANEL MOUNTING

WARNING:

Disconnect the battery leads before installing or disconnecting electrical components

CAUTION:

Install the switch panel on the dashboard in a position allowing easy access from the helmsman's seat If the boat has no dashboard, install the switch panel in an accessible position protected from water spray

1) Cut a hole in the instrument panel as indicated in this mounting diagram Using a 2 1/16-inch hole saw, make holes and then cut out the centre portion as shown
2) Connect the wiring harness to the switch panel assembly, and pass it back through the hole
3) Secure the switch panel assembly to the instrument panel with the screws, washers and nuts provided
4) Connect the wiring-harness to the coupling, lining up the arrow and triangle and lock the connection with the wiring-harness lock

REMOTE CONTROL - MOUNTING

For installation of the steering system, see your Yamaha dealer. It is advisable to ask your Yamaha dealer to install the remote control box and cables.

WARNING:

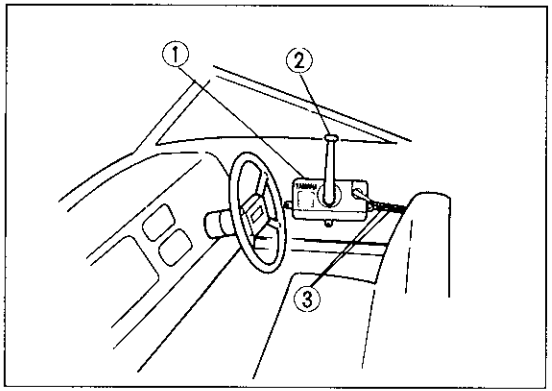
Incorrect selection or installation of a Remote Control could result in sudden and unexpected loss of control leading to accident or personal injury. Get advice from your Yamaha dealer.

Positioning the remote control box

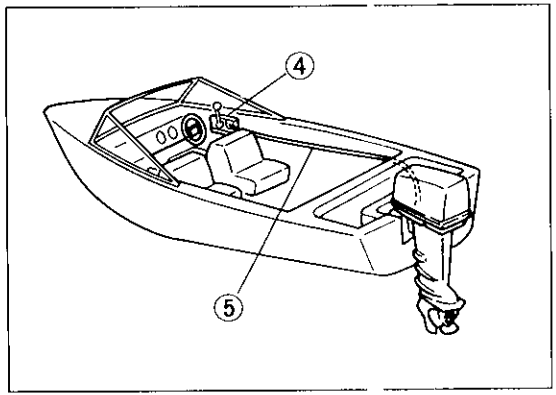
Position the remote control box so as not to obstruct operation of the remote control lever, and ensuring that the route for the remote control cables is unobstructed.

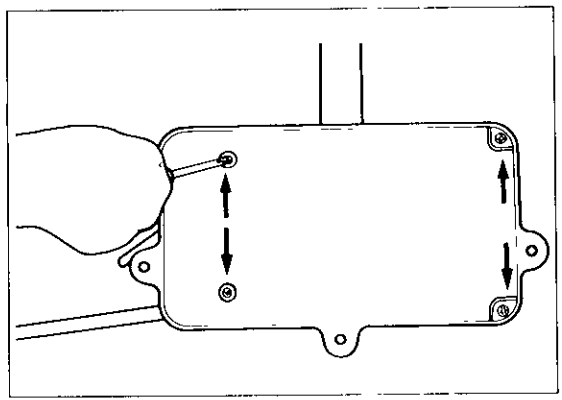
NOTE

The remote control box described in this Owner's Manual is designed for starboard-side steering-wheels.



① Remote control box
② Remote control lever
③ Remote control cable





Remote control cables

Position the remote control cables, and check they are of adequate length, and that when fitted and connected they will not get tangled, or stretched when the steering-wheel is turned

WARNING:

Do not make any sharp bends or kinks in the remote control cables Check that the cables are not formed into a loop of diameter smaller than 400 mm (16 in)

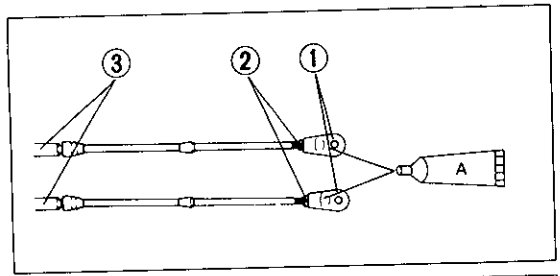
④ Remote control box
⑤ Remote control cable

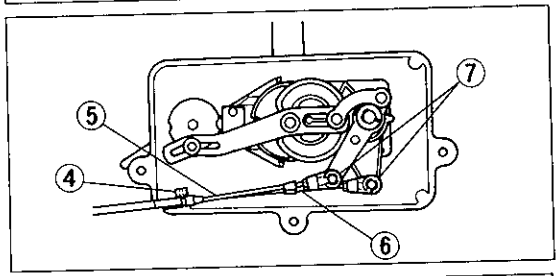
D 600S

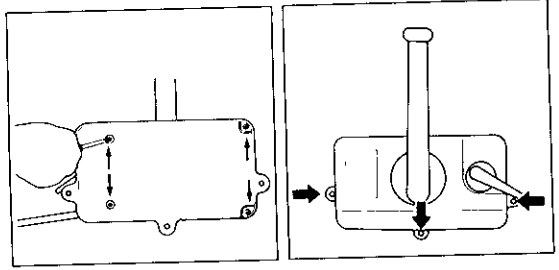
Installing remote control cables (on remote control box side)

Procedure

1) Loosen the screws which secure the cover of the remote control box, and remove the cover
2) Before installing the cable joints, apply water-resistant grease (Yamaha Grease 'A') to the threaded holes in the cable joints Screw in the cable joints (accessories) about 11 mm (0 4 in) over the ends of the remote control cables, and tighten the lock-nuts
3) Align the groove around one of the remote control cables with the projection on the remote control box, and connect the cable





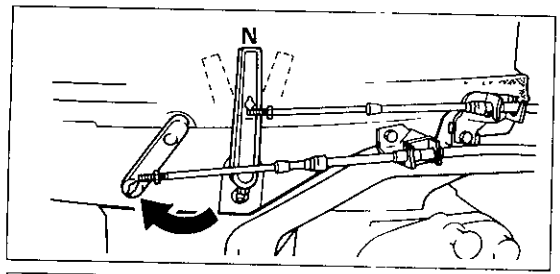


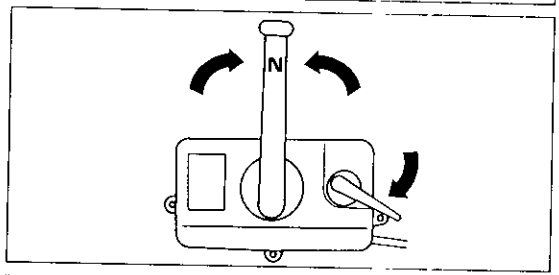
4) Align the groove around the grommet (accessory) with the projection on the remote control box, and fit the grommet onto the box Connect the other remote control cable to the remote control box in the same way

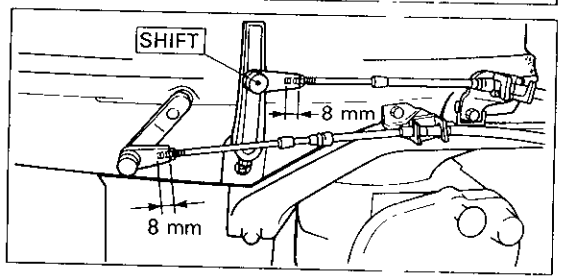
① Cable joint
② Lock-nut
③ Remote control cable
④ Grommet

5) Fit the cable joints onto the gear shift lever and throttle lever, and lock them with circlips
6) Replace the cover of the remote control box, and secure it with the screws
7) Operate the remote control lever to check that the cables move smoothly
8) After connecting the remote control cables, install the remote control box in the predetermined position, using the accessory fittings (screws, nuts and washers)

⑤ Remote control cable for throttle
⑥ Remote control cable for gear lever
⑦ Circlip







D 710S

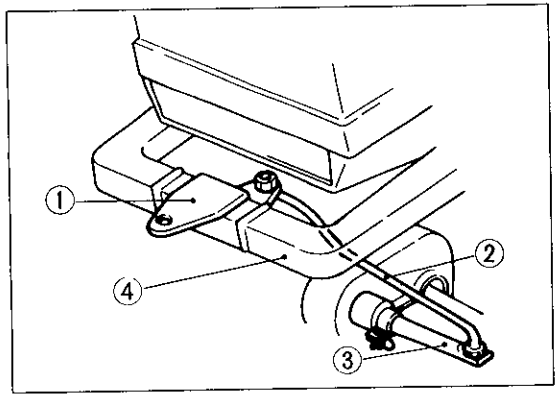
Fitting remote control cables (on the motor side)

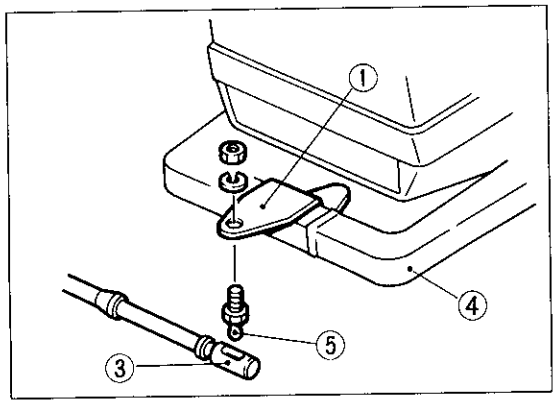
1) Place the gear-shift lever in neutral. Set the throttle-control level in the fully closed position.
2) Place the remote control lever in neutral. Set the neutral throttle lever in the fully-closed position.
3) Screw in the cable joint over the end of the remote control cable so that the cable joint slot aligns with the cable joint set pin, and lock it with the lock-nut.

CAUTION:

Screw the end of the remote control cable into the cable joint a minimum of 8 mm (0.3 in).

4) Fit the cable joints to the gear-shift handle and throttle-control lever. To fit, insert the cable joint into the slot first, and turn it 90° in either direction.





D-810S

FITTING THE STEERING ATTACHMENTS

Steering-guide mechanical type

Attach one end of the steering-link rod to the steering hook with the bolt and nut, and attach the other end to the steering-cable with the nut and washers

Ball-post mechanical type

Fit the ball joint to the steering-hook, then fit, the steering-cable to the ball joint

NOTE:

For details, consult your Yamaha dealer

① Steering-hook
② Steering-link rod
③ Steering-cable
④ Steering-bracket
⑤ Ball joint

PROPELLER SELECTION

The performance of your outboard motor will be critically affected by choice of propeller, for an incorrect one could adversely affect performance and could seriously damage the motor The engine speed depends on the propeller size and the boat load If the engine speed is too high or too low for good engine performance, this will have an adverse effect on the engine

Yamaha outboard motors are fitted with propellers chosen to perform well over a range of applications, but there may be uses where a propeller with a different pitch would be better For a greater operating load, a smaller-pitch propeller is more suitable as it enables the correct engine speed to be maintained Conversely, a larger-pitch propeller is more suitable for a smaller operating load

Yamaha dealers stock a range of propellers, and can advise you and install a propeller on your outboard that is best suited to your application

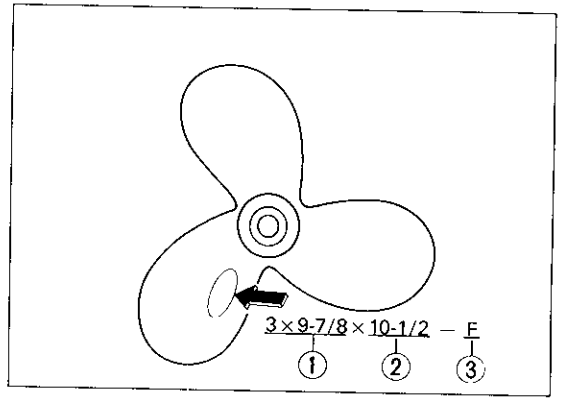
① Propeller diameter (in inches)
② Propeller pitch (in inches)
③ Type of bushing

WARNING:

Before commencing to remove or install a propeller, remove the spark-plug cap to prevent the engine starting and causing accident or injury It is good practice to insert a piece of wood between the anti-cavitation plate and the propeller to lock the propeller and thus protect your hands from injury

Propeller nut torque
30 Nm (3 0 m•kg, 22 ft•lb)

If the propeller nut does not align with the propeller shaft hole when the nut is tightened to specification, turn it in further so that they align



FUEL AND ENGINE OIL

FUEL

Use Regular-Grade petrol (gasoline)

WARNING:

1 **Petrol (gasoline) is highly flammable, and its vapours are flammable and explosive When refuelling, refrain from smoking, and keep away from open flames or sparks.**
2 **Stop engine before refuelling.**
3 **Refuel off-board in a well-ventilated area**
4. **Take care not to spill petrol, and wipe up any spillage on board immediately with dry rags**
5 **Do not over-fill the fuel tank, but fill it only to the safe filling level of 5 mm (0 2 in) below the bottom of filler neck**
6 **Tighten the tank filler-cap securely after refuelling**

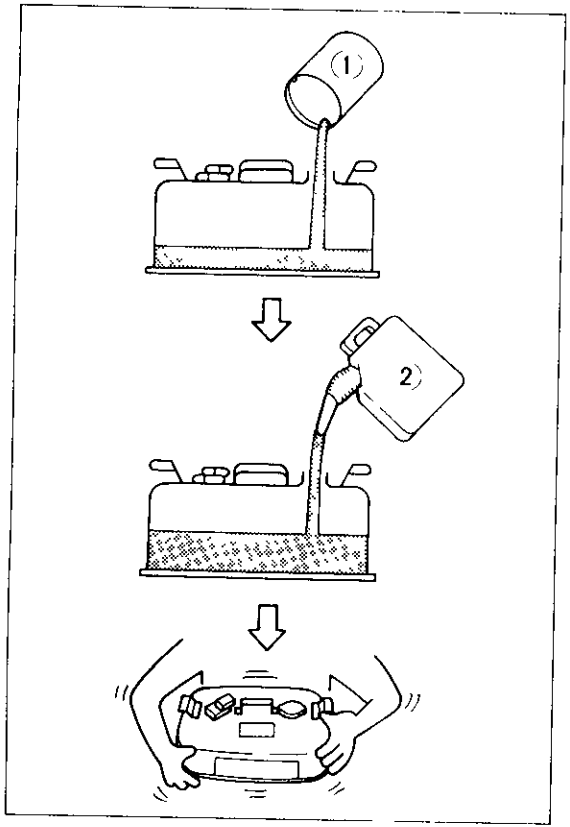
Fuel tank capacity 24 litres (6 34 US gal, 5 28 Imp gal)

CAUTION:

Use only new clean petrol which has been stored in clean containers and is not contaminated with water or foreign matter

ENGINE OIL

Recommended oil YAMAHA outboard motor oil
If YAMAHA outboard motor oil is not available, another 2-stroke engine oil with BIA certified TC-W may be used



MIXING RATIO

	Oil Petrol
Running-in period	1 25
After Running-in	1 100

1) Pour oil and petrol into the fuel tank, in that order

① Oil
② Petrol

2) Then mix the fuel thoroughly by shaking

CAUTION:

- **Avoid using any oil other than designated**
- **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

F 530S

RUNNING-IN PROCEDURE

Your new engine requires a period of running-in to allow mating surfaces of moving parts to wear-in evenly and thus ensure proper performance and longer engine life

Mixing ratio on first tankful

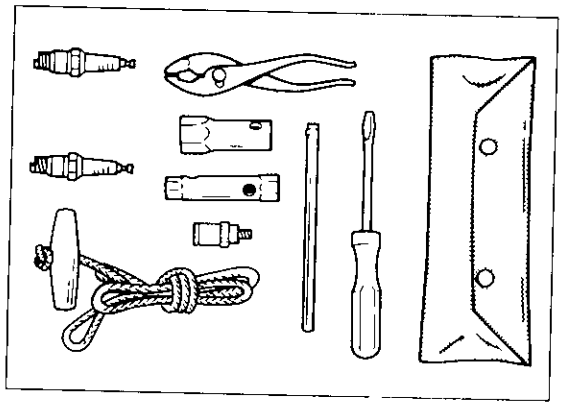
Oil/Petrol (gasoline) 1 25

Procedure

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

CAUTION:

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



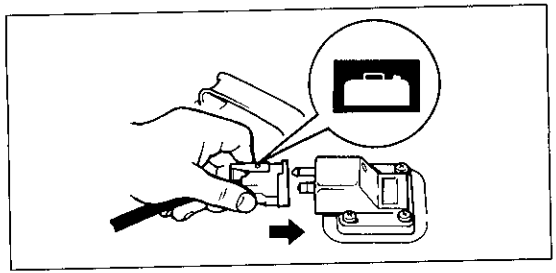
G 020S

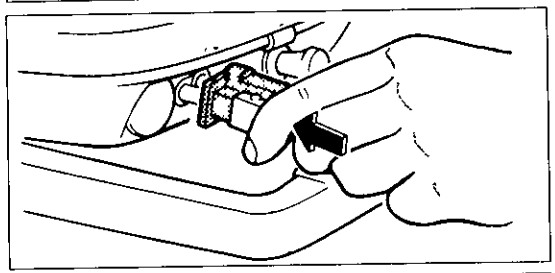
OPERATING INSTRUCTIONS

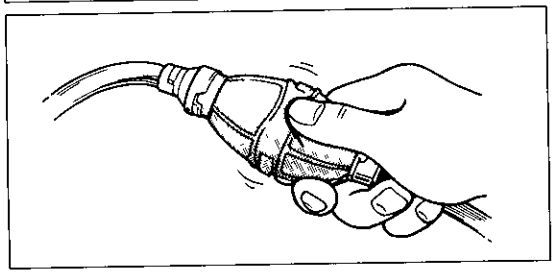
PRIOR TO OPERATION

CAUTION:

1 Check that there is sufficient fuel in the fuel tank
2 Place the fuel tank on a flat surface The fuel-line must be positioned so that it is not twisted or flattened, or likely to come into contact with sharp objects
3 Check that the necessary service tools and spare parts are on board
4 Do not start the engine out of water







STARTING PROCEDURE

WARNING:

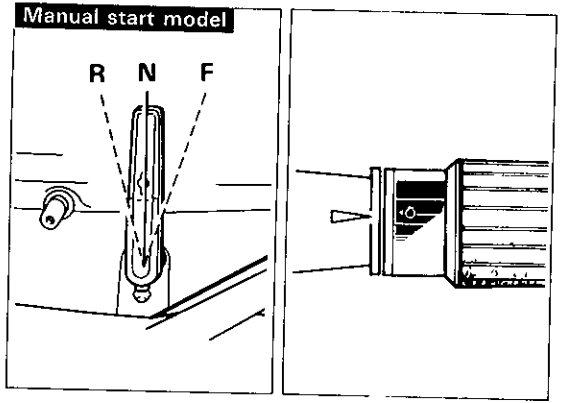
Before starting the engine, check that the boat is tightly moored to the jetty, and that it can be steered clear of any obstructions.

1) Connect the fuel-line joint to the motor, ensuring the connection is tight

WARNING:

When inserting the fuel joint into the fuel tank, petrol vapour will be released Petrol (gasoline) is highly flammable, and its vapours are flammable and explosive Refrain from smoking, and keep away from open flames and sparks while inserting the fuel joint

2) Squeeze the primer bulb until you feel it become firm



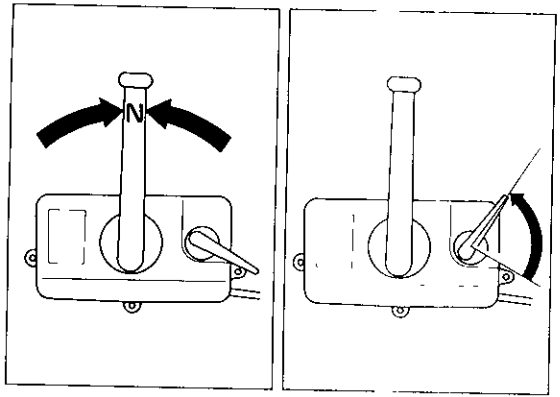
Manual start model

3-1) Place the gear-shift lever in the Neutral position

NOTE

The Start-in-gear Protection feature permits the engine to be started only when it is in Neutral gear

3-2) Place the throttle-grip in the START position



Electric start model

3-1) Place the Remote Control Lever in the Neutral position

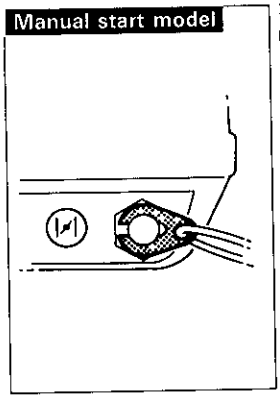
NOTE

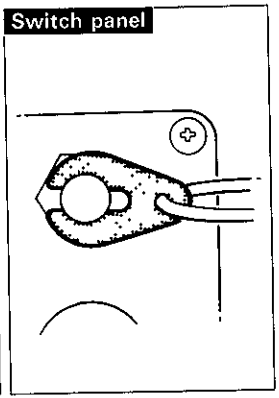
The Start-in-Gear Protection feature prevents the engine from starting except when in Neutral gear

3-2) Turn the neutral throttle lever on the remote control box upward (It is necessary to change the throttle opening slightly depending on the engine temperature.)

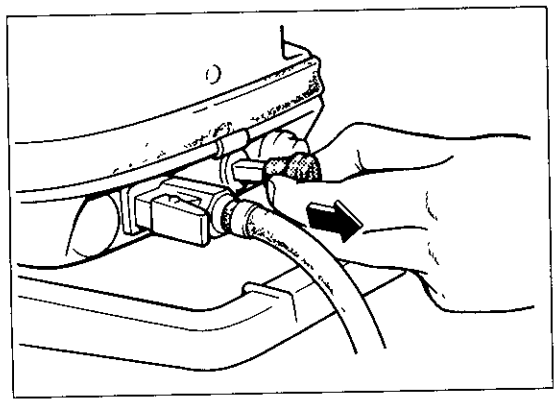
CAUTION:

The operation of the neutral throttle lever is possible only when the remote control lever is in "N"





4) Install the lock-plate firmly on the emergency stop switch, and tie the line attached to the lock-plate to your wrist

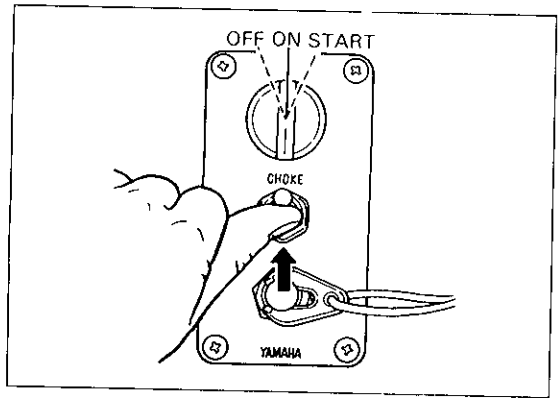


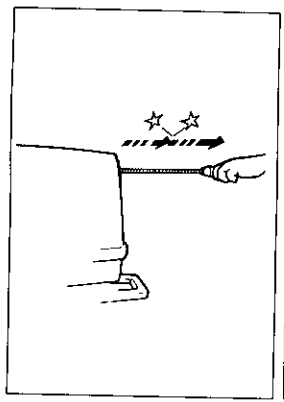
Manual start model

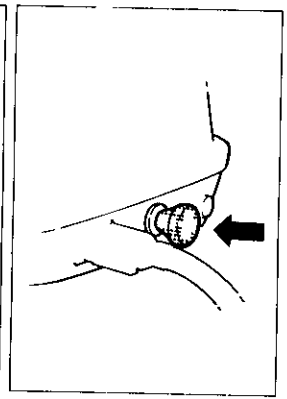
5) Pull out the choke knob completely

NOTE

When the engine is still warm just after a cruise, do not pull out the choke knob







Electric start model

5) Turn the main switch to "ON," and lift the choke switch lever upward (The remote choke switch lever returns to its home position when your hand is released from it Therefore, keep the lever pressed upward)

NOTE

- It is unnecessary to turn the choke switch lever upward while the engine is warm
- Set the manual choke to OFF, or the remote choke system will not operate

Manual start model

6) To start the engine, pull the starter-handle slowly until resistance is felt, then give a strong pull

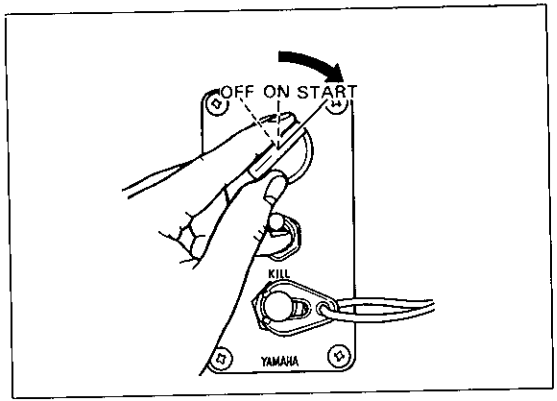
NOTE

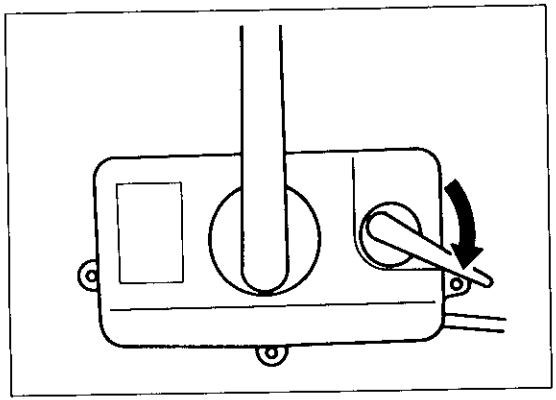
Should the engine fail to start on the first pull, repeat the above procedure several times In the event that the engine will not start, refer to the section on troubleshooting

7) After the engine starts, do not let go of the starter-handle, but return it slowly to its home position before releasing it
8) After using the choke, set the choke knob to the home position

NOTE

If the choke knob is left pulled out, the engine will stall



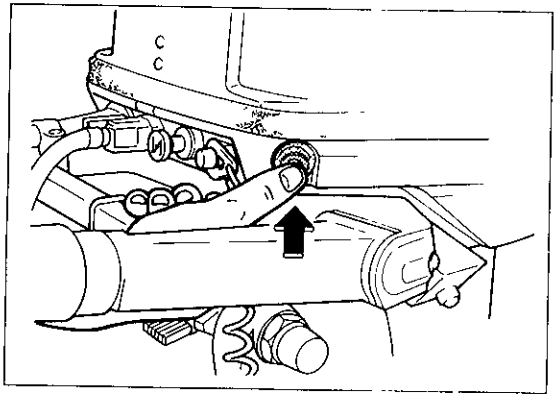


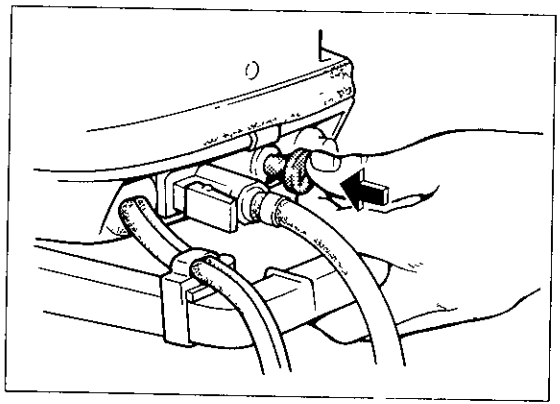
Electric start model

6) Turn the main switch to "START", and hold it turned for a maximum of five seconds
7) Immediately the engine starts, release the main switch to return it to "ON"
8) Return the neutral throttle lever slowly to its home position so that the engine does not stop

CAUTION:

1 Do not turn the main switch to "START" when the engine is running.
2. Do not keep the starter-motor turning for more than five seconds with the main switch in the "START" position. If the engine does not start within five seconds, return the main switch to "ON", wait ten seconds, and then crank the engine again (If the starter-motor is run continuously for more than five seconds, the battery will rapidly become exhausted and it will be impossible for it to start the engine)





Electric start (Manual control) model

6) Push the starting switch, and the starting motor will start
7) After making sure the engine has started, release your hand from the starting switch immediately The starting switch returns to its home position automatically

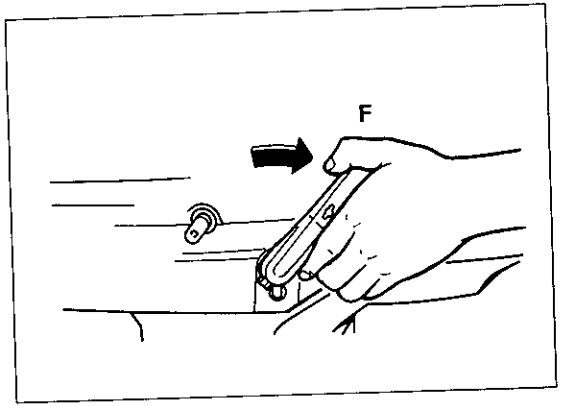
CAUTION:

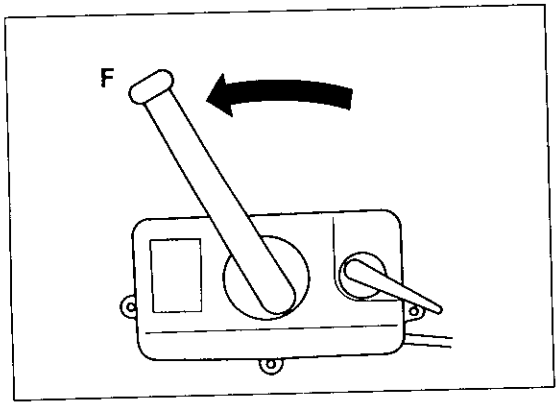
1 **Never push the starting switch while the engine is running**
2 **Do not keep the starting motor turning for more than 5 seconds If the engine will not start after 5 seconds of cranking, release your hand from the starting switch, and crank the engine again after an interval of 10 seconds If the starting motor is turned continuously for more than 5 seconds, the battery will be quickly discharged, thus making it impossible to start the engine.**

8) After using the choke, set the choke knob to the home position

NOTE

If the cheke knob is left pulled out, the engine will stall





H-001S

GEARS - SELECTING FORWARD AND REVERSE

WARNING:

Should the engine collide with an underwater obstruction, check the gear case and brackets for damage

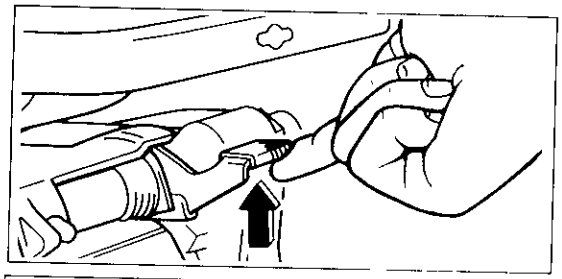
To select forward gear

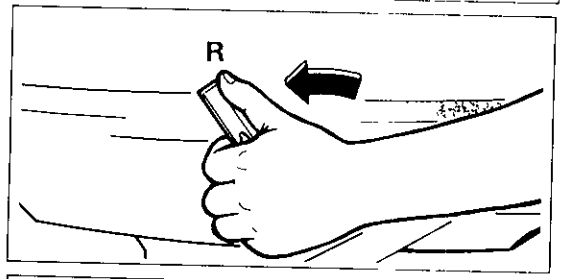
Manual control model

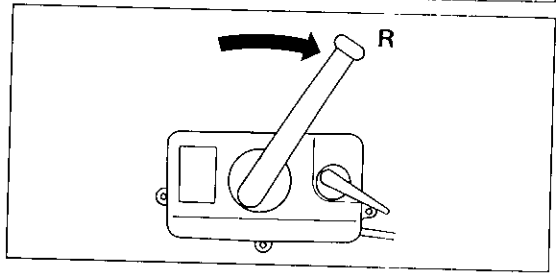
Turn the gear-shift lever quickly and firmly from the Neutral position to the Forward position

Remote control model

Turn the remote control lever from Neutral position to the forward position quickly and firmly







To select reverse gear

1) Check that the tilt-lock lever is in the locked positon

WARNING:

When operating in reverse it is essential that the tilt-lock lever is in the locked position to prevent the motor lifting out of the water and causing loss of control which could cause injury to the occupants of the boat

Manual control model

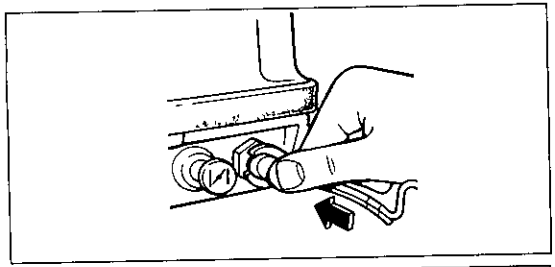
2) Turn the gear-shift lever quickly and firmly from the Neutral position to the Reverse position

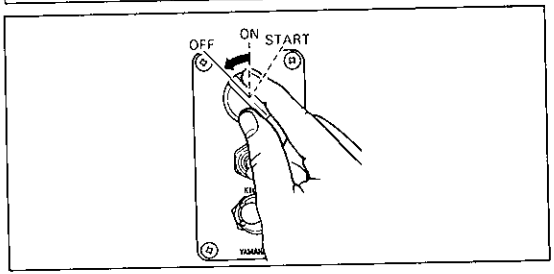
CAUTION:

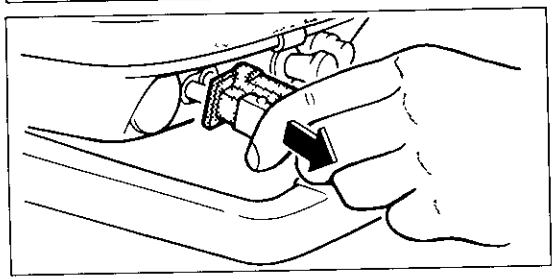
To change the boat direction from forward to reverse or vice versa, close the throttle first so that the engine idles (or runs at low speeds)

Remote control model

2) Turn the remote control lever quickly and firmly from the Neutral position to the Reverse position







H-310S

STOPPING

CAUTION:

Before stopping the engine, reduce the engine temperature by running it at idling speed or low speed for two to three minutes

Manual control model

1) Push the emergency stop switch to stop the engine

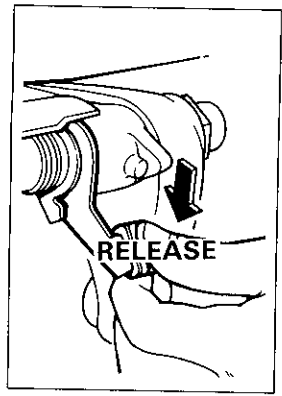
Remote control model

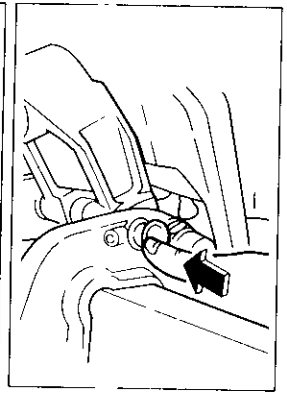
1) Turn the main switch to OFF

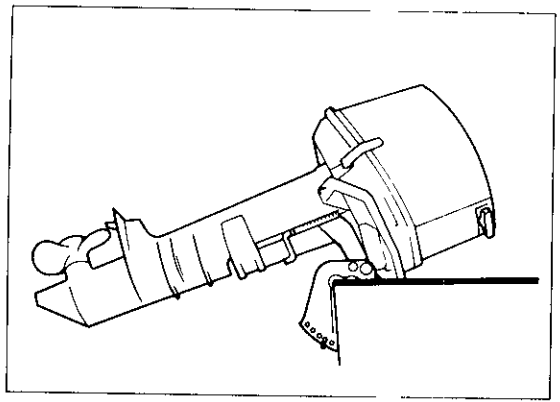
WARNING:

The engine cannot be stopped by disconnecting the wiring-harness Furthermore, when the wiring-harness has been disconnected, the engine cannot be stopped by turning off the main switch or by pulling out the emergency-switch lock-plate. Therefore it is essential to keep the wiring-harness connected during operation

2) After stopping the engine, remove the fuel-line connection from the motor







H 800S

TILT-UP

If the engine will be stopped for some time, or if the boat is moored in shallows, the engine should be tilted up to protect the propeller and casing from damage by collision with obstructions, and also to reduce salt corrosion

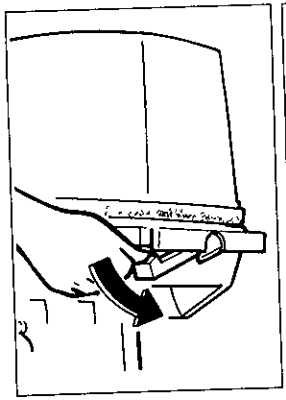
CAUTION:

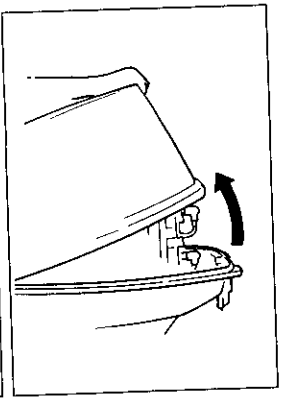
1 Do not tilt-up the engine by pushing the steering-handle as this could break the handle
2 Keep the power unit higher than the propeller at all times to prevent water running into the cylinder and damaging it

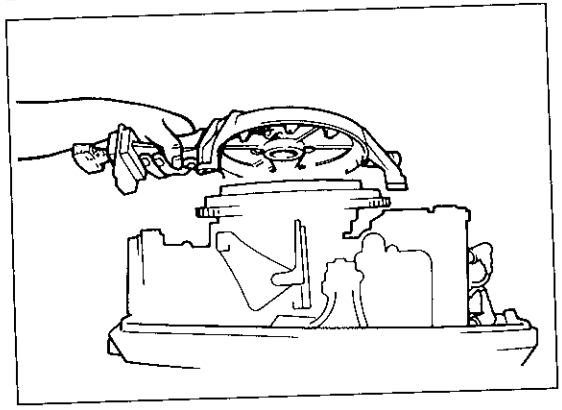
1) Push the tilt-lock lever down to the release position
2) Hold the rear of the top cowling with one hand, tilt the engine up, and lock the tilt-support knob to the swivel bracket with the other hand
3) Remove the fuel-line connection from the motor

WARNING:

To prevent fuel leaking out, it is important to disconnect the fuel-line if the engine is to be tilted up for more than a few minutes







I-050S

EMERGENCY STARTING PROCEDURES

If the starter does not operate, the engine may be started with an emergency starter rope

WARNING:

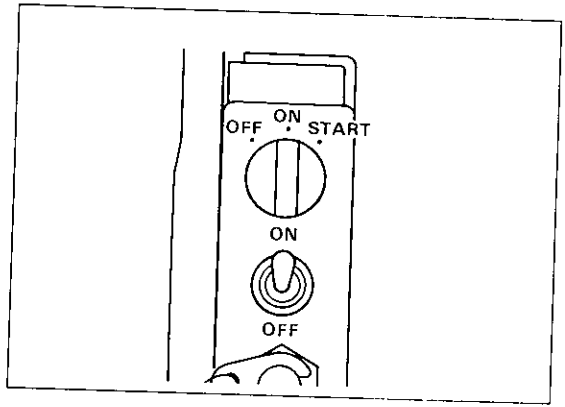
When the emergency starter rope is used to start the engine, the start-in-gear protection device does not operate. Check always, therefore, that the transmission is in neutral, otherwise the boat may lurch forwards or backwards when it starts, with a risk of damage to itself or injury to its occupants

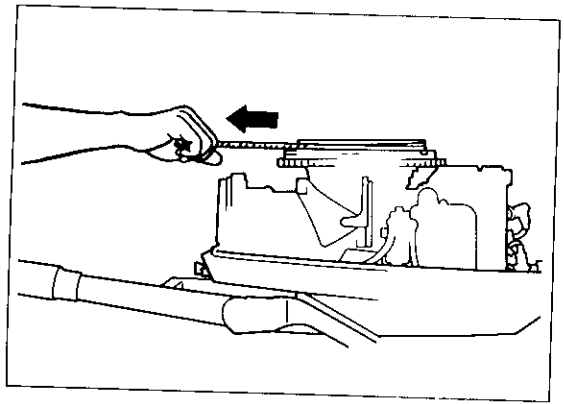
Procedure

1) To remove the cowling depress the lock-lever at the rear of the cowling, and lift the cowling up and backwards
2) Remove the starter by removing the three bolts securing the rewind mechanism to the flywheel

NOTE

On a model equipped with the start-in-gear protection device, disconnect the cable from the starter





Remote control model

3) Turn the main switch to ON

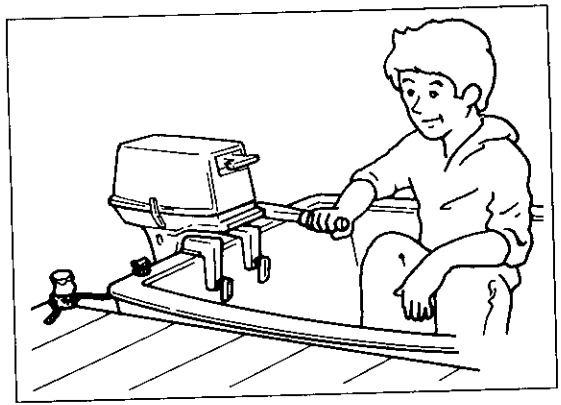
NOTE

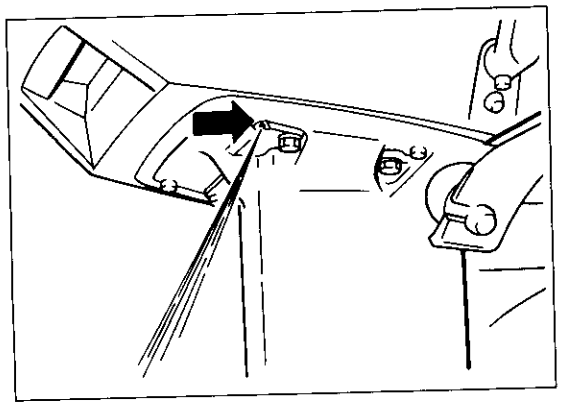
Without setting the main switch to ON, it is impossible to start the engine

4) To start the engine with the emergency starter rope ensuring that loose clothing and other objects are kept well away from the engine, insert the knotted end of the rope into the notch in the flywheel rotor, wind the rope one or two turns clockwise, then pull to start Repeat if necessary

WARNING:

When starting or operating the engine, do not touch the ignition-coil, high-voltage wire, spark-plug cap or other electrical parts carrying high voltage
Keep loose clothing and other objects away from the engine when starting it with an emergency starter rope. An unguarded rotating flywheel is very dangerous Do not attempt to replace the top cowling when the engine is running. Proceed at once to the nearest port to get the engine repaired Take care to prevent water splashing onto the flywheel





I-300S

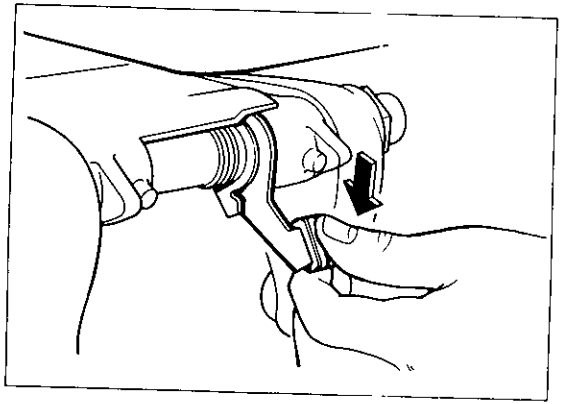
ENGINE WARM-UP

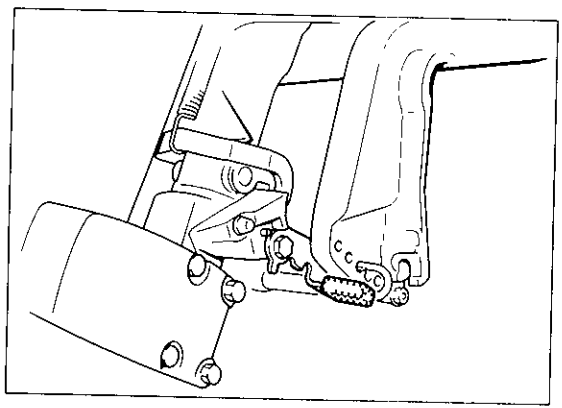
1 Before beginning operation, allow the engine to warm up at idling speed for three minutes (Failure to do this will shorten the engine life)

2 Check that water runs from the cooling-water pilot-holes

CAUTION:

A continuous flow of water from the cooling-water pilot-holes is necessary to prevent overheating and serious damage to the engine. If water does not flow from the pilot-holes during running, stop the engine and check to see if the water-inlet on the lower casing is blocked. Clear any blockage; otherwise take the engine to your nearest Yamaha dealer.





SHALLOW WATER CRUISING

WARNING:

In shallows, run the boat at the possible speed The tilt-lock mechanism 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 the tilt-lock lever down to the release position

2) Slightly tilt up the engine and pull the shallow water lever toward you

NOTE

If the engine is tilted up completely, the tilt-lock lever automatically returns from the release to the lock position and thus the shallow water lever becomes ineffective

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

J 020S

TRANSPORTATION AND STORAGE

OUTBOARD MOTOR

To transport or store the outboard motor, follow this procedure

1 Using fresh water, flush the cooling-water passages and wash the motor body (Refer to "Cleaning the Outboard Motor")
2 Remove the fuel-line connections from the motor
3 Run the engine at idling speed until the carburetor is empty
4 Completely drain the water out of the outboard motor, and thoroughly clean the body
5 Remove the spark-plug, pour a teaspoonful of clean engine-oil into the cylinder, and replace the spark-plug

CAUTION:

1 Do not place the engine on its side before the cooling water has drained from it completely, or water may enter the cylinder through the exhaust port and cause problems
2 Store the engine in a dry, well-ventilated place, not in direct sunlight

J-100S

FUEL TANK

Store the fuel tank in a dry, well-ventilated place, not in direct sunlight

WARNING:

For a long period of storage, drain the fuel from the tank.

Electric start model

J-200S

BATTERY

1 Disconnect both battery leads from the battery, disconnecting the BLACK lead from the NEGATIVE (−) terminal first
2 Store the battery on a level surface in a dry, cool, well-ventilated place, out of direct sunshine
3 During long periods of storage, check the specific gravity of the electrolyte at least once a month, and keep the battery in a state of good charge by recharging periodically

NOTE:

Follow the battery manufacturer's instructions

ADJUSTMENT AND MAINTENANCE

PERIODIC INSPECTION CHART

Frequency of maintenance operations may be adjusted according to the operating conditions, but the following table gives general guidelines

The mark (●) indicates the check-ups which may be done by yourself
The mark (○) indicates work to be carried out by your Yamaha dealer

Item \ Maintenance interval		Initial			Thereafter every	
		10 hours	50 hours 3 months	100 hours 6 months	100 hours 6 months	200 hours 12 months
Spark-plug	Cleaning/Adjustment	●	●	●	●	
Greasing points	Greasing			●	●	
Gearbox oil	Change	●		●	●	
Fuel system	Inspection			●	●	
Fuel filter	Cleaning	●	●	●	●	
Fuel tank	Cleaning					●
Idling speed	Adjustment			●	●	
Anode	Inspection/Replacement			●	●	
Outboard motor body	Inspection		●	●	●	
Cooling-water passages	Cleaning		●	●	●	
Propeller	Inspection		●	●	●	

Item \ Maintenance interval		Initial			Thereafter every	
		10 hours	50 hours 3 months	100 hours 6 months	100 hours 6 months	200 hours 12 months
Cotter-pin	Inspection/Replacement		●	●	●	
Battery fluid	Inspection/Refilling	● (every 1 month)				
Carburetor setting	Inspection/Adjustment	○		○	○	
Ignition timing	Inspection/Adjustment	○		○	○	
Bolts and nuts	Retightening	○		○	○	

SPARK PLUG - CLEANING AND ADJUSTMENT

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 centre 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 **20C/25D** NGK B-7HS
25G 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
20C/25D 0 5~0 6 mm (0 020~0 024 in)
25G 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

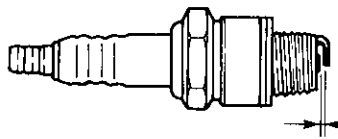
Spark plug torque
20 Nm (2 0 m•kg, 14 ft•lb)

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

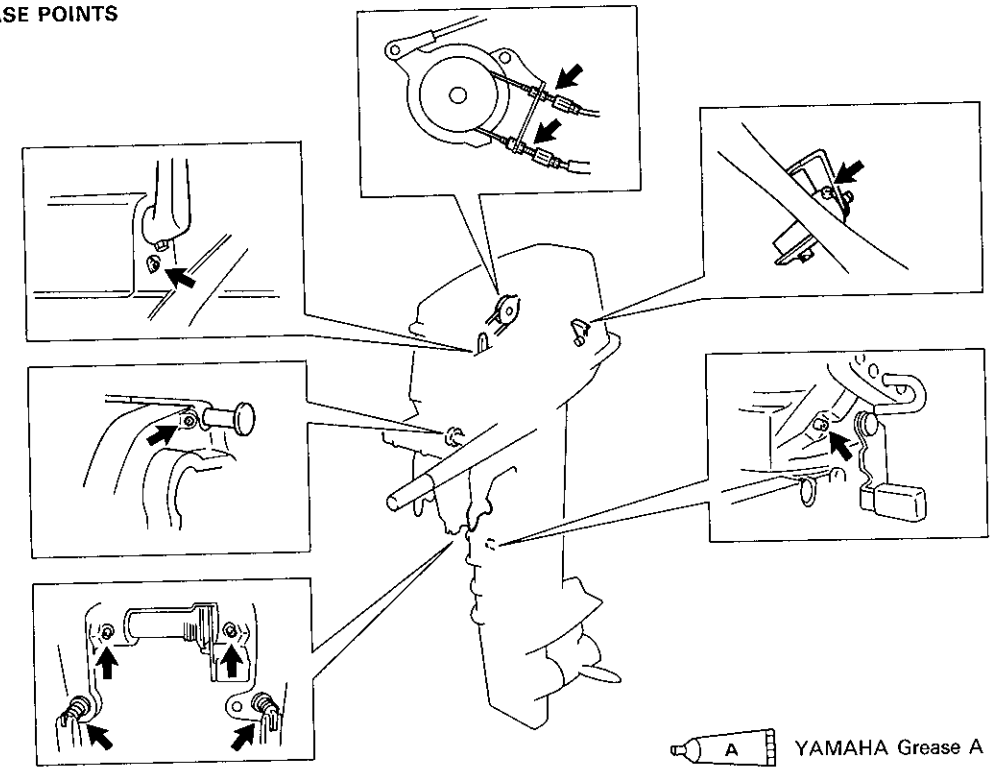


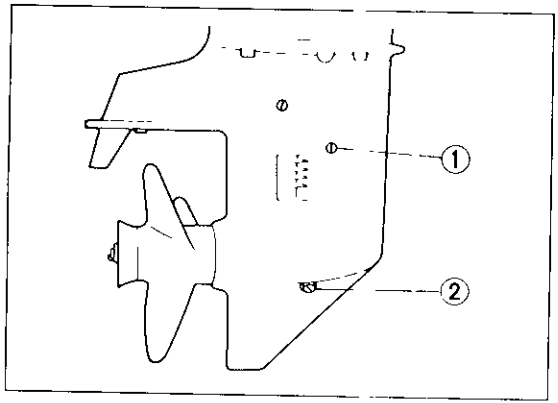
NGK
B-7HS
B-7HS10

0 5~0 6 mm
(0 020~0 024 in)
0 9~1 0 mm
(0 035~0 039 in)

A-600S

GREASE POINTS





K-400S*

GEARBOX-OIL CHANGE

1) Place a suitable container under the gearbox
2) Remove the oil drain-plug
3) Remove the oil-level plug to allow the oil to drain completely
4) With the outboard motor in an upright position, using a flexible or pressurised filling device, inject outboard motor hypoid gearbox-oil (SAE 90) into the oil drain-plug hole

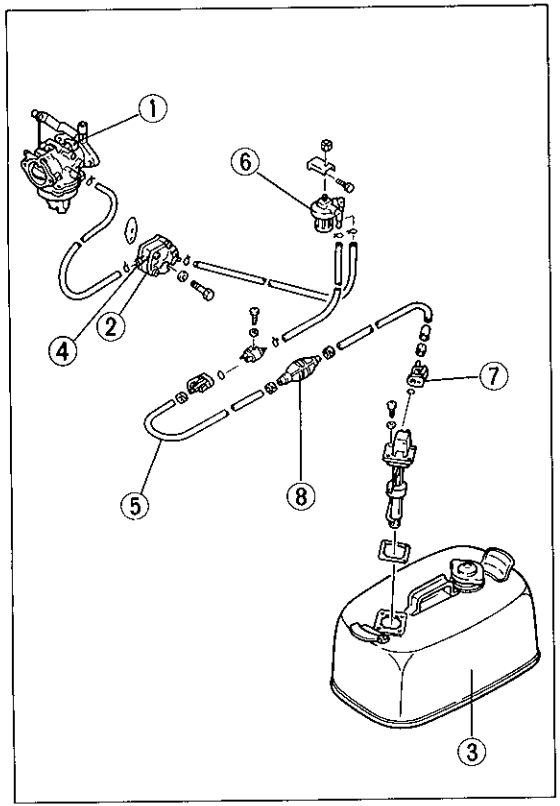
Gearbox-oil capacity
180 cm^3 (6 08 US oz, 6 34 Imp oz)

① Oil-level plug
② Oil drain-plug

5) When oil begins to flow out of the oil-level plug hole, insert and tighten the oil-level plug
6) Screw in the oil drain-plug

CAUTION:

Replace the gearbox-oil after the first 10 hours of operation, and thereafter every 100 hours or at 6-monthly intervals. If the gearbox-oil becomes "milky," consult a Yamaha dealer



FUEL SYSTEM INSPECTION

WARNING:

Petrol (gasoline) is highly inflammable and explosive
Handle with special care

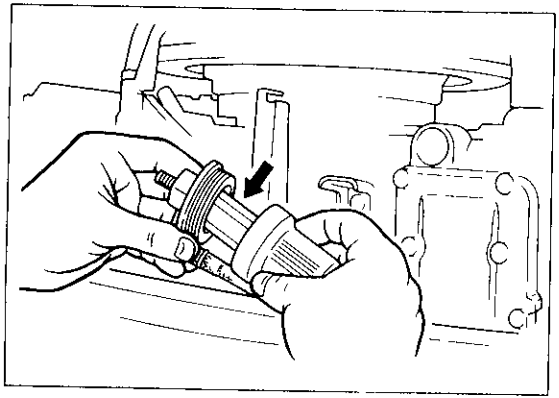
Check the fuel system for leaks, cracks, or malfunctions If any problem is found, do the necessary repair or replacement as required If no cause can be found, consult your nearest Yamaha dealer

Checking points

1 Carburetor leakage
2 Fuel pump malfunction or leakage
3 Fuel tank leakage
4. Fuel hose joint leakage
5 Fuel hose cracks or other damage
6 Fuel filter leakage
7 Fuel connector leakage
8 Primer bulb leakage or damage

WARNING:

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



K 600S

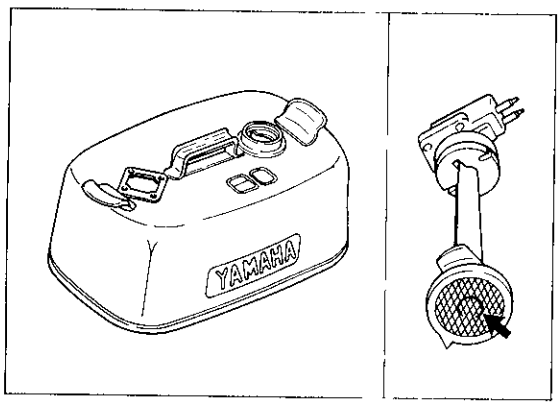
FUEL FILTER

To clean the fuel filter

Remove the fuel hoses and wash the filter in suitable cleaning solvent If compressed air is available, blow dry the filter

WARNING:

Stop the engine before cleaning the fuel filter and remember the fire hazard associated with petrol (gasoline) Do not smoke, and keep away from open flames or sparks



K 700S

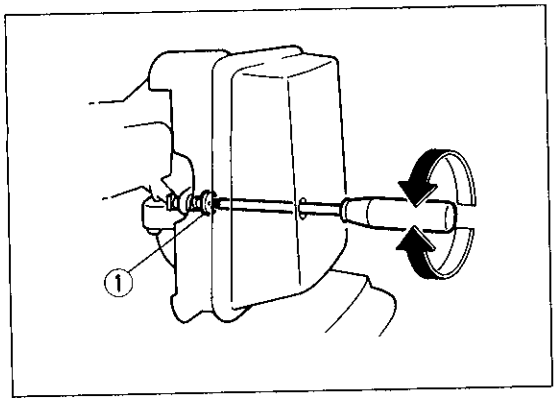
FUEL TANK

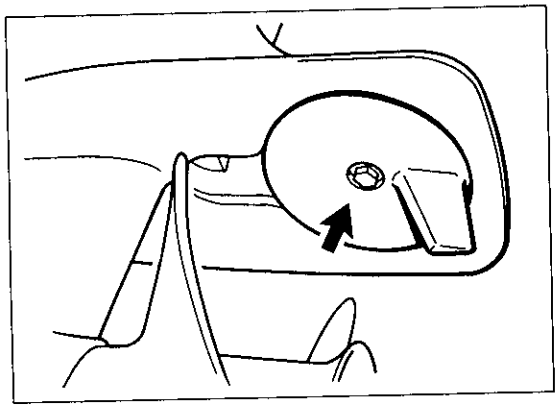
To clean the fuel tank

1 Empty the tank of fuel, pour in a small quantity of suitable cleaning solvent, and clean the tank thoroughly by shaking it
2 After cleaning, drain off the cleaning solvent completely

To clean the tank filter

1 Thoroughly clean the filter (located on the end of the suction pipe) in a suitable cleaning solvent
2 If compressed air is available, blow-dry the filter





K 800S

IDLING SPEED ADJUSTMENT

Procedure

1) Start the engine and allow it to warm up fully by running in neutral, and check that it is running smoothly
2) Adjust the throttle stop-screw to set the idling speed to specification (see "SPECIFICATIONS") by turning the stop-screw clockwise to increase the idling speed, and turning it anti-clockwise to decrease the idling speed

NOTE:

Correct idling-speed adjustment is only possible if the engine is fully warmed up. If not warmed up fully, the speed setting will tend to be too high

① Throttle stop-screw

L-200S

ANODE INSPECTION AND REPLACEMENT

The gear case is protected from corrosion by a sacrificial anode

Check the anode periodically, and if it is eroded by more than two-thirds, replace it

CAUTION:

Do not paint the anode, for this would render it ineffective

CLEANING THE OUTBOARD MOTOR

After use, wash the body of the outboard motor and flush the cooling-water passages with fresh water to remove mud, salt, seaweed etc which could clog or corrode the passages and thereby shorten engine life

To clean cooling-water passages

a Install the outboard motor on the water tank, and fill the tank with fresh water to above the level of the anti-cavitation plate
Shift into neutral gear, start the engine, and run at low speed for a few minutes

CAUTION:

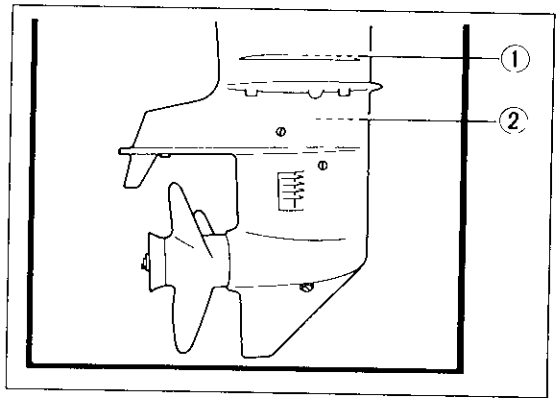
If the fresh water level is below the level of the anti-cavitation plate, or if the water supply is insufficient, engine seizure may occur

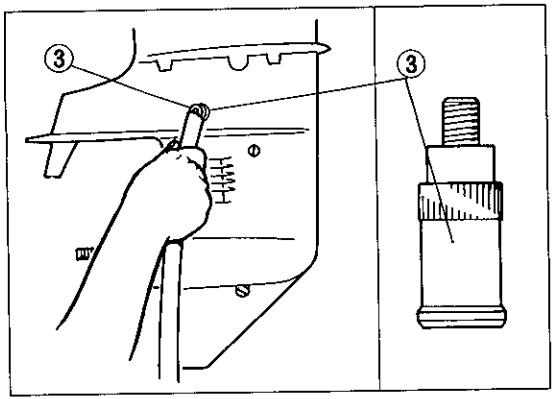
① Water surface
② Lowest water level

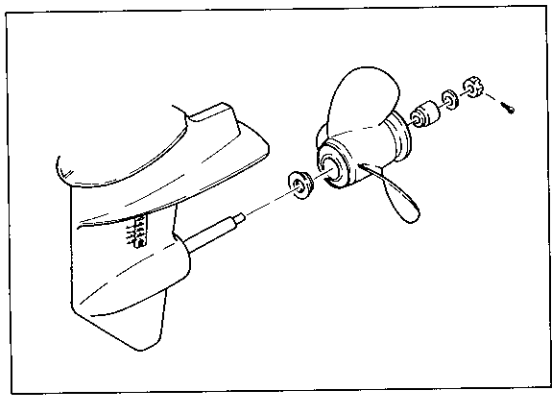
b Remove the screw located beside the "WASH" mark on the lower casing, install the water check plug, and connect it to a fresh-water tap
Check that the engine is in neutral, turn on the water supply through the water check plug, start the engine and run it at low speed for a few minutes

CAUTION:

Do not operate the engine - even momentarily - without running the cooling water, for either the engine water-pump will be damaged or the engine will overheat and be damaged Before starting the engine, check that the water check plug is intalled and that the water feed is operating







WARNING:

Remove the propeller for safety when using the water check plug.

③ Water check plug

L 400S

BATTERY CARE

A poorly-maintained battery will quickly deteriorate

1 Check the electrolyte level at least once a month, and maintain the electrolyte level between the upper and lower level marks by topping-up only with distilled water (or pure de-ionised water suitable for use in batteries)

CAUTION:

Ordinary tap-water contains minerals harmful to a battery, and should not be used for topping-up

2 Keep the battery always in a good state of charge The fitting of a voltmeter is recommended as an aid to good maintenance

N-100S

SUBMERGED MOTOR

The engine will be very seriously affected if submerged, and an engine which has been submerged should be taken to a Yamaha dealer for servicing as soon as possible If this cannot be done quickly, carry out the following First Aid measures

1 Thoroughly wash away, mud, salt, seaweed etc with fresh water
2 Remove the spark-plug, and crank the engine several times with the spark-plug hole facing downwards to drain water out of the engine and carburetor
3 Feed the engine-oil into the motor through the spark-plug hole and carburetor while turning the engine over repeatedly by operating the manual starter so that oil spreads out over the surfaces of the inner parts of the engine
4 Refit the spark-plug

TROUBLESHOOTING

Problems with your outboard motor can largely be prevented by regular preventive maintenance Many problems arise from careless handling and abuse The following table lists some common difficulties and their possible causes Should you still have difficulties after investigating these, please contact your Yamaha dealer

A The engine will not start
B The engine runs irregularly or stalls
C The engine idles unevenly
D Engine speed will not increase
E The engine is overheating
F Engine speed is higher than normal
G Engine speed is lower than normal
H Boat speed is low

A	B	C	D	E	F	G	H	Possible Cause
○	○							Fuel tank is empty
○	○		○					Fuel hose is incorrectly connected
○	○	○	○			○		Fuel hose is flattened or kinked
	○	○	○			○		Fuel filter is clogged
○								Fuel pump is malfunctioning
○	○	○				○		Fuel is contaminated or stale
○	○							Incorrect starting procedure
	○			○				Specified engine oil has not been used
○	○	○	○			○		Spark-plug is fouled or defective
○	○	○		○		○		Spark-plug is in incorrect heat range
	○	○				○		Incorrect spark-plug gap

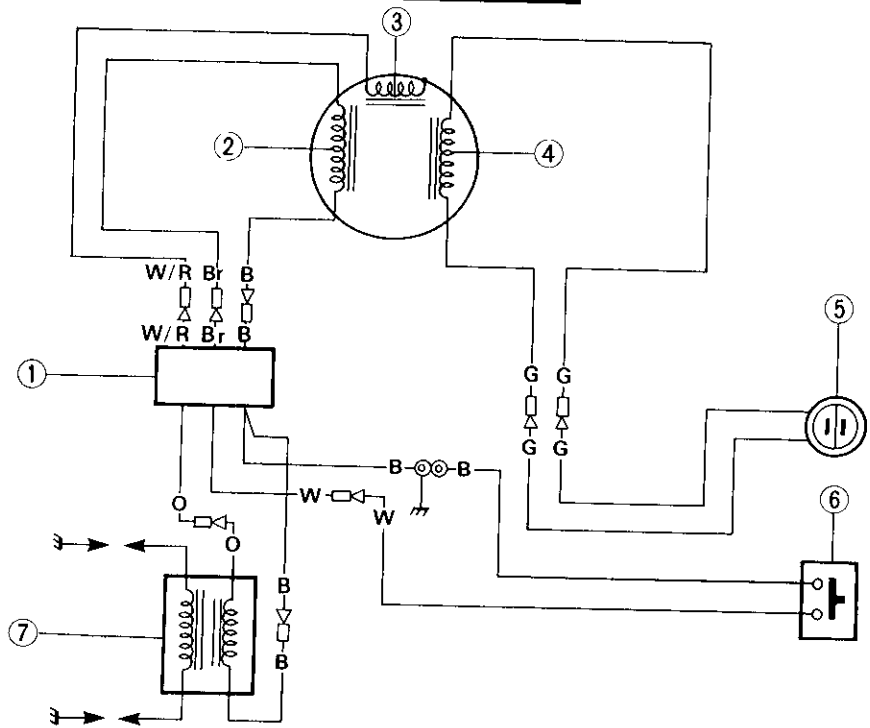
A	B	C	D	E	F	G	H	Possible Cause
○								Spark-plug cap incorrectly fitted
○								Wiring or electrical connections faulty
○								CDI unit is malfunctioning.
○								Ignition-coil is malfunctioning
				○				Clogged water passages.
				○				Faulty water pump
	○			○				Thermostat clogged or faulty
					○		○	Cavitation is occuring
					○		○	Propeller is damaged
			○		○	○	○	Propeller is incorrect pitch or diameter
					○		○	Incorrect trim-angle
			○	○			○	Load on boat is improperly distributed
							○	Transom is too low.
					○		○	Transom is too high
○								Starter motor is faulty
○								Switch is faulty
○								Battery is undercharged

WIRING DIAGRAM

20CM/25DM/25GM

P 001S

B	Black
Br	Brown
G	Green
Gy	Grey
L	Blue
O	Orange
P	Pink
R	Red
Sb	Sky-blue
W	White
Y	Yellow
Lg	Light-green



① CDI unit

② Charge-coil

③ Pulser-coil

④ Lighting coil

20CM/25DM

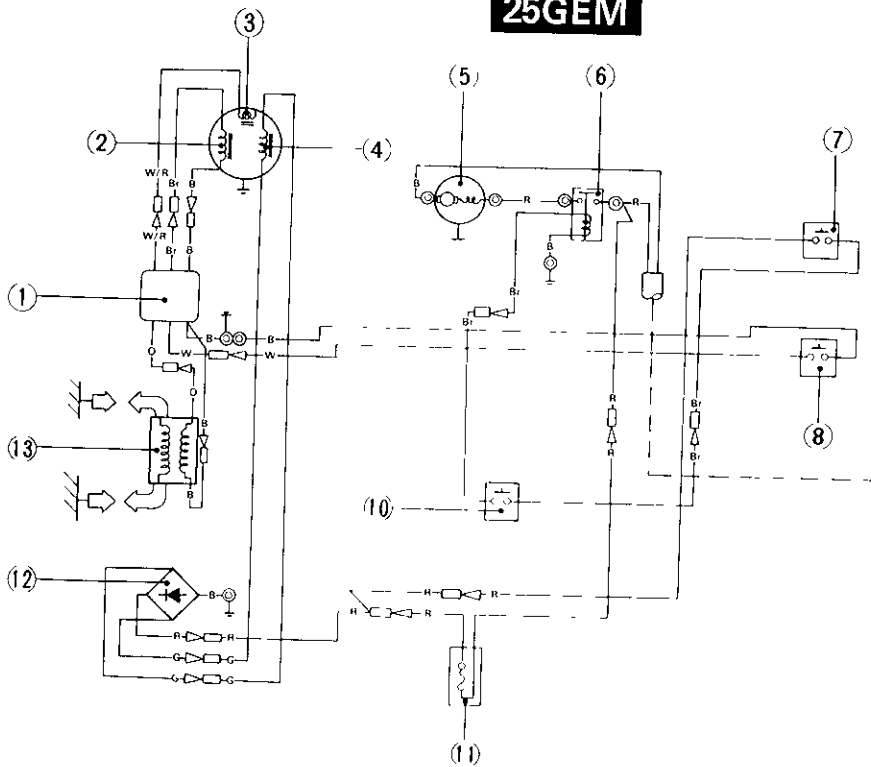
⑤ 2P connector

⑥ Emergency stop switch

⑦ Ignition-coil

25GEM

P-001S



B	Black
Br	Brown
G	Green
Gy	Grey
L	Blue
O	Orange
P	Pink
R	Red
Sb	Sky-blue
W	White
Y	Yellow
Lg	Light-green

① CDI unit

② Charge-coil

③ Pulser-coil

④ Lighting coil

⑤ Starting motor

⑥ Starter relay

⑦ Starter-switch

⑧ Emergency stop switch

⑨ Battery

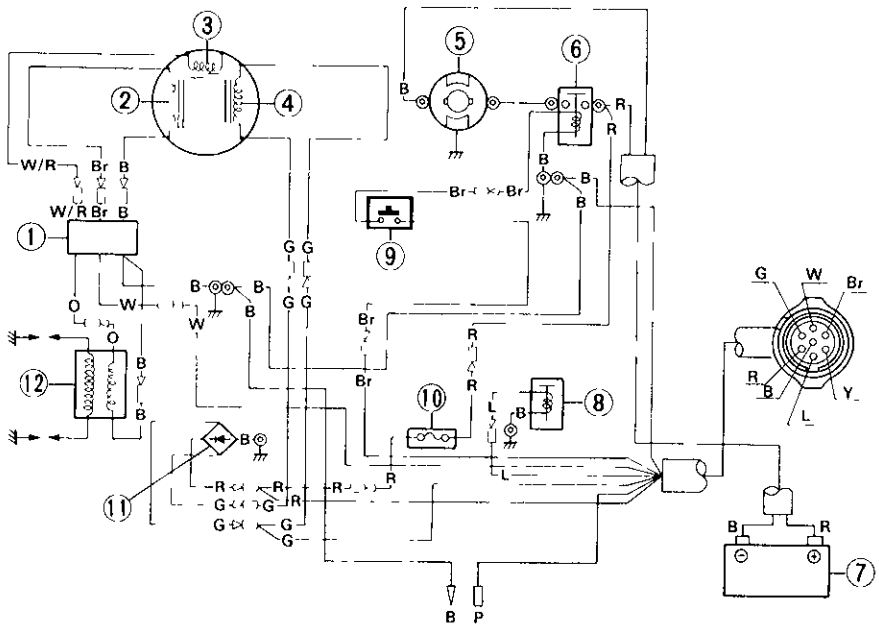
⑩ Neutral switch

⑪ Fuse (20A)

⑫ Rectifier

⑬ Ignition-coil

20CE/25DE



P 001S

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Br	Brown
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L	Blue
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P	Pink
R	Red
Sb	Sky-blue
W	White
Y	Yellow
Lg	Light-green

① CDI unit

② Charge coil

③ Pulser coil

④ Lighting coil

⑤ Starting motor

⑥ Starter relay

⑦ Battery

⑧ Choke solenoide

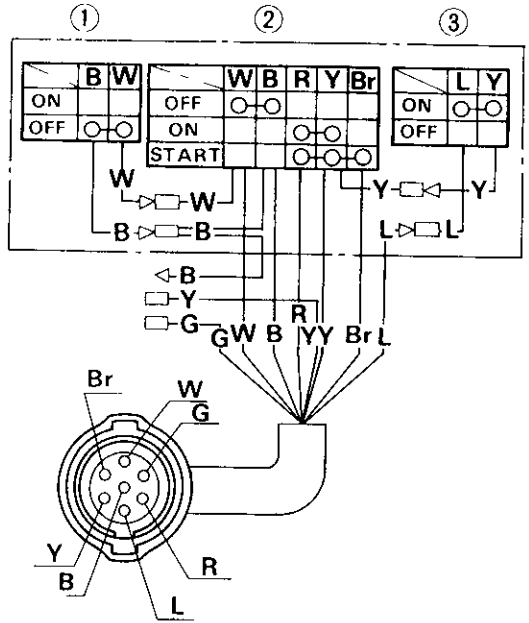
⑨ Neutral switch

⑩ Fuse (20A)

⑪ Rectifier

⑫ Ignition coil

Switch panel



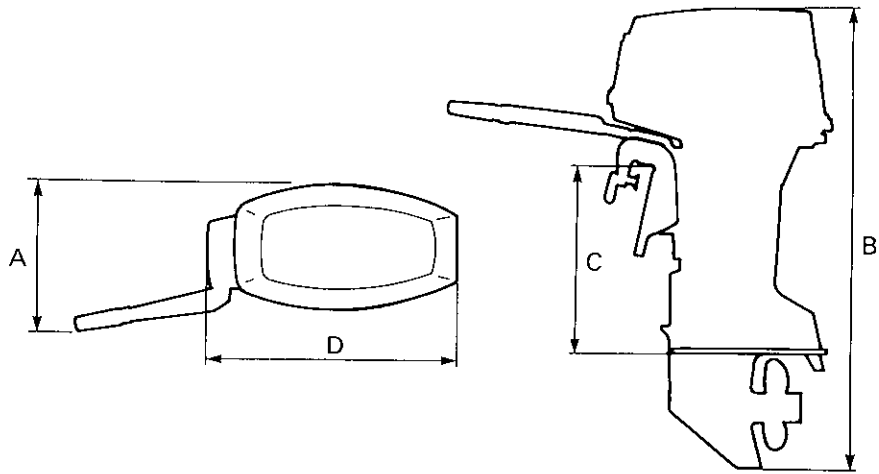
P-001S

B	Black
Br	Brown
G	Green
Gy	Grey
L	Blue
O	Orange
P	Pink
R	Red
Sb	Sky-blue
W	White
Y	Yellow
Lg	Light-green

① Emergency stop switch

② Main switch

③ Choke switch


A
D
C
B

SPECIFICATIONS

Item \ Model	Unit	20CM	20CE
DIMENSIONS			
•Overall width "A"	mm (in)	360 (14 2)	360 (14.2)
•Overall height "B"	mm (in)	S 1,105 (43 5) L 1,232 (48 5)	S 1,105 (43 5) L 1,232 (48 5)
•Transom height "C"	mm (in)	S 419 (16 5) L 546 (21 5)	S 419 (16 5) L 546 (21 5)
•Overall length "D"	mm (in)	600 (23 6)	600 (23 6)
•Weight	kg (lb)	S 48 (105.6) L 49 5 (108.9)	S 52 5 (115 5) L 54 (118 8)
PERFORMANCE			
•Full throttle operating range	revs/min (rpm)	4,500 ~ 5,500	4,500 ~ 5,500
•Maximum output	kW (HP)/at rpm	14 7 (20)/5,000	14 7 (20)/5,000
•Idling speed	revs/min (rpm)	900 ~ 1,000	900 ~ 1,000
ENGINE			
•Type		Two stroke	Two stroke
•Number of cylinder		2	2
•Bore and stroke	mm (in)	67 × 61 (2 64 × 2 40)	67 × 61 (2 64 × 2 40)
•Piston displacement	cm^3 (cu in)	430 (26 24)	430 (26 24)
•Cooling system		Water cooling	Water cooling
•Ignition system		CDI system	CDI system
•Spark-plug	NGK	B-7HS	B-7HS
•Spark-plug gap	mm (in)	0 5 ~ 0 6 (0 020 ~ 0 024)	0 5 ~ 0 6 (0.020 ~ 0 024)

Item \ Model	Unit	20CM	20CE
DRIVE UNIT			
•Gear positions •Gear ratio		Forward-Neutral-Reverse 1 85 (24/13)	Forward-Neutral-Reverse 1 85 (24/13)
FUEL AND OIL			
•Fuel •Fuel tank capacity •Recommended engine-oil •Recommended gearbox-oil •Gear oil capacity	L (US gal, Imp gal) cm^3 (US oz, Imp oz)	Regular-grade petrol (Gasoline) 24 (6 3, 5 3) Yamaha outboard motor oil Outboard motor hypoid gearbox oil (SAE 90) 180 (6 08, 6 34)	Regular-grade petrol (Gasoline) 24 (6 3, 5 3) Yamaha outboard motor oil Outboard motor hypoid gearbox oil (SAE 90) 180 (6 08, 6 34)

SPECIFICATIONS

Item \ Model	Unit	25DM	25DE
DIMENSIONS			
•Overall width "A" •Overall height "B" •Transom height "C" •Overall length "D" •Weight	mm (in) mm (in) mm (in) mm (in) kg (lb)	360 (14.2) S 1,105 (43 5) L 1,232 (48 5) S 419 (16 5) L 546 (21 5) 600 (23.6) S. 48 (105 6) L 49 5 (108 9)	360 (14 2) S. 1,105 (43 5) L 1,232 (48 5) S 419 (16 5) L 546 (21 5) 600 (23 6) S 52 5 (115 5) L 54 (118 8)
PERFORMANCE			
•Full throttle operating range •Maximum output •Idling speed	revs/min (rpm) kW (HP)/at rpm revs/min (rpm)	4,500~5,500 18 4 (25.0)/5,500 1,150~1,250	4,500~5,500 18 4 (25 0)/5,500 1,150~1,250
ENGINE			
•Type •Number of cylinder •Bore and stroke •Piston displacement •Cooling system •Ignition system •Spark-plug •Spark-plug gap	 mm (in) cm^3 (cu in) NGK mm (in)	Two stroke 2 67×61 (2 64×2 40) 430 (26 24) Water cooling CDI system B-7HS 0 5~0.6 (0 020~0 024)	Two stroke 2 67×61 (2 64×2 40) 430 (26 24) Water cooling CDI system B-7HS 0 5~0 6 (0 020~0 024)

Item \ Model	Unit	25DM	25DE
DRIVE UNIT			
•Gear positions •Gear ratio		Forward-Neutral-Reverse 1.85 (24/13)	Forward-Neutral-Reverse 1.85 (24/13)
FUEL AND OIL			
•Fuel •Fuel tank capacity •Recommended engine-oil •Recommended gearbox-oil	L (US gal, Imp gal)	Regular-grade petrol (Gasoline) 24 (6.3, 5.3) Yamaha outboard motor oil Outboard motor hypoid gearbox oil (SAE 90)	Regular-grade petrol (Gasoline) 24 (6.3, 5.3) Yamaha outboard motor oil Outboard motor hypoid gearbox oil (SAE 90)
•Gear oil capacity	cm^3 (US oz, Imp oz)	180 (6.08, 6.34)	180 (6.08, 6.34)

SPECIFICATIONS

Item \ Model	Unit	25GM	25GEM
DIMENSIONS			
•Overall width "A"	mm (in.)	360 (14 2)	360 (14.2)
•Overall height "B"	mm (in.)	S: 1,140 (44 9) L 1,267 (49 9)	S: 1,140 (44 9) L 1,267 (49.9)
•Transom height "C"	mm (in)	S: 419 (16 5) L 546 (21.5)	S 419 (16 5) L: 546 (21.5)
•Overall length "D"	mm (in)	600 (23.6)	600 (23 6)
•Weight	kg (lb.)	S: 51 5 (113 3) L. 53 (116 6)	S. 56 (123.2) L· 57 5 (126 5)
PERFORMANCE			
•Full throttle operating range	revs/min. (rpm)	4,500 ~ 5,500	4,500 ~ 5,500
•Maximum output	kW (HP)/at rpm.	18.4 (25 0)/5,500	18 4 (25 0)/5,500
•Idling speed	revs/min (rpm)	850 ~ 950	850 ~ 950
ENGINE			
•Type		Two stroke	Two stroke
•Number of cylinder		2	2
•Bore and stroke	mm (in)	72 × 61 (2.83 × 2 40)	72 × 61 (2 83 × 2 40)
•Piston displacement	cm^3 (cu in)	496 (30 27)	496 (30.27)
•Cooling system		Water cooling	Water cooling
•Ignition system		CDI system	CDI system
•Spark-plug	NGK	B-7HS10	B-7HS10
•Spark-plug gap	mm (in)	0 9 ~ 1.0 (0 035 ~ 0.039)	0 9 ~ 1 0 (0 035 ~ 0 039)

Item \ Model	Unit	25GM	25GEM
DRIVE UNIT			
•Gear positions •Gear ratio		Forward-Neutral-Reverse 1 85 (24/13)	Forward-Neutral-Reverse 1 85 (24/13)
FUEL AND OIL			
•Fuel •Fuel tank capacity •Recommended engine-oil •Recommended gearbox-oil •Gear oil capacity	L (US gal, Imp gal) cm^3 (US oz, Imp oz)	Regular-grade petrol (Gasoline) 24 (6 3, 5 3) Yamaha outboard motor oil Outboard motor hypoid gearbox oil (SAE 90) 180 (6 08, 6 34)	Regular-grade petrol (Gasoline) 24 (6 3, 5 3) Yamaha outboard motor oil Outboard motor hypoid gearbox oil (SAE 90) 180 (6 08, 6 34)