

YAMAHA

E



Outboards

6C/8C

OWNER'S MANUAL

6G1-28199-2C

A-100S*

6C/8C

OWNER'S MANUAL

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1st Edition, April 1994

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Printed in Japan

TO THE OWNER

Thank you for choosing a Yamaha outboard motor. This Owner's manual contains 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.

If you have any question about the operation or maintenance of your outboard motor, please consult a Yamaha dealer.

ATTENTION

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

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



The Safety Alert Symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

WARNING

Failure to follow WARNING instructions could result in severe injury or death to the machine operator, a bystander, or a person inspecting or repairing the outboard motor.

CAUTION:

A CAUTION indicates special precautions that must be taken to avoid damage to the outboard motor.

NOTE

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

WARNING-SAFETY

- 1 Always attach the engine stop switch lanyard to your wrist while operating the outboard motor.
- 2 Before operating this outboard motor, familiarize yourself with local laws and regulations relating to the use of outboard motors.
- 3 Petrol (gasoline) is highly flammable, and its vapours are flammable and explosive. Handle and store petrol with special care.
- 4 Do not attempt to modify this outboard motor.
- 5 Always wear a life-jacket on board.
6. 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.

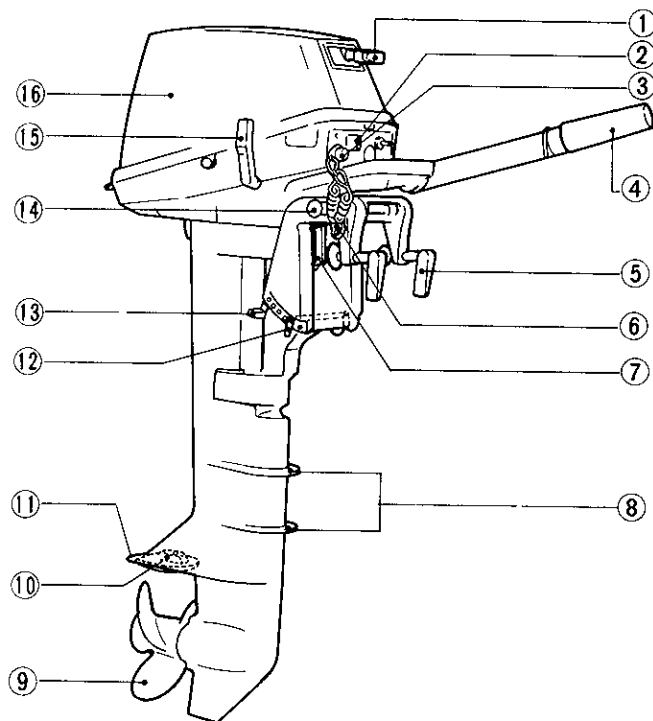
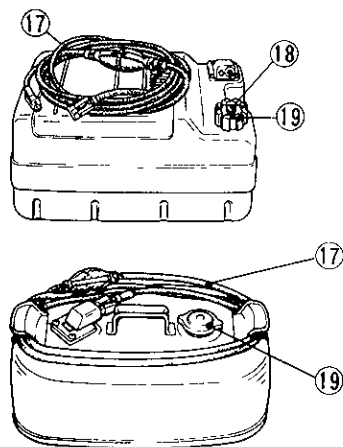
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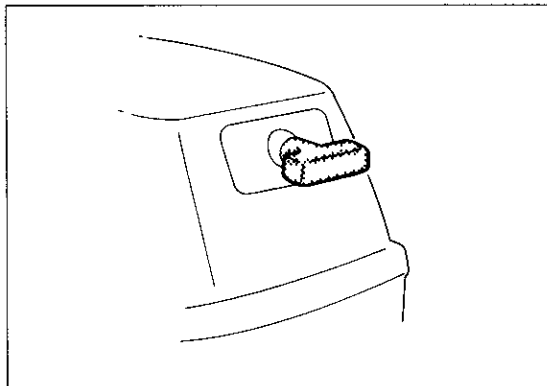
GENERAL INFORMATION

LOCATION OF MAIN COMPONENTS

Fuel tank



- | | | |
|------------------------------------|----------------------------|--------------------|
| ① Recoil starter handle | ⑧ Anti splash plate | ⑮ Gear shift lever |
| ② Choke knob | ⑨ Propeller | ⑯ Top cowling |
| ③ Engine stop lanyard switch | ⑩ Anode | ⑰ Fuel-line |
| ④ Throttle-control/steering-handle | ⑪ Anti-cavitation plate | ⑱ Air-vent screw |
| ⑤ Transom clamp handle | ⑫ Trim angle adjusting-rod | ⑲ Fuel tank cap |
| ⑥ Rope attachment | ⑬ Shallow water lever | |
| ⑦ Carrying handle | ⑭ Tilt support knob | |



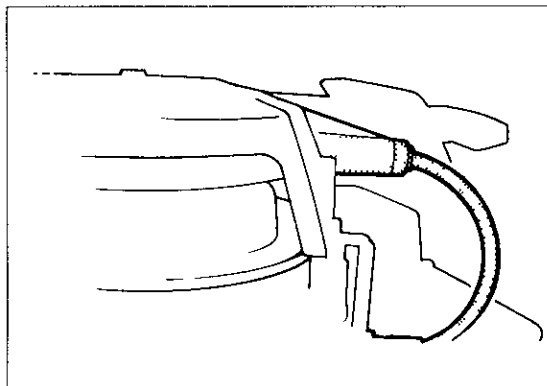
A 550S

CONTROL FUNCTIONS

B 950S

Recoil starter handle

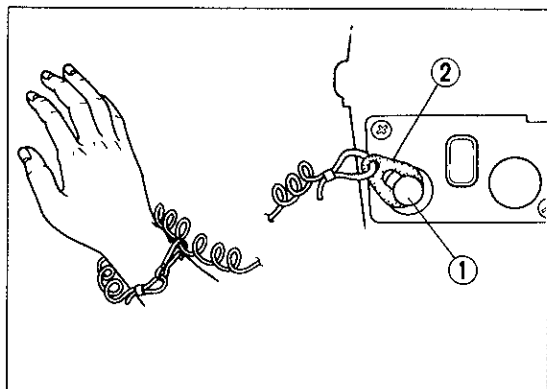
Pulling this handle vigorously cranks the engine to start



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-550S

Engine stop lanyard switch

Pushing this button opens the ignition circuit and stops the engine

The feature is provided for the safety of the operator. When the lock-plate is pulled out from the engine stop lanyard 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.

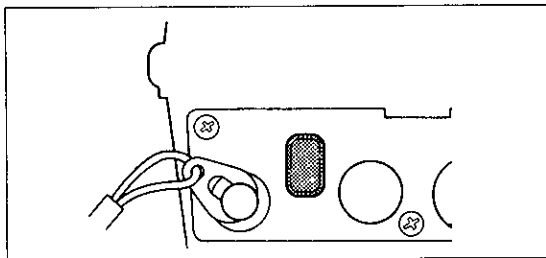
⚠ WARNING

Always attach the engine stop switch lanyard to your wrist while operating the engine

NOTE

The engine cannot be started with the lock-plate removed

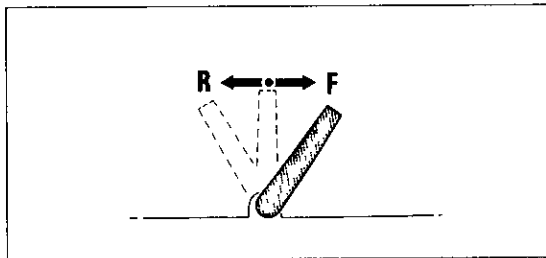
- ① Button
- ② Lock-plate



B 860S

Choke knob

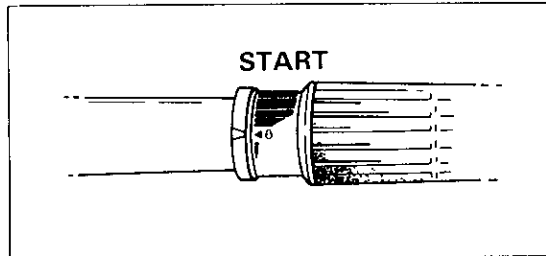
Pulling this knob (setting it to ON) supplies a rich mixture required to start the engine



B 200S

Gears - selecting forward and reverse

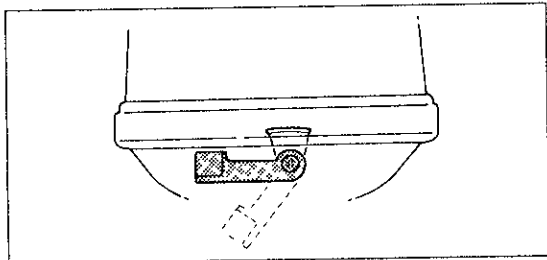
Turning the gear-shift lever towards you engages the clutch with the forward gear so that the boat moves ahead. Turning the lever away from you engages the reverse gear so that the boat moves astern.



B 250S

Throttle-control/steering-handle

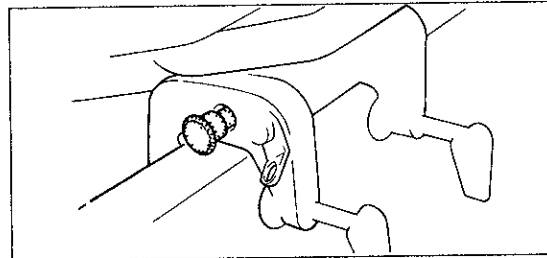
Turn the grip to adjust the throttle, and move it sideways to adjust the steering angle.



B 500S

Cowling lock lever

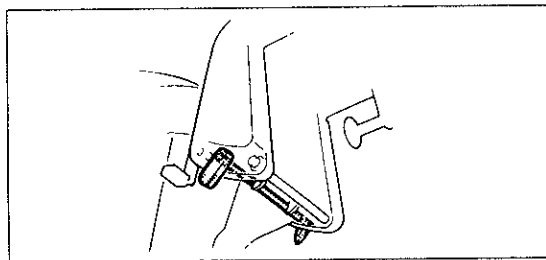
The top cowling can be removed by pushing the cowling lock lever downward. After replacing the cowling, lock it again by moving the lever upwards.



B 400S

Tilt support knob

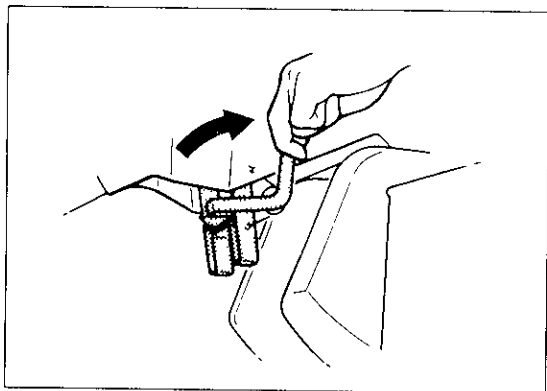
To keep the outboard motor in the tilted-up position, move the tilt support knob under the swivel-bracket.



B-450S

Trim angle adjusting-rod

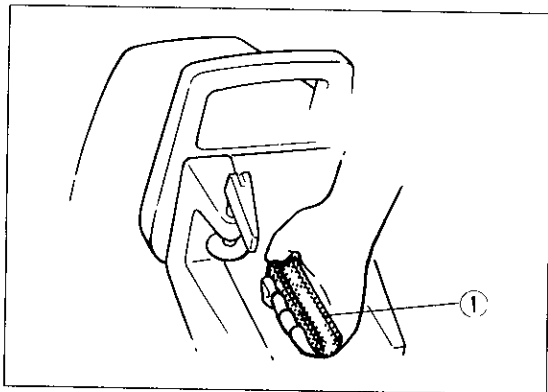
The outboard motor trim angle setting can be adjusted by changing the position of the trim angle adjusting rod.



B 750S

Shallow water lever

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

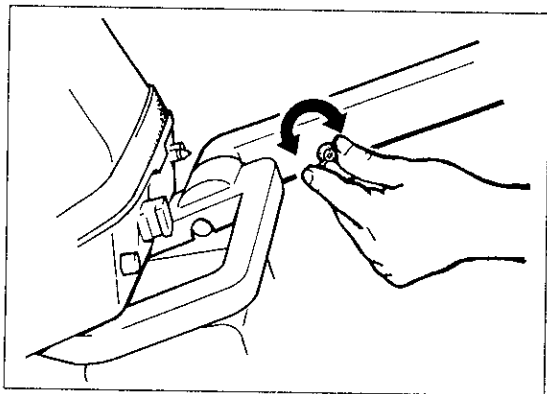


C 200S

Carrying-handle

Carrying-handle is integrated into the swivel-bracket. The carrying-handle enables you to carry the engine easily with a single hand.

① Carrying-handle



C 120S

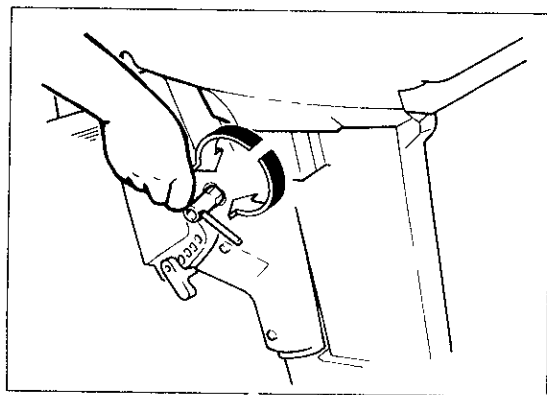
Throttle-control adjustment

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

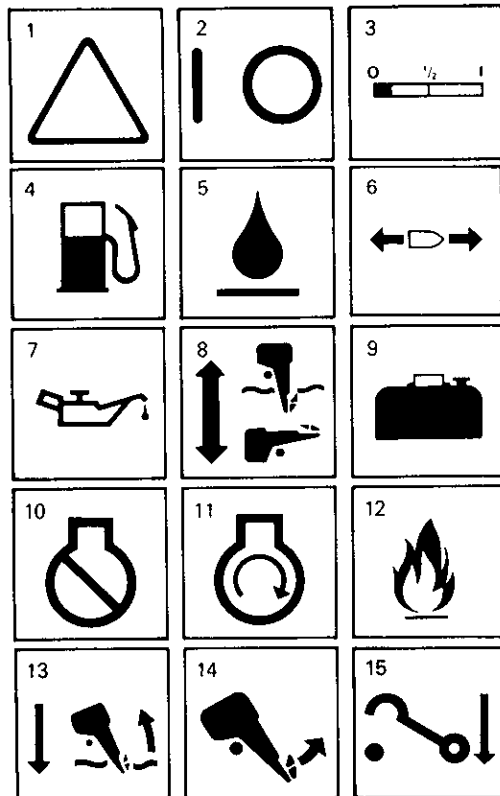
Resistance to steering movement is provided by a friction device, and this can be adjusted by means of the adjusting-bolt on the swivel-bracket

To increase resistance
Turn the adjusting-bolt clockwise

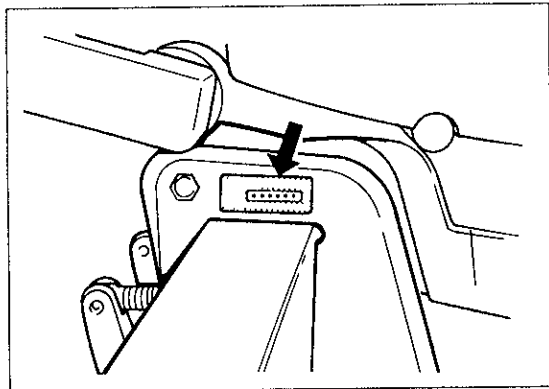
To decrease resistance
Turn the adjusting-bolt anti-clockwise

SYMBOLS

Yamaha outboard motor is marked with the following symbols where necessary



- 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
- 13 Shallow water drive
- 14 Outboard motor tilt up
- 15 Outboard motor tilt lock



C-620S

SERIAL NUMBERS

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

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

ATTENTION

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

C 700S

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

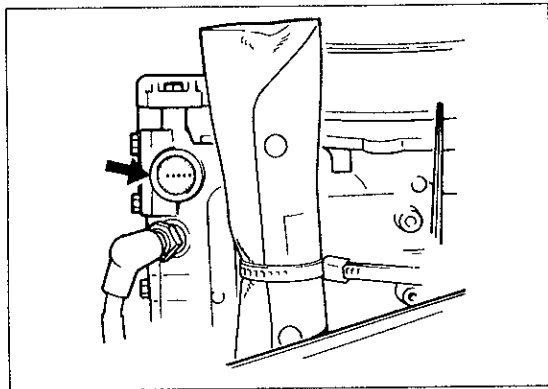
After operating in salt water, wash out the cooling-water passages with fresh water to prevent them from becoming clogged-up with salt deposits

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 center 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

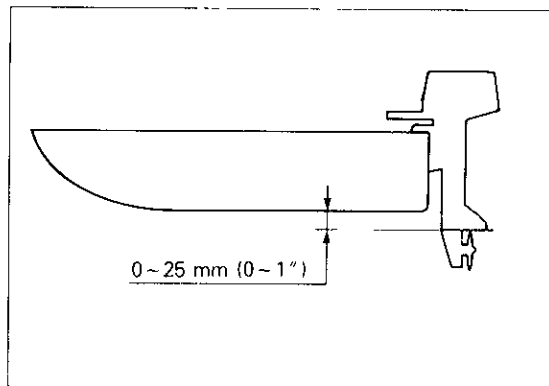
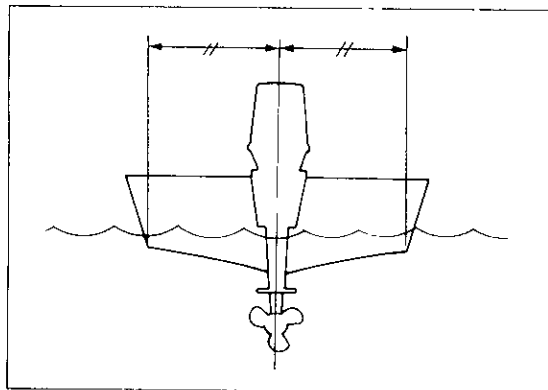
Overpowering a boat may cause severe instability. Do not install an outboard motor with more horsepower than the maximum rating on the capacity plate of the boat. If the boat does not have a capacity plate, consult your Yamaha dealer or the boat manufacturer.

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.

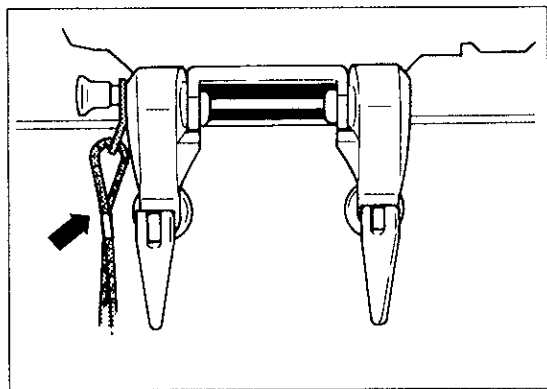
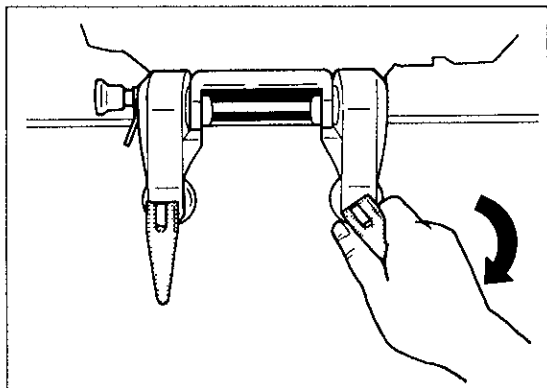
▲WARNING

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.



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 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.

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 outboard motor trim angle setting, 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.

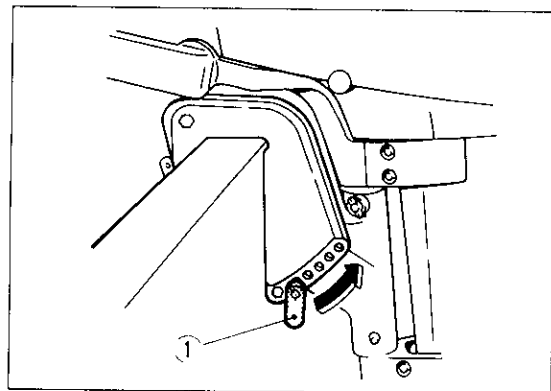
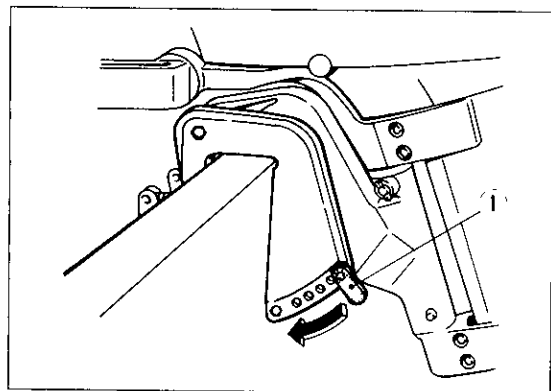
① Trim angle adjusting-rod

⚠ WARNING

Improper trim angle can cause loss of control. Set the trim angle carefully.

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 favorable, the trim angle may be slightly increased to improve the steering stability.
- To lower the bow, move the rod towards the front (bow) side. To raise the bow, move the rod towards the rear (stern) side.



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 used 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.

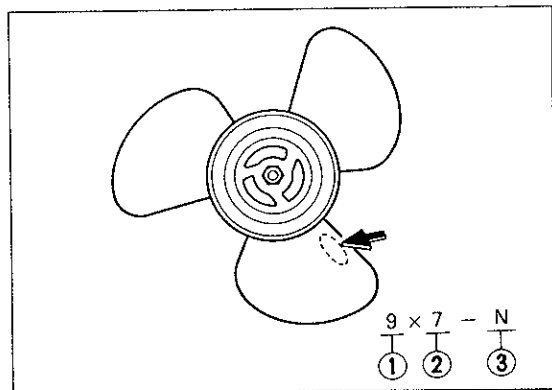
- ① Propeller diameter (in inches)
- ② Propeller pitch (in inches)
- ③ Type of bushing

⚠ WARNING

Before removing the propeller, remove the spark plug caps. Otherwise, the engine may start suddenly, resulting in serious injury or accident. Insert a piece of wood between the propeller and anti-cavitation plate to lock the propeller in place. This helps protect your hands from the propeller blades.

Propeller nut torque 17 Nm (17 m•kg, 12 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 gasoline (petrol)

⚠ WARNING

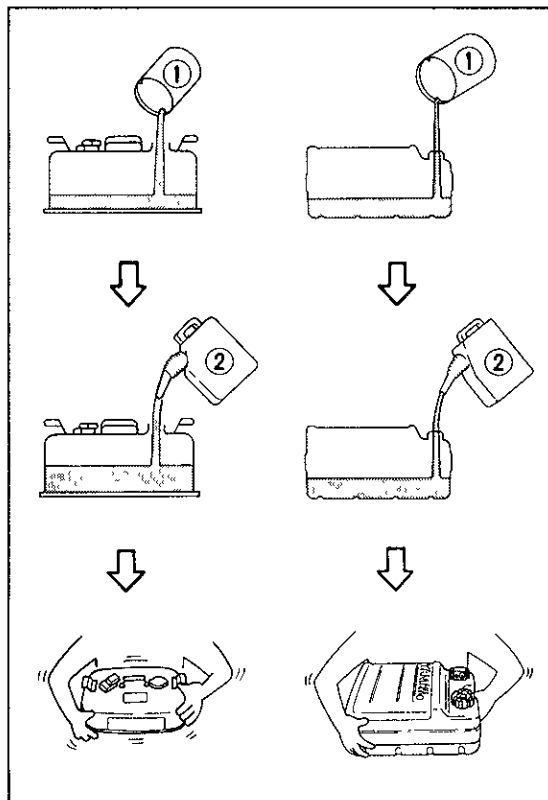
GASOLINE (PETROL) AND ITS VAPORS ARE HIGHLY FLAMMABLE AND EXPLOSIVE!

- Do not smoke when refueling, and keep away from sparks, flames, or other sources of ignition
- Stop engine before refueling
- Refuel in a well-ventilated area Refuel portable fuel tanks off the boat
- Take care not to spill gasoline If gasoline spills, wipe it up immediately with dry rags
- Do not overfill the fuel tank
- Tighten the filler cap securely after refueling
- If you should swallow some gasoline, inhale a lot of gasoline vapor, or get gasoline in your eyes, get immediate medical attention
- If any gasoline spills onto your skin, immediately wash with soap and water Change clothing if gasoline spills on it

Fuel tank capacity Plastic tank 24 litres
(6 34 US gal, 5 3 Imp gal)
Steel tank 14 litres
(3 7 US gal, 3 1 Imp gal)

CAUTION:

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



ENGINE OIL

Recommended oil YAMALUBE, TWO STROKE MOTOR OIL FOR MARINE

If YAMALUBE, TWO STROKE MOTOR OIL FOR MARINE is not available, another 2-stroke engine oil with a BIA-certified TC-W3 rating may be used

MIXING RATIO

	Oil Gasoline (petrol)
Running-in period	1 25
After Running-in	1 100

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

① Oil

② Gasoline (petrol)

2) Then mix the fuel thoroughly by shaking

CAUTION:

- Avoid using any oil other than the designated type
- 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

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/Gasoline (petrol) 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:

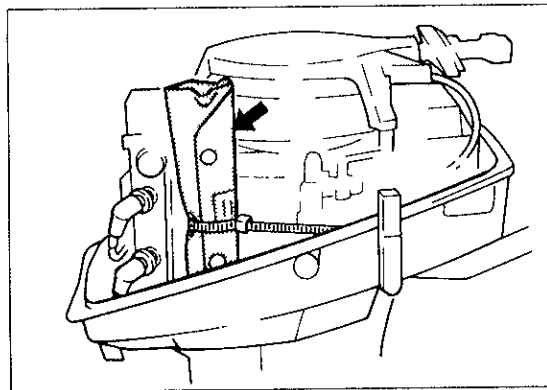
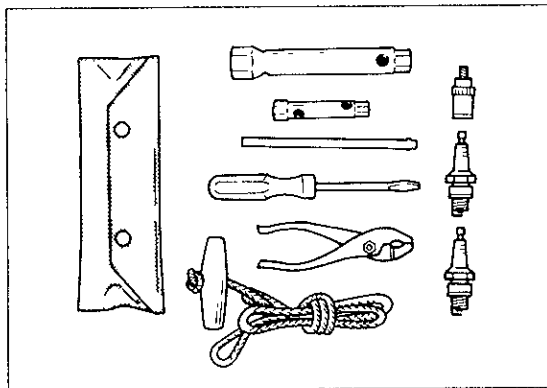
Failure to follow the running-in procedure may result in severe damage to the engine

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.
The tools (accessories) are contained in the tool bag fastened to the starboard side of the engine body. The bag should be fastened tightly with the band so that it will not contact the flywheel due to the engine vibration.
- 4 Do not start the engine out of water.



STARTING PROCEDURE**⚠WARNING**

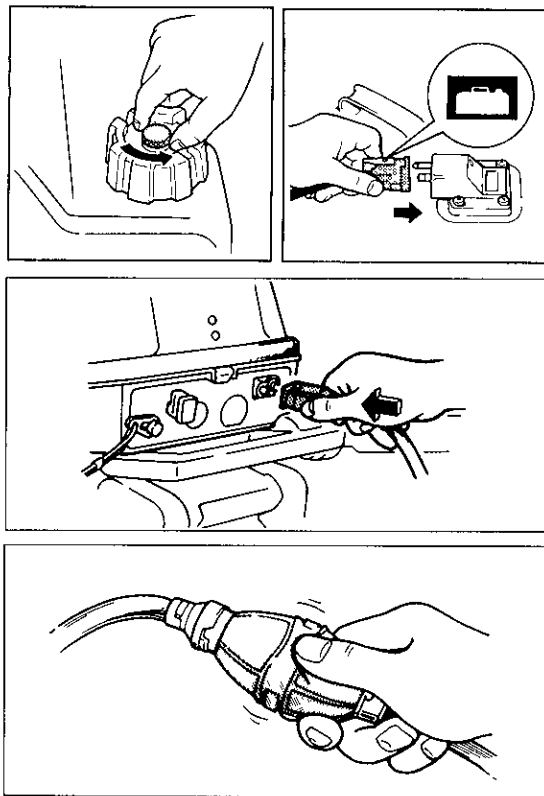
Before starting the engine, make sure that the boat is tightly moored and that you can steer clear of any obstructions

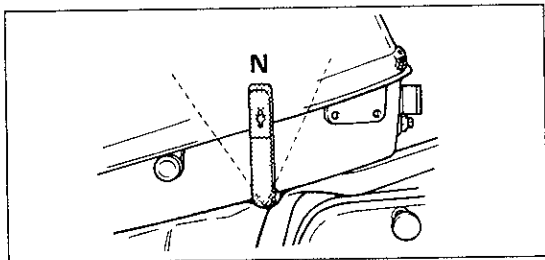
- 1) Loosen the air vent screw attached to the fuel tank cap by 2 or 3 turns (If equipped)
- 2) Firmly connect the fuel joint to the fuel tank. Connect the other joint to the motor

⚠WARNING

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

- 3) Squeeze the primer bulb with the outlet end up until you feel it become firm

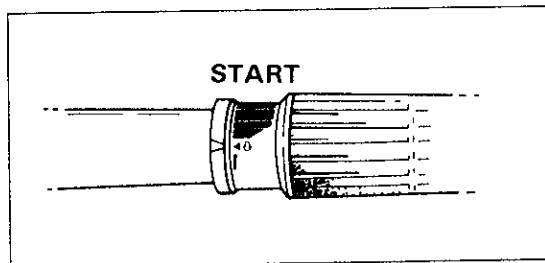




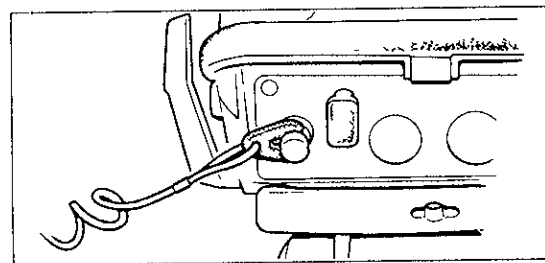
- 4) Place the gear-shift lever in the Neutral position

NOTE.

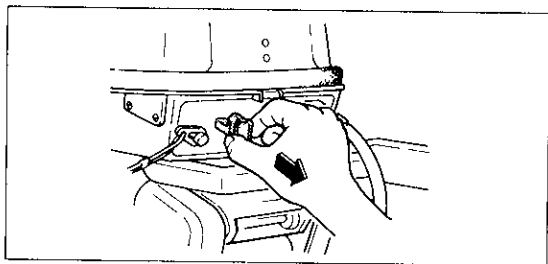
The start-in-gear protection feature permits the engine to be started only when it is in Neutral gear



- 5) Place the throttle-grip in the START position



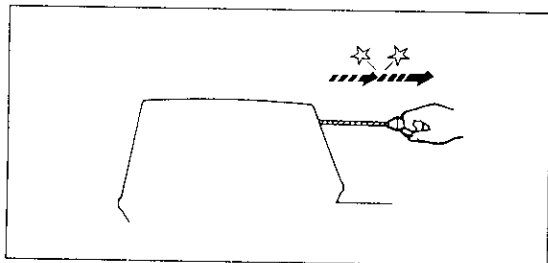
- 6) Install the lock-plate firmly on the engine stop lanyard switch



- 7) Pull out the choke knob completely

NOTE

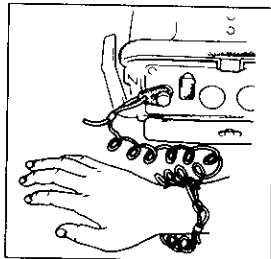
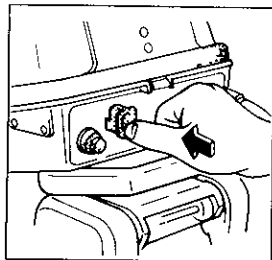
When the engine is still warm just after a cruise, do not pull out the choke knob



- 8) 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



- 9) After the engine starts, do not let go of the starter-handle, but return it slowly to its home position before releasing it
- 10) 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

- 11) Tie the line attached to the lock-plate to your wrist

⚠WARNING

Always attach the engine stop switch lanyard to your wrist while operating the outboard motor

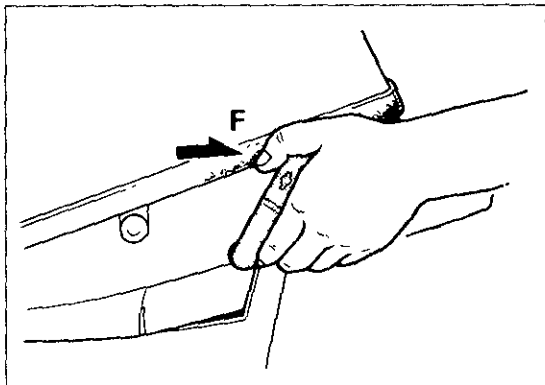
GEARS - SELECTING FORWARD AND REVERSE

⚠ WARNING

If the outboard motor hits an underwater object, check the gear case and brackets. Damage could make the outboard motor unsafe to operate.

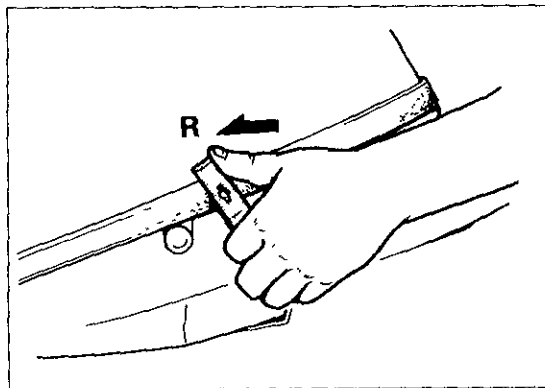
To select forward gear

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



To select reverse gear

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



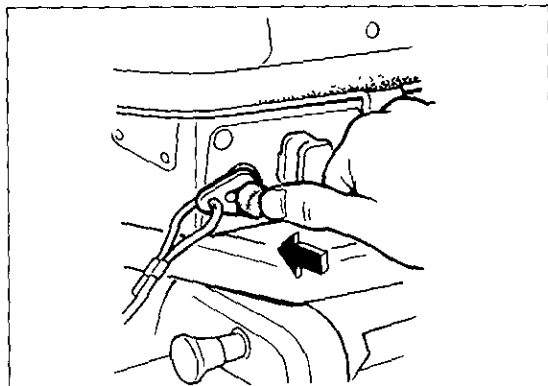
CAUTION:

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 speed).

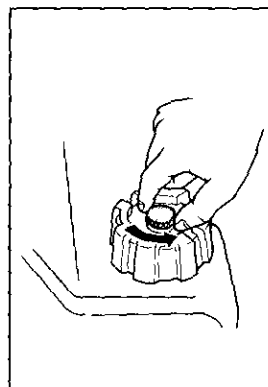
STOPPING

CAUTION:

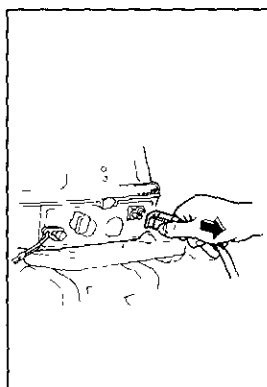
Before stopping the engine, reduce the engine temperature by running it at idling speed or low speed for 2 to 3 minutes



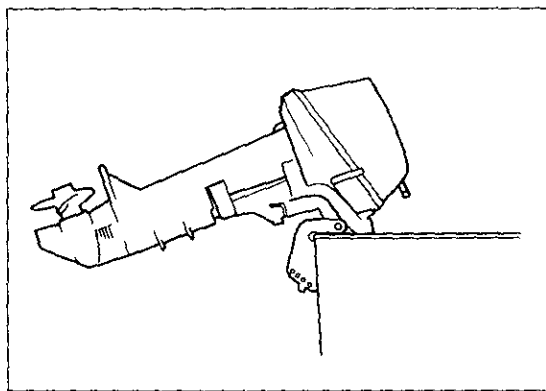
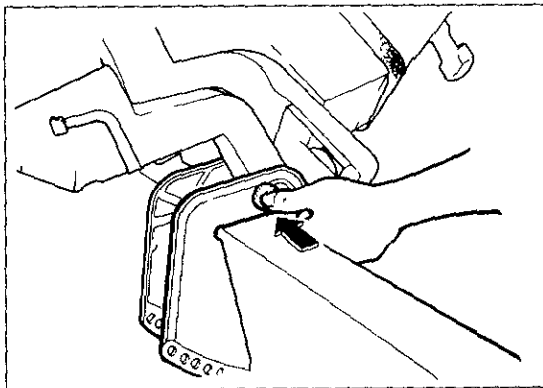
1) Push the engine stop lanyard switch to stop the engine



2) After stopping the engine, tighten the air-vent screw (if equipped)



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



H /005

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.

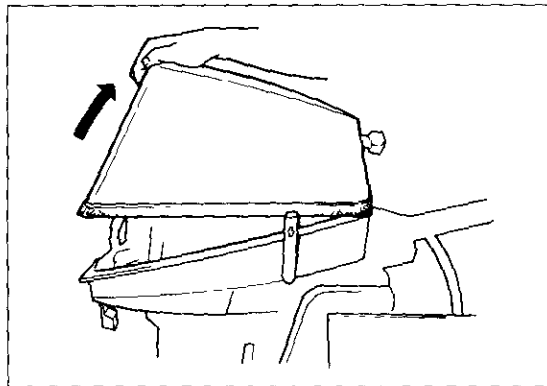
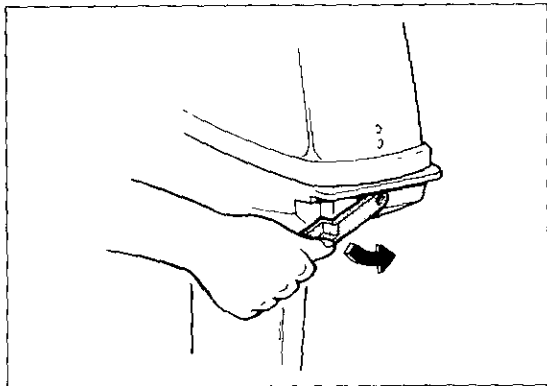
CAUTION

- 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) Place the gear-shift lever in the Neutral position
- 2) Hold the rear of the top cowling with one hand, tilt the engine up, and lock the tilt-support knob to the clamp-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 001S

EMERGENCY STARTING PROCEDURES

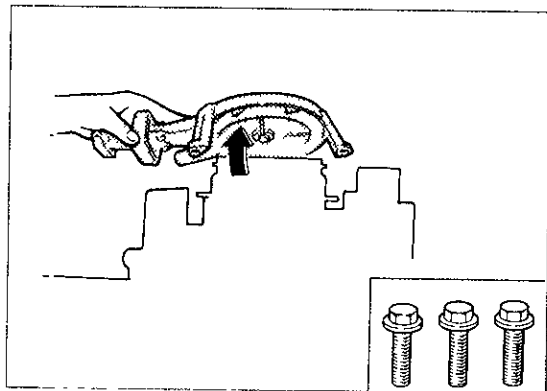
If the starter does not work, the engine may be started with an emergency starter rope

⚠ WARNING

When the emergency starter rope is used to start the engine, the protection mechanism for starting in gear 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 cowl, depress the lock-lever at the rear of the cowl, and lift the cowl up and backwards



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

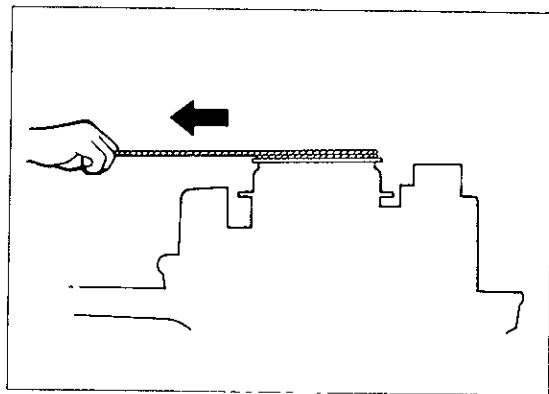
NOTE

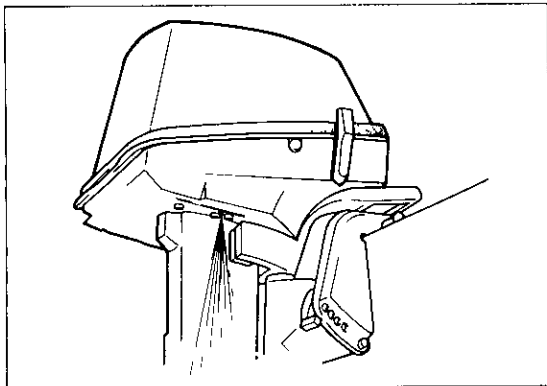
On a model equipped with the protection device for starting in gear disconnect the cable from the starter

- 3) 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 cowl 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





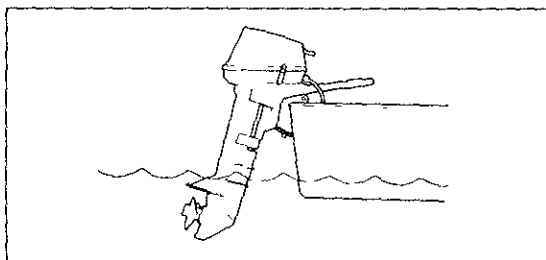
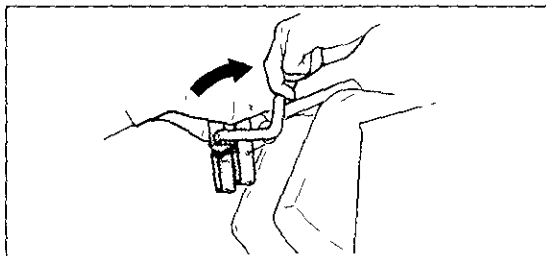
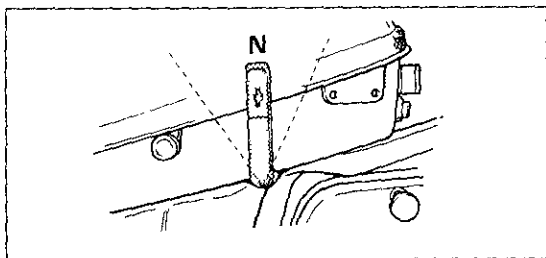
I 300S

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



I 450S

SHALLOW WATER CRUISING

⚠WARNING

In shallows, run the boat at the lowest speed possible. 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) Place the gear shift lever in the neutral 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) When bringing the engine from the shallow water position back to the home position, tilt it up a little, push the shallow water lever downwards, and tilt the engine down slowly

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

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

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 you may carry out yourself
The mark (○) indicates work to be carried out by your Yamaha dealer

Maintenance interval Item		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 tank	Cleaning					●
Idling speed	Adjustment			●	●	
Anode	Inspection/Replacement	●	○	○	○	
Outboard motor body	Inspection		●	●	●	
Cooling-water passages	Cleaning		●	●	●	
Propeller	Inspection		●	●	●	
Cotter-pin	Inspection/Replacement		●	●	●	

Maintenance interval Item		Initial			Thereafter every	
		10 hours	50 hours 3 months	100 hours 6 months	100 hours 6 months	200 hours 12 months
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 about the condition of the engine. For example, if the centre electrode porcelain is very white, this could indicate an intake air leak or carburetion problem in 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 another of the correct type.

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 if necessary.

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

When fitting the plug, always clean the gasket surface and use a new gasket. Wipe off any dirt from the threads and screw in the spark-plug to the correct torque.

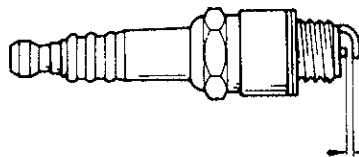
Spark-plug torque
25 Nm (2.5 m•kg, 14 ft•lb)

NOTE

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

⚠ WARNING

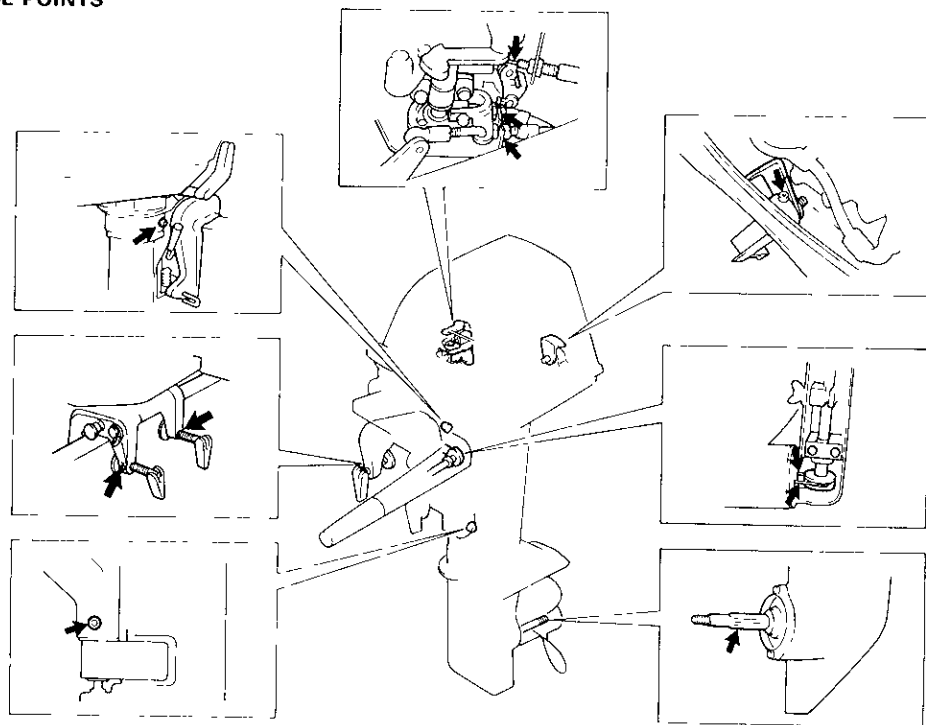
When removing or installing a spark plug, be careful not to damage the insulator. A damaged insulator could allow external sparks, which could lead to explosion or fire.



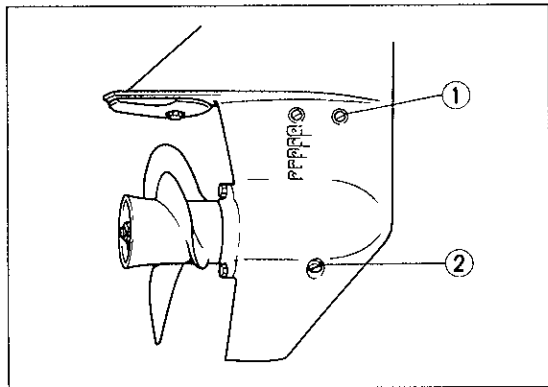
NGK B-7HS10

0.9 ~ 1.0 mm
(0.035 ~ 0.039 in.)

GREASE POINTS



YAMAHA Grease A



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

NOTE

For disposal of used oil consult your Yamaha dealer

- 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
160 cm³ (5.4 US oz, 5.6 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**

Gasoline (Petrol) and its vapors are highly flammable and explosive. Keep away from sparks, cigarettes, flames or other sources of ignition

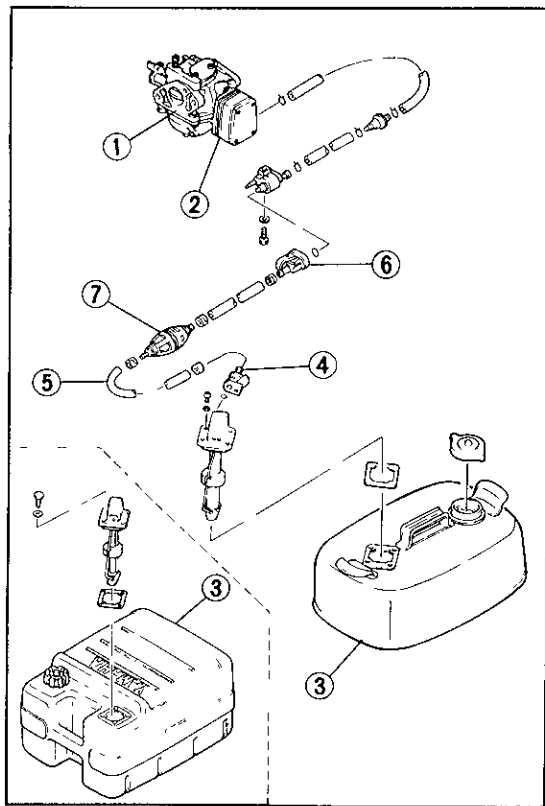
Check the fuel system for leaks, cracks, or malfunctions. If any problem is found, do the necessary repair or replacement as required. If no cause can be found, consult your nearest Yamaha dealer.

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 connector leakage
- ⑦ Primer bulb leakage or damage

▲WARNING

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

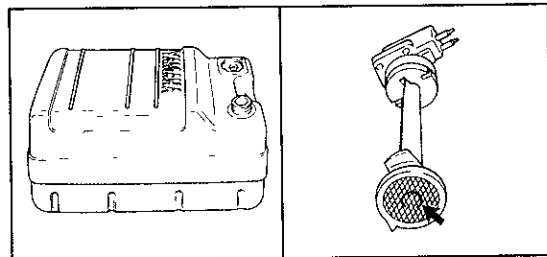
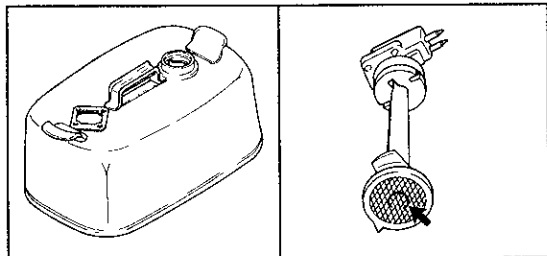


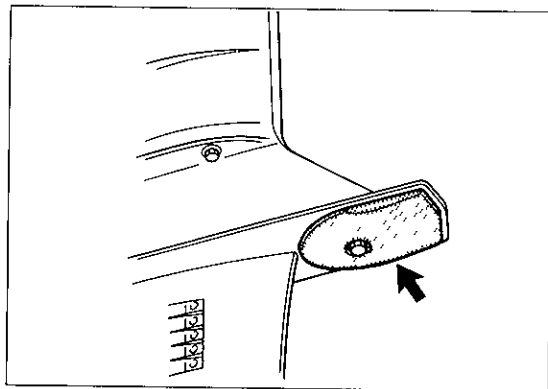
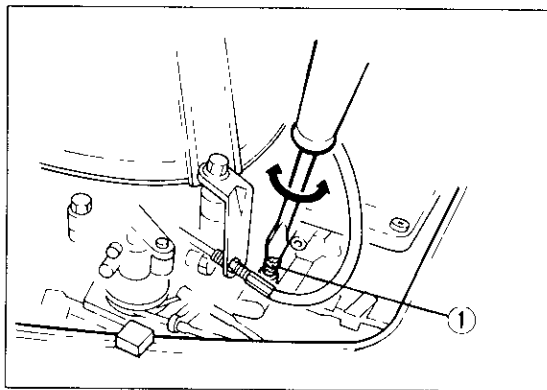
FUEL TANK**To clean the fuel tank.**

- 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 250S

ANODE INSPECTION AND REPLACEMENT

Yamaha outboard motor is protected from corrosion by a sacrificial anode.

Check the anode periodically. Remove the scales from surfaces of the anode.

Without removing them, it is impossible to bring the anode into full play.

For the periodic inspection and replacement of the anode, consult a Yamaha dealer.

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, 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. Cover the cooling water inlet with a tape.
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.

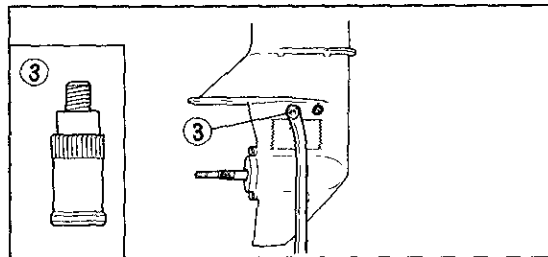
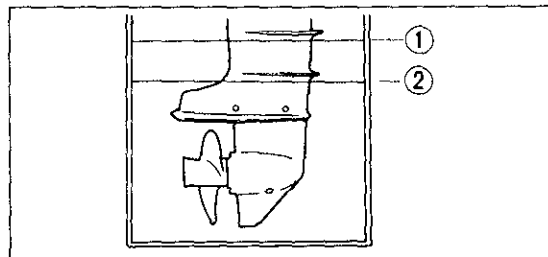
CAUTION:

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 installed and that the water feed is operating.

WARNING

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

③ Water check plug

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.

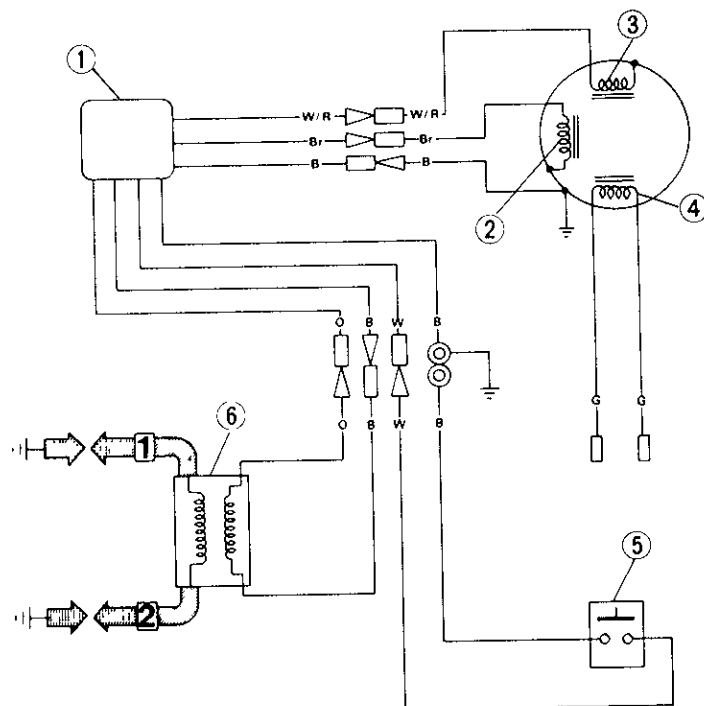
- A The engine will not start
 B The engine runs irregularly or stalls
 C The engine idles unevenly
 D Engine speed will not increase

- 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 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
☐								Spark-plug cap incorrectly fitted

A	B	C	D	E	F	G	H	Possible Cause
☐								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 occurring
					☐		☐	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

WIRING DIAGRAM



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

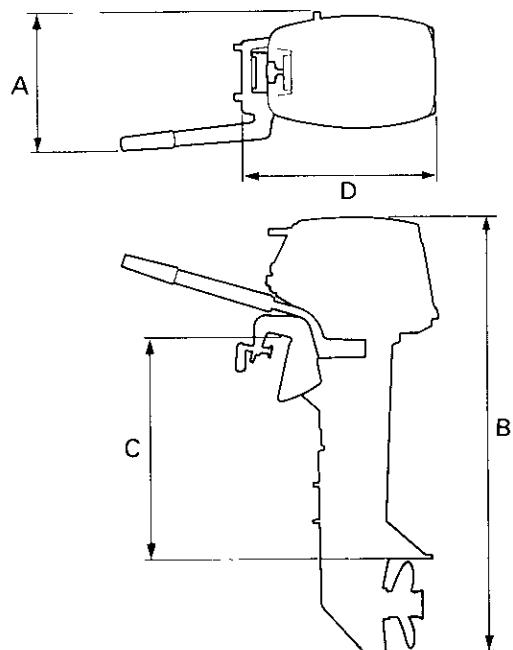
④ Lighting coil

② Charge-coil

⑤ Engine stop lanyard switch

③ Pulser-coil

⑥ Ignition-coil



SPECIFICATIONS

Item	Model	Unit	6CM		8CM	
DIMENSIONS						
•Overall width "A"		mm (in)	343 (13 5)		343 (13 5)	
•Overall height "B"		mm (in)	S 977 (38 5)	L 1,104 (43 5)	S. 977 (38 5)	L 1,104 (43 5)
•Transom height "C"		mm (in)	S 436 (17 2)	L 563 (22 2)	UL 1,167 (45 9)	
•Overall length "D"		mm (in)	802 (31 6)		S 436 (17 2)	L 563 (22 2)
•Weight		kg (lb)	S 27 0 (60)	L 27 5 (61)	UL 626 (24 6)	
					802 (31 6)	
					S 27 0 (60)	L 27 5 (61)
					UL 28 0 (62)	
PERFORMANCE						
•Full throttle operating range		revs/min (rpm)	4,000~5,000		4,500~5,500	
•Maximum output		kW (HP)/at rpm	4 5 (6)/4,500		6 0 (8)/5,000	
•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)	50 × 42 (2 0 × 1 7)		50 × 42 (2 0 × 1 7)	
•Piston displacement		cm ³ (cu in)	165 (10 1)		165 (10 1)	
•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	6CM	8CM
DRIVE UNIT			
•Gear positions •Gear ratio		Forward-Neutral-Reverse 2 08 (27/13)	Forward-Neutral-Reverse 2 08 (27/13)
FUEL AND OIL			
•Fuel •Fuel tank capacity - Steel tank - Plastic tank •Recommended engine-oil •Recommended gearbox-oil •Gear-oil capacity	L (US gal, Imp gal) L (US gal, Imp gal) cm ³ (US oz, Imp oz)	Regular grade gasoline (petrol) 14 (3 7, 3 1) 24 (6 3, 5 3) YAMALUBE, TWO STROKE MOTOR OIL FOR MARINE or an equivalent TC-W3 certified outboard oil Outboard motor hypoid gearbox-oil (SAE 90) 160 (5 4, 5 6)	Regular grade gasoline (petrol) 14 (3 7, 3 1) 24 (6 3, 5 3) YAMALUBE, TWO STROKE MOTOR OIL FOR MARINE or an equivalent TC-W3 certified outboard oil Outboard motor hypoid gearbox-oil (SAE 90) 160 (5 4, 5 6)