YAMAHA

E

Outboards

2B/ Malta
4A/5C

OWNER'S MANUAL

6A1-28199-8C

A-150S*

IDENTIFICATION NUMBERS RECORD

1. OUTBOARD MOTOR NUMBER:

	MODEL	
YAMAHA	MALTA	
CODE		SERIAL No.
6L5 S		025379

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 18, 19)

A-100S*

2B/MALTA/4AC/4AS/5C/5CS
OWNER'S MANUAL

1st Edition, April 1990

Printed in Japan

A-301E

There are the following differences in specifications between the 2-hp, MALTA (3-hp), 4-hp and 5hp series.

Item \ Model	2B	MALTA	4AC	4AS	5C	5CS
Gear-shift device	Not fitted	Fitted	Fitted	Fitted	Fitted	Fitted
Fuel tank	Built-in type	Built-in type	Built-in type	Separate type	Built-in type	Separate type

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.

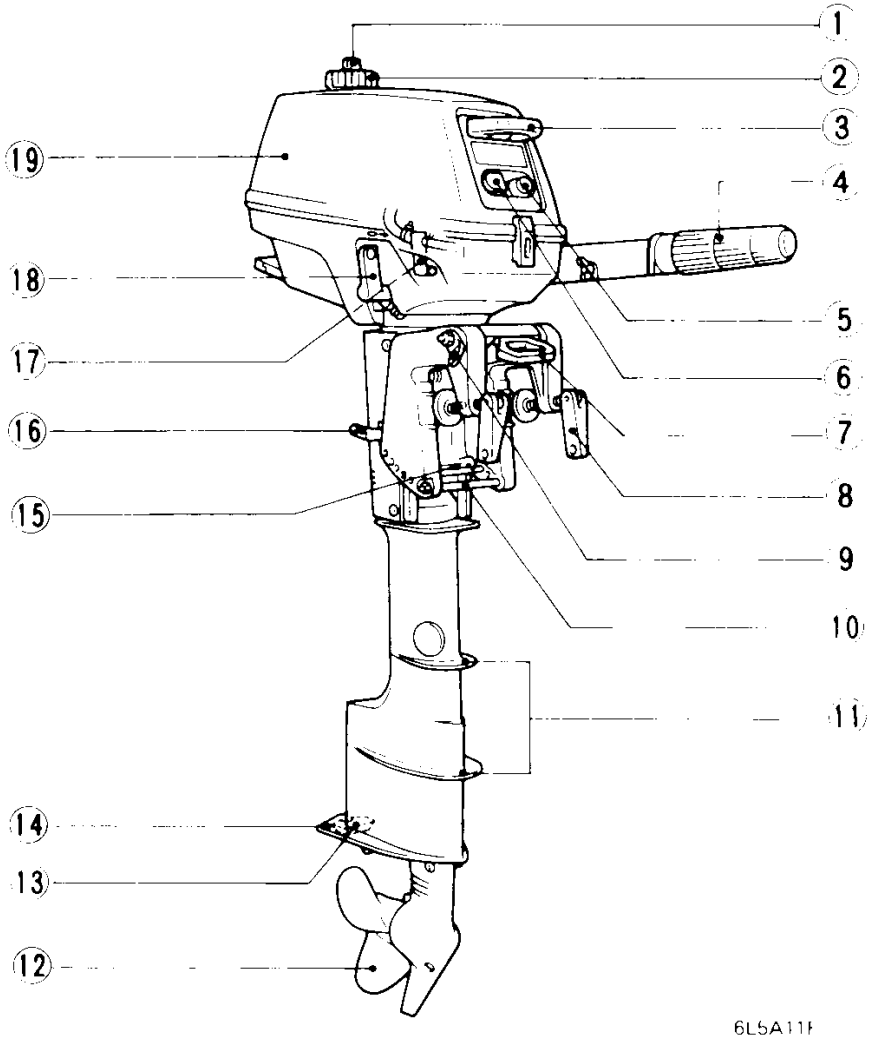
WARNING-SAFETY

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.

Yamaha Motor Co., Ltd.

MALTA



1 Air-vent screw

2 Fuel tank cap

3 Recoil starter handle

4 Throttle-control/steering-handle

5 Stop switch

6 Choke knob

7 Carrying-handle

8 Transom clamp handle

9 Rope attachment

10 Free-lock mechanism

11 Anti splash plate

12 Propeller

13 Anode

14 Anti-cavitation plate

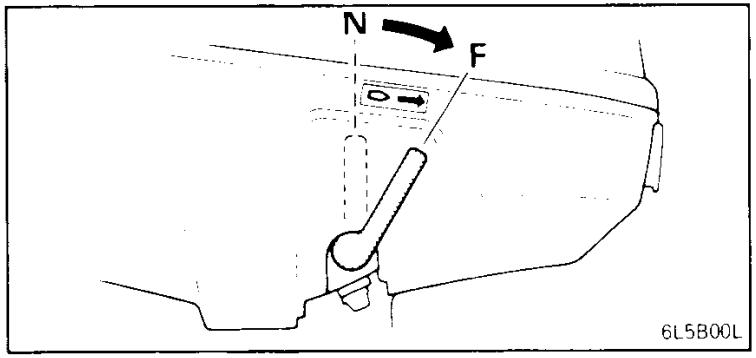
15 Trim angle adjusting-rod

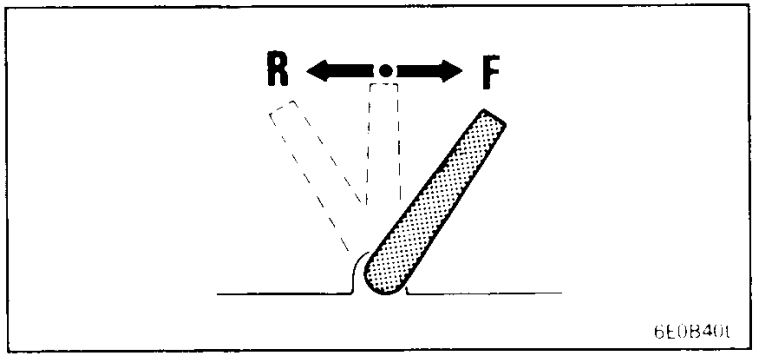
16 Tilt support lever

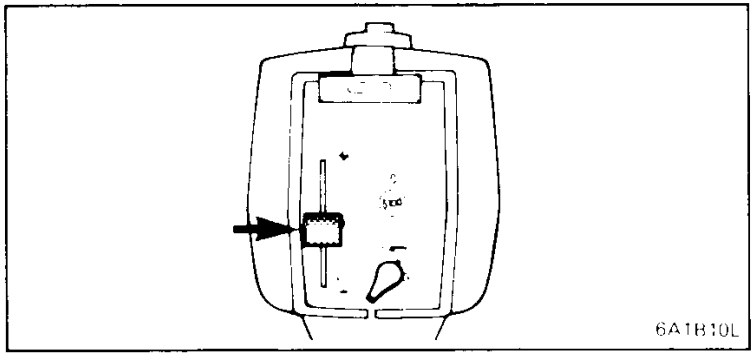
17 Fuel cock

18 Gear shift lever

19 Top cowling







A-550S

CONTROL FUNCTIONS

B-210S

Gear-shift lever

MALTA

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

B-200S

Gears -selecting forward and reverse

4AC/4AS/5C/5CS

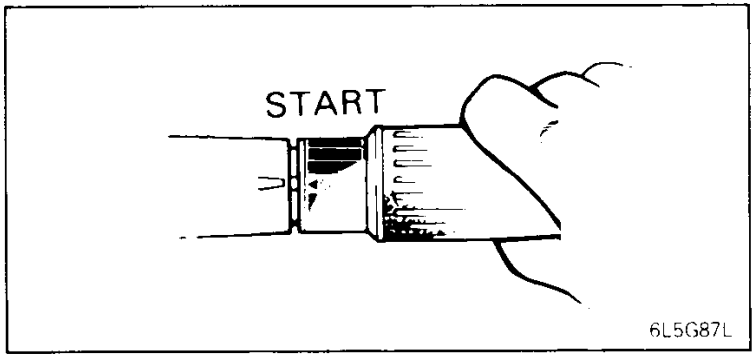
Turning the gear-shift lever towards you engages the clutch with the forward gear so that the boat moves ahead. Turning the lever away from you engages the reverse gear so that the boat moves astern.

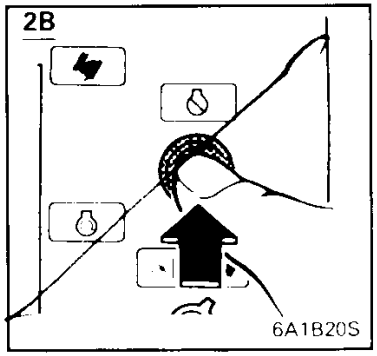
B-260S

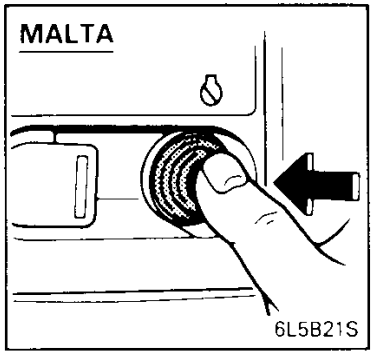
Throttle-control knob

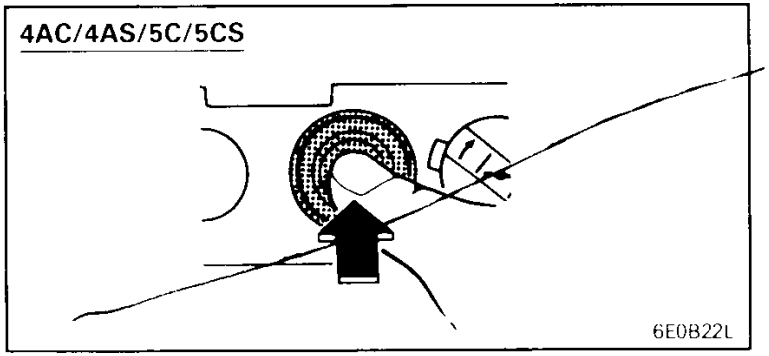
2B

Pushing this knob upwards increases both engine and boat speeds.









B-250S

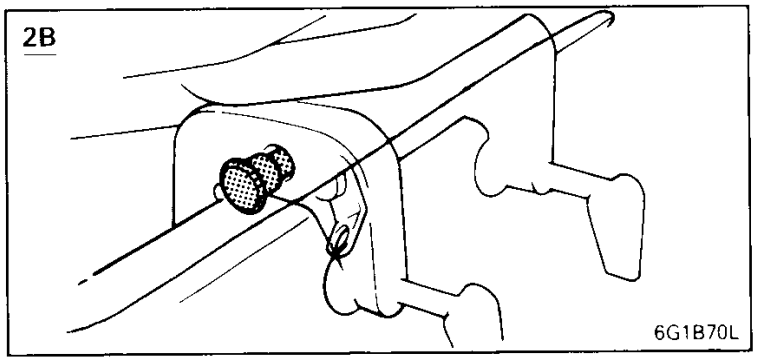
Throttle-control/steering-handle
MALTA/4AC/4AS/5C/5CS

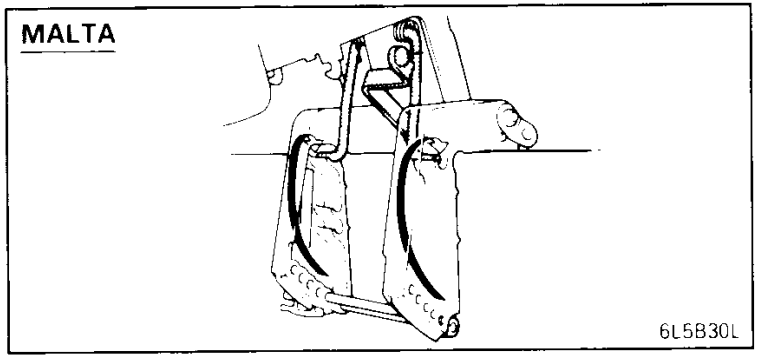
Turn the grip to adjust the throttle, and move it sideways to adjust the steering angle.

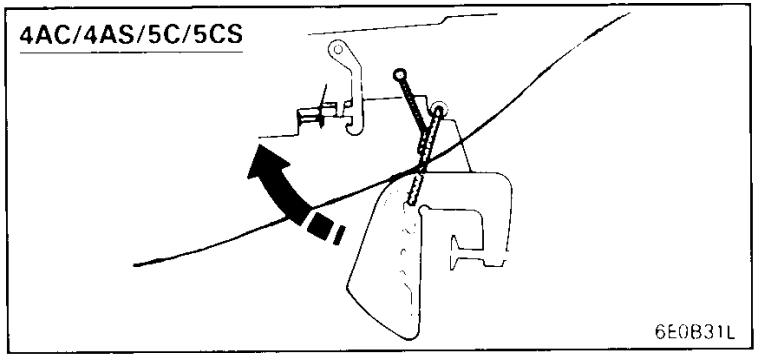
B-300S

Stop switch

Pushing this button opens the ignition circuit and stops the engine.







B-400S

Tilt support knob

2B

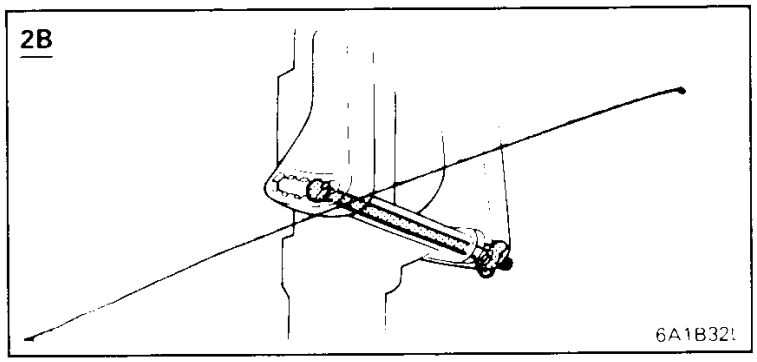
To keep the outboard motor in the tilted-up position, move the tilt support knob under the swivel bracket.

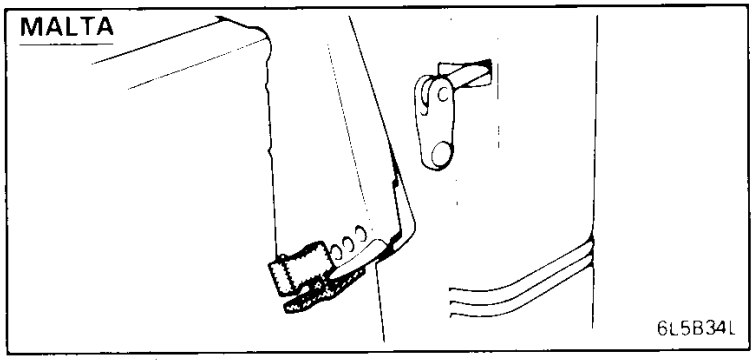
B-420S

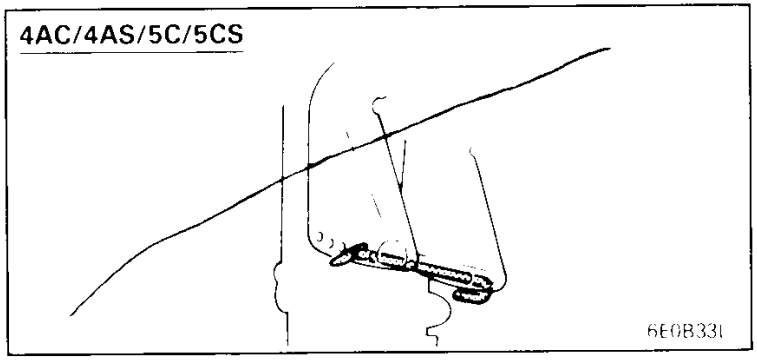
Tilt support lever

MALTA/4AC/4AS/5C/5CS

To keep the outboard motor in the tilted-up position, lock the tilt support lever to the clamp bracket.



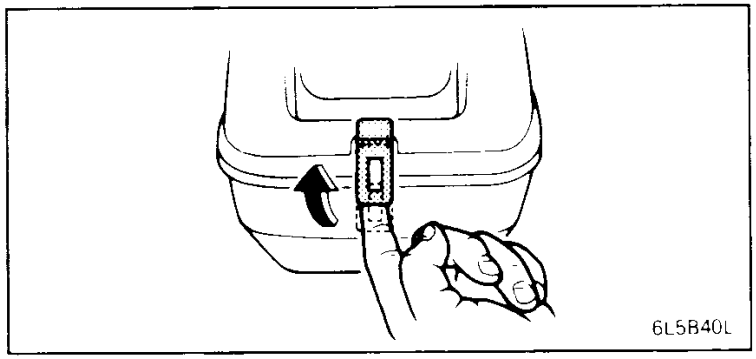




B-450S

Trim angle adjusting-rod

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

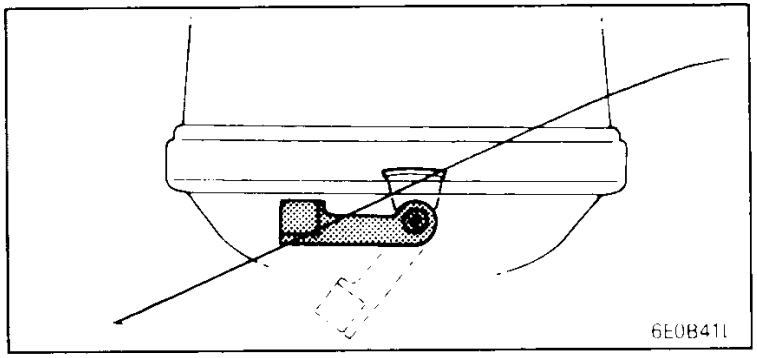


B-515S

Cowling lock lever

MALTA

The top cowling can be removed and refitted by operating the cowling lock levers. Pulling the rear lever up and pulling the front lever up unlock the top cowling for removal. After refitting the cowling, lock it with the levers.

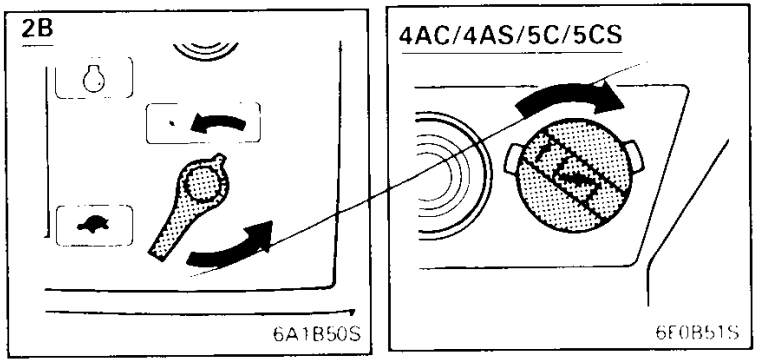


B-500S

Cowling lock lever

4AC/4AS/5C/5CS

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.

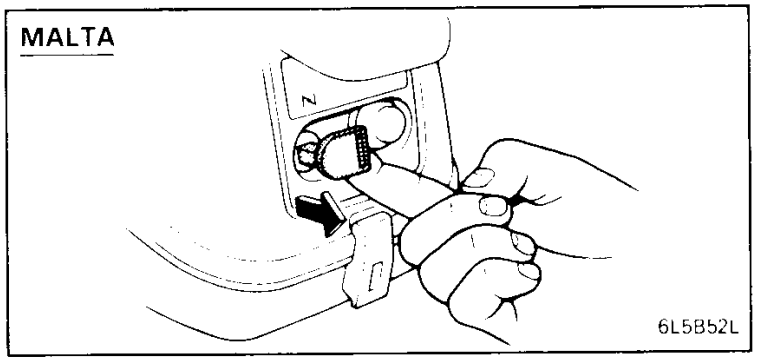


B-850S

Choke knob

2B/4AC/4AS/5C/5CS

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

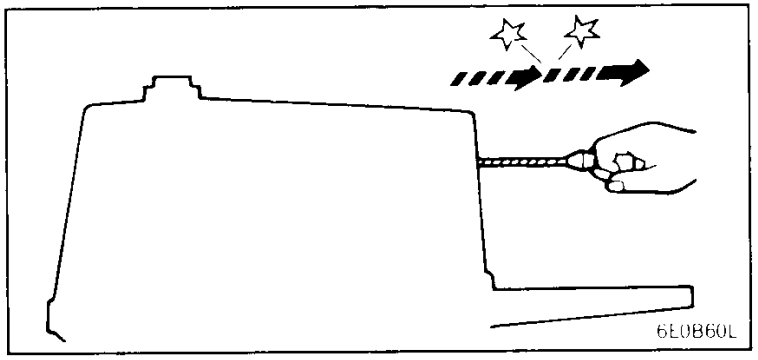


B-860S

Choke knob

MALTA

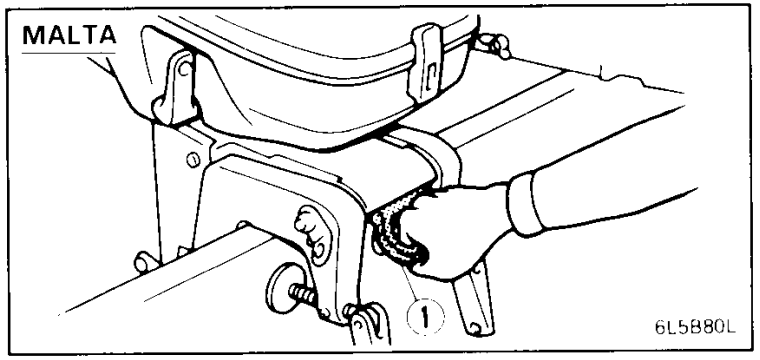
Pulling this knob (setting it to ON) supplies a rich mixture required to start the engine.



B-950S

Recoil starter handle

Pulling this handle vigorously cranks the engine to start.



C-200S

Carrying-handle

MALTA

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

1 Carrying-handle

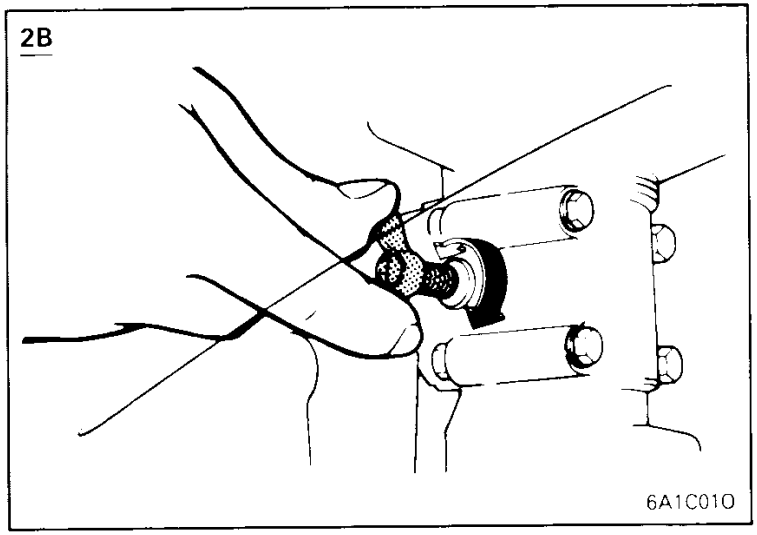
Steering adjustment

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.

2B



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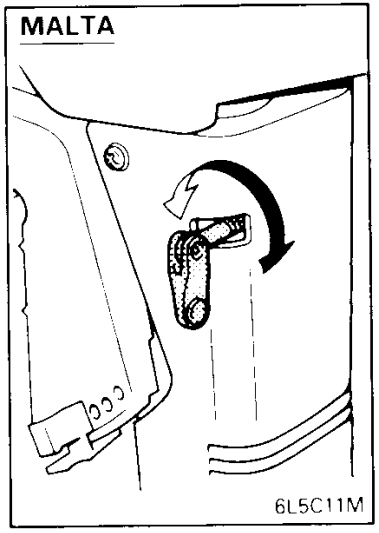
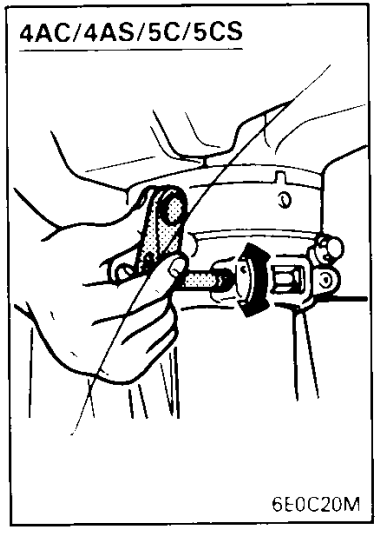
MALTA



6L5C11M

4AC/4AS/5C/5CS



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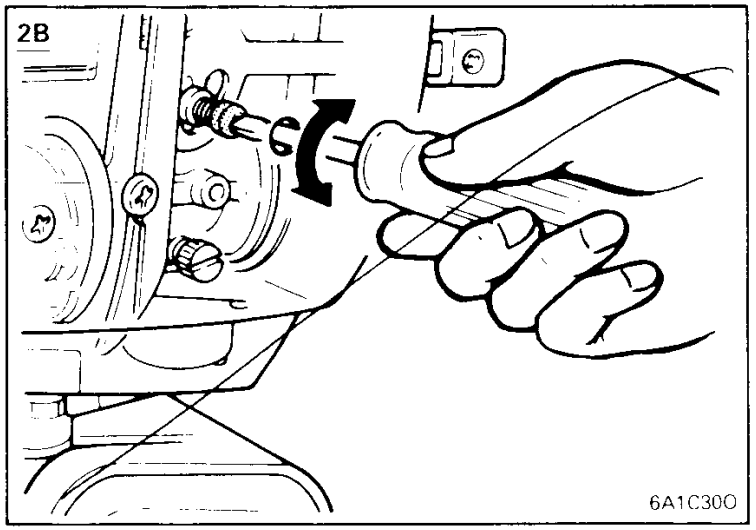


C-110S

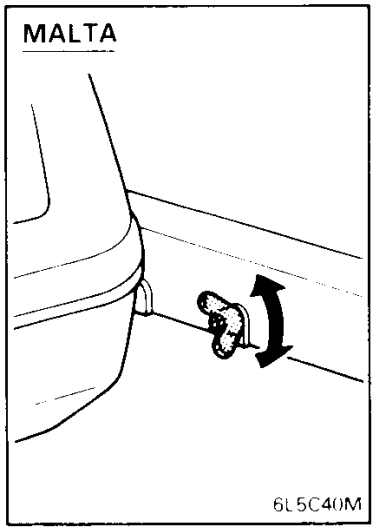
Throttle-control adjustment

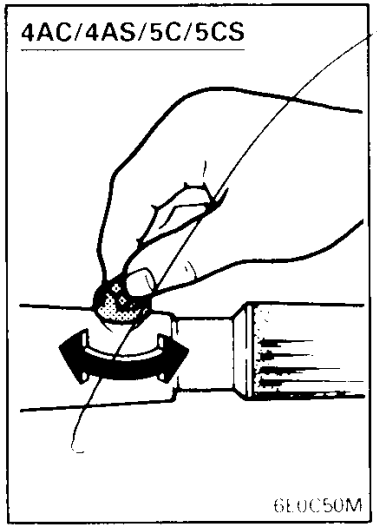
2B

Resistance to the operation of the throttle control lever is provided by a friction device located within the aprons, and this can be adjusted by an adjusting-screw.

To increase the resistance:
Turn the adjusting-screw clockwise.

To decrease the resistance:
Turn the adjusting-screw anti-clockwise.





C 120S

Throttle-control adjustment

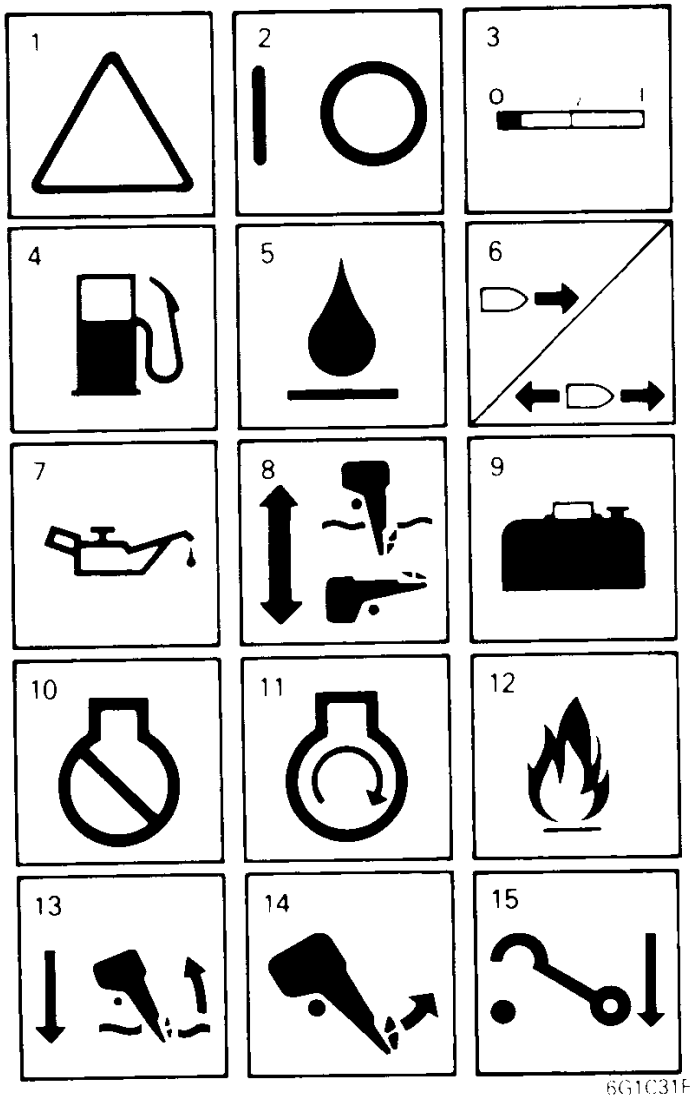
MALTA/4AC/4AS/5C/5CS

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.

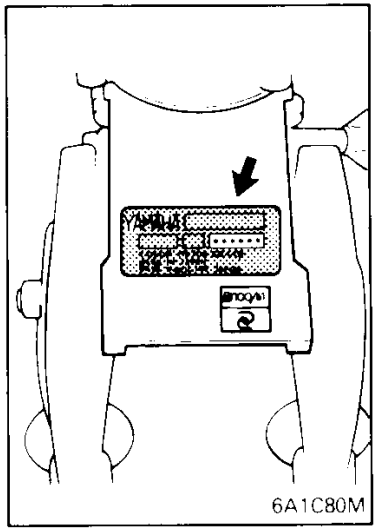


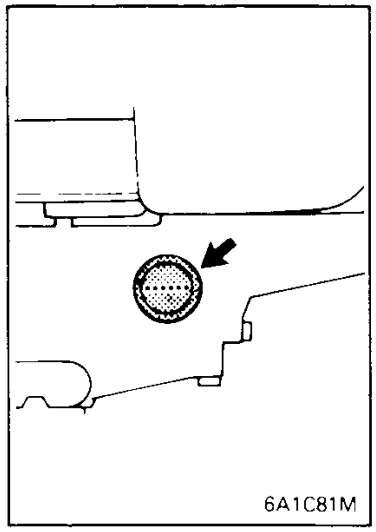
6G1C31E

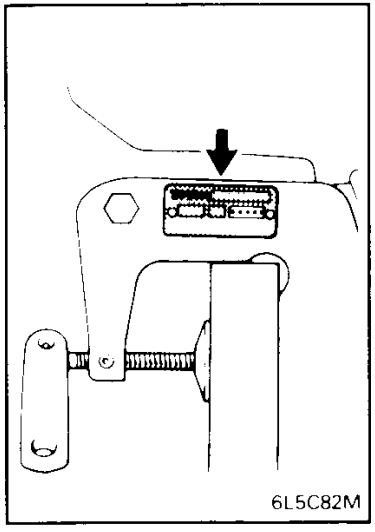
C-520S

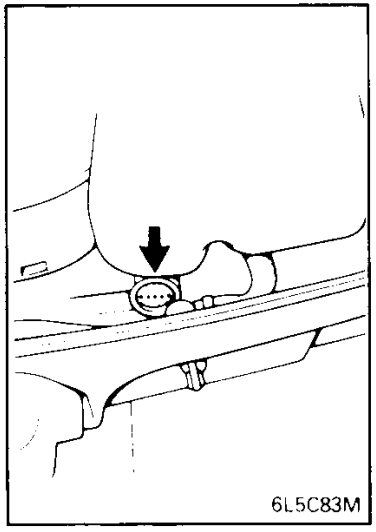
SYMBOLS

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/Forward-Neutral-Reverse
7. Oil lubrication point
8. Outboard motor tilt movement
9. Portable gasoline 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 free lock









C-610S

SERIAL NUMBERS

2B

The outboard motor serial number is stamped on the plate attached to the upper part of the swivel bracket.
The engine serial number is stamped on the port 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-600S

SERIAL NUMBERS

MALTA

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.

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

4AC/4AS/5C/5CS

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.

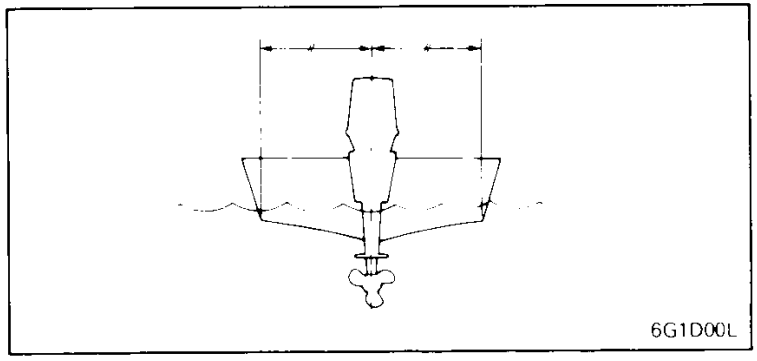
RIGGING

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.

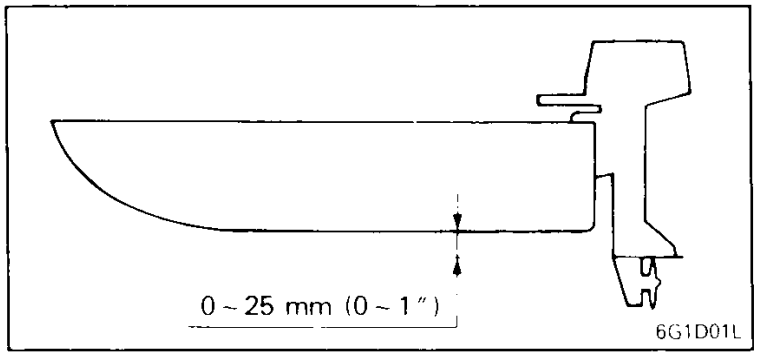


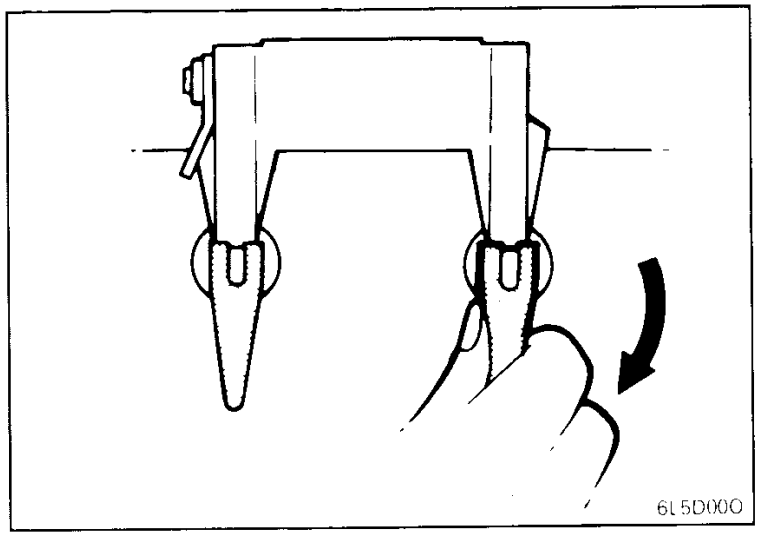
MOUNTING HEIGHT

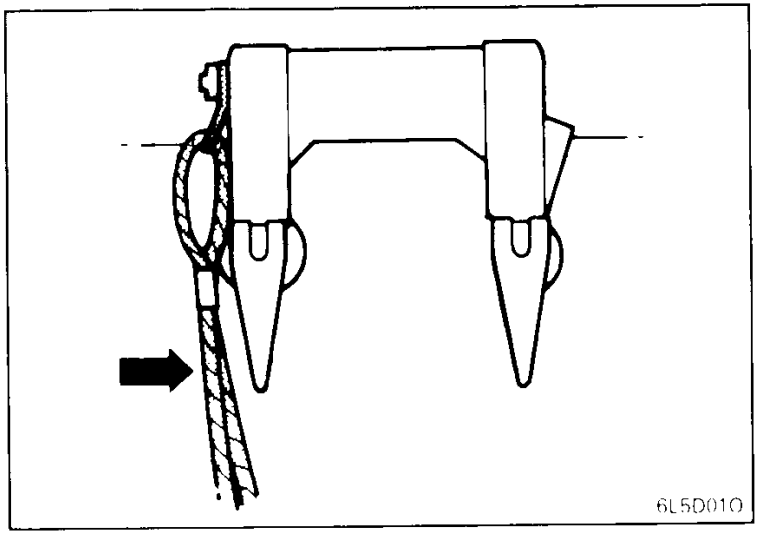
To run your boat at optimum efficiency, the water-resistance (drag) of the boat and outboard motor must be made as little as possible. The mounting-height of the outboard motor greatly affects the water-resistance. If the mounting-height is too high, cavitation tends to occur, thus reducing the propulsion; 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.







D-110S

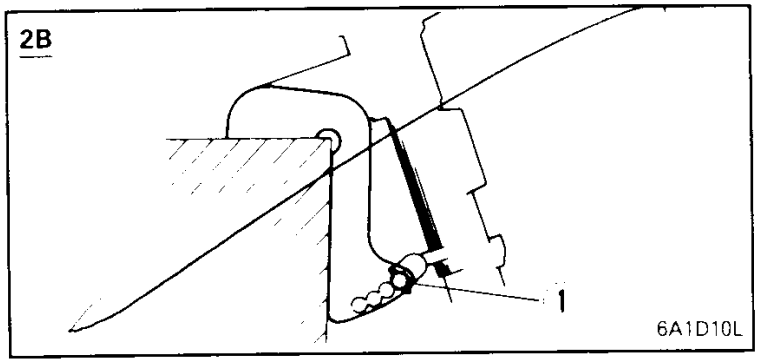
CLAMPING THE OUTBOARD MOTOR

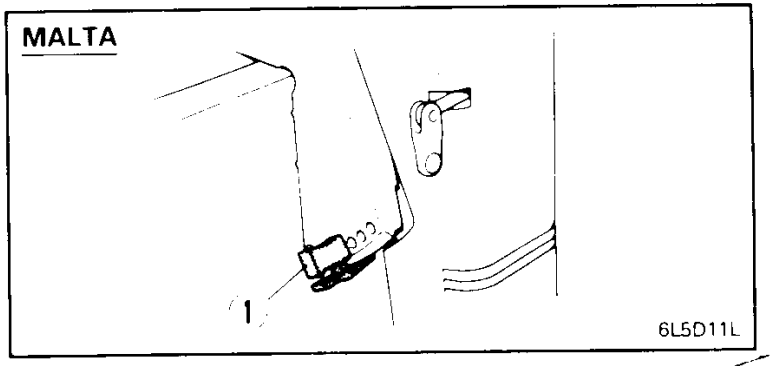
1) Place the outboard on the transom so that it is positioned as close to the centre as possible. Tighten the clamp-screws evenly and securely. Check the clamp-screws for tightness occasionally during operation of the motor as they can work loose due to engine vibration. Loose clamp-screws could allow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

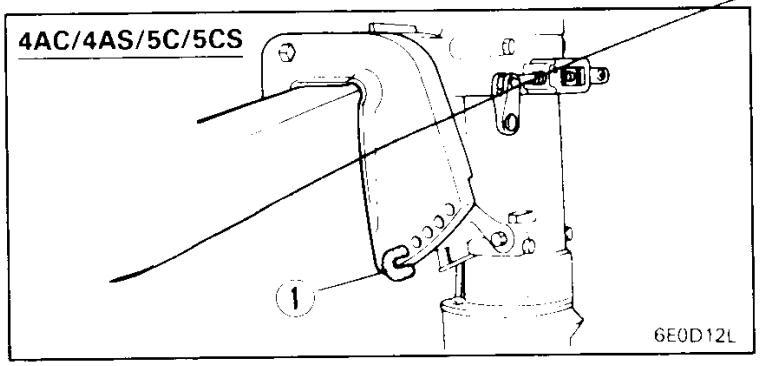
2) The use of a safety-chain or safety-cable is recommended. Attach one end to the safety-chain fixing-point (located beside the clamp-screw) and the other end to a secure mounting-point on the boat.

⚠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.

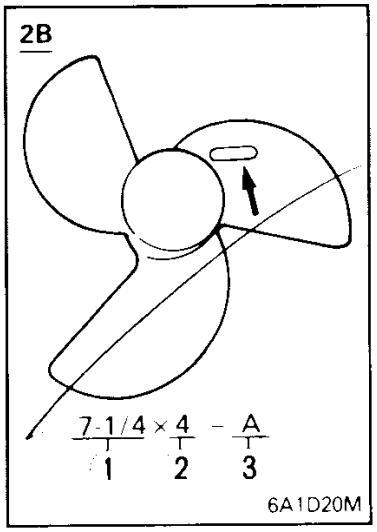
1. Trim angle adjusting-rod

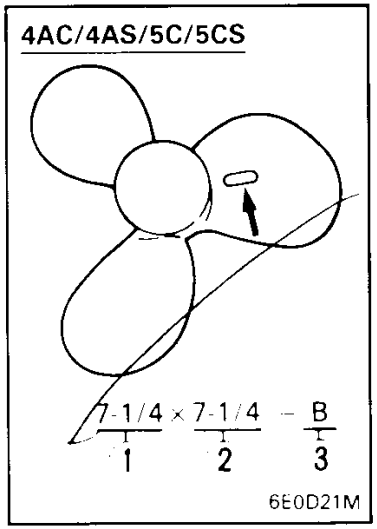
⚠WARNING

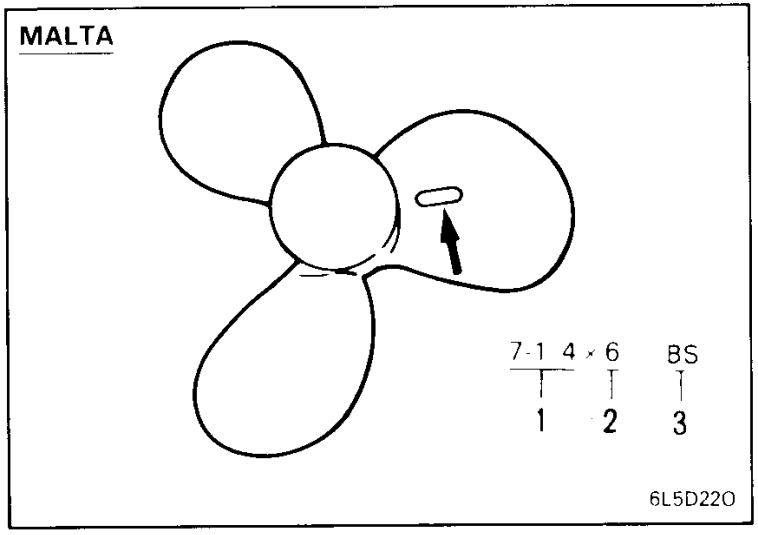
Improper trim angle can cause loss of control. Set the trim angle carefully.

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 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-930S

PROPELLER SELECTION

The performance of your outboard motor will be critically affected by your 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.

F-010E*

FUEL AND ENGINE OIL

FUEL

Use Regular-grade petrol (gasoline).

⚠WARNING

PETROL (GASOLINE) 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 petrol. If petrol 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 petrol, inhale a lot of petrol vapor, or get petrol in your eyes, get immediate medical attention.**
- **If any petrol spills onto your skin, immediately wash with soap and water. Change clothing if petrol spills on it.**

Fuel tank capacity:

~~2B : 1.2 litres (0.32 US gal, 0.26 Imp gal)~~

MALTA : 1.35 litres (0.36 US gal, 0.31 Imp gal)

~~4AC/5C : 2.8 litres (0.74 US gal, 0.62 Imp gal)~~

~~4AS/5CS : 14 litres (3.7 US gal, 3.1 Imp gal)~~

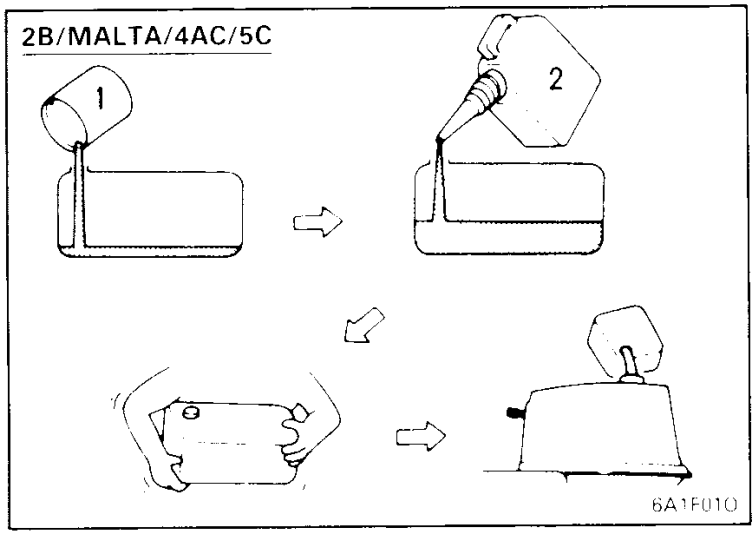
CAUTION:

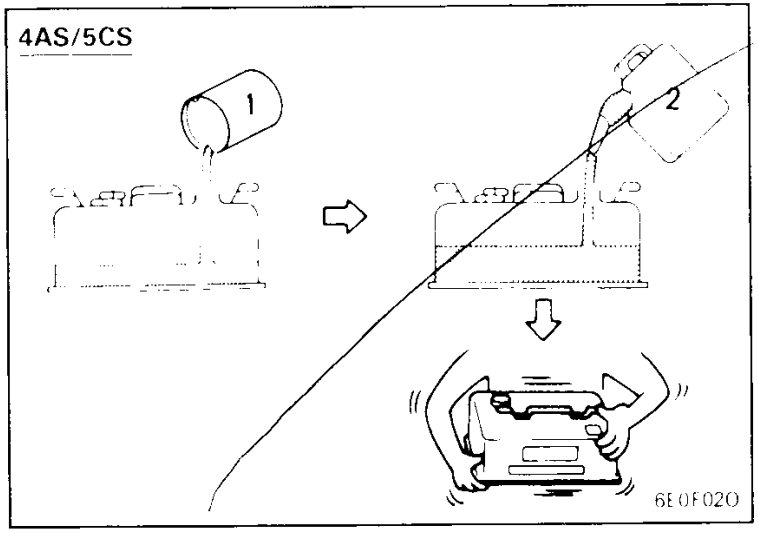
Use only new clean petrol which has been stored in clean containers and is not contaminated with water or foreign matter.

ENGINE OIL

Recommended oil: Yamaha outboard motor oil

If Yamaha outboard motor oil is not available, another 2 stroke engine oil with certified TC-WII may be used.





MIXING RATIO

	Oil : Petrol
Running-in period	1 : 50
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.
3) Make sure the oil is mixed with petrol and pour the mixture into the fuel tank located on top of the engine.

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 adjacent 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 : 50

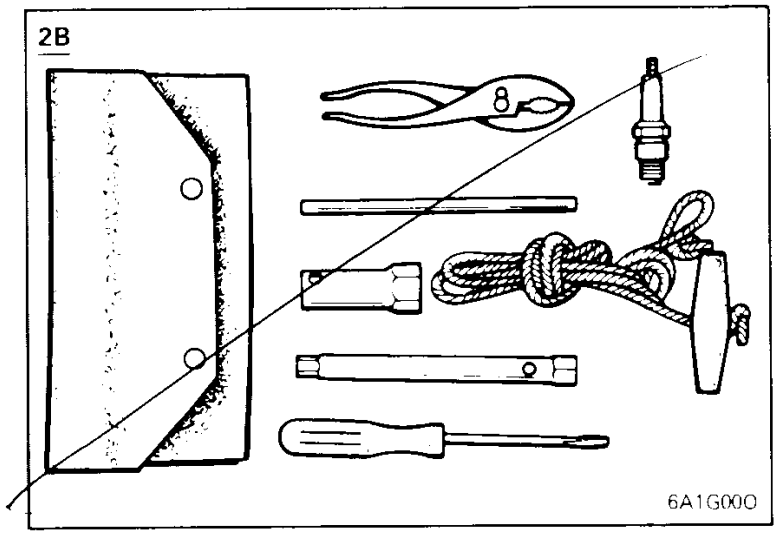
Procedure

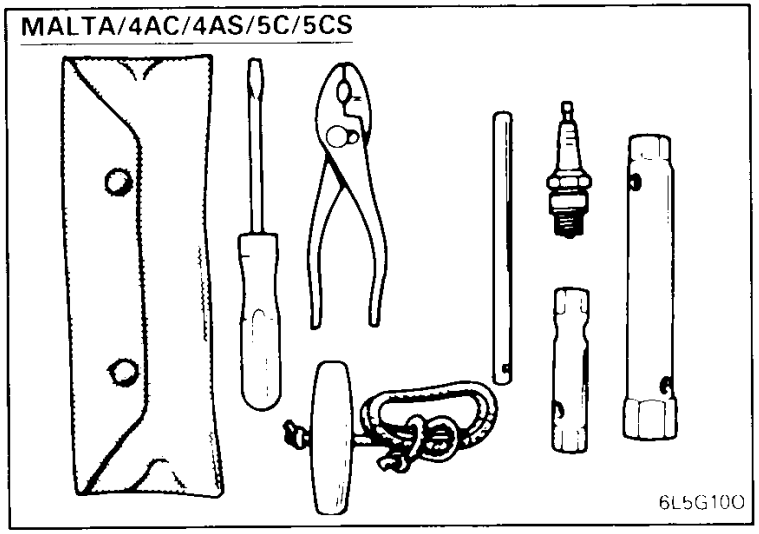
1) Run the engine at the lowest possible speed for the first 5 minutes.
2) Next, slowly open the throttle up to 1/2.
3) Continue operation at half-throttle or less until fuel in a tank is exhausted.
4) After first tankful, go to 1 : 100.

CAUTION:

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

OPERATING INSTRUCTIONS

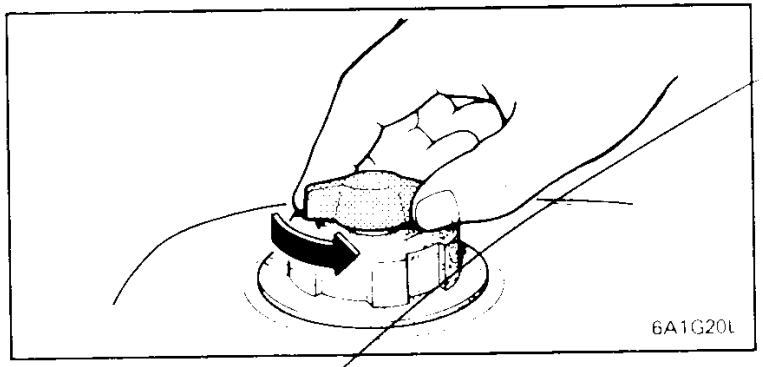


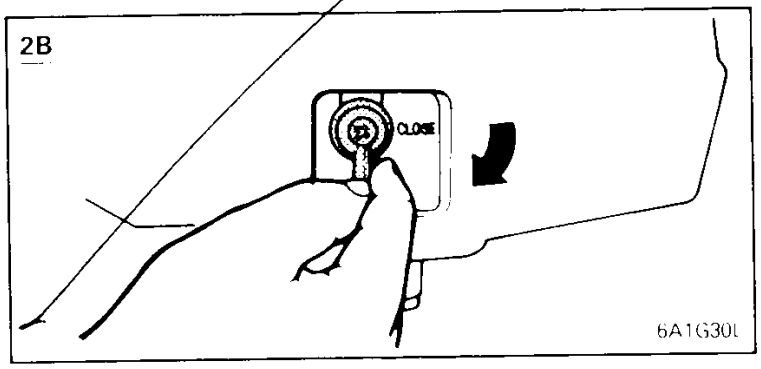


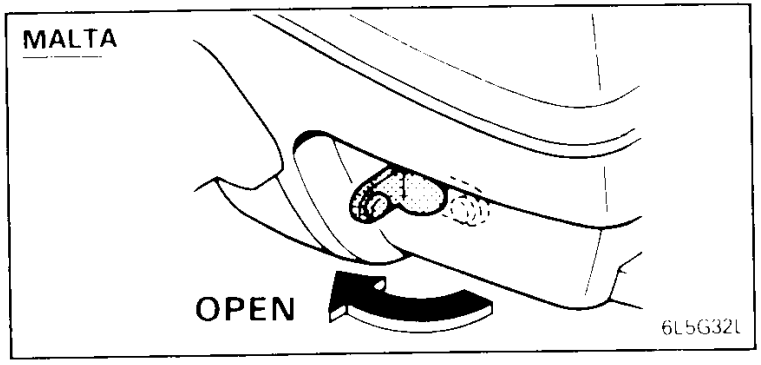
PRIOR TO OPERATION

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.
4. Do not start the engine out of water.







STARTING PROCEDURE

2B/MALTA

⚠WARNING

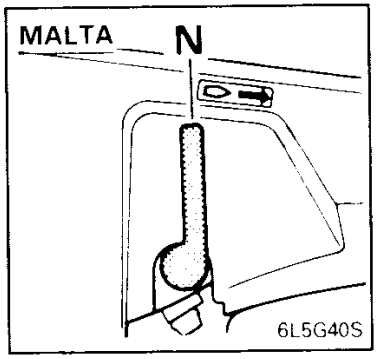
Before starting the engine, make sure that the boat is tightly moored and that you can steer clear of any obstructions.

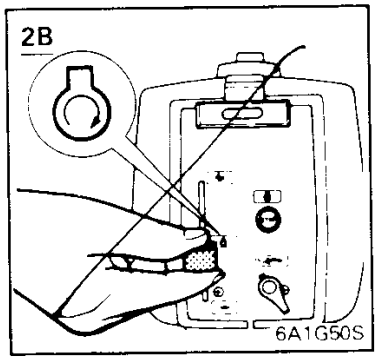
1) Loosen the air-vent screw attached to the fuel-tank cap by 2 or 3 turns.

⚠WARNING

When the air-vent screw is loosened, 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 loosening the air-vent screw.

2) Place the fuel cock knob in the OPEN position.



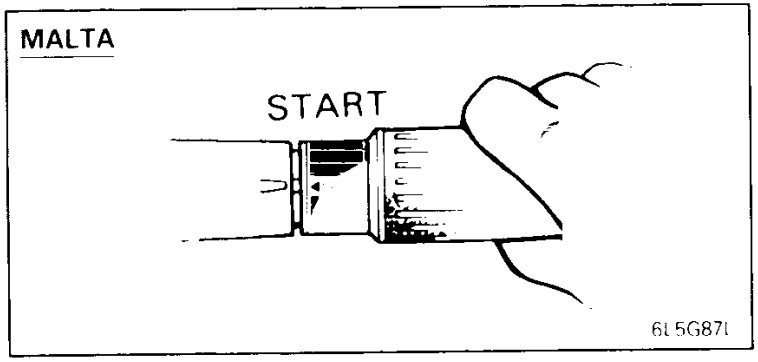


MALTA

2) Place the gear-shift lever in the NEUTRAL position.

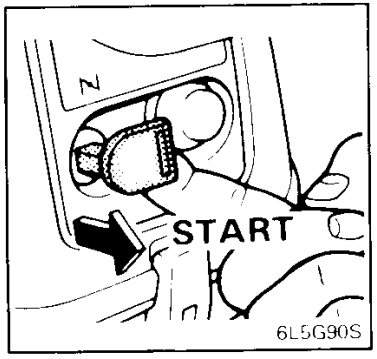
2B

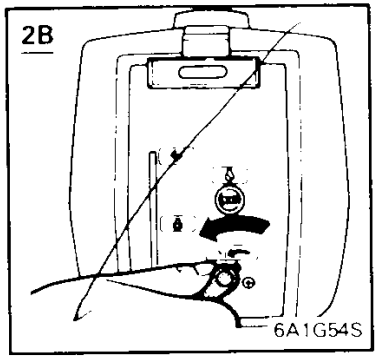
3) ~~Place the throttle control lever in the START~~ position.



MALTA

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

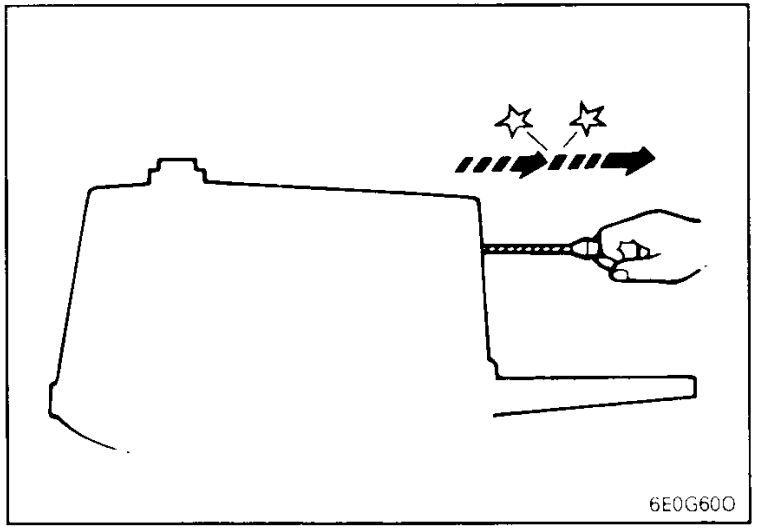




4) Place the choke knob in the START position.

NOTE:

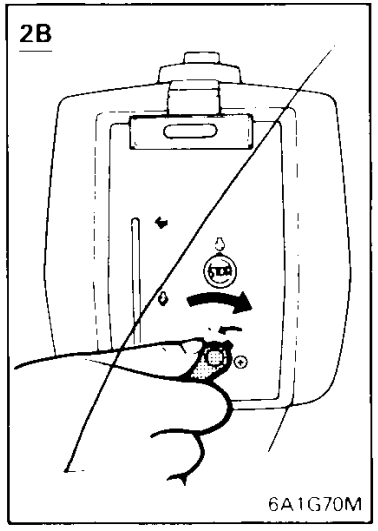
But if the engine is warm, place the choke knob in the RUN position.

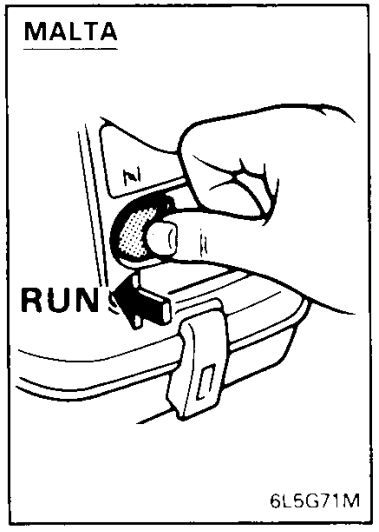


5) To start the engine, pull the starter-handle slowly until resistance is felt, then give a strong pull.

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.

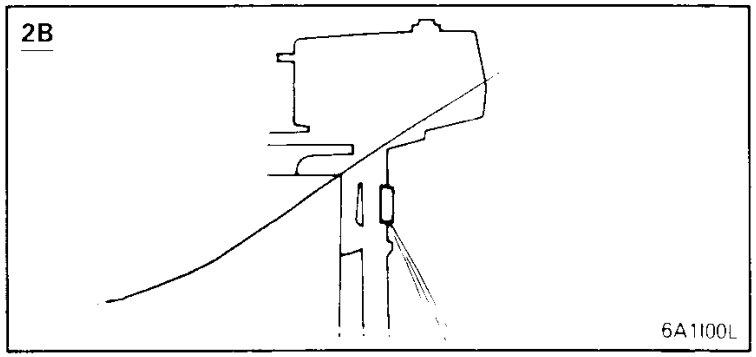
6) After the engine starts, do not let go of the starter-handle, but return it slowly to its home position before releasing it.

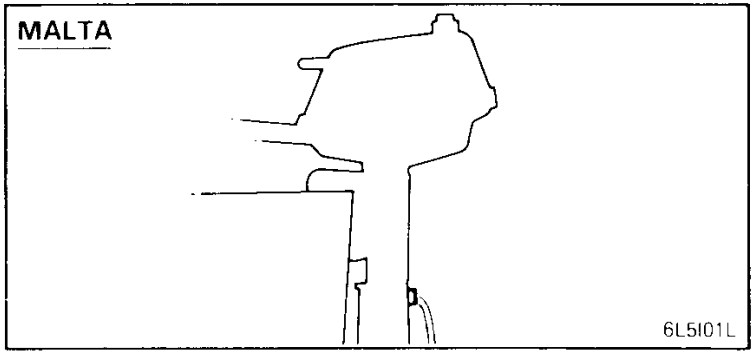


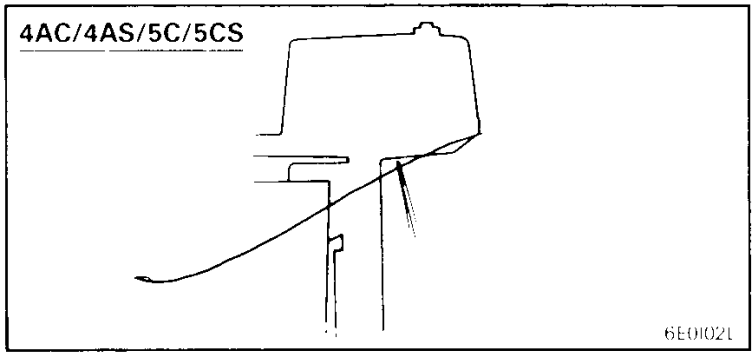


7) After using the choke, place the choke knob in the RUN position.

NOTE:
If the choke knob is left in the START position, the engine will stall.







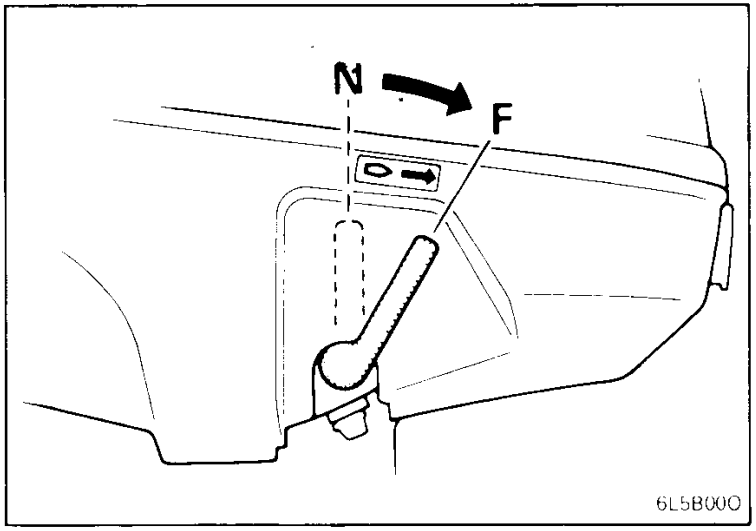
I-300S

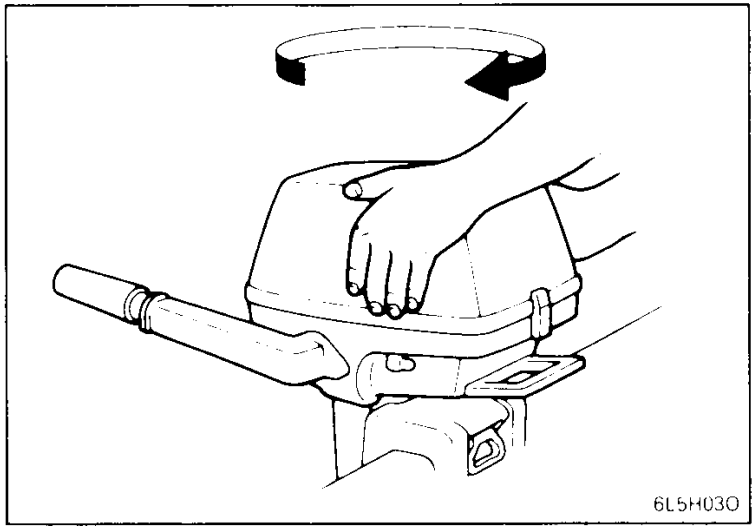
ENGINE WARM-UP

1. Before beginning operation, allow the engine to warm up at idling speed for 3 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.





H-060S

FORWARD AND REVERSE
MALTA

⚠WARNING

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

Forward

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

Reverse

The outboard motor is designed to make a full 360 turn (full-pivot system). The boat can be backed by simply turning the engine 180 .

⚠WARNING

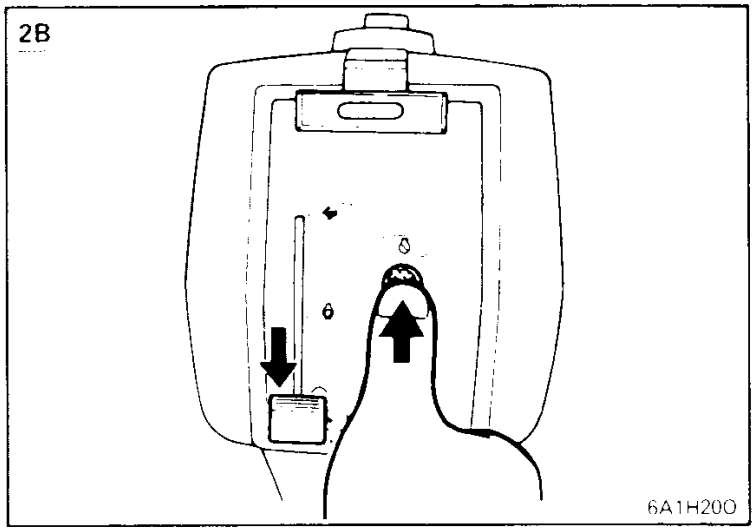
When operating in Reverse, be sure to keep the throttle no more than 1/2 open. If not, the boat will be unstable and loss of control may result, thus causing possible injury to persons.

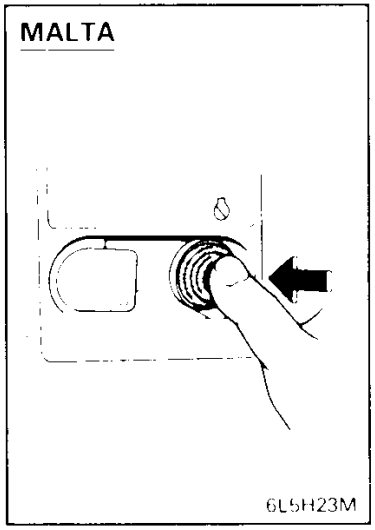
STOPPING

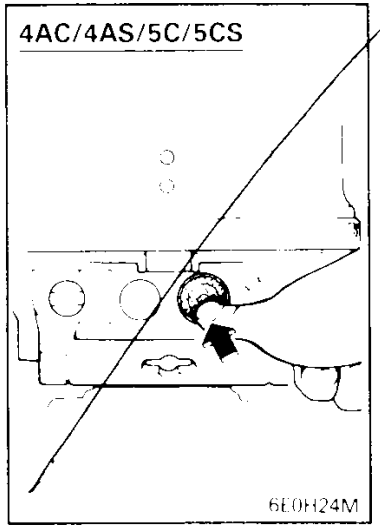
CAUTION:

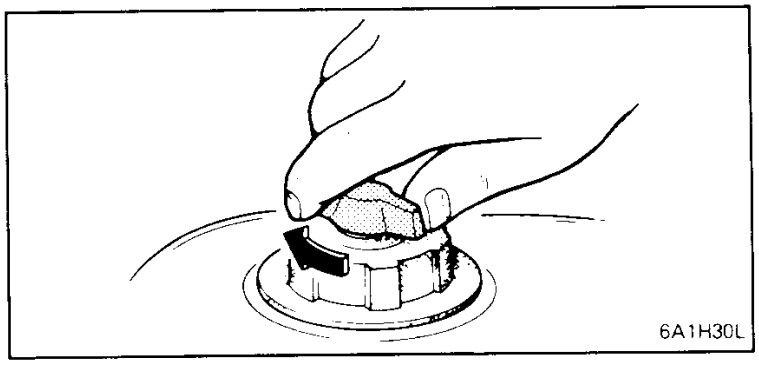
Before stopping the engine, reduce the engine temperature by running it at idling speed or low speed for 2 to 3 minutes.

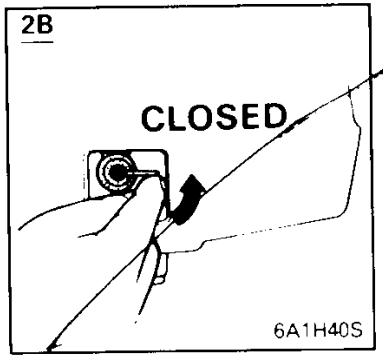
1) Push the stop switch to stop the engine.

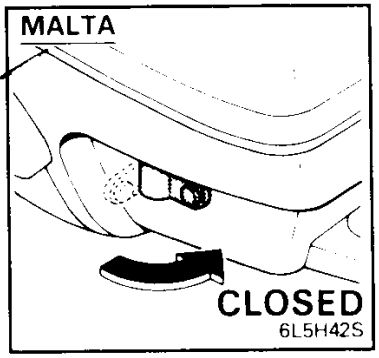


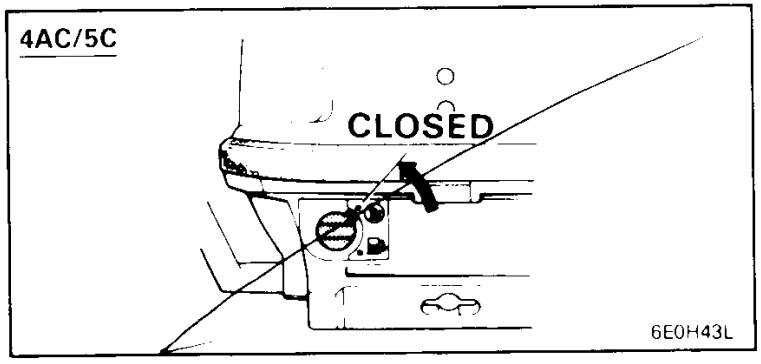






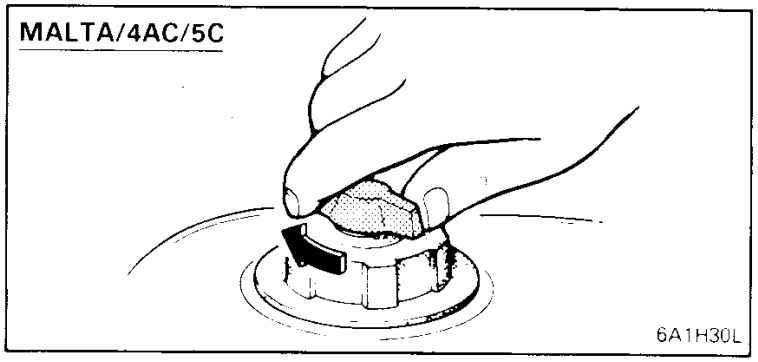


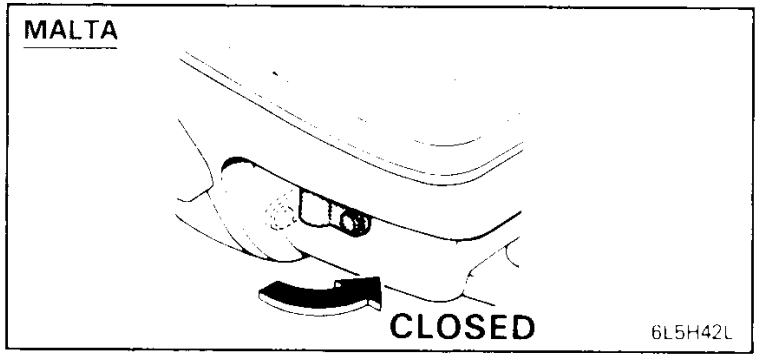


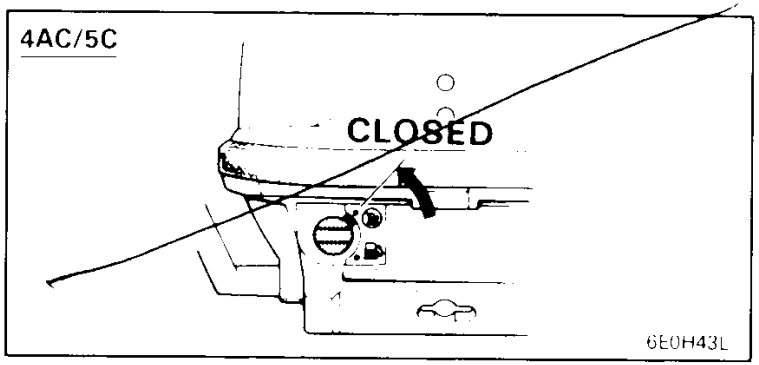


2B/MALTA/4AC/5C

2) After stopping the engine, tighten the air-vent screw and place the fuel-cock knob in the closed position.







H-760S

TILT-UP

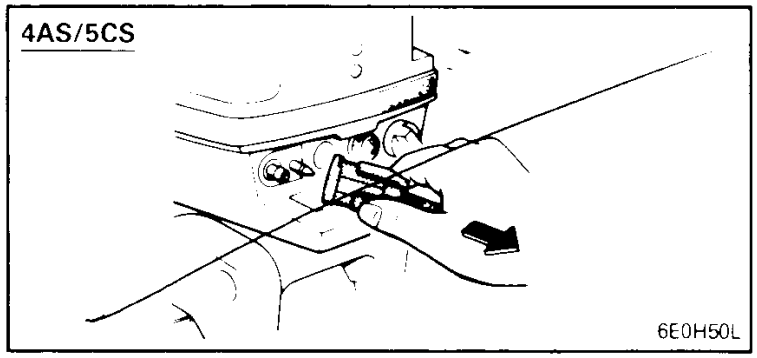
MALTA/4AC/4AS/5C/5CS

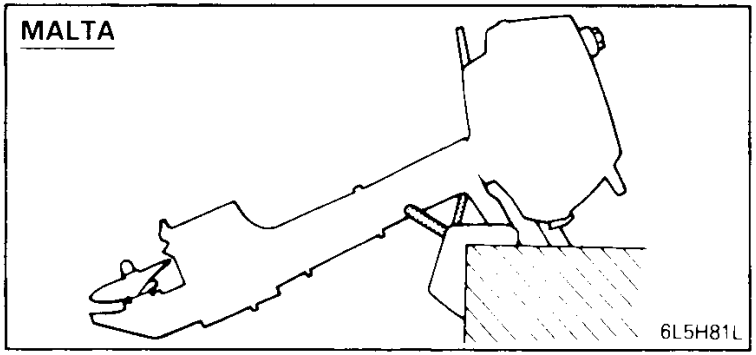
If the engine will be stopped for some time, or if the boat is moored in shallows, the engine should be tilted up to protect the propeller and casing from damage by collision with obstructions, and also to reduce salt corrosion.

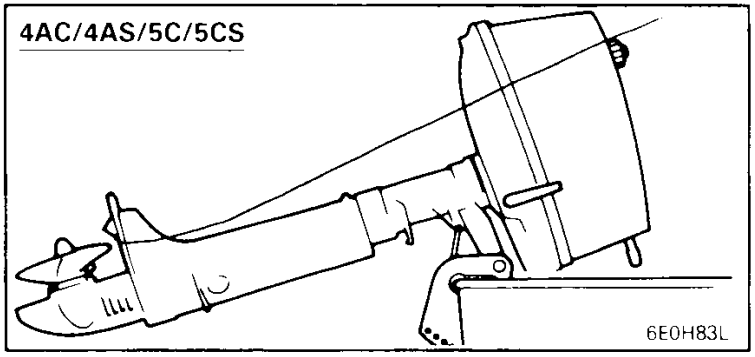
CAUTION:

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.**
3. **When the outboard motor is in Forward or the gear-shift lever is in Neutral, tilting-up is possible, but when it is in Reverse (turned back 180) or the gear-shift lever is in Reverse, tilting-up is impossible.**

1) Tighten the air-vent screw and place the fuel-cock knob in the closed position.







4AS/5CS

1) Disconnect the fuel-line from the motor.
2) Place the gear-shift lever in Neutral.
3) Place the motor in Forward.

MALTA

4) Hold the rear of the top cowling with one hand, tilt the engine up, and the tilt-support lever is turned to the locked position automatically.

4AC/4AS/5C/5CS

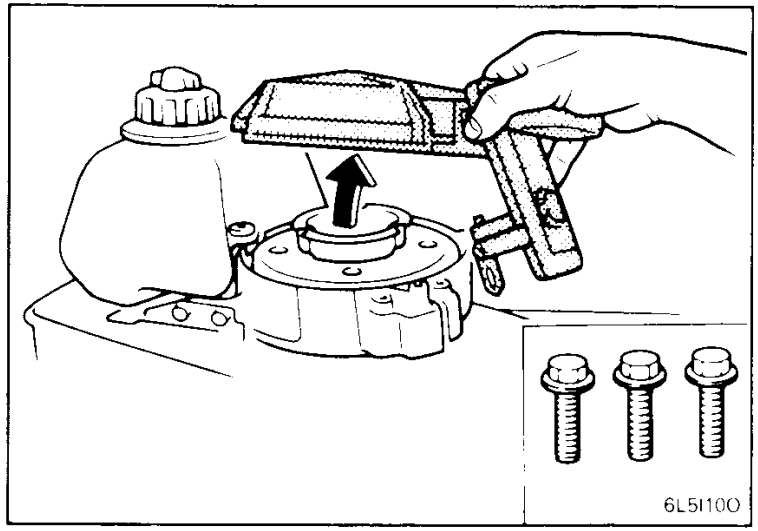
4) Hold the rear of the top cowling with one hand, tilt the engine up, and lock the tilt-support lever to the clamp-bracket with the other hand.

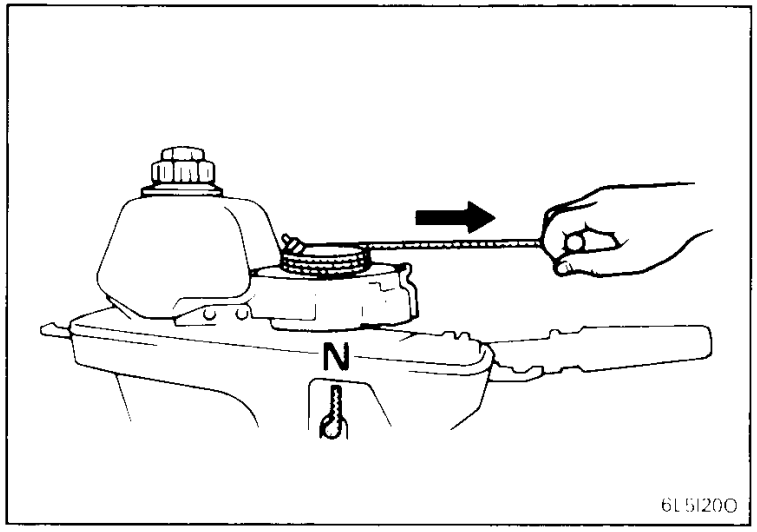
MALTA

5) When bringing the engine to the home position, slightly tilt up the engine, pull back the tilt-support lever and slowly tilt the engine down.

⚠WARNING

To prevent fuel leaking out, it is important to tighten the air-vent screw and place the fuel-cock knob in the closed position or disconnect the fuel-line if the engine is to be tilted up for more than a few minutes.





I-030S

EMERGENCY STARTING PROCEDURES

MALTA

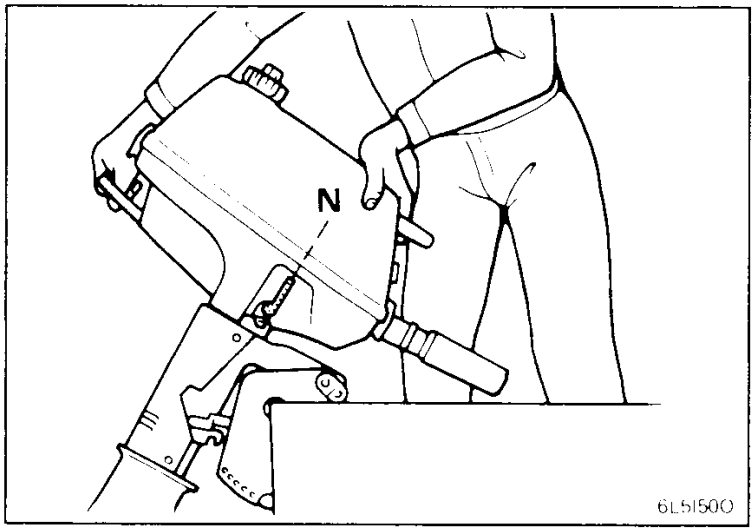
If the starter does not work, the engine may be started with an emergency starter rope.

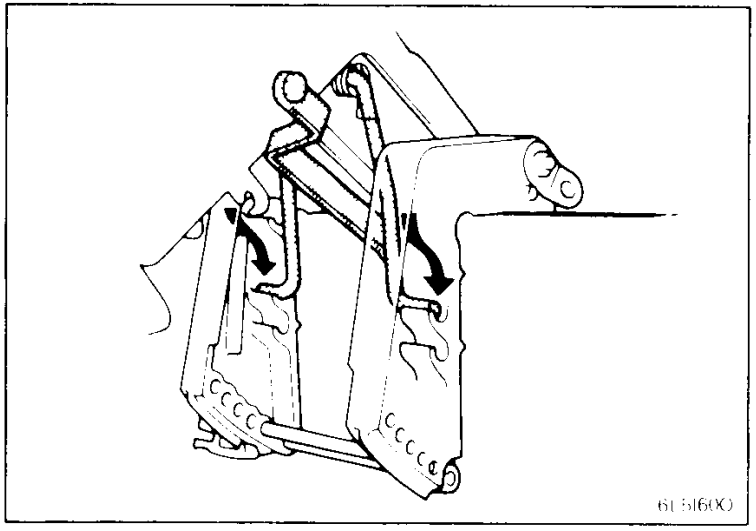
Procedure

1) Place the gear-shift lever in the NEUTRAL position.
2) To remove the cowling: pulling the rear lever up and pulling the front lever up unlocks the top cowling for remove.
3) Remove the starter by removing the 3 bolts securing the rewind mechanism to the flywheel.
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 2 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-470S

SHALLOW WATER CRUISING

MALTA

1) Place the gear-shift lever in the NEUTRAL position.
2) Slightly tilt up the engine and the tilt-support lever is turned to the locked position automatically to support the engine.

3) When bringing the engine to the home position, slightly tilt up the engine, pull back the tilt-support lever and slowly tilt the engine down.

4AC/4AS/5C/5CS

The outboard motor can be tilted up in 3 positions so that shallow water cruising is possible. To tilt down, first tilt up the outboard motor slightly and then put the tilt-support lever toward you while tilting down.

⚠WARNING

In shallows, run the boat at the lowest speed possible. The free-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.

J 030S

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").

2B/MALTA/4AC/5C

2. Tighten the air-vent screw and place the fuel-cock knob in the CLOSED position.

4AS/5CS

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.**

⚠WARNING

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

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.

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.

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 tank (Separate tank)	Cleaning					●
Idling speed	Adjustment			●	●	
Anode	Inspection/Replacement	●	○	○	○	
Outboard motor body	Inspection		●	●	●	
Cooling-water passages	Cleaning		●	●	●	
Propeller	Inspection		●	●	●	
Shear-pin and cotter-pin	Inspection/Replacement		●	●	●	

Item	Maintenance interval	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	○		○	○	
Fuel tank (Built-in tank)	Cleaning					○

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:
2B : NGK BR-5HS
MALTA : NGK BR-6HS10
4AC/4AS/5C/5CS : NGK BR-7HS

Before fitting the spark-plug, measure the electrode gap with a wire thickness gauge; adjust the gap to specification if necessary.

Spark-plug gap:
2B/4AC/4AS/5C/5CS :
0.5~0.6 mm (0.020~0.024 in)
MALTA : 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.

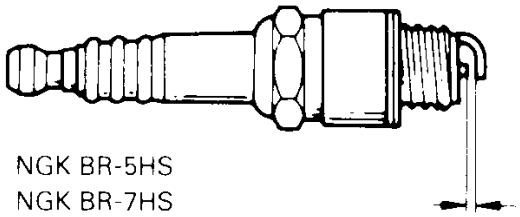
Spark-plug torque:
20 Nm (2.0 m • kg, 14 ft • lb)

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

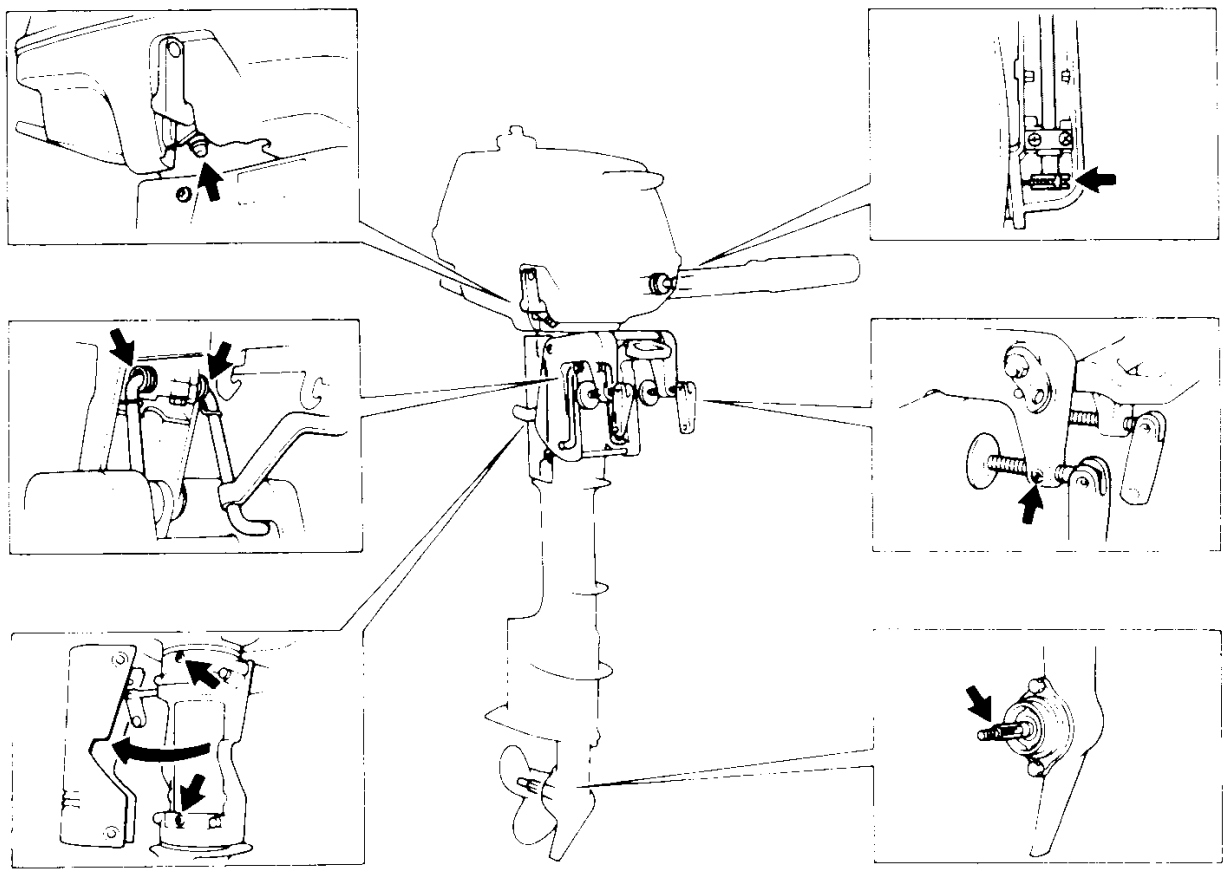
When removing or installing a spark plug, be careful not to damage the insulator. A damaged insulator could allow external sparks, which could lead to explosion or fire.



NGK BR-5HS
NGK BR-7HS
2B/4AC/4AS/5C/5CS : 0.5~0.6 mm (0.020~0.024")
MALTA : 0.9~1.0 mm (0.035~0.039")
NGK BR-6HS10

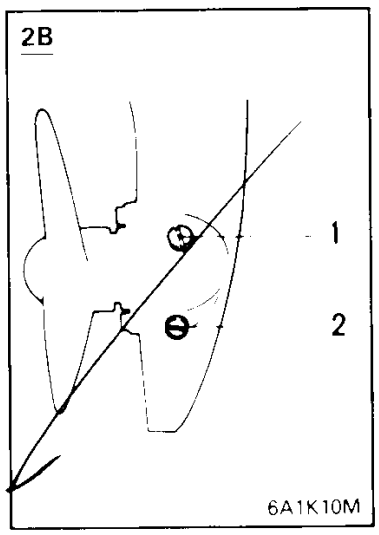
NGKP200

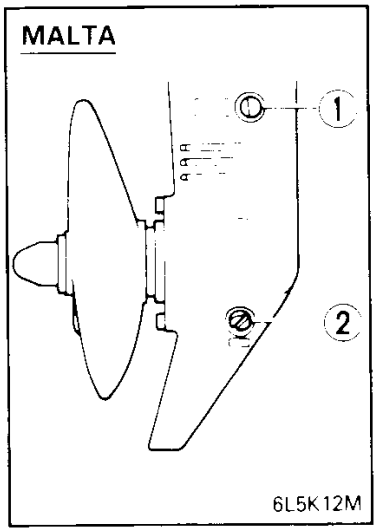
MALTA

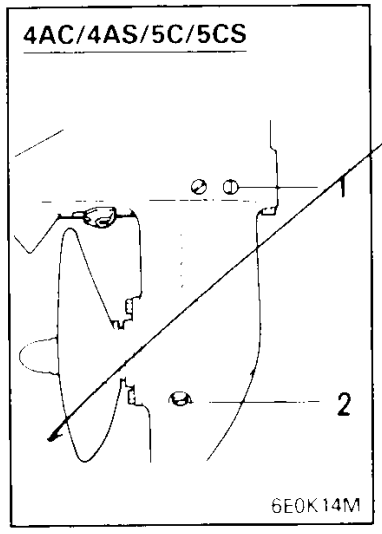


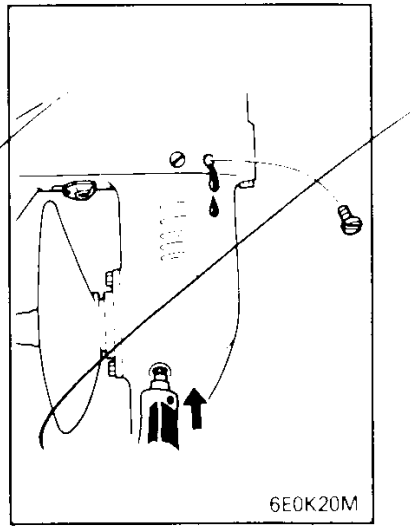
A YAMAHA Grease A

6L5A53E









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.

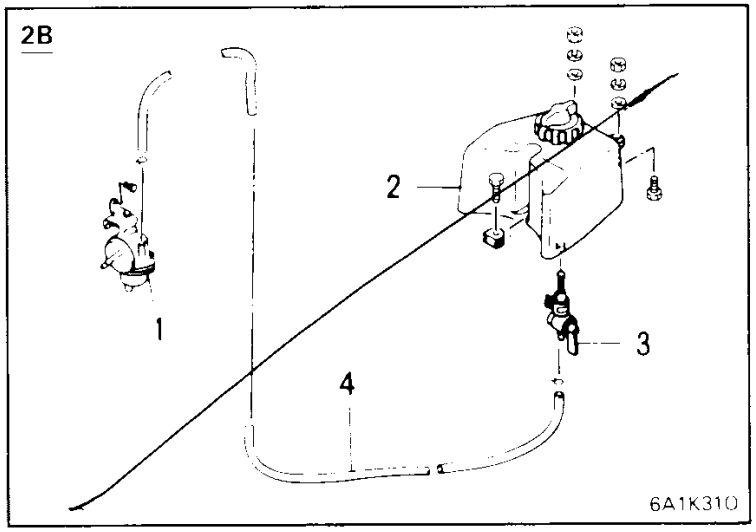
Gearbox-oil capacity:
~~**2B** : 45 cm³ (1.52 US oz, 1.58 Imp oz)~~
MALTA : 75 cm³ (2.53 US oz, 2.64 Imp oz)
4AC/4AS/5C/5CS :
~~105 cm³ (3.55 US oz, 3.70 Imp oz)~~

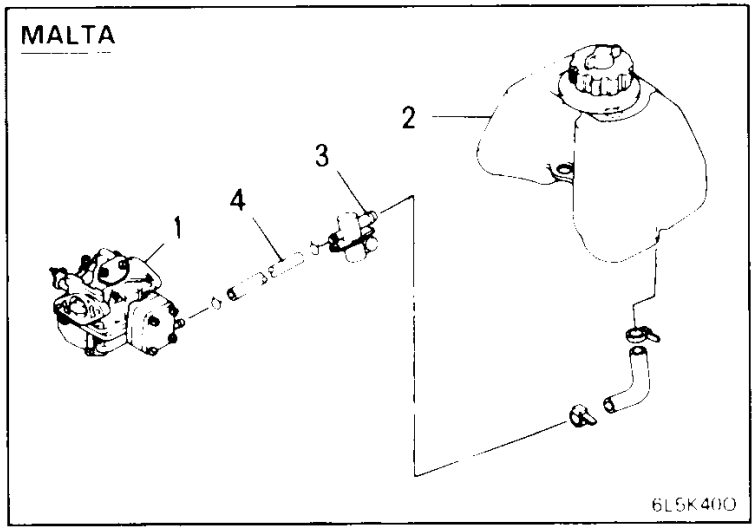
1 Oil-level plug
2 Oil drain-plug

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.





K-510S

FUEL SYSTEM INSPECTION
2B/MALTA

⚠WARNING

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

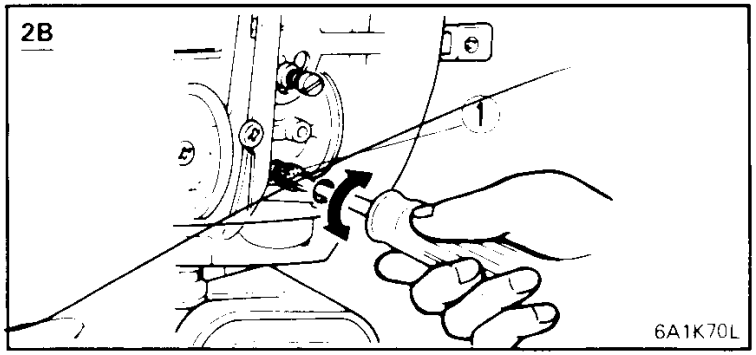
Check the fuel system for leaks, cracks, or malfunctions. If any problem is found, do the necessary repair or replacement as required. If no cause can be found, consult your nearest Yamaha dealer.

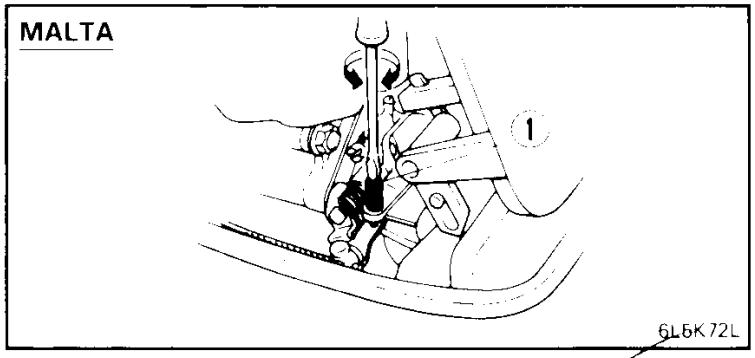
Checking points

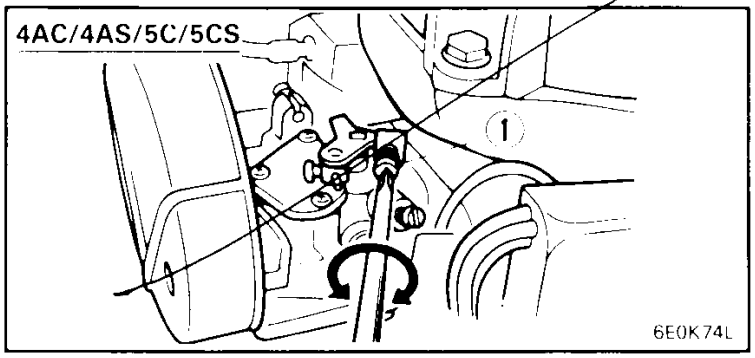
1 Carburetor leakage.
2 Fuel tank leakage.
3 Fuel hose joint leakage.
4 Fuel hose cracks or any damage.

⚠WARNING

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







K-800S

IDLING SPEED ADJUSTMENT

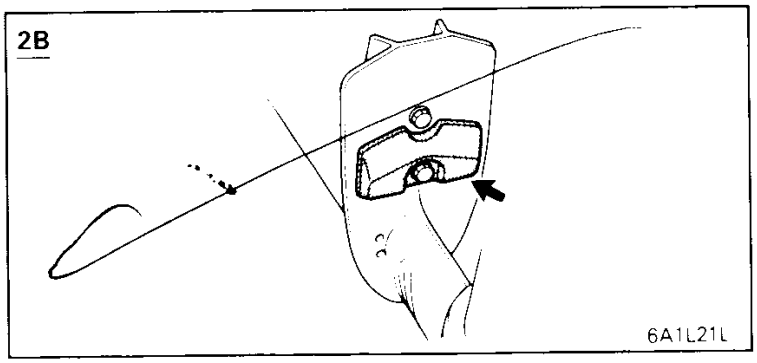
Procedure

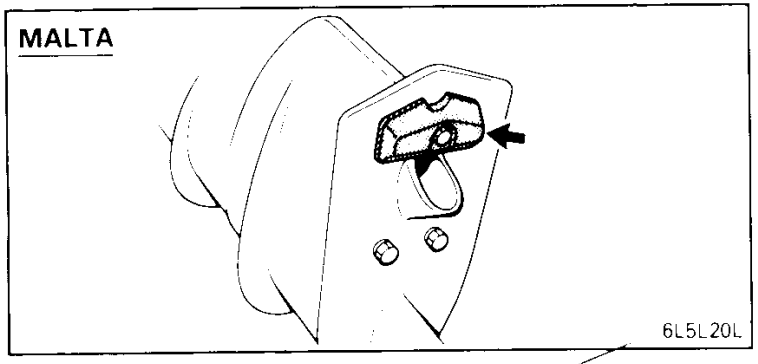
1) Start the engine and allow it to warm up fully by running in Neutral, and check that it is running smoothly.
2) Adjust the throttle stop-screw to set the idling speed to specification (see "SPECIFICATIONS") by turning the stop-screw clockwise to increase the idling speed, and turning it anti-clockwise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

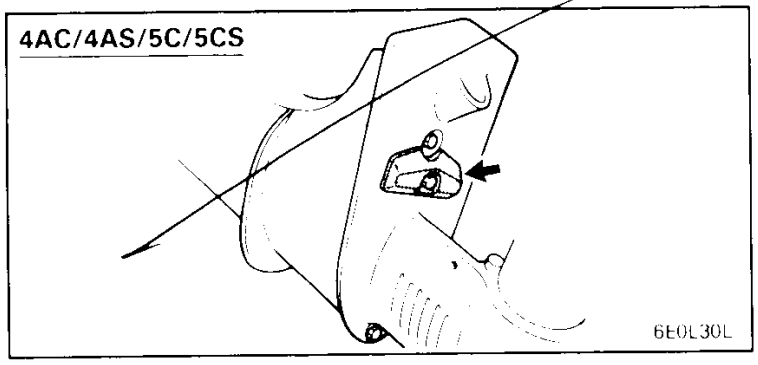
NOTE:

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

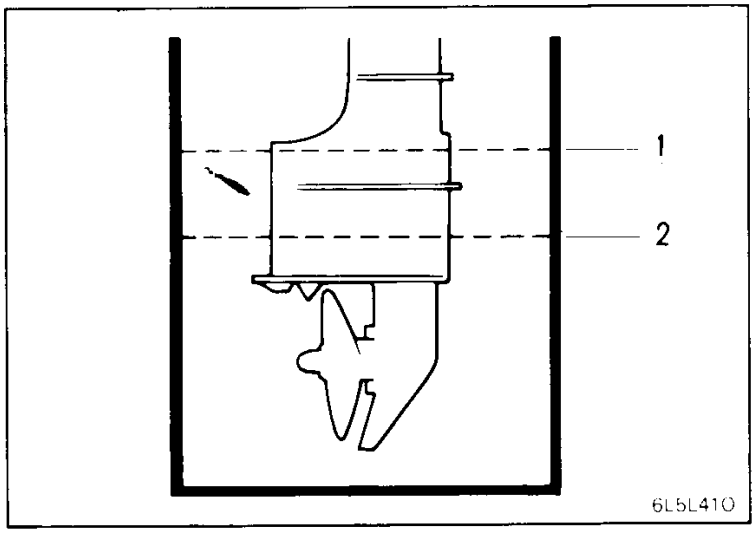
ANODE INSPECTION AND REPLACEMENT

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.



L-330S

CLEANING THE OUTBOARD MOTOR

MALTA

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

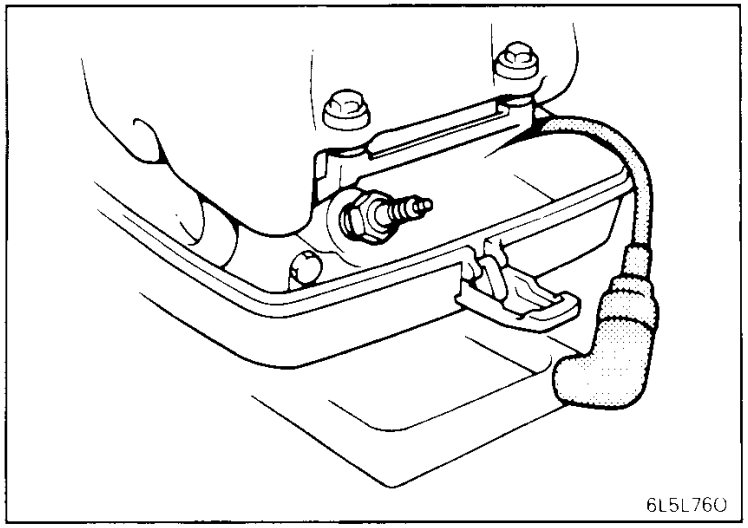
Fit the outboard motor on the water tank, and fill the tank with fresh water to above the level of the anti-cavitation plate.

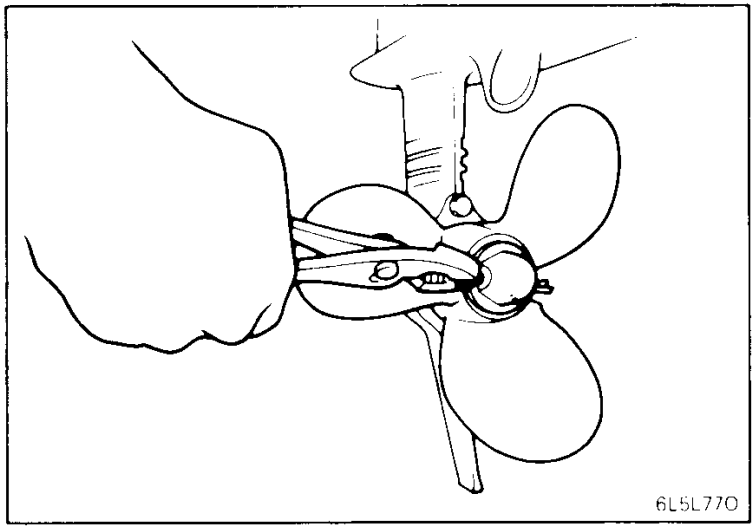
Shift into Neutral, start the engine, and run at low speed for a few minutes.

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





L-515S

PROPELLER

MALTA

⚠WARNING

When removing or installing the propeller, remove the spark-plug cap from the spark-plug.
Otherwise, the engine may start suddenly, and a serious accident may result.

[How to remove]

1) Using the pliers provided, straighten the cotter-pin and pull it out.
2) Remove the propeller nut.
3) Remove the propeller.

[How to replace]

1) Apply Yamaha grease A (water-resistant grease) to the propeller-shaft.
2) Slide the propeller over the propeller-shaft.
3) Align the hole in the propeller-nut with the hole in the propeller-shaft and insert the cotter-pin into the hole. Be sure to bend the cotter-pin ends.

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.

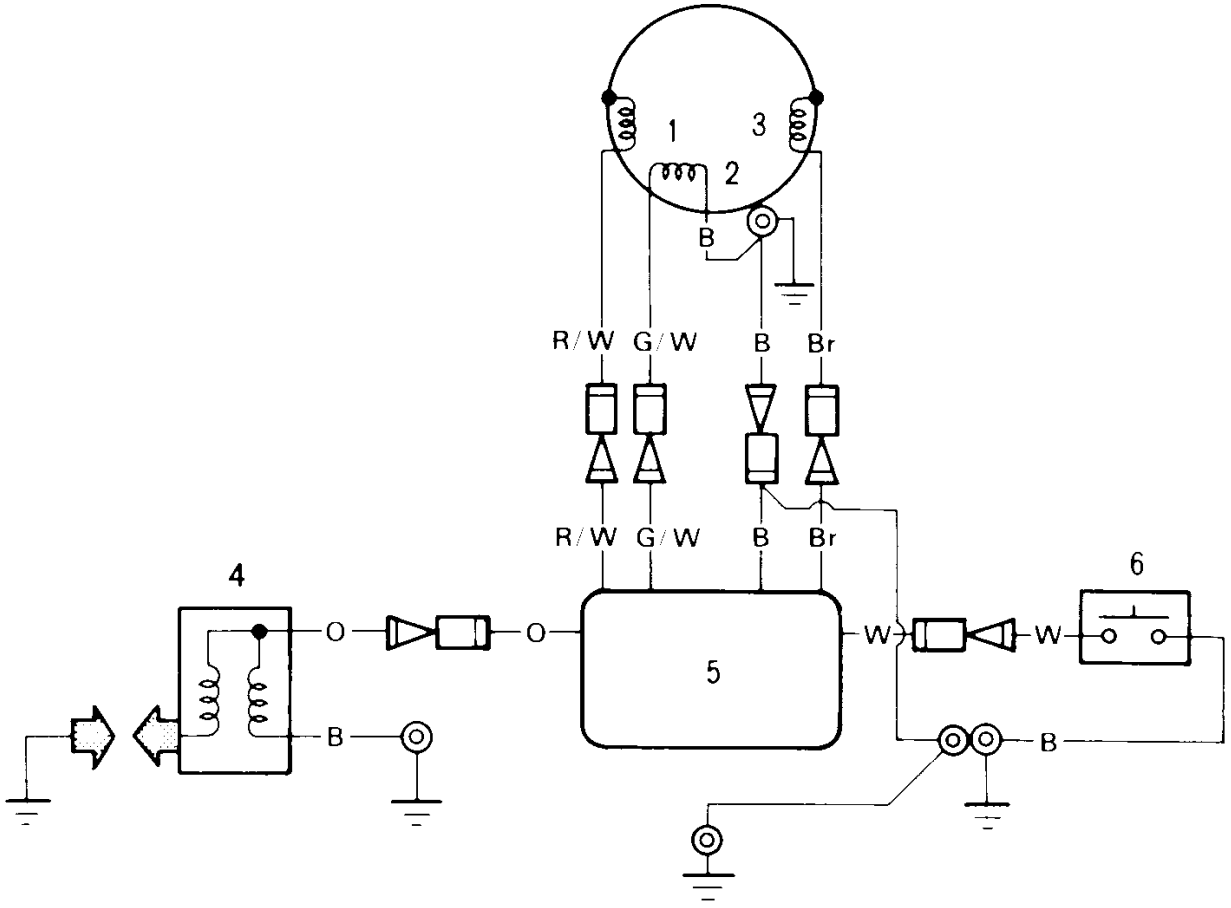
A	B	C	D	E	F	G	H	Possible Cause
								Fuel tank is empty.
								Fuel hose is incorrectly connected.
								Fuel hose is flattened or kinked.
								Fuel pump is malfunctioning. **MALTA/4AC/4AS/5C/5CS**
								Fuel is contaminated or stale.
								Incorrect starting procedure.
								Specified 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. **MALTA/4AC/4AS/5C/5CS**
○								Ignition-coil is malfunctioning. **MALTA/4AC/4AS/5C/5CS**
				○				Clogged water passages.
				○				Faulty water-pump.
	○			○				Thermostat clogged or faulty. **MALTA/4AC/4AS/5C/5CS**
					○		○	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.

MALTA

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 Pulser-coil 1

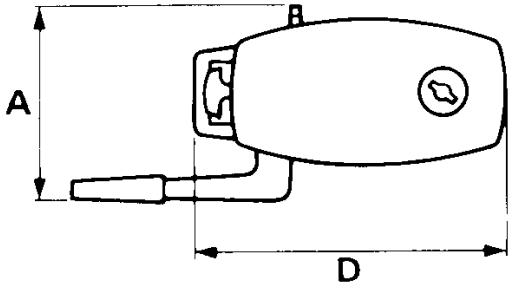
2 Pulser-coil 2

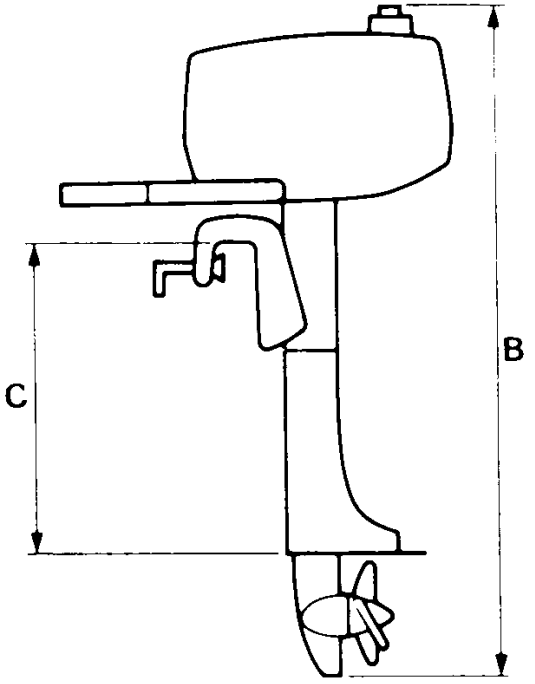
3 Charge-coil

4 Ignition-coil

5 CDI unit

6 Stop switch


A
D


B
C

SPECIFICATIONS

Item \ Model	Unit	2B	MALTA
DIMENSIONS			
•Overall width "A"	mm (in.)	185 (7.3)	285 (11.2)
•Overall height "B"	mm (in.)	920 (36.2)	S: 996 (39.2) L: 1,123 (44.2)
•Transom height "C"	mm (in.)	420 (16.5)	S: 442 (17.4) L: 569 (22.4)
•Overall length "D"	mm (in.)	400 (15.8)	375 (14.8)
•Weight	kg (lb.)	10 (22.0)	S: 16.5 (36.3) L: 17.5 (38.5)
PERFORMANCE			
•Full throttle operating range	revs/min. (rpm)	4,000 ~ 5,000	4,500 ~ 5,500
•Maximum output	kW (HP)/at rpm	1.5 (2)/4,500	2.2 (3)/5,000
•Average maximum power	kW (HP)/at rpm	1.5 (2)/4,500	2.2 (3)/5,000
•Idling speed	revs/min. (rpm)	1,100 ~ 1,200	1,150 ~ 1,250
ENGINE			
•Type		Two stroke	Two stroke
•Number of cylinder		1	1
•Bore and stroke	mm (in.)	39 × 36 (1.54 × 1.42)	46 × 42 (1.82 × 1.65)
•Piston displacement	cm^3 (cu.in.)	43 (2.62)	70 (4.27)
•Cooling system		Water cooling	Water cooling
•Ignition system		Point system	CDI system
•Spark-plug	NGK	BR-5HS	BR-6HS10
•Spark-plug gap	mm (in.)	0.5 ~ 0.6 (0.020 ~ 0.024)	0.9 ~ 1.0 (0.035 ~ 0.039)

Item \ Model	Unit	2B	MALTA
DRIVE UNIT			
•Gear positions •Gear ratio		Forward 2.08 (27/13)	Forward-Neutral 2.08 (27/13)
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) 1.2 (0.32, 0.26) Yamaha outboard motor oil Outboard motor hypoid gearbox-oil (SAE 90) 45 (1.52, 1.58)	Regular-grade 1:100 1.35 (0.36, 0.31) Yamaha outboard motor oil Outboard motor hypoid gearbox-oil (SAE 90) 75 (2.53, 2.64)

1. The average maximum power represents the maximum power at the center of the full-throttle speed range.

⚠WARNING

Certain components used in the construction of this product contain asbestos.
Asbestos may be found in the following: gaskets and heat insulators.
Breathing asbestos dust is hazardous to health.
Please take care when working with/servicing parts containing asbestos.

1. Always work out of doors in a well ventilated place.
2. Do not drill, file or cut the component unless essential and then use only low speed tools equiped, if possible, with dust extractors.
   If high speed tools are used they must be equiped with dust extraction facility.
3. When possible dampen before cutting to reduce possibility of dust.
4. Dampen dust and place it in a properly sealed receptacle and dispose of it safely.