D30000-0

PERIODIC SERVICE

MAINTENANCE SCHEDULE

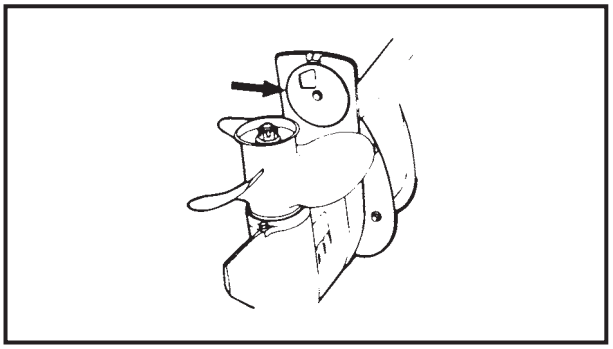
The following chart may be taken as a helpful guide to the intervals between maintenance procedures.

Item \ Intervals	Initial		Every		Refer page
	10 hours (Break-in)	50 hours (3 months)	100 hours (6 months)	200 hours (1 year)	
Anode	○	○	○		3-9
Battery	○ (every month)				3-10
Carburetor	○		○		3-12
Fuel enrichment valve			○		3-13
Carburetor link	○		○		3-13
Cylinder head bolts, engine mounting bolts, and flywheel nut	○		○		3-11
Fuel filter	○		○		3-11
Fuel line			○	○	3-11
Gear oil	○		○		3-11
Idle-speed			○		3-15
Ignition timing	○		○		3-13
Neutral opening control	○		○		3-20
Oil injection pump	○		○		3-11
Oil level warning system	○		○		3-17
Oil pump link	○		○		3-16
Propeller		○	○		3-17
Spark plug	○	○	○		3-18
Start-in gear protection	○		○		3-19
Throttle cable	○		○		3-19

D31000-0

ANODE

Inspect the anode. If it is worn out, replace it with a new one. If scaling of the surface is evident, remove the anode and clean it with a wire brush, and remove all trace of oil or grease. After cleaning, polish the contact surfaces of the anode mount, and re-install.



CAUTION:

Never paint the anode. To ensure good electrical contact, keep the anode contact surface clean of oil or grease.

D31305-0*

BATTERY

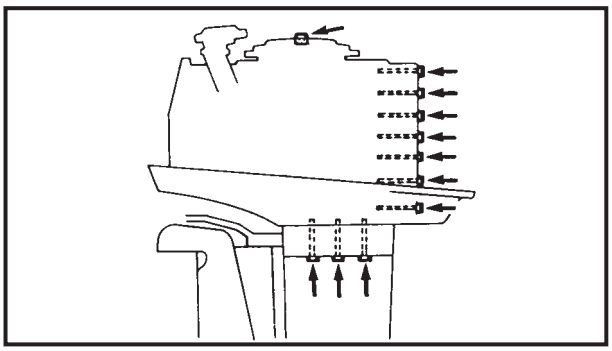
⚠ WARNING

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. It contains sulfuric acid. Avoid contact with skin, eyes, or clothing.
Antidote:
EXTERNAL; Flush with water.
INTERNAL; Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.
EYES; Flush with water for 15 minutes and get prompt medical attention.
Batteries produce explosive gases: Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in a closed space.
Always wear eye protection when working near batteries.
KEEP OUT OF REACH OF CHILDREN.

NOTE:

- Batteries vary among manufacturers. Therefore the following procedures may not always apply. Consult your battery manufacturer's instructions.
- Disconnect the black negative lead first to prevent the risk of shorting.

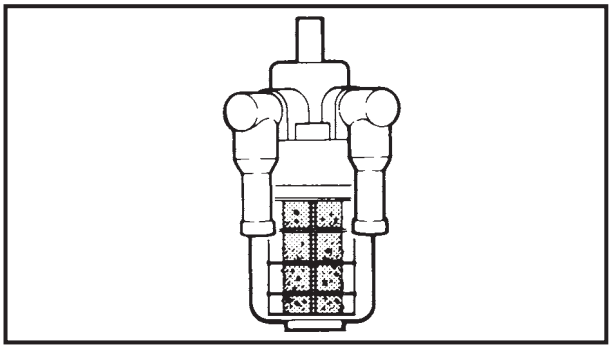
1. Inspect:
   - Battery fluid level
   - Battery fluid specific gravity



D32000-0

CYLINDER HEAD BOLTS, ENGINE MOUNTING BOLTS, AND FLYWHEEL NUT

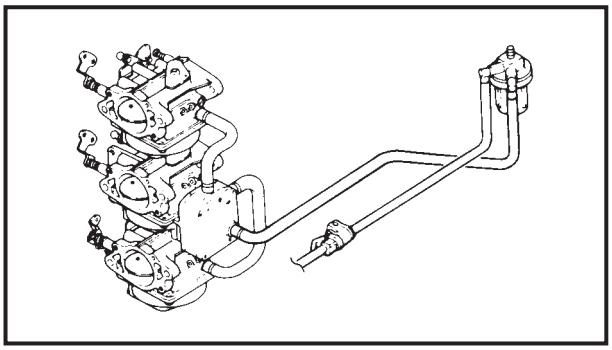
1. Retighten to specifications.
2. Check other fixings and tighten if necessary.



D32300-0

FUEL FILTER

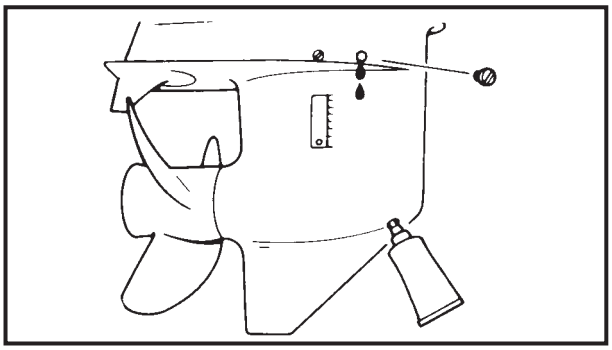
Clean the strainer of dust and impurities.



D32600-0

FUEL LINE

Check the fuel line for leaks.



D32902-0

GEAR OIL

1. Drain the gear oil thoroughly, and pour in new oil.
2. Check for water or metallic sediment in the drained oil.

Gear oil capacity:
200 cm³
(6.76 US oz, 7.04 Imp oz)

D34002-2

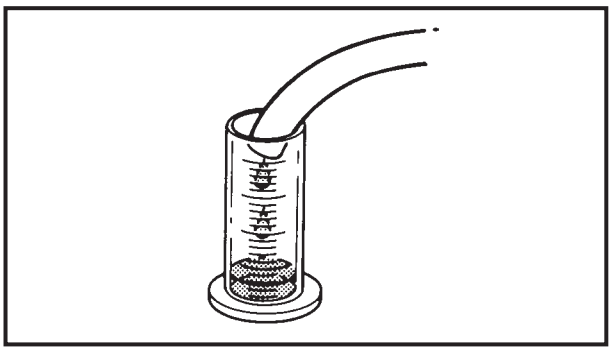
OIL-INJECTION PUMP

Operational test

1. Start the engine, and set the idling speed at 1,500 rpm by adjusting the throttle-stop lever.

CAUTION:

Use a 50:1 fuel mixture to start the engine.

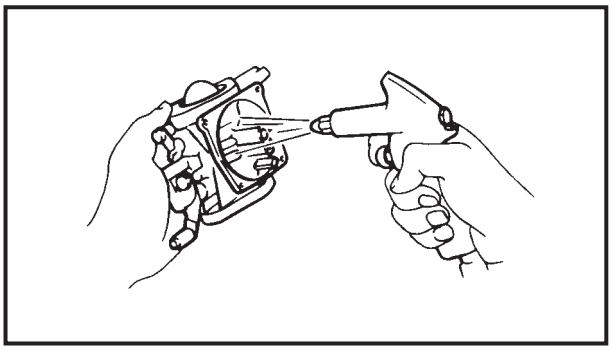


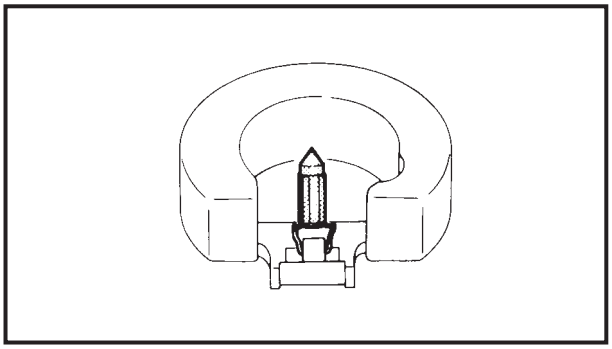
2. Remove the oil-pump link-rod, and fix the oil-pump lever in the full-throttle position.
3. Measure the oil discharge from each port for three minutes, using a measuring cylinder graduated in steps at least of 0.1 cc to confirm that the specified amount is discharge.

Specified discharge:
(each port)
0.7 ± 0.3 cm³
(0.025 ± 0.011 Imp oz,
0.024 ± 0.010 US oz)

NOTE:

- When measuring with the measuring cylinder, ensure that no oil clings to the cylinder wall, for otherwise the measurement will be inaccurate.
- Use only genuine Yamaha oil, for if the viscosity is too high or too low, the measurement of the discharge will be inaccurate.
- The longer the time over which measurement is made, the more accurate will be the measurement. Calculate the rate of discharge per minute.





D31600-1

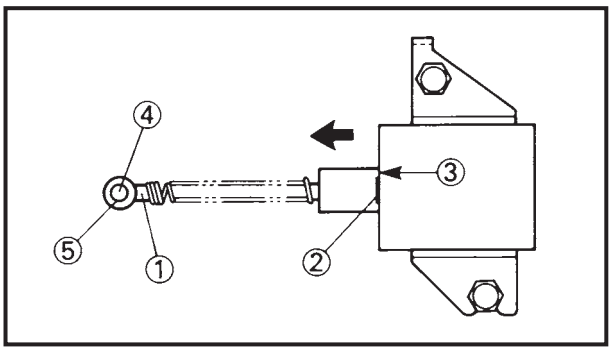
CARBURETOR

1. Check the fuel passages and air passages for fouling or clogging. Clean fouled parts with suitable cleaning solvent and blow out clogged passages with compressed air.

⚠ WARNING

Protect your eyes with suitable safety spectacles or safety goggles when using compressed air.

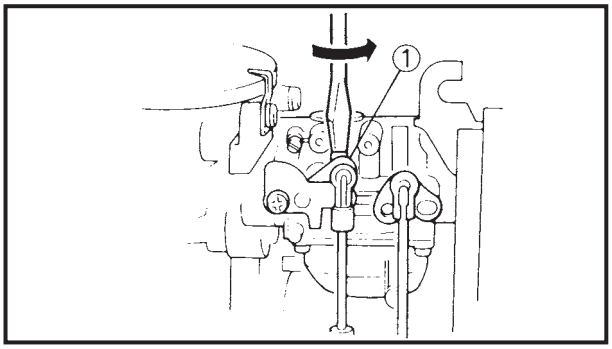
2. Check the needle-valve for wear, and replace it if worn.



D31800-9

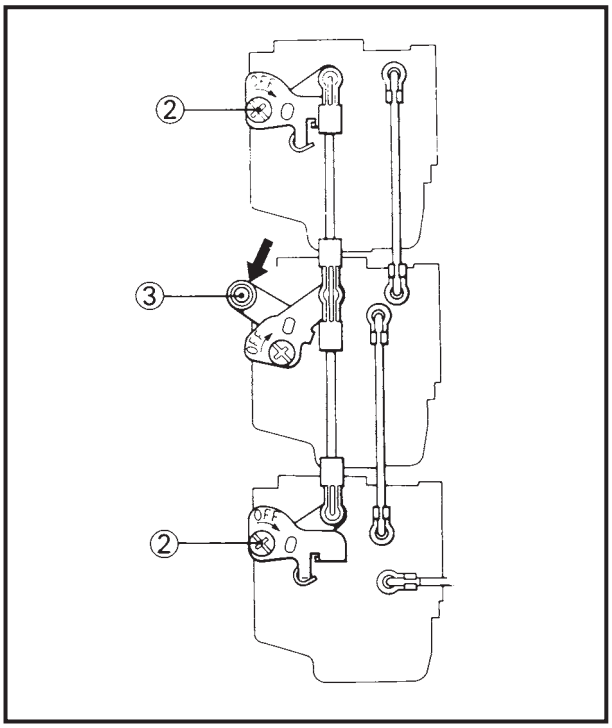
FUEL ENRICHMENT VALVE ADJUSTMENT

1. Fully close the choke valve, adjust the length of the pulling wire hook ① so that the marks on the plunger ② and fuel enrichment valve end ③ are aligned.
2. Hook the pulling wire hook ① to the choke lever pin ④, and hold it with the O-ring ⑤.

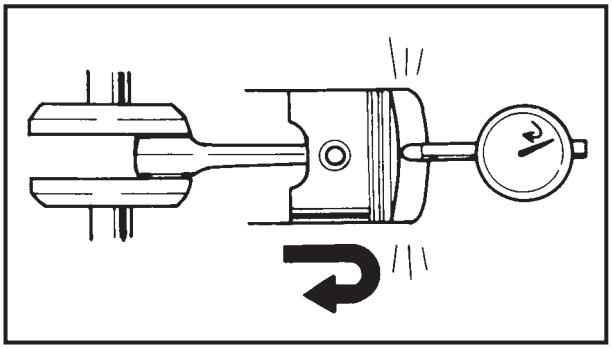


CARBURETOR LINK ADJUSTMENT

1. Loosen the idle adjust screw ① and fully close the throttle valve.



2. Loosen the throttle lever securing screws ② of upper and lower carburetors by turning clockwise.
3. While lightly pushing the throttle lever ③ of the middle carburetor in the direction of the arrow (full-closed), tighten the throttle lever securing screws of the upper and lower carburetors by turning counterclockwise.



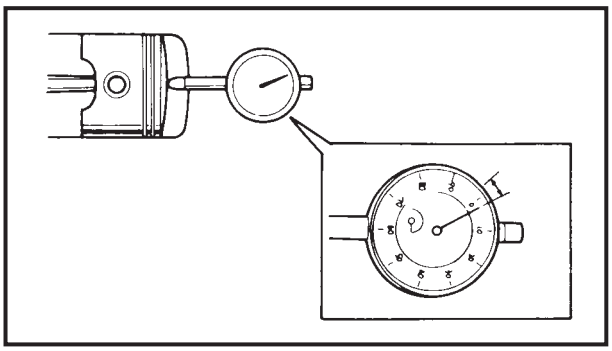
D33302-0*

IGNITION TIMING ADJUSTMENT

1. Install a dial-gauge in the spark-plug hole of No. 1 cylinder.

NOTE:

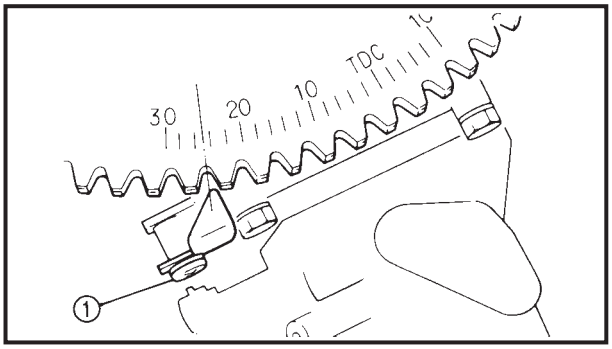
For easy timing-plate adjustment, it is advisable to remove the spark plugs from all the cylinders.



2. Slowly turn the flywheel CLOCKWISE, and stop it when the piston is at TDC.

CAUTION:

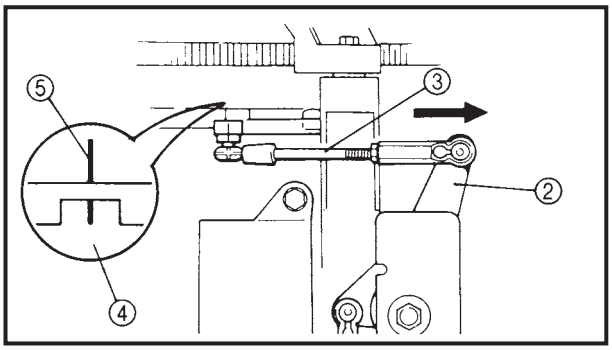
Be sure to turn the flywheel clockwise, or the impeller blade will be twisted the other way, thus reducing pump performance.



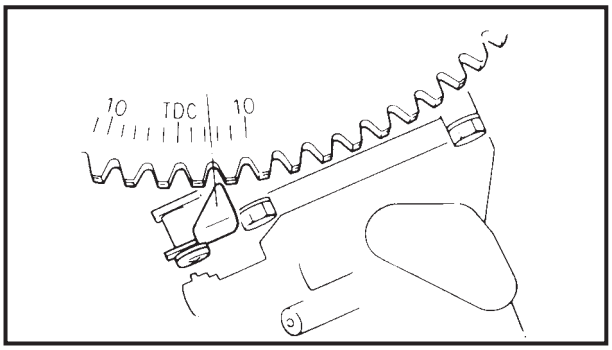
3. Set the piston at 3.55 mm (0.14 in) BTDC, and set the timing-plate at 25˚ BTDC.

NOTE:

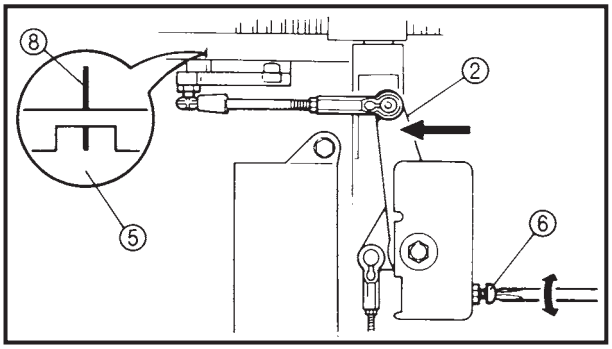
After tightening the screw ① paint over the screwhead to discourage tampering with the adjustment.



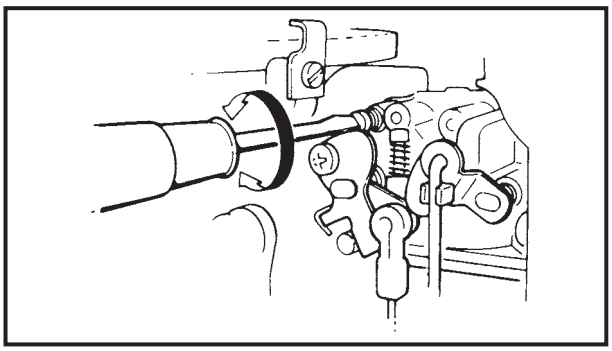
4. Set the magneto control lever ② to the fully-advanced position.
   Adjust the length of the link rod ③ so that the marks on the magneto base ④ and flywheel ⑤ are aligned, and tighten the locknut.



5. Turn the flywheel so that the timing-plate indicates 5˚ ATDC.



6. Set the magneto control lever ② to the fully-retarded position. Adjust the length of the fully-retarded adjusting screw ⑥ so that the marks on the magneto base ⑦ and flywheel ⑧ are aligned, and tighten the locknut.

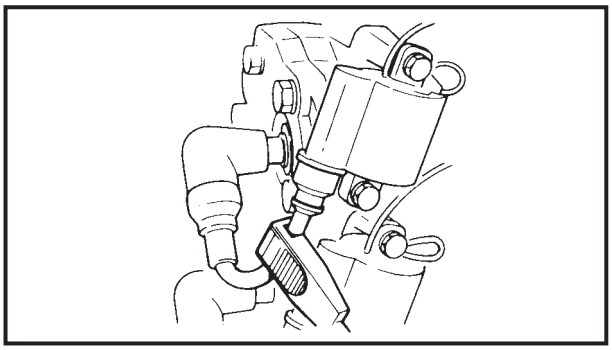


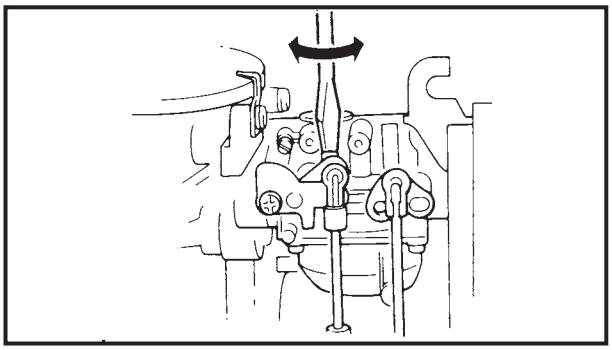
D33000-0

IDLE-SPEED

1. Turn the pilot screw until it is lightly seated.
2. Turn the pilot screw outward to specification.

Pilot screw:
25hp:
3/4 ± 1/4
30hp:
No. 1: 3/4 ± 1/4 turns out
No. 2: 1-3/4 ± 1/4 turns out
No. 3: 1 ± 1/4 turns out

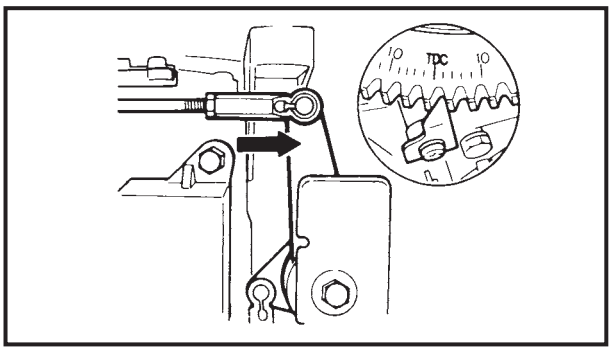




3. Start the motor, and allow it to warm up for a few minutes.
4. Set the idle-speed to the specified level by setting the throttle stop-screw. Use a tachometer for checking the speed when adjusting the motor speed.

NOTE:
Turning the throttle stop-screw clockwise increases the motor speed; turning it counterclockwise decreases the motor speed.

Idle speed:
750 ± 50 rpm
1,050 ± 50 rpm (PTT models)

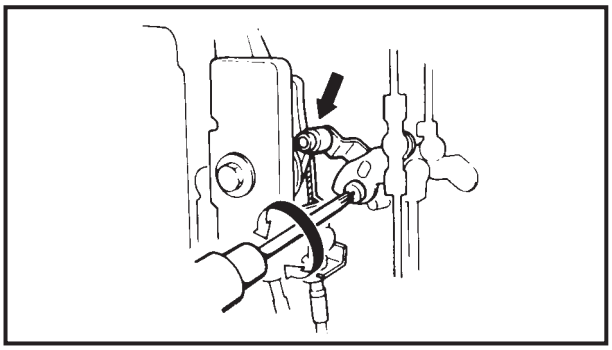


PICK-UP TIMING

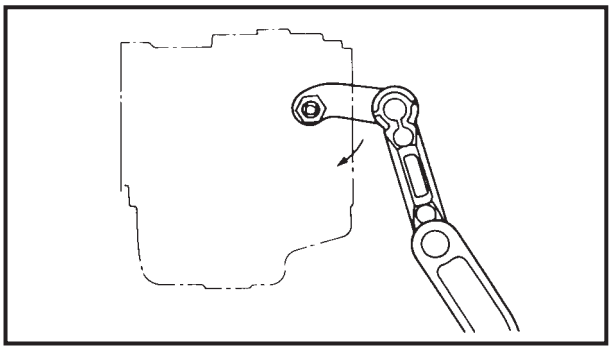
NOTE:
After adjusting the engine idle speed, the pick-up timing should be adjust.

1. Start the engine, and move magneto control lever slightly to the full-advance side so that ignition timing is set at specification. Use a timing light for this adjustment.

Pick up timing:
25hp: ATDC 3 ± 1˚
30hp: ATDC 2 ± 1˚



2. Loosen the throttle lever securing screw of the middle carburetor. Bring the throttle roller lightly in contact with the throttle cam, and tighten the throttle lever securing screw.

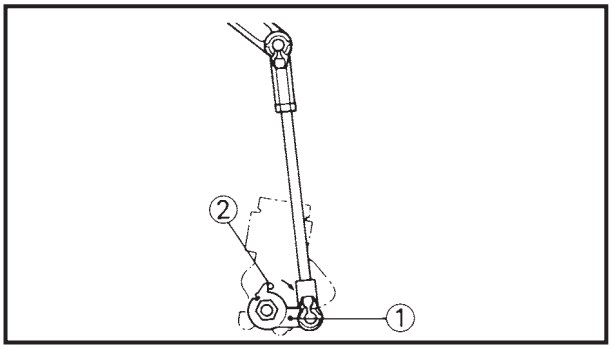


D34300-1

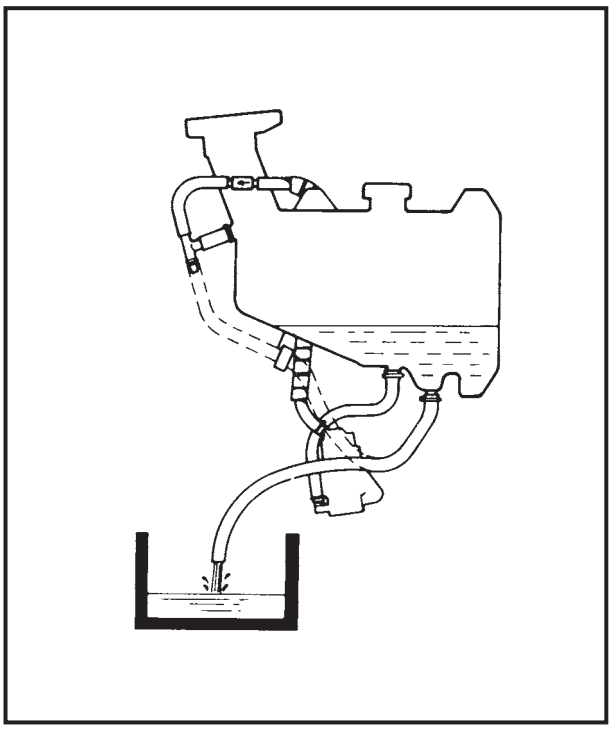
OIL PUMP LINK ADJUSTMENT

1. Fully open the carburetor throttle valve.

NOTE:
If the oil pump lever ① does not contact the stopper ②, adjust the oil pump link rod.



2. Turn the oil pump lever ① toward full-open position until it contacts to stopper ②, adjust the length of the rod connecting the oil-pump to the carburetor, and tighten the locknut.
3. Install the connecting-rod.
4. By operating the carburetor, check the throttle-valve opens fully.



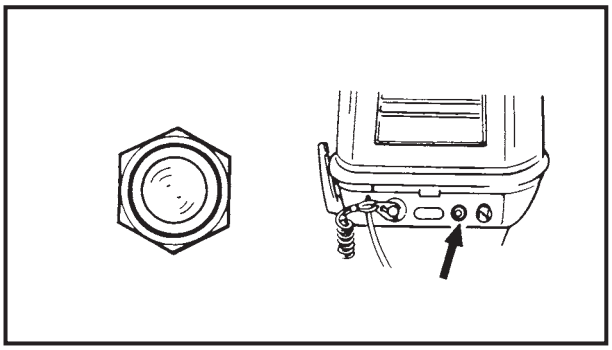
D33900-0

OIL-LEVEL WARNING SYSTEM

1. Fill the oil-tank with oil.
2. Start the engine.
3. By letting the oil little by little out of the drain-hose, check that the oil-level warning system operates correctly.

CAUTION:

Do not allow the engine to operate without oil-even briefly for this will cause malfunction or engine seizure.

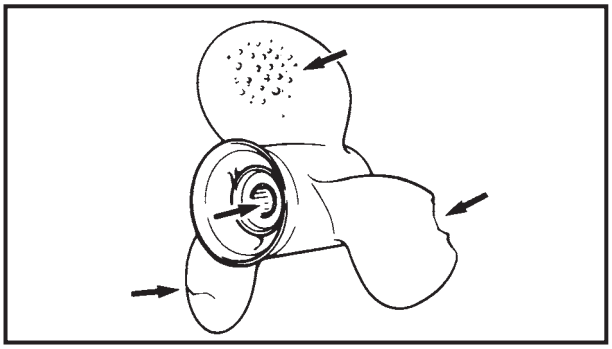


25JMHO, 30DMO, 30DMHO, 30DWHO

Reed switch	Oil level	Oil level warning lamp	Speed drop function
ON	more than 200 cm^3 (0.21 US qt)	OFF	OFF
OFF	200 cm^3 or less (0.21 US qt)	ON	ON

25JEO, 25JETO, 30DEO, 30DETO

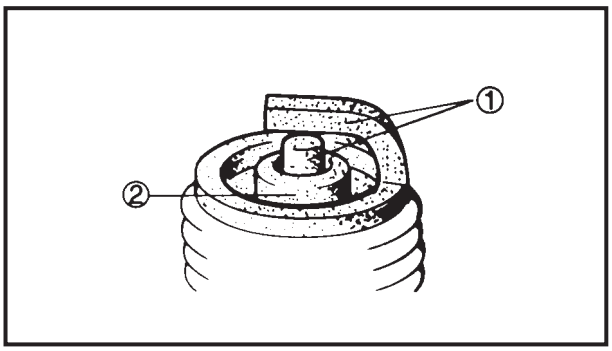
Reed switch	Oil level	Oil level warning lamp	Warning buzzer	Speed drop function
ON	more than 200 cm^3 (0.21 US qt)	OFF	OFF	OFF
OFF	200 cm^3 or less (0.21 US qt)	ON	ON	ON



D34900-0

PROPELLER

1. Check the blades for wear, damage, cavitation erosion.
2. Check the splines for wear and damage.



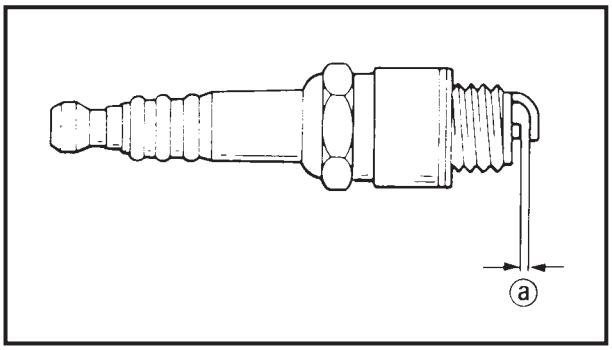
D35000-0*

SPARK PLUG

1. Check the electrode ① condition and state of wear, note the insulator ② color and the electrode gap.
   Normal condition is a medium to light tan color.
   Distinctly different color → Check the engine condition.

Whitish color : Lean fuel mixture
- Plugged filter, jet
- Air leak
- Wrong settings

Blackish color : Electrical malfunction
- Defective spark plug
- Defective ignition system
- Rich mixture
- Excessive idling

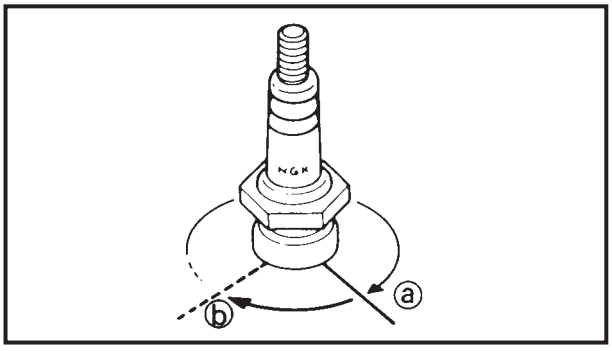


2. Clean the spark plug with spark-plug cleaner or wire brush. Use a wire gauge to adjust the plug gap ⓐ to specification.

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

3. If the electrode becomes too worn, replace the spark plug.

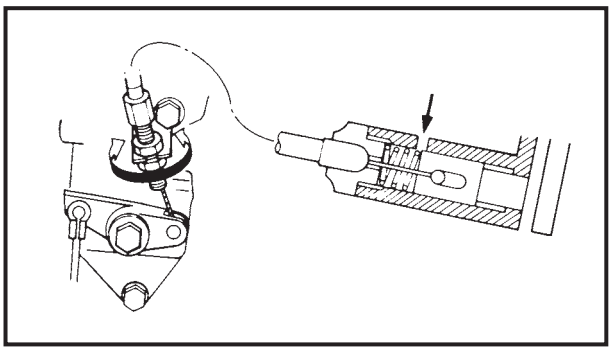
Standard spark plug:
NGK B7HS-10
NGK BR7HS-10
(Noise suppressor type)



4. When installing the spark plug, clean the gasket surface, wipe off any grime there may be on the surface of the spark plug, and screw in the spark plug to the correct torque.

Tightening torque:
20 Nm (2.0 m • kgf, 14 ft • lb)

NOTE:
Screw spark plug in finger-tight ⓐ, then torque spark plug to specification ⓑ.

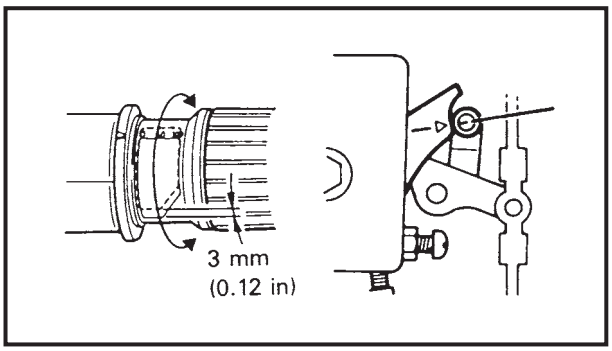


D35300-0

START-IN-GEAR PROTECTION ADJUSTMENT

Start-in-gear protection model

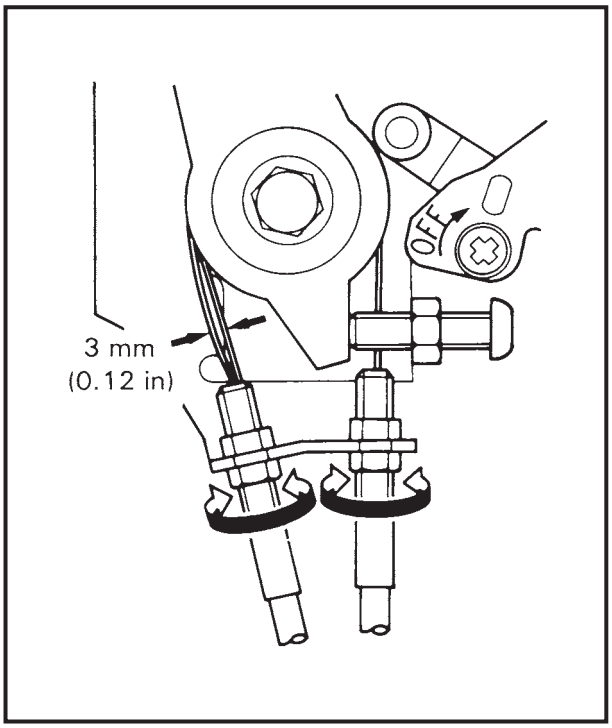
1. Shift into neutral.
2. Adjust the wire adjusting-bolt so that the end of the starter stop-plunger aligns with the center of the hole in the starter case.

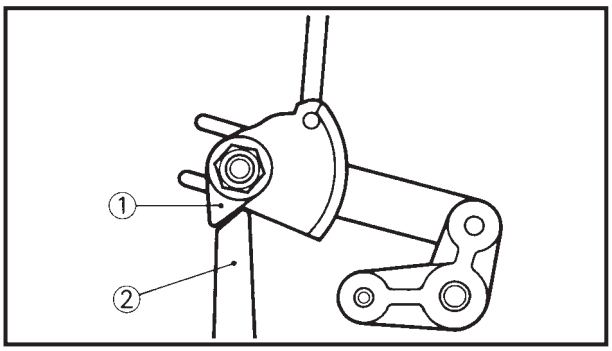


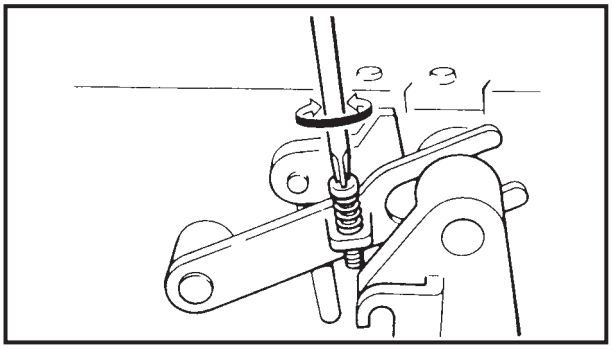
THROTTLE CABLE ADJUSTMENT

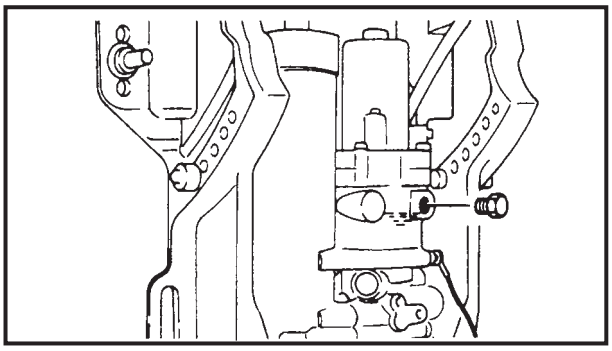
Manual handle model

1. Set the shift lever to the forward position.
2. Twist the throttle grip to fast until it stops, and check to see if the center of the throttle roller lines up with the wide open throttle mark on the throttle cam. If they are not in line, loosen the adjust bolt lock nut on the pull side of the throttle wire, remove the slack in the throttle wire by turning the adjust bolt, and tighten the lock nut.
3. Loosen the adjust bolt lock nut on the other side of the throttle wire, and give it a slack of 3 mm (0.12 in) by turning the adjust bolt, then tighten the lock nut.









D33600-0

NEUTRAL OPENING LIMIT ADJUSTMENT

Neutral opening limit model

1. Set the shift lever to the forward position.
2. Turn the throttle grip to fast until stops.
3. Turn the magneto control lever until throttle control lever ① contacts stopper ②.
4. Adjust the length of the link rod connecting the magneto control lever.
5. Shift into neutral.
6. Start the engine.
7. Open the throttle and, while keeping the magneto control lever in contact with the adjusting screw, adjust the adjusting-screw length so that the engine speed is 3,750 ± 50 rpm.

POWER TRIM AND TILT FLUID CHECK

1. Tilt up the outboard and lock it with the tilt-lock knob.
2. Remove the reservoir plug.
3. Check that the fluid level is directly below the fluid level checking hole.

⚠ WARNING

To prevent the hydraulic fluid from spurting out due to internal pressure, the outboard should be kept fully tilted up (the tilt rod at full length) while slowly removing the reservoir plug.