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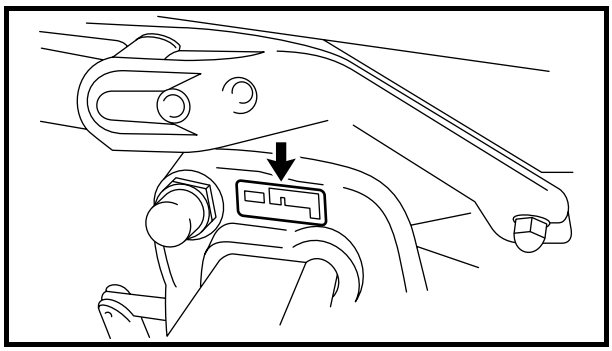
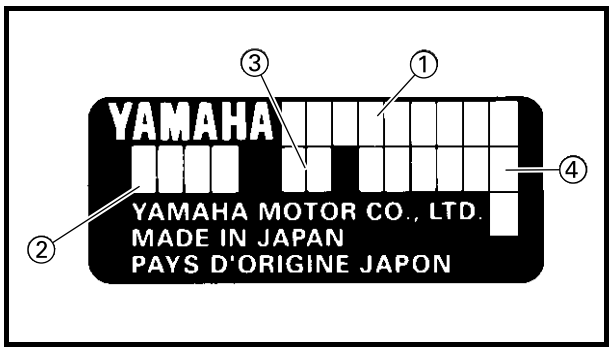




IDENTIFICATION

SERIAL NUMBER

The outboard motor's serial number is stamped on a label which is attached to the port clamp bracket.

NOTE:

As an antitheft measure, a special label on which the outboard motor's serial number is stamped is bonded to the port clamp bracket. The label is specially treated so that peeling it off causes cracks across the serial number.

① Model name
② Approval model code
③ Transom height
④ Serial number

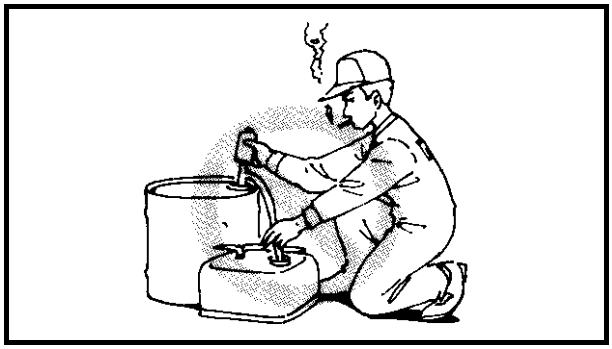
STARTING SERIAL NUMBERS

The starting serial number blocks are as follows:

Model name Worldwide	Approval model code	Starting serial number
25BMH	61R	S:020101
		L:350101
30HMH	61T	S:050101

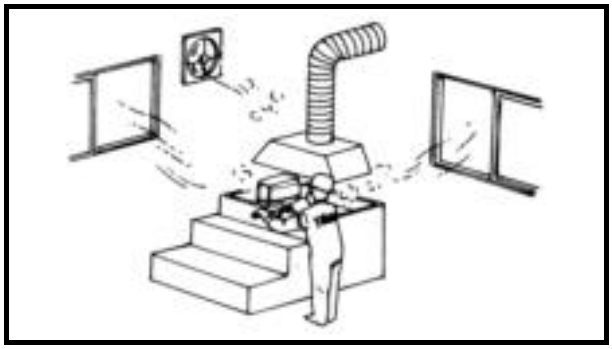
SAFETY WHILE WORKING

The procedures given in this manual are those recommended by Yamaha to be followed by Yamaha dealers and their mechanics.



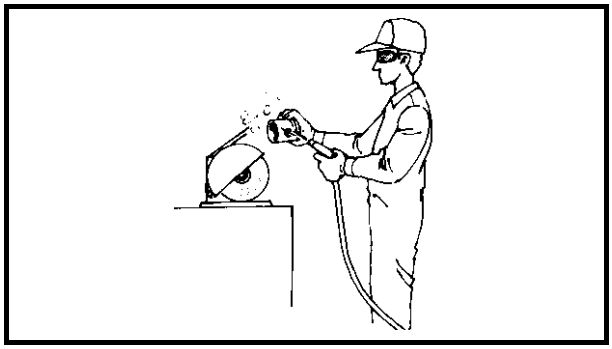
FIRE PREVENTION

Gasoline (petrol) is highly flammable.
Petroleum vapor is explosive if ignited.
Do not smoke while handling gasoline and keep it away from heat, sparks and open flames.



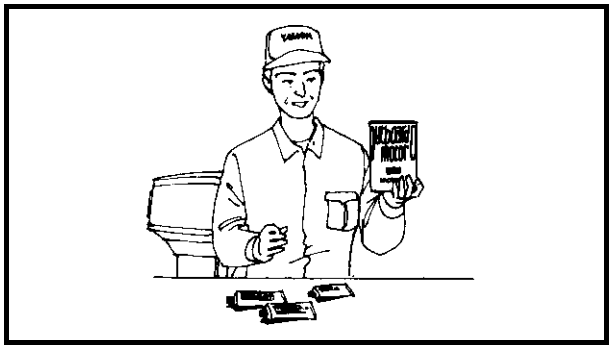
VENTILATION

Petroleum vapor is heavier than air and is deadly if inhaled in large quantities. Engine exhaust gases are harmful to breathe.
When test-running an engine indoors, maintain good ventilation.



SELF-PROTECTION

Protect your eyes with suitable safety glasses or safety goggles, when grinding or when doing any operation which may cause particles to fly off. Protect hands and feet by wearing safety gloves or protective shoes if appropriate to the work you are doing.

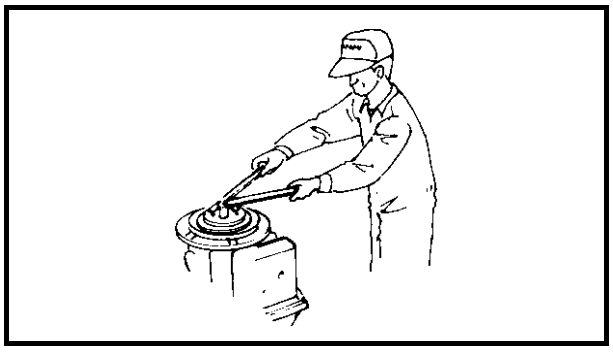


OILS, GREASES AND SEALING FLUIDS

Use only genuine Yamaha oils, greases and sealing fluids or those recommended by Yamaha.

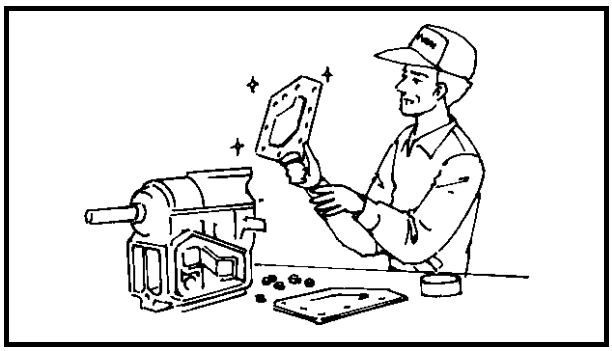
Under normal conditions or use, there should be no hazards from the use of the lubricants mentioned in this manual, but safety is all-important, and by adopting good safety practices, any risk is minimized. A summary of the most important precautions is as follows:

1. While working, maintain good standards of personal and industrial hygiene.
2. Clothing which has become contaminated with lubricants should be changed as soon as practicable, and laundered before further use.
3. Avoid skin contact with lubricants; do not, for example, place a soiled wiping-rag in your pocket.
4. Hands and any other part of the body which have been in contact with lubricants or lubricant-contaminated clothing, should be thoroughly washed with hot water and soap as soon as practicable.
5. To protect the skin, the application of a suitable barrier cream to the hands before working, is recommended.
6. A supply of clean lint-free cloths should be available for wiping purposes.

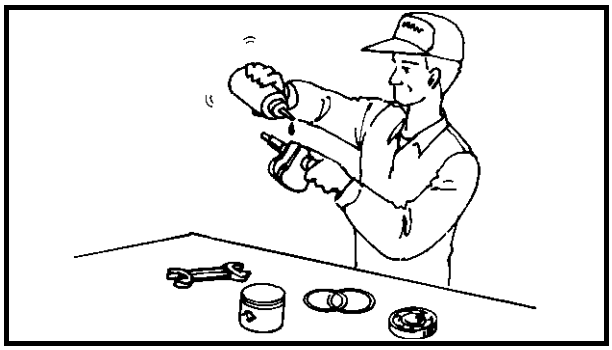


GOOD WORKING PRACTICES

1. The right tools
   Use the recommended special tools to protect parts from damage. Use the right tool in the right manner - do not improvise.
2. Tightening torque
   Follow the tightening torque instructions. When tightening bolts, nuts and screws, tighten the large sizes first, and tighten inner-positioned fixings before outer-positioned ones.

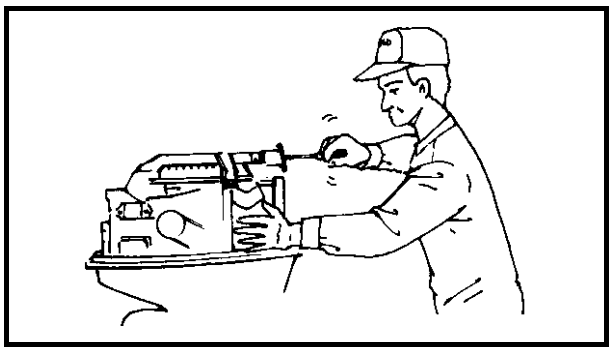


3. Non-reusable items
   Always use new gaskets, packings, O-rings, split-pins, circlips, etc., on reassembly.



DISASSEMBLY AND ASSEMBLY

1. Clean parts with compressed air when disassembling.
2. Oil the contact surfaces of moving parts before assembly.

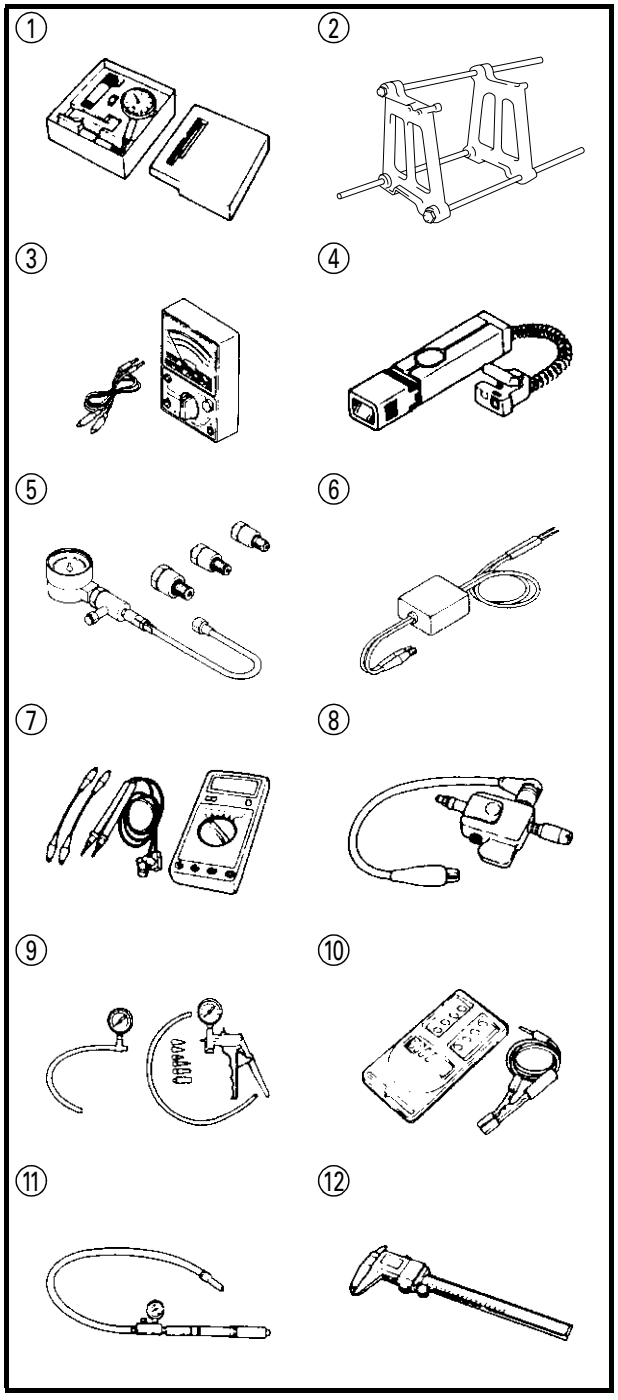


3. After assembly, check that moving parts operate normally.

4. Install bearings with the manufacturer's markings on the side exposed to view, and liberally oil the bearings.
5. When installing oil seals, apply a light coating of water-resistant grease to the outside diameter.

SPECIAL TOOLS

Using the correct special tools recommended by Yamaha, will aid the work and enable accurate assembly and tune-up. Improvising and using improper tools can damage the equipment.



MEASURING

① Dial gauge set
P/N. 90890-01252

② Crank stand alignment
P/N. 90890-03107

③ Pocket tester
P/N. 90890-03112

④ Timing light
P/N. 90890-03141

⑤ Compression Gauge
P/N. 90890-03160

⑥ Peak voltage adaptor
P/N. 90890-03172

⑦ Digital circuit tester
P/N. 90890-03174

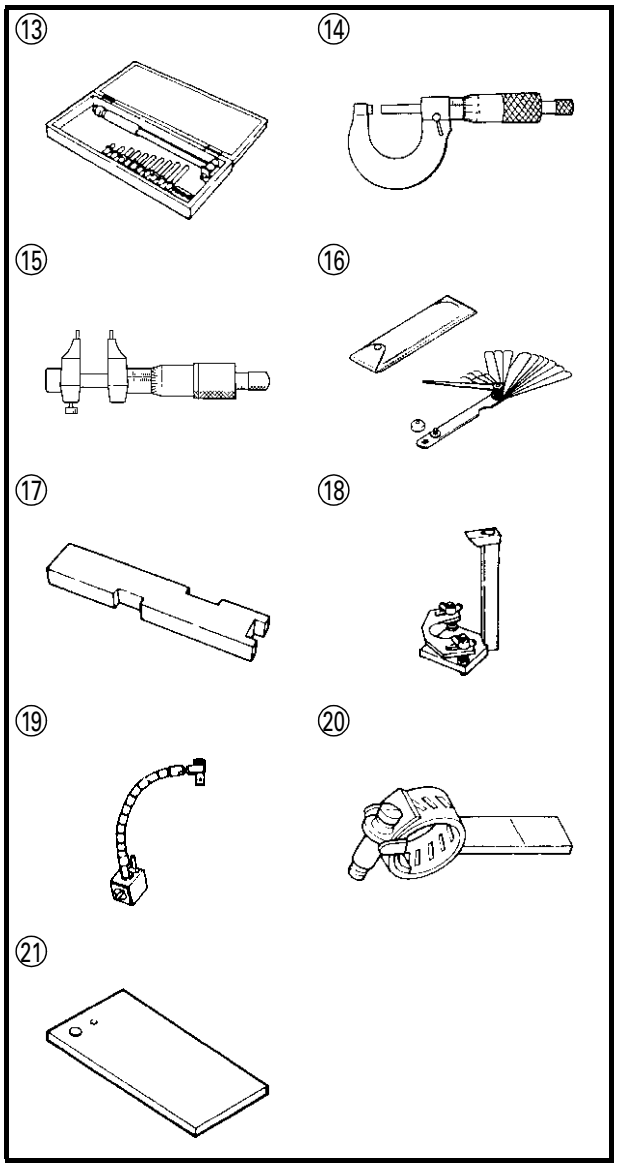
⑧ Ignition tester
P/N. 90890-06754

⑨ Vacuum/pressure pump gauge set
P/N. 90890-06756

⑩ Digital tachometer
P/N. 90890-06760

⑪ Leakage tester
P/N. 90890-06762

⑫ Digital caliper
P/N. 90890-06704



⑬ Cylinder gauge
P/N. 90890-06759

⑭ Outside micrometer
P/N. 90890-03006
P/N. 90890-03008

⑮ Inside micrometer
P/N. 90890-03010

⑯ Thickness gauge
P/N. 90890-03079

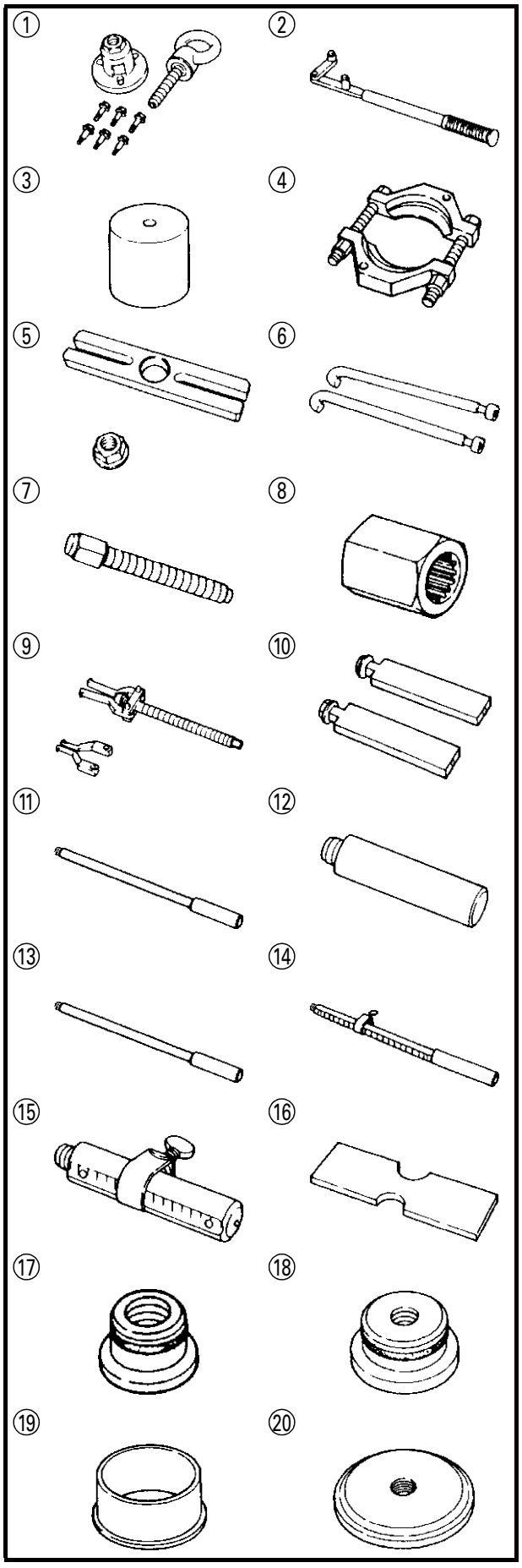
⑰ Shimming plate
P/N. 90890-06701

⑱ Pinion height gauge
P/N. 90890-06702

⑲ Magnet base
P/N. 90890-06705

⑳ Backlash indicator
P/N. 90890-06706

㉑ Magnet base plate
P/N. 90890-07003



REMOVING AND INSTALLING

① Flywheel puller
P/N. 90890-06521

② Flywheel holder
P/N. 90890-06522

③ Small end bearing installer
P/N. 90890-06527

④ Bearing separator
P/N. 90890-06534

⑤ Stopper guide plate
P/N. 90890-06501

⑥ Bearing housing puller claw
P/N. 90890-06564

⑦ Center bolt
P/N. 90890-06504

⑧ Drive shaft holder 3
P/N. 90890-06517

⑨ Bearing puller ass'y
P/N. 90890-06535

⑩ Stopper guide stand
P/N. 90890-06538

⑪ Driver rod LL
P/N. 90890-06605

⑫ Driver rod LS
P/N. 90890-06606

⑬ Driver rod L3
P/N. 90890-06652

⑭ Driver rod SL
P/N. 90890-06602

⑮ Driver rod SS
P/N. 90890-06604

⑯ Bearing depth plate
P/N. 90890-06603

⑰ Needle bearing attachment
P/N. 90890-06608
P/N. 90890-06611
P/N. 90890-06615

⑱ Ball bearing attachment
P/N. 90890-06633

⑲ Bearing inner race attachment
P/N. 90890-06643
P/N. 90890-06644
P/N. 90890-06645

⑳ Bearing outer race attachment
P/N. 90890-06622
P/N. 90890-06628

FEATURES AND BENEFITS

POWER UNIT

The 25B and 30H engines are designed to provide superior fuel economy, serviceability, and durability.
They are based on the previous 25V and 30G with newly designed linkage that controls both throttle opening and ignition timing mechanically and simultaneously.
Special attention was paid on the crankshaft bearings. Collar is added to the upper main journal of the crankshaft. Roller bearing is applied to the center bearing.
The collar added on the upper main journal contributes to get better serviceability.

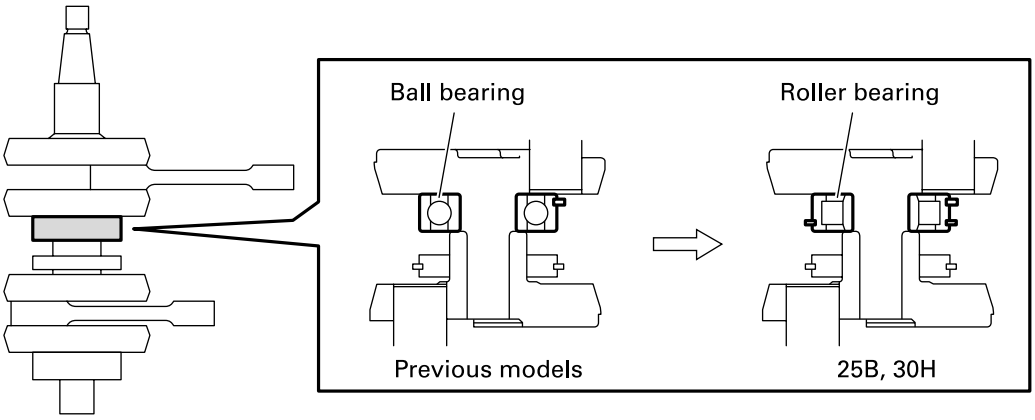


Fig. 1

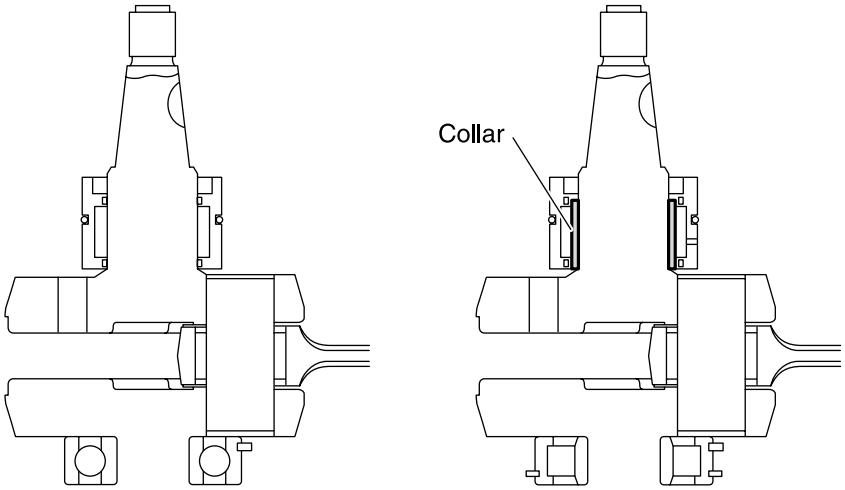


Fig. 2

IGNITION SYSTEM

Ignition system on the 25B and 30H consists of flywheel magnet, charge coil, pulser coil, CDI unit, and ignition coil.
Similar to the previous 25V and 30G, the engine has the mechanical ignition timing advance system that works by way of the linkage.
Superior fuel economy is attained by the modified ignition timing control arrangement.
Also the system restricts the ignition timing advance when the shift is in neutral, which helps to prevent the kickback at the engine start.

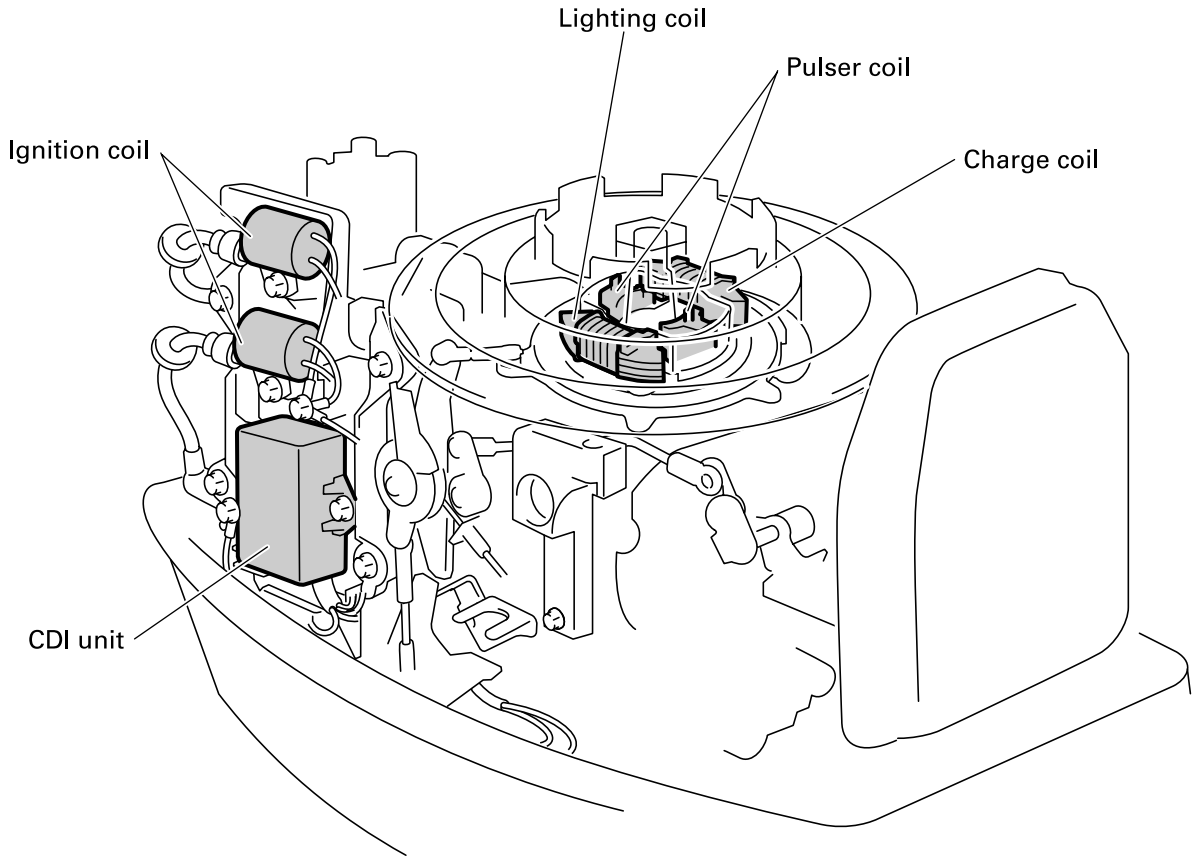


Fig. 3

IGNITION TIMING IN NEUTRAL

As the throttle is opened while the shift in neutral, the Lever ⓐ moves to the right until it touches the Arm ⓑ, and ignition timing advance is stopped at the point "A".
The Arm ⓑ moves to the right or to the left when the shift is engaged, since it is interlocked with the shift lever. Thus, when the shift is engaged, the Lever ⓐ does not touch the Arm ⓑ at the point "A", allowing ignition timing advance to take place.

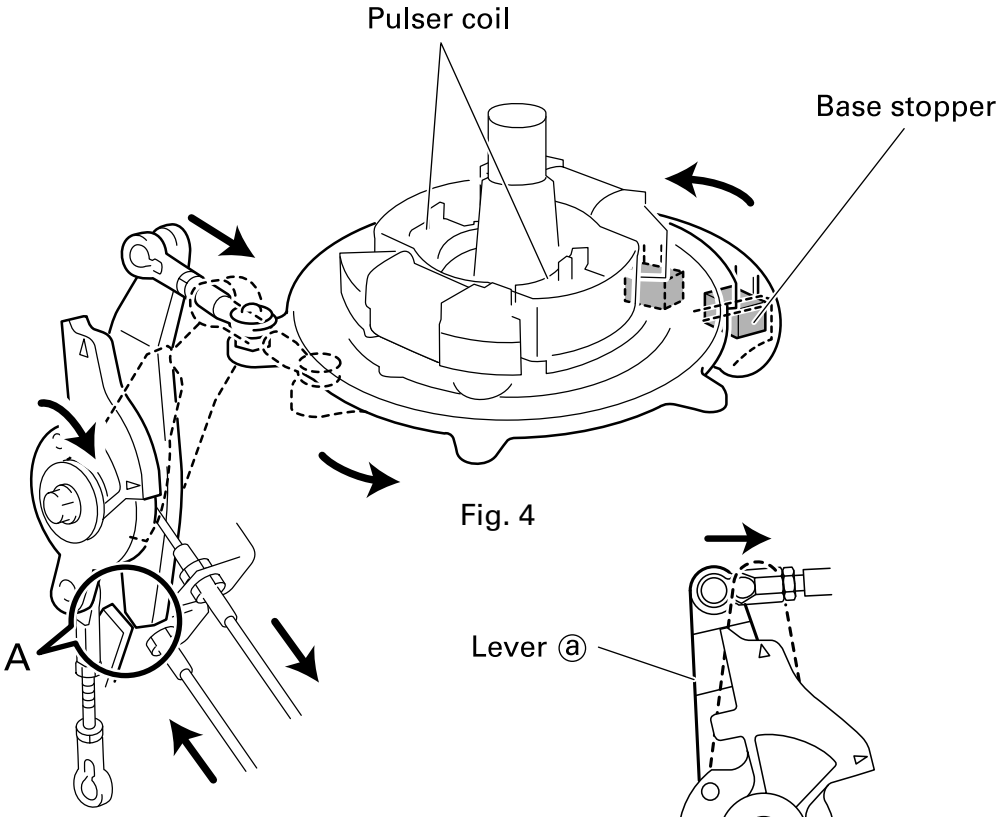


Fig. 4

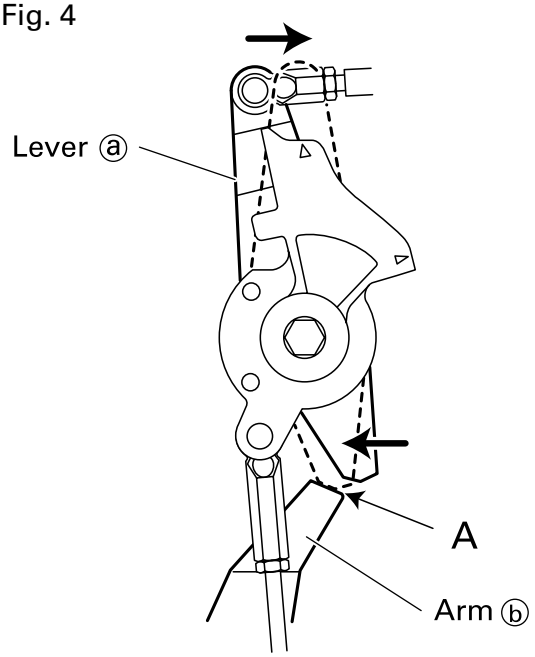
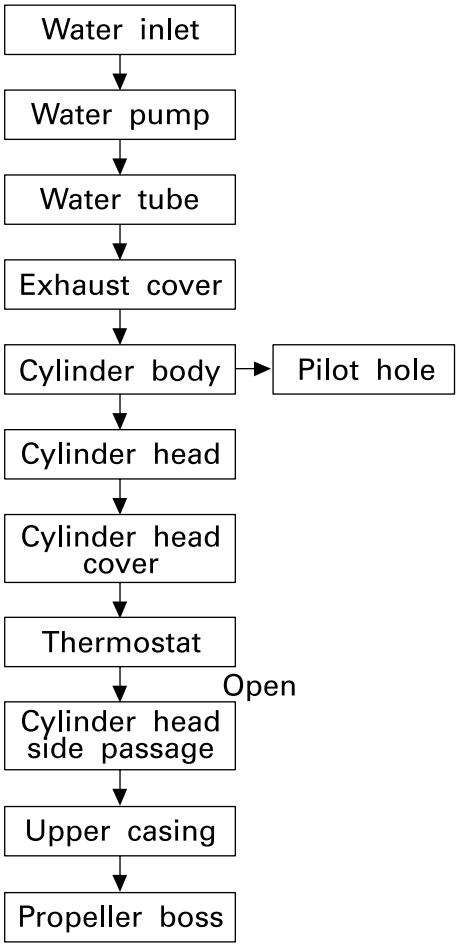
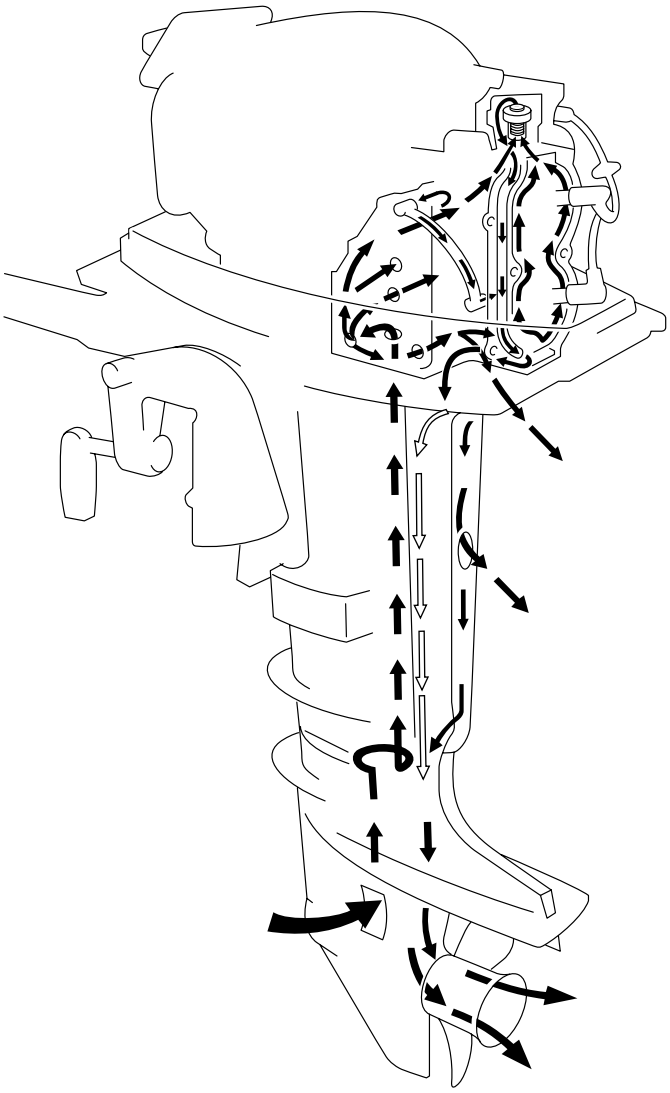


Fig. 5

COOLING SYSTEM

New structure applied to the cooling system provides additional cooling capacity in the upper casing.
With additional cooling water passage (indicated by ⇦), water walls contained in the new upper casing contribute to the reduction of outer surface temperature.





Cooling water flow
(Continued from previous models)

Newly added cooling water passage

Fig. 6

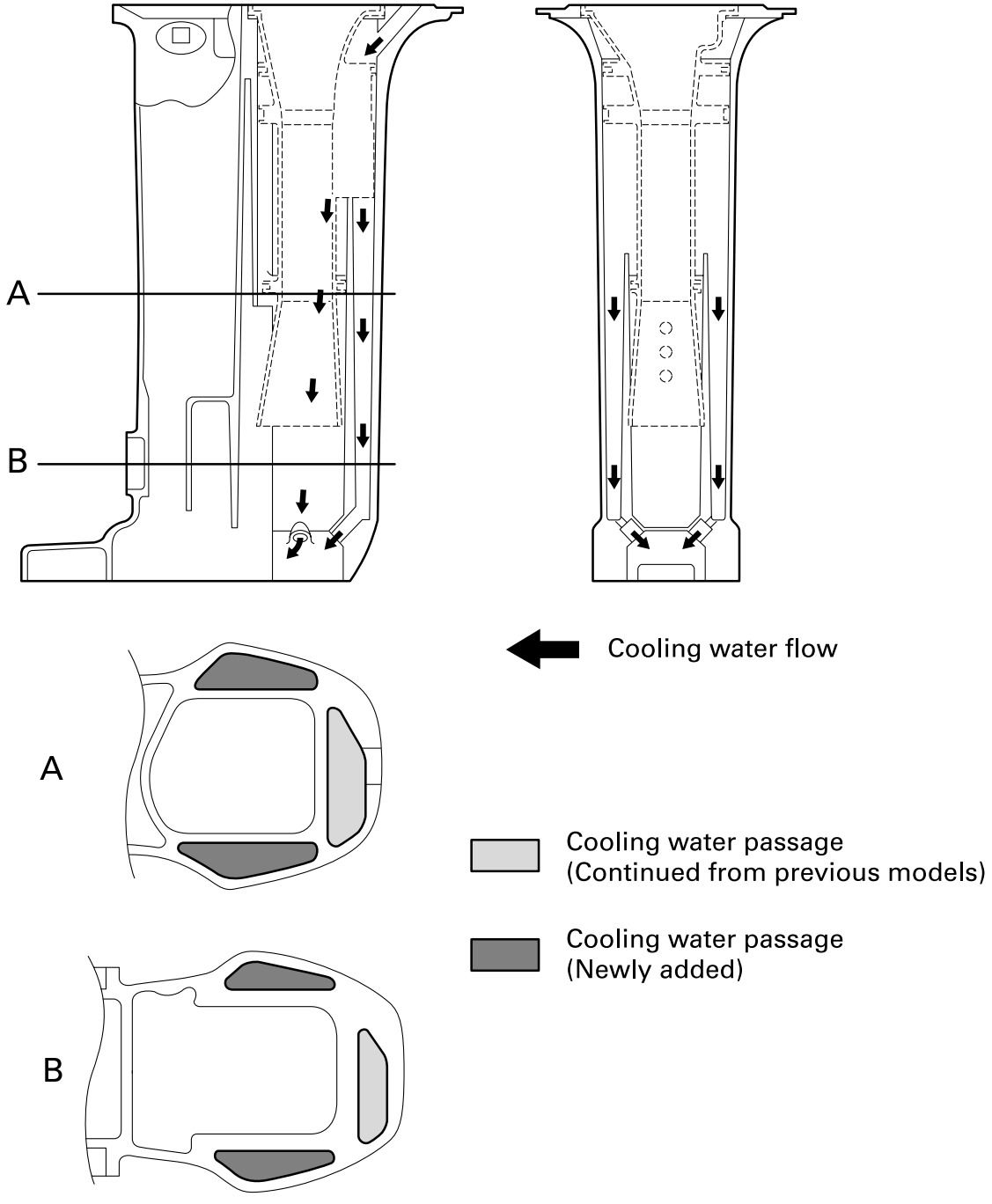

A
B
Cooling water flow
A
B
Cooling water passage
(Continued from previous models)
Cooling water passage
(Newly added)

Fig. 7

TILLER HANDLE

For the throttle grip on the steering handle of the 25B and 30H, 100 degrees of opening angle covers all ranges from full-close to wide-open positions.
Also, new steering handle parts were developed to assume the long use. Inner diameter of the steering handle engagement area, and both inner and outer diameters of steering bracket are increased.
Please note that if the new steering handle is installed on the previous models, Steering handle 2, Steering bracket, Collar, and Washer must be replaced.

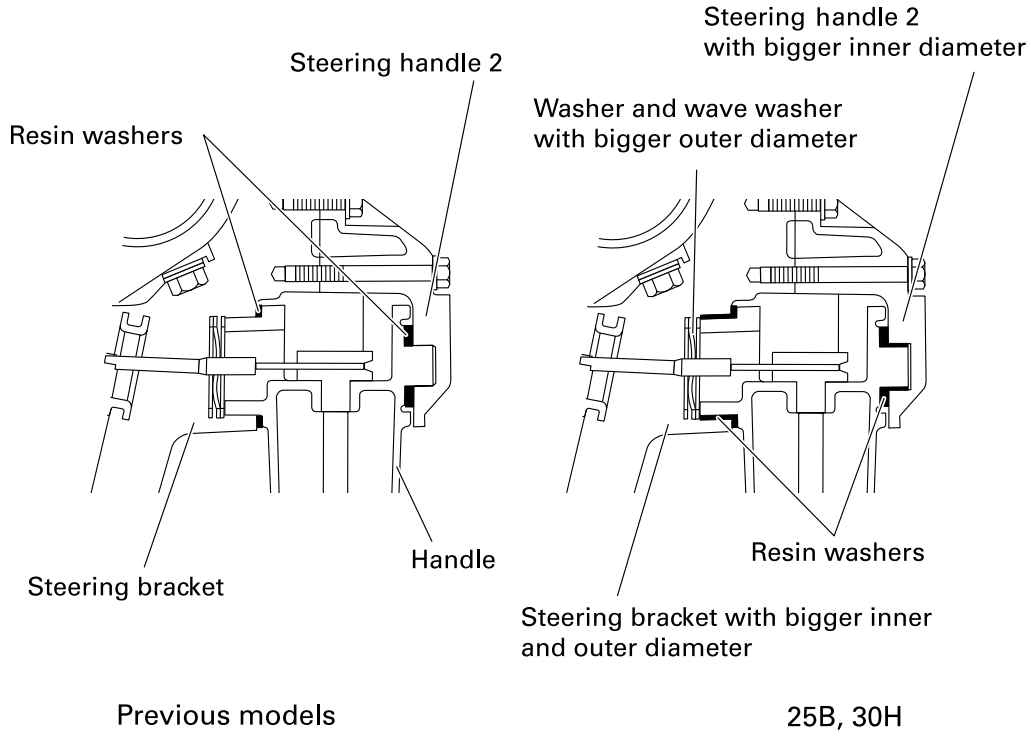


Fig. 8

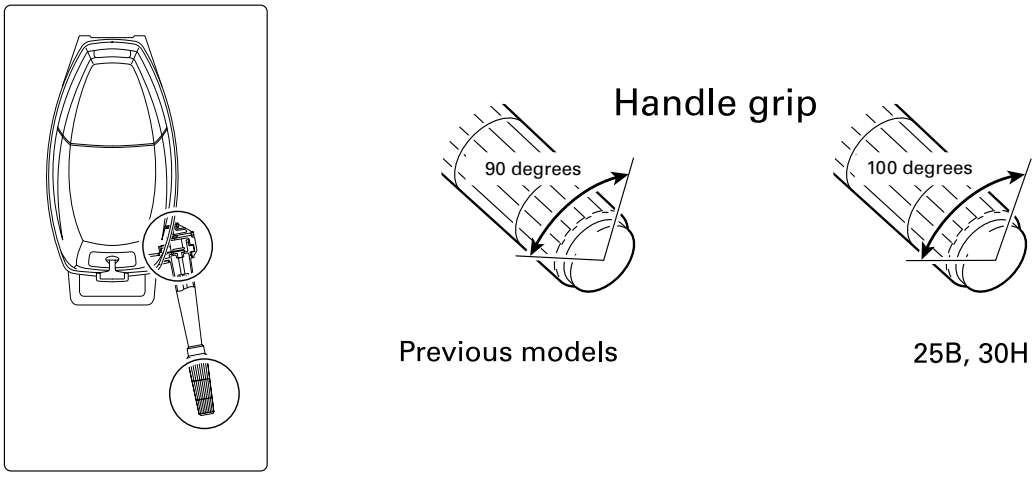


Fig. 9

BRACKET AND BOTTOM COWLING

The Bracket 1 is modified on the 25B and 30H, and newly designed rubber seal is added to provide better sealing ability for the bottom cowling.

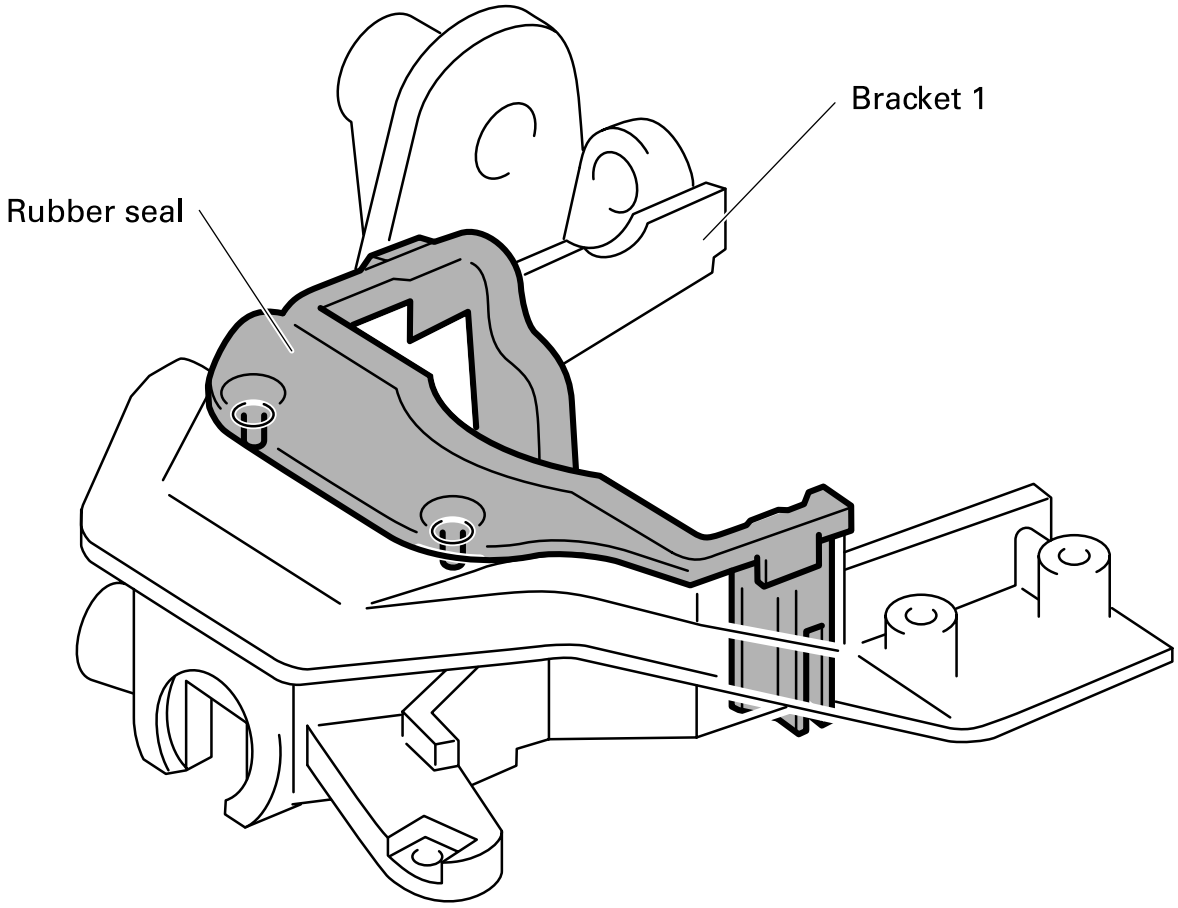


Fig. 10

TECHNICAL TIPS

CARBURETOR

(1) Slow air jet (idling and slow speed operation)

Since the throttle valve is almost closed at low speeds, and thus the vacuum at venturi is small, air/fuel mixture is not delivered through the main nozzle.
At idling, the fuel delivered from the pilot jet is mixed with the air delivered from the pilot air jet.
Air and fuel mixed at the rate determined by the pilot screw adjustment, are supplied to the engine through the pilot outlet located above the throttle valve.
Once the throttle valve is opened to go beyond the bypass holes during the slow-speed operation, air/fuel mixture is fed through the bypass holes.

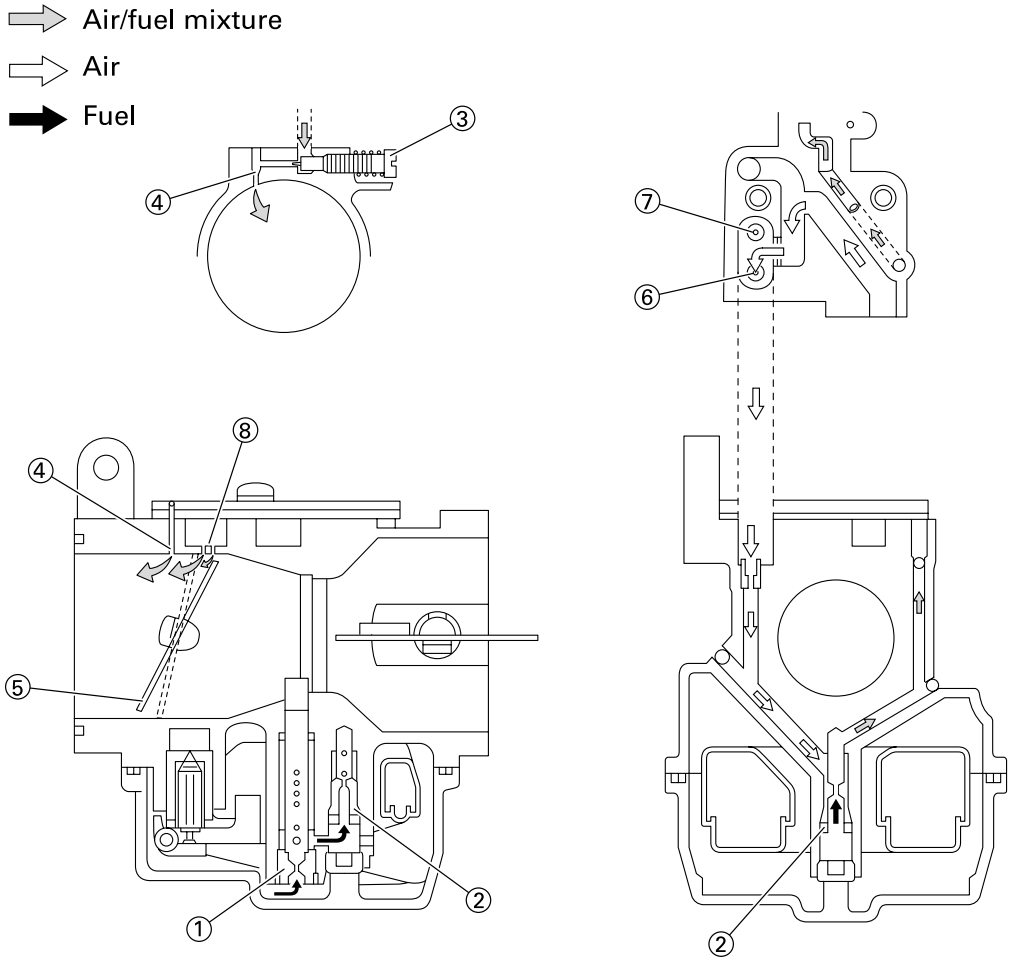


Fig. 11

① Main jet
② Pilot jet
③ Pilot screw
④ Pilot outlet
⑤ Throttle valve
⑥ Pilot air jet
⑦ Main air jet
⑧ Bypass holes

(2) Mid range

As the throttle valve opens in the mid-speed range, air/fuel mixture is fed through the bypass holes in addition to the delivery through the pilot outlet.
Air/fuel mixture is also delivered through the main nozzle depending on the throttle valve opening.

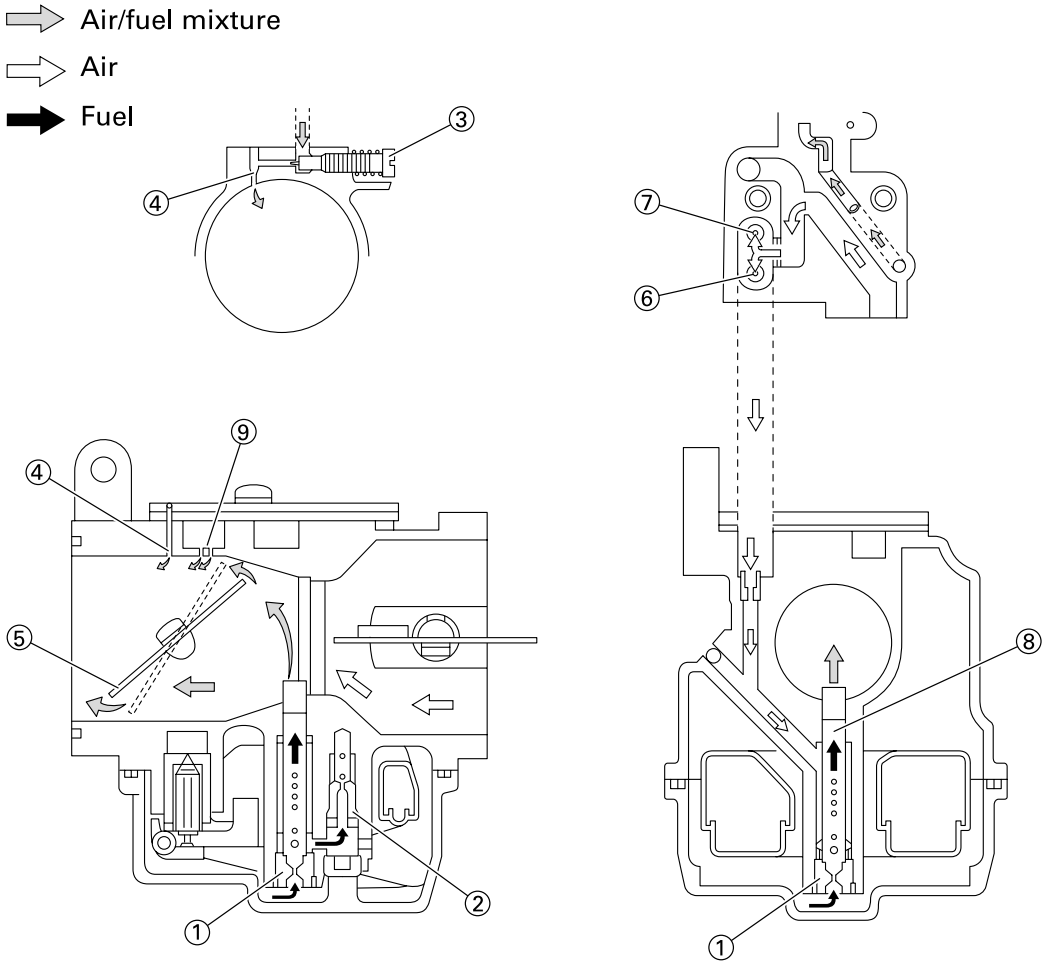


Fig. 12

① Main jet
② Pilot jet
③ Pilot screw
④ Pilot outlet
⑤ Throttle valve
⑥ Pilot air jet
⑦ Main air jet
⑧ Main nozzle
⑨ Bypass holes

(3) High engine speed

In the high engine speed where the throttle valve is fully open, the fuel delivered through the main jet is mixed with the air delivered through the main air jet, which is fed into the venturi through the main nozzle.
Air/fuel mixture delivery through the bypass holes and the pilot outlet continues in the high engine speed.

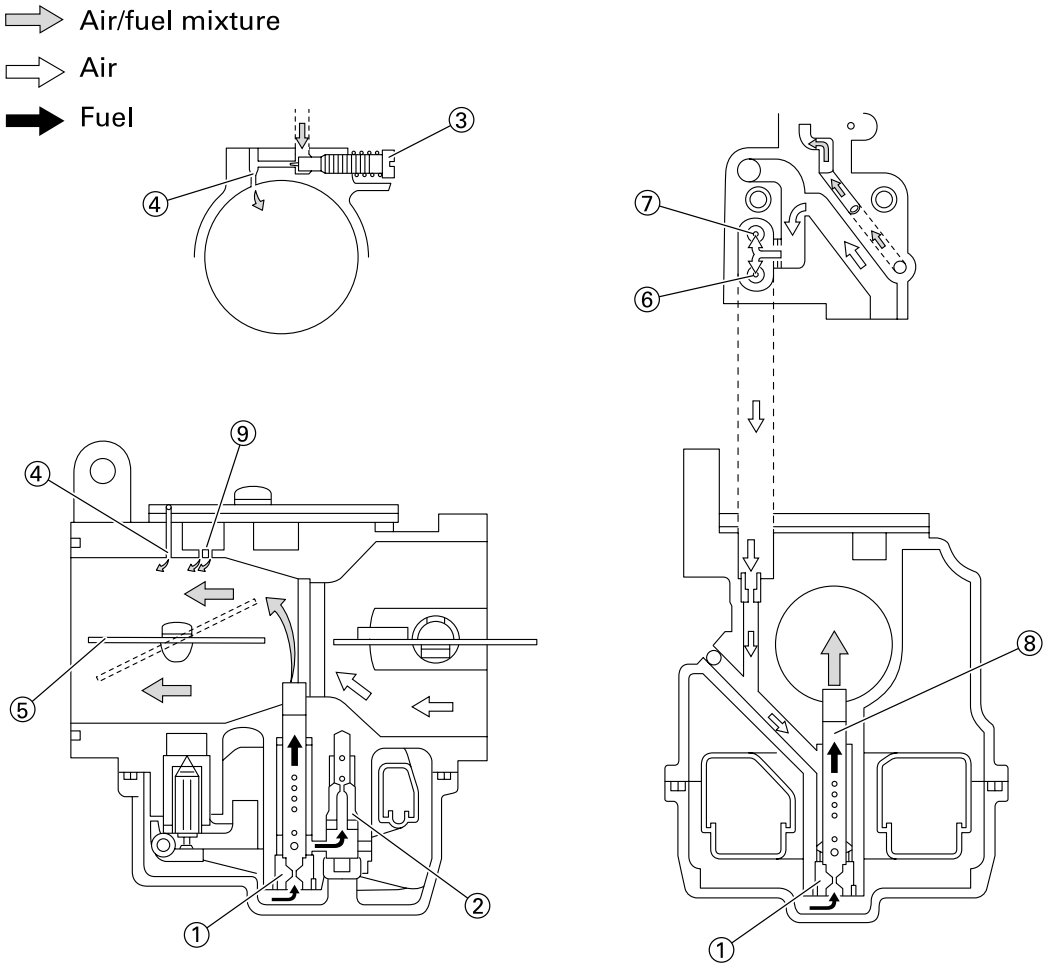


Fig. 13

① Main jet
② Pilot jet
③ Pilot screw
④ Pilot outlet
⑤ Throttle valve
⑥ Pilot air jet
⑦ Main air jet
⑧ Main nozzle
⑨ Bypass holes

IGNITION SYSTEM

The 25B and 30H use the mechanical ignition timing advance system, in which the base of the charge coil and the pulser coil slides in accordance with the throttle valve opening.
Mechanical ignition timing advance applied in this system makes it easier to adjust and confirm the appropriate ignition timing.
In addition, the ignition timing advance is restricted when the shift is in neutral, which helps to prevent the kickback at the engine start.

Ignition timing

Neutral

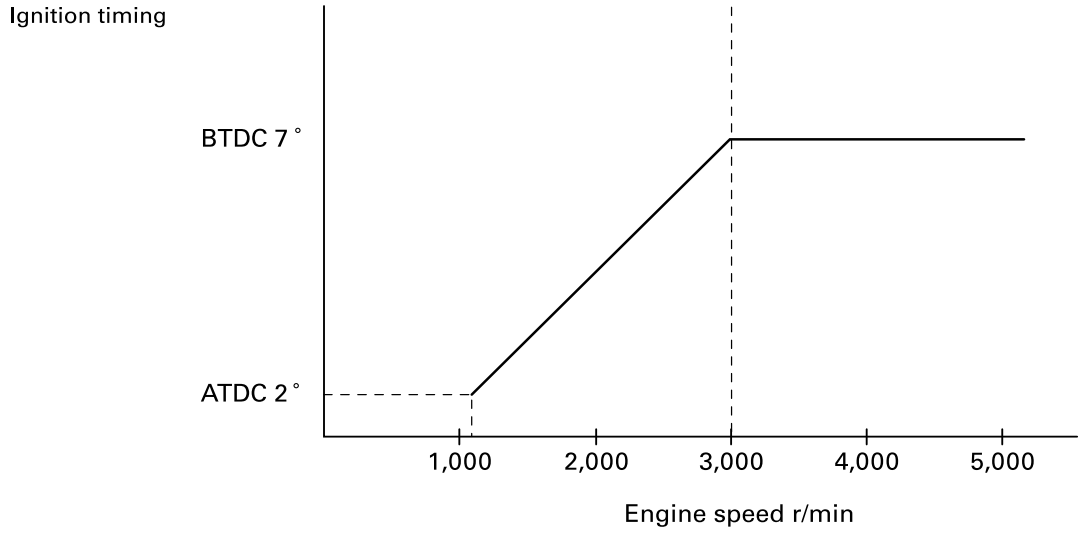


Fig. 14

25B : ATDC 2±2°- BTDC 22±2°
30H : ATDC 2±2°- BTDC 25±2°

Shift - in

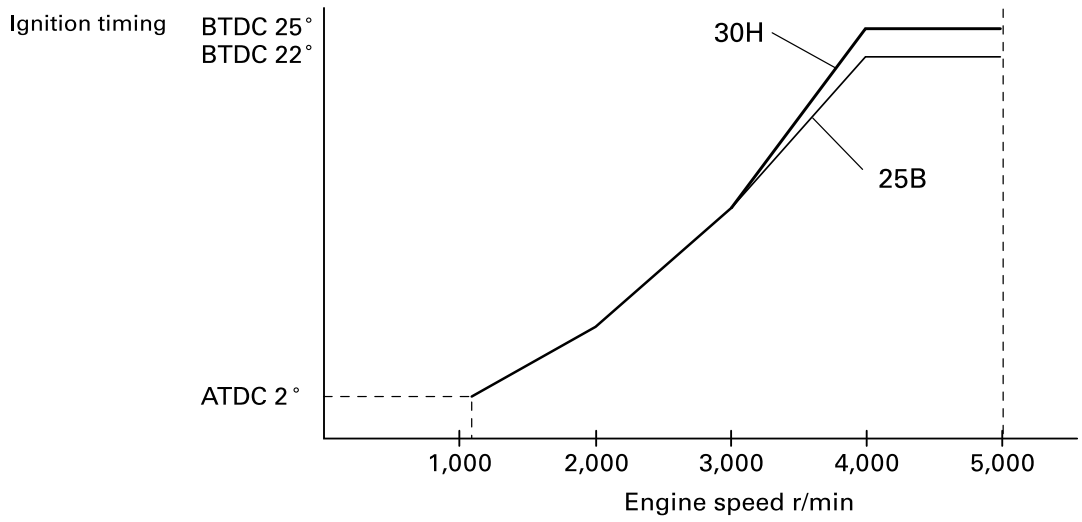


Fig. 15