

## CONTENTS

	Page
1 SPECIAL TOOLS .....	3
2 ENGINE AND LOWER UNIT REMOVAL AND INSTALLATION .....	5
3 DISASSEMBLY AND REASSEMBLY .....	7
1. Recoil Starter .....	7
2. Carburetor · Inlet Manifold .....	9
3. Cylinder Head · Camshaft .....	11
4. Cylinder Barrel · Piston · Crankshaft .....	14
5. Electrical(ignition coil, breaker points, spark plugs)	16
6. Oil Pump · Fuel Pump .....	18
7. Gearcase · Extension Case · Water Pump .....	20
8. Handlebar .....	23
9. Stern Bracket · Swivel Case .....	25
10. Oil Case .....	27
4 SERVICE DATA .....	28
1. Service Data .....	28
2. Torque Table .....	29
3. Lubrication Chart .....	30
4. Trouble Shooting .....	31
5. Wiring Diagram .....	33
6. Specifications .....	34

## FOREWORD

This shop manual is published as a guide for servicing the Honda Marine Engine, model B75 (4-cycle watercooled engine). Many photographs and illustrations are used to clearly describe the details of the respective operation. Reading the manual thoroughly will prepare you to service the engine properly.

August, 1971

**HONDA MOTOR CO., LTD.**  
**SERVICE DIVISION**


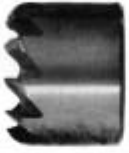




\* Special instruction in the use of this manual.









- 1. The disassembly operation is performed by first removing those parts preceded by (○) followed by the other components in the order of the numbered sequence. Operation numbers marked with (') can be disassembled in any order within the same sequence number.
- 2. The important operations are described using the illustrations.

\* Special operational instruction

- 1. Since all bolts and washers which are exposed on the outboard engine are made of special corrosion resistant material, those parts which are intended for use internally should not be used.
- 2. Always replace lockwashers, O-rings, cotter pins and packings with new items.
- 3. Sand any bare paint spots with emery paper, wipe clean with thinner, and then repaint.

**1** SPECIAL TOOLS

No.	Tool No. & Photo	Description	Use
1	07000-92100	Sepcial tool set	_____
2	07001-92110	Valve seat cutter set	_____
3	07001-21601 	Valve seat cutter, 90°	Inlet and exhaust valve seat
4	07003-92101 	Inlet valve seat flat cutter	Inlet valve seat top
5	07004-92101 	Exhaust valve seat flat cutter	Exhaust valve seat top
6	07007-21601 	Seat cutter holder	Valve seat cutter
7	07997-05101	Seat cutter case	_____
8	07051-92101 	Piston slider	Piston installation
9	07046-92101 	Valve guide driver	Valve guide installation and removal

No.	Tool No. & Photo	Description	Use
10	07048-92101 	Water seal driver	Water seal 6mm, 14mm installation
11	07048-92105 	Seal driver	Coupling seal, 17mm water seal and 6203 bearing installation
12	07062-92101 	Clamp screw staking tool	Clamp screw and push plate staking
13	07078-92101 	Socket wrench, 27mm	Timing pullēy lock nut
14	07790-99911	Tool case	—————
15	* 07008-24001 	Valve guide reamer	Valve guide finishing
16	* 07031-21601 	Valve lifter	Valve removal and installation
17	* 07081-00101 	Tappet socket wrench	Valve tappet adjustment
18	* 07087-00101 	Tappet lock nut wrench	Valve tappet adjustment

## 2 ENGINE AND LOWER UNIT REMOVAL AND INSTALLATION

### 1. Lower Unit Removal Sequence

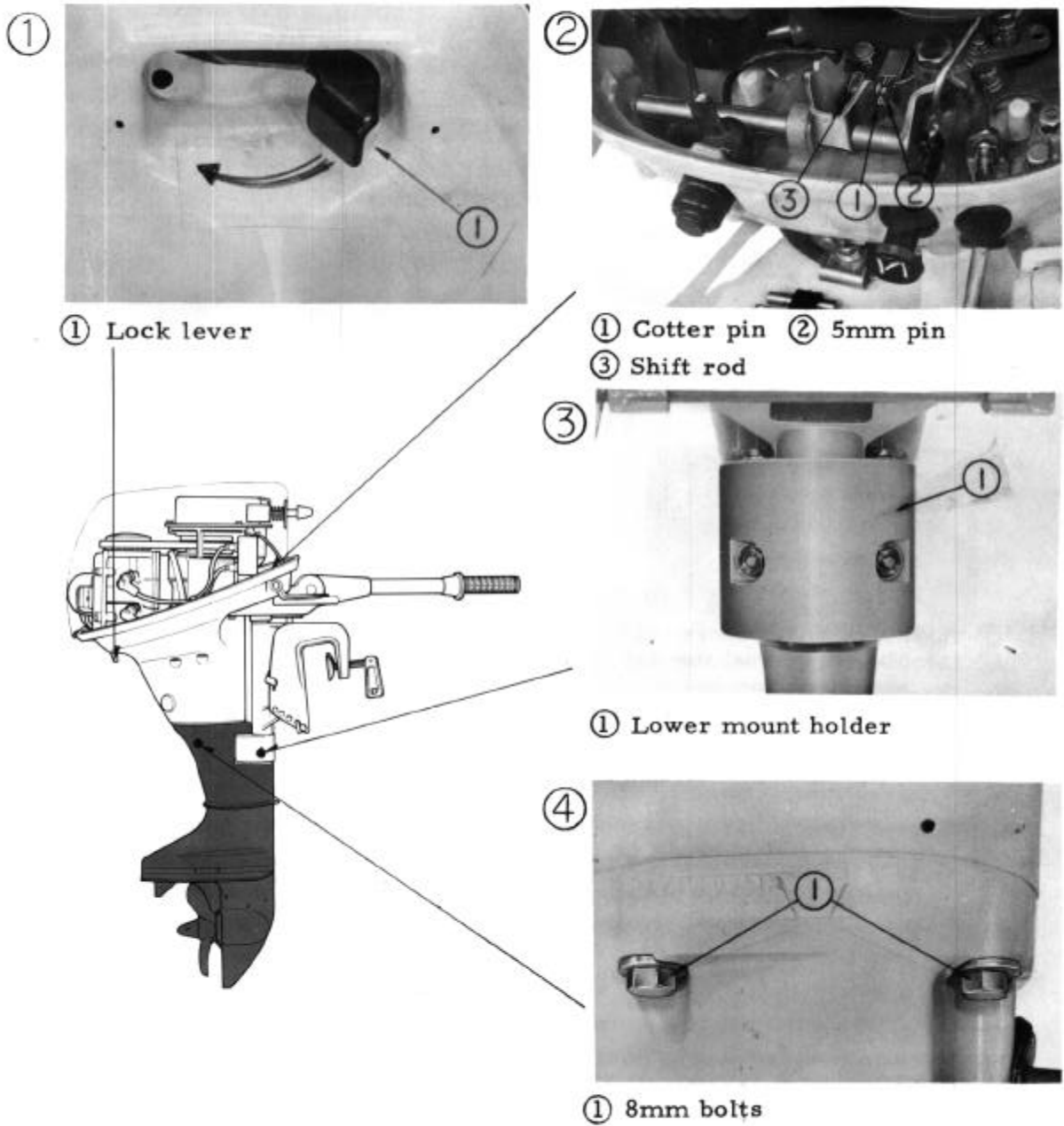


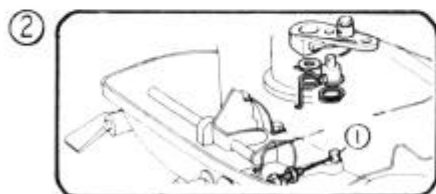
Fig. 1

## 2. Engine Removal Sequence

The following operations are performed after removing the lower unit.



① Fuel tube ② Fuel pump



① Throttle cable



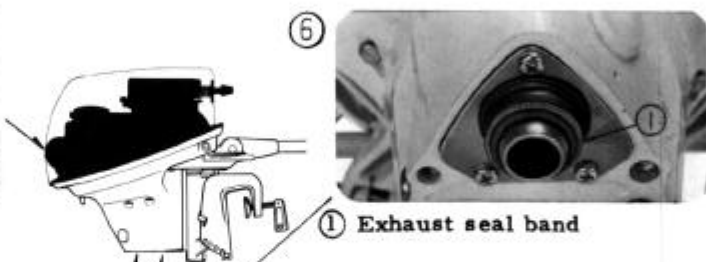
① Throttle cable ② Choke rod  
③ Throttle rod ④ Fuel stop rod



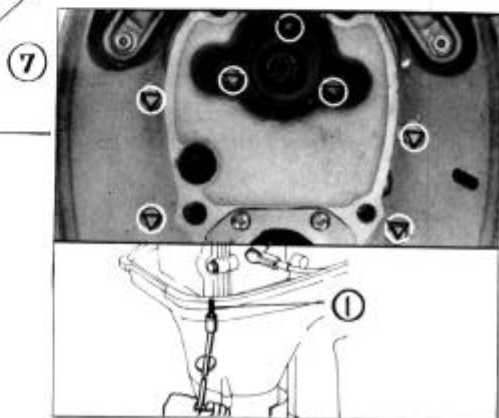
① Breaker cord



① Overflow pipe ② Breather tube A  
③ Water check tube



① Exhaust seal band



① 6mm bolt

Note:

Engine unit is mounted with eight 6mm bolts. One of the bolt is unscrewed with a universal wrench after the oil case grommet is removed.

### 3 DISASSEMBLY AND REASSEMBLY

#### 1. Recoil Starter

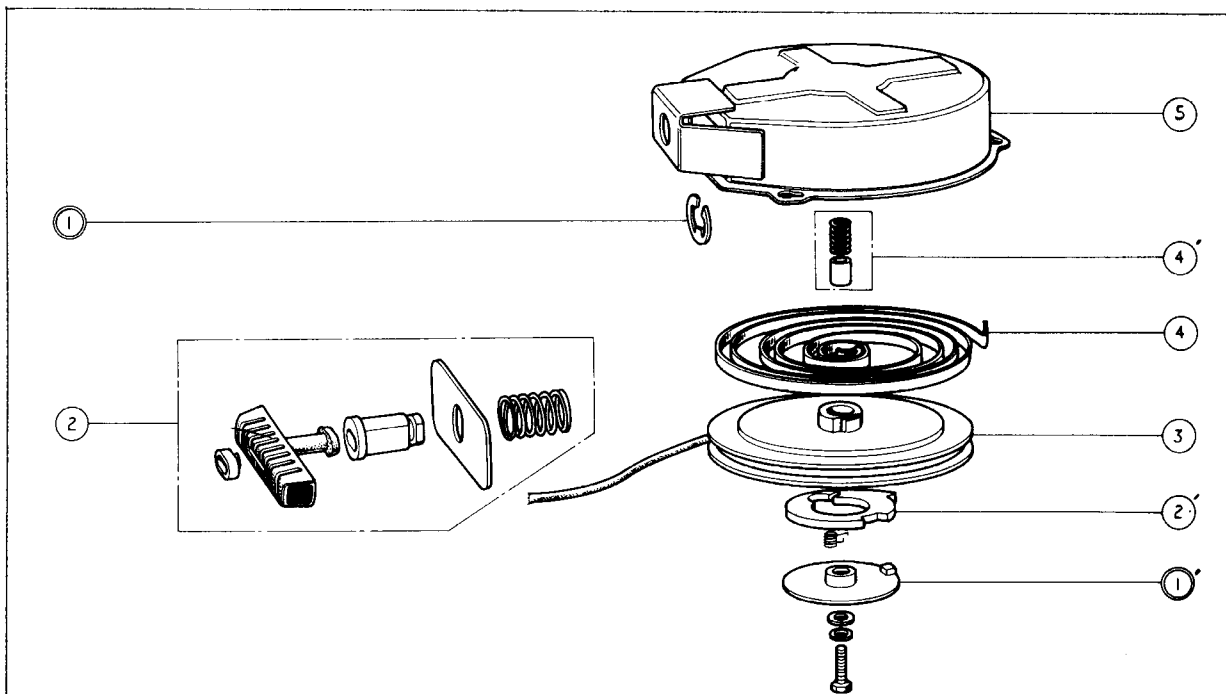


Fig. 3

#### Disassembly Sequence

- o Engine cover (page 5)
- o Recoil starter assembly

1. E ring
- 1'. Friction plate
2. Starter grip
- 2'. Starter ratchet
3. Recoil starter pulley

4. Recoil starter spring
- 4'. Friction spring collar
5. Recoil starter case

Note: The starter spring should be unwound with care.

## Reassembly Pointers



Fig. 4

- ① Recoil starter spring hook
- ② Recoil starter pulley stopper

-1. Set the starter pulley into the starter case so that the starter pulley stopper is hooked to the starter spring hook.

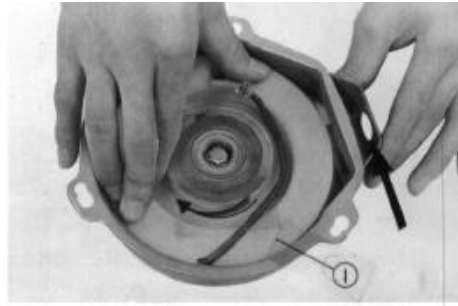


Fig. 5

- ① Recoil starter pulley

-2. Pull the starter rope out of the hole in the starter pulley, as shown in the figure, wind up the pulley 3 to 4 times, and then route the end of the rope through the hole in the case indicated by an arrow.

- Attach a spring scale on the end of the starter rope and measure the tension on the rope. The tension should be 1.2 to 2 kg (2.6 to 4.4 lbs), if not, change the pulley winding to bring the rope tension within the range.

Note: Do not overwind the pulley nor place excess tension on the starter rope.



## 2. Carburetor • Inlet Manifold

### ● Half throttle mechanism

The carburetor is designed so that in the NEUTRAL and REVERSE gear positions the throttle can only be opened half way.

- a. When moving the shift lever from FORWARD to NEUTRAL or REVERSE, the cam on the shift shaft moves in the (A) direction.
- b. As the throttle grip is twisted to open the throttle, the throttle cable moves the arm in the (B) direction. When the shift lever is in the NEUTRAL or REVERSE position, a cam at the end of the shift shaft is moved in place between the throttle arm and the stopper to limit the stroke of the throttle arm, preventing the throttle to be opened full.

### ● Fuel stop mechanism

When the fuel tube connector is removed from the fuel connector on the engine, the fuel stop shaft moves in the (A) direction by the force of the spring and the inter-linked fuel stop lever moves in the (B) direction. The link shaft forces the stopper to block the fuel flow through the main jet. Reengaging the fuel tube connector into the fuel connector moves the linkages in the opposite direction and allows fuel to flow through the main jet.

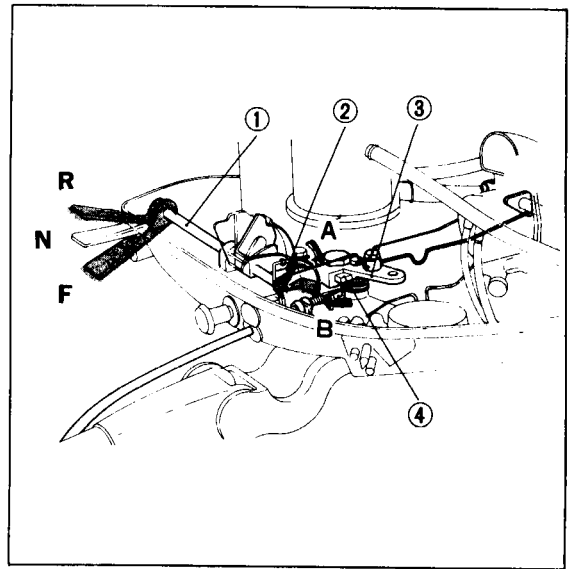


Fig. 6 R: Reverse  
N: Neutral  
F: Forward  
① Shift shaft ② Cam  
③ Throttle arm ④ Stopper

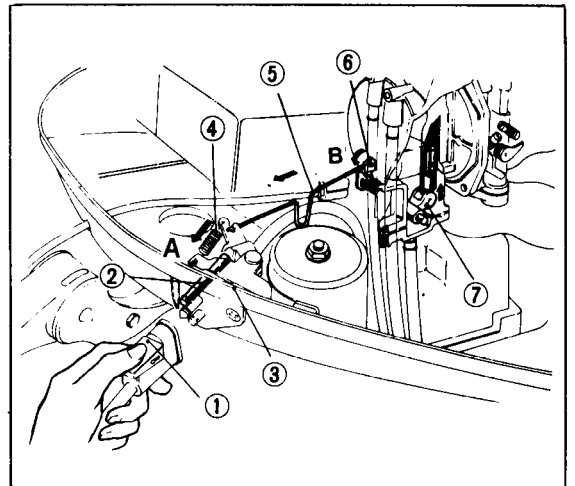
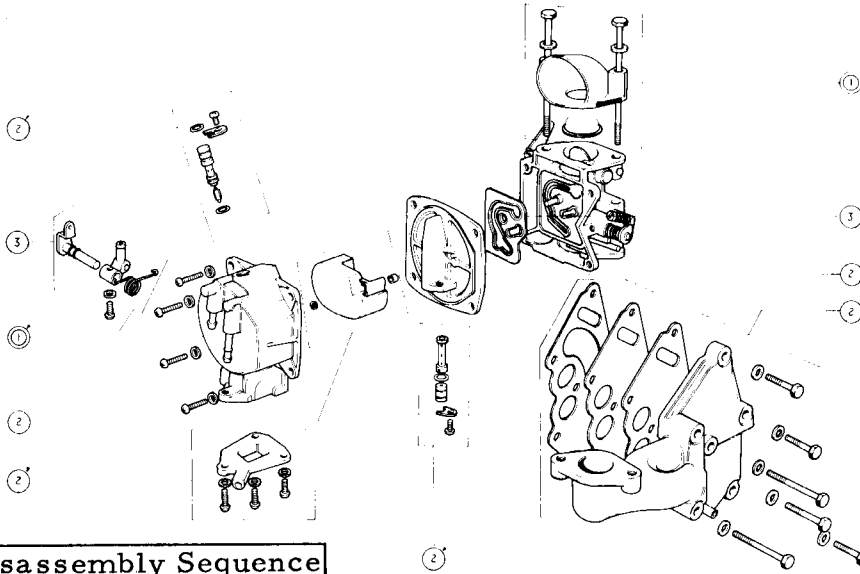


Fig. 7  
① Fuel tube connector  
② Fuel stop shaft  
③ Fuel connector  
④ Spring  
⑤ Fuel stop rod  
⑥ Fuel stop lever  
⑦ Link shaft



**Disassembly Sequence**

Fig. 8

- o Engine cover (page 5)
- o Choke, throttle, fuel stop rod
- 1. Carburetor assembly
- 1'. Float chamber body

- 2. Float
- 2'. Valve seat
- 2'. Cover
- 2'. Inlet manifold
- 2'. Main jet
- 2'. Jet block
- 3. Link shaft
- 3'. Packing

**Reassembly Pointers**

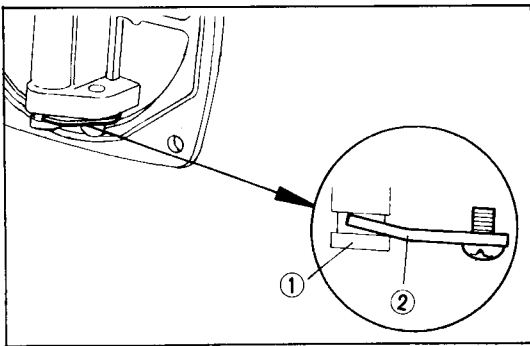


Fig. 9

- ① Main jet
- ② Clip plate

-1. Assemble the clip plate so that the curved end is against the main jet as shown in the figure.

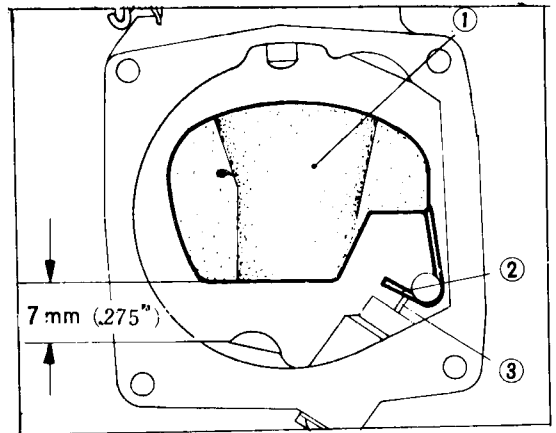


Fig. 10

- ① Float
- ② Float arm lip
- ③ Float valve

-2. Float level adjustment

Measure the distance between the float and body as shown in the figure when the float arm lip and the float valve just touches. The distance should be 7mm (0.275 in.). Bend the float arm lip to adjust.

### -3. Carburetor adjustment

This adjustment must be performed with the water circulating through the engine since it is a water cooled engine.

- a. Run the engine for a few minutes.
- b. Set the engine speed to 1200rpm with the stop screw.
- c. Adjust the pilot screw and set it where the engine is at the highest rpm.
- d. Reset the engine speed to 1200 rpm.
- e. Readjust the pilot screw to verify that it was set at the highest rpm. If the rpm increases, reperform the adjustment sequence b. c. above.



Fig. 11

- ① Stop screw ② Pilot screw

### 3. Cylinder Head • Cam Shaft

#### Disassembly Sequence

- o Engine assembly (page 6)
  - o Recoil starter (page 7)
  - o Carburetor • Inlet manifold
  - o Cam pulley (page 16)
  - o Oil pump • Fuel pump (page 19)
1. Cylinder head cover
  2. Valve rocker arms and rocker arm shaft
  3. Valve cotters
  - 3'. Camshaft
  4. Valve springs
  - 4'. Valves
  5. Cylinder head
  6. Valve guides

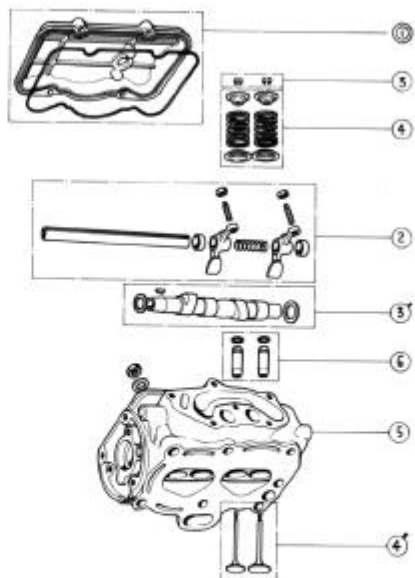


Fig. 12

## Disassembly Pointers

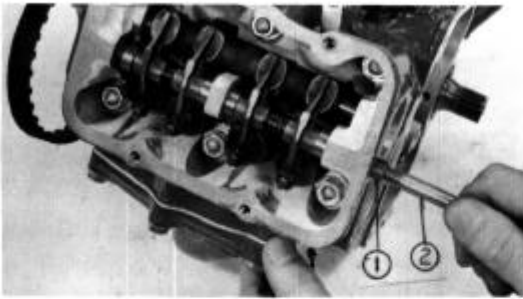


Fig. 13

① Rocker arm shaft ② 8mm bolt

- 1. Screw an 8mm bolt into the rocker arm shaft and pull the shaft out using this bolt.

## Reassembly Pointers

- 1. Coat the valve stems with clean engine oil and insert into the cylinder head. After the valves have been assembled, pour a little oil around the valve heads and blow compressed air at  $1\text{kg/cm}^2$  (14.22 psi) from the inlet and exhaust ports and check for any air leaks around the valves. Leaking valves should be lapped.

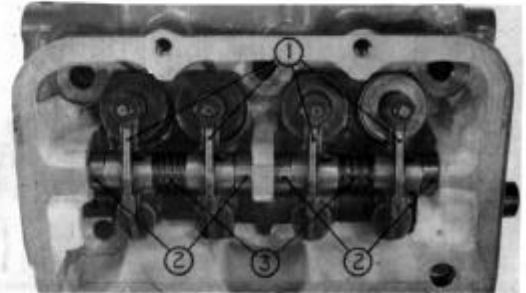


Fig. 15

① Rocker arm  
② Rocker arm collar  
③ Rocker arm spring

- 3. Assemble component parts into the cylinder head as shown above.

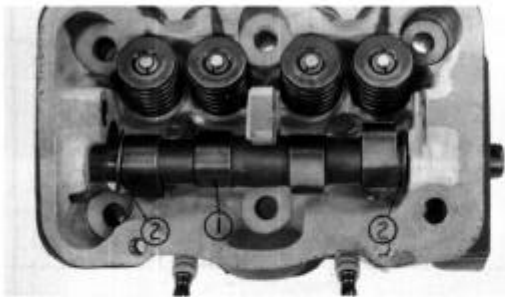


Fig. 14

① Camshaft ② 16mm thrust washer

- 2. Assemble the 16mm thrust washers at both ends of the camshaft.

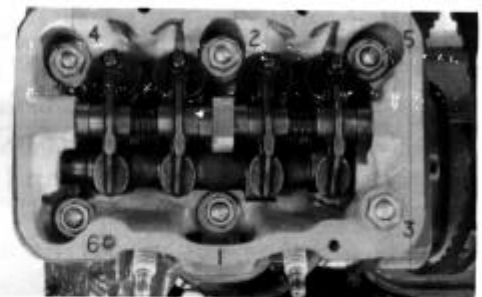


Fig. 16

Cylinder head torquing sequence

- 4. It is important that the final torquing value conforms to the torque table (ref. page 29).

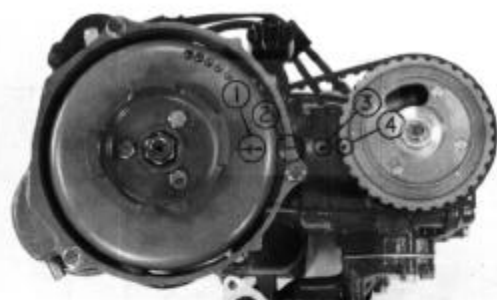


Fig. 17

- ① "T" timing mark
- ② Index mark(starter case)
- ③ Index mark(cylinder barrel)
- ④ Cam pulley timing mark

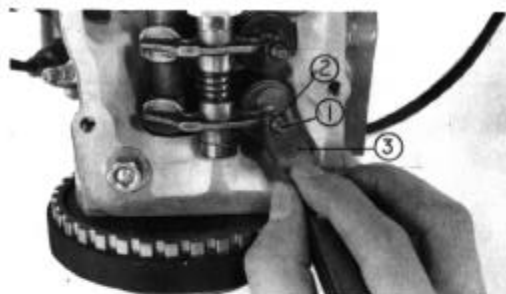


Fig. 18

- ① Tappet adjuster
- ② Lock nut
- ③ Feeler gauge

#### -5. Valve timing

- a. Align the "T" timing mark to the index mark on the starter case.
- b. Fit the timing belt on the cam pulley and install the cam pulley on the camshaft with the cam pulley timing mark aligned to the index mark on the cylinder barrel.

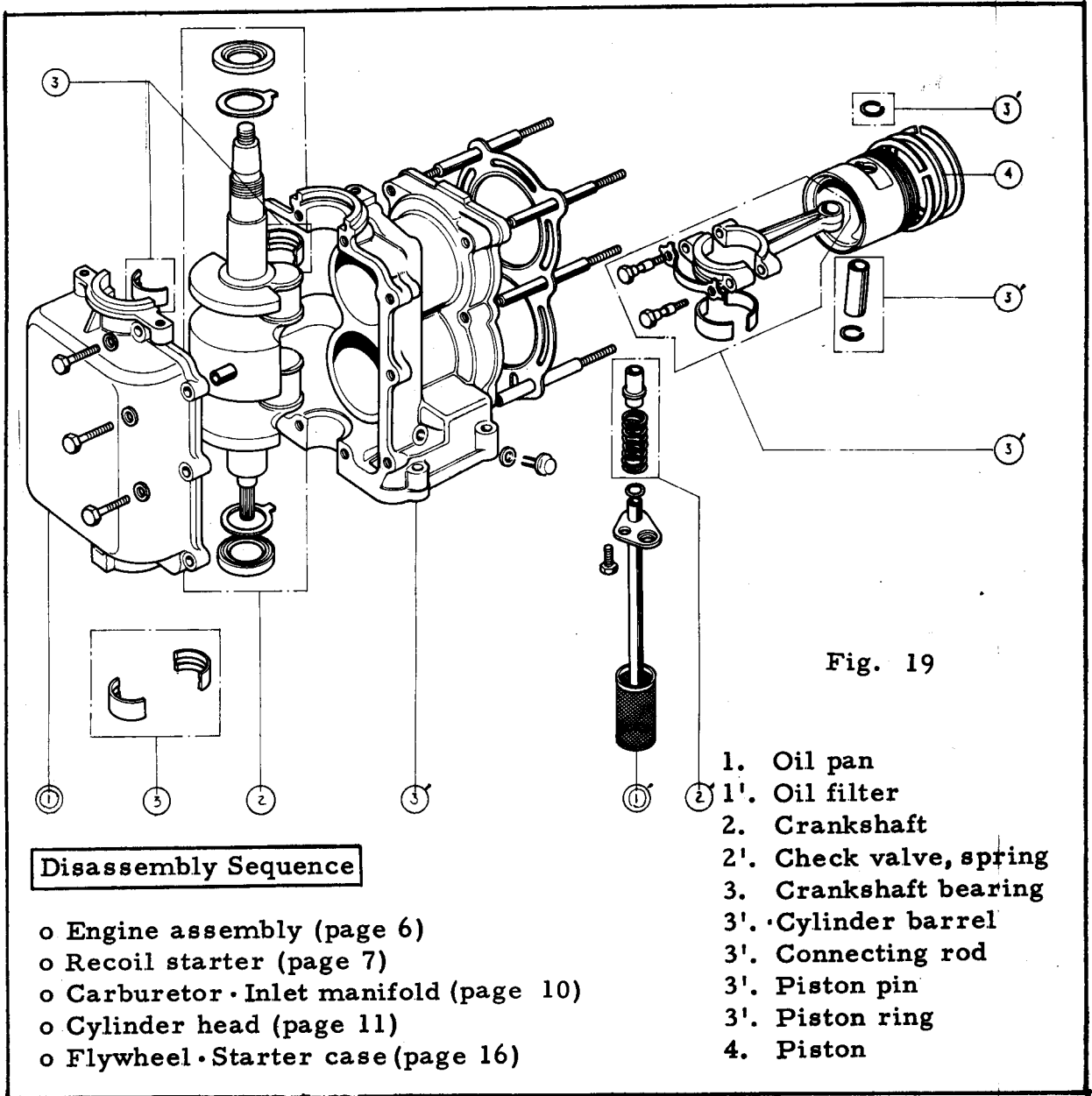
Note: Exercise care not to cut or twist the timing belt.

#### -6. Valve tappet adjustment

- a. Align the "T" timing mark to the index mark on the starter case.
- b. Check the tappet clearance (rocker arms must be in the free cycle). It should be 0.06mm (0.002 in.).
- c. If adjustment is necessary, loosen the lock nut and make the adjustment.

**M E M O**

## 4. Cylinder Barrel • Piston • Crankshaft



### Disassembly Pointers

- 1. Remove the crankshaft assembly from the cylinder barrel before disassembling the connecting rods, pistons and piston rings.

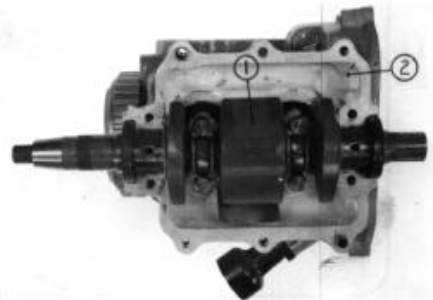


Fig. 20  
①Crankshaft ②Cylinder head

# Reassembly Pointers



Fig. 21  
 ① Piston ② Cylinder barrel

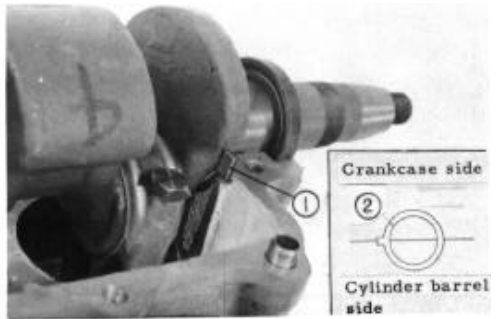


Fig. 23  
 ① Thrust bearing tab  
 ② Thrust bearing

- 1. Assemble the piston on the connecting rod, and then assemble the piston rings so that the ring gaps are not in alignment with the piston pin or 90° to it. Install the pistons into the cylinders from the top so that the recessed section in piston head is positioned as shown in the figure.
- Installation of the piston will be simplified by the use of the piston slider.

- 3. Mount the crankshaft on the cylinder barrel. Install the thrust bearing with the tab set in the cylinder groove.

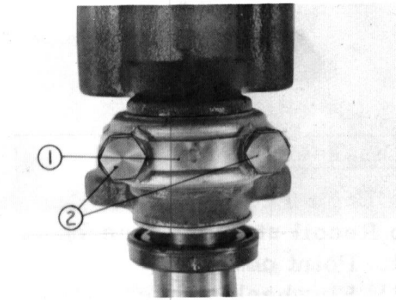


Fig. 24  
 ① Lock washer  
 ② Connecting rod bolt

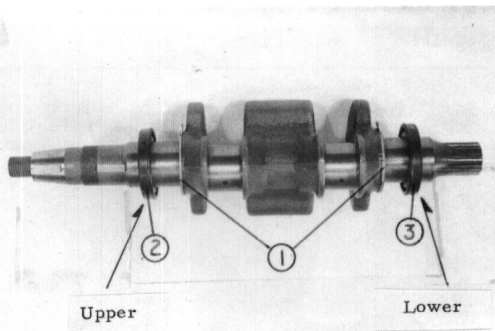


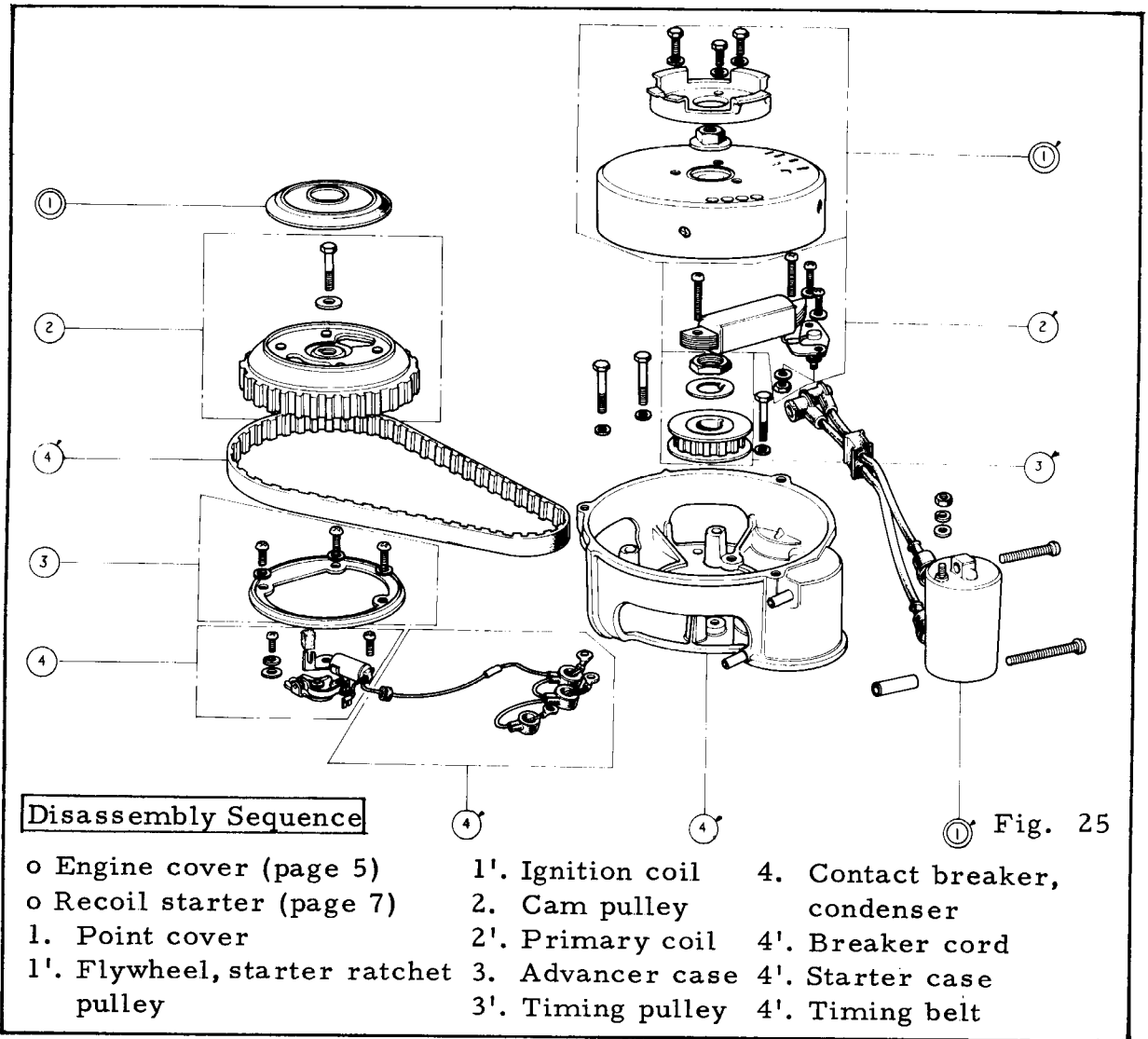
Fig. 22  
 ① Crankshaft thrust bearing  
 ② Oil seal A ③ Oil seal B

- 2. The positions and the direction of the oil seal must not be reversed.

- 4. Tighten the connecting rod bolts and bend up the locking washer tabs against the bolt heads. Torque to the value shown in the torque table on page 29.

- Note: 1. When applying gasket paste on the crankcase flange, exercise care not to allow paste to drop into the cylinder barrel.
- 2. Replace the connecting rod bearings if they are scored or worn.

5. Electrical (Ignition coil, breaker points, spark plugs)



**Disassembly Pointers**

- 1. Remove the cam pulley by screwing a 12mm (P1.25) bolt into the cam pulley.

Note: 1. Do not cut or fold the timing belt.  
 2. Do not strike the cam pulley.

Fig. 26  
 ① 12mm bolt  
 ② Cam pulley



- 2. Remove the flywheel together with the ratchet pulley by loosening 12mm special nut.



Fig. 27  
 ① 12mm special nut ② Flywheel  
 ③ Ratchet pulley

### Reassembly Pointers



Fig. 28  
 ① 22mm lock washer  
 ② 22mm lock nut ③ Timing pulley

- 1. Tighten the lock nut and bend up the lock washer against the side of the nut. Torque the nut to the value specified in the torque table on page 29.



Fig. 29  
 ① "F" timing mark ② Index mark

- 2. Ignition timing

- a. Turn the flywheel in the direction of the arrow shown in the figure and observe the

position of the "F" timing mark when the breaker points just starts to open. The timing is correct if the "F" mark is aligned to the index mark.

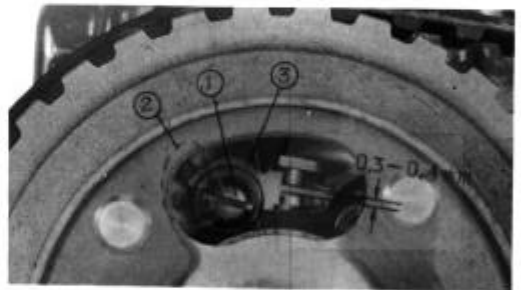


Fig. 30  
 ① 6mm screw ② Adjusting slot  
 ③ Breaker base

- b. If adjustment is necessary, loosen the 6mm screw and move the breaker base by inserting the tip of the screwdriver into the adjusting slot.

- 3. Point gap

Turn the flywheel until the point gap is at maximum opening. Proper gap is 0.3 to 0.4mm (0.01 to 0.02 in.). Replace the point assembly if the gap is beyond specification.

## 6. Oil Pump - Fuel Pump

The oil pump is a trochoid type mounted on the cylinder head at the end of the camshaft by which it is driven.

The diagram shows the flow of the lubricating oil. Fuel pump is a diaphragm type mounted on the cylinder head cover and driven by the valve rocker arm.

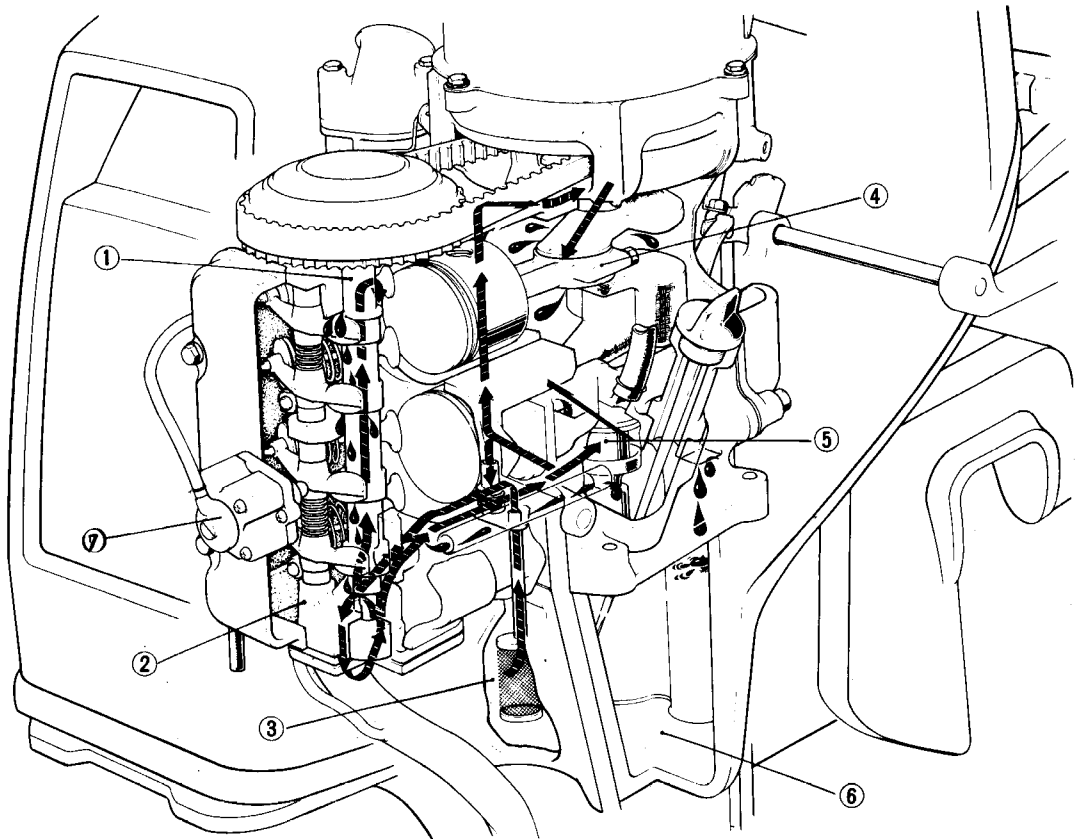
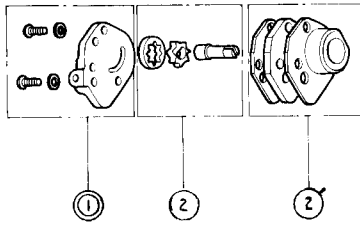


Fig. 31

- ① Camshaft
- ② Oil pump
- ③ Oil filter
- ④ Connecting rod
- ⑤ Crankshaft
- ⑥ Oil
- ⑦ Fuel pump

## Oil Pump



### Disassembly Sequence

- o Engine assembly (page 6)
- o Oil pump assembly (page 18)

1. Oil pump plate
2. Oil pump rotor
- 2'. Oil pump body

Fig. 32

### Reassembly Pointers

- 1. Install the oil pump with the slot in the pump shaft aligned to the pin in the camshaft hole.

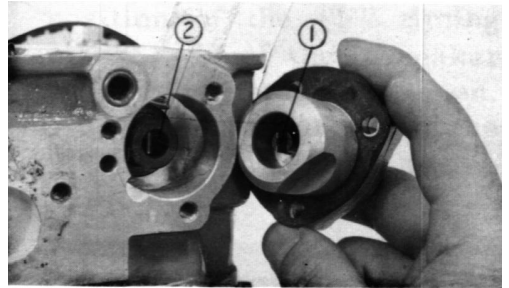
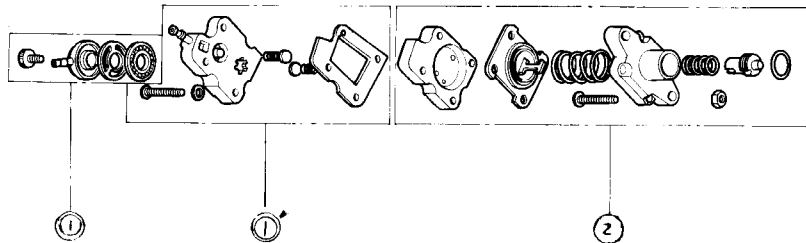


Fig. 33

- ① Oil pump shaft
- ② Pin

## Fuel Pump



### Disassembly Sequence

- o Engine cover (page 5)
- o Fuel pump cover

1. Filter body
2. Diaphragm
- 1'. Cap

Fig. 34

### Disassembly Pointers

- 1. Push in on the pushrod and turn the diaphragm in the direction of the arrow to disassemble the diaphragm from the pump.

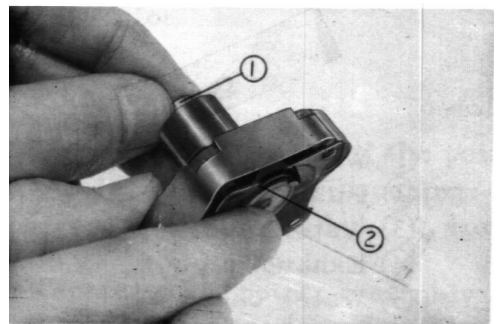


Fig. 35

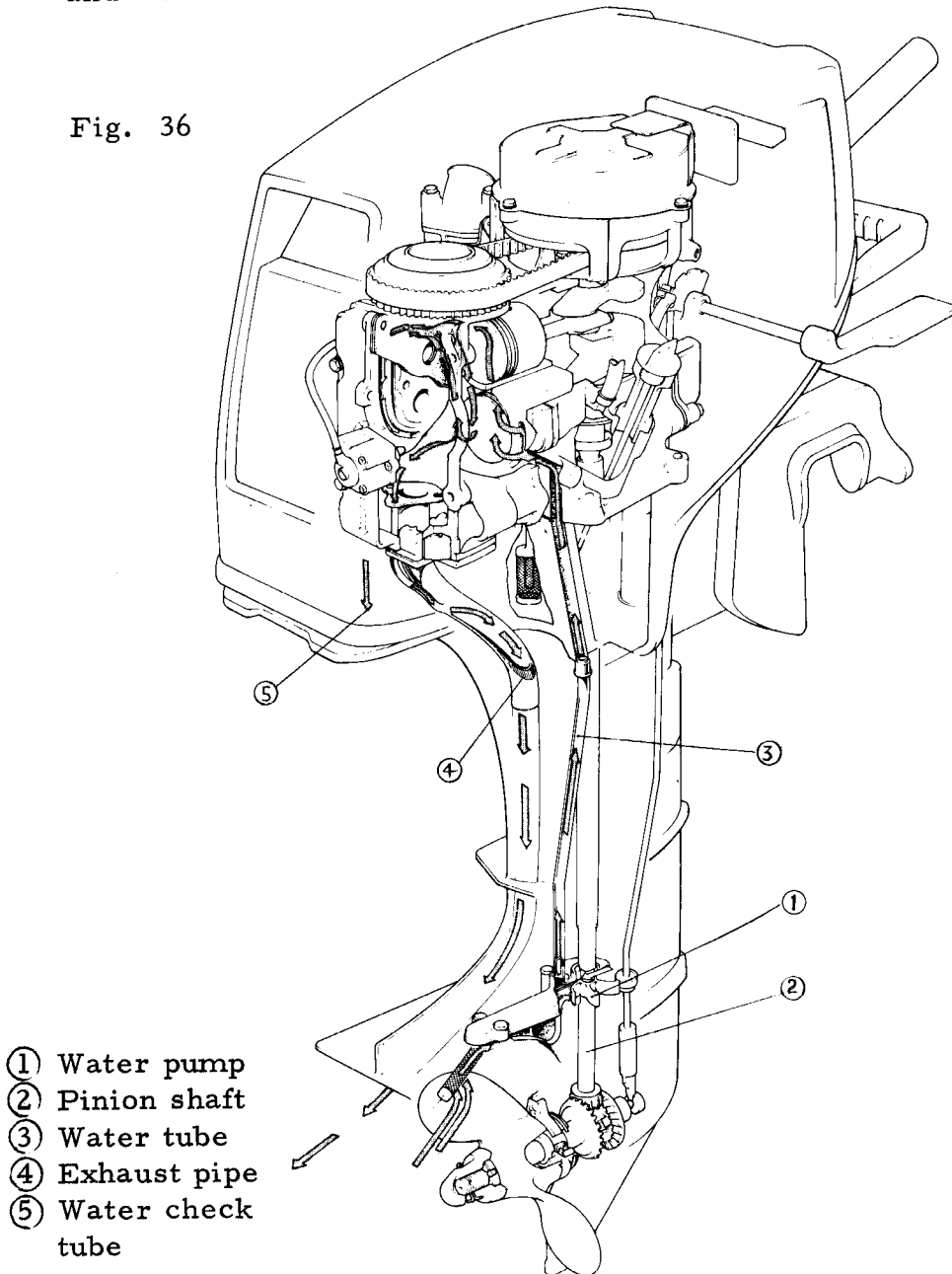
- ① Pushrod
- ② Diaphragm

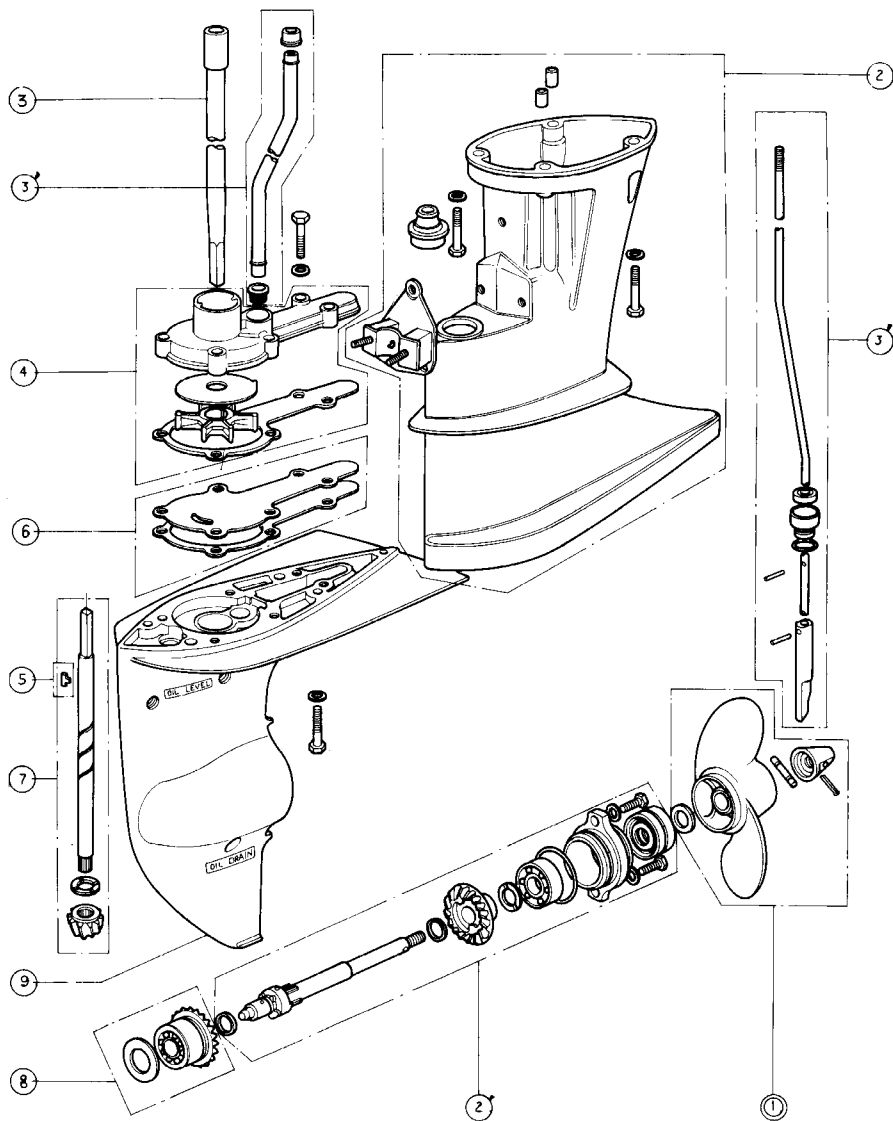
## 7. Gearcase · Extension Case · Water Pump

### ● Cooling water circulating system

The water pump is mounted on the gearcase and driven by the pinion shaft. Water which is taken in by the pump passes through the water tube under pressure and to the engine where it cools the cylinder and cylinder head. The cooling water is then exhausted from the exhaust pipe and water check tube.

Fig. 36





**Disassembly Sequence**

o Lower unit (page 5)

- |                              |                                    |
|------------------------------|------------------------------------|
| 1. Propeller                 | 4. Impeller housing, pump impeller |
| 2. Extension case            | 5. Impeller key                    |
| 2'. Rear bevel gear assembly | 6. Impeller cover                  |
| 3. Shaft                     | 7. Pinion shaft, bevel pinion      |
| 3'. Shift rod complete       | 8. Rear bevel gear                 |
| 3'. Water tube               | 9. Gearcase                        |

Fig. 37

## Reassembly Pointers

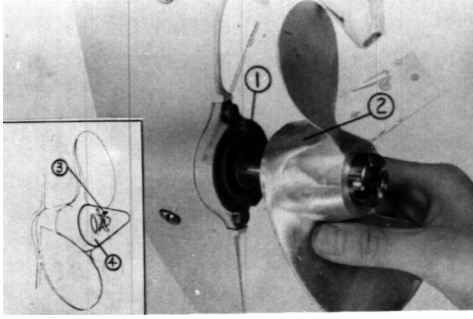


Fig. 38

- ① 14mm plain washer
- ② Propeller
- ③ 3mm split pin
- ④ Propeller cap

-1. Do not forget to install the 14mm plain washer. Install a new 3mm split pin and bend the ends around the cap.

### -2. Bevel gear • Bevel pinion assembly

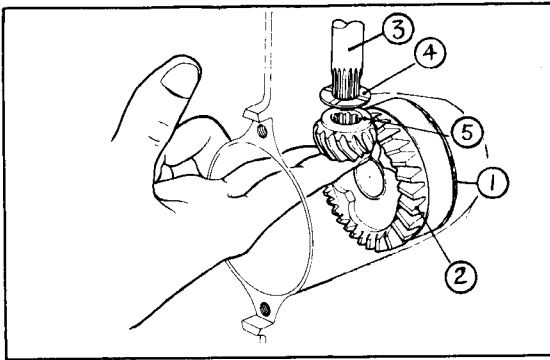


Fig. 39

- ① Gear shim A
- ② Front bevel gear
- ③ Pinion shaft
- ④ Pinion washer
- ⑤ Bevel pinion

- a. Assemble the gear shim A and the front bevel gear into the gear case.
- b. Insert the pinion shaft into the gear case, and then assemble the pinion washer and bevel pinion on the shaft.
- c. Move the bevel pinion and if there is excessive looseness in the gears, replace the pinion washer with one of greater thickness selected from the table below.

Description	Thickness (mm)	Part number
Pinion washer A	1.50	90521-921-000
Pinion washer B	1.55	90522-921-000
Pinion washer C	1.60	90523-921-000
Pinion washer D	1.65	90524-921-000

Note: After reassembly, make sure that the propeller turns smoothly.

-3. Install the pump impeller on the pinion shaft, and then set the impeller housing on the shaft as shown in the figure and move the housing in the direction of (A) so that the impeller blades will be facing in the proper direction.

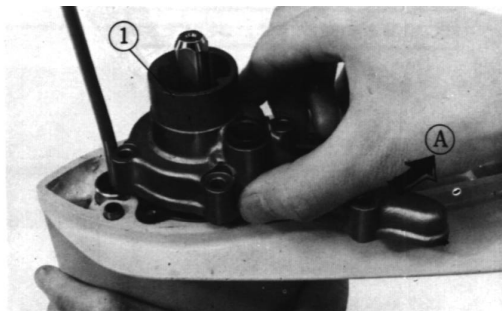


Fig. 40 ① Impeller housing

-4. Fill the lower unit with API standard GL-4 SAE 90 outboard motor gear oil through the oil filler hole until the oil emerges from the level bolt hole. Oil capacity is 0.15ℓ (0.32US pt./ 0.26 Imp. pt. ).

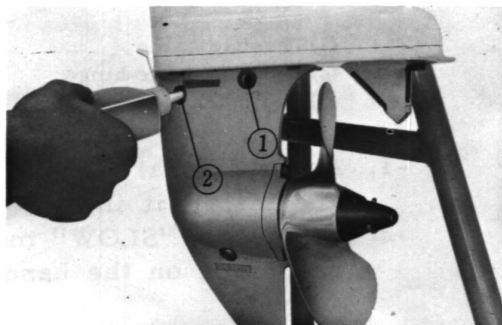
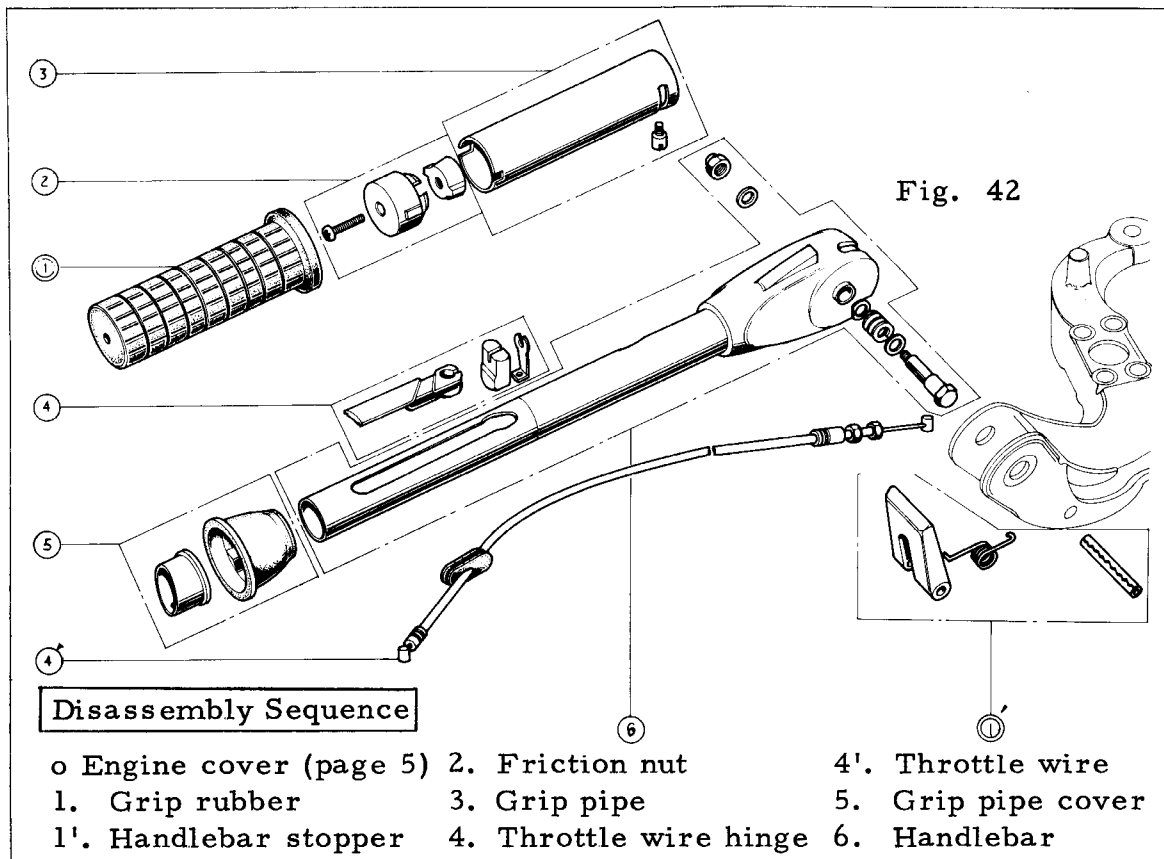


Fig. 41  
① Level bolt hole ② Oil filler hole

## 8. Headlebar



## Reassembly Pointers

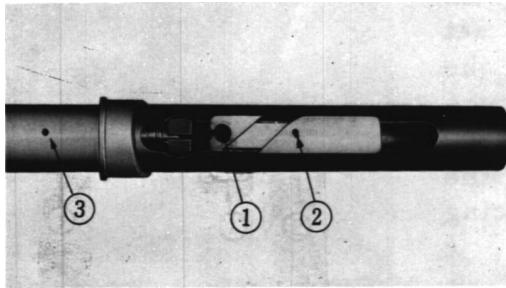


Fig. 43

- ① Throttle cable
- ② Throttle cable hinge
- ③ Red mark

- 1. Apply liberal amount of grease on the throttle cable end and install it into the throttle wire hinge.
- 2. Align the "SLOW" marking on the grip pipe cover to the red mark on the handlebar.

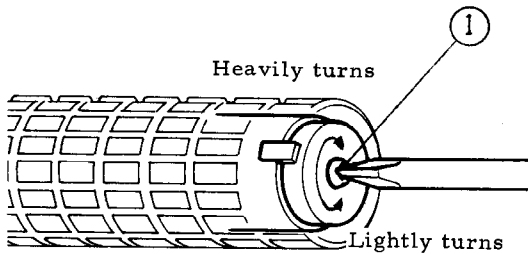


Fig. 44

- ① Adjuster screw

- 3. The smoothness of the throttle grip is adjusted by the screw on the end of the grip.

**M E M O**



## 9. Stern Bracket · Swivel Case

### ● Tilt mechanism

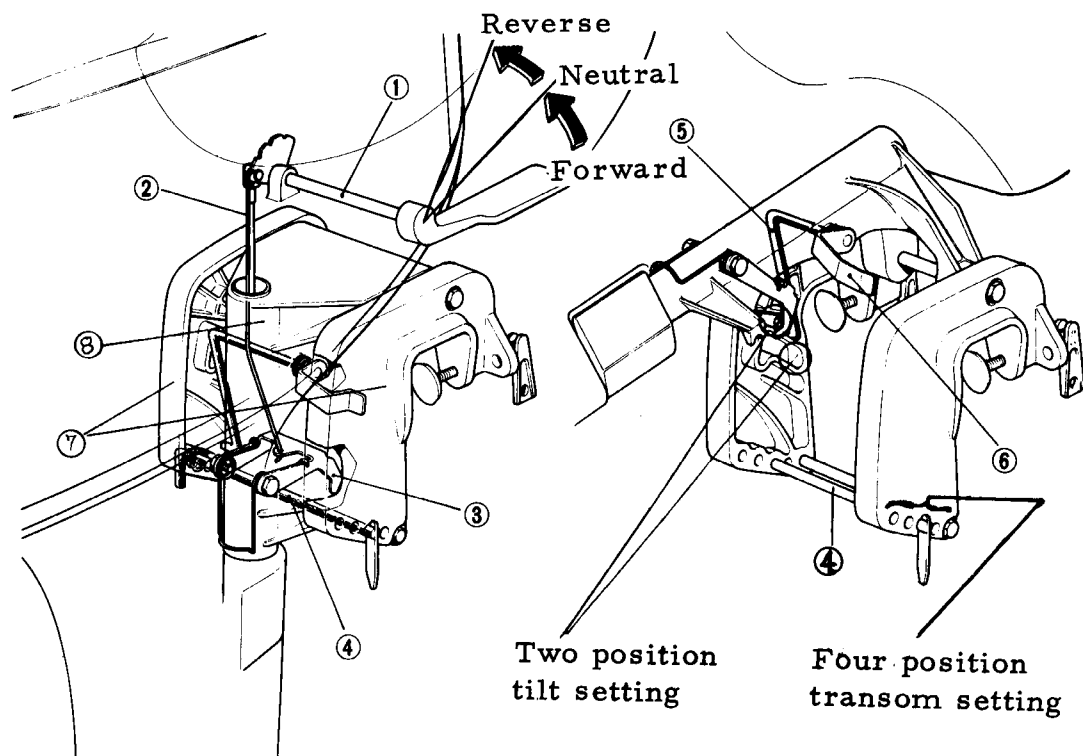
The tilt device permits the main unit to tilt from the stern bracket.

When the shift lever is in FORWARD or NEUTRAL position the release hook is disengaged from the adjuster rod through the shift shaft and release rod linkage. Tilt the engine by lifting at the extension case, move the tilt lever and set the engine in either of the two tilt positions.

### ● Change the position of stern bracket for the transom angle by repositioning the adjuster rod into the proper hole.

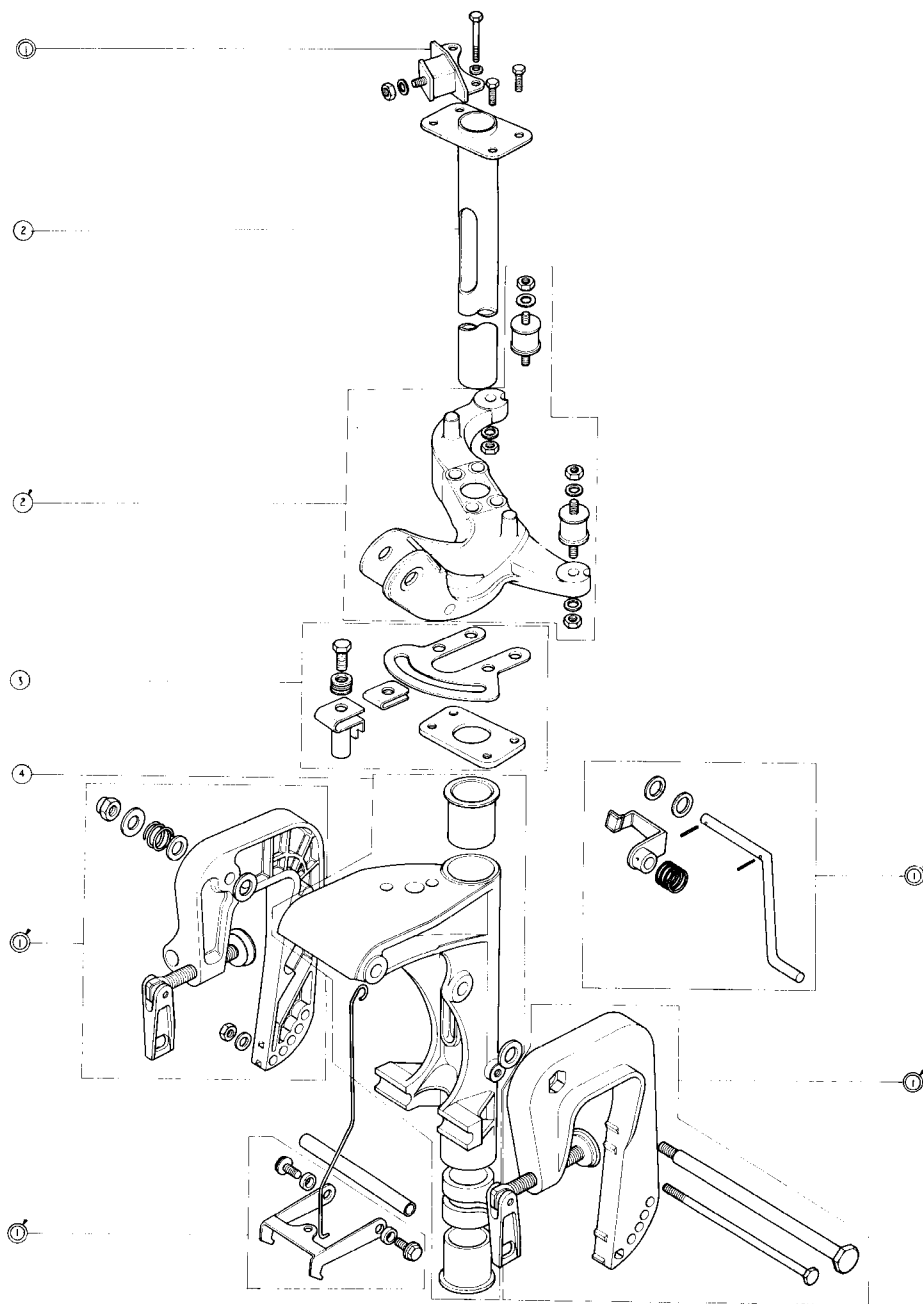
### ● Reverse lock mechanism

When the shift lever is placed in REVERSE the release rod hook engages the adjuster rod and prevents the main unit from tilting.



- ① Shift shaft   ② Release rod   ③ Release lock hook  
④ Adjuster rod   ⑤ Tilt link   ⑥ Tilt lever  
⑦ Stern bracket   ⑧ Swivel case

Fig. 45



**Disassembly Sequence**

- o Engine assembly (page 6)
- o Lower unit (page 5)
- o Oil case (page 27)
- 1. Thrust mount rubber
- 1'. Stern bracket

- 1'. Reverse lock hook
- 1'. Left tilt link
- 2. Swivel shaft

- 2'. Mount frame
- 3. Friction plate
- 4. Swivel case

Fig. 46

## Reassembly Pointers

- 1. Check for smooth operation of the handle. The smoothness of the handle is adjusted by the friction adjuster bolt.

(Reference)

- o The normal load required to move the handle is 2 to 3 kg (4.41 ~ 6.61 lbs) measured with a spring scale at a point 300 mm (11.81 in.) from the handle pivot bolt.

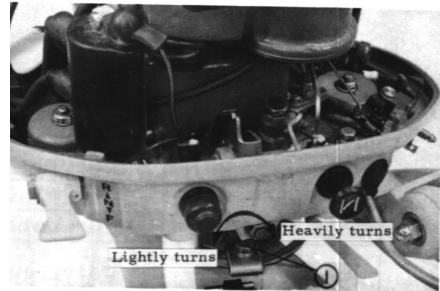


Fig. 47  
① Friction adjuster bolt

## 10. Oil Case

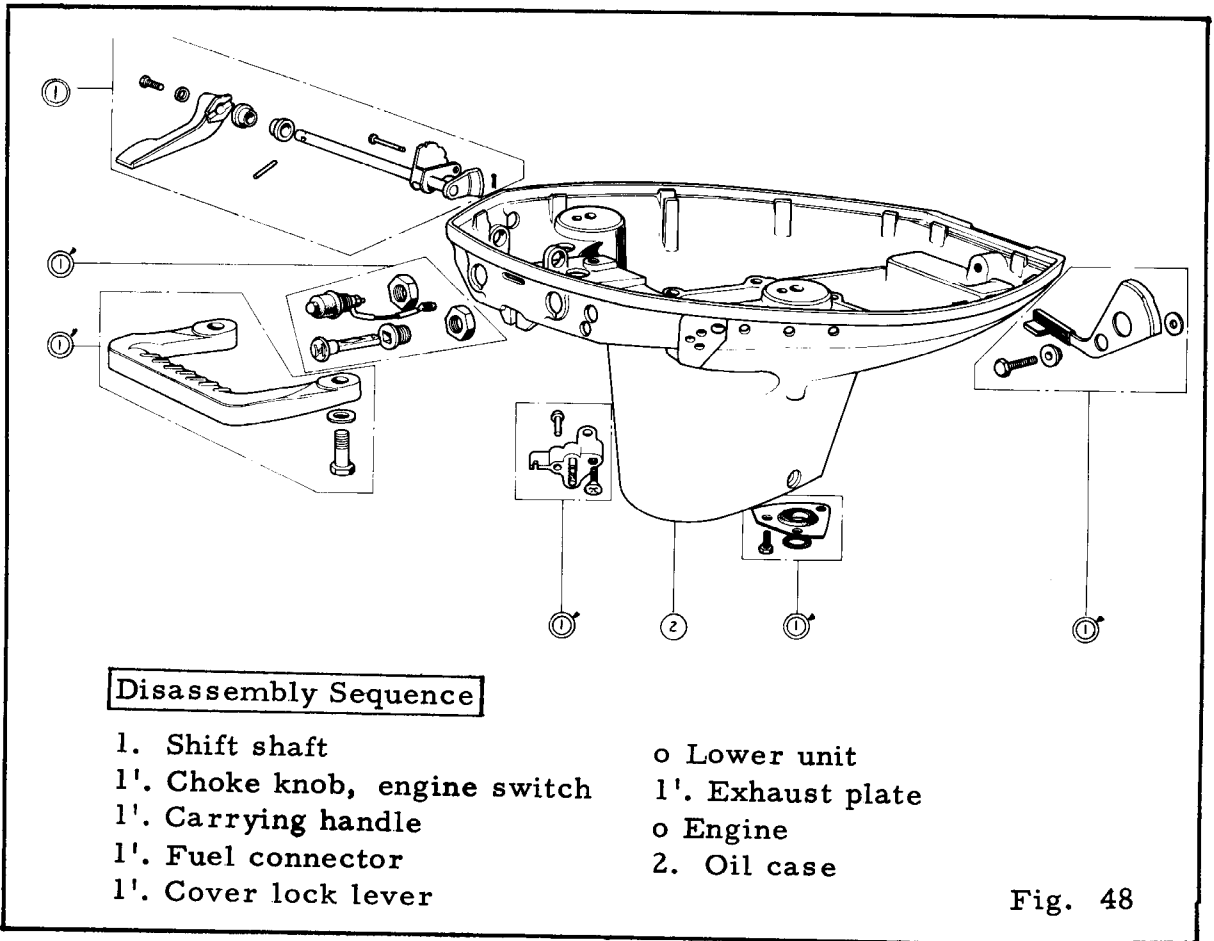


Fig. 48

#### 4 SERVICE DATA

##### 1. Service Data

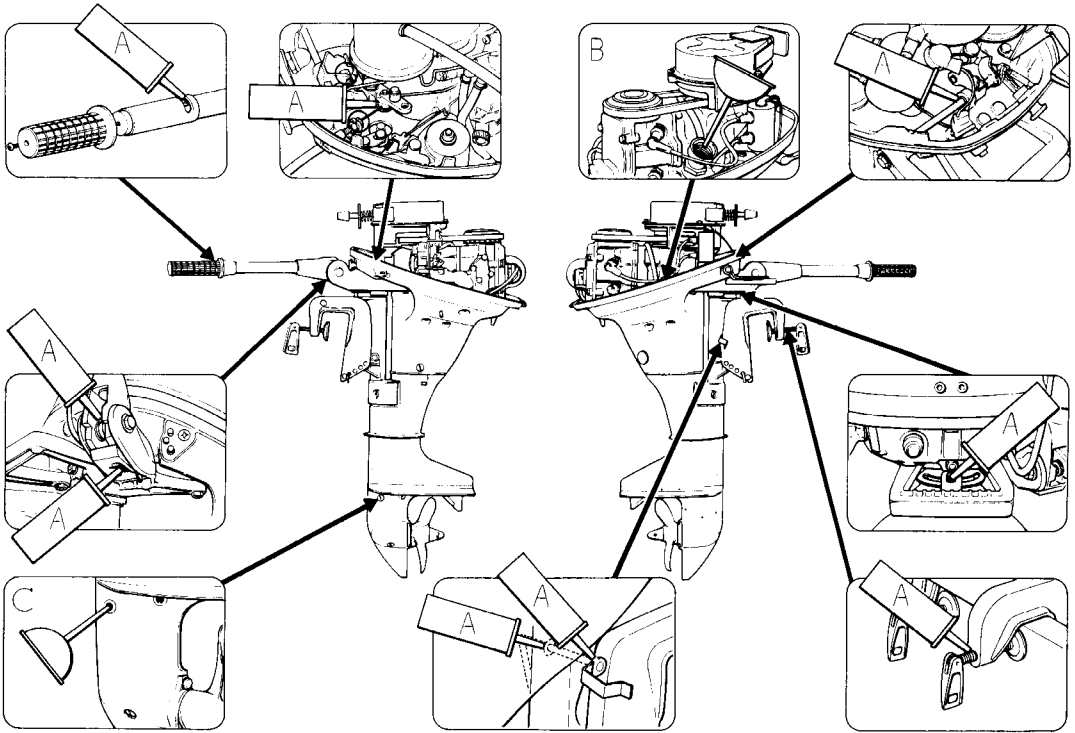
Description	Servicing Item	Maintenance Standard
Starter rope	Pulling force	1.2~2kg(2.64~4.41 lbs)
Carburetor	Float level	7mm(0.28 in.)
	Idle speed	1200 rpm
Cylinder head	Valve guide I.D.	5.500~5.521mm (0.216~0.217 in.)
	Valve seat width	1.5mm(0.059 in.)
	Valve stem clearance	Inlet: 0.12mm (0.0047 in.)
		Exhaust: 0.16mm (0.0062 in.)
Tappet clearance	0.06mm(0.0023 in.)	
Cylinder	Bore	50.1mm(1.97 in.)
Piston	Diameter at the skirt 90° to piston pin	49.8mm(1.96 in.)
Piston ring	End gap	0.6mm(0.023 in.)
	Ring side clearance	0.07mm(0.0027 in.)
Contact breaker	Point gap	0.3~0.4mm (0.011~0.015 in.)
Oil pump	Rotor tip clearance	0.15mm(0.0059 in.)
	Rotor and body clearance	0.10mm(0.0039 in.)
Bevel gear	Bevel gear and bevel pinion backlash	0.1~0.5mm (0.0039~0.019 in.)
	Engine oil capacity	0.8ℓ(1.7 US pt, 1.4 Imp.pt)
	Gear oil capacity	0.15ℓ (0.32 US pt, 0.26 Imp.pt)

## 2. Torque Table

The table below shows the torquing value for the important components.

	Components	Bolt or nut (mm)	Torque Value kg-cm (ft-lbs)
Engine	Crankcase	6 (P1.0) bolt	90 ~ 120 (6.51 ~ 8.68)
	Cylinder head	8 (P1.25) nut	200 ~ 250 (14.4 ~ 17.1)
	Flywheel	12 (P1.25) nut	600 ~ 700 (43.4 ~ 50.6)
	Connecting rod	6 (P1.0) special bolt	90 ~ 120 (6.51 ~ 8.68)
	Timing pulley	22 (P1.0) special nut	200 ~ 250 (14.4 ~ 17.1)
	Cam Pulley	6 (P1.0) bolt	90 ~ 120 (6.51 ~ 8.68)
	Carburetor air guide	6 (P1.0) bolt	90 ~ 120 (6.51 ~ 8.68)
Frame	Engine mounting	6 (P1.0) bolt	90 ~ 120 (6.51 ~ 8.68)
	Extension case	8 (P1.25) bolt	200 ~ 250 (14.4 ~ 17.1)
	Gearcase	6 (P1.0) bolt	90 ~ 120 (6.51 ~ 8.68)
	Propeller shaft holder	6 (P1.0) bolt	90 ~ 120 (6.51 ~ 8.68)
	Mount rubber (upper, lower, thrust)	8 (P1.0) nut	200 ~ 250 (14.4 ~ 17.1)
	Stern bracket	6 (P1.0) nut	90 ~ 120 (6.51 ~ 8.68)
	Tilt bolt	8 (P1.25) nut	200 ~ 250 (14.4 ~ 17.1)
	Swivel shaft	6 (P1.0) bolt	90 ~ 120 (6.51 ~ 8.68)

### 3. Lubrication Chart



- A. Grease
- B. API Standard SD  
SAE 10W-30  
0.8ℓ (1.7 US pt/1.4 Imp.pt)

- C. API Standard GL-4  
SAE 90  
Outboard motor gear oil  
0.15ℓ (0.32 US pt/0.26 Imp.pt)

#### Lubrication Record

Points \ Period						
Engine oil						
Gearcase oil						
Throttle grip						
Throttle wire . Throttle arm						
Shift shaft						
Handlebar stopper . Pivot						
Tilt . Shaft						
Clamp screw						
Friction plate						

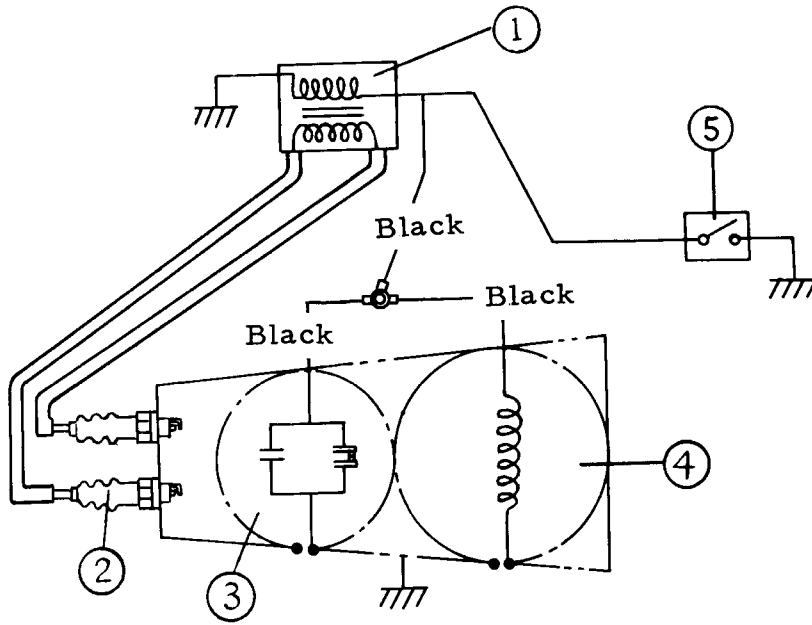
#### 4. Trouble Shooting

Trouble		Probable Causes	Corrective Action
. Engine does not start	Fuel System	1. Fuel tank empty 2. Defective fuel tube connector 3. Clogged fuel filter 4. Closed pilot screw 5. Clogged carburetor 6. Malfunction of fuel stop lever 7. Clogged fuel connector	Refill Inspect and repair - " - Adjust carburetor Inspect and repair carburetor - " - Inspect and repair
	Electrical System	1. Defective spark plug 2. Improper spark plug gap 3. Electrical leak in high tension cord 4. Defective points 5. Grounding of stop switch cord	Replace Adjust gap to 0.6~0.7 mm(0.02~0.03 in.) Replace ignition coil Clean and adjust points Repair or replace
	Others	1. Insufficient starter pull	Pull with greater force

Trouble		Probable Causes	Corrective Action
<ul style="list-style-type: none"> <li>• Engine runs for short period</li> <li>• Frequently engine stops while running</li> </ul>	Fuel System	<ol style="list-style-type: none"> <li>1. Insufficient fuel in tank</li> <li>2. Water mixed in fuel</li> <li>3. Pilot screw opened too far</li> <li>4. Idling set too low</li> <li>5. Clogged carburetor</li> <li>6. Fuel pump malfunction</li> <li>7. Fuel stop lever malfunction</li> </ol>	Refill Drain and refill Adjust carburetor - " - Inspect and repair carburetor Inspect and repair fuel pump Inspect and repair
	Electrical System	<ol style="list-style-type: none"> <li>1. Grounding of engine stop cord</li> <li>2. Defective high tension cord</li> <li>3. Defective coil or condenser</li> <li>4. Defective points</li> <li>5. Defective spark plug</li> <li>6. Loose spark plug cap</li> <li>7. Ignition out of time</li> </ol>	Inspect and repair Replace ignition coil Replace defective part Adjust or replace Replace Inspect and repair Adjust
	Others	<ol style="list-style-type: none"> <li>1. Clogged cooling water pipe</li> </ol>	Inspect and repair



5. Wiring Diagram



- ① Ignition coil
- ② Spark plug
- ③ Contact breaker assembly
- ④ AC generator
- ⑤ Engine switch

Fig. 49

**MEMO**

## 6. Specifications

Items	Data
Engine type	4 cycle, 2 cylinder, OHC
Total displacement	149cc (9.09 cu. in.)
Bore and stroke	50 x 38mm (1.38 x 1.50 in.)
Power output	7.5 ps / 6,000 rpm
Starting method	Recoil starter
Ignition method	Flywheel magneto
Lubrication method	Forced lubrication by trochoid pump
Cooling method	Water cooled
Fuel system	Diaphragm fuel pump
Dimension (L x W x H)	S type : 530 x 315 x 945mm (20.9 x 12.4 x 37.2 in.) L type: 530 x 315 x 1,100mm (20.9 x 12.4 x 443.0 in.)
Weight	S type : 27.0 kg (59.5 lbs) L type: 28.9 kg (63.6 lbs)
Transom mounting angle	Four mounting angle (3°, 8°, 13°, 18°)
Tilt angle	Two tilt angle (35°, 70°)
Transom height	S type : 380mm (15 in.) L type: 533mm (21 in.)
Reduction ratio	13 : 25
No. of propeller blades x diameter x pitch	2 x 210mm x 150mm(8.27 x 5.90 in.)
Clutch	Dog type
Spark plug	NGK D - 5H S

<b>1.</b>	<b>Special Tools</b>	<b>3 - 4</b>
<b>2.</b>	<b>Engine and lower unit removal and installation.</b>	<b>5 - 6</b>
<b>3.</b>	<b>Disassembly and Reassembly</b>	<b>7 - 27</b>
<b>4.</b>	<b>Service Data</b>	<b>28 - 34</b>