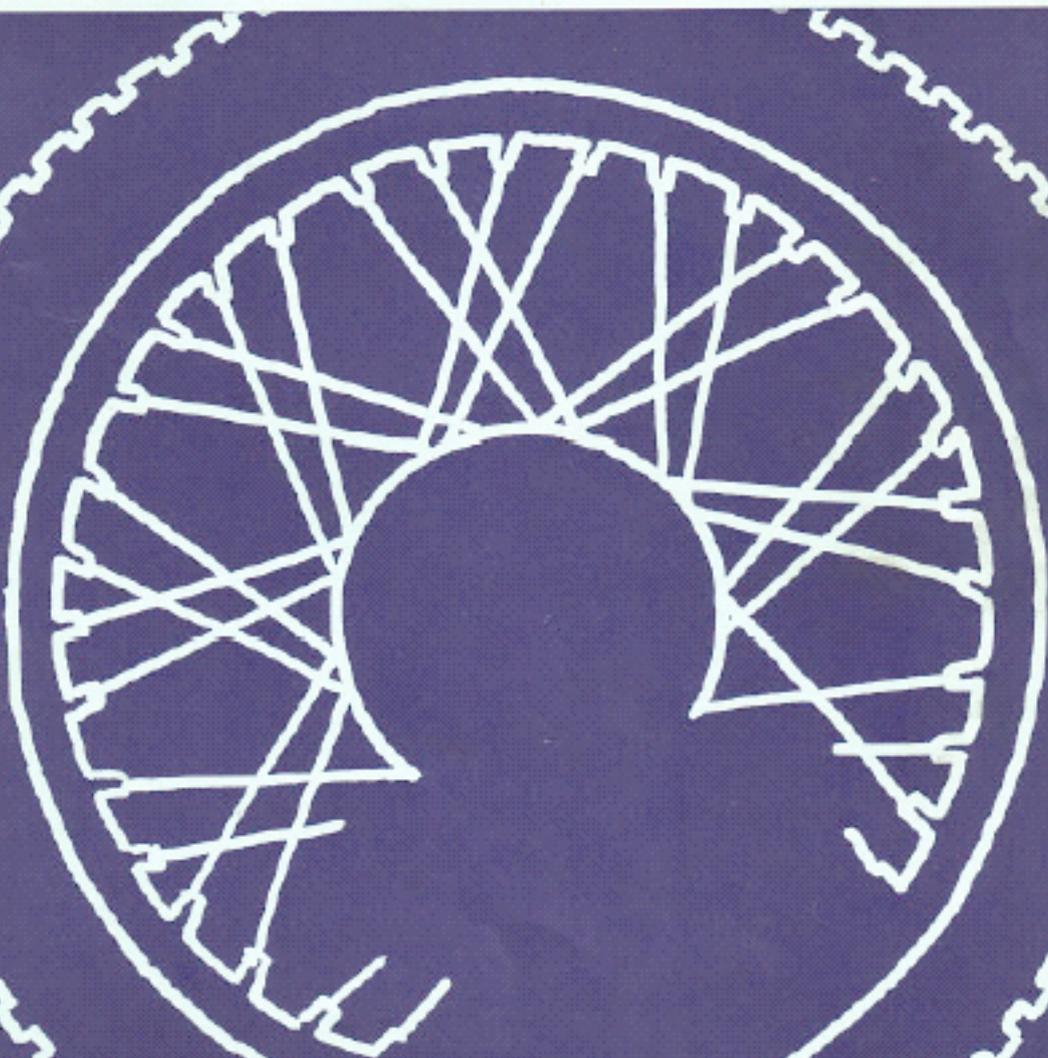


# SHOP MANUAL

## HONDA CB350F - CB400F



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PREFACE



This SERVICE MANUAL has been prepared as a "SERVICE GUIDANCE" for the mechanic responsible for the upkeep of the HONDA CB350F and CB400F. It is compiled into various functional groups and summarizes the procedures for disassembling, inspecting and reassembling the components of the machine. Strict adherence to the instructions given herein will result in better, safer service work.

All information, illustrations and specifications contained herein are based on the 1972 model CB350F. At the end of this manual, the modified information and operation procedures of the model CB400F are given separately. HONDA reserves the right to make changes at any time without notice and obligation.

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**HONDA MOTOR CO., LTD.**

**SERVICE PUBLICATION OFFICE**

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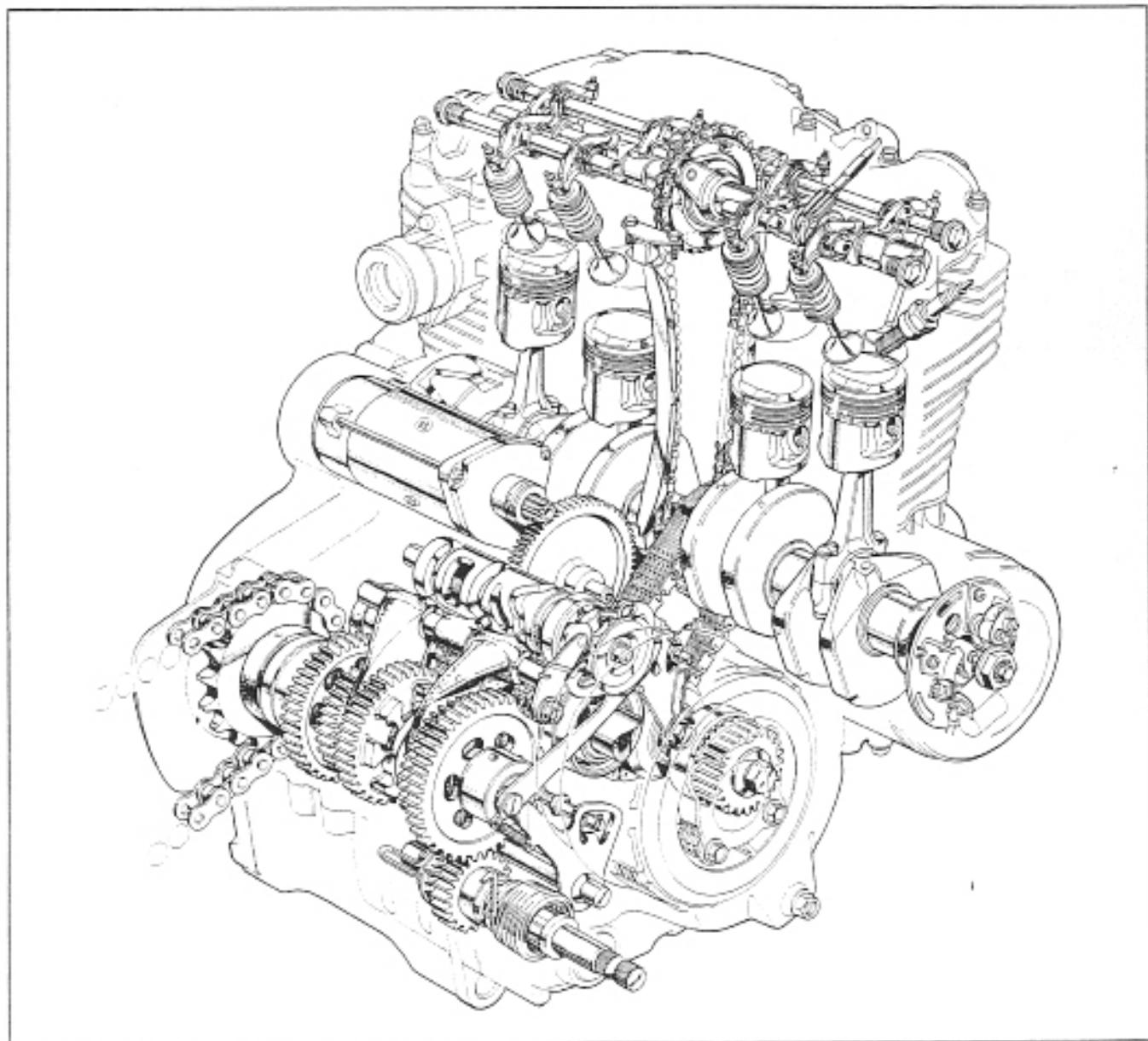


## I. THE 8 RULES FOR EFFECTIVE SERVICE WORK

1. Use new packings, gaskets, O-rings and cotter pins whenever reassembling.
2. When tightening bolts or nuts for which sequence is not specified, begin on center or larger diameter bolts and tighten them in a criss-cross pattern to specified torque in two or more steps if necessary.
3. Use genuine HONDA parts and lubricants or those recommended by HONDA.
4. Use special service tool where use of such a tool is specified.
5. Clean engine parts in or with cleaning solvent upon disassembly. Apply lubricant to their sliding surfaces when reassembling.
6. Coat or fill parts with grease where specified as such.
7. Upon assembling, check every possible part for proper installation and movement or operation.
8. When working with others, try to give a signal or communicate for safety.

### Precautions for Readers

1. The procedures for reassembling the engine and frame parts are not described. Follow the reverse of disassembling procedures carefully observing the titles "Reassembly" in each section.
2. All the service data for each component are compiled on the last pages of this manual.



## II. INSPECTION AND ADJUSTMENT

This section describes the inspection and adjustment procedures for the important items of the periodical maintenance of the HONDA 350 Model CB350F. Cross-refer to PERIODICAL MAINTENANCE SCHEDULE on page 74. For the items other than those described in this section, refer to "Inspection" of each part in this manual.

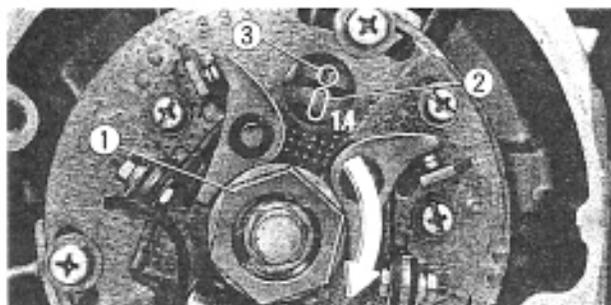


Fig. 2-1 ① Special nut ③ Matching mark  
② Mark "T" 1.4

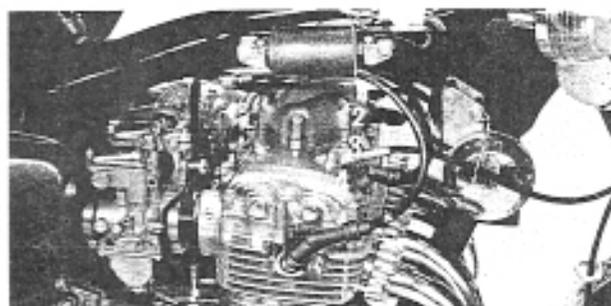


Fig. 2-2 Cylinder No

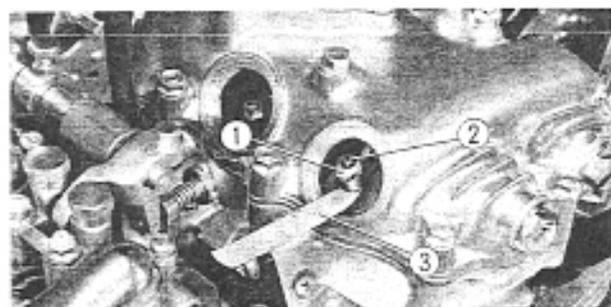


Fig. 2-3 ① Lock nut ② Feeler gauge  
③ Adjusting screw

### 1. TAPPET

Inspection and adjustment of the tappet clearance should be made when the engine is cold.

1. Remove the fuel tank.
2. Remove the eight tappet hole caps. Remove the point cover.
3. Rotate the crankshaft clockwise at the special nut so as to align the mark "T" 1.4 with the matching mark.
4. Make sure if No. 1 piston is at the TDC position on compression stroke. If not, rerotate the crankshaft a full turn clockwise so as to make proper alignment.
5. Check and adjust the tappet clearance of the "O" valves. (Refer to the table below).

To adjust, loosen the lock nut and turn the adjusting screw.

Tappet clearance	Intake valve 0.05 mm (0.002 in.)
	Exhaust valve 0.05 mm (0.002 in.)

Cylinder	No. 1	No. 2	No. 3	No. 4
Intake valve	○	×	○	×
Exhaust valve	○	○	×	×

6. Rotate the crankshaft a full turn clockwise so as to align the mark "T" 1.4 with the matching mark (in this position, the No. 4 piston is at TDC of the compression stroke) and check the "x" valves for correct tappet clearance.
7. Upon completion of the inspection and adjustment of the tappet clearance, install the tappet hole caps and point cover.
8. Install the fuel tank. Check the fuel tube for proper connection.

## 2. BREAKER POINT GAP AND IGNITION TIMING

### Breaker point gap

1. Remove the point cover.
2. Rotate the crankshaft clockwise at the special nut. Check the maximum gap of the points 1.4.

Maximum gap: **0.3~0.4mm (0.012~0.016 in.)**

To adjust the gap, loosen the screw "a" and move the breaker base 1.4.

3. Check the point gap of the points 2.3 in the same manner as for the points 1.4.

To adjust, loosen the screw "b" and move the breaker base 2.3.

### Ignition timing

Test and adjust using a stroboscopic timing light (Service Tester SRH500, Tool No. 07171-99900).

1. Make connection for the service tester as instructed by the tester manufacturer.

Connect the timing light cord to the spark plug of the No. 1 or No. 4 cylinder.

2. Start the engine and set its idle speed to 1,200rpm. Illuminate the matching mark with the timing light and see if the mark "F" 1.4 is aligned with the matching mark. If not aligned, loosen the three screws "c" and move the breaker base plate "e" in either direction.

Moving the plate to the right will advance the ignition timing and to the left retard the timing.

3. Increase the engine speed up to 2,500rpm and check the matching mark. If the mark stays between the advance marks, the ignition timing is correct.

4. Connect the timing light cord to the spark plug of the No. 2 or No. 3 cylinder. Idle the engine and see if the mark "F" 2.3 is aligned with the matching mark. If not aligned, loosen the two screws "d" and move the breaker base plate "f" in either direction.

5. Increase the engine speed up to 2,500rpm and see if the mark "F" 2.3 stays between the two advance marks.

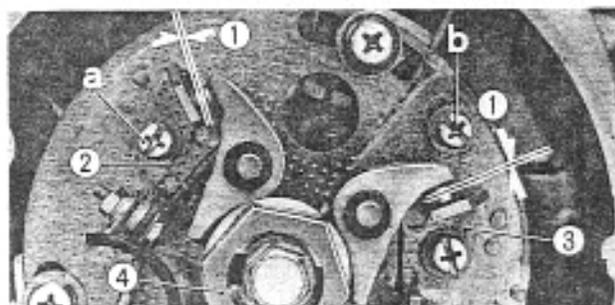


Fig. 2-4 ① Point gap ② Breaker base 1.4  
③ Breaker base 2.3 ④ Special nut

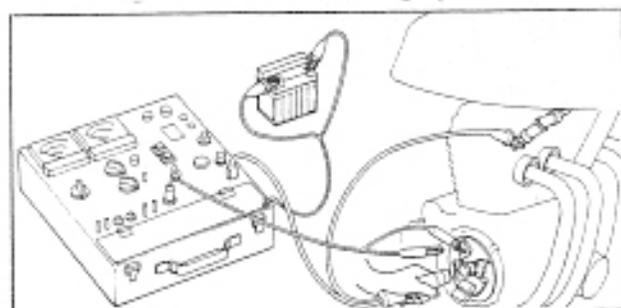


Fig. 2-5 Checking ignition timing



Fig. 2-6 ① Mark "F" 1.4  
② Matching mark



Fig. 2-7 ① Breaker base plate "e"  
② Breaker base plate "f"

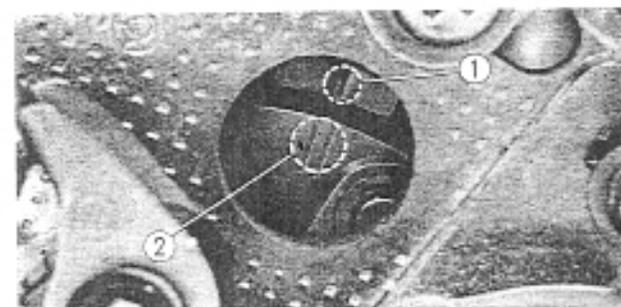


Fig. 2-8 ① Matching mark  
② Advance marks

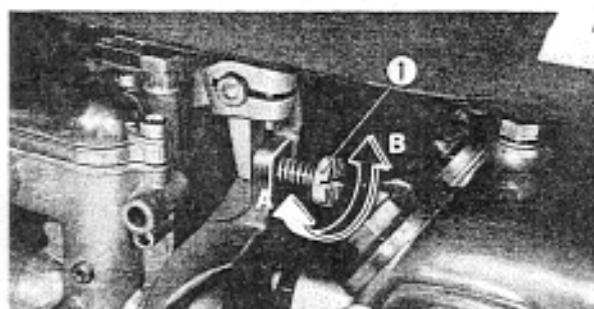


Fig. 2-9 ① Throttle stop screw

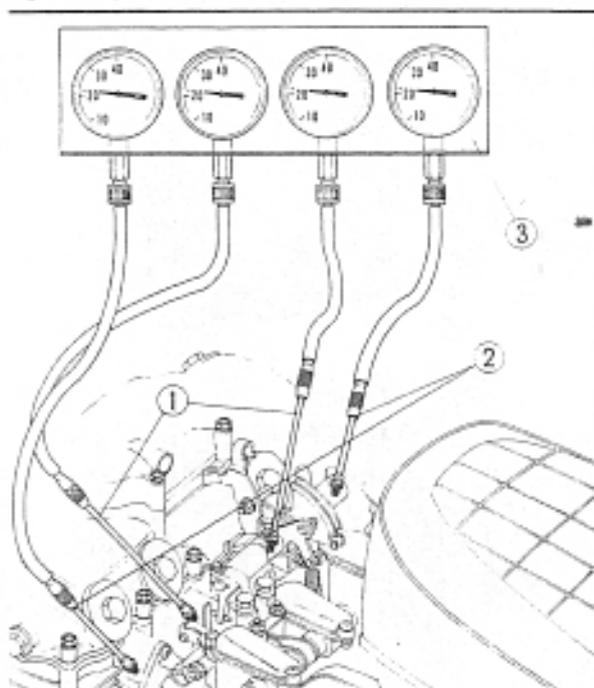


Fig. 2-10 ① Adaptor A ② Adaptor B ③ Vacuum gauge

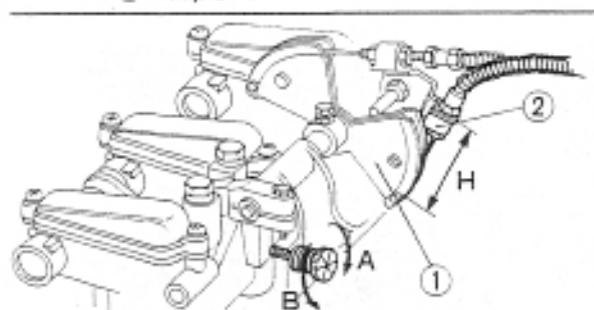


Fig. 2-11 ① Throttle lever ② Stay

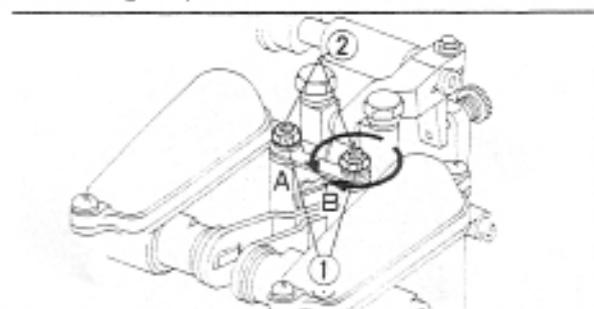


Fig. 2-12 ① Lock nut ② Adjusting screw

### 3. CARBURETOR

Carburetor should be serviced after the engine is warmed up.

#### Checking idle engine speed

1. To set the engine to 1,200rpm, turn the throttle stop screw. Turning the screw clockwise (in direction "A") will increase the engine idle speed, and vice versa (in direction "B").

#### Checking synchronization

1. Remove the four screws from the intake manifolds of the carburetors. Install the attachment A (Tool No. 07068-30007) and B (Tool No. 07068-30012) and install the vacuum gauges (Tool No. 07064-30001).
2. Start the engine and read each gauge.

Specified value: 16~24 cmHg

#### NOTE:

All the gauges should register the same value within the specification.

#### Adjusting synchronization

1. Remove the fuel tank from the machine. Connect a longer fuel tube of the carburetor to the tank.
2. Turn the throttle stop screw to adjust the distance (H) between the throttle lever and stay to 56 mm (2.205 in.). Turning the screw clockwise (in direction "A") will increase the distance (H), and vice versa (in direction "B").

3. Start the engine and see all the value within the specification. If out of the specification, loosen the lock nut and turn the adjusting screw to adjust. Turning the screw in direction "B" will increase the vacuum pressure, and vice versa (in direction "A").

#### NOTE:

Upon adjustment, tighten the lock nut securely and snap the throttle grip three or four times to recheck the synchronization



### Adjusting fast idle speed

The adjustment should be made during the engine warm-up after synchronization of the carburetors has been adjusted.

1. Place the choke lever in the full open position and check the clearance (δ) between the link plate and adjusting screw.

Specified clearance: 0~0.3 mm (0~0.012 in.)

To adjust the clearance, loosen the lock nut and turn the adjusting screw. Turning the screw clockwise (in direction "A") will decrease the clearance and, vice versa (in direction "B").

2. Start the engine. Slowly operate the choke lever up and down to find the maximum engine rpm. If within the specifications of 3,500~4,500 rpm, the fast idle speed is satisfactory. If not, adjust by means of the adjusting screw. Turning the screw clockwise (in direction "A") will increase the engine rpm, and vice versa (in direction "B").

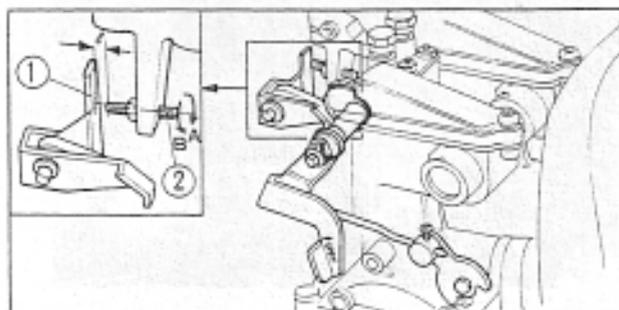


Fig. 2-13 ① Link plate  
② Adjusting screw

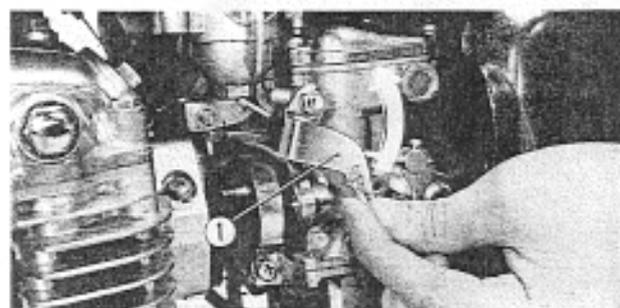


Fig. 2-14 ① Choke lever

### Adjusting overtravel stopper

1. Return the throttle grip to the closed position. Loosen the lock nut and turn the link pin to adjust the clearance (H).

Specified clearance: 2.0~2.1 mm (0.079~0.083 in.)

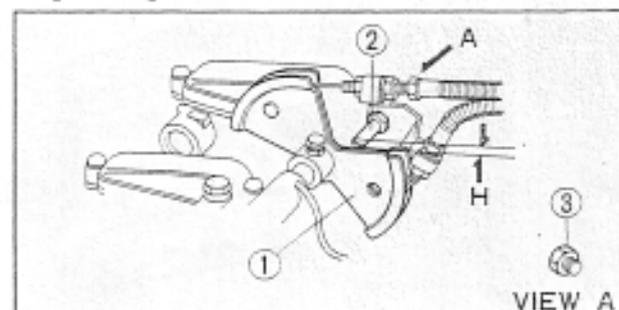


Fig. 2-15 ① Throttle lever ② Link pin  
③ Lock nut

### Adjusting throttle cable

1. Check the throttle grip for play. Specified play: approx. 10° around the grip. To adjust the play, loosen the lock nuts and turn the adjusting nut. Turning the nut clockwise (in direction "A") will increase the play, and vice versa (in direction "B").

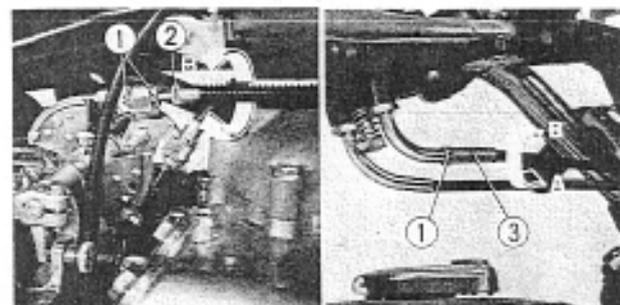


Fig. 2-16 ① Lock nut ② Adjusting nut  
③ Cable adjuster

2. For fine adjustment, loosen the cable lock nut and turn the cable adjuster. Turning the adjuster clockwise (in direction "A") will decrease the play, and vice versa (in direction "B").
3. With the throttle grip in the fully closed position, see if the throttle lever contacts the link pin. Replace the throttle return cable, if the lever does not contact the pin.

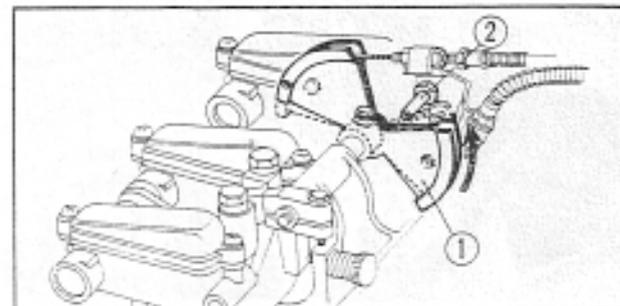


Fig. 2-17 ① Throttle lever  
② Link pin

#### 4. CLUTCH

1. Align the matching mark on the clutch lever with that on the R. crankcase cover and loosen the lock nut. Turn the clutch adjuster counterclockwise until it becomes tight and back it off about 1/4 turn. Tighten the lock nut.

2. Check the tip of the clutch lever for free play. Specified play: 10~20 mm (0.4~0.8 in.)
3. To adjust the play, loosen the lock nut and turning the lower adjuster clockwise (in direction "A") will increase the play, and vice versa (in direction "B").

4. Fine adjustment can be made by means of the upper adjuster of the clutch cable. When adjusting, loosen the lock nut.
5. Upon adjustment, make sure the clutch operates properly.

#### 5. CAM CHAIN

1. Start the engine.
2. Set the engine idle speed to 1,200 rpm. Loosen the lock nut and tensioner adjusting bolt using box wrench contained in tool kit.
3. Retighten the adjusting bolt and secure the lock nut.

**NOTE:**

Do not pull or push the tensioner push bar since it is self-adjusting type.

#### 6. ENGINE OIL

##### Checking oil level

1. Lower the main stand to support the machine. Insert the oil level gauge into the engine case, not screwed in, to check the oil level. Oil should be up to the upper level on the gauge.

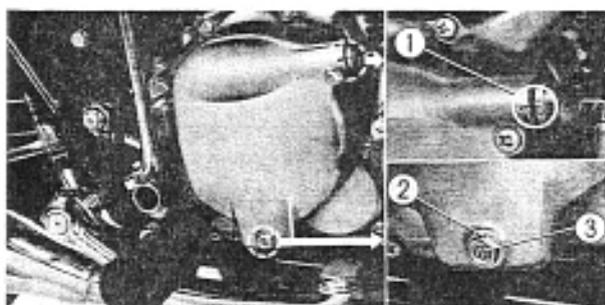


Fig. 2-18 ① Matching mark ② Lock nut ③ Clutch adjuster

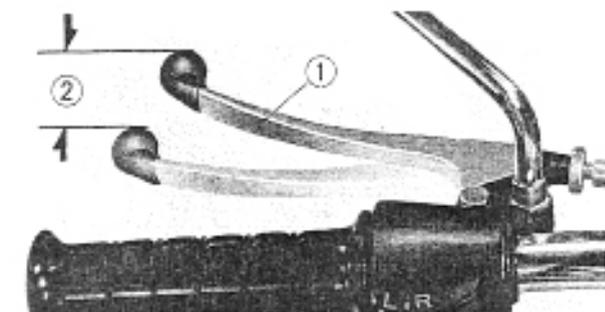


Fig. 2-19 ① Clutch lever ② Clutch lever free play

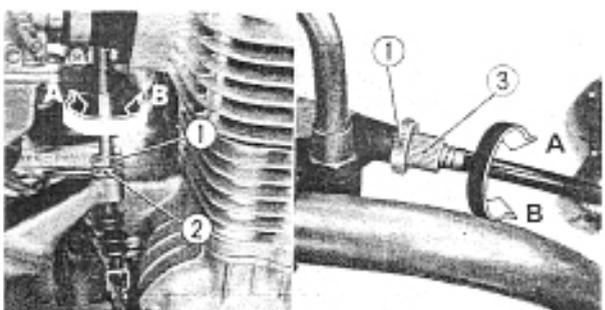


Fig. 2-20 ① Lock nut ② Clutch cable lower adjuster ③ Clutch cable upper adjuster

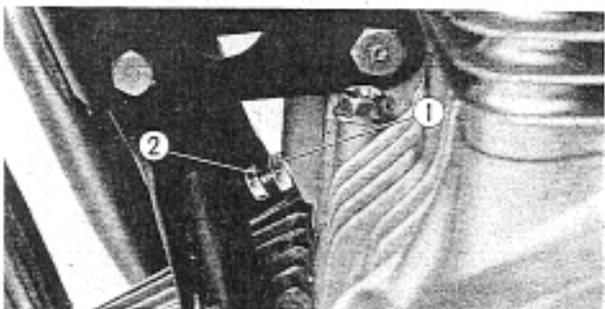


Fig. 2-21 ① Lock nut ② Adjusting bolt

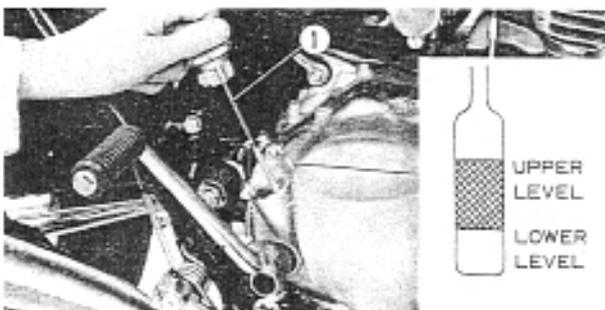


Fig. 2-22 ③ Oil level gauge

### Changing oil

1. Loosen the drain bolt and remove the oil filter by loosening its center bolt. Drain oil out of the crankcase.
2. Retighten the drain bolt and reinstall the oil filter.
3. Fill with recommended oil through the oil filler opening.  
 Capacity: 3.5 ℓ (3.7 US qt., 3.1 Imp. qt.)  
 Recommended oil: SAE 10 W-40 (All weather)  
 SAE 20 W-50 (Above 59°F or 15°C)

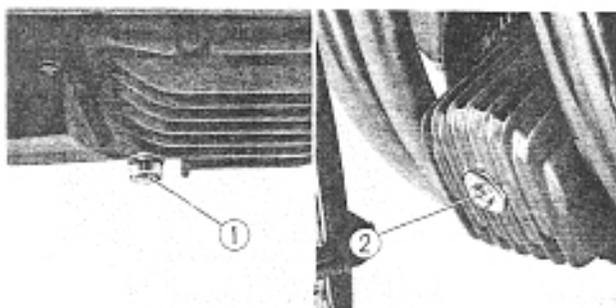


Fig. 2-23 ① Drain bolt  
② Oil filter center bolt

## 7. FRONT BRAKE

### Checking fluid level

1. Remove the fluid cup cap of the master cylinder.
2. Check to see the brake fluid level is up the level line inside the cup. If the level is low, add SAE DOT 3 brake fluid.

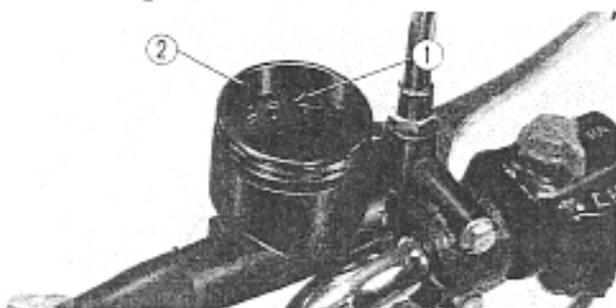


Fig. 2-24 ① Level line  
② Fluid cup

### Adjusting calipers

1. Loosen the lock nut and turn the adjusting bolt counterclockwise until the pad B contacts the disc.
2. Turn the bolt clockwise 1/3 to 1/2 turn from this position and tighten the lock nut.

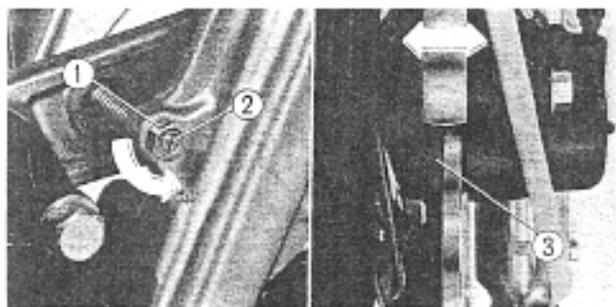


Fig. 2-25 ① Lock nut ② Adjusting bolt ③ Pad B

### Bleeding

1. Fill the fluid cup with brake fluid up to the fluid level line.
2. Remove the bleeder cap and connect a vinyl hose to the bleeder valve.
3. Operate the brake lever several times until a resistance is felt. Loosen the bleeder valve about 1/4 turn using a spanner to bleed air. Retighten the bleeder valve and stop operating the brake lever. Repeat this procedure until no bubbles are contained in the fluid coming out of the valve.

#### NOTE:

Keep the fluid cup properly filled during the bleeding operation.

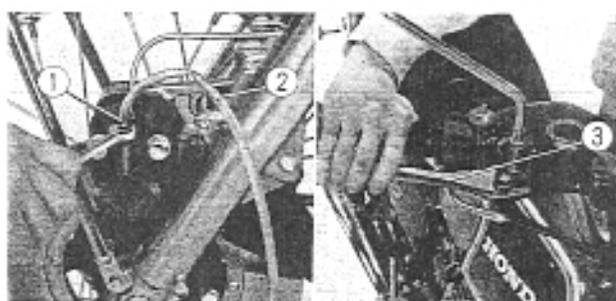


Fig. 2-26 ① Bleeder valve ② Vinyl hose ③ Brake lever

## 8. REAR BRAKE

1. To adjust the depressed-height of the rear brake pedal, loosen the lock nut and turn the adjusting bolt. Turning the bolt clockwise (in direction "A") will decrease the height, and vice versa (in direction "B").

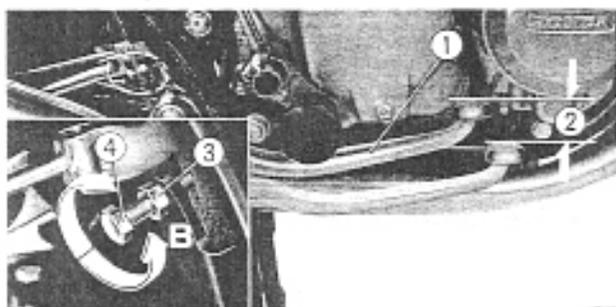


Fig. 2-27 ① Rear brake pedal ② Free travel ③ Lock nut ④ Adjusting bolt