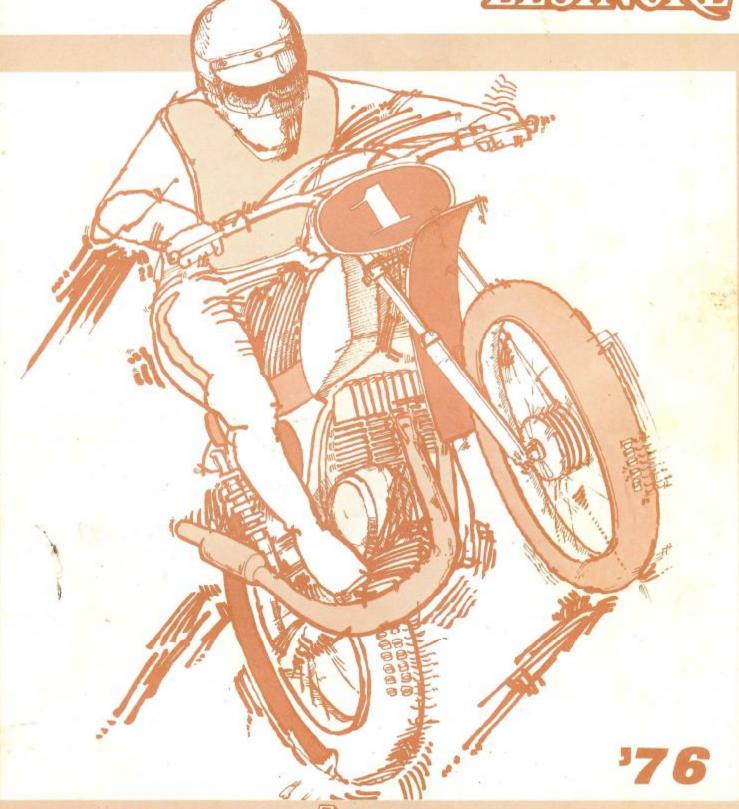
HONDA

CR125M ELSINORE



OWNERS

MANUAL

HONDA CR-125 AND CR-250 MOTORCYCLES ARE SOLD AS IS WITHOUT WARRANTY AND THE ENTIRE RISK AS TO QUALITY AND PERFORMANCE IS WITH THE BUYER

# IMPORTANT NOTICE

THIS VEHICLE IS DESIGNED AND MANUFACTURED FOR COMPETITION USE DNLY. It does not conform to federal motor vehicle safety standards and operation on public streets, roads, or highways is illegal.

STATE LAWS PROHIBIT OPERATION OF THIS VEHICLE EXCEPT IN AN ORGANIZED RACING OR COMPETITIVE EVENT UPON A CLOSED COURSE WHICH IS CONDUCTED UNDER THE AUSPICES OF A RECOGNIZED SANCTIONING BODY OR BY PERMIT ISSUED BY THE LOCAL GOVERNMENTAL AUTHORITY HAVING JURISDICTION.

FIRST DETERMINE THAT OPERATION IS LEGAL.

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FOR OFF-ROAD USE OTHER THAN SANCTIONED RACING EVENTS, THE ADDITIONAL SPARK ARRESTER-MUFFLER ENCLOSED SHOULD BE INSTALLED IN THE MANNER PROVIDED BY DIRECTIONS. THIS SPARK ARRESTER-MUFFLER IS PROVIDED TO COMPLY WITH NOISE LEVEL (86 DBA) AND SPARK ARRESTER LAWS AND REGULATIONS. PERFORMANCE WILL BE DECREASED AND RETUNING IS NOT NECESSARY.

FIRST DETERMINE THAT OPERATION IS LEGAL.

# TO THE NEW OWNER

By selecting a Honda motocross "CR-125M ELSINORE" as your new motorcycle, you have placed yourself in a distinguished family of motorcycle owners and riders.

The CR-125M ELSINORE is designed and built by Honda engineers who spent as much time riding as at the drawing board, and it offers outstanding features.

The purpose of this manual is to acquaint you with the operation and maintenance of your new Honda CR-125M ELSINORE.

Please take the time to read this manual carefully. Proper care and maintenance are essential for troublefree operation and optimum performance.

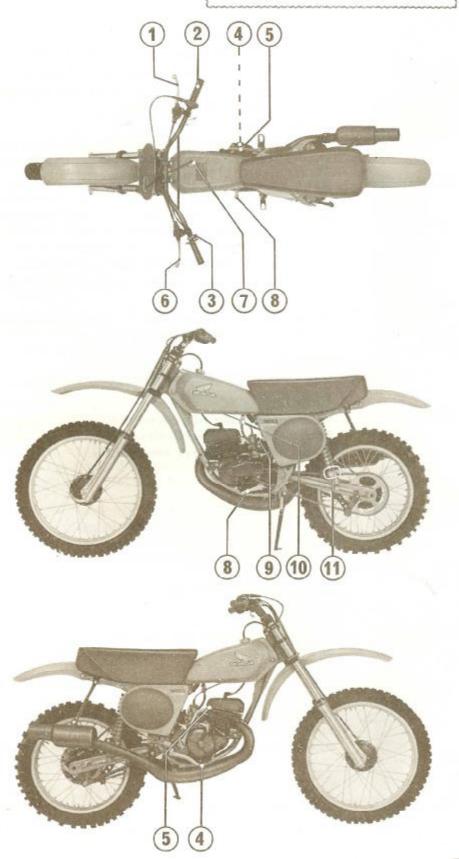
Your authorized Honda dealer will be glad to provide further information and is fully equipped to handle your service needs.

HONDA MOTOR CO., LTD. SERVICE DIVISION

# CONTENTS

I. OPERATING INSTRUCTIONS	III. SERVICING THE ENGINE
1. Controls	1. Service Not Requiring Engine Removal18
2. Fuel	2. Engine Removal and Installation18
3. Riding the Motorcycle 3	3. Cylinder Head, Cylinder and Piston 19
Starting the engine:     3	4. Clutch
Braking the motorcycle	5. Kick Starter
Stopping the engine	6. Gearshift Mechanism26
<ul> <li>Running-in the motorcycle</li></ul>	7. Crankcase and Transmission
	8. Crankshaft and Connecting Rod 30
II, INSPECTION AND MAINTENANCE	9. Carburetor and Air Cleaner31
1. Service Precautions 4	
2. Parts Replacement 4	IV. SERVICING THE FRAME
3. Inspection Checklists 4	1. Handlebar and Front Suspension
4. Maintenance Procedures 5	2. Rear Suspension
• Engine 5	3. Front Wheel and Front Brake 43
Transmission oil	4. Rear Wheel and Rear Brake45
Spark plug 6	
• Clutch 7	V. SERVICING THE ELECTRICAL
Ignition check 8	SYSTEM46
Decarbonizing	
<ul> <li>Air cleaner</li></ul>	VI. SERVICE DATA
<ul> <li>Handlebar</li></ul>	1. Trouble Shooting47
Throttle grip11	Torque Specifications
Front and rear wheels11	3. Service Data
• Front fork11	4. Wiring Diagram
<ul> <li>Rear suspension12</li> </ul>	5. Special Tools
• Front brake adjustment12	6. Optional Parts54
<ul> <li>Rear brake adjustment</li></ul>	7. Specifications
Drive chain maintenance	8. Noise Control/Spark Arrestor Kit
• Fuel tank17	Removal and installation 57
<ul> <li>Fuel filter</li></ul>	
<ul> <li>Expansion chamber</li></ul>	
Spark arrestor17	
• Crancing	

# I. OPERATING INSTRUCTIONS



### 1. CONTROLS

#### (1) Front brake lever

#### (2) Throttle grip

Twist the throttle grip inward to increase engine rpm. Twist it outward to decrease engine rpm.

### (3) Engine stop switch

When shutting off engine operation, press in the engine stop switch button.

- (4) Rear brake pedal
- (5) Kick starter pedal
- (6) Clutch lever

### (7) Fuel tank filler cap

### (8) Gear change pedal

The transmission has 6 speeds. Depress the pedal to shift into 1st gear. Raise the pedal to shift into 2nd, 3rd, 4th, 5th and 6th gears. Neutral is located between 1st and 2nd gears.

### (9) Fuel mixture enrichment lever

When starting a cold engine, lower the fuel mixture lever and fully depress the kick starter pedal.

# (10) Fuel vaive

When the fuel valve is turned to the "OFF" position, fuel cannot flow from the fuel tank to the carburetor. When the fuel valve is turned to the "ON" position, fuel will flow from the tank to the carburetor.

### (11) Rear shock absorber

The rear shock absorber springs have five settings for precise adjustment of the rear suspension to suit riding conditions and differences in rider weight.

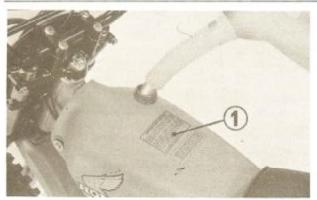


Fig. 1-2 (1) Fuel tank

#### 2. FUEL

The Honda CR-125M Elsinore has a two-stroke engine that requires a gasoline-oil mixture.

The capacity of the fuel tank is 6.88 (1.8 USgal.)

- Use gasoline with an octane rating of 91 or higher.
- · Use two stroke oil or high grade motor oil (SAE 40).
- Premix gasoline and oil in a ratio of 20:1. Prepare the fuel mixture in a clean container, and shake until thoroughly mixed before filling the fuel tank.

### CAUTION:

Too much oil will cause excessive smoking and spark plug fouling. Too little oil will cause engine damage or premature wear. Mix fuel in a ratio of 20 parts gasoline to 1 part oil.

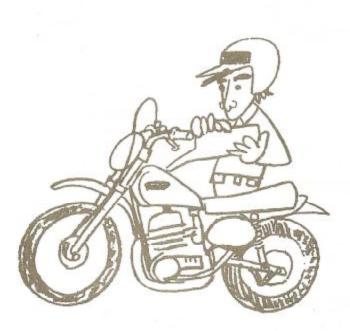
- Vegetable oils separated from gasoline more easily than mineral oils, especially in cold weather. It is advisable to use mineral oil when ambient temperatures of below 0°C (32°F) are expected.
- If the gasoline-oil mixture is left standing in a container for a long period of time, lubricity will become poor. Use the mixture within 24 hours.
- Once an oil container is opened, the oil must be used within one month, since oxidation may occur.

#### CAUTION:

Do not mix vegetable and mineral oils.

#### WARNING:

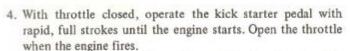
Gasoline is flammable and explosive under certain conditions. Always stop the engine and do not smoke or allow open flames or sparks near the motorcycle when refueling.



#### 3. RIDING THE MOTORCYCLE

## Starting the engine

- 1. Place the fuel valve lever in "ON" position.
- 2. Shift the transmission into neutral.
- 3. Lower the fuel mixture enrichment lever.



 Run the engine for a few minutes, blipping the throttle, until it warms up enough to idle with the fuel mixture enrichment lever raised. The lever should be raised as soon as possible to prevent spark plug fouling due to rich fuel mixture.

### WARNING:

Exhaust contains poisonous carbon monoxide gas. Never run the engine in a closed garage or in a confined area.

## Braking the motorcycle

For maximum deceleration, close the throttle and apply both front and rear brakes equally. Disengage the clutch as the motorcycle comes to a stop. Independent use of the front and rear brakes may be advantageous under certain conditions. Downshift progressively as speed is reduced to ensure good acceleration when speed is resumed.

### Stopping the engine

- 1. Return the throttle grip to the idle position.
- 2. Shift the transmission into neutral.
- Continue pressing in the engine stop switch button until the engine stops completely.
- 4. Turn the fuel valve lever to the "OFF" position.

### NOTE:

Failure to close the fuel valve may cause the carburetor to overflow, filling the crankcase with fuel and resulting in hard starting.

### Running-in the motorcycle

When first riding a new or reconditioned motorcycle, or after replacing the piston, rings, or cylinder (which must be brokenin) operate the motorcycle for the first hour (about 25 km or 16 miles) using not more than half throttle and shifting gears so that the engine does not lug.

### CAUTION:

Revving the engine more than necessary may cause engine damage.



Fig. 1-3 (1) Fuel mixture enrichment lever

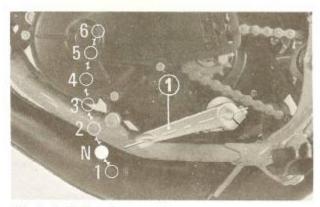


Fig. 1—4 (1) Gear change pedal SHIFTING PATTERN

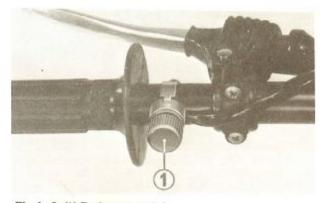


Fig. 1-5 (1) Engine stop switch

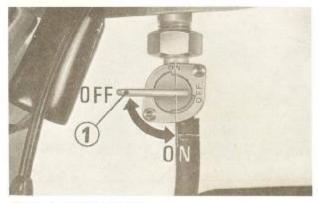


Fig. 1-6 (1) Fuel valve lever

### II. INSPECTION AND MAINTENANCE

#### 1. SERVICE PRECAUTIONS

- Replace gaskets, O-rings, cotter pins, piston pin clips, lock washers, snap rings, etc. when reassembling.
- When torquing bolts, nuts or screws, start with the largerdiameter or inner fasteners, and tighten them to the specified torque using a criss-cross pattern.
- Use only genuine Honda or Honda-recommended parts and lubricants when servicing your motorcycle.
- Be sure to use special tools where specified.
- · Clean the engine before disassembly.

Clean all parts after dismantling, and when reassembling coat all sliding surfaces with good quality lubricant.

- · Grease parts by coating or filling where specified.
- After reassembling, check to be sure each part is securely tightened.

### NOTE:

- · All service data is listed at the end of this manual.
- To assemble engine and frame components, reverse the disassembly procedures.

# 2. PARTS REPLACEMENT (following values are standard.)

### Engine

- Piston ring
   Every 200 km (125 miles) (About every 2 races).
- Spark plug Every 100 km (60 miles) (About every 1 race).
- Transmission oil Every 100 km ( 60 miles) (About every 1 race).

#### Frame

- Drive chain Every 300 km (190 miles) (About every 3 races).
- Cables Every 300 km (190 miles) (About every 3 races).
- Tire Tread depth: 8-10 mm (0.32-0.4 in.).
- · Air cleaner element Every 500 km (310 miles) (About every 5 races).

### 3. INSPECTION CHECK LISTS

## Prepractice inspection

Check:	Ref. page	Check:	Ref.
<ul> <li>Transmission oil for proper level.</li> <li>Spark plug and hightension cord terminal for looseness.</li> <li>Clutch for proper operation.</li> <li>Carburetor throttle valve for proper operation.</li> <li>Frame head and its related parts for condition.</li> <li>Spokes for looseness.</li> <li>Tires for correct inflation pressure.</li> </ul>	5 6 7 - - 11	<ul> <li>Rim locks for looseness.</li> <li>Brakes for correct free play and proper operation.</li> <li>Drive chain for correct tension and proper lubrication.</li> <li>Every possible part for looseness (especially, cylinder head bolts, engine hanger bolts, axle holder, drive chain adjusters, drive chain guide, connector of wire harness, etc.).</li> </ul>	11 12 14

# Prerace inspection

Check:	Ref.	Check:	Ref.
<ul> <li>All items "prepractice inspection".</li> <li>Ignition</li> <li>Spark plug for heat range and carbon fouling.</li> <li>Cylinder head and piston for carbon fouling.</li> <li>Clutch friction discs for wear.</li> </ul>	- 8 6 9	<ul> <li>Air cleaner element for contamination.</li> <li>Brake shoes for wear and contact.</li> <li>Cables for proper lubrication and condition.</li> <li>Drive and driven sprockets for wear.</li> <li>Expansion chamber for cracks or damage.</li> <li>Fuel system for condition.</li> </ul>	10 - 14 17 -

### 4. MAINTENANCE PROCEDURES

### Engine

Start the engine and ride the motorcycle to check for abnormal noises or knocking. Engine knocking is often caused by incorrect ignition timing and overheating. Check and adjust carburetion. (If an abnormal noise such as detonation is heard, use a carburetor main jet \$2-\$5 larger than the standard numbered jet.) If any other abnormal noise is heard, check and correct.

Check each bolt and nut for security. Loose cylinder head nuts may cause exhaust gas leak.

### Transmission Oil

### Transmission oil level

To check the oil level and add oil, proceed as follows:

- 1. Start the engine and warm it up for about three minutes.
- Stop the engine. Place the motorcycle in an upright level position and remove the oil check bolt.
- The oil should flow out of the oil check bolt hole. After checking, tighten the oil check bolt securely.
- If the oil does not flow out, add oil slowly through the oil filler hole until the oil starts to flow out of the oil check bolt hole.

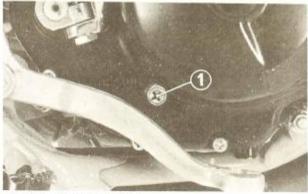


Fig. 2-1 (1) Oil check bolt

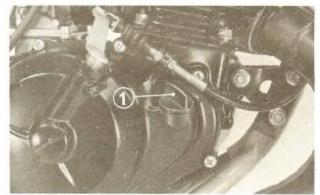


Fig. 2-2 (1) Oil filler cap

# Transmission oil change

When changing oil, drain the used oil from the crankcase while the engine is warm. This will ensure complate and rapid draining.

- 1. Start the engine and warm it up for about three minutes.
- 2. Remove the oil filler cap from the right crankcase cover.
- Place an oil drain pan under the engine to catch the oil, and then remove the drain plug with a 17 mm wrench. Rock the motorcycle from side to side to drain all residual oil.
- When the oil has been completely drained, ensure that the drain plug sealing washer is in good condition and reinstall the drain plug.
- Pour the recommended oil (approximately 0.85% or 0.90 US qt.) slowly through the oil filler hole. Place the motorcycle in an upright position and check the oil level. Refer to the oil level checking section.



When reassembling the engine, add oil until it flows out of the oil check bolt hole. It takes approximately 1.0  $\ell$  (1.1 USqt) to fill a dry transmission.

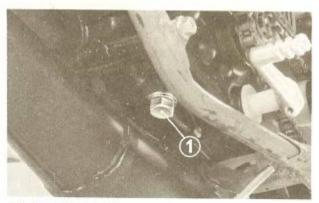


Fig. 2-3 (1) Drain plug



Fig. 2-4 (1) Transmission oil filler hole

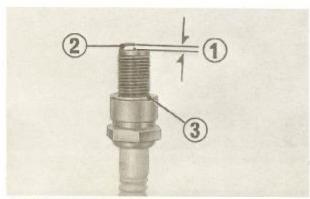


Fig. 2-5 (1) Spark plug gap (2) Side electrode (3) Sealing gasket

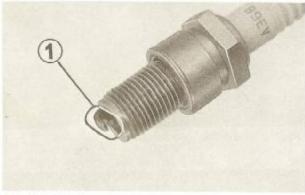


Fig. 2-6 (1) Electrode

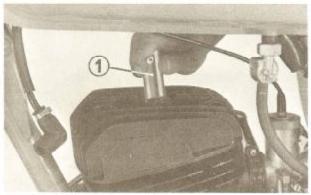


Fig. 2-7 (1) Spark plug wrench

### Transmission oil recommendation

Use only high detergent, premium quality motor oil certified to meet or exceed US automobile manufacturer's requirements for Service Classification SE. Motor oils intended for Service SE will show this designation on the container.

Viscosity selection should be based on the average atmospheric temperature in your riding area. Change to the proper viscosity oil whenever the average atmospheric temperature changes substantially.

## Recommended oil viscosity:

General, all temperatures SAE 10 W-40

#### Alternate

Above 59°F	SAE 30
32° to 59°F	SAE 20 or 20 W
Below 32°F	SAE 10 W

# Spark Plug

The NGK B9EV spark plug is standard for this model. If replacing with any other make of spark plug, be certain to select the correct reach and heat range.

Before removing the spark plug, clean the spark plug area thoroughly to prevent dirt from entering the cylinder.

 Measure spark plug gap with a wire gauge, and adjust by carefully bending the side electrode.

The recommended spark plug gap is 0.5-0.6 mm (0.020

0.024 in.).2. Inspect the firing tip of the used spark plug. The electrode and insulator nose should appear tan or medium gray.

To obtain accurate spark plug readings, switch ignition of at operating speed, coast to a stop with the clutch di engaged, then remove and inspect the spark plug. Idling of low speed operation will produce darker spark plug color tion or increased fouling.

If electrodes appear burnt, or the insulator nose is white very light gray, this indicates one or more of the following conditions:

- Spark plug heat range too hot.
- Ignition timing excessively advanced.
- · Fuel mixture too lean.
- Insufficient oil in fuel mixture.

If the electrodes and insulator nose are black or fouled, tl indicates one or more of the following conditions:

- Spark plug heat range too cold.
- Ignition timing retarded.
- Fuel mixture too rich.
- · Excessive or improper oil in fuel mixture.
- Install the spark plug by hand until finger tight, then tight
  with a spark plug wrench until the sealing gasket is co
  pressed (1/2 to 3/4 turn to compress a new spark pl
  gasket).

#### CAUTION:

The use of spark plug of incorrect reach or heat range cause engine damage.

### Clutch

# Adjustment of clutch

1. Make sure that the center of the clutch cable lower end is within each 10 mm (0.3937 in.) of the index mark on the crankcase as shown. If not, loosen the lock nut and turn the clutch cable lower adjuster.

- 2. Remove the clutch adjuster cap from the right crankcase
- 3. Loosen the adjuster lock nut and turn the clutch adjuster clockwise until it no longer turns. From that position, turn the adjuster counterclockwise 1/2 turn and tighten the lock nut.



4. The normal clutch lever free play is 10-20mm (0.4-0.8in.) at the tip of the lever.

To adjust, remove the dust cover, loosen the lock nut and turn the upper adjuster in either direction. Turning the adjuster in direction (A) will increase the free play and turning it in direction (B) will decrease the free play.

After adjusting, tighten the lock nut and install the dust cover.

5. Test ride to be sure the clutch operates properly, without slip or drag. If clutch operation is not satisfactory after adjustment, check the condition of the clutch plates and friction discs (See pages 23.)

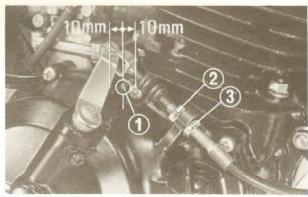


Fig. 2-8 (1) Index mark

- (2) Lock nut
- (3) Clutch cable lower adjuster

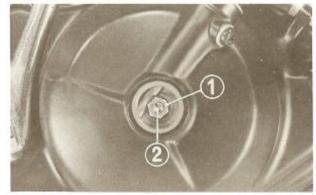


Fig. 2-9 (1) Lock nut (2) Clutch adjuster

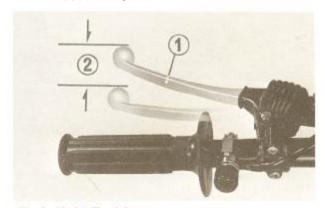


Fig. 2-10 (1) Clutch lever (2) Clutch lever free play

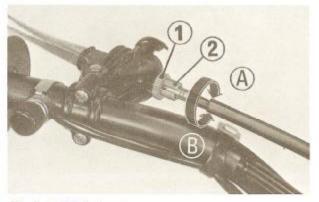


Fig. 2-11 (1) Lock nut (2) Upper adjuster

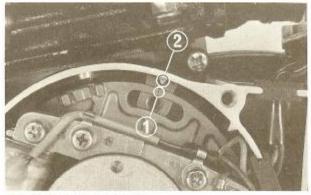


Fig. 2-12 (1) Matching mark (2) Index

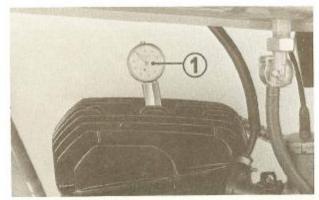


Fig. 2-13 (1) Dial gauge

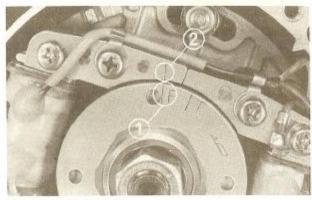


Fig. 2-14 (1) "F" mark (2) Timing mark

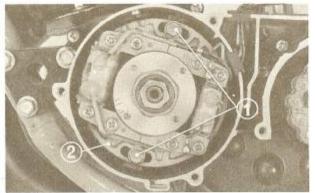


Fig. 2-15 (1) Stator attaching bolts (2) Stator

## Ignition Check

C.D.I. (Capacitive Discharge Ignition) method is adopted in this motorcycle.

This does not use the contact breaker points.

To adjust the ignition timing, proceed as follows:

- 1. Remove the left crankcase cover.
- Remove the top stator attaching bolt and check to see if the matching mark on the stator is aligned with the index on the crankcase.

## Ignition timing check with dial gauge

- Clean the spark plug area thoroughly to prevent dirt from entering the cylinder, and remove the spark plug.
- Install the dial guage set (Tool No. 07542-4000000) in the spark plug hole.
- Turn the crankshaft counterclockwise until the dial gauge indicates that the piston is precisely at top dead center.
   With the piston at top dead center, set the dial gauge scale to zero.
- 4. Turn the crankshaft clockwise (backward) until the dial gauge indicates that the piston is 2.3 mm (0.0906 in.) before top dead center. In this position, the "F" mark on the rotor should be aligned to the timing mark on the stator.
- 5. If ignition timing is incorrect, loosen the stator attaching bolts, and rotate the stator to obtain correct timing. Rotate the stator counterclockwise to retard timing or clockwise to advance timing. Tighten the stator attaching bolts and recheck the ignition timing.

### Ignition timing check with stroboscopic timing light

 Set a stroboscopic type of timing light in position and start the engine. With the engine running at 6,000 rpm, direct the beam of the timing light to the "F" mark on the rotor and see if it is aligned with the timing mark on the stator.

### NOTE:

When the engine speed is 6,000 rpm, the correct ignition timing is 22° BTDC.

2. If the "F" mark is not aligned with the timing mark, loosen the two stator attaching bolts and turn the stator in either direction with a standard type screwdriver fitted into the groove in the stator. Turning the stator clockwise will advance the ignition timing and turning it counterclockwise will retard the timing. Then tighten the stator attaching bolts and recheck.

# Other ignition parts check

After adjusting the ignition timing, check the C.D.I. unit and AC generator coupler for looseness. Also check them for entry of mud or water.

# Decarbonizing

Carbon deposits which build up in the combustion chamber and exhaust pipe will decrease engine performance. These carbon deposits must be removed periodically.

- Remove the exhaust pipe, and scrape carbon deposits from the throat of the pipe.
- Remove the spark plug and cylinder head nuts; then remove the cylinder head.
- Remove the carburetor and cylinder nuts from the cylinder; then remove the cylinder. As the cylinder is raised, place a clean cloth over the crankcase bore to prevent dirt from entering the engine.
- 4. Remove piston pin clip and piston pin. Remove the piston.
- Remove carbon deposits from the piston crown, cylinder head, cylinder and exhaust port, using a scraper of soft material such as wood or plastic to prevent damage to the parts.
- Inspect the piston, piston rings, and cylinder for wear, damage, or sticking rings (See pages 19-21).
- Reassemble in the reverse order of disassembly, using new gaskets and piston pin clips. Coat the cylinder wall with oil before lowering the cylinder over the piston.



Fig. 2-16 (1) "F" mark (2) Timing mark



Fig. 2-17 (1) C.D.I. unit

(2) Connector

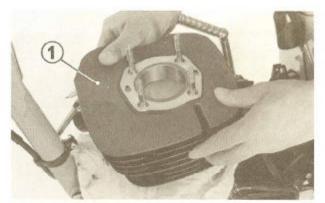


Fig. 2-18 (1) Cylinder

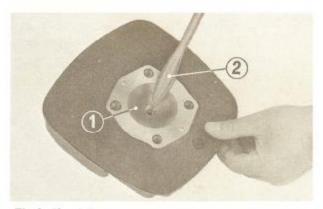


Fig. 2-19 (1) Cylinder head combustion chamber (2) Scraper

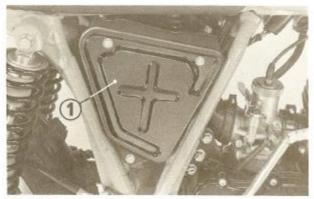


Fig. 2-20 (1) Air cleaner cover

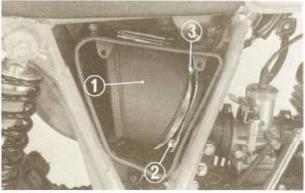


Fig. 2-21 (1) Air cleaner element

(2) Bolt (3) Screw

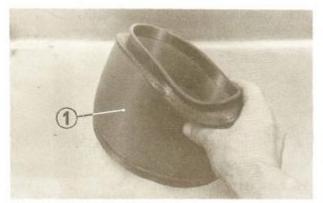


Fig. 2-22 (1) Air cleaner element

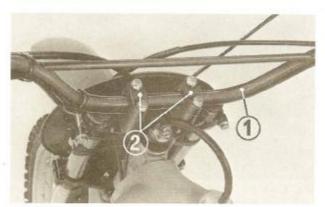


Fig. 2-23 (1) Handlebar (2) Handlebar upper holders

### Air Cleaner

The air cleaner uses a polyurethane element. A dirty element will reduce engine output. To clean the element:

- 1. Remove the left side cover.
- 2. Remove the air cleaner cover by removing nuts.
- Remove bolt holding the air cleaner and pull out the air cleaner element.
- 4. Loosen the screw and remove the air cleaner element.
- Wash the element in clean stoddard solvent and dry it thoroughly.
- Soak the element in clean gear oil (SAE. 80-SAE. 90) and squeeze it to remove excess oil.

7. Install the element on its mounting base.

### CAUTION:

If the element is not installed to the mounting base properly, dirt and dust may enter, resulting in rapid wear of the piston rings and cylinder.

#### Handlebar

Check the handlebar for deformation or cracks and the upper holders for proper tightness. Turn the handlebar to right and left to check for smooth operation.

## Throttle Grip

The standard throttle grip free play is 5°-10° of grip rotation. To adjust, loosen the lock nut and turn the throttle cable adjuster. Turn the adjuster in direction (a) to increase free play or in direction (b) to decrease free play. Tighten the lock nut after adjustment is completed. Operate the throttle grip to ensure that it functions smoothly.

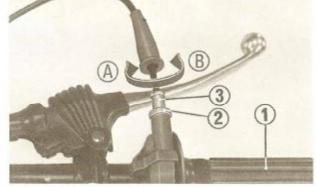


Fig. 2-24 (1) Throttle grip (2) Lock nut (3) Throttle cable adjuster

# Front and Rear Wheels

- 1. Inspect tires for wear or damage.
- 2. Check tire pressure.

FRONT: 1.2 kg/cm<sup>2</sup> (17.1 psi) REAR: 0.9 kg/cm<sup>2</sup> (12.8 psi)

- 3. Inspect wheel rims and spokes for damage.
- 4. Tighten any loose spokes or loosen rim locks.
- 5. Check wheel rim runout, and true wheels if necessary.

### Front Fork

# Front fork oil change

- Place a block under the engine to raise the front wheel off the ground.
- Remove the two handlebar upper holders and remove the handlebar.
- Remove the front fork drain plugs.
   Allow both forks to drain completely.
- 4. Remove the rubber cap.
- While pushing down the spring upper seat with the tip of a screwdriver, remove the snap ring using a snap ring pliers.
   Screw the bolt in thread of the upper seat and pull out the bolt. The spring upper seat can be removed.

## CAUTION:

When removing the snap ring, the spring upper seat may accidentally jump out by means of the force of shock absorber spring.

- 6. Install the drain plugs and tighten securely.
- Fill each fork leg with the specified amount of ATF (Automatic Transmission Fluid).

FRONT FORK FLUID CAPACITY	
Amount required to fill dry assembly.	180 cc (6.1 ozs.) each fork leg
Amount required to refill after draining (total capacity less amount of residual fluid).	165 cc (5.6 ozs.) each fork leg

8. Installation is the reverse order of removal.

#### NOTE:

Securely set the snap ring in the ring groove in the front fork.

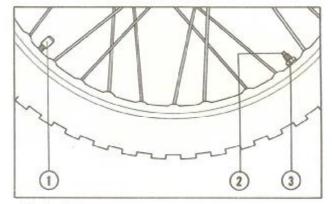


Fig. 2-25 (1) Valve cap (2) Rim lock (3) Lock nut

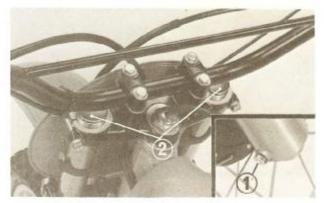


Fig. 2-26 (1) Drain plug (2) Rubber cap

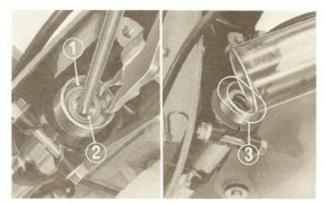


Fig. 2-27 (1) Snap ring (2) Spring upper seat (3) Filler hole

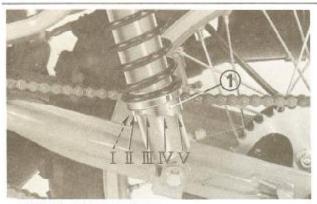


Fig. 2-28 (1) Spring adjuster



Fig. 2-29 (1) Pin spanner

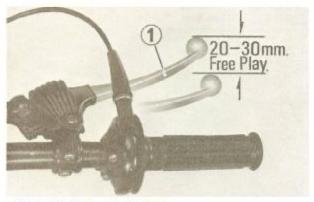


Fig. 2-30 (1) Front brake lever

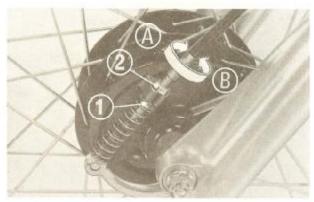


Fig. 2-31 (1) Lock nut .
(2) Front brake adjusting nut

### Rear Suspension

# Inspection

Inspect shock absorbers for damage or leakage.

Inspect rear fork bushings for looseness by checking side play at the rear wheel.

# Adjustment

Rear suspension spring tension is adjustable in five increments to suit riding conditions and rider weight.

Turn the adjusters to the desired setting using a pin spanner. Be certain that both right and left rear suspension springs are adjusted to identical settings.

# Front Brake Adjustment

Free play, measured at the tip of the front brake lever, should be maintained at 20-30 mm (0.8-1.2 in.).

Free play is the distance the brake lever moves before the brake starts to engage.

Major adjustments should be made using the adjusting nut located at the front wheel.

 Loosen the lock nut and then turn the front brake adjusting nut.

Turning the nut in direction (A) will decrease the brake lever free play and turning the nut in direction (B) will increase the free play.

Minor adjustments can be made with the front brake cable adjuster at the front brake lever.

Remove the dust cover, loosen the lock nut and turn the front brake cable adjuster. Turning the adjuster in direction (A) will decrease the brake lever free play and turning the adjuster in direction (B) will increase the free play.

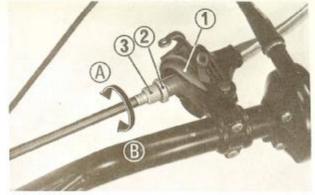


Fig. 2-32 (1) Dust cover (2) Lock put

#### (2) Lock nut (3) Front brake cable adjuster

### Brake wear indicator

The wear indicator is provided in the front brake. When the brake is applied, an arrow, adjacent to the brake arm, moves toward a reference mark on the brake panel. The distance between the arrow and the reference mark, on full application of the brake, indicates brake lining thickness.

If the arrow aligns with the reference mark on full application of the brake, replace the brake shoes.

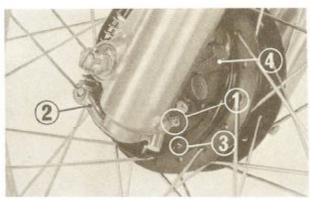


Fig. 2-33 (1) Arrow (2) Brake arm

(3) Reference mark (4) Brake panel

# Rear Brake Adjustment

 The height of the rear brake pedal can be adjusted to the rider. To adjust, loosen the lock nut and turn the adjusting bolt.

Turning the adjusting bolt in direction (A) will raise the tip of the brake pedal and turning it in direction (B) will lower the tip of the pedal. After adjusting, tighten the lock nut securely.

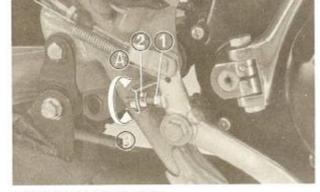


Fig. 3-34 (1) Adjusting bolt (2) Lock nut

 Rear brake pedal free play, measured at the tip of the rear brake pedal, should be maintained at 20-30mm (0.8-1.2in.).
 Free play is the distance the brake pedal moves before the brake starts to engage.

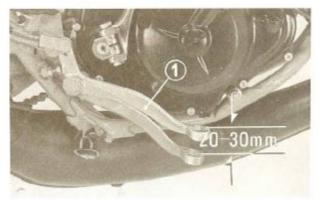


Fig. 2-35 (1) Rear brake pedal

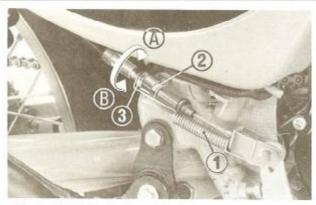


Fig. 2-36 (1) Rear brake pedal spring (2) Lock nut (3) Brake cable adjuster

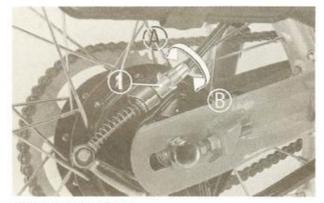


Fig. 2-37 (1) Adjuster

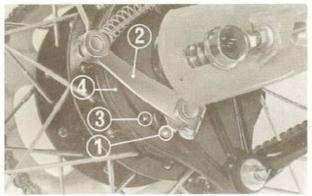


Fig. 2-38 (1) Arrow (2) Brake arm

(3) Reference mark (4) Brake panel 3. Major adjustments should be made at the forward rear brake cable adjuster. Remove the rear brake pedal spring from the forward rear brake cable adjuster, loosen the lock nut and turn the brake cable adjuster. Turning the adjuster in direction (a) will increase the free play and turning it in direction (b) will decrease the free play. After adjusting, tighten the lock nut securely.

4. Minor adjustments should be made at the back rear brake cable adjuster. To adjust rear brake pedal free play turn the rear brake cable adjuster. Turning the adjuster in direction (a) will decrease the free play and turning it in direction (b) will increase the free play.

# Brake wear indicator

The wear indicator is provided in the rear brake. When the brake is applied, an arrow, adjacent to the brake arm, moves toward a reference mark on the brake panel. The distance between the arrow and the reference mark, on full application of the brake, indicates brake lining thickness.

If the arrow aligns with the reference mark on full application of the brake, replace the brake shoes.

# Drive Chain Maintenance

Proper adjustment and lubrication will help to extend the service life of the drive chain. Place a wood block under the engine to raise the rear wheel off the ground. Shift the transmission into neutral. Then, turn the rear wheel slowly and check the drive chain and sprockets for any of the following conditions.

### Drive Chain

- Damaged rollers
- Loose pins
- Dry and rusted links
- · Kinked and binding links
- Excessive wear
- Improper adjustment

### Sprockets

- Excessively worn teeth
- Broken or damaged teeth

### Measuring drive chain wear

Measure a section of the drive chain to determine whether the chain is worn beyond its service limit. Put the transmission in gear, and then turn the rear wheel forward until the lower section of the chain is pulled taut. With the chain held taut and any still joints straightened, measure the distance between a span of 20 pins, from pin center to pin center. In a new CR-125M drive chain, this distance will measure 241.3 mm or 9.5 in. (each pitch=12.7 mm or 0.5 in.) If the distance exceeds 246.4 mm (9.7 in.), the chain is worn out and should be replaced. After the chain is measured, shift the transmission into neutral again before proceeding with inspection and service.

# Inspecting the sprockets

Check the drive and driven sprockets for wear or damage. The left rear crankcase cover must be removed for access to the drive sprocket. Excessively worn sprocket teeth have a hooked and asymmetric appearance. Replace any sprocket which is damaged or excessively worn.

Standard sprocket sizes:

Drive sprocket	Driven sprocket
(engine)	(rear wheel)
14 teeth	53 teeth

#### NOTE:

Never install a new drive chain on badly worn sprockets, or use new sprockets with a badly worn drive chain. Both chain and sprockets must be in good condition, or the new replacement chain or sprocket will wear rapidly.

## Measuring drive chain slack

Check drive chain slack at a point midway between the drive sprocket and the rear wheel sprocket. Move the chain up and down with your fingers, and measure the amount of slack. Drive chain slack is adjusted to approximately 20 mm (3/4 in.). Slack becomes greater as the chain wears. If chain slack is found to exceed a maximum of 38 mm (11/2 in.), the drive chain must be readjusted.

Drive chain tension should remain constant as the wheel is rotated.

If the chain is found to be slack in one segment of its length and taut in another, this indicates that some of the links are either worn or kinked and binding. Kinking and binding can frequently be eliminated by lubrication.

# Drive chain adjustment

If the drive chain is found to require adjustment, the procedure is as follows:

- 1. Remove the rear axle nut cotter pin and loosen the rear axle
- 2. Loosen the lock nuts and turn the adjusting bolts to increase or decrease chain tension. Align the chain adjuster index marks to the reference marks on both sides of the rear fork.
- 3. Tighten the rear axle nut and secure the nut with the cotter pin (replace the cotter pin if it has become broken or damaged).
- 4. Tighten the adjusting bolts and secure them with the lock nuts.

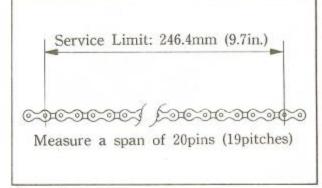


Fig. 2-39

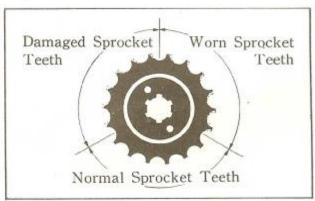


Fig. 2-40



Fig. 2-41 (1) Drive chain

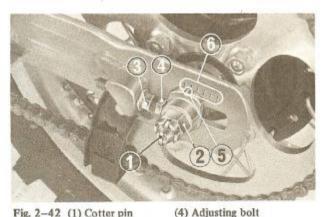


Fig. 2-42 (1) Cotter pin (2) Rear axle nut

- (5) Index mark (3) Lock nut
  - (6) Reference marks



Fig. 2-43 (1) Chain protector

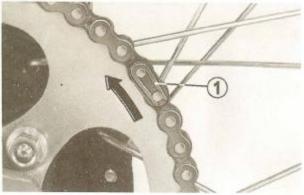


Fig. 2-44 (1) Retaining clip

#### CAUTION:

Check alignment of the chain protector. If the chain protector should become bent, it may rub against the drive chain and cause rapid wear.

### Lubrication

Commercially prepared drive chain lubricants may be purchased at most motorcycle shops and should be used in preference to motor oil or other lubricants.

Saturate each chain joint so that the lubricant will penetrate the space between adjacent surfaces of link plates and rollers.

## Removal and cleaning

When the drive chain becomes extremely dirty, it should be removed and cleaned prior to lubrication.

- Carefully remove the master link retaining clip with pliers.
   Do not bend or twist the clip. Remove the master link.
   Remove the drive chain from the motorcycle.
- Clean the drive chain in solvent and allow to dry. Inspect the drive chain for possible wear or damage. Replace any chain that has damaged rollers, loose fitting links, or otherwise appears unserviceable.
- Inspect the sprocket teeth for possible wear or damage. Replace if necessary. Never use a new drive chain on badly worn sprockets. Both chain and sprockets must be in good condition, or the new replacement chain or sprocket will wear rapidly.
- 4. Lubricate the drive chain.
- Pass the chain over the sprockets and join the ends of the chain with the master link. For ease of assembly, hold the chain ends against adjacent rear sprocket teeth while inserting the master link.
  - Install the master link retaining clip so that the closed end of the clip will face the direction of forward wheel rotation. The master link is the most critical part affecting the security of the drive chain. Master links are reusable, if they remain in excellent condition, but it is recommended that a new master link retaining clip be installed whenever the drive chain is reassembled.
- Adjust the drive chain to the proper tension, following the instruction on page 15.

#### Fuel Tank

Check the fuel tank, fuel valve, and fuel line for leaks.

#### Fuel Filter

The fuel filter is incorporated in the fuel valve which is mounted on the bottom of the fuel tank at the left side. Accumulation of dirt in the filter will restrict the flow of the fuel and cause the carburetor to malfunction, therefore, the fuel filter should be serviced periodically.

- 1. Drain the fuel from the fuel tank. Disconnect the fuel line.
- Remove the fuel valve by turning it. Wash the fuel screen filter in cleaning solvent.
- Reassemble the fuel valve in the reverse order of removal and turn the fuel valve to "ON" position and check for leaks.

# **Expansion Chamber**

Check the three exhaust pipe springs, and replace if damaged or stretched.

Check the chamber bolts for proper tightness.

Remove carbon deposits from the throat of the exhaust pipe. Check the expansion chamber for cracks or deformation.

A damaged chamber may cause an excessive drop in engine horsepower.



The exhaust system spark arrestor must be purged of accumulated carbon periodically.

- 1. Remove the spark arrestor mounting bolts.
- 2. Remove the spark arrestor from the muffler outlet.
- Start the engine and purge accumulated carbon from the muffler by momentarily revving up the engine.
- 4. Clean the spark arrestor of carbon.
- Stop the engine and reinstall the spark arrestor and mounting bolts.

#### WARNING:

- \* Exercise caution when performing this operation because the exhaust system becomes very hot after the engine has been running.
- \* Because of the increased fire hazard when purging the spark arrestor be sure that there are no combustible materials in the area.

### Greasing

The rear fork pivot bolt is equipped with grease fittings. Refill with grease at proper intervals.

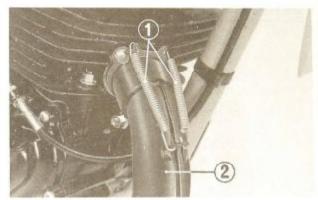


Fig. 2-45 (1) Springs (2) Expansion chamber



Fig. 2-46 (1) Spark Arrestor

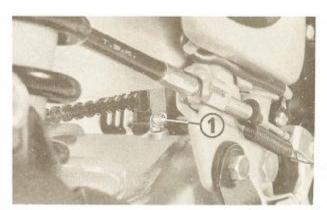


Fig. 2-47 (1) Grease nipple

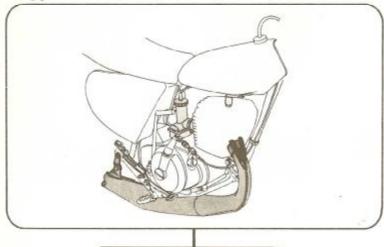
# III. SERVICING THE ENGINE

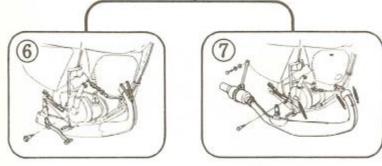
# 1. SERVICE NOT REQUIRING ENGINE REMOVAL

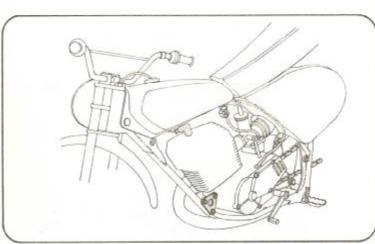
Part to be serviced	Ref. page
Cylinder head, cylinder, piston	19
Clutch	22
Kick starter (one part)	25
Gearshift mechanism (one part)	26
Carburetor	31
Electric system	46

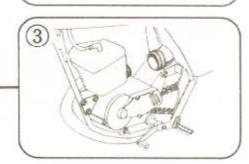
# 2. ENGINE REMOVAL AND INSTALLATION

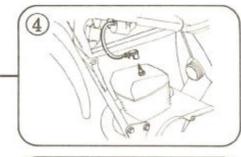
Remove the engine from the frame by removing the following parts in the order shown.

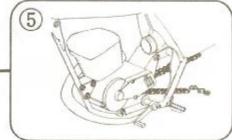












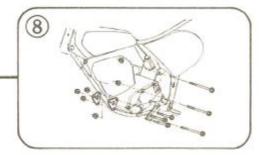
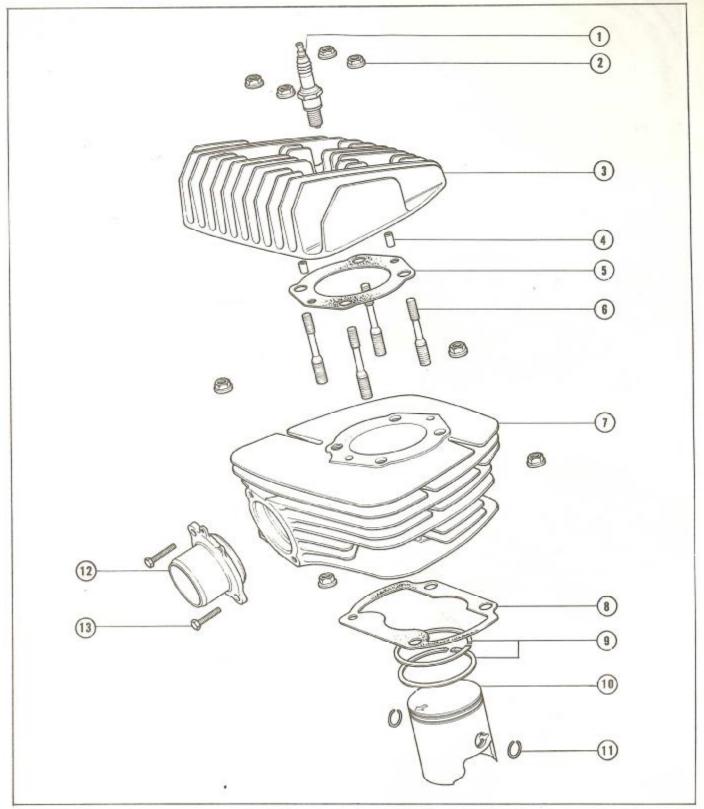


Fig. 3-1

- (1) Carburetor connecting band (2) Generator cord connector
- (3) Fuel tube and carburetor
- (4) Plug cap (5) Clip and drive chain (6) Clutch cable and rear brake pedal
- (7) Three expansion chamber springs and two bolts (8) Bolts

# 3. CYLINDER HEAD, CYLINDER AND PISTON



- Fig. 3-2
  ( 6 ) Cylinder stud bolt (four)
  ( 7 ) Cylinder
  ( 8 ) Cylinder gasket
  ( 9 ) Piston ring set
  ( 10) Piston

- (11) Piston pin clip (two) (12) Exhaust pipe joint (13) Bolt (two)

<sup>(1)</sup> Spark plug (2) Nut (eight) (3) Cylinder head (4) Dowel pin (two) (5) Cylinder head gasket

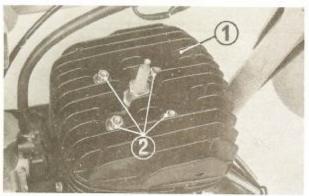


Fig. 3-3 (1) Cylinder head (2) Nut

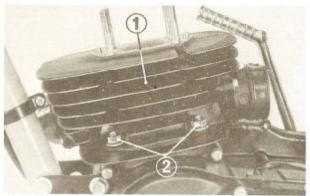


Fig. 3-4 (1) Cylinder (2) Nut

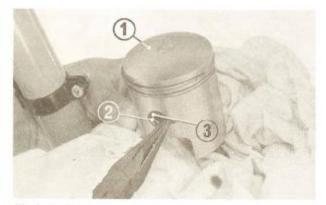


Fig. 3-5 (1) Piston (2) Piston pin dlip (3) Piston pin

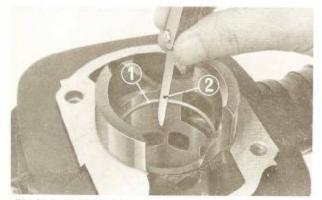


Fig. 3-6 (1) Piston ring (2) Feeler gauge

## Disassembly

- 1. Remove the seat.
- 2. Remove the fuel tank.
- 3. Remove the spark plug cap from the spark plug.
- 4. Remove the four nuts and remove the cylinder head.

Loosen the carburetor insulator band, remove the four nuts and remove the cylinder.

Put a clean cloth over the bore in the crankcase. Remove the piston pin clip, piston pin and piston.

### Inspection

- Carbon deposit.

  Remove carbon der
  - Remove carbon deposits from the combustion chamber, exhaust port and piston. (See page 9)
- Measure the cylinder bore at 15-20 mm from top of the cylinder.
- 3. Piston ring gap.

Seat the piston rings squarely in the skirt of the cylinder, and measure the ring gap with a feeler gauge. If the gap exceeds 0.65 mm (0.0256 in.), replace the rings with new ones.

- 4. Piston ring groove side clearance.
  - Measure the side clearance with a feeler gauge. If the clearance exceeds the service limit, replace the rings. If the clearance is too great even with new rings, replace the piston and rings.
- Measure the piston O.D. at 5-10 mm from the skirt end and at right angle to the piston pin hole.
- Check the piston pin for peeled surface and excessive discoloration, replace if necessary.

# Assembly

 When installing new piston rings, put them in the ring grooves and turn the rings to check for smooth movement.
 The piston rings should be installed with their markings facing upward.

Decarbonize the ring grooves if necessary.

When installing the top and second rings to the piston, install them in their correct positions.

- The top ring is a keystone type and the free ring gap is 6.0-6.5 mm (0.236-0.256-in.)
- The second ring is a flat type and the free ring gap is 5.0-5.5 mm (0.197-0.216-in.).

# NOTE:

Discard the piston pin clip removed. Use a new clip.

Install the piston to the connecting rod with the arrow mark on the piston crown toward the front of the engine.

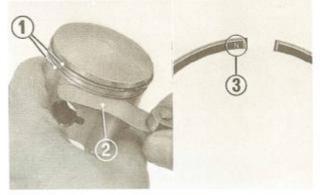


Fig. 3-7 (1) Piston rings (2) Feeler gauge



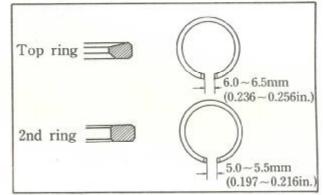


Fig. 3-8



Fig. 3-9 (1) Arrow mark

## 4. CLUTCH

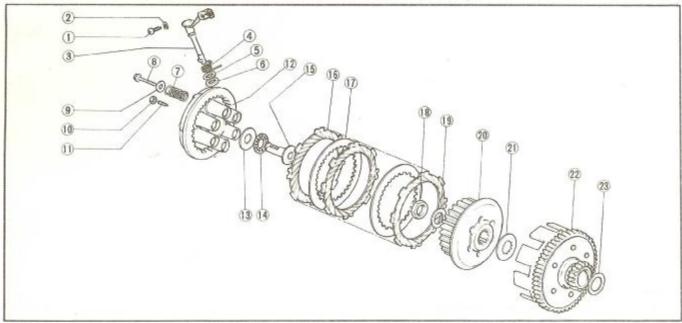


Fig. 3-10

- (1) Special bolt
- (2) Sealing washer
- (3) Clutch lifter shaft
- (4) Lifter shaft spring
- (5) Special washer
- (6) Oil seal

- (7) Clutch spring (six)
- (8) Flange bolt (six)
- (9) Plain washer (six)
- (10) Hex. nut
- (11) Clutch adjusting screw
- (12) Clutch pressure plate
- (13) Thrust washer
- (14) Thrust needle bearing
- (15) Clutch lifter rod
- (16) Clutch disc (six)
- (17) Clutch plate (five)
- (18) Lock nut
- (19) Lock washer
- (20) Clutch center
- (21) Spline washer
- (22) Clutch outer assembly
- (23) Thrust washer

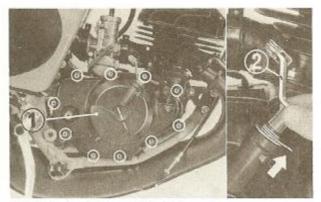


Fig. 3-11 (1) Right crankcase cover (2) Clutch lever

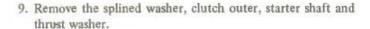


Fig. 3-12 (1) Bolt (2) Clutch pressure plate (3) Clutch lifter rod

### Disassembly

- 1. Drain the transmission oil from the crankcase.
- 2. Remove the brake pedal pivot.
- 3. Remove the kick starter pedal.
- 4. Disconnect the clutch cable from clutch lever.
- Remove the 10 right crankcase cover tightening screws. Then remove the screw and remove the right crankcase cover with the clutch lever raised.
- Remove the six clutch bolts and remove the clutch pressure plate. Then remove the clutch lifter rod, thrust needle bearing and thrust washer from the clutch pressure plate.

- 7. Remove the six clutch friction discs and five clutch plates.
- Shift the transmission in gear. Hold the drive sprocket with the drive sprocket holder (tool no. 07922-3570000).
   Remove the lock nut, lock washer and clutch center.



# Inspection

- Check the clutch friction discs for burning, wear or any other damage, and replace any damaged discs.
- Check the clutch plates for face runout. Warped or damaged plates may cause the clutch to slip when engaged. Replace the plates if necessary.
- Check the clutch springs for fatigue and replace them if necessary.
- Check the clutch outer for stepped wear and replace it if necessary.

## Assembly

- 1. Install the thrust washer to the main shaft.
- Install the clutch outer. Install the splined washer to the main shaft and rotate the shaft until the washer meshes with the shaft.



Fig. 3-13 (1) Lock nut (2) Clutch center

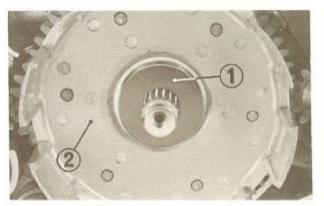


Fig. 3-14 (1) Splined washer (2) Clutch outer

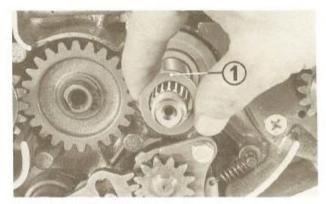


Fig. 3-15 (1) Thrust washer

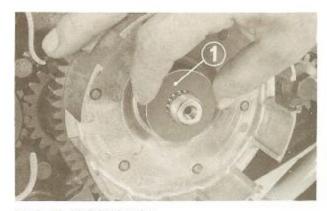


Fig. 3-16 (1) Splined washer

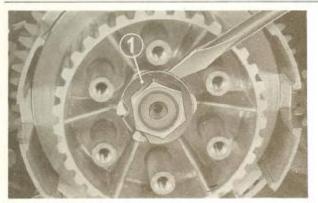


Fig. 3-17 (1) Lock washer

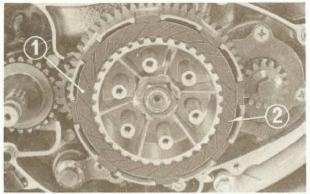


Fig. 3-18 (1) Clutch friction disc (2) Groove

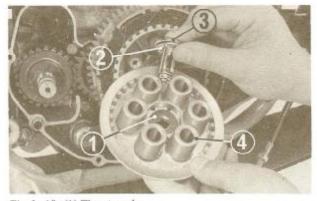


Fig. 3-19 (1) Thrust washer (2) Thrust needle bearing (3) Clutch lifter rod

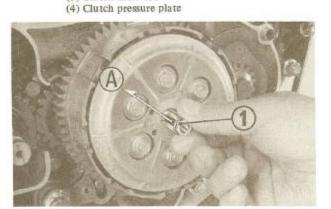


Fig. 3-20 (1) Clutch lifter rod

 Install the clutch center. Install the lock washer with the lug in the recess of the clutch center. Tighten the lock nut to the specified torque. Bend the lock washer against a flat on the lock nut.

#### NOTE:

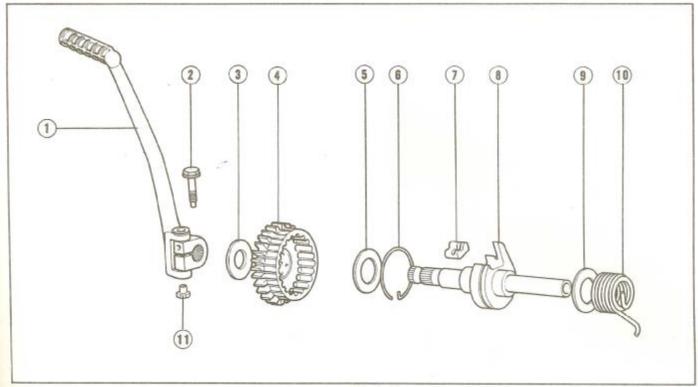
Properly fit the tab of the lock washer into the groove in the clutch center.

4. Install the six friction discs and five clutch plates on the clutch center (alternating the friction discs and clutch plates). The friction discs must be installed with the grooves facing in the direction shown in Fig. 3-18.

 Install the thrust washer, thrust needle bearing and clutch lifter rod to the clutch pressure plate.

6. With the groove in the clutch lifter rod faced in direction (A) in Fig. 3-20, install the right crankcase cover. Insert the clutch lever and turn it clockwise to fit the tip into the groove in the clutch lifter rod.

## 5. KICK STARTER



- (1) Kick starter arm
- (2) Kick starter bolt
- (3) Thrust washer
- (4) Starter pinion (24 teeth)
- Fig. 3-21 (5) Thrust washer
- (6) Starter pawl spring (7) Kick starter pawl
- (8) Starter shaft
- (9) Thrust washer
- (10) Starter return spring
- (11) Kick arm nut

# Disassembly

- 1. Drain the transmission oil from the crankcase.
- 2. Remove the brake pedal pivot.
- 3. Remove the kick starter pedal.
- 4. Disconnect the clutch cable from the clutch lever.
- 5. Remove the right crankcase cover (See page 22).
- 6. Remove the thrust washer and starter pinion.
- 7. Disassemble the right and left crankcase (See page 28).
- 8. Remove the starter spring and the starter shaft assembly.

## Inspection

Check the ratchet pawl for damage and the pawl spring for fatigue.

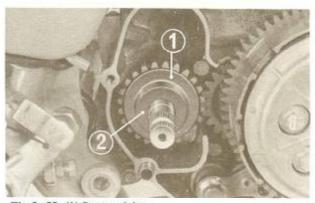


Fig. 3-22 (1) Starter pinion (2) Thrust washer

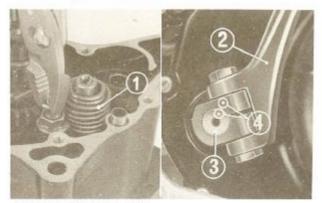
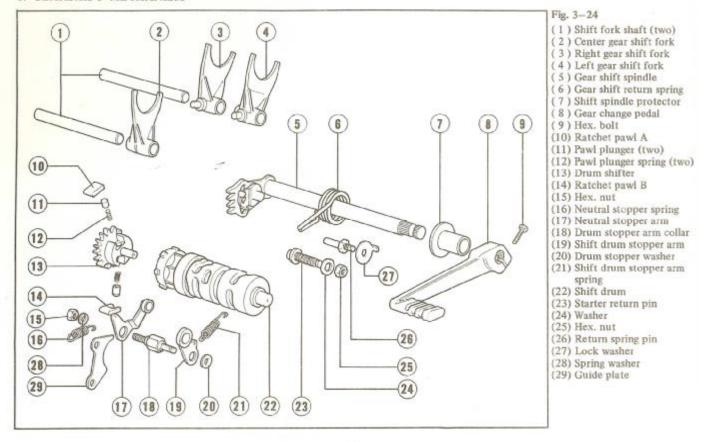


Fig. 3-23 (1) Starter spring

- (2) Kick starter
- (3) Starter shaft
- (4) Punch marks

# 6. GEARSHIFT MECHANISM



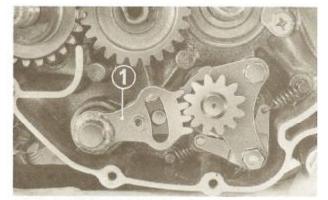


Fig. 3-25 (1) Gearshift spindle



Fig. 3-26 (1) Bolt

- (5) Drum shifter
- (2) Plate guide (3) Nut
- (4) Ratchet pawl

# Disassembly

- 1. Remove the clutch. (See page 22.)
- 2. Remove the gear change pedal and gearshift spindle.

3. Remove the bolt and nut and remove the plate guide. Then remove the drum shifter while holding the two ratchet pawls.

4. Remove the neutral stopper spring and neutral stopper.

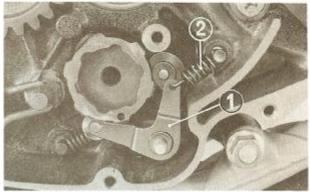


Fig. 3-27 (1) Neutral stopper

(2) Neutral stopper spring

Remove the drum stopper arm collar and drum stopper arm spring and remove the drum stopper arm.



Fig. 3-28 (1) Drum stopper arm (2) Arm collar

(3) Arm spring

Disassemble the right and left crankcases. (See page 28).
 Remove the two fork shafts, three gearshift forks and gearshift drum.



- 1. Check the condition of the gearshift fork finger.
- 2. Measure the gearshift fork guide shaft O.D.
- 3. Measure the gearshift fork I.D.
- 4. Measure the gearshift drum O.D.
- 5. Check for sticking or bent gearshift forks.
- 6. Check for broken, worn, or bent gearshift spindle spring.

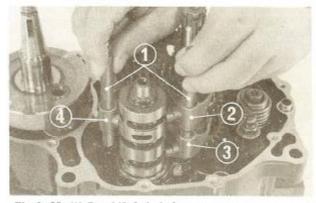


Fig. 3-29 (1) Gearshift fork shaft

- (2) Left gearshift fork
- (3) Right gearshift fork
- (4) Center gearshift fork

### Assembly

- 1. Install the gearshift forks.
- 2. Place the gearshift drum in the neutral position. With the punch mark on the drum shifter facing in the direction shown in Fig. 3-30, install the drum shifter and two ratchet pawls to the gearshift drum. Install the gearshift spindle by fitting the center notch in the spindle ratchet on the punch marked drum shifter tooth.

### NOTE:

Ensure that the ratchet pawls are installed correctly.

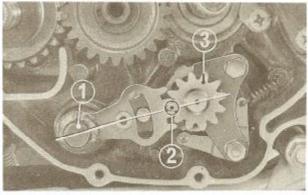
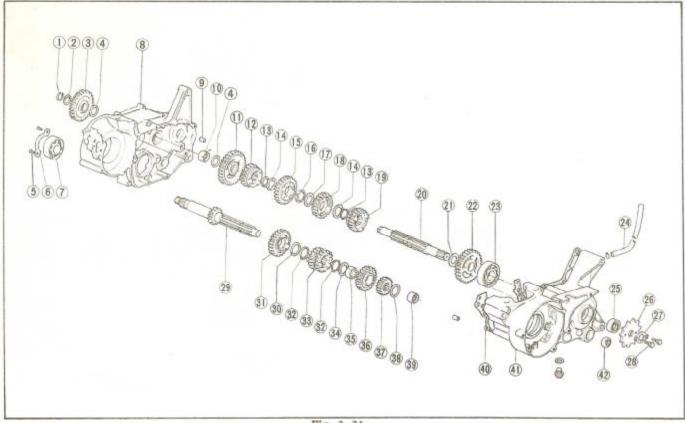


Fig. 3-30 (1) Gearshift spindle

- (2) Punch mark
- (3) Drum shifter

#### 7. CRANKCASE AND TRANSMISSION



- (1) Set ring
- (2) Thrust washer
- (3) Starter idle gear
- (4) Thrust washer (two)
- (5) Flat screw (two) (6) Bearing set plate B
- (7) Ball bearing
- (8) Right crankcase

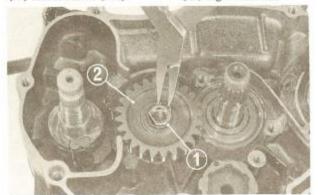


Fig. 3-32 (1) Snap ring (2) Starter idle gear

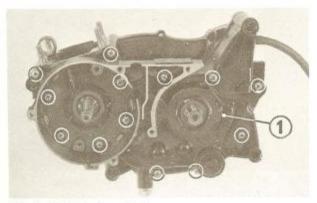


Fig. 3-33 (1) Left crankcase

- Fig. 3-31
  - (9) Dowel pin (two) (10) Needle bearing 1612
  - (11) Countershaft low gear (32 teeth)
  - (12) Countershaft fifth gear (23 teeth)
  - (13) Snap ring (two)
  - (14) Spline washer (two)
  - (15) Countershaft third gear (26 teeth)
  - (16) Lock washer
  - (17) Spline washer
  - (18) Countershaft fourth gear (24 teeth)
  - (19) Countershaft sixth gear (22 teeth)
  - (20) Countershaft (21) Thrust washer
  - (22) Countershaft second gear (29 teeth)
  - (23) Ball bearing
  - (24) Breather tube

- (25) Oil seal
- (26) Drive sprocket
- (27) Fixing plate B
- (28) Hex. bolt (two)
- (29) Main shaft
- (30) Thrust washer
- (31) Main shaft fifth gear (24 teeth)
- (32) Snap ring (two)
- (33) Main shaft third gear (20 teeth)
- (34) Spline washer
- (35) Spline collar
- (36) Main shaft sixth gear (25 teeth)
- (37) Main shaft second gear (18 teeth)
- (38) Thrust washer
- (39) Needle bearing
- (40) Crankcase gasket (41) Left crankcase
- (42) Oil seal

## Disassembly

- 1. Remove the engine. (See page 18.)
- 2. Remove the cylinder head, cylinder and piston. (See page 19.)
- 3. Remove the clutch. (See pages 22.)
- 4. Remove the kick starter. (See page 25.)
- 5. Remove the stator base and A.C. generator.
- 6. Remove the drive sprocket.
- 7. Remove the gearshift spindle, neutral stopper and gearshift drum stopper.
- 8. Remove the snap ring and remove the starter idle gear.
- 9. Remove the 13 left crankcase screws.

10. Bolt the crankcase disassembly tool (tool no. 07937—3600000) to the left crankcase as shown in Fig. 3—34.
Turn the screw of the tool against the end of the crankshaft to separate the cases.

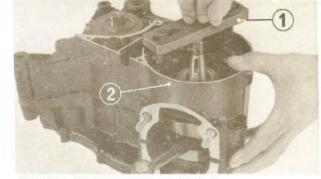


Fig. 3-34 (1) Crankcase disassembly tool (2) Left crankcase

- Remove the two shift frok shafts, three shift forks and gearshift drum.
- 12. Remove the main shaft and countershaft gears.



- Check the gear teeth for damage, and replace any damaged gears.
- Check the dogs of the gears for wear. Also check to see if the gears move smoothly along the shaft splines.

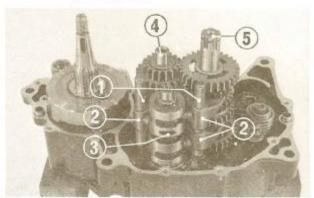


Fig. 3-35 (1) Shift fork shaft (2) Shift fork

(3) Gearshift drum

(4) Main shaft (5) Countershaft

### Assembly

- When installing the right and left crankcases, thoroughly clean the crankshaft chamber first.
- When installing the main shaft and countershaft, apply a coat of oil to the bearing attaching surfaces. Also fill the shafts with oil.

### NOTE:

When installing the spline collar (35) (Fig. 3-31) to the main shaft, align the oil holes.

 Fill the void between double lips of the oil seal with gasoline-resistant grease.
 Check the lips for burr.

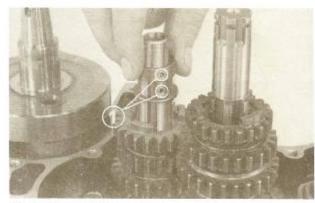


Fig. 3-36 (1) Oil holes

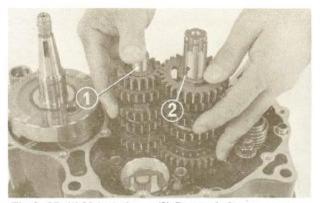
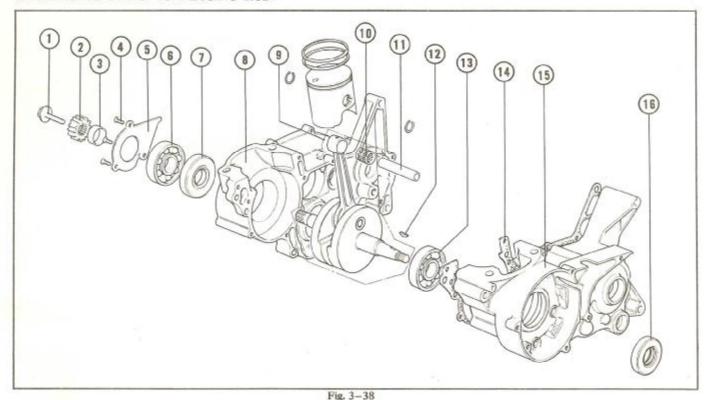


Fig. 3-37 (1) Main shaft

(2) Countershaft

### 8. CRANKSHAFT AND CONNECTING ROD



(1) Special bolt

- (2) Primary drive gear (16 teeth)
- (3) Primary drive gear collar
- (4) Screw (three)
- (5) Bearing set plate A
- (6) Ball bearing
- (7) Oil seal
- (8) Right crankcase
- (9) Crankshaft
- (10) Connecting rod small end bearing
- (11) Piston pin
- (12) Woodruff key

- (13) Ball bearing
- (14) Crankcase gasket
- (15) Left crankcase
- (16) Oil seal

# Disassembly

1. Disassemble the crankcase. (See pages 28-29)

#### NOTE

Before disassembling the crankcase, remove the primary drive gear by using the drive gear holder (tool no. 07924-3600000).

2. Remove the crankshaft assembly from the crankcase.

### Inspection

Before disassembling, hold both ends of the crankshaft and check for looseness. If the crankshaft rattles, check to see if the rattle is caused by loose bearings or excessive clearance between the crankcase and bearing outers.

### Assembly

The connecting rod small end bearing is selective-fitted with the connecting rod small end I.D. The connecting rod small end I.D. is identified by the number of notches.

For identification see the table below.

Connecting rod small end LD. identification	Bearing package color
One notch	Red
Two notches	Blue
Three notches	White

# NOTE:

 The connecting rod small end bearings are identified by the colors of their packaging.

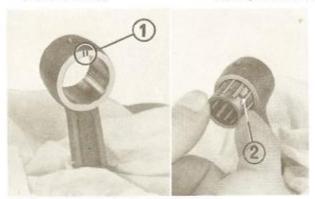


Fig. 3-39 (1) Connecting rod small end I.D. identification mark (2) Small end bearing

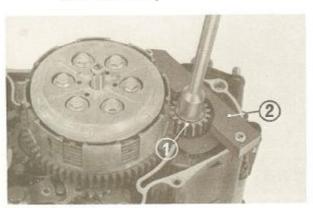
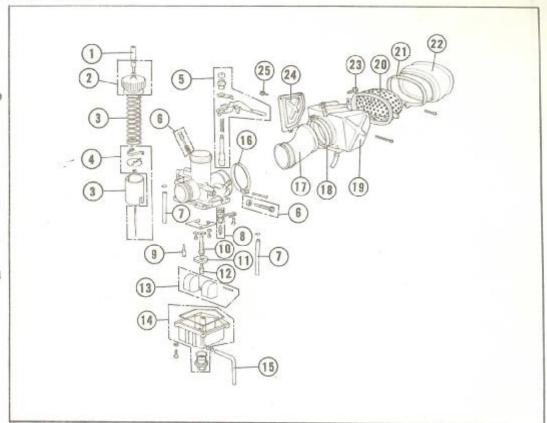


Fig. 3-40 (1) Primary drive gear (2) Drive gear holder

#### 9. CARBURETOR AND AIR CLEANER

### Fig. 3-41

- (1) Rubber cap
- (2) Top set
- (3) Throttle valve set
- (4) Jet needle set
- (5) Starter valve set
- (6) Screw set
- (7) Fuel tube (breather tube)
- (8) Float valve set
- (9) Slow jet
- (10) Jet needle set
- (11) Jet holder
- (12) Main jet
- (13) Float set
- (14) Float chamber set
- (15) Fuel tube
- (16) Connecting tube band A
- (17) Connecting tube
- (18) Connecting tube band
- (19) Air cleaner element case
- (20) Air cleaner element holder
- (21) Air cleaner element band
- (22) Air cleaner element
- (23) Bolt
- (24) Air cleaner case cover
- (25) Bolt



### Construction

# 1. Starting circuit

When the starter valve (1) is opened, fuel is metered by the starter jet (2) and is mixed with air from the passages (3) and (4). Then, the mixture is drawn into the cylinder through the hole(5).



Fuel is metered by the slow jet (6) and is mixed with air from the slow air passage at the bleed. Then, the mixture is squirted from the bypass (8) and pilot outlet (9).

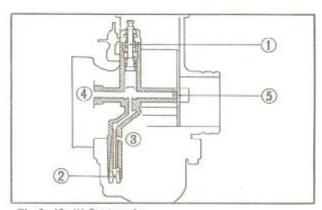


Fig. 3-42 (1) Starter valve (2) Starter jet

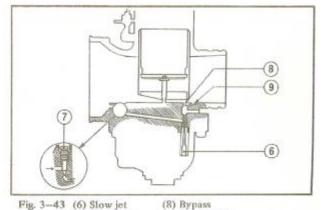


Fig. 3-43 (6) Slow jet

- (7) Air screw
  - (9) Pilot outlet

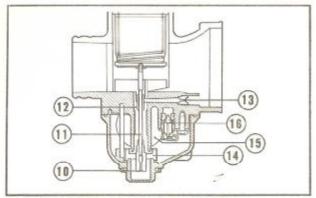


Fig. 3-44 (10) Main jet

- (11) Jet needle
- (12) Needle jet
- (13) Air jet
- (14) Jet holder
- (15) Float
- (16) Float valve

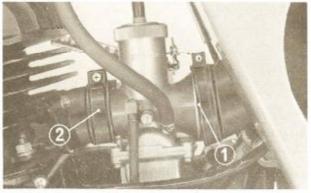


Fig. 3-45 (1) Connecting band (2) Insulator band

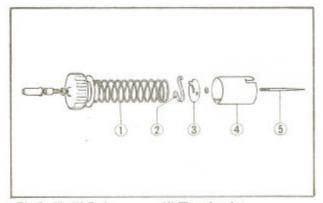


Fig. 3-46 (1) Spring

- (2) Clip
- (3) Clip plate
- (4) Throttle valve
- (5) Jet needle

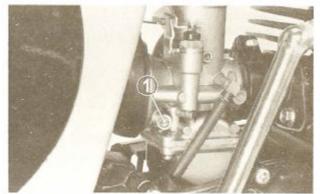


Fig. 3-47 (1) Air screw

### 3. Main circuit

Fuel metered by the main jet (10) flows through the passage between the jet needle (1) and needle jet (12) and is then mixed with air from air jet 13 at the outlet. Then the mixture is squirted from the nozzle tip. The jet holder (4) and the main jet (10) are secured together.

### 4. Flaot chamber

The float chamber maintains a constant fuel level. A spring built into the float valve (6) prevents the float from moving abnormally to maintain a constant fuel level and to prevent wear on float valve.

# 5. Baffle plate

The baffle plate installed in the float chamber inhibits change of fuel level and bubbling caused by vibration.

### Disassembly

- 1. Loosen the connecting band.
- 2. Loosen the insulator band.
- 3. Remove the carburetor.

4. Remove the carburetor top, and remove the spring and throttle valve.

#### CAUTION:

If gasoline comes out of the breather tube accidentally, wipe it completely.

## Inspection

1. Slow jet

The slow jet is a means of regulating the fuel flow in the slow circuit. Its setting is based on adjustment of the air screw.

2. Air screw

The air screw regulates the flow of air in the slow circuit. Turning the air screw clockwise will make the mixture rich and turning it counterclockwise will make the mixture lean.

To adjust, warm up the engine and turn the screw so that the engine runs smoothly at the maximum idle speed. Open the throttle slightly and ensure that the engine revs up smoothly. If the slow jet is too small in size, the response will be slow. If the slow jet is too large, the response will be slow, too, due to too rich a mixture. Check response smoothness when the throttle valve is opened slightly.

#### 3. Throttle valve cutaway

The throttle valve cutaway regulates the flow of air at a throttle opening of 1/8-1/4. The higher the value of the marking, the leaner the mixture, and vice versa.

Road-test the motorcycle with 1/4 throttle. Check the spark plug if any unsmoothness is felt. If the plug is wet, change the throttle valve for one with a larger number and if overheated, use a throttle valve with a smaller number.

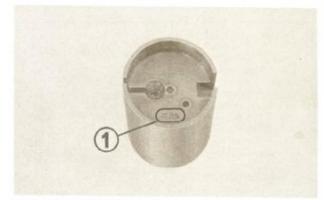


Fig. 3-48 (1) Cutaway number

#### 4. Jet needle

The jet needle regulates the flow of fuel at a throttle opening of 1/4-1/2. The straight part of the needle regulates fuel flow at low throttle opening, and the tapered part regulates fuel flow at mid-throttle.

Five grooves are cut into the needle head to allow for adjustment of the needle. If throttle response is poor or if the engine will not maintain constant rpm, change the position of the needle. Before adjusting, set the main jet.

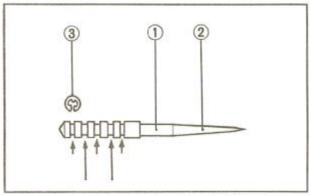
#### Example:

If the engine is running erratically with the jet needle set at the 3rd groove position, change to the 4th groove position. If the motorcycle jerks when accelerated or when running at a certain speed, change to a lower-numbered groove position.

#### 5. Main jet

The main jet operates at 1/2 to full throttle and is important in regulating the flow of fuel from 3/4 to full throttle

Select a larger jet to obtain maximum speed.





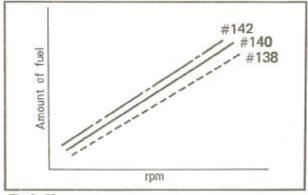


Fig. 3-50

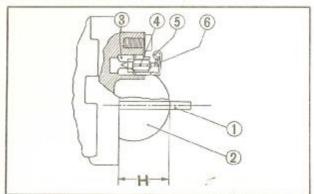


Fig. 3-51 (1) Float valve gauge

- (2) Float
- (4) Float valve
- (5) Float arm pin
- (3) Valve seat
- (6) Float arm tang

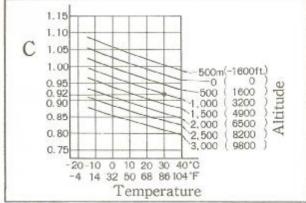


Fig. 3-52

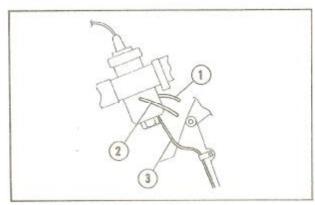


Fig. 3-53 (1) Right carburetor breather tube (2) Left carburetor breather tube

(3) Carburetor overflow tube

#### Carburetor Setting Table

Settin	g No.	083A
Marie Int	STD	#140
Main jet	Option	#132, 135, 138, 142, 145
Atu tas	STD	# 200
Air jet	Option	#160, 180, 220, 240
m i	STD	#45
Slow jet	Option	# 42, 48
Throttle	STD	#2.5
valve	Option	#2.0, 3.0
Jet needle setting		Third groove

#### 6. Float level

Hold the carburetor with its main bore in a vertical position, so the float arm-tang will just close the float valve, without compressing the spring loaded plunger in the end of the valve. Measure float height with a float level gauge.

Float height (distance between the carburetor body and the opposite edge of the float) should be 20 mm (0.787 in.) when the float valve just closes.

If adjustment is needed, carefully bend the float arm tang toward or away from the float valve until the specified float height is obtained. Replace any damaged or leaking float.

#### 7. Temperature and altitude correction factor

The carburetor should be adjusted for changes in temperature and altitude. Determine the needle and air screw settings and main jet size by correction factor C in the table below. Select the correct factor to meet riding conditions.

#### Main jet specified main jet no. x C=main jet to be used

# Jet needle

specified jet needle groove no.+rating of C=groove no. to be used

c	1.20 min.	1.20 { 1.05	1.05	0.95 l 0.80	0.80 max.
Rating	+2	+1	-	-1	-2

- (+) Raise the needle.
- (—) Lower the needle.

#### · Air screw

specified number of turns + rating of C

С	1.20 min.	1.20	1.05 { 0.95	0.95	0.80 max.
Rating	-1	-1/2	-	+1/2	+1

(+) Increase the number of turns

#### For example:

At a temperature of 30°C (86°F) and an altitude of 1,000 m (3,200 ft.), carburetor recommendations are as follows:

Main jet
 140 x 0.92=128.8

• #132

Jet needle

3-1=2

· 2nd groove

Air screw opening
 1¼ + ½ = 1¾

• 1½ turns open

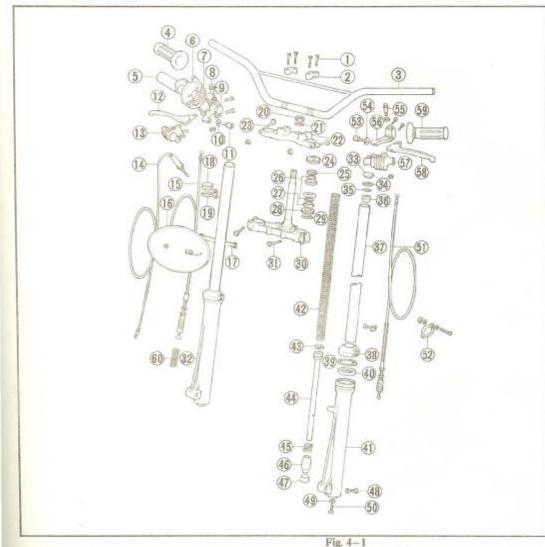
#### NOTE:

Connect each breather tube and overflow tube as shown in Fig. 3-53.

8. For servicing of the air cleaner see page 10.

#### IV. SERVICING THE FRAME

#### 1. HANDLEBAR AND FRONT SUSPENSION



- (1) Flange bolt (four)
- (2) Upper holder B2 (two)
- (3) Handlebar
- (4) Right handle grip
- (5) Throttle grip pipe
- (6) Throttle grip housing A
- (7) Throttle grip housing B
- (8) Handle lever pivot bolt
- (9) Right handle lever bracket
- (10) Lock nut
- (11) Front brake upper adjuster
- (12) Front brake lever
- (13) Handle lever cover
- (14) Throttle cable
- (15) Front brake cable
- (16) Front number plate
- (17) Front number plate band
- (18) Cable guide inner

#### Disassembly

- 1. Disconnect the front brake cable from the brake lever.
- 2. Disconnect the clutch cable from the clutch lever.
- 3. Remove the engine stop switch wiring connectors.
- 4. Disconnect the throttle cable from the throttle grip.
- 5. Remove the two upper holders and remove the handlebar.
- 6. Remove the front wheel. (See page 43.)
- 7. Loosen three 8 mm bolts at each front fork and pull down the forks.

- (27) Steering bottom cone (28) Steering head dust seal
- (29) Steering head dust scal washer
- (30) Steering stem
- (31) Flange bolt (four)
- (32) Front fork assembly
- (33) Rubber cap (two) (34) Snap ring (two)
- (35) O-ring (two)
- (36) Spring upper seat (two)
- (37) Front fork pipe (two)
- (38) Front fork dust seal (two)
- (39) Internal circlip (two)
- (40) Oil seal (two)
- (41) Right fork bottom case Left fork bottom case
- (42) Front suspension spring (two)
- (43) Fork piston ring (two)
- (44) Fork piston (two) (45) Front suspension
- rebound spring (two) (46) Oil lock piece (two)
- (47) Check valve
- (48) Hex. bolt (two)
- (49) Special washer (two)
- (50) Allen head screw (two)
- (51) Clutch cable
- (52) Clutch cable clamper
- (53) Clutch cable upper adjuster
- (54) Lock nut
- (55) Handle lever pivot bolt
- (56) Left handle lever bracket
- (57) Handle lever cover
- (58) Clutch lever
- (59) Left handle grip
- (60) Front brake return spring
- (19) Brake cable guide
- (20) Stem nut C
- (21) Steering stem nut washer
- (22) Fork top bridge
- (23) Flange bolt (two)
- (24) Steering head bearing adjusting nut
- (25) Steering top cone race
- (26) Steel ball #6 (forty-two)

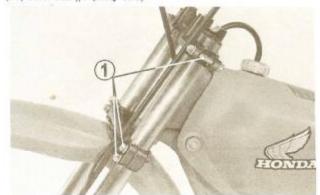


Fig. 4-2 (1) 8 mm front fork bolts

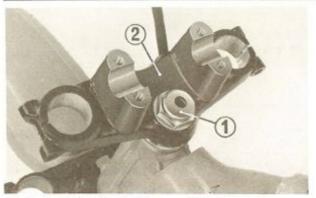


Fig. 4-3 (1) Steering stem nut

(2) Fork top bridge

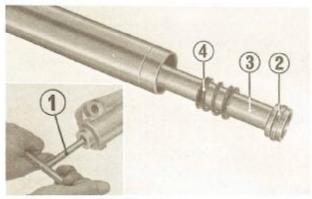


Fig. 4-4 (1) Hollow set wrench

- (2) Fork piston ring
- (3) Fork piston
- (4) Rebound spring



Fig. 4-5 (1) Internal circlip (2) Oil seal

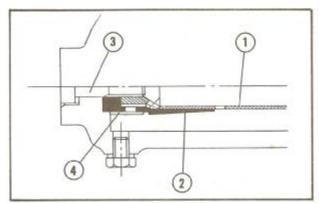


Fig. 4-6 (1) Fork piston (2) Oil lock piece

- (3) Allen head screw
- (4) Check valve

- 8. Remove the steering stem nut and fork top bridge.
- Remove the steering head bearing adjusting nut and pull out the steering stem.

#### NOTE:

When pulling out the steering stem, take care not to lose the steel balls.

 Remove the Allen head screw with the hollow set wrench (too no. 07917-3230000) and remove the fork piston ring, fork piston and rebound spring.

 Remove the internal circlip and oil seal and remove the oil lock piece and check valve.

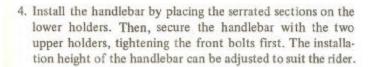
#### Inspection

- 1. Check the handlebar for bends or cracks.
- 2. Check the steel balls for wear or cracks.

#### Assembly

 Apply locking sealant to the threads of the Allen head screw. Install the oil lock piece, fork piston and check valve, and tighten with the Allen head screw as shown in Fig. 4-6.

- When installing the steering stem, apply a sufficient coat of grease to the steel balls. Use twenty-one balls on both upper and lower races.
- Tighten the steering head bearing adjusting nut until the steering stem rotates smoothly without any sign of looseness.



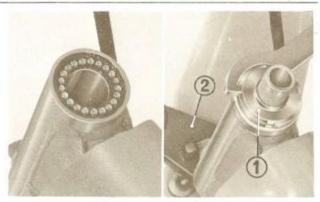


Fig. 4-7 (1) Steering head bearing adjusting nut (2) Steering stem

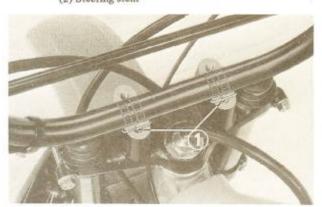


Fig. 4-8 (1) Serrations

## NOTE:

Install the upper holders with the punch marks toward the front.

Route the throttle cable, front brake cable and clutch cable as shown in Fig. 5-1 (See page 46).

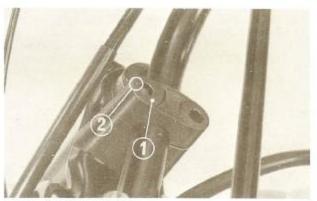


Fig. 4-9 (1) Upper holder (2) Punch mark

Align the end face of the throttle grip housing with the punch mark on the handlebar as shown in Fig. 4-10, and tighten the two screws securely.

Also, align the slit of the front brake lever bracket and clutch lever bracket with the punch mark, and tighten the screw securely.

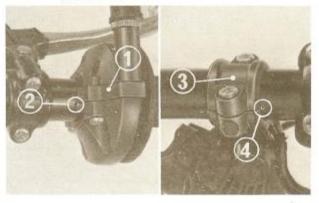
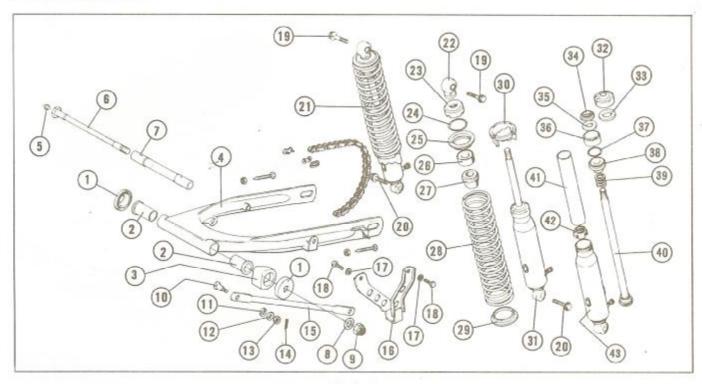


Fig. 4-10 (1) Throttle grip housing

- (2) Punch mark
- (3) Front brake lever bracket
- (4) Punch mark

#### 2. REAR SUSPENSION



(1) Dust seal cap (two)

(2) Pivot thrust bushing (two)

- (3) Chain slider
- (4) Rear fork
- (5) Grease nipple
- (6) Rear fork pivot bolt
- (7) Rear fork center collar
- (8) Tension arm washer
- (9) Lock nut
- (10) Rear brake stopper arm bolt
- (11) Spring washer
- (12) Plain washer

- (13) Hex. nut
- (14) Cotter pin
- (15) Rear brake stopper arm
- (16) Chain guide
- (17) Plain washer
- (18) Hex. bolt
- (19) Flanged bolt (two)
- (20) Flanged bolt (two)
- (21) Rear shock absorber (two)
- (22) Upper shock mount eye (two)
- (23) Upper spring seat (two)
- (24) Stopper ring (two)

- Fig. 4-11
  - (25) Upper spring guide (two)
  - (26) Stopper rubber A (two)
  - (27) Stopper rubber B (two)
  - (28) Shock absorber spring (two)
  - (29) Lower spring guide (two)
  - (30) Spring adjuster (two)
  - (31) Damper unit (two)
  - (32) Bump stopper seat (two)
  - (33) Plate (two)
  - (34) Dust seal (two)
  - (35) Seal guide (two)
  - (36) Oil seal (two)
  - (37) Oring (two)

- (38) Rod guide (two)
- (39) Rebound stop spring
- (40) Damper rod (two)
- (41) Cylinder (two)
- (42) Bottom valve (two)
- (43) Damper case (two)

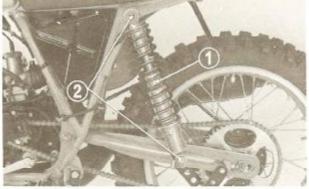


Fig. 4-12 (1) Rear shock absorber

(2) Attaching bolts

#### Disassembly

- Place a wood block under the engine and remove the rear wheel. (See page 45)
- Remove the two rear shock absorber bolts, and remove the right and left rear shock absorbers.
- 3. Pull out the rear fork pivot bolt and remove the rear fork.

#### WARNING:

- When disassembling a shock absorber, be sure to follow the instructions given on page 39 since it contains high pressure nitrogen gas.
- Release gas from shock absorbers thoroughly when they are discarded.

Compress the shock absorber and spring in the tool as shown; take out the stopper ring.

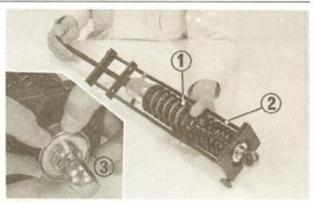


Fig. 4-13 (1) Rear shock absorber

- (2) Shock absorber disassembling tool
- (3) Stopper ring
- Hold the upper spring seat and remove the upper shock mount eye.

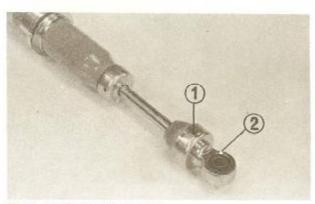


Fig. 4-14 (1) Upper spring seat (2) Upper shock mount eye

#### 6. WARNING:

The high pressure nitrogen gas must be released before disassembling the shock.

Hold the shock upright as shown while releasing the pressure to decrease the quantity of oil discharged. Cover the shock with a heavy cloth during this operation as oil particles are sprayed out under high pressure. Eye protection is recommended.

Allow gas to escape through the valve by pushing down the pin with the point of a suitable screwdriver.

 Remove the bump stopper seat with the pin wrench (tool No. 07902-0980000) and pull the rod out together with the related parts.

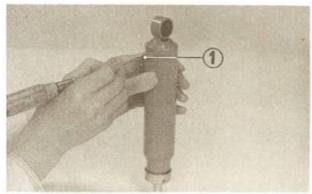


Fig. 4-15 (1) Valve

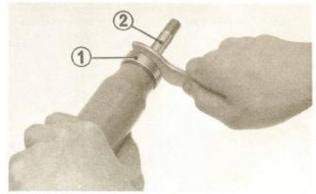


Fig. 4-16 (1) Bump stopper seat (2) Rod

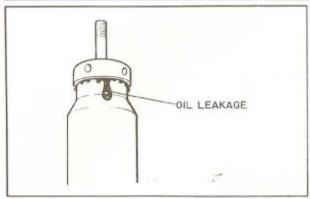


Fig. 4-17

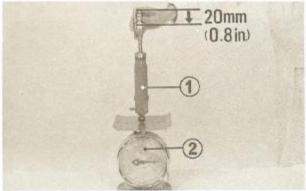


Fig. 4-18 (1) Damper unit (2) Scale

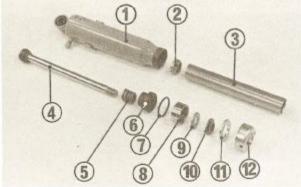


Fig. 4-19 (1) Damper case

- (2) Bottom valve
- (3) Cylinder
- (4) Damper rod
- (5) Rebound stop spring
- (6) Rod guide
- (7) O-ring
- (8) Oil seal
- (9) Seal guide
- (10) Dust seal
- (11) Plate
- (12) Bump stopper seat

#### Inspection

 Visually inspect the damper unit for dents, holes or other defects. Replace the oil seal and O-ring if the bump stopper seat shows any evidence of leaks.

Place the damper unit on a scale and measure the force required to compress the damper unit 20 mm (0.8 in.).

Compression force: 13-20 kg (29-44 lbs)

If the compression force is less than 13 kg (29 lbs), gas leakage is indicated and the oil seal and O-ring should be replaced before refilling. Examine the damper rod and replace if bent or scored.

- Check to make sure that the rod moves up and down freely. It should return smoothly within approx. one second when released.
- Replace the oil seal and O-ring whenever the rod is replaced. Replace the rod guide and dust seal if worn excessively.
- Measure the free length of the spring. Discard if the service limits are exceeded.

Standard:

249.5 mm (9,82 in.)

Service limit: 239.5 mm (9.43 in.)

Measure the rear fork pivot bushing I.D. and center collar O.D.

#### Assembly

 Assembly is the reverse order of removal. However, observe the following assembly notes:  Slide the cylinder complete with the bottom valve into the damper case. While holding the damper case vertical, fill with a 140 cc (1.7 ozs.) of ATF (Automatic Transmission Fluid).

#### NOTE:

Before filling, wash all parts carefully and blow off with compressed air to remove any small particles which could plug the orifices.

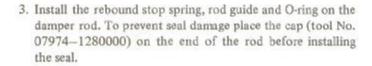




Fig. 4-20

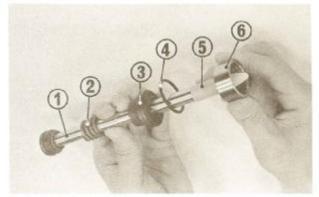


Fig. 4-21 (1) Damper rod (2) Rebound stop spring

(4) O-ring

(3) Rod guide (6

(5) Cap (6) Oil seal

#### NOTE:

Install the oil seal with the thicker wall end (b) facing down. Use added care to avoid damaging the sealing lip.

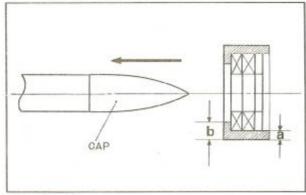


Fig. 4-22

4. Insert the damper rod in the damper case; then, set the rod guide in the cylinder. Make sure that the O-ring is properly seated in the groove in the rod guide.

#### NOTE:

Make sure that the seal is not damaged by the rod threads.

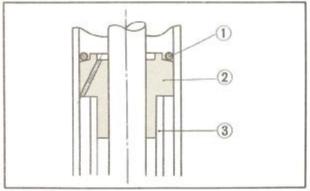


Fig. 4–23 (1) O-ring (2) Rod guide (3) Cylinder

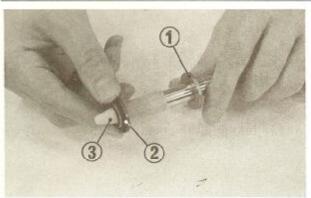


Fig. 4-24 (1) Seal guide (2) Dust seal (3) Cap

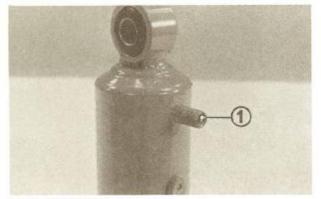


Fig. 4-25 (1) Filler valve opening

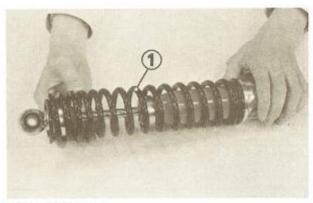


Fig. 4-26 (1) Spring

- 5. Insert seal guide, dust seal, a plate and bump stopper seat.
- Hold damper case by the lower shock mount eye and torque bump stopper seat to 350-500 kg-cm (25-36 lb-ft).

Hold damper unit securely with valve facing as shown in photo. Fill with nigrogen gas.

Specified Pressure: 10-15 kg/cm<sup>2</sup> (142-213 psi)

#### NOTE:

- The purpose of pressurized nitrogen gas in this shock is to prevent dampening curve distortion (unstable dampening characteristics). Increasing the pressure above 10 kg/cm<sup>2</sup> increases the spring preload but does not change the damping characteristics significantly.
- Your authorized Honda dealer can give you more detailed information about the equipment required to fill the shocks with nitrogen.
- When disassembling or assembling the damper, care should be exercised to prevent seal and thread damage.
- · Do not substitute other gases under any condition.
- 8. Install upper spring seat and upper shock mount eye.
- To install the spring, reverse the foregoing removal procedure.

#### NOTE:

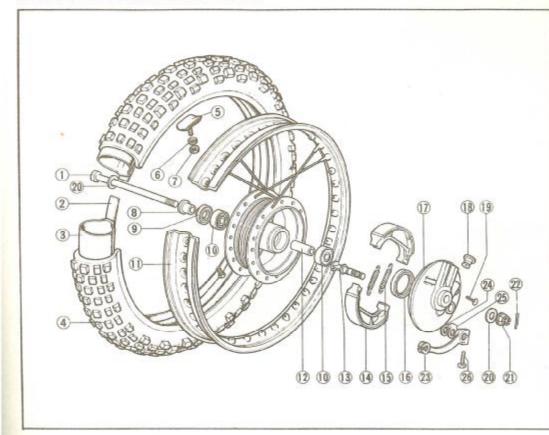
Install the spring so that the narrow pitch end is facing up.

#### Rear Fork

Tighten the rear fork pivot bolt until the rear fork will just drop under its own weight and there is no side play.

Apply a liberal coat of grease to the inside surface of the pivot thrust bushing (2) (Fig. 4-11) and to the lip and inside surface of the dust seal cap.

#### 3. FRONT WHEEL AND FRONT BRAKE



#### Fig. 4-27

- (1) Front wheel axle
- (2) Tire flap
- (3) Front whel tube (3.00-21)
- (4) Front wheel tire (3.00-21-4PR)
- (5) Rim lock
- (6) Spring washer
- (7) Hex. nut
- (8) Front wheel side collar
- (9) Oil seal
- (10) Ball bearing (two)
- (11) Front wheel rim
- (12) Front axle distance collar
- (13) Front brake cam
- (14) Brake shoe (two)
- (15) Brake shoe spring (two)
- (16) Oil seal
- (17) Front backing plate
- (18) Cap
- (19) Screw
- (20) Plain washer
- (21) Castle nut
- (22) Cotter pin
- (23) Front brake arm
- (24) Dust seal
- (25) Indicator plate
- (26) Hex. bolt

#### Disassembly

- Place a wood block under the engine and raise the front wheel off the ground.
- 2. Disconnect the front brake cable from the brake arm.
- Pull out the cotter pin and remove the front axle nut. Then pull out the front axle and remove the front wheel.
- Remove the two brake shoes from the front brake backing plate.

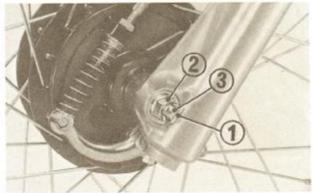


Fig. 4-28 (1) Cotter pin (3) Front axle (2) Axle nut

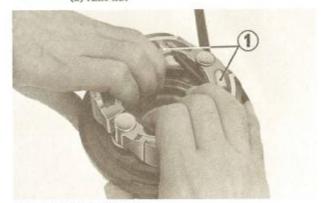


Fig. 4-29 (1) Brake shoes

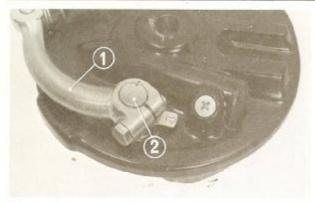


Fig. 4-30 (1) Front brake arm (2) Front brake cam

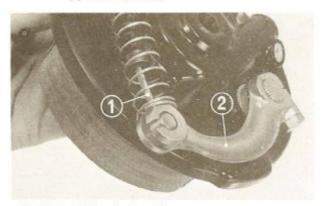


Fig. 4-31 (1) Front brake cable (2) Brake arm

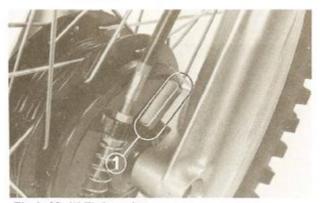


Fig. 4-32 (1) Fitting point

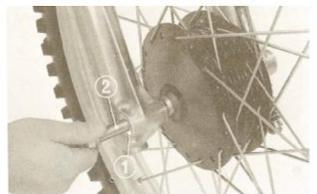


Fig. 4-33 (1) Plain washer

(2) Front axle

## Inspection

- 1. Check the front brake drum for wear.
- 2. Measure brake shoe thickness.
- 3. Check the brake cam for wear or cracks.
- 4. Check the front axle and replace if bent.
- 5. Check the brake shoe springs for fatigue or damage.

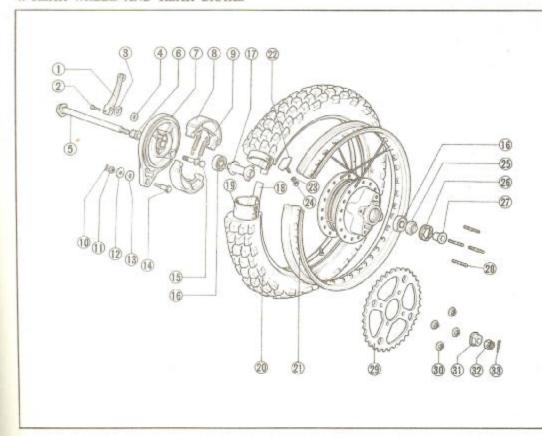
#### Assembly

- 1. Install the front brake arm on the brake cam.
- 2. Connect the front brake cable end to the brake arm.

Install the front wheel between the fork legs by fitting the tongue of the left fork leg into the groove in the front brake backing plate.

4. Install the plain washers to the right and left fork legs and insert the front axle. Install and tighten the axle nut to the specified torque. Install and split cotter pin to lock nut in place.

#### 4. REAR WHEEL AND REAR BRAKE



# Disassembly

- Loosen the drive chain adjuster lock nut and screw in the adjuster bolt.
- 2. Remove the cotter pin from the rear axle nut.
- 3. Remove the master link clip and remove the drive chain.
- 4. Remove the torque arm cotter pin and remove the lock nut. Remove the rear brake backing plate stopper bolt.
- 5. Remove the rear axle, and remove the rear wheel from the frame.
- Disconnect the brake cable end from the brake arm.
- 7. Remove the four lock nuts and remove the driven sprocket.
- 8. Remove the brake shoes from the rear brake backing plate.

Check the same items as in "Front Wheel and Front Brake" (See page 43).

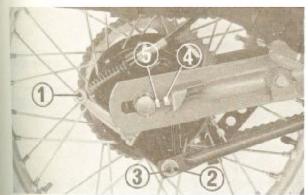


Fig. 4-35 (1) Brake cable end

- (2) Lock pin
- (4) Lock nut
- (5) Adjusting bolt (3) Rear brake backing plate stopper bolt

- Fig. 4-34
- (1) Rear brake arm
- (2) Hex. bolt
- (3) Indicator plate
- (4) Brake cam dust seal
- (5) Rear wheel axle
- (6) Rear brake panel side collar
- (7) Rear brake backing plate
- (8) Brake shoe (two)
- (9) Brake shoe spring (two)
- (10) Lock pin
- (11) Hex. nut
- (12) Handle holder washer A
- (13) Stopper arm cushion rubber
- (14) Rear brake panel bolt
- (15) Rear brake cam
- (16) Ball bearing (two)
- (17) Rear axle distance collar
- (18) Tire flap
- (19) Rear wheel tube (4.10 - 18)
- (20) Rear wheel tire (4.10-18-4PR)
- (21) Rear wheel rim
- (22) Rim lock
- (23) Spring washer
- (24) Hex. nut
- (25) Oil seal
- (26) Bearing retainer
- (27) Rear wheel side collar
- (28) Stud bolt (four)
- (29) Drive sprocket
- (30) Hex. nut (UBS) (four)
- (31) Rear axle collar
- (32) Rear axle nut
- (33) Cotter pin

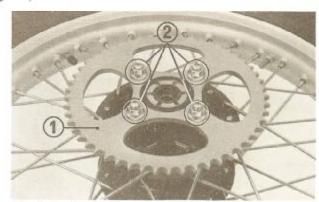


Fig. 4-36 (1) Driven sprocket

(2) Lock nuts

#### V. SERVICING THE ELECTRICAL SYSTEM

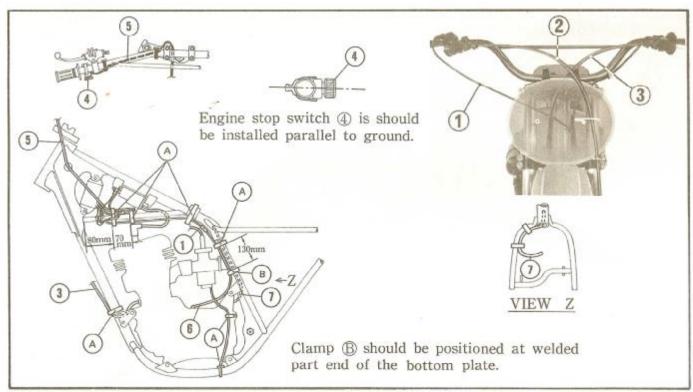
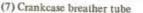


Fig. 5-1 (1) Throttle cable (2) Front brake cable

(3) Clutch cable

(4) Engine stop switch (5) Engine stop switch lead (6) ACG lead



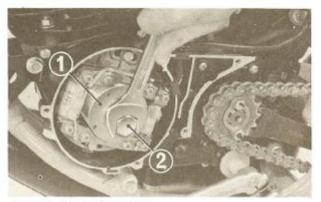


Fig. 5-2 (1) Generator rotor (2) Remover

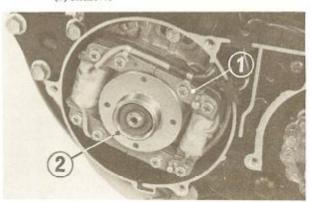


Fig. 5-3 (1) Stator (2) Rotor

#### AC generator

#### Disassembly

- 1. Remove the left crankcase cover.
- 2. Remove the generator rotor attaching nut and remove the rotor with the remover contained in the tool kit.

3. Remove the two stator attaching bolts and remove the stator base.

#### Inspection

Measure the generator rotor-to-stator base clearance. Specification: 0.5 mm (0.0197 in.)

Connect wiring and cables to the frame with the clamps at position (A) and (B) in Fig. 5-1.

#### VI. SERVICE DATA

## 1. TROUBLE SHOOTING

Trouble	Cause	Remedy
ngine fails to start or	Insufficient compression pressure	
oes not start easily.	(1) Crankcase compression leak at oil seal	Replace.
•	(2) Crankcase compression leak at crankcase mating surfaces	Repair.
	(3) Worn or stuck piston rings	Replace.
	(4) Worn cylinder	Repair or replace.
	2. No spark at plug or points	
	(1) Fouled plug	Clean or replace.
	(2) Wet plug	Clean or replace.
	(3) Poor contact of coupler	Repair or replace.
	(4) Defective C.D.I. unit	Replace.
	(5) Incorrect ignition timing	Adjust.
	(6) Defective ignition coil	Replace.
	(7) Open or short circuit in ignition cords	Replace.
	(8) Short circuit in A.C. generator	Repair or replace.
	3. Raw gas in crankcase	Remove gas (with fuel cock in "OFF" position after stopping the engine).
	4. No fuel is fed to carburetor	
	(1) Broken or clogged breather tube	Repair.
	(2) Clogged fuel cock	Clean.
	(3) Defective carburetor float valve	Clean.
81	(4) Clogged fuel tube	Clean.
	5. Deteriorated fuel-oil mixture	Replace.
Engine stalls	1. Fouled plug	Clean or replace.
frequently.	2. Incorrect ignition timing	Adjust.
and and a second	3. Clogged fuel lines	Clean.
	4. Clogged carburetor jets	Clean.
	Crankcase compression leak	Repair.
	6. Intake manifold leak	Repair or replace.
	7. Deteriorated fuel-oil mixture	Replace.
Engine does not have	1. Worn cylinder and worn or stuck piston rings	Repair or replace.
sufficient power.	2. Incorrect ignition timing	Adjust.
Carried March 19 (1997)	3. Incorrect plug gap	Repair or replace.
	4. Clogged carburetor jets	Clean.
	5. Incorrect float height	Adjust.
	6. Clogged air cleaner	Clean or replace.
100	7. Crancked expansion chamber	Repair.
	8. Deteriorated fuel-oil mixture	Replace.
Engine overheats.	1. Carbon deposit on cylinder head	Clean.
	2. Lean fuel mixture	Adjust.
	3. Overadvanced ignition timing	Adjust.
	4. Carbon deposit in expansion chamber	Clean.
	5. Deteriorated gasoline	Replace.

Trouble	Cause	Remedy
Clutch slips.	Misadjusted clutch     Weak clutch springs     Worn or deformed pressure plate     Deformed clutch plates     Worn or deformed friction discs	Adjust. Replace. Replace. Replace. Replace.
Clutch drags.	Misadjusted clutch     Unequal clutch spring tension     Deformed clutch plates	Adjust. Replace. Replace.
Transmission gears fail to shift smoothly or sequentially.	Deformed shift drum stopper     Broken shift drum     Deformed shift forks     Weak shift drum stopper spring	Repair or replace. Replace. Repair or replace. Replace.
Change pedal fails to return.	Broken gearshift return spring     Contact between cases and gearshift spindle	Repair or replace. Repair.
Transmission gears disengage accidentally.	Worn main shaft and countershaft shifting gears     Bent or worn gearshift forks	Replace. Repair or replace.
Engine operation is erratic at low speeds.	Incorrect ignition timing     Excessive plug gap     Weak spark (defective ignition coil)     Short circuit in A.C. generator     Incorrect float level     Misadjusted carburetor air screw	Adjust. Repair or replace. Replace. Repair or replace. Adjust. Adjust.
Engine operation is erratic at high speeds.	Insufficient plug gap     Retarded ignition timing     Defective C.D.I. unit     Defective ignition coil     Incorrect float level     Clogged air cleaner element     Crankcase compression leak     Short circuit in A.C. generator     Broken or cracked expansion chamber, broken tail pipe or carbon deposit	Repair or replace. Adjust. Replace. Replace. Adjust. Clean or replace. Repair. Repair or replace. Repair or replace.
Engine fails to fire.	Fouled spark plug     Defective ignition coil     Defective C.D.I. unit     Short circuit in A.C. generator	Replace. Replace. Replace. Replace.
Spark plug electrodes are fouled.	Rich mixture (rich carburetion or clogged air filter)     Incorrect gasoline and oil mixing ratio     Incorrect spark plug heat range	Adjust or clean. Adjust. Replace.
Spark plug electrodes are burnt.	Incorrect heat range     Overheating engine     Incorrect ignition timing     Loose spark plug     Lean mixture	Use specified plug.  Adjust. Retighten. Adjust.

Trouble	Cause	Remedy
Steering is hard.	Overtightened steering stem     Broken steering stem steel balls     Bent steering stem     Unevenly wom ball races	Adjust. Replace. Replace. Replace.
Front wheel shimmies.	Deformed rim     Loose front wheel bearings     Loose spokes     Loose axle and related parts	Replace. Replace. Adjust. Retighten.
Front suspension is spongy.	Weak springs     Insufficient front fork fluid (ATF)	Replace. Add.
Front suspension is hard.	Incorrect front fork fluid; too high viscosity     Excessive front fork fluid	Replace. Adjust.
Rear wheel shimmies.	Deformed rim     Loose rear wheel bearings     Loose spokes     Loose axle and related parts	Replace. Replace. Adjust. Retighten
Rear suspension is spongy.	Weak springs     Improper rear suspension adjustment     Insufficient nitrogen gas pressure	Replace. Adjust. Fill to specified pressure
Rear suspension is hard.	Improper rear suspension adjustment     Spring thrust joint binding     Bent shock absorber rods	Adjust. Repair. Replace.
Braking effect is poor.	Improper brake shoe contact     Brake linings fouled with oil or grease     Broken brake cable or loose brake pedal shaft     Misadjusted brake	Repair or replace. Replace. Repair or replace. Adjust.
Brake free play is insufficient.	Worn brake shoes     Worn brake cam     Improper brake arm position	Replace. Replace. Repair or replace.

# 2. TORQUE SPECIFICATIONS

Unit: kg-m (lbs-ft.)

	Tightening point	Thread dia. (mm)	Torque	Remarks
	Drive sprocket	6	0.8-1.2 (5.8-8.7)	
	Drum stopper	6	0.8-1.2 (5.8-8.7)	
	Exhaust pipe	6	0.8-1.2 (5.8-8.7)	
	Clutch pressure plate	6	0.8-1.2 (5.8-8.7)	
Engine	A.C. generator rotor	12	5.0-6.0 (36.2-43.4)	
	Cylinder head flange nut	8	2.0-2.3 (14.5-16.6)	Pay special attention to
	Cylinder mounting bolt	8	2.0-2.3 (14.5-16.6)	forquing UBS bolts.
	Primary drive gear	. 8	3.5-4.0 (25.3-28.9)	
	Clutch center	16	4.0-5.0 (28.9-36.2)	
	Steering stem nut	22	6.5-8.0 (47.0-57.9)	
	Front fork top bridge	8	1.8-2.5 (13.0-18.1)	
	Handlebar holder	8	1.8-2.5 (13.0-18.1)	
	Front fork bottom bridge	8	1.8-2.5 (13.0-18.1)	
	Spoke	_	Front: 0.15-0.40 (1.1-2.9)	
			Rear: 0.2-0.45 (1.4-3.3)	
	Rear fork pivot bolt	12	5.5-6.5 (39.8-47.0)	
Frame	Front wheel axle nut	12	5.5-6.5 (39.8-47.0)	
. runne	Engine hanger bolt	8	2.7-3.3 (19.5-23.9)	UBS bolt
	Rear axle nut	14	6.0-8.0 (43.4-57.9)	020 0011
	Driven sprocket	10	4.5-6.0 (32.5-43.4)	UBS nut
	Brake arm	6	0.8-1.2 (5.8-8.7)	
	Rear brake torque link	8	1.8-2.5 (13.0-18.1)	
	Rear shock absorber	10	3.0-4.0 (21.7-28.9)	
	Change arm	6	0.8-1.2 (5.8-8.7)	
	Kick starter pedal	8	1.8-2.5 (13.0-18.1)	
	Rear brake pedal pivot	10	3.0-4.0 (21.7-28.9)	

# Standard tightening torque

Unit: kg-m (lbs-ft.)

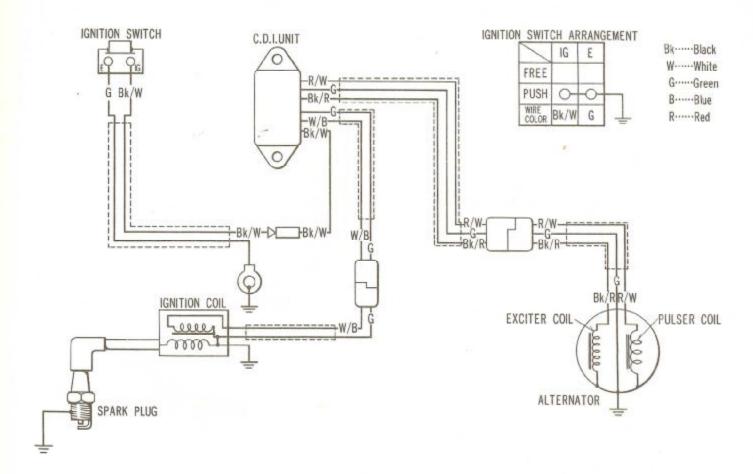
Part	Torque	Part	Torque
6 mm screw 6 mm hex bolt 8 mm hex bolt 10 mm hex bolt	0.7-1.0 (5.1-7.2) 0.8-1.2 (5.8-8.7) 1.8-2.5 (13.0-18.1) 3.0-4.0 (21.7-28.9)	6 mm flanged hex bolt 8 mm flanged hex bolt 10 mm flanged hex bolt	1.0-1.4 (7.2-10.1) 2.4-3.0 (17.4-21.7) 3.8-4.8 (27.5-34.7)

# 3. SERVICE DATA

Unit: mm (in.)

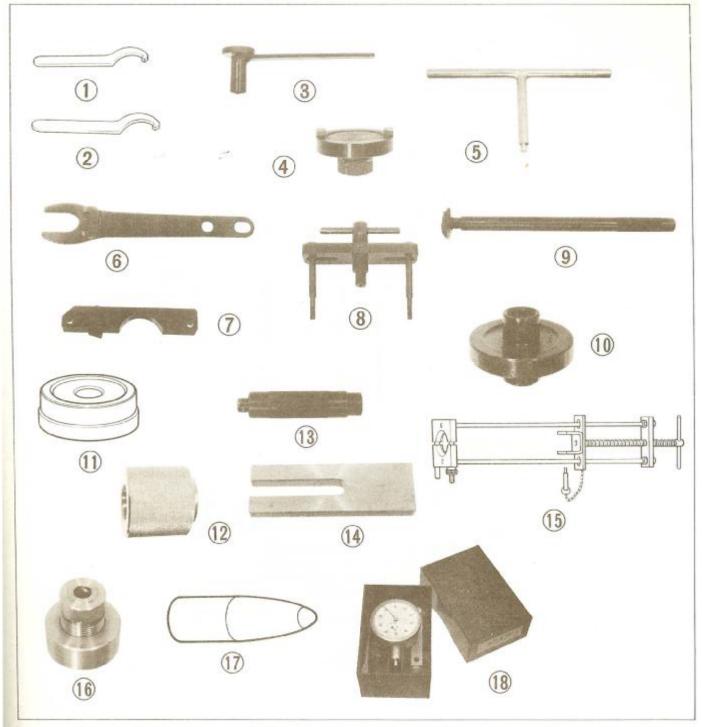
	Item		Assembly standard	Service limit
	Cylinder bore		56.00-56.01 (2.2047-2.2051)	56.05 (2.2067)
	Piston OD		55.94-55.96 (2.2024-2.2031)	55.85 (2.1988)
	Piston pin hole dia.		14.002-14.008 (0.5513-0.5515)	14.05 (0.5531)
	Piston pin OD		13.994-14.000 (0.5509-0.5512)	13.98 (0.5504)
	The second of the second	_	_	
	Piston ring groove side clearance	2nd	0.025-0.055 (0.0010-0.0022)	0.07 (0.0028)
	Piston ring gap		0.3-0.5 (0.0118 -0.0197)	0.65 (0.0256)
	Connecting rod big end axial clear	ance	0.15-0.60 (0.0059-0.0236)	0.70 (0.0276)
Engine	Connecting rod big end radial clearance		0.008-0.020 (0.0003-0.0008)	0.03 (0.0012)
	Clutch friction disc thickness		2.62-2.78 (0.1031-0.1094)	2.40 (0.0945)
	Clutch plate face runout		0.15 (0.0059)	0.25 (0.0098)
	Clutch spring free length		37.8 (1.4882)	36.7 (1.4449)
	Clutch spring tension		23.3/12.75-14.25 kg (0.9173/28.12-31.42 lbs)	23.3/12.5 kg (0.9173/27.56 lbs)
	Transmission gear backlash		_	0.2 (0.0787)
	Shift fork guide shaft OD		9.972-9.987 (0.3926-0.3932)	9.92 (0.3906)
	R/H, center and L/H gearshift fork ID		10.000-10.018 (0.3937-0.3944)	10.05 (0.3957)
	Shift fork finger thickness		4.90-4.95 (0.1929-0.1949)	4.6 (0.1811)
	Front fork pipe OD		34.925-34.950 (1.3750-1.3760)	34.900 (1.3740)
	Front fork bottom case ID		35.025-35.064 (1.3789-1.3805)	35.180 (1.3850)
	Front wheel axle runout		0.01 (0.0004)	0.2 (0.0079)
	6301 ball bearing axial runout		0.02 (0.0008)	0.04 (0.0016)
	6301 ball bearing radial runout		0.015 (0.0006)	0.03 (0.0012)
	Front and rear wheel rim face run	out	0.5 (0.0197)	2.0 (0.0787)
Frame	Front and rear brake drum ID		110.0-110.2 (4.3307-4.3386)	111.0 (4.3701)
	Front and rear brake shoe thickne	ess	3.75 (0.1476)	2.50 (0.0984)
	Rear wheel axle runout		0.01 (0.0004)	0.20 (0.0079)
	Rear fork pivot bushing ID		18.000-18.052 (0.7087-0.7107)	18.20 (0.7165)
	Rear fork center collar OD	11.0	17.968-17.941 (0.7074-0.7063)	17.88 (0.7039)
	6302 ball bearing axial runout		0.02 (0.0008)	0.04 (0.0016)
	6302 ball bearing radial runout		0.015 (0.0006)	0.03 (0.0012)

## 4. WIRING DIAGRAM



MEMO:

## 5. SPECIAL TOOLS



Ref. No.	Tool No.	Description	Ref. No.	Tool No.	Description
(1)	07902-0980000	Pin wrench (for rear shock absorber)	(11)	07946-3640000	Bearing driver (for wheel hub)
(2)	07902-2000000	Pin wrench (for steering head)	(12)	07947-3290000	Fork seal driver (for front fork)
(3)	07908-3230000	Clutch adjusting wrench	(13)	07949-6110000	Driver handle
(4)	07910-3600000	Bearing retainer wrench	(14)	07958-2500000	Connecting rod holder
61-24		(for rear wheel)	(15)	07959-3290000	Shock absorber disassembring tool
(5)	07917-3230000	6mm hollow set wrench (for front fork)	(16)	07965-3610001	Crankcase assembling tool
(6)	07922-3570000	Drive sprocket holder	(17)	07974-1280000	Cap (for rear shock absorber)
(7)	07924-3600000	Drive gear holder	*	07797-2920300	Tool set case
(8)	07937-3600000	Crankcase disassembly tool	(18)	07542-4000000	Dial gauge set (optional tool)
(9)	07944-1150001	Ball race driver (for steering head)	13/ 73/27/	07542-3570100	Dial gauge
(10)	07946-3600000	Bearing driver attachment		07510-3570100	Attachment A
		(for crankcase)		07510-4000000	Attachment B

Special tool set (except No. 18) . . . . 07900-400000

# 6. OPTIONAL PARTS

<b>Optional Parts</b>	Remarks		
Piston, oversize     Piston rings, oversize	If the cylinder becomes excessively worn or scored, rebore to the size in the following table and install oversize piston and piston rings.		
	Unit: mm (in.)		
	and ring Size to which cytinder is to be reported		
	0.25 56.25-56.26 (2.2146-2.2149)		
	0.50 56.50-56.51 (2.2244-2.2248) 0.75 56.75-56.76 (2.2343-2.2347)		
	1.00 57.00-57.01 (2.2441-2.2445)		
	After boring, deburr the edges of the ports with fine emery paper, and relieve the center pillar with an oil stone to a depth of 0.06–0.1 mm as shown below.  A		
Main jets     Slow jets     Air jets     Throttle valve set	#132-#145 (At intervals of 2 or 3. For example: #132, #135, #138, #142, #145) (Standard: #140) #42-#48 (At intervals of 3) (Standard: #45) #160-#240 (At intervals of 20) (Standard: #200) #2.0-#3.0 (At intervals of 0.5) (Standard: #2.5)		
Drive sprocket     Driven sprocket     Drive chain, 124 link	No. of teeth: 15 (Standard: 14) Aluminum: No. of teeth: 49, 51, 53, 55 (Standard: 53) 124 link drive chain is supplied for use with optional sprocket combinations requiring greater chain length.		
Mud guard	The mud guard prevents mud from entering the cylinder or from accumulating on the cylinder head.		
· Racing stand	The racing stand is used to support the motorcycle in an upright position.		
	Tire brand: DUNLOP		
<ul> <li>Front and rear wheel tires</li> </ul>			
Front and rear wheel tires     Number plate			

# 7. SPECIFICATIONS

	Item	Metric	English	
Dimension	Overall length	2,065 mm	81.3 in.	
	Overall width	890 mm	35.0 in.	
	Overall height	1,160 mm	45.7 in.	
	Wheel base	1,385 mm	54.5 in.	
	Seat height	890 mm	35.0 in.	
	Foot peg height	340 mm	13.4 in.	
	Ground clearance	225 mm	8.9 in.	
	Dry weight	88.5 kg	195.1 lbs.	
Frame	Туре	Semi-double cradle		
	F. suspension, travel	Telescopic fork, tra	avel 200 mm (7.9 in.)	
	R. suspension, travel	Swing arm, trave	el 180 mm (7.1 in.)	
	F. tire size, pressure	3.00-21 (4 PR), air pres	ssure 1.2 kg/cm <sup>2</sup> (17.1 psi)	
	R. tire size, pressure	4.10-18 (4 PR), air pressure 0.9 kg/cm <sup>2</sup> (12.8 psi)		
	F. brake, lining area	Internal expanding shoes, lining swept areas 50 cm <sup>2</sup> (7.8 sq. in.)		
	R. brake, lining area	Internal expanding shoes, lining swept areas 50 cm <sup>2</sup> (7.8 sq. in		
	Fuel capacity	6.8 1.8 U.S. gal. 1.5 In		
	Caster angle		59°	
	Trail length	137 mm 5.4 in.		
	Front fork oil capacity	180 cc	6.1 ozs.	
Engine	Туре	Air cooled, 2-stroke engine		
	Cylinder arrangement	Single, inclined from vertical		
	Bore and stroke	56.0 x 50.0 mm	2.205 x 1.969 in.	
	Displacement	123 cc	7.5 cu-in.	
	Compression ratio	7.	5:1	
	Oil capacity	1.00	1.1 U.S. qt., 0.9 Imp.qt.	
	Idle speed	1,90	00 rpm	
Carburetor	Туре	Pisto	on valve	
	Main jet (standard)	#	<b>‡140</b>	
	Slow jet (standard)	#	<del>1</del> 45	
	Air screw opening		1¼	
	Float height	20 mm	0.787 in.	
Drive train	Clutch	Wet, mul	ti-plate type	
	Transmission	6-speed, c	onstant mesh	
	Primary reduction	4	.000	
	Gear ratio I	2	.133	
	Gear ratio II	1	.611	
	Gear ratio III		.300	
	Gear ratio IV		.091	
	Gear ratio V		.958	

	Item	Metric	English
Drive train	Gear ratio VI	3.0	0.880
	Final reduction	3.5	3.786
	Gear shift pattern	Left foot operat	Left foot operated return system
Electrical	Ignition	CDI Igni	CDI Ignition coil
	Starting System	Kick	Kick starter
	Spark plug	NGK	NGK B9EV

MEMO:

#### 8. NOISE CONTROL/SPARK ARRESTOR KIT REMOVAL & INSTALLATION

#### Spark arrestor-sub-muffler

- 1. Removal
- Remove the three bolts holding the sub-muffler stay, the sub-muffler clamp and the muffler clamp.
- · Remove the clamps.
- · Pull out the sub-muffler from the expansion chamber.

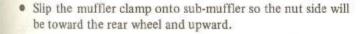
#### NOTE:

If the spark arrestor is removed for maximum performance during competition, this motorcycle will not comply with noise level and spark arrestor laws and regulation.

#### 2. Installation

To install the sub-muffler, follow the reserve order of removal procedure.

Insert the muffler gasket into the sub-muffler.





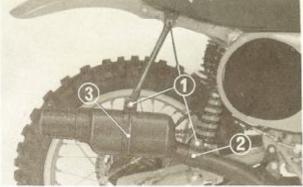


Fig. 6-1 (1) Bolt (3) Muffler clamp (2) Sub-muffler clamp



Fig. 6-2 (1) Muffler gasket

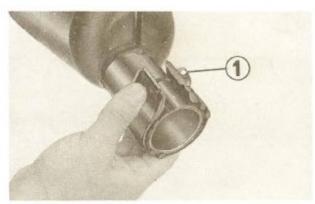


Fig. 6-3 (1) Muffler clamp

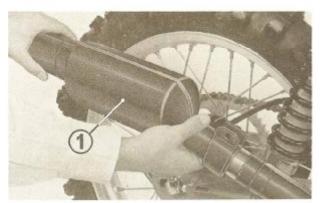


Fig. 6-4 (1) Sub-muffler



Fig. 6-5 (1) Recess (2) Rib

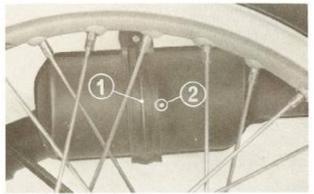


Fig. 6-6 (1) Sub-muffler clamp (2) Punched mark

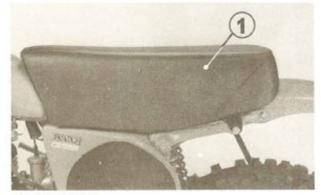


Fig. 6-7 (1) Scat

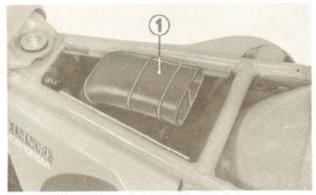


Fig. 6-8 (1) Air cleaner duct (for off road use)

 Slip the sub-muffler clamp onto the sub-muffler so the nut side will be toward the rear wheel and upward. And the recess of the clamp will be aligned to the rib of the sub-muffler.

 Attach the sub-muffler and the sub-muffler stay using the bolts proviously removed: Make sure that the sub-muffler clamp will align to the punched mark on the sub-muffler. Tighten bolts securely.

#### Air cleaner duct change

When off road riding, use the air cleaner duct shown in Fig. 6-8.

When riding for competition, use the air cleaner duct shown in Fig. 6-9.

To replace the air cleaner duct, perform as follows.

- Remove the bolts securing the seat.
- Lift the rear of the seat up and pull the seat back to remove.
- Remove the air cleaner duct by removing the three flanged bolts.

- Install an appropriate air cleaner duct in accordance with riding purpose.
- Tighten bolts securely.

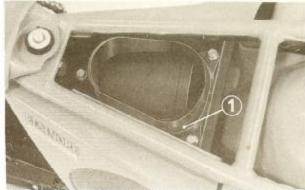
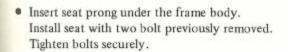


Fig. 6-9 (1) Air cleaner duct (for competition use only)



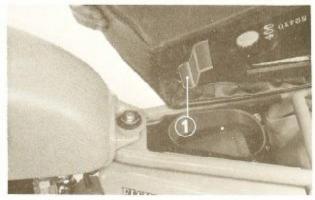


Fig. 6-10 (1) Seat prong



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