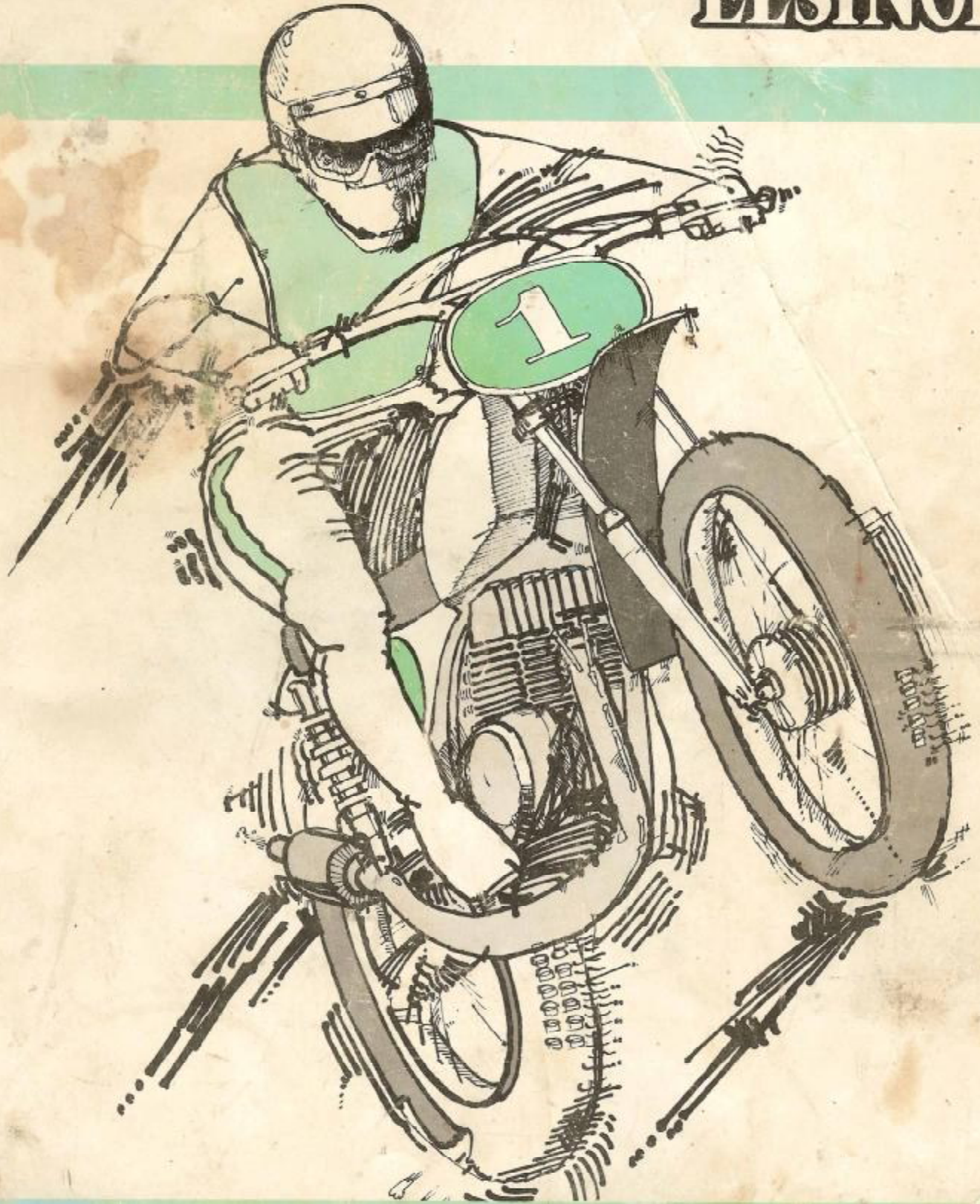


HONDA

CR125M ELSINORE



OWNER'S

MANUAL

IMPORTANT NOTICE

THIS VEHICLE IS DESIGNED AND MANUFACTURED FOR COMPETITION USE ONLY. IT DOES NOT CONFORM TO FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND OPERATION ON PUBLIC STREETS, ROADS, OR HIGHWAYS IS ILLEGAL.

CALIFORNIA LAW PROHIBITS 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.

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 trouble-free 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**



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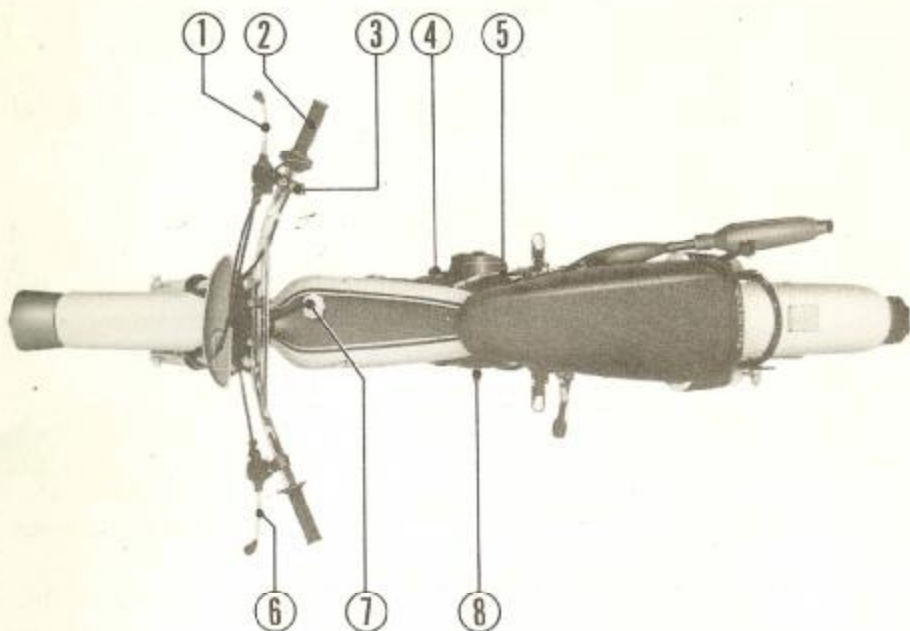
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I. OPERATING INSTRUCTIONS

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 **Ignition switch**

Place the ignition switch in "RUN" position when starting the engine. Place the switch in "OFF" position to stop the engine.

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 valve**

The fuel valve lever has two positions, "ON" (vertical position) and "OFF" (lever pointing to rear). The fuel valve lever is located on the inner side of the fuel valve to prevent accidental movement.

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 6ℓ (1.6 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. Place the ignition switch in "RUN" position.

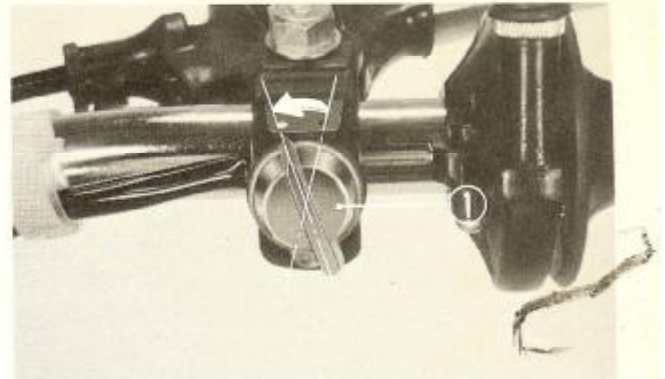


Fig. 1-3 ① Ignition switch

4. Lower the fuel mixture enrichment lever.
5. With throttle closed, operate the kick starter pedal with rapid, full strokes until the engine starts. Open the throttle when the engine fires.
6. 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.

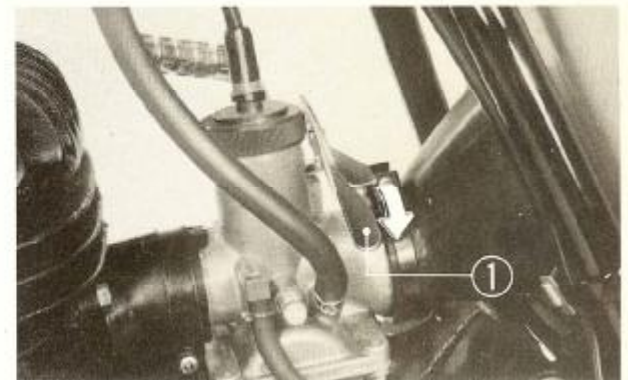


Fig. 1-4 ① Fuel mixture enrichment lever

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.
3. Turn the ignition switch to the "OFF" position.
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 broken-in) 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:

Revvng the engine more than necessary may cause engine damage.

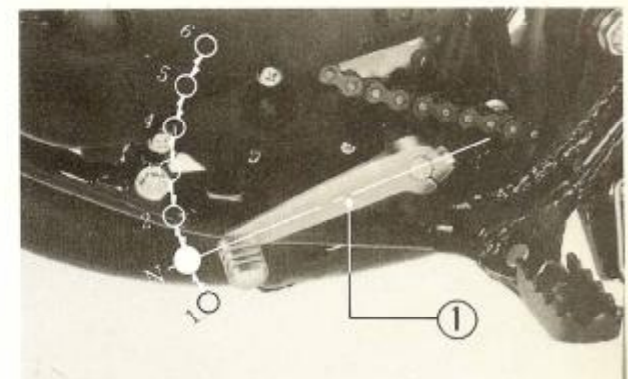


Fig. 1-5 ① Gear change pedal
SHIFTING PATTERN

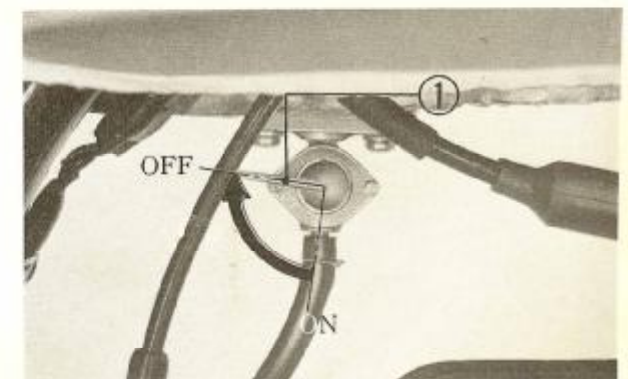


Fig. 1-6 ① Fuel valve lever

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

Prerace inspection

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

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

The transmission oil level should be checked at the two points.

1. Start the engine and allow it to warm up for about three minutes.
2. Stop the engine. With the motorcycle standing upright, remove the transmission oil check bolt from the right crankcase cover.

The oil should flow out of the oil check bolt hole.

3. The transmission oil filler cap is located on the right crankcase cover and contains a dipstick for measuring oil level. Oil level must be maintained between the upper and lower marks on the dipstick.

To check the transmission oil level, insert the dipstick until the cap touches the filler opening. Do not screw in the cap while measuring oil level.

Oil level must be checked with the motorcycle standing upright on level ground.

4. Add oil if the oil level is too low.

Transmission oil change

Drain used oil from the transmission while the engine is warm. This will ensure complete and rapid draining.

1. Remove the oil filler cap and oil check bolt from the right crankcase cover.
2. Place a pan under the engine to catch the oil, and remove the drain plug. Rock the motorcycle from side to side to drain all residual oil.
3. Install the drain plug with its sealing washer, and tighten securely.
4. Add the recommended oil (approximately 0.85 ℓ or 0.90 US qt.) slowly through the oil filler hole. Place the motorcycle in an upright position and ensure that the oil level is up to the upper mark on the level gauge.

NOTE:

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

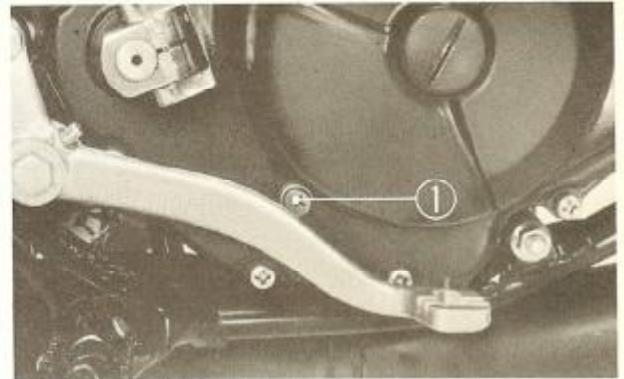


Fig. 2-1 ① Oil check bolt

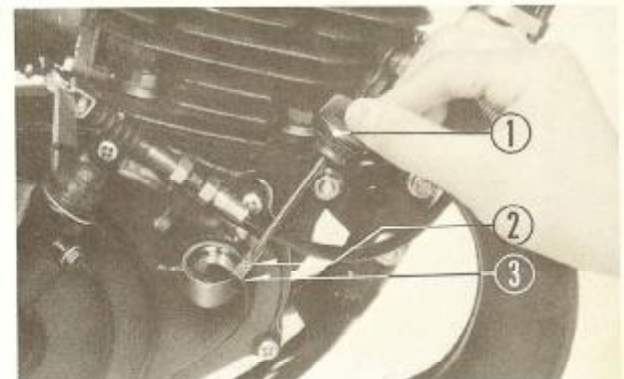


Fig. 2-2 ① Oil filler cap
② Upper mark
③ Lower mark

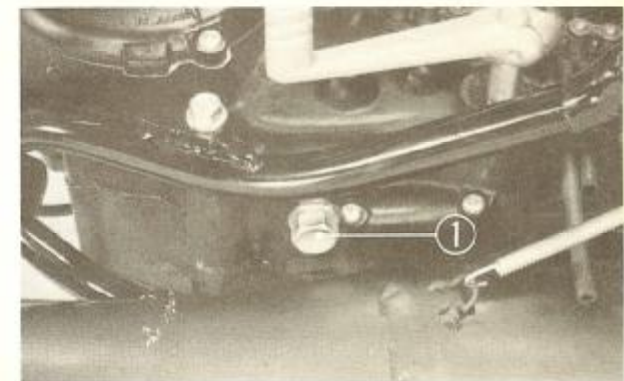


Fig. 2-3 ① Drain plug

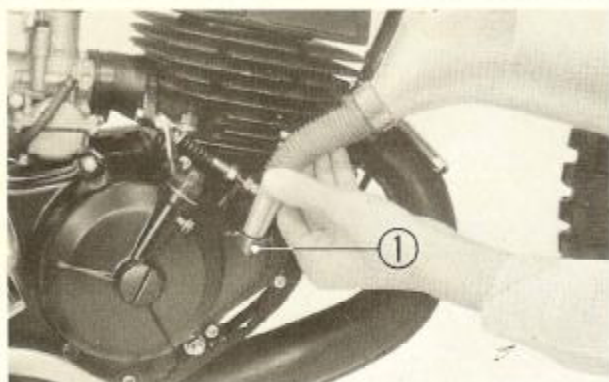


Fig. 2-4 ① Transmission oil filler hole

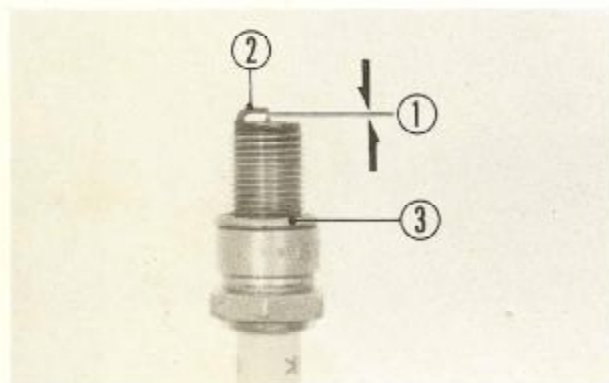


Fig. 2-5 ① Spark plug gap
② Side electrode
③ Sealing gasket

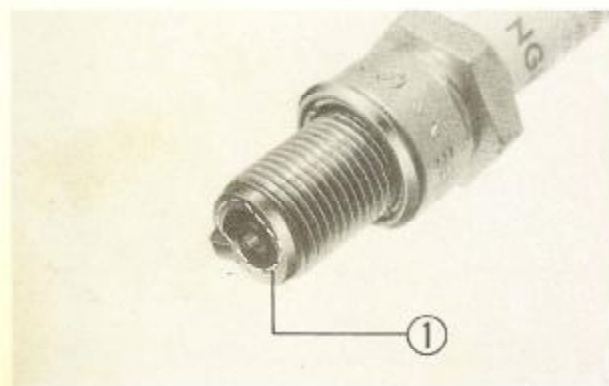


Fig. 2-6 ① Electrode



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.

1. 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 electrodes and insulator nose should appear tan or medium gray.

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

If electrodes appear burnt, or the insulator nose is white or 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, this 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.

3. Install the spark plug by hand until finger tight, then tighten with a spark plug wrench until the sealing gasket is compressed (1/2 to 3/4 turn to compress a new spark plug gasket).

CAUTION:

The use of spark plug of incorrect reach or heat range can

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.

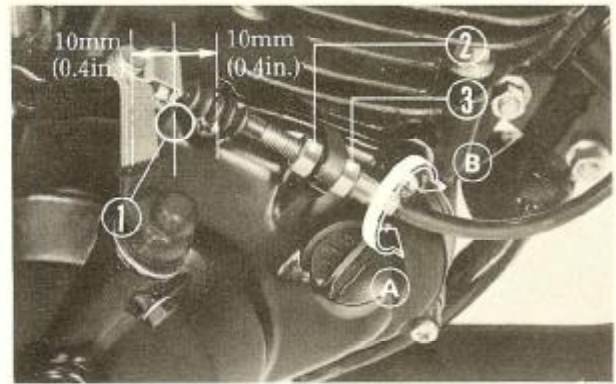


Fig. 2-8 ① Index mark
② Lock nut
③ Clutch cable lower adjuster

2. Remove the clutch adjuster cap from the right crankcase cover.
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.

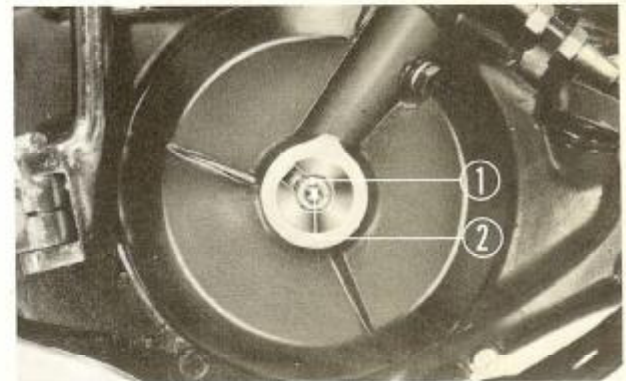


Fig. 2-9 ① Lock nut
② Clutch adjuster

Check the clutch lever free play

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

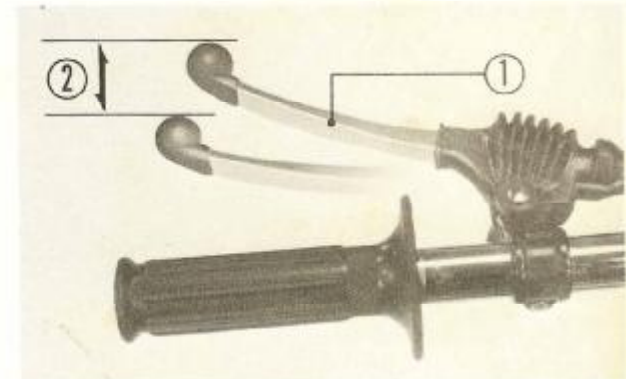


Fig. 2-10 ① Clutch lever
② Clutch lever free play

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.

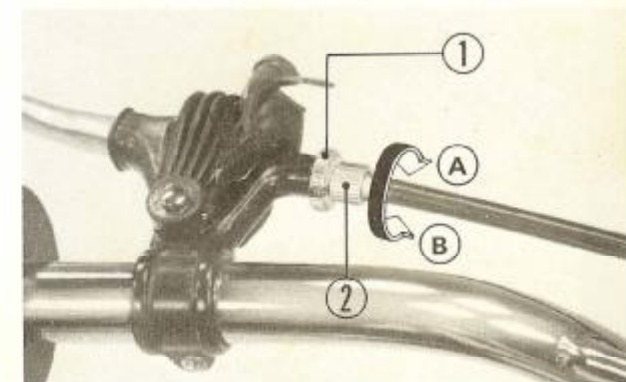


Fig. 2-11 ① Lock nut
② Upper adjuster

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.)

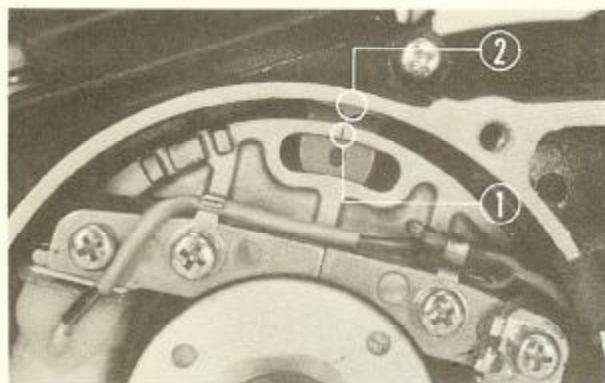


Fig. 2-12 ① Matching mark
② Index

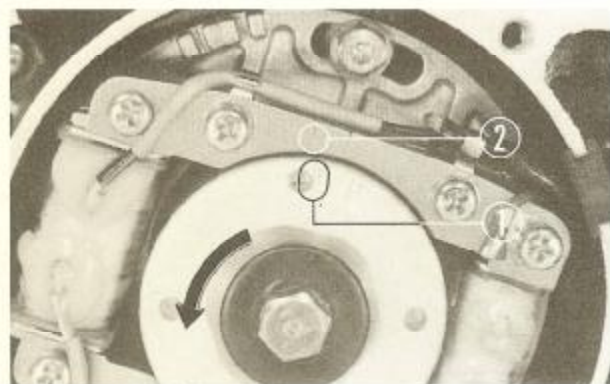


Fig. 2-13 ① "F" mark
② Timing mark

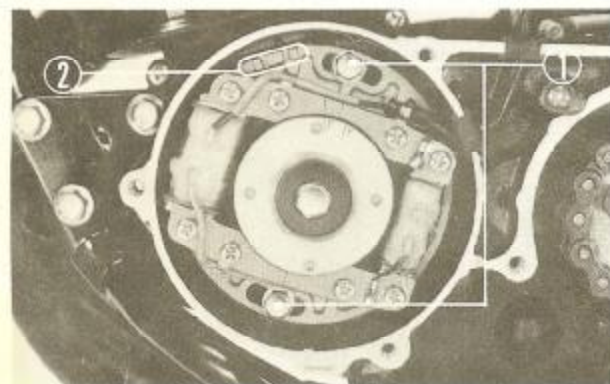


Fig. 2-14 ① Stator attaching bolts
② Grooves

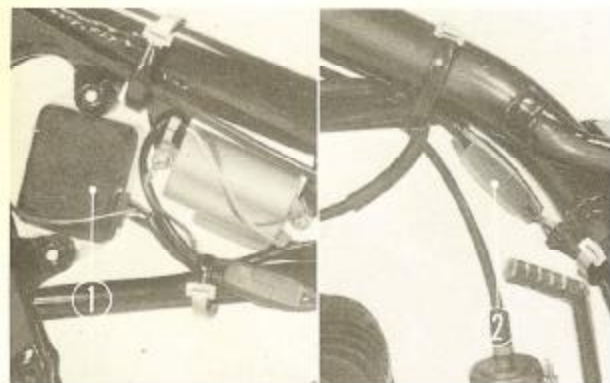


Fig. 2-15 ① C.D.I. unit ② Connector

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.
2. 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.
3. 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 18° BTDC.

4. 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.
5. 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.

1. Remove the exhaust pipe, and scrape carbon deposits from the throat of the pipe.
2. Remove the spark plug and cylinder head nuts; then remove the cylinder head.
3. Remove the carburetor and clutch cable holder 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.
5. 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.
6. Inspect the piston, piston rings, and cylinder for wear, damage, or sticking rings (See pages 19-21).
7. 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 Cylinder
② Cloth

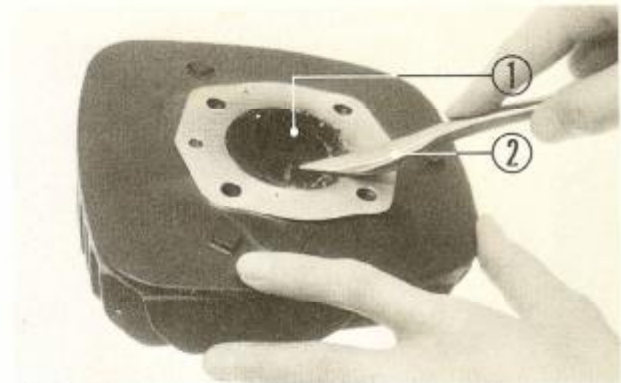


Fig. 2-17 ① Cylinder head combustion chamber
② Scraper



Fig. 2-18 ① Piston

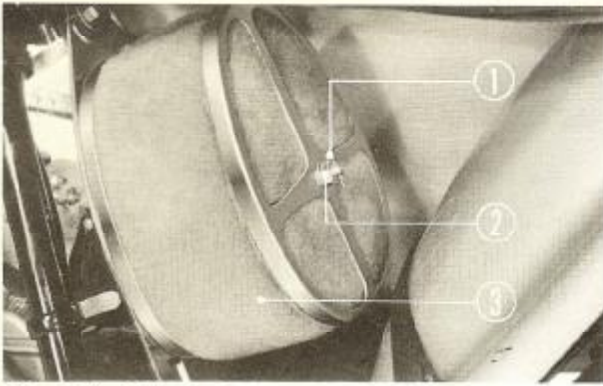


Fig. 2-19 ① Lock pin
② Lock nut
③ Air cleaner element

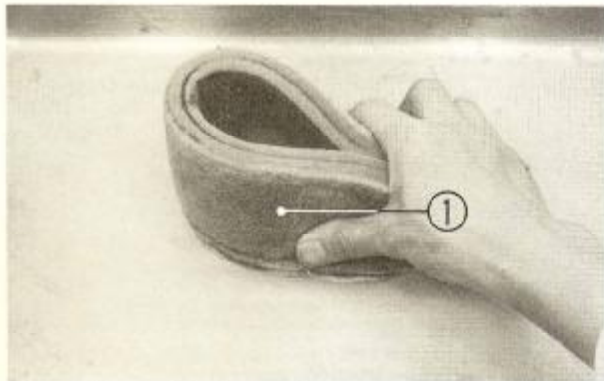


Fig. 2-20 ① Air cleaner element

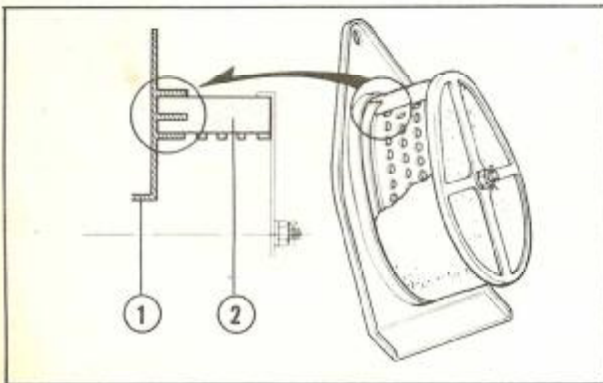


Fig. 2-21 ① Mounting base
② Air cleaner element

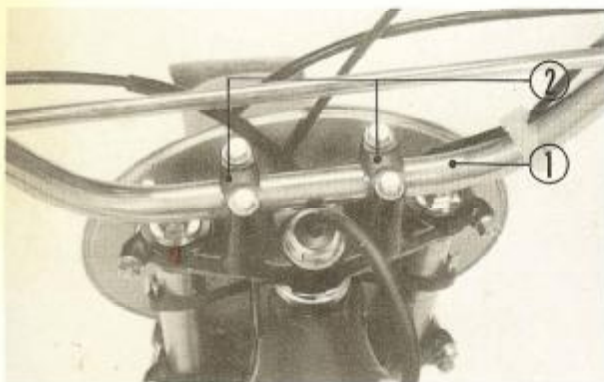


Fig. 2-22 ① Handlebar
② Handlebar upper holders

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. Pull out the lock pin and remove the lock nut. Then remove the element.
3. Wash the element in clean stoddard solvent and dry it thoroughly.
4. Soak the element in clean gear oil (SAE. 80–SAE. 90) and squeeze it to remove excess oil.
5. Install the element on its mounting base as shown in Fig. 2-21. Install the lock nut and lock pin.

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.

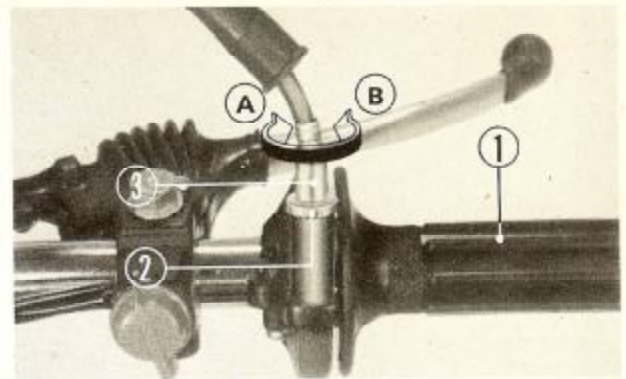


Fig. 2-23 ① Throttle grip
② Lock nut
③ Throttle cable adjuster

Front and Rear Wheels

1. Inspect tires for wear or damage.
2. Check tire pressure.
FRONT: 14.2 psi
REAR: 14.2 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.

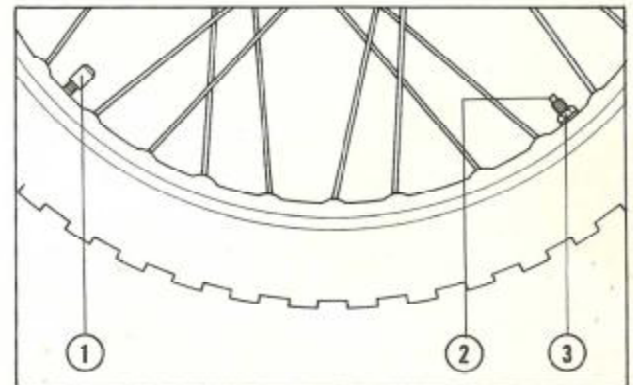


Fig. 2-24 ① Valve cap
② Rim lock
③ Lock nut

Front Fork

Front fork oil change

1. Place a block under the engine to raise the front wheel off the ground.
2. Remove the two handlebar upper holders and remove the handlebar.
3. Remove the front fork drain plugs and filler caps. Allow both forks to drain completely.
4. Install the drain plugs and tighten securely.
5. Fill each fork leg with the specified amount of ATF (Automatic Transmission Fluid).
6. Install the filler caps and tighten securely.

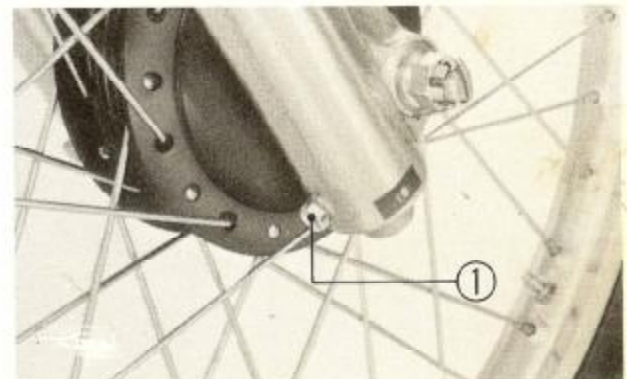


Fig. 2-25 ① Drain plug

FRONT FORK FLUID CAPACITY	
Amount required to fill dry assembly.	155 cc (5.3 ozs.) each fork leg
Amount required to refill after draining (total capacity less amount of residual fluid).	135 cc (4.6 ozs.) each fork leg

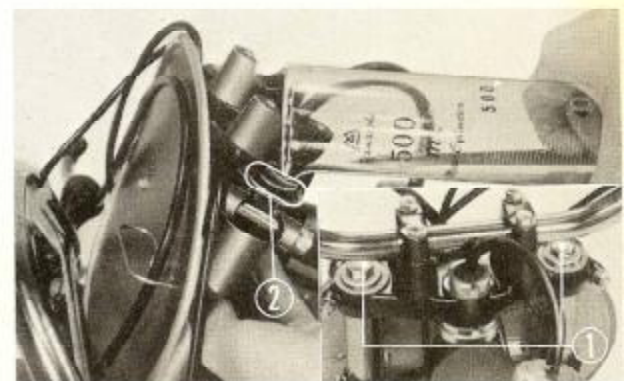


Fig. 2-26 ① Oil filler cap ② Filler hole

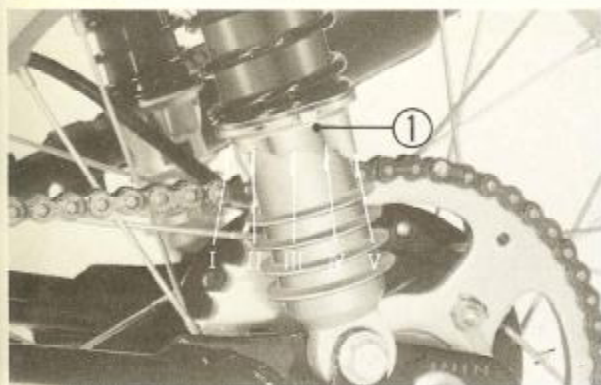


Fig. 2-27 ① Spring adjuster



Fig. 2-28 ① Pin spanner

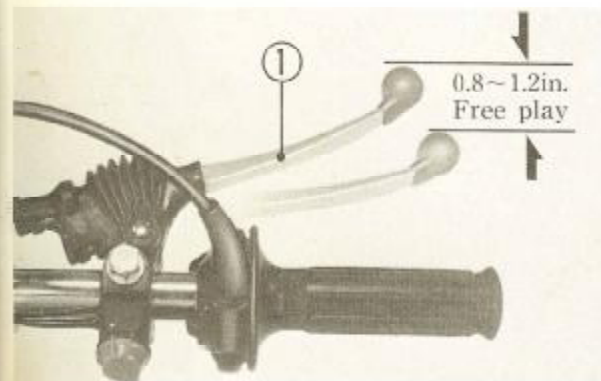


Fig. 2-29 ① Front brake lever



Fig. 2-30 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.

Lubrication

Lubricate the rear fork pivot with chassis grease.

A grease fitting is provided at the left end of the pivot.

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.

1. 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.

2. 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.

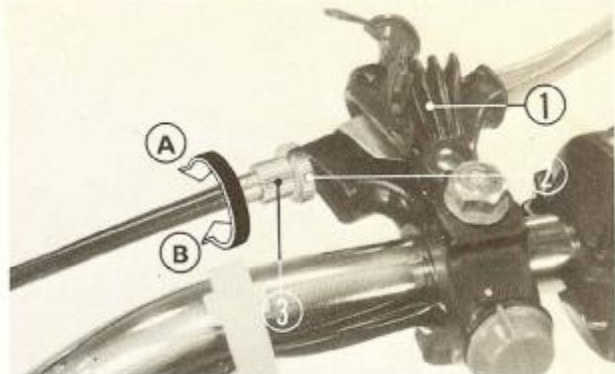


Fig. 2-31 ① Dust cover
② Lock nut
③ Front brake cable adjuster

Rear Brake Adjustment

1. 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 lower the tip of the brake pedal and turning it in direction **B** will raise the tip of the pedal. After adjusting, tighten the lock nut securely.

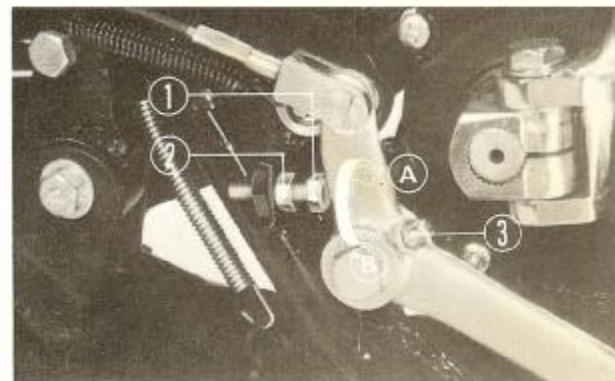


Fig. 2-32 ① Adjusting bolt ③ Grease nipple
② Lock nut

2. 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.

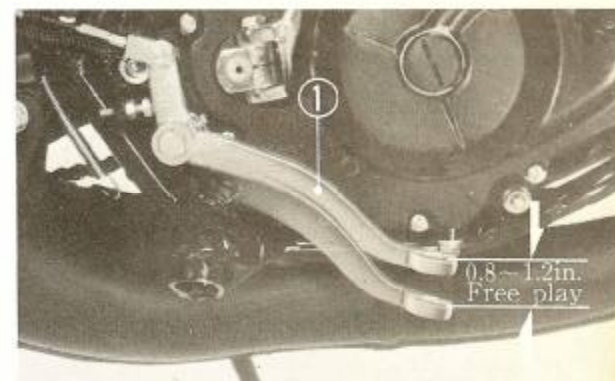


Fig. 2-33 ① Rear brake pedal

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 decrease the free play and turning it in direction **B** will increase the free play. After adjusting, tighten the lock nut securely.

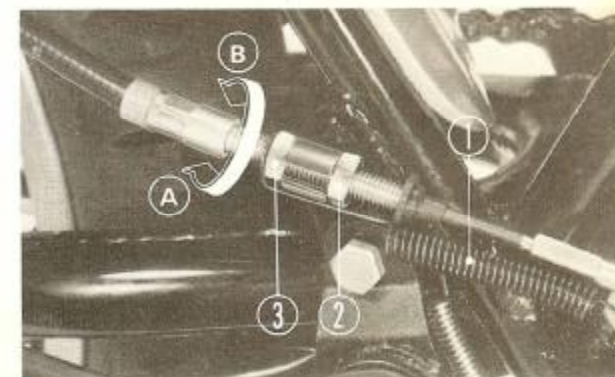


Fig. 2-34 ① Rear brake pedal spring
② Lock nut
③ Brake cable adjuster

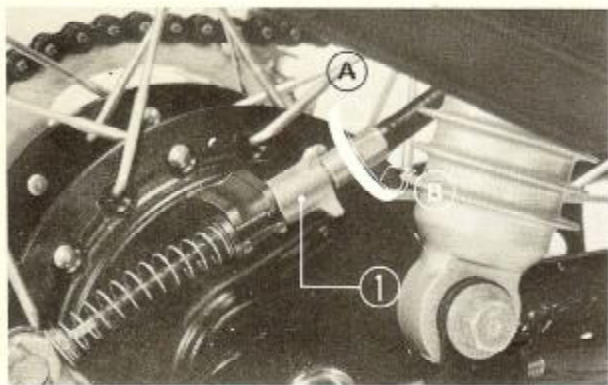


Fig. 2-35 ① Adjuster

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 ① will decrease the free play and turning it in direction ② will increase the free play.

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

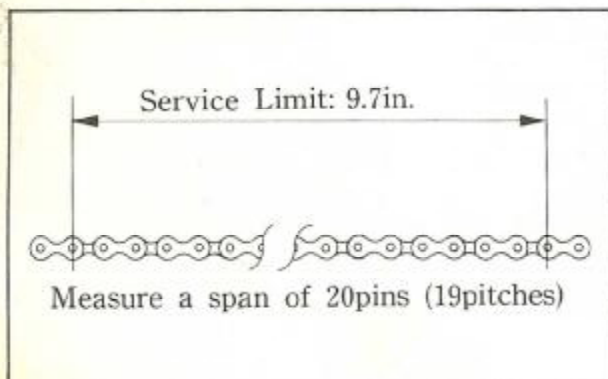


Fig. 2-36

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 9.5 in. (each pitch=0.5 in.). If the distance exceeds 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 (engine)	Driven sprocket (rear wheel)
14 teeth	49 teeth

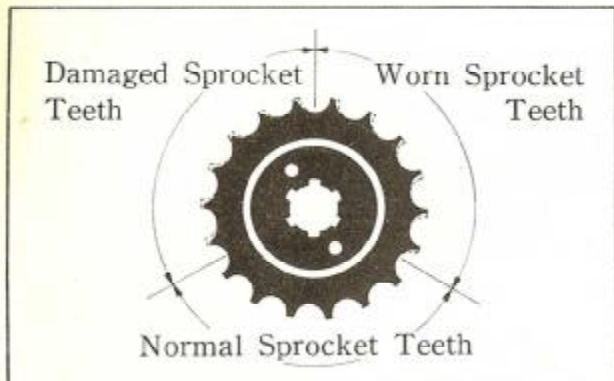


Fig. 2-37

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 3/4 in. Slack becomes greater as the chain wears. If chain slack is found to exceed a maximum of 1 1/2 in., the drive chain must be re-adjusted.

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 nut.
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.
5. Check alignment of the drive chain protector. If the chain protector should become bent, it may rub against the drive chain and cause rapid wear.
6. After adjusting the drive chain, adjust the drive chain roller by loosening the lock bolt and moving the roller until there is 10 mm (0.4 in.) clearance between the chain and the roller. Retighten the lock bolt.

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.

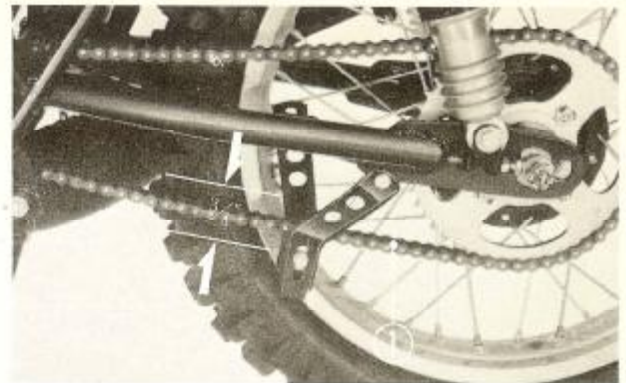


Fig. 2-38 ① Drive chain

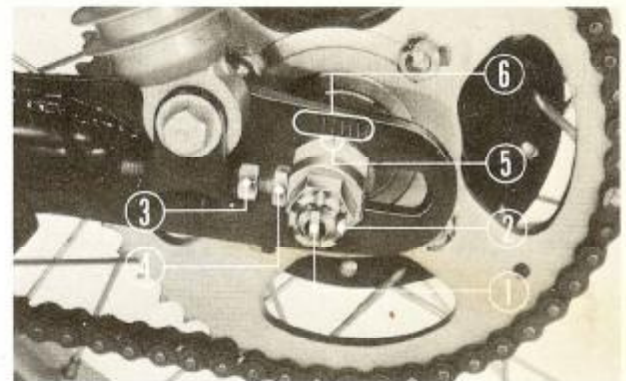


Fig. 2-39 ① Cotter pin
② Rear axle nut
③ Lock nut
④ Adjusting bolt
⑤ Index mark
⑥ Reference marks

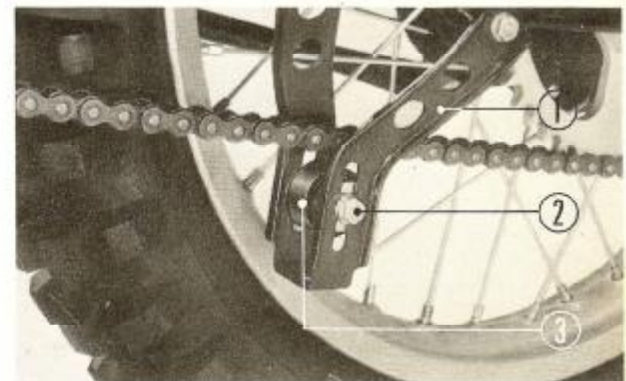


Fig. 2-40 ① Chain protector
② Lock bolt
③ Chain roller

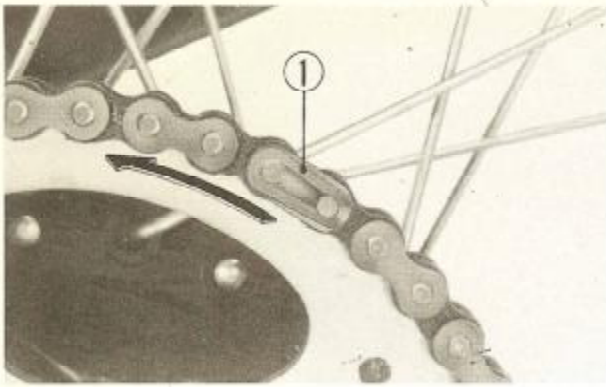


Fig. 2-41 ① Retaining clip

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.

1. 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.
2. 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.
3. 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.
5. 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.
6. 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.
2. Remove the fuel valve by removing the two bolts.
Wash the fuel screen filter in cleaning solvent.
3. 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 four 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.

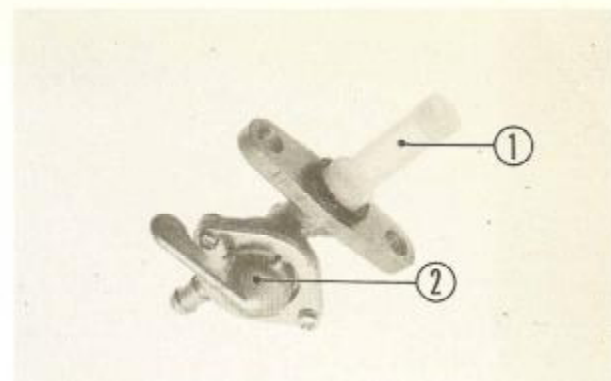


Fig. 2-42 ① Fuel screen filter
② Fuel valve

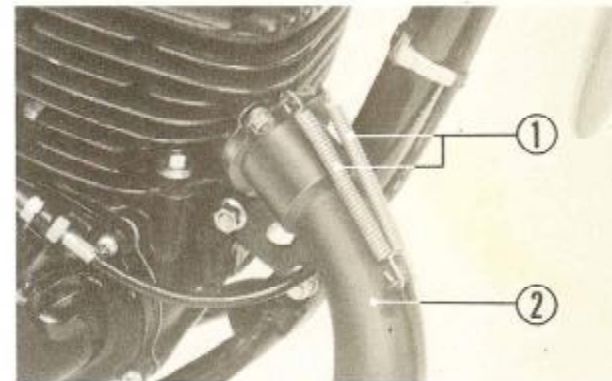


Fig. 2-43 ① Springs
② Expansion chamber

MEMO :

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	42

2. ENGINE REMOVAL AND INSTALLATION

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

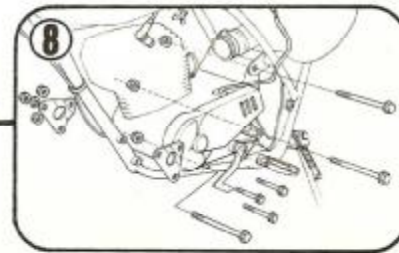
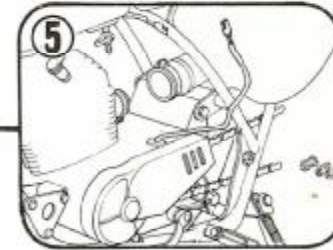
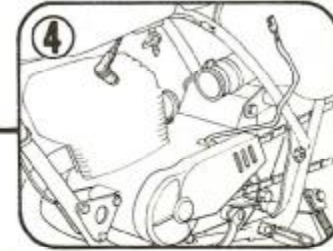
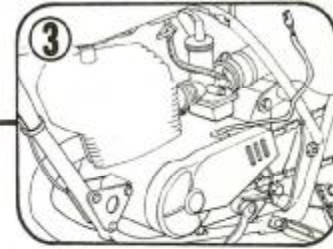
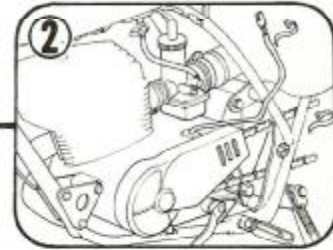
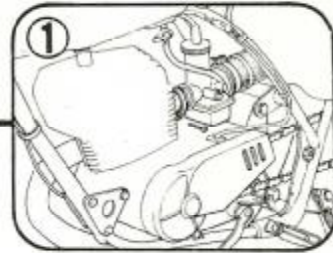
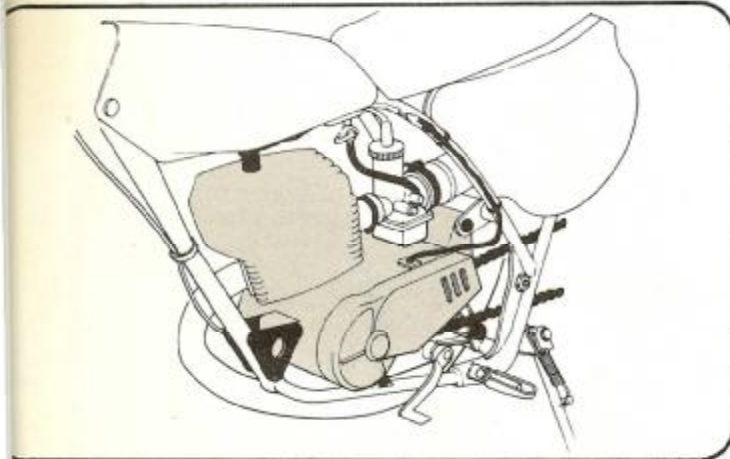
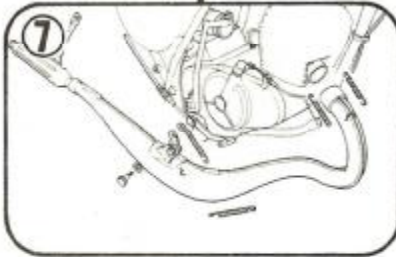
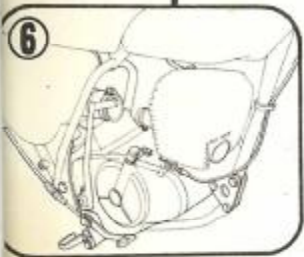
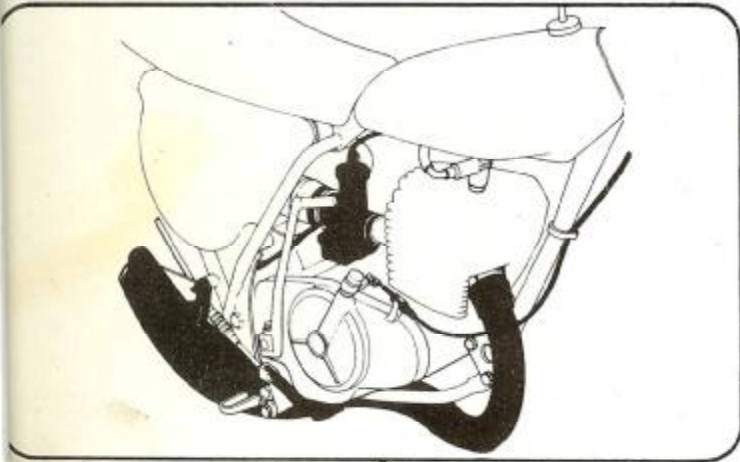


Fig. 3-1

3. CYLINDER HEAD, CYLINDER AND PISTON

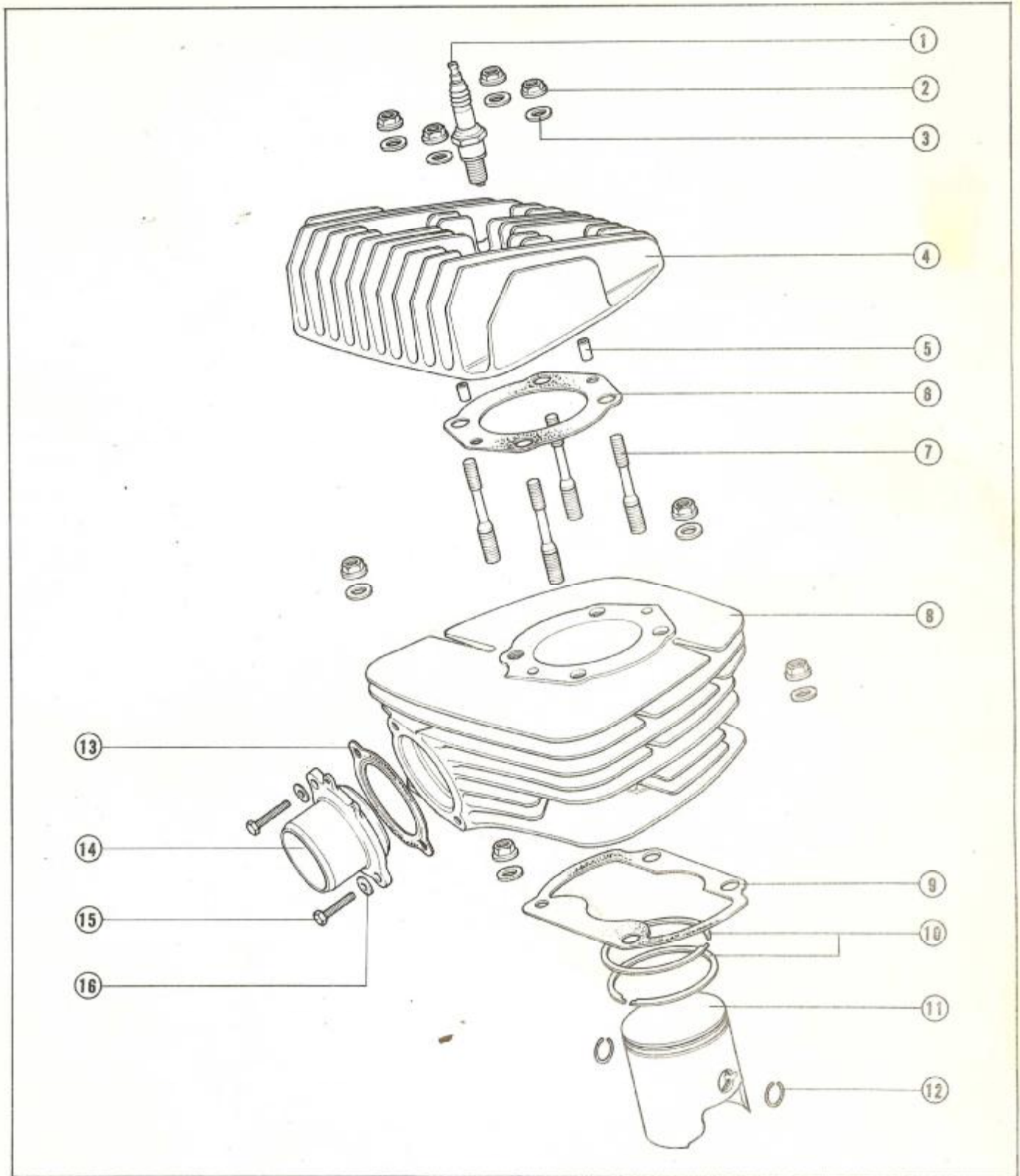


Fig. 3-2

- | | | |
|------------------------|-----------------------------|---------------------------|
| ① Spark plug | ⑦ Cylinder stud bolt (four) | ⑬ Exhaust gasket |
| ② 8 mm nut (eight) | ⑧ Cylinder | ⑭ Exhaust pipe joint |
| ③ 9 mm washer (eight) | ⑨ Cylinder gasket | ⑮ 6x18 bolt (two) |
| ④ Cylinder head | ⑩ Piston ring set | ⑯ 6 mm plain washer (two) |
| ⑤ 6x10 dowel pin (two) | ⑪ Piston | |
| ⑥ Cylinder head gasket | ⑫ Piston pin clip (two) | |

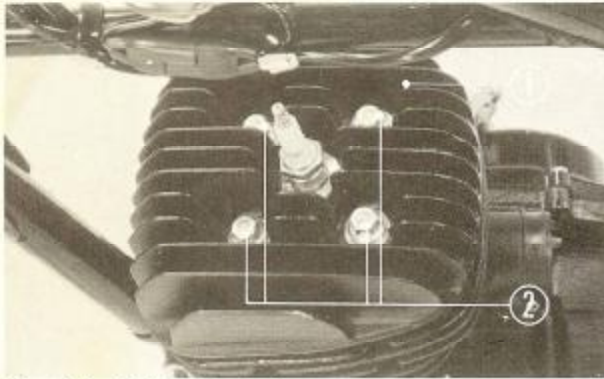


Fig. 3-3 ① Cylinder head
② 8 mm nut

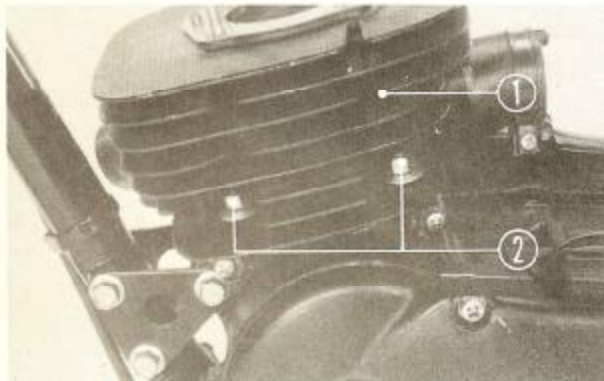


Fig. 3-4 ① Cylinder
② 8 mm nut

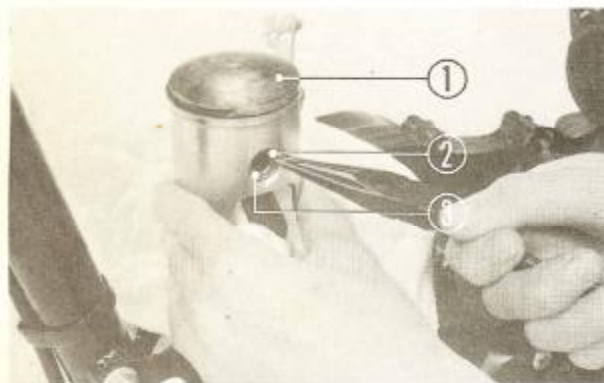


Fig. 3-5 ① Piston
② Piston pin clip
③ Piston pin

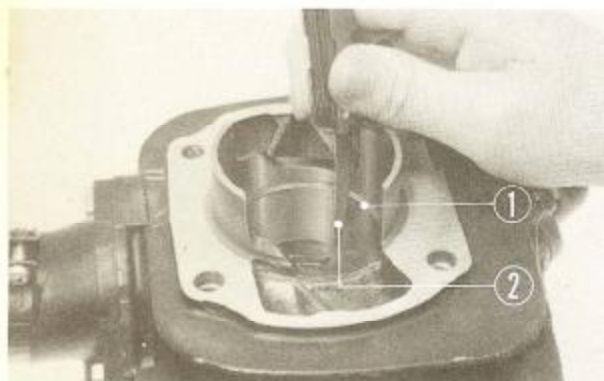


Fig. 3-6 ① Piston ring

Disassembly

1. Remove the seat.
2. Remove the fuel tank.
3. Remove the spark plug cap from the spark plug.
4. Remove the four 8 mm nuts and remove the cylinder head.
5. Loosen the carburetor insulator band, remove the four 8mm nuts and remove the cylinder.
6. Put a clean cloth over the bore in the crankcase.
Remove the piston pin clip, piston pin and piston.

Inspection

1. Carbon deposit.
Remove carbon deposits from the combustion chamber, exhaust port and piston. (See page 9)
2. Measure the cylinder bore.
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 0.5 mm (0.0197 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.

Assembly

1. 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.

NOTE:

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

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

3. Apply a thin coat of oil to the cylinder wall and slowly lower the cylinder, taking care not to damage the cylinder. Then, install the cylinder head gasket and measure the clearance between the gasket and piston crown with the piston placed at the TDC position. The clearance should be 1.3–1.7 mm (0.051–0.067 in.).

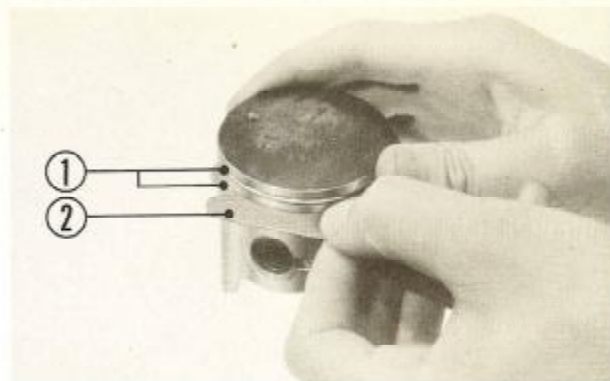


Fig. 3-7 ① Piston rings
② Feeler gauge

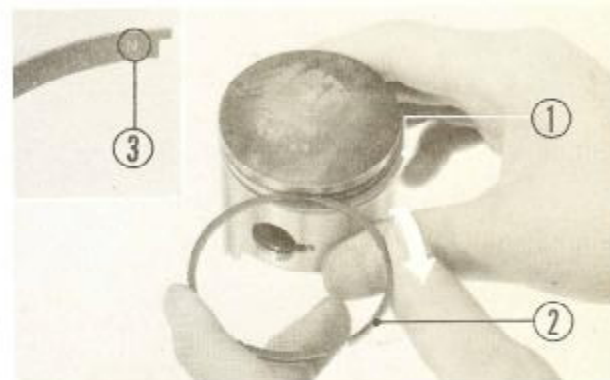


Fig. 3-8 ① Ring groove
② Piston ring
③ Marking



Fig. 3-9 ① Arrow mark

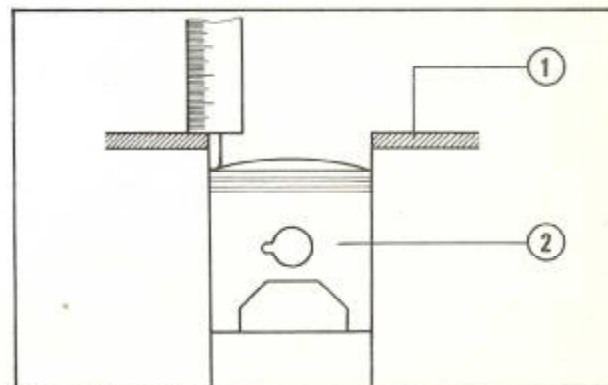


Fig. 3-10 ① Gasket
② Piston

4. CLUTCH

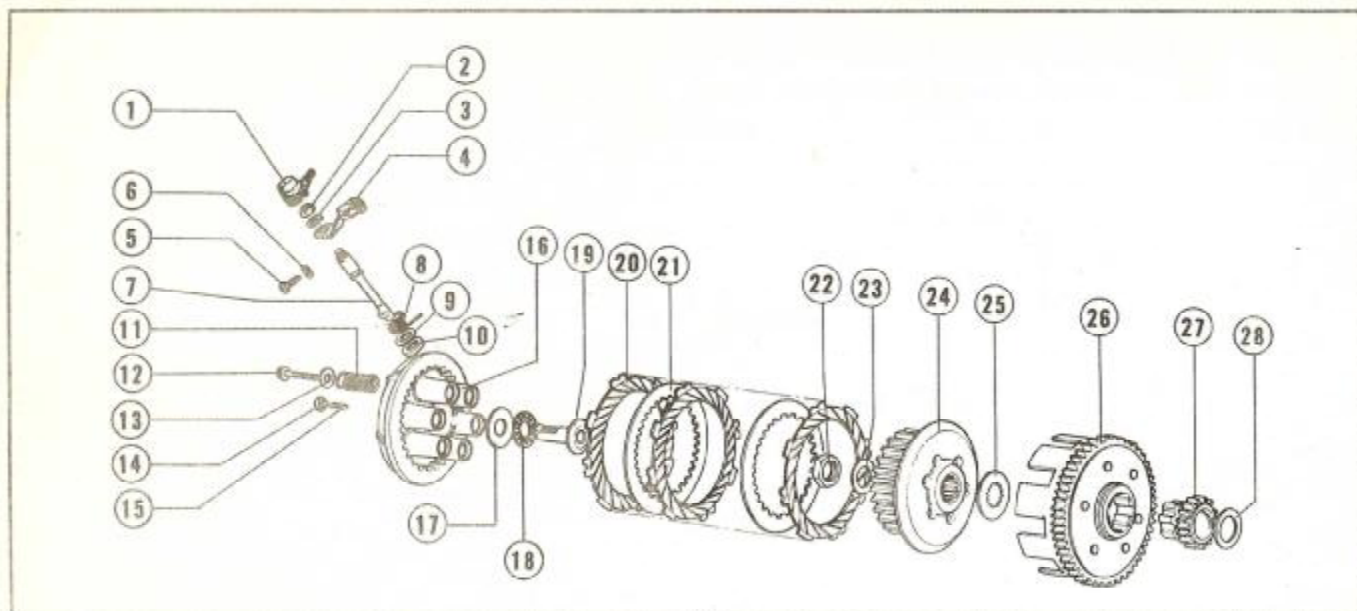


Fig. 3-11

- | | | | |
|----------------------------|--------------------------|--------------------------|-----------------------|
| ① Clutch lever boot rubber | ⑧ Lifter shaft spring | ⑮ Clutch adjusting screw | ⑳ 16 mm lock nut |
| ② 8 mm hex. nut | ⑨ 26 mm special washer | ⑯ Clutch pressure plate | ㉑ 16 mm lock washer |
| ③ 15 mm special washer | ⑩ 13×22×5 oil seal | ⑰ 12.5 mm thrust washer | ㉒ Clutch center |
| ④ Clutch lever | ⑪ Clutch spring (six) | ⑱ Thrust needle bearing | ㉓ 20 mm spline washer |
| ⑤ 6 mm special bolt | ⑫ 6×20 flange bolt (six) | ㉔ Clutch lifter rod | ㉔ Clutch outer |
| ⑥ 6 mm sealing washer | ⑬ Plain washer (six) | ㉕ Clutch disc (six) | ㉕ Starter shaft |
| ⑦ Clutch lifter shaft | ⑭ 6 mm hex. nut | ㉖ Clutch plate (five) | ㉖ 20 mm thrust washer |

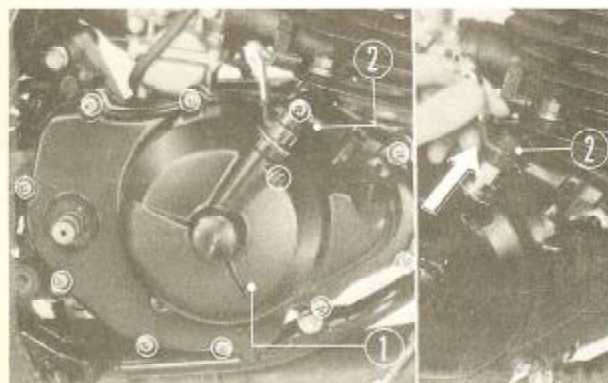


Fig. 3-12 ① Right crankcase cover
② Clutch lever

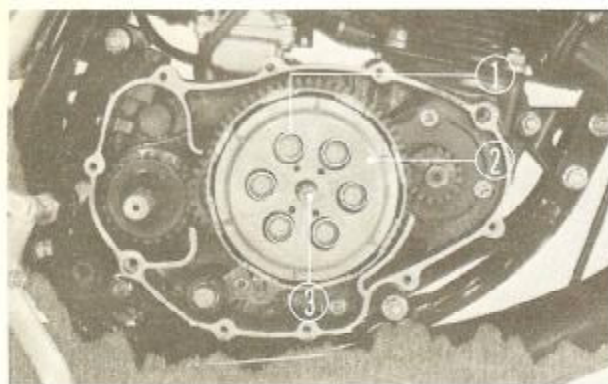


Fig. 3-13 ① 6 mm bolt
② Clutch pressure plate
③ Clutch lifter rod

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.
5. Remove the 10 right crankcase cover tightening screws. Then remove the 6 mm bolt and remove the right crankcase cover with the clutch lever raised.
6. Remove the six 6 mm clutch bolts and remove the clutch pressure plate. Then remove the clutch lifter rod, thrust needle bearing and 12.5 mm thrust washer from the clutch pressure plate.

7. Remove the six clutch friction discs and five clutch plates.
8. Using the lock nut wrench (tool no. 07916-2830000), remove the lock nut, lock washer and clutch center.

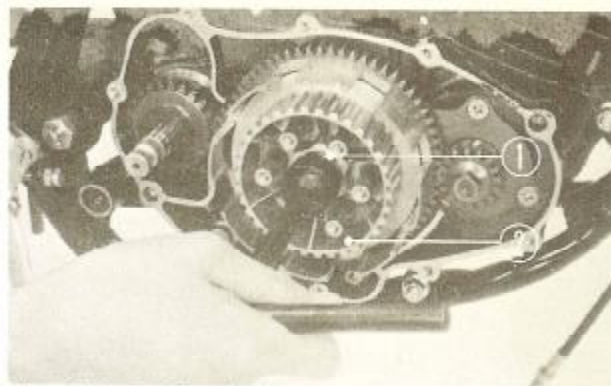


Fig. 3-14 ① 16 mm lock nut
② Clutch center

9. Remove the 20 mm splined washer, clutch outer, starter shaft and 20 mm thrust washer.

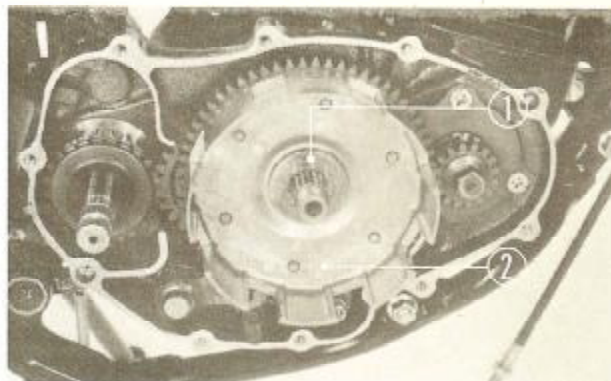


Fig. 3-15 ① 20 mm splined washer
② Clutch outer

Inspection

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

Assembly

1. Install the 20 mm thrust washer and starter shaft to the main shaft.
2. Install the clutch outer. Install the 20 mm splined washer to the main shaft and rotate the shaft until the washer meshes with the shaft.

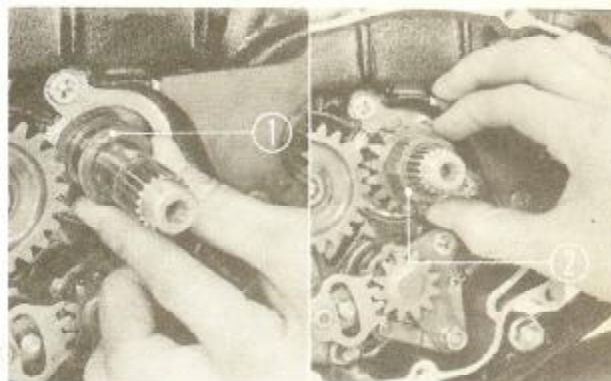


Fig. 3-16 ① 20 mm thrust washer
② Starter shaft

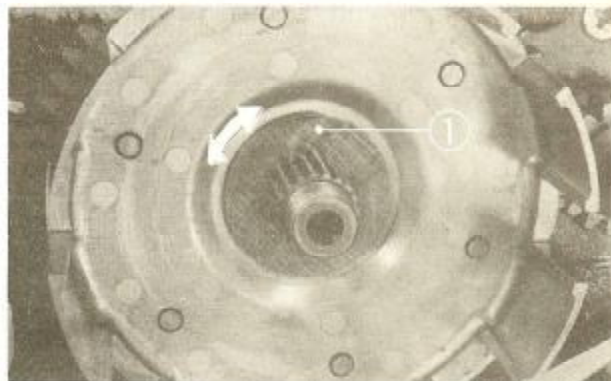


Fig. 3-17 ① 20 mm splined washer

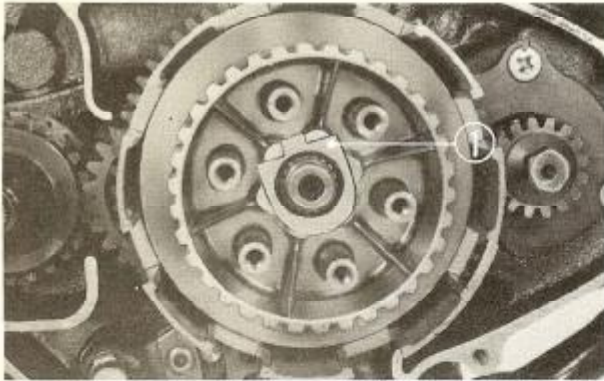


Fig. 3-18 ① 16 mm lock washer

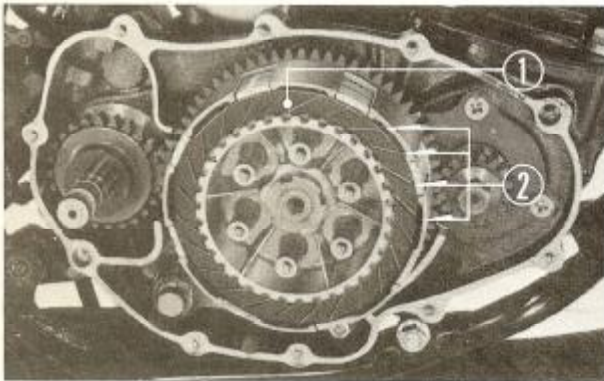


Fig. 3-19 ① Clutch friction disc
② Groove

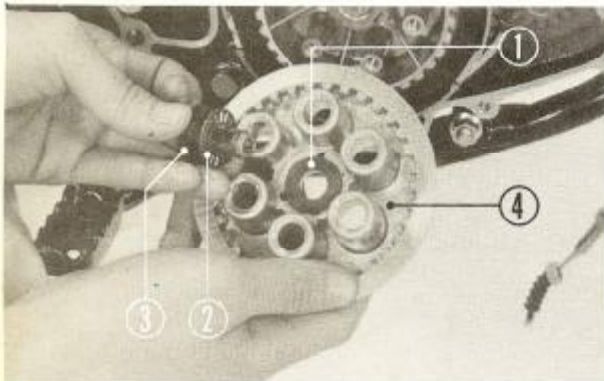


Fig. 3-20 ① 12.5 mm thrust washer
② Thrust needle bearing
③ Clutch lifter rod
④ Clutch pressure plate

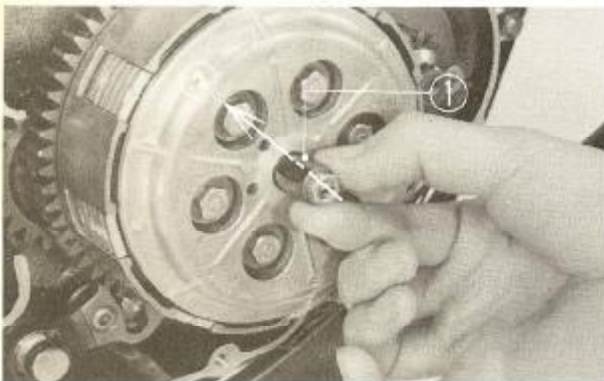


Fig. 3-21 ① Clutch lifter rod

3. Install the clutch center and 16 mm lock washer and tighten the lock nut to the specified torque. Bend the locking lug of the lock washer against a flat on the lock nut.

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. 3.19.

5. Install the 12.5 mm 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. 3-21, 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

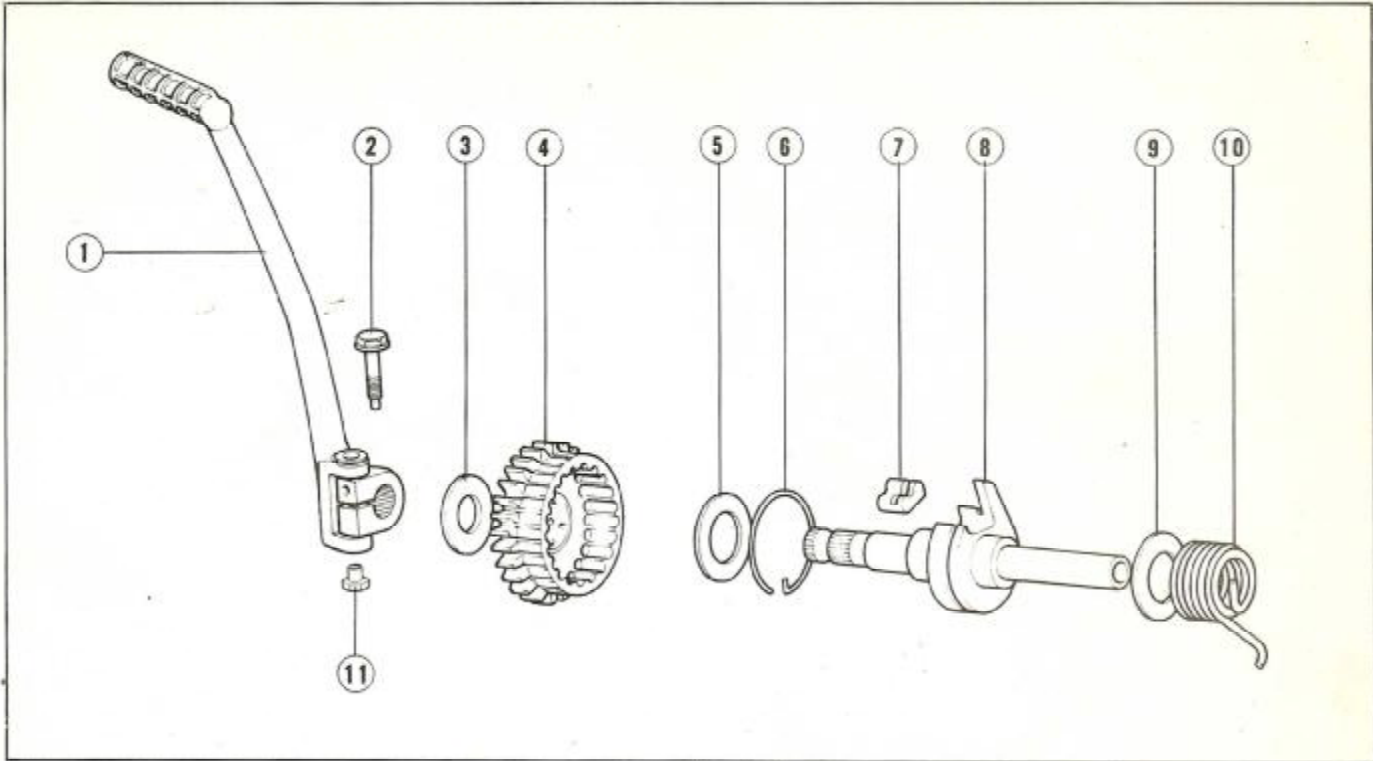


Fig. 3-22

- | | | |
|-----------------------------|-----------------------|-------------------------|
| ① Kick starter arm | ⑤ 22 mm thrust washer | ⑨ 22 mm thrust washer |
| ② Kick starter bolt | ⑥ Starter pawl spring | ⑩ Starter return spring |
| ③ 17 mm thrust washer | ⑦ Kick starter pawl | ⑪ Kick arm nut |
| ④ Starter pinion (24 teeth) | ⑧ Starter shaft | |

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 17 mm 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.

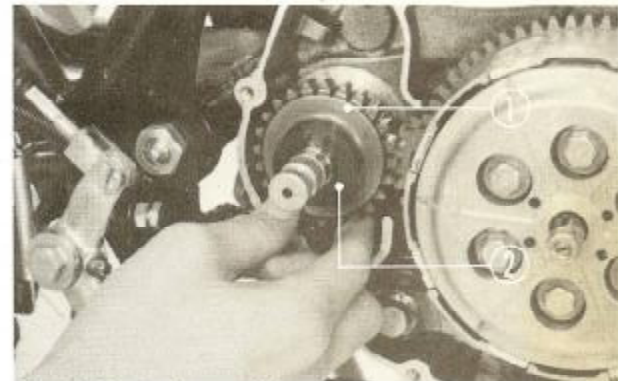


Fig. 3-23 ① Starter pinion
② 17 mm thrust washer



6. GEARSHIFT MECHANISM

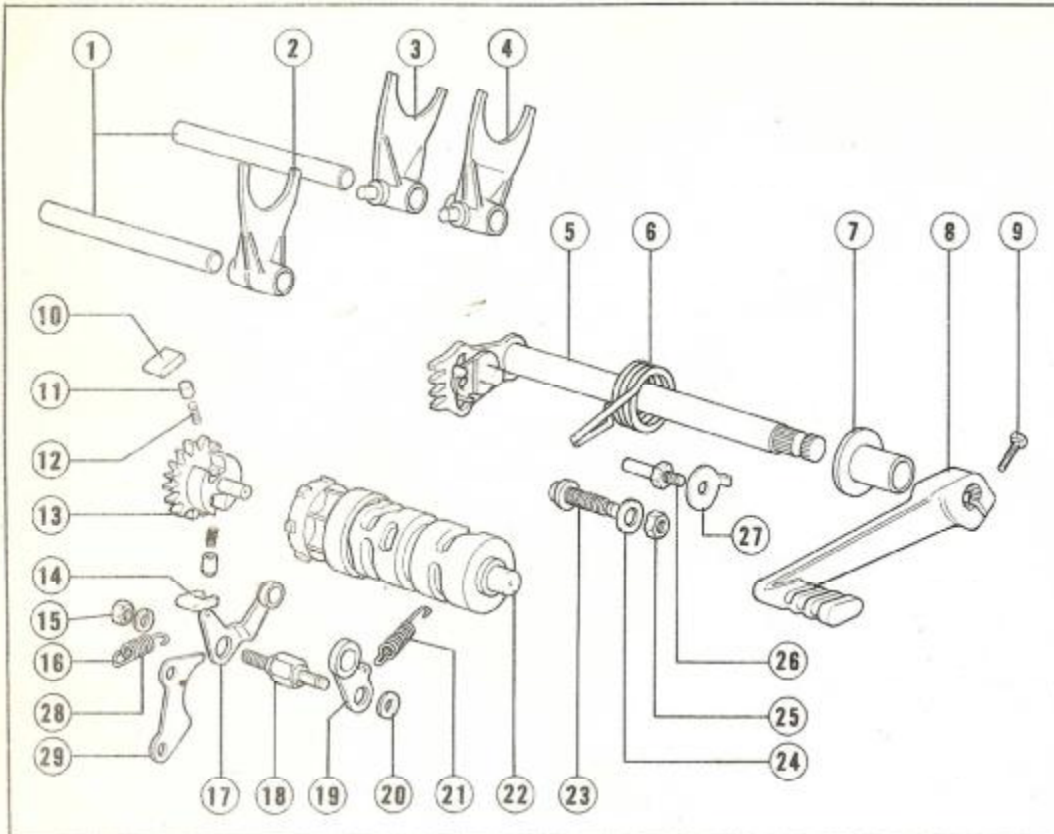


Fig. 3-25

- ① Shift fork shaft (two)
- ② Center gear shift fork
- ③ Right gear shift fork
- ④ Left gear shift fork
- ⑤ Gear shift spindle
- ⑥ Gear shift return spring
- ⑦ Shift spindle protector
- ⑧ Gear change pedal
- ⑨ 6×20 hex. bolt
- ⑩ Ratchet pawl A
- ⑪ Pawl plunger (two)
- ⑫ Pawl plunger spring (two)
- ⑬ Drum shifter
- ⑭ Ratchet pawl B
- ⑮ 6 mm hex. nut
- ⑯ Neutral stopper spring
- ⑰ Neutral stopper arm
- ⑱ Drum stopper arm collar
- ⑲ Shift drum stopper arm
- ⑳ Drum stopper washer
- ㉑ Shift drum stopper arm spring
- ㉒ Shift drum
- ㉓ Starter return pin
- ㉔ 10 mm washer
- ㉕ 10 mm hex. nut
- ㉖ Return spring pin
- ㉗ 8 mm lock washer
- ㉘ 6 mm spring washer
- ㉙ Guide plate

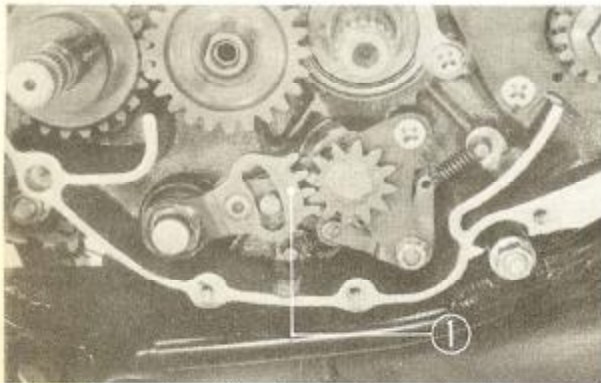


Fig. 3-26 ① Gearshift spindle

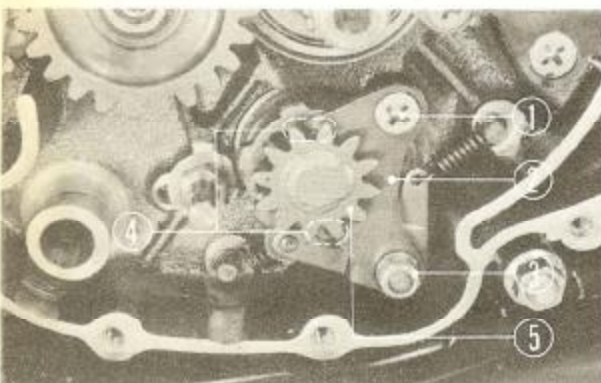


Fig. 3-27 ① 6×12 mm screw ④ Ratchet pawl
 ② Plate guide ⑤ Drum shifter
 ③ 6 mm nut

Disassembly

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

3. Remove the 6 x 12 mm screw and 6 mm 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.

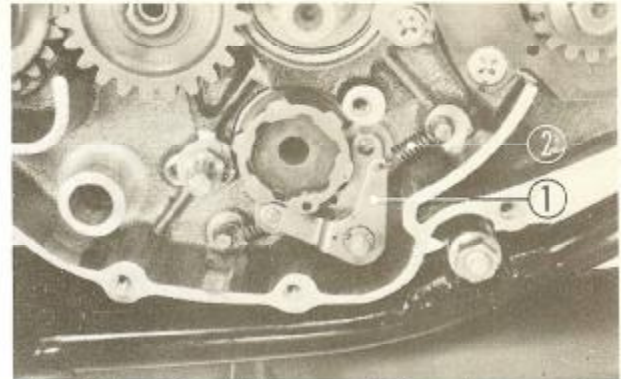


Fig. 3-28 ① Neutral stopper ② Neutral stopper spring

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

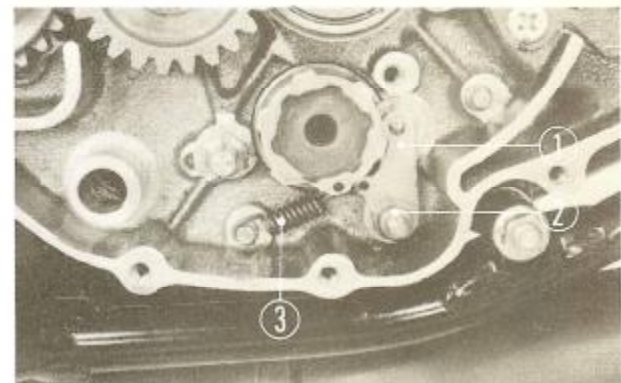


Fig. 3-29 ① Drum stopper arm ③ Arm spring
② Arm collar

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

Inspection

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.

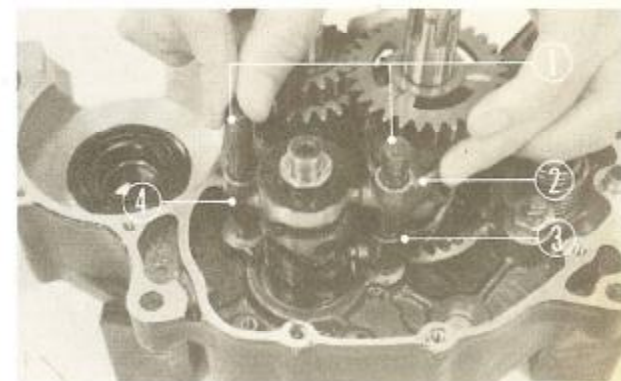


Fig. 3-30 ① Gearshift fork shaft
② Left gearshift fork
③ Right gearshift fork
④ Center gearshift fork

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. 3-31, 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. 3-31 ① Gearshift spindle ③ Drum shifter

7. CRANKCASE AND TRANSMISSION

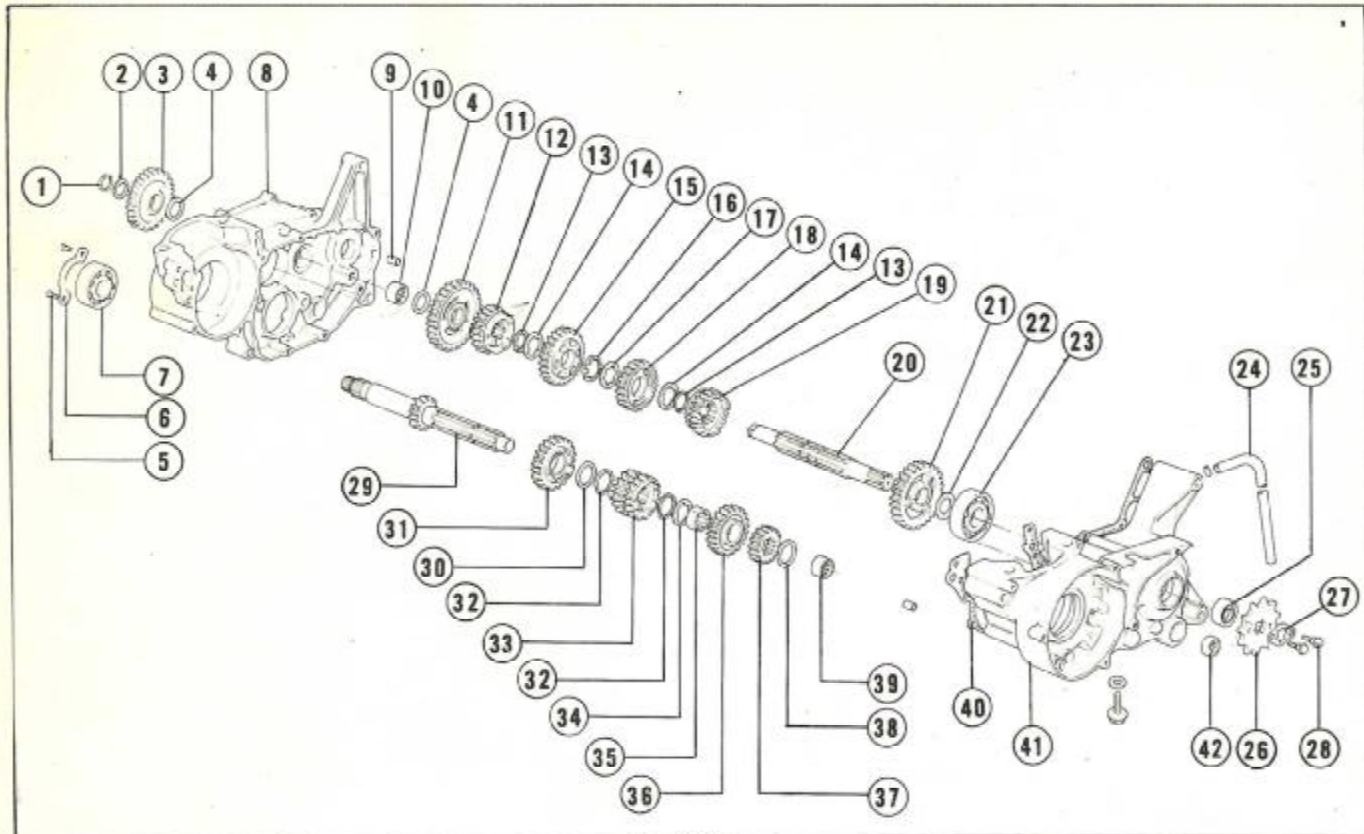


Fig. 3-32

- | | | | |
|-------------------------------|----------------------------|---------------------------------------|-------------------------------------|
| ① 15 mm set ring | ⑤ 6×12 mm flat screw (two) | ⑩ 10×16 dowel pin (two) | ⑳ Oil seal 20×32×6 |
| ② 16 mm thrust washer | ⑥ Bearing set plate B | ⑪ Needle bearing 1612 | ㉑ Drive sprocket |
| ③ Starter idle gear | ⑦ Ball bearing 6304Z | ⑫ Countershaft low gear (32 teeth) | ㉒ Fixing plate B |
| ④ 16.5 mm thrust washer (two) | ⑧ Right crankcase | ⑬ Countershaft fifth gear (23 teeth) | ㉓ 6×10 mm hex. bolt (two) |
| | | ⑭ Snap ring (two) | ㉔ Main shaft |
| | | ⑮ 22 mm spline washer (two) | ㉕ 20 mm thrust washer |
| | | ⑯ Countershaft third gear (26 teeth) | ㉖ Main shaft fifth gear (24 teeth) |
| | | ⑰ Lock washer | ㉗ 20 mm snap ring (two) |
| | | ⑱ Spline washer | ㉘ Main shaft third gear (22 teeth) |
| | | ㉒ Countershaft fourth gear (24 teeth) | ㉙ 20 mm spline washer |
| | | ㉓ Countershaft sixth gear (22 teeth) | ㉚ Spline collar |
| | | ㉔ Countershaft | ㉛ Main shaft sixth gear (25 teeth) |
| | | ㉕ Countershaft second gear (29 teeth) | ㉜ Main shaft second gear (18 teeth) |
| | | ㉖ 30 mm thrust washer | ㉝ 15 mm thrust washer |
| | | ㉗ Ball bearing 6304 | ㉞ Needle bearing 15×22×12 |
| | | ㉘ Breather tube 5.5×300 | ㉟ Crankcase gasket |
| | | | ㊱ Left crankcase |
| | | | ㊲ Oil seal 14×28×7 |

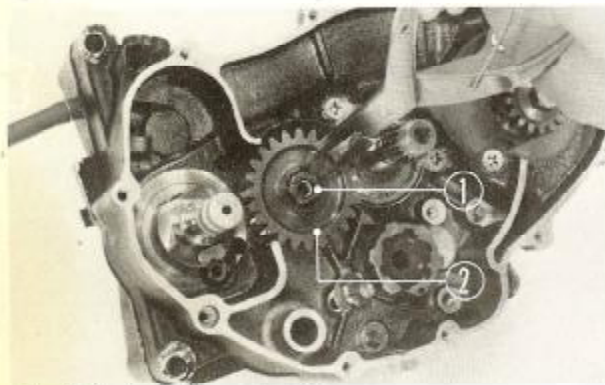
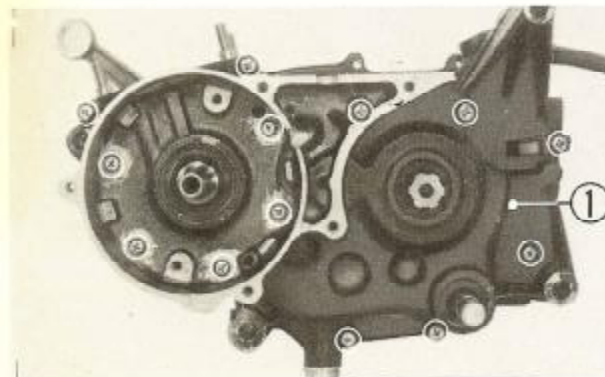
Fig. 3-33 ① 15 mm snap ring
② Starter idle gear

Fig. 3-34 ① Left crankcase

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 15 mm snap ring and remove the starter idle gear.

10. Bolt the crankcase disassembly tool (tool no. 07937-3600000) to the left crankcase as shown in Fig. 3-35. Turn the screw of the tool against the end of the crankshaft to separate the cases.

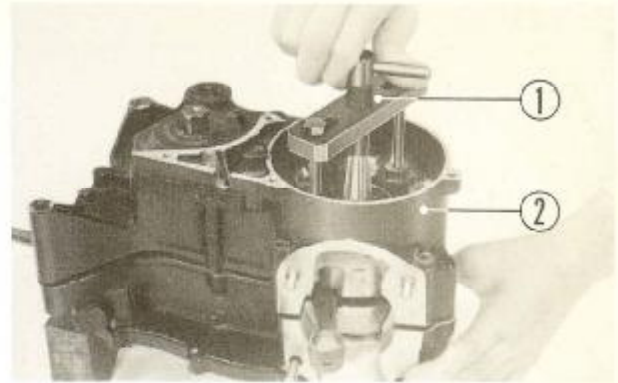


Fig. 3-35 ① Crankcase disassembly tool
② Left crankcase

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

Inspection

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

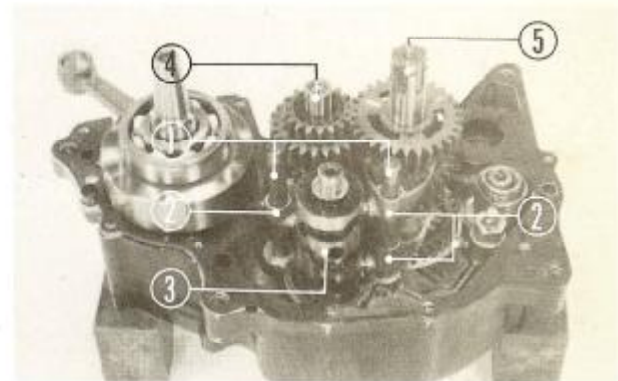


Fig. 3-36 ① Shift fork shaft ④ Main shaft
② Shift fork ⑤ Countershaft
③ Gearshift drum

Assembly

1. When installing the right and left crankcases, thoroughly clean the crankshaft chamber first.
2. Install the spline collar and countershaft while aligning the oil holes in the two parts.
3. When installing the main shaft and countershaft, apply a coat of oil to the bearing attaching surfaces. Also fill the shafts with oil.
4. The main shaft and countershaft 3rd gears have grooves cut in their periphery. Install the main shaft and countershaft 3rd and 4th gears as shown in Fig. 3-37.
5. Fill the void between double lips of the oil seal with gasoline-resistant grease. Check the lips for burr.

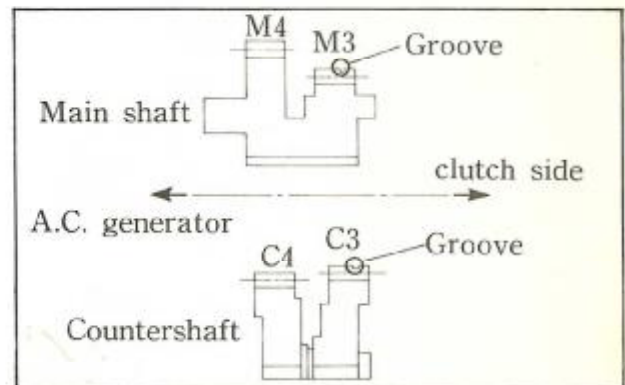


Fig. 3-37

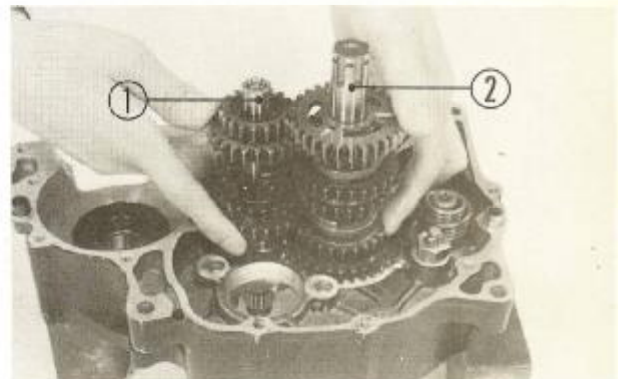


Fig. 3-38 ① Main shaft ② Countershaft

CRANKSHAFT AND CONNECTING ROD

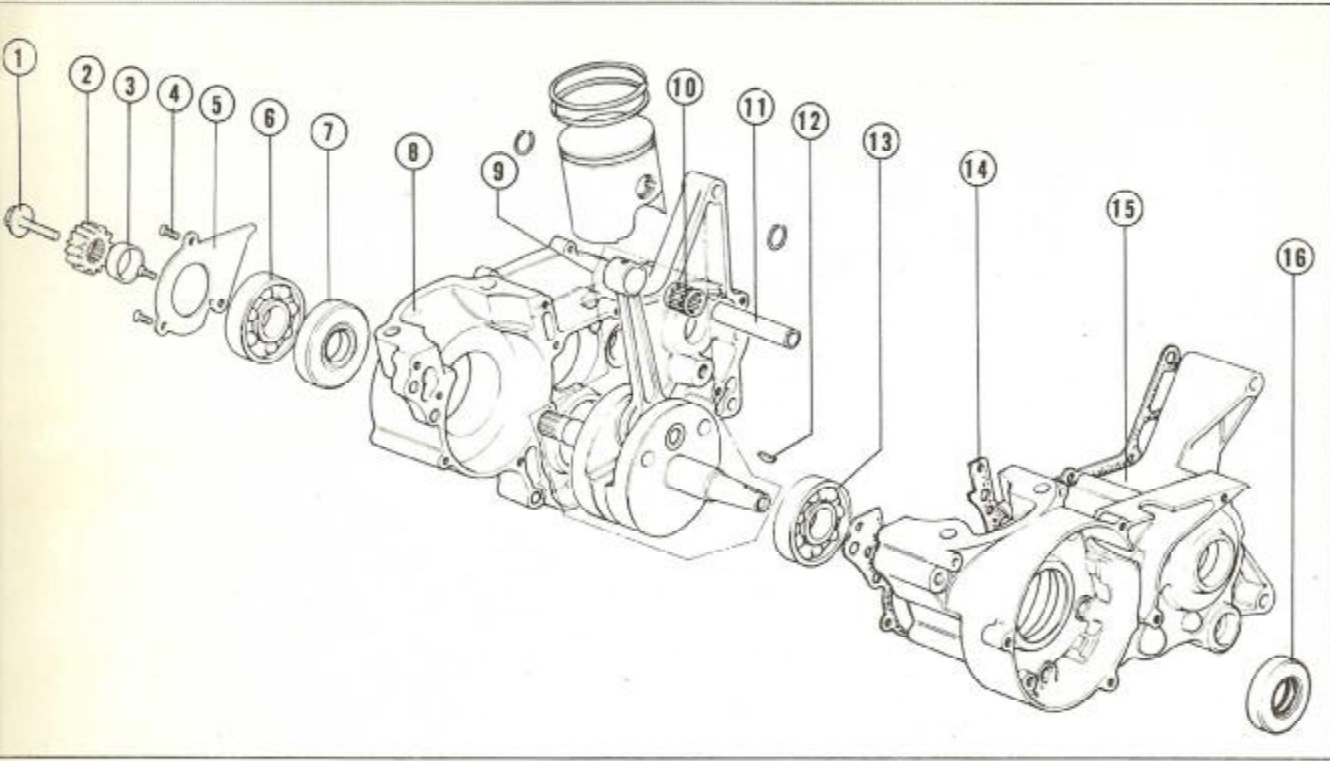


Fig. 3-39

- ① 8×25 mm special bolt
- ② Primary drive gear (19 teeth)
- ③ Primary drive gear collar
- ④ 6×12 mm screw (three)
- ⑤ Bearing set plate A
- ⑥ Ball bearing 6322
- ⑦ Oil seal 28×56×9
- ⑧ Right crankcase
- ⑨ Crankshaft
- ⑩ Connecting rod small end bearing
- ⑪ Piston pin
- ⑫ Woodruff key 25×14 mm
- ⑬ Ball bearing 6305
- ⑭ Crankcase gasket
- ⑮ Left crankcase
- ⑯ Oil seal 25×45×7

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. 07924-360000).

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 I.D. 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.

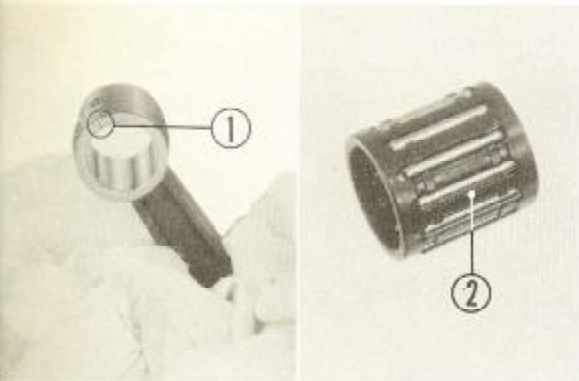


Fig. 3-40 ① Connecting rod small end I.D. identification mark
② Small end bearing

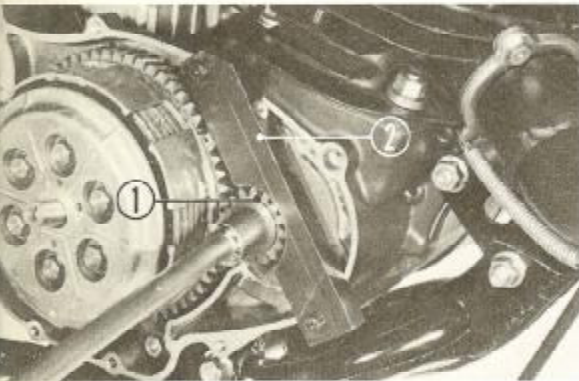
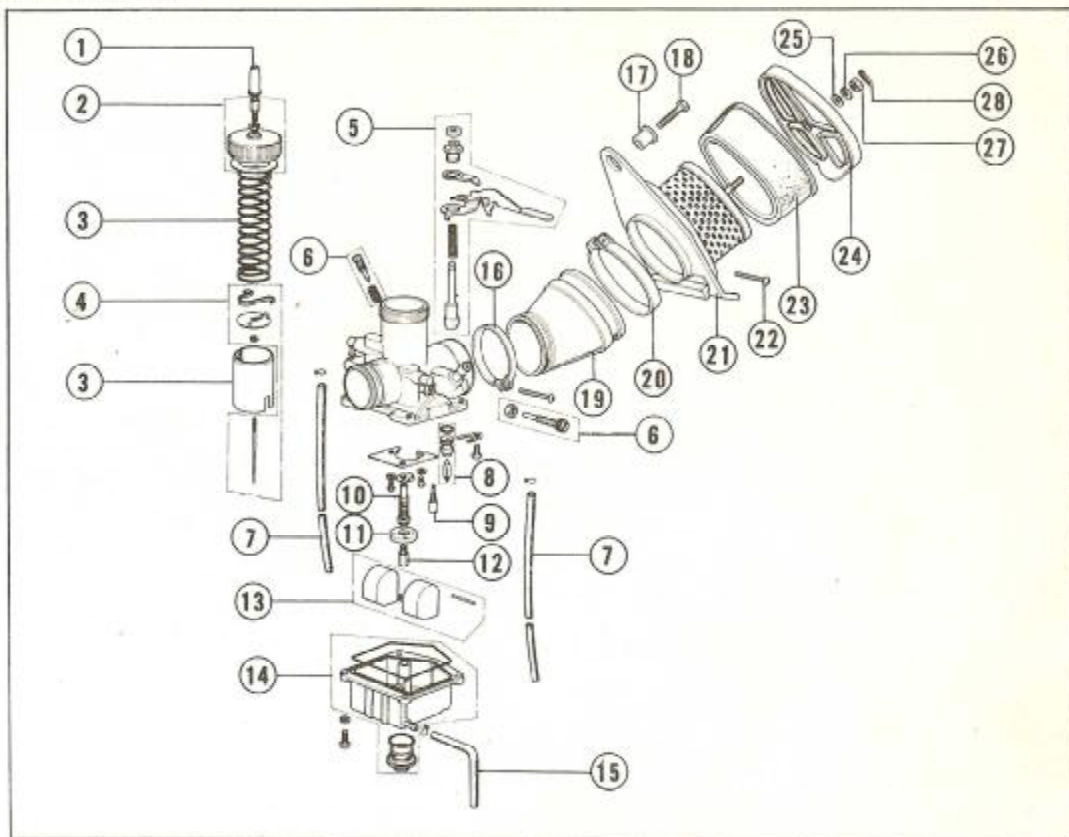


Fig. 3-41 ① Primary drive gear
② Drive gear holder

9. CARBURETOR AND AIR CLEANER

Fig. 3-42

- ① Rubber cap
- ② Top set
- ③ Throttle valve set
- ④ Jet needle set
- ⑤ Starter valve set
- ⑥ Screw set
- ⑦ Fuel tube 3.5×270
- 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 3.5×360
- ⑯ Connecting tube band A
- ⑰ Front fender collar
- ⑱ 6×22 hex. bolt
- ⑲ Air cleaner connecting tube
- ⑳ Connecting tube band B
- ㉑ Air cleaner base
- ㉒ 4×25 pan screw (two)
- ㉓ Air cleaner element
- ㉔ Air cleaner element holder
- ㉕ 6 mm plain washer
- ㉖ 6 mm spring washer
- ㉗ 6 mm nut
- ㉘ 6 mm lock pin



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.

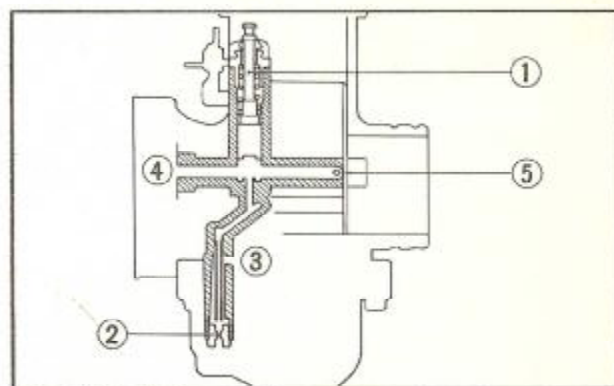


Fig. 3-43 ① Starter valve
② Starter jet

2. Slow circuit

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.

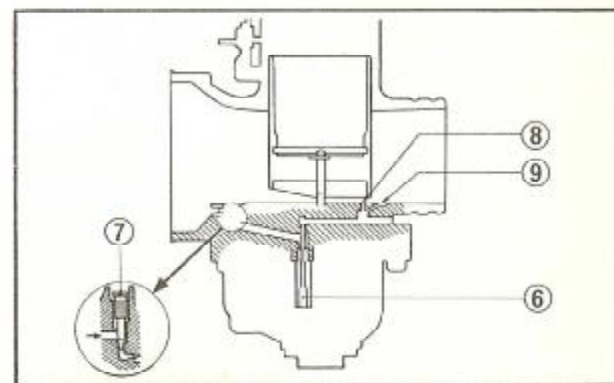


Fig. 3-44 ⑥ Slow jet ⑧ Bypass
⑦ Air screw ⑨ Pilot outlet

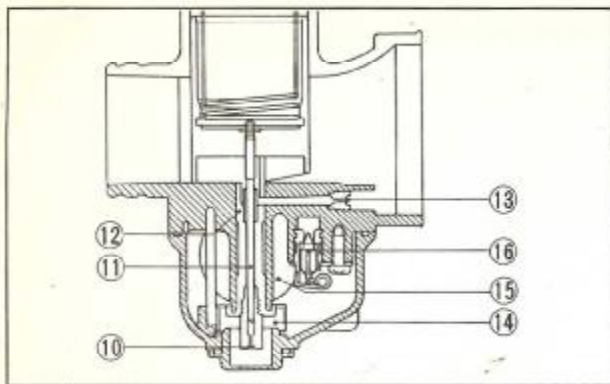


Fig. 3-45 ⑩ Main jet ⑭ Jet holder
 ⑪ Jet needle ⑮ Float
 ⑫ Needle jet ⑯ Float valve
 ⑬ Air jet

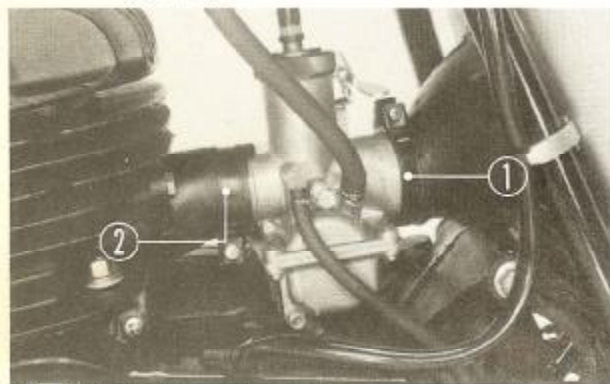


Fig. 3-46 ① Connecting band
 ② Insulator band

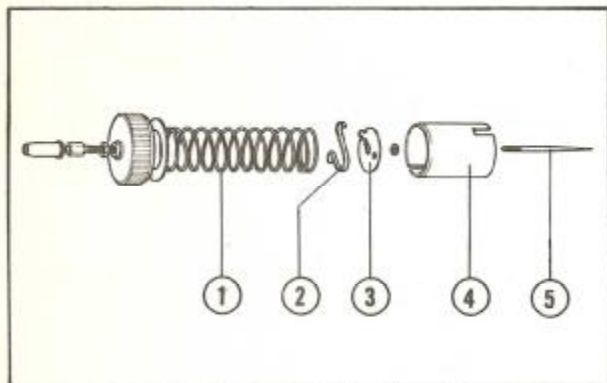


Fig. 3-47 ① Spring ④ Throttle valve
 ② Clip ⑤ Jet needle
 ③ Clip plate



3. Main circuit

Fuel metered by the main jet (10) flows through the passage between the jet needle (11) 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 (14) and the main jet (10) are secured together.

4. Float chamber

The float chamber maintains a constant fuel level.

A spring built into the float valve (16) 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.

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.

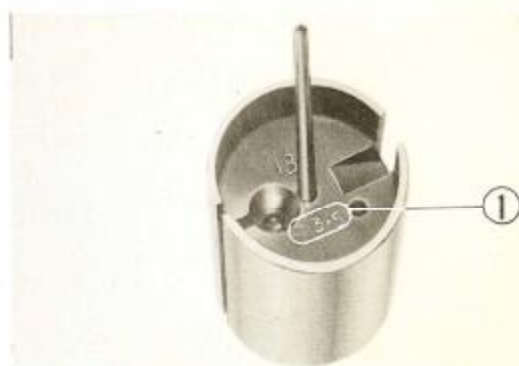


Fig. 3-49 ① Cutaway number

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.

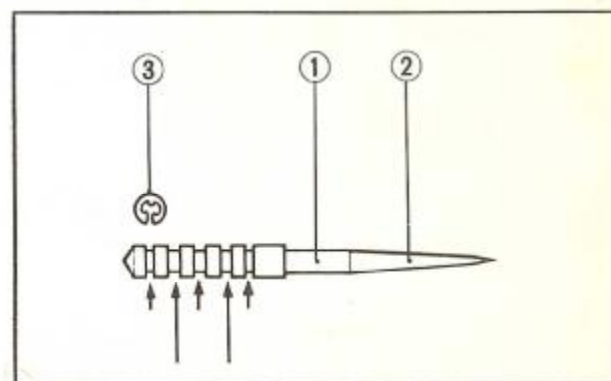


Fig. 3-50 ① Straight ② Tapered ③ Clip

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.

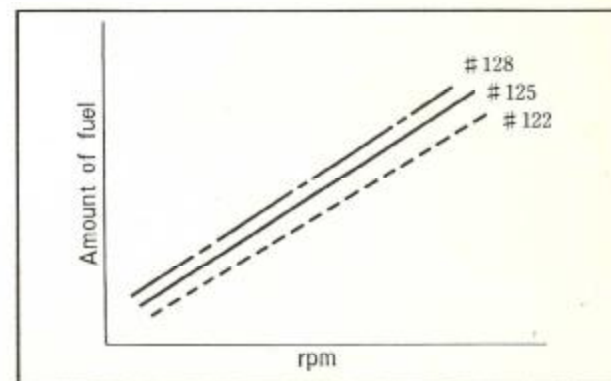


Fig. 3-51

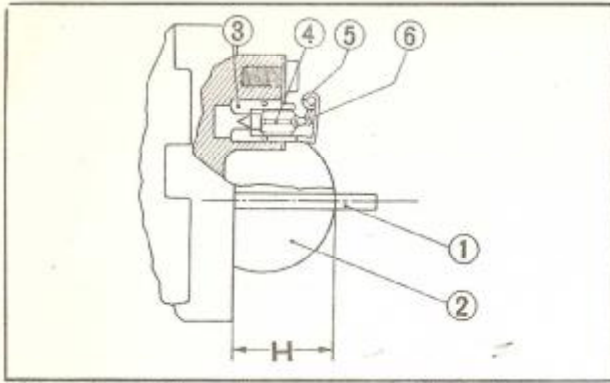


Fig. 3-52 ① Float valve gauge ④ Float valve
② Float ⑤ Float arm pin
③ Valve seat ⑥ Float arm tang

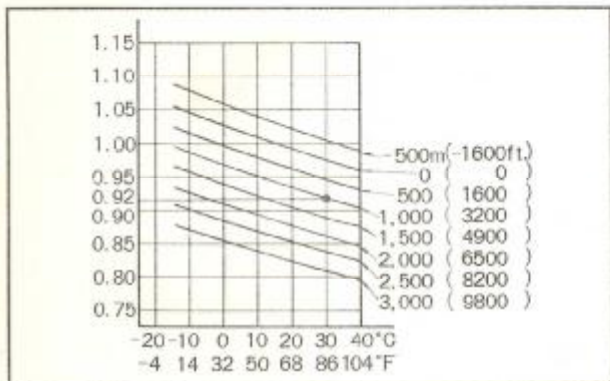


Fig. 3-53

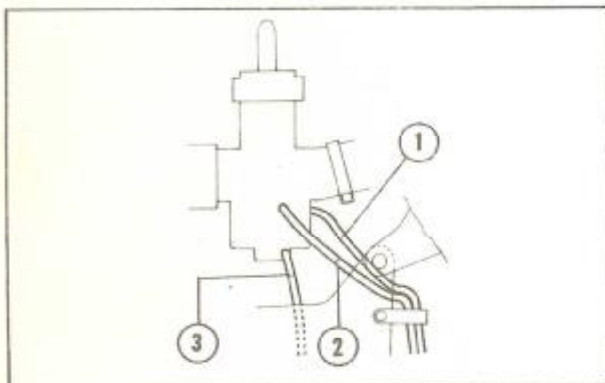


Fig. 3-54 ① Right carburetor breather tube
② Left carburetor breather tube
③ Carburetor overflow tube

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

$\text{specified main jet no.} \times C = \text{main jet to be used}$

• Jet needle

$\text{specified jet needle groove no.} + \text{rating of } C = \text{groove no. to be used}$

C	1.20 min.	1.20 1.05	1.05 0.95	0.95 0.80	0.80 max.
Rating	+2	+1	—	-1	-2

(+) Raise the needle.

(-) Lower the needle.

• Air screw

$\text{specified number of turns} + \text{rating of } C$

C	1.20 min.	1.20 1.05	1.05 0.95	0.95 0.80	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

$125 \times 0.92 = 115$

• # 120

• Jet needle

$3 - 1 = 2$

• 2nd groove

• Air screw opening

$1\frac{1}{2} + 1/2 = 2.0$

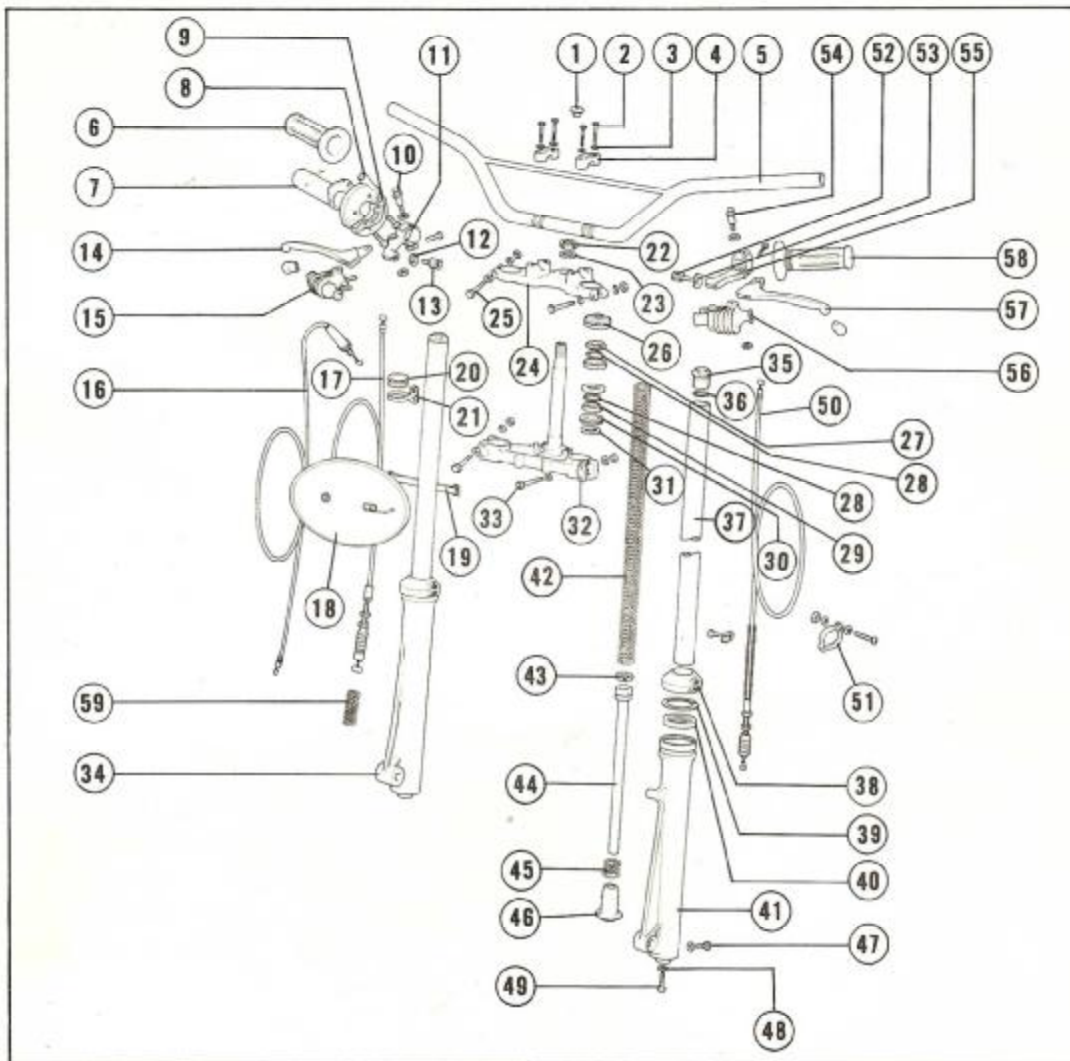
• 2.0 turns open

NOTE:

Connect each breather tube as shown in Fig. 3.54.

IV. SERVICING THE FRAME

1. HANDLEBAR AND FRONT SUSPENSION



- 27 Steering top cone race
- 28 Steel ball #6 (forty-two)
- 29 Steering bottom cone race
- 30 Steering head dust seal
- 31 Steering head dust seal washer
- 32 Steering stem
- 33 8x56 mm hex. bolt (four)
- 34 Front fork assembly
- 35 Fork bolt (two)
- 36 23x2.4 O-ring (two)
- 37 Front fork pipe (two)
- 38 Front fork dust seal (two)
- 39 45 mm internal circlip (two)
- 40 31x43x12.5 oil seal (two)
- 41 Right fork bottom case
- 42 Left fork bottom case
- 43 Front suspension spring (two)
- 44 Fork piston ring (two)
- 45 Fork piston (two)
- 46 Front suspension rebound spring (two)
- 47 Oil lock piece (two)
- 48 6x8 mm hex. bolt (two)
- 49 8 mm special washer (two)
- 50 8 mm 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

Fig. 4-1

- | | | |
|------------------------------|-------------------------------|--|
| 1 Steering stem cap | 10 Handle lever pivot bolt | 19 Front number plate band |
| 2 8x36 mm flange bolt (four) | 11 Right handle lever bracket | 20 Cable guide inner |
| 3 8 mm plain washer (four) | 12 Lock nut | 21 Brake cable guide |
| 4 Upper holder B2 (two) | 13 Front brake upper adjuster | 22 Stem nut C |
| 5 Handlebar | 14 Front brake lever | 23 Steering stem nut washer |
| 6 Right handle grip | 15 Handle lever cover | 24 Fork top bridge |
| 7 Throttle grip pipe | 16 Throttle cable | 25 8x56 mm hex. bolt (two) |
| 8 Throttle grip housing A | 17 Front brake cable | 26 Steering head bearing adjusting nut |
| 9 Throttle grip housing B | 18 Front number plate | |

Disassembly

1. Disconnect the front brake cable from the brake lever.
2. Disconnect the clutch cable from the clutch lever.
3. Remove the ignition switch wiring connector.
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 39.)
7. Loosen three 8 mm bolts at each front fork and pull down the forks.



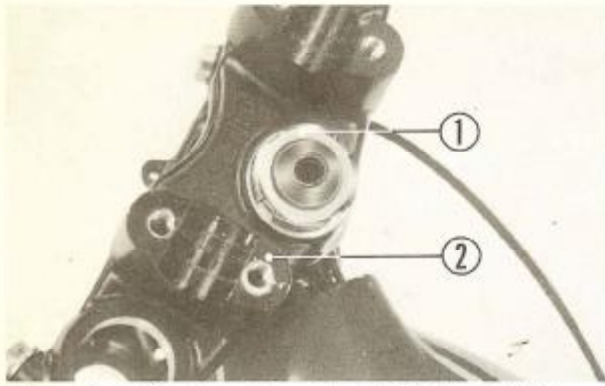


Fig. 4-3 ① Steering stem nut ② Fork top bridge

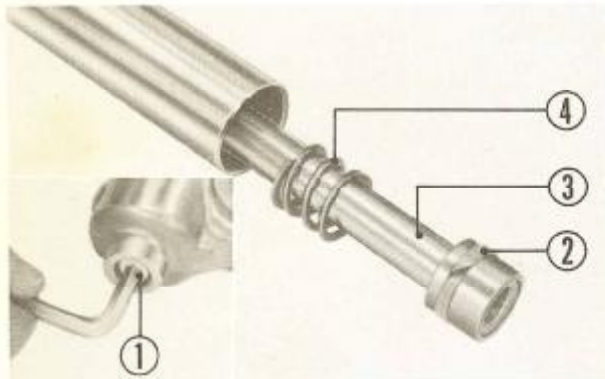


Fig. 4-4 ① 8 mm Allen head screw
② Fork piston ring
③ Fork piston
④ Rebound spring

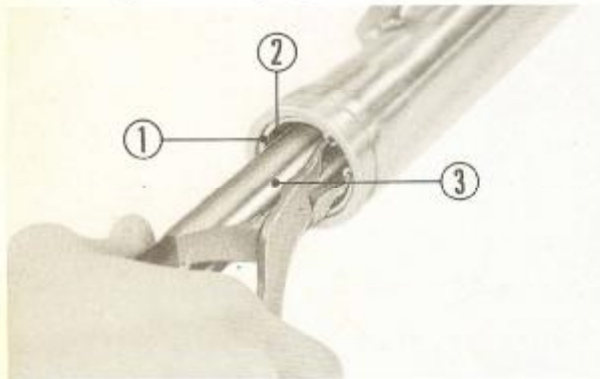


Fig. 4-5 ① 45 mm snap ring ③ Oil lock piece
② Oil seal

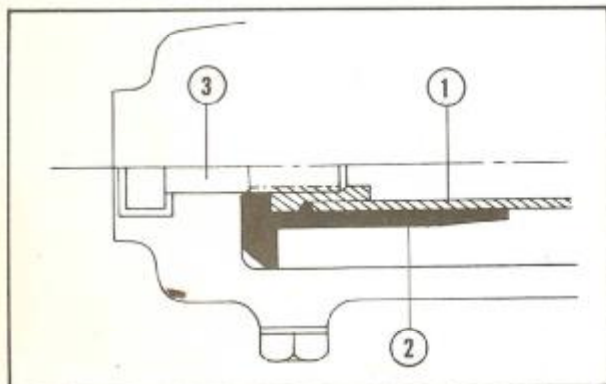


Fig. 4-6 ① Fork piston
② Oil lock piece

8. Remove the steering stem nut and fork top bridge.
9. 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.

10. Remove the 8 mm Allen head screw with the Allen head wrench (tool no. 07912-3230000) and remove the fork piston ring, fork piston and rebound spring.

11. Remove the 45mm snap ring and oil seal and remove the oil lock piece.

Inspection

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

Assembly

1. Apply locking sealant to the threads of the 8 mm Allen head screw. Install the oil lock piece and fork piston 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.

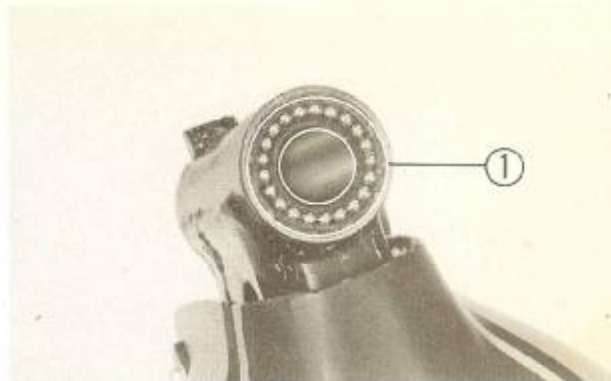


Fig. 4-7 ① Steel balls

- Tighten the steering head bearing adjusting nut until the steering stem rotates smoothly without any sign of looseness.

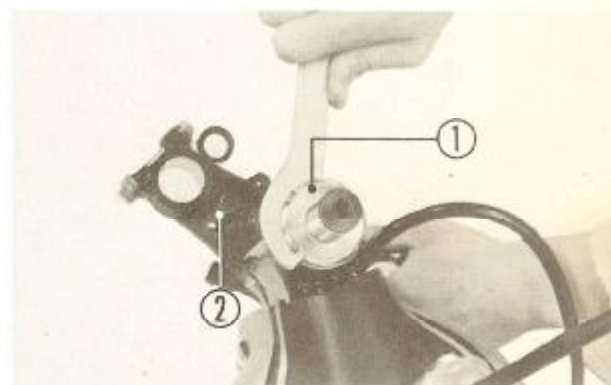


Fig. 4-8 ① Steering head bearing adjusting nut
② Steering stem

- Install the handlebar by placing the serrated sections on the lower holders. Then, secure the handlebar with the two upper holders, tightening the front bolts first. The installation height of the handlebar can be adjusted to suit the rider.



Fig. 4-9 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 42).

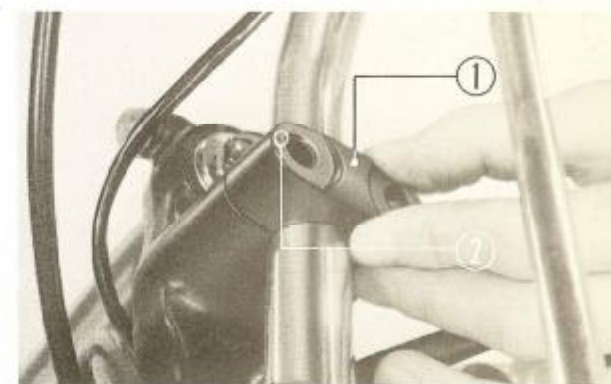


Fig. 4-10 ① Upper holders
② Punch mark

2. REAR SUSPENSION

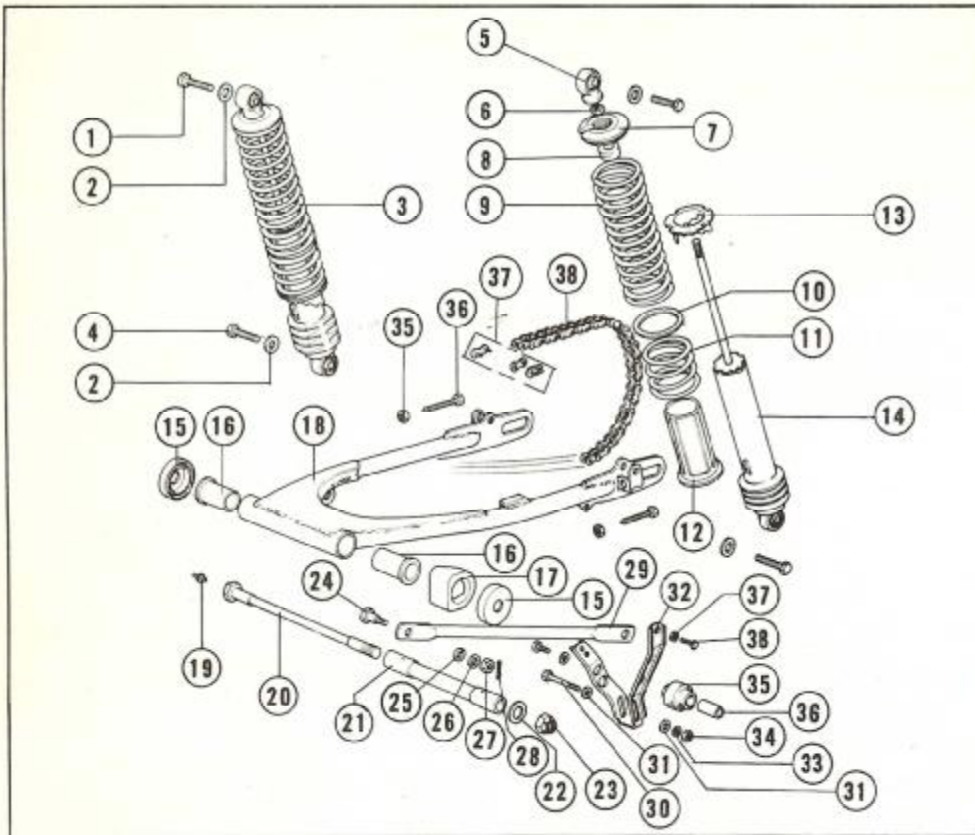


Fig. 4-11

- ① 10×40 mm hex. bolt (two)
- ② 10 mm plain washer (two)
- ③ Rear shock absorber (two)
- ④ 10×32 mm hex. bolt (two)
- ⑤ Upper joint (two)
- ⑥ 10 mm hex. nut (two)
- ⑦ Spring upper seat (two)
- ⑧ Stopper rubber (two)
- ⑨ Spring B (two)
- ⑩ Spring joint (two)
- ⑪ Spring A (two)
- ⑫ Spring guide (two)
- ⑬ Spring adjuster (two)
- ⑭ Rear damper (two)
- ⑮ Dust seal cap (two)
- ⑯ Pivot thrust bushing (two)
- ⑰ Chain slider
- ⑱ Rear fork
- ⑲ Grease nipple
- ⑳ Rear fork pivot bolt
- ㉑ Rear fork center collar
- ㉒ Tension arm washer
- ㉓ 12 mm lock nut
- ㉔ Rear brake stopper arm bolt
- ㉕ 6 mm spring washer
- ㉖ 6 mm plain washer
- ㉗ 6 mm hex. nut
- ㉘ 2.0×15 cotter pin
- ㉙ Rear brake stopper arm
- ㉚ 6×45 mm hex. bolt
- ㉛ 6 mm washer (two)
- ㉜ Chain guide
- ㉝ 6 mm spring washer
- ㉞ Roller setting nut
- ㉟ Tensioner roller
- ㊱ Tensioner collar
- ㊲ 6 mm plain washer
- ㊳ 6×8 mm hex. bolt

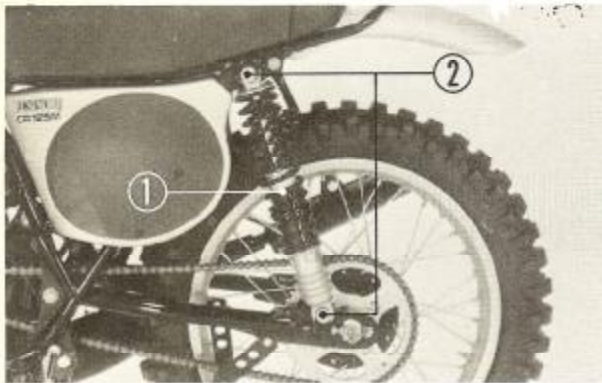


Fig. 4-12 ① Rear shock absorber
② Attaching bolts

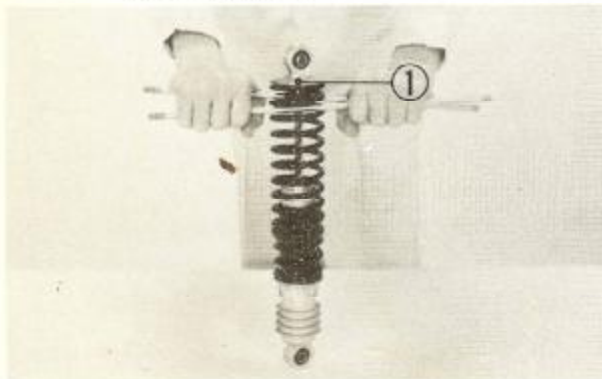


Fig. 4-13 ① Upper spring seat

Disassembly

1. Place a wood block under the engine and remove the rear wheel. (See page 41.)
2. 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.

4. While compressing the rear shock absorber springs as shown, remove the upper spring seat.

Inspection

1. Check for bent shock absorber rods. Push down on the rods by hand to check for smooth movement. Pull to see if a resistance is felt.
2. Check the springs for fatigue.
3. Measure the rear fork pivot bushing I.D. and center collar O.D.

Assembly

1. Tighten the rear fork pivot bolt until the rear fork will just

3. FRONT WHEEL AND FRONT BRAKE

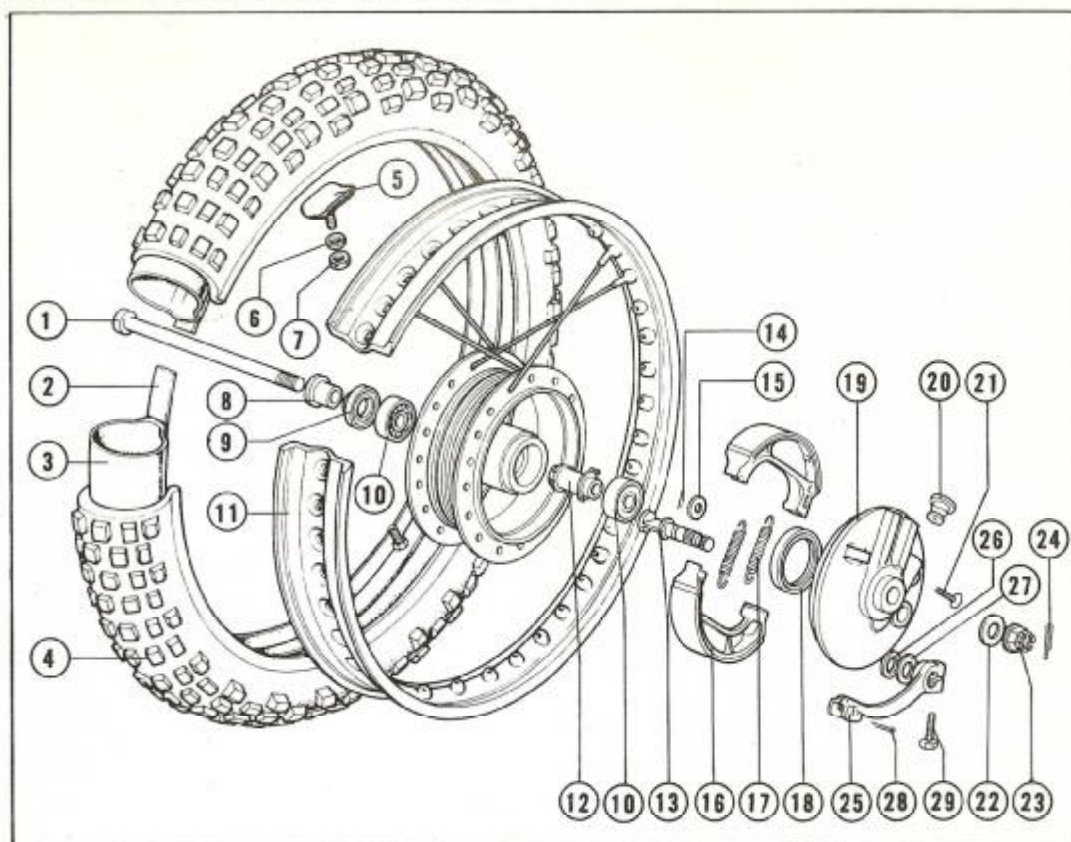


Fig. 4-14

- ① Front wheel axle
- ② Tire flap
- ③ Front wheel tube (2.75-21)
- ④ Front wheel tire (2.75-21-4 PR)
- ⑤ Rim lock
- ⑥ 8 mm spring washer
- ⑦ 8 mm hex. nut
- ⑧ Front wheel side collar
- ⑨ Oil seal 21×35×7
- ⑩ Ball bearing 6301 (two)
- ⑪ Front wheel rim
- ⑫ Front axle distance collar
- ⑬ Front brake cam
- ⑭ Cotter pin 2.0×15
- ⑮ Washer
- ⑯ Brake shoe (two)
- ⑰ Brake shoe spring (two)
- ⑱ Oil seal 47×60×7
- ⑲ Front backing plate
- ⑳ Cap
- ㉑ 5×18 mm screw
- ㉒ 12 mm plain washer
- ㉓ 12 mm castle nut
- ㉔ 3.0 mm cotter pin
- ㉕ Front brake arm
- ㉖ Dust seal
- ㉗ Dust seal washer
- ㉘ 2.0×20 mm cotter pin
- ㉙ 6×22 mm hex. bolt

Disassembly

1. 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.
3. Pull out the cotter pin and remove the front axle nut. Then pull out the front axle and remove the front wheel.
4. Remove the two brake shoes from the front brake backing plate.

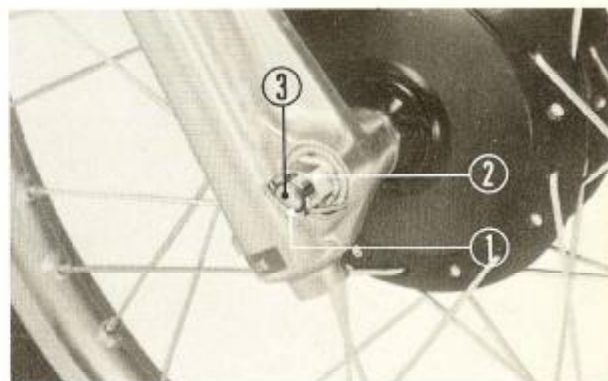
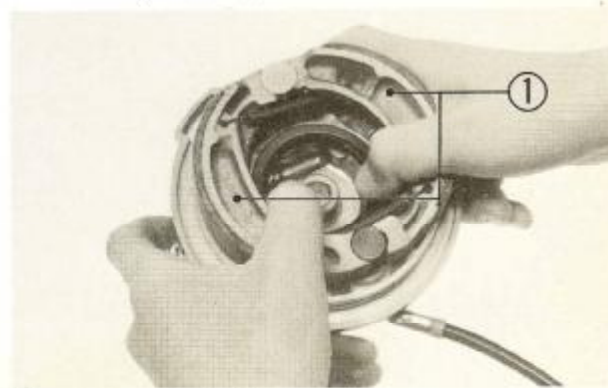


Fig. 4-15 ① Cotter pin ② Axle nut ③ Front axle



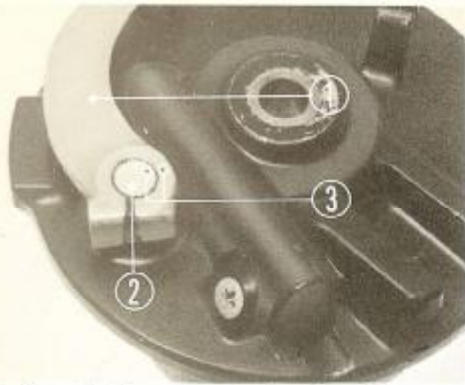


Fig. 4-17 ① Front brake arm ② Front brake cam ③ Punch marks

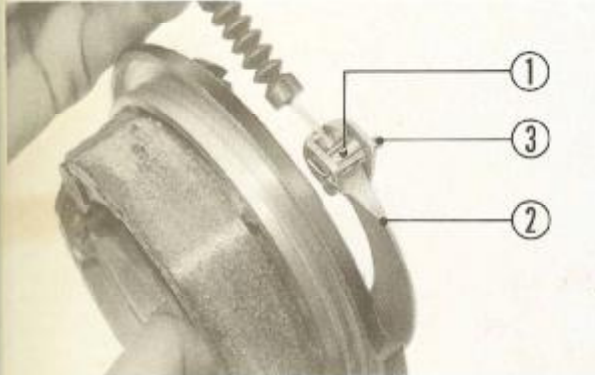


Fig. 4-18 ① Front brake cable ② Brake arm ③ Cotter pin



Fig. 4-19 ① Fitting point

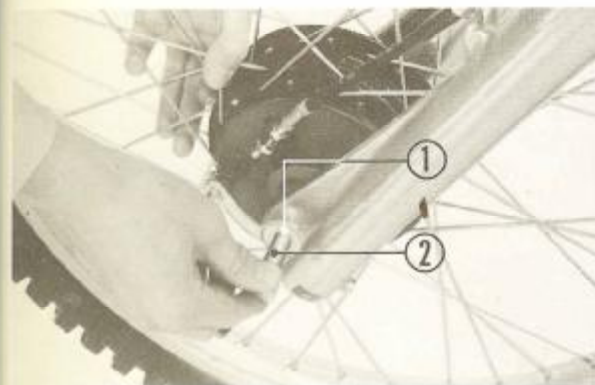


Fig. 4-20 ① Plain washer ② Front axle

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 while aligning the punch marks.

2. Connect the front brake cable end to the brake arm. Install and split cotter pin to lock nut in place.

3. 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

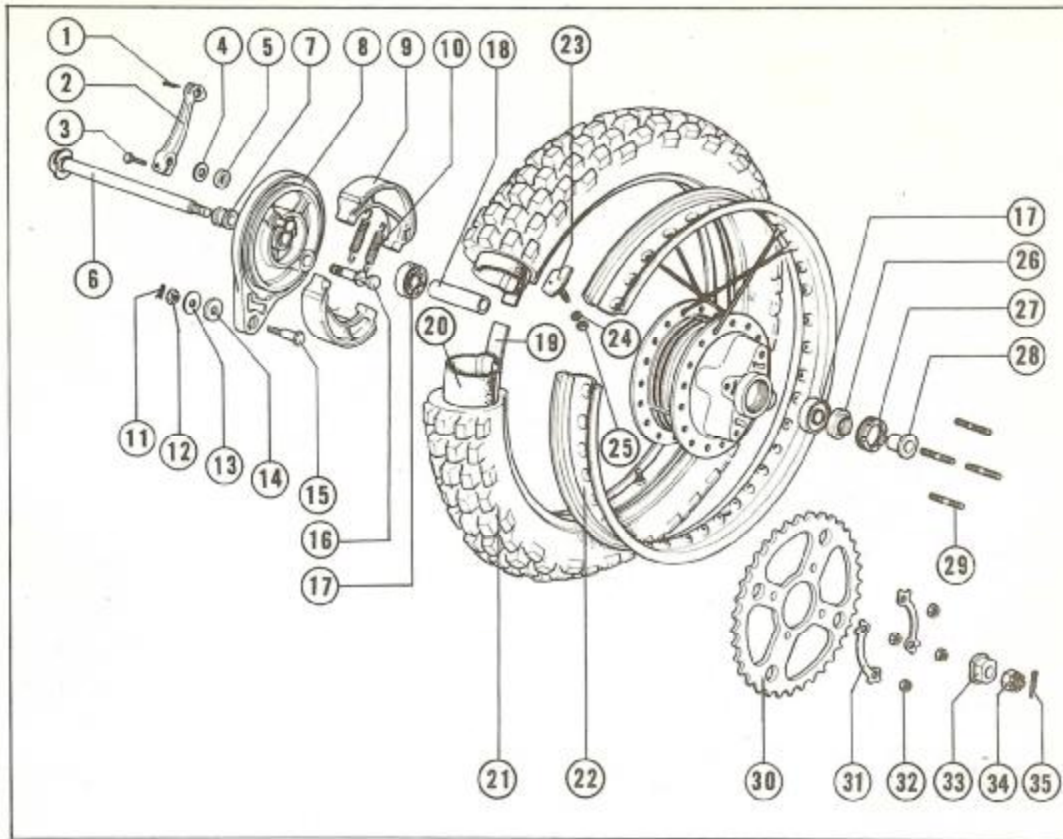


Fig. 4-21

- ① Cotter pin 2.0×20
- ② Rear brake arm
- ③ 6×22 mm hex. bolt
- ④ 14 mm plain washer
- ⑤ Brake cam dust seal
- ⑥ Rear wheel axle
- ⑦ Rear brake panel side collar
- ⑧ Rear brake backing plate
- ⑨ Brake shoe (two)
- ⑩ Brake shoe spring (two)
- ⑪ 8 mm lock pin
- ⑫ 8 mm hex. nut
- ⑬ Handle holder washer A
- ⑭ Stopper arm cushion rubber
- ⑮ Rear brake panel bolt
- ⑯ Rear brake cam
- ⑰ Ball bearing 6302 (two)
- ⑱ Rear axle distance collar
- ⑲ Tire flap
- ⑳ Rear wheel tube (3.50-18)
- ㉑ Rear wheel tire (3.50-18-4PR)
- ㉒ Rear wheel rim
- ㉓ Rim lock
- ㉔ 8 mm spring washer
- ㉕ 8 mm hex. nut
- ㉖ Oil seal 21×35×7
- ㉗ Bearing retainer
- ㉘ Rear wheel side collar
- ㉙ 8×45 mm stud bolt (four)
- ㉚ Driven sprocket
- ㉛ Lock washer (two)
- ㉜ 8 mm hex. nut (four)
- ㉝ Rear axle collar
- ㉞ Rear axle nut
- ㉟ 3.0 mm cotter pin

Disassembly

1. Pull out the cotter pin and disconnect the brake cable end from the brake arm.
2. Loosen the drive chain adjuster lock nut and screw in the adjuster bolt.
3. Remove the cotter pin from the rear axle nut.
4. Remove the master link clip and remove the drive chain.
5. Remove the torque arm cotter pin and remove the lock nut.
Remove the rear brake backing plate stopper bolt.
6. Remove the rear axle, and remove the rear wheel from the frame.
7. Straighten the tabs of the two lock washers, remove the four lock nuts and remove the driven sprocket.
8. Remove the brake shoes from the rear brake backing plate.

Inspection

Check the same items as in "Front Wheel and Front Brake" (See page 39).

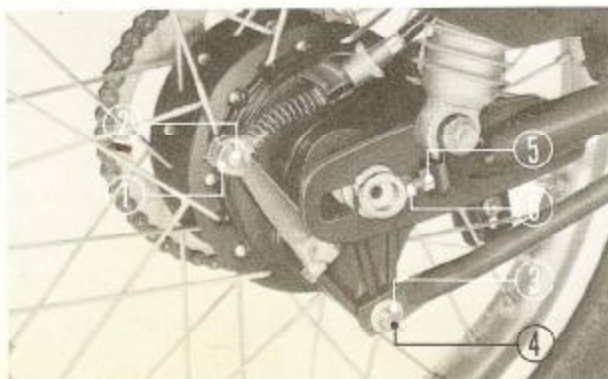


Fig. 4-22 ① Cotter pin ⑤ Lock nut
② Brake cable end ⑥ Adjusting bolt
③ Lock pin

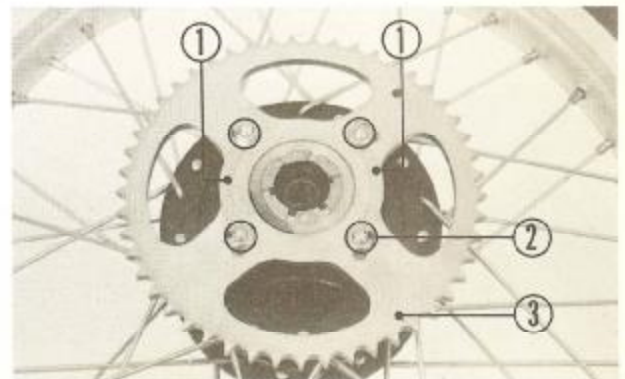


Fig. 4-23 ① Lock washers ③ Driven sprocket
② Lock nuts

V. SERVICING THE ELECTRICAL SYSTEM

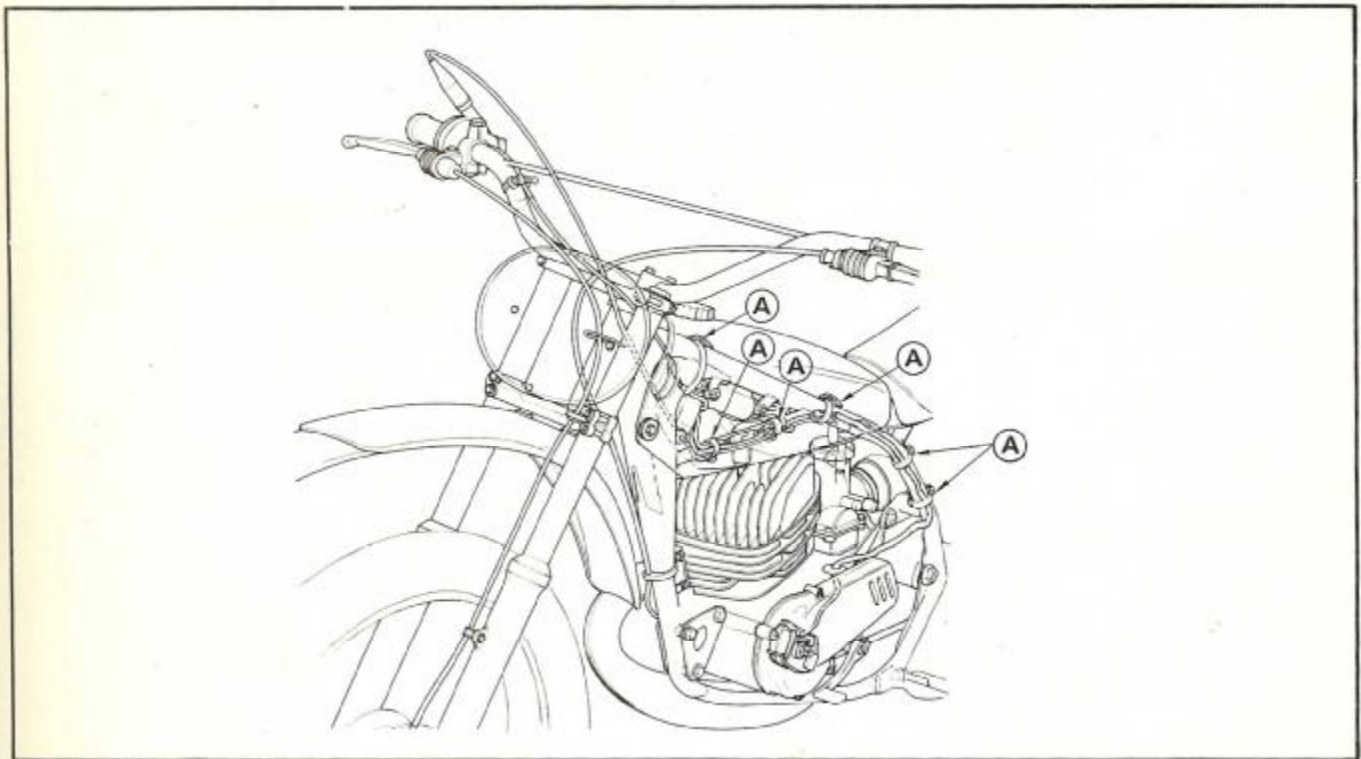


Fig. 5-1

AC generator

Disassembly

1. Remove the left crankcase cover.
2. Remove the generator rotor attaching bolt and remove the rotor with the rotor puller (tool no. 07933-2160000).

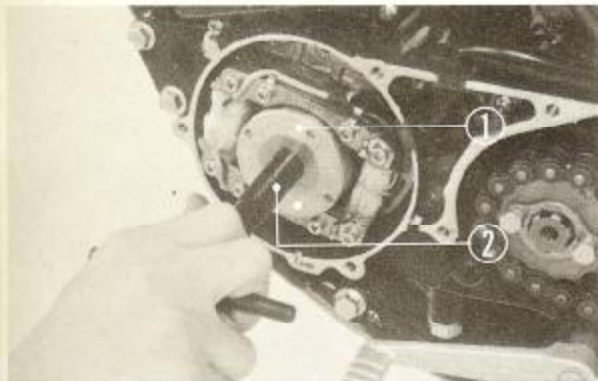
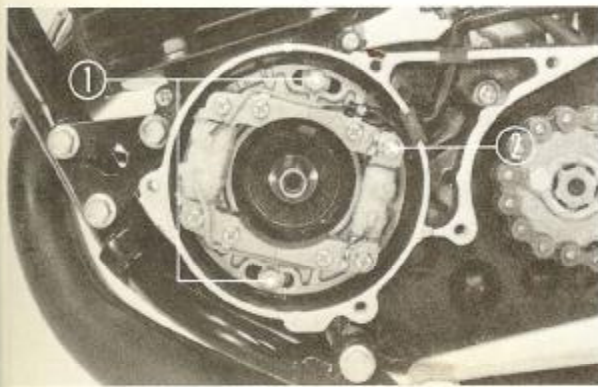


Fig. 5-2 ① Generator rotor
② Generator rotor puller



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.)

NOTE:

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

VI. SERVICE DATA

1. TROUBLE SHOOTING

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

Trouble	Cause	Remedy
Clutch slips.	<ol style="list-style-type: none"> 1. Misadjusted clutch 2. Weak clutch springs 3. Worn or deformed pressure plate 4. Deformed clutch plates 5. Worn or deformed friction discs 	Adjust. Replace. Replace. Replace. Replace.
Clutch drags.	<ol style="list-style-type: none"> 1. Misadjusted clutch 2. Unequal clutch spring tension 3. Deformed clutch plates 	Adjust. Replace. Replace.
Transmission gears fail to shift smoothly or sequentially.	<ol style="list-style-type: none"> 1. Deformed shift drum stopper 2. Broken shift drum 3. Deformed shift forks 4. Weak shift drum stopper spring 	Repair or replace. Replace. Repair or replace. Replace.
Change pedal fails to return.	<ol style="list-style-type: none"> 1. Broken gearshift return spring 2. Contact between cases and gearshift spindle 	Repair or replace. Repair.
Transmission gears disengage accidentally.	<ol style="list-style-type: none"> 1. Worn main shaft and countershaft shifting gears 2. Bent or worn gearshift forks 	Replace. Repair or replace.
Engine operation is erratic at low speeds.	<ol style="list-style-type: none"> 1. Incorrect ignition timing 2. Excessive plug gap 3. Weak spark (defective ignition coil) 4. Short circuit in A.C. generator 5. Incorrect float level 6. Misadjusted carburetor air screw 	Adjust. Repair or replace. Replace. Repair or replace. Adjust. Adjust.
Engine operation is erratic at high speeds.	<ol style="list-style-type: none"> 1. Insufficient plug gap 2. Retarded ignition timing 3. Defective C.D.I. unit 4. Defective ignition coil 5. Incorrect float level 6. Clogged air cleaner element 7. Crankcase compression leak 8. Short circuit in A.C. generator 9. 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.	<ol style="list-style-type: none"> 1. Fouled spark plug 2. Defective ignition coil 3. Defective C.D.I. unit 4. Short circuit in A.C. generator 	Replace. Replace. Replace. Replace.
Spark plug electrodes are fouled.	<ol style="list-style-type: none"> 1. Rich mixture (rich carburetion or clogged air filter) 2. Incorrect gasoline and oil mixing ratio 3. Incorrect spark plug heat range 	Adjust or clean. Adjust. Replace.
Spark plug electrodes are burnt.	<ol style="list-style-type: none"> 1. Incorrect heat range 2. Overheating engine 3. Incorrect ignition timing 4. Loose spark plug 5. Lean mixture 	Use specified plug. Adjust. Retighten. Adjust.

Trouble	Cause	Remedy
Steering is hard.	<ol style="list-style-type: none"> 1. Overtightened steering stem 2. Broken steering stem steel balls 3. Bent steering stem 4. Unevenly worn ball races 	Adjust. Replace. Replace. Replace.
Front wheel shimmies.	<ol style="list-style-type: none"> 1. Deformed rim 2. Loose front wheel bearings 3. Loose spokes 4. Loose axle and related parts 	Replace. Replace. Adjust. Retighten.
Front suspension is spongy.	<ol style="list-style-type: none"> 1. Weak springs 2. Insufficient front fork fluid (ATF) 	Replace. Add.
Front suspension is hard.	<ol style="list-style-type: none"> 1. Incorrect front fork fluid; too high viscosity 2. Excessive front fork fluid 	Replace. Adjust.
Rear wheel shimmies.	<ol style="list-style-type: none"> 1. Deformed rim 2. Loose rear wheel bearings 3. Loose spokes 4. Loose axle and related parts 	Replace. Replace. Adjust. Retighten.
Rear suspension is spongy.	<ol style="list-style-type: none"> 1. Weak springs 2. Improper rear suspension adjustment 	Replace. Adjust.
Rear suspension is hard.	<ol style="list-style-type: none"> 1. Improper rear suspension adjustment 2. Spring thrust joint binding 3. Bent shock absorber rods 	Adjust. Repair. Replace.
Braking effect is poor.	<ol style="list-style-type: none"> 1. Improper brake shoe contact 2. Brake linings fouled with oil or grease 3. Broken brake cable or loose brake pedal shaft 4. Misadjusted brake 	Repair or replace. Replace. Repair or replace. Adjust.
Brake free play is insufficient.	<ol style="list-style-type: none"> 1. Worn brake shoes 2. Worn brake cam 3. Improper brake arm position 	Replace. Replace. Repair or replace.

2. TORQUE SPECIFICATIONS

		Unit: kg-m (lbs-ft)		
	Tightening point	Thread dia. (mm)	Torque	
Engine	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)	
	A.C. generator rotor	8	3.0~3.5 (21.7~25.3)	
	Cylinder head flange nut	8	2.0~2.3 (14.5~16.6)	
	Cylinder mounting bolt	8	2.0~2.3 (14.5~16.6)	
	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	6.0~9.6 (43.4~69.4)	
	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)		
Frame	Rear fork pivot bolt	12	Rear: 0.2~0.45 (1.4~3.3)	
	Front wheel axle nut	12	5.5~6.5 (39.8~47.0)	
	Engine hanger bolt	8	5.5~6.5 (39.8~47.0)	
	Rear axle nut	14	2.8~3.3 (20.~21.9)	
	Driven sprocket	8	7.0~9.0 (50.6~65.1)	
	Brake arm	6	2.0~2.8 (14.5~20.3)	
	Rear brake torque link	8	0.8~1.1 (5.8~8.0)	
	Rear shock absorber	10	1.8~2.5 (13.0~18.1)	
	Change arm, kick starter pedal	6	3.5~4.5 (25.3~32.5)	
	Rear brake pedal pivot	10	0.8~1.2 (5.8~8.7)	
				3.4~4.0 (24.5~28.9)
				UBS bolt

Standard tightening torque

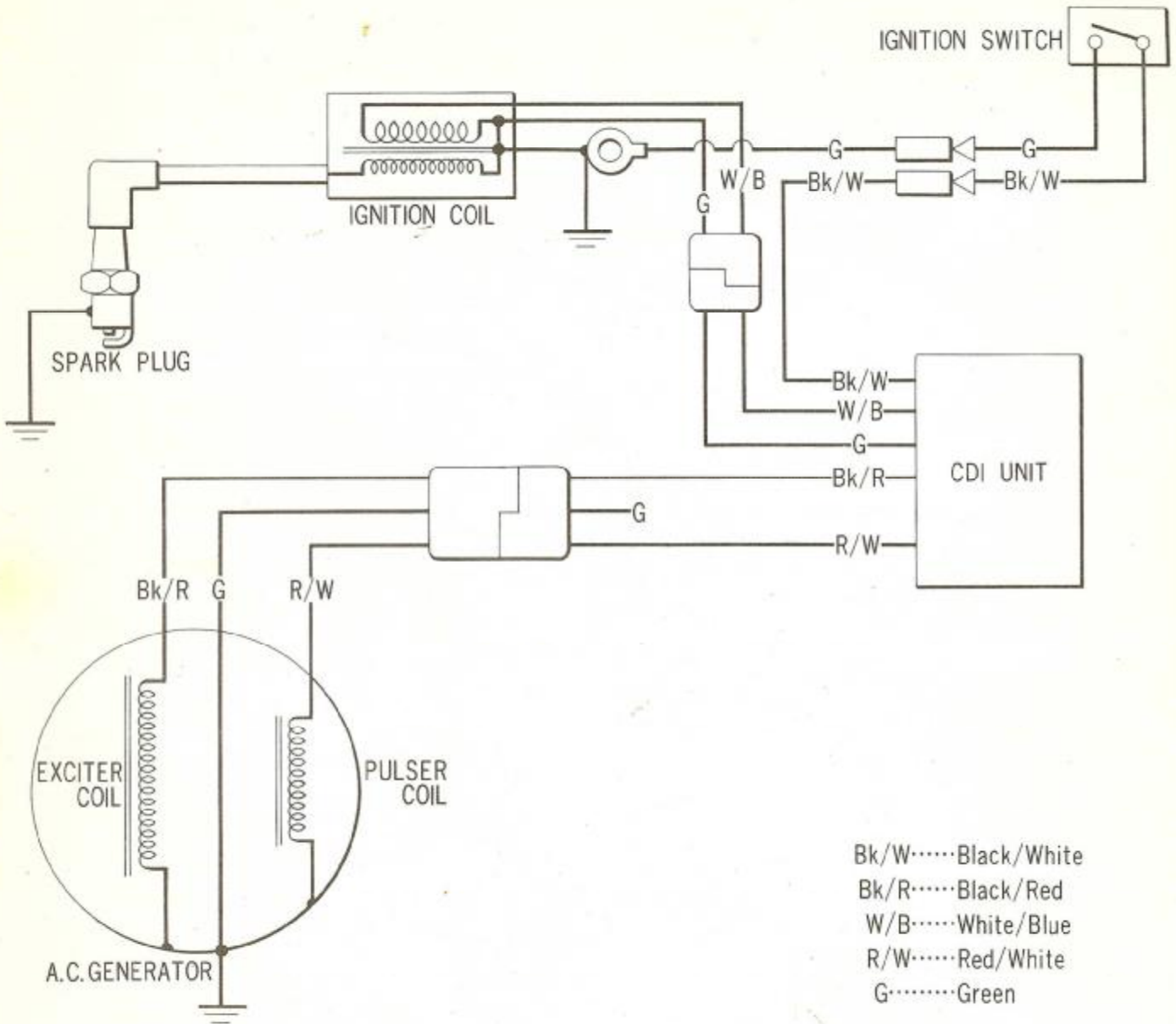
		Unit: kg-m (lbs-ft)	
Part	Torque	Part	Torque
6 mm screw	0.7~1.0 (5.1~7.2)	6 mm flanged hex bolt	1.0~1.4 (7.2~10.1)
6 mm hex bolt	0.8~1.2 (5.8~8.7)	8 mm flanged hex bolt	2.4~3.0 (17.4~21.7)
8 mm hex bolt	1.8~2.5 (13.0~18.1)	10 mm flanged hex bolt	3.8~4.8 (27.5~34.7)
10 mm hex bolt	3.0~4.0 (21.7~28.9)		

3. SERVICE DATA

Unit: mm (in.)

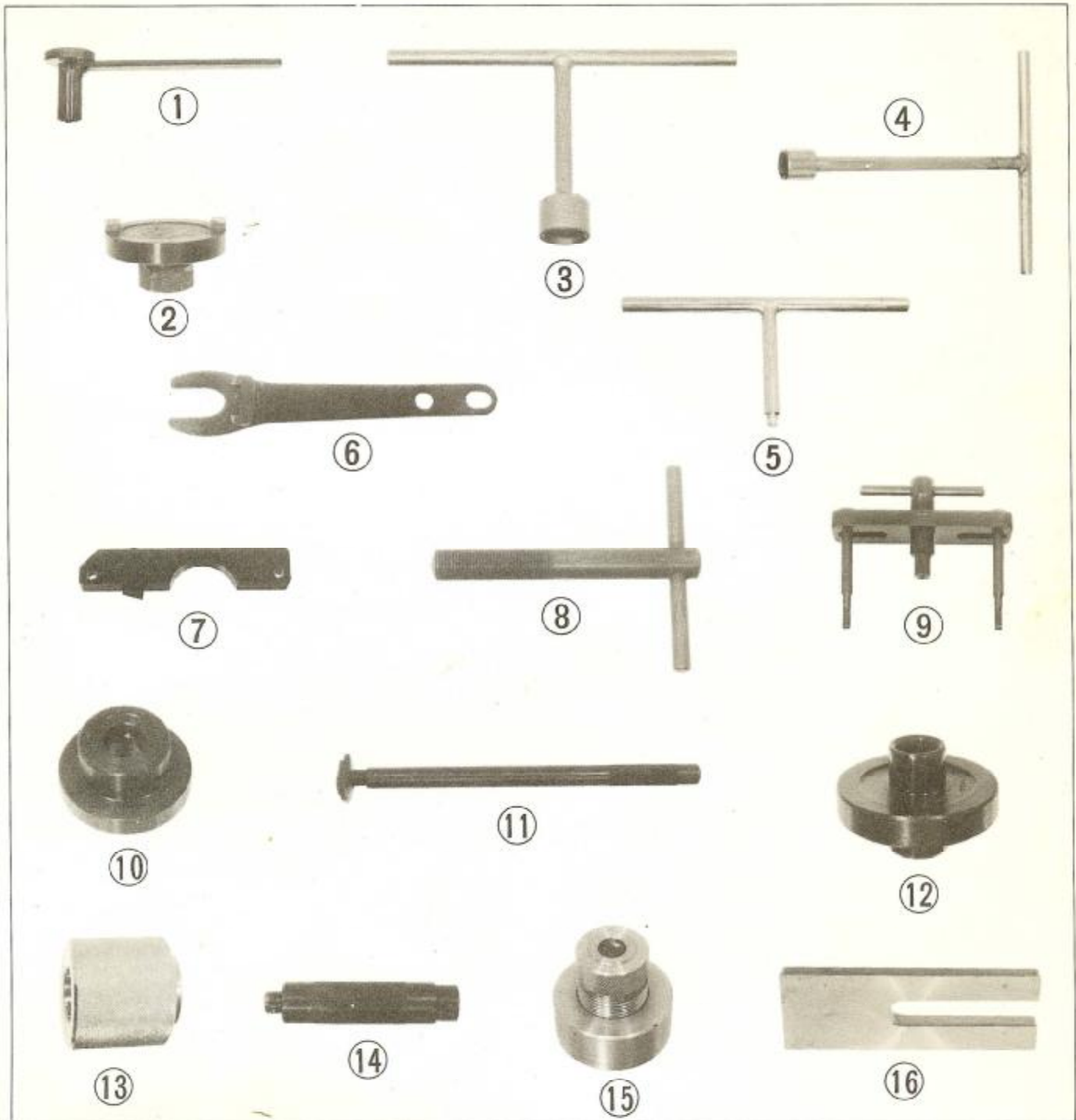
Item		Assembly standard	Service limit	
Engine	Cylinder bore	56.00~56.01 (2.2047~2.2051)	56.1 (2.2087)	
	Piston OD	55.94~55.96 (2.2024~2.2031)	55.85 (2.1988)	
	Piston pin hole dia.	14.002~14.008 (0.5513~0.5515)	14.05 (0.5531)	
	Piston pin OD	13.994~14.000 (0.5509~0.5512)	13.98 (0.5504)	
	Piston ring groove side clearance	Top	0.030~0.075 (0.0012~0.0030)	0.09 (0.0035)
		2nd	0.025~0.055 (0.0010~0.0022)	0.07 (0.0028)
	Piston ring gap	0.15~0.35 (0.0059~0.0138)	0.50 (0.0197)	
	Connecting rod big end axial clearance	0.15~0.60 (0.0059~0.0236)	0.70 (0.0276)	
	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	35.8~37.4 (1.4094~1.4724)	34.5 (1.3583)	
	Clutch spring tension	14.25~15.75/20.5 kg (0.5610~0.6201/55 lbs)	13.0/20.5 kg (0.5118/55 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 and L/H gearshift fork ID	10.000~10.018 (0.3937~0.3944)	10.05 (0.3957)	
	Shift fork finger thickness	4.90~4.93 (0.1929~0.1941)	4.5 (0.1772)	
Frame	Front fork bottom pipe OD	30.925~30.950 (1.2175~1.2185)	30.9 (1.2165)	
	Front fork bottom case ID	31.00~31.039 (1.2205~1.2220)	31.180 (1.2276)	
	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 runout	0.5 (0.0197)	2.0 (0.0787)	
	Front and rear brake drum ID	110.0~110.2 (4.3307~4.3386)	111.0 (4.3701)	
	Front and rear brake shoe thickness	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	18.030~18.063 (0.7098~0.7111)	18.20 (0.7165)	
	Rear fork center collar OD	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



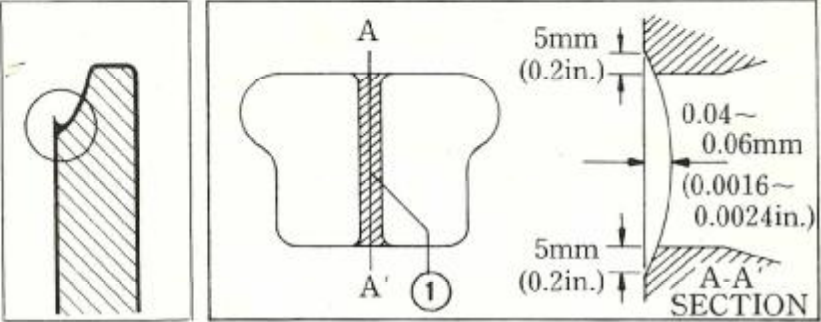
MEMO :

5. SPECIAL TOOLS



Ref. No.	Tool No.	Description	Ref. No.	Tool No.	Description
	07900-3600001	Special tool set	⑨	07937-3600000	Puller, crankcase
①	07908-3230000	Wrench, clutch adjusting	⑩	07945-3230200	Driver bearing
②	07910-3600000	Wrench, bearing retainer	⑪	07944-1150000	Driver, ball race
③	07915-0300000	Wrench, stem nut	⑫	07946-3600000	A.T.T., bearing driver
④	07916-2830000	Wrench, lock nut	⑬	07947-3550000	Driver, front seal
⑤	07917-3230000	Wrench, Allen head	⑭	07949-6110000	Handle, driver
⑥	07922-3570000	Holder, drive sprocket	⑮	07965-3610000	Tool, crankcase assembly
⑦	07924-3600000	Holder, drive gear	⑯	07958-2500000	Holder, connecting rod
⑧	07933-2160000	Puller, dynamo rotor		07797-2920300	Case, tool set

6. OPTIONAL PARTS

Optional Parts	Remarks											
<ul style="list-style-type: none"> · Piston, 0.25 mm oversize · Piston rings, 0.25 mm oversize 	<p>If the cylinder becomes excessively worn or scored, rebore to 56.25~56.26 mm (2.2146~2.2150 in.) and install 0.25 mm oversize piston and piston rings.</p> <p>NOTE : 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 0.04~0.06 mm as shown below.</p>  <p style="text-align: center;">① Center pillar</p>											
<ul style="list-style-type: none"> · High performance cylinder · 29 mm carburetor · Insulator for 29 mm carburetor · Muffler 	<p>The high performance cylinder, 29 mm carburetor and muffler, installed as a set, will increase engine power at high rpm.</p> <p>This modification is recommended for use on high speed race courses only, as it produces a narrower power range with some reduction of low speed torque.</p>											
<ul style="list-style-type: none"> · Main jets · Slow jets · Air jets · Throttle valve set 	<p>#120~#130 (At intervals of 2 or 3. For example: #120, #122, #125, #128...) (Standard: #125)</p> <p>#55~#65 (At intervals of 5) (Standard: #60)</p> <p>#160~#240 (At intervals of 20) (Standard: #200)</p> <p>#3.0~#4.0 (At intervals of 0.5) (Standard: #3.5)</p>											
<ul style="list-style-type: none"> · Drive sprocket · Driven sprocket · Drive chain, 124 link 	<p>No. of teeth: 15 (Standard: 14)</p> <p>Steel: No. of teeth: 47, 51, 53 (Standard 49)</p> <p>Aluminum: No. of teeth: 47, 49, 51, 53</p> <p>124 link drive chain is supplied for use with optional sprocket combinations requiring greater chain length.</p>											
<ul style="list-style-type: none"> · Rear suspension springs 	<p>If the spring tension is out of specification (hard or soft), use the following springs in set.</p> <table border="1" data-bbox="634 1434 1328 1619"> <thead> <tr> <th rowspan="2">Part name</th> <th colspan="2">Part No.</th> </tr> <tr> <th>Soft spring</th> <th>Hard spring</th> </tr> </thead> <tbody> <tr> <td>Rear suspension spring A</td> <td>52401-360-810</td> <td>52401-360-820</td> </tr> <tr> <td>Rear suspension spring B</td> <td>52402-360-810</td> <td>52402-360-000</td> </tr> </tbody> </table>	Part name	Part No.		Soft spring	Hard spring	Rear suspension spring A	52401-360-810	52401-360-820	Rear suspension spring B	52402-360-810	52402-360-000
Part name	Part No.											
	Soft spring	Hard spring										
Rear suspension spring A	52401-360-810	52401-360-820										
Rear suspension spring B	52402-360-810	52402-360-000										
<ul style="list-style-type: none"> · Handlebar 	<p>Two different heights of the handlebar are available to suit a rider.</p> <table border="1" data-bbox="634 1686 1024 1822"> <thead> <tr> <th>Part name</th> <th>Part No.</th> </tr> </thead> <tbody> <tr> <td>High handlebar</td> <td>53100-360-820</td> </tr> <tr> <td>Low handlebar</td> <td>53100-360-810</td> </tr> </tbody> </table>	Part name	Part No.	High handlebar	53100-360-820	Low handlebar	53100-360-810					
Part name	Part No.											
High handlebar	53100-360-820											
Low handlebar	53100-360-810											
<ul style="list-style-type: none"> · Mud guard 	<p>The mud guard prevents mud from entering the cylinder or from accumulating on the cylinder head.</p>											
<ul style="list-style-type: none"> · Racing stand 	<p>The racing stand is used to support the motorcycle in an upright position.</p>											

7. SPECIFICATIONS

	Item	Metric	English
Dimension	Overall length	2,040 mm	80.3 in.
	Overall width	890 mm	35.0 in.
	Overall height	1,090 mm	42.9 in.
	Wheel base	1,360 mm	53.5 in.
	Seat height	820 mm	32.3 in.
	Foot peg height	290 mm	11.4 in.
	Ground clearance	195 mm	7.7 in.
	Dry weight	81 kg	179 lbs.
Frame	Type	Semi-double cradle	
	F. suspension, travel	Telescopic fork, travel 180 mm (7.1 in.)	
	R. suspension, travel	Swing arm, travel 105 mm (4.1 in.)	
	F. tire size, pressure	2.75-21 (4 PR), air pressure 1.0 kg/cm ² (14.2 psi)	
	R. tire size, pressure	3.50-18 (4 PR), air pressure 1.0 kg/cm ² (14.2 psi)	
	F. brake, lining area	Internal expanding shoes, lining swept areas 86.3 cm ² (13.4 sq. in.)	
	R. brake, lining area	Internal expanding shoes, lining swept areas 86.3 cm ² (13.4 sq. in.)	
	Fuel capacity	6 lit.	1.6 U.S. gal. 1.3 Imp. gal.
	Caster angle	59° 30'	
	Trail length	140 mm	5.5 in.
	Front fork oil capacity	155-160 cc	5.3-5.4 ozs.
Engine	Type	Air cooled, 2 stroke engine	
	Cylinder arrangement	Single, inclined from vertical	
	Bore and stroke	56.0×50.0 mm	2.205×1.969 in.
	Displacement	123 cc	7.5 cu. in.
	Compression ratio	7.6 : 1	
	Maximum horsepower	21.7 HP/9,500 rpm (SAE J245)	
	Maximum torque	1.6 kg-m/9,500 rpm	
	Oil capacity	0.85 ℓ	0.9 U.S. qt. 0.8 Imp. qt.
	Idle speed	1,800 rpm	
Carburetor	Type	Piston valve	
	Main jet (standard)	#125	
	Slow jet (standard)	#60	
	Air screw opening	1-1/2±1/8	
	Float height	20 mm	0.787 in.
Drive train	Clutch	Wet, multi-plate type	
	Transmission	6-speed, constant mesh	
	Primary reduction	4.000	
	Gear ratio I	2.133	

VI. SERVICE DATA

	Item	Metric	English
	Gear ratio II		1.611
	Gear ratio III		1.300
	Gear ratio IV		1.090
	Gear ratio V		0.958
	Gear ratio VI		0.880
	Final reduction		3.270
	Gear shift pattern	Left foot operated return system	
Electrical	Ignition	CDI Ignition coil	
	Starting System	Kick starter	
	Spark plug	NGK B9EV	

MEMO :



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