HONDA

SHOP MANUAL
QR50

O.-HM 1037

1983

QR50

IMPORTANT SAFETY NOTICE

WARNING *Indicates a possibility of personal injury or loss of life if instructions are not followed.*

CAUTION *Indicates a possibility of equipment damage if instructions are not followed.*

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. It is important to note that this manual contains some warnings and cautions against some specific service methods which could cause PERSONAL INJURY to service personnel or could damage a vehicle or render it unsafe. Please understand that those warnings could not cover all conceivable ways in which service, whether or not recommended by Honda might be done or of the possible hazardous consequences of each conceivable way, nor could Honda investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized by the service methods or tools selected.

HONDA
QR50

HOW TO USE THIS MANUAL

Sections 1 through 3 apply to the whole motorcycle, while sections 4 through 12 describe parts of the motorcycle, grouped according to location.

Find the section you want on this page, then turn to the table of contents on page 1 of that section.

Most sections start with an assembly or system illustration and all the required specifications, torques, working practices, tools and troubleshooting for the section. The subsequent pages give detailed procedures for the section.

If you don't know what the source of the trouble is, go to section "TROUBLESHOOTING".

HONDA MOTOR CO., LTD.
Service Publications Office

CONTENTS

HONDA QR50 1. GENERAL INFORMATION

GENERAL SAFETY

WARNING

If the engine must be running to do some work, make sure the areas is well-ventilated. Never run the engine in a closed area. The exhaust contains poisonous carbon monoxide gas.

WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.

SERVICE RULES

1. Use genuine HONDA or HONDA recommended parts and lubricants or their equivalent. Parts that don't meet HONDA's design specifications may damage the motorcycle.
2. Use the special tools designed for this product.
3. Install new gaskets, O-rings, cotter pins, lock plates, etc. when ressembling.
4. When torquing bolts or nuts, begin with larger-diameter or inner bolt first, and tighten to the specified torque diagonally in 2-3 steps, unless a particular sequence is specified.
5. Clean parts in non-flammable or high flash point solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
6. After reassembly, check all parts for proper installation and operation.
7. Use only metric tools when servicing this motorcycle. Metric bolts, nuts, and screws are not interchangeable with English fasteners. The use of incorrect tools and fasteners may damage the motorcycle.

SPECIFICATIONS

ITEM		
DIMENSIONS	Overall length	1225 mm (48.2 in)
	Overall width	610 mm (24.0 in)
	Overall height	725 mm (28.5 in)
	Wheel base	845 mm (33.2 in)
	Ground clearance	115 mm (4.5 in)
	Dry weight	35 kg (77.2 lb)
FRAME	Type	Double Cradle
	F. suspension, travel	Telescopic fork 60 mm (2.4 in)
	R. suspension, travel	Unit swing
	Vehicle capacity load	25 kg (55 lb)
	F. tire size, pressure	2.50–10, 100 kPa (1.0 kg/cm^2, 14 psi)
	R. tire size, pressure	2.50–10, 100 kPa (1.0 kg/cm^2, 14 psi)
	F. brake	Internal expanding shoe
	R. brake	Internal expanding shoe
	Fuel capacity	2.0 ℓ (0.5 U.S. gal. 0.44 imp. gal.)
	Caster angle	65°
	Trail length	51 mm (2.0 in)
ENGINE	Type	Air cooled 2-stroke
	Cylinder arrangement	Single cylinder flat
	Bore and stroke	40 x 39.3 mm (1.57 x 1.54 in)
	Displacement	49 cm^3 (2.99 cu. in.)
	Compression pressure	11.0 kg/cm^2/1000 rpm (156 psi/100 min^{-1})
	Transmission oil capacity	750 cc (0.79 U.S. oz, 0.66 Imp. oz)
	Oil tank capacity	0.4 lit. (0.42 U.S. qt, 0.35 Imp. oz)
	Lubrication system	Forced and wet sump
	Prot timing	
	Intake Open	Reed valve controlled
	Close	Reed valve controlled
	Exhaust Open	70.5° (BBDC)
	Close	70.5° (ABDC)
	Scavenge Open	51° (BBDC)
	Close	51° (ABDC)
	Engine dry weight	14 kg (30.9 lb)
	Idle speed	1800 min^{-1} (rpm)

ITEM		
CARBURETION	Carburetor type	Piston valve
	Identification number	PA26A
	Air screw initial setting	1-¼ turns out
	Float level	12.2 mm (0.48 in)
DRIVE TRAIN	Clutch type	Automatic wet centrifugal clutch
	Primary reduction	Chain and gear
ELECTRICAL	Ignition	Condenser capacitive discharge ignition (CDI)
	Starting system	kick starter
	Generator	A.C. Generator 6V 40W/5000 rpm (min^{-1})
	Spark plug	NGK: BPR4HS, ND: W14FPR-L,
	Spark plug gap	0.6 ~ 0.7 mm (0.024 ~ 0.028 in)
	Ignition timing "F" mark	18°/2.000 rpm (min^{-1})

TORQUE VALUES

ENGINE

TIGHTENING POINT	THREAD DIA	TIGHTENING TORQUE		
		N.m	kg-m	ft-lb
Cylinder head	6 mm	9–12	0.9–1.2	7–9
Flywheel nut	10 mm	35–40	3.5–4.0	25–29
Clutch drive plate	10 mm	35–40	3.5–4.0	25–29
Intake pipe	6 mm	8–12	0.8–1.2	6–9

FRAME

TIGHTENING POINT		THREAD DIA	TIGHTENING TORQUE		
			N.m	kg-m	ft-lb
Steering stem nut		JIS BC-1	60–90	6.9–9.0	43–65
Sterring handle tightening nut		8	25–35	2.5–3.5	18–25
Front axle nut		10	40–50	4.0–5.0	29–36
Engine hanger		10	40–50	4.0–5.0	29–36
Rear shock absorber	Upper	10	30–40	3.0–4.0	22–29
	Lower	8	20–30	2.0–3.0	14–22
Rear axle nut		14	80–100	8.0–10.0	58–72
Front brake arm		5	4–7	0.4–0.7	3–5
Rear brake arm		5	4–7	0.4–0.7	3–5

Torque specifications listed above are for important fasteners. Others should be tightened to standard torque values bellow.

STANDARD TORQUE VALUES

TYPE	TIGHTENING TORQUE		
	N.m	kg-m	ft-lb
5 mm bolt, nut	4.5–6	0.45–0.6	3.3–4.3
6 mm bolt, nut	8–12	0.8–1.2	6–9
8 mm bolt, nut	18–25	1.8–2.5	13–18
10 mm bolt, nut	30–40	3.0–4.0	22–29
12 mm bolt, nut	50–60	5.0–6.0	36–43
5 mm screw	3.5–5	0.35–0.5	25–36
6 mm screw	7–11	0.7–1.1	5–8
6 mm flange bolt, nut	10–14	1.0–1.4	7–10
8 mm flange bolt, nut	20–30	2.0–3.0	18–22
10 mm flange bolt, nut	30–40	3.0–4.0	22–29

TOOLS

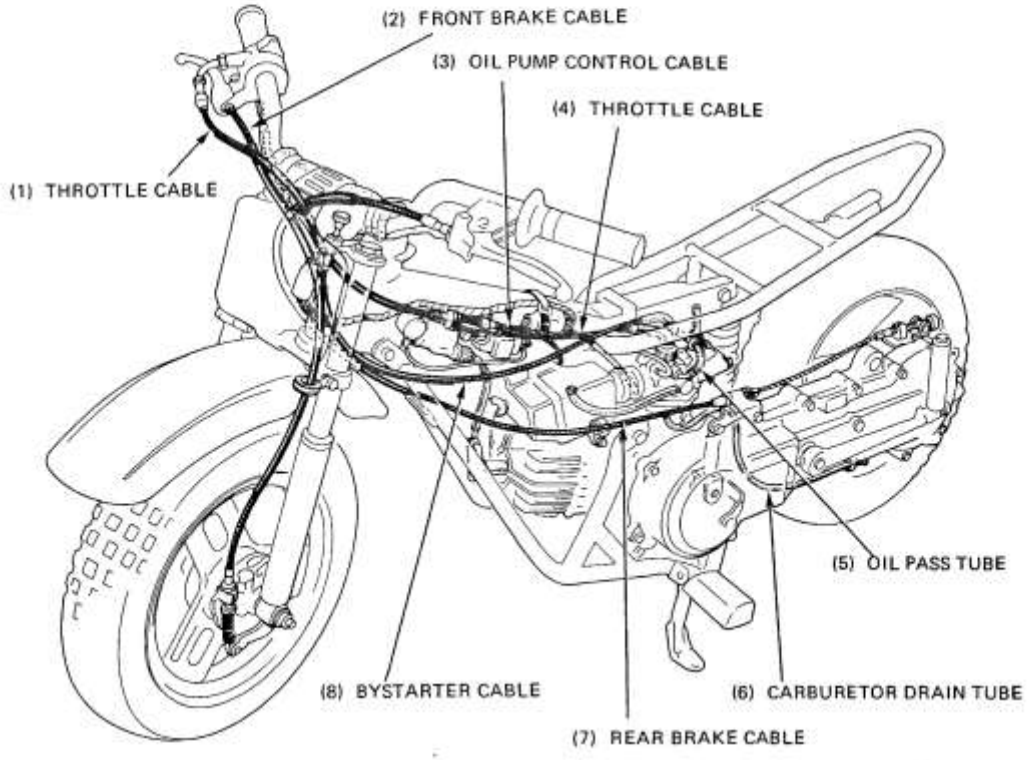
SPECIAL TOOLS

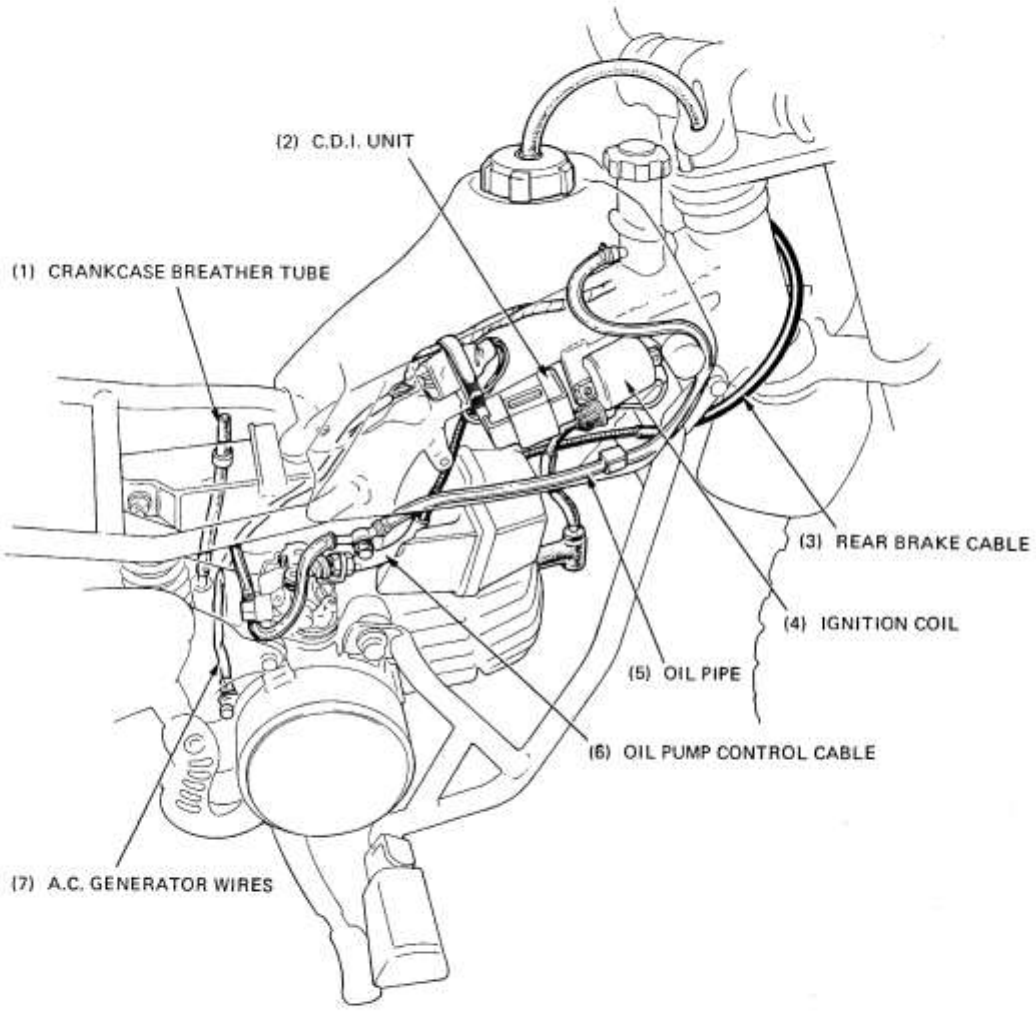
TOOL NUMBER	TOOL NAME	REMARKS	REF PAGE
07931-1870000	A.C.G. Puller attachment	To prevent damage to rotor boss by puller when removing	7-3
07933-1470000	Case puller	To disassemble left crankcase and crankshaft.	9-3
07935-1470001	Drive plate puller	To remove clutch dry plate.	8-2
07935-1870000	Case puller	To separater right and left crankcases.	9-3
07946-GA70000	Ball race remover	To remove steering ball race.	10-13, 10-14
07946-1870100	Bearing outer driver, 28 x 30 mm	To drive front wheel bearings	10-6
07965-1480010	Seal and case assembly tool	To assemble right crankcase and crankshaft, and crankshaft and left crankcase, and to press fit right crankshaft seal.	9-6, 9-7
07967-GA70101	Rear shock absorber attachment A	To disassemble and assemble rear shock-absorber.	11-8
07967-GA70200	Rear shock absorber attachment B	To disassemble and assemble rear shock absorber.	11-8
07631-0010000	Bearing puller	To remove crankshaft bearing.	9-3

COMMON TOOLS

TOOL NUMBER	TOOL NAME	REMARKS	REF PAGE
07401-0010000	Float level gauge	To check float level.	4-6
07725-0030000	Universal holder	To hold flywheel.	7-3, 7-6
07716-0020400	Lock nut wrench socket, 30 x 32mm	To remove and install steering stem nut (distance across opposite sides: 32 mm).	10-12
07716-0020500	Extension bar & handle	To remove and install steering stem nut.	10-12
07749-0010000	Bearing driver handle	To drive in outer bearing.	9-8
07746-0010200	Attachment, 37 x 40 mm	To drive final gear bearing.	9-8
07746-0040400	Pilot, 17 mm	To drive final gear bearing	9-8
07746-0010300	Attachment, 42 x 47 mm	To drive in crankcase bearing (#6004).	9-5
07746-0040500	Pilot, 20 mm	To drive in crankcase bearing (#6004).	9-5
07746-0040100	Pilot, 10 mm	To guide front wheel bearing.	10-6
07959-3290001	Rear shock compressor	Rear shock absorber disassembly & assembly.	11-8

CABLE AND WIRE HARNESS ROUTING




(2) C.D.I. UNIT
(1) CRANKCASE BREATHER TUBE
(3) REAR BRAKE CABLE
(4) IGNITION COIL
(5) OIL PIPE
(6) OIL PUMP CONTROL CABLE
(7) A.C. GENERATOR WIRES

HONDA
QR50

2. LUBICATION

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Use added care when removing and installing the oil pump not to allow dust and dirt from entering inside.
- Do not attempt to disassemble the oil pump.
- Bleed air from the oil pump if there is are in the oil pipe or if the oil pipe is disconnected from the oil pump. (tank to oil pump)
- Bleed air from the oil pass tube (oil pump to carburetor) if it is disconnected.
- Do not plug the oil pipe and pass tube with a screw or bolt as metal dust may enter the pipe and tube, resulting in a host of manifunction.

SPECIFICATIONS

Recommended oil:
HONDA 2 STROKE INJECTOR OIL OR ITS EQUIVALENT

TROUBLESHOOTING

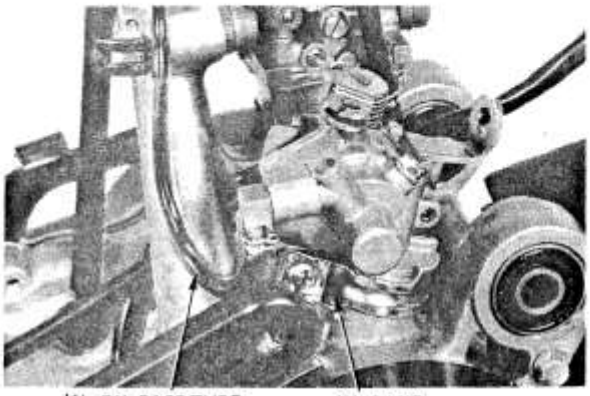
Excessive smoke or carbon deposits on plug
1. Oil pump not properly aligned (excessive oil quantity)
2. Use of poor quality oil

Piston seijure
1. No oil in oil tank or clogged oil pipe
2. Oil pump not aligned properly (insufficient oil quantity)
3. Air in oil pipe
4. Faulty oil pump
5. Carburetor not adjusted properly

Oil not flowing from oil tank
1. Clogged oil tank cap breather hole
2. Clogged oil pipe.

OIL PUMP REMOVAL

Remove the engine (Page 5-2).
Disconnect the oil pass tube.
Remove the oil pump by loosening the band screw.



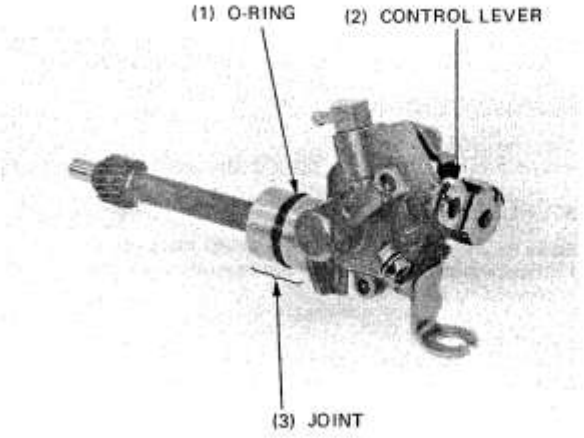
(1) OIL PASS TUBE (2) BAND

OIL PUMP INSPECTION

Check the oil pump for:
- Deteriorated O-ring.
- Damage to crankcase mating faces.
- Control lever operation.

NOTE

Do not disassemble the oil pump.



(1) O-RING (2) CONTROL LEVER (3) JOINT

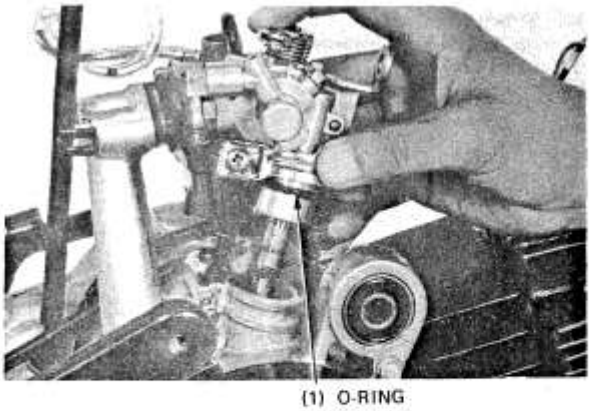
OIL PUMP INSTALLATION

Dip the O-ring in clean HONDA 2 STROKE INJECTOR OIL, and insert the pump into the crankcase.
If difficulty is encountered in installing the oil pump, lightly depress the kick starter pedal to renew the engagement between the gear teeth.
Secure the pump with the clamp. Tighten the clamp screw securely.

NOTE

• Install the clamp with the cutout aligned with the projection of the oil pump. • Make sure that the projection of the crankcase is held by the clamp at the screw.

Connect the oil pass tube.



(1) O-RING

NOTE

After installing the engine, perform the following inspections and services:
- Control cable adjustment (Page 3-6)
- Oil pump air bleeding (Page 2-3)
- Oil pass tube bleeding (Page 2-4)
- Oil leaks

OIL PUMP AIR BLEEDING

NOTE

- Air trapped in the system may cause serious damage to the engine by blocking the flow of oil to the vital parts of the engine.
- To bleed air from the system, bleed the oil pipe and oil pump first, then bleed the oil pass bube.
- Fill the fuel tank with premixed fuel and oil (in a ratio between 25.1 and 50:1). Drain fuel from the carburetor float chamber (Page 4-4).

OIL PIPE/OIL PUMP

NOTE

- The oil pump and oil pipe must be bled when the oil pipe has been disconnected or if there is air in the oil pipe.
- Some amount of air may be escaped into the oil tank by swinging the oil pipe.

Stop the engine.
Fill the oil tank with recommended oil.
Place a rag or shop towel around the oil pump.

Loosen the bleeder bolt at top of the oil pump.
Close the bleeder bolt when the oil flowing out of the bleeder bolt hole is free of air bubbles.

NOTE

The oil pass tube must be bled after air has been bled form the oil pump and oil pipe.

OIL PASS TUBE

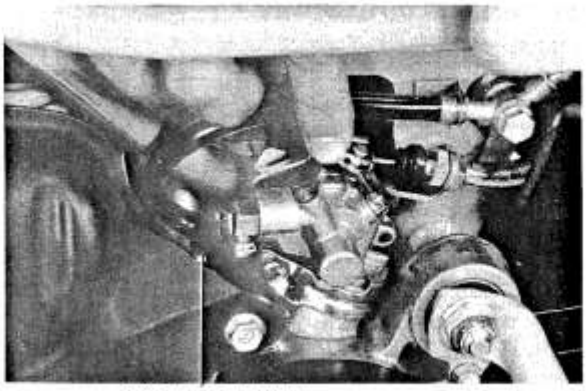
NOTE

Air must be bled form the oil pass tube when it has been disconnected or if there is air in the oil pipe and oil pump.

To bleed air, start the engine and let it idle for about 10 minutes with the control lever held near the FULL OPEN position.

NOTE

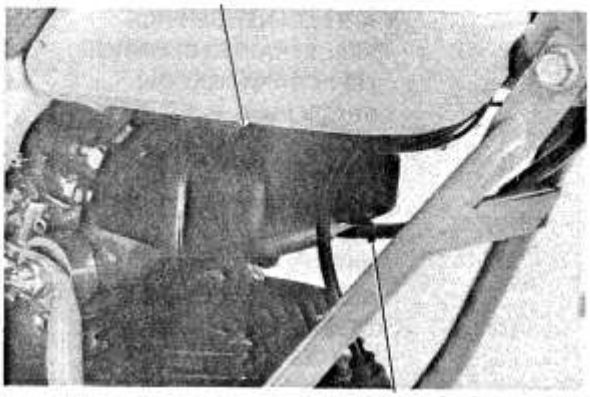
- Use caution when working with gasoline. Always work in a well-ventilated area and away from sparks or flames.
- Do not use oils other than specified in this manual.
- Do not rev up the engine.



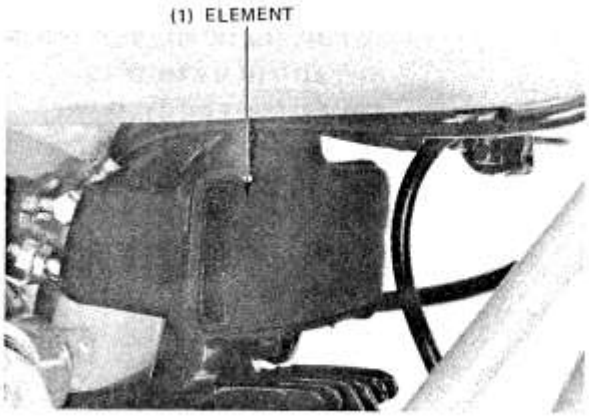
(1) OIL PASS TUBE

AIR CLEANER SERVICE

Remove the spark plug cap.
Remove the air cleaner cover by removing the wing bolt.



Remove the air cleaner element.

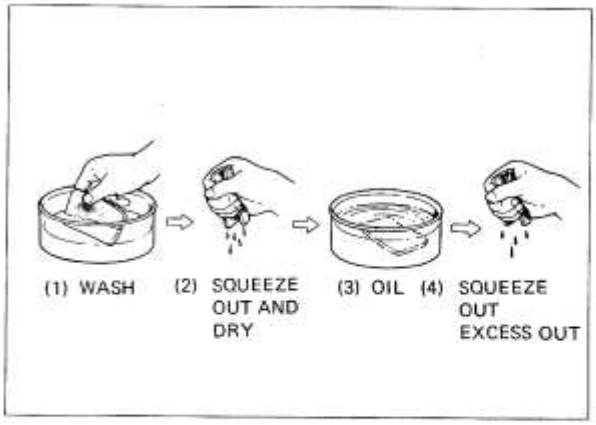


Wash the element in non-flammable or high flash point solvent.
Squeeze out the solvent thoroughly and allow to dry.

NOTE

Do not wash the air cleaner element in gasoline and other organic solvent.

Soak the element in clean motor oil (SAE10W-30) or gear oil (#80– #90) and squeeze out excess.



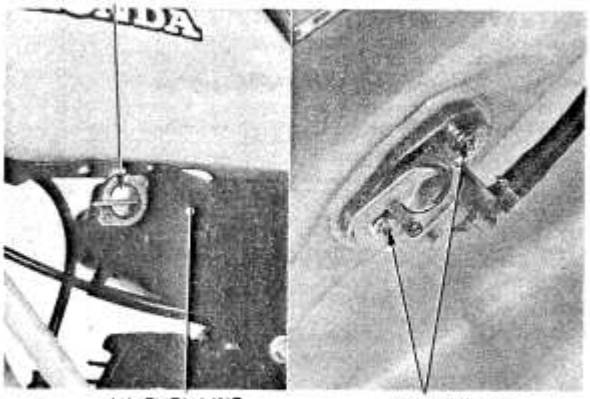
FUEL STRAINER CLEANING

WARNING

Use caution when working with gasoline. Always work in a well-ventilated area and away from sparks or open flames.

Turn the fuel valve to OFF.
Remove the seat.
Remove the fuel tank.

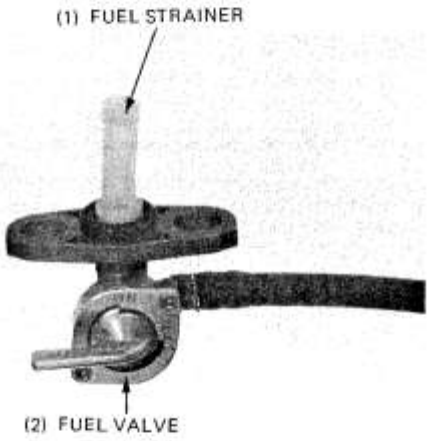
Place a pan under the fuel valve and drain fuel from the fuel tank by turing the fuel valve lever to ON.



Remove the fuel strainer from the fuel valve.
Blow accumulated dust off the strainer using a compressed air.
Installation is the reverse order of removal.

NOTE

After assembling, check for air leak.



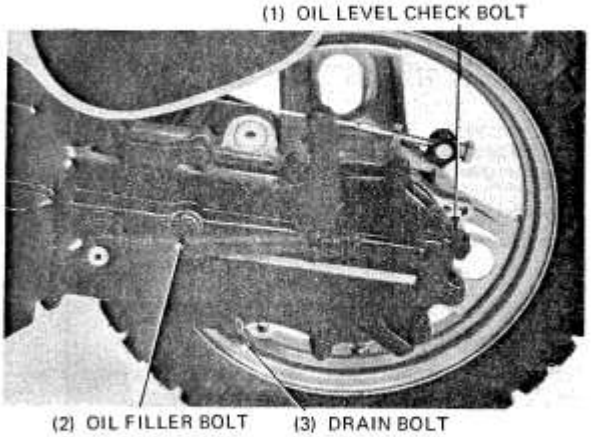
LEFT CRANKCASE OIL

Oil Level Inspection

NOTE

Place the motorcycle on the mainstand on level ground.

Stop the engine and remove the oil level check bolt. The oil level should be up to the oil filler neck.



Oil Change

Remove the oil level check bolt.
Place a pan under the left crankcase and remove the oil drain plug.
Install the oil drain plug and tighten to the specified torque.
TORQUE: 10–14 N.m (1.0–1.4 kg-m, 7–10 ft-lb)

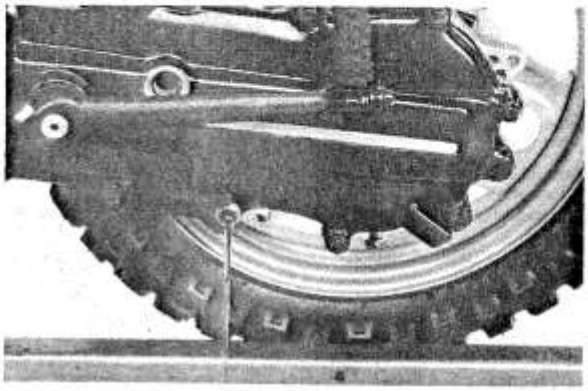
NOTE

> Check that the seal washer is not damaged and in good condition.

Fill the left crankcase up to the oil filler neck with the recommended oil.

OIL CAPACITY: 0.6 liters (1.8 U.S. oz, 1.5 Imp. oz)
SPECIFIED OIL: HONDA 4-STROKE OIL SAE 10W-30 or equivalent

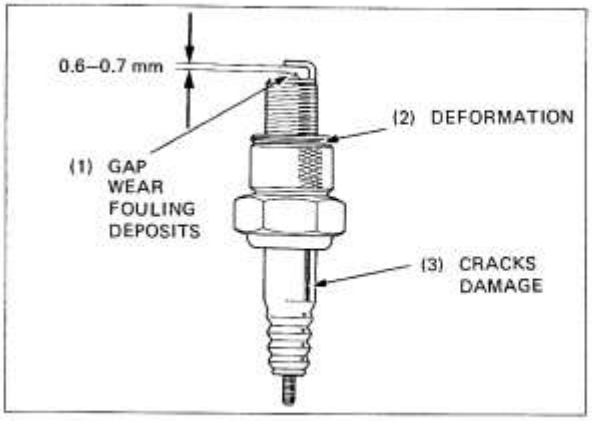
Install the oil level check bolt.
Start the engine and check for leaks.
Recheck the oil level (Page 3-3).



SPARK PLUG

Clean any dirt from around the spark plug base.
Disconnect the spark plug cap.
Remove the spark plug.
Visually inspect the spark plug electrodes for wear. The center electrode should have square edges and the side electrode should not be eroded. Discard the plug if there is apparent wear or if the insulator is cracked or chipped.
Clean the spark plug in a plug cleaner or with a brittle wire brush if there is carbon build-up.

RECOMMENDED SPARK PLUGS:
NGK: BPR 4HS
ND: W14FPR-L



CYLINDER COMPRESSION

NOTE

> Measure the engine compression while the engine is hot.

Remove the spark plug and install a compression gauge to the spark plug hole.
Fully open the throttle and strongly kick the kick starter pedal sereral times.

Specified compression pressure: 9.0–13.0kg/cm² (128–185 psi)

If the compression pressure is below the specified value, check for:

- Blown cylinder head gasket
- Worn piston rings
- Worn cylinder

If the compression pressure is above the specified value, it indicates the carbon deposits are accumulated on the combustion chamber wall or on the piston head. Disassemble and decarbonize.

IGNITION TIMING

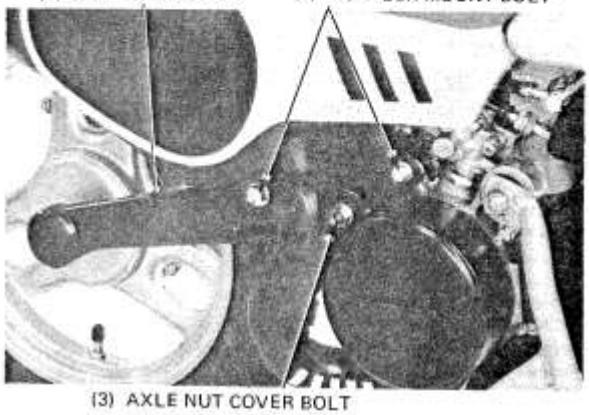
NOTE

> The ignition timing is not adjustable since the motorcycle is equipped with a C.D.I. (Capacitive Discharge Ignition) system. If the ignition timing is incorrect, check the C.D.I. unit and AC generator coils and replace any defective parts.

Use the service tester (No. 07308–0070000 or No. 07308–0010000) to check the ignition timing.

Remove the muffler mount bolt.
Move the axle nut cover down after loosening the cover bolt.

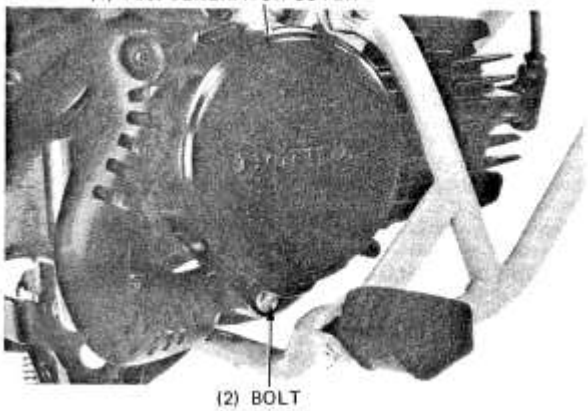
(1) AXLE NUT COVER (2) MUFFLER MOUNT BOLT



(3) AXLE NUT COVER BOLT

Remove the bolt attaching the A.C. generator cover and remove the cover.

(1) A.C. GENERATOR COVER

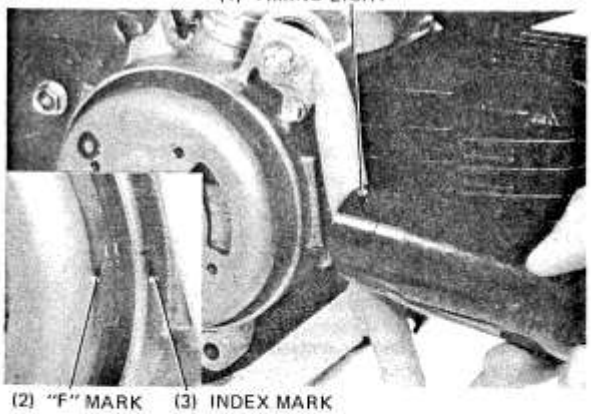


(2) BOLT

Start the engine and let it idle. Aim the timing light at the timing mark.
Timing is correct if the index mark aligns with the "F" mark (within ±3°) at 2,000 rpm.

IGNITION TIMING: 18° ±3°/2,000 rpm BTDC (Before Top Dead Center) (fixed)

(1) TIMING LIGHT



(2) "F" MARK (3) INDEX MARK

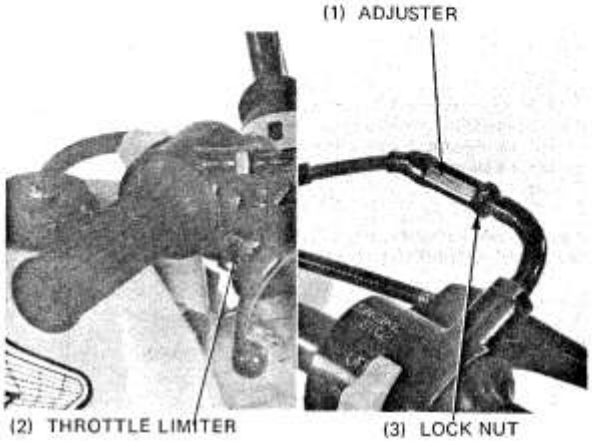
CARBURETOR ADJUSTMENT

THROTTLE CABLE ADJUSTMENT

Loosen the throttle limiter.
Check the throttle grip free play.
PLAY: 2–4 mm (0.08–0.16 in)

To adjust, loosen the grip free play adjuster lock nut and turn the adjster. Tighten the lock nut.

Replace the throttle cable with a new one if the above procedure is no longer effective.

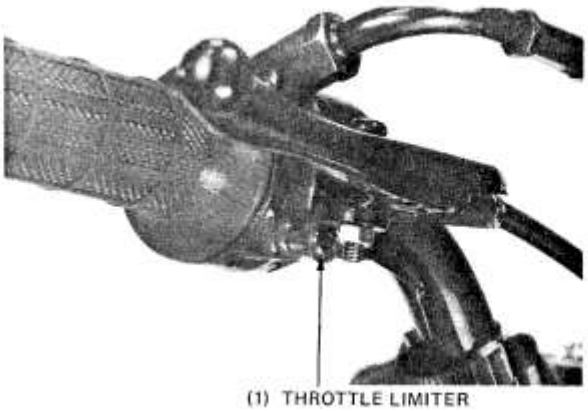


OIL CONTROL CABLE ADJUSTMENT

NOTE

The oil pump control cable should be adjusted after the throttle cable has been adjusted.

Remove the seat.
Loosen the throttle limiter.

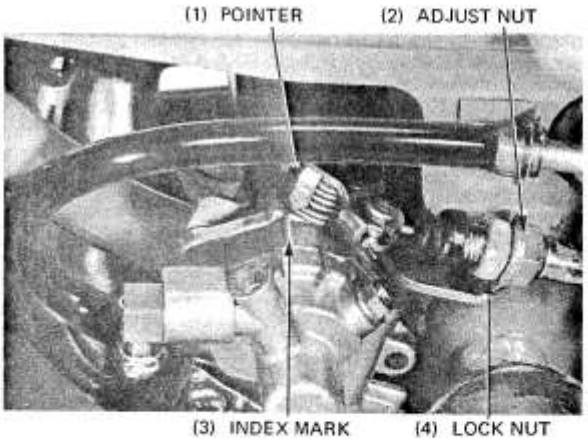


Loosen the oil control cable lock nut.
Fully open the throttle grip.
Turn the oil control cable adjust nut until the pointer of the control lever aligns with the index mark on the oil pump.
Tighten the lock nut.

CAUTION

Do not allow the pointer to enter the CLOSE SIDE of the index mark as this will reduce the oil delivery, resulting in serious engine damage.

- If the pump lever is excessively open: white smoke or hard starting
- If the pump lever opening is too little: Piston seijure



IDLE SPEED ADJUSTMENT

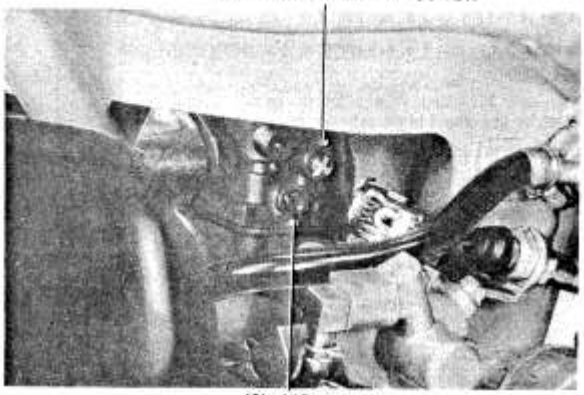
NOTE

> The idle speed should be adjusted after warming up the engine to the operating temperature.

Connect a tachometer.
Set the idel speed to 1,800 rpm by means of the stop screw.
If the engine misses or runs poorly, proceed as follows:

(1) Slowly turn the air screw clockwise until it bears against the seat and becomes firm and then back it off 1-¼ turns.
(2) Set the idle speed to 1,800 rpm with the stop screw.
(3) Turn the air screw in or out to find the highest idle speed.
(4) Again set the idle speed to 1,800 rpm with the stop screw.
(5) Repeat the above steps until the idle speed is stabilized.

(1) THROTTLE STOP SCREW



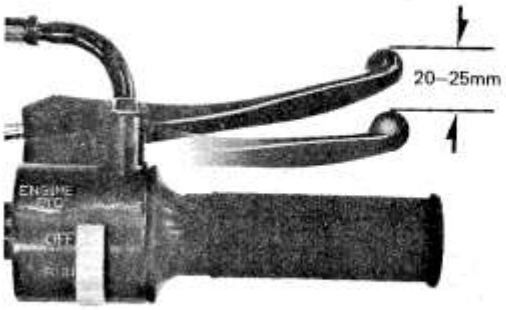
(2) AIR SCREW

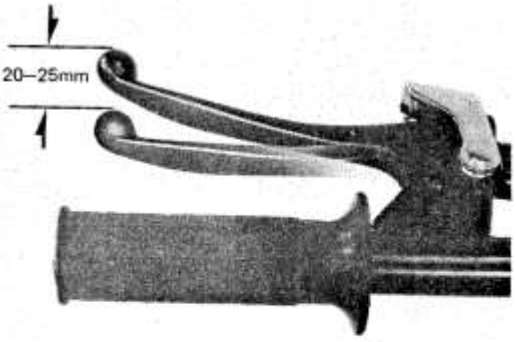
BRAKES

BRAKE ADJUSTMENT

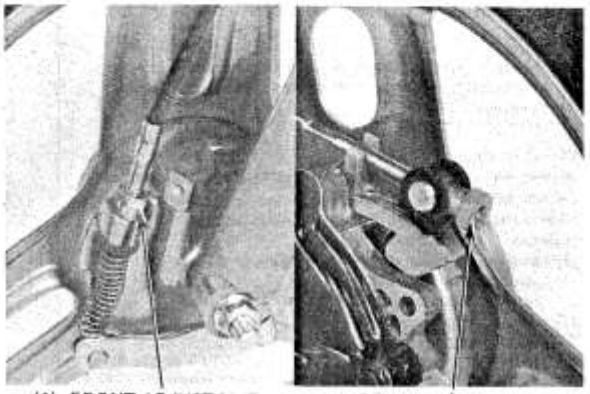
Check the front and rear brake levers for free play.

FREE PLAY: Front: 20–25 mm (0.78–0.98 in)
Rear: 20–25 mm (0.78–0.98 in)





To adjust, turn the front/rear brake adjust nut in or out until correct free play is obtained.

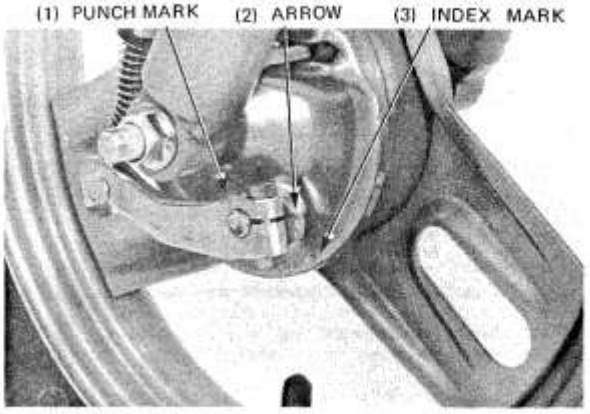


(1) FRONT ADJUST NUT (2) REAR ADJUST NUT

RELOCATING BRAKE ARM ON BRAKE SHOE CAM SHAFT

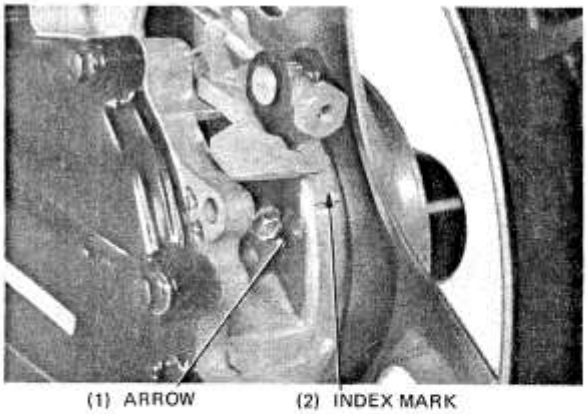
If the brake is worn excessively so that the brake adjust nut is no longer effective, remove the brake arm from the cam shaft, turn it cone serration counterclockwise, and reinstall (Page 10-9, 11-6)

(1) PUNCH MARK (2) ARROW (3) INDEX MARK



BRAKE SHOE INSPECTION

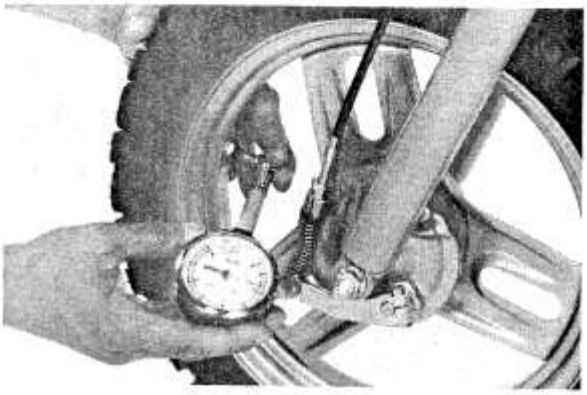
Squeeze the brake lever fully to see if the arrow on the brake arm aligns with the index mark on the brake panel.
Replace the brake shoes with new ones if the arrow aligns with the index mark.
Brake shoe replacement (Page 10-9, 11-5)



(1) ARROW (2) INDEX MARK

WHEELS

Check the front and rear wheel air pressures using an air gauge.



NOTE

Check the air pressures while the tires are COLD.

Air pressures:
Front: 100 kPa (1.0 kg/cm², 14 psi)
Rear: 100 kPa (1.0 kg/cm², 14 psi)

Tire sizes:

Front	2.5–10
Rear	2.5–10

Check the front and rear tires for excessive wear, damage or embedded objects.
Replace the tires with new ones if the wear indicators are exposed.

SUSPENSION

FRONT

Check the action of the front forks by applying the front brake and compressing them several times.
Check the entire fork assembly for signs of leaks or damage.
Replace any components which are unrepairable.
Torque all nuts and bolts.
Check the front wheel for deformation.

REAR

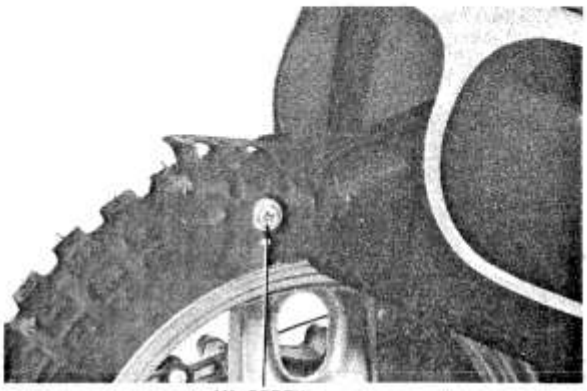
Place the motorcycle on the mainstand to raise the rear wheel off the ground.

Check the entire suspension assembly for loose fasteners or signs of damage.
Check the rear wheel for distortion.

Torque all nuts and bolts.

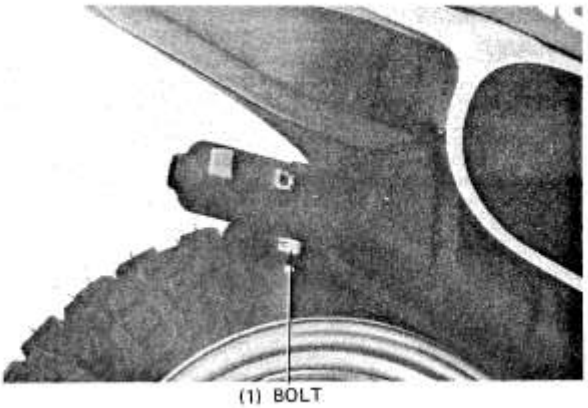
TAIL PIPE

Remove the cover by removing the screw.



(1) SCREW

Remove the tail pipe by removing the bolt.



(1) BOLT

Check the pipe for damage or other defects.
Decarbonize the tail pipe.

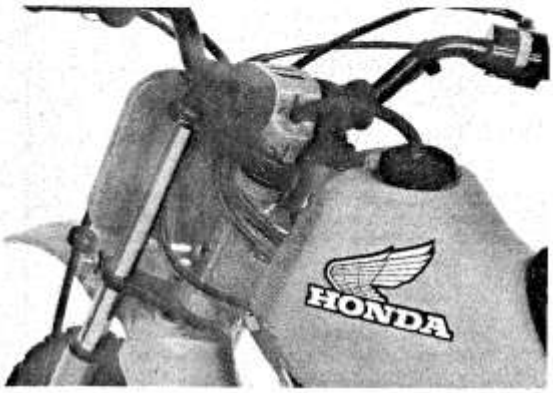
STEERING HEAD

NOTE

Check that the control wires do not interfere with the rotation of the handlebar.

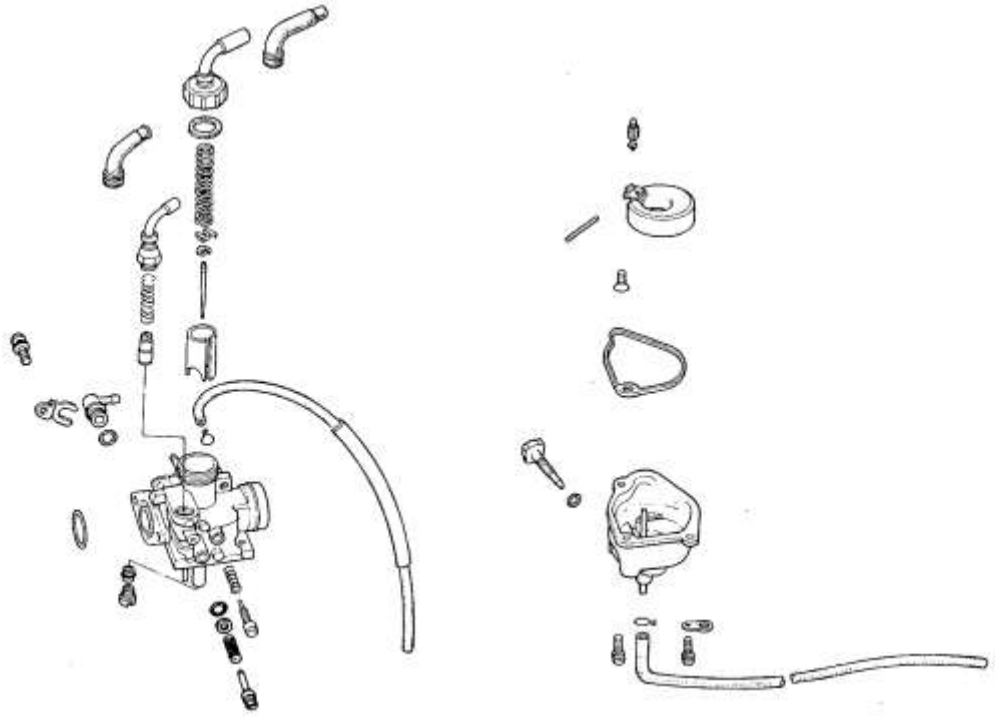
Raise the front wheel off the ground and make sure that the handlebar rotates freely.

It the handlebar moves unevenly, binds or has vertical movement, adjust the steering stem top thread nut with a pin spanner. (Page 10-15).



BOLTS/NUTS

Retighten the bolts, nuts and fasteners at regular intervals shown in the Maintenance Schedule.
Check that all chassis nuts and bolts are tightened to their correct torque values. Check all cotter pins and safety clips.



4. FUEL SYSTEM

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Bleed air from the system whenever the oil pass tube has been disconnected.
- Route all wires and cables properly.
- Use caution when working with gasoline. Always work in a well-ventilated area and away from sparks or flames.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones during assembly.

TOOLS

COMMON TOOL

Float level gauge 07401-0010000

SPECIFICATIONS

Venturi dia.	12 mm (0.47 in)
Identification mark	PA26A
Float level	12.2 mm ± 1.0 mm (0.48 ± 0.04 in)
Air screw opening	1-¼ turns out (standard)
Idle speed	1,800 rpm ± 100 rpm (1,800 ± 100 min^{-1})
Throttle grip free play	2–4 mm (0.08–0.16 in)

TROUBLESHOOTING

Engine cranks but won't start
1. No fuel in tank
2. No fuel reaching to carburetor
3. Too much fuel getting to cylinder
4. Clogged air cleaner

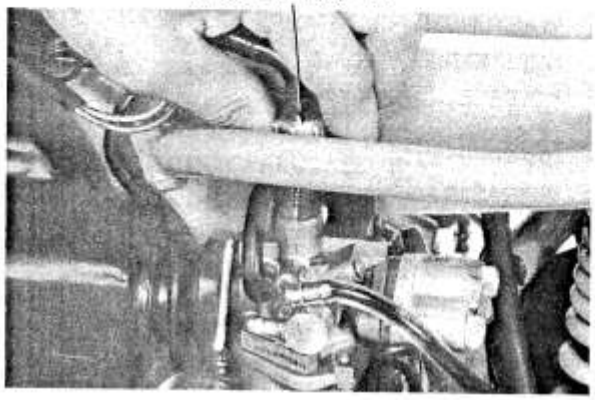
Engine idles roughly, stalls or runs poorly
1. Idle speed incorrect
2. Weak spark
3. Loss of compression
4. Rich mixture
   Lean mixture
6. Clogged air cleaner
7. Intake pipe leaking
8. Fuel contaminated

Lean mixture
1. Carburetor fuel jets clogged
2. Fuel tank breather tube clogged
3. Fuel tube bent, collapsed or clogged
4. Fuel filter clogged
5. Faulty float valve
6. Float level too low
7. Clogged air vent tube

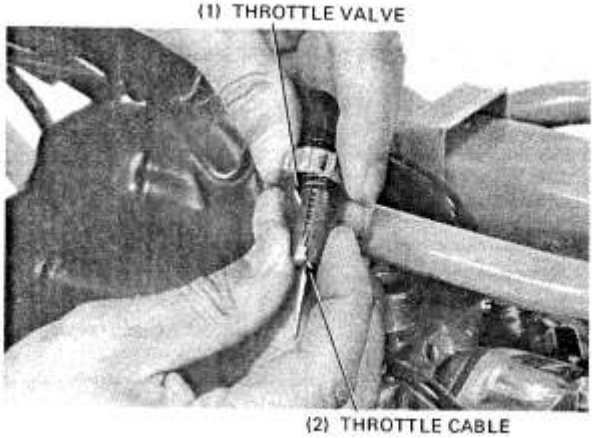
Rich mixture
1. Faulty float valve
2. Float level too high
3. Clogged carburetor jets

THROTTLE VALVE DISASSEMBLY

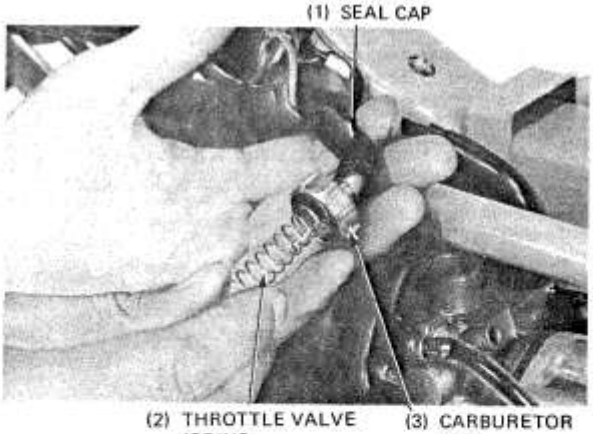
Remove the seat.
Remove the fuel tank.
Loosen off the carburetor top and remove the throttle valve.



Disconnect the throttle cable from the throttle valve.

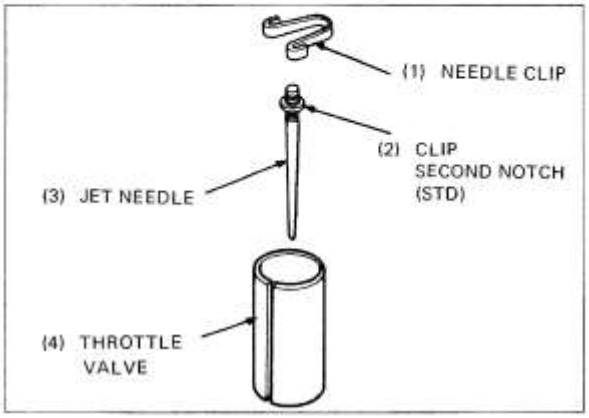


Remove the throttle valve spring, carburetor top and seal cap.



JET NEEDLE/THROTTLE VALVE INSPECTION

Remove the needle clip and jet needle.
Check the jet needle and throttle valve for wear or damage.

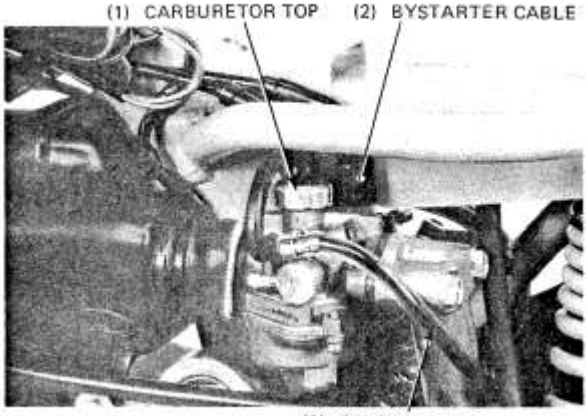


CARBURETOR REMOVAL

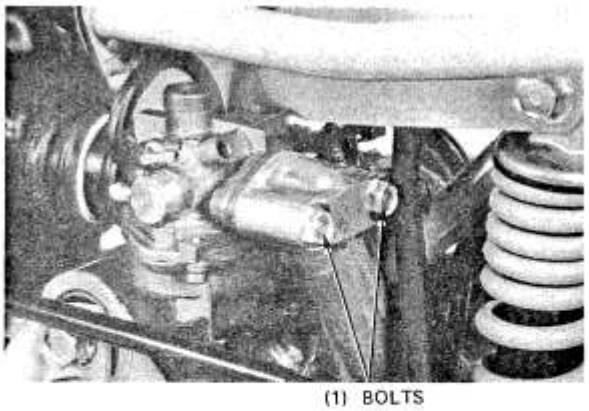
This paragraph deals only with removal of the carburetor.
Remove the seat. Disconnect the bystarter cable.
Disconnect the oil pass tube.

NOTE

Do not plug the oil pass tube with a screw or bolts as such practice may allow metal dust to enter the tube, resulting in some sort of malfunction.



Unscrew the attaching bolts and remove the carburetor.



FLOAT/FLOAT VALVE/ SCREWS DISASSEMBLY

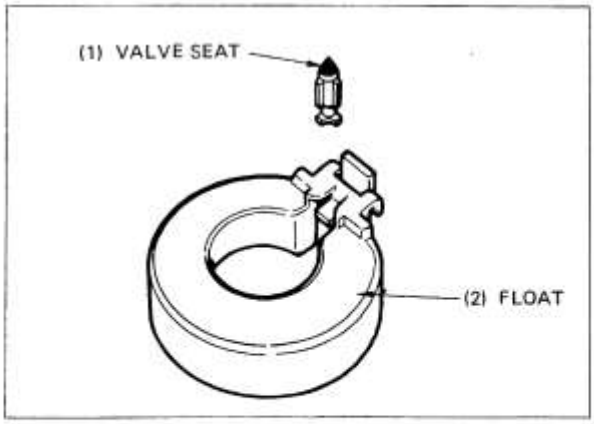
Please a pan under the carburetor and drain fuel from the carburetor by loosening the drain screw. Remove the float chamber from the carburetor.

(1) FLOAT CHAMER (2) DRAIN SCREW

Remove the float and float valve by unscrewing the screw.

FLOAT/FLOAT VALVE INSPECTION

Inspect the float valve for wear on the seat contating face.
Check the float for deformation or seepage of fuel.

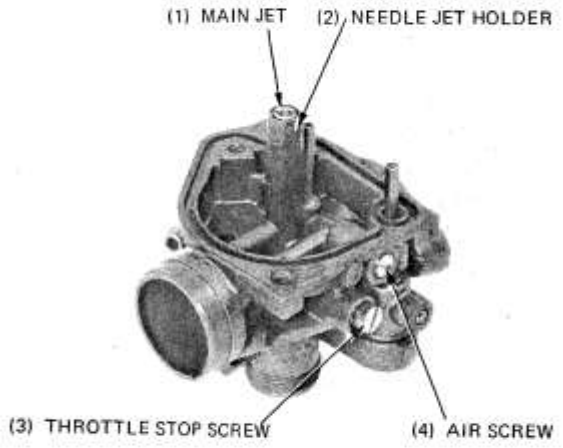


Remove the main jet, needle jet holder and needle jet.

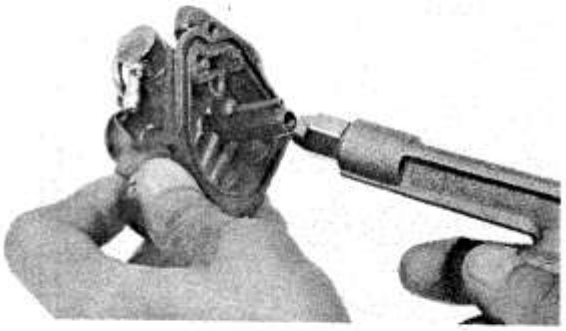
Remove the throttle stop screw and air screw.

NOTE

- Record the number of turns required to seat the screws.
- Do not force the screws against their seats.



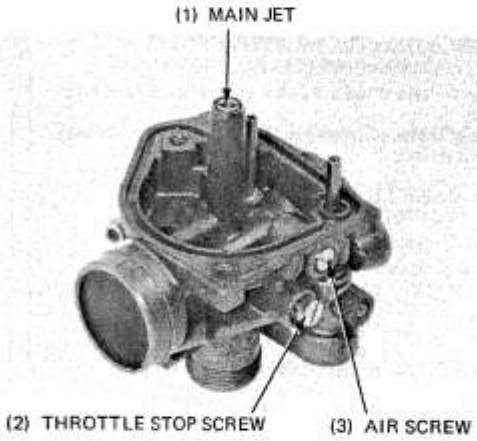
Blow open all body holes and passages using a compressed air.



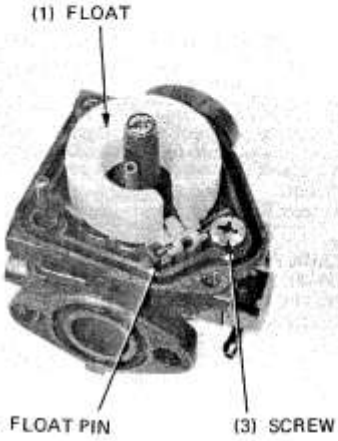
FLOAT/FLOAT VALVE/ SCREWS ASSEMBLY

Install the air and stop screws
AIR SCREW OPENING: 1-¾ turns

Install the jet needle, needle jet holder and main jet.



Install the float valve, float and float pin with the screw.

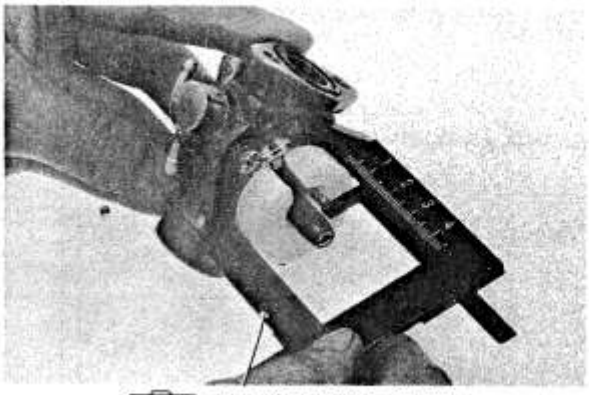


FLOAT LEVEL INSPECTION

Measure the float level at the main jet in parallel with the float pin.

FLAOT LEVEL: 12.2 ± 1.0 mm (0.48 ± 0.04 in)

Check operation of the float, and install the float chamber.

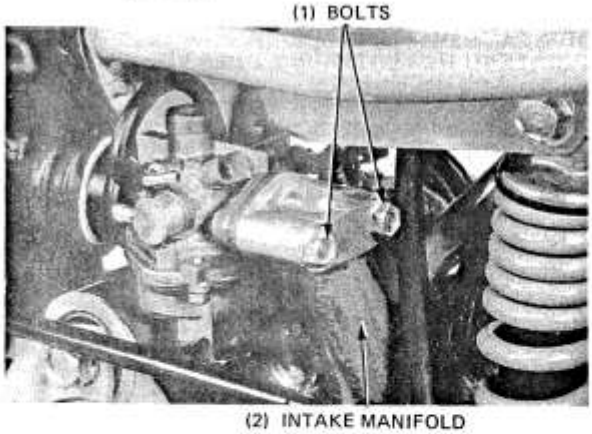


CARBURETOR INSTALLATION

NOTE

Do not allow dust and dirt to enter the inside.

Position the carburetor on the intake manifold through the insulator and install with the attaching bolts.



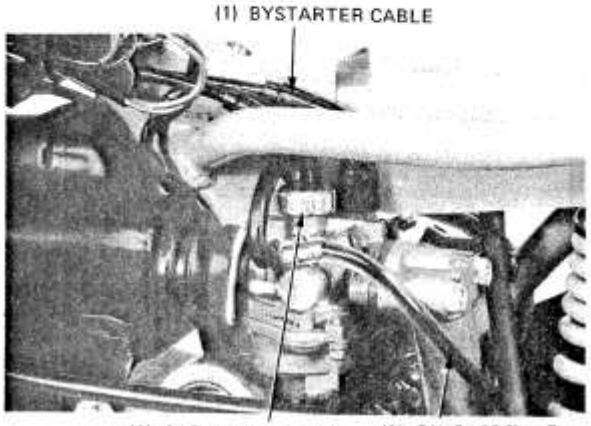
Install the carburetor top and connect the bystarter cable.
Connect the oil pass tube.

NOTE

- Align the slot of the throttle valve with the throttle stop screw.
- Do not overtighten the bystarter top as it is made of resin and damaged easily.

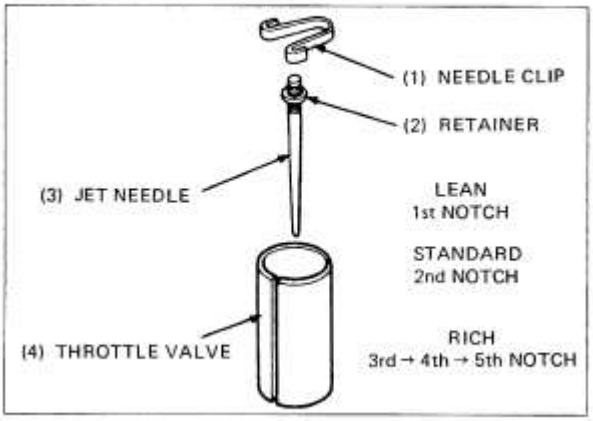
Install the fuel tank and seat.
Perform the following adjustments and operation:

- Throttle cable free play (Page 3-6)
- Oil pump control cable (Page 3-6)
- Oil pump and oil pass tube air bleeding (Page 2-4)
- Idle speed adjustment (Page 3-7)

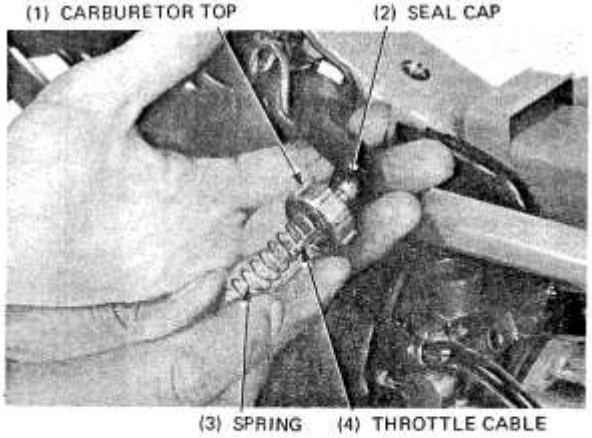


THROTTLE VALVE INSTALLATION

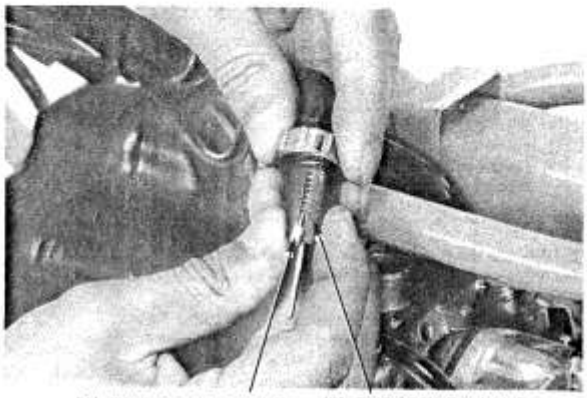
Install the jet needle in the throttle valve and secure with the needle clip.



Slide the seal cap, carburetor top and throttle valve spring onto the throttle cable.



Connect the throttle cable to the throttle valve.



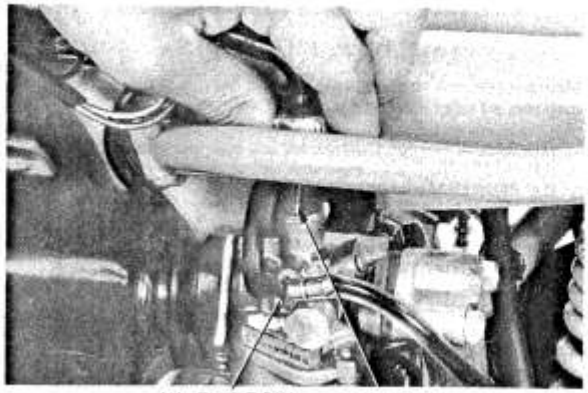
(1) THROTTLE CABLE (2) THROTTLE VALVE

Slide the throttle valve into the valve body.

NOTE

Align the slot in the throttle valve with the carburetor guide pin.

Tighten the carburetor top.



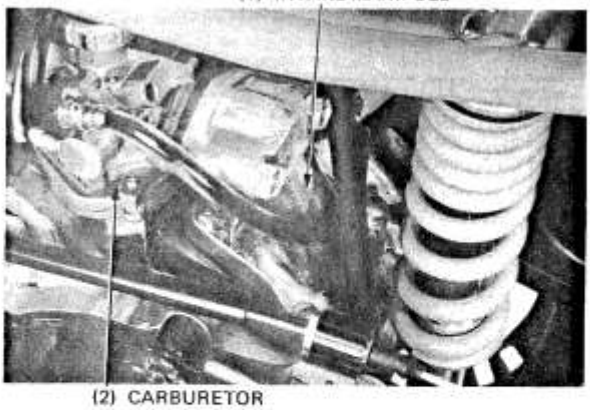
(1) GUIDE PIN (2) SLOT

REED VALVE

REED VALVE REMOVAL

Remove the seat.
Remove the carburetor.
Remove the intake manifold.

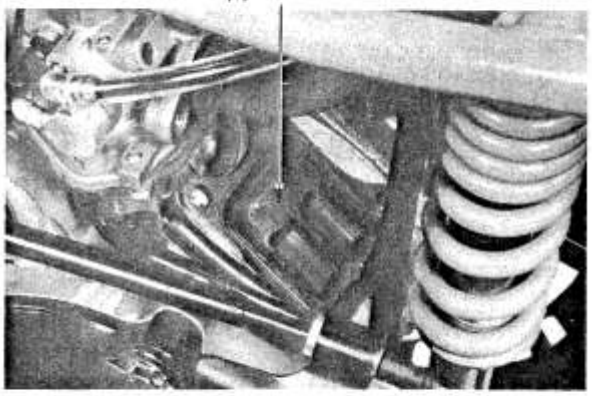
(1) INTAKE MANIFOLD



(2) CARBURETOR

Remove the reed valve.

(1) REED VALVE



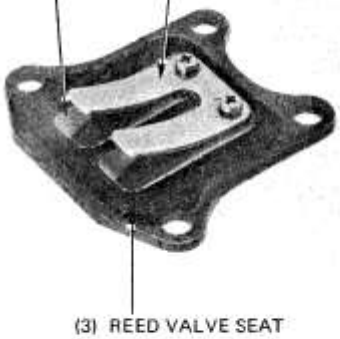
REED VALVE INSPECTION

Inspect the reed valve for damage or weakness. Replace the valve with a new one if the valve seat is damaged or cracked or if there is clearance between the reed and seat.

NOTE

Do not disasemble or bend the reeds. Replace the reed, reed stopper and valve seat as an assembly.

(1) REED (2) REED STOPPER



(3) REED VALVE SEAT

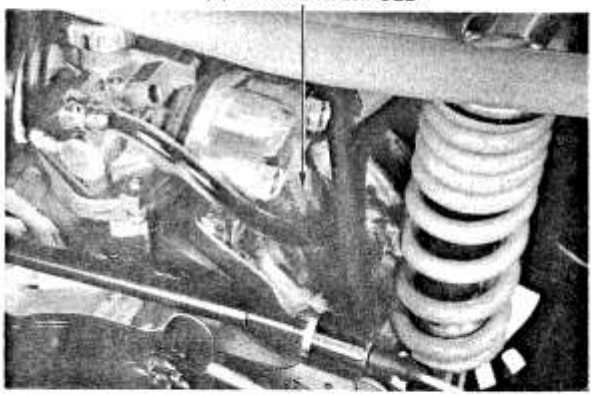
REED VALVE INSTALLATION

The installation sequence is essentially the reverse order of removal.

MANIFOLD TIGHTENING TORQUE:
8–12 N.m (0.8–1.2 kg-m, 6–9 ft-lb)

After installing, check for secondary air leaks.

(1) INTAKE MANIFOLD



HONDA QR50

5. ENGINE REMOVAL/INSTALLATION

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Operation requiring engine removal:
  1. Crankshaft
  2. Oil pump

SPECIFICATIONS

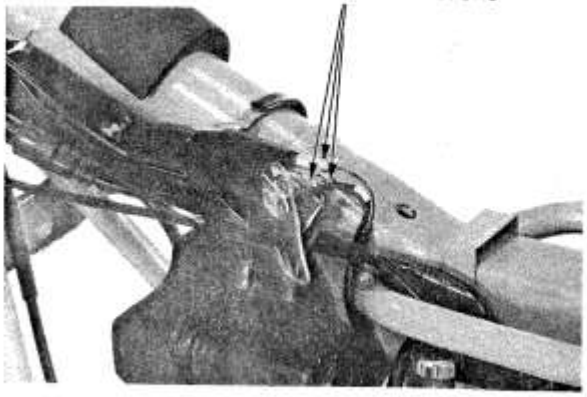
Engine weight	13.5 kg approx.

ENGINE REMOVAL

Remove the seat.
Turn the fuel valve OFF and disconnect the fuel line at the carburetor.
Remove the fuel tank mounting bolt and unclamp the oil pipe from the fuel tank. Remove the fuel tank.

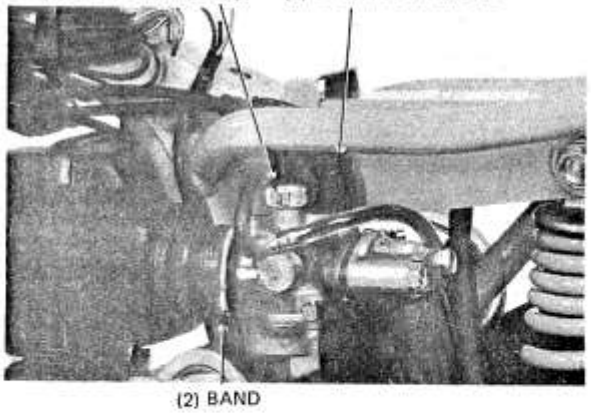
Disconnect the AC generator wire connectors.

(1) A.C. GENERATOR WIRE CONNECTORS



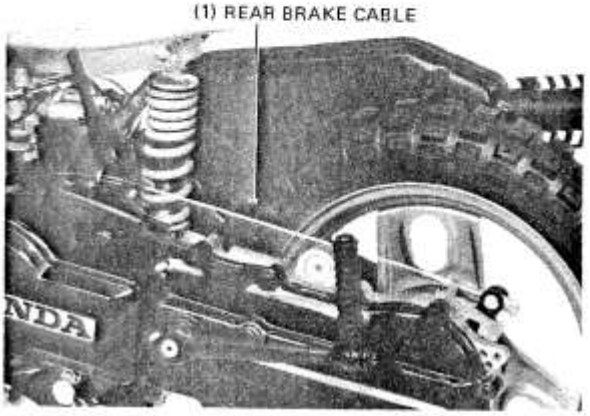
Remove the carburetor band, carburetor top and bystarter cable.

(1) CARBURETOR TOP (3) BYSTARTER CABLE

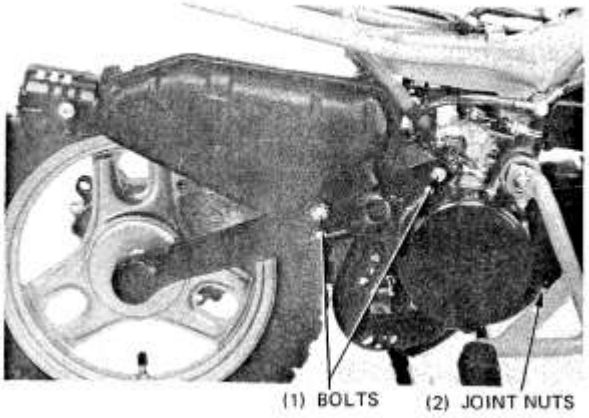


(2) BAND

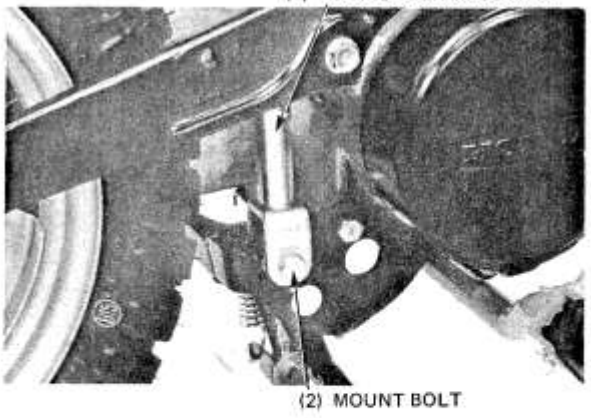
Disconnect the rear brake cable.



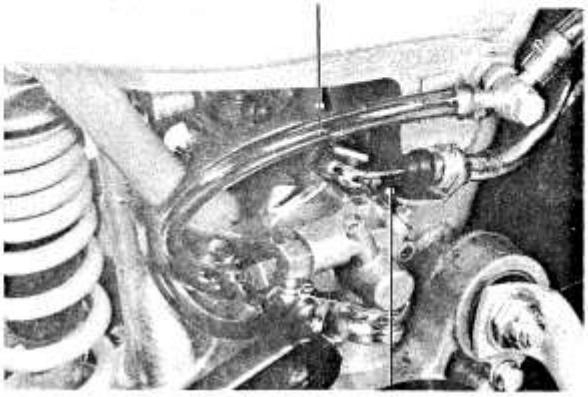
Remove the two bolts and muffler joint nuts and remove the exhaust muffler.



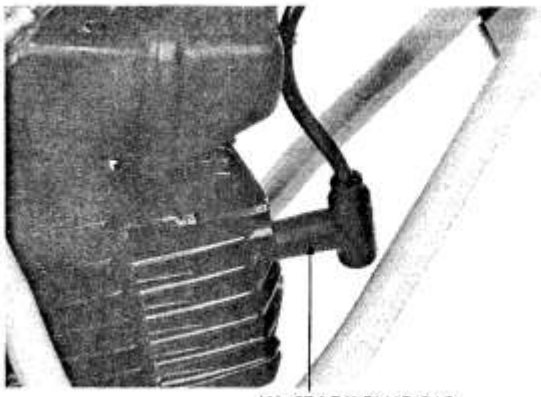
Remove the rear shock absorber lower mount bolt.



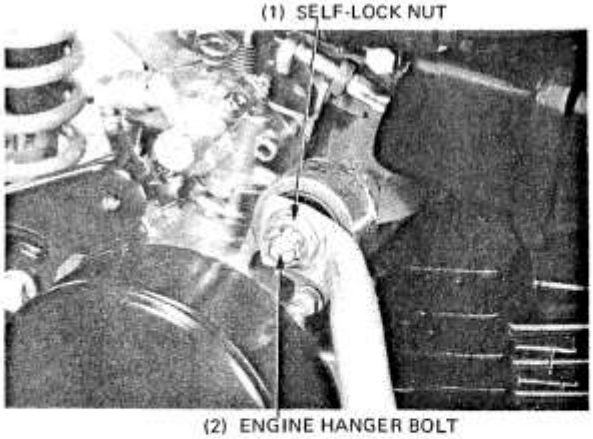
Disconnect the oil pipe and oil pump control cable.

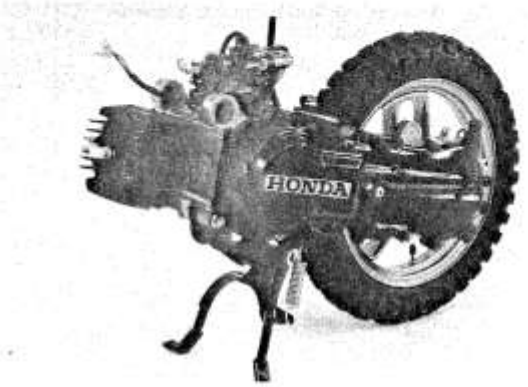


Remove the spark plug cap from the spark plug.



Remove the engine hanger bolt self-lock nut. Withdraw the engine hanger bolt and move the frame forward.



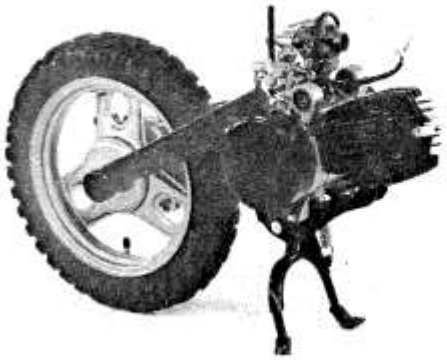


ENGINE INSTALLATION

The installation sequence is essentially the reverse order of removal.

Perform the following checks and adjustment:

- Wire routing (Page 1-6, 1-7)
- Throttle cable and oil pump control cable adjustments (Page 3-6)
- Rear brake cable (Page 3-6)



6. CYLINDER HEAD/CYLINDER/PISTON

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- All cylinder head maintenance and inspection can be accomplished with the engine installed.
- Before disassembling the engine, clean the engine thoroughly so as not to allow dirt and dust from falling into the cylinder and crankcase.
- Remove all traces of gasket material from the mating surfaces of the cylinder head, cylinder and crankcase.
- Use caution when servicing the cylinder and piston to prevent damage to them.
- Do not pry between the cylinder head and cylinder.
- Before assembling, apply clean engine oil to all sliding and friction surfaces of parts.

TROUBLESHOOTING

Compression too low hard starting or poor performance at low speed
1. Blown cylinder head gasket
2. Loose spark plug
3. Worn, stuck or broken piston rings
4. Worn or damaged cylinder and piston
5. Faulty reed valve

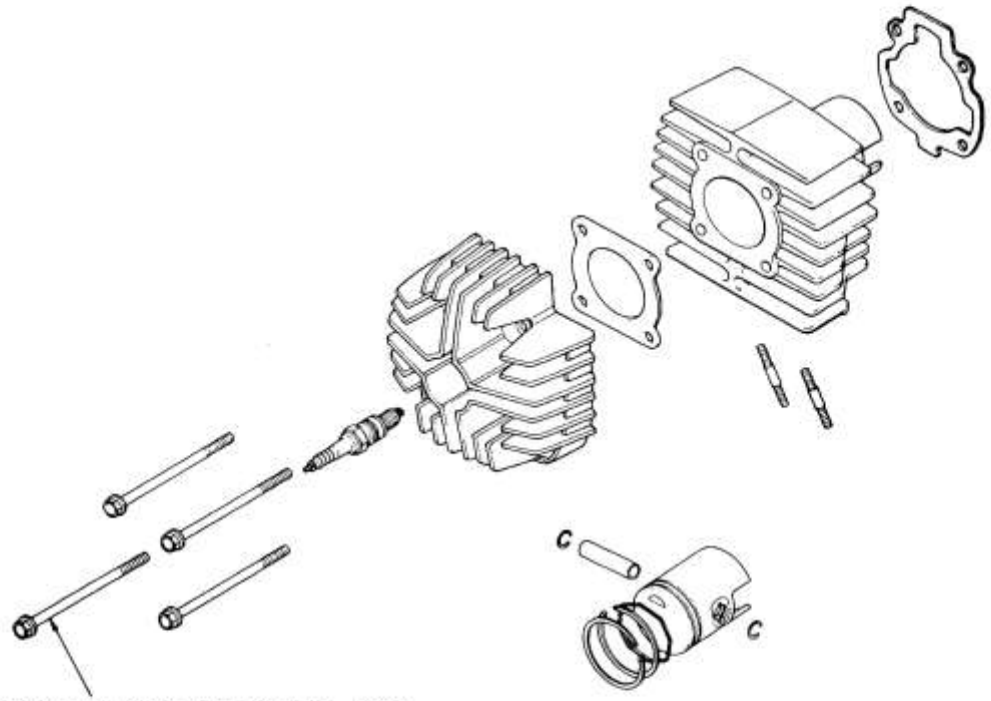
Compression too high, overheat or knocking
1. Excessive carbon buildup in cylinder head or on piston top

Abnormal noise-piston
1. Worn cylinder and piston
2. Worn piston pin or piston pin hole
3. Worn connecting rod small end bearing

Abnormal noise-piston rings
1. Worn, stuck or broken piston rings
2. Worn or damaged cylinder

SPECIFICATIONS

ITEM		STANDARD mm (in)	SERVICE LIMIT mm (in)
Cylinder head warpage		—	0.1 (0.004)
Cylinder bore		40.000 ~ 40.010 (1.5748 ~ 1.5752)	40.05 (1.5768)
Piston O.D. (4–13 mm from skirt end)		39.955 ~ 39.970 (1.5730 ~ 1.5736)	39.895 (1.5706)
Cylinder-to-piston clearance		0.035 ~ 0.050 (0.0013 ~ 0.0019)	0.1 (0.004)
Piston pin bore		10.002 ~ 10.008 (0.3938 ~ 0.3940)	10.03 (0.3949)
Piston pin O.D.		9.994 ~ 10.000 (0.3935 ~ 0.3937)	9.97 (0.3925)
Piston-to-piston pin clearance		0.002 ~ 0.014 (0.0001 ~ 0.0005)	0.04 (0.0016)
Piston ring width	Top	Keyston Type	—
	Second	1.475 ~ 1.490	—
Piston-to-piston ring clearance	Top	Keyston Type	—
	Second	0.025 ~ 0.055 (0.0010 ~ 0.0022)	0.1 (0.004)
Piston ring end gap		0.15 ~ 0.35 (0.006 ~ 0.014)	0.6 (0.024)
Connecting rod small end I.D.		14.005 ~ 14.017 (0.551 ~ 0.552)	14.03 (0.5524)



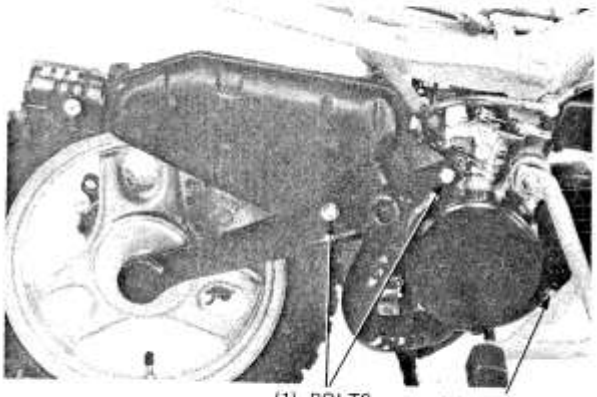
TORQUE: 9–12 N.m (0.9–1.2 kg-m, 7–9 ft-lb)

COUPLE DE SERRAGE:
9–12 N.m (0.9–1.2 kg-m)

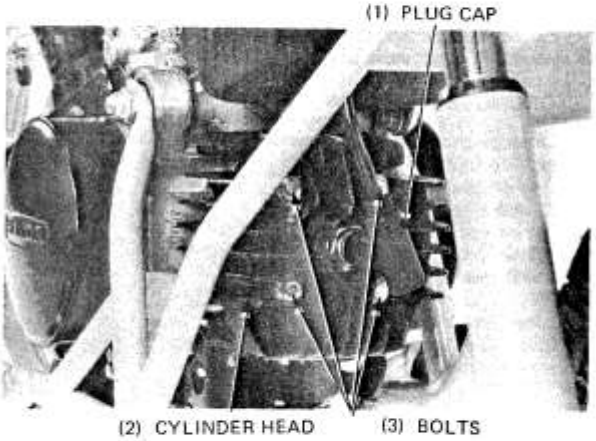
ANZUGSDREHMOMENT
9–12 N.m (0.9–1.2 kg-m)

CYLINDER HEAD REMOVAL

Remove the seat.
Remove the two bolts and nuts attaching the muffler and remove the muffler.

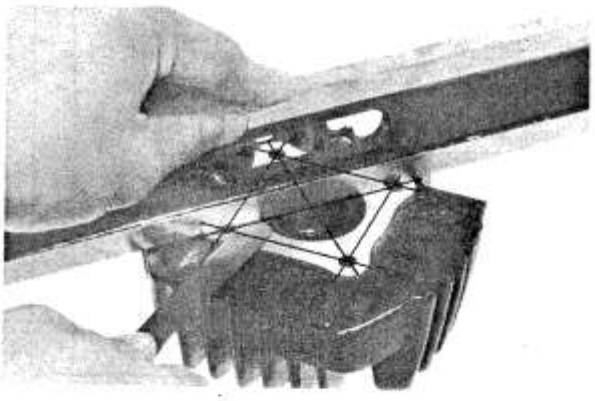


Remove the spark plug cap from the spark plug.
Remove the four bolts attaching the cylinder head and remove the cylinder head.



CYLINDER HEAD WARPAGE INSPECTION

Check the cylinder head warpage with a straight edge and a feeler gauge in the directions shown.
SERVICE LIMIT: 0.1 mm (0.004 in)

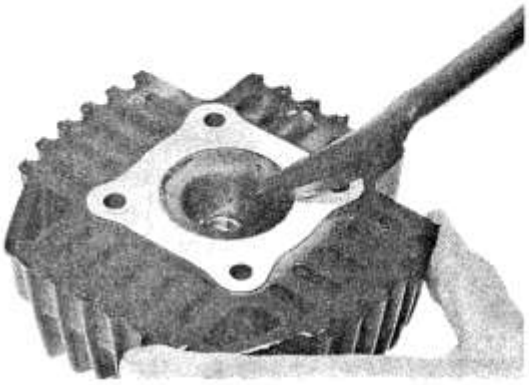


CYLINDER HEAD DECARBONIZING

Decarbonize the combustion chamber.

NOTE

Do not damage the combustion chamber wall and cylinder mating surface.



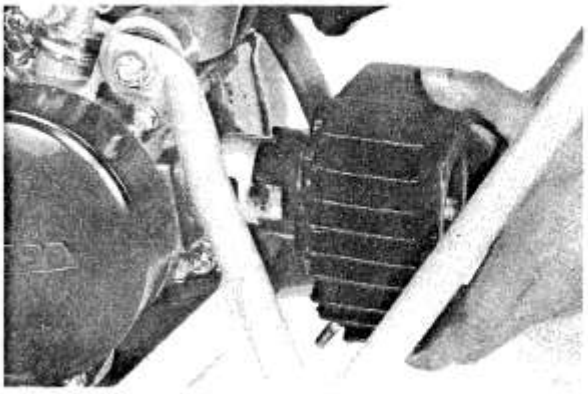
CYLINDER/PISTON REMOVAL

CYLINDER REMOVAL

Remove the cylinder.

NOTE

Do not pry between the cylinder and cylinder head or strike the fins with a hammer.

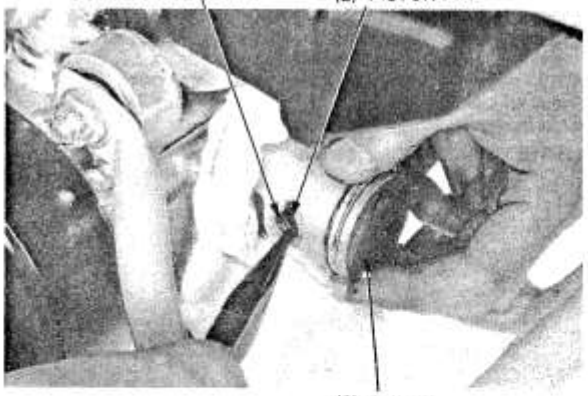


PISTON REMOVAL

Remove each piston pin clip with needle nose pliers. Press the piston pin out and remove the piston.

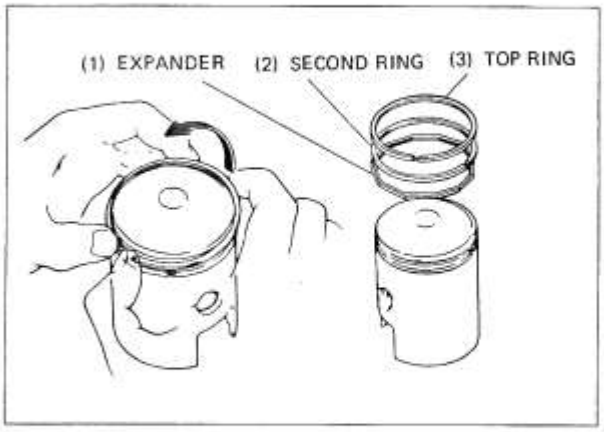
NOTE

- Do not damage the sliding surface of the piston.
- Do not force the connecting rod sidewise when removing the piston pin.
- Do not allow the clips to fall into the crankcase.



PISTON RINGS/EXPANDER REMOVAL

Expand the ring ends and remove the rings from the side opposite the ends.
Remove the expander.

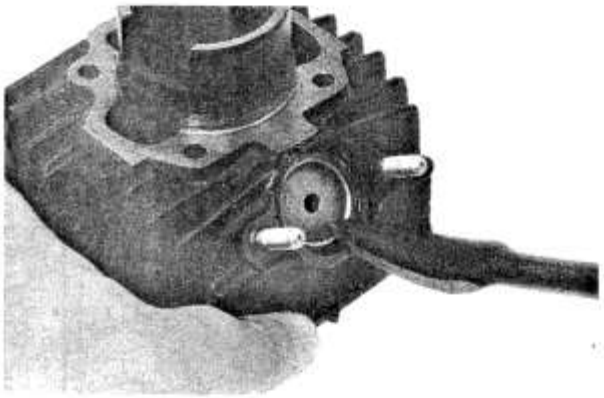


CYLINDER/PISTON INSPECTION

Inspect the cylinder bore and piston for wear or damge.
Remove carbon deposits from the exhaust port.

NOTE

> Do not damage the cylinder wall when decarbonzing the exhaust port.

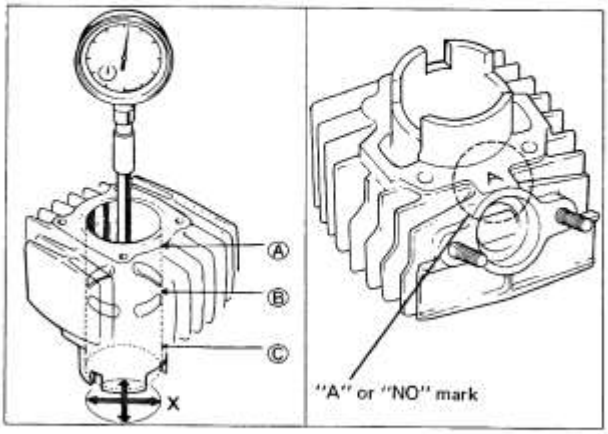


Measure the cylinder I.D. at three levels in X and Y axis, Take the minimum measurement.

SERVICE LIMIT: 40.05 mm (1.5768 in)

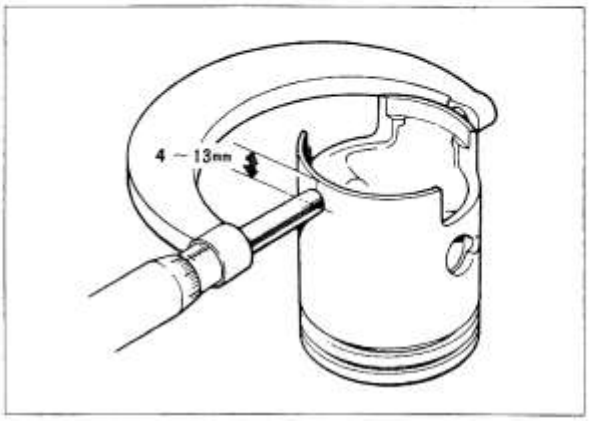
NOTE

> The cylinder has "A" or "NO" mark to compensate for error in machining. When the cylinder is to be replaced with a new one, use the one having the same mark.



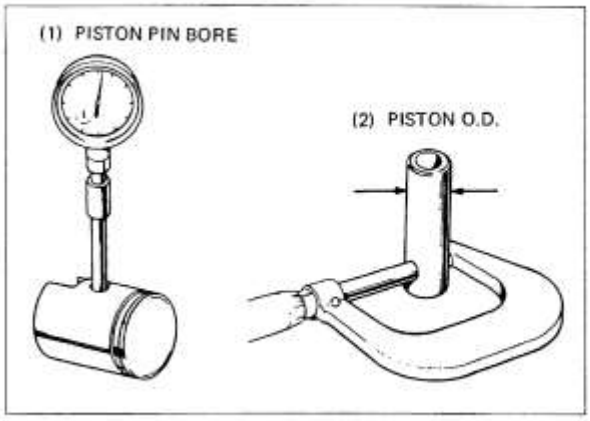
Measure the piston O.D. at the skirt 4–13 mm (0.157–0.512 in) from the end.
SERVICE LIMIT: 39.895 mm (1.5706 in)

Measure the piston-to-cylinder clearance.
SERVICE LIMIT: 0.1 mm (0.004 in)



Measure the pistion pin bore.
SERVICE LIMIT: 10.03 mm (0.3949 in)

Measure the piston pin O.D.
SERVICE LIMIT: 9.97 mm (0.3925 in)



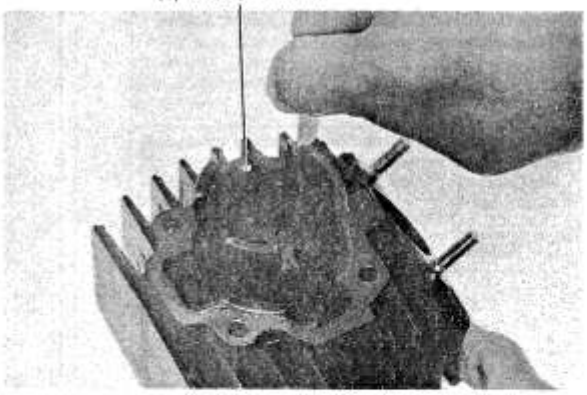
PISTON RING INSPECTION

Insert each piston ring into the cylinder, and measure the end gap.
SERVICE LIMIT: TOP/SECOND: 0.6 mm (0.024 in)

NOTE

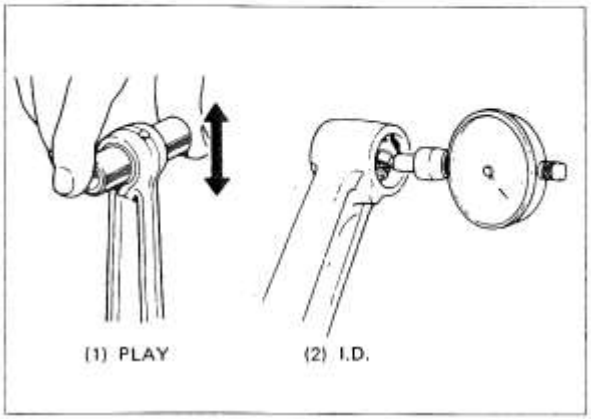
Insert the rings squarely into the cylinder.

(1) PISTON RING



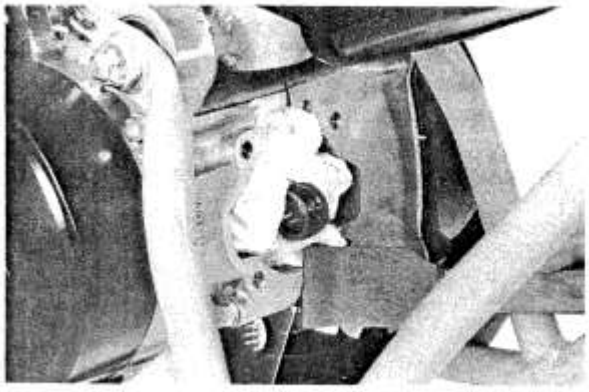
CONNECTION ROD SMALL END INSPECTION

Install the bearing and piston pin in the small end and check for play.
Measure the small end I.D.
SERVICE LIMIT: 14.03 mm (0.5524 in)

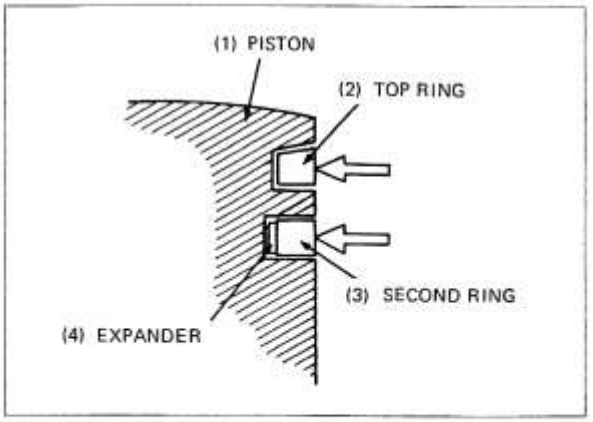


PISTON/CYLINDER INSTALLATION

Remove all traces of gasket material from the crankcase.

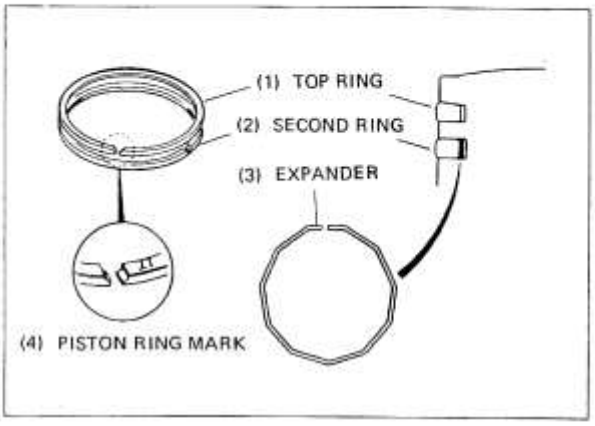


Install the expander in the second ring groove of the piston.
Install the top and second rings in the ring grooves. Make sure that each ring can be pressed to the bottom of the ring groove.
Clean the ring groove if necessary.

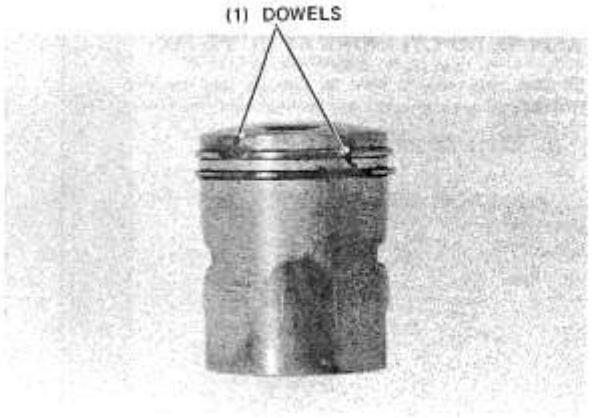


NOTE

- Install the rings with the marking facing up.
- After installation, check that the rings are free to rotate in the ring grooves.
- Do not mix piston rings of different makes.



Align the ring ends with the dowels in the ring grooves as shown.



Assemble the piston with the connecting rod.

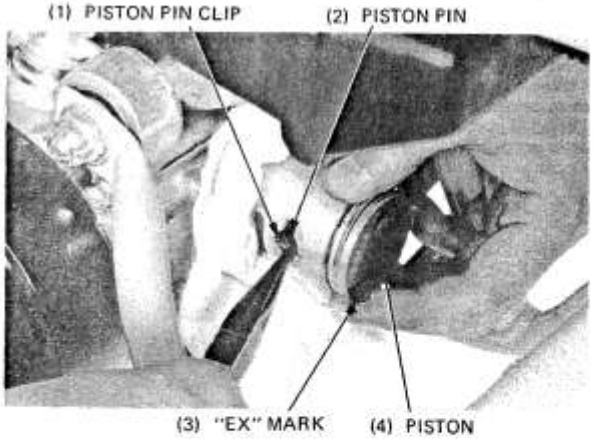
NOTE

- Install the piston with the marking "EX" on the piston head facing the exhaust side.
- Coat the piston pin with clean engine oil before installation.

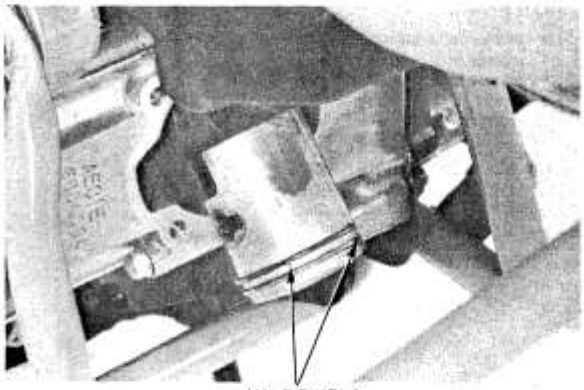
Install the piston pin clips.

NOTE

Cover the crankcase opening with a rag or shop towel to prevent the clips falling into the crankcase.



Align the ring end gaps with the dowels in the ring grooves.

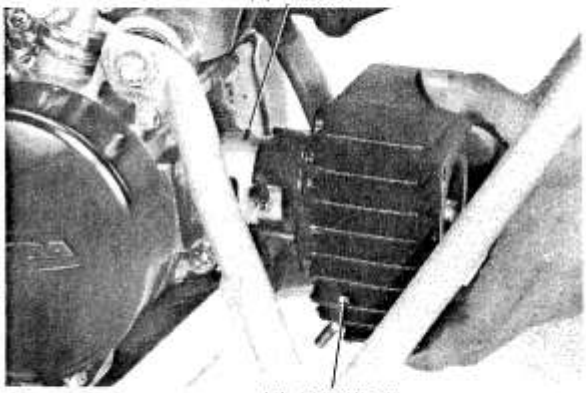


(1) DOWELS

Lubricate the cylinder wall and piston rings with clean engine oil.
Slide the cylinder over the piston while compressing the piston rings.

NOTE

Do not damage the sliding surface of the piston.



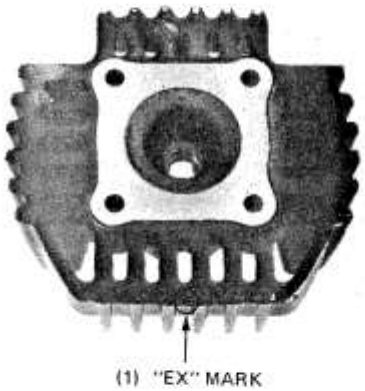
(1) PISTON
(2) CYLINDER

CYLINDER HEAD INSTALLATION

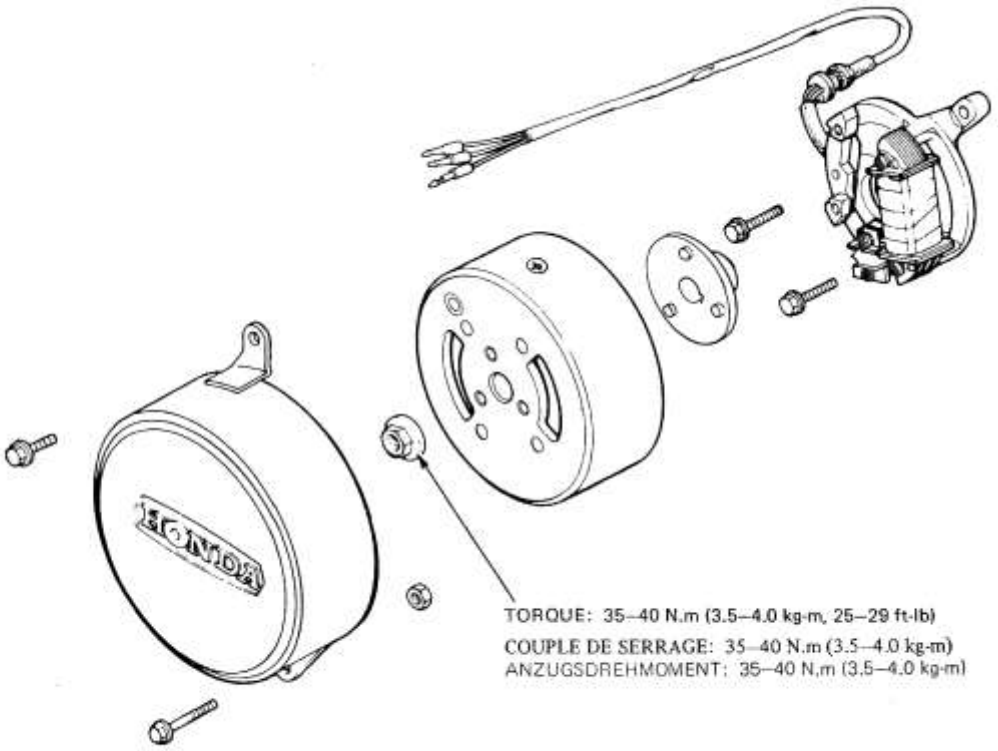
Install the cylinder head on the cylinder using a new cylinder head gasket.

NOTE

Install the cylinder head with the marking "EX" on the back toward the exhaust port.



(1) "EX" MARK


TORQUE: 35–40 N.m (3.5–4.0 kg-m, 25–29 ft-lb)
COUPLE DE SERRAGE: 35–40 N.m (3.5–4.0 kg-m)
ANZUGSDREHMOMENT: 35–40 N.m (3.5–4.0 kg-m)

HONDA
QR50

7. A.C. GENERATOR

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- A.C. generator can be serviced without removing it form the engine. Do not remove the pulser from the stator base.
- See SECTION 13 for A.C. generator inspection

TOOLS

Special Tool

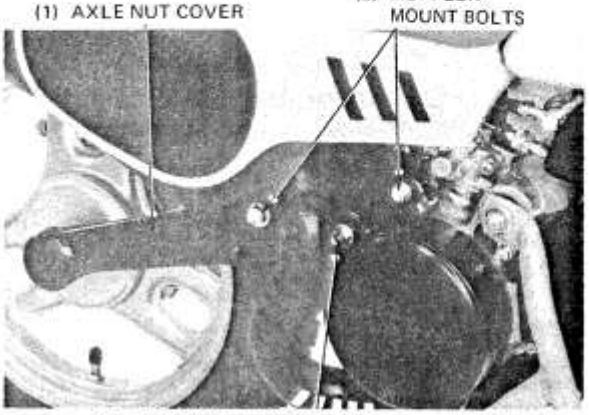
A.C. generator puller attachment	07931-1870000

Common Tool

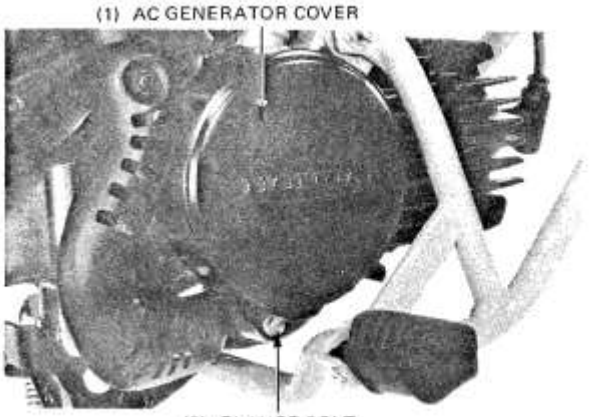
Universal holder	07725-0030000

A.C. GENERATOR REMOVAL

Remove the seat by removing the seat mount bolts.
Remove the fuel tank.
Remove the two bolts attaching the muffler.
Loosen the axle nut cover bolts and slide the cover down.



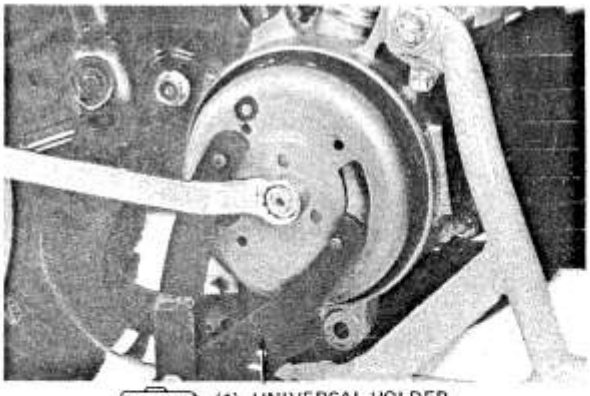
Remove the A.C. generator cover by removing the flange bolt.



Remove the flywheel by removing the 10 mm flange nut.

NOTE

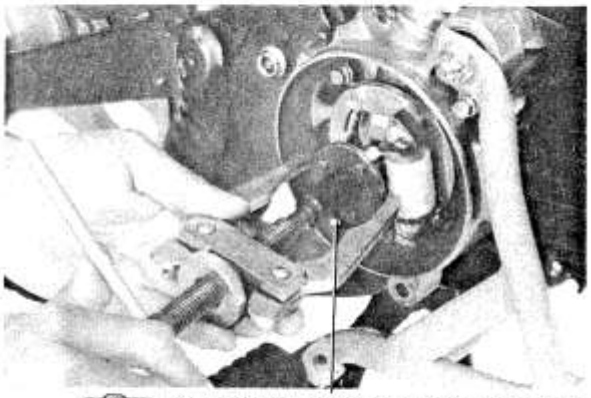
Do not damage the coils inside the flywheel by the universal holder.



Remove the rotor boss using a gear puller.

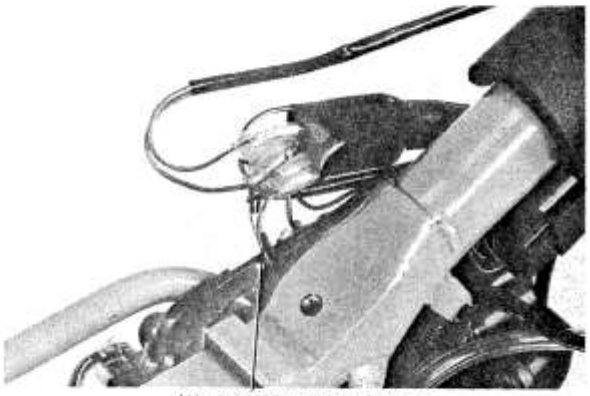
NOTE

Remove the woodruff key from the crankshaft keyway and keep it in a parts rack.



S TOOL (1) AC GENERATOR PULLER ATTACHMENT 07931–1870000

Disconnect the A.C. generator wire connectors.



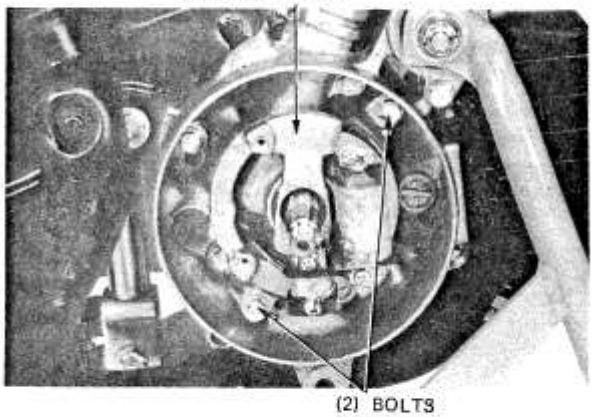
(1) A.C. GENERATOR WIRES

(1) STATOR BASE

Remove the bolts and take out the stator.

NOTE

- Do not remove the pulser from the stator base.
- Store the coils in a safe place to prevent damage to them.

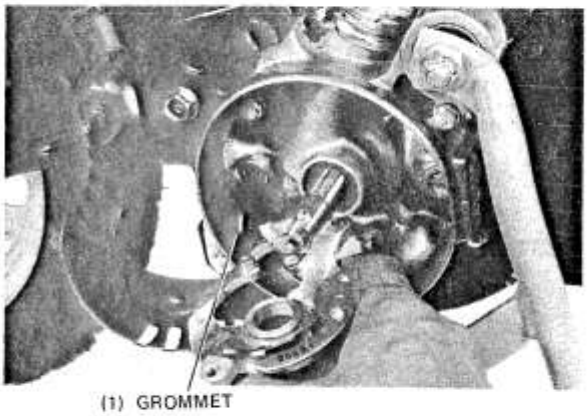


(2) BOLTS

• A.C. generator inspection (Page 13-3)

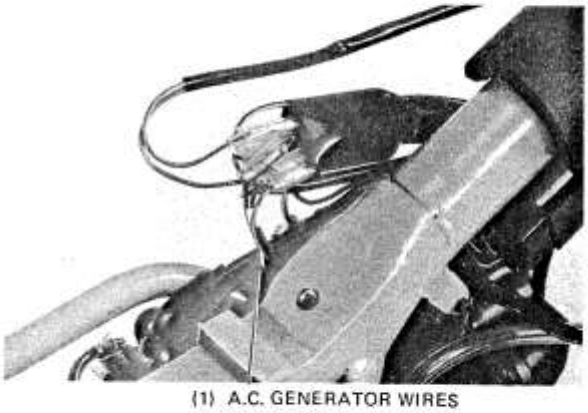
A.C. GENERATOR INSTALLATION

Press the A.C. generator wire grommet in the crankcase.
Install the stator.



(1) GROMMET

Connect the A.C. generator wires to the wire harness color-to-color.



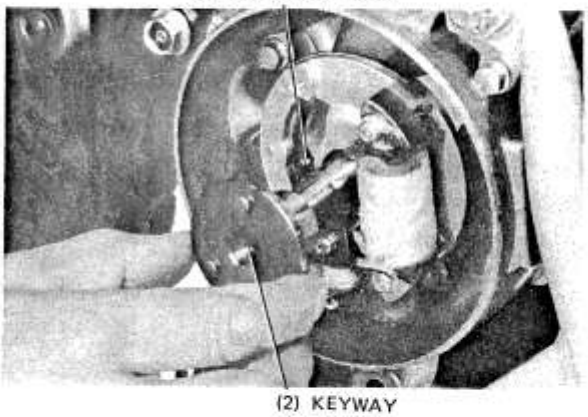
(1) A.C. GENERATOR WIRES

Install the woodruff key in the keyway in the crankshaft and install the rotor boss aligning the cutout with the key.

(1) WOODRUFF KEY

NOTE

Clean the stub end of the crankshaft thoroughly before installing the rotor boss, being sure that the taper is free of burrs and other defects. Sand or repair if necessary.



(2) KEYWAY

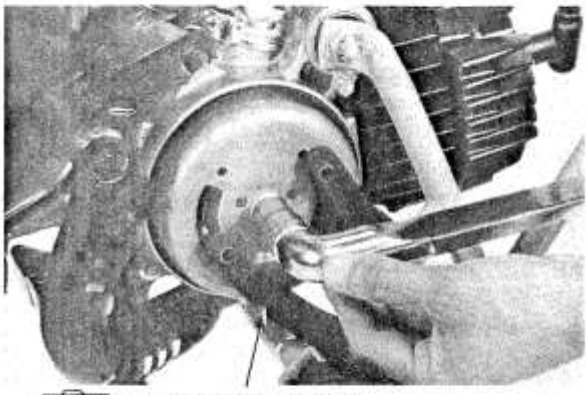
Install the flywheel

NOTE

- Make sure that there are no foreign matters inside the flywheel.
- Install the flywheel aligning with the rotor boss.
- Use the universal holder to hold the flywheel.

TORQUE: 35–40 N.m (3.5–4.0 kg-m, 25–29 ft-lb)

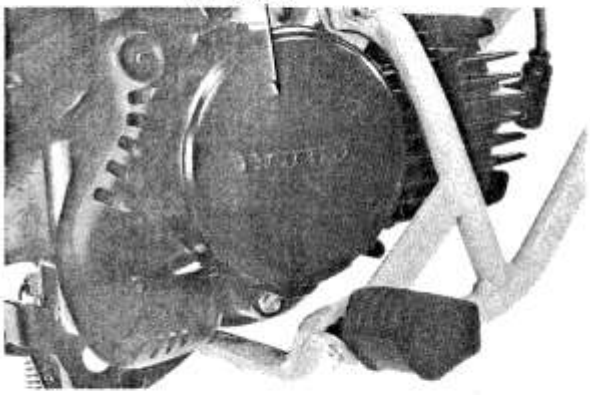
Start the engine and check the ignition timing. (Page 3-5)



S. TOOL (1) UNIVERSAL HOLDER

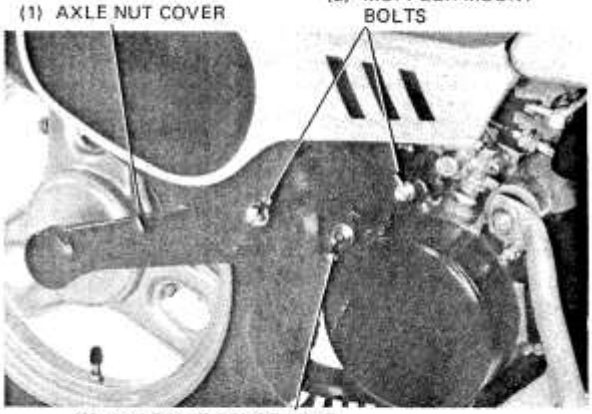
Install the A.C. generator cover.

(1) COVER

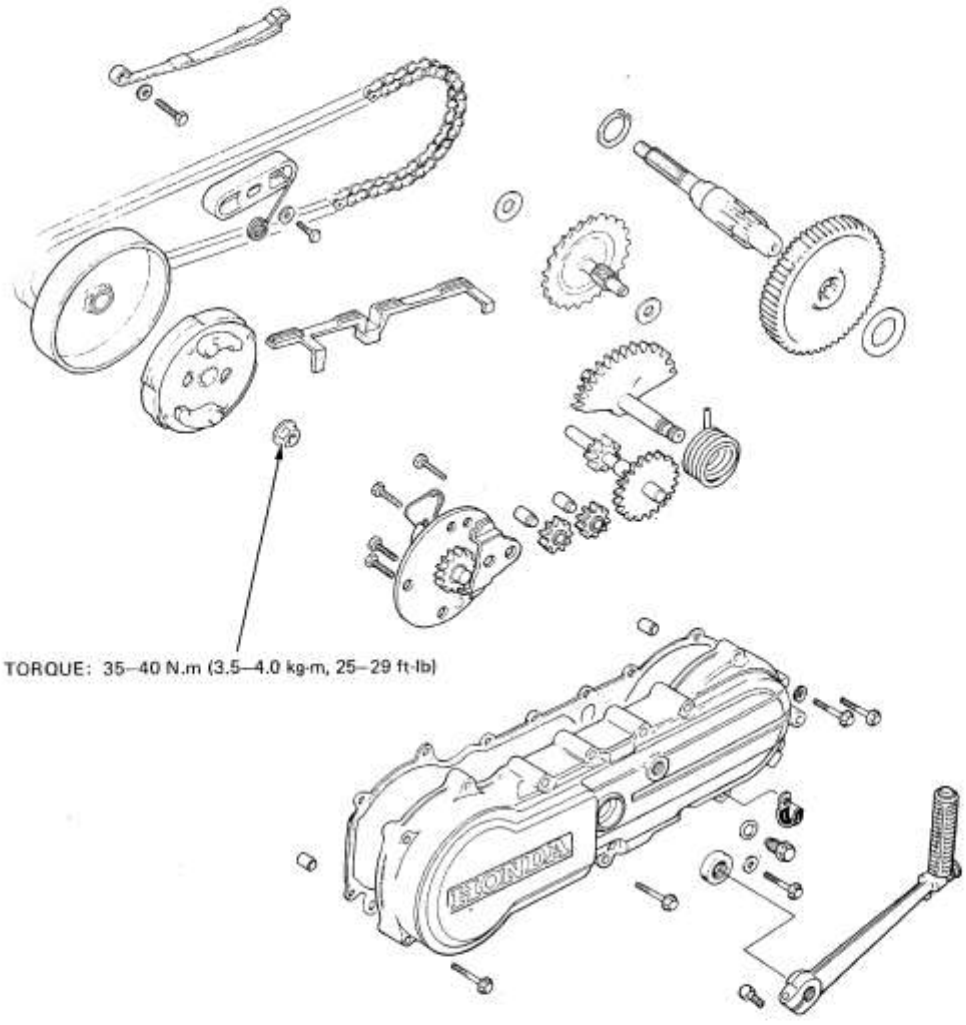


Install the muffler mount bolts and tighten to the specified torque.
Install the fuel tank.
Install the seat.
Replace the axle nut cover to the original position and tighten the bolt securely.

(1) AXLE NUT COVER
(2) MUFFLER MOUNT BOLTS



(3) AXLE NUT COVER BOLT


TORQUE: 35–40 N.m (3.5–4.0 kg-m, 25–29 ft-lb)
HONDA

8. CLUTCH/DRIVE CHAIN/KICKSTARTER

SERVICE INFORMATION

TOOL

Special Tool

Drive plate puller	07935–1470001

Common Tool

Universal holder	07725–0030000

SPECIFICATIONS

ITEM	STANDARD mm (in)	SERVICE LIMIT mm (in)
Clutch outer I.D.	110 ~ 110.2 (4.331 ~ 4.339)	110.5 (4.35)
Drive sprocket I.D.	15.0 ~ 15.027 (0.591 ~ 0.592)	15.07 (0.59)

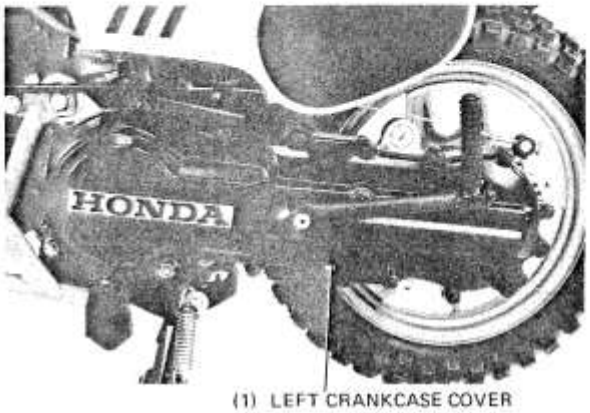
TROUBLESHOOTING

- Engine fires but motorcycle wont't start
  Damaged drive sprocket, driven sprocket of final gear
- Engine fires but stops soon or motorcycle starts suddenly (rear wheel is rotating at idle)
  Clutch shoes seized to clutch outer

CLUTCH/DRIVE CHAIN DISASSEMBLY

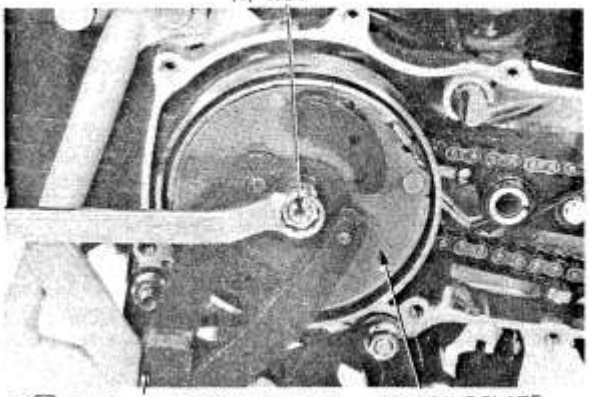
LEFT CRANKCASE COVER REMOVAL

Drain oil from the transmission (Page 3-4).
Loosen the rear axle nut (if the clutch outer, drive, chain and driven sprocket are to be removed).
Remove the left crankcase cover.



(1) LEFT CRANKCASE COVER

Hold the flywheel with the universal holder, and remove the clutch drive plate nut.



(1) NUT

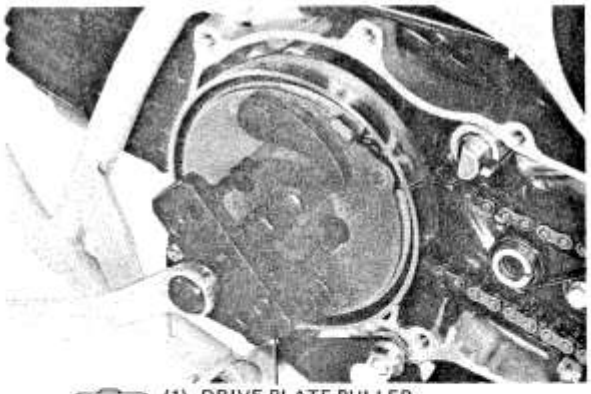
S. TOOL (3) UNIVERSAL HOLDER (2) DRIVE PLATE

CLUTCH DISASSEMBLY

Remove the clutch drive plate using the drive plate puller as shown.

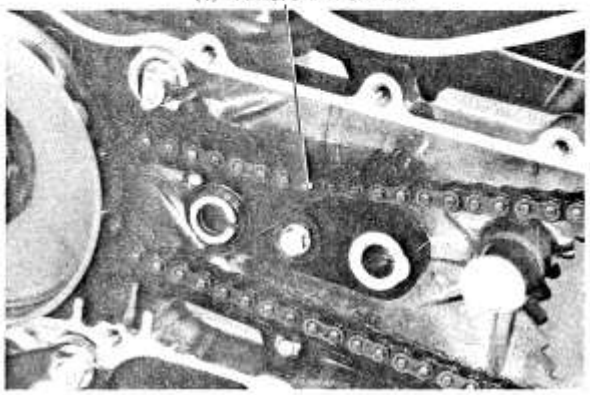
NOTE

Make sure that the end of the puller is inserted into the narrow slot of the hole ●.

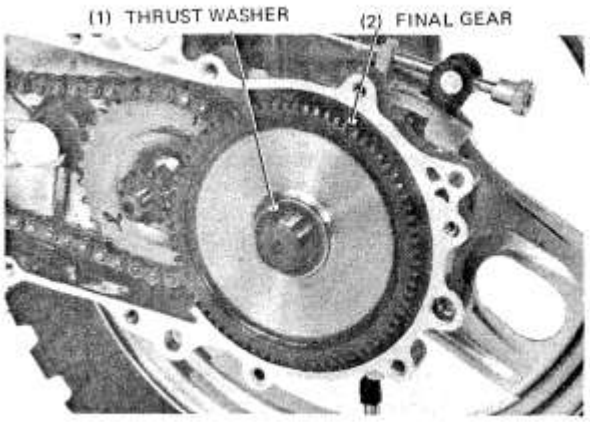


S. TOOL (1) DRIVE PLATE PULLER
07935–1470001

Remove the drive chain tensioner spring.



Remove the thrust washer and final gear.

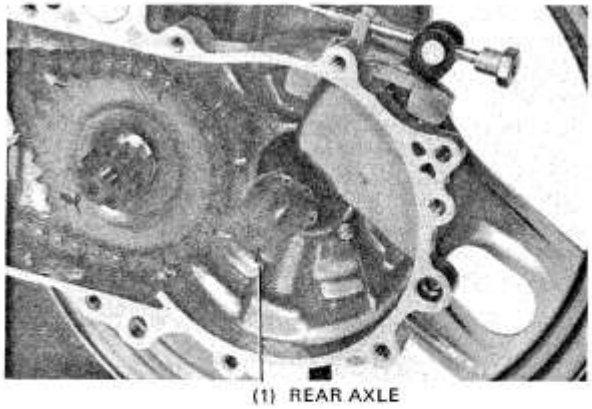


Remove the rear axle nut.

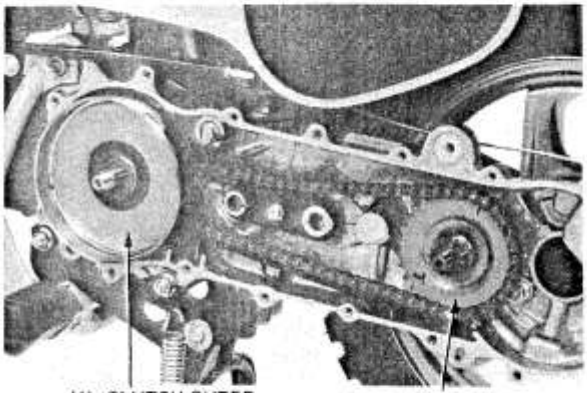
NOTE

Support the rear wheel to take load off the brake shoes when removing the rear axle.

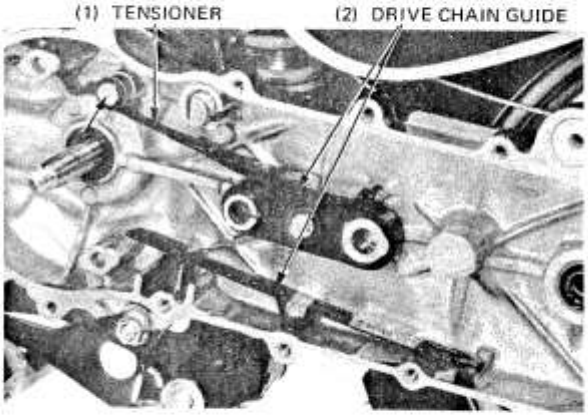
Remove the rear axle.



Remove the clutch outer, drive chain and driven sprocket.



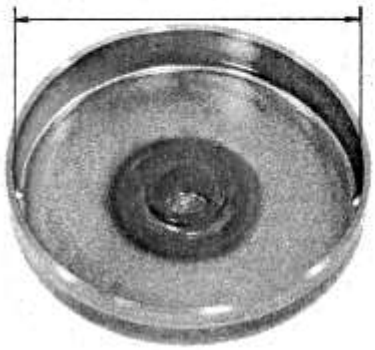
Remove the tensioner and drive chain guide.



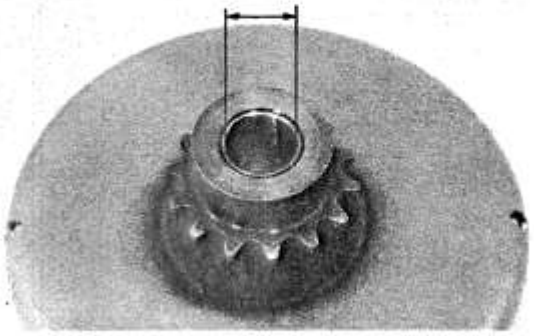
CLUTCH INSPECTION

Check the clutch shoes for excessive or local wear. Replace the shoes with new ones if worn excessively beyond limits.
Check for play in clutch shoe and ratchet pivot.

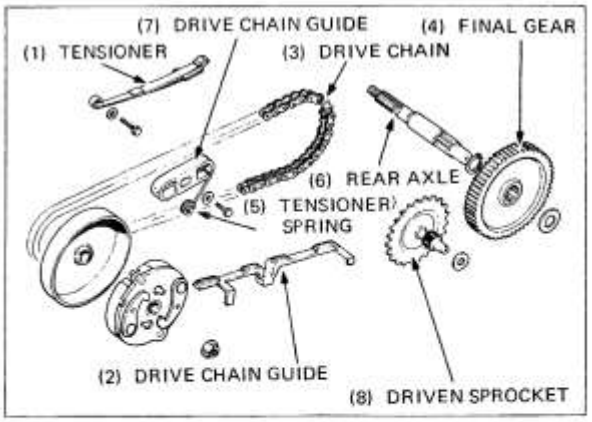
Measure the clutch outer I.D.
SERVICE LIMIT: 110.5 mm (4.35 in)



Measure the drive sprocket I.D.
SERVICE LIMIT: 15.07 mm (0.59 in)

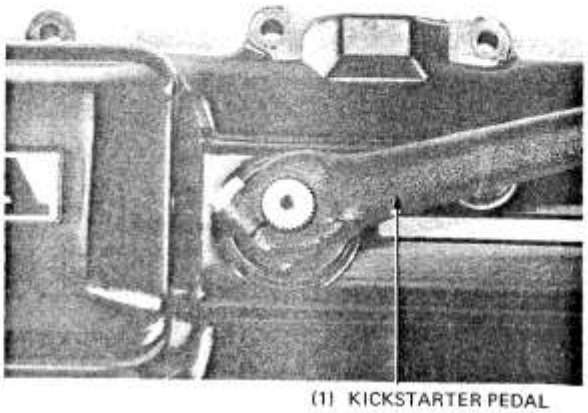


Inspect the drive chain for wear or damage.
Check the drive chain guide and tensioner for wear or damage.
Check the driven sprocket and final gear for wear or damge.



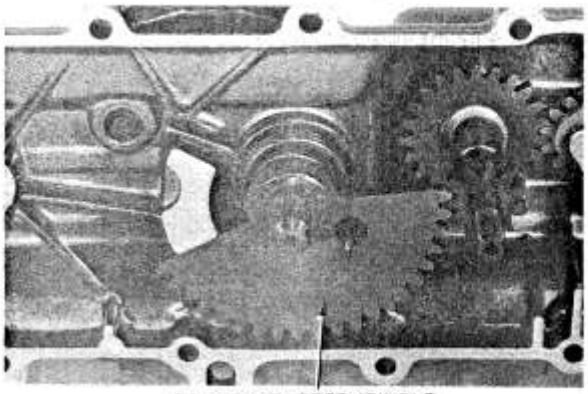
KICKSTARTER DISASSEMBLY

Remove the kickstarter pedal.



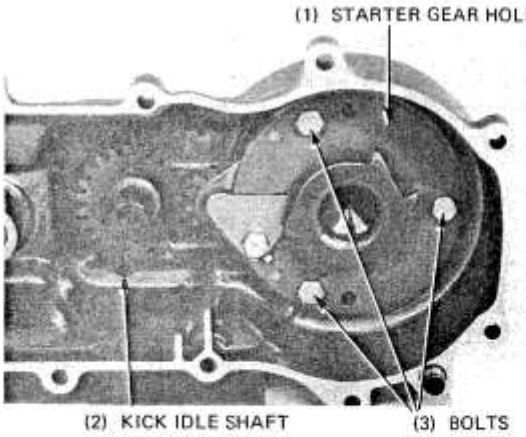
(1) KICKSTARTER PEDAL

Remove the kickstarter spindle.



(1) KICKSTARTER SPINDLE

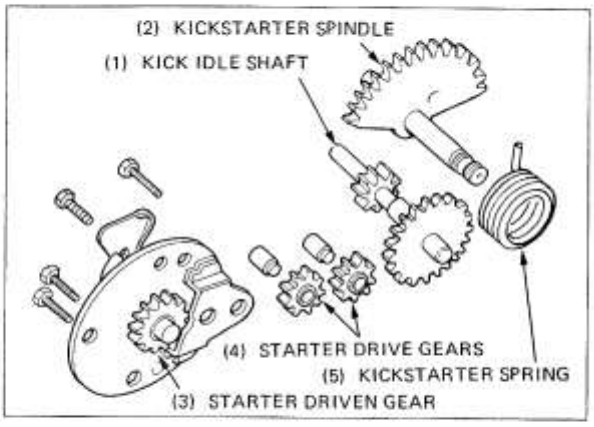
Remove the kick idle shaft.
Remove bolts attaching the starter gear holder and remove the starter drive gear, starter driven gear and starter gear holder.



(1) STARTER GEAR HOLDER
(2) KICK IDLE SHAFT
(3) BOLTS

Check the kick idle shaft, kickstarter spindle and starter driven gear for wear or damage.

Check the starter drive gears for wear or damage.
Check the kickstarter spring for loss of tension.

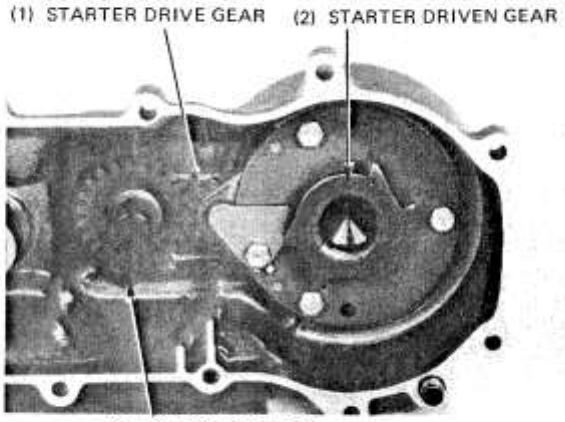


KICKSTARTER ASSEMBLY

NOTE

> Install the left crankcase cover using a new oil seal.

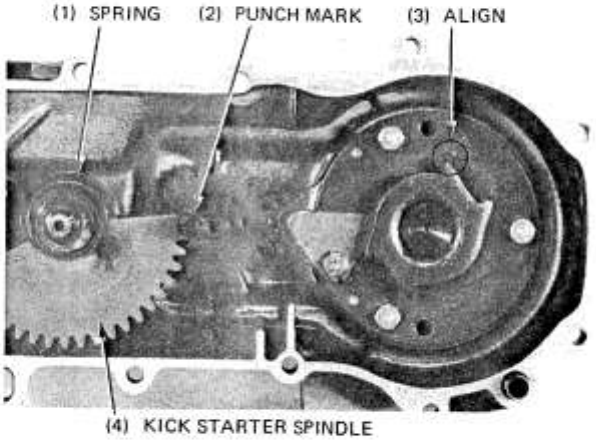
Install the starter gear holder, starter driven gear, starter drive gear and kick idle shaft.



Install the kick starter spindle and spring.

NOTE

> Align the arrow mark on the driven gear with the arrow mark on the holder, and punch mark on the idle shaft with the root of the first tooth of the starter spindle.



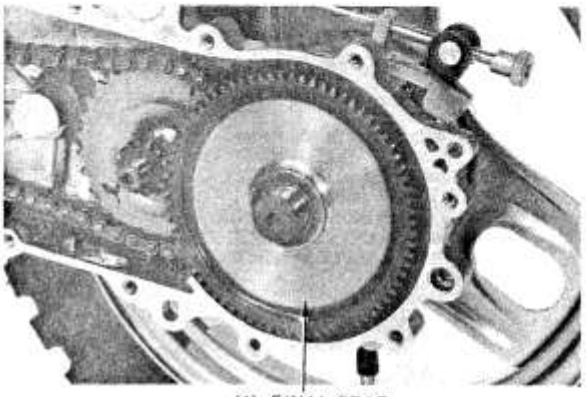
DRIVE CHAIN/CLUTCH ASSEMBLY

Install the rear axle and rear wheel.
Place the drive chain over the drive sprocket (clutch outer) and driven sprocket, and install the sprockets in the crankcase.

Install the drive chain tensioner and drive chain guide.
Install the final gear.

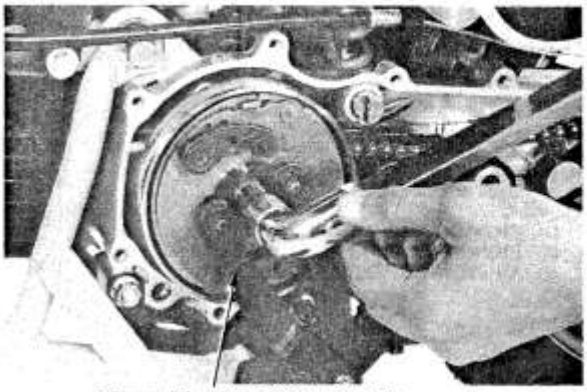
NOTE

Install the final gear with the low boss end on the outside.



(1) FINAL GEAR

Install the drive plate.
TORQUE: 35–40 N.m (3.5–4.5 kg-m, 25–29 ft-lb)

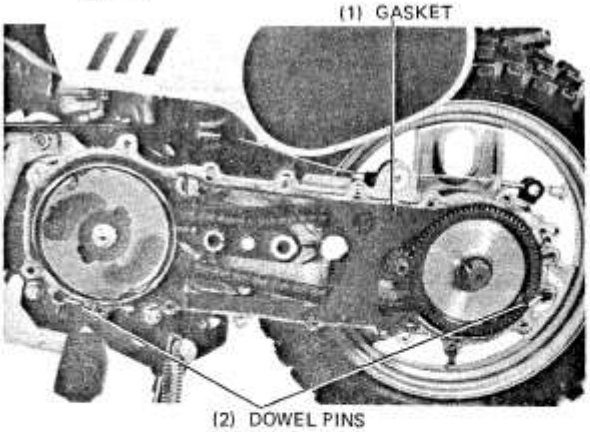


S. TOOL (1) UNIVERSAL HOLDER

Install the left crankcase cover.

NOTE

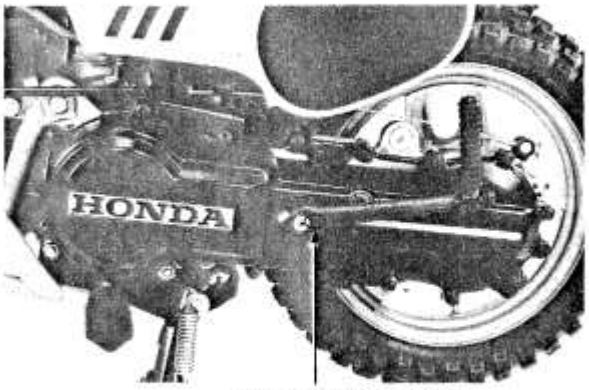
- Do not forget to install the dowel pin and washers.
- When difficulty is encountered in placing the crankcase cover on the crankcase, install the kickstarter pedal on the kick spindle temporarily, and press on the pedal.



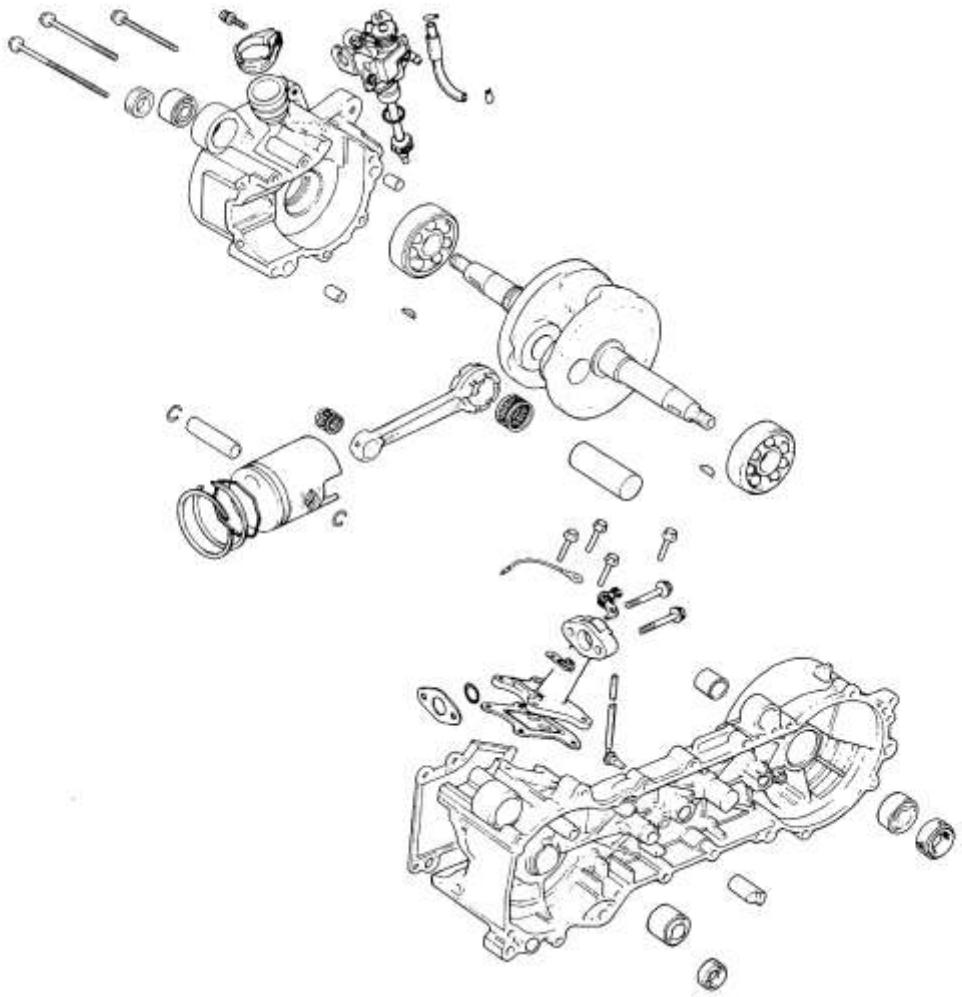
(1) GASKET

(2) DOWEL PINS

Install the kickstarter pedal on the spindle aligning the marks.
Fill the transmission with the recommended oil (Page 3-4).



(1) KICKSTARTER PEDAL



HONDA QR50

9. CRANKCASE/CRANKSHAFT

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- This section deals with separation of the crankcase to service the crankshaft.
- Refer to the following topics for removal of the engine and others which must be removed before separating the crankcase.

Engine removal/installation	Page 5-2 – 5-5
Engine mounting bracket removal	
Main stand removal	
Carburetor removal	Page 4-3
Oil pump removal	Page 2-2
Reed valve removal	Page 4-8
Clutch/drive chain/sprocket removal	Page 8-2
A.C. generator removal	Page 7-2
Cylinder head/cylinder removal	Page 6-2, 6-3

- The following operation is further required when the left crankcase must be replaced.

Rear wheel removal	Page 11-2

TOOLS

Special Tools

Case puller	07933–1470000
Case puller	07935–1870000
Seal & case assembling tool	07965–1480010
Bearing puller	07631–0010000

Common Tools

Bearing driver handle A	07749–0010000
37 x 40 mm outer bearing driver	07746–0010200
17 mm bearing driver pilot	07746–0040400
42 x 47 mm outer bearing driver	07746–0010300
20 mm bearing driver pilot	07746–0040500

SPECIFICATIONS

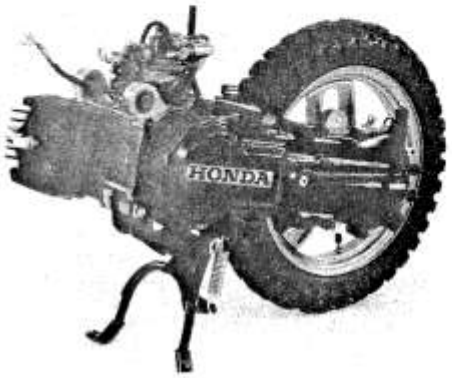
ITEM		STANDARD mm (in)	SERVICE LIMIT mm (in)
Connecting rod side clearance		0.15 –0.41 (0.006–0.016)	0.6 (0.024)
Connecting rod big end radial play		0.011–0.026 (0.0004–0.0010)	0.05 (0.002)
Crankshaft runout	A	0–0.5 (0–0.02)	0.15 (0.006)
	B	0–0.5 (0–0.02)	0.15 (0.006)

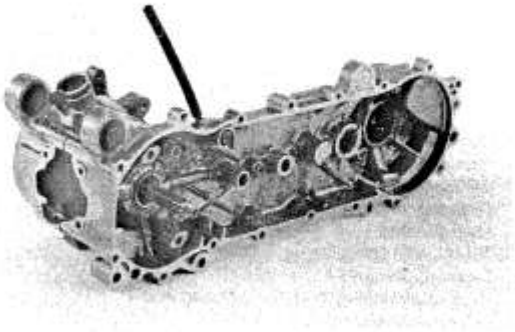
TROUBLESHOOTING

Abnormal noise

1. Worn main journal bearing
2. Worn crankpin bearing

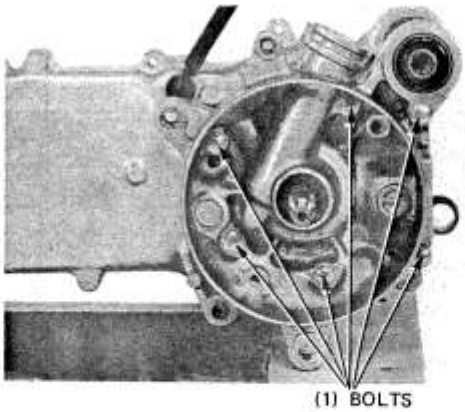
Remove the following parts:
- Engine (Page 5-2)
- Oil pump (Page 2-2)
- Carburetor (Page 4-3)
- Reed valve (Page 4-8)
- Cylinder head and cylinder (Page 6-2, 6-3)
- A.C. generator (Page 7-2)
- Clutch, drive chain, sprocket (Page 8-2)
- Rear wheel (Page 11-2)
- Mainstand



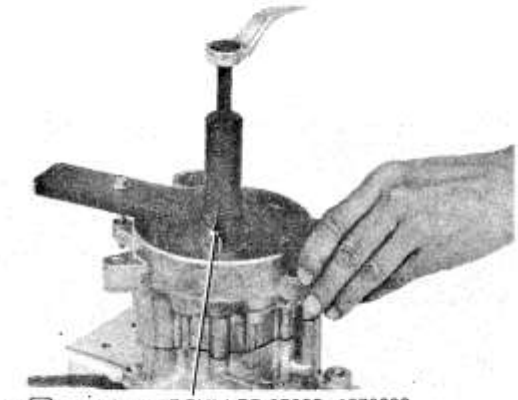


CRANKCASE SEPARATION

Remove the crankcase hold-down bolts.


(1) BOLTS

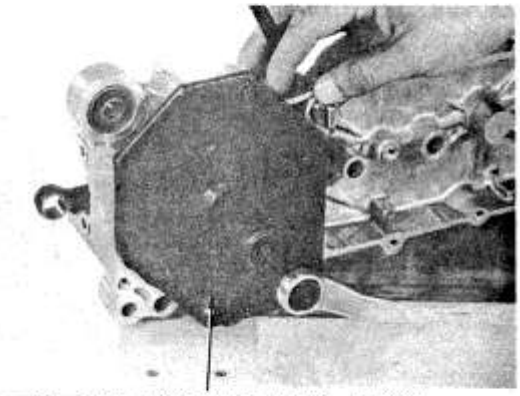
Install the special tool "Case Puller" on the right crankcase.
Remove the right crankcase.
SPECIAL TOOL
CASE PULLER 07935–1870000



S. TOOL (1) CASE PULLER 07935–1870000

CRANKSHAFT REMOVAL

Install the special tool "Case Puller" on the left crankcase.
Remove the crankshaft.
SPECIAL TOOL
CASE PULLER 07933–1470000

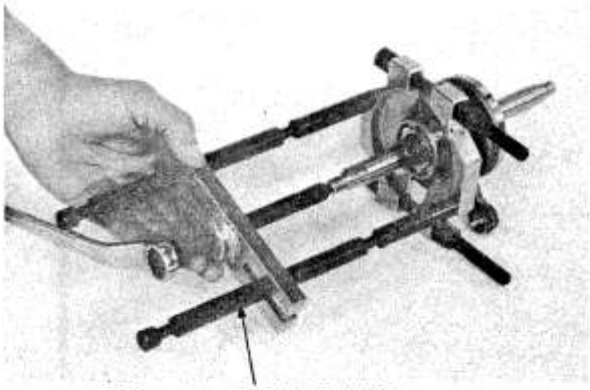


S. TOOL (1) CASE PULLER 07933–1470000

NOTE

Remove the journal bearing with a puller and discard if it is left intact.

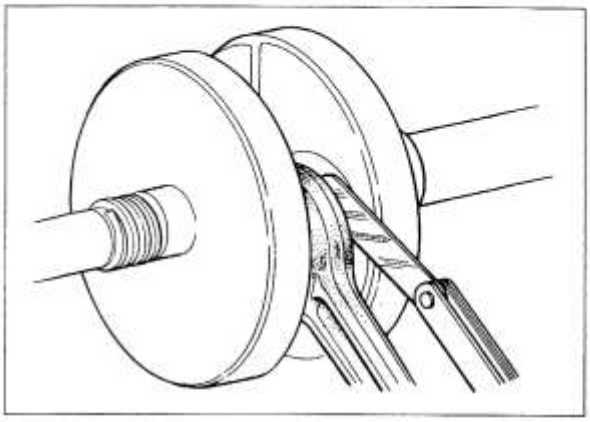
Remove the oil seals from the right and left crankcases.



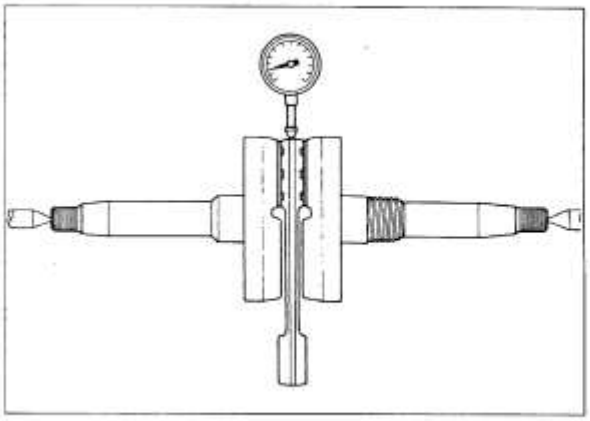
S. TOOL (1) BEARING PULLER

CRANKSHAFT INSPECTION

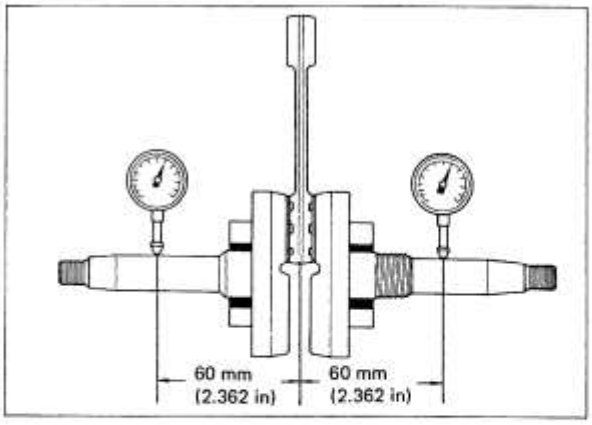
Check the connecting rod side clearance.
SERVICE LIMIT: 0.6 mm (0.024 in)



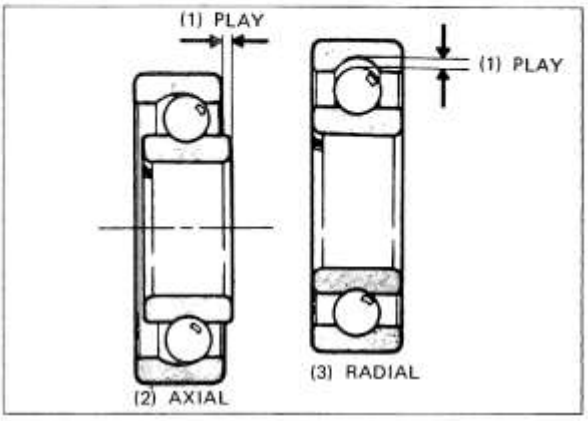
Set the crankshaft on a stand or V blocks. Set a dial indicator to the connecting rod bearing journal. Rotate the crankshaft two revolutions and read runout.
SERVICE LIMIT: 0.05 mm (0.002 in)



With the crankshaft set on a stand or V blocks, measure runout at the journals.
SERVICE LIMIT:
A: 0.15 mm (0.006 in)
B: 0.15 mm (0.006 in)

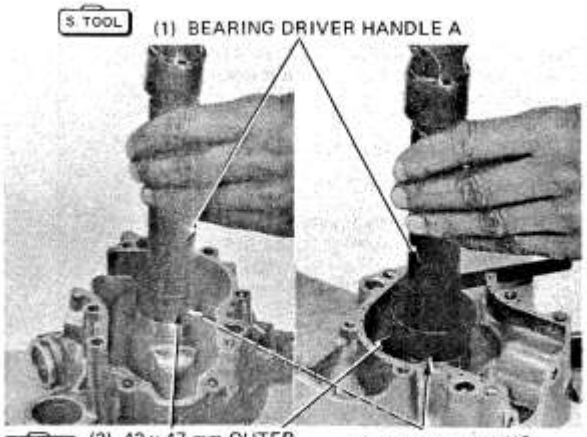


Check the crankshaft journal bearings for excessive play.



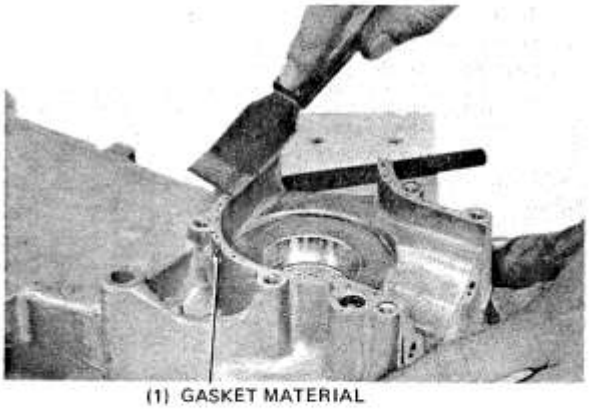
CRANKSHAFT ASSEMBLY

Clean the crankcases in solvent thoroughly, making sure that they are not damaged and in good condition.
Drive in the journal bearings (#6004) into the crankcases using the special tools.



NOTE

- Lubricate the sliding faces of all bearings with clean oil except those in the crankcase.
- Remove all gasket materials from the mating faces of the crankcases and covers.
- Rapair with an oil stone if the surfaces are rough.

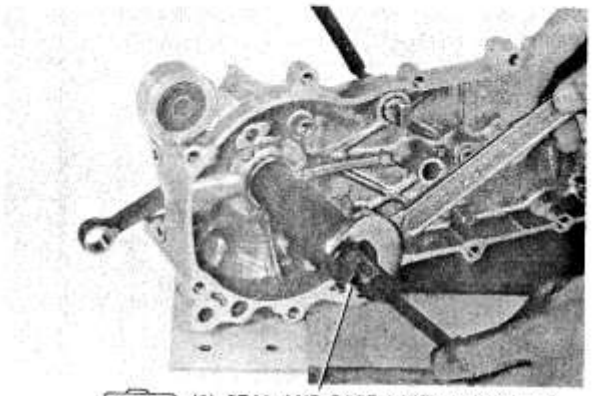


Install the crankshaft in the left crankcase.

NOTE

- Lubricate the crankshaft bearing and connecting rod small end with clean oil.
- Note the location of the connecting rod.

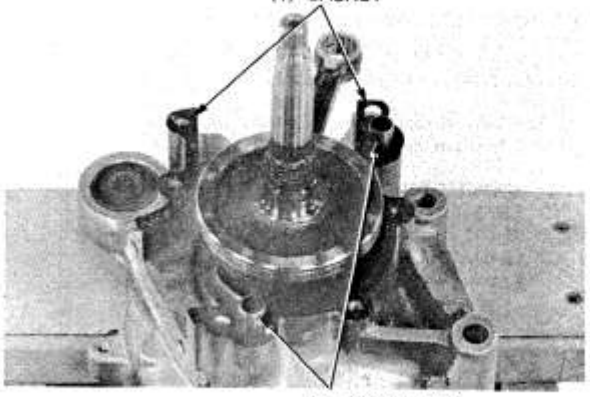
SPECIAL TOOL
SEAL AND CASE ASSEMBLING TOOL
07965–1480010



S. TOOL (1) SEAL AND CASE ASSEMBLING TOOL

CRANKCASE ASSEMBLY

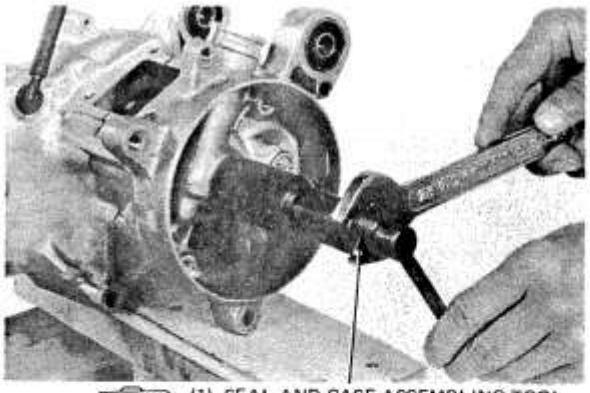
Place dowel pins and new gaskets on the left crankcase.



(1) GASKET
(2) DOWEL PINS

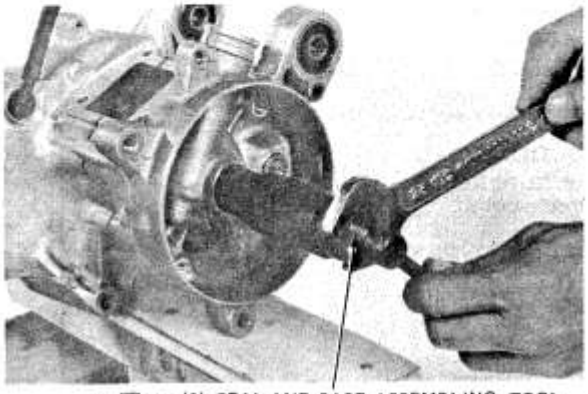
Place the left crankcase on the right crankcase and install using the special tool.

SPECIAL TOOL
SEAL AND CASE ASSEMBLING TOOL
07965–1480010



S. TOOL (1) SEAL AND CASE ASSEMBLING TOOL

Install the oil seal in the right crankcase bore.
SPECIAL TOOL
SEAL AND CASE ASSEMBLING TOOL
07965–1480010

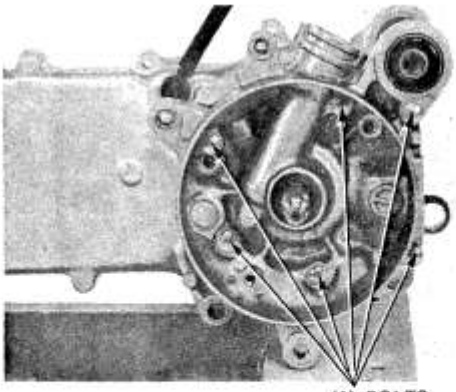


S. TOOL (1) SEAL AND CASE ASSEMBLING TOOL 07965–1480010

Drive the crankshaft oil seal into the left crankcase bore.

(1) LEFT CRANKCASE (2) OIL SEAL

Pull the right and left crankcases together by screwing the crankcase bolts as shown.



(1) BOLTS

FINAL GEAR BEARING INSTALLATION

Drive the bearing in using the common tools as shown.

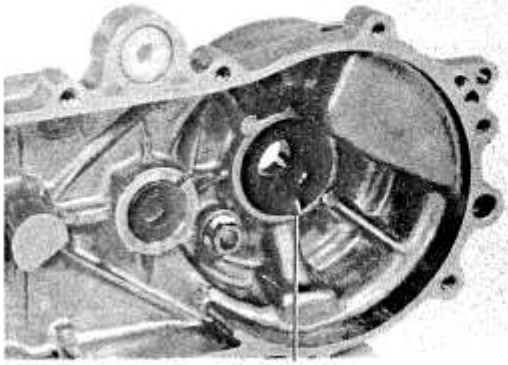
NOTE

Do not damage the bearing seal.

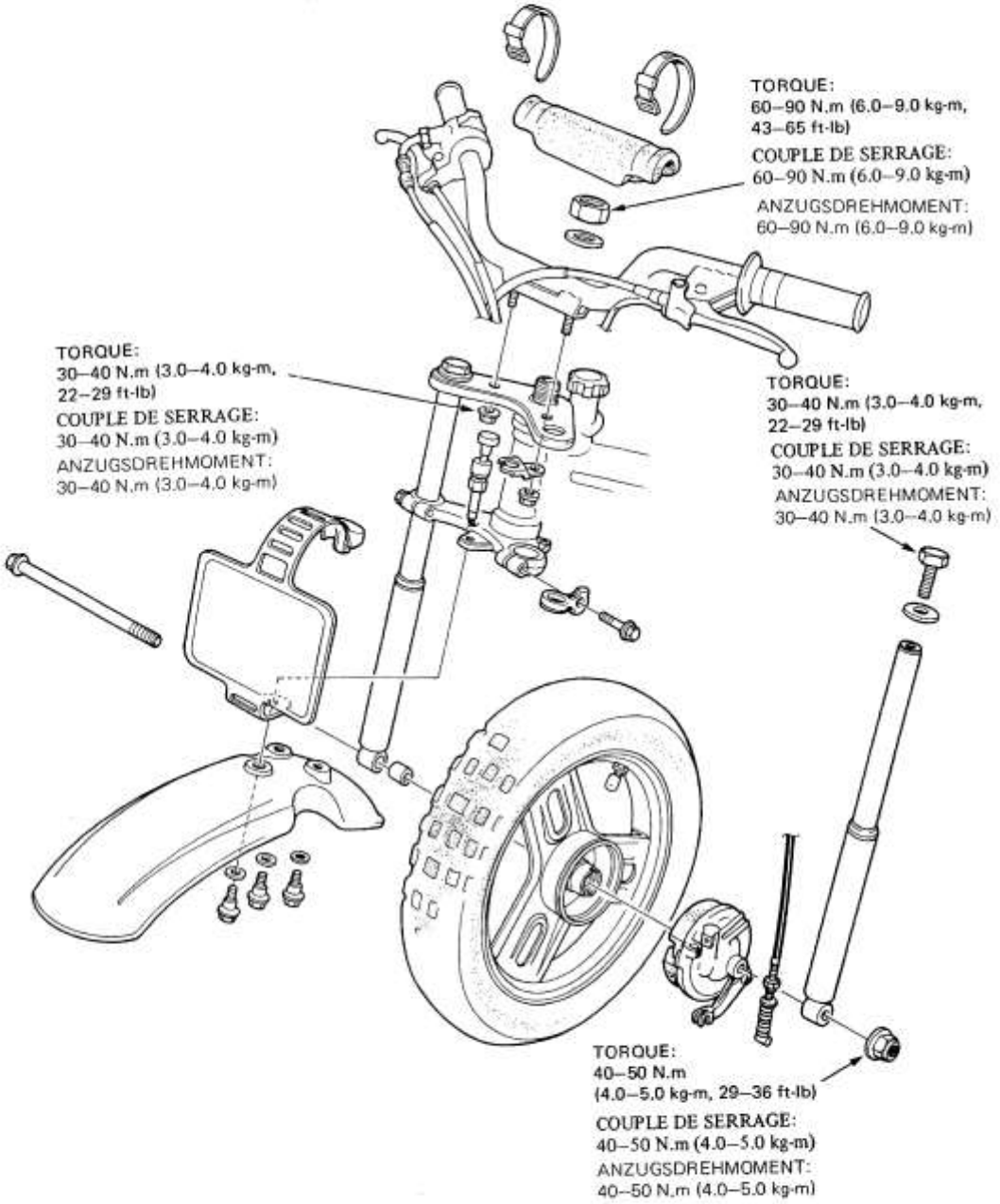
S. TOOL

(1)
- BEARING DRIVER HANDLE A
- 37 x 40 mm OUTER BEARING DRIVER
- 17 mm BEARING DRIVER PILOT

Install the oil seal.



(1) OIL SEAL


TORQUE:
60–90 N.m (6.0–9.0 kg-m, 43–65 ft-lb)
COUPLE DE SERRAGE:
60–90 N.m (6.0–9.0 kg-m)
ANZUGSDREHMOMENT:
60–90 N.m (6.0–9.0 kg-m)
TORQUE:
30–40 N.m (3.0–4.0 kg-m, 22–29 ft-lb)
COUPLE DE SERRAGE:
30–40 N.m (3.0–4.0 kg-m)
ANZUGSDREHMOMENT:
30–40 N.m (3.0–4.0 kg-m)
TORQUE:
30–40 N.m (3.0–4.0 kg-m, 22–29 ft-lb)
COUPLE DE SERRAGE:
30–40 N.m (3.0–4.0 kg-m)
ANZUGSDREHMOMENT:
30–40 N.m (3.0–4.0 kg-m)
TORQUE:
40–50 N.m
(4.0–5.0 kg-m, 29–36 ft-lb)
COUPLE DE SERRAGE:
40–50 N.m (4.0–5.0 kg-m)
ANZUGSDREHMOMENT:
40–50 N.m (4.0–5.0 kg-m)

10. STEERING/FRONT WHEEL FRONT FORK

SERVICE INFORMATION

GENERAL INSTRUCTIONS

TOOLS

Special Tools

Ball race remover	07946–GA70000
Outer driver (28 x 30 mm)	07946–1870100

Common Tools

Lock nut wrench socket (30 x 32 mm)	07716–0020400
Extension bar handle	07716–0020500
Driver pilot (10 mm)	07746–0040100
Bearing driver handle A	07749–0010000
Outer driver (42 x 47 mm)	07746–0010300

SPECIFICATIONS

ITEM		STANDARD mm (in)	SERVICE LIMIT mm (in)
Axle shaft runout		–	0.2 (0.008)
Rim runout	Radial	–	2.0 (0.08)
	Axial	–	2.0 (0.08)
Front brake drum I.D.		80.0–80.2 (3.15–3.16)	80.5 (3.17)
Front brake lining thickness		3.85–4.15 (0.15–0.16)	2.0 (0.08)
Fork spring free length		112.4 (4.409)	109.0 (4.291)
Frok tube runout		–	0.2 (0.008)

TROUBLESHOOTING

Hard steering
1. Steering stem nut too tight
2. Damaged steering stem bearings
3. Damaged steering ball and cone races
4. Insufficient tire pressure

Steers to one side or does not track straight
1. Faulty front shock absorbers
2. Bent front forks
3. Bent front axle or front wheel out of alignment

Front wheel wobbling
1. Bent rim
2. Excessive wheel bearing play
3. Bent spoke plate
4. Faulty or unevenly worn tire
5. Axle not tightened properly

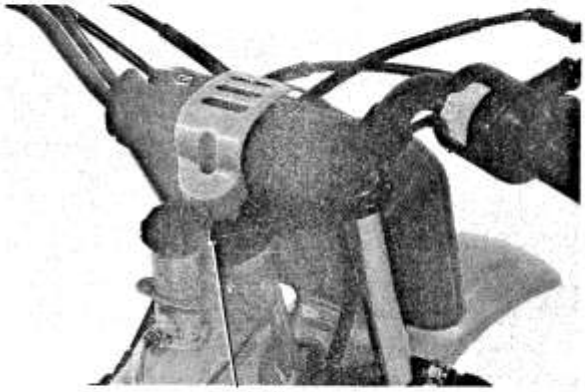
Soft suspension
1. Weak fork springs

Front suspension noise
1. Slider binding
2. Loose front fork fasteners

HANDLEBAR

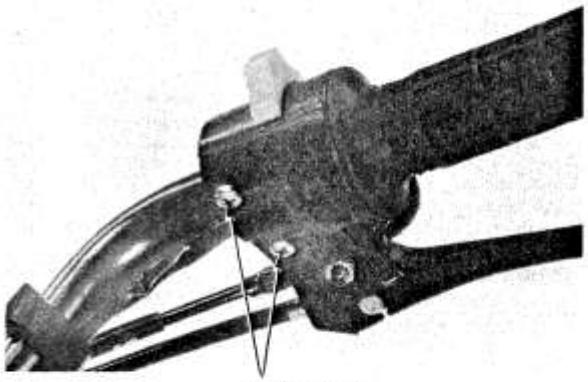
HANDLEBAR REMOVAL

Remove flap of number plate from steering stem nut by prying pawl open.



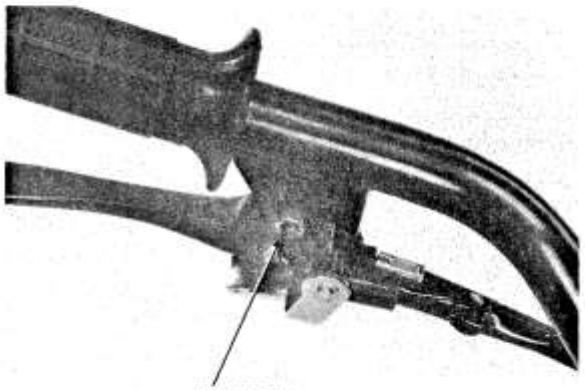
(1) PAWL

Unscrew the two screws attaching the throttle grip housing together and remove the throttle grip from the handlebar.



(1) SCREWS

Remove the rear brake screw and disconnect the brake cable from the brake lever.



(1) SCREW

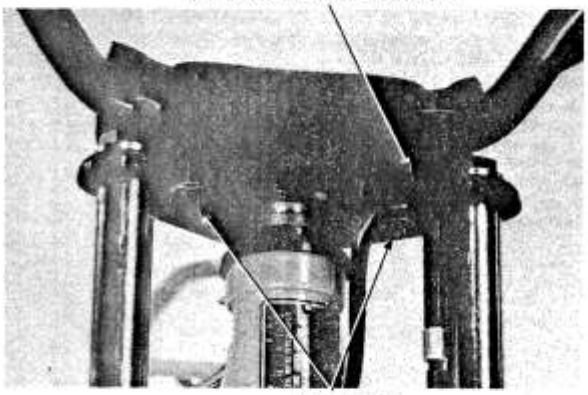
Remove the two nuts attaching the handlebar to the fork top bridge and remove the handlebar.
Remove the choke cable bracket.

HANDLEBAR INSTALLATION

Insert the handlebar studs into the holes in the fork top bridge and install using the two nuts with the choke cable bracket between the left nut and fork top bridge. Tighten the nuts to the specified torque.

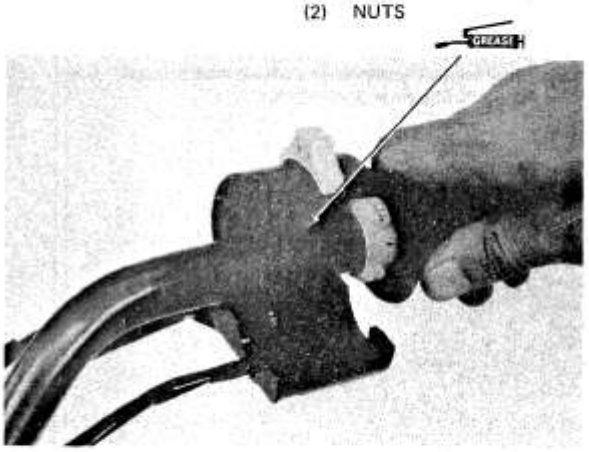
TORQUE: 30–40 N.m (3.0–4.0 kg-m, 22–29 ft-lb)

(1) CHOKE CABLE BRACKET



(2) NUTS

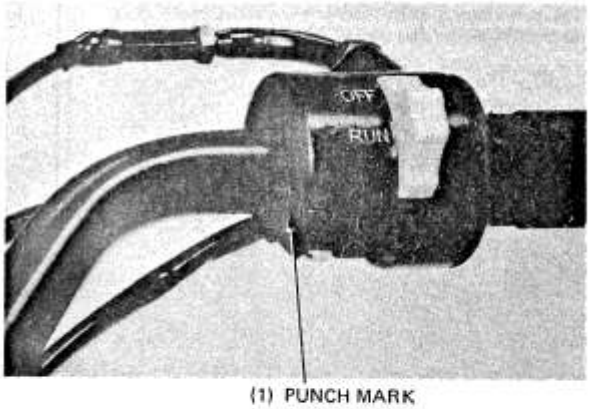
Apply grease to the throttle grip area of the handlebar.



Position the throttle grip housing on the handlebar and install using the two screws. Tighten the screws securely.

NOTE

- Align the slit in the housing with the punch mark on the handlebar.
- Tighten the forward screw first, then tighten the rear screw.

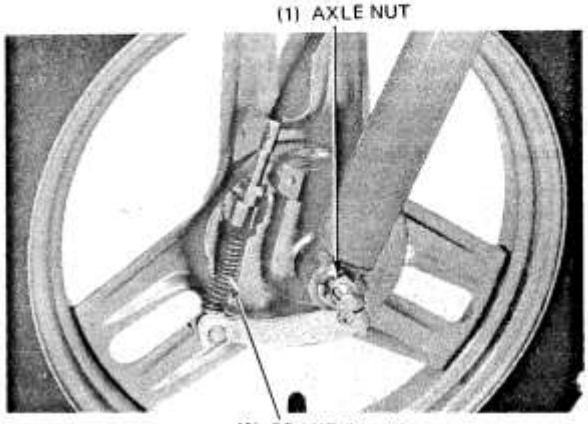


(1) PUNCH MARK

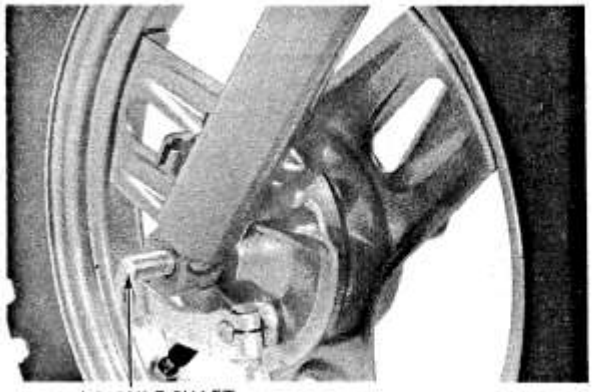
FRONT WHEEL

FRONT WHEEL REMOVAL

Disconnect the front brake cable from the brake arm.
Remove the axle nut.



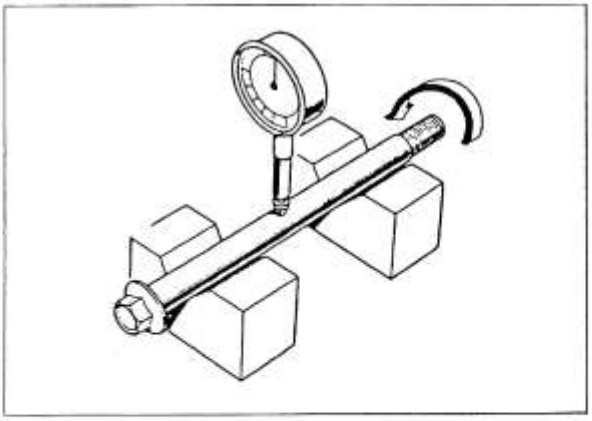
Withdraw the front axle and remove the front wheel.



FRONT AXLE INSPECTION

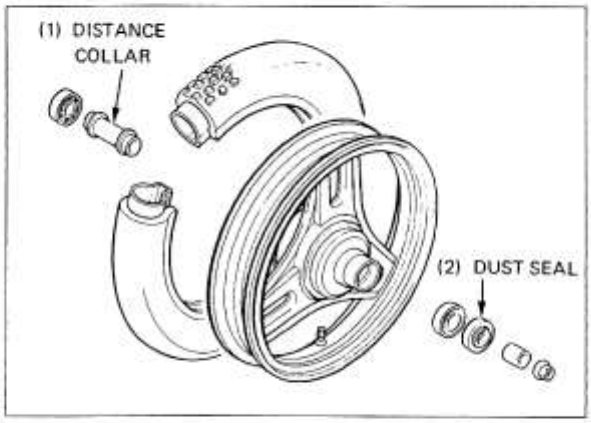
Set the axle in V blocks and measure the runout. The actual runout is 1/2 of TIR (Total Indicator Reading).

SERVICE LIMIT: 0.2 mm (0.008 in)



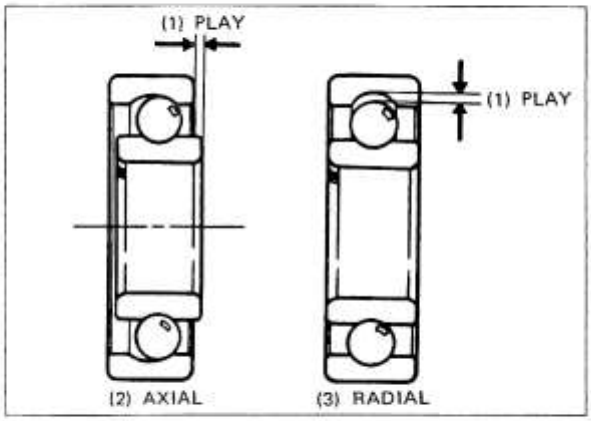
FRONT WHEEL DISASSEMBLY

Remove the dust seals, bearings and distance collar.



WHEEL BEARING INSPECTION

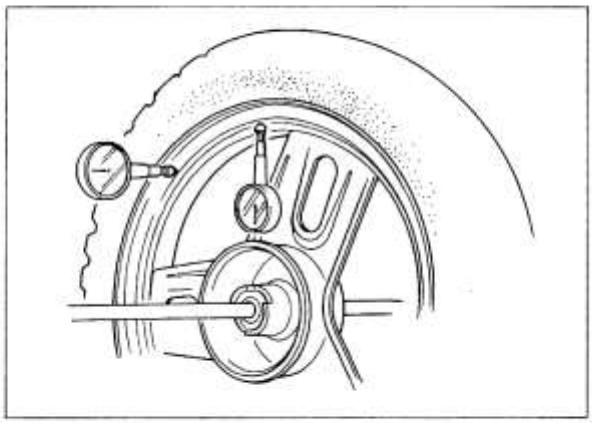
Check wheel bearing play by placing the wheel in a truing stand and spinning the wheel by hand. Replace the bearings with new ones if they are noisy or have excessive play.



WHEEL INSPECTION

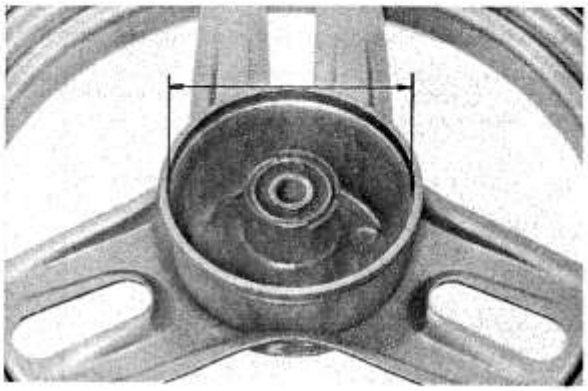
Check rim runout by placing the wheel in a truing stand. Spin the wheel slowly and read the runout using a dial indicator gauge.

SERVICE LIMITS:
RADIAL PLAY: 2.0 mm (0.08 in)
AXIAL PLAY: 2.0 mm (0.08 in)



FRONT BRAKE DRUM INSPECTION

Remove the brake panel.
Measure the front brake I.D.
SERVICE LIMIT: 80.5 m (3.17 in)



FRONT WHEEL ASSEMBLY

Pack all bearing cavities with grease.
Drive in the left bearing.
Install the distance collar.
Drive in the right bearing.

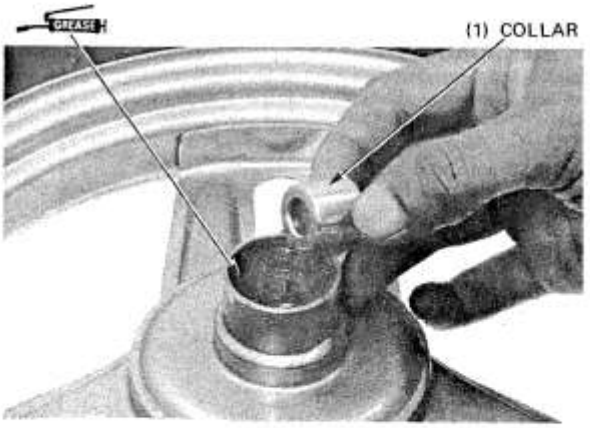
NOTE

- Drive in the bearings squarely.
- Install the bearings with the sealed end facing out.
- Do not get grease on the brake drum.

SPECIAL TOOL:
BEARING DRIVER (28 x 30)
07946–1870100

COMMON TOOLS:
BEARING DRIVER PILOT (10 mm)
BEARING DRIVER HANDLE A

Install the dust seals.
Apply grease to the inside of the dust seal.
Install the dust seal and collar.



FRONT WHEEL INSTALLATION

Install the front wheel.

NOTE

Align the locating plate of the slide pipe with the groove in the brake panel.

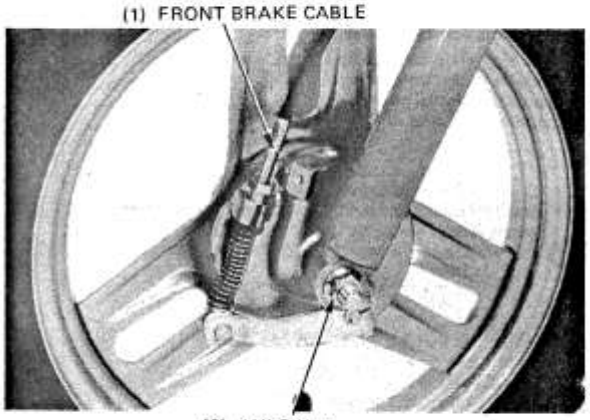
Insert the axle from the right side.

(1) AXLE SHAFT (2) ALIGN

Install the axle nut on the axle and tighten to the specified torque.

TORQUE: 40–50 N.m (4.0–5.0 kg-m, 29–36 ft-lb)

Connect the brake cable.
Adjust brake lever free play (Page 3-7).

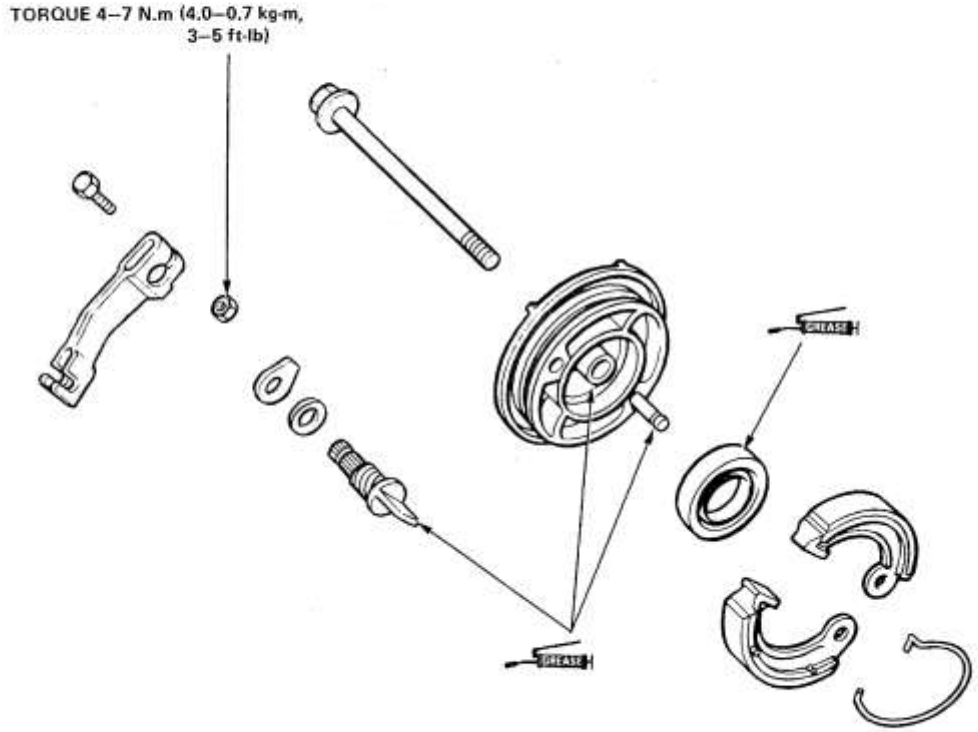


(1) FRONT BRAKE CABLE

(2) AXLE NUT

FRONT BRAKE

FRONT BRAKE DISASSEMBLY

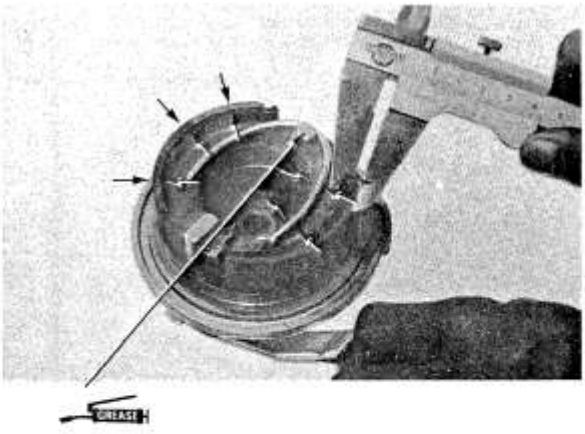


FRONT BRAKE LINING THICKNESS

Measure the front brake lining thickness.
SERVICE LIMIT: 2.0 mm (0.08 in)

WARNING

Do not get grease on the brake lining.

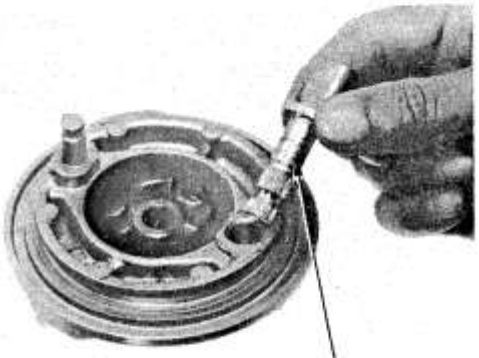


FRONT BRAKE CAM ASSEMBLY

Apply grease to the brake cam contacting faces of the brake shoes.
Apply grease to the sliding faces of the brake cam.
Install the brake cam and felt seal.

NOTE

- Clean the inside of the brake panel thoroughly.
- Soak the felt ring with oil before installation.


(1) BRAKE CAM

Install the wear indicator plate.

NOTE

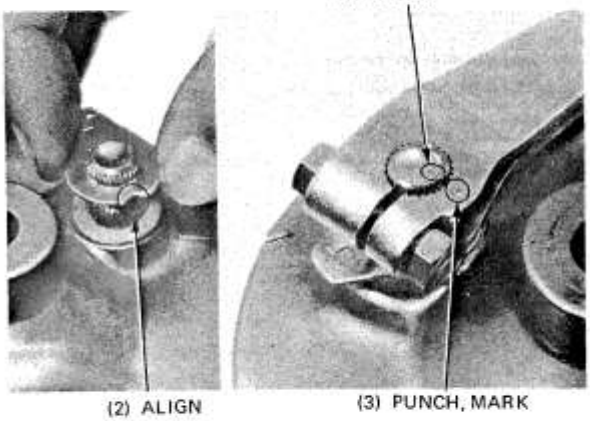
Align the slit in the plate with the slit in the brake cam.

Install the brake arm.

NOTE

Align the punch mark on the brake arm with the slit in the brake cam.

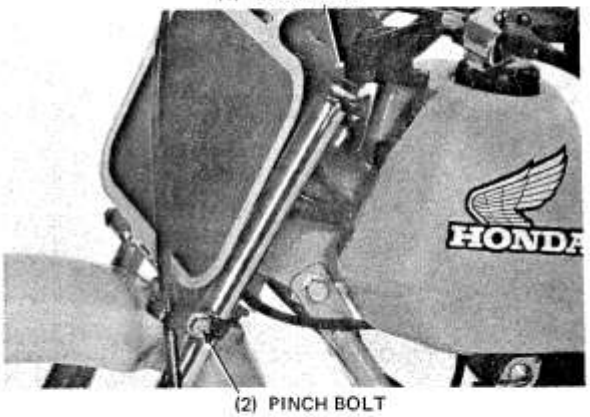
Tighten the brake arm bolt to the specified torque.
TORQUE: 4–7 N.m (4.0–0.7 kg-m, 3–5 ft-lb)


(1) ALIGN
(2) ALIGN
(3) PUNCH, MARK

FRONT FORK

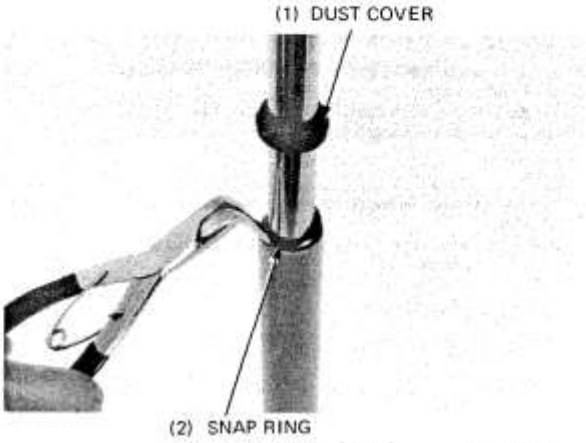
FRONT FORK REMOVAL

Remove the front wheel (Page 10-4).
Remove the fork bolts and fork pinch bolts.
Remove the front fork.

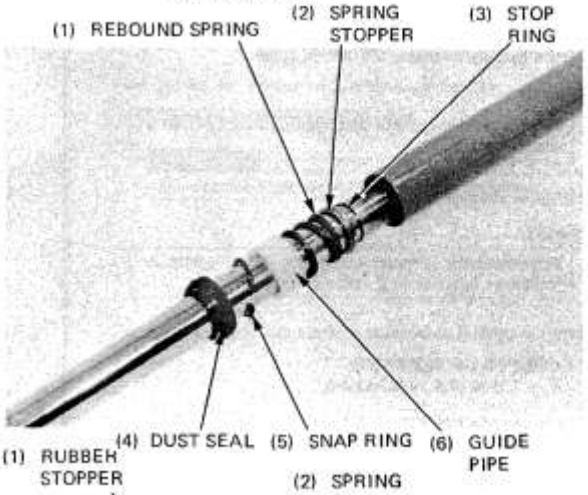


(1) FORK BOLT
(2) PINCH BOLT

Remove the dust cover and pry the snap ring from each fork.



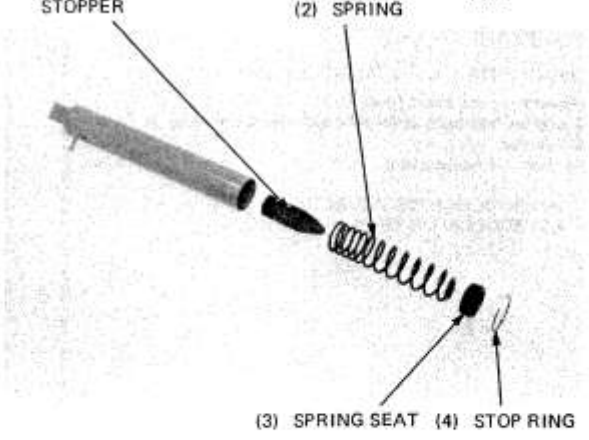
Withdraw the fork pipes.
Remove the dust seal, snap rings, guide pipe and rebound spring from each fork pipe.



Remove the stop ring, spring seat, stopper and spring.

NOTE

The rubber stopper is provided only on the left fork.

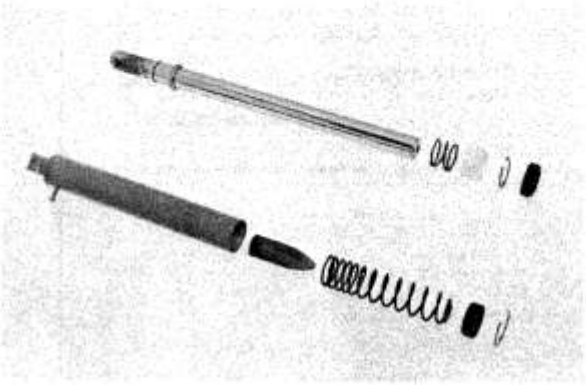


FRONT FROK INSPECTION

Check each fork for excessive wear or damage.
Check each slider for bending.

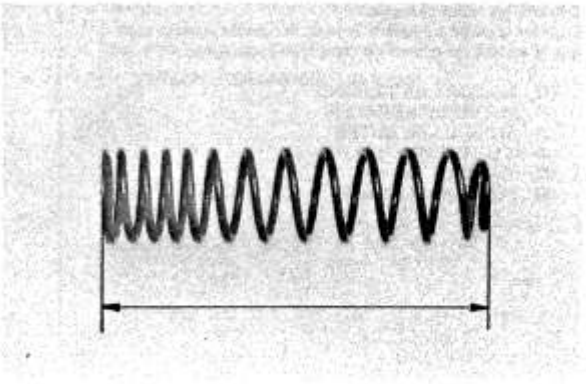
NOTE

Repair or replace the slider if it is bent.



FORK SPRING INSPECTION

Measure the fork spring free length.
SERVICE LIMIT: 109.0 (4.291 in)

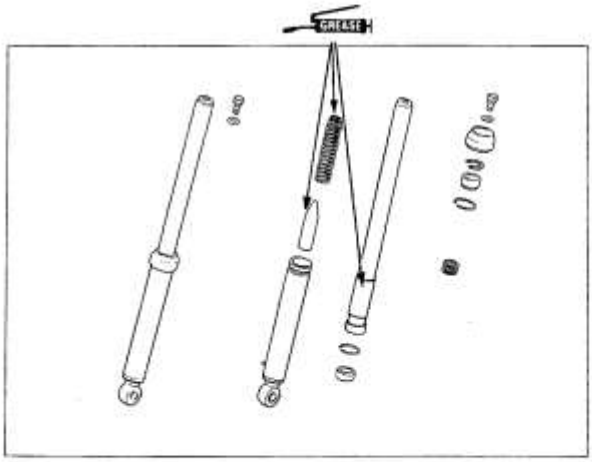


FRONT FORK ASSEMBLY

Assembly is the reverse order of disassembly.

NOTE

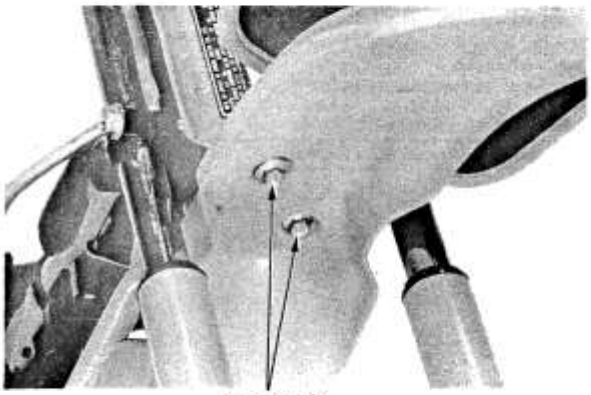
- Coat the sliding surface of the fork piston and outside of the frok spring with grease (5g for each fork).
- Install the rubber stopper with the rubber facing up (Left fork only).



STEERING STEM

STEERING STEM REMOVAL

Remove the handlebar (Page 10-2).
Remove the front wheel (Page 10-4).
Remove the front fender by removing the two bolts.



(1) BOLTS

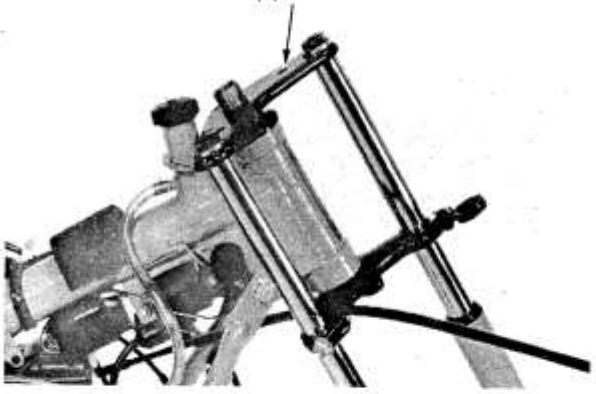
Remove the steering stem nut.

S. TOOL (1) EXTENSION BAR

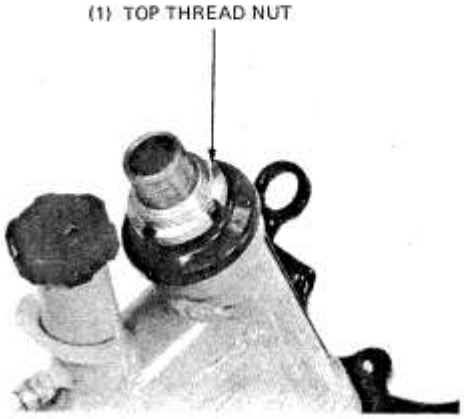
S. TOOL (2) LOCK NUT WRENCH SOCKET

Remove the front fork.
Remove the front fork and fork top bridge.

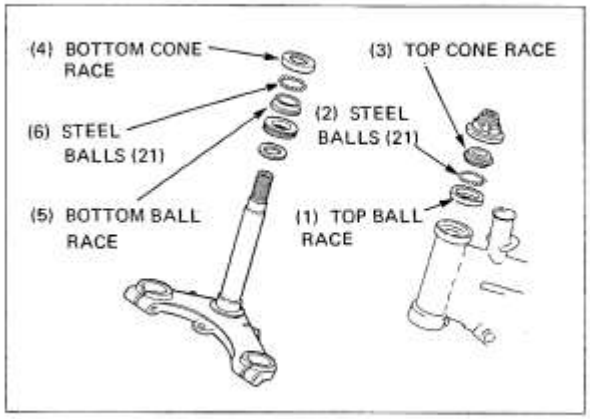
(1) FORK TOP BRIDGE



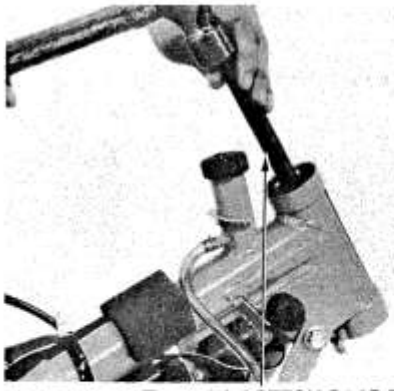
Remove the steering head top thread nut.
Remove the top cone race and steering stem.



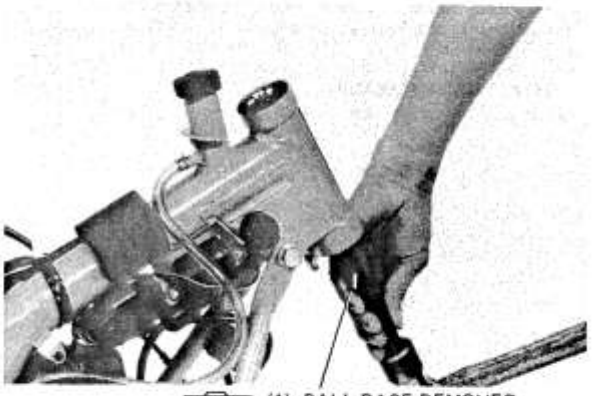
BALL RACE DISASSEMBLY/ASSEMBLY



Drive out the bottom ball race.



Drive out the top ball race.



S. TOOL (1) BALL RACE REMOVER
07946–GA70000

Drive in the top ball race.

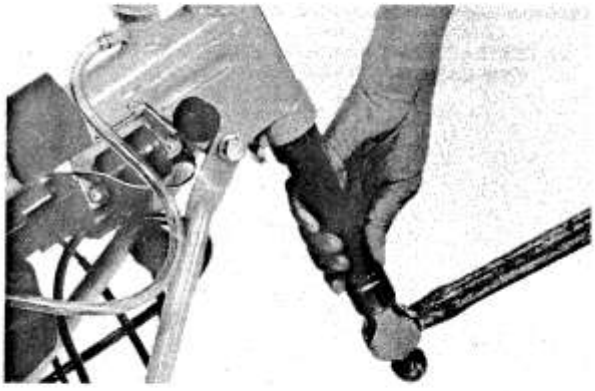
SPECIAL TOOL
DRIVER HANDLE OUTER A

COMMON TOOL
OUTER DRIVER (42 x 47 mm)

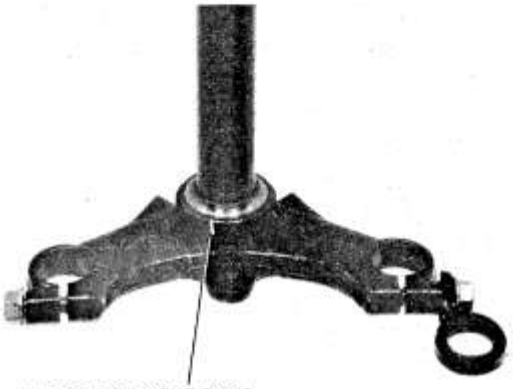
S. TOOL (1) DRIVER HANDLE OUTER (A)

(2) OUTER DRIVER (42 x 47 mm)

Drive in the bottom ball race.



Replace the bottom cone race with a new one.



(1) BOTTOM CONE RACE

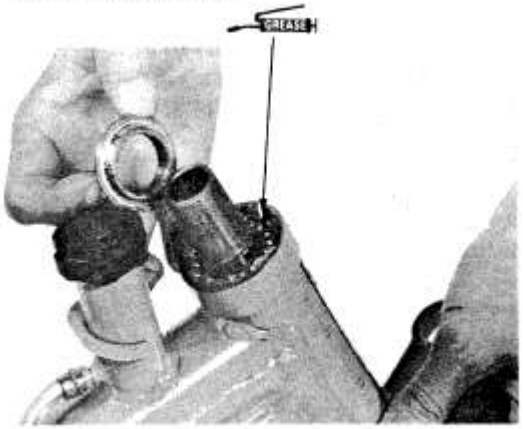
STEERING STEM INSTALLATION

Coat the ball races with grease to hold the steel balls. Install the steel balls in the ball races.

NOTE

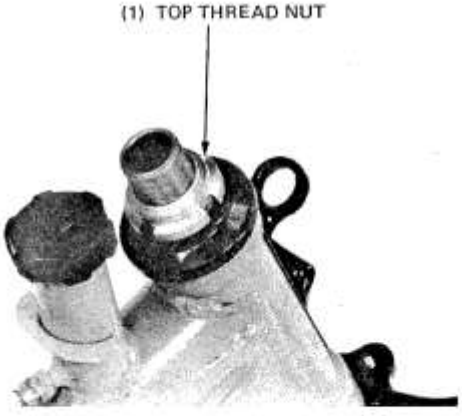
Before installing, clean the steel balls thoroughly in or with solvent.

Install the steering stem nut.

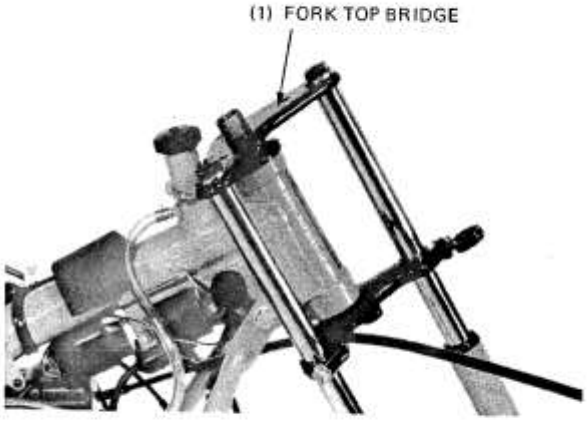


(1) TOP THREAD NUT

Tighten the nut until snug against the top cone race, then back it off 1/8 turn.
Make sure that there is no vertical movement and the stem rotates freely.

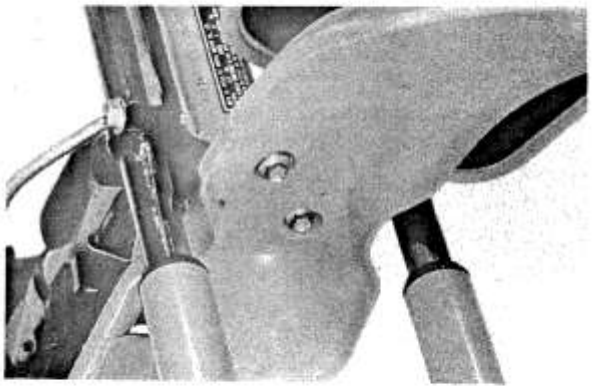


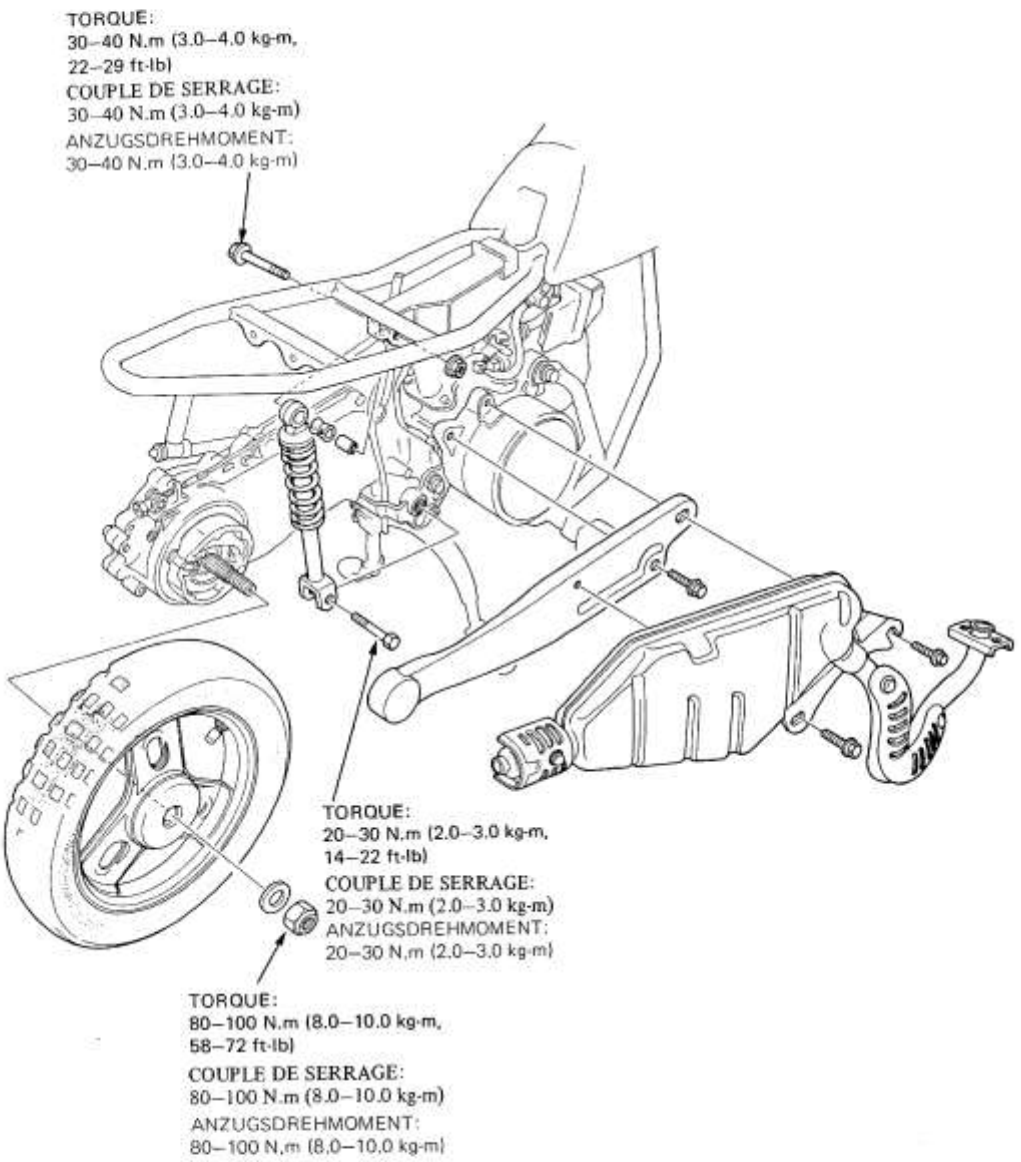
Install the front fork and fork top bridge.



Tighten the stem nut to the specified torque.
TORQUE: 60–90 N.m (6–9 kg-m, 43–65 ft-lb)

Install the front fender.
Install the front wheel (Page 10-7).
Install the handlebar (Page 10-3).




TORQUE:
30–40 N.m (3.0–4.0 kg-m,
22–29 ft-lb)
COUPLE DE SERRAGE:
30–40 N.m (3.0–4.0 kg-m)
ANZUGSDREHMOMENT:
30–40 N.m (3.0–4.0 kg-m)
TORQUE:
20–30 N.m (2.0–3.0 kg-m,
14–22 ft-lb)
COUPLE DE SERRAGE:
20–30 N.m (2.0–3.0 kg-m)
ANZUGSDREHMOMENT:
20–30 N.m (2.0–3.0 kg-m)
TORQUE:
80–100 N.m (8.0–10.0 kg-m,
58–72 ft-lb)
COUPLE DE SERRAGE:
80–100 N.m (8.0–10.0 kg-m)
ANZUGSDREHMOMENT:
80–100 N.m (8.0–10.0 kg-m)

HONDA QR50

11. REAR WHEEL /REAR BRAKE REAR SUSPENSION

SERVICE INFORMATION

GENERAL INSTRUCTIONS

COMMON TOOL

Rear shock absorber compressor	07959–3290001

SPECIAL TOOLS

Rear shock absorber attachment A	07967–GA70101
Rear shock absorber attachment B	07967–GA70200

SPECIFICATIONS

ITEM	STANDARD mm (in)	SERVICE LIMIT mm (in)
Rear wheel rim runout	–	2.0 (0.08)
Rear brake drum I.D.	95.0–95.2 (3.74–3.75)	95.5 (3.76)
Rear brake lining thickness	3.85–4.3 (0.15–0.17)	2.0 (0.08)
Rear shock absorber spring free length	112.9 (4.445)	109.5 (4.311)

TROUBLESHOOTING

Rear wheel wobbling
1. Bent rim
2. Faulty tire
3. Axle not tightened properly

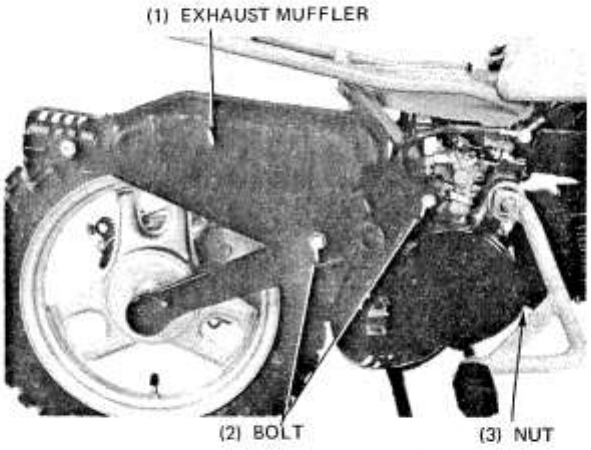
Soft suspension
1. Weak shock absorber spring

Poor brake performance
1. Brake not adjusted properly
2. Contaminated brake shoes
3. Worn brake shoes
4. Worn brake shoes at cam contacting area
5. Worn brake cam
6. Worn brake drum
7. Improper engagement between brake arm and camshaft

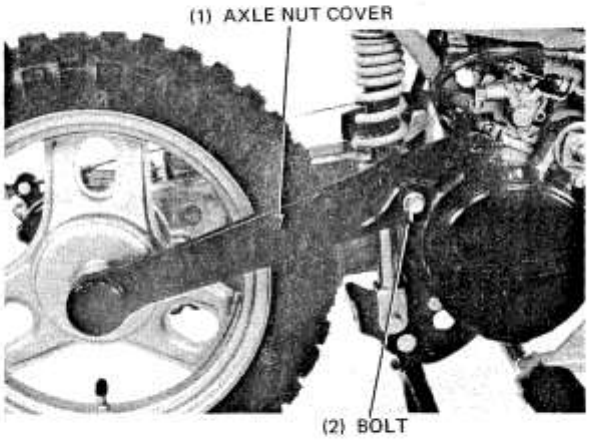
REAR WHEEL

REAR WHEEL REMOVAL

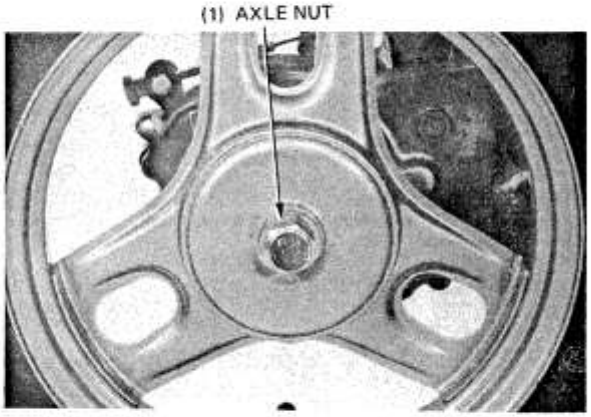
Remove the seat.
Remove the exhaust muffler by removing the bolt and nut.



Remove the axle nut cover by removing the bolt .



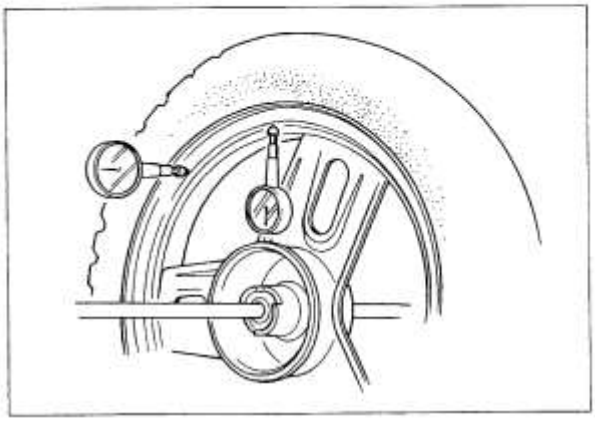
Remove the axle nut and rear wheel.



REAR WHEEL RIM RUNOUT INSPECTION

Check the rim for runout by placing the wheel in a truing stand. Spin the wheel by hand and read the runout using a dial indicator gauge.

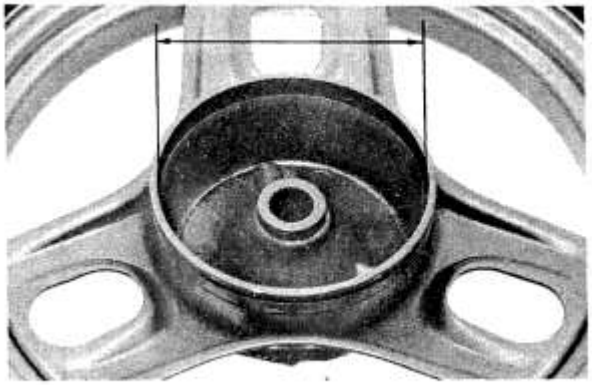
SERVIE LIMITS:
Radial: 2.0 mm (0.08 in)
Axial: 2.0 mm (0.08 in)



REAR BRAKE DRUM INSPECTION

Measure the rear brake drum I.D.

SERVICE LIMIT: 95.5 mm (3.76 in)

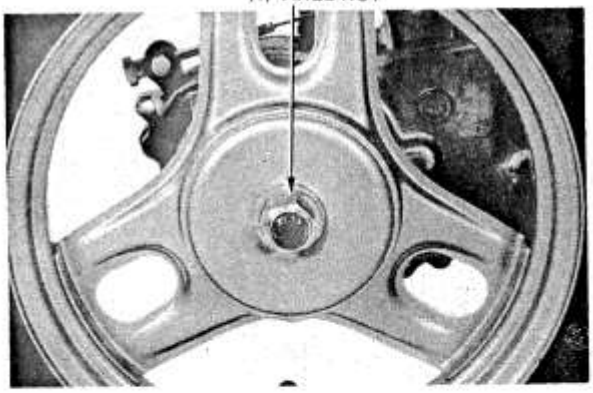


REAR WHEEL INSTALLATION

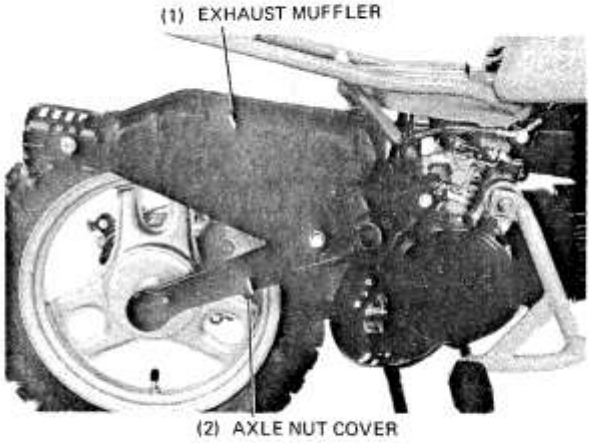
Install the rear wheel on the axle and tighten the axle nut to the specified torque.

TORQUE: 80–100 N.m (8.0–10.0 kg-m, 58–72 ft-lb)

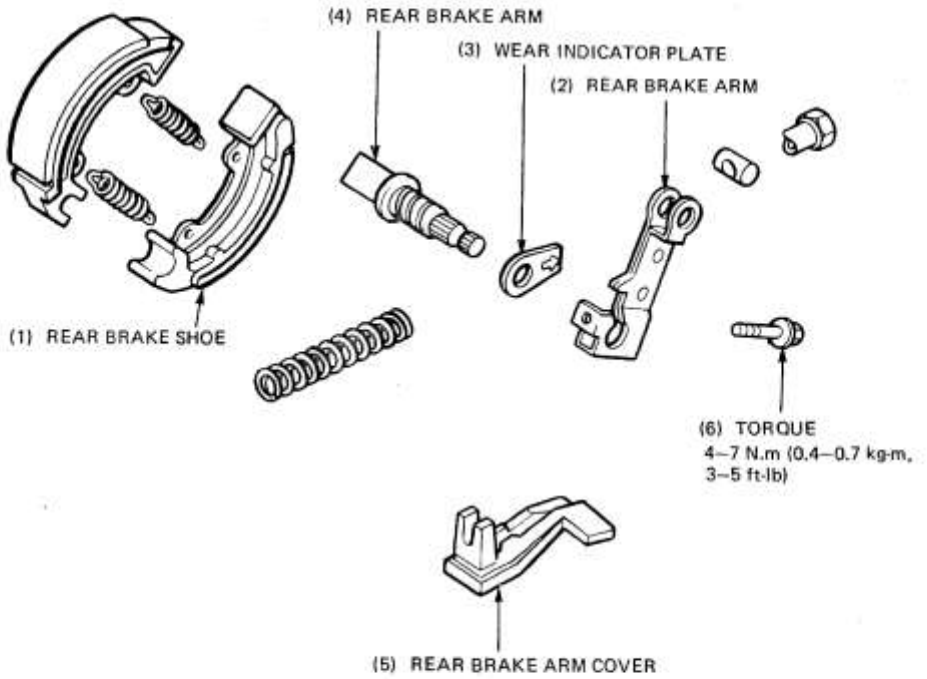
(1) AXLE NUT



Install the axle nut cover.
Install the exhaust muffler.



REAR BRAKE



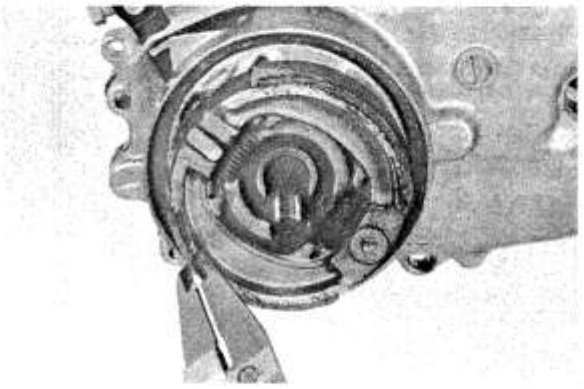
Remove the rear wheel (Page 11-2).

REAR BRAKE LINING THICKNESS

Measure the brake lining thickness.
SERVICE LIMIT: 2.0 mm (0.008 in)

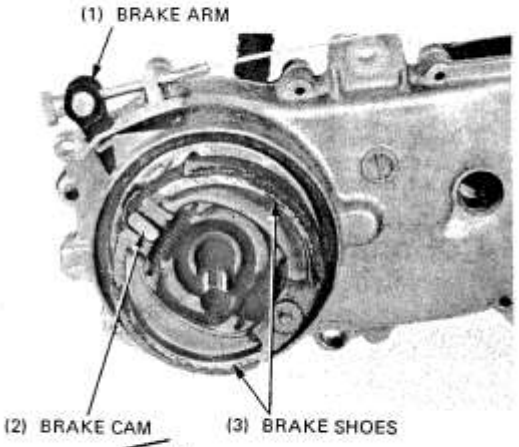
WARNING

Contaminated brake lining reduces stopping power.
Keep grease off the linings.



REAR BRAKE DISASSEMBLY

Remove the brake shoes.
Remove the brake arm and brake cam.



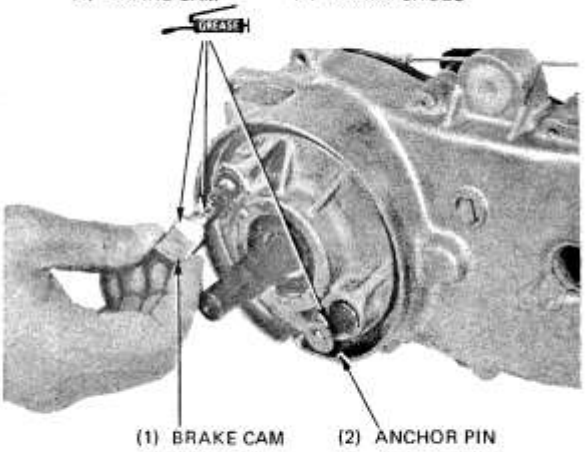
REAR BRAKE ASSEMBLY

Apply grease to the brake shoe anchor pin.

Apply grease to the brake shoe contacting surfaces of the cam.
Install the brake cam.

WARNING

Contaminated brake lining reduces stopping power.
Keep grease off the linings.



Install the wear indicator plate.

NOTE

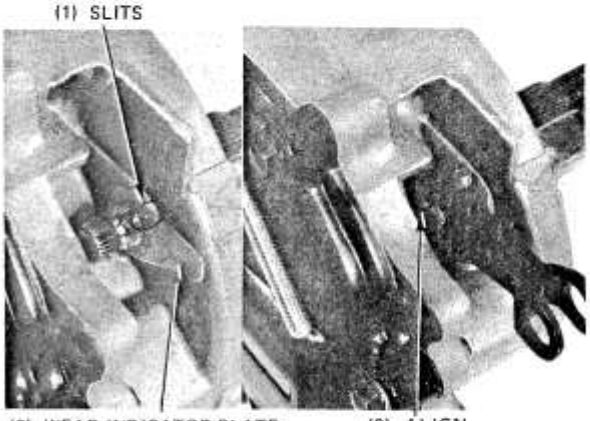
Align the slit in the plate with the slit in the brake cam shaft.

Install the brake arm.

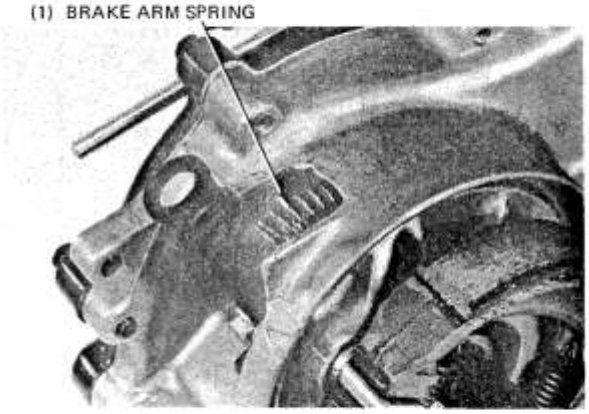
NOTE

Align the punch mark on the brake arm with the slit in the brake cam shaft.

Tighten the brake arm bolt.
TORQUE: 4–7 N.m (0.4–0.7 kg-m, 3–5 ft-lb)



Install the brake shoe spring.
Install the brake arm spring.

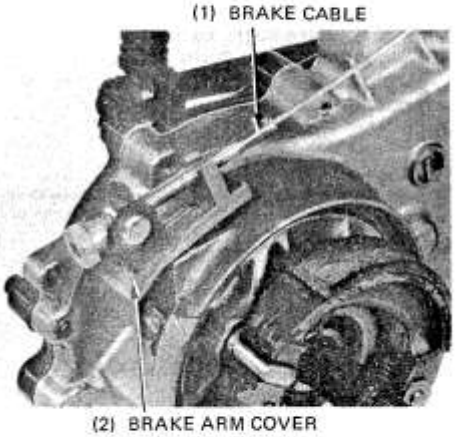


Install the brake arm cover.
Connect the rear brake cable.

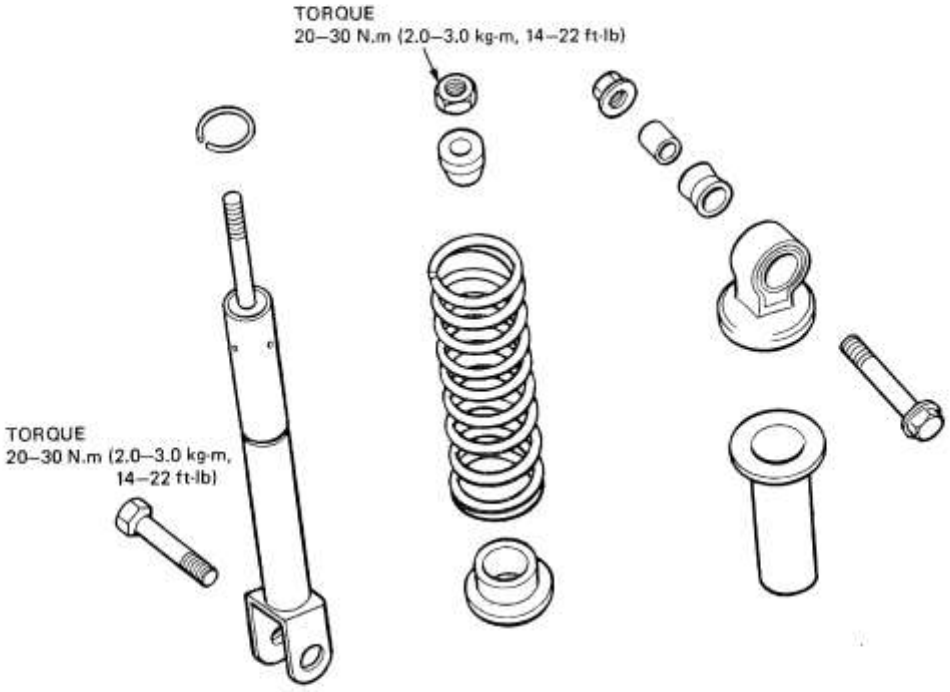
NOTE

Insert the brake cable in the slot of the brake arm cover.

Install the rear wheel (Page 11-3).
Adjust the rear brake lever free play (3-7).

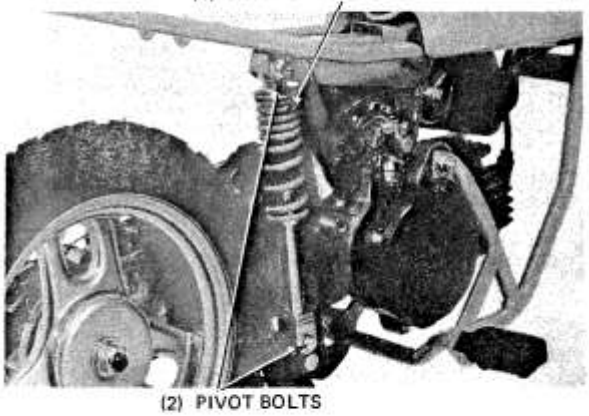


REAR SHOCK ABSORBER



REAR SHOCK ABSORBER REMOVAL

Remove the seat and exhaust muffler.
Remove the rear shock absorber by removing the upper and lower pivot bolts.

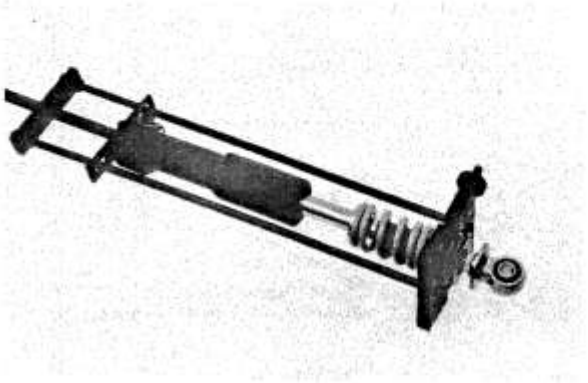


REAR SHOCK ABSORBER DISASSEMBLY

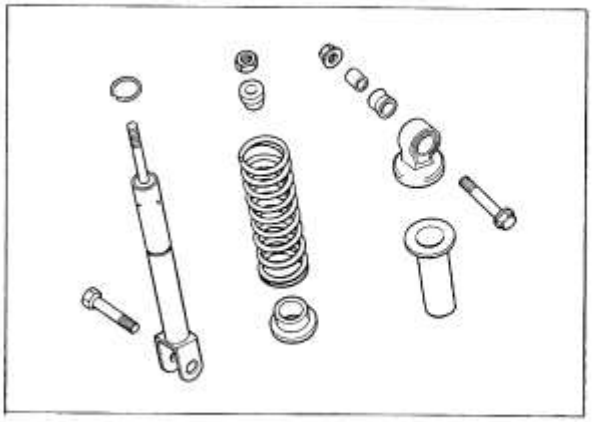
Compress the shock absorber enough to remove the lock nut.

SPECIAL TOOLS:
REAR SHOCK ABSORBER ATTACHMENT A
07967–GA70101
REAR SHOCK ABSORBER ATTACHMENT B
07967–GA70200

COMMON TOOL:
REAR SHOCK ABSORBER COMPRESSOR

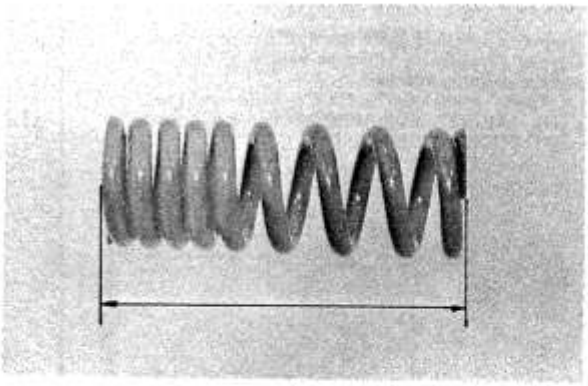


Remove the lock nut and lower joint.
Disassemble the shock absorber.



REAR SHOCK ABSORBER SPRING FREE LENGTH

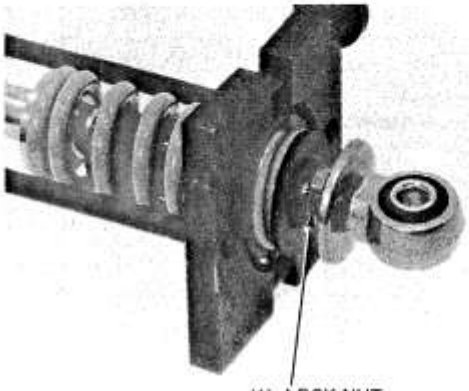
Measure the spring free length.
SERVICE LIMIT: 109.5 mm (4.311 in)



REAR SHOCK ABSORBER ASSEMBLY

NOTE

- Install the spring with the tightly wound end facing up.
- Coat the threads of the lock nut with locking agent before installation.



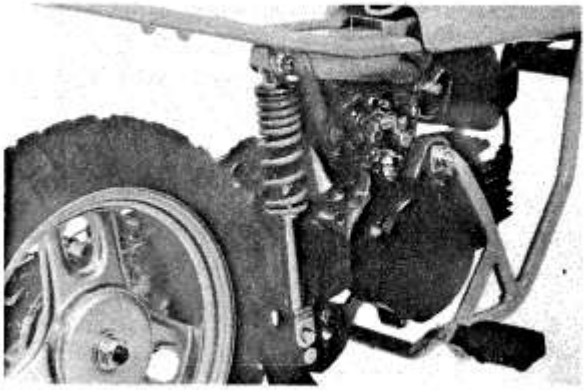
(1) LOCK NUT

REAR SHOCK ABSORBER INSTALLATION

Install the rear shock absorber.
Tighten the upper and lower pivot bolts.

TORQUES:
Upper pivot bolt:
30–40 N.m (3.0–4.0 kg-m, 22–29 ft-lb)
Lower pivot bolt:
20–30 N.m (2.0–3.0 kg-m, 14–22 ft-lb)

Check operation of the rear shock absorber.



HONDA QR50 12. FUEL TANK/AIR CLEANER

TROUBLESHOOTING

Engine does not start at all
1. No fuel in tank
2. Clogged fuel tube
3. Clogged fuel filter

Mixture too lean
1. Clogged fuel tank breather tube
2. Bent, collapsed or clogged fuel tube
3. Clogged fuel filter

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- Use extreme caution when working with gasoline.
- Keep away from sparks and open flames.

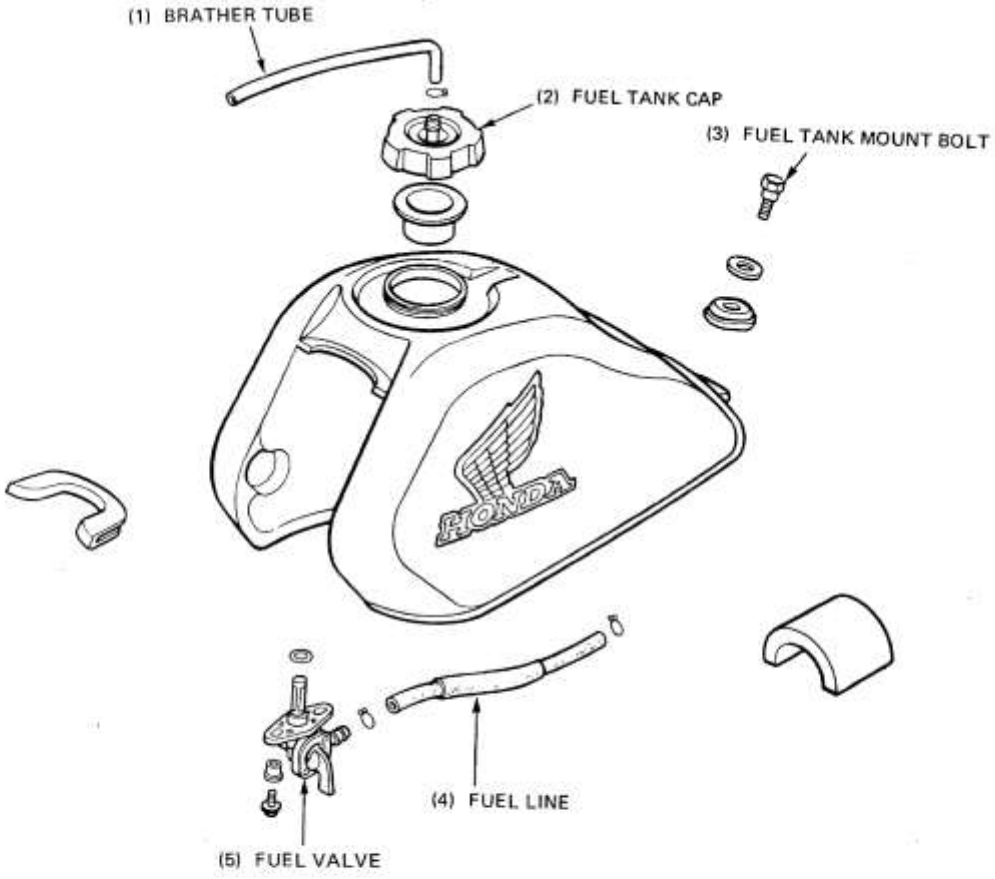
FUEL TANK

DIS/ASSEMBLY

WARNING

Use extreme caution when working with gasoline.
Keep away from sparks and open flames.

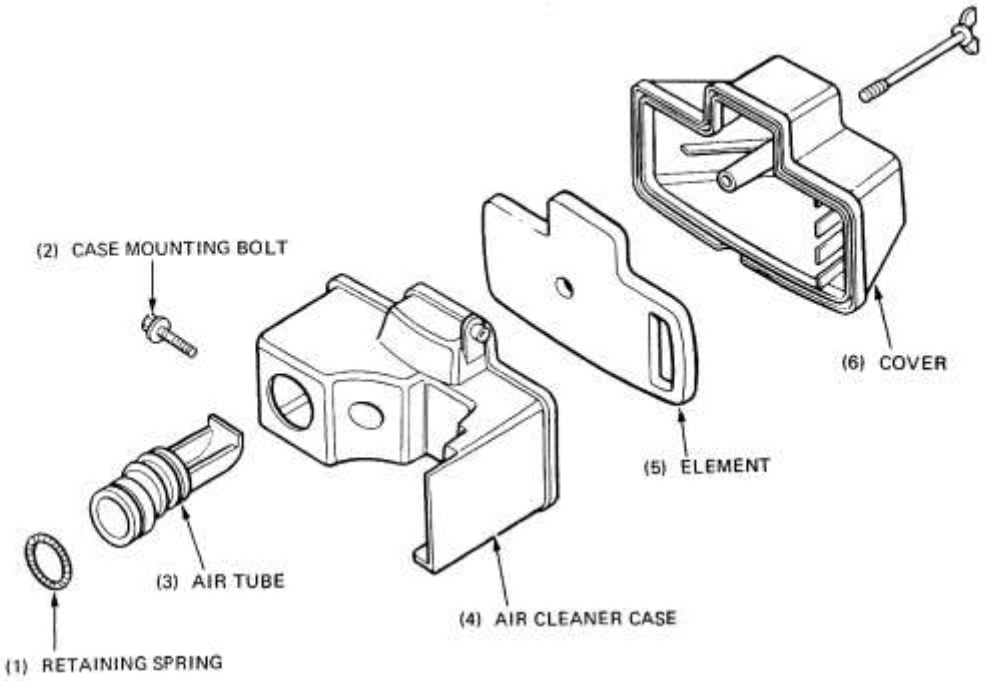
Drain fuel from the fuel tank into a clean container.
Disconnect the fuel line.
Remove the seat and fuel tank by removing the fuel tank mount bolt.



AIR CLEANER

DIS/ASSEMBLY

Disconnect the air tube from the carburetor by releasing the retaining spring.
Remove the air cleaner case mounting bolt and remove the air cleaner case by releasing the right lug from the bracket hole.
Remove the cover from the air cleaner case by removing the wing bolt.
Remove the air cleaner element from the air cleaner case.



HONDA
QR50

13. ELECTRICAL

SERVICE INFORMATION

GENERAL INSTRUCTION

- C.D.I. ignition system is not adjustable. If the timing is incorrect, inspect the C.D.I. unit and A.C. generator and replace any defective parts.
- Use the service tester to inspect the ignition timing.

SPECIFICATIONS

Spark plug	NGK: BPR4HS ND: W14FPR-L
Spark plug gap	0.6–0.7 mm
Ignition timing	18° B.T.D.C./2,000 rpm

TROUBLESHOOTING

No spark at plug

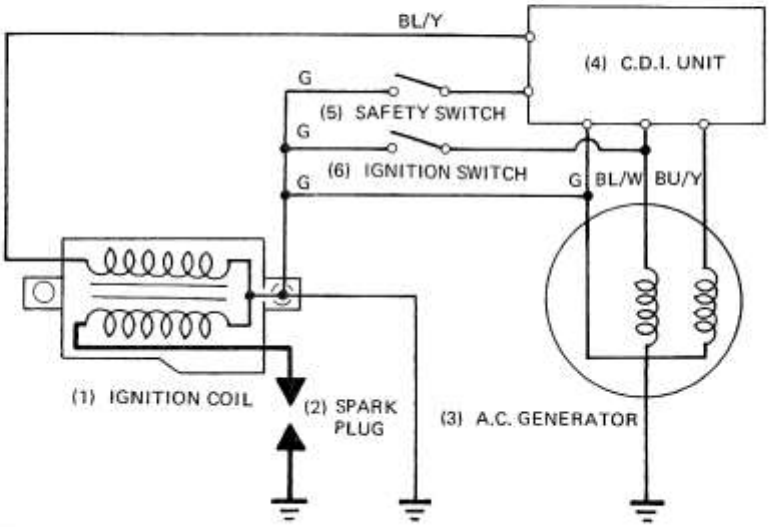
1. Faulty spark plug
2. Poorly connected, broken or shorted wires
   - Between A.C. generator and C.D.I. unit
   - Between C.D.I. unit and ignition coil
   - Between C.D.I. unit and engine switch
   - Between ignition coil and spark plug
3. Faulty ignition switch
4. Faulty C.D.I. unit
5. Faulty A.C. generator

Enigne starts but runs poorly

1. Ignition primary circuit
   - Faulty ignition circuit
   - Loose or bare wire or connector
   - Poorly connected switch
2. Igntion secondary circuit
   - Faulty ignition coil
   - Faulty spark plug
   - Faulty high tension cord
   - Faulty plug cap
3. Improper ignition timing
   - Faulty A.C. generator
   - Stator not installed properly
   - Faulty C.D.I. unit

IGNITION SYSTEM

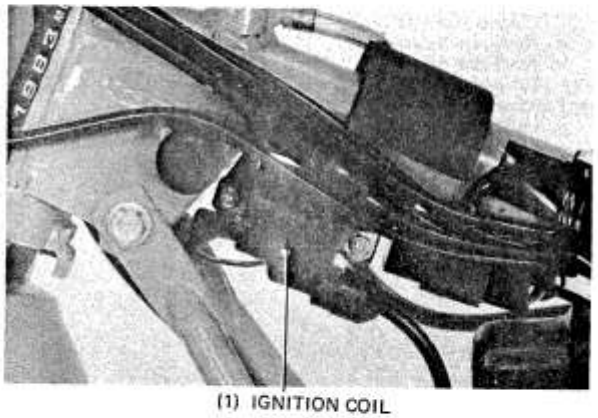
IGNTION CIRCUITS



(7) BL: BLACK
(8) BU: BLUE
(9) G: GREEN
(10) R: RED
(11) BR: BROWN
(12) W: WHITE

IGNITION COIL
REMOVEAL/INSTALLATION

Remove the seat and fuel tank.
Remove the igntion coil.
Disconnect the spark plug cap from the high tension wire while rotating the plug cap.



(1) IGNITION COIL

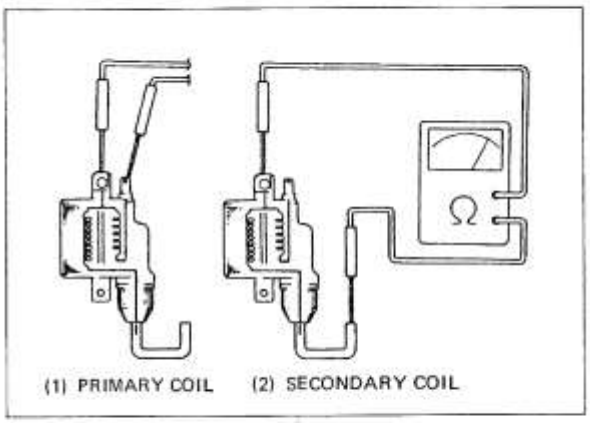
CONTINUITY TEST

Measure the resistances of the primary and secondary coils.

NOTE

> This test is for reference purpose only. To determine if the ignition coils are functioning properly, it is necessary to perform the spark test with the C.D.I. service tester.

Resistances:
Primary coil: **0.2–0.3 Ω**
Secondary coil: **3.4–4.3 Ω**



(1) PRIMARY COIL (2) SECONDARY COIL

A.C. GENERATOR INSPECTION

NOTE

> It is not necessary to remove the stator to make this test.

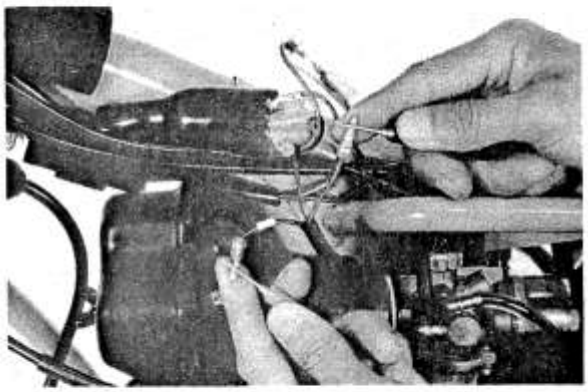
Disconnect the stator wire connetors.
Measure the resistances between the connectors:

Black/white – Ground wire	50–300Ω
Blue/yellow – Ground wire	10–100Ω

NOTE

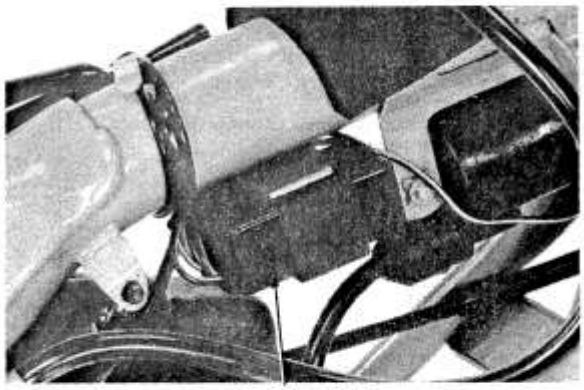
> Measure the resistances with the tester in the x 1Ω range.

A.C. generator removal and installation (Page 7-4, 7-7).



C.D.I. UNIT

Remove the seat and fuel tank.
Remove the C.D.I. unit.



(1) C.D.I. UNIT

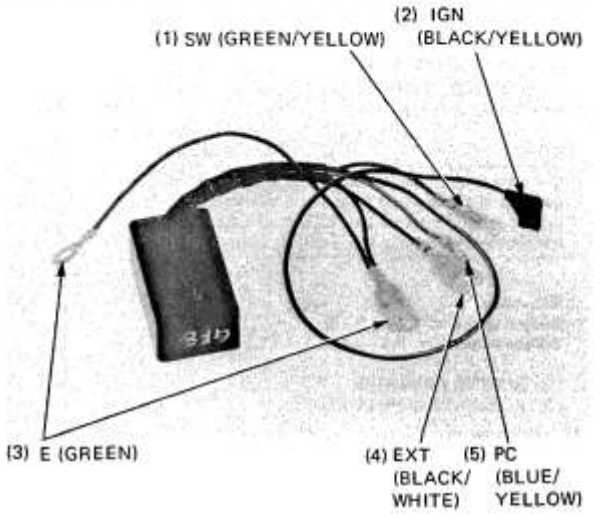
CONTINUITY TEST

Measure the resistance betweens the terminals. Replace the C.D.I. unit with a new one if the readings do not fall within the limits shown in the table below.

NOTE

- For accurate testing, it is necessary to use a specified electric tester. Use of an improper tester or measurements in improper range may give a false readings.
- Use SANWA ELECTRIC TESTER (P/N 07308-0020000) or KOWA ELECTRIC TESTER (TH-5H).
- In the table, "Needle swings then returns" indicates that there is a charging current in the condenser for the first time. The needle will then remain at ∞ unless the condenser is discharged.

Measuring ranges:
SANWA: xKΩ
KOWA: x100Ω



(1) UNIT : KΩ

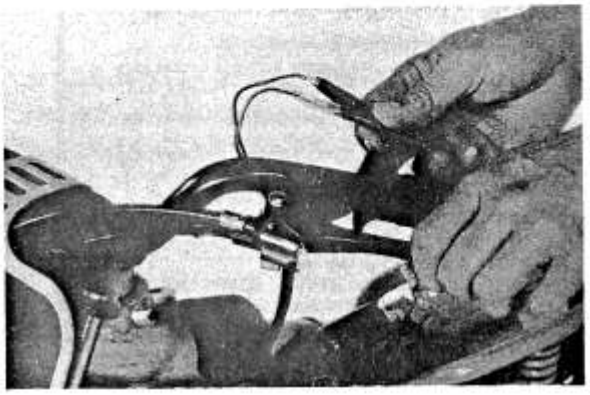
(2) Tester (+) / (3) Tester (1)	SW	EXT	PC	E	IGN
SW		∞	∞	∞	∞
EXT	∞		∞	∞	(4) "Needle swings then returns" or ∞
PC	10–500	∞		∞	∞
E	1–200	1–200	∞		∞
IGN	∞	∞	∞	∞	

SWITCHES

REAR BRAKE SWITCH

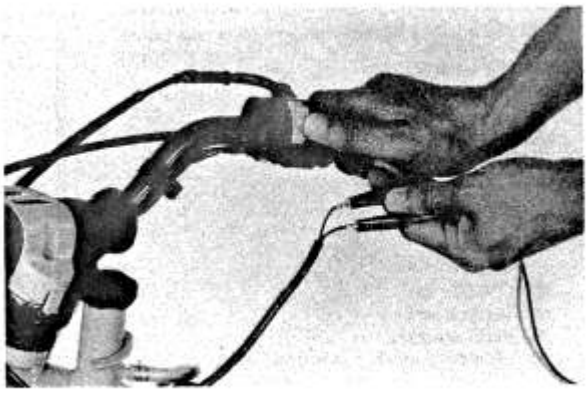
Check the rear brake switch for continuity.

The switch is normal if there is continuity when the brake lever is applied.



ENGINE SWITCH

The switch is normal if there is continuity when it is in OFF.



14. TROUBLESHOOTING

HONDA QR50

ENGINE DOES NOT START OR IS HARD TO START

		Probable Cause
1. Check if fuel is getting to Carburetor by loosening drain screw	NOTE GETTING TO CARBURETOR →	(1) No fuel in fuel tank (2) Clogged fuel tube up to carburetor, vacuum tube up to inlet pipe, or fuel pipe (3) Clogged float valve (4) Clogged fuel tank breather tube
GETTING TO CARBURETOR ↓		
2. Try spark test	WEAK OR NO SPARK →	(1) Faulty spark plug (2) Fouled spark plug (3) Faulty CDI unit (4) Faulty AC generator (5) Broken or shorted high tension cord (6) Broken or shorted ignition coil (7) Faulty engine switch
SPARK JUMPS ↓		
3. Test cylinder compression	LOW COMPRESSION →	(1) Stuck piston rings (2) Faulty or deteriorated reed valve (3) Worn cylinder and piston rings (4) Faulty in cylinder or cylinder head (5) Compression leak past crankcase (6) Blown cylinder head gasket
NORMAL COMPRESSSION ↓		
4. Start by following normal starting procedure	ENGINE FIRES BUT SOON STOPS →	(1) Air leaking past manifold (2) Improper ignition timing
ENGINE DOES NOT FIRE ↓		
5. Remove spark plug	WET PLUG →	(1) Carburetor overflooded (2) Throttle valve excessively open
DRY		

ENGINE LACKS POWER

		Probable Cause
1. Lightly accelerate engine	ENGINE SPEED NOT INCREASED SUFFICIENTLY →	(1) Clogged air cleaner (2) Restricted fuel flow (3) Clogged fuel tank breather tube (4) Clogged muffler
ENGINE SPEED INCREASED ↓		
2. Check ignition timing	INCORRECT →	(1) Faulty CDI unit (2) Faulty AC generator
CORRECT ↓		
3. Test cylinder compression by Operating kickstarter pedal	TOO LOW →	(1) Worn cylinder or piston rings (2) Blown cylinder head gasket (3) Flaws in cylinder or cylinder head. (4) Faulty or deteriorated reed valve
NORMAL ↓		
4. Check carburetor for clogging	CLOGGED →	(1) Carburetor not serviced frequently enough
NOT CLOGGED ↓		
5. Remove spark plug	FOULED OR DISCOLORED →	(1) Plug not serviced frequently enough (2) Use of plug with improper heat range
NOT FOULED OR DISCOLORED ↓		
6. Check if engine overheats	OVERHEATED →	(1) Exessive carbon build-up in combustion chamber (2) Use of improper grade of fuel (3) Fuel air mixture too lean (4) Clutch slipping
NOT OVERHEATED ↓		
7. Try rapid acceleration or run at high speed	ENGINE KNOCKS →	(1) Worn piston and cylinder (2) Fuel air mixture too lean (3) Use of improper grade of fuel (4) Excessive carbon build up in combustion chamber (5) Ignition timing too advanced
ENGINE DOES NOT KNOCK		

14

POOR PERFORMANCE AT LOW AND IDLE SPEEDS

		Probable Cause
1. Check ignition timing	INCORRECT →	(1) Faulty CDI unit (2) Faulty AC generator
CORRECT ↓		
2. Check carburetor air screw for proper adjustment	INCORRECT →	(1) Fuel air mixture too rich (Screw out to correct) (2) Fuel air mixture too lean (Screw in to correct)
CORRECT ↓		
3. Check if air is leaking past manifold	LEAKING →	(1) Deteriorated insulator packing (2) Loose carburetor (3) Deteriorated inlet pipe packing (4) Deteriorated insulator O-ring
NOT LEAKING ↓		
4. Try spark test	WEAK OR INTERMITTENT SPARK →	(1) Faulty, carbon or wer fould spark plug (2) Faulty CDI unit (3) Faulty AC generator (4) Faulty ignition coil (5) Broken or shorted high tension cord (6) Faulty engine switch
GOOD SPARK		

POOR PERFORMANCE AT HIGH SPEED

		Probable Cause
1. Check ignition timing	INCORRECT →	(1) Faulty CDI unit (2) Faulty AC generator
CORRECT ↓		
2. Disconnect fuel tube at fuel valve	FUEL FLOW RESTRICTED →	(1) No fuel in fuel tank (2) Clogged fuel tube or fuel filter (3) Clogged fuel tank cap breather hole
FUEL FLOWS FREELY ↓		
3. Remove carburetor and check for clogged jet	CLOGED →	(1) Clean
NOT CLOGGED		

CLUTCH AND DRIVE/DRIVEN SPROCKETS

	Probable Cause
1. If engine firs but motorcycle does not start	(1) Broken drive chain (2) Broken drive/driven sprocket (3) Separated clutch lining (4) Damaged final gear shaft splines (5) Damaged final gear (6) Seized or burnt final gear
2. If motorcycle creeps or engine starts but soon stops	(1) Broken shoe spring (2) Seized clutch outer and clutch weight (3) Seized pivot
3. If there is abnormal noise	(1) Weak or damaged tensioner spring (2) Worn drive chain or sprocket (3) Worn drive chain tensioner (4) Worn chain guide

POOR HANDLING

LOSS OF CONTROL ——— Check tire pressure

	Probable Cause
1. If steering is heavy	(1) Steering head adjuster too tight (2) Damaged steering cones or steel balls
2. If either wheel is wobbling	(1) Excessive wheel bearing play (2) Distorted rim (3) Loose axle nut
3. If the motorcycle pulls to one side	(1) Misaligned front and rear wheels (2) Bent front frok

POOR FRONT/REAR SUSPENSION PERFORMANCE

	Probable case
1. If suspension is too soft	(1) Weak cushion spring (2) Excessive load
2. If suspension is too hard	(1) Bent fork pipe or cushion rod
3. If suspension is noisy	(1) Slider binding (2) Cushion spring binding (3) Damaged cushion stopper rubber (4) Worn fork piston (front) (5) Worn slide pipe guide (front) (6) Loose steering stem nut

POOR BRAKE PERFORMANCE

	Probable Cause
1. If wear indicator arrow aligns with index mark on brake panel →	(1) Worn brake shoes (2) Worn brake cam (3) Worn cam contacting face of shoe (4) Worn brake drum
2. If either brake squaling →	(1) Worn brake shoes (2) Foreign matter on brake lining (3) Rough shoe contact face of brake drum
3. If brake performance is poor →	(1) Faulty or elongated brake wire (2) Brake shoes partially contacting brake drum (3) Mud or water in brake drum (4) Brake linings fouled with grease or oil