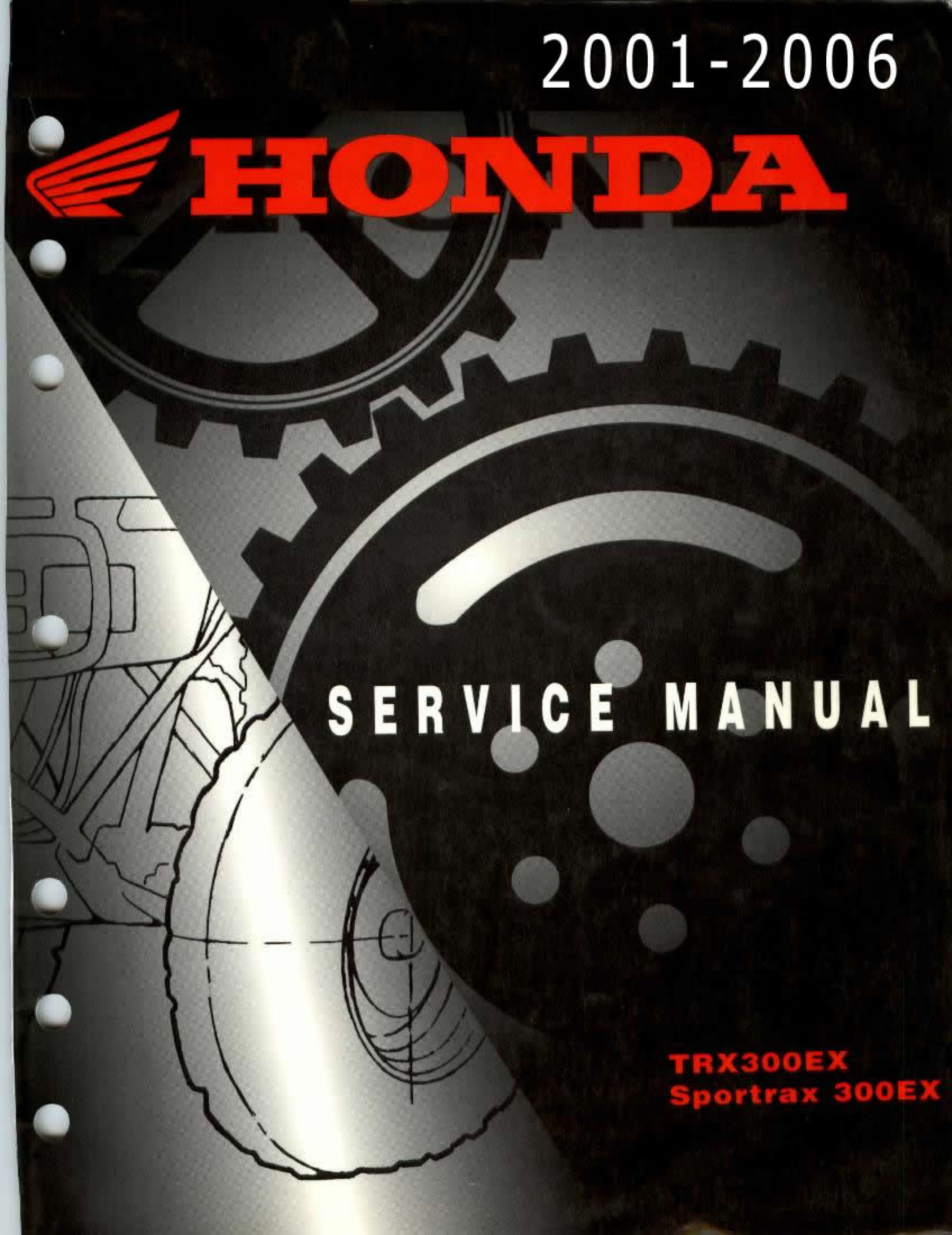
2001-2006

HONDA

SERVICE MANUAL



TRX300EX
Sportrax 300EX

CYLINDER/PISTON

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder	I.D.		74.00 – 74.01 (2.913 – 2.914)	74.1 (2.92)
	Taper		—	0.10 (0.004)
	Out of round		—	0.10 (0.004)
	Warpage		—	0.05 (0.002)
Piston, piston rings	Piston mark direction		"IN" mark facing toward the intake side	—
	Piston O.D.		73.965 – 73.985 (2.9120 – 2.9128)	73.90 (2.909)
	Piston O.D. measurement point		20 mm (0.8 in) from bottom of skirt	—
	Piston pin bore I.D.		17.002 – 17.008 (0.6694 – 0.6696)	17.04 (0.671)
	Piston pin O.D.		16.994 – 17.000 (0.6691 – 0.6693)	16.96 (0.668)
	Piston-to-piston pin clearance		0.002 – 0.014 (0.0001 – 0.0006)	0.80 (0.031)
	Piston ring-to-ring groove clearance	Top	0.030 – 0.060 (0.0012 – 0.0024)	0.11 (0.004)
		Second	0.015 – 0.045 (0.0006 – 0.0018)	0.095 (0.0037)
	Piston ring end gap	Top	0.15 – 0.30 (0.006 – 0.012)	0.5 (0.02)
		Second	0.30 – 0.45 (0.012 – 0.018)	0.6 (0.02)
		Oil (side rail)	0.20 – 0.70 (0.008 – 0.028)	—
	Piston ring mark	Top	"R" or "T" mark	—
		Second	"R" or "T" mark	—
Cylinder-to-piston clearance			0.015 – 0.045 (0.0006 – 0.0018)	0.10 (0.004)
Connecting rod small end I.D.			17.016 – 17.034 (0.6699 – 0.6706)	17.10 (0.673)
Connecting rod-to-piston pin clearance			0.016 – 0.040 (0.0006 – 0.0016)	0.14 (0.006)

CLUTCH

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Clutch	Clutch lever free play		10 – 20 (3/8 – 3/4)	—
	Spring free length		35.9 (1.41)	34.9 (1.37)
	Disc thickness		2.92 – 3.08 (0.115 – 0.121)	2.6 (0.10)
	Plate warpage		—	0.20 (0.008)
	Clutch outer I.D.		28.000 – 28.021 (1.1024 – 1.1032)	28.05 (1.104)
	Outer guide	I.D.	22.000 – 22.021 (0.8661 – 0.8670)	22.05 (0.868)
		O.D.	27.959 – 27.980 (1.1007 – 1.1016)	27.92 (1.099)
Mainshaft O.D. at clutch outer guide			21.959 – 21.980 (0.8645 – 0.8654)	21.93 (0.863)
Reverse selector lever free play			2 – 4 (1/16 – 1/8)	—

FRAME

LOCATION	MATERIAL	REMARKS
Steering shaft bushing sliding area Steering shaft dust seal lips Wheel hub dust seal lips Upper and lower arm pivot Swingarm pivot needle bearings Swingarm pivot dust seal lips Rear axle bearing holder pipe inner surface Rear caliper stay sliding surface Rear brake pedal pivot sliding surface Rear brake pedal dust seal lips Rear axle spline Rear axle nut threads and seating surface Throttle cable end Throttle cable bolt threads Parking arm sliding surface Throttle lever dust seal lips Reverse shift lever pin sliding surface	Multi-purpose grease	
Front shock absorber lower mount bushing Front shock absorber lower mount dust seal lips	Molybdenum disulfide paste	
Throttle cable casing inner Clutch cable casing inner Reverse cable casing inner	Engine oil	
Air cleaner element	Pro-Honda Form Filter Oil	
Brake master cylinder cups Brake caliper piston seals	DOT4 brake fluid	
Handle grip	Honda Bond A or Honda Hand Grip Cement (U.S.A. only)	
Brake caliper boot inside Caliper slide pin sliding surface Caliper pin bolt sliding surface Front brake lever pivot and piston tips Rear master cylinder boot inside and push rod tips	Silicone grease	
Inner and outer axle lock nut threads Clutch plate screw threads Exhaust pipe protector bolt threads	Locking agent	Clean and apply to the threads
Air cleaner housing inlet tube and air cleaner housing mating surfaces	Liquid sealant	

2. FRAME/BODY PANELS/EXHAUST SYSTEM

SERVICE INFORMATION

GENERAL

- This section covers removal and installation of the body panels, fuel tank and exhaust system.
- Always replace the exhaust pipe gaskets after removing the exhaust pipe from the engine.
- When installing the exhaust system, loosely install all of the exhaust pipe fasteners. Always tighten the exhaust clamps first, then tighten the mounting fasteners. If you tighten the mounting fasteners first, the exhaust pipe may not seat properly.
- Always inspect the exhaust system for leaks after installation.

TOROUE VALUES

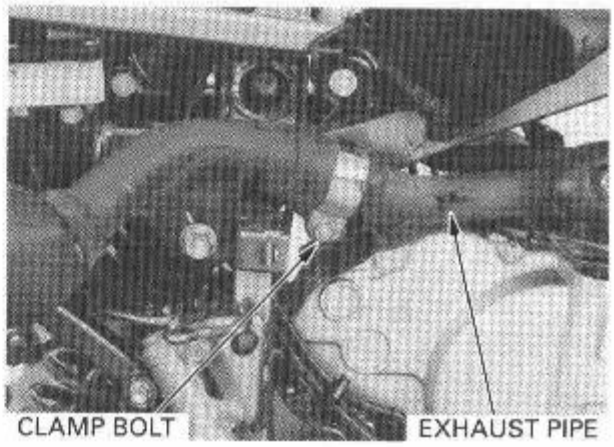
Footpeg holder bolt, 10 mm	49 N•m (5.0 kgf•m, 36 lbf•ft)	
Skid plate bolt	30 N•m (3.1 kgf•m. 22 lbf•ft)	ALOC bolt: replace with a new one
Exhaust pipe clamp bolt	23 N•m (2.3 kgf•m, 17 lbf•ft)	
Muffler mounting bolt	54 N•m (5.5 kgf•m, 40 lbf•ft)	
Exhaust pipe cover bolt	16 N•m (1.6 kgf•m, 12 lbf•ft)	

TROUBLESHOOTING

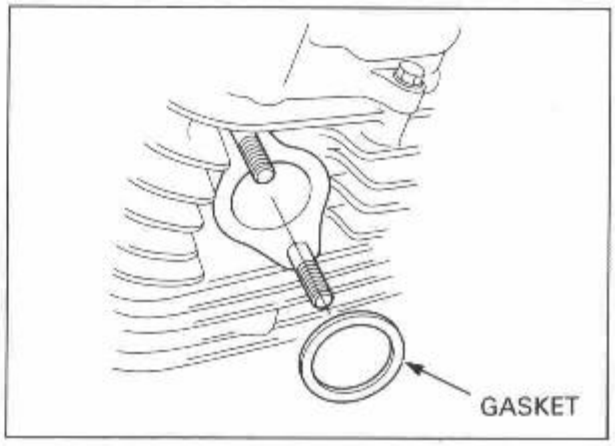
EXCESSIVE EXHAUST NOISE
- Broken exhaust system
- Exhaust gas leak

POOR PERFORMANCE
- Deformed exhaust system
- Exhaust gas leak
- Clogged muffler

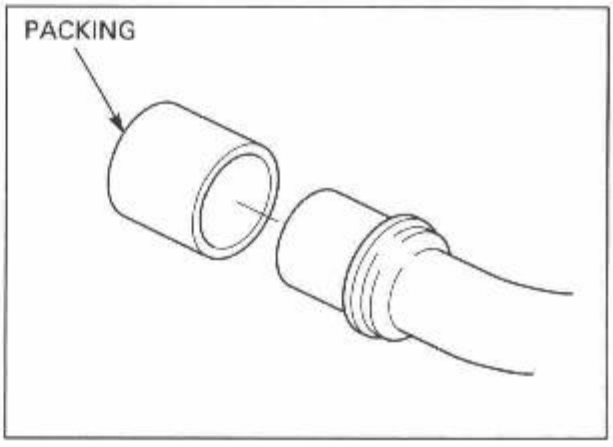
Remove the exhaust pipe clamp bolt and exhaust pipe.



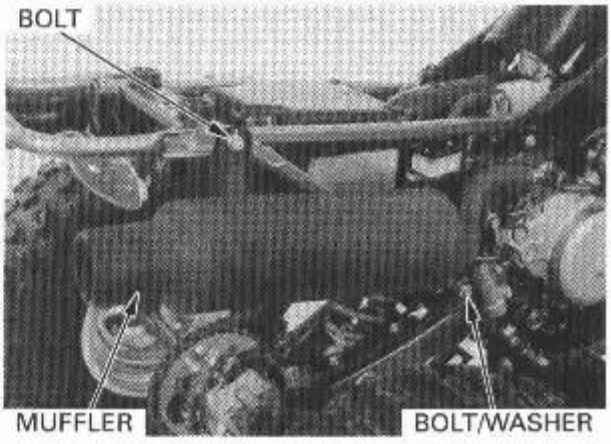
Remove the exhaust pipe gasket.



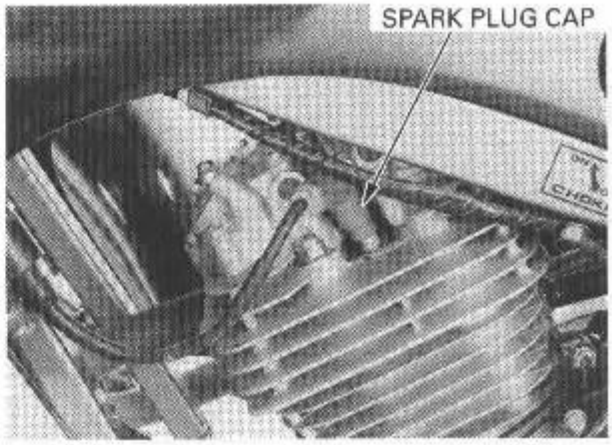
Remove the muffler packing.



Remove the muffler front mounting bolt and washer.
Remove the muffler rear mounting bolt and muffler.



SPARK PLUG

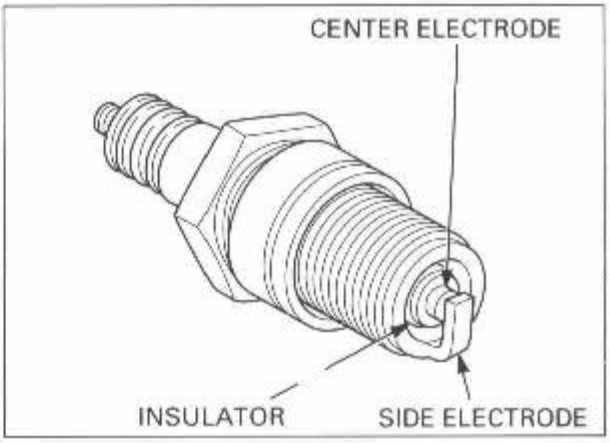


Disconnect the spark plug cap and clean around the spark plug base.

Clean around the spark plug base with compressed air before removing the plug, and be sure that no debris is allowed to enter the combustion chamber.

Remove the spark plug.

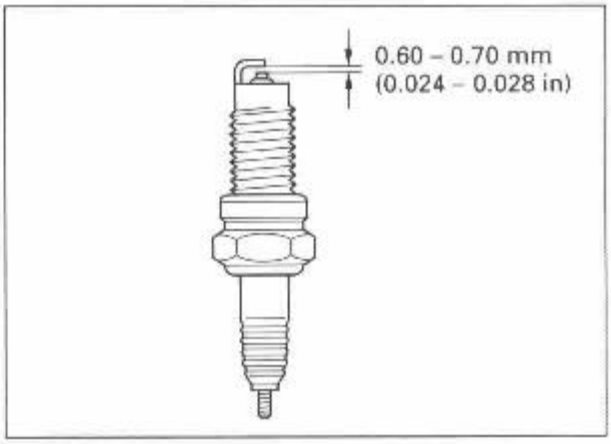
Check the insulator for cracks or damage, and the electrodes for wear, fouling or discoloration. Replace the plug if necessary (recommended spark plug : page 3-1).



Clean the spark plug electrodes with a wire type brush or special plug cleaner.

Check the gap between the center and side electrodes with a wire-type feeler gauge. If necessary, adjust the gap by bending the side electrode carefully.

SPARK PLUG GAP: 0.60 – 0.70 mm (0.024 – 0.028 in)



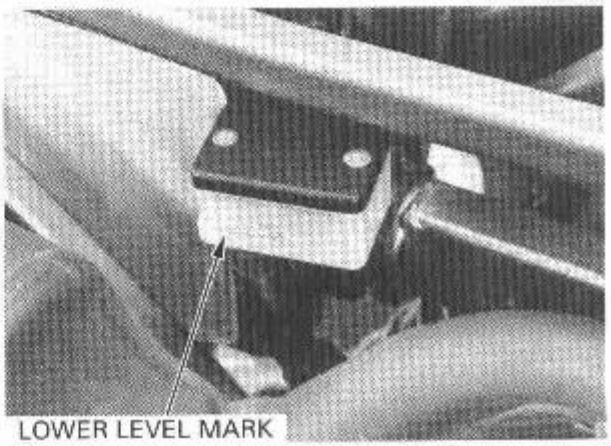
To prevent damage to the cylinder head, hand-tighten the spark plug before using a wrench to tighten to the specified torque.

Reinstall the spark plug in the cylinder head and hand tighten, then tighten to the specified torque.

TOROUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)

Connect the spark plug cap.

REAR BRAKE:
Remove the seat/rear fender (page 2-4).
Place the vehicle on a level surface.
Check the rear brake fluid reservoir level.
If the level is near the lower level line, check the brake pad wear (page 3-18).

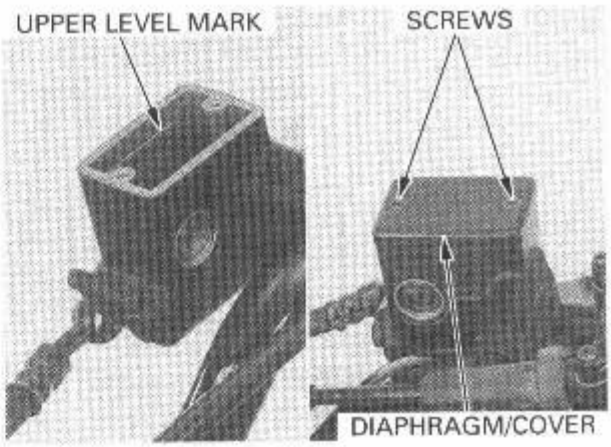


FLUID FILLING

FRONT:
Remove the handlebar cover (page 2-8).

Remove the screws, cover and diaphragm.
Fill the reservoir with DOT 4 brake fluid to the upper level mark. Install the diaphragm and cover.
Tighten the screws securely.

Check the entire system for leaks.



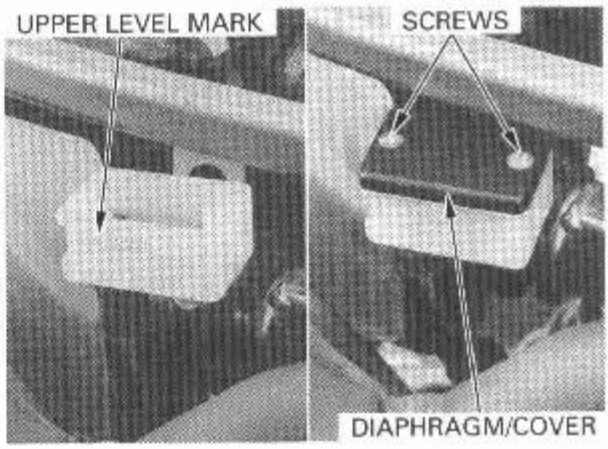
REAR:
Remove the seat/rear fender (page 2-4).

Remove the screws, cover and diaphragm.
Fill the reservoir with DOT 4 brake fluid to the upper level mark. Install the diaphragm and cover.
Tighten the screws securely.

Check the entire system for leaks.

Inspect the brake hose and fittings for deterioration, cracks or signs of leakage. Tighten any loose fittings.

Replace the hose and fittings as required.



4. LUBRICATION SYSTEM

SERVICE INFORMATION

GENERAL

⚠ CAUTION

Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

- This section covers service of the oil pump.
  For oil level check, oil change and oil filter replacement, refer to section 3.
  The service procedures in this section can be performed with the engine installed in the frame.
- When removing and installing the oil pump, use care not to allow dust or dirt to enter the engine.
- If any portion of the oil pump is worn beyond the specified service limits, replace the oil pump as an assembly.
- After the oil pump has been assembled, check that there are no oil leaks and that oil pressure is correct.

SPECIFACATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	At draining	1.55 liter (1.64 US qt, 1.36 Imp qt)	———
	At disassembly	1.60 liter (1.69 US qt, 1.41 Imp qt)	———
	At oil filter change	2.00 liter (2.11 US qt, 1.76 Imp qt)	———
Recommended engine oil		Pro-Honda GN4 4-stroke Oil or equivalent motor oil API service classification SF or SG Viscosity: SAE 10W – 40	———
Oil pump rotor	Body clearance	0.15 – 0.21 (0.006 – 0.008)	0.25 (0.010)
	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Side clearance	0.02 – 0.08 (0.001 – 0.003)	0.10 (0.004)

TORQUE VALUES

Oil drain bolt	25 N•m (2.5 kgf•m, 18 lbf•ft)
Oil filter cover SH flange bolt	10 N•m (1.0 kgf•m, 7 lbf•ft)
Right crankcase cover SH bolt	10 N•m (1.0 kgf•m, 7 lbf•ft)
Oil pipe bolt	12 N•m (1.2 kgf•m, 9 lbf•ft)

TROUBLESHOOTING

ENGINE OIL TOO LOW – HIGH OIL CONSUMPTION

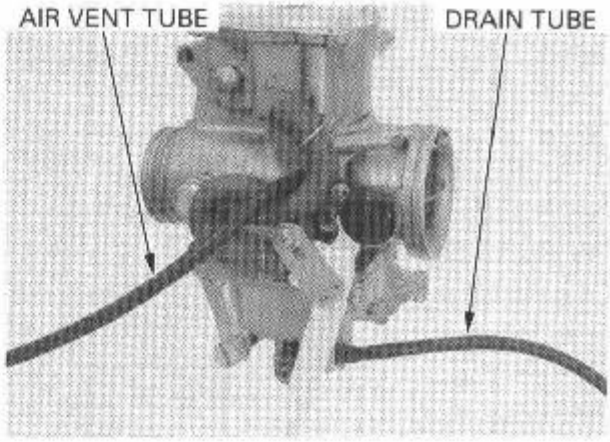
- External oil leaks
- Worn piston rings
- Oil not changed often enough
- Faulty head gasket

ENGINE OIL CONTAMINATION

- Worn piston rings
- Oil not changed often enough
- Faulty head gasket

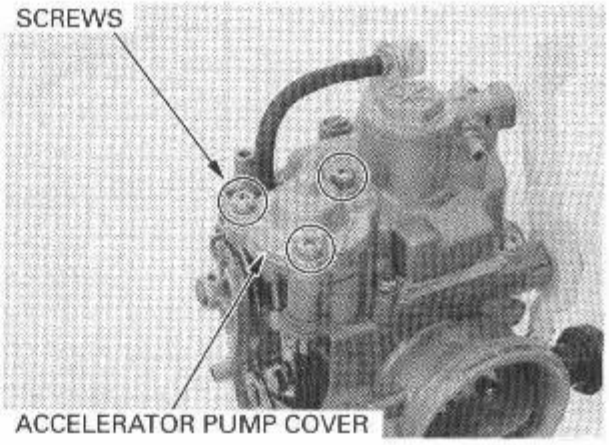
CARBURETOR DISASSEMBLY/ INSPECTION

Disconnect the air vent tube and drain tube from the carburetor.

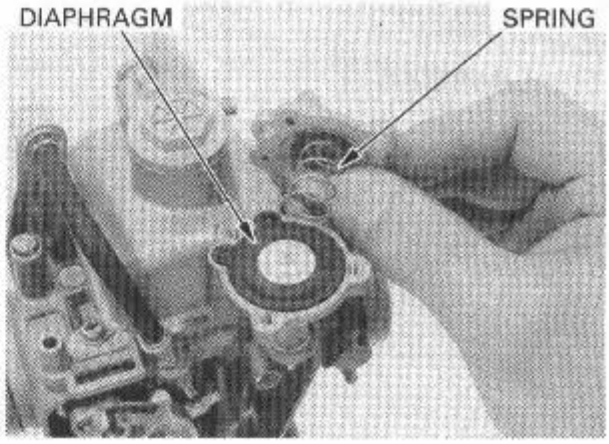


ACCELERATOR PUMP

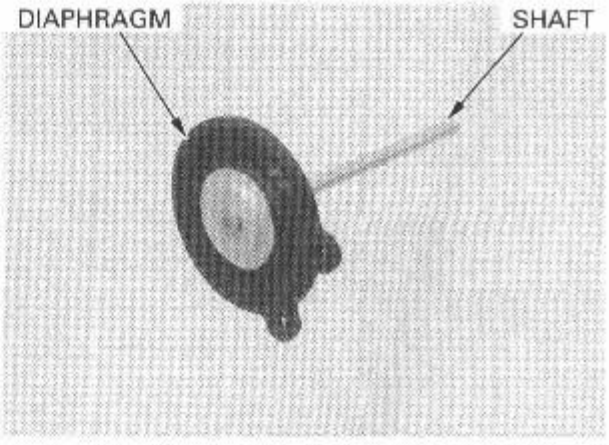
Remove the screws and accelerator pump cover.



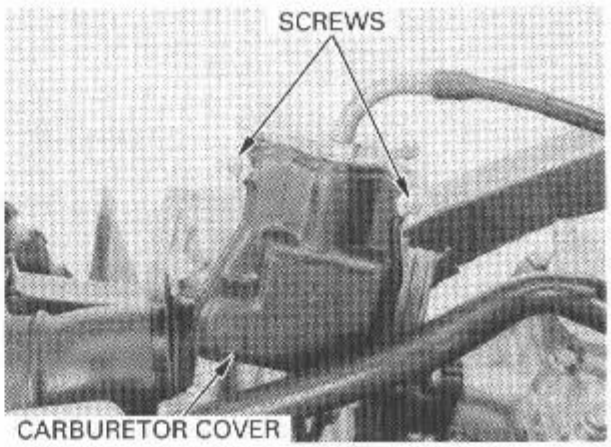
Remove the spring.
Remove the diaphragm from the float chamber.



Check the shaft for straightness and the diaphragm for pin holes or other damage.



Tighten the screws securely.



Align the tab on the carburetor body with the groove on the carburetor insulator.

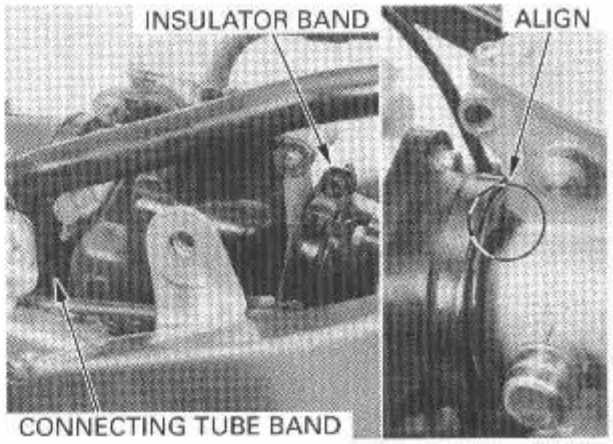
Install the carburetor to the carburetor insulator and air cleaner connecting tube.
Tighten the band screws to the specified torque.

TORQUE: 4 N·m (0.4 kgf·m, 2.9 lbf·ft)

Route the throttle cable properly (page 1-18).
Install the fuel tank (page 2-10).

Perform the following inspections and adjustments.
– Engine idle speed (page 3-12).
– Throttle operation (page 3-4).

Adjust the pilot screw if it was replaced (see below).



PILOT SCREW ADJUSTMENT

IDLE DROP PROCEDURE

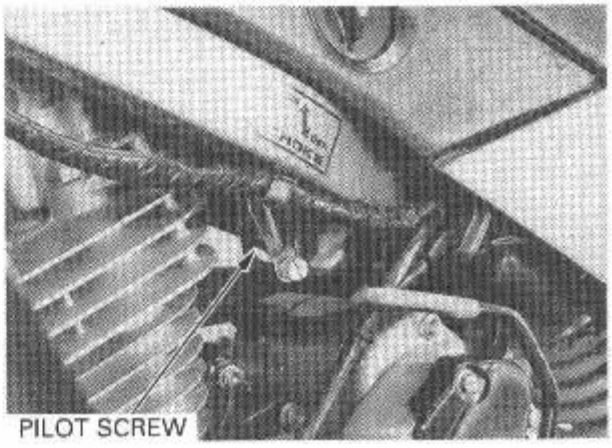
The pilot screw is factory pre-set and no adjustment can be made unless it is replaced.
Use a tachometer with graduations of 50 rpm or smaller that will accurately indicate a 50 rpm change.

Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.

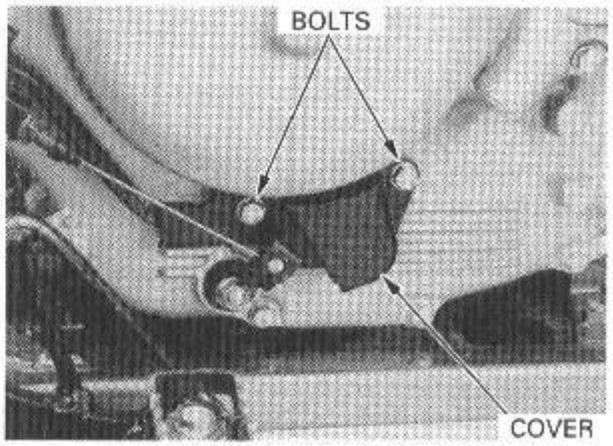
1. Turn pilot screw clockwise until it seats lightly, then back it out to specification given. This is an initial setting prior to the final pilot screw adjustment.

INITIAL OPENING: 2-1/4 turns out

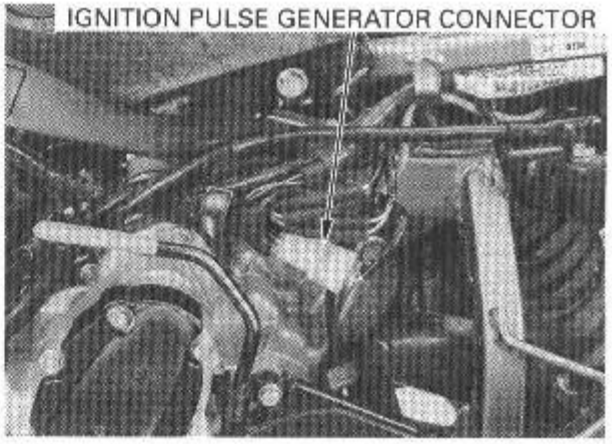
2. Warm up the engine to operating temperature. Stop and go riding for 10 minutes is sufficient.
3. Attach a tachometer according to its manufacturer's instructions.



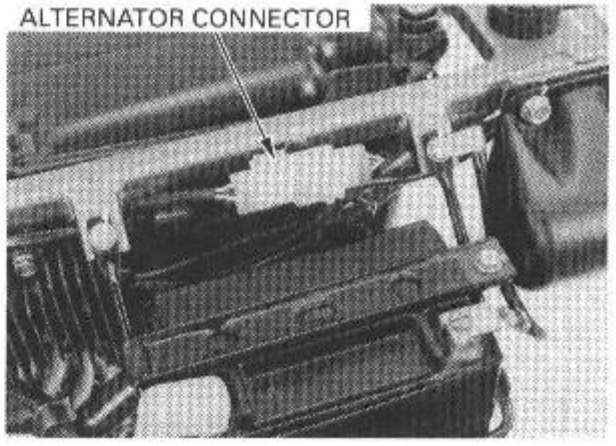
Install the indicator switch cover.
Tighten the bolts securely.



Connect the Ignition pulse generator 3P connector.



Connect the alternator 3P connector.

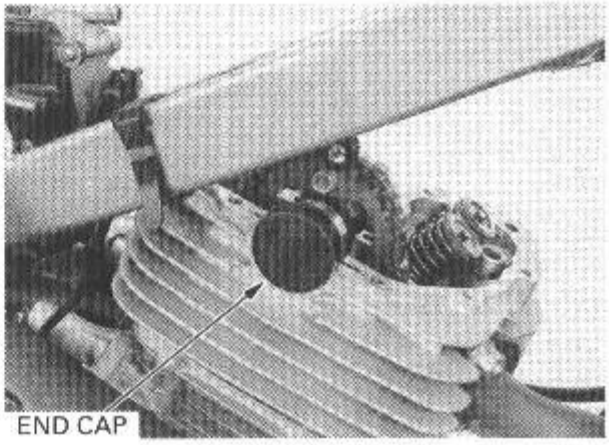


Install the following:
- Brake pedal (page 15-27)
- Carburetor (page 5-14)
- Exhaust pipe (page 2-12)
- Left mud guard/footpeg holder (page 2-8)
- Fuel tank (page 2-10)
- Seat/rear fender (page 2-4)

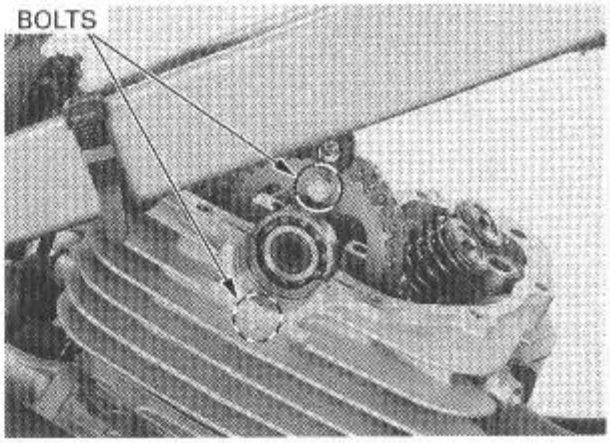
Fill the crankcase with recommended engine oil (page 3-10).

Perform the following inspections and adjustments:
- Throttle operation (page 3-4)
- Clutch cable adjustment (page 3-21)
- Reverse selector cable adjustment (page 3-20)
- Drive chain slack adjustment (page 3-12)

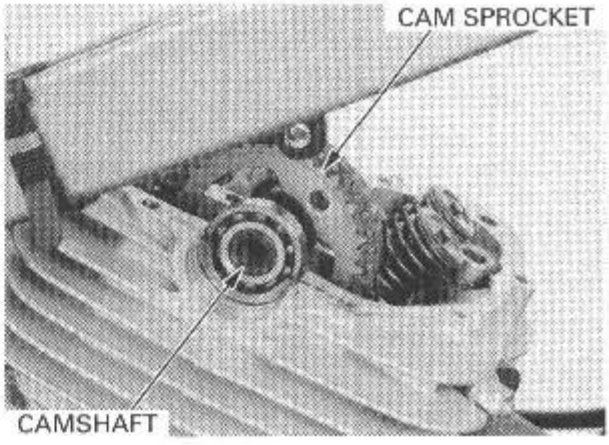
Remove the camshaft end cap.



Turn the flywheel counterclockwise and remove the cam sprocket bolts.

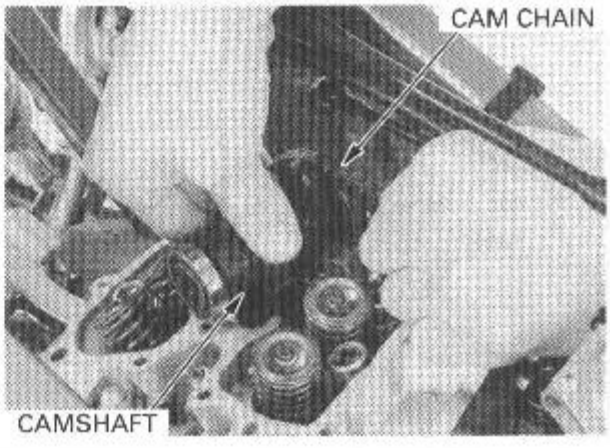


Remove the cam sprocket from the camshaft shoulder.



Remove the cam sprocket and camshaft.

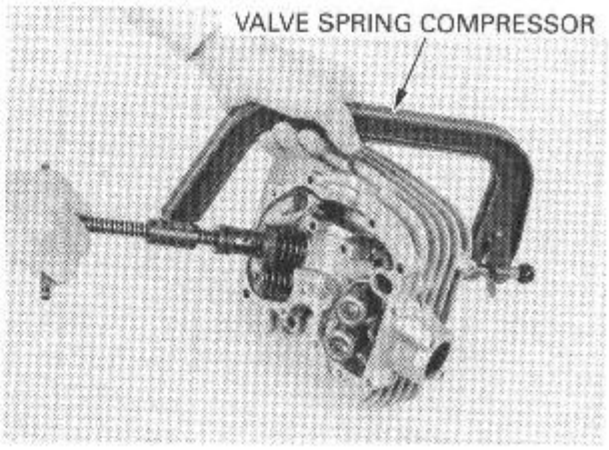
Suspend the cam chain with a piece of wire to prevent it from falling into the crankcase.



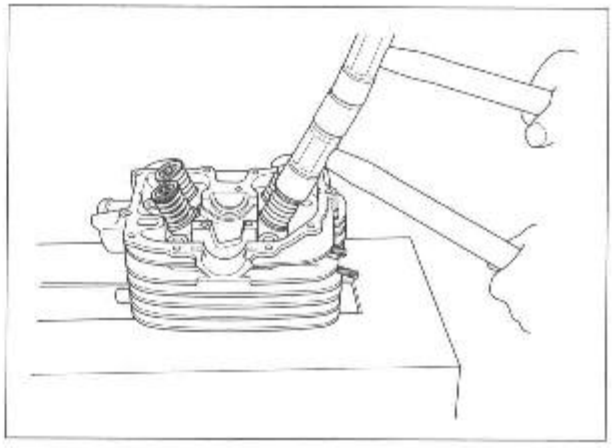
To prevent loss of tension do not compress the valve springs more than necessary to remove the cotters.

Compress the valve springs using the valve spring compressor, then install the valve cotters.

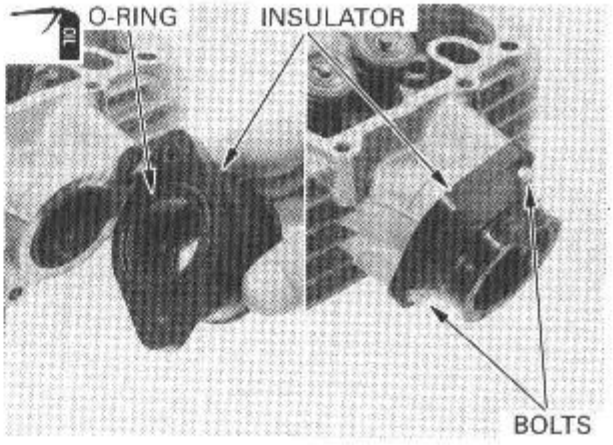
TOOL:
Valve spring compressor 07757 – 0010000



Support the cylinder head above the working bench surface to prevent possible valve damage, then gently tap the valve stems with two plastic hammers as shown to seat the cotters.



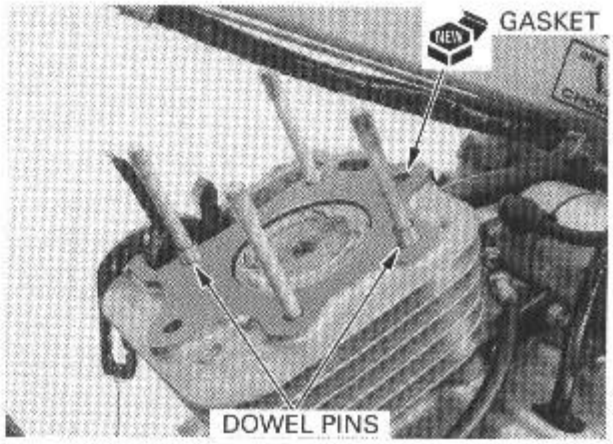
Apply engine oil to a new O-ring and install the insulator.
Install the insulator to the cylinder head and tighten the bolts securely.



CYLINDER HEAD INSTALLATION

Make sure that the cylinder head gasket is in good condition. If it was warped or damaged, replace it with a new one.

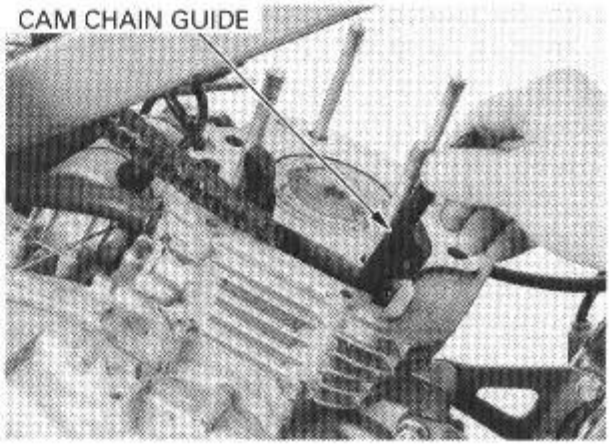
Install the dowel pins and cylinder head gasket.



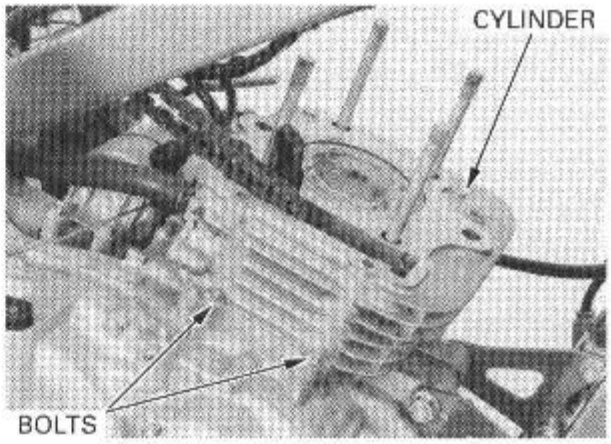
CYLINDER REMOVAL

Remove the cylinder head (page 7-9).

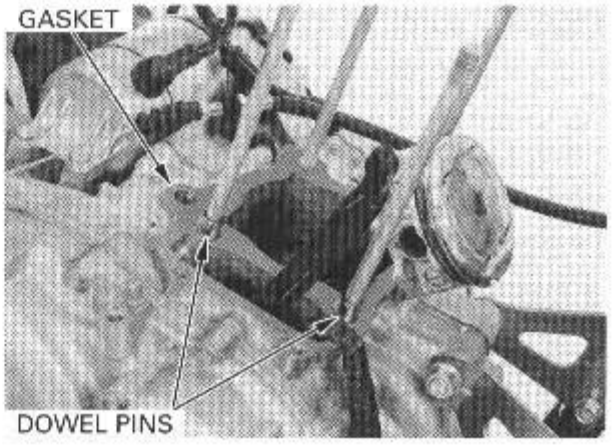
Remove the cam chain guide.



Remove the bolts and cylinder.



Remove the gasket and dowel pins.

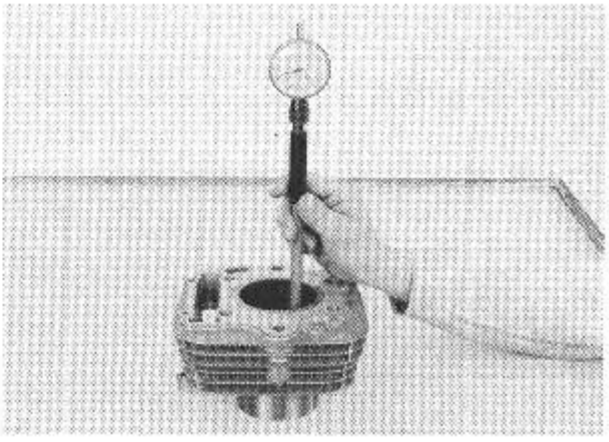


CYLINDER INSPECTION

Inspect the cylinder walls for scratches and wear.

Measure and record the cylinder I.D. at three levels in both an X and Y axis. Take the maximum reading to determine the cylinder wear.

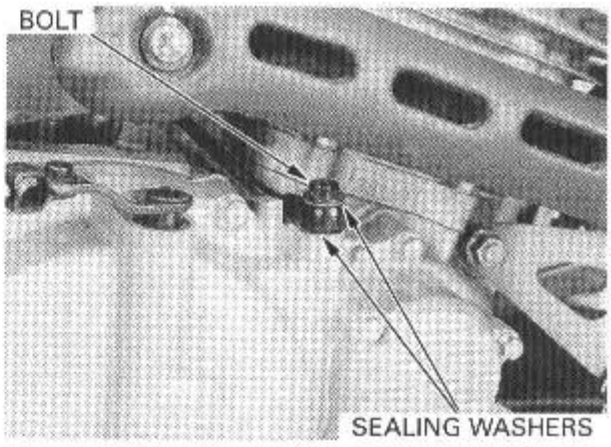
SERVICE LIMIT: 74.1 mm (2.92 in)



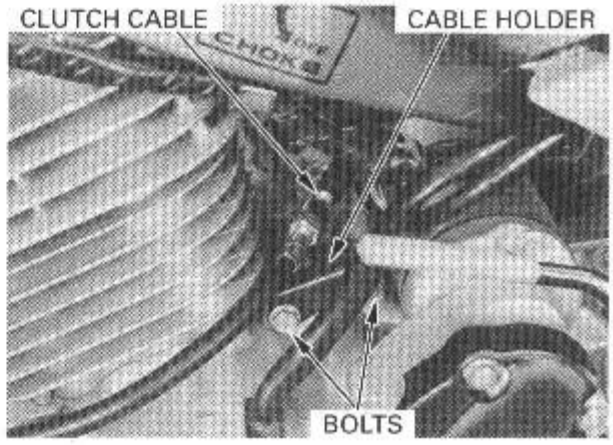
RIGHT CRANKCASE COVER REMOVAL

Drain the engine oil (page 3-10).
Remove the brake pedal (page 15-26).

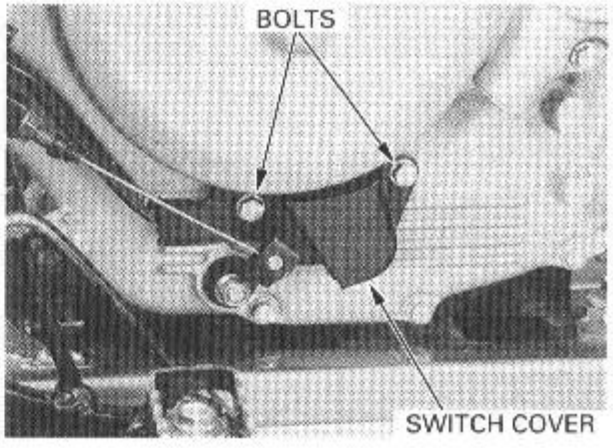
Remove the oil pipe bolt and sealing washers.



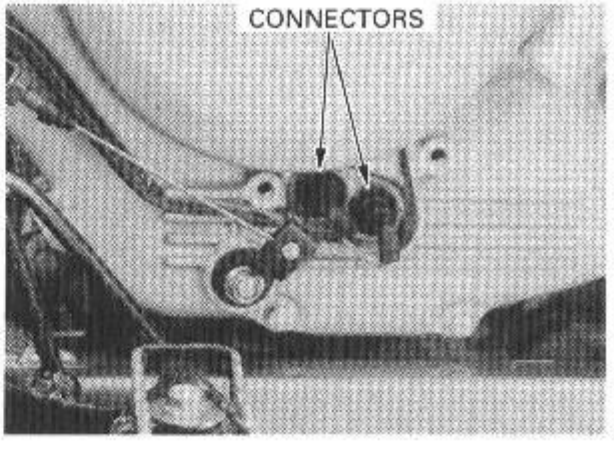
Remove the bolts and clutch cable holder and unhook the clutch cable from the clutch lifter arm.



Remove the bolts and indicator switch cover.



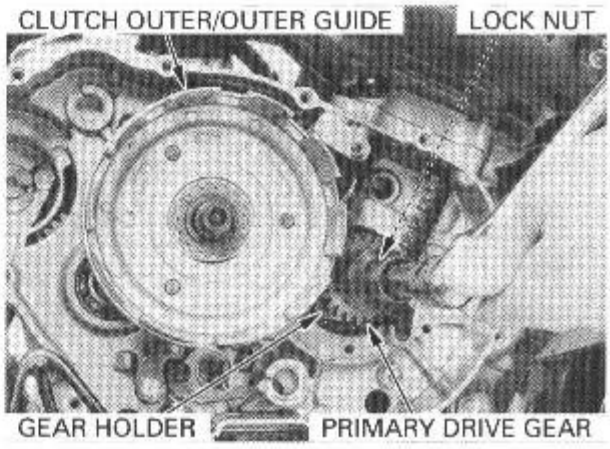
Disconnect the neutral and reverse indicator switch connectors.



Temporarily install the clutch outer guide and clutch outer to the mainshaft.
Install the gear holder between the primary drive gear and driven gear as shown.

TOOL:
Gear holder — **07724 – 0010100 Not available in U.S.A.**

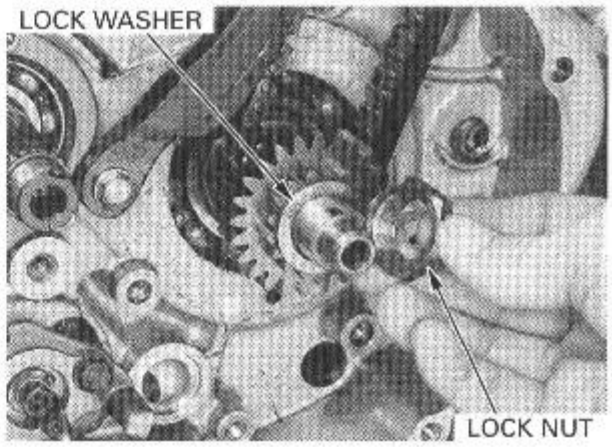
If the gear holder (07724 – 0010100) is not available, shift the transmission into gear and use the universal holder (07725 – 0030000) to hold the drive sprocket, and loosen the primary drive gear lock nut before removing the clutch assembly.



The primary drive gear lock nut has left-hand threads.

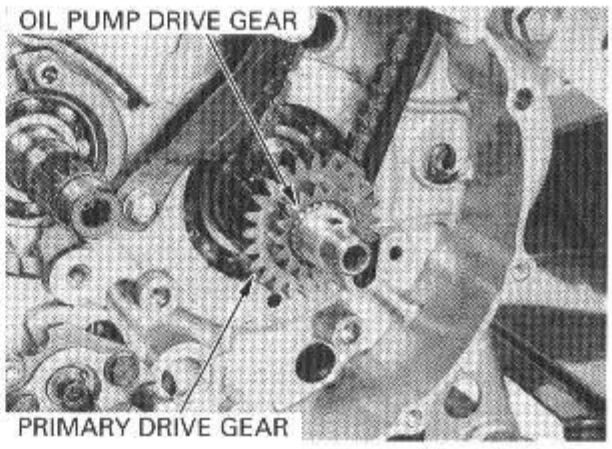
Remove the lock nut and lock washer from the crankshaft.

TOOLS:
Lock nut wrench, 17 x 27 mm — **07716 – 0020300 or equivalent commercially available in U.S.A.**
Extension bar — **07716 – 0020500 or equivalent commercially available in U.S.A.**



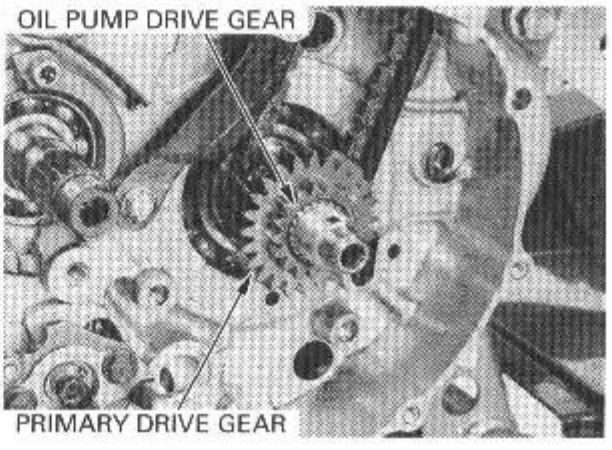
Remove the clutch outer and outer guide from the mainshaft.

Remove the oil pump drive gear and primary drive gear from the mainshaft.

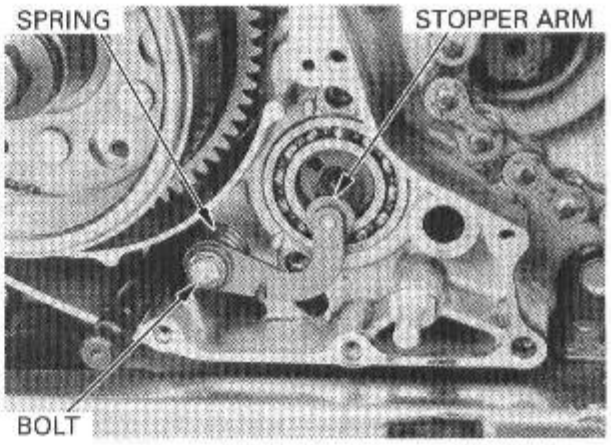


INSTALLATION

Install the primary drive gear and oil pump drive gear onto the crankshaft.



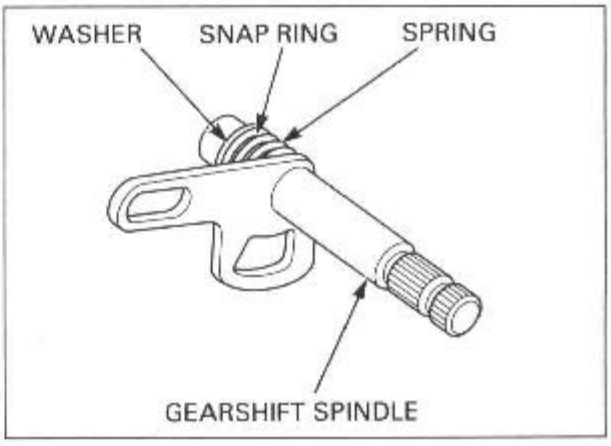
Remove the bolt, stopper arm and return spring.



INSPECTION

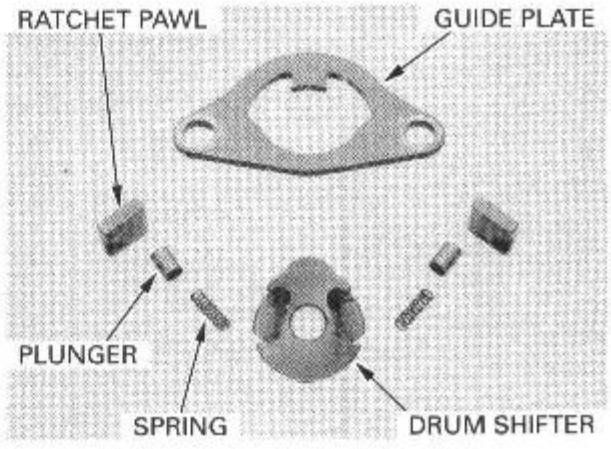
Remove the washer, snap ring and return spring from the gearshift spindle.

Check all parts for wear or damage, replace if necessary.



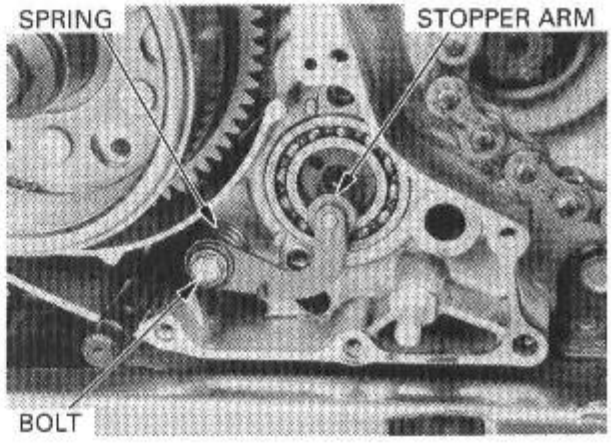
Disassemble the guide plate and drum shifter.

Check the ratchet pawls, springs and drum shifter for wear or damage and replace any damaged parts.



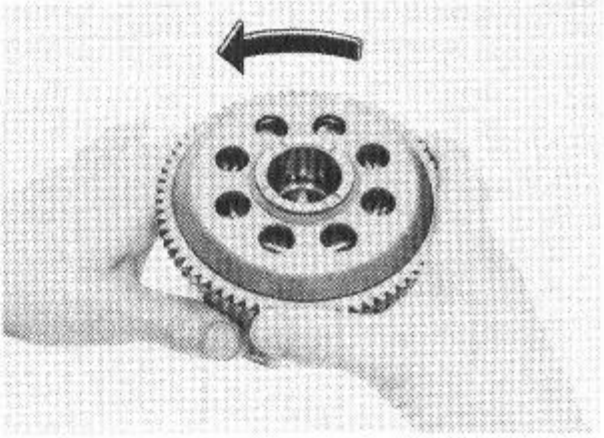
INSTALLATION

Install the return spring, stopper arm and bolt. Tighten the bolt securely.

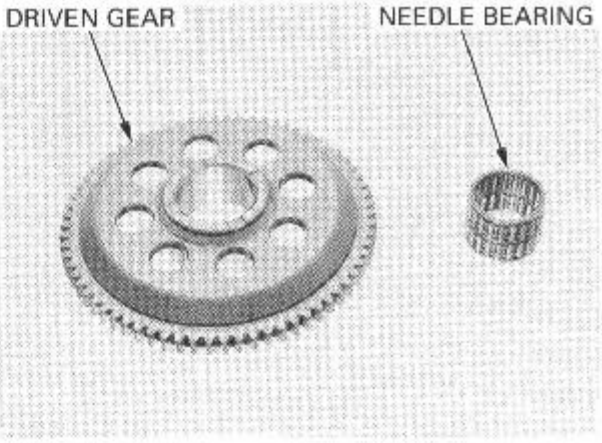


STARTER CLUTCH INSPECTION/ DISASSEMBLY

Check the operation of the one-way clutch by turning the driven gear.
You should be able to turn the driven gear counterclockwise smoothly, but the gear should not turn clockwise.



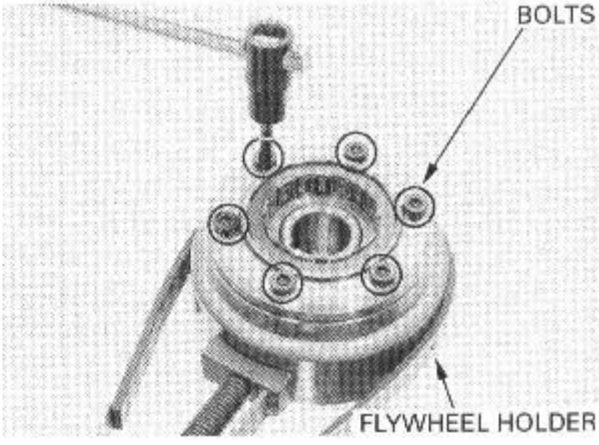
Inspect the starter driven gear teeth for damage or abnormal wear.
Check the needle bearing for damage.



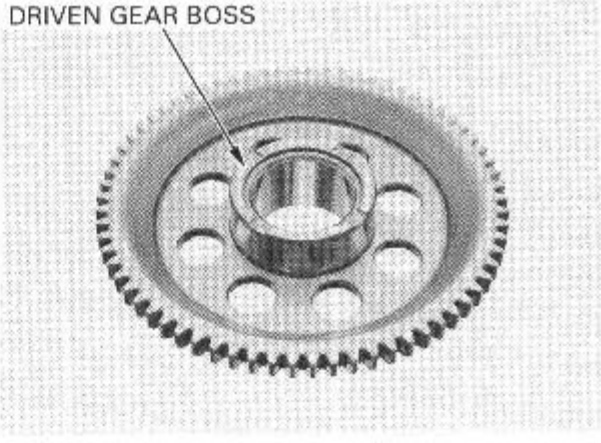
Remove the socket bolts and one-way clutch from the flywheel.

TOOL:

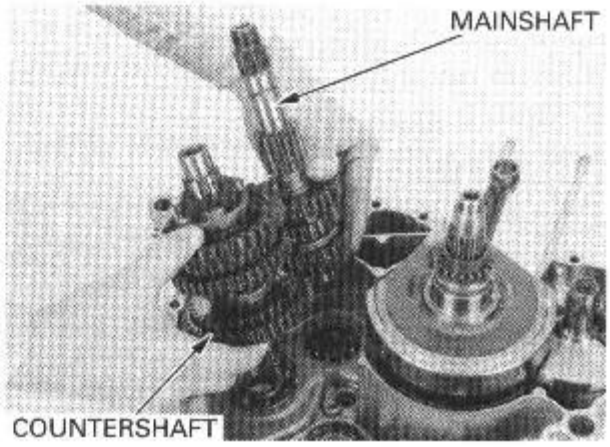
Flywheel holder	**07725 – 0040000 or Equivalent commercially available in U.S.A.**



Check the one-way clutch rollers for wear or damage.
Check the starter driven gear boss for wear or damage.



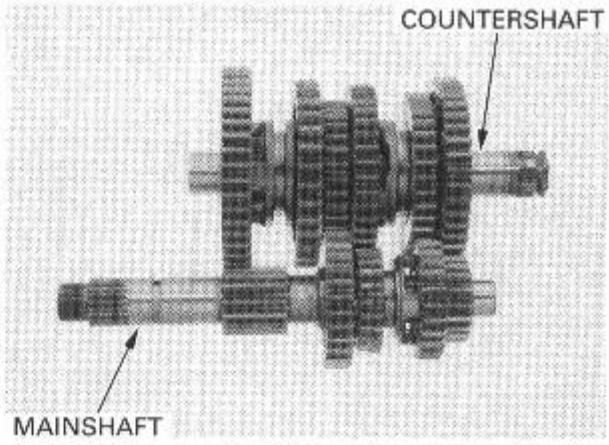
Remove the mainshaft and countershaft as a set.



Disassemble the mainshaft and countershaft.

Clean all disassembled parts in solvent thoroughly.

Keep track of the disassembled parts by stacking them on a tool or slipping them onto a piece of wire. Do not expand the snap ring more than necessary for removal. To remove the snap ring, expand the snap ring and pull it off using the gear behind it.



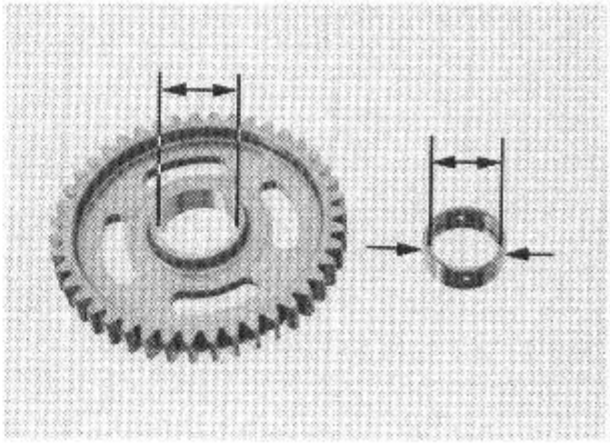
INSPECTION

GEAR/BUSHING/SHAFT

Check the gear dogs, dog holes and teeth for excessive or abnormal wear, or evidence of insufficient lubrication.

Measure the gear I.D.

SERVICE LIMITS:
M4, M5, C2: 25.07 mm (0.987 in)
C1, C3 Reverse: 28.07 mm (1.105 in)
Reverse idle: 18.05 mm (0.711 in)

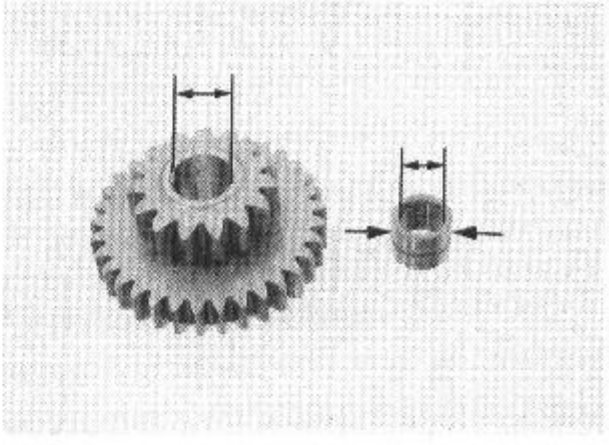


Measure the gear bushing O.D.

SERVICE LIMITS:
M4, M5, C2: 24.93 mm (0.981 in)
C3: 27.93 mm (1.100 in)
C1, Counter reverse: 27.93 mm (1.100 in)
Reverse idle: 17.93 mm (0.706 in)

Calculate the gear-to-bushing clearance.

SERVICE LIMITS:
M5, C2, C3: 0.10 mm (0.004 in)
Reverse idle: 0.09 mm (0.004 in)



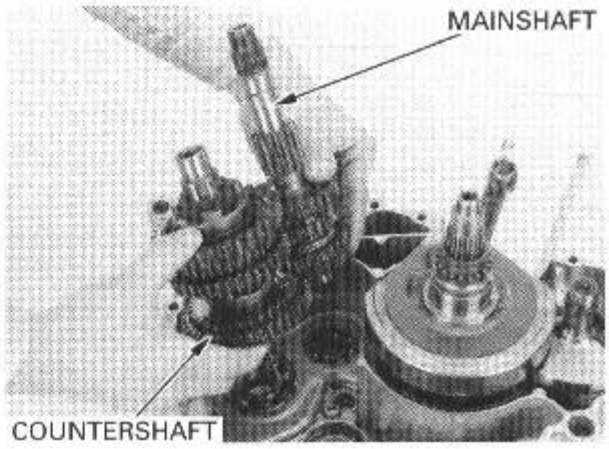
Measure the gear bushing I.D.

SERVICE LIMITS:
M5, C2: 22.05 mm (0.868 in)
C3: 25.05 mm (0.986 in)
Reverse idle: 14.05 mm (0.553 in)

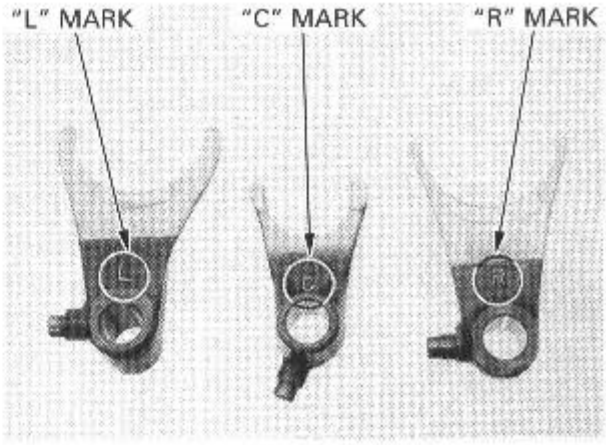
If removed install the crankshaft and balancer (page 12-20).

Be sure to install the thrust washers.

Install the mainshaft and countershaft assemblies as a set into the left crankcase.

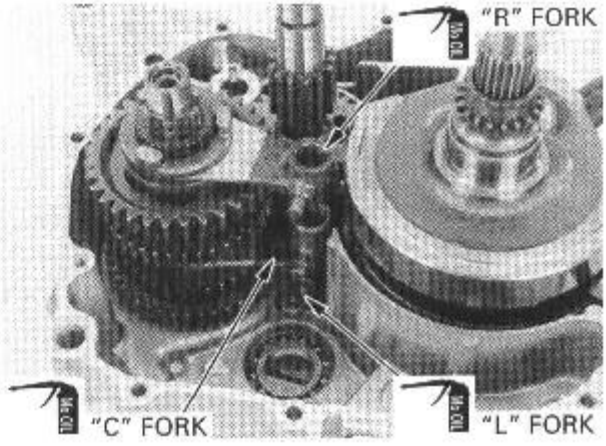


Each shift fork has an identification mark "R" for the right fork, "C" for the center fork and "L" for the left fork.



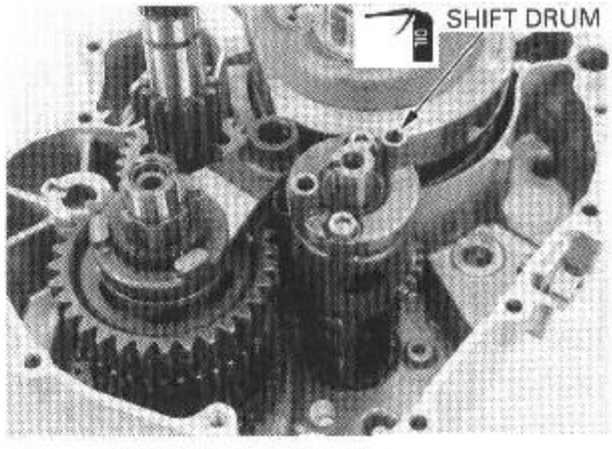
Coat the shift fork guide pins and claws with molybdenum disulfied oil.

Install the shift forks into the gear shifter grooves ("R" fork into reverse countershaft gear, "C" fork into the M3 gear and "L" fork into the C4 gear) with their identification marks facing up (right crankcase side).



Apply engine oil to the shift drum guide pin grooves, reverse gear teeth, bearings and journals.

Install the shift drum while inserting the shift fork guide pins into the guide pin grooves properly.



TROUBLESHOOTING

HARD STEERING
- Steering shaft holder too tight
- Faulty steering shaft bearing/bushing
- Damaged steering shaft
- Insufficient tire pressure
- Faulty tire

STEERING TO ONE SIDE OR DOES NOT TRACK STRAIGHT
- Bend tie-rod
- Incorrect wheel alignment
- Unequal tire pressure
- Bent frame
- Worn wheel hub bearing
- Worn swingarm pivot components

FRONT WHEEL WOBBLING
- Bent rim
- Worn wheel hub bearings
- Faulty tire

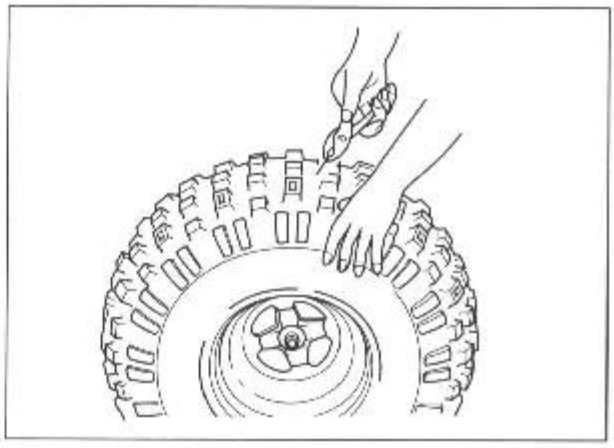
SOFT SUSPENSION
- Weak front shock absorber spring
- Faulty front shock absorber damper
- Loose front suspension fasteners

HARD SUSPENSION
- Bent front shock absorber damper rod
- Improperly installed suspension arms
- Faulty suspension arm spherical bearings

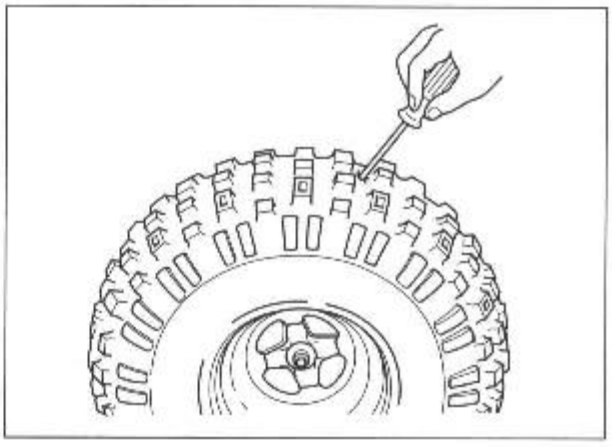
FRONT SUSPENSION NOISY
- Binding suspension link
- Loose front suspension fasteners

TIRE REPAIR

Use the manufacturer's instructions for the tire repair kit you are using. If your kit does not have instructions, use the procedures provided here.

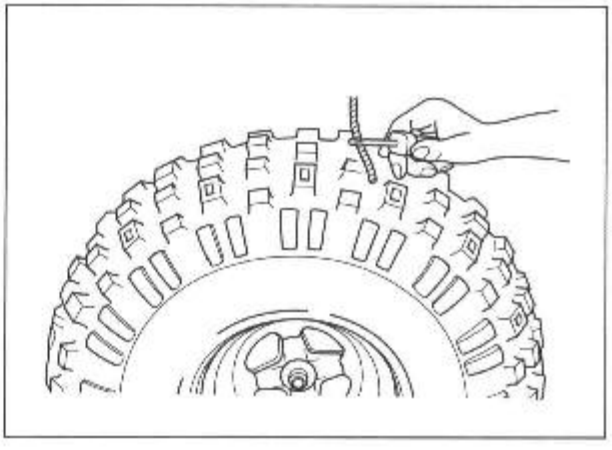


Check the tire for puncturing objects.
Chalk mark the punctured area and remove the puncturing object.
Inspect and measure the injury.
Tire repairs for injuries larger than 15 mm (5/8 in) should be a section repair.
Section repairs should be done by a professional tire repair shop.
If the injury is smaller than 15 mm (5/8 in), proceed with the repair as described here.



Install a rubber plug into the injury as follows:
Apply cement to a plug inserting needle and work the needle into the injury to clean and lubricate it.
Do this three times.
Do not let the cement dry.

Insert and center a rubber plug through the eye of the inserting needle.

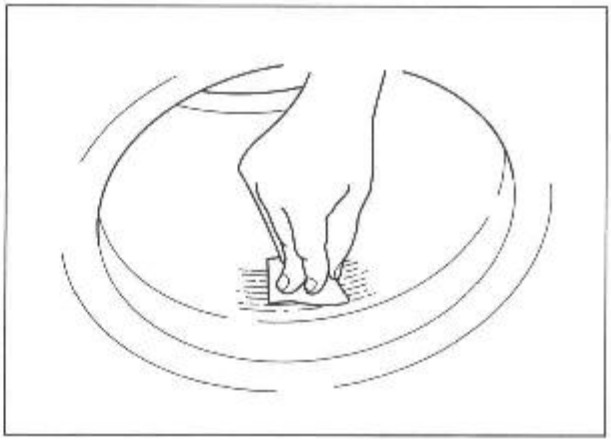


Apply cement to the rubber plug.
Push the inserting needle with plug into the injury until the plug is slightly above the tire.
Twist the needle and remove it from the tire; the plug will stay in the tire.

Be careful not to push the plug all the way into the tire to prevent it from falling inside.

Trim the plug 6 mm (1/4 in) above the tire surface.
Repeat the above procedure if the puncture is large.
Do not use more than two plugs per injury.

Allow the repair to dry. Drying time will vary with air temperature. Refer to the tire repair kit manufacturer's recommendations.

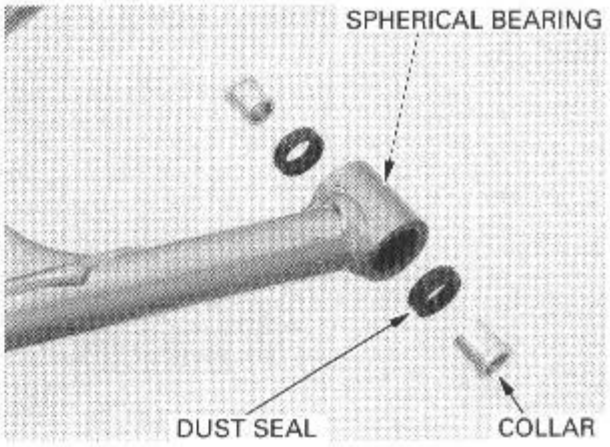


Inflate the tire and test the seal by dabbing a small amount of cement around the plug. Escaping air will cause a bubble in cement. If there is leakage, remove the tire (page 13-11) and apply a cold patch to the inside of the tire as described.
If a plug has been inserted, trim it even with the Inner tire surface.

Temporarily place a rubber patch that is at least twice the size of the puncture over the injury. Make a mark around the patch, sightly larger than the patch itself.
Rough the area marked inside the tire with a tire buffer or a wire brush. Clean the rubber dust from the buffed area.

Check the front arm pivot collars, dust seals and spherical bearings for wear or damage.

Replace them if necessary.

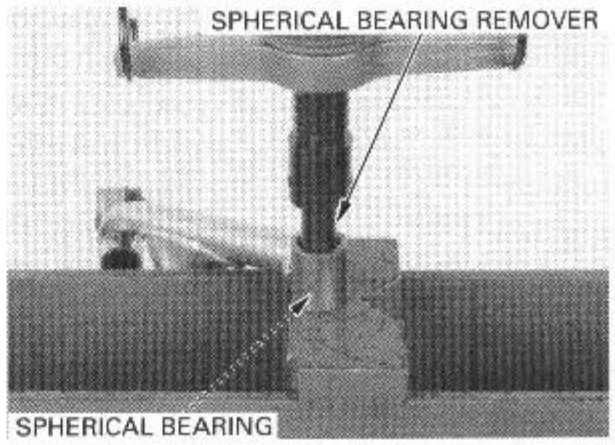


SPHERICAL BEARING REPLACEMENT

Remove both stop rings.
Press the spherical bearing out of the front arm.

TOOL:

Spherical bearing remover	**07HMF – HC00100 Not available in U.S.A. or 07GAD – PH70100**



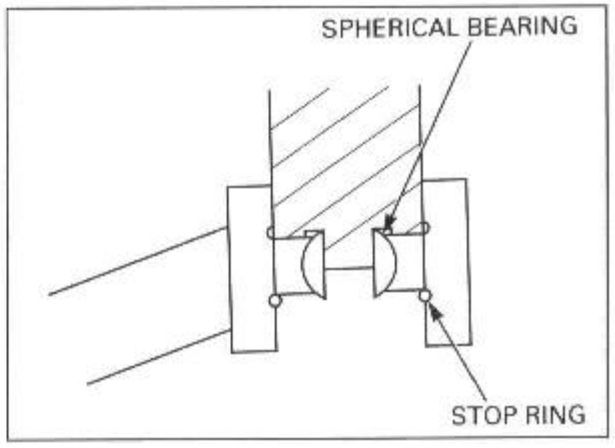
Install the stop ring into the groove in the front arm securely.

Press the spherical bearing into the front arm until it seats on the stop ring.

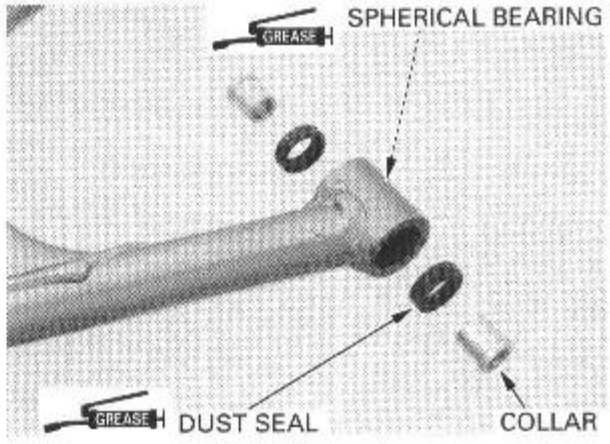
TOOL:

Spherical bearing remover	**07HMF – HC00100 Not available in U.S.A. or 07GAD – PH70100**

Install the opposite side stop ring into the groove securely.



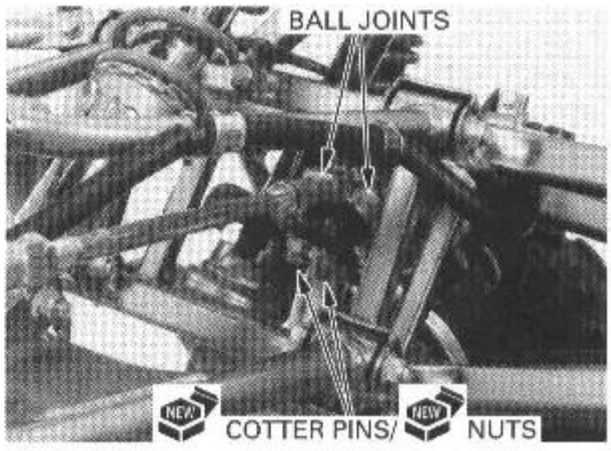
Apply grease to the spherical bearing and dust deal lips.
Install the dust seals and pivot collars to the front arm pivot.



Install the tie-rod ball joints onto the steering shaft.
Install the new nuts and tighten the specified torque.

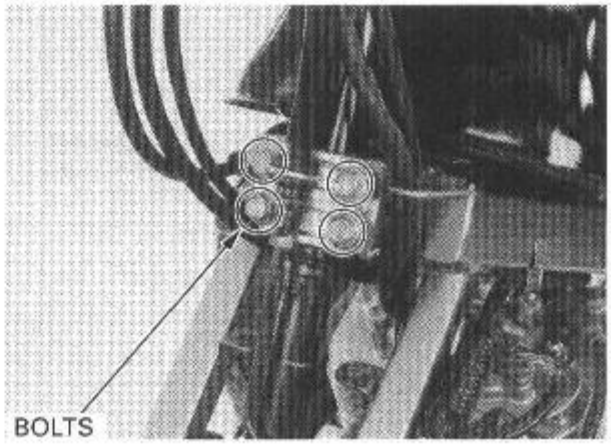
TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)

Install the new cotter pins.



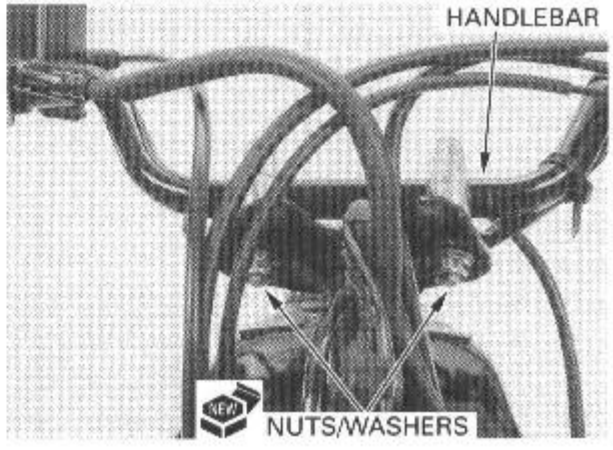
Tighten the steering shaft holder bolts to the specified torque.

TORQUE: 27 N·m (2.8 kgf·m, 20 lbf·ft)

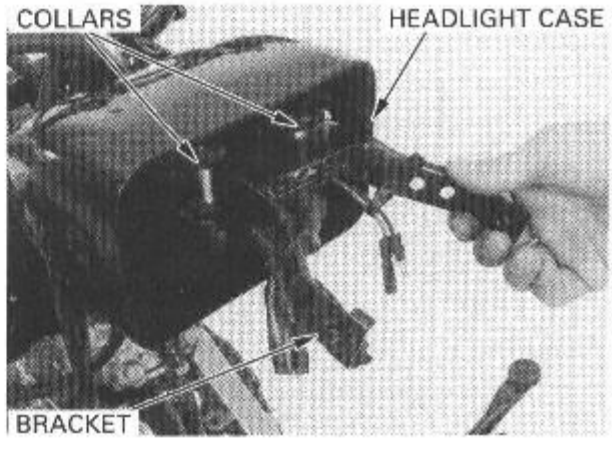


Install the handlebar onto the steering shaft, washers and new lower mounting nuts.
Tighten the nuts to the specified torque.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)



Install the headlight case, headlight case bracket and collars.

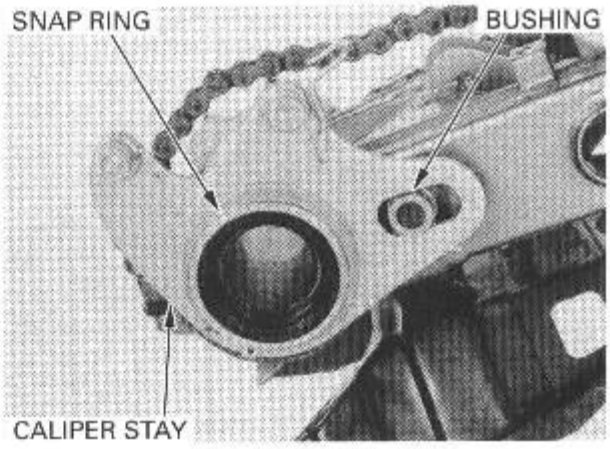


REAR AXLE BEARINGS

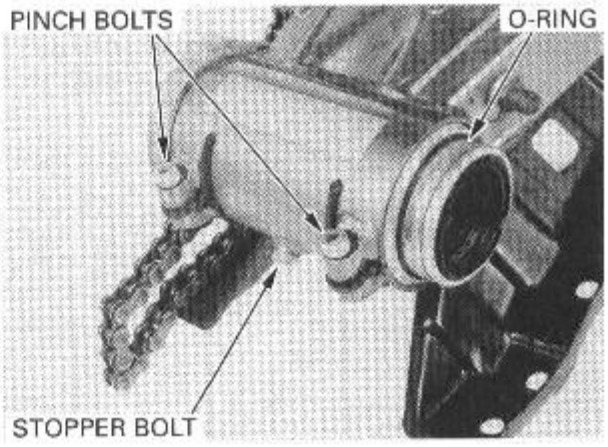
BEARING HOLDER REMOVAL

Remove the rear wheels and axle (page 14-3).

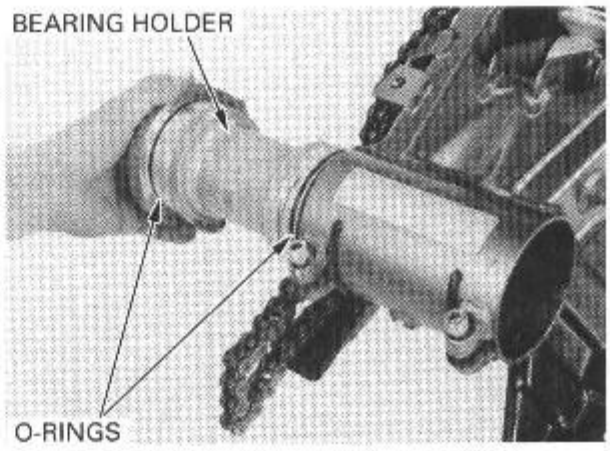
Remove the snap ring, brake caliper stay and bushing.



Loosen the axle holder pinch bolts.
Remove the O-ring from the bearing holder.
Remove the stopper bolt.

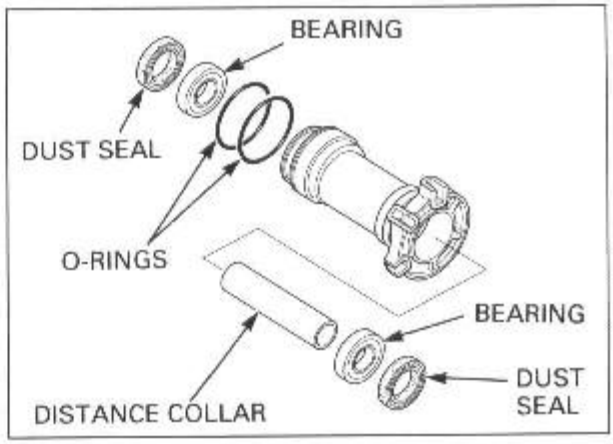


Remove the bearing holder from the swingarm.
Remove the O-rings from the bearing holder.



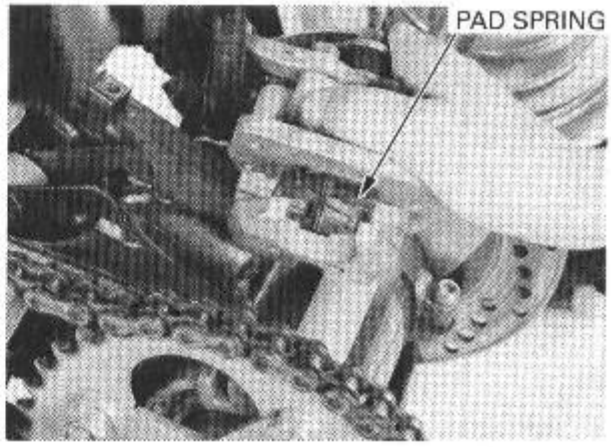
BEARING REPLACEMENT

Remove the dust seals, bearings and distance collar from the bearing holder.



MEMO

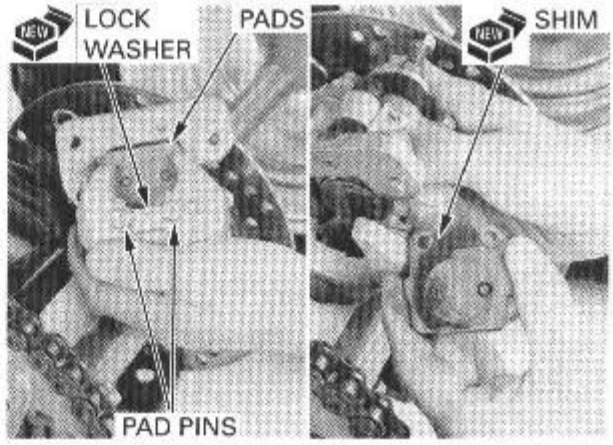
Make sure the pad spring is installed in place as shown



Replacement pads come with new shims.

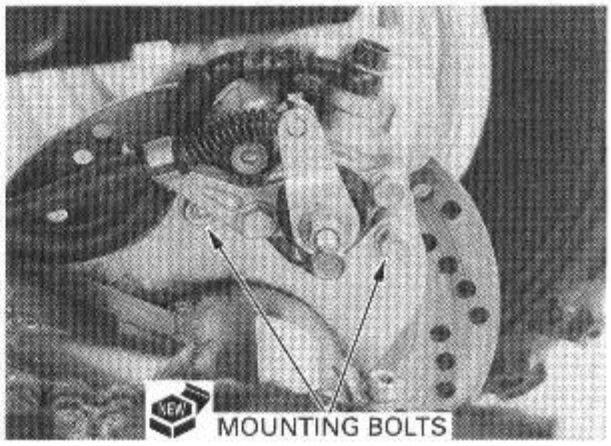
Install the new pads in the caliper.

Align the pad pin holes by depressing the pads against the caliper, and install a new lock washer and pad pins.



Lower the caliper so the disc is positioned between the pads, being careful not to damage the pads. Install the new caliper mounting bolts and tighten to the specified torque.

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)



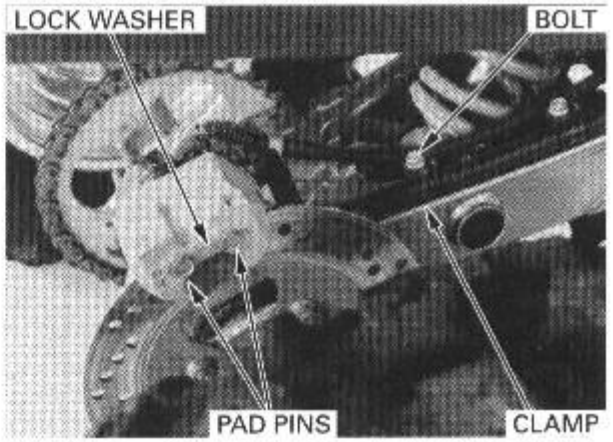
Install the brake hose clamp and tighten the bolt securely.

Install and tighten the pad pins to the specified torque.

TORQUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)

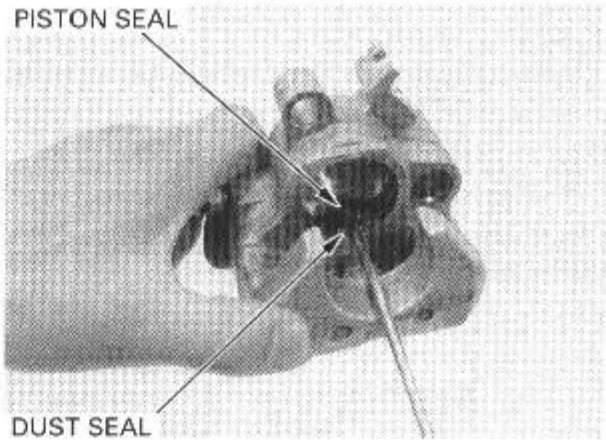
Bend up the lock washer tabs against the bolt heads.

Adjust the parking brake (page 3-19).



Be careful not to damage the piston sliding surface. Push the dust seals and piston seals in and lift them out.

Clean the seal grooves, caliper pistons and caliper piston sliding surfaces with clean brake fluid.

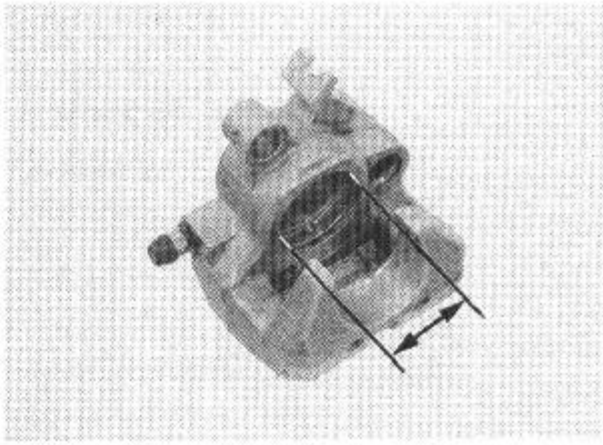


INSPECTION

Check the caliper cylinder and pistons for scoring, scratches or damage.

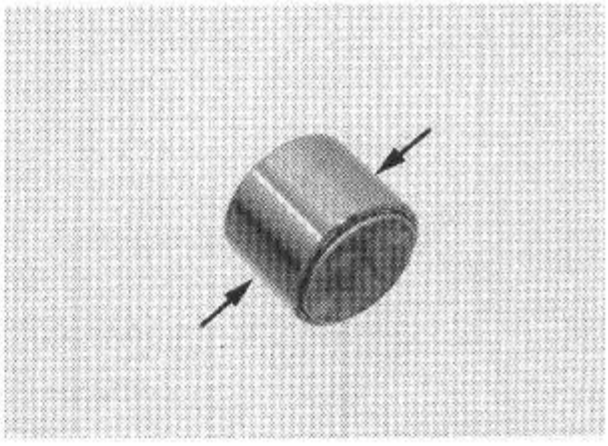
Measure the caliper cylinder I.D.

SERVICE LIMIT: 34.020 mm (1.3394 in)



Measure the caliper piston O.D.

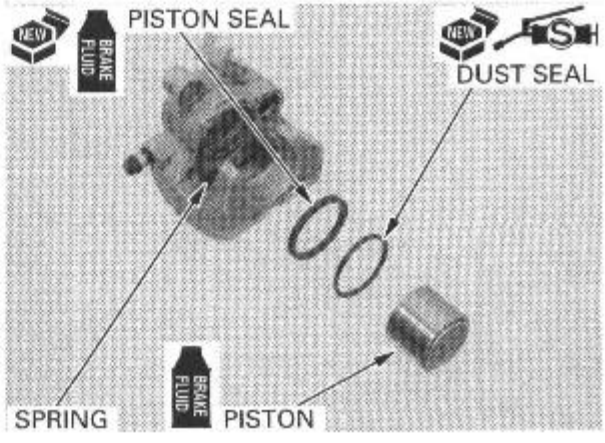
SERVICE LIMIT: 33.870 mm (1.3335 in)



ASSEMBLY

Replace the dust seal and piston seal with a new one.
Replace the caliper and bracket pin boots if they are worn, deteriorated or damaged.
Apply silicone grease to the boot inner surface.
Be sure that each part is free from dust or dirt before reassembly.

Coat a new piston seal with clean brake fluid.
Coat a new dust seal with silicone grease.
Install the piston seal and dust seal into the groove of the caliper body.
Coat the caliper piston with clean brake fluid and install them into the caliper cylinder with their closed ends facing the pad.



16. BATTERY/CHARGING SYSTEM

SERVICE INFORMATION

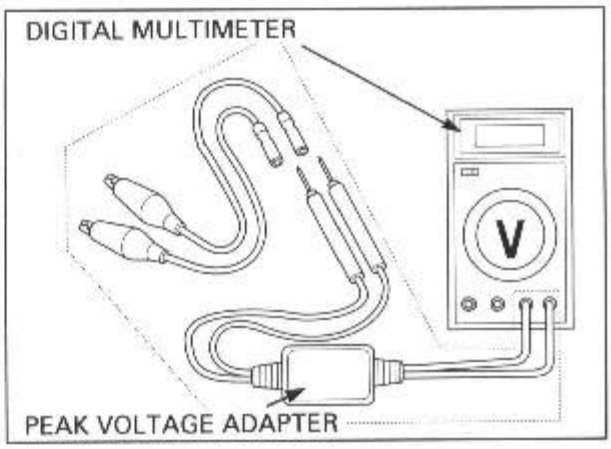
GENERAL

⚠ CAUTION

- The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging.
- The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.
  - If electrolyte gets on your skin, flush with water.
  - If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician immediately.
- Electrolyte is poisonous.
  - If swallowed, drink large quantities of water or milk and call your local Poison Control Center or physician immediately, KEEP OUT OF REACH OF CHILDREN.

- Always turn off the ignition switch before disconnecting any electrical component.
- Some electrical components may be damaged if terminals or connectors are connected or disconnected while the ignition switch is ON and current is present.
- For extended storage, remove the battery, give it a full charge, and store it in a cool, dry place.
- For a battery remaining in a shorted vehicle, disconnect the negative battery cable from the battery.
- The battery caps should not be removed. Attempting to remove the sealing caps from the cells may damage the battery.
- The maintenance free battery must be replaced when it reaches the end of its service life.
- The battery can be damaged if overcharged or undercharged, or if left to discharge for long period. These same conditions contribute to shortening the "life span" of the battery. Even under normal use, the performance of the battery deteriorates after 2 – 3 years.
- Battery voltage may recover after battery charging, but under heavy load, the battery voltage will drop quickly and eventually die out. For this reason, the charging system is often suspected as the problem. Battery overcharge often results from problems in the battery itself, which may appear to be an overcharging symptom. If one of the battery cells is shorted and battery voltage does not increase, the regulator/rectifier supplies excess voltage to the battery. Under these conditions, the electrolyte level goes down quickly.
- Before troubleshooting the charging system, check for proper use and maintenance of the battery. Check if the battery is frequently under heavy load, such as having the headlight and taillight ON for long periods of time without riding the vehicle.
- The battery self-discharges when the vehicle is not in use, for this reason, charge the battery every two weeks to prevent sulfation from occurring.
- Filling a new battery with electrolyte will produce some voltage, but in order to achieve its maximum performance, always charge the battery. Also, the battery life is lengthened when it is initially charged.
- When checking the charging system, always follow the steps in the troubleshooting flow chart (page 16-3).
- For alternator service, refer to section 11.

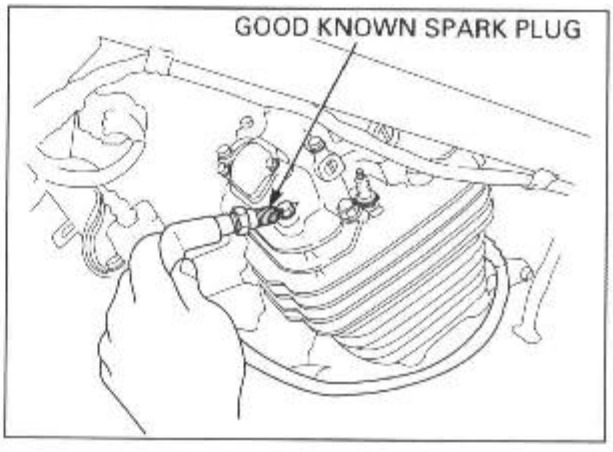
IGNITION SYSTEM INSPECTION



If there is no spark at any plug, check all connections for loose or poor contact before measuring each peak voltage.
Use recommended digital multimeter or commercially available digital multimeter with an impedance of 10 MΩ/DCV minimum.
The display value differs depending upon the internal impedance of the multimeter.
Connect the peak voltage adapter to the digital multimeter.

TOOLS:
Peak voltage adapter **07HGJ – 0020100 (U.S.A. only)**
with Commercially available digital multimeter (impedance 10 MΩ/DCV minimum) or
Peak voltage tester (U.S.A. only)

IGNITION COIL PRIMARY PEAK VOLTAGE

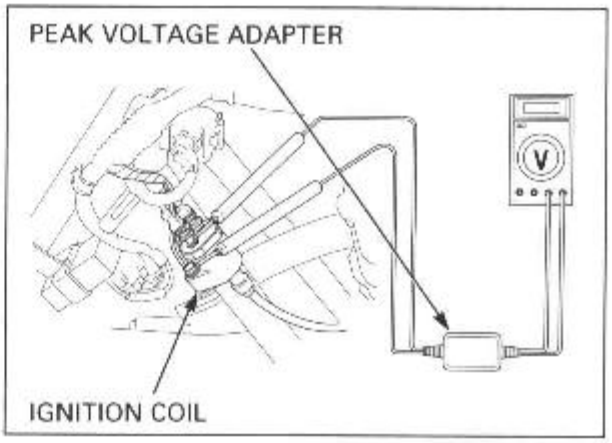


Check all system connections before inspection. If the system is disconnected, incorrect peak voltage might be measured.
Check cylinder compression and check that the spark plug is installed correctly in the cylinder.
Shift the transmission into neutral and disconnect the spark plug cap from the spark plug.

Connect a known good spark plug to the spark plug cap and ground the spark plug to the cylinder as done in a spark test.

With the ignition coil primary wire connected, connect the peak voltage adapter to the ignition coil.

CONNECTION: Black/Yellow (–) – Body ground (+)

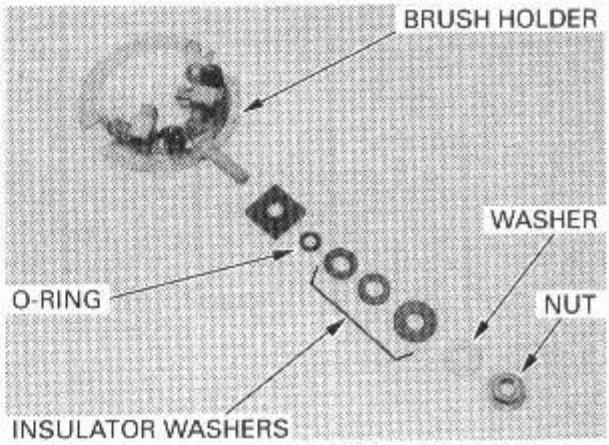


Turn the ignition switch ON.
Avoid touching the spark plug and tester probes to prevent electric shock.
Crank the engine with the starter motor and read ignition coil primary peak voltage.

PEAK VOLTAGE: 100V minimum

If the peak voltage is abnormal, check for an open circuit or poor connection in Black/Yellow wires.
If no defects are found in the harness, refer to the troubleshooting chart on page 17-2.

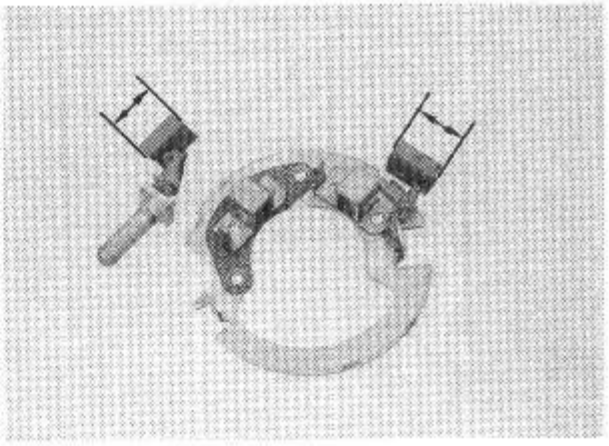
Remove the following:
- nut
- washer
- insulator washers
- brush holder assembly
- O-ring

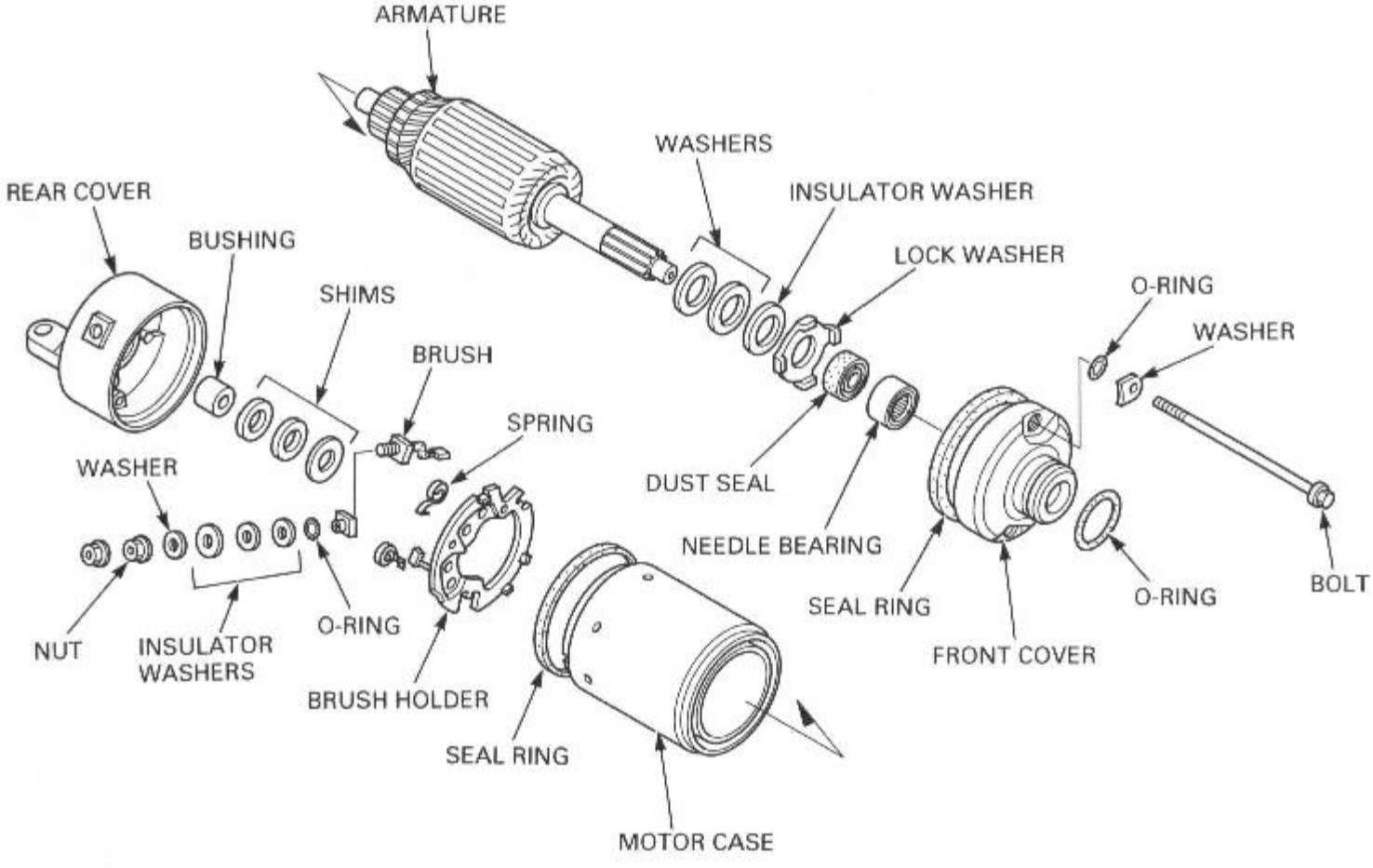


Remove the brushes from the brush holder.

Measure the brush length.

SERVICE LIMIT: 9.0 mm (0.35 in)

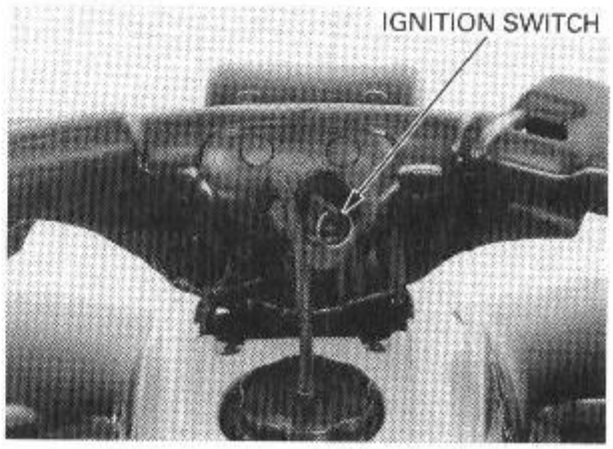




Check for continuity between the wire terminals of the ignition switch connectors in each switch position.
Continuity should exist between the color coded wires as follows:

IGNITION SWITCH

	BAT 1	BAT 2
OFF		
ON	○	○
CORD COLOR	Red	Black

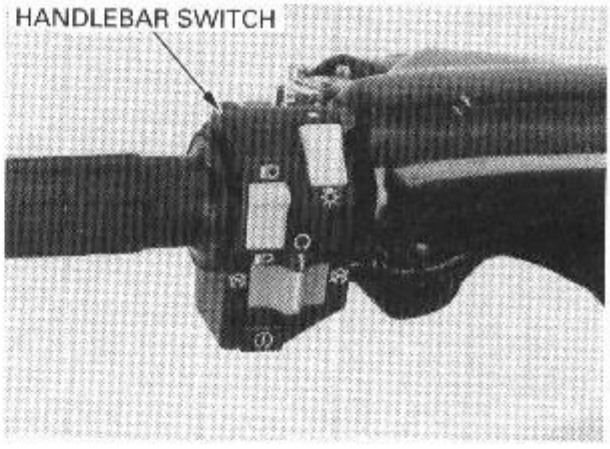


HANDLEBAR SWITCHES

The handlebar switches (lighting, dimmer, engine stop and starter switches) must be replaced as an assembly.

Remove the headlight (page 19-2).

Disconnect the handlebar switch connectors.
Check for continuity between the wire terminals of the handlebar switch connectors.
Continuity should exist between the color coded wire terminals as follows:



STARTER SWITCH

	BAT 2	ST
FREE		
PUSH	○	○
CORD COLOR	Black	Yellow/Red

ENGINE STOP SWITCH

	BAT 2	IG
OFF		
RUN	○	○
OFF		
CORD COLOR	Black	Black/White

LIGHTING SWITCH

	BAT 2	TL
OFF		
ON	○	○
CORD COLOR	Black	Brown

DIMMER SWITCH

	HI	(HL)	LO
HI	○	○	
↕	○	○	○
LO		○	○
CORD COLOR	Blue	•	White

CONNECTION OF SWITCH