2004-2007

HONDA

SERVICE MANUAL

TRX400FA

FOURTRAX RANCHER® AT™

TRX400FGA

FOURTRAX RANCHER AT GPScape™

LUBRICATION SYSTEM SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	2.6 liters (2.7 US qt, 2.3 Imp qt)	–
	After draining/filter change	2.8 liters (3.0 US qt, 2.5 Imp qt)	–
	After disassembly	3.3 liters (3.5 US qt, 2.9 Imp qt)	–
Recommended engine oil		Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil (U.S.A. and Canada), or Honda 4-stroke oil (Canada only), or an equivalent motor oil API service classification: SG or Higher except oils labeled as energy conserving on the circular API service label JASO T 903 standard: MA Viscosity: SAE 10W-40	–
Oil pressure 80°C(176°F)	at 1,400 rpm	130 kPa (1.3 kgf/cm^2, 18 psi)	–
	at 4,000 rpm	580 kPa (6.0 kgf/cm^2, 85 psi)	–
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.22 (0.006 – 0.009)	0.25 (0.010)
	Side clearance	0.02 – 0.09 (0.001 – 0.004)	0.11 (0.004)

FUEL SYSTEM SPECIFICATIONS

ITEM	SPECIFICATIONS
Carburetor identification number	VE6CA
Main jet	# 142
Slow jet	# 45
Jet needle clip position	2nd groove from top
Pilot screw opening	2 – 1/4 turns out
Float level	15.9 mm (0.63 in)
Idle speed	1,400 ± 100 rpm
Throttle lever free play	3 – 8 mm (1/8 – 5/16 in)

FRONT WHEEL/SUSPENSION/STEERING

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Handlebar lower holder nut	2	10	39 (4.0, 29)	NOTE 6
Steering shaft end nut	1	14	108 (11.0, 80)	NOTE 6
Steering shaft holder flange bolt	2	8	32 (3.3, 24)	
Tie-rod ball joint nut	4	12	54 (5.5, 40)	
Upper arm pivot nut	4	10	44 (4.5, 33)	NOTE 6
Lower arm pivot nut	4	10	44 (4.5, 33)	NOTE 6
Upper and lower arm ball joint nut	4	12	29 (3.0, 22)	NOTE 7
Shock absorber mounting nut	4	10	30 (3.1, 22)	NOTE 6
Front wheel nut	8	10	64 (6.5, 47)	
Front axle nut	2	16	78 (8.0, 58)	NOTE 7

REAR WHEEL/SUSPENSION

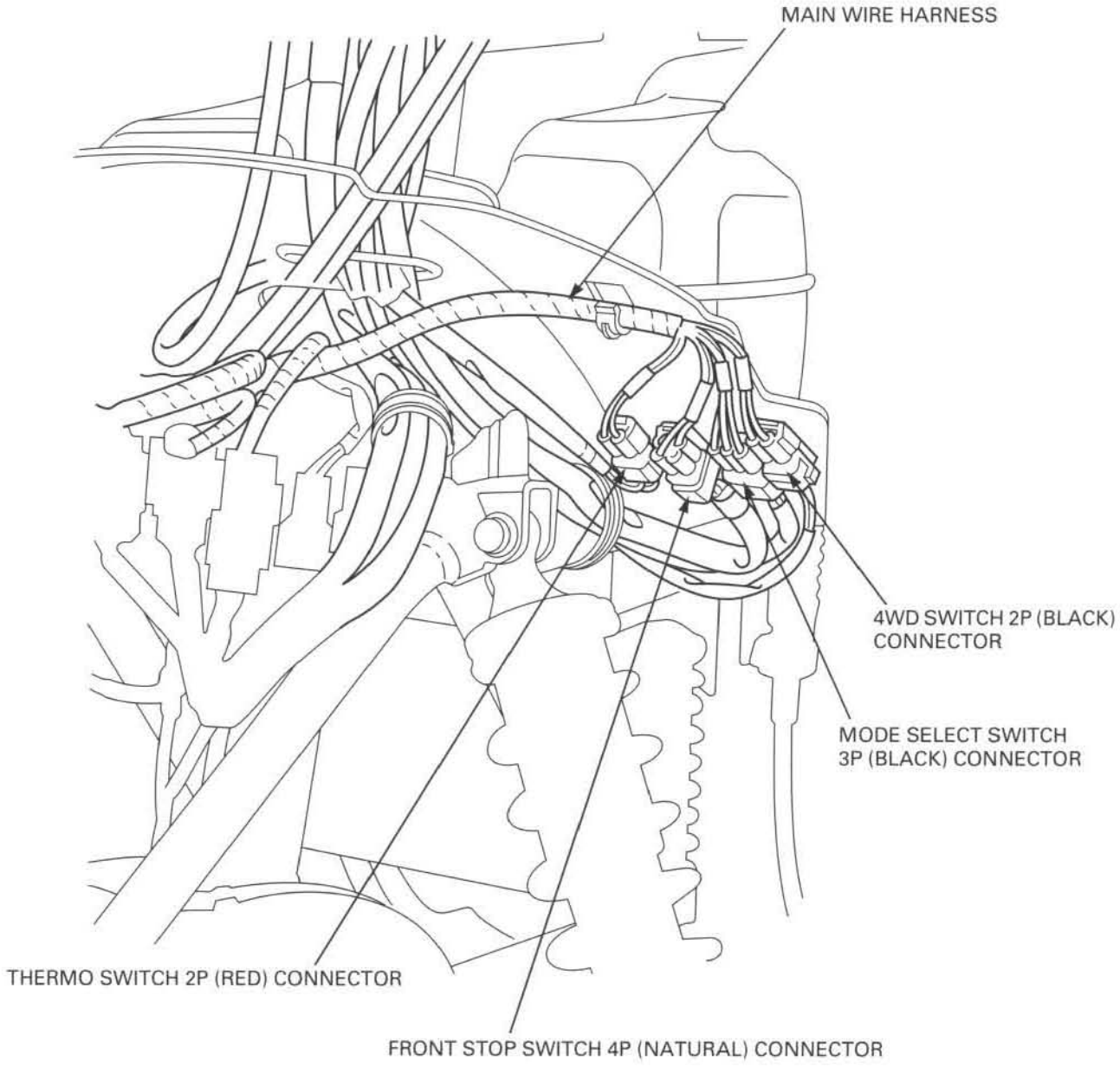
ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Rear wheel nut	8	10	64 (6.5, 47)	
Rear wheel hub nut	2	20	137 (14.0, 101)	NOTE 7
Shock absorber upper mounting flange bolt/nut	1	10	44 (4.5, 33)	NOTE 6
Shock absorber lower mounting flange bolt	1	10	44 (4.5, 33)	
Swingarm left pivot bolt	1	30	118 (12.0, 87)	
Swingarm right pivot bolt	1	30	4 (0.4, 2.9)	
Swingarm right pivot lock nut	1	30	118 (12.0, 87)	
Final gear case mounting flange bolt	8	10	54 (5.5, 40)	
Left axle housing mounting nut	4	10	44 (4.5, 33)	NOTE 6
Skid plate mounting flange bolt	3	8	32 (3.3, 24)	
Trailer hitch mounting bolt/nut	2	10	44 (4.5, 33)	NOTE 6

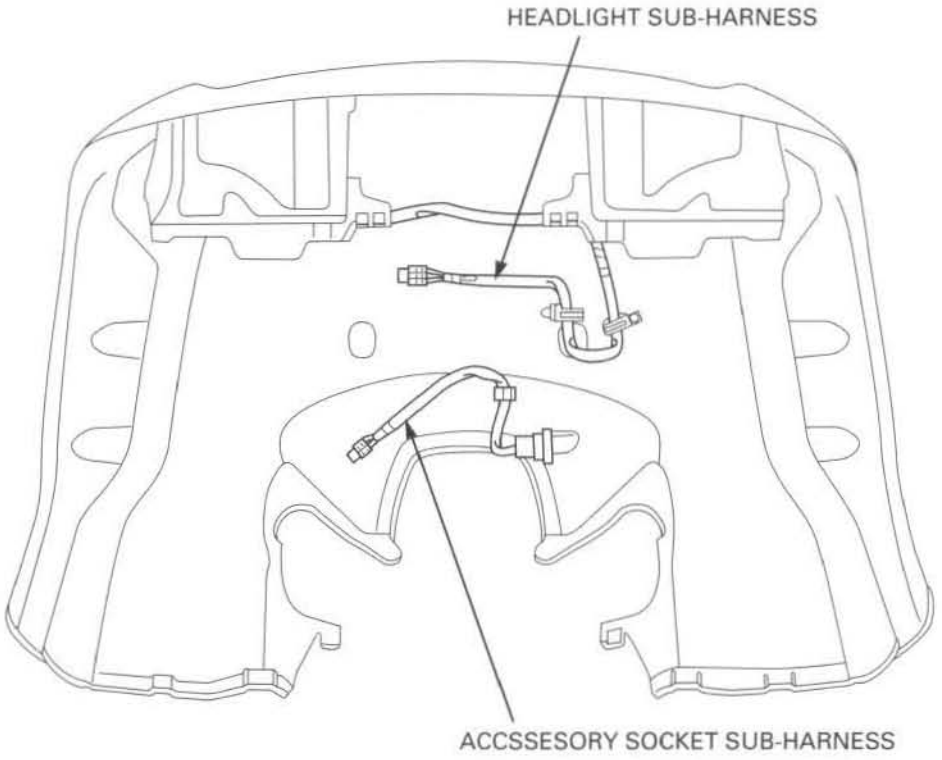
BRAKE SYSTEM

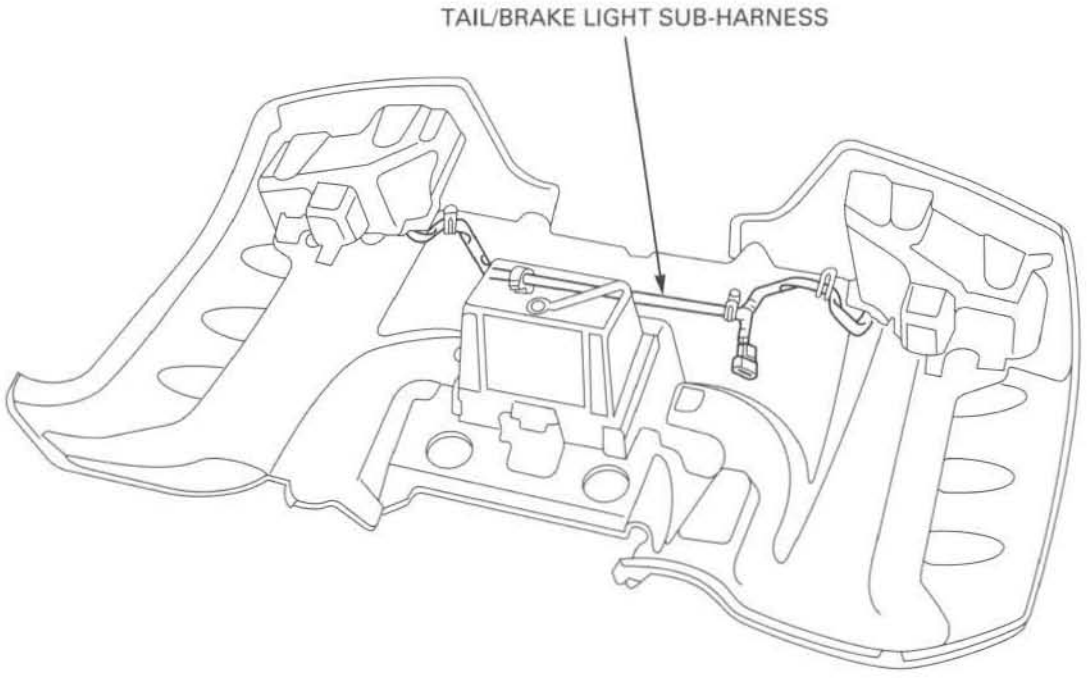
ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Front master cylinder reservoir cap screw	2	4	2 (0.15, 1.1)	
Front master cylinder holder SH bolt	2	6	12 (1.2, 9)	
Front brake lever pivot bolt	1	6	6 (0.6, 4.3)	
Front brake lever pivot nut	1	6	6 (0.6, 4.3)	
Brake hose oil bolt	3	10	34 (3.5, 25)	
Brake hose clamp flange bolt	4	6	12 (1.2, 9)	
Brake pipe bolt	2	10	17 (1.7, 12)	
Front brake panel flange bolt	8	8	29 (3.0, 22)	
Wheel cylinder bolt	4	6	8 (0.8, 5.8)	
Wheel cylinder nut	4	8	17 (1.7, 12)	
Wheel cylinder oil pipe joint nut	4	10	16 (1.6, 12)	
Wheel cylinder bleed valve	2	8	6 (0.6, 4.3)	
Rear brake arm pinch bolt	1	8	20 (2.0, 14)	
Rear brake panel drain bolt	1	8	12 (1.2, 9)	

FRONT DRIVING MECHANISM

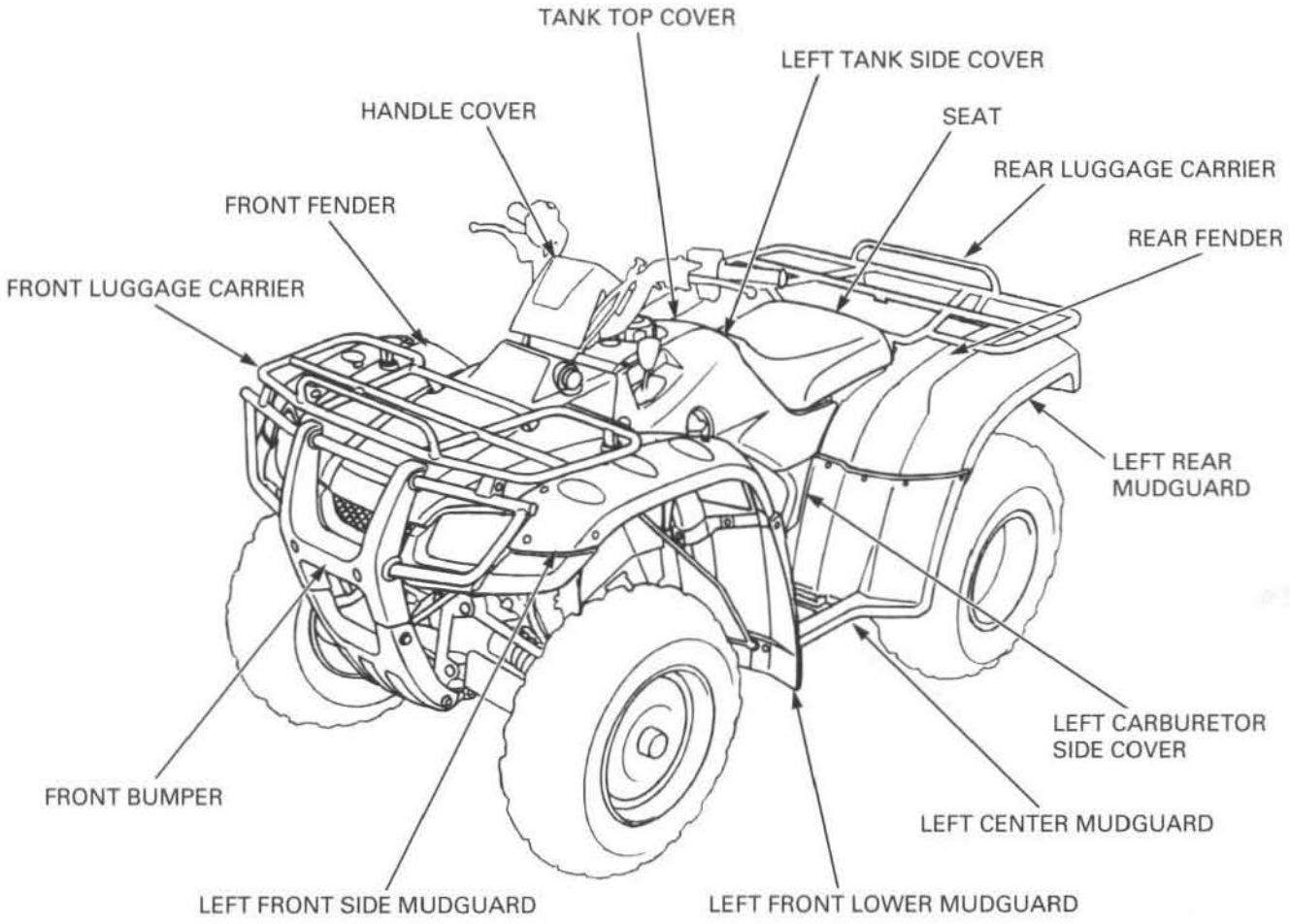
ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kgf·m, lbf·ft)	REMARKS
Front differential mounting flange bolt/nut	2	10	44 (4.5, 33)	NOTE 6
Front differential mounting bracket flange bolt	2	8	22 (2.2, 16)	
Front differential mounting flange nut	1	8	22 (2.2, 16)	
Gear case cover flange bolt	6	8	25 (2.6, 19)	
Gear case cover bolt	2	10	49 (50, 36)	NOTE 1
Differential case assembly mounting bolt	8	8	49 (50, 36)	NOTE 1
Final drive clutch assembly mounting flange bolt	3	8	25 (2.5, 18)	
Front sensor cover SH bolt	2	6	10 (1.0, 7)	
Clutch cover stay SH bolt	3	6	10 (1.0, 7)	
Clutch cover flange bolt	2	6	7 (0.7, 5.1)	


MAIN WIRE HARNESS
4WD SWITCH 2P (BLACK) CONNECTOR
MODE SELECT SWITCH 3P (BLACK) CONNECTOR
THERMO SWITCH 2P (RED) CONNECTOR
FRONT STOP SWITCH 4P (NATURAL) CONNECTOR


HEADLIGHT SUB-HARNESS
ACCSSESORY SOCKET SUB-HARNESS

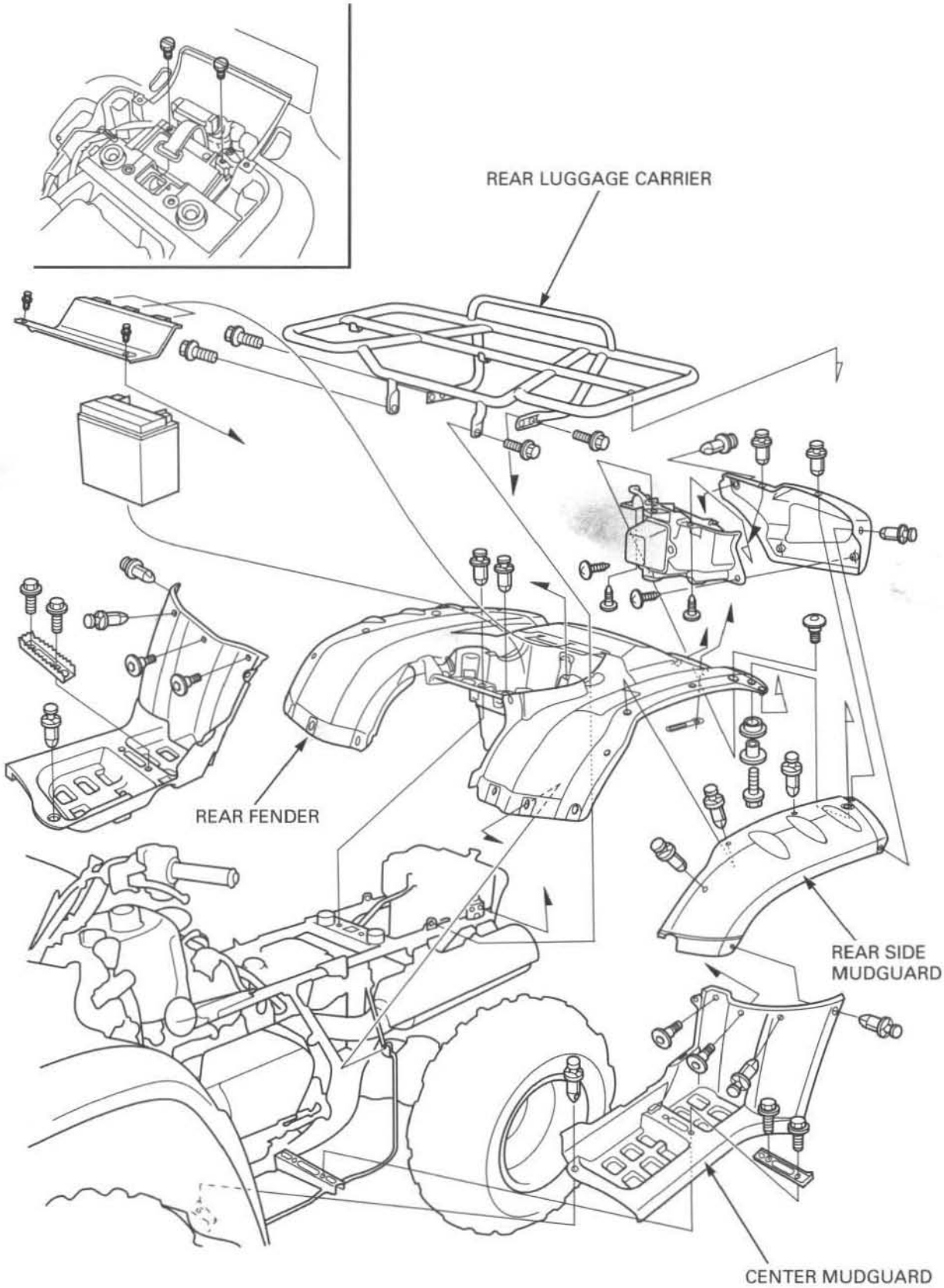

TAIL/BRAKE LIGHT SUB-HARNESS

BODY PANEL LOCATIONS



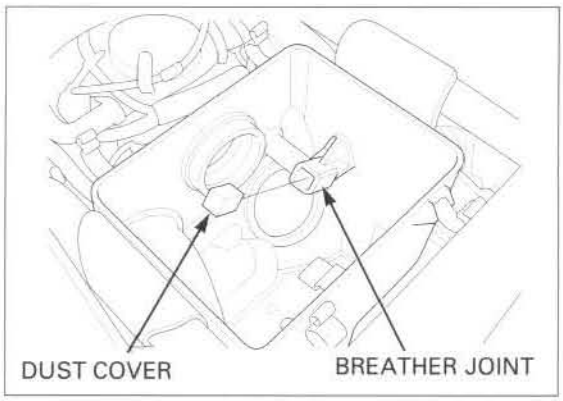
INSTALLATION

Install the rear fender in the reverse order of removal.



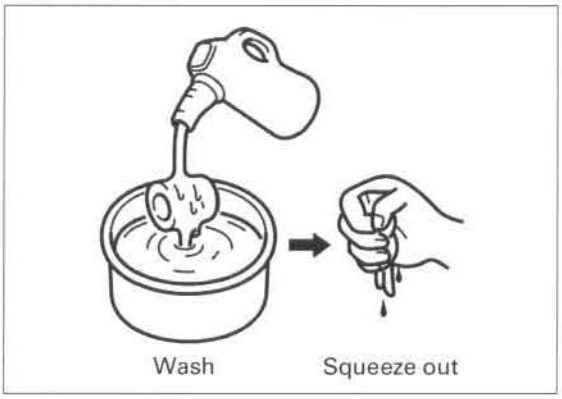
Remove the dust cover from the breather joint.

Clean the dust cover with compressed air if it is dirty.
Install the dust cover in position.



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

Install the sub-air cleaner filter onto the air cleaner joint.

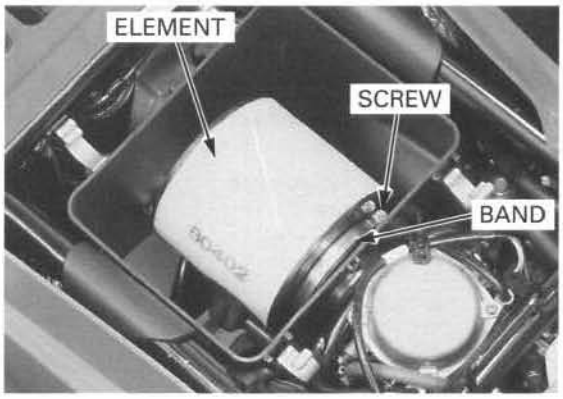


Apply approximately 20 g (0.7 oz) of Pro Honda Foam Filter Oil or equivalent oil from the inside of the element.
Place the element into a plastic bag and spread the oil evenly by hand.

Install the element core into the air cleaner element properly.

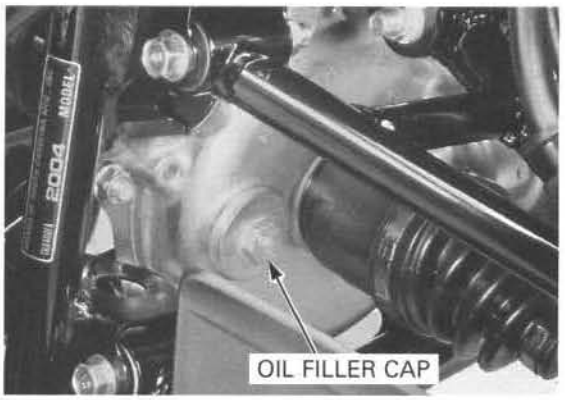
Install the element band onto the air cleaner element and the element assembly over the connecting tube flange of the housing securely.
Tighten the band screw.

Failure to properly tighten the band screw will allow the air cleaner element to fall off and engine damage could result.



Install the oil filler cap and tighten it to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



OIL CHANGE

Place the vehicle on a level surface.

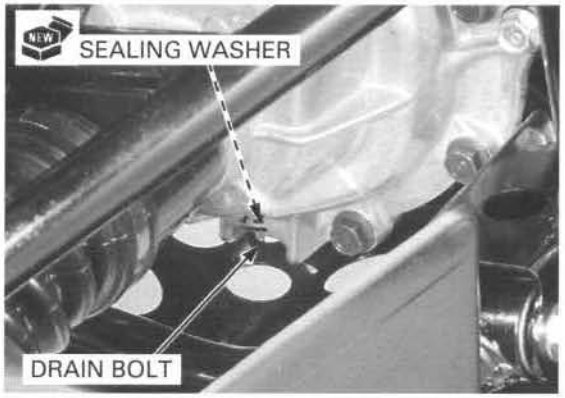
Remove the oil filler cap and drain bolt to drain the oil.
When the oil is completely drained, install the drain bolt with a new sealing washer.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Fill the differential case with the recommended oil (page 4-16).

OIL CAPACITY:
240 cm³ (8.1 US oz, 8.4 Imp oz) at draining
300 cm³ (10.1 US oz, 10.6 Imp oz) at disassembly

Install the oil filler cap.



BRAKE FLUID

- Do not mix different types of fluid, as they are not compatible with each other.
- Do not allow foreign material to enter the system when filling the reservoir.

NOTICE

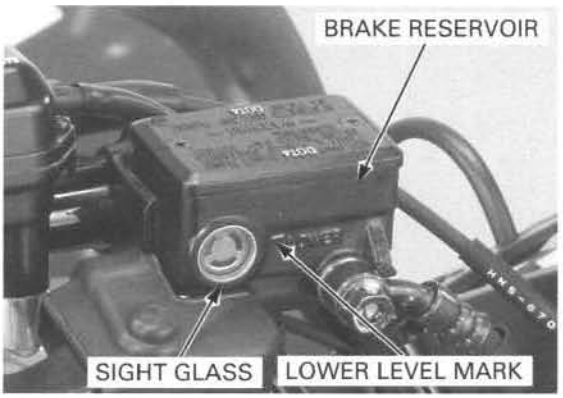
Spilled fluid can damage painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.

FRONT BRAKE

Turn the handlebar to the left side so that the reservoir is level and check the brake reservoir level through the sight glass.

If the level is near the "LOWER" level mark, check the brake shoe wear (page 4-18).

Check the brake system for leaks (page 16-7).



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 and oil cooler.
- For oil level check, oil change and filter replacement, refer to page 4-12.
- 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 oil pump, oil cooler and/or oil hoses have been installed, check for oil leaks.

SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Engine oil capacity	After draining	2.6 liters (2.7 US qt, 2.3 Imp qt)	–
	After draining/filter change	2.8 liters (3.0 US qt, 2.5 Imp qt)	–
	After disassembly	3.3 liters (3.5 US qt, 2.9 Imp qt)	–
Recommended engine oil		Pro Honda GN4 or HP4 (without molybdenum additives) 4-stroke oil (U.S.A. and Canada), or Honda 4-stroke oil (Canada only), or an equivalent motor oil API service classification: SG or Higher except oils labeled as energy conserving on the circular API service label JASO T 903 standard: MA Viscosity: SAE 10W-40	–
Oil pressure 80°C(176°F)	at 1,400 rpm	130 kPa (1.3 kgf/cm^2, 18 psi)	–
	at 4,000 rpm	580 kPa (6.0 kgf/cm^2, 85 psi)	–
Oil pump rotor	Tip clearance	0.15 (0.006)	0.20 (0.008)
	Body clearance	0.15 – 0.22 (0.006 – 0.009)	0.25 (0.010)
	Side clearance	0.02 – 0.09 (0.001 – 0.004)	0.11 (0.004)

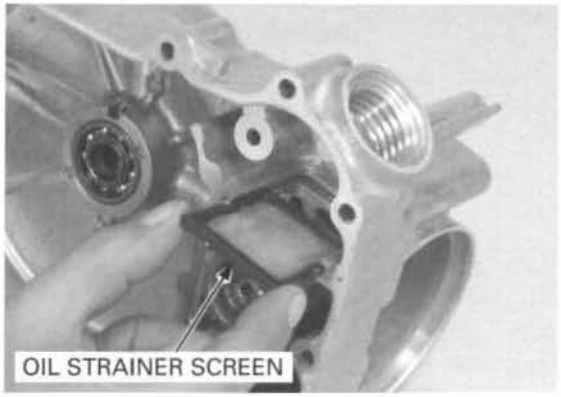
TORQUE VALUES

Front crankcase cover socket bolt	34 N·m (3.5 kgf·m, 25 lbf·ft)	
Oil feed pipe set cap bolt	18 N·m (1.8 kgf·m, 13 lbf·ft)	
Oil pump assembly bolt	6 N·m (0.6 kgf·m, 4.3 lbf·ft)	
Cooling fan mounting nut	3 N·m (0.3 kgf·m, 2.2 lbf·ft)	Apply locking agent to the threads.
Fan motor mounting tapping screw	2 N·m (0.15 kgf·m, 1.1 lbf·ft)	
Oil cooler tapping screw	2 N·m (0.15 kgf·m, 1.1 lbf·ft)	

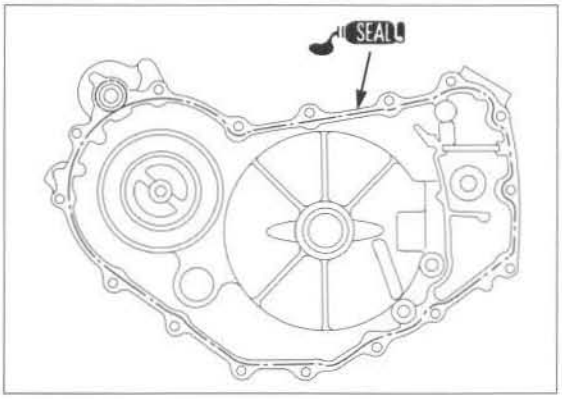
INSTALLATION

Clean the oil strainer.

Install the oil strainer with its narrow side facing the front crankcase cover.



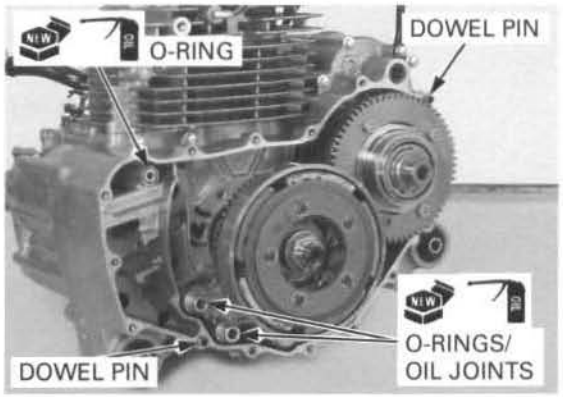
Apply sealant to the mating surface of the front crankcase cover.



Apply clean engine oil to the new oil joint O-rings and install them onto the oil joints.
Install the oil joints into the oil pump holes.

Apply clean engine oil to the new O-ring and install it into the front crankcase groove.

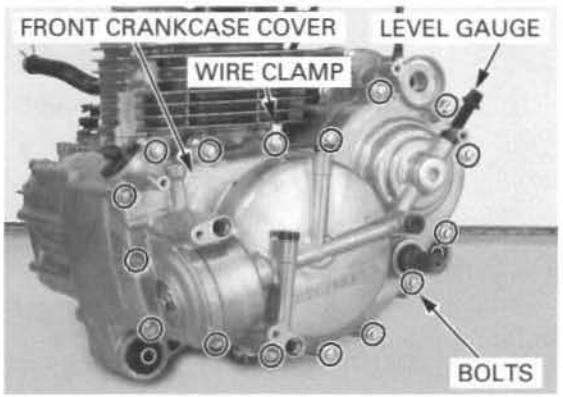
Install the dowel pins.



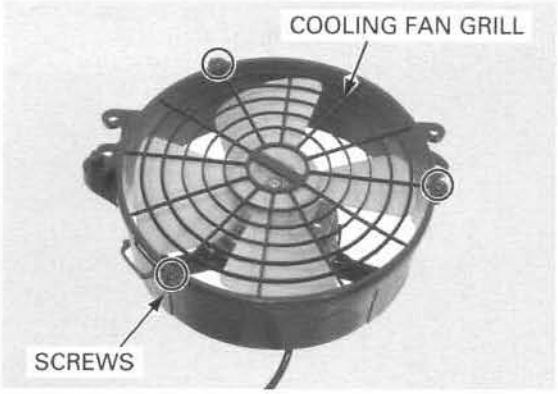
Install the front crankcase cover.
Install the wire clamp and front crankcase cover bolts, tighten the bolts in a crisscross pattern in 2 - 3 steps.

Install the oil level gauge.

Install the automatic control motor assembly (page 24-49).
Install the oil cooler pipes (page 5-24).

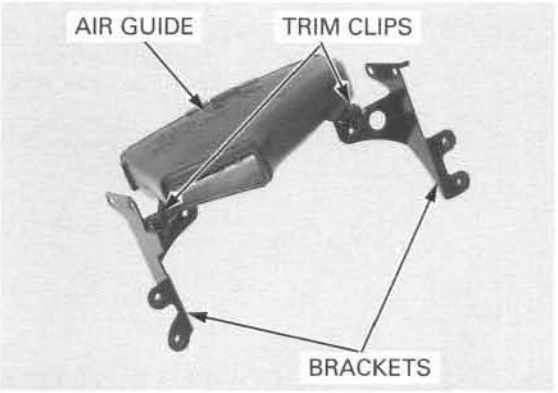


Install the cooling fan grill and tighten the screws.



COOLING FAN INSTALLATION

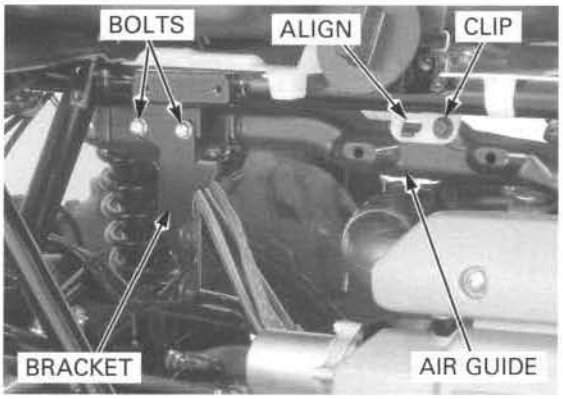
Assemble the cooling fan shroud brackets and air guide, secure them with trim clips.



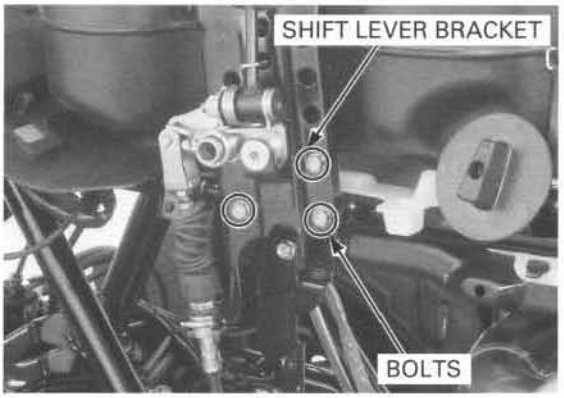
Install the cooling fan shroud bracket/air guide assembly onto the frame while aligning the air guide tab with the top shield.

Install and tighten the bracket mounting bolt.

Secure the air guide with trim clip.



Install the shift lever bracket assembly and tighten the bolts.

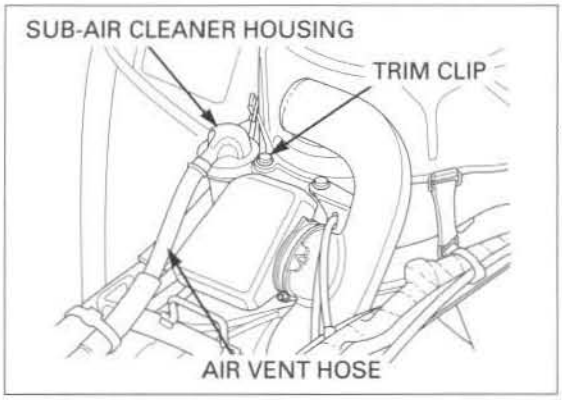


INSTALLATION

Install the sub-air cleaner housing assembly onto the fuel tank, secure it with trim clip.

Connect the air vent hose from the sub-air cleaner housing.

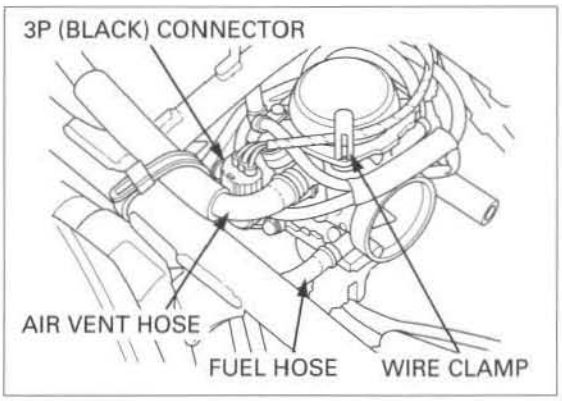
Install the side/fuel tank cover (page 3-4).
Install the seat (page 3-4).



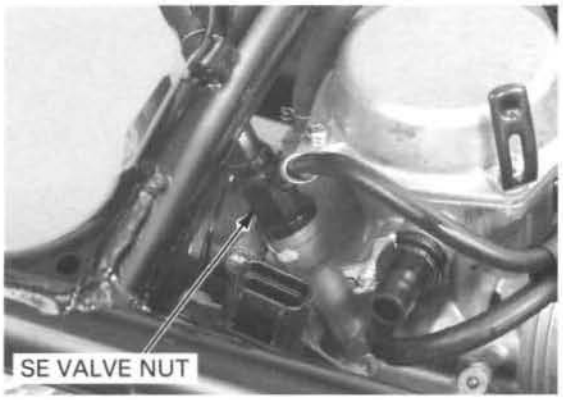
CARBURETOR REMOVAL

Remove the air cleaner housing (page 6-5).

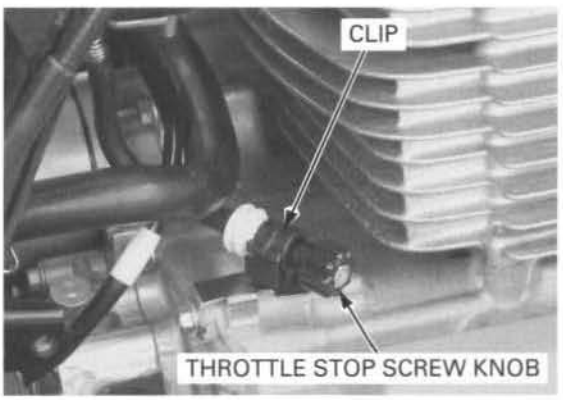
Turn the fuel valve to OFF and disconnect the fuel hose from the carburetor.
Disconnect the air vent hose from the carburetor.
Disconnect the throttle position (TP) sensor 3P (Black) connector.
Remove the throttle position sensor wire from the clamp.



Loosen the SE valve nut and remove the SE valve from the carburetor.



Remove the throttle stop screw knob from the cable clip.



FLOAT LEVEL

Check the float level after checking the float valve, valve seat and float.

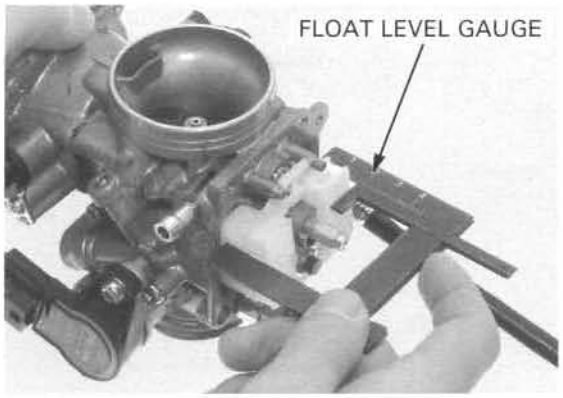
Set the float level gauge so that it is perpendicular to the float chamber face at the highest point of the float.

With the float valve seated and the float arm just touching the valve, measure the float level with the float level gauge.

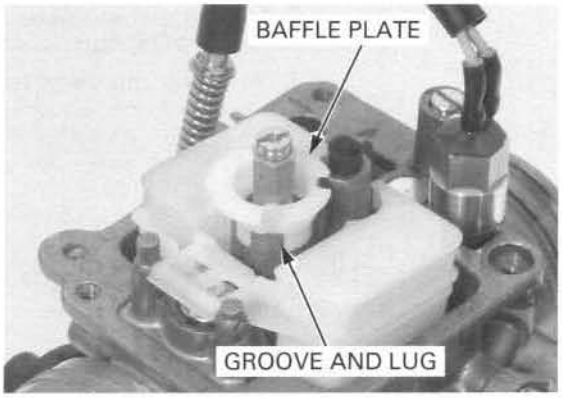
TOOL:
Carburetor float level gauge 07401-0010000

FLOAT LEVEL: 15.9 mm (0.63 in)

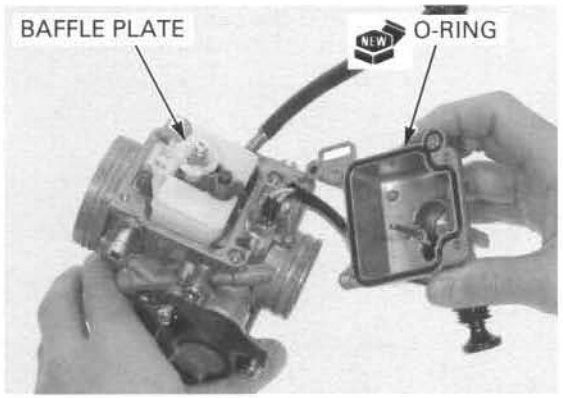
The float level cannot be adjusted.
Replace the float assembly if the float level is out of specification.



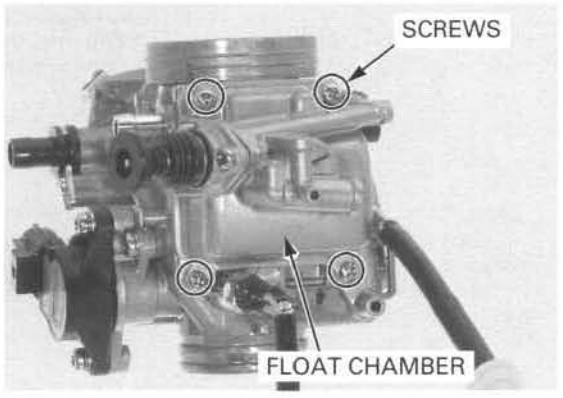
Install the baffle plate by aligning its groove with the lug on the carburetor body as shown.



Install a new O-ring into the float chamber groove.



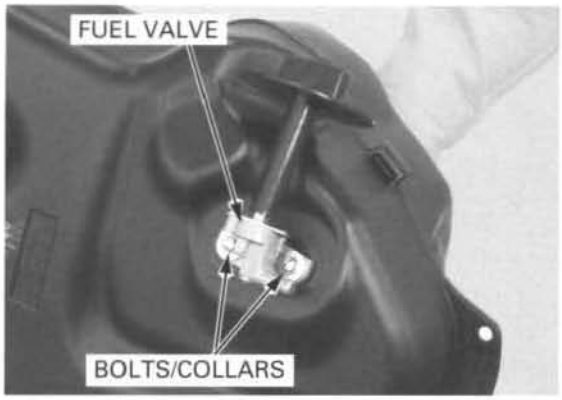
Install the float chamber and tighten the four screws.



FUEL STRAINER SCREEN CLEANING

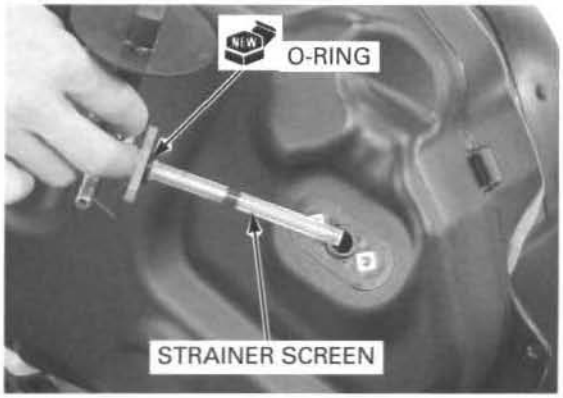
Remove the fuel tank (page 6-25).

Drain the gasoline into an approved fuel container.
Remove the two mounting bolts, collars and the fuel valve.



Remove the O-ring and fuel strainer screen.
Clean the strainer screen with non-flammable or high flash point solvent.
Dry the strainer screen thoroughly.

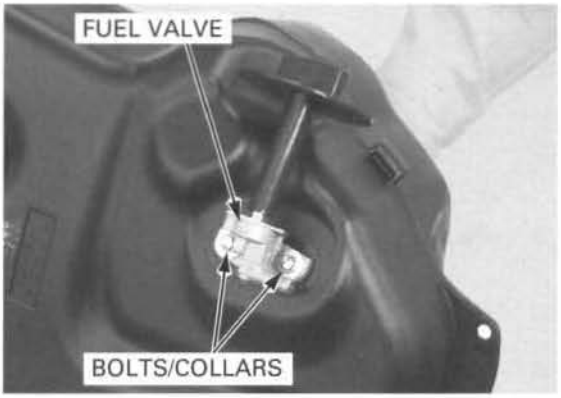
Install the strainer screen and a new O-ring onto the fuel valve.
Install the fuel valve onto the fuel tank.



Install the collars and mounting bolts, and tighten the bolts to the specified torque.

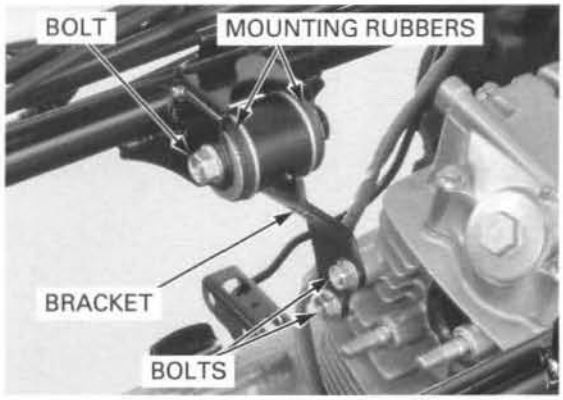
TORQUE: 9 N·m (0.9 kgf·m, 6.5 lbf·ft)

Install the fuel tank (page 6-28).

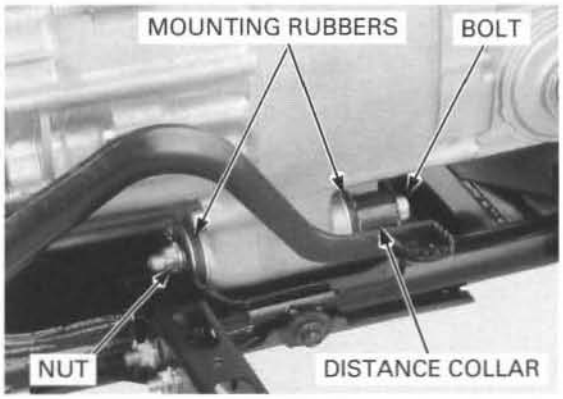


Remove the upper engine hanger bracket bolts (engine side).

Remove the upper engine hanger bracket bolt, mounting rubbers and hanger bracket.

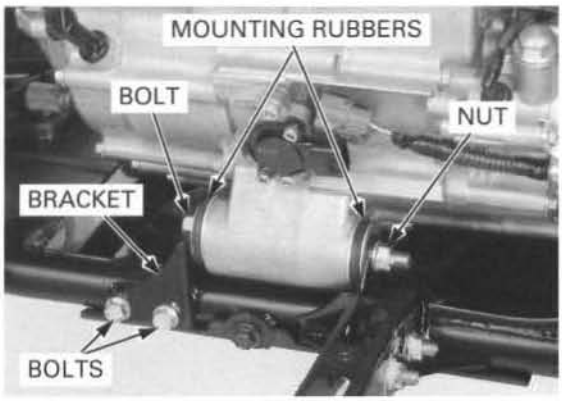


Remove the right engine hanger bolt/nut, distance collar and mounting rubbers.



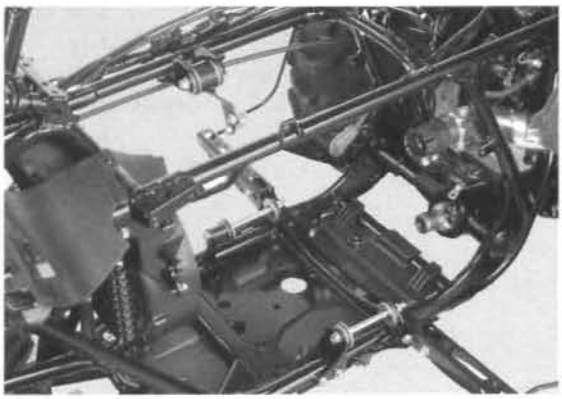
Remove the left engine hanger bolt/nut and mounting rubbers.
Remove the bolts and left engine hanger bracket.

Move the engine forward and disconnect the output shaft from the universal joint.
Remove the engine from the frame toward the left side.



ENGINE INSTALLATION

Note the direction of the engine hanger bolts and nuts.



SERVICE INFORMATION

GENERAL

- This section covers service of the rocker arms, cylinder head, valves and camshaft. These services can be done with the engine installed in the frame.
- When disassembling, mark and store the disassembled parts to ensure that they are reinstalled in their original locations.
- Clean all disassembled parts with cleaning solvent and dry them by blowing them off with compressed air before inspection.
- Rocker arm, valve and camshaft lubricating oil is fed through oil passages in the cylinder head and head cover. Clean the oil passages before assembling cylinder head and head cover.
- Be careful not to damage the mating surfaces when removing the cylinder head cover and cylinder head.

SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder compression at 450 rpm			736 kPa (7.5 kgf/cm², 107 psi)	–
Valve clearance		IN	0.15 (0.006)	–
		EX	0.15 (0.006)	–
Valve, valve guide	Valve stem O.D.	IN	5.475 – 5.490 (0.2156 – 0.2161)	5.45 (0.215)
		EX	5.455 – 5.470 (0.2148 – 0.2154)	5.43 (0.214)
	Valve guide I.D.	IN/EX	5.500 – 5.512 (0.2165 – 0.2170)	5.53 (0.218)
	Stem-to-guide clearance	IN	0.010 – 0.037 (0.0004 – 0.0015)	0.12 (0.005)
		EX	0.030 – 0.057 (0.0012 – 0.0022)	0.14 (0.006)
	Valve guide projection above cylinder head	IN	15.8 – 16.0 (0.62 – 0.63)	–
		EX	15.8 – 16.0 (0.62 – 0.63)	–
	Valve seat width	IN/EX	1.0 – 1.1 (0.039 – 0.043)	1.4 (0.06)
Valve spring	Free length	Inner	37.8 (1.49)	37.04 (1.458)
		Outer	42.7 (1.68)	41.85 (1.648)
Rocker arm	Arm I.D.	IN/EX	12.000 – 12.018 (0.4724 – 0.4731)	12.05 (0.474)
	Shaft O.D.	IN/EX	11.964 – 11.984 (0.4710 – 0.4718)	11.92 (0.469)
	Arm-to-shaft clearance	IN/EX	0.016 – 0.054 (0.0006 – 0.0021)	0.08 (0.003)
Camshaft and cam follower	Cam lobe height	IN	35.9795 – 36.2195 (1.41651 – 1.42600)	35.84 (1.411)
		EX	35.9245 – 36.1654 (1.41435 – 1.42383)	35.79 (1.409)
	Cam follower O.D.	IN/EX	22.467 – 22.482 (0.8845 – 0.8851)	22.46 (0.884)
	Follower bore I.D.	IN/EX	22.510 – 22.526 (0.8862 – 0.8868)	22.54 (0.887)
	Follower-to-bore clearance	IN/EX	0.028 – 0.059 (0.0011 – 0.0023)	0.07 (0.003)
Cylinder head warpage			–	0.10 (0.004)

TORQUE VALUES

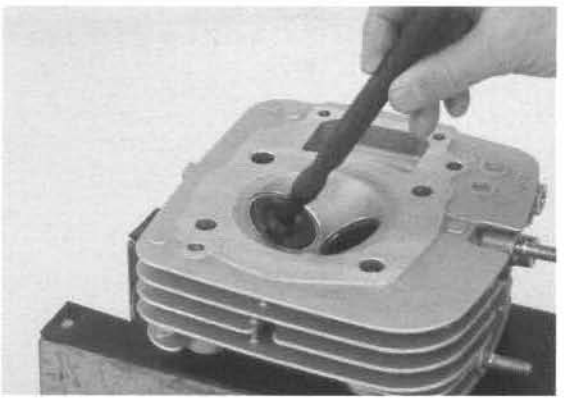
Cylinder head flange cap nut	39 N·m (4.0 kgf·m, 29 lbf·ft)	Apply oil to the threads and seating surface
Cam chain tensioner pivot bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	Apply a locking agent to the threads
Timing hole cap	10 N·m (1.0 kgf·m, 7 lbf·ft)	
Exhaust pipe stud bolt	See page 1-15	
Engine hanger bracket bolt (frame side)	54 N·m (5.5 kgf·m, 40 lbf·ft)	
Engine hanger bracket bolt (engine side)	32 N·m (3.3 kgf·m, 24 lbf·ft)	

VALVE SEAT INSPECTION/REFACING

INSPECTION

Clean all intake and exhaust valves thoroughly to remove carbon deposits.

Apply a light coat of Prussian Blue to each valve seat.
Tap the valve against the valve seat several times without rotating the valve, to check for proper valve seat contact.

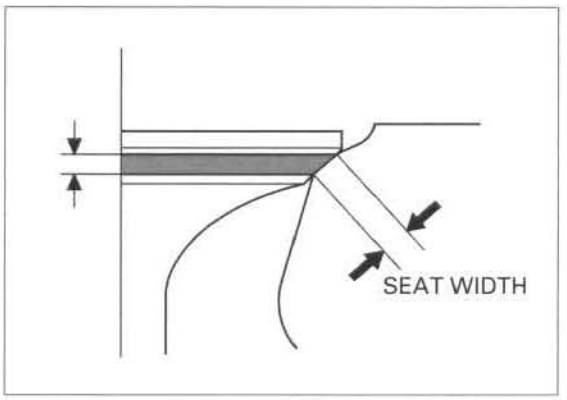


The valve cannot be ground. If the valve face is burned or badly worn or if it contacts the seat unevenly, replace the valve.

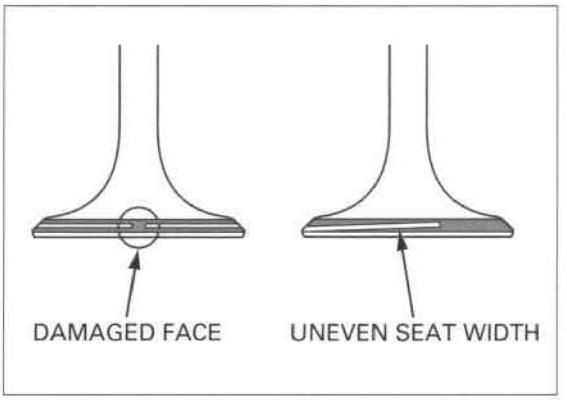
Remove the valve and inspect the valve seat face. The valve seat contact should be within the specified width and even all around the circumference.

STANDARD: 1.0 – 1.1 mm (0.039 – 0.043 in)
SERVICE LIMIT: 1.4 mm (0.06 in)

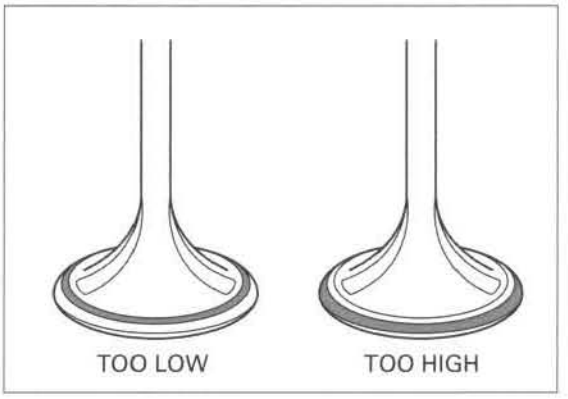
If the valve seat width is not within specification, reface the valve seat.



Inspect the valve face for:
- Damaged face:
  – Replace the valve and reface the valve seat.
- Uneven seat width:
  – Replace the valve and reface the valve seat.



- Contact area (too high or too low)
  – Reface the valve seat.



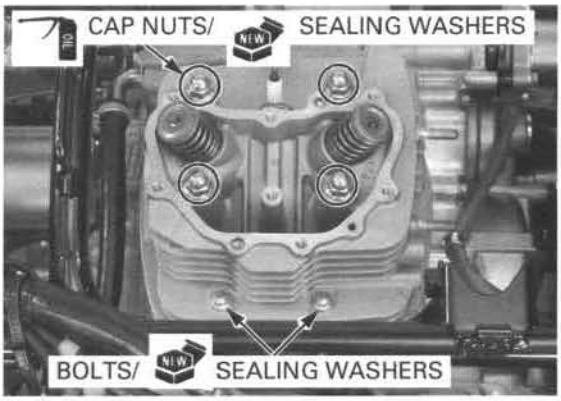
Install the cylinder head on the cylinder.

Install the four new sealing washers and cap nuts.
Install two new sealing washers and cylinder head mounting bolts.

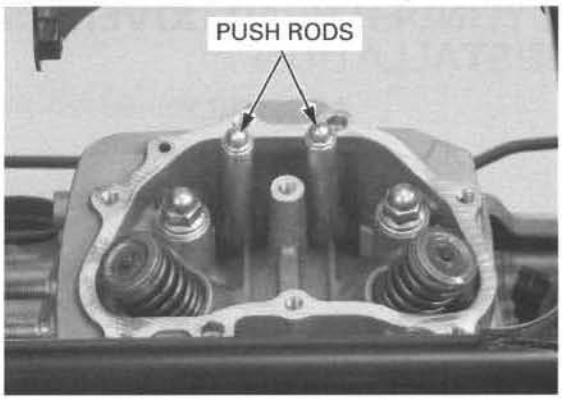
Apply oil to the cylinder head cap nut threads and seating surfaces.
Tighten the cap nuts to the specified torque.

TORQUE: 39 N·m (4.0 kgf·m, 29 lbf·ft)

Tighten the cylinder head mounting bolts securely.



Install the push rods.



Install the mounting rubbers on the upper engine hanger bushing with the large O.D. side facing in.
Install the upper engine hanger bracket and the hanger bolt (frame side).

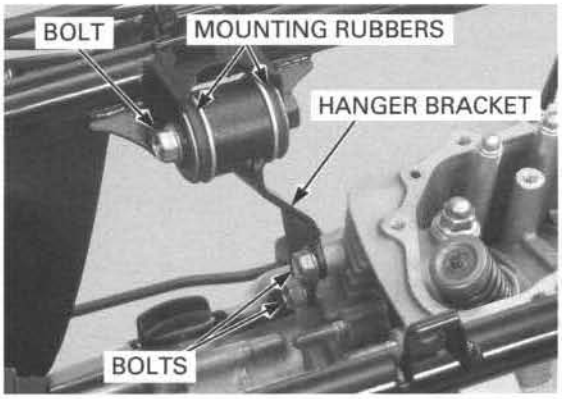
Install the upper engine hanger bolt (engine side).

Tighten the engine side hanger bracket bolts to the specified torque.

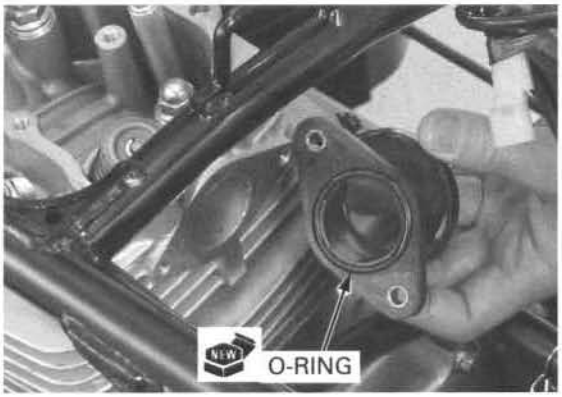
TORQUE: 32 N·m (3.3 kgf·m, 24 lbf·ft)

Tighten the frame side hanger bracket bolt to the specified torque.

TORQUE: 54 N·m (5.5 kgf·m, 40 lbf·ft)



Install a new O-ring into the carburetor insulator groove.



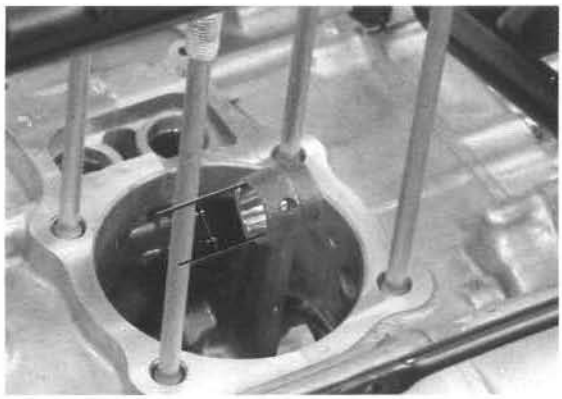
CONNECTING ROD

Measure the connecting rod small end I.D.

SERVICE LIMIT: 18.07 mm (0.711 in)

Calculate the connecting rod-to-piston pin clearance.

SERVICE LIMIT: 0.10 mm (0.004 in)



CYLINDER STUD BOLT REPLACEMENT

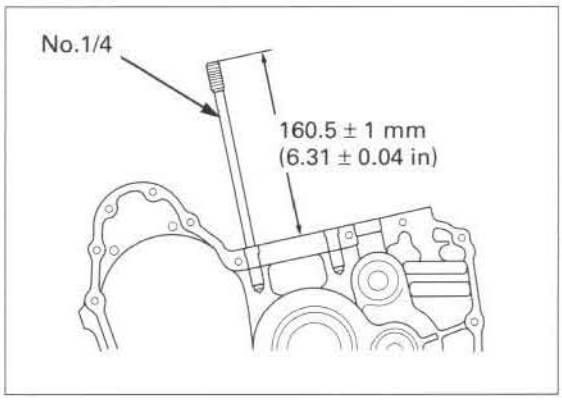
Thread two nuts onto the stud and tighten them together, and use a wrench on them to turn the stud bolt out.

Install a new stud bolt as shown.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Be sure to verify the stud height from the crankcase surface.

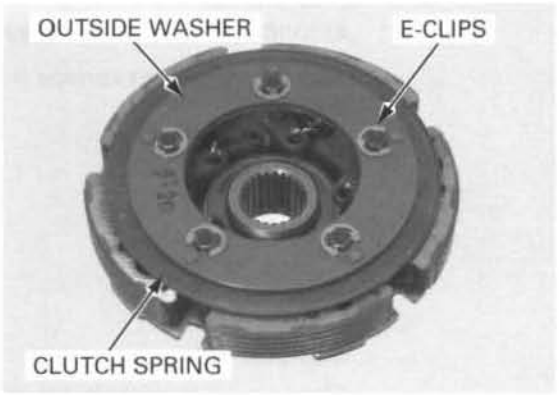
Adjust the height if necessary.



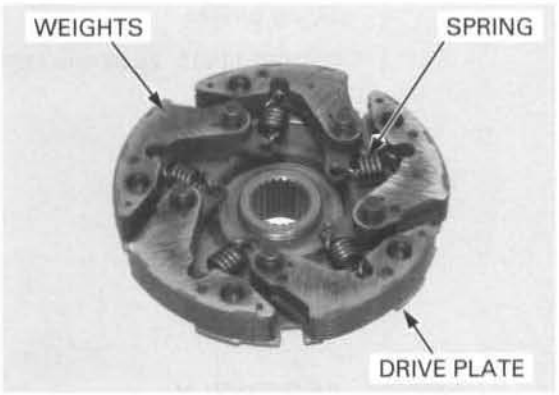
WEIGHT LINING/WEIGHT SPRING/CLUTCH SPRING

Remove the E-clips using a screw driver.

Remove the outside washer, clutch spring and inside washer.

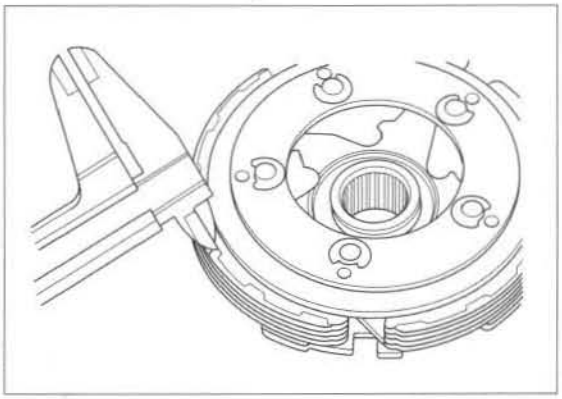


Remove the clutch weights and springs from the drive plate.



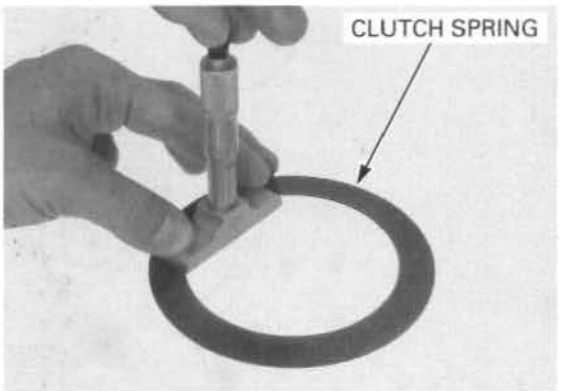
Measure the weight lining thickness.

SERVICE LIMIT: 2.0 mm (0.08 in)

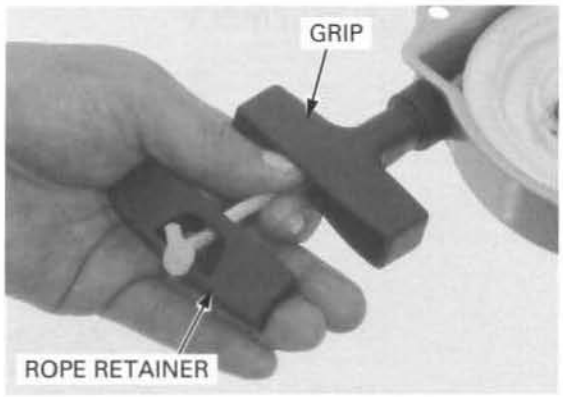


Measure the height of the clutch spring.

SERVICE LIMIT: 3.00 mm (0.118 in)



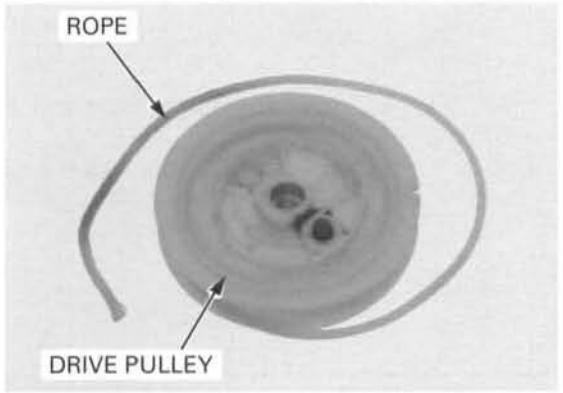
Untie the starter rope and remove the rope retainer and starter grip.
Release the starter rope slowly.



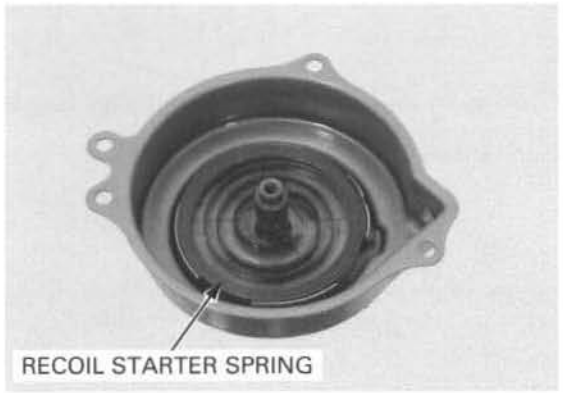
Wear eye protection and use care when removing the drive pulley and starter spring. The spring can pop out of the housing.

Remove the starter drive pulley.

Remove the starter rope from the drive pulley.
Check the starter rope for wear or damage.



Check the recoil starter spring.
Remove the spring and replace it if it is broken.



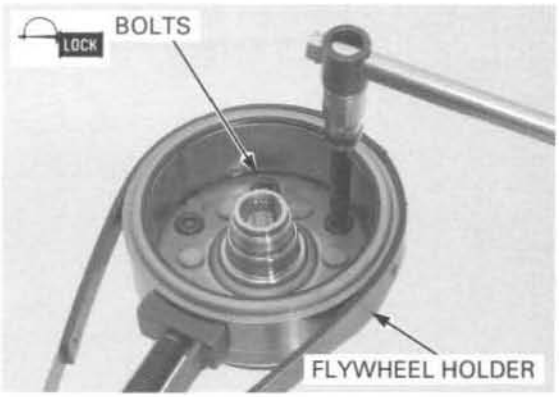
Apply locking agent to the starter one-way clutch bolt threads and install them.

Hold the flywheel with the special tool and tighten the bolts to the specified torque.

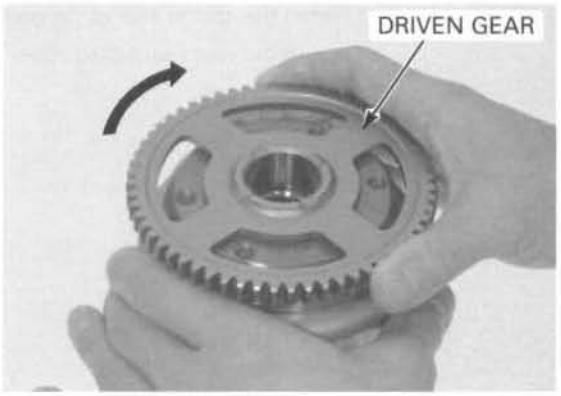
TOOL:

Flywheel holder	**07725-0040000 or equivalent commercially available in U.S.A.**

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)

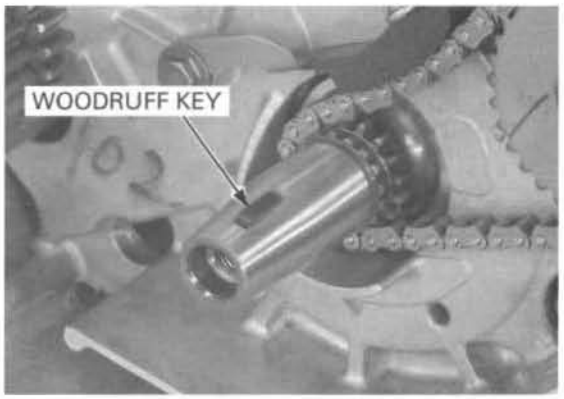


Install the starter driven gear while turning it clockwise.

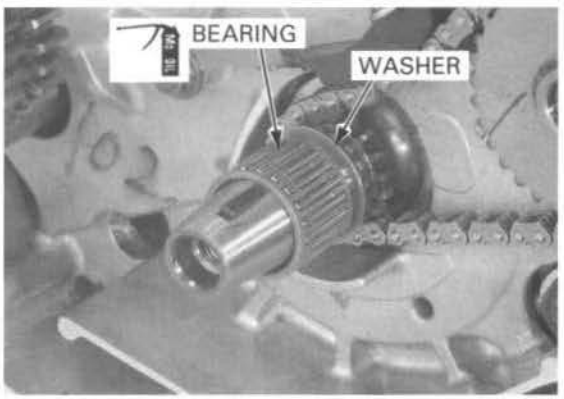


INSTALLATION

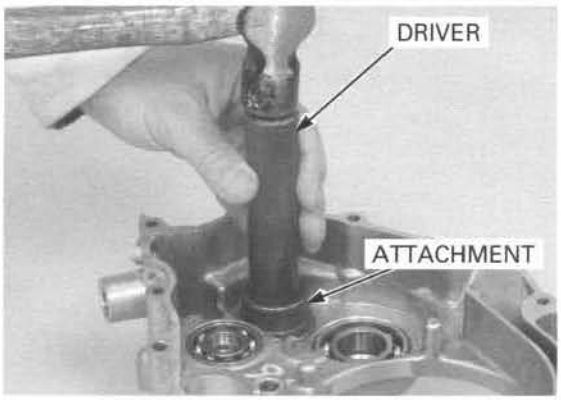
Install the woodruff key into the key groove.



Lubricate the needle bearing with molybdenum oil solution.
Install the washer and bearing onto the crankshaft.
Clean any oil from the tapered portion of the crankshaft and flywheel.



Drive the each bearing into the rear crankcase cover using the following tools.

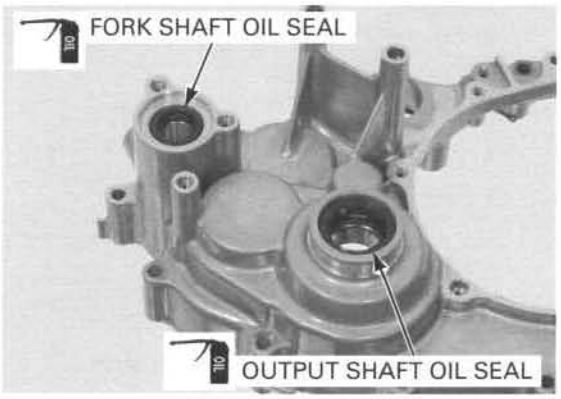


TOOLS:

Mainshaft bearing:	
Driver	**07749-0010000**
Attachment, 37 x 40 mm	**07746-0010200**
Pilot, 17 mm	**07746-0040400**
Countershaft bearing:	
Driver	**07749-0010000**
Attachment, 37 x 40 mm	**07746-0010200**
Pilot, 15 mm	**07746-0040300**
Output shaft bearing:	
Driver	**07749-0010000**
Attachment, 52 x 55 mm	**07746-0010400**
Pilot, 25 mm	**07746-0040600**

Apply oil to the output shaft oil seal and shift fork shaft oil seal lips.

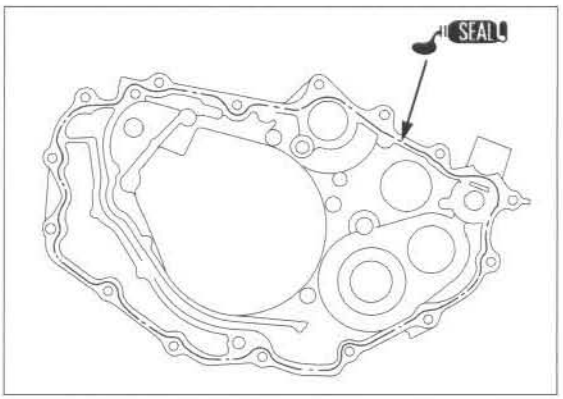
Install the each oil seal until it seats in the crankcase cover.



INSTALLATION

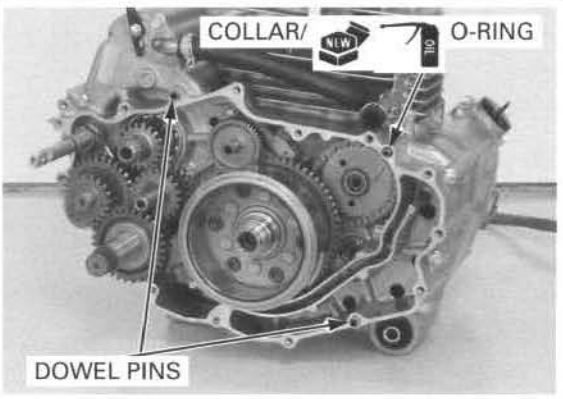
Blow compressed air through the oil passage in the rear crankcase cover.
Clean the crankcase and cover mating surfaces.

Apply sealant to the mating surface of the rear crankcase cover.



Install the two dowel pins.

Apply oil to a new O-ring
Install O-ring and oil pass collar.



SERVICE INFORMATION

GENERAL

- The crankcase halves must be separated to service the crankshaft and automatic transmission (mainshaft). To service these parts, the engine must be removed from the frame (page 7-4).
- Be careful not to damage the crankcase mating surfaces when servicing.

SPECIFICATIONS

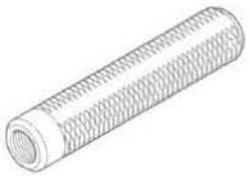
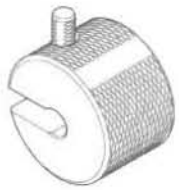
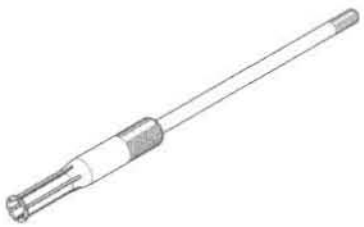
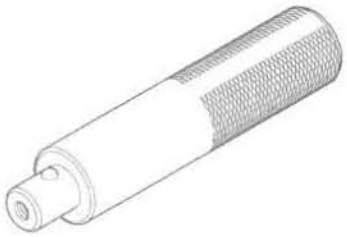
Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Crankshaft	Runout	–	0.05 (0.002)
	Big end side clearance	0.05 – 0.65 (0.002 – 0.026)	0.8 (0.03)
	Big end radial clearance	0.006 – 0.018 (0.0002 – 0.0007)	0.05 (0.002)

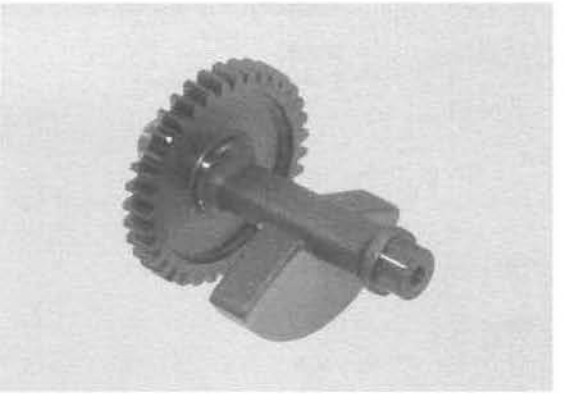
TORQUE VALUES

Primary driven gear socket bolt	17 N·m (1.7 kgf·m, 12 lbf·ft)	Apply oil to the threads and seating surface
Angle sensor mounting bolt	6 N·m (0.6 kgf·m, 4.3 lbf·ft)	
Angle sensor bracket bolt	10 N·m (1.0 kgf·m, 7 lbf·ft)	

TOOLS

Bearing remover 07936-3710300 	Remover handle 07936-3710100 	Remover weight 07741-0010201  or 07936-3710200 or 07936-371020A (U.S.A. only)
Bearing remover set 07936-3710600 	Driver 07749-0010000 	Attachment, 32 x 35 mm 07746-0010100 

Check the balancer gear for wear or damage.

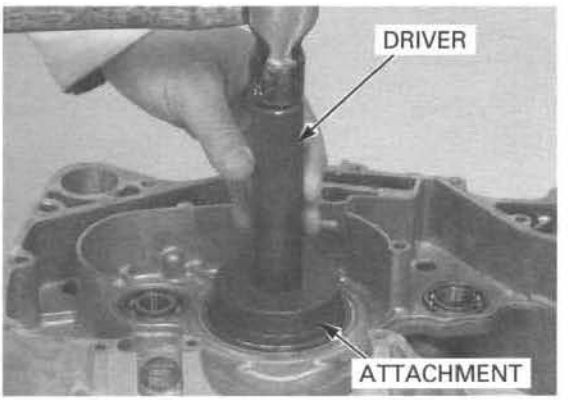


CRANKSHAFT AND BALANCER INSTALLATION

Apply engine oil to a new front crankshaft bearing. Drive the crankshaft bearing into the front crankcase with the marking side facing up.

TOOLS:

Driver	**07749–0010000**
Attachment, 72 x 75 mm	**07746-0010600**

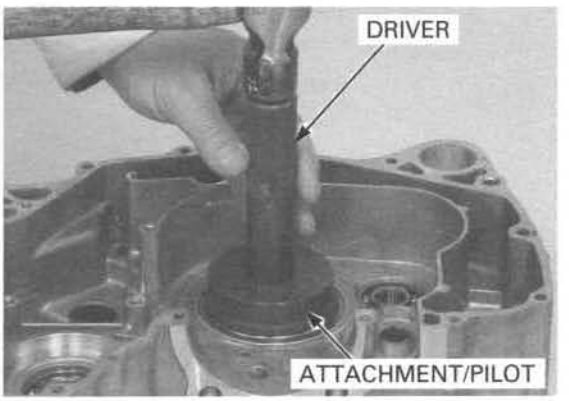


Apply engine oil to a new rear crankshaft bearing. Drive the crankshaft bearing into the rear crankcase with the marking side facing up.

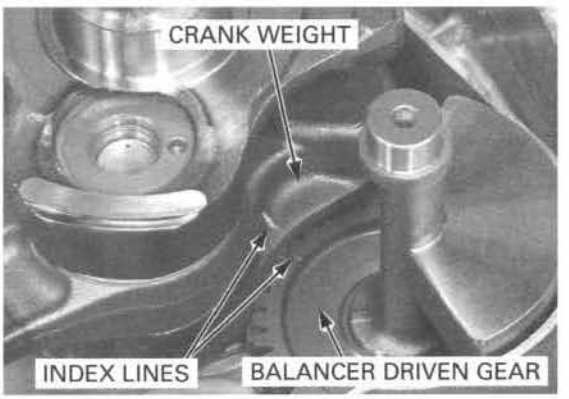
TOOLS:

Driver	**07749–0010000**
Attachment, 72 x 75 mm	**07746-0010600**

For other bearing replacement in the crankcase halves, see page 13-14.



Engage the crankshaft and balancer by aligning the index lines on the sides of the balancer drive and driven gears as shown, and install them together into the rear crankcase.



TROUBLESHOOTING

Hard steering
- Steering shaft holder too tight
- Damaged steering shaft bearing/bushing
- Insufficient tire pressure

Steers one side or does not track straight
- Incorrect wheel alignment
- Unequal tire pressure
- Bent tie-rod, suspension arm or frame
- Worn or damaged knuckle bearing
- Weak shock absorber

Front wheel wobbling
- Bent rim
- Worn or damaged knuckle bearing
- Faulty tire
- Wheel hub nut not tightened properly

Soft suspension
- Weak shock absorber spring
- Faulty shock absorber damper

Hard suspension
- Bent shock absorber damper rod
- Improperly installed suspension arms
- Faulty suspension arm bushings

Front suspension noise
- Loose front suspension fasteners
- Damaged suspension components

ASSEMBLY

Install the tire onto the rim where the rim shoulder width is the narrowest, to simplify installation.

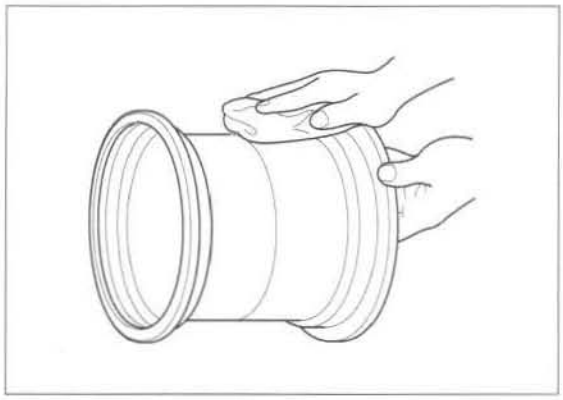
Clean the rim bead seat and flanges.

Use only water as a lubricant when removing or mounting tires. Soap or some mounting lubricants may leave a slippery residue which can cause the tire to shift on the rim and lose air pressure during riding.

Apply clean water to the rim flanges, bead seat and base.

Install the valve core in the valve stem.
Install the tire with the arrow mark facing in the normal rotating direction.
Inflate the tire to seat the tire bead.

Deflate the tire. Wait 1 hour and inflate the tire to the specified pressure.



RECOMMENDED TIRE PRESSUE:

Standard:	**25 kPa (0.25 kgf/cm², 3.6 psi)**
Minimum:	**22 kPa (0.22 kgf/cm², 3.2 psi)**
Maximum:	**28 kPa (0.28 kgf/cm², 4.0 psi)**
With cargo:	**25 kPa (0.25 kgf/cm², 3.6 psi)**

Check for air leaks and install the valve cap.

WHEEL HUB/KNUCKLE

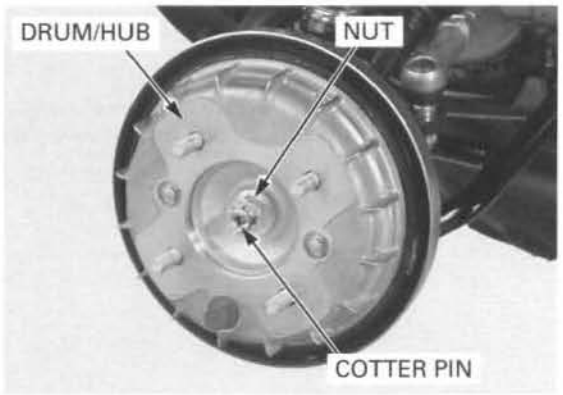
REMOVAL

Do not get grease onto the brake shoes and drum, or stopping power will be reduced.

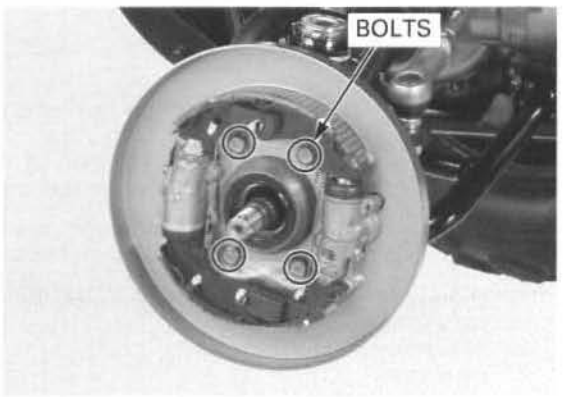
Remove the front wheel (page 14-12).

Remove and discard the cotter pin.
Remove the wheel hub nut, brake drum and wheel hub.

For waterproof seal inspection, see page 16-14.

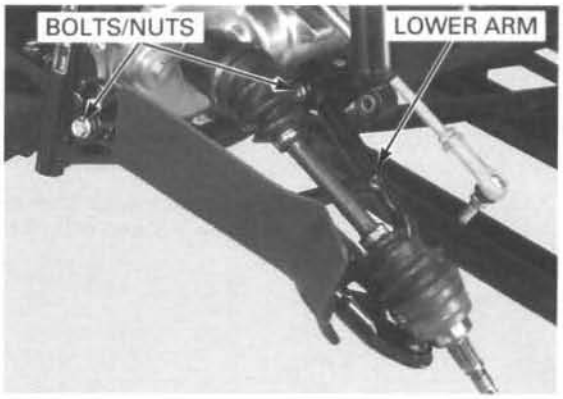


Loosen the four brake panel bolts.



INSTALLATION

Install the lower arm onto the frame, then install the pivot bolts from the front side.
Install the new pivot nuts.

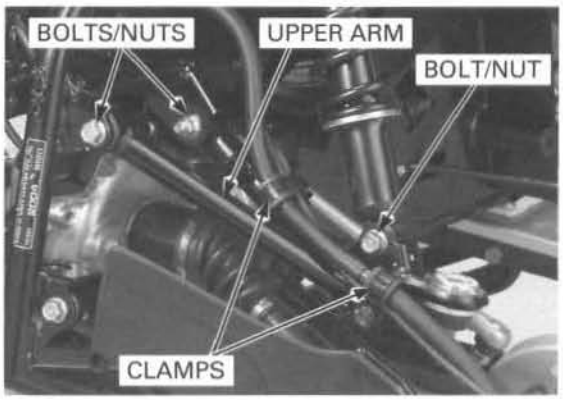


Install the upper arm onto the frame, then install the pivot bolts from the outside as shown.
Install the new pivot nuts.

Install the shock absorber lower mounting bolt and new nut.

Install the brake hose clamps and tighten the bolts to the specified torque.

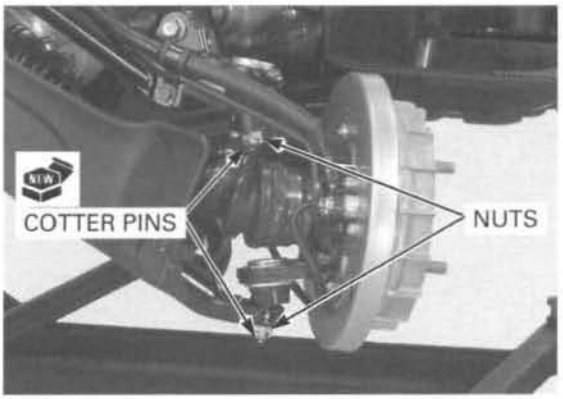
TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



Install the brake drum/knuckle assembly onto the upper and lower arms and install the castle nuts. Tighten the castle nuts to the specified torque and further tighten until their grooves align with the cotter pin holes.

TORQUE: 29 N·m (3.0 kgf·m, 22 lbf·ft)

Install new cotter pins.



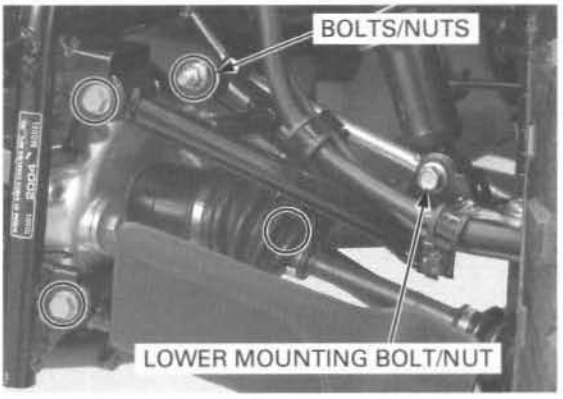
Remove the support and place the vehicle on level ground.

Tighten the upper and lower arm pivot nuts to the specified torque.

TORQUE: 44 N·m (4.5 kgf·m, 33 lbf·ft)

Tighten the shock absorber lower mounting nut to the specified torque.

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)



SERVICE INFORMATION

GENERAL

⚠ CAUTION

Frequent inhalation of brake lining or pad dust, regardless of material composition could be hazardous to your health.
- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

- This section covers service of the rear wheel and rear suspension.
- For tire information, refer to (page 14-12).
- For brake system service, refer to page 16-3
- For rear driving mechanism service, refer to page 18-3.
- A jack or other support is required to support the vehicle.
- Use genuine Honda replacement bolts and nuts for all suspension pivots and mounting points.
- When using the lock nut wrench, use a deflecting beam type torque wrench 20 inches long. The lock nut wrench increases the torque wrench's leverage, so the torque wrench reading will be less than the torque actually applied to the lock nut. The specification given is the actual torque applied to the lock nut, not the reading on the torque wrench. Do not overtighten the lock nut. The specification later in the text gives both actual and indicated.

SPECIFICATIONS

ITEM		STANDARD	SERVICE LIMIT
Minimum tire tread depth		–	4.0 mm (0.16 in)
Cold tire pressure	Standard	25 kPa (0.25 kgf/cm², 3.6 psi)	–
	Minimum	22 kPa (0.22 kgf/cm², 3.2 psi)	–
	Maximum	28 kPa (0.28 kgf/cm², 4.0 psi)	–
	With cargo	25 kPa (0.25 kgf/cm², 3.6 psi)	–

TORQUE VALUES

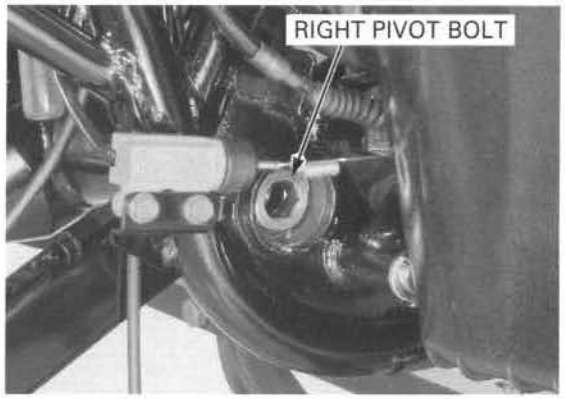
Rear wheel nut	64 N·m (6.5 kgf·m, 47 lbf·ft)	
Rear wheel hub nut	137 N·m (14.0 kgf·m, 101 lbf·ft)	*Castle nut
Shock absorber upper mounting flange bolt/nut	44 N·m (4.5 kgf·m, 33 lbf·ft)	Self-lock nut; replace with a new one
Shock absorber lower mounting flange bolt	44 N·m (4.5 kgf·m, 33 lbf·ft)	
Swingarm left pivot bolt	118 N·m (12.0 kgf·m, 87 lbf·ft)	
Swingarm right pivot bolt	4 N·m (0.4 kgf·m, 2.9 lbf·ft)	
Swingarm right pivot lock nut	118 N·m (12.0 kgf·m, 87 lbf·ft)	
Final gear case mounting flange bolt	54 N·m (5.5 kgf·m, 40 lbf·ft)	
Left axle housing mounting bolt	44 N·m (4.5 kgf·m, 33 lbf·ft)	Self-lock nut; replace with a new one
Skid plate mounting flange bolt	32 N·m (3.3 kgf·m, 24 lbf·ft)	
Trailer hitch mounting bolt/nut	44 N·m (4.5 kgf·m, 33 lbf·ft)	Self-lock nut; replace with a new one

*Castle nut: Tighten to the specified torque then tighten to position suitable for cotter pin hole alignment.

Tighten the right pivot bolt to the specified torque using a commercially available tool.

TORQUE: 4 N·m (0.4 kgf·m, 2.9 lbf·ft)

Move the swingarm up and down several times. Retighten the right pivot bolt to the specified torque (see above).



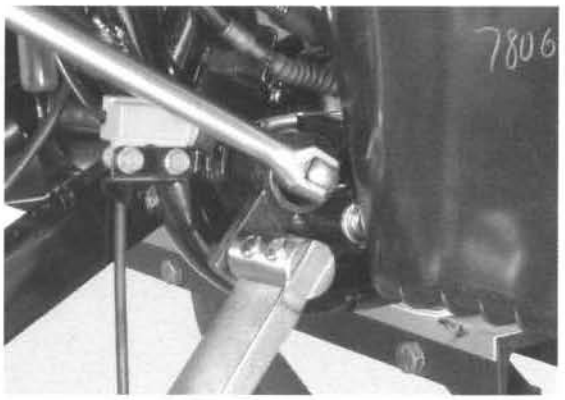
Install the right pivot lock nut.

Tighten the right pivot lock nut to the specified torque using the special tool while holding the pivot bolt.

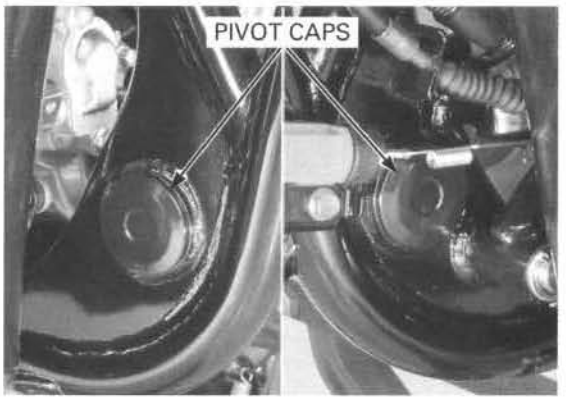
TOOL:
Pivot adjusting wrench 07908-4690003

Refer to torque wrench reading information on page 15-3 "SERVICE INFORMATION".

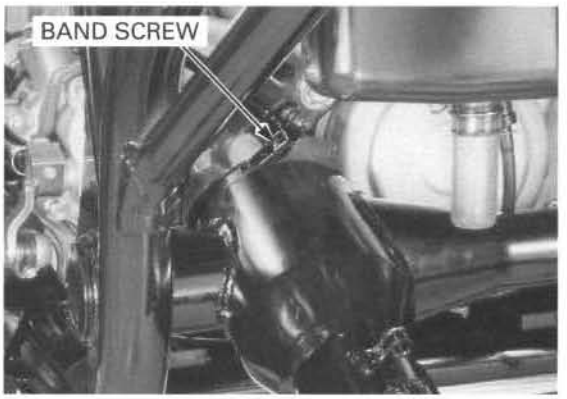
TORQUE:
Actual: 118 N·m (12.0 kgf·m, 87 lbf·ft)
Indicated: 107 N·m (10.9 kgf·m, 79 lbf·ft)



Install the swingarm pivot caps each side.

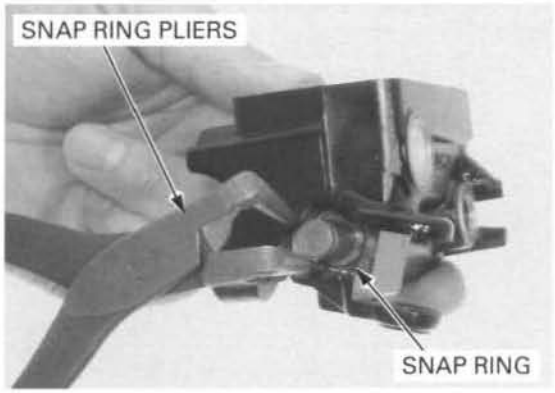


Attach the swingarm boot to the swingarm and tighten the boot band screw securely.

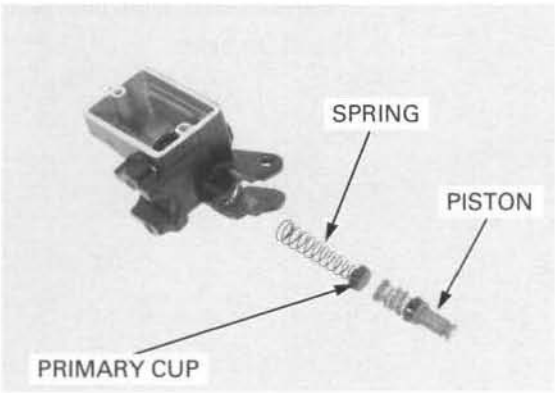


Remove the snap ring from the master cylinder using the special tool.

TOOL:
Snap ring pliers **07914-SA50001**

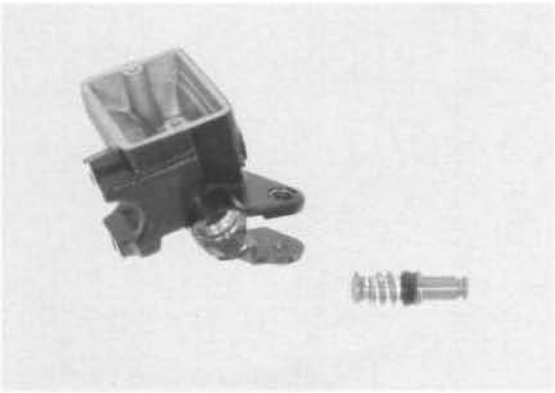


Remove the master piston, primary cup and spring.



INSPECTION

Check the piston boot, primary cup and secondary cup for fatigue or damage.
Check the master cylinder and piston for abnormal scratches.



ASSEMBLY

NOTE:

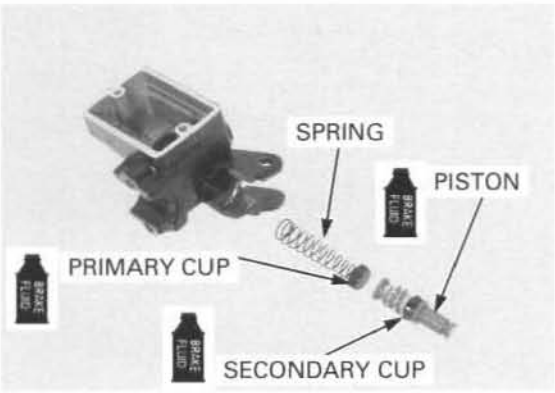
- Keep the piston, cups, spring, snap ring and boot as a set; do not substitute individual parts.

Coat all parts with clean brake fluid before assembly.

When installing the cups, do not allow the lips to turn inside out.

Install the secondary cup into the master piston groove.

Install the primary cup onto the tip of spring.
Install the spring/primary cup and master piston into the master cylinder.



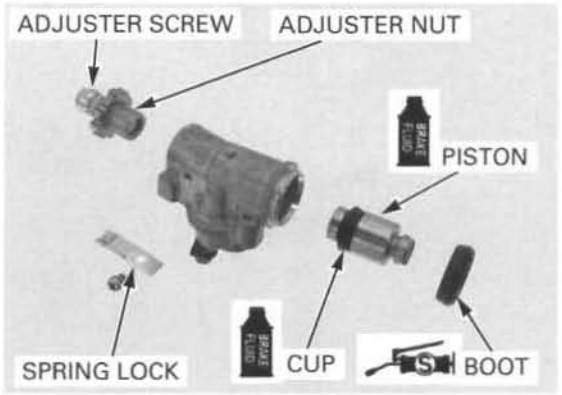
Coat the piston and cup with clean brake fluid.

Do not allow the piston cup lip to turn inside out.

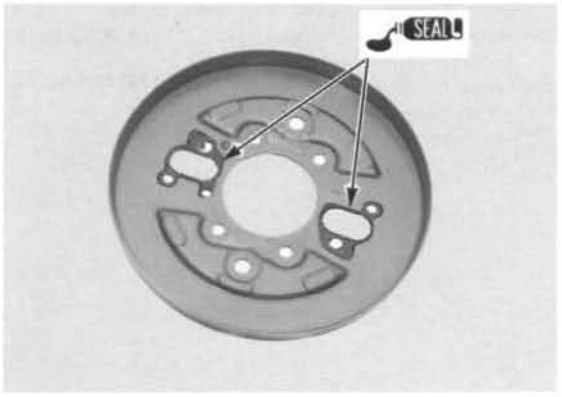
Install the piston into the wheel cylinder.

Apply silicone grease to the boot grooves in the piston and cylinder body.
Install the piston boot onto the cylinder and piston grooves properly.
Apply silicone grease to the adjuster nut.

Apply silicone grease to the adjuster screw threads and adjuster nut spindle outer surface.
Install the adjuster into the master cylinder.

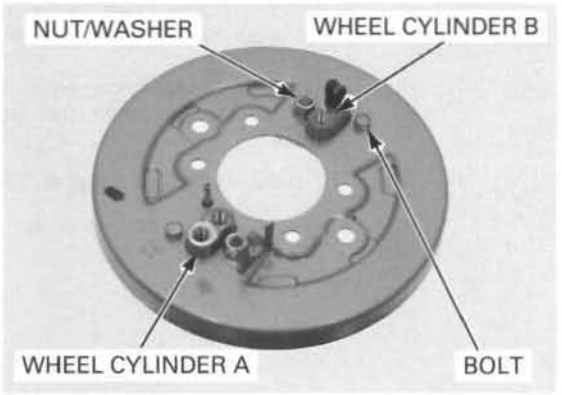


Apply sealant to the cylinder's mounting locations on the brake panel.



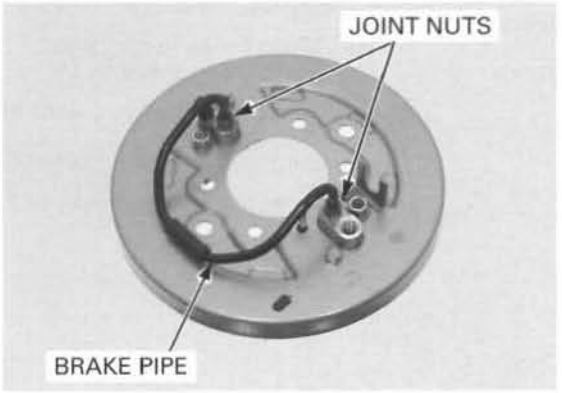
Install the cylinder assembly A and B, bolts, washers and nuts.
Tighten the nuts and bolts to the specified torque.

TORQUE:
8 mm nut: 17 N·m (1.7 kgf·m, 12 lbf·ft)
6 mm bolt: 8 N·m (0.8 kgf·m, 5.8 lbf·ft)

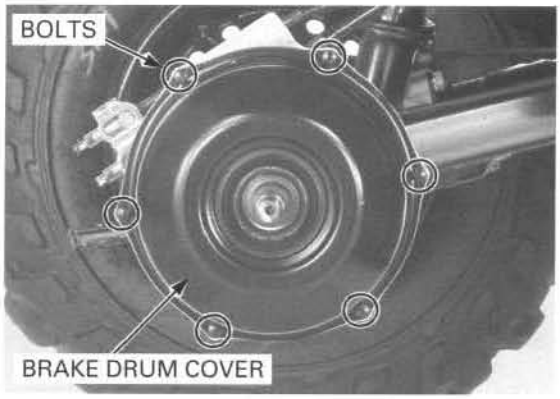


Install the brake pipe as shown by tightening the joint nuts to the specified torque.

TORQUE:17 N·m (1.7 kgf·m, 12 lbf·ft)

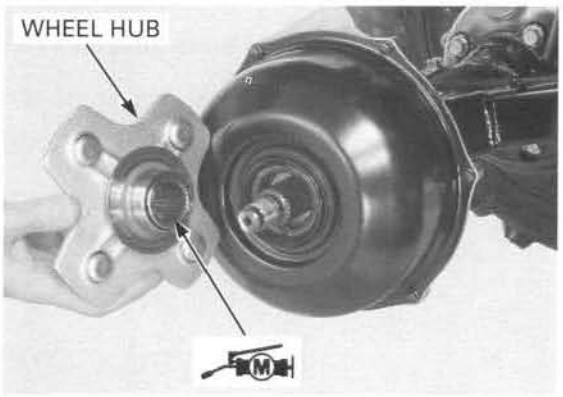


Install the brake drum cover and tighten the bolts securely.



Apply molybdenum disulfide grease to the wheel hub dust seal and axle splines.

Install wheel hub onto the rear axle.

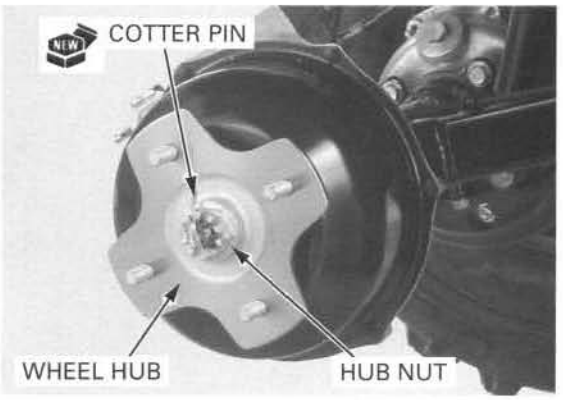


Install the hub nut and tighten it to the specified torque.

TORQUE: 137 N·m (14.0 kgf·m, 101 lbf·ft)

Further tighten the hub nut until its grooves align with the cotter pin hole in the axle shaft.
Install a new cotter pin and secure the hub nut.

Install the rear wheel (page 15-6).
Adjust the rear brake lever and pedal free play (page 4-18).



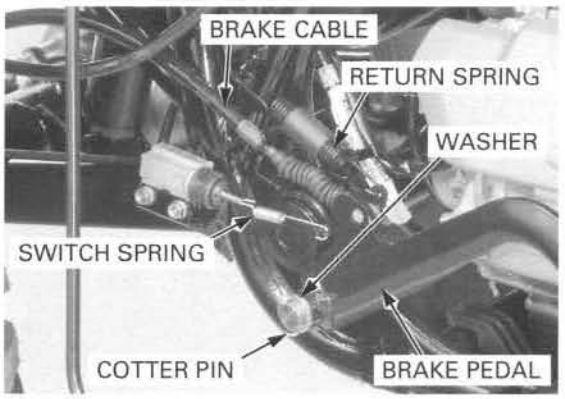
BRAKE PEDAL

REMOVAL

Remove the brake cables from the brake arm (page 16-23).

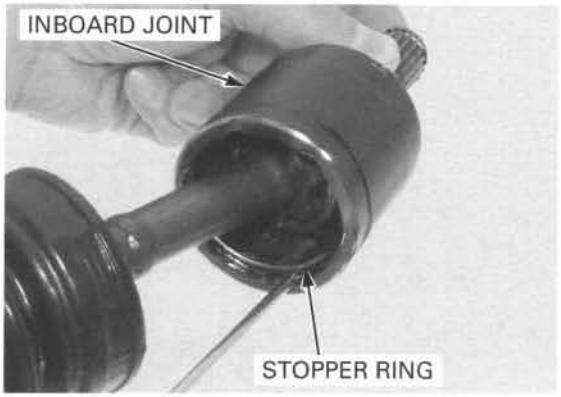
Disconnect the brake cable from the frame bracket.
Unhook the brake pedal return spring and brake switch spring.
Remove the cotter pin and washer from the pedal pivot shaft, then remove the brake pedal from the shaft.

Unhook the brake cable from the brake pedal.

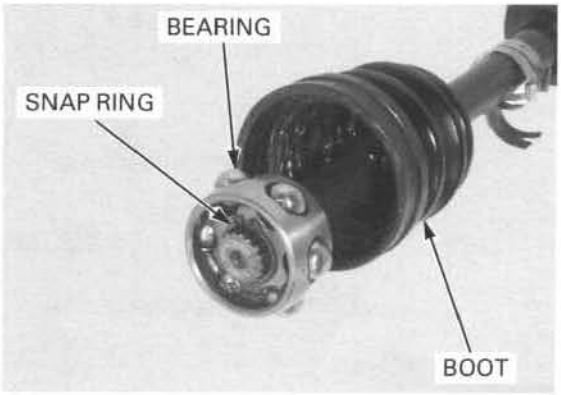


Remove the following:

- stopper ring
- inboard joint



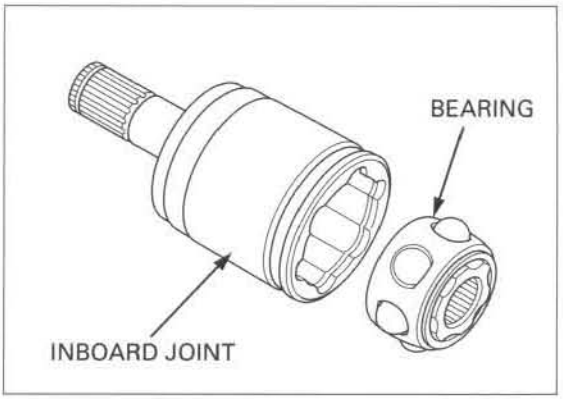
- snap ring
- bearing
- inboard boot
- boot band C



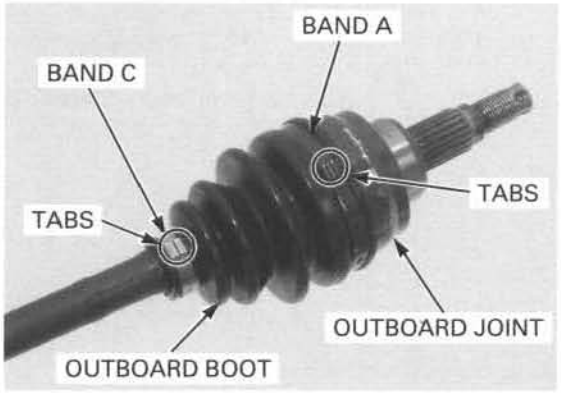
Replace the components as an assembly.

Check the following for wear or damage:

- bearing cage
- race
- steel balls
- inboard joint

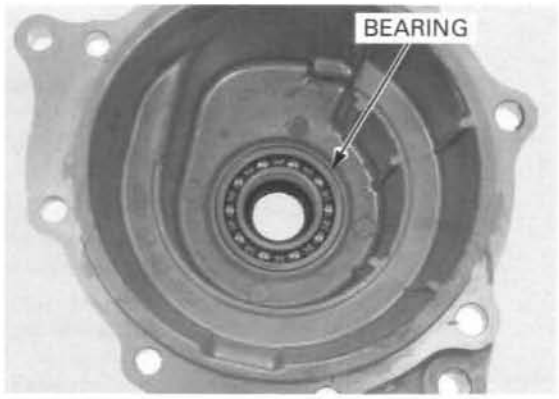


Bend up the lock tabs and raise the band ends to loosen the boot bands on the outboard side.
Remove boot band A.
Remove the boot from the outboard joint.



BEARING INSPECTION

Turn the inner race of each bearing in the gear case and cover with your finger. The bearings should turn smoothly and quietly. Also check that the bearing outer race fits tightly in the case or cover.



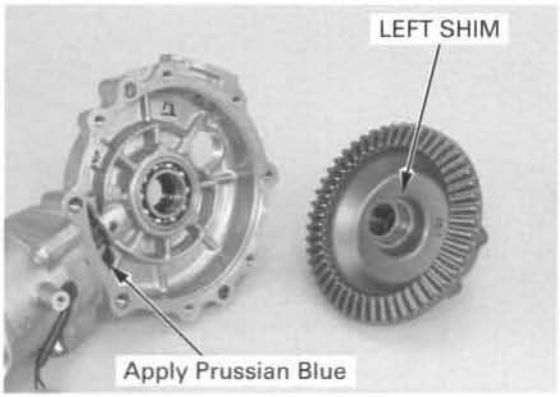
GEAR TOOTH CONTACT PATTERN CHECK

Keep dust and dirt out of the case and cover.

Clean sealing material off the mating surfaces of the differential case and cover, being careful not to damage them.

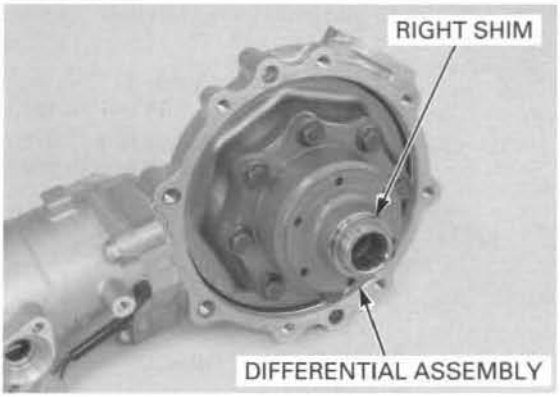
Apply thin coat of Prussian Blue to the pinion gear teeth for a tooth contact pattern check.

Install the left ring gear shim onto the differential assembly.



Install the differential assembly into the gear case.

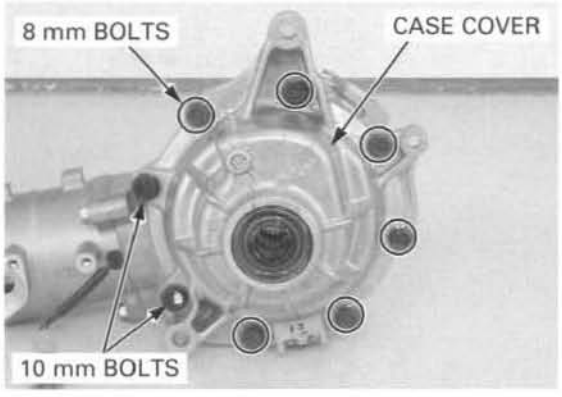
Install the right ring gear shim onto the differential assembly.



It is important to turn the pinion gear while tightening the bolts. If the ring gear shim is too thick, the gears will lock after only light tightening.

Install the case cover and tighten the bolts in several steps until the cover evenly touches the gear case. Then, while rotating the pinion gear, tighten the bolts to the specified torque in a crisscross pattern in several steps.

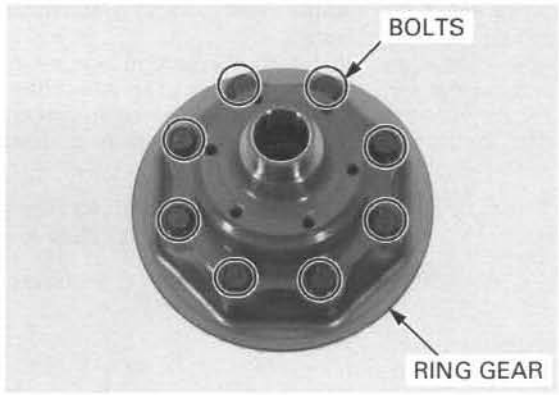
TORQUE: 10 mm bolt: 49 N·m (5.0 kgf·m, 36 lbf·ft)
8 mm bolt: 25 N·m (2.6 kgf·m, 19 lbf·ft)



Install new ring gear bolts and tighten them in a crisscross pattern in several steps.

TORQUE: 49 N·m (5.0 kgf·m, 36 lbf·ft)

Inspect the slip torque (page 17-20). If the slip torque is out of specification, perform the shim adjustment. Replace the differential assembly when the replacement shim is changed by 0.3 mm or more from the selected shim (page 17-28).



DIFFERENTIAL CASE ASSEMBLY

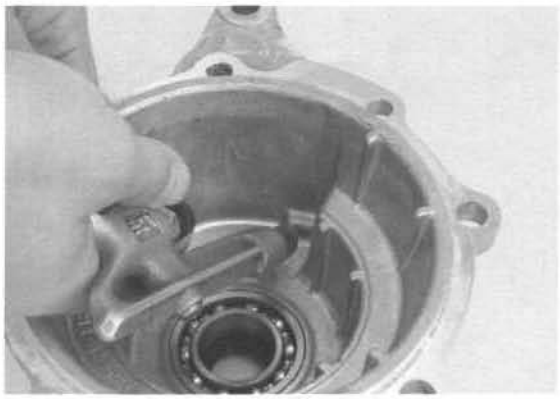
NOTE:

- When the gear set, bearing, differential housing and/or gear case has been replaced, check the tooth contact pattern (page 17-19) and gear backlash (page 17-17).

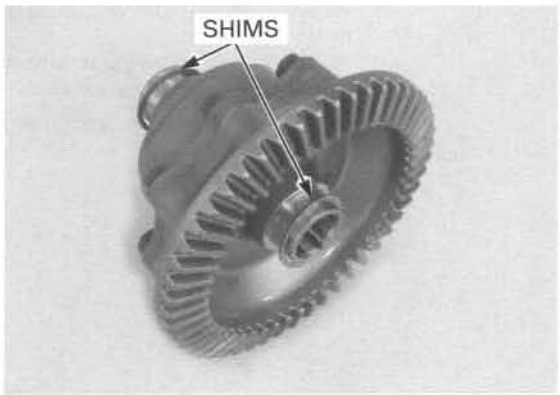
Keep dust and dirt out of the case and cover.

Clean the mating surface of the gear case and cover, being careful not to damage them.

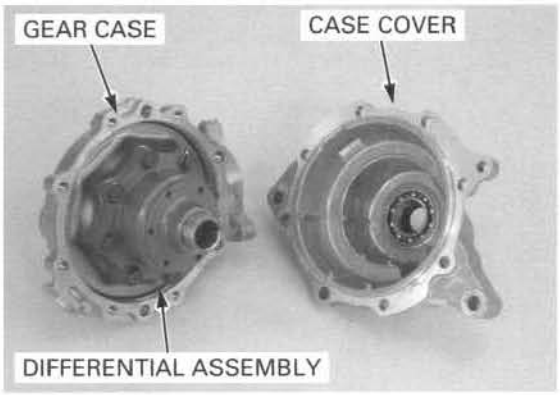
Blow compressed air through the breather hole in the case cover.



Install the proper ring gear shims onto the differential assembly and install the assembly into the gear case.



Install the case cover over the gear case.



Pilot, 14 mm
07746-0041200

Pilot, 35 mm
07746-0040800

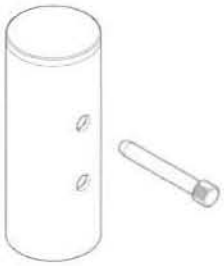
Pilot, 40 mm
07746-0040900

Pilot, 32 x 50 mm
07MAD-PR90200

Driver, 40 mm I.D.
07746-0030100

Attachment, 30 mm I.D.
07746-0030300

Seal driver attachment
07965-KE80200



(Not available in U.S.A.)

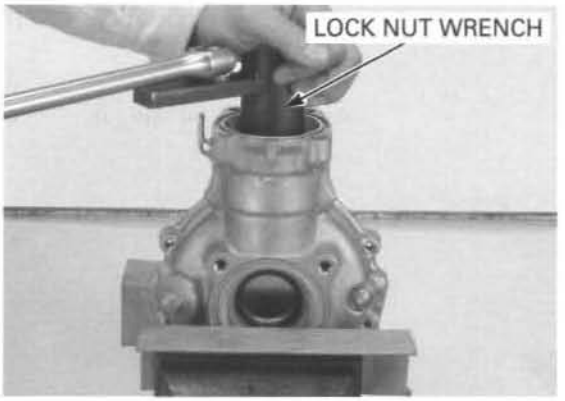
Pinion cover driver
07LAD-PW50500

Oil seal driver attachment
07947-SD90101

Fork seal driver
07947-4630100

Remove the lock nut using the special tool.

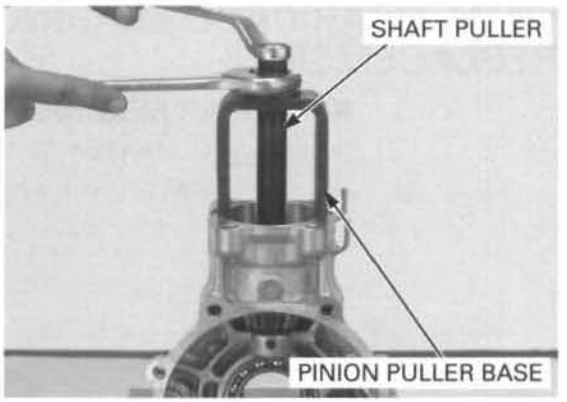
TOOL:
Lock nut wrench, 30/64 mm 07916-MB00002



Install the special tools onto the pinion gear shaft and gear case.

TOOLS:

Pinion puller base	**07HMC-MM80110 or 07HMC-MM8011A (U.S.A. only)**
Shaft puller	**07931-ME40000 or 07931-ME4010B and**
Special nut	**07931-HB3020A (U.S.A. only)**

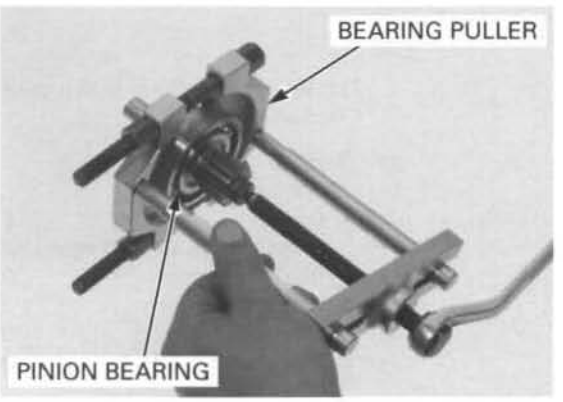


Pull the pinion gear assembly out of the gear case.

PINION GEAR BEARING/SHIM REPLACEMENT

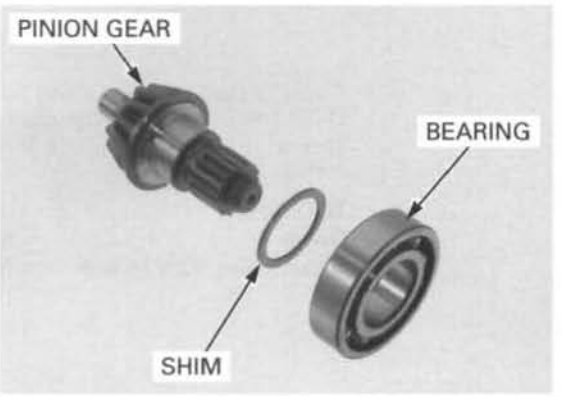
Pull the pinion bearing from the shaft with a commercially available bearing puller.

Remove the pinion gear shim.



When the gear set, ring gear bearing, and/or gear case has been replaced, use a 2.00 mm (0.79 in) thick shim for initial reference.

Install the shim and new bearing onto the pinion gear.



19. BATTERY/CHARGING SYSTEM

20. IGNITION SYSTEM

SERVICE INFORMATION

GENERAL

- Always turn the ignition switch to OFF before servicing the starter motor. The motor could suddenly start, causing serious injury.
- The starter motor can be serviced with the engine in the frame.
- When checking the starter system, always follow the steps in the troubleshooting (page 21-4).
- A weak battery may be unable to turn the starter motor quickly enough, or supply adequate ignition current.
- If the current is kept flowing through the starter motor to turn it while the engine is not cranking over, the starter motor may be damaged.
- See page 11-12 for starter clutch servicing.
- See page 22-7 for ignition switch information.
- See page 22-8 for engine stop switch and starter switch inspection.
- See page 22-22 for front brake switch inspection.
- See page 24-42 for neutral switch information.

SPECIFICATIONS

Unit: mm (in)

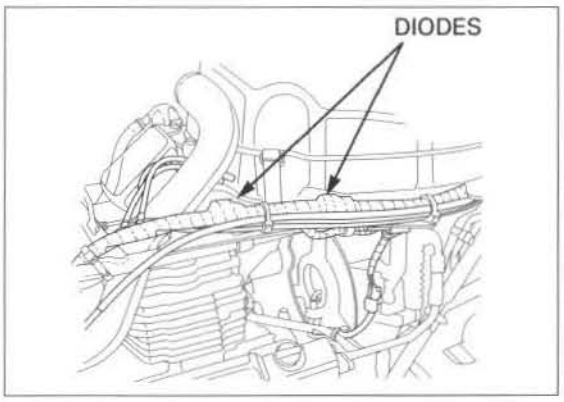
ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	12.5 (0.49)	9.0 (0.35)

DIODE

INSPECTION

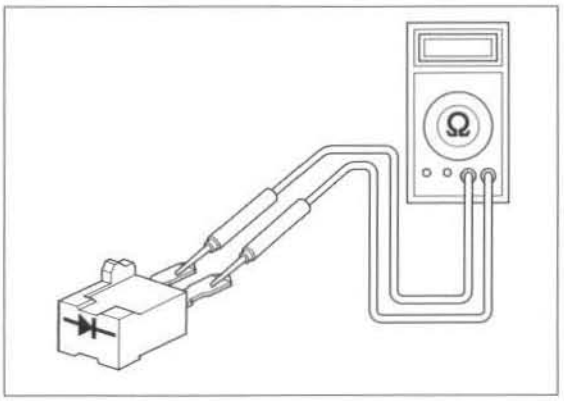
Remove the fuel tank (page 6-25).

Remove the diodes from the wire harness.



Check for continuity between the diode terminals. When there is continuity, a small resistance value will register.

If there is continuity in one direction, the diode is normal.



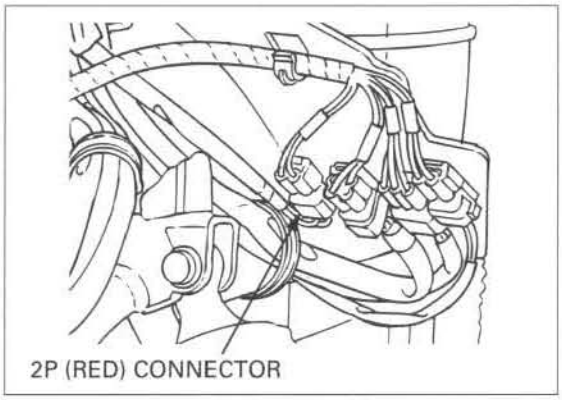
CARBURETOR HEATER/AIR TEMPERATURE SWITCH

SYSTEM INSPECTION

Remove the front fender (page 3-6).

Remove the air temperature switch 2P (RED) connector from the holder and disconnect it.

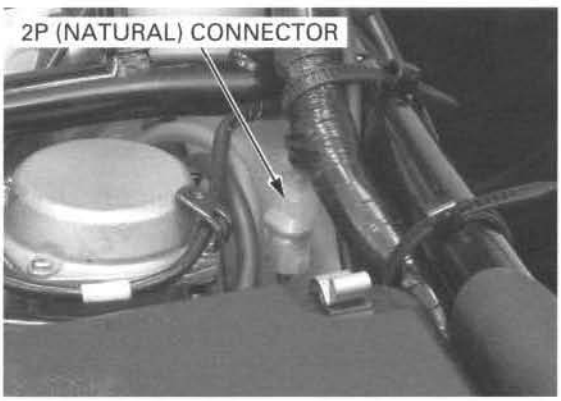
Connect the wire harness side connector terminals with a jumper wire.



Remove the tank side cover (page 3-4).

Disconnect the carburetor heater 2P (Natural) connector.

Measure the voltage between the Brown (+) and Green (–) wire terminals of the wire harness side connector.
There should be battery voltage with the ignition switch turned to ON.
If there is no voltage, check for an open circuit in the wire harness.



CARBURETOR HEATER INSPECTION

INSPECTION

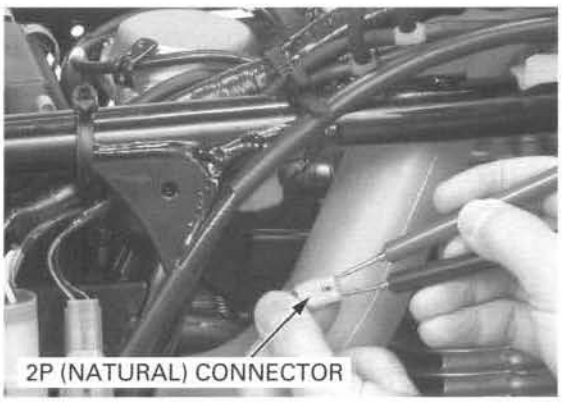
Remove the tank side cover (page 3-4).

Disconnect the carburetor heater 2P (Natural) connector.

Measure the resistance between the heater side connector terminals.

STANDARD: 13 – 15 Ω (at 20°C/68°F)

If the resistance is out of above range, replace the carburetor heater.



GPS INDICATOR BLINKS (COMMUNICATION ERROR)

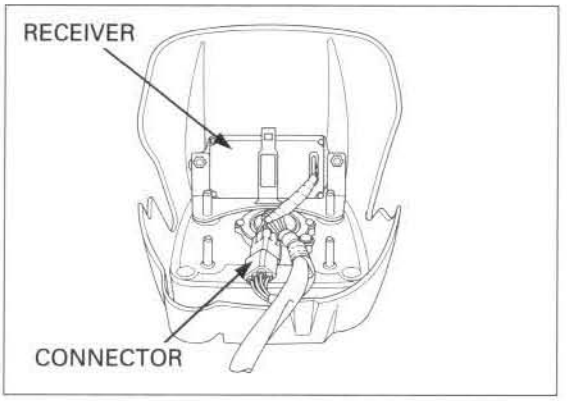
1. GPS RECEIVER CONNECTOR CHECK

Remove the combination meter assembly (page 22-12).
Check for loose connection or poor contact of the GPS receiver connector.
Connect the GPS receiver 6P (Natural) connector, and turn the ignition switch ON
After 8 minutes, recheck the GPS indicator.

Is the GPS indicator still blinking?

YES – GO TO STEP 2.

NO – No problem (Temporary failure)



2. GPS RECEIVER INPUT VOLTAGE INSPECTION

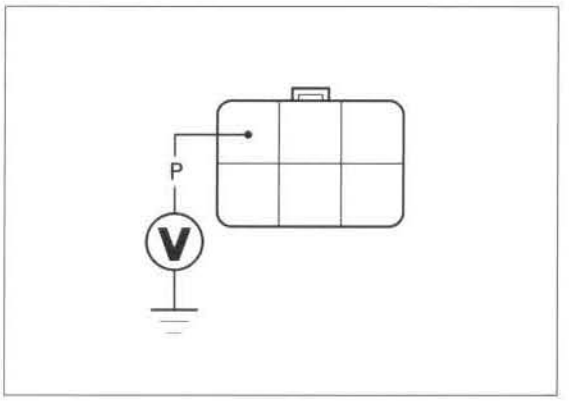
Disconnect the GPS receiver 6P (Natural) connector.
Turn the ignition switch ON.
Measure the voltage at the meter side connector terminal and ground.

Connection: Pink (+) – Ground (–)

Is there about 5 V?

YES – GO TO STEP 3.

NO – • Open or short circuit on the Pink wire
• Inspect the combination meter (page 22-11)



3. GPS RECEIVER GROUND LINE INSPECTION

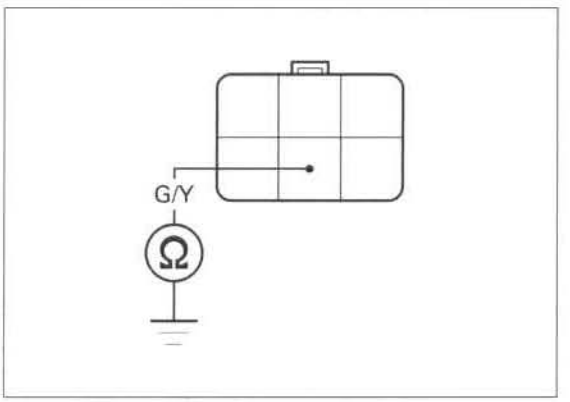
Turn the ignition switch OFF.
Check for continuity between the meter side connector terminal and ground.

Connection: Green/yellow – Ground

Is there continuity?

YES – GO TO STEP 4.

NO – • Open circuit on the Green/yellow wire
• Inspect the combination meter (page 22-11)



Is there continuity?

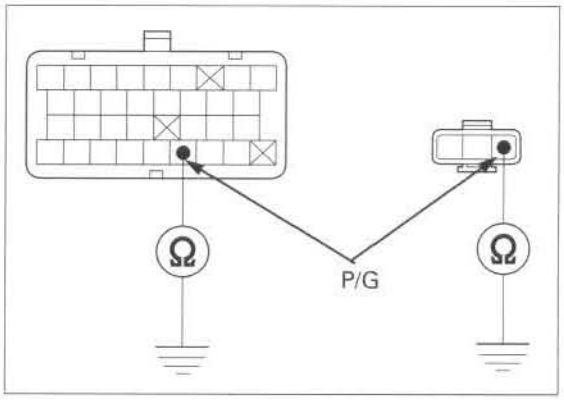
NO – Open circuit in the Pink/green wire between the ECM connector and rear VSS connector.

YES – GO TO STEP 4.

4. Rear VSS Line Short Circuit Inspection

Be careful not to bend the connector terminals.

Check the Pink/green wire for continuity between the ECM 34P (Black) connector terminal and ground.
Check the Pink/green wire for continuity between the rear VSS 3P (Black) connector terminal and ground.



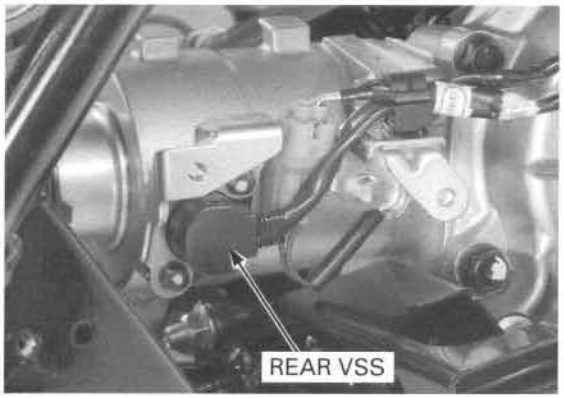
Is there continuity?

YES – Short circuit in the Pink/green wire between the ECM connector and rear VSS connector.

NO – GO TO STEP 5.

5. Rear VSS Mechanical Inspection

Check the rear VSS for correct installation.
Remove the rear VSS (page 23-10), and check for any object on the sensor tip or ring gear surface, and check for damage on the sensor tip.



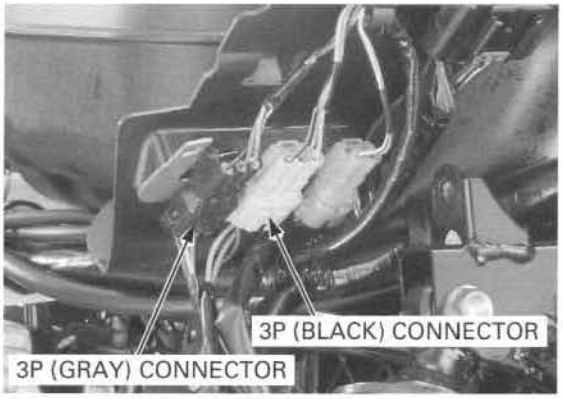
It there correct.

NO – Clean the rear VSS and ring gear, correctly install the rear VSS, or replace the rear VSS.

YES – GO TO STEP 6.

6. Failure Reproduction

Interchange the front VSS 3P (Gray) and rear VSS 3P (Black) connector.
Turn the ignition switch OFF then ON.
Turn the 2WD/4WD select switch to 4WD.
Test-drive the vehicle above 4 mph for more than 30 seconds and check that the 4WD indicator blinks.

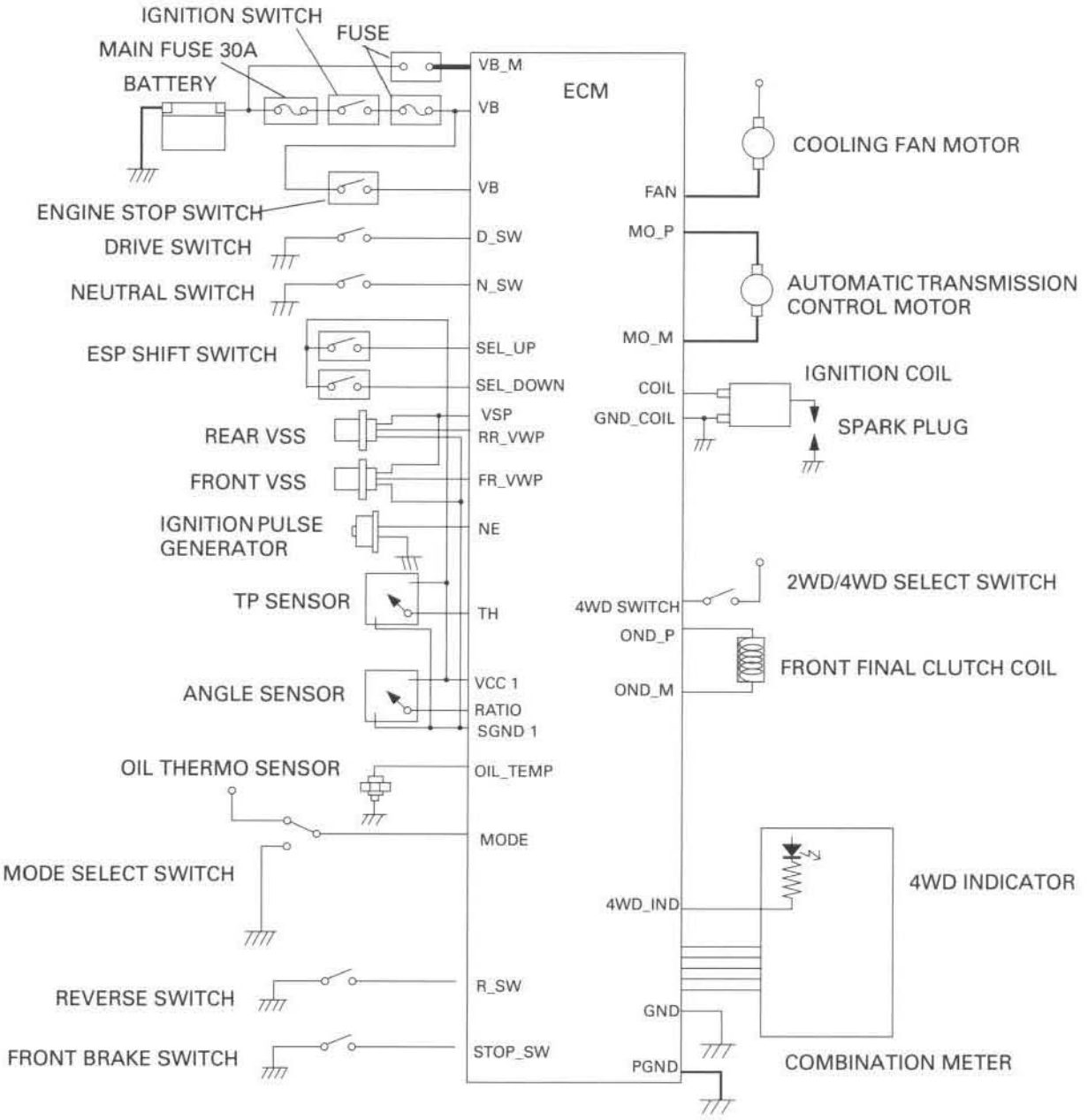


Does the 4WD indicator blink?

NO –
- Check for poor contact or loose connection in wire harness.
- No problem (Temporary failure).

YES –
- If the indicator blinks 3 times, recheck for poor contact or loose connection in wire harness. If they are OK, replace the ECM.
- If the indicator blinks 2 times, replace the rear VSS.

CIRCUIT DIAGRAM



VB	Battery voltage	VCC 1	Voltage center channel 1	4WD SWITCH	4WD switch
VB_M	Main battery voltage	RATIO	Ratio voltage	OND_P	Final clutch power (+)
D_SW	Drive switch	SGND 1	Sensor ground 1	OND_M	Final clutch power (-)
N_SW	Neutral switch	OIL_TEMP	Oil temperature	4WD_IND	4WD indicator
R_SW	Reverse switch	MODE	Mode signal	GND	Ground
SEL_UP	Selector up	STOP_SW	Stop switch	PGND	Power ground
SEL_DOWN	Selector down	FAN	Fan motor	IND_1	Indicator 1
VSP	Vehicle speed sensor voltage	MO_P	Motor power (+)	IND_2	Indicator 2
RR_VWP	Rear wheel pulse voltage	MO_M	Motor power (-)	IND_3	Indicator 3
NE	Number of engine revolution	COIL	Ignition coil	IND_4	Indicator 4
TH	TP sensor voltage	GND_COIL	Ignition coil ground	IND_5	Indicator 5

PROBLEM CODE 2: VEHICLE SPEED SENSOR (VSS) SYSTEM

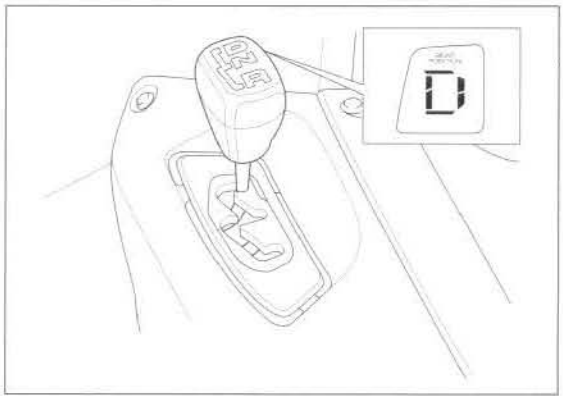
1. Mechanical System Inspection

Test-ride the vehicle with the gearshift lever in D range.

Is it possible to ride?

NO – • Check the automatic transmission mechanical system (page 13-5)
• Check the centrifugal clutch (page 10-5)

YES – GO TO STEP 2.



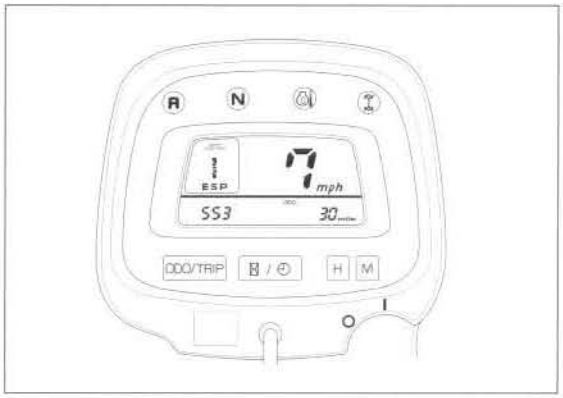
2. Speedometer Indication Inspection

Check the indication of the speedometer when driving at a low speed.

Is the indication accurate?

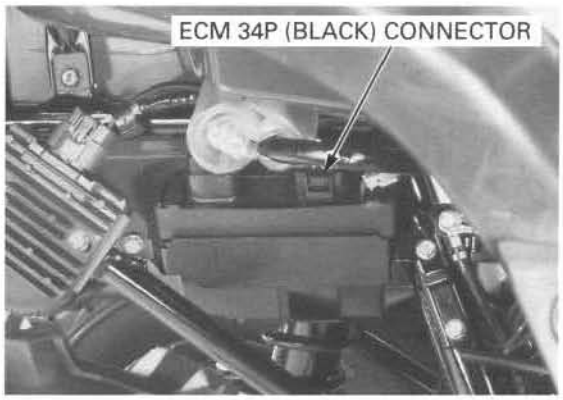
NO – Perform the troubleshooting of meter/ speed sensor (page 22-11).

YES – GO TO STEP 3.



3. VSS Connection Inspection

Check for loose or poor contact on the ECM 34P (Black) connector.

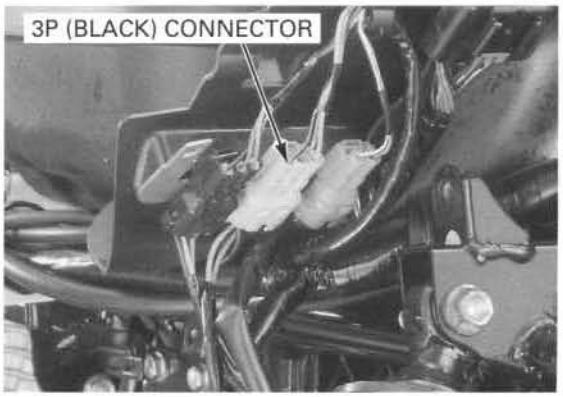


Check for loose or poor contact on the rear VSS 3P (Black) connector.

Is there normal condition?

NO – Loose or poor contact on the ECM 34P connector and the rear VSS 3P (Black) connector

YES – GO TO STEP 4.



13. Angle Sensor Input Voltage Inspection

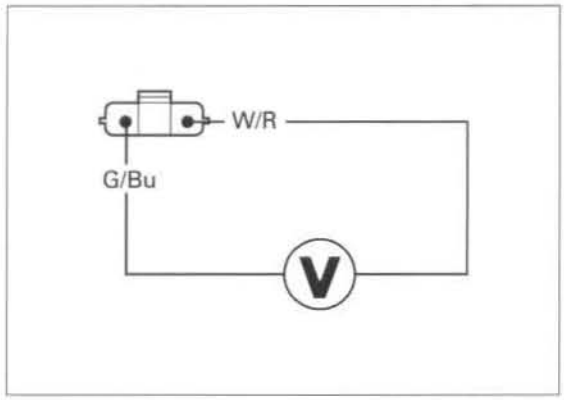
Turn the ignition switch ON.
Measure the voltage between the wire harness side connector terminal (page 24-42).

Connection: White/red (+) – Green/blue (–)

Is the voltage within 4.7 – 5.3 V?

NO – Faulty ECM – After replacement, perform initial setting procedure.

YES – GO TO STEP 14.



14. Angle Sensor Resistance Inspection 2

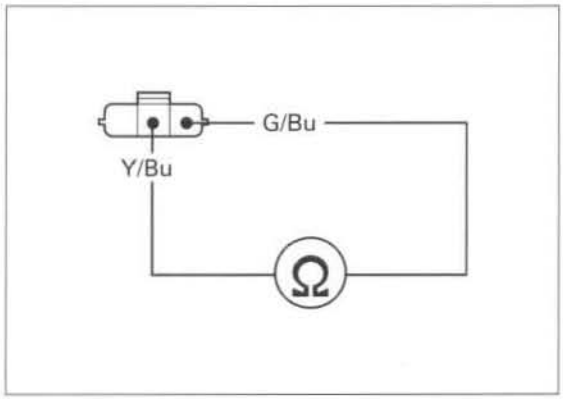
Remove the angle sensor (page 24-43).
Check that the resistance at the angle sensor terminal varies while turning the sensor shaft (page 24-42).

Connection: Yellow/blue (+) – Green/blue (–)
Standard: 0 to 1.6 – 2.4 kΩ (20°C/60°F)

Is there normal condition and standard resistance?

NO – Faulty angle sensor – After replacement, perform initial setting procedure.

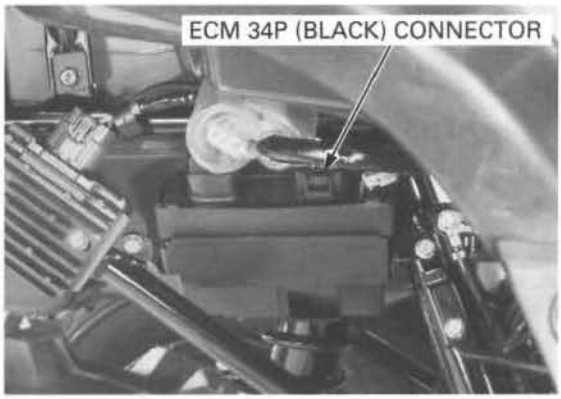
YES – Faulty ECM – After replacement, perform initial setting procedure.



PROBLEM CODE 6: ANGLE SENSOR SYSTEM (AUTOMATIC TRANSMISSION SWASH PLATE ANGLE)

1. Angle Sensor Connection Inspection

Check for loose or poor contact on the ECM 34P (Black) connector.



PROBLEM NOT DETECTED BY ECM

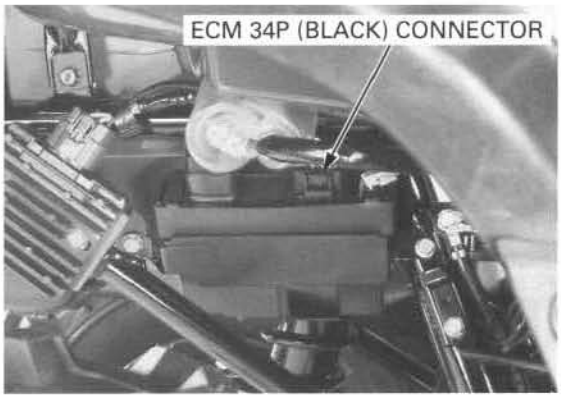
Gear position indicator does not blink to notify a problem and the problem and the problem code is not recorded: Faulty gear position indicator and/or drive mode indicator (No indication/Stuck indication/Incorrect indication)

NOTE:

See page 22-11 for the meter function problems (except for the gear position indicator and drive mode indicator).

1. Meter Connection Inspection

Check for loose or poor contact on the ECM 34P (Black) connector.

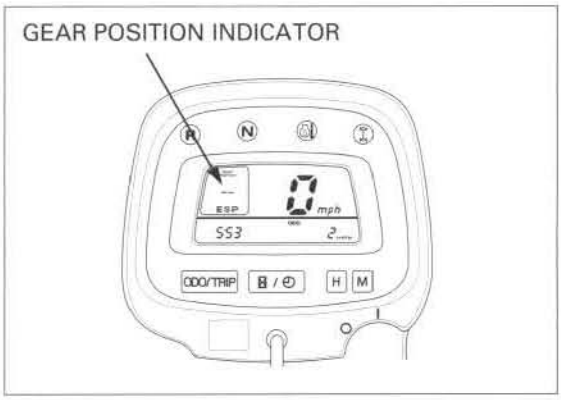


Check for loose or poor contact on the combination meter 14P (Gray) connector, the engine subharness (gear position switch) 4P (Natural) connector and the mode select switch 3P (Black) connector.

Is the INDICATOR MODE 1 blink indicated?

NO – Loose or poor contact on the ECM connector, combination meter connector, the gear position switch connector and the mode select switch connector

YES – GO TO STEP 2.



2. Gear Position Switch Line Inspection (ECM side)

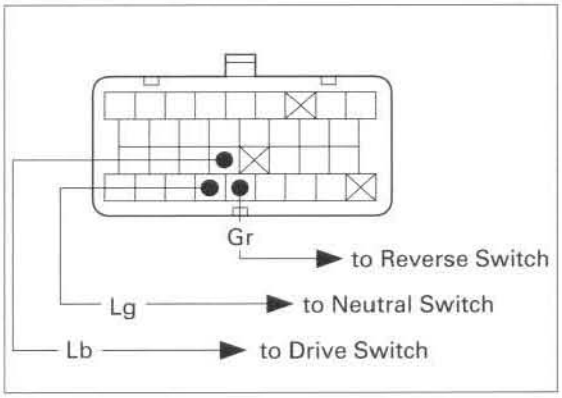
Place the gearshift lever into "N" (Neutral) position.

Check for continuity between each gear position switch wire terminal of the ECM connector and ground (page 24-17).

Is there continuity?

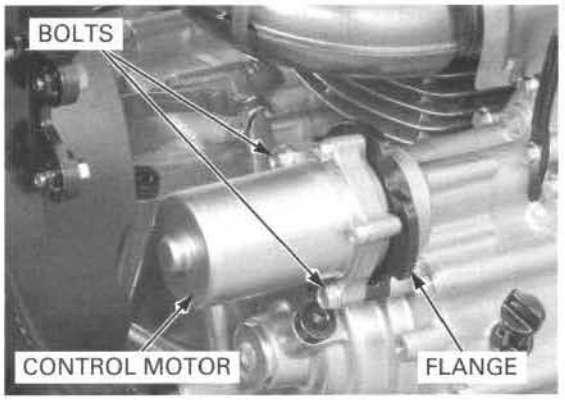
NO – GO TO STEP 3.

YES – GO TO STEP 4.

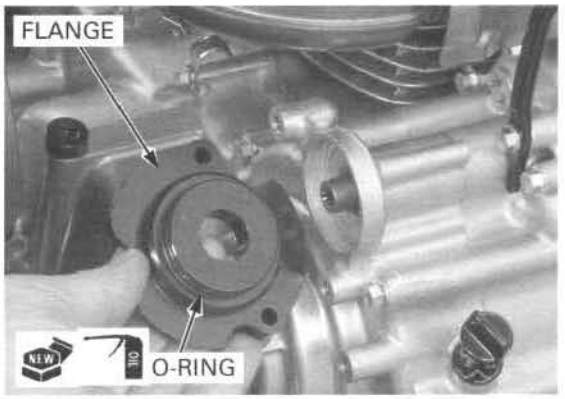


Remove the left engine side cover (page 7-4).

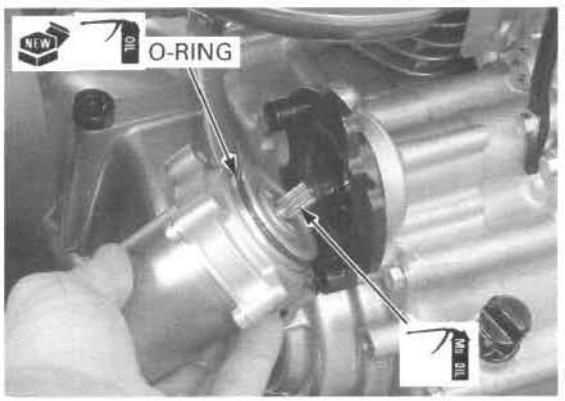
Remove the two mounting bolts, control motor and mounting flange.



Coat a new O-ring with engine oil and install it into the groove of the mounting flange.
Install the mounting flange to the front crankcase cover.



Coat a new O-ring with engine oil and install it into the control motor groove.
Apply molybdenum oil solution to the motor shaft splines and install the control motor into the front crankcase cover by aligning the bolt holes.



Install the mounting bolts and tighten them.