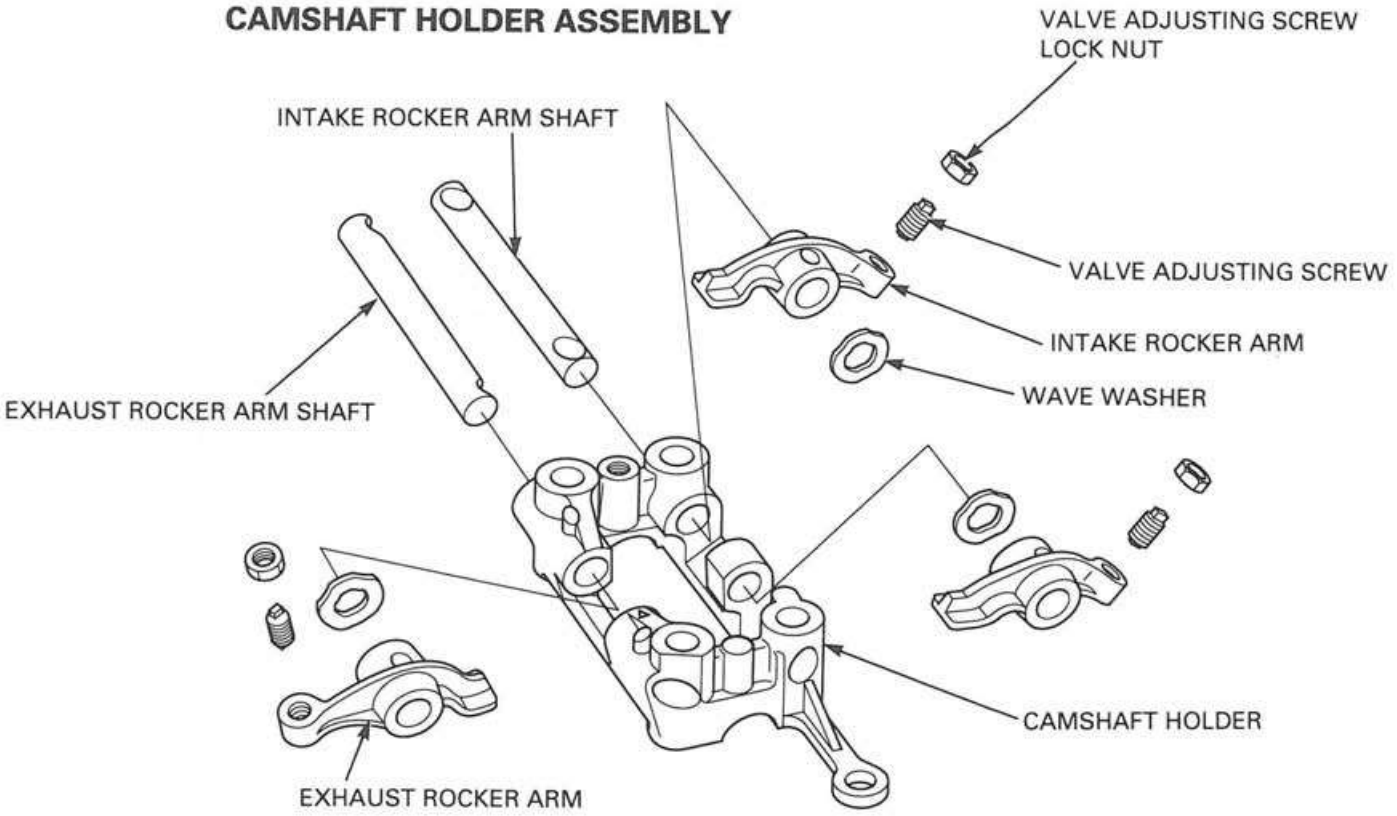
CAMSHAFT INSTALLATION

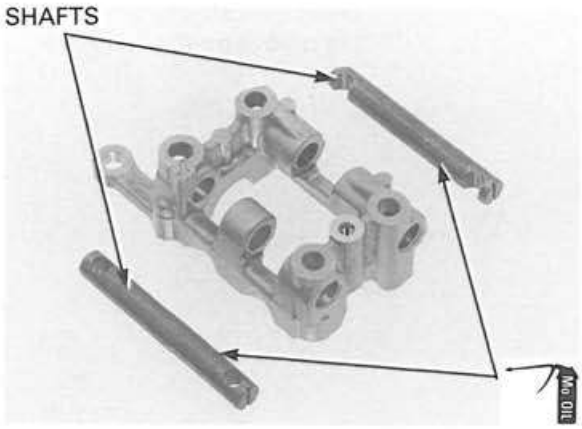
CAMSHAFT HOLDER ASSEMBLY



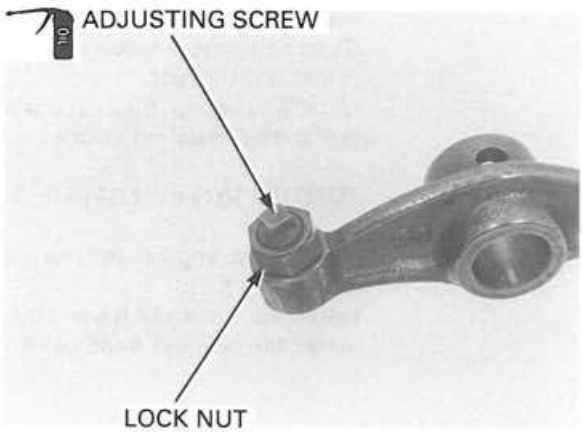
NOTE:

Camshaft lubricating oil is fed through oil passages in the cylinder head and camshaft holder. Clean the oil passages before assembling the cylinder head and camshaft holder.

Lubricate each rocker arm shaft outer sliding surfaces with molybdenum disulfide oil.



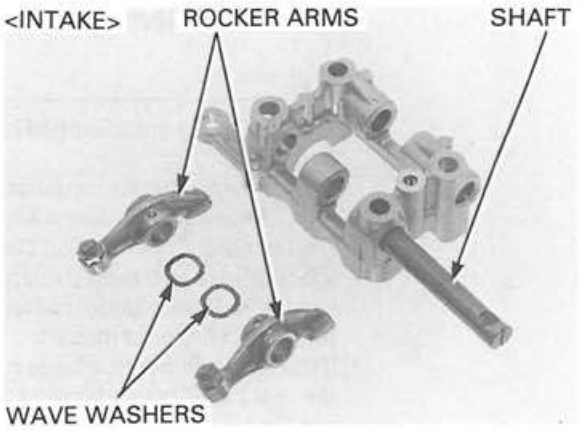
Apply engine oil to the valve adjusting screw threads and seating surface.
Install the valve adjusting screw and lock nut.



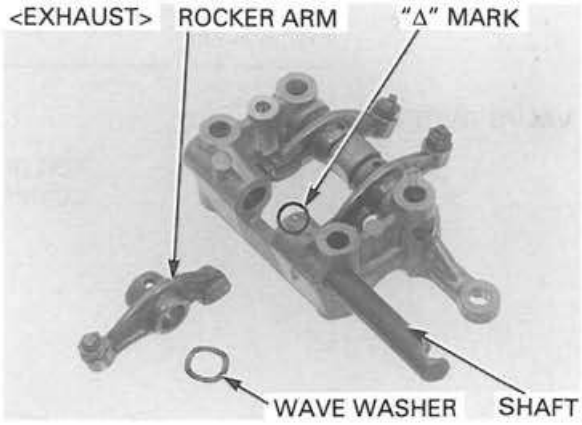
NOTE:

- The exhaust rocker arm has larger slipper face than the intake rocker arm.
- The intake rocker arm shaft has two holes on each end.
- The exhaust rocker arm shaft has two grooves on each end.

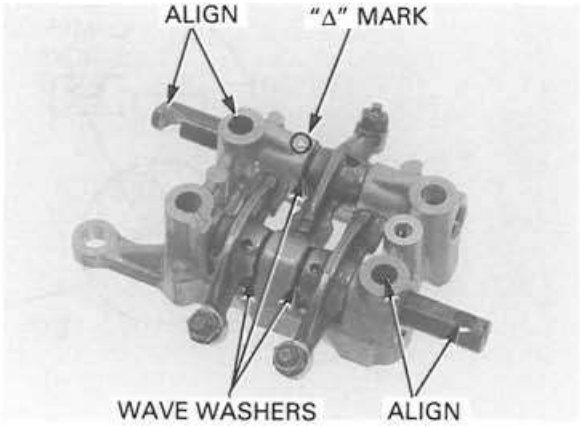
Install the wave washer (12 mm), intake rocker arm and intake rocker arm shaft to the camshaft holder.



Install the wave washer (12 mm) to the "Δ" mark side on the camshaft holder.
Install the exhaust rocker arm and exhaust rocker arm shaft to the camshaft holder.



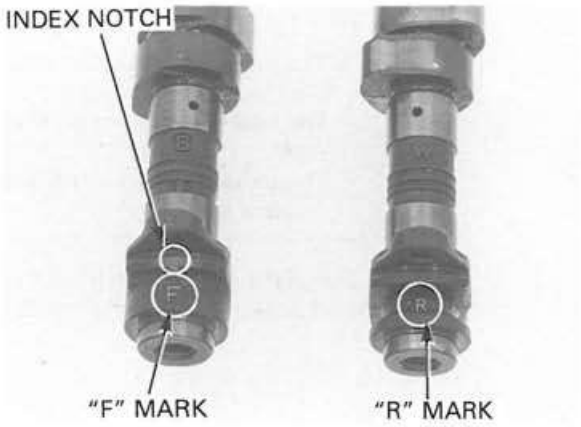
Position the grooves and holes in the rocker arm shafts vertically, aligning the bolt holes of the holder.



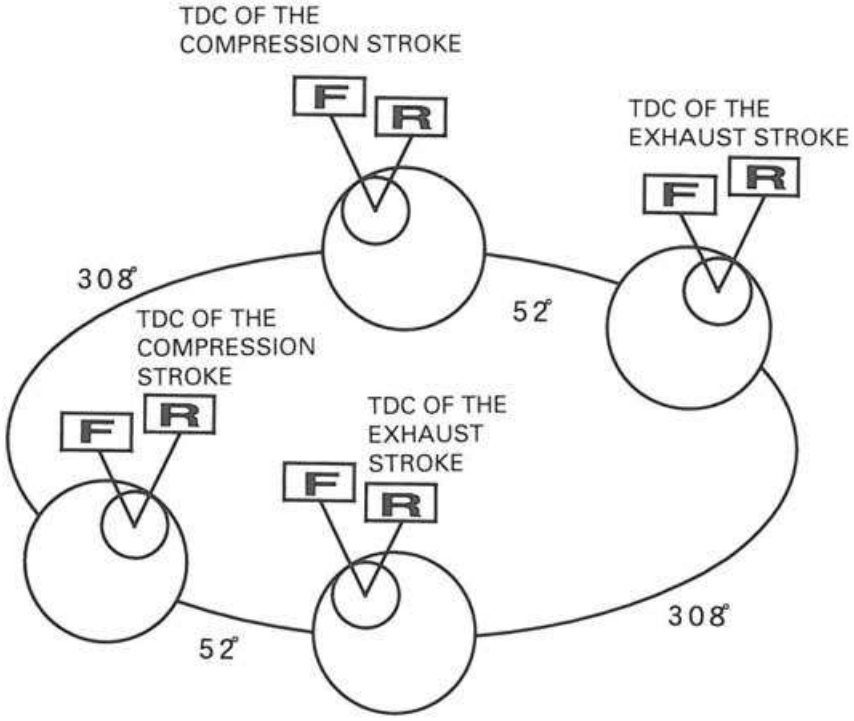
CAMSHAFT INSTALLATION

NOTE:

- The camshafts are identified by marks on the their flanges:
  "F": Front cylinder camshaft
  "R": Rear cylinder camshaft
  "Index notch": TDC (Top Dead Center) mark
- If both (front and rear) camshafts were removed, install the front cylinder camshaft first, then install the rear cylinder camshaft.
- If the rear cylinder head was not serviced, remove the rear cylinder head cover to check the camshaft position.
- If the front cylinder head was not serviced, remove the front cylinder head cover to check the cam shaft position.



VALVE TIMING



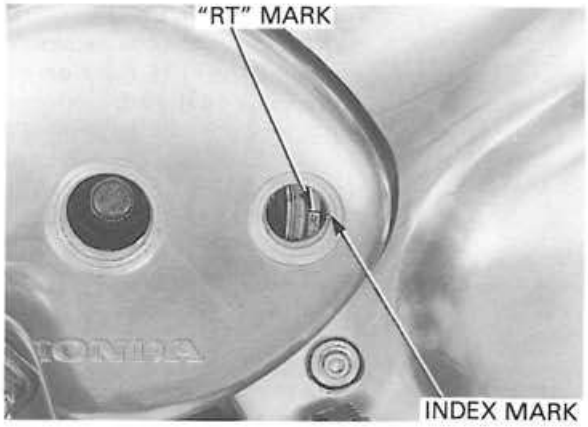
BOTH CYLINDER CAMSHAFT SERVICE

Remove the timing hole cap.

Turn the crankshaft counterclockwise and align the "FT" mark on the flywheel with the index mark on the left crankcase cover, then check the front cylinder piston is "TDC (Top Dead Center)".

Install the front cylinder camshaft (page 10-29).

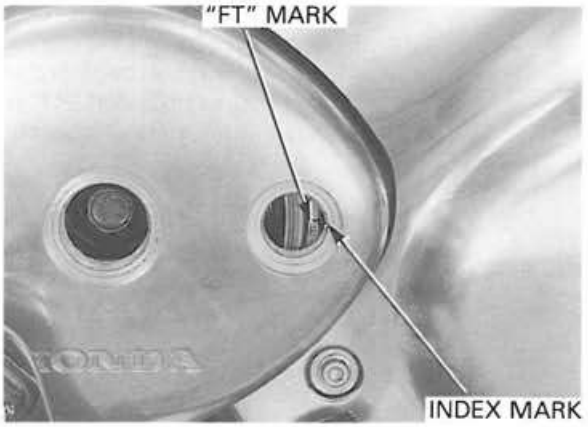
Then turn the crankshaft counterclockwise 232° and align the "RT" mark on the flywheel with the index mark on the left crankcase cover, then install the rear camshaft (see below).



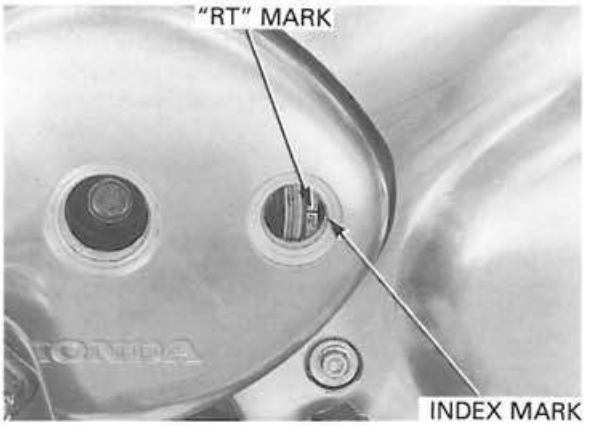
REAR CYLINDER CAMSHAFT SERVICE ONLY (FRONT CYLINDER CAMSHAFT WAS NOT SERVICED)

If the front cylinder head was not serviced, remove the front cylinder head cover (page 10-5) and check the camshaft position as follows:

Remove the front cylinder head camshaft end holder (page 10-8).
Remove the timing hole cap.
Turn the crankshaft counterclockwise and align the "FT" mark on the flywheel with the index mark on the left crankcase cover, then check that the camshaft "TDC (Top Dead Center)" mark is facing up.



If the "TDC (Top Dead Center)" mark is facing up, turn the crankshaft counterclockwise 308° and align the "RT" mark on the flywheel with the index mark on the left crankcase cover, then install the rear camshaft (page 10-30).

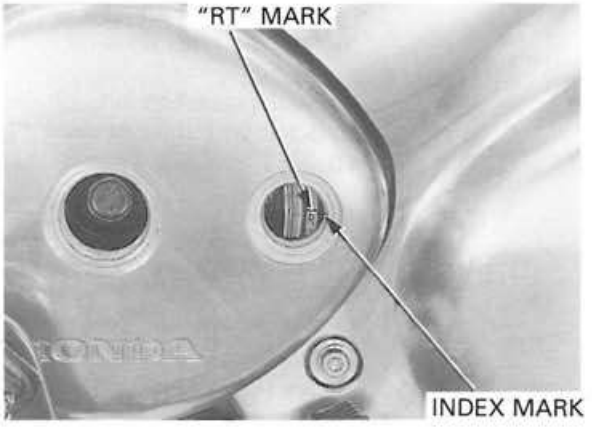


If the "TDC (Top Dead Center)" mark is facing down, turn the crankshaft counterclockwise 668° (360°+308°) and align the "RT" mark on the flywheel with the index mark on the left crankcase cover, then install the rear camshaft (page 10-30).

FRONT CYLINDER CAMSHAFT SERVICE ONLY (REAR CYLINDER CAMSHAFT WAS NOT SERVICED)

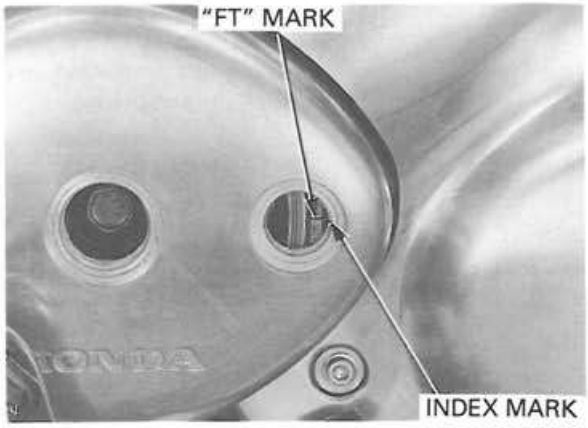
If the front cylinder head was not serviced, remove the rear cylinder head cover (page 10-6) and check the camshaft position as follows:

Remove the front cylinder head camshaft end holder (page 10-8).
Remove the timing hole cap.
Turn the crankshaft counterclockwise and align the "RT" mark on the flywheel with the index mark on the left crankcase cover, then check that the camshaft "TDC (Top Dead Center)" mark is facing up.



If the "TDC (Top Dead Center)" mark is facing up, turn the crankshaft counterclockwise 412° (360°+52°) and align the "FT" mark on the flywheel with the index mark on the left crankcase cover, then install the front camshaft (page 10-30).

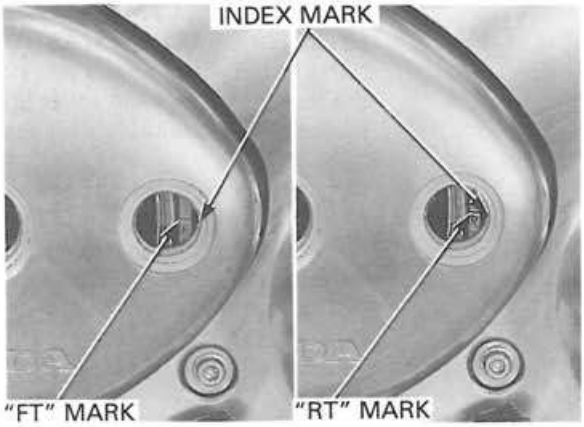
If the "TDC (Top Dead Center)" mark is facing down, turn the crankshaft counterclockwise 52° and align the "FT" mark on the flywheel with the index mark on the left crankcase cover, then install the front camshaft (page 10-30).



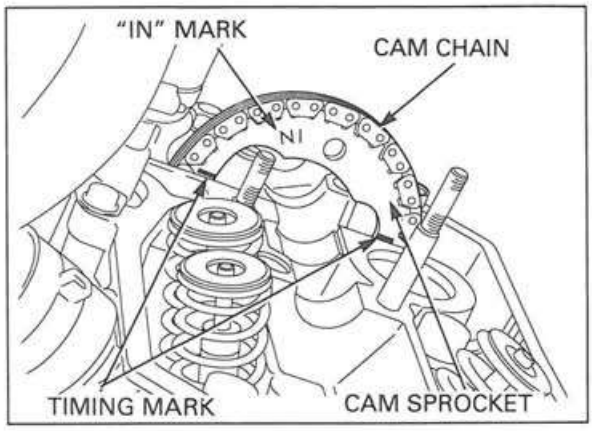
CAMSHAFT INSTALLATION

Remove the timing hole cap.

Turn the crankshaft counterclockwise and align the "FT" mark (rear cylinder: "RT" mark) on the flywheel with the index mark on the left crankcase cover.



Install the cam sprocket to the cam chain with the "IN" mark facing the inside and align the timing marks (index line) on the cam sprocket and the upper surface of the cylinder head.

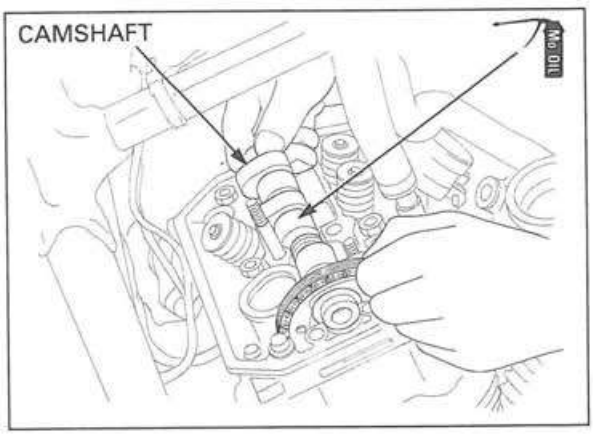


Lubricate camshaft lobe and journal surfaces with molybdenum disulfide oil.

Install the camshaft through the cam chain and cam sprocket with the camshaft "TDC" mark is facing up.

NOTE:

The camshafts are identified by marks on the their flanges:
"F": Front cylinder camshaft
"R": Rear cylinder camshaft
"Index notch": TDC (Top Dead Center) mark

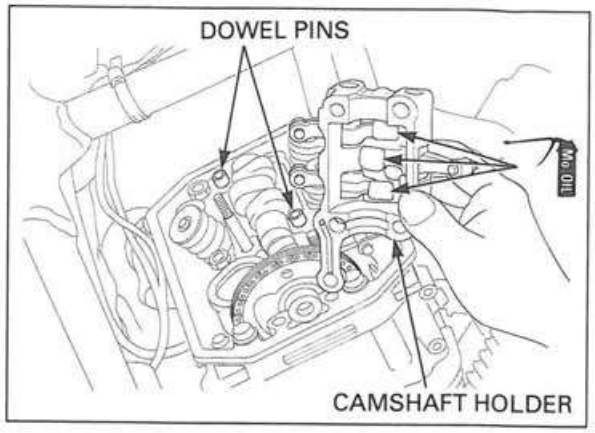


Install the dowel pins.
Lubricate each rocker arm slipper surfaces with molybdenum disulfide oil.

NOTE:

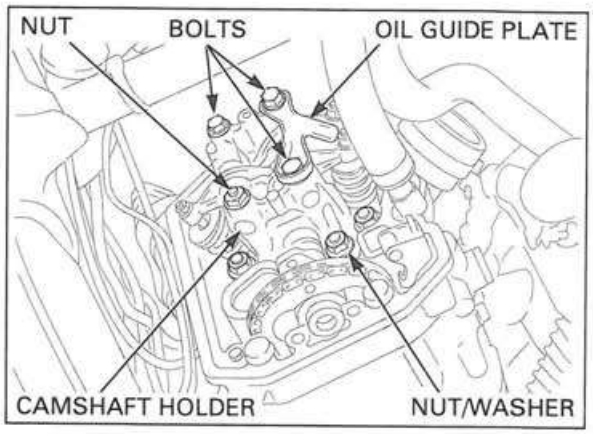
Before camshaft holder installation, loosen the valve adjusting screw and lock nut fully.

Install the camshaft holder assembly.

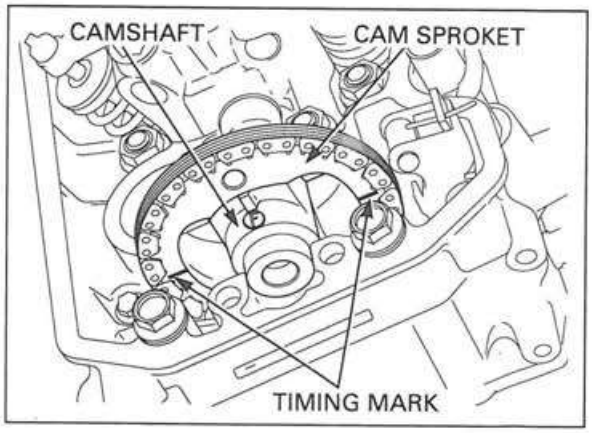


Install the oil guide plate.
Install the camshaft holder bolts (8 mm), nuts and washer (8 mm).
Tighten the bolts (8 mm) and nuts (8 mm) to the specified torque.

TORQUE: 8 mm bolt: 23 N·m (2.3 kgf·m, 17 lbf·ft)
8 mm nut: 23 N·m (2.3 kgf·m, 17 lbf·ft)



Install the cam sprocket on the camshaft flange and recheck that the timing marks align with the upper surface of the cylinder head.

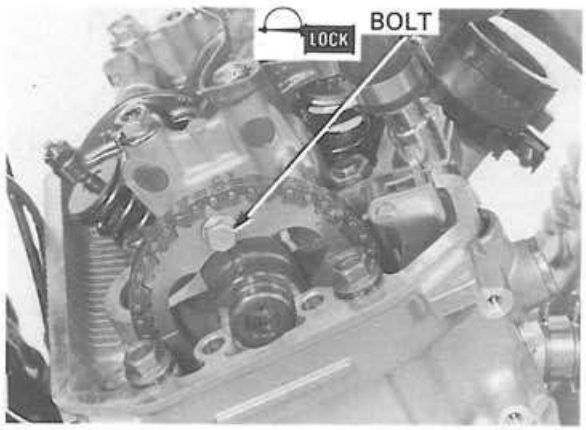


Be careful not to let the cam sprocket bolts fall into the crankcase.

Clean and apply a locking agent to the cam sprocket bolt threads.

Align the cam sprocket bolt holes in the cam sprocket and camshaft.
Temporarily install the cam sprocket bolt.
Turn the crankshaft counterclockwise 360° and tighten other sprocket bolt to the specified torque.

TORQUE: 23 N·m (2.3 kgf·m, 17 lbf·ft)

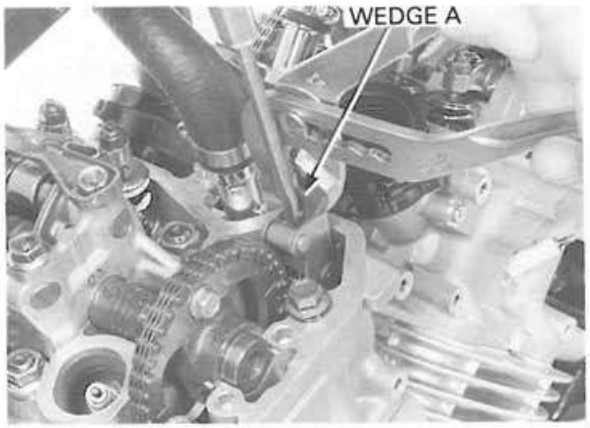


Turn the crankshaft counterclockwise 360° and tighten other sprocket bolt to the specified torque.

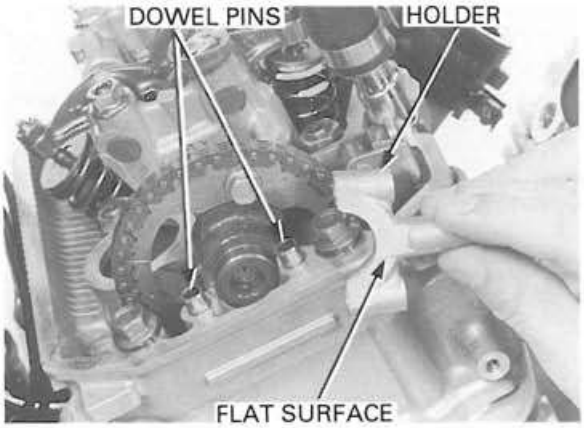
Remove the 2 mm pin holding cam chain tensioner wedge A.

NOTE:

- Be careful not to let the 2 mm pin fall into the crankcase.
- Do not forget to remove the 2 mm pin before installing the cylinder head cover.



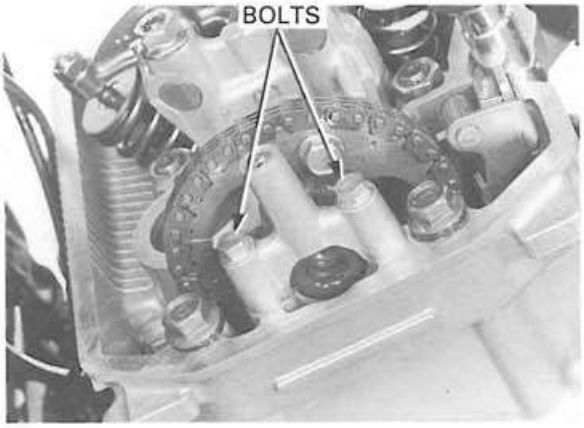
Install the dowel pins.
Install the camshaft end holder with it's flat surface on the holder facing in.



Install and tighten the camshaft end holder bolts to the specified torque.

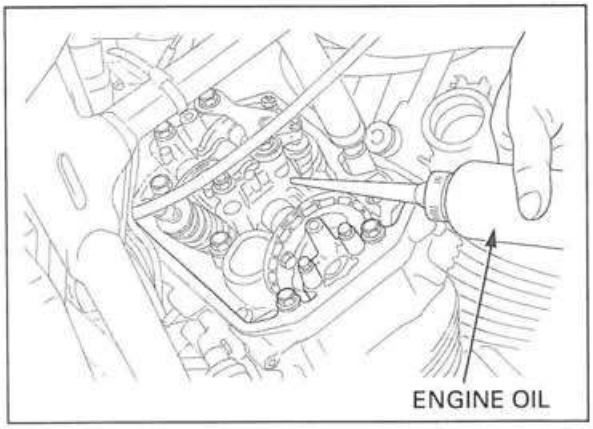
TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)

Adjust the valve clearance (page 3-9).



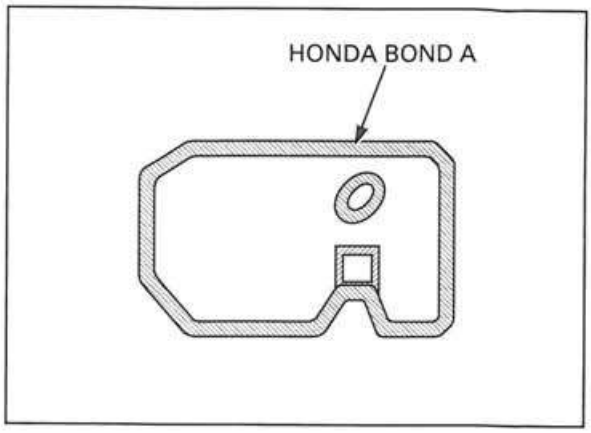
CYLINDER HEAD COVER INSTALLATION

Fill the oil pockets in the head with the engine oil.



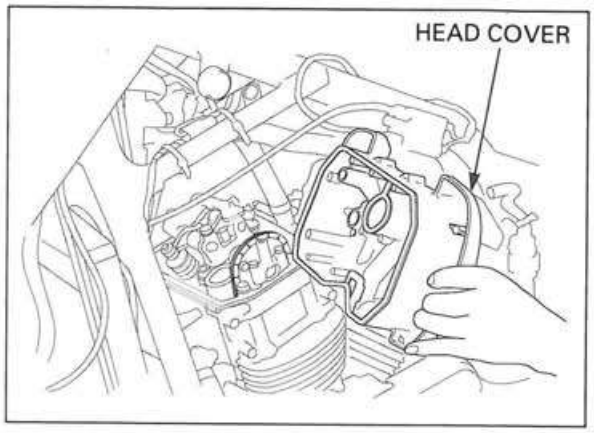
Clean the gasket groove and cylinder head mating surface of the cylinder head cover.
Apply Honda Bond A or equivalent to the gasket groove of the cylinder head cover.

Install the gasket into the groove.



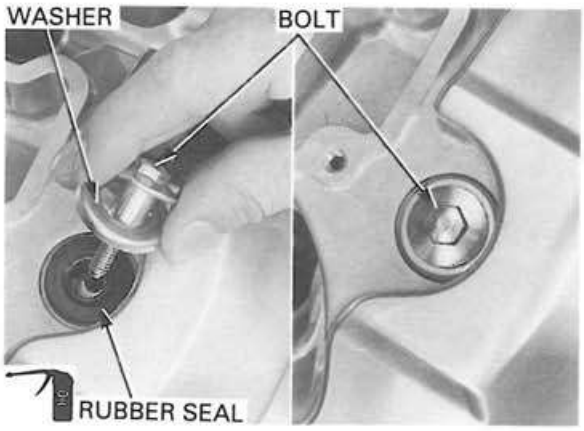
Clean the cylinder head cover mating surface of the cylinder head.

Install the front cylinder head cover to the front cylinder.

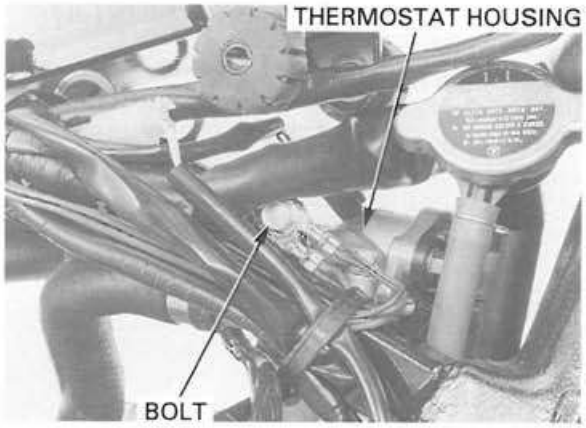


Apply engine oil to the rubber seals whole surface.
Install the rubber seals and washers.
Install and tighten the cylinder head cover bolts to the specified torque.

TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)

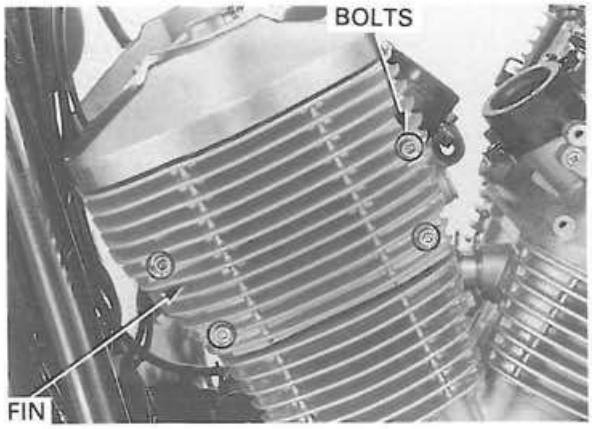


Install the thermostat housing to the frame.
Install and tighten the mounting bolt with the ground cable.

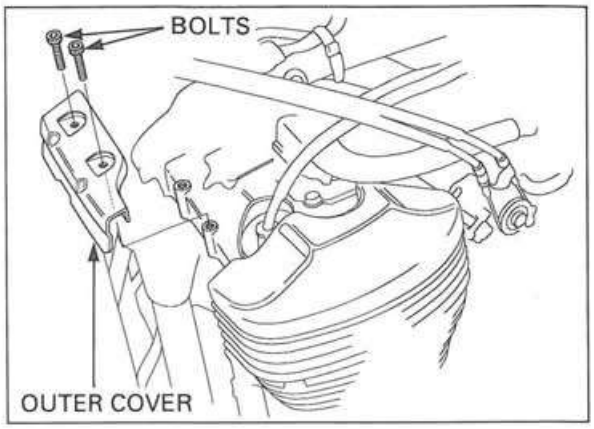


Install the each side cylinder fins and socket bolts.
Tighten the bolts to the specified torque.

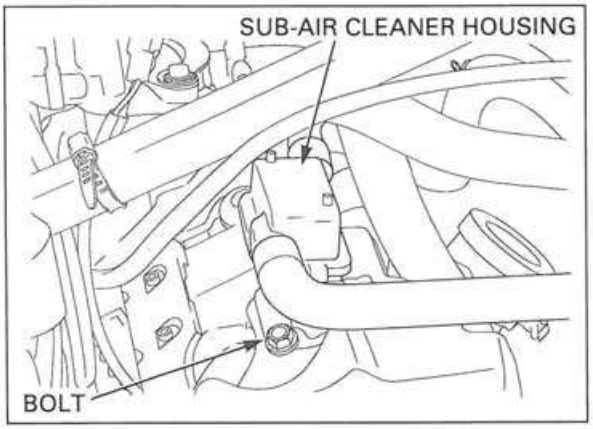
TORQUE: 10 N•m (1.0 kgf•m, 7 lbf•ft)



Install the cylinder head cover outer cover.
Install and tighten the bolts securely.



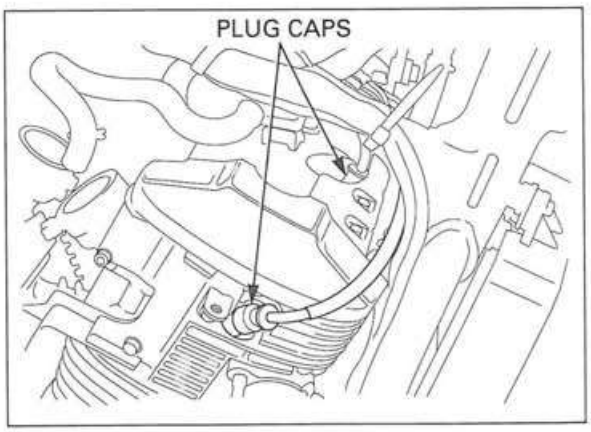
Install the sub-air cleaner housing.
Install and tighten the bolt securely.



Connect the spark plug caps.

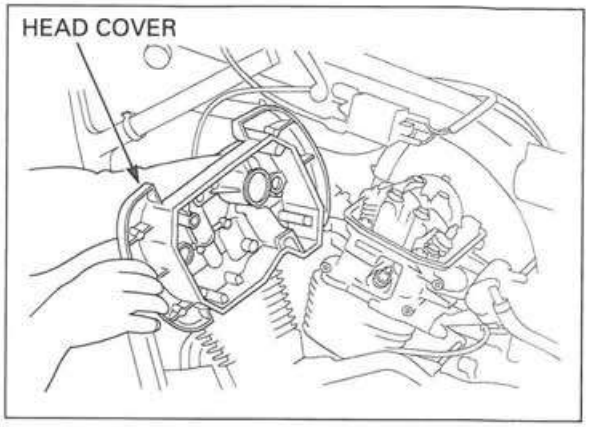
Install the following:
- Carburetors (page 5-20)
- Air cleaner chamber (page 5-7)
- Air cleaner housing (page 5-4)
- Fuel tank (page 2-4)
- Steering covers (page 2-3)

Fill the coolant (page 6-5).



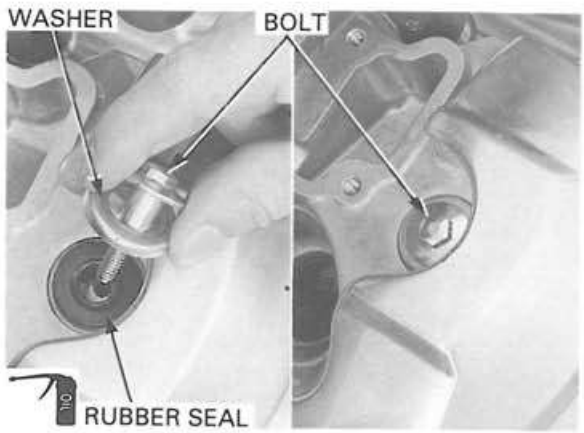
Clean the cylinder head cover mating surface of the cylinder head.

Install the rear cylinder head cover to the rear cylinder.



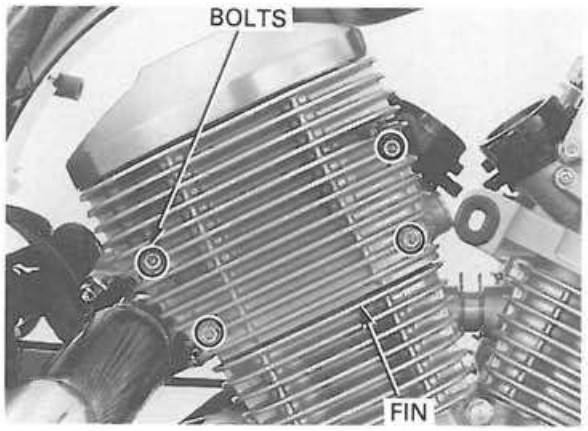
Apply engine oil to the rubber seals whole surface.
Install the rubber seals and washers.
Install and tighten the cylinder head cover bolts to the specified torque.

TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)

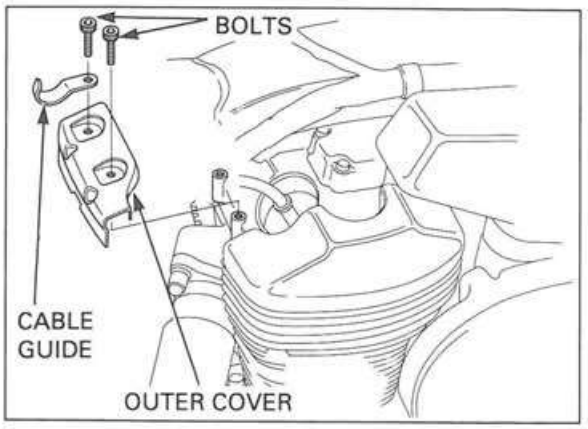


Install the removed side cylinder head fin and mounting socket bolts.
Tighten the bolts to the specified torque.

TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)



Install the cylinder head cover outer cover.
Install the cable guide and tighten the bolts securely.



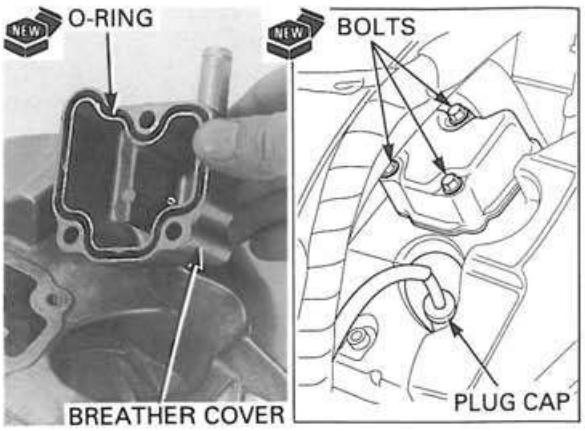
Install the new O-ring into the breather cover groove.
Install the breather cover and new bolts to the cylinder head cover.
Tighten the bolts to the specified torque.

TORQUE: 12 N•m (1.2 kgf•m, 9 lbf•ft)

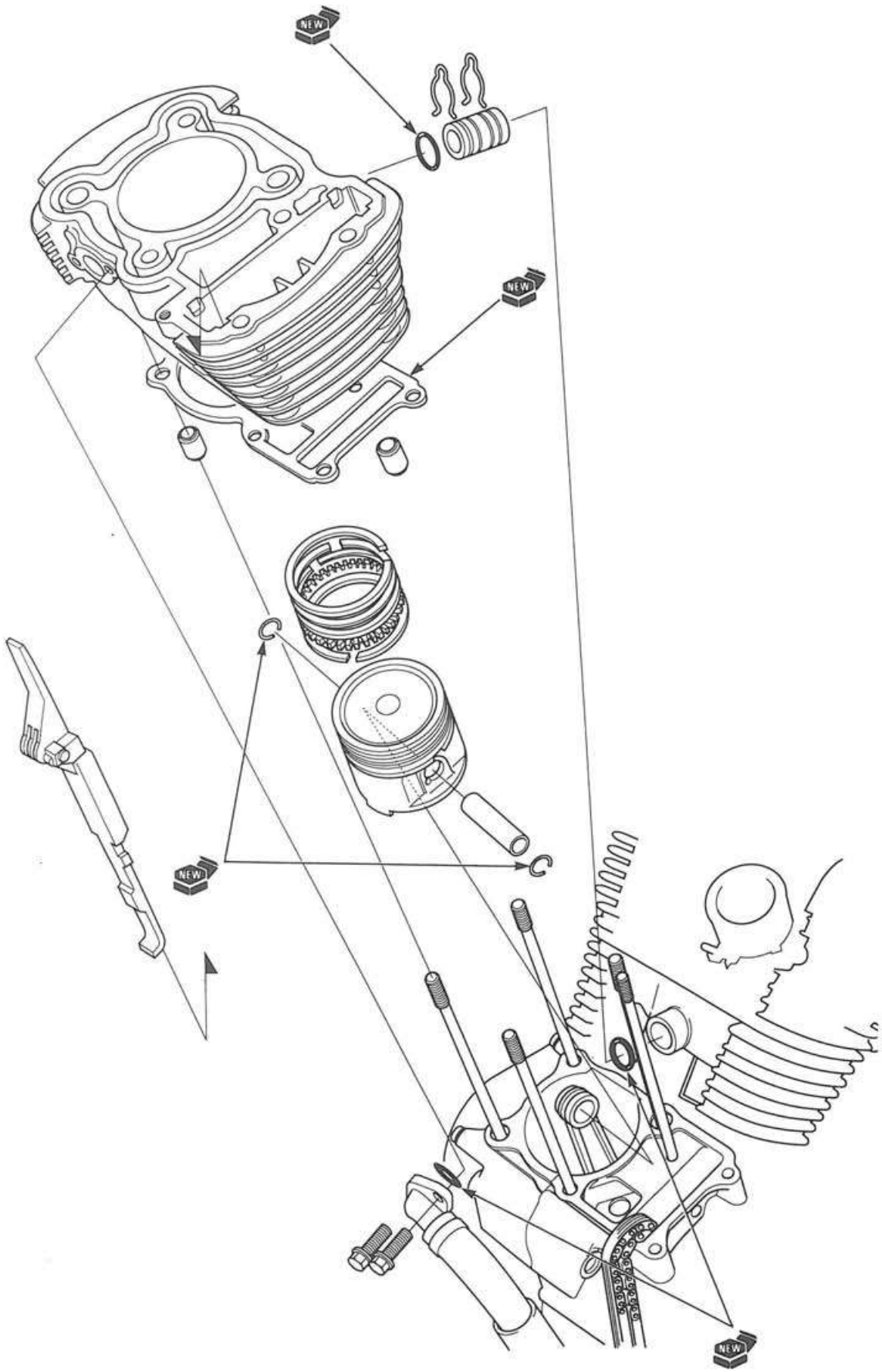
Connect the spark plug cap.

Install the following:
- Carburetors (page 5-20)
- Air cleaner chamber (page 5-7)
- Air cleaner housing (page 5-4)
- Fuel tank (page 2-4)

Fill the coolant (page 6-5).



MEMO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NEW
NEW
NEW

11. CYLINDER/PISTON

SERVICE INFORMATION

GENERAL

- The engine must be removed from the frame before servicing the cylinder and piston.
- Take care not to damage the cylinder wall and piston.
- Be careful not to damage the mating surfaces by using a screwdriver when disassembling the cylinder.
- Clean all disassembled parts with clean solvent and dry them using compressed air before inspection.
- When disassembling, mark and store the disassembled parts to ensure that they are reinstalled in their original locations.

SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Cylinder	I.D.		79.000 – 79.015 (3.1102 – 3.1108)	79.10 (3.114)
	Out of round		———	0.06 (0.002)
	Taper		———	0.06 (0.002)
	Warpage		———	0.10 (0.004)
Piston, piston rings	Piston mark direction		"IN" mark facing toward the intake side	———
	Piston O.D.		78.97 – 78.99 (3.109 – 3.110)	78.90 (3.106)
	Piston O.D. measurement point		7 – 17 mm (0.3 – 0.7 in) from bottom of skit	———
	Piston pin bore I.D.		18.002 – 18.008 (0.7087 – 0.7090)	18.05 (0.711)
	Piston pin O.D.		17.994 – 18.000 (0.7084 – 0.7087)	17.98 (0.708)
	Piston-to-piston pin clearance		0.002 – 0.014 (0.0001 – 0.0006)	0.04 (0.002)
	Piston ring-to-ring groove clearance	Top	0.025 – 0.055 (0.0010 – 0.0022)	0.08 (0.003)
		Second	0.015 – 0.045 (0.0006 – 0.0018)	0.07 (0.003)
	Piston ring end gap	Top	0.20 – 0.35 (0.008 – 0.014)	0.5 (0.02)
		Second	0.35 – 0.50 (0.014 – 0.020)	0.7 (0.03)
		Oil (side rail)	0.20 – 0.80 (0.008 – 0.031)	1.0 (0.04)
	Piston ring mark	Top	"R" mark	———
		Second	"RN" mark	———
Cylinder-to-piston clearance			0.010 – 0.045 (0.0004 – 0.0018)	0.10 (0.004)
Connecting rod small end I.D.			18.016 – 18.034 (0.7093 – 0.7100)	18.17 (0.711)
Connecting rod-to-piston pin clearance			0.016 – 0.040 (0.0006 – 0.0016)	0.06 (0.002)

TROUBLESHOOTING

Compression too low, hard starting or poor performance at low speed

- Leaking cylinder head gasket
- Worn, stuck or broken piston rings
- Worn or damaged cylinder and piston
- Loose spark plug

Compression too high, over heating or knocking
- Excessive carbon build-up in cylinder head or on top of piston

Abnormal noise
- Worn cylinder and piston
- Worn piston pin or piston pin hole
- Worn connecting rod small end

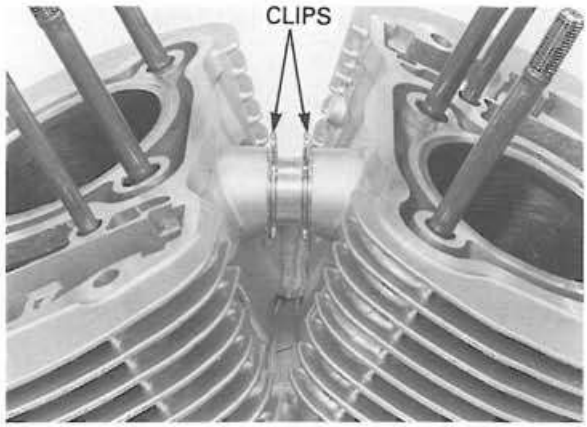
Excessive smoke
- Worn cylinder, piston and piston rings
- Improper installation of piston rings
- Scored or scratched piston or cylinder wall

CYLINDER REMOVAL

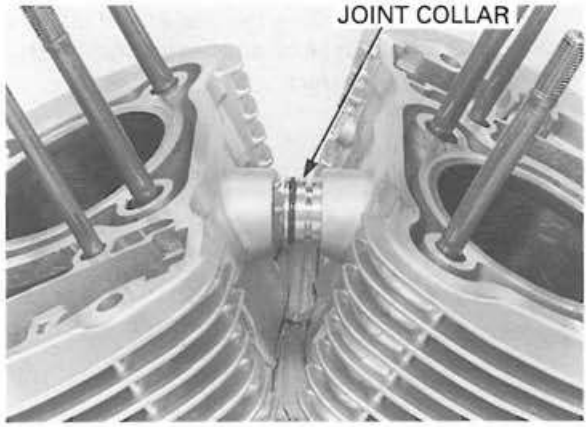
The front cylinder uses the same service procedure as the rear cylinder.

Remove the cylinder head (page 10-14).

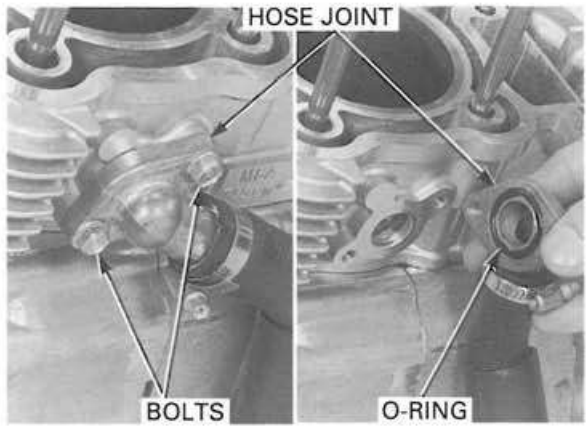
Remove the joint clips.



Slide the cylinder joint collar toward either the front or rear cylinder.



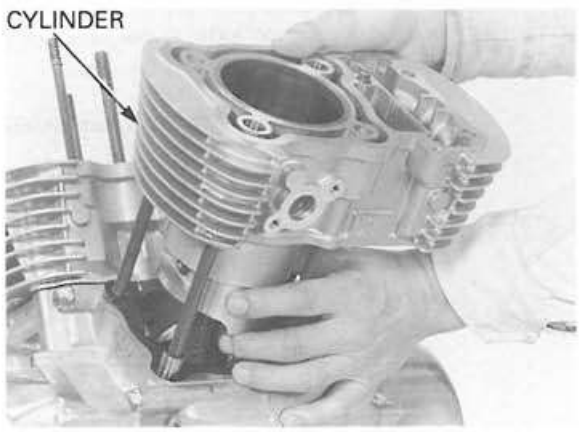
Front cylinder only: Remove the bolts, water hose joint and O-ring.



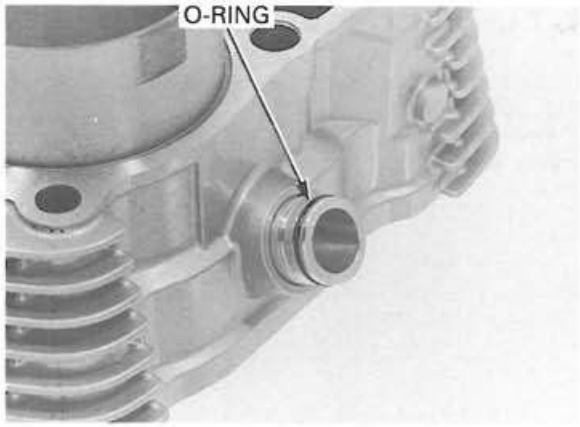
Remove the cylinder.

NOTE:

- Attach a piece of mechanic's wire to the cam chain to prevent it from being dropped into the crankcase.
- Be careful not to damage the mating surfaces by using a screwdriver when disassembling the cylinder.

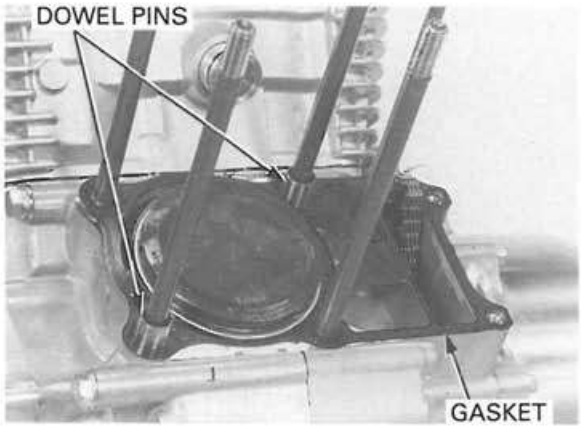


Remove the O-ring.



Be careful not to damage the gasket surface.

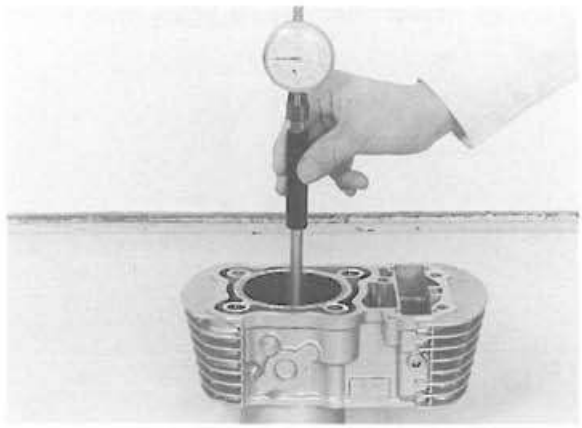
Remove the gasket and dowel pins.
Clean off any gasket material from the cylinder upper surface.



INSPECTION

Inspect the cylinder wall for scratches and wear. Measure and record the cylinder I.D. at three levels in both the X and Y axes. Take the maximum reading to determine the cylinder wear.

SERVICE LIMIT: 79.10 mm (3.114 in)

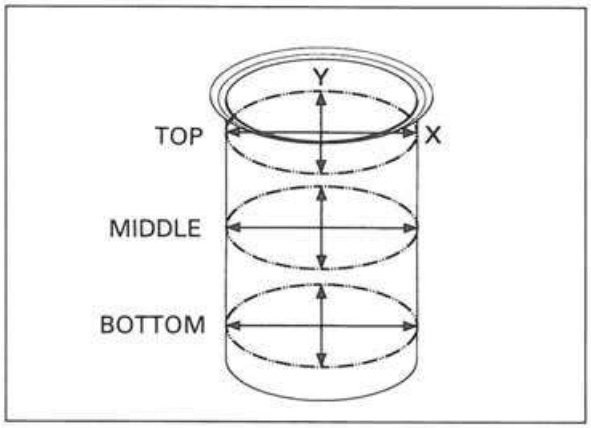


Measure the cylinder for out of round at the three levels in an X and Y axis. Take the maximum reading to determine the out of round.

SERVICE LIMIT: 0.06 mm (0.002 in)

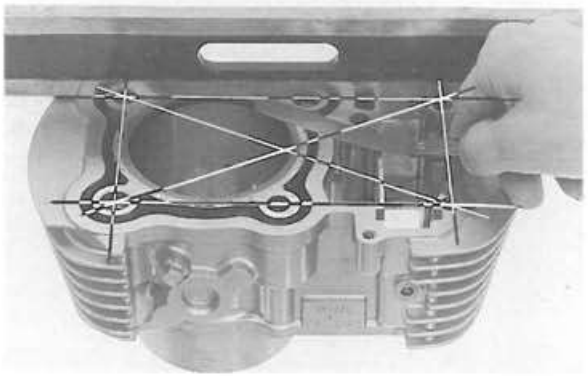
Measure the cylinder for taper at three levels in an X and Y axis. Take the maximum reading to determine the taper.

SERVICE LIMIT: 0.06 mm (0.002 in)



Check the cylinder for warpage by placing a straight edge and a feeler gauge.

SERVICE LIMIT: 0.10 mm (0.004 in)



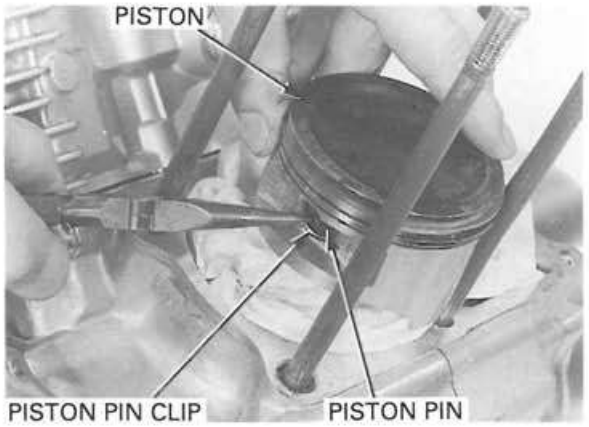
PISTON REMOVAL

NOTE:

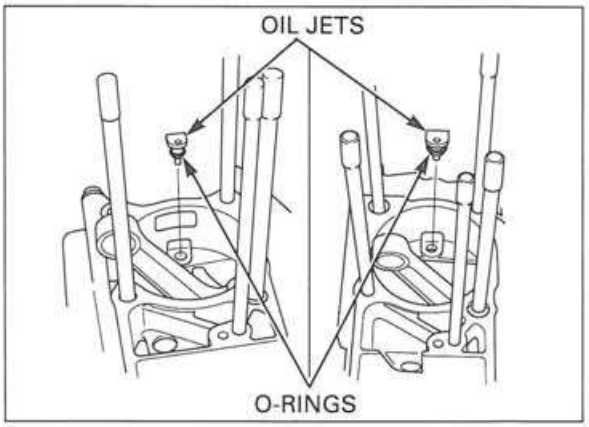
Place a shop towel over the crankcase opening to prevent piston pin clips from falling into the crankcase.

The rear piston uses the same service procedure as the front piston.

Remove the piston pin clip, piston pin and piston.



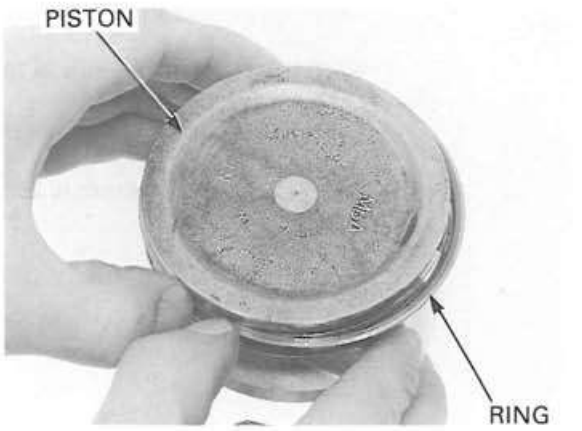
Remove the oil jets and O-rings.



Spread each piston ring and remove it by lifting it up at a point just opposite the gap.

CAUTION:

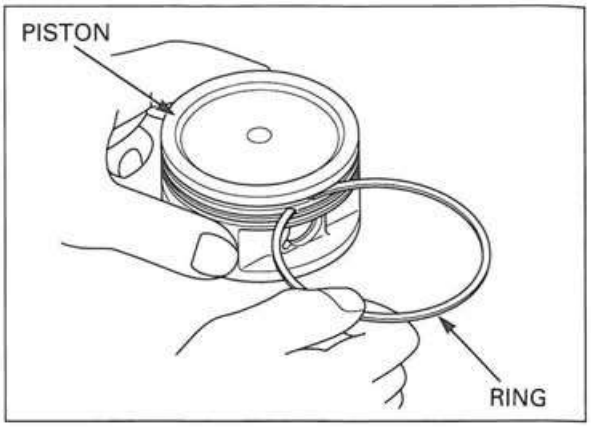
- ***Do not damage the piston ring by spreading the ends too far.***
- ***Be careful not to damage the piston during piston ring removal.***



Clean carbon deposits from the piston.

NOTE:

Clean carbon deposits from the piston ring grooves with a ring that will be discarded. Never use the wire brush; it will scratch the groove.

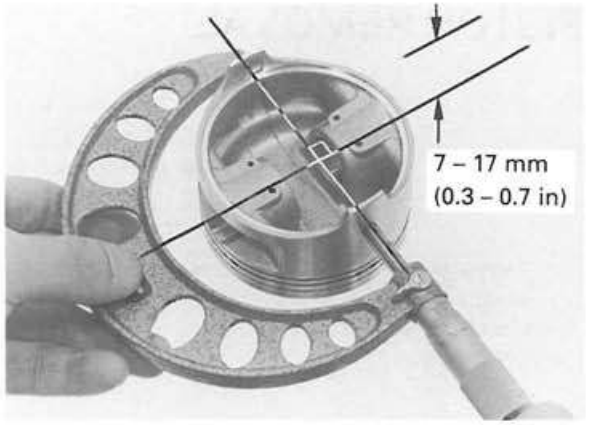


INSPECTION

Inspect the piston for cracks or other damage. Inspect the ring grooves for excessive wear and carbon build-up.
Measure each piston O.D..

NOTE:

Take measurements 7 – 17 mm (0.3 – 0.7 in) from the bottom, and 90° to the piston pin hole.



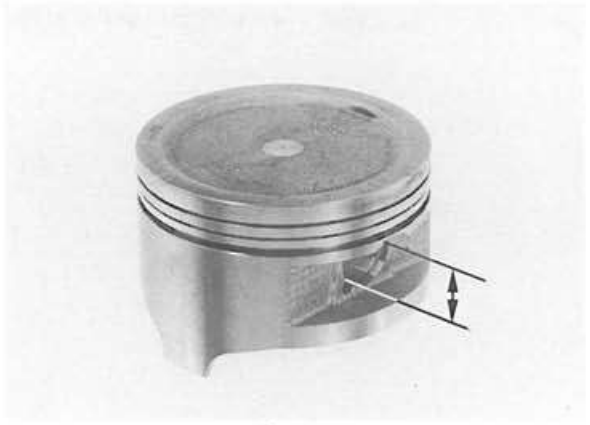
SERVICE LIMIT: 78.90 mm (3.106 in)

Calculate the piston-to-cylinder clearance. Take the maximum reading to determine the clearance (Cylinder I.D.: 11-4).

SERVICE LIMIT: 0.10 mm (0.004 in)

Measure each piston pin hole I.D. in an X and Y axis. Take the maximum reading to determine I.D..

SERVICE LIMIT: 18.05 mm (0.711 in)

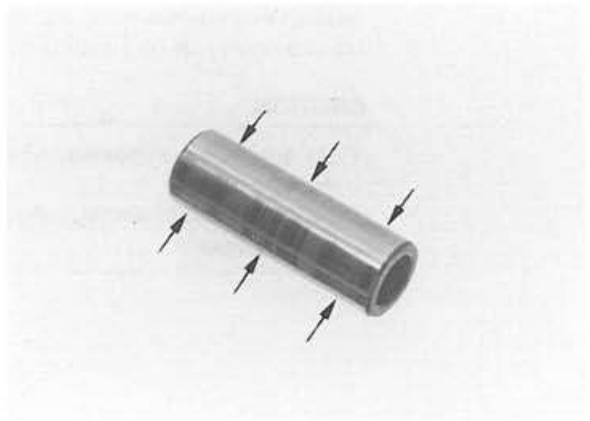


Measure the piston pin O.D. at three points.

SERVICE LIMIT: 17.98 mm (0.708 in)

Calculate the piston-to-piston pin clearance.

SERVICE LIMIT: 0.04 mm (0.002 in)

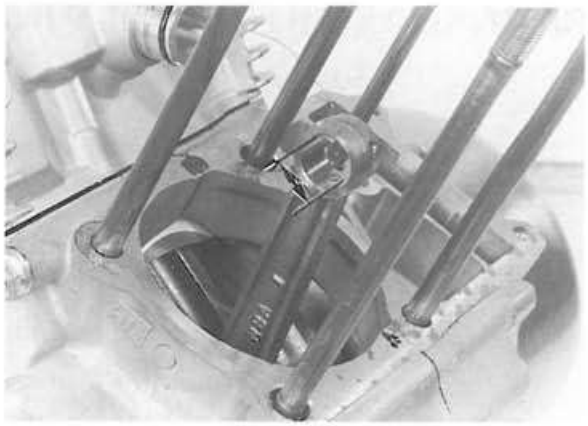


Measure the connecting rod small end I.D.

SERVICE LIMIT: 18.07 mm (0.711 in)

Calculate the connecting rod small end-to-piston pin clearance.

SERVICE LIMIT: 0.06 mm (0.002 in)



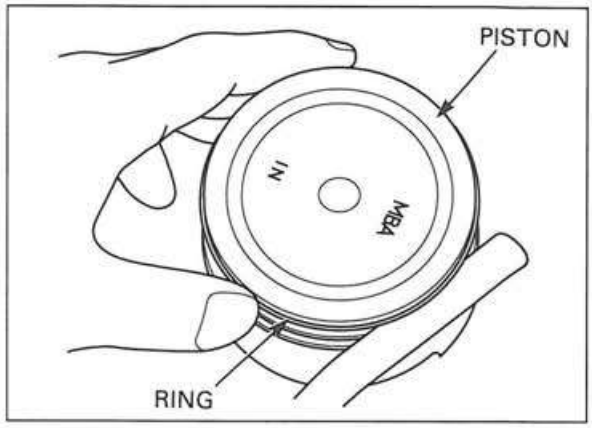
Always replace the piston rings as a set.

Inspect the piston ring, and replace them if they are worn.

Reinstall the piston rings (page 11-8) into the piston grooves.

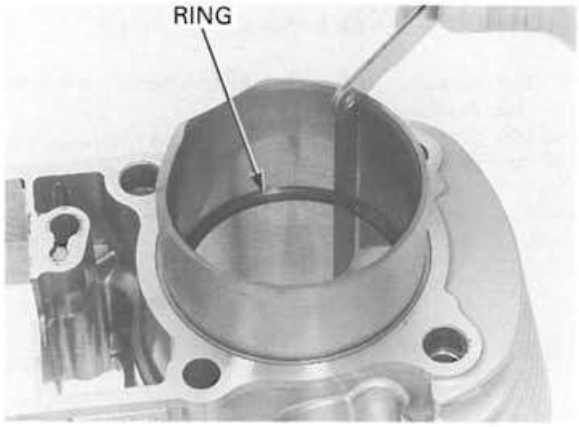
Push in the ring until the outer surface of the piston ring is nearly flush with the piston and measure the clearance using a feeler gauge.

SERVICE LIMIT:
Top: 0.08 mm (0.003 in)
Second: 0.07 mm (0.003 in)

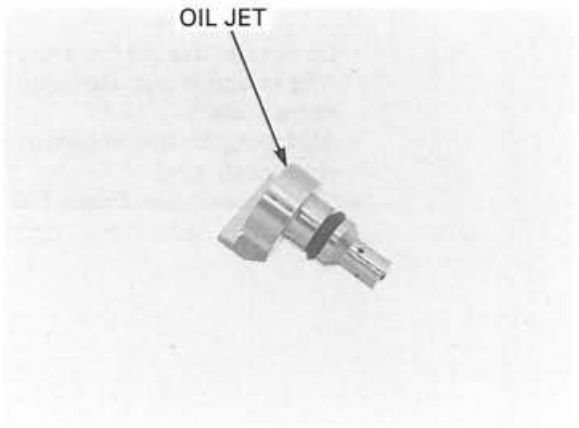


Using a piston, push the ring securely into the cylinder and measure the end gap using a feeler gauge.

SERVICE LIMIT:
Top: 0.5 mm (0.02 in)
Second: 0.7 mm (0.03 in)
Oil : 1.0 mm (0.04 in)



Check the oil jet for clogging.



CRANKCASE STUD BOLT INSPECTION

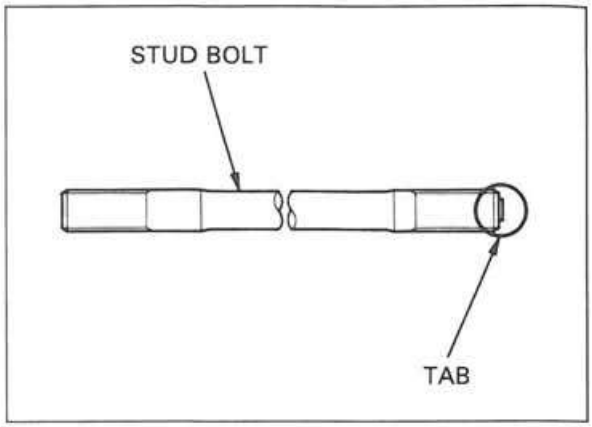
Check the stud bolts for looseness.
If the stud bolts are loose or need to replaced, remove the stud bolts, apply engine oil to the threads, and tighten the stud bolt securely.

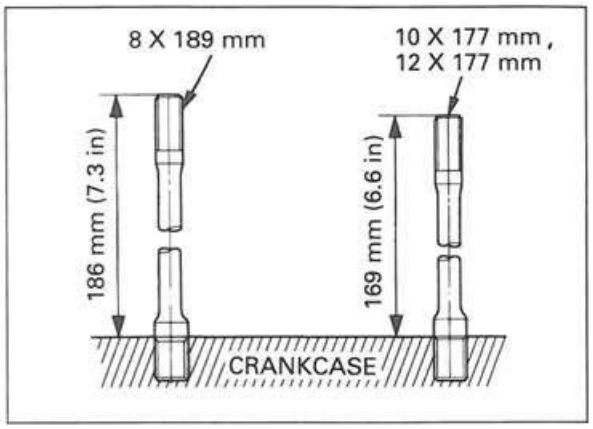
NOTE:

Install the stud bolts with its tab side facing the cylinder head side.

After installing, be sure to measure the length from the top of each stud to crankcase surface.

STANDARD LENGTH:
8 X 189 mm: 186 mm (7.3 in)
10 X 177 mm: 169 mm (6.6 in)
12 X 177 mm: 169 mm (6.6 in)





PISTON INSTALLATION

The rear piston uses the same service procedure as the front piston.

Clean the piston heads, ring lands and skirts.

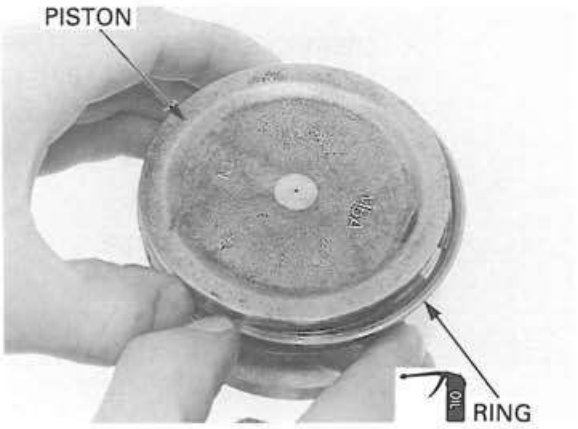
Apply engine oil to the piston rings outer surfaces. Carefully install the piston rings onto the piston with their markings facing up.

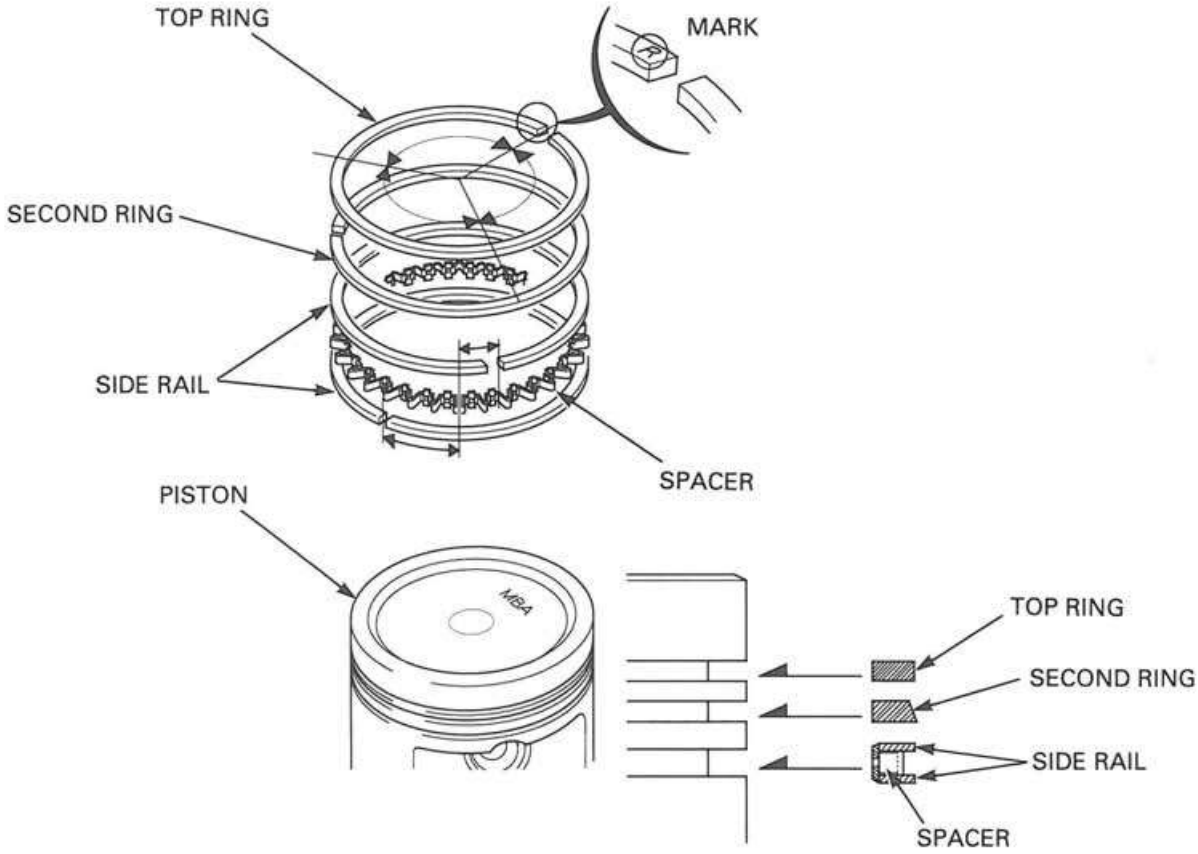
CAUTION:

- ***Do not damage the piston ring by spreading the ends too far.***
- ***Be careful not to damage the piston during piston ring installation.***

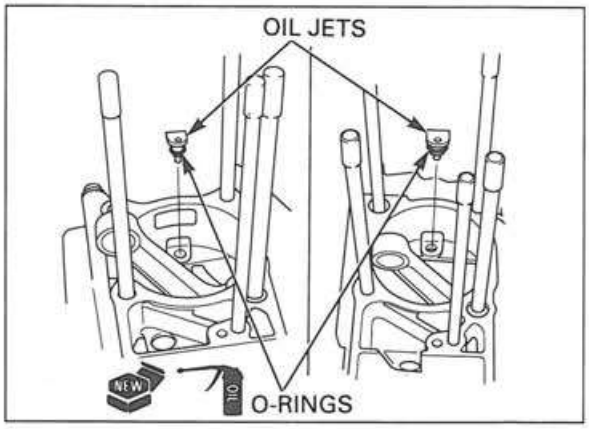
NOTE:

- Do not confuse the top and second rings: The top ring is chrome-coated and second ring is not coated (black).
- After installing the rings they should rotate freely, without sticking.
- Space the ring end gaps 120 degrees apart.





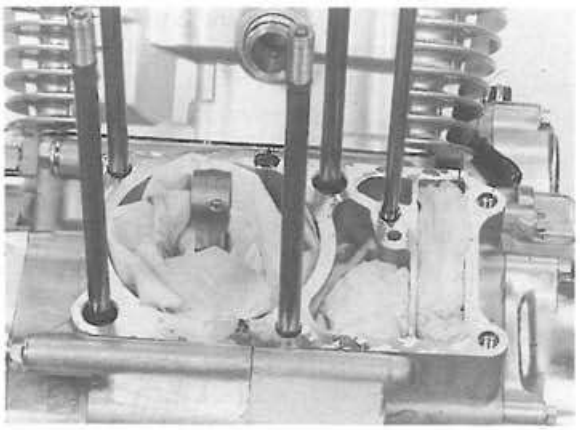
Apply engine oil to the new O-ring and install it to the oil jet.
Securely install the oil jet onto the crankcase.



NOTE:

When cleaning the cylinder mating surface, place a shop towel over the cylinder opening to prevent dust or dirt from entering the engine.

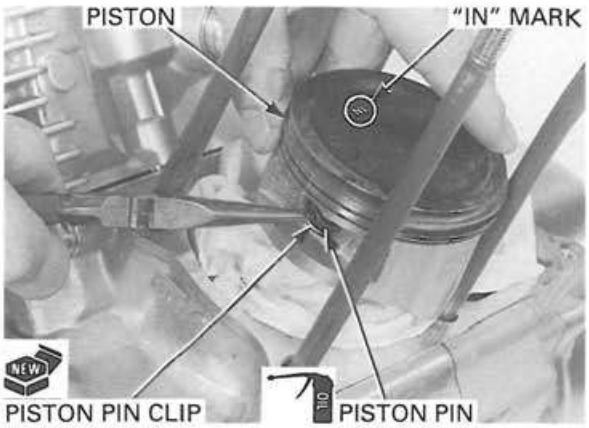
Clean any gasket material from the cylinder mating surfaces of the crankcase.



NOTE:

Place a shop towel over the crankcase opening to prevent piston pin clips from falling into the crankcase.

Apply molybdenum disulfide oil to the connecting rod small end inner surface.
Apply engine oil to the piston pin outer surface.
Install the piston with its "IN" mark facing the intake side.
Install the piston pin.
Install the new piston pin clips.



CAUTION:

Always use new piston pin clips. Reinstalling used piston pin clips may lead to serious engine damage.

NOTE:

- Set the piston pin clip in the groove properly.
- Do not align the clip's end gap with the piston cutout.

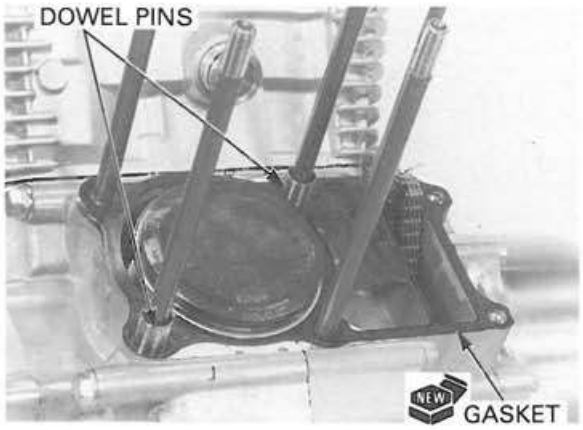
CYLINDER INSTALLATION

NOTE:

When cleaning the cylinder mating surface, place a shop towel over the cylinder opening to prevent dust or dirt enter the engine.

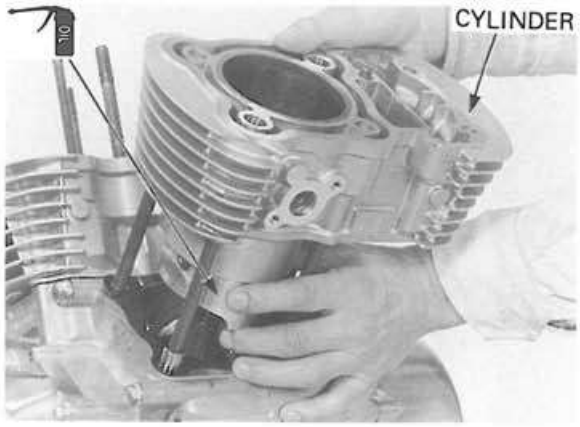
The rear cylinder uses the same service procedure as the front cylinder.

Install the dowel pins and new gasket.



Apply coolant to the new O-ring and install it to the water joint of the cylinder.

Apply engine oil to the cylinder wall, piston outer surfaces and piston rings.

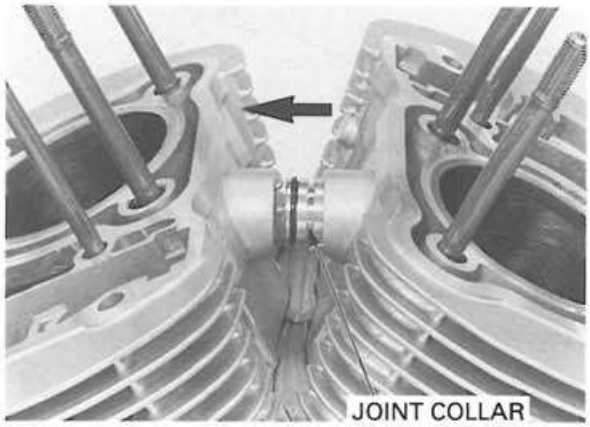


CAUTION:

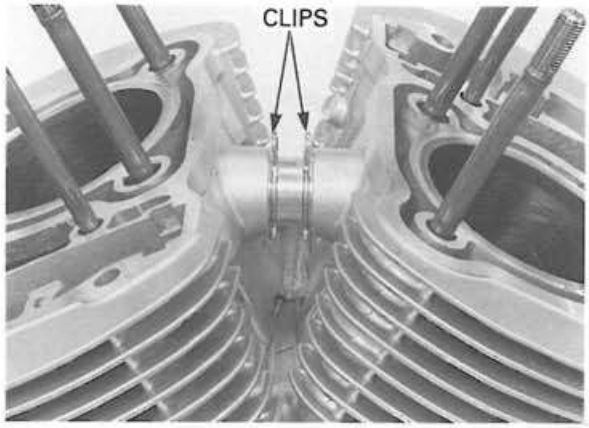
Be careful not to damage the piston rings and cylinder walls.

Route the cam chain through the cylinder.
Install the cylinder over the piston rings by hand while compressing the piston rings.

Slide the cylinder joint collar to the its original position.



Install the joint collar clips to the groove on the water joint of the cylinder.



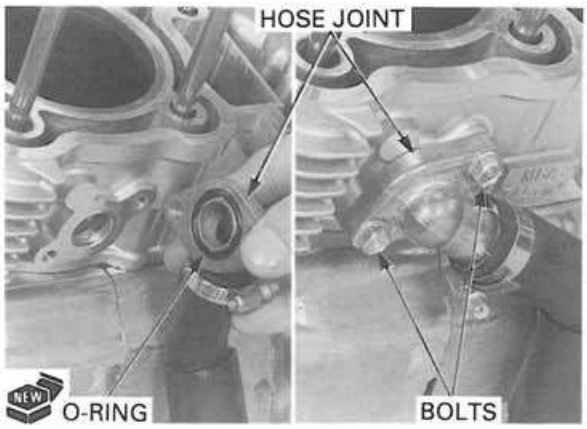
Apply coolant to the new O-ring and install it to the groove on the water hose joint of the front cylinder (front cylinder only).

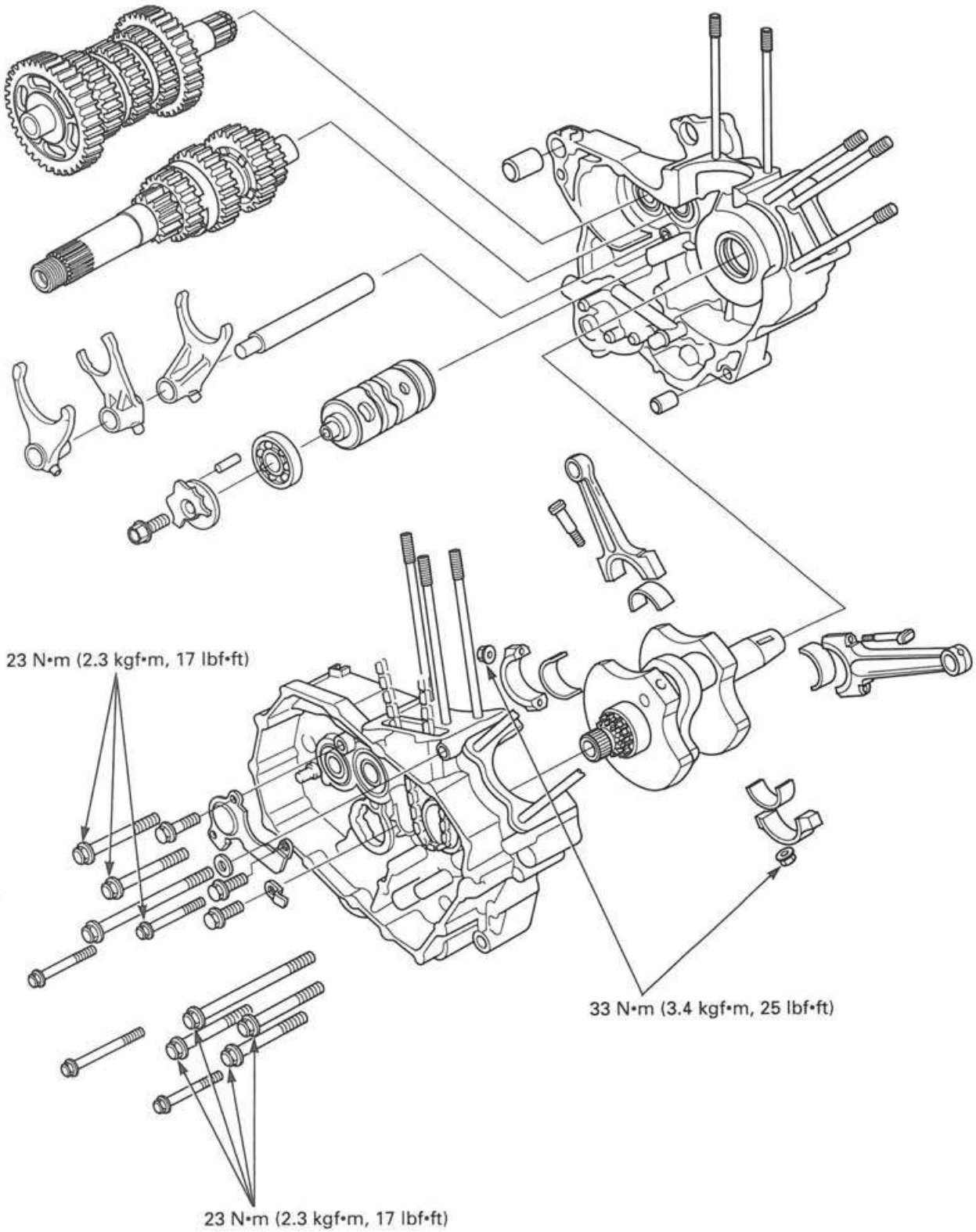
Install and tighten the hose joint bolts securely (front cylinder only).

NOTE:

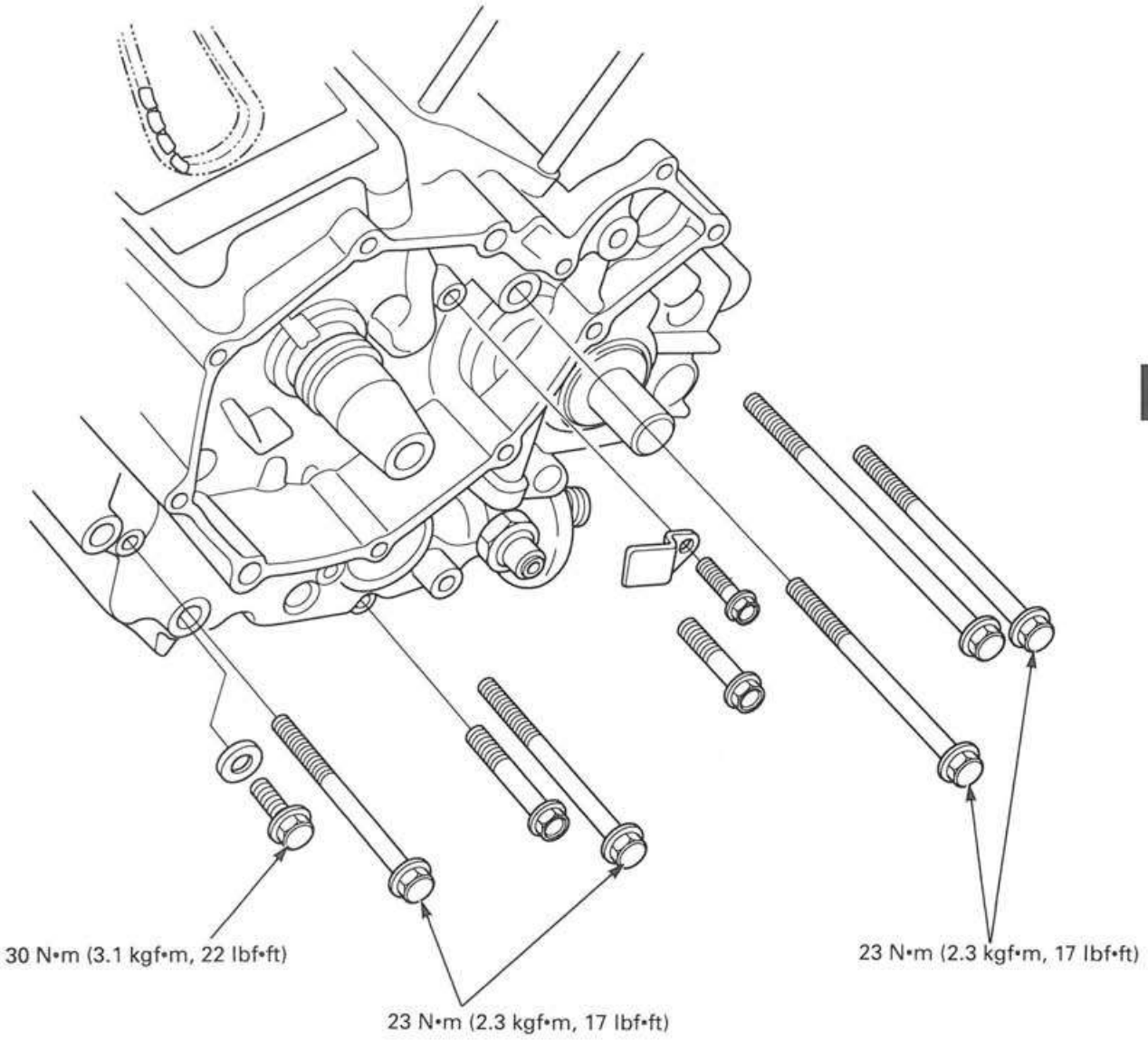
If the water hose was removed, connect the water hose by aligning the white paint on the hose with the boss on the water pipe.

Install the cylinder head (page 10-24).




23 N•m (2.3 kgf•m, 17 lbf•ft)
33 N•m (3.4 kgf•m, 25 lbf•ft)
23 N•m (2.3 kgf•m, 17 lbf•ft)

12. CRANKSHAFT/TRANSMISSION



SERVICE INFORMATION

GENERAL

- The crankcase halves must be separated to service the crankshaft, connecting rod and transmission (including the shift fork and shift drum). To service there parts, the engine must be removed from the engine (Section 7).
- The following parts must be removed before separating the crankcase:
  - Oil filter (Section 3)
  - Water pump (Section 6)
  - Cylinder head (Section 10)
  - Cylinder, piston (Section 11)
  - Clutch, gearshift linkage and primary drive gear (Section 8)
  - Alternator, flywheel (Section 9)
  - Starter motor (Section 18)
  - Neutral switch, oil pressure switch (Section 19)
- Be careful not to damage the crankcase mating surface.
- When disassembling, mark and store the disassembled parts to ensure that they are reinstalled in their original locations.
- Connecting rod bearing inserts are select fitted and are identified by color code. Select the replacement bearings using the selection tables. After installing new bearings, recheck them with plastigauge to verify correct clearance.
- Clean and apply sealant to the crankcase mating surfaces. Wipe off excess sealant thoroughly.

SPECIFICATIONS

Unit: mm (in)

ITEM			STANDARD	SERVICE LIMIT
Crankshaft	Side clearance		0.05 – 0.20 (0.002 – 0.008)	0.30 (0.012)
	Runout		———	0.03 (0.001)
	Crank pin oil clearance		0.028 – 0.052 (0.0011 – 0.0020)	0.07 (0.003)
	Main journal oil clearance		0.030 – 0.046 (0.0012 – 0.0018)	0.07 (0.003)
Transmission	Gear I.D.	M3, M5	28.000 – 28.021 (1.1024 – 1.1032)	28.04 (1.104)
		C1, C2, C4	31.000 – 31.025 (1.2204 – 1.2215)	31.05 (1.222)
	Bushing O.D.	M3, M5	27.959 – 27.980 (1.1007 – 1.1016)	27.94 (1.100)
		C1, C2, C4	30.950 – 30.975 (1.2185 – 1.2195)	30.93 (1.218)
	Bushing I.D.	M3	25.000 – 25.021 (0.9843 – 0.9851)	25.04 (0.986)
		C2	27.995 – 28.016 (1.1021 – 1.1030)	28.04 (1.104)
	Gear-to-bushing clearance	M3, M5	0.020 – 0.062 (0.0008 – 0.0024)	0.10 (0.004)
		C1, C2, C4	0.025 – 0.075 (0.0010 – 0.0030)	0.11 (0.004)
	Mainshaft O.D.	M3 bushing	24.972 – 24.993 (0.9831 – 0.9840)	24.95 (0.982)
		Case journal A	19.980 – 19.993 (0.7866 – 0.7871)	19.96 (0.786)
		Case journal B	21.967 – 21.980 (0.8648 – 0.8654)	21.94 (0.864)
	Countershaft O.D.	C2 bushing	27.967 – 27.980 (1.1011– 1.1016)	27.95 (1.100)
		Case journal A	27.972 – 27.990 (1.1013 – 1.1020)	27.95 (1.100)
		Case journal B	19.980 – 19.993 (0.7866 – 0.7871)	19.96 (0.786)
	Bushing-to-shaft clearance	M3	0.007 – 0.049 (0.0003 – 0.0019)	0.08 (0.003)
		C2	0.015 – 0.049 (0.0006 – 0.0019)	0.08 (0.003)
Shift fork, fork shaft	Fork	I.D.	13.000 – 13.021 (0.5118 – 0.5126)	13.04 (0.513)
		Claw thickness	5.93 – 6.00 (0.233 – 0.236)	5.6 (0.22)
	Fork shaft O.D.		12.966 – 12.984 (0.5105 – 0.5112)	12.90 (0.508)
Shift drum O.D. (at left side journal)			11.966 – 11.984 (0.4711 – 0.4718)	11.94 (0.470)

TORQUE VALUES

Crankcase 8 mm bolt	23 N•m (2.3 kgf•m, 17 lbf•ft)	
Connecting rod bearing cap nut	33 N•m (3.4 kgf•m, 25 lbf•ft)	Apply oil to the threads and seating surface

TOOLS

Attachment, 42 × 47 mm	07746-0010300	
Attachment, 52 × 55 mm	07746-0010400	
Pilot, 20 mm	07746-0040500	
Pilot, 25 mm	07746-0040600	
Pilot, 22 mm	07746-0041000	
Driver	07749-0010000	
Bearing remover set	07936-3710001	Not available in U.S.A. or 07936-371020A (U.S.A. only) or 07936-3710200
– Remover weight	07741-0010201	
– Remover handle	07936-3710100	
– Bearing remover set	07936-3710600	

TROUBLESHOOTING

Excessive noise
- Worn connecting rod big end bearing
- Bent connecting rod
- Worn crankshaft main bearing
- Worn transmission gear

Hard to shift
- Improper clutch adjustment
- Improper clutch operation
- Bent shift fork
- Bent shift fork shaft
- Bent shift spindle
- Damaged shift drum cam grooves
- Incorrect transmission oil weight

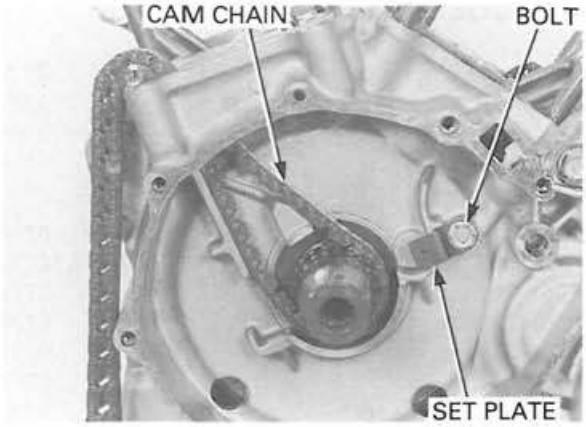
Transmission jumps out of gear
- Worn gear dogs or slots
- Bent fork shaft
- Broken shift drum stopper
- Worn or bent shift forks
- Broken shift linkage return spring

CRANKCASE SEPARATION

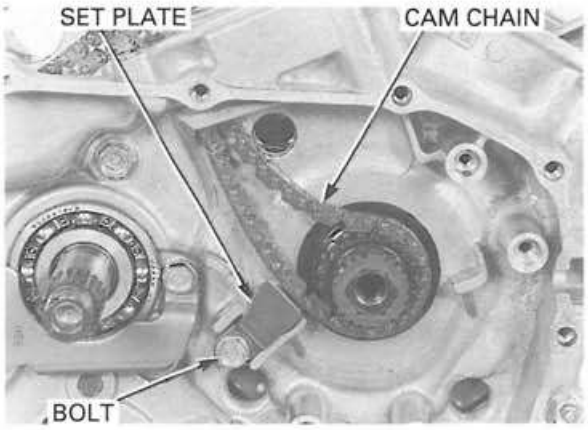
Remove the engine from the frame (Section 7).

Refer to Service Information (page 12-1) for removal of necessary parts before disassembling the crankcase.

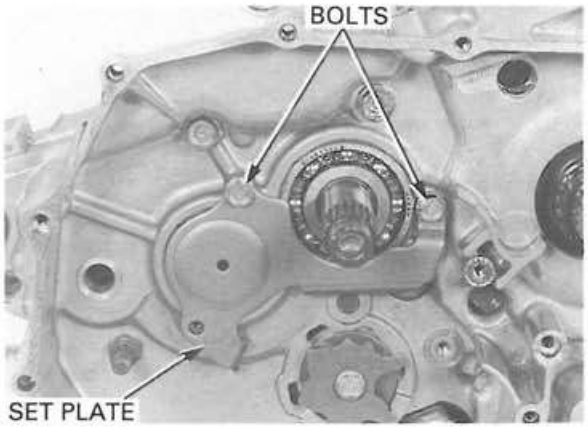
Remove the bolt and front cam chain tensioner set plate.
Remove the front cam chain from the crankshaft.



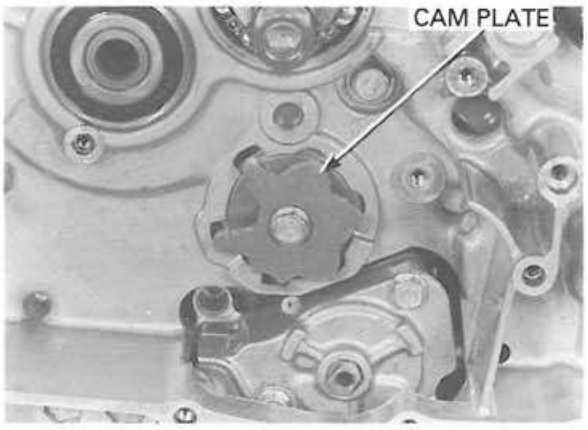
Remove the bolt and rear cam chain tensioner set plate.
Remove the rear cam chain.



Remove the mainshaft bearing set plate by removing the bolts.



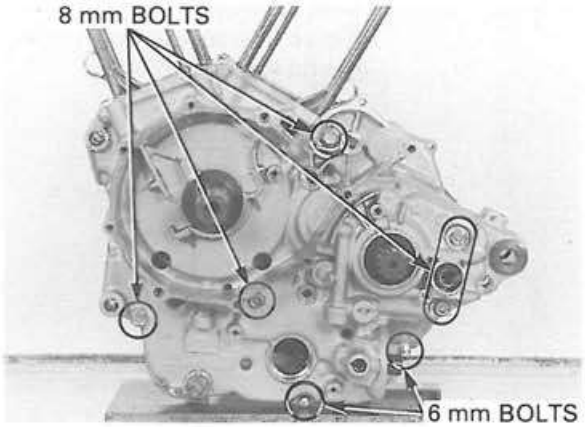
Turn the shift drum until shift cam plate is positioned shown.



Remove the left crankcase bolts.

NOTE:

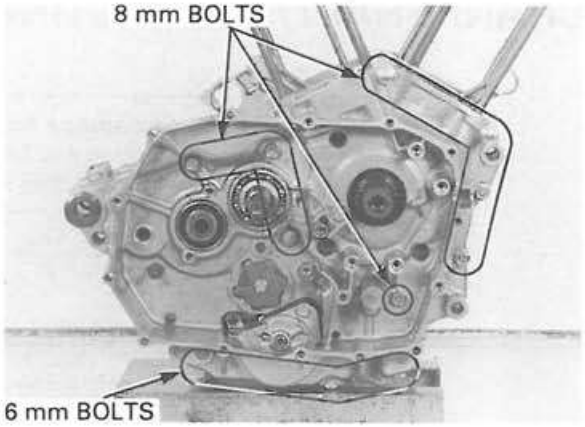
- Loosen the 6 mm bolts first, then 8 mm bolts.
- Loosen the left crankcase bolts in a crisscross pattern in several steps.



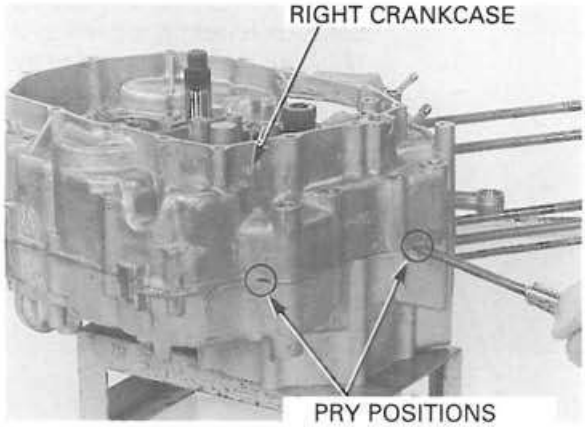
Remove the right crankcase bolts.

NOTE:

- Loosen the 6 mm bolts first, then 8 mm bolts.
- Loosen the right crankcase bolts in a crisscross pattern in several steps.

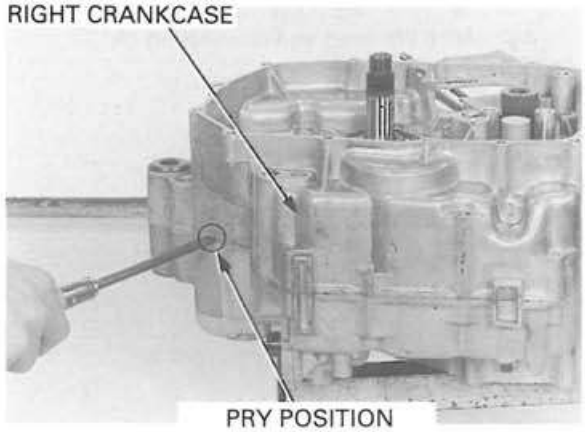


Place the crankcase with the left crankcase down and remove the right crankcase.

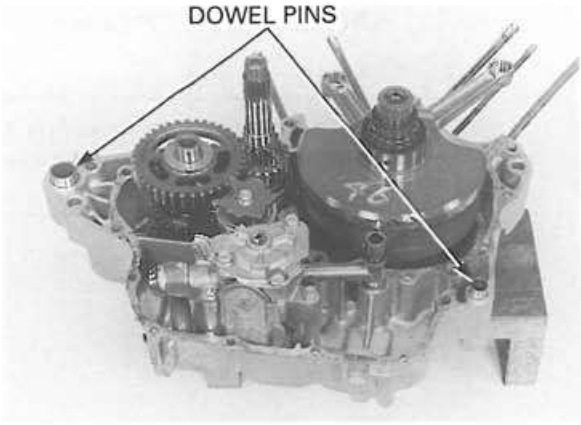


NOTE:

- Separate the right crankcase from the left crankcase while prying at the points as shown.
- Separate the right crankcase from the left crankcase while tapping them at several locations with a soft hammer.



Remove the dowel pins.
Clean off the sealant from the left and right crankcase mating surfaces.



CRANKSHAFT/CONNECTING ROD

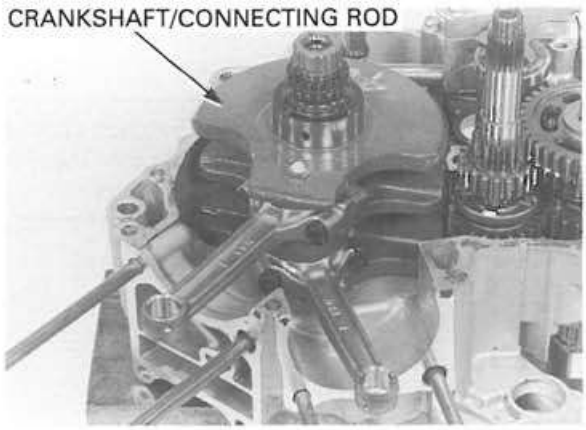
CAUTION:

Be careful not to damage the crankshaft main bearing and connecting rod bearing while servicing the crankshaft/connecting rod.

REMOVAL

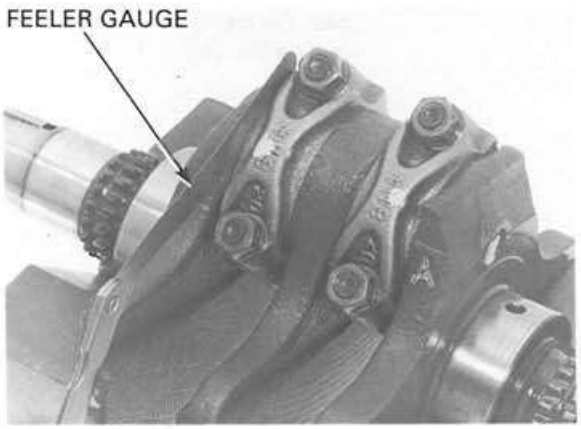
Separate the crankcase (page 12-4).

Remove the crankshaft/connecting rod from left crankcase.



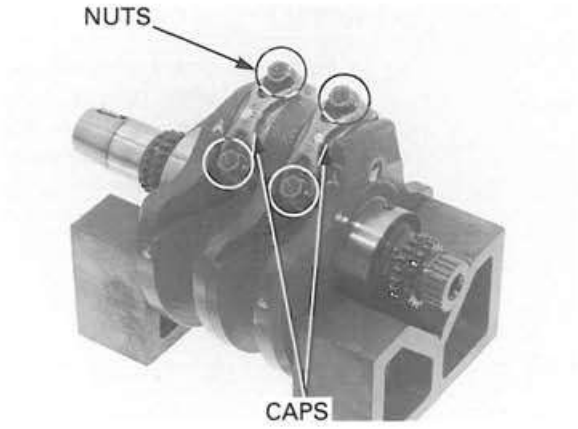
Inspect the connecting rod big end side clearance before connecting rod removal.
Measure the side clearance by inserting the feeler gauge between the crankshaft and connecting rod big end as shown.

STANDARD: 0.30 mm (0.012 in)



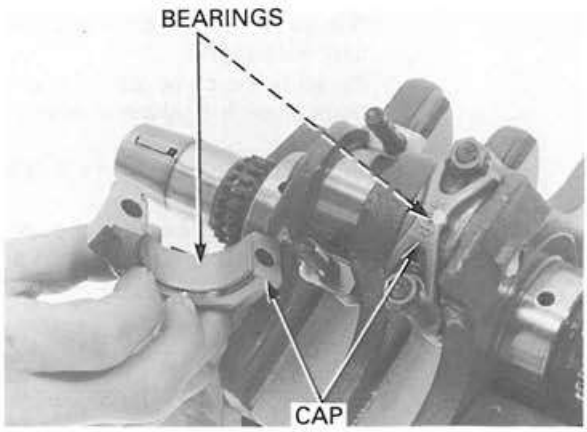
Tap the side of the cap lightly if the bearing cap is hard to remove.

Remove the connecting rod bearing cap nuts, bearing cap and connecting rod.



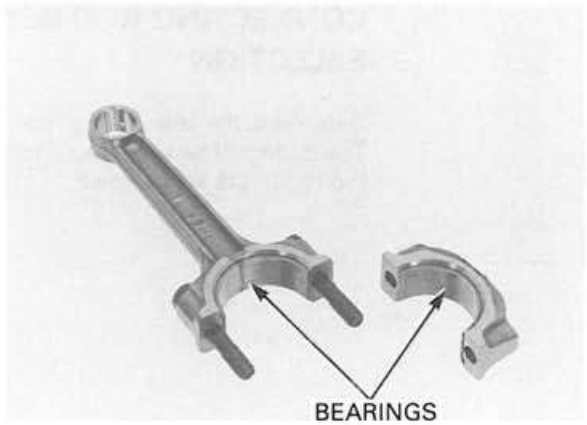
Mark the bearing caps, bearings and connecting rod as you remove them to indicate the correct cylinder and position on the crank pins for reassembly.

Connecting rod small end inspection (page 11-7).



CONNECTING ROD BEARING INSPECTION

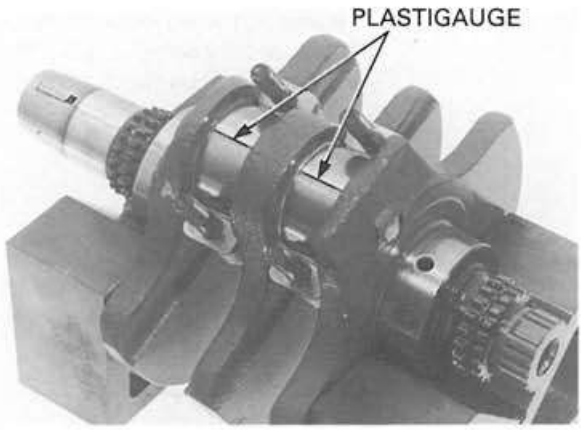
Inspect the bearing inserts for unusual wear, damage or peeling and replace if necessary.



CRANKPIN OIL CLEARANCE

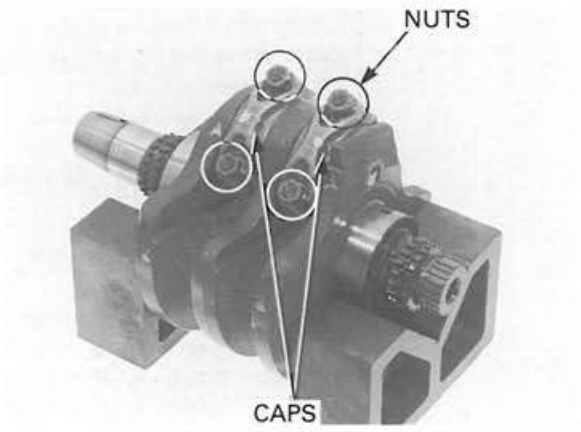
Do not rotate the crankshaft during inspection.

Clean off any oil from the connecting rod bearing inserts and crank pin.
Put a strip of plastigauge on each crank pin avoiding oil hole.



Install the connecting rod bearing and bearing cap to the original location.
Install and tighten the connecting rod bearing cap nuts in a crisscross pattern in several steps.

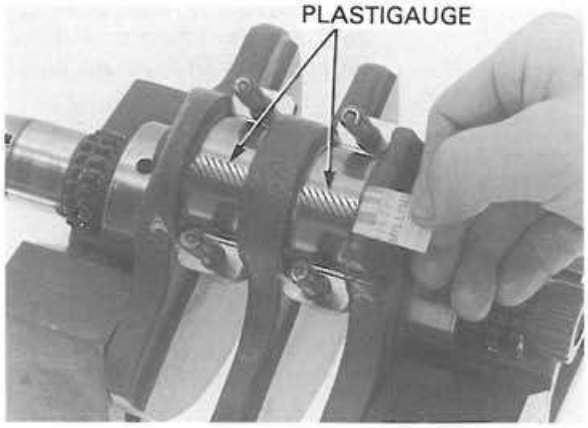
TORQUE: 33 N·m (3.4 kgf·m, 25 lbf·ft)



Remove the connecting rod bearing cap nuts, bearing cap and bearing.
Measure the compressed plastigauge at its widest point on each crankpin to determine the oil clearance.

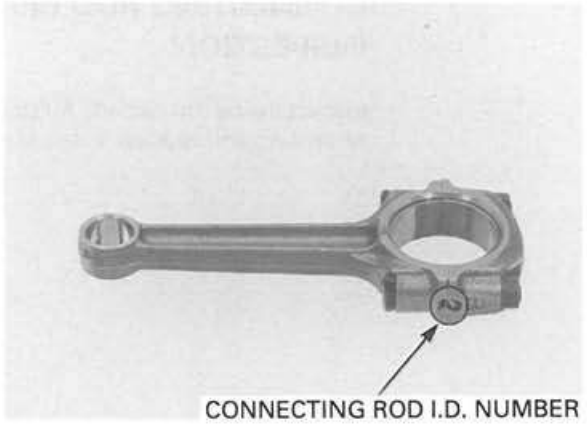
SERVICE LIMIT: 0.07 mm (0.003 in)

If the clearance exceeds the service limit, select the correct replacement bearings as follows.

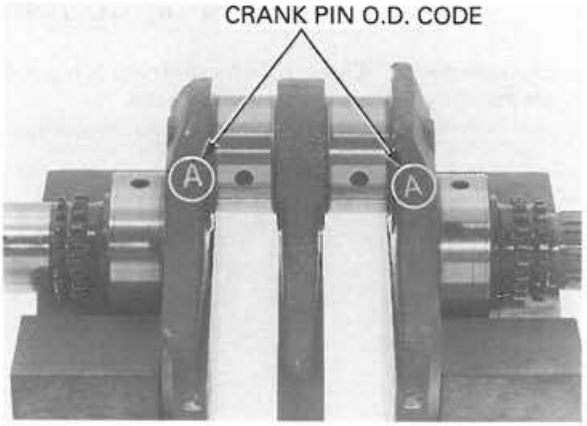


CONNECTING ROD BEARING SELECTION

Determine the connecting rod I.D. number.
The code will be either a number 1 or 2 located on the rod in the area shown.



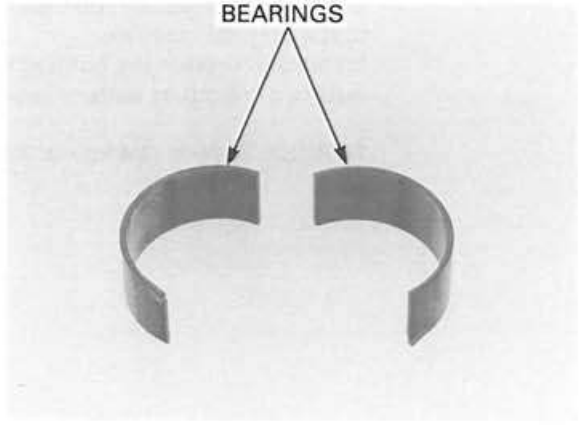
Determine the corresponding crankpin O.D. code (or measure the crankpin O.D.). the code will be either a letter A or B on the crank weight.



Cross reference the crankpin and connecting rod codes to determine the replacement bearing collar.

Unit: mm (in)

Crankpin O.D. code / Connecting rod I.D. number		A	B
		39.982 - 39.990 (1.5741 - 1.5744)	39.974 - 39.981 (1.5738 - 1.5741)
1	43.000 - 43.007 (1.6929 - 1.6932)	C (Brown)	B (Black)
2	43.008 - 43.016 (1.6932 - 1.6935)	B (Black)	A (Blue)



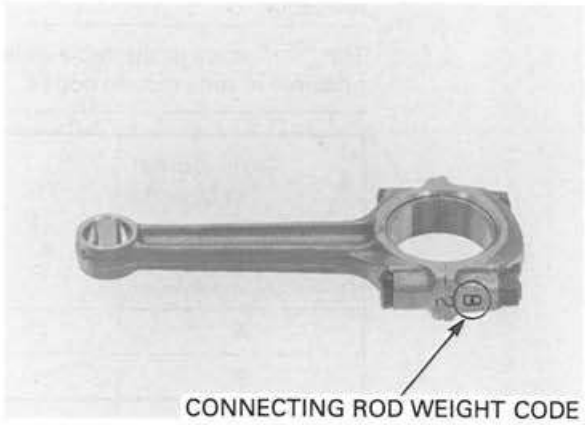
BEARING INSERT THICKNESS:
A (Blue): 1.495 - 1.499 mm (0.0589 - 0.0590 in)
B (Black): 1.491 - 1.495 mm (0.0587 - 0.0589 in)
C (Brown): 1.487 - 1.491 mm (0.0585 - 0.0587 in)

'98 – 2000: CONNECTING ROD/CRANKSHAFT SELECTION

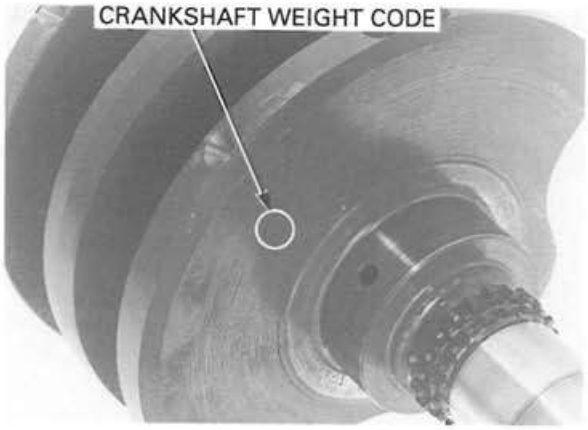
Connecting rod and crankshaft are select fitted. Record the connecting rod weight code (A, B or C). Record the crankshaft weight code (L, R or No code). If the connecting rod and/or crankshaft are replaced, select them with the following fitting table.

NOTE:

The " ○ " mark in the table indicates that mating is possible in the crossed codes.



Front connecting rod weight code / Rear connecting rod weight code	A	B	C
A	*	○	○
B	○	○	○
C	○	○	**



CAUTION:

For selecting crankshaft weight.

- ***Select "L" crankshaft weight, if the front rod and rear rod have code A (*).***
- ***Select "R" crankshaft weight, if the front rod and rear rod have code C (**).***
- ***Select crankshaft weight with no code, other than the above two cases.***

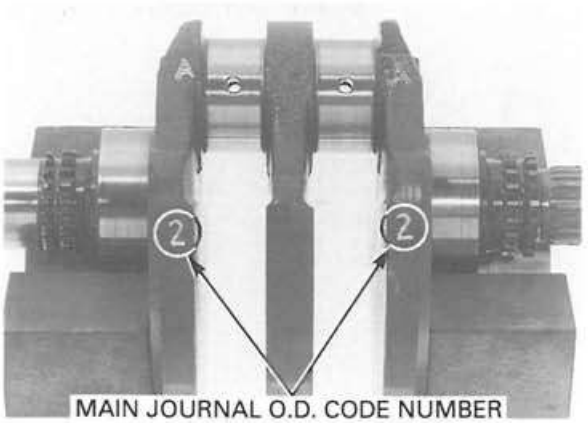
CRANKSHAFT/CRANKCASE SELECTION

Crankcase and crankshaft are select fitted.

Record the main journal O.D. code number (1 or 2).

Record the main journal bearing I.D. code (A or B).

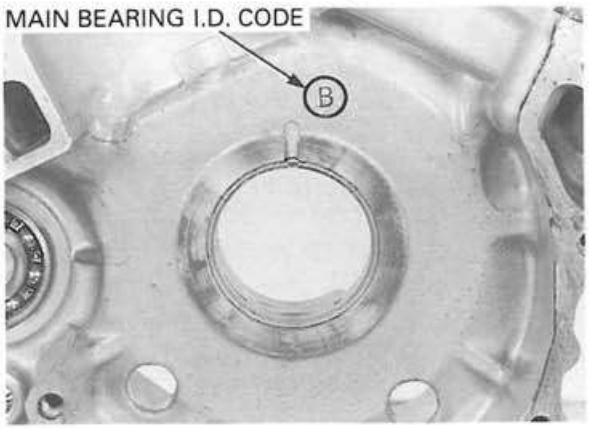
If the crankcase and/or crankshaft are replaced, select them with the following fitting table.



NOTE:

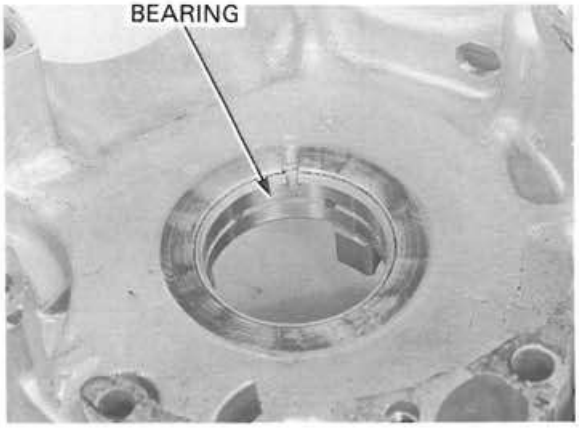
The " ○ " mark in the table indicates that mating is possible in the crossed codes.

Main journal O.D. code / Main journal bearing I.D. code	1	2
A	○	
B		○



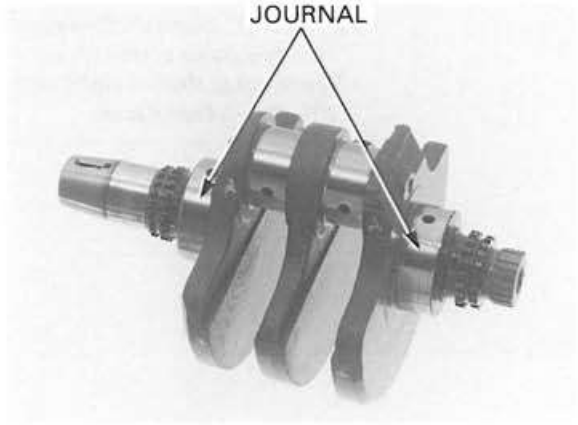
MAIN BEARING INSPECTION

Inspect the bearing inserts for unusual wear, damage or peeling and replace the crankcase if necessary.

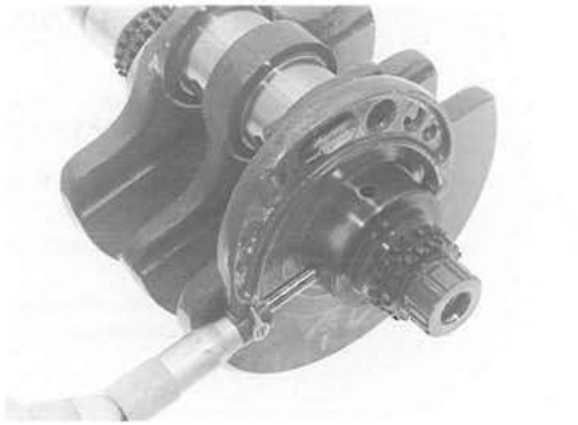


MAIN BEARING OIL CLEARANCE

Clean off any oil from the main bearing inserts and crankshaft journals.



Measure and record the crankshaft main journal O.D..

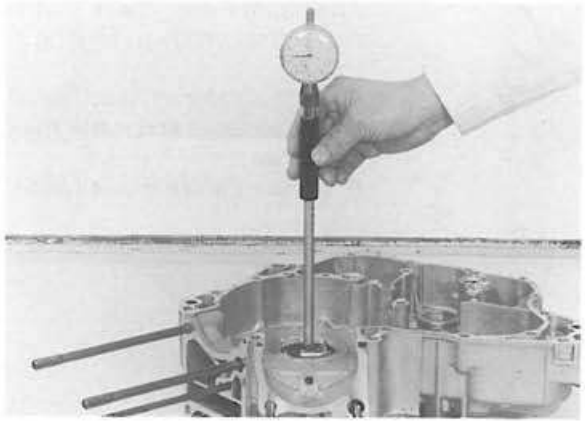


Measure and record the main bearing I.D..

Calculate the oil clearance by subtracting the journal O.D. from bearing I.D..

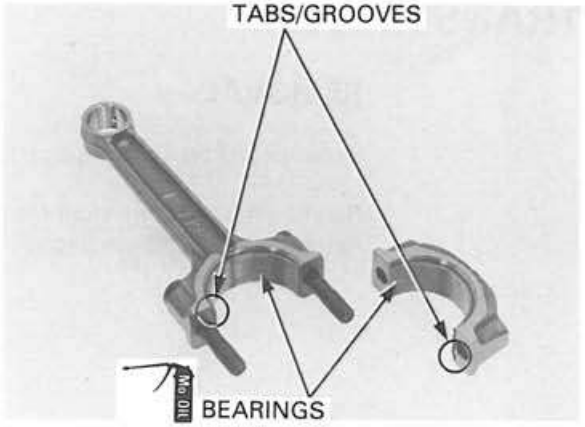
SERVICE LIMIT: 0.07 mm (0.003 in)

Replace the crankcase if the service limit is exceeded. Select the replacement crankcase (page 12-9).



INSTALLATION

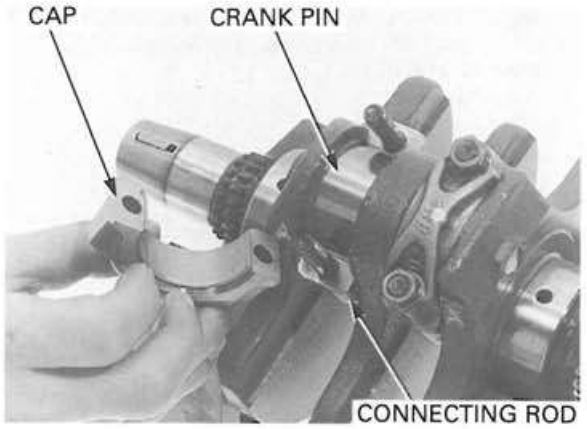
Clean off any oil from the main bearing inserts and connecting rod bearing cap.
Apply molybdenum disulfide oil to the bearings.
Install the main bearing to the connecting rod and bearing cap aligning the tab on the bearing with the groove on the connecting rod and bearing cap.



Install the connecting rods and bearing caps on the crankpin.
Be sure the each part is installed in its original position.

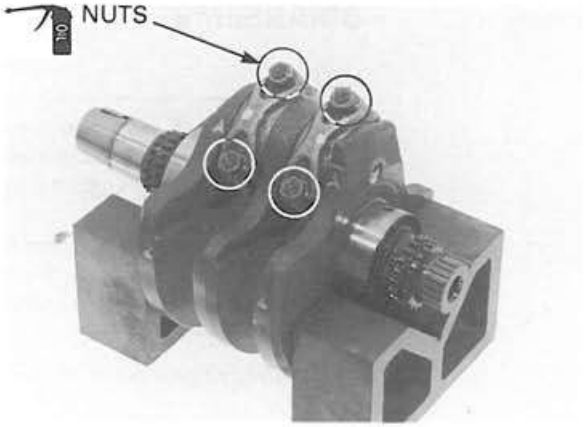
NOTE:

Align the I.D. code on the bearing cap and connecting rod.



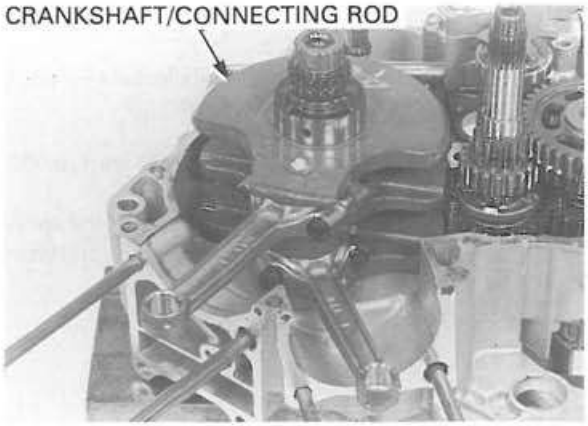
Apply oil to the connecting rod bearing cap bolt/nut threads and flange surface.
Install and tighten the connecting rod bearing cap nuts to the specified torque in several steps.

TORQUE: 33 N·m (3.4 kgf·m, 25 lbf·ft)



After tightening, check that the connecting rods move freely without binding.

Apply molybdenum disulfide oil to the main bearing sliding surfaces and install the crankshaft to the left crankcase.
Assemble the crankcase (page 12-22).

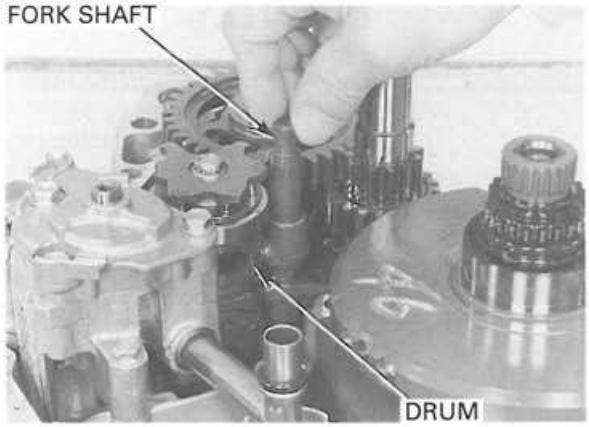


TRANSMISSION

REMOVAL

Separate the crankcase (page 12-4).

Remove the shift fork shaft from the shift fork.
Remove the shift drum and shift fork.



Do not forget to install the transmission end washer.

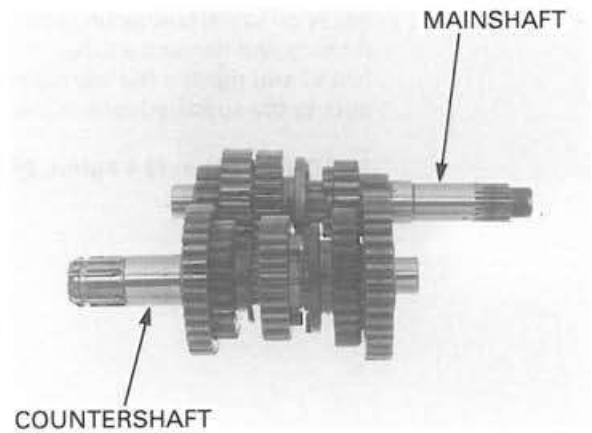
Remove the mainshaft and countershaft from the left crankcase as assembly.

DISASSEMBLY

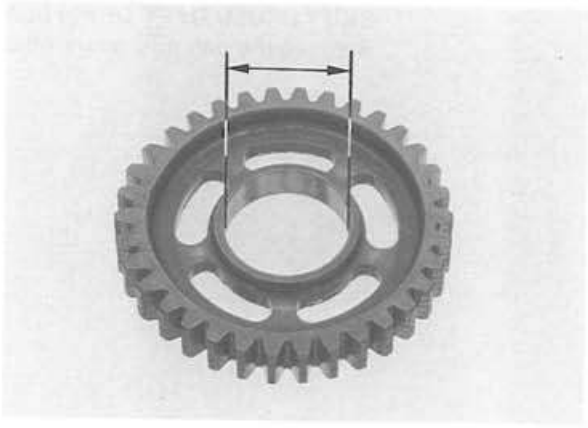
NOTE:

- Keep track of the disassembled parts (gears, bushings, washers, and snap rings) 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 a snap ring, expand the snap ring and pull it off using the gear behind it.

Disassemble the mainshaft and countershaft.



INSPECTION

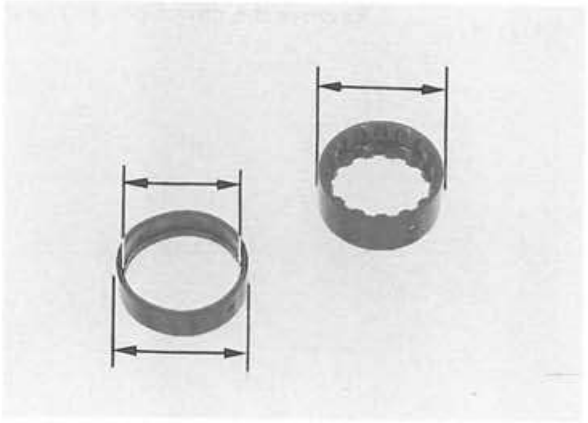


GEAR

Check the gear dogs, dog holders and teeth for damage or excessive wear.
Measure the I.D. of each gear.

SERVICE LIMITS:

M3, M5:	**28.04 mm (1.104 in)**
C1, C2, C4:	**31.05 mm (1.222 in)**



BUSHING

Check the bushings for damage or excessive wear.
Measure the O.D. of each bushings.

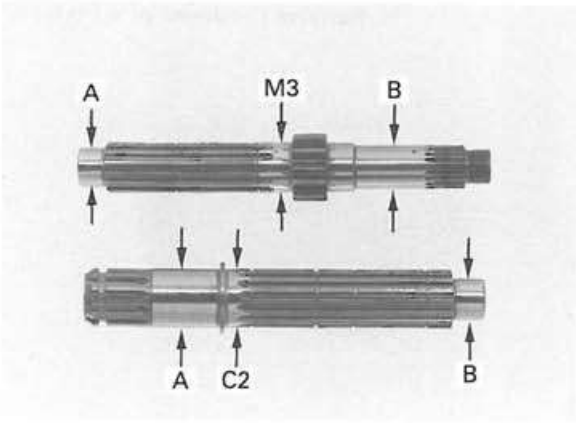
SERVICE LIMITS:

M2, M5:	**27.94 mm (1.100 in)**
C1, C2, C4:	**30.93 mm (1.218 in)**

Measure the I.D. of each bushings.

SERVICE LIMITS:

M3:	**25.04 mm (0.986 in)**
C2:	**28.04 mm (1.104 in)**



MAINSHAFT/COUNTERSHAFT

Check the spline grooves and sliding surfaces for damage or abnormal wear.
Measure the O.D. of the mainshaft and countershaft at the gear and bushing sliding areas.

SERVICE LIMITS:

Mainshaft:	
M3 gear bushing:	**24.95 mm (0.982 in)**
Case journal A:	**19.96 mm (0.786 in)**
Case journal B:	**21.94 mm (0.864 in)**
Countershaft:	
C2 gear bushing:	**27.95 mm (1.100 in)**
Case journal A:	**27.95 mm (1.100 in)**
Case journal B:	**19.96 mm (0.786 in)**

Calculate the clearance by subtracting mainshaft and countershaft O.D. front gear bushing I.D..

SERVICE LIMITS:

M3, C2:	**0.08 mm (0.003 in)**

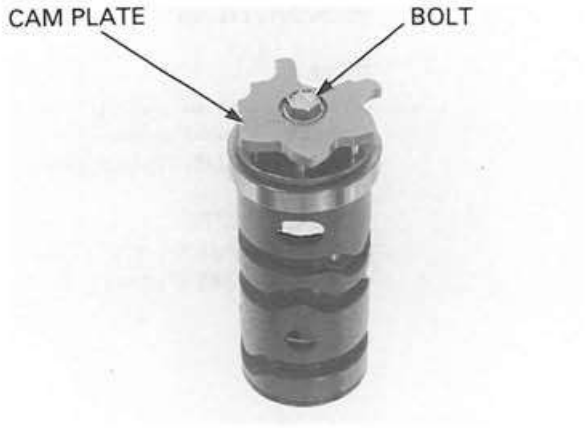
Calculate the clearance by subtracting gear bushing O.D. from gear I.D..

SERVICE LIMITS:

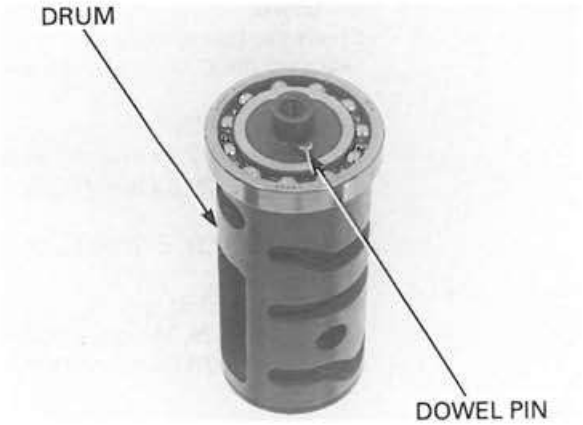
M3, M5:	**0.10 mm (0.004 in)**
C1, C2, C4:	**0.11 mm (0.004 in)**

SHIFT DRUM/SHIFT DRUM BEARING

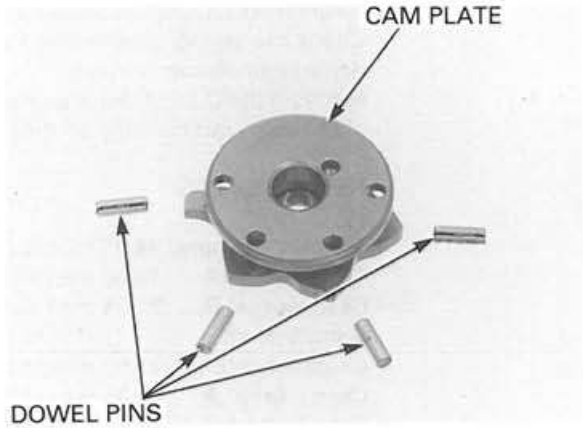
Remove the bolt and gearshift cam plate.



Remove the dowel pin and bearing.



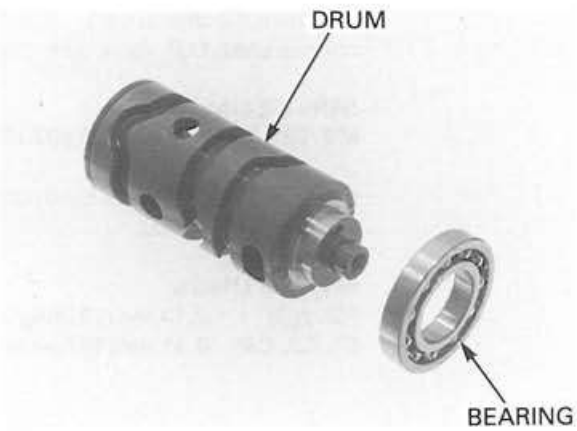
Remove the dowel pins from the gearshift cam plate.



Inspect the shift drum for scoring, scratches or evidence of insufficient lubrication.

Check the shift drum grooves for abnormal wear or damage.

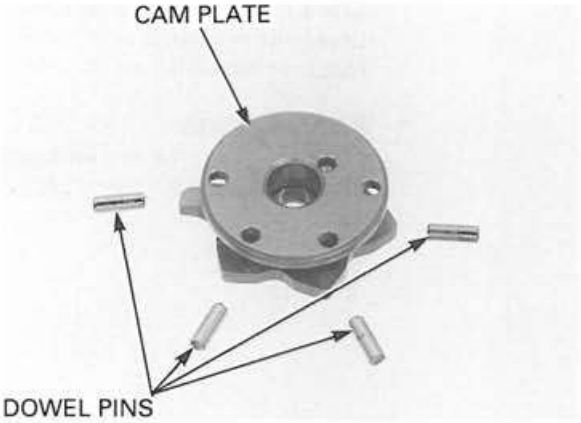
Turn the inner race of bearing with your finger. The bearing should turn smoothly and quietly.



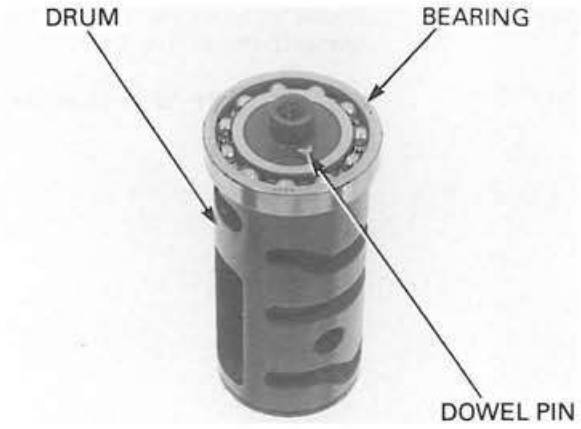
Measure the shift drum O.D. at the left side journal.

SERVICE LIMIT: 11.94 mm (0.470 in)

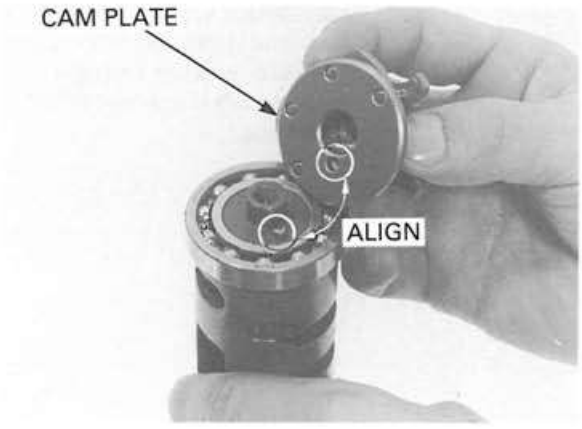
Install the dowel pins into the cam plate holes.



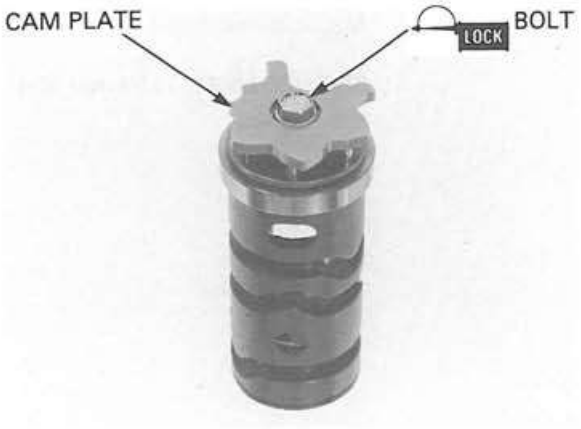
Install the bearing to the shift drum.
Install the dowel pin into the shift drum hole.



Install the gearshift cam plate by aligning the hole on the cam plate with the dowel pin.

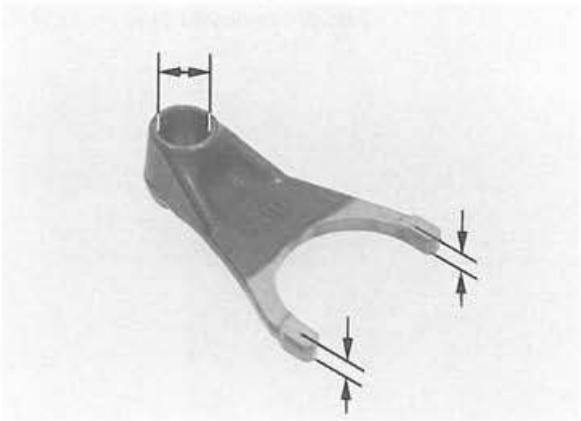


Clean and apply a locking agent to the gearshift cam plate bolt.
Install and tighten the bolt to the securely.



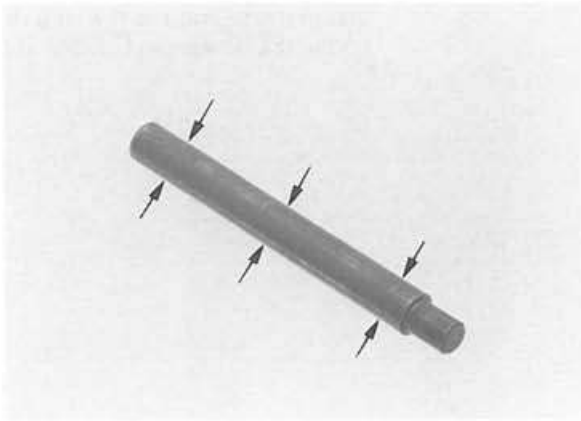
SHIFT FORK, SHIFT FORK SHAFT
Check for abnormal wear or deformation.
Measure the shift fork I.D. and claw thickness.

SERVICE LIMITS:
I.D.: 13.04 mm (0.513 in)
Claw thickness: 5.6 mm (0.22 in)

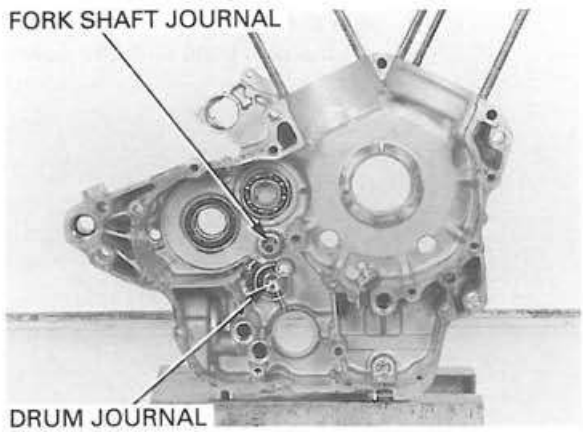


Check for abnormal wear, damage or straightens.
Measure the shift fork shaft O.D..

SERVICE LIMIT: 12.90 mm (0.508 in)



SHIFT DRUM JOURNAL, SHIFT FORK SHAFT JOURNAL
Check the right and left crankcase shift fork shaft journal for wear or damage.
Check the left crankcase shift drum journal for wear or damage.



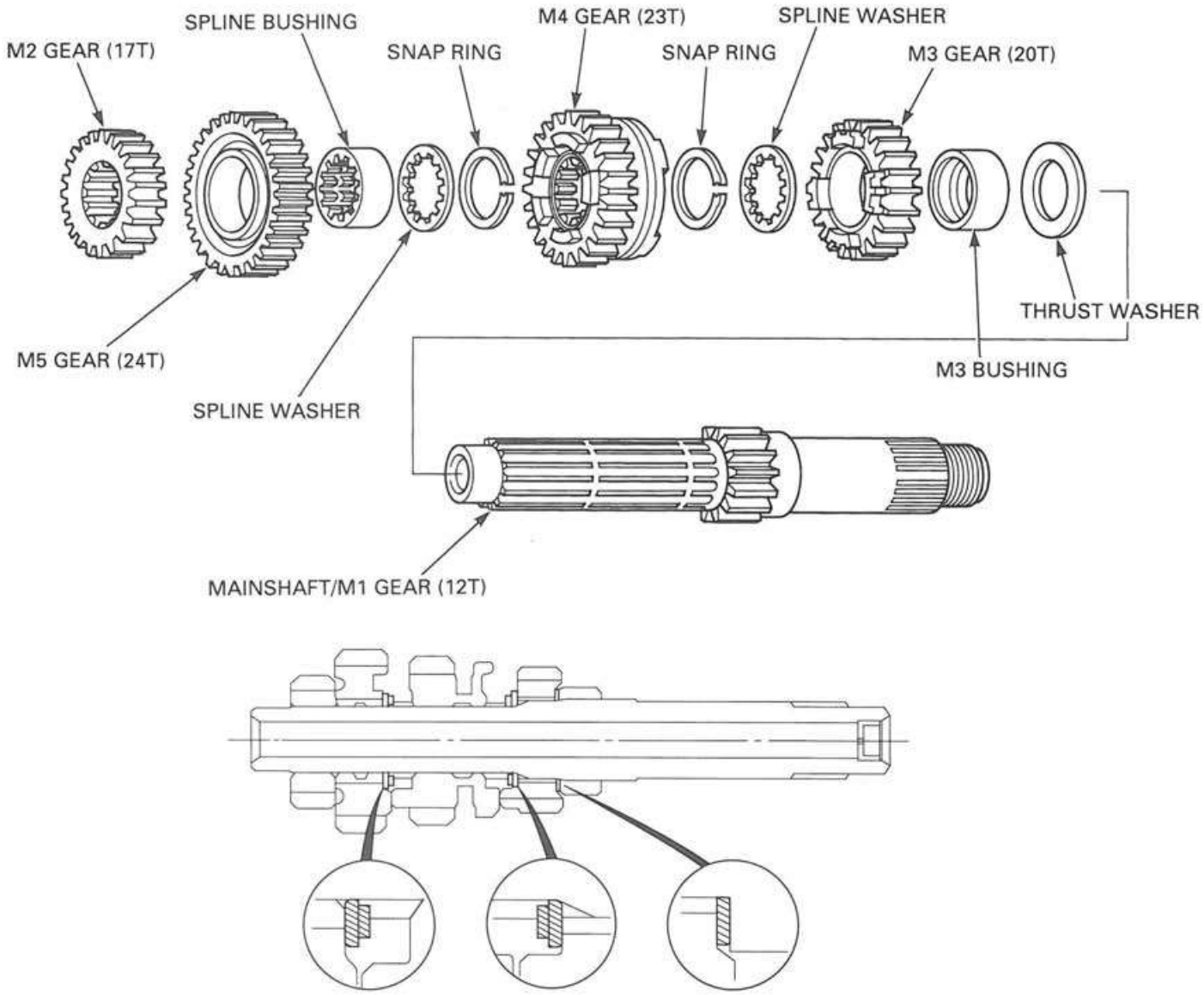
ASSEMBLY

Clean all parts in solvent.
Apply molybdenum oil solution to the transmission gear shift fork groove, transmission collar inner and outer surface and spline collar outer surface to ensure initial lubrication.
Assemble all parts into their original positions.

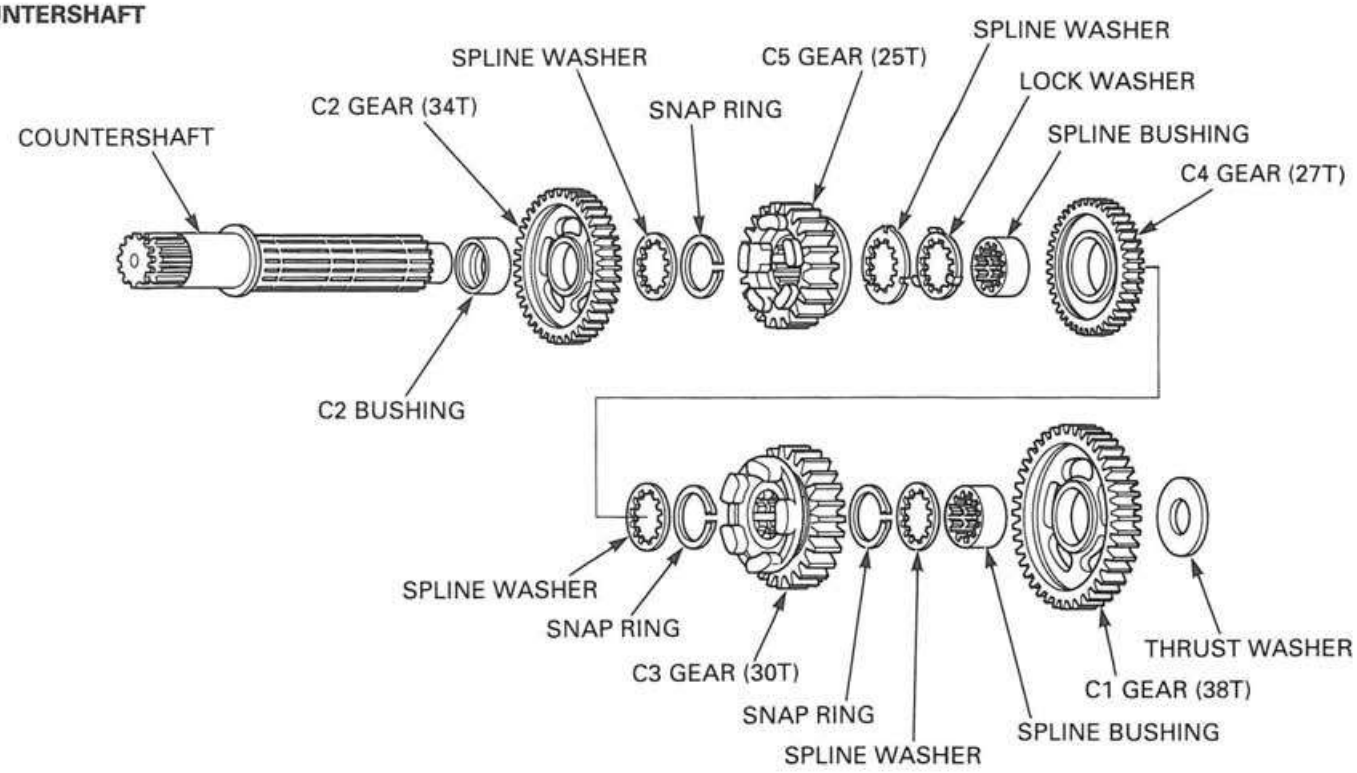
NOTE:

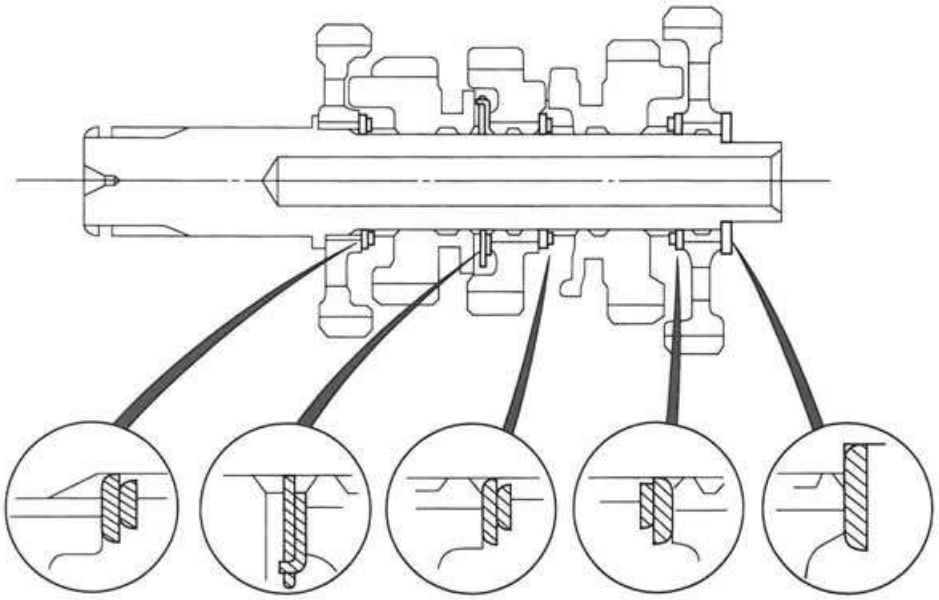
- Check the gears for freedom of movement or rotation on the shaft.
- Install the washers and snap rings with the chamfered edges facing the thrust load side.
- Do not reuse worn snap rings which could easily spin in the grooves.
- Check that the snap rings are seated in the grooves. Align their end gaps with the grooves of the spline.

MAINSHAFT



COUNTERSHAFT

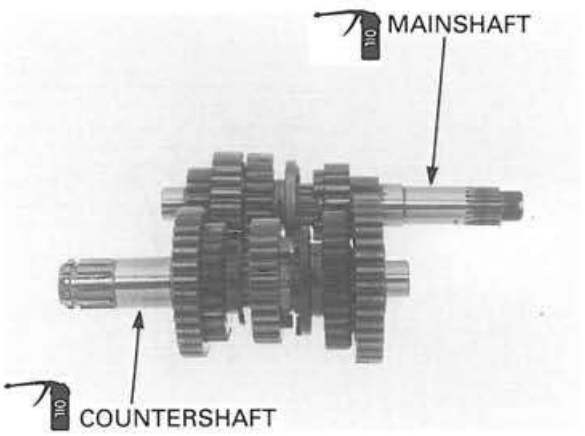




INSTALLATION

Apply engine oil to the following parts:
- Mainshaft
- Countershaft
- Each gear tooth
- Mainshaft bearing
- Countershaft bearing
- Shift drum bearing

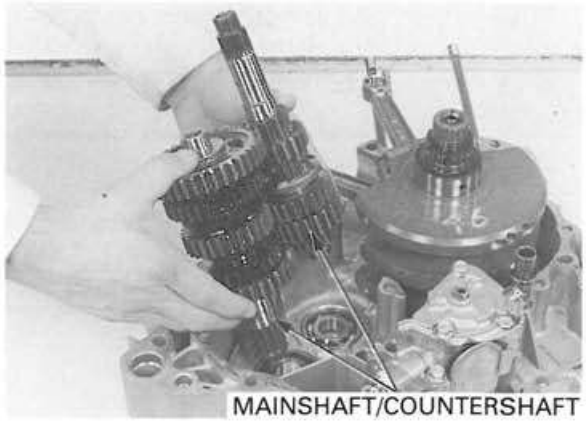
Apply molybdenum disulfide oil to the following parts:
- Each gearshift fork grooves
- Each collar inner and outer surfaces
- Each spline collar outer surfaces



Install the mainshaft and countershaft to the left crankcase as assembly.

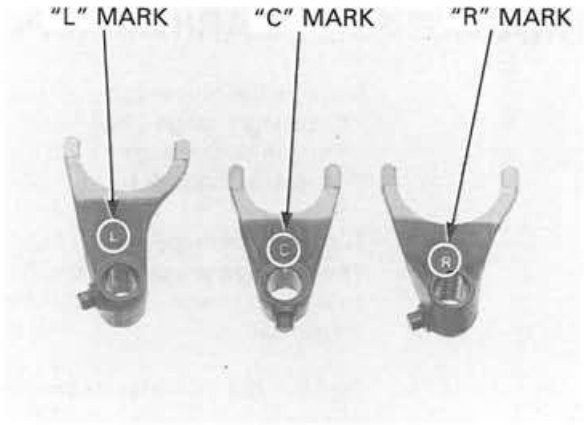
NOTE:

- Do not forget to install the transmission end washer.
- When mainshaft and countershaft installation, be careful not to damage the countershaft oil seal.



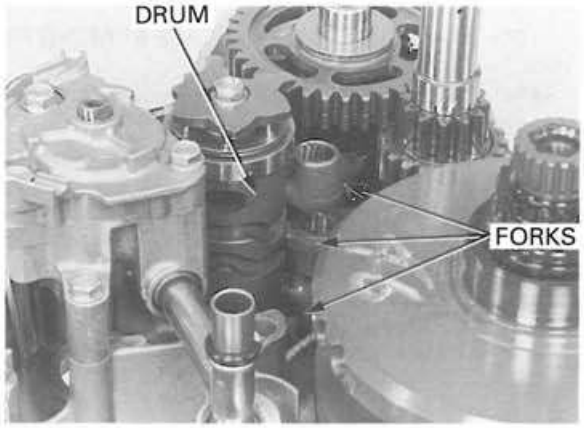
NOTE:

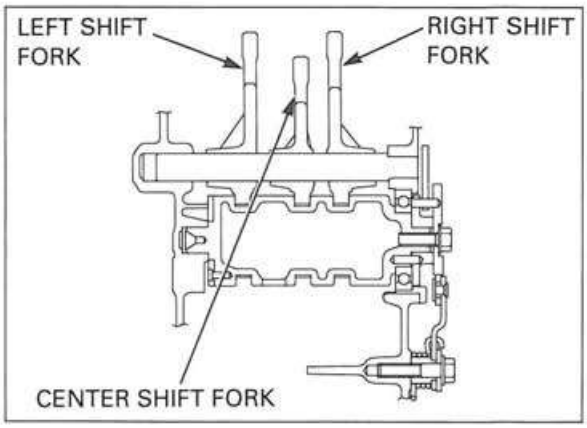
Each shift fork has an identification mark; "R" is for the right shift fork, "L" is for the left shift fork and "C" is for the center shift fork.



Install the shift forks to the grooves of the shifter gear with their marks facing up (toward right crankcase side).

Install the shift drum by aligning the guide pins on the shift fork with the guide grooves of the shift drum.

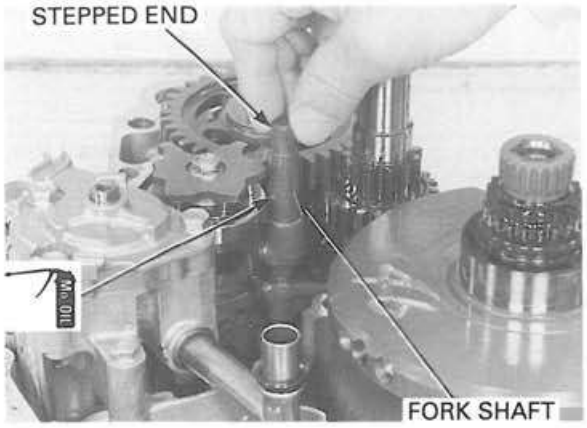




Apply molybdenum oil solution to the shift fork shaft. Install the shift fork shaft with its stepped end side facing up (right crankcase side).

After installing, check for smooth transmission operation.

Assemble the crankcase (page 12-22).

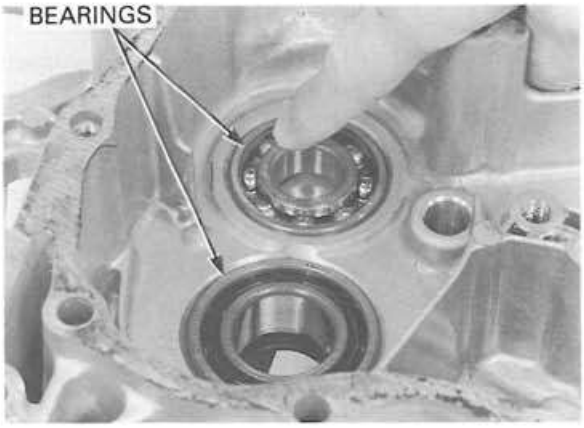


CRANKCASE BEARING REPLACEMENT

Remove the following:
- Crankshaft (page 12-6)
- Transmission (page 12-12)
- Oil pump (page 4-4)

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

Replace the bearings if the races does not turn smoothly and quietly, or if they fit loosely in the crankcase.



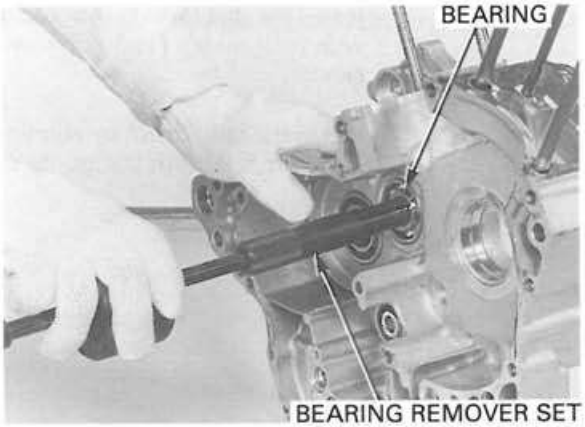
The oil pump must be removed before replacing the crankcase bearing.

LEFT CRANKCASE BEARING REPLACEMENT

Remove the left mainshaft bearing using the special tools.

TOOLS:

Bearing remover set	**07936-3710001**
	Not available in U.S.A.
– Remover handle	**07936-3710100**
– Bearing remover head	**07936-3710600**
– Remover sliding weight	**07741-0010201 or 07936-371020A (U.S.A. only) or 07936-3710200**



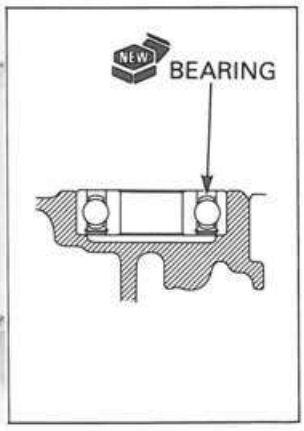
Remove the left countershaft bearing and oil seal.

Drive in the new bearings squarely with the marking side facing up.

Install the new bearings to the left crankcase using the following special tools.

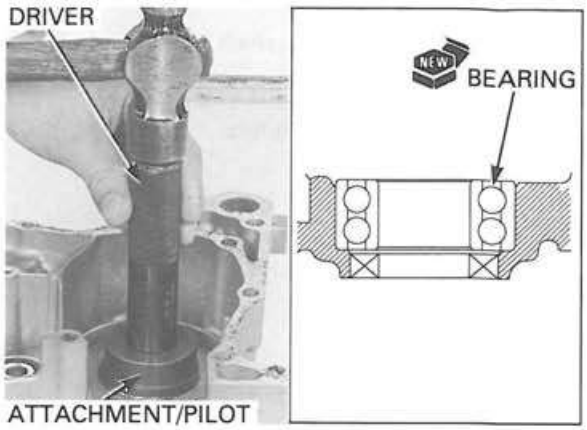
TOOLS:

Mainshaft bearing:	
Driver	**07749-0010000**
Attachment, 42 X 47 mm	**07746-0010300**



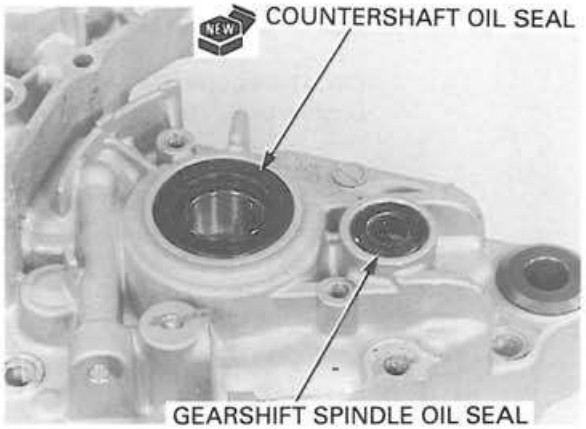
TOOLS:
Countershaft bearing:

Driver	**07749-0010000**
Attachment, 52 X 55 mm	**07746-0010400**
Pilot, 25 mm	**07746-0041100**

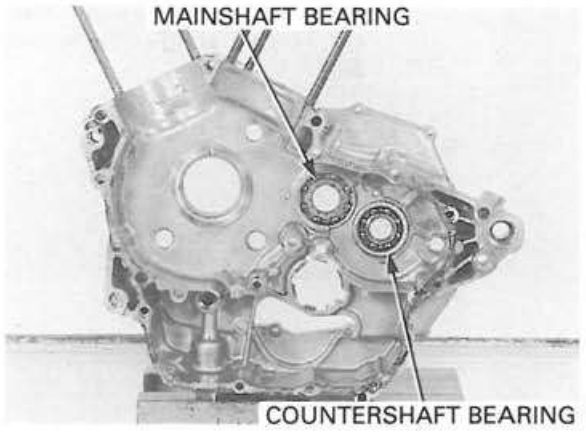


Install the new countershaft oil seal.

Check the gearshift spindle oil seal for damage. Replace the gearshift spindle oil seal if necessary.



RIGHT CRANKCASE BEARING REPLACEMENT
Drive out the right mainshaft bearing and right countershaft bearing.

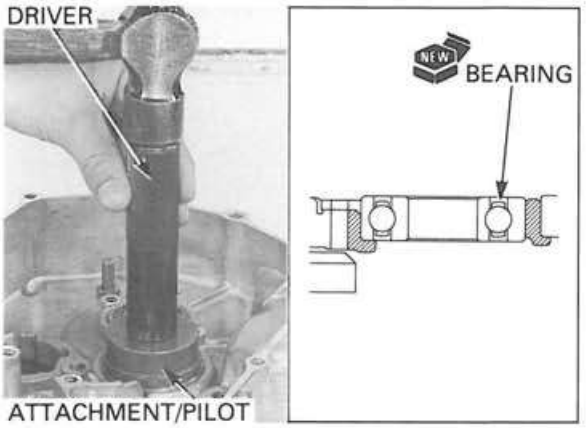


Drive in the new bearings squarely with the marking side facing up.

Install the new bearings to the right crankcase using the following special tools.

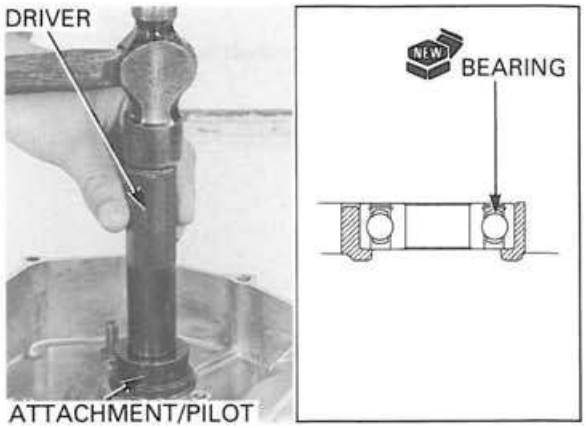
TOOLS:
Mainshaft bearing:

Driver	**07749-0010000**
Attachment, 52 X 55 mm	**07746-0010400**
Pilot, 25 mm	**07746-0040600**



TOOLS:
Countershaft bearing:

Driver	**07749-0010000**
Attachment, 42X47 mm	**07746-0010300**
Pilot, 20 mm	**07746-0040500**

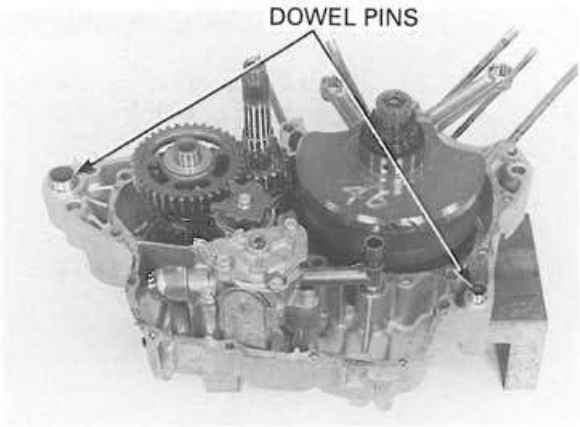


CRANKCASE ASSEMBLY

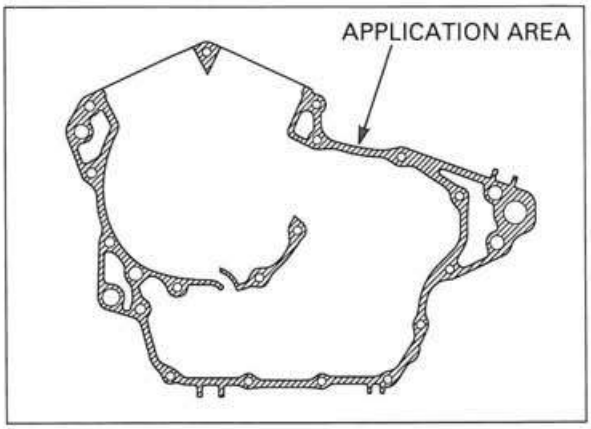
Clean the right and left crankcase mating surface thoroughly, being careful not to damage them.

Install the following:
- Crankshaft (page 12-11)
- Transmission (page 12-18)
- Oil pump (page 4-9)

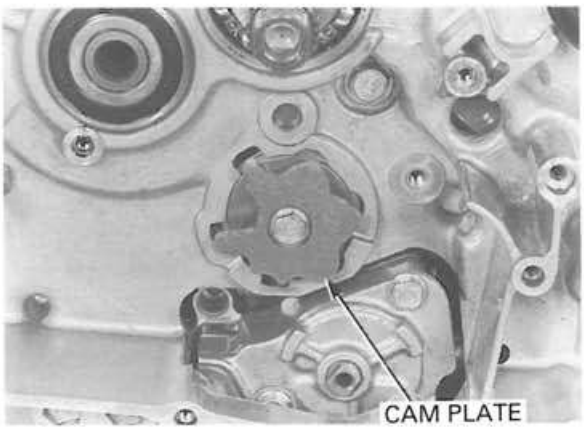
Install the dowel pins.



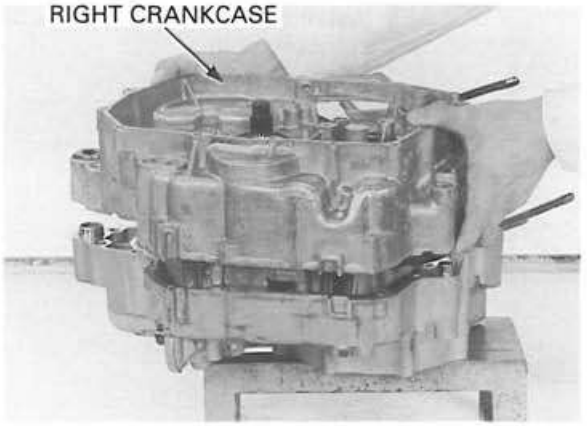
Apply a light but through coating of sealant to all crankcase mating surfaces except the oil passage area.



Turn the shift drum until shift cam plate as shown.

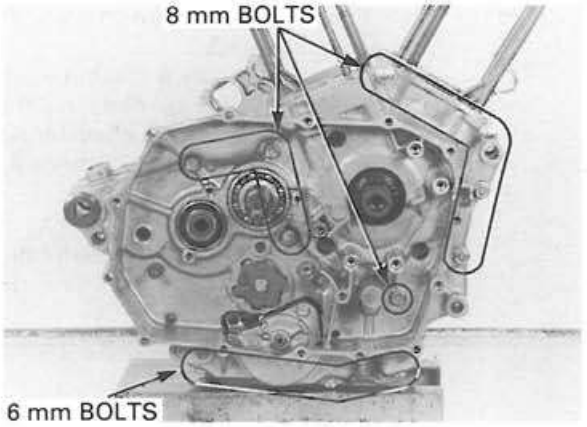


Install the right crankcase to the left crankcase.



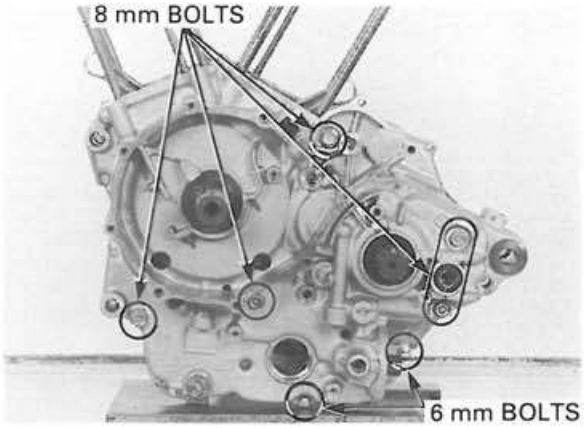
Install and tighten the right crankcase bolts in a criss-cross pattern in several steps.

TORQUE: 8 mm bolt: 23 N•m (2.3 kgf•m, 17 lbf•ft)

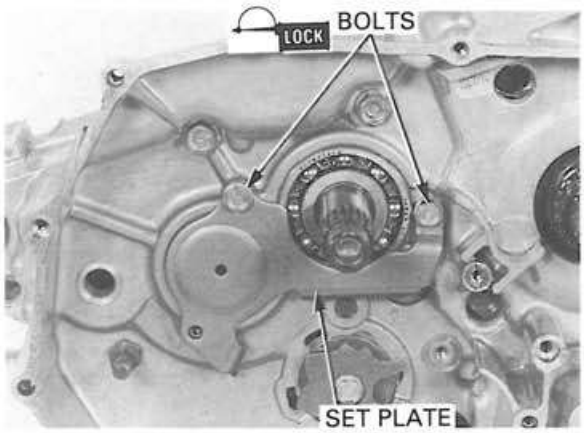


Install and tighten the left crankcase bolts in a criss-cross pattern in several steps.

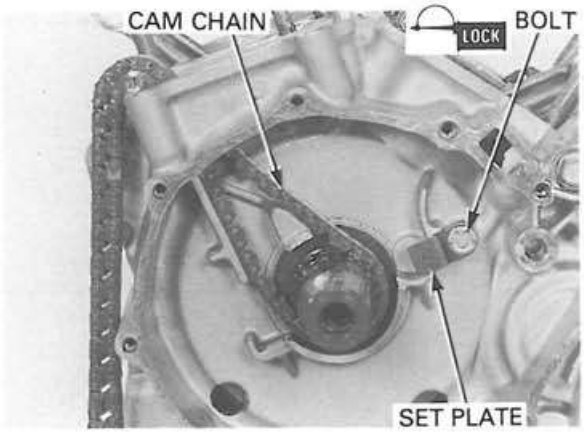
TORQUE: 8 mm bolt: 23 N•m (2.3 kgf•m, 17 lbf•ft)



Clean and apply a locking agent to the mainshaft bearing set plate bolt threads.
Install the mainshaft bearing set plate.
Install and tighten the mainshaft bearing set plate bolts securely.

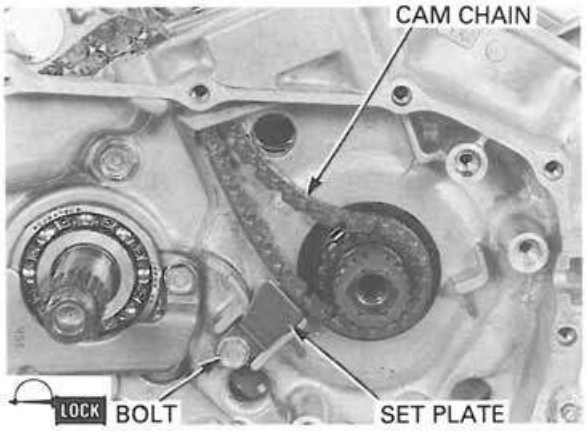


Install the rear cam chain to the cam chain drive sprocket tooth.



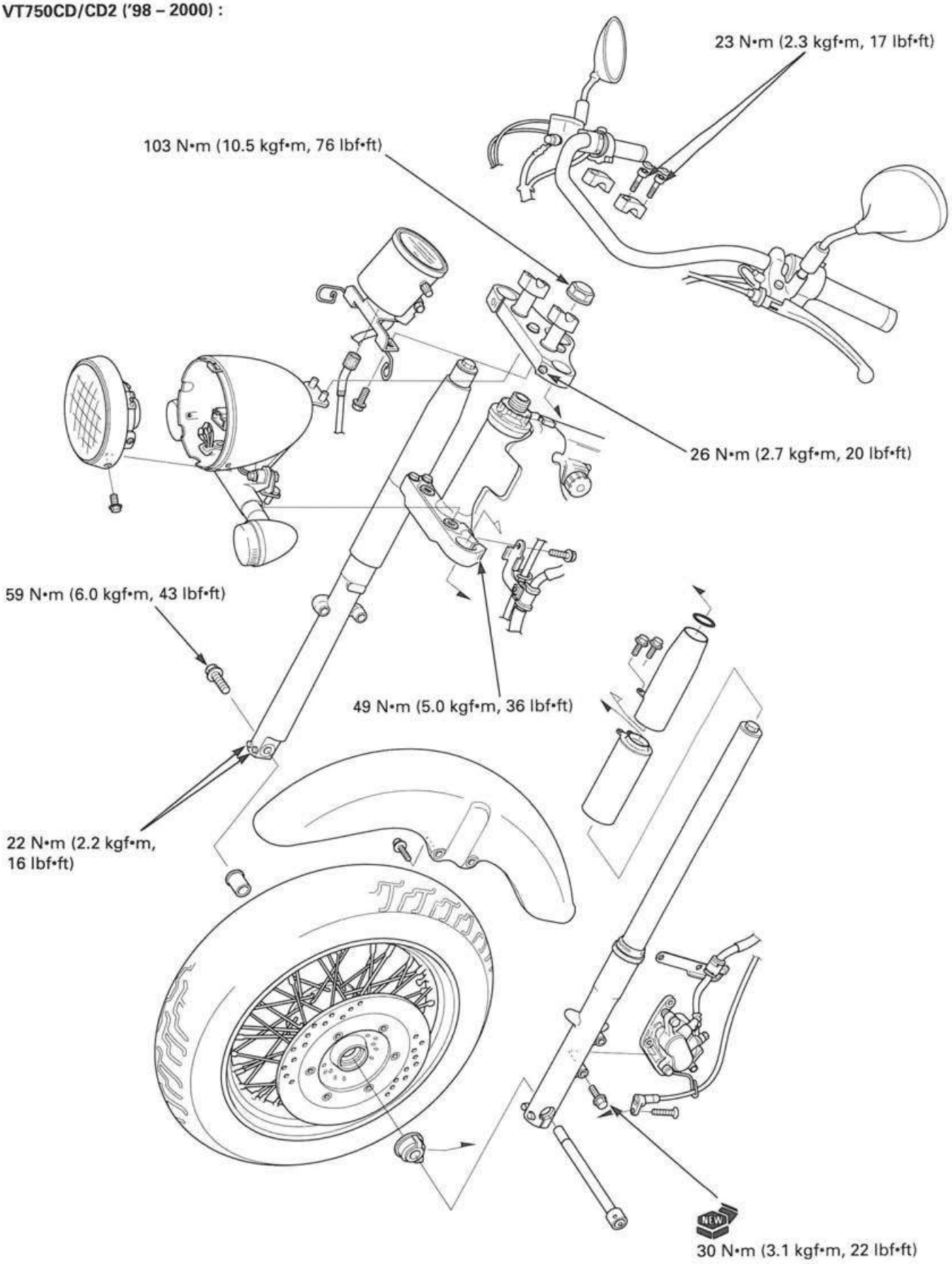
Install the front cam chain to the cam chain drive sprocket tooth.
Clean and apply a locking agent to the front cam chain tensioner set plate bolt threads.
Install the front cam chain tensioner set plate.
Install and tighten the front cam chain tensioner set plate bolt securely.

Install the engine into the frame (Section 7).



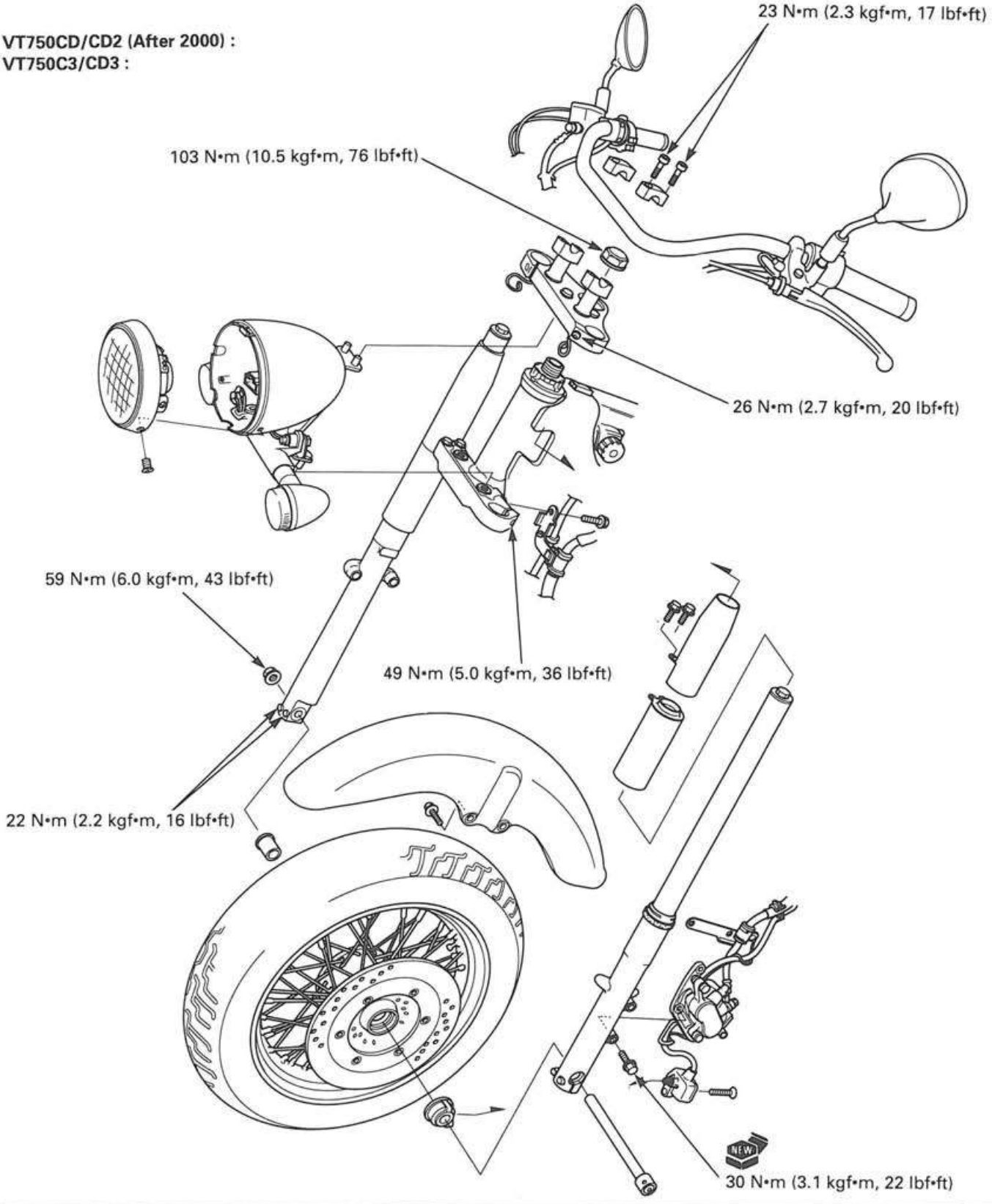
MEMO

VT750C :
VT750CD/CD2 ('98 – 2000) :



13. FRONT WHEEL/SUSPENSION/STEERING

VT750CD/CD2 (After 2000) :
VT750C3/CD3 :



GENERAL

⚠ WARNING

- ***A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean contaminated disc with a high quality brake degreasing agent.***
- ***Riding on damaged rims or spokes impairs safe operation of the vehicle.***
- ***Wheel balance directly affects the stability, handling and overall safety of the motorcycle. Carefully check balance before reinstalling the wheel.***

CAUTION:

- ***Do not jack up the motorcycle using the oil filter.***
- ***To avoid damaging the rim when using the tire lever, always use rim protectors.***

- When servicing the front wheel, support the motorcycle securely with a jack or other adjustable support.
- Do not operate the brake lever after removing the caliper and front wheel. This will make it difficult to fit the brake disc between the brake pads.
- Refer to Section 15 for brake system information.

SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire thread depth		—	1.5 (0.06)
Cold tire pressure	Up to 90 kg (200 lb) load	200 kPa (2.00 kgf/cm², 29 psi)	—
	Up to maximum weight capacity	200 kPa (2.00 kgf/cm², 29 psi)	—
Axle runout		—	0.20 (0.008)
Wheel rim runout	Radial	—	2.0 (0.08)
	Axial	—	2.0 (0.08)
Wheel hub-to-rim distance		(page 13-17)	—
Wheel balance weight		—	60 g (2.1 oz)
Fork	Spring free length	303.4 (11.94)	297.3 (11.70)
	Spring installed direction	Tightly wound coils should be at the top	—
	Tube runout	—	0.2 (0.008)
	Recommended fork oil	Pro-Honda Suspension Fluid SS-8	—
	Oil level	108 (4.3)	—
	Oil capacity	514 ± 2.5 cm³ (17.4 ± 0.08 US oz, 18.0 ± 0.09 Imp oz)	—
Steering head bearing preload		0.43 – 1.04 kgf (0.95 – 2.30 lbf)	—

TORQUE VALUES

Steering stem nut	103 N•m (10.5 kgf•m, 76 lbf•ft)	See page 13-40
Top thread A	21 N•m (2.1 kgf•m, 15 lbf•ft)	
Top thread B	—	
Top bridge pinch bolt	26 N•m (2.7 kgf•m, 20 lbf•ft)	
Bottom bridge pinch bolt	49 N•m (5.0 kgf•m, 36 lbf•ft)	
Handlebar upper holder bolt	23 N•m (2.3 kgf•m, 17 lbf•ft)	
Handlebar lower holder nut	26 N•m (2.7 kgf•m, 20 lbf•ft)	
Handlebar switch screw	3 N•m (0.3 kgf•m, 2.2 lbf•ft)	
Front axle	59 N•m (6.0 kgf•m, 43 lbf•ft)	
Front axle pinch bolt	22 N•m (2.2 kgf•m, 16 lbf•ft)	
Front brake disc bolt	42 N•m (4.3 kgf•m, 31 lbf•ft)	ALOC bolt: Replace with a new one
Fork cap	22 N•m (2.2 kgf•m, 16 lbf•ft)	
Fork socket bolt	29 N•m (3.0 kgf•m, 22 lbf•ft)	Apply a locking agent to the threads
Clutch lever holder bolt	12 N•m (1.2 kgf•m, 9 lbf•ft)	
Brake caliper mounting bolt	30 N•m (3.1 kgf•m, 22 lbf•ft)	ALOC bolt: Replace with a new one
Brake master cylinder holder bolt	12 N•m (1.2 kgf•m, 9 lbf•ft)	
Spoke nipple	4 N•m (0.4 kgf•m, 2.9 lbf•ft)	

TOOLS

Attachment, 42 X 47 mm	07746-0010300	
Attachment, 52 X 55 mm	07746-0010400	
Attachment	07746-0030300	
Pilot, 20 mm	07746-0040500	
Bearing remover shaft	07746-0050100	
Bearing remover head, 20 mm	07746-0050600	
Attachment, 28 X 30 mm	07746-1870100	
Driver	07749-0010000	
Steering stem socket	07916-3710101	or 07916-3710100
Bottom holder pipe	07930-KA50000	
– Holder handle	07930-KA40200	
– Bottom holder attachment	07930-KA50100	
Bearing race remover	07946-3710500	
Slider weight	07947-KA50100	
Driver attachment set	07947-KF00100	
Ball race remover	07953-MJ10000	
– Driver attachment	07953-MJ10100	
– Driver handle	07953-MJ10200	
Spoke wrench	07JMA-MR60100	or equivalent commercially available in U. S. A.

TROUBLESHOOTING

Hard steering
- Steering top thread too tight
- Faulty steering head bearings
- Damaged steering head bearings
- Faulty tire
- Insufficient tire pressure

Steers to one side or does not track straight
- Bent fork
- Faulty steering head bearings
- Damaged steering head bearings
- Bent frame
- Worn wheel bearings
- Bent front axle
- Worn swingarm pivot component

Front wheel wobbling
- Bent rim
- Worn wheel bearings
- Faulty tire
- Unbalanced tire and wheel

Soft suspension
- Weak fork spring
- Low fluid level in fork
- Insufficient fluid in fork
- Low tire pressure

Hard suspension
- High tire pressure
- Bent fork
- High fluid level in fork
- Incorrect fluid weight
- Clogged fluid passage

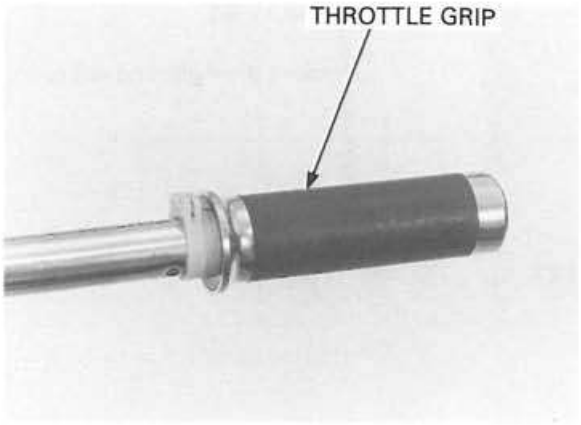
Front suspension noisy
- Loose fork fasteners
- Insufficient fluid in fork

Wheel turns hard
- Faulty wheel bearings
- Bent front axle
- Brake drug
- Faulty speedometer gear

HANDLEBAR

GRIP REPLACEMENT

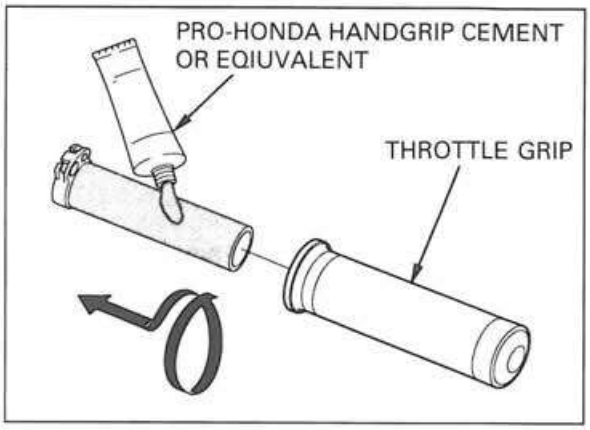
Remove the throttle grip from the handlebar (page 13-8).



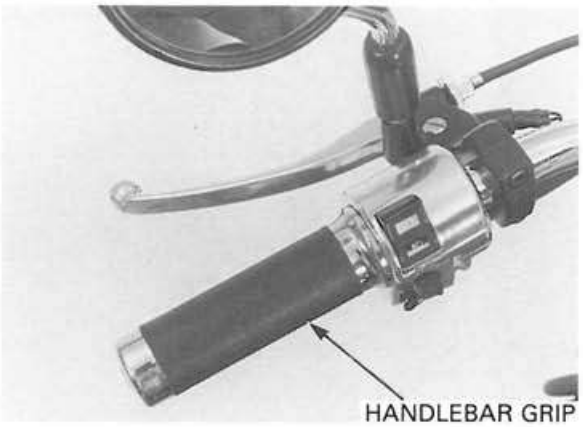
Remove the grip from the throttle grip.

Apply Pro-Honda Handgrip Cement or equivalent Honda Bond A to the inside surface of the throttle grip to the clean surface of the throttle pipe. Wait 3–5 minutes and install the grip. Rotate the grip for even application of the adhesive.

Install the throttle grip to the handlebar (page 13-10).



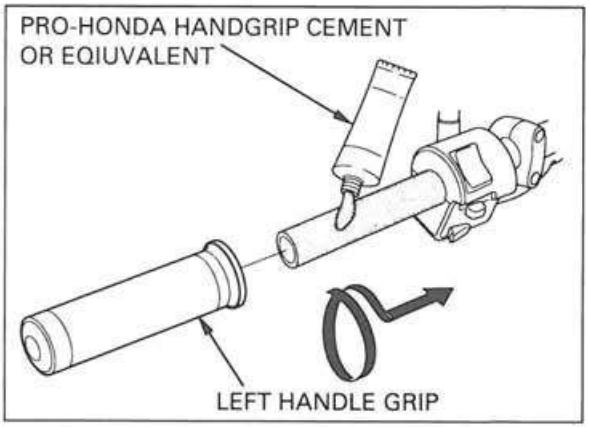
Remove the left handlebar grip from the handlebar.



Apply Pro-Honda Handgrip Cement or equivalent to the inside surface of the left handlebar grip to the clean surface of the handlebar. Wait 3–5 minutes and install the grip. Rotate the grip for even application of the adhesive.

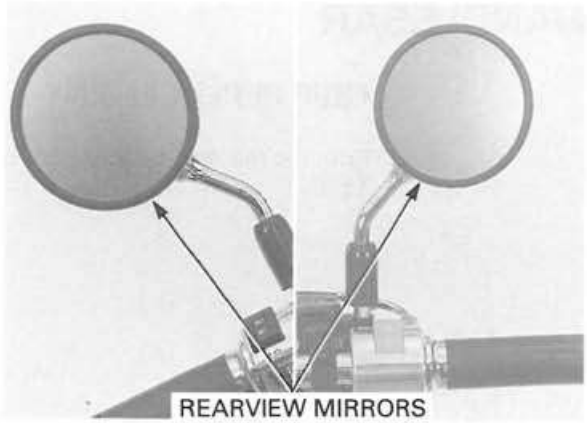
NOTE:

Allow the adhesive to dry for an hour before using. Check for smooth throttle operation after the right grip is installed.

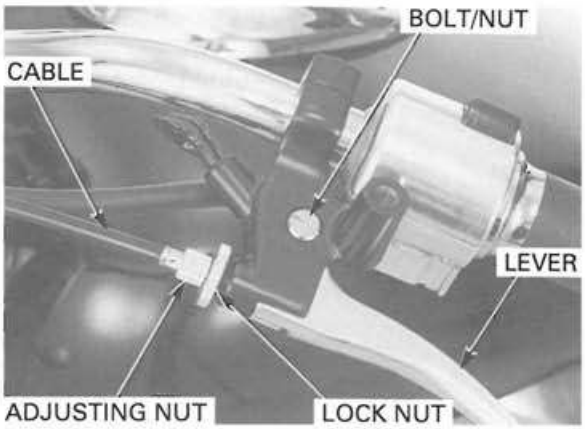


REMOVAL

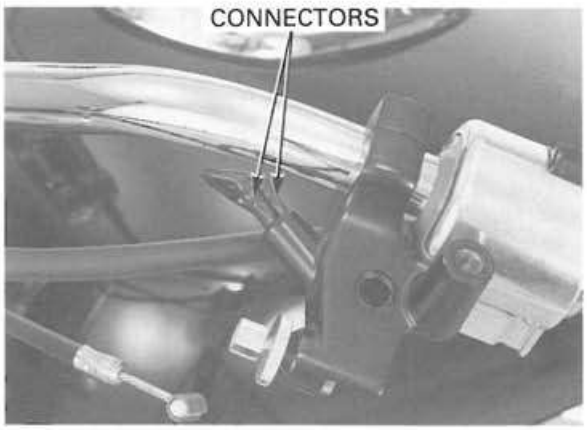
Remove the right and left rearview mirror.



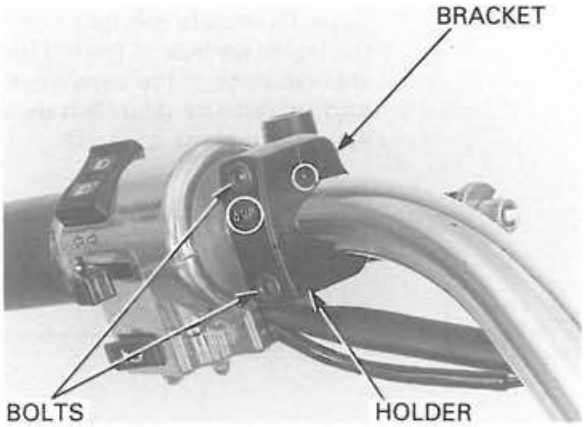
Loosen the clutch cable lower adjusting nuts and disconnect the clutch cable from the clutch lever. Remove the bolt/nut and clutch lever from the clutch lever bracket.



Disconnect the clutch switch connectors from the clutch switch.

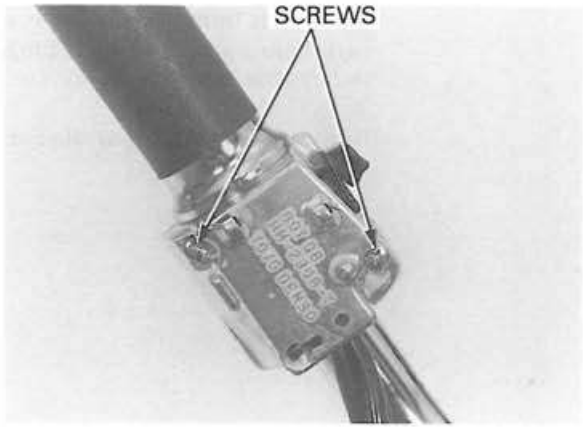


Remove the socket bolts, clutch lever holder and bracket.

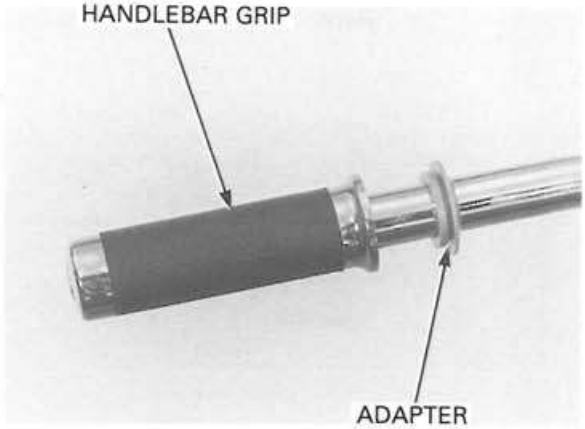


Remove the clutch switch from the clutch holder.

Remove the screws and left handlebar switch.

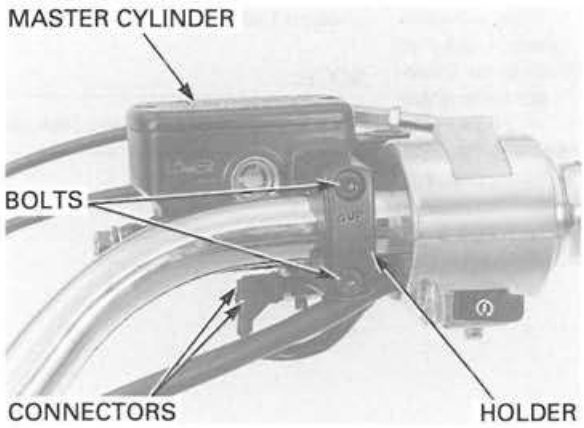


Remove the left handlebar grip and adapter.

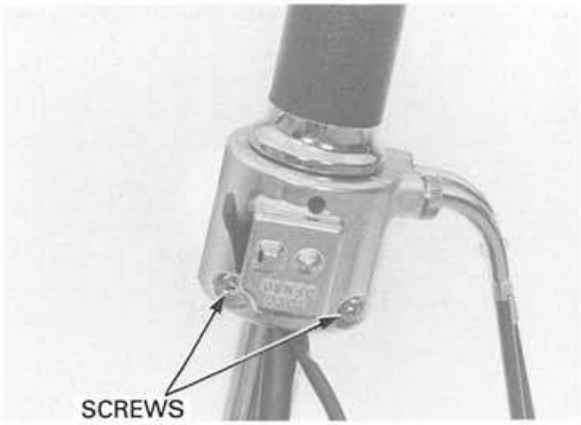


Disconnect the front brake light switch connectors from the switch.

Remove the socket bolts, master cylinder holder and master cylinder.

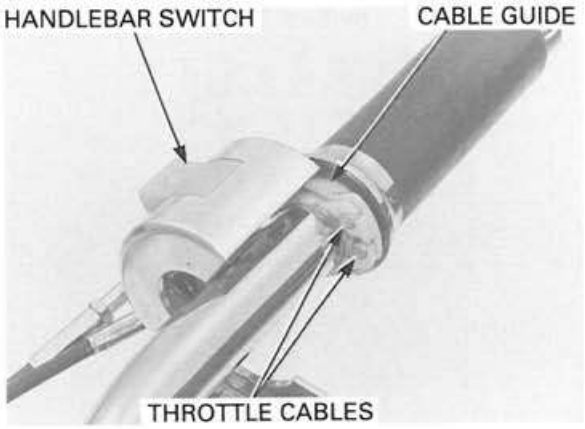


Remove the right handlebar switch screws.

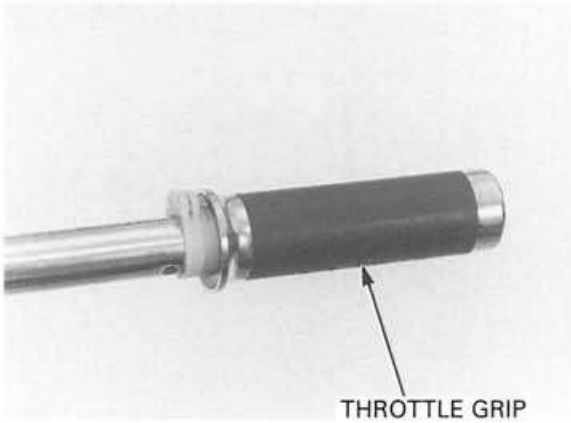


Loosen the throttle cable lower adjusting nuts at the carburetors and disconnect the throttle cables from the throttle cable guide.

Remove the right handlebar switch from the handlebar.



Remove the throttle grip from the handlebar.

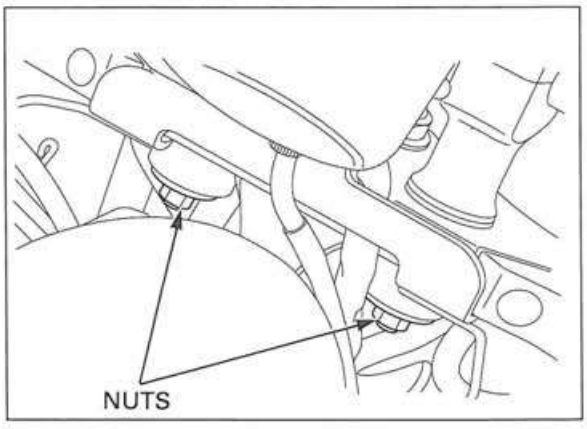


If the handlebar lower holders will be removed, loosen the lower holder nuts before removing the upper holders.

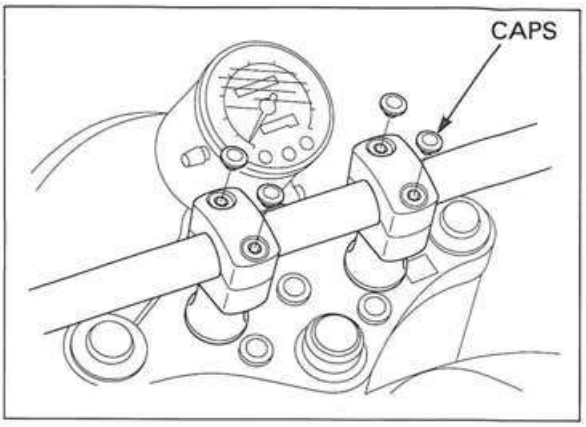
Loosen the handlebar lower holder nuts.

NOTE:

Do not remove the lower holder nuts yet.



Remove the handlebar upper holder bolt caps.

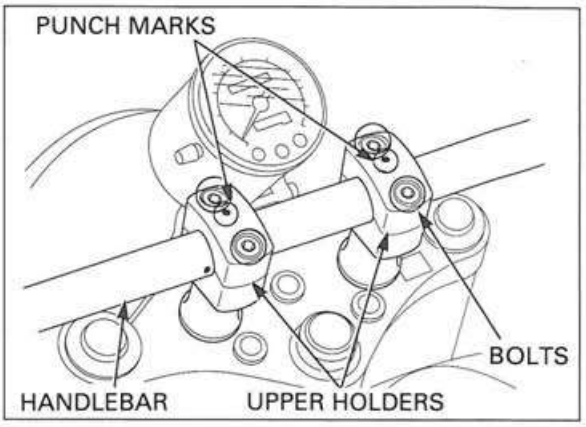


Remove the socket bolts, upper holders and handlebar.

INSTALLATION

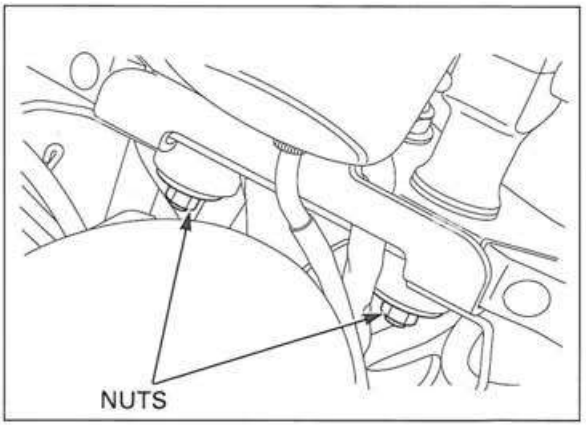
Install the handlebar and upper holders with their punch marks facing forward.

Temporarily tighten the upper holder socket bolts.



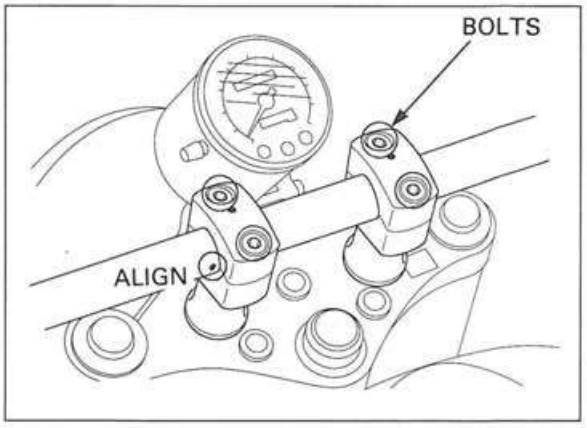
If the handlebar lower holders removed, Tighten the lower holder nuts to the specified torque.

TORQUE: 23 N·m (2.3 kgf·m, 16 lbf·ft)

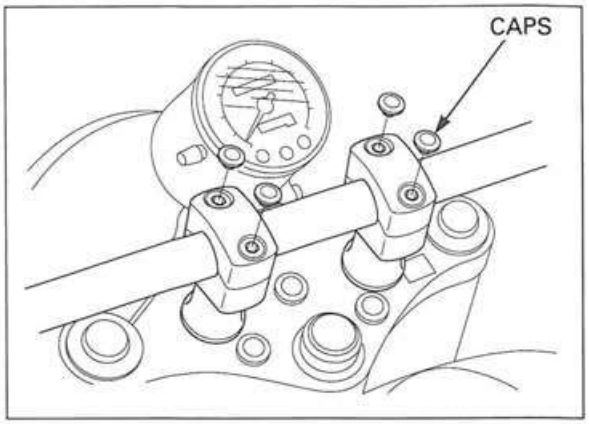


Loosen the upper holder socket bolts and align the punch marks on the handlebar with the splits of the handlebar holders.
Tighten the forward bolts first, then tighten the rear bolts.

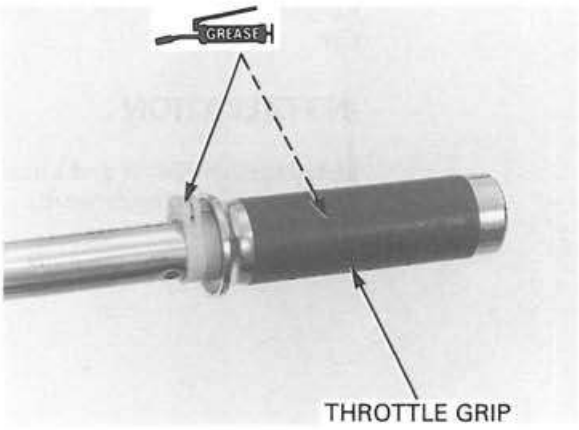
TORQUE: 23 N·m (2.3 kgf·m, 17 lbf·ft)



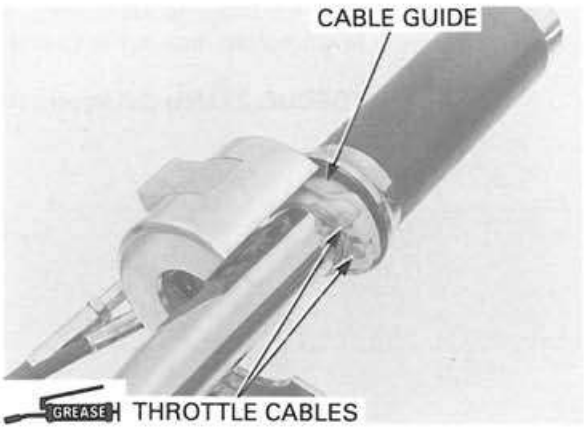
Install the upper holder bolt caps.



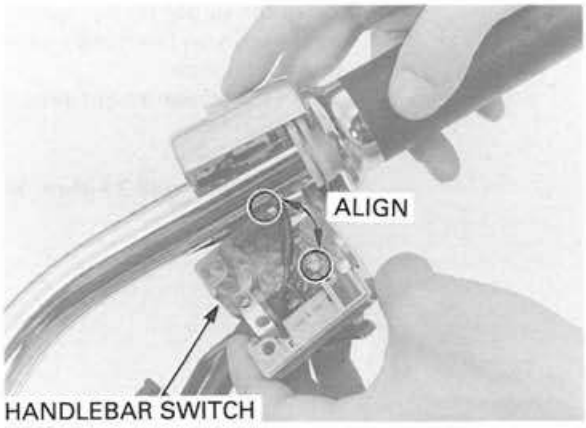
Apply grease to the throttle grip inner surface and throttle cable contact point.
Install the throttle grip to the handlebar.



Apply grease to the throttle cable end.
Connect the throttle cables to the throttle cable guide.



Install the right handlebar switch housing onto the handlebar, aligning the locating pin with the hole in the handlebar.



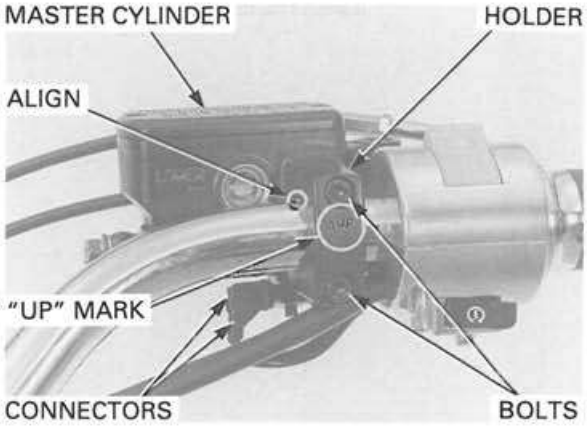
Install the attaching screws and tighten the forward screw first, then tighten the rear screw to the specified torque.

TORQUE: 3 N•m (0.3 kgf•m, 2.2 lbf•ft)

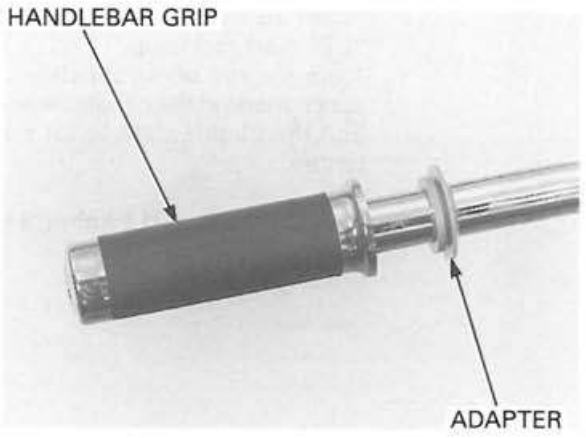
Install the master cylinder and holder with the "UP" mark facing up.
Align the end of the master cylinder with the punch mark on the handlebar and tighten the upper bolt first, then tighten the lower bolt to the specified torque.

TORQUE: 12 N•m (1.2 kgf•m, 9 lbf•ft)

Connect the front brake light switch connector to the switch.



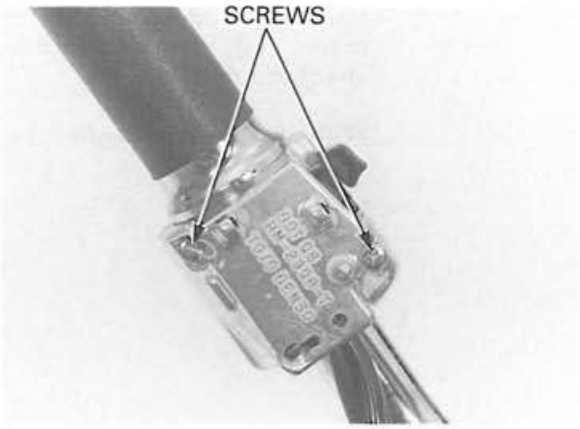
Install the adapter and left handlebar grip onto the handlebar (refer to page 13-5).



Install the left handlebar switch housing onto the handlebar by aligning the locating pin with the hole in the handlebar.

Install the attaching screws and tighten the forward screw then tighten the rear screw to the specified torque.

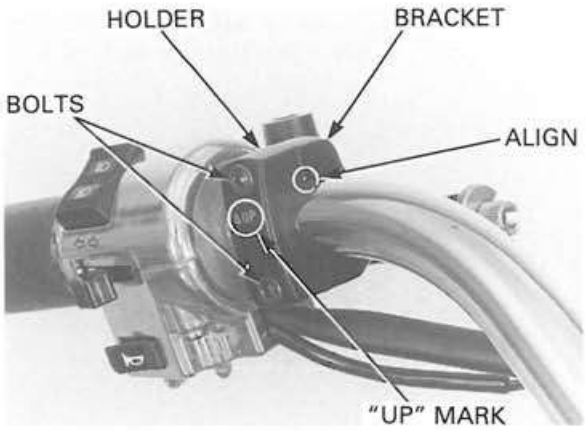
TORQUE: 3 N·m (0.3 kgf·m, 2.2 lbf·ft)



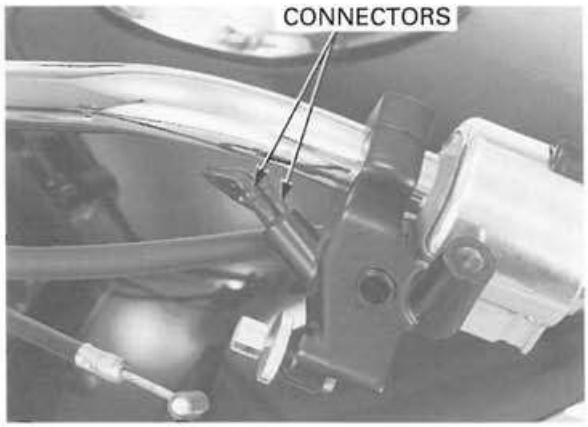
Install the clutch switch into the clutch lever bracket.

Install the clutch lever bracket and holder with the "UP" mark facing up.
Align the end of the clutch lever bracket with the punch mark on the handlebar and tighten the upper bolt then tighten the lower bolt to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



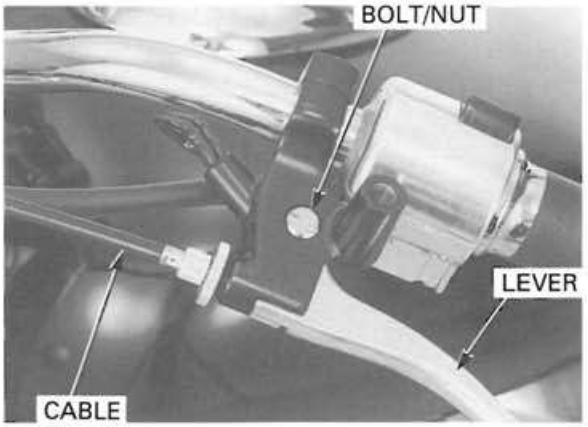
Connect the clutch switch connectors to the clutch switch.



Apply grease to the clutch lever pivot bolt sliding surface.

Install the clutch lever to the clutch lever bracket. Install and tighten the bolt and nut securely.

Connect the clutch cable to the lever.

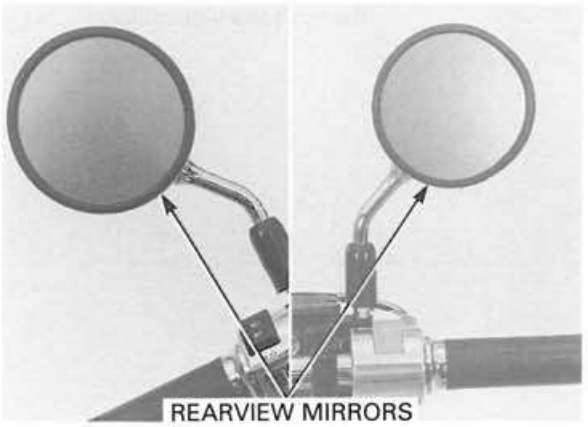


Install the right and left rearview mirrors.

NOTE:

Route the cables, wires and harness properly (page 1-22).

Adjust the following:
- Throttle operation free play (page 3-4).
- Clutch lever free play (page 3-26).



FRONT WHEEL

⚠ WARNING

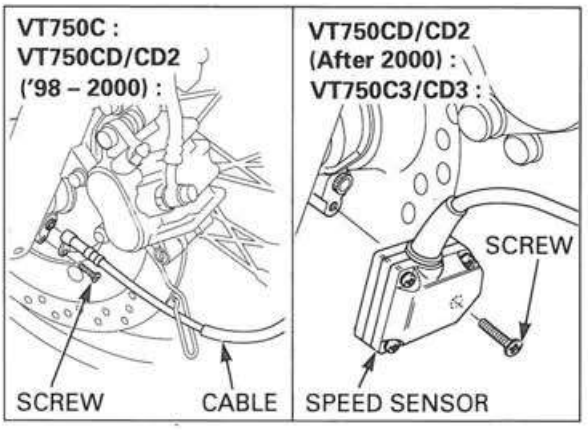
A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean contaminated disc with a high quality brake degreasing agent.

REMOVAL

Raise and support the motorcycle using a hoist or jack.

CAUTION:

Do not jack up the motorcycle using the oil filter.



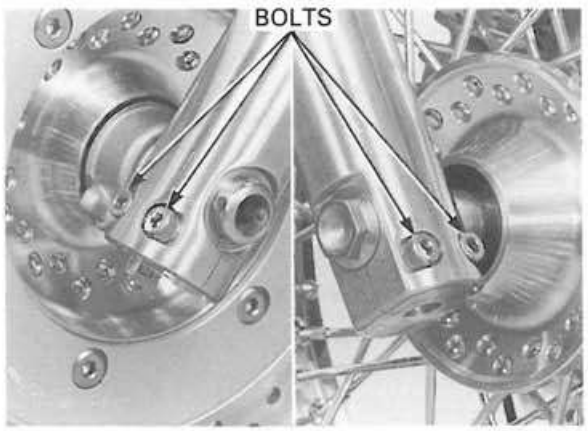
VT750C and VT750CD/CD2 ('98 – 2000):

Remove the screw and speedometer cable from the speedometer gear.

VT750C3/CD3 and VT750CD/CD2 (after 2000):

Remove the screw and speed sensor from the speedometer gear.

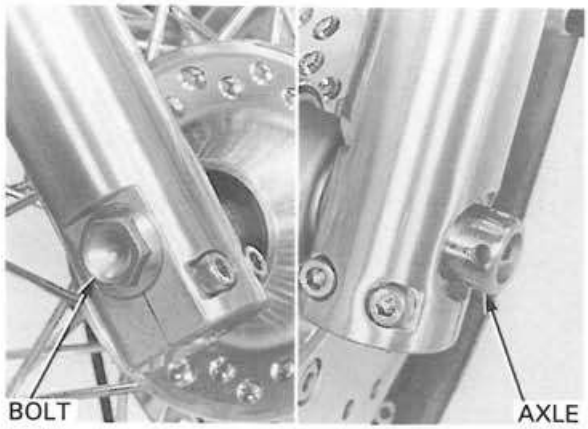
Loosen the axle pinch bolts.



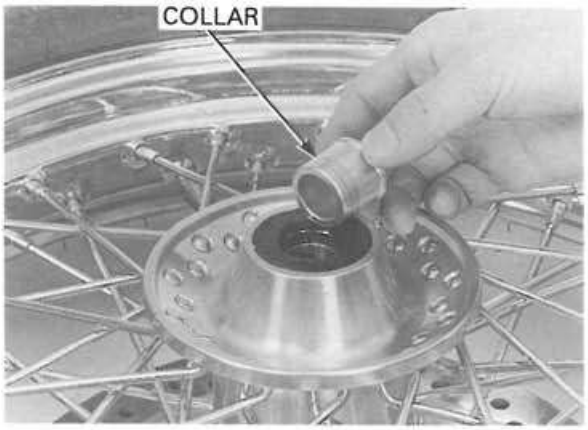
Remove the axle bolt, axle and front wheel.

NOTE:

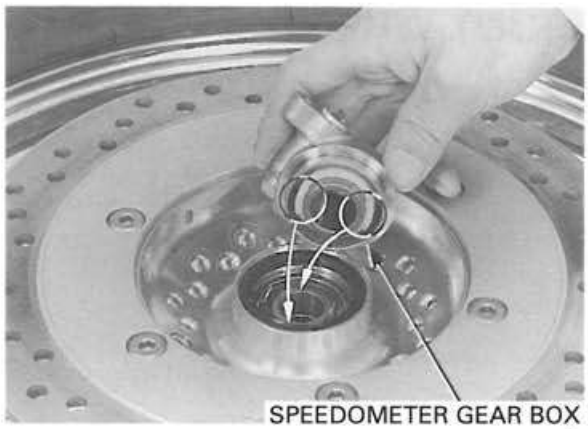
Do not operate the front brake lever after removing the front wheel. This will make it difficult to fit the brake disc between the brake pads.



Remove the side collar.



Remove the speedometer gear box.

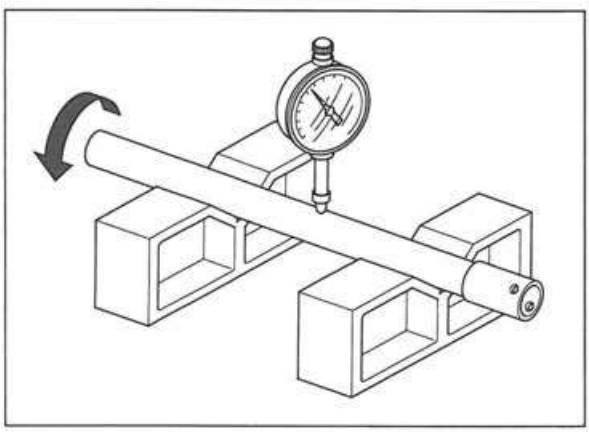


INSPECTION

AXLE

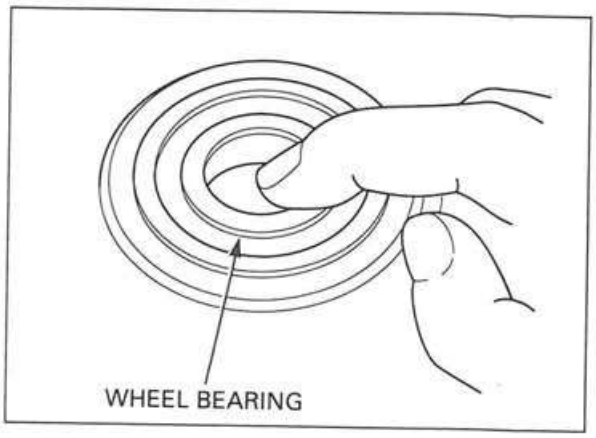
Set the front axle in V-blocks and measure the runout.
Turn the front axle and measure the runout using a dial indicator.
Actual runout is 1/2 the total indicator reading.

SERVICE LIMIT: 0.2 mm (0.008 in)



WHEEL BEARING

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



Replace the wheel bearings in pairs.

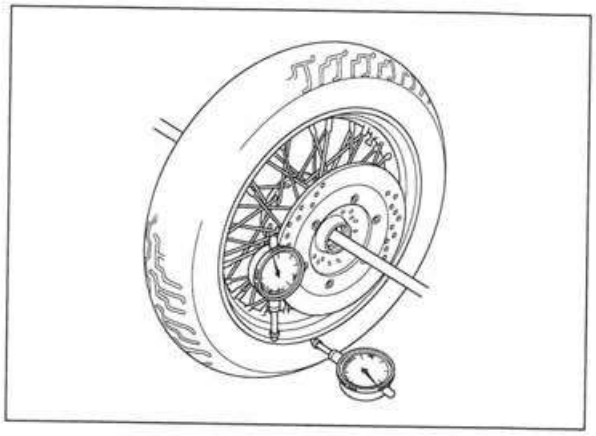
Remove and discard the bearings if the races do not turn smoothly and quietiy, if they fit loosely in the hub.

WHEEL RIM

Check the rim runout by placing the wheel in a truing stand.

Spin the wheel slowly and read the runout using a dial indicator.

Actual runout is 1/2 the total indicator reading.



SERVICE LIMITS:

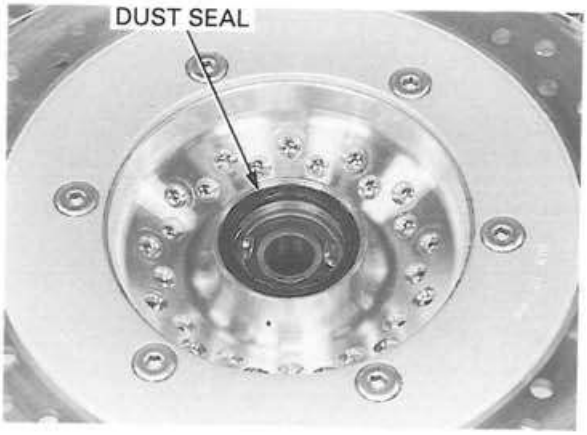
Radial: 2,0 mm (0.08 in)
Axial: 2.0 mm (0.08 in)

Check the spokes for loose or damage.

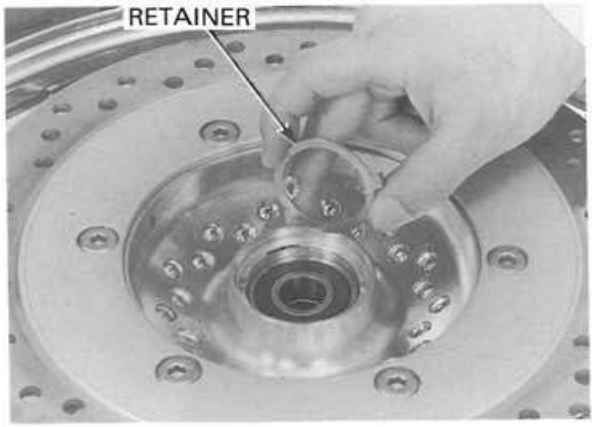
DISASSEMBLY

Remove the right dust seal from the right side of the front wheel.

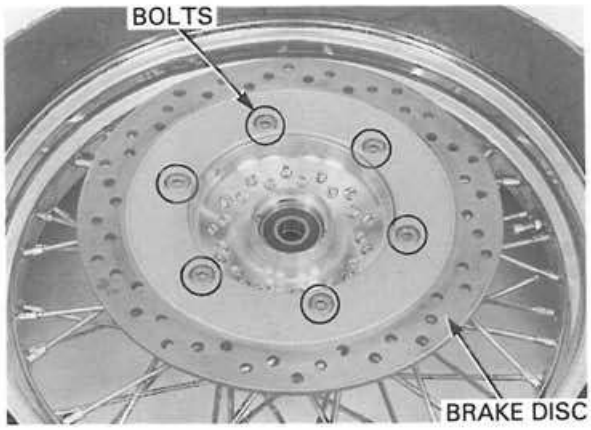
Remove the left dust seal from the left side of the front wheel.



Remove the speedometer gear retainer.



Remove the brake disc mounting bolts and brake disc.



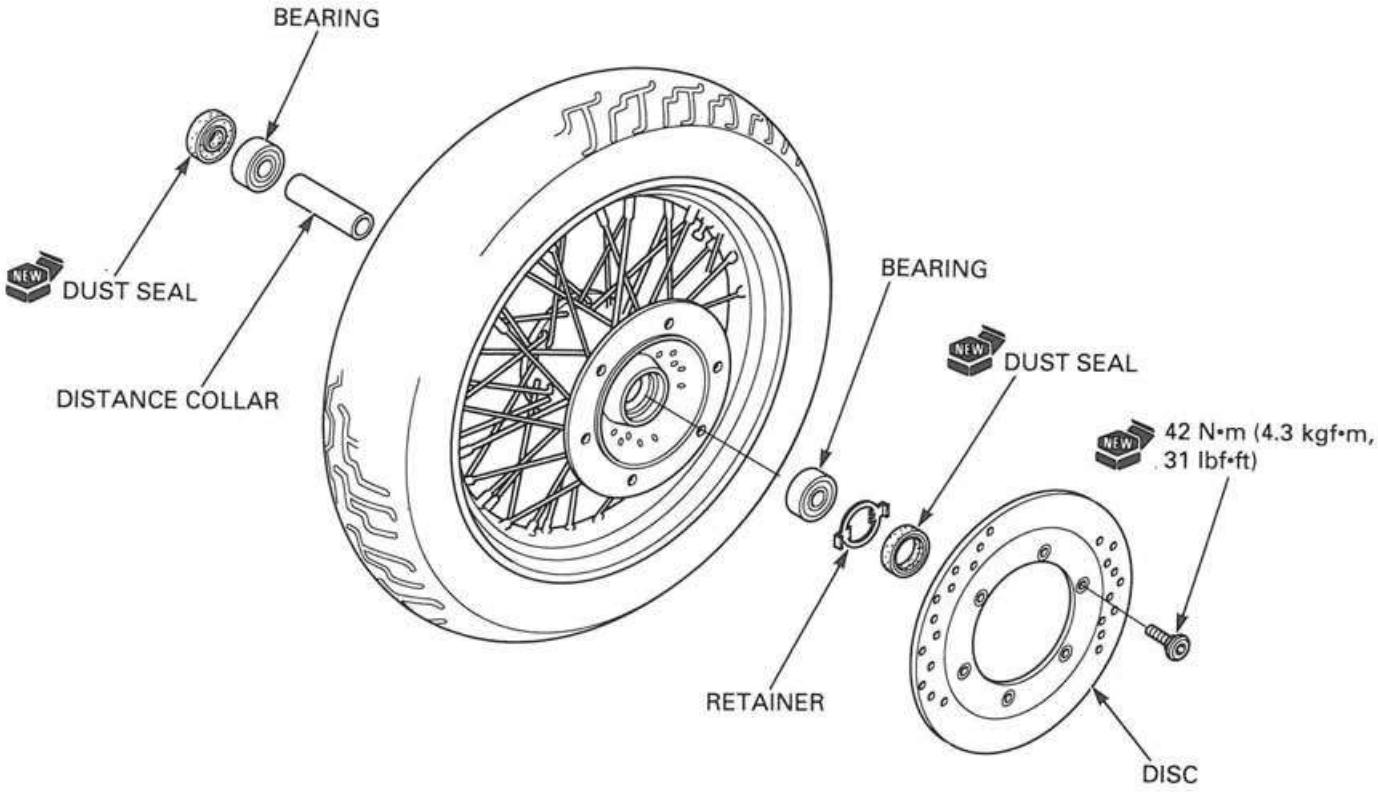
Replace the wheel bearings in pairs. Do not re-use old bearings.

Install the bearing remover head into the bearing. From opposite side install the bearing remover shaft and drive the bearing out of the wheel hub. Remove the distance collar and drive out the other bearing.

TOOLS:

Bearing remover shaft	**07746 – 0050100**
Bearing remover head, 20 mm	**07746 – 0050600**

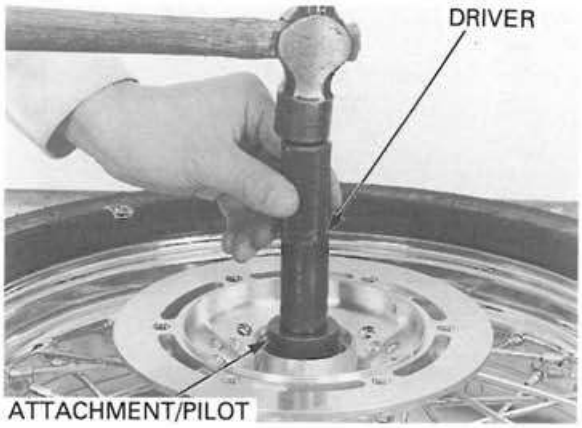
ASSEMBLY



Drive in a new right bearing squarely with the marking side facing up until it is fully seated.
Install the distance collar.
Drive in a new left bearing squarely with the marking side facing up until it is fully seated.

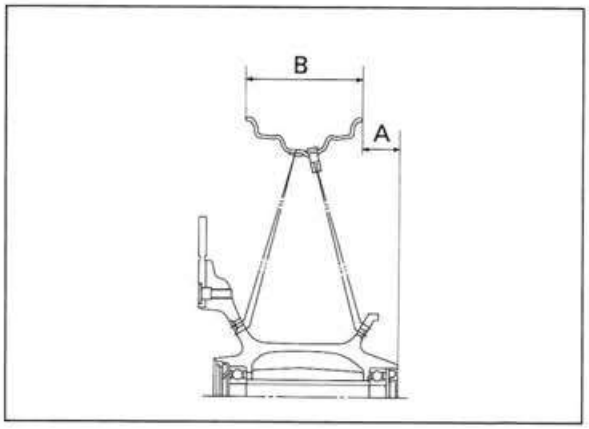
TOOLS:

Driver	**07749 – 0010000**
Attachment, 42 X 47 mm	**07746 – 0010300**
Pilot, 20 mm	**07746 – 0040500**



Assemble the wheel as follows if the wheel is disassembled.
Clean the spoke nipple threads.
Measure the hub width B.
Calculate the distance A as following:

A = 79 mm – B/2

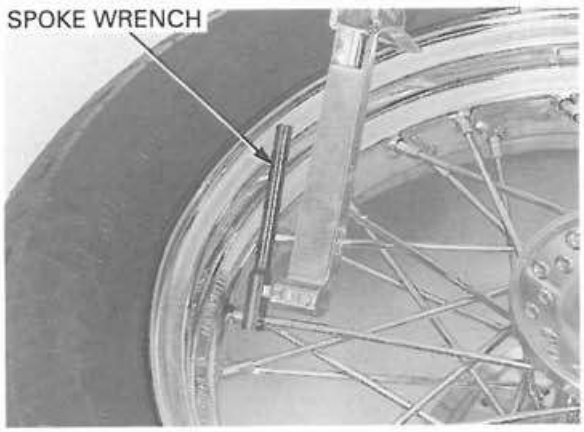


Adjust the rim position and distance A by tightening the spokes to the specified torque in 2 or 3 progressive steps.

TOOL:
Spoke wrench **07JMA – MR60100 or equivalent commercially available in U.S.A.**

TORQUE: 4 N·m (0.4 kgf·m, 2.9 lbf·ft)

Check the rim runout (page 13-15).

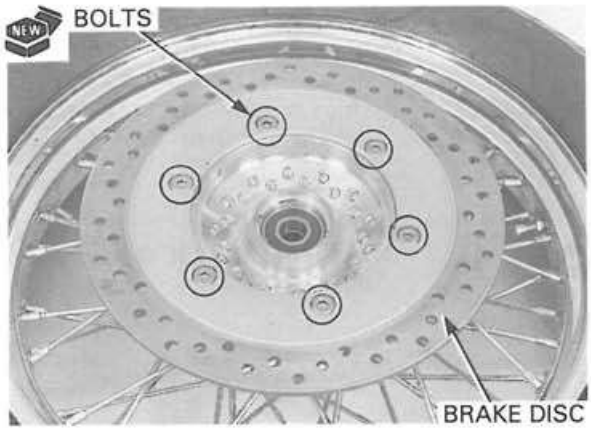


Install the brake disc with the "MIN. TH. 5mm" marked side facing out.

Tighten the bolts in a crisscross pattern in 2 or 3 steps.

Install and tighten the new brake disc bolts to the specified torque.

TORQUE: 42 N·m (4.3 kgf·m, 31 lbf·ft)



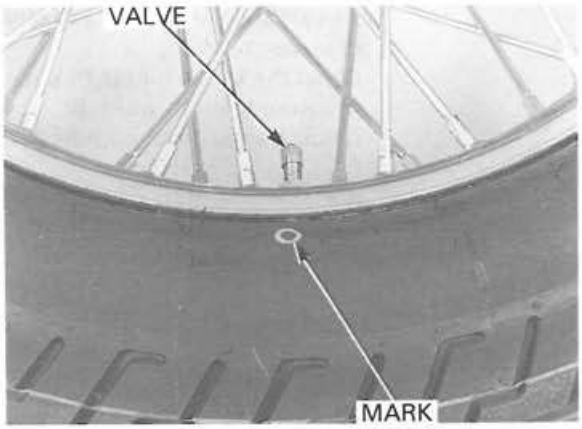
WHEEL BALANCE

⚠ WARNING

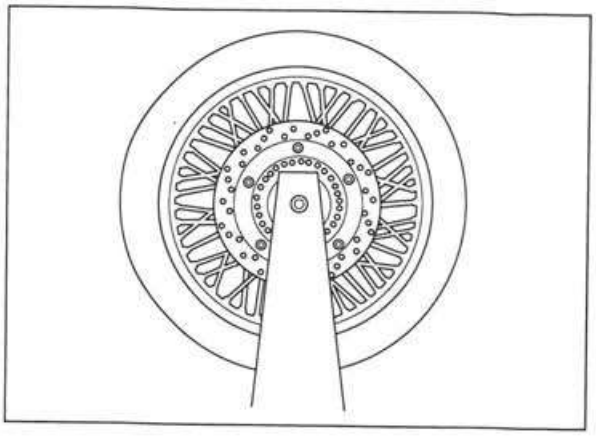
Wheel balance directly affects the stability, handling and overall safety of the motorcycle.
Carefully check balance before reinstalling the wheel.

NOTE:

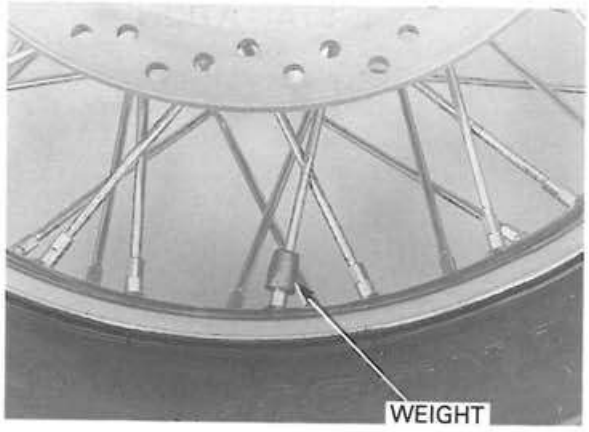
- The wheel balance must be checked when the tire is remounted.
- For optimum balance, the tire balance mark (a paint dot on the side wall) must be located next to the valve stem. Remount the tire if necessary.



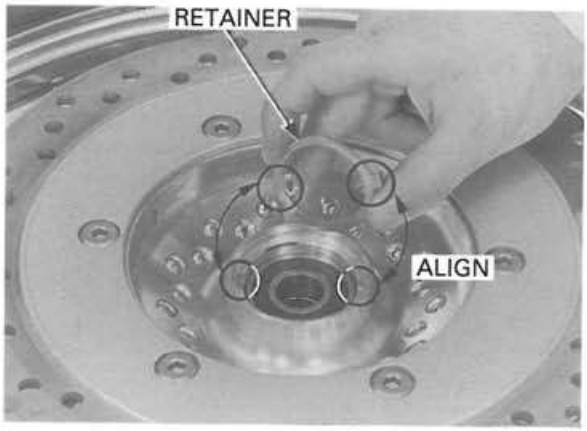
Mount the wheel, tire and brake disc assembly on an inspection stand.
Spin the wheel, allow it to stop, and mark the lowest (heaviest) part of the wheel with chalk.
Do this two or three times to verify the heaviest area.
If the wheel is balanced, it will not stop consistently in the same position.



To balance the wheel, install balance weights on the lightest side of rim, the side opposite the chalk marks.
Add just enough weight so the wheel will no longer stop in the same position when it is spun.
Do not add more than 60 g (2.1 oz) to the front wheel.



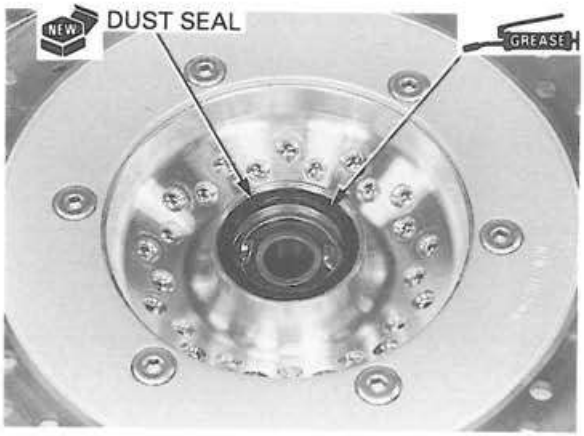
Install the speedometer gear retainer to the wheel hub by aligning the tangs on the retainer with the slots on the hub.



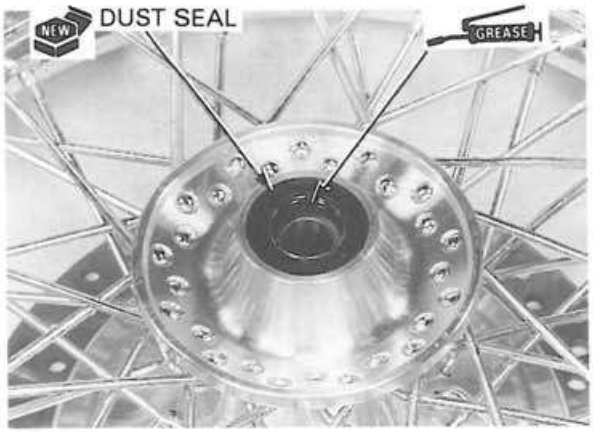
⚠ WARNING

Do not get grease on the brake disc or stopping power will be reduced.

Apply grease to the new left dust seal lip.
Install the dust seals to the left wheel hub.

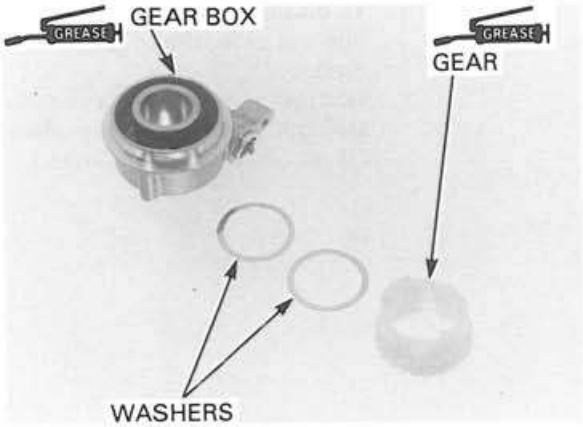


Apply grease to the new right dust seal lip.
Install the dust seal to the right wheel hub.

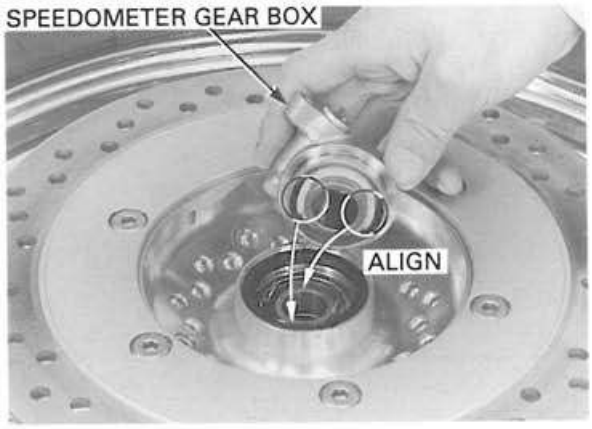


INSTALLATION

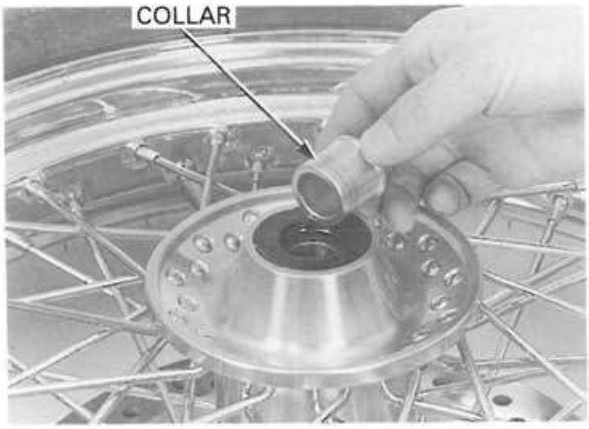
Apply grease to the speedometer gear box and gear.
Install the speedometer gear and washers into the gear box.



Install the speedometer gear box into the left wheel hub by aligning the tangs with the slots.

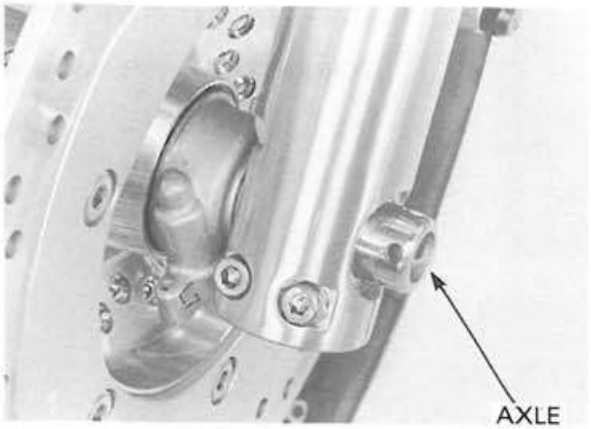


Install the side collar into the right wheel hub.

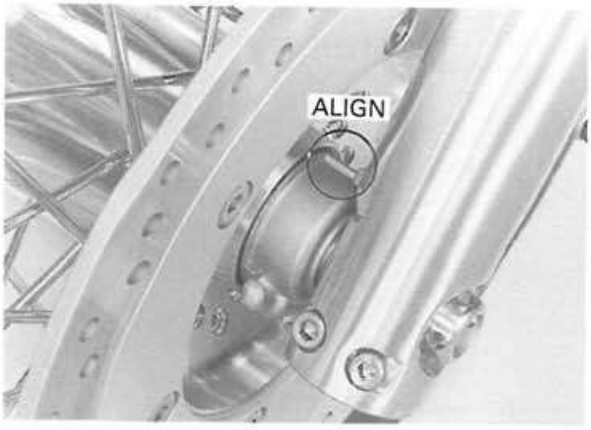


Install the front wheel between the fork legs so that the brake disc is positioned between the pads, being careful not to damage the pads.

Apply thin coat of grease to the front axle.
Install the front axle.



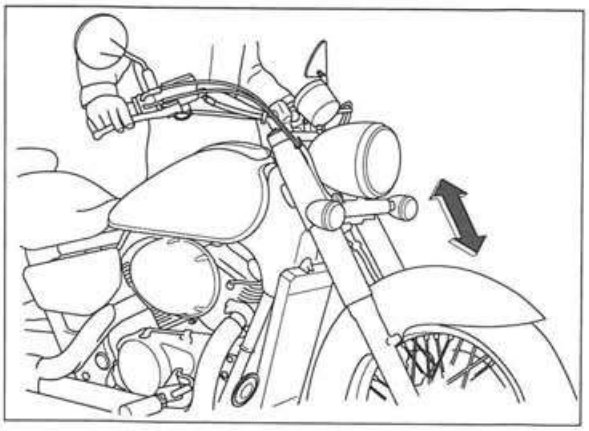
Position the lug on the speedometer gear box against the back of the stopper on the fork leg.



Install and tighten the front axle bolt to the specified torque.

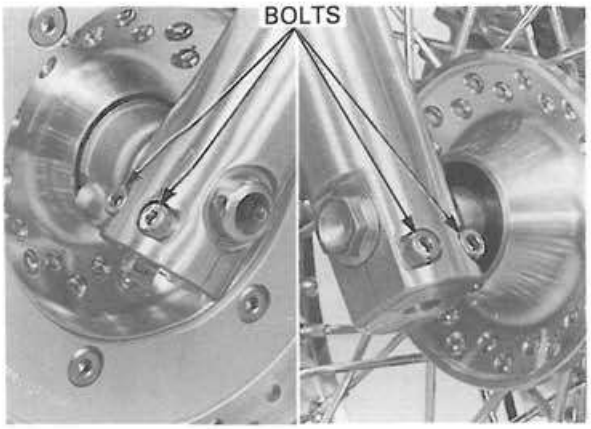
TORQUE: 59 N·m (6.0 kgf·m, 43 lbf·ft)

With the front brake applied, pump the front suspension up and down several times to seat the axle and check front brake operation.



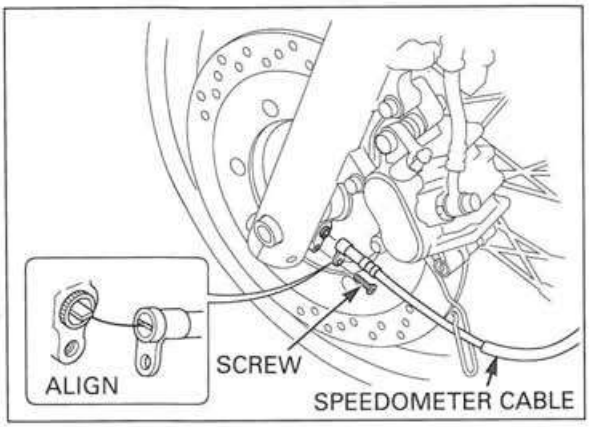
Tighten the axle pinch bolts to the specified torque.

TORQUE: 22 N•m (2.2 kgf•m, 16 lbf•ft)



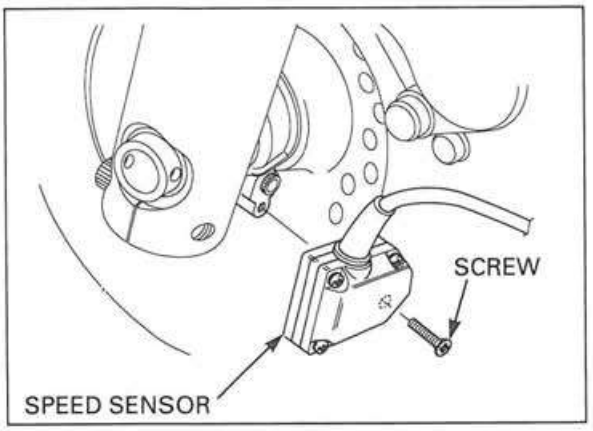
VT750C and VT750CD/CD2 ('98 – 2000) :

Install the speedometer cable and tighten the screw securely.



VT750C3/CD3 and VT750CD/CD2 (after 2000) :

Install the speed sensor and tighten the screw securely.

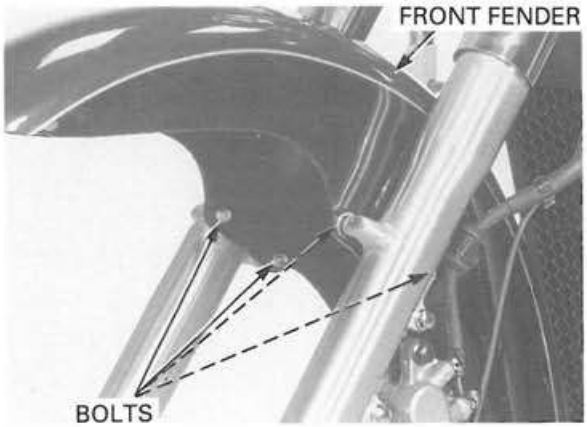


FORK

REMOVAL

Remove the front wheel (page 13-13).

Remove the four bolts.
Remove the brake hose clamp and front fender.



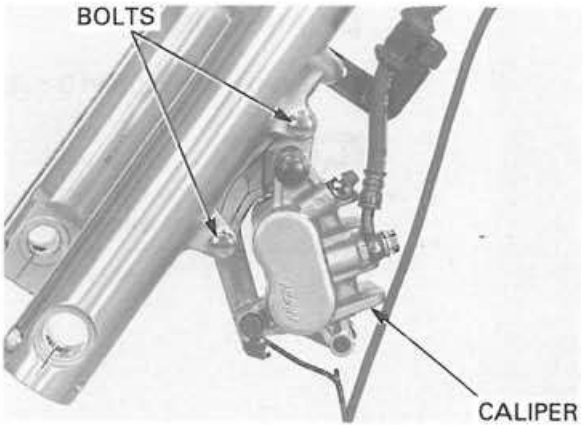
NOTE:

Do not operate the front brake lever after removing the front wheel. To do so will cause difficulty in fitting the brake disc between the brake pads.

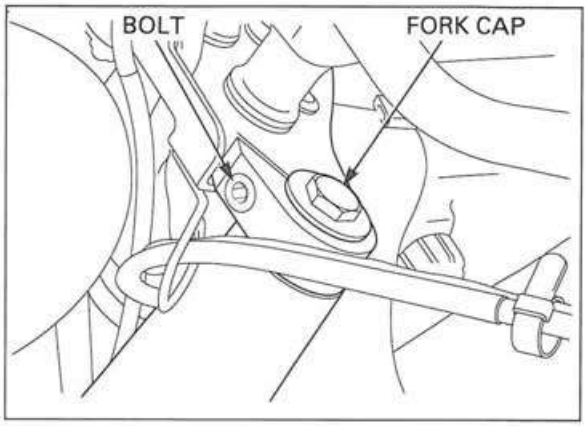
Remove the brake caliper mounting bolts and brake caliper.

CAUTION:

- ***Do not suspend the brake caliper from the brake hose.***
- ***Do not twist the brake hose.***



Loosen the fork top bridge pinch bolt.
When the fork is ready to be disassembled, loosen the fork cap, but do not remove it.

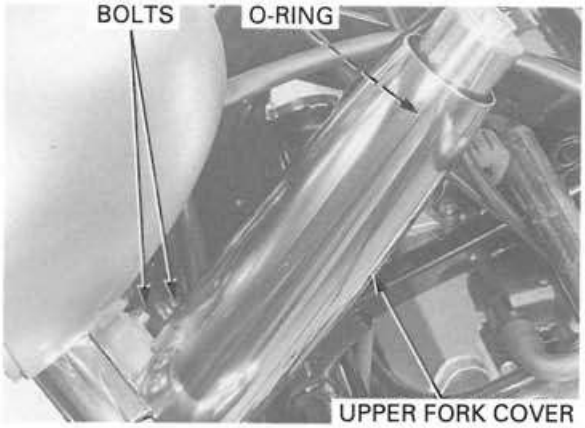


VT750CD/CD2/CD3: Remove the top bridge (page 13-35).

Remove the O-ring, bolts and upper fork cover.

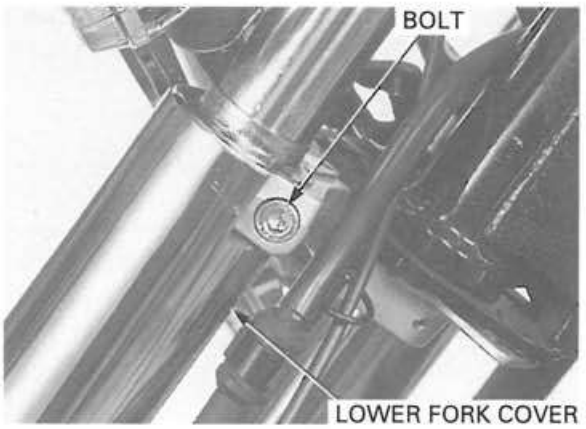
NOTE:

Do not apply soapsuds or oil to the fork cover inner surface when removing the fork cover.



Loosen the fork bottom bridge pinch bolt while holding the fork.
Remove the front fork.

VT750CD/CD2/CD3: Remove the lower fork cover from the steering stem.

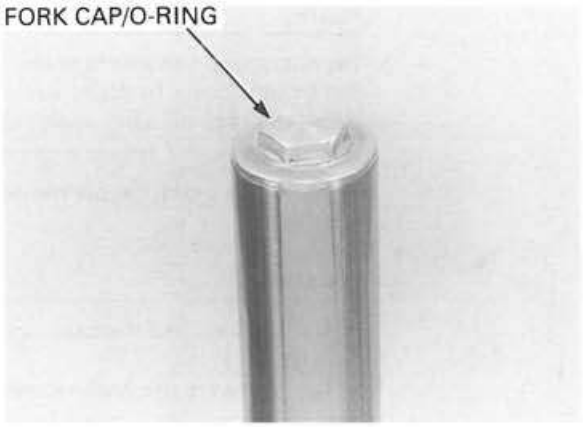


DISASSEMBLY

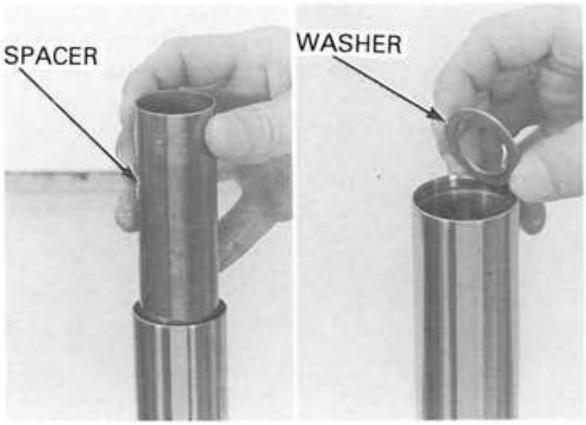
Remove the fork cap and O-ring from the fork tube.

⚠ WARNING

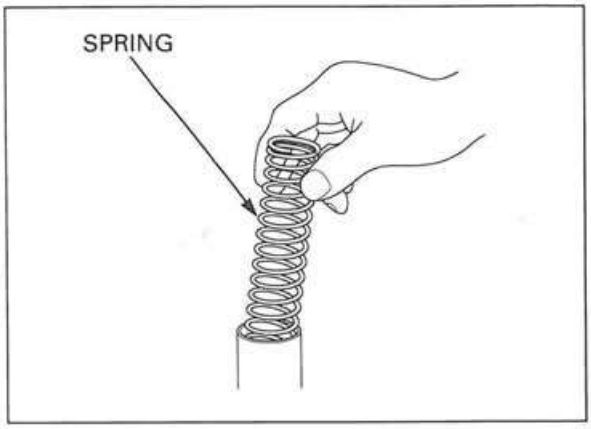
The fork cap is under spring pressure. Use care when removing it and wear eye and face protection.



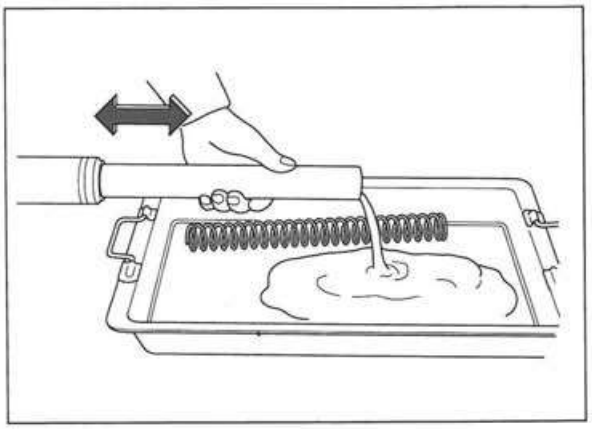
Remove the spring spacer and washer from the fork tube.



Remove the fork spring.



Pour the fork oil from the fork leg by pumping the fork 8–10 times.



CAUTION:

Do not over tighten the fork slider.

Hold the axle holder in a vise with a piece of wood or soft jaws to avoid damage.

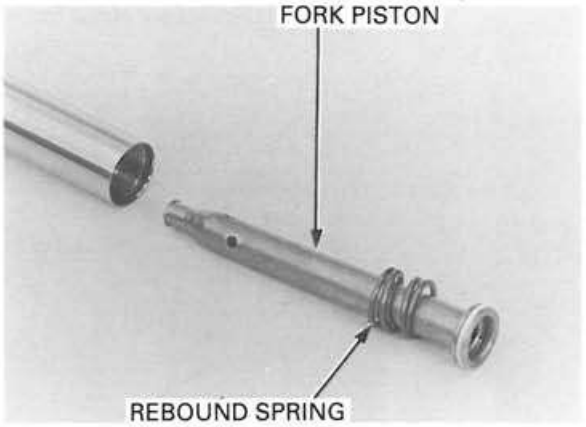
Loosen and remove the fork socket bolt and sealing washer from the fork slider.

If the fork piston turns with the socket bolt, temporarily install the fork spring, washer, spring spacer and fork cap.

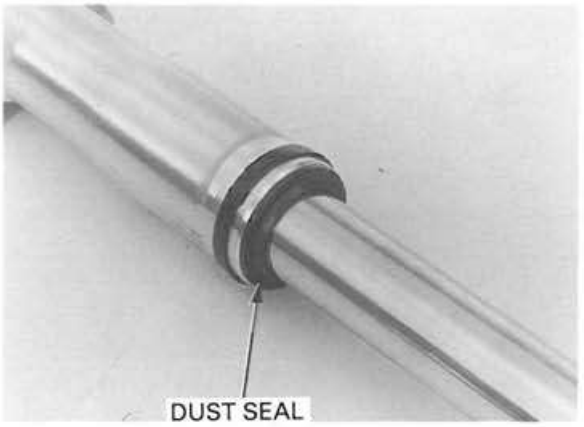

SOCKET BOLT/SEALING WASHER

Do not remove the fork piston ring, unless it is necessary to replace with a new one.

Remove the fork piston and rebound spring.



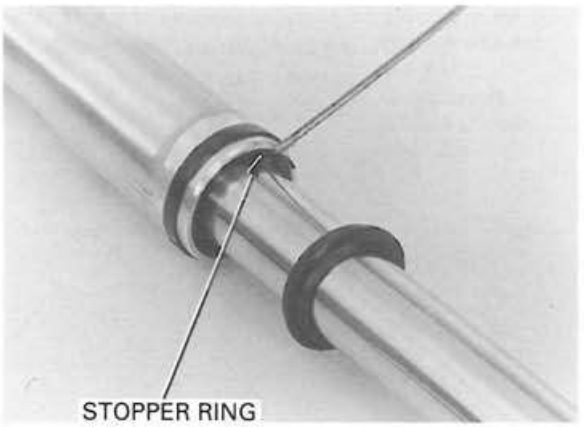
Remove the dust seal from the fork slider.


DUST SEAL

Remove the stopper ring from the groove of the fork slider.

CAUTION:

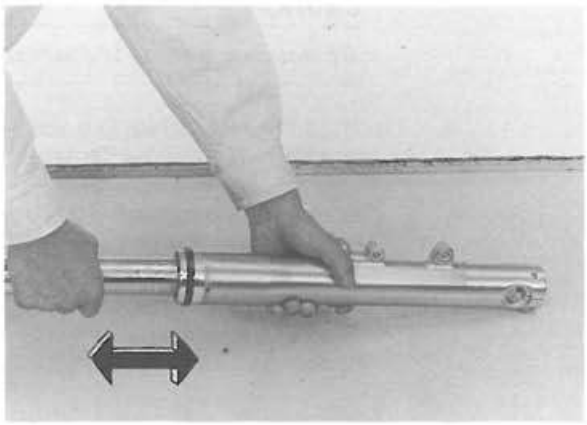
Do not scratch the fork tube sliding surface.


STOPPER RING

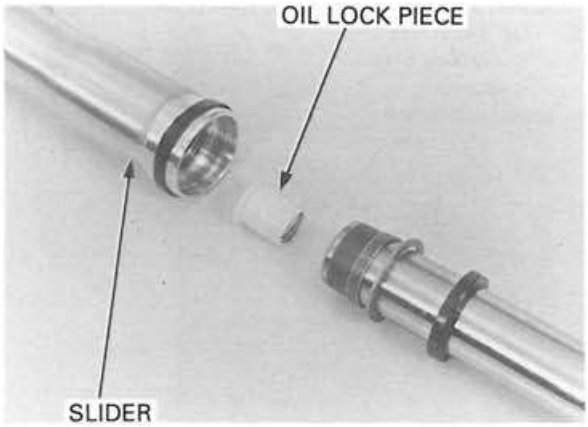
NOTE:

Check that the fork tube moves smoothly in the fork slider. If does not, check the fork tube for bending or damage, and bushings for wear or damage.

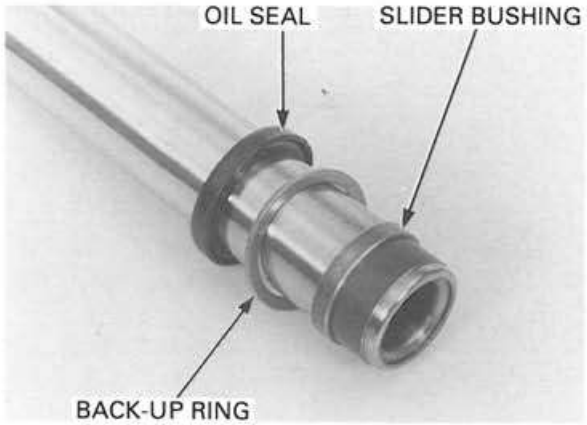
Using quick successive motions, pull the fork tube out of the fork slider.



Remove the oil lock piece from the fork slider.

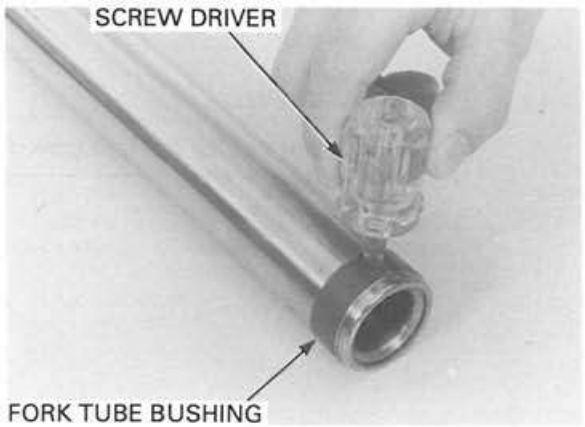


Remove the oil seal, back-up ring and slider bushing from the fork tube.

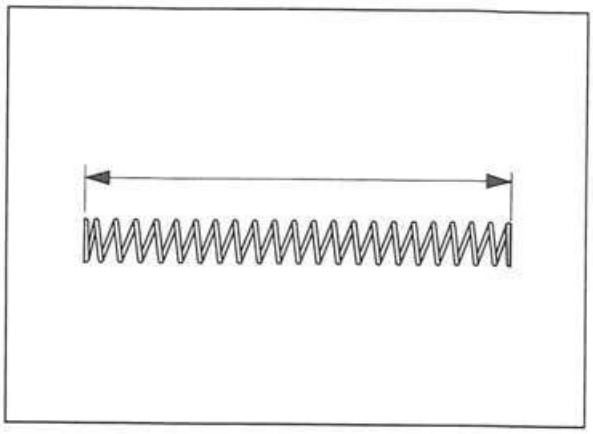


Do not remove the fork tube bushing unless it is necessary to replace it with a new one.

Carefully remove the fork tube bushing by plying the slot with a screwdriver until the bushing can be pulled off by hand.



INSPECTION

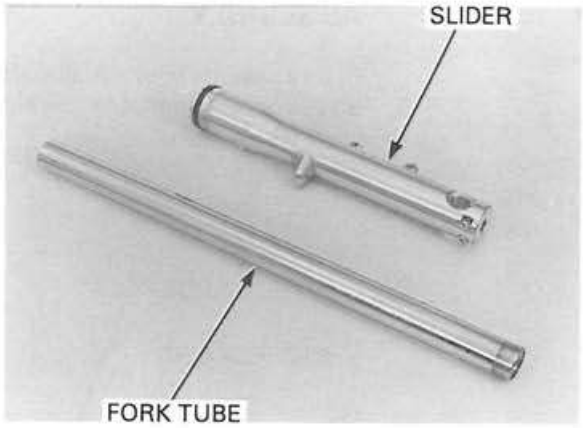


FORK SPRING
Measure the fork spring free length by placing the spring on a flat surface.

SERVICE LIMIT: 297.3 mm (11.70 in)

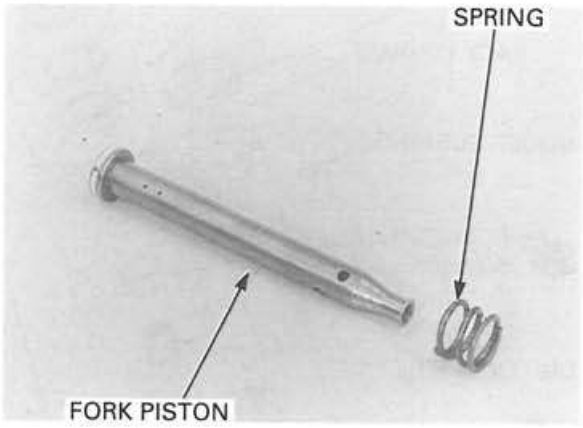
FORK TUBE/SLIDER/FORK PISTON
Check the fork tube, slider and fork piston for score marks, and excessive or abnormal wear.

Replace the component if necessary.



Check the fork piston ring for wear or damage.
Check the rebound spring for fatigue or damage.

Replace the component if necessary.



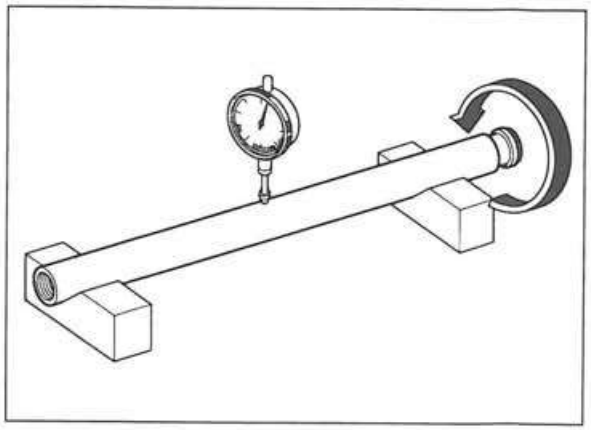
Set the fork tube in V-blocks and measure the fork tube runout rotating it with a dial indicator.
Actual runout is 1/2 the total indicator reading.

SERVICE LIMIT: 0.2 mm (0.008 in)

Replace if the service limit is exceeded, or there are scratches or nicks that will allow fork oil to leak past the seals.

NOTE:

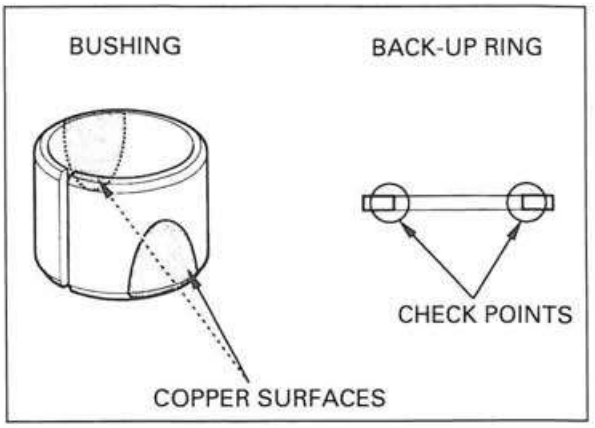
Do not reuse the fork tube if it cannot be perfectly straightened with minimal effort.



FORK TUBE BUSHING

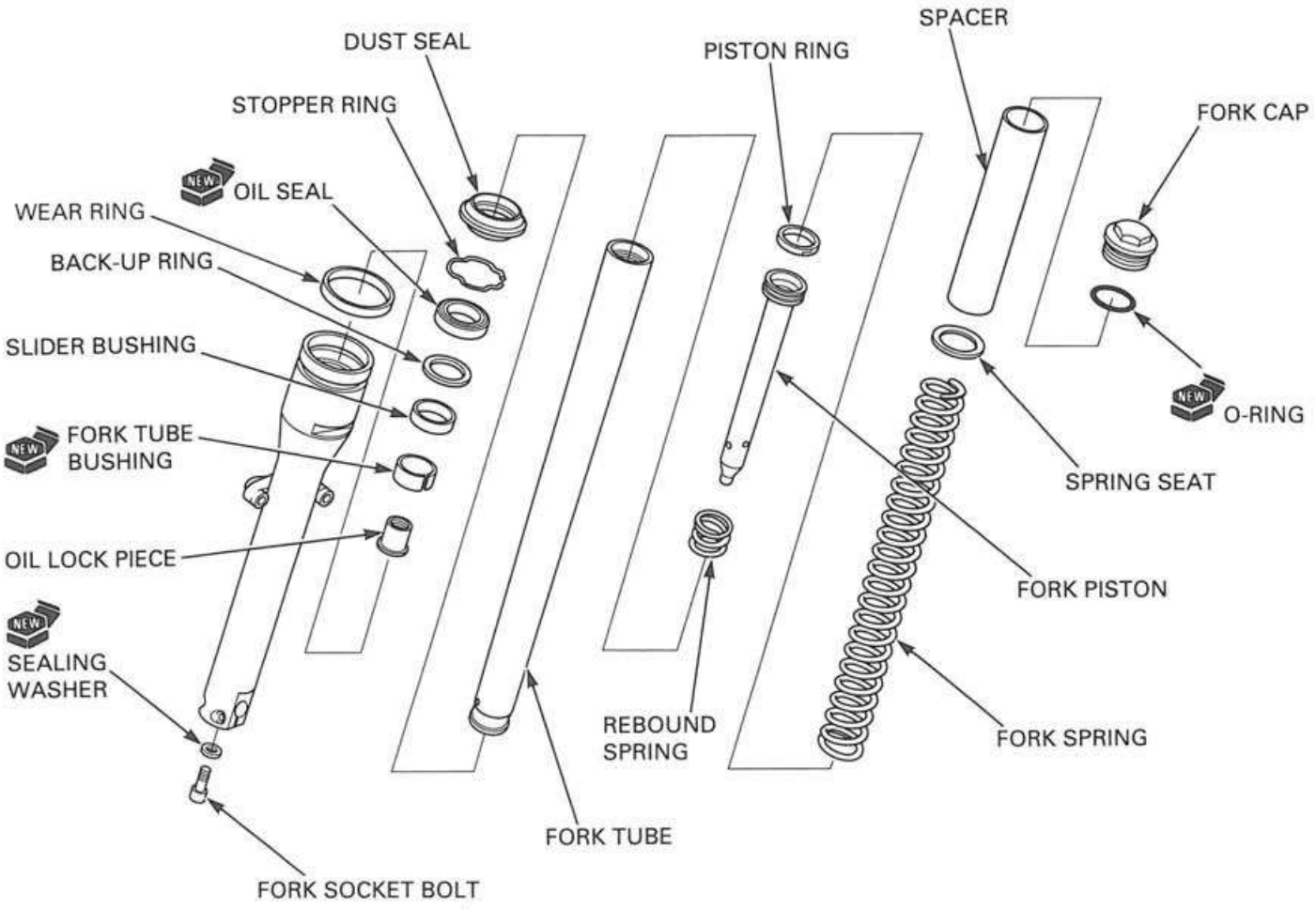
Visually inspect the slider and fork tube bushings. Replace the bushings if there is excessive scoring or scratching, or if the teflon is worn so that the copper surface appears on more 3/4 of the entire surface.

Check the back-up ring; replace it if there is any distortion at the point shown.



ASSEMBLY

Before assembly, wash all parts with a high flash point or non-flammable solvent and wipe them off completely.



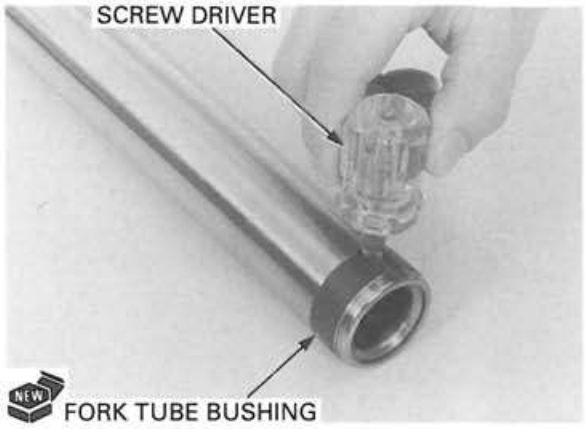
Install a new fork tube bushing if the tube bushing has been removed.

CAUTION:

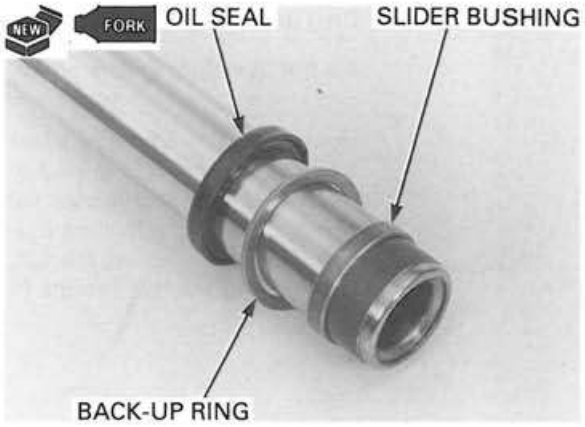
- ***Be careful not to damage the fork tube bushing coating.***
- ***Do not open the fork tube bushing more than necessary.***

NOTE:

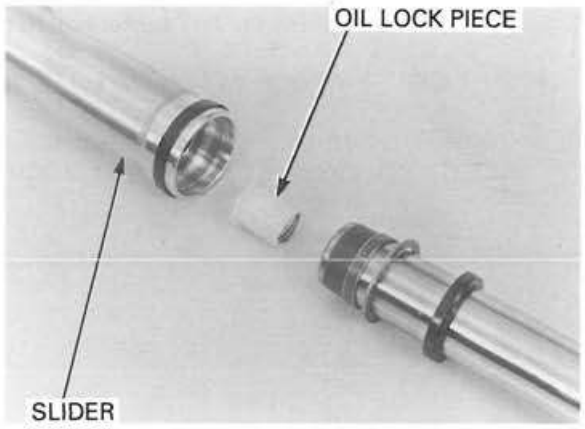
Remove the burrs from the bushing mating surface, being careful not to peel off the coating.



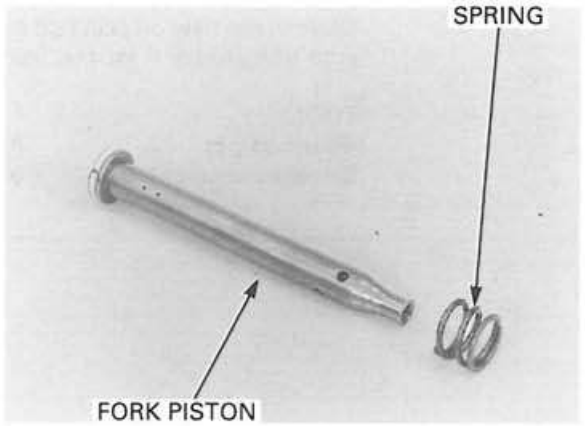
Install the slider bushing and back-up ring to the fork tube.
Apply fork oil to the new oil seal lip.
Install the new oil seal to the fork tube with it marking side facing up.



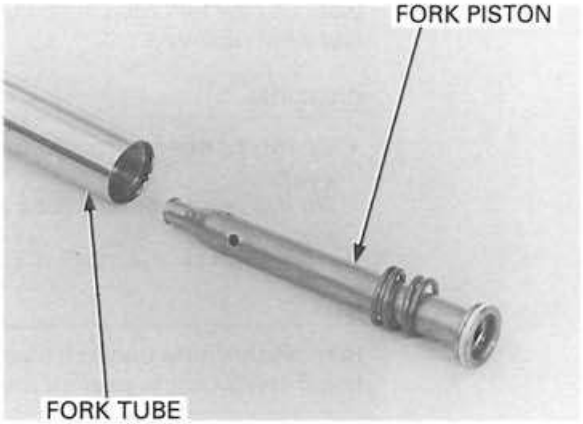
Install the oil lock piece onto the fork piston end.
Coat the fork tube bushing with fork oil and install the fork into the fork slider.



Install the rebound spring to the fork piston.



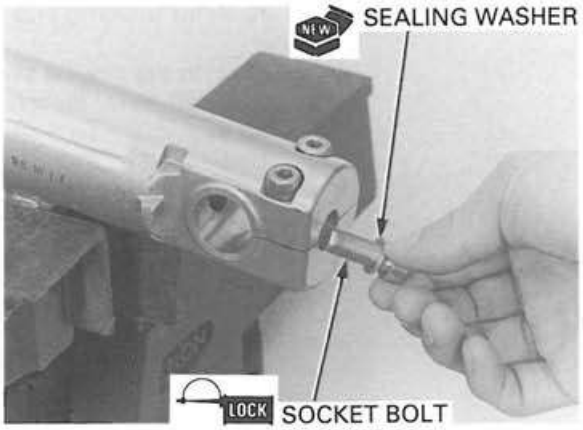
Install the fork piston into the fork tube.



CAUTION:

Do not overtighten fork slider.

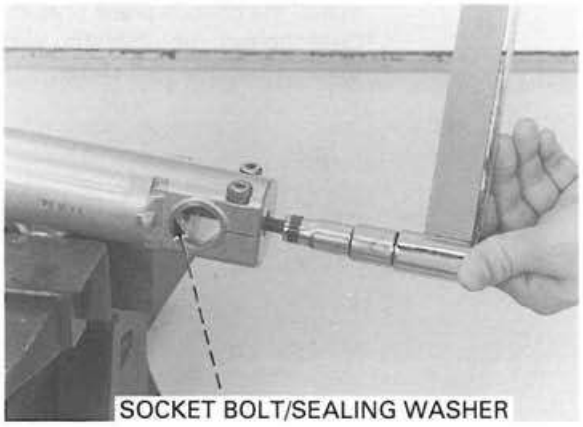
Hold the axle holder of the fork slider in a vise with a piece of wood or soft jaws to avoid damage.
Replace the sealing washer with a new one.
Clean and apply a locking agent to the fork socket bolt threads and install the fork socket bolt with the new sealing washer into the fork piston.



Tighten the fork socket bolt to the specified torque.

TORQUE: 29 N·m (3.0 kgf·m, 22 lbf·ft)

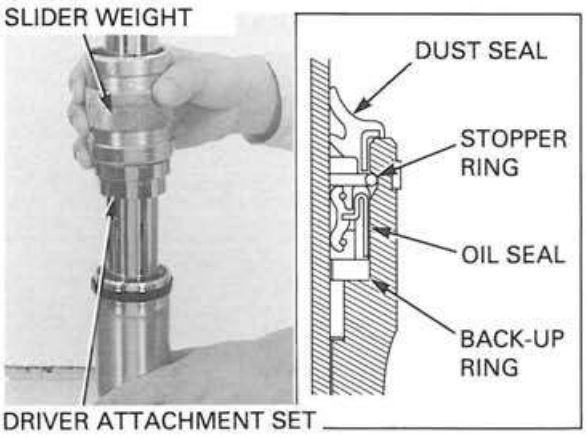
If the fork piston turns with the socket bolt, temporarily install the fork spring, washer, spring spacer and fork cap.



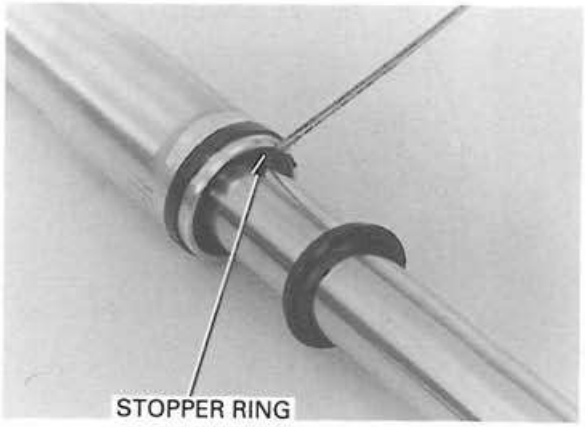
Drive in the new oil seal into the fork tube until the stop ring groove is visible, using the special tool.

TOOL:

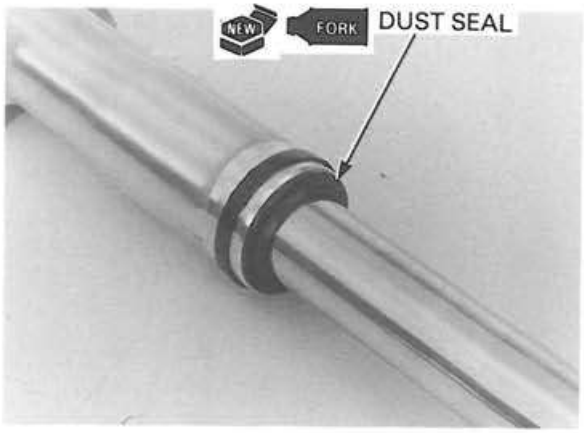
Slider weight	**07947-KA50100**
Driver attachment set	**07947-KF00100**



Install the stopper ring into the groove in the fork slider.



Apply fork oil to the lip a new dust seal and install the dust seal.

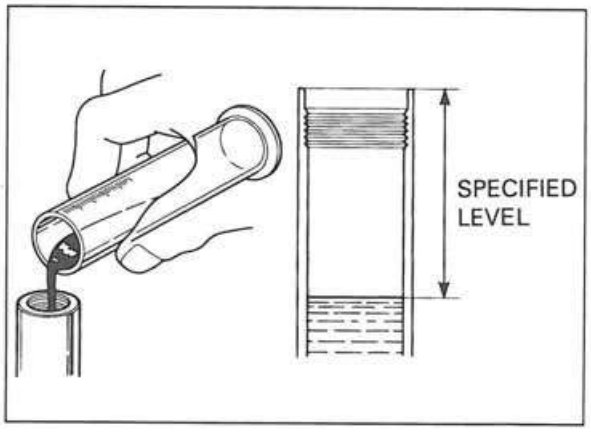


Pour half the required amount of the recommended fork oil in the fork tube.

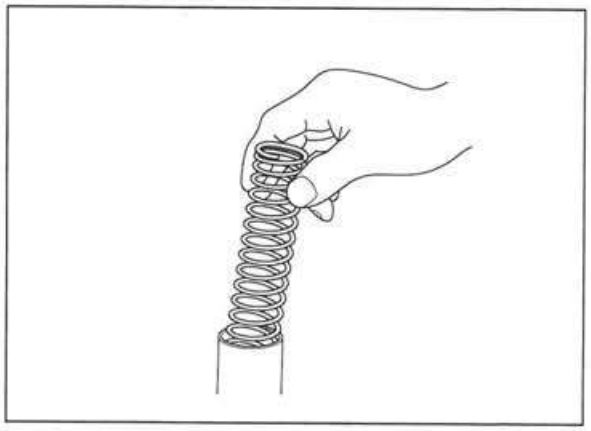
RECOMMENDED FORK OIL:
Pro-Honda Suspension Fluid SS-8 or equivalent
OIL CAPACITY:
514 ± 2.5 cm³ (17.4 ± 0.08 US oz, 18.0 ± 0.09 Imp oz)

Slowly pump the fork tube several times to remove trapped air.
Pour additional oil up to the specified capacity and repeat the above step.
Compress the fork leg fully.
Measure the oil level from the top of the fork tube.

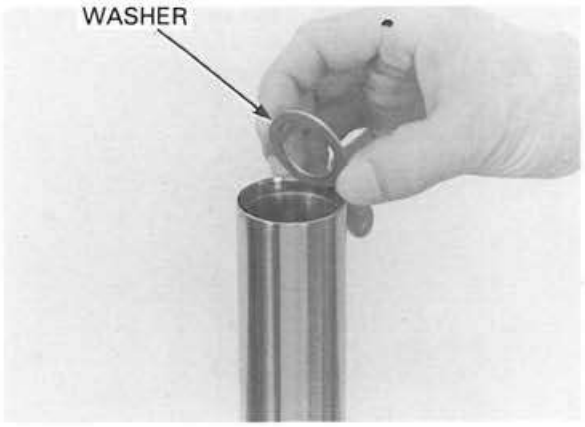
OIL LEVEL: 108 mm (4.3 in)



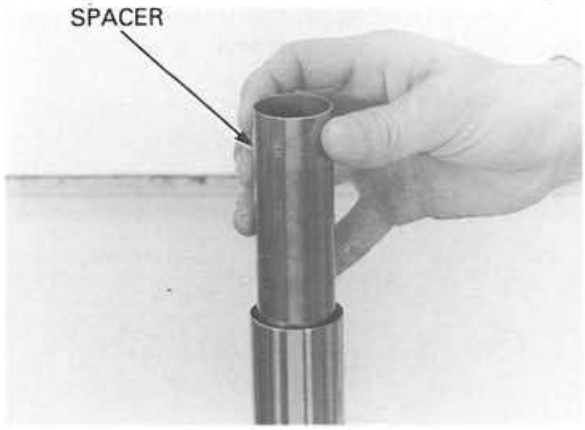
Install the fork spring into the fork tube.



Install the washer.



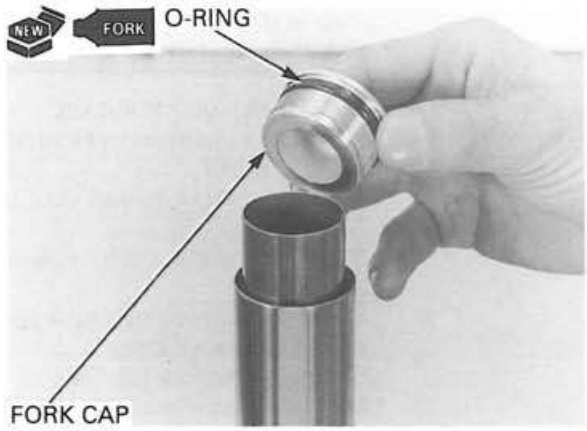
Install the spring spacer.



Apply fork oil to the new O-ring and install the new O-ring to the fork cap.
Install the fork cap into the fork tube.

NOTE:

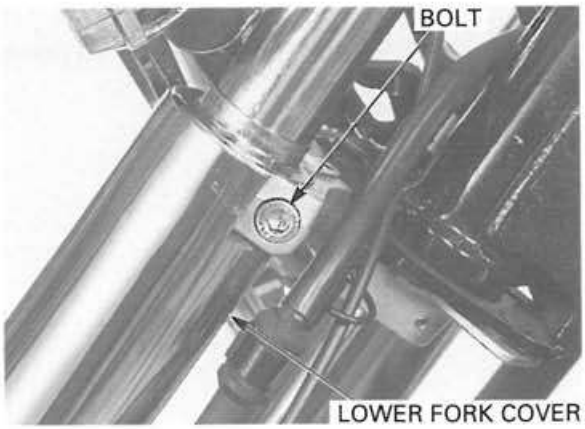
Tighten the fork cap after installing the fork tube into the fork bridge.



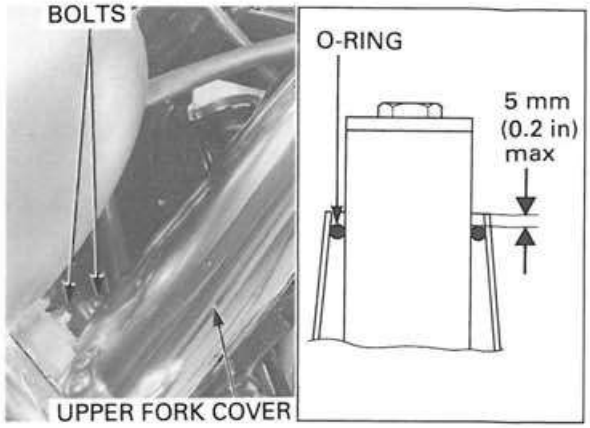
INSTALLATION

VT750CD/CD2/CD3: Install the lower fork cover to the steering stem.

Install the front fork to the steering stem, then tighten the bottom bridge pinch bolt to temporarily hold the fork in place.



VT750CD/CD2/CD3: Install the upper fork cover to the front fork.
Install and tighten the bolts securely.
Install the O-ring into the fork cover as shown.



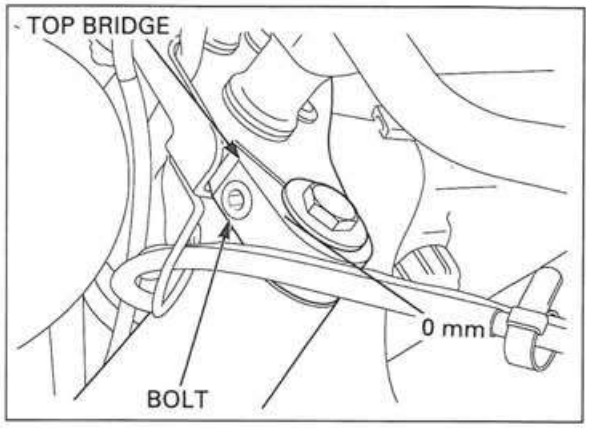
NOTE:

Do not apply soapsuds or oil to the fork cover inner surface when removing the fork cover.

Install the top bridge (page 13-42).

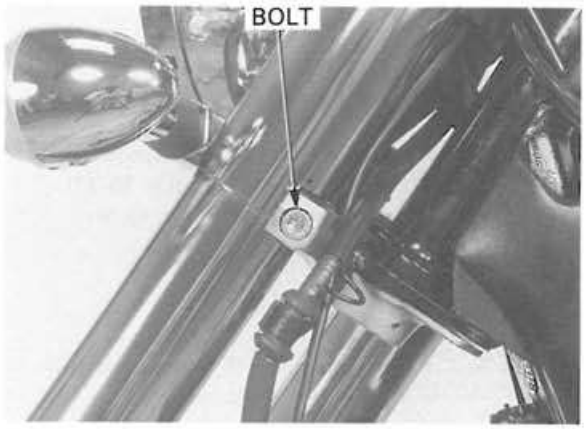
Loosen the bottom bridge pinch bolt.

Align the top of fork tube with the upper surface of the top bridge.



Tighten the bottom bridge pinch bolt to the specified torque.

TORQUE: 49 N·m (5.0 kgf·m, 36 lbf·ft)

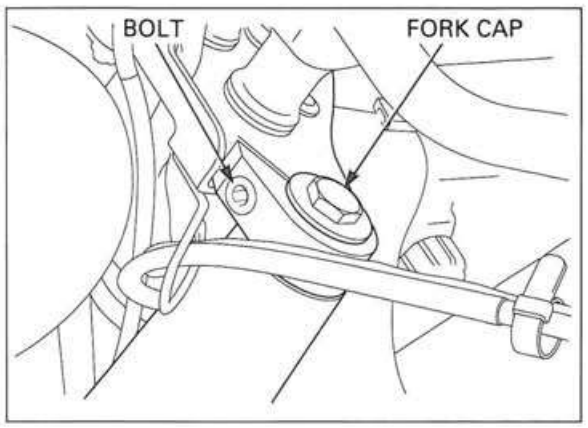


Tighten the fork cap to the specified torque, if removed.

TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)

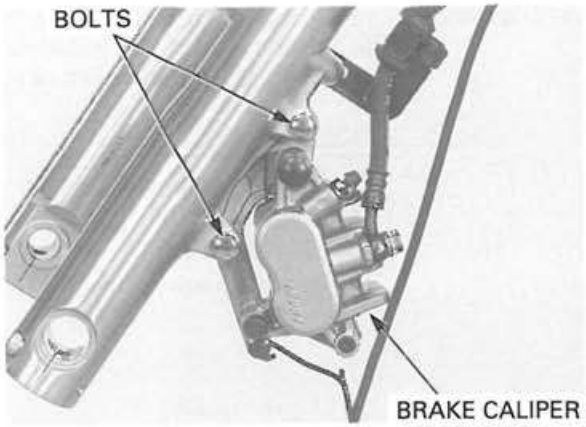
Tighten the top bridge pinch bolts to the specified torque.

TORQUE: 26 N·m (2.7 kgf·m, 20 lbf·ft)

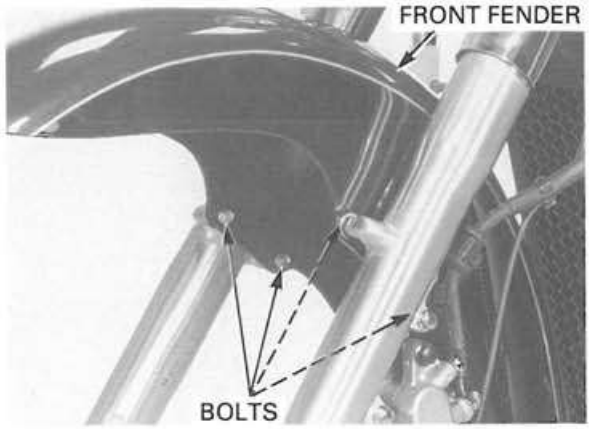


Install the brake caliper to the left front fork.
Install and tighten the new front caliper mounting bolts to the specified torque.

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)



Install the front fender with the brake hose clamp.
Install and tighten the mounting bolts securely.



STEERING STEM

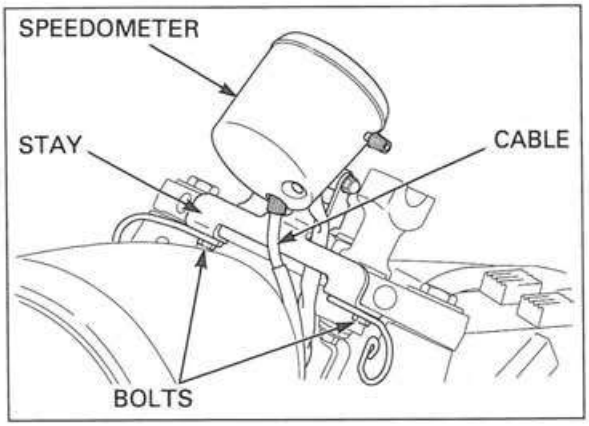
REMOVAL

If the handlebar lower holders will be removed, loosen the lower holder nuts before removing the upper holders.

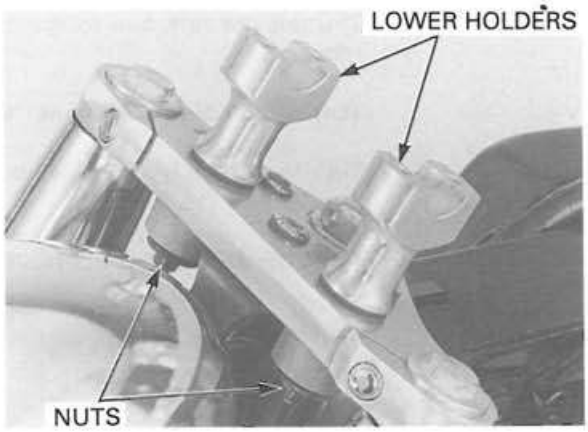
Remove the following:
- Front wheel (page 13-13)
- Handlebar (page 13-6)

VT750C and VT750CD/CD2 ('98 – 2000):

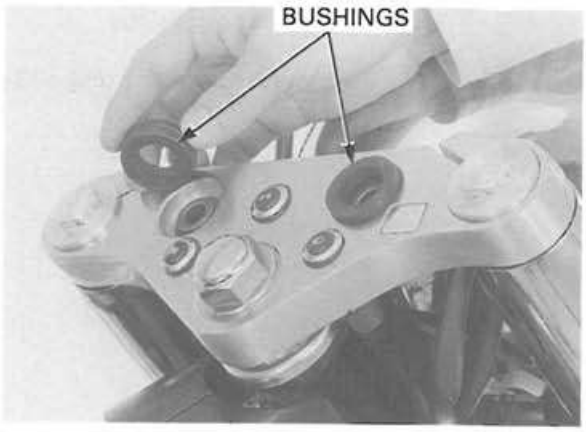
Disconnect the speedometer cable from the speedometer.
Remove the speedometer stay mounting bolts.
Remove the speedometer and stay as an assembly.



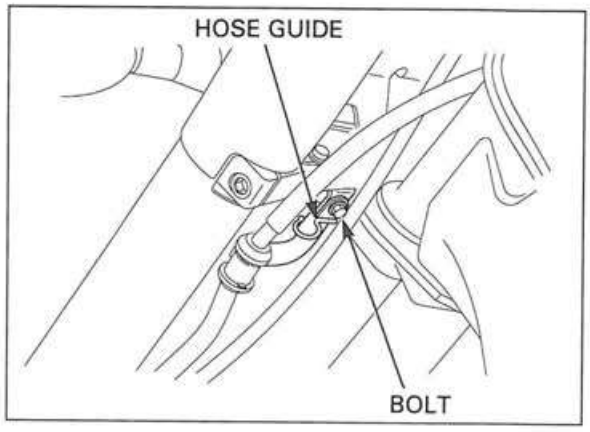
Remove the nuts, washers and handlebar lower holders.



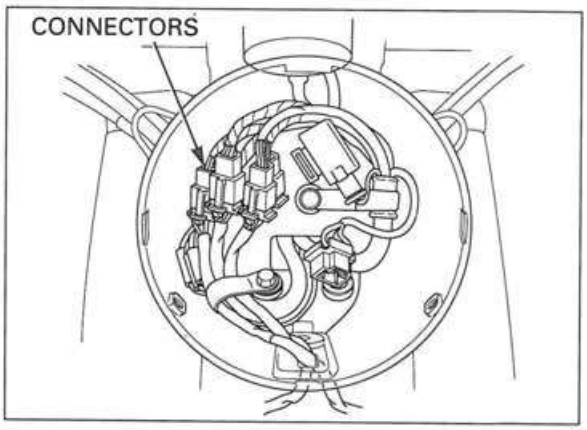
Remove the bushings.



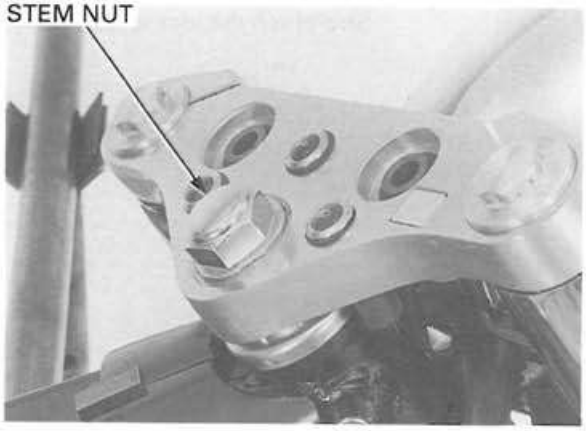
Remove the bolt and brake hose guide.



Remove the headlight (page 19-7).
Disconnect the wire connectors.

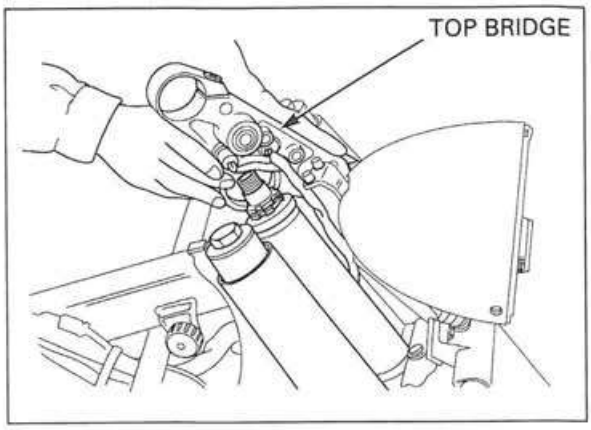


Remove the steering stem nut.

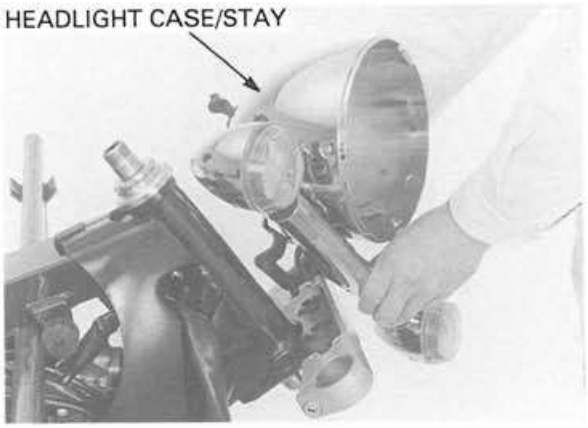


Remove the top bridge.

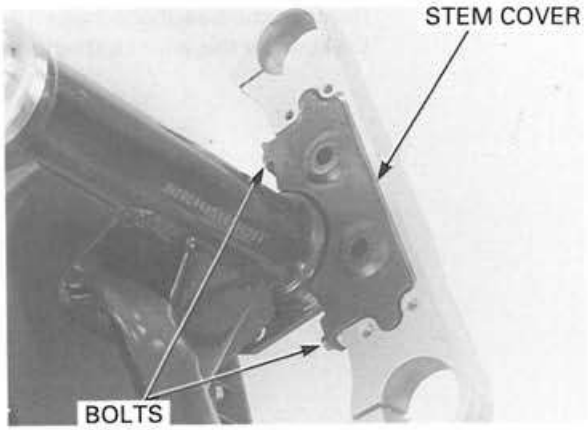
Remove the front fork (page 13-22).



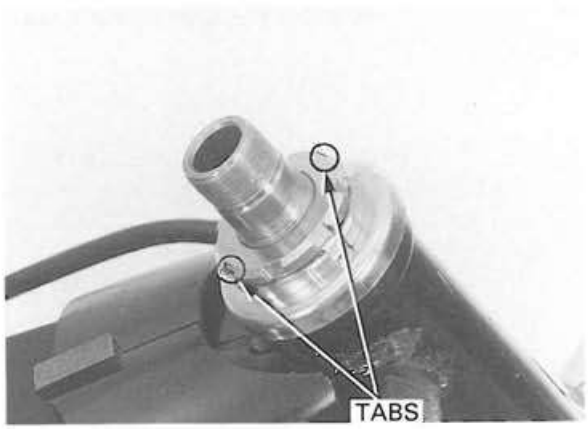
Remove the headlight case and stay from the steering stem.



Remove the bolts and steering stem cover.



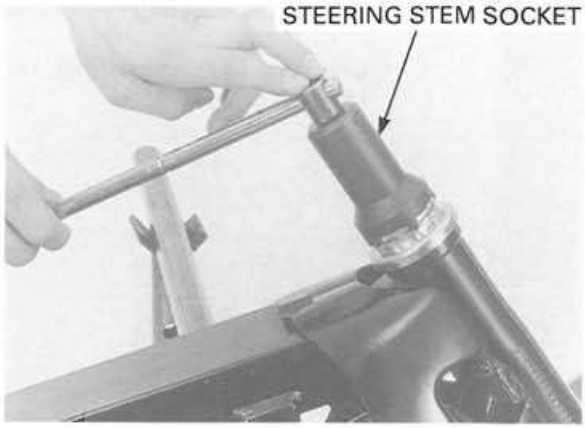
Straighten the lock washer tabs.



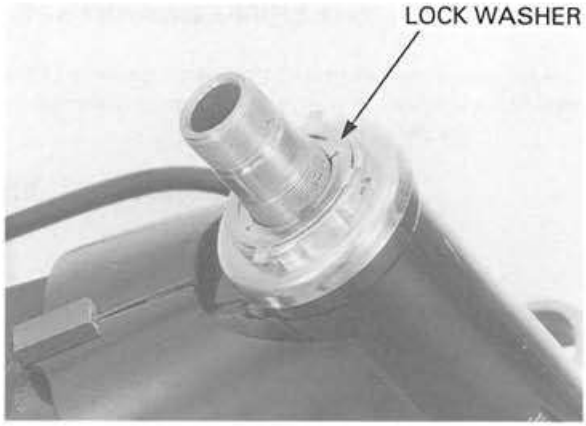
Remove the lock nut using following tool.

TOOL:

Steering stem socket	**07916-3710101 or 07916-3710100**



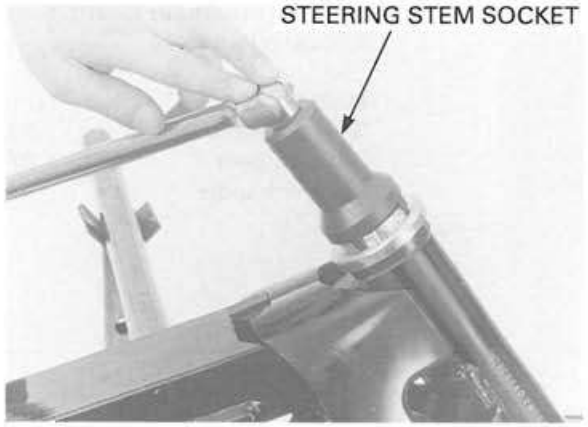
Remove the lock washer.



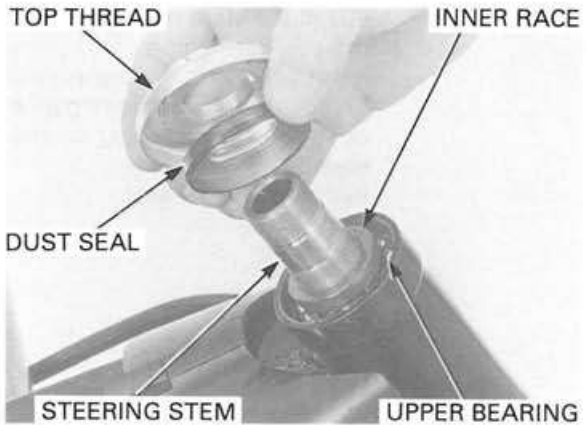
Remove the steering top thread using following tool.

TOOL:

Steering stem socket	**07916-3710101 or 07916-3710100**

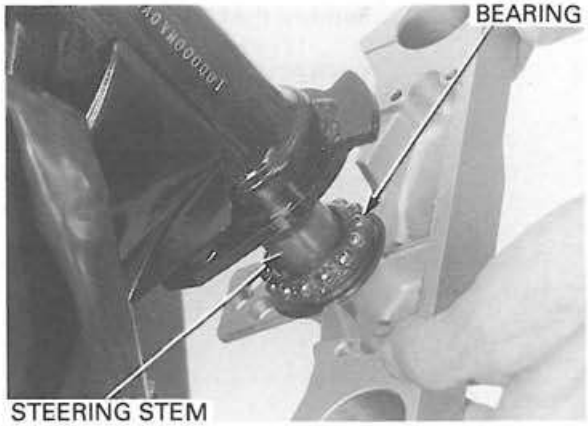


Hold the steering stem by hand and remove the steering top thread, dust seal, upper bearing inner race and upper bearing.



Remove the steering stem from the steering head.

Check the steering bearings, inner and outer races for wear or damage.



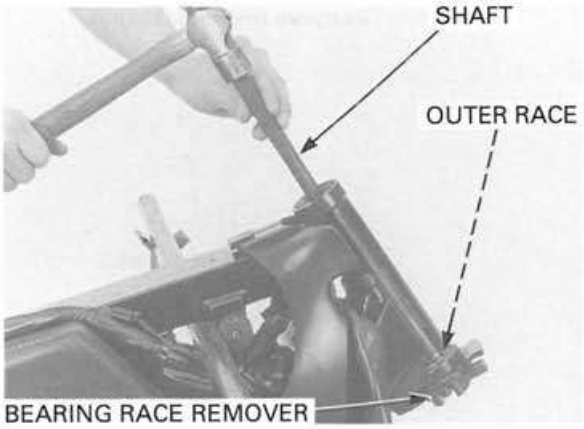
STEERING BEARING REPLACEMENT

Always replace the bearings and races as a set.

Remove the lower bearing outer race using the following tool and suitable shaft.

TOOL:

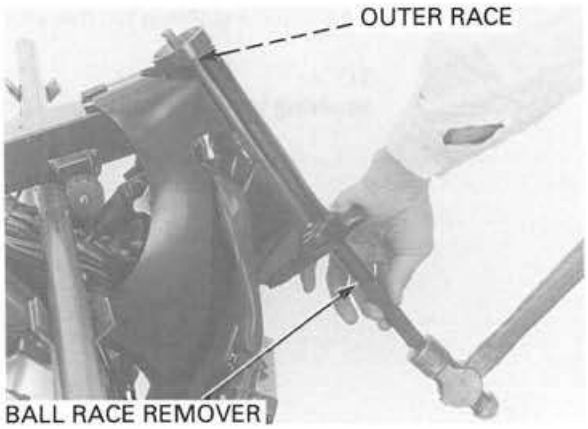
Bearing race remover	**07946-3710500**



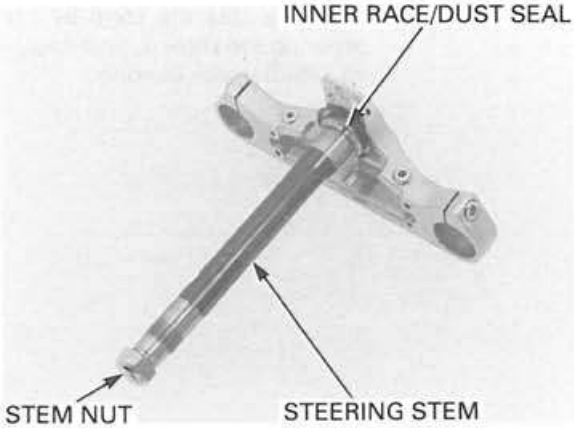
Remove the upper bearing outer race using the following tools.

TOOLS:

Ball race remover	**07953-MJ10000**
– Attachment	**07953-MJ10100**
– Driver handle	**07953-MJ10200**

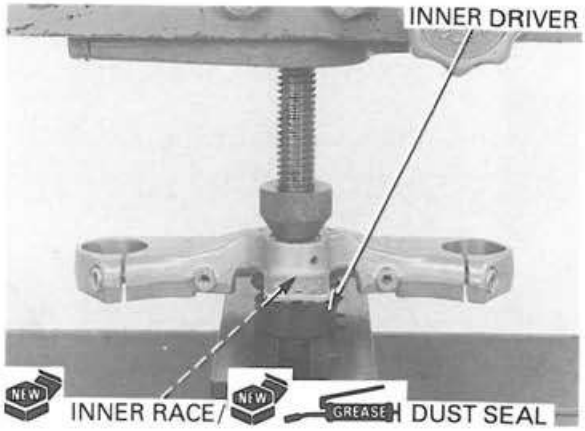


Install the stem nut onto the stem to prevent the threads from being damaged when removing the lower bearing inner race from the stem.
Remove the lower bearing inner race with a chisel or equivalent tool being careful not to damage the stem.
Remove the dust seal.



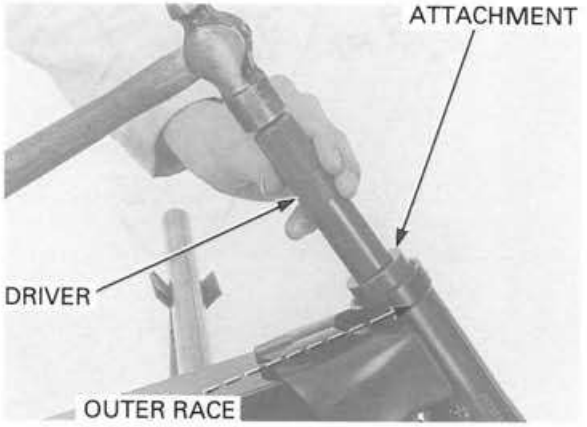
Apply grease to the new dust seal lip and install it to the steering stem.
Install the new lower bearing inner race using the following tool and hydraulic press.

TOOL:
Attachment **07746-0030300**



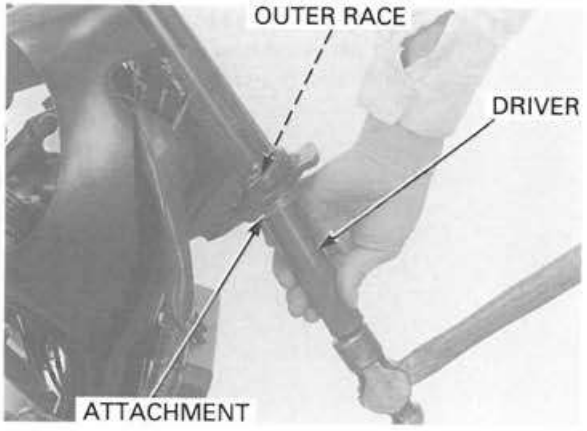
Drive the new upper bearing outer race into the head pipe using the following tools.

TOOLS:
Driver **07749-0010000**
Attachment, 42 X 47 mm **07746-0010300**

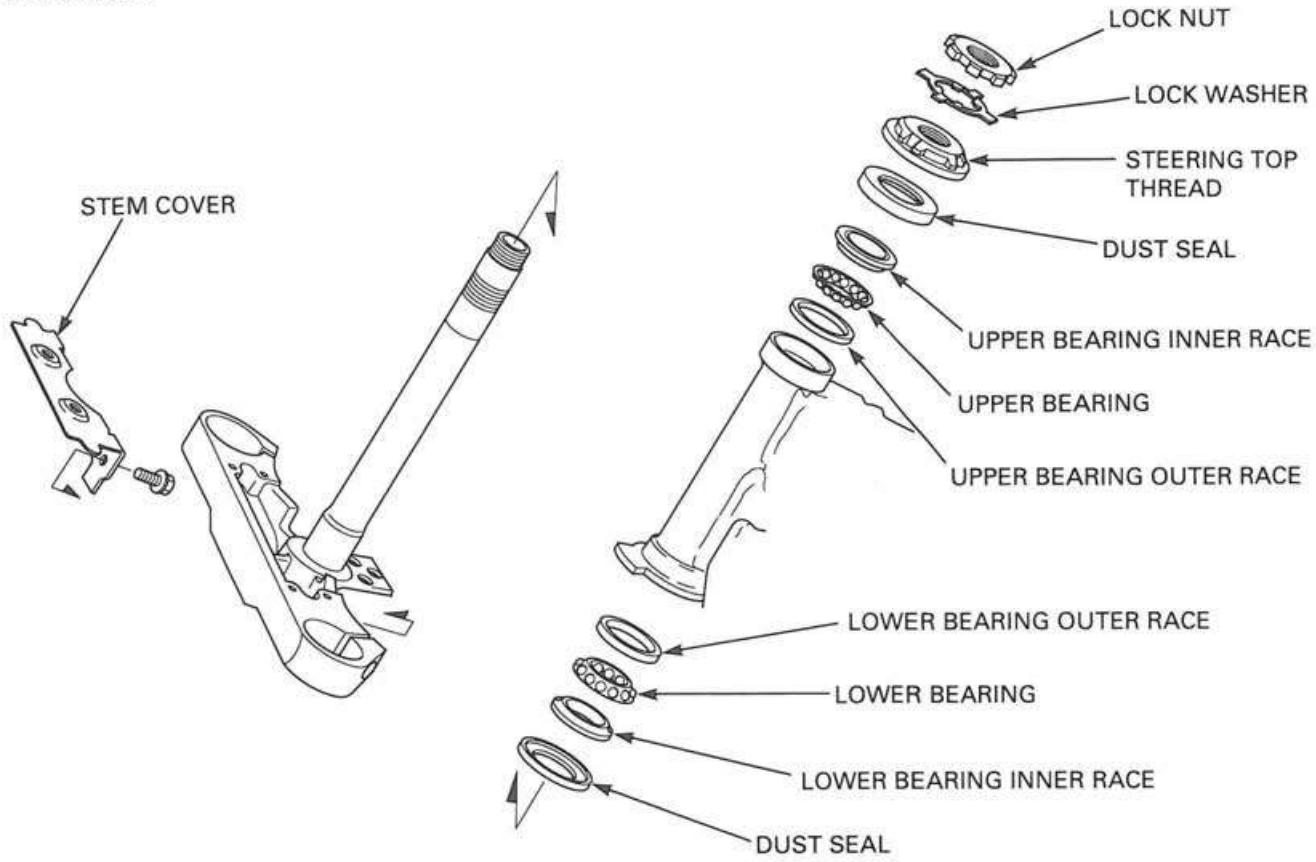


Drive the new lower bearing outer race into the head pipe using the following tools.

TOOLS:
Driver **07749-0010000**
Attachment, 52 X 55 mm **07746-0010400**

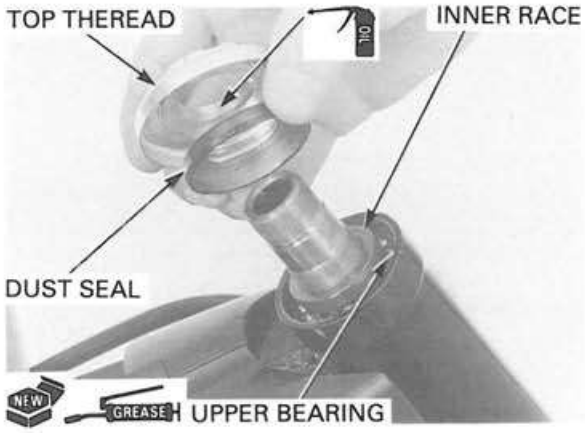


INSTALLATION



Apply grease to the new lower bearing.
Install the new lower bearing onto the steering stem.
Install the steering stem into the head pipe.

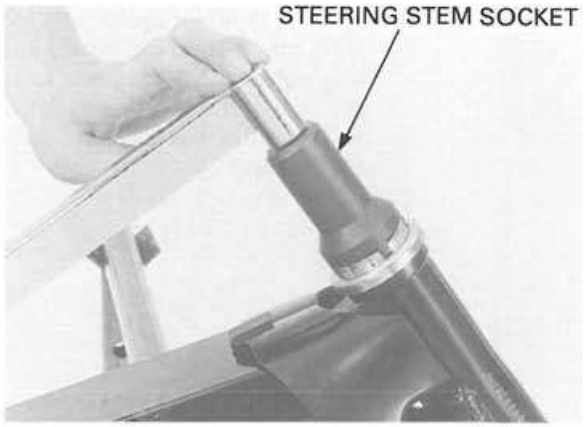
Apply grease to the new upper bearing.
Apply oil to the steering top threads.
Install the upper bearing, upper bearing inner race, dust seal and steering top thread.



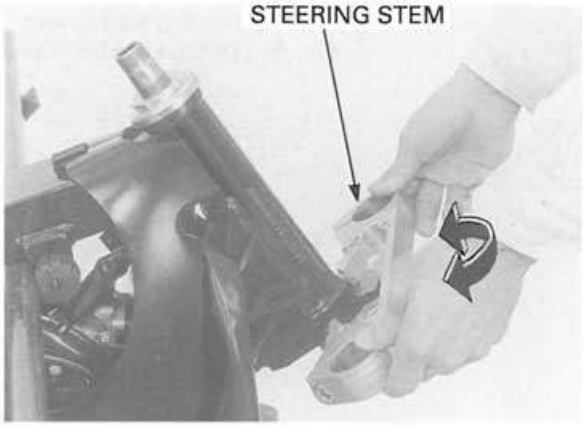
Tighten the top thread to the specified torque.

TOOL:
Steering stem socket **07916-3710101 or 07916-3710100**

TORQUE: 21 N·m (2.1 kgf·m, 15 lbf·ft)



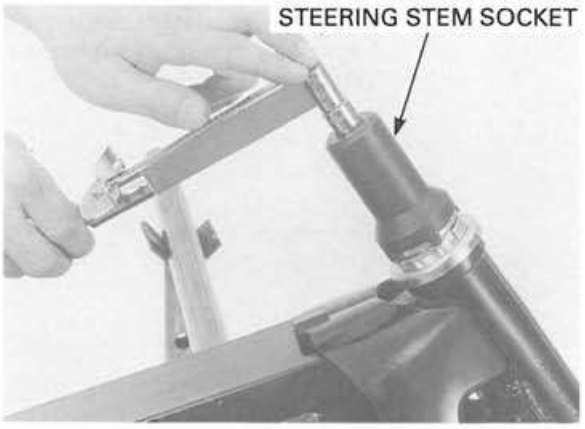
Turn the steering stem right and left, lock-to-lock at least five times to seat bearings.
Make sure that the steering stem moves smoothly, without play or binding.



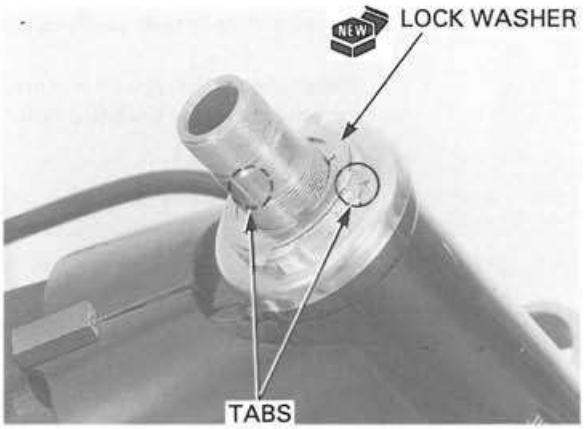
Retighten the top thread to the specified torque.

TOOL:
Steering stem socket **07916-3710101 or 07916-3710100**

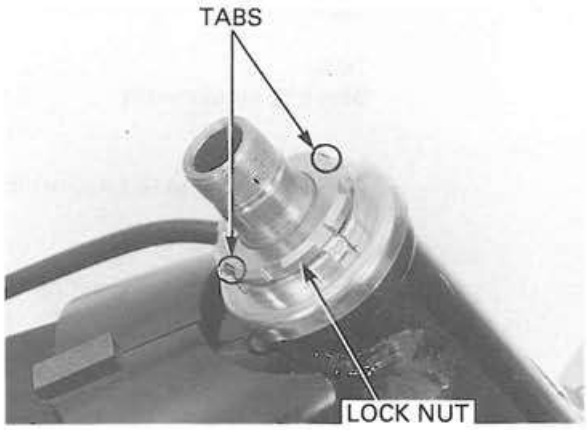
TORQUE: 21 N·m (2.1 kgf·m, 15 lbf·ft)



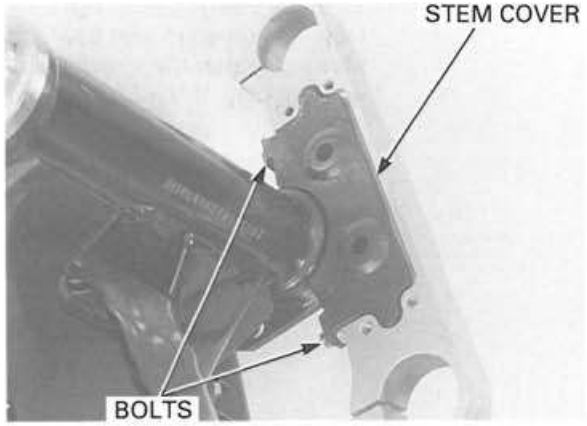
Install the new lock washer and bend the two opposite tabs down into the grooves in the top thread.



Install and finger tighten the lock nut all the way. Hold the steering top thread and further tighten the lock nut, within 90 degrees, to align its grooves with the tabs of the lock washer.
Bend up the lock washer tabs into the grooves of the lock nut.



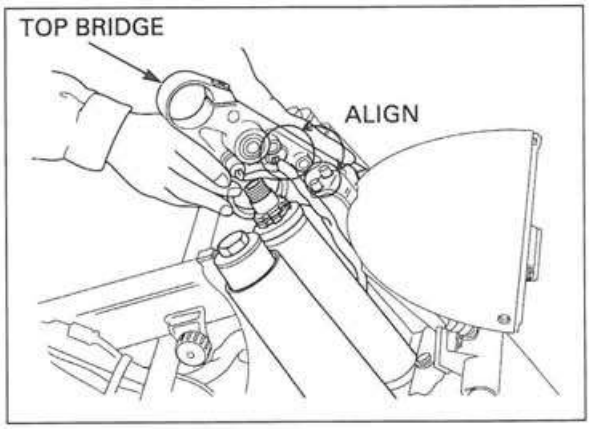
Install the steering stem cover to the steering stem. Install and tighten the bolts securely.



Install the headlight case and stay, aligning the headlight stay mounting rubber with the hole steering stem.

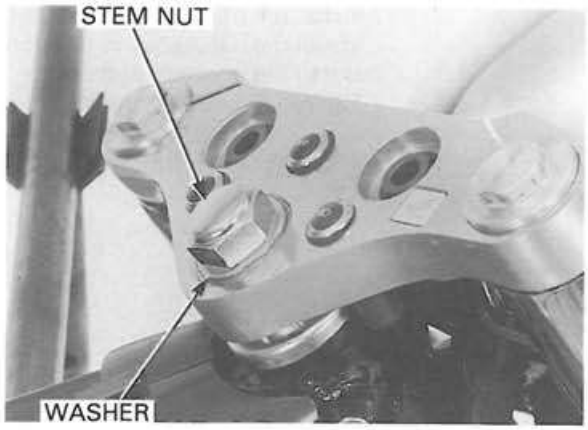
Install the front fork and fork covers (page 13-32).

Install the top bridge by aligning the headlight stay mounting rubber with the hole in the top bridge.

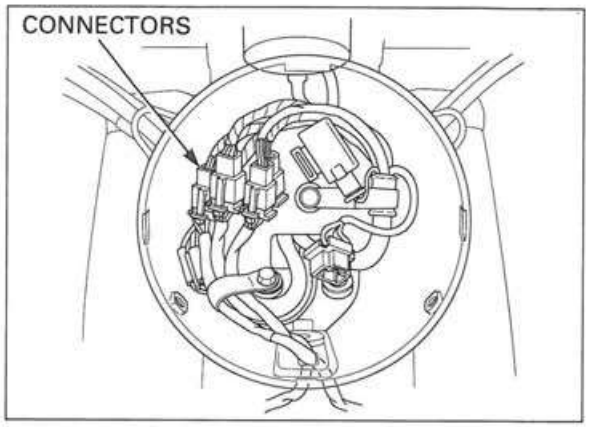


Install and tighten the steering stem nut to the specified torque.

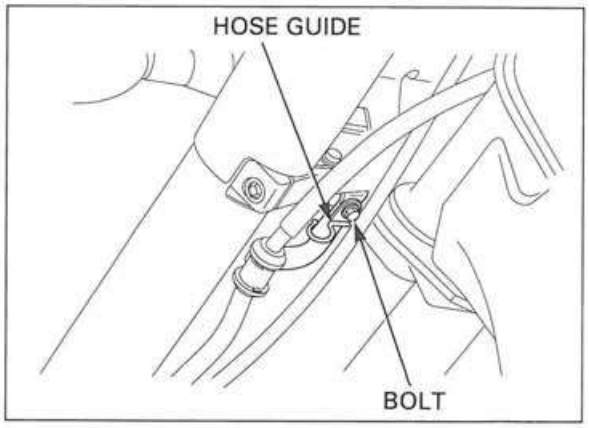
TORQUE: 103 N·m (10.5 kgf·m, 76 lbf·ft)



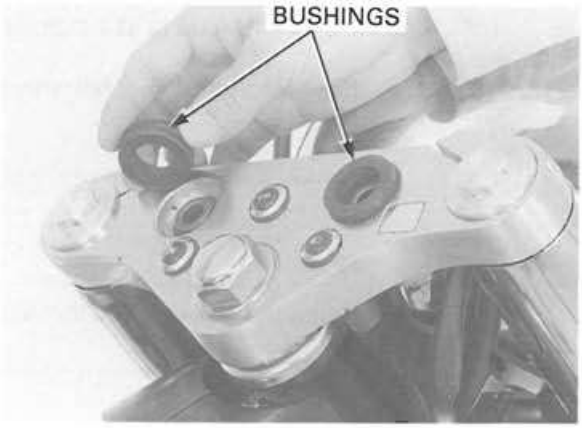
Connect the wire harness in the headlight case.
Install the headlight (page 19-7).



Install the brake hose guide and bolt.
Tighten the bolt securely.

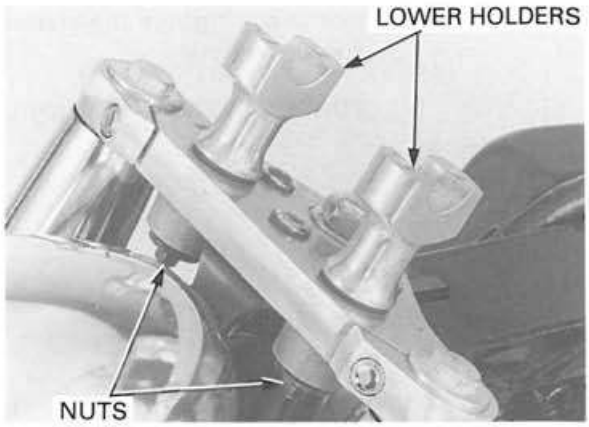


Check the bushings and replace if necessary.
Install the bushings to the top bridge.



Install the handlebar lower holders.
Install the handlebar to temporarily (page 13-9).
Install the washers and nuts.
Tighten the nuts to the specified torque.

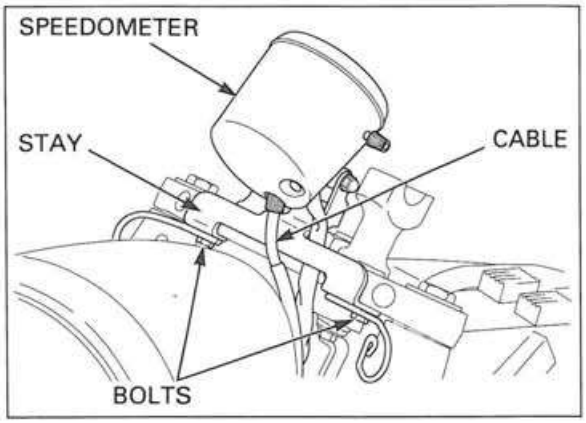
TORQUE: 26 N•m (2.7 kgf•m, 20 lbf•ft)



VT750C and VT750CD/CD2 ('98 – 2000):

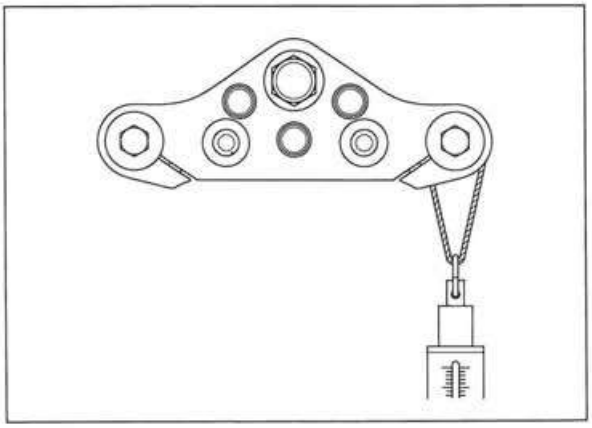
Install the speedometer and stay to the top bridge.
Install and tighten the bolts
Connect the speedometer cable to the speedometer.

Install the following:
– Handlebar (page 13-9)
– Front wheel (page 13-20)



STEERING BEARING PRELOAD

Raise the front wheel off the ground.
Position the steering stem to the straight ahead position.
Hook a spring scale to the fork tube between the fork top and bottom bridges.
Make sure that there is no cable or wire harness interference.
Pull the spring scale keeping the scale at a right angle to the steering stem.



Read the scale at the point where the steering stem just starts to move.

STEERING BEARING PRELOAD:
0.43 – 1.04 kgf (0.95 – 2.30 lbf)

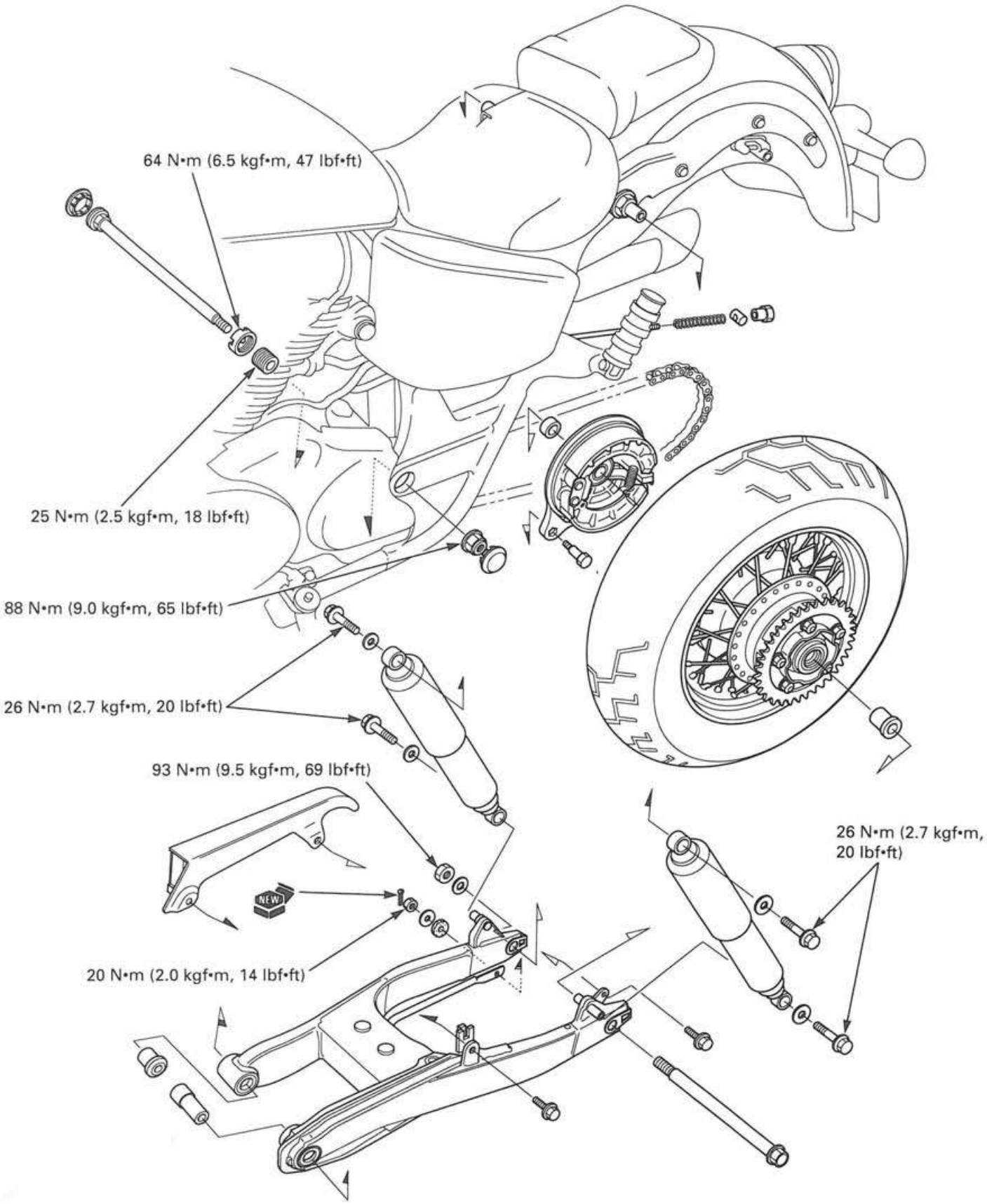
If the readings do not fall within the limits, readjust the steering top thread.

Install the removed parts in the reverse order of removal.

NOTE:

Route the cables and wire harness properly (page 1-22).

MEMO


64 N•m (6.5 kgf•m, 47 lbf•ft)
25 N•m (2.5 kgf•m, 18 lbf•ft)
88 N•m (9.0 kgf•m, 65 lbf•ft)
26 N•m (2.7 kgf•m, 20 lbf•ft)
93 N•m (9.5 kgf•m, 69 lbf•ft)
NEW
20 N•m (2.0 kgf•m, 14 lbf•ft)
26 N•m (2.7 kgf•m, 20 lbf•ft)

14. REAR WHEEL/BRAKE/SUSPENSION

SERVICE INFORMATION

GENERAL

⚠ WARNING

- ***A contaminated brake drum or shoe reduces stopping power. Discard contaminated shoes and clean contaminated drum with a high quality brake degreasing agent.***
- ***Riding on damaged rims or spokes impairs safe operation of the vehicle.***
- ***Wheel balance directly affects the stability, handling and overall safety of the motorcycle. Carefully check balance before reinstalling the wheel.***

CAUTION:

- ***To avoid damaging the rim when using the tire lever, always use rim protectors.***
- ***Do not jack up the motorcycle using the oil filter.***

- When servicing the rear wheel, swingarm or shock absorber, support the motorcycle using a safety stand or hoist.
- Use only genuine Honda replacement bolts and nuts for all suspension pivot and mounting points.

SPECIFICATIONS

Unit: mm (in)

ITEM		STANDARD	SERVICE LIMIT
Minimum tire thread depth		———	2.0 (0.08)
Cold tire pressure	Up to 90 kg (200 lb) load	200 kPa (2.00 kgf/cm², 29 psi)	———
	Up to maximum weight capacity	250 kPa (2.50 kgf/cm², 36 psi)	———
Axle runout		———	0.20 (0.008)
Wheel rim runout	Radial	———	2.0 (0.08)
	Axial	———	2.0 (0.08)
Wheel hub-to-rim distance		(page 14-8)	———
Wheel balance weight		———	70 g (2.5 oz)
Drive chain slack		15 – 25 (3/5 – 1)	40 (1-3/5)
Drive chain link		122 L	———
Drive chain size	DID	525 V8	———
	RK	525 SM5	———
Rear brake	Drum I. D.	180.0 – 180.3 (7.09 – 7.10)	181 (7.13)
	Lining thickness	5 (0.2)	2 (0.1)
Brake pedal height		50 mm (2.0 in) above the top of the footpeg	———
Brake pedal free play		20 – 30 (3/4 – 1-1/4)	———
Shock absorber spring preload adjuster setting		2nd position	———

TOROUE VALUES

Rear axle nut	93 N•m (9.5 kgf•m, 69 lbf•ft)	U-nut
Driven sprocket nut	88 N•m (9.0 kgf•m, 65 lbf•ft)	U-nut
Rear shock absorber mounting bolt	26 N•m (2.7 kgf•m, 20 lbf•ft)	
Swingarm pivot nut	88 N•m (9.0 kgf•m, 65 lbf•ft)	
Swingarm pivot adjusting bolt	25 N•m (2.5 kgf•m, 18 lbf•ft)	
Swingarm pivot lock nut	64 N•m (6.5 kgf•m, 47 lbf•ft)	
Drive chain slider screw	3 N•m (0.3 kgf•m, 2.2 lbf•ft)	
Brake pedal pivot bolt	34 N•m (3.5 kgf•m, 25 lbf•ft)	
Rear brake stopper arm bolt	20 N•m (2.0 kgf•m, 14 lbf•ft)	
Rear brake arm bolt	29 N•m (3.0 kgf•m, 22 lbf•ft)	
Rear brake middle rod joint bolt	34 N•m (3.5 kgf•m, 25 lbf•ft)	
Spoke nipple	4 N•m (0.4 kgf•m, 2.9 lbf•ft)	

TOOLS

Attachment, 32 X 35 mm	07746-0010100	
Attachment, 42 X 47 mm	07746-0010300	
Pilot, 15 mm	07746-0040300	
Pilot, 20 mm	07746-0040500	
Pilot, 22 mm	07746-0041000	
Bearing remover shaft	07746-0050100	
Bearing remover head, 17 mm	07746-0050500	
Attachment, 28 X 30 mm	07746-1870100	
Driver	07749-0010000	
Snap ring priers	07914-3230001	
Driver shaft	07946-MJ00100	Not available in U.S.A.
Attachment	07946-MJ00200	Not available in U.S.A.
Driver shaft	07949-3710001	
Swingarm pivot lock nut wrench	07GMA-KT70200	Not available in U.S.A.
Spoke wrench	07JMA-MR60100	or equivalent commercially available in U.S.A.

TROUBLESHOOTING

Rear wheel wobbles
- Bent rim
- Worn rear wheel bearings
- Loose or bent spokes
- Faulty tire
- Unbalanced tire or wheel
- Low tire pressure
- Axle not tightened properly
- Chain adjusters not adjusted equally
- Faulty swingarm pivot bearings and bushings
- Bent frame or swingarm

Wheel turns hard
- Faulty wheel bearings
- Bent rear axle
- Brake drug

Rear suspension noisy
- Faulty rear shock absorber
- Loose fasteners

Soft suspension
- Weak spring
- Improper shock absorber spring preload
- Oil and gas leakage from damper unit
- Low tire pressure

Hard suspension
- Improper shock absorber spring preload
- Bent damper rod
- High tire pressure
- Damaged swingarm pivot bearings and bushings
- Bent frame or swingarm

Poor brake performance
- Improper brake adjustment
- Worn brake shoes
- Brake linings oily, greasy or dirty
- Worn brake cam
- Worn brake drum
- Brake arm serrations improperly engaged
- Brake shoes worn at cam contact area

REAR WHEEL

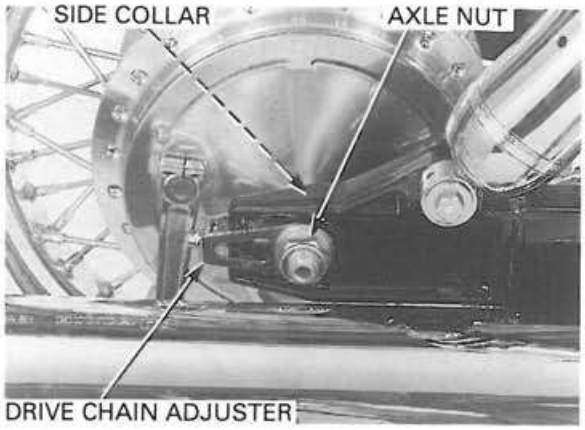
REMOVAL

CAUTION:

Do not jack up the motorcycle using the oil filter.

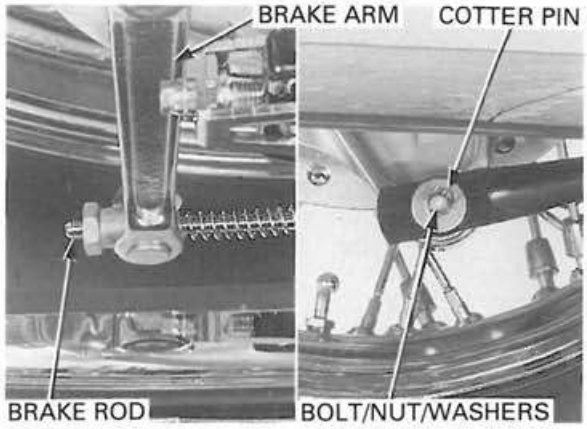
Raise and support the motorcycle using a hoist or jack.

Loosen the axle nut.
Loosen the drive chain adjusters on both sides of the swingarm.



Disconnect the brake rod from the brake arm.

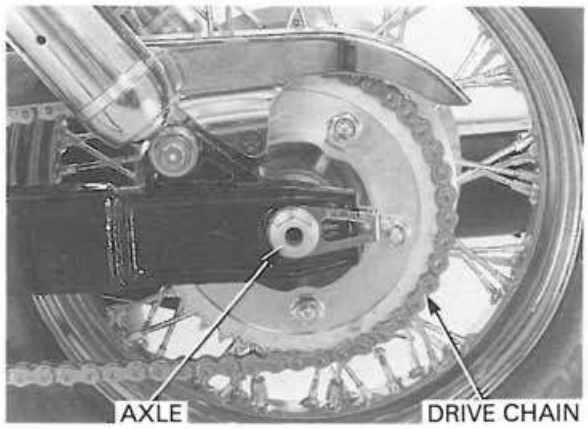
Remove the cotter pin, nut, washers and bolt from the stopper arm on the brake panel.



Remove the axle nut, right side collar and rear axle.

Side the rear wheel forward and remove the drive chain from the driven sprocket.

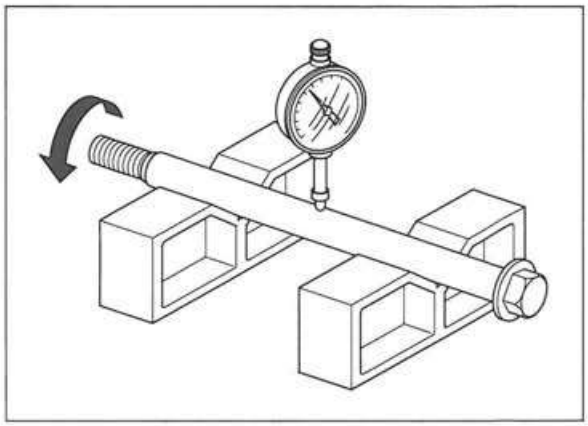
Remove the rear wheel.



INSPECTION

AXLE
Place the axle in V-blocks and measure the runout. Actual runout is 1/2 the total indicator reading.

SERVICE LIMIT: 0.20 mm (0.008 in)



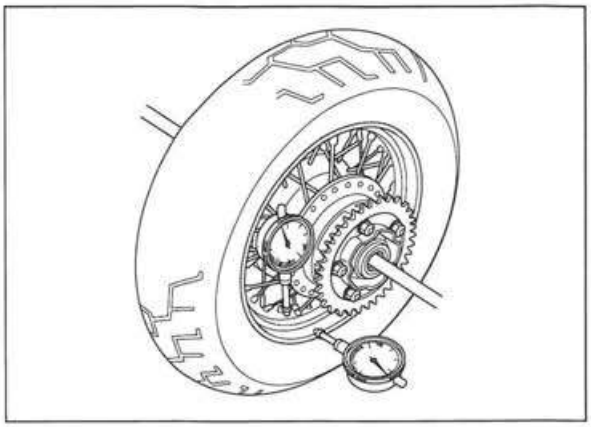
WHEEL

Check the rim runout by placing the wheel in a turning stand.

Spin the wheel slowly and read the runout using a dial indicator.

Actual runout is 1/2 the total indicator reading.

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

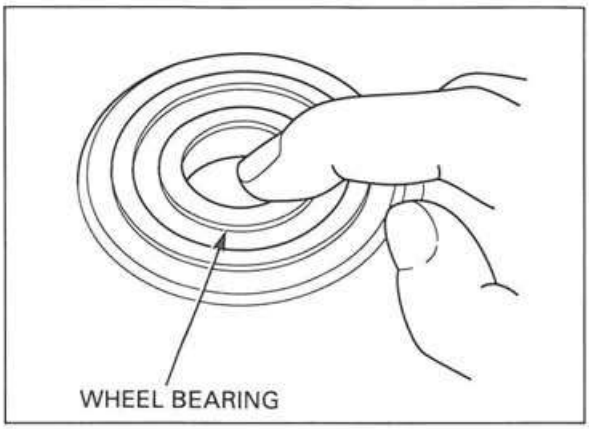


WHEEL BEARING

Turn the inner race of each bearing with your finger. Bearings should turn smoothly and quietly. Also check that the bearing outer race fits tightly in the hub.

Replace the wheel bearings in pairs.

Remove and discard the bearings if the races do not turn smoothly and quietly, or if they fit loosely in the hub.

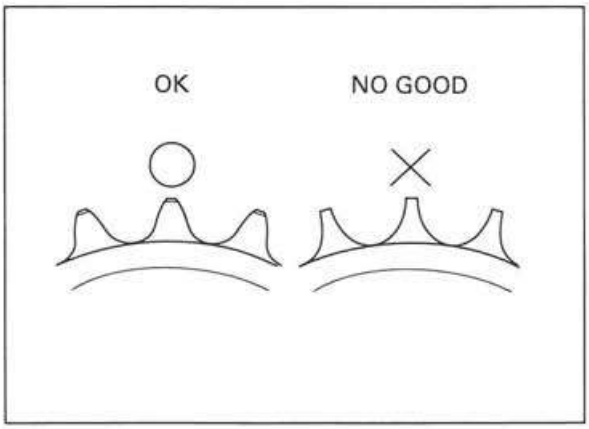


DRIVEN SPROCKET

Check the condition of the final driven sprocket teeth. Replace the sprocket if worn or damaged.

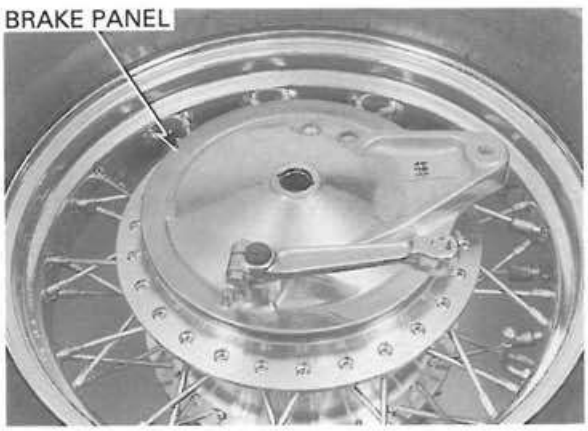
NOTE:

- If the final driven sprocket requires replacement, inspect the drive chain and drive sprocket.
- Never install a new drive chain on a worn sprocket or a worn chain on new sprockets. Both chain and sprocket must be in good condition or the replacement chain or sprocket will wear rapidly.

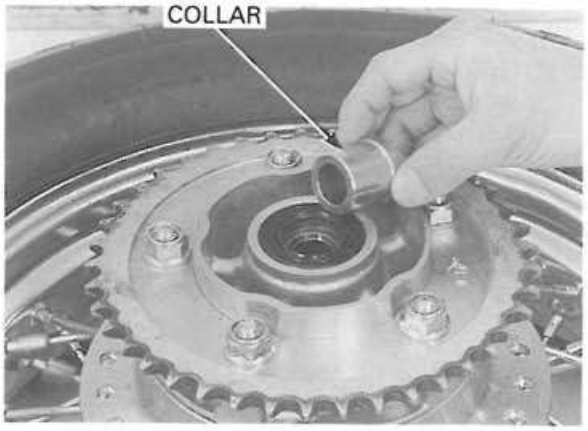


DISASSEMBLY

Remove the brake panel assembly from the right wheel hub.



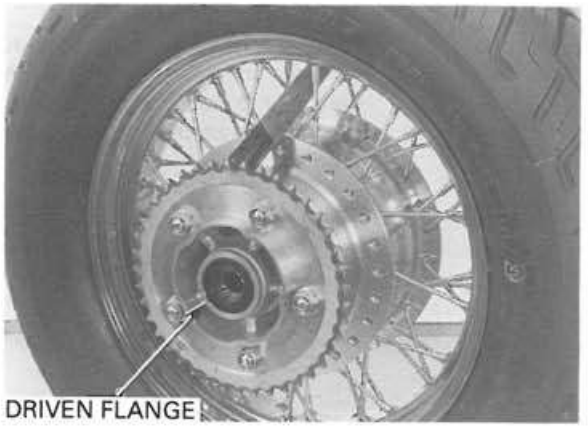
Remove the collar.



Remove the driven flange from the left wheel hub.

NOTE:

If you will be disassemble the driven flange, loosen the driven sprocket nuts before removing the driven flange from the wheel hub.

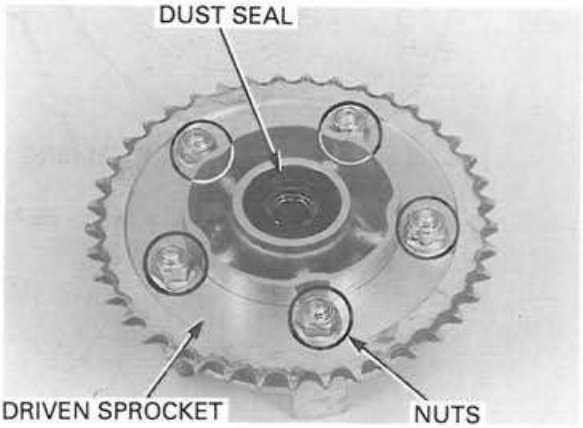


Remove the damper rubbers and O-ring.

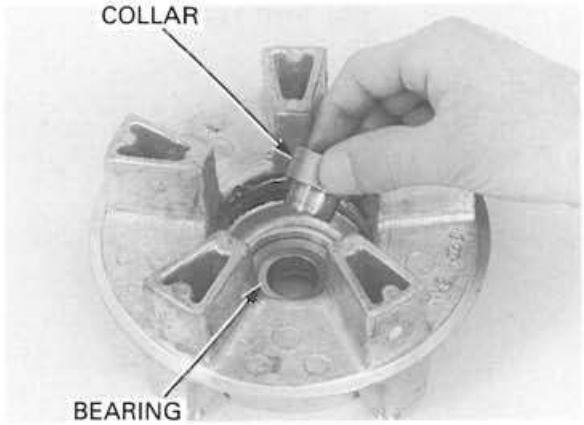
DRIVEN FLANGE BEARING REMOVAL

Remove the dust seal.

Remove the driven sprocket nuts and driven sprocket.



Remove the driven flange bearing and collar.

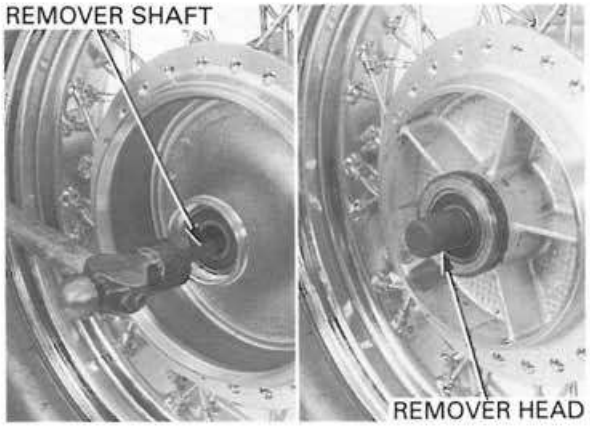


WHEEL BEARING REMOVAL

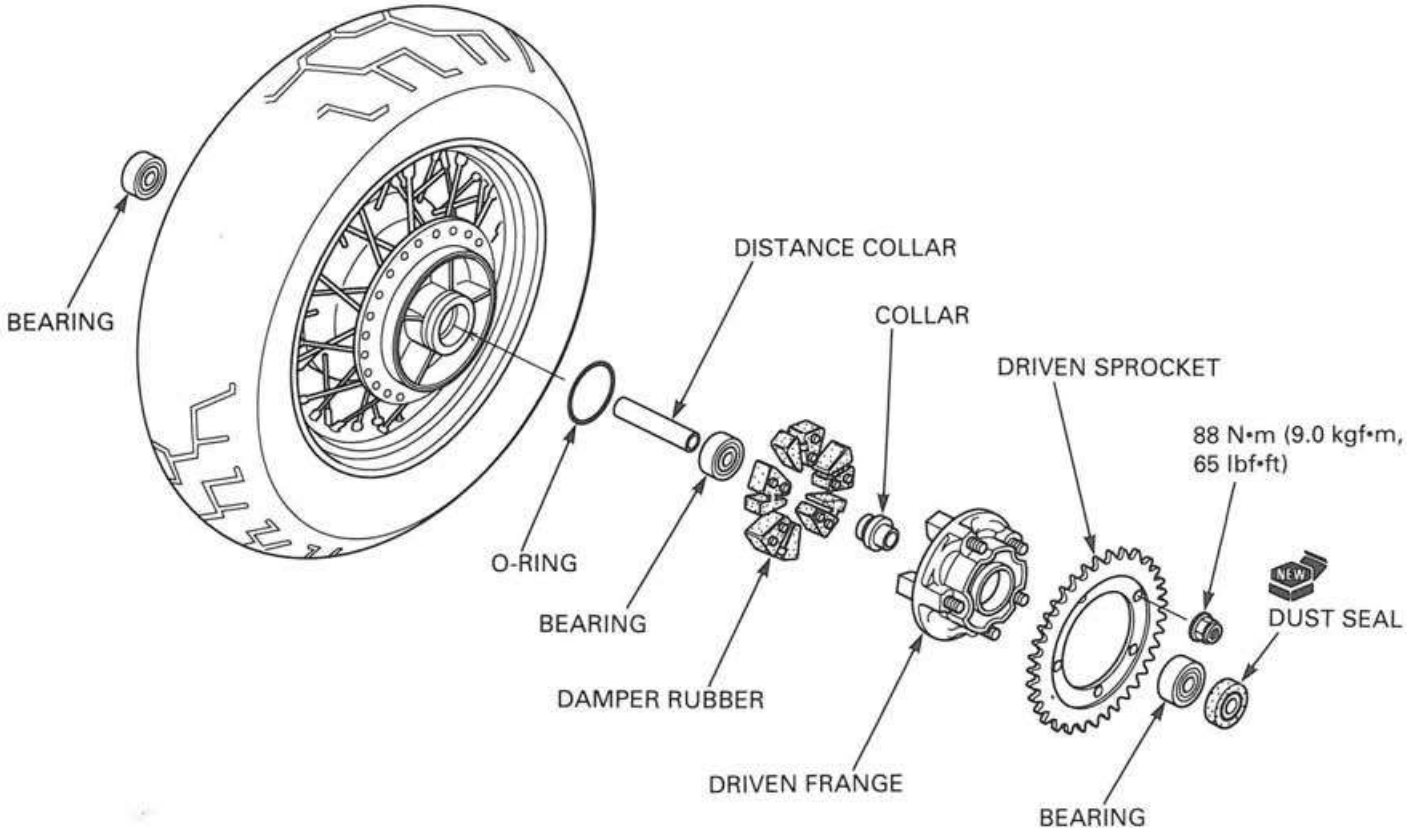
Install the bearing remover head into the bearing. From the opposite side install the bearing remover shaft and drive the bearing out of the wheel hub. Remove the distance collar and drive out the other bearing.

TOOLS:

Bearing remover shaft	**07746-0050100**
Bearing remover head, 17 mm	**07746-0050500**



ASSEMBLY



WHEEL BEARING INSTALLATION
Pack all bearing cavities with grease.

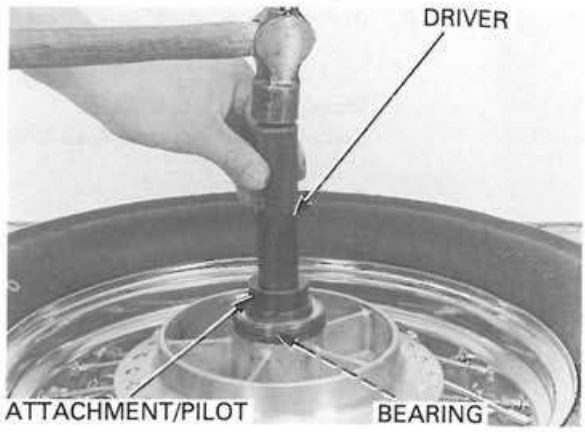
CAUTION:

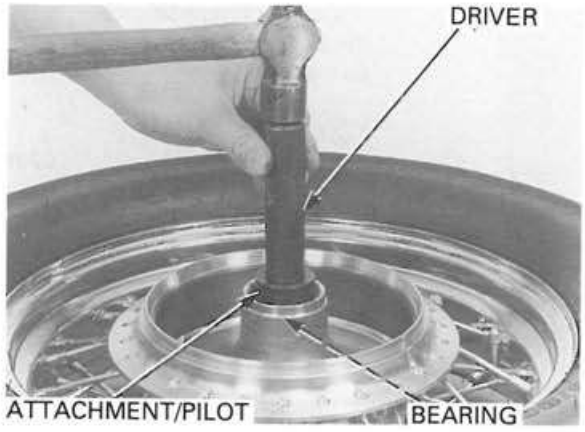
Never install an old bearing has been removed, the bearing must be replaced with a new one.

Drive a new left bearing squarely with its sealed side facing out.
Install the distance collar, then drive in the right side bearing with its sealed side facing out.

TOOLS:

Driver	**07749-0010000**
Attachment, 42 X 47 mm	**07746-0010300**
Pilot, 20 mm	**07746-0040500**

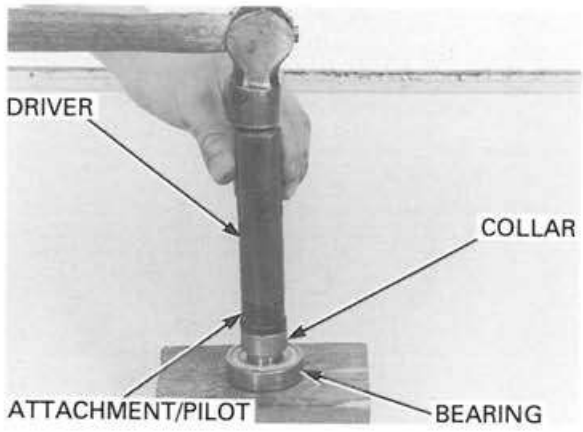




DRIVEN FLANGE BEARING INSTALLATION
Install the driven flange collar to the new driven flange bearing using the special tools.

TOOLS:

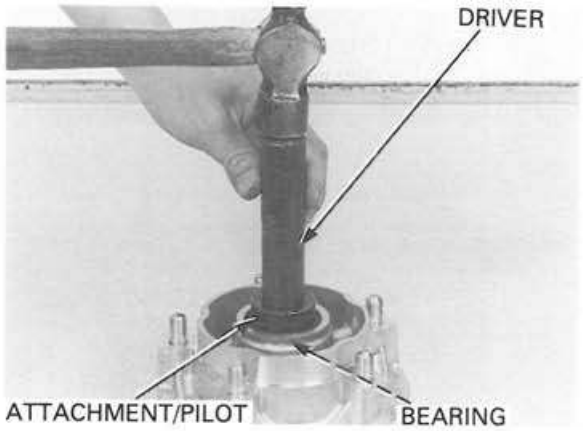
Driver	**07749-0010000**
Attachment, 32 X 35 mm	**07746-0010100**
Pilot, 20 mm	**07746-0040500**



Drive the driven flange bearing and collar into the driven flange using the special tools.

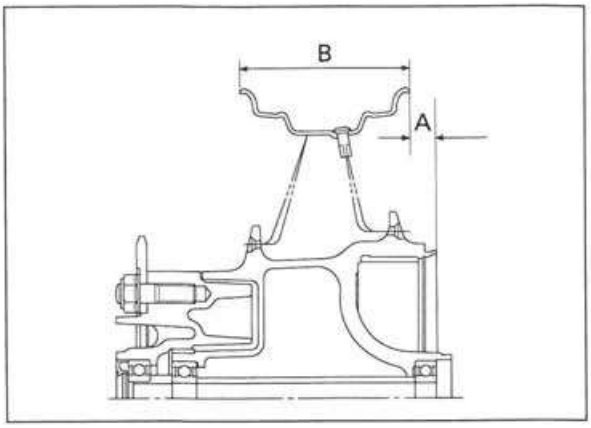
TOOLS:

Driver	**07749-0010000**
Attachment, 42 X 47 mm	**07746-0010300**
Pilot, 20 mm	**07746-0040500**



Assemble the wheel as follows if wheel is disassembled.
Clean the spoke nipple threads.
Measure the hub width B.
Calcurate the distance A as following:

A = 72.7 mm – B/2

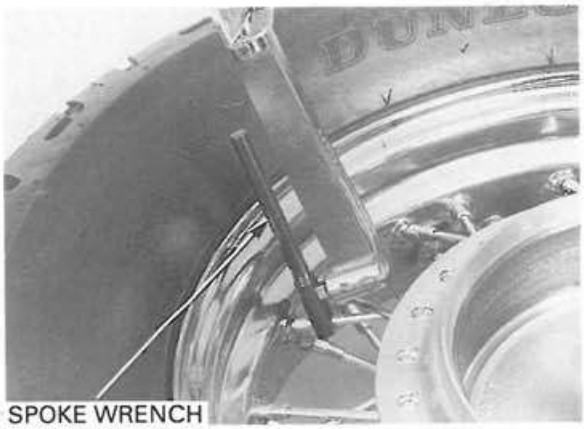


Adjust the rim position and distance A by tightening the spokes to the specified torque in 2 or 3 progressive steps.

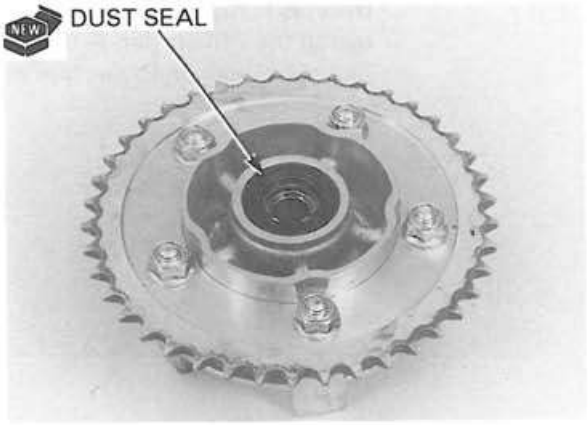
TOOL:
Spoke wrench **07JMA-MR60100 or equivalent commercially available in U.S.A.**

TORQUE: 4 N·m (0.38 kgf·m, 2.7 lbf·ft)

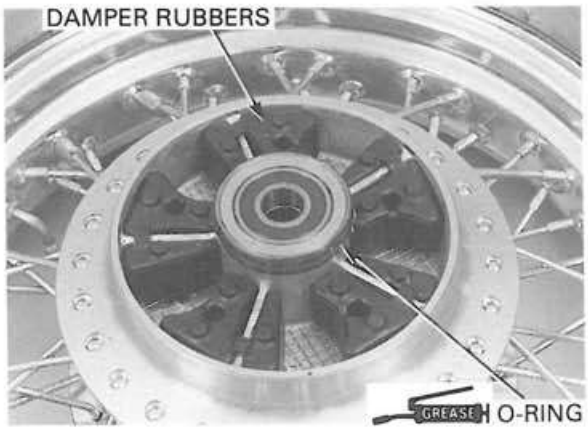
Check the rim runout (page 14-4).



Apply grease to the new dust seal lips, then install it into the driven flange.



Apply grease to the O-ring.
Install the wheel damper rubbers and O-ring into the wheel hub.



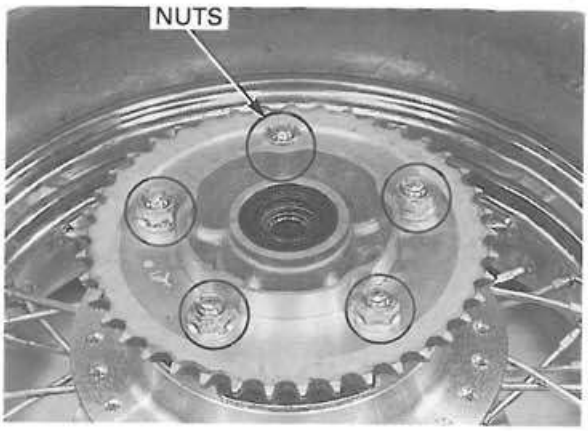
⚠ WARNING

Do not get grease on the brake drum or stopping power will be reduced.

Install the driven flange assembly into the left wheel hub.
Apply grease to the new dust seal lips, then install it into the driven flange.

If the driven sprocket was removed, clean and apply a locking agent to the driven flange stud bolt threads. Install the driven sprocket and tighten the nuts.

TORQUE: 88 N·m (9.0 kgf·m, 65 lbf·ft)



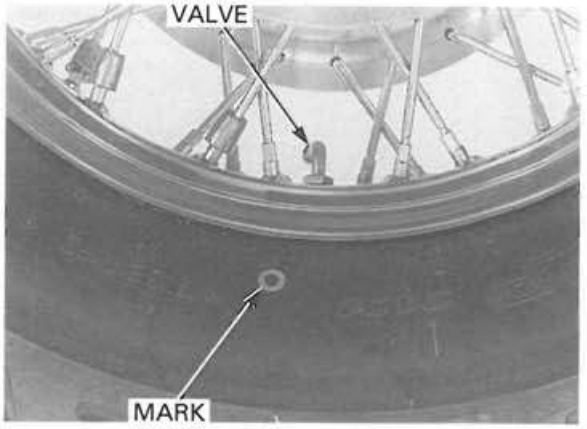
WHEEL BALANCE

⚠ WARNING

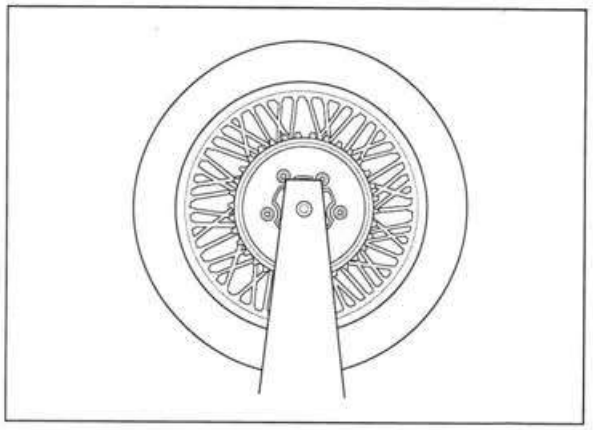
Wheel balance directly affects the stability, handling and overall safety of the motorcycle.
Carefully check balance before reinstalling the wheel.

NOTE:

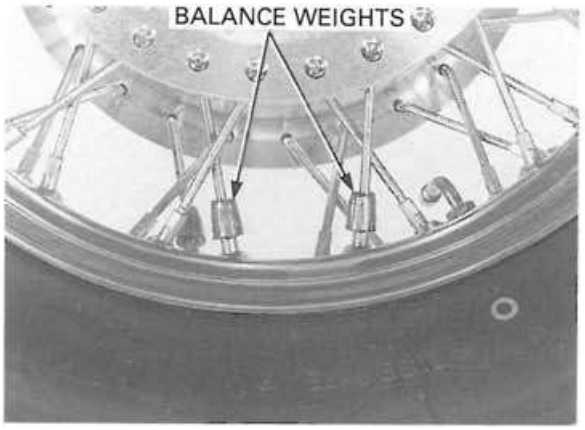
- The wheel balance must be checked when the tire is remounted.
- For optimum balance, the tire balance mark (a paint dot on the side wall) must be located next to the valve stem. Remount the tire if necessary.



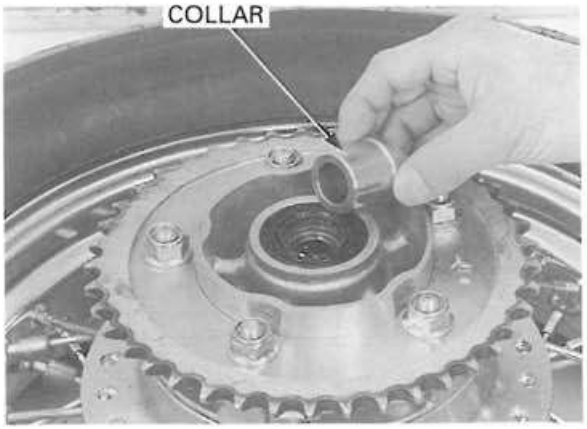
Mount the wheel, tire and driven flange assembly on an inspection stand.
Spin the wheel, allow it to stop, and mark the lowest (heaviest) part of the wheel with chalk.
Do this two or three times to verify the heaviest area. If the wheel is balanced, it will not stop consistently in the same position.



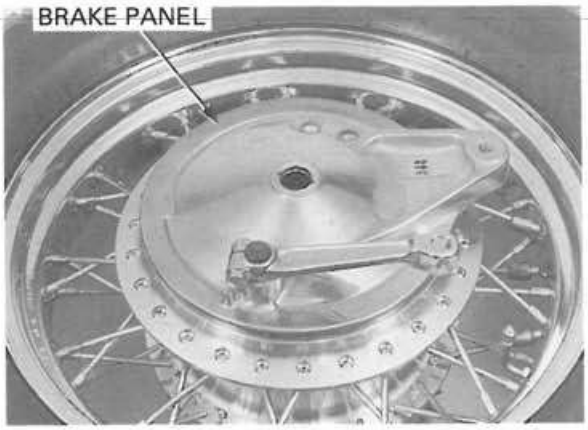
To balance the wheel, install balance weights on the lightest side of rim, the side opposite the chalk marks.
Add just enough weight so the wheel will no longer stop in the same position when it is spun.
Do not add more than 70 g (2.5 oz) to the front wheel.



Install the left side collar.



Install the brake panel assembly into the right wheel hub.

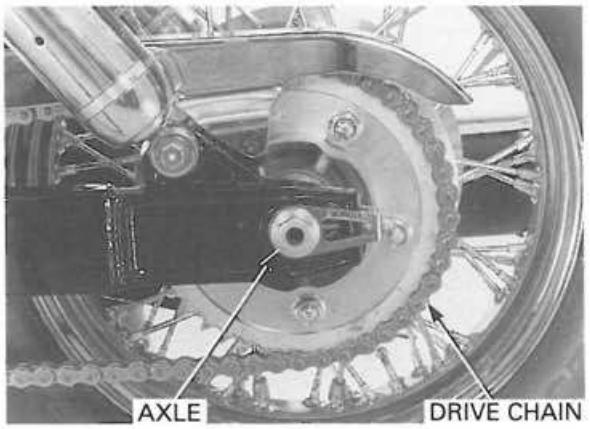


INSTALLATION

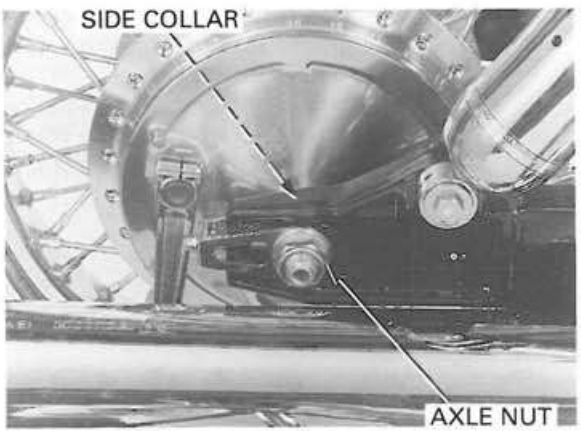
Position the rear wheel between in swingarm.

Insert the axle (from the left side) through the swingarm, wheel hub and side collars.

Install the drive chain over the driven sprocket.



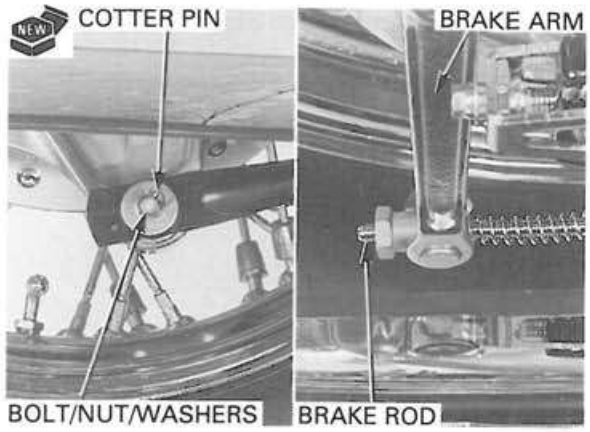
Install the axle nut.



Connect the brake stopper arm to the brake panel with bolt, seat washer, washer and nut.
Tighten the nut to the specified torque.

TORQUE: 20 N·m (2.0 kgf·m, 14 lbf·ft)

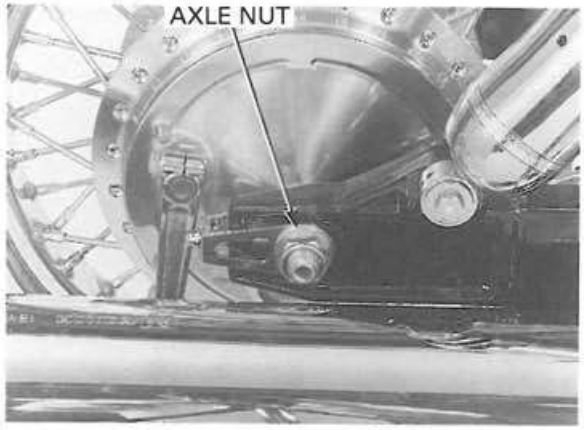
Install the new cotter pin and bend back it securely.
Connect the brake rod to the brake arm.



Adjust the drive chain (page 3-18) and rear brake pedal free play (page 3-24).

Tighten the axle nut.

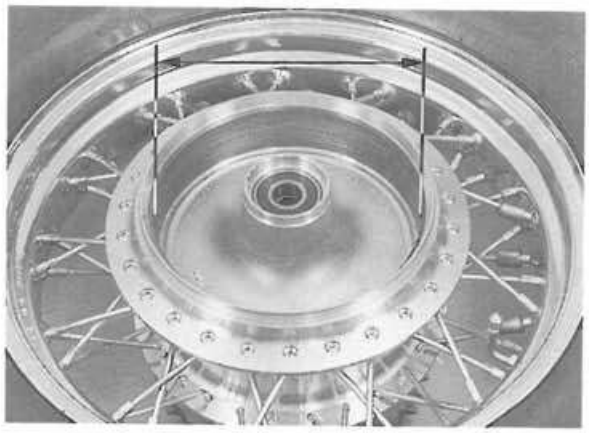
TORQUE: 93 N·m (9.5 kgf·m, 69 lbf·ft)



REAR BRAKE

REMOVAL

Remove the rear wheel (page 14-3).
Remove the brake panel from the rear wheel (page 14-4).



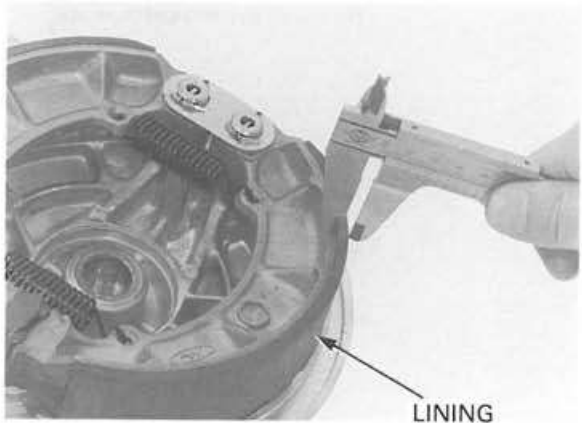
INSPECTION

Measure the brake drum I.D.

SERVICE LIMIT: 181 mm (7.13 in)

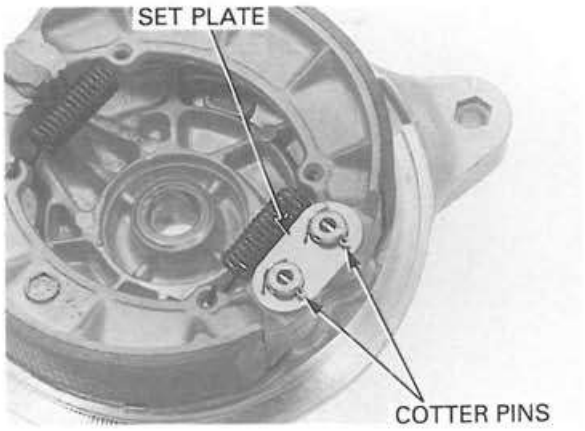
Measure the brake lining thickness.

SERVICE LIMIT: 2 mm (0.1 in)



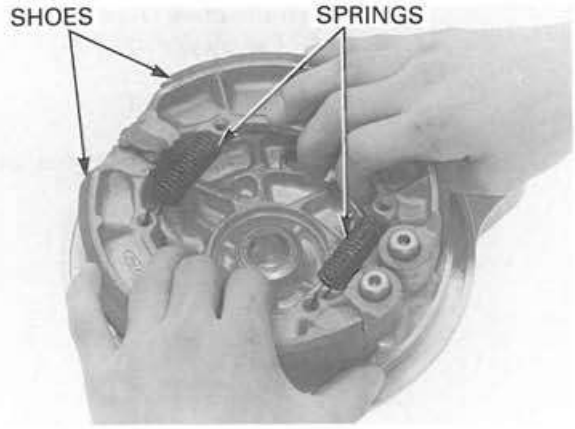
DISASSEMBLY

Remove the cotter pins and set plate.

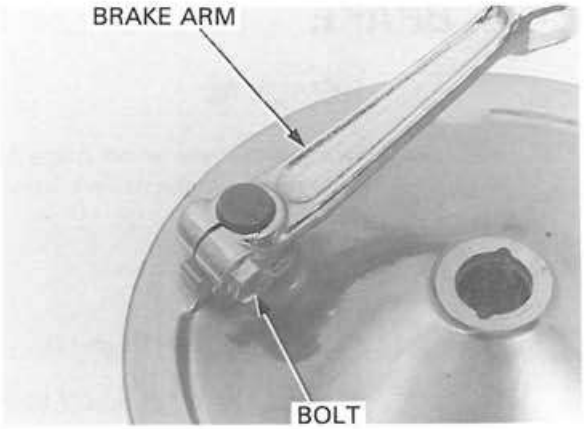


Mark the shoes to indicate their original positions before removing them.

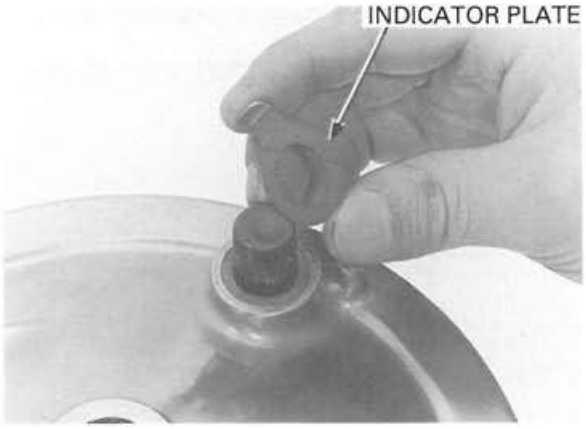
Remove the brake shoes and springs.



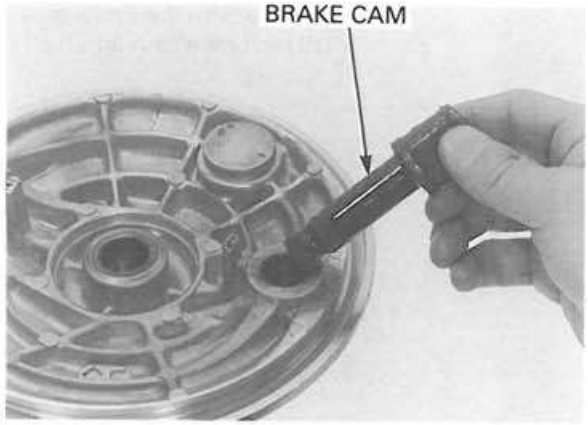
Remove the bolt and brake arm.



Remove the indicator plate.

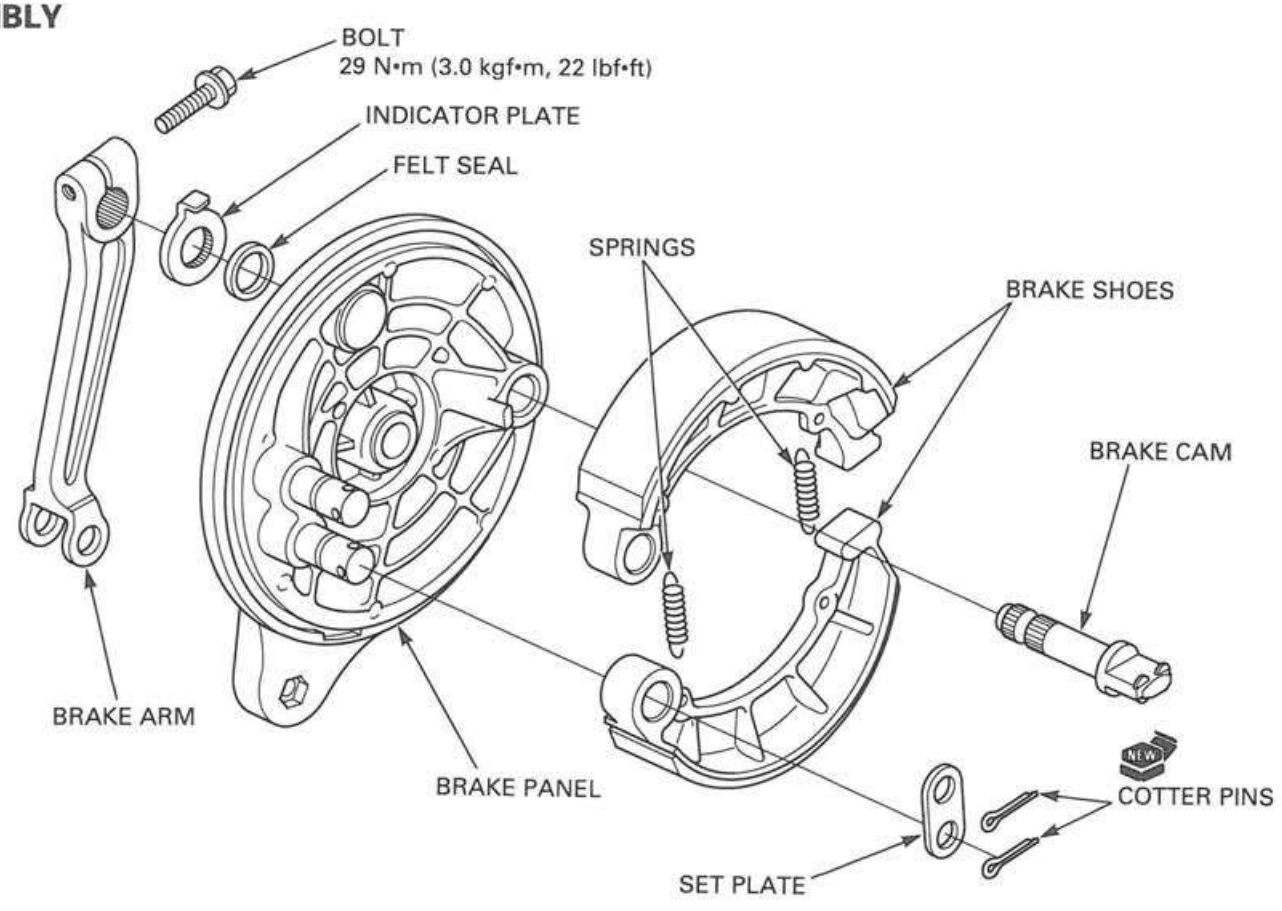


Remove the brake cam.

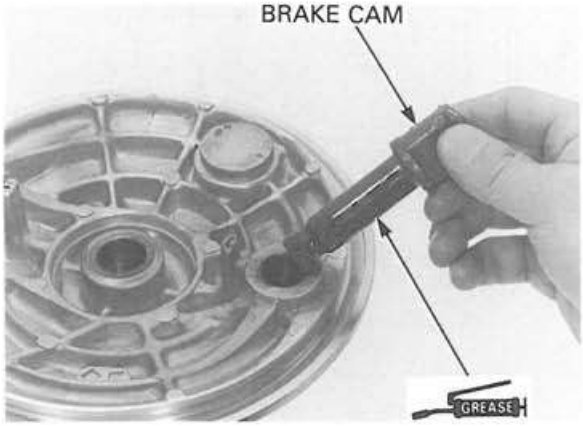


Remove the felt seal.

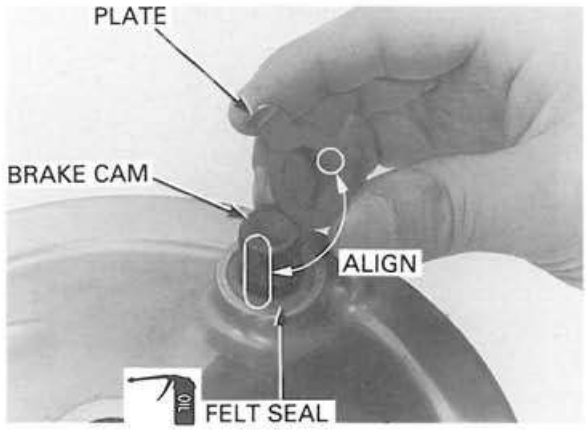
ASSEMBLY



Apply grease to the brake cam sliding surface.
Install the brake cam into the brake panel.

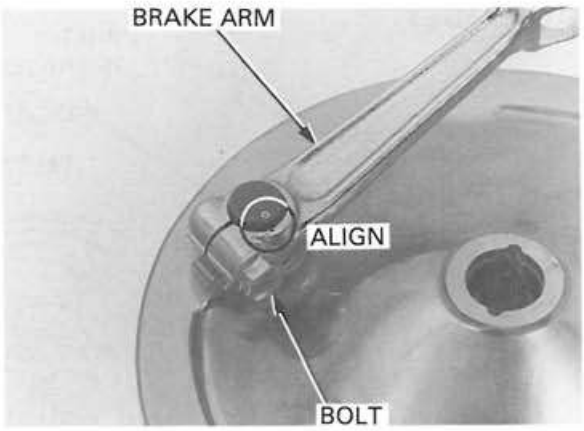


Apply oil to the felt seal and install it onto the brake panel.
Install the wear indicator plate on the brake cam aligning its wide tooth with the wide groove on the brake cam.

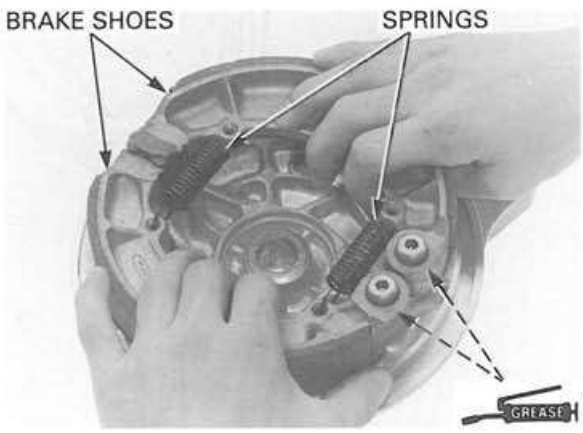


Install the brake arm aligning the punch marks of the arm and the brake cam.
Install and tighten the brake arm pinch bolt to the specified torque.

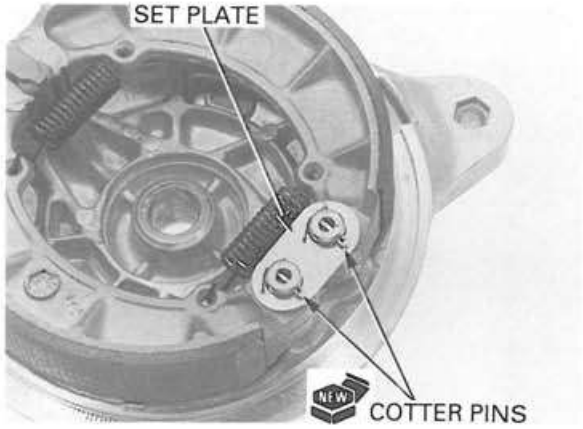
TORQUE: 29 N·m (3.0 kgf·m, 22 lbf·ft)



Apply grease to the brake shoe-to-cam sliding surface.
Apply grease to the anchor pin sliding surfaces.
Install the brake shoes and springs.



Install the set plate and new cotter pins.



INSTALLATION

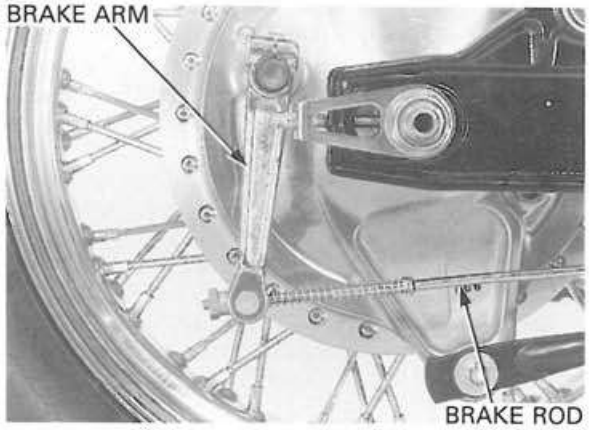
Install the brake panel into the wheel hub (page 14-10).
Install the rear wheel (page 14-10).

BRAKE PEDAL

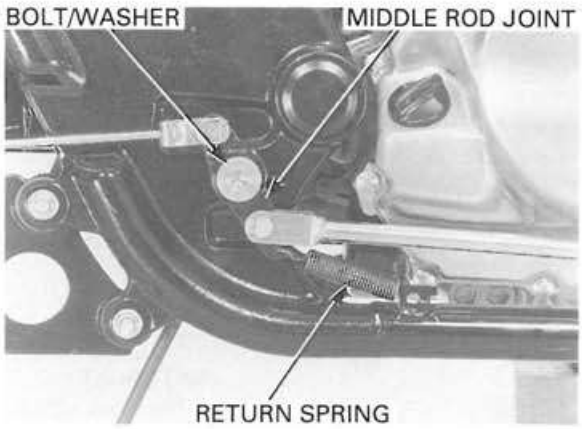
REMOVAL

Remove the muffler (page 2-7).

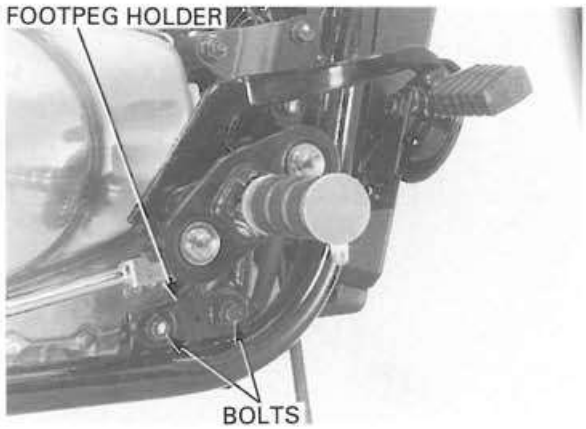
Disconnect the brake rod from the brake arm.



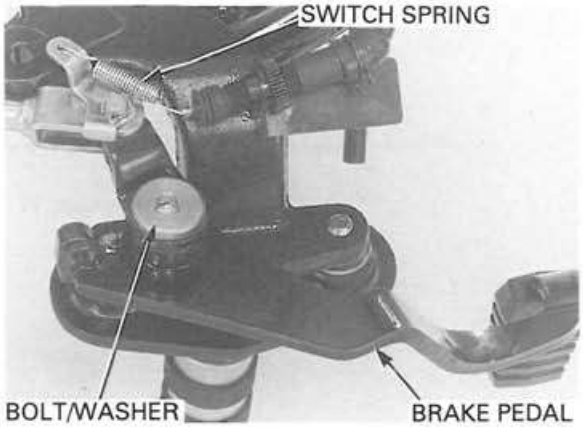
Remove the middle rod joint bolt and washer.
Unhook the middle rod joint return spring.



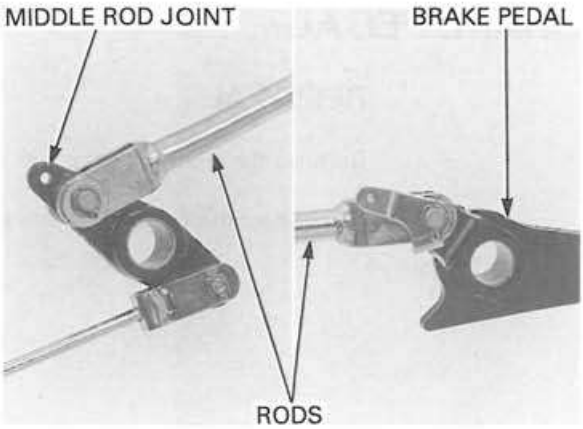
Remove the bolts and right footpeg holder assembly.



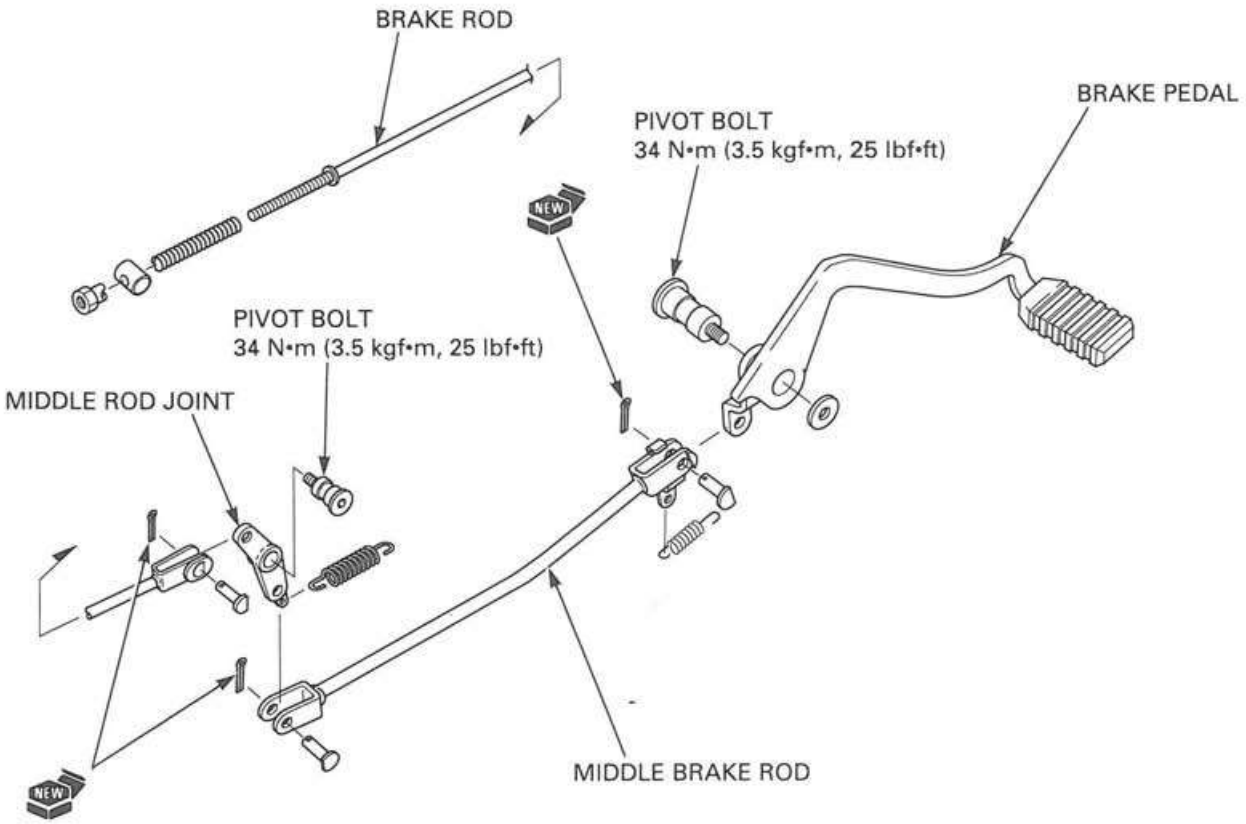
Remove the brake pedal pivot bolt and washer, then remove the brake pedal.
Unhook the rear brake light switch spring from the brake rod.
Remove the brake rod assembly.



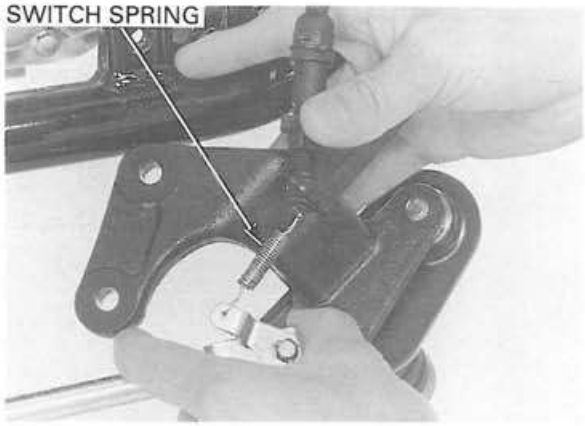
Inspect the brake pedal, rods and middle rod joint for damage.
Inspect the joint pin for wear or damage.
Replace these parts if necessary.



INSTALLATION



Fook the rear brake light switch spring as shown.

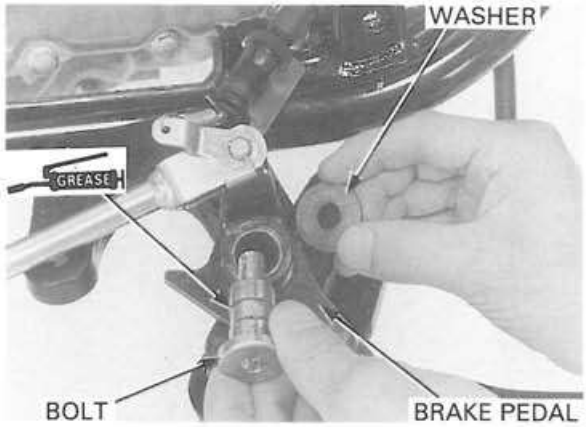


Apply grease to the brake pedal pivot bolt sliding area.

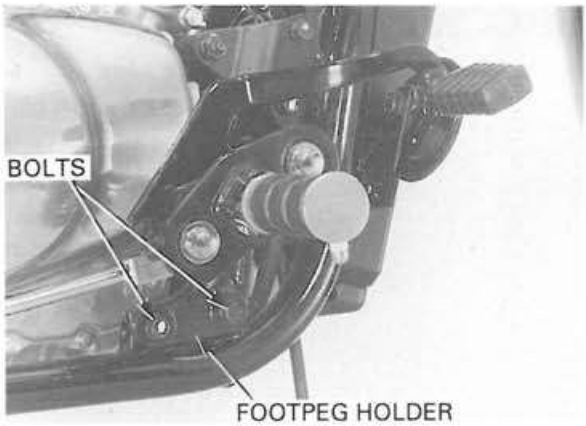
Install the brake pedal, washer and pivot bolt to the frame.

Tighten the bolt to the specified torque.

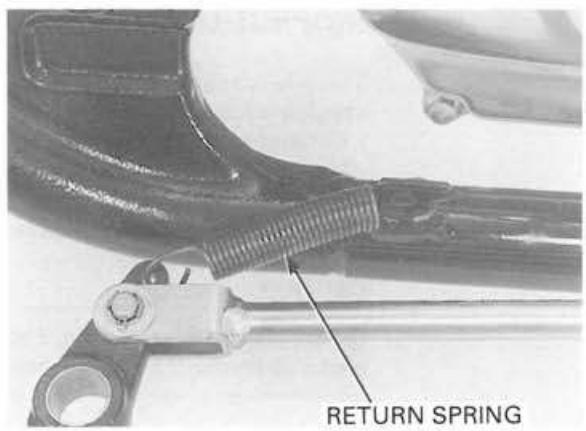
TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)



Install the right footpeg holder to the frame. Install and tighten the mounting bolts securely.



Fook the middle rod joint return spring as shown.

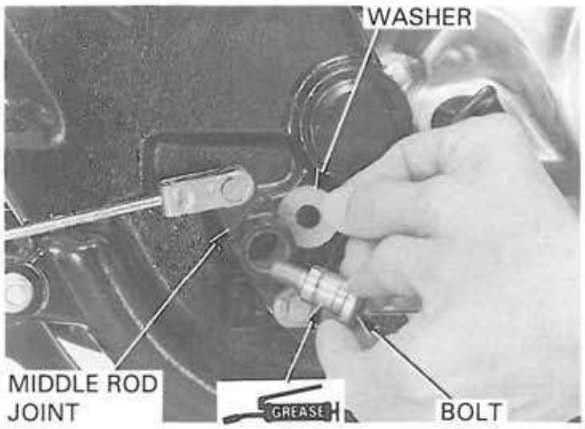


Apply grease to the middle rod joint bolt sliding area.

Install the middle rod joint with the washer and joint bolt.

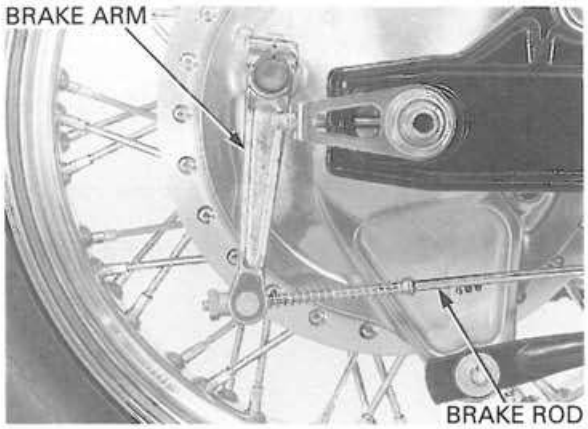
Tighten the bolt to the specified torque.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)



Connect the brake rod to the brake arm.

Install the muffler (page 2-8).
Adjust the brake pedal free play (page 3-24).

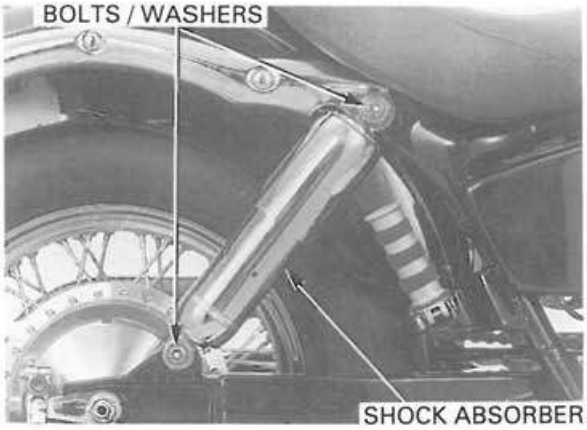


SHOCK ABSORBER

REMOVAL

Raise and support the motorcycle using a hoist or jack under the engine.

Remove the upper and lower mounting bolts and washers.
Remove the shock absorber.



INSPECTION

Visually inspect the shock absorber for damage. check the following:
- Damper unit for deformation or oil leaks
- Upper and lower joint bushings for wear or damage

Check smooth damper operation.

CAUTION:

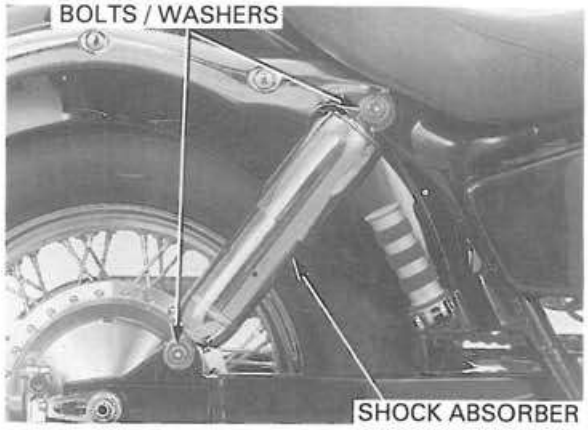
Do not disassemble the shock absorber. Replace the shock absorber if any component is damaged.

INSTALLATION

Install the shock absorber with the arrow mark facing forward and upward.

Install the mounting bolts and washers.
Tighten the bolts to the specified torque.

TORQUE: 26 N·m (2.7 kgf·m, 20 lbf·ft)

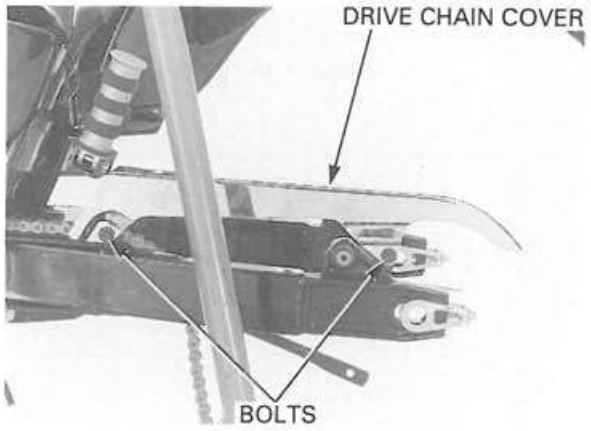


SWINGARM

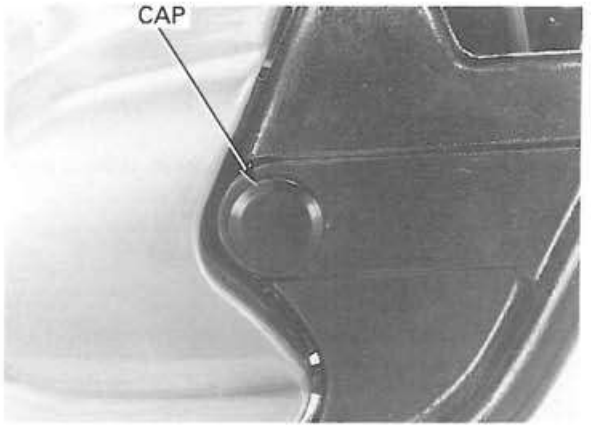
REMOVAL

Remove the muffler (page 2-7).
Remove the rear wheel (page 14-3).
Remove the right and left shock absorbers (page 14-18).

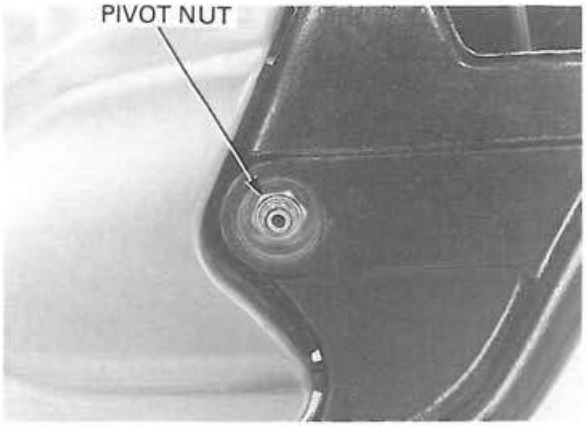
Remove the bolts and drive chain cover.



Remove the pivot bolt caps.



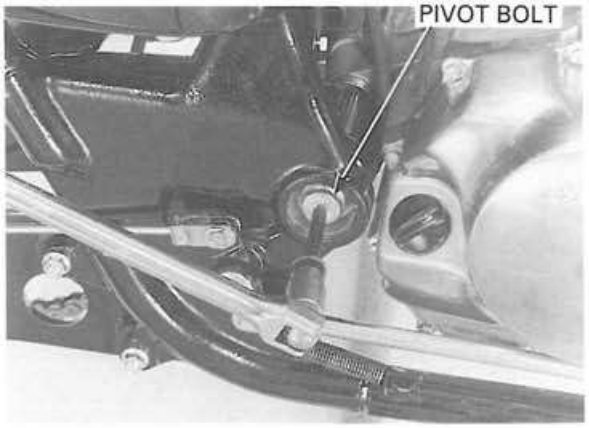
Remove the swingarm pivot nut.



Remove the swingarm pivot lock nut while holding the pivot bolt.

TOOL:
Swingarm pivot lock nut wrench 07GMA-KT70200
Not available in U.S.A.

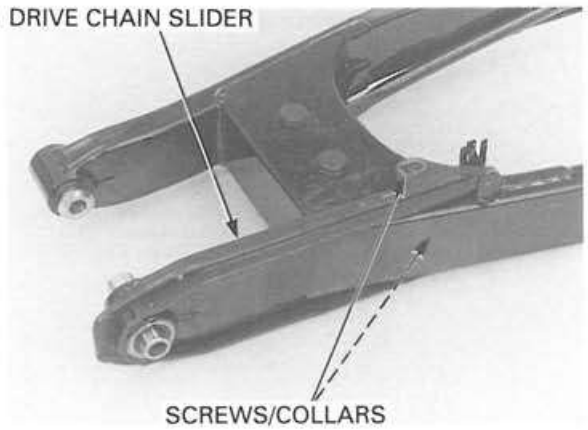
Loosen the swingarm adjusting bolt by turning the pivot bolt.
Remove the pivot bolt and swingarm.



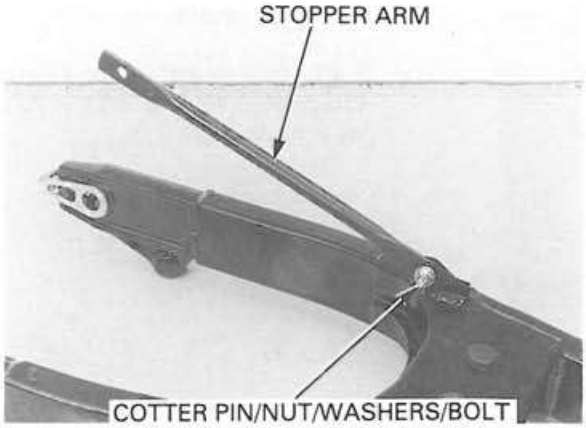
DISASSEMBLY

Inspect the drive chain slider for wear or damage. Replace it if necessary.

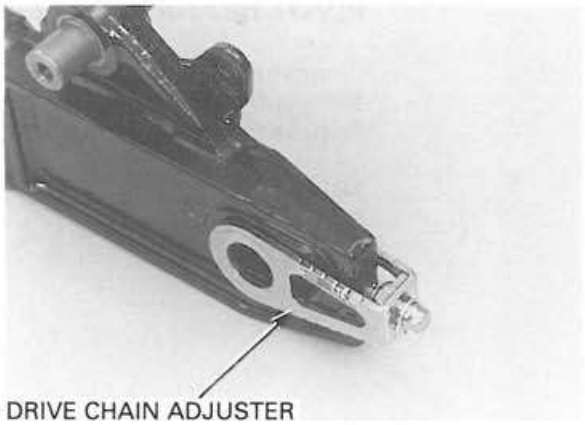
Remove the screws, collars and drive chain slider.



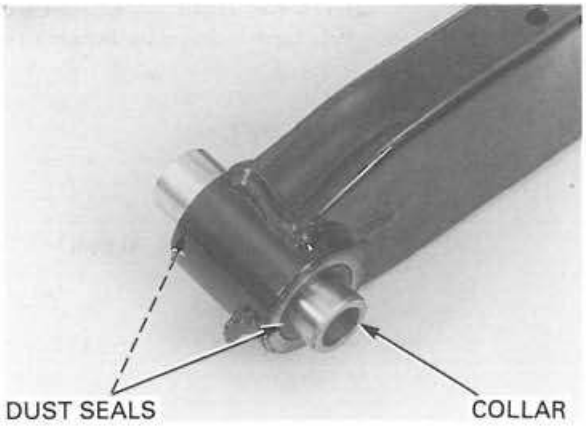
Remove the cotter pin, nut, washers, bolt and stopper arm.



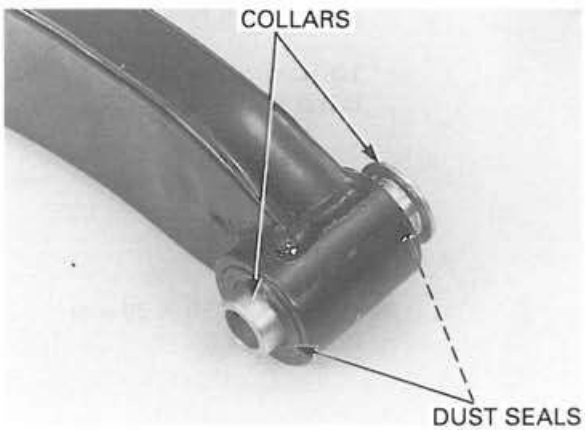
Remove the right and left drive chain adjusters.



Remove the collar and dust seals from the left side pivot.

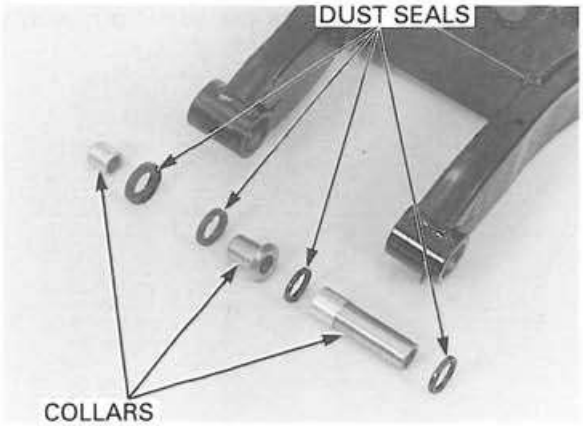


Remove the collars and dust seals from the right side pivot.



INSPECTION

Inspect the swingarm for deformation or cracks.
Check the pivot bearings, collars and dust seals for wear or damage.

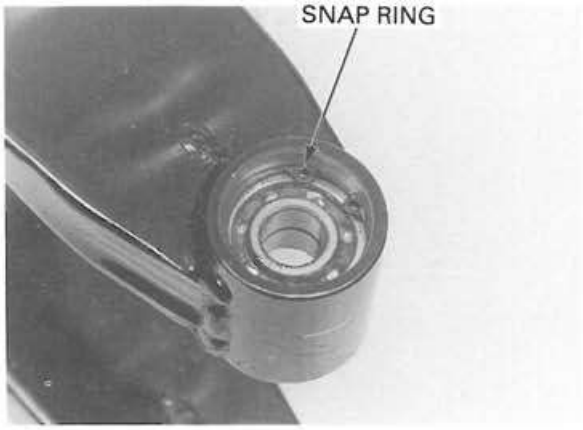


PIVOT BEARING REPLACEMENT

Remove the dust seals from the right and left swingarm pivots.
Remove the snap ring from the right pivot.

TOOL:

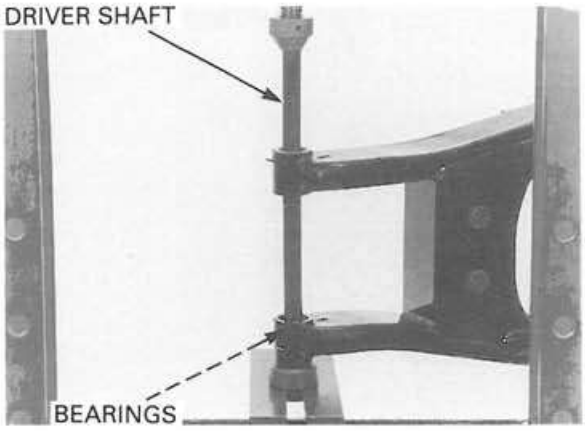
Snap ring pliers	**07914-3230001**



Drive the right pivot ball bearings out of the swingarm using a hydraulic press and driver shaft.

TOOL:

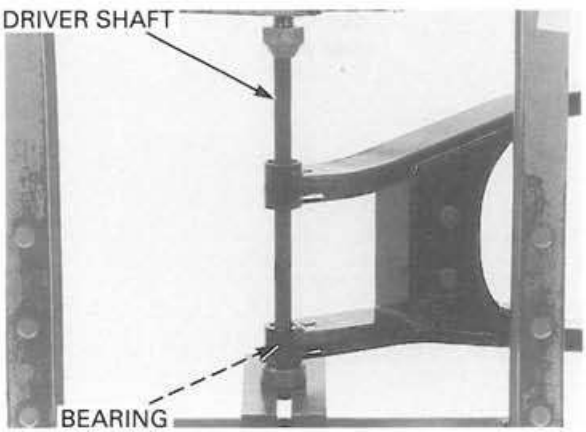
Driver shaft	**07946-MJ00100 Not available in U.S.A. or**
Pilot, 15 mm	**07746-0040300**
Attachment, 28 × 30 mm	**07946-1870100**
Driver shaft	**07949-3710001**



Drive the left needle bearing out of the swingarm.

TOOL:

Driver shaft	**07946-MJ00100 Not available in U.S.A.**
Attachment	**07946-MJ00200 Not available in U.S.A. or**
Pilot, 20 mm	**07746-0040500**
Attachment, 28 × 30 mm	**07946-1870100**
Driver shaft	**07949-3710001**

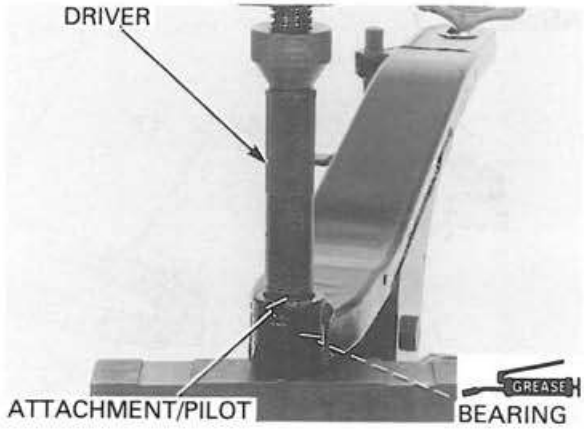


Install the bearings with the mark facing out.

Apply grease to the new right side ball bearings. Press the new right side ball bearings into the swingarm.

TOOLS:

Driver	**07749-0010000**
Attachment, 32 X 35 mm	**07746-0010100**
Pilot, 15 mm	**07746-0040300**

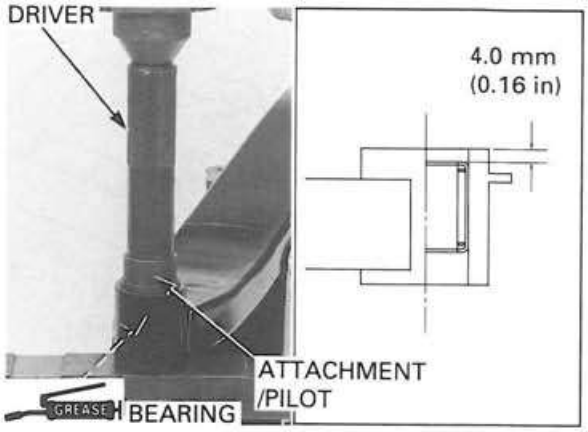


Install the bearing with the mark facing out.

Apply grease to the new left side needle bearing. Press the new left side needle bearing into the swingarm so that the needle bearing outer surface is 4.0 mm (0.16 in) below the outer edge of the swingarm pivot bearing cavity.

TOOLS:

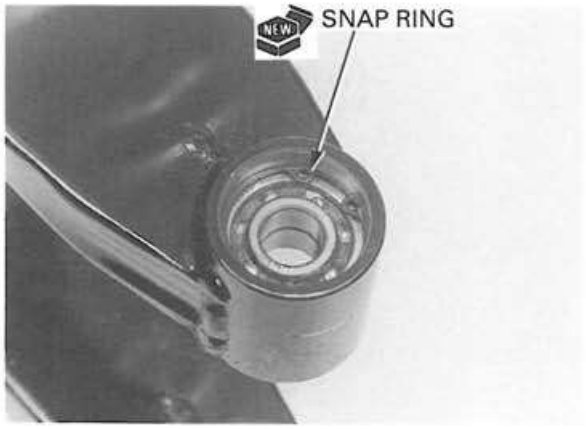
Driver	**07749-0010000**
Attachment	**07946-MJ00200**
	Not available in U.S.A. or
Attachment, 28 X 30 mm	**07946-1870100**



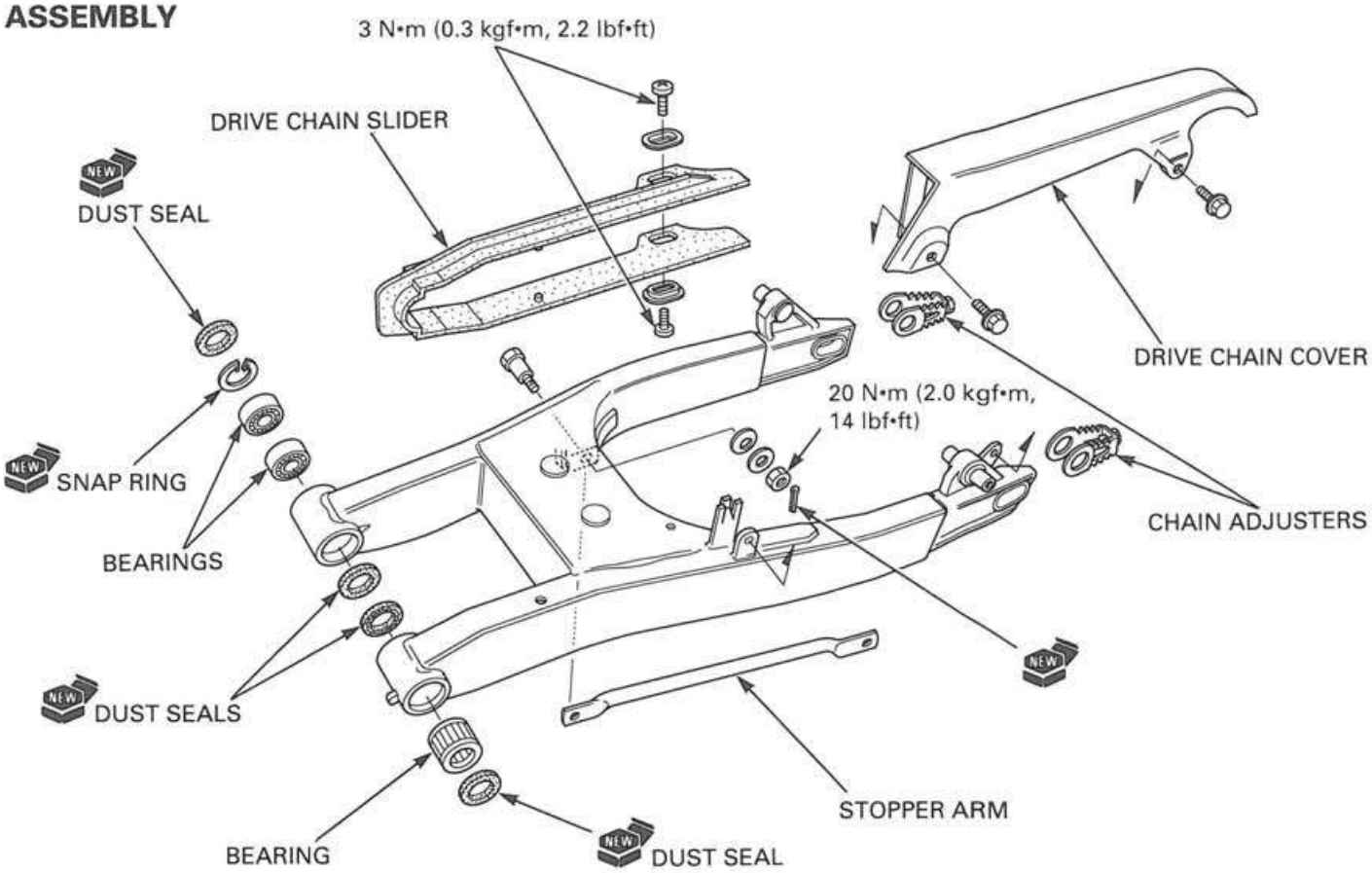
Install the new snap ring into the right pivot.

TOOL:

Snap ring pliers	**07914-3230001**



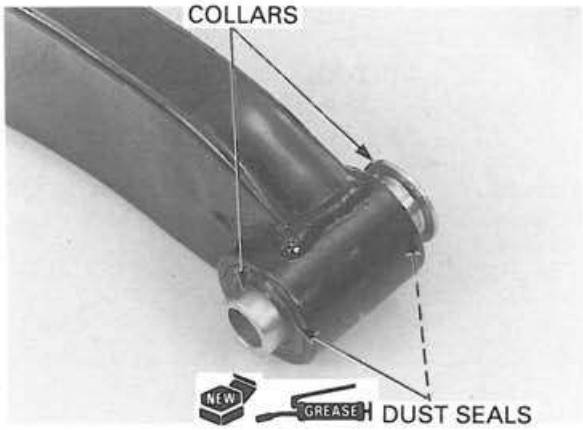
ASSEMBLY



Apply grease to the new dust seal lips.

Apply oil to the pivot collars outer and sliding surface.

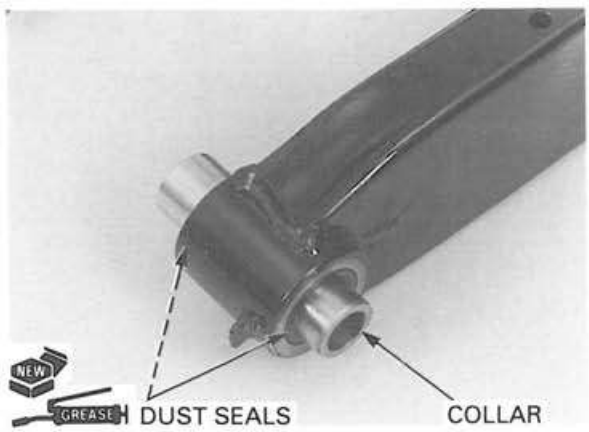
Install the dust seals and pivot collars to the swingarm right side pivot.



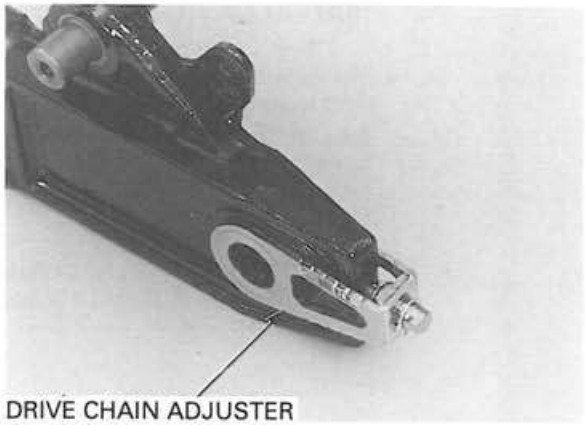
Apply grease to the new dust seal lips.

Apply oil to the pivot collars outer and sliding surface.

Install the dust seals and pivot collars to the swingarm left side pivot.



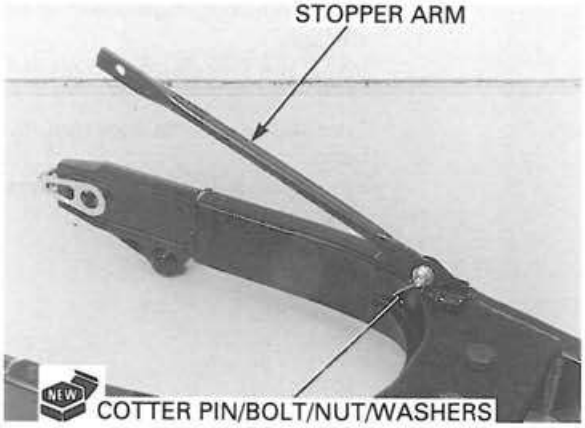
Install the right and left drive chain adjusters.



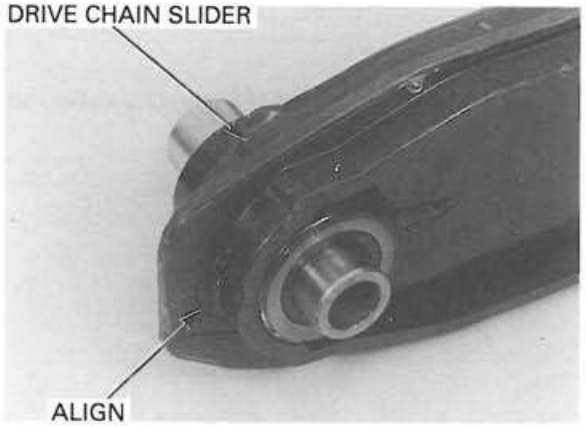
Install the stopper arm, bolt, washers and nut.
Tighten the nut to the specified torque.

TORQUE: 20 N·m (2.0 kgf·m, 14 lbf·ft)

Install the new cotter pin to secure the nut.



Install the drive chain slider aligning the hole on the chain slider to the pin on the swingarm.



Clean and apply a locking agent to the drive chain slider screw threads.

Install the collars and screws.
Tighten the screws to the specified torque.

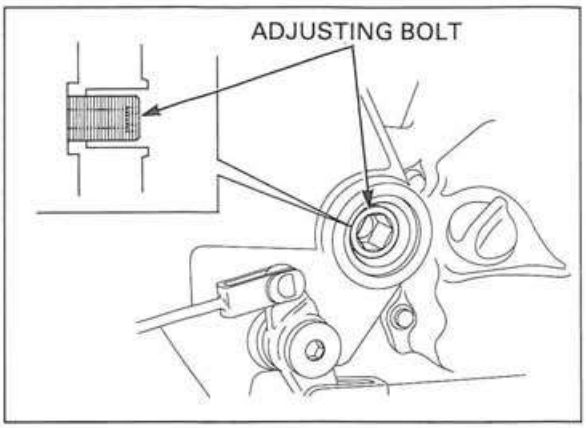
TORQUE: 3 N·m (0.3 kgf·m, 2.2 lbf·ft)

INSTALLATION

Place swingarm into frame.
Install the swingarm adjusting bolt.
Be sure that the tip of the bolt does not protrude inward.

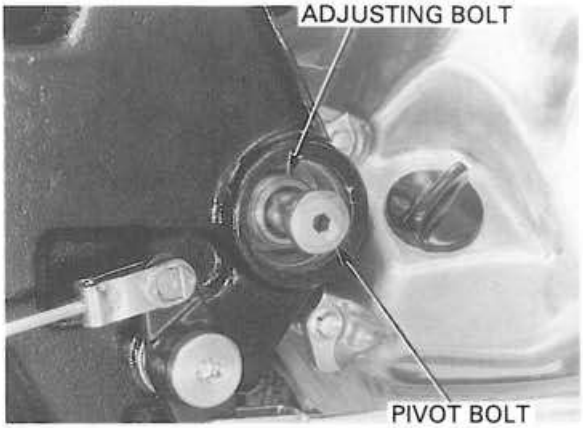
NOTE:

If the end of the adjusting bolt does protrude, it will not be possible to install the swingarm.



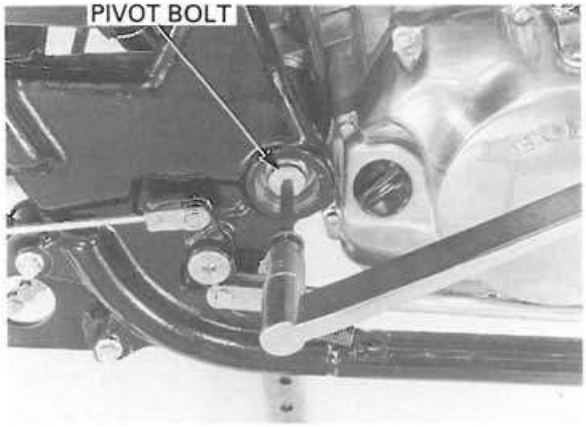
Apply thin coat of grease to the swingarm pivot bolt surface.
Install the swingarm and pivot bolt.

Turn the swingarm adjusting bolt completely in by hand.
Push the pivot bolt's hex shank into the adjusting bolt's socket head.



Tighten the swingarm pivot adjusting bolt with the pivot bolt.

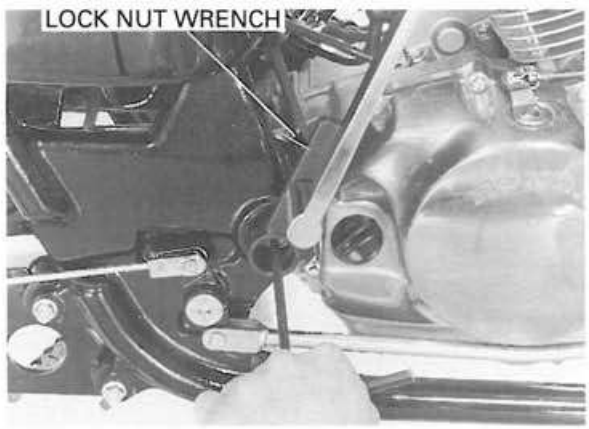
TORQUE: 25 N•m (2.5 kgf•m, 18 lbf•ft)



Install and tighten the swingarm pivot adjusting bolt lock nut fully by hand, then tighten the lock nut to the specified torque while holding the pivot bolt using the special tool.

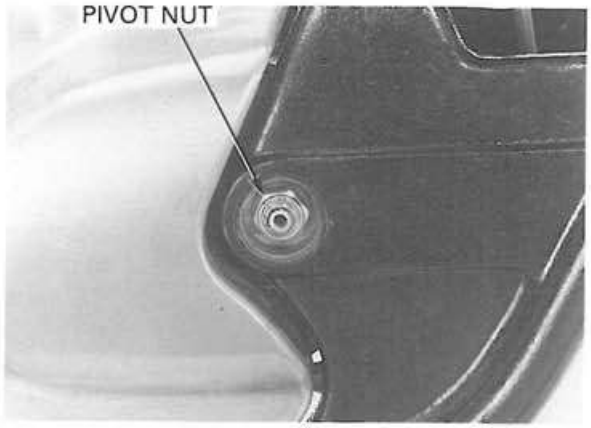
TOOL:
Swingarm pivot lock nut wrench 07GMA-KT70200
Not available in U.S.A.

TORQUE: 64 N•m (6.5 kgf•m, 47 lbf•ft)

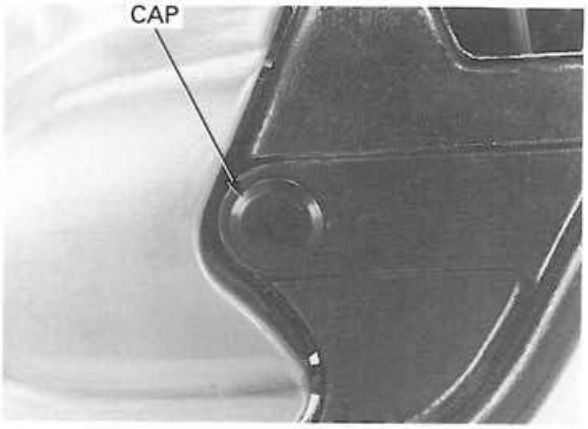


Tighten the swingarm pivot nut to the specified torque.

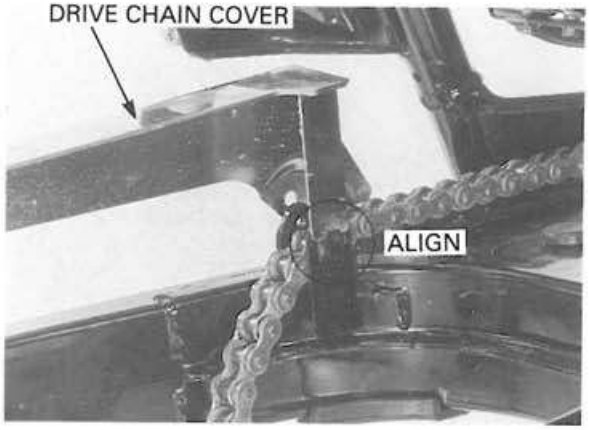
TORQUE: 88 N·m (9.0 kgf·m, 65 lbf·ft)



Install the pivot bolt caps.



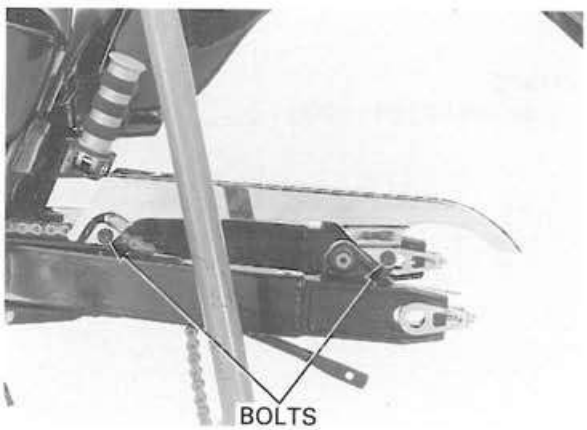
Install the drive chain cover by aligning the set plate with the tab on the swingarm.

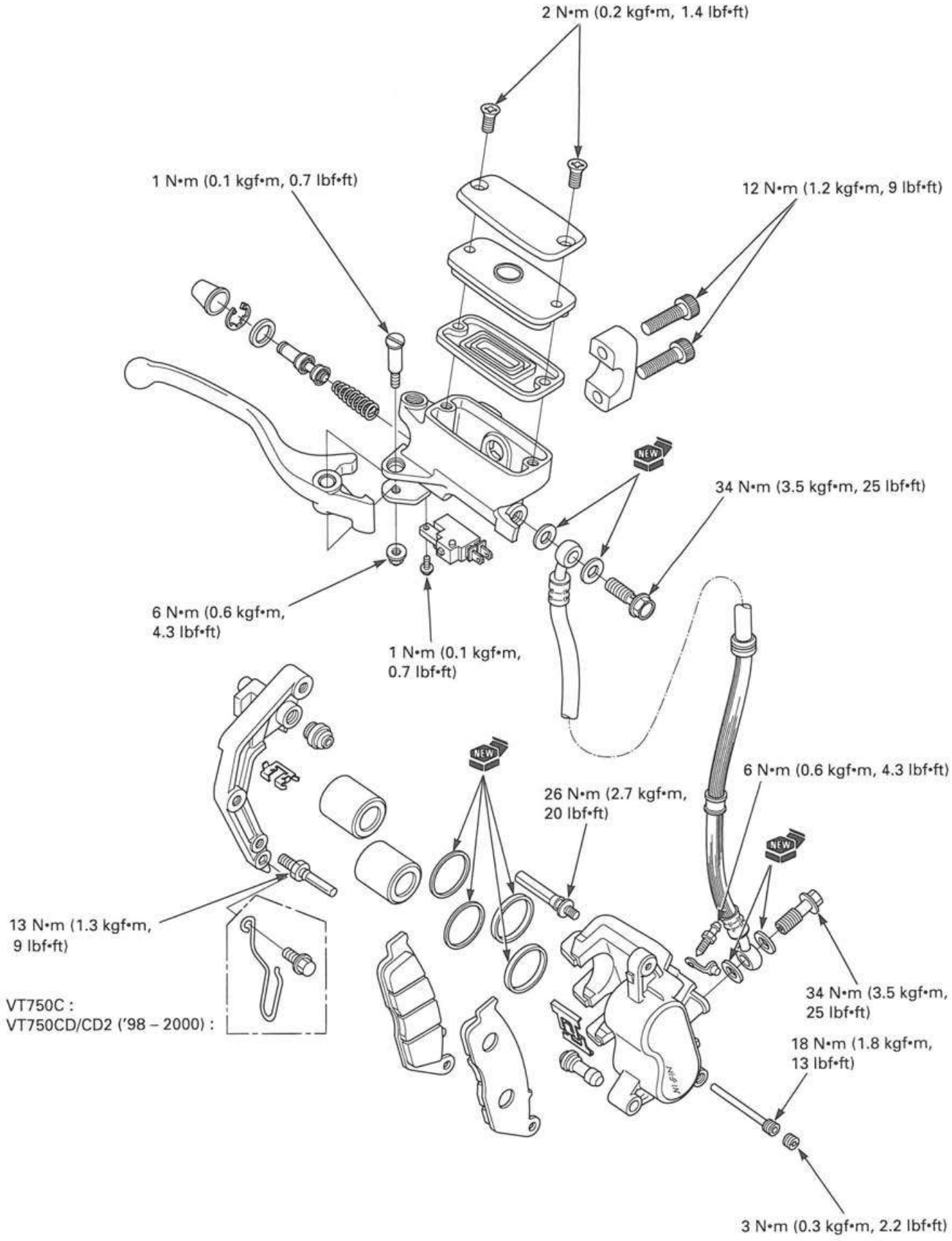


Install and tighten the bolts securely.

Install the right and left shock absorbers (page 14-19).
Install the rear wheel (page 14-10).
Install the muffler (page 2-8).

Adjust the drive chain (page 3-18).
Adjust the rear brake pedal free play (page 3-24).




2 N•m (0.2 kgf•m, 1.4 lbf•ft)
1 N•m (0.1 kgf•m, 0.7 lbf•ft)
12 N•m (1.2 kgf•m, 9 lbf•ft)
NEW
34 N•m (3.5 kgf•m, 25 lbf•ft)
6 N•m (0.6 kgf•m, 4.3 lbf•ft)
1 N•m (0.1 kgf•m, 0.7 lbf•ft)
NEW
26 N•m (2.7 kgf•m, 20 lbf•ft)
6 N•m (0.6 kgf•m, 4.3 lbf•ft)
NEW
13 N•m (1.3 kgf•m, 9 lbf•ft)
VT750C :
VT750CD/CD2 ('98 – 2000) :
34 N•m (3.5 kgf•m, 25 lbf•ft)
18 N•m (1.8 kgf•m, 13 lbf•ft)
3 N•m (0.3 kgf•m, 2.2 lbf•ft)

15. HYDRAULIC BRAKE

SERVICE INFORMATION

GENERAL

⚠ WARNING

A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean contaminated disc with a high quality brake degreasing agent.

CAUTION:

- ***Support the brake caliper with a piece of wire so that it does not hang from the brake hose. Do not twist the brake hose.***
- ***Reusing drained fluids can impair braking efficiency.***
- ***Avoid spilling brake fluid on painted, plastic or rubber parts. Place a rag or shop towel over these parts whenever the system is serviced.***

- Never allow contaminants (dirt, water, etc.) to get into an open reservoir.
- Always use fresh DOT 4 brake fluid from a sealed container when servicing the system. Do not mix different types of fluid as they may not be compatible.
- Spilled brake fluid will severally damage instrument lenses and painted surfaces. It is also harmful to some rubber parts. Be careful whenever you remove the reservoir cap: make sure the from reservoir is horizontal first.
- Do not reuse the sealing washers. Replace with new ones.
- Once the hydraulic system has been operated, or if the brake feel spongy, the system must be bled.
- Always check brake operation before riding the motorcycle.
- Always replace the brake pads is pairs to ensure even disc pressure.
- Always check brake operation before riding the motorcycle.

15

SPECIFICATIONS

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Brake fluid	DOT4	———
Brake pad wear indicator	———	To groove
Brake disc thickness	5.8 – 6.2 (0.23 – 0.24)	5 (0.2)
Brake disc runout	———	0.30 (0.012)
Master cylinder I.D.	11.000 – 11.043 (0.4331 – 0.4348)	11.05 (0.435)
Master piston O.D.	10.957 – 10.984 (0.4314 – 0.4324)	10.945 (0.4309)
Caliper cylinder I.D.	27.000 – 27.050 (1.0630 – 1.0650)	27.06 (1.065)
Caliper piston O.D.	26.935 – 26.968 (1.0604 – 1.0617)	26.93 (1.060)

TORQUE VALUES

Brake caliper mounting bolt	30 N•m (3.1 kgf•m, 22 lbf•ft)	ALOC bolt: replace with a new one
Caliper pin bolt	26 N•m (2.7 kgf•m, 20 lbf•ft)	
Bracket pin bolt	13 N•m (1.3 kgf•m, 9 lbf•ft)	
Pad pin	18 N•m (1.8 kgf•m, 13 lbf•ft)	
Pad pin plug	3 N•m (0.3 kgf•m, 2.2 lbf•ft)	
Brake caliper bleeder	6 N•m (0.6 kgf•m, 4.3 lbf•ft)	
Brake lever pivot bolt	1 N•m (0.1 kgf•m, 0.7 lbf•ft)	
Brake lever pivot nut	6 N•m (0.6 kgf•m, 4.3 lbf•ft)	
Master cylinder holder bolt	12 N•m (1.2 kgf•m, 9 lbf•ft)	
Master cylinder cover screw	2 N•m (0.2 kgf•m, 1.4 lbf•ft)	
Front brake light switch screw	1 N•m (0.1 kgf•m, 0.7 lbf•ft)	
Brake hose oil bolt	34 N•m (3.5 kgf•m, 25 lbf•ft)	

TOOLS

Snap ring pliers	07914-3230001

TROUBLESHOOTING

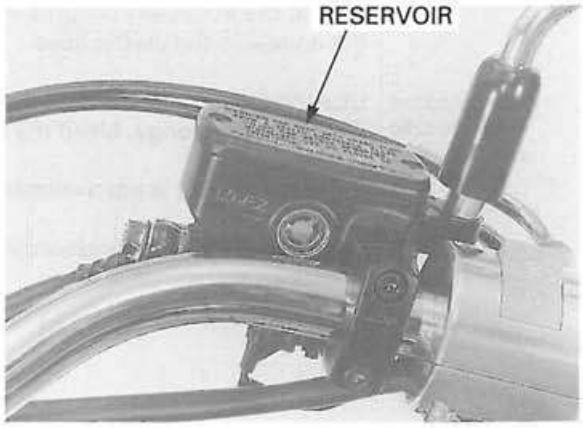
Brake lever soft or spongy
- Air in the hydraulic system
- Leaking hydraulic system
- Contaminated brake disc/pad
- Worn caliper piston seal
- Worn brake pad/disc
- Contaminated caliper
- Caliper not sliding properly
- Worn master cylinder piston cup
- Worn brake pad/disc
- Low fluid level
- Clogged fluid passage
- Warped/deformed brake disc
- Sticking/worn caliper piston
- Sticking/worn master cylinder piston
- Contaminated master cylinder
- Bent brake lever/pedal

Brake lever hard
- Sticking/worn caliper piston
- Caliper not sliding properly
- Clogged/restricted fluid passage
- Worn caliper piston seal
- Sticking/worn master cylinder piston
- Bent brake lever/pedal

Brake grab or pull to one side
- Contaminated brake pad/disc
- Misaligned wheel
- Clogged/restricted brake hose joint
- Warped/deformed brake disc
- Caliper not sliding properly

Brakes drag
- Contaminated brake disc/pad
- Warped/deformed brake disc
- Caliper not sliding properly
- Misaligned wheel

BRAKE FLUID REPLACEMENT/AIR BLEEDING



⚠ WARNING

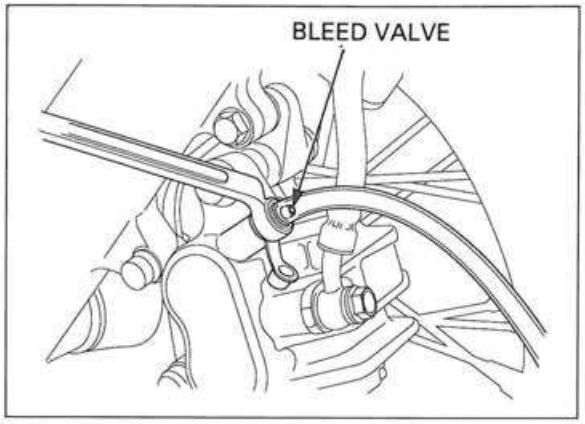
A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean contaminated disc with a high quality brake degreasing agent.

CAUTION:

- ***Do not allow foreign material to enter the system when filling the reservoir.***
- ***Avoid spilling fluid on painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.***
- ***Use only DOT 4 brake fluid from a sealed container.***
- ***Do not mix different types of fluid. They are not compatible.***

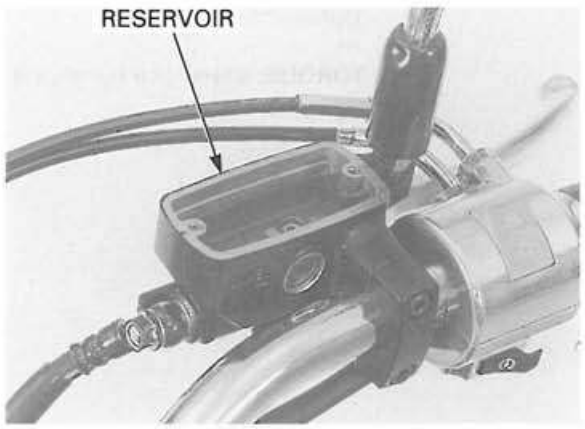
BRAKE FLUID DRAINING

For the front brake, turn the handlebar to the left until the reservoir is level. Remove the screws, reservoir cover, set plate and diaphragm.



Connect the bleed tube to the bleed valve.

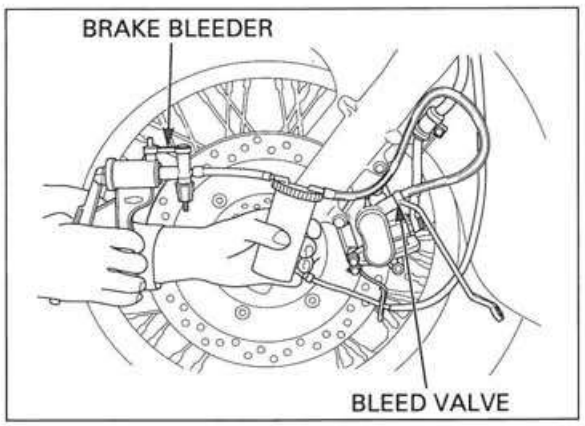
Loosen the bleed valve and pump the brake lever until no more fluid flows out of the bleed valve.



BRAKE FLUID FILLING/BLEEDING

Close the bleed valve.
Fill the reservoir with DOT 4 brake fluid from a sealed container.

Connect a commercially available brake bleeder to the bleed valve.
Pump the brake bleeder and loosen the bleed valve, Add brake fluid when the fluid level in the reservoir is low.



NOTE:

- Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.
- When using a brake bleeding tool, follow the manufacturer's operating instructions.

Repeat the above procedures until air bubbles do not appear in the plastic hose.

If air is entering the bleeder from around the bleed valve threads, seal the threads with teflon tape.

Close the bleed valve and operate the brake lever. If it still feels spongy, bleed the system again.

If a brake bleeder is not available, use the following procedure:
Pump up the system pressure with the brake lever until lever resistance is felt.

Connect a bleed hose to the bleed valve and bleed the system as follows:

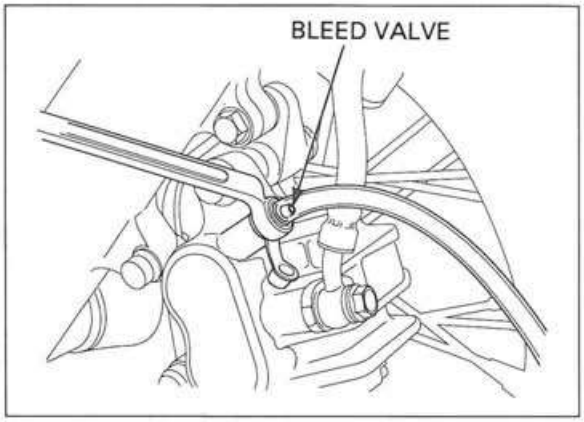
1. Squeeze the brake lever. Open the bleed valve 1/2 turn and close it.

NOTE:

Do not release the brake lever until the bleed valve has been closed.

2. Release the brake lever slowly and wait several seconds after it stops moving.

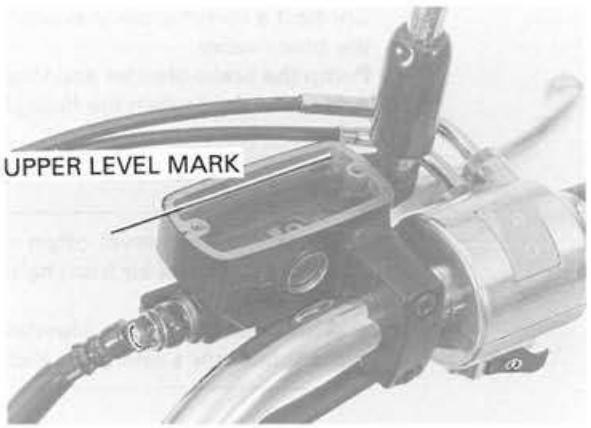
Repeat steps 1 and 2 until air bubbles do not appear in the bleed valve.



Tighten the bleed valve.

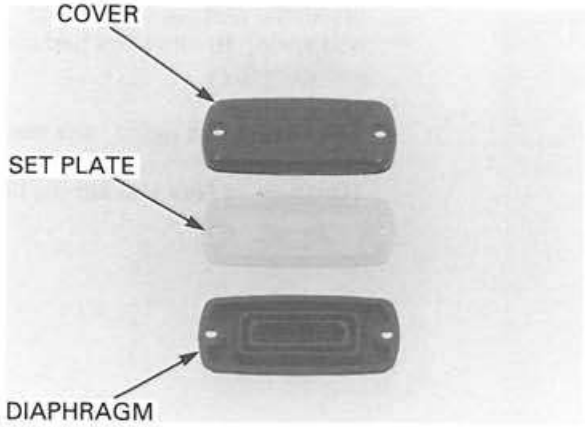
TORQUE: 6 N·m (0.6 kgf·m, 4.3 lbf·ft)

Fill the reservoir to the upper level mark with DOT 4 brake fluid from a sealed container.



Install the diaphragm, set plate and reservoir cover. Tighten the screws to the specified torque.

TORQUE: 2 N•m (0.2 kgf•m, 1.4 lbf•ft)



BRAKE PAD/DISC

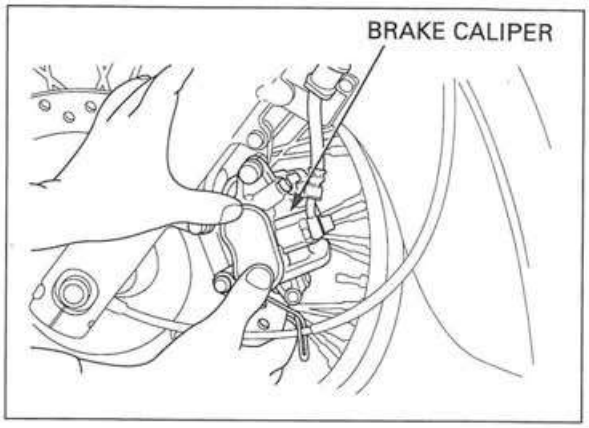
⚠ WARNING

A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean contaminated disc with a high quality brake degreasing agent.

BRAKE PAD REPLACEMENT

Always replace the brake pads in pairs to ensure even disc pressure.

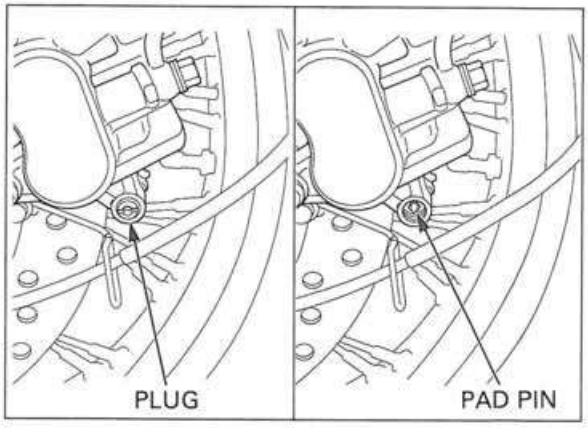
Push the caliper pistons all the way in by pushing the caliper body inward to allow installation of new brake pads.



NOTE:

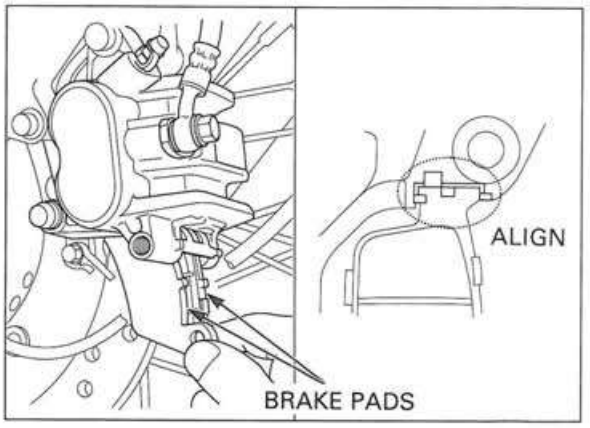
Check the brake fluid level in the brake master cylinder reservoir as this operation causes the level to rise.

Remove the pad pin plug and loosen the pad pin.



Remove the pad pin and the brake pads.

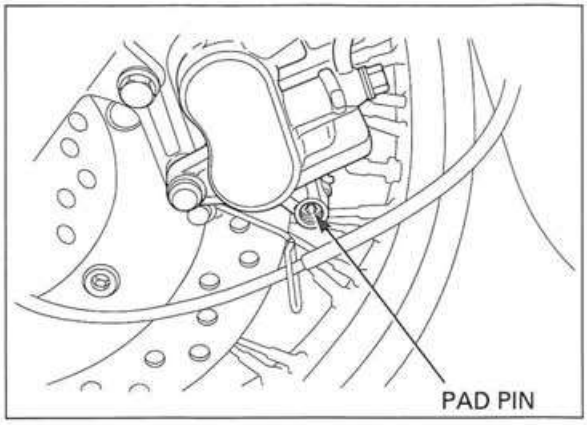
Install new pads so that their ends rest on the pad retainer on the bracket properly.



Install the pad pin by pushing the pads against the pad spring to align the pad pin holes in the pads and caliper.

Tighten the pad pin to the specified torque.

TORQUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)

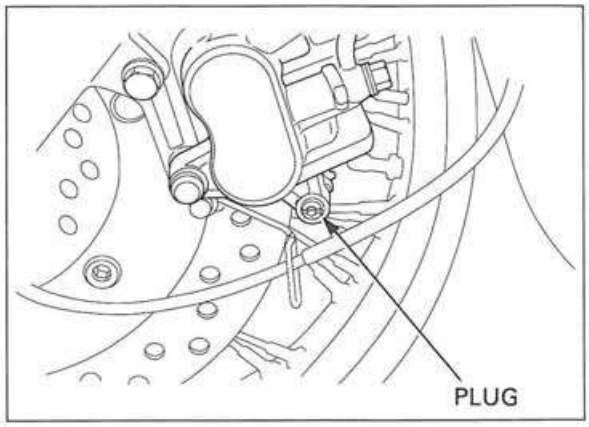


Install and tighten the pad pin plug to the specified torque.

TORQUE: 3 N·m (0.3 kgf·m, 2.2 lbf·ft)

⚠ WARNING

After replacement, operate the brake lever to seat the caliper pistons against the pads.



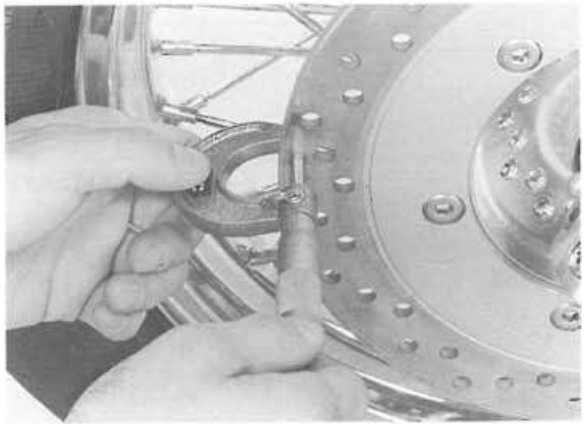
BRAKE DISC INSPECTION

Visually inspect the disc for damage or cracks.

Measure the brake disc thickness at several points.

SERVICE LIMIT: 5 mm (0.2 in)

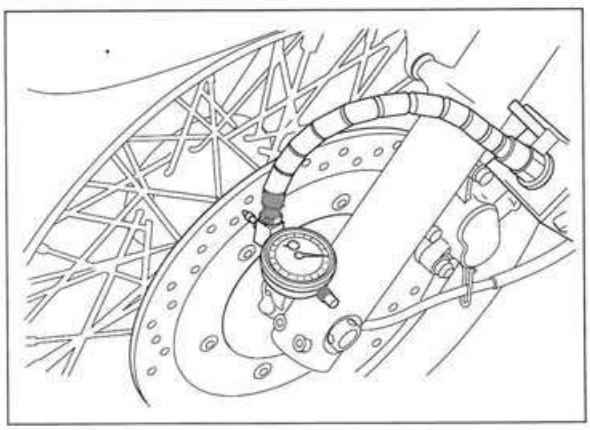
Replace the brake disc if the smallest measurement is less than the service limit.



Check the brake disc for warpage.

SERVICE LIMIT: 0.30 mm (0.012 in)

Check the wheel bearings for excessive play, if the warpage exceeds the service limit.
Replace the brake disc if the wheel bearings are normal.



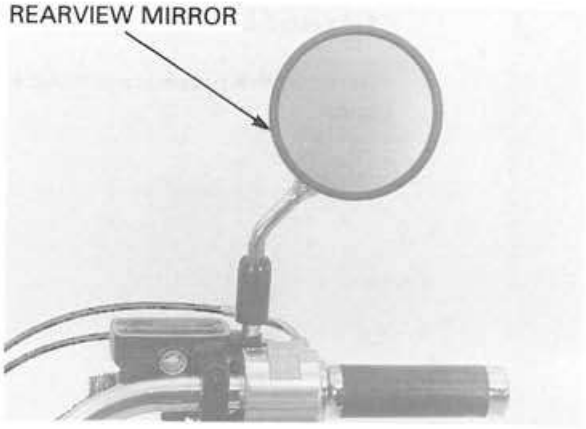
MASTER CYLINDER

CAUTION:

- ***Avoid spilling brake fluid on painted, plastic or rubber parts. Place a rag or shop towel over these parts whenever the system is serviced.***
- ***When removing the oil hose, cover the end of the hose to prevent contamination.***

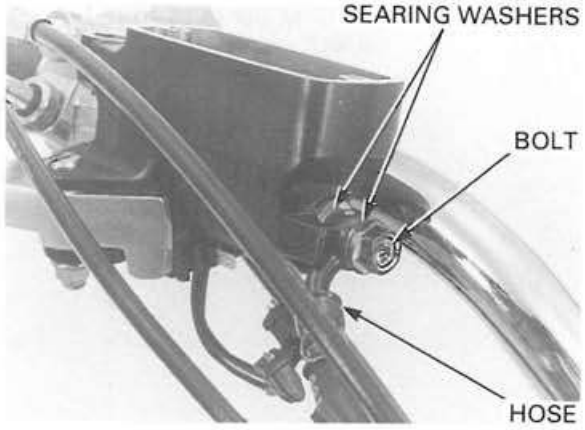
REMOVAL

Drain the brake fluid (page 15-3).
Remove the right rear view mirror.

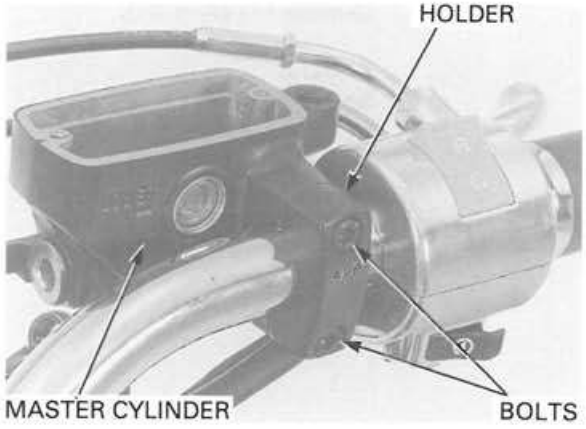


Disconnect the brake light switch connectors.

Disconnect the brake hose by removing the oil bolt and sealing washers.

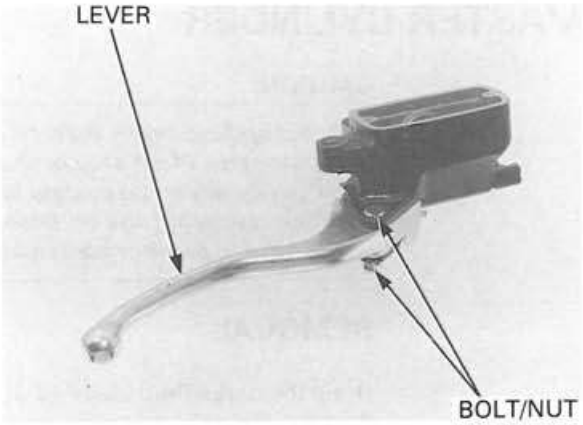


Remove the master cylinder holder bolts, holder and master cylinder.

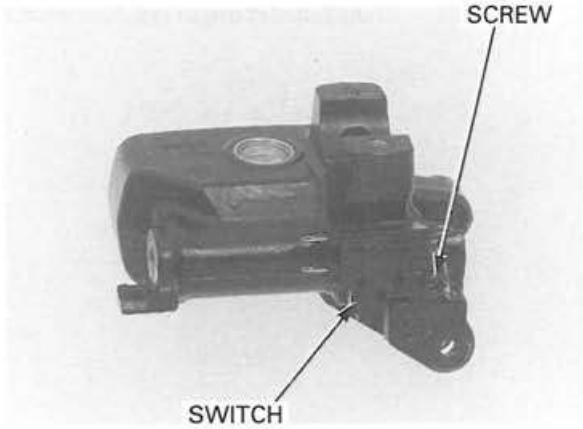


DISASSEMBLY

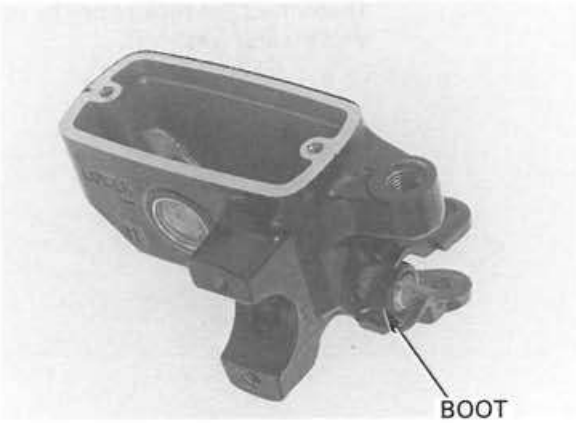
Remove the brake lever pivot nut, bolt and brake lever.



Remove the screw and brake light switch.



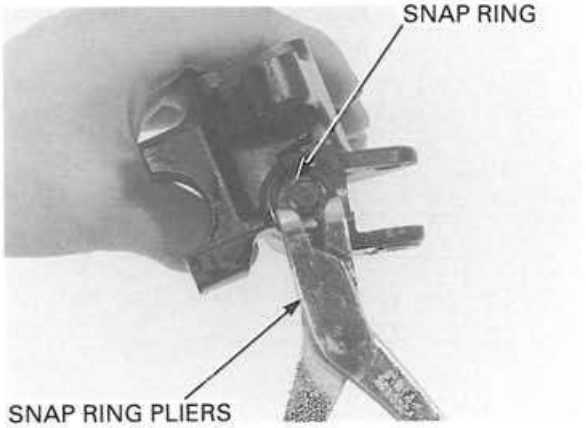
Remove the boot from the master cylinder and master piston.



Remove the snap ring.

TOOL:

Snap ring pliers	**07914-3230001**

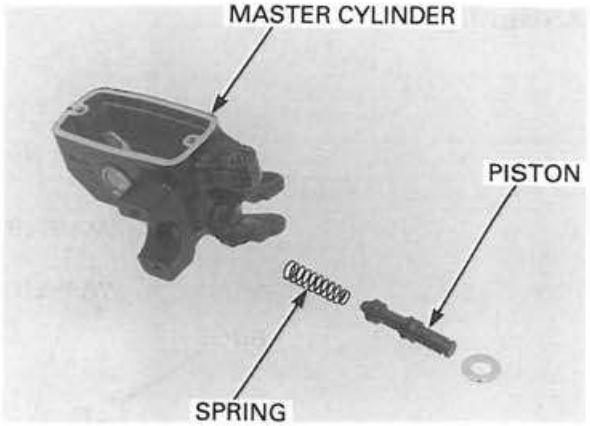


Remove the master piston and spring from the master cylinder.

Clean the master cylinder, reservoir and master piston with clean brake fluid.

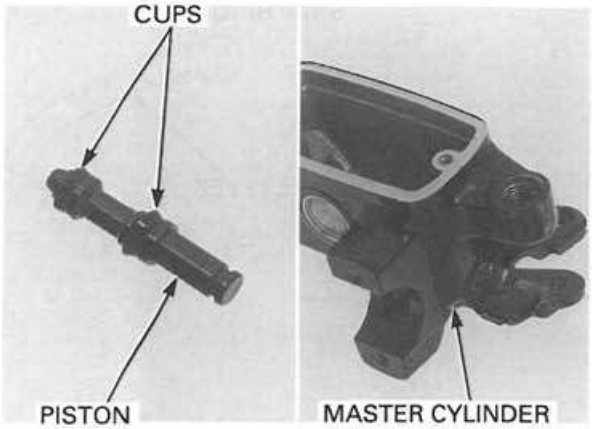
NOTE:

- Replace the master piston, spring, cups, spring seat and snap ring as a set whenever they are disassembled.
- Be sure that each part is free from the dust or dirt before reassembly.
- Never allow contaminants (dirt, water, etc.) to get into an open reservoir.



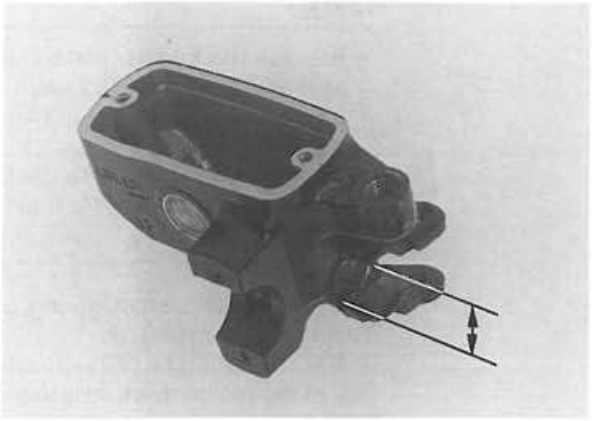
INSPECTION

Check the piston cups and for wear, deterioration or damage.
Check the master cylinder and piston for scoring, scratches or damage.



Measure the master cylinder I.D.

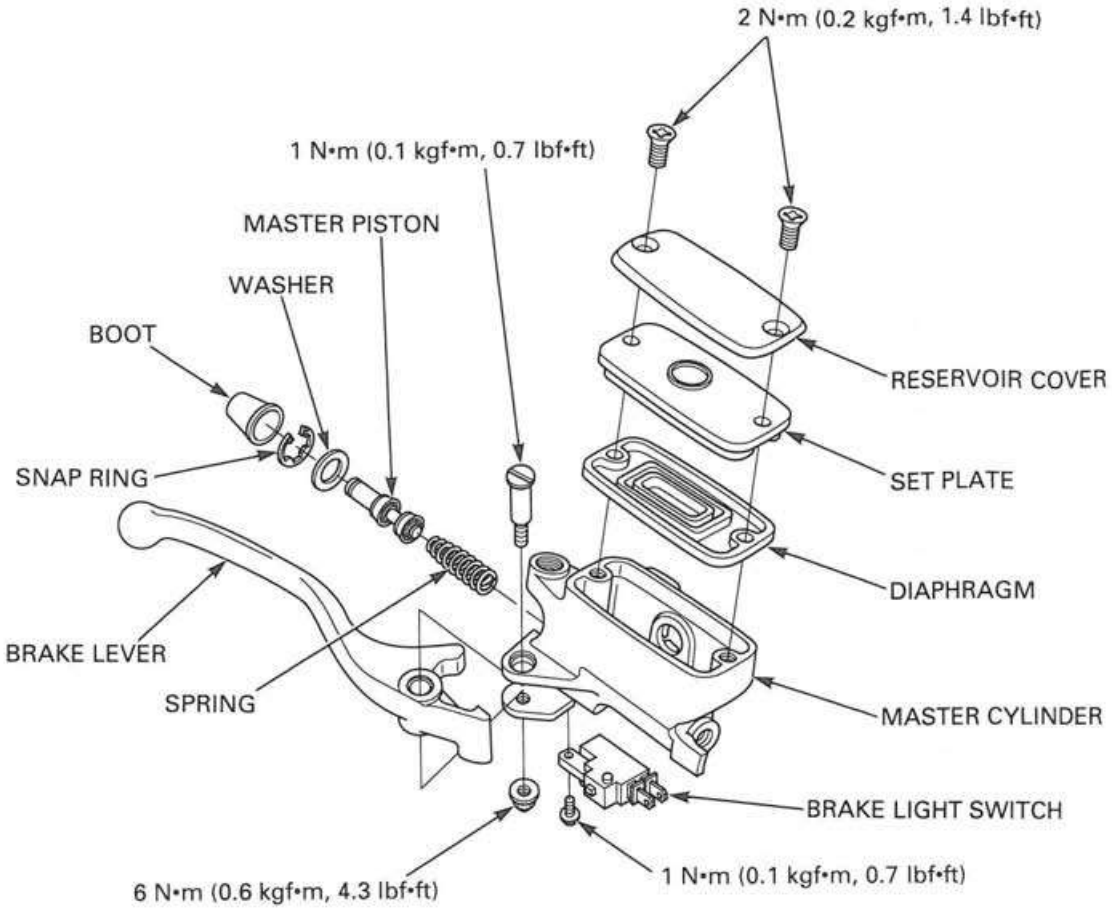
SERVICE LIMIT: 11.05 mm (0.435 in)



Measure the master piston O.D.

SERVICE LIMIT: 10.945 mm (0.4309 in)

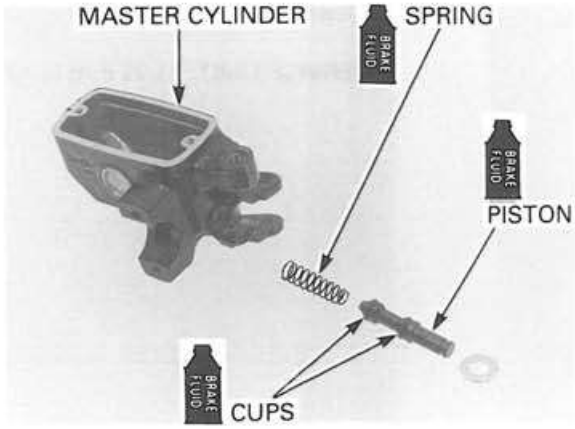
ASSEMBLY



NOTE:

- Replace the master piston, spring, cups, spring seat and snap ring as a set.
- Replace the boot if it is wear, deterioration or damage.
- Apply silicone grease to the boot inner surface.
- Be sure that each part is free from the dust or dirt before reassembly.

Coat the master piston, spring, and piston cups with clean DOT 4 brake fluid.
Install the spring onto the master piston end.
Install the master piston/spring and washer into the master cylinder.



CAUTION:

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

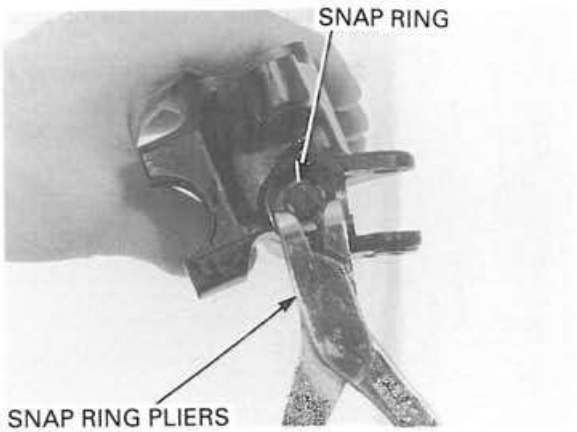
Install the snap ring into the groove in the master cylinder.

TOOL:

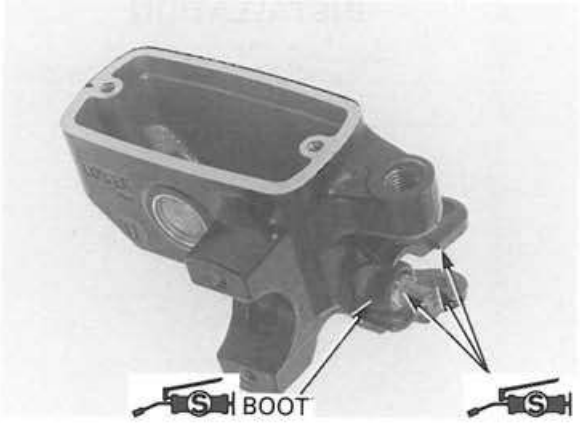
Snap ring pliers	**07914-3230001**

CAUTION:

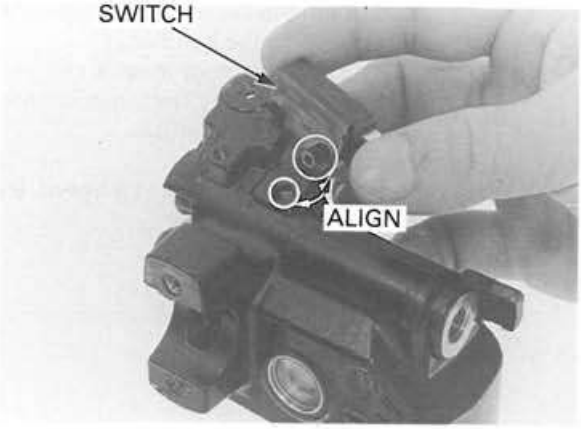
Be certain the snap ring is firmly seated in the groove.



Install the boot into the master cylinder and the groove in the master piston.
Apply silicone grease to the brake lever contacting surface of the master cylinder and piston.



Install the brake light switch to the master cylinder aligning the brake light switch boss and master cylinder hole.



Install and tighten the screw to the specified torque.

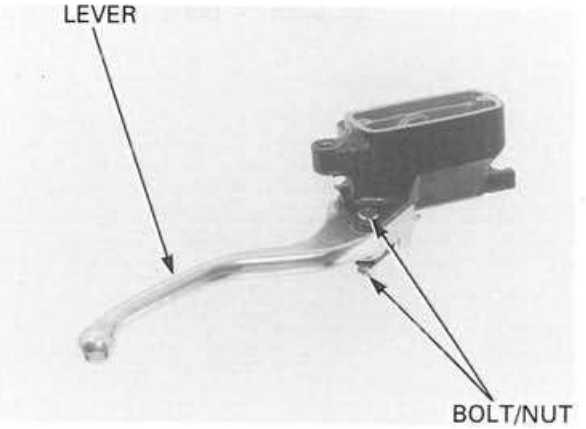
TORQUE: 1 N•m (0.1 kgf•m, 0.7 lbf•ft)

Apply grease to the brake lever pivot bolt.
Install the brake lever to the master cylinder.
Install and tighten the brake lever pivot bolt to the specified torque.

TORQUE: 1 N•m (0.1 kgf•m, 0.7 lbf•ft)

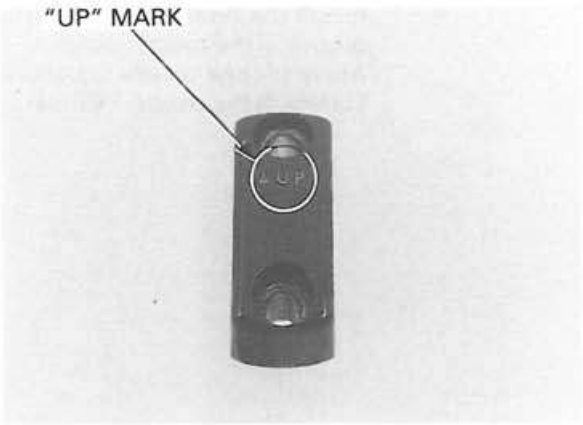
Install and tighten the brake lever pivot nut to the specified torque.

TORQUE: 6 N•m (0.6 kgf•m, 4.3 lbf•ft)



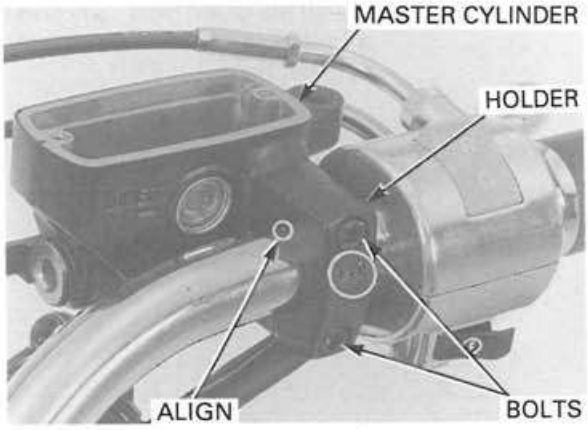
INSTALLATION

Install the master cylinder and the master cylinder holder with the "UP" mark facing up.



Align the end of the master cylinder with the punch mark on the handlebar.
Install the front master cylinder bolts and tighten the upper bolt first, then tighten the lower bolt to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



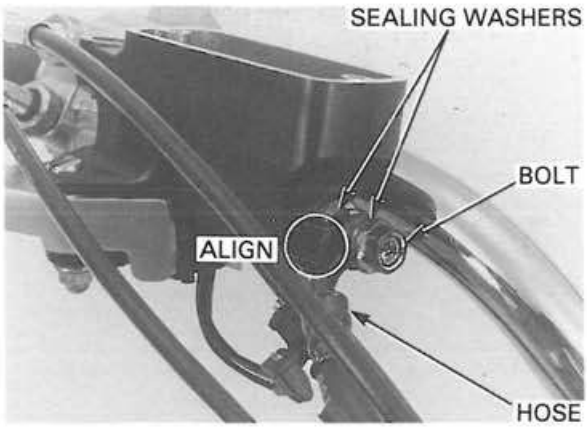
Be careful not to twist the brake hose.

Connect the brake hose eyelet with the oil bolt and new sealing washers.

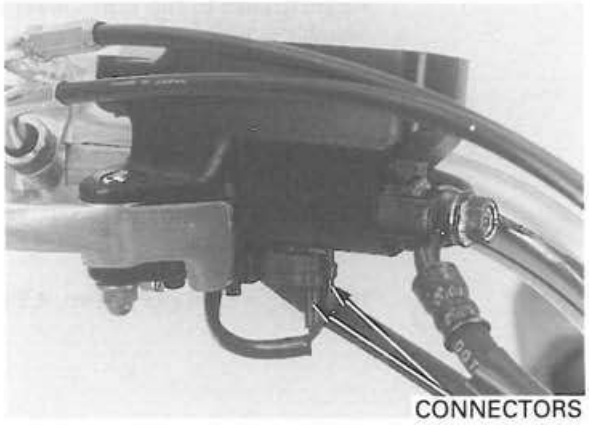
While tightening the brake hose oil bolt, align the brake hose end with the stopper.

Tighten the brake hose oil bolt to the specified torque.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)

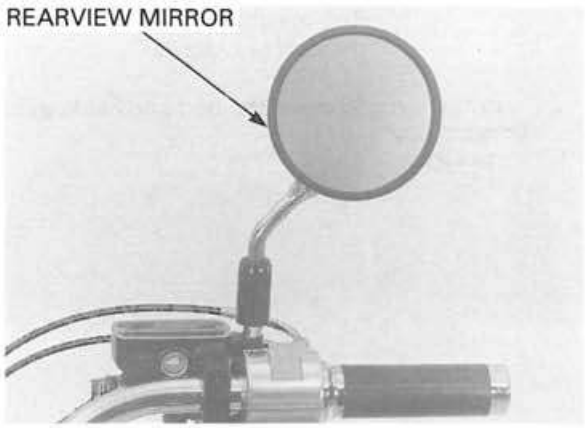


Connect the brake light switch connectors.



Install the right rear view mirror.

Refill the brake fluid (page 15-3).
Install the brake pad (page 15-5).



BRAKE CALIPER

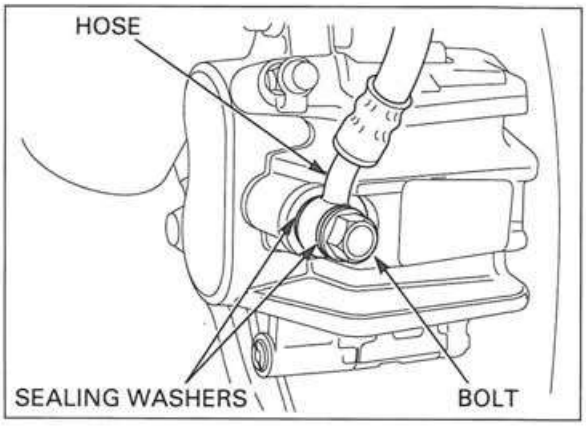
CAUTION:

- ***Avoid spilling brake fluid on painted, plastic or rubber parts. Place a rag or shop towel over these parts whenever the system is serviced.***
- ***When removing the oil hose bolt, cover the end of the hose to prevent contamination.***

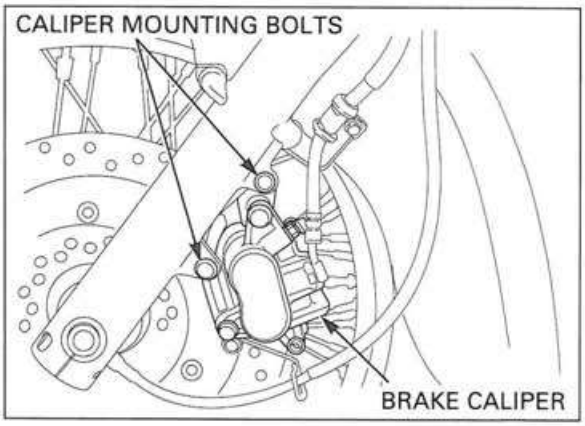
REMOVAL

Remove the brake pads (page 15-5).
Drain the brake fluid (page 15-3).

Remove the brake hose oil bolt and sealing washers and disconnect the brake hose from the front brake caliper.



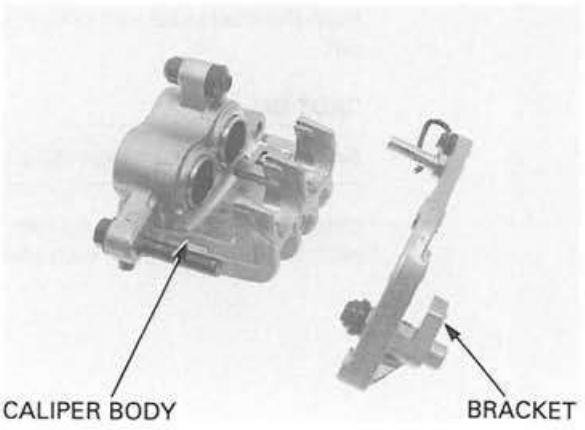
Remove the front brake caliper mounting bolts and front brake caliper.



DISASSEMBLY

Do not remove the caliper and bracket pins unless replacement.

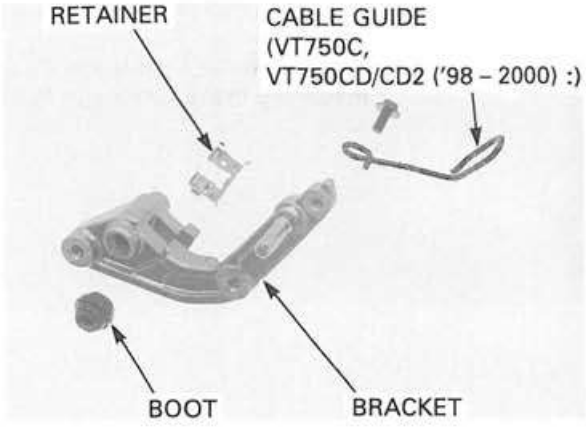
Remove the caliper bracket from the caliper body.



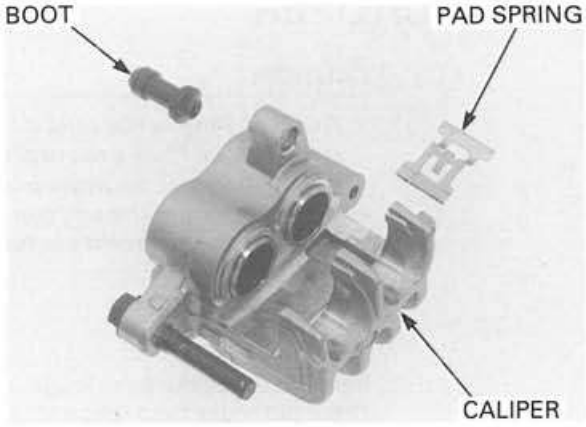
Remove the caliper pin boot and pad retainer from the caliper bracket.

VT750C and VT750CD/CD2 ('98 – 2000) :

Remove the bolt and cable guide.



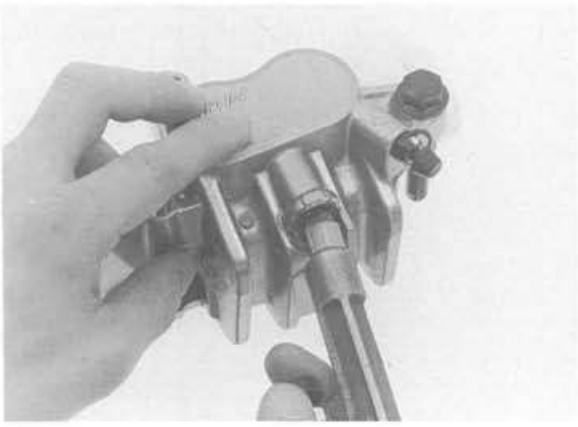
Remove the pad spring and bracket pin boot from the caliper body.



Place a shop towel over the pistons.
Position the caliper body with the pistons down and apply small squirts of air pressure to the fluid inlet to remove the pistons.

CAUTION:

Do not use high pressure air or bring the nozzle too close to the inlet.

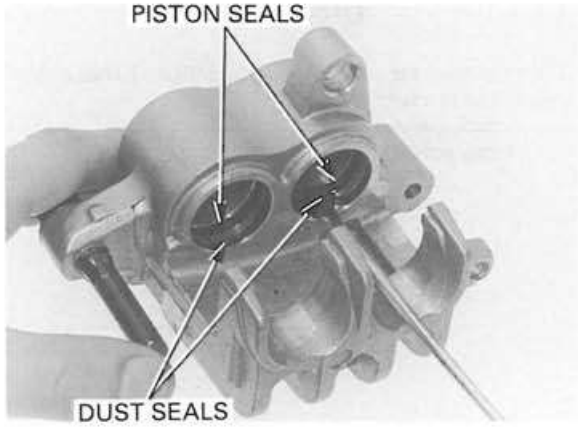


Push the dust seals and piston seals in and lift them out.

CAUTION:

Be careful not to damage the piston sliding surface.

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

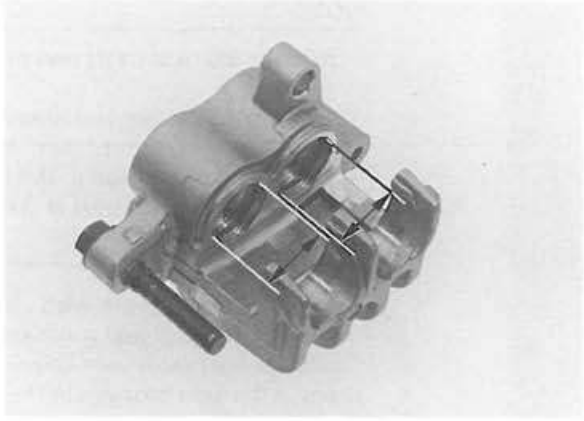


INSPECTION

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

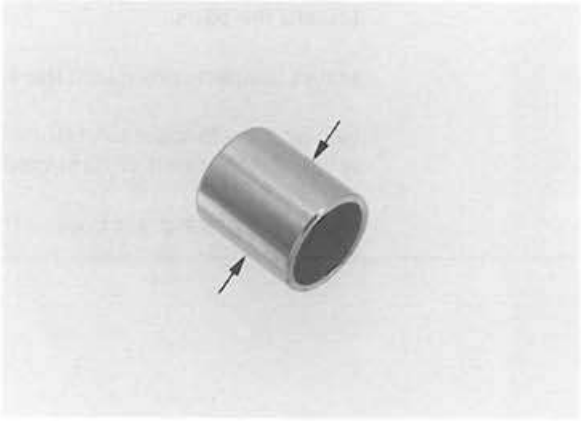
Measure the caliper cylinder I.D.

SERVICE LIMIT: 27.06 mm (1.065 in)

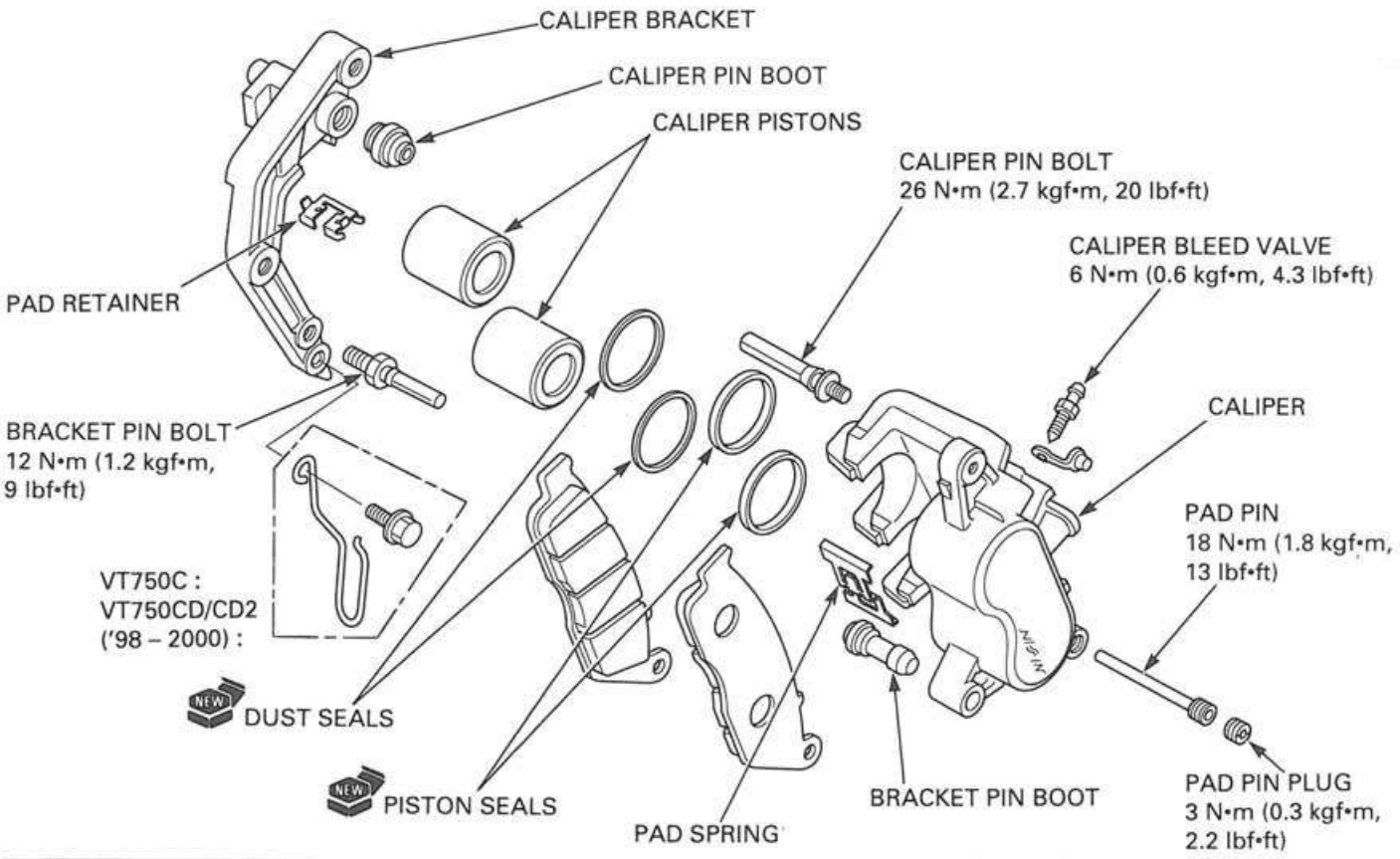


Measure the caliper piston O.D.

SERVICE LIMIT: 26.93 mm (1.060 in)



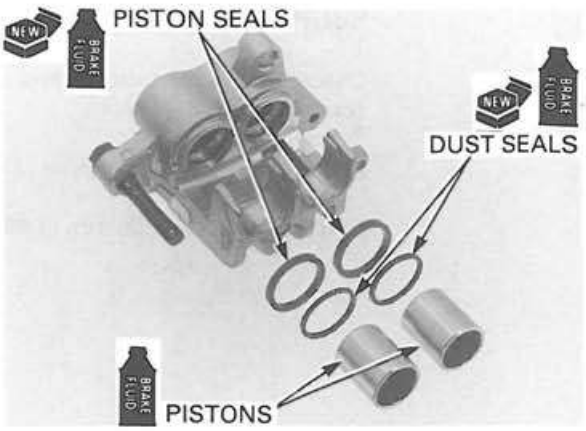
ASSEMBLY



NOTE:

- Replace the dust seals and piston seals with new ones.
- Replace the caliper and bracket pin boots there is wear, deterioration or damage.
- Apply silicone grease to the boot inner surface.
- Be sure that each part is free from dust or dirt before reassembly.

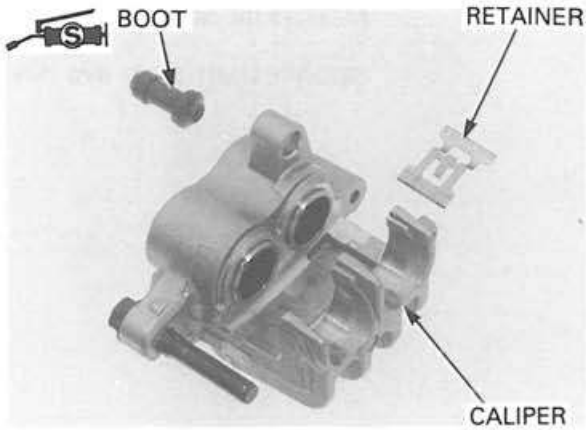
Coat new piston seals with clean brake fluid and install them in the seal grooves in the caliper.
Coat new dust seals with silicone grease and install them in the seal grooves in the caliper.
Coat the caliper piston with clean brake fluid and install it into the caliper cylinder with the opening toward the pads.



Install the pad spring into the caliper body.

Replace the bracket pin boot with a new one if it is worn, deteriorated or damaged.

Install the bracket pin boot to the caliper body.



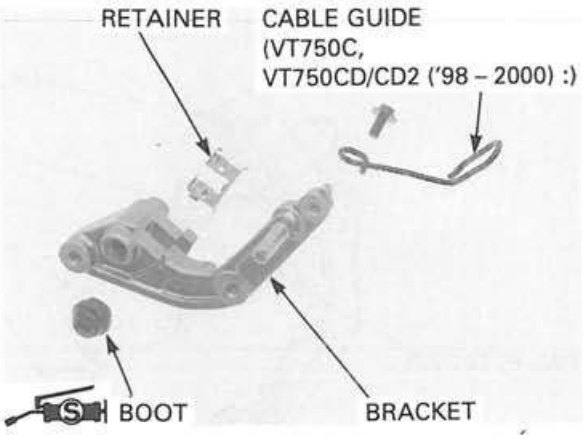
Replace the caliper pin boot with a new one if it is worn, deteriorated or damaged.

Install the caliper pin boot.

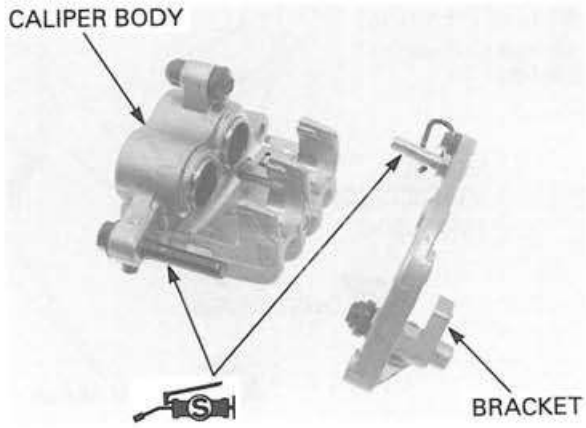
Apply Threebond #1521 or equivalent to the pad retainer-to-caliper bracket seating surface.
Install the pad retainer to the caliper bracket.

VT750C and VT750CD/CD2 ('98 – 2000):

Install the speedometer cable guide to the caliper bracket.



Apply silicone grease to the caliper and bracket pins.
Install the caliper bracket over the caliper.

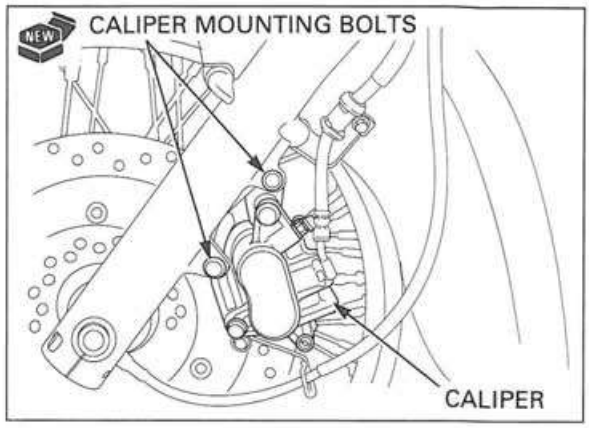


INSTALLATION

Install the front brake caliper to the front fork.
Install and tighten the new front caliper mounting bolts to the specified torque.

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)

Install and tighten the speedometer wire guide lower mounting bolt securely.



Be careful not to twist the brake hose.

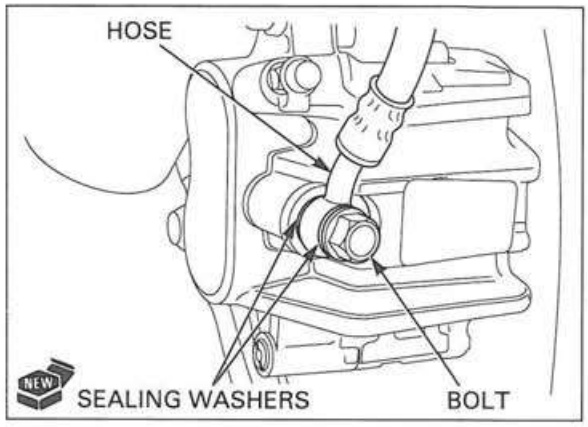
Connect the brake hose to the brake caliper with new sealing washers.

While tightening the brake hose oil bolt, align the brake hose end with the stopper.

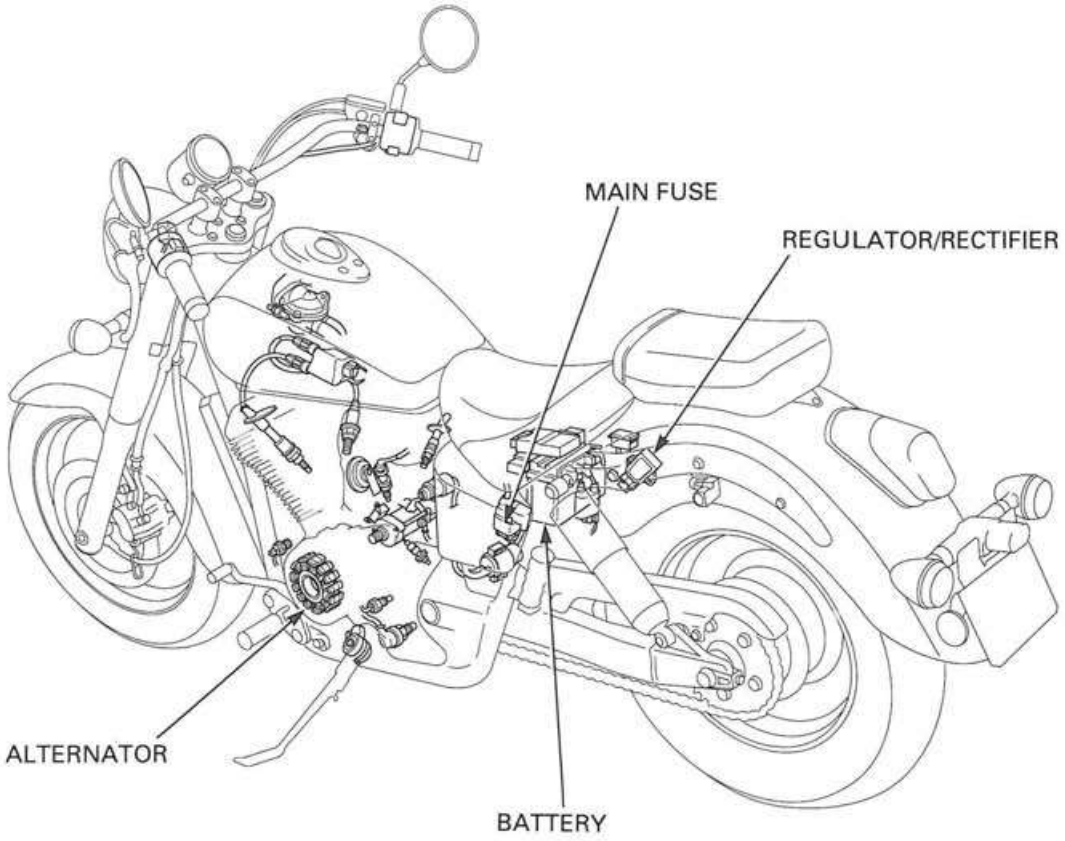
Install and tighten the brake hose oil bolt to the specified torque.

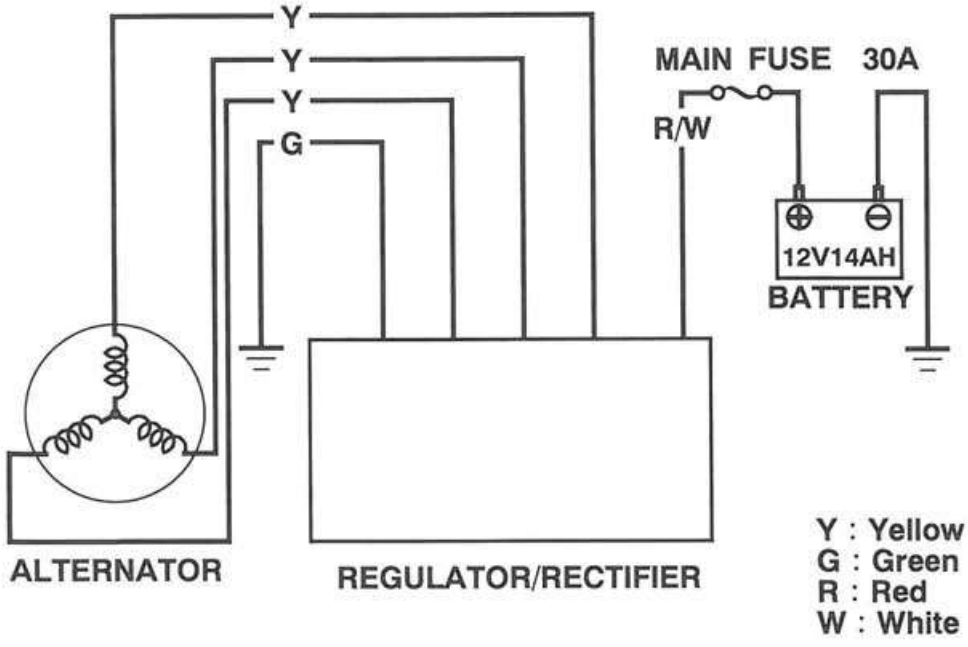
TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)

Refill the brake fluid (page 15-3).
Install the brake pads (page 15-5).



SYSTEM DIAGRAM





16. BATTERY/CHARGING SYSTEM

SERVICE INFORMATION

GENERAL

⚠ WARNING

- ***The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging or using the battery in an enclosed space.***
- ***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 on 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 follow with milk of magnesia or vegetable oil and call a physician.***
- ***KEEP OUT OF REACH OF CHILDREN.***

- Always turn off the ignition switch before disconnecting any electrical component.

CAUTION:

Some electrical components may be damaged if terminals or connectors are connected or disconnect while the ignition switch is ON and a current is present.

- For extended storage, remove the battery, give it a full charge and store it in a cool, dry space. For maximum service life, charge the stored battery every two weeks.
- For battery remaining in a stored motorcycle, disconnect the negative battery cable from the battery terminal.
- The battery can be damaged if overcharged or undercharged, or if left to discharge for long periods. 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 a heavy load, battery voltage will drop quickly and eventually the battery will be completely discharged. For this reason, the charging system is often suspected to be the problem. Battery overcharge often results in problems in the battery itself, which may appear to be an overcharge symptom. If one of the battery cells is shorted and the battery voltage does not increase, the regulator/rectifier supplies excess voltage to the battery. Under these conditions, the electrolyte level drops quickly.
- Before troubleshooting the charging system, check for proper use and maintenance of the battery. Check if the battery is frequently under a heavy load, such as having the headlight and taillight ON for long periods of time without riding the motorcycle.
- The battery will self-discharge when the motorcycle is not use. For this reason, charge the battery every two weeks to prevent sulfation from forming.
- Filling a new battery with electrolyte will produce some voltage, but in order to achieve maximum performance, always charge the battery. Also, the battery life is lengthened when it is initial-charged.
- When checking the charge system, always follow the steps in the troubleshooting flow chart (page 16-3).
- Alternator servicing may be done with the engine in the frame.

SPECIFICATIONS

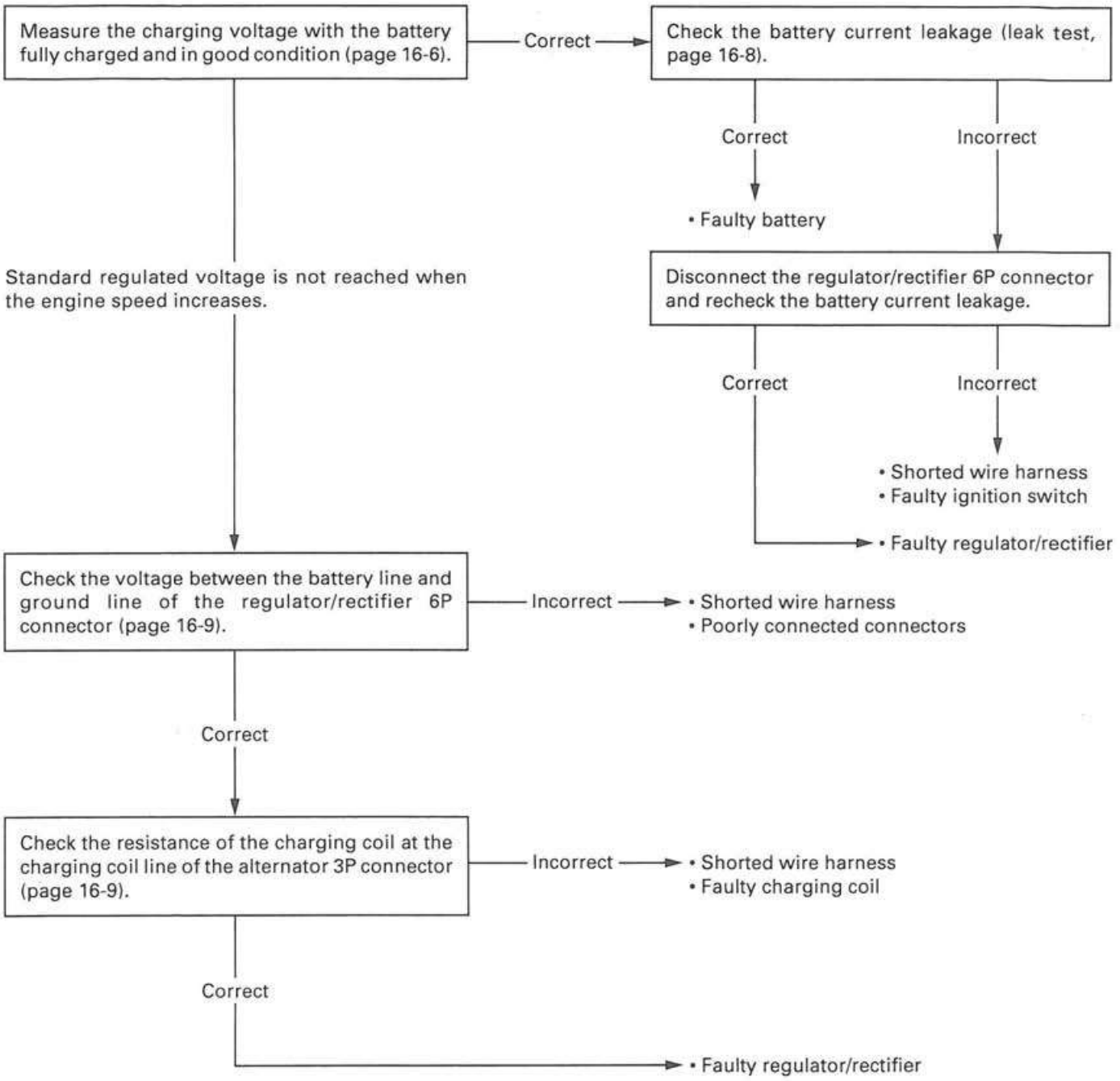
ITEM			SPECIFICATIONS
Battery	Capacity		12 V – 14 Ah
	Current leakage		1.0 mA max
	Voltage (20°C/68°F)	Fully charged	13.0 – 13.2 V
		Needs charging	Below 12.3 V
	Charging current	Normal	1.4 A/5 – 10 h
		Quick	6.0 A/1 h max
Alternator	Capacity		345 W/5,000 rpm
	Charging coil resistance (20°C/68°F)		0.1 – 0.3Ω
Regulator/rectifier regulated voltage			14 – 15 V/4,000 rpm

TORQUE VALUES

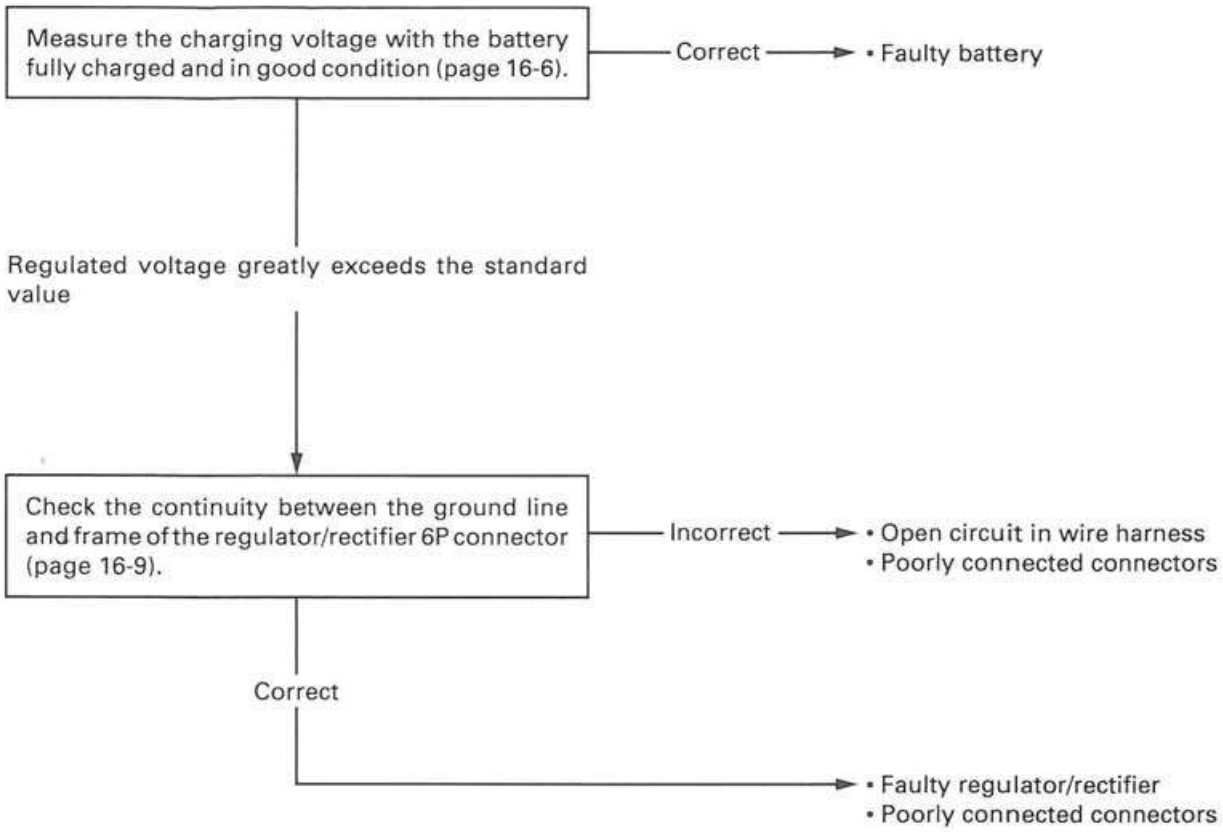
Battery case cover screw	10 N•m (1.0 kgf•m, 7 lbf•ft)

TROUBLESHOOTING

Battery undercharging (voltage not raised to regulated voltage).



Battery overcharging (regulated voltage too high).



BATTERY

REMOVAL

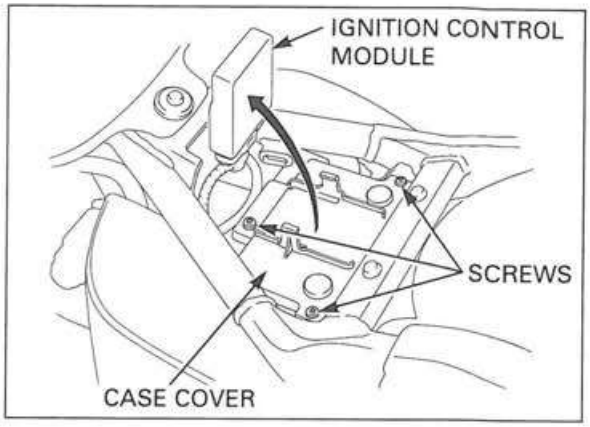
Always turn the ignition switch OFF before removing or installing the battery.

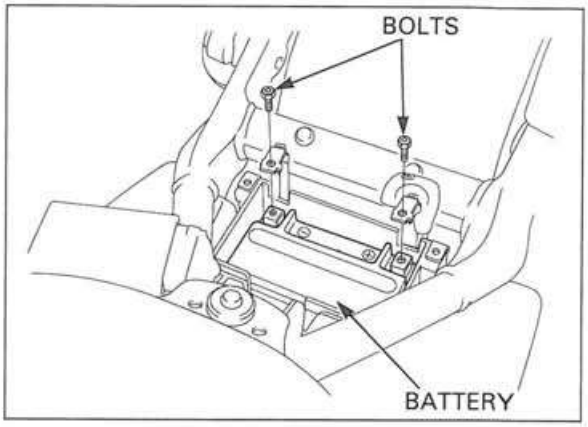
Remove the seat (page 2-2).

Remove the ignition control module from the battery case cover.
Remove the three screws and battery case cover.

Disconnect the battery negative cable first, then positive cable from the battery.

Remove the bolt and battery negative cable.
Remove the positive cable cover.
Remove the bolt and battery positive cable.
Pull the battery out of the battery case.





INSTALLATION

Place the battery into the case and connect the battery positive cable to the battery first from the left side, then connect the negative cable from the right side.
Coat the battery terminal with clean grease.

Install the battery case cover then tighten the three screws to the specified torque.

TORQUE: 10 N•m (1.0 kgf•m, 7 lbf•ft)

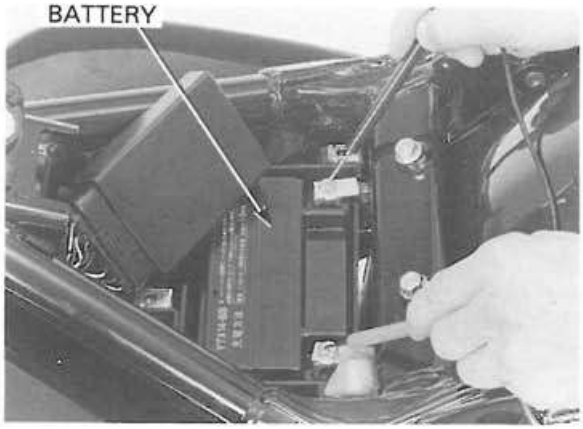
Install the ignition control module to the battery case cover.

Install the seat (page 2-2).

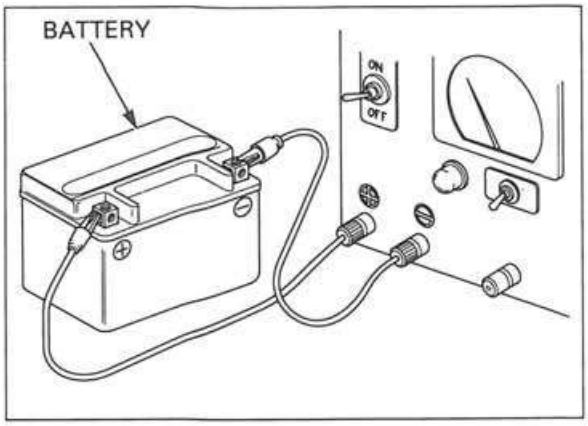
INSPECTION

Measure the battery voltage using a commercially available digital multimeter.

VOLTAGE: Fully charged: 13.0 – 13.2 V
Under charged: Below 12.3 V



BATTERY CHARGING



⚠ WARNING

- ***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 on your eyes, flush with water for at least 15 minutes and call a physician.***
- ***Electrolyte is poisonous. If swallowed, drink large quantities of water or milk and follow with milk of magnesia or vegetable oil and call a physician.***
- ***Turn power ON/OFF at the charger, not at the battery terminals.***

Remove the battery (page 16-5).

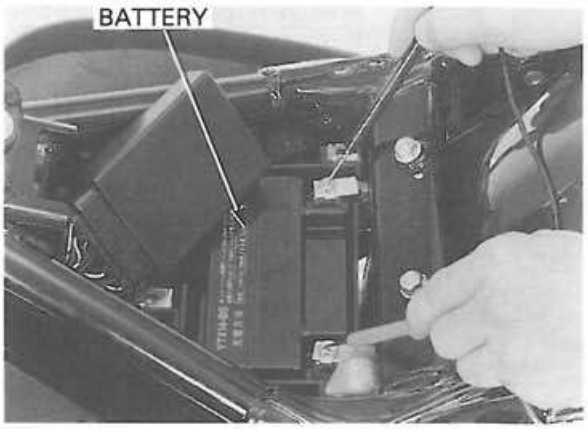
Connect the charger positive (+) cable to the battery positive (+) terminal.
Connect the charger negative (-) cable to the battery negative (-) terminal.

CHARGING CURRENT/TIME
Standard: 1.4A/5 – 10 h
Quick: 6.0 A/1 h max

CAUTION:

- ***Quick-charging should only be done in an emergency; slow charging is preferred.***
- ***For battery charging, do not exceed the charging current and time specified on the battery. Using excessive current or extending the charging time may damage the battery.***

CHARGING SYSTEM INSPECTION



NOTE:

- Measuring circuits with a large capacity that exceeds the capacity of the tester may cause damage to the tester. Before starting each test, set the tester at the high capacity range first, then gradually down to low capacity ranges in order to ensure that you have the correct range and do not damage the tester.
- When measuring small capacity circuits, keep the ignition switch off. If the switch is suddenly turned on during a test, the tester fuse may blow.

REGULATED VOLTAGE INSPECTION

⚠ WARNING

- ***If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area.***
- ***The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and may lead to death.***

Remove the battery (page 16-5) and install the fully charged battery.
Start the engine and warm it up to the operating temperature; stop the engine.
Connect the multimeter between the positive and negative terminals of the battery.

CAUTION:

- ***To prevent short, make absolutely certain which are the positive and negative terminals or cable.***
- ***Do not disconnect the battery or any cable in the charging system without first switching off the ignition switch. Failure to follow this precaution can damage the tester or electrical components.***

With the headlight to Lo beam, restart the engine.
Measure the voltage on the multimeter when the engine runs at 5,000 rpm.

REGULATED VOLTAGE: 14 – 15 V/4,000 rpm

The battery is normal if the voltage reads the regulated voltage on the tester.

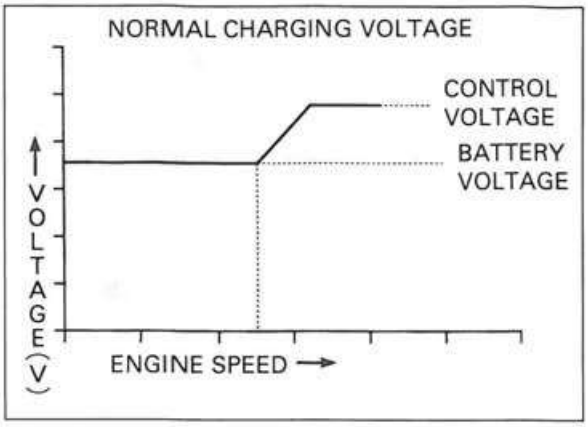
NOTE:

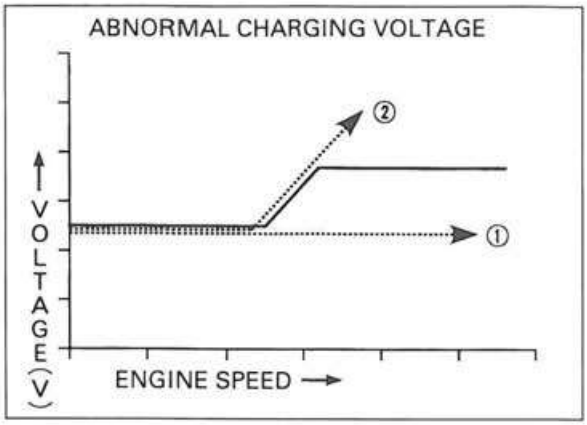
The speed at which voltage starts to rise cannot be checked as it varies with the temperature and loads of the generator.

A frequently discharged battery is an indication that it is deteriorated even if it proves normal in the regulated voltage inspection.
The charging circuit may be abnormal if any of the following symptoms is encountered:

1. **Voltage not raised to regulated voltage (page 16-3)**
   - Open or shorted circuit in the charging system wire harness or poorly connected connector
   - Open or shorted of the alternator
   - Faulty regulator/rectifier

2. **Regulated voltage too high (page 16-4)**
   - Poorly grounded voltage regulator/rectifier
   - Faulty battery
   - Faulty regulator/rectifier





CURRENT LEAKAGE TEST

Remove the battery cover (page 16-5).

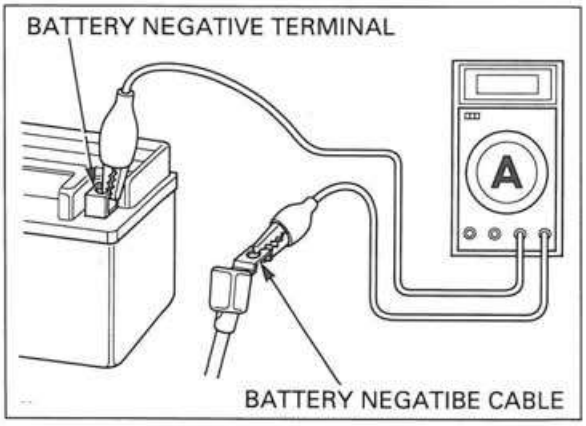
Turn the ignition switch OFF, and disconnect the ground (-) cable from the battery.
Connect the ammeter (+) probe to the battery ground cable and the ammeter (-) probe to the battery (-) terminal.
With the ignition switch OFF, check for current leakage.

NOTE:

- When measuring current using a tester, set it to a high range, and then bring the range down to an appropriate level. Current flow higher than the range selected may blow out the fuse in the tester.
- While measuring current, do not turn the ignition switch ON. A sudden surge of current may blow out the fuse in the tester.

SPECIFIED CURRENT LEAKAGE: 1.0 mA max.

If current leakage exceeds the specified value, a shorted circuit is likely.
Locate the short by disconnecting connections one by one and measuring the current.



REGULATOR/RECTIFIER

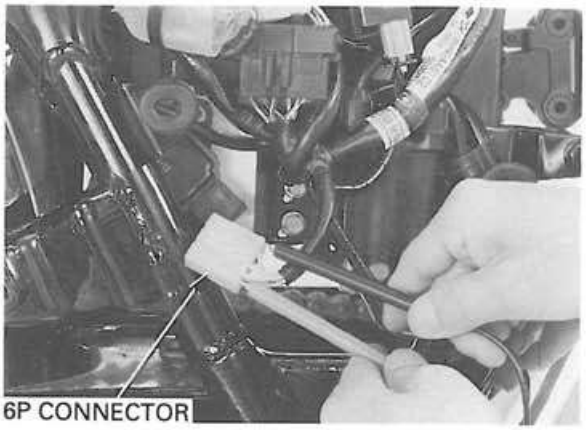
WIRE HARNESS INSPECTION

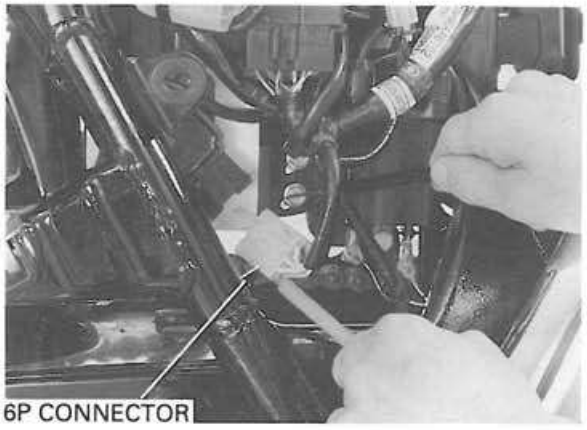
Remove the left side cover (page 2-4).

Disconnect the regulator/rectifier 6P connector.
Check the connectors for loose or corroded terminals.

BATTERY LINE
Make sure the battery voltage between Red/White (+) and Green (-).
If there are no voltage, measure the following:

Item	Terminals	Specification
Battery charging line	Red/White (+) and ground (-)	Battery voltage should register
Ground line	Green and ground	Continuity exists


6P CONNECTOR


6P CONNECTOR

CHARGING LINE

It is not necessary to remove the stator coil to complete this test.

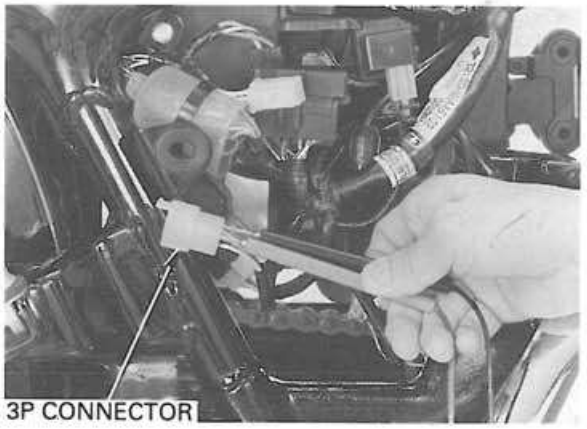
Measure the resistance between the connector terminals and ground.

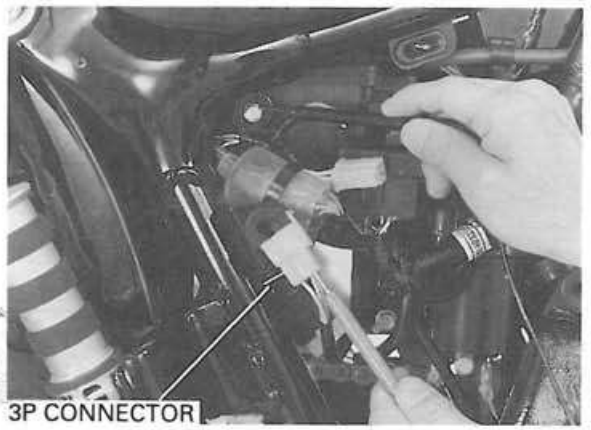
CONNECTION: Yellow and Yellow
STANDARD: 0.1 – 0.3 Ω (20 °C/68 °F)

If the charging coil reading is out of specification, replace the stator (page 9-2).

Check for continuity between the connector terminals and ground.
There should be no continuity.

If the there is continuity between the connector and ground, replace the stator (page 9-2).

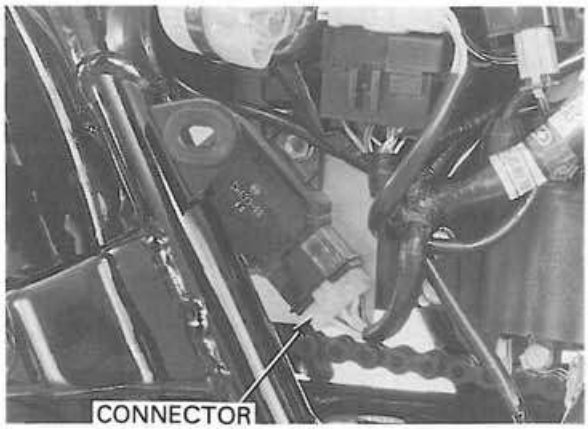

3P CONNECTOR


3P CONNECTOR

REMOVAL/INSTALLATION

Remove the left side cover (page 2-4).

Disconnect the regulator/rectifier 6P connector.

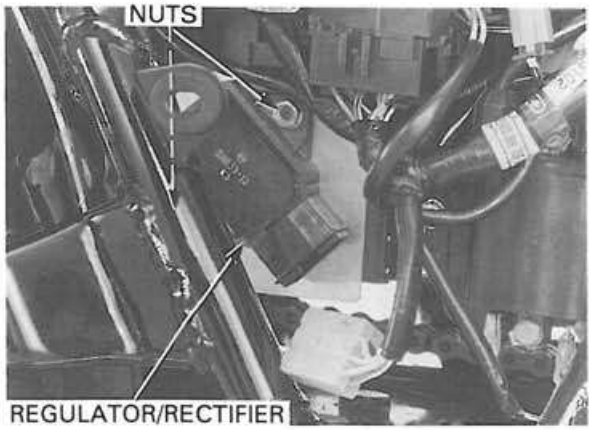


Remove the nuts and regulator/rectifier unit.

Installation is in the reverse order of removal.

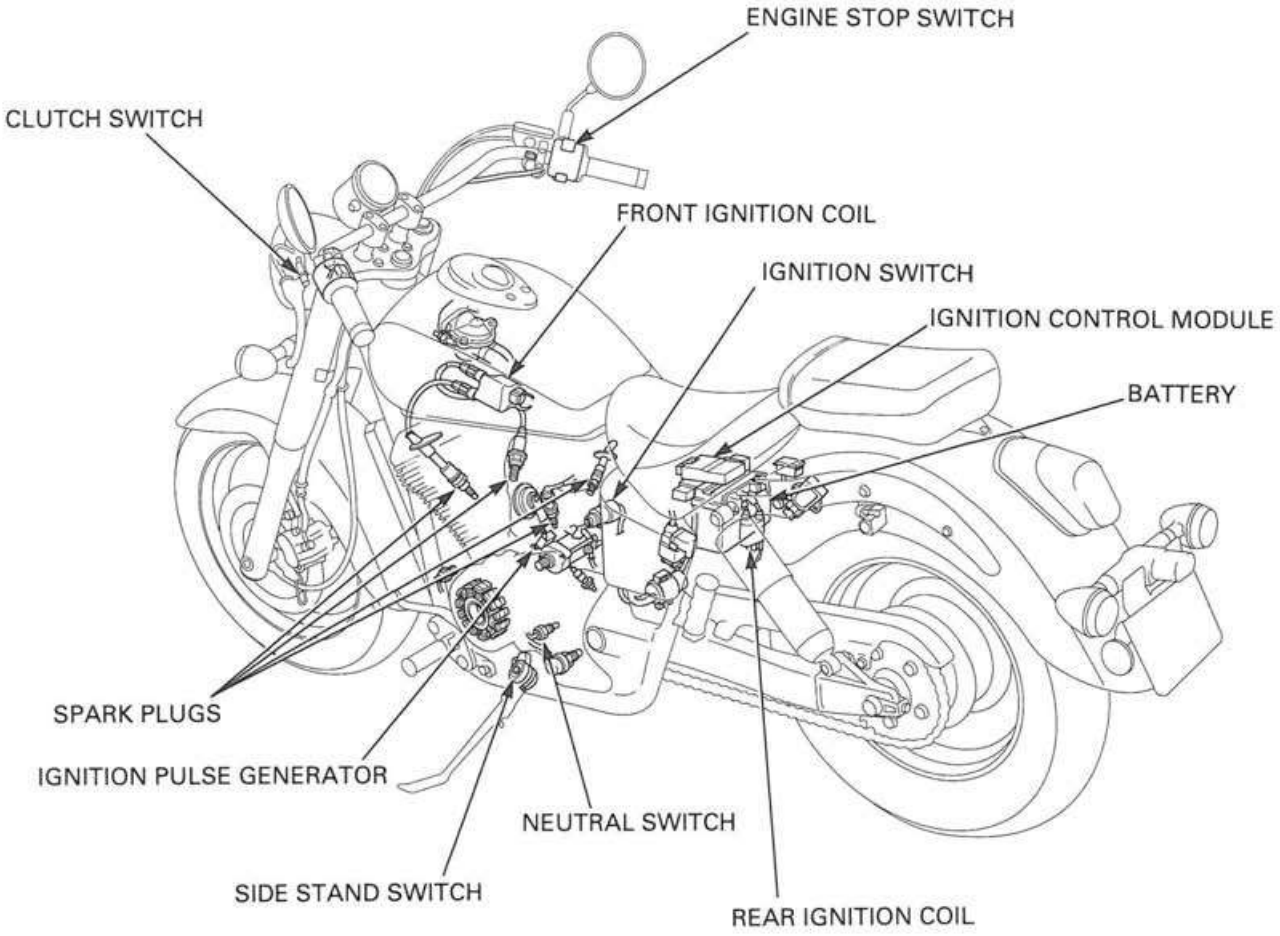
NOTE:

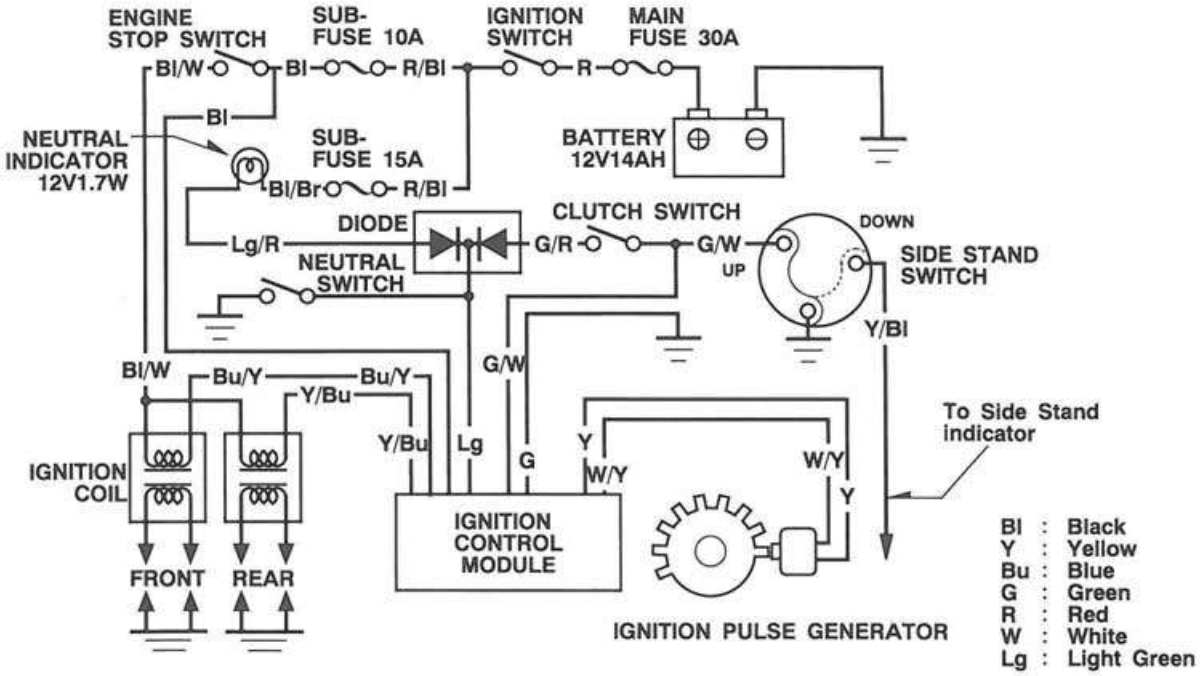
Route the wire harness properly (page 1-22).



MEMO

SYSTEM DIAGRAM





17. IGNITION SYSTEM

SERVICE INFORMATION

GENERAL

⚠ WARNING

If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that may cause loss of the consciousness and may lead to death. Run the engine in an open area or with an exhaust evacuation system in an enclosed area.

CAUTION:

Some electrical components may be damaged if terminals or connectors are connected or disconnected while the ignition switch is ON and a current is present.

- When checking the ignition system, always follow the steps in the troubleshooting (page 17-3).
- Ignition timing cannot be adjusted since the Ignition Control Module (ICM) is non-adjustable. If ignition timing is incorrect, check the system components and replace any faulty parts.
- The ICM may be damaged if dropped. Also, if the connector is disconnected when current is flowing, the resulting excessive voltage may damage the unit. Always turn off the ignition switch before servicing.
- A faulty ignition system is often related to poorly connected or corroded connectors. Check those connections before proceeding. Make sure the battery is adequately charged. Using the starter motor with a weak battery results in a slower engine cranking speed as well as no spark at the spark plugs.
- Use spark plugs of the correct heat range. Using a spark plug of an incorrect heat range can damage the engine.
- For neutral switch and side stand switch inspection and removal/installation see section 19.
- For engine stop switch and ignition switch inspection and removal/installation see section 13, 19.

SPECIFICATIONS

ITEM		SPECIFICATIONS	
Spark plug		NGK	DENSO
	Standard	DPR8EA 9	X24EPR-U9
	For cold climate (below 5℃/41°F)	DPR7EA 9	X22EPR-U9
	For extended high speed riding	DPR9EA 9	X27EPR-U9
Spark plug gap		0.80 – 0.90 mm (0.031 – 0.035 in)	
Ignition coil primary peak voltage		100 V minimum	
Ignition pulse generator peak voltage		0.7 V minimum	
Ignition timing "F" mark		8° BTDC at 1,000 rpm	
Advance	Start	3,000 ± 200 rpm	
	Stop	5,500 ± 200 rpm	
Full advance		24.5° BTDC at 5,500 rpm	

TORQUE VALUES

Timing hole cap	10 N•m (1.0 kgf•m, 7 lbf•ft)	Apply grease to the threads

TOOLS

Imrie diagnostic tester (model 625) or Peak voltage adapter	07HGJ–020100 with Commercially available digital multimeter (impedance 10 MΩ /DCV minimum)

TROUBLESHOOTING

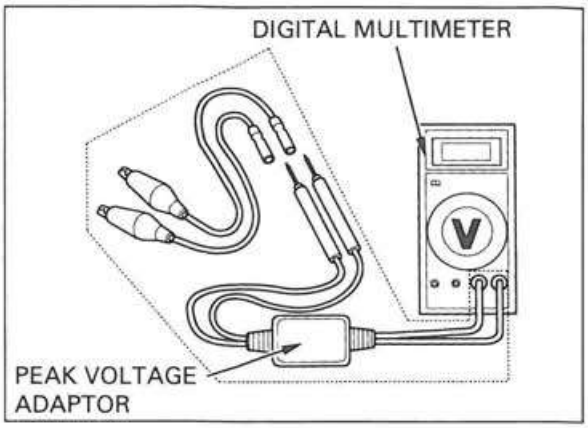
- Inspect the following before diagnosing the system.
  - Faulty spark plug
  - Loose spark plug cap or spark plug wire connections
  - Water got into the spark plug cap (Leaking to the ignition coil secondary voltage)
- If there is no spark at either cylinders, temporarily exchange the ignition coil with the other good one and perform the spark test. If there is a spark, the exchanged ignition coil is faulty.
- "Initial voltage" of the ignition primary coil is the battery voltage with the ignition switch ON and engine stop switch at RUN (The engine is not cranked by the starter motor).

No spark at all plugs

Unit: mm (in)

Unusual condition		Probable cause (Check in numerical order)
Ignition coil primary voltage	No initial voltage with ignition and engine stop switches ON. (Other electrical components are normal.)	1. Faulty engine stop switch. 2. An open circuit in Black/White wire between the ignition coil and engine stop switch. 3. Loose primary terminal or an open circuit in primary coil. 4. Faulty ICM (when the initial voltage is normal while disconnecting ICM connectors.
	Initial voltage is normal, but it drops down to 2 – 4 V while cranking the engine.	1. Incorrect peak voltage adapter connections. 2. Undercharged battery. 3. No voltage between the Black/White (+) and Body ground (–) at the ICM connector or loosen ICM connection. 4. An open circuit or loose connection in Green wire. 5. An open circuit or loose connection in Yellow/Blue and Blue/Yellow wires between the ignition coils and ICM. 6. Short circuit in ignition primary coil. 7. Faulty side stand switch or neutral switch. 8. An open circuit or loose connection in No.7 related circuit wires. • Side stand switch line: Green/White wire. • Neutral switch line: Light green/Red wire. 9. Faulty ignition pulse generator (measure the peak voltage). 10. Faulty ICM (in case when above No. 1 – 9 are normal).
	Initial voltage is normal, but no peak voltage while cranking the engine.	1. Faulty peak voltage adapter connections. 2. Faulty peak voltage adapter. 3. Faulty ICM (in case when above No.1, 2 are normal).
	Initial voltage is normal, but peak voltage is lower than standard value.	1. The multimeter impedance is too low; below 10 MΩ/DCV. 2. Cranking speed is too low (battery undercharged). 3. The sampling timing of the tester and measured pulse were not synchronized (system is normal if measured voltage is over the standard voltage at least once). 4. Faulty ICM (in case when above No. 1 – 3 are normal).
	Initial and voltage are normal, but does not spark.	1. Faulty spark plug or leaking ignition coil secondary current ampere. 2. Faulty ignition coil.
Ignition pulse generator	Peak voltage is lower than standard value.	1. The multimeter impedance is too low; below 10 MΩ/DCV. 2. Cranking speed is too low (battery undercharged). 3. The sampling timing of the tester and measured pulse were not synchronized (system is normal if measured voltage is over the standard voltage at least once). 4. Faulty ignition pulse generator (in case when above No. 1 – 3 are normal).
	No peak voltage.	1. Faulty peak voltage adapter. 2. Faulty ignition pulse generator.

IGNITION SYSTEM INSPECTION



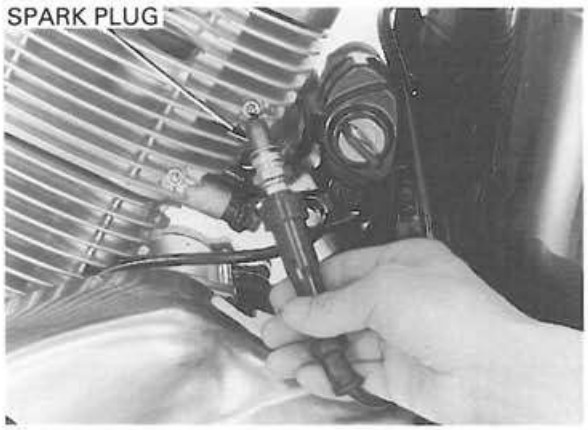
NOTE:

- If there is no spark at either plug, check all connections for loose or poor contact before measuring each peak voltage.
- Use the 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.
- If using an Imrie diagnostic tester (model 625), follow the manufacturer's instructions.

Connect the peak voltage adapter to the digital multimeter, or use the Imrie diagnostic tester.

TOOLS:
Imrie diagnostic tester (model 625) or
Peak voltage adaptor 07HGJ – 0020100 with
Commercially available digital multimeter
(impedance 10MΩ/DCV minimum)

IGNITION PRIMARY VOLTAGE INSPECTION



NOTE:

- Check all system connection before the inspection. If the system is disconnected, an incorrect peak voltage will register.
- Check cylinder compression at each cylinder and check that the spark plugs are installed correctly in each cylinder.

Support the motorcycle using the side stand.

Disconnect the spark plug caps from the spark plugs on the cylinder head (page 17-7).

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

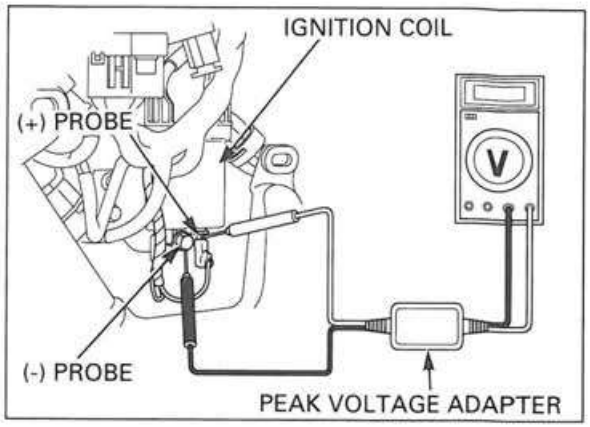
When servicing the front ignition coil:
– Remove the fuel tank (page 2-4).

When servicing the rear ignition coil:
– Remove the right side cover (page 2-4).

Do not disconnect the ignition coil primary wires.

Connect the peak voltage adaptor or Imrie tester to the ignition coil primary terminal.

TOOLS:
Imrie diagnostic tester (model 625) or
Peak voltage adapter 07HGJ – 0020100 with
Commercially available digital multimeter
(impedance 10MΩ/DCV minimum)



CONNECTION:
Front ignition coil:
Blue/Yellow (+) – Body ground (-)
Rear ignition coil:
Yellow/Blue (+) – Body ground (-)

⚠ WARNING

Avoid touching the spark plugs and tester probes to prevent electric shock.

Turn the ignition switch "ON" and engine stop switch to "RUN".
Check for initial battery voltage.
If battery voltage is not present, follow the checks described in the troubleshooting on page 17-3.

Shift the transmission into neutral.
Crank the engine with the starter motor and read each ignition coil primary voltage.

PEAK VOLTAGE: 100 V minimum

NOTE:

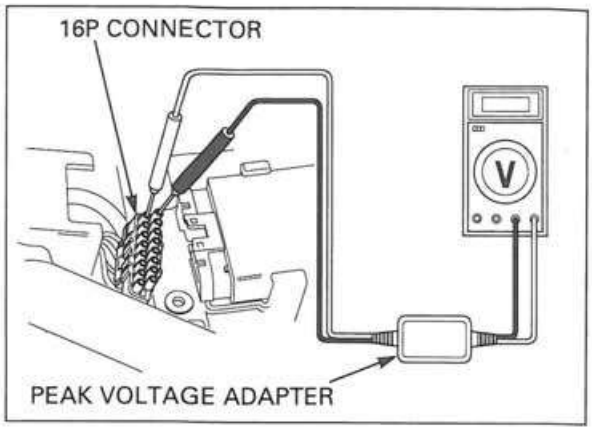
Although measured values are different for each ignition coil, they are normal as long as the voltage is higher than the standard value.

If the peak voltage is lower than the standard value, follow the checks described in the troubleshooting on page 17-3.

IGNITION PULSE GENERATOR PEAK VOLTAGE INSPECTION

NOTE:

- Check all system connections before the inspection. If the system is disconnected, an incorrect peak voltage will register.
- Check cylinder compression at each cylinder and check that the spark plugs are installed correctly in each cylinder.

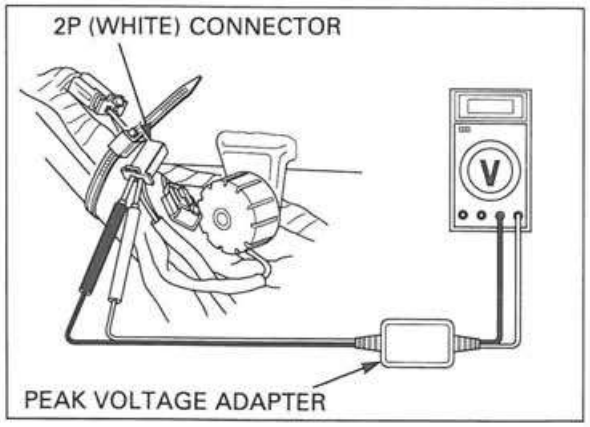


Remove the ignition control module (ICM) (page 17-7).
Disconnect the ignition control module (ICM) 16P connector.
Connect the peak voltage adaptor to the 16P connector wire harness side.

TOOLS:
Imrie diagnostic tester (model 625) or
Peak voltage adapter 07HGJ – 0020100 with
Commercially available digital multimeter
(impedance 10MΩ/DCV minimum)

CONNECTION: White/Yellow (+) – Yellow (-)

Turn the ignition switch "ON" and engine stop switch to "RUN".
Shift the transmission into neutral.
Crank the engine with the starter motor and read the ignition pulse generator peak voltage.



PEAK VOLTAGE: 0.7 V minimum

If the peak voltage is lower than standard value, perform the following procedure.

Remove the steering covers (page 2-3).

Disconnect the ignition pulse generator 2P (White) connector.
Turn the ignition switch "ON" and engine stop switch to "RUN".
Shift the transmission into neutral.
Crank the engine with the starter motor and measure the peak voltage at the 2P (White) connector ignition pulse generator side and record it.

CONNECTION: White/Yellow (+) – Yellow (-)

PEAK VOLTAGE: 0.7 V minimum

Compare their values at the ignition control module (ICM) 16P connector and the ignition pulse generator 2P connector.

If the value at the ignition pulse generator is normal, but abnormal at the ignition control module (ICM):
- Open circuit in the ignition pulse generator wires
- Loosen connection in the ignition pulse generator connector

If both values are abnormal:
- The ignition pulse generator is likely to be faulty. Check and perform troubleshooting on page 17-3.
- For ignition pulse generator replacement, refer to section 8.

IGNITION CONTROL MODULE (ICM)

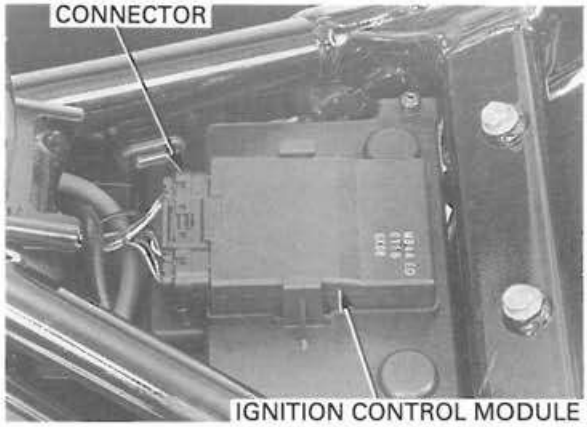
REMOVAL/INSTALLATION

Remove the seat (page 2-2).

Remove the ignition control module (ICM) from the battery case cover.

Disconnect the 16P connector.

Installation is in the reverse order of removal.

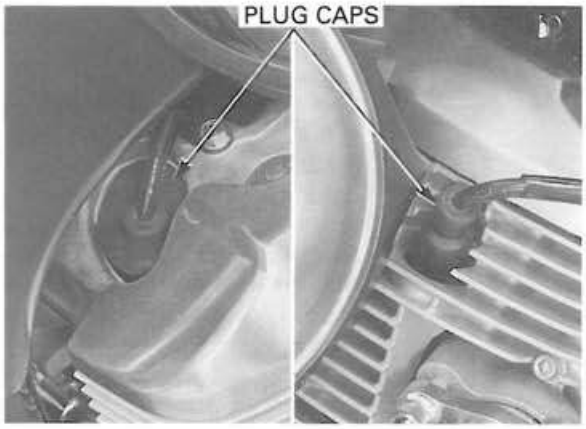


IGNITION COIL

REMOVAL/INSTALLATION

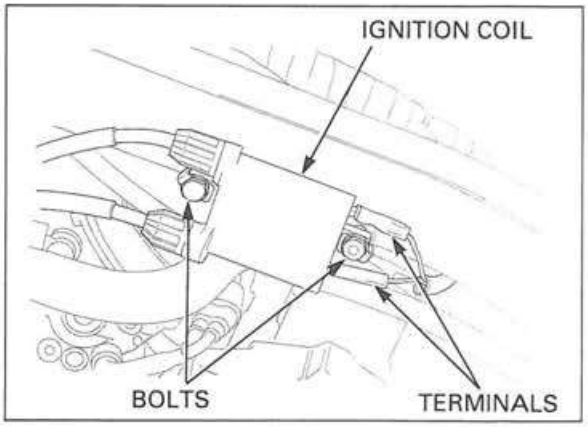
FRONT:
Disconnect the spark plug caps from the spark plugs.

Remove the fuel tank (page 2-4).



Disconnect the ignition coil primary wires from the terminals.
Remove the bolts and ignition coil.

Installation is in the reverse order of removal.



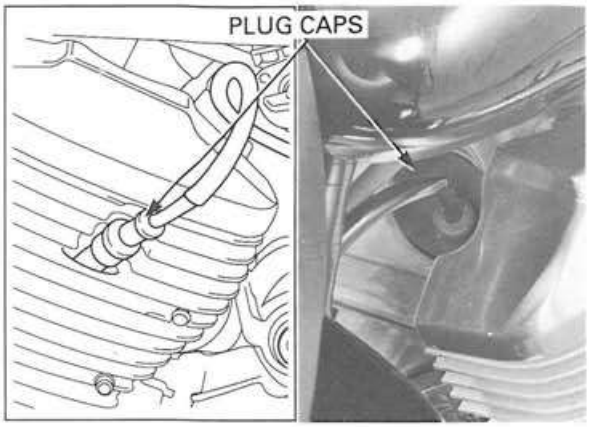
REAR:
Remove the right side cover (page 2-4).

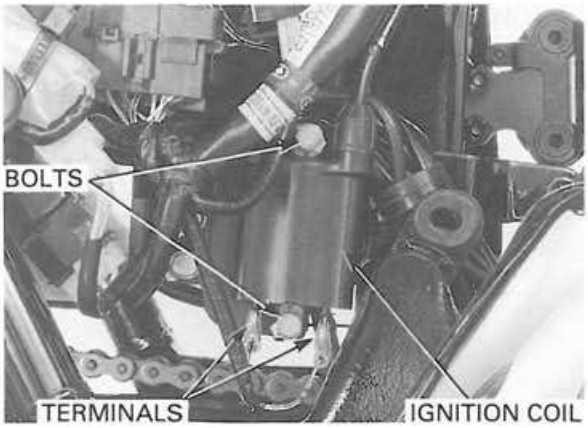
Disconnect the spark plug caps from the spark plugs.
Disconnect the ignition coil primary wires from the terminals.
Remove the bolts and ignition coil.

Installation is in the reverse order of removal.

NOTE:

- Route the spark plug wires properly (Section 1).
- Connect the primary wires to the original position.
  Front:
  Black terminal: Black/White wire
  Green terminal: Blue/Yellow wire
  Rear:
  Black terminal: Black/White wire
  Green terminal: Yellow/Blue wire





IGNITION TIMING

⚠ WARNING

If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that may cause loss of the consciousness and lead to death.
Run the engine in an open area or with an exhaust evacuation system in an enclosed area.

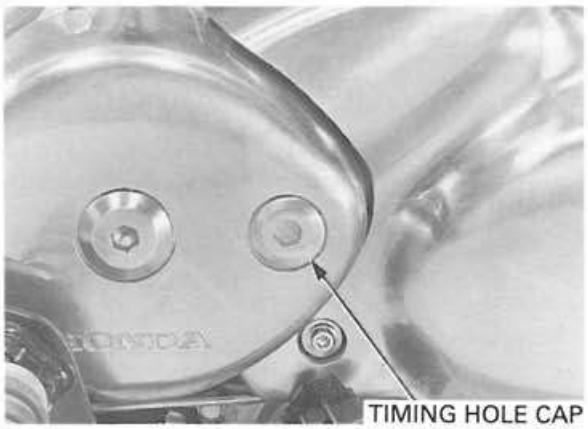
Read the manufacturer's instructions for the timing light before operating.

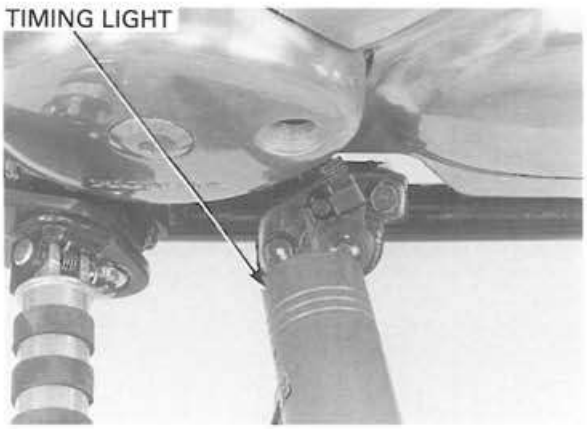
Warm up the engine.
Stop the engine.

Remove the timing hole cap.

Connect a timing light to the rear (No.1) cylinder spark plug wire.
Start the engine and let it idle.

IDLE SPEED: 1,000 ± 100 rpm

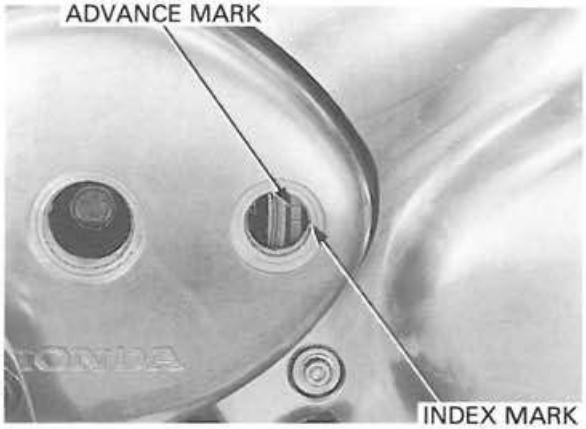




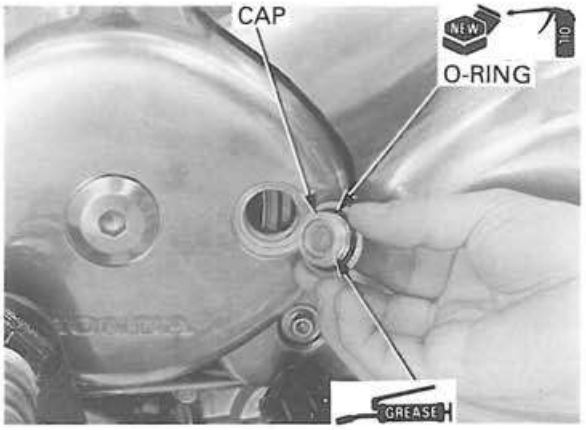
The timing is correct if the "F" mark on the flywheel aligns with the index mark on the left crankcase cover.

Increase the engine speed by rotating the throttle stop control knob.
The timing is correct if the advance marks on the flywheel aligns with the index mark on the left crankcase cover.

Stop the engine and connect the timing light to the front (No.2) cylinder spark plug wire.

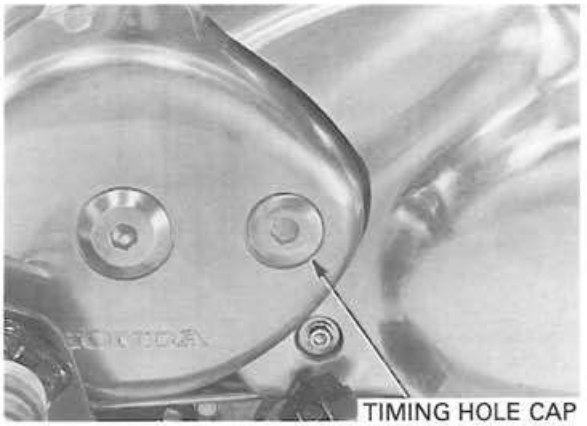


Recheck the ignition timing at the front cylinder.
Coat the new O-ring with engine oil and install it in the timing hole cap groove.
Apply grease to the timing hole cap threads and flange surface.

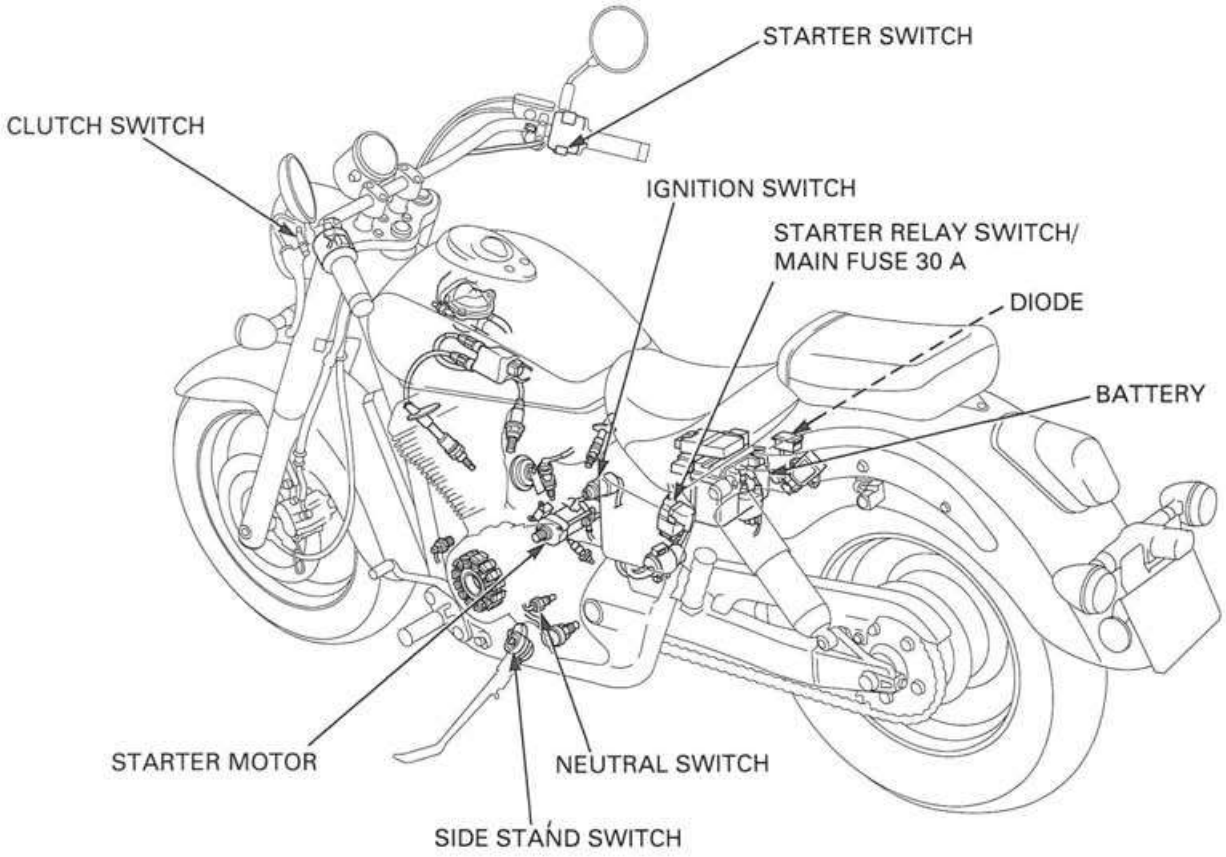


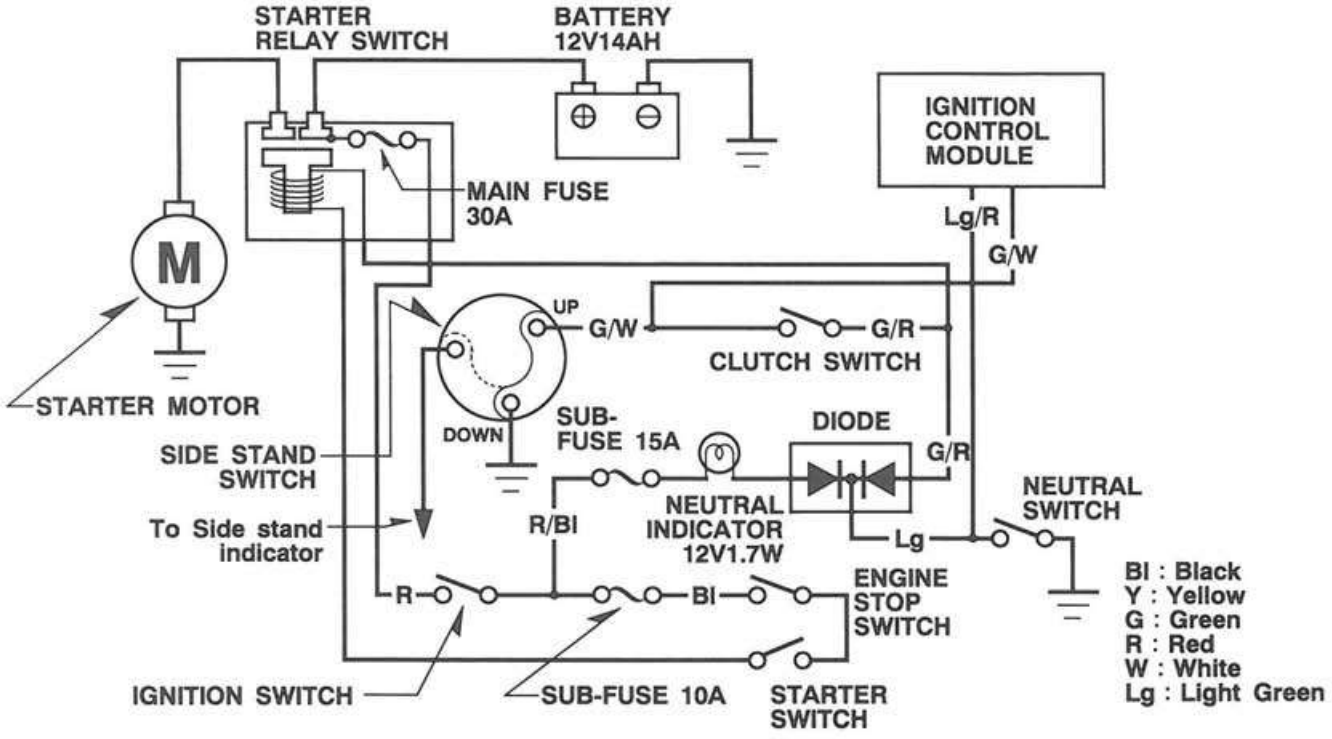
Install and tighten the timing hole cap to the specified torque.

TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)



SYSTEM DIAGRAM





18. ELECTRIC STARTER

SERVICE INFORMATION

GENERAL

⚠ WARNING

Always turn the ignition switch OFF before servicing the starter motor. The motor could suddenly start, causing serious injury.

- When checking the starter system, always follow the steps in the troubleshooting flow chart (page 18-2).
- A weak battery may be unable to turn the starter motor quickly enough, or supply adequate ignition current.
- If current continues to flow kept flowing through the starter motor while the engine is not cranking over, the starter motor may be damaged.
- Always turn of the ignition switch before disconnecting any electrical components.
- For following components inspections, refer to the following pages, for the parts locations, see page 18-0 of this manual.
  - Side stand switch (Section 19)
  - Neutral switch (Section 19)
  - Ignition switch (Section 19)
  - Starter switch (Section 19)
  - Clutch switch (Section 19)

SPECIFICATIONS

Unit: mm (in)

ITEM	STANDARD	SERVICE LIMIT
Starter motor brush length	12.5 (0.49)	6.5 (0.26)

TORQUE VALUES

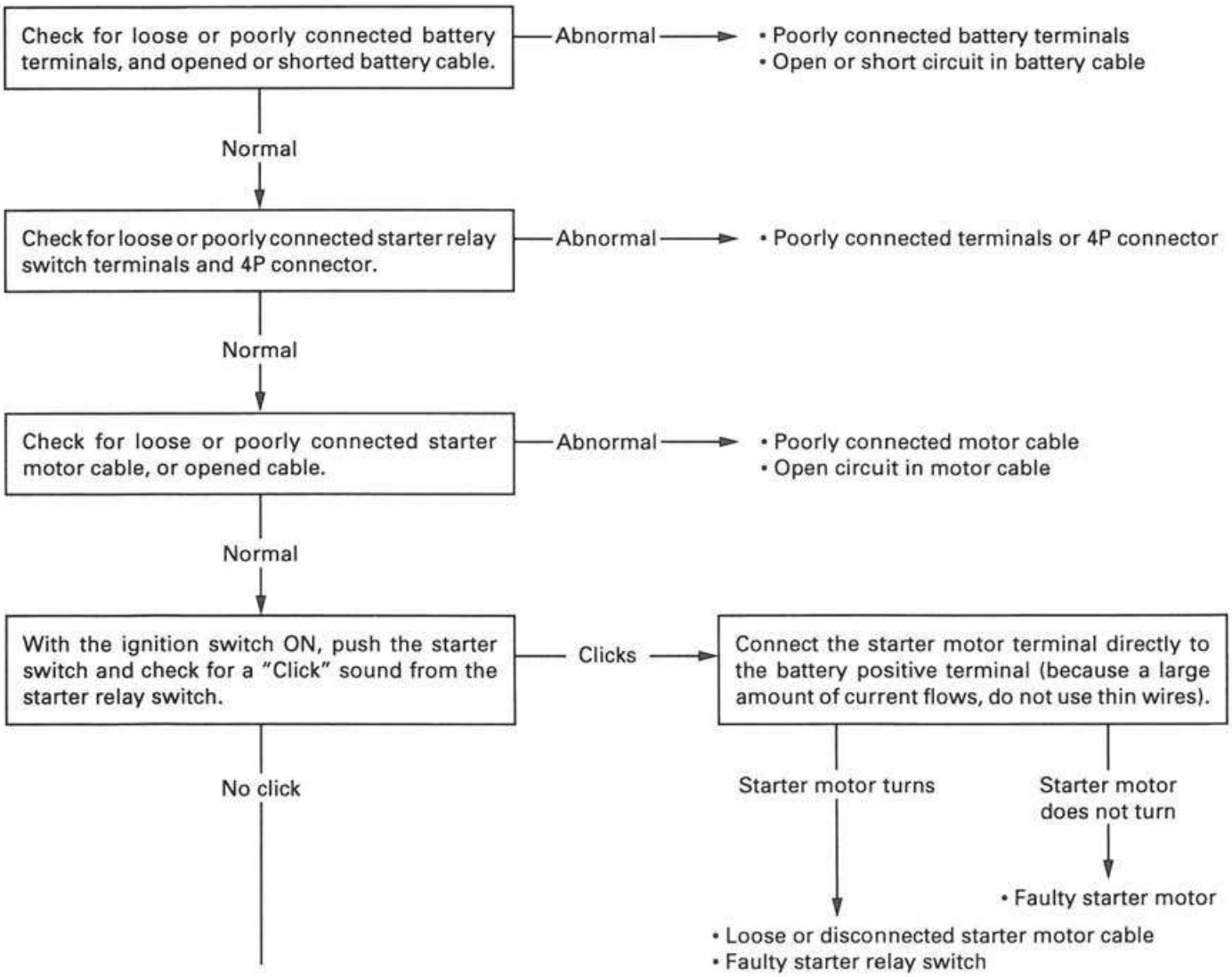
Starter motor cable nut	10 N•m (1.0 kgf•m, 7 lbf•ft)

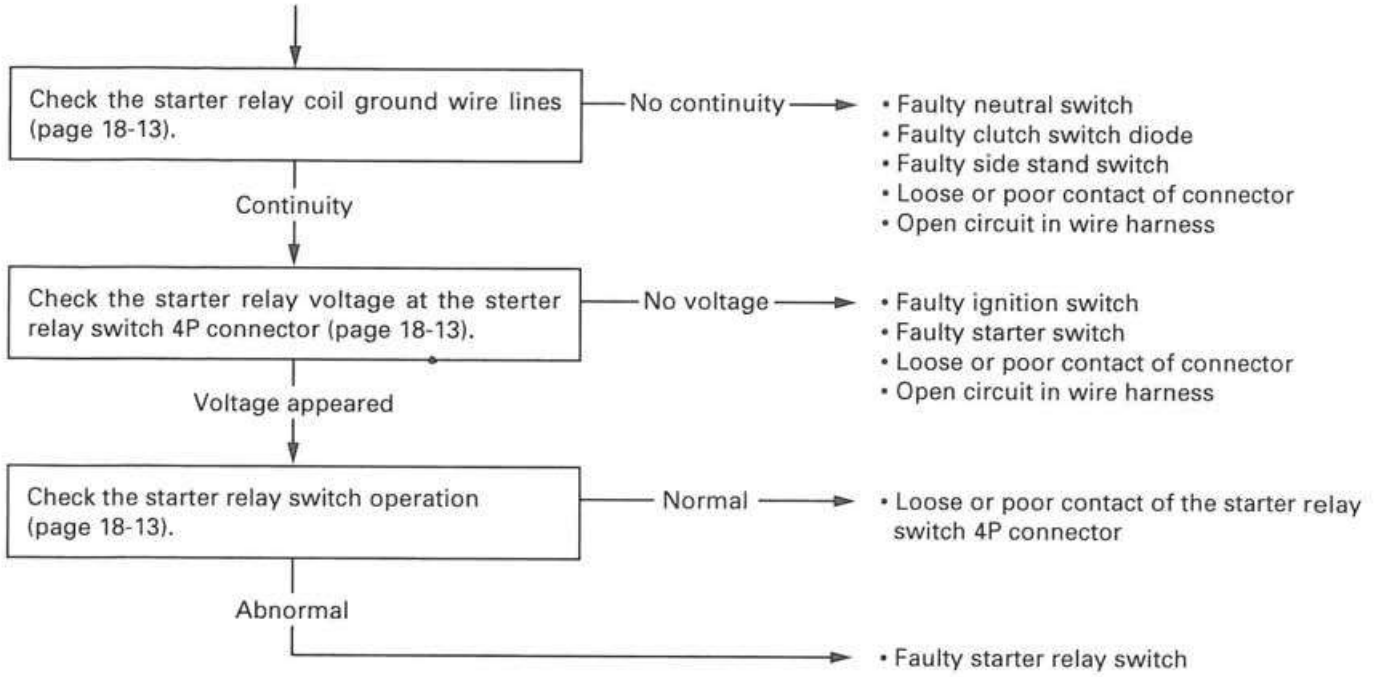
TROUBLESHOOTING

- Check for the following before troubleshooting the system.
  - Blown main fuse (30 A) or sub-fuse (10 A, 15 A).
  - Loose battery and starter motor cable.
  - Discharged battery.
- The starter motor should turn when the transmission is in neutral
- The starter motor should turn when transmission is in any gear as indicated the chart below.

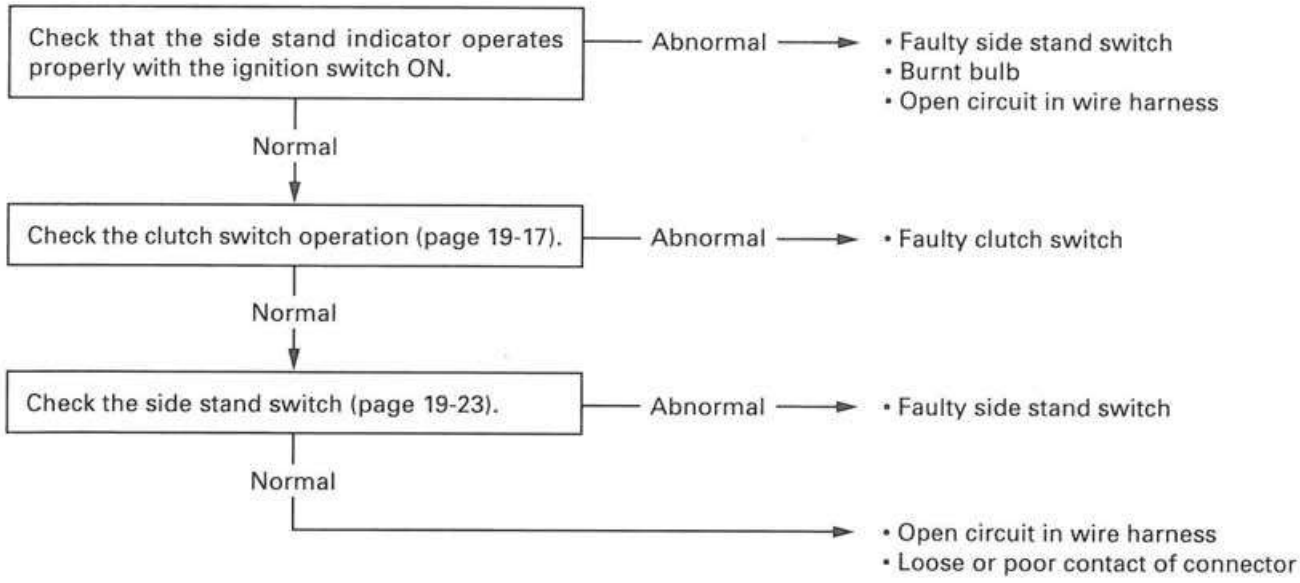
Gear Position	Side Stand	Clutch Lever	Starter Motor
Any Gear	Up	Pulled in	Turn
		Released	Does not turn
	Down	Pulled in	Does not turn
		Released	Does not turn

Starter motor will not turn





The starter motor turns when the transmission is in neutral, but does not turn with the transmission in any position except neutral. The side stand is up and the clutch lever is pulled in.



Starter motor turns slowly
- Poorly connected battery terminal cable
- Poorly connected starter motor cable
- Faulty starter motor
- Worn or damaged starter motor brush
- Low battery

Starter motor turns, but engine does not turn
- Starter motor is running backwards
  - Case assembled improperly
  - Terminals connected improperly
- Faulty starter clutch

Starter relay switch "clicks", but engine does not turn over
- Crankshaft does not turn due to engine problem
- Faulty starter reduction gear
- Faulty starter idle gear
- Low battery

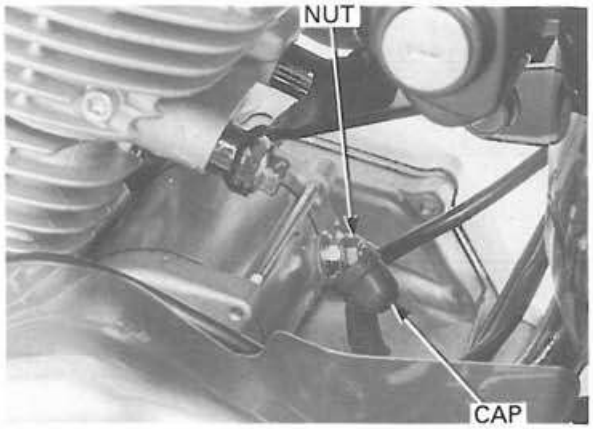
STARTER MOTOR

REMOVAL

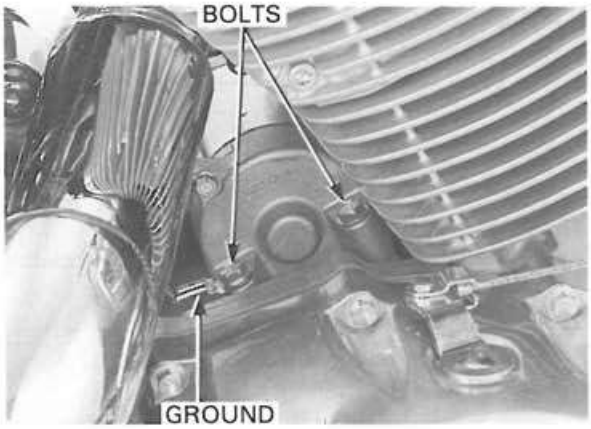
⚠ WARNING

Always turn the ignition switch OFF before servicing the starter motor. The motor could suddenly start, causing serious injury.

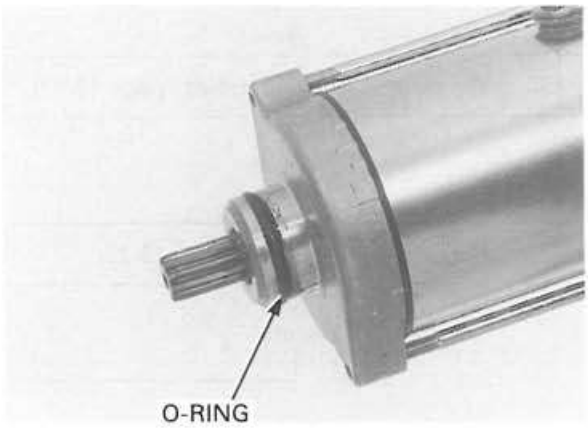
Remove the rubber cap and starter motor cable nut. Disconnect the starter motor cable.



Remove the bolts and ground cable.
Remove the starter motor from the left side.



Remove the O-ring.

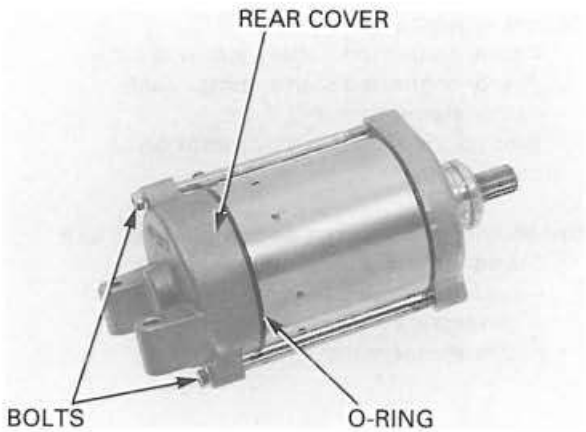


DISASSEMBLY

NOTE:

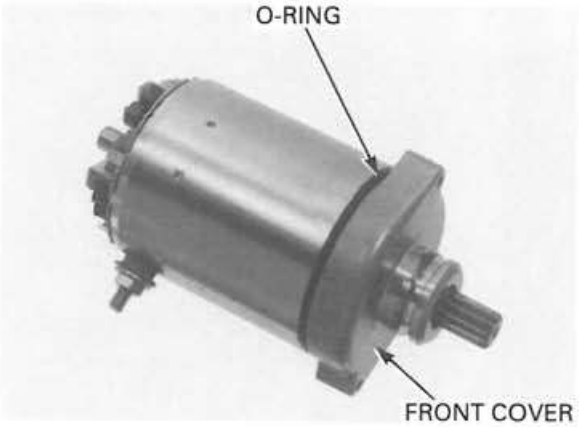
Record the location and number of shims and washers.

Remove the bolts, rear cover and O-ring.

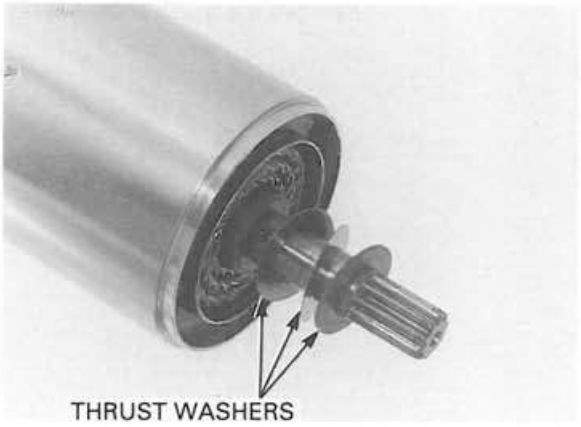


Remove the thrust washers.

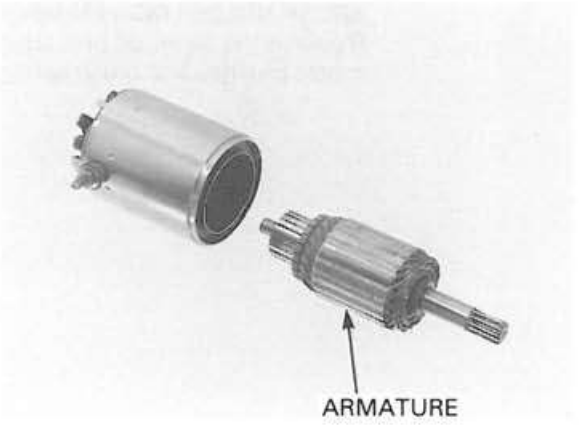
Remove the front cover and O-ring.



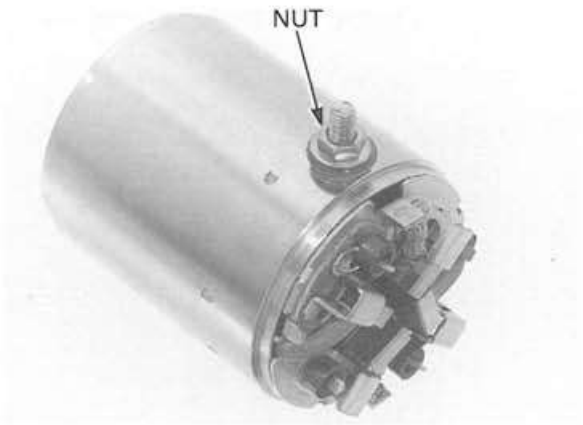
Remove the thrust washers.



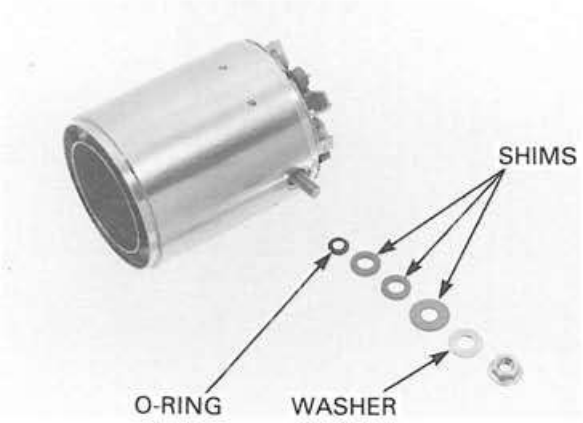
Remove the armature.



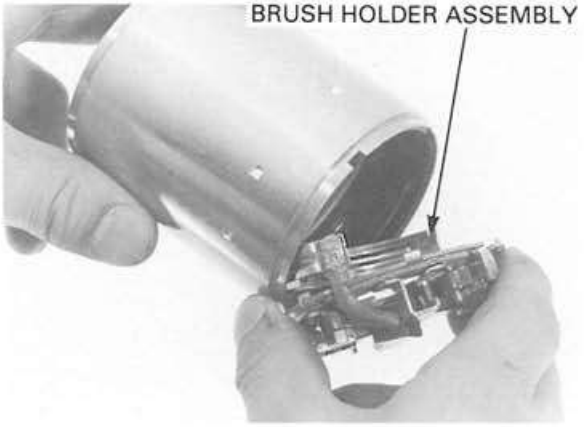
Remove the terminal nut.



Remove the washer, shims and O-ring.

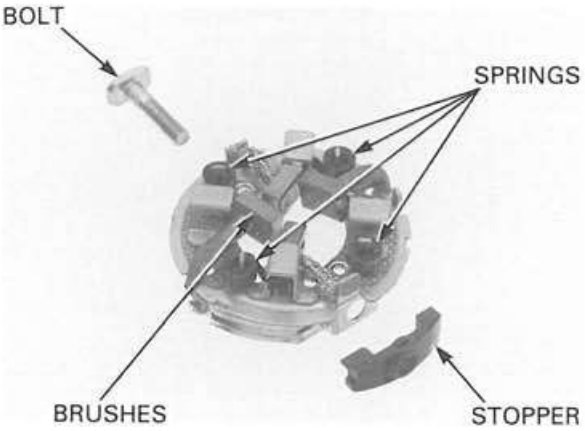


Remove the brush holder assembly.



BRUSH HOLDER DISASSEMBLY

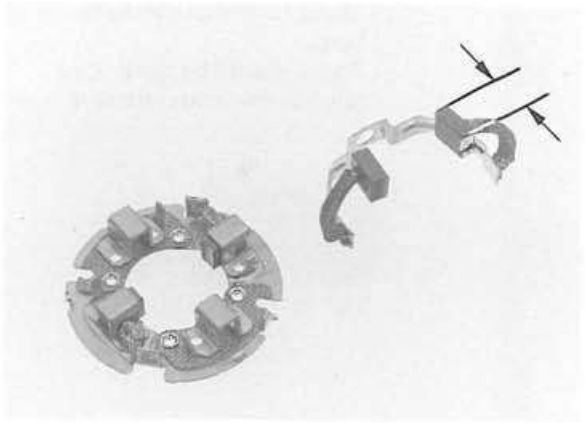
Remove the terminal bolt stopper, terminal bolt, motor brushes and brush springs.



INSPECTION

Measure the each brush length

SERVICE LIMIT: 6.5 mm (0.26 in)

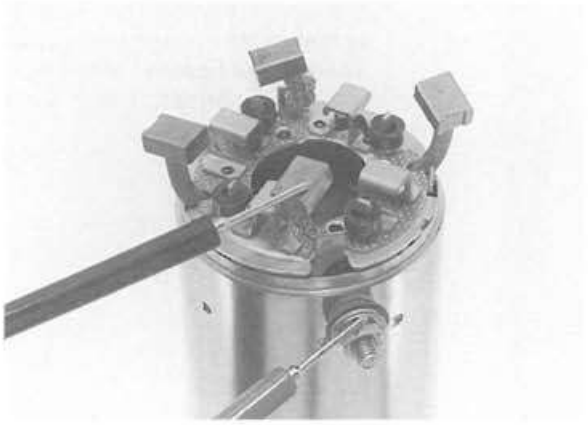


Check for continuity between starter motor terminal and positive brush.

There should be continuity.

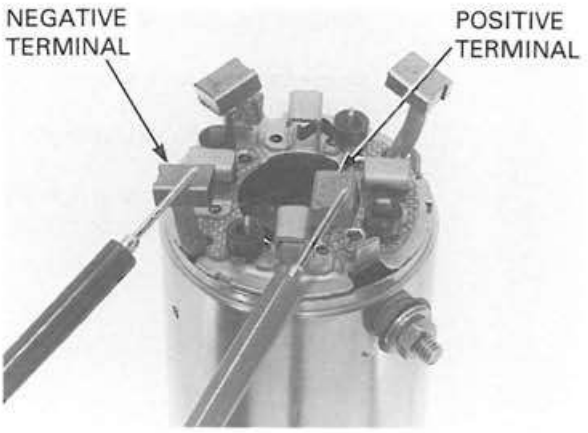
Check for continuity between starter motor terminal and starter motor case.

There should be no continuity.



Check for continuity between positive and negative terminals.

There should be no continuity.

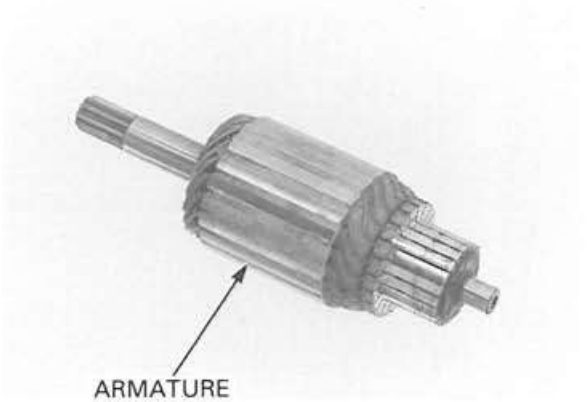


Check the commutator for damage or abnormal wear.
Replace the armature with a new one if necessary.

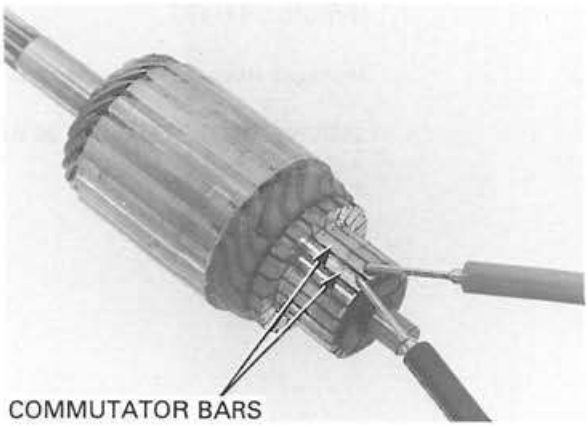
Check the commutator for metallic debris between commutator bars.
Clean the metallic debris off between commutator bars.

Do not use emery or sand paper on the commutator.

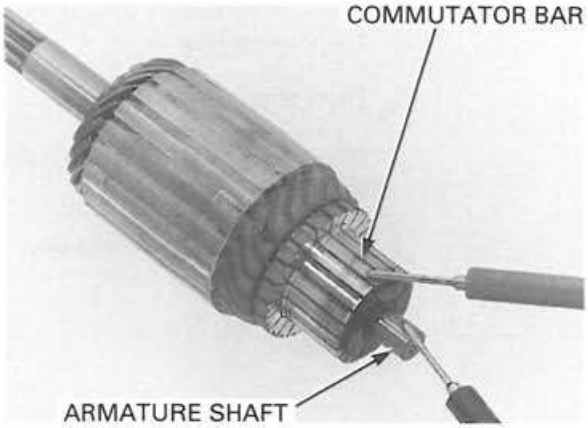
Check the commutator for discolorration of the commutator bar.
Replace the armature with a new one if necessary.



Check for continuity between pairs of commutator bars.
There should be continuity.
Replace the armature with a new one if necessary.



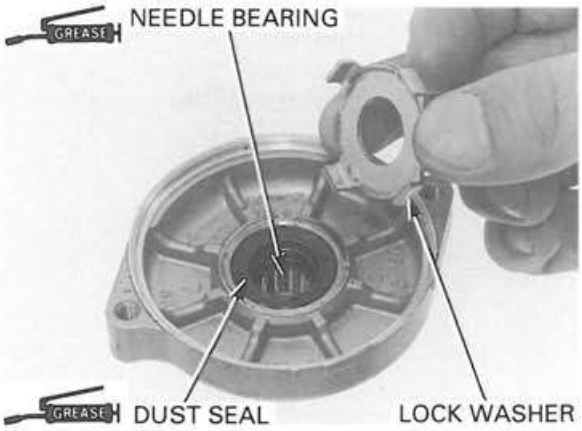
Check for continuity between each individual commutator bar and the armature shaft.
There should be no continuity.
Replace the armature with a new one if necessary.



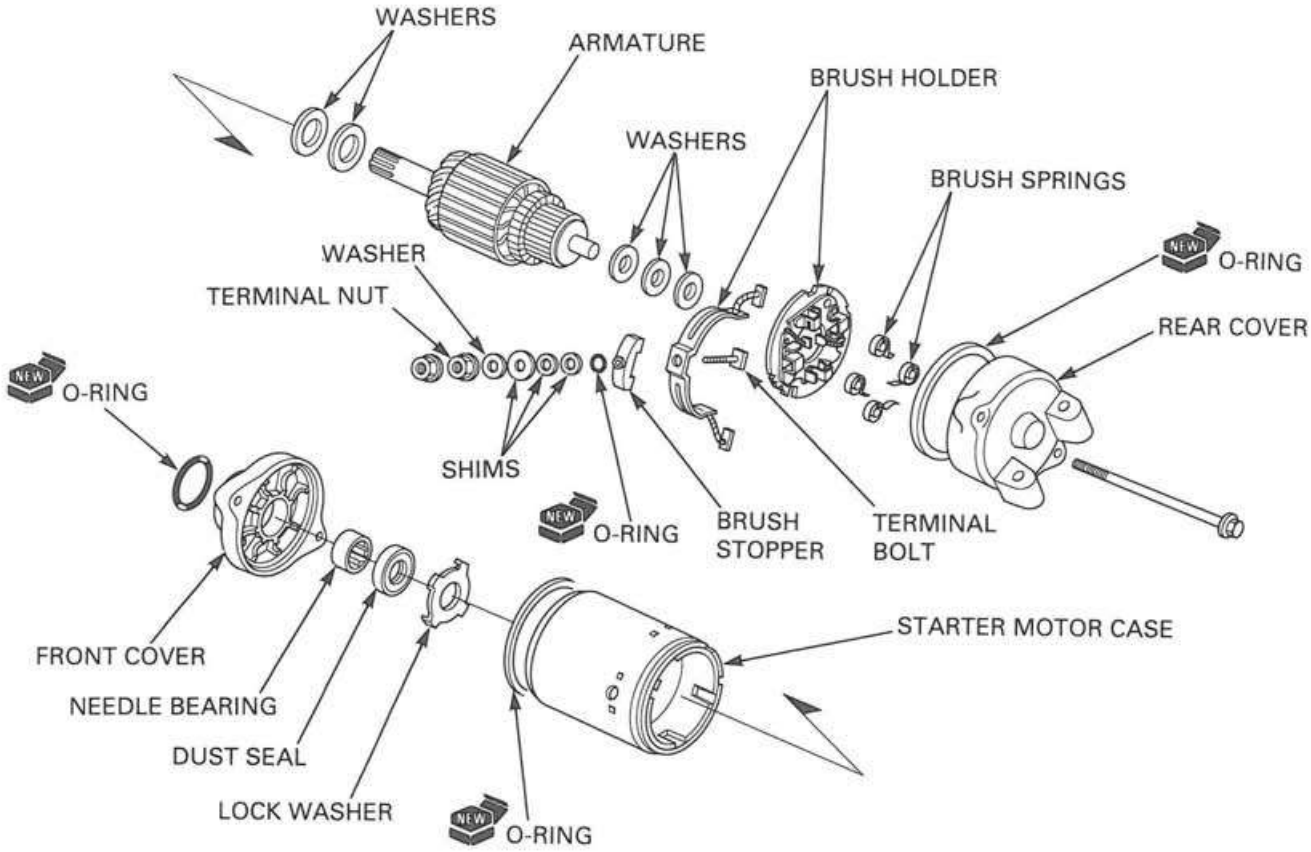
Remove the lock washer from the front cover.

Check the dust seal and needle bearing for wear or damage.
Check the needle bearing rotates smoothly.

Apply grease to the seal lips and needle bearing.
Install the lock washer to the front cover.

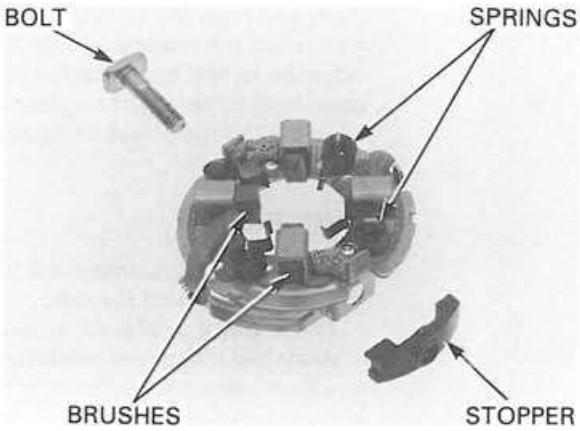


ASSEMBLY



BRUSH HOLDER ASSEMBLY

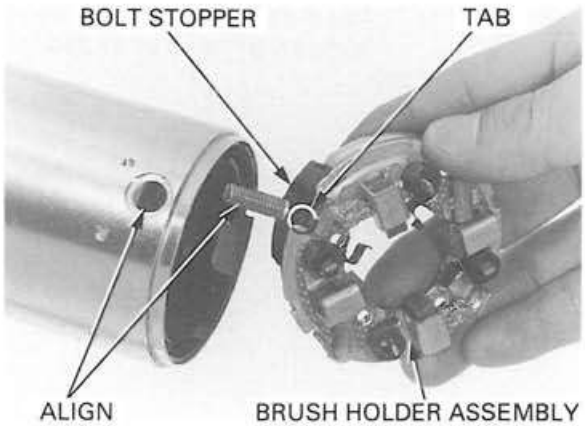
Install the brush spring, motor brush and terminal bolt.



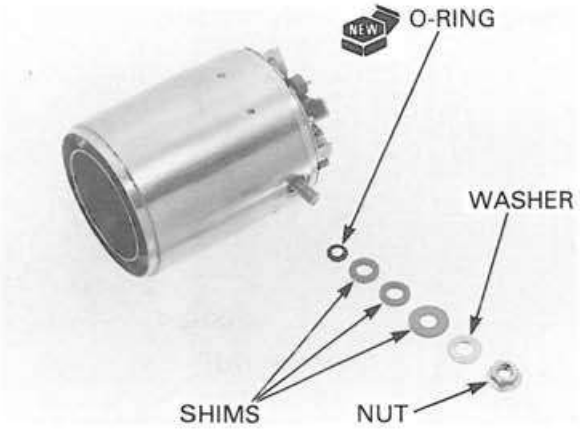
Install the terminal bolt stopper with its tab side facing to the rear cover side.

Install the terminal bolt and brush holder to the starter motor case aligning the terminal bolt and hole on the starter motor case.

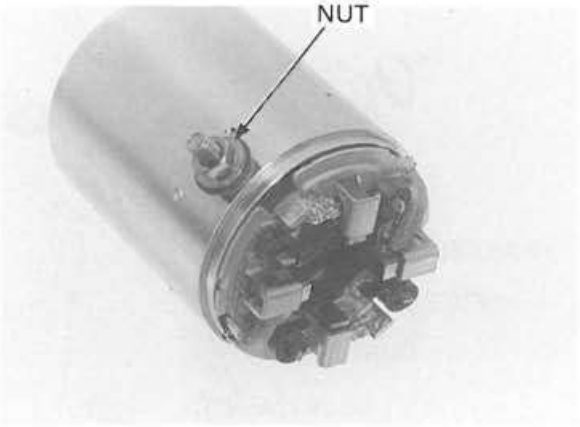
Align the starter motor case notch with the brush holder tab.



Install the new O-ring.
Install the same number of shims in the same locations as when disassembled.
Install the washer and terminal nut.



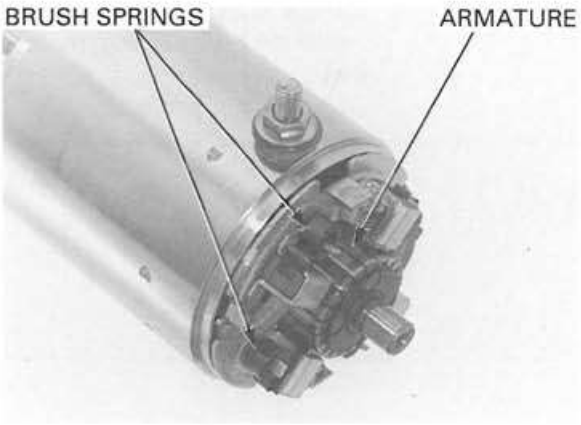
Tighten the terminal nut securely.



Push and hold the brush inside the brush holder, and install the armature through the brush holder. When installing the armature into the stater motor case, hold the armature tightly to keep the magnet from pulling the armature against the stater motor case.

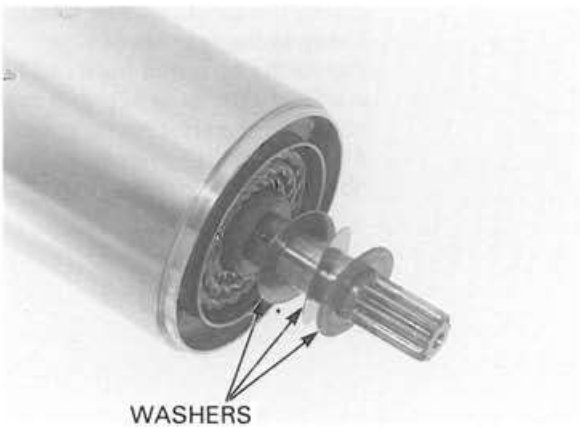
CAUTION:

- ***The coil may be damaged if the magnet pulls the armature against the case.***
- ***The sliding surfaces of the brushes can be damaged if they are not installed properly.***



Set the brush springs.

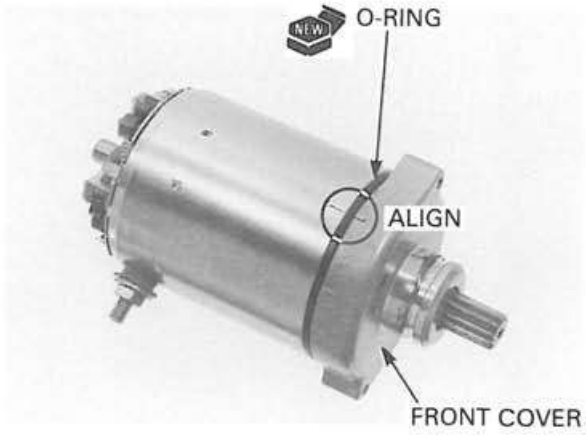
Install the same number of thrust washers in the same locations as when disassembled.



Install the new O-ring and front cover with aligning the index mark.

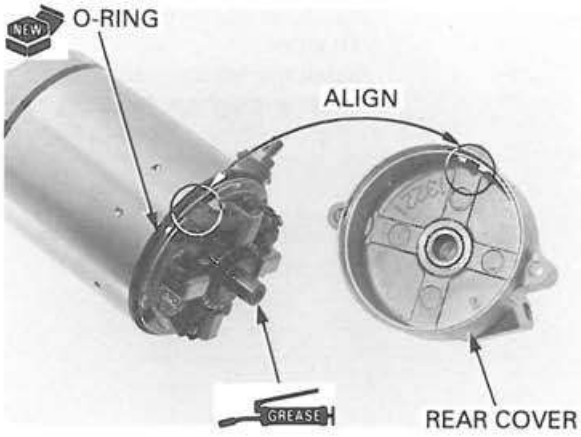
CAUTION:

When installing the front cover, take care to prevent damaging the oil seal lip with the armature shaft.

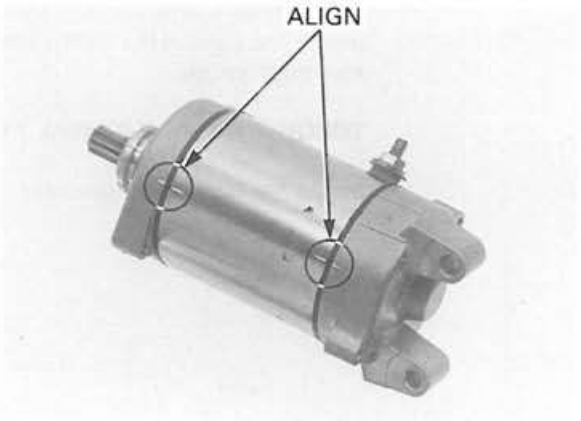


Install the same number of thrust washers in the same locations as when disassembled.

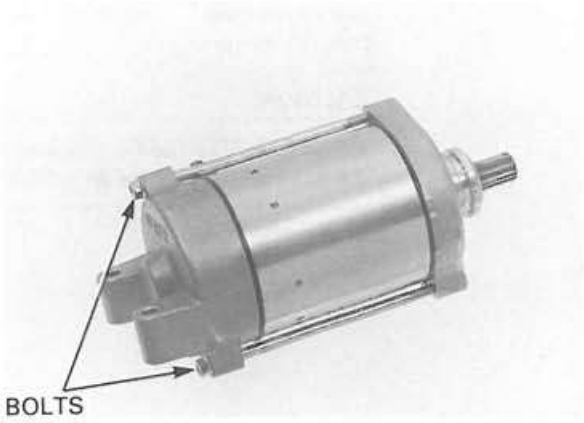
Install the new O-ring.
Apply thin coat of grease to the armature shaft end.
Install the rear cover aligning its groove with the brush holder tab.



Align the index marks on the starter motor case and front cover.



Install and tighten the bolts securely.

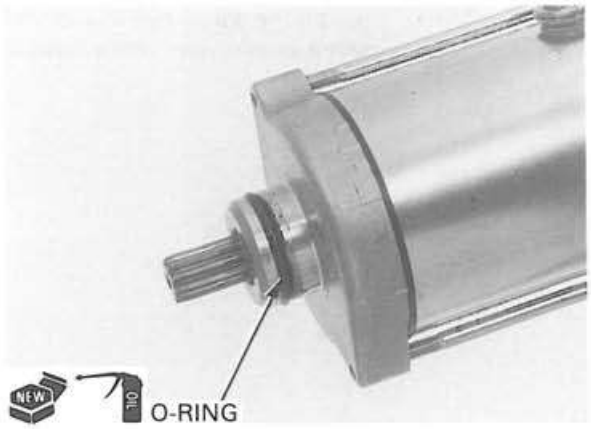


INSTALLATION

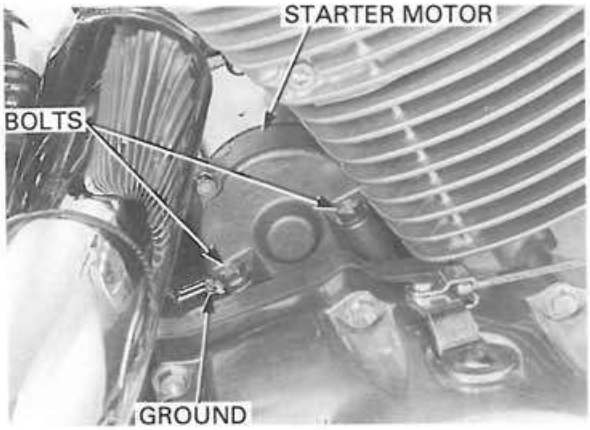
NOTE:

Route the starter motor cable and ground cable properly (page 1-29).

Apply oil to the new O-ring and install it to the starter motor groove.



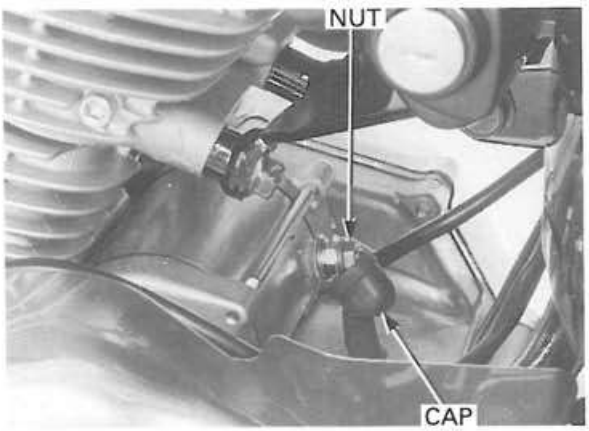
Install the starter motor onto the crankcase from the left side.
Install the ground cable.
Install and tighten the bolts securely.



Connect the starter motor cable.
Install and tighten the starter motor cable nut to the specified torque.

TORQUE: 10 N•m (1.0 kgf•m, 7 lbf•ft)

Install the rubber cap securely.



STARTER RELAY SWITCH

INSPECTION

NOTE:

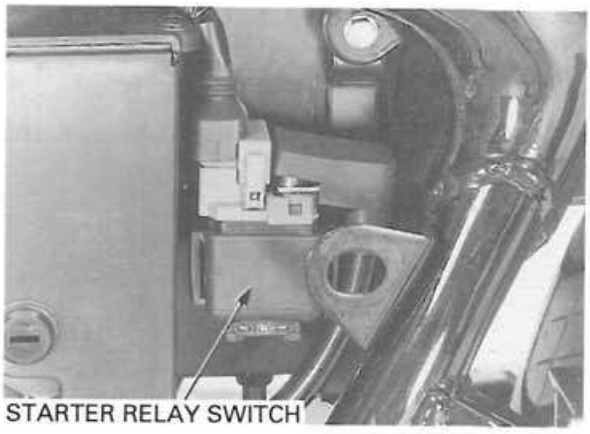
Before checking the starter relay switch, check for battery condition.

Remove the left side cover (page 2-4).

Shift the transmission into neutral.
Turn the ignition switch ON and engine stop switch to RUN.
Depress the starter switch button.

The coil is normal if the starter relay switch clicks.

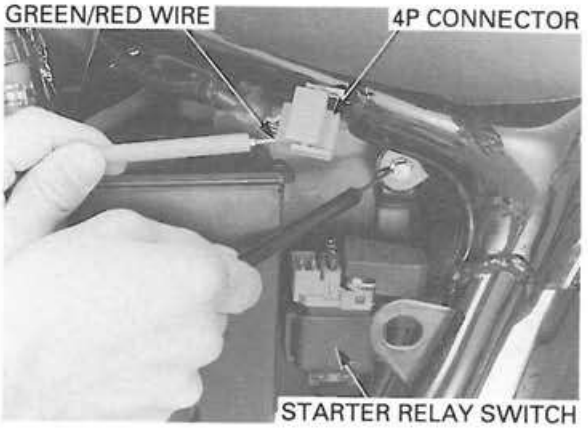
If you don't hear the switch "CLICK", inspect the relay switch using the procedure below.



GROUND LINE

Disconnect the starter relay switch 4P connector.
Check for continuity between the Green/Red wire (ground line) and ground.

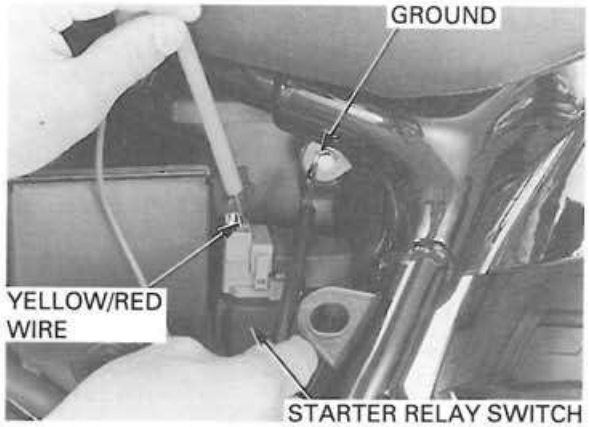
If there is continuity when the transmission is in neutral or when the clutch is disengaged and the side stand switch is up, the ground circuit is normal (In neutral, there is a slight resistance due to the diode).



STARTER RELAY VOLTAGE

Connect the starter relay switch 4P connector.
Shift the transmission into neutral.
Measure the voltage between the Yellow/Red (+) wire and ground at the starter relay switch 4P connector.

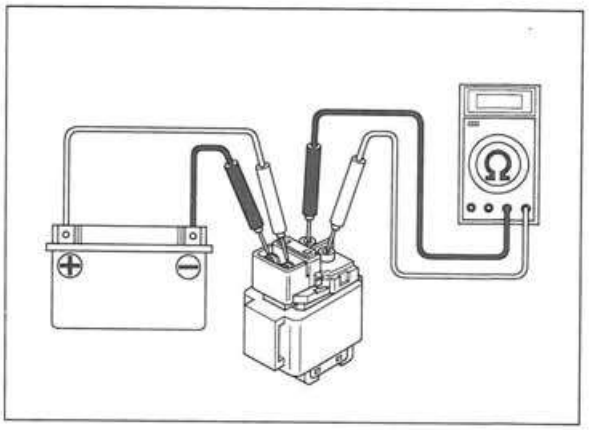
If the battery voltage appears only when the starter switch is pressed with the ignition switch ON, it is normal.



OPERATION CHECK

Disconnect the starter relay switch 4P connector and cables.
Connect a fully charged 12 V battery positive wire to the relay switch Yellow/Red wire terminal and negative wire to the Green/Red wire terminal.

There should be continuity between the large terminals while the battery is connected, and no continuity when the battery is disconnected.



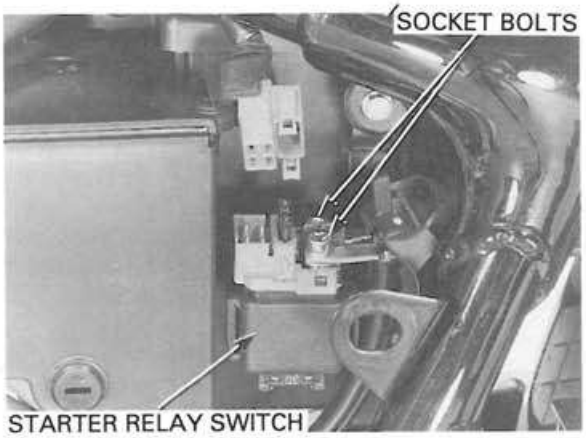
REMOVAL/INSTALLATION

Remove the left side cover (page 2-4).

Disconnect the starter relay 4P connector.

Remove the socket bolts and cables.
Remove the starter relay switch.

Installation is in the reverse order of removal.

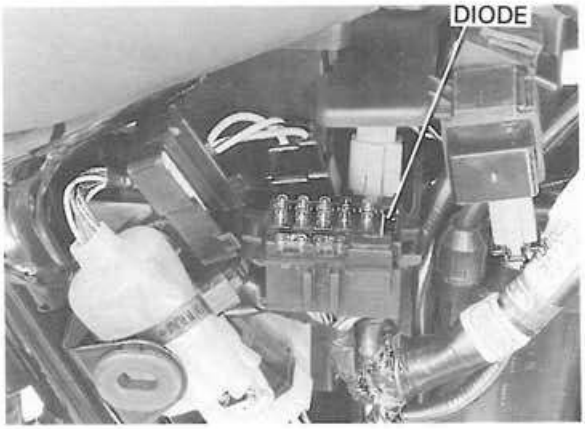


CLUTCH DIODE

INSPECTION

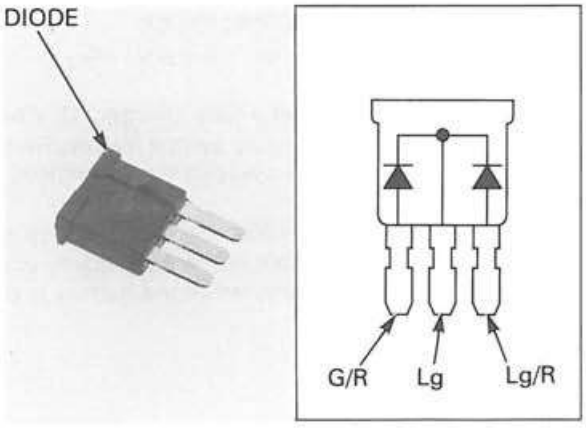
Remove the right side cover (page 2-4).

Open the fuse box and remove the diode.



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

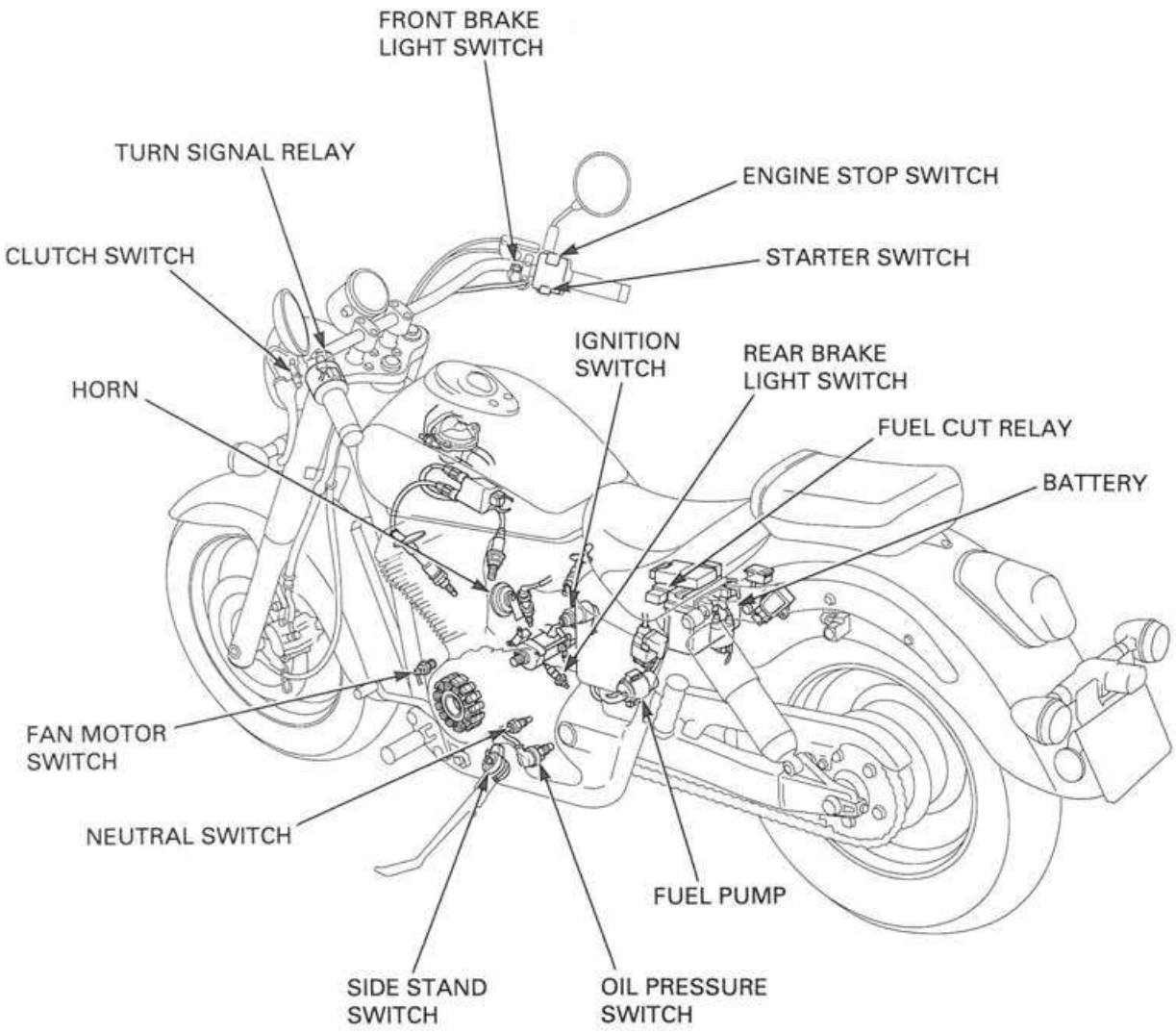
If there is continuity in one direction, the diode is normal.



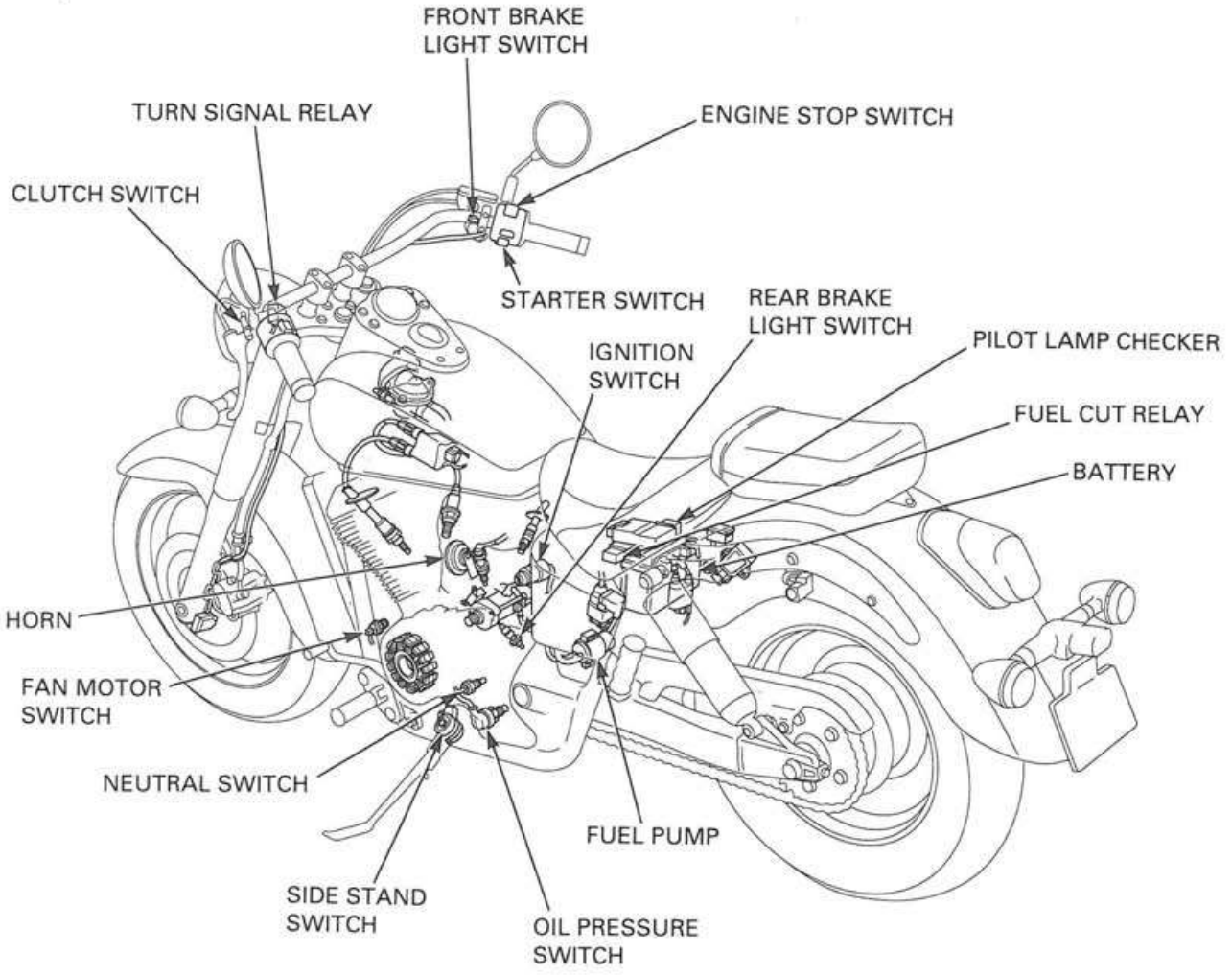
MEMO

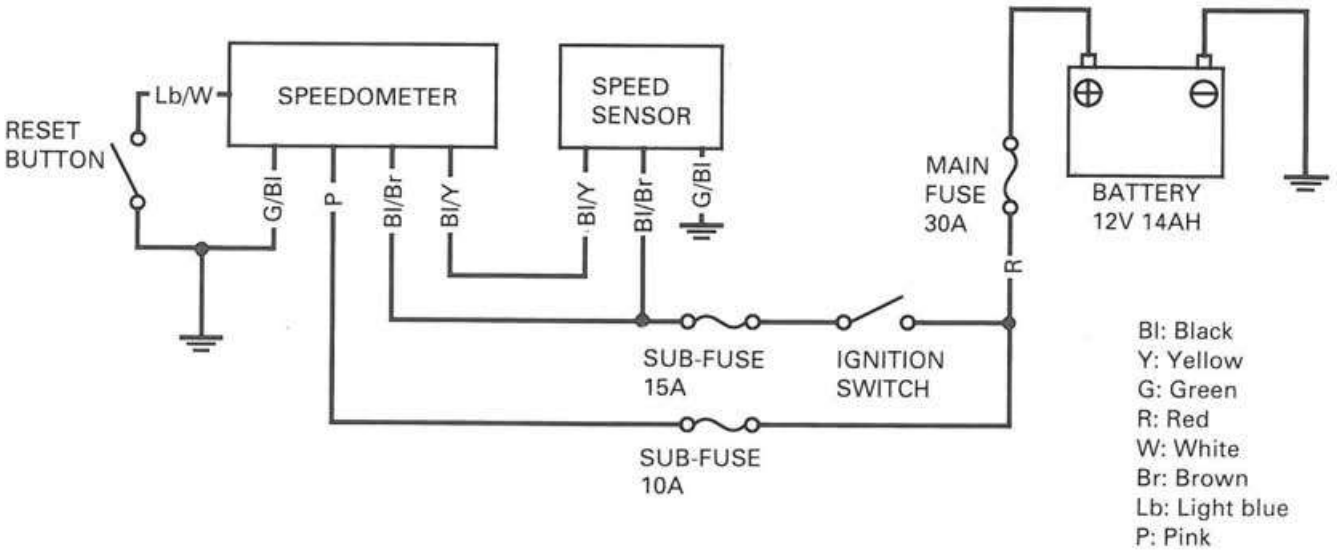
SYSTEM DIAGRAM

VT750C :
VT750CD/CD2 ('98 – 2000) :



VT750CD/CD2 (After 2000) :
VT750C3/CD3 :





SERVICE INFORMATION

GENERAL

⚠ WARNING

- ***A halogen headlight bulb becomes very hot while the headlight is ON, and remains hot for a while after it is turned OFF. Be sure to let it cool down before servicing.***
- ***Use an electric heating element to heat the water/coolant mixture for the thermosensor inspection. Keep all flammable materials away from the electric heating element. Wear protective clothing, insulated gloves and eye protection.***

- Note the following when replacing the halogen headlight bulb.
  - Wear clean gloves while replacing the bulb. Do not put finger prints on the headlight bulb, as they may create hot spots on the bulb and cause it to break.
  - If you touch the bulb with your bare hands, clean it with a cloth moistened with alcohol to prevent its early failure.
  - Be sure to install the dust cover after replacing the bulb.
- All plastic connectors have locking tabs that must be released before disconnecting, and must be aligned when reconnecting.
- Always turn off the ignition switch before disconnecting any electrical component.
- A continuity test can be made with switches installed on the motorcycle.
- Check the battery condition before performing any inspection that requires proper battery voltage.
- If you disconnect the battery terminal, the trip meter memory is erased (:VT750CD/CD2 (After 2000), VT750C3/CD3).

ITEM			SPECIFICATIONS
Bulbs	Headlight (High/Low beam)		12 V – 60/55 W
	Brake/tail light		12 V – 32/3 CP
	Front turn signal/running light		12 V – 21/5 W × 2
	Rear turn signal light		12 V – 21 W × 2
	License light		12 V – 5 W
	Speedometer light	VT750C VT750CD/CD2 ('98 – 2000)	12 V – 3.4 W
		VT750CD/CD2 (After 2000) VT750C3/CD3	12 V – 1.7 W
	Turn signal indicator		12 V – 3.4 W
	High beam indicator		12 V – 3.4 W
	Neutral indicator		12 V – 3.4 W
	Side stand indicator	VT750CD/CD2 (After 2000) VT750C3/CD3	12 V – 3.4 W
	Oil indicator	VT750CD/CD2 (After 2000) VT750C3/CD3	12 V – 3.4 W
	Temp indicator	VT750CD/CD2 (After 2000) VT750C3/CD3	12 V – 3.4 W
Fuse	Main fuse		30 A
	Sub-fuse		10 A × 4, 15 A × 1
Fan motor switch	Starts to close (ON)		98 – 102 °C (208 – 216 °F)
	Starts to open (OFF)		93 – 97 °C (199 – 207 °F)
Coolant temperature sensor	Starts to close (ON)		112 – 118 °C (259 – 270 °F)
	Starts to open (OFF)		Below 108 °C (252 °F)

TORQUE VALUES

Oil pressure switch	12 N•m (1.2 kgf•m, 9 lbf•ft)	Apply sealant to the threads
Neutral switch	12 N•m (1.2 kgf•m, 9 lbf•ft)	
Handlebar switch screw	3 N•m (0.3 kgf•m, 2.2 lbf•ft)	
Fan motor switch	18 N•m (1.8 kgf•m, 13 lbf•ft)	Apply sealant to the threads
Thermo sensor	12 N•m (1.2 kgf•m, 9 lbf•ft)	Apply sealant to the threads
Side stand switch mounting bolt	10 N•m (1.0 kgf•m, 7 lbf•ft)	ALOC bolt: Replace with a new one

TROUBLESHOOTING (VT750CD/CD2 (AFTER 2000), VT750C3/CD3)

Speed sensor/Speedometer

NOTE:

- The speed sensor sends digital pulse signals to the speedometer.
- When the speedometer or odometer/trip meter operates abnormally, replace the speedometer assembly.

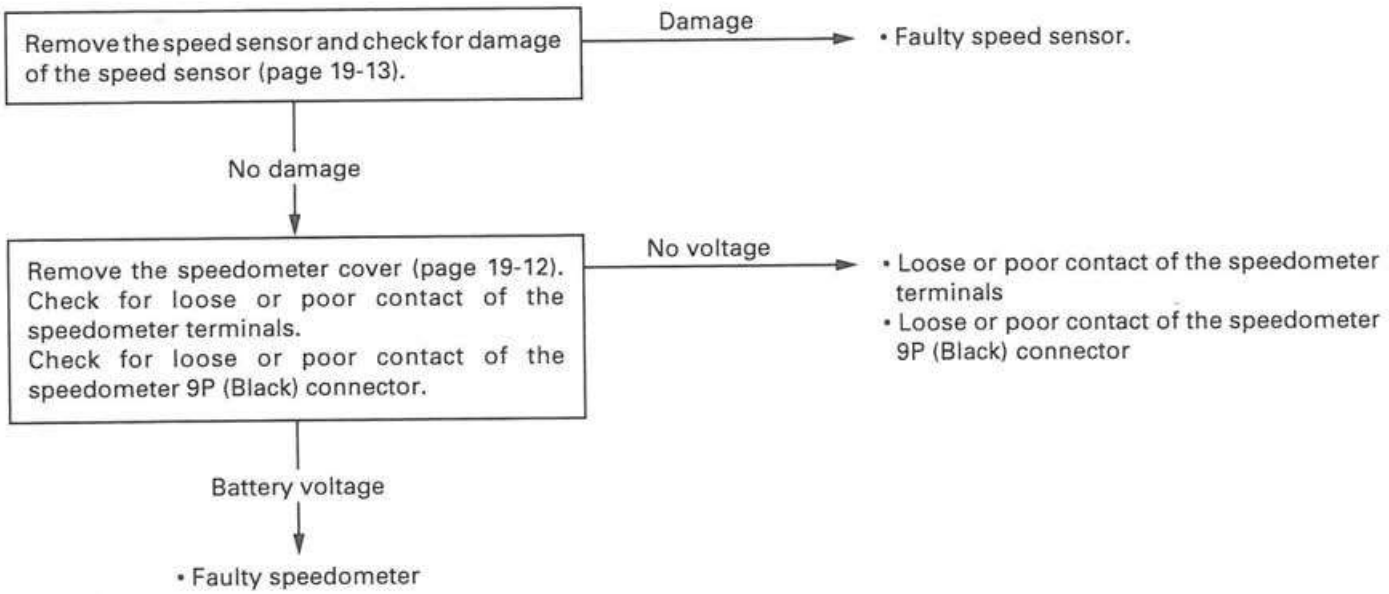
The odometer/trip meter operate normally, but the speedometer does not operate

- Faulty speedometer

The speedometer operates normally, but the odometer/trip meter does not operate

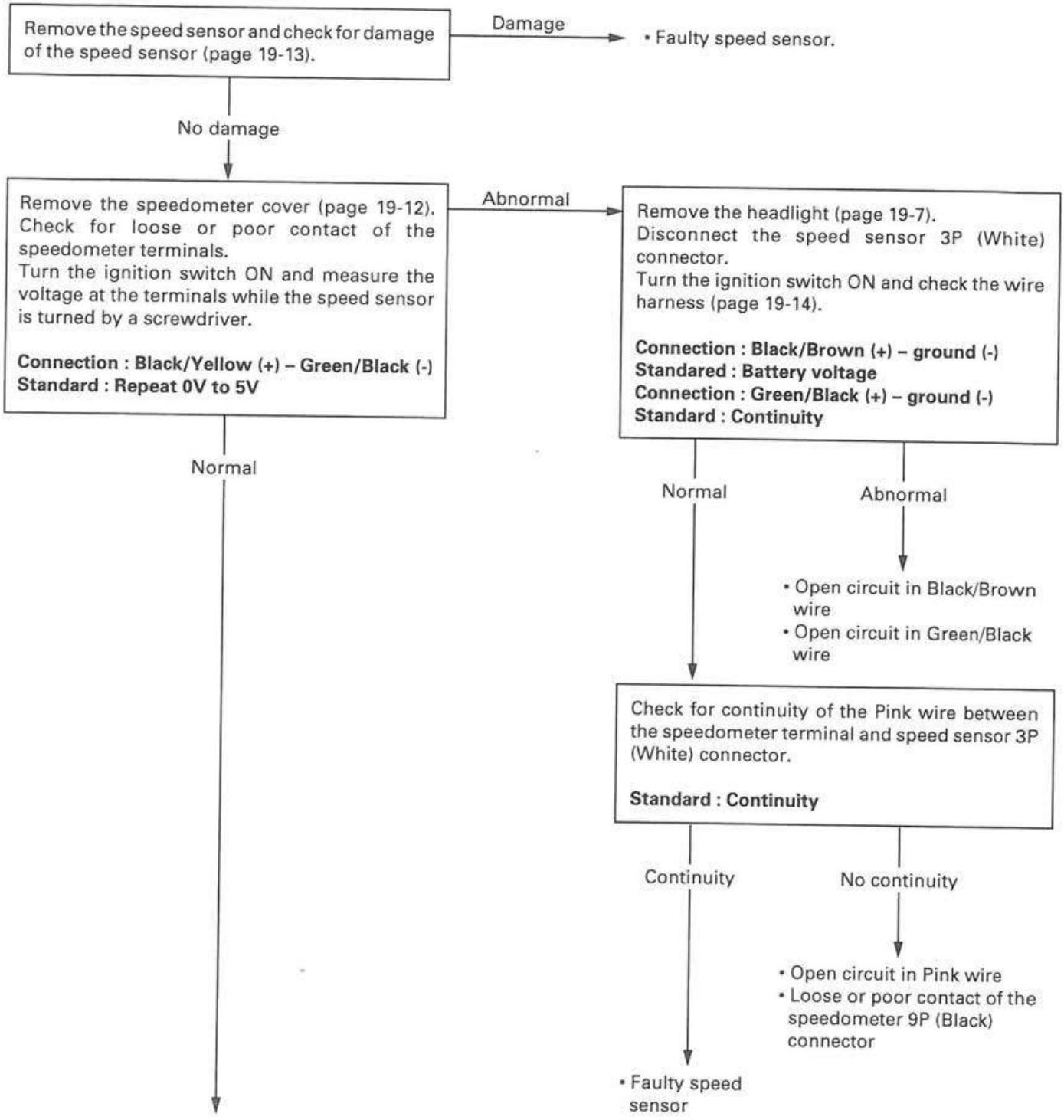
- Faulty odometer/trip meter

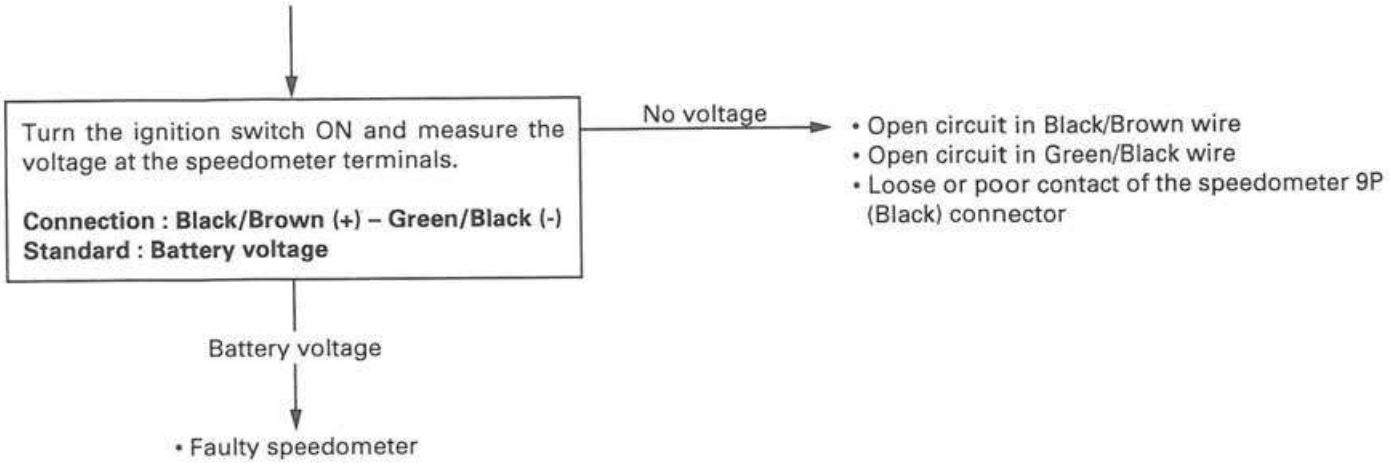
The speedometer indication error is large



The speedometer and odometer/trip meter does not operate

- Check for the following before diagnosing.
  - blown main fuse (30A) or sub-fuse (10A).
  - loose or corroded terminals of the connectors.
  - discharged battery.




Turn the ignition switch ON and measure the voltage at the speedometer terminals.
Connection : Black/Brown (+) – Green/Black (-)
Standard : Battery voltage
No voltage
• Open circuit in Black/Brown wire
• Open circuit in Green/Black wire
• Loose or poor contact of the speedometer 9P (Black) connector
Battery voltage
• Faulty speedometer

BULB REPLACEMENT

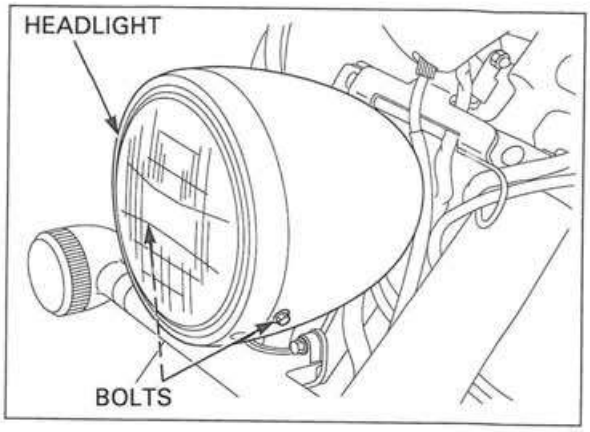
HEADLIGHT

⚠ WARNING

A halogen headlight bulb becomes very hot while the headlight is ON, and remains hot for a while after it is turned OFF. Be sure to let it cool down before servicing.

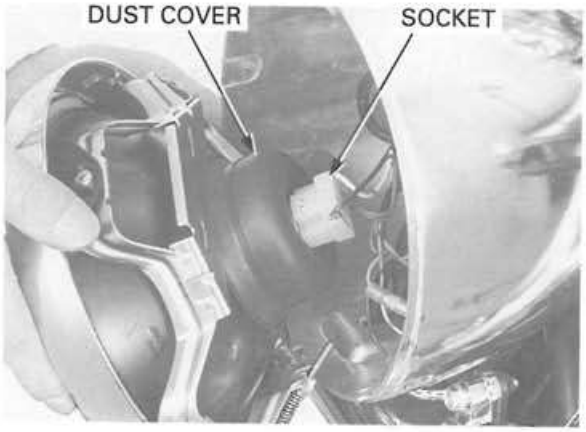
CAUTION:

- ***Wear clean gloves while replacing the bulb. Do not put fingerprints on the headlight bulb, as they may create hot spots on the bulb and cause it to break.***
- ***If you touch the bulb with your bare hands, clean it with a cloth moistened with alcohol to prevent its early failure.***
- ***Be sure to install the dust cover after replacing the bulb.***

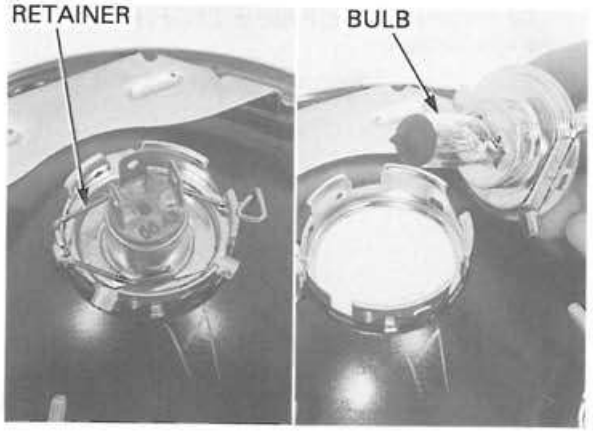


Remove the bolts, collars and headlight.

Disconnect the headlight bulb socket and remove the dust cover.

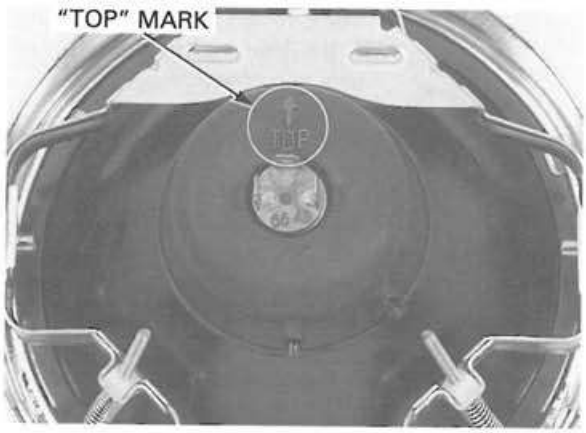


Unhook the bulb retainer and remove the headlight bulb.



Install the dust cover with its "TOP" mark facing up.

Installation is in the reverse order of removal



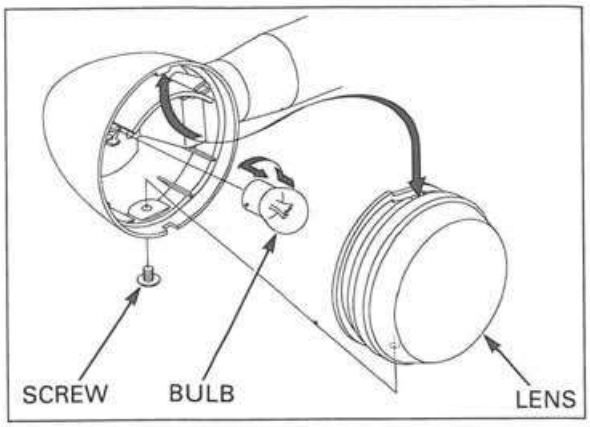
TURN SIGNAL LIGHT

Remove the screw and turn signal lens.
While pushing in, turn the bulb counterclockwise to remove it and replace with a new one.

Installation is in the reverse order of removal.

NOTE:

- When performing turn signal light lens installation, align the tab on the lens with the groove on the turn signal light case.
- Seat the rubber packing properly.

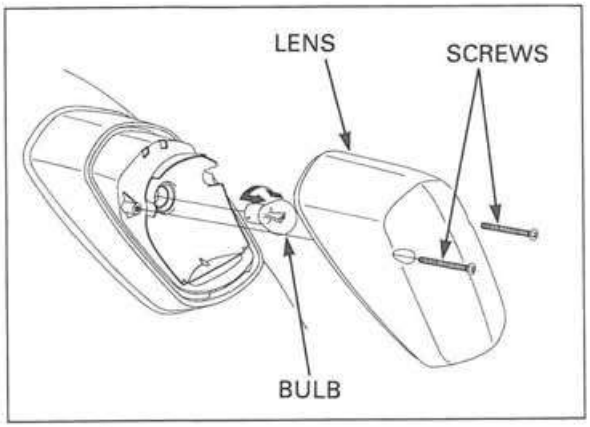


TAIL/BRAKE LIGHT

Remove the screws and tail/brake light lens.
While pushing in, turn the bulb counterclockwise to remove it and replace with a new one.

Seat the rubber packing properly.

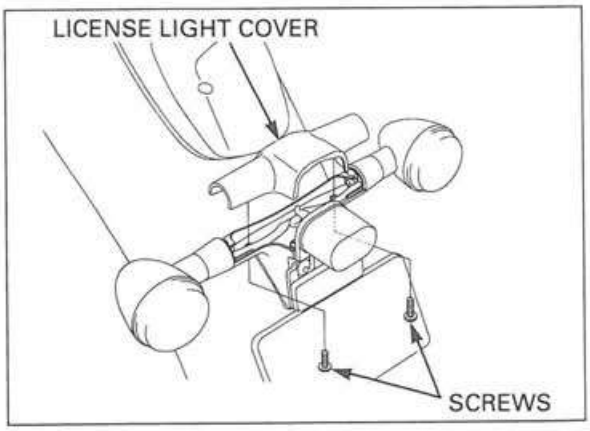
Installation is in the reverse order of removal.



Do not damage the wire harness.

LICENSE LIGHT

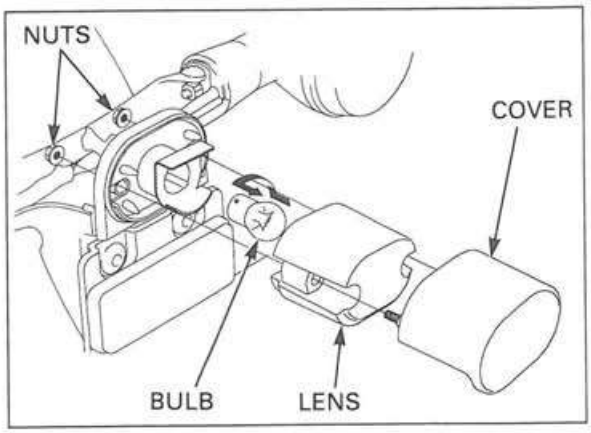
Remove the screws and license light cover.



Remove the lens attaching nuts on the reverse side of the license plate base and remove the license light lens and cover.

While pushing in, turn the bulb counterclockwise to remove it.

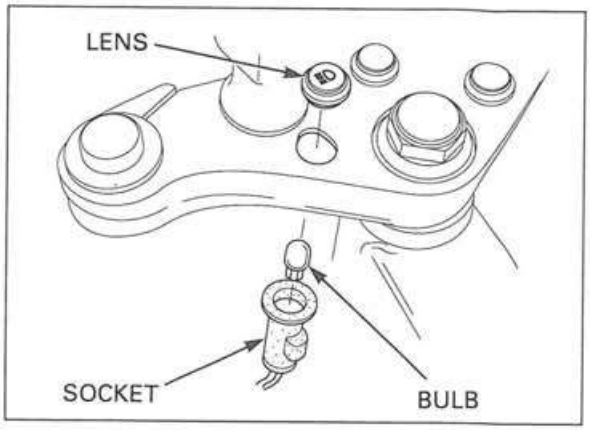
Installation is in the reverse order of removal.



INDICATOR LIGHT

Remove the indicator light lens.

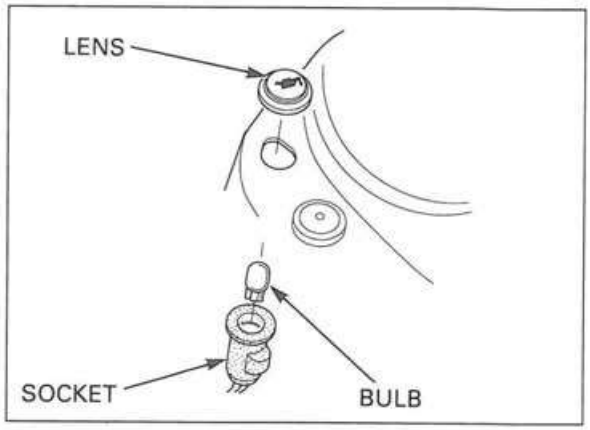
Remove the bulb socket.
Replace a new bulb and install it in the reverse order of removal.



VT750C3/CD3 and VT750CD/CD2 (after 2000) :

NOTE:

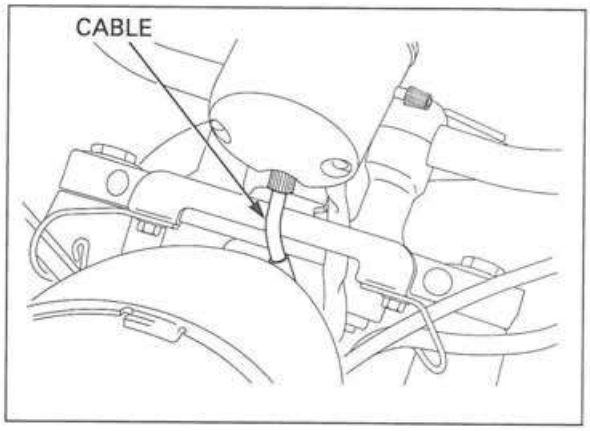
The speedometer cover must be removed from the fuel tank before servicing the speedometer cover side indicator light.
– Refer to speedometer cover removal/installation (page 19-12)



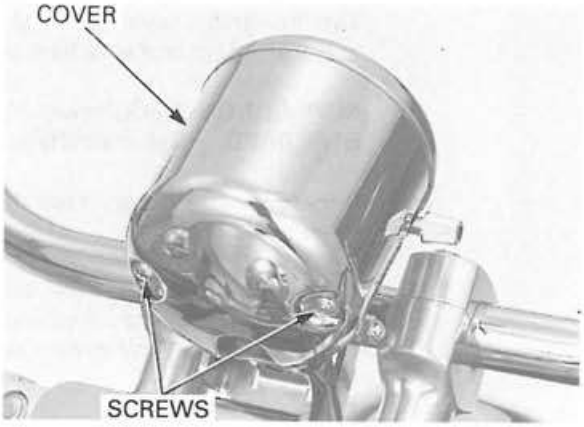
VT750C and VT750CD/CD2 ('98 – 2000) :

SPEEDOMETER LIGHT

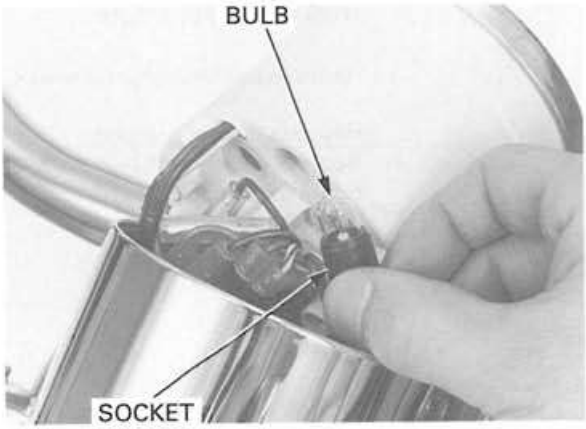
Disconnect the speedometer cable from the speedometer



Remove the speedometer cover mounting screws and cover.



Remove the bulb socket from the speedometer. Remove the speedometer bulb from the bulb socket. Replace a new bulb and install it in the reverse order of removal.

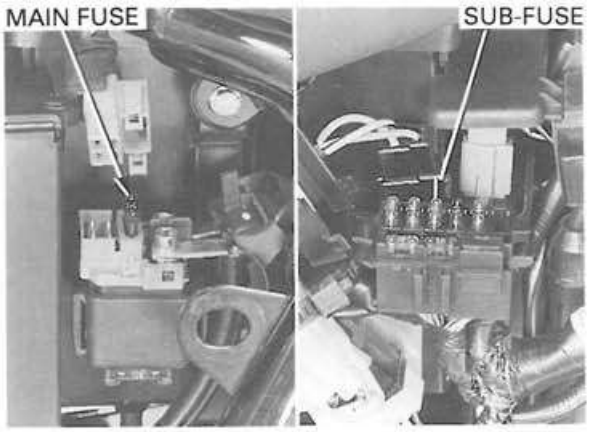


SPEEDOMETER

VT750C3/CD3 and VT750CD/CD2 (after 2000) :

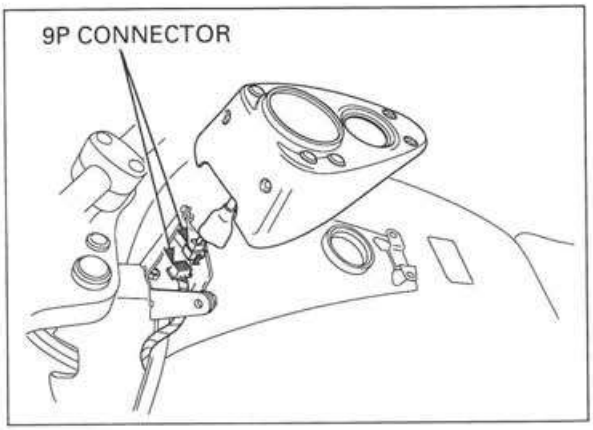
INSPECTION

Check that the main fuse (30 A) or sub-fuse (10 A, 15 A) is not blown.



Remove the speedometer (page 19-12).

Disconnect the speedometer 9P connector.

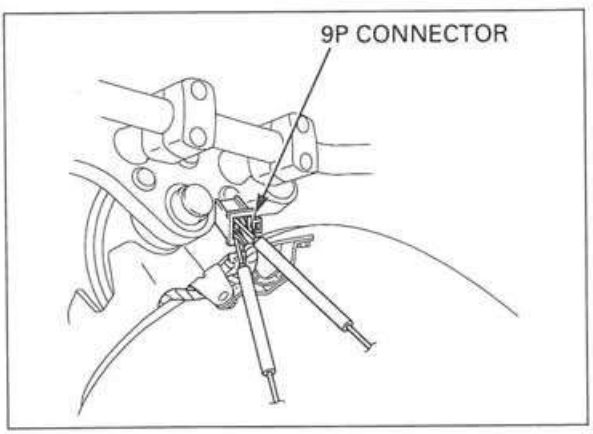


Turn the ignition switch ON and measure the voltage at the 9P connector wire harness side.

CONNECTION: Black/Brown (+) – Green/Black (–)
STANDARD: Battery voltage

If there is no voltage, check the related circuit for open or short circuit.

If the related circuit is normal, temporarily disconnect the battery positive terminal and reset the meter (see Owner's manual) and inspect again.

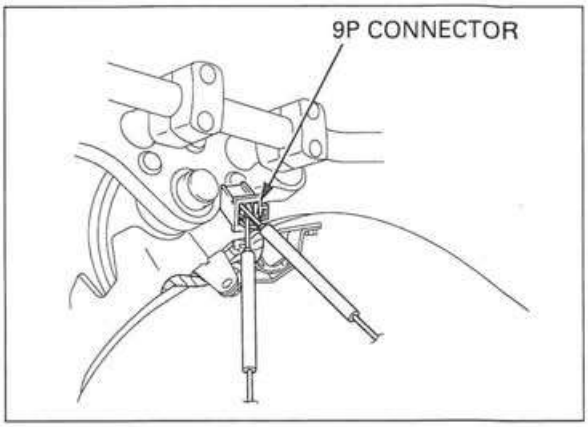


Measure the voltage at the 9P connector wire harness side.

CONNECTION: Pink (+) – Green/Black (–)
STANDARD: Battery voltage

If there is no voltage, check the related circuit for open or short circuit.

If the related circuit is normal, temporarily disconnect the battery positive terminal and reset the meter (see Owner's manual) and inspect again.

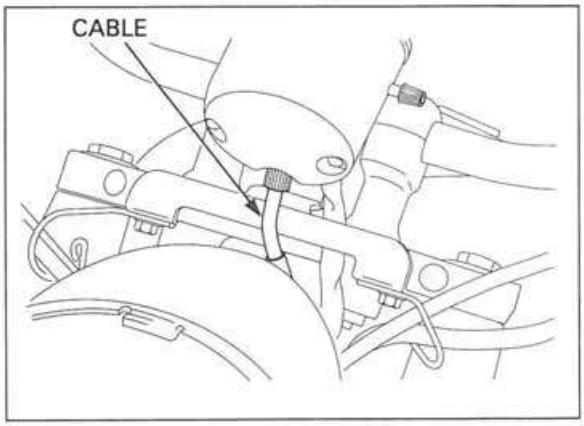


VT750C and VT750CD/CD2 ('98 – 2000) :

REMOVAL/INSTALLATION

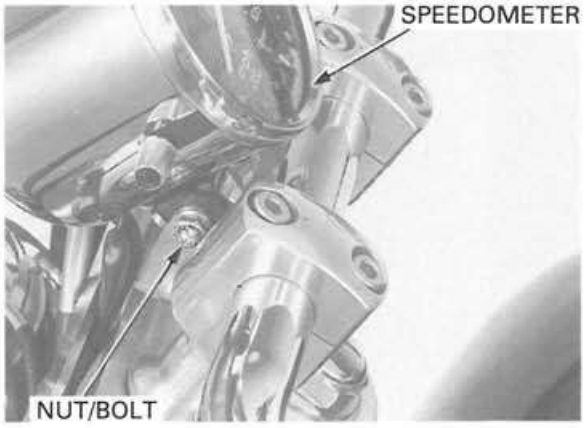
Remove the headlight (page 19-7).
Disconnect the speedometer 6P (Black) connector.

Disconnect the speedometer cable from the speedometer



Remove the speedometer mounting nut/bolt and meter from the speedometer stay.

Installation is in the reverse order of removal.



VT750C3/CD3 and VT750CD/CD2 (after 2000) :

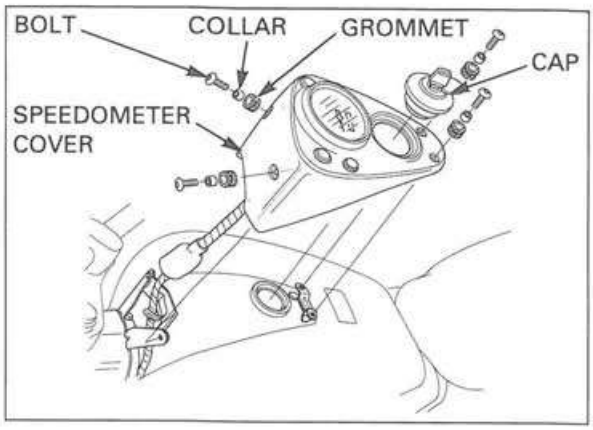
REMOVAL/INSTALLATION

⚠ WARNING

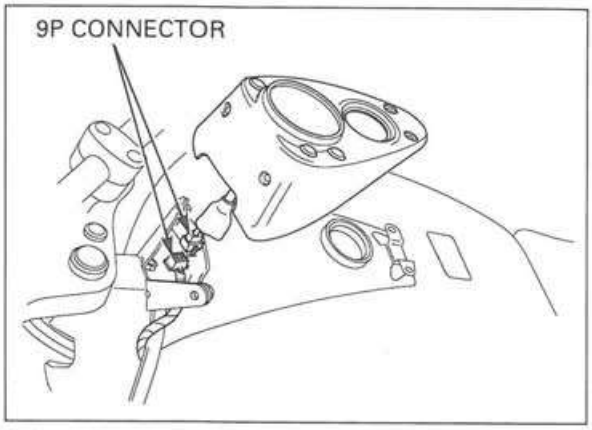
Gasoline is extremely flammable and explosive under certain conditions. KEEP OUT OF REACH OF CHILDREN.

Remove the fuel tank mounting bolt (page 2-4) and lift the fuel tank upward.

Disconnect the speedometer 9P connector.



Remove the speedometer cover mounting bolts, collars and grommets.
Remove the fuel tank cap.
Remove the speedometer cover from the fuel tank.

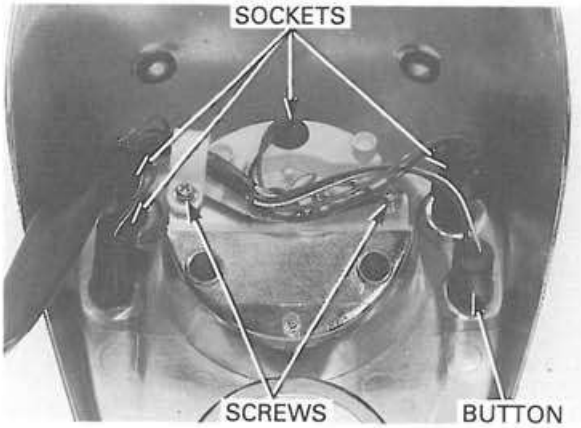


Remove the speedometer light, indicator light and trip meter reset button from the speedometer cover (page 19-9).
Remove the screws and speedometer from the cover.

Installation is in the reverse order of removal.

NOTE:

Route the wire harness properly.

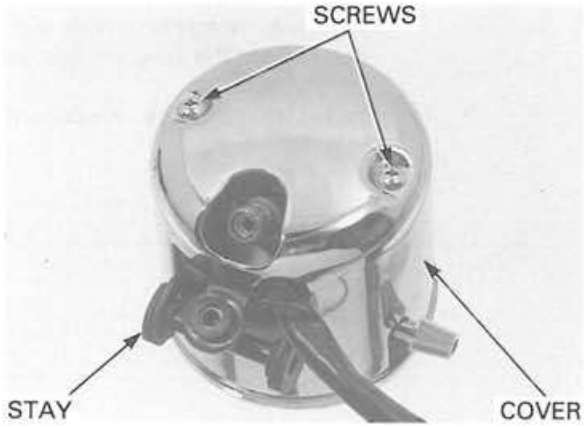


VT750C and VT750CD/CD2 ('98 – 2000) :

DISASSEMBLY

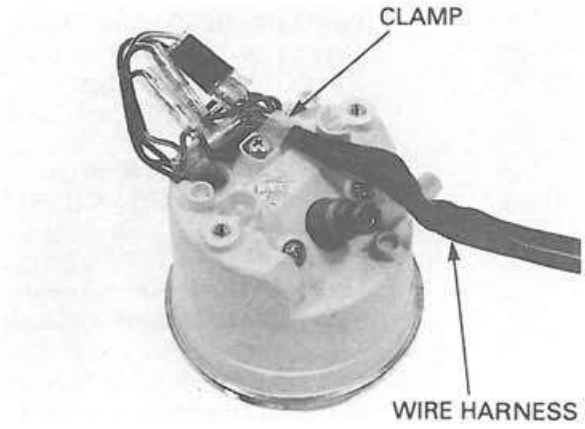
Remove the speedometer (page 19-11).

Remove the screws and speedometer cover.
Remove the speedometer stay.



Remove the clamp and speedometer light from the speedometer.
Remove the wire harness from the speedometer.

Assembly is in the reverse order of disassembly.

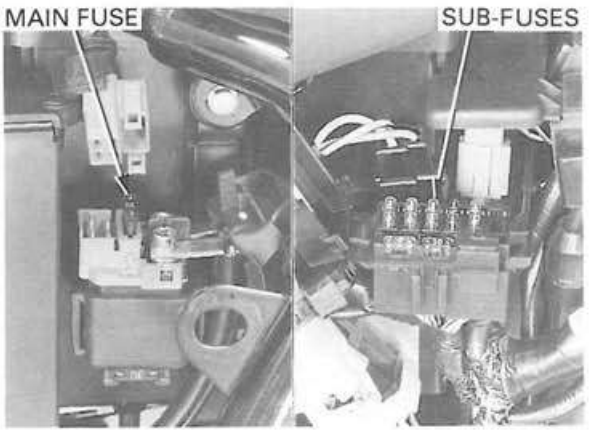


SPEED SENSOR (VT750CD/CD2 (AFTER 2000), VT750C3/CD3)

INSPECTION

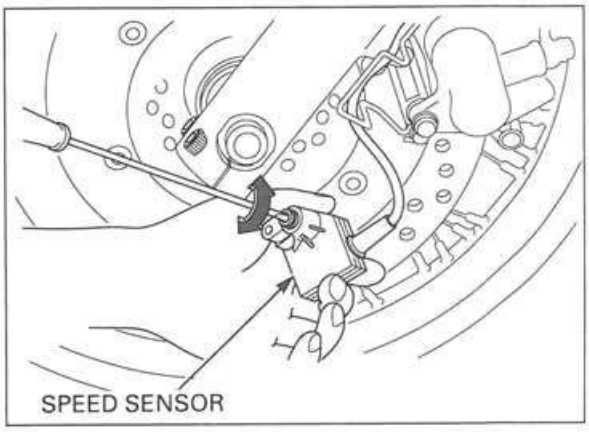
NOTE:

Check for the following before diagnosing:
- blown main fuse (30A) or sub-fuse (10A)
- loose or corroded terminals of the connectors
- discharged battery



Remove the mounting screw and speed sensor.

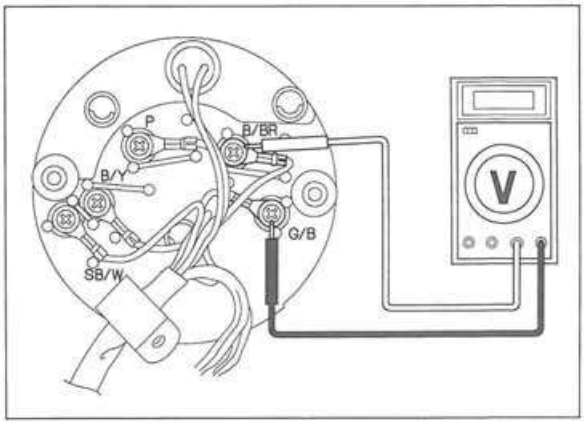
Check that the speed sensor turns smoothly.
If the speed sensor does not turn smoothly, replace it with a new one.
Install the speed sensor in the reverse order of removal.



OUTPUT SIGNAL INSPECTION
Turn the ignition switch ON.
Measure the voltage at the terminals while the speed sensor is turned by a screwdriver.

CONNECTION: Black/Yellow (+) – Green/Black(–)
STANDARD: Repeat 0V to 5V

If the measured value is out of specification, inspect the following:
Turn the ignition switch ON.
Measure the voltage at the speedometer terminals.



CONNECTION: Black/Brown (+) – Green/Black (–)
STANDARD: Battery voltage

If the measured value is out of specification, inspect the wire harness.

WIRE HARNESS INSPECTION

Disconnect the speed sensor 3P connector.
Check the continuity between Green/Black terminal of 3P connector wire harness side and ground.

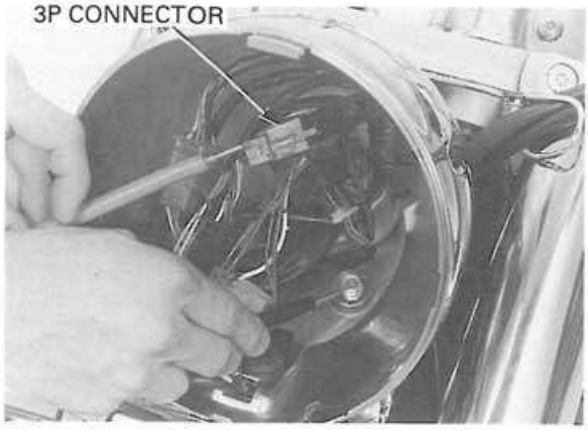
Turn the ignition switch ON.
Measure the voltage at the 3P connector wire harness side.

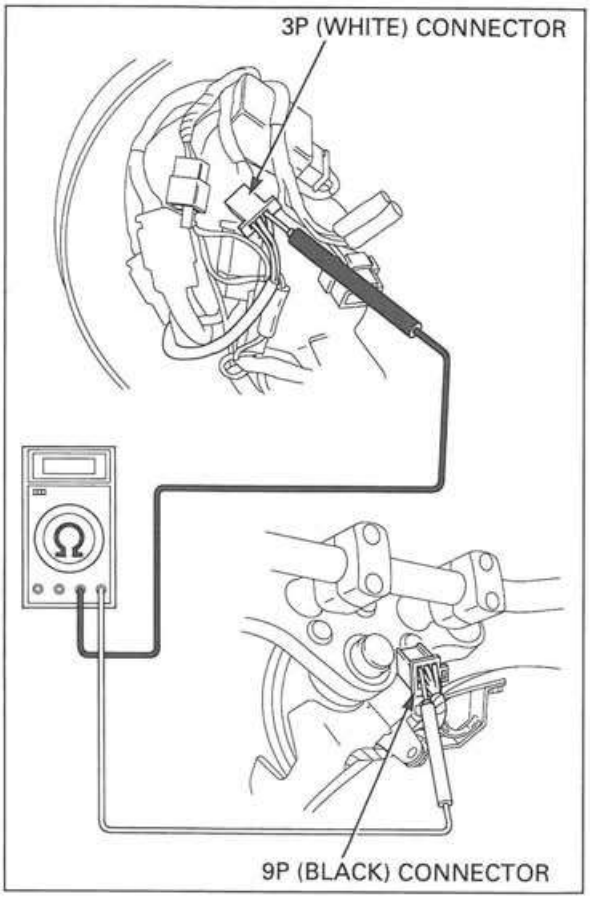
CONNECTION: Black/Brown (+) – ground (–)
STANDARD: Battery voltage

If the measured value is out of specification, check for continuity of the Pink wire between the speedometer 9P (Black) connector and speed sensor 3P (White) connector.

STANDARD: Continuity

If the measured value is out of specification, inspect the wire harness.



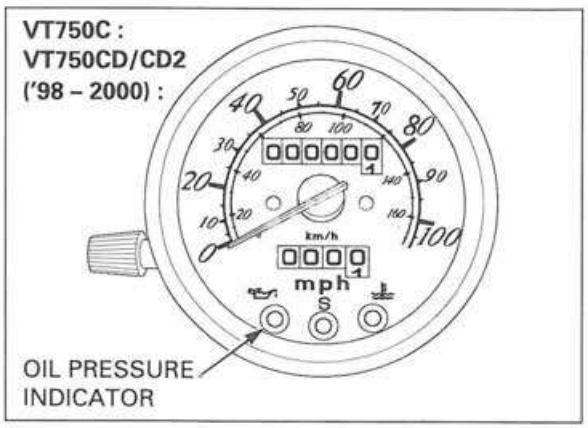


OIL PRESSURE SWITCH

NOTE:

The oil pressure switch removal/installation procedure is on page 4-3.

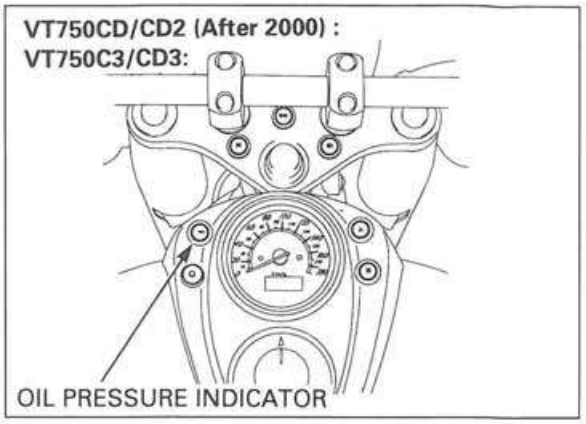
Make sure that the oil pressure warning indicator comes on with the ignition switch "ON".

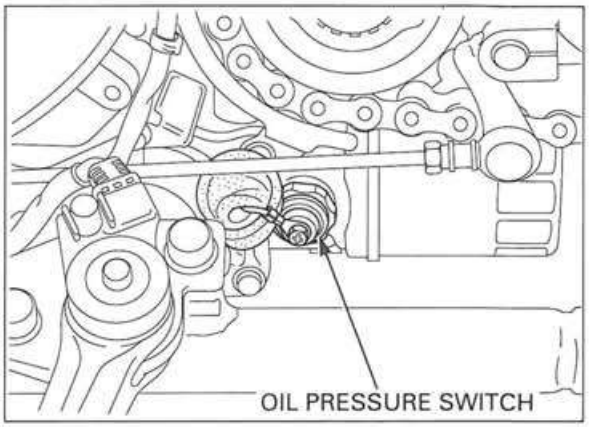


If the indicator does not come on, inspect as follows:
Remove the left rear cover (page 7-3).
Disconnect the oil pressure switch wire from the switch by removing the terminal screw.
Short it to ground using a jumper wire. Turn the ignition switch "ON".

The oil pressure warning indicator should come on.
If the indicator does not come on, check the sub-fuse (10A) and wires for a loose connection or an open circuit.

Start the engine and make sure that the indicator goes out. If the indicator does not go out, check the oil pressure (page 4-3).
If the oil pressure is normal, replace the oil pressure switch (page 4-3).





NEUTRAL SWITCH

INSPECTION

Remove the right side cover (page 2-4).

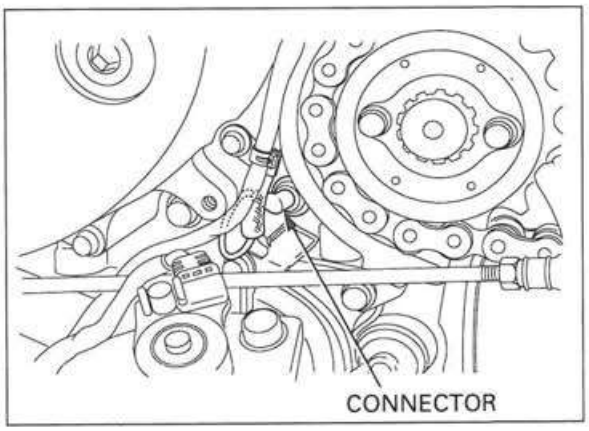
Disconnect the engine sub-harness 2P (Black) connector.
Shift the transmission into neutral and check for continuity between the Light green/Red wire and ground.

There should be continuity when the transmission is in neutral.
There should be no continuity when the transmission is in any other gear.

REMOVAL/INSTALLATION

Remove the left rear cover (page 7-4).

Disconnect the neutral switch connector.

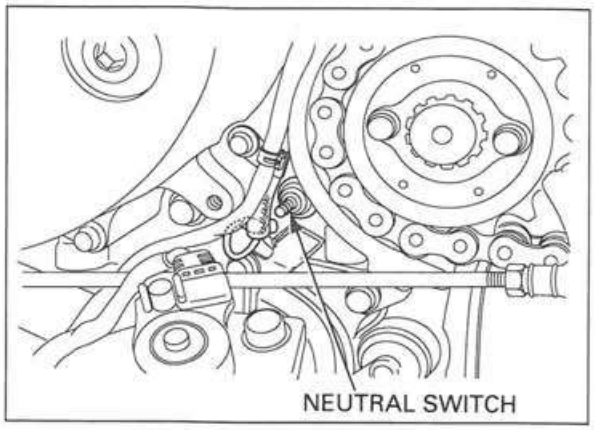


Remove the neutral switch.

Install and tighten the neutral switch to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Connect the neutral switch connector.



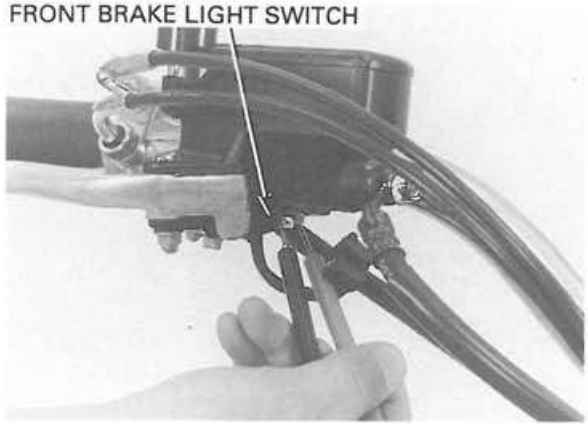
FRONT BRAKE LIGHT SWITCH

NOTE:

The front brake light switch removal/installation procedure is on pages 15-8,11.

Disconnect the front brake light switch connectors and check for continuity.

There should be continuity with the front brake applied and no continuity with it released.

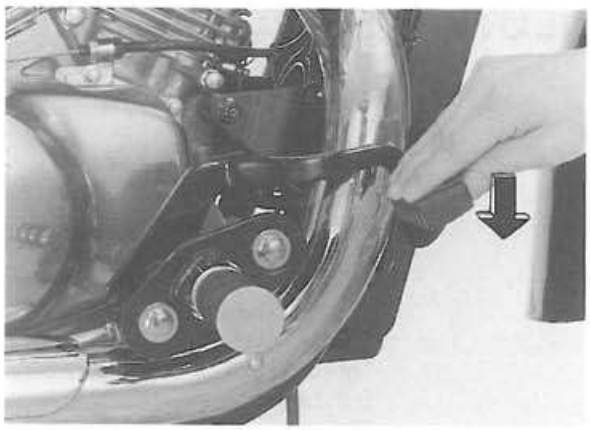


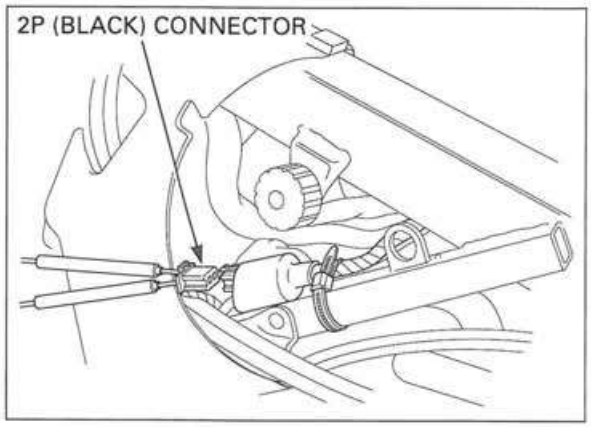
REAR BRAKE LIGHT SWITCH

Remove the fuel tank (page 2-4).

Disconnect the rear brake light switch 2P (Black) connector and check for continuity at the switch side connector.

There should be continuity with the rear brake applied and no continuity with it released.





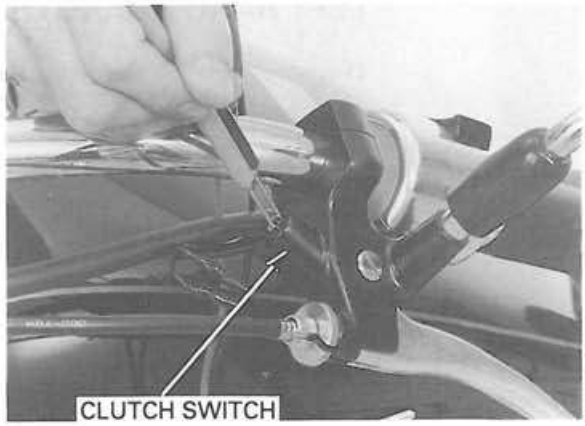
CLUTCH SWITCH

NOTE:

The clutch switch removal/installation procedure is on pages 13-7,12.

Disconnect the clutch switch connectors and check for continuity.

There should be continuity with the clutch lever applied and no continuity with it released.



HANDLEBAR SWITCH

NOTE:

The handlebar switches removal/installation procedure is on pages 13-7, 10.

Remove the headlight (page 19-7).

Check for continuity between the terminals. Continuity should exist between the color code wire as shown in each chart.

RIGHT HANDLEBAR SWITCH

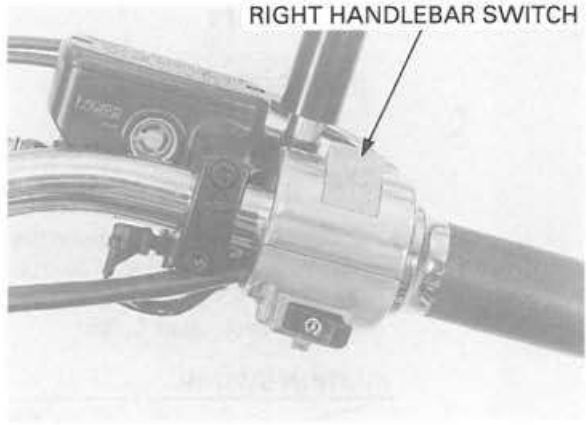
Disconnect the right handlebar 9P connector.

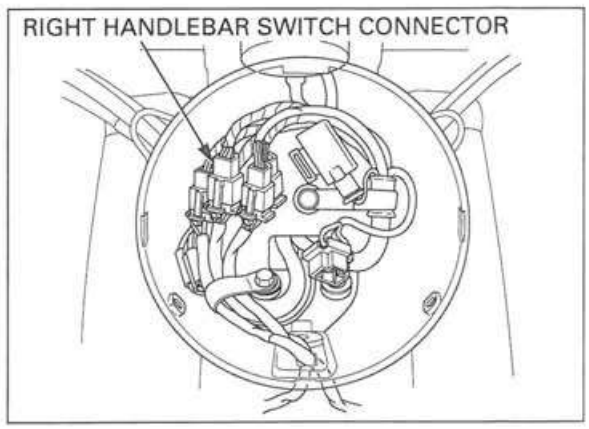
STARTER SWITCH

	Bl/W	Y/R
Free		
Push	○	○

ENGINE STOP SWITCH

	Bl/G	Bl/W
Off		
Run	○	○





LEFT HANDLEBAR SWITCH

Disconnect the left handlebar 9P connector.

DIMMER SWITCH

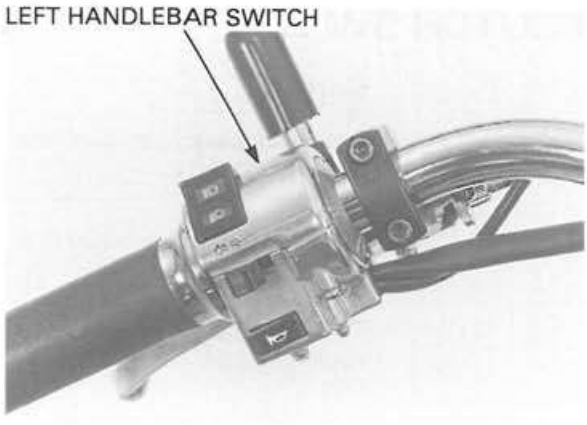
	Bu/W	Bu	W
Lo	○		○
(N)	○	○	○
H	○	○	

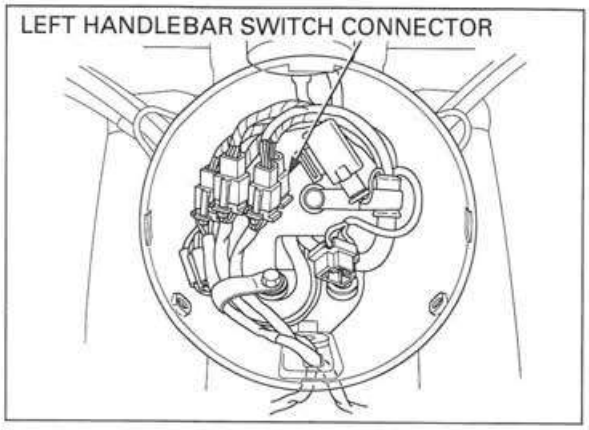
TURN SIGNAL SWITCH

	Gr	Lb	O	Br/Bl	Lb/W	O/W
Right	○	○		○		○
N				○	○	○
Left	○		○	○	○	

HORN SWITCH

	Bl/Br	Lg
Free		
Push	○	○





IGNITION SWITCH

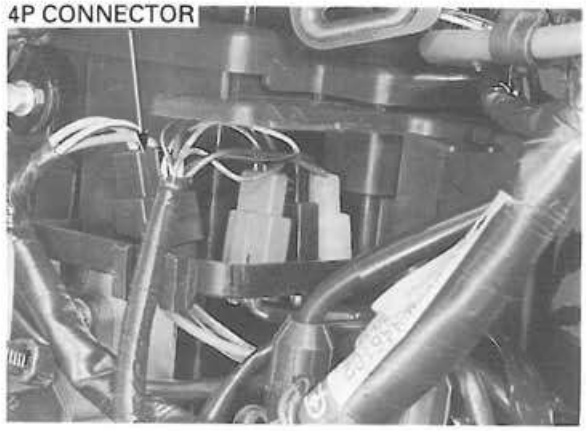
INSPECTION

Remove the seat and left side cover (page 2-4).
Disconnect the ignition switch 4P connector.

Check for continuity between the ignition switch connector terminals in each switch position.
Continuity should exist between the color coded wires in each chart below.

IGNITION SWITCH

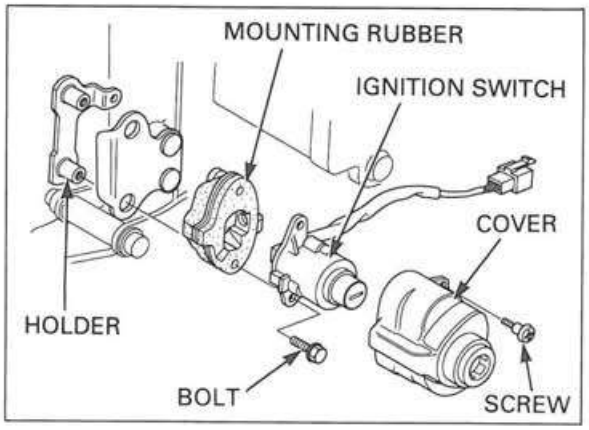
	R	R/Bl	Bu/O
On	○	○	○
Off			



REMOVAL/INSTALLATION

Disconnect the ignition switch 4P connector (see above).
Remove the two screws and ignition switch cover.
Remove the two bolts and ignition switch.

Installation is in the reverse order of removal.



FAN MOTOR SWITCH

INSPECTION

FAN MOTOR DOES NOT STOP

Turn the ignition switch OFF, disconnect the fan motor switch connector from the fan motor switch and turn the ignition switch ON again.

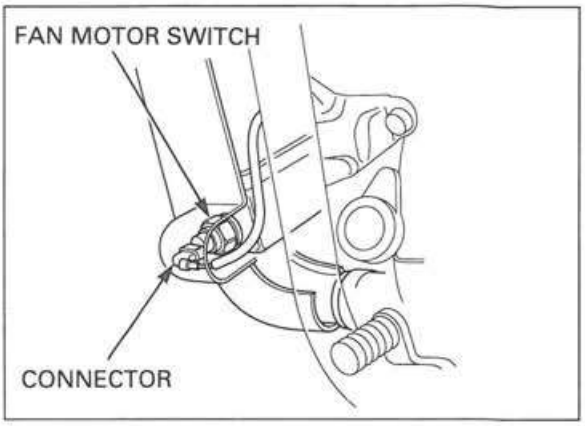
If the fan motor does not stop, check for a shorted wire between the fan motor and switch.
If the fan motor stops, replace the fan motor switch.

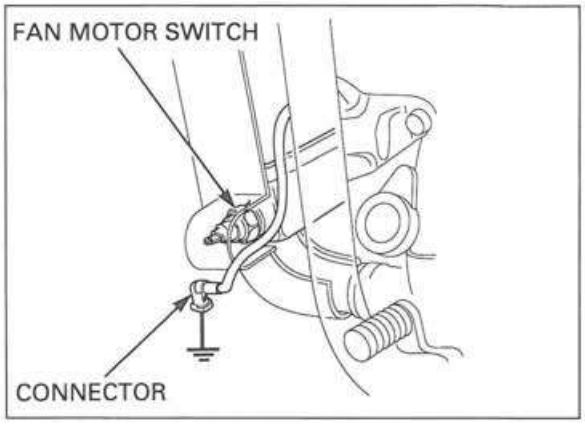
FAN MOTOR DOES NOT START

Before testing, warm up the engine to operating temperature.

Disconnect the connector from the fan motor switch and ground the connector to the body with a jumper wire.
Turn the ignition switch ON and check the fan motor.
If the motor starts, check the connection at the fan motor switch terminal. If it is OK, replace the fan motor switch.
If the motor does not start, check for voltage between the fan motor switch connector and ground.

– Battery voltage: Faulty fan motor
– No battery voltage:
- Broken wire harness
- Blown sub-fuse
- Faulty ignition switch
- Poor connection of the connector (between the ignition switch and fuse box)





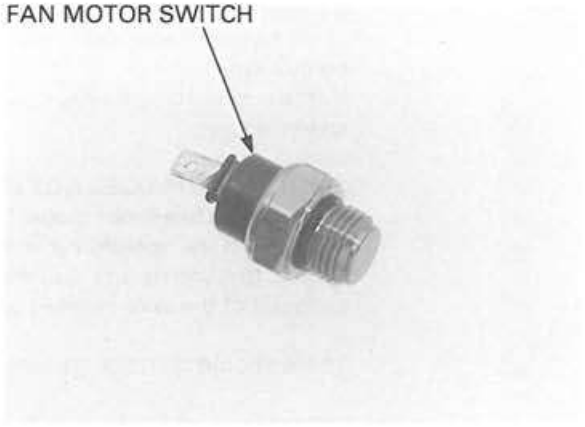
REMOVAL/INSTALLATION

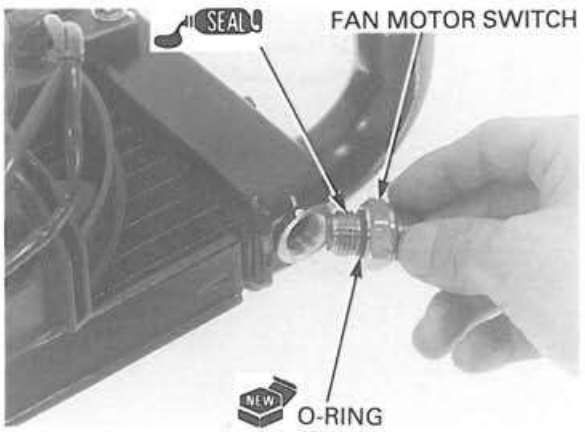
Remove the radiator (page 6-9).

Disconnect the fan motor switch connector from the fan motor switch.
Remove the fan motor switch and O-ring from the radiator.

Install the new O-ring.
Clean and apply sealant to the fan motor switch threads.
Install and tighten the fan motor switch to the specified torque.

TORQUE: 18 N·m (1.8 kgf·m, 13 lbf·ft)





COOLANT TEMPERATURE, THERMO SWITCH

SYSTEM INSPECTION

VT750C and VT750CD/CD2 ('98 – 2000):

THE INDICATOR DOES NOT COME ON

Lower the side stand.

Turn the ignition switch ON. The side stand indicator and oil pressure indicator should come on.

–If the side stand indicator and oil pressure indicator come on:

Remove the left steering cover (page 2-3).

Disconnect the thermo switch connector.

Short it to ground using a jumper wire then turn the ignition switch "ON".

Check for loose or poor connection of Green/Yellow connector and the thermo switch.

–If the side stand indicator and oil pressure indicator do not come on:

Check the sub fuse (15A)

Remove the headlight (page 19-7).

Disconnect the speedometer 6P (Black) connector.

Measure the voltage between the Black/Brown (+) and Green/Blue (-) terminal of the wire harness side.

There should be voltage with the ignition switch ON.

If there is no voltage, check the wire harness for an open circuit or loose connections in the speedometer connector.

If there is battery voltage available, replace the speedometer.

THE INDICATOR DOES NOT GO OFF

Remove the headlight (page 19-7).

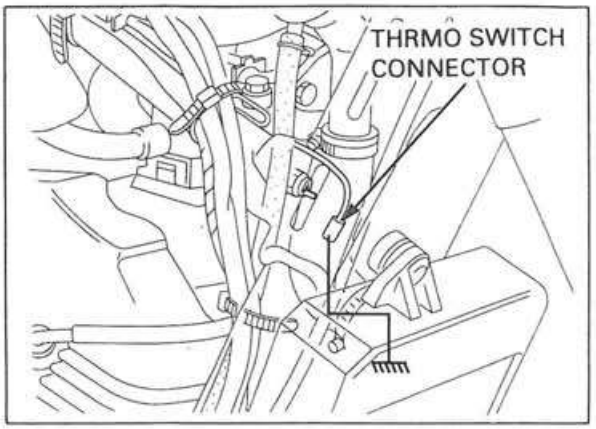
Disconnect the speedometer 6P (Black) connector.

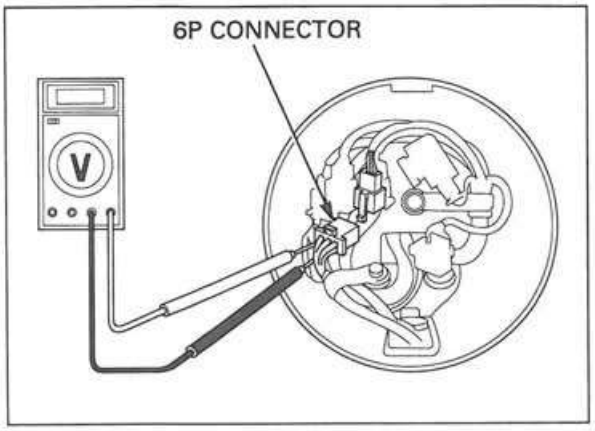
Check for continuity between the Green/Blue terminal of the wire harness side and ground.

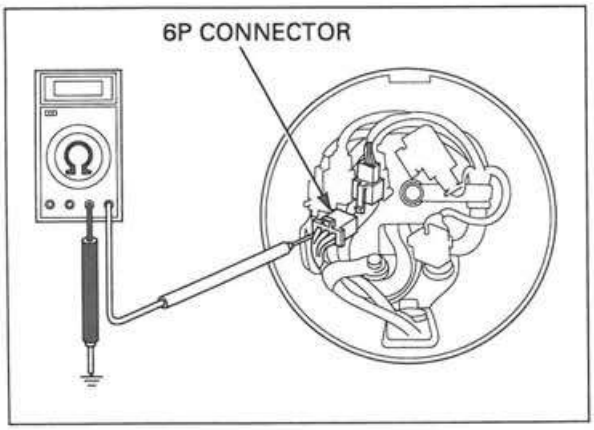
There should be no continuity.

If there is continuity, check for a short circuit in the Green/Blue wire.

If there is no continuity, check the thermo switch (page 19-21).



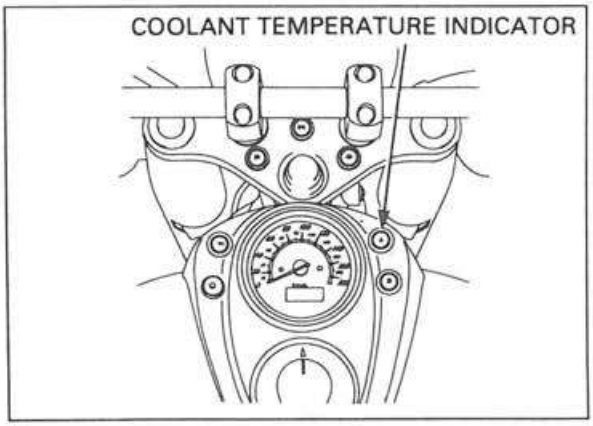




SYSTEM INSPECTION

VT750C3/CD3 and VT750CD/CD2 (after 2000):

Turn the ignition switch ON. The temperature warning light should come on for a few seconds and then go out.



THE INDICATOR DOES NOT GO OFF
Remove the right side cover (page 2-4).

Disconnect the pilot lamp checker connector and ignition switch ON.
Check for coolant temperature indicator illuminates.
If the coolant temperature indicator illuminates, check for a short circuit in the pilot lamp checker connector Green/Blue terminal.
If the circuit is normal, replace the thermo switch.

If the coolant temperature indicator does not come on, connect the pilot lamp checker connector and ignition switch ON.
Check that the coolant temperature indicator illuminates.

- If the indicators does not go off:
  – Faulty pilot lamp checker
- If the indicators should come on for few seconds, then go off:
  – Faulty thermo switch

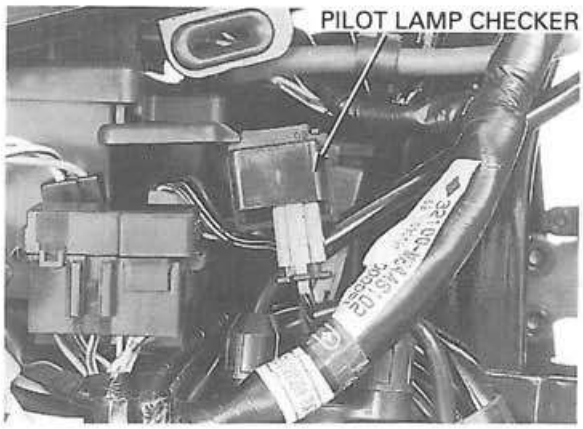
THE INDICATOR DOES NOT ILLUMINATE
Remove the right side cover (page 2-4).

Disconnect the pilot lamp checker connector, check for continuity between the Green/Blue wire and ground.
Check that the coolant temperature indicator illuminates.

If the coolant temperature indicator does not illuminates, check for an open circuit in Green/Blue wire.
If the circuit is normal, replace the coolant temperature indicator bulb.

If the coolant temperature indicator illuminates, measure the battery voltage between the pilot lamp checker connector Black/Brown and Green terminal.

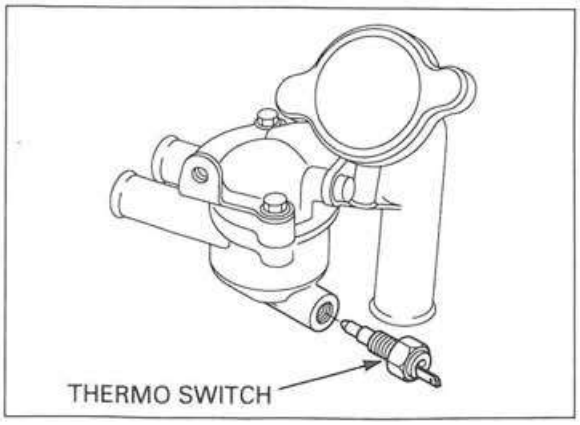
- If there is battery voltage:
  – Faulty pilot lamp checker
- If there is no voltage:
  – Open circuit or loose connection in Black/Brown wire



THERMO SWITCH INSPECTION

⚠ WARNING

- ***Wear insulated gloves and adequate eye protection.***
- ***Keep flammable materials away from the electric heating element.***

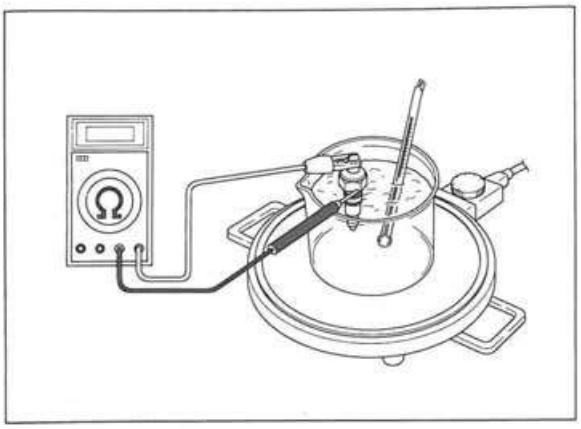


CAUTION:

Do not drop or give strong shock on the thermo switch. Damage to the switch can result.

NOTE:

- The thermo switch is a precision device and can be damaged easily.
  Before reinstalling an old switch, check that it is not damaged and in good condition.
- Soak the thermo switch in coolant up to its threads with at least a 40 mm (1.6 in) gap from the bottom of the pan to the bottom of the switch.
- Keep the temperature constant for 3 minutes before testing. A sudden change of temperature will result in incorrect readings. Do not let the thermo switch or thermometer touch the pan.



Drain the coolant (page 6-5).
Remove the left steering cover (page 2-3).

Disconnect the thermo switch connector.
Remove the thermo switch.
Suspend the thermo switch in a pan of coolant (50 - 50 mixture) over the electric heating element and check for continuity through the switch as the coolant heats up.

STANDARD:
Starts to close (ON) : 112 – 118°C (259 – 270°F)
Starts to open (OFF) : Below 108°C (252°F)

Replace the switch if it is out of specification.

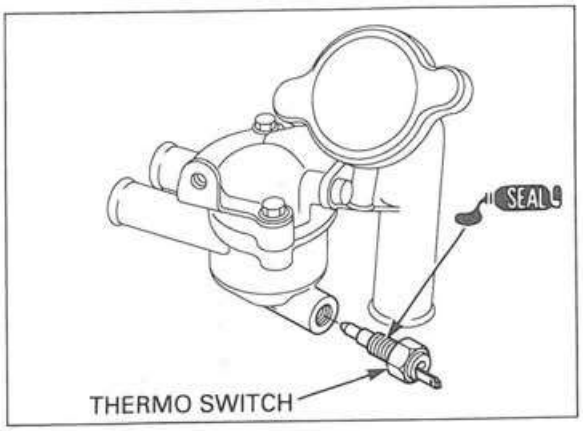
Clean and apply sealant to the thermo switch threads.
Do not apply sealant to the switch head.

Install and tighten the thermo switch to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Connect the thermo switch connector.

Refill the coolant (page 6-6).
Install the left steering cover (page 2-3).

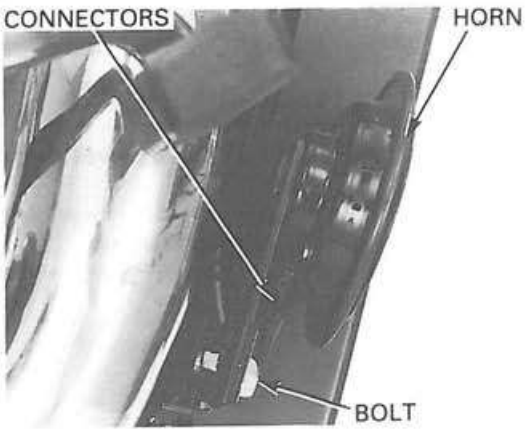


HORN

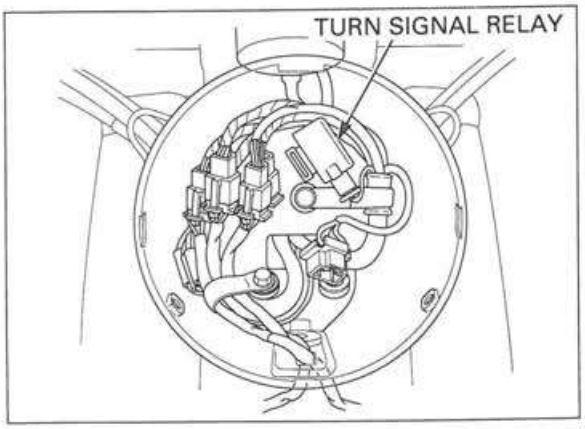
Remove the nut.
Disconnect the horn connectors and remove the horn.

Connect a 12 V battery to the horn terminals.

The horn is normal if it sounds when the 12 V battery is connected across the horn terminals.



TURN SIGNAL RELAY



REMOVAL/INSTALLATION

Remove the headlight (page 19-7).

Disconnect the turn signal relay 3P connector.
Remove the turn signal relay.

Installation is in the reverse order of removal.

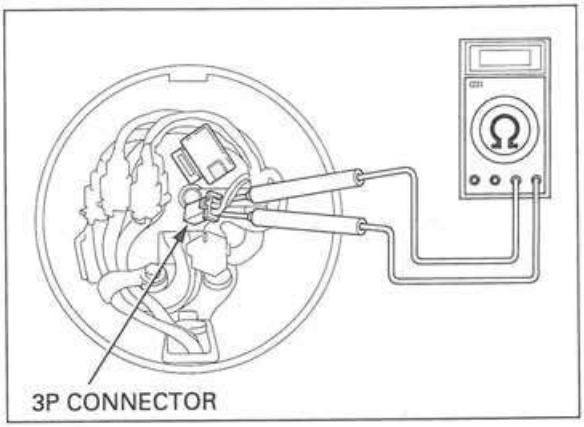
PERFORMANCE TEST

Check the turn signal circuit connection before testing.

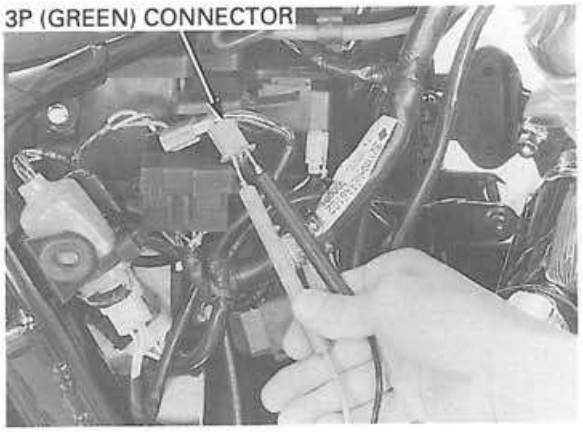
Short the Black and Gray terminals of the turn signal relay connector with a jumper wire. Turn the ignition switch ON and check the turn signal light by turning the turn signal switch ON.

If the light does not come on, check the turn signal switch for an open circuit in Black or Gray wire.

If the light comes on, check for continuity between Green terminal and body ground at the turn signal relay 3P (Black) connector.
– No continuity: Open circuit in Green wire
– Continuity:
- Loose or poor contact of the turn signal relay 3P connector
- Faulty turn signal relay



SIDE STAND SWITCH



INSPECTION

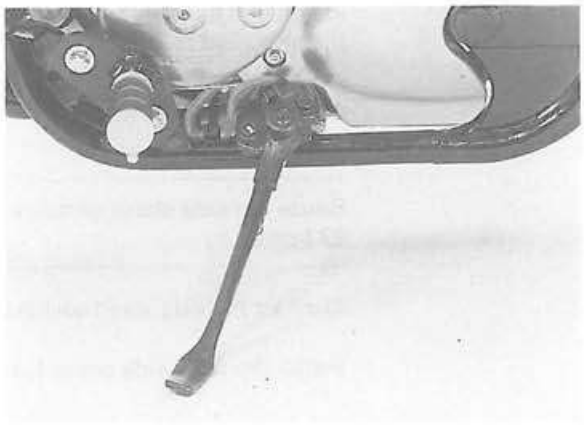
Remove the right side cover (page 2-4).

Disconnect the side stand switch 3P (Green) connector.

Check for continuity between each of the terminals as below.
There should be continuity between the ○–○ positions on the chart below.

SIDE STAND SWITCH

	G/W	Y/Bl	G
Side stand down		○	○
Side stand up	○		○

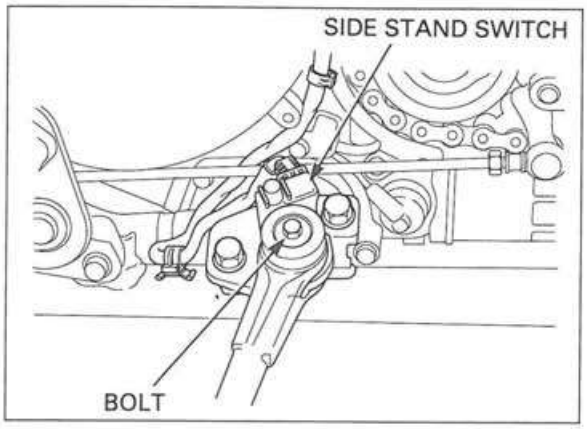


REMOVAL

Remove the right side cover (page 2-4).

Disconnect the side stand 3P (Green) connector.

Remove the side stand switch bolt and side stand switch.

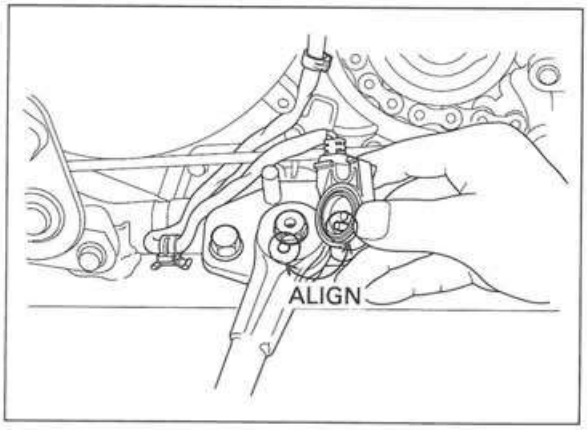


INSTALLATION

Install the side stand switch.

NOTE:

- During side stand switch installation, align the pin on the switch with the hole in the side stand.
- During side stand switch installation, align the groove on the switch with the pin on the side stand bracket.



Install and tighten the new side stand switch bolt to the specified torque.

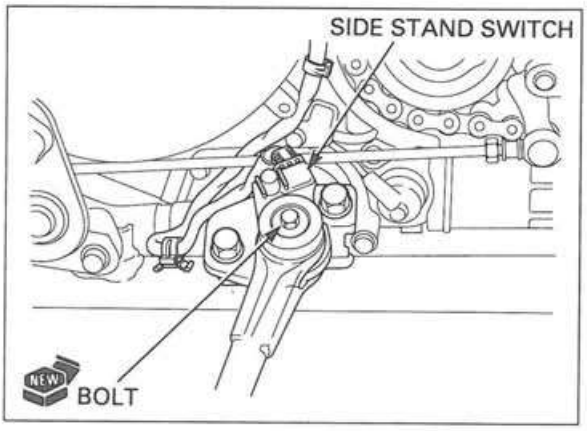
TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)

NOTE:

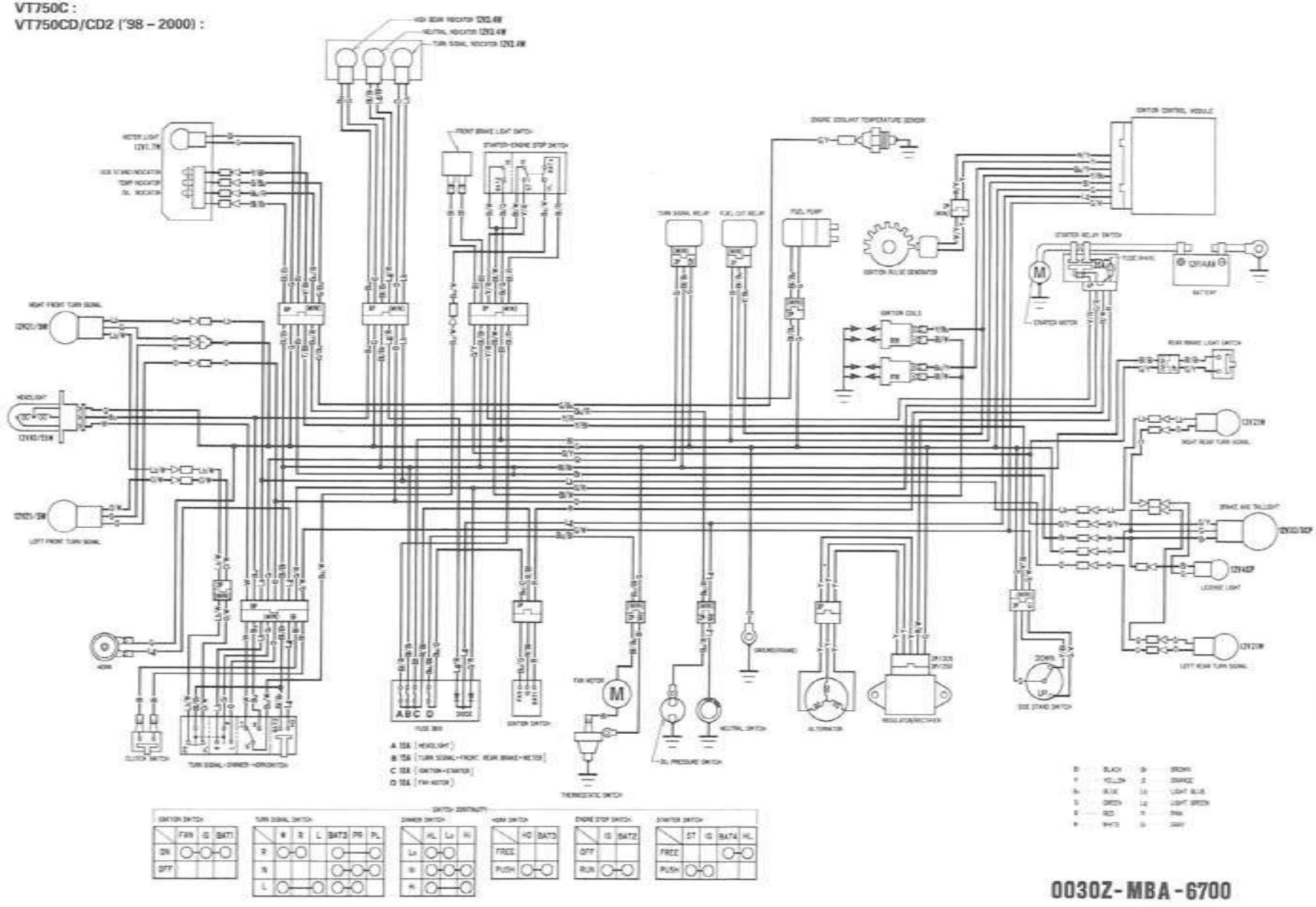
Route the side stand switch wire properly (page 1-27) .

Connect the side stand switch 3P (Green) connector.

Install the right side cover (page 2-4).

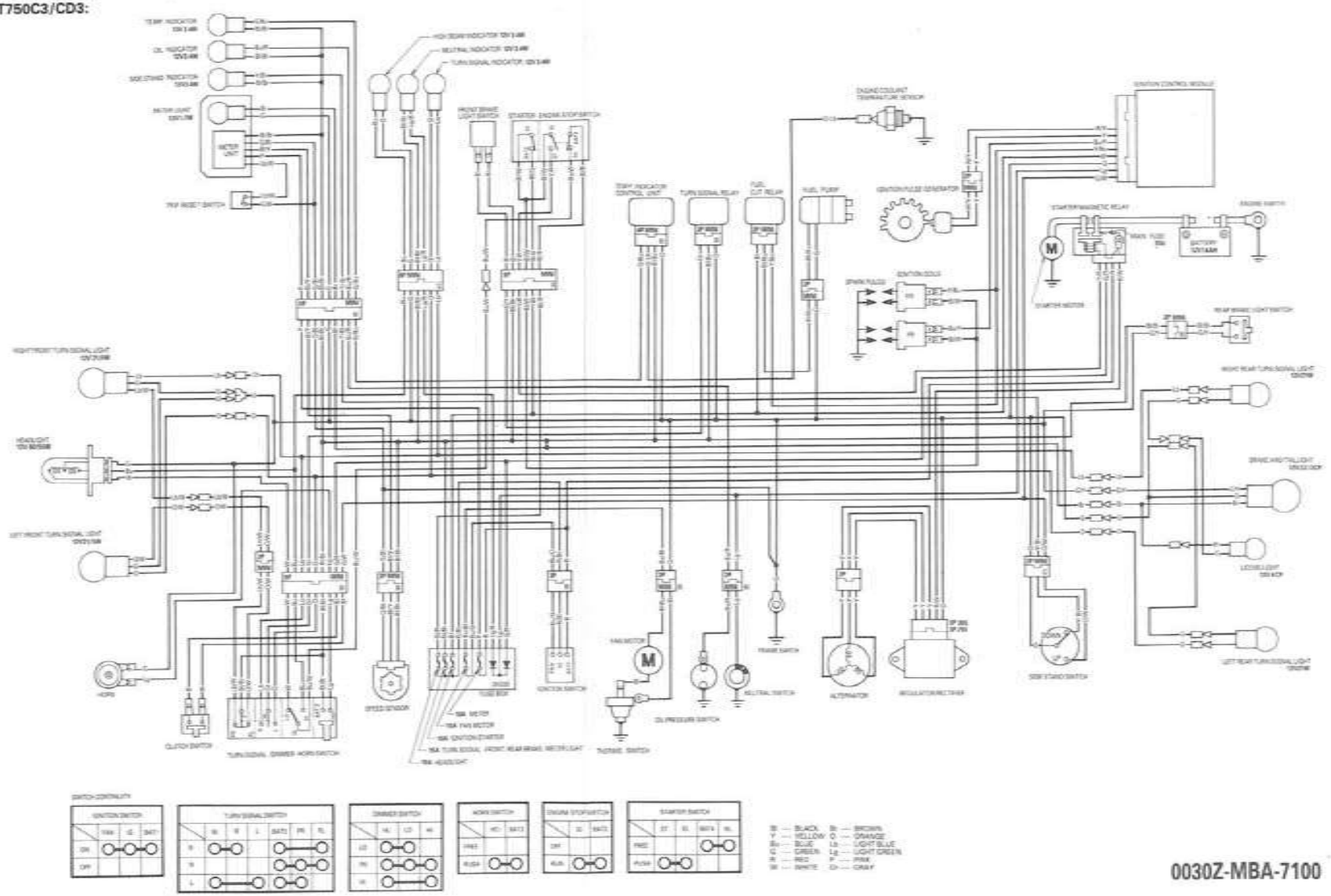


VT750C :
VT750CD/CD2 ('98 – 2000) :



0030Z-MBA-6700

VT750CD/CD2 (After 2000) :
VT750C3/CD3:



0030Z-MBA-7100

21. TROUBLESHOOTING

ENGINE DOES NOT START OR IS HARD TO START

		Possible cause
1. Check the fuel flow to carburetor	Not reaching carburetor	• Clogged fuel line and filter • Pinched fuel valve vacuum tube • Clogged fuel tank breather
Reaching carburetor ↓		
2. Perform a spark test	Weak or no spark	• Faulty spark plug • Fouled spark plug • Faulty ignition control module • Broken or shorted spark plug wire • Faulty ignition switch • Faulty ignition pulse generator • Faulty engine stop switch • Loose or disconnected ignition system wires
Good spark ↓		
3. Remove and inspect spark plugs	Wet plug	• Flooded carburetor • SE valve ON position • Throttle valve open • Air cleaner dirty
Good ↓		
4. Start by following normal procedure	Engine starts but stops	• Improper choke operation • Carburetor incorrectly adjusted • Intake pipe leaking • Improper ignition timing (Faulty ignition coil or ignition pulse generator) • Fuel contaminated
Engine does not start ↓		
5. Test cylinder compression	Low compression	• Valve clearance too small • Valve stuck open • Worn cylinder and piston ring • Damaged cylinder head gasket • Seized valve • Improper valve timing

ENGINE LACKS POWER

			Possible cause
1.	Raise wheel off the ground and spin by hand	Wheels do not spin freely	• Brake dragging • Worn or damaged wheel bearing
	Wheel spins freely		
2.	Check tire pressure	Pressure low	• Faulty tire valve • Punctured tire
	Pressure normal		
3.	Accelerate rapidly from low to second	Engine speed doesn't change accordingly when clutch is released	• Clutch slipping • Worn clutch discs/plates • Warped clutch discs/plates • Weak clutch spring • Additive in engine oil
	Engine speed reduced when clutch is relased		
4.	Accelerate lightly	Engine speed does not increase	• SE valve ON position • Clogged air cleaner • Restricated fuel flow • Clogged muffler • Pinched fuel tank breather
	Engine speed increases		
5.	Check ignition timing	Incorrect	• Faulty ignition control module • Faulty ignition pulse generator
	Correct		
6.	Test cylinder compression	Incorrect	• Valve stuck open • Worn cylinder and piston rings • Leaking head gasket • Improper valve timing
	Normal		
7.	Check carburetor for clogging	Clogged	• Carburetor not serviced frequently enough
	Not clogged		
8.	Remove spark plugs	Fouled or discolored	• Plugs not serviced frequently enough • Spark plugs are the incorrect heat range
	Not fouled or discolored		
9.	Check oil level and condition	Incorrect	• Oil level too high • Oil level too low • Contaminated oil
	Correct		
10.	Remove cylinder head cover and inspect lubrication	Valve train not lubricated properly	• Clogged oil passage • Clogged oil control orifice
	Valve train lubricated properly		

		Possible cause
11. Check for engine overheating	Overheating	• Coolant level low • Fan motor not working (faulty fan motor switch) • Thermostat stuck close • Excessive carbon build-up in combustion chamber • Use of poor quality fuel • Clutch slipping • Lean fuel mixture • Wrong type of fuel
Not overheating		
12. Accelerate or run at high speed	Engine knocks	• Worn piston and cylinder • Wrong type of fuel • Excessive carbon build-up in commbustion chamber • Ignition timing to advanced (faulty ignition control module) • Lean fuel mixture
Engine does not knock		

POOR PERFORMANCE AT LOW AND IDLE SPEED

		Possible cause
1. Check carburetor pilot screw adjustment	Incorrect	• See section 5
Correct		
2. Check for leaking intake pipe	Leaking	• Loose insulator clamps • Damaged insulator
Not leak		
3. Perform spark test	Weak or intermittent spark	• Faulty carbon or wet fouled spark plug • Faulty ignition control module • Faulty ignition coil • Broken or shorted spark plug wire • Faulty engine stop switch • Faulty ignition pulse generator • Faulty ignition switch • Loose or disconnected ignition system wires
Good spark		
4. Check ignition timing	Incorrect	• Improper ignition timing (faulty ignition control module)

POOR PERFORMAMCE AT HIGH SPEED

			Possible cause
1. Disconnect fuel tube at carburetor and pump the vacuum line ↓ Fuel flows freely	→	Fuel flow restricted	→ • Clogged fuel line • Clogged fuel tank breather • Faulty fuel valve • Clogged fuel filter
2. Remove the carburetor and check for clogging ↓ Not clogged	→	Clogged	→ • Clean
3. Check valve timing ↓ Correct	→	Incorrect	→ • Cam sprocket not installed properly
4. Check ignition timing ↓ Correct	→	Incorrect	→ • Faulty ignition control module • Faulty ignition pulse generator
5. Check valve spring ↓ Not weak	→	Weak	→ • Faulty spring

POOR HANDLING

		Possible cause
1. If steering is heavy	→	• Steering stem adjusting nut too tight • Damaged steering head bearings
2. If either wheel is wobbling	→	• Excessive wheel bearing play • Bent rim • Improper installed wheel hub • Swingarm pivot bearing excessively worn • Bent frame
3. If the motorcycle pulls to one side	→	• Faulty shock absorber • Front and rear wheel not aligned • Bent fork • Bent swingarm • Bent axle

22. INDEX