

16. CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

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SERVICE INFORMATION

GENERAL

- The crankcase halves must be separated to service the transmission, crankshaft and oil pump. To service these parts, the engine must be removed from the frame (page 10-5).
- Be careful not to damage the crankcase mating surfaces when servicing.

SPECIFICATIONS

Unit: mm (in)

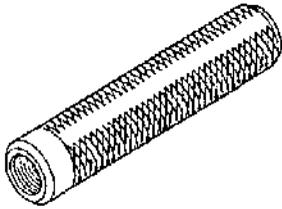
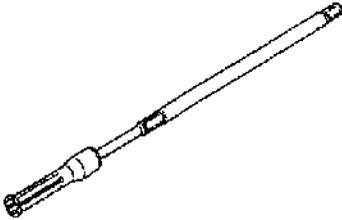
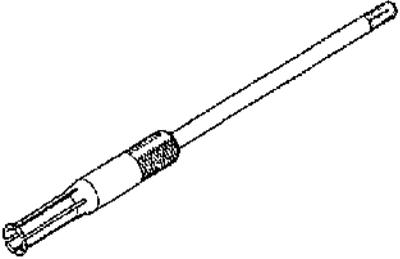
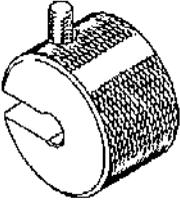
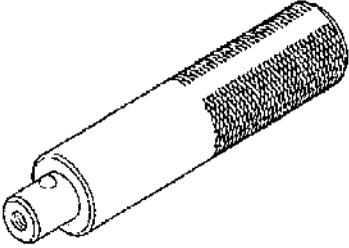
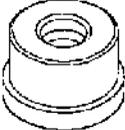
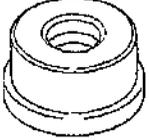
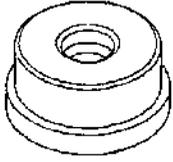
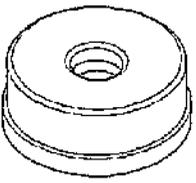
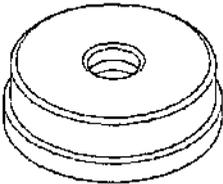
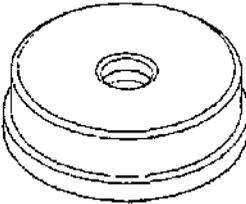
ITEM		STANDARD	SERVICE LIMIT	
Shift fork, shaft	Fork I.D.	Left	12.035 - 12.056 (0.4738 - 0.4746)	
		Right	12.003 - 12.024 (0.4726 - 0.4734)	
		Center	11.003 - 11.024 (0.4332 - 0.4340)	
	Shaft O.D.	Left/right	11.966 - 11.984 (0.4711 - 0.4718)	
		Center	10.969 - 10.980 (0.4319 - 0.4323)	
	Transmission	Fork claw thickness	4.93 - 5.00 (0.194 - 0.197)	4.8 (0.19)
Gear I.D.		M4	28.007 - 28.028 (1.1026 - 1.1035)	28.05 (1.104)
		M5	28.020 - 28.033 (1.1031 - 1.1037)	28.06 (1.105)
		C1	22.020 - 22.041 (0.8669 - 0.8678)	22.07 (0.869)
		C2	30.020 - 30.041 (1.1819 - 1.1827)	30.07 (1.184)
		C3	28.020 - 28.041 (1.1031 - 1.1040)	28.07 (1.105)
Gear bushing O.D.		M4, M5	27.959 - 27.980 (1.1007 - 1.1016)	27.94 (1.100)
		C1	21.959 - 21.980 (0.8645 - 0.8654)	21.94 (0.864)
		C2	29.959 - 29.980 (1.1795 - 1.1803)	29.94 (1.179)
		C3	27.959 - 27.980 (1.1007 - 1.1016)	27.94 (1.100)
Gear bushing I.D.		M5	25.020 - 25.041 (0.9850 - 0.9859)	25.06 (0.987)
		C1	19.020 - 19.041 (0.7488 - 0.7496)	19.06 (0.750)
		C2	27.020 - 27.041 (1.0638 - 1.0646)	27.06 (1.065)
		C3	25.020 - 25.041 (0.9850 - 0.9859)	25.06 (0.987)
Mainshaft O.D.		at M5	24.967 - 24.980 (0.9830 - 0.9835)	24.95 (0.982)
Countershaft O.D.	at C1	18.959 - 18.980 (0.7464 - 0.7472)	18.94 (0.746)	
	at C2	26.959 - 26.980 (1.0614 - 1.0622)	26.94 (1.061)	
	at C3	24.959 - 24.980 (0.9826 - 0.9835)	24.94 (0.982)	
Crankshaft	Runout	Left	-	
		Right	-	
	Big end side clearance	0.30 - 0.75 (0.012 - 0.030)	0.75 (0.030)	
	Big end radial clearance	0.006 - 0.018 (0.0002 - 0.0007)	0.05 (0.002)	

TORQUE VALUE

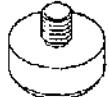
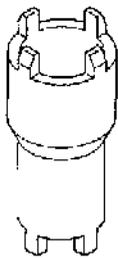
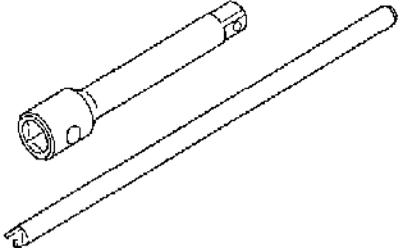
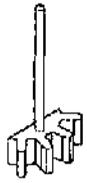
Balancer shaft lock nut	54 N·m (5.5 kgf·m, 40 lbf·ft)	Apply oil to the threads and seating surface. Replace with a new one and stake.
Cam chain tensioner bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	Apply locking agent to the threads.
Primary drive gear bolt	108 N·m (11.0 kgf·m, 80 lbf·ft)	Apply oil to the threads and seating surface.
Bearing set plate bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	Apply locking agent to the threads.
Crankshaft Bearing set plate bolt	16 N·m (1.6 kgf·m, 12 lbf·ft)	Apply locking agent to the threads.
Countershaft Bearing set plate torx screw	12 N·m (1.2 kgf·m, 9 lbf·ft)	Apply locking agent to the threads.
Transmission oil drain bolt	22 N·m (2.2 kgf·m, 16 lbf·ft)	Apply oil to the threads and seating surface.
Neutral switch (hole plug bolt)	12 N·m (1.2 kgf·m, 9 lbf·ft)	
Piston jet mounting bolt	10 N·m (1.0 kgf·m, 7 lbf·ft)	Apply locking agent to the threads.

CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

TOOLS

<p>Bearing remover handle 07936-3710100</p> 	<p>Bearing remover, 17 mm 07936-3710300</p> 	<p>Bearing remover, 20 mm 07936-3710600</p> 
<p>Remover weight 07741-0010201</p>  <p>or 07936-3710200 or 07936-371020A (U.S.A. only)</p>	<p>Driver 07749-0010000</p> 	<p>Attachment, 32 x 35 mm 07746-0010100</p> 
<p>Attachment, 37 x 40 mm 07746-0010200</p> 	<p>Attachment, 42 x 47 mm 07746-0010300</p> 	<p>Attachment, 52 x 55 mm 07746-0010400</p> 
<p>Attachment, 62 x 68 mm 07746-0010500</p> 	<p>Attachment, 72 x 75 mm 07746-0010600</p> 	<p>Pilot, 17 mm 07746-0040400</p> 

CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

<p>Pilot, 20 mm 07746-0040500</p> 	<p>Pilot, 25 mm 07746-0040600</p> 	<p>Pilot, 30 mm 07746-0040700</p> 
<p>Lock nut wrench, 20 x 24 mm 07716-0020100</p> 	<p>Extension bar 07716-0020500</p>  <p>or commercially available equivalent</p>	<p>Gear holder, M2.5 07724-0010100</p>  <p>or 07724-001A100 (U.S.A. only)</p>
<p>Gear holder, M1.5 07724-0010200</p>  <p>or 07724-001A200 (U.S.A. only)</p>		

TROUBLESHOOTING

Excessive engine noise

- Worn connecting rod big end bearing
- Worn crankshaft main journal bearing
- Worn balancer bearing
- Improper balancer installation
- Worn transmission gears
- Worn transmission bearings

Transmission jumps out of gear

- Worn gear dogs or dog holes
- Worn shift drum guide groove
- Worn shift fork guide pin
- Worn gear shifter groove
- Worn shift fork
- Bent shift fork shaft

Hard to shift

- Incorrect clutch adjustment
- Bent shift fork
- Bent shift fork shaft
- Bent shift fork claw
- Damaged shift drum guide grooves
- Damaged shift fork guide pin

Engine vibration

- Excessive crankshaft runout
- Improper balancer timing

BALANCER GEAR/BALANCER

REMOVAL

Remove the following:

- right crankcase cover (page 14-5)
- flywheel (page 21-12)
- clutch assembly (page 14-6)

Temporarily install the clutch outer guide, needle bearing and clutch outer onto the mainshaft.

Install the special tool between the primary drive and driven gears as shown, and loosen the primary drive gear bolt.

TOOL:

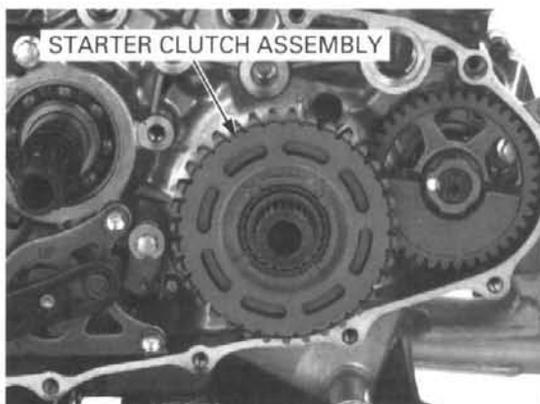
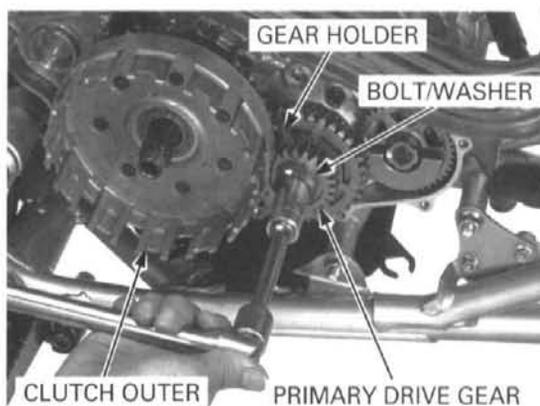
Gear holder, M2.5

07724-0010100 or
07724-001A100
(U.S.A. only)

Remove the clutch outer, needle bearing and clutch outer guide.

Remove the primary drive gear bolt, washer and gear.

TRX450ER only: Remove the starter clutch assembly.



Install the special tool between the balancer drive and driven gears as shown, and loosen the balancer shaft lock nut using the special tool.

TOOLS:

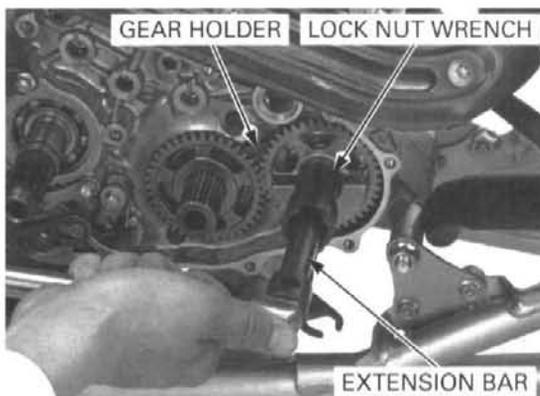
Gear holder, M1.5

07724-0010200 or
07724-001A200
(U.S.A. only)

Lock nut wrench, 20 x 24 mm

07716-0020100
07716-0020500 or
commercially
available
equivalent

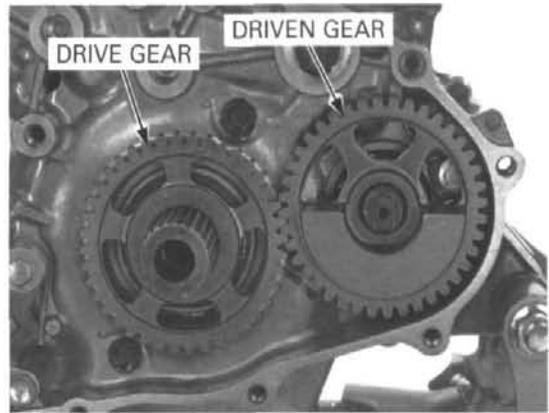
Extension bar



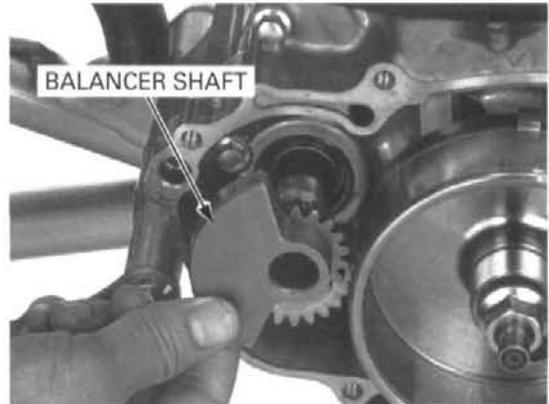
Remove the lock nut and washer.

CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Remove the balancer drive and driven gears.



Position the balancer weight as shown and remove the balancer shaft.



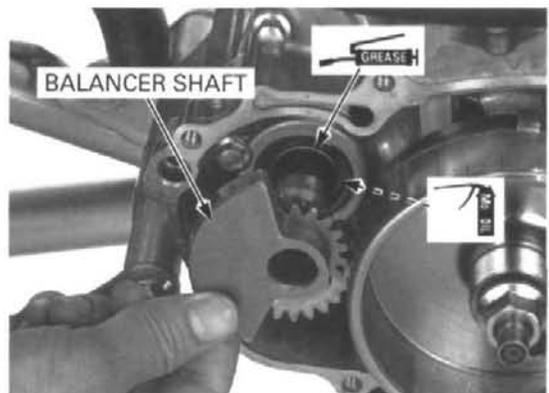
INSPECTION

Check the balancer shaft for wear, damage or scratches.



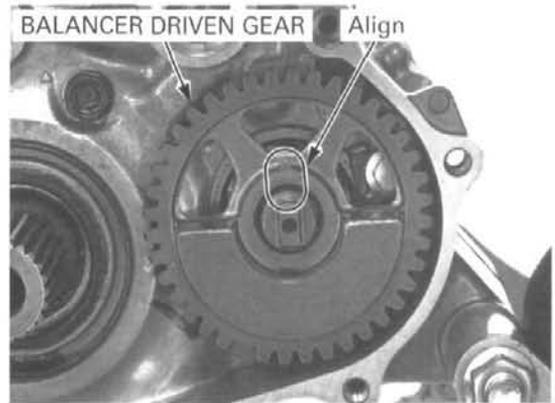
INSTALLATION

Apply molybdenum oil solution to the balancer shaft ball bearing and needle bearing. Apply grease to the balancer shaft oil seal lip. Position the balancer weight as shown, install the balancer shaft into the crankcase.

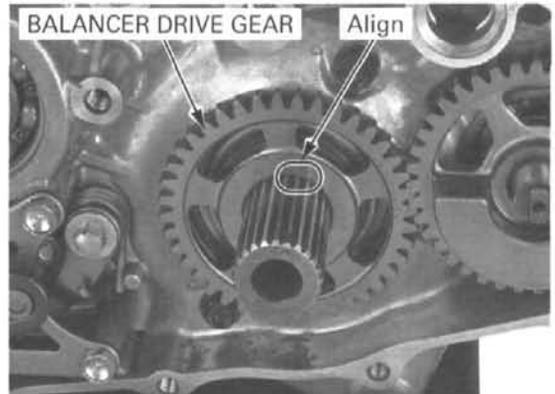


CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

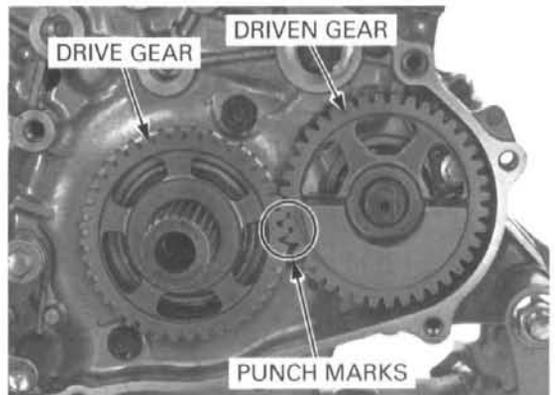
Install the balancer driven gear to the balancer shaft while aligning its tab with the clinched tooth of the balancer shaft.



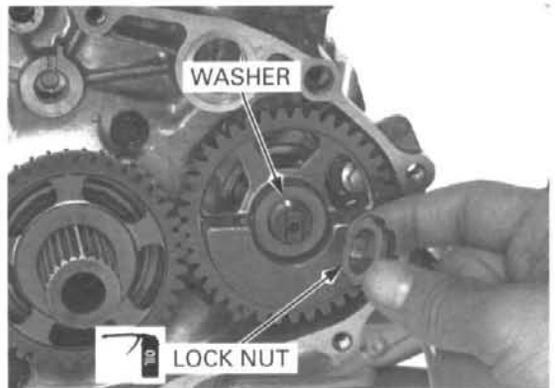
Install the balancer drive gear onto the crankshaft by aligning the wide groove with the flat tooth (punch mark).



Mesh the balancer drive and driven gears while aligning the punch marks (balancer timing marks) as shown.



Install the washer.
Apply oil to a new balancer shaft lock nut threads and seating surface, and install it onto the balancer shaft.



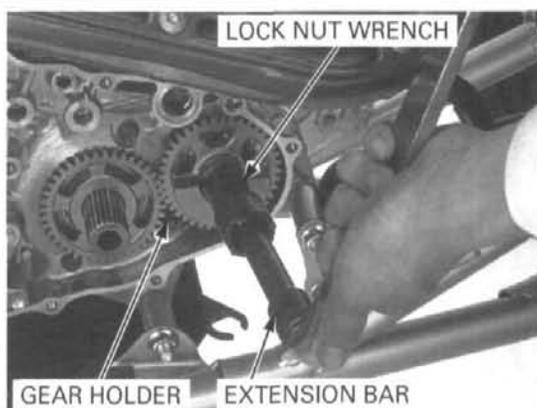
CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Install the special tool between the balancer drive and driven gears as shown, and tighten the balancer shaft lock nut using the special tool.

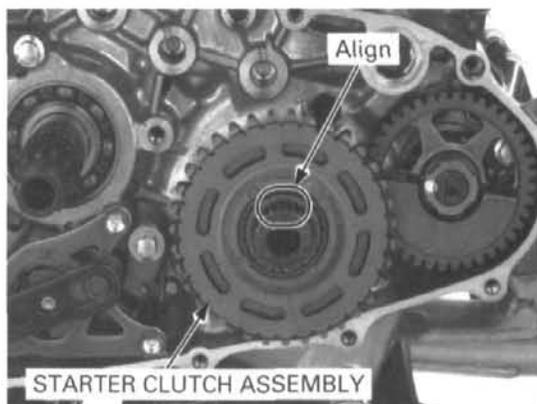
TOOLS:

Gear holder, M1.5	07724-0010200 or 07724-001A200 (U.S.A. only)
Lock nut wrench, 20 x 24 mm	07716-0020100
Extension bar	07716-0020500 or commercially available equivalent

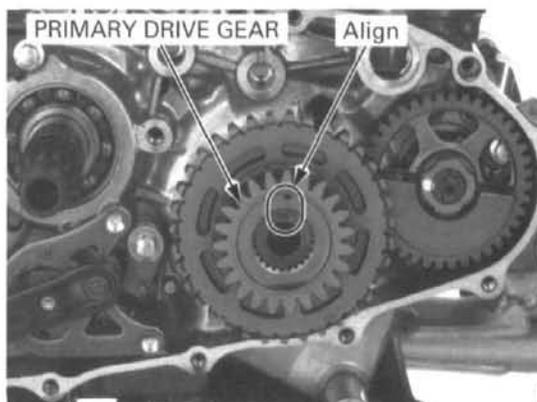
TORQUE: 54 N·m (5.5 kgf·m, 40 lbf·ft)



TRX450ER only: Install the starter clutch assembly while aligning its wide cut-out in the splines with the punch mark on the mainshaft.



Install the primary drive gear with the punch mark facing out Install the primary drive gear onto the crankshaft by aligning the wide groove with the flat tooth (punch mark).



Temporarily install the clutch outer guide, needle bearing and clutch outer onto the mainshaft. Install the special tool between the primary drive and driven gears as shown.

TOOL:

Gear holder, M2.5	07724-0010100 or 07724-001A100 (U.S.A. only)
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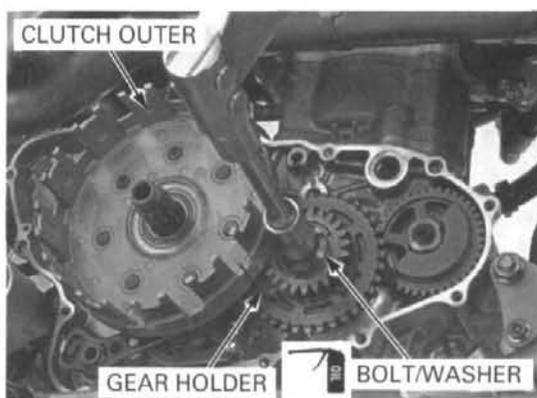
Apply transmission oil to the primary drive gear bolt threads and seating surface.

Install the washer and tighten the primary drive gear bolt to the specified torque.

TORQUE: 108 N·m (11.0 kgf·m, 80 lbf·ft)

Install the following:

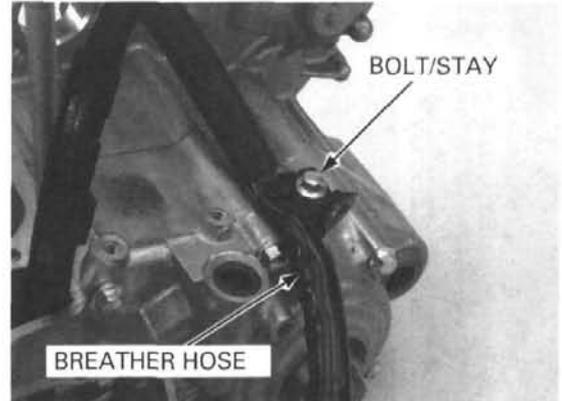
- clutch assembly (page 14-11)
- right crankcase cover (page 14-28)
- flywheel (page 21-12)



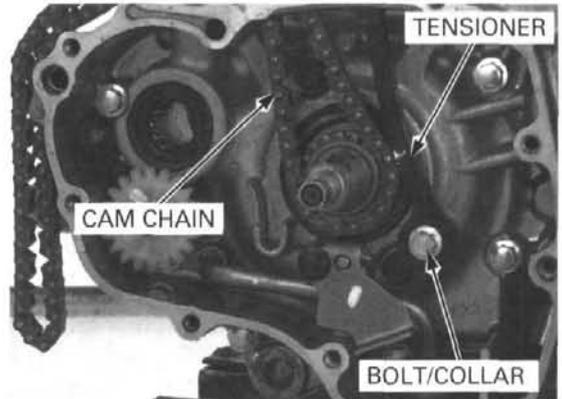
CRANKCASE SEPARATION

Remove the following:

- engine (page 10-5)
- cylinder head (page 11-15)
- cylinder, piston (page 12-5)
- clutch assembly (page 14-6)
- starter clutch (TRX450ER) (page 14-15)
- gearshift linkage (page 14-24)
- flywheel (page 21-12)
- balancer shaft (page 16-7)
- starter motor (TRX450ER) (page 23-6)
- kickstarter (TRX450R) (page 14-20)
- drive sprocket (page 10-5)
- bolt, stay and breather hose



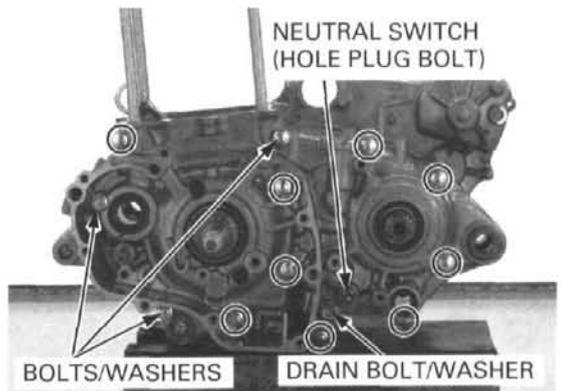
- cam chain
- bolt, cam chain tensioner and pivot collar
- oil pump driven gear/drive pin (page 6-5)
- oil strainer (page 6-5)



Remove the countershaft collar and seal ring.

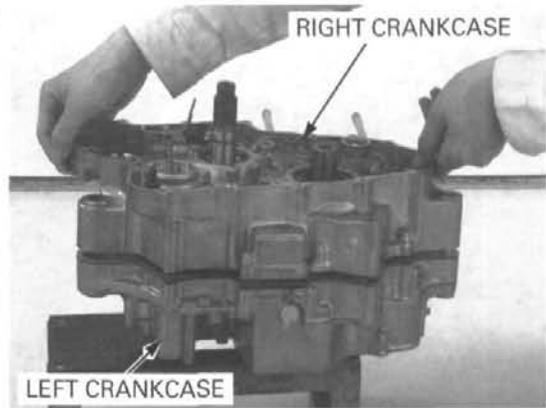


- Remove the transmission oil drain bolt and sealing washer.
- Remove the neutral switch (TRX450ER) or hole plug bolt (TRX450R).
- Loosen the crankcase bolts in a crisscross pattern in 2 or 3 steps.
- Remove the crankcase bolts and washers.

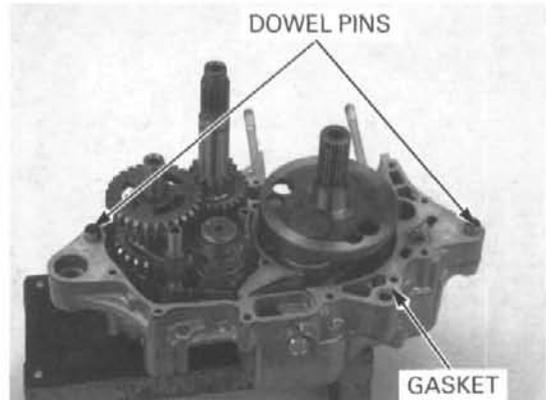


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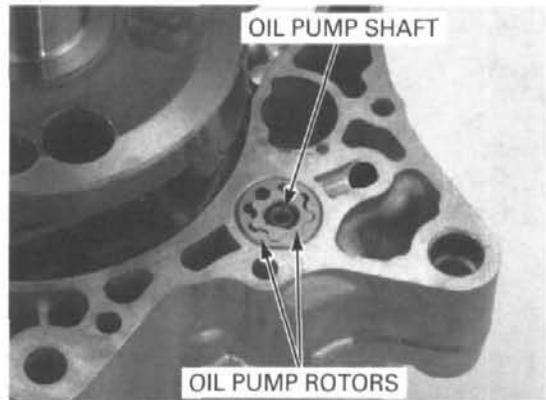
Place the left crankcase down, separate the right crankcase from the left crankcase.



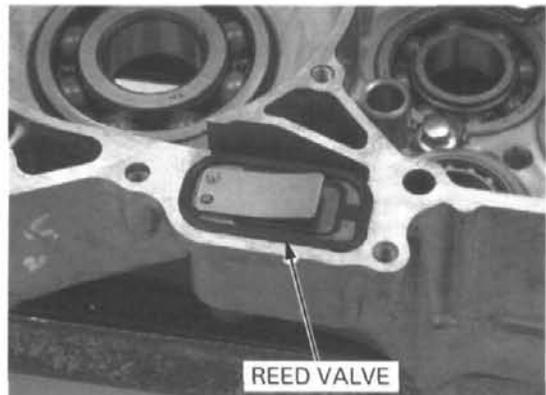
Remove the dowel pins and gasket.



Remove the oil pump shaft, inner and outer rotors from the left crankcase if necessary.

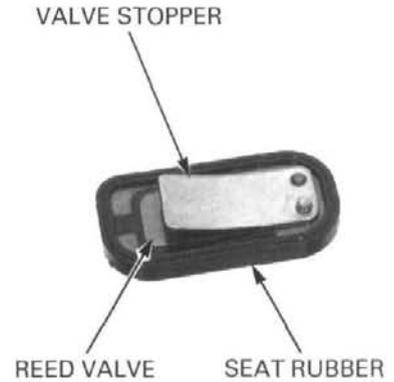


Remove the reed valve from the right crankcase.



REED VALVE INSPECTION

Check the reed valve for fatigue or damage.
Check the reed valve stopper for cracks, damage or deformation.
Check the seat rubber for deterioration or damage.



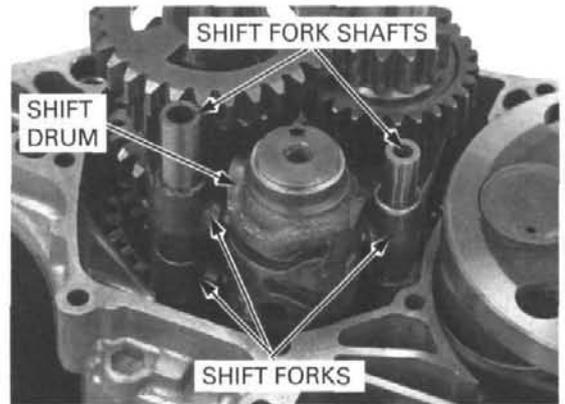
TRANSMISSION

DISASSEMBLY

Separate the crankcase halves (page 16-11).

Pull out the shift fork shafts.

Remove the right shift fork, left shift fork, center shift fork and shift drum.



Remove the mainshaft, countershaft as an assembly from left crankcase.

Disassemble the mainshaft and countershaft.

NOTE:

- Keep track of the disassembled parts (gears, bushings, washers and rings) by sliding them onto a tool or slipping them onto a piece of wire.

Do not expand the snap ring more than necessary for removal.



INSPECTION

Check the gear shifter groove, dogs, dog holes and teeth for abnormal wear or damage.

Measure the I.D. of each gear.

- SERVICE LIMITS:** M4: 28.05 mm (1.104 in)
- M5: 28.06 mm (1.105 in)
- C1: 22.07 mm (0.869 in)
- C2: 30.07 mm (1.184 in)
- C3: 28.07 mm (1.105 in)

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

- SERVICE LIMITS:** M4, M5: 27.94 mm (1.100 in)
- C1: 21.94 mm (0.864 in)
- C2: 29.94 mm (1.179 in)
- C3: 27.94 mm (1.100 in)

Measure the I.D. of each bushing.

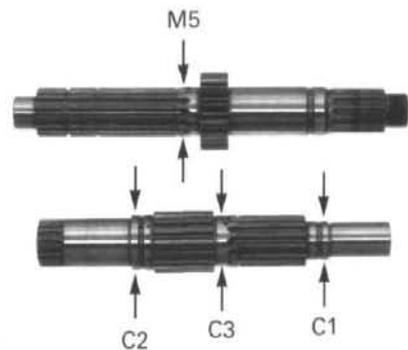
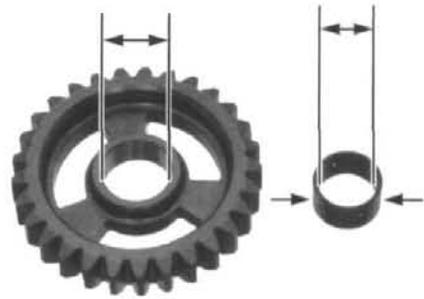
- SERVICE LIMITS:** M5: 25.06 mm (0.987 in)
- C1: 19.06 mm (0.750 in)
- C2: 27.06 mm (1.065 in)
- C3: 25.06 mm (0.987 in)

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

- SERVICE LIMITS:** at M5: 24.95 mm (0.982 in)
- at C1: 18.94 mm (0.746 in)
- at C2: 26.94 mm (1.061 in)
- at C3: 24.94 mm (0.982 in)

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

Check the shift drum guide grooves for abnormal wear or damage.



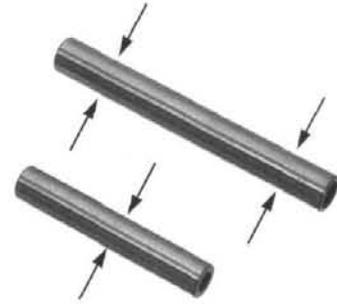
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Check the shift fork shafts for abnormal wear or damage.

Measure each shift fork shaft O.D.

SERVICE LIMITS:

Left and right: 11.950 mm (0.4700 in)
Center: 10.969 mm (0.4319 in)



Check the shift forks for abnormal wear or damage.

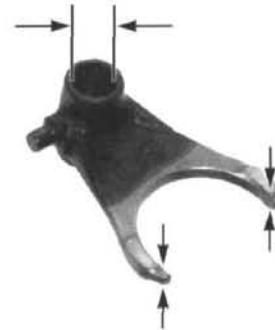
Measure the I.D. of each shift fork.

SERVICE LIMITS:

Left: 12.07 mm (0.475 in)
Right: 12.04 mm (0.474 in)
Center: 11.04 mm (0.435 in)

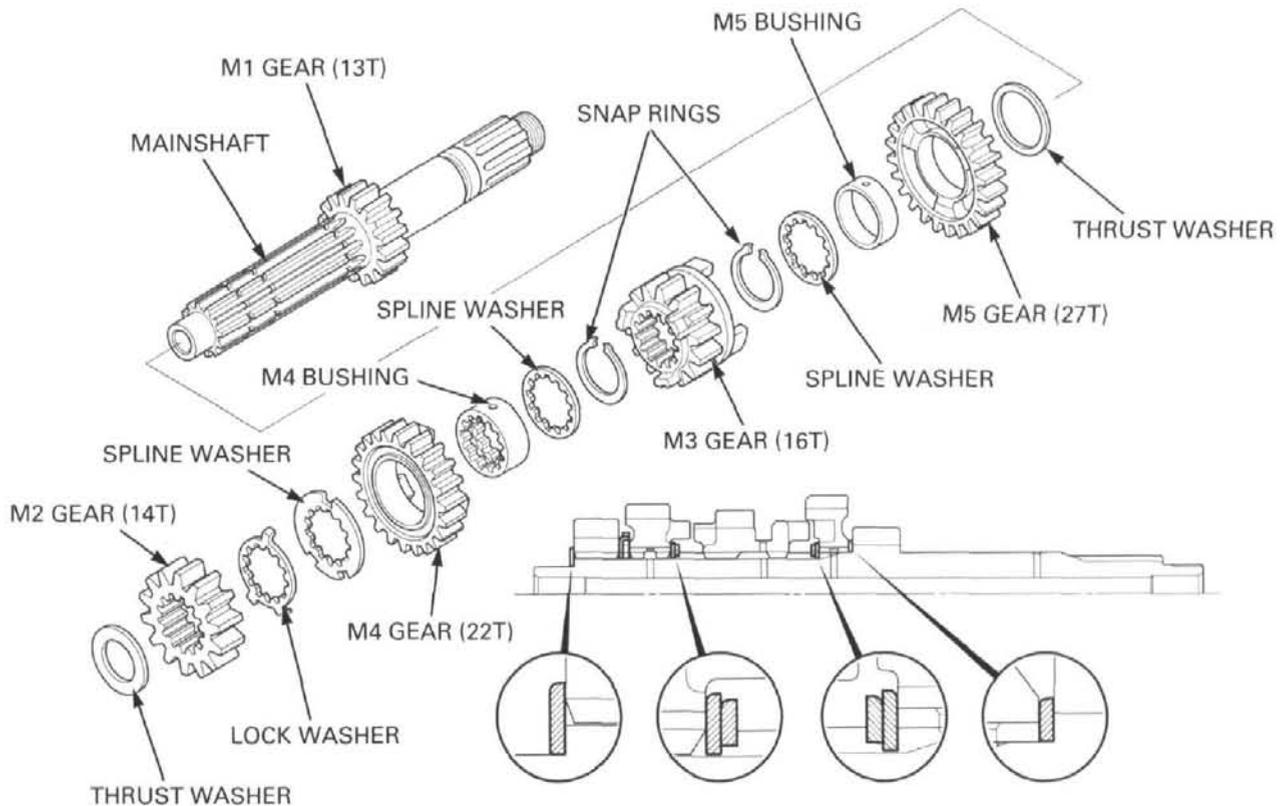
Measure claw thickness of each shift fork.

SERVICE LIMIT: 4.8 mm (0.19 in)

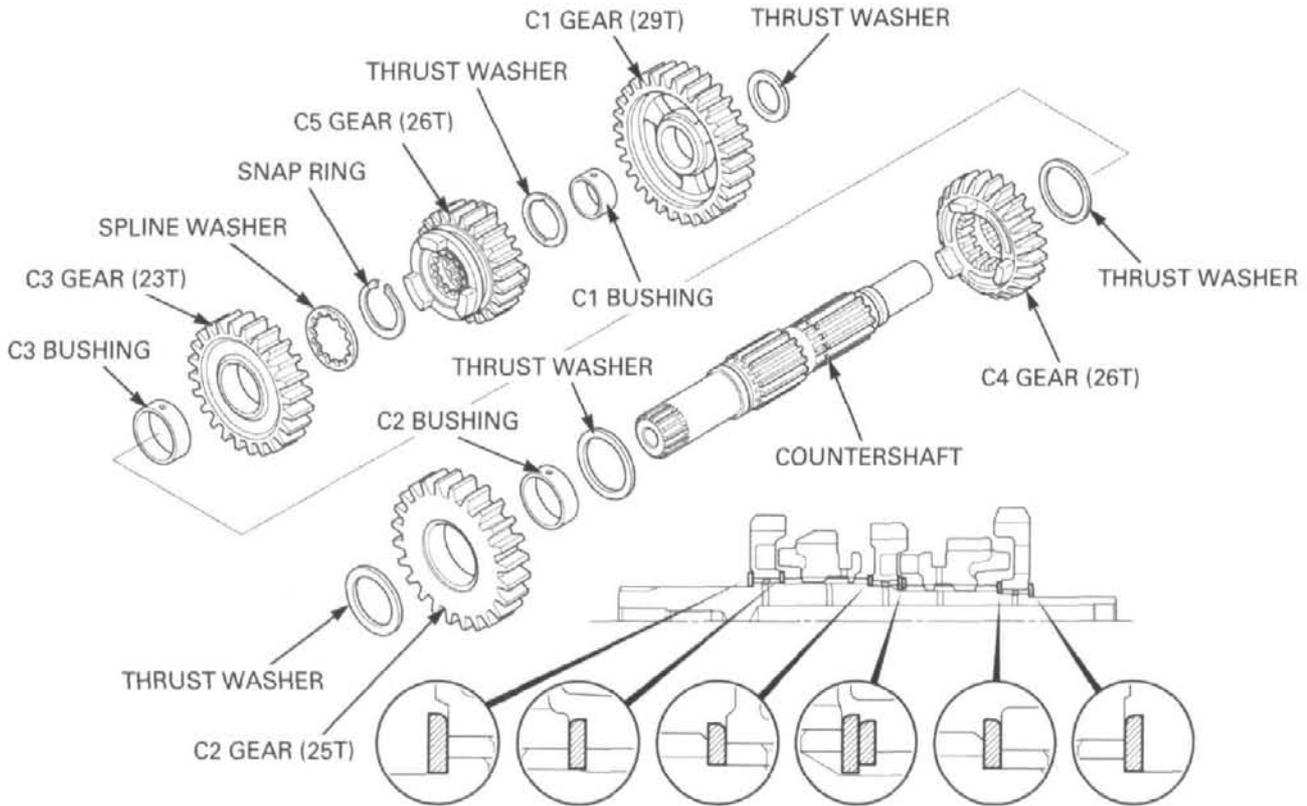


ASSEMBLY

MAINSHAFT



COUNTERSHAFT



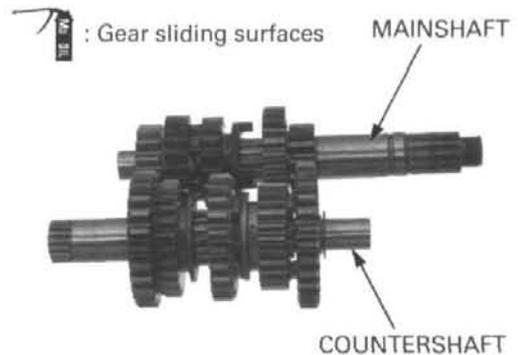
Apply molybdenum oil solution to the sliding surfaces of the transmission gears.

Assemble the mainshaft and countershaft.

NOTE:

- Always install the washer and snap ring with the chamfered (rolled) edge facing away from the thrust load.
- Do not reuse worn snap ring which could easily spin in the groove.
- Install the snap ring so that its end gap aligns with the groove in the splines.
- Make sure that the snap ring is fully seated in the shaft groove after installing it.

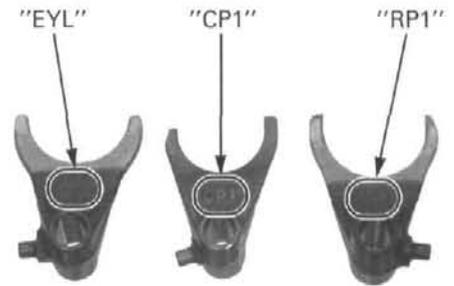
Install the mainshaft and countershaft as an assembly into the left crankcase.



Make sure the shift fork identification marks.
The left shift fork has an "EYL" mark, the center shift fork has a "CP1" mark and the right shift fork has an "RP1" mark.

Face the shift fork marks as follows:

- Left shift fork mark to the left crankcase
- Center and right shift fork marks to the right crankcase



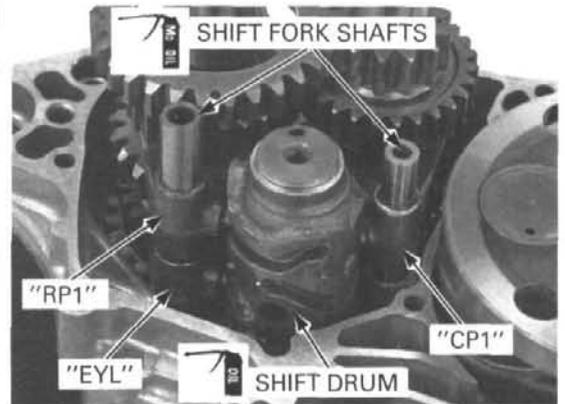
Apply molybdenum oil solution to the claws and guide pins of the left, center and right shift forks.
Install the shift forks to the grooves in the sliding gears.

Apply oil to the shift drum guide grooves and install it into the left crankcase.

Install the shift fork guide pins into the shift drum guide grooves.

Apply molybdenum oil solution to the shift fork shafts and install them through the shift forks and into the left crankcase.

Assemble the crankcase halves (page 16-25).



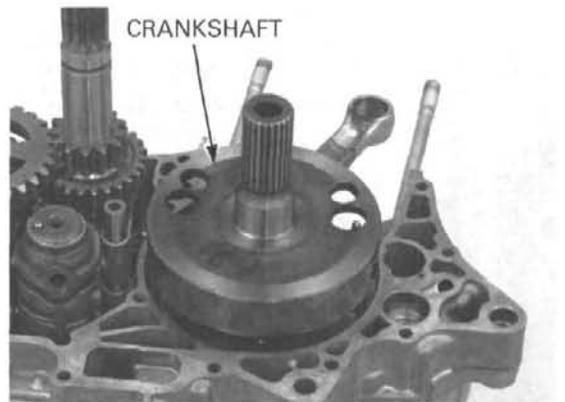
CRANKSHAFT

REMOVAL

Separate the crankcase halves (page 16-11).

Remove the transmission (page 16-13).

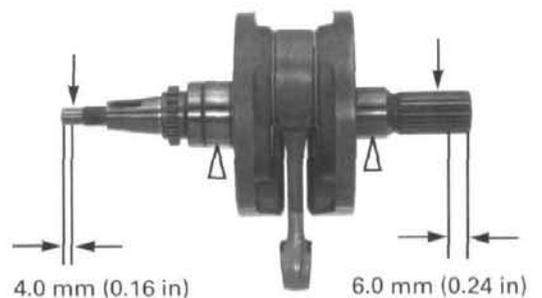
Remove the crankshaft from the left crankcase.



INSPECTION

Set the crankshaft on a stand or V-blocks and measure the runout using a dial indicator.

SERVICE LIMITS: L: 0.05 mm (0.002 in)
R: 0.03 mm (0.001 in)



CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Measure the connecting rod big end side clearance.

SERVICE LIMIT: 0.75 mm (0.030 in)

FEELER GAUGE



Measure the connecting rod big end radial clearance.

SERVICE LIMIT: 0.05 mm (0.002 in)



INSTALLATION

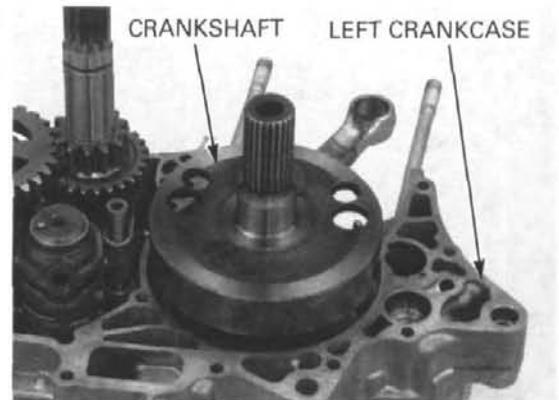
Coat the oil seal contacting surface of the crankshaft with oil.

Apply grease to a new crankshaft oil seal lip and install it into the left crankcase.

Install the crankshaft into the left crankcase.

Install the transmission (page 16-15).

Assemble the crankcase halves (page 16-25).

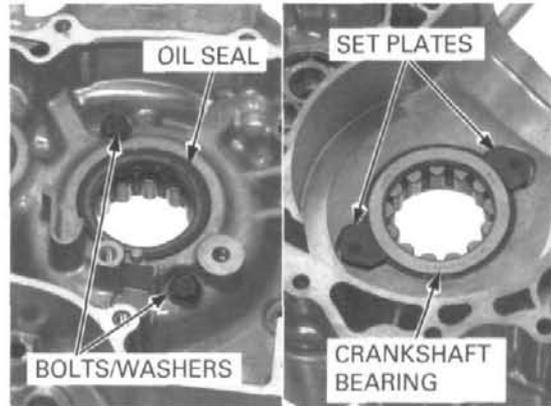


LEFT CRANKCASE BEARING REPLACEMENT

Remove the crankshaft oil seal.

Remove the set plate bolts, washers and set plates from the left crankcase.

Drive the crankshaft bearing out of the left crankcase.

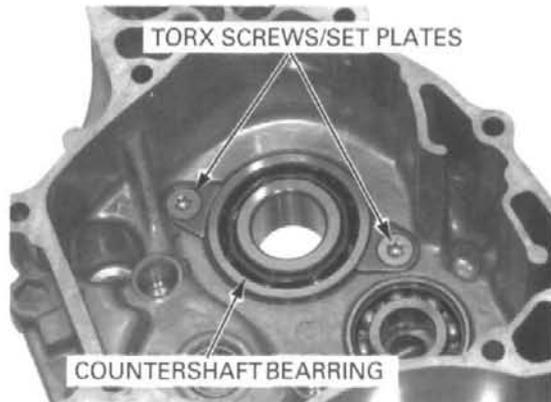


Remove the countershaft and balancer shaft oil seals.

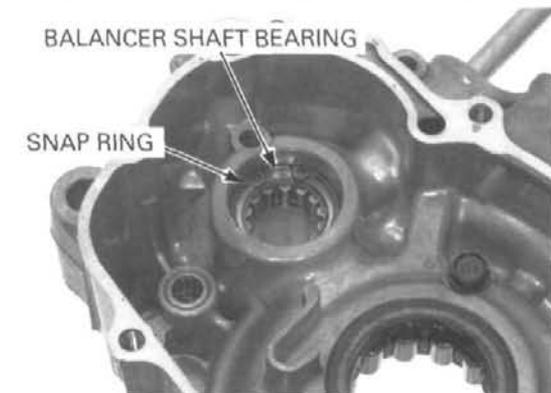


Remove the torx screws and countershaft bearing set plates.

Drive the countershaft bearing out of the left crankcase.

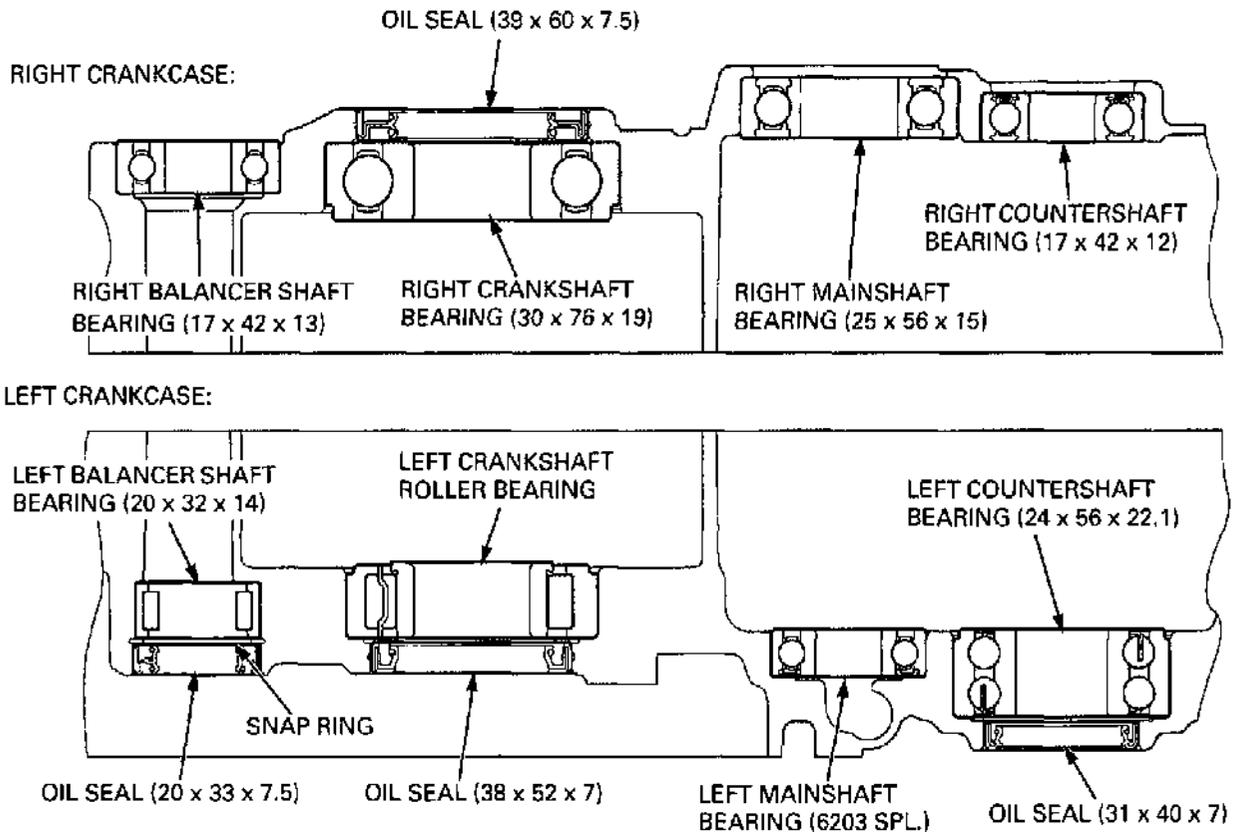


Remove the snap ring from left crankcase.



CRANKCASE BEARING

CRANKCASE BEARING/OIL SEAL LOCATION

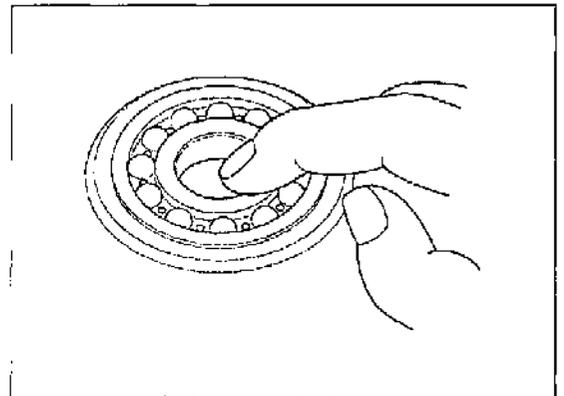


INSPECTION

Remove the crankshaft (page 16-17).

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

Replace any bearing if the inner race does not turn smoothly, quietly or if the outer race fits loosely in the crankcase.



CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Remove the mainshaft bearing and balancer shaft bearing using the special tools.

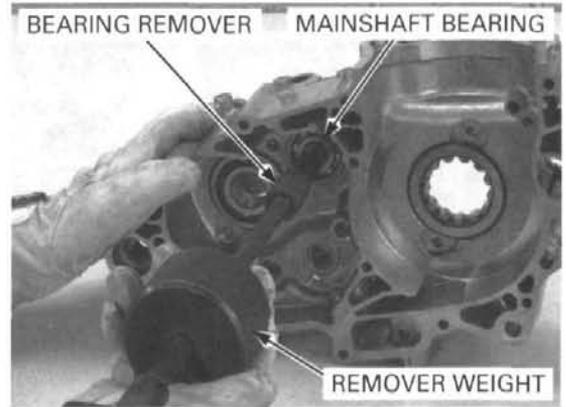
TOOLS:

Mainshaft bearing:

Bearing remover, 17 mm	07936-3710300
Remover handle	07936-3710100
Remover weight	07741-0010201 or 07936-3710200 or 07936-371020A (U.S.A. only)

Balancer shaft bearing:

Bearing remover, 20 mm	07936-3710600
Remover handle	07936-3710100
Remover weight	07741-0010201 or 07936-3710200 or 07936-371020A (U.S.A. only)



Drive in new bearings squarely with the marking side facing toward the inside of the crankcase.

Drive new bearings into the left crankcase with the markings facing up, using the special tools.

TOOLS:

Crankshaft bearing:

Driver	07749-0010000
Attachment, 62 x 68 mm	07746-0010500

Countershaft bearing:

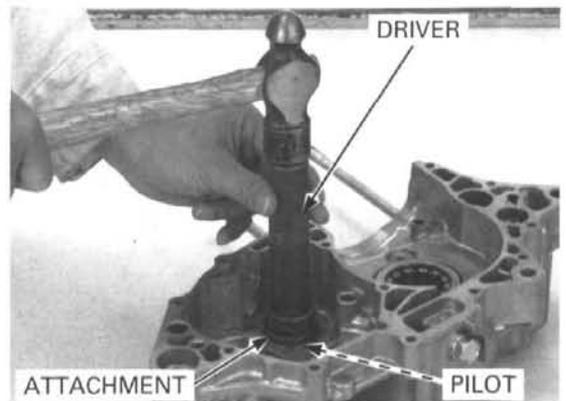
Driver	07749-0010000
Attachment, 52 x 55 mm	07746-0010400

Mainshaft bearing:

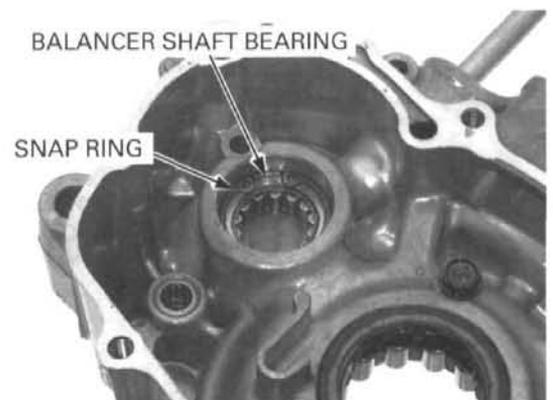
Driver	07749-0010000
Attachment, 37 x 40 mm	07746-0010200
Pilot, 17 mm	07746-0040400

Balancer shaft bearing:

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



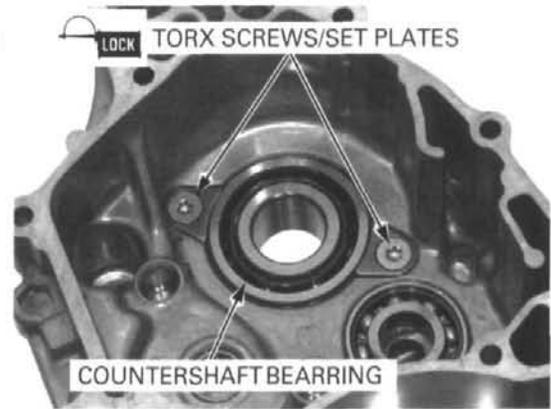
Install the snap ring into the left crankcase securely.



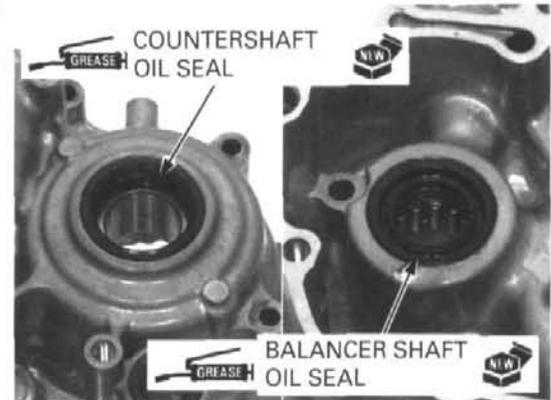
CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Apply locking agent to the torx screw threads.
Install the countershaft bearing set plates and
tighten the torx screws to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



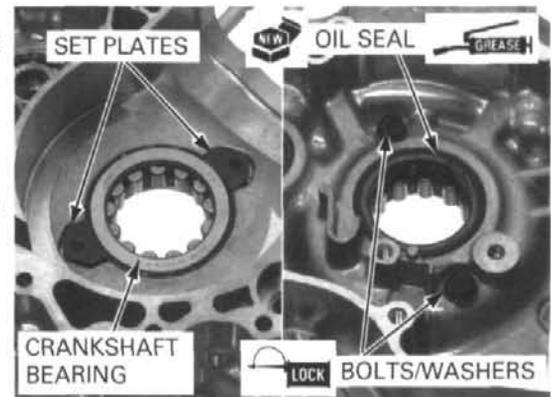
Apply grease to a new countershaft and balancer
shaft oil seal lips.
Install the oil seals to the crankcase until it is flush
with the crankcase surface.



Apply a locking agent to the set plate bolt threads.
Install the set plates, washers and bolts to the left
crankcase.
Tighten the set plate bolts to the specified torque.

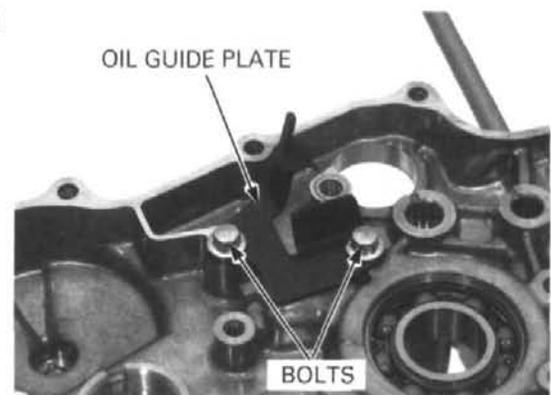
TORQUE: 16 N·m (1.6 kgf·m, 12 lbf·ft)

Apply grease to a new crankshaft oil seal lip.
Install the oil seal to the crankcase until it is flush
with the crankcase surface.



RIGHT CRANKCASE

Remove the bolts and oil guide plate from the right
crankcase.

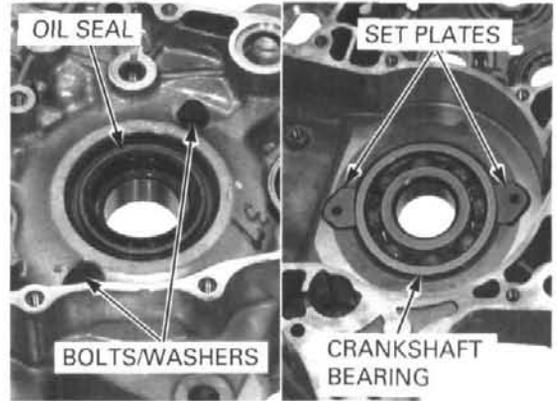


CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Remove the crankshaft oil seal.

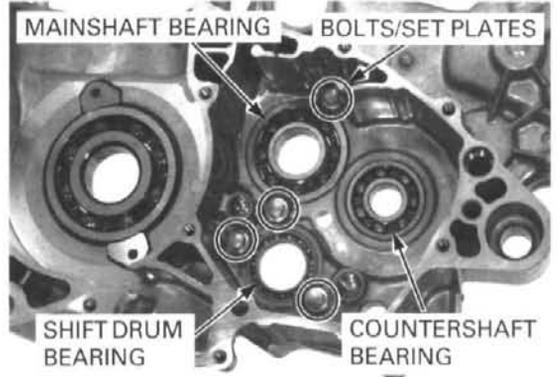
Remove the set plate bolts, washers and set plates from the right crankcase.

Drive the crankshaft bearing out of the right crankcase.



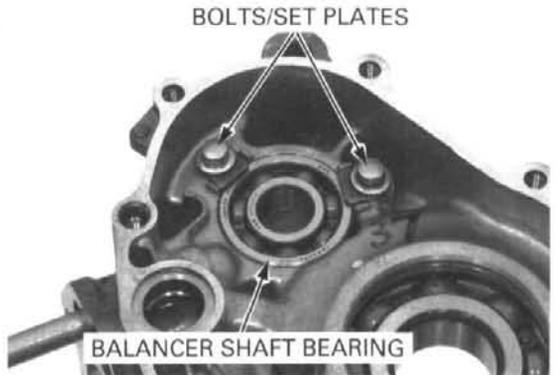
Remove the bolts and set plates.

Drive the countershaft bearing, mainshaft bearing and shift drum bearing out of the right crankcase.



Remove the bolts and set plates.

Drive the balancer shaft bearing out of the right crankcase.



CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Drive in new bearings squarely with the marking side facing toward the inside of the crankcase.

Drive in new bearings into the right crankcase using the special tools.

TOOLS:

Crankshaft bearing:

Driver	07749-0010000
Attachment, 72 x 75 mm	07746-0010600
Pilot, 30 mm	07746-0040700

Countershaft bearing:

Driver	07749-0010000
Attachment, 42 x 47 mm	07746-0010300
Pilot, 17 mm	07746-0040400

Mainshaft bearing:

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

Shift drum bearing:

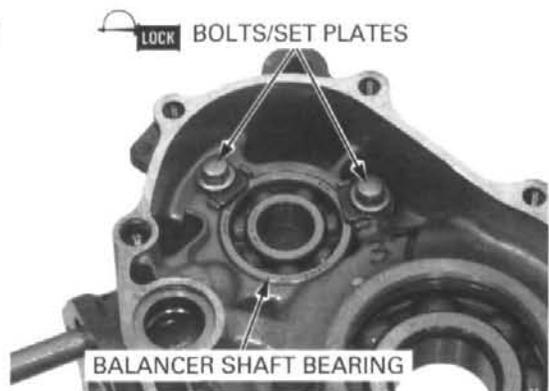
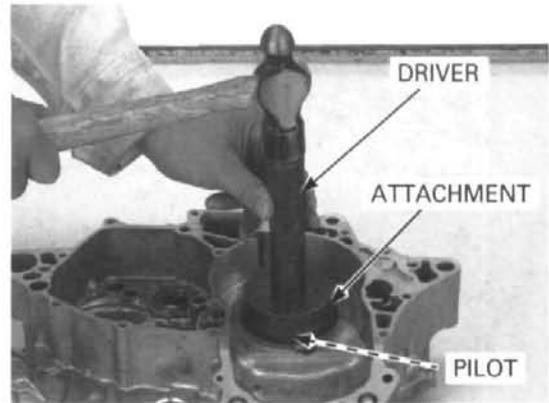
Driver	07749-0010000
Attachment, 42 x 47 mm	07746-0010300
Pilot, 25 mm	07746-0040600

Balancer shaft bearing:

Driver	07749-0010000
Attachment, 42 x 47 mm	07746-0010300
Pilot, 17 mm	07746-0040400

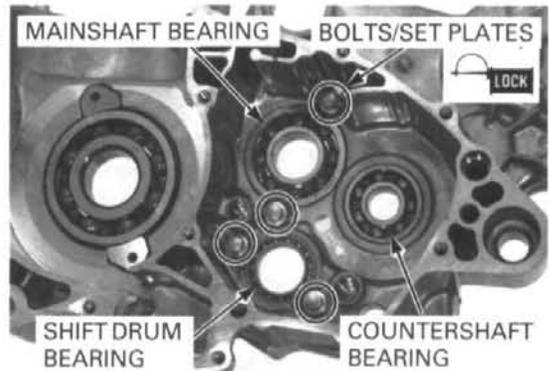
Apply locking agent to the set plate bolt threads. Install the balancer shaft bearing set plates and tighten the bolts to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



Apply locking agent to the set plate bolt threads. Install the mainshaft and shift drum bearing set plates, and tighten the bolts to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

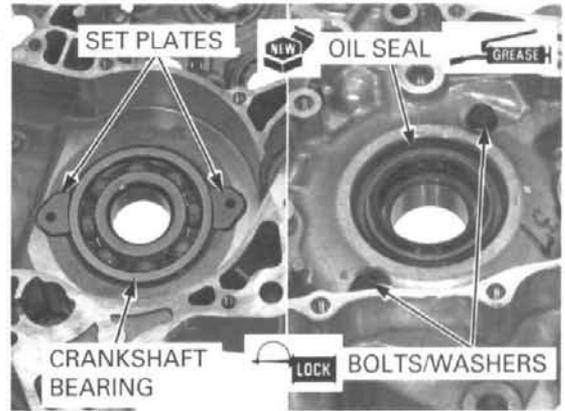


CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

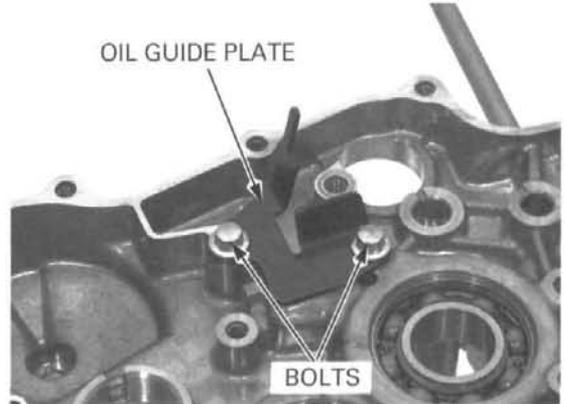
Apply a locking agent to the set plate bolt threads.
Install the set plates, washer and bolts to the right crankcase.
Tighten the set plate bolts to the specified torque.

TORQUE: 16 N·m (1.6 kgf·m, 12 lbf·ft)

Apply grease to a new crankshaft oil seal lip.
Install the oil seal to the crankcase until it is flush with the crankcase surface.

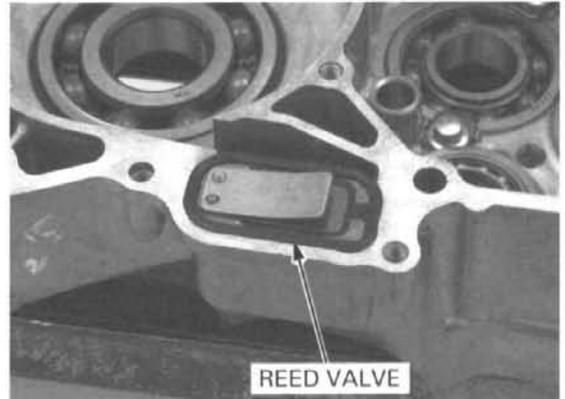


Install the oil guide plate to the right crankcase and tighten the bolts.

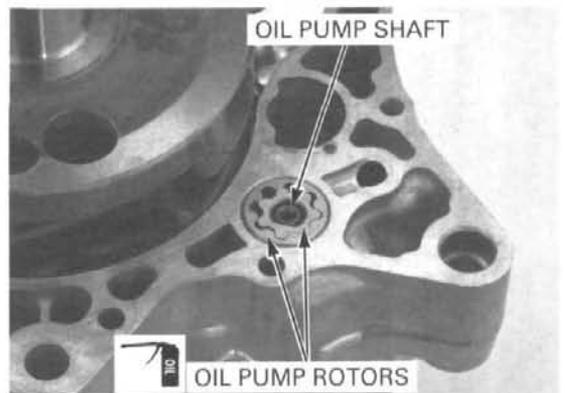


CRANKCASE ASSEMBLY

Install the reed valve into the right crankcase.



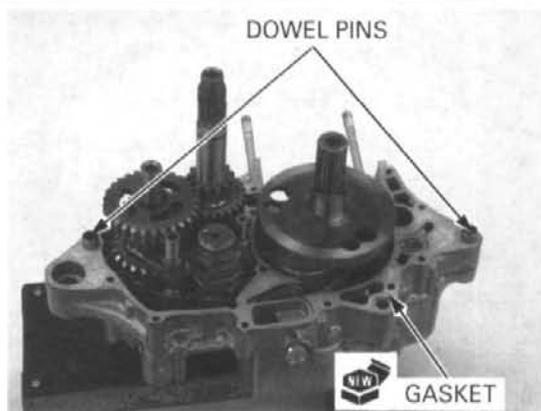
Dip oil pump inner and outer rotors in clean engine oil.
Install the oil pump shaft, inner and outer rotors into the left crankcase.



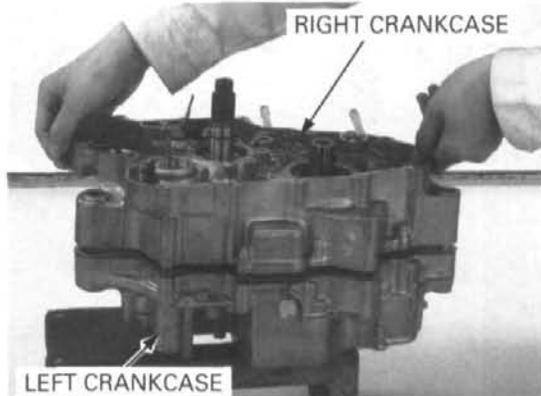
CRANKCASE/TRANSMISSION/CRANKSHAFT/BALANCER (After '05)

Install the dowel pins and a new gasket onto the left crankcase.

Coat the oil seal contacting surface of the crankshaft with oil.



Install the right crankcase onto the left crankcase.



Apply locking agent to the crankcase bolt threads.

Install the crankcase bolts and washers.

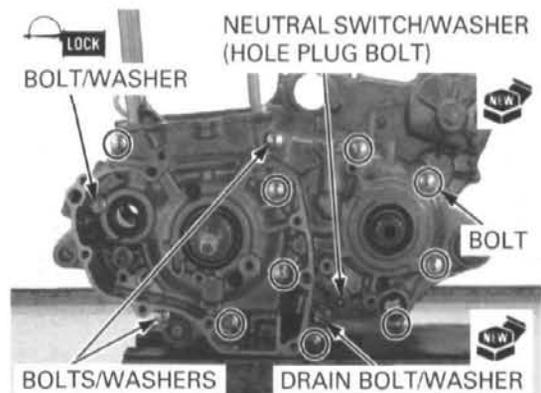
Tighten the bolts in a crisscross pattern in 2 or 3 steps.

Apply oil to the drain bolt threads and seating surface.

Install a new washer and tighten the drain bolt to the specified torque.

TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)

Carefully trim the protruding gasket material from the cylinder gasket surface.



NOTICE

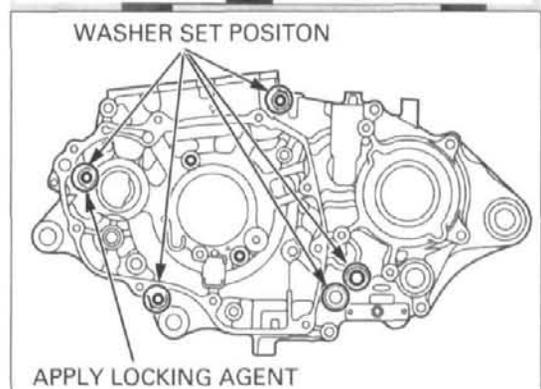
- Do not let the gasket material fall into the crankcase.
- Do not damage the cylinder gasket surface.

TRX450ER: Install a new washer and tighten the neutral switch to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

TRX450R: Install a new washer and tighten the neutral switch hole plug bolt to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



Coat the countershaft seal ring with grease and install the countershaft collar onto the countershaft.



Apply locking agent to the cam chain tensioner bolt threads.

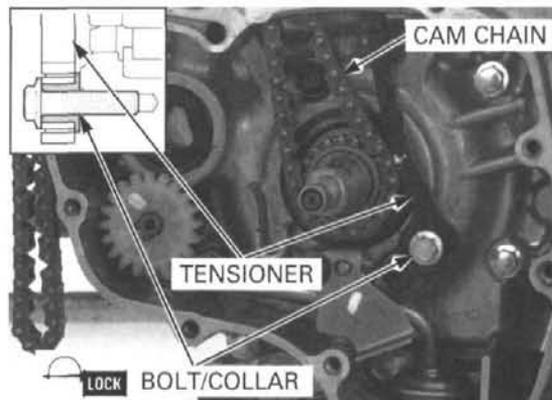
Install the cam chain tensioner and collar, and tighten the bolt.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

Install the cam chain.

Install the following:

- oil strainer (page 6-6)
- oil pump driven gear/drive pin (page 6-6)



- breather hoses
- drive sprocket (page 10-9)
- kickstarter (TRX450R) (page 14-23)
- starter motor (TRX450ER) (page 23-12)
- balancer shaft (page 16-8)
- flywheel (page 21-12)
- gearshift linkage (page 14-26)
- starter clutch (TRX450ER) (page 14-19)
- clutch assembly (page 14-11)
- cylinder, piston (page 12-10)
- cylinder head (page 11-24)
- engine (page 10-9)

