

6. ENGINE REMOVAL/INSTALLATION

SERVICE INFORMATION

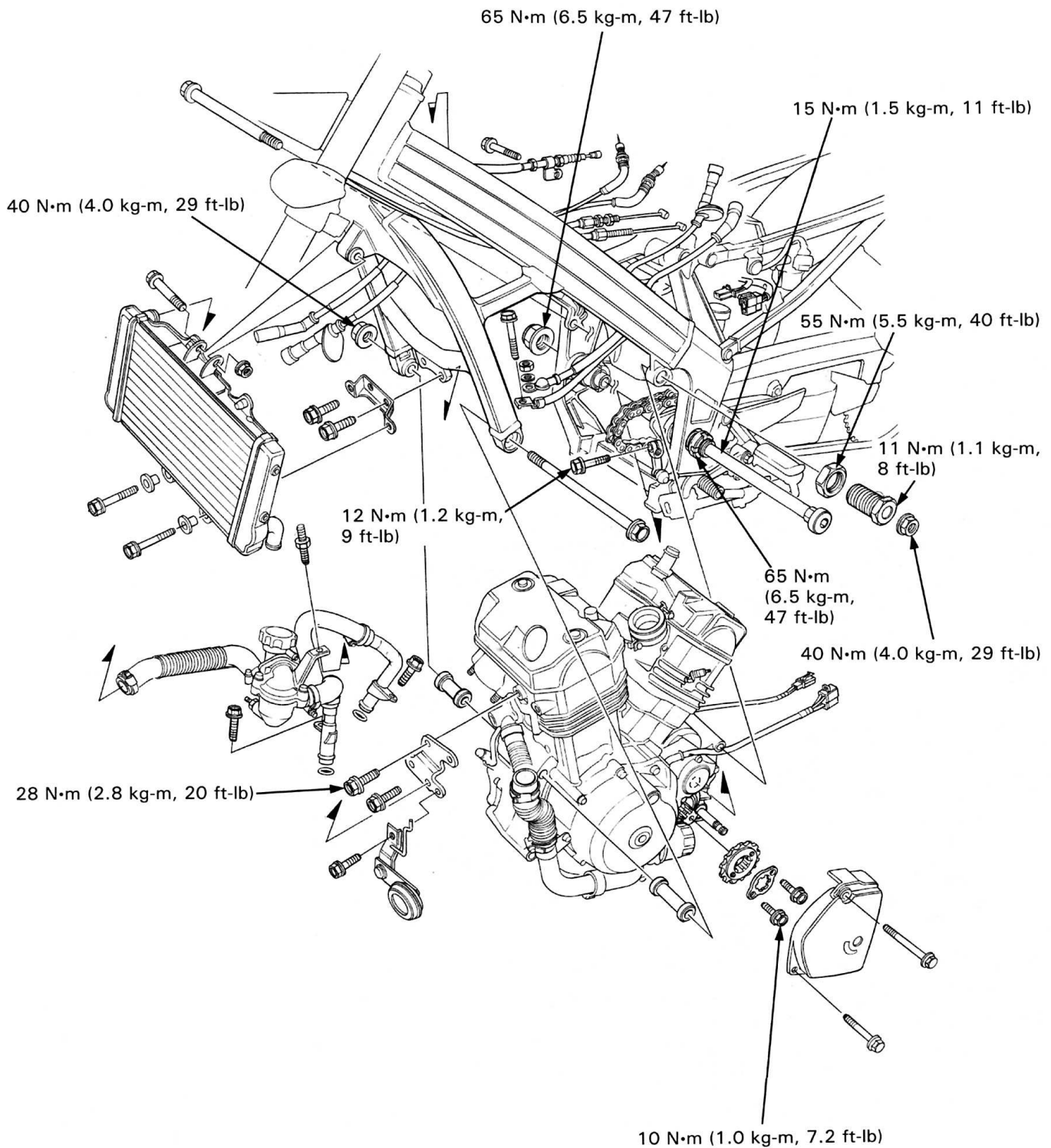
6-2 ENGINE INSTALLATION

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ENGINE REMOVAL

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6



SERVICE INFORMATION

GENERAL

- Support the motorcycle using a hoist, a floor jack or other adjustable support.
- The following parts can be serviced with the engine installed in the frame:
 - Clutch
 - Gearshift linkage
 - Camshafts
 - Cylinder head
 - Alternator
 - Starter motor
 - Carburetors
 - Water pump
- To service the crankshaft/transmission, oil pump, and cylinder the engine must be removed from the frame.
- When using the lock nut wrench, use a 20 inch long deflecting beam type torque wrench. The lock nut wrench increases the torque wrench's leverage, so the torque wrench reading will be less than the torque actually applied to the lock nut.

SPECIFICATIONS

Engine dry weight	61 kg (134 lb)
Oil capacity	2.8 lit (2.94 US qt, 2.46 Imp qt) at disassembly
Coolant capacity	2.0 lit (1.89 US qt, 2.27 Imp qt) total

TORQUE VALUES

Muffler mounting bolt	27 N•m (2.7 kg-m, 20 ft-lb)
Exhaust pipe joint nut	27 N•m (2.7 kg-m, 20 ft-lb)
Gearshift arm bolt	12 N•m (1.2 kg-m, 9 ft-lb)
Drive sprocket bolt	10 N•m (1.0 kg-m, 7.2 ft-lb)
Swingarm pivot nut	65 N•m (6.5 kg-m, 47 ft-lb)
Swingarm pivot lock nut	65 N•m (6.5 kg-m, 47 ft-lb)
Swingarm pivot adjusting bolt	15 N•m (1.5 kg-m, 11 ft-lb)
Front engine bracket bolt	28 N•m (2.8 kg-m, 20 ft-lb)
Front engine mouning bolt	40 N•m (4.0 kg-m, 29 ft-lb)
Rear upper engine mouning bolt	40 N•m (4.0 kg-m, 29 ft-lb)
— mounting bolt lock nut	55 N•m (5.5 kg-m, 40 ft-lb)
— mounting bolt adjusting bolt	11 N•m (1.1 kg-m, 8 ft-lb)
Fuel tank mounting bolt: Front	12 N•m (1.2 kg-m, 9 ft-lb)
: Rear	22 N•m (2.2 kg-m, 13 ft-lb)

TOOL

Special	
Lock nut wrench	07908—ME90000

ENGINE REMOVAL

Place the motorcycle on its center stand.

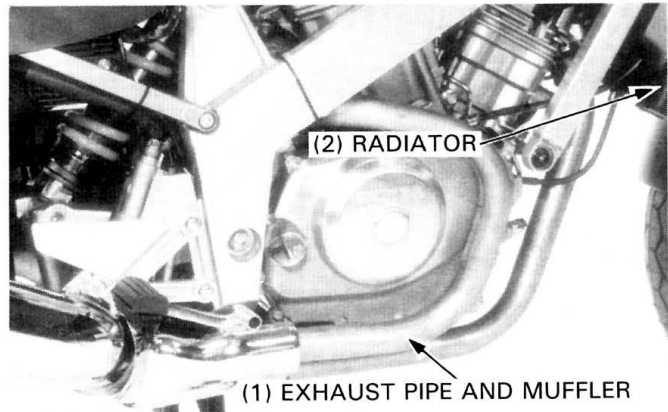
Drain the engine oil (page 2-3).

Drain the coolant (page 5-3).

Disconnect the battery negative cable from the battery terminal.

Remove the following:

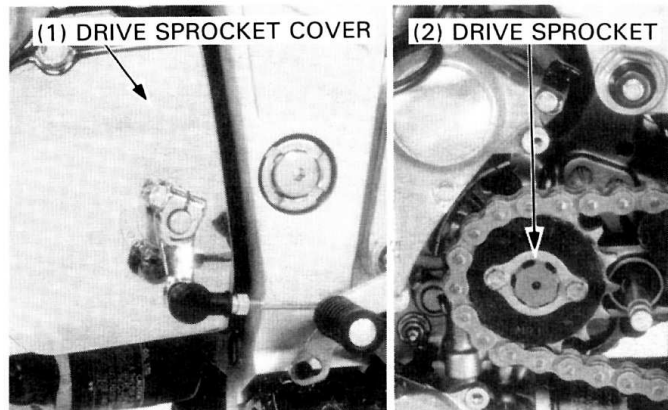
- fuel tank (page 4-3).
- air cleaner case (page 4-4).
- carburetor (page 4-5).
- radiator (page 5-5).
- exhaust pipe and muffler (page 13-24).



Remove the gearshift arm from the gearshift spindle.

Loosen the drive chain (page 3-12).

Remove the drive sprocket cover (page 8-2), then remove the sprocket from the drive chain by removing two sprocket bolts and the plate.



Disconnect the following electrical connections:

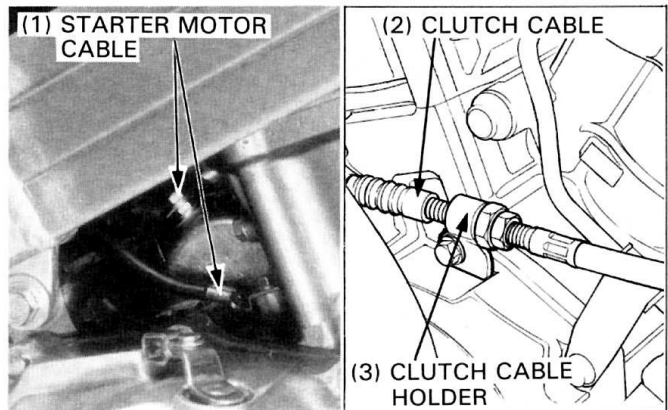
- oil pressure switch wire.
- neutral switch wire.
- pulse generator wire.
- alternator wire.
- starter motor cable and ground cable.

Disconnect the following cooling system connections:

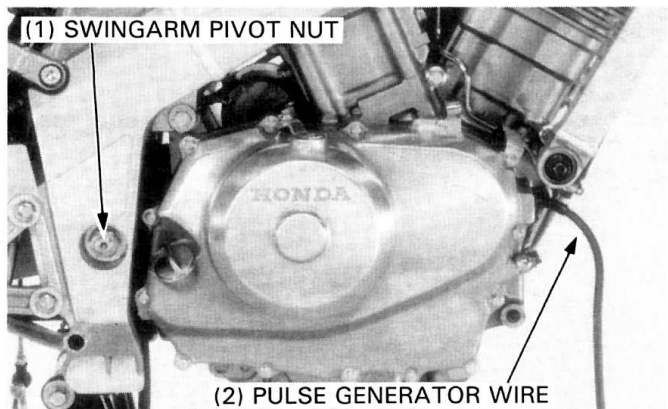
- water hoses to thermostat housing at the engine.
- siphon tube at the filler neck.

Remove the thermostat housing with water hoses attached.

Disconnect the clutch cable from the clutch lifter arm by removing the holder bolt.



Remove the swingarm pivot nut.



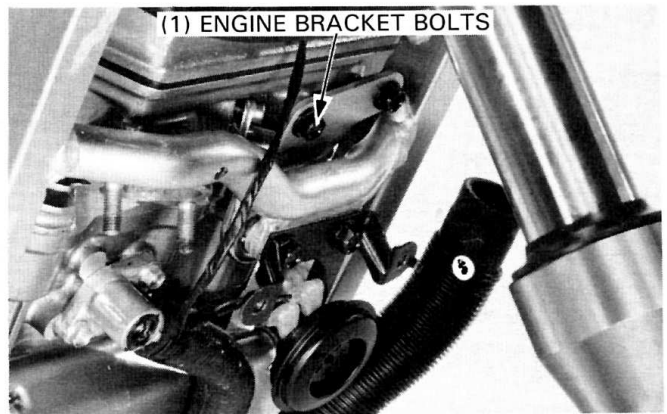
ENGINE REMOVAL/INSTALLATION

Place a floor jack or other adjustable support under the engine.

CAUTION

- *The jack height must be continually adjusted to relieve stress for ease of bolt removal.*
- *Do not jack up the engine at the oil filter.*

Remove the engine upper bracket bolts and bracket.

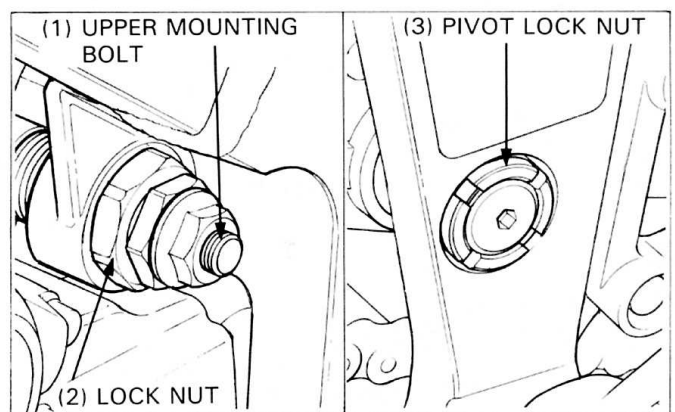


Remove the front engine lower mounting bolt.
Loosen the rear engine upper mounting bolt lock nut and remove the rear engine upper mounting and adjusting bolts.

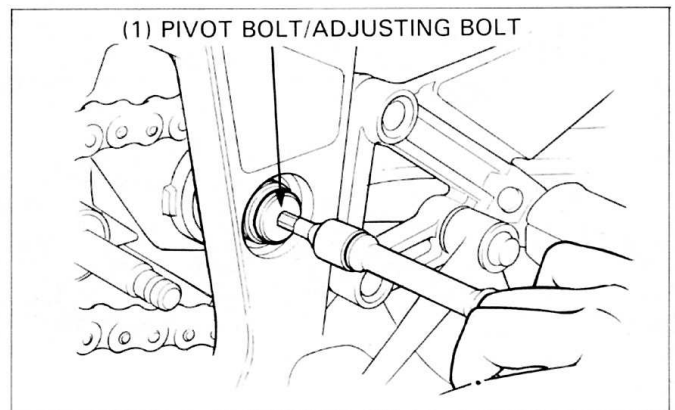
Remove the swingarm pivot adjusting bolt lock nut.

TOOL:

Lock Nut wrench 07908-ME90000

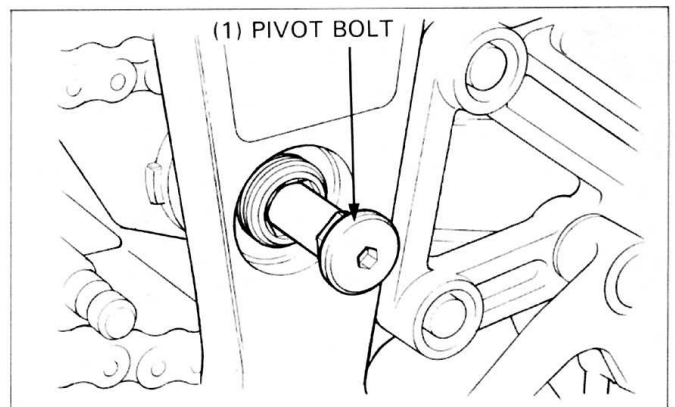


Turn the pivot bolt with the adjusting bolt counterclockwise to release the engine mounting frame.



Pull the swingarm pivot bolt out to clear the engine mounting hole, but do not remove it.

Remove the engine from the frame.



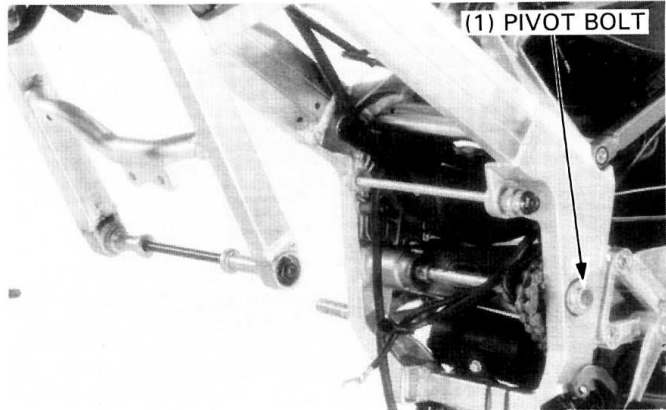
ENGINE INSTALLATION

Install the engine into the frame correctly.

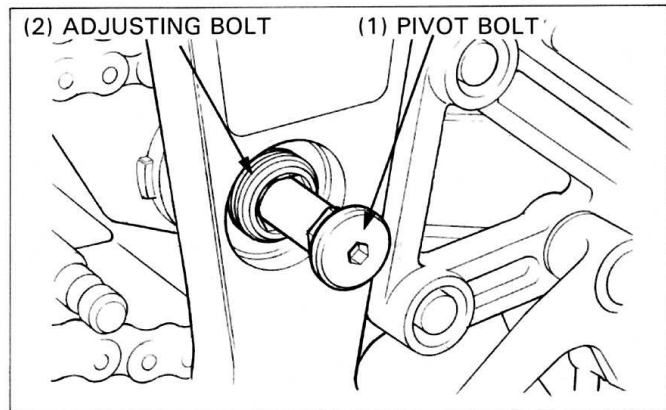
Engine installation is essentially the reverse order of removal. Use a floor jack or other adjustable support to carefully maneuver the engine into place.

CAUTION

- *Carefully align the mounting points with the jack to prevent damage to mounting bolt threads and wire harness and cables.*

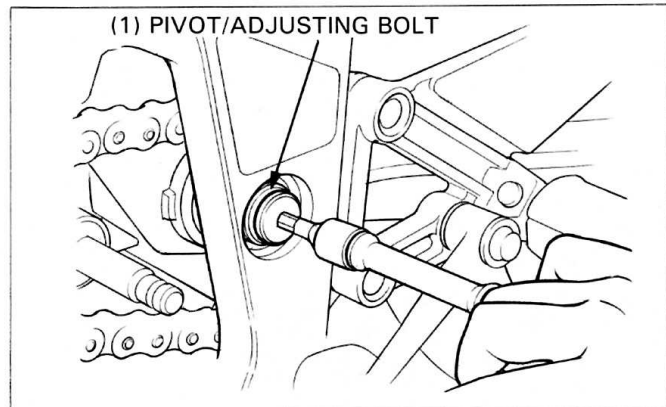


Insert the swingarm pivot bolt while aligning the serrations of the pivot bolt and adjusting bolt.



Turn the pivot bolt with the adjusting bolt clockwise fully to seat the swingarm left pivot collar. Tighten the bolt to the specified torque.

TORQUE: 15 N·m (1.5 kg-m, 11 ft-lb)



Install the lock nut onto the adjusting bolt. Tighten the lock nut to the specified torque while holding the pivot bolt and adjusting bolt together.

TORQUE:

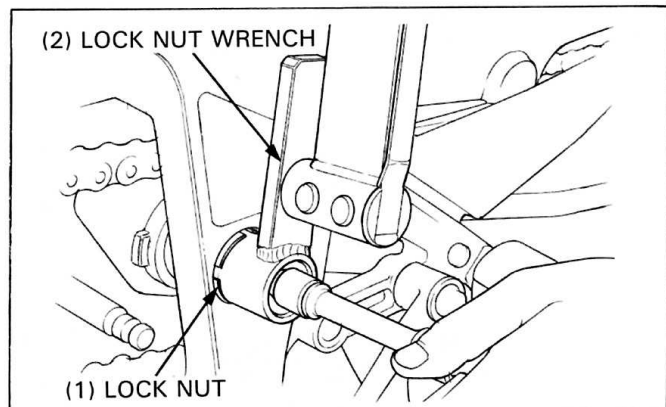
Actual: 65 N·m (6.5 kg-m, 47 ft-lb)

Indicated: 59 N·m (5.9 kg-m, 43 ft-lb)

TOOL:

Lock nut wrench

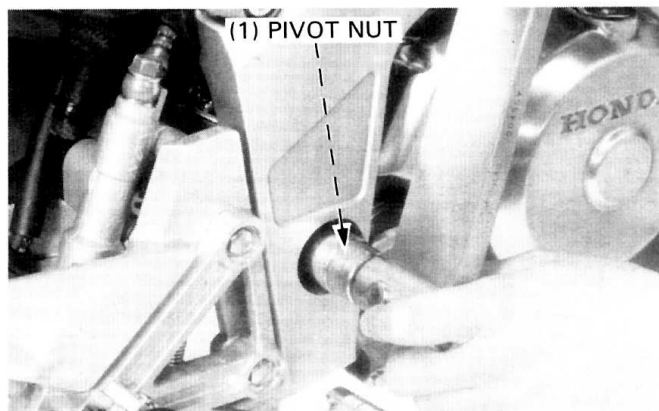
07908—ME90000



ENGINE REMOVAL/INSTALLATION

Install the swingarm pivot nut and tighten it to the specified torque.

TORQUE: 65 N·m (6.5 kg-m, 47 ft-lb)

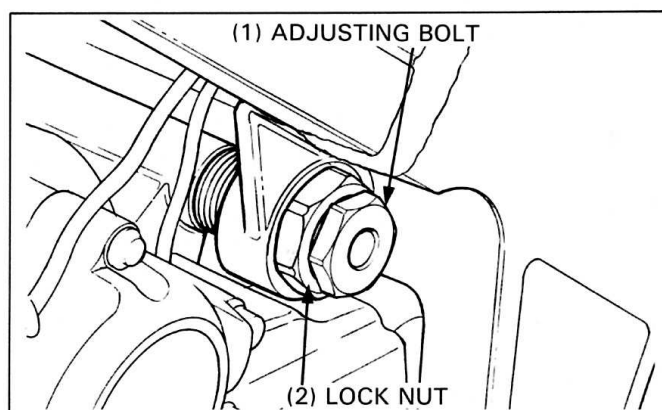


Install the rear engine upper mounting adjusting bolt. Turn the mounting adjust bolt clockwise fully to seat the engine mount. Tighten to the specified torque.

TORQUE: 11 N·m (1.1 kg-m, 8 ft-lb)

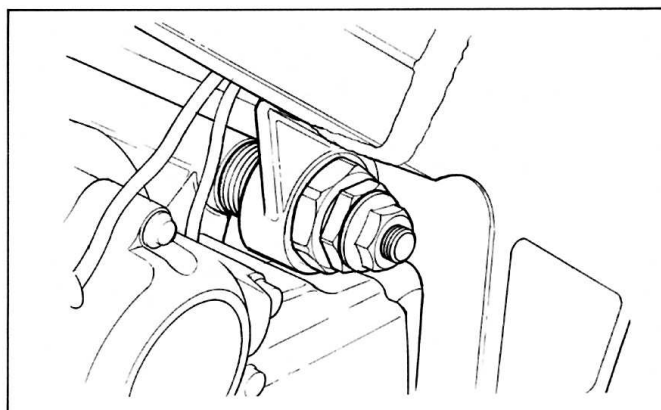
Install the lock nut onto the adjusting bolt.

TORQUE: 55 N·m (5.5 kg-m, 40 ft-lb)



Install the rear engine upper mounting bolt and tighten it to the specified torque.

TORQUE: 40 N·m (4.0 kg-m, 29 ft-lb)



Tighten all the fasteners to the torques given on page 6-1 and 2.

NOTE

- Route the wires and cables properly (Section 1).
- Fill the crankcase to the proper level with the recommended oil (page 2-1).
- Fill the cooling system (page 5-3).
- Perform the following inspection and adjustments:
 - Throttle operation (page 3-4).
 - Clutch (page 3-15).