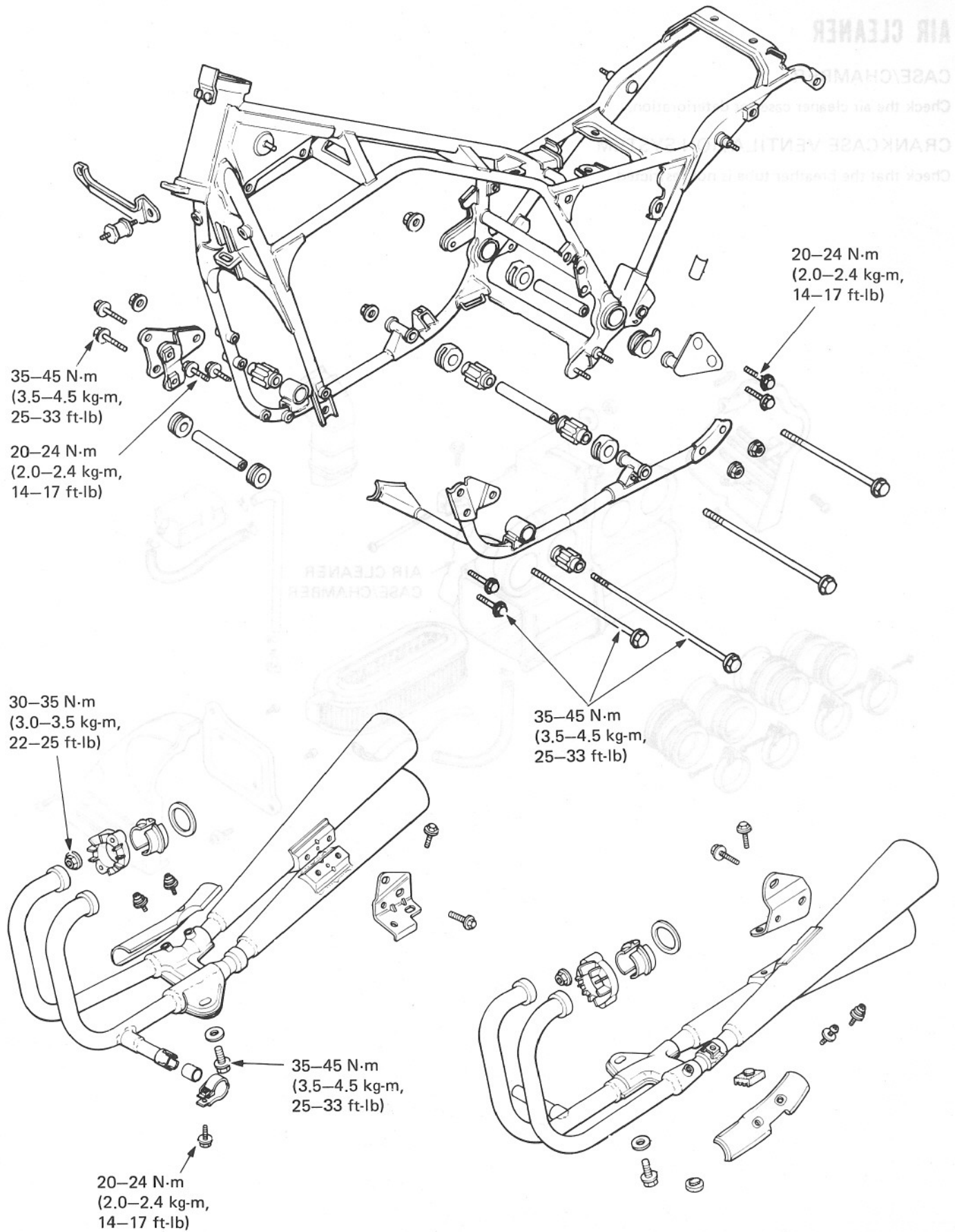




ENGINE REMOVAL/INSTALLATION





5. ENGINE REMOVAL/INSTALLATION

SERVICE INFORMATION	5-1
ENGINE REMOVAL	5-2
ENGINE INSTALLATION	5-6

SERVICE INFORMATION

GENERAL

• The following parts or components can be serviced with the engine installed in the frame:

- Clutch
- Gear shift linkage
- Camshaft
- Alternator
- Starter motor
- Carburetor

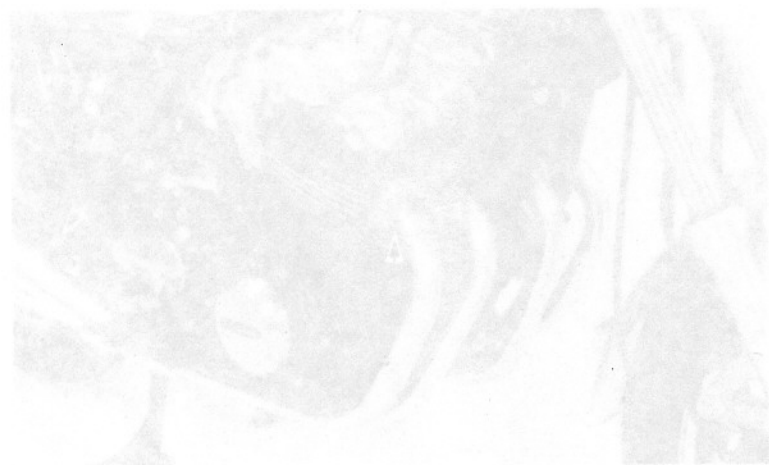
SPECIFICATIONS

Engine dry weight	106 kg (234 lb)
Oil capacity	4.5 lit (4.7 US qt) at engine assembly 3.5 lit (3.7 US qt) at change

TORQUE VALUES

Engine hanger bolts	
8 mm bolt	20-24 N·m (2.0-2.4 kg-m, 14-17 ft-lb)
10 mm bolt	35-45 N·m (3.5-4.5 kg-m, 25-33 ft-lb)
Rear axle nut	80-100 N·m (8.0-10.0 kg-m, 58-72 ft-lb)
Final gear case nuts	35-45 N·m (3.5-4.5 kg-m, 25-33 ft-lb)
Exhaust pipe joint nuts	30-35 N·m (3.0-3.5 kg-m, 22-25 ft-lb)
Muffler hanger setting bolts	35-45 N·m (3.5-4.5 kg-m, 25-33 ft-lb)
Exhaust pipe mounting under bolts	35-45 N·m (3.5-4.5 kg-m, 25-33 ft-lb)
Exhaust pipe joint band bolts	20-24 N·m (2.0-2.4 kg-m, 14-17 ft-lb)

Apply oil to threads.
Tightening sequence, see page 5-7.



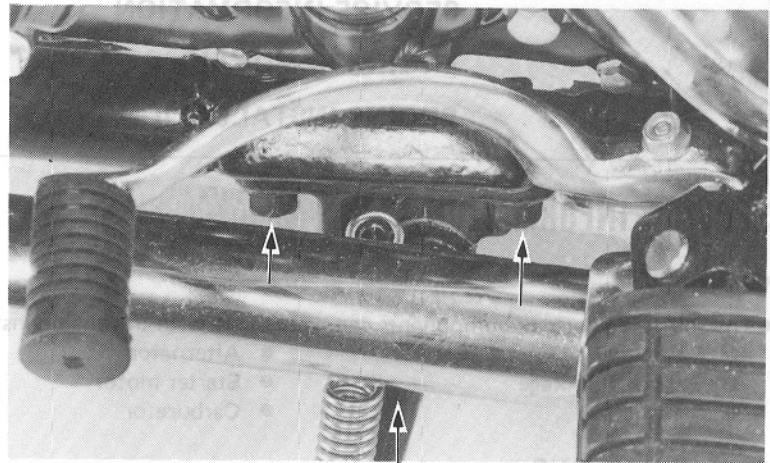
ENGINE REMOVAL

Place the motorcycle on its center stand and drain the engine oil (page 2-3).

Remove the seat and fuel tank.

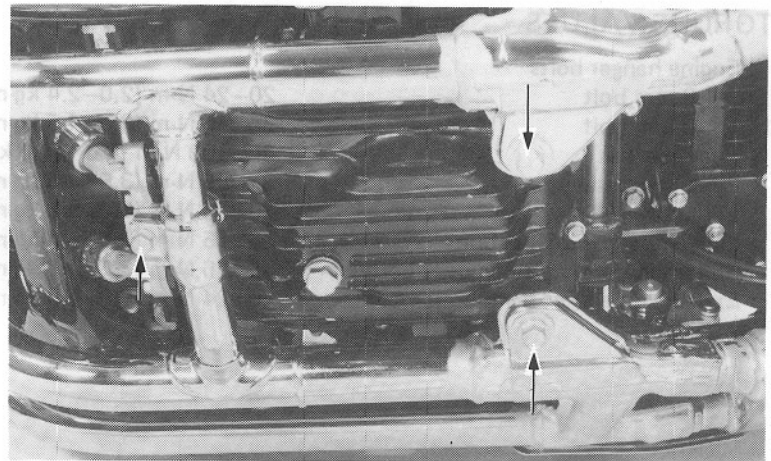
Remove the left and right frame side covers.

Remove the side stand.

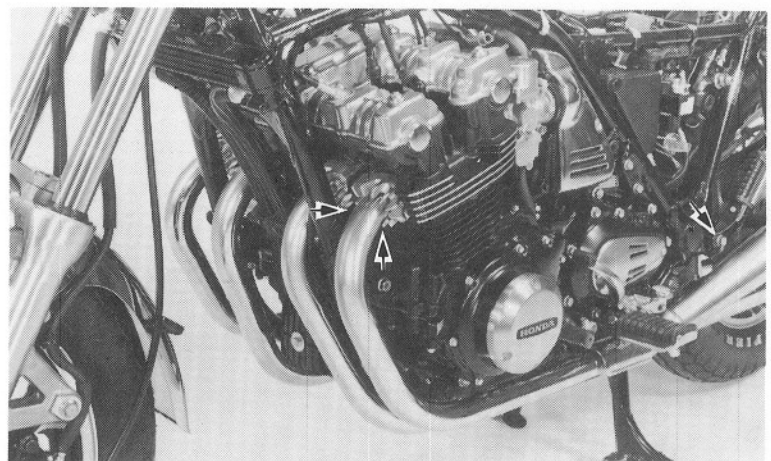


SIDE STAND

Remove the exhaust pipe center mounting bolts.
Loosen the exhaust pipe joint clamp bolt.



Remove the exhaust pipes.

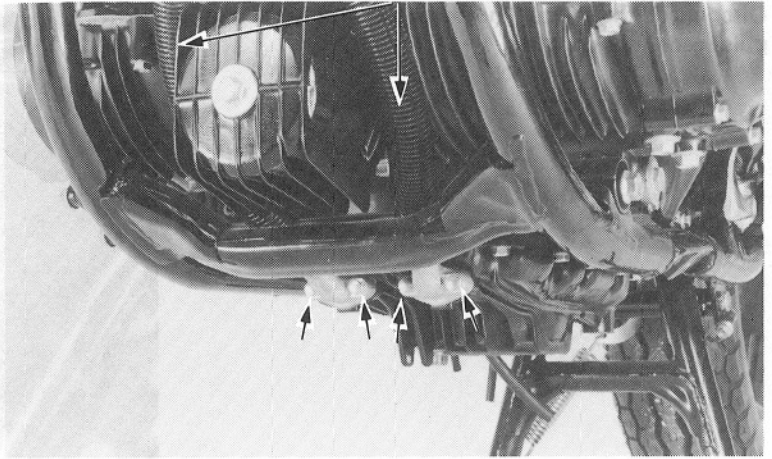




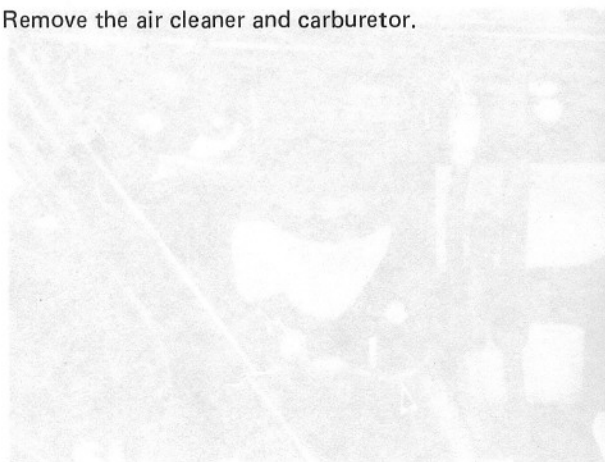
Disconnect the oil cooler hoses from the engine.



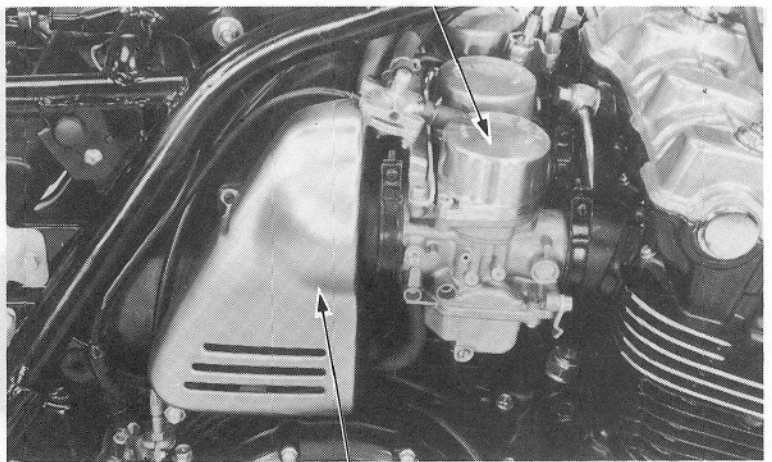
OIL COOLER HOSES



Remove the air cleaner and carburetor.

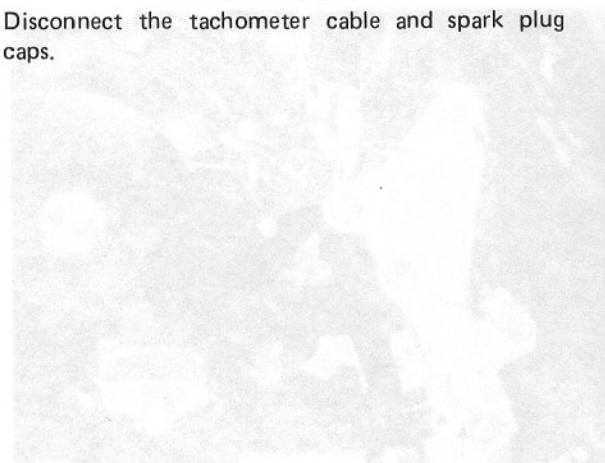


CARBURETOR

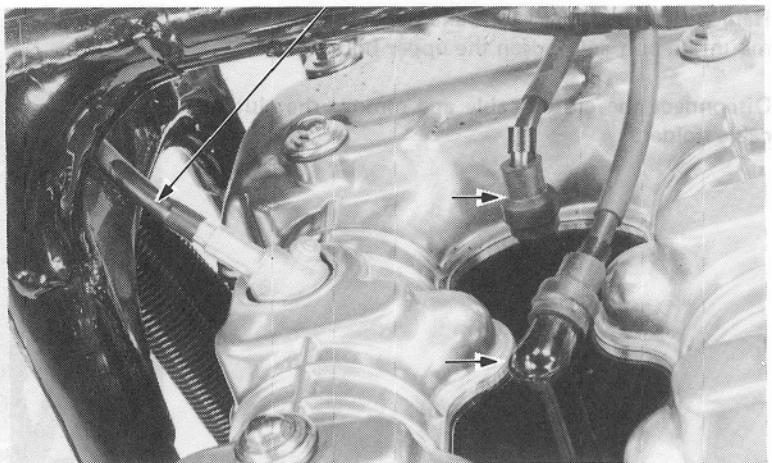


AIR CLEANER

Disconnect the tachometer cable and spark plug caps.



TACHOMETER
CABLE



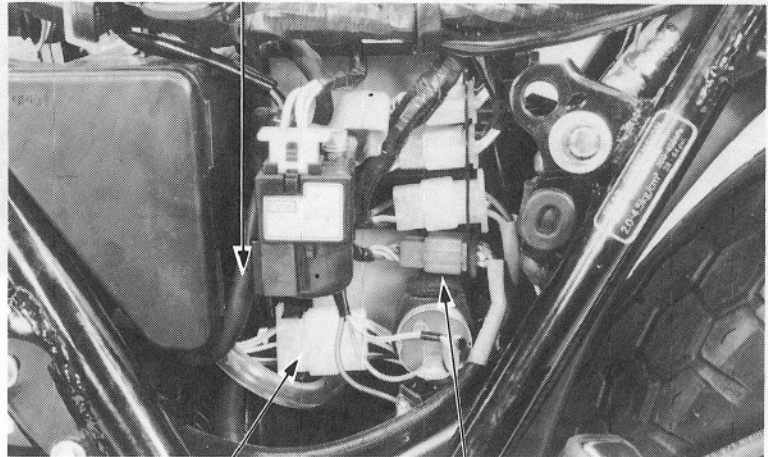


ENGINE REMOVAL/INSTALLATION

STARTER MOTOR CABLE

Disconnect the starter motor cable, alternator and pulse generator couplers.

STARTER CABLE

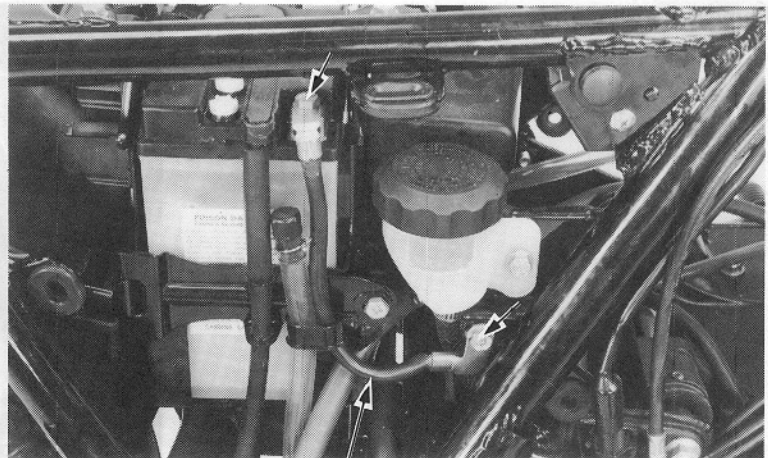


**ALTERNATOR
COUPLER**

**PULSE GENERATOR
COUPLER**

BATTERY NEGATIVE CABLE

Disconnect the battery negative cable.



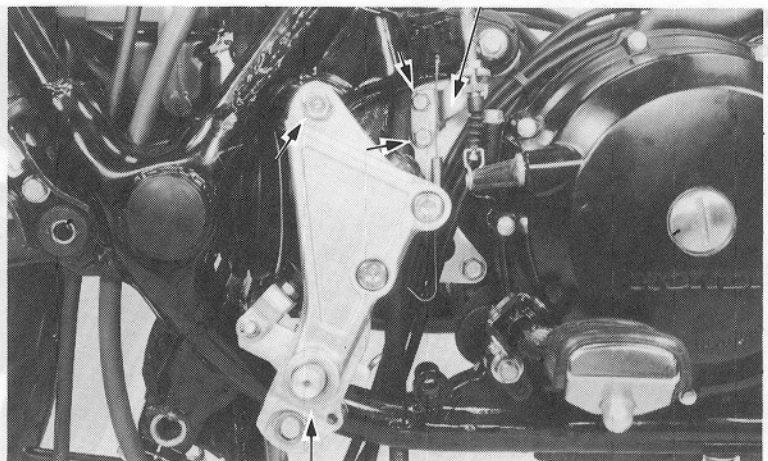
**NEGATIVE
CABLE**

CLUTCH CABLE HOLDER

Remove the brake pedal, brake pedal bracket lower mounting bolt and loosen the upper bolt.

Disconnect the clutch cable and remove the clutch cable holder.

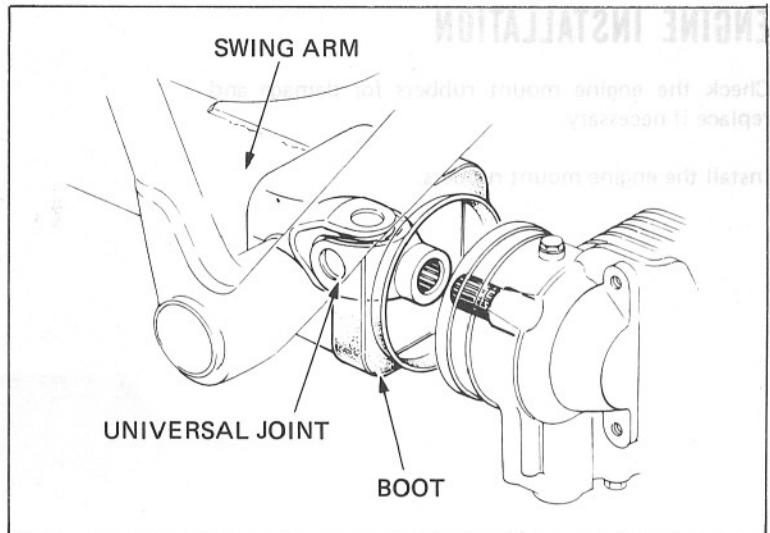
**CLUTCH
CABLE HOLDER**



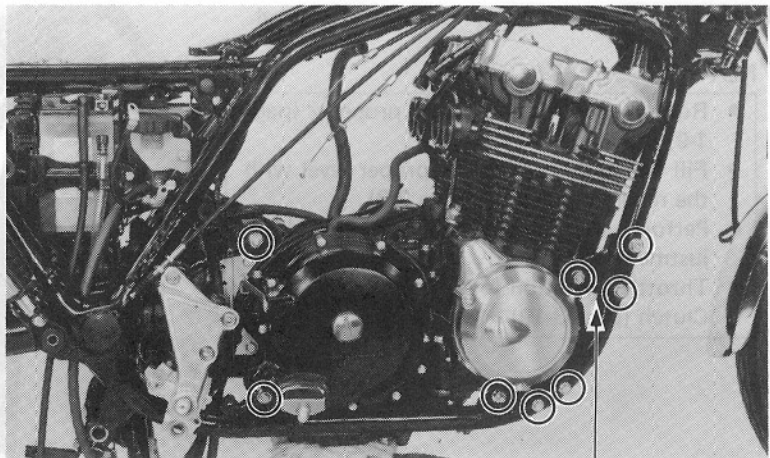
BRAKE PEDAL BRACKET



Remove the rear wheel (page 15-2).
 Remove the final drive gear.
 Pull the swing arm boot back and disengage the drive shaft from the engine.

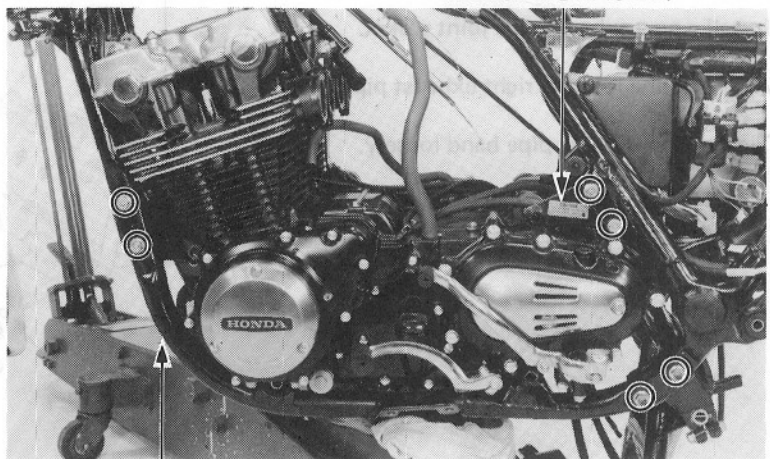


Use a jack to support the engine.
 Remove the engine mounting bolts and right engine hanger bracket.



RIGHT ENGINE HANGER BRACKET

Remove the rear engine hanger bracket.
 Remove the left side sub-frame.
 Remove the engine from the left side.



REAR ENGINE HANGER BRACKET

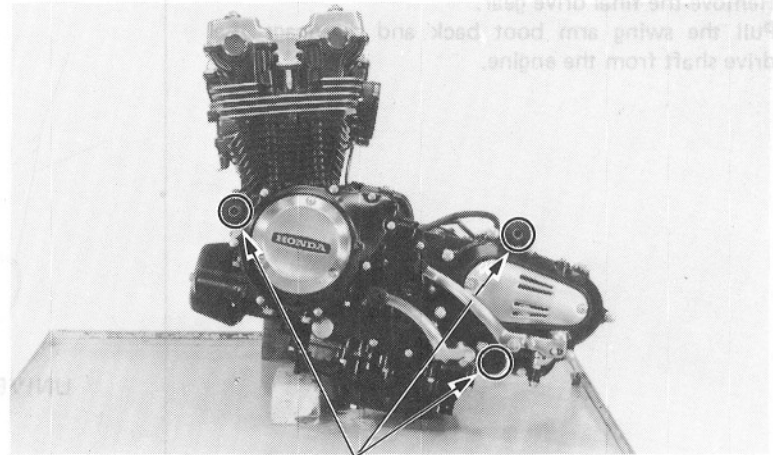
LEFT SIDE UNDER FRAME

ENGINE REMOVAL/INSTALLATION

ENGINE INSTALLATION

Check the engine mount rubbers for damage and replace if necessary.

Install the engine mount rubbers.



MOUNT RUBBERS

10 mm BOLTS

35–45 N·m

(3.5–4.5 kg·m, 25–33 ft·lb)

8 mm BOLTS

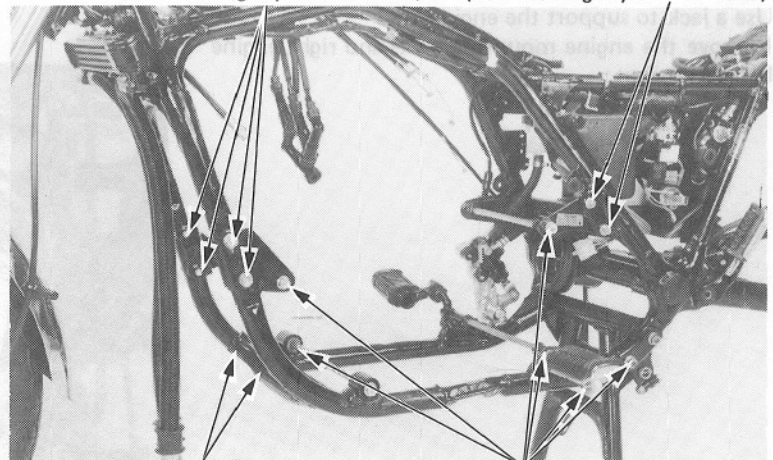
20–24 N·m

(2.0–2.4 kg·m, 14–17 ft·lb)

Install the engine in the reverse order of removal.

NOTE

- Route the wires and cables properly (page 1-9).
- Fill the crankcase to the proper level with the recommended oil (page 2-3).
- Perform the following inspection and adjustments:
Throttle operation (page 3-5)
Clutch (page 3-19)



8 mm BOLTS

20–24 N·m

(2.0–2.4 kg·m, 14–17 ft·lb)

10 mm BOLTS

35–45 N·m

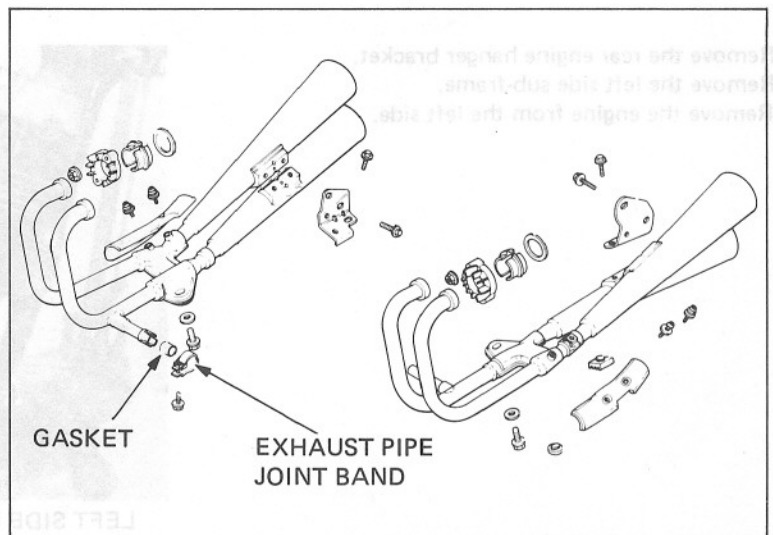
(3.5–4.5 kg·m, 25–33 ft·lb)

EXHAUST PIPE INSTALLATION

Install a new exhaust pipe joint gasket.

Assemble the left and right exhaust pipes.

Tighten the exhaust pipe band loosely.



Install the exhaust pipes.

Loosely install all bolts and nuts, then tighten them in the following order:

1. Exhaust pipe joint nuts.

TORQUE: 30–35 N·m
(3.0–3.5 kg·m, 22–25 ft·lb)

2. Exhaust pipe mounting under bolts.

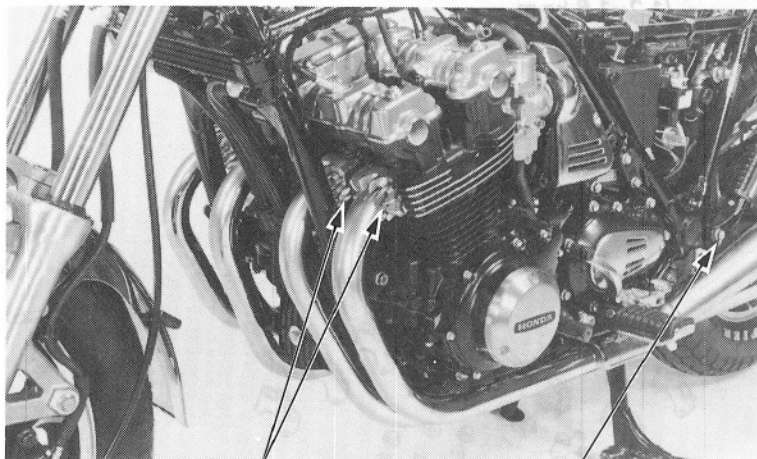
TORQUE: 35–45 N·m
(3.5–4.5 kg·m, 25–33 ft·lb)

3. Rear muffler hanger setting bolts.

TORQUE: 35–45 N·m
(3.5–4.5 kg·m, 25–33 ft·lb)

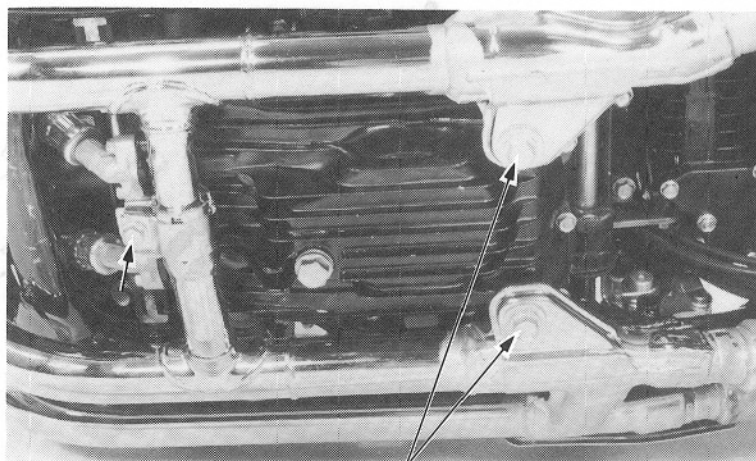
4. Exhaust pipe joint band bolt.

TORQUE: 20–24 N·m
(2.0–2.4 kg·m, 14–17 ft·lb)



**JOINT
NUTS**

**HANGER
SETTING BOLT**



UNDER BOLT