SECTION 2-G
ENGINE MOUNTING ADJUSTMENT, FLYWHEEL REPLACEMENT, ENGINE BALANCING

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2-25 ENGINE MOUNTING ADJUSTMENT

The engine and transmission when properly aligned with the frame will rest in a normal position which does not impose any shear strain on the rubber mounting pads.

Shims are installed in production to locate the transmission support between the frame rails with respect to the front engine mounts. For this reason it is important that the position of the support not be changed by the removal or addition of shims to move it side ways. Whenever it is necessary to remove the support, the number and location of the shims at each end of the support should be noted so they may be reinstalled in the same location.

The following procedure should be used when tightening mounts to obtain proper adjustment:

1. Loosen exhaust pipe or pipes at exhaust manifolds.

2. Loosen four engine mount to frame bolts.

3. Make sure that transmission support to frame shims are in original position and tighten all support to frame rail, support to mount, and mount to rear bearing retainer bolts. See Figure 2-44.

4. Raise engine slightly to allow mounts to normalize. Lower engine and tighten engine mount to frame bolts.

2-26 FLYWHEEL REPLACEMENT

a. Replace Flywheel and Check Run-out

1. Remove the transmission then remove the flywheel from the crankshaft flange.

2. Inspect flywheel. If flywheel is cracked at crankshaft bolt holes, replace flywheel.

3. Check for burrs around drilled holes in crankshaft flange and face of flywheel to be installed; remove any burrs with a mill file. Position flywheel so 3/8" locating hole in flywheel bolt hole circle is matched with locating hole in crankshaft. Install bolts and tighten evenly to 50-60 ft. lbs. torque.

4. Mount Dial Indicator as shown in Figure 2-45, so that stem of indicator bears against the flat surface of flywheel at inner side of the bolt holes.

5. Turn flywheel, making sure that crankshaft end thrust is held in one direction, and note run-out of flywheel face. Run-out should not exceed .015".

6. If run-out exceeds .015" attempt to correct by tapping high side of flywheel with mallet. If this does not correct run-out remove flywheel and check for burrs between flywheel and face of crankshaft flange. Remove burrs and recheck for run-out.

7. If no burrs exist install a new flywheel and recheck run-out. If run-out still exceeds .015" check run-out of rear face of crankshaft flange.

8. After installation of transmission, test for engine vibration. If vibration has been introduced by installation of new flywheel make correction as described in paragraph 2-27.

b. Correction of Misaligned Flywheel

The three legs of flywheel should all bear

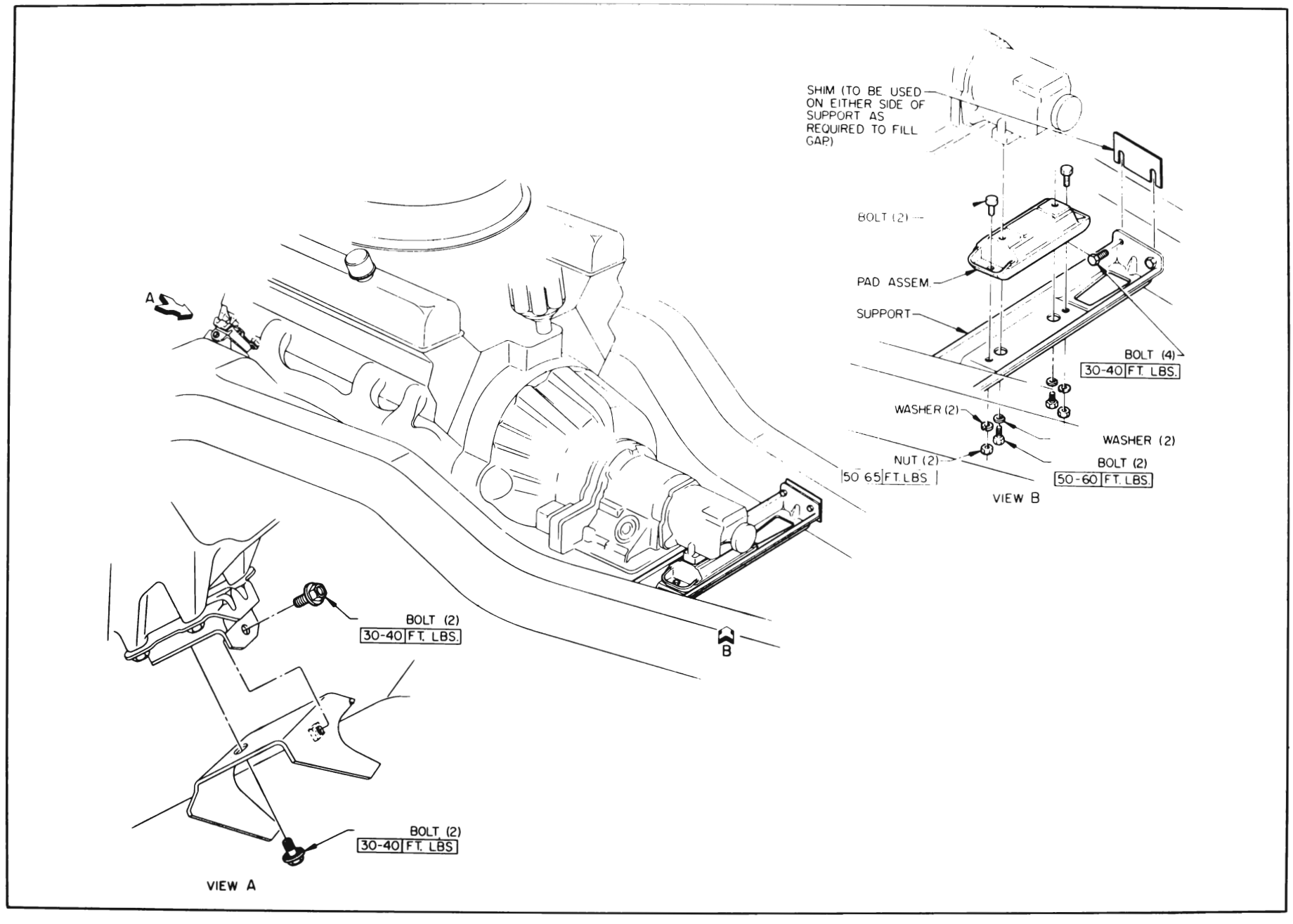

Figure 2-44—Engine and Transmission Mounts

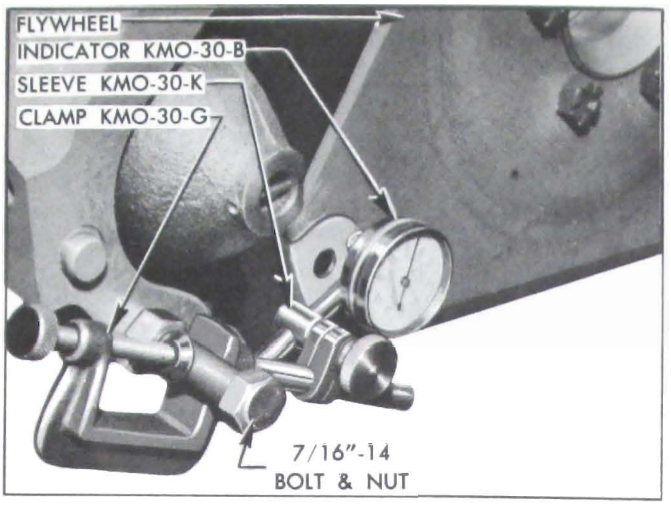

Figure 2-45—Checking Run-Out of Flywheel

equally against the converter pump cover. Before attempting to balance an engine-transmission assembly the following procedure should be observed:

1. Loosen one flywheel attaching bolt and check contact between flywheel leg and converter pump cover. A .010" feeler gauge should slip between flywheel and cover with slight drag. See Figure 2-46.

2. If flywheel bears heavily against converter pump cover, pry it away until light contact to .010" clearance exists.

3. If more than .010" clearance exist between flywheel and pump cover insert two 1/4" diameter rods between cover and flywheel as shown in Figure 2-47. tighten attaching bolt to bend flywheel into correct contact with pump cover. Remove rods and check results.

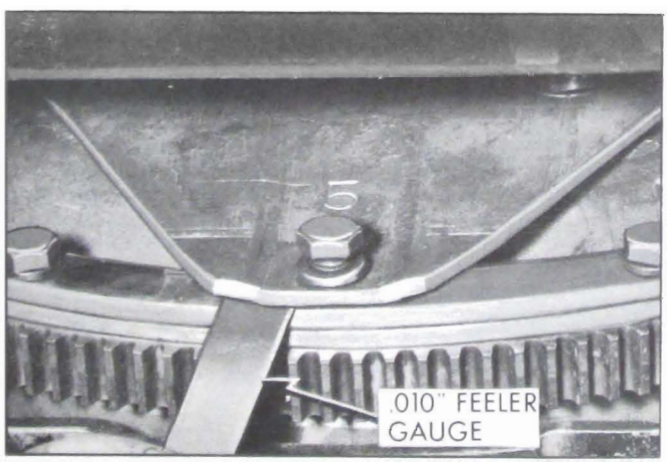

Figure 2-46—Checking Contact Between Pump Cover and Flywheel

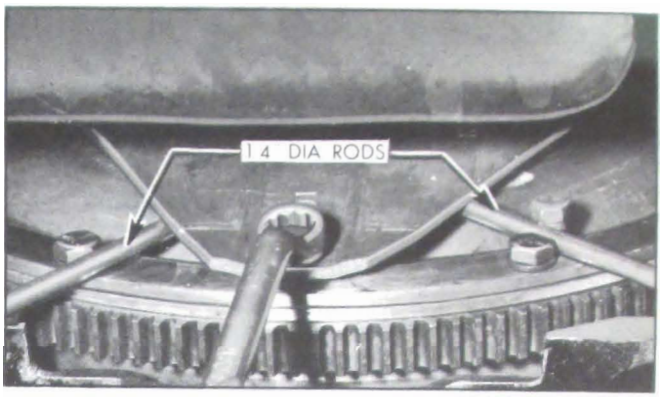

Figure 2-47—Bending Flywheel Leg Toward Pump Cover

4. Repeat check on each leg of flywheel and make corrections as necessary to insure equal contact of each flywheel leg with pump cover.

2-27 CORRECTION OF UNBALANCED ENGINE OR MISALIGNED FLYWHEEL

Individual crankshafts, flywheels, and other rotating parts are dynamically balanced to very close limits in production. Completely assembled engines are also given a running test and balanced to very close limits by drilling the flywheel or by adjusting converter balance weights as required. For this reason, a converter pump should always be marked so that it can be reinstalled in its original position on the flywheel.

Some cases of excessive vibration may result from replacement of rotating parts. An extremely unbalanced condition should always be corrected by replacing parts which are abnormally out of balance or materially different in weight from corresponding parts. The following procedures are intended only for correction of minor cases of unbalance which may occur when individually balanced parts are replaced.

a. Critical Speed of Vibration

Determine the engine speed at which the vibration is most pronounced, so that test at this critical speed may be made after corrective work is done.

1. Place car solidly on stands high enough to permit working underneath.

2. Connect a tachometer to engine. Start engine and with transmission control lever

in Parking position increase speed gradually until a point is reached where the objectionable vibration is definite. Note engine RPM at this critical speed, then stop engine.

b. Correction of Unbalanced Engine

1. Remove bell housing cover.

2. Install one balance weight No. 1178109 (.060" thick) under the head of two converter pump cover bolts, and tighten bolts to 25-30 ft. lbs. torque. See Figure 2-48.

NOTE: Do not place a weight at a flywheel to converter driving bolt because these bolts are not long enough for addition of weights.

3. Run engine at critical speed and carefully compare vibration with that obtained without the weight, then stop engine.

4. Mark location of balance weight on converter pump. remove weight and tighten bolt to 25-30 ft. lbs. torque.

5. Install the balance weight at other converter pump cover bolts and compare the vibration produced at critical speed.

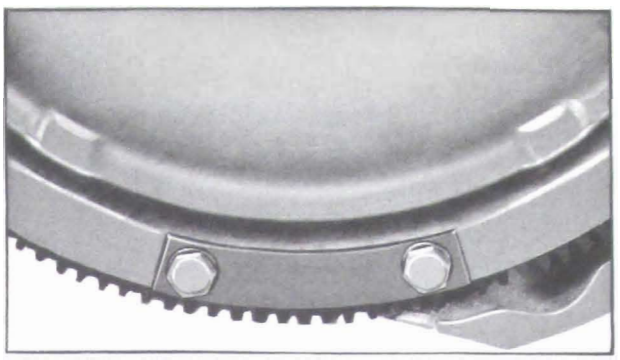

Figure 2-48—Installation of Balance Weight

6. At the point where the balance weight produced the greatest improvement in vibration install weights of proper thickness to eliminate objectionable vibration. Balance weights are available under Group 4.115 in several different thicknesses.

NOTE: When factory balancing of converter pump is changed to balance an engine, the pump cannot be used with any other engine.

7. Install bell housing cover. Remove tachometer and car stands.