

### 4A-4 PROPELLER SHAFT

Remove both rear wheel assemblies and reinstall wheel lug nuts with flat sides next to drums/discs.

2. Mark and number propeller shaft at four (4) points 90 degrees apart at rear of shaft just forward of balance weight, as shown.
3. Install two (2) hose clamps on the rear of the propeller shaft and slide them rearward until the clamps stop at the nearest balance weight welded to the tube. Align both clamps at any one of the four marks made on shaft in Step 2 and tighten. Be sure sufficient clearance is maintained so that clamp heads do not contact floor pan of vehicle when axle is in contact with rebound bumper in frame. In order to gain sufficient clearance, it may be necessary to position the clamps over the balance weights.
4. Run the vehicle through the speed range to 50-55 MPH (81-89 Km/h) and note amount of imbalance.

**CAUTION: Never run vehicle faster than 55 M.P.H. (89 Km/h). All persons should stay clear of universal joint and balance weight areas to avoid possible injury. Do not run on hoist for extended periods due to the danger of overheating the transmission or engine.**

5. Loosen clamps and rotate clamp heads 90 degrees to the next mark on a propeller shaft. Tighten clamps and repeat Step 4.
6. Repeat Step 5 until car has been run with clamp heads located at all four marks on shaft.
7. Position clamps at point of least imbalance. Rotate the clamp heads away from each other 45 degrees (one on each side of the position), as shown. Run the vehicle and note if imbalance has improved.

In some cases it may be necessary to use one clamp or possibly three clamps in order to obtain a good balance. Replace shaft if three hose clamps do not improve the imbalance.

8. Continue to rotate the clamps apart in smaller angular increments until the imbalance is at its minimum.
9. Reinstall wheel assemblies and road test the vehicle for final check of balance. A minimal vibration felt in the vehicle on the hoist may not show up during a road test.

#### Strobe Light Method

Figures 4A-11, 4A-14, and 4A-15

If a wheel balancer of the strobe light type is available, the use of such a unit will facilitate the balancing of the propeller shaft. The balance pick-up unit should be placed directly under the nose of the rear axle carrier and as far forward as possible.

1. Place the vehicle on a twin post hoist so the rear of the vehicle is supported on the rear axle housing and the rear wheels are free to rotate. Lower rear hoist and allow axle to rest on jackstands. The groove in the rear hoist fixture could clamp hoist the axle and destroy the

sensitivity of the operation. Remove both rear wheel assemblies and reinstall wheel lug nuts with flat sides next to the drums/rotors.

2. Mark and number drive shaft at 4 points 90 degrees apart at rear of shaft just forward of balance weights, as shown.
3. Place the strobe light wheel balancer pick-up under the nose of the carrier.
4. Run vehicle in gear at the speed where the disturbance is at its peak, allow the driveline to stabilize by holding at a constant speed. Point strobe light up at the spinning propeller shaft and note position of one of the reference numbers. Shut off engine and position the propeller shaft so the reference numbers will be in the same position as was noted while the shaft was rotating. When strobe light flashed, the heaviest point of the shaft was at the bottom (6 o'clock). To balance the propeller shaft, it would be necessary to apply the balancing weights (hose clamps) 180 degrees away from the heaviest point or at the top of the propeller shaft (12 o'clock).
5. Install two screw-type hose clamps on the propeller shaft as close to the rear as possible. Position both clamp heads 180 degrees from the heaviest point of drive shaft as indicated by strobe light. Tighten clamps.

**NOTICE:** Be sure sufficient clearance is maintained so clamp heads do not contact floor pan of vehicle when axle is in contact with rebound bumper on frame. In order to gain sufficient clearance, it may be necessary to position the clamps over the balance weights.

6. Run vehicle through the speed range 50-55 M.P.H. (81-89 Km/h). If disturbance is gone, nothing further need be done on the hoist. If the disturbance is not gone and the strobe light shows the clamp heads at the bottom (6 o'clock) of the shaft, go to Step 7. If the strobe light shows the two clamp heads at the top of the shaft, add one more hose clamp and recheck. If the strobe light shows the three clamp heads at the top of the shaft, remove the propeller shaft and reindex it 180 degrees on the rear axle pinion companion flange. Recheck with no clamps. Repeat balance starting with Step 5. If the shaft still needs more than three hose clamps at the same clock position, replace it. If the clamps are also 180 degrees from their original position after the propeller shaft was reindexed 180 degrees, the rear axle pinion companion flange is out of balance and must be replaced. **DO NOT** use more than three hose clamps to balance the shaft. If the strobe light shows the hose clamps at the bottom of the shaft, but the disturbance still exists, go to Step 7.
7. Rotate two of the hose clamps equally away from each other toward the top (one on each side of the position) in small increments until the best balance is achieved. In some cases it may be necessary to use one clamp or possibly three clamps in order to obtain a good balance.