# Propeller Shaft Alignment

## PONTIAC

**Pontiac**
**(Exc. Phoenix)**

## DESCRIPTION

To properly measure front and rear universal joint angles, vehicle must be at proper trim height (distance from top of axle tube to bottom of frame) and curb weight with a full tank of gasoline. If necessary, add weight to meet trim height specification. With vehicle level and supported at axles, an inclinometer is used to determine driveline angles. Adjustment may be accomplished by shims between transmission rear bearing retainer and transmission mounting. On all models except Firebird, rear universal joint angle may be adjusted by changing rear upper control arms. On Firebird models, rear joint angle is adjusted with shims between upper spring plate cushion and spring.

## CHECKING & ADJUSTMENT

### CHECKING

Lift and support vehicle at axle tubes. Check trim height and adjust as necessary to meet specifications shown in chart. Clean all bearing caps and place inclinometer (J-23498) on rear propeller shaft bearing cap. Center bubble in sight glass and record reading. Remove inclinometer, rotate propeller shaft 90° and install inclinometer on drive yoke bearing cap. Measure angle and subtract smaller reading from higher reading to obtain rear universal joint angle. Repeat procedure on front universal joint to obtain front universal joint angle.

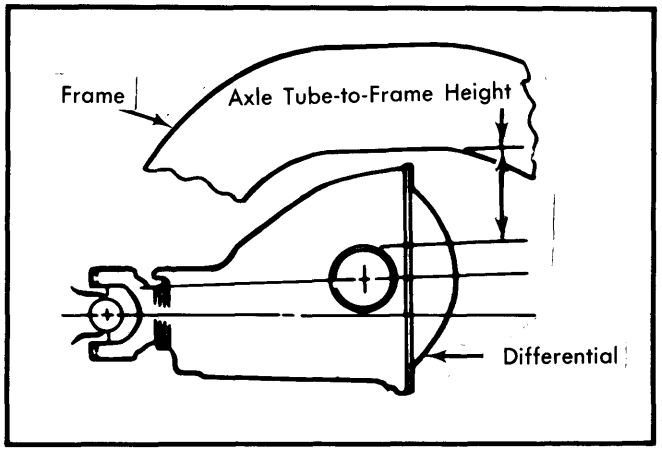


***Fig. 1 Checking Pontiac Trim Height***

### ADJUSTMENT

**Front Universal Joint Angle** – Adding 1 shim at transmission mount will decrease front universal joint angle ½° and increase rear angle ¼°. Removing 1 shim will increase front angle ½° and decrease rear angle ¼°.

NOTE – *Production mount bolt is M10-1.5 x 35 mm. When using 2 or more shims, an M10-1.5 x 50 mm bolt must be used.*

**Rear Universal Joint Angle (Firebird) – 1)** Loosen "U" bolt nuts to 3-4 threads beyond bottom of bolts. Work on one side at a time to prevent axle from turning. Install required shim between upper spring seat cushion and spring.

**2) Place thick end of shim toward front of vehicle to decrease angle. To increase angle, place thick end of shim toward rear of vehicle. Install spacers between upper and lower spring plates with thick end of spacer in same direction as shim. Tighten "U" bolt nuts to 45 ft. lbs.**

**Rear Universal Joint Angle (All Others)** – Shorter or longer rear upper control arms may be used to change rear universal joint angle ±1½° on LeMans and Grand Prix or ±2° on Bonneville and Catalina. *See Table.*

**Universal Joint Angle Change with Rear Upper Control Arm**

| Application & Arm Type | Rear Angle Change | Front Angle Change |
|---|---|---|
| Bonneville & Catalina | | |
| Short Arm | +2° | +⅓° |
| Long Arm | −2° | −⅓° |
| Grand Prix & LeMans | | |
| Short Arm | +1¾° | +⅓° |
| Long Arm | −1¼° | −1/10° |

**Universal Joint Angles**

| Application (Trim Height ±.25") | Front | Rear |
|---|---|---|
| LeMans | | |
| Station Wagon (5.4") | 3/10° | 13/10° |
| All Others (5.3") | 7/10° | 13/10° |
| Grand Prix (4.9") | 7/10° | 13/10° |
| Bonneville & Catalina | | |
| Station Wagon (5.0") | | |
| 7½" & 8½" Axles | 7/10° | 13/10° |
| 8¾" Axle | 3/10° | 12/5° |
| All Others (6.1") | | |
| 7½" & 8½" Axles | 7/10° | 13/10° |
| 8¾" Axle | 3/10° | 1½° |
| Firebird (5.1") | 1° | 4° |

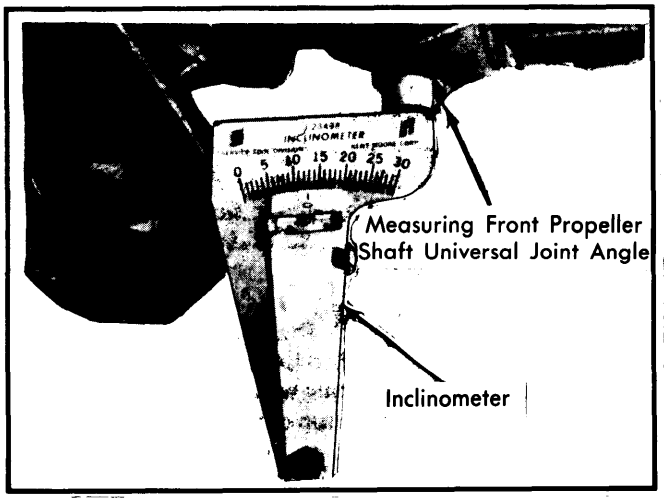


***Fig. 2 Checking Pontiac Universal Joint Angle***