

By bringing caster within specifications by turning one bolt at a time, then turning both bolts an equal amount to bring camber to the preferred reading, caster will usually be brought close to the preferred setting.

After both caster and camber readings are correct, tighten the nuts to 65 foot-pounds while holding the bolts from turning. Use Tool C-3675 as a straight line extension for the torque wrench. A torque wrench reading of 45 foot-pounds will then tighten the nut correctly to 65 foot-pounds.

Always recheck caster and camber after tightening the nuts, since the bolts may have turned slightly during the tightening operation.

4. CASTER AND CAMBER ADJUSTMENT WITH USE OF THE CHART

Caster adjustment is obtained through the use of camber readings.

1. Check caster and camber in the normal way and record readings.
2. Adjustment of caster—
 - (a) Determine *caster adjustment* required.
 - (b) With instruments set for camber readings, loosen the cam bolt nuts for adjusting and with Tool C-3675, adjust FRONT cam bolt one degree camber for every $4\frac{3}{4}$ degrees of caster change required (about a 1 to 5 ratio). For example, if caster must be changed $2\frac{1}{2}$ degrees then the camber adjustment required on the front bolt would be only $\frac{1}{2}$ degree. (See chart for adjustments required).

Note: If caster must be changed in a positive direction, camber must be changed in a positive direction in this operation. If caster must be changed in a negative direction, then camber must be changed in a negative direction.
 - (c) Then adjust REAR bolt to bring camber back to its *original setting as recorded*. The caster setting should not be as required.
3. Adjustment of camber—
 - (a) Determine *camber adjustment* required. (Instruments should still be set for camber readings.)
 - (b) Adjust front cam bolt *one-half the amount of camber change* required.

(c) Then adjust the rear cam bolt the remaining half. This will give you the correct camber setting without changing the correct setting already obtained for caster.

4. Recheck caster setting by normal operation of the checking fixture. If caster is not correct to specifications, repeat steps No. 2 and No. 3 until correct specifications are obtained.
5. If the front end height required readjustment it is necessary that the headlamp aiming be rechecked to conform with state requirements.

CHART TO COMPUTE CAMBER CHANGES REQUIRED FOR PROPER CASTER ADJUSTMENT

FOR A REQUIRED * CASTER CHANGE OF	THE FRONT CAM BOLT SHOULD BE MOVED THE FOLLOWING CAMBER CHANGE
(Degrees)	(Degrees)
— $\frac{1}{4}$	— $\frac{1}{16}$
— $\frac{1}{2}$	— $\frac{1}{8}$
— $\frac{3}{4}$	— $\frac{1}{8}$
—1	— $\frac{3}{16}$
— $1\frac{1}{4}$	— $\frac{1}{4}$
— $1\frac{1}{2}$	— $\frac{5}{16}$
— $1\frac{3}{4}$	— $\frac{3}{8}$
—2	— $\frac{7}{16}$
— $2\frac{1}{4}$	— $\frac{7}{16}$
— $2\frac{1}{2}$	— $\frac{1}{2}$
— $2\frac{3}{4}$	— $\frac{9}{16}$
—3	— $\frac{5}{8}$
— $3\frac{1}{4}$	— $\frac{11}{16}$
— $3\frac{1}{2}$	— $\frac{3}{4}$
— $3\frac{3}{4}$	— $\frac{3}{4}$
—4	— $\frac{13}{16}$
— $4\frac{1}{4}$	— $\frac{7}{8}$
— $4\frac{1}{2}$	— $\frac{15}{16}$
— $4\frac{3}{4}$	—1
—5	— $1\frac{1}{16}$

* Note: If the caster change is in a + (positive) direction, then the camber adjustment given in the second column must also be in a positive direction at the front adjustment.

SECTION II—REAR AXLE

SURE-GRIP AXLES

Servicing of 1959 rear axles remains the same as outlined in the 1958 Plymouth Service Manual.

Sure-Grip axles are identified by means of the letter "S" stamped on the ratio pad on the bottom of the carrier housing. A metal tag reading "Use Sure-Grip Lube" is also attached to the carrier attaching bolt below the filler plug.

Sure-Grip differentials use a two-piece differential

case. The eight bolts used to hold the two halves of the Sure-Grip differential together have left-hand threads and require tightening to 55 ft. lbs. torque. The case and bolts are visible through the filler plug opening. The conventional differential has a dome shaped, one-piece case, and does not use bolts.

The Sure-Grip axle will be made available in only two ratios, 3.31 and 3.73, and will be produced only in the $8\frac{3}{4}$ in. ring gear size.

REAR AXLE DATA AND SPECIFICATIONS

Models	M-1	M-2				
		318 cu. in.		361 cu. in.		
Type	Semi-Floating					
Drive Gear Type	Hypoid					
Ratios	Conv.	Sure-Grip	Conv.	Sure-Grip	Conv.	Sure-Grip
Manual Three-Speed	3.73	3.73	3.54	3.73	3.31	3.31
Optional—Mountains and hilly country	4.1	N.A.	3.91	N.A.	N.A.	N.A.
Overdrive	4.1	N.A.	3.91	N.A.	N.A.	N.A.
PowerFlite	3.73	3.73	3.31	3.31	N.A.	N.A.
Optional—Mountains and hilly country	3.91	N.A.	3.91	3.73	N.A.	N.A.
TorqueFlite	N.A.	N.A.	2.93	3.31	3.31	3.31
Optional—Mountains and hilly country	N.A.	N.A.	N.A.	3.73	N.A.	N.A.
Ring Gear Size*	8 $\frac{1}{4}$ in.		8 $\frac{3}{4}$ in.			
Ring Gear to Drive Pinion Clearance	.006 to .008 in.					
Differential Case Run-Out	.000 to .003 in.					
Differential Side Gear Clearance	.000 to .008 in.					
Axle Shaft End Play	.013 to .018 in.					
Drive Pinion Bearing Preload	20-30 in. lbs. without seal					
Lubricant Capacity	3 $\frac{1}{4}$ Pts.		3 $\frac{1}{2}$ Pts.			

*8 $\frac{3}{4}$ in. Ring Gear—Standard on 6-Cyl. Taxicab and Heavy Duty Package.

TORQUE SPECIFICATIONS

Axle Shaft Nuts	145 ft. lbs. (Min.)
Rear Axle Ring Gear Bolt Nuts	40 ft. lbs.
Differential Bearing Cap Screws	85 to 90 ft. lbs.
Drive Pinion Flange Nut	240 to 280 ft. lbs.

SECTION III—BRAKES

MANUAL BRAKES

The master cylinder on cars equipped with Manual Brakes has a one-piece non-adjustable brake pedal push rod and does not require any pedal "free play." A pedal stop within the master cylinder eliminates the necessity of this adjustment, as shown in Figure 1. The pedal is returned by the piston, piston return spring and pressure in the master cylinder.

In the event that the piston, push rod, or piston stop and boot retainer require replacement, it will be necessary to discard the piston-collar-rod-retainer and boot assembly and replace with a service package which consists of these parts pre-assembled.

Wheel cylinder cup expanders (one expander per cup) are used in all wheel cylinders.

POWER BRAKES

The master cylinders on cars equipped with Power Brakes use an adjustable two-piece push rod. They require $\frac{1}{16}$ " to $\frac{1}{8}$ " free play at the foot pedal which will provide the correct clearance of .015" to .030" clear-

ance between the push rod and piston.

For complete servicing of the brake system refer to the 1958 *Plymouth Service Manual*.

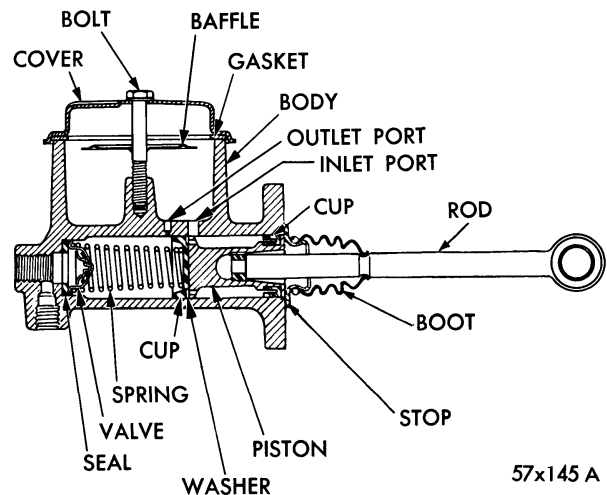


Figure 1—Master Cylinder Assembly