

**READ ALL INSTRUCTIONS COMPLETELY AND THOROUGHLY UNDERSTAND THEM BEFORE DOING ANYTHING.  
CALL TOTAL CONTROL PRODUCTS TECH SUPPORT (916) 388-0288 IF YOU NEED ASSISTANCE.**

# INSTALLATION GUIDE



## TCP TA2F9-36

### 36" Torque Arm for Ford Rearend Housings

**Description:** Bolt-on tubular torque arm for Ford 9" rear end housing. Direct bolt-on with TCP subframe connector system and specific bolt-in FAB9™ fabricated 9" housing.

**Application:** Cougar 1967-1970

Additional applications require bolt-on/clamp-on weld fixture (TCP TABKT-1), housing specific bracket kit (Ford 8", Ford 9", FAB9) and crossmember fabrication.

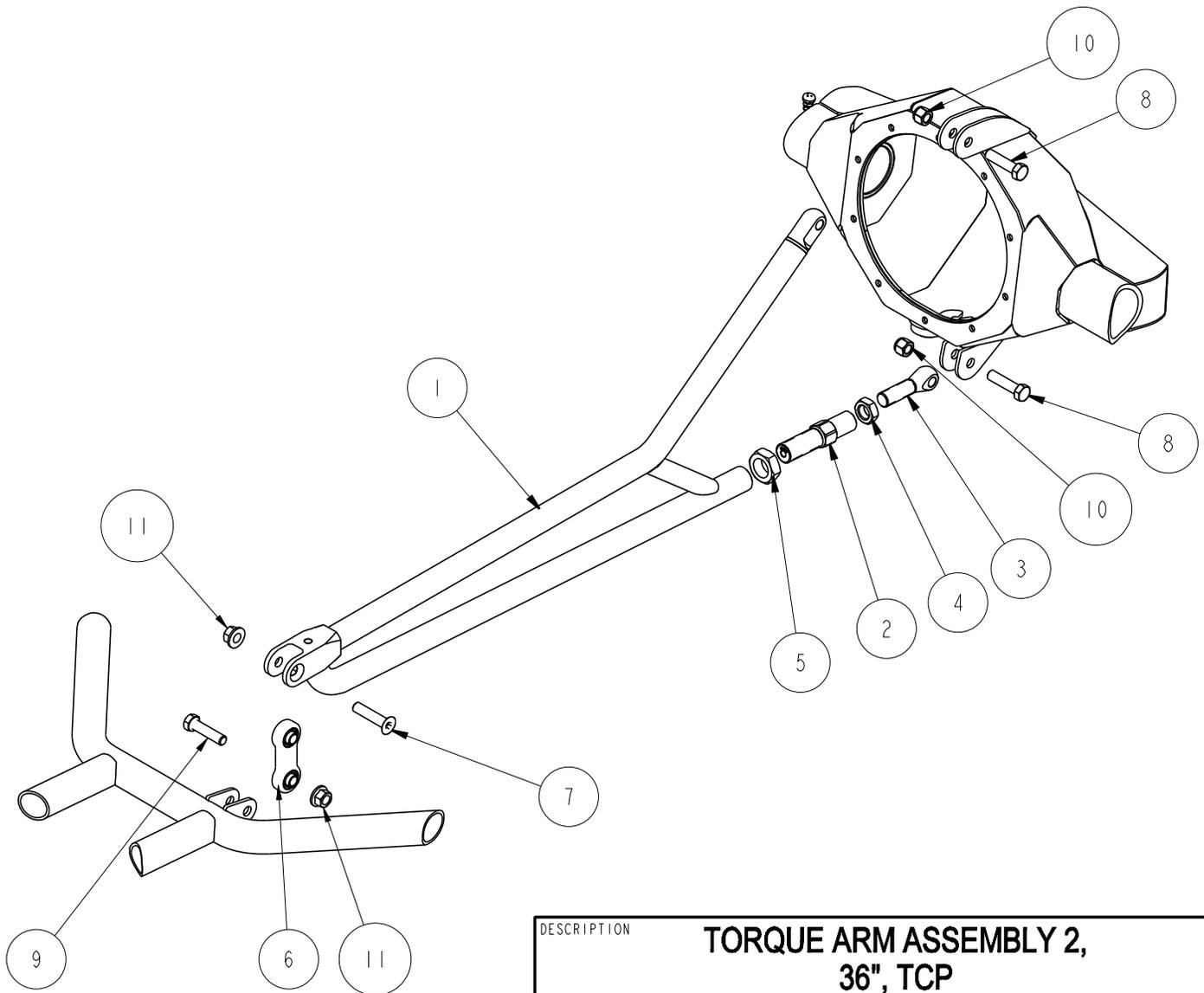
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ITEM	QTY	PART NO.	DESCRIPTION
1	1	7917-045	TORQUE ARM WELDMENT, 36", TCP
2	1	1500	ADJUSTER LINK, 1-14 LEFT THREAD 3/4-16 RIGHT THREAD
3	1	1204	EYEBOLT 3/4-16 RIGHT x 1/2 BORE
4	1	3102-075-16RC	JAM NUT, 3/4-16 RIGHT, CLEAR ZINC
5	1	3102-100-14LY	JAM NUT, 1-14 LEFT, YELLOW ZINC
6	1	7917-026	DOG BONE LINKAGE ASSEMBLY, TCP TORQUE ARM
7	1	3105-050C2.25B	FLAT HEAD SOCKET SCREW 1/2-13 x 2 1/4, BLACK OXIDE
8	2	3102	HEX BOLT, 1/2-20 x 2, GRADE 8, YELLOW ZINC
9	1	3100-050C2.00Y	HEX BOLT, 1/2-13 x 2, GRADE 8, YELLOW ZINC
10	2	3101-050-20C	LOCKNUT, 1/2-20, GRADE 8, NYLON INSERT, CLEAR ZINC
11	2	3132-050-13B	FLANGED TOP LOCKNUT, 1/2-13, GRADE G, BLACK OXIDE



DESCRIPTION		<b>TORQUE ARM ASSEMBLY 2, 36", TCP</b>	
<b>Chris Alston's CHASSISWORKS INC.</b> 8661 YOUNGER CREEK DRIVE SACRAMENTO, CA 95828 (916) 388-0288 FAX 388-0295		PART NO. <b>7903-TA2F9-36</b>	
		5/17/07	DWG: 7903-TA2F9-36

# INSTRUCTIONS

## Prior to Installation

- A. Exhaust system components that may interfere with the installation of the torque arm should be removed from the vehicle before proceeding with installation.
  - a. Modification to exhaust may be required for clearance.
- B. Installation of weld-in housing mounting brackets (TCP TABKT-X) and fabrication of crossmember and mounting bracket must be completed before proceeding with installation.

## Torque Arm Assembly

1. Thread 1"-14 (1-1/2" hex) jam nut (Item 5) onto adjustment coupler (Item 2) until loosely seated.
2. Screw male end of adjustment coupler (1-1/8" hex) (Item 2) into lower tube of torque arm weldment (Item 1) until loosely seated.
  - a. Use anti-sieze or similar thread lubricant.
3. Thread 3/4"-16 (1-1/8" hex) jam nut (Item 4) onto eyebolt (Item 3) until loosely seated.
4. Screw eyebolt (Item 3) into female end of adjustment coupler (Item 2) until loosely seated.
  - a. Use anti-sieze or similar thread lubricant.

## Torque Arm Installation

5. Bolt adjustment coupler eyebolt (Item 3) to lower mounting brackets of rear end housing.
  - a. Use 1/2-20 x 2" (3/4" hex) hex head cap screw (Item 8) and 1/2-20 locknut (3/4" hex) (Item 10).
  - b. Do not torque at this time.
6. Bolt eyebolt of torque arm weldment (Item 1) to upper mounting bracket of rear end housing.
  - a. Use 1/2-20 x 2" (3/4" hex) hex head cap screw (Item 8) and 1/2-20 locknut (3/4" hex) (Item 10).
  - b. Do not torque at this time.
7. Install dogbone linkage (Item 6) onto torque arm weldment (Item 1).
  - a. Use 1/2-13 x 2-1/4" (5/16" hex) flat head cap screw (Item 7) and 1/2-13 (3/4" hex) flanged top lock nut (Item 11).
  - b. Flat head cap screw (Item 11) will seat in tapered counterbore.
  - c. Torque to 45 lb. ft.
8. Secure dogbone linkage (Item 6) to TCP connector support or crossmember mounting bracket.
  - a. Use 1/2-13 x 2" (3/4" hex) hex head cap screw (Item 9) and 1/2-13 (3/4" hex) flanged top lock nut (Item 11).
  - b. Torque to 45 lb. ft.
  - c. If fabricating chassis crossmember for dogbone linkage mount, use following dimensions.  
Clevis Size: 1.010" Bolt Hole: .516" for 1/2" bolt  
Clevis Center: 3.125" from centerline of vehicle, offset toward driver's side
9. Set pinion angle to **1-2 degrees down** using adjustment coupler. (Refer to Pinion Angle section)
  - a. Rear suspension must be in ride height position when measuring pinion angle.
  - b. Upper and lower 1/2" mounting hardware must be loose to prevent binding during adjustment.
  - b. Torque jam nuts to 60 lb. ft. once adjustment is properly set.
  - c. Torque upper and lower mounting hardware to 60 lb. ft.

# Fastener Torque Specifications

Fastener Description	Location	Torque Value
Hex Head Cap Screw, 1/2-20 x 2"	Rear End Housing Brackets	60 lb. ft.
Hex Head Cap Screw, 1/2-13 x 2"	Dogbone Linkage	45 lb. ft.
Flat Head Cap Screw, 1/2-13 x 2-1/4"	Dogbone Linkage	45 lb. ft.
Jam Nut 1"-14	Adjustment Coupler	60 lb. ft.
Jam Nut 3/4"-16	Adjustment Coupler	60 lb. ft.

## Pinion Angle

Our recommended pinion angle of one to two degrees down, as compared to the engine crankshaft angle, serves as a starting point for your particular application. Installed components, available traction, and specific application will have some affect on the correct settings for your vehicle.

Pinion angle is to be set at ride height using the torque arm adjustment coupler. Torque arm mounting hardware at the housing must be loosened before adjusting the length of the coupler. Be sure to tighten the jam nuts and mounting hardware to the torque value specified in this installaion guide.

### Understanding Pinion Angle

The pinion angle is a very misunderstood measurement. The pinion angle is simply the difference in degrees of the engine crankshaft or drivetrain angle and the third member. The pinion angle is not a tuning aid. It is something that has to be set, but you do not adjust it for bite.

### Measuring the Drivetrain Angle

This can be taken from the vertical suface of the transmission tailshaft, the oil pan rail, or the front face of the harmonic balancer. Most production vehicle drivetrain angles will run slightly downhill towards the rear bumper. A typical measurement may be 2 degrees.

### Adjusting the Third Member Angle

The third member should be adjusted so that at ride height there is a one to two degree difference in the measured drivetrain angle and the third member angle. As an example, the two degrees downhill drivetrain angle previously established would require the third member to be set at zero degrees or parallel to the ground for a difference of two degrees. Shortening the torque arm adjustment coupler to tilt the pinion upward to a measurement of one degrees would give a difference of one degree when compared to the drivetrain angle.

Greater traction from wider or softer tire compounds combined with higher horsepower levels will require a greater pinion angle than low traction, low horsepower applications.