

INSTALLATION - SERVICE INSTRUCTIONS



Bulletin NO. SB0111
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December
2020

www.markwilliams.com

Part Numbers:

50245AXLE, CORVETTE INNER 30 SPLINE, 1350 UNIVERSAL JOINT
with **50237** U-BOLT CAP KIT (One)

Parts Included: Two of P/N 50245 are required for the vehicle. The 50245 Axles includes 50237 billet caps with studs and nuts. This bulletin is for parts identification, installation and modifications required for an Eaton or OEM Posi-Traction carrier.

ADDITIONAL PARTS ARE REQUIRED FOR THIS CONVERSION ARE:.

The axles spider gears with the mating 30-tooth spline are from an Eaton 12 Bolt car Posi unit. The Eaton part number for the axle gear kit is 29412-00S (older part number EDS-29581). The splined axle side gears in this kit are used with your current spider gears, (the small gear). The C-clip lock ring are also from the 12 bolt Posi and a NAPA part number is 6351025.

Primary Applications:

Upgrading a C2 and C3 Corvette to utilize a larger 30 spline axle gear combined with 300M Aircraft quality steel inner M/W Axle shaft for added strength.

Installation Overview:

- 1) *The spider to axle gears should have backlash clearance when assembled with the pressure plates and preload springs. This backlash is controlled with the shims in the clutch pack assembly. Various thickness shims are available from the Posi-Traction manufacturer. This should be set first before choosing the C-Clip lock thickness.*
- 2) *The endplay of the axle installed to the spider pin with the pre-load springs installed should be in the .003”-.007” range. This clearance can be checked with a feeler gauge between the axle end and the cross pin. The standard C-Clip Locks are .156” and .152” thickness. These are a common auto parts item with a NAPA part number 6351025 for both thicknesses. A thicker C-Clip is available from Mark Williams Enterprises that can be turned or surface ground to a precise fit. The M/W C-Clip part number is 52047.*

Torque Specs:

Torque the 50237 Billet Cap with 3/8”-24 reduced hex nuts to 17 foot pounds. Over torque will cause the roller bearings to brinell, and crack causing the universal joint to prematurely fail.

Maintenance Requirements:

Regularly check the torque values of the U-Joint attachment nuts. The 50245 axle shafts should be Magnaflux inspected periodically to assure absence of cracks.

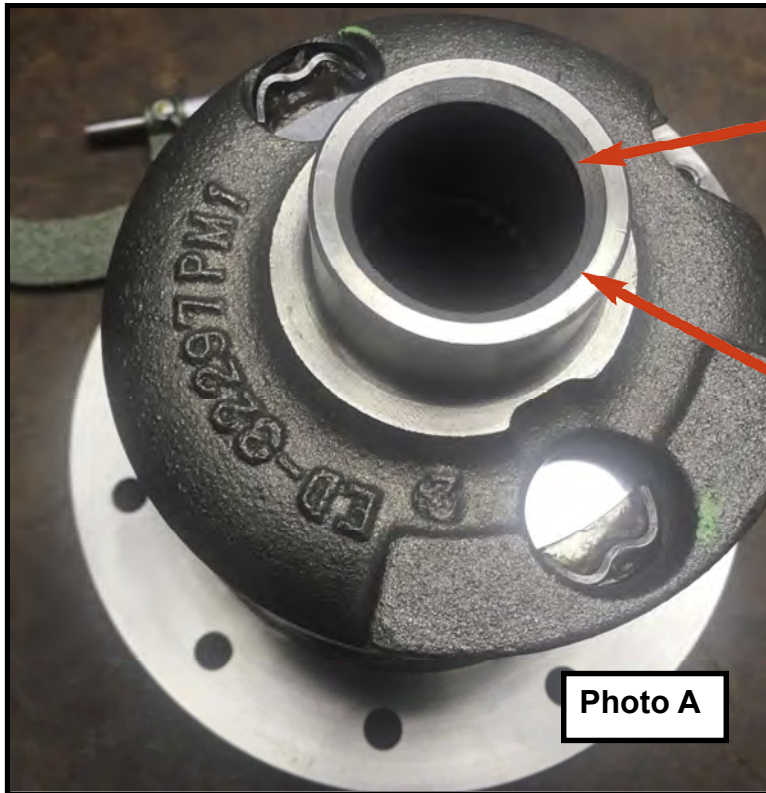
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Case Modifications Required

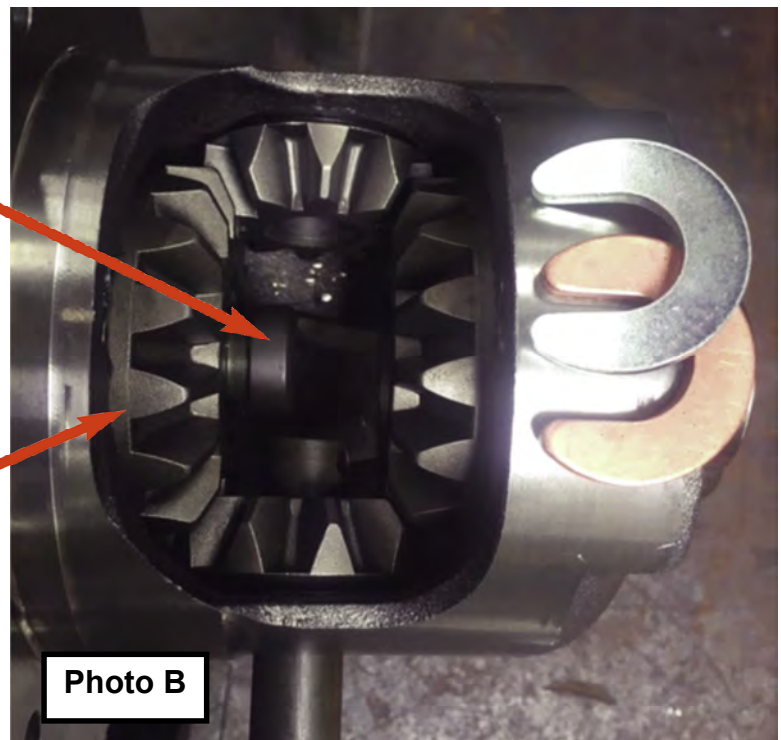


Bore on both sides to enlarge to a 1.300"-1.305" diameter to clear 30-spline axle with a 1.290" diameter. To use the larger 30 spline 12 Bolt Posi Gear

Both ends must have 1.500" diameter X 45 degree chamfer. This is necessary to allow the axle to be inserted far enough to install C-Clip lock.

Axle must go in far enough to install C-Clip lock with center pin and pre-load springs and plates removed.

Side gears are 30 spline from an 12 Bolt Car Post unit.



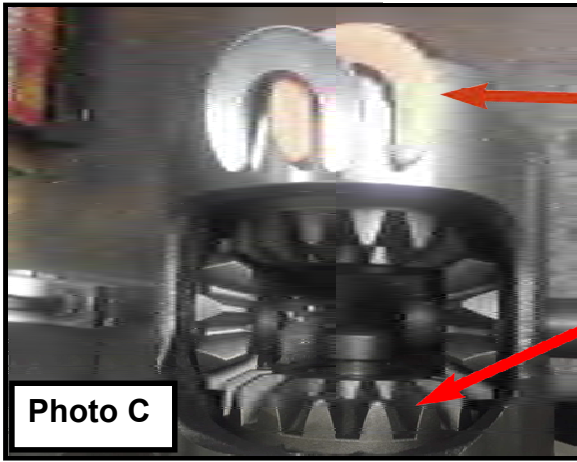
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Case Modifications Required



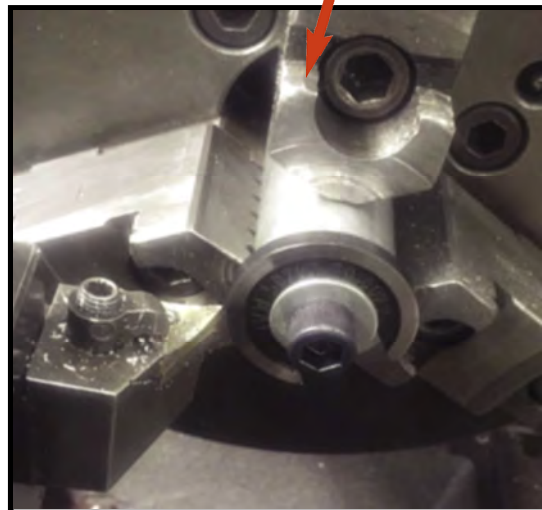
The C-Clip locks are available in .152" (copper color) and .156" (silver color) from common aftermarket sources. NAPA part number 6351025 has both thickness in the kit.

12 Bolt 30 spline gear, from Eaton kit EDS-29581 or 29412-00S.

M/W offers an extra thick hardened C-Clip, P/N 50247. This C-Clip can be machined to the precise thickness needed. The basic thickness is .180" and can be machined down to .140". Note: the stepped side of the washer goes against the axle gear.

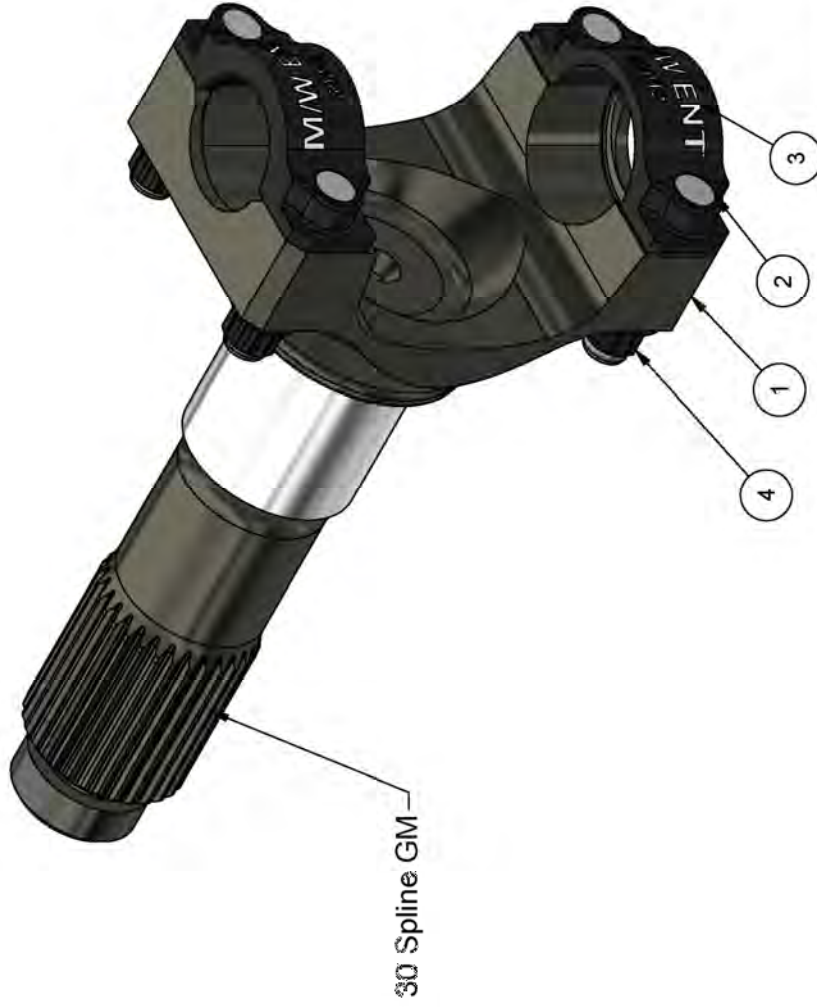


The set up for machining the thickness can be done on any lathe rather than grinding. Make a shaft arbor that is turned with a small shoulder approximately .750" in diameter to center the C-Clip. A 3/8" (or any size bolt) with a washer to hold it against the machined shoulder allows facing.



Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION	FILE NAME
1	1	50245	AXLE, VETTE INNER 30 SPLINE 300M	004921IN.ipt
2	4	39912-3	STUD, CAP 50231 YOKE	004924IN.ipt
3	2	39112-1	CAP, FOR MW STANDARD PINION YOKE (ONE)	001851IN.ipt
4	4	3_8-24 12PT NUT	3/8-24 12PT NUT	3_8-24 12PT NUT.ipt



MATERIAL	HEAT TREAT
PROTECTIVE FINISH	
Z:\inventorFiles\Assembly_Files\AS004921IN.ipt	
STOCK INFORMATION	MACHINING TOLERANCES
PAR LENGTH: .XX	XXX XXXX X
WEIGHT: .015	.005 .0005 1/2
ELDS PER DR: SURFACE FINISH/UNLESS NOTED VTS	
PROCS WEIGHT (PART)	



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PROJECT: AS004921IN.ipt
 DATE: 1-9-20

TITLE: AXLE, CORVETTE INNER 30 SPLINE

DATE: 01/24/2020 12:01 PM
 SHEET NO: 1

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CORVETTE RACING QUALITY COMPONENTS

ADDITIONAL PARTS FOR IMPROVING THE CORVETTE RELIABILITY



50230-KIT • C2-C3 Corvette Next-Step Rear Axle-Yoke Assembly • Replaces the weak 17-spline axles with 31-spline, and a one-piece u-Joint flange yoke.



50245-KIT • C2-C3 Rear Inner Yoke Shafts (2) • 30 Spline. Uses 12-Bolt car axle side gear to increase strength, and replaces the bolt on u-joint flange. This is the solution for the failure prone 17-spline OEM flange yokes.



50248-KIT • C2-C3 Rear Inner Yoke Shafts for modified C2-C3 Differentials for rears that have the Tom's Gears modified 12 bolt carrier and special ring and pinion gears.



ACG-020 • C2-C3 Corvette Front Lower Control Pivot Shaft • Heat-treated and shot peened alloy steel, modified design for a slight roll center change.

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CORVETTE RACING QUALITY COMPONENT



ACG-030 • C2-C3 Replacement Case for the Eaton™ 19670 Positraction • The is Case produced from thru-hardened alloy steel that solves the problem with cracked and failed cases while increasing gear life. It use 12 Bolt GM axle side and pinion gears for the 30 spline inner shafts.



58100 • C2-C3 Steel Main Cap Replacement for Cast Iron Cap.



39038 • C2-C3 Pinon Yoke 1350 Seies u-joint upgrade.



Cross Pin for C2-C3 M/W Case Uses 12 Bolt Spiders .809 Dia.



39800-VETT AXLE DRIVE SHAFT 4130 TUBE AND END FITTINGS SPICER JOINTS



50225-KIT • C4 '88-'96 Corvette Rear Hub and Yoke Shaft Kit • Features new Timken™ hubs with a larger 32-spline and matching 300M Yoke with Billet Caps.



50210 • C5 Corvette 300M Intermediate Shaft • Replaces GM part number 88893900.



50220 • C5 Corvette CV Shaft • 300M steel replaces GM part number 10311201.

For more information on these parts go to www.markwilliams.com/corvette-parts.html

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