

TECH

Dressed to the 9s

Bolt a Currie 9-Plus Rearend Into a '64-'72 Chevelle

Text and Photos by **Scott Crouse**

1 A set of Hotchkis adjustable upper control arms is the best way to adjust the pinion angle. The ideal pinion angle is 2-degrees nose down with the car at ride height.

Going fast and breaking parts are two concepts that go hand in hand. As power increases, the strength of its driveline must be up to the task. Our Chevelle had plans for some dragstrip action, but the weak 10-bolt had to make way for a stronger rearend before the car could hit the track. Because the Chevelle would see numerous engine combinations, we decided that it would be best to use a rearend that could handle the abuse of mondo torque while offering the flexibility of easy gear changes.

The tried-and-true 12-bolt is more than capable of handling massive doses of torque, but due to its internal design, the process of swapping in ratios isn't very inviting. Even though the cast-iron 10-bolt rearend

weighed in at 185 pounds and the cast-iron 9-inch tipped the scales at a heftier 230 pounds, we were willing to pay the 45-pound weight penalty for the added strength and convenience.

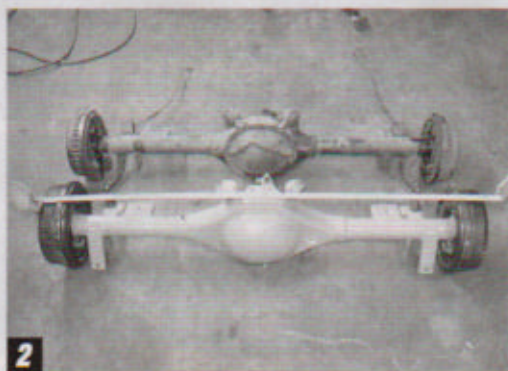
We contacted Currie Enterprises to find the right 9-inch. Currie offers its 9-Plus rearend housing kit with everything you need to bolt a 9-inch rearend into your '64-'72 A-body. The Chevelle-matching 61-inch drum-to-drum 9-inch housing is supplied with the bearings, seals, gaskets, axles, and housing. The rest of the 9-Plus kit is available in individual pieces to fit your application.

Once the new 3.50-geared 9-Plus package reached our doorstep, we began preparing for the replacement rearend. Before a single wrench is

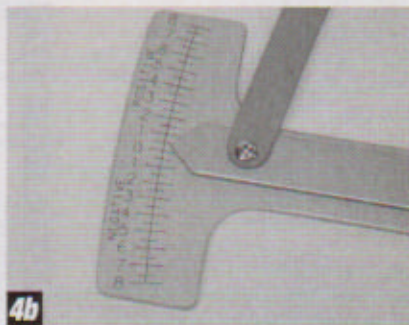


turned, it's crucial to measure the distance between the rear fender lip and the factory axle centerline with the car sitting on the ground to establish ride height. In no time, the car hit the hoist and bolts were flying until the factory 10-bolt vacated the car. With everything cleaned, we began bolting the 9-Plus housing in place. A 9-inch rearend is taller than a 10- or 12-bolt Chevy. Even though the 9-Plus housings are built with a specific >>

2 Our Currie-built 9-Plus rearend appears wider because of the larger drum brakes even though it's the same width at 61 inches. The 10-bolt weighed in at 185 pounds while the 9-inch tipped the scales at 230 pounds.



3 This is a complete rear suspension kit with both the adjustable and non-adjustable upper control arms shown. Under acceleration, the lower control arms are in compression, while the upper control arms are in tension. The braces keep the crossmember from bending.



4a-b This Powerhouse Products pinion-angle gauge features a magnetic base that sticks to the U-joint while the arm is placed on the bottom of the driveshaft.

axle-to-axle length to fit the ordered application, their taller design forces the factory control arms to alter the pinion angle of the rearend.

The length of the upper control arms and the vehicle ride-height are two factors that affect pinion angle. To correct the pinion angle problem, we used a set of Hotchkis adjustable upper control arms. Before the upper control arms are installed, it is crucial to adjust them to the exact length of the factory arms. This allows for an even starting point. Once the arms are adjusted to the factory lengths, use a pinion-angle measurement tool to record the beginning pinion angle. Currie recommends placing a digital level on the oil-pan rail to get the most accurate crankshaft position, and also at the bottom of the 9-Plus rearend housing. Because the oil-pan rail can be difficult to get to, we placed our level on the yoke and the driveshaft. The stock-length upper control arms pushed the top of the rearend housing back and caused the pinion to sit with a negative (upward) angle. At this point we removed our adjustable arms and screwed them in two turns where they bottomed out. When adjusting your control arms, be sure that both of them are adjusted to the same lengths or the rearend will bind.

With the arms shortened, we checked the pinion angle only to

| Where to Get It | | | |
|---------------------------------|------------|-----------|--------|
| Description | Mfr. | PN | Price |
| Upper arms fixed ('68-'72) | Hotchkis | 1202 | \$257 |
| Upper arms fixed ('64-'67) | Hotchkis | 1203 | 257 |
| Adj. upper arms ('68-'72) | Hotchkis | 1202A | 316 |
| Adj. upper arms ('64-'72) | Hotchkis | 1203A | 316 |
| Lower arms ('64-'72) | Hotchkis | 1302 | 254 |
| Trailing arm brace ('64-'72) | Hotchkis | 1403 | 126 |
| Trailing arm hardware | Hotchkis | 1702 | 19 |
| Rear spring 1-inch drop | Hotchkis | 1900R | 141 |
| Trailing arm package ('64-'67) | | | |
| 1203, 1302, 1403, 1702 | Hotchkis | 1804A | 715 |
| Trailing arm package ('64-'67) | | | |
| 1203, 1302, 1403, 1702 non-adj. | Hotchkis | 1804 | 656 |
| 9-Plus housing kit (31-spline) | Currie | CE-0005C | 689.95 |
| Chevelle Bracket kit ('64-'72) | Currie | CE-7011B | 249.95 |
| 9-Plus drum brake kit | Currie | CE-6005A | 299.95 |
| Complete standard third-member | | | |
| TSD posi, 3.50 gear, iron case | Currie | CE-3030C | 859.95 |
| Yoke 1350 billet | | | |
| (application specific) | Currie | CE-4044B | 109.95 |
| U-joint (application specific) | Lakewood | Call | Call |
| 1310 series | | | |
| U-joint (application specific) | Lakewood | Call | Call |
| 1330 series | | | |
| U-joint (application specific) | Lakewood | Call | Call |
| 1350 series | | | |
| Driveshaft measurement tool | Powerhouse | POW351032 | 93.95 |

find that the pinion still sat too far negative. To achieve the factory-recommended 2-degree nose-down pinion angle, we removed the upper control arms and shortened the

male end by roughly three threads to allow two more turns of inward adjustment. Further shortening the upper control arms finally rolled the pinion angle positive (down) to >>

5 Because the 9-inch rearend offsets the pinion to the right, two different-length axles are used. This also adds a lateral (compound) angle to the driveshaft.



6 It is crucial to make sure that both adjustable upper control arms are the same length. Mismatched lengths will put the rearend in a bind.

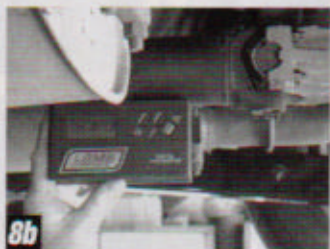


7 Be sure to duplicate the ride height of your vehicle before checking the pinion angle. The ride height of a vehicle will drastically affect the pinion angle of the rearend. We removed the rear coil springs to make the effort easier.

the correct angle. Then, the adjustment nuts on the upper arms were tightened, locking the control arms at a set length. Hotchkis recommends no less than 1/2-inch thread engagement into the head of the adjuster for maximum strength.

To finish the rear suspension, we used a set of Hotchkis lower control arms and control arm braces that connect between the front of the upper and lower control arms. These braces prevent damage to the upper crossmember that can be caused by engine torque. The rearend braces are extremely important pieces as torque loads increase. These braces are now adjustable because many Chevilles have a bent crossmember brace from numerous years of blasting down the dragstrip.

With the housing in place, we were ready to connect our new TCI TH400 to the 9-inch rearend and head to the track. Unfortunately, the driveshaft needed some help. The 9-inch center section that we installed features a yoke that requires a larger U-joint. To remedy this problem, we contacted Currie Enterprises and found some interesting facts about U-joints. The majority of musclecar U-joints are classified in three different series. There are 1310, 1330, and 1350 series U-joints that fit dozens of applications. To determine which U-joint fits where, two measurements need to be taken. The first is an overall diameter of the U-joint measured from the outside of one endcap to the opposite side. The second is the cap diameter. Once



Sources

Currie Enterprises Inc.

Dept. CHP
1480 N. Tustin Ave.
Anaheim, CA 92807
714/528-6957
www.new9inch.com

Denny's Driveshaft Service

Dept. CHP
1189 Military Rd.
Kenmore, NY 14217
800/955-1872
716/875-6640

Hotchkis Performance

Dept. CHP
12035 Burke St., Ste. 13
Santa Fe Springs, CA 90670
877/4NO-ROLL (466-7655)
562/907-7757, www.
hotchkisperformance.com

Lakewood Industries

Dept. CHP
10601 Memphis Ave., Ste. 12
Cleveland, OH 44144-2043
216/688-8300
www.mrgasket.com
/lakewood.htm

Powerhouse Products

Dept. CHP
3402 Democrat Rd.
Memphis, TN 38118
800/872-7223, www.
powerhouseproducts.com

TCI Automotive

Dept. CHP
151 Industrial Dr.
Ashland, MS 38603
662/224-8972
800/319-9824 (orders)
www.tciauto.com

Something to Think About

Every new project creates more things that need to be done. An easily overlooked area when converting to a 9-inch rearend is wheels. Fords commonly feature a 5x5-inch or 5x4 1/2-inch bolt pattern with 1/2-inch wheel studs. The 10- and 12-bolt Chevy rearends commonly use a 5x4 3/4-inch bolt pattern with 7/16-inch wheel studs. Currie Enterprise's 9-Plus rearend kits can be ordered drilled for the Chevy bolt pattern with 7/16- or 1/2-inch wheel studs. Be sure to plan for the bolt pattern you want before purchasing a set of wheels. Another alternative is using wheels with dual bolt patterns that fit both, as offered by companies like Center Line.

these dimensions are recorded, any U-joint supplier will be capable of filling your order.

The 9-Plus rearend will match up to the TCI TH400 with help from a larger driveshaft from Denny's Driveshafts (we'll deal with that next month). We also realized that the large Ford 11.25-inch rear drum brakes didn't agree with the factory proportioning valve and would prematurely lock up upon deceleration. The larger shoes not only

provide more surface area, but the wheel cylinder's 1 1/8-inch piston is much larger than the original Chevelle wheel cylinder. This prompted us to remove the factory proportioning valve and splice in an adjustable valve to control pressure to the rear brakes.

The process of installing a 9-inch rearend is really not that difficult, especially if you anticipate the problems you'll face. The good news is that now we can put some serious power to our Chevelle. **CHP**