

# GM K-Truck Front-Drive Axles

Looking At The 'Forgotten' Axle

By Mike Weinberg  
Contributing Editor

As I write this, the leaves are coming off the trees, and there is a light frost these mornings. Most people consider this the start of the holiday season, but for our industry, it is the beginning of the transfer-case season. Shops now hope to be busy with four-wheel-drive and all-wheel-drive problems.

A good many of the four-wheel-drive problems probably have been in the customer's vehicle for some time but have gone unnoticed as the need for four-wheel drive was non-existent in the warm summer months. Now that the snow is about to fly, people are readying their vehicles for the winter season.

If your customers are anything like the people I deal with, they fall into two categories: the experienced few who come in to get their transmission, transfer case and differentials serviced in the fall, and the vast majority of SUV owners who are following the trend and have no

idea what "preventive maintenance" means. These are the guys and gals who show up with the first snowfall wondering why their 4WD doesn't work and wanting you to wave your



magic wand and make everything right so that they can be at work on time.

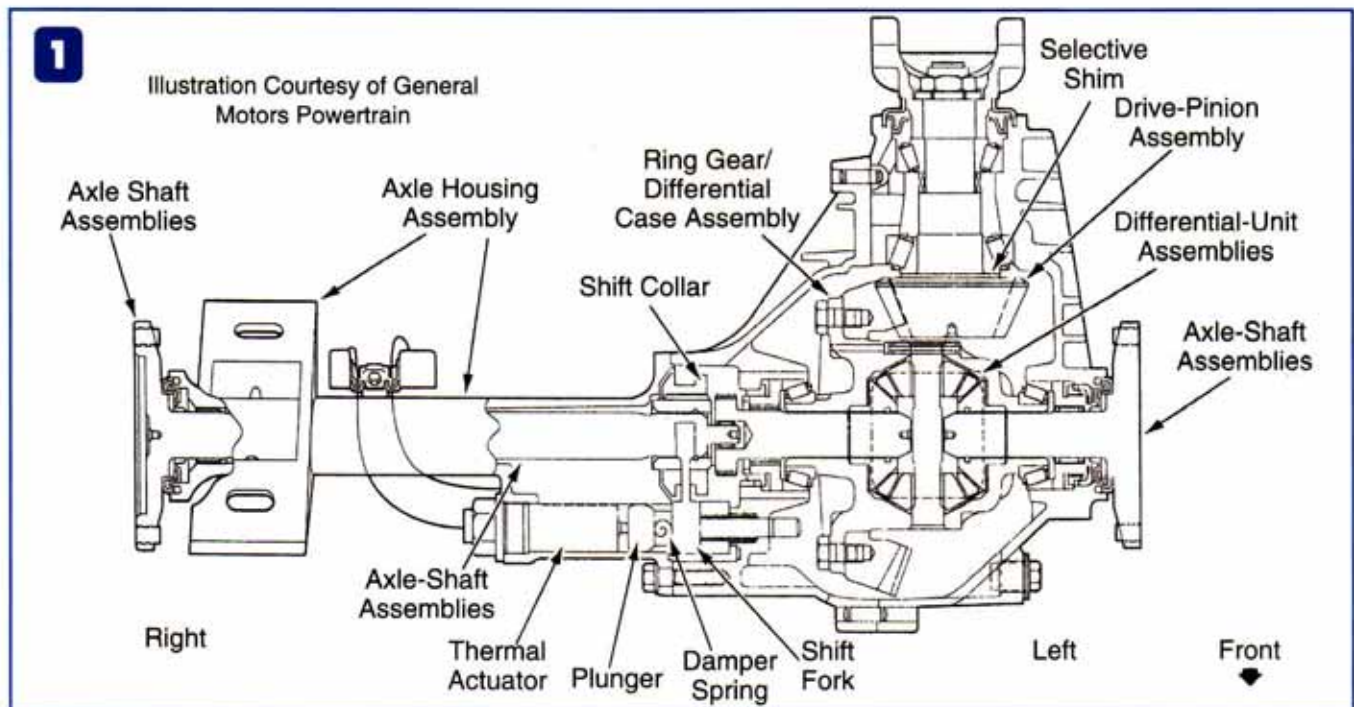
One of the most-neglected areas of the 4WD truck is the front-drive axle. In this article we will examine the

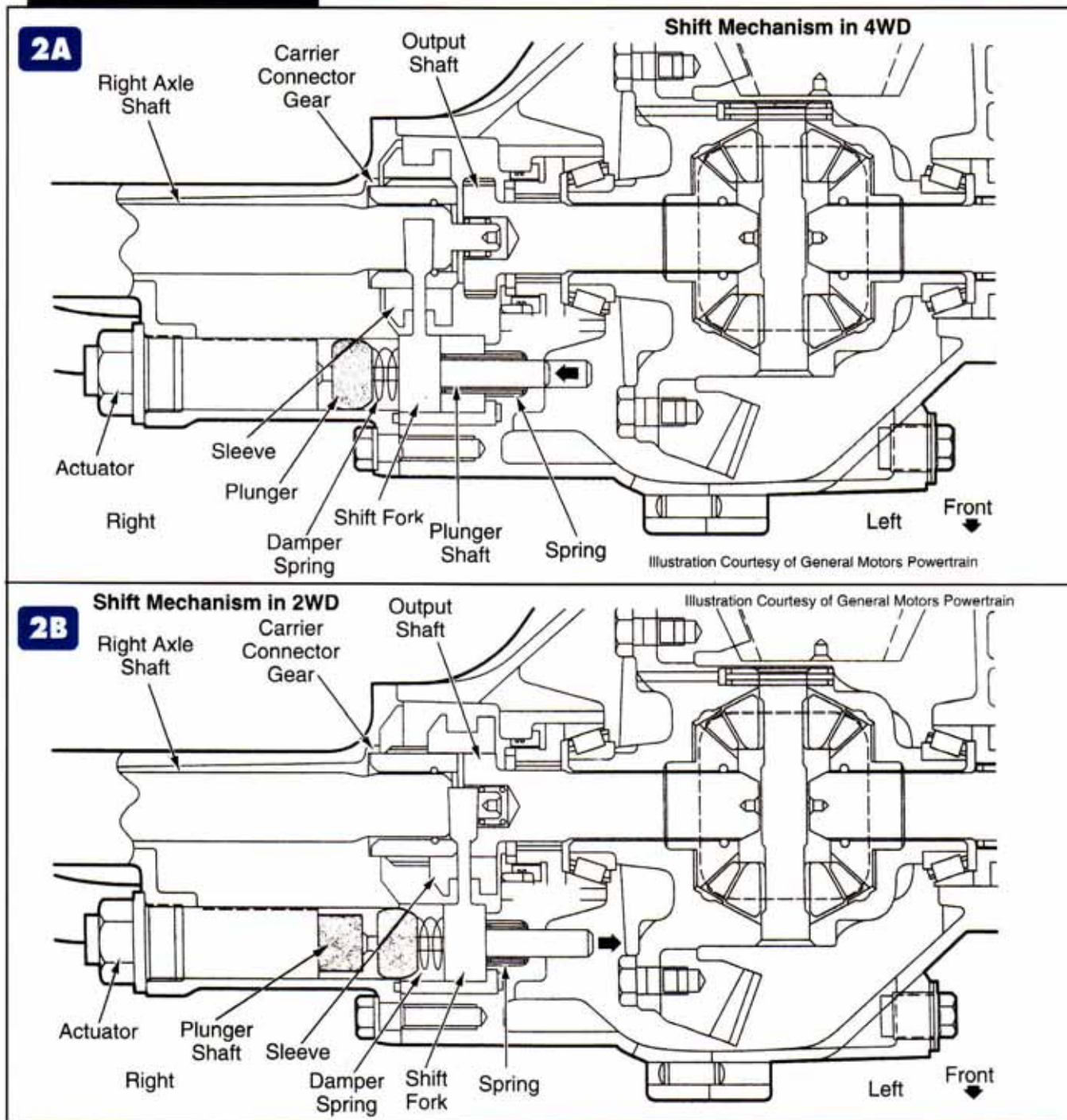
GM K-truck front-drive axle and its operation (See Figure 1). The unit we will concentrate on is the K or full-sized truck, but the T trucks function in a similar way.

American Axle and Manufacturing builds the K-series front-drive axles. These units come in two ring-gear sizes and assorted ratios. Please note that whatever the ratio of the rear differential it must match the ratio of the front. Never, never begin a 4WD diff repair without confirming the drive-axle ratios. The K10-series trucks use an 8¼-inch ring gear and come in 3.42, 3.73 and 4.10 ratios. The K20-series trucks also use an 8¼-inch ring gear and have ratios of 3.42, 3.73, 4.10 and 4.26. The K30 trucks use a 9¼-inch ring gear and are equipped with ratios of 3.73, 4.10, 4.26 and 5.13.

These trucks' front axles are equipped with an electrically operated disconnect that allows the

*continues page 34*





vehicle to operate in two-wheel drive without turning the front driveshaft to save fuel and wear on the transfer-case components. When the transfer case is shifted into 4WD range (either high or low), the circuit is completed to the front axle, and the actuator pushes a shift fork with a sliding sleeve to lock the right axle to the output shaft of the differential (See Figure 2A). Shifting the transfer case into 2WD interrupts the power to the

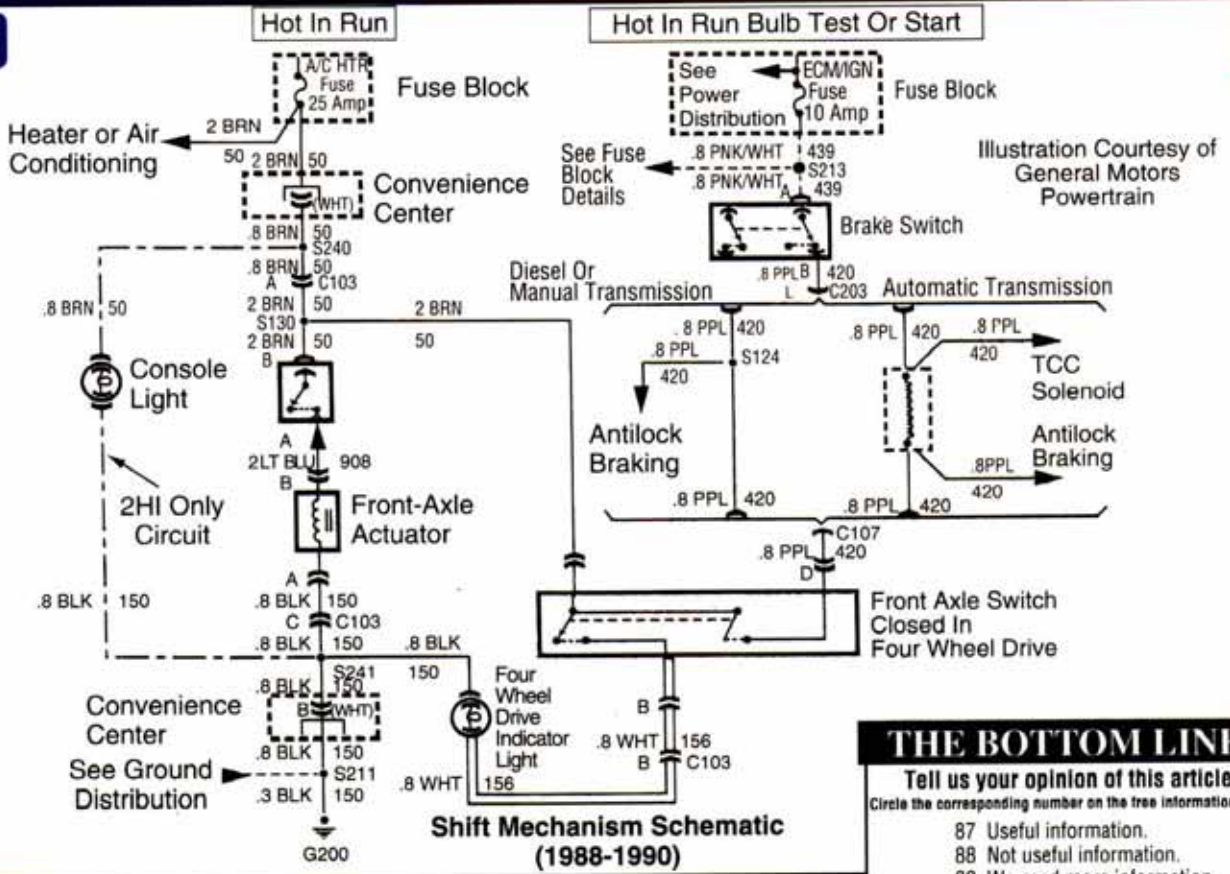
actuator, and spring tension pushes the sliding sleeve off the output shaft of the diff so the right axle can freewheel (See Figure 2B).

These are basic, simple systems that often can cause a lot of wasted time in the shop. The accompanying diagrams and electronic schematics should help you diagnose and repair these units (See Figures 3 and 4 on page 36). Many times a busy shop will overlook the front diff when

working on a "transfer-case problem." Look at the whole picture before you get into any one component.

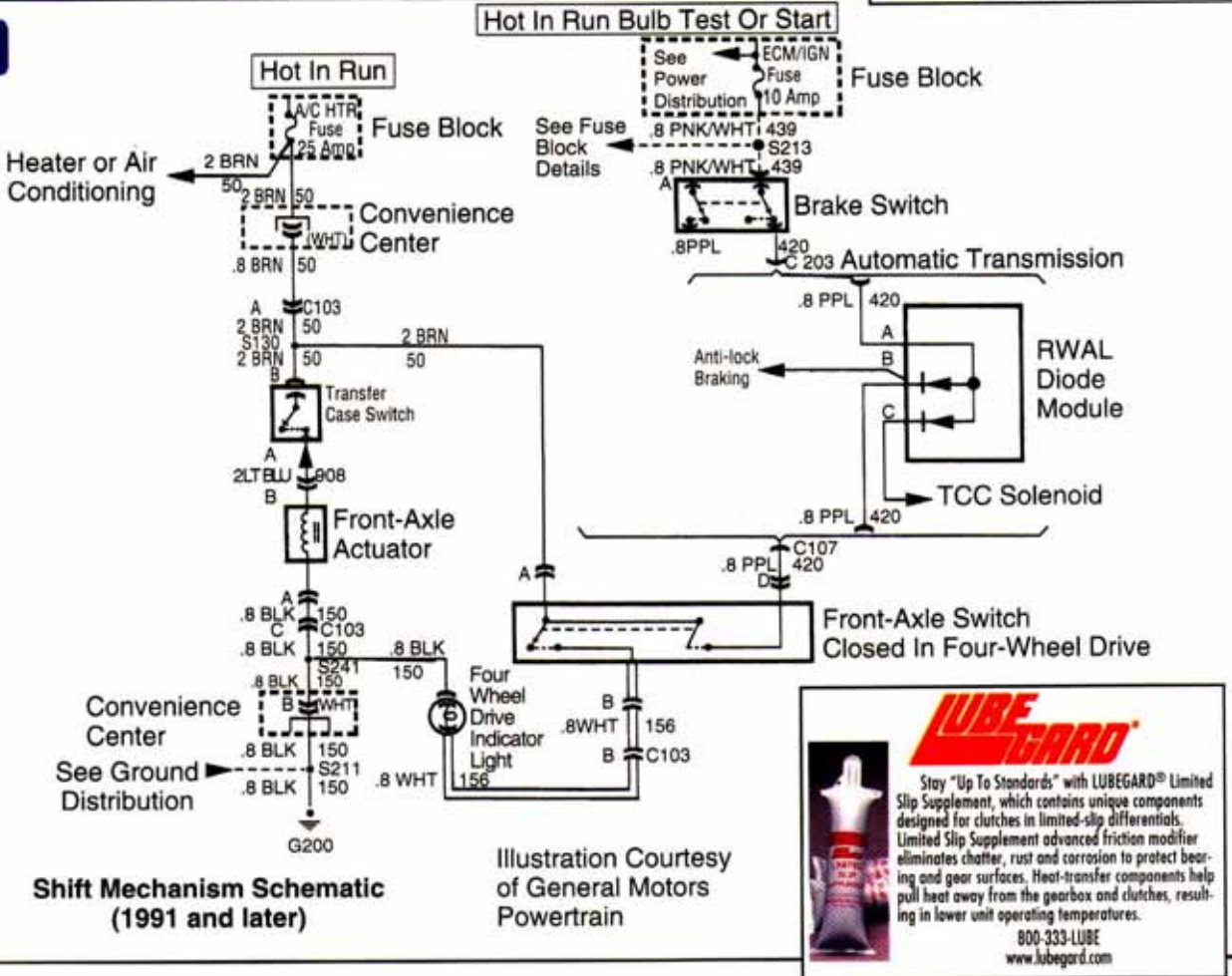
The holidays are around the corner, and I thank all our loyal readers for their attention this year and wish all of you and your families a wonderful, safe holiday and a prosperous, healthy New Year. **TD**

3



**THE BOTTOM LINE:**  
 Tell us your opinion of this article:  
 Circle the corresponding number on the free information card.  
 87 Useful information.  
 88 Not useful information.  
 89 We need more information.

4



**LUBE-GUARD**

Stay "Up To Standards" with LUBE-GUARD® Limited Slip Supplement, which contains unique components designed for clutches in limited-slip differentials. Limited Slip Supplement advanced friction modifier eliminates chatter, rust and corrosion to protect bearing and gear surfaces. Heat-transfer components help pull heat away from the gearbox and clutches, resulting in lower unit operating temperatures.

800-333-LUBE  
 www.lubeguard.com