



California Clutch & Gear presents

The Gear Gazette

Welcome to the Gear Gazette

We've had some great responses from our premier issue of the Gear Gazette. In this, the second issue, we're bringing you more gear advice and news.

Fuller Model Numbers

Ever wonder what all the numbers in a Fuller transmission model number mean? Here's a quick guide

R T L O F - 16 9 13 A

R Roadranger

T Twin countershaft

L Low inertia

O Overdrive (if no "O" is present, the transmission's highest gear is direct or 1-to-1)

F Forward-mount cover (if no "F" is present, the transmission has a rear mount cover)

Forward-mount covers actually have the mounting hole near the center of the cover, not the front.

16 This x 100 is the nominal torque capacity

9 This number indicates the design generation of the transmission.

13 Number of forward gears.

A Ratio (also, L or LL may be here, indicating additional low gears)

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California Clutch and Gear
Your Heavy-Duty Drivetrain Specialist

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Clutch Materials

There are two basic types of clutch friction materials that have replaced asbestos: organic and ceramic.

Organic

Organic clutches use friction surfaces that are woven from fiberglass, metals and other substances into facings. These clutches will provide a little slip and offer a relatively smooth clutch engagement.

Ceramic

Ceramic clutches use friction surfaces that are made of a combination of ceramics and metals. Ceramic material is usually seen in the form of buttons that are riveted to the clutch discs. Ceramic clutches provide better heat resistance, but clutch engagement is less smooth than organic.

There are other clutch friction materials, like Kevlar, that we'll discuss later.



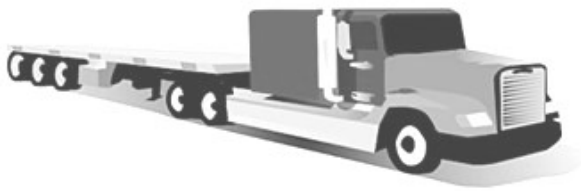
Ask the Gear Guy:

Q: How can I tell if my clutch is dragging?

A: The easiest way to tell is to put your transmission in any gear, press the clutch pedal and start the truck. If the truck immediately lurches, you probably have a sticking clutch.

If the truck doesn't lurch, put the gear shift lever into neutral, and then shift the transmission into reverse. Do you hear grinding gears? Do you have trouble getting the transmission into reverse? Then you probably have a clutch that is hanging up.

If the gear shift lever goes into reverse easily or you hear just a quick chirp, the clutch is probably working properly.



Q: My dispatcher got on me for driving with my clutch out of adjustment. I didn't even know it needed adjusting! How can I tell?

A: Regular clutch adjustment is the single-most important contributor to long clutch life.

But how often should you have your clutch adjusted? It all depends on *free-play*. Free-play is the initial travel in the clutch pedal before you feel the clutch – it represents the small gap between the clutch release fork and the clutch throw-out bearing.

As the clutch wears, the throw-out bearing moves gradually closer to the release fork. Once the fork and bearing touch, you run out of free-play at the top of the clutch pedal's travel.

So when the free-play goes away, it's time for a clutch adjustment.

So what happens if you don't adjust your clutch? Well, eventually the clutch fork will prevent the clutch from engaging completely, and the clutch will start slipping.

Once a clutch is slipping, it's only a matter of time before the clutch friction material burns and the clutch needs replacement.

Q: Which is a faster ratio: 3.55 or 4.11? If I want to change ratios, do I have to change both my front and rear drivers?

A: 3.90. An axle's ratio describes the number of turns required by the driveline to turn the wheels once. Technically, ratios should be written as 3.90:1, which means the driveline turns 3.9 times for every one turn of the wheels. So the lower the axle ratio, the faster the truck will go.

An axle's ratio is determined by the number of teeth on the ring gear and the pinion gear. If you divide the ring gear tooth count by the pinion gear tooth count, that will give you the ratio.

And yes, you have to change both your front and rear drivers when you change ratios. If you don't you'll wear out or damage the power divider very quickly. Additionally, you'll break something pretty quickly if you lock in your power divider.



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