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NO: FAB6.0007

Fabco FSD Series Steer Drive Axles Available with Eaton Truetrac[®] Limited Slip

In response to severe service customer needs for maximum off-highway maneuverability combined with smooth on-highway drivability, Fabco has introduced Eaton's exclusive Truetrac limited slip differential for Fabco 8,000 through 15,500-lb. steer drive axles.

In the past, operators had primarily two alternatives for an open differential in a front steer drive axle. The traditional offerings have been driver controlled differential locks (DCDL) and full time limited slip differentials. DCDL relies completely on the driver to properly engage and disengage when the conditions warrant – and when engaged, troubles with vehicle control due to understeer are problematic. The other method is traditional full time limited slip using either a friction clutch or spring loaded locked spider assembly, which when running on the road with good traction, often cause severe handling difficulties and drivetrain windup.

The Eaton Truetrac system solves the above mentioned problems. The Truetrac unique, patented design of parallel axis, planetary helical gears delivers smooth and quiet automatic bias of the torque. The proven design can transfer up to 3.5 times more torque to the high traction wheel in low traction conditions such as wet, muddy, icy or loose terrain. While under normal, on-highway high traction conditions, the Truetrac allows smooth steering feedback in the same manner as an open differential. The benefits of the Truetrac include:

- Improved traction in wet, muddy and icy conditions or loose terrain
- Automatic power transfer – requires no driver intervention to engage and disengage
- Maintenance free – requires no special lubricants or friction modifiers
- Lifetime torque bias retention
- Simple, proven design
- Smooth and quiet operation
- Limits wheel spin-out and improves vehicle handling
- Performs like an open differential, until needed

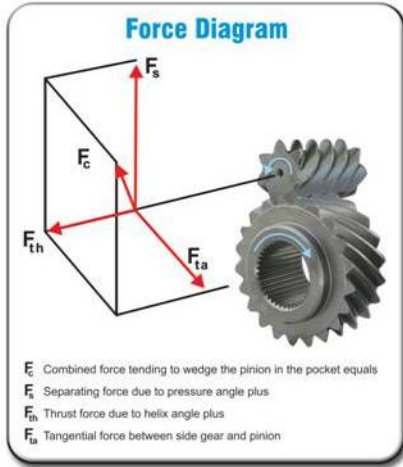
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Fabco Automotive – Product Bulletin

September 24, 2009

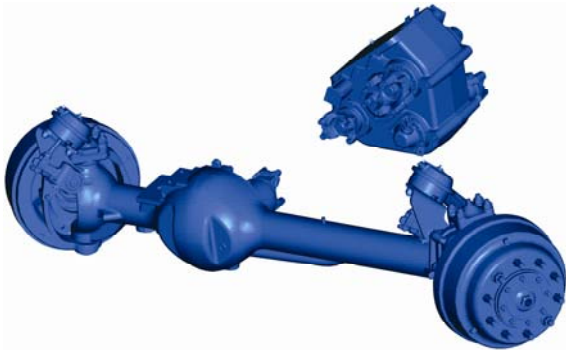
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The Truetrac performs like an open differential under normal conditions, and automatically transfers torque to the wheel with the highest traction when required. The Truetrac can transfer up to 3.5 times more torque to the high traction wheel. This torque transfer ratio (called the bias ratio) is accomplished by using helical side gears and pinions. The bias ratio is the result of pressure exerted by the side gears and pinions against the surface of the differential case. In certain applications, this normal gear engagement may produce temporary driver feedback.

The Truetrac designs have been produced within a maximum continuous torque range from 2,500 Lb-Ft to 25,000 Lb-Ft. Increased capacity can be accomplished by larger gears and more pinion sets.

Principal of Operation



Fabco FSD-14A & TC-38 Transfer Case



Eaton Detroit Truetrac

