Performance Engineering & Manufacturing, LLC

For Technical Support Call 636-234-0975

IMPORTANT INSTRUCTIONS FOR 3rd MEMBER BREAK-IN SHEET

CARRIER ASSEMBLY TORQUE

Carrier assembly to housing stud nuts 25-40 ft. lbs.

LUBE

Fill the gear case with the required amount of Premium 85-140 weight lube or better and maintain the proper level at all times. Proper maintenance is a must to protect the safety and working life of your gear set. Periodically inspect the oil level and add oil if necessary, inspect vent plug for cleanliness and function, and inspect for oil leakage. NOTE: For oval track racing add 2-3 additional pints gear lube. Minimum for oval track is 1 gallon

RING & PINION BREAK IN PROCEDURE

High ratio gear assemblies with new bearings can cause excessive heat build up, this excessive heat tends to soften the surfaces of the gear teeth. To prevent this we must break in the new assembly.

Proper break in of your new ring and pinion is extremely important. When the following procedures are followed, you will realize the performance gains expected.

DRAG RACE BREAK IN:

Drive the car around the pits or on the return road for approximately 10 minutes. NOTE: When the proper lube is used and backlash is set properly excessive heat buildup should not occur.

STREET VEHICLE BREAK IN:

1. **Operate the car at normal street driving speed for around 10 miles (25-45 mph).**
2. **Let the ring and pinion cool 30 minutes.**
3. **Friction Modifier additive must be used in addition to the lube in all Trac-Loc applications.**

TOWING VEHICLE BREAK IN:

Operate the towing vehicle at normal street driving speed for around 250 miles (25-45 mph).

CIRCLE TRACK BREAK IN:

1. **Drive the car at slow speed for around 6 laps (1/2 mile oval).**
2. **Let the ring and pinion cool 30 minutes.**
3. **Drive the car again at slow speed for around 6 laps.**
4. **Drive the car at full speed 2-3 laps.**
5. **Let the ring and pinion cool 30 minutes.**

666, 683 and 700 ratio Technical Service Bulletin

Ford 9" Ring & Pinion Ratios 666, 683, and 700 ratios. PEM recommends using a Daytona style support, solid pinion spacer, and an inner seal in the outer axle tube. Without these 3 things, your gears and bearings will get too hot and will cause the gears to anneal. Annealing will destroy the heat treatment applied to the gears at the factory making them soft. This is why gears will appear to have MELTED to some degree. PEM Highly Recommends a high pressure synthetic or synthetic blend and a rear end oil cooler in all three of these gear applications for the best results!