



Instructions for the installation of US Gear Ring & Pinion Sets

IMPORTANT:

WE HIGHLY RECOMMEND THAT YOU READ THIS SET OF INSTRUCTIONS COMPLETELY BEFORE BEGINNING THE INSTALLATION OF THIS NEW GEAR SET. CORRECT INSTALLATION CAN BE THE DIFFERENCE IN A SAFE EXTENDED GEAR LIFE...OR PREMATURE FAILURE.

1. Remove the old gear set and thoroughly clean both the ring gear carrier and rear end housing with solvent. After cleaning, air-dry all parts.
2. Examine the ring gear mounting surface for nicks or burrs which might prevent a flush mounting of the newly installed ring gear. Ring/ Pinion tooth depth variations can result from a ring gear that is "cocked" on its mounting surface. If a ring gear spacer is to be used, also check it for surface imperfections. Nicks or burrs can be removed by using block-backed grit paper or a small file. Following material removal, rewash in solvent and air dry. Mount ring gear. Loctite ring gear bolts and torque to factory specifications.
3. All US Gear gears have been "lapped" in sets and should never be mixed with another ring gear or pinion. Check to see serial numbers are the same on the ring gear and pinion.
4. Each US Gear gear set is pre-run and marked on the pinion face with its proper depth setting called the "Checking Distance". This dimension is from the face of the pinion to the axle centerline. A setting tool must be used to measure the checking distance. Pinion depth is adjusted by adding or subtracting shim thickness. Stay +/- .002 of the pinion dimension. (See Illustrations 'A' and 'B').
5. Once the pinion depth is achieved, install a new crush collar (preload shim pack for Dana's) and seal. Then loctite the pinion nut and tighten to 15 inch-pounds rotating torque with used bearings or 25 inch-pounds with new bearings.
6. With the pinion gear installed, position ring gear and carrier into housing to check backlash. US Gear gears are developed to be run at .008" to .012" backlash for street gear sets and .006" to .008" backlash for competition gear sets.



7. Adjustments for backlash are done by spanner rings in the housing or shim packs behind the carrier bearing cups (GM) or cones (Dana). Always be sure carrier bearings are pre-loaded. The carrier should not fall out of the housing, but should have to be “tapped” in during final installation. Replace bearing caps and torque to factory specifications.

8. You are now ready to verify the tooth contact pattern. A gear marking compound should be used. Paint gear teeth with compound in several spots and rotate ring gear several revolutions. A tooth contact pattern will appear and should be similar to the pattern shown in Illustration ‘C’. If the pattern is not in the approximate position shown, reset pinion depth and backlash to correct pattern. Pinion shims usually must be moved in .003 of an inch increments to notice a pattern change. If a pattern is heavy toe subtract shims, (See Illustration D). If a pattern is heavy heel add shims, (See Illustration E).

NOTE: Reverse this procedure for 8" and 9" Ford.

9. Fill the case with the required amount of EP85-90 gear lube, and maintain the proper level at all times. Proper maintenance is a must to protect you and the gear set.

US GEAR

FINAL RESULTS

Properly designed, manufactured, and maintained US Gear gears, correctly assembled by you in a clean, rigid gear box, and operated with the proper lubricant, will result in safe and satisfactory performance. Be sure that the gear set properly fits the application.

NOISE ACCEPTABILITY

A gear-driven unit will produce a certain amount of noise. Some noise is acceptable and might be audible at certain speeds or under various driving conditions. The slight noise is not detrimental to operation of the rear axle and must be considered normal.

NOTICE: Manufacturer’s obligation for warranty returns shall be limited to repairing, or replacing, or crediting at its option, any parts found to be defective. Manufacturer will not be liable for charges and/or other expenses incurred, nor shall it be liable for damages or injury to persons or property resulting from the misuse or improper installation of any part subject to this warranty. The warranty contained herein is expressly in lieu of any and all other warranties, including any implied warranty of merchantability or fitness for any particular purpose.

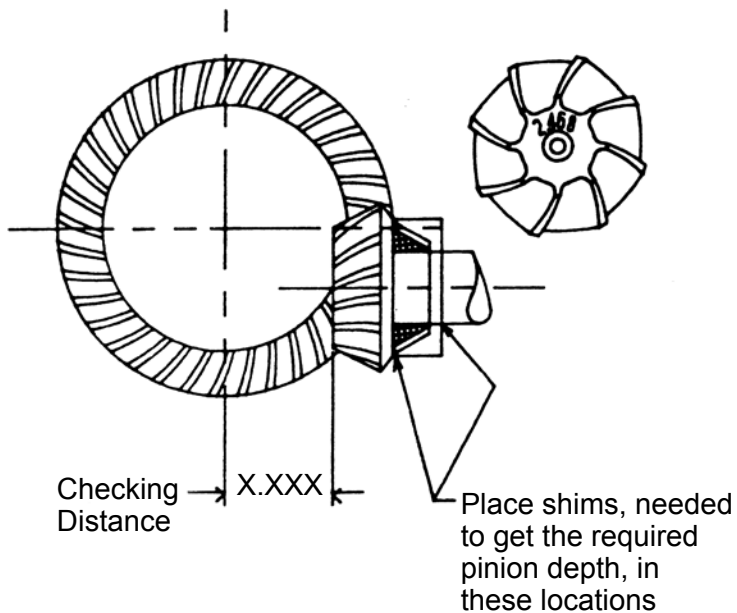


ILLUSTRATION A
GM - Chrysler

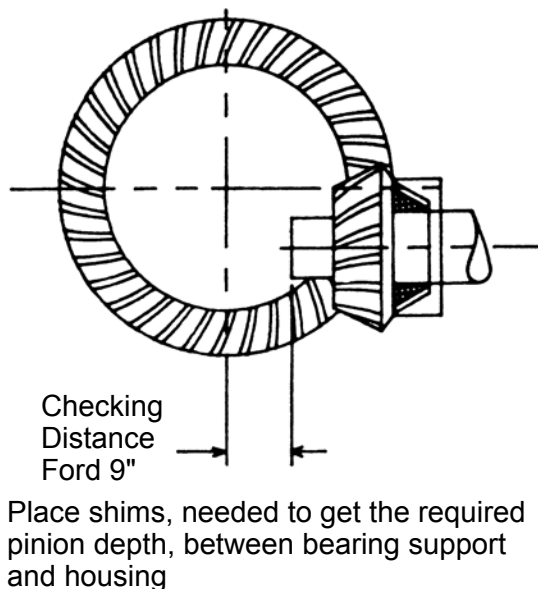


ILLUSTRATION B
Ford 9 inch

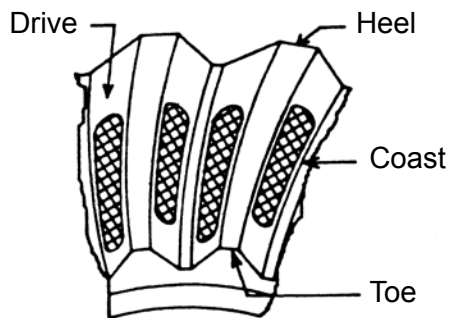


ILLUSTRATION C
Correct Load Patterns

8620 Material
(Street Sets)

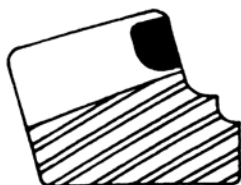


ILLUSTRATION D
Incorrect Pattern
(Drive Side)

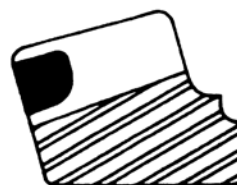


ILLUSTRATION E
Incorrect Pattern
(Drive Side)

BREAK IN PROCEDURE

A new ring and pinion installed with new bearing following will initially generate higher than normal operating temperatures. It is advisable to use whichever of the break in procedures matches your application.

GENERAL USE

- 1) With vehicle still on jack stands and rear-end filled with proper amount of lube, run in forward and reverse approximately 2 to 3 minutes. * *
- 2) Drive vehicle approximately 10 miles at normal operating speeds.
- 3) Do not do any heavy towing for 300 miles. (Trucks Only)

SPECIFIC APPLICATIONS

- STREET:**
- 1) With car still on jack stands and rear-end filled with proper amount of lube, run in forward and reverse approximately 2 to 3 minutes. ***
 - 2) Drive vehicle approximately 10 miles at normal operating speeds. Accelerate and decelerate several times conservatively, then let cool for one hour.

- OVAL TRACK:**
- 1) Repeat step one above. ***
 - 2) Run several laps at slow to medium speeds; let cool.
 - 3) Run several hot laps; let cool.

- DRAG RACE:**
- 1) Repeat step one above. ***
 - 2) Pull to line.

*****WARNING:** OPERATOR MUST REMAIN IN DRIVER'S SEAT AND ALWAYS MAKE SURE FRONT WHEELS ARE BLOCKED AND JACK STANDS ARE SECURED BEFORE ATTEMPTING THIS PROCEDURE — NEVER EXCEED 2000 RPM WITH WHEELS OFF GROUND. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN SERIOUS DAMAGE, PHYSICAL INJURY OR DEATH!

TORQUE SPECIFICATIONS		
APPLICATION	RING GEAR BOLTS	CARRIER CAP BOLTS
CHRYSLER 8.25"	70 FT LBS	70 FT LBS
CHRYSLER 8.75"	45 FT LBS	75 FT LBS
CHRYSLER 9.25"	70 FT LBS	100 FT LBS
DANA 60	110 FT LBS	85 FT LBS
FORD 7.5	70 FT LBS	50-60 FT LBS
FORD 8.0	70 FT LBS	50-60 FT LBS
FORD 8.8	70 FT LBS	70-85 FT LBS
FORD 9"	70 FT LBS	75 FT LBS
GM 10 BOLT 7.5	70 FT LBS	50-60 FT LBS
GM 10 BOLT 8.2	45 FT LBS	50-60 FT LBS
GM 10 BOLT 8.4	45 FT LBS	50-60 FT LBS
GM 10 BOLT 8.5	70 FT LBS	50-60 FT LBS
GM 12 BOLT	45 FT LBS	50-60 FT LBS
OLDS / PONT 9.2"	45 FT LBS	75 FT LBS



US GEAR
1400 ROCHESTER ROAD, TROY, MI 48083
TECHNICAL SUPPORT - CALL 800-540-2794
www.usgear.com