

INSTRUCTIONS

910-82720

ECONO 9" FORD REAR SETUP TOOL

PLEASE NOTE: We make no recommendations for specific settings on gear sets. Pinion depth and backlash specs should be etched on the new ring and pinion, if not, contact your gearset manufacturer for proper specifications. If you are installing a used gearset or one which has no legible markings, then the contact pattern is the only method of assuring proper installation of the ring and pinion.

These instructions are not intended to cover all details or variations in equipment, nor provide for every possible contingency to be met in connection with the selection, installation or operation of your components. These instructions are intended to guide you through the set up process of a 9" Ford ring and pinion in order to obtain the correct gear tooth contact pattern. Pinion checking dimension and backlash are a good place to start, but the contact pattern is the key to a quiet, durable gear set installation. Speedway rear end rebuild kits come with white gear pattern marking grease, if you are using someone else's products which did not include gear marking grease, it may be obtained at better automotive parts stores or industrial supply sources.

Begin the installation procedure by checking your new gearset. Count the gear teeth, verify that it is the ratio you desire. Check teeth for nicks, chips or other damage. Use a whetstone to remove any burrs on the mating surface of the ring gear or gear teeth. Thoroughly clean the ring and pinion to remove preservative oil and any metal shavings. Air dry or wipe with a lint free cloth.

Disassemble rear end as required to remove center section (or 3rd member). Disassemble the 3rd member and thoroughly clean all components.

CAUTION: DO NOT discard the original shim installed between the gear case and pinion support.

Begin reassembly by installing new bearings on carrier assembly (or spool). Using the whetstone, remove any burrs from the mating flange of the carrier and thoroughly clean mating flanges. Install the ring gear on the carrier taking care that ring gear does not get cocked during installation. **NOTE:** If the ring gear fits very tightly on the carrier, the ring gear can be placed in a 400° oven for a few minutes to ease installation. Torque ring gear bolts to spec in 3 steps using a star pattern until final torque is reached. Set assembled carrier aside.

Thoroughly clean pinion gear and pinion support. Install new bearing races in pinion support. Press new load bearing (large) onto pinion gear. Make sure it is seated properly on pinion gear shoulder. Lightly lube bearing with oil and install pinion gear into pinion support. Do not install crush sleeve or pinion seal at this time. Install thrust bearing (small) on splined end of pinion gear and secure with driveshaft yoke and used pinion nut.

WARNING: DO NOT OVER TIGHTEN NUT! Snug nut only enough to remove play from pinion bearings.

Install the pinion support/pinion gear assembly into the gear case using the original shim/shims which were removed at disassembly. **NOTE:** If you do not know the original shim thickness or are using a new case or pinion support, use a .020" shim as a starting point. Install the carrier assembly into the case, making sure that carrier bearing races are positioned properly. Install the spanner nuts into each side of the case and turn clockwise until they firmly contact the carrier bearing races. Snug the spanner nuts down to pre-load the carrier bearings until you achieve a rotational torque value of 10-15 in lbs (used bearings) or 20-25 in lbs (new bearings).

Attach a dial indicator to the gear case in such a manor that the plunger is tangent to the rotation of the ring gear and the tip of the plunger contacts the outer edge of a ring gear tooth. Check backlash in 3 or 4 places equally spaced around the ring gear. **NOTE:** Maximum variation of these readings is .004 (for example: if specified back lash is .008 all readings must be within the range of .008 to .012). If the max variation is exceeded remove ring gear from carrier, make certain that no nicks, burrs or foreign particles are keeping the ring gear from seating properly. Stone off any high spots, clean, reassemble and try again.)

To increase backlash, rotate the drivers side spanner nut counterclockwise a small amount and then adjust the passenger side spanner nut clockwise a similar amount. To decrease backlash, reverse the procedure. When backlash is within specified range at all locations, torque cap bolts to spec. and re-check backlash.

You are now ready to check the gear tooth contact pattern. Apply a thin coat of marking grease to the drive and coast side of several ring gear teeth at the location of your tightest back lash reading. Contact patterns should comply with the illustrations in the following table (or use the pattern recommended by your gearset manufacturer if provided in their instruction sheet). To alter the contact pattern, remove the pinion support, add or remove shims as required, reinstall pinion support, re-set backlash and check pattern again.

Once a satisfactory contact pattern has been established, remove the pinion support from the case, mark the shims for re-installation, and remove the pinion gear from the support. Install new crush sleeve on pinion, install pinion gear into pinion support, insert pinion thrust bearing, install a new pinion seal, yoke and new nut. Hold the yoke with the supplied wrench and tighten pinion nut to compress crush sleeve to preload pinion bearings. Tighten nut until you achieve a rotational torque on the pinion gear of 10-15 in lbs (used bearing) or 20-25 in lbs (new bearings).

Recheck rotational torque on carrier assembly and adjust spanner nuts if required. Install pinion support on gear case using the previously determined shims, torque bolts to spec. Re-check backlash, adjust as required. Re-check tooth contact pattern. If all is well, install the spanner nut retainers and the job is complete.

	Ring Gear Tooth Contact	Coast Side	Drive Side	Condition	Remedy
A		For Street Gears		IDEAL PATTERN	N/A
B		For Race Gears		IDEAL PATTERN	N/A
C		All Series - Pattern Too High		HIGH TOOTH CONTACT heavy on the top of the drive gear tooth profile	Move the Drive PINION DEEPER into MESH
D		All Series - Pattern Too Low		LOW TOOTH CONTACT heavy on the root of the drive gear tooth profile	Move the Drive PINION OUT of MESH

TORQUE SPECIFICATIONS

RING GEAR BOLTS GRADE 8

3/8" X all lengths	45-50 ft lb
7/16" x all lengths	60-65 ft lb
1/2" x all lengths	100-110 ft lb

CARRIER CAP BOLTS

7/16" (5/8" head)	60-65 ft lb
1/2" (3/4" head)	80-85 ft lb

IMPORTANT

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**Speedway Motors Inc., P.O. Box 81906
Lincoln, NE 68501 (402) 323-3200
www.speedwaymotors.com**



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