BORG WARNER LOCKER DIFFERENTIAL

Ford Motor Co.
Pinto & Bobcat

DESCRIPTION

Unit is four pinion limited slip differential. Frictional surfaces of brake cones consists of a coarse spiral thread that provides lubrication passages. Cones are preloaded with four springs mounted between spring thrust plates that press against side gear and brake cone assembly, which sets in cavities in both halves of differential case. These springs provide resistance to differential action during normal operation. Pressure between side gear and brake cones, created by four preload springs, opposes differential action at all times. Since side gears are splined to axle shafts, axle shafts are locked together and rotate with case. Friction between side gear and brake cone assemblies will transfer part of usable torque to wheel with most traction.

AXLE RATIO & IDENTIFICATION

Axle Identification

Axle Ratio	Code	Ring Gear (In.)
3.40-1	WFZ-AC, WFZ-BC	6¾
3.55-1	WFZ-AD	6¾

TESTING ON CAR

Raise one wheel (other wheel must be on ground) and install a suitable tool and torque wrench on wheel mounting studs. With transmission in neutral, note torque required to keep axle rotating throughout several revolutions. Torque should be at least 40 ft. lbs. Axle shaft should turn with even pressure without slipping or binding.

REMOVAL & INSTALLATION

See Ford Motor Co. Integral Housing (Standard Type) in this section.

OVERHAUL

The following procedures are for Locker Differential assembly only. For service and repair of other rear axle components, see *Ford Motor Co. Integral Housing (Standard Type) in this section. NOTE — Manufacturer does not recommend overhaul of this assembly. The procedures given herein are intended only for cleaning and inspection. If internal parts show signs of excessive wear, the entire unit must be replaced.*

DISASSEMBLY

1) Scribe marks in differential case-halves and ring gear for reassembly. Remove ring gear attaching bolts and tap ring gear from case using soft-faced hammer. Place differential case in a press or large-jawed vise to load case at bearing journals so that preload of springs is overcome.

2) Loosen cap screws that hold case halves together until three or four threads remain engaged. Loosen press or vice slightly, but do not remove case. Tap flange-half of case with soft-faced hammer to spring it loose. Remove case assembly from vise or press with flange-half up. Remove cap screws and lift off flange-half.

3) Remove side gear and brake cone assemblies, preload spring, thrust plates, four preload springs, pinion cross shaft and four pinion gears, and thrust washers. *NOTE — Brake cones must be kept with their respective case-halves.*

INSPECTION

Clean all parts in suitable cleaning solvent, dry throroughly. Inspect all mating parts for surface condition. Very slight grooves or scratches are acceptable, and parts may be reassembled. However, any condition worse than described calls for replacement of unit.

REASSEMBLY

1) Clamp one axle shaft in a vise allowing approximately 3" to extend above the vise. Place cap-half of differential case over shaft, with inside of case-half facing upward. Position proper brake cone over axle and seat it in position in the case-half.

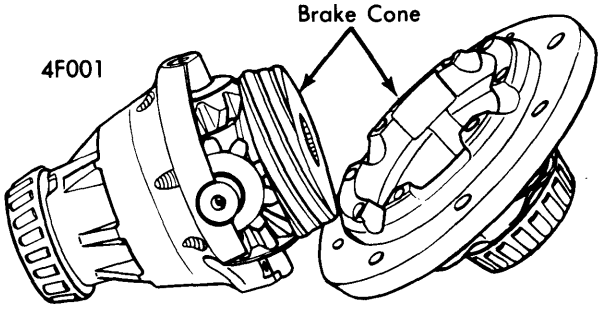
2) Position and assemble in proper order all remaining parts including four pinion gears and thrust washers, pinion gear shaft, preload springs, and thrust plates. Install second cone assembly, and lubricate all parts. Install flange-half of case over cone in position to match original alignment marks. Install two retaining bolts finger tight at opposite sides.

3) Position second axle shaft through flange-half to differential case. Rotate shaft to permit entry of splines (a slight tap may be needed). With shaft in position, install remaining cap screws and tighten. Remove axle shafts, and install ring and tighten mounting bolts. Bench check assembly before installing in vehicle.

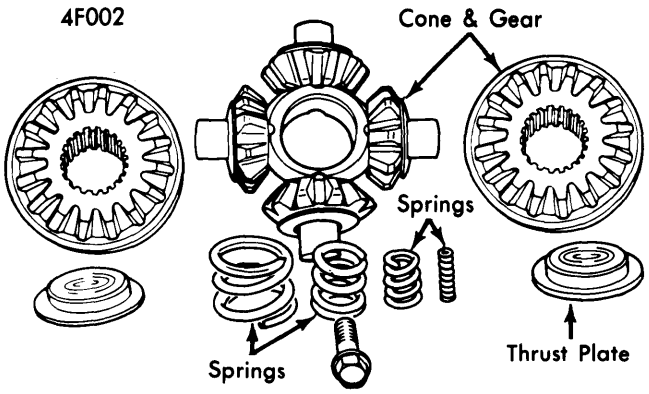
BENCH CHECK

With one axle shaft held, and differential case free to rotate at 18-20 RPM, 42-75 ft. lbs. torque should be required to turn other axle shaft.

NOTE — Axle shafts should be used as mounting tools. Failure to observe this will result in shafts not assembling to units, and forcing them will result in damage to spring thrust blocks.



DIFFERENTIAL — SEPARATED



DIFFERENTIAL — DISASSEMBLED