

DETROIT AUTOMOTIVE PRODUCTS NOSPIN DIFFERENTIAL

Ford Motor Co.
General Motors

DESCRIPTION

NoSpin unit is a true locking device containing no power-averaging gearing. Differential action is accomplished through engaging and disengaging of a system of cams and dog clutches. When travelling in a straight line, both wheels must turn because they are positively locked together by dog clutches in differential. When turning, only the inside wheel is driven because dog clutch of outside wheel is disengaged. It should be noted that driven wheel always turns at ring gear speed because of direct mechanical lock to differential case.

AXLE RATIO & IDENTIFICATION

See Drive Axles in this Section.

LUBRICATION

Check level of lubricant every 6,000 miles. Drain and refill differential every 24,000 miles (more often during periods of extremely severe use). No special lubricant or additive is required for NoSpin differential.

TESTING ON VEHICLE

With rear wheels raised off ground, engine off and transmission in a driving gear, rotate both wheels as far forward as possible. While holding left wheel firmly in place, rotate right wheel toward the rear. Rotate both wheels as far to the rear as possible. Hold left wheel firmly in place and rotate right wheel forward. Repeat tests, holding right wheel and rotating left wheel. Wheels should rotate freely during tests.

REMOVAL & INSTALLATION

See Drive Axles in this Section.

OVERHAUL

DISASSEMBLY

CAUTION — NoSpin differential is assembled under spring tension. Use $\frac{1}{2}$ -13x6" bolt with nut and washers to compress unit during disassembly and reassembly.

Insert suitable retainer bolt to compress NoSpin unit and mark case halves for reassembly reference. Remove ring gear attaching bolts and ring gear, then separate case halves. Remove NoSpin unit from case and carefully release spring tension by unscrewing bolt and nut assembly. Separate NoSpin components.

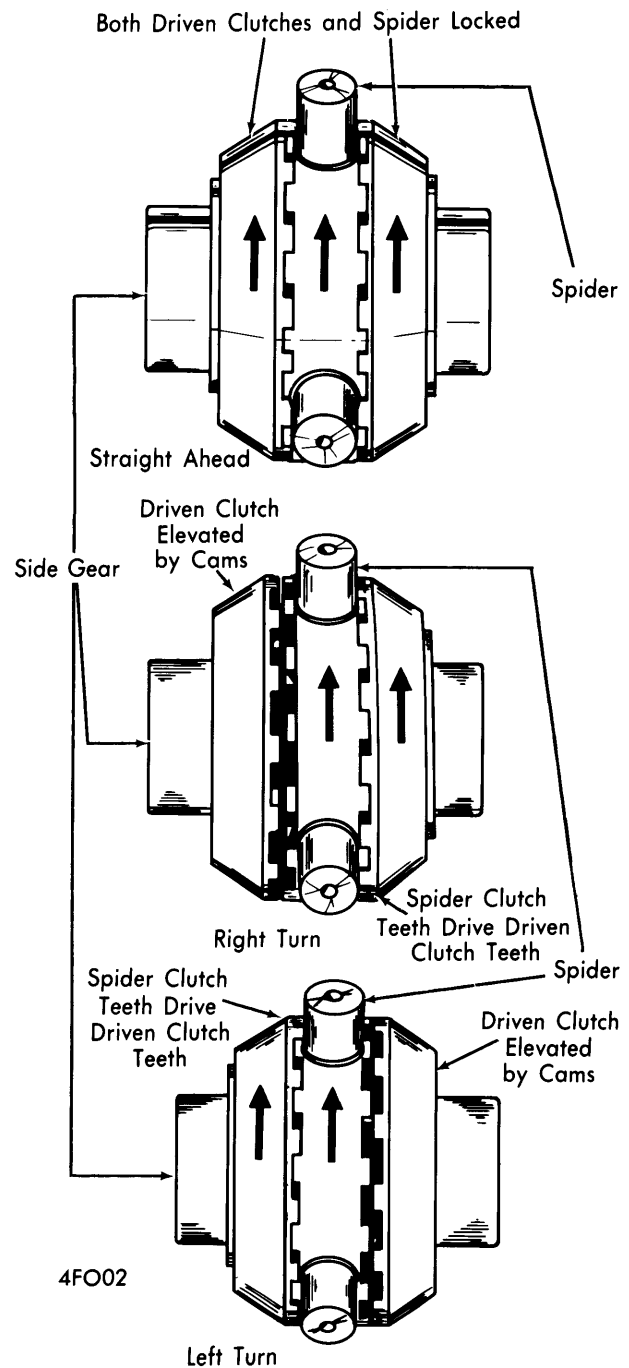
INSPECTION

Wash all parts and dry with compressed air. Check side gear and driven clutch splines for fracture or excessive wear. Check spider, center cam, holdout ring and driven clutch teeth for chipping or burring. Check spring retainer seat and splines for fractures and check spring free height. Free height should be $2\frac{1}{8}$ - $2\frac{1}{4}$ ".

REASSEMBLY

1) Lubricate all clutch teeth and cams before assembly. Install split holdout rings into drive member assembly, making sure key is aligned with slot in holdout ring. Assemble driven clutches, spring retainers, springs, and side gears to spider or center cam assembly.

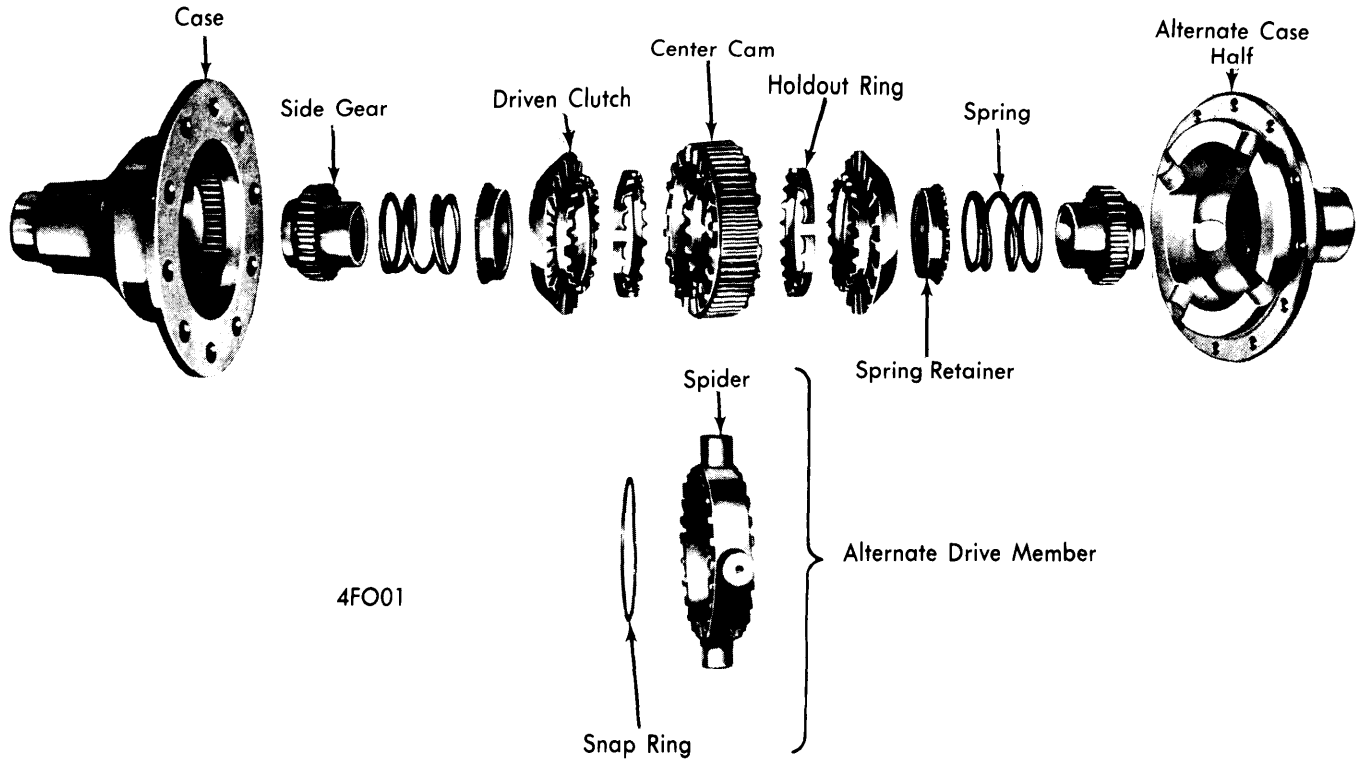
2) Compress NoSpin assembly and hold in compressed position using suitable bolt and nut assembly. Place NoSpin unit into case half and reassemble case, making sure marks made during disassembly are in alignment. Install ring gear and ring gear attaching bolts. Remove bolt used as compressing tool.



NOSPIN DIFFERENTIAL OPERATION

Positive Traction Differentials

DETROIT AUTOMOTIVE PRODUCTS NOSPIN DIFFERENTIAL (Cont.)



NOSPIN DIFFERENTIAL ASSEMBLY