DANA/SPICER POWER-LOK

Chrysler Corp.
Ford Motor Co.
General Motors
International Harvester

NOTE – *Some models may use other units, refer to Contents page.*

DESCRIPTION

The Power-Lok differential uses clutch packs which are preloaded by Bellevue plates to provide limited slip action. The torque on the axle causes the pinion shafts to move up ramps on the differential case to increase preload on clutch packs. This varies the amount of torque directed to each wheel and causes the wheel with the greatest traction to receive the greatest torque. Power-Lok is used on Dana/Spicer axles that have a two-piece differential case and four differential pinion gears.

AXLE RATIO & IDENTIFICATION

See Dana/Spicer Semi-Floating or Full Floating Axles in this Section.

LUBRICATION

NOTE – *To insure proper operation of unit and to prevent differential chatter, manufacturers recommend that only the special lubricants listed be used.*

Dodge – "Sure-Grip" lubricant No. 2585318.

Ford Motor Co. – Hypoid Gear Lubricant Part Number C9AZ-19580-A and friction modifier that meets Ford Specification EST-M2C118-A.

General Motors Corp. – General Motors Positraction Lubricant.

Jeep Corp. – Limited Slip Differential Lubricant.

TESTING ON VEHICLE

With engine off and transmission in Neutral, raise one wheel off ground and block both front and rear of opposite wheel. Install suitable tool across two wheel studs and attach torque wrench to center of tool. Observe torque required to continuously turn wheel smoothly through several revolutions. NOTE – *Disregard breakaway torque.* Repeat test for opposite side. If differential is operating properly, torque should be 40-200 ft. lbs.

REMOVAL & INSTALLATION

See Dana/Spicer Semi-Floating or Full Floating Axles in this Section.

OVERHAUL

NOTE – *Chrysler Corp. does not recommend overhaul of Power-Lok units on their vehicles.*

DISASSEMBLY

CAUTION – *During disassembly note and record relationship of all parts, especially clutch discs and plates, to each other. Mark case halves and differential spiders for reassembly reference.*

Remove differential case bolts and separate case halves. Remove differential spider shafts, pinion gears, thrust washers, side gears and side gear rings from case halves. Remove clutch plates and discs, noting position of flat and concave discs. NOTE – *It is unnecessary to remove ring gear or differential side bearings unless they are to be replaced.*

INSPECTION

Inspect differential spider shafts for wear, scoring and pitting. If center land of either spider shaft shows signs of wear inspect end of axle shaft to determine if shaft is rubbing against spider. Examine clutch plates and discs for wear, cracks or dis-

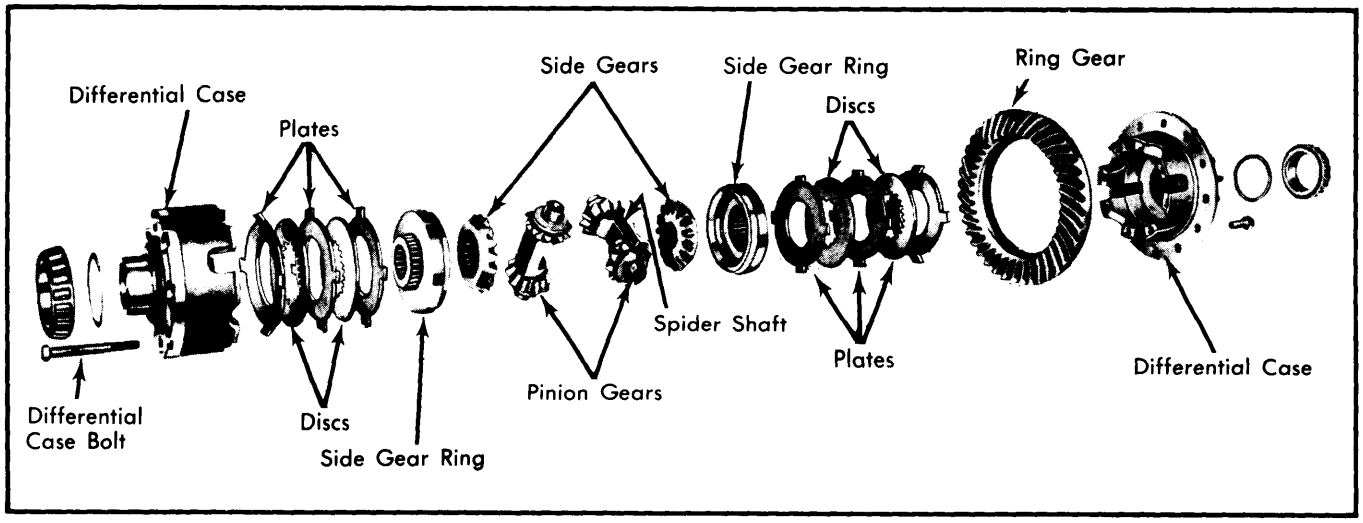

Fig. 1 Exploded View of Dana/Spicer Power-Lok Differential Assembly

DANA/SPICER POWER-LOK (Cont.)

tortion. Check side gear rings, side gears and differential case halves for wear, cracks and distortion.

REASSEMBLY

NOTE – *During assembly, keep all parts clean, and lubricate with limited slip gear lubricant just prior to installation.*

1) Assemble clutch plates and discs to side gear rings, making sure they are assembled in exact order and direction of removal. Place assembled side gear ring and clutch pack into ring gear half of differential case. Install differential side gear, spider shaft, pinion gears and thrust washers.

2) Install second spider shaft with its pinion gears and thrust washers. Install remaining side gear, side gear ring, clutch plates and clutch discs, making sure they are assembled in exact order and direction of removal.

3) Position remaining case half over assembled parts, being sure to align reference marks made at time of disassembly. Loosely install differential case bolts. Using splined end of axle shaft, align splines of side gears and side gear rings on each side. Tighten differential case bolts alternately and evenly and remove axle shaft.

4) Check alignment of spider shafts. They should be tight in "V" of their ramps or within .005" of tight. If clearance does exist, it should be equal at all four ramps.

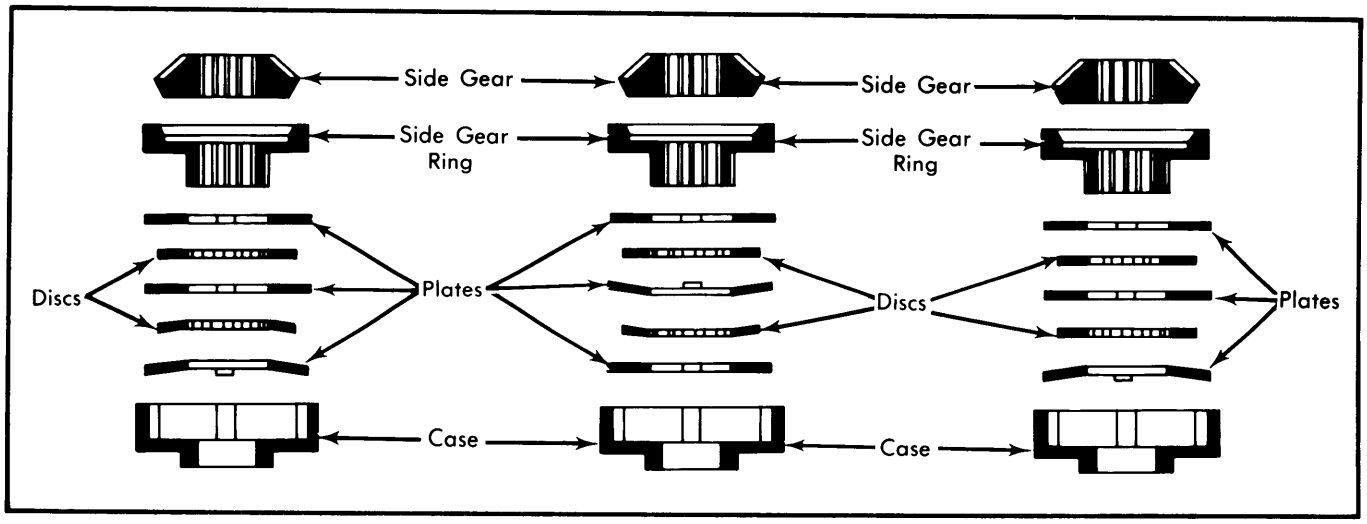

Fig. 2 Three Views of Typical Clutch Pack Arrangements (Not All Combinations Shown)