

## 9. General Diagnostic Table

### A: INSPECTION

| Symptom or trouble  | Possible cause   | Remedy  |
|---|--|---|
| <b>1. Oil leakage</b>   | (1) Worn, scratched, or incorrectly seated front or side oil seal. Scored, battered or excessively worn sliding surface of companion flange. | Repair or replace.  |
|   | (2) Clogged or damaged air breather hose.  | Clean, repair or replace.                                     |
|   | (3) Loose bolts on the side retainer, or incorrectly fitted O-ring.  | Tighten the bolts to specified torque. Replace the O-ring.    |
|   | (4) Loose rear cover attachment bolts or damaged gasket.   | Tighten the bolts to specified torque. Replace the gasket.    |
|   | (5) Loose filler plug or drain plug.   | Replace the gasket, and tighten to the specified torque.      |
|   | (6) Wear, damage or incorrect fitting of drive shaft, side retainer or oil seal.   | Repair or replace.  |
| <b>2. Seizure</b><br><br>NOTE:<br>Seized or damaged parts should be replaced, and also other parts should be thoroughly checked for any defect and should be repaired or replaced as required.                    | (1) Insufficient backlash for hypoid driven gear.  | Readjust or replace.  |
|   | (2) Excessive preload for side, rear or front bearing.   | Readjust or replace.  |
|   | (3) Insufficient or improper oil used.   | Add recommended differential gear oil to the specified level. |
| <b>3. Damage</b><br><br>NOTE:<br>Damaged parts should be replaced, and also other parts should be thoroughly checked for any defect and should be repaired or replaced as required.                               | (1) Improper backlash for hypoid gear.   | Readjust or replace.  |
|   | (2) Insufficient or excessive preload for side, rear or front bearing.   | Readjust or replace.  |
|   | (3) Excessive backlash for differential gear.  | Replace gear or thrust washer.                                |
|   | (4) Loose bolts and nuts such as hypoid driven gear bolt.  | Retighten.  |
|   | (5) Damage due to overloading.   | Replace.  |
| <b>4. Noises when starting or shifting gears</b><br><br>NOTE:<br>Noises may be caused by differential assembly, universal joint, wheel bearing, etc. Find out what is actually making noise before disassembling. | (1) Improper tooth contact of hypoid driven gear and drive pinion.   | Readjust. (drive pinion adjustment and backlash adjustment)   |
|   | (2) Excessive backlash for hypoid driven gear.   | Replace the gear or the pinion height adjusting washer.       |
|   | (3) Excessive backlash for side gear.  | Replace gear or thrust washer.                                |
|   | (4) Insufficient preload for front or rear bearing.  | Readjust.   |
|   | (5) Loose drive pinion nut.  | Tighten to the specified torque.                              |
|   | (6) Loose bolts and nuts such as side retainer attachment bolt.  | Tighten to the specified torque.                              |
| <b>5. Noises when cornering</b>   | (1) Damaged differential gear.   | Replace.  |
|   | (2) Excessive wear or damage of thrust washer.   | Replace.  |
|   | (3) Broken pinion mate shaft.  | Replace.  |
|   | (4) Stuck or damaged side bearing.   | Replace.  |

## General Diagnostic Table

### DIFFERENTIALS

| Symptom or trouble   | Possible cause   | Remedy   |
|--|--|--|
| <b>6. Gear Noise</b><br><br>NOTE:<br>Since noises from engine, muffler, transmission, propeller shaft, wheel bearings, tires, and body are sometimes mistaken for noises from differential assembly, be careful in checking them. Inspection methods to locate noises include coasting, accelerating, cruising, and jacking-up all four wheels. Perform these inspections according to the condition of trouble. When listening to noises, shift gears into four wheel drive and fourth speed position, trying to pick up only differential noise. | (1) Improper tooth contact of hypoid driven gear and drive pinion.<br><br>(2) Improper backlash of the hypoid driven gear.<br><br>(3) Scored or chipped teeth of hypoid gear.<br><br>(4) Scuffed hypoid gear.<br><br>(5) Improper preload for front or rear bearings.<br><br>(6) Stuck, scored or chipped front or rear bearing.<br><br>(7) Stuck, scored or chipped side bearing.<br><br>(8) Vibrating differential gear. | Readjust or replace the hypoid gear set.<br><br>Readjust.<br><br>Replace hypoid gear set.<br><br>Replace hypoid gear set.<br><br>Readjust.<br><br>Replace.<br><br>Replace.<br><br>Replace the differential gear. |

# TRANSFER CASE

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|  | Page |
|--|------|
| 1. General Description .....           | 2    |
| 2. Transfer Clutch .....               | 3    |
| 3. Extension Case .....                | 4    |
| 4. Oil Seal .....                      | 5    |
| 5. Center Differential Carrier .....   | 6    |
| 6. Reduction Driven Gear .....         | 7    |
| 7. Transfer Clutch Pressure Test ..... | 8    |