

# DIAGNOSIS

This section contains a list of the abnormal conditions of operation that may be encountered with the Automatic Transmission. These conditions are arranged in groups, each group representing a general type of abnormal operation.

**Group A** includes all slipping conditions.

**Group B** includes dragging or sticking conditions and conditions resulting in poor performance.

**Group C** includes conditions of excessively noisy operation.

**Group D** includes conditions involving abnormal external oil leakage.

**Group E** includes the conditions caused by improper operation of the anti-creep system and the starter cut-out switch circuit.

When diagnosing the reason for abnormal operation it is first necessary to determine the exact operating conditions of the Automatic Transmission by following the procedure given in the "Testing" section under "Testing the Car." The "Operation Checks" described in the "Testing" section will enable the specific abnormal condition to be isolated; under the particular condition in this section a list of the possible causes will be found. The description of the causes indicate the rectification procedure to follow.

It should be borne in mind that the hydraulic system is common to all operating conditions and must be functioning if the other units are to operate properly. Usually, failure of the hydraulic system will make the transmission completely inoperative. However, it is possible for a slight malfunctioning of this system to result in early failure of one of the other units; hence, a check of front pump pressure is recommended whenever trouble is encountered.

## GROUP A

**Automatic Transmission is inoperative or has excessive slippage accompanied by engine race.**

The conditions in this group are characterized by failure of the Automatic Transmission to operate, or to operate only with excessive slippage. Conditions A.II-A.V, in most cases, are caused by a failure of one of the driving units to hold (see the operation chart on page 35). Conditions A.VI-A.VIII usually are caused by failure of one of the hydraulic control units to operate properly.

### A. I. Slipping excessively, or not operative, in all ranges except direct drive.

#### CAUSES

1. Low oil level (see Group D).
2. Incorrect manual selector linkage adjustment (see the "Service Adjustments" section).
3. Low front pump pressure:
  - (a) Sticking front or rear pump relief valve.
  - (b) Leakage caused by incorrect installation of the valve block assembly.
  - (c) Damaged front pump drive fingers.
  - (d) Excessive wear of front pump.
  - (e) Internal oil leakage in transmission case oil passages.

### A. II. Slipping excessively, or not operative, in low and intermediate drive.

#### CAUSES

1. Forward band slipping:
  - (a) Incorrect adjustment.
  - (b) Damaged or excessively worn lining.
  - (c) Low pressure at forward servo.
2. Forward free wheel unit slipping.

### A. III. Slipping excessively, or not operative, in reverse.

#### CAUSES

1. Reverse band slipping:
  - (a) Incorrect band adjustment.
  - (b) Damaged or excessively worn lining.
  - (c) Low pressure at reverse servo.
2. Reverse free wheel unit slipping.

**Note.**—In this case, the transmission will slip in Reverse and also will lose its hill holding characteristic.

### A. IV. Ineffective engine braking for deceleration in low.

#### CAUSES

1. Low band slipping:
  - (a) Incorrect adjustment.
  - (b) Damaged or excessively worn lining.
  - (c) Low pressure at low servo.

### A. V. Excessive slipping during acceleration in intermediate drive and loss of the hill holding characteristic.

#### CAUSES

1. Multiple disc clutch slipping:
  - (a) Damaged or excessively worn disc facings
  - (b) Leakage in oil passages to the multiple disc clutch.