



SURFACE VEHICLE RECOMMENDED PRACTICE

J647™

DEC2025

Issued 1960-06
Reaffirmed 1995-06
Revised 2025-12

Superseding J647 NOV2019

Automatic Transmissions - Schematic Diagrams

RATIONALE

This document has been changed to add additional typical schematic diagrams and to show the revised one-way clutch schematic diagrams. Additionally, tables have been added for clutch/brakes as per specific gear.

1. SCOPE

The following schematic diagrams reflect various methods of illustrating automotive transmission arrangements. These have been developed to facilitate a clear understanding of the functional interrelations of the gearing, clutches, hydrodynamic drive unit, and other transmission components.

Two variations of transmission diagrams are used: in neutral (clutches not applied) and in gear. For illustrative purposes, some typical transmissions are shown.

2. REFERENCES

There are no referenced publications specified herein. However, as an additional method for transmission schematic arrangement analysis, please refer to SAE Technical Paper 810102, "The Lever Analogy: A New Tool in Transmission Analysis."

3. TRANSMISSION IN NEUTRAL

Figure 1 illustrates a six-speed layshaft dual clutch transmission. Each gear is identified according to the particular transmission speed it provides when engaged, for example: 1st, 2nd, 3rd, and so forth.

Figure 2 illustrates a four-speed planetary gear transmission in neutral with clutches and bands shown disengaged. Brake bands and clutches are designated as 1st, 2nd, 3rd, reverse, and so forth, in accordance with their use. The number of teeth in each gear is shown.

Figure 3 illustrates a four-speed transverse planetary gear transaxle with a chain drive connecting the two axes.

Figure 4 illustrates a four-speed longitudinal planetary gear transaxle with a chain drive connecting the main centerline to the differential.

Figure 5 illustrates a five-speed planetary gear transmission.

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Figure 6 illustrates a six-speed planetary gear transmission.

Figure 7 illustrates a continuously variable transmission (CVT).

Figure 8 illustrates a seven-speed RWD planetary gear transmission.

Figure 9 illustrates an eight-speed RWD planetary gear transmission.

Figure 10 illustrates a nine-speed FWD planetary gear transmission.

Figure 11 illustrates a ten-speed FWD planetary gear transmission.

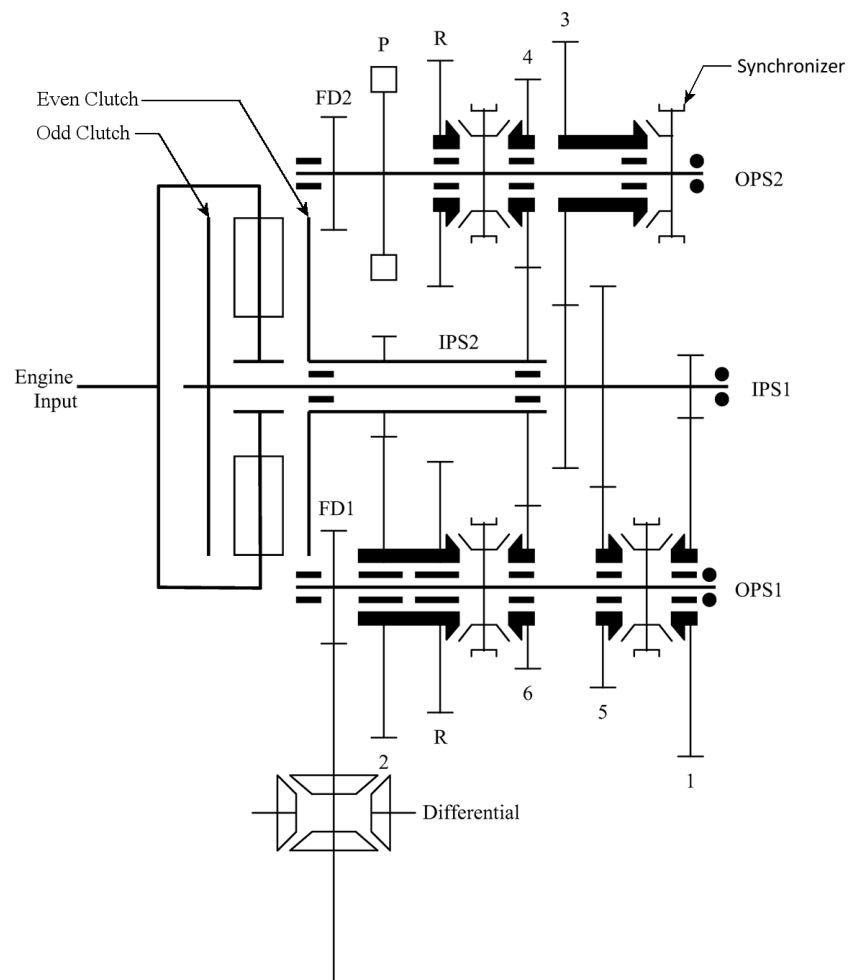


Figure 1 - Six-speed dual clutch transmission diagram - neutral

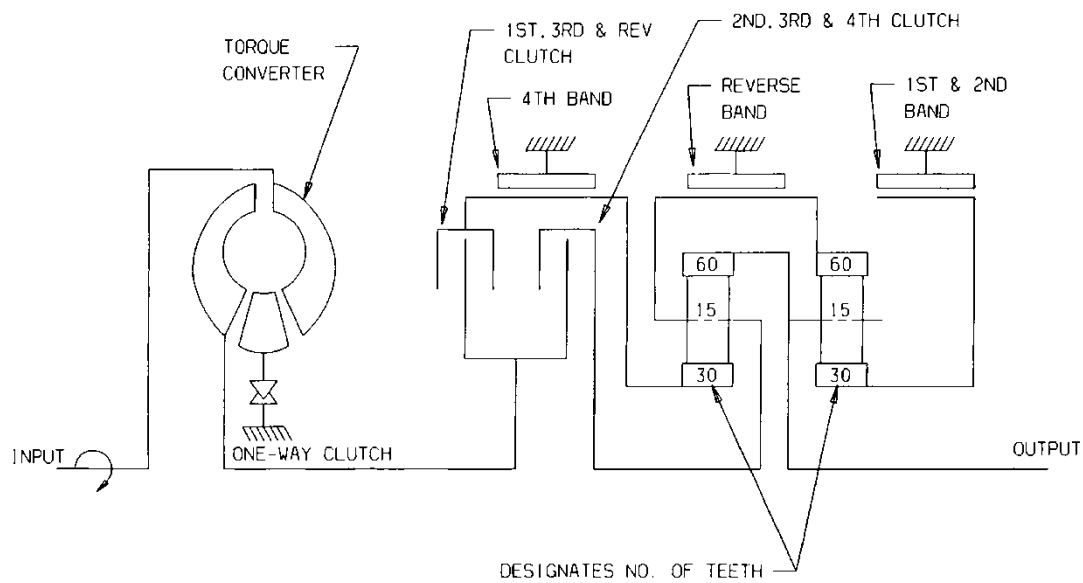


Figure 2 - Four-speed transmission diagram - neutral

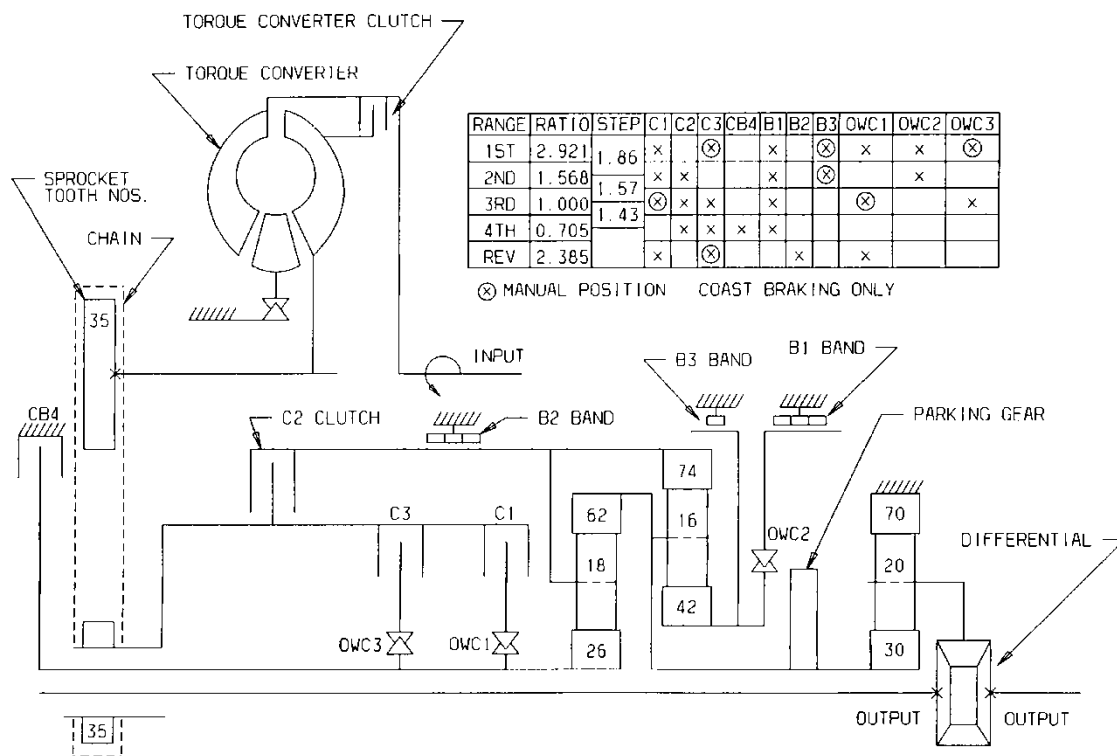


Figure 3 - Four-speed two axes transverse transaxle - neutral