

Submitted for recognition as an American National Standard

## ALL-WHEEL-DRIVE SYSTEMS CLASSIFICATION

**Foreword**—This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. **Scope**—In this SAE Recommended Practice, attention will be given to passenger cars and light trucks (through Class III).
- 1.1 **Purpose**—Figures 1 to 4 and the definitions are intended to outline basic nomenclature and to categorize all-wheel-drive concepts. The goal is to give those working in the field a common base for discussion regarding the type of all-wheel-drive systems independent of marketing terminology.
2. **References**—There are no referenced publications specified herein.
3. **Definitions**
  - 3.1 **All-Wheel Drive**—A vehicle drive system with the ability to drive all wheels.
  - 3.2 **Manually Controlled**—The transition between two-wheel drive and all-wheel drive is accomplished through operator activation.
  - 3.3 **Automatically Controlled**—The transition between two-wheel drive and all-wheel drive does not require operator interaction.
  - 3.4 **Permanent**—The system is permanently in the all-wheel-drive mode.
  - 3.5 **AWD Synchronization**—The act of bringing two or more torque-carrying members to the same speed to engage all-wheel drive while the vehicle is in motion.
  - 3.6 **Speed Differentiation**—A permitted difference in speed between two or more driven members.
  - 3.7 **Fixed Torque Distribution**—Output torque distribution is fixed by the design of the device.
  - 3.8 **Variable Torque Distribution**—Output torque distribution is variable by the design of the device.
  - 3.9 **Indeterminate Torque Distribution**—Output torque distribution is not determined by the device but by the input torque and tractive capability.

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**3.10 Classification**—The alphanumeric reference, obtained by answering questions on the diagram in Figure 1, which indicates the ability of the evaluated design.

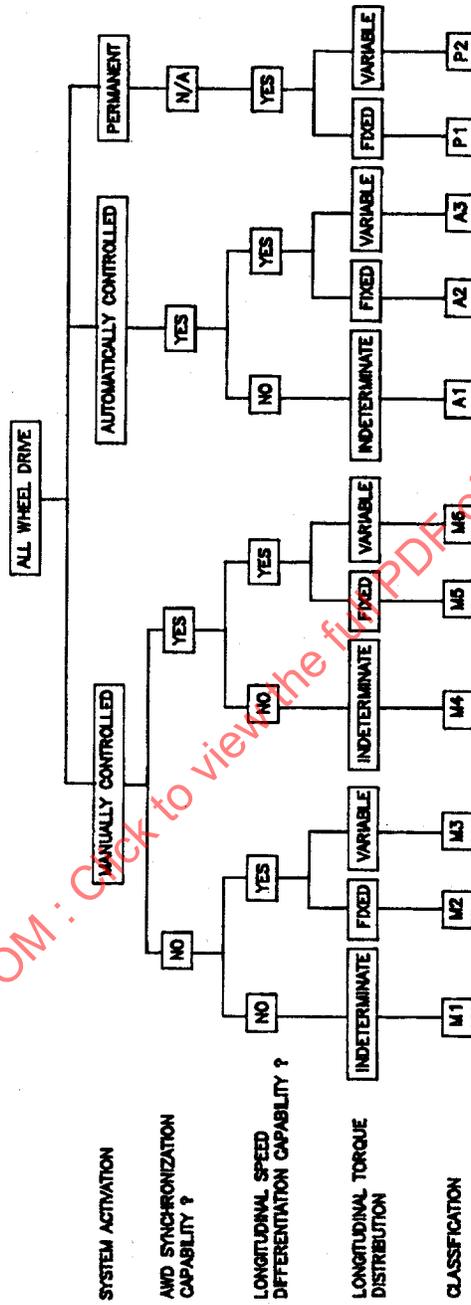


FIGURE 1—ALL-WHEEL-DRIVE SYSTEMS CLASSIFICATION DIAGRAM



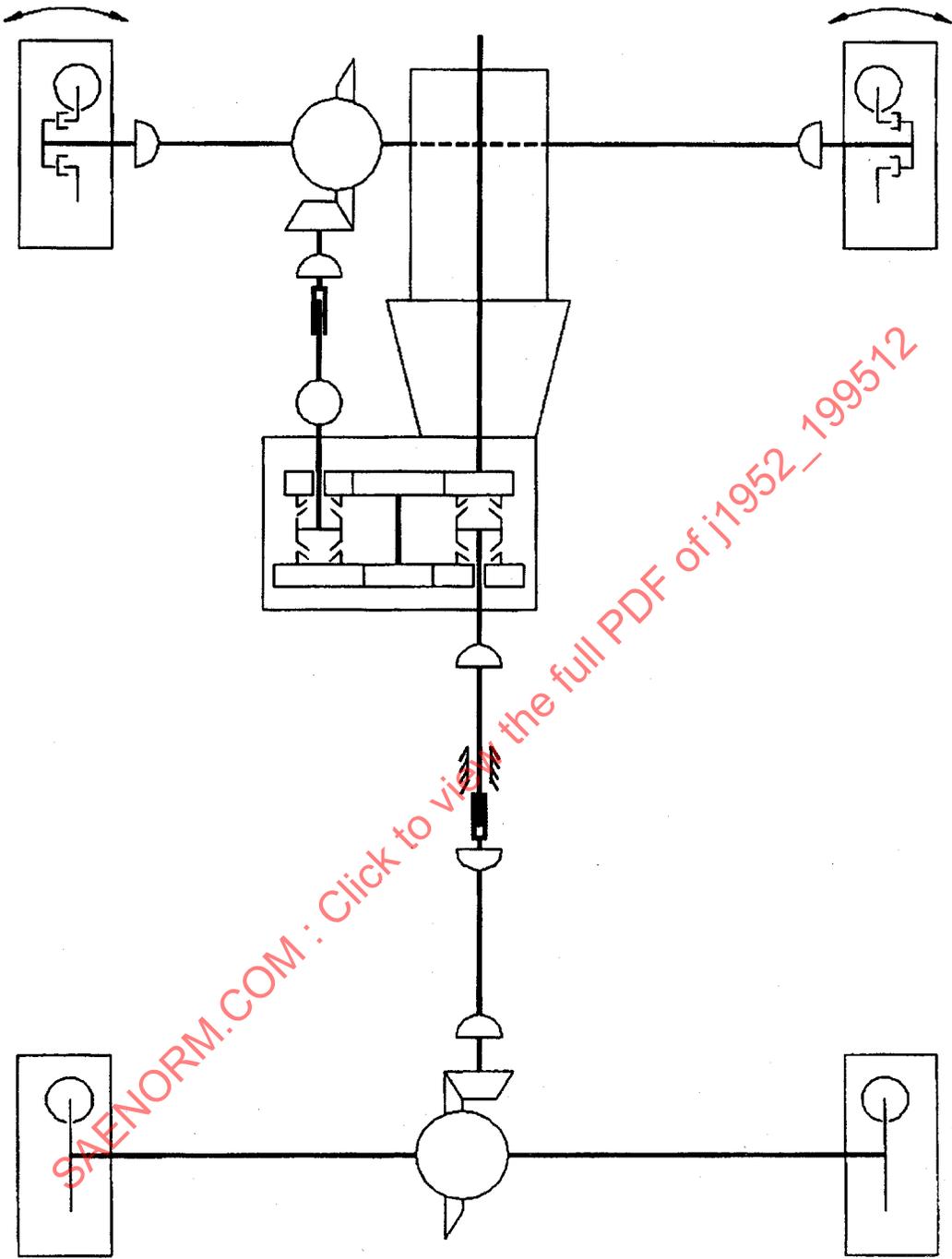


FIGURE 3—CLASS M4 ALL-WHEEL-DRIVE VEHICLE