



SURFACE VEHICLE STANDARD

J824™

JUN2022

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Reaffirmed 2022-06

Superseding J824 JUN1995

Engine Rotation and Cylinder Numbering

RATIONALE

SAE J824 has been reaffirmed to comply with the SAE Five-Year Review policy.

Foreword—This reaffirmed document has been changed only to reflect the new SAE Technical Standards Board format.

1. **Scope**—This SAE Standard was developed to provide a method for indicating the direction of engine rotation and numbering of engine cylinders. The document is intended for use in designing new engines to eliminate the differences which presently exist in industry.
2. **References**—There are no referenced publications specified herein.
3. **Standard Rotation**—Counterclockwise rotation as viewed from the principal output end. If power can be delivered from either end, rotation shall be as viewed from the flywheel end.
4. **Opposite Rotation**—Clockwise rotation as viewed from the principal output end. If power can be delivered from either end, rotation shall be as viewed from the flywheel end.
5. **Cylinder Numbering**—Cylinders shall be numbered by either of two methods:¹
 - a. In single or multibank engines, number the cylinders in the sequence in which the connecting rods are mounted along the crankshaft beginning with the cylinder farthest from the principal output end.
 - b. In multibank engines, number the cylinders in sequence in each bank, starting with the cylinder farthest from the principal output end and designate right or left bank by suffix letters "R" and "L."
EXAMPLE: 1R, 2R, and 1L, 2L.

If the suffix letters "R" and "L" are inadequate, other letter designations may be used if properly defined.

6. **Right- and Left-Hand Designation**—Cylinder bank and accessory locations are described as right or left when engine is viewed from flywheel or principal output end.

PREPARED BY THE SAE POWERPLANT FORUM COMMITTEE

1. This numbering method will generally exclude radial engines or those with coplanar cylinder bore axes.

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