SUBARU SYMMETRICAL ALL-WHEEL DRIVE VS. OTHER DRIVE SYSTEMS

**SUBARU SYMMETRICAL ALL-WHEEL DRIVE**
- Designed and engineered into all Subaru vehicles from the ground up
- Starts with a longitudinally mounted Boxer engine with its inherent balance and symmetry
- The transmission, front and center differentials are engineered as a single unit – not added on
- Power flows in a linear manner to all the wheels
- Driveshafts are equal in length, and the entire powertrain is balanced left to right – it is symmetrical
- The system automatically provides power and traction to all four wheels

**TRADITIONAL TRUCK-BASED 4-WHEEL DRIVE**
- Starts with the heavy components of a front-engine, rear-wheel-drive truck
- Adds the drivetrain components needed to transfer engine power to the front wheels
- Power flows through several 90-degree turns to reach the wheels, contributing to reduced efficiency
- Usually employs a heavy two-speed transfer gearbox and requires an offset front differential
- The front driveshafts are unequal in length, and the entire system is not symmetrical
- Traditionally, most systems use part-time 4WD, which requires driver intervention and cannot be used on dry pavement

**ALL-WHEEL DRIVE ADAPTED FROM FRONT-WHEEL DRIVE**
- Starts with transverse (sideways) engine and front-wheel-drive layout; a transaxle (transmission + front differential) is positioned to the left or right of the engine
- Adds a transfer mechanism, including a center differential, to send power to the rear as well as the front wheels
- Power flows through several 90-degree turns to reach the wheels, contributing to reduced efficiency
- The front driveshafts are unequal in length, and the entire system is not symmetrical
- Most systems operate in front-wheel-drive mode until wheelspin is detected; only then is power sent to the rear wheels

**ALL-WHEEL DRIVE ADAPTED FROM REAR-WHEEL DRIVE**
- Starts with traditional front-engine, rear-wheel-drive layout
- Like the traditional truck-based system, it adds the drivetrain components needed to transfer engine power to the front wheels
- Power flows through several 90-degree turns to reach the wheels, contributing to reduced efficiency
- The front driveshafts are unequal in length, the front differential is offset to one side and the entire system is not symmetrical
- Many systems require the rear wheels to slip before the front wheels receive much engine power

There are significant differences in how these 4WD and AWD systems react to loss of traction. Our Symmetrical All-Wheel Drive is distinguished by how it constantly proportions power to the wheels with the best traction and how it effectively works at all speeds and under a wide variety of driving conditions.