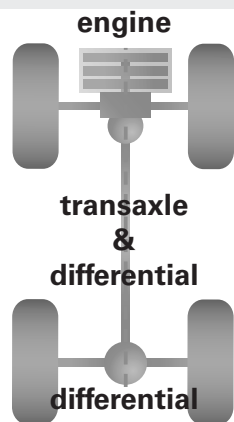


# SUBARU SYMMETRICAL ALL-WHEEL DRIVE VS. OTHER DRIVE SYSTEMS

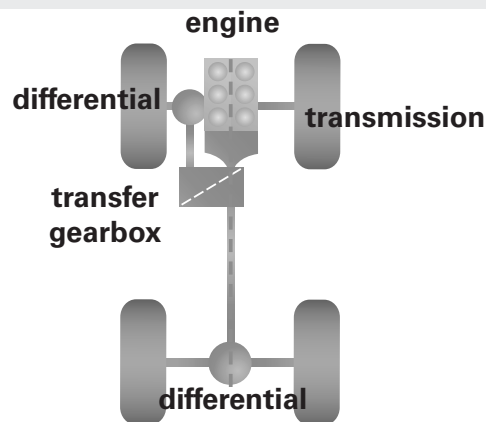
## SUBARU SYMMETRICAL ALL-WHEEL DRIVE

- 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



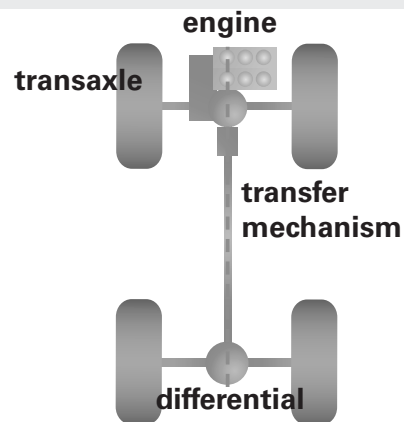
## TRADITIONAL TRUCK-BASED 4-WHEEL DRIVE

- 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



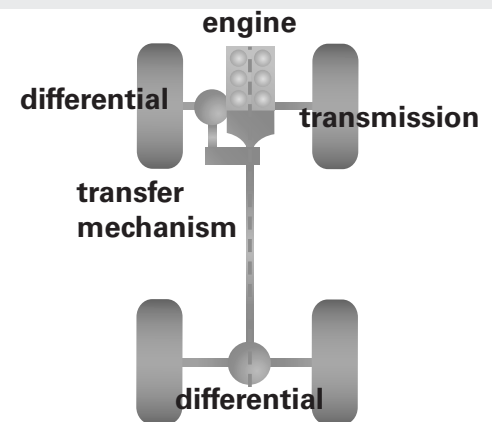
## ALL-WHEEL DRIVE ADAPTED FROM FRONT-WHEEL DRIVE

- 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.

