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Jeep® Four-Wheel-Drive Glossary

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Angle of Approach
From level ground, this is the degree of slope a vehicle can approach without scraping or hitting any components ahead of the front tires. Angle of approach is a great indication of the ability to navigate severe off-road terrain like boulders and logs. A short front overhang produces high angles of approach, thus increasing off-road ability.

Angle of Departure
Whatever goes over an obstacle must come back down. In returning to level ground, the angle of departure indicates the degree of slope a vehicle can depart from without scraping or hitting the lowest, rear most part of the vehicle.

Articulation
The ability of one tire to move relative to the chassis or the other wheel – left wheel up, right wheel down. Articulation makes it possible for the wheels to stay in contact with the ground (and retain traction) on very uneven terrain.

Axle Ratio
Usually expressed as driveshaft revolutions to each revolution of the tire. A ratio of 3.55:1 means the driveshaft turns 3.55 times for every one turn of the tires.

Breakover Angle
The degree of slope that defines the largest obstacle that a vehicle can travel over without scraping the peak of the obstacle against the frame or underbody components.

Compression Braking
When the compression of the engine resists wheel rotation to help control the speed of a vehicle. This results in controlled hill descent without the use of brakes.

Crawl Ratio
This is the final drive ratio of a vehicle in low-range. A high crawl ratio allows Jeep® vehicles to creep along at very low speeds with great control and torque multiplication. Crawl ratio formula: First gear ratio x rear-axle ratio x lowrange four-wheel-drive ratio. A higher number usually indicates better off-road capabilities.

Differential
A mechanical unit that differentiates torque, distributing engine power to front and rear axles, and to each tire.

Four-Wheel Drive
A drive system in which both the front and rear wheels are connected through driveshafts and axles to the transmission, usually via a transfer case.

Full-Time Four-Wheel Drive
A four-wheel-drive system that is designed for permanent engagement (delivers power to both axles at all times).

Part-Time Four-Wheel Drive
A four-wheel-drive system in which the driver can engage four-wheel drive in conditions of marginal traction (slippery or loose surfaces) and use two-wheel drive at other times.

Running Ground Clearance
The distance from the ground to the lowest point between the axles.

Shift-on-the-Fly
The ability to shift from two-wheel drive to four-wheel drive, and back, while the vehicle is moving.

Skid Plates
Rugged steel plates help protect the undercarriage from damage when driving off-road.

Suspension Travel
The amount of vertical wheel movement provided by the suspension, measured at the center of the wheel.

Torque
Expressed in terms of “pound-feet,” this is the amount of rotational effort exerted by an engine.

Tow Hooks
Heavy-duty forged steel hooks in the front and rear of a vehicle that provide attachment points for tow straps and winch cables.

Transfer Case
Mounted behind and driven by the vehicle transmission, this component transfers power to the front and rear driveshafts in four-wheel-drive Jeep vehicles.

Transmission
A mechanism that translates engine torque into useable driving power through the use of gearsets. These gearsets multiply engine torque in varying amounts to meet specific driving speeds and demands.

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