



Getting to Know Your Vehicle

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Everyone's off-road vehicle is unique. Get to know *yours*. The following are print resources that should get you started.

- Owner's Manual
- Service Manuals - Chilton's, Haynes, Factory Service Manual
- Web sites devoted to your particular vehicle - classicbroncos.com, ih8mud.com, jeepsunlimited.com, binderbulletin.org...
- Magazines devoted to your vehicle - FSJ, 4WD Toyota Owner, Bronco Driver, JP, Land Rover World
- Catalogs and Vender Web Sites
- Books – e.g., 'Jeep Owner's Bible' by Moses Ludel



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Visual Inspection – Make it a Habit!

- Get to know your undercarriage
- What hangs low?
- What is vulnerable?
- What's protected? What's not?!
- Ask Yourself: “*What damage is acceptable?*”

Under the Hood

- Fluids, Filters, and Belts – check the level, know the type



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Post-Wheeling Inspection & Troubleshooting: knowing your vehicle also means knowing what's normal and what's not. The below are just the *tip of the iceberg!*

- **New Vibrations:** typically items that spin, such as damaged drive shaft, bent rims, mud in wheels, brake drums, universal joints
- **Steering & Handling:** Check all steering components, tie rod ends, track bar bushings and links, sway bar end links
- **Suspension:** leaf springs cracked or loose, u-bolts and plates, coil springs unseated or shifted, shocks broken
- **Hard Parts:** axle tube loose or damaged, frame cracked
- **Overheating:** dirty air filter, thermostat, under-capacity radiator or water pump



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Skid Plate: a surface or structure, usually made of steel, which shields vulnerable areas of your vehicle from damage and/or enhances its capabilities by providing a surface under which obstacles can slide (J.E.).

- **Essential Protection:** Gas Tank (OEM), Transfer Case (OEM), Transmission, Oil Pan, Steering Box, Differentials
- **Added Functionality:** Spring Plate U-Bolts, Shock Mounts, Control Arm Mounts, Rocker Panels (sliders), Drive Shaft, Trail Corners



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Angle of Approach: When viewed from the side, this is the angle between the ground and a line running from the front tire to the lowest-hanging point directly in front of it, which is usually the front bumper. This angle gives an indication of how the vehicle can approach a steep incline and its ability of climbing onto objects like rocks and other obstacles without damaging the front bumper.

Angle of Departure: Also viewed from the side, this is the angle between the ground and a line running from the rear tire to the lowest-hanging point directly behind it, which is usually the rear bumper or trailer hitch. Similar to the approach angle, this angle indicates how the vehicle can depart a steep incline and its ability to exit off of rocks and other obstacles without damaging the rear bumper.

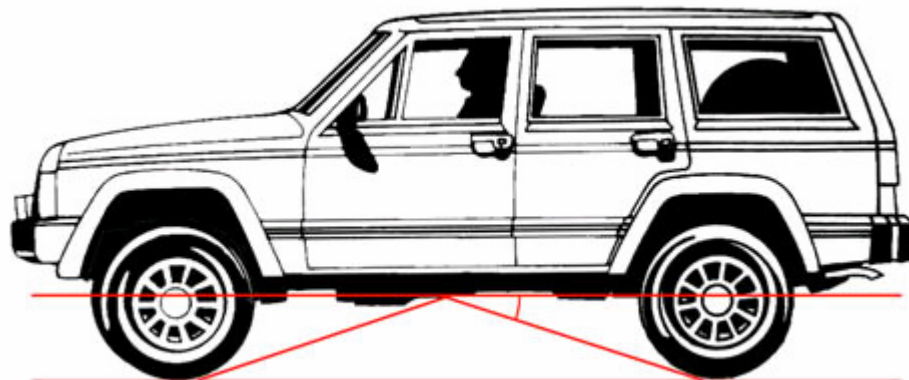
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Breakover Angle: This angle is a measurement of a vehicle's ability to drive over a sharp ridge without touching its underside. A shorter vehicle with large tires will have the better breakover angle than a longer wheelbase vehicle and/or one with smaller tires.

Important Notes: Approach, departure, and breakover angles are a product of wheelbase, over-hang, suspension height, and tire size. A suspension lift will always improve these angles, regardless of tire size. Fitment of larger tires via body lift or fender trimming will improve these angles only in proportion to the tire's increased radius. A "total package" approach is most effective when considering upgrades to suspension, tires, and (sometimes) skid plates.