We are all looking for a suspension setup that allows the wheels to get best travel and ride while pounding the tracks or even just doing the daily travel duties. Once we have found a great set of shocks and suspension links, the last thing to upgrade is generally the panhard rods. But what exactly do they do, and what do you look for when selecting the right ones?

A panhard rod is a suspension link that provides lateral location of the axle. The advantage of the panhard rod is its simplicity, essentially a rigid link that connects to the chassis on one side of the vehicle and to the diff on the opposite side. Its major disadvantage is that the axle must necessarily move in an arc relative to the body, with the radius equal to the length of the panhard rod.

When adding a raised height suspension to common live axle 4WD vehicles, the fixed length of the front or rear panhard rods often cause the axle to shift to one side. This situation becomes most obvious when one wheel protrudes out past the vehicle’s guard. Another downside to the shift in axle position is the added risk of reduced clearance between the tyre and the wheel arch under articulation, in some circumstances contact can occur which may damage the tyre.

Ideally, a longer panhard rod is needed when performing any lift over 2in to correct axle shift after raising suspension. An adjustable or extended fixed-length panhard can be used as required to re-centralise the axle to vehicle. Fixed-length extended panhard rods are made longer to suit a specific lift height (or small range) so as the axle sits directly underneath the chassis. Heavy duty adjustable panhard rods enable you to adjust the diff location more accurately over a wider range of lift heights and suspension setups.

So why upgrade to a heavy duty panhard? In most cases we will all be starting to push the limits of what a factory link can handle, most original panhards are nothing more than a piece of 3.5mm thick wall tube which once dented or damaged will fail very easily. This lack of strength combined with increased angle from a lift kit and often added weight from accessories or loads being towed can push them a little too far. A lot of failures off-road often occur as a result of sudden impact or bouncing when trying to climb obstacles or bouncing in and out of ruts.

Some key design points to consider when purchasing the correct panhard for your vehicle are:

As panhards are subjected to high tensile forces in both compression and extension it is recommended that the material used be of sufficient sectional modulus (cross section or diameter) to resist failure should any offset loading occur. The types of material considered as best for upgrades should be at least medium to high tensile steels such as K1045 (solid bar) or Mecaplus E470, and for more extreme protection or competition use 4140 solid bar or even up to 4340. The thickness of the eyes at each end is also very critical as well as the welding practice used to attach them. The machining and corrosion resistance often reflect the quality and effort that has gone into the manufacture. Precision CNC machining and bending generally ensure a quality product to the customer. Fine thread adjustment such as M32 x 2mm thread, ensures precision adjustment for greater accuracy and location as well as optimum strength. The use of OEM style rubber bushes, will provide maximum flex and durability.

Superior Engineering offer a large range of panhard rods to suit any level or application, from OE style extended fixed length ‘STEALTH’ and adjustable K1045 solid rods all the way up to competition spec 4140 and 4340M solid panhards. Fixed or adjustable damper brackets are also a feature that should be considered when deciding on which Panhard rod is right for your 4WD.

As with any suspension components you may need, contact your local 4WD suspension specialist for information on the best parts for your vehicle.