

Roadsafe - Arming Themselves for the Future

New suspension arms available for VE Commodore & FG Falcon



Recent years have seen a change in trend in Australian vehicle suspension setup, starting with the Territory and now moving into the current Commodore & Falcon.

Both the current VE Commodores and FG Falcons have adapted the more highly sophisticated 'European' trend design, common in BMW's and other euro brand vehicles, incorporating a smaller, lighter lower front control arm and a stronger caster bar, to carry much of the lateral load, in the front suspension setup.

This new suspension setup is a key component of the Falcon chassis system and introduces a similar set-up to the popular and effectively proven Ford Territory.

This style of suspension setup offers a number of advantages over other designs, offering improved steering geometry and directional stability. In comparison to other locally made, rear-wheel-drive sedans that use a McPherson strut with a virtual pivot control link, the FG Falcon system uses an upper A-arm with a virtual pivot control lower link. This setup results in better camber when cornering, allowing for improved tyre contact with the road.

The FG Falcon in particular has resulted in a marked improvement in steering geometry over the BA/BF models. The caster is slightly higher (only about 1degree). Having the combination of modifications and design changes has resulted in greatly improved directional stability.

Ford have also opted for a forward (of the front cross member) mounted steering rack for the first time.

These vehicles effectively display a 'live' caster. The ball joint is no longer the pivot point in these new designs. The two ball joints from the front lower inner control arm and the caster bar work together to create a 'virtual-pivot' front suspension, allowing the suspension to behave as though the lower pivot point is at the intersection of the two arms.

As the suspension turns, this 'virtual-pivot' point can move forward and back in an arc which induces caster change, creating a better directional stability. The 'virtual-pivot' point is further out than can be achieved by conventional setup, leading to reductions in the King Pin Axis offset, thereby reducing the disturbance to the driver (of tyre & wheel balance issues), through the steering wheel.

The FG Falcon suspension designers have also finally inverted the bottom ball joint to create a load carrying compression ball joint, instead of load carrying tension ball joints found in the AU-BF models.

These new suspension designs, coupled with the advances in aftermarket designs for replacement components and upgrades, allows for a setup that, at the end of the day, offers greater handling for drivers.

The reasons for these changes could be a mixture of a number of requirements:

1. lower cost of manufacture for arms that don't have to have the capability for a removable, replaceable ball joint
2. Weight saving as manufacturers chase lower weight results
3. Material costs
4. Greater customer demand for a better handling vehicle

As replacement ball joints in new vehicles become less, and Holden and Ford develop their new vehicle platforms along this more European trend, future aftermarket items will rely on significant arm development programs.

Roadsafe Automotive Products, Australia's largest steering & suspension supplier, has identified this requirement, and has already established a manufacturing program for all forged arms. Newly developed forged arms include items for both the VE Commodore and FG Falcon.

Roadsafe have seen further to the future, and also established an aluminium forging program for these new aluminium style arms, in an effort to replicate the genuine requirement of weight reduction, and strengthening.

The aluminium forging facility got its first run with an Australian vehicle with the FG Falcon arms. The aluminium forged FG arms will result in a significant weight reduction than simply using the older technology for steel forged arms. Basically instead of increasing the front end weight by 20kg, replacements will be able to retain the existing weight ratios of the genuine design.

With a change in trend also come changes in manufacturing and market direction. So whilst resellers are used to stocking and selling standard replacement ball joints, these new vehicles are requiring a change in known practices, and encouraging the stocking of arms, to take advantage of sales opportunities. Roadsafe are working with resellers now to ensure they are prepared for all of these changes, and are ready when the opportunities present themselves in the future.

Should you require additional information about gearing up for the new arms and sale opportunities for the VE & FG models, please contact Roadsafe Automotive Products (03) 9580 0644.

For additional information please contact Roadsafe on VIC 1300 651 551 or QLD 1300 559 086 or check out the website www.roadsafe.com.au for the stockist nearest you!