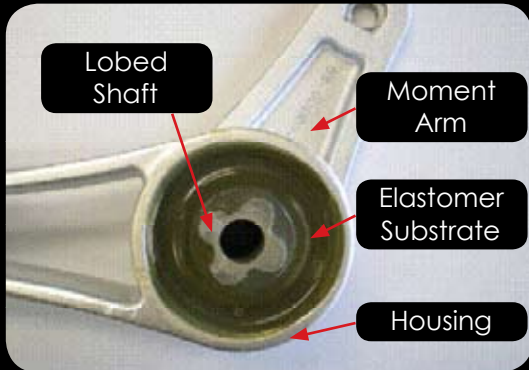


# RIASORB®

Protected by global patents the RIASORB® suspension system delivers a tailored, active and controlled reaction in direct proportion to the speed and force of any impact.

RIASORB® is unique in that it can fulfill many functions, including suspension (combined shock absorption and damping), vibration control, resistance and overload protection - all in one compact mechanism that requires no lubrication!



## WHAT IS RIASORB®?

RIASORB® consists of a moment arm coupled to a lobed shaft, which applies torque to an elastomeric material contained in and bonded to a housing.

## WHY ELASTOMERS?

The use of an elastomeric material to absorb energy and react to force is not new, but in most cases is delivered through linear compression—limiting effectiveness. RIASORB® utilises the properties of an elastomer in shear resulting from torsional resistance, rather than compression. This exploits the natural properties of the elastomer and significantly broadens the potential applications.



The bearing forces uniform shear to prevent compression set (creep) and enhances the characteristics of the elastomer by forcing it to stay concentric to the shaft.

## KEY FEATURES

- More versatile and efficient than alternative technologies
- Lightweight with superior strength
- More effective at preventing dangerous or catastrophic failure (controlled progressive spring rate)
- Able to operate in the most extreme temperature and environmental conditions
- Cancels vibration noise

## APPLICATIONS INCLUDE:

Automotive, marine & rail  
Aviation & aerospace  
Military & law enforcement

Construction & engineering  
Materials handling  
Cycling



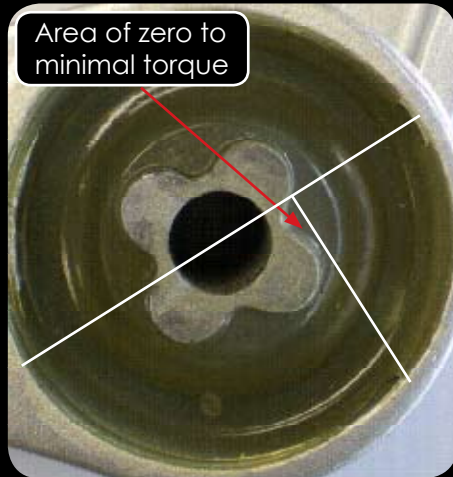
### Key Contact

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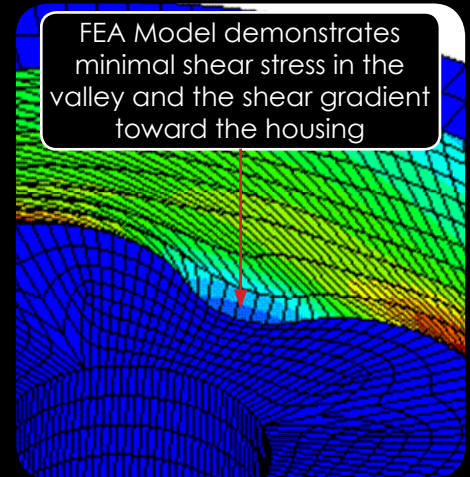
# Key elements of RIASORB®

## 1. Patented 'Limited Torque Angle' Configuration

Of primary importance in the design of RIASORB® is the lobed shaft, which when under torque exhibits a zero to limited shear force in the valleys of the shaft. Being a rheopectic material, the polyurethane viscosity (and similarly the rebound) increases in the valley due to the shear gradients experienced. This characteristic of RIASORB® provides a suspension system with the unique ability to increase reaction force in response to a greater impact.



The lobed shaft has the effect of pushing and pulling the elastomer, in a similar fashion to a square shaft, without having the stress rises associated with pressure angles that cause catastrophic failure. A round shaft will also result in catastrophic failure as de-lamination can occur simultaneously around the shaft surface.



## 2. Bond Integrity

The strict process through which the bond between the elastomer and the shaft and housing is achieved is of critical importance to the performance of RIASORB®.

## 3. Depth of Elastomer Understanding

Designing elastomers to meet the needs of critical suspension and impact absorption solutions requires a depth of understanding as to the interrelationship of a number of key variables including:

Hardness	Temperature influence	Abrasion resistance
Tensile properties	Bashore rebound (damping)	Chemical resistance
Elongation		Hydrolytic stability

**RIAS Technologies** (International) Ltd is a dynamic Australian unlisted public company with a core focus of designing and licensing suspension and impact absorption solutions utilising a revolutionary, enviro-friendly RIASORB® technology.

### Key Contact

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