



COMPLETE FLEET & COMMERCIAL SOLUTIONS



**2019
WINNER**

Excellence in Export
Parramatta Chamber of Commerce



**2019
FINALIST**

NSW Defence Industry Award



**2019
FINALIST**

Excellence in Business
Parramatta Chamber of Commerce



**2019
FINALIST**

Excellence in Export

WWW.TOUGHDOG.COM.AU

THE TOUGH DOG STORY

Tough Dog has been “making tracks across the world” since 1985, and have grown rapidly as a result of the excellent reputation their quality products command. Today, Tough Dog products are sought after the world over, and our distribution network spans 41 countries around the world. With some of the harshest conditions

right here in Australia to test out products, the gear that makes it to the market is a cut above the rest. In 2018, Tough Dog took up residence in our new Headquarters in Marsden Park. Featuring dedicated facilities for Research & Development, Design & Manufacture, and Bulk Production, the new home of Tough Dog marks

the beginning of a new chapter in our international story. Our efforts in the export market were also recognised, with 3 runner-up positions and a win in the WSABE Excellence in Export category.



WHAT IS FLEET ADVANTAGE?

The Tough Dog Fleet advantage program is a strengthened focus from Tough Dog on providing tailored suspension solutions for the Fleet, Government, and Commercial sectors. There was a need for better suspension solutions for the varied needs of many of today’s fleets around Australia. Through this the Tough Dog Fleet Advantage program was born and with it our market leading 3 Year, Unlimited Kilometre commercial warranty.



QUALITY CONTROL COMMITMENT

Tough Dog is committed to providing products that are of a high quality and consistently high manufacturing standard.

We work to achieve this objective by:

- Working to a clear & accurate product development methodology.
- Consistently applying multi layered quality control procedures.
- Achieving the highest standards necessary for relevant QC certification.

PRODUCTION QUALITY CONTROL PROCEDURES

During Production, Tough Dog ensures that the highest level of quality is maintained on both a batch by batch level, as well as a final assembly run level. During production run quality control, Tough Dog Suspension employs a three-stage checking process, where all three checks require one degree of staff separation from the operator to the inspector.



CERTIFICATION

Tough Dog Suspension Product’s internal systems & practices consistently exceed the requirements to achieve ISO:9001 certification, which is re-audited every year to ensure compliance, and is also subject to random inspection.

SPRINGS

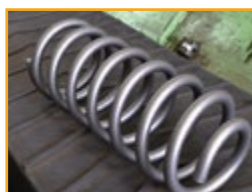
COIL SPRINGS

Made from X5K spring steel, our coils are designed with less material while maintaining superior ride quality & load carrying characteristics. This means the spring retains its original memory even after heavy loading.

THE RESULT? A lighter, tougher coil designed specifically for armoured vehicle applications.

Manufactured using an exacting, computer controlled system, our AVR coil springs are CAD designed, and the blank steel is bar peeled to remove any surface defects.

The bar peeled steel is heated to around 1000°C and then rolled into shape before being quenched in oil, which hardens the springs to 62HRC. Once hardened, they are then tempered at 400°C, and if required, machine ground to suit the application. After tempering, the coil is shot-peened, giving the coil a high intensity finish to ensure maximum life. Finally, each spring is phosphate coated for corrosion resistance, and powder coated to create the finished product.



LEAF SPRINGS

Tough Dog leaf springs are a truly progressive rate leaf spring. Each leaf is set slightly higher than the leaf above so there is contact along the whole length of each leaf.

Flat bar steel in SUP9 and SUP9A grade is cut to length, then the centre hole, diamond cut ends, and other fixtures are cold pressed into the steel.

The military wraps and rolled eyes are formed, before the springs are heated to around 1000°C in a gas forge, and hot cambered to the required specifications. Quenched in oil to harden the springs, the leaves are then tempered by being re-heated in the forge.

After tempering, the springs are shot-peened to a high intensity finish

and stress relieved to guard against sag in the spring.

Finally, each leaf is individually coated in primer and top coat to ensure that every part of the steel is coated. After assembly, the leaves are dipped in paint to ensure total coverage.



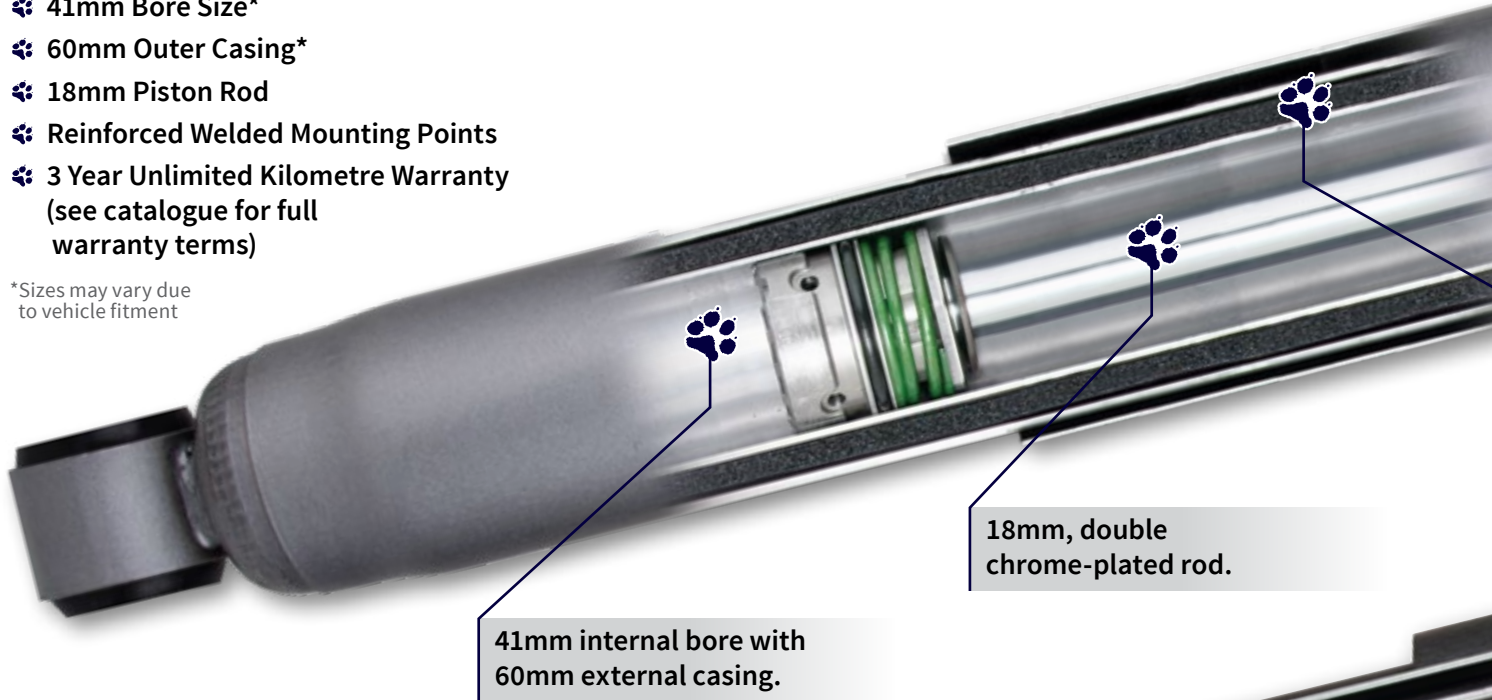
3 YEAR UNLIMITED KILOMETRE WARRANTY

SHOCK ABSORBERS

41mm FOAM CELL shock

- ❁ Award Winning 'Best All-Round Performer'
- ❁ 41mm Bore Size*
- ❁ 60mm Outer Casing*
- ❁ 18mm Piston Rod
- ❁ Reinforced Welded Mounting Points
- ❁ 3 Year Unlimited Kilometre Warranty (see catalogue for full warranty terms)

*Sizes may vary due to vehicle fitment



53mm RALPH shock

- ❁ 53mm Bore
- ❁ 70mm Outer Casing
- ❁ 22mm Piston Rod
- ❁ Reinforced Welded Mounting Points
- ❁ Huge Oil Reservoir
- ❁ 3 Year Unlimited Kilometre Warranty (see catalogue for full warranty terms)

*Sizes may vary due to vehicle fitment.



RIGOROUS PRODUCT TESTING

When it comes to testing, the knowledge acquired in the workshop is just as important as the real world testing carried out as a part of every Tough Dog suspension. The state of the art Roehrig shock dynamometer allows an exact measurement of the forces exerted on the shock. testing for both valving

suitability, as well as longevity and heat resistance testing give a complete picture of our suspension's capabilities. This workshop testing is then coupled with real world testing on every road surface, this knowledge helps us to remain at the cutting edge of 4WD suspension design.





Double welded end fittings in all applications for maximum strength.

Micro-cellular foam insert that reduces shock fade.



COMPLETE STRUT ASSEMBLIES

Modern IFS vehicles use strut style suspension in the front axle, and the spring rate required can be more than 750lbs in some instances. This enormous pressure needs an industrial spring compressor to ensure correct assembly. Assembling the strut unit

prior to fitment to the vehicle is the most crucial part of any suspension fit out, and incorrect assembly can lead to premature suspension failure. Tough Dog offer their complete range of struts in complete assembly variants – at no extra cost!



3 YEAR UNLIMITED KILOMETRE WARRANTY

GVM UPGRADES

CARRY MORE - SAFELY

The allowable payload on most modern 4WDs seems great on paper, but this quickly gets eaten up when vehicles are fitted with bull bars, trays, equipment, and passengers. Remaining under the manufacturer's Gross Vehicle Mass (GVM) specifications can seem like a tough task, but this is where the Tough Dog GVM program can assist. Tough Dog Suspension provides a solution for owners and managers of vehicles who have a need to carry loads which exceed the manufacturer's specifications, while at the same time meeting the practical application and documentary compliance.

WHY DO YOU NEED A GVM UPGRADE?

- Protection for the Business from claims of breaches from OH&S laws and employee negligence.
- The possibility of Insurance companies voiding a payout if the vehicle has been loaded beyond the vehicle's factory GVM.
- Failure of factory componentry resulting in costly repair bills due to the factory warranty being voided on suspension related parts.



FEDERALLY APPROVED

Tough Dog Suspension is a recognised Second Stage Manufacturer (SSM) which allows us to develop and federally certify components to increase your vehicle's GVM. Maximise your allowable payload without risking your roadworthiness! Each complete GVM kit has been extensively tested to ensure ADR compliance is maintained.



DOTARS APPROVED SECOND STAGE MANUFACTURER

Tough Dog Suspension is recognised as a Second Stage Manufacturer by the Department of Transport and Regional Services (DOTARS). Following strict Quality Assurance Processes, Tough Dog Suspension is permitted to undertake modification of new vehicles and affix a secondary identification plate to the vehicle. Your fleet of GVM upgraded vehicles is nationally recognised, and Federally compliant.



ESC testing ensures vehicle safety and continued compliance



GVM TESTING

FINITE ELEMENT ANALYSIS TESTING:

Finite element analysis (FEA) methods are used to predict the structural performance of the design. The structural safety of an automobile's suspension is crucial because it plays an important role in the vehicle's stability and handling performance. FEA testing has been carried out on the vehicle's factory axles to ensure it can safely operate within the vehicle's new GVM.

BRAKE TESTING:

The Australian Design Rule ADR35/00 rule is to specify braking requirements under normal and emergency conditions. Brake testing has been carried out on all Tough Dog GVM vehicles both laden and unladen as well as testing under partial system failure to comply with ADR35/00.

ESC TESTING:

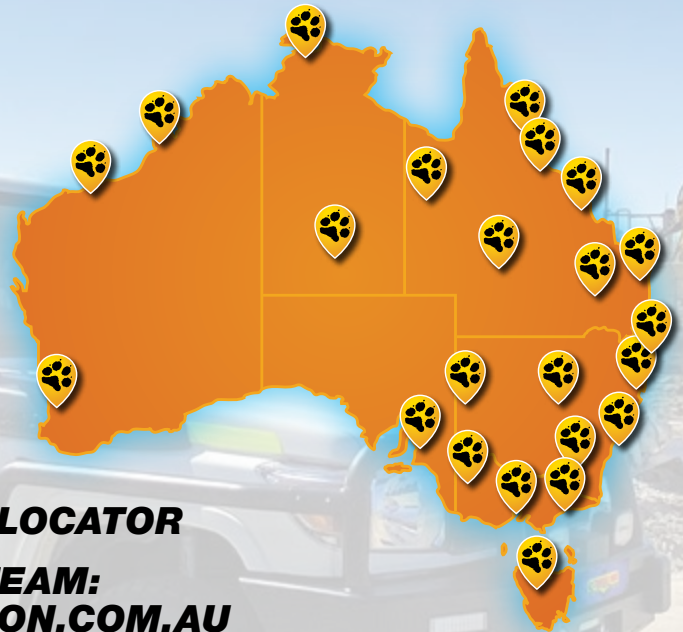
This test ensures that the vehicle's ESC system's response is the same or better than the original vehicle. The same test is used by all vehicle manufacturers and major component suppliers around the world to simulate vehicle dynamics for the development and testing of new chassis system components, engines, power trains, drivelines, suspension and vehicle electronic control systems.



3 YEAR UNLIMITED KILOMETRE WARRANTY



NATION WIDE DEALER NETWORK



**FIND YOUR NEAREST DEALER AT
WWW.TOUGHDOG.COM.AU/DEALERLOCATOR**

**CONTACT OUR DEDICATED FLEET TEAM:
FLEETADVANTAGE@4WAYSUSPENSION.COM.AU**



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