Armouring a vehicle? We've re-invented the wheel!

From the inventors of the original safety band comes the ultimate Runflat 4 System

TYRON
Flat Tyre Protection
www.tyron.com

The Tyron R4

Introducing the unique R4 heavy duty wheel for armoured cars, 4 x 4 and cash carrying vehicles. This super strong alloy wheel, with a load rating of 1600Kg incorporates an ingenious beadlock design. This makes installation of the runflat safer and changing tyres can be easily carried out without the risk of damaging the tyre bead... ... unlike other extended runflat systems!

The Tyron ATR

Inside our new R4 wheel sits the world's only bullet-proof, multi-piece rubber with steel re-inforcement runflat. Invented by Tyron, it creates a double beadlock with the R4 wheel so it will outperform ALL other runflat systems.

LEFT: Special beadlock retension ring dramatically increases runflat performance

For a quotation, please go to:
www.tyron.com/tyron-products-extended-runflat-R4.htm
and complete the enquiry form

The Finabel standard asks for 50 kilometres with 2 flat tyres.....but we exceeded it with ALL 4 TYRES FLAT

ALL TERRAIN RUNFLAT (ATR) (Patent Pending)

Introducing the world's first bulletproof two and three-piece steel re-inforced rubber Runflat system for all terrain vehicles. Its unique, flexible characteristics outperform the alternatives in both distance and durability.

Each extended runflat system is designed with unique elements dependant on the application and performance requirements of the customer.

Setting up Tyron ATR for testing on a rolling road

Tyron ATR undergoing load and speed testing

Measuring unique load deflection characteristics

"ONLY the Tyron ATR has exceeded the stated performance.... and that's with ALL 4 tyres flat!".

HUMVEE Performance Test

1. The purpose of this User Assessment (UA) was to conduct an initial user evaluation of the performance, technical and operational characteristics, specifications, and capabilities of the Tyron ATR, super duty, long range Runflat as well as conduct a comparison with current-service Runflat offered by Hutchinson. The Runflat is produced by Tyron International Limited (hereafter "Tyron"). The UA was conducted utilizing the US Special Operations Command Ground Mobility Vehicle (GMV) at Fort Campbell, KY by the lead Mobility Non-Commissioned Officer (NCOIC) of the 5th Special Forces Group (A), Force Modernization Section.

2. Product Description:

Name: Tyron ATR
Installation: Three-piece inter-connective; field mountable, field serviceable
Material: Rubber Runflat with steel backbone
Load Range: Designed for Load Range D. E and HMMWV Trailer (heavy payload spec)
Remark: Super duty, long range Runflat capability

3. User Assessment Conditions: In June 2009, the Ground Mobility NCOIC conducted an initial UA and simulated a catastrophic, simultaneous failure of all four tyre systems. This was achieved by removing the valve stems of each wheel assembly and letting the air out of the tyres. The wheel assemblies were provided by Tyron and consisted of four Goodyear 16.5" Wrangler MT/R (type tyres), four Tyron ATR Runflats (pre-assembled) and four standard GMV Hayes-Lemmerz 16.5" wheels. The vehicle was driven for a total of 30 miles on paved surface roads, improved surface roads, trails and cross-country. 80% of the travel was conducted on paved surface roads. Road speeds between 0-60 mph were attempted and achieved. The majority of the road travel was conducted at 25-30 mph with accelerations to 60 by increments of 10 mph. Off-road speeds between 0-30 were attempted and achieved across varying types of terrain consistent with the topography of Fort Campbell, KY (rolling). At the end of the UA, the wheel assemblies were removed from the vehicle and the tyres and Runflats were removed or disassembled. The UA was ended because the Runflats exceeded performance claims and concerns that the tyres, which began to disintegrate, would damage the vehicle. The UA was not stopped because of Runflat performance issues, failure of the Runflats or damage caused to the GMV associated with the Runflat.

4: Remarks and observations: The Tyron ATR met and exceeded stated performance requirements currently in place with the HMMWV and GMV programs (30 mph/30 miles). Additionally, the Tyron ATR met industry performance claims of 50 mph and 60 mph. The only visible and noticeable factors were smoking from the valve stems when driving above 30 mph as well as degradation in vehicle power performance. This degradation can be attributed to the four tyres being flat and the vehicle driving on all four Runflats. The degradation was characterized by a loss in horsepower demonstrated by reduced top end speed and rate of acceleration. Upon removal of the tyre, mechanics and operators inspected the condition of the Runflat and recognized no appreciable damage to the Runflat. They were able to disassemble and reassemble the Runflat with ease and without any special tools. The Runflats were remounted along with new tyres for further use.

Ballistic test to the 16.5 ATR runflat designed for the Humvee.

First test was carried out to the Finabel standard, but without the tire fitted. 5 shots into the side of the runflat and 2 into the tread area from 50 meters with an AK47 using 7.62mm bullets and an M16 using 5.56mm bullets.

Special effort was made to hit the fixings with one bullet making a direct hit on the fixing head which ricocheted off and another hitting the washer and was absorbed. The other three simply passed through the rubber system. The two shots into the tread area around the fixings where simply absorbed therefore none of the shooting had any effect on the performance of the runflat system.

We carried out the same test at only 25 meters with the same results.

In total we shot the runflat 35 times with no effect.

CONCLUSION

Even without the added protection of the tire, a total of 35 direct hits on the runflat all aimed at and around the fixings were simply absorbed.
It was therefore clearly demonstrated that under a severe ballistic attack, the Tyron ATR could not be compromised even in the event of the fixings being repeatedly hit.

High powered assault rifles

Minimum impact damage to runflat fixings

Impact is easily absorbed with no structural breakdown