



\ The non compliant system cuts into the tire



\ Inside of the tire cut by a non compliant system



\ Vehicles equipped with compliant VFI™/MVFI



\ The compliant system does not damage the tire

► **Impacts absorption**

Military and security vehicles are typically exposed to **sizeable impacts** while operating off road or trying to get to safety.

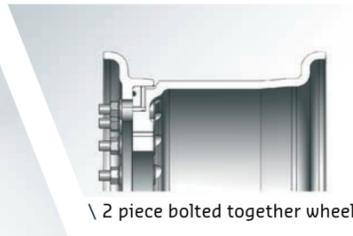
► **Solution :** The VFI™/MVFI due to its **compliance properties**, is able to absorb impacts without damages to the tire. Testing has shown that the **VFI™/MVFI can reduce the acceleration to the wheel/ tire assembly by factors of 2 or more** compared to non compliant devices.

► **Compatibility**

Military vehicles use a wide range of tires and wheels.

► **Solution :** The Hutchinson VFI™/MVFI **complies with all main tire and flat rim standards, valve and CTIS configurations and has been utilized in conjunction with all major tire brands.** The Hutchinson VFI™ **is able to operate in conjunction with a wide range of rims and tires from 12" to 36" or more.**

\ 3 piece lock ring wheel



\ 2 piece bolted together wheel

\ Air transport



► **Weight Saving**

Any reduction of runflat weight allows for additional armoring, increased payload, improved fuel mileage, optimized suspension dynamic behaviour.

► **Solution :** The **VFI™ Gen 2 can save up to 10% weight** compare to the standard VFI™.

Conception & réalisation : ESCAPE www.escape-com.fr - Crédits photos : Hutchinson - HUTCHVFI/MVFI2014

# VFI MVFI



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**MVFI**  
THE HAND  
MOUNTABLE VFI



Hutchinson, the world leader in mobility systems, has provided runflat system solutions to the military and security markets for over 80 years.

The HUTCHINSON VFI™ runflat is relied upon worldwide by soldiers to ensure mobility and safety in all terrain and combat situations. We improved it with the MVFI, the hand mountable VFI™.

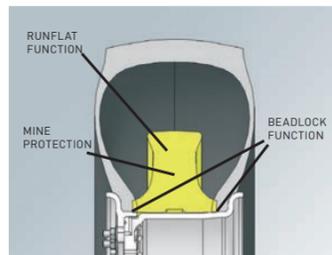
## VFI™/MVFI Runflat system

The tires are the primary target to immobilize a wheeled vehicle. It is vital to the crew that a vehicle can escape at high speed or complete its mission with one or all of the tires flat. The VFI™/MVFI has withstood some of the harshest wartime conditions, and has proven to be priceless to the protection of the crew and its vehicle.

### Runflat

Regardless of the conditions, a military or security vehicle must be able to maintain mobility with one or all tires flat in order to complete the mission and return the crew safely to base.

**Solution :** The VFI™/MVFI is designed to achieve the runflat specifications of the customer. It can be manufactured to meet known standards such as FINABEL or the US Army specifications. Hutchinson can modify the VFI™/MVFI to conform to specific customized requirements.



## Innovation

### Mountability

Regardless of the conditions, Armies need a Reliable Field Hand Mountable Runflat System.

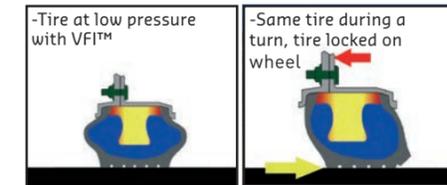
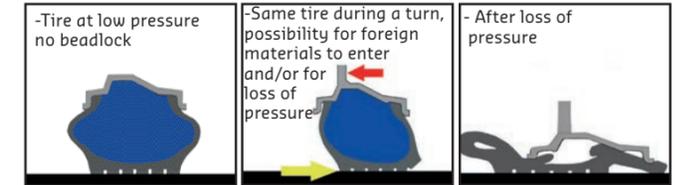
**Solution :** Based on the VFI™ technology, Hutchinson has developed the MVFI, safe, easy and fast to insert without specific tools.

### Enhanced Mobility

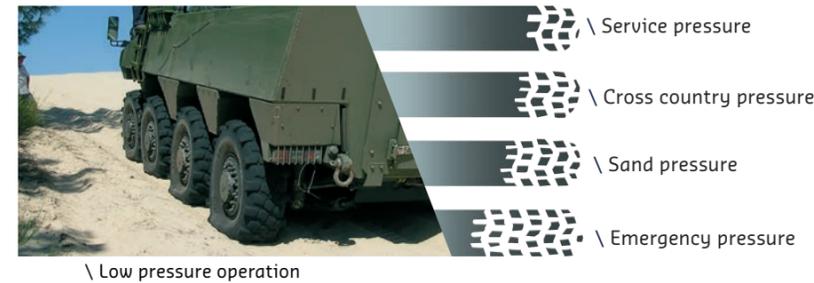
The air inside a tire applies pressure on the tire walls. This pressure clamps the tire beads on the rim seats. At low pressure the clamping force on the tire beads decreases drastically, and is not sufficient to prevent the tire from slipping on the wheel or unseating..

**Solution :** The VFI™/MVFI includes an internal Beadlock, which ensures the clamping of the tire beads on the rim at lowered or zero pressure. As a result the vehicle capabilities are enhanced by:

- Increased traction and braking
- Improved steering control
- Minimal chance of rollover caused by the unseating of the tire
- Preventing foreign materials from entering the tire.



HMMWV equipped with Hutchinson VFI™ with integrated Beadlock



Low pressure operation

### Ballistic resistance

The runflat system must withstand warlike conditions such as gunfire, to ensure the mobility of the vehicle and safety of its crew. This life saving feature is achieved by means of a ballistic proof material and a connection free system.

**Solution :** The rubber material that Hutchinson's VFI™/MVFI is constructed of has excellent ballistic characteristics.



No negative structural effect even at -40°C

### Mine protection

The first barrier against a mine blast is the wheel assembly. Thus the energy absorption characteristics of the wheel assembly are of the utmost importance to mitigate the blast.

**Solution :** The rubber material and reinforcements that the Hutchinson's VFI™/MVFI is composed of allows it to absorb a substantial amount of energy from the mine blast. In combination with the Hutchinson aluminum wheel the VFI™ has shown to reduce the acceleration from a blast significantly.



Independent test results: the mine blast acceleration is 80% greater on a steel wheel assembly without VFI™ compared to a steel wheel with VFI™. The mine blast acceleration is 145% greater on a steel wheel without VFI™ compared to an Hutchinson aluminum wheel with VFI™.