



...For safety and security on wheels



TSI Runflat Inserts are used by:

Diplomats throughout the world
Ministries of Defence in Europe and the Middle East
Major aid agencies throughout the world

The TSI Runflat Insert is endorsed by the best,
so be sure that you use the best by specifying TSI Runflat Insert.

For your nearest Runflat agent worldwide, refer to our website:
www.runflatinternational.com

TSI Runflat Systems

3
PIECE

FITTING INSTRUCTIONS AND USER GUIDE
3-PIECE SYSTEM

(Remember to carry Fitting Instructions & Fitting Tool with the Vehicle Tool Kit)



Runflat International Limited

PO Box 12525, Gawne Lane, Cradley Heath, West Midlands, England B62 2AQ

Tel: +44 (0)1384 414845

Fax: +44 (0)1384 414849

Email: info@runflatinternational.com

www.runflatinternational.com



MAXIMUM RECOMMENDED SPEED WITH DEFLATED TYRES: **50KM/HR**



Fitting tools



TSI Runflat inserts are designed to be fitted to the wheels and tyres supplied by the vehicle manufacturer. These instructions apply to 3 segment inserts. The fixing bolt locking method is a combination of Loctite thread adhesive and double locking washers under the head of each fixing bolt.

Both methods must be used.



EQUIPMENT NEEDED FOR FITTING:

- A) TYRE FITTING STAND.
- B) TYRE LEVERS OR BEAD LIFTER.
- C) TYRE LUBRICANT.
- D) TWO BLOCKS OF WOOD 30mm x 40mm x 60mm.
- E) TORQUE LIMITING TOOL OR STANDARD FITTING TOOL.
(Note: Torque setting depends on diameter and width of TSI Runflat insert. Check top side of roller for correct torque setting.)
- F) TSI GREASE.
- G) LOCTITE THREAD ADHESIVE.
- H) LENGTH OF CORD.
- I) BUFFING/CLEANING FLUID.



STANDARD FITTING TOOL
PART NO. RFI 008



TORQUE LIMITING TOOL
PART NO. RFI 009



BEAD LIFTING TOOL
PART NO. RFI 016



LOCTITE THREAD ADHESIVE
(SUPPLIED) PART NO. RFI 013



TSI GREASE
(SUPPLIED) PART NO. RFI 012



ASSEMBLY CORD
PART NO. RFI 020

TSI Runflat System



User Guide

If TSI Runflat systems are fitted in accordance with the enclosed Fitting Instructions they will give good service.

Read this User Guide carefully and bring it to the attention of all drivers using vehicles fitted with TSI Runflat rollers.

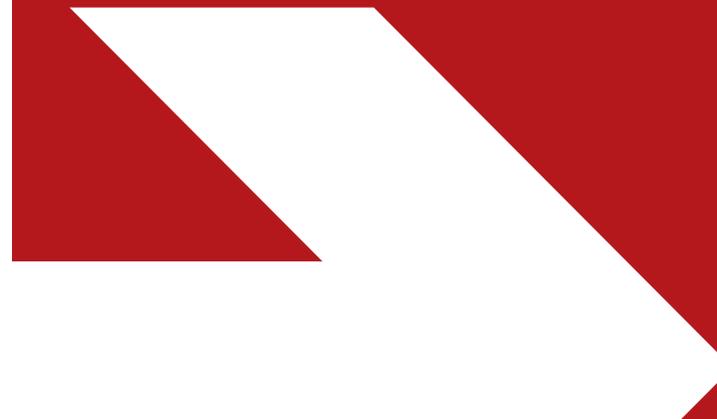
Vehicles with standard wheels and tyres are fitted with the TSI Runflat system for two purposes:

- 01) To assist a driver to maintain control if a tyre should fail at speed. Because the vehicle drops onto the roller insert instead of directly onto the wheel, a higher level of control is possible than is the case if no Runflat insert is fitted; and
- 02) To enable a driver to continue travelling to place of safety with a deflated tyre so that the damaged wheel can be changed. With security vehicles it may be necessary to travel some kilometres to reach a place of safety. TSI Runflat rollers have been designed to meet extended runflat conditions.

The TSI system is designed to give up to 30km runflat distance at speeds up to 50km/hr with one front and one rear tyre deflated when fitted to standard profile tyres. With two front tyres deflated steering control should be adequate to clear an area of hazard at a lower speed. In a serious emergency, traction and control can be maintained at speeds up to 50km/hr with all four tyres deflated.

The trial method used with TSI systems on saloons and other vehicles up to 4 tonnes GVW fitted with low profile tyres is to complete 50km continuous running with one front and one rear tyre deflated, with the first 3km at 90km/hr, the next 10km at 50km/hr and the balance at between 25 and 35km/hr. This Statement of Claim is the only claim to runflat performance.

IMPORTANT: Underinflated and fully deflated tyres fitted with Runflat rollers behave differently to fully inflated tyres and the handling of the vehicle is markedly different. Note: An underinflated rear tyre is more dangerous than an underinflated front tyre. Therefore do not attempt violent manoeuvres or sudden changes of direction with one or more tyres deflated.



To reduce the risk of misuse of the TSI Runflat inserts, advice sheets should be issued as follows:

- a) As soon as you become aware of a deflated tyre, **SLOW DOWN** immediately.
- b) If circumstances permit, stop immediately to establish the cause of the tyre failure.
- c) If an emergency requires you to continue, reduce speed to a maximum of 50km/hr and drive to the nearest point of safety to a maximum distance of 50km. Avoid sharp turns or other violent manoeuvres.
- d) At the first opportunity, stop and inspect the deflated tyre for damage. If there are obvious signs of serious tyre damage, do not continue, but change the wheel.
- e) After any runflat use report the occurrence to the Workshop manager, who will arrange for the system to be inspected by the TSI distributor. TSI Road Runner systems are designed for repeated use, subject to inspection after runflat use.

To reduce the risk of misuse of TSI Runflat inserts, advice sheets should be issued as follows:

01. VEHICLE DASHBOARD

Runflat Systems

For your safety and security the wheels on this vehicle are fitted with Runflat rollers inside the tyres. These help you to maintain control if a tyre fails at speed, or to continue with a deflated tyre to a place of safety to have the wheel changed. **DO NOT** exceed 50km/hr with a deflated tyre. Stop as soon as you can to change the wheel to a maximum of 50km. Read the Operating Instructions in the Vehicle Logbook. Check tyre pressures daily.

02. VEHICLE LOGBOOK

Runflat Systems

For your safety and security the wheels on this vehicle are fitted with Runflat rollers. They give improved driver control if a tyre fails at speed and allow the vehicle to continue in an emergency with a tyre deflated. Vehicles handle differently with deflated tyres. **DO NOT** swerve sharply or carry out violent manoeuvres with a deflated tyre. **DO NOT** exceed 50km/hr with a deflated tyre. Stop as soon as possible to a maximum of 50km to have the damaged wheel changed. Check your tyre pressures daily and report any runflat use to the Workshop Manager.

Note: The Runflat rollers have to be removed to change tyres.

03. DRIVER'S RESTROOM

Runflat Systems on Security Vehicles

Security vehicles in the fleet are fitted with Runflat roller inserts for your safety and security. These assist in controlling the vehicle after a tyre blow-out at speed and allow drivers to continue with a damaged tyre in an emergency to a maximum distance of 50km.

Vehicles handle differently with deflated tyres. Sudden turns or other violent manoeuvres with under-inflated tyres can cause the vehicle to become unstable. For this reason, as soon as you become aware of a deflated tyre, **SLOW DOWN** immediately. **DO NOT** exceed 50km/hr with a deflated tyre.

In an emergency you are able to continue at a reduced speed to a place of safety to have the damaged wheel changed.

Runflat rollers have to be removed to change tyres. Tyre pressures must be checked daily to avoid damage to the roller inserts.

Ask for more details from the Workshop Manager.

TSI Systems after runflat operation

TSI tyre inserts are designed to be returned to service after runflat use, subject to the following conditions.

01) If the system has been subject to any form of ballistic or explosive attack the unit must be returned to the local TSI distributor or agent with an account of the runflat incident for detailed inspection by the distributor or agent. On no account should it be returned to service without this inspection process.

02) If the runflat operation led to any noticeable damage to the tyre, the TSI system must be returned to the local TSI distributor or agent distributor with an account of the runflat incident for detailed inspection by the distributor or agent.

03) If there is no apparent damage to the tyre after the runflat incident the following measures must be carried out by the workshop manager:

i) The system(s) involved in the runflat operation should be cleaned examined carefully for cracks, fissures or any mechanical damage sustained during runflat use. If there is any sign of damage the unit must be returned to the TSI distributor or agent for detailed examination.

ii) If there is no sign of surface damage, the system(s) should be fitted to a bare wheel (wheel with no tyre) from the vehicle to which the systems were originally fitted. The wedge fixing bolts should then be tightened to the recommended torque setting. If the units can be rotated on the wheel the system(s) must be returned to the TSI distributor or agent for detailed examination.

iii) If there is no movement of the unit on the wheel, remove it, re-grease with TSI grease, Part No RFI012, and fit to the original wheel with new fixing bolts. The fitting should be recorded as for an initial fitting.



ARMOURED CASH CARRYING VEHICLE



4X4 ARMOURED VEHICLE



ARMOURED SALOON VEHICLE

Spares



3
PIECE



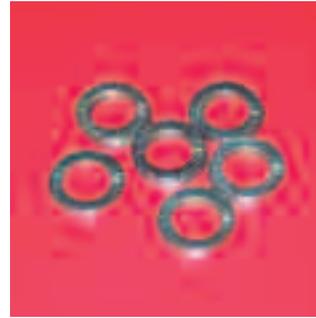
CLAMPING PLATE
(SUPPLIED) PART NO. RFI 002



RIVET NUT INSERT
(SUPPLIED) PART NO. RFI 001



METAL CLAMP-IN VALVE
(SUPPLIED) PART NO. RFI 011



DOUBLE LOCKING WASHERS
(SUPPLIED) PART NO. RFI 019



10MM HIGH STRENGTH S/O BOLT
(SUPPLIED) PART NO. RFI 005



TSI WEDGE UNITS
(SUPPLIED) PART NO. RFI 003

