

MOBILITY & SECURITY EXPERTS



DYNAMIC RUNFLAT SYSTEMS

FITTING INSTRUCTIONS AND USER GUIDE

(Remember to carry fitting instructions & fitting tool with the vehicle tool kit)

MAXIMUM RECOMMENDED SPEED WITH DEFLATED TYRES: 50km/h

FITTING TOOLS

Dynamic RunFlat systems are designed to be fitted to single piece wheels and tubeless tyres.

These instructions apply to 2 and 3 segment Dynamic RunFlat systems for cars, SUV's, vans and light trucks.

IMPORTANT. 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) APPROVED TYRE LUBRICANT.
- D) TORQUE LIMITING TOOL.
(Note: Check RunFlat system identification label for correct torque setting).
- E) HIGH TEMPERATURE GREASE
(Supplied with RunFlat).
- F) LOCTITE THREAD ADHESIVE
(Supplied with RunFlat).
- G) ASSEMBLY CORD.
- H) BUFFING/CLEANING FLUID.



STANDARD FITTING TOOL
PART NO. RFI 008



TORQUE LIMITING TOOL
PART NO. RFI 009



BEAD LIFTING TOOL
PART NO. RFI 016



THREAD LOCKING ADHESIVE
PART NO. RFI 013



HIGH TEMPERATURE GREASE
PART NO. RFI 012



ASSEMBLY CORD
PART NO. RFI 020

DYNAMIC RUNFLAT SYSTEM

USER GUIDE

If Dynamic RunFlat systems are fitted in accordance with these 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 DYNAMIC RUNFLATS.

Vehicles are fitted with RunFlat systems for two purposes:

- 1** To assist a driver to maintain control if a tyre should fail at speed. Because the vehicle drops onto the RunFlat system instead of directly onto the wheel, a higher level of control is possible than is the case if no RunFlat system is fitted; and
- 2** To enable a driver to continue travelling to a 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 distance to reach a place of safety. Dynamic RunFlat systems are designed to meet extended run flat conditions.

The Dynamic RunFlat system

is designed to cover runflat distances (distances vary depending on models) at speeds up to 50km/h 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 lower speed (typically 20km/h). In a serious emergency, traction and control can be maintained with all four tyres deflated. This Statement of Claim is the only claim to RunFlat performance.

IMPORTANT:

Underinflated and fully deflated tyres fitted with RunFlats behave differently to fully inflated tyres and the handling of the vehicle is markedly different. Therefore do not attempt violent manoeuvres or sudden changes of direction with one or more tyres deflated.

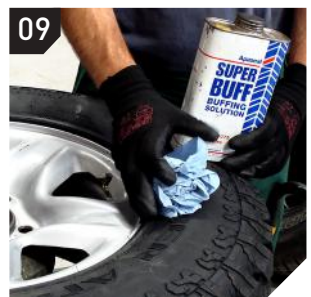
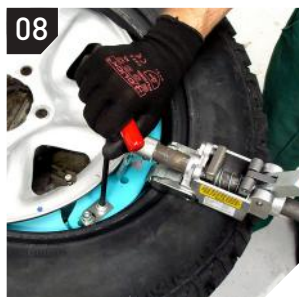
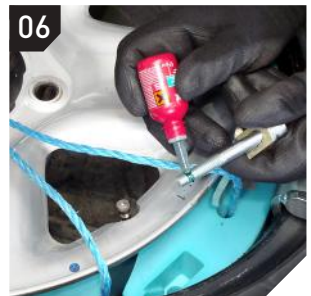
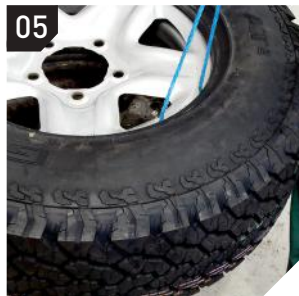
FITTING INSTRUCTIONS FOR

2-SEGMENT DYNAMIC RUNFLAT SYSTEM

FOR STEEL WHEELS

Keep these instructions with the fitting tools in the vehicle tool kit

- 01** Remove valve core and deflate tyre. Break both beads and fit on tyre fitting machine with valve side uppermost.
- 02** Replace rubber snap-in valve with metal clamp-in valve.
- 03** Disassemble Dynamic RunFlat system. Grease underside of RunFlat segments, making sure grease slots are completely full of grease. **Fig 01.**
- 04** Apply Loctite thread adhesive to 2 wedge bolts making sure double locking washers are under head of each bolt. **Fig 02.** Connect 2 RunFlat segments, inserting wedge bolt for 4 or 5 threads only. Leave final joint unconnected. Pass assembly cord through holes adjacent to final joint position. **Fig 03.**
- 05** Lift top bead of tyre with tyre fitting machine, tyre lever or bead spreader, holding up if necessary with wooden blocks. Insert RunFlat segments, wedge slot uppermost, making sure wedges sit at the top of wedge bolts. **Fig 04.**
- 06** Using assembly cord move RunFlat system so that the RunFlat joint sits both sides of the valve. When in position use assembly cord to pull RunFlat system together so that ends of the segments overlap. **Fig 05.**
- 07** Secure ends of assembly cord to keep the RunFlat system in the correct position. Clean off all traces of RunFlat grease from top of tyre.
- 08** Pull over top bead of tyre in area of valve with tyre fitting machine, tyre lever or bead spreader. **Fig 06.** Insert final wedge bolt and tighten down so that wedge top is level with top of wedge slot. Remove assembly cord after final wedge bolt has been fitted.
- 09** Tighten down wedge bolts in turn so that the top of each wedge sits just below the top of the wedge slot. Use torque limiting tool to tighten each wedge bolt to torque setting marked on the identification label. **Fig 07.**
- 10** Apply Loctite to 2 clamping plate bolts and fit clamping plates at each joint position making sure double locking washers are under head of the bolts. **Fig 08.** Tighten down clamping plate bolts to torque setting marked on the identification label.
- 11** Mount top bead of tyre. **IMPORTANT:** Clean top bead and wheel edge with buffing fluid to remove all traces of grease and tyre lubricant. **Fig 09.**
- 12** Inflate tyre and balance wheel/tyre assembly in normal way.
- 13** **IMPORTANT:** As a quality control measure, the following information should be recorded in the vehicle log or service book at the time of fitting of the RunFlat systems:
 - i) Make and model of vehicle of vehicle and registration number.
 - ii) RunFlat system batch number.
 - iii) Date, location of fitting agency and name or quality control stamp details of fitter.
 - iv) Vehicle mileage at time of fitting.



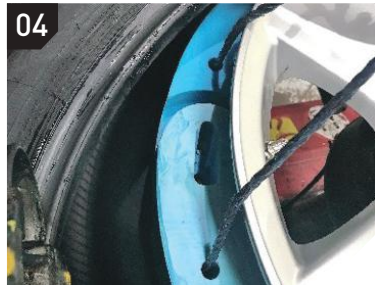
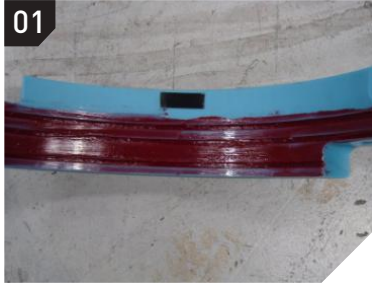
FITTING INSTRUCTIONS FOR

2-SEGMENT DYNAMIC RUNFLAT SYSTEM

FOR ALLOY WHEELS

Keep these instructions with the fitting tools in the vehicle tool kit

- 01** Remove valve core and deflate tyre. Break both beads and fit on tyre fitting machine with valve side uppermost.
- 02** Replace rubber snap-in valve with metal clamp-in valve.
- 03** Disassemble Dynamic RunFlat system. Grease underside of RunFlat segments, making sure grease slots are completely full of grease and leaving toe of RunFlat free from grease. Remove cover from pressure sensitive tape. **Fig 01.**
- 04** Apply Loctite thread adhesive to 2 wedge bolts making sure double locking washers are under head of each bolt. Connect 2 RunFlat segments, inserting bolt for 4 or 5 threads only. Leave final joint unconnected. Pass assembly cord through holes adjacent to final joint position. **Fig 02.**
- 05** Protect top edge of rim with masking tape to prevent marking of wheel. Lift top bead of tyre with tyre fitting machine, tyre lever or bead spreader, holding up if necessary with wooden blocks. Insert RunFlat segments, wedge slot uppermost, making sure wedges sit at the top of wedge bolts. **Fig 03.**
- 06** Using assembly cord move RunFlat system so that the RunFlat joint sits both sides of the valve. When in position use assembly cord to pull RunFlat system together so that ends of the segments overlap.
- 07** Secure ends of assembly cord to keep the RunFlat system in the correct position. Clean off all traces of RunFlat grease from top of tyre. **Fig 04.**
- 08** Pull over top bead of tyre in area of valve with tyre fitting machine, tyre lever or bead spreader. Insert final wedge bolt and tighten down so that wedge top is level with top of wedge slot. Remove assembly cord after final wedge bolt has been fitted.
- 09** Tighten down wedge bolts in turn so that the top of each wedge sits just below the top of the wedge slot. Use torque limiting tool to tighten each wedge bolt to torque setting marked on the identification label. **Fig 05.**
- 10** Apply Loctite to 2 clamping plate bolts and fit clamping plates at each joint position making sure double locking washers are under head of the bolts. **Fig 06.** Tighten down clamping plate bolts to torque setting marked on the identification label.
- 11** Mount top bead of tyre. **IMPORTANT:** Remove masking tape from top edge of wheel. Clean top bead and wheel edge with buffing fluid to remove all traces of grease and tyre lubricant.
- 12** Inflate tyre and balance wheel/tyre assembly in normal way.
- 13** **IMPORTANT:** As a quality control measure, the following information should be recorded in the vehicle log or service book at the time of fitting of the RunFlat systems:
 - i) Make and model of vehicle of vehicle and registration number.
 - ii) RunFlat system batch number.
 - iii) Date, location of fitting agency and name or quality control stamp details of fitter.
 - iv) Vehicle mileage at time of fitting.



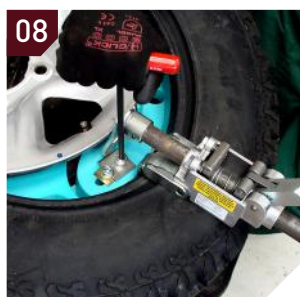
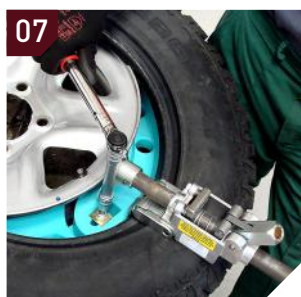
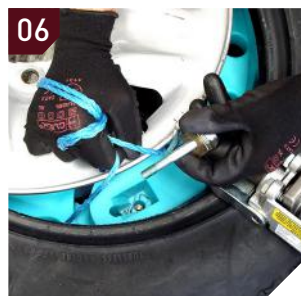
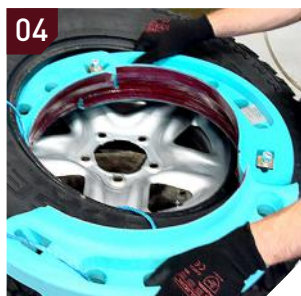
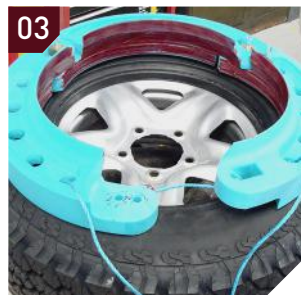
FITTING INSTRUCTIONS FOR

3-SEGMENT DYNAMIC RUNFLAT SYSTEM

FOR STEEL WHEELS

Keep these instructions with the fitting tools in the vehicle tool kit

- 01** Remove valve core and deflate tyre. Break both beads and fit on tyre fitting machine with valve side uppermost.
- 02** Replace rubber snap-in valve with metal clamp-in valve.
- 03** Disassemble Dynamic RunFlat system. Grease underside of RunFlat segments, making sure grease slots are completely full of grease. **Fig 01.**
- 04** Apply Loctite thread adhesive to 3 wedge bolts making sure double locking washers are under head of each bolt. **Fig 02.** Connect 3 RunFlat segments, inserting bolt for 4 or 5 threads only. Leave final joint unconnected. Pass assembly cord through holes adjacent to final joint position. **Fig 03.**
- 05** Lift top bead of tyre with tyre fitting machine, tyre lever or bead spreader, holding up if necessary with wooden blocks. Insert RunFlat segments, wedge slot uppermost, making sure wedges sit at the top of wedge bolts. **Fig 04.**
- 06** Using assembly cord move RunFlat system so that the RunFlat joint sits both sides of the valve. When in position use assembly cord to pull RunFlat system together so that ends of the segments overlap.
- 07** Secure ends of assembly cord to keep the RunFlat system in the correct position. Clean off all traces of RunFlat grease from top of tyre. **Fig 05.**
- 08** Pull over top bead of tyre in area of valve with tyre fitting machine, tyre lever or bead spreader. **Fig 06.** Insert final wedge bolt and tighten down so that wedge top is level with top of wedge slot. Remove assembly cord after final wedge bolt has been fitted.
- 09** Tighten down wedge bolts in turn so that the top of each wedge sits just below the top of the wedge slot. Use torque limiting tool to tighten each wedge bolt to torque setting marked on the identification label. **Fig 07.**
- 10** Apply Loctite to 3 clamping plate bolts and fit clamping plates at each joint position making sure double locking washers are under head of the bolts. **Fig 08.** Tighten down clamping plate bolts to torque setting marked on the identification label.
- 11** Mount top bead of tyre. **IMPORTANT:** Clean top bead and wheel edge with buffing fluid to remove all traces of grease and tyre lubricant. **Fig 09.**
- 12** Inflate tyre and balance wheel/tyre assembly in normal way.
- 13** **IMPORTANT:** As a quality control measure, the following information should be recorded in the vehicle log or service book at the time of fitting of the RunFlat systems:
 - i) Make and model of vehicle and registration number
 - ii) Dynamic batch number.
 - iii) Date, location of fitting agency and name or quality control stamp details of fitter.
 - iv) Vehicle mileage at time of fitting.



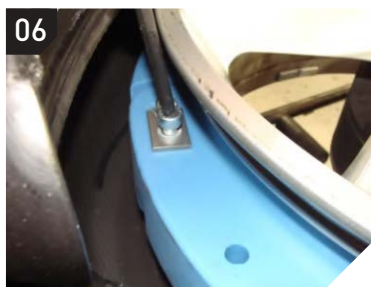
FITTING INSTRUCTIONS FOR

3-SEGMENT DYNAMIC RUNFLAT SYSTEM

FOR ALLOY WHEELS

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- 02** Replace rubber snap-in valve with metal clamp-in valve.
- 03** Disassemble Dynamic RunFlat system. Grease underside of RunFlat segments, making sure grease slots are completely full of grease and leaving toe of RunFlat free from grease. Remove cover from pressure sensitive tape. **Fig 01.**
- 04** Apply Loctite thread adhesive to 3 wedge bolts making sure double locking washers are under head of each bolt. Connect 3 RunFlat segments, inserting bolt for 4 or 5 threads only. Leave final joint unconnected. Pass assembly cord through holes adjacent to final joint position. **Fig 02.**
- 05** Protect top edge of rim with masking tape to prevent marking of wheel. Lift top bead of tyre with tyre fitting machine, tyre lever or bead spreader, holding up if necessary with wooden blocks. Insert RunFlat segments, wedge slot uppermost, making sure wedges sit at the top of wedge bolts. **Fig 03.**
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- 12** Inflate tyre and balance wheel/tyre assembly in normal way.
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 - i) Make and model of vehicle of vehicle and registration number.
 - ii) RunFlat system batch number.
 - iii) Date, location of fitting agency and name or quality control stamp details of fitter.
 - iv) Vehicle mileage at time of fitting.



DISMOUNTING DYNAMIC RUNFLAT SYSTEM

At each tyre change or every two years, whichever comes first.

It is necessary to remove the Dynamic RunFlat system in order to change a tyre. If the tyre is damaged beyond repair, simply cut around the sidewalls and remove the tyre tread. This will expose the fixing bolts. These can be removed, the RunFlat system taken out of the well of the wheel and the tyre dismantled in the normal way. If the tyre is capable of being repaired and returned to service the removal process is as follows:

- 01** Deflate the tyre by removing the valve core. Break the outer bead (bead on the valve side).
- 02** Place wheel assembly on tyre fitting stand with valve side uppermost. Dismount top bead. Pull over top bead with a tyre lever to expose joint of Dynamic RunFlat system. Use fitting tool to remove clamping plate bolt and wedge bolt at first joint, removing bolts, plate and wedge from tyre. Repeat process at all of the joints.
- 03** Remove wheel assembly from tyre fitting stand and break inside bead. Fit wheel assembly back on fitting stand. Lift top bead and remove one section of the Dynamic RunFlat system. Repeat process with all of the system segments. Dismount tyre in normal way.
- 04** At each tyre change the RunFlat system must be cleaned and all grease removed. The segments should be visually inspected for cracks and fatigue. If any crack is visible on the surface of any RunFlat segment, the complete system should be discarded. If no cracks have developed, the grease slots should be refilled with (new) RunFlat International grease. The fixing bolts and double locking washers should be renewed. The fitting should be carried out in accordance to the appropriate afore described procedure.



INSPECTION & REUSE

RunFlat Systems after run flat operation.

Dynamic RunFlat systems are designed to be returned to service after run flat use, subject to the following conditions.

- 01** If the system has been subjected to any form of ballistic or explosive attack, it is recommended that the complete system should be changed. Alternatively the RunFlats may be returned to the local RunFlat International 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** Otherwise the following measures must be carried out by the workshop manager:
 - i) The system(s) involved in the RunFlat operation should be cleaned and examined carefully for cracks, fissures or any mechanical damage sustained during run flat use. If there is any sign of damage the unit must be returned to the RunFlat International 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 RunFlat International distributor or agent for detailed examination.
 - iii) If there is no movement of the unit on the wheel, remove it, re-grease with RunFlat International grease (Part No RF1 012), and fit to the original wheel with new fixing bolts and double locking washers. The fitting should be recorded as for an initial fitting.



MISUSE OF RUNFLAT SYSTEM

To reduce the risk of misuse of RunFlat systems, 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/h and drive to the nearest point of safety. 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 authorised RunFlat International distributor. Dynamic RunFlat systems are designed for repeated use, subject to inspection after runflat use.

VEHICLE DASHBOARD RUNFLAT SYSTEMS

For your safety and security the wheels on this vehicle are fitted with RunFlat systems 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/h with a deflated tyre. Stop as soon as you can to change the wheel. Read the Operating Instructions in the Vehicle Logbook. Check tyre pressures daily.

VEHICLE LOGBOOK RUNFLAT SYSTEMS

For your safety and security the wheels on this vehicle are fitted with RunFlat systems. 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/h with a deflated tyre. Stop as soon as possible to have the damaged wheel changed. Check your tyre pressures daily and report any runflat use to the workshop manager.

Note: The RunFlat systems have to be removed to change tyres.

DRIVER'S RESTROOM RUNFLAT SYSTEMS ON SECURITY VEHICLES

This vehicle is fitted with RunFlat systems 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. Vehicles handle differently with deflated tyres. Sudden turns or other violent manoeuvres with underinflated 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/h 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 systems have to be removed to change tyres. Tyre pressures must be checked daily to avoid damage to the RunFlats and the tyres.

Ask for more details from the Workshop Manager

SPARES

All of the below parts are supplied with new RunFlat systems. They are also available as spares when changing tyres, etc... For specific RunFlat systems, some of the spares may be different to those below; it is strongly recommended to provide as much information as possible about the vehicle, wheel rims, tyres and RunFlat system itself (if known) when ordering spares.

STORAGE OF RUNFLAT SYSTEMS

All systems must be stored before use in the following conditions:

- Relative humidity of 60 or higher.
- Out of direct sunlight.
- Not subject to water exposure, e.g. rain, floods.
- Covered to ensure systems are dust and contamination free, in low light levels.



CLAMPING PLATES

RFI 002



RIVET NUT INSERT

RFI 001



METAL CLAMP-IN VALVE

RFI 011



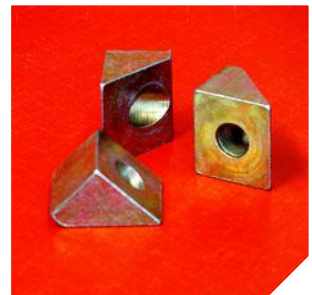
DOUBLE LOCKING WASHERS

RFI 019



HIGH STRENGTH BOLTS

RFI 005]



WEDGE UNIT

RFI 002

RunFlat International's products are regularly, arduously tested according to military standards such as Finabel as well as other standards established by certain countries and manufacturers (e.g TUV, Mercedes 150km, Plasan 300 km tests).

Originally designed and manufactured for highly demanding military requirements, Dynamic RunFlats are now sold to broader markets (Police vehicles, VIP cars, high value cargo carriers, aid agency vehicles, etc...) all around the World.



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