

# TIRE INFORMATION SERVICE BULLETIN

## GENERAL INFORMATION ON SELF-SUPPORTING RUNFLAT TIRES

### Introduction and Purpose

The purpose of this bulletin is to provide general information about self-supporting, runflat tire applications. Runflat tires may be designated with the characters “RF,” the term “RunFlat” or “Extended Mobility” following the tire size on the sidewall. Because this bulletin is not intended to be all-inclusive, questions pertaining to specific runflat products should be addressed to the vehicle manufacturer or tire manufacturer.

Runflat tires are designed to allow the vehicle to continue to be temporarily driven for a limited distance and reduced speed after a puncture or other event has resulted in either a drop in tire inflation pressure (low-inflation) or a complete loss of inflation pressure (zero-inflation). Runflat tires give the driver the convenience and safety benefits of not having to stop and either replace the tire with a spare or temporarily restore and re-inflate the in-service tire, in an oftentimes dangerous location at the side of the road or highway. However, use of runflat tires alone does not replace the need for regular inflation pressure checks with a gauge, independent of the Tire Pressure Monitoring System (TPMS), at least once a month and before every long trip.

### Runflat Tire Operation in Low-Inflation or Zero-Inflation Mode

Runflat tires are not intended to be used for unlimited service when in low-inflation or zero-inflation mode. When low-inflation or zero-inflation conditions exist, the speed and distance of the vehicle must be limited according to the tire manufacturer and vehicle manufacturer recommendations.

A functioning TPMS must be used with runflat tires to warn the driver when a tire is operating while underinflated. Even though these tires are designed to function with low or zero-inflation pressure for limited speed/distances, the TPMS is necessary to alert you of a drop in inflation pressure. When alerted, follow instructions in the vehicle owner’s manual and see “Runflat” or “Run Low Tire Pressure” operation instructions.

## **WARNING**

Operation of a runflat tire at low or zero-inflation pressure beyond the recommended distance or speed limitations could result in sudden tire destruction, which may result in an accident, personal injury or death.

If the TPMS indicates a drop in inflation, reduce vehicle speed as much as possible. Vehicle speed and distance must be limited. While in a low-inflation or zero-inflation condition, runflat tires are usually limited to speeds no greater than 50 mph (80km/h) and to distances no greater than 100 miles (160km). These restrictions vary by product and application. Driving the shortest distance at the lowest possible speed may increase the chance the tire can return to service. When a tire has a drop in inflation pressure, vehicle handling is reduced, particularly during cornering. Avoid hard cornering, hard braking and severe handling maneuvers. Refer to the manufacturer's recommendations in the vehicle owner's manual.

If an unusual vibration or vehicle handling difficulty arises, release the accelerator and gradually reduce speed. Stop driving as soon as safely and reasonably possible. The tire may be about to suddenly destruct. The tire(s) may need to be replaced before proceeding.

Once a tire has been run at low or zero-inflation pressure it must be demounted and inspected by a tire service professional to determine whether it may be repaired or must be replaced.

## **CAUTION**

Do not touch a runflat tire that has recently been run low or at zero-inflation. It may be very hot. Allow the tire to cool before handling and servicing. Wear protective gloves. Failure to do so may result in personal injury.

### **Runflat Service Conditions and Maintenance Information**

The following are requirements for the use of runflat tires:

- The vehicle must have an operational TPMS.
- Regular inflation pressure checks with a gauge - monthly and before every long trip. The recommended tire inflation pressure can be found on the vehicle tire placard or in the owner's manual.
- No tire, regardless of its design or quality, is indestructible. Runflat tires can be ultimately rendered unusable due to a puncture or other road hazard as well as from being improperly operated in low or zero-inflation mode. Some but not all tread area punctures in a runflat tire may be repaired under certain restrictions and specifically prescribed procedures. Therefore, the tire manufacturer must be consulted on its individual repair policy recommendations.<sup>1</sup>
- Runflat tires have specific servicing and maintenance requirements that may vary by tire and vehicle manufacturers. Consult with the manufacturer for details.
- Some runflat tires must be replaced after they have experienced low or zero-inflation pressure. Consult with the manufacturer for details.
- Some manufacturers require or highly recommend special rims with internal tire support rings and/or extended safety humps for runflat tires. Consult with the manufacturer for details.
- The TPMS sensor, which is often part of the valve assembly (or wheel well), requires appropriate precautions when demounting/mounting tires to prevent damage to the sensor. For instructions on TPMS installation, maintenance, etc., always follow the system manufacturer's recommendations.<sup>2</sup>

## **WARNING**

Unauthorized or improper runflat tire repairs (or a failure to make required tire repairs) can result in sudden tire destruction, which may result in an accident, personal injury or death.

Other specific limitations or requirements for the safe operation, service, and maintenance of runflat tires on the vehicle may exist. Refer to the vehicle owner's manual and the tire manufacturer's recommendations.

<sup>1</sup> Refer to USTMA's "Puncture Repair Procedures for Passenger and Light Truck Tires" wall chart.

<sup>2</sup> Refer to the TPMS manufacturer. Also, see the Tire Industry Association's (TIA) training program on TPMS servicing.

## Runflat Tire Replacement

Before replacing tires, always refer to and follow the vehicle manufacturer's replacement tire restrictions and recommendations.<sup>3</sup>

## Four Tire Runflat Replacement

When replacing tires normally (i.e. wear out), it is recommended and preferred that all four runflat tires are replaced at the same time with four runflat tires in order to maintain runflat tires' mobility, TPMS capability, and vehicle handling, stability and performance. Check vehicle owner's manual for specific recommendations. Runflat tires should only be fitted to vehicles which come with runflat tires as original equipment (OE). It is important to ensure that the TPMS on the vehicle functions with the replacement runflat tires.

## Emergency, Temporary Single Conventional Tire Replacement

Depending on the circumstances, some runflat tires must be replaced after they have experienced low- or zero-inflation pressure. As previously mentioned, runflat tires have specific servicing requirements, such as product-specific puncture repair or demounting/mounting procedures, which may vary by tire and vehicle manufacturers. Consult with the manufacturers for details.

### NOTE

Never mix runflat tires with conventional tires (tires that do not have runflat technology) unless in an emergency situation on a limited, temporary basis. The conventional tire should be replaced with a runflat tire as soon as possible. It is not recommended to mix different runflat technologies/products.

If a conventional tire is used on a temporary basis, it is important to note that vehicle handling characteristics may be affected. Also, it is recommended that the conventional replacement tire is of the same size, inflation pressure, load-carrying capacity and speed rating noted on the vehicle tire placard.

## Runflat Replacement with Four Conventional Tires

It is recommended and preferred to replace runflat tires with runflat tires; however, a consumer may wish to replace the OE runflat tires with non-runflat, conventional tires. Consult with the vehicle and tire manufacturers before replacing runflat tires with conventional tires to identify any vehicle operation restrictions. If the conventional tire option is chosen, then application restrictions apply, including but not limited to the following:

- Loss of runflat capability
- Emergency mobility is negated (to maintain mobility, the consumer will need to acquire additional equipment, such as a spare tire, new rim/wheel assembly, hand jack, etc.)
- Vehicle TPMS visual displays, audible alarms, and logic designed for runflat operation may be affected
- Vehicle handling, stability and performance may be affected
- Vehicle owner's manual reference regarding OE runflat tire fitment may no longer apply

<sup>3</sup> For more details on tire replacement recommendations, refer to the USTMA's "Care and Service of Passenger and Light Truck Tires" manual.

As standard practice, any replacement tires should be of the same size, inflation pressure, load-carrying capacity, and speed rating as noted on the vehicle tire placard. If a tire of a different speed rating is selected, the vehicle speed capability will be limited to the lowest speed-rated tire on the vehicle.<sup>4</sup>

### **Replacing Conventional Tires with Runflat Tires**

Depending on the specific tire, vehicle, wheel, TPMS, and other factors, runflat tires may be acceptable replacements for conventional tires. However, a vehicle or tire manufacturer may advise against the application of certain runflat tires to certain vehicles that were not originally equipped with runflat tires.

Therefore, the vehicle and tire manufacturers must be consulted on their tire replacement recommendations for specific vehicles and runflat tires.

If conventional tires are to be replaced by runflat tires, follow the same tire replacement recommendations established for conventional tires that include selecting the proper tire size(s) and meeting inflation pressure capacity, load-carrying capacity and speed rating requirements. Refer to the vehicle and tire manufacturers' tire replacement recommendations and the vehicle tire placard, certification label, and/or owner's manual.

In addition, note the following:

- The vehicle must have an operational TPMS. If not originally equipped with a TPMS, a system must be retro-fit to the vehicle
- Do not mix tires with incompatible runflat technologies on a vehicle (for example, all tires should be the same type of self-supporting runflat)
- The wheels must be the recommended size/rim contour, such as extended hump (example: EH2 and EH2+) marked rims and must be compatible with the runflat tires and any TPMS sensors
- The inflation pressure recommendations for runflat tires are the same as those for conventional tires that have the same size code, load index and speed rating

Never mix runflat tires with conventional tires unless in an emergency situation on a limited, temporary basis. See Emergency, Temporary Single Conventional Tire Replacement above.

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<sup>4</sup> For more details on tire replacement recommendations, refer to the USTMA's "Care and Service of Passenger and Light Truck Tires" manual.