

# Guidelines for Truck Tire REINFORCED SHOULDER REPAIR

**Reinforced Shoulder Repair (RSR)** was adopted by the tire industry in 2013 as the appropriate repair method for penetration in the “shoulder” area of medium/heavy truck tires. This terminology and method is endorsed by:

**TIA**  
(Tire Industry Association)

**TRIB**  
(Tire Retread & Repair Information Bureau)

**TRMG**  
(Tread Rubber & Tire Repair Manufacturers Group)

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## WHY REINFORCED SHOULDER REPAIR (RSR)?

Improves repair reliability for small punctures/injuries (i.e., maximum 8.0 mm) in or near shoulder.

### SCOPE:

The industry has experienced repair unit issues specific to injuries in the shoulder area of tires because the incorrect repair unit selection and placement. Repair unit construction design normally allows for 50% of the repair unit to be shifted off-center to accommodate full injury security. When the anchor portion of the repair unit, 25% on each end of the repair body, ends in a high-flex portion of the tire, the additional stress on the repair unit body structure can result in repair unit's cord breakout and/or edge lifting.

### PURPOSE:

Repair unit manufacturers typically produce “templates” that indicate the injury width and length a repair body can be shifted over an injury so that the unit placement can be anchored in non-flex zones of the tire casing. Because shoulder injuries are directly adjacent to the sidewall FLEX ZONE of tires, placement and size selection of the repair unit is vital to attaining permanent repair results. These guidelines are written to explain the selection methods and placement of the appropriate repair unit to achieve permanent repair results.

### REINFORCED SHOULDER REPAIR (RSR) UNIT PLACEMENT

The repair unit should not be installed any closer than 3/8" (10mm) to the bead toe. Shoulder and sidewall injuries generally require one anchor point in the crown area and another anchor point out of the FLEX ZONE, near the bead area of the tire. This procedure will require an up-sizing the repair unit in an effort to gain additional length, so as to accomplish proper patch placement (i.e., non-flex to non-flex position). See Figures 1 to 3.

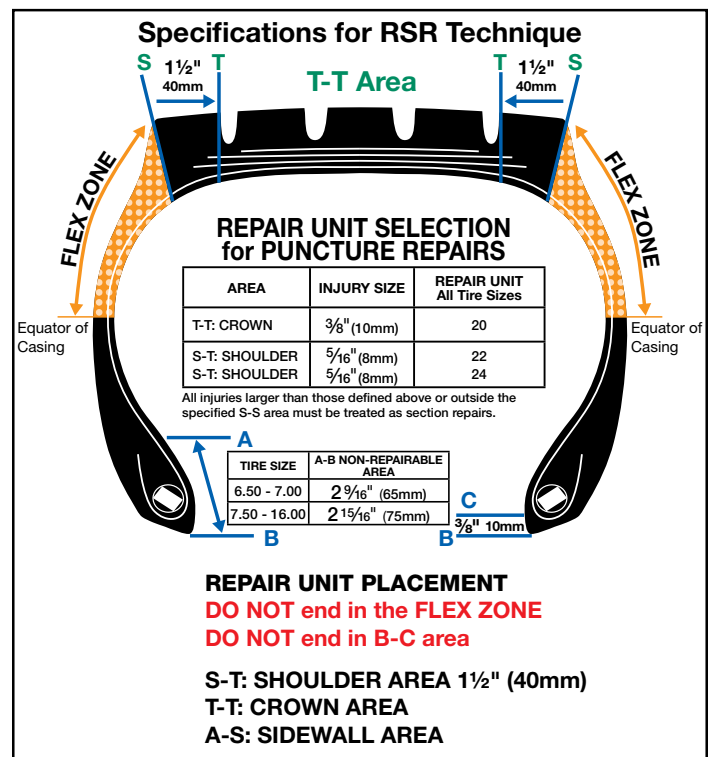


Figure 1

### BENEFIT OF OFFSETTING A REPAIR UNIT (NON-CENTERED)

#### Moves edge of repair unit away from FLEX ZONE

A longer repair unit than #20 is required for a maximum 5/16" (8mm) injury in the shoulder area. This type of injury requires the use of a #22 or #24 repair unit (if using the RSR repair recommendations). Otherwise refer to manufacturers' recommendations.

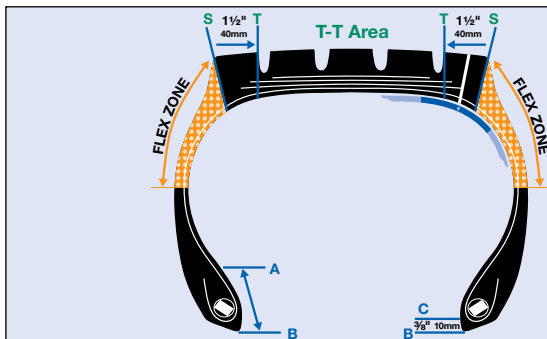
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## Summary

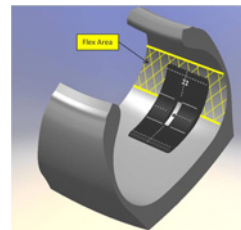
### REINFORCED SHOULDER REPAIRS

- Avoid ending repair unit reinforcement in any FLEX ZONE.
- Keep prepared damage within the guidelines of the template.
- Use a BLUE TRIANGLE on the sidewall of the tire nearest the RSR injury to indicate that a repair unit is installed.
- Educate your fleet customers and service providers.
- TRMG is working with other industry associations to revise and update repair specification changes:
  - New RSR designation
  - Fleet specifications to retreaders

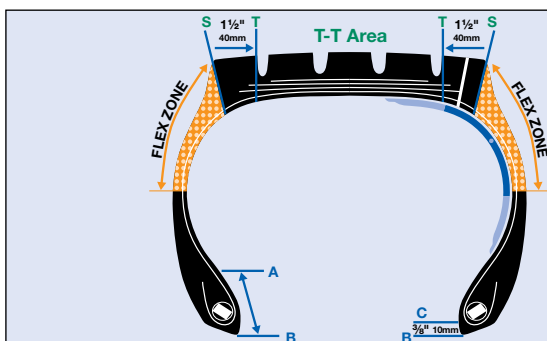
For any truck tire puncture repair where the edge of the repair reinforcement would end in the FLEX ZONE when centered, offset the repair keeping the injury in the acceptance window of the template.



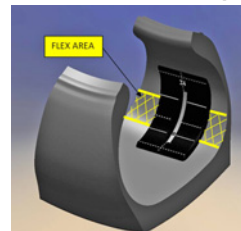
**Fig. 2 #22 Repair Replacement BEFORE OFFSET**  
(Not much better than #20)



**INCORRECT PLACEMENT**



**Fig. 3 #24 Repair Replacement AFTER OFFSET**  
(Repair unit reinforcement completely out of flex zone)



**CORRECT PLACEMENT**