

# **SUNSOUL REPAIR MANUAL**

## **Tire Patch Plug Repair Methods**

USED FOR RUN-FLAT TIRES,HIGH-PERFORMANCE TIRES AND SOUND SUPPRESSION TIRES  
STANDARD PASSENGER TIRES,LIGHT,MEDIUM & HEAVY TRUCK TIRES

**M-66**

With the increased presence of Electric Vehicles on the road, Sound Suppression tires are becoming more common. Sound Suppression tires are manufactured with a foam insert on the inside of the tire to help reduce vibration and road noise. Like any other tire, these tires can become damaged and require a repair. These tires are repairable, and the following is a guide for proper repair of Sound Suppression tires.



SUNSOUL Tire Patch Plug are designed to provide safe and permanent repair all types of SOUNDPROOF tires, run-flat tires, High-Performance tires, passenger standard tires, Steel cord light, Medium & Heavy truck tires in the market today. SUNSOUL Tire Patch Plug feature a lead wire for easy installation, and green chemical cushion gum which provides maximum adhesion both in the injury and to the inner liner of the tire.

Tire Patch Plug meet all tire industry guidelines for proper puncture repairs and fulfill tire manufacturers' warranty requirements. These guidelines state that all injuries must be filled with a rubber stem or suitable vulcanizing material and the tire must be sealed and reinforced from the inside with a repair unit.





This repair manual has been created to instruct each customer in the proper installation procedures of SUNSOUL Tire Patch Plug ensuring a safe, permanently repaired tire is returned to service every time.

# SUNSOUL Tire Patch Plug -W



## •Features

- Plug Stem repair unit require no special wire pulling tools.just insert the plug into the injury from the inside to pull out.
- Lead wire for easy installation.
- Pre-cured,self-vulcanizing inserts are easy installation.
- Sunsoul most popular repair unit for crown area repair of tires.
- Sunsoul Plug Stem Repair patch are available in a wide range of sizes and establish new standards in one-piece repair technology.
- For best result always use with SUNSOUL carbide cutters and special cement (flammable) for a permanent,reliable repair.

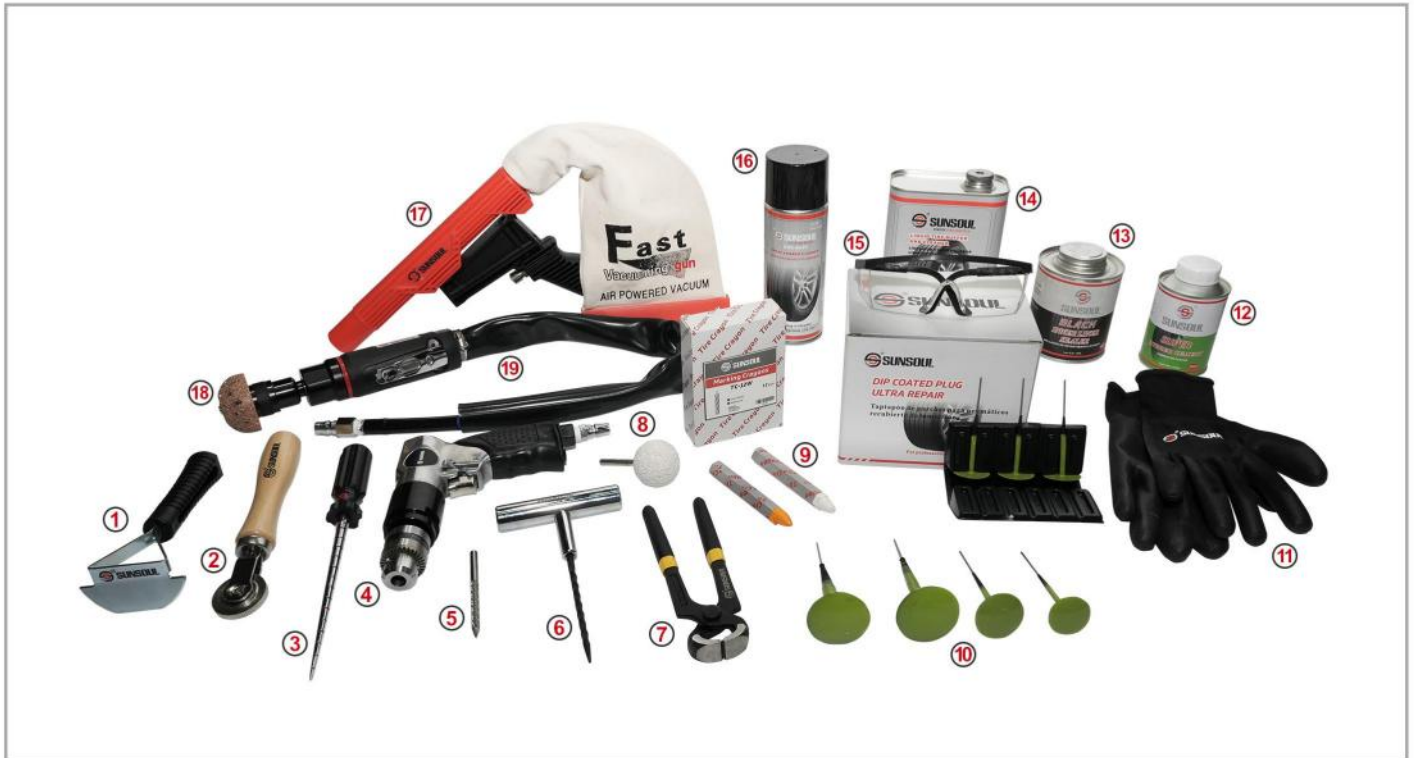
SUNSOUL code	Size(mm)	Injury hole	pcs/box	box/ctn					
W-3	30X4.0	3mm	24	24	●	●	●	●	●
W-4.5	35X5.0	4.5 mm	18	24	●	●	●	●	●
W-6	45X7.0	6mm	18	24	●	●	●	●	●
W-8	45X9.0	8mm	18	24	●	●	●		
W-10	45X10.0	10mm	18	24	●	●	●		

## Actual size illustration





# List of Tire Patch Plug Repair Materials



Number	Product Name	Model
1	Inner Liner Scraper	ABT-14B
2	Wood Handle Stitcher	T-15-4
3	Injury Checking Tool	TRT08C
4	Air Drills	AT-4031B
5	Carbide Cutter	SSCB-346-6
6	T-Handle Knurled Probe	TRT10-2F
7	Tire Nail Removal	NT-240
8	Mounted Stone Buffing Wheel	SSCB-1054
9	Tire Crayon	TC-12Y/TC-12W
10	Tire Patch Plug	W-6 Series
11	Gloves	SSNPG-02
12	Rubber Cement	GRC-250
13	Inner Liner Sealer	ILS-500
14	Liquid Tire Buff and Cleaner	LRC-946
15	Safety Glasses	SG-01
16	Spray Rubber Buff Cleaner	SRC-450
17	Air Vacuum	FVG-300P
18	Buffing Wheel	SSS-1009
19	Air Buffer	AT-7070C

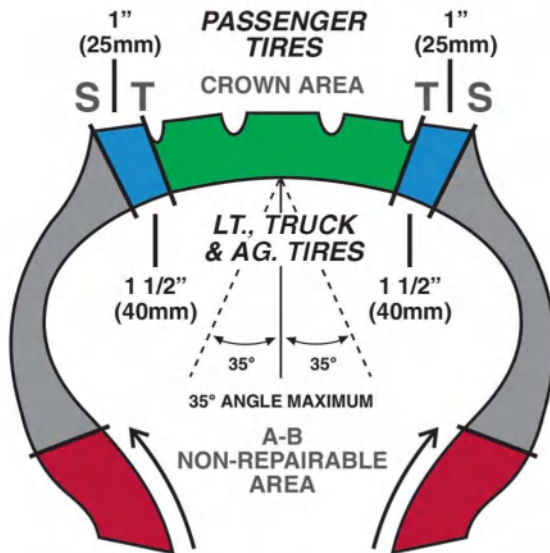
# One Piece Repair Limitations



## WARNING

Failure to properly repair tire could cause **SUDDEN TIRE FAILURE, RESULTING IN SERIOUS INJURY OR DEATH.** Carefully read and follow these instructions.

## Tire Repair Limitations (Figure A.)



Tire Patch Plug repairs are designed for use in the Crown (T-T) area of the tire only.

## TIRE PATCH PLUG REPAIR CHART

Type of Tire	Repair Unit	Carbide Cutter	Prepared Crown Injury Size Ø	Number of Repairs Per Tire	
RUN FLAT TIRE	W-3	SSCB-340-3	3mm(1/8")	1	Repairs must not overlap or be on the same radial ply
	W-4.5	SSCB-345-4.5	4.5mm(3/16")	1	
	W-6	SSCB-346-6	6mm(1/4")	1	
PERFORMANCE TIRE RATED H, V, W, Y OR Z	W-3	SSCB-340-3	3mm(1/8")	1	
	W-4.5	SSCB-345-4.5	4.5mm(3/16")	1	
	W-6	SSCB-346-6	6mm(1/4")	1	
STANDARD PASSENGER & FABRIC CORD LIGHT TRUCK TIRES	W-3	SSCB-340-3	3mm(1/8")	NO LIMIT	
	W-4.5	SSCB-345-4.5	4.5mm(3/16")	NO LIMIT	
	W-6	SSCB-346-6	6mm(1/4")	NO LIMIT	
STEEL CORD LIGHT, MEDIUM & HEAVY TRUCK TIRE	W-6	SSCB-346-6	6mm(1/4")	NO LIMIT	
	W-8	SSCB-347-8	8mm(5/16")	NO LIMIT	
	W-10	SSCB-348-10	10mm(3/8")	4	

NOTE: THIS CHART SERVES ONLY AS A SUGGESTED GUIDELINE. INDUSTRY RECOMMENDED PRACTICES AND TIRE MANUFACTURER'S RECOMMENDATIONS SHOULD ALSO BE FOLLOWED.

## Please Read Before Performing Any Tire Repair:

- Protective eyewear must be worn while repairing tires.
- Tire industry standards state that all injuries must be filled with a rubber stem or suitable vulcanizing material and a repair unit applied to the inner liner.
- Failure to follow industry recommendations may result in premature tire failure.
- Tire manufacturers' warranties and policies regarding repair of radial passenger, performance, or run flat tires may differ. These policies supersede those of SUNSOUL.
- Although a tire may be rated for high speed, SUNSOUL does not endorse the operation of a motor vehicle in an unsafe or unlawful manner.
- Chemicals used during the repair process are extremely flammable. Do not use near sources of ignition.
- Failure to follow the procedures shown in this manual may result in premature tire failure. This could result in serious injury or death.
- Failure to follow procedures in this manual will void SUNSOUL's warranty relating to Tire Patch Plug repairs. SUNSOUL will not be responsible for any damages or losses, direct or indirect, related to or associated with the failure to follow the instructions contained in this manual.



# Typical Run-flat Damage

**Both are Non-Repairable conditions**

Photo #1



*Inner liner Separation*

Photo #2



*Inner Liner Cracking*

## Tire Inspection

1. Remove the tire from the wheel for inspection and repair.
2. Thoroughly inspect the tire for damage and defects. **DO NOT** repair the tire if your inspection reveals any of the following signs of damage:
  - Damage due to being run flat or being run under inflated (See Photos 1 and 2)
  - Casing damage
  - Separation
  - Visible, bent or broken bead wires
  - Sidewall or tread cracking deeper than 2mm
  - Weather checking or cracking deeper than 2mm
  - Sidewall scuffing that exposes cord body.
3. If the tread depth is less than 2/32", 1.6mm, the tire **MUST NOT BE REPAIRED**.

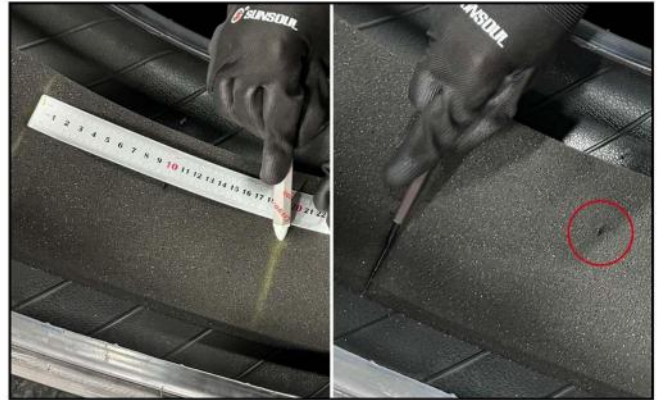
# WARNING

Failure to properly repair a tire could cause a **SUDDEN TIRE FAILURE, RESULTING IN SERIOUS INJURY OR DEATH.**  
Carefully read and follow these instructions.

# Sound Suppression Tire Pre-Treatment



1. Locate and mark the injury on the outside of the tire. Use a probe through the injury hole to determine the location of inside.



2. Draw a 20cm opening length centered on the tire wound. Use a sharp knife to cut completely in one direction.



3. Raise about 15-20cm section of silent foam, to ensure sufficient operating area.



4. Use clamps to hold the foam in place so that it doesn't fall off.



## SUNSOUL TIP:

When cutting sound-absorbing foam, it is necessary to take into account its material properties (mostly sponge, polyester fiber, or rubber materials, which are prone to generating debris and having frayed edges) and safety standards, while also balancing cutting accuracy and operational safety.

**Be careful not to damage the inner liner.**



# Tire Inspection & Pre-Cleaning



Injury size: 3mm, 1/8"  
Use W-3 with SSCB-340-3 Cutter

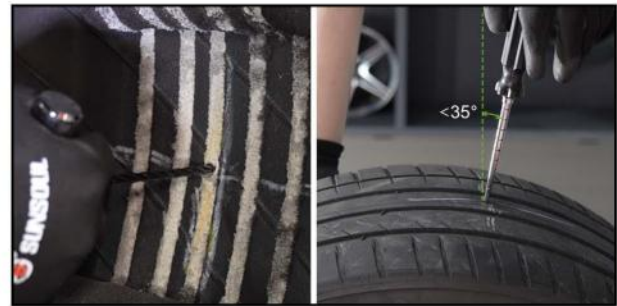
Injury size: 4.5mm, 3/16"  
Use W-4.5 with SSCB-345-4.5 Cutter

Injury size: 6mm, 1/4"  
Use W-6 with SSCB-346-6 Cutter

Injury size: 8mm, 5/16"  
Use W-8 with SSCB-347-8 Cutter



**1** Locate and use Crayon to mark all damage on the inside and outside of the tire. Pull out the nail with the Nail Removal Tool.



**2** Use the Knurled probe through the hole. Inspect the injury using Power-Awl tool. If the angle of the injury channel is less than 35 degrees, a one-piece repair system can be used.



**3** Drill the injury channel using a low speed buffer < 1800 rpm from the inside-out repeat 2-3 times.



**4** Apply Pre-buff cleaner. Scrape away contaminants while the pre-Buff still wet. Repeat process 2 -3 times.

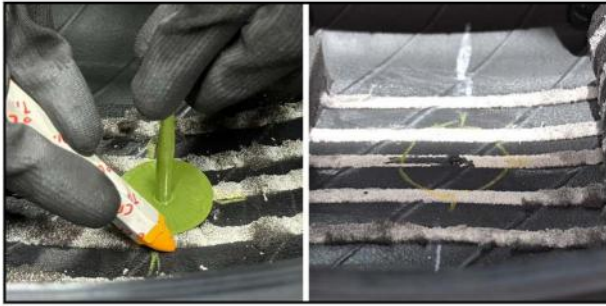


## SUNSOUL TIP:

Insert the **TRT08B** measuring tool into the injury from the inside of the tire. Apply firm pressure to the handle while rotating the tool in a circular motion. When the tool meets resistance, find the closest visible line to the inner liner. Refer to the illustration (right) to determine the injury size.



# Buffing & Cement Application



- 5** Mark the area according to the size of the patch on the inside. The marked area should be larger than the patch, at least 3mm.



- 6** Lightly buff the repair area using a low-speed buffer (< 5000 RPM) with a buffing rasp, 18 to 36 grit. Use a low-speed wire brush buffer (< 5000 RPM). Remove buffing dust and debris from the buffed area.



- 7** Use an air vacuum to thoroughly remove any scraps and debris. Apply Rubber Cement GRC-250 to the buffed surface. Allow to dry 1-3 minutes. Allow additional drying time in cold or humid conditions.



- 8** Apply Rubber Cement GRC-250 to the prepared injury using knurled probe in a clockwise direction. Repeat 2-3 times.



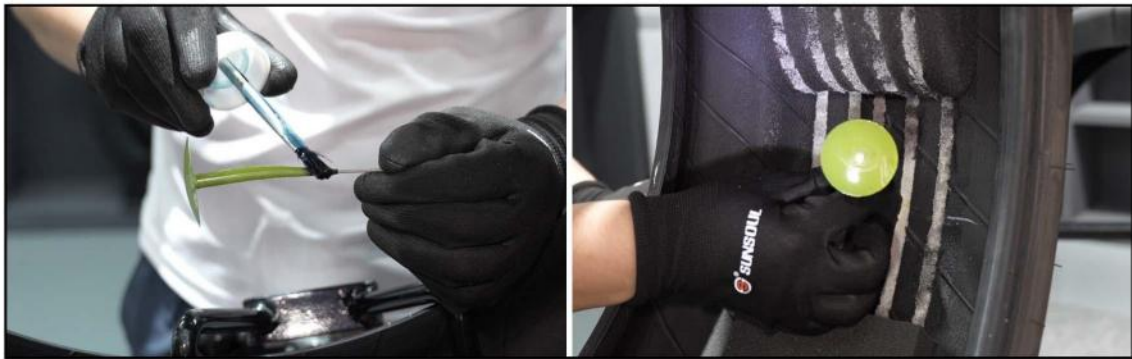
Pls always choose sunsoul rubber cement GRC-250 series



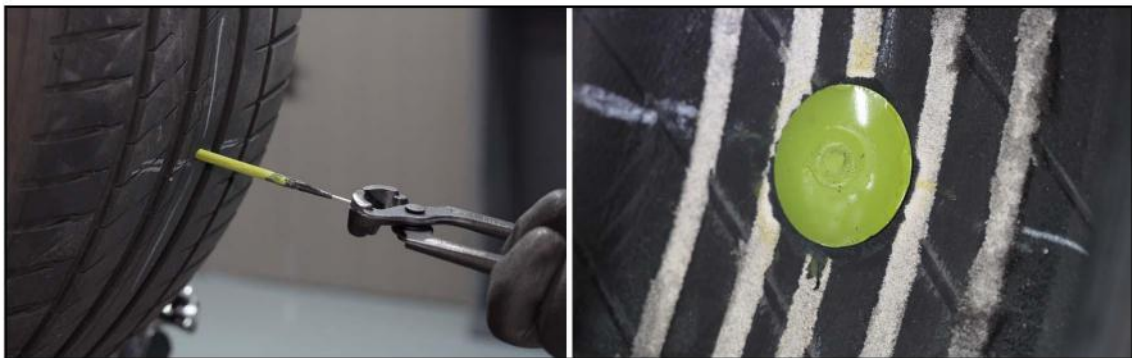
## SUNSOUL TIP:

- Do not use a compressed air line to clean the buffed area, as contamination from moisture and oil will occur.
- When cleaning the tire, care should be taken to not let anything touch the buffed surface.
- Always use SUNSOUL #SSS-1080 wire brush to remove buffing dust and debris which should be applied before use air vacuum.
- Do not use any outside heat sources or open flame to shorten the drying time of vulcanizing fluid. This will adversely affect the vulcanizing fluid and potentially lead to premature repair failure.

## Insert & Pull The Wire of Stem



- 9** Apply Rubber Cement GRC-250 to the tapered portion of the stem of plug. Insert the Tire Patch PLUG.



- 10** Grasp the wire with pliers on the outside of the tire and pull the stem plug through the tire until the cap forms a slight indentation.



### **SUNSOUL TIP:**

**SUNSOUL Tire Patch Plug** are slightly larger than the prepared injury, resulting in a compression fit with excellent adhesion. Placing a small amount of vulcanizing fluid on the stem just before inserting it into the tire injury provides lubrication for easier installation.

**Warranty** of Tire Patch Plug is 24 months and storage in room temperature 15-26°C.



# Roller Compaction & Sealing




- 11** Continue stitching toward the edges of the repair till press completely. Use Inner Liner Sealer to Seal the edges of the repair unit and the over buffed area.



- 12** With the stem plug relaxed, cut off the excess 1/8" (3mm) above the tread surface. The tire is ready to be returned to service.



 Pls always choose sunsoul inner liner sealer ILS-500 series



**SUNSOUL  
TIP:**

SUNSOUL Inner Liner Sealer ILS-500 are designed to replace the inner liner that was removed during the buffing process and promote better air retention.



**Focus on Tire Repair, Tire Retreading and Car workshop 20+ Years**

Sunsoul export our products to more than 60+ countries

Our complete line of Tire Patch  
Plug Repair all have a specific  
advantage. Watch this quick  
video to learn more!



Snap for video



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