EXHIBIT
2042

RM-8

TECH
REPAIR
MANUAL

TECH UNIVERSITY
TEACH EACH CUSTOMER HOW

Radial Truck Tire Repair Method

· PUNCTURE REPAIR · CROWN SECTION REPAIR
· SIDEWALL SECTION REPAIR

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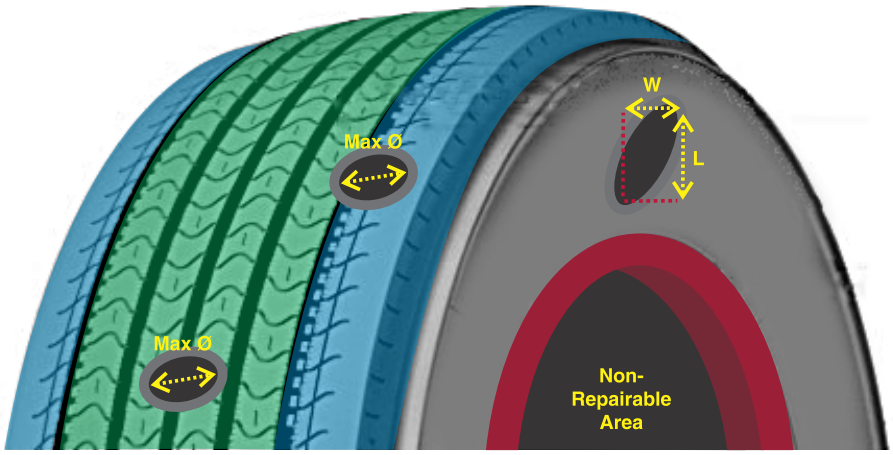
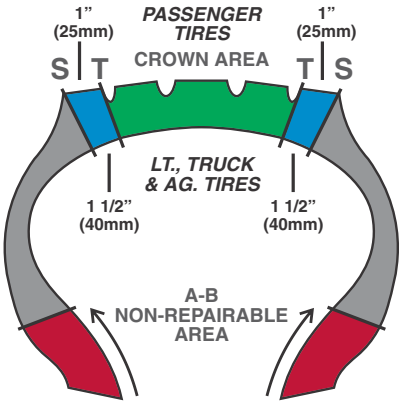
CENTECH & THERMACURE

Radial Truck Tire Repair Chart





A-B NON-REPAIRABLE AREA	
Passenger Tires	1 1/2" (40mm)
TRUCK TIRE A-B NON REPAIRABLE AREA	
6.50-7.00 (165-195)	2 1/2" (65mm)
7.50-16.00 (205-385)	3" (75mm)
17.5-23.5 (425-600)	3 1/2" (90mm)
AG TIRE A-B NON REPAIRABLE AREA	
13.6-16.9 (345-430)	4" (100mm)
18.4-20.8 (465-530)	4 1/2" (115mm)
23.1 & Larger (585 & larger)	5 1/2" (140mm)

CROWN AREA BEGINS 1 1/2" (40mm) IN FROM TREAD EDGE

Tube-Type Tire Sizes | Tubeless Tire Sizes

Sidewall Injury		Shoulder Injury Diameter (S-T Area)	Crown Injury Diameter (T-T Area)	Light Truck Through Load Range E	Truck Tire Sizes Heavy Truck	
				6.50-12.50	7.50-10.00	11.00-14.00
				LT 215-285	8-11 235/80-275/80 225/75-295/75	12-16.5 295/80-315/80 305/75-445/65 425/50-495/45
Width	Length					
			1/4" (6mm)	10 or 111	10HD or 111	10HD or 111
1/4" (6mm)	1/4" (6mm)			10	20	20
		1/4" (6mm)		22	24	26
			5/16" (8mm)	12 or 111	12HD or 111	12HD or 111
5/16" (8mm)	5/16" (8mm)			12	20	20
		5/16" (8mm)		22	24	26
			3/8" (10mm)	20 or 112	20 or 112	20 or 112
1 Cable	1 1/2" (40mm)			20	20	20
1 Cable	3 1/8" (80mm)			22	24	24
1 Cable	4 3/4" (120mm)				24	24
1 Cable	6" (150mm)				26	26
2 Cables	3/4" (20mm)			20	20	24
2 Cables	1 1/2" (40mm)			20	24	24
2 Cables	2 3/8" (60mm)			22	24	26
2 Cables	5 1/8" (130mm)				26	26
3/8" (10mm)	1 1/2" (40mm)			20	26	40
3/8" (10mm)	2 3/8" (60mm)			22	26	40
3/8" (10mm)	3 1/8" (80mm)			26	40	42
3/8" (10mm)	5 1/8" (130mm)				42	44
		3/8" (10mm)		24	26	26
			1/2" (13mm)	22	33 or 40	33 or 40
1/2" (13mm)	1 1/2" (40mm)			22	40	40
1/2" (13mm)	2 3/4" (70mm)			22	40	42
1/2" (13mm)	3 3/4" (95mm)			40	42	42
1/2" (13mm)	5 1/8" (130mm)				44	44
		1/2" (13mm)		40	40	40
			3/4" (20mm)	22	33 or 40	35 or 42
3/4" (20mm)	1" (25mm)			22	40	40
3/4" (20mm)	2 1/2" (65mm)			24	42	42
3/4" (20mm)	4 3/8" (110mm)				42	44
3/4" (20mm)	5 1/8" (130mm)				44	44
		3/4" (20mm)		40	42	42
			1" (25mm)	33 or 40	35 or 42	37 or 44
1" (25mm)	2" (50mm)			40	42	44
1" (25mm)	3 1/4" (80mm)				42	44
1" (25mm)	4" (100mm)				44	44
		1" (25mm)			44	44
			1 1/4" (32mm)		35 or 42	37 or 44
1 1/4" (32mm)	2" (50mm)				42	44
1 1/4" (32mm)	3 1/8" (80mm)				44	44
1 1/4" (32mm)	4" (100mm)					46

NOTE: THIS SECTION REPAIR CHART IS A GUIDELINE ONLY. LOAD, SPEED AND HIGHWAY APPLICATION CAN AFFECT THE LIMITATIONS OF SECTION REPAIRS.

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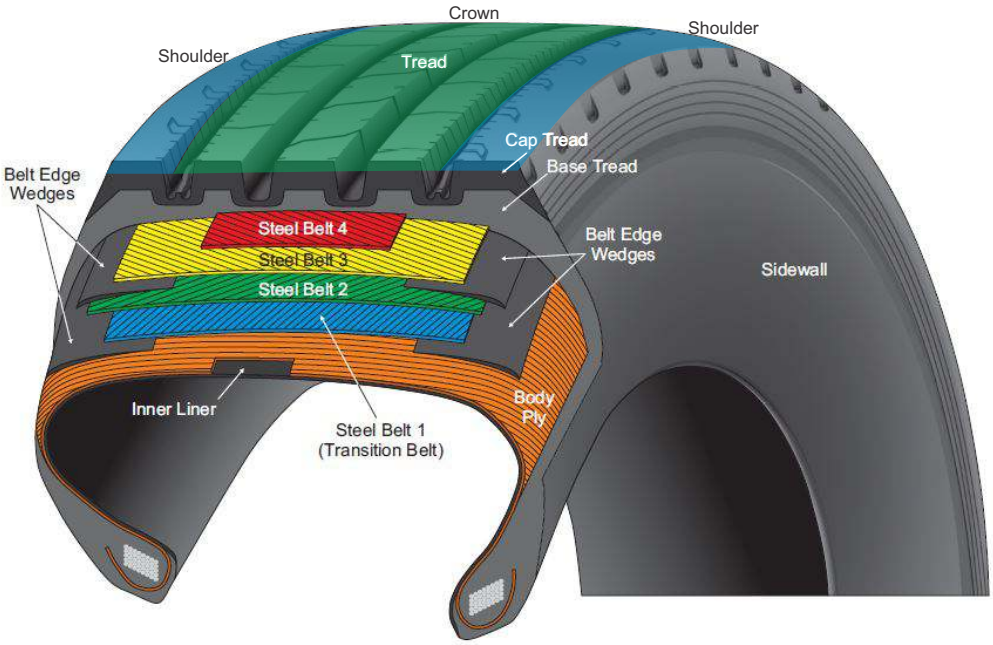
Radial Tires



Radial tires are constructed by placing one to two layers of fabric cords or a single layer of steel cords from the bead on one side of the tire, directly across to the bead on the other side. The cords run at a 90° angle to the beads and wrap around the steel bead bundles. The crown area of the tire is reinforced and stabilized by multiple layers of belts wrapped around the circumference of the tire. These belts may be a combination of fabric and steel layers, or all steel depending on whether the tire is a light truck or medium truck tire.

The beads of the tire serve as the anchoring points of the tire's internal reinforcement structure and must precisely fit the rim's mating surface. This part of the tire is considered non-repairable if the body plies or steel bead bundle is exposed or damaged.

Radial tires flex differently than bias tires. The sidewalls, reinforced with a single ply, flex outward as they pass through the footprint of the tire. The tread or crown area of the tire remains flat, providing an even footprint due to the belts acting as stabilizers.

In order to successfully repair a radial tire, the repair unit must flex in the same manner as the tire. When aligning a radial repair unit in the tire, it is extremely important to align the repair's reinforcement with the radial ply. The repair unit has directional arrows that must point toward the beads.

Tire Inspection

A thorough inspection of the casing is critical to ensuring that the repair being performed will be worth the investment. In order to perform a proper inspection of the casing, the technician will need to be well educated on inspection procedures and have a few basic tools and proper lighting at their disposal.

Recommended Tools for Tire Inspection:

- Low RPM Buffer (Max. 5,000 RPM) such as: S1036, CP873K or S1032AC
- Rotary gouge, such as #S2045, to remove loose rubber
- Radial skive brush such as: #RSB3 or #RSB3E
- #919 Probe
- Minimum 200 lumens work light such as: #JSTECHLIGHT – Tire Spreader Light Kit or #JS78606 – Rechargeable Slim LED Work Light

Tires should not be repaired if any of the following conditions are present:

1. External
   - Damage to the cords that exceeds the limitations in the Centech & Thermacure Radial Repair Chart
   - Broken, damaged, kinked or exposed bead bundle
   - Weather checking which exceeds 2/32" (1.5mm)
   - Multiple injuries to the same body cord(s)
   - Tires with 2/32" (1.5mm) or less remaining tread depth unless planned for retreading.
   - Radial and/or circumferential cracking
   - Any signs of a potential zipper rupture (ripples, bulges, or softness in the upper sidewall, or crunching or popping sounds when flexed)

2. Internal
   - Porous or loose inner liners
   - Open liner splices which expose body cords
   - Injuries to the body cords beyond repairable limits
   - Evidence of run-flat or overloading damage such as wrinkled, creased or discolored inner liner
   - Injuries in the non-repairable bead area to the body cords
   - Impact breaks

For more information on tire inspection, please refer to the "Radial Tire Conditions Analysis Guide" produced by the Technology & Maintenance Council (TMC) of the American Trucking Association.

SECTION 1

Puncture Repair

Injuries measuring 3/8" (10mm) or smaller in the Crown area or 5/16" (8mm) or smaller in the Shoulder are to be treated as puncture repairs. Larger injuries or any injury in the sidewall is treated as a section repair.

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

Locate and mark the damage on the inside and outside of the tire.

If present, remove the penetrating object. Note the angle of the injury as you remove the object.

Using a probe, determine the size and angle of the injury while checking for rust and/or separation.

Pre-clean the inner liner with TECH Rub-O-Matic #704 or 704A and a Scraper #933 2 to 3 times to remove contaminants from the inner liner.

Damaged rubber and steel should be removed from the injury using a carbide cutter on a low speed air or electric drill (1,200 RPM max.). Following the angle of the injury, drill the injury from the inside of the tire 3 to 5 times. The injury should then be drilled 3 to 5 times from the outside of the tire to ensure complete damage removal.

If necessary, use a pencil shaped aluminum oxide stone on a high speed grinder (20,000 RPM min.) to remove any remaining loose steel cables in the injury channel. Remove any scorched or burnt rubber using skive brush on a low speed buffer.

If repairing a self-sealing tire, proceed to step 1-26.

1-7.

Using a small ball rasp, remove a small area of the inner liner around the injury to inspect the casing. If splits in the rubber and/or loose cables are detected, the damage must be removed. This can be accomplished by using a larger carbide cutter. If the damage is still within puncture limitations, then proceed to the next step. If not, then proceed to the Crown Section Repair procedures on page 10 of this manual.
Note: If the injury is being filled with a stem, refer to TECH repair manual RM-5 for the proper procedures.

1-8.

Select the correct repair unit to be installed. Center the proper repair unit template over the injury and use a tire marker to outline the template for buffing. It is also acceptable to use the repair unit and mark an area at least ½" (13mm) larger than the repair unit for buffing.

1-9.

If the injury is in the outer 1.5" (40mm) of the tread, process the injury as a Reinforced Shoulder Repair. Select the appropriate size template. Position the template over the injury so the template is shifted toward the bead, keeping the injury within the template window. This will ensure that the fabric reinforcement in the repair unit extends beyond the high flex area of the tire.

1-10.

Using an RH107 or equivalent buffing wheel on a low speed buffer (max. 5,000 RPM) buff the marked area on the inner liner to a #2 buffed texture.
Note: FCRT3CR70 and RH114X buffing wheels will also result in a #2 buffed texture.

1-11.

Clean the buffed area using a soft wire brush on a low speed buffer. Remove buffing dust by lightly brushing from the right side of the buffed surface to the left side. Repeat until all dust is removed.

1-12.

Vacuum all buffing dust from the tire. Do not touch the buffed surface with the vacuum, as this could lead to contamination.

SECTION 1

Puncture Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

1-13.

Using a fluted or spiral cement tool, apply black TemVulc cement into the injury.

1-14.

Apply a thin, even coat of TemVulc cement to the buffed surface. Allow the cement to dry for 8-10 minutes. In cold and/or humid conditions, additional drying time will be needed.

1-15.

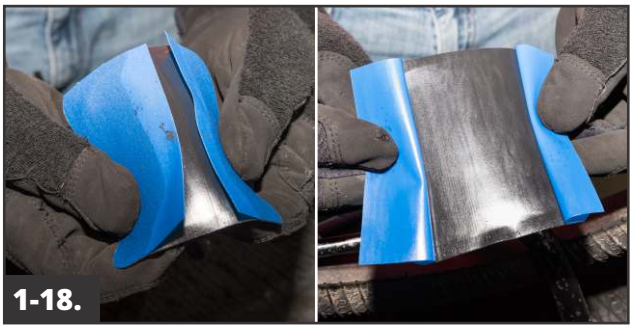
Preheat the extruder. Place a repair unit or a piece of poly over the hole on the outside of the tire. Hold firm pressure against the tire so that no air will be trapped.

1-16.

Fill the hole from the inside of the tire with LRRP rope rubber until there is a small amount of rubber above the inner liner. If a non-reinforced repair unit is used, a small amount of overfill is necessary to prevent the appearance of dimpling in the repair unit after curing. Stitch the rubber into place with a stitcher. If too much rubber remains, use a flexible knife to remove the excess rubber to avoid trapping air under the repair unit, then stitch the rubber again.

1-17.

Release the spreader so the tire is in a relaxed position before installation of the repair unit.



1-18.

Bend the repair unit back and push up on the edges of the repair with your fingers to break the perforation on the protective poly on the back of the repair. Partially remove the poly, exposing only the middle portion of the repair unit.

1-19.

Fold the repair unit and position the repair unit, aligning the beads arrows to the tire's beads if a reinforced repair is being used. Center and place the repair unit over the injury. Release the repair unit to check for proper placement and alignment. If the repair unit is not centered and/or straight, lift the repair and reposition.

1-20.

If the injury is a Reinforced Shoulder Repair, fold the repair unit, and then position the repair unit so that it is completely within the buffed area, aligning the bead arrows to the tire's beads. Release the repair unit and check the alignment. If the repair unit is not straight and/or completely within the buffed area, lift the repair unit and reposition.

1-21.

Press down the center of the repair unit with your thumb. Begin stitching from the center outward, using firm pressure. Stitch out to the folded poly.

1-22.

Remove the poly from under the repair unit and continue stitching from the center out, using firm pressure.

1-23.

Remove the clear poly from the top of the repair unit and inspect the repair unit for trapped air. If trapped air is found, stitch the repair unit again until all trapped air is removed. If the trapped air cannot be removed, remove the repair unit and return to step 1-18 and install a new repair unit.

1-24.

Initial and date the repair unit with a tire marker or silver ink pen for proper tracking.

SECTION 1

Puncture Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

1-25.

Apply Butyl Liner Repair Sealer #739 to the edge of the repair unit and to the overbuffed surface on the inner liner to retain proper air retention.

Self-Sealing Tire Puncture Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

Continued from step 1-6.

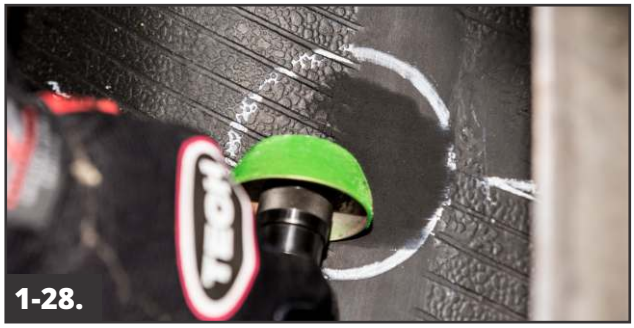
- **Puncture repairs made on Self-Sealing tires should always be repaired with the appropriate size non-fabric-reinforced Uni-Seal Ultra repair unit.**
- **If the angle of the injury is greater than 30°, or larger than 3/8" (10mm), the injury must be processed as a section repair.**
- **Any tools used to repair a Self-Sealing tire should not be used on any other type of tire due to the possible risk of contamination.**

1-26.

Inspect below the inner liner for splits leading away from the puncture using a #919 probe. If splits are detected, attempt to remove the additional damage with a larger carbide cutter. If the area is less than 3/8" (10mm) after the damage is completely removed, proceed to the next step. If not, treat the injury as a section repair.
Note: Do not use a ball rasp to check for splits when installing a Uni-Seal. This will lead to excessive dimpling of the repair.

1-27.

Center the appropriate repair template and use a tire crayon to mark the area on the inner liner for buffing. If a template is not available, center the repair unit over the injury and mark an area approximately ½" (13mm) larger than the repair unit.



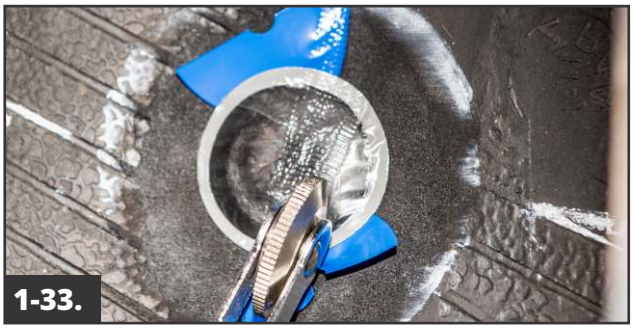
Using a fine grit buffing wheel on a low RPM air buffer (5,000 RPM max), buff the marked area on the inner liner to a #1 or #2 buffed texture, staying within the marked area.
Note: SSG170 or 230, MCM50 or 70, or 36 grit tungsten carbide buffing wheels should be used in order to achieve a #1 or #2 buffed texture.

Using a spiral cement tool, apply Chemical Vulcanizing Fluid #760 into the injury 3 to 5 times to ensure the cement is coating the entire injury channel. Leave the cement tool in the injury after the last application. Next, apply a thin, even layer of Chemical Vulcanizing Fluid to the entire buffed surface. Allow 3-5 minutes for Chemical Vulcanizing Fluid to completely dry. Additional drying time will be needed in cold or humid conditions.

Apply Chemical Vulcanizing Fluid to the tapered part of the stem only and insert the lead wire through the injury from the inside of the tire. Grasp the wire with pliers on the outside and pull the stem through the tire until the cap forms a slight indentation. Do not over pull the stem.

Clean the buffed surface with a soft wire brush on a low RPM air buffer, working from the right side of the buffed area to the left. Repeat until all buffing dust is removed. Vacuum all buffing dust from the tire. Do not touch the buffed surface with the vacuum, as this will lead to contamination.

Remove the poly from the stem by pulling on the tapered portion of the stem and twisting until it releases. Remove and reposition the poly on the cap to prevent contamination of the cushion gum and to allow for easier removal of trapped air from under the repair during installation.



Press down the repair with your thumb, working from the center out. With the poly still in place under the cap, stitch the repair from the center out using firm pressure.

Self-Sealing Tire Puncture Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

1-34.

Remove the remaining poly from under the repair unit. Press down the repair and stitch firmly in multiple directions from the center out to ensure all air is removed.

1-35.

Remove the clear poly from the top of the repair unit and inspect the repair for trapped air. If trapped air is found, stitch the repair unit again until all air is removed. If the trapped air cannot be removed, remove the repair unit. Return to step 1-30 and install a new repair unit.

1-36.

Mark and date the repair with a tire crayon or silver ink pen.

1-37.

Apply Butyl Liner Repair Sealer #739 to the edge of the repair and any buffed surface outside the repair's edge.

1-38.

Cut off the excess stem 1/8" (3mm) above the tire's outer surface. If the tread has been buffed off, use rough grit buffing wheel on a low RPM buffer and buff the stem flush with the tire's buffed surface.

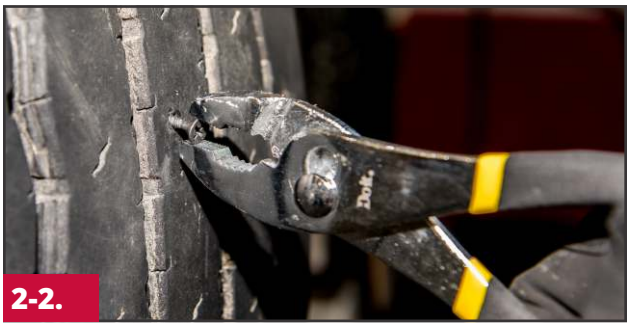
Crown Section Repair

Injuries measuring 3/8" (10mm) or smaller in the Crown area or 5/16" (8mm) or smaller in the Shoulder are to be treated as puncture repairs. Larger injuries or any injury in the sidewall is treated as a section repair.

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

2-1.

Mark the injury on both the inside and outside of the tire using a tire crayon.



2-2.

If present, remove the penetrating object. Observe the angle of the injury as you remove the object.

2-3.

Inspect the injury with a #919 probe to determine the size and angle of the injury. Also, check for any additional damage such as looseness or impact breaks. Always look for rusted wires when the tire has steel belts or steel body plies.

2-4.

Place the tire so the repair area is at the 7-9 o'clock position to allow solvent and buffing dust to fall to the bottom of the tire. Pour or spray Rub-O-Matic #704 or 704A or Citrus Based Rubber Cleaner #705C on the inner liner and use a #933 scraper to clean the inner liner. Repeat this process 2-3 times to remove any foreign materials that might contaminate the repair area or buffing tools.

2-5.

Use a knife or rotary gouge on a low RPM tool (5,000 RPM max.) to remove any loose or damaged rubber. Be careful to avoid contacting the steel cables as this could lead to additional damage.

2-6.

Use an encapsulated wire brush on a low RPM tool to remove any remaining rubber and to expose damaged cords. Be careful not to expose too much steel. This could lead to reduced adhesion of the fill material to the tire.

Crown Section Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

2-7.

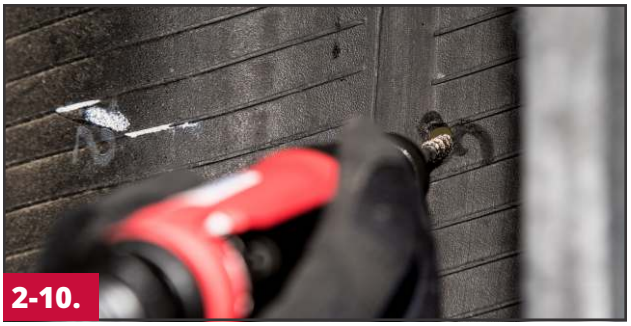
Use a carbide router on a high speed grinder (20,000 RPM min.) to remove all damaged steel and separations. Steel body cables and belts must be cut back to solid rubber. Do not use an aluminum oxide stone for this process, as they tend to scorch rubber.

2-8.

Using a probe, check to make sure that all separation has been removed.

2-9.

Use an aluminum oxide stone on a high speed grinder to dress any frayed steel cables into solid rubber.



2-10.

Remove any scorched or burned rubber using a skive brush on a low speed buffer.

2-11.

Use a medium grit rasp or encapsulated brush on a low speed buffer to buf the rubber above the steel belts. The skive should be angled at 45° and buffed to a #2 or #3 buffed texture.

2-12.

On high tread tires, the tread grooves must be buffed with a pencil rasp (#RH626 or #FCRTNR70) on a low speed buffer.

2-13.

If the tread has not been buffed off, buff the outside surface of the tire 1" (25mm) wider than the skive being prepared.

2-14.

Measure the length and width of the injury at the widest opening of exposed cord to determine the proper repair unit to be used.

2-15.

Measure the total thickness of the tire to help determine the cure time.

If using a spotter to cure fill rubber, proceed to step 2-30.

If repairing a self-sealing tire, proceed to step 2-53.

2-16.

Refer to the #CT repair unit selection chart to determine the proper repair unit to be installed.

2-17.

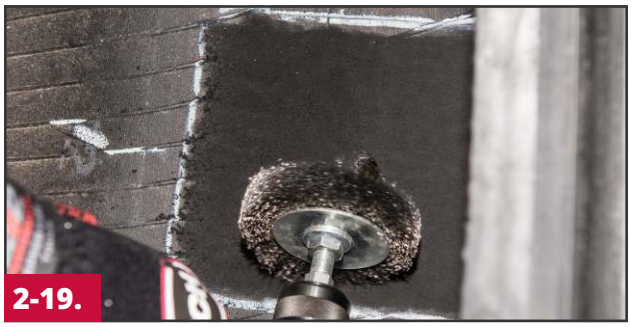
Center the appropriate repair template and use a tire crayon to mark the area on the inner liner for buffing. If a template is not available, center the repair unit over the injury and mark an area approximately ½" (13mm) larger than the repair unit.

2-18.

Using a fine grit buffing wheel (#RH107 or #FCRT3CR50 or equivalent) on a low RPM buffer (5,000 RPM Max.), buff the inner liner area marked to a #1 or #2 buffed texture, being careful to stay within the marked area.

Crown Section Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.



2-19.

Clean the buffed area on both inside and outside of the tire using a soft wire brush on a low RPM buffer. Remove the buffing dust by lightly brushing the buffed area from the right side to the left. Repeat the process a minimum of 2 – 3 times to ensure that all buffing dust is removed.

2-20.

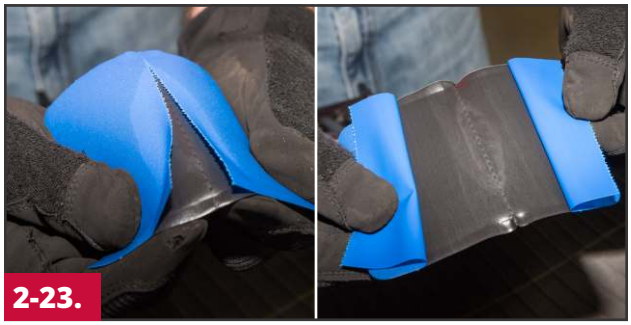
Vacuum all of the buffing dust from the tire. Do not touch the buffed surface with the vacuum as this could lead to contamination.

2-21.

Apply a thin, even coat of cement by stippling the cement onto the inner liner. Use Chemical Vulcanizing Fluid #760 or Heavy Duty Blue Vulcanizing Fluid #775 for cold, or chemical cure applications. Use Temvulc Black Cement #1082 for heat cure applications such as retreading. Allow the cement to dry thoroughly.
Note: Dry time for #760 is 3 – 5 minutes, #775 is 5 – 8 minutes and #1082 is 8 – 10 minutes. Allow additional drying time in cold and/or humid conditions.

2-22.

Once the cement is dry, release the spreader so that the tire is in a relaxed position. This will reduce the risk of bridging the repair unit.



2-23.

Break the perforation in the poly and peel back the poly approximately half way to expose the center of the repair unit's cushion gum. Use the poly to grasp the repair unit and keep the cushion gum clean.
Note: Avoid touching the cushion gum with your hands. This will lead to contamination and possible failure of the repair unit.

2-24.

Fold and position the repair unit so that the repair unit's bead arrows are pointed toward the tire's beads. Center the repair unit over the injury and place the center of the repair unit against the inner liner. Release the repair unit and check that the repair unit is properly aligned and centered. If the repair unit is not centered, and/or straight, lift and reposition the repair unit.

2-25.

Press down the center of the repair unit with your thumb or the side of your hand. Begin stitching the repair unit from the center out, using firm pressure. Stitch out to the folded poly.

2-26.

Remove the poly from under the repair unit and continue stitching from the center toward the edges of the repair unit.

2-27.

Remove the clear poly from the top of the repair unit and inspect the repair unit for trapped air. If trapped air is found, stitch the repair unit again. If the trapped air cannot be removed, remove and install a new repair unit.

2-28.

Use a dark ink pen or marker to mark the date and retread plant DOT code (if applicable) onto the repair unit.

2-29.

Apply Butyl Liner Repair Sealer #739 or Security Coat #738 to the edge of the repair unit as well as to any buffed surface not covered by the repair unit.

For Instructions on filling the skive, proceed to step 2-74.

Spotter Cure

Continued from step 2-16.

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

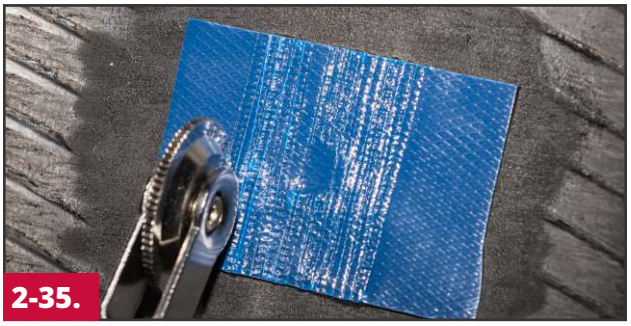
2-30. Using a fine grit buffing wheel (#RH107 or #FCRT3CR50 or equivalent) on a low RPM buffer (5,000 RPM Max.), buff an area approximately 1 ½" (40mm) in all directions around the injury.

2-31. Clean the buffed area on both inside and outside of the tire using a soft wire brush on a low RPM buffer. Remove the buffing dust by lightly brushing the buffed area from the right side to the left. Repeat the process a minimum of 2 – 3 times to ensure that all buffing dust is removed.

2-32. Vacuum all of the buffing dust from the tire. Do not touch the buffed surface with the vacuum as this could lead to contamination.

2-33. Apply a thin, even coat of Temvulc Black Cement #1082 to the buffed surfaces on both the inner liner and the outside skive. Allow to dry 8-10 minutes. More drying time may be necessary in cold and/or humid conditions.

2-34. Cut a piece of Vul-Gum cushion gum approximately 1" larger than the injury in all directions.



2-35. Apply the Vul-Gum to the buffed area on the inner liner. Stitch the Vul-Gum from the center out. Remove the poly from the Vul-Gum after it is thoroughly stitched.

2-36.

Pre-heat the extruder gun. Exerting firm pressure on the extruder, apply TRRP or LRRP rope rubber into the injury channel from the outside of the tire.

2-37.

Use a Skive packing tool (#985 or #986) or a stitcher to pack the rubber into the injury channel and to remove trapped air.

2-38.

Finish filling the cavity with rope rubber until the rubber is built up 1/8" (3mm) above the tire's surface. Stitch the rubber using firm pressure to remove trapped air. The tire is now ready for curing. Refer to page 34 for instructions on how to calculate cure times.

2-39.

After the tire is cured and has cooled to room temperature, pour or spray Rub-O-Matic #704 or 704A or Citrus Based Rubber Cleaner #705C on the inner liner and use a #933 scraper to clean the inner liner. Repeat this process 2-3 times to remove any foreign materials that might contaminate the repair area or buffing tools.

2-40.

Use the appropriate size template and a tire marker to mark an area on the inner liner for buffing. When placing the template be sure to place the lines for the reinforcement package outside of the flex area of the tire.

2-41.

Using a fine grit buffing wheel (#RH107 or #FCRT3CR50 or equivalent) on a low RPM buffer (5,000 RPM max.), buff the inner liner area marked to a #1 or #2 buffed texture, being careful to stay within the marked area.

Spotter Cure

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

2-42.

Clean the buffed area on both inside and outside of the tire using a soft wire brush (#S892) on a low RPM buffer. Remove the buffing dust by lightly brushing the buffed area from the right side to the left. Repeat the process a minimum of 2 – 3 times to ensure that all buffing dust is removed.

2-43.

Vacuum all of the buffing dust from the tire. Do not touch the buffed surface with the vacuum as this could lead to contamination.

2-44.

Apply a thin, even coat of cement by stippling the cement onto the inner liner. Use Chemical Vulcanizing Fluid #760 or Heavy Duty Blue Vulcanizing Fluid #775 for cold, or chemical cure applications. Allow the cement to dry thoroughly.
Note: Dry time for #760 is 3 – 5 minutes, #775 is 5 – 8 minutes. Allow additional drying time in cold and/or humid conditions.

2-45.

Once the cement is dry, release the spreader so that the tire is in a relaxed position prior to installing the repair unit. This will reduce the risk of bridging the repair unit.

2-46.

Break the perforation in the poly and peel back the poly approximately half way to expose the center of the repair unit's cushion gum. Use the poly to grasp the repair unit and keep the cushion gum clean.
Note: Avoid touching the cushion gum with your hands. This will lead to contamination and possible failure of the repair unit.

2-47.

Fold and position the repair unit so that the repair unit's bead arrows are pointed toward the tire's beads. Center the repair unit over the injury and place the center of the repair unit against the inner liner. Release the repair unit and check that the repair unit is properly aligned and centered. If the repair unit is not centered, and/or straight, lift and reposition the repair unit.

2-48.

Press down the center of the repair unit with your thumb or the side of your hand. Begin stitching the repair unit from the center out, using firm pressure. Stitch out to the folded poly.

2-49.

Remove the poly from under the repair unit and continue stitching from the center toward the edges of the repair unit.

2-50.

Remove the clear poly from the top of the repair unit and inspect the repair unit for trapped air. If trapped air is found, stitch the repair unit again.

2-51.

Use a dark ink pen or marker to mark the date and retread plant DOT code (if applicable) onto the repair unit.

2-52.

Apply Butyl Liner Repair Sealer #739 or Security Coat #738 to the edge of the repair unit as well as to any buffed surface not covered by the repair unit. Allow the tire to sit for 24 hours before returning to service.

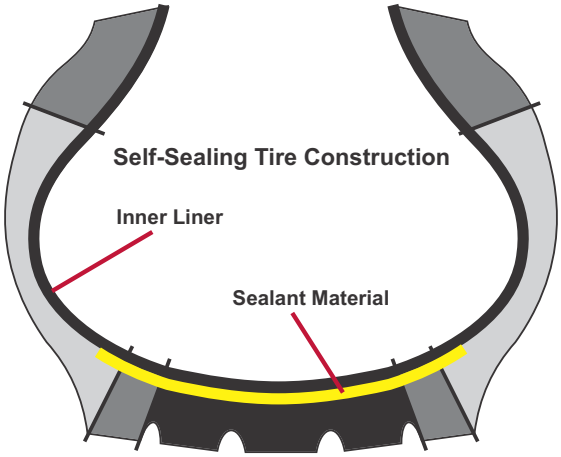
Self-Sealing Tire Section Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

Continued from step 2-16.

Note: In order to properly reinforce crown and shoulder injuries larger than 3/8" (10mm) in a Self-Sealing tire, the inner liner must be completely removed from the repair area along with the sealant material.

Any tools used to repair a Self-Sealing tire should not be used on any other type of tire due to the possible risk of contamination.



2-53.

Use the appropriate size repair template and a tire crayon to mark the area where the inner liner is to be removed. If a template is not available, mark an area at least ½" (13mm) larger than the repair unit being installed.

2-54.

Use a sharp knife #807 to cut the inner liner along the outer perimeter of the outlined area. Lift the edge of the inner liner with the knife or a probe to determine the thickness of the material to be removed.

2-55.

Using a tire regroover with a wide flat blade (W-5 or W-6 style) set to the appropriate depth, cut the inner liner and sealant material out of the tire in the outlined area, leaving a thin layer of the sealant on the casing. An alternative method is to completely remove the cut inner liner by pulling it out with a pair of pliers before using the regroover to remove the sealant material.

2-56.

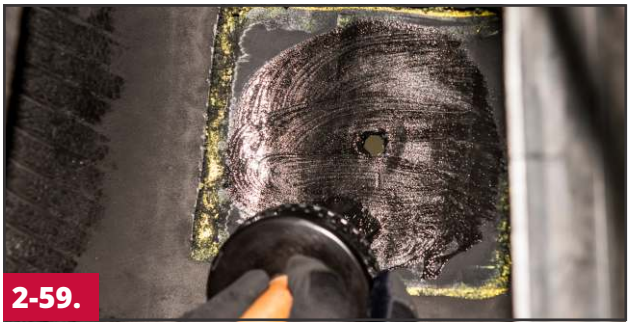
Using a twisted wire brush on a low RPM buffer, lightly buff the remaining sealant material from the exposed area. Make sure to completely remove the sealant material from the edges and corners where the inner liner has been cut away.

2-57.

Once the sealant material has been completely removed from the casing, buff the exposed area of the casing with a fine grit buffing wheel (RH107, FCRT3CR50 or equivalent) on a low RPM buffer to a #1 or #2 buffed texture. Also, buff a 1-1/2" (40mm) area on the inner liner on all sides of the exposed area with the buffing wheel rotating inward toward the cut edge of the inner liner.

2-58.

Use a soft wire brush moving from right to left to remove buffing dust and debris from the buffed area. Use a vacuum to remove this material from the tire.



2-59.

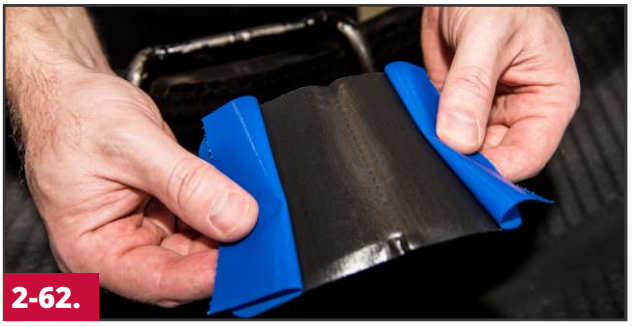
Apply a thin, even coat of Temvulc Black Cement #1082 to the entire buffed surface on both the inside and outside of the tire. Allow 8-10 minutes drying time. Additional time will be necessary in cold or humid conditions.

2-60.

Cut a piece of cushion gum to the size of the buffed surface and over buffed area on the inner liner.

2-61.

Place the cushion gum over the buffed area and stich the cushion gum from the center out. Be sure not to trap air in the transition area between the casing and the inner liner.



2-62.

Break the perforation on the back of the repair unit and expose the center of the repair, leaving the protective poly on both ends.

Self-Sealing Tire Section Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

2-63.

Center the repair unit within the prepared area and check for proper alignment of the bead arrows toward the tire's beads. Press down the center of the repair unit with your thumb and stitch the repair unit from the center out, using firm pressure.

2-64.

Remove the remaining poly from under the repair unit, press the repair unit down and continue stitching the repair unit toward the edges.

2-65.

Remove the protective poly from the top of the repair unit. Mark the date and retread plant DOT number (if applicable) onto the repair unit using a dark or silver pen.

2-66.

Apply Butyl Liner Repair Sealer #739 or Security Coat #738 to the edge of the repair unit, Vul-Gum and the over buffed area on the inner liner.

2-67.

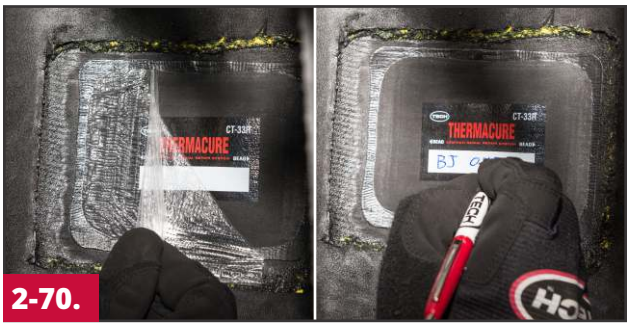
Alternate method of applying the repair unit:
Break the perforation on the back of the repair unit and expose the center of the cushion gum, leaving the protective poly on both ends.

2-68.

Center the repair unit over the injury, within the area where the inner liner is removed, and check for proper alignment of the bead arrows toward the tire's beads. Press down the repair unit with your thumb and stitch the repair unit from the center out using firm pressure.

2-69.

Remove the remaining poly from under the repair unit, press the repair unit down and continue stitching form the center out, toward the edges of the repair unit.



2-70.

Remove the protective poly from the top of the repair unit. Mark the date and retread plant DOT code (if applicable) onto the repair unit using a dark or silver pen.

2-71.

Apply a thin, even coat of Temvulc Black Cement to the outer 1" (25mm) edge of the repair unit and the buffed perimeter of the inner liner. Allow 8-10 minutes to dry.

2-72.

Cut four strips of 2" (50mm) wide Vul-Gum cushion gum #864 that are approximately 2" (50mm) longer than each side of the repair unit. Place each strip of rubber overlapping the edges of the repair unit and the inner liner and stitch. Make sure the gum covers both the edge of the repair unit and the buffed area on the inner liner to ensure that it properly contains the sealant material under the inner liner.

2-73.

Apply Butyl Liner Repair Sealer #739 or Security Coat #738 to the Vul-Gum and the over buffed area on the inner liner.

Skive Filling

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

2-74.

Pre-heat the extruder gun. Exerting firm pressure on the extruder, apply TRRP or LRRP rope rubber into the injury channel from the outside of the tire.

2-75.

Use a skive packing tool #985 or #986 or a stitcher to pack the rubber into the injury channel and to remove trapped air.

2-76.

Finish filling the cavity with rope rubber until the rubber is built up 1/8" (3mm) above the tire's surface. Stitch the rubber using frim pressure to remove trapped air. The tire is now ready for curing.

2-77.

After the tire is cured, inspect the repair unit and fill rubber for proper cure. Buff any excess fill material flush with the tread surface. If necessary, use a regroover to cut any filled-in grooves back into the tread. The tire can now be returned to service.

Sidewall Section Repair

Injuries measuring 3/8" (10mm) or smaller in the Crown area or 5/16" (8mm) or smaller in the Shoulder are to be treated as puncture repairs. Larger injuries or any injury in the sidewall is treated as a section repair.

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

3-1.

Mark the injury on both the inside and outside of the tire using a tire crayon.

3-2.

If present, remove the penetrating object. Observe the angle of the injury as you remove the object.

3-3.

Inspect the injury with a #919 probe to determine the size and angle of the injury. Also, check for any additional damage such as looseness or impact breaks. Always look for rusted wires when the tire has steel belts or steel body plies.

3-4.

Place the tire so the repair area is at the 7-9 o'clock position to allow solvent and buffing dust to fall to the bottom of the tire. Pour or spray Rub-O-Matic #704 or 704A or Citrus Based Rubber Cleaner #705C on the inner liner and use a #933 scraper to clean the inner liner. Repeat this process 2-3 times to remove any foreign materials that might contaminate the repair area or buffing tools.

3-5.

Use a knife or rotary gouge on a low RPM buffer (5,000 RPM max.) to remove all loose or damaged rubber. Be careful to avoid contacting the steel cables as this could lead to additional damage.

3-6.

Using an encapsulated brush on a low RPM buffer, remove the remaining rubber and lightly expose only the body cables believed to be damaged, the full length of the injury. Avoid putting excess pressure on the steel cables as this could lead to additional body ply damage.

Sidewall Section Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

3-7.

Using a skive knife, cut along the outer edge of the damaged cables. Leave as much rubber as possible in the tire.

3-8.

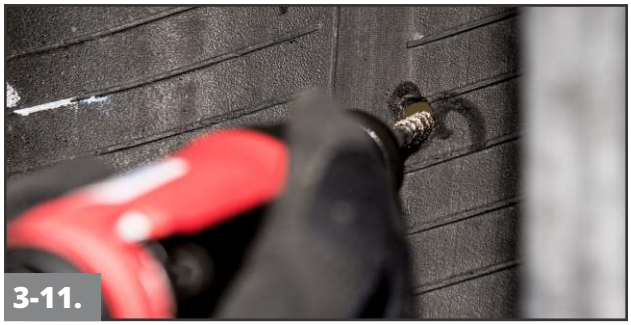
Using the appropriate carbide burr on a high RPM buffer (20,000 RPM min.), remove all damaged steel at a 90° angle to the tire. Steel cables must be cut back to solid rubber.

3-9.

Using a probe, check to make sure that all separation has been removed.

3-10.

Use an aluminum oxide stone on a high RPM buffer to dress any frayed steel cables into solid rubber. Aluminum oxide stones are only used to finish dressing steel, not for cutting through steel cables, as they tend to scorch rubber.



3-11.

Remove any scorched rubber using a skive brush on a low RPM buffer.

3-12.

Use a medium grit buffing rasp (FCBZ21470 or RH300) or encapsulated brush (S890 or S897) on a low RPM buffer to buff the skived rubber above the steel body cables. The skive should be angled to 60° and buffed to a #2 or #3 buffed texture.

3-13.

Using a fine grit buffing rasp (RH107 or FCRT3CT50) on a low RPM buffer, buff the outside surface of the tire 1" (25mm) wider than the cavity being prepared. Buffing this area to a #1 or #2 surface will promote proper bonding of the overflow rubber as the repair cures.

3-14.

Measure the width and length of the injury at the widest opening of removed body ply. Use these measurements to select the proper repair unit from the Centech & Thermacure Radial Repair Chart (#CT).

3-15.

If necessary based on the curing equipment being utilized, measure the thickness of the tire in the repair area so that curing time can be calculated. Refer to page 34 for more information on calculating cure times.

If using a spotter to cure fill rubber, proceed to step 3-33.

3-16.

Mark the buffing area on the inner liner by placing the appropriate repair template over the injury and tracing around it with a tire crayon. Another method is to place the repair unit over the injury and mark an area ½" (13mm) larger than the repair unit for buffing.

3-17.

Using a fine grit buffing rasp on a low RPM buffer (5,000 RPM max.), buff the marked area on the inner liner to a #1 or #2 buffed texture. To prevent contamination of the buffed surface, avoid buffing into the crayon marks.

3-18.

Clean the buffed surfaces on both the inside and outside of the tire using a soft wire brush on a low RPM buffer. Remove the buffing dust by lightly brushing from the right side of the buffed surface to the left side. Repeat 2-3 times or until all of the buffing dust is removed. To prevent contamination, stay within the marked area.

Sidewall Section Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

3-19.

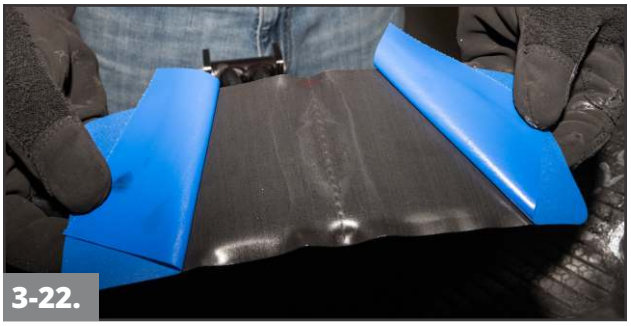
Vacuum all of the buffing dust from the tire. To avoid contamination, do not touch the buffed surface with the vacuum.

3-20.

If installing a Thermacure repair, apply a thin, even coat of TemVulc black cement to the buffed inner liner and skive areas. If installing the repair unit chemically, use Chemical Vulcanizing Fluid.
Cement Drying Times: TemVulc: 8-10 minutes; Chemical Vulcanizing Fluid: 3-5 minutes; Heavy Duty Blue Vulcanizing Fluid: 5-8 minutes. Additional time is necessary in cold and/or humid conditions.

3-21.

Release the spreader so that the beads of the tire are in a relaxed position prior to installing the repair unit. This will help prevent bridging of the repair unit.



3-22.

Break the perforation in the blue poly on the back of the repair unit. Peel the poly back on both sides to expose the center of the repair unit's cushion gum, while leaving the edges covered. Use the poly to grasp the repair unit and prevent contamination of the cushion gum.

3-23.

Fold the repair unit, then position the repair unit over the buffed surface, aligning the bead arrows toward the tire's beads. Place the repair unit over the injury and check the alignment. If the repair unit is not straight and/or properly positioned within the buffed surface, lift the repair unit and reposition.

3-24.

Press down the center of the repair unit. Begin stitching the repair unit from the center outward using firm pressure. Stitch the repair unit out to the folded poly.

3-25.

Remove the blue poly from under the repair unit and continue stitching outward using firm pressure.

3-26.

Remove the clear poly from the top of the repair unit and inspect the repair unit for trapped air. If trapped air is found, stitch the repair unit again until all air is removed. If the trapped air cannot be removed, remove and install a new repair unit.

3-27.

Mark the date and retread plant DOT code (if applicable) onto the repair unit with a dark or silver ink pen.

3-28.

Apply Butyl Liner Repair Sealer #739 or Security Coat #738 to the edge of the repair unit as well as any buffed surface beyond the edge of the repair unit.

3-29.

Using a preheated extruder, apply rope rubber into the cavity while exerting firm pressure with the extruder to prevent trapping air.

3-30.

Stitch the rope rubber with firm pressure.

SECTION 3

Sidewall Section Repair

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

3-31.

Finish filling the cavity with the extruder and stitch the rope rubber. The fill rubber should be built up to 1/8" (3mm) above the tire's outer surface. The tire is now ready for curing.

3-32.

After the tire is cured and has cooled to room temperature, buff the cured rubber on the outside of the tire flush with the tire's surface. The tire can now be returned to service.

SECTION 3

Spotter Cure

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

Continued from step 3-15.

3-33.

Using a fine grit buffing wheel (#RH107 or #FCRT3CR50 or equivalent) on a low RPM buffer (5,000 RPM max.), buff an area approximately 1 ½" (40mm) in all directions around the injury.

3-34.

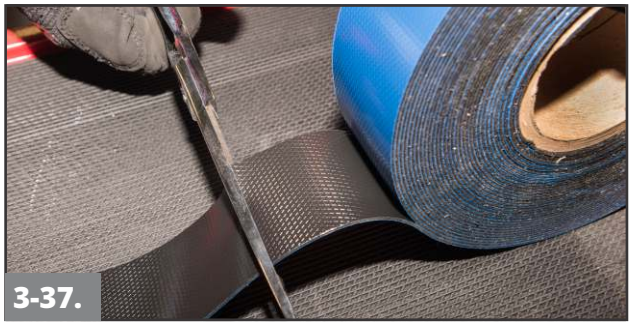
Clean the buffed area on both inside and outside of the tire using a soft wire brush on a low RPM buffer. Remove the buffing dust by lightly brushing the buffed area from the right side to the left. Repeat the process a minimum of 2 – 3 times to ensure that all buffing dust is removed.

3-35.

Vacuum all of the buffing dust from the tire. Do not touch the buffed surface with the vacuum as this could lead to contamination.

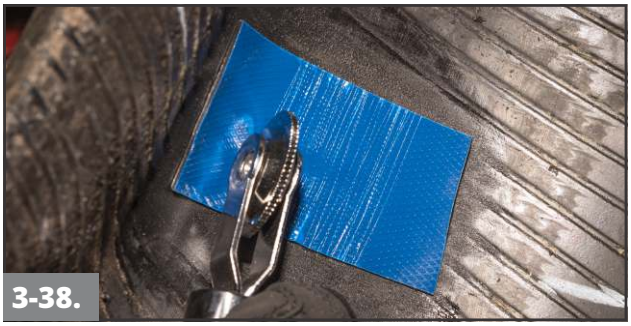
3-36.

Apply a thin, even coat of Temvulc Black Cement #1082 to the buffed surfaces on both the inner liner and the outside skive. Allow to dry 8-10 minutes. More drying time may be necessary in cold and/or humid conditions.



3-37.

Cut a piece of Vul-Gum cushion gum approximately 1" larger than the injury in all directions.



3-38.

Apply the Vul-Gum to the buffed area on the inner liner. Stitch the Vul-Gum from the center out. Remove the poly from the Vul-Gum after it is thoroughly stitched.

3-39.

Pre-heat the extruder gun. Exerting firm pressure on the extruder, apply TRRP or LRRP rope rubber into the injury channel from the outside of the tire.

3-40.

Use a Skive packing tool (#985 or #986) or a stitcher to pack the rubber into the injury channel and to remove trapped air.

Spotter Cure

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

3-41.

Finish filling the cavity with rope rubber until the rubber is built up 1/8" (3mm) above the tire's surface. Stitch the rubber using firm pressure to remove trapped air. The tire is now ready for curing.

3-42.

After the tire is cured and has cooled to room temperature, pour or spray Rub-O-Matic #704 or 704A or Citrus Based Rubber Cleaner #705C on the inner liner and use a #933 scraper to clean the inner liner. Repeat this process 2-3 times to remove any foreign materials that might contaminate the repair area or buffing tools.

3-43.

Use the appropriate size template and a tire marker to mark an area on the inner liner for buffing. When placing the template be sure to place the lines for the reinforcement package outside of the flex area of the tire.

3-44.

Using a fine grit buffing wheel (#RH107 or #FCRT3CR50 or equivalent) on a low RPM buffer (5,000 RPM max.), buff the inner liner area marked to a #1 or #2 buffed texture, being careful to stay within the marked area.

3-45.

Clean the buffed area on both inside and outside of the tire using a soft wire brush on a low RPM buffer. Remove the buffing dust by lightly brushing the buffed area from the right side to the left. Repeat the process a minimum of 2 – 3 times to ensure that all buffing dust is removed.

3-46.

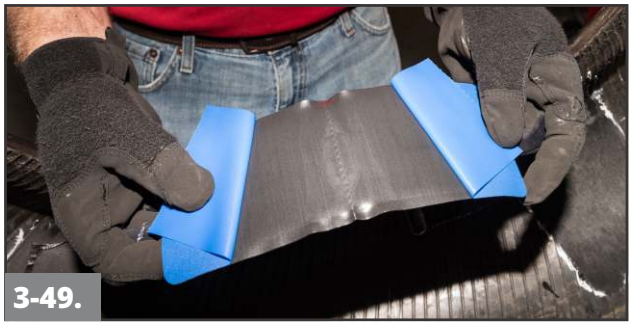
Vacuum all of the buffing dust from the tire. Do not touch the buffed surface with the vacuum as this could lead to contamination.

3-47.

Apply a thin, even coat of cement by stippling the cement onto the inner liner. Cement the tire by applying a thin, even coat of cement by stippling the cement onto the inner liner. Use Chemical Vulcanizing Fluid #760 or Heavy Duty Blue Vulcanizing Fluid #775 for cold, or chemical cure applications. Allow the cement to dry thoroughly.
Note: Dry time for #760 is 3 – 5 minutes, #775 is 5 – 8 minutes. Allow additional drying time in cold and/or humid conditions.

3-48.

Once the cement is dry, release the spreader so that the tire is in a relaxed position prior to installing the repair unit. This will reduce the risk of bridging the repair unit.



3-49.

Break the perforation in the poly and peel back the poly approximately half way to expose the center of the repair unit's cushion gum. Use the poly to grasp the repair unit and keep the cushion gum clean.
Note: Avoid touching the cushion gum with your hands. This will lead to contamination and possible failure of the repair unit.

3-50.

Fold and position the repair unit so that the repair unit's bead arrows are pointed toward the tire's beads. Center the repair unit over the injury and place the center of the repair unit against the inner liner. Release the repair unit and check that the repair unit is properly aligned and centered. If the repair unit is not centered, and/or straight, lift and reposition the repair unit.

3-51.

Press down the center of the repair unit with your thumb or the side of your hand. Begin stitching the repair unit from the center out, using firm pressure. Stitch out to the folded poly.

3-52.

Remove the poly from under the repair unit and continue stitching from the center toward the edges of the repair unit.

Spotter Cure

Caution: Always wear proper Personal Protective Equipment (PPE) when repairing tires.

2-53.

Remove the clear poly from the top of the repair unit and inspect the repair unit for trapped air. If trapped air is found, stitch the repair unit again.

2-54.

Use a dark ink pen or marker to mark the date and retread plant DOT code (if applicable) onto the repair unit.

2-55.

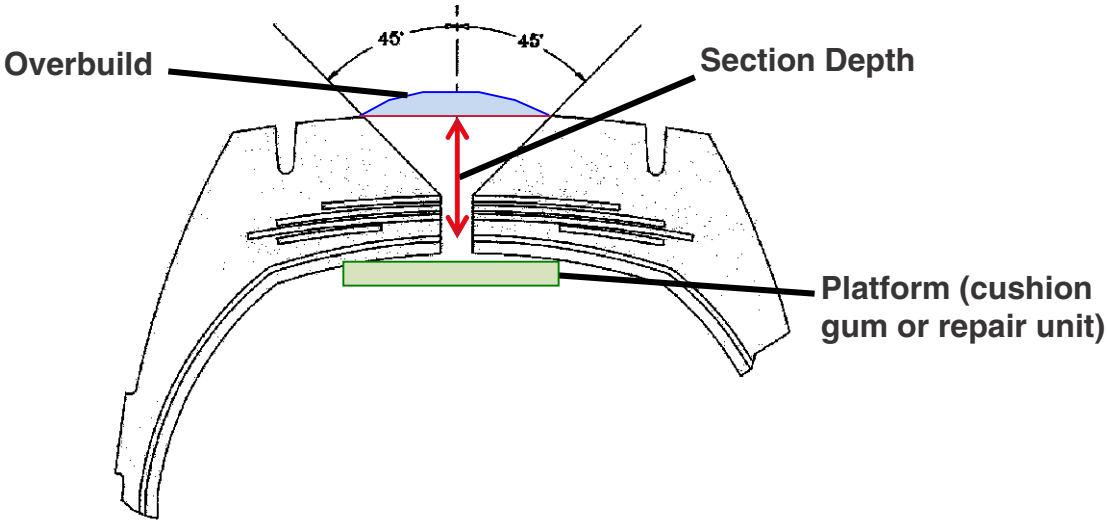
Apply Butyl Liner Repair Sealer #739 or Security Coat #738 to the edge of the repair unit as well as to any buffed surface not covered by the repair unit. Allow the tire to sit for 24 hours before returning to service.

Rubber Cure Rates

RUBBER CURE RATES AT 280-300°F / 138 -149°C

Filler Rubber	Minutes / 1/8”	Minutes / mm
Vul-Gum Cushion Gum	10	3
LRRP, TRRP Rope Rubber	6	2

Calculating Cure Time



To determine the cure time measure the section depth (thickness of the tire at the deepest point of the skive). Then add this to the thickness of the repair and overbuild of the filler rubber. The total thickness is then multiplied by the cure rate of the rubber being used. **This does not include equipment warm up time.**

EXAMPLE:

TRRP Rope Rubber = 6 minutes per 1/8”

Section Depth	=	1 ½” or 12/8”
Overbuild	=	1/4” or 2/8”
Platform	=	1/8” or 1/8”
Total thickness	=	15/8”
	X	6

Cure time: 90 minutes or 1 hour, 30 minutes

TRRP Rope Rubber = 2 minutes per mm

Section Depth	=	40mm
Overbuild	=	6mm
Platform	=	3mm
Total thickness	=	49mm
	X	2

Cure time: 98 minutes or 1 hour, 38 minutes

Recommended Tool List

Hand Tools

TECH Cat. No.	Description
913	8" Slip Joint Pliers
915	Spiral Cement Tool
919	Pointed Awl
933	Scraper
936	1/8" (3mm) Stitcher
938	1/32" (.8mm) Stitcher
939	1/4" (6mm) Stitcher
940	Skiving Knife
941	Curved Skiving Knife
942	Flexible Skiving Knife
951	White Paint Marker
951Y	Yellow Paint Marker
946W	White Mechanical Marker Pencil
946Y	Yellow Mechanical Marker Pencil
TRT105	Injury Measuring Tool
JS78606	Slim-Lite Rechargeable LED Work Light
JSTECHLIGHT	LED Spreader Light
807	Break-Off Retractable Knife
986	Skive Packing Tool

Carbide Cutters & Adaptors

TECH Cat. No.	Description
270	1/4" (6mm) Carbide Cutter
S1040	Adaptor for 270 Carbide Cutter
271	5/16" (8mm) Carbide Cutter
S1041	Adaptor for 271 Carbide Cutter
271/38	3/8" (10mm) Carbide Cutter
272	1/2" (13mm) Carbide Cutter
S1041/38	Adaptor for 271/38 & 272 Carbide Cutters

Repair Units

TECH Cat. No.	Description
111	2 1/2" (65mm) Round All Purpose Repair
112	3 1/2" (90mm) Square Multi Purpose Repair
170	CT-20 Centech Radial Repair
174	CT-24 Centech Radial Repair
176	CT-26 Centech Radial Repair
177	CT-33 Centech Radial Crown Only Repair
178	CT-35 Centech Radial Crown Only Repair
179	CT-37 Centech Radial Crown Only Repair
180	CT-40 Centech Radial Crown Only Repair
182	CT-42 Centech Radial Repair
184	CT-44 Centech Radial Repair
RTMS	Repair Template Set
TRRP	Rope Rubber

*For Thermacure Repairs add suffix "R" to end of item number.

Contour Buffing Wheels & Inserts

TECH Cat. No.	Description
RH107	2.5"(64mm) 170 SSG Grit Contour Wheel
RH109	2.5"(64mm) 230 SSG Grit Contour Wheel
RH152	Poly Insert for 3" Rubberhog Contour Wheels
FCRT25 CR50	2.5"(64mm) 50 MCM Grit Contour Wheel
RH112	3" (75mm) 170 SSG Grit Contour Wheel
RH114X	3" (75mm) 70 MCM Grit Contour Wheel
RH154	Poly Insert for 2.5" Rubberhog Contour Wheels
FCRT3CR50	3" (75mm) 50 Grit Contour Wheel
FCRT3CR70	3" (75mm) 70 Grit Contour Wheel
RH120X	3.5" (90mm) 70 MCM Grit Contour Wheel
RH156	Poly Insert for 3.5" Rubberhog Contour Wheels
FCRT35CR70	3.5" (90mm) 70 Grit Contour Wheel
S2020	3" (75mm) 36 Grit Tungsten Carbide Buffing Wheel
S2021	3" (75mm) 16 Grit Tungsten Carbide Buffing Wheel
S2022	4" (100mm) 36 Grit Tungsten Carbide Buffing Wheel
S2023	4" (100mm) 16 Grit Tungsten Carbide Buffing Wheel

Buzzout Wheels

TECH Cat. No.	Description
RH300	1/4" x 2" (6mmx50mm) 230 SSG Grit Buzzout Wheel
RH302	1/4" x 2" (6mmx50mm) 390 SSG Grit Buzzout Wheel
RH619	1/4" x 1-3/8"" (6mmx35mm) 330 SSG Grit Buzzout Wheel
FCBZ21470	1/4" x 2" (6mmx50mm) 70 Grit Buzzout Wheel
FCBZ21490	1/4" x 2" (6mmx50mm) 90 Grit Buzzout Wheel
S2000	1/4" x 2" (6mmx50mm) 16 Grit Tungsten Buzzout Wheel
S2001	1/4" x 2" (6mmx50mm) 390 SSG Grit Buzzout Wheel

Recommended Tool List

Carbide Burrs

TECH Cat. No.	Description
280	Mini Carbide Burr
283	Mini Carbide Router
284	Carbide Router
284C	Coarse Carbide Router

Aluminum Oxide Stones

TECH Cat. No.	Description
S870	Mini Pencil Stone
S872	Pencil Stone
S872S	Small Pencil Stone
S873	Large Mushroom Stone 1-5/8" (40mm) dia.
S874	Mini Mushroom Stone 1/2" (13mm) dia.
S875	Conical Stone
S879	Mushroom Stone 1-1/4" (32mm) dia.

Brushes

TECH Cat. No.	Description
S890	Plastic Encapsulated Brush
S892	3" (75mm) Soft Wire Cleaning Brush
S893	1-1/2" (32mm) Soft Wire Brush
S896	Stem Skive Brush
S897	Rubber Encapsulated Brush
RSB3	3" (75mm) Radial Skive Brush
RSB3E	3" (75mm) Encapsulated Radial Skive Brush

Air Tools

TECH Cat. No.	Description
CP871K	22,000 RPM High Speed Grinder
CP873K	2,800 RPM Low Speed Buffer
S1032AC	2,600 RPM Low Speed Buffer
S1035	500 RPM Low Speed Reversible Air Drill
CP9288	600 RPM Low Speed Air Drill
S180	Nail Hole Extruder Gun
S182	Standard Extruder Gun

Rotary Gouges

TECH Cat. No.	Description
S2042	2" (50mm) Diameter Gouge
S2045	1-1/4" (30mm) Diameter Gouge

Ball, Cone & Pencil Rasps

TECH Cat. No.	Description
RH601	5/8" (15mm) 330SSG Grit Ball Rasp
RH603	7/8" (22mm) 330 SSG Grit Ball Rasp
RH611	5/8" (15mm) 330SSG Grit Cone Rasp
RH613	7/8" (22mm) 330 SSG Grit Cone Rasp
RH626	1/4" (6mm) 330 SSG Grit Pencil Rasp
FCRTS170	1" (25mm) 70 Grit Ball Rasp
FCRTS190	1" (25mm) 90 Grit Ball Rasp
FCRT78 CONE70	7/8" (22mm) 70 Grit Cone Rasp
FCRT78 CONE90	7/8" (22mm) 90 Grit Cone Rasp
S2006	1/4" (6mm) 16 Grit Tungsten Carbide Pencil Rasp
S2007	1/4" (6mm) 36 Grit Tungsten Carbide Pencil Rasp
S2010	16 Grit Tungsten Carbide Cone Rasp
S2011	36 Grit Tungsten Carbide Cone Rasp

Quick Change Adaptors

TECH Cat. No.	Description
S1044	Quick Change Adaptor for 1/4" (6mm) Shaft
S1046	1/2" (13mm) Long Quick Change Adaptor
S1046D	Quick Change Adaptor for RSB3 & RSB3E Brushes
S1047	1" (25mm) Long Quick Change Adaptor
S1047XL	1-3/4" (45mm) Long Quick Change Adaptor

Chemicals

TECH Cat. No.	Description
704	Rub-O-Matic 1 Quart / 945 ml can
704A	Rub-O-Matic 11 oz Aerosol Spray Can
760	Chemical Vulcanizing Fluid 8 oz (235 ml)
775	Heavy Duty Blue Vulc. Fluid 8 oz (235 ml)
776	Heavy Duty Blue Vulc. Fluid1 qt (945 ml)
1082	Temvulc Black Cement 1 qt (945ml)
738	Security Coat 16 oz (470 ml)
739	Butyl Liner Repair Sealer 16 oz (470 ml)
975	Atomizer for 704

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