

## ***Retread Tire Factory Tour Video Transcript***

### ***(Title Graphic) Retread Tire Factory Tour***

***(Voice Over)*** Let's take a look at a modern retread plant. So you can see how retreads will save your fleet money, and provide the same safety and performance as higher priced new tires while at the same time, helping the environment. Retreads may look round and black, but they are really very green, with one of the highest post-consumer contents of any recycled product. And now it's time for the tour...

### ***(TDS Plant Manager Jon Ogilvie)***

"Hi, I'm Jon Ogilvie and I'll be walking you through your retread plant tour today. This is the first stage of our process, *initial inspection*.

### ***(Title Graphic; "INITIAL INSPECTION")***

#### ***(Shots of employees working at factory, Jon describes their actions)***

The first thing he's going to do is a visual inspection of the casing. He's going to be looking for any damage to the casing. He's going to be looking for nail holes, section repairs, any bead damage. All the tires come in with a barcode which is attached at our point of sale, that barcode gives us all the information as far as customer, what we're going to do with the casing, retread design, any particular instructions that you want done with your casing, all that is included on the barcode. After he's concluded the casing is okay, it's going to go onto the machines. The machine is going to inject 25000 volts through the casing. If it detects a nail hole the machine's going to stop, he'll be able to pinpoint exactly where the hole is at. Once he's completely done inspecting the tire, he's going to verify on a computer that it's all good, it's all ready to go down the line, and then we'll move on to our next phase.

### ***(Title Graphic; "SHEAROGRAPHY")***

After our tires pass initial inspection, then they come to the shearography machine. The tire's going to get up into the machine. Inside there's two laser cameras that are going to come up through the center of the casing. The cameras are going to pick up any movement in the casing. That's what we're looking for. Any air that's trapped inside the casing would be a separation, and that's what it's going to find. The cameras are actually going to cut the tire up into nine different segments, and in each segment, we're going to get 28 different pictures of that segment. It's going to take about 3 minutes to do the whole process. Once it's done, we can look at the monitor. We can find any separation from bead to bead, meaning, from one bead all the way around the sidewall down the other sidewall to the other bead. We can look at the entire casing. If there's any separation in the casing, this machine will find it.

### ***(Title Graphic; "BUFFING")***

This is the buffing stage of our operation. At this stage we mount the tire on the buffer, on an expandable hub. It inflates the tire. There's a rasp on there with about fifty blades on it that is going to shave the tread design off. As the tire rotates in one direction, the blades are rotating in the opposite. He's going to make several passes back and forth until we get 3/32 of an inch left of rubber. So all we're doing is removing the tread design and leaving a little bit of rubber on top of the steel. Once he's finished removing all of the tread design, he's going to trim the shoulders down to a specified tread size. Every casing that comes into this plant, because we are ISOP certified, must be done exactly the same way every time. When he's completed buffing the tire, he'll deflate it; put it up on the monorail. Everything from here on out... every tire's up on the monorail, there's no more rolling the tires around on the ground. The rubber dust that's created from this operation is sucked out of the plant into a trailer. Once the trailer is full, we have a company that picks up the trailer, and they make the rubber mats, that you see he's standing on here. 100% of this material is used, nothing is wasted here.

**(Title Graphic; "SKIVING")**

This is what we call skiving. He's going to use a series of small hand grinders and buffing tools to take out all of the damage. Any raw cuts got to be completely removed. Anywhere there's exposed steel it's got to be cleaned up and removed. He's also looking for nail holes. Anything, in the state of California, that's 50 percent of the way through the casing is an automatic repair. So he probes the casing and he's through half of the ply's in there, he's going to mark it for repair and then go to the repair station to be fixed properly. Once he's finished skiving the tire, he's going to remove loose dirt that's on the casing using a wire brush. We don't want any loose rubber dust on there because we'll lose adhesion. Next thing he's going to do is brand the casing with our DOT code and the date that this tire was produced.

**(Title Graphic; "PATCH and REPAIR")** This is our repair station. The repairs have already been marked before they got to this area. What he's going to do is remove all the injury, it's very important to remove all of the injury, all of the damage to the casing. Once he's removed all the damage to the casing, he's going to prepare a surface inside the casing for a patch. He's going to clean it, he's going to cement the hole area, inside and out, let that dry for about ten minutes. For a proper repair, you never just want to pull a plug through the casing. You want to actually remove all of the damage, and then you are going to fill it with raw rubber, so you have a solid plug from inside to outside. You're also going to have a tapered edge on the outside and a tapered edge on the inside so that there's no way that the plug can be ejected. Then they'll put a patch behind that, which, the way these patches are made, they are actually stronger than the sidewall casing was when it was new. Even with a 3/4 inch hole in the tread area, or, a 3/8 inch gash in the sidewall, we can repair that tire successfully, it can run down the road and we can retread it several times over.

**(Title Graphic; "RUBBER APPLIED")**. At this stage of the process the casing is ready for rubber. What we're going to do first is we're going to mount the tire on the machine. Inflate the casing. Then we're going to move the tire to the head of the machine. Coming through the machine is what we call 'raw rubber'. It's going to go up through an auger, it's going to be heated and churned and it's going to come out kind of like Playdoh<sup>®</sup>. It's going to be forced onto the machine... it's going to cover the casing from buffed edge to buffed edge, all the way around. At the same time, it's applying this thin layer of raw rubber, it's filling all of our skive out, any of the repairs we've done on the casing, so you have a nice smooth surface for the tread to adhere to.

**(Title Graphic; "TREAD APPLIED")** Now we're going to apply the tread. Our tread, being a pre-cured rubber, already comes in a tread design. We have many different sizes, shapes, different tread designs: trailers, traction, whichever you prefer. The back of the tread has a light buffed texture to it, that will allow the cushion to adhere to it. The tire, of course, has a buffed edge, that allows the rubber to adhere to it. The machine is going to apply the tread automatically; all he has to do is load the rubber. It's going to go through the machine, it's going to come around 'til it hits a laser switch which is going to shut it off at a determined length so it's exactly right when he puts the splice together, it's just the perfect length. When he's all done with that he will put a weight (?) pad on the tire. Then he sends it down the line to the next station.

**(The video stops suddenly with a scratched record sound effect. Harvey Brodsky appears.)**

*Harvey:* "What!? Staples on a tire, where the tread is spliced together? You saw staples going in! Don't worry about it! The staples are coming out and the splice happens to be the strongest part of the tire and not the weakest. Have you ever seen a weld in metal? Well you know the weld is the strongest part and the same with the splice on retreaded tires. How do I know that retreads are strong? I drive on them! I'm Harvey Brodsky and I'm the managing director of the 'Tire Retread and Repair Information Bureau'. And now we're going to go on with the Retread Plant tour."

**(Video continues with shots of employees working at factory, Jon describes their actions)**

**(Title Graphic; "ENVELOPE")** This is where we install the envelope, which is the first step out of three in the chamber area. We're going to select an envelope to fit on the casing. We have many different sizes to fit the

different size casings. He's going to wrap the edge of the envelope around the edge of the machine. He's going to spread it open. Then he's going to insert the tire into the envelope. This envelope is what allows us to give direct pressure on the casing. Okay, he's going to close the envelope now, open the machine up, now the casing is ready to move onto the next stage.

**(Title Graphic; "VACUUM SEAL")** Now we've got an envelope on there, we have the arc bands on there, we just need to make sure we have a good tight seal. Once we're done with the vacuum check, we have a good solid seal; we're ready to go into the chamber.

**(Title Graphic; "CURE CHAMBER")** This is our cure chamber area. This chamber cures at 210 degrees. We've got to have time, which is three hours and forty minutes, then we have air pressure at 85 psi, directly on that tread area. Once we've unloaded the chamber and bring them back over here, we are going to reverse the process we did earlier- we're going to pull the arc bands off, then we're going to take the envelope off, and then after that, we're ready for final inspection.

**(Title Graphic; "FINAL INSPECTION")** This is the final stage of the retread process; we're going to a final inspection. This is a lot like 'initial' where we are going to do a visual inspection of the casing, we're going to run the non-destructive technology inspection machine, a second time, so, this is the second time we run it across here, just to assure that we catch all the nail holes. We're going to shoot the barcode, pull it up on the computer, he's going to verify that we have the correct tread design on there, then he's going to final it, and we're going to print a tag. The very last thing we're going to do is, we're going to paint the casing so that it looks like a brand new tire. In some cases, this will actually run better than a brand new tire... you get more mileage out of it. We're going to tag it, it's got all of our customer information, all the information about everything we did to it as far as tread design, repair, and it's ready for delivery. I just want to thank you, my crew wants to thank you for watching this videotape, and remember, that what we're doing here, is recycling tires and keeping them out of our landfills.

**Credit roll. Copyright 2007, 2011**

**Total run time of video: 11:07**