DTU

DISCOUNT TIRE UNIVERSITY

INFLATING TIRES

PARTICIPANT GUIDE

INFLATING TIRES

INTRODUCTION

Now that you know how to change tires, the next step is to inflate them. In this training, we will discuss:

- Safety and Service Guidelines
- Do Not Inflate or Service Best Practices
- Proper Inflation Pressure
- Inflating Assemblies: Seal, Seat, and Set
- Inflating Loose Assemblies
- Inflating Assemblies on the Vehicle

CRITICAL TO SAFETY

CRITICAL TO QUALITY

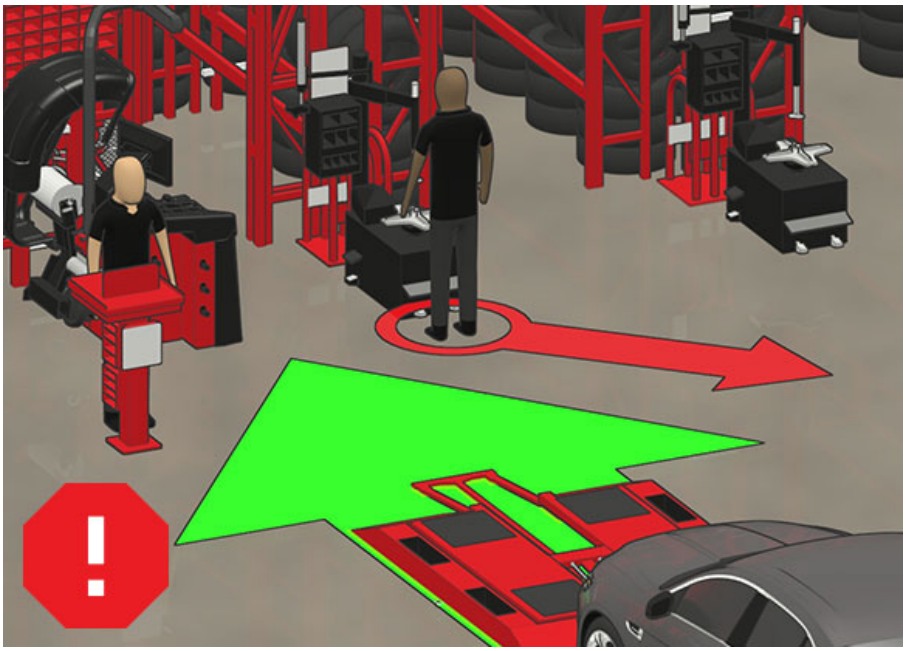
CRITICAL TO SAFETY are processes that must be followed to ensure a safer working environment for Our People, provide a quality service for Our Customers, and adhere to Discount Tire's core values with regard to Integrity, Honesty, and doing what we believe is right.

CRITICAL TO QUALITY are processes that must be followed to ensure the quality of our work, increase overall delivery, and adhere to Discount Tire's core values with regard to Integrity, Honesty, and doing what we believe is right.

INFLATING TIRES

SAFETY AND SERVICE GUIDELINES

Before we start to break down the process of inflating tires, we want to take a moment to highlight safety and personal protective equipment (PPE).



CRITICAL TO SAFETY

Remember, you can never be in the path of a vehicle when it is running. Do not begin to inflate a tire if the inflation device you are going to use puts you in the path of a vehicle that is running. If you are in the process of inflating a tire, stop and move out of the path of the vehicle until it has come to a complete stop and the ignition is off (when being pulled in) or you are no longer in the path of the vehicle (when being pulled out).

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SAFETY AND SERVICE GUIDELINES *(continued)*

Safety Glasses

Safety glasses must be worn at all times when working in the Service Area.

Gloves are strongly suggested to be worn at all times when working in the Service Area due to the frequency of dealing with foreign objects, exposed cords, and more.

INFLATING TIRES

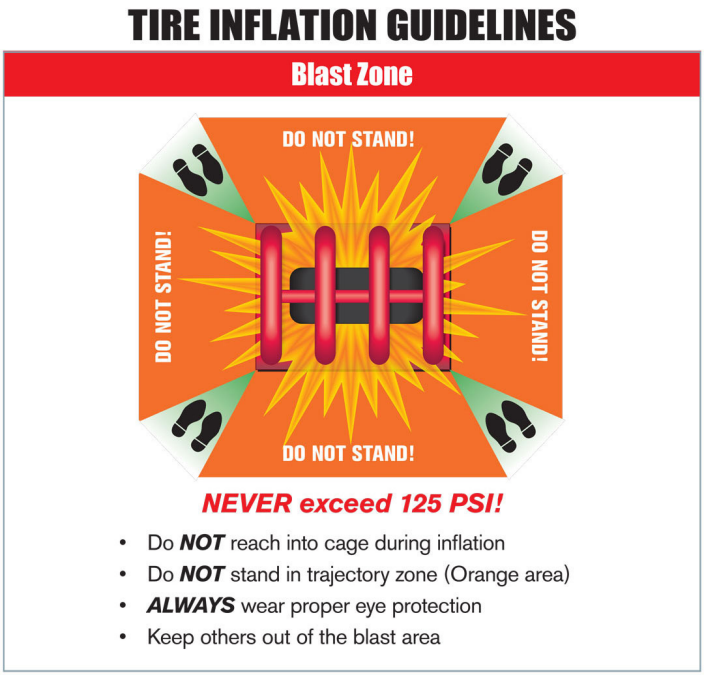
SAFETY AND SERVICE GUIDELINES *(continued)*

Video - Inflation Cage and Blast Zones

As you can see in the video, tires have a huge amount of energy stored in them. If they fail, there is the potential to cause significant damage. This is why we use an inflation cage every time we inflate a tire not bolted onto a vehicle.

Now let's take a look at what happens when a tire fails inside an inflation cage. In this example, you can see how the inflation cage helps to contain the explosion, reducing the chance of injury.

The inflation cage helps to contain the tire and wheel but is not a sealed container. To further reduce the chance of injury, you must move outside of the blast zone shown in the image. You will also see this posted above the inflation station in your store.



INFLATING TIRES

SAFETY AND SERVICE GUIDELINES *(continued)*

Inflation Devices

You will be using two types of devices to inflate tires: automatic inflation (Autoflate) devices and the MAST air gauge.

Autoflate Devices

The majority of tires that we service can be inflated using the Autoflate devices.

There are two different types of Autoflate devices, one labeled Cage and one labeled Air-Check.

Both Autoflate devices have safety features built into them specifically tailored to how they are used.

Cage Autoflate Device

The Autoflate labeled Cage can be found next to each Air Cage and is intended to inflate tires with little to no air pressure directly after they have been mounted from the tire changer.

These Autoflate devices have a Safety Stop feature and an Emergency Stop valve for when the tire's inflation pressure reaches 40 PSI and the beads have not seated.

We will cover these in more detail later on.

INFLATING TIRES

SAFETY AND SERVICE GUIDELINES *(continued)*

Air-Check AutoFlate

The Air-Check Autoflate is usually found in the Air Check Bay and Service Bays. It is intended to inflate tires that are still bolted to a vehicle.

These Autoflate devices include a feature that will not allow inflation if the current pressure in the tire in less than 15 PSI.

MAST Air Gauge

The MAST air gauge is a more basic device that should only be used when inflating over 80 PSI and on small assemblies. This is because the automatic inflation devices are not designed or calibrated for these scenarios.

CRITICAL TO SAFETY

Never inflate a tire over 125 PSI.

INFLATING TIRES

DO NOT INFLATE OR SERVICE BEST PRACTICES

In the previous section, you watched a video that shows exactly how devastating the failure of a tire can be. In this section, we will highlight some of the various items that we cannot adjust the pressure or connect to an inflation device.

We do not inflate:

- 19.5, 22.5 or 24.5 inch Commercial Tires
- Portable Air Tanks
- Plastic Wheels
- Bolt Together Wheels / Split Rims
- Passenger(p)/Light Truck(LT) tires less than 15 PSI (w/o internal inspection)
- Steel Sidewall Tires 15 PSI or more below recommended inflation pressure (w/o internal inspection)

CRITICAL TO SAFETY

There are a limited number of examples where we can inflate an assembly that we cannot service, or put into service.

- Tire is 10 years old
- Load capacity exceeded on vehicle
- 2/32nds or less of tread remaining
- Non-RMA repairs have been performed

However, this can only be done with authorization from a Store Manager or Senior Assistant Manager. Keep in mind, even though you may be authorized to inflate in these cases, you are **NEVER** authorized to mount them on a wheel, balance, repair, or install on a vehicle's axle.

Definitions:
Service - To mount on a wheel, balance, or repair
Put Into Service - To install on a vehicle's axle for the first time (vehicle did not arrive with assemblies installed)
Inflate - To connect to an inflation device and adjust the air pressure

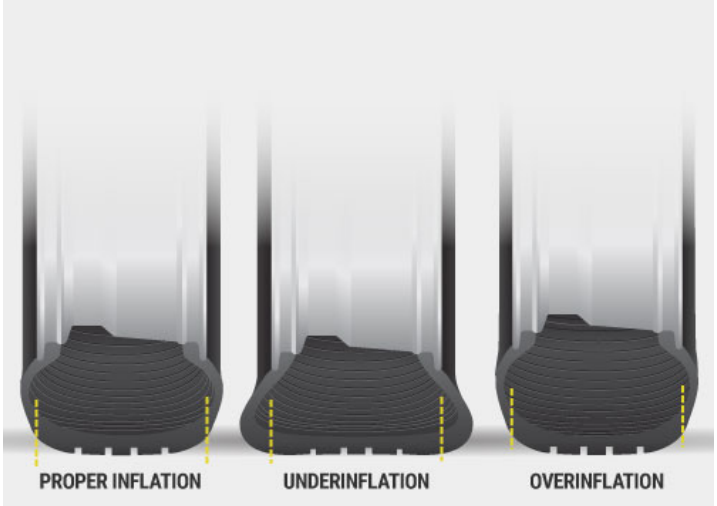
CONDITION	SERVICE	PUT IN SERVICE	INFLATE	SELL
10 Years Old or Older (See Manager/Asst. Manager)	⊘	⊘	✔	N/A
Load Capacity Exceeded (On Vehicle)	⊘	⊘	✔	N/A
2/32nds or Less	⊘	⊘	✔	N/A
Non-USTMA Repair	⊘	⊘	✔	N/A
14.5, 15.5, 16.5 or 17.5	✔	✔	✔	✔
19.5, 22.5 or 24.5	⊘	⊘	⊘	✔
Portable Air Tank	⊘	⊘	⊘	N/A
Split Rims	⊘	⊘	⊘	N/A
Plastic Wheels	⊘	⊘	⊘	N/A
Bolt Together Wheels	⊘	⊘	⊘	N/A
Incorrect Rim Width	✔	⊘	✔	⊘
Passenger or Light Truck Tires Less than 15 PSI (w/o Inspection)	⊘	⊘	⊘	N/A
Steel Sidewall Tires 15 PSI or Less than recommended Inflation Pressure (w/o Inspection)	⊘	⊘	⊘	N/A

INFLATING TIRES

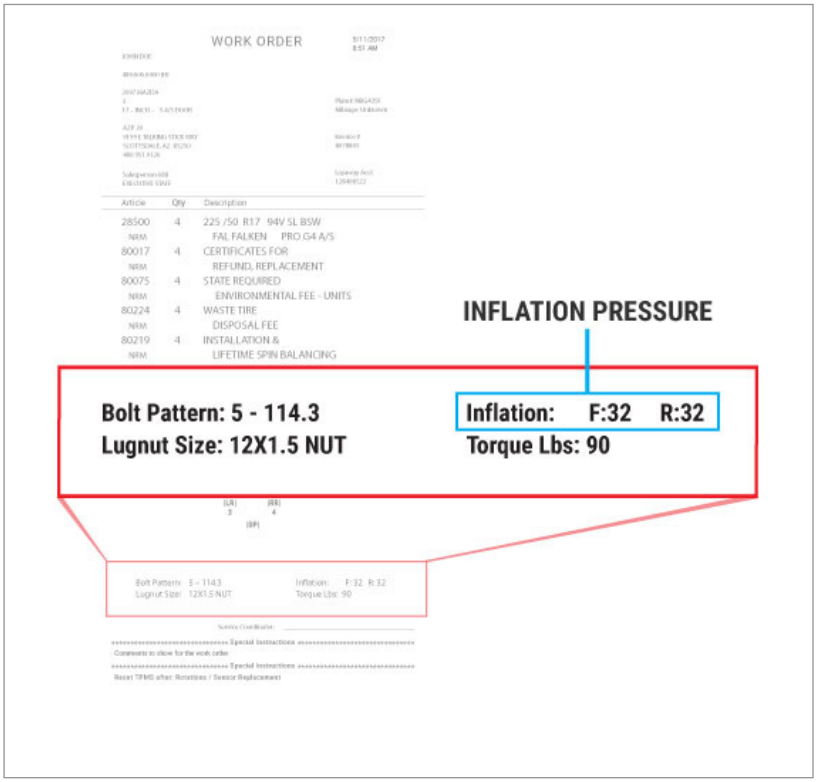
PROPER INFLATION PRESSURE

For a tire to perform properly, it must be inflated to the correct pressure. If a tire is under or over inflated, it can cause:

- Lowered miles per gallon (MPG)
- Irregular wear
- Unsafe handling conditions
- Increased stopping distance
- Hydroplaning
- Heat damage
- Failure



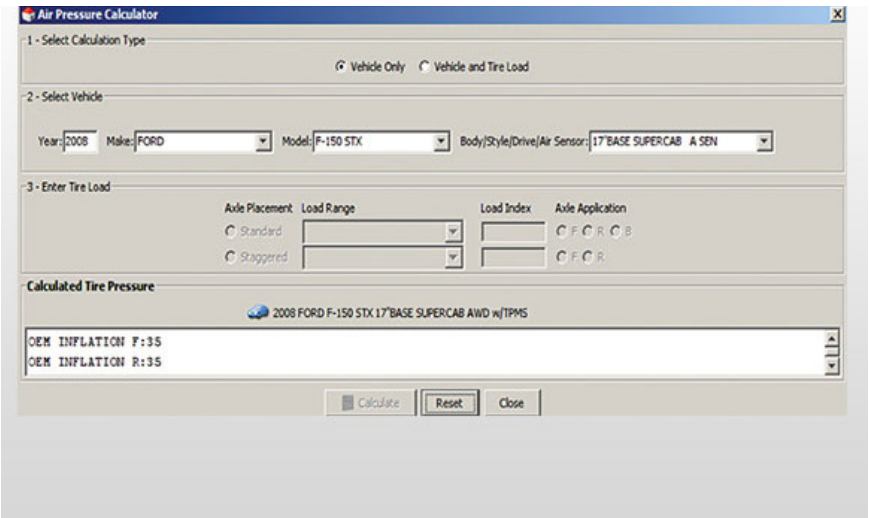
You can find the proper inflation pressure in three different locations. The first place to check is the work order. You should see the proper inflation pressure in the lower right section of the work order.



INFLATING TIRES

PROPER INFLATION PRESSURE *(continued)*

The second location is the CSL Air Pressure Calculator. This should be used if the customer does not have or is not putting the original equipment (OE) tire size on the vehicle. You will use the OE information to determine its carrying capacity. Then, use the information from the replacement tires to make sure the air pressure supports an equal or greater carrying capacity.



The final location to identify the proper inflation pressure is on the vehicle placard. This can typically be found in the driver's door jam or rear edge of the driver's door. This provides you with the OE tire pressure but should typically only be needed when working the air check station.

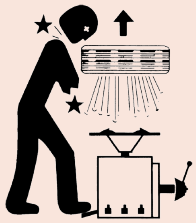
INFLATING TIRES

INFLATING ASSEMBLIES: SEAL

Video

CRITICAL TO SAFETY

Do not position yourself over the assembly while inflating.



Sealing the assembly is the first of the three steps that happen immediately after a tire is mounted onto a wheel. This creates an initial seal between the bead and the wheel so it can hold air.

Once the tire is mounted onto the wheel:

1. Rotate the turntable so the valve is next to the inflation hose.
2. **CRITICAL TO SAFETY**
   Connect the inflation hose and then lift the tire by the tread until the top bead contacts the rim flange, keeping your hands and fingers away from the pinch points.
3. Partially press down on the inflation pedal to start the flow of air.
4. From here, you will want to add enough air to maintain the seal, not exceeding 10 PSI.

INFLATING TIRES

INFLATING ASSEMBLIES: SEAL *(continued)*

There are some situations where using the standard inflation method will not create a seal. There are additional tools in place to help create a seal:

1. Bead Blaster
2. Hard to Seal Tool (HTS)
3. CR-kit

Video

When using the Bead Blaster:

1. Release the clamp holding the wheel.
2. Press the pedal down completely to send a blast of air.
3. Once seal is made, stop inflating and place assembly in the cage to complete inflation.

INFLATING ASSEMBLIES: SEAL *(continued)*

Video

There are situations where the Bead Blaster will not create a seal. For example, a Corvette wheel with a performance tire. For these situations, you can use the Hard to Seal (HTS) tool.

With the top bead dismounted, connect the cable from the HTS to the valve stem, ensuring TPMS is properly oriented, if applicable.

1. Mount the top bead.
2. Attach the hose to the HTS tool.
3. Make sure hands and fingers are away from the bead, and then pull the trigger on the HTS to create a seal.
4. Once a seal is made, stop inflating and lift the tool, pulling the valve or TPMS sensor into position.

CRITICAL TO SAFETY

You must wear both eye and ear protection when using the HTS.

INFLATING TIRES

INFLATING ASSEMBLIES: SEAL *(continued)*

Video

In rare cases, the HTS tool may still fail to create a seal. As a last resort, you can use the CR-kit.

1. Start by removing the valve core to increase air flow into the tire.
2. Position the barrel next to the lip of the rim.
3. Count down: 3-2-1.
4. Open the valve quickly to release a blast of air to seal the tire.
5. Make sure to reinstall the valve core once you have a seal.

CRITICAL TO SAFETY

You must wear both eye and ear protection when using the CR-kit.

CRITICAL TO SAFETY

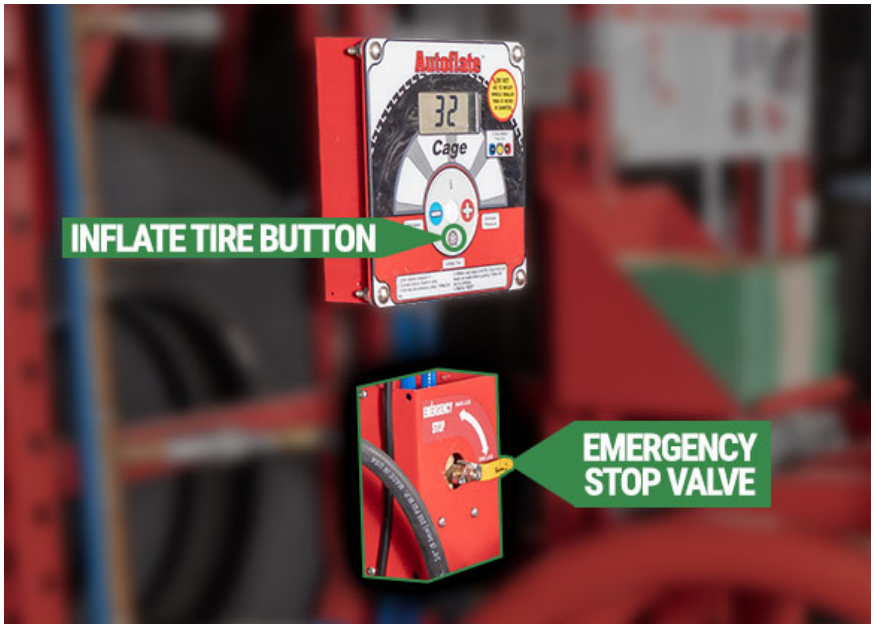
Once the seal has been created, you must transfer the assembly to the inflation cage in order to continue inflating.

INFLATING TIRES

INFLATING ASSEMBLIES: SEAT

The next step to inflate the assembly is to seat the bead of the tire in its final position against the rim flange.

Let's take a look at the Autoflate device that you will be using at the inflation cage. The safety features included are a dump valve to release the pressure in the tire, and an automatic stop at 40 PSI. If you need to fill over 40 PSI, press the "Inflate Tire" button to continue up to 80 PSI.



Video

Place the assembly into the inflation cage with the valve at the 6 o'clock position. Then, select the proper pressure and connect the hose to begin the inflation process.

As the assembly is inflated, the beads will seat into the proper position against the rim flange. When this happens, you may hear an audible pop and it can move the entire assembly. If the valve is not at the 6 o'clock position, the movement can damage the wheel, inflation hose, or the TPMS sensor.

INJURY WARNING

Watch your head when moving assemblies to and removing assemblies from the inflation cage. You could potentially hit your head on the air cage, robo-arm, or swingarm which can result in concussions and deep lacerations.

CRITICAL TO SAFETY

When you begin the inflation process, you must move out of the blast zone.

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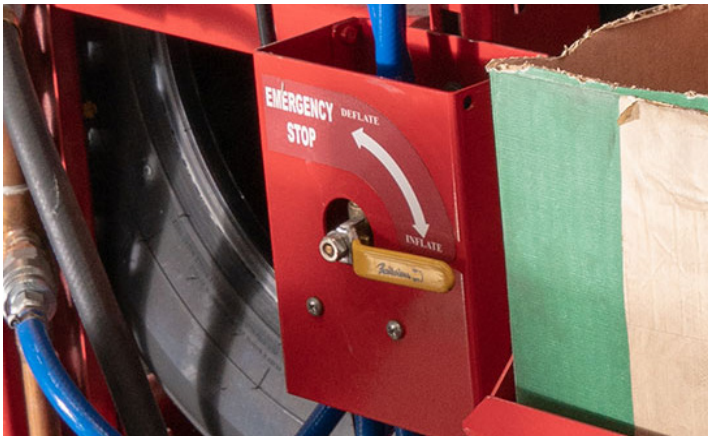
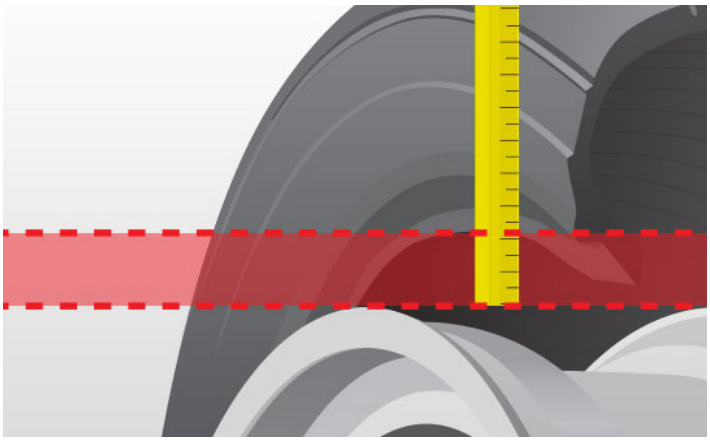
INFLATING ASSEMBLIES: SEAT *(continued)*

Typically the bead will seat on the assembly well below 40 PSI. However, you may run into a situation where it does not. This can be caused by many things, such as a severe drop center or even improper lubrication.



If this happens, use the emergency stop valve on the inflation cage to dump the air out of the tire and do the following:



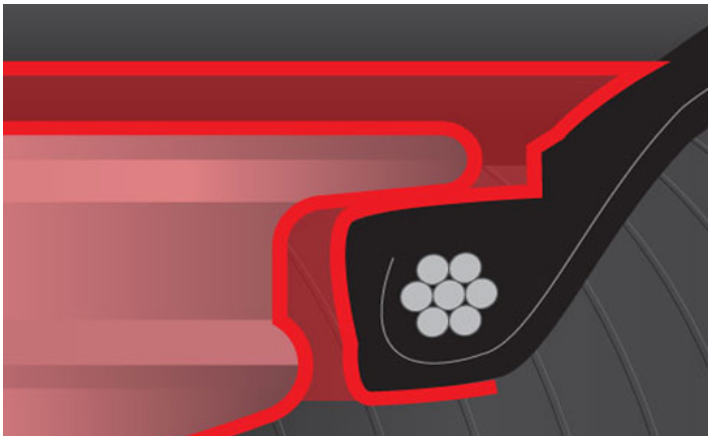
1. Verify the wheel and tire diameter match.

2. Remove the assembly from the inflation cage and place it back on the tire changer.

INFLATING TIRES

INFLATING ASSEMBLIES: SEAT *(continued)*

3. Check for a kinked or damaged bead.



4. Ensure the bead and wheel is properly lubricated.

5. After you have verified there are no issues, begin the inflation process again. If the bead does not seat at 40 PSI, stop and speak with your supervisor.

Note: Some tire and wheel combinations may require more than 40 PSI to seat beads.

CRITICAL TO SAFETY

If inflating over 40 PSI to seat beads, call out, “air up” to alert the people working in the area.

INFLATING TIRES

INFLATING ASSEMBLIES: SET

Once the bead is seated, the last step of inflating assemblies is setting the final pressure. If your target inflation pressure is less than 40 PSI, this can be a seamless transition requiring no additional input.

However, if your target inflation pressure is above that, you will need to start the Autoflate device again, due to the safety stop built in at 40 PSI, or use the MAST air gauge if inflating over 80 PSI.

INFLATING TIRES

INFLATING ASSEMBLIES: SET *(continued)*

Once the Autoflate device has filled the tire to the set pressure, it will automatically stop and beep to alert you.

CRITICAL TO QUALITY

At this point, you should verify the assembly is not leaking from the TPMS and that it has a proper seal. To do this, begin by spraying all exposed parts of the TPMS with Bubble Check before putting the cap on.

INFLATING TIRES

INFLATING LOOSE ASSEMBLIES

A loose assembly, or carry-out, is simply a wheel and tire that is brought in by a customer that is not mounted to a vehicle. You need to pay special attention to these assemblies as we do not know their history or condition.

The first thing you should check is the age of the tire. If the tire is less than 10 years old, it should be safe to inflate. However, if it is over 10 years old, do not inflate and notify your Store Manager or Senior Assistant Manager. We do this because once a tire is over 10 years old we recommend replacement. With that being said, if the Store Manager or Senior Assistant Manager authorizes you to do so, the assembly can be inflated in the inflation cage but cannot be installed on the vehicle.

INFLATING TIRES

INFLATING LOOSE ASSEMBLIES *(continued)*

After verifying that the tire is less than 10 years old (or authorization is received if the tire is over 10 years old), the next step is to check the air pressure.

If the current air pressure is 15 PSI or greater, inspect the wheel and tire for injuries and proceed with the service if possible.

CRITICAL TO SAFETY

Make sure to pay special attention to the sidewalls for heat rings, cracks, cuts, bulges, or blisters. If you find any of these, do not inflate and notify your Store Manager or Senior Assistant Manager.

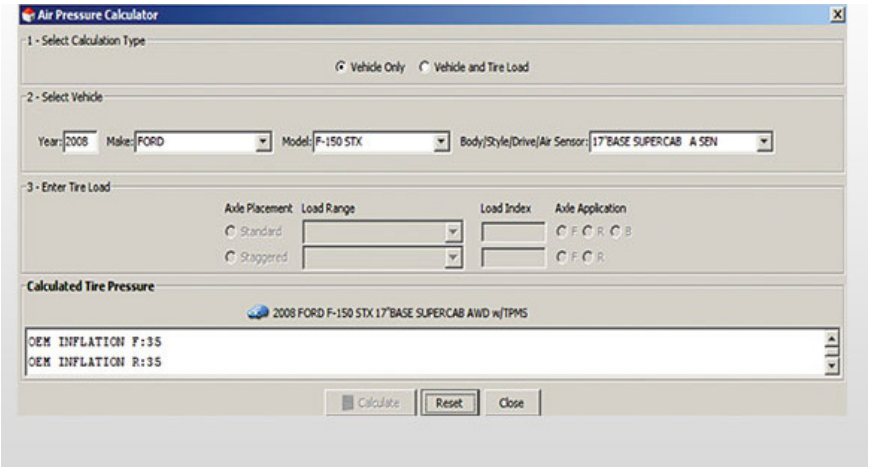
HEAT RING

SIDEWALL BULGE

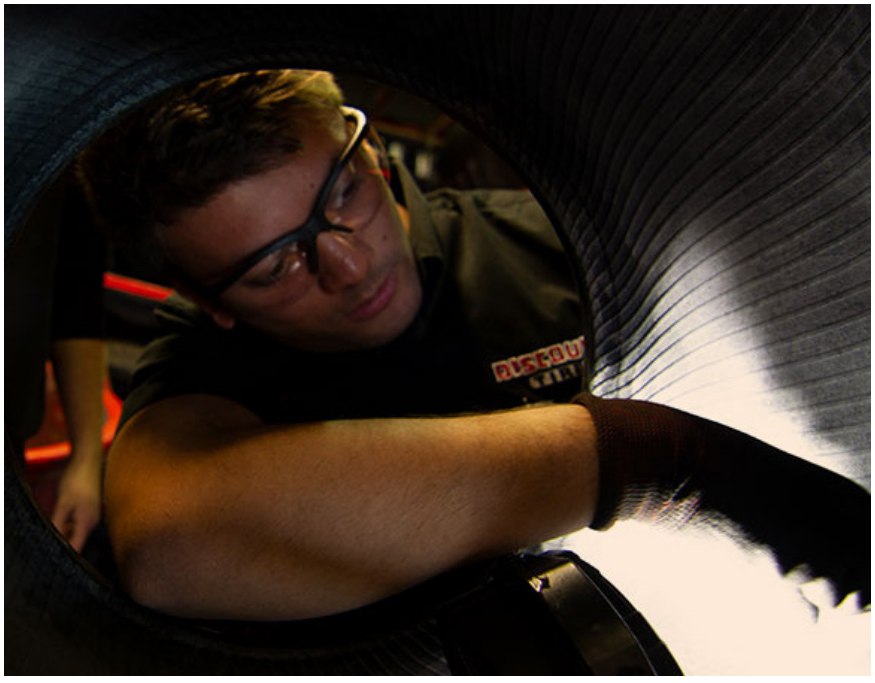
SIDEWALL BLISTER

INFLATING LOOSE ASSEMBLIES *(continued)*

Next, verify the vehicle, year, make, and model. Then, use the CSL Air Pressure Calculator to determine the proper air pressure. Finally, place the assembly into the inflation cage and inflate to the proper pressure.



If the current air pressure is less than 15 PSI, it is likely to have some unseen internal damage. Therefore, an off-the-wheel inspection must be performed to determine the safety of the tire.



CRITICAL TO SAFETY

If you find sidewall damage, do not inflate and inform the customer.

However, if you find an injury that is repairable, perform the repair. Once the tire is determined to be safe, verify the year, make, and model of the vehicle and then use the CSL Air Pressure Calculator to determine the proper air pressure. Finally, mount the tire and begin the inflation process.

INFLATING TIRES

INFLATING LOOSE ASSEMBLIES *(continued)*

There will be times that customers bring in tires that are less than 10 inches in diameter, such as smaller trailer or ATV tires. First, you should verify that the assembly meets our requirements to inflate.

CRITICAL TO SAFETY

When servicing assemblies less than 10 inches in diameter, and you have determined that we are able to inflate the assembly, place it in the inflation cage and use the MAST air gauge with short blasts of air until the proper pressure is achieved. Do not use an Autoflate device, as they are not designed to work on such small assemblies.

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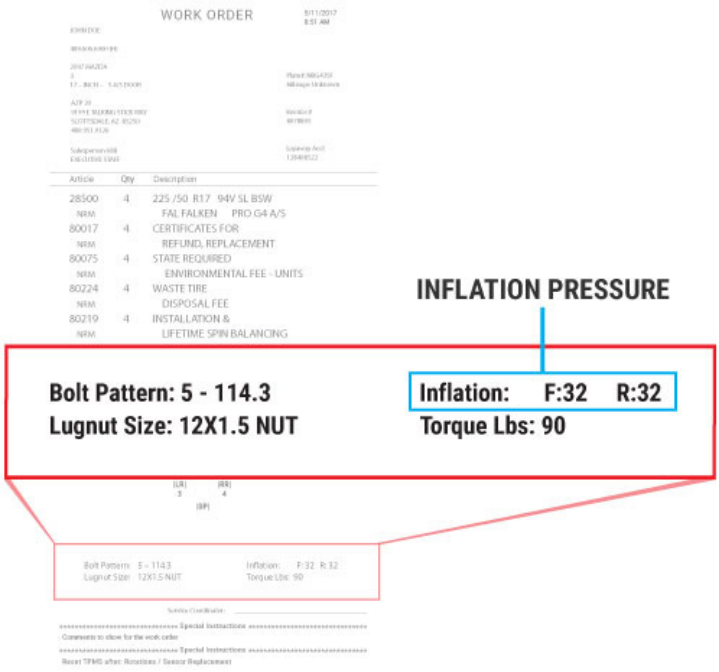
INFLATING TIRES

INFLATING ASSEMBLIES ON THE VEHICLE

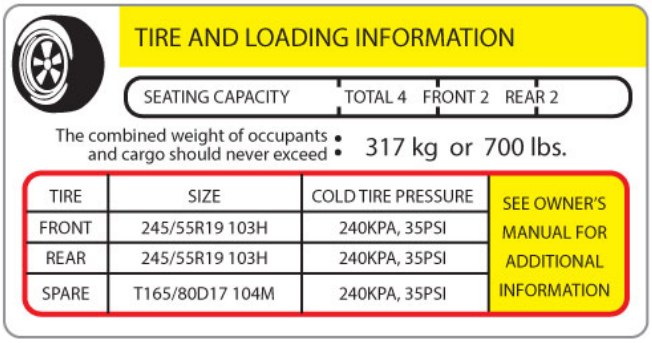
There are times that you will need to inflate tires that are mounted to the vehicle. In these cases, before inflating, you will need to perform an on-the-vehicle inspection. You will inspect for tread depth, injuries, and signs of under inflation, such as a heat ring.

CRITICAL TO SAFETY

If you find signs of under inflation, stop and speak with your supervisor.



If you are working on a vehicle in the service bay, locate the proper inflation pressure on the work order.



If you are working the air check station, locate the proper inflation pressure on the vehicle placard.

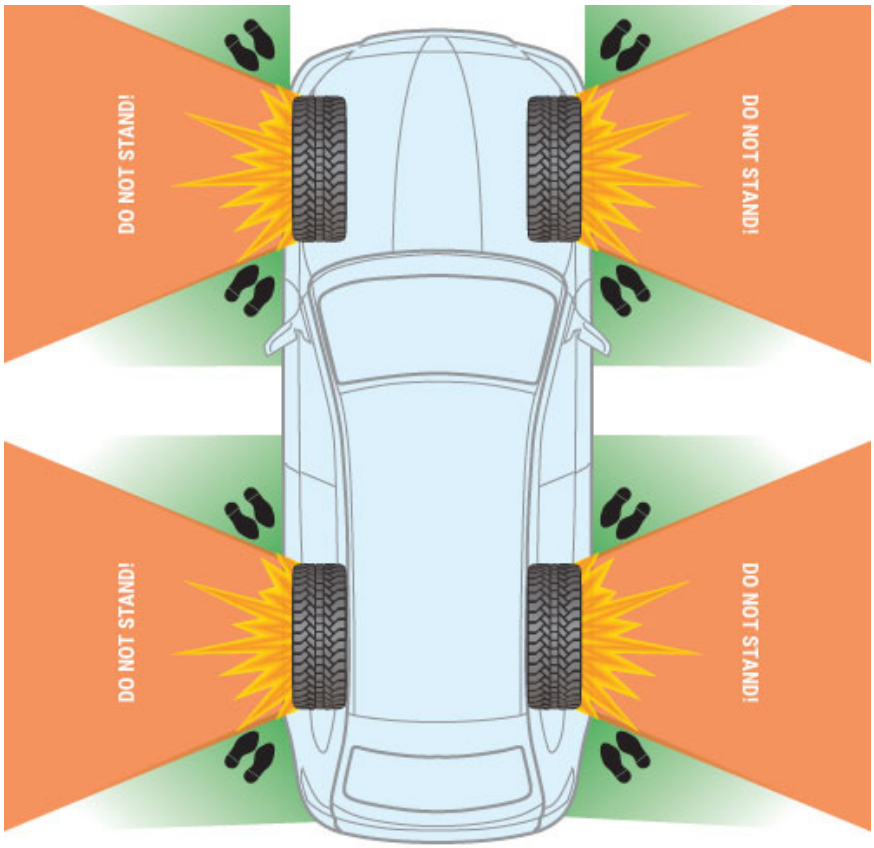
INFLATING TIRES

INFLATING ASSEMBLIES ON THE VEHICLE *(continued)*

Now that you have determined the proper inflation pressure, check the current inflation for each tire. The air check Autoflate devices you will be using have a safety feature that will not allow inflation if the tire has less than 15 PSI. Remember, if a tire in service has less than 15 PSI, we must remove the assembly from the vehicle, dismount the tire, and perform an off-the-wheel-inspection of the tire before inflating.

CRITICAL TO SAFETY

Once you have confirmed that the tire is safe to inflate, begin the inflation process and move away from the tire.



INFLATING TIRES

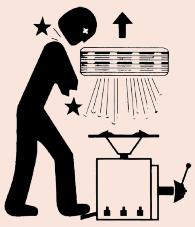
INFLATING ASSEMBLIES ON THE VEHICLE *(continued)*

If possible, you should be checking the pressure in a spare tire. Since these are used less frequently, pay special attention to the age of the tire. If the tire is less than 10 years old, it is safe to inflate. If the tire is more than 10 years old, do not inflate and notify your Store Manager or Senior Assistant Manager.

The spare tire can be inflated in its current location as long as it is secured to the vehicle.

CRITICAL TO SAFETY

Never stand over an assembly while inflating or go underneath a lifted vehicle to inflate a spare assembly.



At this point, you should be able to safely inflate loose assemblies and tires in service, as well as seal, seat, and set a freshly mounted tire. This course covered a vast amount of information with an emphasis on safety. Your safety and the safety of Our Customers is our number one priority.

If you ever have a question or are unsure about how to handle a situation, do not hesitate to ask your supervisor.