
Installation and Operation Manual



DANGER

Read the *entire contents* of this manual thoroughly *before* installing, operating, servicing, or maintaining this lift. Failure to follow the instructions and safety precautions in this manual can result in serious injury or death. Make sure all operators read this manual. Keep the manual near the product for future reference. *By proceeding with installation and operation, you agree you fully understand the contents of this manual and assume full responsibility for product use.*****

Safety. Your new product was designed and manufactured with safety in mind. Your safety also depends on proper training and thoughtful operation. Do not set up, operate, maintain, or repair the unit without reading and understanding this manual and the labels on it; ***do not use this product unless you can do so safely!***

Owner Responsibility. In order to maintain your product properly and to ensure operator safety, it is the responsibility of the product owner ***to read and follow these instructions.***

- Follow all setup, operation, and maintenance instructions.
- Make sure product installation and operation conforms to all applicable local, state, and federal codes, rules, and regulations, such as state and federal OSHA regulations and electrical codes.
- Read and follow all safety instructions. Keep them readily available for operators.
- Make sure all operators are properly trained, know how to safely operate the unit, and are properly supervised.
- Do not operate the product until you are certain that all parts are in place and operating correctly.
- Carefully inspect the product on a regular basis and perform all maintenance as required.
- Service and maintain the unit only with approved replacement parts.
- Keep the manual with the product and make sure all labels are clean and visible.
- **Only use this product if it can be used safely!**

Unit Information. Enter the Model Number, Serial Number, and the Date of Manufacture from the label on your unit. This information is required for part or warranty issues.

Model: _____

Serial: _____

Date of Manufacture: _____

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Introduction

This manual describes the **machine**, a touchless tire changer that quickly and efficiently breaks Beads and demounts and mounts Tires.

The **machine** features the latest in touchless wheel-service technology. It is designed to work on all wheel types without damaging the Rim or requiring clumsy tool bars, bead locks, or tire levers.

This manual is mandatory reading for all users, including anyone who sets up, operates, maintains, or repairs it.

You can always find the latest version of the **manual for your product on the website**.

 DANGER Be very careful when setting up, operating, maintaining, or repairing this equipment; failure to do so could result in property damage, product damage, injury, or (in very rare cases) death. Make sure only authorized personnel operate this equipment. All repairs must be performed by an authorized technician. Do not make modifications to the unit; this voids the warranty and increases the chances of injury or property damage. Make sure to read and follow the instructions on the labels on the unit.

Keep this manual on or near the equipment so that anyone who uses or services it can read it.

Technical support and service for your Tire Changer is available from your distributor. You may also call regarding parts replacement (please have the serial number and model number of your unit available).

Shipping Information

Your equipment was carefully checked before shipping. Nevertheless, you should thoroughly inspect the shipment **before** you sign to acknowledge that you received it.


When you sign the bill of lading, it tells the carrier that the items on the invoice were received in good condition. **Do not sign the bill of lading until after you have inspected the shipment.** If any of the items listed on the bill of lading are missing or damaged, do not accept the shipment until the carrier makes a notation on the bill of lading that lists the missing or damaged goods.

If you discover missing or damaged goods **after** you receive the shipment and have signed the bill of lading, notify the carrier at once and request the carrier to make an inspection. If the carrier will not make an inspection, prepare a signed statement to the effect that you have notified the carrier (on a specific date) and that the carrier has failed to comply with your request.

It is difficult to collect for loss or damage after you have given the carrier a signed bill of lading. If this happens to you, file a claim with the carrier promptly. Support your claim with copies of the bill of lading, freight bill, invoice, and photographs, if available. Our willingness to assist in helping you process your claim does not make us responsible for collection of claims or replacement of lost or damaged materials.

Safety Considerations

Read this manual carefully before using your new product. Do not set up or operate the product until you are familiar with all operating instructions and warnings. Do not allow anyone else to operate the product until they are also familiar with all operating instructions and warnings.

 **WARNING** There are many moving parts on a Tire Changer; you must keep clear of the Tire Changer and the Tire being changed at all times while using it. In particular, when inflating a Tire, never lean over the Tire; if it were to explode (which does happen), the force could injure or kill the Operator or bystanders. During inflation, the Operator should be as far away from the Tire as possible and bystanders must be at least 30 feet away.

Safety Information

Please note the following:

- The product is a Tire Changer. **Use it only for its intended purpose.**
- The product **must** only be operated by authorized, trained personnel. Keep children and untrained personnel at least 30 feet away from the product.
- You must wear approved personal protective equipment at all times when installing, using, maintaining, or repairing the product. Leather gloves, steel-toed work boots, eye protection, back belts, and hearing protection are **mandatory**.
- Do not use the product while tired or under the influence of drugs, alcohol, or medication.
- Do not use the product in the presence of cigarette smoke, dust, or flammable liquids or gases. Use the product indoors in a well-ventilated area.
- Do not make any modifications to the product; this voids the warranty and increases the chances of injury or property damage. **Do not modify any safety-related features in any way.**

-
- Make sure all operators read and understand the *Installation and Operation Manual*. Keep the manual near the device at all times.
 - Make a visual inspection of the product before each use. Do not use the product if you find any missing or damaged parts. Instead, take the unit out of service, then contact an authorized repair facility, your distributor.
 - We recommends making a **thorough** inspection of the product once a month. Replace any damaged or severely worn parts, decals, or warning labels.

Symbols

Following are the symbols that may be used in this manual:



DANGER

Calls attention to a hazard that **will** result in death or injury.



WARNING

Calls attention to a hazard or unsafe practice that **could** result in death or injury.



CAUTION

Calls attention to a hazard or unsafe practice that could result in personal injury, product damage, or property damage.

NOTICE

Calls attention to a situation that, if not avoided, could result in product or property damage.



Tip

Calls attention to information that can help you use your unit better.

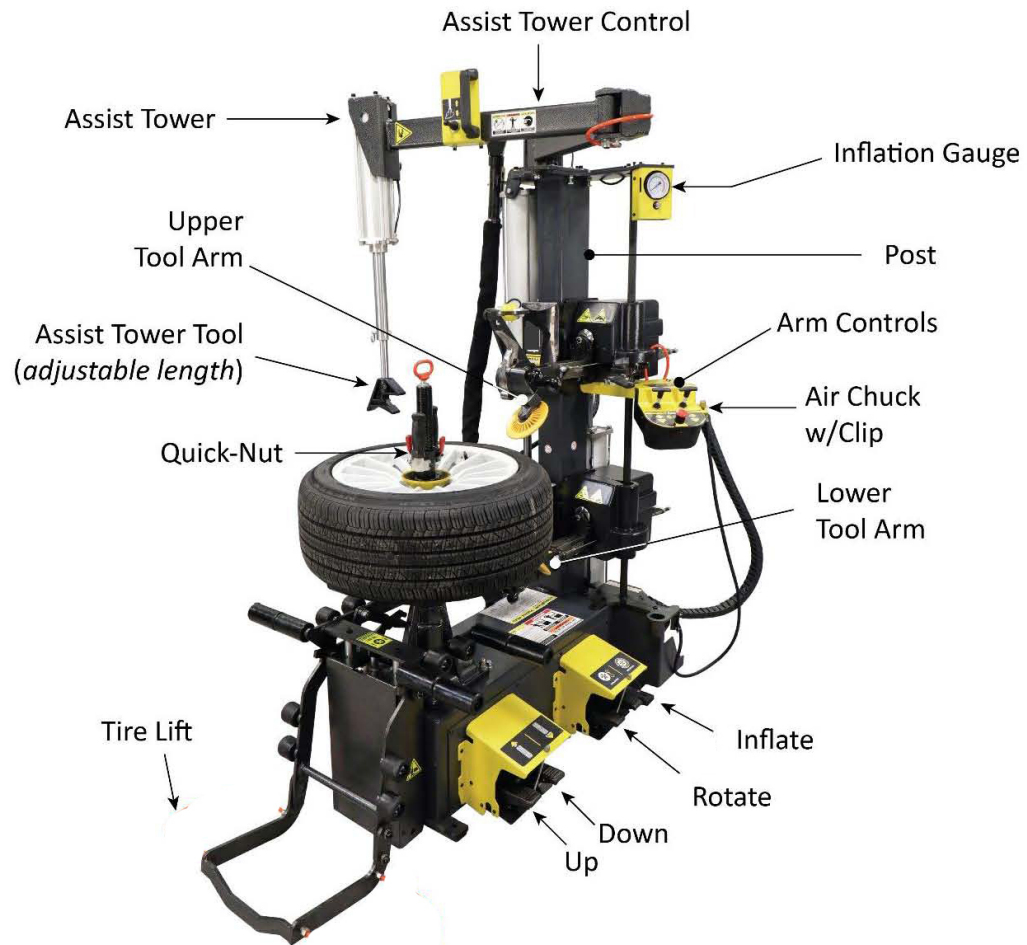
Liability Information

The manufacturer assumes **no** liability for damages resulting from

- Use of the equipment for purposes other than those described in this manual.
- Modifications to the equipment without prior, written permission from the manufacturer.
- Modifying, disabling, overriding, or removing safety features.
- Damage to the equipment from external influences.
- Incorrect operation of the equipment.

Components

The following image shows the main components of the Tire Changer.



The Air Pressure Regulator/Filter and Oiler/Lubricator, Turbo-Blast hose, and Shut-Off Valve are on the other side of the Tire Changer and are not visible in the image above.

Tire Changer components include:

- **Turntable.** Holds the Wheel.
- **Mirror.** Shows you what is happening on the underside of the Wheel.
- **Post.** Holds many components. Needs to be lubricated for easy movement of those components. Once lubricated, ***do not lean on or touch the Post***
- **Assist Tower Tool.** Helps you mount a new Tire on a Wheel.
- **Assist Tower Control.** Controls the Assist Tower Tool.
- **Inflation Gauge.** Shows the amount of air pressure being used to inflate a Tire.
- **Bead Seater.** Directs a burst of air pressure to help seat a difficult Bead. Never point the Turbo-Blast Nozzle at people or things; use it with caution. Use it only to seat a difficult Bead, nothing else. Has a Shut-off Valve near the base of the Turbo Blast Hose.
- **Shut-Off Valve.** Controls when the Turbo-Blast is On/Off. The Shut-Off Valve ***must*** be turned off when the Turbo-Blast is not in use. Not shown in the view on the preceding page.
- **Arm Lock / Unlock.** Controls the locations of the two Tool Arms.
- **Upper / Lower Tool Arms.** Both have Tools on them. The Tool Arms are synchronized, so whatever the location of the Upper, the Lower is in the same location under the Tire even if it is hard to see.
- **Inflate foot pedal.** Inflates the new Tire.
- **Rotate foot pedal.** Rotates the Turntable.
- **Tire Lift.** Moves the Wheel into position on the Turntable.
- **Tire Lift Down foot pedal.** Moves the Tire Lift *down*.
- **Tire Lift Up foot pedal.** Moves the Tire Lift *up*.
- **Regulator/Filter and Oiler/Lubricator.** Control and route the incoming air supply.

Tire Changer accessories include:

- **Bucket.** For your Tire lubricant. Only use a lubricant approved by the Tire manufacturer.
- **Lube Brush.** To spread your Tire lubricant.
- **Petroleum jelly.** For lubricating the Post; comes inside the Bucket. Also called Vaseline®. ***Not*** a Tire lubricant.
- **Two metal Cones with plastic Cone Protectors.** Used with the Quick-Nut to accommodate larger Tire hole sizes. Require Turntable Spacer.
- **Rubber Turntable Cover.** An extra Rubber Turntable in case the original gets damaged or lost.
- **Quick-Nut.** Holds the Wheel in place on the Turntable. Greased for transport, so clean it before using it.
- **Quick-Nut Adapters.** Used with the Quick-Nut to accommodate smaller Tire hole sizes.
- **Turntable Spacer.** Required when using either of the two metal Cones.

Other important terms include:

- **Wheel.** A circular metal piece that attaches to an axle and rotates. A Tire is the rubber piece that attaches on the outside of the Wheel.
- **Rim.** The part of a Wheel that directly attaches to a Tire; the outer portion of the Wheel. “Wheel” and “Rim” are not the same thing, but some people use them interchangeably.
- **Tire.** A circular rubber piece that surrounds and attaches to a Wheel; more specifically, to the Rim, which is the part of the Wheel that directly touches the Tire.
- **Tire Sidewall.** Displays information about the Tire and the Wheel onto which the Tire fits.

Frequently Asked Questions

Question: What does a Tire Changer do?

Answer: A Tire Changer takes Tires off of Wheels (called demounting) and puts Tires onto Wheels (called mounting).

Q: What is the difference between a Tire, Wheel, and Rim?

A: A Wheel is the round **metal** piece that attaches to the Vehicle's axle. A Tire is the round **rubber** piece that surrounds the Wheel. The outer edge of the Wheel, where the Tire attaches to the Wheel, is called the Rim.

Q: What are the steps in the process of demounting a Tire and then mounting a new Tire?

A: The steps are: Secure the Wheel on the Turntable, deflate the Tire, break the Bead, demount the Tire, mount the new Tire, inflate the new Tire, then remove the Wheel from the Turntable.

Q: What does "break the Bead" mean?

A: A Tire is held on the Rim of a Wheel by the Tire Bead sitting between the Rim Lip and the Bead Retainer of the Rim. The air in the Tire holds it in place. When you "break the Bead", you move the Tire Bead out of its location between the Rim Lip and the Bead Retainer, which is required if you want to take the Tire off of the Wheel.

Q: Can I break the Bead without fully deflating the Tire?

A: No, do not do this. **Always fully deflate a Tire before attempting to break its Bead.** The air pressure energy in a Tire, even if not fully inflated, can be considerable. If you were to attempt to break the Bead of a Tire not fully deflated, that air pressure energy would be released all at once, possibly injuring or, in rare cases, killing the Operator or bystanders.

Q: What thing should I always do when working with the Tire Changer?

A: You must match Rim Width for the Tire you are mounting. The result of a mismatch is that the Tire could literally explode off the Wheel when you reinflate it or while the Vehicle is being driven. In both cases, people could be injured or killed.

Q: Where should I put my Tire Changer?

A: What you want is a flat Concrete floor with room around it that is also near where you work on Tires. Ideally, you want it a little off the beaten path, as you must – for safety – keep everyone away from the Tire Changer while it is in use. For safety, no one other than the Tire Changer Operator should be within 30 feet of the Tire Changer while it is being used.

Q: Why isn't there a plug on the end of the Power Cord?

A: 220 VAC plugs vary by region, so you need to use one that is appropriate for the power outlet where you will be using your Tire Changer. You **must use** a licensed Electrician to wire the power cord and plug in accordance with applicable electrical codes.

Specifications

Model	
Wheel Diameter Range	13" to 30" / 330 mm to 762 mm
Maximum Tire Diameter	47" / 1,194 mm
Maximum Wheel Width	15" / 381 mm
Maximum Tire Weight	143 lbs / 65 kg
RPM of Turntable	7 to 14 turns per minute
Air Consumption	1 SCFM / 27 L/Min
Width	34" / 864 mm
Height	73" / 1,854 mm
Depth	71" / 1,803 mm
Shipping Weight	1,150 lbs / 522 kg
Shipping Dimensions	61" x 35" x 80" / 1,550 mm x 900 mm x 2,030 mm
Working Temperature	27°F to 82°F / -5°C to 50°C
Sound	< 70 dBA

Installation Checklist

Following are the steps needed to install an Tire Changer. Perform them in the order shown.

- 1. Review the installation Safety Rules.
- 2. Plan for Electrical Work.
- 3. Make sure you have the necessary Tools.
- 4. Make sure there is adequate Clearance on all Sides.
- 5. Select the Installation Site.
- 6. Unpack the Components.
- 7. Anchor the Unit.
- 8. Connect to a Power Source. ***Requires a licensed Electrician.***
- 9. Connect to an Air Source.
- 10. Prepare the Tire Lube Bucket.
- 11. Prepare the Quick-Nut.
- 12. Lube the Post.
- 13. Test the Tire Changer.
- 14. Review the Final Checklist.

Installation

This section describes how to install your Tire Changer.

Installation Safety Rules

Pay attention at all times during installation. Use appropriate tools and equipment. Stay clear of moving parts. Keep hands and fingers away from pinch points. **Safety is a top priority.**

Use caution when unpacking the Tire Changer from its shipping container and setting it up. The Tire Changer is heavy and the weight is not evenly distributed; dropping or knocking over the unit may cause equipment damage and personal injury.

⚠ WARNING You must wear appropriate protective clothing at all times during setup: leather gloves, non-skid steel-toed work boots, approved eye protection, and an industrial back belt. Accidents can cause significant injuries.

Only allow experienced, trained technicians to install the Tire Changer. In particular, all electrical work **must** be done by a licensed, certified Electrician.

⚠ CAUTION Certain parts of installing the Tire Changer are difficult for just one person. We Ranger strongly recommends having two or more persons work together to install the Tire Changer.

If you have to use an extension cord, make sure its current rating is equal to or greater than that of the equipment being used. Make sure the extension cord cannot be stepped on, run over, or pulled out. Extension cords are also a tripping hazard, so they must be secured.

Plan for Electrical Work

The ^{machine} does **not** come with a Plug on the end of the Power Cord; it is your responsibility to supply the Plug and have an Electrician attach it to the Power Cord. A 220 VAC NEMA 30 Amp plug is needed.

Refer to **Plug Wiring Information** for additional information.

⚠ WARNING **All electrical work**, such as attaching the Plug to the Power Cord, **must be done by a licensed, certified Electrician** in accordance with all applicable local electrical codes.

Tools

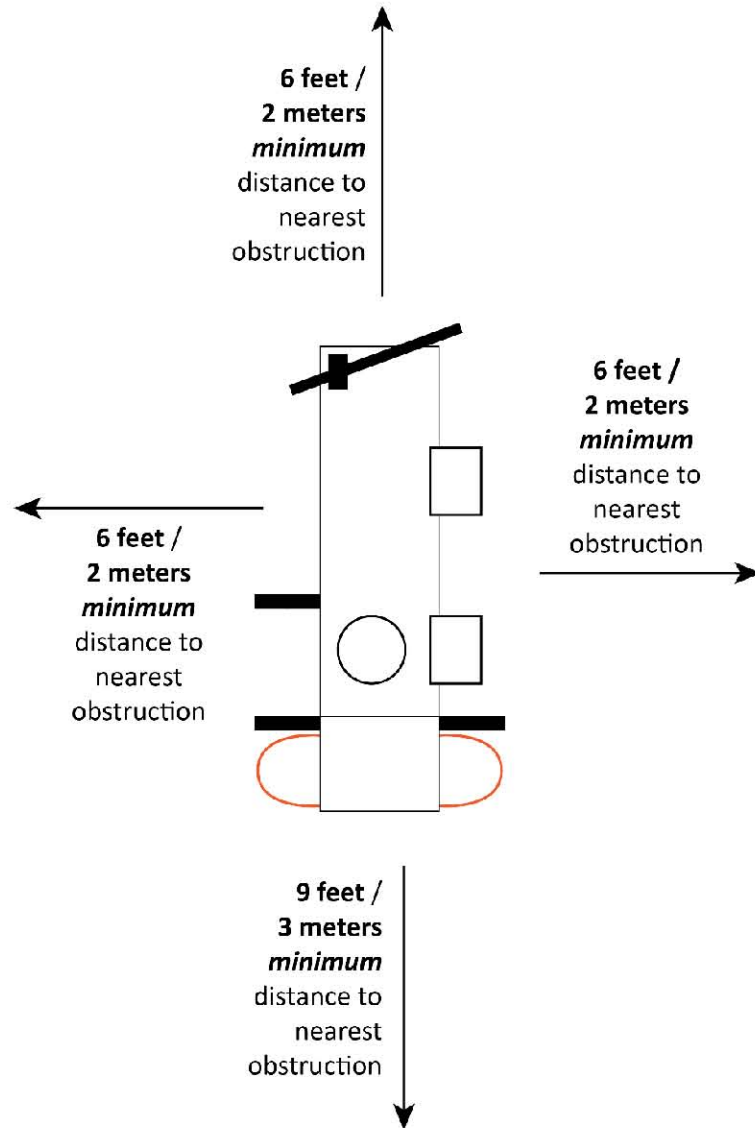
You may need some or all of the following tools:

- Forklift, pallet jack, or shop crane
- Utility knife
- Hammer, crow bar, or pry bar
- Tin or sheet metal snips
- Hex key set, metric and SAE
- Wrench set, metric and SAE
- Screwdriver set, flat head and Phillips

Clearances

To allow space to work with Wheels and Tires, a certain amount of space around the Tire Changer is required.

⚠ WARNING The Clearance values shown below are to allow enough space to operate the Tire Changer. **For safety purposes, only the Tire Changer Operator should be within 30 feet of the Tire Changer while it is being used.**



You also need room **above** the Tire Changer, which is 73 inches /1,850 mm high. We manufacturer recommends leaving at least an additional 12 inches / 305 mm of open space above the top of the Tire Changer.


Finding a Location

Keep the following in mind when deciding on a location:

- **Power source.** The Tire Changer needs to be near an appropriate 220 VAC power source.
- **Floor.** The Tire Changer is best used on a flat, Concrete floor.
- **Accessibility.** You need some space to move the Wheels whose Tires you are going to change to and from the Tire Changer.
- **Danger.** When a Tire is on the Tire Changer, especially during Inflation, you need to keep everyone far away from it; only the Tire Changer Operator should be near it. Except for the Tire Changer Operator, all other people must be kept at least 30 feet away from the Tire Changer.


Do not set up the Tire Changer in a well-travelled area.

- **No water.** The Tire Changer has electronic components. If the Tire Changer gets wet while turned on, those electronic components will most likely short circuit and have to be replaced.

 **WARNING** Do not use the Tire Changer if it is sitting in water. You will almost certainly short circuit the electronic components in the Tire Changer and you could electrocute yourself.

Unpacking

Use caution when taking the Tire Changer out of its shipping container. You do not want to damage the unit, misplace any of the components that come with it, or hurt anyone.

 **CAUTION** Make sure to use an appropriate lifting device, such as a forklift or pallet jack, to move the Tire Changer while it is on its pallet. Make sure only personnel who are experienced with material handling procedures are allowed to move the Tire Changer. The Tire Changer is heavy and the weight is not evenly distributed; dropping or knocking over the unit may cause equipment damage or personal injury.


We recommend you unpack the Tire Changer in the area where you are going to set it up.

To unpack the Tire Changer:

1. Where the Cover meets the Pallet, push the metal tabs all the way down, on all four sides.
2. Lift the Cover off.

You may have to apply some force to get all of the metal tabs free; they sometimes stick a little.

3. Remove the plastic wrap around the Tire Changer and other components.
4. Remove the Accessory Box.
5. Remove the shipping bolts that are holding the Tire Changer to the Pallet.
6. Move the Tire Changer off the Pallet, then move it to the desired location.

 **CAUTION** recommends having at least two people move the Tire Changer; it is heavy and the weight is not evenly distributed. If it is dropped or falls, it could cause injuries and the Tire Changer could be damaged.

Refer to **Finding a Location** and **Clearances** for additional location information.

Anchoring the Tire Changer

The Tire Changer has holes for anchoring it into place; anchoring is optional.

Note: You are not required to anchor your Tire Changer. Manufacturer recommends doing so, as the Tire Changer applies a certain amount of force at various times during the changing of a Tire. Anchoring it ensures it will not move during operation.

The Anchor Bolts (sometimes called Wedge Anchors) mentioned in the following procedure are **not** supplied with the Tire Changer.

To anchor the Tire Changer:

1. Make sure the Tire Changer is in the desired location.

Remember that you need to allow some space around the Tire Changer. Refer to [Finding a Location](#) for additional information.

2. Using the holes as guides, drill the holes for the Anchor Bolts.



Go in straight; do not let the drill wobble. Use a carbide bit (conforming to standards).

The diameter of the drill bit must be the same as the diameter of the Anchor Bolt. So if you are using an M10 diameter Anchor Bolt, for example, use an M10 diameter drill bit.

3. Vacuum each hole clean.

Manufacturer recommends using a vacuum to get the hole very clean.

Do **not** ream the hole. Do **not** make the hole any wider than the drill bit made it.

4. Make sure the Washer and Nut are in place, then insert the Anchor Bolt into the hole.

The Expansion Sleeve of the Anchor Bolt may prevent the Anchor Bolt from passing through the hole in the Base Plate; this is normal. Use a hammer or mallet to get the Expansion Sleeve through the Base Plate and into the hole.



Even using a hammer or mallet, the Anchor Bolt should only go into the hole part of the way; this is normal. If the Anchor Bolt goes all the way in with little or no resistance, the hole is too wide.

Once past the hole in the Base Plate, the Anchor Bolt eventually stops going down into the hole as the Expansion Sleeve contacts the sides of the hole; this is normal.

5. Hammer or mallet the Anchor Bolt the rest of the way down into the hole.
Stop when the Washer is snug against the Base Plate.
6. Wrench each Nut **clockwise** to the recommended torque, 60 – 70 lbf-ft / 81 – 95 N-m.

Important: Do **not** use an impact wrench to torque the Anchor Bolts.

Wrenching the Nut forces the Wedge up, forcing out the Expansion Sleeve and pressing it tightly against the Concrete.

Connecting to a Power Source

The Tire Changer has to be connected to a 208-230 VAC power source.


A Power Cord with *no Plug* is provided with the unit. You need to have a licensed, certified Electrician wire the open end of the Power Cord to an appropriate 208-230 VAC NEMA 30 Amp Plug.

Refer to **Plug Wiring Information** for additional wiring information.

 **WARNING** All electrical work **must be done by a licensed, certified Electrician**.

Additional electrical information:

- Make sure wiring is done in accordance with National Electric Code (NED) and local codes and standards covering electrical apparatus and wiring.
- Operation with no Ground can damage electronics and could create a shock hazard. **You must ground the unit**
- Damage caused by improper electrical installation (not grounding the unit, for example) voids the warranty.
- The Tire Changer uses pneumatic and electrical energy; if your organization has Lockout/Tagout policies, make sure to implement them after connecting to the power source.
- Make sure that adequate wire sizes are used, service is of adequate amp rating, the supply line has the same electrical characteristics (voltage, cycles, and phase) as the motor, and that no other equipment is operated from the same line.
- Electrical codes may require “hard-wiring” when the machine is anchored to the floor. Consult a licensed Electrician regarding the applicable codes for your location.

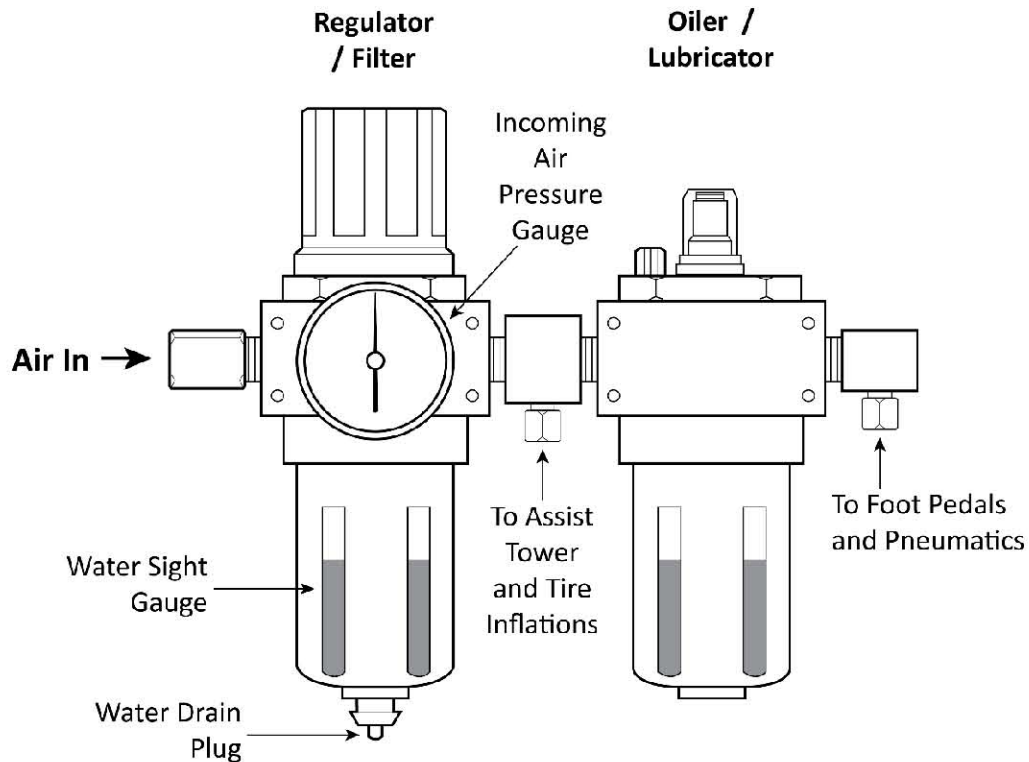
 **WARNING** **Disconnect power before performing any maintenance.** Make sure the unit cannot be reenergized until you are done with maintenance; secure the plug so that it cannot be accidentally plugged back in. If your organization has Lockout/Tagout policies, make sure to implement them. This equipment has internal arcing or sparking parts that should not be exposed to flammable vapors. The unit must not be located in a recessed area or below floor level.

Connecting to an Air Source

The Tire Changer requires a 15 to 25 CFM Air Source with an operating air pressure of 140 to 165 PSI (9.6 to 11.4 bar).

The Tire Changer uses pneumatic and electrical energy; if your organization has Lockout/Tagout policies, make sure to implement them after connecting to the Air Source.

The incoming Air Source connects to the Tire Changer via the Air In connector on the left side of the Regulator/Filter. You need to provide a fitting for the Air In connector; it is not supplied.



Drawing not necessarily to scale. Not all components shown. Note that the air lines going to the Assist Tower/Tire Inflations and the Foot Pedals/Pneumatics come connected and ready for use; no installation or adjustment is required.

There are three main components of the Air Source:

- **Incoming Air.** The Tire Changer requires an air source of 15 to 25 CFM that has an operating air pressure of 140 to 165 PSI (9.6 to 11.4 bar). *You need to supply a fitting for the Air In connector.*
- **Regulator / Filter.** Removes contaminants from the Incoming Air. It also includes a gauge that shows the operating air pressure of the Incoming Air. If you see water in the Water Sight Gauge, you can drain it using the Water Drain Plug. Refer to **Maintenance** for more information. Air that passes through the Regular/Filter – that does not go to Foot Pedals or other pneumatic components of the Tire Changer – are routed to the Assist Tower and to Tire Inflations.
- **Oiler / Lubricator.** Puts pneumatic oil, for lubrication, into the Incoming Air. This lubricated air is routed to the Foot Pedals and other pneumatic components of the Tire Changer. It is very important to make sure the oil feed rate is correct, 1 or 2 drops of oil per use of the Up or Down Foot Pedals. Refer to **Maintenance** for more information.

Prepare the Tire Lube Bucket

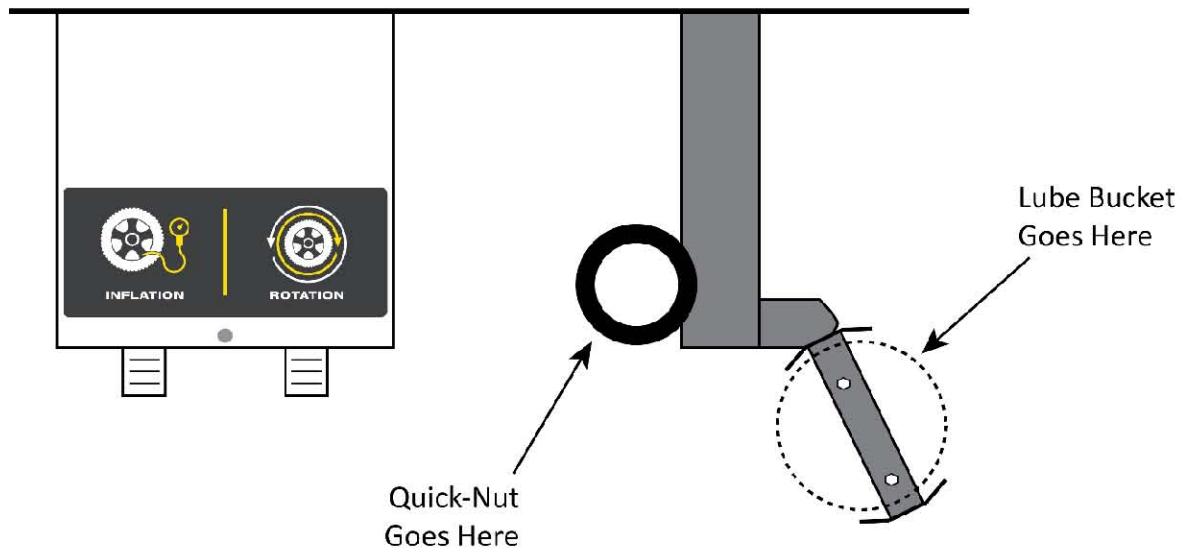
The Tire Changer comes with a Tire Lube Bucket (to hold your Tire Lube) and a Tire Lube Brush (to apply your Tire Lube).

The manufacturer does not include any Tire Lube with the Tire Changer, as there are many options available.

⚠ CAUTION Only use Tire Lube that is approved by the Tire manufacturer. Using non-approved Tire Lube could corrode the Wheel or cause Tire/Wheel slippage and vibration issues.

Be sure to use enough lubricant without using too much. The point of lubricant is to **temporarily** reduce the friction between the Tire Bead area and the Rim. What you are looking for is a lubricant that is slippery when wet but not slippery once dried. If you notice excessive amounts of lubricant on the Tire or Rim, remove it.

There is a location on the Tire Changer for the Tire Lube Bucket near the Quick-Nut.



Drawing is not necessarily to scale. Not all components shown. View is from above.

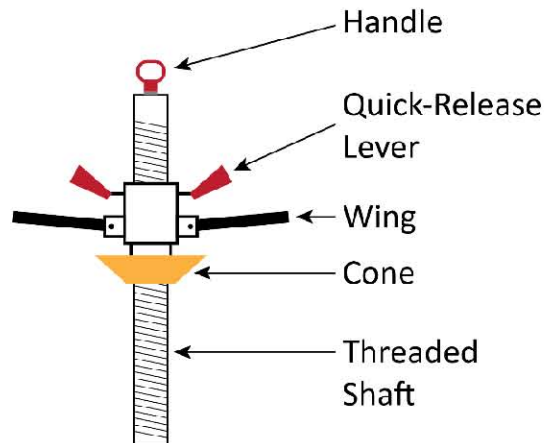
Refer to the drawing in the **Components** section for a side view of the Lube Bucket and Quick-Nut location.

Preparing the Quick-Nut

The Quick-Nut holds Wheels in place while the Tire is being demounted or mounted.

Note: When the Quick-Nut and its Cones and Adapters are shipped from the factory, they are coated with oil to protect them. Until you clean the oil off of them, either wear gloves, keep a rag handy, or be prepared to wash your hands frequently.

The Quick-Nut has multiple parts.



The parts of the Quick-Nut and their functions are:

- **Handle.** Use it to pick up the Quick-Nut and move it around.
- **Quick-Release Lever.** Quickly put on or take off the Quick-Nut. Twist both Levers to prevent the Wings from engaging the threads in the Threaded Shaft; release when you want the Wings to engage the Threaded Shaft.
- **Wing.** Used to tighten the Quick-Nut on, or loosen it from, the Threaded Shaft, depending on whether you are securing the Wheel on the Turntable or taking the Wheel off the Turntable. After securing a Wheel to the Turntable, fold up the Wings to get them out of the way.
- **Cones and Adapters.** The Quick-Nut has several different sized Cones and Adapters you can use to firmly secure the Wheel in place. The two large metal Cones come with yellow plastic protectors for securing aluminum rims (so you do not scratch or mar the rims).
- **Threaded Shaft.** Goes into the hole in the center of the Turntable, which holds the Wheel in place.

There is a location on the Tire Changer to hold the Quick-Nut when it is not being used; refer to the drawing in [Components](#) for the exact location.

Lube the Post

The Tire Changer Post needs to be lubed so that both Tool Arms can easily slide up and down as required.

The Tire Changer comes from the factory with a packet of petroleum jelly for lubing the Post. The packet is located inside the Lube Bucket.

⚠ CAUTION *The petroleum jelly for lubing the Post is not a Tire Lube.* Do not use it to lube Tires. Once the Post is lubricated with the petroleum jelly, do not lean on it or touch it. When you run out of the provided petroleum jelly, you can replace it with more petroleum jelly or Vaseline®.

Test the Tire Changer

Make sure the following items have been done before putting the Tire Changer prior to normal operation:

- **Check for pneumatic (air) pressure.** The Tire Changer requires pneumatic energy to perform many of its functions. You can press the Lock Button on the Tool Arm Handle to make sure the Tire Changer is getting air; you will hear a whoosh of air when you press the button if it is getting air. If it is not, check the air source.
- **Test the power source.** Other Tire Changer functions require electric power. Step on and hold down the Rotation Foot Pedal to check for electric power. If the Turntable turns, you have electric power.
- **Test the Laser.** Press the Laser On/Off button to see if the red laser dot appears on the Turntable. If it does, the Laser is working.
- **Test the Tire Lift.** Step on and hold down the Up Foot Pedal. If the Tire Lift starts moving up, then the Tire Lift is working. You do not need to have a Tire on the Tire Lift to test it.
- **Make sure there is Tire lubricant available.** Your shop probably has a brand of Tire lube that it prefers. Make sure some is in the Lube Bucket on the Tire Changer. Always use Tire lube; it just makes changing Tires easier, including helping to prevent damage to the Tire and the Wheel.
- **Make sure the Turntable turns.** Step on and hold down the Rotation Foot Pedal. If the Turntable starts turning, then the Turntable is working.
- **Test both Tool Arms.** Use the Tool Arm Handle to move both Tool Arms in or out together. Use the Upper and Lower Tool Arm Controls to move the Upper Tool Arm and Lower Tool Arm, respectively, up and down separately.
- **Change some non-customer Tires.** Just to make sure you are used to all of the controls, BendPak Ranger recommends changing some *non-customer Tires* before changing some customer Tires.

Final Checklist Before Operation

Do the following things **before** putting your Tire Changer into normal operation:

- Review the Installation Checklist to make sure all steps have been performed.
- Make sure the Tire Changer is getting electric and pneumatic power.
- Check to see that all Anchor Bolts are in position and tightened, if you installed them.
- Make sure the Tire Changer has been tested.
- Leave the Manual with the owner/operator.

Operation

This section describes how to use your Tire Changer.

- ⚠ DANGER** Do not proceed with using the Tire Changer to change a Tire unless you have formal training and have read the entire *Installation and Operation Manual*. Tire changing must only be done by trained personnel. **Failure to understand and follow proper procedures will result in injury or death.**

Usage Precautions

Keep the following in mind while you use your Tire Changer:

- Never perform service on an *inflated* Tire; **always** fully deflate the Tire before beginning work.
 - Never mount or change damaged Tires or Wheels.
 - Always secure the Wheel to the Tire Changer or place in a safety cage before inflating the Tire.
 - Make sure all employees receive specific training in Tire demounting and mounting before they are allowed to use the Tire Changer, that their training is verified through a testing program, and that all training is documented. All others, including children and untrained personnel, must be kept at least 30 feet away from the Tire Changer.
 - **The Tire Changer may work differently than other Tire Changers you have used.** The manufacturer recommends practicing with non-customer Tires to get familiar with how the product works *before* starting work on customer Tires.
 - Make a visual inspection of the Tire Changer **before each use**. Do not operate the unit if you find any issues. Instead, take it out of service, then contact your dealer.
 - You must wear approved personal protective equipment at all times when installing, using, maintaining, or repairing the product. Leather gloves, steel-toed work boots, approved eye protection, back belts, and hearing protection are **mandatory**.
- ⚠ WARNING** Always wear eye protection. An accident could cause significant injuries to eyes.
- Keep the work area clean and well lit. Dirty, cluttered, and dark work areas increase the chances of an accident happening.
 - Do not try to access the inside of the unit unless instructed to do so by manufacturer's Support. There are no user serviceable parts inside.
- ⚠ WARNING** Be especially careful when inflating Tires. This is a dangerous time when using a Tire Changer. If the Tire and Wheel are mismatched or there is a defect in the Tire, it could explode, injuring or killing you or anyone nearby. **Never lean over the Tire when inflating a Tire.** Move away from the Tire during inflation.
- Do not use the unit in a wet environment or expose it to rain or excess moisture.
 - If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment must be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
 - Do not use anything flammable on the Beads or Rim surfaces for lubrication purposes.
 - Do not use the unit in the vicinity of open containers of flammable liquids.
 - Clean the unit according to the instructions in **Maintenance**.
 - Read the entire *Installation and Operation Manual* before using the unit.

Using the Controls

The Tire Changer has multiple controls; this section describes how to use them.

Pedals

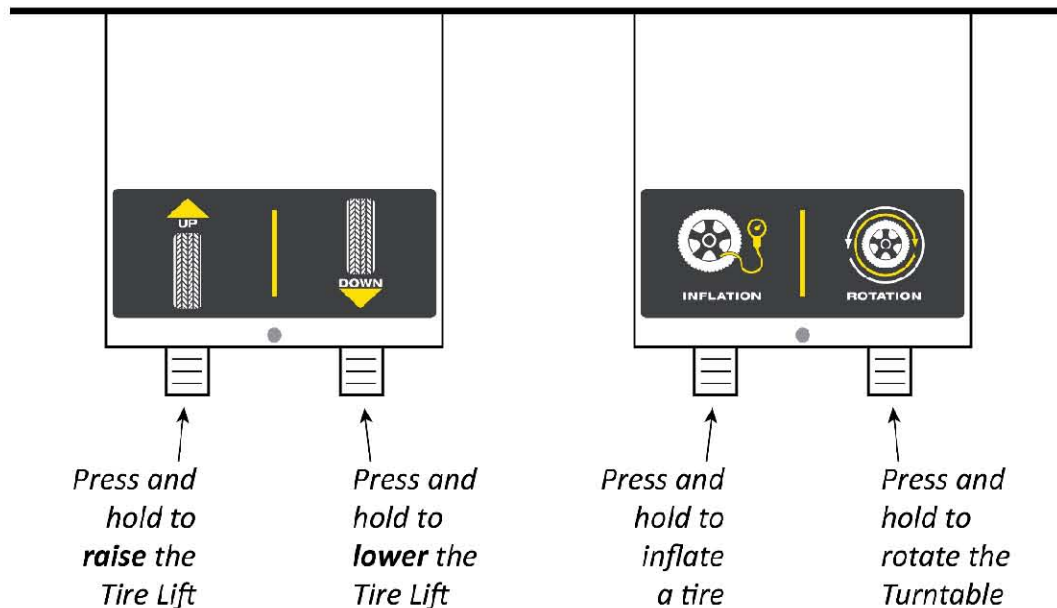
The Tire Changer has four Pedals:

- **Up.** Step on and hold down to raise the Tire Lift. Uses pneumatic power. Step off to stop.
- **Down.** Step on and hold down to lower the Tire Lift. Uses pneumatic power. Step off to stop.
- **Inflation.** Step on and hold down to inflate the Tire (when the Air Chuck is connected). Uses pneumatic power. Step off to stop.

⚠ WARNING The Air Chuck has a clip so that you can clip it on when inflating a Tire. Do not hold the Air Chuck while you are inflating a Tire. This leaves you very close to the Tire, which could result in injury if there were a problem during the inflation. Instead, clip the Air Chuck into position, move away from the Tire, then press and hold the Inflation Foot Pedal.

- **Rotation.** Step on and hold down to turn the Turntable clockwise. Uses electric power. Step off to stop. Press **up** to turn the Turntable **counterclockwise**.

The following drawing is a top view of the Pedals.



Tool Arm Handle

The Tool Arm Handle controls the in and out movement (towards and away from the Wheel/Tire) of the Upper Tool Arm and the Lower Tool Arm.

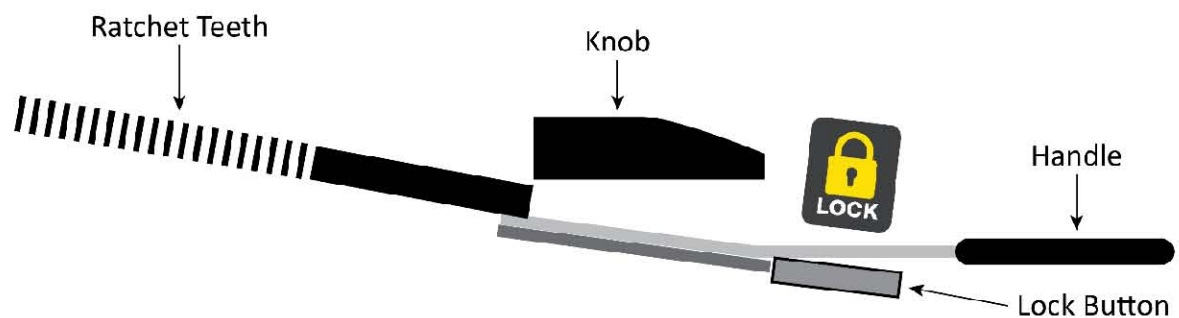
Important: The Upper and Lower Tool Arms are synchronized; **they move in and out together**. However, *they move up and down separately* (controlled by the Upper and Lower Tool Arm Controls).

The components of the Tool Arm Handle include:

- **Handle.** Pump to move the Tool Arms in and out.
- **Lock Button.** Hold to allow the Handle to move the Tool Arms. Uses pneumatic power. You cannot move the Tool Arms unless you hold down the Lock Button while pumping the Handle.
- **Knob.** Controls the direction the Tool Arms move. If they move the “wrong” direction when you pump the Handle, turn the Knob to the other position and then try again.

To use the Handle, Lock Button, and Knob:

- Turn the Knob to the right (EXPAND), press the Lock Button, then ratchet the Handle to the right to move the Tool Arms towards the Tire.
- Turn the Knob to the left (RETRACT), press the Lock Button, then ratchet the Handle to the left to move the Tool Arms away from the Tire.



Set Knob to
RETRACT to
move the Tool
Arms to the
right, away
from Tire



Set Knob to
EXPAND to
move the Tool
Arms to the
left, towards
Tire

Upper and Lower Tool Arm Controls

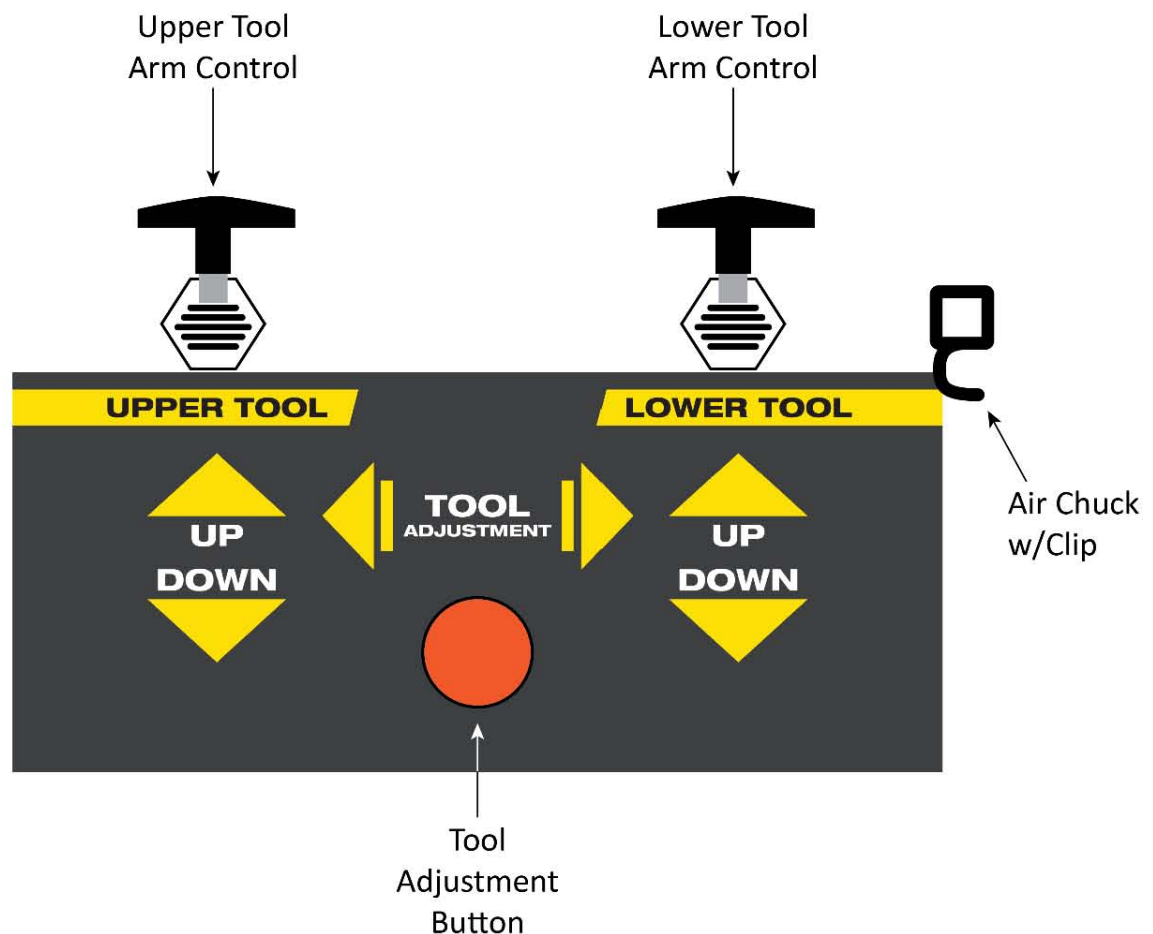
The Upper and Lower Tool Arms Controls control the up and down movement of the Upper Tool Arm and the Lower Tool Arm.

Note: The Upper and Lower Tool Arms *move up and down separately*. Their up and down movement are not synchronized with each other.

- **Upper Tool Arm Control.** Moves the Upper Tool Arm up and down.
- **Lower Tool Arm Control.** Moves the Lower Tool Arm up and down.
- **Tool Adjustment Button.** Automatically moves both Tool Arms in about one inch (25 mm) for as long as you hold the button down. Use of the Tool Adjustment Button is situational; you do not need to use it all the time.

For example, when you are breaking a Tire's Bead and the Bead Breaker Tool slips under the Wheel's Rim Lip, you can press and hold the Tool Adjustment Button to move the Bead Breaker Tool in. When you release the Tool Adjustment Button, the Bead Breaker returns to its original position.

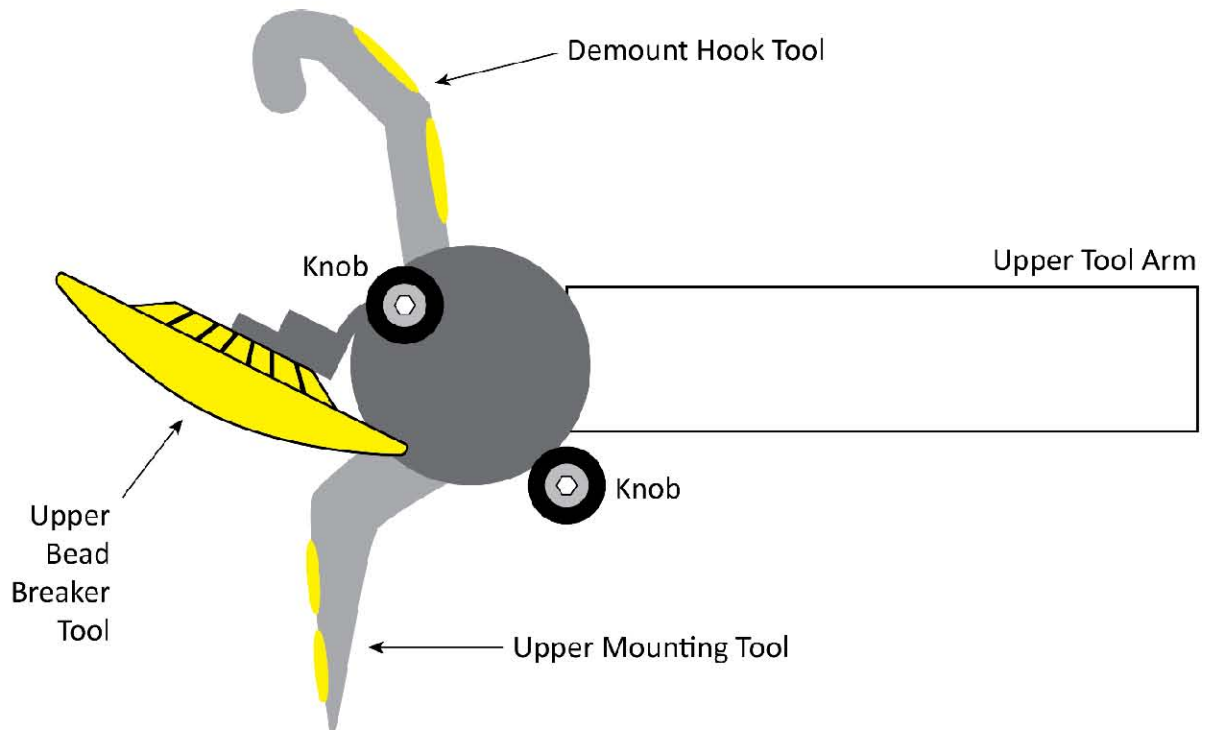
- **Air Chuck with Clip.** The Air Chuck is used to inflate a Tire. When not in use, it can be stored on the side of the Upper and Lower Tool Arm Controls.



Upper Arm Tools

The Upper Arm has three Tools:

- **Upper Bead Breaker Tool.** Breaks the Bead on the top side of a mounted Tire. Has its own control Knob.
- **Demount Hook Tool.** Pulls the Tire up and over the Wheel during the demount process. Shares a Knob with the Upper Mounting Tool.
- **Upper Mounting Tool.** Pushes the Tire down into place during the mount process. Shares a Knob with the Demount Hook Tool.
- **Knobs.** One moves just the Bead Breaker Tool between two locations, the other moves the Demount Hook Tool and the Upper Mounting Tool between two locations.

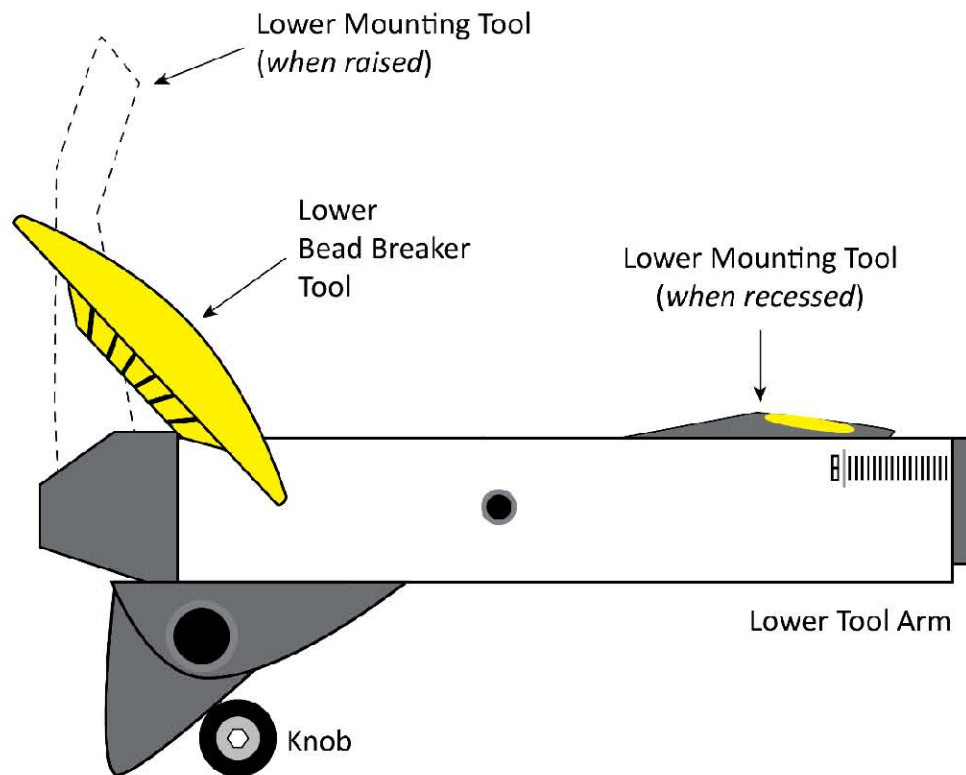


Side view. Not necessarily to scale. Not all components shown.

Lower Arm Tools

The Lower Arm has two Tools:

- **Lower Bead Breaker Tool.** Breaks the Bead on the *underside* of a mounted Tire. Does not move.
- **Lower Mounting Tool.** Slides the Tire back onto the Wheel during the mount process. When not needed, press down to move it out of the way.
- **Knob.** Moves the Lower Mounting Tool.



Side view. Not necessarily to scale. Not all components shown.

Assist Tower

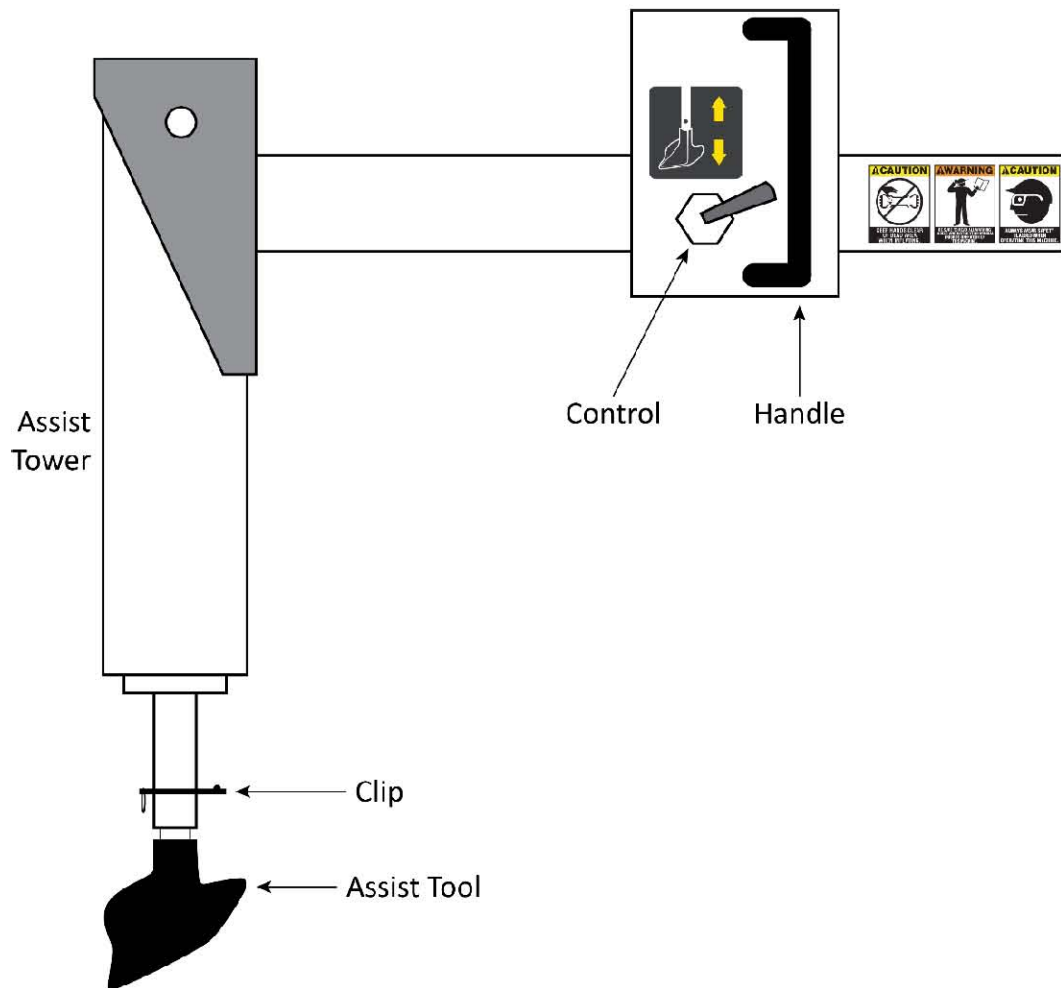
The Assist Tower holds the Assist Tool, which is used to hold the sidewall of the Tire down during the mount process.

The components of the Assist Tower are:

- **Handle.** Helps to move the Assist Tower into the desired position.
- **Control Joystick.** Moves the Assist Tool up and down.
- **Clip.** Use to lengthen or shorten the Assist Tool.

To adjust the length of the Assist Tool: remove the Clip, move the Assist Tool to the desired length, then replace the Clip.

- **Assist Tool.** Used to hold the Tire in place (you put it on the sidewall of the Tire) during the mount process.



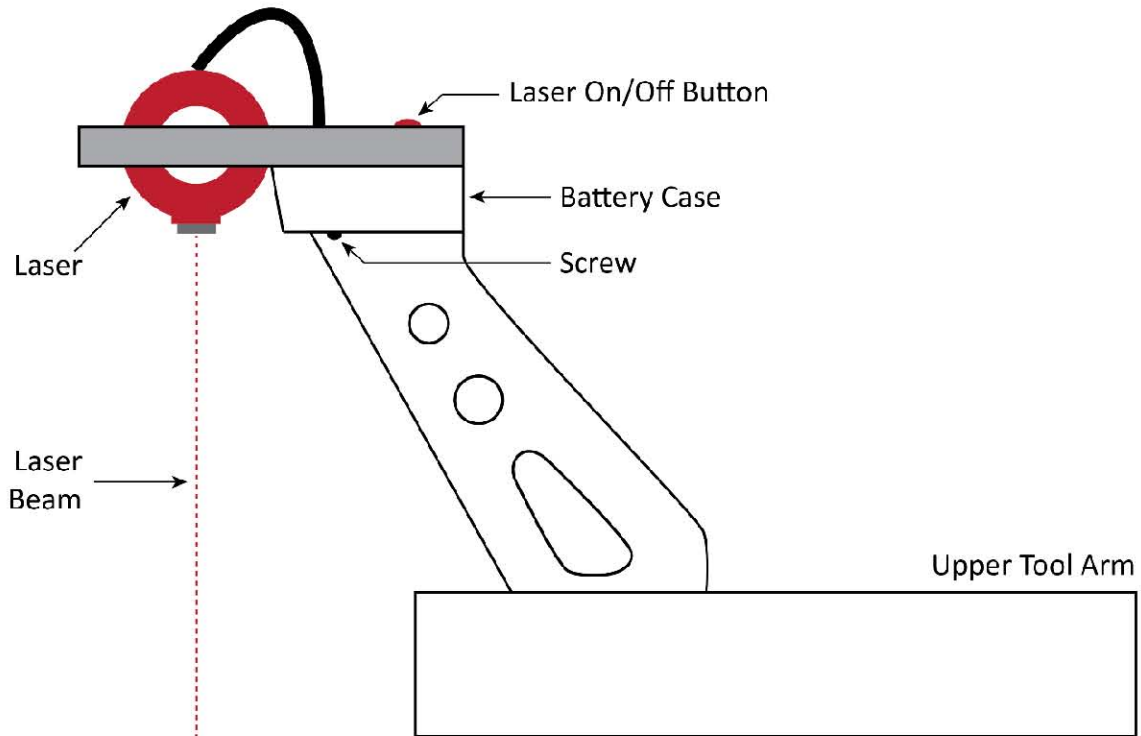
Laser (Optional)

The Laser, when turned on, shines a red beam straight down, showing you where the selected Upper Arm Tool will impact the Tire if used.

For example, if you are looking to use the Bead Breaker Tool on the Upper Arm and you want to know where it will hit the Tire if you were to lower it, the Laser shows that location.

When the Upper Tool Arm moves, the location where the Laser hits also moves.

Press the Laser On/Off Button to turn the Laser on and off. When done using the Laser, remember to turn it off (or you will quickly drain the Batteries).



Batteries for the Laser are not supplied. Batteries in general can occasionally cause issues during shipping, so they are considered a shipping hazard.

You need to supply 2 AA Batteries and install them.

To install Batteries for the Laser:

1. Unscrew and remove the two 3 mm hex screws on the bottom of the Battery Case, then remove the Battery Case itself.

Be careful not to disturb the wiring under the Battery Case.

2. Put in two new AA Batteries.

The Batteries must be installed in opposite directions; insert the minus (-) end first, against the springs, and then slide in the plus (+) end.

3. Put the Battery Case back in place, then reinstall the two screws.

Do not overtighten the screws; you could damage the Battery Case.

Before You Change a Tire

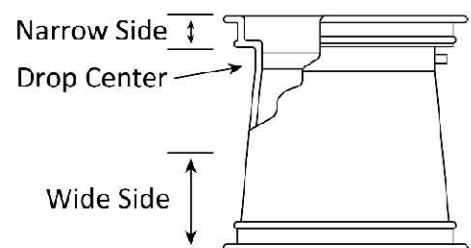
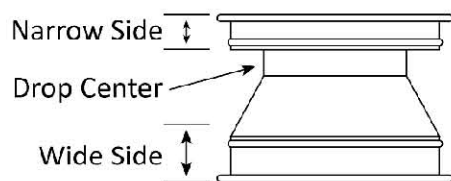
⚠ DANGER Do not use the Tire Changer unless you have been properly trained and have read the entire *Installation and Operation Manual*. Tire changing must only be done by trained personnel. Failure to understand and follow proper procedures will result in injury or death.

Before you change a Tire, you should:

- **Remove weights.** Check the Wheel to make sure that all clip-on and adhesive weights (from having the Tire balanced) have been removed.
- **Deflate the Tire.** Some shops have their technicians do this before putting the Wheel on the Tire Changer, others when it has been mounted and secured on the Tire Changer. The Tire Changer supports either option. **Fully deflate Tires before working on them.**
To make sure a Tire is *fully deflated*, remove the Valve Core from the Valve Stem. You should use a Valve Core Tool for this, but if you do not have one, you may be able to use needle-nosed pliers.
- **Have Tire lubricant ready.** Tire Lubricant makes the process of demounting and mounting Tires much easier. If you do not use Tire Lubricant, you significantly increase the chances of damaging the Wheel and the Tire. Tire Lubricant is not provided with the Tire Changer.
- **Check for damage.** Especially with expensive Wheels, make sure to check them for any damage *before* changing the Tire. Depending on the circumstances, if you find any damage you might want to discuss that damage with the owner of the Vehicle and/or photograph the damage. If you work in a shop, talk to your supervisor regarding shop policies in this area.
Additionally, damaged Wheels and Tires are dangerous to work with. If you are not sure whether a Wheel or Tire is too damaged to work with, talk to your supervisor.

- **Understand Performance Wheels.** Before servicing performance Wheels, review the Performance Wheels section of this manual.
- **Identify the Narrow Side/Drop Center of the Wheel.** The rule is: the Narrow Side/Drop Center side of the Wheel gets put onto the Tire Changer facing up. For most Wheels, this means the side of the Wheel facing the *outside* of the Vehicle goes on top, because that's where the Narrow Side/Drop Center side is on most (but not all) Wheels.

The following drawing shows two Wheels and identifies the Narrow Side, Drop Center, and Wide Side of each.



Some aftermarket and OEM performance Wheels are **reverse** drop-center Wheels, meaning the Narrow Side/Drop Center side of the Wheel is closer to the *inside* of the Vehicle. The rule still holds for these Vehicles: the Narrow Side/Drop Center side of the Wheel gets put onto the Tire Changer facing up.

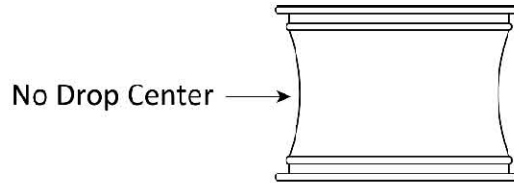
- **Ask your Supervisor.** If you have *any* concerns about a Tire you have been asked to demount or mount or about how to use the Tire Changer, consult with your Supervisor **before** starting work.

Working with Custom and Special Wheels

This section covers working with Alloy Wheels with no drop center, European performance Wheels, and Wheels with tire pressure monitoring systems.

Alloy Wheels

Some manufacturers offer Wheels with little or no drop center. These types of Wheels are almost never Department of Transportation approved.



⚠ DANGER

The Tire, Wheel, or both can be damaged and the Tire could explode under pressure, resulting in serious injury or death. The manufacturer **recommends you not try to demount or mount this type of Wheel**. If you do attempt to demount or mount this type of Wheel, **proceed with extreme caution**.

European Performance Wheels

Some European performance Wheels have very large humps except near the Valve Hole.

On these Wheels, the Beads should be loosened at the Valve Hole on both the upper and lower sides first.

Wheels with Tire Pressure Monitoring Systems (TMPS)


Some Wheels have a pressure sensor located behind the Valve Stem. On these Wheels, the Beads should be loosened opposite the Valve Stem on both upper and lower sides first, before breaking the Beads on the rest of the Tire.

Performance Wheels on some Vehicles (including Corvette, BMW, and Lamborghini Diablo) have a pressure sensor strapped to the rim opposite the Valve Hole. On these Wheels, the Beads should be loosened at the Valve Hole on both the upper and lower sides first, before breaking the Beads on the rest of the Tire.

The Steps in Changing a Tire

Changing a Tire consists of multiple steps:

1. **Place the Wheel on the Turntable.** Use the Tire Lift and the Up Foot Pedal to get a Wheel onto the Turntable.
2. **Secure the Wheel.** It is important for the Wheel to stay in place on the Turntable. Use the Quick-Nut to do this.

 **DANGER** It is extremely important to carefully secure every Wheel you work on. When pressurized Tires fail, they can literally explode. The better the Wheel is secured, the better off everyone in your garage will be if a pressurized Tire fails. Note that even if you carefully secure the Wheel with the Quick-Nut, you must still take precautions (described throughout this manual) with pressurized Tires. The Quick-Nut can control the Wheel, in most cases, but cannot control what happens to the Tire portion if it were to explode. Bystanders can be seriously injured or even killed if a pressurized Tire explodes.

3. **Deflate the Tire.** There is a lot of energy stored in a Tire when it is inflated. You **must** fully deflate the Tire before you can change it. If you do not, that energy will be released when you try to change it, which could result in the Tire exploding, causing injury and even death to the Operator or bystanders. **Never work on a Tire unless you have personally confirmed that it is fully deflated.** The best way to do this is to make sure the Valve Core has been removed from the Body of the Valve Stem.
4. **Break the Bead.** Tires stay in position because the Tire Bead is correctly seated between the Bead Retainer and the Rim Lip of the Wheel (called the Bead Seat). To change a Tire, you must get the Tire Bead out of the Bead Seat all the way around both sides of the Tire. This is called breaking the Bead.
5. **Demount the Tire.** Once the Bead is broken, you still have to slide the Tire over the Rim Lip of the Wheel to get it fully off. Once the Tire is demounted from the Wheel, you can move it out of the way and then put on the new Tire.
6. **Mount the new Tire.** Mounting a Tire is basically the opposite of the steps described above. You first need to get the Tire over the Wheel (the opposite of demounting the Tire), then get the Bead into position in the Bead Seat (the opposite of breaking the Bead), and then inflate the Tire (the opposite of deflating the Tire).
7. **Inflate the Tire: Bead Seal, Bead Seat, Inflate.** The Tire inflation process consists of three stages that could easily be considered a single process. **Bead Sealing** is putting in a small amount of air pressure to push the Tire up against the Rim so that air does not leak out. **Bead Seating** is putting in more air pressure to “pop” the Tire Beads into position in the Bead Seat. **Inflation** is adding air pressure to the Tire manufacturer’s recommended pressure after the Bead has been seated.
8. **Remove the Wheel from the Turntable.** Remove the Quick-Nut, slide the Wheel onto the Tire Lift, and then use the Down Foot Pedal to lower it down to the ground.

Placing a Wheel on the Turntable

When you want to take the Tire off of a Wheel (called *demounting* the Tire), you must first put the Wheel onto the Tire Changer Turntable.

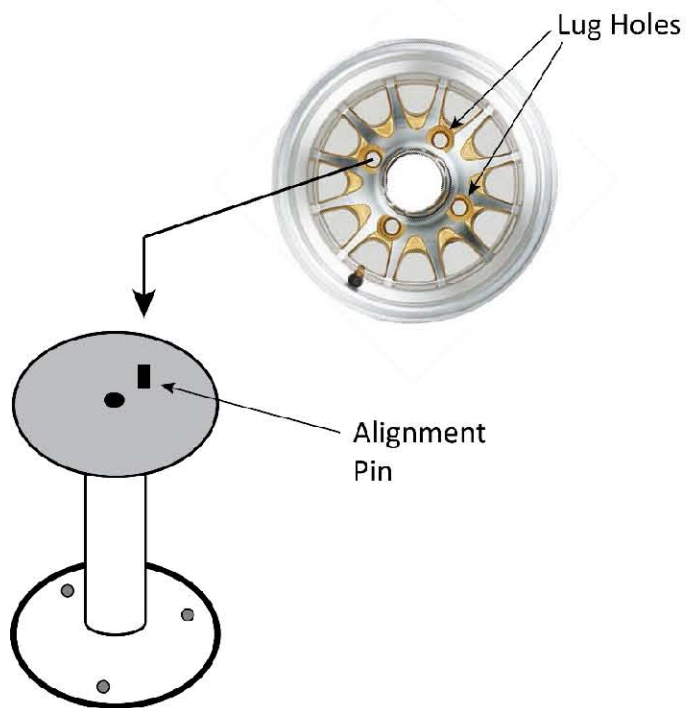
To put a Wheel onto the Turntable:

1. Make sure you are wearing approved eye protection: safety glasses, face shield, or goggles.
2. Review the requirements in **Before You Change a Tire**.
3. Move the Wheel onto the Tire Lift.
4. Press and hold the Up Foot Pedal.

The Tire Lift rises and moves the Wheel over the Turntable.

Make sure the Narrow Side is facing up.

5. Release the Up Foot Pedal and then put the hole in the middle of the Wheel directly over the Turntable.
6. Align a Lug Hole in the Wheel over the Alignment Pin on the Turntable.



Not necessarily to scale. Not all components shown.

Secure the Wheel

Securing the Wheel ensures it stays in place while you demount or mount the Tire.

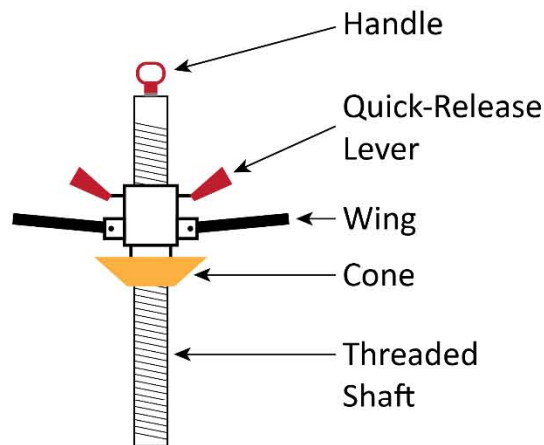
To secure a Wheel on the Turntable:

1. Select an appropriate Adapter or Cone.

You want the Adapter or Cone to go into the hole in the center of the Wheel without going all the way through and touching the Turntable.

2. If you are using a Cone, you also need to use the Turntable Spacer on the Turntable and under the hole in the center of the Wheel; this prevents the Cone from touching the Turntable.
3. Put the Quick-Nut into place.

Make sure to use the correct Cone (and Turntable Spacer) or Adapter with the Quick-Nut.



4. Hold the Handle up and adjust the Threaded Shaft until the Threaded Shaft goes all the way down into the top of the Turntable.

Important: Make sure the Threaded Shaft goes down into the Turntable. If it does not, the Quick-Nut will not correctly hold the Wheel in place.

5. Hold the Quick-Release Levers to the side to quickly pass most of the threads in the Threaded Shaft.
6. When the Adapter or Cone is all the way down, release the Quick-Release Levers and turn the Wings clockwise until the Quick-Nut is securely tightened.
7. When the Wheel is secured by the Quick-Nut, flip up the Wings to get them out of the way.

When you need to remove the Quick-Nut later, reverse the process: flip down the Wings, turn the Wings counter-clockwise until the Quick-Nut is loose, then hold the Quick Release Levers to the side and pull up the Quick-Nut.

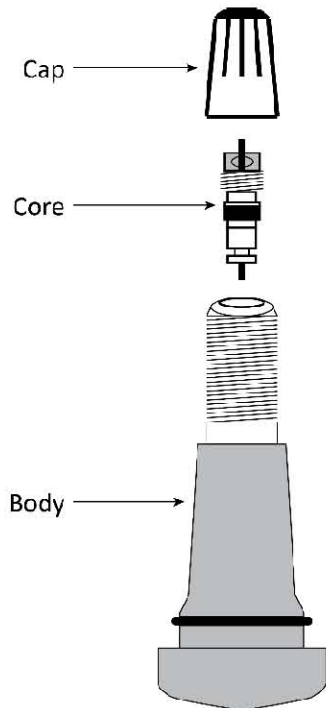
Deflate the Tire

If you have not done so already, you need to fully deflate the Tire.

⚠ DANGER Never attempt to demount or mount an **inflated** Tire. You must fully deflate it first. **Attempting to demount or mount an inflated Tire will result in injury or death.**

To deflate a Tire:

1. If the Valve Stem has a Cap on it, remove the Cap.
2. Pull the Valve Core out of the Valve Body.



You can use a Valve Core Tool to remove the Valve Core. If a tool is not available, you may be able to use needle-nosed pliers.

3. Make sure all of the air comes out of the Tire.

Important: Do not proceed with any other Tire changing activity until the Tire is **fully** deflated.

Break the Bead

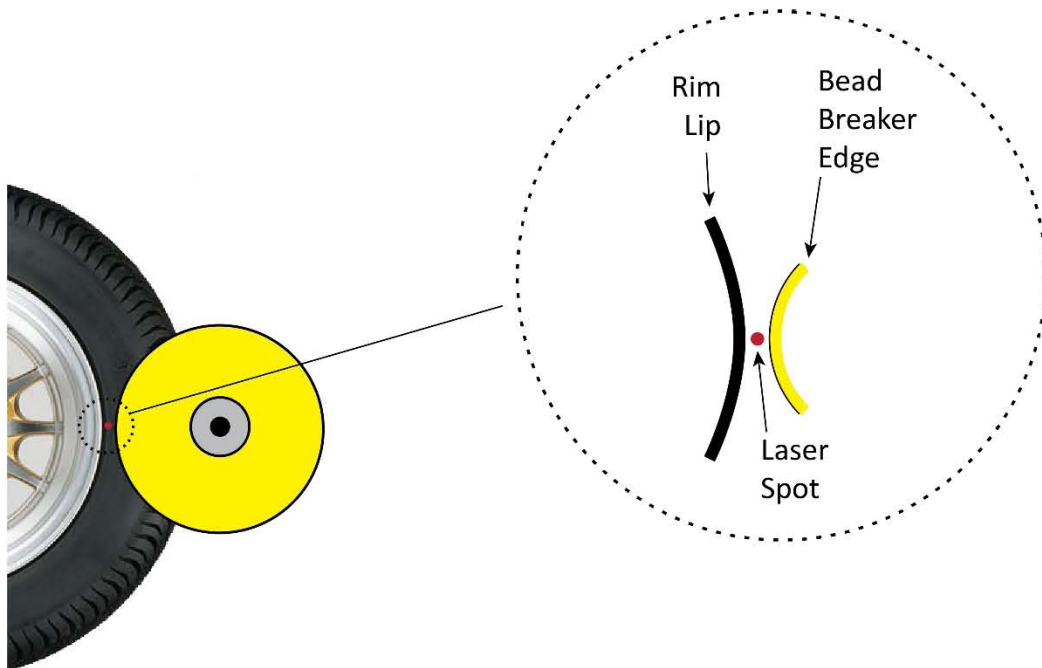
The Bead must be broken – on both sides of the Tire – before the Tire can be taken off the Wheel.

Important: Do not begin breaking a Tire's bead until you are **sure** that the Tire is being held securely in place and it is completely deflated.

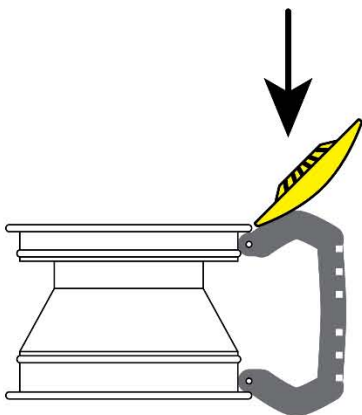
The following procedure describes first breaking the bead on the upper side of the Tire and then on the lower side of the Tire.

To break a Tire's bead:

1. Make sure both Bead Breaker Tools are in position to break the bead.
2. Turn on the Laser.
3. Move the Upper Arm until the Laser is pointing at a spot on the Tire that is about 1/4 inch to 1/8 inch away from the Rim Lip.



4. Using the Upper Tool Arm Control, bring the Upper Tool Arm down to about an inch over the Tire.
5. Check the location of the edge of the upper Bead Breaker Tool in relation to the edge of the Rim.
6. If necessary, use the Tool Arm to adjust the location of the upper Bead Breaker Tool.



-
7. Using the Upper Tool Arm Control, push the upper Bead Breaker Tool down into the Tire about an inch.
 8. Step on the Rotation Foot Pedal and hold it down.
The Turntable begins turning clockwise.
 9. Press and hold the Tool Adjustment Button.
The upper Bead Breaker Tool pushes down into the Tire until it gets below the edge of the rim and then automatically moves in about an inch or two, depending on the geometry of the Tire.
The Bead Breaker Tool moves in because you pressed the Tool Adjustment Button.

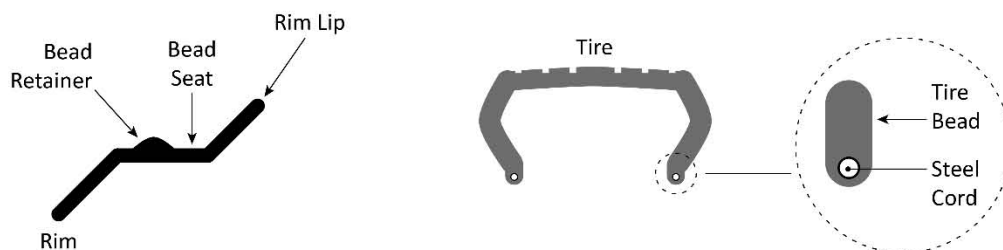
10. Continue turning the Turntable.

11. When the Bead has been broken, release the Rotation Foot Pedal and the Tool Adjustment Button.

The Bead Breaker Tool automatically returns to the starting location, where it was **before** you pressed and held the Tool Adjustment Button.

12. Verify that the Bead has been broken all the way around the Rim on the upper side of the Tire.

The Bead is broken when the Tire Bead comes out from between the Rim Lip and the Bead Retainer (the Bead Seat) all the way around the Tire.



13. When you have verified that the upper Bead has been broken, you can switch to the lower Bead.
14. Without changing the location of the Upper Tool Arm, check the Mirror to verify that the Bead Breaker Tool on the Lower Arm is at a spot on the Tire that is about 1/4 inch to 1/8 inch away from the Rim Lip on the lower side of the Tire.

The Upper Tool Arm and the Lower Tool Arm are synchronized, so if the Upper Bead Breaker is in the correct location to break the Bead on the upper side of the Tire (you can verify this using the Laser), then the Lower Bead Breaker Tool is in the correct location to break the Bead on the lower side of the Tire.

15. After verifying the location of the lower Bead Breaker Tool, use the Lower Tool Arm Control to push the lower Bead Breaker Tool up into the Tire about an inch.
16. Press down the Rotation Foot Pedal and hold it down; the Turntable starts rotating.
17. Press and hold the Tool Adjustment Button.

The lower Bead Breaker Tool pushes into the Tire until it gets below the edge of the rim and then automatically moves in about an inch or two, depending on the geometry of the Tire.

18. When the lower Bead has been broken, release the Rotation Foot Pedal and the Tool Adjustment Button.

19. Verify that the Bead has been broken all the way around the Rim on the lower side of the Tire.

The Tire's Bead is now broken. The next step is to take the Tire off the Wheel, called demounting.

Demount the Tire

After the Bead is broken, you can take the Tire off the Wheel, called demounting.

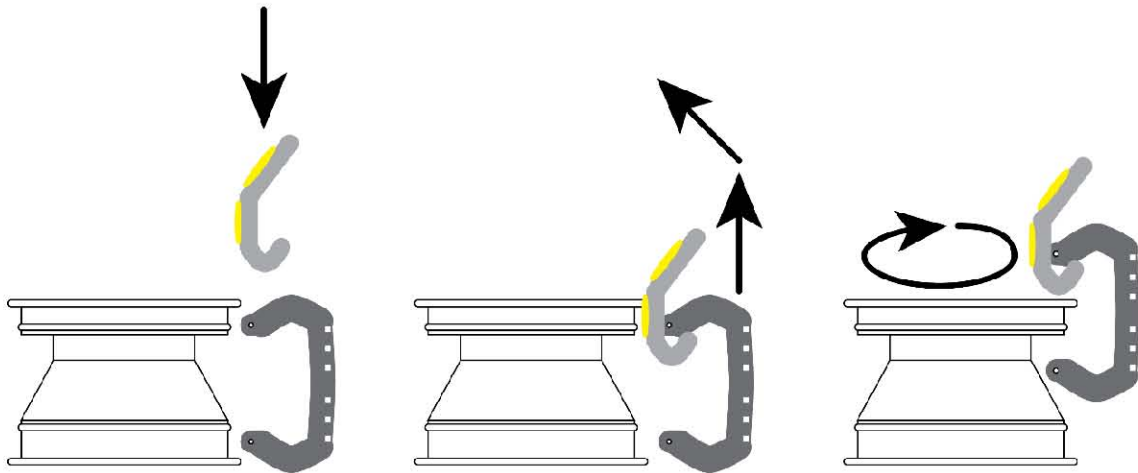
Important: The manufacturer recommends using a liberal amount of lubricant; this makes the Tire come off more easily and helps to prevent damage to the Wheel or the Tire.

⚠ WARNING The following procedure **requires** that the Tire's Bead is broken on both sides. **Do not** try to demount a Tire whose Bead is not broken; you could damage the Wheel, the Tire, or even cause personal injury to yourself or bystanders.

The following procedure demounts a Tire from the Wheel it is on.

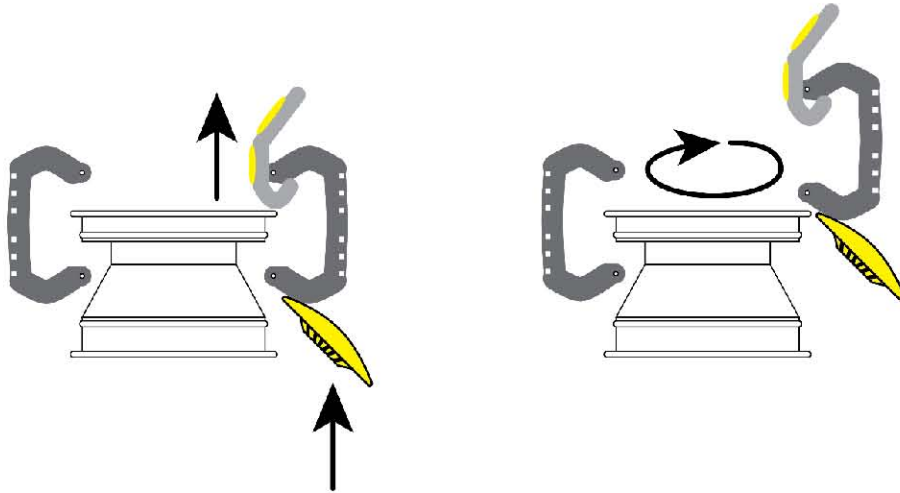
To demount a Tire:

1. Verify that the Tire's Bead is completely broken on both sides of the Tire.
2. Apply Tire lubricant to both the upper and lower Beads of the Tire.
This helps get the Tire off the Rim.
3. Switch the Upper Arm to the Demount Hook Tool.
4. Move the Demount Hook Tool down onto the top of the Tire.
5. Press and hold the Rotation Foot Pedal to start the Turntable rotating.
6. Press and hold the Tool Adjustment Button.
7. Move the Demount Hook Tool down into the space where the Bead edge of the Tire meets the Rim using the Upper Tool Arm Control.



8. When the Demount Hook Tool slips under and catches the Bead edge of the Tire, release the Rotation Foot Pedal to stop the Turntable.
9. Release the Tool Adjustment Button.
The Demount Hook Tool automatically moves out.
10. Use the Upper Tool Arm Control to pull the Demount Hook Tool up.
11. Use the Upper Tool Arm Control to move the Demount Hook Tool in.
12. Press and hold the Rotation Foot Pedal to start the Turntable rotating.
13. When the entire upper Bead edge of the Tire is above the upper Rim, release the Rotation Foot Pedal to stop the Turntable.

14. Move both Arms up, high enough so the lower Bead edge will clear the top of the upper Rim.

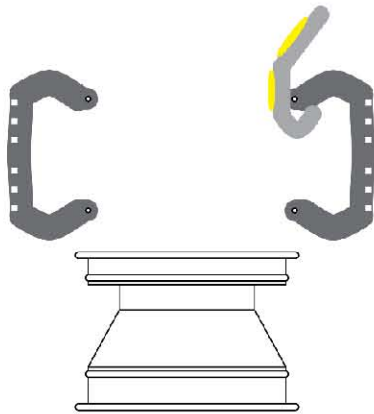


15. Use the Lower Tool Arm Control to move the lower Bead Breaker Tool up.

16. Press and hold the Tool Adjustment Button and the Rotation Foot Pedal.

The Tire is pulled up.

17. Release the Tool Adjustment Button and the Rotation Foot Pedal when the Tire's lower Bead is above the top of the upper Rim.



The Tire is now dismounted. The next step is to mount the new Tire.

Wheel / Tire Mismatches

A Wheel / Tire mismatch is mounting a Tire where the Tire Bead diameter does not exactly match the Diameter of the Wheel.

A Wheel / Tire mismatch is dangerous. A mismatched Tire and Wheel may separate or explode, resulting in injury or even death.

The differences can be subtle, so you must take care to get an exact match. For example, a 16 inch Tire goes on a 16 inch Wheel, not a 15.5 or a 16.5 inch Wheel. It may be possible to slide the 16 inch Tire over the Rim Lip of a 16.5 inch Wheel, but during inflation it will not seat properly.

⚠ WARNING **Never mount a Tire on a Wheel until you have positively identified and correctly matched the Tire and Rim diameters.** If you try to seat a Tire Bead on a mismatched Wheel and Tire by inflating it, the Tire Bead may break with explosive force, which could result in serious injury or death.

Mount a New Tire

This section describes how to mount a new Tire on a Wheel.

⚠ WARNING Mounting a new Tire can be hazardous if not done correctly. Do not change a Tire unless you have been trained to do so. Failure to understand and follow proper procedures can result in injury or death.

Review the following points before mounting a new Tire:

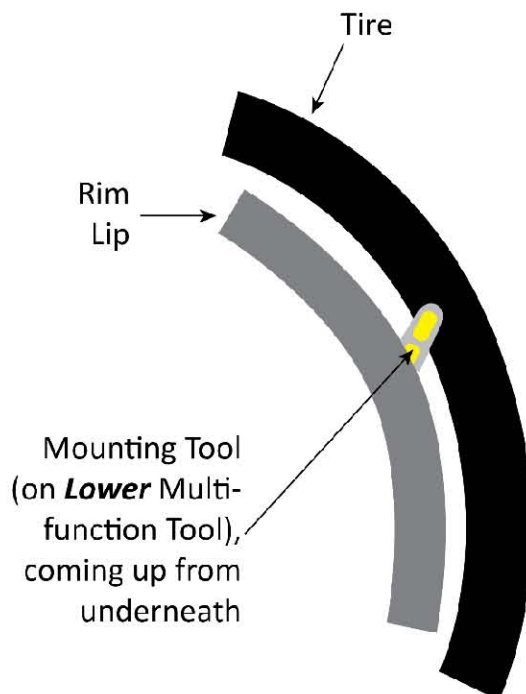
- Check the Tire and Wheel to make sure they are an exact match.
- Check the Tire for damage; **do not mount a damaged Tire**.
- Make sure the Tire is both clean and free of balancing weights.
- Check the location of the TPMS and adjust the Tire if necessary.
- Make sure the Tire is **fully** deflated.

To mount a Tire:

1. Make sure you are wearing approved eye protection: safety glasses, face shield, or goggles.
2. If the Wheel is not already secured on the Turntable, move the Wheel onto the Turntable and secure it with the Quick-Nut.

Make sure the Narrow Side is facing up.

3. Align a Lug Hole in the Wheel with the Alignment Pin on the Turntable, if desired.
4. Apply Tire lubricant liberally to both the upper and lower Beads of the Tire.
5. On the **Lower** Arm, move the Mounting Tool so that it is pointing up.
6. Adjust the Mounting Tool so that the top of it is about an inch over the Wheel's Rim bottom and about half an inch from the Rim Lip.
7. Lift the new Tire over the Quick-Nut and place it on top of the Wheel with the Mounting Tool between the Wheel and the Tire.



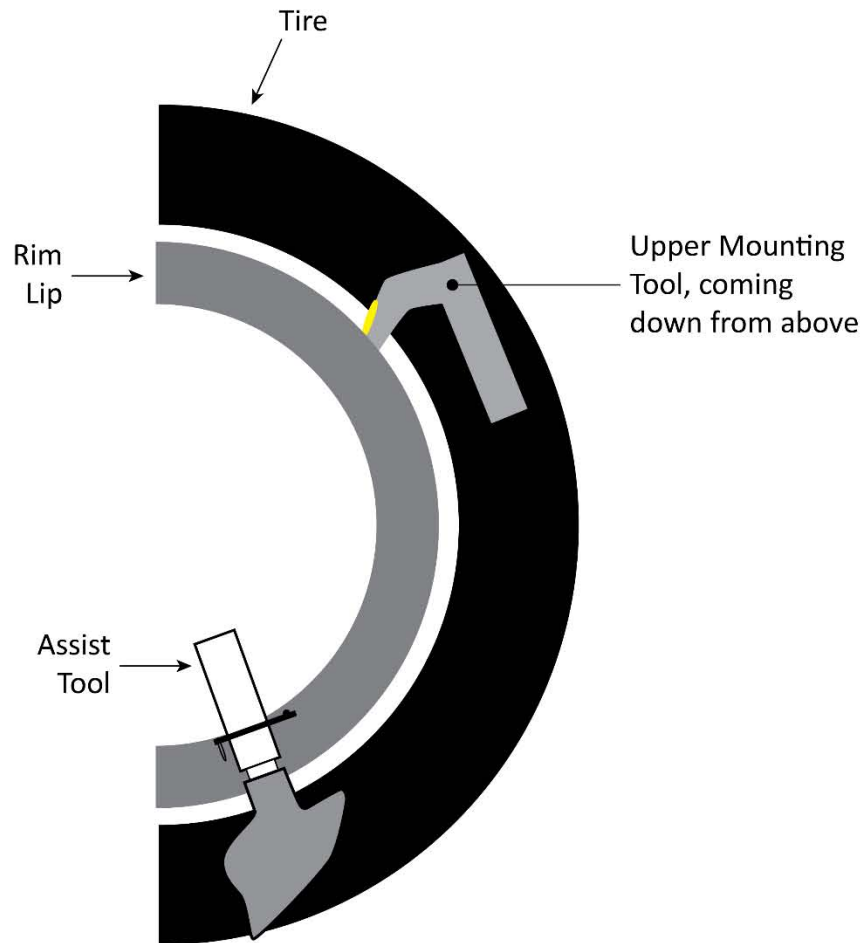
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8. Push down on the Tire so that it is part way down the Mounting Tool.
 9. Rotate the Turntable until the bottom edge of the Tire slips down over the top edge of the Wheel.
 10. Lower the Lower Tool Arm.

The Tire slides down so that it is next to the Wheel.

11. On the **Upper** Arm, move the Mounting Tool so that it is facing down.
12. Move the Mounting Tool down so that it is pressing into the top of the Tire.

The tip of the Mounting Tool should be pressing down about an inch past the Wheel Rim.

13. Move the Assist Tool into place; put it at about a quarter of the way around the Tire from the Mounting Tool.



14. Rotate the Turntable; move the Assist Tool with the Tire as the Tire moves.

The Top Bead of the Tire slips over the Rim edge as the Wheel rotates.

15. Raise the Upper Arm.

The Tire is now in place around the Wheel. The next step is to inflate the Tire.

Inflate the Tire

The Tire inflation process consists of three stages:

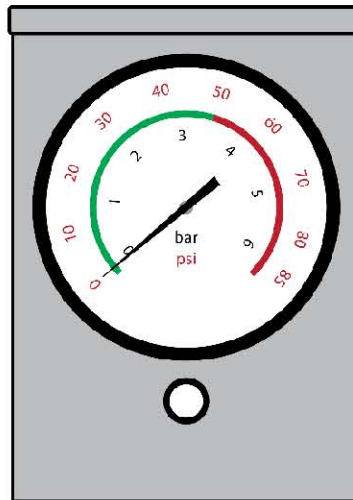
- **Bead sealing** is putting in a small amount of air pressure to push the Tire up against the Rim (after the new Tire has been mounted) so that air does not leak out.
- **Bead seating** is putting in more air pressure to “pop” the Tire Beads into position in the Bead Seat.
- **Inflation** is adding air pressure to the Tire manufacturer’s recommended pressure.

If the Tire inflation process goes smoothly, these three stages could easily be considered a single stage instead of multiple stages.

CAUTION The inflation process can produce some additional noise. The manufacturer recommends wearing ear protection when inflating a Tire.

WARNING Do not exceed the maximum air pressure specified by the Tire manufacturer. This increases the chances that the Tire could explode, causing injury or even death to the Operator and bystanders.

Use the Pressure Gauge on the Tire Changer to monitor the air pressure in the Tire you are inflating.



DANGER If you are inflating a Tire that requires more than 60 psi, **always** use a **Tire Inflation Cage such as the RIC-4716** for safety purposes. If a Tire fails at high pressure, it can explode and cause serious injury or death to anyone near it. Using a Tire Inflation Cage helps reduce the danger.

To inflate a Tire:

1. Make sure you are wearing approved eye protection: safety glasses, face shield, or goggles.
2. Make sure the Wheel on the Turntable is well secured with the Quick-Nut.

WARNING The Quick-Nut can hold the Wheel in place, but it cannot restrain a Tire that explodes. To reduce danger during Tire inflation, no one other than the Tire Changer Operator should be closer than 30 feet to the Tire and the Operator should be as far from the Tire as possible.

3. Make sure both the upper and lower Beads are lubricated.
4. Clip the Air Chuck to the Valve Stem of the new Tire.

5. Press and hold on the Inflation Foot Pedal for a second or two.

Bead Sealing takes very little air pressure, anywhere from 0 to 3 psi, which you can monitor on the Pressure Gauge.

The purpose of Bead Sealing is to push the Tire up against the Rim so that air does not leak out during the rest of the inflation process.

6. Check to make sure the upper and lower Beads are sealed against the Rim.

If the Beads are not sealed, try again, this time putting it slightly more air.

7. When the Beads are sealed, press and hold on the Inflation Foot Pedal to seat the Bead.

You should hear a pop as the Beads are seated.

8. Bead Seating takes more air pressure, usually requiring 7 psi or above; **do not exceed 40 psi to seat the Bead.**

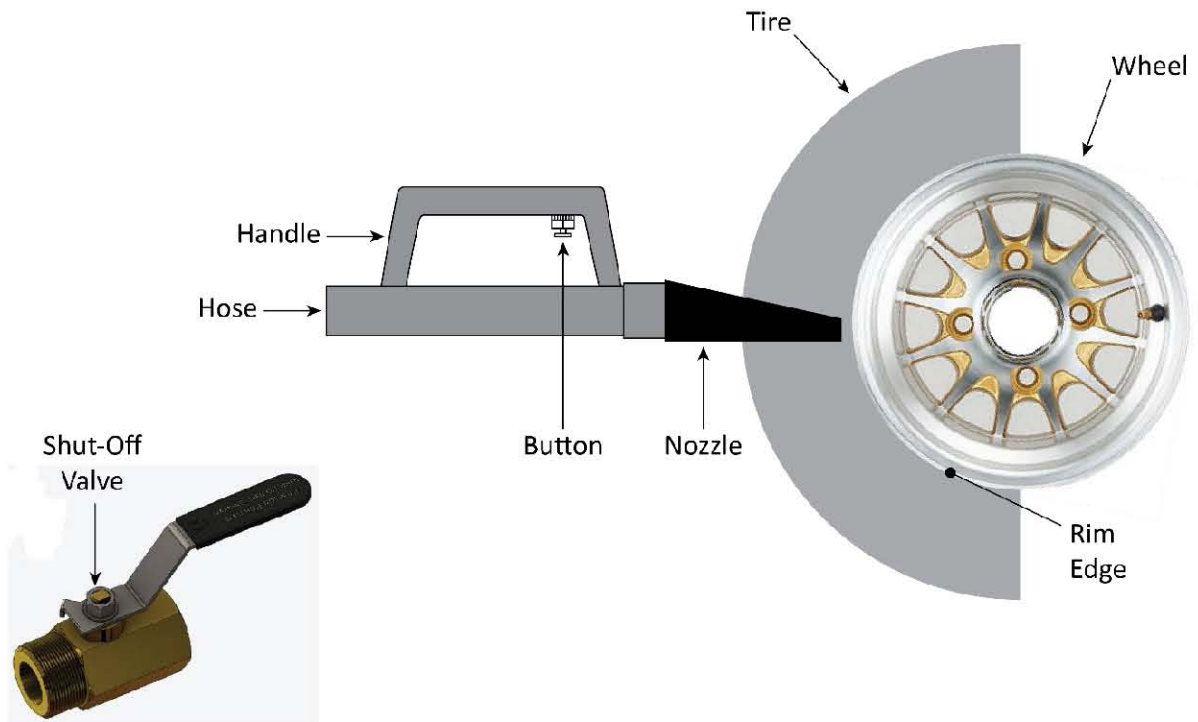
Always follow the Tire manufacturer's recommended procedure for Bead Seating.

If air pressure gets to 40 psi but the Bead is not seated, let the air out of the Tire and try again.

9. If the Bead is still not seated, position the Turbo-Blast™ nozzle about an inch from where the Wheel meets the Rim Edge and press the Button. You want the air blast to go under the Rim and into the Tire, seating the Bead.

You must hold the Turbo-Blast with two hands when delivering an air blast.

The following drawing shows the optimal location of the Turbo-Blast nozzle.



Not to scale. Not all components shown. Side view shown; nozzle must be flat to use.

⚠ WARNING A Turbo-Blast air blast is dangerous; it can cause product damage, serious injury, and death. **Never** point the Turbo-Blast Nozzle at people or things. The Shut-Off Valve behind the tower **must** be turned off when Turbo Blast is not in use.

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11. If the Bead still does not seat, either get a different Tire or remove all air from the Tire and start the inflation procedure over from the beginning.

Never exceed 40 psi to seat the Bead.

12. When you have verified that both the upper and lower Beads are seated, press and hold the Inflation Foot Pedal and inflate the Tire to the manufacturer's recommended air pressure for the Tire.

The typical inflation pressure for automobile Tires is from approximately 25 to 45 psi. Light truck Tire inflation pressures typically cover a wider range.

Do not exceed the Tire manufacturer's recommended air pressure for a Tire.

The Tire Changer has an air pressure limiter that is set at the factory so that it does ***not*** exceed 60 psi. ***Do not override the pressure limiter.***

-  **DANGER** Inflating a Tire with a bypassed pressure limiter could result in the Tire exploding, which could injure or kill bystanders or the Tire Changer Operator. Do not exceed 60 psi unless the Tire is in a Tire Inflation Cage.

13. When the Tire is correctly inflated, remove the Air Chuck from the Valve Stem.

The Wheel can now be removed from the Turntable.

Remove the Wheel from the Turntable

Once the new Tire has been correctly mounted on the Wheel and inflated, you can remove it from the Turntable.

To remove a Wheel from the Turntable:

1. Take the Quick-Nut off and return it to its holder on the Tire Changer.
Flip down the Wings, turn the Wings counter-clockwise until the Quick-Nut is untightened, then hold the Quick Release Levers to the side and pull up the Quick-Nut.
2. Press and hold the Up Foot Pedal to raise the Tire Lift.
3. Slide the Wheel off the Turntable and onto the Tire Lift.
4. Press and hold the Down Foot Pedal to lower the Tire Lift.
5. Move the Wheel off the Tire Lift.