cod. 4-146855 - 10/2023

TCX51M Tire Changer

Operations Manual

HUNTER
Engineering Company

Hunter Engineering Company

Dear Purchaser

Thank you for purchasing your Hunter Tire Changer.

Your Tire Changer has been designed to provide years of safe and dependable service, as long as it is used and maintained in accordance with the instructions provided in this manual.

All persons who will use and/or maintain this Tire Changer must read, understand and follow all warnings and instructions provided in this manual, and be properly trained.

This Owner's Manual should be considered an internal part of your Tire Changer and should remain with the Tire Changer. However, nothing in this manual, and none of the devices installed on the Tire Changer, substitute for proper training, careful operation, good judgment and safe work practices.

Always be sure that your Tire Changer is in optimum working order. If you suspect that anything is not working properly, or that a dangerous situation may exist, immediately shut down the Tire Changer and remedy any condition before you proceed.

If you have any questions concerning the proper use or maintenance of your Tire Changer, please call your authorized Hunter Engineering Company representative..

You can also contact Hunter Engineering Company at Tel: 800-448-6848 or 314-731-3020, Fax. 314-731-1776 or use

Sincerely,

Hunter Engineering Company

OWNER INFORMATION

Owner Name _____

Owner Address _____

Model Number _____

Serial Number _____

Date Purchased _____

Date Installed _____

Service and Parts Representative _____

Phone Number _____

Sales Representative _____

Phone Number _____

Training Checklist

Safety Precautions	**Trained**	**Declined**
Warning and Caution Labels	❒	❒
Pinch Points and Other Potential Hazards	❒	❒
Safe Operating Procedures	❒	❒
Maintenance and Performance Checks		
Mounting Head Inspection	❒	❒
Adjustment and Filling of Oilers	❒	❒
Bead Breaking		
Standard Wheels	❒	❒
Low Profile Wheels	❒	❒
Clamping		
Steel Jaw Internal/External Clamping	❒	❒
Demounting		
Standard Wheels with Bead Lever and Plastic Sleeve Protector	❒	❒
Full Seating of Mount/Demount Head to Prevent Head Failure	❒	❒
Bead Lubrication During Removal of Low Profile Tires	❒	❒
Reverse Drop Center Wheels	❒	❒

Mounting	**Trained**	**Declined**
Standard Wheels	❒	❒
Mounting of Stiff, Low Profile Tires	❒	❒
Reverse Drop Center Wheels	❒	❒
Proper Bead Lubrication for Mounting Protection	❒	❒
Inflation	**Trained**	**Declined**
Safety Precautions	❒	❒
Lubrication and Removal of Valve Core	❒	❒
Bead Sealing and Seating	❒	❒

Individuals and Dates Trained

_____ _____

_____ _____

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Contents

1. Getting Started

1.1 Introduction

PURPOSE OF THE MANUAL

The purpose of this manual is to provide the instructions necessary for optimum operation, use and maintenance of your machine. If you sell this machine, please deliver this manual to the new owner. In addition, so we can contact our customers with any necessary safety information, please ask the new owner to complete and return to Hunter the change of ownership form attached to the last page of this manual. Alternately, the new owner can send an email to newuser@hunter.com.

This manual presumes that the technician has a thorough understanding of rim and tire identification and service. He/she must also have a thorough knowledge of the operation and safety features of all associated tools (such as the rack, lift, or floor jack) being utilized, and have the proper hand and power tools necessary to work in a safe manner.

The first section provides the basic information to safely operate the TCX51M tire changer family. The following sections contain detailed information about equipment, procedures, and maintenance. “Italics” are used to refer to specific parts of this manual that provide additional information or explanation. For example, Refer to “*Equipment Components*” page 21. These references should be read for additional information to the instructions being presented.

The owner of the tire changer is solely responsible for enforcing safety procedures and arranging technical training. The tire changer is to be operated only by a qualified and trained technician. Maintaining records of personnel trained is solely the responsibility of the owner or management.

The TCX51M tire changer family is intended for mounting, demounting, and inflating most tires with an approximate dimension of 50 inches in diameter and 15 inches in width.

Copies of this manual and of the documents accompanying the machine may be obtained from Hunter Engineering Company by specifying the type of machine and its serial number.

NOTICE: Design details are subject to change. Some illustrations may vary slightly in appearance from the machine you have.”

An advanced operation section has been provided in *“Advanced Procedures,” page 3*4.

1.2 For Your Safety

Hazard Definitions

These symbols identify situations that could be detrimental to your safety and/or cause equipment damage.

DANGER

DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

NOTICE: Used without the safety alert symbol indicates potentially hazardous situation, which, if not avoided, may result in property damage.

1.3 General Warnings and Instructions

WARNING

Avoid Personal Injury. Carefully read, understand and follow the warnings and instructions given in this manual. This manual is an essential part of the product. Keep it with the machine in a safe place for future reference.

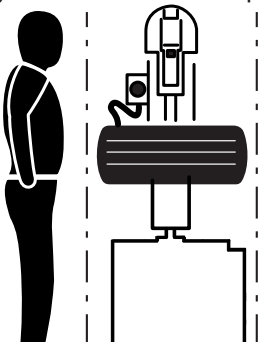
1. If the use and maintenance procedures provided in this manual are not properly performed, or the other instructions in this manual are not followed, an accident could occur. Throughout this manual reference is made that “an accident” could occur. Any accident could cause you or a bystander to sustain severe personal injury or death, or result in property damage.

⚠ WARNING

Avoid Personal Injury. Carefully read, understand and follow the warnings and instructions given in this manual. This manual is an essential part of the product. Keep it with the machine in a safe place for future reference.

2. Overinflated tires can explode, producing hazardous flying debris that may result in an accident.
3. Tires and Rims that are not the same diameter are “mismatched.” Never attempt to mount or inflate any tire and rim that are mismatched. For example, never mount a 16.5” tire on a 16” rim and vice versa. This is very dangerous. A mismatched tire and rim could explode and result in an accident.
4. Never exceed the bead setting pressure (gauge on hose) provided by the tire manufacturer, as stated on the sidewall of the tire.
5. Never place your head or any part of your body over a tyre during inflation process or when attempting to seat beads. This machine is not a safety device against the possible risk of explosion of tyres, tubes or rims.

6. Keep a safe distance from the tyre changer during inflation, in order to remain outside the vertical cylinder area occupied by the wheel. Do not approach it.



⚠ DANGER

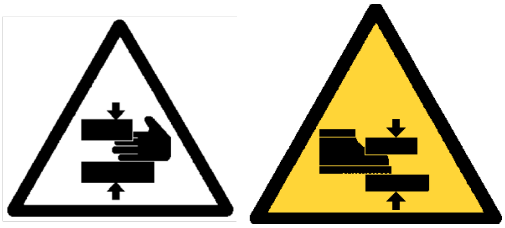
A bursting tyre can cause projections of its parts in surrounding areas with a force sufficient to cause serious injury or death.

Never mount any tyre unless its size (moulded into the sidewall) matches the rim size (stamped into the rim) exactly or if the rim or tyre are defective.

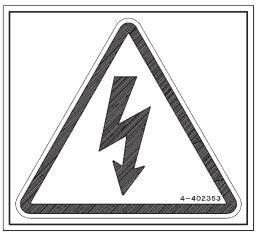
Never exceed tyre pressure recommended by tyre manufacturer.

The tyre changer is not a safety device and does not prevent tyres and rims from exploding. Keep all persons not working on the machine out of the working area.

7. Risk of crushing. Presence of moving parts. Contact with moving parts can cause accidents.
   - Only one operator may work with the machine at a time.
   - Keep bystanders away from the tyre changer.
   - Keep your hands and fingers away from the rim edge during the demounting and mounting process.
   - Keep hands and fingers clear of mount/ demount head during operation.
   - Keep your hands and other body parts away



from moving parts.
- Do not use tools other than those supplied with tyre changer.
- Use lubricant that is specific for tyres in order to prevent tyre binding.



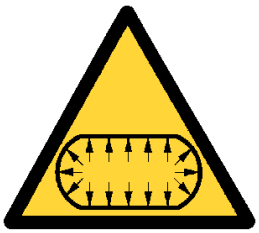
8. Electrocution hazard.
   - Do not clean electric tyre changers using water or pressure.
   - Do not operate the machine in the presence of a damaged electrical cable.
   - If an extension cable is necessary, use a cable with a rated current equal to or greater than that of the equipment. Cables with rated features that are lower than those of the machine could overheat and cause a fire.
   - Make sure that the cable is positioned so that it cannot be pulled and the avoided.

9. Eye injury hazard.

   During the bead insertion and inflation phase, debris, dust and fluids could be projected into the air. Remove any debris from the tyre tread and on the tyre surface. Wear OSHA approved safety glasses during mounting and demounting procedures.

10. Always carefully inspect the machine before using it. Missing, damaged or worn equipment (including the hazard adhesive labels) must be repaired or replaced before start-up.
11. Never leave nuts, bolts, tools or other materials on the machine. They could be entangled in moving parts and cause malfunctions.
12. Do NOT mount or inflate tyres that are cut, damaged, decayed or worn. Do NOT mount tyres on damaged, bent, rusted, worn, warped or deformed rims.
13. Should the tyre get damaged during the mounting phase, do not try to complete the mounting operation. Remove it, take it away from the service area and mark it as damaged.
14. Inflate tyres in gradual steps, while continuously monitoring the pressure and observing the tyre itself, the rim and the bead. NEVER exceed the pressure limits indicated by the manufacturer.
15. The internal parts in this equipment could create contacts or sparks if exposed to flammable vapours (petrol, paint thinners, solvents, etc.). Do not install the machine in a narrow area or position it below floor level.16. Do not operate the machine while under the influence of alcohol, medicines and/or drugs. If you are taking prescription or non-prescription medicines, contact a physician to be aware of the side effects that they might have on the ability to operate the machine safely.
17. Always use OSHA approved and authorised personal protective equipment (PPE) while operating the machine. Consult your supervisor for more instructions.

18. Do not wear jewellery, watches, loose clothing, ties and tie up long hair before using the machine.
19. Wear non-slip safety footwear while using the tyre changer.
20. While positioning, lifting or removing wheels from the tyre changer, wear an appropriate back support and use a correct lifting technique.
21. Only appropriately trained personnel can use, service and repair the machine. Repairs must only be performed by qualified personnel. Your Hunter service representative is the most qualified person. The employer must determine if an employee is qualified to carry out any machine repair safely if the operator has attempted to make the repair.
22. Before starting the machine, the operator must pay close attention to the warnings of the adhesive labels affixed to the equipment.



23. Clamp the rim on the turntable during inflation.
24. Disconnecting the pneumatic supply, both due to non-use or to maintenance of the machine or the pneumatic system of the workshop, can leave pneumatic actuators under pressure. Discharge the machine pneumatic system using the controls on the actuators.

DECAL PLACEMENT

No.	Part Number	Description
1	RP11-4-146905	DECAL-PEDAL OPERATION
2	RP11-4-404331	DECAL-INFLATRON PEDAL OPERATION
3	RP11-4-147466	DECAL-HUNTER LOGO TCX51M
4	RP11-4-402021	DECAL-MANUAL TIRE BLEED VALVE
5	RP11-4-144226	DECAL-DANGER OPERATION
6	RP11-4-115243	DECAL-WARNING OPERATION
7	RP11-4-402027	DECAL-MAXIMUM INLET PRESSURE
8	RP11-4-136333	DECAL-WARNING INDICATION
9	RP11-4-136661	DECAL-ELECTRICAL HAZARD
10	RP11-4-115245	DECAL-WARNING INDICATION
11	RP11-3013640A	DECAL-ARROWS LEFT-RIGHT
12	RP11-3014039	DECAL-WARNING INDICATION
13	RIF. SN	DECAL-MODEL SERIAL NUMBER
14	RP11-4-137989	DECAL-TPMS RECOMMENDATIONS
15	RP11-4-402365	DECAL-VERTICAL COLUMN LOCK LEVER OPERATION

Electrical Indications

The TCX51M family is manufactured to operate at a specific voltage and amperage rating.

Make sure that the appropriate electrical supply circuit is of the same voltage and amperage ratings as marked on the TCX51M.

⚠ WARNING

FIRE HAZARD. DO NOT ALTER THE ELECTRICAL PLUG.

NOTICE

Plugging the electrical plug into an unsuitable supply circuit will damage the equipment.

⚠ DANGER

- **HAZARDOUS VOLTAGE**
- **Turn off and lock out system power before servicing.**
- **Contact may cause electric shock or death.**

Make sure that the electrical supply circuit and the appropriate receptacle is installed with proper grounding.

To prevent the possibility of electrical shock injury or damage to the equipment when servicing the TCX51M, power must be disconnected by removing the power cord from the electrical power outlet.

Specific Precautions/Power Source

The TCX51M is equipped with motoinverter, (115VAC/ 1 PH / 50-60Hz), and standard plug 115V 5-15P plug.

This machine must be connected to a 15 amp branch circuit. Please refer all power source issues to a certified electrician. Refer to installation manual.

⚠ WARNING

A protective ground connection, through the grounding conductor in the power cord, is essential for safe operation. Use only a power cord that is in good condition.

Equipment installation and service

A factory-authorized representative should perform installation.

This equipment contains no user serviceable parts. All repairs must be referred to a qualified Hunter Service Representative

Equipment specification

Electrical	
Voltage:	115 VAC, 1 phase, 50-60 Hz, includes NEMA 5-15P
Circuit size:	15 amps
Air	
Air Pressure Requirements:	115-175 PSI (7.9-12.0 bar)
Approximate Air Consumption:	at 8 bar = 6 Lt/s • 0.2118 Ft3/s • 12,70 CFM (ft3/min)
	at 10 bar = 7,76 Lt/s • 0.2471 Ft3/s • 14,82 CFM (ft3/min)
Mechanical	
Clamping System Rotating Speed:	CW – 7 rpm and 17 rpm CCW – 7 rpm
Max. Tire Diameter:	44 in.
Max Bead Roller Opening Width:	15 in.
Diameter Range:	14” – 26”
Noise level when operating	70 db(A)

Explanations of symbols

These symbols may appear on the equipment.

Alternating current.

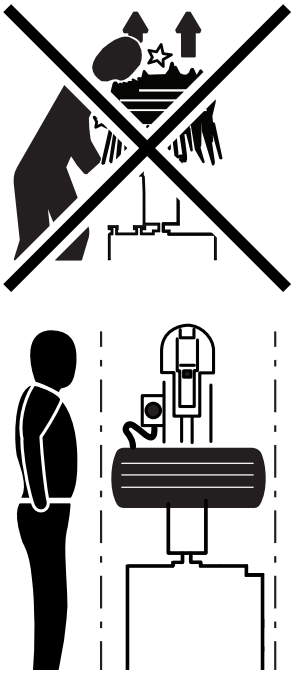

Earth ground terminal.


Protective conductor terminal.


Risk of electrical shock.

Air Pressures

The machine is equipped with an internal pressure limiting valve to minimize the risk of over inflating the tire.



DANGER

- **EXPLOSION HAZARD**
- **Never exceed tire pressure recommended by tire manufacturer. Always match the tyre and rim dimensions.**
- **Take care to avoid any damage to the tyre.**

1. Never exceed these pressure limitations:
   - Supply line pressure (from compressor) is 220 psi.
   - Operating pressure (gauge on regulator) is 145 psi.

   Bead setting pressure (gauge on hose) is the tire manufacturer's maximum pressure as stated on the sidewall of the tire.

2. Activate air inflation jets only when sealing bead.

3. Bleed air pressure system before disconnecting supply line or other pneumatic components. Air is stored in a reservoir for operation of inflation jets.

4. Only activate the air inflation jets if the rim securing device is locked in place and the tire is properly clamped (when possible).

5. Only use supplied inflation hose with a properly functioning regulator.

6. Never inflate using "shop air" on the tire changer.

7. Use a safety cage in accordance with tire manufactures recommendations if inflation pressures beyond the tire changer equipped regulated air is required.

1.4 Special Rim/Tire Considerations

NOTICE

Wheels equipped with low tire pressure sensors or special tire and rim designs may require certain procedures. Consult wheels and tire manufacturer's service manuals.

1.5 Intended Use of The Machine

This machine must be used only to remove and replace an automotive tire on an automotive rim, using the tools with which it is equipped. Any other use is improper and can result in an accident.

1.6 Employee Training

1. The employer is obligated to provide a program to train all employees who service rim wheels in the hazards involved in servicing those rim wheels and the safety procedures to be followed. Service or servicing means the mounting and demounting of rim wheels, and related activities such as inflating, deflating, installing, removing and handling.

   • The employer shall insure that no employee services any rim wheel unless the employee has been trained and instructed in correct procedures of servicing the type of wheel being serviced, and in the safe operating procedures.
   • Information to be used in the training program shall include, at a minimum, the applicable information contained in this manual.

2. The employer shall ensure that each employee demonstrates and maintains the ability to service rim wheels safely, including performance of the following tasks:

   • Demounting of tires (including deflation).
   • Inspection and identification of the rim wheel components.
   • Mounting of tires.
   • Use of any restraining device, cage, barrier, or other installation.
   • Handling of rim wheels.
   • Inflation of the tire.
   • Understanding the necessity of standing back from tire changer during inflation of the tire and during inspection of the rim wheel following inflation, never lean over.
   • Installation and removal of rim wheels.

3. The employer shall evaluate each employee's ability to perform these tasks and to service rim wheels safely and shall provide additional training as necessary to assure that each employee maintains his or her proficiency.

1.7 Pre-Use Checks

Before beginning work, carefully check that all components of the machine, especially rubber or plastic parts, are in place, in good condition and working properly. If the inspection reveals any damage or excessive wear, no matter how slight, immediately replace or repair the component.

Walk around the machine to ensure that all components are in good condition and operational and that there are no foreign objects or debris (rags, tools, etc…) in or about the machine which could affect its operation.

These checks must be carried out:

- Before starting the machine.
- At regular time intervals.
- After any modification or repair.

The machine may only be started after this pre-use check is successfully completed.

Do not use the machine if it is placed out of service for a tune up, maintenance, lubrication, etc.

1.8 During Use

In the event you hear any strange noise or feel unusual vibrations, if a component system is not operating properly or if there is anything unusual at all, stop using the machine immediately.

- Identify the cause and take any necessary remedial action.
- Contact your supervisor if necessary.

Never allow any bystander to be within 20 feet of the machine during operation.

To stop the machine in an emergency:

- disconnect the power supply plug;
- cut off the compressed air supply network by disconnecting the shut-off valve (snap coupling).

1.9 Control Pedal Configurations

⚠ WARNING

Avoid unintended machine movement and personal injury.
Pay close attention to the configuration of your machine.

Throughout this manual, control pedals are referred to by the associated symbol.

ROTATION

The PowerOut system provides bead breaking controls on the handle for convenience, particularly with larger diameter assemblies.

1.10 Wheel Rotation Pedal

Step down on the rotation pedal to rotate the wheel clockwise.

Lift up on the pedal to rotate the wheel counterclockwise.

1.11 Console controls

1.11.1 Upper roller

The upper control activates the upper bead breaker; move the lever up or down in order to make the upper bead breaker shift vertically. Release the control to stop the bead breaker.

1.11.2 Lower roller

The lover control activates the lower bead breaker; move the lever up or down in order to make the lower bead breaker shift vertically. Release the control to stop the bead breaker.

1.11.3 Upper roller indent

Press the upper button to start upper disc penetration.

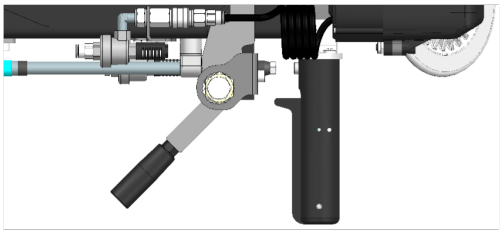
1.11.4 Lower roller indent

Press the lower button to start lover disc penetration.

1.12 Diameter control

This control activates the horizontal shift of the bead breakers; firmly hold the handle to unlock the horizontal shift, push or pull the lever in order to move the bead breakers. Release the handle to lock the bead breakers in the desired position. This control activates both bead breaking arms at the same time.

1.13 Bead breaker opening

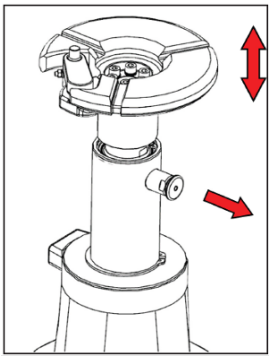


This control allows moving the upper bead breaker to the out-of-work position in order to facilitate the movement of bulkiest wheels. Push the lever backwards to unlock the upper bead breaker and place it in the out-of-work position. At the end of this operation, manually move the bead breaking arm back to the operating position and make sure that the retaining hook is firmly engaged.

1.14. Pressure gauge and deflation button

The pressure gauge allows reading the tyre inflation pressure. Press the deflation button to deflate the tyre.

1.15 Centre post adjustment



This tyre changer is equipped with a height-adjustable centre post. Use the knob to raise and lower the rim bearing plane.

To change the position of the centre post, pull the knob and then manually raise or lower the centre post until the knob pin engages in the locking hole (note: make sure that the pin has completely entered the hole).

1.16 Air Inflation Pedal

On the left side of the base, the air inflation pedal operates the two-stage air inflation system. Refer to illustrations on page 30. The pedal controls the air going to the inflation hose and the air inflation jets.

DANGER

- **EXPLOSION HAZARD**
- **Never exceed tire pressure recommended by tire manufacturer. Always match the tyre and rim dimensions.**
- **Take care to avoid any damage to the tyre.**

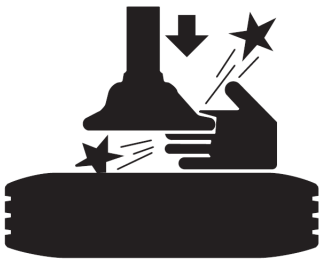
WARNING

Keep hands clear of wheel during sealing and seating of beads.

WARNING

Risk of Tire Failure When Driving.
Excessive air pressure can damage the internal structure of a tire, without this damage being visible to you, resulting in an automobile accident, personal injury or death.

1.17 Moving Parts



WARNING

- **MOVING PARTS PRESENT.**
  MOVING PARTS CAN CUT AND CRUSH.
- **Keep hands away from moving parts.**
- **Crush may cause injury.**

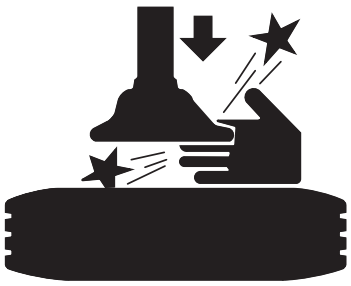
1.18 Inflator and Pressure Limiter

As a safety device, the pressure limiter prevents the operator from using excessive air pressure.

Bead seating pressure should never exceed the tire manufacturer's maximum bead seating pressure as stated on the sidewall of the tire.

If tires being mounted require more than the tire manufacturer's maximum bead seating pressure, the wheel should be removed from the tire changer, placed in an inflation cage, and inflated per manufacturer's instructions.

1.19 Mount / Demount Head

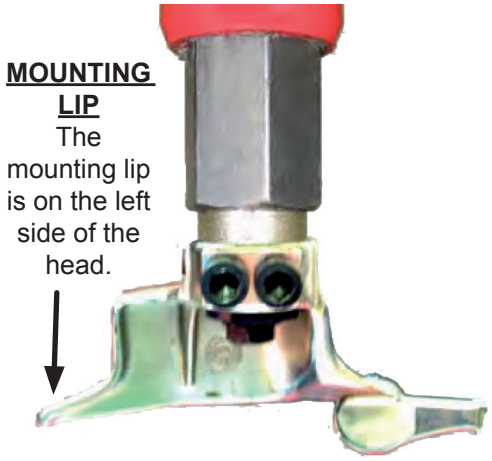


⚠ WARNING

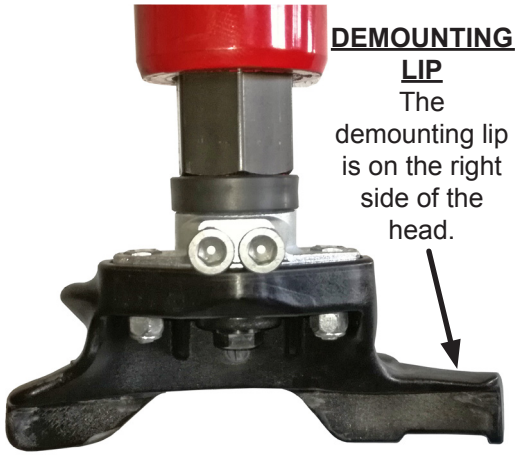
- **MOVING PARTS PRESENT. MOVING PARTS CAN CUT AND CRUSH.**
- **Keep hands away from moving parts.**
- **Crush may cause injury.**

The mount/demount head is suspended from the column above the turntable.

The head has a mounting and demounting lip that is designed to install or remove the bead of tire as the wheel is rotated clockwise.

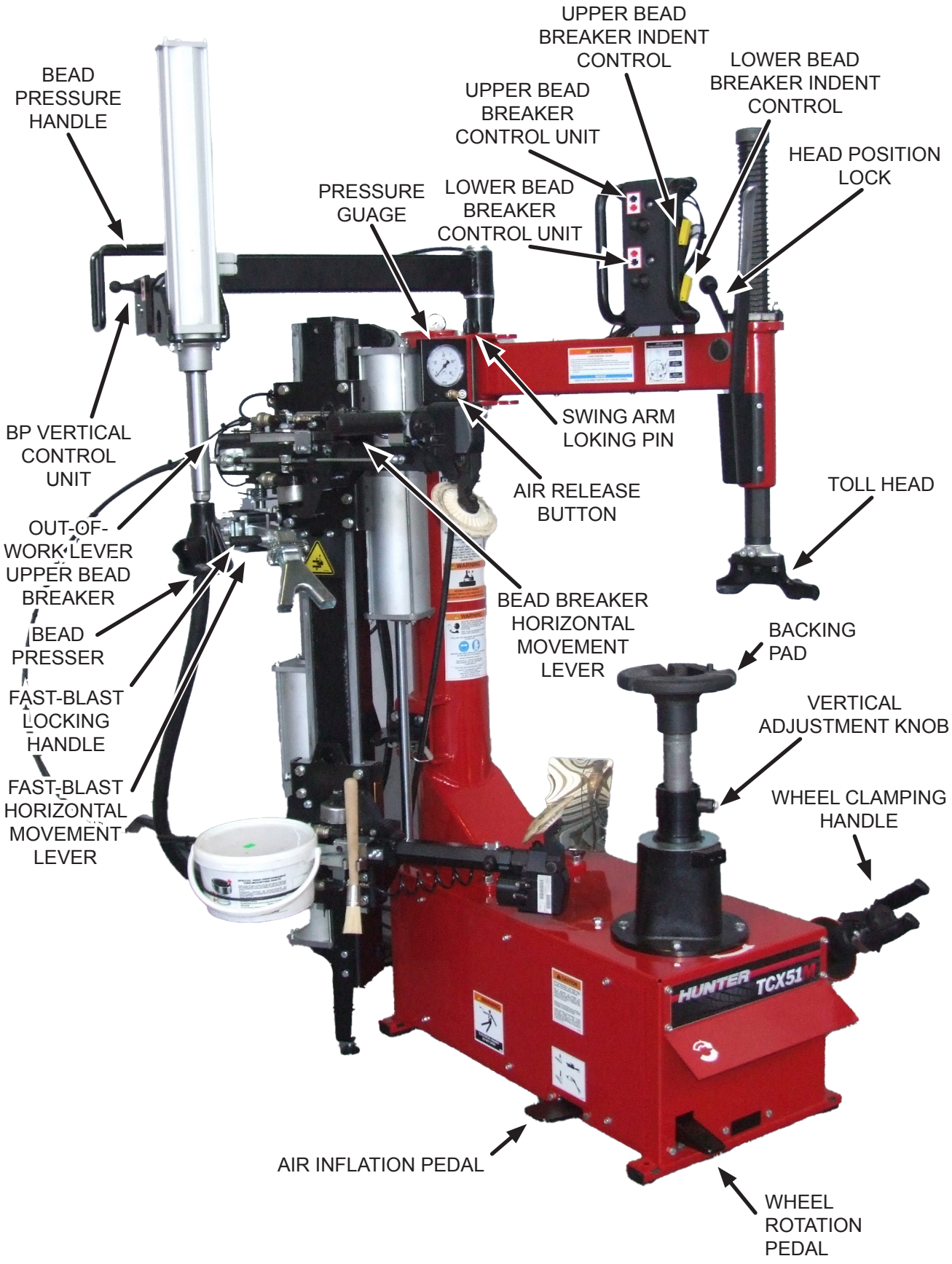


STEEL MOUNT HEAD



PLASTIC MOUNT HEAD

1.20 Equipment Components



2. Basic Procedures

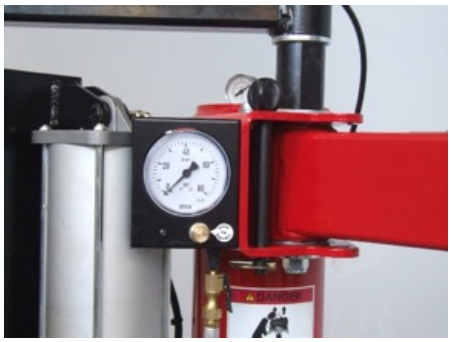
2.1 Before starting

⚠ CAUTION

If the tire changer is used for mobile service, remember to unlock the movable parts before using it and then lock them once finished.

Swing arm

To unlock the swing arm, move the locking pin to the left hole.



Insert the locking pin to the right hole, to lock the swing arm.

Bead press arm

To lock the bead press arm, attach it to the console handle; detach the bead press arm from the console handle, to unlock it.

Clamping pin

To lock the wheel-clamping pin, insert and tighten it on the clamping plate.

Other movable parts

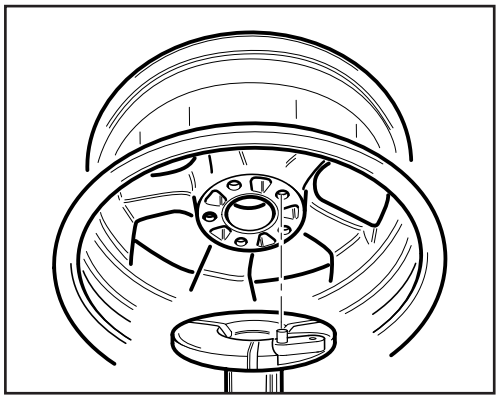
Check that the upper bead breaker arm is in the work position (closed).
If FastBlast (optional) is installed, check that it is in the work position (closed).

2.2 Placing Wheel on Tyre Changer

NOTICE

Identify and recognize special wheel combinations such as tilted channel wheels (they need to be inverted on the tyre changer), AH, “Run-Flat” and standard tyres with pressure sensors. If you are not familiar with these special types of wheels, DO NOT USE the tyre changer. Consult your supervisor.

Lock the wheel on the turntable

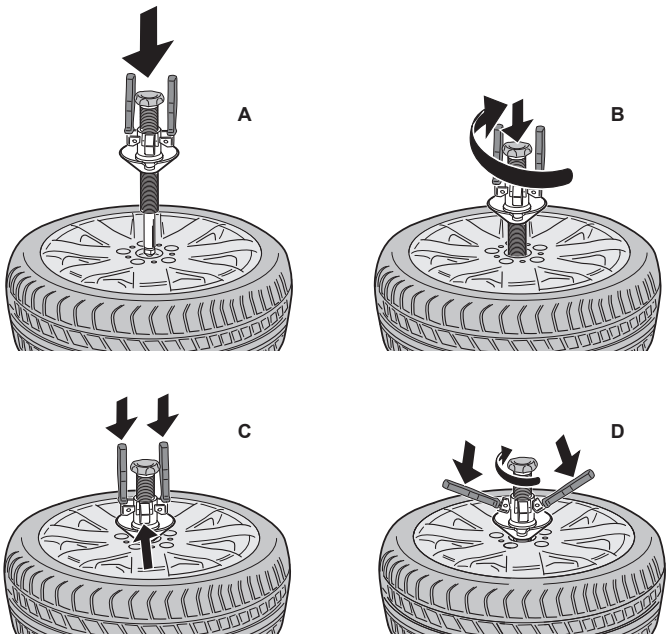


Load the wheel on the turntable. When positioning the wheel on the turntable, also take care to centre the movable centring pin, placed radially on the turntable, in one of the fixing bolt holes.

⚠ CAUTION

If the wheel weighs more than 10 kg, with a lifting frequency of more than 20 wheels/ hour, it is recommended to use a lifting device (optional).

1. Fit the clamping device into the central hole of the wheel (A).
2. Turn the device for correct engagement with the turntable (B).
3. Move the centring cone manually into position on the rim by moving the retainers 1 (C).
4. Tighten the clamping device by turning the handles 2 clockwise (D).



WARNING

If the wheel weighs more than 10 kg, with a lifting frequency of more than 20 wheels/hour, it is recommended to use a lifting device (optional).

2.3 Bead Breaking

CAUTION

All air pressure inside the tyre must be removed before proceeding. Never attempt to break the bead until all air is removed from the tyre. Failure to remove all air from tyre may result in injury to the operator, or damage to the equipment, the tyre, or the wheel.

1. Deflate the tyre completely, by removing ferrule from the valve rod. Remove all wheel balance weights from the rim to protect the rim and extend life of the mounting/demounting head.

2. Move the upper bead breaking unit from its rest position to its operating position.

3. Move the disc closer to the rim:
   the horizontal movement is achieved by hand, operating control 1.13.4;
   the vertical movement is achieved by operating control 1.13.2 and 1.13.3

4. Once the desired distance is reached (a gap of 2-3 mm should be left between the rim edge and the bead breaker disc), release control 1.13.4 to inhibit any further horizontal movement of both bead breaker discs.

NOTICE

Lubricate the bead carefully, before and during the bead breaking phase to facilitate the operation.

Upper bead breaking

1. Preload the bead breaker disc using control 1.13.2 (a tyre crushing preload of about 5 mm is advisable).

2. Activate disc penetration (control 1.13.2) and then start wheel rotation (pedal control 1.12.1), while lowering the bead breaker disc a little at a time (control 1.13.2).

3. Perform at least one complete rotation to fully break the bead. The tyre bead should be greased during the rotation.

4. Set the upper arm upwards over the wheel using control 1.13.2.

Lower bead breaking

1. Preload the bead breaker disc using control 1.13.3 (a tyre crushing preload of about 5 mm is advisable).

2. Activate disc penetration (control 1.13.3) and then start wheel rotation (pedal control 1.12.1), while lowering the bead breaker disc a little at a time (control 1.13.3).

3. Perform at least one complete rotation to fully break the bead. The rim bead should be greased during the rotation.

4. Set the upper arm downwards below the wheel using control 1.13.3.

2.4 Demounting Tire from Rim

Standard tires

NOTICE

Clean the mount/demount head to remove dirt and debris before demounting the tire from the rim.

Press the wheel rotation pedal until the valve location is in the one o'clock position.

Position the mount/demount head against the outer edge of the upper rim lip.

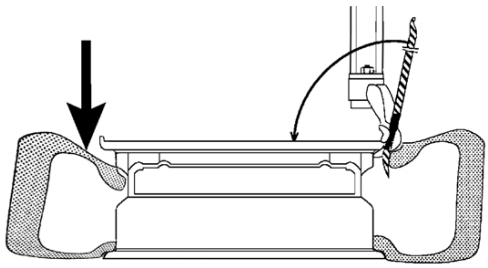
Slide the mount/demount head in or out along the upper rail and lower the head into position. Pull the head position lock handle to lock head into position.

A plastic protector sleeve may be installed on the bead lever tool to aid in rim protection.

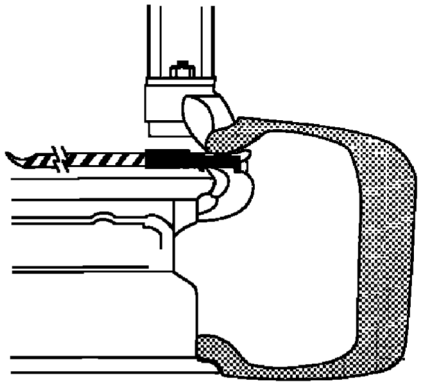
Plastic protectors bead lever

Position the bead lever between the demounting lip of the head and bead of tire. The demounting lip is on the right side of the head.

Push down on the tire sidewall 180 degrees from the mount/demount head to slip the bead into the drop center of rim.



Using the bead lever tool, lift the tire bead over the demounting lip of the head.



The bead lever tool must be pulled down parallel to the rim.

Press the wheel rotation pedal  to rotate the wheel clockwise.

Remove the bead lever tool from the tire when it easily slides out, approximately after a quarter rotation of the wheel.

Continue to press the wheel rotation pedal  to rotate the wheel clockwise until the entire bead is lifted from the rim.

Lift tire and repeat this procedure for lower bead.

Lift the mount/demount arm assembly up and away from the wheel.

Remove tire from rim.

For additional information on demounting special wheels, refer to "Advanced Demounting Procedures," page 33.

Difficult tires

If the outer bead of the tire has "re-seated", or needs additional lubrication, the bead loosening procedure can be repeated with the BP Bead Press Arm rather than the side shovel.
The BP Bead Press Arm can be used when removing the tire from the rim.

1. Position the mount/demount head on the tire and rim.
2. Insert bead lever.

NOTICE

The Bead Press Arm can also be used to create a gap for the bead lever.

3. Position the Bead Press Arm head approximately 180° from the mount/demount head.

4. Lower the Bead Press Arm head so the bead is pressed downward toward the center of the rim.
5. Using the bead lever, pull the bead up and onto the mount/demount head.

6. Raise the Bead Press Arm up and out of the way.
7. Rotate clockwise  to complete the demounting procedure.

Using the Bead Press Head Hook to Lift the Tire
Use the hook on the bead press head to help lift the tire during demount.
With upper bead demounted, use the bead lever and position the bead press head hook under the upper bead on the opposite side of the tire.

Raise the bead press head hook.

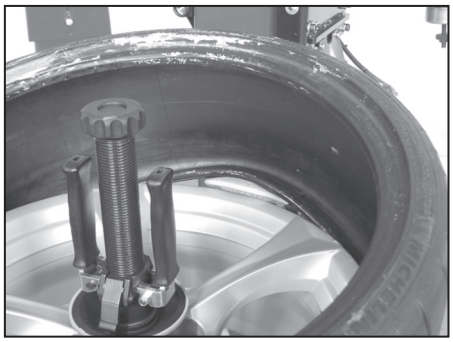
Use lever to hook lower bead and pull over rim.
Remove the bead press head hook from the upper bead and complete removal of the lower bead.

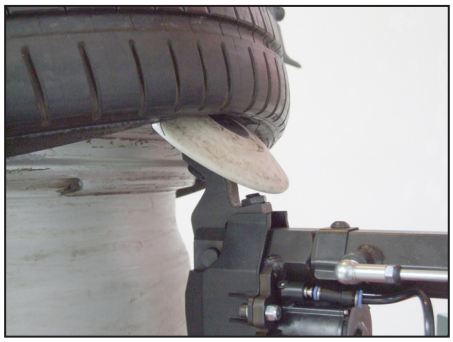
Demounting lower bead with bead breaker disc

1. Operate control  and raise the tyre lower bead at the same level of the rim upper edge.

2. Perform disc penetration by using control 

3. Start wheel rotation  and simultaneously raise the lower disc a little at a time  . Rotate until the tyre is completely demounted.





CAUTION

It might be necessary to use the upper bead breaking arm with the bead breaking unit rotated by 180° for rims with an internal channel.

2.5 Mounting Tire to Rim

Always use this “checklist” as a guide when mounting tires to ensure proper service.
There are four basic steps when mounting a tire to a rim:

- Position the bead on top of the mounting lip of the mount/demount head.
- Position the bead under the demounting lip of the mount/demount head.
- Lock the tire to the rim in the mounting position.
- Slip the bead into the drop center.

These four basic steps to mounting do not necessarily follow the same sequence, however all four steps need to be performed to mount a tire to a rim.

Mount a standard tire to rim

NOTICE

The mounting procedure is the same for both: standard and leverless mounting head.

Lubricate inside and outside of both beads of the tire to be mounted with supplied mounting paste.
Position tire on top of the rim and tilt tire forward.
Position mount/demount head through the opening of the tire and on the outer edge of the rim lip.

Position edge of tire bead on top of the mounting lip of the head. The mounting lip is on the left side of the head.
Push edge of tire bead under the demounting lip of the head, while keeping the other edge of tire bead above the mounting lip.

Twist tire clockwise by hand to lock the tire into the mounting position.
Push down on tire at about the 6 o'clock position to slip the bead into drop center.

LOWER BEAD

UPPER BEAD

Press the wheel rotation pedal  to rotate the wheel clockwise until the tire bead drops over the lip of the rim.

Repeat procedure on upper bead of tire. Slip the bead completely into the drop center of the rim, during mounting of the upper bead.
For additional information on special wheels, refer to "Advanced Mounting Procedures," page 36.

NOTICE

When basic procedures are NOT followed, sharp angled wheel flanges increase potential damage to tires during mounting. Be sure the tire bead is placed on top of the mounting head. If the tire is incorrectly pushed onto the rim by the side of the mounting head, it may become "trapped" and increases mounting stress to the tire bead.

Insufficient lubrication and failure to place tire into drop center during mounting may also cause the polymer mount/demount head to fail prematurely.

MOUNT HEAD CORRECTLY PLACED

MOUNT HEAD INCORRECTLY PLACED

Position the tire such that the back of the tire is over the mount / demount head and the front of the tire under the finger of the mount / demount head.

BACK OF TIRE OVER MOUNT / DEMOUNT HEAD

FRONT OF TIRE UNDER MOUNT /DEMOUNT HEAD FINGER

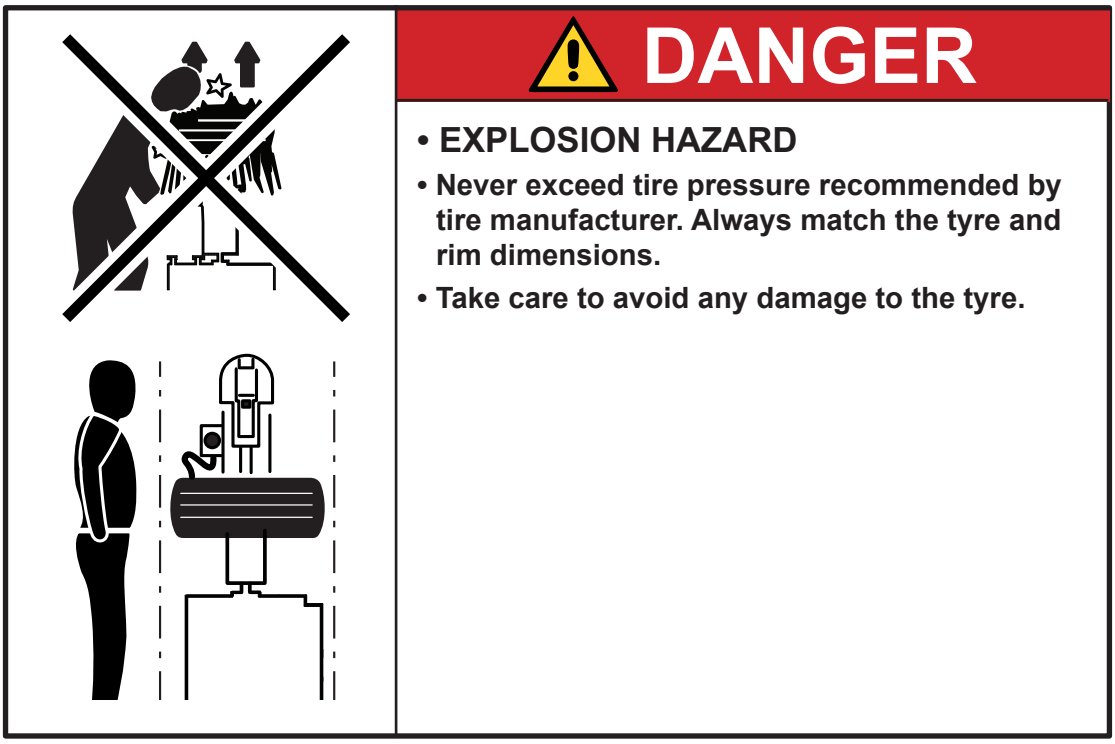
Mount difficult tires

In cases where the sidewall is too strong, this operation could be difficult. In this case use the BPS or BP arm.
If equipped, move the articulated arm of the BPS (or BP arm) to the 3 o'clock position and lower the upper bead press disc down onto the edge of the tire.

With the tire in position, press the wheel rotation pedal to rotate the wheel clockwise and mount the top bead.

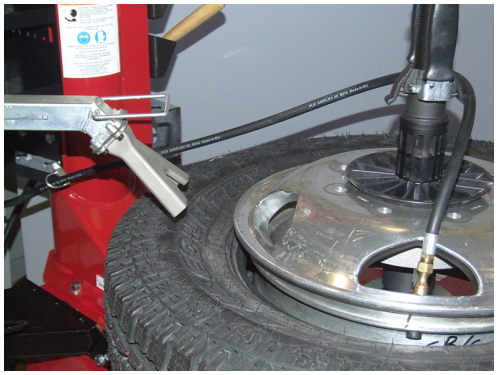
2.6 Tire Inflation

The FastBlast (OPTIONAL) device has been developed to simplify bead insertion and then inflation of the tire.
When operating on very soft tires, or tires which have been stored horizontal for a long period of
time, bead insertion and inflation may be very difficult because the air directed into the tubeless
tire comes straight out again due to the failure to achieve a seal between the rim and the tire.
By emitting a powerful air jet in a very short time, the FastBlast device generates a series of forces inside the tire which help rapid insertion of the bead onto the rim.
The device is activated using the inflation pedal.



• Verify that both upper and lower tire beads and rim bead seat have been properly lubricated with an approved mounting paste.
• Remove valve stem core if not already done.
• Connect inflation hose to valve stem.

• Make sure that the tire is completely sealed on the rim in the lower part of the wheel.
• Adjust the position of the FastBlast nozzle to suit the diameter of the rim. Use the knob to adjust the distance between the nozzle and the rim; use knob to lock nozzle at desired position.



⚠ WARNING

Do not stand over tire during inflation.

Step down completely on the air inflation pedal (pedal on the left side of the base) to release a high-pressure air blast through jet on FastBlast to assist in seating the beads of the tire.
Step down partially on the pedal to inflate tire and seal beads with inflation hose. Frequently stop to check bead seating pressure on gauge.

⚠ WARNING

Do not exceed tire manufacturer's maximum pressure as stated on the sidewall of the tire when seating beads.

Reinstall valve stem core into the valve stem after beads have been seated, and then inflate tire to vehicle manufacturer recommended pressure.

⚠ WARNING

Activate air inflation jets only when sealing bead.

Bleed air pressure from system before disconnecting supply line or other pneumatic components. Air is stored in a reservoir for operation of inflation jets.

⚠ WARNING

• Only activate the air inflation jets if the rim securing device is locked in place and the tire is properly clamped.
• Never mount a tire to a rim that is not the same diameter (e.g., 16 1/2 inch tire mounting on a 16 inch rim).

NOTICE

FastBlast inflation system has been designed to work effectively with the nozzle 3-4 inches (76-101 mm) above the rim. Do not position the nozzle too close to the rim edge and do not position it below the level of the upper rim edge, as this would reduce its effectiveness

If tire is over-inflated, air may be removed from the tire by pressing the brass manual air release button located below the air pressure gauge.
Disconnect inflation hose from valve stem.

3. Advanced Procedures

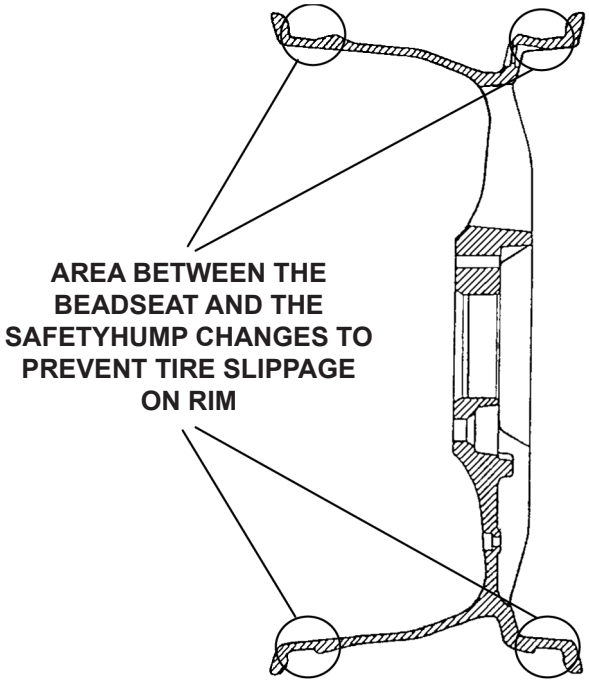
The capabilities of the TCX51M tire changer family allow the user to utilize numerous advanced procedures on a variety of rims and tires. For the operator to take advantage of these features, this section explains in detail what additional steps can be taken.

3.1 Advanced Bead Breaking Procedures

Bead Breaking “AH” Wheels (e.g. BMW M3, M5, Some Porsches, Range Rover, Lancia, etc.)

“AH” (Asymmetrical Humps), “Bead Locking System” wheels may be identified by looking on the back of a rim for “AH” in the rim size designation casting (e.g. 8X17-AH).

“AH” wheels are designed so that the lowest point of the safety hump is located at the valve stem or 180 degrees out. These two points are where it is easiest to break the bead from the bead seat.



Bead Breaking “AH” Wheels as follows:

To avoid possible damage to the valve and, if present, to the pressure sensor, start bead breaking with the beads positioned at 180 ° compared to the pressure point of the bead breaker disc. To make bead breaking easier, turn the wheel clockwise and anticlockwise, alternatively, so as to prevent moving the bead breaker disc near the valve.

3.2 Advanced Demounting Procedures

NOTICE

It is important on large, low profile tires to always lubricate the tire bead, wheel drop center, and bead seat to prevent possible tire damage during demount.

Demounting Tire from Rim Using the Bead Lever Tool without the Plastic Sleeve Protector

Sometimes the sidewall of the tire is so stiff that use of the bead lever tool with the plastic sleeve protector is not possible. The technician needs every bit of clearance to be able to pry the bead of the tire up and over the mount/demount head.

Demounting Upper Bead

Position mount/demount head onto the outer edge of the upper rim lip.

Position bead breaker tool without plastic sleeve protector between demounting lip of the head and the bead of the tire. The demounting lip is on the right side of the head.

Using the bead lever tool, pry the tire bead over the demounting lip of the head.

Position the bead lever tool parallel to the rim.

Lift slightly on the wheel rotation pedal  to rotate the wheel counterclockwise approximately 1/2 inch, to fully unfold the bead onto the mount/demount head.

Slide the bead lever tool out from between the mount/demount head and the tire.

Step down on the wheel rotation pedal  to rotate wheel clockwise until the entire bead is lifted from the rim.

Demounting Lower Bead

Pull the tire up and tilt to place rear of lower bead in drop center behind mount/demount head.

Lubricate tire bead lever tool and then insert it over the demounting lip of the head and under the lower bead of the tire.

Pull the lower bead up and over the demounting lip of the head.

Push the bead lever half-way through tire and rim. Grasp inside of bead lever with one hand and grasp outside of bead lever at the base with the other hand. Firmly pull bead lever straight up.

Step down on the wheel rotation pedal  to rotate wheel clockwise until the entire bead is lifted from the rim.

3.3 Advanced Mounting Procedures

Always use this “checklist” as a guide when mounting tires to ensure proper service.

There are four basic steps when mounting a tire to a rim:

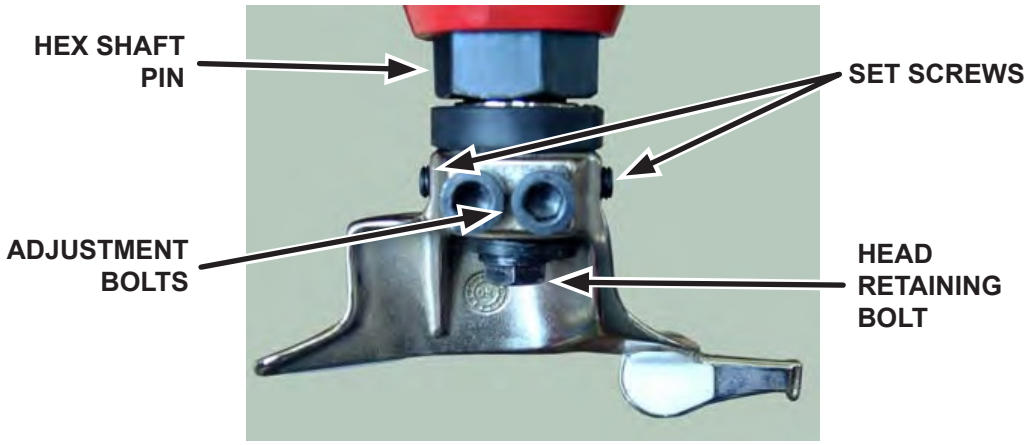
- Position the bead on top of the rear lip of mount/demount head.
- Position the bead under the front lip of the mount/demount head.
- Lock the tire to the rim in the mounting position.
- Slip the bead into the drop center.

These four basic steps to mounting do not necessarily follow the same sequence, however all four steps need to be performed to properly mount a tire to a rim.

3.4 Mount/Demount Head Assembly

There are plastic and steel mount/demount head assemblies available for the TCX51M tire changer family. Both use standard procedures for mounting and demounting.
To change the mount/demount head assembly:

1. Loosen the set screws (steel heads only) and the adjustment bolts.
2. Remove the head retaining bolt.
3. Remove the mount/demount head assembly.



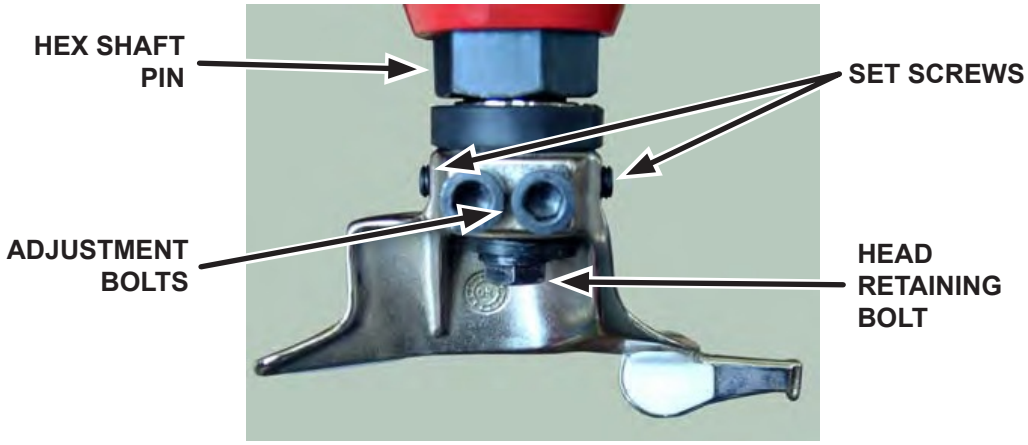
4. Place the mount/demount head assembly that you wish to use over the lower section of the hex shaft and reverse the above procedures to install.

Checking Mount/Demount Head Calibration For Steel Heads

Calibration will require the use of a 17-18 inch bare rim.

Set Position of Steel Mount/Demount Head on Hex Shaft

1. Clamp rim without a tire on the tire changer turntable.
2. Loosen the head retaining bolt slightly so that the head is still attached.
3. Loosen the two adjustment bolts and set screws so that the tool head can swivel on the hex shaft pin.



4. Position the tool head manually against the edge of the rim so that both sides of the tool head are resting on it.
5. Tighten the set screws in alternation to maintain 5/64 in. horizontal gap at leading and trailing edge of the mount head. Double check distance with feeler gauge. See above figure.
6. Keep the roller in contact with the edge of the rim, alternately loosen and tighten the two adjustment bolts until the gap is 1/4-inch.

BACK EDGE OF HEAD

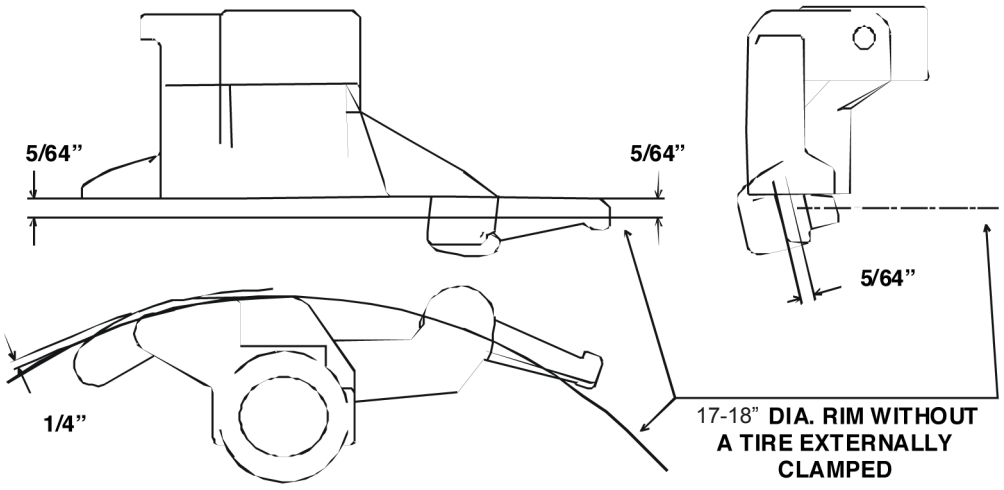
OVER-HANG

Measure with depth gauge

¼-inch specification

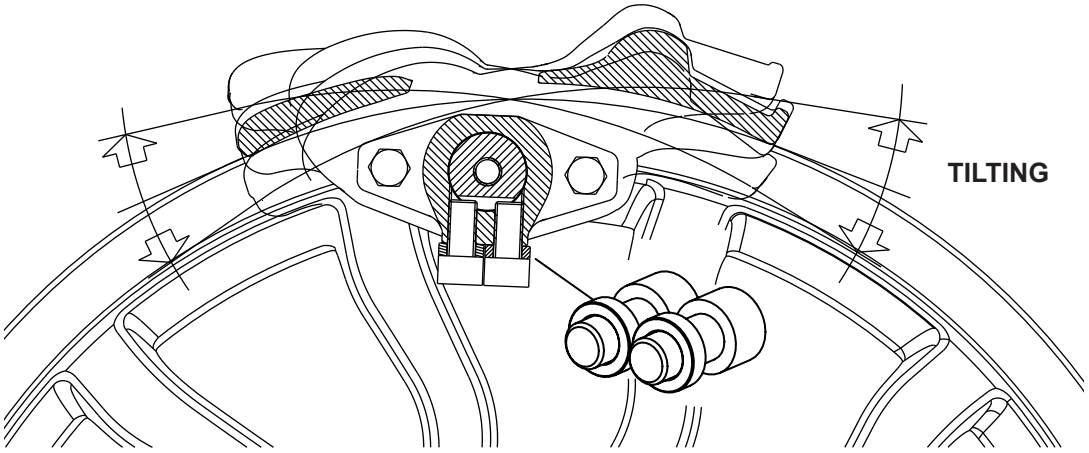
7. Fully tighten the set screws, checking when done that both sides of the tool head are still the same distance from the edge of the rim.
8. When the correct position has been achieved, tighten the adjustment bolts alternately to lock it in position.
9. Tighten the head retaining bolt.

Figure below is a summary of the desired end result.



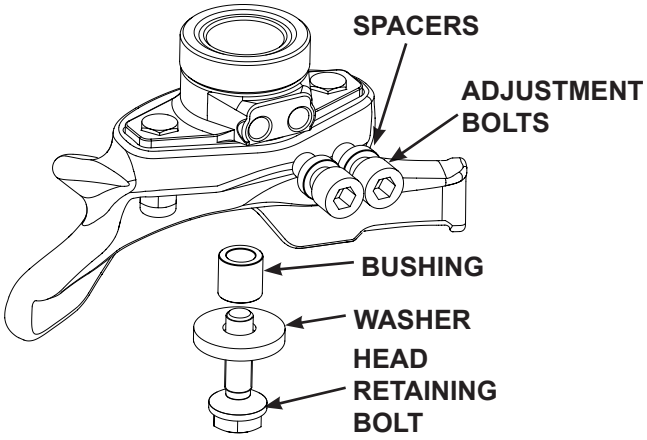
For Tilting Plastic Heads

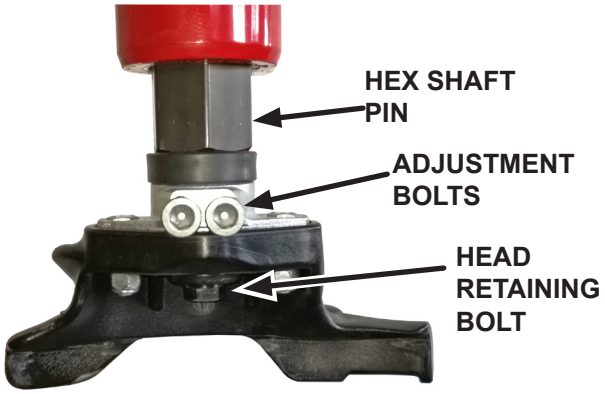
Figure below is a summary of the desired end result.
The head will adjust itself to each rim diameter, due to its tilting feature.



Set Position of Plastic Mount/Demount Head on Hex Shaft

1. Fit the head on the hexagonal shaft.
2. Fully tighten the head retaining bolt being sure to insert the relevant washer and bushing.





3. Fully tighten the adjustment bolts being sure to insert the two relevant spacers.

Adjust the Offset of Lock Mechanism – Steel and Plastic Heads

1. Again, position the mount/demount head on the outer edge of upper rip lip and lock in this position.
2. Use gauges to measure distances between head and the top of the rim. Measure at inserts on steel head.

TIRE MOUNTING LIP

TOP GAP

Measure with feeler gauge

5/64-inch specification

TIRE DEMOUNTING LIP

SIDE GAP

Measure with feeler gauge

5/64-inch specification

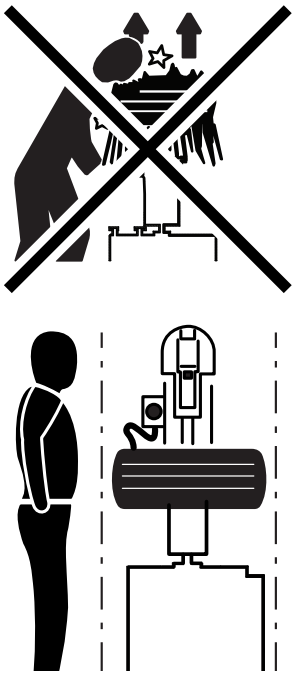
Change the offset by removing the plastic cover and adjusting the nuts located on front of the locking mechanism.

Replace the plastic cover.

Confirm head clearances to the 17 in rim are correct. Position the mount/demount head on the outer edge and lock in this position. Check clearances.

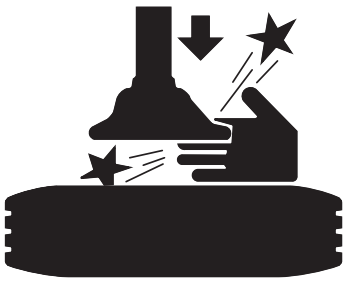
4. Maintenance

4.1 Maintenance Schedule



DANGER

- **EXPLOSION HAZARD**
- **Never exceed tire pressure recommended by tire manufacturer. Always match the tyre and rim dimensions.**
- **Take care to avoid any damage to the tyre.**



CRUSH HAZARD.

Before making any adjustments or carrying out maintenance, disconnect the electricrical and compressed air supplies from the equipment and make sure that all moving parts are suitably immobilized.

DANGER

- **HAZARDOUS VOLTAGE**
- **Turn off and lock out system power before servicing.**
- **Contact may cause electric shock or death.**

Before carrying out cleaning or maintenance operations on the machine or when replacing machine parts, disconnect. Follow any “lock out – tag out” procedures in your jurisdiction. See your supervisor for additional information.
Should any maintenance task require the disabling, removal or disassembling of any safety device, that device must be immediately restored or replaced when the maintenance is complete.

Wear personal protective equipment (PPE) and clothes, in compliance with the local rules and regulations, including but not limited to OSHA. See your supervisor for instructions.
If you have any questions concerning the proper use or maintenance of your machine, please contact your nearest Hunter Engineering Company representative.
You can also contact Hunter Engineering Company at
Tel: 800-448-6848 or 314-731-3020.

In case of a written request, please specify the:
- Machine model.
- Serial number.
- Detail of the problems encountered.
- Inspections that have been performed.
- Adjustments made and their outcome.
- Any other useful information.

You may address your written requests to:

HUNTER ENGINEERING COMPANY
11250 Hunter Drive
Bridgeton, Missouri 63044

Fax: 314-731-1776

e-mail: Customerservice@hunter.com

The components of Hunter Engineering Company products are designed as a single integrated system. To avoid compromises in terms of safety, performance, durability and function, and to prevent voiding of the warranty, do not substitute Hunter Engineering Company components with components manufactured by other companies. Use only ORIGINAL replacement PARTS supplied by Hunter Engineering Company.

During maintenance procedures,
- Never modify or alter the machine or any of its components.
- Use proper stairs, ladders or platforms to access areas that cannot be reached from ground level.
- Use appropriate personal protection equipment (PPE), such as eye protection, face shield, respiratory protection, gloves and coveralls, when performing maintenance, repairs or adjustments in compliance with local and OSHA regulations. Check with your supervisor.
- Never attempt any repairs or adjustments to any hydraulic component or auxiliary unit, including pumps, hoses, fittings, if the system is pressurized or operational or if the machine is in operation. Always shut down the machine, relieve all pressure and wait for all motion to come to a complete stop before performing any repairs or adjustments.

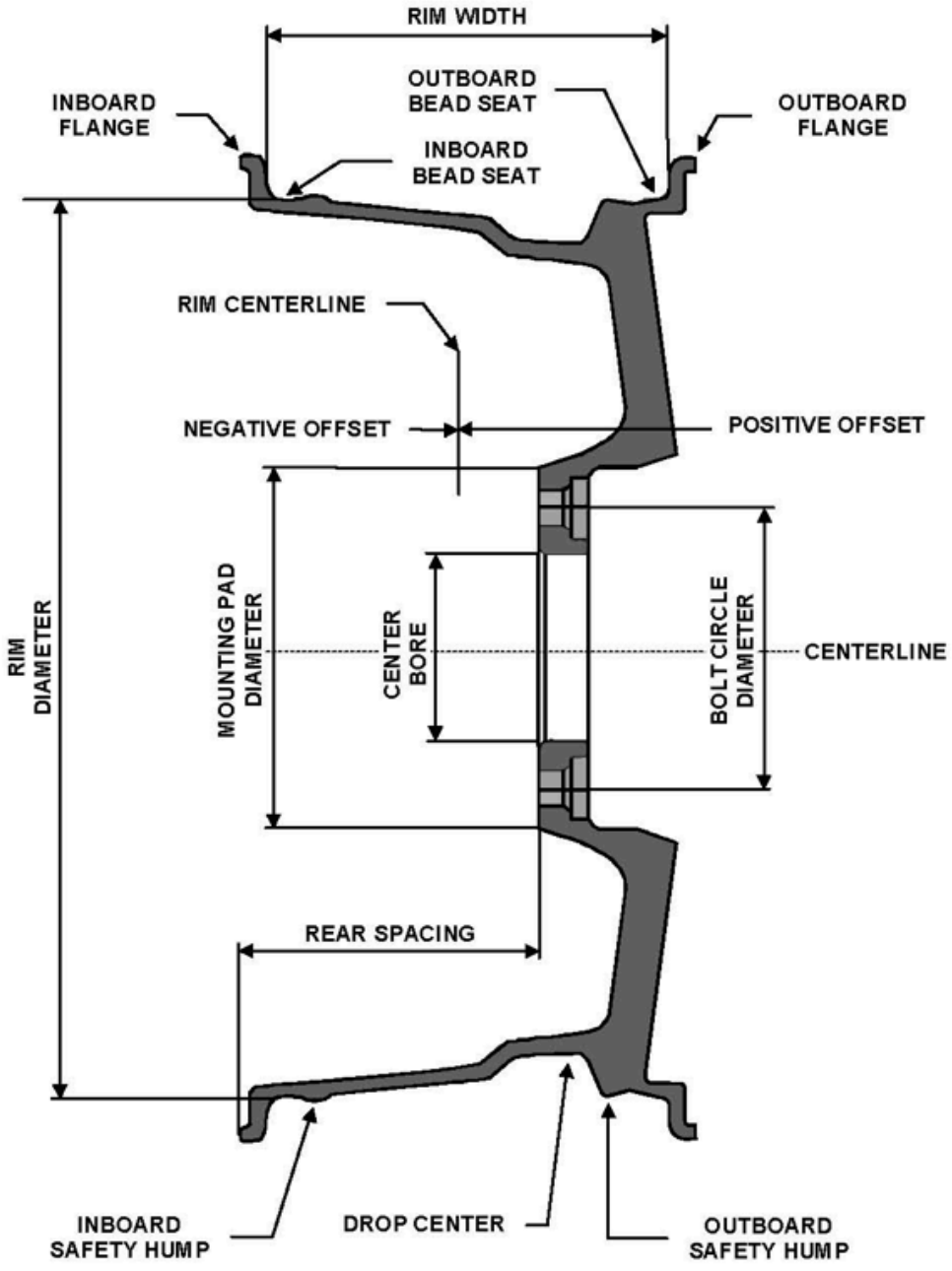
Maintenance Schedule	Perform the Following Maintenance
Daily	Drain condensation from pressure regulator reservoir by pressing in on the fitting located on the bottom of the regulator. Check for worn or damaged rubber and nylon components that should be replaced to prevent damage from occurring. Replace worn parts as needed (tool supports, rubber pads, lever protector sleeve and mount/demount head). Clean all areas that contact rims or tires to prevent possible scratching to rim.
Weekly	Clean tire changer with shop towels or a vacuum cleaner. **Do not clean with or use compressed air, which can blast dirt between moving parts.** Do not use cleaning solvents to clean pressure regulator and oiler (if present).
Periodically	If present, refill oiler using only Hunter Lubri-Oil, 148-133-2, as needed. **Petroleum-based oils should never be used in the oiler and may void all warranties.** Adjust the oiler to release one drop of oil every three rotations of the clamping table by adjusting the screw on top. Check for loose bolts and tighten per specifications.

4.2 Maintenance and Replacement Parts

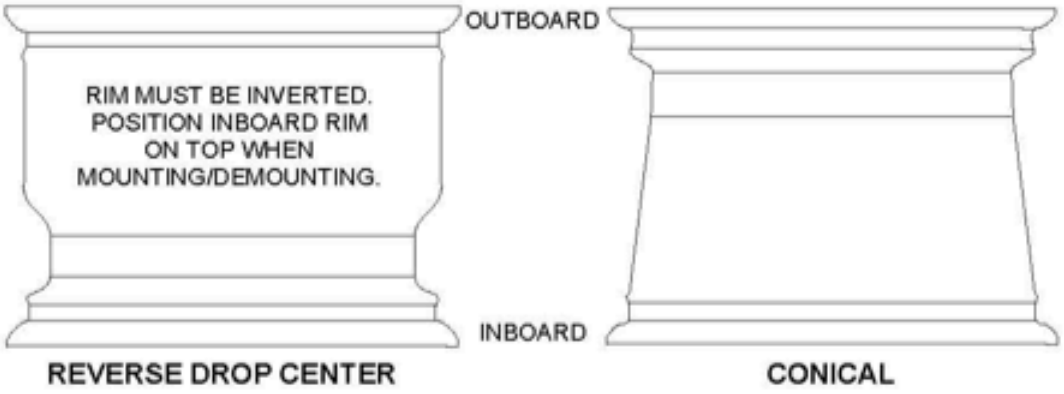
NAME	NUMBER
Safety Goggles	179-15-2
Brush	RP6-1506
Mounting Paste	RP6-3784
Polymer Mount/Demount Head	RP11-3314813
Hand Held Bead Lever - straight	RP11-3009516
Bead Lever Protector Sleeve (HM)	RP6-0326
Bead Lever Protector Sleeve (Std) (4)	RP11-8-11400098
Steel Head Inserts (10 sets - 20 covers)	RP11-8-11400096

5. Glossary

5.1 Rim Diagram

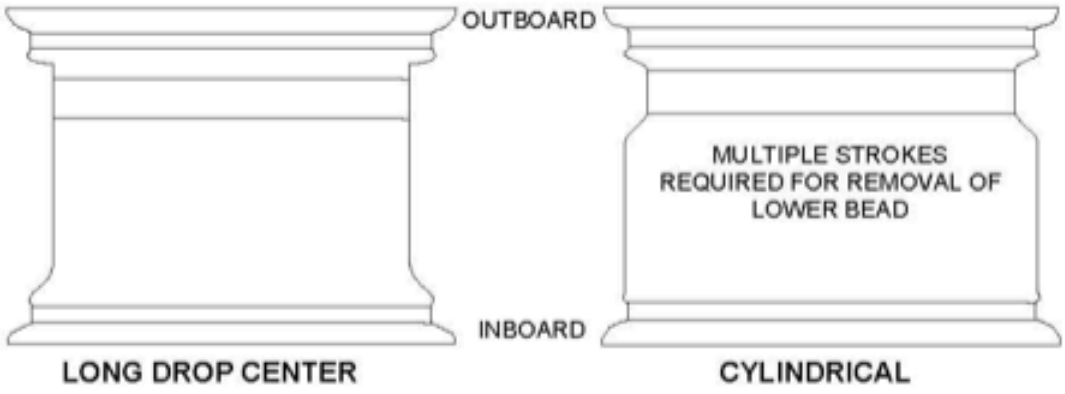


5.2 Illustrations of Various Rim Designs



REVERSE DROP CENTER

CONICAL



LONG DROP CENTER

CYLINDRICAL

NO DROP CENTER

OWNER INFORMATION

New Owner Name _____

New Owner Address _____

Prior Owner Name_____

Prior Owner Address _____

Model Number_____

Serial Number _____

Date Purchased_____

Date Installed_____

Return Completed Form To:

HUNTER ENGINEERING COMPANY
11250 Hunter Drive
Bridgeton, Missouri 63044
Tel: 800-448-6848 or 314-731-3020
Fax: 314-731-1776
e-mail: Customerservice@hunter.com

HUNTER
Engineering Company

6. Warranty

Tire Changers are fully warranted for a period of three (3) years with the exception of consumable parts.
Replacement parts purchased through the Hunter Service Center and no longer covered by machine warranty are warranted for a period of six (6) months.
Field labor is covered under this warranty for a period of six months.

This warranty does not include normal wear items and does not apply to any product which has been subject to abuse, misuse, alterations, accident, exposure to the elements, tampering, unreasonable use, or failure to provide reasonable and necessary maintenance.

In case of any warranty claim it will be necessary to contact your local authorized Hunter Service Representative. To have an item considered for warranty it must be returned to Hunter Engineering Company for inspection and evaluation. This must be done on a freight prepaid basis. If after our inspection the product proves to be defective, and is within the time frame specified, we will repair or replace the item at no additional cost.

This is Hunter Engineering Company's only warranty with respect to new equipment. Hunter Engineering Company disclaims all other warranties to the extent permitted by law. This express warranty and any implied warranties of merchantability and fitness for a particular purpose shall not extend beyond the warranty period. Hunter Engineering is not responsible for any incidental or consequential damages, including, but not limited to, loss of business.

We do not authorize any person to assume for us any other liabilities with our products. Any remaining warranty may be transferred to subsequent purchasers by forwarding the purchaser's name, address, phone number and equipment serial number to:

Hunter Engineering Company
Customer Service Department
11250 Hunter Drive Bridgeton, MO
63044 (800) 448-6848

Hunter Research and Training Center

HUNTER TRAINING

Hunter operates the most advanced, up-to-date Training Center in the industry today.

The courses have been designed to meet the needs of new and experienced technicians who want to increase their mechanical and diagnostic capabilities. The low student-teacher ratio (average 7 to 1) and the emphasis on “hands-on” training (70% time in shop) create an excellent learning environment.

Highlights of the Hunter Training Center include:

✓ An instruction staff with years of shop, field, and teaching experience.
✓ Fully-equipped service bays.
✓ Classrooms equipped with modern teaching aids.
✓ The most up-to-date wheel alignment, balancing service, and brake equipment on the market today.

Classes Available

- ❒ Align 1 (Basic Alignment Theory and Practice) - 3 day / 24 hours
- ❒ Align 2 (Advanced theory / Aftermarket Adjustment) - 2 day / 16 hours
- ❒ Align 3 (Advanced Diagnostics and OEM Procedures) - 2 day / 16 hours
- ❒ Performance Tire (Basic and Advanced Tire Changing) - 1 day 8 hours
- ❒ Road Force® / GSP9700 Certification - 2 day / 16 hours
- ❒ Rolling Smooth (Basic & Advanced vibration theory) - 1 day / 8 hours
- ❒ Heavy-Duty Truck Alignment 1 (Fundamental Alignment) - 3 day / 24 hours
- ❒ Heavy-Duty Truck Alignment 2 (Advanced Alignment) - 2 day / 16 hours

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