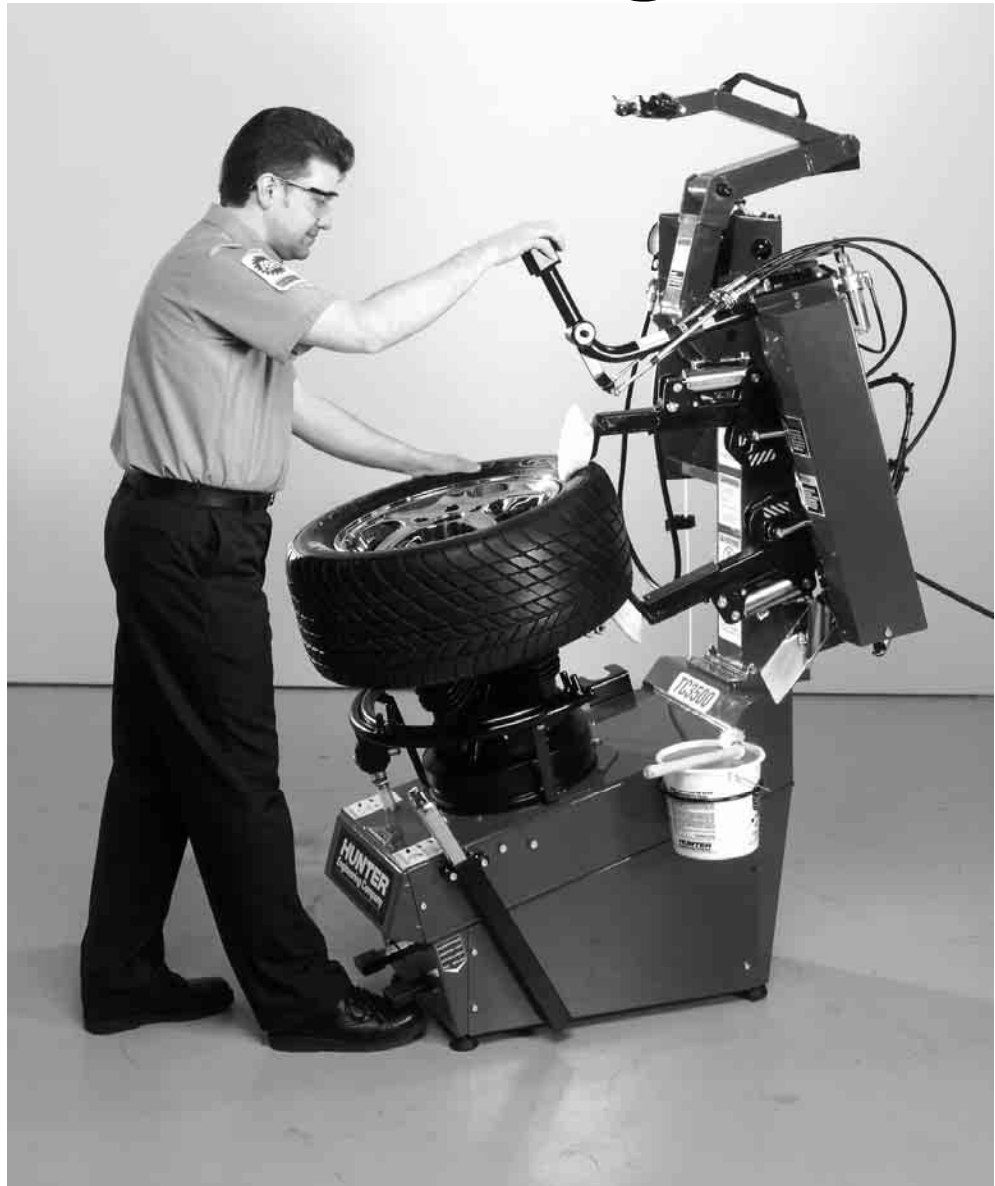


OPERATION INSTRUCTIONS

TC3500 Tire Changer



OWNER INFORMATION

Model Number _____

Serial Number _____

Date Installed _____

Service and Parts Representative _____

Phone Number _____

Sales Representative _____

Phone Number _____

Concept and Procedure Explanation

Safety Precautions

Warning and Caution Labels

Trained

Declined

Bead Roller

Maintenance and Performance Checks

Air Pressure and Volume Check

Trained

Declined

Checking Arm Calibration to Rims

Rollers Parallel to Rim/Reference Gauge

Checking Angle of Rollers to Center Support

Adjustment and Filling of Oilers

Oil Type/Lubrication Fittings

Mounting Head and Rubber Pad Inspection (on TC3500-SS models)

Internal Clamping

Rubber Pad Positioning

Trained

Declined

Conical Rims/Use of Rim Securing Device

Steel Jaw Use

External Clamping

Rubber Jaw Positioning

Trained

Declined

Clamp Without Center Support

Bead Loosening

Standard Wheels

Trained

Declined

Low Profile Wheels

AH2 Wheels

Cylindrical Wheels

Drop Center Identification and Tire Lubrication

Side Shovel Operation (on TC3500-SS models)

Contents

1. Getting Started	1
1.1 Introduction	1
1.2 For Your Safety.....	1
Hazard Definitions.....	1
IMPORTANT SAFETY INSTRUCTIONS.....	2
1.3 Wheel Clamping Pedal	3
1.4 Tire Bead Loosening / Wheel Rotation Pedal (TC3500-SS Models only).....	3
1.5 Wheel Rotation Pedal	3
1.6 Air Inflation Pedal.....	4
1.7 Inflator and Pressure Limiter.....	4
1.8 Command Unit.....	4
1.9 Equipment Components	6
2. Basic Procedures	9
2.1 Bead Loosening (TC3500-SS Models only)	9
2.2 Placing Wheel on TC3500	9
Clamping the Wheel from Inside of Rim	10
Installation of Optional Wheel Securing Device	11
Installation of Steel Jaws.....	12
Clamping the Wheel from Outside of Rim	12
Clamping Reverse Drop Center Wheels	13
2.3 Bead Loosening Standard Rim and Tire	13
2.4 Demounting Standard Tires from Rim	14
2.5 Mounting Standard Tire to Rim.....	16
Precautionary Notes	17
2.6 Tire Inflation	17
2.7 Removal of Wheel from Tire Changer	18
3. Advanced Procedures	19
3.1 Advanced Bead Loosening Procedures	19
Bead Loosening Soft Sidewall, Tall Profile Tires.....	19
Bead Loosening Tough, Low Profile Tires.....	20
Bead Loosening “AH” Wheels	20
3.2 Advanced Demounting Procedures.....	22
Using “HM” Bead Lever and Sleeve Protector	22
Using Bead Depressor “Tail” and Bottom Roller to Demount Upper Bead without Sleeve Protector	22
Using Force Multiplier, RP6-8832.....	25
Demounting Lower Bead without Sleeve Protector.....	26
Cylindrical Rims/Bead Loosening and Demounting Lower Bead.....	27
3.3 Advanced Mounting Procedures.....	27
Mechanical Bead Pusher, RP6-2413	28
Mounting of Stiff Sidewall, Low Profile Tires.....	28
Removal of Bead Depressor “Tail”	30
Mounting Low Profile Tires on Rounded Edged Rims.....	31
3.4 Mounting Stiff, Low Profile Tires on Rounded Edged Rims Using Roller and No Mounting Head.....	32
3.5 Mounting 20-Inch and Larger Automotive Wheels and Tires	33
3.6 Matching/Optimizing of Tire to Rim.....	33

3.7 Run-Flat Tire Service	34
Basic Run-Flat / EMT Information.....	34
Run-Flat “Zero Pressure” Tires and Rims	34
Tire Monitoring System (TMS).....	35
Sensors	36
TMS Band Type Sensor Installation.....	36
Demounting Run-Flat with Valve Type Sensor.....	39
Mounting Run-Flat with Valve Type Sensor	43
Inflating Run-Flats.....	48
Demounting Run-Flat with Band Type Sensor	49
Mounting Run-Flat with Band Type Sensor.....	55
3.8 Servicing BMW Z3 Motorsport Rear Reversed Drop Center 17x9AH2.....	59
Bead Loosening	60
Demounting.....	63
Mounting	65
3.9 Optional Steel Mount/Demount Head Assembly (RP6-2654)	68

4. Maintenance and Calibration..... 69

4.1 Maintenance Schedule	69
4.2 Maintenance Replacement Parts.....	70
4.3 Calibrating and Adjusting the Position of the Column	70
4.4 Checking and Adjusting the Bead Rollers	71
4.5 Checking and Adjusting the Position of the Bead Breaker Arm	71

5. Glossary 73

5.1 Rim Diagram	73
5.2 Illustration of AH2 Rim (Asymmetrical Humps) “Bead Locking System”.....	74
5.3 Illustrations of Various Rim Designs	75

1. Getting Started

1.1 Introduction

This manual provides operation instructions and information required to maintain the TC3500 tire changer. An advanced operation section has been provided in “Advanced Procedures.”

“References”

This manual assumes that you are already familiar with the basics of tire changing. The first section provides the basic information to operate the TC3500. 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 6.* These references should be read for additional information to the instructions being presented.


The owner of the TC3500 is solely responsible for arranging technical training. The TC3500 is to be operated only by a qualified trained technician. Maintaining records of personnel trained is solely the responsibility of the owner or management.

The TC3500 is intended for mounting, demounting, and inflating most tires with a maximum dimension of 40 inches in diameter and 19 inches in width.


1.2 For Your Safety

Hazard Definitions

Watch for these symbols:

 CAUTION: Hazards or unsafe practices, which could result in minor personal injury, or product or property damage.
--

 WARNING: Hazards or unsafe practices, which could result in severe personal injury or death.

 DANGER: Immediate hazards, which will result in severe personal injury or death.

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

IMPORTANT SAFETY INSTRUCTIONS

NOTE: Operators of this equipment should review the Hunter Training video before use. A certification test is also available.

Read and follow all caution and warning labels affixed to equipment and tools.

Read and understand all instructions before operating this machine.

Misuse of this equipment can cause personal injury and shorten the life of the TC3500.

To prevent accidents or damage to the TC3500, use only Hunter recommended procedures and accessories.

Wear OSHA approved eye protection while operating the TC3500.

Wear non-slip safety footwear when operating the TC3500.

Do not wear jewelry or loose clothing when operating the TC3500.

Wear proper back support when lifting or removing wheel from the TC3500.

⚠ WARNING: Keep hands and clothing clear of moving parts.

Keep hands clear of upper roller when bead loosening or rotating clamped wheel.

Do not lean or reach over tire when inflating.

Never stand on the TC3500.

⚠ WARNING: Do not exceed these pressure limitations:

SUPPLY LINE PRESSURE (from compressor) 220 PSI.

OPERATING PRESSURE (gauge on regulator) 145 PSI.

BEAD SEATING PRESSURE (gauge on hose) 40 PSI.

⚠ WARNING: 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).

⚠ DANGER: Activate air inflation ring only when seating bead.

Bleed air pressure from system before disconnecting supply line or other pneumatic components. Air is stored in a reservoir for operation of the inflation ring. Air pressure can be bled from the system by pulling up on the knob located on top of the regulator, and then turning it **counterclockwise**.

Do not activate the air inflation ring if the tire is not properly clamped.

Do not operate TC3500 with worn rubber or plastic parts.

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

Service and maintain machine regularly as outlined in "*Maintenance and Calibration*," page 75. For further information contact:

Hunter Engineering Company
11250 Hunter Drive
Bridgeton, Missouri 63044
1-800-448-6848
Internet address: www.hunter.com

1.3 Wheel Clamping Pedal

The left pedal on the front of the base controls the wheel clamping. *Refer to illustration on pages 6 and 7.*

Step down on the pedal to expand the wheel clamping device (arms move **outward**).

Lift the pedal to retract the wheel clamping device (arms move **inward**).

1.4 Tire Bead Loosening / Wheel Rotation Pedal (TC3500-SS Models only)

 **WARNING:** Keep arms and legs from between the bead breaker arm and the side of the housing.

When the bead breaker arm is swung out away from the housing, the right pedal on the front of the base engages to control the bead breaker arm. *Refer to illustration on page 7.*

Step down on the pedal, to close the bead breaker arm, to loosen the bead.

Lift the pedal to allow the bead breaker arm to open.

The right pedal on the front of the base also controls the rotation of the wheel. *Refer to illustration on page 7.*

Step down on the pedal to rotate the wheel **clockwise** (mounting and demounting).


Lift the pedal to rotate the wheel **counterclockwise** (bead loosening).

1.5 Wheel Rotation Pedal

The right pedal on the front of the base controls the rotation of the wheel. *Refer to illustration on page 6.*


Step down on the pedal to rotate the wheel **clockwise** (mounting and demounting).

Lift the pedal to rotate the wheel **counterclockwise** (bead loosening and matching).

 **CAUTION:** Keep hands clear of wheel, tire, and rollers during bead loosening.

1.6 Air Inflation Pedal

The pedal on the left side of the base is a two-stage design. *Refer to illustration on page 6.* The pedal controls the air going to the inflation hose and the dual air inflation ring.

 **CAUTION:** Keep hands clear of wheel during sealing and seating of bead.

When operating air inflator, stand to the left side of the base. Do not stand in front of the TC3500 while operating the air inflator.

Step down partially on the pedal to inflate tires through inflator hose.

Step down completely on the pedal to activate the air inflator ring to seal tire beads.

The TC3500 features a dual air inflation ring. When the diverter valve is pushed in, air will be directed through the inner ring. When the diverter valve is pulled out, air will be directed through the outer ring. Due to the wide variety of wheel and tire combinations, determining which rings works best for any particular wheel and tire combination will be by trial and error.

1.7 Inflator and Pressure Limiter

As a safety device, the pressure limiter prevents the operator from using excessive air pressure to seat the tire bead during tire inflation. Bead seating pressure should never exceed 40 psi. If tires being mounted require more than 40 psi for inflation pressure, the tire/wheel assembly should be removed from the TC3500, placed in an inflation cage, and inflated per manufacturer's instructions.

While inflating the tire, the pressure gauge will read zero until the inflation pedal is released. At that time, the gauge will give the correct air pressure reading in the tire.

1.8 Command Unit

The command unit governs all the movements necessary for complete bead roller operation. *Refer to illustration on page 6.*

The command unit is used to position the bead roller into the working position.

For proper operation of the command unit, place your hand over controller with index finger and middle finger over lever buttons.

Push and pull the command unit to bring the rollers to the correct rim diameter.

The rim diameter that the bead rollers are set to is indicated on the scale of the handle support. The scale is only a reference. All rims differ in flange design.

The command unit has two pneumatic lever buttons:

Left button controls the upper bead roller arm assembly.

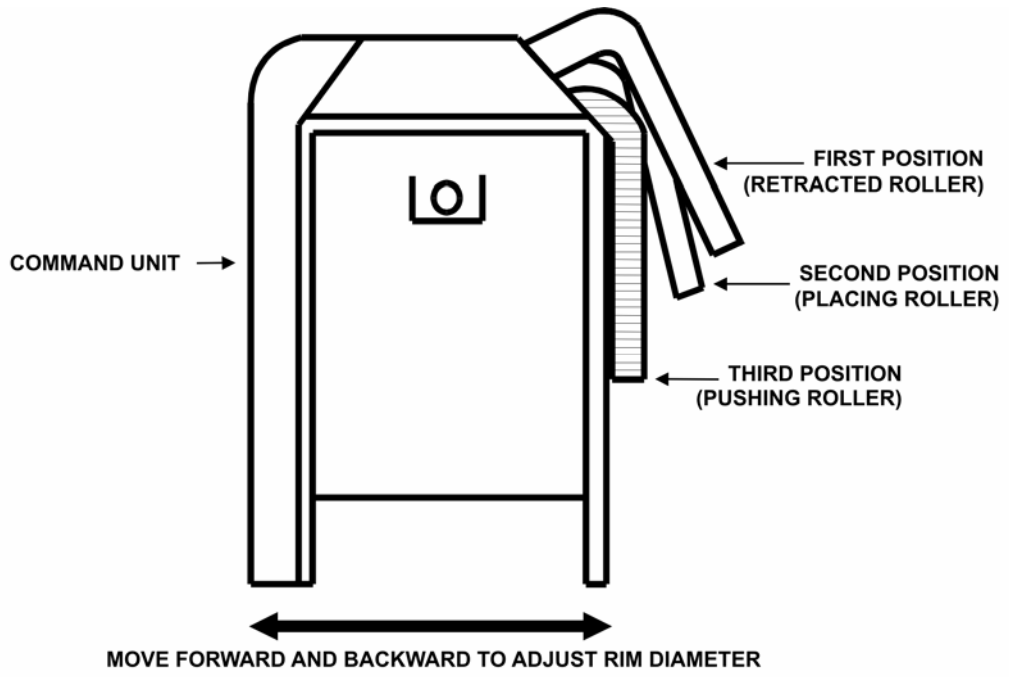
Right button controls the lower bead roller arm assembly.

Each button has three positions:

In first position, bead roller arms are retracted.

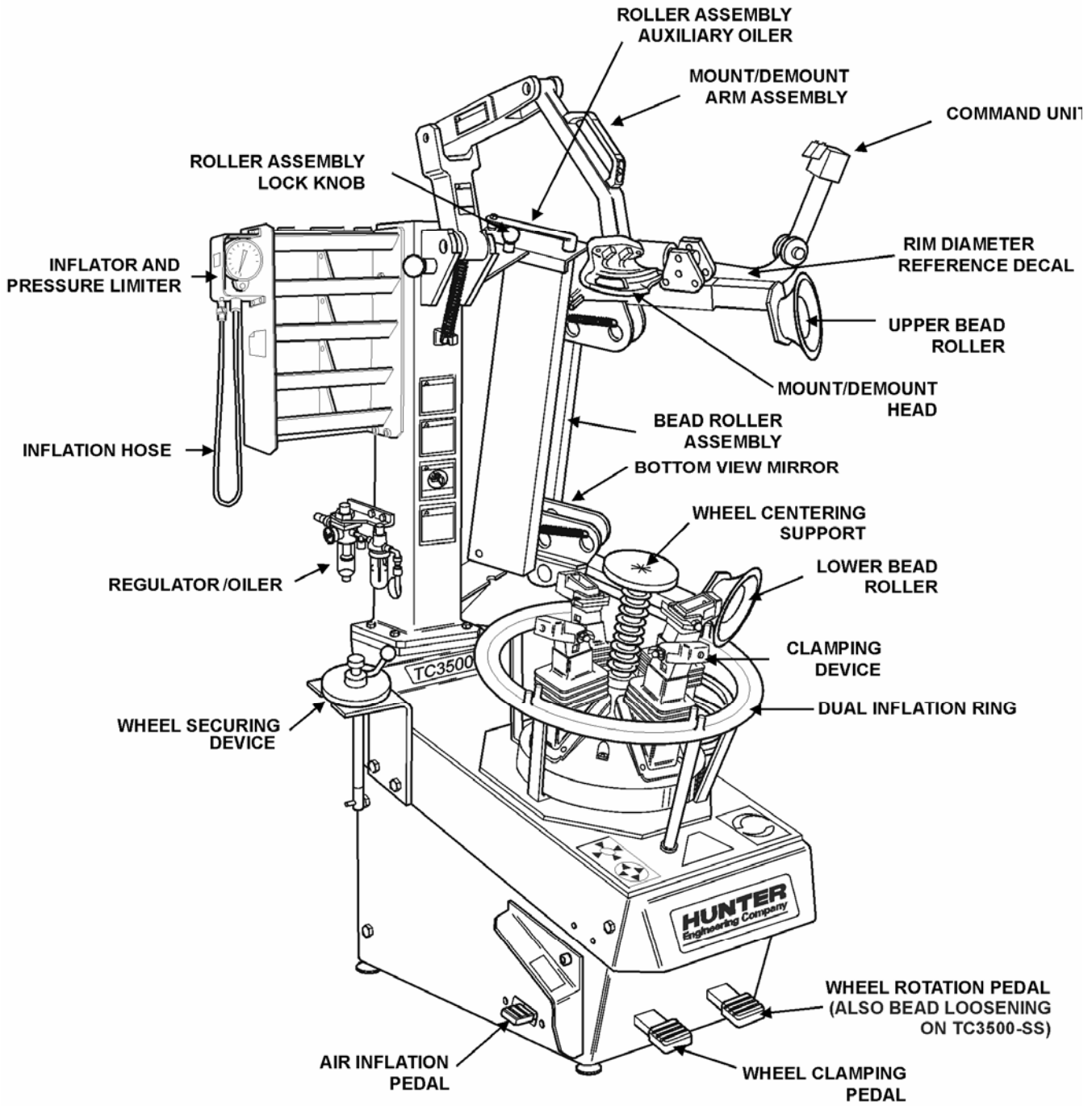
In second position, bead roller with air pressure lightly contacts the sidewall of the tire. The bead roller stays in this position until the button is depressed or retracted.

In third position, the bead roller applies hydraulic pressure to push the bead of the tire inward.



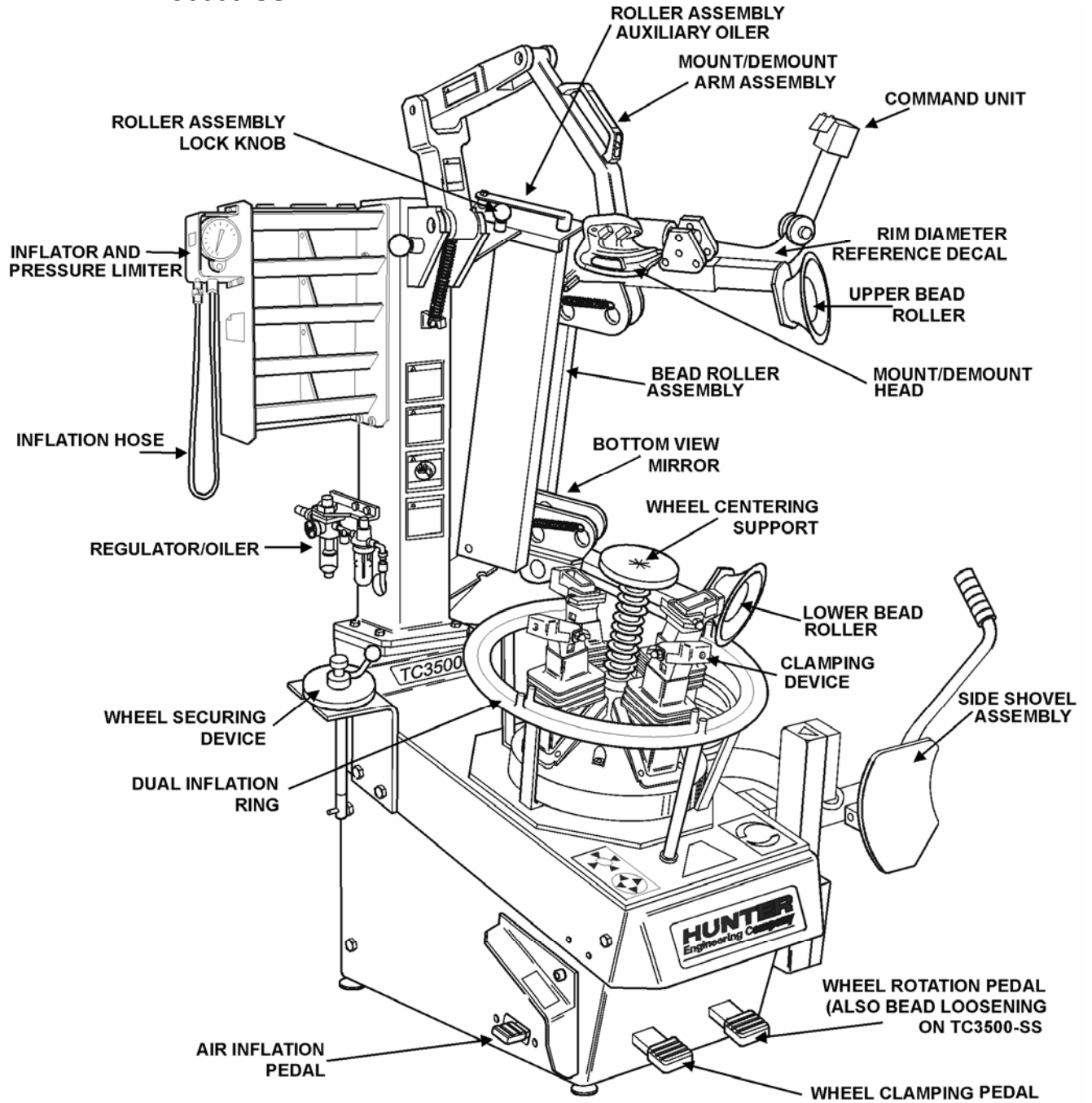
1.9 Equipment Components

TC3500



TC3500 TIRE CHANGER

TC3500-SS



TC3500-SS TIRE CHANGER

2. Basic Procedures

2.1 Bead Loosening (TC3500-SS Models only)

For bead loosening with rollers, refer to “2.3 Bead Loosening Standard Rim and Tire,” page 13.

Remove valve stem core and deflate tire completely.

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

Remove all weights from the rim to protect the rim and to extend life of the mount/demount head.

Swing the bead breaker arm out and away from the housing.

Position the wheel against the side of the TC3500-SS, between the bead breaker arm and the housing.

Swing the bead breaker arm toward the tire and position the blade two to three inches from the edge of the rim on the sidewall of the tire.

Step down on the right pedal. The bead breaker arm will be pulled toward the TC3500-SS to loosen the bead.

Lift and hold the right pedal up to disengage the bead breaker arm and then swing the arm to the open position. Once the arm has been swung to the open position, release the pedal.

If the bead has not completely loosened, rotate the wheel and repeat the bead loosening procedure at a different area on the tire.

Turn the wheel and loosen the opposite bead using the same procedure.

2.2 Placing Wheel on TC3500

The “tulip arm clamping” design is truly exclusive in its versatility and ability to grip wheels without damaging the surface finish.

Remove valve stem core and deflate tire completely (if not done previously).

⚠ WARNING: All air pressure inside the tire must be removed before proceeding. Failure to remove all air from tire may result in injury to operator or damage to equipment, tire, or wheel.

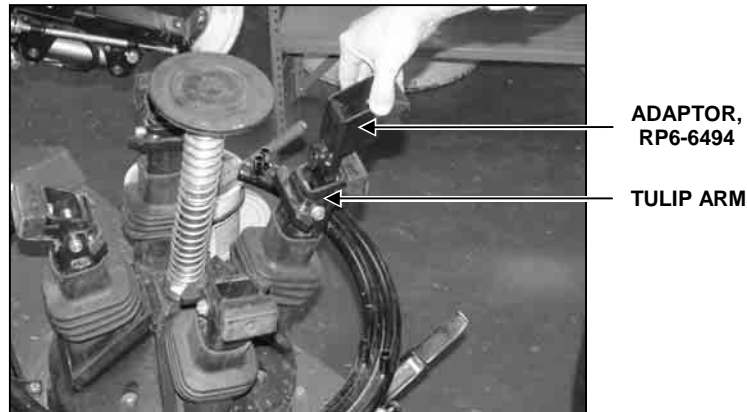
Remove all weights from the rim to protect the rim and extend life of mount/demount head (if not done previously).

Identify and recognize special wheel combinations such as Reverse Drop Center, AH2, and "Run-Flat" Extended Mobility Tires (EMT).

Identify the inner locations on the rim where the rubber pads of the clamping arms will come in contact in a parallel manner.

Clamping the Wheel from Inside of Rim

If servicing wheels larger than 20 inches in diameter, insert one adaptor, RP6-6494, into each of the tulip arms.



Verify that removable rubber coated jaws are not installed in clamping arms.

Lift the clamping (left) pedal to retract the clamping device.

NOTE:	Periodically clean and degrease the rubber pads to remove dirt and debris before placing the wheel on the TC3500.
--------------	---

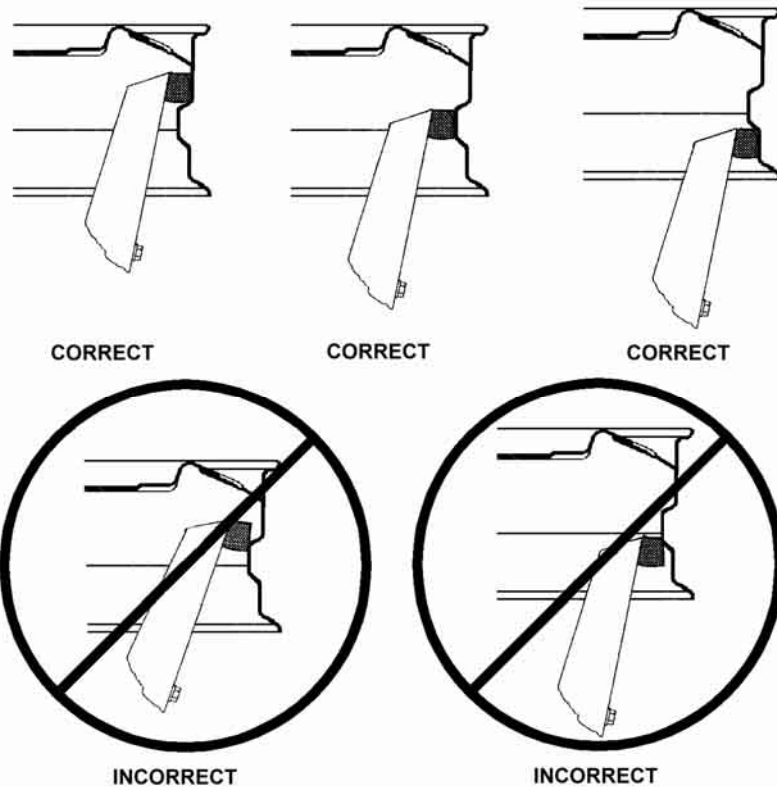
Place the wheel onto the spring-loaded, wheel-centering device.

Push down on the wheel to locate the desired area to which the rubber pads will be applied. Hold the wheel at this location until properly clamped.

Step down on the clamping pedal until the wheel is completely clamped by the rubber pads.

Verify that the entire face of the rubber pad contacts the rim. If the rubber pad is partially pushed against a sharp corner or radius on a rim, the clamping force will cause uneven pressure and eventually "chunk" the pads.

The amount of pressure being applied by the rubber pads to the rim can be increased or decreased by depressing or lifting the clamping pedal. Apply only enough pressure to keep the rim from rotating or coming loose during tire demounting/mounting. Weak rims (e.g. wire wheels, etc.) can be lightly clamped by applying minimal pressure.



Verify that the wheel has been properly clamped and centered.

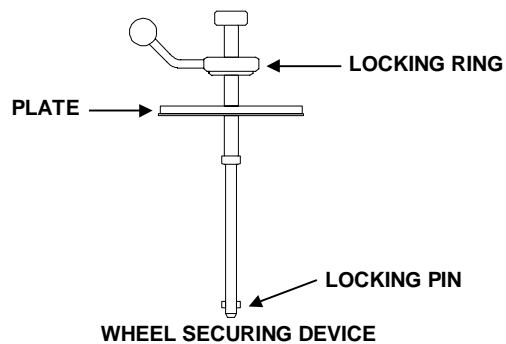
NOTE: On conical shaped rims, always clamp the rim at a position parallel to the feet to prevent slippage. If the rim clamping area is oily or wet, clean the backside of the rim or install the steel clamping jaws, RP6-2035, on the rubber pads to increase rim gripping ability or use the wheel securing device. Refer to "Installation of Wheel Securing Device," page 11 or to "Installation of Steel Jaws," page 12.

Installation of Optional Wheel Securing Device

The wheel securing device, RP6-1485, may be used if clamping conical internal rim shapes, wet or oily rims, run-flat or stiff sidewall tires. The primary purpose of this device is to prevent the rim from popping up during clamping. **It is not to be used to hold the wheel during bead loosening procedures.**

Position the wheel securing device through the center hole of the rim until it has been inserted into the wheel centering support.

Insert the locking pin of wheel securing device into the center support nut by rotating **clockwise**.



Position plate and lock into place by rotating locking ring **clockwise**.

If lock pin will not engage, loosen clamping arms and reposition pin.

CAUTION: The wheel securing device is not to be used as a safety related hold-down tool.

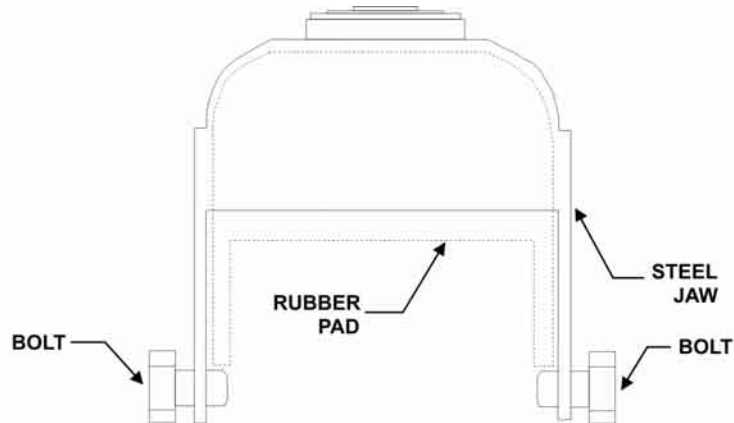
Installation of Steel Jaws

The steel clamping jaws, RP6-2035, may be used if the rim clamping area is oily or wet. Install the jaws onto the rubber pads to increase rim gripping ability.

Place a steel jaw onto a rubber pad of a centering arm.

Push the steel jaw completely onto the rubber pad.

Hand-tighten the bolt located on each side of the steel jaw securing it to the centering arm.



Repeat above steps to install remaining steel jaws.

CAUTION: Steel jaws may damage the finish of the inside rim surface during use.

Clamping the Wheel from Outside of Rim

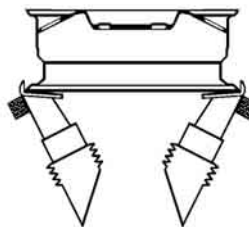
If servicing wheels larger than 22 inches in diameter, insert one adaptor, RP6-6494, into each of the tulip arms.

Install removable rubber coated jaws into clamping arms by sliding the lower prongs beneath the bolt that attaches the arm stop to the clamping arms.

Step down on the clamping pedal to expand the clamping device.

Rotate the arms to the 4 and 7 o'clock positions.

Place the wheel onto the two jaws at 4 and 7 o'clock positions.



Push down on the wheel to position the wheel onto two of the four jaws on the clamping device.

Lift the clamping (left) pedal until the rim is completely clamped by the jaws.

NOTE: Always verify all four arms are clamping rim before applying pressure to prevent possible failure.

Remove rubber coated jaws when finished with external clamping.

Clamping Reverse Drop Center Wheels

HINT: Identify reverse drop center wheels while you are loosening the bead of the tire. This will help you properly identify the proper procedure to use before demounting the tire.

Wheels with a reversed offset drop center must be mounted on the tire changer upside down to remove the tire from the rim without damage.

Remove the wheel centering support before inverting wheel on clamps as follows:

Using a 36mm or 1 7/16 inch open end wrench, loosen the base of the wheel centering support.

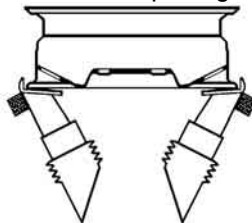
With bead lever, pry up on the center support spring to allow extra width to insert open end wrench.

Rotate the wheel centering support **counterclockwise** until it is free from the TC3500.

Lift the wheel centering support, removing it from the TC3500.

Store support in accessory brackets on left side of base.

Re-install wheel centering support after completing the tire changing procedure.



2.3 Bead Loosening Standard Rim and Tire

Swing in bead roller to locked position.

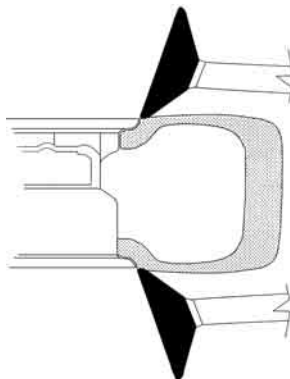
Adjust rim reference diameter.

Position upper roller at edge of rim by pressing the left button of the command unit to the second position.

Position lower roller to edge of rim by pressing the right button of the command unit to the second position.

Rotate wheel **counterclockwise**.

Apply hydraulic force to push both upper and lower beads simultaneously to begin loosening beads.



Continue to rotate wheel during entire procedure.

CAUTION: Never rotate the wheel **clockwise** while bead loosening. Never lock the bead roller assembly with the lock knob while bead loosening.

Push the upper and lower bead of the tire off the rim bead seat.

CAUTION: Never place hands near the rollers while applying force and rotating tire. Hands could be pulled between the roller and tire causing injury.

Lubricate the lower bead and rim by inserting brush of lubricant into wheel just behind the roller.

Lubricate the upper bead and rim as above.

Retract rollers.

Swing the bead roller assembly away to the stored position.

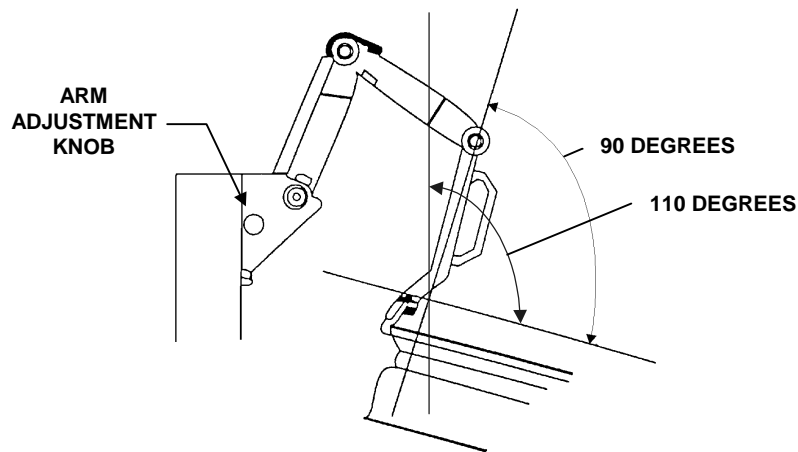
For additional information on special wheels, refer to "Advanced Bead Loosening Procedures."

2.4 Demounting Standard Tires from Rim

NOTE: For rims that have a clearcoat finish, clean the mount/demount head to remove dirt and debris before demounting the tire from the rim.

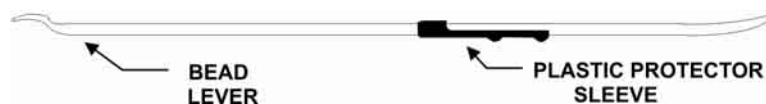
The angle between the tool arm and the rim flange must be close to 90 degrees.

The tool arm can be set to four different positions. The four positions are set by pulling out the arm adjustment knob on the column and moving the arm manually until it is locked in the required position. For rims with flat, rounded, or painted rim lips, the angle between the mount/demount arm assembly arm and the rim flange can be adjusted to approximately 110 degrees.



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

Verify that the plastic protector sleeve is installed on the bead lever tool as shown below.

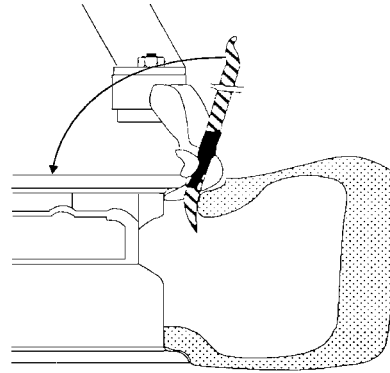


Position the straight end of the bead lever between right hand edge of mount/demount head and bead of tire.

Slide plastic protector sleeve on the bead lever tool toward the tire.

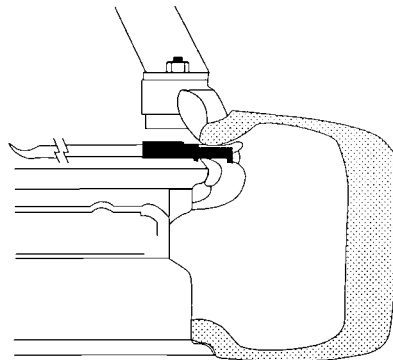
The mount/demount head should be positioned between the humps of the plastic protective sleeve.

Push down on the tire sidewall at the 6 o'clock position. On very stiff tires, use the Bead Depressor "Tail" to slip the sidewall into the drop center of the rim. *Refer to "Using Bead Depressor "Tail" and Bottom Roller to Demount Upper Bead without Sleeve Protector."*



IMPORTANT: To prevent the plastic protective sleeve and mount/demount head from breaking during demounting, the mount/demount head must be fully seated on the outer edge of the upper rim lip before prying bead lever back for demounting.

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



The bead lever tool must be pulled down parallel to the rim to prevent the possibility of breaking the plastic sleeve protector.

Rotate wheel **clockwise** until the entire bead is lifted from the rim.

Lift tire and repeat this procedure for lower bead.

HINT: If lower bead becomes re-seated on rim, push lower bead roller up against lower bead while rotating **counterclockwise** to re-loosen.

Swing 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."

2.5 Mounting Standard Tire to Rim

Always be aware of this “checklist” 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 left lip of mount/demount head.
- Position the bead under the right lip of the mount/demount head.
- Lock the rim to the tire.
- 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.

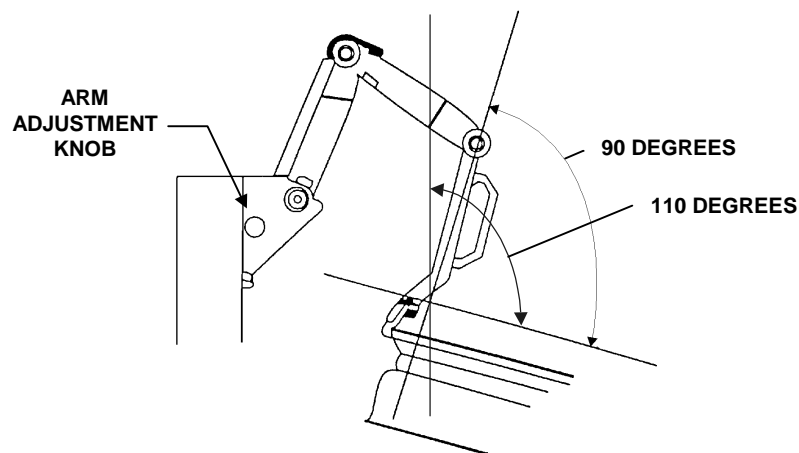
Mount a standard tire to rim as follows:

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 toward column.

Position mount/demount head through the opening of the tire and on the outer edge of the rim lip.

The angle between the tool arm and the rim flange must be close to 90 degrees.



The mount/demount assembly arm can be set to four different positions. The four positions are set using the arm adjustment knob on the column and moving the arm manually until it is locked in the required position. For rims with flat, rounded, or painted rim lips, the angle between the tool arm and the rim flange can be adjusted to approximately 110 degrees.

Position edge of lower tire bead on top of the left lip of mount/demount head.

Push edge of lower tire bead under the right lip of the mount/demount head while keeping other edge of lower tire bead above the left lip.

Twist tire **clockwise** by hand to lock the mounting of the tire to the rim.

Push down on tire at approximately the 6 o'clock position to slip the tire into drop center.

Rotate wheel **clockwise** until the lower tire bead drops over the lip of the rim.

Repeat procedure on upper bead of tire, making sure to slip the bead completely into the drop center of the rim, during mounting of the upper bead.

NOTE: If the tire bead does not have sufficient lubrication and the tire fails to slip into drop center during mounting, the mount/demount head may fail before damage to tire bead takes place.

For additional information on special wheels, refer to “Advanced Mounting Procedures.”

Precautionary Notes

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 increase mounting stress to the tire bead.



BEAD CORRECTLY PLACED ON TOP OF MOUNTING HEAD



TIRE IS INCORRECTLY PUSHED ON BY MOUNTING HEAD

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

2.6 Tire Inflation

Verify that the wheel has been properly clamped and centered.

▲ WARNING: Never attempt to inflate a tire when the wheel is clamped from the outside. Always reclamp the wheel from the inside before inflating.

Remove the valve stem core from valve stem. Removing the valve stem core will allow the tire to inflate faster and the bead to seat easier.

Connect inflator hose to valve stem.

NOTE: To increase the effectiveness of inflation ring, always liberally lubricate the outer edge of the tire sidewall and pull up on the tire while twisting to seal the bead.

Step down completely on the air inflation pedal to release a high-pressure air blast through nozzles on the air inflation ring to assist in seating the beads of the tire.

Step down partially on the air inflation pedal to inflate tire and seat the beads.

 WARNING: Do not exceed 40 PSI when seating the beads of a tire.

After beads have been seated, disconnect inflation hose and reinstall valve stem core previously removed. Then connect inflation hose and inflate tire to the required pressure.

If the preset adjustable inflator is used, step down partially on the pedal until inflator cycling stops. The tire will be inflated to the preset inflation pressure. *Refer to "Inflator and Pressure Limiter."*

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 inflator hose from valve stem.

2.7 Removal of Wheel from Tire Changer

Remove wheel-securing device, if installed.

For rims clamped on inside, lift the clamping pedal to release the rim from the clamping device.

For rims clamped on outside, step down on the clamping pedal to release the rim from the clamping device.

3. Advanced Procedures


The capabilities of the TC3500 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 Loosening Procedures

Bead Loosening Soft Sidewall, Tall Profile Tires

Swing the bead roller assembly in toward the column to the working position (against the stop).

Set rim diameter.

 **WARNING:** Never place hands near the rollers while applying force and rotating wheel.


Bring the upper bead roller down until it contacts the tire at the edge of the rim.

Lock upper roller into the side of the tire.

Bring the lower bead roller up until it contacts the tire.

Lock the lower roller into the side of the tire.

Continue to rotate wheel during the entire loosening procedure.

 **CAUTION:** Never rotate the wheel **clockwise** while bead loosening.
Never lock the bead roller assembly with the lock knob while bead loosening.

Leaving no more than 5 psi in the tire may help to stiffen the sidewall and loosen the bead.

Use multiple rotations to loosen the bead, while slowly increasing roller pressure. Let the roller work the bead.

Push the lower bead of the tire off the rim bead seat while rotating tire.

Fully lubricate the lower bead and rim by inserting brush with lubricant into rim, just behind the roller.

Retract lower roller.

Push the upper bead of the tire off the rim bead seat while rotating tire.

Lubricate upper bead, rim bead seat, rim balcony, and drop center.

Retract upper roller.

Swing the bead roller assembly away to the resting position.

Bead Loosening Tough, Low Profile Tires

Swing the bead roller assembly in toward the column to the working position (against the stop).

Set rim diameter.

⚠ WARNING: Never place hands near the rollers while applying force and rotating wheel.

Bring the upper bead roller down until it contacts the tire at the edge of the rim.

Lock upper roller into the side of the tire by pushing the upper roller down while rotating wheel **counterclockwise** so it is approximately 1/4 inch below rim edge.

Bring the lower bead roller up until it contacts the tire.

Lock the lower roller into the side of the tire.

Continue to rotate wheel during the entire loosening procedure.

⚠ CAUTION: Never rotate the wheel **clockwise** while bead loosening. Never lock the bead roller assembly with the lock knob while bead loosening.

Push the lower bead of the tire off the rim bead seat while rotating tire.

Fully lubricate the lower bead and rim by inserting brush with lubricant into rim, just behind the roller.

Retract lower roller.

Push the upper bead of the tire off the rim bead seat while rotating tire.

Lubricate upper bead, rim bead seat, rim balcony, and drop center.

Retract upper roller.

Swing the bead roller assembly away to the resting position.

Bead Loosening “AH” Wheels

(e.g. BMW M3, M5, some Porsche, Range Rover, Lancia, etc.)

“AH” wheels may be identified by looking on the rim for an “AH” code cast in the rim size designation (e.g. 71/2J X17AH2.) Refer to “*Illustration of AH2 Rim (Asymmetrical Humps) “Bead Locking System.”*”

Liberaly lubricate the upper sidewall of the tire. This reduces friction between roller and tire.



Lower the upper bead roller until it contacts the tire.



Lock the upper roller into the side of the tire. Roller should be approximately 1/4 inch below rim flange.

Rotate wheel **counterclockwise**.

Gradually push the upper bead of the tire off the rim bead seat by rotating the tire repeatedly and pushing the upper roller down the sidewall. Apply roller force gradually. Let multiple rotations of the tire slowly push the tire off the safety hump.

After the bead of the tire has been broken loose from the safety hump of the rim bead seat, thoroughly lubricate tire and rim.

Thoroughly lubricate bead and rim drop center.

Return the left and right button to the resting position.

Remove wheel from clamps.

Turn the wheel over and clamp from the outside of rim.

Liberaly lubricate the sidewall of the tire.

Lower the upper bead roller until it contacts the tire.

Lock the upper roller onto the side of the tire.

Rotate wheel **counterclockwise**.

Letting the rotation of the wheel do the work, apply downward force with the upper roller to push the bead of the tire off the rim bead seat. Multiple rotations are necessary to remove the tire from the rim bead seat.



Gradually push the bead of the tire off the rim bead seat by rotating the tire repeatedly and pushing the roller down the sidewall. Apply roller force gradually. Let multiple rotations of the tire slowly push the tire off the safety hump.

After the bead of the tire has been broken loose from the safety hump of the rim bead seat, thoroughly lubricate tire and rim.

Retract upper roller.

Remove wheel and clamp face up to demount tire (providing rim is not of reversed drop center design).

3.2 Advanced Demounting Procedures

NOTE:	It is important on large, low profile tires to always lubricate the bead, drop center, and bead seat to prevent possible tire damage and ease demounting.
--------------	---

Using “HM” Bead Lever and Sleeve Protector

The “HM” (Half Moon) high performance bead lever, RP6-2663, and plastic bead lever sleeve protector, RP6-0326, should be used to demount low profile tires. Using this special procedure will ensure a fast, effortless, and damage free completion of the demounting process. Use of the lubricated “HM” lever allows for **counterclockwise** rotation of the wheel to roll the bead up onto the mounting head. This requires less effort to turn the tire up onto the mount head. The bead of the tire also slips into the drop center. *Refer to “Run Flat Tire Service,” page 34 for proper procedure.*

Using Bead Depressor “Tail” and Bottom Roller to Demount Upper Bead without Sleeve Protector

The Bead Depressor “Tail” can be used to assist in mounting and demounting the upper bead of extremely stiff sidewalls or low profile tires. The Bead Depressor “Tail” allows the upper bead to be pushed down so it will slip (when lubricated) into the drop center of the rim.

Demounting:

Swing the bead roller assembly in toward the unit to the working position (against the stop). Lock pin into this position.

Lubricate the upper bead and the entrance of the drop center, while rotating the wheel **counterclockwise** and using the upper bead roller to push down on the bead.



Lock the bead roller fixation knob.



Rotate the wheel **clockwise** until the valve stem is at the 1 o'clock position.

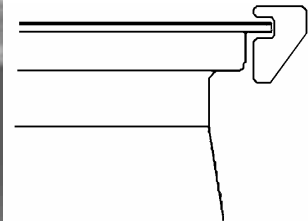
Lubricate and push the bead depressor post through the center hole of the rim until it has been inserted into the spring centering system.

HINT:

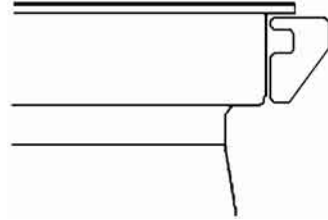
If the post will not insert into the center hole, the wheel support is depressed too far down. Release the clamping jaws and reposition the arms to allow for less compression of the support and try again.

Push the sidewall down with upper roller to allow the insertion of the block on the arm.

Slide the horizontal arm of the tail so the fixed block is positioned into the rim flange as shown below.



Rotate wheel **clockwise** and position each of the attached blocks of the bead depressor onto the rim as shown. Each block should be positioned as far away from the next block as the cord will allow.



For rims that have an extra deep drop center, position each of the following attached blocks under the rim lip as shown below.

Rotate the wheel **clockwise** until the Bead Depressor "Tail" is installed between the 3 o'clock and 9 o'clock positions.

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

Liberaly lubricate bead lever tool on both top and bottom.

Use the upper roller to aid in the lever insertion, if necessary. Position bead lever tool between right-hand edge of mount/demount head and the bead of the tire.



Pull back on bead lever tool repeatedly to force tire forward, and slip the backside of the depressed "Tail" area into the drop center.

Position bottom roller and push on the lower bead of the tire.

NOTE:	The mount/demount head must be fully seated on the outer edge of the upper rim lip before prying bead lever back for demounting.
--------------	--

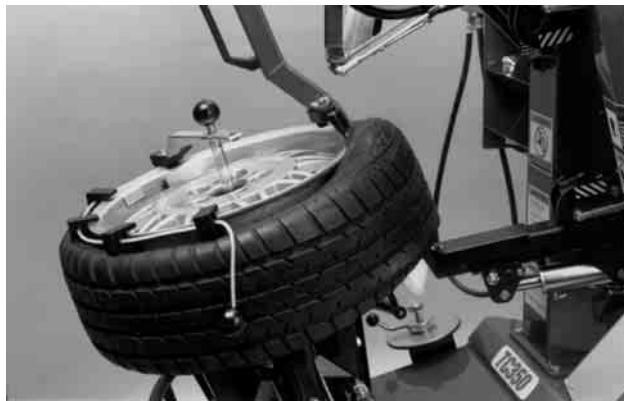
Partially lift the tire bead over the right-hand end of the head.

Push bottom roller up again to fully bring tire bead over head.



Rotate the wheel **counterclockwise** approximately 1/2 inch to unfurl tire bead onto the bead lever.

Slide the bead lever tool out from between the mount/demount head and the bead of the tire. The bead of the tire must remain over the right-hand end of the head.



Rotate wheel **clockwise** until the entire bead is lifted from the rim. Retract the lower roller to the resting position.

Remove the Bead Depressor "Tail" from the rim. *Refer to "Removal of Bead Depressor Tail," page 30.*

Using Force Multiplier, RP6-8832

NOTE:

When demounting the tire, the polymer head should be fully seated against the wheel or it may become over stressed and prematurely fail. Fully seating the polymer head against the wheel can be accomplished by using the Force Multiplier to seat the head against the wheel.



CORRECT (FULLY SEATED) MOUNT/DEMOUNT HEAD



INCORRECT (NOT FULLY SEATED) MOUNT/DEMOUNT HEAD

The force multiplier is used to help the operator to keep the polymer head down and fully seated when levering the upper bead during demounting of low-profile, stiff sidewall tires. The force multiplier may also be used to push the sidewall down in order to enable the mounting head to be hooked on to the edge of the wheel. Position the polymer head against the wheel edge in preparation for demounting. If head is not fully seated, check for correct positioning of articulating arm and then grasp force multiplier handle and pull down until the demount nose area of the polymer head is fully seated.

FORCE
MULTIPLIER,
RP6-8832



Demounting Lower Bead without Sleeve Protector

Lubricate tire bead lever.

Pull tire up and tilt forward to place rear of lower bead in drop center.

Insert bead lever over the demount head and place the lip of the tool under lower bead.

Pull lower bead up and over demount head.

Push bead lever half-way through tire and rim.

Grasp inside of bead lever with left-hand.

Grasp outside of bead lever at the base with right-hand.

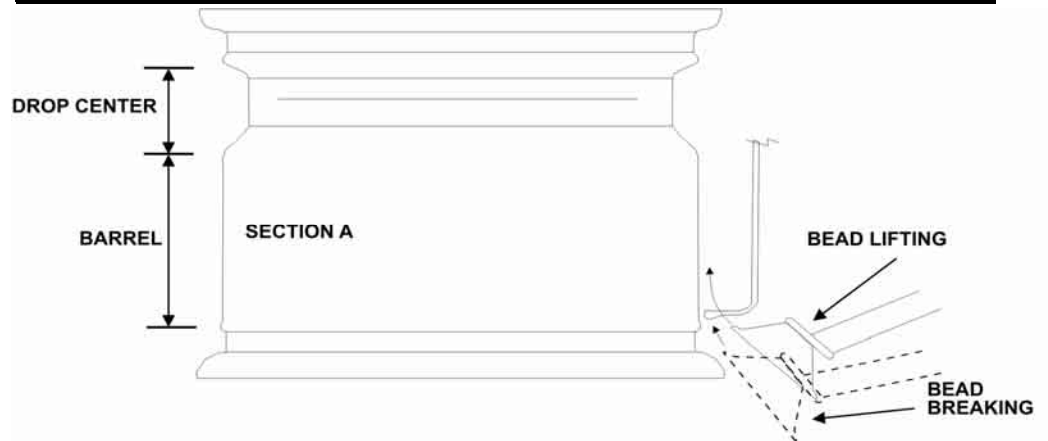


Firmly pull bead lever straight up.

Rotate wheel **clockwise** to demount.

Cylindrical Rims/Bead Loosening and Demounting Lower Bead

⚠ WARNING: When demounting the lower bead on rims with a small drop center where section A is long and cylindrical, rolling up the bead with the lower bead roller can cause damage if not operated properly.



- Lock the upper roller against top bead.
- Place and lock the lower roller against the lower bead.
- Rotate wheel and loosen bottom bead from rim.
- Lubricate tire and rim thoroughly.
- Retract lower roller.
- Rotate wheel and loosen the upper bead from the rim.
- Lubricate upper bead rim drop center and barrel if possible.
- Retract upper roller.
- Demount upper bead.
- Bring the lower bead roller up until it contacts the tire.
- Lock the lower roller and push the lower sidewall of the tire up while rotating.
- Continue rotating wheel until the lower bead has been lifted.

⚠ CAUTION: On repeated attempts to roll the lower bead up the rim, never readjust the rim diameter from initial setting to prevent damage to rim.

3.3 Advanced Mounting Procedures

Always be aware of this “checklist” when mounting tires to ensure proper service.

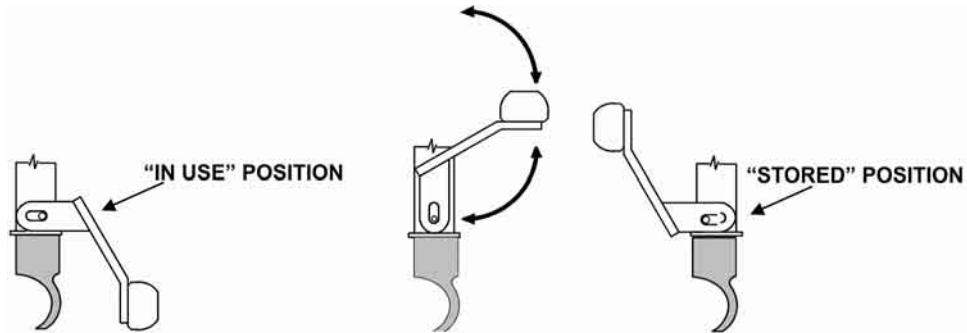
There are four steps when mounting a tire to a rim:

- Position the bead on top of the left lip of mount/demount head.
- Position the bead under the right lip of the mount/demount head.
- Lock the rim to the tire.
- 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.

Mechanical Bead Pusher, RP6-2413

The Mechanical Bead Pusher is used for pushing the upper bead below the right hand area of the mount head, keeping the tire in the proper location during mounting of stiff, low profile tires.



To use:

Mount the bottom bead of the tire onto the wheel. Position the upper bead of the tire on the upper left side of the mounting head. Rotate and lock the mechanical bead pusher into the "IN USE" position with the tire sidewall passing below the locked mechanical bead pusher roller. The locked roller of the bead pusher will keep the tire bead and sidewall below the right side of the mounting head.

To store:

Unlock and rotate the mechanical bead pusher into the "STORED" position.



Mounting of Stiff Sidewall, Low Profile Tires

Lubricate the upper and lower bead of the tire, paying special attention to the inner toe area of the bead. Lubricate the bead seats and the entrance of the drop center of the rim.

Install lower bead.

Position the upper bead of the tire below the rim lip.

Push the bead depressor post through the center hole of the rim until it has been inserted into the spring centering system.

HINT:	The post may need to be lightly lubricated before installing. If post will not insert into the center hole, the wheel support is depressed too far. Release the clamping jaws and reposition the arms to allow for less compression of the support and try again.
--------------	---

Slide the horizontal arm of the tail so the fixed block is positioned into the rim flange.

Position the fixed block of the bead depressor between the rim and the bead of the tire that was previously positioned below the rim lip.



Swing the bead roller assembly in toward the unit to the working position (against the stop).

Lock the bead roller assembly into the working position by pushing down on the fixation knob.

Set the rim diameter approximately 2 inches larger than the actual rim diameter by moving the command unit away from or toward the unit.

Lock the upper roller onto the sidewall of the tire.

Position the bead of the tire under the right side of the mount head.



Rotate the wheel **clockwise** and position each of the attached blocks of the bead depressor onto the rim as shown below. Each block should be positioned as far away from the next block as the cord will allow.



Rotate the wheel **clockwise** until the upper bead of the tire is completely installed. To prevent rim from spinning inside the tire, grasp tire at location shown below and pull tire along with rim during rotation.



Remove Bead Depressor “Tail” from rim.

Removal of Bead Depressor “Tail”

CAUTION: Never forcefully pull bead depressor “tail” out of tire after installation to avoid damage to tool and/or rim.

With the upper roller depressing the sidewall of the tire, rotate the wheel **counterclockwise**.

Pull the ball knob at the end of the attached blocks as each attached block approaches the upper bead roller.



Remove the block and shaft from the rim by pushing out to relax from rim.



Retract the upper roller.

Unlock the bead roller assembly by pulling up on the fixation knob and swing the bead roller assembly away to the resting position.

Mounting Low Profile Tires on Rounded Edged Rims

On certain types of alloy rims with round flanges, there is a potential to rub the surface of weak coated rims. To eliminate this potential, the following procedure should be used:

NOTE: Only use this procedure on rims with rounded edges.
--

Lubricate tire bead and rim flange area.

Adjust articulating arm back to the #4 position.



Push upper roller down against tire to ensure the mounting head is secured by the upper roller. This will prevent the mounting head from popping up when the tire is fully mounted.



Push on the bead while rotating wheel clockwise instead of going over the top of the mounting head.

Lock the rim to the tire by hand, or by using the bead lever or bead depressor "tail."

Slip the bead into the drop center.

Rotate wheel clockwise to mount tire.

3.4 Mounting Stiff, Low Profile Tires on Rounded Edged Rims Using Roller and No Mounting Head

⚠ CAUTION: This special case procedure does not perform properly on all tires. Tires of the same size, but of different makes react differently to this method. Attempt first tire slowly to determine compatibility of this procedure with application.

Mount lower bead as normal.

To mount upper bead:

Move roller assembly into work position.

Lower the upper roller against the upper bead approximately 1/2 inch away from the rim edge.

Grasp and support tire at the 6 o'clock position.

Lower the upper roller and push bead down slightly so it is below the balcony of the drop center.



Lock the tire to the rim by grasping the tire with a cross-handed grip.

Rotate the wheel **counterclockwise** and press down hard on the tire at the 6 o'clock position to guide tire into the drop center.



Continue mounting by rotating the wheel **counterclockwise** until upper bead is mounted.



Retract upper roller and swing bead roller assembly away to prepare for inflation.

HINT:	Use of bead depressor (without inserting tail) may assist in locking tire to rim during mounting.
--------------	---

3.5 Mounting 20-Inch and Larger Automotive Wheels and Tires

Twenty-inch and larger wheels have recently been introduced into the market. The handling of these tires on the TC3500 will not pose any difficulties. Bead loosening and demounting follow the same general procedures as the normal low profile tires. During mounting, the mounting head sitting on the rim edge prevents the upper roller from reaching its mounting position on the sidewall of the tire. This can be resolved easily and without any modification by positioning the roller first and then the mounting head. This solution works for all 20-inch combination wheels.

3.6 Matching/Optimizing of Tire to Rim

Matching/Optimizing allows positioning of the rim to the tire for proper mounting to minimize vibrations. This procedure must be done with both beads fully loosened and well lubricated.

Match/Optimize the rim to the tire as follows:

Set the rim diameter approximately 1 to 2 inches larger than the actual rim diameter.

Bring the lower bead roller up until it contacts the tire.

Bring the upper bead roller down until it contacts the tire.

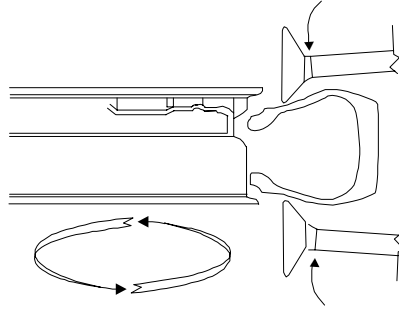
Rotate wheel **counterclockwise** and continue rotating for next three steps.

Lock upper roller and push in on sidewall of the tire until upper bead is in drop center of rim.

Lock lower roller and push in on sidewall of the tire until rim and tire are rotating at two different speeds.

NOTE:	For reverse drop center rims, reverse the previous two procedures: Lock lower roller and push in on sidewall of tire until bead is in drop center. Lock upper roller and push in on sidewall of tire until rim and tire are rotating at two different speeds.
--------------	---

Continue rotating the tire and rim at different speeds until the rim spins inside the tire and the mark on the tire is positioned where needed in reference to the rim.



Once matching has occurred, retract arms and inflate.

3.7 Run-Flat Tire Service

Basic Run-Flat / EMT Information

A Run-Flat / EMT tire is capable of supporting the vehicle's weight, even when the air pressure is zero psi.



The sidewall of the tire is approximately six times thicker than a standard tire. A standard tire's sidewall goes flat at low pressure, causing the customer to change the wheel before driving the vehicle. A Run-Flat / EMT tire can support the vehicle's weight, even at zero pressure. The customer can drive on the tire to the dealer for service, as far as fifty miles. The customer no longer has to jack up the vehicle and install a spare tire and wheel.

Run-Flat "Zero Pressure" Tires and Rims

⚠ WARNING: Most run-flat designs require an approved inflation cage due to possible extremely high bead seating pressure required.

NOTE: Sidewalls are extremely tough, require liberal lubrication, and complete positioning into the drop center before proper removal.

Care must be taken when mounting tires on vehicles equipped with the Low Tire Pressure Warning System (LTPWS). Each wheel has a sensor secured inside the rim.

Damage to the air pressure sensor is a costly mistake. Consult the manufacturer's specifications and procedures to properly demount and service this wheel combination.

The air pressure sensor will be located in two possible locations:

Valve stem, integral type: located at the valve stem as an integral part of the valve.

Drop Center, Band and Sensor type: located 180 degrees away from the valve stem and in the drop center of the rim.

Extended Mobility Tires (EMT) should have a standard Low Tire Pressure Warning System. If the "LOW/FLAT TIRE" warning light is "ON," check the inflation of the tire. If the "LOW/FLAT TIRE" warning light reappears and EMT has been operated at a pressure significantly below 25 PSI, the affected tire must be inspected for possible repair or replacement.

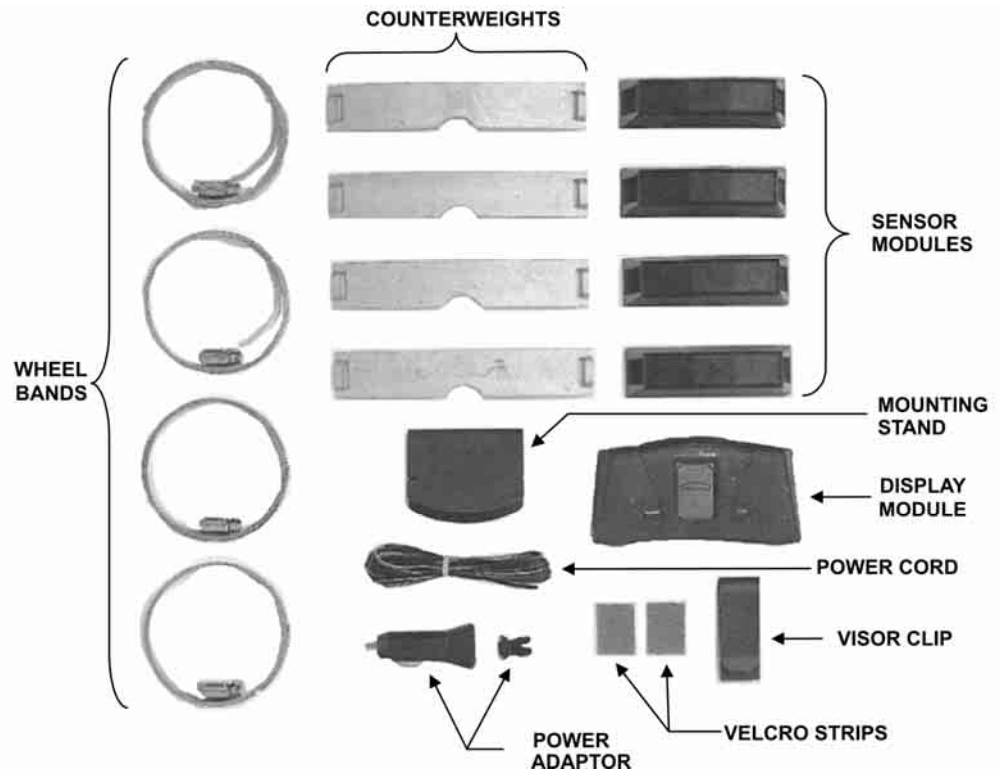
CAUTION: Do not lubricate the tire bead or wheel with lubrication containing "silicon."

Tire Monitoring System (TMS)

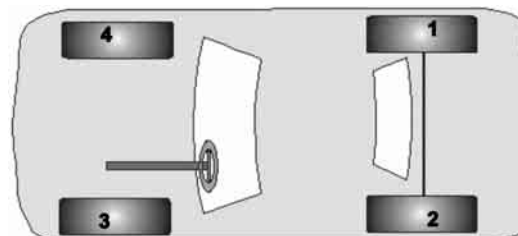
Since Run-Flat / EMT tires do not appear low on air or flat, a Tire Monitoring System **must** be installed on the vehicle.

A tire information Display Module is conveniently mounted within the customer's view and reach. A Sensor Module, mounted inside each tire/wheel assembly, measures its contained air pressure and temperature and transmits data to the Display Module.

The Display Module analyzes the received data and issues a **visual** and/or **audible** alert for any irregular tire pressure or temperature.



Each sensor has an ID code. Example initial default ID wheel positions are shown below.



Chemical-based tire sealer and inflators (commonly referred to as “Fix-a-Flat”) will damage the sensors and void the customer’s warranty.

Sensors

The **band type sensor** fits over most wheels. Compatibility must be checked during installation.



The **valve type sensor** is currently used on original equipment wheels. The valve type sensor can be installed only on wheels machined for an O-ring seat and sensor profile. Valve type sensors will soon be available for aftermarket changeover.



TMS Band Type Sensor Installation

Inspect drop center for flush sensor fitment. Clean drop center area as needed.



Measure and trim excess band clamp length. Remove burrs from end of bands.

Wheel Diameter	Cut-off Length
13"	16"
14"	13"
15"	10"
16"	7"
17"	3"
18"	N/A

Pass band clamp through counterweight with notch facing toward valve stem.



Thread band clamp through sensor with label and counterweight valve cutout on same side.



Position sensor 180 degrees from valve stem. Clamp screw must not be within two inches of sensor.



Position counterweight under valve stem with notch for stem base.



Tighten clamp to specified torque (30 in.-lbs.).



Verify position of sensor, counterweight, and clamp screw.



Note sensor number and wheel position.

Demounting Run-Flat with Valve Type Sensor

Mount wheel/tire assembly on TC3500.

Inspect the wheel for safe serviceability and identify the type of sensor. Valve type sensors are identified as aluminum with a retainer nut.



Remove the valve core. Remove the sensor retainer nut (11mm). Drop sensor into the tire.



Liberalily lubricate tire and wheel during bead loosening. Use multiple short strokes of bead roller.



Properly clamp and secure the wheel on the tire changer.



Position upper bead into drop center opposite demount head by using bead depressor tail.



Lubricate "HM" bead lever.



Insert bead lever (with protector sleeve) and pry top bead onto demount head.



As required, rotate briefly **counterclockwise** to unfurl the toe of the bead on the demount head.



Carefully rotate **clockwise** to remove upper bead. Remove bead depressor tail.



Remove the sensor from inside the tire.



Position lower bead opposite demount head into the drop center. Insert bead lever and pull back to pry the lower bead onto the demount head.



Carefully rotate tire/wheel assembly to demount lower bead and remove tire from wheel.



Mounting Run-Flat with Valve Type Sensor

Inspect the wheel for safe serviceability and identify the type of sensor. Note wheel position on vehicle.



Verify the tire is the proper size for the wheel.



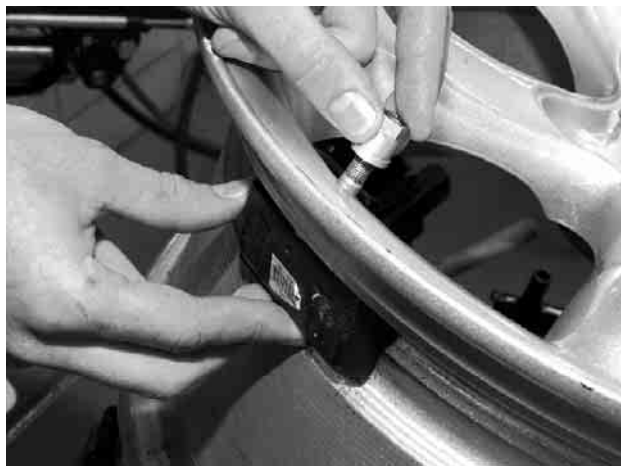
Properly position and secure the wheel on the changer.



Clean the sensor and sensor mount surface on wheel. Inspect and lubricate O-ring.



Insert the sensor and properly torque to manufacturer's specification.



Lube wheel flange area, bead seats, and drop center balcony.



Fully lubricate the inner and outer portion of both beads of the tire.



Verify the direction of rotation for directional tires.



Position lower bead on mount/demount head. Rotate tire **clockwise** and lock to wheel for traction, making sure that sensor is just ahead of traction point.



Mount bottom bead.



Position upper bead on mount head. Install bead depressor tail.



Verify sensor is just ahead of traction point.



Rotate tire with wheel clockwise, maintaining traction. **Tire and wheel must rotate clockwise without slippage.**



Carefully mount upper bead. Sensor should end up under mount head. Remove bead depressor tail.



Verify air outlet of sensor is not blocked by bead of tire prior to inflation. Repositioning of tire bead may be necessary. Do not inflate tire on tire changer.



Inflating Run-Flats

⚠ WARNING: Always use an approved inflation safety cage and remote air gauge when inflating and seating beads on Run Flat tires.

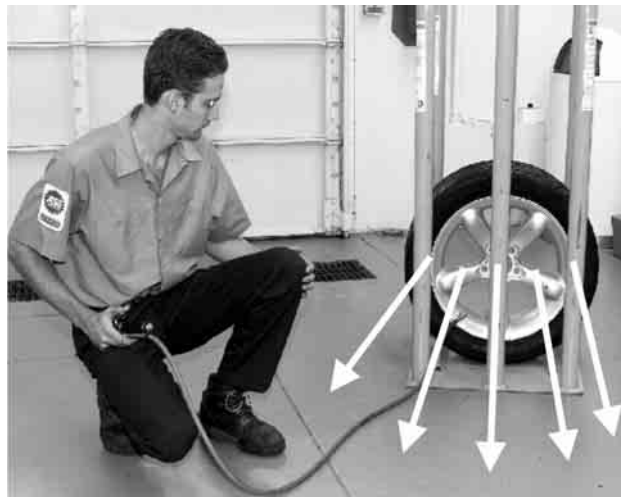
Use adequate lube during mounting to assist in bead seating. Relube as required.



Remove tire/wheel and place in safety inflation cage. Attach clip-on hose from remote inflation gauge.



Stand in safe zone away from wheel flanges and slowly inflate.



Never exceed 80 psi to seat beads. If not seated, all pressure MUST be exhausted remotely before approaching tire in cage. Remove, inspect, and relubricate if beads do not seat.



After beads seat, deflate tire using the remote device. Install valve core and re-inflate to specification inflation pressure using remote device. Remove tire/wheel assembly from cage.



Demounting Run-Flat with Band Type Sensor

Inspect the wheel for safe serviceability and identify the type of TMS sensor. A Run-Flat/EMT tire with a rubber valve stem usually indicates that the TMS is a band type sensor.



Remove valve core and fully deflate the tire.



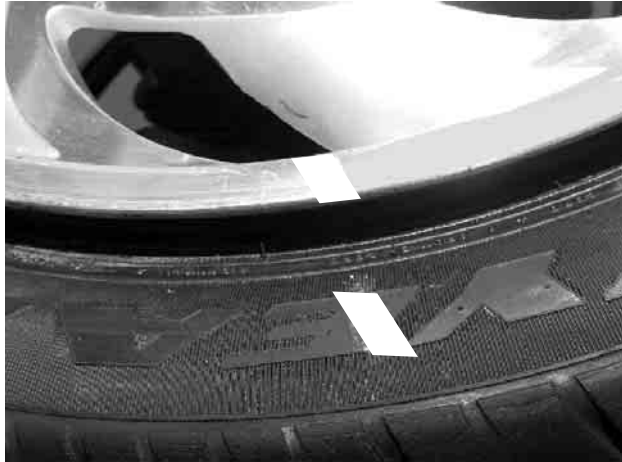
Loosen outer bead with multiple short strokes without damaging sensor. Apply lube to bead and wheel.



Visually verify sensor location.



Mark wheel and tire sidewall with tire crayon to index location.



Loosen inner bead with short strokes without damaging sensor. Apply lube to bead and wheel.



Clamp wheel on changer. Position sensor immediately to left of bead lever position.



Slip tire into drop center opposite head using bead depressor tail.



Pry upper bead over demount head. Depress bead with upper bead roller and insert "HM" bead lever tool.



Unfurl bead by briefly rotating tire/wheel assembly **counterclockwise**.



Rotate tire/wheel assembly **clockwise**, while grasping and pulling tire to maintain traction against wheel.



Carefully remove upper bead. Remove bead lever and bead depressor tail.



Re-loosen lower bead, if necessary.



Reposition sensor immediately to left of bead lever position. Position lower bead into drop center opposite demount head. Insert bead lever with protective sleeve.



Pull tire up and pry bead over demount head.



Rotate to remove tire. Grasp bead lever and remove from underside of tire.



Mounting Run-Flat with Band Type Sensor

Inspect the wheel for safe serviceability and identify the type of TMS sensor.



Verify the tire is the proper size for the wheel.



Properly position and secure wheel on changer.



Verify proper position of sensor and counterweight. **Inspect and/or replace valve stem.**



Lube tire beads and wheel.



Verify the direction of rotation for directional tires.



Position lower bead on mount head. Rotate tire and “lock” to rim for traction.



Verify sensor is just ahead of traction point. Mount bottom bead by rotating wheel and tire **clockwise** together.



Position upper bead on mount head with sensor in anticipated “lock” position.



Install bead depressor tail. Verify sensor is just ahead of traction point.



Carefully mount upper bead by rotating tire with wheel **clockwise**, maintaining traction. **Tire and wheel must rotate WITHOUT SLIPPAGE.**



Sensor must end up under mount head.



⚠ WARNING: Always use an approved inflation safety cage and remote air gauge when inflating and seating beads on Run-Flat / EMT tires.

3.8 Servicing BMW Z3 Motorsport Rear Reversed Drop Center 17x9AH2



Overview of Components

Tire has a low profile, soft sidewall, with stiff, wide tight bead.



Rim has a reverse drop center with AH2 bead lock system locking the tire to the rim.

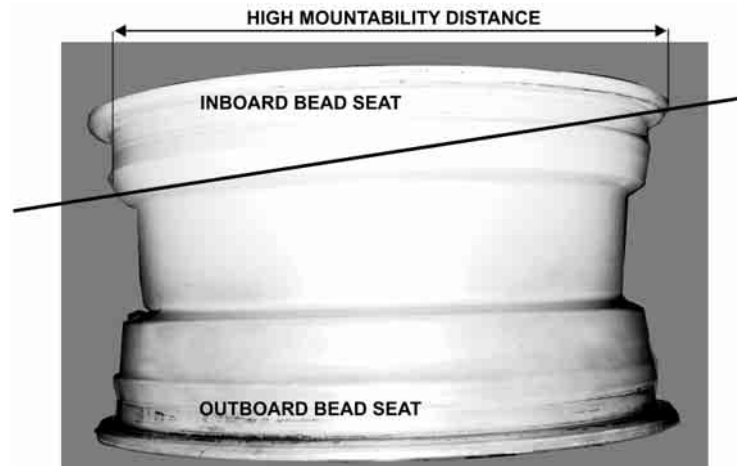


If using a side shovel type tire changer, the bead should be loosened at the valve stem location first.

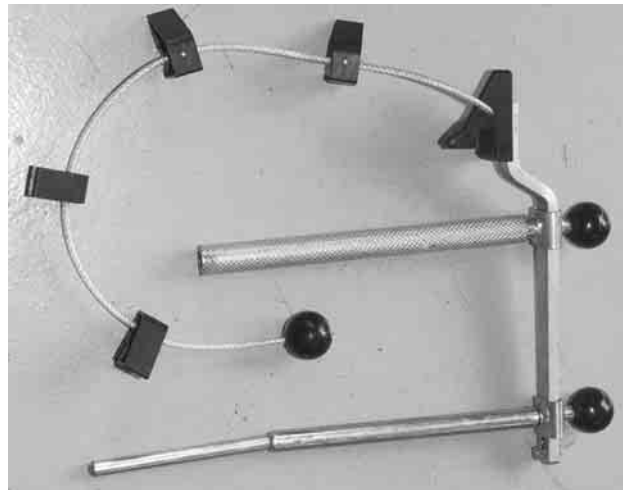
NOTE: A side shovel type tire changer is not the recommended equipment for servicing this wheel/tire combination.

Wheel must be inverted to mount or demount the tire.

An extremely deep drop center and low profile tire combination causes high mountability distance.



Optional Bead Depressor "Tail" with Traction Device, RP6-3702, special tool required.



Bead Loosening

Clean demount head. Replace with a new unit if dirt is embedded in demount head.



Clean rim. Note and record any damage to rim prior to servicing.



Clamp wheel internally. Verify rim is squarely clamped by checking rotational runout. If not square, briefly release and reclamp.



Deflate tire. Lubricate outer bead and sidewall before loosening outer bead.



Loosen outer bead using multiple rotations. When bead is loosened, lubricate tire and rim at bead seat areas.



Remove wheel from tire changer. Insert removable rubber coated jaws into clamping arms. Invert tire/wheel assembly and clamp externally.

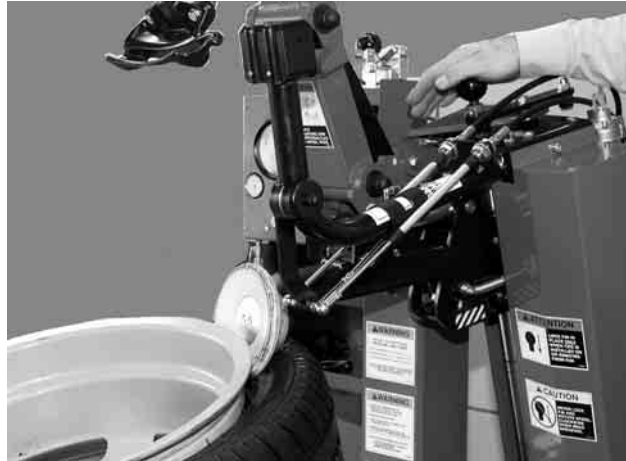


Loosen bead with multiple rotations. Lube inner bead and rim bead seat.

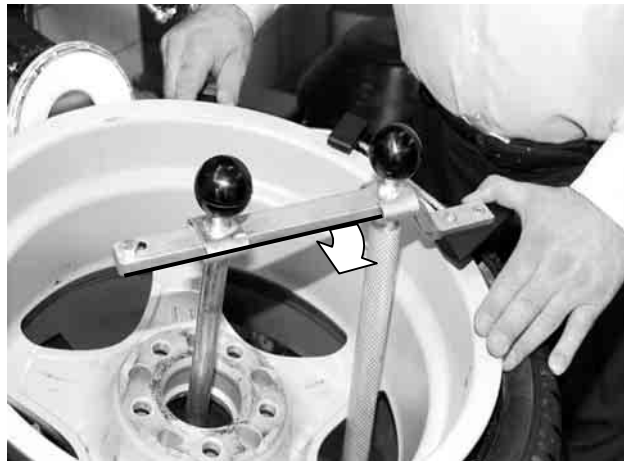


Demounting

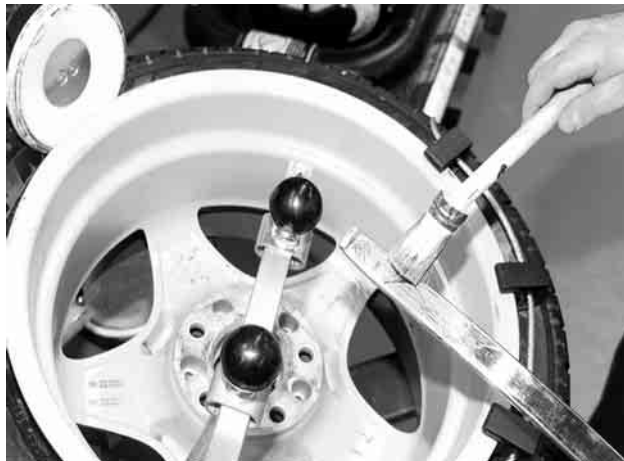
Lock bead roller assembly.



Install bead depressor tail with traction device.



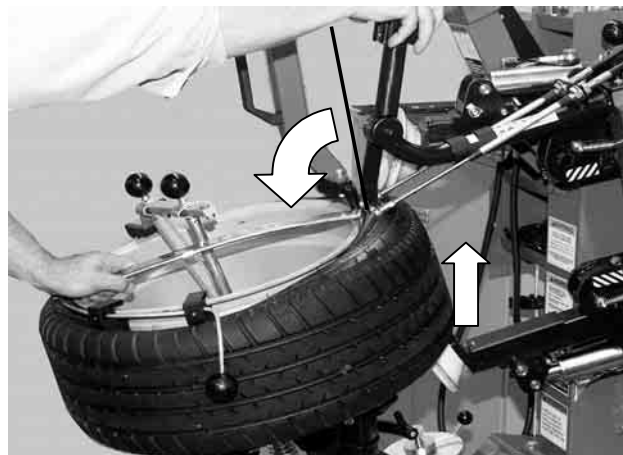
Lube "HM" bead lever.



Insert "HM" bead lever.



Pull "HM" bead lever back flush with rim while pushing with bottom roller to assist.

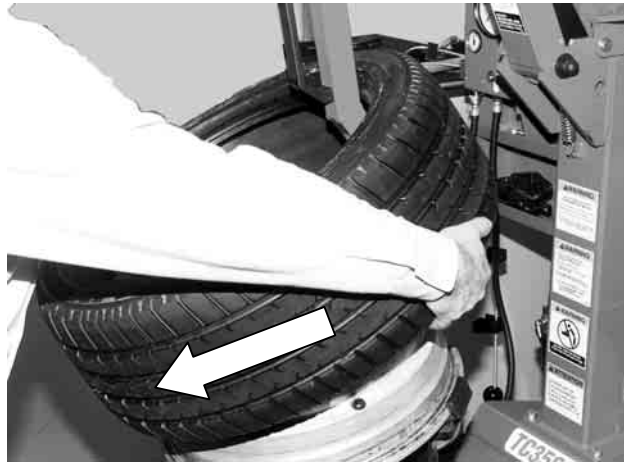


Rotate **clockwise** to remove upper bead.

IMPORTANT: Stop rotation before traction device hits mounting head.



Demount outer bead.



Mounting

With wheel clamped externally and inverted, thoroughly lubricate rim flange, drop center, bead seats, and safety humps.



Thoroughly lubricate tire bead face and inner toe area.



Mount inner bead.



Position and lock column.



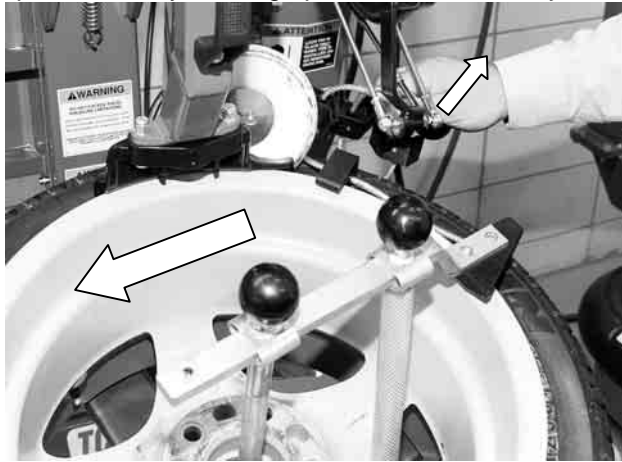
Place outer bead onto mount head. Position upper roller against bead and tire behind mount head. Install bead depressor tail and traction post. Lock tire to rim. Begin inserting blocks while continuing to mount outer bead.



Continue mounting tire. Stop rotation immediately after tire is mounted. Ensure that bead depressor tail does not contact mount head.



Remove bead depressor tail by backing up tire/wheel assembly after mounting.



Release external clamping. Invert and clamp internally.



Inflate tire, keeping clear of assembly.



3.9 Optional Steel Mount/Demount Head Assembly (RP6-2654)

Use standard procedures for mounting and demounting.

The optional steel mount/demount head assembly is to be used for mounting or demounting tires from steel rims only. **DO NOT** use the steel mount/demount head assembly on alloy rims, it could damage the finish.

4. Maintenance and Calibration

4.1 Maintenance Schedule

Proper care and maintenance are necessary to ensure that the TC3500 operates properly. Proper care will also ensure that rims and tires are not damaged during the mount/demount process.

Maintenance Schedule	Perform the Following Maintenance
<p style="text-align: center;">Daily</p>	<p>Drain condensation from pressure regulator reservoir by pressing in on the fitting located on the bottom of the regulator.</p> <p>Check for worn or damaged rubber and nylon components that should be replaced to prevent damage from occurring. Replace worn parts as needed (rubber pads and blocks, claw protectors, lever protector sleeve and mount/demount head).</p> <p>Clean all areas that contact rims or tires to prevent possible scratching to rim.</p>
<p style="text-align: center;">Weekly</p>	<p>Clean TC3500 with shop towels or a vacuum cleaner. Do not clean with or use compressed air, which can blast dirt between moving parts.</p> <p>Do not use cleaning solvents to clean pressure regulator/oiler.</p>
<p style="text-align: center;">Periodically</p>	<p>Refill the pressure regulator/oiler using only Hunter Lubri-oil as needed. Petroleum-based oils should never be used in the oiler and may void all warranties.</p> <p>Adjust the screw on top of the column mounted oiler to release one drop of oil every four revolutions. Adjust bead roller mounted oiler to release one drop of oil for every seven complete arm positioning strokes.</p> <p>Lubricate oil fittings as shown on decal on side of storage tray.</p> <p>Check for loose bolts and tighten per specifications.</p>

4.2 Maintenance Replacement Parts

<u>QTY</u>	<u>NAME</u>	<u>NUMBER</u>
1	Safety Goggles	179-15-2
1	Brush	RP6-1506
1	Mounting Paste	RP6-5749995
1	Steel Jaw Cover (Set Of 4)	RP6-2035
1	Mount/Demount Head	RP6-0343
1	Straight Bead Lever	RP6-0322
1	"HM" Bead Lever	RP6-2440
1	Bead Lever Protector Sleeve	RP6-0326
1	Rubber Bonded External Clamping Jaw	RP6-3656

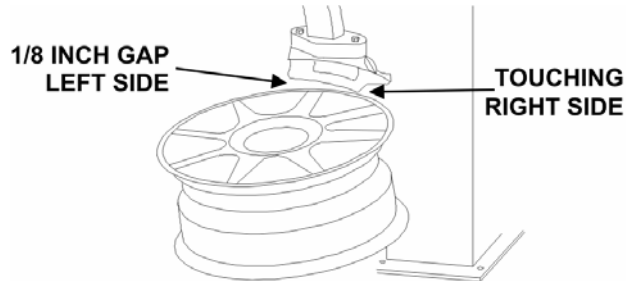
4.3 Calibrating and Adjusting the Position of the Column

Check the column position as follows:

Clamp a 14 or 15 inch rim without tire.

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

Verify that the left-hand side of the mount/demount head has a clearance of 1/8 inch from the rim edge while rotating the clamping device. The right side of the mount/demount head must contact the edge of the rim.



Adjust the column position as follows:

Remove bolt securing rear panel to base. Set rear panel and bolt aside.

Loosen the four mounting bolts securing column to the base.

Clamp a 14 or 15 inch rim without tire.

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

Turn the column so that the left side of the mount/demount head has a clearance of 1/8 inch from the rim edge, while rotating the clamping device. The right side of the mount/demount head must contact the edge of the rim.

Tighten and torque four mounting bolts securing column to the base to 45 ft-lbs.

Re-install rear panel and secure to base with bolt previously removed.

4.4 Checking and Adjusting the Bead Rollers

Check to ensure bead rollers operate in line with each other as follows:

Position the bead roller assembly into its working position.

Clamp a 14 or 15 inch rim without tire, from the outside of the rim with rubber jaws.

Set the rim diameter indicator to the diameter of the rim mounted on the TC3500.

Rotate the wheel so that the lower roller arm will not contact the tulip arm.

Lower the upper bead arm so the roller just passes the outboard flange of the rim by 1/8 of an inch.

Return the upper arm to the resting position.

Raise the lower arm and note if there is any difference in distance when the roller is passing the lower rim edge. The lower bead roller should pass the inboard flange of the rim at same position as the upper roller setting.

Adjust rollers as follows:

Loosen both nuts that lock the lower bead roller arm adjustment cable.

Pull or push the cable until the lower roller is passing the inboard flange at the same distance as the upper roller.

Tighten both nuts to lock the lower bead roller arm adjustment cable.

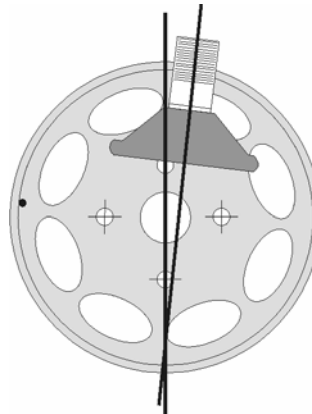
Move the bead roller command handle a couple of times forward and backward.

Verify that the bead rollers operate in line with each other and adjust as needed.

4.5 Checking and Adjusting the Position of the Bead Breaker Arm

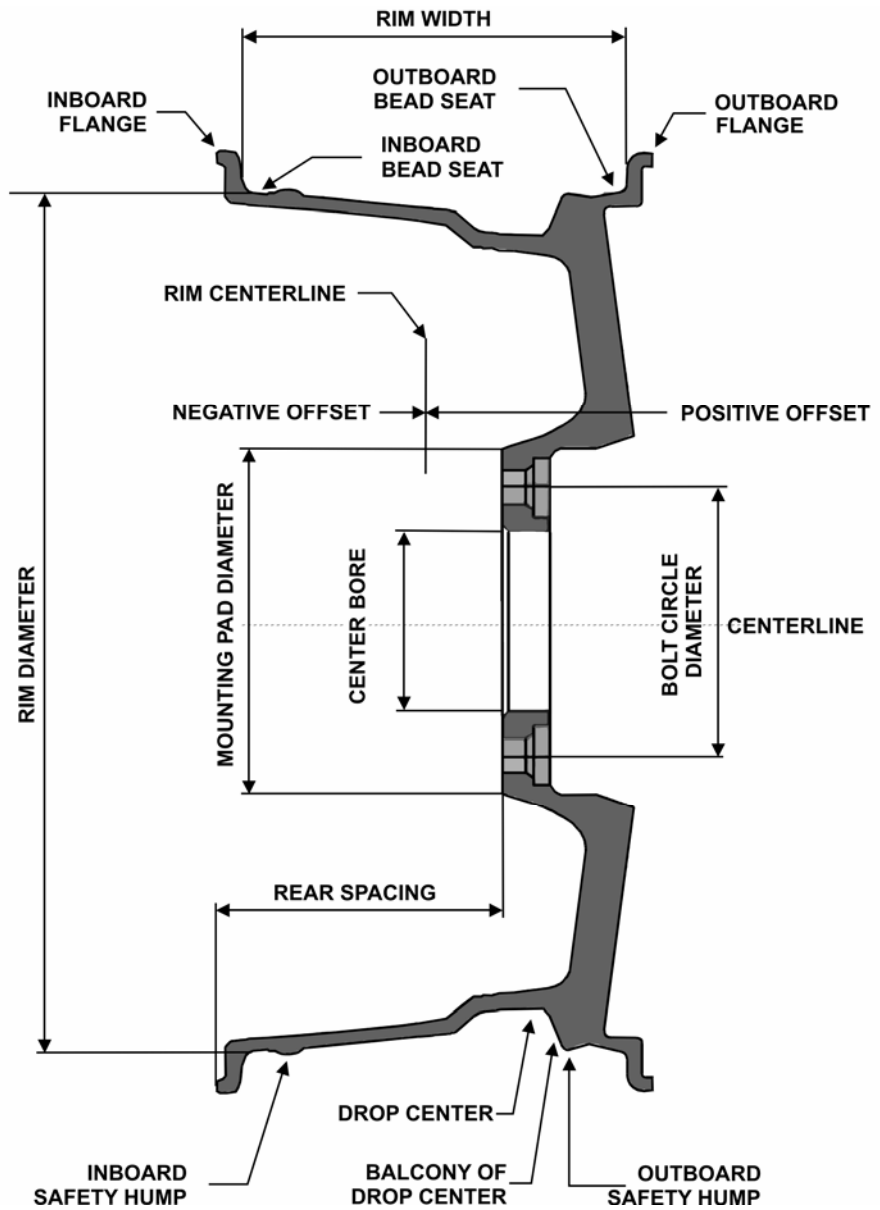
Verify that the position of the bead breaker arm is slightly to the right of the centerline of the wheel.

If bead breaker arm needs to be repositioned, loosen the two stop bolts of the roller assembly and position as needed.

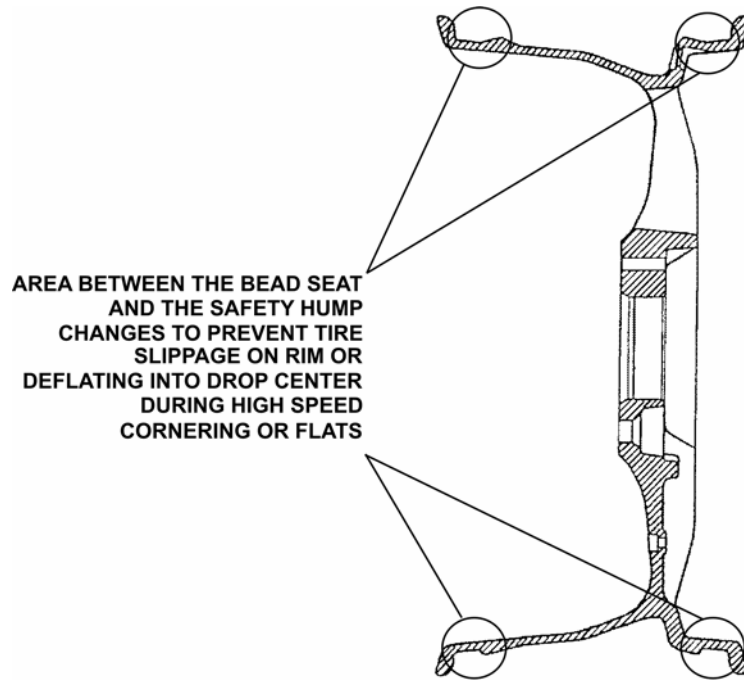


5. Glossary

5.1 Rim Diagram



5.2 Illustration of AH2 Rim (Asymmetrical Humps) “Bead Locking System”



5.3 Illustrations of Various Rim Designs

