Mount and Balance Work Instructions

Mount and Balance - Work Instructions
Release 1 – July 2025

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Workflow Instructions

PRIOR TO WORKFLOW

- Skids of tires & wheels will be dropped off
- Small parts bins will be assembled
- Identifying and matching all wheels, tires, and hardware associated with order

1. Setup

1.1 Retrieve labels from underneath tires

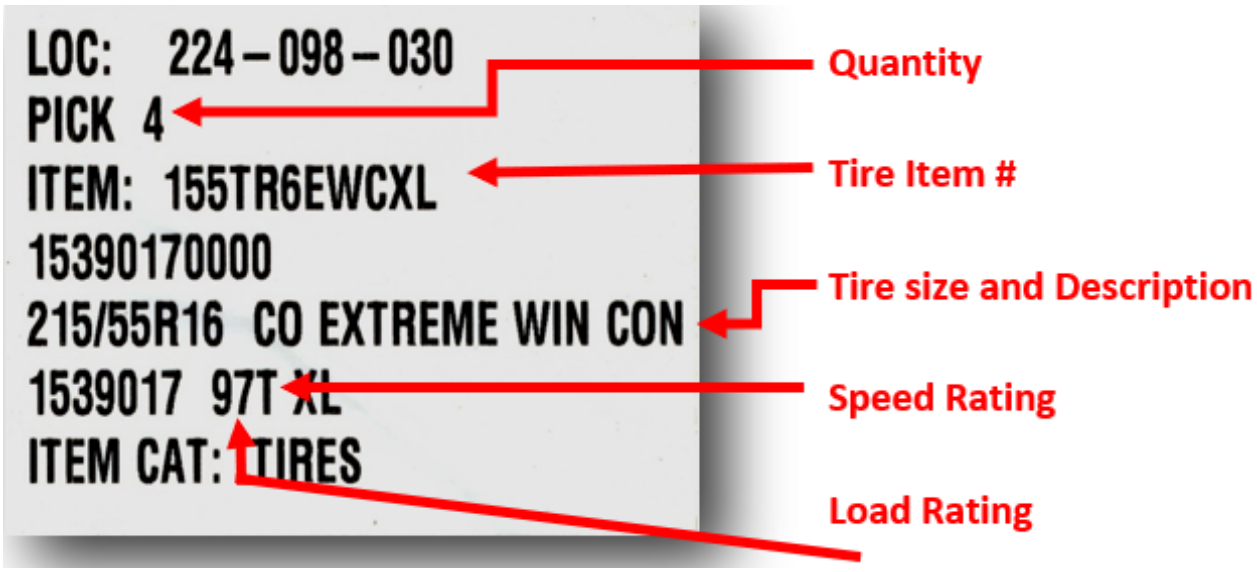
A. Cross reference the label with the tire information to ensure they match

a. Brand

b. Size

c. Speed Rating

(a) Refer to MB Manual Appendix Tire Identification for additional details on differentiating tires by sidewall – Page 61



B. Place tire onto rollers

a. DOT Label facing up

b. White wall facing up (If applicable)

1.2 Determine remaining quantity of tires

A. Retrieve tires and verify label & tire information on all units

B. Place remaining tires onto rollers

1.3 Locate and correctly place the matching hardware box using the order # and customer name

A. Ensure that “MTCH” number correctly line up between hardware, wheels, and tires

1.4 Locate the matching wheels using the order # and the customer's name

A. Open up wheel boxes and inspect for any visible damage

- **a.** Place each wheel standing upright with inside markings visible to setup staff
- **b.** Each wheel should have valve stem hole at topmost position
  - **(a)** Creates location consistency for setup staff

B. **Refer to MB Manual 1.4 <u>Wheel Inspection Standards</u> for additional details – Page 4**

- **a.** Ensure color and style match the order
- **b.** Properly dispose or recycle wheel boxes & wrap
  - **(a)** Any caps, center rings, and/or stickers from manufacturers box should be placed into the hardware box

1.5 Within hardware box, retrieve label

A. Identify if order is R (Retail) or W (Wholesale)

a. If R (Retail), insert the Owner's Manual along with yellow Read Me sticker into tote with hardware

b. W (Wholesale) will not have these included

Include with R (Retail)

1.6 Scan shipping label to parcel audit

A. Setup staff should be logged into option 3: **DOT/Tape Adt/TPMS** on scanner

B. Scan Parcel

a. If retail, refer to MB Manual 1.6 Inputting DOT for additional details – Page 9

1.7 Ensure hardware label matches invoice #'s and customer name

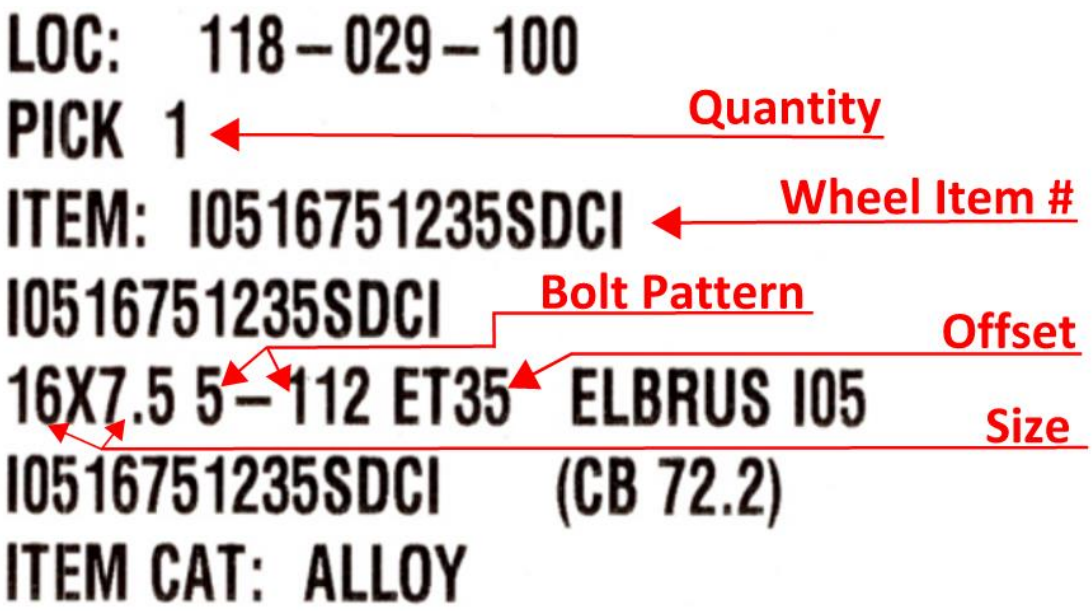
A. Ensure correct product(s) and count have been picked

1.8 Ensure wheel label matches invoice #'s and customer name

A. Check the wheel item # and bolt pattern by using the picking label

a. Recommended to flip wheel face up on tire after inspection

b. Center bore is checked additionally if center ring doesn't fit



c. Additional Identifiers:

(a) < or > Center cap is optional for this wheel

i. If no cap is listed on the order, okay to ship without cap

(b) " Center cap is included (free) with wheel, but does not come in the box

i. Cap will be a line item on order and picked with other accessories

ii. Shown between wheel brand and model **(15X6.5 4-100 ET40 SE"CD)**

1. If no cap on order, hold order and send to fitment support

1.9 Install valves/sensors/optional metal valves

A. Refer to MB Manual 1.9 Installing Valves for additional details – Page 11

1.10 Retrieve a wheel cover/foam protection

A. Place on top of first wheel/tire package

1.11 Place box & remaining hardware on top of cover/foam

A. Leave mounting note label hanging over edge of box for mounter

B. Push package down rollers in open lane

Example of correct setup

2. Mounting

Note: Safety glasses required for this zone

2.1 Scan shipping label to parcel audit

- **A.** Mounting staff should be logged into _ **MBMONT Mount M&B** on scanner
- **B.** View mounting notes and determine if any special instructions are included
- **C.** Place hardware box on rollers leading to air inflation station
  - **a.** If you are running multiple lines, it's recommended to alternate orders by lane

2.2 Identify correct mounter by wheel style

- **A.** **Refer to MB Manual 2.2 TC3500 – Page 19**
- **B.** **Refer to MB Manual 2.2 TCX550 or TCX50H – Page 19**

2.3 Lube the tire's bead with lube brush/wand

2.4 Read the mounting notes (If applicable)

- **A.** Some labels will have specific instructions for mounting
- **B.** Other factors to note include identifying tread pattern for proper mounting- directional, symmetrical, asymmetrical, and competition/slicks.
  - **a.** **Refer to Appendix – Types of Tread Patterns for additional details – Page 57**
  - **b.** Directional tires will include driver and passenger side stickers to be placed on flat portion of sidewall (**Note:** Some DC's may require this step at inflation, refer to manager)

2.5 Mount bottom bead of the tire onto the wheel

- **A.** Mounting bar or bead press arm may be necessary
- **B.** **Refer to MB Manual 2.5 Basic Mounting Procedures (TC3500) – Page 20**
- **C.** **Refer to MB Manual 2.5 Basic Mounting Procedures (TCX550) – Page 23**

2.6 Continue process by mounting the top bead of tire over the wheel

- **A.** Disengage clamps from package after completion

2.7 Place first mounted tire onto rollers and set hardware box with protective foam underneath

- **A.** Continue to mount & place the remaining packages onto the same rollers

2.8 Potential Additional Step

- **A.** Package will be dismounted and remounted if balancing machine recommends over 4oz (<20in) or 8oz (20in+) of weight per plane and/or excessive road force
  - **a.** It will be deflated and turned (1^{st} = 180°, 2^{nd} = 90°) when remounting
  - **b.** **Refer to MB Manual 2.8 Dismounting a Standard Tire from Wheel – Page 25**

3. Inflation

Note: Safety glasses required for this zone

3.1 Scan shipping label to parcel audit
- **A.** Inflation staff should be logged into _ **MBINFL Inflate M&B** on scanner
- **B.** Place hardware box on balancer's side of air machine

3.2 Clean wheel with wipes and small amount of Xact Cleaner if needed
- **A.** Inspect the edge of wheel and tire for any mounting damage

3.3 Remove valve cap & valve core
- **A.** Provides faster inflation and greater ability to fill harder tire/wheel packages

3.4 Roll package into cage
- **A.** Connect 1st air hose to valve and close cage door

Note: **ALWAYS MAKE SURE TOP OF CAGE IS CLEARED OFF. IF TIRE EXPLODES ANTHING ON TOP BECOMES A PROJECTILE!**

3.5 Press start button, letting air machine inflate to the preset max 50 psi (top #)
- **A.** Before the machine stops it will deflate the package to 45 psi (bottom #)
  - **a.** If tire leaks air when attempting to fill, the seal has not been set
- **B.** Do **NOT** override 100 psi (only for managers)
- **C.** Wait for inflation machine to completely stop before disconnecting hose

3.6 Potential Step: Use one of the following if package is leaking air when attempting to fill

- **A. Refer to MB Manual 3.6 Ring Blaster – Page 29**
  - **a.** This should be the first method attempted for all packages
- **B. Refer to MB Manual 3.6 Tire Beading Ring – Page 30**
- **C. Refer to MB Manual 3.6 Cheetah Blaster/Viper/Bead Bazookah – Page 31**
  - **a. Note:** Hearing protection required for option C
  - **b.** Once leaking air subsides, return to previous step (3.5)

3.7 Prep the following package while waiting for the air machine

- **A.** Clean package with wipes and/or small amount of Xact Cleaner (as needed)
- **B.** Inspect the edge of wheel and tire for any mounting damage
- **C.** Remove valve cap & core if needed

3.8 Disconnect first hose and push package out of the cage towards the balancer

- **A.** Allow tire to begin to deflate

3.9 Connect 1st air hose to following package valve stem, push into cage and close door

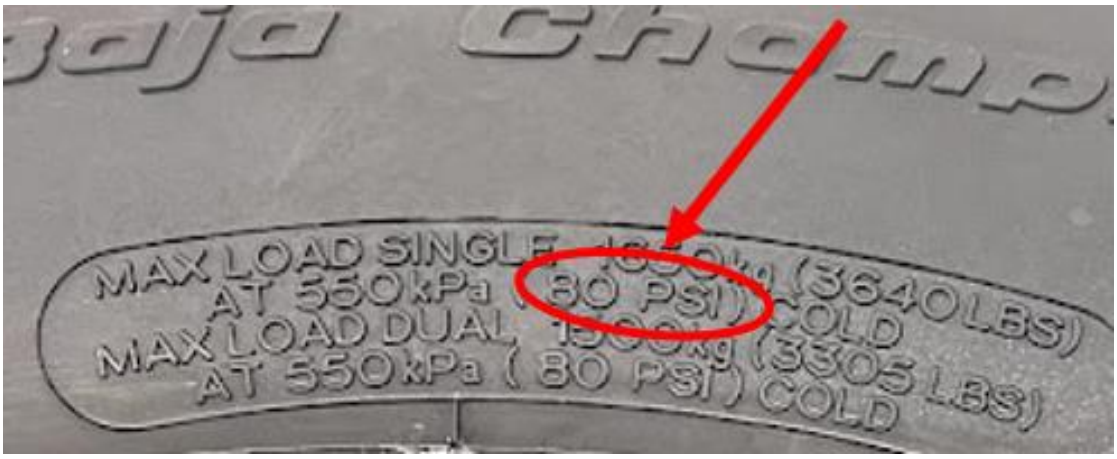
- **A.** Ensure **NOTHING** is on top of cage

3.10 Let package deflate to near 0 psi, then insert valve core into packages valve stem

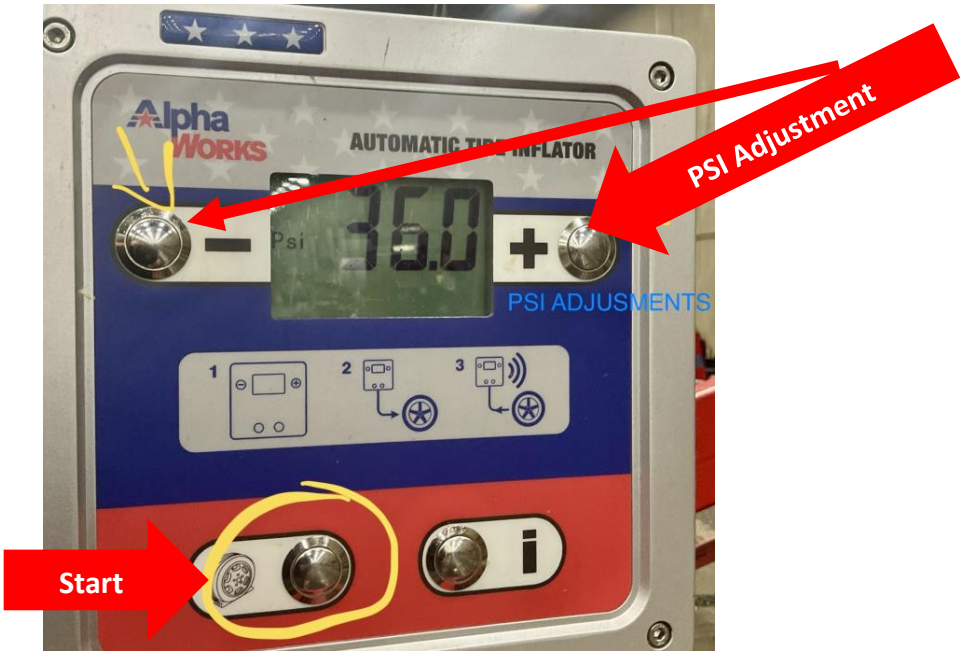
- **A.** Replace same valve core that came with package
  - **a.** Replace with Nickel core if the original is lost or damaged

3.11 Using air hose 2, press start button, letting air machine inflate to the preset max 36 psi

Note: Airing tires with a **load range of D**, operator must override the final pressure to **65* psi.**
Airing tires with a **load range of E**, operator must override the final pressure to **80* psi.**
***DO NOT INFLATE BEYOND RECCOMMENDED COLD PRESSURE NOTED ON SIDEWALL**



*Recommended cold pressure noted on sidewall shown above



*Inflate tire with secondary air machine (Alpha Works model is ideal for second fill)

Note for Alpha Works: Press start button only if there is 0 psi in tire

3.12 Manually check air pressure with tire pressure gauge

A. Wipe off any extra lube that might have splattered after bead has been set

3.13 Identify directional tires

A. These will include driver and passenger side stickers to be placed on flat portion of sidewall (**Note:** Some DC's may require this step at mounting, refer to manager)

3.14 Place hardware tote back on top of first wheel with foam underneath it

3.15 Repeat steps 3.6 – 3.13 as many times as needed to complete

A. Note that step 3.6 may not be necessary

4. Balancing

Note: Safety glasses required for this zone

Note: Refer to MB Manual 4.0 Daily Maintenance – Page 37

4.1 Start of shift procedure: Perform daily calibration (A or B)

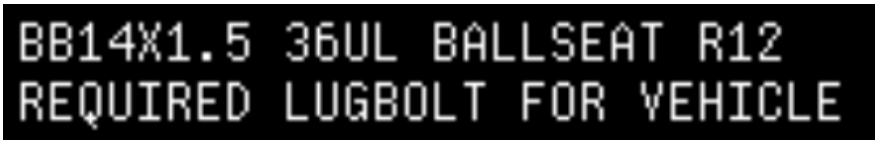
- **A. Refer to MB Manual 4.1 Daily Calibration - Physical Button Calibration – Page 38**
  Or
- **B. Refer to MB Manual 4.1 Daily Calibration – Touch Screen Calibration– Page 40**
  - **a.** After completion of calibration, run test package and ensure that machine does **NOT** suggest additional weight or show high road force
    - **(a)** This package is pre balanced and marked to signify its bolt pattern for testing

4.2 Scan shipping label to parcel audit

- **A.** Balancing staff should be logged into _ **MBBLNC Balance M&B** on scanner
- **B.** Remove hardware box from first wheel and validate correct contents
  - **a.** Place hardware box on or beside rollers leading to QC & packaging

4.3 Prepare materials needed for package(s)

- **A.** Validate bolt pattern on the wheel label and select the correct plate as shown below
  - **a.** Must use lug plate with correct fingers (ball, conical or flat) to get a proper balance
    - **(a)** Anytime “Reuse OE Hardware” is noted, check seat type
    - **(b)** View notes to determine package calls for specific seat type



    - **(c) Refer to Appendix – Difference in lug seat types for additional details**
  - **b.** Based on the bolt pattern shown below, the operator should retrieve the 5-112 lug plate
    - **(a)** 5 (fingers) - 112 (mm)

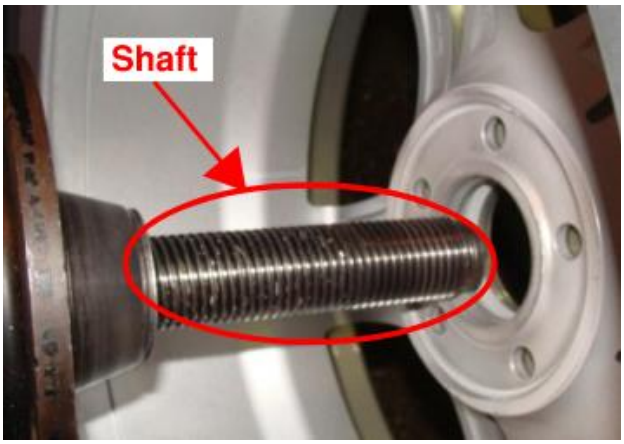
B. Find the cone that fits halfway into the back of the center bore
   a. This is done through trial and error

C. Place cone onto balancer

4.4 Place package on balancer making sure not to drag wheel on balancer shaft

A. For larger packages, the lift station may be helpful in reducing lifting strain and preventing scratches

a. Shown in raised position



B. Slide the correct lug plate onto the spindle and into the wheels bolt holes

a. You may need to hold pressure on package to prevent scratching

b. Recommended to verify depth of lug access before insertion (To prevent scratches)

C. Tighten large wing nut onto spindle

a. Ensure all parts are snug and in place

4.5 Some machines require you to set dimensions with the balancer dataset arm

A. **Refer to MB Manual 4.5 <u>Setting Dimensions</u> – Page 43**

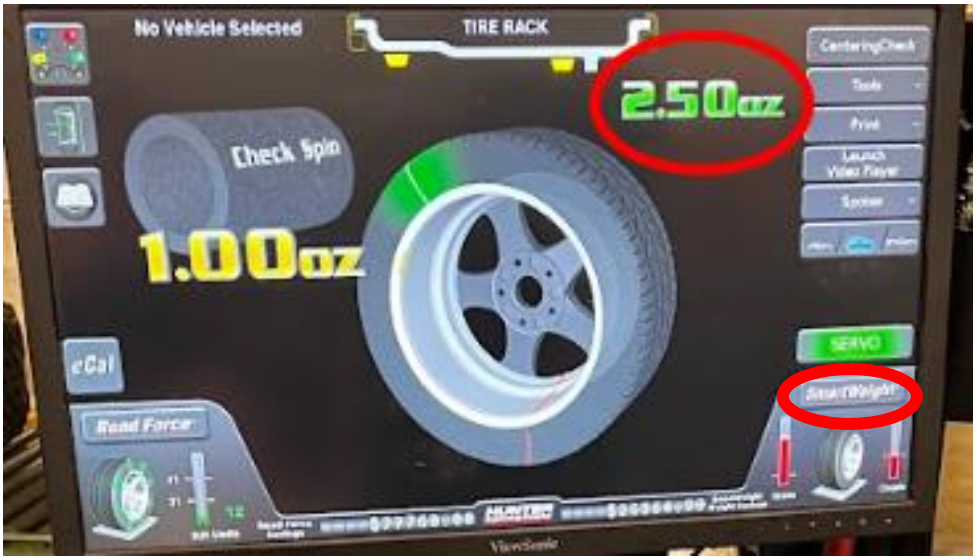
4.6 Lower the hood to automatically begin smart balancing analysis

Note: If wheels include caps, remove while balancer is spinning (Also add hardware onto packages if time permits)

Note: If a "No-RF" note is included, skip road force evaluation – Page 53

A. After analysis conclusion, the screen will identify weight recommendation by plane

- **a.** If either recommendation suggests over 4oz (per plane) for wheels smaller than 20", the package is to be deflated and sent back to the mounter for adjustment
- **b.** For wheels over 20", the max (per plane) is 8oz
  - **(a)** 20"+ wheels can use large 1oz adhesive weights



B. The balancer will automatically position itself to be centered in accordance with the green weight value listed on screen

- **a.** If analysis returns with "Okay, Okay" for both locations
  - **(a) Refer to MB Manual 4.6 Disabling SmartWeight – Page 45**
  - **(b) Refer to MB Manual 4.6 Disabling Single Plane SmartWeight – Page 46**
    - **i.** For single plane/steel wheels
  - **(c)** All packages must leave a minimum of 0.25oz

- **b.** If analysis shows a high or low road force indication
  - **(a) Refer to MB Manual 4.6 Road Force Limits – Page 48**
    - **i.** Ensures correct setup & identification
  - **(b) Refer to MB Manual 4.6 Increasing/Reducing Road Force – Page 49**
    - **i.** To identify solution
- **c.** There will be a red laser line indicating where the center of the balancing weights should be located
  - **(a)** Wipe the indicated area with a dry blue 3M microfiber tack cloth
  - **(b) Note:** Balancer (without data arm) may occasionally not accurately display on chrome/black gloss wheels

i. Balancer without data arm will also ask for exactly where imbalance is located and not specifically on a certain plane

d. Collect the correct weights and attach them to the wheel

(a) Refer to screen to determine which plane weights should be added to

i. Black weights -> Black wheels only

ii. Silver weights -> All other wheels

iii. 1oz weights -> 20"+ Truck (LT) packages only

(b) Refer to MB Manual 4.6 Proper Weight Placement for additional details – Page 50

i. Steel wheels will use clamp on weights

C. Press the uncompleted (yellow) number on the screen and let the package automatically rotate to the correct position

a. Repeat step B above

D. Check spin and repeat step 4.6 with any wheel requiring over 2oz of weight per plane

a. Recommended to check spin all packages even under 2oz to ensure accuracy

b. If screen shows anything above "Okay" (0.00oz) then repeat step B (4.6, B)

4.7 Remove wing nut and lug plate from package

A. Carefully remove package from spindle and place on rollers

B. Place package such that hardware can be added without damaging face of wheel

a. These include angled packages leaning against support and/or face down on taped portion of rollers as shown below

4.8 Begin balancing next package

A. Return to step 4.4 for repeat packages

a. Return to 4.1 for new packages

B. After hood has been closed, attach remaining hardware to previous package

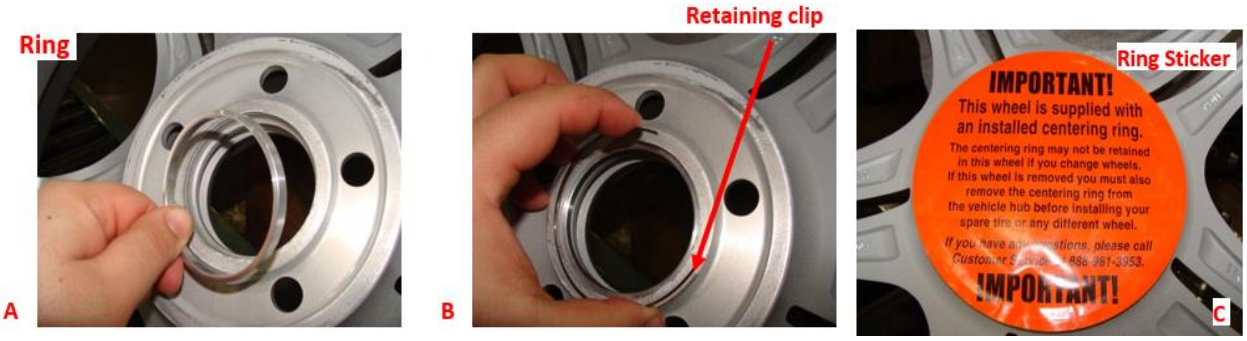
a. Install ring into center bore of wheel

(a) Note: Do **NOT** install rings that came out of original wheel box

b. Place retaining clip on top of ring (If required)

c. Attach orange ring sticker covering ring, clip, & center bore

(a) Ship with hardware if parts do not stay in position



C. After ring assembly is installed, flip package over and install cap as needed

a. **Note:** Do **NOT** insert rear loaded or loose push through caps

(a) Refer to MB Manual 4.8 <u>Non-Secured Caps</u> – Page 51

4.9 The package is then sent down to the QC/packaging station

A. First package will include the hardware and labels

4.10 Repeat steps 4.4 – 4.8 as needed to complete all repeat packages

5. Quality Control (QC)

5.1 Scan **ALL** shipping labels to parcel audit

- **A.** QC staff should be logged into _ **MBQA QA M&B** on scanner
- **B.** Ensures that any missed label does not get shipped as unscanned

5.2 Check air pressure of all packages

5.3 Compare all package details to the labels provided

- **A.** Ensure that all wheel patterns and colors match
- **B.** Make sure all caps and valves are on correctly
- **C.** Ensure ring, retaining clip, and orange ring sticker are all on and properly installed
- **D.** Ensure every piece connected is flush
- **E.** Ensure balance weight has been installed correctly and is secured
- **F.** Ensure **all** special instructions have been followed
  - **a.** Validate correct placement of DOT (Inside/Outside)
- **G.** Label tires requiring identification for customers
  - **a.** Ensure tires are mounted correctly and labeled “Drivers Side” & “Passenger Side”
  - **b. Refer to Appendix – Directional Tire Labels for additional details – Page 60**
    - **(a)** Should be accomplished by mounter or inflation, but occasionally fall off going down line

5.4 Clean and validate seals

- **A.** Clean off any marks, scuffs, and lube with soft-n-fresh wipes and Xact cleaner if necessary
  - **a.** Ensure that there are no damages to the package after cleaning
- **B.** Spray metal valve stems (with Xact Cleaner) to check seal
  - **a.** This should **NOT** bubble after spraying
    - **(a)** If valve bubbles, it could indicate a leaking sensor, return to mounter for correction

5.5 After all checks have been completed, signal packager with one of the following:

- **A.** White chalk mark on tire
- **B.** Cardboard, foam, and hardware tote assembled on package
  - **a.** Place sheet of foam on each wheel’s face to prevent damages
  - **b.** Follow with a carboard piece below and on top of package
  - **c.** Some may require additional carboard or foam
- **C.** Refer to manager for additional signals (If needed)

6. Packaging

6.1 Scan shipping labels to parcel audit

- **A.** Packaging staff should be logged into _ **MBPack Package M&B** on scanner
- **B.** Take shipping labels out of tote and place them on table to be used later
  - **a.** Throw away extra pick labels

If left incomplete from QC:

6.2 Place sheet of foam on each wheel's face to prevent damages

- **A.** Follow with a carboard piece below and on top of package
- **B.** Some may require additional carboard or foam

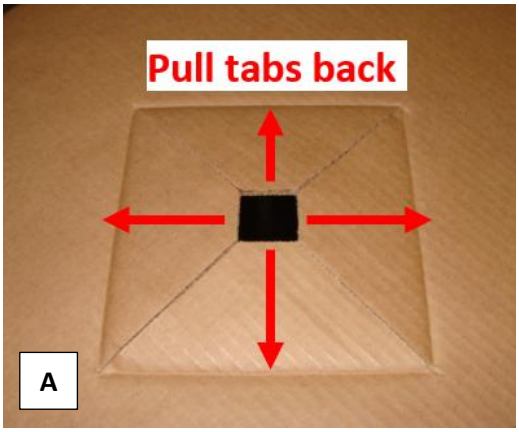
6.3 Prepare hardware box

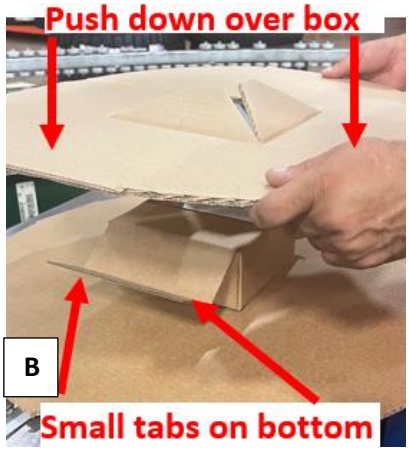
- **A.** Take hardware out of tote and place into box with invoice
  - **a.** Include Owner's Manual for retail customers
- **B.** The hardware box must be closed on either end, so you have 2 long tabs on top
  - **a.** Attach "Installation Warning" sticker
- **C.** Crease hardware box edges and place on cardboard round

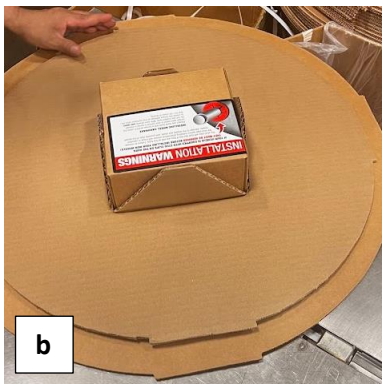
Note: Complete steps 6.3-6.5 only for first package with hardware

6.4 Prepare cardboard rounds

- **A.** Pull tabs back on precut hardware round
- **B.** Place the hardware round on top of the hardware box and push down so the box goes through the center
  - **a.** Small tabs should be on bottom of hardware round
  - **b.** Ensure hardware box is flat on cardboard round



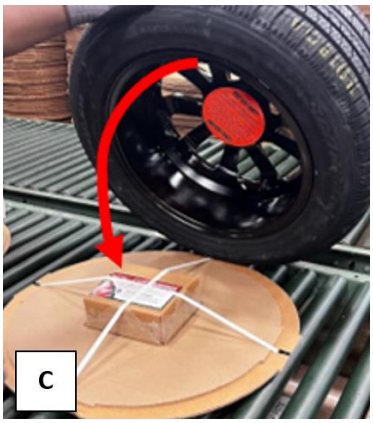




Note: Picture **a** shows inverted image of **B** after pushing cardboard round over hardware box

6.5 Finalize hardware round

- **A.** Tape around the hardware box so it is connected to the tabs from the circle
- **B.** Place 2 straps over box
- **C.** Place M&B package on top of hardware box, so the box is inside the center of wheel



Note: The M&B supervisor has the authority to decide to use 2 circles on the front of the package when necessary. Expensive wheels or wheels with raised lips are candidates to use 2 circles per side for a better cushioning effect.

6.6 Label first package with the invoice & hardware enclosed sticker

A. Yellow "Important Read Me" should always be included with invoice & hardware for **ALL** retail orders

a. **NOT** included in wholesale

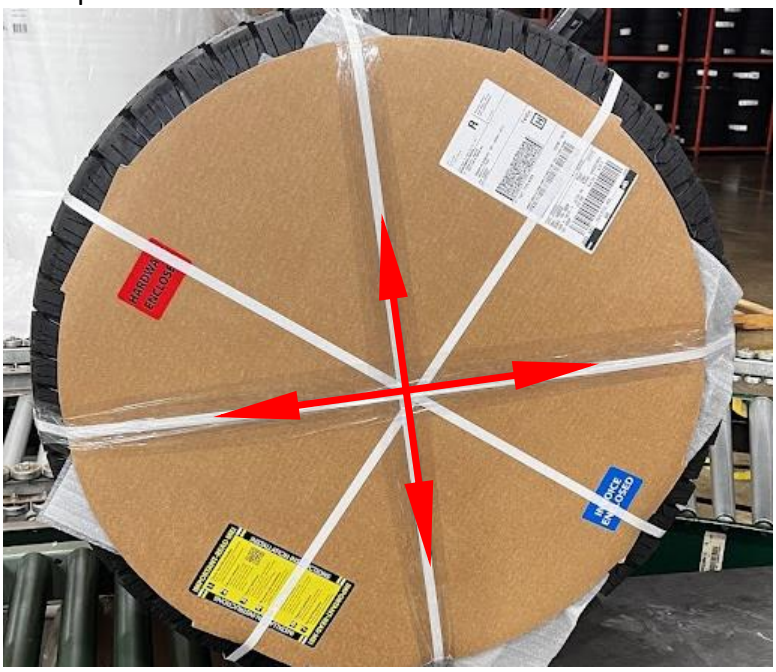
6.7 Label **ALL** packages with the shipping label

6.8 Place the first strap on the package in the center

- **A.** Turn the package a quarter turn for the second, third, and fourth strap
  - **a.** Ensure you do not cover shipping label barcode with strap

6.9 Lift package so it is now sitting like it would on a car

- **A.** Put tape over center strap and spin tire two full rotations completely covering that one strap
  - **a.** Ensure that tape does **NOT** cover shipping label
    - **(a)** Correct tape direction over straps indicated with red cross below
- **B.** Rotate tire 180 degrees so you can now tape the strap that crosses that strap and tape it two full rotations



6.10 Slide tire onto conveyor

Note: Varies between A or B (Refer to manager)

- **A.** Do not put any packages 80lbs+ on conveyor
- **B.** Do not put any package over 31” on conveyor
  - **a.** Roll those packages over to correct location

6.11 If there are more packages for the same customer follow steps 6.7 through 6.10