

TIRE INFORMATION SERVICE BULLETIN

DEMOUNTING AND MOUNTING PROCEDURES FOR MOTORCYCLE TIRES

AWARNING

Tire changing can be dangerous and should be done by trained personnel using proper tools and procedures. Always read and understand any manufacturer's warning contained on their tread label, customer literature, or molded into the tire sidewall.

Failure to comply with these procedures may result in faulty positioning of the tire and/or rim parts and cause the assembly to burst with explosive force, sufficient to cause serious physical injury or death. Never mount or use damaged tires or rims.

SAFETY PROCEDURES FOR MOUNTING MOTORCYCLE TIRES

Improper mounting can result in deflation, tube failure, tire damage and an accident. To reduce the chance of an accident and injury, follow the recommendations below:

ALWAYS:

- Wear approved eye protection while servicing tire and wheel assemblies.
- Ensure the rim/wheel is the correct size/type for the tire being mounted.¹
- Clean the mounting surfaces of the rim thoroughly and apply approved liquid tire lubricant to rim/ wheel and tire beads, and dry lubricant to the tube.
- Lock assembly on mounting machine or place in safety cage before inflating.
- Ensure that all lock nuts, grommets and washers are accounted for and correctly assembled to the valve stem before inflating.
- For a tubeless rim, replace rubber valve assembly. Replace valve core and grommet in metal valve assembly.
- Follow tire manufacturers instruction for maximum bead seating pressures; otherwise do not exceed 40 psi.
- Follow these additional recommendations for applications requiring a tube:
 - With spoked wheel rims, an effective "rim band" must cover the spoke ends in the drop center rim well so that the spoke ends will not chafe the tube. Inspect the spoke ends and rim band for any damage; replace if necessary.
 - Use a new tube in a new tire with matching size marking and use the tube-type (radial or non-radial) that matches the construction of the motorcycle tire (radial or non-radial). Check for matching size and radial (R) marking.

¹ For more information, see USTMA TISB Volume 28, "Never Mount Passenger Car Tires on Motorcycle Rims Fitted to Motorcycles or Sidecars."



ALWAYS: (continued)

- Before installing a tube, always be sure that the tube is clean and that the inside of the tire is free of damage, dirt, liquids, foreign material and remove any identification labels.
- Center and lubricate tube, rim and the tire bead contact surfaces with approved tire mounting/rubber lubricant to prevent pinching.
- Replace and secure any required rim locks.
- When beads are seated, deflate completely and re-inflate to avoid tube folds, creases, or wrinkles.

NEVER:

- Use antifreeze, silicones, or petroleum-based lubricants when mounting tires.
- Install a tube as a substitute for a proper repair.
- Install a different sized tube than specified for the tire.
- Install a non-radial tube in a radial motorcycle tire. Check for matching size and radial (R) marking.
- Mount a tire on a wheel rim that is damaged or that has been repaired or reworked by welding or brazing.
- Use a flammable or volatile substance, bead sealer, aerosol inflator, or rubber (donut) to aid bead seating.
- Exceed manufacturers maximum bead seating pressure to seat beads.

Follow motorcycle owner's manual to select the correct replacement tire size. The tire bead diameter as listed in the tire size must always match the rim diameter. It is unsafe to install passenger car tires on motorcycle rims.

AWARNING

A motorcycle rim, which may be marked with an "M/C" and/or "MT", "MTM", or "WM", has a different bead seat diameter and flange contour than a passenger car rim and each tire type is designed to fit its approved rims.

Any attempt made to mount passenger car tires on motorcycle rims may cause inflation pressure loss or one of the beads to break with explosive force and could cause serious physical injury or death.

NEVER MOUNT A PASSENGER CAR TIRE ON A MOTORCYCLE RIM.

For more information, see USTMA TISB Volume 28, "Never Mount Passenger Car Tires on Motorcycle Rims Fitted to Motorcycles or Sidecars."

AWARNING

Silicone, petroleum or solvent-based lubricants must not be used. These substances may:

- Cause the tire to slip on the rim.
- Have a harmful effect on the tire, tube, flap and/or rim.
- Create explosive mixtures of air and vapors in the tire which may result in serious injury or death.



AWARNING

WHEN SEATING BEADS NEVER STAND, LEAN, OR REACH OVER THE ASSEMBLY DURING INFLATION.

Inspect both sides of the tire to be sure that the beads are evenly seated. If tire is mounted on a machine that does not have a positive lock-down device to hold the wheel, inflation should be done in a safety cage or other restraining device. If both beads are not properly seated when reaching manufacturer's maximum bead seating pressure, deflate the assembly, reposition the tire and/or tube on the rim, relubricate, and reinflate. Inflating beyond manufacturer's maximum bead seating pressure when trying to seat the beads is a dangerous practice that may break a tire bead (or even the rim) with explosive force, possibly resulting in serious injury or death. After the beads are fully seated, adjust inflation pressure to the required operating pressure.

AWARNING

Never, under any circumstance, introduce a flammable substance into a tire.

Igniting this substance in an effort to facilitate seating the beads is extremely unsafe. This may result in an explosion of the tire with force sufficient to cause serious personal injury or death.

This practice may also result in undetected damage to the tire or rim that could result in failure of the tire in service.

The National Highway Traffic Safety Administration (NHTSA) issued a Consumer Advisory² warning about the hazards of fixing tires filled with flammable aerosol inflators. The following text was extracted and paraphrased from the Consumer Advisory:

Many aerosol inflators contain a flammable propellant that can cause an explosion. Aerosol flat tire fixes are an emergency temporary solution and should be used with caution. After filling a tire with an aerosol inflator, don't expose the tire to extreme heat, flames, sparks or other ignition sources. Be careful using metal tools like tire irons, metal reamers, and hammers, because they could cause sparks while being used to repair a tire. A tire service professional should assume a tire may have been repaired previously with an aerosol product. Before starting to fix a tire, remove the valve core and as much of the aerosol propellent as possible. Then, inflate and deflate the tire a few times to completely remove all traces of the potentially explosive propellent. Once this is all done, you may remove the tire from the rim and repair the tire using industry recommended repair procedures...

For normal operation, follow pressure recommendations in the owner's manual, on the motorcycle placard or the tire manufacturer's recommendations. Load and cold inflation pressure must not exceed the rim/wheel manufacturer's recommendations, even if the tire is approved for a higher load or inflation.

² USDOT/NHTSA Consumer Advisory, Sept. 24, 1991 "NHTSA Warns About Hazards of Fixing Tires Filled with Aerosol Inflators" (NHTSA-49-91)



MOTORCYCLE TIRE DEMOUNTING INSTRUCTIONS

Remove wheel assembly from motorcycle in accordance with vehicle manufacturer's instructions.

1. Place, do not throw or drop the assembly on the mounting machine and secure the assembly with a hold down device.

2. Carefully remove the valve core to completely deflate the assembly while staying out of the trajectory of the valve stem/core. Remove washers and nuts from the valve stem. Loosen rim locks, where applicable.

3. Push off both tire beads from the rim flange and over the hump.

4. Lubricate the top bead of the tire and demount it from the rim beginning at the valve area. Use commercially available lubricants made for tire mounting and demounting. Also, vegetable oil and animal soap solutions may be used. Never use antifreeze, silicones, or petroleum-based lubricants. If a lubricant is water-based, it should contain a rust inhibitor.

5. Beginning with the valve area, remove the tube (if tube-type) from the tire by hand, being careful not to pinch the tube between the tire bead and the rim. Lubricate the second bead and the top rim flange.

6. Demount the bottom bead of the tire from the rim. This may be done using tire irons only, it is often easier to begin the process with a tire iron and simply push the tire off the rim. If equipped with the original assembly, remove the rim band on the spoke wheel.



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MOTORCYCLE TIRE MOUNTING INSTRUCTIONS

1. Follow the owner's manual to select the correct replacement tire size. Ensure the tire and rim diameter codes always match. Only motorcycle tires should be mounted on motorcycle rims. Most motorcycle rims are marked with the suffix "M/C". Do not mount passenger car tires on motorcycle rims.

Center and securely fasten the wheel to the mounting machine with a hold down cone or clamping device (see Photo 1). Follow approved mounting and safety instructions per the manufacturer of the equipment being used.

2. With a wire brush remove any rubber deposits, dried soap solution, rust, heavy paint, etc., from rim flanges and bead seat ledges (especially humps and radius). All interior surfaces should be smooth and clean. Special care must be exercised to be sure that any broken wire fragments from the brush are removed (see Photo 2).

For a tubeless rim, replace rubber valve assembly. Replace valve core and grommet in metal valve assembly.

For motorcycles equipped with Tire Pressure Monitoring Systems (TPMS) consult the owner's manual or TPMS manufacturer for service recommendations.

3. For tubetype/spoked wheels check the drop center well to make certain no spokes are loose or protrude above the nipples. In the event spokes are loose or protruding above the nipples, proper repair of the wheel must be completed prior to proceeding. Inspect the rim band and (replace if damaged with new band of the same specification). Reinstall the rim band and make certain it is in place, completely covering the spoke ends (see Photo 3).



PHOTO 1



PHOTO 2



РНОТО 3



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MOTORCYCLE TIRE MOUNTING INSTRUCTIONS

4. Follow the owner's manual to select the correct replacement tire size. Ensure the tire and rim diameter codes always match. All passenger car and motorcycle rims actually differ in bead seat diameter and flange contour. Only motorcycle tires should be mounted on motorcycle rims. Most motorcycle rims are marked with the suffix "M/C". Do not mount passenger car tires on motorcycle rims.

Example: Mount 15" diameter motorcycle tires only on contours (examples: MT or MTM rims) for 15M/C motorcycle tires.

Note: Where tubeless tires are fitted on rims which are not suitable for tubeless application, an appropriate motorcycle inner tube shall be fitted. Do not fit tubes in radial motorcycle tires, or fit radial motorcycle tires on rims requiring tubes, unless the tubes have matching size and radial (R) markings.

5. Be sure the inside of the tire and rim well are free of dirt, liquids, nuts, washers, or other foreign material and damage.

6. With a soft brush, cloth, or spray, apply an approved tire lubricant to the rim contact surface and the bottom tire bead (see Photo 4). Never use antifreeze, silicones, petroleum-based or flammable lubricants. Mount the bottom bead on the wheel observing the directional arrows indicating the direction of the rotation (see Photo 5) and ensuring the wheel position (front or rear) is correct. This may often be accomplished by simply pushing the bead onto the rim when the other side of the bead is resting in the drop center well (see Photo 6).



PHOTO 4



PHOTO 5



PHOTO 6



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MOTORCYCLE TIRE MOUNTING INSTRUCTIONS

7. For applications requiring a tube, select a new tube with the exact same size as specified for the new tire. Follow tube or rim manufacturers' instructions for matching tube valve base and stem to rim.

Be sure the tube is clean and not damaged. Lightly dust the tube with dry lubricant to ease fitting. Carefully insert the tube in the tire starting by fitting the stem through the valve hole. To properly position the tube, it is recommended to inflate the tube sightly so it holds its shape but is still flexible. After aligning the tube valve with the valve stem hole in the rim, insert and center the valve stem through the valve hole in the rim (see Photo 7). If the valve location is offset on the rim, make sure that the valve has the correct orientation. If the tube has a fully threaded valve stem, fit the valve stem washer and grommet, and then start the locking nut by threading it part of the way on the stem.

8. Apply liquid lubricant to the exposed rim flange, tube base and the base of the upper tire bead (see Photo 8). Do not let excessive lubricant run between the tire and tube or contact the treads.

9. Ensure the bead area 180 degrees from the valve position rests in the drop center well. Mount top bead of the tire on the rim using mounting tools. Use caution not to tear or damage the bead during this process. The bead in the valve area will be the last part of the bead to go over the rim flange.

Do not use a pry bar or lift sharply on the tire bead. Take extreme care not to pinch or damage the tube. Never use a substitute tool such as a screwdriver. Re-center the valve stem, if necessary, by rotating both tire and tube (see Photo 9).



PHOTO 7



PHOTO 8



РНОТО 9



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MOTORCYCLE TIRE MOUNTING INSTRUCTIONS

10. If not done yet, insert the valve core (see Photo 10). Before inflating to seat tire beads, ensure that assembly is secure on tire mounting machine/changer or placed in an approved safety cage. If the tire mounting machine/ changer is not equipped with a positive hold down device for the assembly inflation process, an approved safety cage must be used.

11. Use an extension air hose with a clip-on chuck and in-line valve with gauge or pre-set pressure regulator to permit you to stand clear of tire assembly (see Photo 11). Stand back. Never stand, lean or reach over assembly during inflation. Inflate slowly and carefully (in short bursts), with the valve core inserted to seat the tire beads. Do not exceed manufacturers maximum bead seating pressure to seat beads. While the assembly remains secured, visually check for even bead seating. If the beads are not seated; deflate completely and repeat the above procedures.

12. For applications with a tube, after the beads are seated, always remove the valve core and completely deflate the tube. Re-insert the valve core and reinflate the tube to the proper operating pressure (see Photo 12). Consult motorcycle owner's manual, placard, and any special tread label or sidewall instructions or the tire manufacturer's recommendations. Deflation and re-inflation helps prevent tube folds, creases, or wrinkles. Consult the tube manufacturer regarding installation of nut(s) on the valve stem. Check and tighten any rim locks.

13. For tubeless applications, ensure the nut on the valve stem is tightened to the torque value specified by the valve manufacturer. Check and tighten any rim locks.

While still secured, inflate the assembly to the proper operating pressure (see Photo 12). Consult motorcycle owner's manual, placard, and any special tread label or sidewall instructions or the tire manufacturer's recommendations. Install a sealing valve cap to guard against leakage.



PHOTO 10



PHOTO 11



PHOTO 12



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MOTORCYCLE TIRE MOUNTING INSTRUCTIONS

14. Balance the tire and wheel assembly. Tire and wheel assembly must be checked with a balance stand or a computer wheel balancer (see Photo 13). Manufacturers may provide a balance dot to be aligned with the valve stem. Check with the tire manufacturer for details regarding balance dots.

15. Follow vehicle manufacturer's instructions for remounting the finished tire and wheel assembly on motorcycle and re-install in accordance with any directional arrows marked on the tire. Spin the tire and wheel assembly to check alignment and clearance (see photo 14).



PHOTO 13



PHOTO 14

OTHER REFERENCE MATERIALS:

• USTMA wall chart, "Demounting and Mounting Procedures for Motorcycle Tires." Wall charts and other publications may be ordered online: www.USTires.org

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