

**MULTI-PIECE WHEEL/RIM DEMOUNTING MOUNTING
TRUCK SPLIT RIM**



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QUIZ

It is divided into two components:

ANSWER KEY 8-9

Use it for grading purposes only. Do not distribute among the students.

QUESTIONS 10-11

Make as many copies as needed to test the students on the presented program.

Digital 2000 has designed the **Training Materials supplement** to provide the trainer with resources that would enhance the training experience. Please note that this supplement **does not constitute complete training**. It is the responsibility of the employer to ensure that the employee or student receives appropriate training and comprehends the subject on which training is conducted.

This Leader's Guide is provided to assist in conducting a successful presentation.

INTRODUCTION: *A brief description of the program.*

PROGRAM OUTLINE: *Summarizes the program content. The program will be more meaningful if the outline is discussed prior to the presentation of the video.*

PREPARING FOR AND CONDUCTING THE PRESENTATION: *These sections will help you set up the training environment, help you relate the program to site-specific incidents, and provide program objectives for focusing your presentation.*

REVIEW QUESTIONS AND ANSWERS: *Questions may be copied and given to participants to document how well they understood the information that was presented. Answers to the review questions are provided separately.*

ATTENDANCE RECORD: *Document the date of your presentation, as well as identify the program participants. The attendance record may be copied as needed.*

INTRODUCTION

One of the most powerful forces tire technicians work with is air pressure. Twenty-five to 30 pounds of pressure inside a passenger tire can be destructive. Truck tires inflated to 50 to 75 pounds have an even greater hazard potential.

The program is designed to alert you to the hazards of multi-piece rims and safety guidelines for using and servicing these types of wheels.

PROGRAM OUTLINE

Safety Precautions

- A safety inflation cage should be used when inflating multi-piece rims.
- Inspect the cage daily for cracks and weld spots, cracked or broken components, bent or missing parts.
- If the inflation cage is defective, remove it from service; only the manufacturer can repair it.
- Always use a clip-on chuck with an in-line air pressure cage when inflating any tire.
- With the tire in the safety cage, the technician and other people must stand completely away during inflation.

Truck Split Rim

- Removing a multi-piece rim and tire assemble from a vehicle is different than removing passenger tires.
- Check the recommended tire pressure on the tire's side wall and then check the tire pressure.
- If the tire is 80% or less than the recommended pressure, deflate the tire before removing it from the vehicle.
- When removing the lug nuts, the components could fly off causing injury if the tire is not deflated.
- Deflate the tire by removing the valve core.
- Push a piece of wire into the stem after removing the core to make sure there is no debris that might keep air pressure inside the tire.

Components of the Multi-Piece Rim

- After the tires are removed from the wheel inspect the components for cracks and broken or defective parts.
- Never re-use damaged rim components.
- Use a wire brush to clean the components.
- Do not re-work, braze, weld or repair rims or rim components.
- Never use a metal hammer on rim components.
- Steel-on-steel can cause cracks and damage rim components.
- Use a brass, lead, plastic or rubber hammer if you need extra force.

Removing the Split Rim

- The recommended procedure for removing the split rim from the wheel is to pry the rim off using a tire tool.
- You may have to use a long handle hammer to break the bead away from the rim.
- Do not hit the split ring component with the hammer as it will damage the part and make it unsafe to reassemble.
- Once the beads are broken, use the tire tools to remove the split ring from the rim.

Truck Split Rim

- Turn the tire over and unseat the rear bead from the rim.
- Be careful not to damage the valve stem when removing the tire from the wheel.
- Remove the inside flap and tube from the tire.
- Clean and inspect the tire for frays, cracks, bead damage or other defects.
- Clean the rim and split ring with a wire brush.

Remounting the Tire Assembly

- Insert the tube in the tire, add enough air into the tube to help round out inside the tire.
- Apply plenty of lubricant over both beads and the inside of the beads around the flap.
- Place the rim on the floor, valve slot up, install the tire on the rim and insert the valve stem through the rim slot.

Remount the Split Ring

- Place the ring on the tire with the ring split opposite the valve stem.
- Never place the side rings split over the valve slot.
- To install the split ring, place the leading edge of the ring into the groove and begin walking the side ring into place.

Inspect the Assembly

- Make sure the valve stem is straight and the split ring is seated properly.
- Install the valve core.
- Place the tire in the safety cage.
- Turn the valve stem towards the wall.
- Use an air hose with a clip-on chuck and an in-line pressure gauge to inflate the tire.
- Inflate the tire to 10 pounds of pressure.

Truck Split Rim

- It is faster and easier to inflate a tube tire without a valve core.
- The flow of air into the tube is very rapid and can cause some areas of the tube to stretch around the stem.
- After inspecting the assembly at 10 pounds pressure, determine the manufacturer's recommended tire pressure.
- Deflate the tire after the beads have been properly seated and check the split ring assembly to make sure it seated properly.
- Deflating the tire reduces the chances of overstretching.
- After the tire is inflated and the pressure has been checked, roll the assembly out of the cage.
- Clean and return all tire tools and equipment to their proper place.

Summary

- Safety precautions remain the same for all types of assemblies.
- Do not take shortcuts.
- Do not use steel hammers on rims or rim parts.
- Inspect components for cracks or defects.
- Don't put more than 3 pounds of pressure in the tire unless it is in as safety cage.
- Use a wire to clean the valve stem.
- Deflate the tire if the pressure is 80% or less than the recommended pressure.
- Stand away from the safety cage while inflating the tire.
- Double check wheel, tire sizes and components to make sure they match.
- Take time for safety.

How to Mount Split Rims

Split rim describes a wheel rim that uses an additional locking ring in the bead to help seat and hold the tire in place. Trucks of older vintage use split rims, as well as newer trucks designed for improved versions of split rims. Safety issues arise with split rims, since the mounting techniques used on them differs entirely from those for standard rims. Split rims remain very dangerous to handle and mount. The do-it-yourself auto repair person or the professional tire installer must exercise extreme caution for any and all split rim mounting procedures.

Instructions

- Mix a solution of dish washing soap and water in a bucket. Use a tire brush to thoroughly clean the inside and outside surface of the tire. Scrub the tire bead vigorously on both sides. Scrub the rim with soap and water. Pay particular attention to the inner bead matting surface and the tire well. Dry the tire and rim with towels. Inspect the tire for cracks, weathering or deformations of the beads on both sides. Make sure the rim lips have no bends or nicks in the metal.
- Install the rubber dust band around the circumference of the rim, aligning it with the valve stem hole. If you have a tube rim, install the inner tube on the rim and adjust it so its seams align properly and that it spreads evenly around the circumference of the rim. Push the valve stem up through the rim hole. For the tubeless rim design, push the valve stem up through the hole, then use a valve stem installer tool to pull it up and lock it in place.
- Use a towel dipped in rubber lubricant to wipe the inner and outer tire bead, applying a thick coat. Place the tire on a clean hard surface, with the inside surface of the rim facing up. Set the tire over the rim. Use the tire installation tool to hook the tire bead, and begin pulling around the rim edge. Use your other hand to shove the bead down under the rim lip. Use an
- Work your way around the tire until the bead slips down into the rim valley. Hook the tool into the next bead and pull in a circular motion, while pushing down hard. If you need to, have your assistant step on the tire to add more force while turning the tire installing bar. Pop the bead down into the rim.
- Flip the tire over so the outer part of the rim faces up. Check the position of the tube inside the tire for proper fit and orientation. Hook a hose and hose valve up to a compressor. Inflate the tire just enough to bring both tire bead surfaces up against the inner part of the rim on both sides.

Truck Split Rim

- Re-check the tube again, making sure it has not caught up in the bead seams. Place the split rim lock ring under the rim lip by standing on the rubber surface of the tire and shoving the lock ring into place. Step around the tire as you shove the lock ring all the way around and under the rim lip. Align the lock ring evenly around the rim.
- Set the wheel on an elevated table inside a tire cage, with the outer part of the rim facing up. If you have marked the wheel weight locations on the rim and tire, turn the tire on the rim to match the marks. Re-check the position of the tube inside the tire. Connect the air valve to the valve stem and add a little more air to seat the tire against the lock ring.
- Exit the tire cage but leave the air valve connected to the valve stem. Make sure the tire cage door is shut. Caution any bystanders to keep their distance from the tire cage. Use a valve knob on a compressor or foot pedal on a tire machine to remotely fill the tire to half of its recommended PSI -- pounds per square inch. Refer to your owner's manual for the correct number. Read the PSI on the air valve gauge or tire machine.
- Don safety goggles. Enter the cage. Inspect the tire carefully. Look for any pinch at the beads on both sides, misalignment or unusual bulges. If you see anything wrong, deflate the tire and make positioning adjustments. If the tire looks properly proportioned and set correctly, exit the tire cage and fill the tire to manufacturer's specifications. Enter the cage and manually check the tire with a tire gauge to be certain of accurate pressure.

Tips & Warnings

If you have access to a tire machine, use it to install the tire beads over the rim. The torque pressure supplied by the machine will aid greatly in installation, particularly with large truck tires.

DOT Specifications for Rims

They may move too fast to read, but every rim on every tire on the road must comply with U.S. Department of Transportation (DOT) regulations. Certain information must be included on each tire rim for the convenience of tire dealers, manufacturers and consumers. The DOT states that these regulations are put in place to ensure safe vehicle operation.

Truck Split Rim

Rim Information

- The DOT requires each tire's rim or wheel disc to be marked with certain information for identification purposes. According to DOT regulation 571.120, the rim should be marked with the source of the rim and its size. The rim must also be marked "DOT" to indicate that it complies with DOT regulations. The date of manufacture should also be marked, either by use of a symbol or numerals.

Rim Markings

- A rim manufacturer may have all the right information on the tire, but if it is not properly marked, it will be in violation of DOT regulations. According to Regulation 571.120, the markings on rims should be in lettering no less than 3 mm high. The lettering can be impressed on the rim or embossed with a height/depth no less than 0.125 mm. This information must appear on the outside or weathered side of the rim so that it can be easily read without having to take the rim off the wheel, according to the DOT.

Proper Rim Listing

- According to DOT regulation 571.119, each tire manufacturer must furnish a listing of usable rims for their tires to the public. The tire manufacturer's dealers must have a complete listing of these rims and be able to furnish the information if requested. If this is not possible, the information should be included in at least one of many tire publications, such as those from the Tire and Rim Association or the Japan Automobile Tire Manufacturer's Association, Inc.

Truck Split Rim

TRUE/FALSE

1. Air pressure inside a passenger vehicle tire is not destructive at 25 to 30 pounds of pressure.

True **False**

2. A safety inflation cage should be used when inflating multi-piece rims.

True False

3. A clip-on chuck should be used with an in-line air pressure cage while inflating any tire.

True False

4. Removing a multi-piece rim and tire assembly from a vehicle is the same as removing passenger tires.

True **False**

5. You should never try to repair damaged rims or rim components.

True False

Truck Split Rim

MULTIPLE CHOICE

6. If the tire pressure is ____% or less than the recommended pressure, you must deflate the tire before removing it from the vehicle.
- a. 20
 - b. 50
 - c. 80**
 - d. 90
7. If you need extra force assembling or disassembling multi-piece rims use a _____.
- a. metal hammer
 - b. rubber hammer**
 - c. wrench
 - d. socket
8. Use a _____ to clean the components so you will be able to carefully check the rim and other parts of the assembly.
- a. vacuum
 - b. sponge
 - c. wire brush**
 - d. all of the above
9. The recommended procedure for removing the split rim from the wheel is to pry the rim off using _____.
- a. wire brush
 - b. tire tools**
 - c. tire gauge
 - d. crowbar
10. A _____ should not be used on rims or rim parts.
- a. rubber hammer
 - b. long handle hammer
 - c. steel hammer**
 - d. brass hammer

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