

# 9

## **SAFETY IN THE SHOP**

## **MOUNTING TIRES AND INFLATION.**

1. Mounting and demounting of the tire:
  - a. Shall be done only from the narrow ledge side of the wheel.
  - b. Care shall be taken to avoid damaging the tire beads while mounting tires on wheels.
  - c. Tires shall be mounted only on compatible wheels of matching bead diameter and width.
2. Rim flanges, rim gutters, rings, bead seating surfaces and the bead areas of tire shall be free of any dirt, surface rust, scale or loose or flaked rubber build-up prior to mounting and inflation.
3. Wheel component acceptability. Multi-piece wheel components shall not be interchanged except as provided in the charts or in the applicable rim manual.
4. Prior to assembly the size (bead diameter and tire and/or wheel widths) and type of both the tire and wheel shall be checked and incompatible parts shall not be assembled.
5. Non-flammable rubber lubricant shall be applied to bead and rim mating surfaces before assembly of the rim or wheel unless the tire or wheel manufacturer recommends against it.
6. Tires shall be inflated in accordance with Section 3325.
7. If a bead expander is used, it shall be removed before the valve core is installed and as soon as the rim or wheel becomes airtight (the tire bead slips onto the bead seat).
8. Employees shall be instructed not to take a position over the tire during inflation and to remain outside the trajectory.
9. Except as permitted in number (10) tires shall not be inflated when any flat, solid surface is in the trajectory and within one foot of the sidewall.
10. Tires may be inflated outside a restraining device to a pressure that shall not exceed 5 pounds per square inch (psi) to force the tire bead onto the rim ledge and create an airtight seal and/or to assist the seating of the lock rings.

### **EXCEPTIONS:**

Where higher pressures are recommended by the tire manufacturer.

11. Whenever a single, split or multi-piece rim wheel is in a restraining device, employees shall be instructed not to rest or lean any part of their body or equipment on or against the restraining device.
12. Except during the operation described in number (9) above, employees shall be instructed not to attempt to correct the seating of side and lock rings by hammering, striking, or forcing the components while the tire is pressurized.
13. After tire inflation, the tire and rim or wheel components shall be inspected before removal from the restraining device to ensure that they are properly seated and locked. If further adjustment is necessary, the tire shall be deflated by removal of the valve core before the adjustment is made.

NOTE: Tires on rim wheels with no obvious or suspected damage to the rim wheel or tire are not required to be deflated prior to removal from the axle and employees shall avoid taking a position over the tire except during the operation described in number (9) above.

## **Installation/Removal of Rim Wheels from Vehicle Axles.**

Unserviceable rim wheels shall be completely deflated by removal of the valve core before they are removed from the axle.

NOTE: Serviceable rim wheels are not required to be deflated prior to removal from the axle. Section 3225, Title 8 of the California Code of Regulations.

Tire inflation shall be accomplished by means of a clip on chuck with a minimum 24-inch length hose to an in-line foot or hand valve and gauge. A clip-on chuck and an in-line regulator (factory preset at 40 psi maximum for passenger car tires or a restraining device may be used as an equivalent).

### **EXCEPTIONS:**

- Automatic tire inflation machines that inflate the tire in a pressurized chamber through the bead seat annulus.
- Where passenger car or truck tires are serviced at the same facility, an adjustable in-line regulator is allowed as long as the regulator pressure is properly set in each case.

Tire inflation control valves shall automatically shut off the airflow when the operator releases the valve or be of the preset regulator type.

Specific employee instruction shall be provided which will ensure the employee makes the correct tire to rim size match prior to inflating the tire.

Tires shall not be inflated to more than the inflation pressure recommended by the manufacturer.

Unless otherwise recommended by the manufacturer, tires shall not be inflated beyond a maximum of 40 psi to seat the beads. During inflation, tire beads shall be inspected for proper seating at intervals not to exceed 20 psi. Tires not properly seated at 40 psi, or at the maximum psi recommended by the manufacturer, shall be completely deflated before making the adjustment of the tire, rim or wheel components. Except as permitted in **Section 3326**, tires shall be in a restraint device when seating the beads.

## **TIRE MOUNTING AND INFLATING INSTRUCTIONS**

### **Section 3226, Title 8 of the California Code of Regulations**

Each employee shall understand, demonstrate and maintain the ability to service **single, split and multi-piece rims or wheels** safely, including performance of the following tasks:

- Demounting of tires (including deflation).
- Inspection and identification of the rim wheel components.
- Mounting of tire (including inflation with a restraining device or other safeguard required by this section).
- Use of other equipment required by this section.
- Inflation of the tire when a single piece rim wheel is installed on a vehicle.
- An understanding of the necessity of standing outside the trajectory both during inflation of the tire and during inspection of the rim wheel following inflation.
- Installation and removal of rim wheels from the vehicle.

### **Restraining Devices.**

A safety tire rack, cage, or equivalent protection shall be provided and used when inflating mounted tires installed on single piece, split rim or rims equipped with locking rings or similar devices.

#### **EXCEPTIONS:**

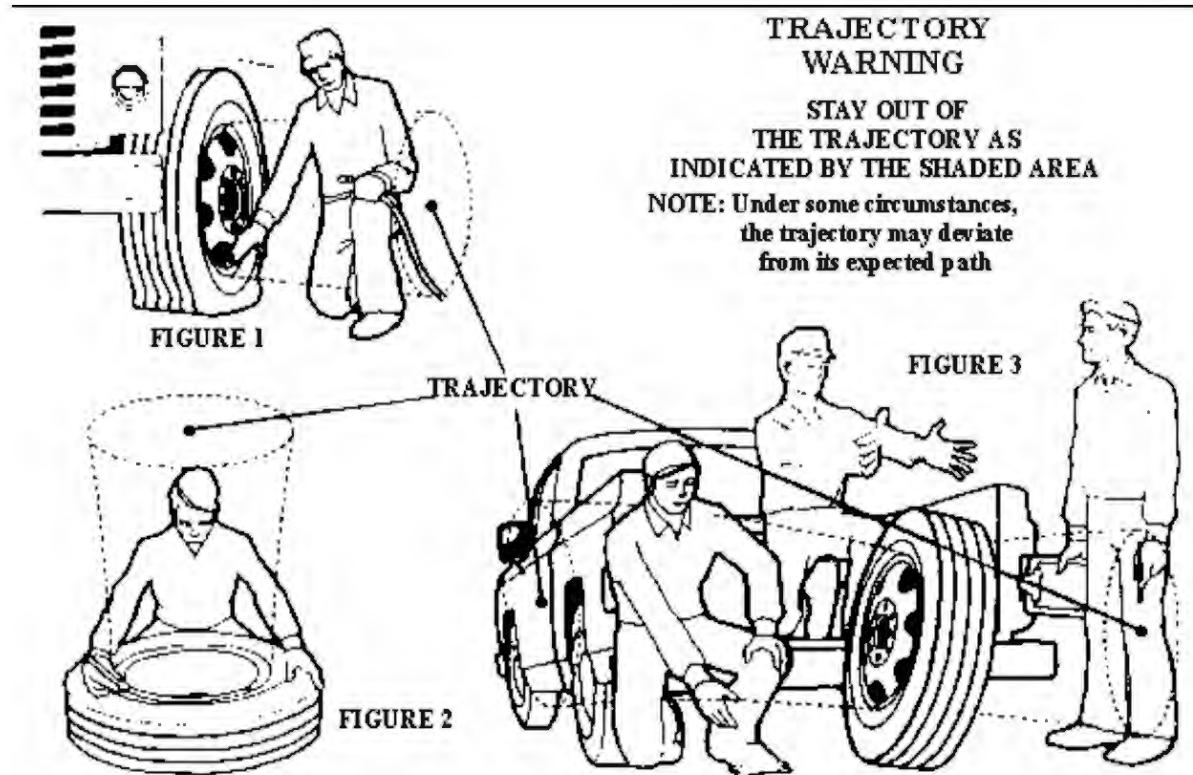
- Single piece rims or wheels when installed on the vehicle with the lug nuts fully tightened.
- If a tire on a vehicle is under-inflated but has more than 80% of the manufacturer's recommended load chart pressure, the tire may be inflated while the wheel is on the vehicle provided remote control inflation equipment is used, and employees remain outside the trajectory path during the inflation process.

Restraining devices and barriers shall be visually inspected prior to each day's use and after any separation of the rim wheel components. Any restraining device or barrier exhibiting damage such as the following defects shall be immediately removed from service:

- Cracks at welds;
- Cracked or broken components;
- Bent or sprung components caused by mishandling, abuses, tire explosion or rim wheel separation;
- Pitting of components due to corrosion;
- Restraining devices or barriers requiring structural repair such as component replacement or rewelding shall be removed from service until they are repaired by either the manufacturer or a California certified welder.

#### Wheel Servicing and Mounting.

1. There shall be available in the service area a current split and multi-piece Rim or Wheel Matching Chart, a Typical Rim Contours & Marking Location Chart, and current Rim Manual containing instructions for the proper tools recommended for the type of rim or wheel being serviced.  
NOTE: Other publications providing at least the same instructions, safety precautions and other information contained in the charts may be used provided the publications are readily available for reference by employees.
2. The employer shall furnish and assure that only tools recommended in the rim manual for the type of rims or wheels being serviced are used.
3. Single, split and multi-piece rim or wheel components shall be inspected prior to assembly. Any rim or wheel or rim or wheel component which has been rendered unfit by being bent out of shape, pitted from corrosion, broken, or cracked shall not be used and shall be marked or tagged unserviceable and removed from the service area. Damaged or leaky valves shall be replaced.



4. Before making any repairs or welds on rims or wheels, the tire shall be removed and remain off the rim or wheel until the repair is complete and any welds have returned to ambient temperature. Any repair involving welding on the rim or wheel or any of its components shall only be done in accordance with the manufacturer's specifications.

### **Demounting Tires.**

1. Split and multi-piece rim tires shall be completely deflated by removing the valve core. A wire or equivalent device shall be inserted into the center of the valve stem to ensure no obstruction exists that would prevent complete deflation, before removal of the wheel from the axle.

NOTE: This does not apply to tires on rim wheel assemblies with no obvious or suspected damage to any rim wheel components or the tire.

2. No heat shall be applied to a single, split or multipiece wheel or wheel component except that frozen or broken lug nuts may be cut off after the tire is completely deflated.

NOTE: Subjecting wheels to excessive heat may result in structural deficiencies. Therefore, care shall be exercised while cutting off lug nuts to avoid excessive heating of the wheel.

Wheels subjected to prolonged heating shall be removed from service.

3. Tires shall be completely deflated by removal of the valve core before demounting.

## **WELDING AND CUTTING**

Welding and cutting are specialized jobs that can be extremely hazardous when done by an inexperienced person. No employees shall attempt any welding or cutting unless they have been properly trained. In all cases, appropriate eye and face protection shall be used, leather gloves worn, and safety shoes and long-sleeved cotton coveralls or other appropriate clothing worn. The work shall always be done in a well-ventilated area, away from combustible materials. Fire extinguishers shall be kept nearby in an easily identifiable and accessible location. Breathing of welding fumes shall be avoided. Hearing protection may be required, depending on the procedure.

### **Electric Welding**

- A welding shield or hood fitted with filter glass of the proper shade shall be used.
- Do not look at a welding arc with the naked eye, or do not strike an arc if a person without eye protection is nearby.
- Material to be welded, and all components including the welding machine, shall be adequately grounded.
- Welding cables should not be overloaded.
- Avoid damp areas and keep hands and clothing dry.
- Use suitable spark shields.
- Keep uninsulated portions of the electrode holder from touching the welding ground when current is on.
- Keep welding cables dry and free of oil and grease.
- Do not carry welding cables around the shoulders.
- Use hearing protection with an NRR rating of 28 or better when operating the air-arc system.

### **Oxygen/Acetylene Equipment**

- When not in use, safety caps shall be secured on all compressed gas cylinders.
- Gas cylinders shall not be moved by dragging, sliding or rolling on their sides, or by means of magnets or slings. They shall not be transported with gauges attached. Cylinders shall never be used as a work support.
- Oxygen and acetylene cylinders must be stored at least twenty (20) feet from highly combustible materials such as oil or grease unless separated from them by a 1-hour fire wall 5 feet high or more.
- Each gas cylinder lead shall be provided with a backflow check valve.
- A friction lighter shall be used to ignite torches.
- Gas cylinders shall be placed in a vertical position and firmly fastened in place to prevent falling.



- Empty cylinders shall be tagged "EMPTY" and returned to their storage area.
- Gas cylinders shall not be subjected to excessive heat or welding sparks, and all equipment should be kept free from accumulation of oil and grease.
- When cutting or welding, ensure that sparks and flames will not contact combustible materials. A fire extinguisher shall be kept nearby.
- Stand to one side away from the regulator when operating cylinder valves.
- Inspect equipment at the beginning of each shift for leaking shutoff valves, hose couplings, and tip connections.
- Use hearing protection with an NRR rating of 28 or better when using a No. 6 tip or larger.
- Oxygen shall never be used as a substitute for compressed air such as for dusting clothing or work areas, purging lines or tanks, or powering pneumatic tools.
- Valves shall be closed when equipment is not in use and when changing torches.

## **STEAM CLEANER AND HIGH PRESSURE CLEANER**

The steam cleaner and high-pressure cleaner have the potential for inflicting serious injury if not used properly. Therefore, only employees who have received training in their use shall operate them. Some general rules apply as follows:

- Protective clothing consisting of a long-sleeved shirt or jacket, full-length pants, safety shoes, and gloves shall be worn. A face shield shall be used at all times when operating the equipment.
- The equipment shall not be operated when other personnel are close by who could accidentally get hit with steam or high-pressure spray.

### **Steam Cleaner - Operating Instructions**

- Check all hoses and fittings for damage, wear, or leaks prior to operation.
- Remove combustible materials or liquids from vicinity of the steam cleaner.
- When turning steam cleaner on, do not ignite burner until a steady flow of water comes from the gun.
- Know where the gas shutoff and electric circuit breaker are located.
- If straight steam comes from the gun, shut the burner off temporarily until some water comes from the gun nozzle.
- When shutting the equipment off, turn the burner switch off but leave the pump running until a steady flow of cool water comes from the gun nozzle.

### **Pressure Washer - Operating Instructions**

- The high pressure developed by this unit can cause serious injury or damage. Use care in where it is pointed and how it is used.
- Do not attempt to make adjustments on the machine while it is operating. Shut it off to do this.
- Do not leave the gun in the shutoff position with the pump running for extended periods of time as this will damage the pump.