

MC-9 MAINTENANCE MANUAL

SECTION 15

WHEELS HUBS AND TIRES

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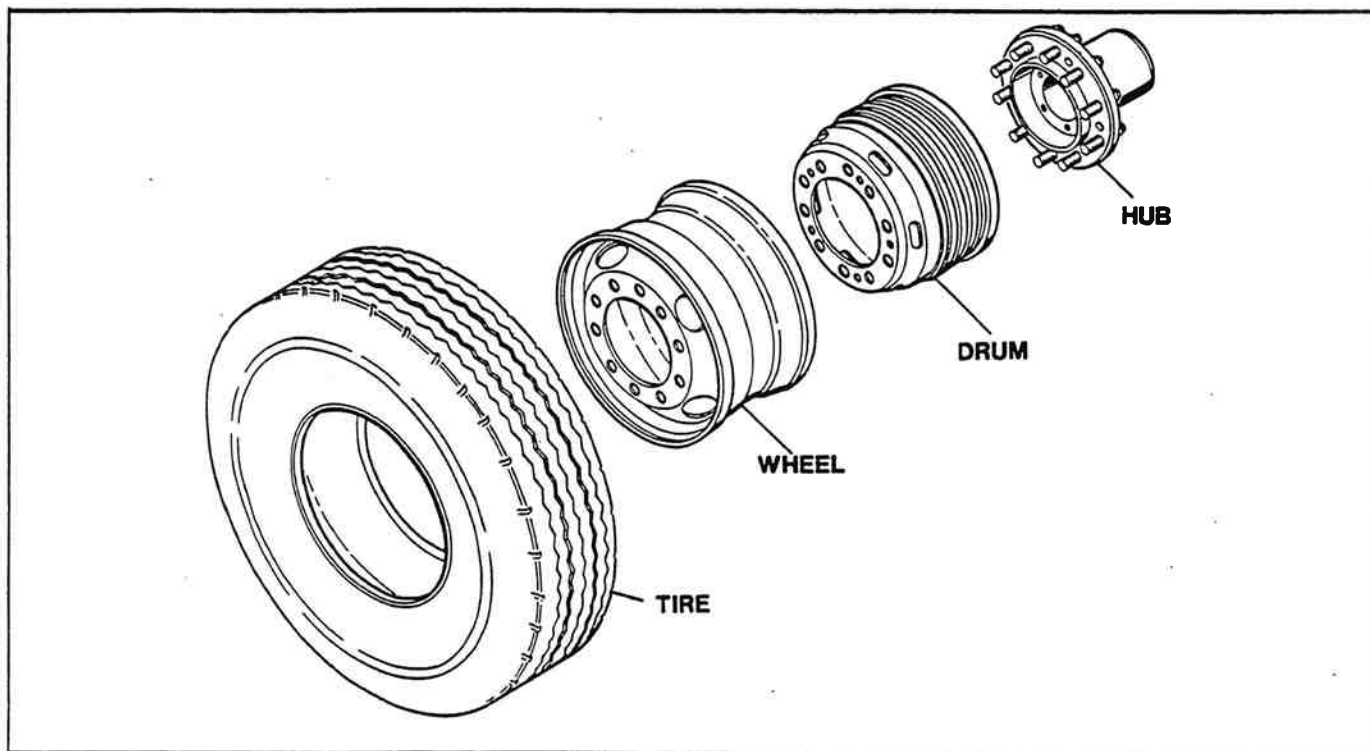


Figure 15-1. Tire, Wheel, Drum and Hub.

WHEELS, HUBS AND TIRES

Wheels supplied on the coach vary according to the specifications of the user. They are of standard type and manufacture and may have either 2-piece or 3-piece rims. Either tube type or tubeless tires may be used.

Standard wheels are 22.50 x 8.25" (571.5 x 209.5 mm) for tires of the following sizes: 12.00" x 22.50" (304.8 x 571.5 mm), 12.5" x 22.5" (317.5 x 571.5 mm) or 12.75R x 22.5 (323.9 x 571.5 mm). See figure 15-1.

The spare wheel and tire are carried in a compartment immediately behind the front bumper. Access is gained by releasing retaining locks located directly beneath the bumper, then pulling bumper out and up. Bumper will lock in the open position. Make sure that both bumper locks are firmly in place after closing compartment door.

WHEEL MAINTENANCE

Maintenance consists of periodic checks to see that wheel nuts are tightened to the proper torque. With a new coach, or after new wheels have been installed, stud nuts should be tightened every 100 miles (161 km) for the first 500 miles (805 km) to allow setting in of clamping surfaces.

Standard equipment consists of stud-mounted wheels; hub-mounted wheels are optional.

Stud-mounted wheels rely on the cone-shaped wheel nuts to hold the wheel on the hub in the proper location. After July '85, all 96/102 series coaches have, on the front axles, five cone-shaped wheel nuts and five flanged wheel nuts, installed alternately. Rear and trailing wheels have only the cone-shaped wheel nuts.

When installing front wheels (stud-mounted) always install and tighten the cone-shaped wheel nuts first to properly center the wheel. Tighten the nuts progressively, on alternate sides of the wheel. Final tightening should be with a torque wrench to 450-500 lb-ft (610-678 Nm) torque. The torque requirement is for both the cone-shaped and the flanged wheel nuts.

CAUTION: Do not intermix stud-mount nuts with nuts used on hub-mounted wheels. Stud-mounted wheels must be installed with cone-shaped and flanged stud nuts. Rear and trailing axle stud-mounted wheels must be installed with the cone-shaped stud nuts.

Hub-mounted wheels (optional equipment) are mounted with a close tolerance fit of the wheel over the axle hub flange.

The nuts used with hub-mounted wheels are flat. Cone-shaped or flanged nuts are not used with hub-mounted wheels. The nuts are to be tightened progressively on alternate sides of the wheel. Final tightening should be with a torque wrench to 450-500 lb-ft (610-678 Nm) torque.

CAUTION: Do not intermix stud nuts for hub-mounted wheels with those intended for use with stud-mounted wheels. Do not use stud-mount wheels in place of hub-mount wheels. Do not adapt either type of wheel for a different mounting.

Wheel studs and nuts must be kept free from grease and oil. No lubricant should be used, except for the cap nut condition described below.

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Corrosion or galling of the stud and nut assembly can reach a point where removal of cap nuts is difficult. If this is a persistent problem, a light application of lubricant can be applied on the first three threads of the stud and the first three threads of the inner cap nut. Care should be taken to keep all lubricant from ball seat of stud hole or ball faces of cap nuts.

In case of a broken, cracked or worn hub face, it should be replaced. A badly worn hub face is always caused by running wheel assemblies in a loose condition. If the wear is not too excessive, the entire hub face can be machined to a flat surface with the studs removed. Otherwise, with a badly out-of-flat or worn condition, the hub should be replaced.

When mounting rear dual wheels, care should be taken to position the tire valve stems 180° apart so that access to both inner and outer tire valves may be obtained (figure 15-2).

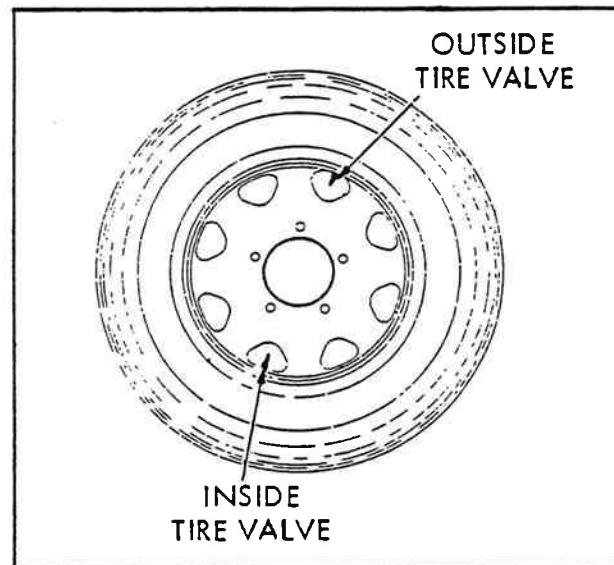


Figure 15-2. Proper Tire Valve Position.

CHANGING WHEELS

Whenever it is necessary to change a wheel when a flat tire occurs, the following procedures should be followed:

FRONT AXLE:

1. Turn front wheels to extreme right or left, depending on which tire is flat, so that the front of the flat tire is turned outward.
2. Run flat tire up on runup block. (Refer to figure 15-3.) Run up block is supplied in the coach tool compartment.
3. Apply parking brakes.
4. Place jack under front jack pad and raise coach.
5. Remove run-up block and proceed to change wheel.
6. Lower jack and remove from under jack pad.

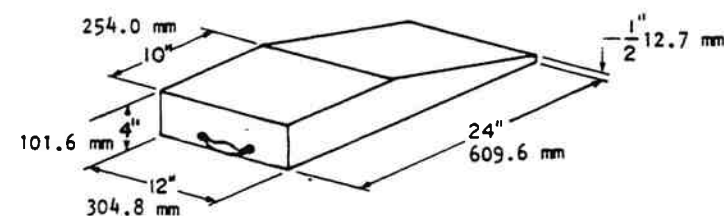


Figure 15-3. Run-up Block.

REAR DRIVE OUTSIDE DUAL:

1. Place wooden run-up block at inside tire.
2. Drive coach onto block to raise outside dual off ground.
3. Fully apply parking brakes.
4. Proceed to change wheel.

REAR DRIVE INSIDE DUAL:

1. Fully apply parking brakes.
2. Position jack under rear jack pad.
3. Jack up axle and proceed to change wheel.

REAR TRAILING WHEEL

1. Release air pressure from bellows by turning the air release valve towards the rear of the coach until air is released from bellows.
2. Position jack under jack pad and jack up flat tire.
3. Change the wheel.

NOTE: If no spare wheel is available for the rear trailing axle, the wheel should be raised and removed from axle. The hold-up link should be installed to hold up the axle. Reduce road speed to a minimum with trailing axle in raised position.

It is important that wheel stud nuts be tightened alternately on opposite sides of wheel. Refer to figure 15-4 for suggested sequence for tightening and follow this recommended procedure:

1. Run the stud nuts in lightly referring to figure 15-4 for sequence so that wheel will position itself concentrically with hub. This is important; otherwise, wheel may be eccentric with hub and will not run straight. In this initial step, run the nuts up only as necessary to correctly position the wheel.
2. Tighten stud nuts progressively as shown in figure 15-4 with an impact wrench.
3. Tighten stud nuts to 450-500 ft. lbs. (610-678 Nm) torque.

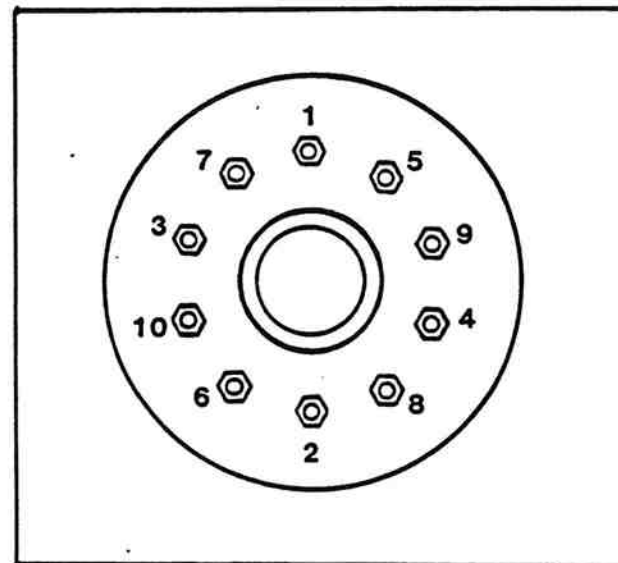


Figure 15-4. Stud Nut Tightening Sequence.

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TIRES

MAINTENANCE

The correct maintenance procedure is essential to safe and economical tire service. Daily, inspect each tire carefully for cuts or foreign matter such as nails, glass, etc. Remove any foreign matter lodged between tires and dual wheels.

Check tire inflation pressure (figure 15-5) with an accurate gauge. Pressure should be checked before starting a run and should be as recommended by tire manufacturer. Always use the same gauge to check the pressure to eliminate any differences resulting from gauge error.

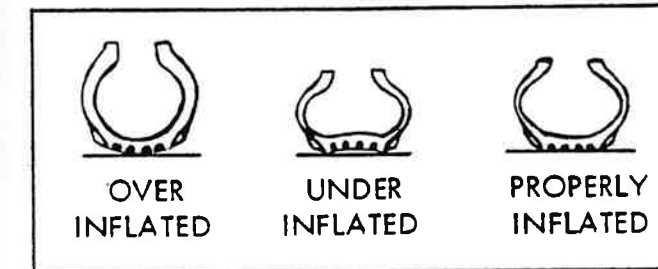


Figure 15-5. Tire Inflation.

If pressure loss is greater than normal, remove and inspect tire to determine cause. Replace any missing valve caps.

NOTE: Tire pressure should be checked with pressure cold.

The valve core is a spring loaded check valve in the stem permitting inflation or deflation of the tire. The valve is provided to seal the air in the tire. When the valve cap is tightened on the stem, the sealing washer inside the cap is pressed tightly against the top of the stem, preventing air leakage.

REPLACEMENT

When tires are changed, especially to the new low profile tires now available, clearances and revolutions per mile may be affected. Before making changes to tires with different specifications, ensure that the replacement tires have adequate clearances and that the revolutions per mile are not seriously affected. Customers who have already changed to replacement tires, especially to low profile tires, should check to ensure that the tires are not rubbing and that the revolutions per mile have not affected the speedometer reading.

INFLATION

Improper inflation is the greatest cause of accelerated tire wear. Tires should be checked frequently for this condition. Unless correct air pressure is consistently maintained, tires will not function as they should; consequently, safe, economical operation of the coach will be affected.

An under-inflated tire runs sluggishly, heats up quickly because of greater flexing, and is subjected to more frequent bruising. Over-inflation does not compensate for over-loading. It does not add strength to the tire; in fact, it actually weakens the tire by reducing its ability to absorb road shock, and may cause a blow-out.

In addition to the effect improperly inflated tires may have on tire life, improperly inflated tires will degrade steering, riding comfort, and safe driving.

All tires on the same axle should always carry the same air pressure. A difference in air pressure between rear tires and front tires may be permissible within certain limitations; however, there should not be a difference in pressures between the right and left tires on the same axle. A 5 psi (34.5 kPa) under-inflation in one front tire not only can cause hard steering, but can create steering hazards which may cause unsafe operation. An under-inflated rear tire can seriously affect braking. Balance tire pressures for ease of steering, comfort in riding, safety in driving, as well as for minimum fuel consumption and maximum tire mileage.

NOTE: Before rotating tires, consult the tire manufacturer. They are the source for directions relating to specific tires.

ROTATION

Radial tires should be rotated only when necessary. If the tires are wearing evenly, there is no need to rotate. If irregular wear becomes apparent, or if the wear rate on the tires is perceptively uneven, the tires should be rotated in such a manner to alleviate the problem. There is no restriction on criss-cross rotation.

Bias-ply tires should be interchanged at regular intervals to obtain maximum life. Change wheels without dismounting tires so direction of rotation will be reversed. The following system of interchanging is recommended: Right front to left rear inside or right rear outside. Left front to right rear inside or left rear outside.

If inside dual tires show more wear than outside dual tires, place front tires on inside when changing. In this case, outside dual tires can be interchanged between right and left side of vehicle.

If outside dual tires show more wear than inside dual tires, place front tires on outside dual tires when changing. At the same time, interchange right and left hand inside dual tires.

New tires should be installed on front wheels where they run coolest. Baggage should always be placed as far to the rear as possible. This puts the load on the rear axle and reduces front tire stress.

SAFETY PRECAUTIONS

WARNING: Exercise care when handling wheels and tires. Careful attention to the following suggestions will prevent injury. Make it a rule to respect the explosive force contained in an inflated tire.

Refer to figure 15-6.

1. Prepare for any tire repair operation in a proper way. In servicing tires be careful not to drop them on the feet, hands or body, or heavily on the floor. Practice proper methods of lifting. When carrying tires or wheels avoid oil and objects on the floor. Keep floor clean and dry.

2. Deflating a tire properly is very important. First reduce pressure as much as possible by pushing the valve core plunger. Keep your eyes away from valve. Remove valve core to ensure complete deflation. Wear approved safety glasses or goggles when using compressed air.