

DPO9-006

Decals and Dash Placard

Blue Bird

12/17/09

Attachment

HITCH CAPACITY
18,500lb. G. T. W. R.
1,000lb TONGUE WEIGHT

TIRE INFLATION
450LXi
RECOMMENDED
COLD PRESSURE

FRONT	130 PSI
DRIVE	100 PSI
TAG	95 PSI

DO NOT USE THIS
AIR COMPRESSOR
TO SERVICE TIRES.
GO TO BAY 1 AND
FOLLOW
INSTRUCTIONS ON
BAY DOOR.

IMPORTANT WARNING: FRONT TIRE PRESSURE AT 140 PSI

Tire Inflation System Operating Instructions

Please read these instructions carefully and comply with them, as well as, all other applicable safety warnings. See the Owner's Manual Addendum for more detailed operating instructions.

1. Find the system control panel located at the upper rear corner of the compartment.
2. Uncoil the air hose assembly. This assembly is designed to service the tires on only one side of the motor coach.
3. Fully insert (two clicks) the male fitting on the hose into the female fitting on the control panel.
4. Insure that the air line bleed-off valve located at the bottom of the control panel is closed. (The valve at the opposite control panel must also be in the closed position.)
5. Turn the air compressor switch ON and allow the compressor to it reaches its maximum operating pressure (compressor will turn off automatically) before servicing a tire.
6. Remove the valve stem dust cap from the tire to be serviced.
7. Attach the self-locking inflation chuck to the tire valve stem by pressing the two together until the sound of air escaping from the valve stem stops - then rotate the chuck slightly toward the ground so that the threads in the chuck engage with the threads on the stem. Release the inflation chuck and step away from the tire.
8. Observe the tire inflation pressure on the gauge. To increase the pressure in the tire, fully depress the round button below the gauge until the desired pressure is indicated on the gauge, and then release the button. To decrease the pressure in the tire, partially depress the button until the desired pressure is indicated on the gauge, and then release the button. Air from the tire will exit through a hole on the side of the inflation gauge handle.
9. Release the self-locking inflation chuck by lifting it up and then jostle the chuck until the threads disengage and the chuck slides off the valve stem.
10. Reinstall the valve stem dust cap.
11. Repeat steps #6 through #9 to service other tires on the same side of the motor coach.
12. Return to the control panel and depress the blue button once on the quick-connect fitting to relieve the air pressure in the air hose. Depress the blue button a second time to release the hose from the quick-connect fitting.
13. Turn the air compressor switch OFF.

Repeat steps #1 through #13 if the tires on the opposite side of the motor coach require service. When all tire servicing is completed, drain the air from the compressor tank by opening the air line bleed-off valve located at each of the control panels. (Note: A large volume of air will be discharged.) Close the valve when the compressor tank is emptied.

Re-coil and stow the air hose assembly.

FRONT STORAGE

lb. LIMIT

BAY # 1 STORAGE

lb. LIMIT

BAY # 2 STORAGE

lb. LIMIT

BAY # 3 STORAGE

lb. LIMIT

THIS VEHICLE WAS ALTERED BY
BLUE BIRD BODY COMPANY IN 06/2008
AND AS ALTERED IT CONFORMS TO ALL
APPLICABLE U.S.A. FEDERAL MOTOR VEHICLE
SAFETY, BUMPER AND THEFT PREVENTION
STANDARDS AFFECTED BY THE ALTERATION
AND IN EFFECT IN 08/2004.

GVWR: 24494 KG (54000 LB)
GAWR-FRONT: 7711 KG (17000 LB)
GAWR INTERMEDIATE: 10886 KG (24000 LB)
GAWR-REAR: 5897 KG (13000 LB)

VEHICLE TYPE: MPV

SUITABLE TIRE-RIM CHOICE
FRONT: 315/80R22.5L TIRES, NA RIMS,
AT 900 KPA (130 PSI) COLD SINGLE

INTERMEDIATE: 315/80R22.5L TIRES, NA RIMS,
AT 690 KPA (100 PSI) COLD DUAL

REAR: 315/80R22.5L TIRES, NA RIMS,
AT 660 KPA (95 PSI) COLD SINGLE

DP09-006

Owner's Manual Addendums

Blue Bird

12/17/09

Attachment

1-1.9.1 Back-up Lights

Back-up lights are similar to backup lights on other vehicles. They illuminate when the transmission in the motor home is in the reverse gear and are intended to provide increased visibility during low ambient light conditions and alert others that the motor home is in the reverse gear and may be driven backwards.

1-1.9.2 Landing Lights

There are three sets of landing lights. Two are on the left side of the motor home, two are on the right side of the motor home, and two are on the rear of the motor home. They may be switched ON or OFF by selecting one of three buttons on the panel just to the left of the main instrument panel on the dash and that are marked REAR LAND, LEFT LAND, and RIGHT LAND. A common use would be to aid the in various operations, such as, loading the motor home, entertaining, or any time that light is needed in those areas of the motor home. The rear landing lights will only operate while the motor home's transmission is in reverse or neutral and will not illuminate if the transmission is in drive.

1-1.10 Spot Lights

The spot lights are located on the roof in the front of the motor home. They are illuminated by an ON/OFF switch and their orientation is controlled by a toggle switch located on the right-hand side of the dash next to the ignition switch.

1-1.12 Vehicle Loading

The Federal Certification Label, located inside and above the driver's windshield between the sun visor mounting brackets, lists the maximum weight-carrying capacity of your motor home, referred to as the Gross Vehicle Weight Rating (GVWR), and the maximum load carrying capacity for each axle, referred to as the Gross Axle Weight Rating (GAWR).

The Unloaded Vehicle Weight (UVW) is defined as the vehicle/motor home weight before any passengers or personal belongings are loaded. For determining your motor home's UVW, the following conditions are to be used - empty black and grey tanks, ¼ fill level in the fresh water tank (Blue Bird's recommended water level while driving the motor home – fresh water tanks can be filled to any level when parked), full hot water tank, full LP tank, and full fuel tanks.

To determine the UVW, the corresponding front suspension/axle load and the combined drive and tag axle load of your motor home requires a commercial scale that is used for weighing large vehicles. Follow the procedure described below to obtain this data:

- 1) Pull the front tires of the motor home on to the scale, exit the motor home and step off of the scale, and record the weight (this is the empty front suspension/axle load);
- 2) Move the motor home on to the scale so that ALL of the tires are on the scale, exit the motor home and step off the scale, and record the weight (this is the UVW); and then,
- 3) Pull forward so that the front tires are no longer on the scale, exit the motor home and step off of the scale, and record the combined weight for the drive and tag axle (this is the empty combined drive and tag axle load).

To obtain individual loads for the drive and tag axles requires special scales that measure loads at the specific tire locations. Bluebird Coachworks has such scales and can provide this service.

The Net Carrying Capacity (NCC) of your motor home is the difference between the GVWR and UVW. The total weight of all food, clothing, other supplies/belongings, and passengers must not exceed the NCC or any of the axle weight ratings.

3-2 Towing

3-2.1 Receiver-Type Trailer Hitch

The trailer hitch on your motorhome has a rated towing capacity (gross weight of the trailer or vehicle and its contents) of 18,500 pounds. The tongue load (the weight applied in a downward direction on to the ball) for your motorhome is rated at 1,000 pounds.

When using the rear hitch remember that the motorhome is intended for towing light loads. Your motorhome is designed to be used primarily as a recreational vehicle and towing will affect durability and economy. Your safety and satisfaction require proper use. Avoid excessive loads. Do not use the motorhome to tow anything until it has been driven 500 miles (800 kilometers). Tongue load (as described above) must not exceed 1,000 pounds. We recommend weighing your motorhome, as it will be operated, to be certain that there is proper weight distribution (see Owner's Manual section 1-1.12 Vehicle Loading). Total weight of your motorhome and any trailer or vehicle being towed by it must not exceed the GCWR (see Owner's Manual section 1-1.12.1 Gross Combined Weight Rating).

▲ WARNING: Any trailer being towed by your motorhome must have adequate brakes. Failure to follow these instructions will create a safety hazard and may result in an accident.

3-2.2 Tow Hooks

Two tow eyes are located at the front of the motorhome. Removable tow hooks are provided. Insert hooks into the receivers and secure with pins provided.

NOTE: The front center panel must be removed if the hooks are to be used to tow the vehicle.

▲ WARNING: DO NOT LIFT THE MOTORHOME WITH THE TOW EYES. TOW EYES ARE FOR FLAT GROUND MANEUVERING ONLY.

3-2.3.1 Towing Procedures

It is recommended that if a towing company is called make sure they use a wheel grid (an arm that goes under motorhome and lifts from the front tires.) Refer to figures 1 and 2 below.



Figure 1

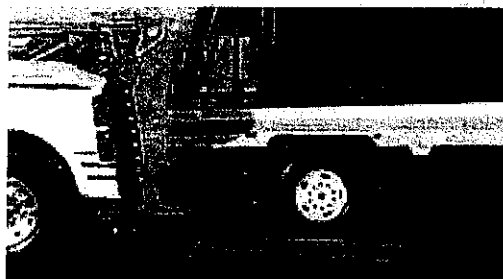
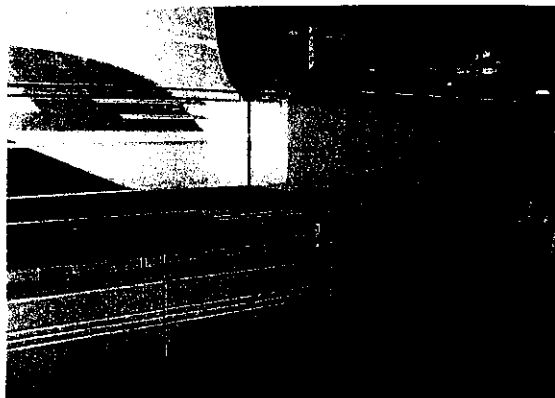


Figure 2

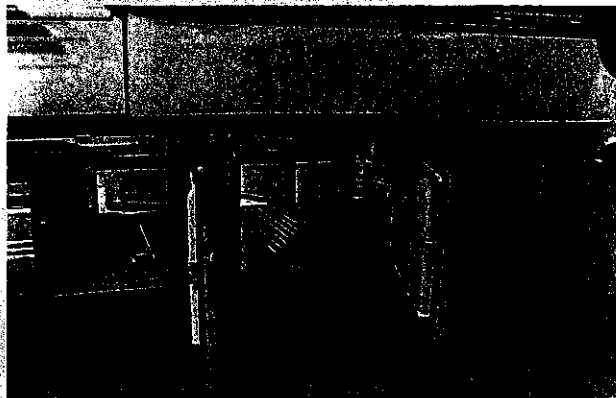
4-2 EXTERIOR STORAGE

4-2.1 Cargo Bays

The 450 LXI has exterior storage in compartments below the coach called cargo bays (basement). There are four cargo bays located beneath the coach.



Cargo bays with doors closed



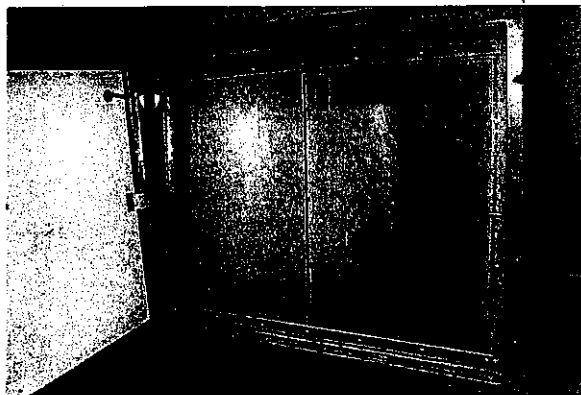
Cargo bays with door open



Cargo Bay #3 curb-side with original Webasto Hydronic Heating System



Cargo Bay #3 has new tire inflation air compressor installed at mid-line



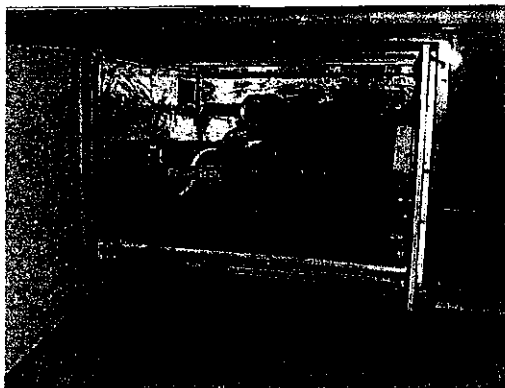
Cargo Bay #3 road-side has relocated auxiliary generator – inner doors closed



Cargo Bay #3 road-side has relocated auxiliary generator – inner doors open

4-3 PowerTech PTSMH17.5 GENERATOR

The PowerTech PTSMH17.5 Generator supplied with the 450 LXi Coach has been relocated to the roadside of storage Bay #3.



4-3.1 Safety Precautions

Careful operation is your best insurance against an accident. Read and understand this entire section carefully before operating the generator engine. All operators, no matter how much experience they may have had, should read this and other related manuals before operating the engine or any equipment attached to it. It is the owner's obligation to instruct all operators in safe operation.

4-3.1.1 Observe Safety Instructions

- Read and understand carefully this "Operator's Manual" and "Labels on the Engine" before attempting to start and operate the engine.
- Learn how to operate and work safely. Know your equipment and its limitations. Always keep the engine in good running condition.
- Before allowing other people to use engine, explain how to operate and have them read this manual before operation.
- Do not modify the engine by yourself. Unauthorized modifications to the engine may impair the function and/or safety and affect engine life.

4-3.1.2 Wear Safety Clothing

- Do not wear loose, torn or bulky clothing around the machine that may catch on working controls and projections causing personal injury.
- Use additional safety items, e.g. hard hat, safety protection, gloves, etc., as appropriate or required.
- Do not operate machine or any equipment attached to it while under the influence of alcohol, medication, or other drugs, or while fatigued.
- Do not wear radio or music headphones while operating engine.

4-3.1.3 Check Before Operating and Starting the Engine

- Be sure to check the engine before operation. If something is wrong with the engine, do not fail to repair it quickly.
- Keep all guards and shields in place before operating the engine. Replace any that are damaged or missing.
- Check to see if there is a safe distance from the engine before starting.
- Always keep the engine at least 3 feet (1 meter) away from buildings and other facilities.
- DO NOT allow children or livestock to approach the machine while the engine is running.
- DO NOT start the engine by shorting across starter terminals. The machine may start in gear and move.

4-3.1.4 Keep Area Around the Engine Clean

- Be sure to stop the engine before cleaning.
- Keep the engine clean and free of accumulated dirt, grease and trash to avoid a fire. Store flammable fluids away from sparks and fire.
- DO NOT stop the engine without idling; Temperatures around the engine rise suddenly. Keep the engine idling for about 5 minutes or over before stopping.

6-1.1.2 Drive Axle Dual Wheels

1. Repeat steps 1 through 10, Front Axle Wheels.
2. Loosen inner lug nuts (studs with square heads), if inner wheel is to be replaced.
3. Remove outer lug nuts from the (5) studs which have lock rings and slide hub cover over remaining lug nuts.
4. Remove the (5) remaining lug nuts and wheel.
5. Remove inner lug nuts and inner wheel, if inner wheel is to be replaced.
6. Install replacement wheel and inner lug nuts. Tighten progressively, in the sequence shown on lug nut tightening diagram, starting with #1 and proceeding with #10. Final torque should be between 450 and 500 foot-pounds.
7. Install outer wheel (or replacement wheel) and lug nuts over inner lug nuts marked 1, 3, 7, 9 and 6. Torque nuts in the following sequence, 1, 7, 6, 3 and 9 to between 450 and 500 foot pounds.
8. Install hub cover over the (5) lug nuts holding wheel to hub. Place lock rings and lug nuts on remaining inner lug nuts 10, 5, 2, 4 and 8.
9. Replace wheel saver.
10. Torque nuts in the following sequence 10, 2, 8, 5 and 4 to between 450 and 500 foot-pounds. Wheel must be on the ground for final torque.
11. Return to step 13 of Front Axle Wheels and continue.

NOTE: When checking torque on dual wheels loosen all outside lug nuts. Check torque on inner lug nuts (studs with square heads) for torque value shown above, then torque outer lug nuts to value shown above.

6-1.2 Tire Inflation – Towing - Trailer

6-1.2.1 Tire Inflation

Under-inflation causes needless tire wear and promotes excessive fuel consumption... Check tire pressures on a regular basis.

The Amended Federal Certification Label (located inside and above the driver's windshield between the sun visor mounting brackets) shows the cold tire inflation pressures necessary to support the GAWR.

For convenience, we are listing the proper tire inflation pressures for your motorhome:

Front Tires:	130 psi
Drive Axle Tires:	100 psi
Tag Axle Tires:	95 psi

6-1.2.1 On-board Tire Inflation System

This 450 LXi motor home has been equipped with an on-board tire inflation system capable of properly inflating all of the tires. The original auxiliary air compressor is not able produce the required 130 psi air pressure specified for the front tires and should not be used for tire inflation.

Please carefully read and comply with these instructions. Supplemental instruction labels have also been attached adjacent to the system control panels. Adhere to these, as well as, all other safety warnings.

Operating Instructions:

1. Open the bay two storage compartment door on the same side of the motor home as the tires you wish to service. The on-board tire inflation system control panel is located at the outboard upper rear corner of the compartment and contains the air compressor power ON/OFF switch, a female quick-connect air fitting, and an air line pressure bleed-off valve.
2. Uncoil the air hose assembly which is composed of the red air hose with a male quick-connect fitting, an air pressure control module and pressure gauge, and the self-locking inflation chuck. This assembly will reach all of the tires on one side of the motor home. It must be disconnected and re-attached to the opposite side to service the tires on that side.
3. Insert the male quick-connect fitting on the air hose into the female fitting on the control panel. This is a two-stage connector and two distinct "clicks" will be heard when properly connected.
4. Insure that the air line bleed-off valve located at the bottom of the control is in the closed position. The valve "wings" should be parallel to the face of the panel. (Note: If the sound of air exiting from the valve is heard after the compressor is turned on then the orientation of the "wings" may need to be adjusted to fully close the valve.) The valve at the control panel on the opposite side of the motor home must also be in the fully closed position as described above.
5. Turn the air compressor on by depressing the "ON" side of the rocker switch (the LED will illuminate). Allow the compressor to run until it reaches its maximum operating pressure (200 psi) before attempting to inflate a tire. (Note: The compressor will automatically cycle on and off during normal operation.)
6. Remove the valve stem dust cap from the tire to be serviced.

7. Attach the self-locking inflation chuck to the tire valve stem by sliding the chuck over the stem and pressing the two together until the sound of air escaping from the valve stem stops, then rotate the chuck slightly toward the ground so that the threads in the chuck engage with the threads of the stem. When properly connected the chuck does not have to be held to maintain an airtight seal with the valve stem.
8. Observe the tire inflation pressure on the gauge. To increase the pressure in the tire, fully depress the round button below the gauge until the desired pressure is indicated on the gauge and then release the button. To decrease the pressure in the tire, partially depress the button until the desired pressure is indicated on the gauge and then release the button. The air from the tire will exit through a small hole at the side of the inflation assembly handle.
9. To release the self-locking inflation chuck, lift it up and jostle the chuck until the threads disengage and the chuck slides off the valve stem. There will be a momentary release of air as the seal between the chuck and stem is broken.
10. Reinstall the valve stem dust cap.
11. Repeat steps #6 through #9 to service other tires on the same side of the motor home. Please note that the inflation pressures are not the same for all tires. The correct inflation pressures for each tire can be found on the inflation label located in bay one.
12. Return to the control panel and depress the blue button once on the quick-connect fitting to relieve the air pressure in the red air hose assembly. There will be a momentary release of air at the fitting. Depress the blue button a second time to release the hose from the quick-connect fitting.
13. Turn the air compressor off by depressing the "OFF" side of the toggle switch. The "ON" LED will no longer be illuminated.

Repeat steps #1 through #13 if the tires on the opposite side of the motor home require service. When all tire servicing is completed, drain the air from the compressor tank by opening one of the valves located at a control panel by rotating the valve "wings" perpendicular to the panel face. There will be a large volume of air expelled from the valve while the compressor tank is emptying.

Re-coil the air hose assembly and properly stow. (See photograph on page 6-1-2c.)

Water condensation must be drained from the air compressor tank at least once each year. To drain the tank:

- 1) Turn the compressor on until 50 psi pressure is achieved.
- 2) Turn the compressor off.
- 3) Open the valve (located at the bottom of the tank) completely by turning the "wings" counter-clockwise. Air and water mist/drops will exit through the valve. Holding an old towel or similar object near the valve will help dissipate the force of the air and capture any water.
- 4) When the sound of air exiting through the valve stops close the valve completely by turning the "wings" in a clockwise direction until they stop.

Air hose assembly

6-1.3.2 Towing

Two towing eyes are provided behind the lower part of the forward storage bay door (original generator door). Remove the door panel for access.

CAUTION: Do not tow a vehicle equipped with Allison automatic transmission unless the drive shaft has been removed, or the rear wheels raised from the ground. Do not attempt to tow unit by front axle or cross member. Damage to wiring and/or air lines can result because of proximity of these items to front cross member. Do not tow with generator tray extended. Do not tow by the bumpers. Air pressure is required to release brakes.

6-1.3.3 Trailer Hitch Capacity

The trailer hitch on your motorhome has a rated towing capacity (gross weight of the trailer or towed vehicle and contents) of 18,500 pounds. The tongue load (the weight applied in a downward direction on to the ball) for your motorhome has a rated capacity of 1,000 pounds.

Standard equipment includes a 2" hitch ball with a 1" shank that is rated for 5,000 pound maximum towing capacity and 500 pounds tongue load. Hitch ball nut must be torqued to 200 ft-lbs.

NOTE: For more towing capacity, we offer an optional 2 5/16" hitch ball with a 1 1/4" shank rated for a 10,000 pound maximum towing capacity and a 1,000 pound tongue load. Hitch ball must be torqued to 200 ft-lbs.

Michelin Technical Bulletin

May 15, 2006

Service Life for RV/Motorhome Tires

The following recommendation applies to RV/Motorhome tires. Tires are composed of various types of material and rubber compounds, having performance properties essential to the proper functioning of the tire itself. These component properties evolve over time. For each tire, this evolution depends upon many factors such as weather, storage conditions, and conditions of use (load, speed, inflation pressure, maintenance, etc.) to which the tire is subjected throughout its life. This service-related evolution varies widely so that accurately predicting the serviceable life of any specific tire in advance is not possible.

That is why, in addition to regular inspections and inflation pressure maintenance by consumers, it is recommended to have RV/Motorhome tires, including spare tires, inspected regularly by a qualified tire specialist, such as a tire dealer, who will assess the tire's suitability for continued service. Tires that have been in use for 5 years or more should continue to be inspected by a specialist at least annually.

Consumers are strongly encouraged to be aware not only of their tires' visual condition and inflation pressure, but also of any change in dynamic performance such as increased air loss, noise or vibration, which could be an indication that the tires need to be removed from service to prevent tire failure.

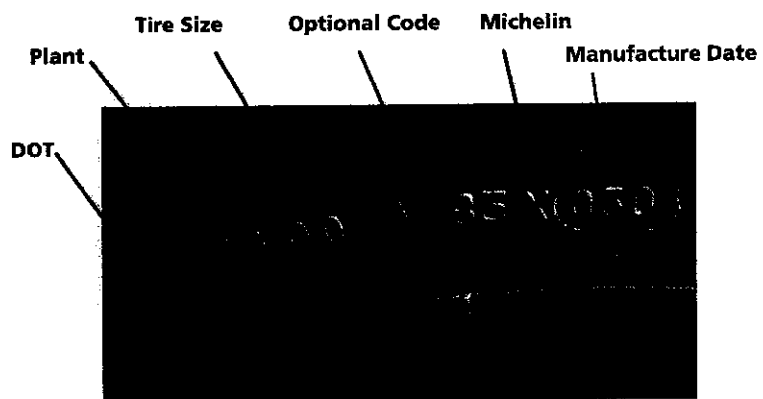
It is impossible to predict when tires should be replaced based on their calendar age alone. However, the older a tire the greater the chance that it will need to be replaced due to the service-related evolution or other conditions found upon inspection or detected during use.

While most tires will need replacement before they achieve 10 years, it is recommended that any tires in service 10 years or more from the date of manufacture, including spare tires, be replaced with new tires as a simple precaution even if such tires appear serviceable and even if they have not reached the legal wear limit.

For tires that were on an original equipment vehicle (i.e., acquired by the consumer on a new vehicle), follow the vehicle manufacturer's tire replacement recommendations, when specified (but not to exceed 10 years).

The date when a tire was manufactured is located on the sidewall of each tire. Consumers should locate the Department of Transportation or DOT code on the tire that begins with DOT and ends with the week and year of manufacture. For example, a DOT code ending with "0304" indicates a tire made in the 3rd week (Jan) of 2004. (See back.)





For further information, please contact Michelin at www.michelintruck.com.

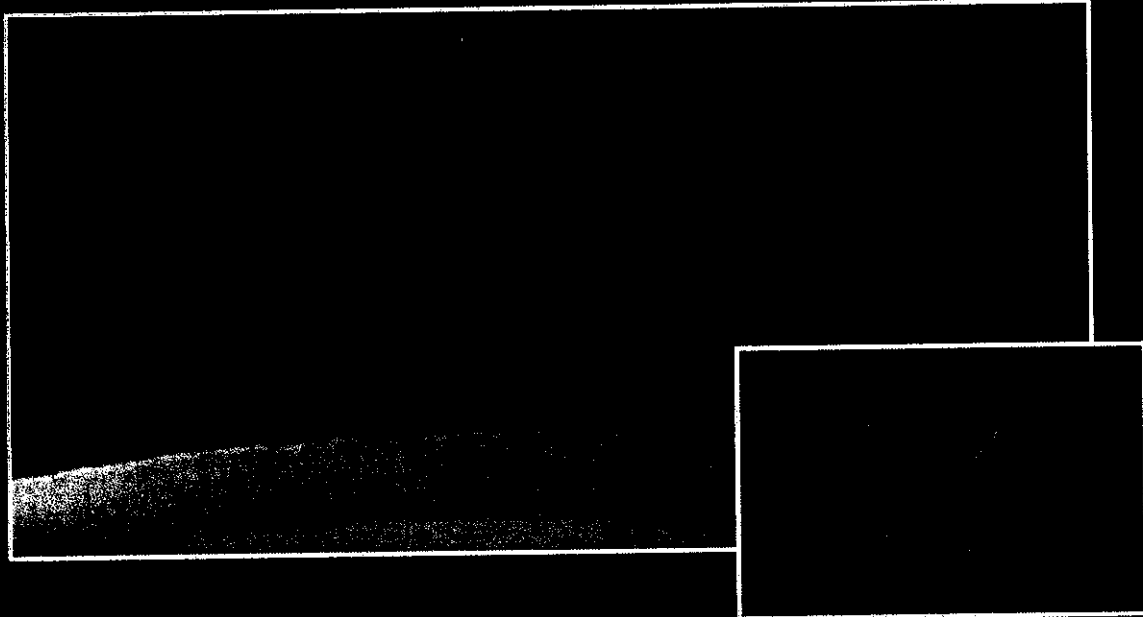
www.michelintruck.com

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MWT43059



AGING, WEATHER CHECKING, AND OZONE CRACKING

During the pre-trip inspection, be sure to check your tires for signs of aging, weather checking and/or ozone cracking -- these show up as tiny cracks in the rubber surface on the sidewall of the tire. If the cracks are less than $1/32$ " deep, the tire is fine to run. Between $1/32$ " and $2/32$ ", the tire is suspect and should be examined by your Michelin dealer. If the cracks are any deeper than $2/32$ ", the tire should be replaced immediately.

Here are a few tips to help you protect your tires from these common damage conditions:

- 1) Keep your tires properly inflated.
- 2) Keep your tires clean.
- 3) Avoid prolonged exposure to heat, cold or moisture.
- 4) Avoid prolonged exposure to ultraviolet rays.
- 5) Cover your tires when your vehicle is not in use.
- 6) Do not park near electric generators or transformers.
- 7) Do not store vehicle in an area where welding is being done or in a garage that has mercury vapor lamps.

LONG TERM STORAGE AND RV TIRES

Unless you're a full time RV'er, your vehicle probably spends some time in long-term storage. But what you probably didn't know is that rubber tires age when not being used. So, if you must store your RV, a cool, dry, sealed garage is your best bet. Also, some storage surfaces can cause tires to age faster. That's why Michelin recommends placing a barrier (cardboard, plastic or plywood) between your tire and the storage surface. Here are some other steps you can take to help reduce the aging effects from long term storage:

- 1) Thoroughly clean tires with soap and water before placing into storage.
- 2) Cover tires to block direct sunlight and ultraviolet rays.
- 3) Store out of a high ozone area.

Note: When a vehicle is stored, tires should be inflated to the inflation pressure indicated on the sidewall.

Before removing your vehicle from long-term storage, thoroughly inspect each tire — this includes sidewalls, tread area, and air pressure. If your tires have lost air, be sure to inflate them to the correct pressure before driving.

PROPER CLEANING OF YOUR RV'S TIRES

Like the rest of your RV, it pays to keep your Michelin® tires clean. Road oil will cause deterioration of the rubber and dirt buildup will hold the contaminants next to the tire.

As with the cleaning of any rubber product, proper cleaning methods must be used to obtain the maximum years of service from your tires. A soft brush and the normal mild soap that you would use to clean your RV may be used. If you use a dressing product to "protect" your tires from aging, use extra care and caution. Tire dressings that contain petroleum products, alcohol or

silicones will cause deterioration or cracking and accelerate the aging process.

In many cases, it is not the dressing itself that can be a problem, but rather the chemical reaction that the product can have with the antioxidant in the tire. Heat can add to the negative reaction. When these same dressing products are used on a passenger car tire that is replaced every three to four years, it is rare to see a major problem. However, in most cases, RV tires may last much longer due to limited annual mileage, and the chemical reactions have much longer to take place.

ADDITIONAL TIRE CARE RECOMMENDATIONS

Tire Repair

Even the best drivers can drive over a nail and the best tires can pick up that nail or screw and go flat. If you pick up an object that causes a flat with a Michelin® RV tire, the repair must be made to the inside of the tire to be repaired properly. To do this, the tire needs to be demounted and inspected on the inside of the casing for any other damage that the object may have caused. See your Michelin truck tire dealer for the proper repair and damage inspection.



Tire Inspection

Your RV tires should be inspected thoroughly at least once a year, and any time you drive in rough or rocky terrain, or when you have your RV serviced. This inspection should include both sidewalls, the tread area, and the valves, caps, and any valve extensions. Inspect for nails, cuts, bulges, aging, or fatigue cracks and weathering or ozone checking. Also, check between the duals for objects lodged between them. See your Michelin dealer at once if anything unusual is observed.

On a regular basis, rub the palm of your hand across the face of the tread on your front tires to feel for any feathered wear from "toe" alignment problems. **NOTE:** Be careful since severe wear can expose steel belt edges that are very sharp. A "toe" misalignment problem can be caused by impact with a "chuck" hole in the road. Bad "toe" wear can be hard to find visually, but can be felt very quickly with the hand. This type of alignment problem can wear rubber off the tread of your tires in just a few hundred miles.

TIRE DAMAGE – EFFECT AND CAUSE

All scrap tire failures are cause and effect related. In the majority of the situations, it is the effect that we first see when we look at the tire damage. However, tire condition “effects” may have many causes. Often a pattern can be found which may

point to changes needed to avoid future scrap failures of this nature. Surprisingly, the majority of tubeless commercial scrap conditions are found in the following 5 damage categories:

EFFECT	CAUSE
RUN FLAT (Tire run with very low psi)	• Nail / bolt / debris hole penetrating liner • Crown / sidewall injury • Leaky valve or grommet • Leaky wheel or rim • Leaky repair • Bead damage
AIR INFILTRATION (Any damage which opens inner liner and allows air pressure to migrate within the steel and rubber products)	• Nail • A faulty repair • Under inner liner split (from impact) • Bead area or inner liner damage (result of poor mounting procedures) • Inner liner cut • Inner liner burn (e.g., electrical discharge damage)
PINCH SHOCK (Crown / sidewall impact compressing the tire until the internal rubber products hit) (Usually an impact with blunt object)	• Impact with a curb • Impact with a deep pot hole • Impact with road debris • A severe impact with anything!!
IMPACT DAMAGE (With or without a rupture – zipper) (Crown, shoulder, or sidewall)	• Impact with a sharp cutting object (A rupture usually indicates a rather severe impact)
FATIGUE RELATED DAMAGE (With or without a rupture – zipper) (Any damage which will allow the casing to oxidize or the casing plies to weaken or break)	• Run flat tires (mainly dual positions) • Impacts to steel (not filled or repaired) • Faulty repairs • This may be a final removal condition • On an old (well used) tire

MICHELIN[®] TECHNICAL BULLETIN



October 1, 1999

THE USE OF BLOCKS TO LEVEL MOTOR HOMES/RV'S EQUIPPED WITH RADIAL TIRES

Extreme caution must be taken to ensure that the tires are fully supported when using blocks to level motor homes and/or RV's. The load on the tire should be evenly distributed on the block and in the case of duals, evenly distributed on blocks for both tires. If not properly done, the steel cables in the sidewall of the tires may be damaged and could lead to premature fatigue of the sidewall.

The CORRECT methods are shown in Figure 1. Please note that the blocks are wider than the tread and longer than the tire's footprint. This provides maximum support to the tires and assures that the load is evenly distributed throughout the tire's footprint area.

FIGURE 1
CORRECT

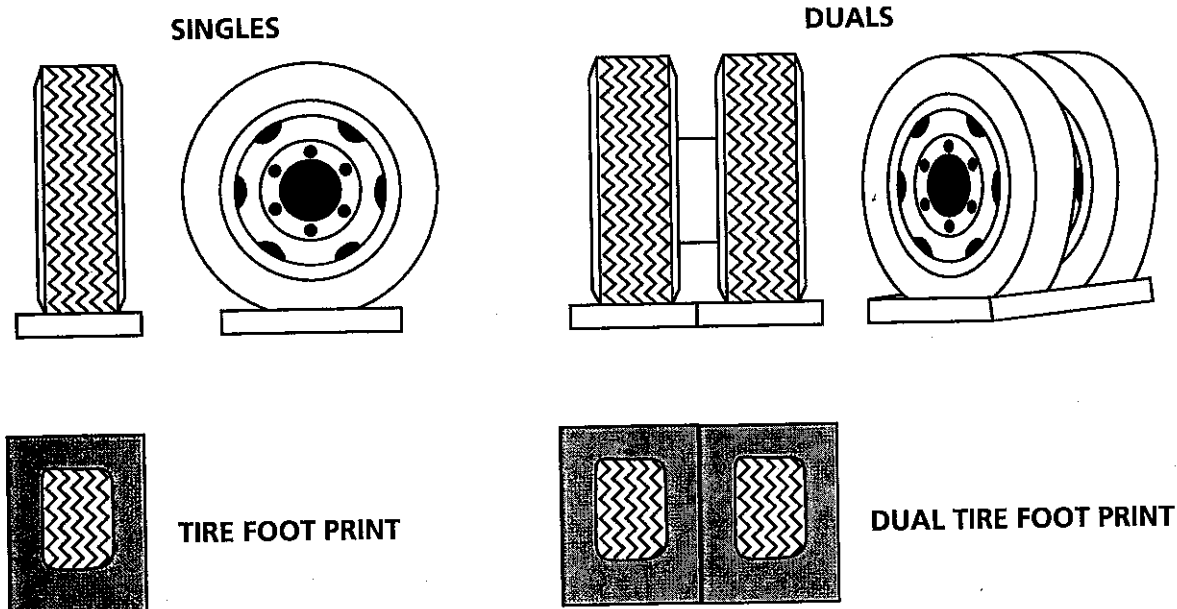
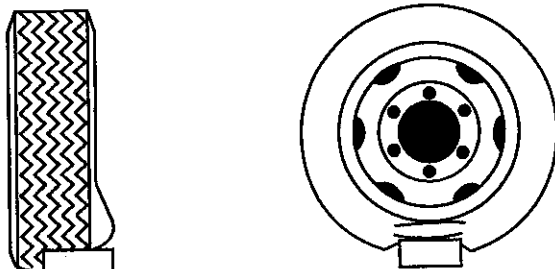


FIGURE 2
INCORRECT METHOD

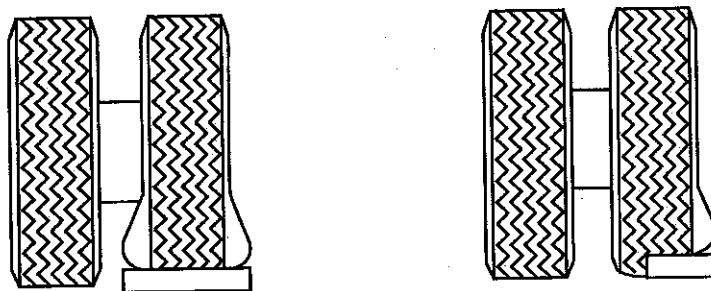
Singles
INCORRECT

Only a portion of the tire is supporting the full load.

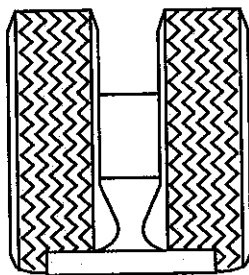


Duals
INCORRECT

One tire or a portion of one tire is supporting the full load.



Portion of the two tires supporting the full load.



Tires incorrectly supported, as shown above, may be damaged, which could lead to casing failure resulting in serious injury or property damage. If, on previous occasions, the tires have been incorrectly supported, a hidden damage may be present. Please contact your local Michelin dealer and request an inspection and determination of possible damage.



Truck Tire Operator's Manual and Limited Warranty,
Including Applicable Limited Warranty Coverage for Commercial Use,
for the Michelin® Long Haul Tires with Extended Warranty, and
for Limited Warranty Coverage for Consumer Use

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► MICHELIN® TRUCK TIRE LIMITED WARRANTY

ABOUT THIS WARRANTY

As the original purchaser of a Michelin® brand truck tire, you are covered by all the benefits and conditions (subject to the maintenance recommendations and safety warnings) contained in this booklet. To ensure your understanding of and compliance with the terms and conditions of this warranty, please read it carefully. It is essential that you also read and understand the safety and maintenance recommendations for your tires beginning on page 6.

WHAT IS COVERED AND FOR HOW LONG - COMMERCIAL USE

Workmanship and Materials

Except as limited below, Michelin® truck tires bearing the Michelin® name and complete serial and identification numbers, used in commercial service, according to the instructions contained in this Operator's Manual, are covered by this limited warranty against defects in workmanship and materials for the life of the original tread. At that time, all warranties, express or implied, expire.

Long Haul Tires with Extended Warranty

Certain Michelin® truck tires bearing the Michelin® name and complete serial and identification numbers, used only in long-haul service according to the instructions contained in this Operator's Manual, are covered by this limited warranty against defects in workmanship and materials for 700,000 miles, and up to 3 retreads for 7 years from the date of manufacture. At that time, all warranties, express or implied, expire. (See chart for list of tires covered by this extended warranty on page 4).

Casings covered under this Extended Warranty which become unserviceable due to a covered condition, will be replaced under Extended Warranty coverage only if:

- 1) The tires have been used in long haul highway service for the life of the casing.
- 2) The tires have been inspected and retreaded by a participating Michelin® dealer, in accordance with the retreading standards set by the American Retreader's Association, the National Tire

► MICHELIN® TRUCK TIRE LIMITED WARRANTY

Dealers/Retreader's Association, Michelin® Retread

Technologies, Inc. (MRTI), Bandag or Oliver Rubber Company, and in accordance with Michelin's specifications for the particular tire treads/sizes covered. (See retread specifications listed on page 5.)

- 3) The casings have not become unserviceable due to a condition listed under "WHAT IS NOT COVERED" (See page 3).

WHAT IS COVERED AND FOR HOW LONG - CONSUMER USE

Michelin® truck tires bearing the Michelin® name and complete serial and identification numbers, used in consumer service, such as on a motorhome, according to the instructions contained in this Operator's Manual, are covered by this limited warranty against defects in workmanship and materials for the life of the original tread, or five years from the date of purchase, whichever occurs first. At that time, all warranties, expressed or implied, expire.

Definitions

The life of the original usable tread is the original tread down to the level of the treadwear indicators - 2/32nds of an inch (1.6 mm) of tread remaining. Date of purchase is documented by new vehicle registration or tire sales invoice. If no proof of purchase is available, coverage will be based on the date of manufacture, as molded on the sidewall. The date of manufacture is based on the original Michelin DOT number molded on the tire sidewall. The mileage received will be based on fleet records. Replacement will be made in accordance with the terms and conditions described under "HOW REPLACEMENT CHARGES ARE CALCULATED."

► MICHELIN® TRUCK TIRE LIMITED WARRANTY

WHAT IS NOT COVERED

Tires/casings which become unserviceable due to:

- Road hazard injury (e.g., a cut, snag, bruise, impact damage or puncture);
- Incorrect mounting of the tire, tire/wheel imbalance, improper retread or improper repair;
- Misapplication, improper maintenance, racing, underinflation, overinflation or other abuse resulting in casing damage or fatigue;
- Accident, fire, chemical corrosion, contamination, tire alteration or vandalism;
- Flat spotting caused by improper storage;
- The addition of liquid, solid or gaseous materials other than air, nitrogen or carbon dioxide;
- Uses other than long haul service for any extended warranty casing claims;
- Uneven or rapid wear caused by mechanical irregularity in the vehicle such as wheel misalignment, resulting in damage to the under-tread, carcass or steel belts;
- Ozone or weather checking.

HOW REPLACEMENT CHARGES ARE CALCULATED - COMMERCIAL AND CONSUMER USE

Workmanship/Materials

A tire which becomes unserviceable due to a condition covered by this workmanship and materials limited warranty will be replaced with a comparable new Michelin® truck tire, for a pro rata charge.

The retailer will determine the charge by multiplying the percentage of the original usable tread worn by the current selling price at the adjustment location or the price on the current Michelin® Americas Truck Tires Base Price List, whichever is lower. This list is based on a predetermined price intended to fairly represent the actual selling price of the tire.

You pay the cost of mounting, balancing, and any other service charges and applicable taxes.

► MICHELIN® TRUCK TIRE LIMITED WARRANTY

Long Haul Tires with Extended Warranty

The following tire sizes are covered by the 700,000 mile/7 year/3 retread warranty:

Tread Design	Size	Load Range
XZA2	11R22.5	G, H
XZA2	11R24.5	G
XZA2	275/60R22.5	G, H
XZA2	275/60R24.5	G
XZA3	11R22.5	G, H
XZA3	11R24.5	G
XZA3	275/60R22.5	G, H
XZA3	275/60R24.5	G

Tread Design	Size	Load Range
XDA2	11R22.5	G
XDA2	11R24.5	G
XDA2	275/60R22.5	G
XDA2	275/60R24.5	G
XDA3	11R22.5	G
XDA3	11R24.5	G
XDA3	275/60R22.5	G
XDA3	275/60R24.5	G
XDA ENERGY	275/60R22.5	G

If your Long Haul tire becomes unserviceable due a condition covered by this warranty before providing 700,000 miles and 3 retreads of service, Michelin® will provide casing credit based on the following schedule:

Life of casing up to 7 years
Original Tread
First, second or third retread

Casing Credit
\$130.00
\$100.00

WHAT YOU MUST DO WHEN MAKING A CLAIM

When making a claim under the terms of this limited warranty you must present your tire/casing to a participating Michelin® truck tire retailer. You pay any service charges for normal vehicle and tire maintenance.

CONDITIONS AND EXCLUSIONS

Unless this limitation is prohibited by state law, this warranty does not provide compensation for loss of time, loss of use of vehicle, inconvenience or incidental or consequential damages.

Tires/casings presented for claim remain the property of the owner/consumer and Michelin® brand accepts no responsibility for loss of, or damage to, tires/casings, which are in the custody or control of a Michelin® truck tire retailer for the purpose of inspection for warranty adjustment.

Tires accepted for claim become the property of Michelin® North America, Inc. ("MNA").

► MICHELIN® TRUCK TIRE LIMITED WARRANTY

In the event of a disputed claim, the owner/consumer must make the tire available for further inspection.

No Michelin representative, employee or retailer has the authority to make or imply any representation, promise or agreement, which in any way varies the terms of this limited warranty.

This limited warranty applies only in the United States.

CONSUMER RIGHTS

This limited warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

SAFETY MAINTENANCE INFORMATION

Read your Tire Operator's Manual, the information on the sidewall of your tires, your vehicle owner's manual and vehicle tire information placard for essential safety and maintenance information.

When service is required:

1. Contact a participating Michelin® truck tire retailer listed in your yellow pages.
2. If additional assistance is needed in locating a Michelin® truck tire retailer, please call the phone number for your area which is listed on page 15 or write Consumer Relations at the address listed on page 15.

MICHELIN RETREAD SPECIFICATIONS FOR ALL SIZES OF EXTENDED WARRANTY TIRES*:

- Buff radius: 675 mm
- Buff rim width: 9.0"
- Buffing inflation pressure: 1.2 to 1.5 bar.
- Minimum undercut thickness: 0.5 mm.
- Maximum undercut thickness: 4.0 mm.
- Minimum pre-cure cap width: 219 mm.
- Maximum pre-cure cap width: 232 mm.

* This is the preferred specification

WARNING

Disregarding any of the safety precautions and instructions contained in this manual may result in tire failure or explosion causing serious personal injury or death.

DRIVING ON ANY TIRE THAT DOES NOT HAVE THE CORRECT INFLATION PRESSURE IS DANGEROUS

Any underinflated tire builds up excessive heat that may result in sudden tire destruction. For replacement tires, the correct inflation pressure will be provided by your tire retailer. If not, refer to the vehicle placard.

The placard indicates the minimum inflation pressures which must be maintained. However, do not exceed the maximum inflation pressure for the tire or for the wheel on which it is mounted.

CHECK THE COLD INFLATION PRESSURES IN ALL YOUR TIRES, INCLUDING THE SPARE, AT LEAST ONCE EACH WEEK

Failure to maintain correct inflation pressure may result in improper vehicle handling and may cause rapid and irregular tire wear, sudden tire destruction, loss of vehicle control and serious personal injury. Therefore, inflation pressures should be checked at least once each week and always prior to long distance trips.

Pressures should be checked when tires are cold; in other words, before they have been driven on. The ideal time to check tire pressures is early morning. Driving, even for a short distance, causes tires to heat up and air pressure to increase.

Never bleed air from hot tires. Bleeding air from hot tires could result in underinflation.

Use an accurate tire gauge to check pressures. Never allow children to inflate or deflate tires.

If your pressure check indicates that one of your tires has lost pressure of four pounds or more, look for signs of penetration,

valve leakage or wheel damage that may account for the air loss. Any tire suspected of having been run flat or run at very low air pressure (less than 80% of normal operating pressure) should not be re-inflated without careful inspection of the entire tire. Visit a Michelin® Truck Tire retailer.

► **INSPECT YOUR TIRES DAILY. IF YOU SEE ANY DAMAGE TO YOUR TIRES OR WHEELS, VISIT A MICHELIN® TRUCK TIRE DEALER AT ONCE.**

Hazards

Driving over potholes, curb, glass, metal, rocks, wood debris and the like, can damage a tire and should be safely avoided. Unavoidable contact with such hazards should prompt a thorough tire inspection.

If you see damage to your tires or wheels, replace with a spare and immediately visit any participating Michelin® Truck Tire retailer for advice.

Inspection

Always examine your tires for bulges, cracks, cuts, penetrations and abnormal tire wear, particularly on the edges of the tire tread, which may be caused by misalignment or underinflation. If any such damage is found, the tire must be inspected by any participating Michelin® Truck Tire retailer at once. Use of a damaged tire could result in sudden tire destruction and rapid air loss. Failure to control a vehicle when one or more tires experience a sudden air loss can lead to an accident.

All tires will wear out faster when subjected to high speeds as well as hard cornering, rapid starts, sudden stops, frequent driving on surfaces which are in poor condition, and off-road use. Surfaces with holes and rocks or other objects can damage tires and cause vehicle misalignment. When driving on such surfaces, drive carefully and slowly, and before driving again at normal or highway speeds, examine your tires for any damage, such as cuts, bulges, penetrations, unusual wear patterns, etc.

► **WEAR BARS**

Michelin® truck tires contain "Wear-Bars" in the grooves of the tire tread which show up when only 2/32nds of an inch (1.6 mm) of tread is remaining. At this stage, tires must be replaced.

Tires worn beyond this stage are dangerous.

(Federal law requires the tires on front axles of a Bus, Truck or Truck Tractor to have at least 4/32nds of an inch of tread depth remaining.)

► **HIGH SPEED DRIVING CAN BE DANGEROUS**

Correct inflation pressure is especially important. However, at high speeds, even with the correct inflation pressure, a road hazard, for example, is more difficult to avoid and if contact is made, has a greater chance of causing tire damage than at a lower speed. Moreover, driving at high speed reduces the reaction time available to avoid accidents and bring your vehicle to a safe stop.

If you see any damage to a tire or wheel, replace it with the spare at once and visit a participating Michelin® truck tire retailer.

The maximum speed at which Michelin truck tires can be operated is indicated in the Michelin® Truck Tire Data Book. This speed varies for each type of tire and depends on the type of application. Consult a Michelin® truck tire dealer for assistance in determining the maximum speed for your application.

Exceeding this maximum speed will cause the tire to build up excessive heat, which can cause tire damage that could result in sudden air loss and rapid tire destruction. Failure to control a vehicle when one or more tires experience a sudden air loss can lead to an accident, property damage, and personal injury.

In any case, you should not exceed reasonable speeds as indicated by the legal limits and driving conditions.

► **WHEEL ALIGNMENT, TRACKING, AND BALANCING ARE IMPORTANT FOR SAFETY AND MAXIMUM MILEAGE FROM YOUR TIRES**

CHECK HOW YOUR TIRES ARE WEARING AT LEAST ONCE EACH MONTH

If your tires are wearing unevenly, such as the inside shoulder of the tire wearing faster than the rest of the tread, your vehicle may be out of alignment. This condition not only shortens the life of your tires but also adversely affects the handling characteristics of your vehicle, which could be dangerous. If you detect irregular wear, have the alignment of the wheels and the parallelism of the axles checked immediately. Also check to see that your tires are properly inflated. Tires which have been run underinflated will show more wear on the shoulders than in the center of the tread. Tires which have been run overinflated will show more wear in the center of the tread than on the shoulders.

For optimum tire life and performance, the front end alignment on trucks equipped with Michelin® truck tires should be in accordance with the recommendations of the vehicle manufacturer.

It is recommended that you have your tires and wheels dynamically balanced. Tires and wheels which are not balanced may cause steering difficulties, a bumpy ride, and irregular tire wear.

► DO NOT OVERLOAD - DRIVING ON ANY OVERLOADED TIRE IS DANGEROUS

The maximum load rating marked on the tire sidewall of any truck tire is based on a specific maximum speed of operation. Consult a Michelin® Truck Tire Data Book for complete information on allowable loads for the tires in your application. Tires which are loaded beyond their maximum allowable loads for the particular application, will build up excessive heat that may cause sudden tire destruction, property damage, and personal injury.

In the case of dual mounted tires; if one of the tires is run under-inflated or flat then the other tire will become severely overloaded which could lead to a tire failure. "Limping in" is illegal and should never be attempted.

► TIRE MIXING

FOUR WHEEL TRUCKS: For best performance it is recommended that the same size and type of tire be used on all four-wheel positions. If only two Michelin radial truck tires are mounted with two non-radial tires, the radial tires should be mounted on the rear axle.

Before mixing different types of tires in any configuration on any vehicle, be sure to check the vehicle manufacturer's owner's manual for its recommendations.

It is especially important to check the vehicle manufacturer's owner's manual when mixing, matching or replacing tires on 4-wheel drive vehicles, as this may require special precautions.

TRUCKS WITH MORE THAN FOUR WHEEL

POSITIONS: For best performance, it is strongly recommended that radial and non-radial tires not be mixed in a dual fitment.

► TIRE ALTERATIONS

Do not make or allow to be made any alteration to your tires. Alterations may prevent proper performance, leading to tire damage which can result in an accident. Tires which become unserviceable due to alterations such as, but not limited to, truing, whitewall inlays, addition of balancing or sealant liquids or the use of tire dressings containing petroleum distillates, are excluded from warranty coverage.

► IMPROPERLY RETREADED AND/OR REPAIRED TIRES ARE DANGEROUS AND CAN CAUSE TIRE DESTRUCTION, PROPERTY DAMAGE, AND PERSONAL INJURY.

Retreading and repairing of Michelin® Truck Tires should be performed only by qualified personnel with proper equipment using the procedures contained in Michelin Retread and Repair manuals.

If any Michelin® tire sustains a puncture, have the tire demounted and thoroughly inspected by a participating Michelin® tire retailer for possible damage that may have occurred.

Plug-only repairs done on-the-wheel are considered improper and are therefore, not recommended. Such repairs are not reliable and may cause further damage to the tire and may result in tire failure.

► STORAGE

Tires contain waxes and emollients to protect their outer surfaces from ozone and weather checking. As the tire rolls and flexes, the waxes and emollients continually migrate to the surface, replenishing this protection throughout the normal use of the tire. Consequently, when tires sit outdoors, unused for long periods of time (a month or more) their surfaces become dry and more susceptible to ozone and weather checking, and the casing becomes susceptible to flat spotting. Serious problems occur with tube type tires when mounted with water trapped between the tire and the tube. Due to pressurization, the liquid can pass through the inner liner and into the casing plies. For these reasons, tires should always be stored in a cool, dry, clean indoor environment. If storage is for one month

or more, eliminate the weight from the tires by raising the vehicle or by removing the tires from the vehicle. Failure to store tires in accordance with these instructions could result in premature aging of the tires and sudden tire failure.

When tires are stored, be sure they are placed away from sources of heat and ozone, such as hot pipes and electric generators. Be sure the surfaces on which tires are stored are clean and free from grease, petroleum products or other substances which could deteriorate the rubber. (Tires exposed to these materials during storage or driving could be subject to sudden failure.)

► FOLLOW THESE MOUNTING RECOMMENDATIONS TO PREVENT TIRE DESTRUCTION, PROPERTY DAMAGE AND PERSONAL INJURY

Regulations and recommendations published by the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA) deal in detail with mounting and demounting of tires for trucks. You should ensure that you are always in compliance with these regulations and recommendations.

In addition, Michelin urges you to bear in mind the following considerations:

Tire changing can be dangerous and must be done by professionally trained persons using proper tools and procedures as specified by the Rubber Manufacturers Association (RMA).

Tires should be mounted on wheels of the correct size and type which are in good, clean condition. Bent, chipped or rusted wheels, rims or rim components may cause tire damage and can also malfunction causing an accident.

All rim components (i.e. flanges, lock rings, rim base, etc.) must match. Be sure to check rim/wheel manufacturer's specifications.

When changing any tire, always deflate the tire before loosening any wheel or rim lugs. Always install new valve cores with new mountings.

TUBES: Always fit a new Michelin® tube of the proper size in a new mounting. A tube through normal use will experience growth; therefore, if an old tube is re-used, there is a probability of creasing it with subsequent chafing and eventual failure of the

tube causing tire damage. Michelin tubes are made of butyl rubber and marked with the trade name "AIRSTOP®". Because of the extreme flexibility of the Michelin 'X'® tire, it is essential to use an "AIRSTOP®" tube. These tubes are made with an overlap splice which is stronger than the butt splice used in many other tubes. The use of other tubes, not designed for Michelin 'X' radial tires, could result in tube failure causing tire damage.

FLAPS: Always install a new Michelin® Flap when you install a new tire. A flap through extended use becomes hard and brittle. After a limited time it will develop a set to match the tire and rim in which it is fitted; therefore, it will not exactly match a new tire/rim combination.

LUBRICANT: Always use a proper lubricant when mounting tires. Use only a approved tire mounting lubricant. Never use anti-freeze, silicones or petroleum-based lubricants. Do not allow excess lubricant to run down and collect inside the tire.

SAFETY CAGE: Always use a safety cage when inflating a track tire. Ensure that the safety cage is large enough to accommodate wide base tires when inflating X One® tires.

Never stand over the tire or in front of the valve when inflating. Use an inline gauge and stand to the side. Before final inflation, check the assembly carefully for signs of weakness or irregularities.

VALVE CAPS: It is essential that all valves be fitted with pressure-sealing metal valve caps, which are the PRIMARY seal of the valve, to avoid leaks. After mounting, check the assemblies for leaks. When wheel assemblies are mounted on a vehicle, be sure that the valves do not touch the brake drums or any mechanical part of the vehicle.

DUAL MOUNTING: Tires mounted in duals must be matched so that the maximum difference between the diameters of the tires does not exceed 1/4 inch. Failure to properly match dual tires will result in the tire with the larger diameter carrying a disproportionate share of the load which can cause sudden tire destruction, property damage, and personal injury.

Proper dual spacing must be provided to prevent the tires from rubbing together and to allow for the flow of cooling air. Consult the Michelin® Truck Tire Data Book or visit a

Michelin® Truck Tire retailer for information on the minimum dual spacing required for a particular tire/wheel fitment.

► PREPARATION OF WHEELS AND RIMS

Prior to fitment, wheel assemblies should be thoroughly inspected for cracks, warpage, deformation of flanges, side rings, lock rings, etc. The condition of the stud holes on wheels should also be checked. If any of these conditions are discovered, the rim/wheel should be discarded. All burns, welds, hammer dents, etc., that are present on the tire side of the rim must be made smooth with a file and/or emery cloth. Remove rust with a wire brush and apply a rust inhibiting paint. Make sure the tires are being mounted on the correct wheel size and type. The wheels, rims and rim components should be in good condition and clean.

X ONE® TIRE SPECIFIC INFORMATION

All drivers of vehicles equipped with X One® Tires should be aware of the following :

Pressure Maintenance

Drivers have commented that an under-inflated X One® tire is more likely to be detected with a simple visual inspection than duals. However, pressure is difficult to gauge visually even for the most experienced driver. Drivers should always use a properly calibrated gauge when verifying the air pressure of an X One tire and should not rely on the aspect of the tire. If the tire is 20% below the recommended air pressure, it must be considered flat, removed and inspected for punctures or other damage. Failure to do so may cause tire failure.

Vehicle Handling

Drivers have commented that the wide, stable footprint of the X One tire can provide the feel of a much more stable truck

compared to traditional dual tires. However, while most X One fitments allow the track of the tractor and trailer to be widened, the vehicle's behavior in curves (on ramps or off ramps) is still subject to roll-over at excessive speeds. Drivers should not let the outstanding handling of the X One tire give them a false sense of stability in curves. Drivers should always respect all posted speed limits regardless of tire fitment. Failure to do so may cause vehicle to tip.

Rapid Air Loss Techniques:

Extensive testing has shown that a rapid air loss on an X One tire will not compromise the stability and behavior of the vehicle. However, with one tire on each axle end, the loss of air pressure will allow the wheel and axle end to drop and possibly contact the road surface. To avoid additional damage to the tire, wheel and axle due to tire/wheel lock-up and brake drag, Drivers should be encouraged to decelerate gradually through down shifting, use of trailer brake (when appropriate) or by pumping the brakes during the initial phase of deceleration to allow some

rotation of the assembly. Failure to do so may cause irreparable damage to the tire, wheel, axle components and vehicle.

FAILURE TO OBSERVE ANY OF THE
RECOMMENDED PRECAUTIONS
CONTAINED IN THIS OWNER'S MANUAL
CAN LEAD TO ERRATIC VEHICLE
BEHAVIOR AND/OR TIRE DAMAGE
POSSIBLY RESULTING IN
AN ACCIDENT.

Any time you see damage to your tires or wheels, contact your local participating Michelin® truck tire retailer listed in the yellow pages at once. If further assistance is required, contact:

In the United States 1-888-622-2306

Or Write: Consumer Relations
P.O. Box 19001
Greenville, SC 29602-9001

NOTES

NOTES

REMEMBER . . . TO AVOID DAMAGE TO YOUR TIRES AND POSSIBLE ACCIDENT:

- Check tire pressures at least once each week when tires are cold;
- Maintain the proper pressure in the tires for the load being carried;
- Do not underinflate;
- Do not overload;
- Do not overinflate;
- Drive at moderate speeds, observe legal speed limits;
- Avoid driving over potholes, obstacles, curbs or edges of pavement;
- If you see any damage to a tire, replace with a spare and visit any Michelin® Truck Tire Dealer at once;
- If you have any questions, contact your Michelin® Truck Tire Dealer



MICHELIN NORTH AMERICA • P.O. BOX 19001, GREENVILLE, SOUTH CAROLINA 29602-9001

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AN EQUAL OPPORTUNITY EMPLOYER

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