



## OWNER'S MANUAL

# 10' & 12' *Versa-Max*



Featuring FLOE's exclusive  Versa-Track System™

# Congratulations!



Dear Customer,

We appreciate your business and hope you are proud of your new Floe aluminum trailer – a pride that will continue throughout the years. If you shopped trailers before deciding on the Floe, you probably concluded that our trailer has numerous features not commonly found on others.

At FLOE INTERNATIONAL, we take great pride in providing the highest quality trailer, with the latest state-of-the-art features, at an affordable price. Each year we implement improvements to our product lines to ensure that we are on the “leading edge” and providing the best available trailer.

We are confident your Floe trailer will provide you with years of trouble free trailering, and that if you decide to buy another trailer, it is because you want another Floe model.

Please take the time to read and understand this owner’s manual before towing your new trailer. The information offered here will have a direct impact on your safety, the safety of others, and the dependability of your trailer.

Thank you for choosing Floe.

Sincerely,

A handwritten signature in black ink that reads "Wayne Floe". The signature is fluid and cursive, with a long, sweeping underline.

Wayne Floe  
CEO, Floe International

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# **Important** **Safety Information**

## **READ THIS INFORMATION BEFORE USING TRAILER!**

**It is the owner's/operator's responsibility to check the following items each time before towing trailer:**

- Wheel bearings are properly tightened and oiled.
- Tires are inflated to correct pressure.
- Lug nuts on each wheel are tight.
- Trailer is level with tow vehicle and load is positioned to apply equal weight to all tires.
- Bed locking system (tilt clamp) is properly secured.
- Ensure safety chains cross each other and open end of "S" hook faces the trailer.
- Ensure any cables are secure.
- Trailer coupler is properly adjusted and securely attached to the hitch ball.
- If equipped, brake system is working properly and breakaway cable is securely attached.
- Trailer electrical connector is properly connected and all lights are operating correctly.
- Load is secure. Monitor load at regular intervals once underway.
- Trailer capacity and tongue weight are not exceeded.
- The width of the trailer in proportion to your vehicle. Take mental note if trailer width exceeds that of your towing vehicle and drive accordingly.
- No structural damage to trailer exists. Do not use if damaged.

**----- IMPORTANT -----**  
**Whether you are using your trailer for hauling snowmobiles, ATVs or other items, it is important that you take simple safety precautions every time you use your trailer.**



### **WARNING**



**Failure to follow this manual's instructions may result in damage to your trailer or vehicle, and could cause severe or fatal injury to you or others.**

## **Reporting Safety Defects**

If you believe that your trailer has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying FLOE INTERNATIONAL, INC. at 1-800-336-6337.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or FLOE INTERNATIONAL, INC.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to: NHTSA, US Department of Transportation, 1200 New Jersey SE, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

## Procedure for

# Vortex Hub/Spindle

Simple is best when it comes to Wheel bearing lubrication. Tie Down has adapted the best features of grease and oil lubrication to develop the Vortex hub. The Vortex hub bearing lubrication system provides long term continuous bearing lubrication and ease of service or inspection. Your trailer is equipped with Vortex hubs/spindles from Tie Down Engineering. The hubs are pre-grease and assembled at the factory and should not require any additional adjustments, The Vortex hub uses tapered roller bearings adjusted to a maximum .006 end play. The twelve sided castle nut easily maintains this maximum .006 end play. The configuration requires a minimal amount of end-play that is factored in at the time of assembly.



### Vortex Features:

- Stainless steel wear sleeve on factory assembled spindle/hub units
- Vortex internal through the spindle lubrication system
- Super strong threaded removable grease cap
- Premium grade Lucas Oil Marine grease (100,000 miles)

## WHAT MAKES THE VORTEX THE BEST

The rear seal rides on a stainless steel wear sleeve. This provides longer life for the seal as the surface does not corrode. Corroded or rusted seal surfaces act like sandpaper on the seal causing premature failure. Vortex lubrication makes changing or adding grease easy with no need to remove the hub. The threaded grease cap is easy to remove and replace. No more knocking the cap off with a hammer. Lucas Oil Marine grease is a premium lithium based complex fortified with rust and oxidation inhibitors, high pressure additives and provides a high degree of moisture resistance and washout properties. These features allow Tie Down Engineering to offer a 6 year, 100,000 mile limited warranty. See separate warranty sheet for details.

The Vortex hub/spindle is designed to be a no maintenance hub for 6 years. If you should need to add grease or remove the hubs for any reason, follow the instructions listed in this owner's manual.

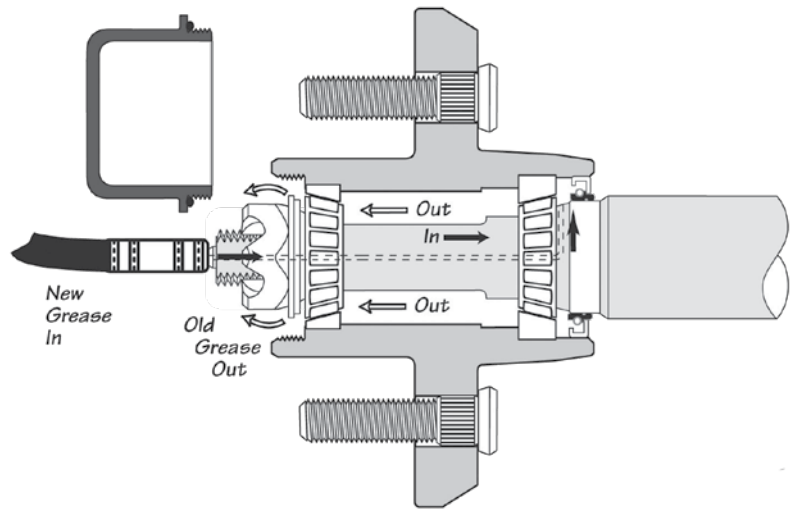
**TO MAINTAIN THE FACTORY WARRANTY, LUCAS OIL MARINE GREASE MUST BE USED WHEN ADDING OR REPLACING GREASE IN THE VORTEX HUB.**

## ADDING OR CHANGING GREASE IN YOUR VORTEX HUB

Your Vortex hub/spindle is equipped with the Vortex Lubrication System. Should the hub/bearings require additional lubrication for any reason, the Vortex lubrication system allows you to do so without removing the hub or having to re-adjust the bearings. New Lucas Oil Marine grease is pumped into the zerc fitting at the end of the spindle, travels to the rear bearing where the new grease pushes out the old grease through the rear bearing, center of hub and through the front bearing.

1. Remove the Vortex grease cap, un-screwing in a counter clockwise rotation.
2. Use a standard grease gun loaded with Lucas Oil marine grease to pump grease into the zerc fitting located on the end of the spindle.

3. Pump the Lucas Oil Marine grease into the zerc fitting while slowly rotating the wheel. Grease will flow out of the hub around the front bearing.
4. When the grease appears to be the new clean grease, remove the grease gun.
5. Replace the Vortex grease cap. Turn in a clock-wise rotation until the o-ring on the cap is in contact with the hub surface. Turn an additional 1/4 turn to seal the Vortex cap to the hub. (This is similar to installing an oil filter in an automobile)



## REMOVING/REMOUNTING FOR THE VORTEX HUB

Removing the Vortex hub for inspection or maintenance should be done in a safe location away from moving vehicles.

1. Elevate the trailer on level ground using the manufacturers instructions. Always use jack stands or other solid supports. Do not rely on a jack to support the trailer. Block wheels to keep the trailer from rolling.
2. Remove the tire/wheel assembly.
3. Place a newspaper or cloth on the ground under the hub to keep any parts from falling onto a dirty surface.
4. Remove the Vortex grease cap by un-screwing in a counter clockwise rotation.
5. Remove the cotter pin, castle nut (in a counter clockwise rotation) and washer.
6. Remove the hub from the spindle. If you have disc brakes, you will need to remove the brake caliper to remove the rotor. Follow separate instructions for disc brake rotor removal.
7. Be careful not to allow the bearings to fall out of the hub.
8. Clean bearing and cup surfaces.
9. To re-install, coat bearings with Lucas Oil Marine grease before re-installing.
10. Install bearings and place hub on spindle in reverse order as listed above. Rotate the hub while applying approximately 50 ft lbs of torque to the spindle nut. This translates into a full hand pressure load with a 12" long wrench. This "seats" the bearings.
11. Loosen the spindle nut to remove the torque applied. **DO NOT ROTATE THE HUB.**
12. Tighten the spindle nut until snug, backing off only enough to line up the cotter pin with the hole in the spindle.
13. Bend the cotter pin into place.
14. **LOAD HUB WITH LUCAS OIL MARINE GREASE USING THE INSTRUCTIONS FOR ADDING OR CHANGING GREASE.**
15. Replace the Vortex grease cap. Turn in a clock-wise rotation until the o-ring on the cap in contact with the hub surface. Turn an additional 1/4 turn to seal the Vortex cap to the hub. (This is similar to installing an oil filter in an automobile)
16. Replace tire/wheel, torque lug nuts according to wheel manufacturers instructions.
17. Test hub for proper end play by grabbing the tire and pulling the tire from side to side. Readjust if necessary.
18. **VERY IMPORTANT: RE-CHECK LUG NUTS AFTER 25 MILES OF USE.**

# Procedure for Axle Assembly

1. Place teflon insulators on the axle beam mount and line up holes.

Some trailers will have two sets of holes with the front set as the standard location. The rear set can be used to add tongue weight.

2. Set axle(s) on top of Teflon insulators so trailing arm taper is to the rear of trailer. Start each of the four bolts but do not snug up yet. See Fig. 1 and Fig. 2

3. Pick a point on the outer edge of the axle(s) that can be easily measured to on both sides. Measure from the center of the coupler to these points (fig. 3). Adjust axles so these two measurements are equal to within 1/16". If mounting more than one axle, start with the rear and work forward.

4. Tighten all four bolts to 75 ft/lbs. Recheck alignment.

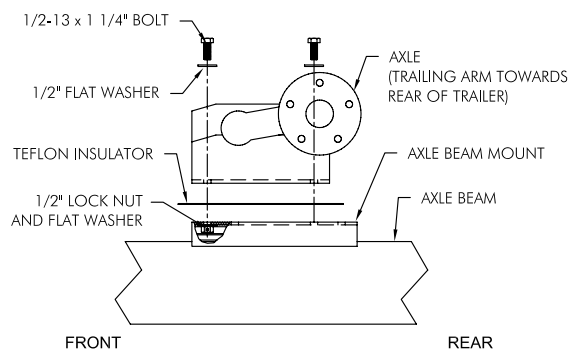


Fig. 2  
(Shown Upside Down)

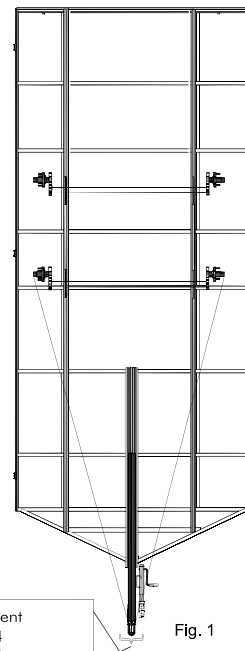


Fig. 1

IMPORTANT: For proper alignment these two measurements from #4 must be within a 1/16" of each other.



## WARNING



**Multi axle trailers must be level when towing. Failure to do so will result in excessive tire wear and reduced braking power.**



# Using your FLOE trailer

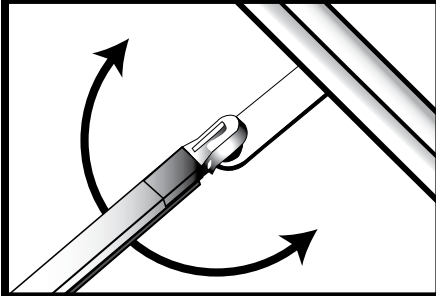
## Hitch Selection

When selecting a hitch, there are four important things to keep in mind:

- **Ball size** -- All FLOE tilt trailers use 2" couplers.
- **Load capacity** -- Load should never exceed the load capacity of your hitch.
- **In-set or out-set hitch** -- FLOE recommends an out-set or receiver-type hitch (See below).
- **Hitch Height** -- Hitch should be set so the trailer is level.

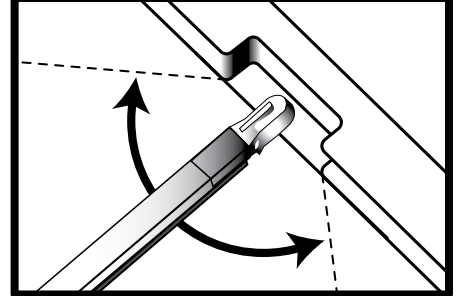
**----- IMPORTANT -----**  
**Pulling a trailer that is not level could greatly affect the trailer's performance and create an uncomfortable and dangerous situation while towing. It could also create excessive or negative tongue weight which can cause either tongue or axle damage.**

**Out-set Hitch (Recommended)**



These illustrations show that a trailer's turning radius is significantly reduced when towed by vehicles equipped with an "in-set" hitch. To reduce the risk of damage, we recommend the use of an "out-set" or "receiver-type" hitch.

**In-set Hitch (NOT Recommended)**



### WARNING



When connecting your trailer to the towing vehicle, it is important that your hitch coupler is adjusted with the correct amount of force for both smooth and safe trailer performance. A loose connection may cause the coupler to disconnect or to rattle. An over-tight coupler will make it difficult to connect and disconnect. This can also transmit unnecessary vibration to your towing vehicle.



### CAUTION



When turning or backing up, the towing vehicle operator must exercise good judgement. The manufacturer will not be responsible for damage from "jackknifing". Jackknifing is damage that results from the tongue or trailer coming in contact with towing vehicle!

## Using your FLOE trailer

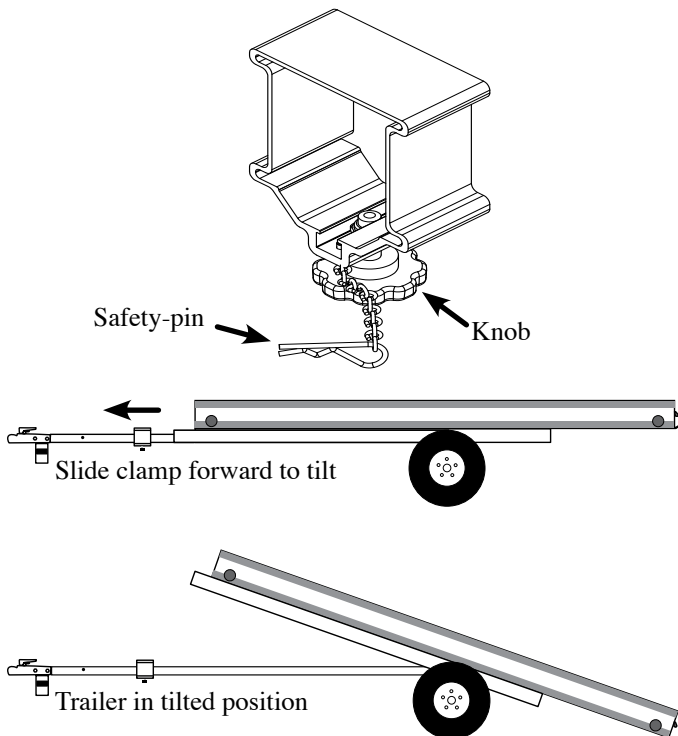
# Hitch Coupler Adjustment

All FLOE models have a lever lock hitch coupler. On the lever lock coupler, the amount of locking force can be adjusted to the diameter of the hitch ball. To change the amount of locking force against the hitch ball:

1. Release the hitch coupler locking lever (to its straight up position).
2. Locate the adjustment nut on the bottom of the hitch coupler.
3. Rotate the nut on the threaded shaft counter clockwise to decrease tightness, or clockwise to increase tightness.
4. Re-mount the trailer coupler on the hitch ball.
5. Push down the hitch coupler locking lever to its original locking position.
6. Repeat steps 1 through 5 until a snug fit is obtained. (If you are unfamiliar with how tight to adjust your coupler, consult your FLOE dealer.)

## Using your FLOE trailer

# Tilt Clamp



**Note:** If your trailer does not stay in the tilted position:

1. The tongue mounting bolt may not be tightened to optimal tension.
2. A tilt-assist shock assembly is available as an accessory for your FLOE tilt trailer. See page 18.



## WARNING



**Failure to tighten tilt clamp and secure safety pin before towing trailer could cause the trailer to tilt while in transit.**

The Floe tilt clamp eliminates the hassle and rattle of a hitch pin design. To tilt, simply loosen T-bolt, remove the safety cotter pin, and slide clamp forward. Slide back on, replace cotter pin, and tighten when finished loading or unloading.

1. Loosen Knob on underside of tilt clamp.
2. Remove safety cotter pin.
3. Slide clamp forward.
4. To tilt trailer bed, either lift up on front of trailer, or push down on rear of trailer.
5. Load trailer (see "Proper Loading and Unloading" on page 7)
6. Tilt trailer back to horizontal position by lifting up on rear of trailer, or pushing down on front of trailer.
7. Slide tilt clamp back to original position, replace cotter pin and tighten Knob.
8. Secure your load before towing. (see pages 7-9)

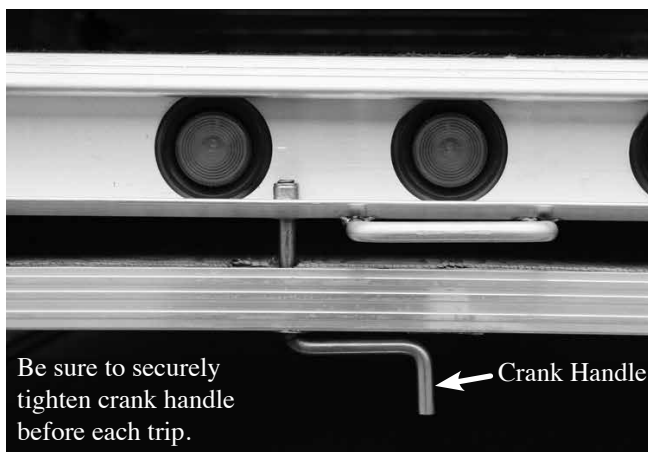
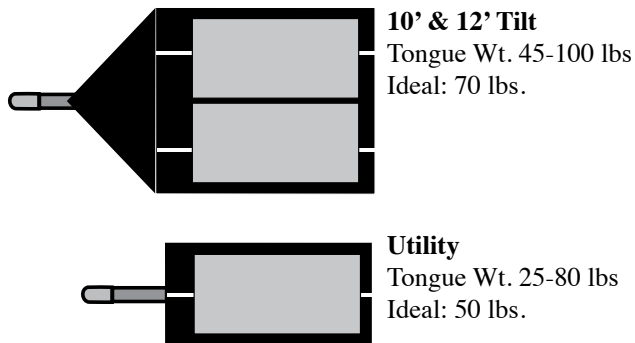


# Using your FLOE trailer

## Proper Loading & Unloading

Loads should be placed on the trailer so that proper weight is applied to the tongue. Increase or decrease the tongue weight by moving the load forward or backward. When possible, loads should also be placed to distribute equal weight to all tires to prevent poor towing, axle damage, and unequal or premature tire wear. See the diagrams below for suggested load placement and tongue weight. Unlike many trailers, the advanced design of your FLOE trailer requires very little tongue weight in order to minimize sway and to track smoothly behind your tow vehicle.

The illustrations below are for typical placement of snowmobiles. Use this information and common sense for placing other loads as well. Tongue weights are not strict maximums or minimums, they are recommended ranges that work well for the illustrated loads.



**CAUTION**

**Failure to follow the steps below when loading or unloading could result in damage to your trailer, tow vehicle, snowmobile, and/or cause possible severe or fatal injury to yourself and others.**

1. Never load or unload your trailer unless it is properly connected to your tow vehicle.
2. It is imperative that your tow vehicle and trailer are parked on level, even ground. Loading while parked on an incline or uneven ground could cause your trailer bumper to be at an improper angle. This could catch your ski and cause damage to your trailer, snowmobile and/or cause severe or fatal injury.
3. Never load at speeds greater than 5 mph.
4. Ensure the trailer is fully tilted and that it will stay in the tilted position until you have driven on to it.
5. After loading, make sure the tilt clamp is secure and will not work itself loose while being towed. Make sure the safety pin is attached.
6. Always test your footing before walking on the trailer's deck. It may get very slippery in cold, wet and snowy weather.

## Using your FLOE trailer

### Securing Ramp

Be sure that you tighten the crank handle firmly in place each time you travel and each time the ramp is put into its storage position.

**WARNING**

**Failure to firmly secure the ramp by tightening the crank handle may result in the trailer ramp becoming loose and falling out.**

## Securing The Load

----- **IMPORTANT** -----  
Although your FLOE trailer is equipped with certain load securing features, it is the responsibility of the operator to decide what is necessary to properly secure the load for the travel conditions.



### WARNING

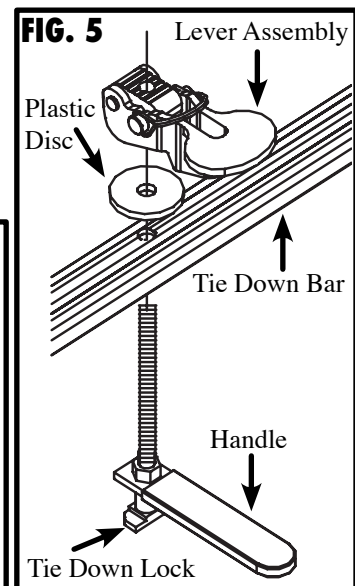
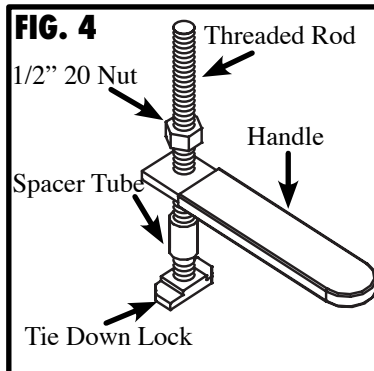


Failure to read the Versa-Lock use instructions prior to using it could result in severe damage to the cargo it is meant to hold, cause a road hazard, or even death.

### VERSA-LOCK ASSEMBLY INSTRUCTIONS

1. Slide spacer tube and handle over threaded rod. Thread 1/2" nut down to handle and tighten so handle is perpendicular (90°) to tie down lock. Torque to 60 ft. lbs. See Fig. 4
2. Insert threaded rod through tie down bar from the bottom. The tie down lock and handle assembly should be on the bottom (flat) side of bar. Slide the plastic disc over rod. Apply a liberal amount of anti-seize lubricant onto the threaded rod. Screw the lever assembly onto the rod until 1" of thread is sticking out the top of lever assembly. See Fig. 5.
3. Before using the Versa-Lock to secure a load, read and understand the instructions on how to use it.

---- **IMPORTANT** ----  
**Anti-seize lubricant MUST be applied on the threaded rod of the Versa-Lock when assembling for the first time and annually or as needed to provide peak performance.**



### VERSA-LOCK USE INSTRUCTIONS

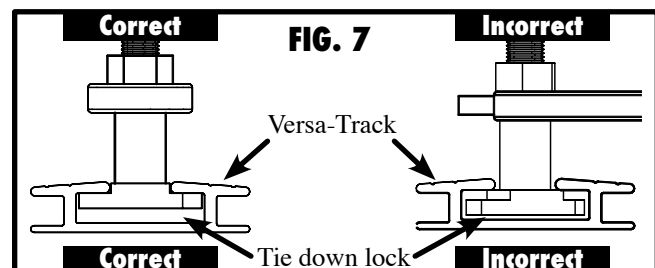
1. With the snowmobile loaded on the trailer, place the tie-down bar on the skis, insert the tie-down lock into the Versa-Track™ on the trailer and turn handle 90°. See Fig. 6. The handle should be parallel (in line) with Versa-Track and directly below the lever assembly. Ensure tie-down lock is properly seated as shown in Fig. 7, by lifting handle and moving from side to side until lock is completely square across track.



Insert tie down lock and turn 90°

FIG. 6

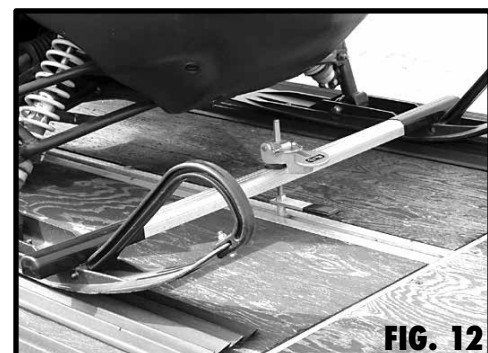
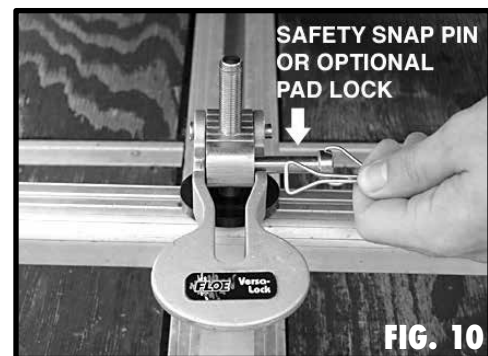
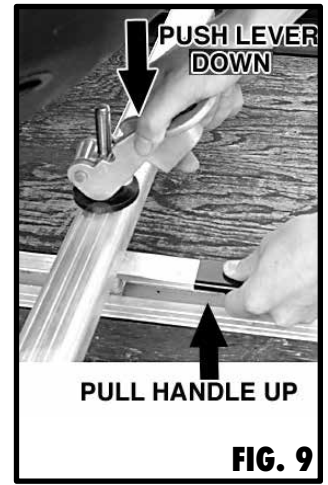
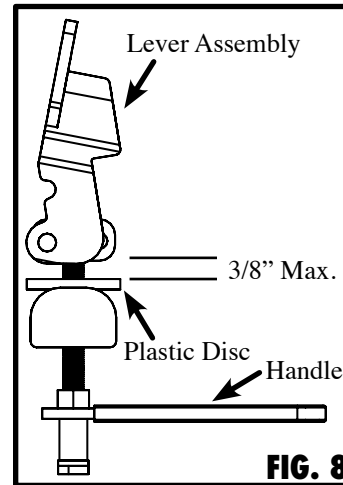
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# Securing The Load

## CONTINUED FROM PREVIOUS PAGE

2. Crank the lever assembly down until it is a maximum of 3/8" from the plastic disc when the tie-down bar is sitting on the skis. See Fig. 8.
3. To clamp tie down bar in place, pull up on handle and move side to side to make sure tie down lock is seated properly in Versa-Track. See Fig. 7. Use your other hand to push down on lever assembly while still pulling up on handle. Pulling the handle up keeps the tie-down assembly in vertical position and allows it to clamp down much easier. See Fig. 9. If more or less holding pressure is desired, simply lift lever up and turn clockwise to tighten or counter clockwise to loosen.
4. With the Versa-Lock in the clamped position, insert the safety snap pin to hold the lever assembly down. See Fig. 10. A padlock (not included) may be used instead of the snap pin for added security. Failure to insert the safety snap pin or padlock will result in the load becoming unsecured.
5. A recommended Quick Loop and strap for rear tie-down is shown in Fig. 11. Fig 12 shows a properly installed Versa-Lock with tie-down bar. Note: If the Versa-Lock is used on a different snowmobile, it may need to be adjusted up or down for varying ski heights.



## CAUTION



**As with any tie-down system, the ultimate responsibility for ensuring that the load is adequately secured lies with the driver. At a minimum, FLOE recommends the use of a properly tensioned tie-down bar and a means to secure the rear of the snowmobile (as shown in Figs. 11 & 12). You may choose to do more or less, based on road conditions and your specific situation. Always use discretion when determining load-securing measures, and periodically check your load to ensure security is maintained.**

## Safety

# Securing The Load

### QUICK-LOOP™ INSTALLATION

Lubricate the threads of the bolt with Anti-seize. Insert the Quick Loop assembly into the Versa-Track. Rotate the cam until the insert catches in the Versa-Track. While pulling up on the Quick Loop, tighten until insert stays engaged with slot. Slide the Quick Loop to the desired location and finish tightening the bolt. Quick Loops should be installed so that the pull is as close to perpendicular as possible.



## Safety

# Trailer Lighting System

Special emphasis has been placed on the design of your FLOE trailer's lighting and wiring system to ensure that it is long-lasting and maintenance-free. FLOE uses high quality lights that are commonly found on commercial over-the-road trailers.

### SIDE MARKER LIGHTS (Amber and Red)

- Shock-mounted (on replaceable rubber grommets)
- Waterproof sealed units (for longer life)
- Easy to replace
- Small enough to carry spares

### REAR TAIL/BRAKE/TURN SIGNAL LIGHTS

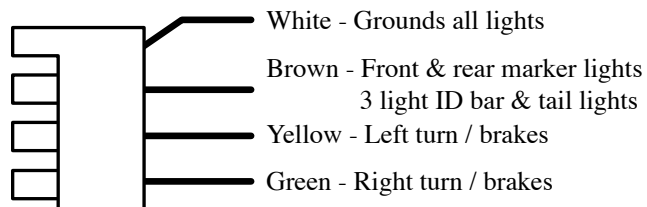
- Standard size
- Easy to replace and to carry spares

### REAR ID MARKER LIGHTS, FRONT/REAR CLEARANCE LIGHTS

- Standard size
- Easy to replace and to carry spares

### TONGUE CONNECTOR AND HARNESS

- Electrical connector has a molded harness for long lasting durability. Your trailer is equipped with a plug-in receptacle to keep the electrical connector protected when not in use.
- Tongue portion of wiring harness can be replaced without having to splice or replace the remaining wiring harness.
- Wire harness is run through the trailer frame to keep it protected from the elements.
- To ensure trouble-free use, periodically inspect all connections for tight, corrosion-free contact and apply an electrical grease as necessary to prevent future corrosion.

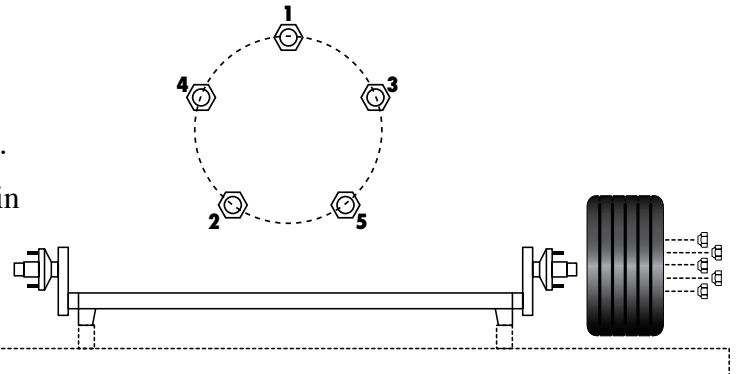


The wiring diagram provides the information needed for wiring the towing vehicle harness/connector. It is important that the proper connections be made and that the system is tested before using your trailer.

# Changing Tires

## CHANGING TIRES

1. Start all lug nuts by hand to prevent cross-threading and to ensure proper nut-to-rim seal.
2. Tighten bolts in the sequence detailed below in stages, first tighten to 25 ft./lbs. then 60 ft./lbs. and finally 80 ft./lbs.
3. Inflate tires to proper PSI as noted on the sidewall of the tire.



# Care & Maintenance

### ----- IMPORTANT -----

**It is very important to read and follow these maintenance procedures to help avoid trailer failure. Any trailer failure resulting from improper maintenance may void your warranty.**

COMPONENT	CARE & MAINTENANCE	AVOID
Wheel Hubs	a) Adjust wheel bearings within the first 100 miles and every 2,000 miles, or annually thereafter, whichever comes first. (Inspect bearings, seals, and races - replace if worn.) To check for wear, jack up the trailer and pull on each wheel to see if there is any in and out play or "slop." The Turbo-Lube oil bath system eliminates the need for greasing or packing the bearings.	a) Getting sand in hubs or bearings. b) Neglecting to check the oil levels in the hubs' transparent caps. c) Exceeding 40,000 miles without changing the oil in the hubs.
Axle	a) Powder Coated - clear road salt off after using trailer to prolong life of axle.	
Tires	a) Keep tires properly inflated. b) Inspect periodically. (Replace when necessary)	a) Leaving loaded for long periods a) Driving with worn tires.
Aluminum Surfaces	a) Rinse periodically with water, particularly if driven on "salted" roadways. b) Remove grease, oil and dirt by scrubbing with soft bristle brush and mild detergent. Rinse with clean water.	a) Harsh, abrasive cleaners. b) Bolting or hard-mounting dissimilar metals to aluminum surfaces.
Decking Surface	a) Rinse periodically to remove surface dirt especially when driving on "salted" roadways.	a) Using harsh chemicals or solvents
Electrical System Connector	a) Periodically check for build-up of oxidation or corrosion and clean when necessary. Use electrical grease in all wire and bulb connections to help prevent corrosion.	

### ----- NOTE -----

**The aluminum structure of your trailer is lightweight, super strong, and never needs painting. This structure contains corrosion-resistant alloys that are specially tempered and heat-treated for added strength and durability.**

## Tire Safety

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires.

This booklet presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires
- Tire safety tips.

### BASIC TIRE MAINTENANCE

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

### UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure—measured in pounds per square inch (psi)—a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kPa), which is the metric measure used internationally.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)



### WARNING



**Lug nuts must be re-torqued after the first 100 miles. Use spec chart below for proper ft/lbs.**

#### VERSA MAX LUG NUT TORQUE SPECIFICATIONS

Steel Rims	Aluminum Rims
50-75 ft/lbs	90-120 ft/lbs

#### ----- NOTE -----

**Use the following information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.**

# **Safety**

# **Tire Safety**

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the “maximum permissible inflation pressure” on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

## **CHECKING TIRE PRESSURE**

It is important to check your vehicle’s tire pressure at least once a month for the following reasons:

- \* Most tires may naturally lose air over time.
- \* Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- \* With radial tires, it is usually not possible to determine underinflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

## **MAINTAINING PROPER TIRE PRESSURE**

- \* Step 1: Locate the recommended tire pressure on the vehicle’s tire information placard, certification label, or in the owner’s manual.
- \* Step 2: Record the tire pressure of all tires.
- \* Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
- \* Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These “missing” pounds of pressure are what you will need to add.
- \* Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated.
- \* Step 6: Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle’s tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer’s recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don’t forget to recheck and adjust the tire’s pressure when you can obtain a cold reading.

## **LUG NUTS ON NEW WHEELS MUST BE RE-TORQUED AFTER THE FIRST 50 TO 100 DRIVING MILES**

**THIS SHOULD BE DONE AS CLAMPING LOADS CAN CHANGE FOLLOWING THE INITIAL INSTALLATION DUE TO THE METAL COMPRESSION/ELONGATION OR THERMAL STRESSES AFFECTING THE WHEELS AS THEY ARE BREAKING IN, AS WELL AS TO VERIFY THE ACCURACY OF THE ORIGINAL INSTALLATION.**



# Tire Safety

## TIRE SIZE

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

## TIRE TREAD

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

## TIRE BALANCE AND WHEEL ALIGNMENT

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires and prevents your car from veering to the right or left when driving on a straight, level road. These adjustments require special equipment and should be performed by a qualified technician.

## TIRE REPAIR

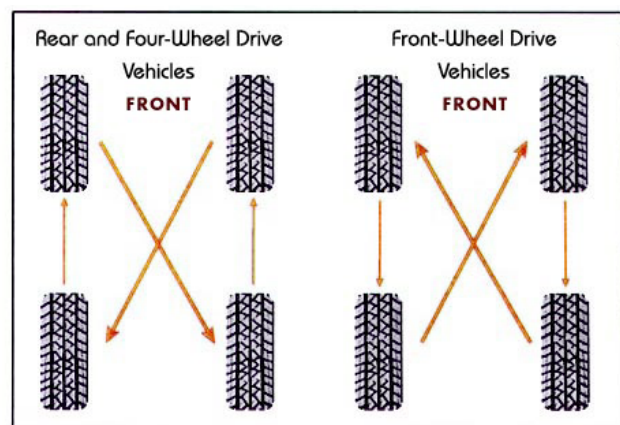
The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

## TIRE ROTATION

Rotating tires from front to back and from side to side can reduce irregular wear (for vehicles that have tires that are all the same size). Look in your owner's manual for information on how frequently the tires on your vehicle should be rotated and the best pattern for rotation.

### A Tire Rotation Example

**For maximum mileage, rotate your tires every 5,000 miles. Follow correct rotation patterns.**



# Tire Safety

## UNIFORM TIRE QUALITY GRADING SYSTEM (UTQGS)

To help consumers compare a passenger car tire's treadwear rate, traction performance, and temperature resistance, the federal government requires tire manufacturers to grade tires in these three areas. This grading system, known as the Uniform Tire Quality Grading System, provides guidelines for making relative comparisons when purchasing new tires. You also can use this information to inquire about the quality of tires placed on new vehicles.

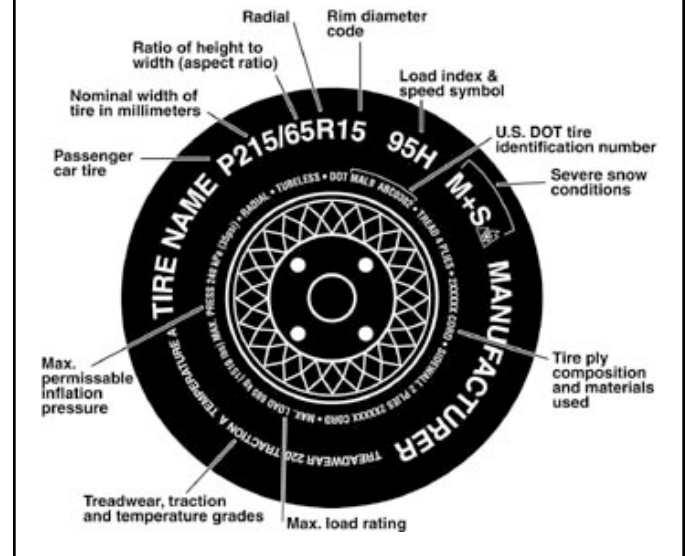
Although this rating system is very helpful when buying new tires, it is not a safety rating or guarantee of how well a tire will perform or how long it will last. Other factors such as personal driving style, type of car, quality of the roads, and tire maintenance habits have a significant influence on your tire's performance and longevity.

Treadwear grades are an indication of a tire's relative wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire grade of 400 should wear twice as long as a tire grade of 200.

Traction grades are an indication of a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA", "A", "B", and "C".

Temperature grades are an indication of a tire's resistance to heat. Sustained high temperature (for example, driving long distances in hot weather), can cause a tire to deteriorate, leading to blowouts and tread separation. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

### Information on Passenger Vehicle Tires Please refer to the diagram below.



## TIRE FUNDAMENTALS

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

### P

The "P" indicates the tire is for passenger vehicles.

### NEXT NUMBER

This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

## Tire Safety

### NEXT NUMBER

This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

### R

The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

### NEXT NUMBER

This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

### NEXT NUMBER

This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: You may not find this information on all tires because it is not required by law.

### M+S

The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

### SPEED RATING

The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below. Note: You may not find this information on all tires because it is not required by law.

#### SPEED

Q	99 mph	H	130 mph
R	106 mph	V	149 mph
S	112 mph	W	168* mph
T	118 mph	Y	186* mph
U	124 mph		

*\* For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.*

### U.S. DOT TIRE IDENTIFICATION NUMBER

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

# **Safety**

# **Tire Safety**

## **TIRE PLY COMPOSITION AND MATERIALS USED**

The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

## **MAXIMUM LOAD RATING**

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

## **MAXIMUM PERMISSIBLE INFLATION PRESSURE**

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

## **UTQGS INFORMATION**

### **TREADWEAR NUMBER**

This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

### **TRACTION LETTER**

This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA", "A", "B", and "C".

### **TEMPERATURE LETTER**

This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, underinflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

# Tire Safety

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6.

Section 2.1 contains "Steps for Determining Correct Load Limit - Trailer".

Section 2.2 contains "Steps for Determining Correct Load Limit – Tow Vehicle".

Section 2.3 contains a Glossary of Tire Terminology, including "cold inflation pressure", "maximum inflation pressure", "recommended inflation pressure", and other non-technical terms.

Section 2.4 contains information from the NHTSA brochure entitled "Tire Safety – Everything Rides On It".

This brochure, as well as the preceding subsections, describes the following items;

- Tire labeling, including a description and explanation of each marking on the tires, and information about the DOT Tire Identification Number (TIN).
- Recommended tire inflation pressure, including a description and explanation of:
  - A. Cold inflation pressure.
  - B. Vehicle Placard and location on the vehicle.
  - C. Adverse safety consequences of under inflation (including tire failure).
  - D. Measuring and adjusting air pressure for proper inflation.
- Tire Care, including maintenance and safety practices.
- Vehicle load limits, including a description and explanation of the following items:
  - A. Locating and understanding the load limit information, total load capacity, and cargo capacity.
  - B. Calculating total and cargo capacities with varying seating configurations including quantitative examples showing / illustrating how the vehicles cargo and luggage capacity decreases as combined number and size of occupants' increases. This item is also discussed in Section 3.
  - C. Determining compatibility of tire and vehicle load capabilities.
  - D. Adverse safety consequences of overloading on handling and stopping on tires.

## **1.1. STEPS FOR DETERMINING CORRECT LOAD LIMIT – TRAILER**

Determining the load limits of a trailer includes more than understanding the load limits of the tires alone. On all trailers there is a Federal certification/VIN label that is located on the forward half of the left (road) side of the unit. This certification/VIN label will indicate the trailer's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded trailer can weigh. It will also provide the Gross Axle Weight Rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided.

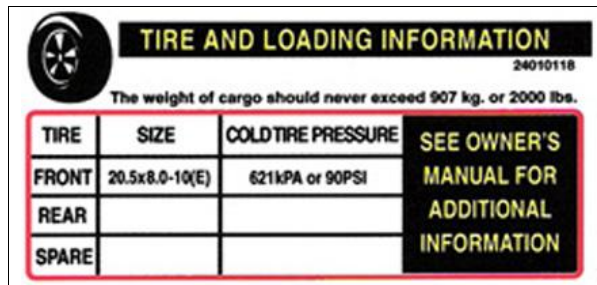
If your trailer has a GVWR of 10,000 pounds or less, there is a vehicle placard located in the same location as the certification label described above. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity. Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer can not exceed the stated GVWR.

For trailers with living quarters installed, the weight of water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the trailer before it is loaded with cargo, and is not considered part of the disposable cargo load. Water however, is a disposable cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

Excessive loads and/or underinflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. The proper air pressure may be found on the certification/VIN label and/or on the Tire Placard. This value should never exceed the maximum cold inflation pressure stamped on the tire.

### **1.1.1. TRAILERS 10,000 POUNDS GVWR OR LESS**



The image shows a 'TIRE AND LOADING INFORMATION' placard. It features a tire icon on the left. The title 'TIRE AND LOADING INFORMATION' is in yellow on a black background. Below the title, it says '24010118' and 'The weight of cargo should never exceed 907 kg. or 2000 lbs.'. The placard contains a table with columns for 'TIRE', 'SIZE', and 'COLD TIRE PRESSURE'. The 'TIRE' column has rows for 'FRONT', 'REAR', and 'SPARE'. The 'SIZE' column has '20.5x8.0-10(E)' for the front and is empty for the others. The 'COLD TIRE PRESSURE' column has '621kPa or 90PSI' for the front and is empty for the others. To the right of the table, it says 'SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION'.

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	20.5x8.0-10(E)	621kPa or 90PSI
REAR		
SPARE		

*Tire and Loading Information Placard – Figure 1-1*

1. Locate the statement, “The weight of cargo should never exceed XXX kg or XXX lbs.,” on your vehicle’s placard. See figure 1-1.
2. This figure equals the available amount of cargo and luggage load capacity.
3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

The trailer’s placard refers to the Tire Information Placard attached adjacent to or near the trailer’s VIN (Certification) label at the left front of the trailer.

### **1.1.2. TRAILERS OVER 10,000 POUNDS GVWR (NOTE: THESE TRAILERS ARE NOT REQUIRED TO HAVE A TIRE INFORMATION PLACARD ON THE VEHICLE)**

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.
2. Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer’s VIN (Certification) label.
3. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

## **1.2. STEPS FOR DETERMINING CORRECT LOAD LIMIT – TOW VEHICLE**

1. Locate the statement, “The combined weight of occupants and cargo should never exceed XXX lbs.,” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the “XXX” amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage capacity calculated in Step # 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle’s manual to determine how this weight transfer reduces the available cargo and luggage capacity of your vehicle.

## **1.3. GLOSSARY OF TIRE TERMINOLOGY**

### **Accessory weight**

The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

# **Tire Safety**

**Bead**

The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

**Bead separation**

This is the breakdown of the bond between components in the bead.

**Bias ply tire**

A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

**Carcass**

The tire structure, except tread and sidewall rubber which, when inflated, bears the load.

**Chunking**

The breaking away of pieces of the tread or sidewall.

**Cold inflation pressure**

The pressure in the tire before you drive.

**Cord**

The strands forming the plies in the tire.

**Cord separation**

The parting of cords from adjacent rubber compounds.

**Cracking**

Any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

**CT**

A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

**Curb weight**

The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

**Extra load tire**

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

**Groove**

The space between two adjacent tread ribs.

**Gross Axle Weight Rating**

The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.

**Gross Vehicle Weight Rating**

The maximum weight of the fully loaded trailer, as published on the Certification / VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.

**Hitch Weight**

The downward force exerted on the hitch ball by the trailer coupler.

**Innerliner**

The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

**Innerliner separation**

The parting of the innerliner from cord material in the carcass.



**Intended outboard sidewall**

The sidewall that contains a white-wall, bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same molding on the other sidewall of the tire or the outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle.

**Light truck (LT) tire**

A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

**Load rating**

The maximum load that a tire is rated to carry for a given inflation pressure.

**Maximum load rating**

The load rating for a tire at the maximum permissible inflation pressure for that tire.

**Maximum permissible inflation pressure**

The maximum cold inflation pressure to which a tire may be inflated.

**Maximum loaded vehicle weight**

The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

**Measuring rim**

The rim on which a tire is fitted for physical dimension requirements.

**Pin Weight**

The downward force applied to the 5<sup>th</sup> wheel or gooseneck ball, by the trailer kingpin or gooseneck coupler.

**Non-pneumatic rim**

A mechanical device which, when a non-pneumatic tire assembly incorporates a wheel, supports the tire, and attaches, either integrally or separably, to the wheel center member and upon which the tire is attached.

**Non-pneumatic spare tire assembly**

A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

**Non-pneumatic tire**

A mechanical device which transmits, either directly or through a wheel or wheel center member, the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.

**Non-pneumatic tire assembly**

A non-pneumatic tire, alone or in combination with a wheel or wheel center member, which can be mounted on a vehicle.

**Normal occupant weight**

This means 68 kilograms (150 lbs.) times the number of occupants specified in the second column of Table I of 49 CFR 571.110.

**Occupant distribution**

The distribution of occupants in a vehicle as specified in the third column of Table I of 49 CFR 571.110.

**Open splice**

Any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

**Outer diameter**

The overall diameter of an inflated new tire.

**Overall width**

# **Tire Safety**

The linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

## **Ply**

A layer of rubber-coated parallel cords.

## **Ply separation**

A parting of rubber compound between adjacent plies.

## **Pneumatic tire**

A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

## **Production options weight**

The combined weight of those installed regular production options weighing over 2.3 kilograms (5 lbs.) in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

## **Radial ply tire**

A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

## **Recommended inflation pressure**

This is the inflation pressure provided by the vehicle manufacturer on the Tire Information label and on the Certification / VIN tag.

## **Reinforced tire**

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

## **Rim**

A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

## **Rim diameter**

This means the nominal diameter of the bead seat.

## **Rim size designation**

This means the rim diameter and width.

## **Rim type designation**

This means the industry of manufacturer's designation for a rim by style or code.

## **Rim width**

This means the nominal distance between rim flanges.

## **Section width**

The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

## **Sidewall**

That portion of a tire between the tread and bead.

## **Sidewall separation**

The parting of the rubber compound from the cord material in the sidewall.

## **Special Trailer (ST) tire**

The "ST" is an indication the tire is for trailer use only.

## **Test rim**

The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

## **Tread**

That portion of a tire that comes into contact with the road.

**Tread rib**

A tread section running circumferentially around a tire.

**Tread separation**

Pulling away of the tread from the tire carcass.

**Treadwear indicators (TWI)**

The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread.

**Vehicle capacity weight**

The rated cargo and luggage load plus 68 kilograms (150 lbs.) times the vehicle's designated seating capacity.

**Vehicle maximum load on the tire**

The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

**Vehicle normal load on the tire**

The load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table I of CRF 49 571.110) and dividing by 2.

**Weather side**

The surface area of the rim not covered by the inflated tire.

**Wheel center member**

In the case of a non-pneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic rim and provides the connection between the non-pneumatic rim and the vehicle; or, in the case of a non-pneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic tire and provides the connection between tire and the vehicle.

**Wheel-holding fixture**

The fixture used to hold the wheel and tire assembly securely during testing.

## **1.4. TIRE SAFETY - EVERYTHING RIDES ON IT**

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

[http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires\\_index.html](http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html)

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires.

This booklet presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires

# Tire Safety

- Tire safety tips.

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

## **1.5. SAFETY FIRST—BASIC TIRE MAINTENANCE**

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

### **1.5.1. FINDING YOUR VEHICLE'S RECOMMENDED TIRE PRESSURE AND LOAD LIMITS**

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW—the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR—the maximum weight the axle systems are designed to carry).

Both placards and certification labels are permanently attached to the trailer near the left front.

### **1.5.2. UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS**

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure—measured in pounds per square inch (psi)—a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kpa), which is the metric measure used internationally.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

### **1.5.3. CHECKING TIRE PRESSURE**

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine underinflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

#### **1.5.4. STEPS FOR MAINTAINING PROPER TIRE PRESSURE**

- Step 1: Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
- Step 2: Record the tire pressure of all tires.
- Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
- Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
- Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated.
- Step 6: Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

#### **1.5.5. TIRE SIZE**

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

#### **1.5.6. TIRE TREAD**

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

#### **1.5.7. TIRE BALANCE AND WHEEL ALIGNMENT**

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

#### **1.5.8. TIRE REPAIR**

The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

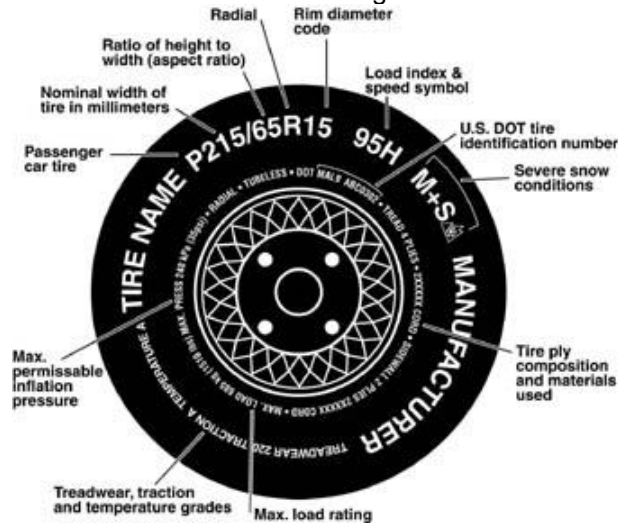
#### **1.5.9. TIRE FUNDAMENTALS**

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

## Tire Safety

### 1.5.9.1. Information on Passenger Vehicle Tires

Please refer to the diagram below.



#### P

The "P" indicates the tire is for passenger vehicles.

#### Next number

This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

#### Next number

This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

#### R

The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

#### Next number

This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

#### Next number

This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: You may not find this information on all tires because it is not required by law.

#### M+S

The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

#### Speed Rating

The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below. Note: You may not find this information on all tires because it is not required by law.

## Tire Safety Information

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Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

\* For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

### U.S. DOT Tire Identification Number

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

### Tire Ply Composition and Materials Used

The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

### Maximum Load Rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

### Maximum Permissible Inflation Pressure

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

### 1.5.9.2. UTQGS Information

#### Treadwear Number

This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

#### Traction Letter

This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA", "A", "B", and "C".

#### Temperature Letter

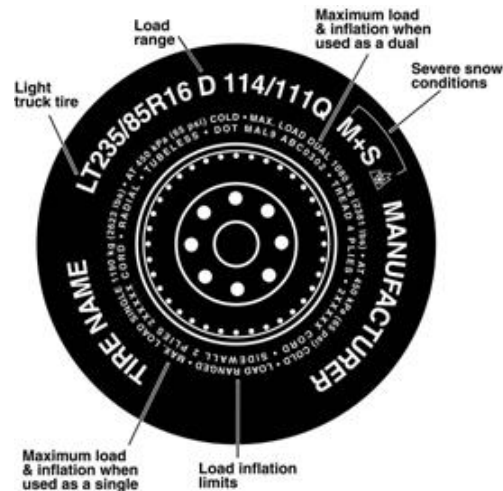
This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, underinflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".



# Tire Safety

## 1.5.9.3. Additional Information on Light Truck Tires

Please refer to the following diagram.



Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

### LT

The "LT" indicates the tire is for light trucks or trailers.

### ST

An "ST" is an indication the tire is for trailer use only.

### Max. Load Dual kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

### Max. Load Single kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a single.

### Load Range

This information identifies the tire's load-carrying capabilities and its inflation limits.

## 1.6. TIRE SAFETY TIPS

### Preventing Tire Damage

- Slow down if you have to go over a pothole or other object in the road.
- Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.

### Tire Safety Checklist

- Check tire pressure regularly (at least once a month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- Do not overload your vehicle. Check the Tire Information and Loading Placard or User's Manual for the maximum recommended load for the vehicle.

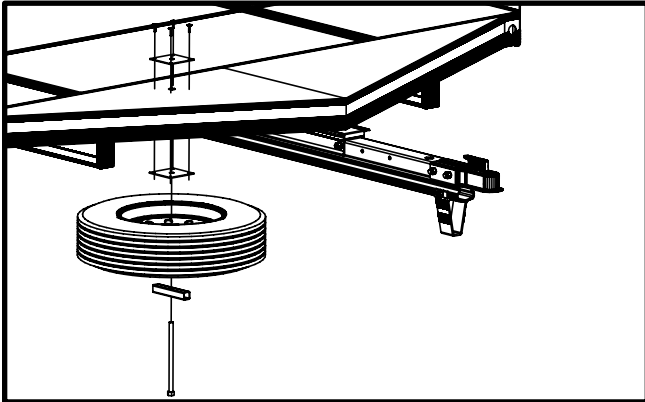


**Extra**

# Accessories

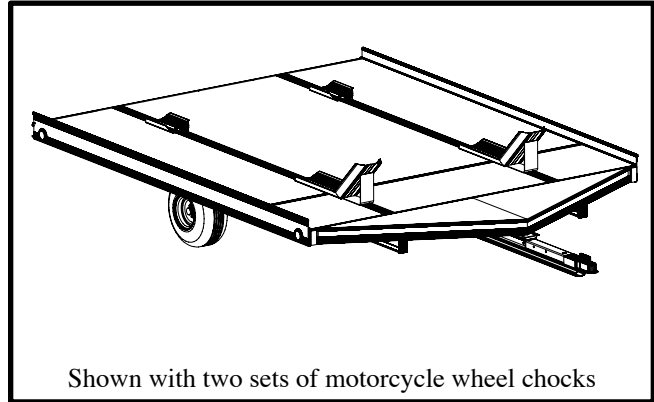
## SPARE TIRE CARRIER

Mounts under trailer for an easy to access place to store a spare tire for your trailer.



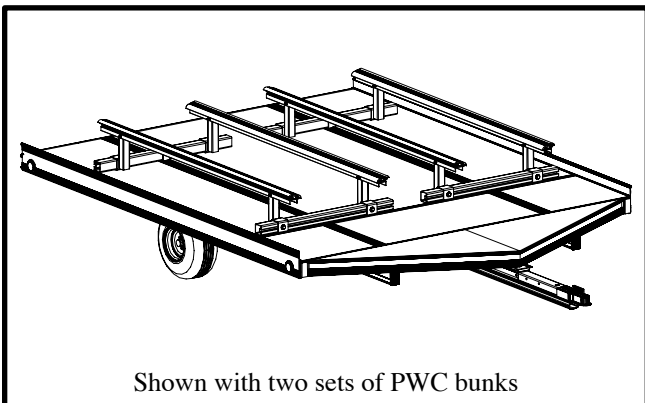
## MOTORCYCLE WHEEL CHOCK

Versa-Track accessory that offers extra security when motorcycles are hauled on a FLOE trailer.



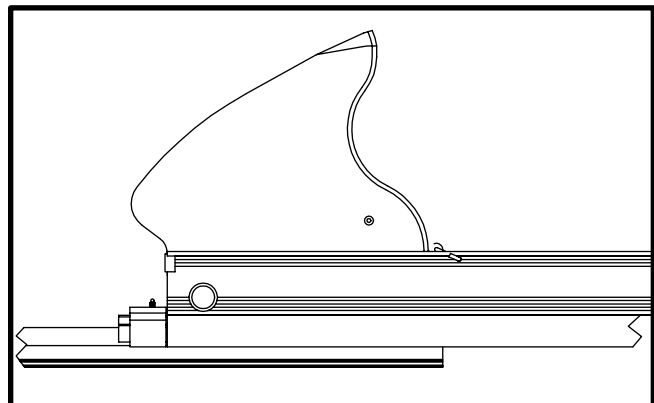
## PWC BUNKS

Versa-Track accessory that allows PWC to be loaded and hauled on a standard FLOE trailer.



## SALT SHIELD

Mounts to the front of a FLOE trailer to help keep road grime off trailer load. Also improves aerodynamics and reduces wind resistance of trailer. Must be removed while loading to enable you to use tie-down bars.

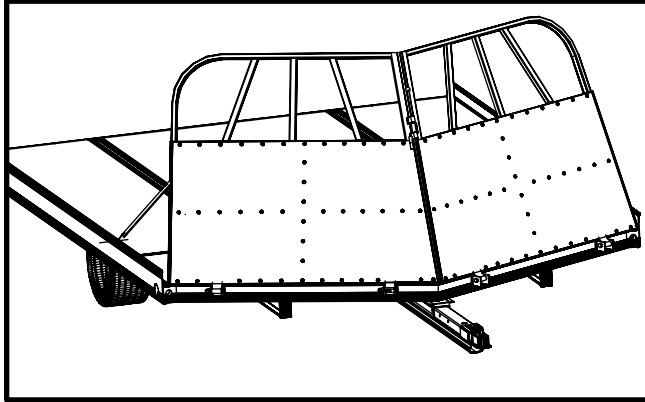


← Tiedown Track

# Extra Accessories

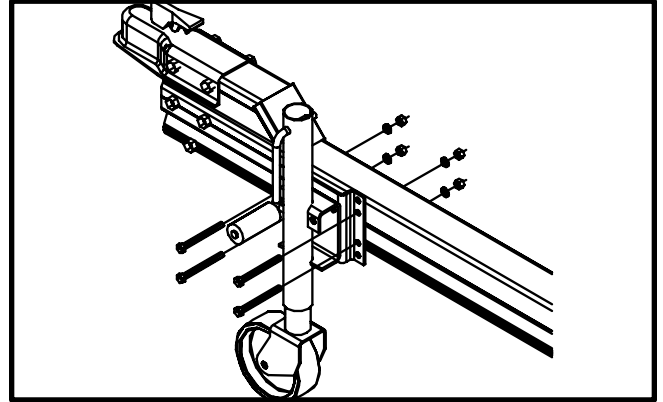
## RAMP / SALT SHIELD COMBINATION

Attaches to the front of a V-Front trailer to help keep road grime of trailer load. Each side quickly folds down allowing for easy unloading of vehicles from trailer.



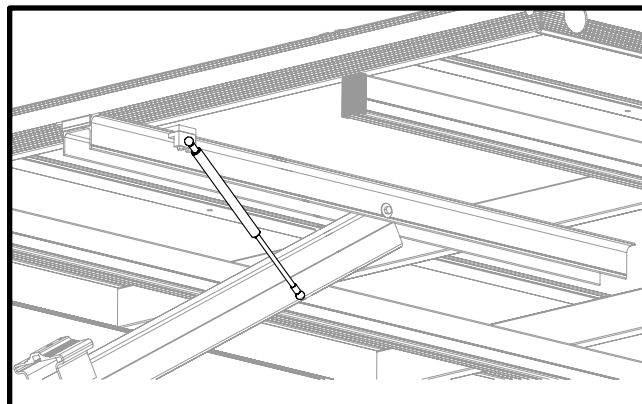
## TONGUE JACK

Attaches to trailer tongue to keep trailer level and the tongue off the ground when not attached to a vehicle. Quickly pivots out of the way for travel.



## TILT ASSIST

Assists in keeping the trailer in a tilted position while driving recreational vehicles on.



## **Trouble Shooting**

# **Questions & Answers**

### **WHAT CAN CAUSE VIBRATION IN MY TOW VEHICLE?**

1. Over tight hitch coupler -- Refer to Coupler Adjustment Section of this manual.
2. Loose or worn-out wheel bearings -- Refer to Wheel Bearing Adjustment Section of this manual.
3. Loose wheels -- Refer to Changing the Tire section of this manual.
4. New tires -- It is possible that the new tires are out of round. Once they are inflated to the proper PSI and used for a short period of time on a loaded trailer, they should work themselves round. New tires that are still out of round after an ample break in period may be defective and need to be replaced. Call the tire manufacturer or your local FLOE dealer for replacement.
5. Unbalanced wheel hubs -- If your tires are balanced and not out of round this may be the problem. Replace if necessary.

### **WHY DOES MY TRAILER SWAY OR WHIP?**

1. Trailer is not being towed level -- Refer to Proper Loading and Unloading section of this manual.
2. Not enough tongue weight -- Refer to Proper Loading and Unloading section of this manual.
3. Overloaded trailer -- Refer to Proper Loading and Unloading section of this manual.
4. Too much tongue weight -- Refer to Proper Loading and Unloading section of this manual.

### **WHY ARE MY TIRES WEARING UNEVENLY?**

1. Unequal side-to-side loading -- Refer to Proper Loading and Unloading section of this manual.
2. Axle is not aligned properly -- Refer to Axle Assembly section of this manual.
3. Tires not inflated to proper PSI
4. Wheel bearings are not properly tightened & oiled.

### **CAN I REPLACE MY TIRES WITH LARGER ONES?**

1. Yes, if you maintain a minimum of 3 inches of clearance between your tire and the trailer frame or bed.

### **WHY DO I KEEP BLOWING FUSES WHEN I CONNECT OR USE MY TRAILER LIGHTS?**

1. Wrong amperage fuse -- Replace with proper size.
2. A wire is cut or bare and is shorting out -- Visually locate and repair or replace.

### **WHY DO MY LIGHTS BLINK ON AND OFF?**

1. Corrosion on wire connections -- Check all connections for corrosion, clean and apply electrical grease to prevent future corrosion.
2. Improper ground to tow vehicle -- This may cause all lights to blink or cause your marker lights to blink when you turn on your turn signals.

### **WHAT KIND OF GREASE SHOULD I USE IN MY HUBS?**

Any high-quality lithium grease for grease style hubs. Use oil if Turbo Lube style hubs (50W min - 90w max.)

### **WHAT SHOULD I DO IF I GET ICE IN MY VERSA TRACK?**

Simply use a screwdriver or any other suitable object to clear it.

----- **IMPORTANT** -----  
**For additional information, please contact your Authorized Floe Dealer, visit our website at [www.floeintl.com](http://www.floeintl.com) or call: 1-800-336-6337 to locate the dealer nearest you.**

# Trouble Shooting

# Specifications Chart

Model	GWR lbs/kgs	GAWR lbs/kgs	Cargo Load*** lbs/kgs	Net Wt. lbs/kgs	Axle(s) lbs/kgs	Standard Tires*	Upgrades					Max. Tongue wt. - lbs/kgs	Tongue jack	Optional enclosure weight***	Trailer Length
10' All-Terrain - 10' x 54"	1872/849	1800/816	1492/676	380/172	(1) 1800/816	• 20.5 x 10" -C • 878 x 13" -C	• 5.30 x 12" -C Mag	• 878 x 13" -C	• 20.5 x 10" -E	• 13" radial	• 13" alum. rim radial	150/68	OPT	NA	NA
10' Versa-Max™ Tilt • Single Axle - No Brakes	1955/886	1880/852	1489/675	466/211	(1) 2200/998	•		•	•			150/68	OPT	NA	NA
12' Versa-Max™ Tilt • Single Axle - No Brakes	2288/1037	2200/997	1680/762	608/276	(1) 2200/998	•			•	•		150/68	OPT	NA	215.5/8"

\* A minimum of 2-1/2" must be kept between the tire and the trailer frame. If larger wheels/tires are used (beyond FLOE's standard upgrade), spacer blocks may be needed.

\*\* Minimum tongue weight is required to reach rated cargo loads listed. Minimum tongue weight is the empty trailer. Loaded tongue weight should never be less than the empty trailer tongue weight.

\*\*\*The "cargo load" of your trailer will be reduced by the weight of the enclosure.

TRAILER LOAD CAPACITY: Each trailer model has a maximum load capacity. It is important that this capacity is not exceeded.

If upgrading 10' ramp trailers to 13" tires, spacer blocks must be used.

# FLOE INTERNATIONAL, INC.

## TRAILER 10 YEAR LIMITED WARRANTY

Floe International warrants, to the original purchaser, FLOE Versa-Max trailers, All-Terrain Pro trailers, ATV Pro trailers and Pro-Tektor enclosures to be free from original defects in materials and workmanship under the conditions and loads for which designed and from date of purchase as follows:

### ALUMINUM STRUCTURE AND LIGHTING SYSTEM

FLOE INTERNATIONAL will repair or replace, at its option, any portion of the aluminum structure and lighting system (excluding light bulbs and lenses,) which fails as a result of a defect in material or workmanship during the first year after purchase. Thereafter, FLOE INTERNATIONAL will repair or replace any portion of the aluminum structure or lighting system which fails as a result of a defect in material or workmanship at a cost to the purchaser of a proportion of the existing manufacturer's suggested retail price as follows:

YEARS OWNED	% TO YOU OF CURRENT RETAIL PRICE	YEARS OWNED	% TO YOU OF CURRENT RETAIL PRICE
0-1	0%	5-6	75%
1-2	55%	6-7	80%
2-3	60%	7-8	85%
3-4	65%	8-9	90%
4-5	70%	9-10	95%

### TORSION AXLE

A full five (5) years is extended on axle suspension.

Hubs, drums, brakes, bearings and seals are covered for a period of one (1) year from the date of purchase when installed, used and maintained by the purchaser. Warranty is provided by the manufacturer "Tie Down". Tie Down can be reached at 404-477-6899, ext 1538.

### TIRES

Warranty is provided by the tire manufacturer. For model year 2010 and earlier, the manufacturer is Green Ball Corp (1-800-946-9412). For model year 2011 and later trailers, the tire manufacturer is either Green Ball Corp (see above) or Kenda Tires (1-800-225-4714).

Your trailer tires are warranted against failures due to factory defective material for four years from date of manufacture. Contact manufacturer for any warranty issues on tires.

### DECKING

One year. Warranty is provided by plywood manufacturer. A lifetime warranty against damage as a result of fungal decay or rot as well as against damage caused by termites or other wood eating insects. Warranty does not cover inherent wood characteristics such as checking, leafing, splitting and broken grain.

This warranty covers only the cost of replacement of materials due to defects in materials or workmanship and represents the only warranty authorized by us. In order to receive performance under this warranty, all warranty repairs must be authorized in advance by Floe International. Floe International will not be responsible for any costs incurred for unauthorized repairs! Unauthorized repairs may void the warranty on items repaired! This warranty does not cover deck replacement labor, nor any possible damages due to overloading of trailer, damage resulting from road hazards, damage caused by wear rods or traction products, jackknifing, misuse, or negligence. This warranty covers personal use and does not apply to commercial or rental uses. The manufacturer is not responsible for damage where repairs have been made or attempted by others. Items purchased by FLOE INTERNATIONAL are warranted by the original manufacturer and warranty is extended to the original purchaser. FLOE INTERNATIONAL reserves the right to inspect and perform rework at its main facility (F.O.B.) McGregor, Minnesota. Freight is the responsibility of the consumer. Specifications may change without notice or obligation. To receive performance under this warranty, contact your authorized Floe Dealer.

THERE ARE NO OTHER EXPRESSED WARRANTIES OR ANY IMPLIED WARRANTIES.

Our obligations under this warranty are limited to repair or replacement at our discretion,  
AND WE SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

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



## **FLOE INTERNATIONAL, INC. TRAILER 5 YEAR LIMITED WARRANTY**

Defects in material and workmanship of certain accessories and components of FLOE Trailers are covered under a five-year pro-rated warranty. This pro-rated parts warranty begins after the two-year parts and labor warranty. Items covered in this five-year pro-rated warranty include quick loops, salt shields, tie down bars, PWC bunks, motorcycle chocks and Versa track.

The pro-rated schedule of these items is as follows:

YEARS OWNED	CONSUMER PORTION OF CURRENT RETAIL PRICE
0-2	0%
2-3	50%
3-4	55%
4-5	60%

This warranty covers only the cost for replacement of materials due to defects in materials or workmanship, and represents the only warranty authorized by us.

In order to receive performance under this warranty, all warranty repairs must be authorized in advance by FLOE International, Inc.

Thank you for purchasing a quality FLOE trailer. Understanding the information in this manual should help you to keep your trailer in optimal working condition for many years of worry-free enjoyment.

Please take the time to record this important information for future reference:

Model Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

*NOTE: Not all trailers will be identified with a serial number. It is a good idea to save your receipt from the dealer.*

**Be sure to register your FLOE trailer. Register online  
at [www.floeintl.com](http://www.floeintl.com) or by mailing your Warranty  
registration card to the address below.**

**FLOE International, Inc.**  
Warranty Registration Department  
48473 State Highway 65  
McGregor, MN 55760-9514



## WARRANTY REGISTRATION CARD

**NOTE:** This card must be completed by the FLOE Retail Dealer or the customer and returned to FLOE INTERNATIONAL, INC. within \*15 days of purchase, to validate warranty. Please affix proper postage before mailing. Please complete all information requested.

\*FLOE INTERNATIONAL, INC. is not responsible for lost, stolen or misplaced warranty registration cards.

NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_ / \_\_\_\_\_

ADDRESS: \_\_\_\_\_ CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

DATE PURCHASED: \_\_\_\_/\_\_\_\_/\_\_\_\_ DEALER PURCHASED FROM: \_\_\_\_\_

### PRODUCT PURCHASED *Please check all that apply*

☐ FLOE TRAILER .....SIZE: \_\_\_\_\_ MODEL: \_\_\_\_\_ VIN#: \_\_\_\_\_

☐ TRAILER ENCLOSURE .....SIZE: \_\_\_\_\_ MODEL: \_\_\_\_\_

☐ BOAT LIFT SYSTEM .....MODEL: \_\_\_\_\_

☐ ROLL-IN DOCK .....DECKING IS: ☐ CEDAR - ☐ CARPETED - ☐ ALUMINUM

☐ FLOATING DOCK .....DECKING IS: ☐ CEDAR - ☐ ALUMINUM

NOTE: Please list SIZE for each Dock Component.

SIZE: \_\_\_\_x\_\_\_\_ SIZE: \_\_\_\_x\_\_\_\_ SIZE: \_\_\_\_x\_\_\_\_ SIZE: \_\_\_\_x\_\_\_\_

SIZE: \_\_\_\_x\_\_\_\_ SIZE: \_\_\_\_x\_\_\_\_ SIZE: \_\_\_\_x\_\_\_\_ SIZE: \_\_\_\_x\_\_\_\_

ACCESSORY: \_\_\_\_\_ ACCESSORY: \_\_\_\_\_

ACCESSORY: \_\_\_\_\_ ACCESSORY: \_\_\_\_\_

[www.floeintl.com](http://www.floeintl.com)

How did you become familiar with  
FLOE Aluminum Products?

☐ Magazine Ad ☐ Radio Ad

☐ Television Ad ☐ Dealer

☐ Newspaper Ad ☐ Friend

☐ Trade Show \_\_\_\_\_

☐ Other \_\_\_\_\_

Reason for selecting a FLOE Aluminum  
Product?

☐ Quality ☐ Features

☐ Availability ☐ Price

☐ Other \_\_\_\_\_

**IF NOT REGISTERING ONLINE, MAIL IN YOUR ORIGINAL WARRANTY CARD OR PHOTOCOPY THE ABOVE CARD.**

# FLOE manufactures an extensive line of other products



FLOE open and enclosed trailers are available in many styles and sizes to accommodate your needs. FLOE trailers have an aluminum frame that resists corrosion and never rusts. Aluminum construction allows for a light trailer while still offering the strength you need.



The Cargo Max XRT Trailer is a world-class combination of style, durability and simplicity. The trailer is engineered with a high-strength extruded aluminum frame and an ultra-rugged high-density polyethylene trailer body. It can haul and be towed by ATVs, and is great for yard work, hunting, camping, cabin travel, construction, rental, shopping and almost any other use imaginable.



**PWC, BOAT & PONTOON LIFTS** (Featuring FLOE's exclusive Easy-Level™ leveling leg): With FLOE, you get a long-lasting, low-maintenance lift system. They are engineered with custom extruded aluminum components and stainless steel leveling cables. FLOE lifts are designed for easy installation and removal.



**MODULAR SECTIONAL DOCKS** – FLOE's Sectional Docks are a great value and ideal for lake lots with minimal space or hilly terrain where roll-in systems won't work. The docks sections break down in seconds with no tools for easy stacking storage.

Your authorized FLOE Dealer:



FLOE INTERNATIONAL, INC.  
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[www.floeintl.com](http://www.floeintl.com)

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