

FRONT WHEEL ALIGNMENT

Often times overlooked, but having a significant effect on the handling of a vehicle, is the front wheel alignment.

Front wheel alignment is the angular relationship between the vehicle's front wheels, suspension and the ground, the purpose of which is to allow the vehicle's wheels to roll without dragging, cupping, scuffing or slipping. While proper alignment ensures ease of steering and reduces suspension and tire wear, an improper alignment can result in a less than pleasurable driving experience.

Warning signs that alignment is in need of adjustment:

- Irregular tire wear
- Heavy steering
- Vehicle wandering or hard to keep in a straight line
- Vehicle steering wheel not returning to center
- Vehicle pulling one direction

Correct alignment can:

- Save excessive uneven and premature tire wear
- Save fuel
- Enhance cornering and general handling
- Reduce driver fatigue

After reviewing the basics, it is important to note that the angular relationships will vary with the amount of weight added to or subtracted from the vehicle.

Every vehicle manufactured by Winnebago Industries is aligned prior to leaving the factory. Once the vehicle is put into use, it is necessary to check alignment and adjust as necessary. Because of correlation between weight distribution and alignment, front wheel alignments are considered a maintenance procedure and not covered under vehicle warranty.

This is not only a Winnebago Industries policy, but a common industry practice.

As it is not feasible to have an alignment every time the vehicle's weight varies slightly, it is recommended that the following rule of thumb be applied:

- Load the vehicle as it will be used 50 percent or more of the time. Then have the front wheels aligned.

By doing it in this manner, you will ensure optimum performance level for the majority of the vehicle's travel.

Front wheel alignment is an important factor throughout the life of the vehicle. Make it a practice to check tires periodically for evidence of improper wear. A convenient time for inspection is every time you put fuel in the vehicle. Also check the suspension for worn or broken parts every six months.

If inspections indicate worn or broken components, schedule an appointment for repairs and an alignment. Also, have the alignment checked any time you notice a change in handling characteristics.

If uneven front tire wear is noticed, you should have the tires rotated when an alignment is performed. Refer to your chassis owners manual for the recommended rotation procedure.

NOTE: It is always good maintenance to routinely check tires for proper inflation. Over inflated or under inflated tires can also show uneven tire wear and effect the ride and handling of your vehicle.

Following is an example of our statement regarding alignment as provided in our operation's manual: "The front suspension and steering system of this vehicle was factory aligned using highly accurate equipment prior to delivery to the dealership. However, we recommend that alignment be checked and adjusted, if necessary, after you have fully loaded the motor home according to your personal needs. Thereafter, the alignment should be periodically inspected to help prevent uneven tire wear.

"Any excessive or abnormal tire wear may indicate worn or misaligned suspension or steering, unbalanced tire, or other tire/suspension problems.

"Alignment can be affected by worn steering/suspension parts or by incidents which happen during driving, such as hitting a curb, pothole, railroad track, etc. Improper alignment can cause tires to roll at an angle and wear unevenly. It may also cause the vehicle to "pull" to the right or left. Have your dealer inspect your vehicle's suspension components periodically for misalignment or wear.

“Out-of-balance tires will not roll smoothly and can lead to annoying vibrations and uneven tread wear such as cupping and flat spots. Tires may need to be balanced if uneven wear is detected or if ride comfort decreases noticeably.

See your chassis operating guide for further information.”

Following are the three major measurable parameters of alignment:

1. CASTER – The tilting of the steering axis either forward or backward from the vertical plane. It affects directional stability but not tire wear.
2. CAMBER – The vertical tilt of the wheel as viewed from the front of the vehicle.

The top of the wheel tilted in or out affects directional stability and tire wear: Top of the tire tilts outward = Positive Camber; Top of the tire tilts inward=Negative Camber.

3. TOE – The comparison of distance between centerline of front tire and centerlines of rear tires. This measurement is taken at spindle height. It affects directional stability and tire wear. Front of tires narrower than rear = Toe In = Positive Toe; Front tires wider than rear = Toe out = Negative Toe.

