



Intercomp's Bruce Rhoe (left) and 2013 WISSOTA modified champion Mike Stearns show the tools they use to check caster and camber in the pits of I-94 Speedway in Fergus Falls, Minnesota.

HOW TO CHECK CASTER AND CAMBER

Story and Photographs
by **Mike Adaskaveg**

Using today's equipment makes it easier than ever.

Back in the day, steering was turned lock-to-lock for caster," Intercomp's Bruce Rhoe says. "Wheels turned on the ground got 'scrub bind.' If the front end has no freedom of movement, you cannot get precise caster and camber numbers."

Turn plates allow you to freely move your wheels without causing a bind. This results in a more accurate reading of caster.

You can more accurately measure caster and camber with a digital gauge.

"Today we are looking for every bit of precision on our race cars," says Hecla, South Dakota, modified driver Mike Stearns, who won the 2013 WISSOTA national championship.

By bringing turn plates and a caster/camber gauge to the races, you can quickly check these settings.

"Mike [Stearns] discovered today that he had more camber than normal," Rhoe says. "That would indicate something happened to the car when racing [the previous] night. All it takes is a bump or a scrape with the wall. The gauge detects changes, especially bent spindles."

Rhoe and Stearns demonstrated how to check caster/camber with Intercomp's digital caster/camber gauge and turn plates.



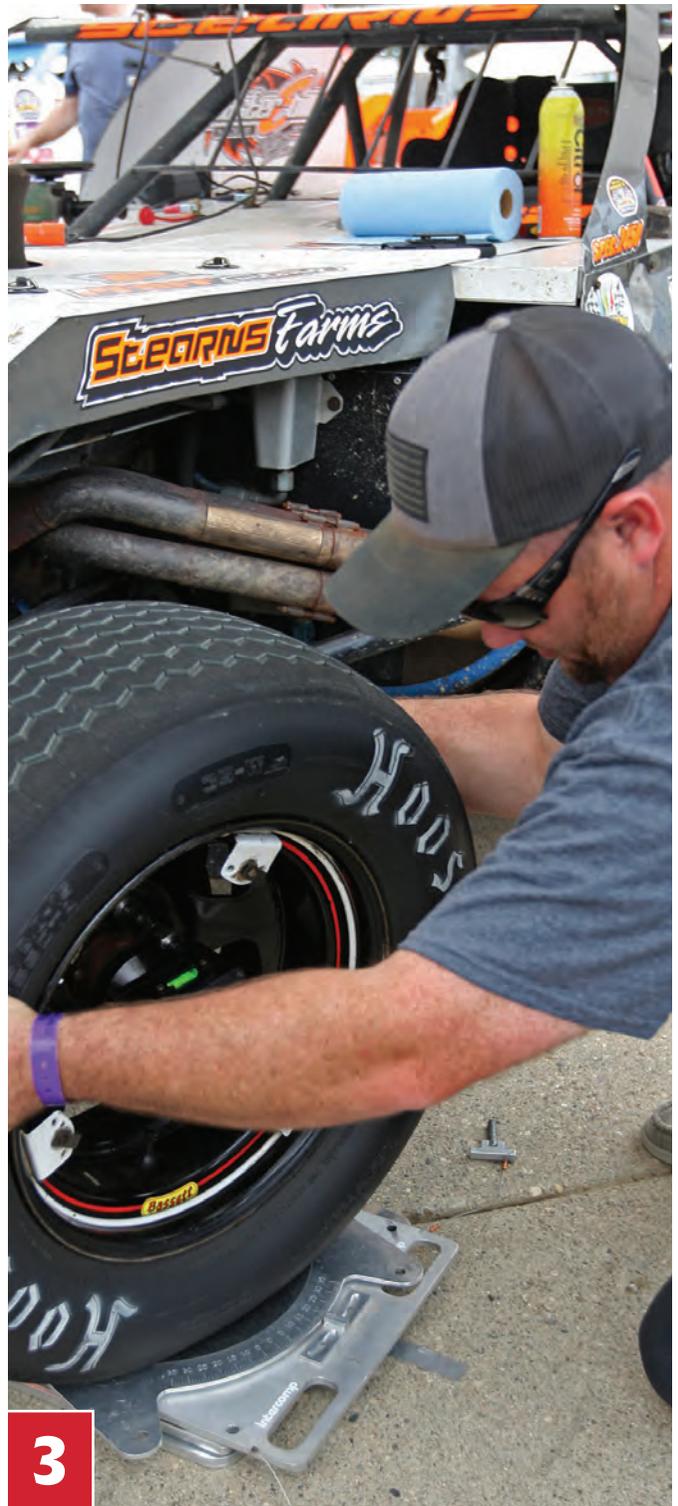
1

Move your car to level ground and make sure your tires are at race-ready pressures.



2

Center the turn plates under the front tires. Set the car's steering straight ahead (be sure the steering shaft's setscrew at the box is pointing up). Jack the car high enough to slide a plate beneath each front tire. Center the plate beneath the bearing cap, loosen the screws holding the pointer so it aims at zero.



3

Remove a bearing cap and attach the caster/camber gauge to the spindle.

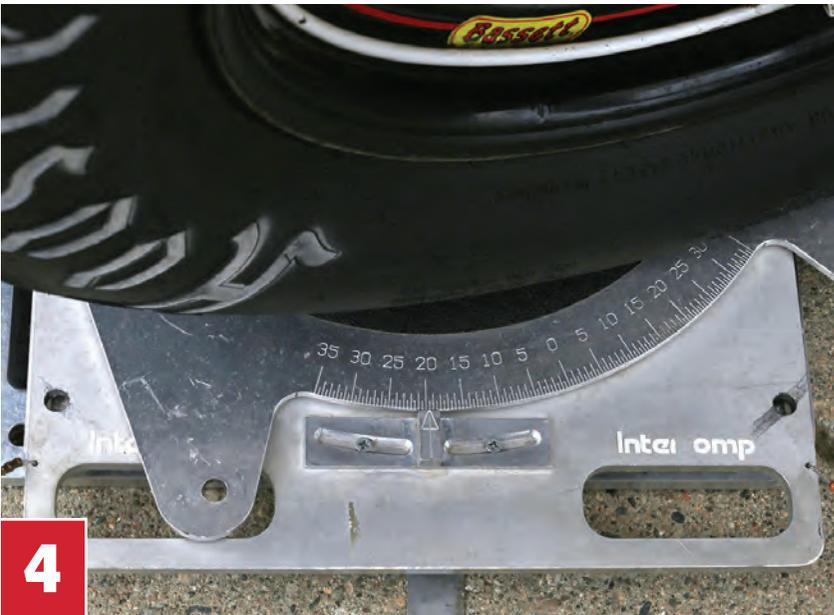
Press the caster button on the gauge. Turn the left-front wheel clockwise until the turning plate reads 20°. (Note: Some manufacturers' manuals instruct you to go counterclockwise first. Follow the recommendation for your specific gauge or otherwise you'll reverse negative and positive caster.)

Level the gauge by rotating it until the level bubble centers, and then press the zero button on the gauge.

To Set Ackermann Steering Geometry

Ackermann steering geometry is when the car's front tires turn at slightly different radii from a turning point. This helps the car turn better around tight corners. On most ovals, the left-turn wheel turns more than the right-front wheel—this is positive Ackermann.

To set Ackermann, turn the right-front wheel from 0° to 20° on the turn plate. If the car has positive Ackermann, the left-front wheel will read typically 2°–3° more than the right front (in this case, it would read 22°–23°). Ackermann is easily adjusted on aftermarket spindles that have serrations or slugs. Setting toe-out on the left front while keeping the right-side tires inline can get some Ackermann in factory spindles.



Turn the wheel counter-clockwise a total of 40° until the turning plate reads 20° on the other side of “zero” on the plate.

Level the gauge by rotating it until the level bubble centers.

Note the caster reading. On this gauge, a minus sign indicates negative caster. Positive caster has no plus sign, just the number.



Repeat the process for the right-front wheel. Remove the bearing cap and attach the caster/camber gauge to the spindle.

Press the caster button on the gauge. With your hands, turn the right-front wheel clockwise until the turning plate reads 20°.

Level the gauge by rotating it until the level bubble centers, and then press the zero button on the gauge.

Turn the wheel counter-clockwise a total of 40° until the turning plate reads 20° on the other side of “zero” on the plate.

Level the gauge by rotating it until the level bubble centers.

Note the caster reading.



Switch the caster/camber gauge into camber mode. Straighten the wheels once again.

Press camber on the gauge. Level the gauge by rotating it until the level bubble centers. Note the number, which is your camber. Repeat the same process for the other wheel. 🍷

SOURCES

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