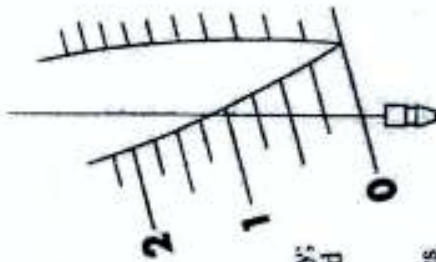


The scale design used on your camber castor gauge is a little unusual but you will find it very easy to use. All you have to do is compare the point where the plumb line crosses the curved scale line with the graduations: in the example drawn on the right the lines cross between the 1 degree and 1 1/4 degree graduations so the reading in this case is 1 1/8 deg.



The green graduations are read in exactly the same way; the difference in spacing is because they are calibrated for Castor measurement.

Set out below is the method for taking Camber readings and opposite is the procedure for finding Castor.....



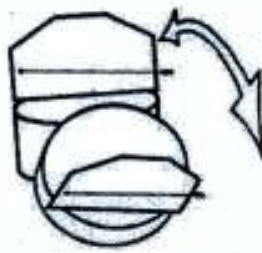
The diagrams drawn along side show how to position the gauge on a wheel to measure Camber which should be done with the wheels pointing straight ahead. It is best to position the gauge so that the plumb just rubs on the scale plate for two reasons: the rubbing tends to damp out unwanted swinging of the line and it virtually eliminates the chance of taking an incorrect reading due to the parallax error.

A few moments thought, will show that camber readings are meaningless if the car is not on level ground. Well-financed teams have accurate "flat patches" in their workshops which can be relied on as flat and truly level. However, you can compensate for an unlevel floor by using the second scale on the gauge: find a place on the car which you know to be level relative to the ground. This will be different for every car but good sites are often anti-roll bars or, on saloon cars, the lip of the boot aperture. Take a note of the reading on the second scale and, as appropriate, add or subtract the "offset" to the camber readings in order to get the true value.



On most modern day purpose built racing cars there is a surface provided on the uprights which enables you to measure castor directly using the second scale. If your car does not have this provision, castor can be gleaned from its steering motion by using the green graduations on the main scale and the following procedure.....

The essence of the procedure is to measure the CHANGE of the camber over a specific steering motion. The required steering motion is showed by the V-shaped guideline printed on the back of the gauge and the necessary mathematics and correction factors have been incorporated into the green graduations on the main scale.



The first step is to make a template out of plywood or stiff card to the guideline printed on the back of the gauge. Place this template on the ground next to the wheel, aligning the long edge parallel to the car. Have an assistant sit in the car and turn the steering until the road wheel lines up with one angled edge of the template (in practice you can judge this quite accurately enough by standing back and visually comparing the alignment of the wheel to the template.

Take readings in exactly the same way as when measuring the camber but instead use the green castor graduations. Make a note of the reading and repeat the procedure on the other lock. The DIFFERENCE between the two readings is the castor.

Referring to the example one reading is -1 1/2 deg., the other +2 3/4 deg. so the castor is 4 1/4 deg. (NOT 1 1/4)

Because the Castor procedure relies on measuring CHANGE of camber it is not necessary to establish an offset value but to ensure accuracy do position the car on reasonably level ground.

