Model A Ford
Front End Alignment

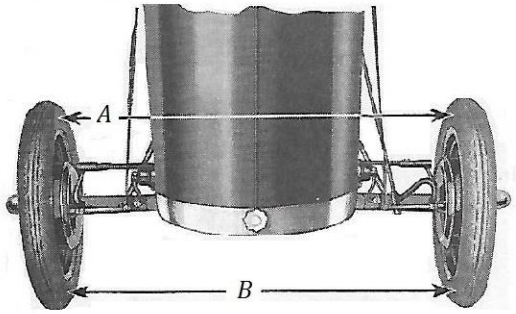
By Willie Priaulx June 2020

Specifications:	Toe-In	1/16” +-1/32”
	Camber Angle	+2 degrees
	Caster Angle	+5 degrees

Toe-In

To calculate toe-in measure the distance between the two front tires on both the leading edges and trailing edges.

Toe-in = A - B



If the distance between the leading edges is narrower than the trailing edges, your vehicle is set up with “toe-in”. The opposite is “toe-out”. Always service and tighten loose front wheel bearings before taking the toe-in measurement.



Three Toe-In
Measurement locations

1. Duby Alignment Gauge
   chain length from floor (8")
   at inside mid tire.
   Toe-in = 1/16"
2. Center tread at 6" from floor.
   Toe-in = 1/16"
3. Center tread at hub height.
   Toe-in = 3/32"

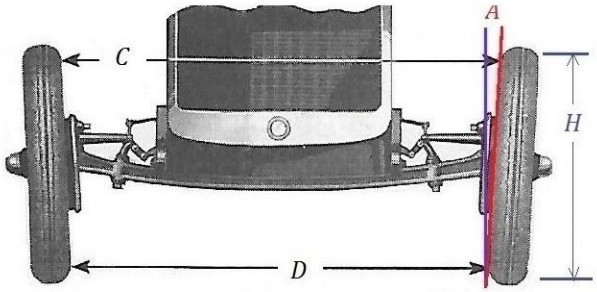
The toe setup on a car significantly impacts its turning performance. Rear-wheel-drive cars are best served by a slight toe-in setup. As a car’s body rolls into a corner, the suspension effectively moves the wheel backwards, bringing the toe to neutral. Excessive toe-in can make a car feel very “Darty”. Toe-out will make a car respond lazily to steering input. Both conditions accelerate tire wear. Like most good things in life, the key is balance.

Camber

The camber angle identifies how far the tire slants away from vertical when viewed directly from the front. Camber is said to be positive when the top leans away from the center of the vehicle and negative when to top leans in towards the vehicle.

Camber length = C - D

Front wheels should have a Camber of approximately 1 13/16".



With a camber length of 1 13/16", and height (H) of 26" then

Camber Angle (A) = 2 degrees.

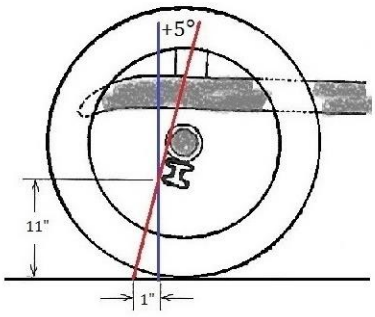
A benefit of positive camber is that you don't need to use as much effort when steering. Also, if you're normally driving on uneven roads or surfaces, then you will want the added straight line stability that positive cambers provide. Negative camber, used on race cars, presents more tread to the road in a turn but sacrifices straight line stability and tire wear.

Caster

Picture the front wheels that spin on your shopping cart. The contact point of the caster wheel falls significantly behind the steering axis. This rearward placement (positive caster) makes the wheel trail along steadily.

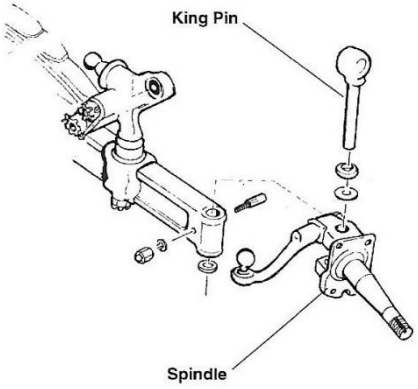


Caster = 5 degrees.



A positive caster angle will make the wheels straighten out quickly following a turn. Negative or no caster will make the car feel unstable when you attempt to drive in a straight line.

Camber and Caster on a vintage car like the Model A is typically not adjustable. After 90 years of pot-holes, wear, and abuse our only option is to "Repair and Replace" worn and damaged parts.



It is probably more significant that your measurements are the same from the left to right side than a bit out of spec.

Camber is synonymous with the kingpin angle.
Caster is maintained by the front radius rod,
and a bent axle will mess up the whole works.



The *Duby* Alignment Gauge listed in the Ford Service Bulletin from 1928 is still being made. Manufactured by Wheel-A-Matic, Hooksett, NH, distributed by S & G Tool Aid Corp, Newark, NJ, and available for sale at Amazon.com. Amazon.com/Duby-Wheel-Aligning-Gage

Enjoy the ride… *and keep the rubber side down.*

- Willie

Toe-In and Camber specs are from the Ford Service Bulletin, April '28, updated Sep '28.
Front Wheel Bearing Adjust can be found in the Mechanics Handbook, Vol I, p 2-10.
Toe-In Adjustment can be found in the Mechanics Handbook, Vol I, p 2-19.
Caster Adjustment can be found in the Mechanics Handbook, Vol I, p 2-6.