



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF AGRICULTURE ENGINEERING

19AGB301-FARM TRACTORS

III YEAR V SEM



TOPIC – FRONT AXLE AND WHEEL ALIGNMENT BRAKE



TYPES OF AXLE



REAR AXLE

- Full Floating
- Semi Floating
- Three Quarter Floating

FRONT AXLE

- Dead Front Axle
- Line Front Axle

STUB AXLE

- Elliot
- Reversed Elliot
- Lamoine
- Reversed Lamoine



FRONT AXLE

- A front axle is a rotating shaft at the front of a vehicle that turns the front wheels.
- Vehicle design can be quite variable, and axles come in a range of formats and designs to meet different needs.
- Replacement of a front axle may be necessary in the wake of a serious accident or other damage, like heavy rusting.

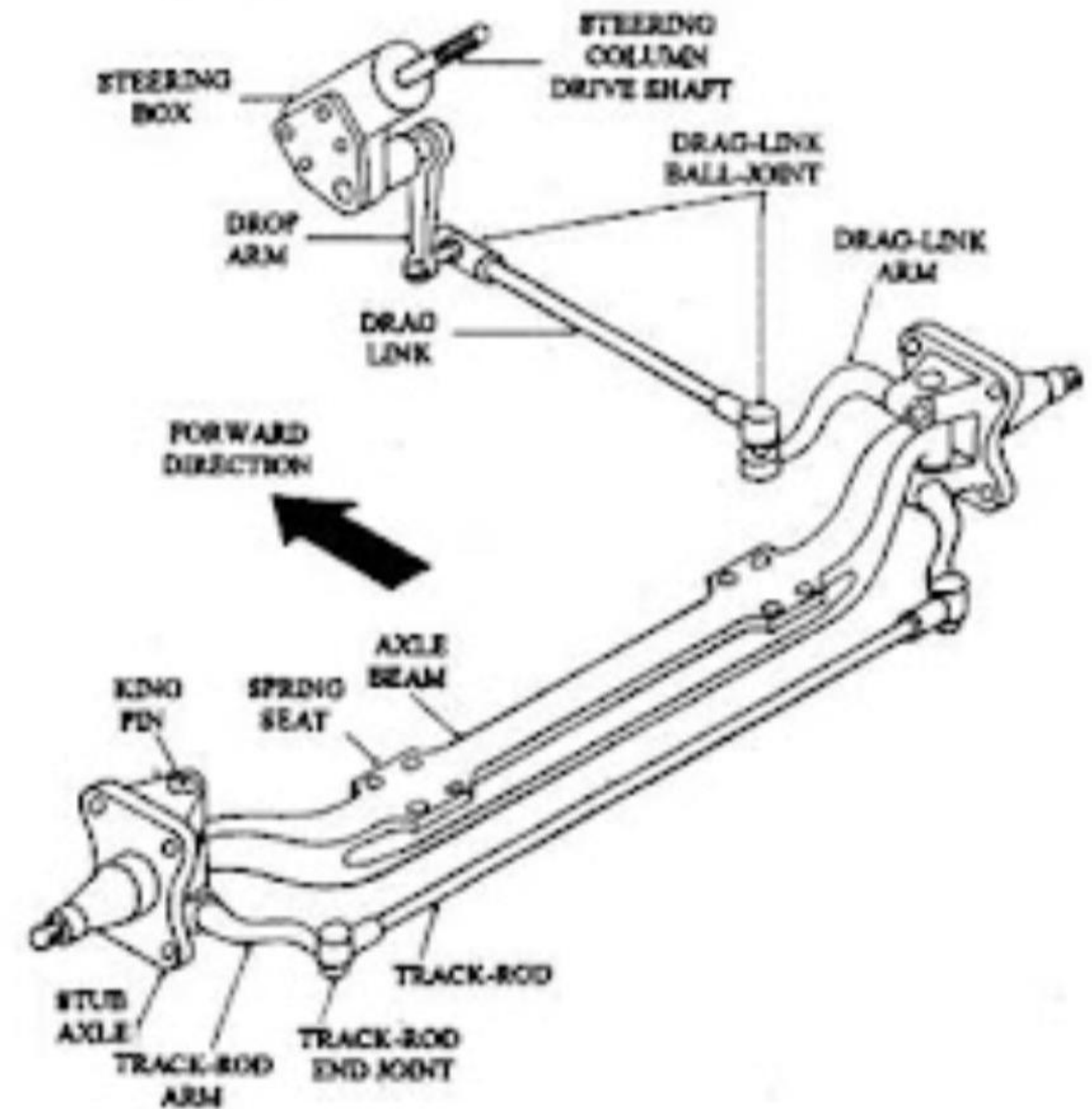


FUNCTIONS OF FRONT AXLE



Front wheels of the vehicle are mounted on front axles

1. It supports the weight of front part of the vehicle.
2. It facilitates steering.
3. It absorbs shock which are transmitted due to road surface irregularities.
4. It absorbs torque applied on it due to braking of vehicle.





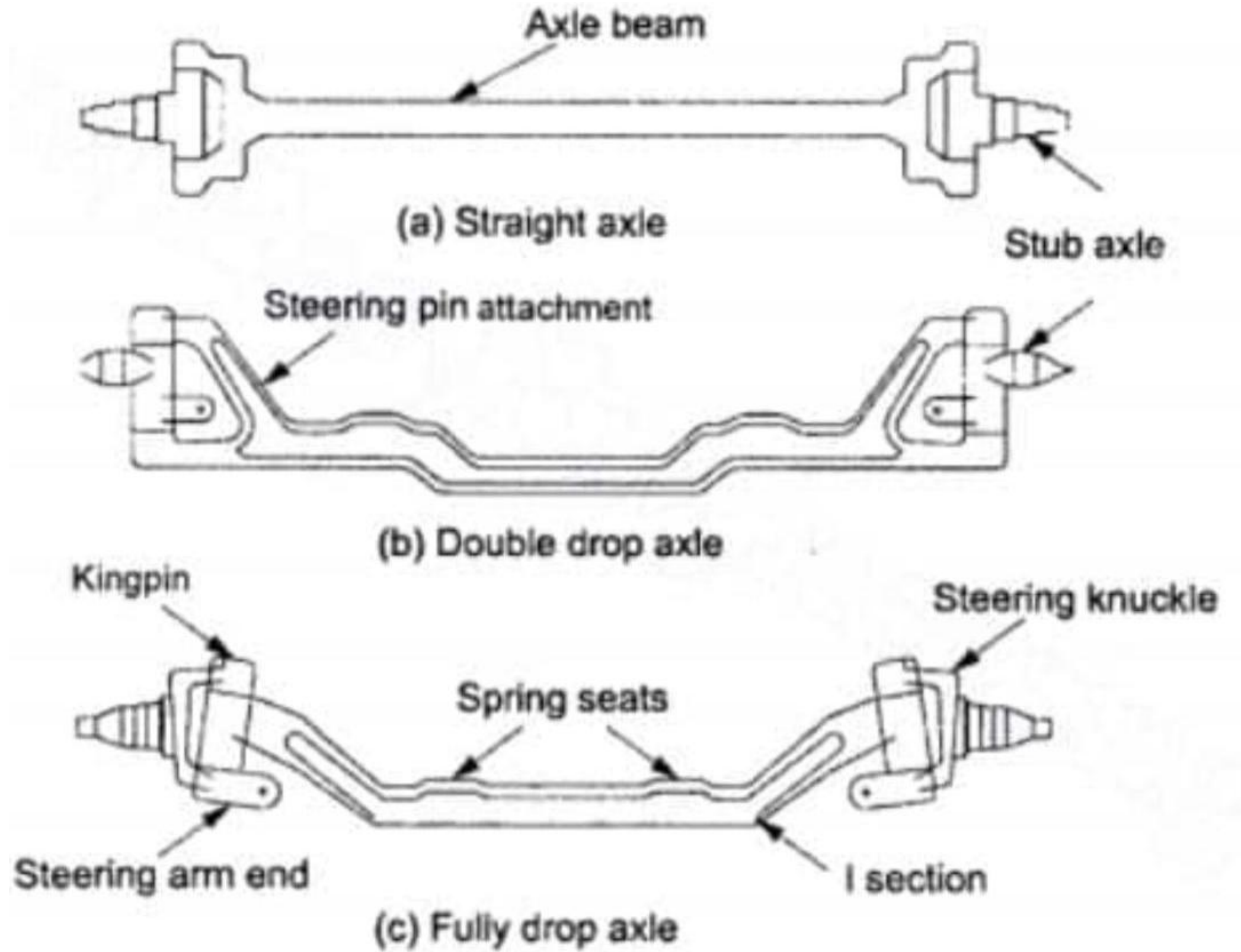
TYPES OF FRONT AXLE

There are two types of the front axles based on the rotation as follows.

1. Live front axle
2. Dead front axle.

There are two types of the front axles based on the axle beam as follows.

1. Straight axle
2. Double drop axle
3. Fully drop axle

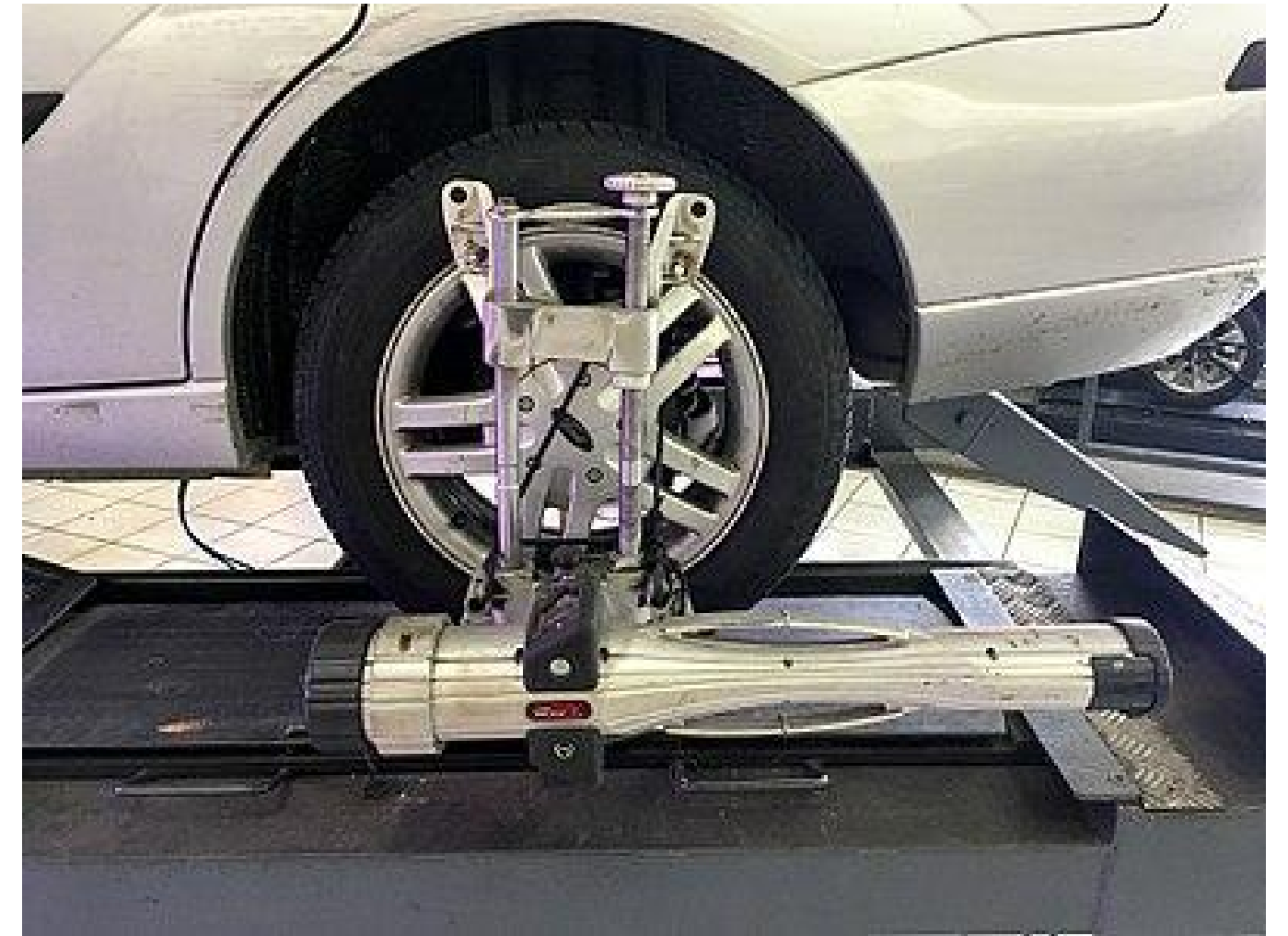




WHEEL ALIGNMENT

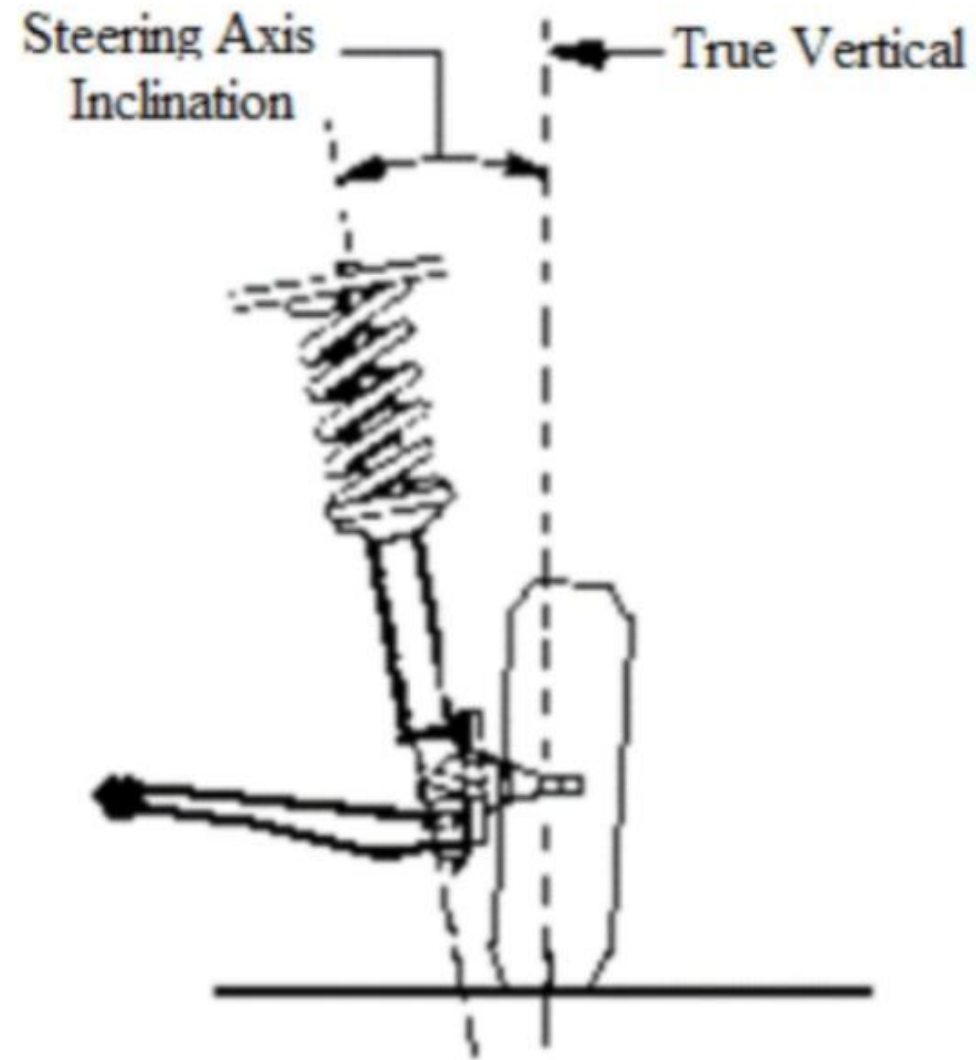


Wheel alignment involves a mechanical adjustment of vehicle suspension to influence the direction and angle of the tyre's contact with the surface.

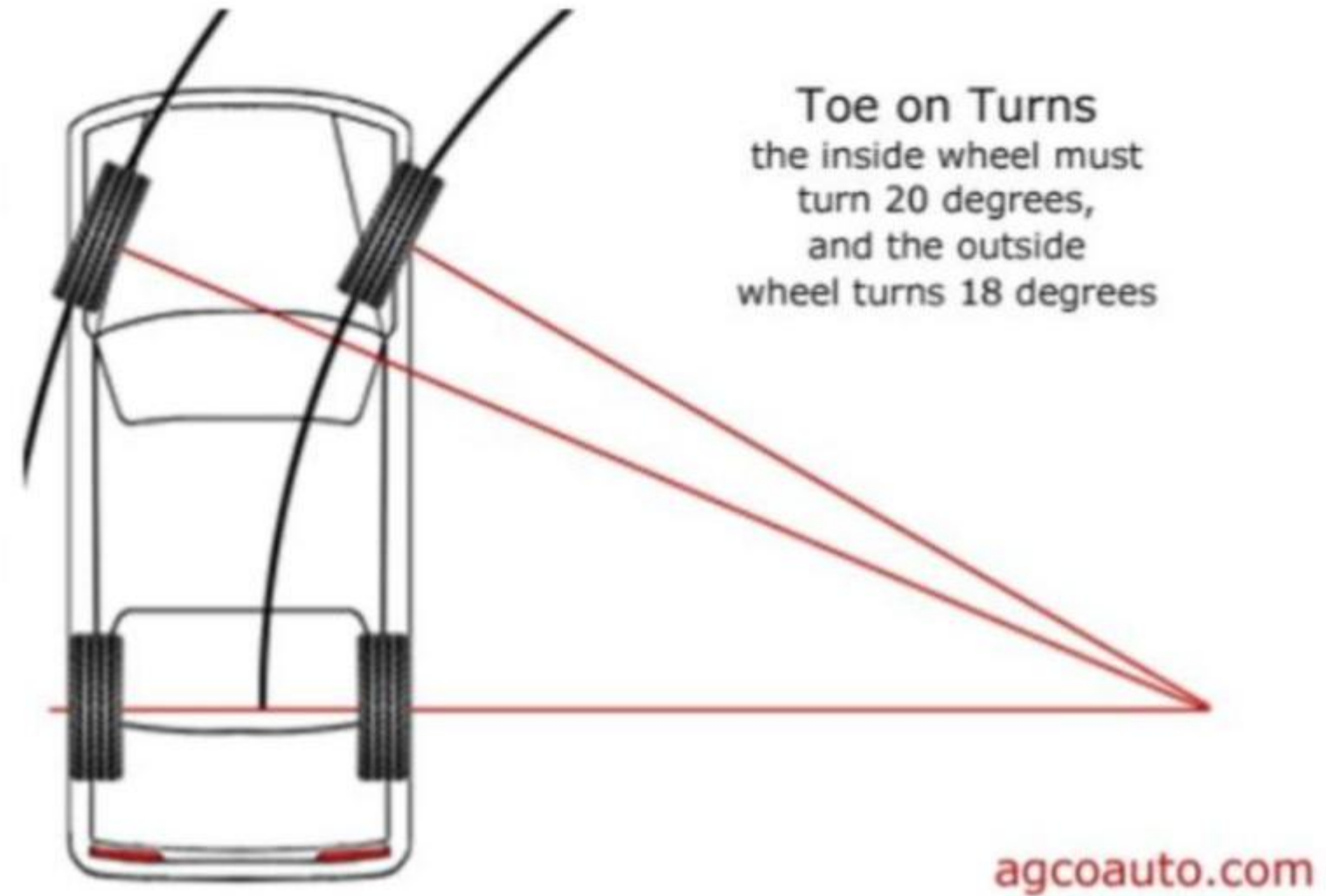




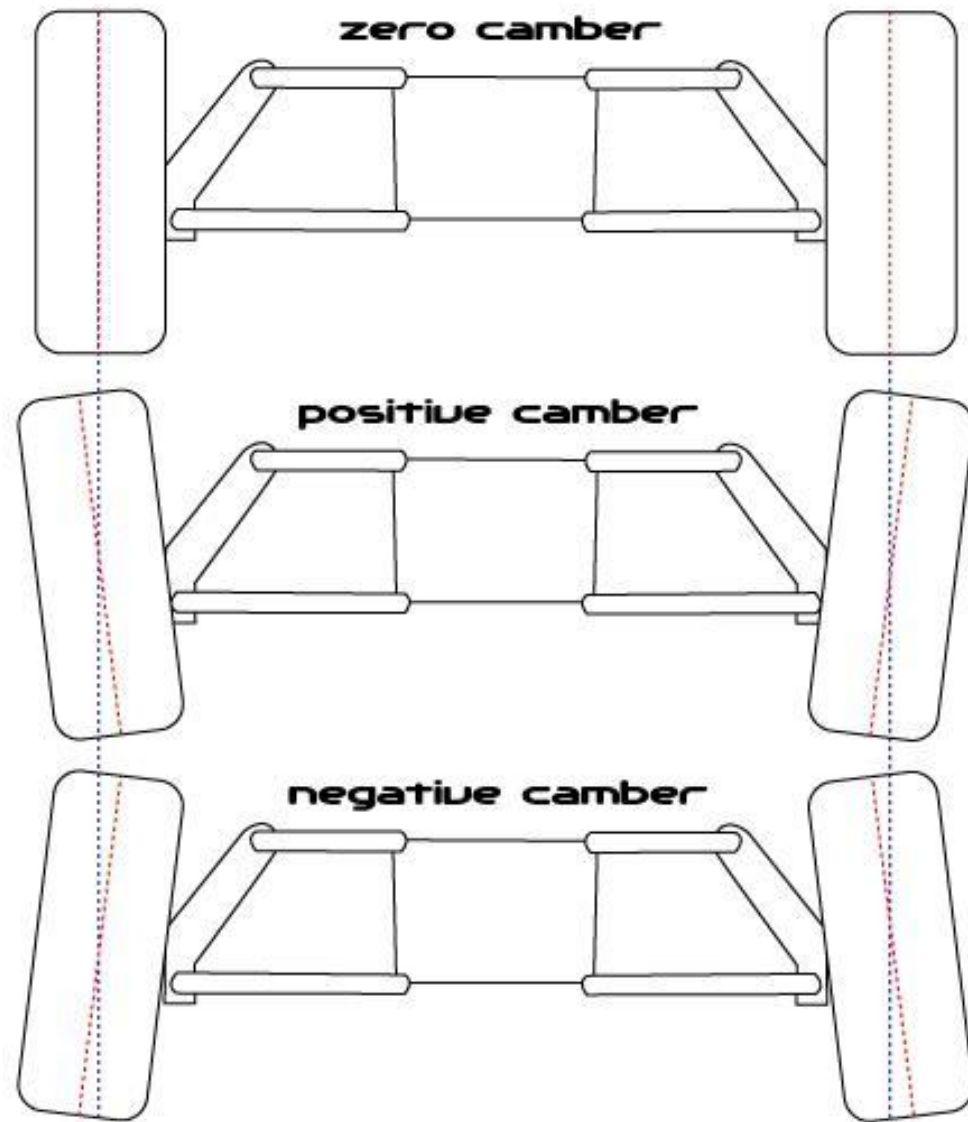
VARIOUS ANGLES OF ALIGNMENT



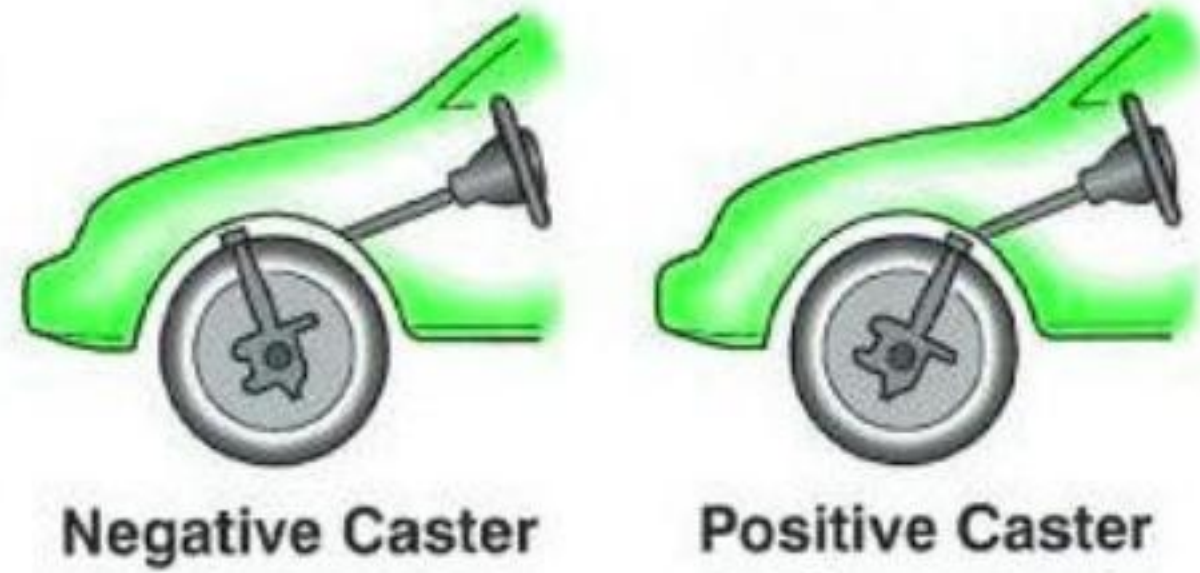
KINGPIN



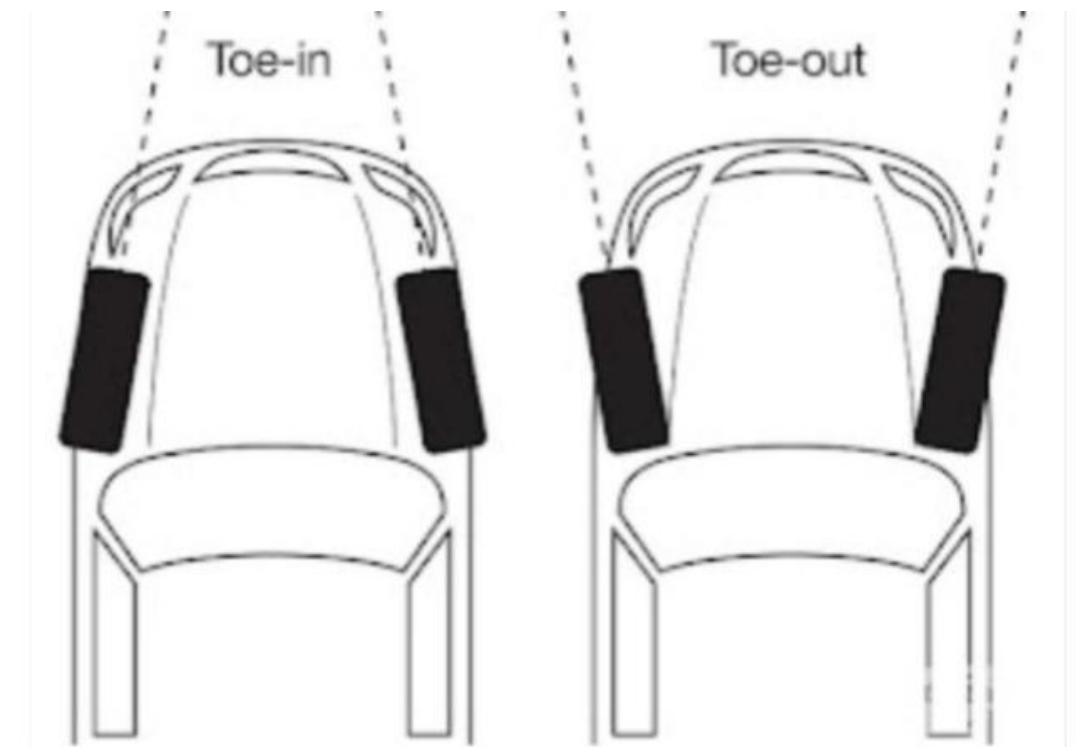
TURNING RADIUS



CAMBER



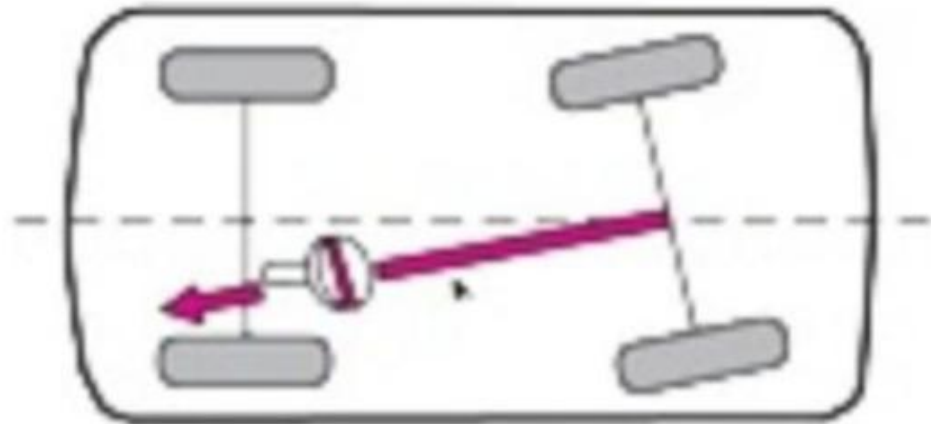
CASTERS



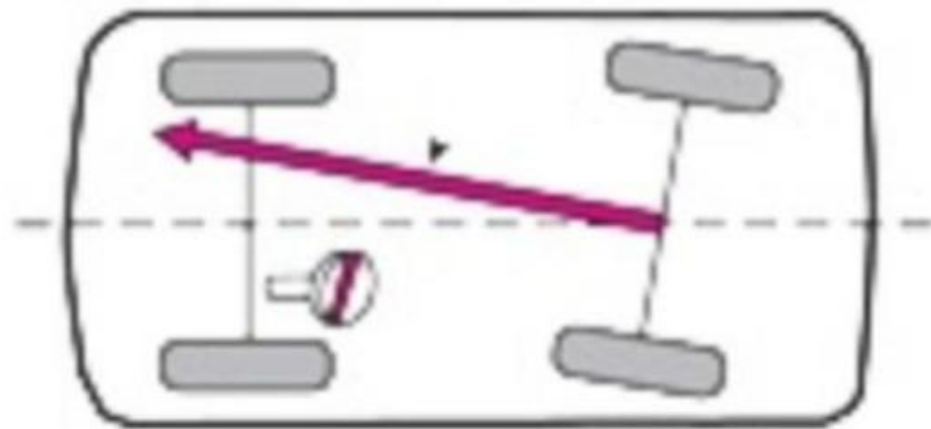
TOES



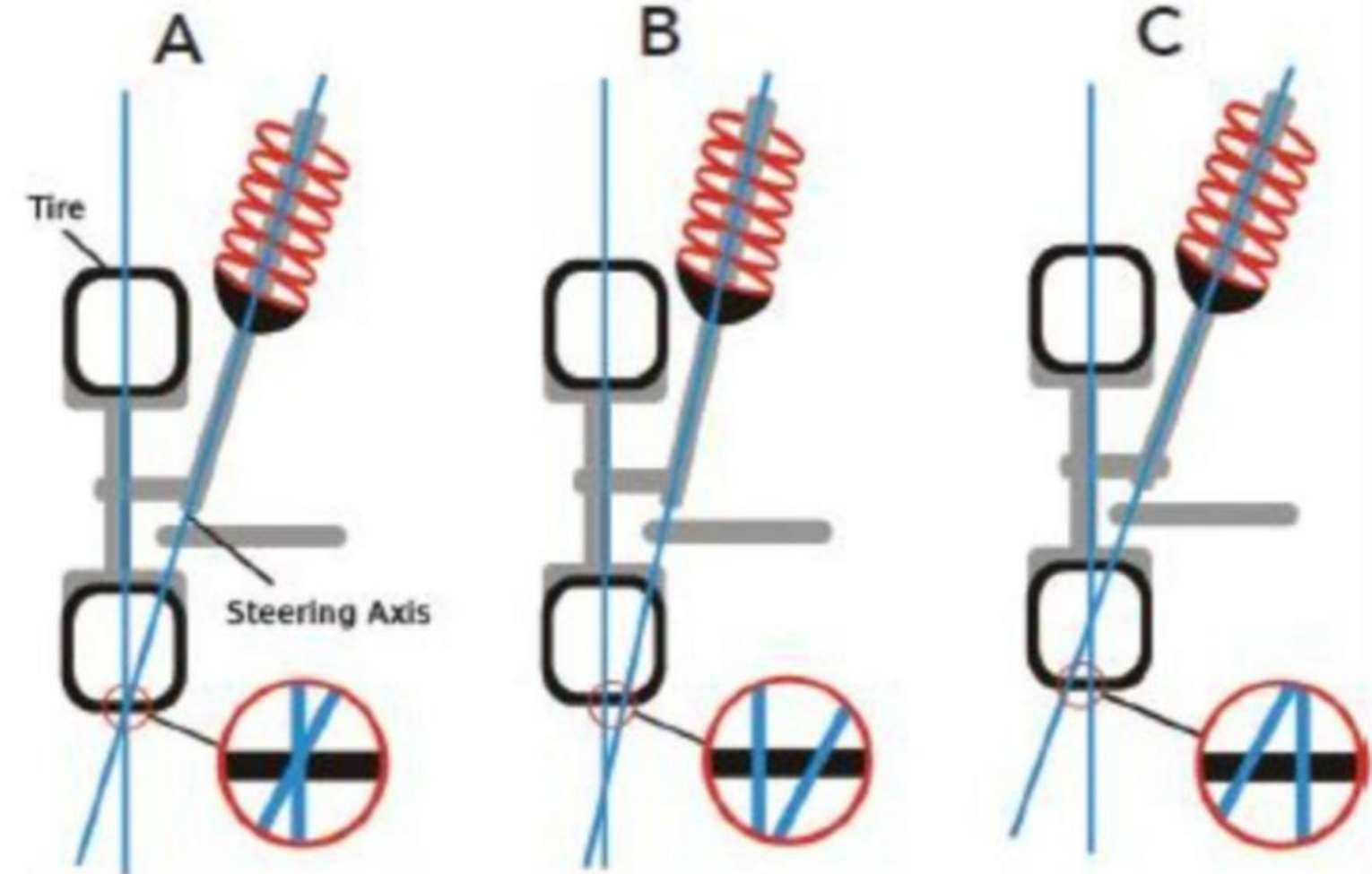
**NEGATIVE
THRUST
ANGLE**



**POSITIVE
THRUST
ANGLE**



THRUST ANGLE



SCRUB RADIUS



Reference:



- <http://differenttypesofengineering.blogspot.com/2016/06/automobile-front-axle-beam-and-stub-axle.html?m=1>
- <https://learnmech.com/front-axle-construction-function-and-types-of-front-axle/>
- <https://lakecityautocare.com/common-wheel-alignment-questions-answered/>



Thank You!