Pinion for Forklift

Pinion for Forklift - The king pin, typically made of metal, is the main pivot in the steering mechanism of a motor vehicle. The original design was in fact a steel pin wherein the movable steerable wheel was mounted to the suspension. Able to freely rotate on a single axis, it limited the levels of freedom of motion of the remainder of the front suspension. In the 1950s, when its bearings were replaced by ball joints, more in depth suspension designs became accessible to designers. King pin suspensions are nevertheless featured on some heavy trucks since they can carry much heavier load.

New designs no longer restrict this apparatus to moving similar to a pin and now, the term may not be used for a real pin but for the axis in the vicinity of which the steered wheels pivot.

The kingpin inclination or also called KPI is also called the steering axis inclination or SAI. This is the definition of having the kingpin placed at an angle relative to the true vertical line on most modern designs, as viewed from the front or back of the lift truck. This has a major impact on the steering, making it likely to return to the straight ahead or center position. The centre position is where the wheel is at its uppermost position relative to the suspended body of the lift truck. The motor vehicles weight has the tendency to turn the king pin to this position.

One more effect of the kingpin inclination is to fix the scrub radius of the steered wheel. The scrub radius is the offset between the tire's contact point with the road surface and the projected axis of the steering down through the king pin. If these points coincide, the scrub radius is defined as zero. Although a zero scrub radius is possible without an inclined king pin, it needs a deeply dished wheel so as to maintain that the king pin is at the centerline of the wheel. It is more practical to incline the king pin and make use of a less dished wheel. This also provides the self-centering effect.