Forklift Pinions

Pinion for Forklifts - The king pin, normally made from metal, is the major axis in the steering device of a vehicle. The first design was in fact a steel pin on which the movable steerable wheel was attached to the suspension. In view of the fact that it can freely revolve on a single axis, it limited the degrees of freedom of motion of the rest of the front suspension. During the 1950s, the time its bearings were substituted by ball joints, more in depth suspension designs became obtainable to designers. King pin suspensions are nevertheless used on some heavy trucks since they have the advantage of being capable of lifting much heavier cargo.

New designs no longer limit this particular device to moving similar to a pin and nowadays, the term may not be used for an actual pin but for the axis around which the steered wheels pivot.

The kingpin inclination or otherwise called KPI is likewise referred to as 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 looked at from the front or back of the lift truck. This has a major effect on the steering, making it likely to return to the centre or straight ahead position. The centre location is where the wheel is at its peak point relative to the suspended body of the lift truck. The vehicles' weight has the tendency to turn the king pin to this position.

One more effect of the kingpin inclination is to set the scrub radius of the steered wheel. The scrub radius is the offset amid 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. Though a zero scrub radius is possible without an inclined king pin, it needs a deeply dished wheel in order to maintain that the king pin is at the centerline of the wheel. It is much more practical to tilt the king pin and use a less dished wheel. This also supplies the self-centering effect.