

Pinions for Forklift

Forklift Pinion - The king pin, usually made of metal, is the main axis in the steering mechanism of a vehicle. The initial design was really a steel pin on which the movable steerable wheel was mounted to the suspension. Able to freely revolve on a single axis, it restricted the degrees of freedom of motion of the rest of the front suspension. In the nineteen fifties, when its bearings were substituted by ball joints, more detailed suspension designs became available to designers. King pin suspensions are nevertheless featured on several heavy trucks as they have the advantage of being capable of lifting a lot heavier weights.

The new designs of the king pin no longer limit to moving similar to a pin. Nowadays, the term might not even refer to an actual pin but the axis wherein the steered wheels revolve.

The KPI or otherwise known as kingpin inclination can also be known as the steering axis inclination or SAI. These terms define the kingpin when it is set at an angle relative to the true vertical line as viewed from the front or back of the forklift. This has a major effect on the steering, making it likely to go back to the straight ahead or center position. The centre location is where the wheel is at its highest point relative to the suspended body of the lift truck. The vehicles' weight tends 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 among the projected axis of the steering down through the kingpin and the tire's contact point with the road surface. If these points coincide, the scrub radius is defined as zero. Even if a zero scrub radius is possible without an inclined king pin, it requires a deeply dished wheel so as to maintain that the king pin is at the centerline of the wheel. It is a lot more sensible to slant the king pin and use a less dished wheel. This likewise offers the self-centering effect.