

Pinion for Forklifts

Forklift Pinion - The main pivot, called the king pin, is found in the steering machinery of a forklift. The first design was a steel pin which the movable steerable wheel was connected to the suspension. Able to freely turn on a single axis, it limited the levels of freedom of movement of the rest of the front suspension. During the nineteen fifties, the time its bearings were replaced by ball joints, more comprehensive suspension designs became available to designers. King pin suspensions are still utilized on some heavy trucks because they could lift a lot heavier cargo.

The newer designs of the king pin no longer restrict to moving like a pin. These days, the term might not even refer to an actual pin but the axis in which the steered wheels turn.

The KPI or also known as kingpin inclination could also be called the SAI or steering axis inclination. These terms describe the kingpin if it is set at an angle relative to the true vertical line as looked at from the front or back of the forklift. This has a major impact on the steering, making it likely to return to the centre or straight ahead position. The centre position is where the wheel is at its highest point relative to the suspended body of the forklift. The vehicles' weight has the tendency to turn the king pin to this position.

The kingpin inclination likewise sets the scrub radius of the steered wheel, which is the offset among projected axis of the tire's connection point with the road surface and the steering down through the king pin. If these items coincide, the scrub radius is defined as zero. Even though 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 much more practical to tilt the king pin and use a less dished wheel. This also offers the self-centering effect.