

## Forklift Pinions

Pinions for Forklift - The main pivot, known as the king pin, is found in the steering machinery of a lift truck. The very first design was a steel pin which 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 rest of the front suspension. In the 1950s, the time its bearings were replaced by ball joints, more comprehensive suspension designs became accessible to designers. King pin suspensions are nonetheless used on some heavy trucks because they have the advantage of being capable of lifting much heavier weights.

The newer designs of the king pin no longer restrict to moving similar to a pin. Now, the term may not even refer to a real pin but the axis wherein the steered wheels revolve.

The KPI or also known as kingpin inclination can likewise be known as the steering axis inclination or SAI. These terms define 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 lift truck. This has a major impact on the steering, making it likely to return to the straight ahead or center position. The centre location is where the wheel is at its uppermost point relative to the suspended body of the forklift. The vehicles' weight has the tendency to turn the king pin to this position.

Another effect of the kingpin inclination is to set 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 likely 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 more practical to tilt the king pin and use a less dished wheel. This also provides the self-centering effect.