

## Komatsu

### Forklift Operation - Maintaining the Stability Triangle

The stability triangle and the center of gravity is amongst the important basic operating factors. Among the hardest things for a lift truck operator to determine is the importance of maintaining their center of gravity within their stability triangle.

### The Stability Triangle

To describe it clearly, a forklift has a 3-point suspension system. When drawing imaginary lines between these three points, the stability triangle is formed. The operator needs to make sure that the center of gravity, that is made, along with the machinery and his load, remains within the stability triangle in order to prevent the forklift from losing balance and tipping over.

### Centers of Gravity

How is the center of gravity defined? When it comes to using a lift truck, we need to be concerned not just with the center of gravity of the load being lifted but as well with the combined center of gravity. This comprises the load which is being picked up as well as the lift truck itself.

The center of gravity of the load is defined as the load center. The load center could be more easily detected in a uniform load situation, such as a bale. A uniform load on a 48 inch long pallet, for example, would have the load center at 24 inches. This is a common load center for numerous smaller capacity lift trucks. Then again, if a load is not centered properly, like with non-symmetrical things, maybe an engine for example, then great care and caution must be taken to be able to gauge the center of gravity.

Furthermore, the lift truck has it's own center of gravity. This shifts each and every time the lift truck picks up a load. When the load is lifted, the center of gravity shifts forward. Care must be taken to be able to maintain the center of gravity within the forklift's stability triangle. This occurs by following the numbers and not raisin over the maximum allowable, given the center of the load. Also, the load center must be taken into account. Be very careful whenever raising the load, the load center also shifts forward.

If the stability triangle is respected and the center of gravity is maintained, the operator and all workers and pedestrians nearby can stay much safer. This will truly ensure balanced loads, a balanced machine and safer for everyone.