

## Komatsu

### Forklift Operation - Maintaining the Stability Triangle

One of the important basic discussions about lift trucks is taking into account the stability triangle and the center of gravity. Amongst the hardest things for a lift truck operator to judge is the significance of maintaining their center of gravity in their stability triangle.

### The Stability Triangle

In order to explain 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 should ensure that the center of gravity, that is made, combined with his load and the machine itself, remains within the stability triangle in order to guard against the forklift losing balance and tipping over.

### Centers of Gravity

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

The load's center of gravity is defined as the load center. The load center could be more easily detected in a uniform load situation, like for example a bale. A uniform load on a 48 inch long pallet, for instance, will have the load center at 24 inches. This load center is really common for lots of lift trucks with smaller capacity. However, if a load is not correctly centered, like with things that are not symmetrical, maybe an engine for example, then a lot of care and caution must be taken to be able to gauge the center of gravity.

Additionally, the lift truck has it's own center of gravity. This shifts every time the lift truck carries a load. Once the load is lifted, the center of gravity moves forward. A lot of care needs to be taken to be able to maintain the center of gravity in the forklift's stability triangle. This happens by following the numbers and not lifting more than the maximum allowable, given the center of the load. As well, the load center has to be considered. Be very careful whenever lifting the load, the load center also shifts forward.

The operator and everybody else who works close-by or in the nearby vicinity, could stay a lot safer if the stability triangle is respected and the center of gravity is maintained. This will truly ensure balanced loads, a balanced machinery and safer for everybody.