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# RIGGING SAFETY FACTS ASK THE CG FORCE

(If your question is selected for Rigging Safety Facts, All-Lifts, Inc. will send you a hat)

**Rob asks**; When ever I call All-Lifts with a rigging question, you guys ask me where the Center of Gravity (CG) is. What is Center of Gravity?

**CG Force**: Merriam Webster dictionary defines CG as the point at which the entire weight of a body may be considered as concentrated so that if supported at this point the body would remain in equilibrium in any position. In other words the point that if you could pick the item up it would be balanced.

It is very important to understand what CG is in order to continue to set up a lift. Once the weight of the load is determined, the loads on the slings and hardware can be determined. When a single sling is used, it is a simple matter to select the sling and the hitch that will support the load. The capacity must be equal to or greater that the weight.

When multiple leg slings are used, calculating the load on each sling requires more effort. The simplest situation is two equal vertical legs. The load will be shared equally if the CG is placed equally spaced between the pick points.

When the CG is not equally spaced between the pick points, the slings and fittings will not carry an equal share of the load. The sling connected closest to the CG will carry the greatest share of the load.

Sling #2 is connected closest to CG. It will carry the greatest share of the load.

Greatest share of load;
SLING #2= 10 x 8/(8+2)= 8 tons
SLING #1= 10 x 2/(8+2)= 2 tons

A demonstration game about center of gravity can be found at the web site listed below
http://www.phy.ntnu.edu.tw/java/block/block.html
More info go to www-all-lifts.com

**Call All-lifts, Inc. for all you hoisting requirements. Hoists, slings, mechanical jacks, hydraulic jacks, overhead cranes, lifting beams, lifting clamps.**
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