

RIGGING FOR HOISTING & CRANING

IDENTIFY

Rigging is only as strong as its weakest link. Workers' lives depend on the strength of that link. It doesn't matter what safe working load is stamped on a hook if the hook is cracked and twisted or opening up at the throat, it can't deliver its full rated capacity. Inspection is vital in rigging and hoisting.

COMMUNICATE AND CONTROL

Rigging hardware must have enough capacity for the job. Only load-rated hardware of forged alloy steel should be used for hoisting. Load-rated hardware is stamped with its working load limit or WLL.

Adequate capacity is the first thing to look for in rigging hardware. For hoisting, the design factor must be five to one, for example, if the load equals 5,000 pounds, the rigging must equal 25,000 pounds. Once the right hardware has been chosen for a job, it has to be inspected regularly as long as it's in service.

There are warning signs that hardware has been weakened in use and should be replaced.

With your crew, inspect rigging hardware in use or stored on site. Repair — to the manufacturers specifications — or replace any damaged or defective items you find.

Cable clips

- Check for wear on saddle.
- Check that original parts are in place and in good condition.
- Check for cracks.
- Check for proper size of the wire rope.

Shackles

- Check for wear and cracks on saddle and pin.
- Check that pin is straight and properly seated.
- Check that legs of shackle are not opening up.

Hooks

- Check for wear, twisting, and cracks.
- Make sure that hook is not opening up.
- Ensure the hook latch spring (if equipped) is operational and not altered.

Turnbuckles

- Check for cracks and bends.
- Check rods for straightness and damage to threads.

Cracks

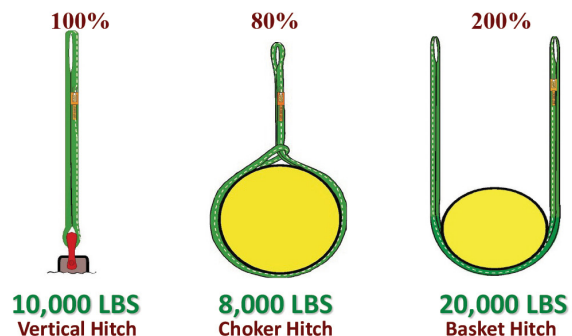
- Inspect closely — some cracks are very fine.

Missing parts

- Make sure that parts such as catches on hooks, nuts on cable clips, and cotter pins in shackle pins are still in place.

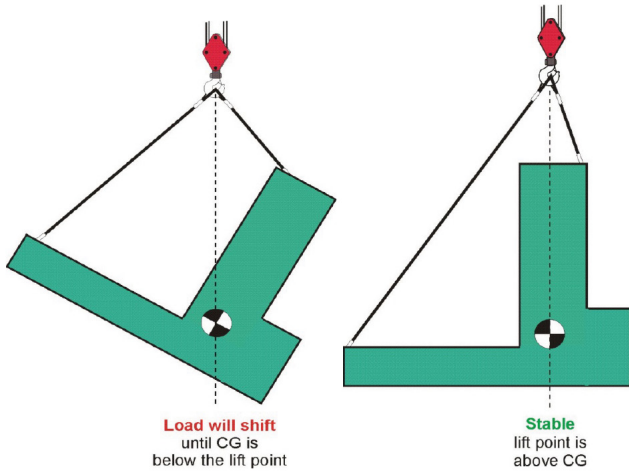
FACTS AND TIPS

There are several types of hitches that are typically used while hoisting — vertical, choker, and basket. Each has a certain purpose and benefits.



The worker doing the rigging should be aware of the best method for hooking up the loads. If unsure, ask the crane or hoist operator. Be sure to place the hook directly over the balance point of the load. The centre of gravity (CG) will depend on the load shape and size. All hoisted loads should be raised as level as possible to avoid excess stress on the slings or hoist. Sling softeners should be used on loads that have sharp edges which may cut a sling as it's being hoisted.

FACTS AND TIPS



Slings come in several different styles — wire rope, single-path poly round, and synthetic nylon. Each of these slings has benefits and restrictions. Be sure to use the correct sling for the hoist.

All slings should be inspected before use to check for defects. Some basic defects may include the following:

- Wire rope:
 - Birdcage strands
 - Pigtailed (kinked)



- Single-path poly round:
 - Exposed core
 - Cut sheathing



- Synthetic nylon:
 - Cut through
 - Abrasion wear



If a sling fails the inspection, it must be removed from service immediately. There is no such thing as, “just a small lift.” The sling may fail and cause a serious incident.

Each sling will have a tag that the rigger should inspect to ensure the sling will be able to hoist the load. This tag will also verify the weight capacity of each hitch.



Do not use a sling where the tag is not attached or legible.

THE QUIZ

1. All slings must be inspected prior to use:
TRUE _____ FALSE _____
2. What are the three hitches used when rigging?
a) _____
b) _____
c) _____
3. If a sling is defective, what should happen to it?

4. All slings will lift the same amount of weight:
TRUE _____ FALSE _____
5. What does “CG” stand for?

6. What is the first thing to look for in rigging hardware?

ANSWERS:
1. TRUE; 2. Vertical, choke, basket; 3. Remove from service; 4. FALSE; 5. Centre of gravity; 6. Adequate capacity