4.5. <u>Choker hitches</u> – If a shackle is used to create a choker sling, make sure that the shackle pin is connected through the sling eye. Otherwise, slack adjustments could cause the pin to unscrew.



4.6. <u>Synthetic slings</u> – Synthetic web slings may not be bunched together in the bow of a shackle. A properly sized sling shackle may be needed.

Also, note that threads on screw pin shackles can cut synthetic slings. Avoid loading on shackle pin or protect this area.

4.7. <u>Secure screw pin</u> – Mouse the screw pin if it could inadvertently unscrew, or when used for long term or high vibration applications. Use multiple wraps if load may slide on the shackle pin.

Where the shackle pin could rotate during the lift, consider using a bolt-type pin.







Hoist hook

Grab hook

Sorting hook

Sling hook

### HOOKS

### 1. <u>Common types.</u>

- 1.1. <u>Hoist hook</u> Common general-use hook. Can accommodate many slings, master links, and shackles. However, wider web slings will not fit in the bowl of the hook without bunching. A sling shackle may be needed to accommodate.
- 1.2. <u>Grab hook</u> Meant to be used with alloy steel chain slings. Make sure the hook is the proper grade (80 or 100).
- 1.3. <u>Choker hook</u> Meant to be used with wire rope to form a choker hitch.
- 1.4. <u>Sling hook</u> The wider bowl of this hook helps to prevent bunching of synthetic slings.
- 1.5. <u>Sorting hook</u> Meant to sort and place steel, steel plates, & cylinders. WLL varies based on whether the load is imparted in the bowl of the hook (higher WLL) or near the tip (lower WLL). Usually not for overhead lifting.
- 1.6. <u>Safety latches</u> Required where the hook can accommodate. Grab hooks & sorting hooks are typically not designed to accommodate safety latches.
- 1.7. <u>Attachment types</u> There are several ways that a hook can be designed to connect to hoisting equipment. Some of the most common are the eye, reverse eye, swivel, clevis, and shank.



#### 2. WLL & selection

WLL should be permanently marked on the hook. If not, refer to manufacturer's data. Do not use a hook if its WLL is not known.

Understand that hooks of the same size and type may have different WLL based on material used to make the hook (i.e. carbon steel vs. alloy steel).

Make sure hooks have a WLL equal to or greater than that of the sling(s) to which it is coupled. Maximum capacity applies only when load is resting in bowl of the hook.







Max 5% wear

(outside 45° marks)

Max 10% wear

#### 3. Visual inspections.

Remove hooks from service if:

- a. Safe working capacity is unknown.
- b. Cracks, bends, stretch, or visible distortion.
- c. Excessive nicks, gouges, or wear (5% or 10% orig. dimension).
- d. Excessive hook throat opening (5% or more than original ¼" max.)
- e. Twisting or distortion
- f. Safety latch or other components missing or damaged
- g. Attempt to repair by heating, welding or bending
- h. Weld splatter or discoloration from excessive temperature
- i. Make shift hooks, components, or repairs.
- j. Corrosion, pitting, or chemical damage
- k. Visible damage that casts doubt as to safe continued use



#### 4. Other notes.

- 4.1. Protection Avoid contact with sharp edges or dragging over abrasive surfaces.
- 4.2. <u>Sling eyes</u> Do not fit a wire rope sling eye over any hook that is wider than ½ the length of the sling eye. For synthetic web slings, the hook may be no wider than ½ the sling's eye length.
- 4.3. <u>Repairs</u> No repairs. Never attempt to repair, alter, rework, or reshape a hook by welding, heating, burning, or bending. This will dramatically weaken the hook and possibly lead to catastrophic failure.

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4.4. <u>Two slings in hook</u> – Maximum included angle is 90° (45° from vertical). If angle between slings is greater than this – *in other words, angle sling makes with load is between 30° & 45°* – use a longer sling, a shackle or a bull ring with shackle (depending on plane of slings) which will allow a max. included angle of 120°.

Take care not to tip load or back load the hook.





1100



CORRECT

4.5. <u>Grab hooks</u> – Make sure the chain seats completely in the bowl of the hook. Do not tip load.

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4.6. <u>Duplex hooks</u> – Must be loaded uniformly. If only attaching one sling, couple to this hook using a shackle through the hole at the base of the hook.



4

Safety Management, Training & Cons

WRONG