



# *Rigging Safety Procedures*

**Table of Contents**

*Hoisting and Rigging Hazards*..... 3

*Elements that can Affect Hoisting Safety*..... 3

    Working Load Limit (WLL) not known .....3

    Defective Components.....3

*Responsibilities* ..... 3

*Inspection Frequency* ..... 3

*Slings*..... 4

*Procedures and Precautions with Wire Rope*..... 4

*Fiber Rope Slings* ..... 5

*Rigging Hardware* ..... 5

*Hoisting Hooks*..... 6

*Swivels*..... 6

*Shackles* ..... 6

*Eye Bolts* ..... 6

*Hoisting Tips*..... 6

*Rigging, Lifting, and Landing Loads* ..... 7

*Determining Load Weights* ..... 7

*Hoist Pre-Operational/Daily Checklist*..... 8

*Synthetic Web and Polyester Round Sling Inspection Checklist/Criteria* ..... 9

*Wire Rope Sling Inspection Checklist/Criteria* ..... 10

*Alloy Steel Chain Sling Inspection Checklist/Criteria*..... 11

*Lever and Chain Hoist Inspection Checklist/Criteria*..... 12

*Wire Rope Type Lever Hoist Inspection Checklist/Criteria*..... 13

*Hook Inspection Checklist/Criteria* ..... 14

*Jack Inspection Checklist/Criteria* ..... 15

*Sheave Block Inspection Checklist/Criteria*..... 16

*Spreader and Load Equalizer Beams Inspection Checklist/Criteria*..... 17

*Turnbuckle Inspection Checklist/Criteria*..... 18

*Eye bolt and Eye nut Inspection Checklist/Criteria*..... 19

*Rings, Links and Swivel Inspection Checklist/Criteria* ..... 20

*Shackle Inspection Checklist/Criteria* ..... 21

*Shackles/Slings Visual Tools* ..... 22

*Sling Inspection Record*..... 25

## Hoisting and Rigging Hazards

It is important that workers involved with hoisting and rigging activities are trained in safety and operating procedures. Hoisting equipment should be operated only by trained personnel.

A safe rigging operation requires the rigger to know:

- The weight of the load and rigging hardware.
- The capacity of the hoisting device.
- The working load limit of the hoisting rope, slings, and hardware.

When the weights and capacities are known, the rigger must then determine how to lift the load so that it is stable. Training and experience allows riggers to recognize hazards that can have an impact on a hoisting operation. Riggers must be aware of elements that can affect hoisting safety, factors that reduce capacity, and safe practices in rigging, lifting, and landing loads. Riggers must also be familiar with the proper inspection and use of slings and other rigging hardware.

## Elements that can Affect Hoisting Safety

### *Working Load Limit (WLL) not known*

- Don't assume. Know the workload limits of the equipment being used. Never exceed these limits.

### *Defective Components*

- Before use examine all hardware, tackle, and slings. Destroy defective components. Defective equipment that is merely discarded may be picked up and used by someone unaware of its defects.
- Questionable equipment. Do not use equipment that is suspected to be unsafe or unsuitable, until its suitability has been verified by a competent person.

## Responsibilities

### Supervisor

- Responsible to have hoisting and rigging hardware inspected and maintained.
- Function as the coordinator of all work necessary to perform hoisting and rigging hardware inspections.
- Ensure inspection of hardware process has been completed prior to use of hardware.
- Have a qualified competent rigger to perform inspections.
- Ensure all rigging hardware in the area is properly tagged and inspected prior to use.
- Shall be a qualified competent person rigger and be familiar with the hoisting and rigging hardware for which he/she is responsible.
- Delivery of inspection records to main office for filing.

## Inspection Frequency

Planning, preparation and review are required to perform inspection and testing of hoisting and rigging components. Several types of inspections are explained below. In all cases complete inspection forms that are appropriate to completely document the inspection.

Our supervisor or designee to perform inspection prior to issuing rigging tools and hardware. Document on the appropriate inspection checklist.

- Ensure frequent inspections are performed, as appropriate, on hoisting and rigging hardware to

ensure they are maintained in safe operating condition.

- Frequent inspections are “visual” inspections only that are to be done during and after use. A checklist of items to be inspected is provided in the specific attachments to these guidelines.
- The intent of this inspection is not intended to exclude the normal (initial) prior-to-use or after-use inspections.
- Ensure that any time a piece of rigging hardware appears to be damaged or is suspected of being overloaded, it shall be taken out of service and tagged “Do Not Use” and returned to the office.
- Ensure items damaged or worn sufficiently to affect operation are replaced before continuing operations.
- Ensure that when a piece of rigging hardware appears to be damaged or is suspected of being overloaded, it is tagged “Do Not Use” and removed from service.
- Perform inspection prior to use.

## **Slings**

After the hoist rope, the sling is the most commonly used piece of rigging equipment. Observe the following precautions with slings:

- Never use damaged slings.
- Inspect slings prior to using to ensure their safety.
- Check wire rope slings for kinking, wear, abrasion, broken wires, worn or cracked fittings, loose sizing and splices, crushing, flattening, and rust or corrosion. Pay special attention to the areas around thimbles and other fittings.
- Slings should be marked with an identification number and their maximum capacity on a flat ferrule or permanently attached ring. Mark the capacity of the sling for a vertical load or at an angle of 45°. Ensure that everyone is aware of how the rating system works.
- Avoid sharp bends, pinching, and crushing. Use loops and thimbles at all times. Corner pads that prevent the sling from being sharply bent or cut can be made from split sections of large-diameter pipe, corner saddles, padding, or blocking.
- Never allow wire rope slings, or any wire rope, to lie on the ground for long periods of time or on damp or wet surfaces, rusty steel, or near corrosive substances.
- Avoid dragging slings out from underneath loads.
- Keep wire rope slings away from flame cutting and electric welding.
- Never make slings from discarded hoist rope.
- Avoid using single-leg wire rope slings with hand-spliced eyes. The load can spin, causing the rope to unlay and the splice to pull out.
- Never wrap a wire sling completely around a hook. The sharp radius will damage the sling. Use the eye.
- Avoid bending the eye section of wire rope slings around corners. The bend will weaken the splice or swaging. There must be no bending near any attached fitting.

## **Procedures and Precautions with Wire Rope**

- Ensure that the right size and construction of rope is used for the job.
- Inspect and lubricate rope regularly according to manufacturer’s guidelines.
- Never overload the rope. Minimize shock loading. To ensure there is no slack in the rope, start the load carefully, applying power smoothly and steadily.
- Take special precautions and/or use a larger size rope whenever:
  - The exact weight of the load is unknown.
  - There is a possibility of shock loading.

- Conditions are abnormal or severe.
- There are hazards to personnel.
- Use softeners to protect rope from corners and sharp edges.
- Avoid dragging rope out from under loads or over obstacles.
- Do not drop rope from heights.
- Store all unused rope in a clean, dry place.
- Never use wire rope that has been cut, kinked, or crushed.
- Ensure that rope ends are properly seized.
- Use thimbles in eye fittings at all times.
- Prevent loops in slack lines from being pulled tight and kinking. If a loop forms, don't pull it out unfold it.
- Once a wire rope is kinked, damage is permanent. A weak spot will remain no matter how well the kink is straightened out.
- Check for abnormal line whip and vibration.
- Avoid reverse bends.
- Ensure that drums and sheaves are the right diameter for the rope being used.
- Ensure that sheaves are aligned and that fleet angle is correct.
- Sheaves with deeply worn or scored grooves, cracked or broken rims and worn or damaged bearings must be replaced.
- Ensure that rope spools properly on the drum. Never wind more than the correct amount of rope on any drum. Never let the rope cross-wind.

## **Fiber Rope Slings**

Fiber rope slings are preferred for some applications because they are pliant, grip the load well and do not mar its surface. They should be used only on light loads, however, and must never be used on objects that have sharp edges capable of cutting the rope or in applications where the sling will be exposed to high temperatures, severe abrasion or acids.

The choice of rope type and size will depend on the application, the weight to be lifted and the sling angle. Before lifting any load with a fiber rope sling, be sure to inspect the sling carefully. Fiber slings, especially manila, deteriorate far more rapidly than wire rope slings and their actual strength is very difficult to estimate. Like other slings, fiber rope slings should be inspected regularly. Look for external wear and cutting, internal wear between strands, and deterioration of fibers.

Open up the rope by untwisting the strands but make sure not to kink them. The inside of the rope should be as bright and clean as when it was new. Check for broken or loose yarns and strands. An accumulation of powder-like dust indicates excessive internal wear between strands as the rope is flexed back and forth during use.

## **Rigging Hardware**

Know what hardware to use, how to use it, and how its working load limits (WLL) compare with the rope or chain used with it. All fittings must be of adequate strength for the application. Only forged alloy steel load-rated hardware should be used for overhead lifting. Load-rated hardware is stamped with its rating.

Inspect hardware regularly and before each lift. Telltale signs include: – ware, – cracks, – severe corrosion, – deformation/bends, – mismatched parts, – obvious damage.

## **Hoisting Hooks**

- Should be equipped with safety catches (except for sorting or grab hooks).
- Should be forged alloy steel with WLL stamped or marked on the saddle.
- Should be loaded at the middle of the hook. Applying the load to the tip will load the hook eccentrically and reduce the safe working load considerably.
- Should be inspected regularly and often. Look for wear, cracks, corrosion, and twisting especially at the tip – and check throat for signs of opening up.

## **Swivels**

- Reduce bending loads on rigging attachments by allowing the load to orient itself freely.
- Should be used instead of shackles in situations where the shackle may twist and become eccentrically loaded.

## **Shackles**

- Available in various types.
- For hoisting, should be manufactured of forged alloy steel.
- Do not replace shackle pins with bolts. Pins are designed and manufactured to match shackle capacity.
- Check for wear, distortion, and opening up. Check crown regularly for wear. Discard shackles noticeably worn at the crown.
- Do not use a shackle where it will be pulled or loaded at an angle. This severely reduces its capacity and opens up the legs.
- Do not use screw pin shackles if the pin can roll under load and unscrew.

## **Eye Bolts**

- For hoisting, use eye or ring bolts of forged alloy steel.
- Use bolts with shoulders or collars. Shoulderless bolts are fine for vertical loading but can bend and lose considerable capacity under angle loading. Even with shoulders, eye and ring bolts lose some capacity when loaded on an angle.
- Make sure that bolts are at right angles to hole, make contact with working surface, and have nuts properly torqued.
- Pack bolts with washers when necessary to ensure firm, uniform contact with working surface.
- Make sure that tapped holes for screw bolts are deep enough for uniform grip.
- Apply loads to the plane of the eye, never in the other direction. This is particularly important with bridle slings, which always develop an angular pull in eye bolts unless a spreader bar is used.
- Never insert the point of a hook in an eye bolt. Use a shackle instead.
- Do not reeve a sling through a pair of bolts. Attach a separate sling to each bolt.

## **Hoisting Tips**

- Never wrap a wire rope sling completely around a hook. The tight radius will damage the sling.
- Make sure the load is balanced in the hook. Eccentric loading can reduce capacity dangerously.
- Never point-load a hook unless it is designed and rated for such use. Point-loading can cut capacity by more than half.
- Never wrap the crane hoist rope around the load. Attach the load to the crane hook by slings or other rigging devices.
- Avoid bending wire rope slings near attached fittings or at eye sections.

## **Rigging, Lifting, and Landing Loads**

- Rig loads to prevent any parts from shifting or dislodging during the lift. Suspended loads should be securely slung and properly balanced before they are set in motion.
- Keep the load under control at all times. Use one or more taglines to prevent uncontrolled motion.
- Loads must be safely landed and properly blocked before being unhooked and unslung.
- Lifting beams should be plainly marked with their weight and designed working loads, and should only be used for their intended purpose.
- Never wrap the hoist rope around the load. Attach the load to only the hook, with slings or other rigging devices.
- The load line should be brought over the load's center of gravity before the lift is started.
- Keep hands away from pinch points as slack is being taken up.
- Wear gloves when handling wire rope.
- Make sure that everyone stands clear when loads are being lifted, lowered, and freed of slings.
- As slings are being withdrawn, they may catch under the load and suddenly fly loose.
- Before making a lift, check to see that the sling is properly attached to the load.
- Never work under a suspended load.
- Never make temporary repairs to a sling.
- Procedures for proper repair should be established and followed.
- Secure or remove unused sling legs of a multi-leg sling before the load is lifted.
- Never point-load a hook unless it is designed and rated for such use.
- Begin a lift by raising the load slightly to make sure that the load is free and that all sling legs are taking the load.
- Avoid impact loading caused by sudden jerking during lifting and lowering. Take up slack on the sling gradually. Avoid lifting or swinging the load over workers below.
- When using two or more slings on a load, ensure that they are all made from the same material.
- Prepare adequate blocking before loads are lowered. Blocking can help prevent damage to slings.

## **Determining Load Weights**

A key step in rigging is determining the weight of the load that will be hoisted. You can obtain the load's weight from shipping papers, design plans, catalogue data, manufacturer's specifications, and other dependable sources.

**Hoist Pre-Operational/Daily Checklist**

Project Name:		Project Location:	
Inspected by:		Date:	
Type:	Size:	Reach:	Load Limit:

**Instructions:** Inspect sling using this checklist. Sign off only if all checklist items are found satisfactory. Any unsatisfactory items should be reported to the supervisor.

CONDITION S + Satisfactory, U - Unsatisfactory, NA Not Applicable + - NA

**Instructions For Pre-Operational Sling Checklists**

1. The purpose of these checklists is to ensure we use equipment that is properly functioning and there are no visual deficiencies. We cannot operate equipment that does not function properly. We do not allow deviations for equipment that is questionable or that has visual damage. When a lifting device such as a sling has any physical damage or an unknown capacity, we cannot use these devices with any degree of confidence.
2. The Pre-Operational Checklist is to be completed daily or before operating the crane. All checklist items must be found to be satisfactory. Each crane should have this checklist. Supervisors should keep completed forms.
3. The Pre-Operational Sling Checklist should be completed for each sling used. The five checklist items must be found satisfactory before the sling is used. Slings found to have unsatisfactory items should be removed from service.

**CONDITION S + Satisfactory, U - Unsatisfactory, NA Not Applicable** + - **NA**

Sling Markings	Slings must be marked with manufacturer and the load capacity of the sling.			
	Is the sling used at or below the rated capacity of the weakest component?			
SLING DEFECTS	Alloy slings (check for cracked, deformed or excessively worn links)			
	Wire rope slings (check for 10 or more random broken wires, 5 broken one lay, scraping 1/3 dia. outside wires, kinking, crushing bird caging, heat damage distortion, crushing deformed.)			
	Metal Mesh Slings (check for broken weld, heavy abrasion, broken wire, cracked, deformed, corrosion)			
	Synthetic webbing slings (check for chemical damage, burns, melting, charring, snags, punctures, tears cuts, worn stitches, holes, broken stitching, distortion )			



### Synthetic Web and Polyester Round Sling Inspection Checklist/Criteria

DESCRIPTION:	PROJECT:							
IDENTIFICATION No.:	SERIAL No.:							
INSPECTIONS CHECKLIST	Sun. + -	Mon. + -	Tues. + -	Wed. + -	Thurs. + -	Fri. + -	Sat. + -	Sun. + -
<b>Visually inspect the synthetic web and polyester round sling for the following conditions</b>								
Any evidence of acid or caustic burns.								
Melting or charring of any part of the sling.								
Any holes, cuts, snags or tears.								
Any broken or worn stitching.								
Any excessive abrasive wear.								
Any excessive pitting or corrosion, cracks distortion or broken fittings.								
Any other visible damage that might impair the strength of the sling.								
Missing rigging hardware identification tag/label showing size and rated capacity.								
Hooks attached to slings shall be inspected IAW Attachment H, Hook Inspection Checklist / Criteria.								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the rigging hardware from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
<b>Certification Signature</b> _____ <b>Date</b> _____								



### Alloy Steel Chain Sling Inspection Checklist/Criteria

DESCRIPTION:	PROJECT:							
IDENTIFICATION No.:	SERIAL No.:							
INSPECTIONS CHECKLIST	Sun. + -	Mon. + -	Tues. + -	Wed. + -	Thurs. + -	Fri. + -	Sat. + -	Sun. + -
<b>Visually inspect the alloy steel chain sling for the following conditions</b>								
Wear, nicks, cracks, breaks, gouges, stretch, bends, weld splatter, or discoloration from excessive heat.								
Freely hanging links and attachments.								
Latches on hooks, if present, should hinge freely and seat properly without evidence of permanent distortion.								
Missing identification tag / label showing size, grade, rated capacity and manufacturer.								
Hooks attached to slings shall be inspected IAW Attachment H, Hook Inspection Checklist / Criteria.								
Each link and each attachment shall be examined individually, taking care to expose inner link surfaces of the chain and chain attachments.								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the rigging hardware from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
Certification Signature _____ Date _____								

**Lever and Chain Hoist Inspection Checklist/Criteria**

DESCRIPTION:	PROJECT:							
IDENTIFICATION No.:	SERIAL No.:							
INSPECTIONS CHECKLIST	Sun. + -	Mon. + -	Tues. + -	Wed. + -	Thurs. + -	Fri. + -	Sat. + -	Sun. + -
<b>Visually inspect the lever and chain hoist for the following conditions</b>								
All functional operating mechanisms for maladjustment interfering with proper operation.								
Hook latches for proper attachment and operation, if used.								
Load chain reeving for compliance with hoist manufacturer's recommendations.								
Hoist lever for bends, cracks, or other damage.								
The manufacturer's name, model or serial number and rated capacity of the hoist shall be marked on the hoist or load block.								
Hooks attached to slings shall be inspected IAW Attachment H, Hook Inspection Checklist / Criteria								
The hoist chain is to be visually inspected IAW Attachment E, Alloy Steel Chain Sling Inspection Check / Criteria.								
Evidence of loose bolts, nuts or rivets.								
Evidence of worn, corroded, cracked, or distorted parts such as load blocks, suspension housing, levels, chain attachments, clevises, yokes, suspensions bolts, shafts, gears, bearings, pins, rollers, and locking and clamping devices.								
Warning label required by ANSI B30.21 on lever operated hoists only.								
End connections of load chain, including over travel restraints.								
The existence of gouges, nicks, corrosion, weld spatter, or distorted links is sufficient reason for questioning chain safety and considering chain replacement. Decision shall be made by a qualified person.								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the equipment from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
Certification Signature _____ Date _____								

**Wire Rope Type Lever Hoist Inspection Checklist/Criteria**

DESCRIPTION:	PROJECT:							
IDENTIFICATION No.:	SERIAL No.:							
INSPECTIONS CHECKLIST	Sun. + -	Mon. + -	Tues. + -	Wed. + -	Thurs. + -	Fri. + -	Sat. + -	Sun. + -
<b>Visually inspect the wire rope type lever hoist for the following conditions</b>								
All function operating mechanisms for maladjustment interfering with proper operation.								
Hook latches for proper attachment and operation, if used.								
Wire rope reeving for compliance with hoist manufacturer's recommendations.								
Hoist lever for bends, cracks or other damage.								
The manufacturer's name, model or serial number and rated capacity of the hoist shall be marked on the hoist or load block.								
Hooks attached to slings shall be inspected IAW Attachment H, Hook Inspection Checklist / Criteria.								
The hoist wire rope is to be visually inspected IAW Attachment D, Wire Rope Sling Inspection Checklist / Criteria.								
Evidence of loose bolts, nuts or rivets.								
Evidence of worn, corroded, cracked, or distorted parts such as load blocks, suspension housing, levels, chain attachments, clevises, yokes, suspensions bolts, shafts, gears, bearings, pins, rollers, and locking and clamping devices.								
Warning label required by ANSI on lever operated hoists only.								
End connections of wire rope.								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the rigging hardware from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
<b>Certification Signature</b> _____ <b>Date</b> _____								

**Hook Inspection Checklist/Criteria**

DESCRIPTION:	PROJECT:							
IDENTIFICATION No.:	SERIAL No.:							
INSPECTIONS CHECKLIST	Sun. + -	Mon. + -	Tues. + -	Wed. + -	Thurs. + -	Fri. + -	Sat. + -	Sun. + -
<b>Visually inspect the hook for the following conditions</b>								
Wear, cracks, arc strikes or distortion in the hook housing.								
Wear or rotational binding in the hook's swivel or hanger pin.								
Wear, cracks, gouges, or arch strikes in the throat of the hook.								
Proper engagement of the safety latch, if so equipped. Mousing of the hook (using rope or wire to close the throat opening of a hook) is allowed until the latch can be replaced or repaired.								
Manufacturer identification shall be legible and positioned on a non-wearing area of the block.								
Evidence of field welded attachments to a finished hook. (Only shop welded attachments prior to final heat treatment are allowed.)								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the rigging hardware from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
<b>Certification Signature</b> _____ <b>Date</b> _____								



### Sheave Block Inspection Checklist/Criteria

DESCRIPTION:	PROJECT:							
IDENTIFICATION No.:	SERIAL No.:							
INSPECTIONS CHECKLIST	Sun. + -	Mon. + -	Tues. + -	Wed. + -	Thurs. + -	Fri. + -	Sat. + -	Sun. + -
<b>Visually inspect the sheave block for the following conditions</b>								
Cracked, missing, or deformed housing members.								
Worn, cracked, or distorted bale pins.								
Worn, cracked, or binding sheaves.								
Loose or missing components.								
Legible identification number and rated capacity.								
Hooks attached to sheave block shall be inspected IAW Attachment H, Hook Inspection Checklist / Criteria.								
Pins								
Bearings								
Shafts								
Gears								
Rollers								
Locking Devices								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the rigging hardware from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
<b>Certification Signature</b> _____ <b>Date</b> _____								



**Spreader and Load Equalizer Beams Inspection Checklist/Criteria**

DESCRIPTION:	PROJECT:							
IDENTIFICATION No.:	SERIAL No.:							
INSPECTIONS CHECKLIST	Sun. + -	Mon. + -	Tues. + -	Wed. + -	Thurs. + -	Fri. + -	Sat. + -	Sun. + -
<b>Visually inspect the spreader and load equalizer beams for the following conditions</b>								
Legible Identification number and rated capacity.								
Cracks								
Distortion								
Corrosion								
Wear								
Arc strikes								
Missing bolts, rivets, etc.								
Welds at joints between highly stressed members.								
Welds at joints in principal load-carrying members and highly restrained members.								
Excessive deformation in principal load carrying members or parts.								
Proof testing, both static and dynamic, shall be performed on an "as specified" basis and shall conform to a written procedure by a qualified person.								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the rigging hardware from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
Certification Signature _____ Date _____								



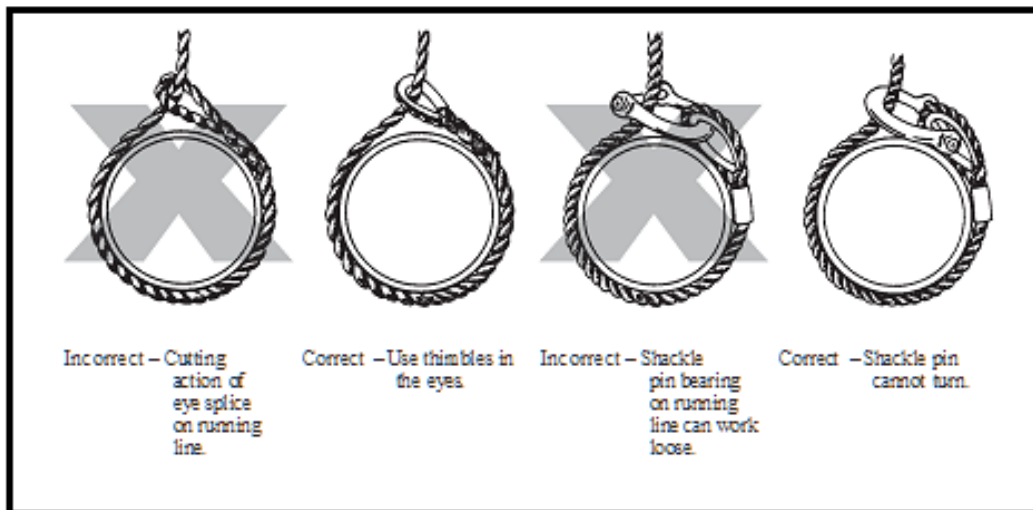
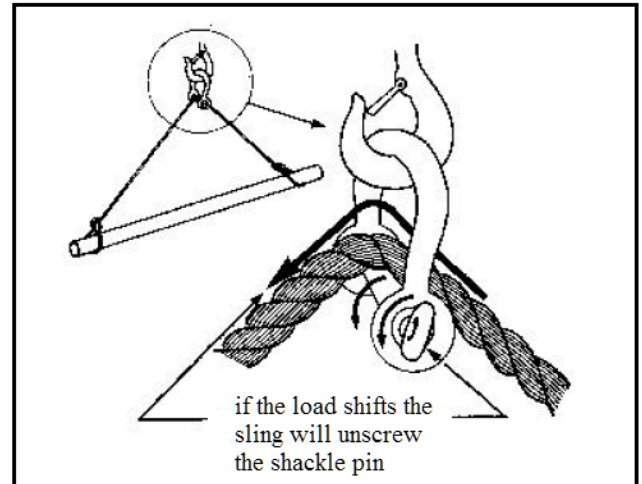
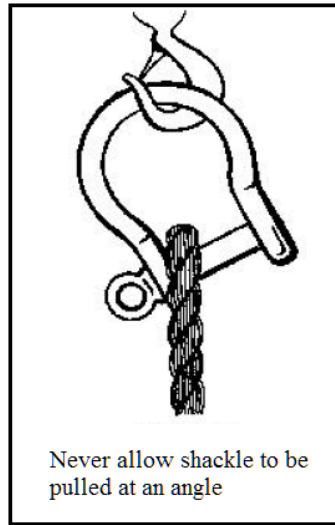
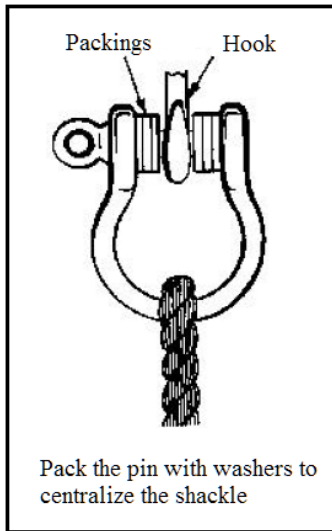
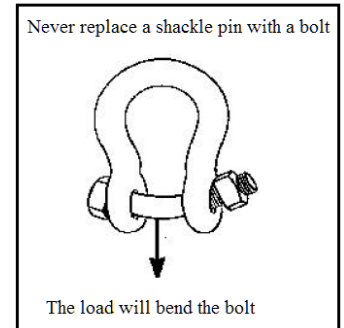
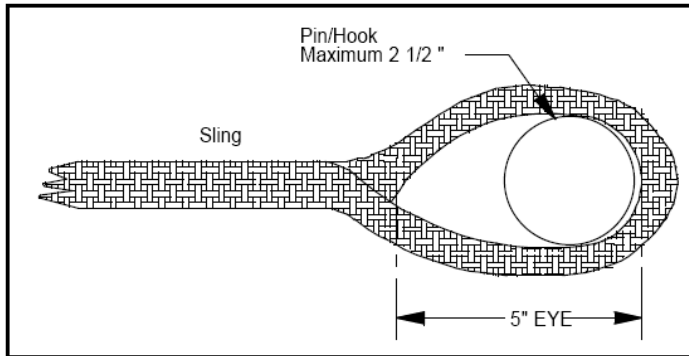


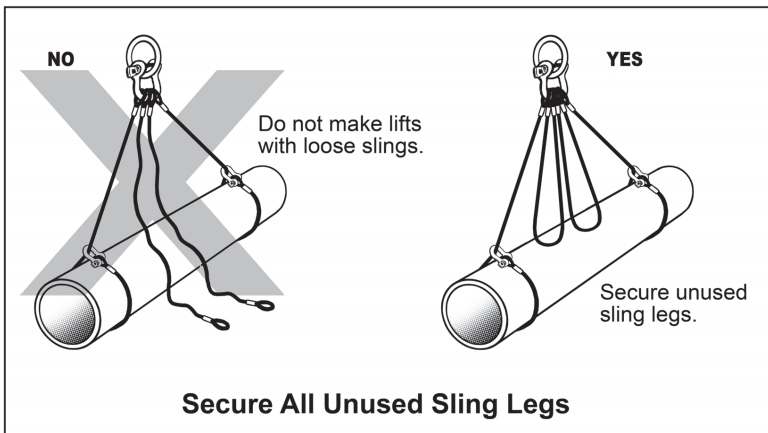
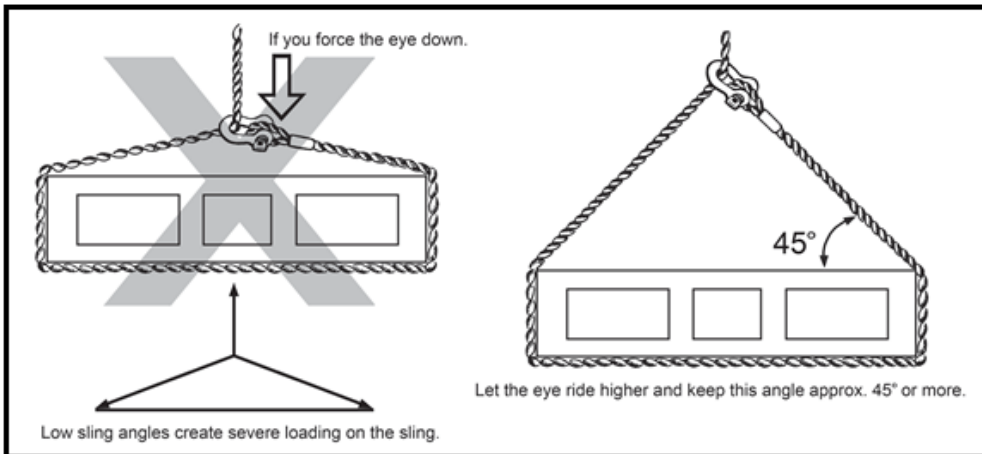
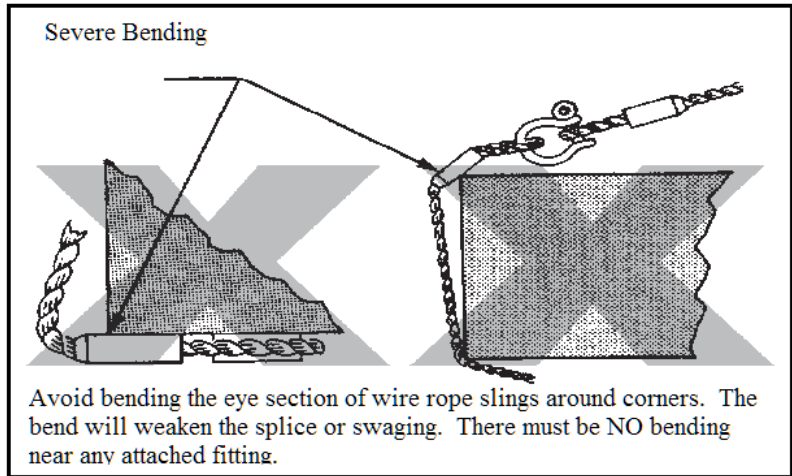
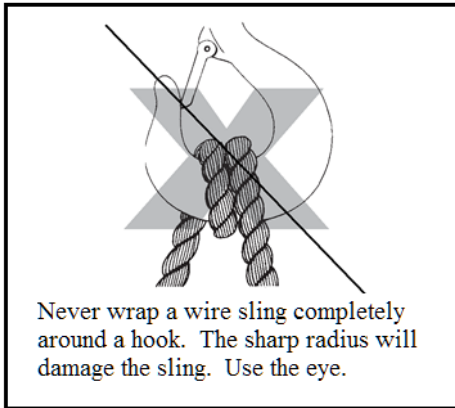


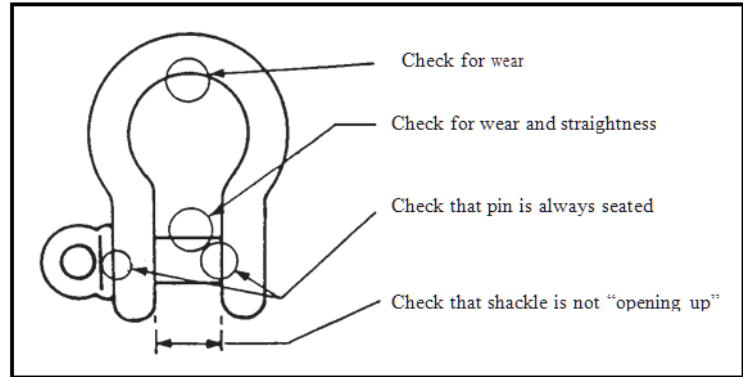
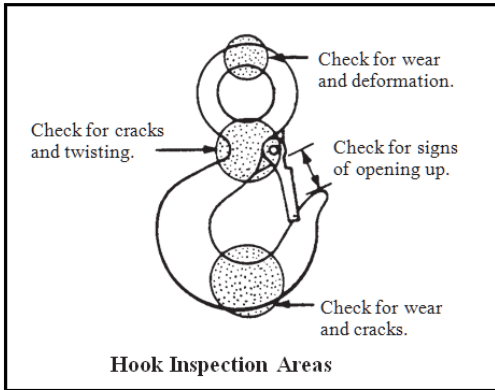
**Shackle Inspection Checklist/Criteria**

<b>Description:</b>	<b>Project:</b>							
<b>Identification No.:</b>	<b>Serial No.:</b>							
<b>Inspections Checklist</b>	<b>Sun.</b> + -	<b>Mon.</b> + -	<b>Tues.</b> + -	<b>Wed.</b> + -	<b>Thurs.</b> + -	<b>Fri.</b> + -	<b>Sat.</b> + -	<b>Sun.</b> + -
<b>Visually inspect the shackle for the following conditions</b>								
Deformities								
Cracks								
Arc strikes								
Wear								
Signs of abuse								
Modifications								
Inspect threads for uniformity and thread damage.								
Ensure that manufacturer's name, and product identification code is properly marked.								
<b>Inspection Acceptance Criteria: Any discrepancies found will result in removing the rigging hardware from service until the discrepancies are corrected and re-inspected, or rigging hardware removed permanently from service.</b>								
<b>Discrepancies and Disposition:</b>								
<b>Certification Signature</b> _____ <b>Date</b> _____								

### Shackles/Slings Visual Tools

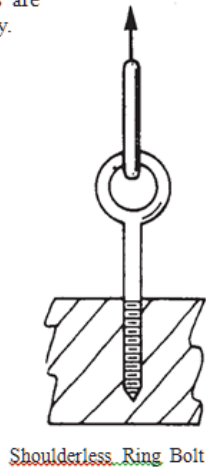
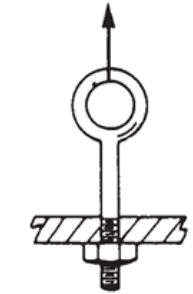






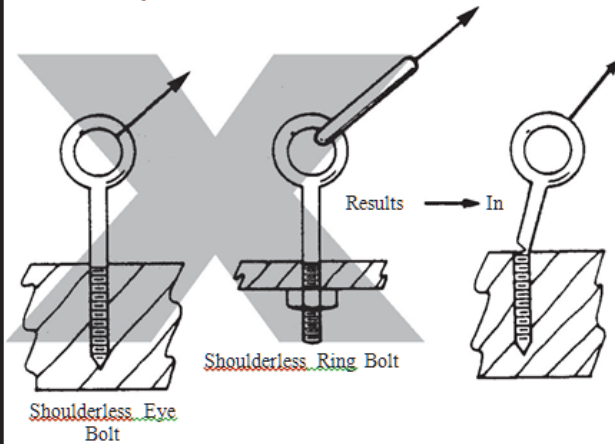
**Correct**

Shoulderless eye and ring bolts are designed for vertical loads only.



**Incorrect**

If shoulderless eye and ring bolts are pulled at an angle as shown, they will either bend or break.

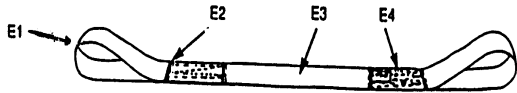




## Sling Inspection Record

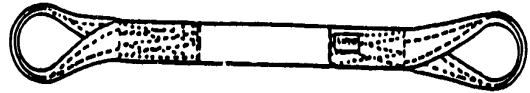
### EYE & EYE (Flat)

TYPE III – Sling made with a flat loop eye on each end with loop eye opening on same plane as sling body. This type of sling is sometimes called a flat eye, eye and eye, or double eye sling.



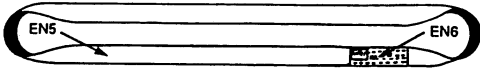
### EYE & EYE (Half Twist)

Type IV – Sling made with both loop eyes formed as in TYPE III, except that the loop eyes turned to form a loop eye which is right angle to the plane of the sling body. This type of sling is commonly referred to as a twisted eye sling.



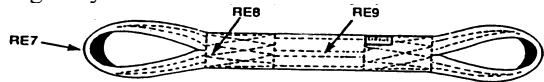
### EYE & EYE (Half Twist)

Type V – Endless sling sometimes referred to as a grommet. It is a continuous loop formed by joining the ends of the fabric together with a splice.



### REVERSED EYE

TYPE VI – The reversed eye sling is formed by using multiple widths of webbing held edge to edge. A wear pad is attached to both sides of the sling body and to both sides of the loop eyes to form a loop eye at each end which is at a right angle to the plane of the sling body.



		Comments			Comments
Equip. #			Equip. #		
Type			Type		
Sling Design			Sling Design		
Serial Number			Serial Number		
Special Attachments			Special Attachments		
Sling Condition **			Sling Condition **		
O.K.			O.K.		
Loc. Designator			Loc. Designator		
Damage Description			Damage Description		

\*\* If sling is damaged, do not use, replace

Use additional sheets as necessary to document all slings inspected

Inspected By (print name and initial): \_\_\_\_\_ Date: \_\_\_\_\_