



IPS
Industrial Performance Services

ITCS
Industrial Tubular Catalyst Services

RIGGING AND LIFTING DEVICES PROCEDURE

Rigging and Lifting Devices Procedure

January 2023

Purpose

The handling, setting and erection of materials and equipment is a hazardous task. Each operation presents its own peculiar hazard with no two jobs really alike. With proper training, planning and equipment, each job can be performed free of bodily harm and without damage to the equipment.

A. General

1. Only qualified employees by training/experience shall perform any rigging operation on any jobsites.
2. Supervisory personnel must determine an employee's skills and abilities prior to job assignment.
3. Any lift designated as a "critical lift" shall have rigging operations conducted by employees in the job classification of Rigger.
4. Leather palm gloves must be used at all times by employees while performing rigging operations.
5. When applying rigging to an object to be lifted, care should be taken to avoid damage to the sling.
 - a. The use of softeners is required to safely handle objects with sharp corners/edges.
6. The method of rigging depends largely upon that task to be performed, load size and weight and area with which load is to be placed.
7. Only one sling shall be placed in a lifting hook. To hold two (2) or more slings a shackle shall be utilized.
8. Tag lines shall be used to control the load at all times.
9. All slings, shackles, and attachments shall be capable of safely supporting the load.
10. No employee shall be allowed under a suspended load.
 - a. Area around any lift shall be barricaded.
11. Sling angle shall be considered as an integral part of the lift to determine sling load vs. capacity.

B. Cable Clamps

1. The number of clamps utilized shall be adequate for the diameter of wire rope.
2. Clamps should be spaced not less than six rope diameters apart.
3. Clamps with corrugations in the forging with the rope lay for which designed must be utilized.
4. U-bolt clamps must be placed on the rope with the "U" bolts bearing upon the short/dead end of the rope.

5. After rope has been used under tension, all clamps must be re-tightened due to reduction in rope size.

C. Beam Clamps

1. Supervision must approve location attachment of a beam clamp to any structural member to assure that structural member will support the load to be raised.
2. Never weld rings to a beam clamp/modify.
3. The use of beam clamps shall not be permitted when angle lifts are to be made.
 - a) clamp capacities are based for straight lifts only.
4. Never use plate lips, tongs, girder hooks, pipe clamps, etc. as substitutes for beam clamps.
5. Never connect a hoist hook directly to a beam clamp. A shackle must be used.
6. Beam clamps should be visually inspected before each use.
 - a) Hooks, locking pins and lifting eyes for distortion/other defects.
 - b) Inspect welds for cracks/checks.
 - c) Bolts/locking device for ease of operation.
 - d) Identification numbers, capacity and beam size are clearly marked.

D. Block And Tackle

1. Make sure blocks being used are designed for the weight to be lifted.
2. The number of parts of line necessary can be determined by dividing a single line capacity of the rope into the weight of the load. This will determine the number of sheaves required.
3. All tackle block hooks must be wire moused.
4. Fall line and becket line must come off a middle sheave when blocks contain more than two (2) sheaves.
5. The tackle should be reeved so that the upper and lower blocks will be at right angles to each other.

E. Come-A-Longs

1. Always keep chain perpendicular to the load. Never side load.
2. The use of cheater bars is strictly prohibited.
3. Never exceed the rated capacity.

4. Never drop a come-a-long.
5. Do not use the hoist chain to lift load. A sling/chocker must be used.
 - a) Bending hoist chain under a load could cause serious damage/breakage.
6. Always have firm footing before use to avoid falls, falls or strains.
7. Come-A-Longs under strain should not be left unattended for any lengthy period of time.
8. Always stand clear of load being lifted/away from the path of a load being pulled.
9. Inspection (see Chain Falls)

F. Chain Falls

1. Chain falls should be marked as to capacity in tons. Never exceed the capacity of equipment.
2. Ensure that supporting structure is capable of supporting the load.
3. Chain falls should be equipped with an automatic load brake to prevent load dropping.
4. Do not leave a load hanging on a chain fall unattended.
5. Do not wrap the load chain around the load to be lifted; use slings/chokers.
6. Do not load the point of the chain hoist lifting hook. Safety latch or mouse all hooks.
7. Only one person should operate a chain hoist; if two people are required to pull chain a larger chain fall is required.
8. Never use a chain fall for a horizontal pull, as designed chain sprocket is not obtained.
9. All chain falls (come-a-longs) should be inspected visually before making any lift.
 - a) Check chain for wear, deformities, kinks, twists or damage.
 - b) Check hook for spread, bends, deformities/irregularities and proper latch operation.
 - c) Check housing and sheaves for damage.
 - d) Check load chain at inter-link points for wear.
 - e) Check free gearing system.

G. Slings And Chokers

1. All slings and chokers shall be inspected prior to use, during use or where service conditions warrant.
2. Inspection of wire rope slings.

- a) Damaged or defective slings shall be removed from service immediately or when:
 - 1. Fiber core wire rope slings of all grades are exposed to temperatures more than 200 degrees F.
 - 2. Non-fiber core wire rope slings of all grades are exposed to temperatures more than 400 degrees F.
 - 3. Six randomly distributed broken wires occur in one rope lay, or three broken wires in one strand in one rope lay.
 - 4. Wear or scraping of one-third the original diameter of the outside individual wires exists.
 - 5. Any damage resulting in distortion of the wire rope structure as in kinking, crushing or bird caging.
 - 6. Any end attachment is cracked, deformed, or worn.
 - 7. Corrosion of the rope or end attachment is present.

Inspection of synthetic web slings

- a) Each sling shall be marked or coded to show rated capacities.
- b) Webbing shall be uniform in thickness and width end selvage edges shall not be split from the webbing width.
- c) Nylon web slings shall not be used where fumes, vapors, sprays, mists, or liquids of acids or phenolics are present.
- d) Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists, or liquids of caustic are present.
- e) Polyester and nylon slings shall not be used at temperatures more than 180 degrees F.
- f) Polypropylene web slings shall be immediately removed from service when:
- g) Damaged or defective slings shall be immediately removed from service when:
 - 1. Sling has acid or caustic burns.
 - 2. Melting or charring of any part of the sling surface.
 - 3. Snags, punctures, tears, or cuts.
 - 4. Broken or worn stitches or when the red safety stitch is visible.

Competency Assessment

No.	Questionnaire	C/NYC
Q1		
A1		
Q2		
A2		
Q3		
A3		
Q4		
A4		
Q5		
A5		

Enclosed Attachments	
Risk Assessment	<input checked="" type="checkbox"/>
Environmental Aspect and Impact	<input checked="" type="checkbox"/>
Training and Competency	<input checked="" type="checkbox"/>
Measure and Evaluation Tools	<input checked="" type="checkbox"/>

Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

Procedure	Competency	Date	Competent YES / NO	Employee Signature

(Please tick appropriate box)

This employee is competent in performing the job.

This employee has not attained the competency level.

*

* *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By Employee: _____ Date: _____

Trainer: _____ Date: _____

Assessor: _____ Date: _____

Regional Manager: _____ Date: _____

Environmental Aspects and Impacts

Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

Activity	Aspect	Impact
Purchasing & Administrative Work	Consumption of goods	Conservation of natural resources
	Consumption of energy (eg. Electrical equipment and facilities)	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of waste (eg. Paper)	Consumption of space for waste disposal; Habitat loss
Climate Control	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of noise	Disturbance to community; Habitat loss
Cleaning of – offices / vehicles	Storage, use and release of chemicals	Contamination of air, water or soil; Risk to human health
Transport (Fleet vehicles / staff travel)	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution
	Consumption of goods (eg. Oil)	Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts
	Generation of waste (eg. Oil)	Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss
	Exhaust emission	Release of greenhouse gases and atmospheric pollution
	Use of dangerous goods (eg. Batteries)	Potential contamination of air, water or soil; Risk to human health
	Generation of noise	Disturbance to community; Habitat degradation
Operations		

Sample only.
To be filled in

Risk Assessment

Risk Assessment // insert name here					
Step No: Logical sequence	Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps. Each step should be logical and accomplish a major task.	Potential Safety & Environmental Hazards/Impacts at the site of the Job Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job.	Risk Rating Refer to the risk matrix or HSEQT.PRO. Risk Mgt	Recommended Corrective Action or Procedure <i>Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be reduced or controlled to ALARP before work commences.</i> Document who is responsible for implementing the controls to manage each hazard identified.	Risk Rating refer to the risk matrix or HSEQT.PRO.Risk Mgt
1.					
2.					
3.					
4.					
5.					

Audit



Process: insert// Procedure: Insert //		Date:		Audited by:	
		Location of Audit:		Area Mgr/Supervisor:	
Item	Question	Evidence Sited	Comments		Conformance Score 0,3,5
1.					
2.					
3.					
4.					
5.					
6.					
7.					
AUDITOR'S SIGNATURE:		CONFORMANCE SCORE: / 25		0 – Non-Conformance	
SAFETY REP'S SIGNATURE:		CONFORMANCE %:		3 – Continuous Improvement Opportunity	
				5 – Total Conformance	