LIFTING AND SLINGING

Document #: ITAL – A – 11
Version: 01

Date: 23 – 09- 2023
Revision: 00

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Revision History:

Version	Revision	Description of Changes	Requested by	Date

Distribution:

Copy #	Distributed to	Handed to	Signature	Date
	Local Manager			
	QHSE			
	Operations			
	HR			
	Procurement			
	Free-Zone			
	Accounting			

References:

- ISO 45001:2018 Occupational health and safety management systems — Requirements with guidance for use

Contents

1. PURPOSE

The purpose of this safe working instruction is to define ITAL SERVICES EGYPT guidance for safe lifting operations and lifting appliances and gears safety precautions.

2. SCOPE

The scope of this safe working instruction is applicable to ITAL SERVICES EGYPT and all subsidiary companies and subcontractors.

3. RESPONSIBILITY

Senior QHSE Specialist: Responsible for establish, implement, maintain and continually improve the safe working instruction. QHSE Field Specialist: Insure the proper implementation of the safe working instruction.

4. SAFE WORKING INSTRUCTIONS

Lifting appliance: includes any machine which, by means of lifting gear, can raise, lower or suspend a load (e.g., a hoist, crane, sheer-legs, derrick, winch, excavator, wire rope hoist block, pulley block forklift). Lifting appliances may be fixed or portable.

Lifting gears: include any device which is used directly or indirectly to connect a load to a lifting appliance, and which is not part of the load (e.g. wire rope sling, chain sling, ring, link, hook, plate clamp, clamp, shackle, swivel, or eyebolt).

Lifting points: such as pad-eyes, eye bolts, etc., must be designed according to a specific Safe Working Load (SWL), all welds must be done according to the standard welding procedures, and NDT (Non-destructive test) must be considered. Pad-eyes holes must be machined according to the designed diameters.

Lifting Appliances General Safety Precautions

- All personnel who use rigging/lifting appliances must have completed a rigging training course appropriate to the operational needs of the site.
- A lifting appliance must not be loaded beyond the safe working load marked on it, except for the purpose of proof testing by a Competent Person.
- Safe working load indicators or alarms fitted to lifting appliances must not be made unserviceable or disconnected at any time whilst the equipment is in service.
- It is the responsibility of the Crane Driver/Operator not to continue to lift a load, which causes the safe load indicators to alarm.
- All lifting gear provided from rigging stores shall be visually inspected by a Competent Person immediately before issue.
- Care must be taken when calculating the weight of equipment prior to lifting, especially when the equipment may contain liquid used for pressure/leak testing, etc.
- Where the lift is complicated, due to access or no vertical lifting, then a qualified expert must be involved in the planning and execution of that lift.

Crane General Safety Precautions

- Only persons with good sight (corrected by spectacles if necessary) and good hearing shall be selected for employment as Crane Drivers.
- Crane Drivers shall have a working knowledge of safe slinging practice.
- Cranes shall only be operated by persons properly trained, qualified and authorized. Contract Crane Drivers must hold a certificate of competence issued by their employer which shall be available for inspection.
- The hoisting mechanism of a crane shall not be used for any purpose other than raising or lowering a load vertically.
- Cranes must not be used to transport loads, unless specifically designed for this purpose.
- A crane shall not be used or hired unless a pre-use inspection of the crane has been carried out by a Crane Driver and by a qualified crane inspector this inspection should cover electrical cables, wire ropes, fittings, drums, brakes, hooks and guards, etc. Limit switches must be tested to ensure that they are operating correctly and should be in periodical intervals not more than one year by a third-party company.
- Crane shall not be hired if it does not have a certificate or in case of an invalid certificate
- Cranes shall not be operated in wind speeds in excess of manufacturer's recommended limitations.
- A table, showing the safe working load/radius limitations of the crane, shall be available in every crane cabin and at every site and installation.
- No crane operation shall take place without an appointed and identifiable, fully trained and experienced; Banks man (Signal Man).
- No crane operation shall take place without an adequate system of communication between the Crane Driver and Banks man.
- Only one Banks man at a time.
- Absolute care and safety shall be observed in all operations involving the use of cranes.
- On any certified modifications of crane, the safe working load (SWL)/radius limitations table must be changed to show clearly the new SWL/radius limitations.
- The Crane Driver/Operator must be advised of the weight of each load to be lifted and shall operate within the limits indicated by the safe working load/radius tables displayed within the crane cab. Drivers/Operators must not use the load/radius alarms as indication of working within safe limits.
- Crane activities shall stop (once the load has been made safe) in the event of a general alarm or emergency.
- Whilst the crane is in operation, the Crane Driver/Operator must not perform other work, and must not leave his position at the controls until the load has been safely landed.
- No parts of the crane including the boom must be permitted to work beyond the safe distance, according to relevant standards, away from overhead power lines, unless the cables have been isolated electrically.
- Man-riding on loads, hooks or buckets intended for general cargo movement is not permitted.
- A fire extinguisher should be sited in or near the cabin.
- After erection, re-erection or any removal or adjustment to the crane structure which may affect its ability to lift loads safely, the crane must be retested in the approved manner by a Competent Person.

- Planning before starting a lifting operation by a crane should include the following points:
    - Level the crane and ensure that the support surface is firm and able to support the load
    - Contact power line owners and determine precautions. Know the location and voltage of overhead power lines.
    - Know the basic crane capacities, limitations, and job site restrictions, such as the location of power lines, unstable soil, or high winds.
    - Make other personnel aware of hoisting activities.
    - Barricade areas within swing radius.
    - Ensure proper maintenance and inspections.
    - Determine safe areas to store materials and place machinery.
    - Before lifting, carefully inspect all rigging, slings, hooks, etc.
    - Report any damage or defects to your supervisor right away.
    - Use tag lines to guide suspended loads if required.

- Never ride the load or hook.
- Keep out from under suspended loads.
- Watch out for materials that could fall on you if hit by the moving load.
- Blocks sheaves' grooves must be smooth and free from surface defects which could cause rope damage
- Crane tires must be regularly inspected.
- Working Load Limit must be stamped on the boom and must be clear enough.

Forklift General Safety Precautions

- All drivers of industrial forklifts must be properly trained to their use.
- Drivers of forklifts must undertake a course of training and testing. Drivers must provide evidence of having attended and successfully completed such a training course before driving any forklift.
- Daily safety and maintenance checks shall be carried out. Any fault affecting the safe operation of the forklift prohibits its use until rectified.
- The forklift must not be used to lift loads greater than the maximum Safe Working Load for which the equipment is rated. Only secure loads are allowed to be moved.
- The driver's head, feet and hands must be kept within the limits of the truck and never put between the mast uprights.
- It is strictly forbidden for anyone to ride on a forklift truck as a passenger. Forklifts must not be used as elevated working platforms unless modified to meet the requirements of the Health and Safety Executive.
- Forklift must be certified in intervals not more than one year by a third-party company.

Lifting points general safety precautions

- Four lifting points are normally recommended. For smaller equipment, however, two or three lifting points may be acceptable.
- The lifting points may be of any design suitable for the purpose. It is essential that they are fitted in a manner such that they are aligned in the direction of principal load, (e.g. “pad-eyes” should be

angled towards the center of lift) such that the angle at which the load is applied is 45° from the vertical.

- Lifting points should be accurately positioned and with a four point lift the difference between the diagonal measurements between lifting point centers should not exceed 5 mm.
- Bolted fittings should be self-locking or be provided with a means to prevent loosening.
- Lifting points should be of sufficient strength and located to minimize mechanical damage.
- Lifting points should be capable of accepting a shackle or connector without inhibiting movement or causing friction against the external surfaces of the suspension sling termination.
- Lifting points should be positioned on the equipment to preclude, as far as practicable, the risk of slings fouling against the equipment or during normal use.
- Where eyebolts are fitted the manufacturer should provide a certificate.
- The lifting points should be visually examined for distortion, mechanical damage or any other sign of distress or overload periodically.
- Unless the competent person decides an alternative method is more appropriate ferromagnetic materials should be examined by magnetic particle inspection (MPI) every six months.
- Unless the competent person decides an alternative method is more appropriate non-ferromagnetic materials, should be examined by dye Penetrant inspection (DPI) every six months

Mobile Elevating Work Platforms (MEWP) general safety precautions

- Vehicle sited on firm and stable ground.
- Sufficient clearance from abstractions and overheads when operating.
- Barriers around the MEWP to prevent it being struck vehicles or mobile plants. Barriers also act to keep people out from underneath the cradle.
- Guard-rail incorporated into the cradle. Safety harnesses as an additional backup.
- Controls of the MEWP should be inside the cradle so that the person working at height has some control.
- Must not be driven with the cradle raised unless specifically to do so.
- Must not be overloaded.
- Must be inspected in interval not more than one year.
- Use must be restricted to trained and authorized staff only.

Lifting Gears general safety precautions

- Slings are 3 types, wire rope sling, chains and synthetic webbing slings.
- Before using the slings check the following:

  ### Wire Rope Slings:

  - Missing or illegible identification.
  - Excessive broken wires.
  - Severe localized abrasion scraping.
  - Kinking, crushing, bird caging to the structure.
  - Evidence of heat damage.
  - End attachments that are cracked, deformed or worn.
  - Sever corrosion of the rope.

- Cracks or breaks.

Chain Slings:

- Missing or illegible identification.
- Excessive wear.
- Stretched chain links or components.
- Bent twisted or deformed chain links or components.
- Evidence of heat damage.
- Excessive pitting or corrosion.
- Lack of ability of chain or component to hinge freely.
- Weld splitter.

Synthetic webbing slings:

- Missing or illegible identification.
- Acid or caustic burns.
- Melting or charring of any part of the sling.
- Holes, tears, cuts or snags.
- Broken or worn stitching.
- Excessive abrasive wear.
- Knots in any part of sling.
- Discoloration and brittle or stiff area on any part of the sling.
- Fittings that are pitted, corroded, cracked, bent, twisted or broken.

- Select correct type shackle for the job in hand
- Check the safe working load of the shackle before use
- Check shackle pin for excessive wear
- Make sure the pin is free-but not loose in the tapped hole(s) of the shackle
- Threads on pin and shackle should be undamaged and without appreciable wear
- Check alignment of pin holes- the untapped hole should not be worn or oversized.
- Only properly fitted pins shall be used in shackles
- Homemade or modified shackles must never be used.
- Check jaws and pin of shackle for distortion. Check body of shackle for pitting, cracks or corrosion.
- When using U-bolt wire rope clips to form eyes, ensure the "U" section is in contact with the dead end of the rope
- Select proper size clips.
- Place clips on in proper sequence.
- Torque all clips evenly.
- Apply first load and re-torque.
- The clip assembly must be properly installed and capable of being torqued to its full recommended value.
- The U-Bolt must fit into the base without requiring a forceful change in U-Bolt spread.
- The saddles in the clip base must be undamaged.
- U-Bolt must be on dead line of the wire.
- Loading shall be centered in the base (Bowl/Saddle) of the hook to prevent point loading of the hook.

- Hooks shall not be used in such a manner as a tip load, side load or back load on the hook.
- DUPLEX hooks shall be loaded equally on both sides.
- Latch shall be provided for the purpose of retaining slings or other devices under slack condition.
- All lifting gears must be stamped by the required data as per relevant standard

Lifting Gears purchase, register and Inspection

Purchase: All MSR (Material Service Requests) for lifting rears have to include a requirement for a Test Certificate. Certificates have to accompany the delivery of the lifting gear and be related by ID Number to the device.

Register: A register of lifting gear purchased by the company has to be kept. The register has to include as a minimum the Description of Gear, certificate Number, Identification Number- if different from certificate number, Safe Working Load (SWL) Location Used in Facility and Dates Inspected.

Inspection: Lifting gear inspections are in three types: Initial Inspection: Prior to use, Frequent Inspection: Each day or shift before use and Periodic Inspection: every six months. Periodical Inspection has to be conducted by 3rd party.

5. FORMS

None.