



# PROCEDURE

Title: **Lifting Equipment - Inspection and Maintenance**

Procedure No: <b>P314.420</b>	Issue: <b>1</b>	Revision: <b>1</b>	Operative Date: <b>10/04/2018</b>
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### 1.0 PURPOSE

To provide standards for the inspection and maintenance of lifting system equipment on the QAL site to comply with legal and site requirements.

### 2.0 SCOPE

This procedure applies to all lifting equipment on the QAL site (including the Residue Disposal Area). It applies to QAL owned equipment and all equipment hired by QAL. Contractors using their own equipment on site will have a system in place of equal standing.

The procedure excludes the inspection and maintenance requirements for:

- Industrial rope access rescue equipment and systems (refer AS/NSZ 4488 series)
- Personnel Fall Protection Systems (refer P314.311 Work at Height)
- Queensland Fire & Rescue Service / First Response rescue lift equipment.

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- Elevators – personnel
- EWP and Scissor Lifts (refer P314.311 Work at Height and P314.701 Operation of Mobile Equipment procedures)
- Towing Equipment

### 3.0 RESPONSIBILITIES

#### Basic Rigger

- Perform inspections of lifting equipment prior to use. Acknowledge on the Lift Plan sheet or Critical Lift Plan
- Immediately tag defective equipment and take out of service

#### Crane Base Supervisor (or delegated representative)

- Perform inspections of lifting equipment prior to use
- Immediately tag defective equipment and take out of service

#### Crane Operator

- Perform inspections of lifting equipment prior to use. Acknowledge on the Lift Plan sheet or Critical Lift Plan
- Immediately tag defective equipment and take out of service

#### Dogger

- Perform inspections of all lifting equipment, prior to use. Acknowledge on the Lift Plan.
- Immediately tag defective equipment and take out of service.

#### Engineering and Maintenance Services Manager

- Approve use of aluminium components in lifting equipment

#### Intermediate Rigger / Advanced Rigger

- Perform a inspection of all lifting equipment, prior to use. Acknowledge on the Lift Plan sheet or Critical Lift Plan
- Immediately tag defective equipment and take out of service.

#### Persons with no WHS Rigger/Dogger Licence

- Perform a visual inspection of all lifting equipment, prior to use. Acknowledge on the Lift Plan sheet.
- Immediately tag defective equipment and take out of service.

#### Section Superintendent / Equipment Owner

- Maintain all lifting equipment items under their control in safe order, without risks to health and safety of persons by ensuring that:
  - A register of all lifting equipment items under their control is developed and maintained
  - Lifting equipment items that require scheduled servicing / maintenance are recorded in SAP and maintenance plans are in place for the inspection, maintenance and servicing requirements.
  - Inspection and testing programs are undertaken as stated within this procedure
  - Inspection tagging systems are used correctly
  - Lifting equipment items under their control shall be made available for inspection
  - Adequate storage is provided for lifting equipment items
  - A documented risk assessment for each power operated lifting device has been prepared and entered into the QAL Plant Risk Register.
- Approve the use of synthetic web / synthetic-fibre slings

### 4.0 REFERENCES

P312.402 Pre-task Hazard Assessment  
 P774.008 Registration of Design Calculations, Computational Models & Reports  
 Queensland Work Health & Safety Act  
 Queensland Work Health & Safety Regulation  
 Code of Practice – Plant  
 Rio Tinto HSE Performance Standard C6 – Cranes and Lifting Equipment  
 PG177a and b Load Lift and Rigging training module

PH177c Load Lift and Rigging for Superintendents training  
 PG277 Load Lift and Rigging Non-licenced Personnel  
**QM50-132-04 Lifting points (Construction Standard)**

## 5.0 DEFINITIONS

**Competent Person** – a person who is suitability qualified (whether by experience, training or both) to carry out the relevant work or function.

**Davit** – a lifting beam that can rotate or move on a horizontal plane.

**Dogger** - a person holding a WHSQ Certificate of Competency for Dogging and a QAL qualification imparted by completing PG177a and PG177b.

**Lifting Attachment** – an attachment designed to be used in conjunction with lifting devices and similar lifting equipment to raise, lower or haul, arrest and sustain a load (see Attachment 7.1 for examples ).

**Lifting Device** – a device equipped with mechanical means that will raise, lower or haul, arrest and sustain a load in any working position within the full range of hoisting or haulage without adverse effects on any components. Cranes and mobile cranes are inclusive. The lifting device may be manually, engine or power operated (electric, hydraulic, and pneumatic) (see Attachment 7.1 for examples).

**Lifting Equipment Register** – details the current list of equipment including a description, date of purchase, last inspection date and condition and WWL / SWL.

**Lifting Equipment** – lifting attachments and rigging equipment that will raise, lower or haul, arrest and sustain a load or object.

**Lifting Point** – *An attachment to a structure, pressure vessel, tank or pipework used for attaching lifting equipment for the purpose of raising or lowering some other piece of equipment.*

**Rigger** – a person holding a WHSQ Certificate of Competency for Basic Rigging and a QAL qualification imparted by completing PG177a and PG177b.

**RPEQ Engineer** – Register Professional Engineer Queensland.

**Workbox** - a device designed to AS1418.17 to be suspended from a crane to provide a working area for a person.

**Workbasket** - a device designed to be elevated by a forklift or similar having tyne arrangements to provide a working area for a person. Use of a workbasket involving personnel in the basket is restricted.

**WHSQ** - Work Health and Safety Queensland

**WWL / SWL** – Working Load Limit / Safe working load limit – equivalent meaning.

## 6.0 ACTIONS

### 6.1 New Lifting Equipment to site

All new lifting equipment brought to site must have the following identification and information attached prior to being used in the field.

#### 6.1.1 Lifting Attachments and Power Operated Lifting Devices

Lifting attachments and power operated lifting devices must have the following attached:

- An Equipment Number must be attached in a prominent position and be designed to last the life of the equipment.
- A Design load rating SWL must be attached in a prominent position and be designed to last the life of the equipment.
- An Annual Inspection Punch Tag-must be punched with date next due for inspection.

Lifting attachments must have a Design Certificate from a RPEQ Engineer and Certificate of Inspection and Test must be witnessed and attached to the SAP equipment number / functional location.

A cyclic work order created in SAP for the required inspection frequency and maintenance requirements.

### **6.1.2 Rigging Equipment and Manually Operated Lifting Devices**

Rigging equipment and manually operated lifting devices must have the following attached:

- An Equipment Identification Tag - refer 6.8
- A Design load rating-SWL must be attached in a prominent position and be designed to last the life of the equipment.
- A Colour tag for current year of use.

### **6.1.3 Tackle and Slings less than 1 tonne**

These items are not registered prior to putting into service as they are treated as a consumable item.

Slings less than 1 tonne shall have the following identification:

- An Equipment Identification Tag- refer 6.8
- A Design load rating-SWL must be attached in a prominent position and be designed to last the life of the equipment.

Tackle must have the Manufacturer's load rating clearly identified on the item.

### **6.1.4 Aluminum and alloy fixtures, fittings or attachments**

All lifting equipment shall be manufactured from ferrous load bearing components. Exceptions are by Engineering and Maintenance Services Manager approval only.

## **6.2 Pre-Use check of Lifting System Equipment**

All lifting system equipment required to undertake a lift shall be inspected by a competent person prior to use. The check will include:

- Current Inspection Tag
- Equipment ID tag is attached and legible
- Safe Working Load (SWL) is visible and appropriate to task
- Equipment is free of defects and safety latch fitted to all hooks.

### **6.2.1 Pre-use check identifies an item with no ID tag or inspection tag, tag is not current or equipment is defective/damaged**

Any lifting system equipment component found to be non-compliant shall be taken out of service immediately. An "Out of Service" Tag with information stating the date and why the equipment is defective shall be attached.

If the Inspection Tag is not current or missing, a competent Intermediate Rigger may perform the equipment inspection using the appropriate inspection sheet. The record of inspection must be retained by the Section (attach inspection sheet to SAP) and the equipment register updated.

If the equipment is defective/damaged or the Equipment ID tag is missing then an assessment should be made if the equipment should be disposed of or repaired based on cost. The lifting register will be updated based on any changes.

Tackle and sling < 1t are to be treated as a consumable item. If damaged then a new replacement should be procured and the damaged item discarded.

### 6.2.2 Synthetic Slings

Synthetic Slings are treated as a restricted item-with approval for use by Area Superintendent. Slings shall be in new condition prior to use. Any sling with staining or abrasion shall be destroyed.

## 6.3 Scheduled Annual Inspection and Testing

The equipment owner is accountable for ensuring their equipment is safe for use, this can be achieved by ensuring scheduled inspections and testing are undertaken. Attachment 7.1 lists the lifting equipment used on site and identifies the frequency of scheduled inspections (inspection frequencies have been established to align with legislative requirements).

Scheduled inspections and testing are to be performed by a qualified external contractor who is notified of inspection requirements via cyclic work orders established for the either the individual item or groups of items (eg. a work groups lifting equipment)

Inspection of equipment will be conducted as per manufacturer's recommendations or be risk based and approved by the Process Integrity Superintendent.

Upon receipt of the cyclic work order, the Contractor will:

- Contact the equipment owner to arrange an inspection time/location.
- Check each item against a predefined inspection criteria
- Check inspection tag fitted (refer 6.8)
- Update the Lifting Equipment Register with inspection outcomes and attach a copy of the inspection report for each item (Rigging equipment and manually operated lifting devices only)
- Ensure a copy of the updated Lifting Equipment Register and all inspection reports are forwarded to the Section Planner for uploading to the relevant SAP equipment number or functional location.

If the equipment ID tag is not available/legible and the equipment cannot be identified as an item on the register then it will be treated as a new item as per section 6.1.

If the equipment fails the inspection the item will be tagged "Out of Service" and the Owner notified and provided with a copy of the inspection report. Depending on the severity of the damage the equipment owner may decide to:

- Arrange for repair and load testing, or
- Release the item for destruction.

## 6.4 Maintenance

Maintenance activities may be performed by a competent person in accordance with the manufacturer's recommendations or Process Integrity Superintendent approval.

## 6.5 Repairs

Repairs shall only be performed by a competent external Contractor in accordance with the manufacturer's specification and regulatory requirements (ie. Load test performed where identified). The equipment owner will witness the repair certificate prior to attaching a current Inspection Tag.

All repairs shall be documented and recorded in the Lifting Equipment Register.

Unrepairable items shall be destroyed and removed from the register by the Section.

## 6.6 Modifications and Alterations to lifting equipment or structures

Modifications or alterations to lifting equipment or structures used to support a load lift require design approval by an RPEQ Certified Engineer. Approval is required prior to use.

The design shall be reviewed, approved and registered in accordance with QAL Procedure P774.008 "Registration of Design Calculations, Computational Models and Reports" by the certifying engineer.

Approval may require load testing to be performed before use.

## 6.7 Lifting System Equipment Storage

All lifting system equipment must be correctly stored preferably off the ground or on a frame in a clean designated area according to 5S principles.

## 6.8 Lifting System Equipment Identification/inspection tags

All lifting equipment on site will be fitted with:

### 6.8.1 Equipment identification tag or manufacturers unique ID tag

- For rigging equipment and manually operated lifting devices (refer Attachment 7.1), use the manufacturers unique ID or a unique Section identification number (eg. the Work centre number followed by the next available number on the register ie. 553PC\_01, 553PC\_02) imprinted on a metal tag securely attached to the equipment.
- For lifting attachments and power operated Lifting Devices (refer Attachment 7.1), the Identification number will consist of the SAP Equipment number / Functional location imprinted on a metal tag securely attached to the equipment.

### 6.8.2 Annual Inspection tags

There are two types of inspection tags:

- Colour tag with the current year displayed, or
- Metal Stamped dog tag for lifting attachments only.

Dates marked indicate the expiry date.

Inspections may commence 2 weeks prior to and up to 2 weeks after the expiry date, with tags changed over as equipment is identified as compliant.

## 6.9 Risk Assessments

A plant risk assessment will be conducted for each type of lifting equipment and device used on site. The assessment process will involve equipment owners, operators, maintainers and a safety representative.

The risk assessment will be housed in the Plant Risk Register on SAP and be reviewed at a frequency reflective of the inherent risk, or as part of an incident investigation.

## 6.10 Training and Qualifications

Any person who has completed PG277 and been deemed competent by their Supervisor can undertake the pre-task inspection of the specific lifting equipment for the PPM or work instruction.

If there is no PPM the pre-task inspection can be performed by a QAL employee or contractor with:

- Dogger or Rigger (Basic, Intermediate or Advanced) qualifications issued by WHS, and
- A QAL qualification imparted by completing PG177a and PG177b Lifting and Rigging training.

Qualifications must be recorded in SAP against the individual's training records.

**6.11 Lifting System Equipment Register**

It is a legislated requirement that a register be established and maintained for lifting equipment for site.

Lifting equipment will be registered by the Section Planner in one of two ways:

- As an individual item in SAP with its own unique SAP functional location or equipment number. This method will be selected for lifting attachments and power operated Lifting Devices (refer Attachment 7.1).
  - Cyclic work order to be established for the inspection/testing of the item.
  - Results of inspection/testing attached to the SAP Item
- As an item listed on an excel register. Each item has its own unique ID number which corresponds to the next available number on the register or manufacturer's unique ID. This method will be used for rigging equipment >1t and manually operated lifting device.
  - The register will have its own unique SAP equipment number
  - A cyclic work order will be established for the register – not individual items
  - Results of the inspection/testing will be documented in the excel register
  - A copy of the register will be attached to the SAP equipment number once equipment has been inspected

Work groups are not required to keep a hard copy of the register.

Records must be retained for the life of the equipment, and if the equipment is sold, then a copy of the inspection records form part of the sale.

**It is the equipment owner's accountability to ensure appropriate items of equipment are entered into the Area Lifting Register prior to use.**

**6.12 Manuals**

Manufacturer supplied manuals and other service books and pre-start check books are to be kept in situ or made easily accessible.

The maintenance manual, service record (log book) and parts book can be kept at the office of the equipment owner.

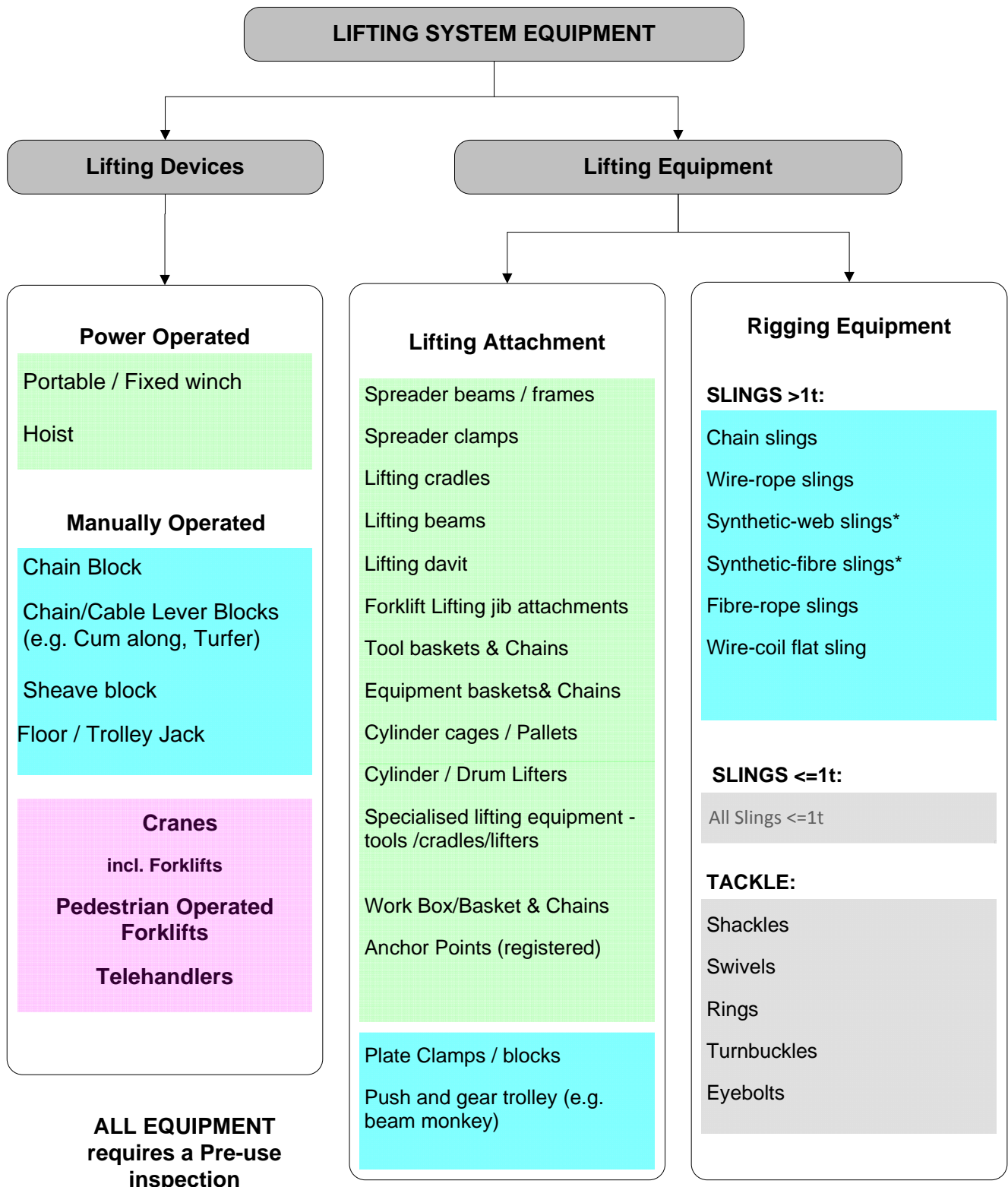
**7.0 ATTACHMENTS**

7.1 Onsite Lifting Equipment and Devices Inspection Frequencies

**8.0 REVISION HISTORY**

Issue	Revision	Revision date	Change Reason
1	1	10/04/2018	Removed reference to Lifting lugs in Att7.1 Inspection Frequencies. Added reference to Lifting lug & management of lugs under Engineering standard.
1	0	22/12/2016	Complete review and rebuild of system

**ONSITE LIFTING EQUIPMENT & DEVICES  
INSPECTION FREQUENCIES**



Annual Inspection, Records against SAP Functional location /Equipment #

Annual Inspection & Records on the Section Specific Register

Not recorded on a Register

Refer P314.422 Cranes – Inspection \* Maintenance

\* Annual testing required or dispose of