

Crane Maintenance & Inspections

This program is designed to train maintenance tradespersons and supervisors directly responsible for crane maintenance on *Inspection and Preventative Maintenance* of industrial cranes to a level of expertise pursuant to government standards and the Occupational Health & Safety Act. It will combine theory and practical exercises on cranes used in the plant.

Specific checks, evaluation of repairs, who should make the repair and scheduled inspection procedures will be covered with emphasis on crane safety, safe working loads and the knowledge required to effectively evaluate equipment condition and document findings.

INTRODUCTION

Objective: Know the course content and how it will benefit participants.

SUBTOPICS:

- Instructor and Participants
- Course Outline
- Activities
- Training Aids and Manuals

EMPLOYEE SAFETY

Objective: Understand the safety procedures and conditions for themselves and fellow employees.

SUBTOPICS:

- Personal safety equipment as outlined by the Government and specific company policies
- Fall arrest protection and how to use it
- Lock out procedures
- Area protection and the use of caution tape and barriers
- Scaffolding and ladders
- Documentation that work is in progress in the specific department
- Protection for electrical inspection

CRANE INSPECTIONS

Objective: Understand the specific types of crane inspections and what should be accomplished at each stage.

SUBTOPICS:

- Inspection Procedures
- Pre-Use Inspection
- Frequent Inspection
- Periodic Inspection
- Preventative Maintenance

- Predictive Maintenance

SAFETY GUIDELINES FOR INSPECTION AND REPAIR

Objective: Review specific responsibilities of inspection and maintenance.

SUBTOPICS:

- Health and Safety Act, Overhead Cranes and the Law
- Repair Responsibilities
- Company Crane Safety Guidelines
- Logbooks and Effective Documentation
- Hoist Block Capacity and Integrity
- Hoist Rope Spooling

WIRE ROPE AND HOISTING CHAINS

Objective: Understand the parameters of wire rope and hoisting chains, how to check and evaluate equipment condition. Safe working loads and what it means.

SUBTOPICS:

- Safe Working Loads
- Rope Inspection/Evaluation
- Chain Inspection/Evaluation
- Inspection of Hooks and Safety Clips

CRANE TYPES AND LOADS

Objective: Identify the different types and models of cranes to be inspected and understand load ratings.

SUBTOPICS:

- Bridge Crane, Single and Double
- Jib Crane, Post and Wall Mounted
- Monorail Crane
- Beam Hoist
- Mobile Cranes

BRIDGE CRANES

Objective: Identify how and what to check on single or double bridge type cranes.

SUBTOPICS:

- Electrical power supply (pendant) control methods
- Hydraulic system
- Brake maintenance and how to check efficiency
- Crane capability
- Wheels, drive shaft system
- Cable drum, clamps
- Over travel switch
- Cable (wire rope) sheaves and accessories
- Track – trolley and bridge
- Hook and clip
- Lubrication

JIB AND BEAM CRANES

Objective: Identify how to inspect and evaluate condition of Jib cranes.

SUBTOPICS:

- Bearing Inspection
- Load Checks
- Hoist Evaluation Electric or Pneumatic
- Trolley and Support
- Rail and Stops

PORTABLE / MOBILE CRANES

Objective: Study inspection procedures and evaluation of mobile units.

SUBTOPICS:

- Cable System Drum, Sheaves and Correct Spooling
- Operator Cab and Controls
- Rotation Bearings
- Hook and Block
- Superstructure of Lifting Arm
- Outriggers Mechanical or Hydraulic

FIELD EXERCISES

Objective: Perform on-site inspection of cranes with instructor present.

SUBTOPICS:

- Inspection of 10 – 50 Ton Overhead Crane
- Inspection of 5 Ton Hoist
- Inspection of Jib or Monorail Superstructure
- Inspection of Chain Hoist Electrical or Pneumatic
- Documentation and Log Books
- Decision Analysis of any Repairs Suggested