CORPORATE MANUAL OF ENVIRONMENTAL HEALTH AND SAFETY

2016 Version
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Employees of Axis Crane LLC, affiliates associated with Axis Crane LLC, and sub-contractors of Axis Crane LLC are expected to comply with all procedures and practices stated in this program, any programs required by a customer, and take all reasonable safety precautions pertaining to its work and the conduct thereof shall comply with all applicable laws, ordinances, rules, regulations and orders issued by any public or government body or authority to protect the life and health of employees as well as environment and property.
Summary of changes to the EHS Safety Manual, 2016 Release

The Manual has been updated with a new look. The new format will make it easier to read and has also helped shorten the length of the manual significantly (about 50 pages).

Along with the format, all names were taken out and positions were put in their place to reference who to contact in case of a situation or who is in charge of what department. This was done throughout the entire manual.

Under mobile equipment, section 2.14, it was added that all equipment shall be refueled at the end of each shift.

The “Accident Involvement and Reporting” Section was removed and the new “Accident/Incident Response and Reporting Procedure was added as section 2.18."
1 INTRODUCTION

1.1 SAFETY PHILOSOPHY

Axis Crane has a strong commitment to our employees and customers to provide a safe work place and to promote high standards of employee health and customer satisfaction.

The health and safety of every worker is the number one priority of the company at all times, regardless of the job at hand.

All accidents are preventable.

Working safely and complying with all safety rules and regulations is a condition of employment. It is not an option.

All operating risks and exposures can be safeguarded.

Training all employees to work safely is a company mandate.

Prevention of injury is not only good business, it is the moral responsibility of everyone at Axis Crane. We owe it to our customers, our families, and ourselves.

Management is responsible for the prevention of accidents and injuries. Management provides directions and full support of all safety procedures, training, and hazard elimination practices. Furthermore, management is required to enforce company rules and take immediate corrective action to eliminate hazardous conditions.

Employees are expected to cooperate with all aspects of Axis Crane’s safety program. Each employee has responsibility for their own safety as well as the safety of coworkers. Safety is part of Axis’ culture and everyone must do his/her part by doing what is necessary to ensure workplace safety. No job is so important that we cannot take time to do it in a safe manner.

Travis Wilt – President
1.2 SAFETY COMMITTEE AND MEETINGS

The Safety Committee consists of management and employee representatives who have an interest in the general promotion of safety and health for Axis Crane. The committee is responsible for recommending ways to improve safety in the workplace. In this capacity, the committee will define problems, identify hazards, and suggest corrective action. Do to the nature of the crane industry, safety committee participants may be represented through the weekly tail gate safety meetings, safety suggestion box, monthly meetings and quarterly meetings allowing an open line of communication.

Goal

The goal of the Safety Committee is to:

- Increase safety awareness and promote safe working habits
- Decrease personnel injuries and equipment damage
- Create and implement safe practices, policies, and procedures

Objectives

The objectives of the Safety Committee are:

- Identify and correct existing and potential safety issues
- Bolster employee morale and confidence through safety
- Ensure OSHA compliance
- Decrease worker compensation and general insurance expenses and liabilities

Duties

The duties of the Safety Committee include:

- Policy creation, adoption, and review
- Reports of unsafe conditions, equipment, and personnel
- Communication from and to all employees
- Issue resolution
- Accident and incident investigation
- Inspection of equipment and job sites
- Reports of unsafe conditions, equipment, and personnel
- Enforcement of company policies

1.3 SAFETY MEETINGS

Along with monthly safety meetings, it is required that all employees participate in “Tail Gate Safety Meetings”. These meetings contain subjects which remind us of dangers to look for and allows for all employees to provide input on potential hazards or methods to improve safety in the work place while creating team building with customers. Many customers may have a similar program which requires participation while on site. Our “Tailgate Safety Meetings” meet Oregon OSHA 437-001-0765 requirements. Any safety concerns and suggestions should be passed along through these meetings.
1.4 EMPLOYEE SAFETY PROGRAM

Overview

The success of Axis Crane depends on the safety and well-being of each individual and their families. Therefore, it is imperative that resources are dedicated to support the safety program which will aid in identifying operational hazards so they may be evaluated and effectively controlled in order to prevent accidents. Resources should also support continued training and cross training of employees while maintaining industry standards.

The Safety Department will act as a resource to the company on safety and training. Develop and maintain the safety program, administer tailgate safety meetings, monthly safety meetings, develop and implement safety training and continued awareness. Participate in the development of cross training courses and employee advancement. Conduct routine site safety inspections, monitor employee training, accident/incidents and tracking of disciplinary points. Prepare project and company safety analysis. Perform accident/incident investigations using the findings, facts, and conclusion method.

Employee Performance Evaluation

Employees will be evaluated annually or upon management request. Evaluations shall include safety performance as well as work ethics and other related performances. These evaluations shall be conducted by department managers or supervisors using the dedicated evaluation forms located on pages 104-105.

Employee Safety Incentive/Recognition Program

The Safety Recognition program is critical to employee morale and performance. The Operations Manager may authorize awards such as; individual lunch or crew lunch based on job specific performance and/or during a site safety inspection and previous months safety records. For employees who reach 2500 hours without a recordable injury or illness and 2500 hours thereafter, the recognition is at the discretion of the Operations Manager or Safety Manager and can vary from appreciation certificates to award gifts such as; apparel, gift cards or tools.

Employee Return to Work Program

It is the goal of the Safety Program to encourage employees “Return to Work” in the event of an injury. Due to the nature of the crane industry; each employee injured will be required to provide documentation of their abilities or restriction from a physician. As each case is different, the employee will be assigned duties which allow him/her to continue work based on the physicians restrictions.

ALL ACCIDENTS CAN BE PREVENTED
2 POLICIES

2.1 SAFETY POLICY

The following safety habits apply to everyday actions

Set Standards
Don’t be influenced by others around you who are negative. If you fail to wear safety glasses because others don’t, remember the blindness you may suffer will be yours alone to live with.

Operate Equipment Only if Qualified
Your supervisor may not realize you have never done the job before. You have the responsibility to let your supervisor know, so the necessary training can be provided.

Respect Machinery
If you put something in a machine’s way, it will crush it, pinch it, or cut it. Make sure all necessary precautions are taken. Never hurry beyond your ability to think and act safely. Take care of the equipment and keep it clean. We have a pressure washer for your convenience.

Use Your Own Initiative for Safety Protection
You are in the best position to see problems when they arise. Ask for the personal protective equipment you need.

Ask Questions
If you are uncertain, ask. Do not accept answers that contain, “I think, I assume, I guess.” Be sure.

Use Care and Caution When Lifting
Most muscle and spinal injuries are from overstraining. Know your limits. Do not attempt to exceed them. The few minutes it takes to get help will prevent weeks of being off work and in pain.

Practice Good Housekeeping
Disorganized work areas are the breeding grounds for accidents. Clean the trash out of the vehicle cabs at the end of the day. You may not be the only victim. Don’t be the cause.

Wear Proper and Sensible Work Clothes
Wear sturdy and appropriate footwear. These should enclose the foot fully. Avoid loose clothing, dangling jewelry and be sure that long hair is tied back and cannot become entangled in the machinery.

Practice Good Personal Cleanliness
Avoid touching eyes, face, and mouth with gloves or hands that are dirty. Wash well. Most industrial rashes are the result of poor hygiene practices.

Be a Positive Part of the Safety Team
Willingly accept and follow safety rules. Encourage others to do so. Your attitude can play a major role in the prevention of accidents and injuries.
The following ten safety habits apply to the operation of cranes

Regulations and Laws

All employees must abide by the rules and policies of the company, as well as all applicable OSHA safety regulations.

Pre-lift Safety Meeting

A pre-lift safety meeting must be conducted for every project and the appropriate form completed and signed by all lift-related personnel.

Communication

To prevent accidents, discuss the lift with all personnel involved with the lift, especially any riggers and construction personnel working within the lift radius.

Equipment Maintenance

Equipment maintenance logs must be completed on a routine basis to ensure that equipment is safe and operating properly. Preventative maintenance helps reduce equipment failure.

Power Lines

Best option, de-energize and ground. Confirm with the utility company the line is dead and visually grounded. Alternative option as per OSHA 1926.1408, Power lines up to 350kv, minimum clearance is 20 feet. For lines over 350kv the minimum distance is 50 feet. Erect and maintain an elevated warning line equipped with flags or high visibility markings at 20/50 feet from the powerline.

Outriggers

The outriggers on the crane shall be fully extended and properly positioned for maximum safety. Wood or crane mats will be placed under outrigger pads to reduce ground pressure. The crane’s operation manual shall always be used and recommendations followed.

Load Chart and Capacity

Every crane is required to have load charts and the operator is expected to know how to use them. Be sure to study the charts before setting up to make a pick. Know the weight of the load and if necessary use the load indicator to determine the weight prior to the lift.

Computer and LMI

The crane’s computer and LMI systems will be activated and utilized if available.

Terrain

In the event the terrain in which the crane is situated does not allow for full extension and placement of the outriggers, then the operator shall perform a thorough inspection of the site and evaluate the risks presented by moving the crane without one or more outriggers in place. If a potential hazard exists, the operator shall make a determination based on his or her expertise as to whether the crane can be repositioned and avoid any incidents.

Positioning

In the event a crane is moved or positioned, whether with or without the outriggers in place, and an incident or accident results from that movement or positioning (i.e. tipping of crane, injury to person or property, etc.), then the operator authorizing and/or performing the movement or positioning will be fully responsible for the consequences and may be subject to discipline, including termination. The crane’s manual of operation must be followed.
2.2 STRETCH AND FLEX

The “Stretch and Flex” is suggested for all employees prior to shift. This exercise program is designed to help reduce the risk and severity of back and musculoskeletal injuries that can occur while doing physical work. This can be done while discussing the “Tail Gate Meeting” or while planning the scope of work for the day.

This also creates team-building providing workers from different trades and companies the opportunities to interact and build relationships between Axis Crane employees and their customers. Many customers may have a similar program which requires participation while on site. (See attached guide for details)
2.3 ENVIRONMENTAL AND SUSTAINABILITY PROGRAM AND POLICY

At Axis Crane, we believe it is our moral obligation to be good stewards of the environment such that we protect it for future generations. Our goal is to provide the tools and knowledge to help preserve and enhance our existing environmental policy. As a company, we are constantly working to maximize the safety and sustainability of our business.

Office:

All materials, cans, bottles and waste paper have their own recycling containers throughout the office. Each Desk/workstation has its own paper recycling bin. Each of the containers go into larger recycling bins on a weekly basis and are picked up and recycled.

Equipment/Maintenance:

All oils and fluids that are drained from equipment are recycled when and where applicable. The fluids are put into proper containers and marked for local/regional pick –up.

The major lubricant used by cranes is hydraulic oil. Axis crane uses Clarion Industrial White Oil as an environmentally friendly substitute to common hydraulic oils. While this oil is not perfect, it is 85% free of environmentally harmful additives. This product is non-toxic to aquatic life. When working on or near water for the United States Army Corp of Engineers, it is a requirement to use this type of oil. Axis crane has adopted the use of inherently biodegradable oil in all cranes and equipment.

When and where applicable, all parts, cores, and equipment components are recycled.

Run-off/water:

All run-offs during cleaning or washing activities are collected into a catch basin such that it does not mix with storm water.

It is typically a site specific requirement by the customer, however, when working at or near a water source, Axis Crane ensures that containment barriers are in place to preclude oil, corrosive or other non-native materials from mixing or entering into the local water source, run-off, or body of water.

Spills

In the event of any kind of spill, each crane is outfitted with a spill prevention kit that consists of absorbent pads and powders coupled with small absorbent booms or containment rolls.

Protocol of notification - Customer and/or impacted agencies shall be notified.

Preventative Maintenance

Preventative maintenance, or scheduled maintenance, can not only mitigate unnecessary downtime for equipment, it can also be a pro-active approach to prevent contaminant leaks and spills. Axis crane maintains a computer based preventative maintenance program for every truck and crane in its fleet.

The above actions and philosophies are steps towards a program which we all benefit from. As Axis Crane continues to grow, we are adapting to our customers need to uphold the highest environmental practices. Their efforts, coupled with Axis Crane’s policy, ensures our commitment to the environment and sustainability.
2.4 CRISIS MANAGEMENT AND EMERGENCY ACTION PLAN

- At each entrance to the office/shops emergency exit signs shall have emergency lights installed to aid in locating exits.
- The fire alarm is an automatic alarm system with strobes and siren in case of fire emergency.
- First aid signs are located on doors of the facilities entrance where a first aid station is located.
- Fire extinguishers are mounted and marked with signs indicating location.
- A designated smoking area has been established outside where there is a red sign indicating the location along with the cigarette butt containment can which is located in an area where there are no window openings. (Be sure to check this location for personnel)
- A designated spill kit station is located outside the oil room. This station will contain the designated spill kit required to keep on site and will not be allowed to leave the facility. Additional spill materials/supplies for mobile kits are available in the storage garage.
- The evacuation assembly area is located outside to the right as you exit the main building entrance by the tree marked with the assembly area sign. This is the designated location for emergency evacuations for the facilities. Once all employees have been accounted for an action plan will be determined based on the emergency. 9-1-1 should always be initiated as soon as possible during life threatening emergencies.

Emergency evacuation procedures will vary depending on employee assignment. Each employee shall know and understand the evacuation procedures and assembly area locations for the customer when applicable.

Axis Crane main facility located at; **2500 Industrial Ave, Hubbard, OR 97032**, evacuation procedures are as follows;

In the event of fire, flood, earthquake, or any emergency event caused by nature or mankind which results in the evacuation of facilities. All employees shall follow the evacuation map provided at the room entrance for proper exit locations. Upon exiting facility, all employees shall meet at the designated evacuation assembly area where roll call will be taken to assure all employees have been evacuated. When required, call 911 and advise emergency personnel of the situation

After all employees are accounted for and depending on the nature of the incident, only authorized employees will be permitted to enter the facility to address the hazard. Once the hazard has been corrected and the facility has been recognized as safe, employees may enter.

In the event of a fire, all employees shall exit the facility using the above evacuation procedure. When practical and only when safety to life is not compromised, the use of a fire extinguisher may be used to contain or extinguish the fire. When this method is used, employees shall do so in teams of two and only as long as practically needed without compromise to life or health until emergency response personnel arrive.

During after-hours emergencies, Human Resources is the main contact for the alarm service and will provide access and information to emergency personnel as required. Alternate contact may be utilized depending on H.R. availability.

**Also see Fire Prevention, Section 3.3**.
2.5 CUSTOMER PROPERTY

As a service provider, we must follow our customer’s safety guidelines. These guidelines may include annual training or site specific training. For our safety and contract agreements it is important to follow these guidelines. Something as simple as not checking in and out, can lead to serious safety violations and put ourselves and others in danger.

It is important to follow proper procedures while on site. Example; when working on wind farms, remember there is property boundaries and the customer we are working for leases the land being used. Be aware of these boundaries and know the areas we are only allowed to travel, stage, and work within.

Many customers require truck drivers to notify them of their ETA so that proper arrangements can be made in advance for training, material handling, etc...

Don’t use equipment you are not qualified to operate and that is not the property or rental of Axis Crane. Our customers have their own training process and prior arrangements must be made before operating any of their equipment.

Always follow the customer’s incident/accident reporting procedures as well as Axis Crane procedures. These procedures are designed to help create a safer working environment and vital to future operations.

2.6 DISCIPLINARY POLICY

Axis Crane expects adherence to these rules and policies identified in the Employee/Safety Manual. Any infraction thereof could result in points being assessed to your employment record or immediate termination. Discipline is an essential part of any well run organization. Whereas following company policies and procedures are a consideration of continued employment therefor, Axis Crane has adopted the following disciplinary point policy:

- 12 Points x 36 Months system
- Per disciplinary event an employee will be assessed 1-3 points
- Points will be totaled for a running 36 months (points will not count against the employee once they are older than 36 months)
- Human Resource Director, Safety Manager, and Direct Supervisor will meet to determine the points assessed to an employee.
- Minor Infraction – 1 Point
- Moderate Infraction – 2 Points
- Major Infraction – 3 Points
- Repeat offences within the last 36 months will be assessed at the next point level up to 3 points

Consequences for Point
- 1-3 Points – Verbal Warning & Retraining
- 4-5 Points – Written Warning & 2-Day Suspension & Retraining
- 6-9 Points – 2nd Written Warning & 3-Day Suspension & Retraining
- 10-11 Points – Put on notice of possibility of termination & 5-Day Suspension & Retraining
- 12 Points and above – Termination without possibility of rehire.
Immediate disciplinary action, including dismissal, may be used if an employee puts others in immediate danger. All the above disciplinary measures will be considered on a case-by-case basis and may be accelerated depending on the severity of the incident in review.

There are other circumstances for which employees may be disciplined, such as being convicted of a felony that can also lead to disciplinary action up to and including immediate termination.

CDL Drivers that commit traffic offences will face at the minimum penalties as prescribed by the Federal Motor Carrier Division in 49 CFR 383. Note: a copy of all CDL regulations will be issued to all employees with a CDL for reference. The content of your personnel file is confidential between you and the Company and will be protected as required by law. Spouses, parents and significant others will not have access to any of the items above without written permission from employee.

2.7 CODE OF CONDUCT

- ATTITUDE: Every employee should display a positive attitude towards his or her job. A negative attitude creates a difficult working environment for all employees working around you, and prevents the Company from providing quality service. Your personal problems must not negatively affect the Company's working environment.

- SAFETY: Axis Crane is committed to providing a safe place for you to work, and it has established a safety program to ensure that everyone understands the importance of safety. This program requires all employees to exercise good judgment and common sense in their day-to-day work. Horseplay and practical jokes can cause accidents and injuries and therefore are not permitted and will not be tolerated.

- COURTESY: Courtesy is the responsibility of every employee. Everyone is expected to be courteous, polite and friendly to Axis Crane’s Customers as well as to their fellow employees. No one should be disrespectful to a Customer using profanity or any language, which injures the image or reputation of the Company.

- CONFIDENTIALITY: As an employee, you may have access to confidential information. All Company business (verbal, written, or electronic communication) must be kept strictly confidential. No records or documents pertaining to any affairs of the Company will be mailed or given to any person or organization without the approval of management. Breach of this confidentiality could result in termination.

- INSUBORDINATION: All employees have duties to perform and everyone, including your supervisor, must follow direction(s) from someone. It is against Axis Crane’s policy for an employee to refuse to follow the direction of a supervisor or management official in an insubordinate manner. If an employee thinks his/her supervisor is asking them to do something illegal or unethical, respectfully decline and request that this matter be addressed with a senior vice president.

- HIGH PERFORMANCE EXPECTATION: Our expectations are high. Employees are expected to make every effort to learn their job thoroughly and efficiently, and to perform at a level satisfactory to the Company at all times.

- PERSONAL APPEARANCE: Axis Crane does not have a formal dress policy as we prefer to rely on every employee’s good judgment to dress appropriately for a business such as ours and the job he or she is performing. We do expect all employees to present a neat, well-groomed appearance and a
courteous disposition. We feel that these qualities go further than any other factor in making a favorable impression on the public and fellow workers. Please avoid extremes in dress. Flashy, skimp or revealing outfits, tee shirts with offensive words or suggestive phrases and other non-business-like clothing are unacceptable. They reflect poorly on our company. Employees who report to work in unacceptable attire may be requested to leave work and return in acceptable attire. Such time off from work will generally be without pay.

- **SUBSTANCE ABUSE:** Substance abuse will not be tolerated at Axis Crane. Our Drug and Alcohol Policy contained in this Manual explains our position and policy regarding alcohol and drug use, as well as other intoxicants and mind-altering substances.

### 2.8 DRUG AND ALCOHOL POLICY

**Axis Crane LLC**  
**Drug and Alcohol Policy**  
**For use with FMCSA/NON DOT and DOT regulated employees**

**Overview**

Federal regulations require that employers conduct alcohol and controlled substances testing of drivers who operate commercial motor vehicles, including but not limited to: company drivers, contract drivers, mechanics, and supervisors with a commercial driver’s license who fill in. For the purpose of this policy the term employee will be referred to as “driver” and employer will be referred to as “Company.” This policy provides guidelines for circumstances under which the Federal Motor Carrier Safety Administration (FMCSA) and the United States Department of Transportation (DOT) mandated testing must be conducted. Of course, all the details of every possible situation cannot be anticipated, so the Company reserves the right to determine the appropriate application of this policy and general employment policies to any particular case.

Employees covered by this policy have been provided a copy of these FMCSA/DOT provisions and by your signature, you are verifying that you have read and understand the policy. **Drivers should note that in addition to the required DOT regulations they are also subject to the company’s drug and alcohol policy and all other policies and procedures as applied to all employees.**

The Company expects all drivers to work drug- and alcohol-free at all times. If you have any questions about this policy, contact Human Resources Office, (800) 585-2947

The following conditions and activities are expressly prohibited:

The manufacture, or sale, or use or possession of alcohol, any controlled or illegal substance (except strictly in accordance with medical authorization) or any other substances which impair job performance or pose a hazard, when use or possession occurs on Company premises or property, or during work time, or while representing the Company in any work-related fashion.

Reporting for work having consumed alcohol or used illegal drugs or controlled substances at a time, or in such quantities, or in a manner that may impair work performance. For purposes of this policy, having any detectable level of an illegal or controlled drug, or alcohol with an alcohol concentration of .02 or greater, in one’s system while covered by this policy will be considered to be a violation.

**Alcohol and Drug Problems**
In some cases alcohol and drug abuse can be a result of chemical dependency that can be successfully treated with professional help. Drivers who are having problems with alcohol or drug use are encouraged to seek voluntary counseling and treatment. It is the driver’s responsibility to seek help when needed, and to do so before substance abuse causes problems on the job or results in disciplinary action.

Drivers who admit to alcohol misuse or controlled substances use are not subject to the referral, evaluation, and treatment requirements of 49 CFR Part 382 and 40, provided that:

- The driver does not self-identify in order to avoid testing;
- The driver makes the admission of alcohol misuse or controlled substances use before performing a safety sensitive function;
- The driver does not perform a safety sensitive function until the Company is satisfied that the driver has successfully completed education or treatment requirements in accordance with the self-identification program guidelines.

Normally, the Company will:

- Not take adverse action against a driver making a voluntary admission of alcohol misuse or controlled substances use provided that the admission occurs before the employee has been subject to disciplinary action or the use/misuse has affected job performance;
- Allow the driver sufficient opportunity to seek an evaluation, education or treatment to establish control over the employee’s drug or alcohol problem;
- Permit the employee to return to safety sensitive duties only upon successful completion of an educational or treatment program, as determined by a substance abuse professional, and will be required to sign a Last Chance Agreement as a condition of employment.

The employee must pay the cost of the pre-treatment evaluation and any treatment. The company’s medical plan, when available to the employee, may cover a portion of the evaluation and treatment costs, however uncovered costs remain the employee’s responsibility to pay. The Company will pay the cost of any follow-up controlled substances or alcohol testing required by the substance abuse professional.

The following Substance Abuse Professionals can provide help and referrals:

<table>
<thead>
<tr>
<th>Betty Friedman, MSW</th>
<th>Jim Thower, PHD</th>
<th>or saplist.com</th>
</tr>
</thead>
<tbody>
<tr>
<td>1525 NE Weidler St. Ste 202</td>
<td>1020 SW Taylor #570</td>
<td>Portland OR 97205</td>
</tr>
<tr>
<td>Portland OR 97232</td>
<td>Portland OR 97205</td>
<td>(503) 226-6615</td>
</tr>
<tr>
<td>(503) 525-1142</td>
<td>(503) 226-6615</td>
<td></td>
</tr>
</tbody>
</table>

Definitions

“Alcohol” means the intoxicating agent in beverage alcohol, ethyl alcohol, or other low molecular weight alcohols including methyl and isopropyl alcohol.

“Alcohol concentration (or content), BAC” means the alcohol in a volume of breath expressed in terms of grams of alcohol per 210 liters of breath as indicated by an evidential breath test under 49 CFR Part 382.

“Alcohol use” means the drinking or swallowing of any beverage, liquid mixture or preparation (including any medication), containing alcohol.

“Commercial motor-vehicle” means a motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle:
• Has a gross combination weight rating of 26,001 or more pounds inclusive of a towed unit with a gross vehicle weight rating of more than 10,000 pounds; or
• Has a gross vehicle weight rating of 26,001 or more pounds; or
• Is designed to transport 16 or more passengers, including the driver; or
• Is of any size and is used in the transportation of materials found to be hazardous for the purposes of the Hazardous Materials Transportation Act and which require the motor vehicle to be placarded under the Hazardous Materials Regulations (49 CFR Part 172, subpart F).

“Controlled substances” mean those substances identified in 49 CFR Part 40.85: marijuana, cocaine, opiates, amphetamines, and phencyclidine.

“DOT Agency” means an agency (or “operating administration”) of the United States Department of Transportation administering regulations requiring alcohol and/or drug testing (14 CFR parts 61, 63, 65, 121, and 135; 49 CFR parts 199, 219, 382, and 655), in accordance with 49 CFR Part 40.

“Driver” means any person who operates a commercial motor vehicle. This includes, but is not limited to: full time, regularly employed drivers; casual, intermittent or occasional drivers; leased drivers and independent, owner-operator contractors who are either directly employed by or under lease to an employer or who operate a commercial motor vehicle at the direction of or with the consent of an employer.

“Drug” has the meaning of any controlled substances, prescription, or over-the-counter medication.

“EBT (or evidential breath testing device)” means an EBT approved by the National Highway Traffic Safety Administration (NHTSA) for the evidential testing of breath and placed on NHTSA’s “Conforming Products List of Evidential Breath Measurement Devices” (CPL), and identified on the CPL as conforming with the model specifications available from the National Highway Traffic Safety Administration, Office of Alcohol and State Programs.

“Employer” means an entity employing one or more employees (including an individual who is self-employed) that is subject to DOT agency regulations requiring compliance with 49 CFR Part 382. The term refers to the entity responsible for overall implementation of DOT drug and Alcohol program requirements, as well as those individuals employed by the entity who take personnel actions resulting from violations of 49 CFR Part 382 and any applicable DOT agency regulations. Service agents are not employers.

“Licensed medical practitioner” means a person who is licensed, certified, and/or registered, in accordance with applicable Federal, State, local, or foreign laws and regulations, to prescribe controlled substances and other drugs.

“Medical Review Officer (MRO)” means a licensed physician (medical doctor or doctor of osteopathy) responsible for receiving laboratory results generated by an employer’s drug testing program who has knowledge of substance abuse disorders and has appropriate medical training to interpret and evaluate an individual’s confirmed positive test result together with his or her medical history and any other relevant biomedical information.

“Performing (a safety-sensitive function)” means a driver is considered to be performing a safety-sensitive function during any period in which he or she is actually performing, ready to perform, or immediately available to perform any safety-sensitive functions.

“Refuse to submit (to an alcohol or controlled substances test)” means that a covered employee:
• Fails to show up for any test (except a pre-employment test) within a reasonable time after being directed to do so by the Company. This includes the failure of an employee (including an owner-operator) to appear for a test when called by a Consortium/Third Party Administrator;

• Fails to remain at the testing site until the testing process is complete; provided, that an applicant who leaves the testing site before the testing process commences for a pre-employment test is not deemed to have refused a test. The testing process commences once the applicant has been provided the specimen collection cup.

• Fails to provide a urine specimen for any drug test or breath or saliva sample for an alcohol test required by 49 CFR Part 382, if the employee leaves after the testing process has commenced;

• In the case of a directly observed or monitored collection in a drug test, fails to permit the observation or monitoring of the provision of a specimen;

• Fails to provide a sufficient amount of urine, breath or saliva when directed, unless it has been determined, through a required medical evaluation, that there was an adequate medical explanation for the failure to provide.

• Fails or declines to take a second test the employer has directed following a negative dilute result as required by 40.197(b);

• Fails to undergo an additional medical examination, as directed by the MRO as part of the verification process, or as directed by the Designated Employer Representative (DER) concerning the evaluation as part of the “shy bladder” procedures in 49 CFR Part 40, subpart I;

• or fail to undergo a medical examination or evaluation as directed by the employer as part of the insufficient breath procedures outlined in 40.265I.

• Fails to cooperate (e.g. refuses to empty pockets when directed by the collector, behave in a confrontational way that disrupts the collection process, fail to wash hands after being directed to do so by the collector) or otherwise interferes with any part of the testing process.

• Fails to sign the certification at Step 2 of the alcohol testing form (ATF).

• Is reported by the MRO as having a verified adulterated or substituted test result.

• For an observed collection, fail to follow the observer’s instructions to raise your clothing above the waist, lower clothing and underpants, and to turn around to permit the observer to determine if you have any type of prosthetic or other device that could be used to interfere with the collection process.

• Possess or wear a prosthetic or other device that could be used to interfere with the collection process.

• Admit to the collector or MRO that you adulterated or substituted the specimen.

“Safety-sensitive function” means all time from the time a driver begins to work or is required to be in readiness to work until the time he/she is relieved from work and all responsibility for performing work. Safety-sensitive functions shall include:

• All time at an employer or shipper plant, terminal, facility, or other property, or on any public property, waiting to be dispatched, unless the driver has been relieved from duty by the employer;

• All time inspecting equipment as required by 49 CFR 392.7 and 392.8 or otherwise inspecting, servicing, or conditioning any commercial motor vehicle at any time;
• All time spent at the driving controls of a commercial motor vehicle in operation;
• All time, other than driving time, in or upon any commercial motor vehicle except time spent resting in a sleeper berth (a berth conforming to the requirements of 49 CFR 393.76);
• All time loading or unloading a vehicle, supervising, or assisting in the loading or unloading, attending a vehicle being loaded or unloaded, remaining in readiness to operate the vehicle, or in giving or receiving receipts for shipments loaded or unloaded; and
• All time repairing, obtaining assistance, or remaining in attendance upon a disabled vehicle.

Prohibited Conduct: The following is considered prohibited conduct under this policy:
• No driver shall report for duty or remain on duty requiring the performance of safety-sensitive functions while having an alcohol concentration of 0.04 or greater.
• No driver shall use alcohol while performing safety-sensitive functions.
• No driver shall perform safety-sensitive functions within four hours after using alcohol.
• No driver required to take a post-accident alcohol test under 49 CFR 382.303 shall use alcohol for eight (8) hours following the accident, or until he/she undergoes a post-accident alcohol test, whichever occurs first.
• No driver shall refuse to submit to a post-accident, random, reasonable suspicion, or follow-up controlled substance and/or alcohol test required by 49 CFR Part 382.
• No driver shall report for duty or remain on duty requiring the performance of safety-sensitive functions when the driver uses any controlled substance, except when the use is pursuant to the instructions of a licensed medical practitioner, who has advised the driver that the substance will not adversely affect the driver’s ability to safely operate a commercial motor vehicle.

**Prescription Medications:** No driver may possess any prescription medication or report to work while using any prescription, except when he/she is under a doctor’s care and the doctor has advised the driver that the substance does not affect his/her ability to operate a commercial motor vehicle. The use of medication that could affect a driver’s safe job performance is prohibited while working. The driver shall report to the Human Resources Office, (503) 253-5646, the use of any prescribed medication and, without identifying the medication, shall provide a certificate from the driver’s doctor that the use of the medication will not impair his/her ability to safely perform his/her duties. If, as a result of testing under this policy, the driver is found to have the presence of controlled substances in the body which is a result of the use of his/her legally prescribed medication that has not been reported, the driver shall be removed from service without pay until it is determined that the use of medication will not impair the his/her ability to safely perform assigned duties.

** Company requirement, not a DOT mandated requirement

No driver shall report for duty, remain on duty or perform a safety-sensitive function, if the driver tests positive for controlled substances.

The Company shall not permit a driver to continue to perform safety sensitive functions if the Company has actual knowledge of a driver violating any of the aforementioned prohibitions.
The Company can obtain actual knowledge based on the employer’s direct observation of the employee, information provided by the driver’s previous employer(s), a traffic citation for driving a CMV while under the influence of alcohol or controlled substances, or an employee’s admission of alcohol or controlled substances use, except as discussed in the Company’s voluntary self-identification program.

Other Related Alcohol Conduct

A driver tested under the requirements of this policy who is found to have an alcohol concentration of 0.02 or greater but less than 0.04 shall be removed immediately from performing safety-sensitive functions until the start of the driver’s next regularly scheduled duty period, but not less than 24 hours following the test administration.

Controlled Substances and Alcohol Testing

Any negative dilute test result will be accepted as a negative test, no further action is required.

Drivers/employees will be subject to testing as follows:

Pre-Employment: Drivers will be tested for controlled substances unless the applicant participated in a DOT testing program within the past 30 days and:

- Passed a DOT controlled substance test within the past six (6) months; or
- Was subject to DOT random controlled substance testing program for the previous 12 months; and
- Has not violated any prohibitions of 49 CFR Part 382 within the past six (6) months.

A driver/applicant who tests positive on a pre-employment test will not be hired. In addition, an applicant who tested positive for this or any other company’s mandated pre-employment drug test after August 1, 2001, must provide documentation of his/her successful completion of DOT return-to-duty requirements (i.e. an evaluation by a substance abuse professional, education and/or treatment, and a negative DOT pre-employment test all of which meet the requirements of 49 CFR Part 40). The driver/applicant will be responsible to pay for the pre-treatment evaluation, education and/or treatment, and the subsequent pre-employment test.

Post-Accident: As soon as practicable following an occurrence involving a commercial motor vehicle operating on a public road in commerce, each surviving driver shall be tested for controlled substances and alcohol:

- Who was performing safety-sensitive functions with respect to the vehicle, if the accident involved the loss of human life (fatality); or
- The driver received a citation for a moving violation and the accident involved bodily injury to any person who, as a result of the accident, immediately receives medical treatment away from the scene of the accident; or
- The driver received a citation for a moving violation and the accident involved one or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicle to be transported away from the scene by a tow truck or other motor vehicle.

A driver may not consume alcohol for eight (8) hours following an accident that requires the DOT alcohol test. The alcohol test must be completed within two (2) hours of the accident, if not the driver must advise the Company the reasons for the delay, and shall continue to have the test conducted up to eight (8) hours following the accident. After eight (8) hours the attempt to test will be ceased, the driver must again provide the reasons for the test not being administered.
**In addition, any employee involved in any commercial motor vehicle accident involving an injury requiring immediate medical attention or any vehicle towed away because of disabling damage, where no citation has been issued; any other motor vehicle accident with a company vehicle that requires a report to be filed with the Oregon Driver and Motor Vehicle Services (DMV); any job related accident requiring immediate off-site medical attention; or damage to Company or client property in excess of $1000.00 will be required to submit to testing. Testing will be conducted to determine the presence, use, or any involvement with alcohol or drugs unless the Company determines, at its discretion, that the accident could not have been caused by alcohol or drug use. The driver will submit to an alcohol test within 8 hours and a controlled substances test within 32 hours of the accident. The driver must advise the collection site and alcohol testing personnel that the test being required is a company required test not a mandated DOT test.**

**Company requirement, not a DOT mandated requirement.**

**Random:** The employer is using a consortium/third party administrator to facilitate the random selection of drivers and notification to the employer of the driver(s) selected for testing. The consortium/third party administrator is:

**A WorkSAFE Service, Inc.**

1696 Capitol St NE

Salem OR 97301

(503) 391-9363

Drivers will be subject to random alcohol and controlled substance testing under the following program:

- Random selection of drivers will be made by a scientifically valid method using a computer-based random number generator that is matched with drivers’ Social Security numbers.
- Each driver shall have an equal chance of being drawn each time selections are made.
- Selections for testing are unannounced and reasonably spread throughout the calendar year.
- Random selections are made to ensure testing for controlled substances is conducted at not less than the minimum annual 50% rate and alcohol is conducted at not less than the minimum annual 10% rate, or the rates as established by the FMCSA.
- A driver shall only be tested for alcohol just before, during, or after performing safety-sensitive functions, however, he/she may be tested for controlled substances anytime while performing work for the employer.
- Once a driver is notified of selection for random alcohol and/or controlled substances testing he/she shall proceed to the test site immediately.

**Reasonable Suspicion:** Drivers will be tested for alcohol and/or controlled substances whenever the employer has reasonable suspicion that the individual has violated any of the drug and alcohol policy (for example, if the employer observes physical signs of drug or alcohol use, such as slurred speech, unsteady gait, dilated pupils, odor of alcohol or controlled substances, etc.; or if observed unusual behavior suggesting the use of controlled substances or alcohol in violation of the Company policy). Drivers required to be tested under reasonable suspicion testing will be removed from performing safety sensitive functions pending the outcome of the test result(s) and be transported to the testing facility by the Company.

Reasonable suspicion drug testing is authorized when the supervisor’s observation of the driver’s behavior occurs anytime during the workday. Reasonable suspicion alcohol testing is authorized only if the
supervisor’s observation of the driver’s behavior has been made during, just preceding, or just after performing any safety-sensitive function.

The alcohol test must be completed within two (2) hours of the observation, if not, the Company must document the reasons for the delay, and shall continue to have the test conducted up to eight (8) hours following the observation. After eight (8) hours the attempt to test will cease, and the Company must again provide the reasons for the test not being administered.

If an alcohol test is not completed within the two (2) or eight (8) hour time periods, the employer shall prepare and maintain on file a record stating the reasons the test was not administered within the appropriate time frames.

The Company shall not permit a driver to report for duty, remain on duty, perform, or continue to perform any safety-sensitive functions while the driver is impaired by alcohol, as shown by the behavioral, speech, or performance indicators of alcohol misuse, until:

- An alcohol test is administered and the driver’s alcohol concentration measures less than 0.02 percent; or
- The start of the driver’s next regularly scheduled duty period, but not less than twenty four (24) hours following the supervisor’s determination that reasonable suspicion exists.

Supervisors and any company representative that may be expected to serve in a supervisory capacity, and who may be required to make a reasonable suspicion determination, must have received at least 60 minutes of training on the indicators of probable drug use and an additional 60 minutes training on the indicators of probable alcohol misuse. Only those individuals who have received this training are qualified to make these decisions.

**Return-to-Duty:** No driver found to be in violation of the Company drug and alcohol policy will be permitted to return-to-duty involving safety-sensitive functions until the driver has a verified negative controlled substances test and/or an alcohol test with a result less than 0.02 alcohol concentration.

All controlled substances return-to-duty tests will be conducted by same gender direct observation. Refusing to permit an observed collection will constitute a refusal to test with the same consequences as testing positive.

**Follow-Up:** Any driver in need of assistance in resolving problems associated with alcohol misuse and/or controlled substances use as identified through the evaluation by the Substance Abuse Professional will, if still employed be required to enter into a Last Chance Agreement and to submit to unannounced follow-up testing for controlled substances and/or alcohol as directed by the Substance Abuse Professional. The Company may perform follow-up testing for five years.

All controlled substances follow-up tests will be conducted by same gender direct observation. Refusing to permit an observed collection will constitute a refusal to test with the same consequences as testing positive.

**Failure to Cooperate**

Employees who are subject to this policy are expected to comply fully with any required testing. Failure to do so (including, for example, refusing to sign consent or refusing to test, obstructing the testing process, failing to make yourself available for a required test, failing to provide an adequate sample for testing, attempting to adulterate or substitute a specimen, or in any way tampering with a required test, failure to empty pockets or wash hands as requested by collection site personnel, refusing to permit an observed collection, possessing or wearing a prosthetic or other device that could be used to interfere with the collection process) will cause the driver to be immediately relieved from performing safety-sensitive functions, and will also be considered a
violation of Company policy that will subject the employee to discipline, up to and including termination of employment. The Company also reserves the right to involve law enforcement officials for any conduct, which it believes, might be in violation of state or federal law.

Testing Procedures

**Urine Specimen Collection:** Specimen collections will be conducted in accordance with the procedures of 49 CFR Part 40, as amended. The collection procedures are designed to ensure the security and integrity of the specimen provided by each covered employee, and those procedures will strictly follow federal chain-of-custody guidelines. Moreover, every reasonable effort will be to preserve the individual’s privacy as much as possible consistent with ensuring an accurate result. Covered employees will be required to empty their pockets before providing the drug test specimen.

Under normal circumstances the applicant or covered employee will be afforded complete privacy in the restroom for providing the urine sample. Certain situations do require the urine sample be provided under same gender direct observation. Those situations include:

- The temperature on the original specimen was out of range; or
- The original specimen appeared to have been tampered with (i.e. unusual color, odor, foam, etc.); or
- The laboratory reported to the MRO that a specimen is invalid, and the MRO reported to the Company there was not an adequate medical explanation for the result; or
- The MRO reported to the Company that the original positive, adulterated, or substituted test result had to be cancelled because the test of the split specimen could not be performed; or
- The laboratory reported to the MRO that the specimen was negative-dilute with a creatinine concentration greater than or equal to 2 mg/dL but less than or equal to 5mg/dL, and the MRO reported the specimen to the Company as negative-dilute and a second collection must take place under direct observation; or
- All return-to-duty or follow-up drug tests.

When that occurs, the donor will be required to follow the observer’s instructions to raise their clothing above the waist, lower clothing and underpants, and to turn around to permit the observer to determine if there is any type of prosthetic or other device that could be used to interfere with the collection process.

Refusing to permit an observed collection, possessing or wearing a prosthetic or other device that could be used to interfere with the collection process are considered a refusal to test and will constitute a verified positive drug test result.

**Laboratory Analysis:** As required by 49 CFR Part 40, only a laboratory certified by the Department of Health and Human Services (DHHS) will be retained by the Company to perform the analysis of the urine specimen for controlled substances. The initial screening test will be performed by immunoassay and will test for substances and at cutoff levels required by 49 CFR Part 40, as amended. All specimens identified as positive on the initial screening test will be confirmed using gas chromatography/mass spectrometry techniques at cutoff levels required by 49 CFR Part 40, as amended.

**Breath Alcohol:** Testing will be conducted by a qualified technician according to 49 CFR Part 40 procedures. Either a breath or saliva test by an EBT device will be used for the testing

**Medical Review**
All controlled substances test results will be reviewed by a Medical Review Officer (MRO) before results are reported to the Company. The MRO will attempt to contact the driver to discuss the test results before reporting positive results to the Company.

The Company Medical Review Officer is:
Dr. C. Kirby Griffin, MD
9370 SW Greenburg Rd., Suite 200
Portland OR 97223
(503) 977-3225

Notification of Results
The Company will notify the affected driver of any controlled substances test that is reported as positive by the MRO. The Company will notify driver-applicants of the results of pre-employment controlled substances testing if the applicant requests that information in writing within 60 days after we notify the applicant that he/she has or has not been hired.

Reanalysis of Original Specimen
Within 72 hours of the MRO notifying the driver of a verified positive controlled substances test, an adulterated or substituted specimen, the driver may request the reanalysis of the original specimen. Only the MRO may authorize such a reanalysis, and such a reanalysis may take place only at laboratories certified by the Department of Health and Human Services (DHHS). If the reanalysis fails to reconfirm the presence of the drug or drug metabolite, the MRO shall cancel the test.

All drivers have a right to request the reanalysis of the original specimen for which the Company will be responsible to pay.

Confidentiality
Records required under this policy, including test results, will be maintained in a secure location with controlled access. Each driver, upon written request, shall be entitled to receive copies of his/her own records, and to have copies of his/her records made available to any subsequent employer. Information may also be disclosed to the relevant state or federal agencies, or in connection with judicial, administrative or related proceedings (e.g., grievances and arbitration) initiated by or on behalf of the driver.

Evaluation and Referral
DOT regulations require that any driver who violates the alcohol and controlled substances rules of 49 CFR Part 382 be advised of available evaluation resources and be evaluated by a Substance Abuse Professional. The driver must complete an appropriate education and/or treatment program before being eligible to return-to-safety sensitive duty.

Before returning to performing safety-sensitive functions for any DOT employer a driver must be tested for controlled substances with a verified negative controlled substances test result and/or alcohol with a test result less than 0.02 alcohol concentration. The driver will be subject to follow-up testing of at least six tests in the first 12 months of returning to duty, and follow-up testing may continue for five years. All return-to-duty and follow-up drug tests will be required to be collected as same gender direct observation collections.

Consequences
Under normal circumstances, employees violating this policy or federal regulations will be suspended from performing any safety-sensitive functions with a commercial motor vehicle as defined by this policy and
will be subject to disciplinary action up to and including termination of employment. Under some circumstances, however, we may agree to return an employee to performing these functions following treatment and rehabilitation. Where that occurs, the employee must pay the cost of the pre-treatment evaluation and any treatment. The Company medical plan may cover a portion of the pre-treatment evaluation and treatment cost however the uncovered costs remain the employee’s responsibility. The Company will pay the cost of any follow-up controlled substances or alcohol testing required by 49 CFR Part 382.

Where, at the Company’s discretion, an employee is returned to work, the driver will be required to enter into a Last Chance Agreement and to submit to unannounced follow-up testing for controlled substances and/or alcohol as directed by the Substance Abuse Professional in order to continue to perform safety-sensitive functions and operating a commercial motor vehicle requiring a CDL.

The Company reserves the right to take disciplinary action up to and including termination for violation of the Company drug and alcohol policy where and when we deem it appropriate.
CERTIFICATE OF RECEIPT

I hereby certify that on the date shown below I received and read a copy of Axis Crane, Inc. Drug and Alcohol Policy for Use With FMCSA/DOT-Regulated Employees, consisting of fifteen (15) pages including these Certificates of Receipt, and a copy of drug and alcohol awareness training materials. I understand and agree to comply with this policy, including any required alcohol or controlled substance testing.

______________________________
EMPLOYEE – PRINT NAME

______________________________
EMPLOYEE – SIGNATURE

DATED: __________________________
2.9 DRIVER QUALIFICATION AND HIRING CRITERIA

When employment begins with Axis Crane, to the extent allowed by law, you will be asked to provide, or we will obtain a written history of your previous record of violations and accident experience as recorded from the state Department of Motor Vehicles records.

This history will become part of your permanent employee record file. The record will be reviewed with you prior to hire. With rare exception, Axis’ driving record evaluation criteria is as follows.

**Motor vehicle driving record evaluation guide**

An individual driver is considered unacceptable (unless there are reasonable extenuating circumstances) if his/her driving record for the most recent three-year period exceeds the following standards:

<table>
<thead>
<tr>
<th>Driver Ages</th>
<th>Number of Convictions/Accidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt; 25</td>
<td>One conviction</td>
</tr>
<tr>
<td>Age &gt; 25</td>
<td>Two convictions <strong>and</strong></td>
</tr>
<tr>
<td></td>
<td>One at-fault accident, <strong>or</strong></td>
</tr>
<tr>
<td></td>
<td>Three convictions</td>
</tr>
</tbody>
</table>

Single major violations are normally not acceptable and include the following:

- In physical control while under the influence of alcohol or other mind-altering substances
- Homicide or assault with a motor vehicle
- Leaving the scene of an accident
- License revocation/suspension; operating a vehicle while license is suspended
- Reckless driving
- Acceleration or speed contest
- Negligent driving
- Using a motor vehicle for the commission of a felony

Axis realizes that your driving habits will be no different whether operating company owned equipment or personal vehicles on company property. Therefore, as part of your overall annual job performance review, we will request, at our expense, updated information by obtaining current information as supplied from the Department of Motor Vehicles and Licensing. You may be requested to approve the release of an updated driver report based on State requirements.

Driving records obtained will be kept Confidential.

**Road tests**

Prior to operating a company vehicle, in addition to providing a valid driver’s license and meeting the motor-vehicle record criteria, drivers must complete a Road Test provided by an authorized member of management. This is generally a 20-30 minute observation of your driving skills with documentation with
the vehicle you are expected to be operating. Undue concerns may result in an advanced driver-training course (classroom or over the internet) being required prior to driving a company vehicle. Testing may also be administered to existing employees.

**Cargo security**

Cargo/Equipment falling from vehicles can result in fatalities to pedestrians or other drivers. Prior to each trip in a company pick-up, truck, or van, a final walk-around of the vehicle “by the driver” should be completed to ensure that all cargo and equipment is adequately secured. In cases of questionable security, management or veteran drivers should be contacted for advice. Loads shall be with in manufactures legal limits. The vehicle shall only be used for its intended purpose.

**Ongoing training**

In support of preventing employee injury, preventing damage to Axis Crane’s equipment, and protecting our customers and the public, Axis Crane may require periodic driver training.

Drivers of Axis Crane company vehicles may be requested to take Smith System’s Advanced Driver Training program or in-house training. Smith System’s program is internet-based and can be completed on an employee’s home computer or a computer provided by management.

Drivers who have doubles/triples endorsements for at least six (6) months and who will be driving these types of combination vehicles are required to have LCV training prior to operation of these vehicles. This training will be made available for candidates who qualify and who do not currently hold the training requirements under FMCSR (49 CFR § 380.111).

### 2.10 ALLEVIATE DRIVER FATIGUE

Research indicates that fatigue can play a major role in accidents, particularly for drivers on the road for 12 hours or more. What causes fatigue? Normal fatigue can be caused by three categories of stress factors: 1) physical environment such as temperature and vibration; 2) physiological factors such as poor or inadequate sleep, drugs and alcohol, or irregular eating habits; and 3) psychological factors such as anger, fear, and frustration. Professional drivers are exposed to many of these factors every day. Below are ten tips to help alleviate potential fatigue brought on by the day-to-day business of driving:

1. **Proper Nutrition.** Eat a well-balanced diet that includes the major food groups-meat, fish, fruits, grains, vegetables, and dairy products.
2. **Comfortable Environment.** Review your environment, especially your sleeping quarters. Check for noise, poor ventilation, high or low temperatures, and inadequate lighting.
3. **Exercise Regularly.** If you spend much of the day sitting, plan an exercise program to build your stamina. Poor physical conditioning may be the problem.
4. **Reduce Excess Weight.** The excess pounds you carry around all day may be responsible for your fatigue. Resolve to lose a certain amount of weight over a set period.
5. **Improve Sleep.** Insomnia is a common complaint, but it can often be resolved. Experiment by sleeping more or less, going to bed earlier or later, to discover proper sleep time.
6. **Time Management.** Stop running around trying to do too much too soon. Take advantage of time management techniques to gain control over your life.
7. **Relax More.** Use some of the proven relaxation techniques to reduce stress. Biofeedback, meditation, autogenic training, and others can ease tension, promote sleep, and reduce emotional stress.

8. **Reduce Caffeine.** Caffeine is a drug that may over-stimulate the body and mind, interfering with sleep and increasing anxiety. Try cutting back to no more than a couple of cups a day to see if it helps reduce fatigue.

9. **Quit Smoking.** Nicotine produces an initial stimulation, but is followed by a depressant phase of action. It is a drug that creates dependence and is incompatible with good health. Effects of tobacco smoke have been linked to many of the diseases that cause fatigue.

10. **Avoid Alcohol.** Alcohol is a drug that depresses bodily functions, causing fatigue and lethargy. Alcohol disturbs sleep, especially when taken near bedtime, and causes emotional turmoil that contributes to fatigue.

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**ALL ACCIDENTS CAN BE PREVENTED**

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2.11 **UNAUTHORIZED DRIVERS AND PASSENGERS**

Axis does not permit unauthorized drivers or passengers in company owned vehicles. An unauthorized driver shall be defined as any non-Axis Crane employee or Axis Crane employee without authorization or qualification to operate a company vehicle.

Passengers are permitted when they have a business relationship with Axis Crane and the ride is for business related purposes. Seat belts are required to be worn by all occupants. It is the responsibility of the driver to ensure this.

2.12 **VEHICLE INSPECTIONS**

All vehicles shall be maintained in safe working order. Post-trip inspections are required for Commercial Motor Vehicles. Pre-trip inspections also include review of the last Driver Vehicle Inspection report.

Any Out of Service problems must be reported to dispatch immediately so the problem can be resolved effectively.

Dispatch: (971) 284-4333

Maintenance: (971) 276-1442

Brake adjustment and burned out lights are the drivers responsibility!

For Commercial Motor Vehicles, “Periodic Inspections” are required by one of the following methods (per §396.11):

1. A Commercial Vehicle Safety Alliance (CVSA) roadside inspection
2. Self-inspections must be performed by a qualified inspector meeting the requirements found in FMCSR §396.19.

2.13 TRAFFIC CONTROL

Even when all traffic control measures are taken, a confused or unaware driver can crash through a work site, or a daydreaming worker can step into the path of a speeding vehicle. Some drivers take reckless chances by running stop signs or changing lanes without signaling. These unsafe acts jeopardize other drivers who may lose control of their vehicle while avoiding a collision. We must all prepare for the unexpected on the road, both during and after work hours. When our worksite involves moving traffic, safety awareness should be at its peak.

Planning: All traffic control must be carefully planned and approved by governing authorities before work begins. The person responsible for this planning should drive through the traffic pattern before any work starts to insure that the public will understand how to control their vehicles appropriately.

Signage: The Manual on Uniform Traffic Control Devices and local or state regulations should be followed for proper signage and barricading. Place initial warning signs a minimum of 1,000 feet from traffic revisions. In some cases, independent traffic safety contractors handle warning signs and barricades.

Barricades: Devices which guide traffic such as cones, barrels, etc., should be highly visible and spaced fairly close together, so drivers will not deviate from an assigned traffic flow. All such barriers should be made of material that will cause little damage if a vehicle contacts it.

Safety Gear: All employees should wear hard hats and must wear high-visibility orange or day-glow vests. When working at night, the vest should have light-reflective strips.

Flaggers: Roadside construction sites must have at least one individual assigned to traffic control. A highly visible sign paddle should be used during daylight hours. It should be octagonal in shape, at least 18 inches across, and have letters at least six inches high that say STOP on one side and SLOW on the other. A sign indicating flaggers must be placed a minimum of 500 feet from the beginning of the detour.

Vehicles: All construction vehicles should be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs when appropriate. All operators must be qualified and trained to operate the equipment they are using. If a vehicle will be parked along-side the road, orange safety cones should be placed around it to alert drivers.

Night Work: If work is done at night, the entire site must be illuminated. Increase warning distances in areas of fast-moving traffic as light fails. Flaggers should have orange-cone flashlights and barricades should be equipped with flashing lights. Any excavations or utility accesses should be taped off and barricaded with flashing warning lights.

2.14 COMPANY VEHICLES AND CELL PHONES

Axis Crane strives to provide a safe place of employment for its employees. This “safe place” extends to employees who use cellular phones in the course of completing their business responsibilities when driving. Axis Crane requires all employees to use good judgment as to when cell phone usage is appropriate and abide by customer requirements as well as the following safety guidelines:

Cell phone usage guidelines

Cell phones are a valuable tool in business today. Every employee has, and needs them to help perform their jobs more effectively and efficiently. They help increase productivity by keeping employees
connected to the office, customers, and co-workers. Cell phones do however raise some issues involving safety.

Recent legislative action is focusing on the effects of the increasing use of mobile phones by drivers and the number of highway accidents related to cell/mobile phone usage. The studies currently being evaluated revealed that cell phone usage contributes to distracted drivers and those distractions are causing accidents. One study concluded that talking on a cell phone while driving can lead to “inattention blindness”, or the inability to recognize objects encountered in the driver’s visual field. The following are some safety guidelines:

- Always dial while the vehicle is not moving
- Never use the cell phone in heavy traffic or bad weather
- Use speed dialing as much as possible
- Utilize hands free accessories
- Never look up phone numbers while driving
- Avoid stressful conversations while driving
- Keep your eyes on the road if you must use a cell phone
- Only make or receive calls that are absolutely necessary
- Keep the conversations short and factual
- No driver shall operate equipment while under the influence of alcohol or drugs or certain medications

## 2.15 MOBILE EQUIPMENT

- Only authorized employees shall be allowed to operate Axis Crane LLC mobile equipment. Authorization to operate mobile equipment will be issued to employees qualifying under appropriate training and proficiency testing.
- At the beginning of each shift, the operator shall inspect and check the assigned equipment, reporting immediately to his/her supervisor any malfunction of the clutch or of the braking system, steering, lighting, or control system and locking/tagging out the equipment if necessary. All fluids shall be checked and filled pre/post trip and maintained during operations. Brake adjustments shall be made by operator as required to maintain a safe operation of vehicle. Any major brake adjustments need to be reported to maintenance. (See Attached Brake Adjustment Guide)
- The operator is responsibility to keep the cab of the truck or crane clean of debris and garbage.
- Unauthorized personnel shall not be permitted to ride on equipment unless it is equipped to accommodate passengers safely.
- The operator shall make sure the warning signal is operating when the equipment is backing up.
- No operator shall operate mobile equipment without the protection of an enclosed cab or approved eye protection.
- Before starting the engine, the driver shall fasten seat belts and adjust them for a proper fit.
The operator shall not use, or attempt to use any vehicle in any manner or for any purpose other than for which it is designated.

The operator shall not load the vehicle/equipment beyond its established load limit and shall not move loads which because of the length, width, or height that have not been centered and secured for safe transportation.

All equipment is to be refueled at the end of each shift.

The operator of a gasoline or diesel vehicle shall shut off the engine before filling the fuel tank and shall ensure that the nozzle of the filling hose makes contact with the filling neck of the tank. No one shall be on the vehicle during fueling operations except as specifically required by design. There shall be no smoking or open flames in the immediate area during fueling operation

ABSOLUTELY NO SMOKING WHILE IN COMPANY VEHICLES

2.16 FORKLIFTS

Objective
Ensure employees who use forklifts in the yard or on project sites are competent and capable of safely operating the equipment.

Assumption
Employees from the Operating Engineers Union and Pile Driving / Carpenter’s Union have received prior training and/or have sufficient experience operating forklifts as a necessity of their profession. Axis Crane will verify competency and capability.

Action
An experienced forklift operator will evaluate each Axis employee prior to the employee operating a forklift to determine competency. Upon successful completion of this evaluation, the employee will be issued a certificate of competence.

Policy
Forklifts (powered industrial trucks) shall be operated, maintained, and controlled in a safe manner.

This policy covers minimum performance standards applicable to all company associates, employees and locations. Local practices requiring more detailed or stringent rules, or local, state or other federal requirements regarding this subject can and should be added as an addendum to this procedure as applicable.

Purpose
To define the procedures and standards that apply to the care, control, maintenance, inspection, and operation of forklifts (powered industrial trucks).

Scope
Company associates, work sites, i.e., company offices, client job sites, etc. requiring the use of forklifts (powered industrial trucks).

Definitions
Forklift means a mobile, power-propelled truck used to carry, push, pull, lift, stack, or tier materials. Powered industrial trucks (forklifts) are also commonly known as pallet trucks, rider trucks, fork trucks, or lift trucks.

Training Requirements

Only trained and authorized persons are permitted to operate a forklift. No employees are allowed to operate a forklift without the proper training. The Branch Safety Officer or designee will administer the forklift operator certification program and maintain training records.

Training shall occur prior to employee operation of any company forklift, and at least every three years thereafter unless observed performance by the operator dictates the need for more frequent retraining. The following requirements shall be met to become a "Qualified Forklift Operator":

- Complete the educational requirement as stated above.
- Perform the demonstrated capability requirement satisfactorily. Each trainee, who satisfactorily completes the qualifications as outlined above, shall be issued a written document as evidence of being a Qualified Forklift Operator.

Inspection and Maintenance

Prior to placing a forklift into service, the operator shall inspect their vehicle and document this inspection on the company forklift inspection form. This inspection is not necessary on days when the forklift will not be placed into service. Follow the manufacturer’s recommendations and utilize Axis Crane’s “Daily Forklift & Aerial Inspection” form.

It is the responsibility of the department manager to submit the inspection checklists to the Safety Officer on a weekly basis. The Branch Safety Officer shall keep the last 30 days of inspection checklists for each forklift on file for review.

Any noted condition that affects the safe operation of the forklift shall be reported to the operator's supervisor for corrective action and shall tag the forklift “out of service” until the unsafe condition is corrected.

A maintenance log shall be maintained for each forklift to determine when required maintenance is due. Only qualified personnel shall perform maintenance and repair. Maintenance records for each forklift shall be kept on file by the maintenance department.

General Safe Operating Rules

The following safe operating rules apply to company employees who operate a forklift. Violations of safe operating rules can and will result in retraining and/or disciplinary action.

- Only company employees trained as per the requirements of this manual and authorized by the department manager shall be allowed to operate forklifts
- Company forklifts shall not be loaned or rented to others for use.
- Stunt driving and horseplay shall not be permitted.
- Forklifts shall be equipped with seat belts and utilized by the operator when in use.
- Personnel are not permitted to ride on forklifts except in designated seats that are part of the equipment design.
- Forklifts shall be equipped with a portable fire extinguisher.
• Under travel conditions, the forklift shall be operated at a speed that will permit it to be brought to a stop in a safe manner.

• Traffic regulations shall be observed, including authorized work site speed limits. A safe distance shall be maintained approximately three forklift lengths from the forklift truck ahead.

• The driver shall be required to slow down and sound the horn at cross aisles and other areas where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

• The driver shall be required to look in the direction of, and keep a clear view of the path of travel.

• Forklifts shall have a functional horn and back-up alarm with a distinctive sound, loud enough to be heard clearly above background noises. There are other scenarios where a flashing yellow/amber light may be installed.

• Copies of the manufacturer's operating instructions for each type of forklift shall be readily available for review by operators and supervisory personnel.

• Lift trucks, stackers, etc., shall have the rated capacity clearly posted on the vehicle so as to be clearly visible to the operator. When the manufacturer provides auxiliary removable counterweights, corresponding alternate rated capacities also shall be clearly shown on the vehicle. These ratings shall not be exceeded.

• No modifications or additions, which affect the capacity or safe operation of the equipment, shall be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

• Steering or spinner knobs shall not be attached to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering hand wheel to spin. The steering knob shall be mounted within the periphery of the wheel.

• Forklifts shall have the manufacturer’s nameplate showing its weight with attachments, lifting capacity, lift height maximum and other pertinent date. Nameplates or markings shall be maintained in legible conditions and remain in place.

• Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.

• Grades shall be ascended or descended slowly.

• When ascending or descending grades in excess of 10 percent, loaded forklifts shall be driven with the load upgrade.

• On grades, the load and load engaging means shall be tilted back if applicable and raised only as far as necessary to clear the road surface.

• No person shall be allowed to stand or pass under the elevated portion of any forklift, whether loaded or empty.

• There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
• Arms or legs are prohibited from being placed between the uprights of the mast or outside the running lines of the forklift.

• When a forklift is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off and brakes set.

• Wheels shall be blocked if parked on an incline.

• A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform, or freight car. Forklifts shall not be used for opening or closing freight doors.

• Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor. Prior to forklift entry the flooring and frames of trucks, trailers and railroad cars shall be checked for breaks and weakness before they are driven into and to determine if it will bare the intended weight of the forklift and intended load.

• Dock board or bridge plates shall be properly secured before they are driven over. Dock board or bridge plates shall be driven over carefully and slowly and their rated capacity never exceeded. Portable dock boards shall be secured in position, by being anchored or equipped with devices that will prevent their slipping.

• An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material etc. representative of the job application, but not to withstand the impact of a falling capacity load.

• Additional counter weighting of forklifts shall not be allowed unless approved by the manufacturer.

• Employees shall not jump off a forklift.

• Forklift operators shall yield to pedestrians.

• Loads carried shall be secured on the forks to prevent upset or overturn.

Refueling and Battery Changing/Charging

Refueling and battery charging operations shall be performed only in designated areas. Open flames, smoking, sparks or electric arcs shall be eliminated from refueling (reference Fire Protection) and battery changing/charging areas (reference Electrical-General and First Aid section) of this manual for battery safety and eye wash requirements).

Forklifts shall be shut-off, properly positioned and brakes applied before attempting to refuel or charge battery. Proper PPE including eye and face protection and gloves will be worn when handling cylinders and/or batteries. Refer to the Personal Protective Equipment Section.

OSHA standards that apply:

OSHA 29 CFR 1910. 178 (Powered Industrial Trucks)

OSHA 29 CFR 1926.602 (c) (Lifting and Hauling Equipment)
An aerial or scissor lift is any vehicle-mounted device used to elevate personnel, including: extendable boom platforms, aerial ladders, articulating (jointed) boom platforms, vertical towers, and any combination of the above.

Aerial lifts have replaced ladders and scaffolding on many job sites due to their mobility and flexibility. They may be made of metal, fiberglass reinforced plastic or other materials. They may be powered or manually operated, and are considered to be aerial lifts whether or not they can rotate around a primarily vertical axis.

Many workers are injured or killed on aerial lifts each year.

The following hazards, among others, can lead to personal injury or death:

- Fall from elevated level
- Objects falling from lifts
- Tip-overs
- Ejections from the lift platform
- Structural failures (collapses)
- Electric shock (electrocutions)
- Entanglement hazards
- Contact with objects
- Contact with ceilings and other overhead objects

**Training**

Only trained and authorized persons are allowed to operate an aerial lift. Training should include:

- Explanations of electrical, fall, and falling object hazards
- Procedures for dealing with hazards
- Recognizing and avoiding unsafe conditions in the work setting
- Instructions for correct operation of the lift (including maximum intended load and load capacity)
- Demonstrations of the skills and knowledge needed to operate an aerial lift before operating it on the job
- When and how to perform inspections
- Manufacturer’s requirements
- Drop-offs, holes, or unstable surfaces such as loose dirt
- Inadequate ceiling heights
- Slopes, ditches, or bumps
- Debris and floor obstructions
- Overhead electric power lines and communication cables
- Other overhead obstructions
- Other hazardous locations and atmospheres
• High wind and other severe weather conditions, such as ice
• The presence of others in close proximity to the work

WHAT TO DO WHILE OPERATING AN AERIAL LIFT

Fall Protection:
• Ensure that access gates or openings are closed
• Stand firmly on the floor of the bucket or lift platform
• Do not climb on or lean over guardrails or handrails
• Do not use planks, ladders, or other devices as a working position
• Use a body harness or a restraining belt with a lanyard attached to the boom or bucket
• Do not belt-off to adjacent structures or poles while in the bucket

Operation/Traveling/Loading:
• Do not exceed the load-capacity limits. Take the combined weight of the worker(s), tools and materials into account when calculating the load
• Do not use the aerial lift as a crane
• Do not carry objects larger than the platform
• Do not drive with the lift platform raised (unless the manufacturer’s instructions allow this)
• Do not operate lower level controls unless permission is obtained from the worker(s) in the lift (except in emergencies)
• Do not exceed vertical or horizontal reach limits
• Do not operate an aerial lift in high winds above those recommended by the manufacturer
• Do not override hydraulic, mechanical, or electrical safety devices
• Be aware of overhead clearance and overhead objects, including ceilings

Retraining
Workers should be retrained if any of the following conditions occur:
• An accident occurs during aerial lift use
• Workplace hazards involving an aerial lift are discovered
• An employee is observed operating an aerial lift improperly

What to Do Before Operating an Aerial Lift
Conduct a pre-start inspection prior to each shift to verify the equipment and all its components are in safe operating condition. Follow the manufacturer’s recommendations and utilize Axis Crane’s “Daily Forklift & Aerial Inspection” form.

Work Zone Inspections
Employers must assure that work zones are inspected for hazards and take corrective actions to eliminate such hazards before and during operation of an aerial lift. Items to look for include: Do not position aerial lifts between overhead hazards if possible.
• Treat all overhead power lines and communication cables as energized, and stay at least 10 feet (3 meters) away
• Ensure that the power utility or power line workers de-energize power lines in the vicinity of the work

Insulated aerial lifts offer protection from electric shock and electrocution by isolating you from electrical ground. However, an insulated aerial lift does not protect you if there is another path to ground (for instance, if you touch another wire). To maintain the effectiveness of the insulating device, do not drill holes in the bucket.

**OSHA standards that apply:**
29 CFR 1926.21, 29 CFR 1926.453,


### 2.18 ACCIDENT INVESTIGATION

While all accidents/ incidents should be investigated, the extent of such investigation shall reflect the seriousness of the situation utilizing a root cause analysis process or other similar method.

• Required incidents must be verbally reported to applicable regulatory agency(s) within 8 hours of their discovery. Incidents must also be reported to the client as soon as possible, or in a timely manner (within 24 hours of incident)
• Each employee is responsible for reporting the accident or injury to supervisor unless individual is unable to do so due to injury then a witness shall do so
• Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques. Training requirements relative to incident investigation and reporting (Awareness, First Responder, Investigation, and training frequency) should be identified in the program
• Equipment may include some or all of the following items; writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, etc.
• Initial identification of evidence immediately following the incident might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, and physical factors such as fatigue, age, and medical conditions. Refer to your accident/incident report or response sheet
• Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment.
• Witness interviews and statements must be collected. Locating witnesses, ensuring unbiased testimony, obtaining appropriate interview locations, and use of trained interviewers should be detailed. The need for follow-up interviews should also be addressed.
• It is intended that all Incident investigations should result in corrective actions therefore, written incident reports should be prepared and include an incident report form and a detailed narrative statement concerning the events. The format of the narrative report may include an introduction, methodology, summary of the incident, investigation board member names, narrative of the event, findings and recommendations. Photographs, witness statements, drawings, etc. should be included.

• Lessons learned should be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.
ACCIDENT/INCIDENT RESPONSE AND REPORTING PROCEDURE

The following accident and incident report procedure is carried in every company vehicle.

The Axis Crane procedure for reporting any accident, incident, or near miss is vital to company operations. All reports are reviewed to determine how it occurred and what can be done to prevent future occurrences. The reports also help to determine what happened should third parties become involved. If it’s not documented and reported both properly, and in a timely manner, it is difficult to determine how and what happened. Always document who, what, when, where, and why; include any and all pictures that document the event.

<table>
<thead>
<tr>
<th>Definitions</th>
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<tbody>
<tr>
<td>• <strong>Accident</strong> - an undesired event that results in a personal injury or property damage</td>
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<tr>
<td>• <strong>Incident</strong> - an unplanned, undesired event that adversely affects completion of a task</td>
</tr>
<tr>
<td>• <strong>Near Miss</strong> - incidents where no property was damaged or no personal injury was sustained; but where damage and/or injury easily could have occurred, given a shift in time or location</td>
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<table>
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<tr>
<th>Initiation</th>
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<tr>
<td>• Secure scene for safety - Contain spills - Provide first aid if needed.</td>
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<tr>
<td>• If emergency response is necessary Call 9-1-1 before continuing to;</td>
</tr>
<tr>
<td>1) Call Direct Supervisor - If no answer, leave message and continue to step 2.</td>
</tr>
<tr>
<td>2) Call Safety Manager - If no answer, leave message and continue to step 3.</td>
</tr>
<tr>
<td>3) Call General Manager - If no answer, leave message and begin repeating at step 1.</td>
</tr>
<tr>
<td>• Employee(s) involved are responsible for completing the appropriate forms</td>
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<tr>
<th>Responsibilities</th>
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<tr>
<td>• Safety Department - determine level of response and begin investigation</td>
</tr>
<tr>
<td>• Inform Employee(s) to follow proper procedure for site specific customer reporting requirements</td>
</tr>
<tr>
<td>• General Manager - manage and delegate resources needed for response</td>
</tr>
<tr>
<td>• Dispatch - aid in response for support as needed</td>
</tr>
<tr>
<td>• Employee(s) - provide continuous communication for situation updates. Safety Department will coordinate with Operations for resources if necessary</td>
</tr>
<tr>
<td>• Document all information pertaining to event for written report and will take pictures (refer to Safety Manual for vehicle accident involvement and reporting)</td>
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<tr>
<th>Reporting</th>
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<tr>
<td>• Document statement of event by using the designated &quot;Incident Report Short Form&quot;.</td>
</tr>
<tr>
<td>• All parties involved must complete form.</td>
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<tr>
<td>• Include all pictures or evidence that pertain to event</td>
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<tr>
<td>• Employee(s) will complete and return report to Safety Department for review within 24 hours from Incident/Accident (In situations that involve serious injury and that do not allow for the involved employee to provide immediate report, report may be provided by other employee(s) or outside resources)</td>
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<th>Processing</th>
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<tr>
<td>• Safety Department - Reviews report and provides a final, OSHA 301 compliant, report containing: findings, facts, and conclusion. All reports are reviewed by Safety Committee when complete.</td>
</tr>
<tr>
<td>• HR Manager – Upon receipt of report, processes and reviews with department manager for disciplinary action and/or corrections required to ensure stronger job safety, if necessary.</td>
</tr>
<tr>
<td>• Additional reports may be required by other agencies. These reports are typically completed by the responsible party (supervisor or employee(s) involved directly with situation)</td>
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</table>
The company will conduct post-accident drug and/or alcohol testing in accordance with 49CFR 382.303. As soon as practicable following an accident involving a commercial motor vehicle (CMV) requiring a CDL, the company shall ensure each surviving CMV driver is tested for alcohol and/or controlled substances in accordance with the triggering events for FMCSA as defined in 49CFR 382.303. The company is responsible for ensuring the drivers may be required to have a DOT-mandated drug and/or alcohol test(s) after certain accidents.

Alcohol testing should occur within two (2) hours, but no longer than eight (8) hours following the qualified accident. Drug testing must occur within 32 hours of the accident. If testing is not administered within the stated time frames, the company shall prepare and keep on file a record stating why the test was not promptly administered.
3 PERSONAL SAFETY

3.1 LOCK-OUT / TAG-OUT

Purpose
This policy is designed to allow each employee the opportunity to protect themselves when inspecting or performing maintenance on moving machinery or equipment. The policy is designed so that each employee has complete assurance that equipment will not be started while maintenance is being performed. It is further designed to assure that if equipment or machinery is defective such that a safety hazard is created by continued operation or use, such equipment will be tagged out and removed from available use. In order for this protection to occur each employee must adhere to the following guidelines.

Lock-Out Policy
The lockout program centers on the policy of “one person, one lock”. This means that any time an employee is exposed to rotating or moving equipment, they will place their own lock on the equipment energy source even if other locks are in place.

Each employee is given a lock for this purpose and the employee is given the only key to the lock. The following procedures shall be followed:

• Any time an employee is working on a piece of equipment they must lockout the energy source of that piece of equipment with their lock, which is labeled with the employee’s name.
• Prior to working on any piece of equipment, which has been locked out, the employee who placed the lock on the equipment must physically test the equipment to verify that it is properly locked out and cannot be started.
• If an employee has inadvertently left their lock on a piece of equipment and has returned home, they will be required to return to the place where the equipment is locked out at their own expense and remove the lock.
• Each employee who is issued a lock will receive the policies and procedures of the lock-out tag-out program. Evidence of receipt of the policy is the employee’s signature kept on file in the employee’s Safety training file.

Tag-Out Policy
Any employee who has good cause to believe that continued operation of specified equipment will create a hazard and put employees at risk for injury, shall place a “out of service” tag in a conspicuous place on the equipment such that any employee or individual will see the tag prior to attempting to start, run or otherwise use the equipment. The “out of service” tag will contain a warning and language that clearly communicates to all persons that the equipment is out of service and is not to be energized or used pending repair.

Any such equipment tagged shall under no circumstances be started, run or otherwise operated until the following procedures have been followed:

• The employee placing the “red tag” will immediately notify their supervisor, dispatcher, manager, or company mechanic giving a detailed description of the problem or defect creating the hazard.
• An authorized employee of the company will thoroughly inspect the equipment and arrange for repairs ASAP. All repairs must be suitable to alleviate the risk of hazard.
• The “out of service” tag must not be removed until the equipment has been repaired and returned to service by a certified or authorized mechanic.

• In the event the repairs were not sufficient to alleviate the problem, a request may be made to the management / safety team to review through an investigative process to determine what action is needed to return the equipment to safe operation.

Under no circumstances will equipment that has been tagged “out of service” be placed into service or used by any employee until the equipment is repaired and safe for operation

### 3.2 FIRE PREVENTION PROGRAM

#### Purpose

Fire Prevention/Protection Policy is intended to provide compliance with all related OSHA regulation and standard safe work practice. The purpose of the policy is to prevent fires and to provide guidelines for action in the event that a fire does occur.

Fire prevention program combines the following policies:

• HazCom Training Policy
• PPE Policy
• Electrical Safety Policy
• Emergency Action Plan

These policies encompass methods used for incidence avoidance, incident response and specialized training required in the event of a fire.

Issues addressed in the above policies include, but are not limited to:

• Evacuation Procedure
• Extinguisher Training
• Basic Process Safety Training (if applicable)
• Hot Work Safety Training (if applicable)
• Confined Space Entry Safety Training (if applicable)
• Emergency Life Support Training
• Respiratory Protective Devices Training (if applicable)
• Assured Grounding Programs

#### Policy

Employees shall be informed of the proper actions to take in the event of a fire. This includes, but is not limited to; notification and evacuation procedures. It is STRESSED that at no time does the task of fighting fire supersede an employee's primary duties of:

• Ensuring their personal safety and the safety of others.
• Reporting the incident to the proper authority and ensuring personnel accountability for yourself and all subordinates at the jobsite, in accordance with company and client policy.
Procedure

- All employees are responsible for good housekeeping practices to enhance fire prevention methods. Supervisors will be held accountable for the housekeeping of their job sites.
- If applicable, welding machine mufflers will be equipped with an approved spark arresting muffler.
- Only approved containers will be used during fueling operations. These shall be of the self-closing type.
- Only fans and electrically operated equipment which are certified with ignition resistant components shall be used in areas where flammable materials, including vapors while painting, shall be used.
- Flammable material shall be kept under control. It shall be stored in compliance with applicable OSHA and client regulations. The quantity of flammable/combustible material shall be kept to a minimum on the job site.
- Welding, cutting and grinding sparks shall be contained.
- Hot work areas shall be kept wetted down, and a fire extinguisher and hose maintained on each jobsite.
- Oily rags shall be immediately disposed of in designated hazardous waste containers.
- No hot work is to be performed without a Hot Work Permit.
- All vehicle entry into process areas requires a permit or permission from the operator.
- Use bonding straps to discharge and prevent static charges during transfer of flammable liquids from one container to another.
- Report all spills or suspicious odors immediately.
- Fire extinguishers are to be kept in areas easily accessible to employees. Only approved fire extinguishers are to be used. They must have an inspection tag attached. Extinguishers are to be maintained in a fully charged, ready to operate state. Extinguishers are to be inspected before each use and documented annually. Training is provided to all employees who use or may use fire extinguishers.
- NEVER put yourself or others a risk while attempting to extinguish an incipient fire.
- DO NOT USE any fire hoses larger than 1-3/4”, unless fully trained as an industrial firefighter.
- NEVER attempt to extinguish a pressurized-fuel fed fire.
- DO NOT direct a fire nozzle with a straight stream at any type of LPG fire. This action could extinguish the fire, producing an LPG vapor cloud capable of detonation.
- DO NOT USE fire monitors as the force can damage small equipment and certain high chrome alloy equipment cannot have water applied as cracking could occur.
- DO NOT APPLY water to any acid or caustic release as it can cause a violent reaction. Additionally, low concentration acids or caustics become extremely corrosive, causing an increasing leak condition.

In the event of a fire

- Remain calm
- Only extinguish a fire when it is clearly within your abilities and the equipment available
• Know the location of the nearest alarm and how to activate the emergency system
• Know the evacuation routes and collection points
• If the fire cannot be extinguished, leave the area immediately and report to your evacuation area
• Await further instructions from the Incident Commander, or designated responsible personnel

**Basic fire science:**

The combination of fuel, heat, oxygen equals the well-known fire triangle. To understand fire better, a fourth factor is added, a molecular chain reaction. This is due to the fact that fire results from a series of reactions in which complicated molecules “crack” into easily oxidized fragments. Disruption of this chain, along with the removal of fuel, heat or oxygen, is recognized as a method of fire extinguishment through the use of dry chemical extinguishers.

- **Heat Energy** - Can be produced by building up molecules (composition) or breaking - apart (decomposition) by heat or a solution when materials are dissolved in a liquid, or by combustion.
- **Heat Transfer** - A law of physics states that heat tends to flow up from a hot substance or place to a cold substance or place. This is through conduction (transfer of heat through a medium such as metals) or through convection (transfer of heat with a medium-usually circulatory).
- **Fuels** - Those substances that will burn when heat is applied. The most common fuels are not pure elements such as carbon, but compounds and mixtures such as paper and wood.
- **Oxygen** - Makes up a major portion of the oceans and earth’s crust and one-fifth of our atmosphere. Atmospheric oxygen is the major source of oxygen that supports combustion. Oxygen itself does not burn, however, without it, combustion is impossible. Normal burning is the combination of fuels with oxygen under the influence of heat.
- **Combustion** - A rapid oxidation or chemical combination accompanied by heat.
- **Oxidation** - The ability of materials to produce oxygen during a chemical reaction.
- **Spontaneous Combustion** - When oxidation is allowed to occur, enough oxygen is available, heat is produced, molecules become more energetic and combine with oxygen at an increasing rate, temperatures rise and visible heat (flames) are produced.

**Classes of fires**

- **Class A** - Ordinary combustibles (wood/paper/textiles)
- **Class B** - Flammable liquids (gasoline/oils/grease)
- **Class C** - Live electric (wiring/generators/motors)
- **Class D** - Combustible metals (finely divided form/chips, turnings)
Types of fire extinguishers

- Water - extinguisher for ordinary combustible fires
- Dry Chemical or CO2 - extinguisher for electrical equipment fires and for flammable liquid fires
- Multipurpose Dry Chemical - extinguisher for ordinary combustible fires, liquid fires, and electrical equipment fires
- Foam - extinguishing agent for hydrocarbon fires

NFPA Diamond:

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<tr>
<td>0 will not burn</td>
<td>0 Normal Material</td>
<td>0 stable</td>
<td>Radioactive = ☢</td>
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Fire protection/extinguishers

- Axis Crane will provide all required vehicles with proper fire extinguishers that have been inspected monthly and un-used. All building extinguishers shall also be inspected monthly and un-used. Maintenance shall take place annually with defective extinguishers replaced as needed.
- Each employee shall be trained and familiarized in the proper use and application of extinguishers using P.A.S.S. in accordance with basic fire suppression skills of extinguishers prior to assignment and annually as required.
- Each extinguisher shall be inspected monthly with documentation on extinguisher and recharged in accordance with manufacturers specifications

3.3 BLOOD BORNE PATHOGENS, FIRST AID AND CPR

Employees shall be trained for awareness of Blood Borne Pathogens (BBP) upon initial assignment as required and with-in one year there-after as necessary. All training records will be kept and maintained for a period of three years from date of training. Exposure control plan is as follows:
• Should any employee become exposed to any body fluids or infectious materials, employees shall wear proper PPE (including gloves and goggles) which is supplied by employer in all first aid kits. Any exposure shall be reported to management using the incident report form located in the main office and all safety handbooks.

• When the possibility of occupational exposure is present, PPE is to be provided at no cost to the employee such as gloves, gowns, etc. PPE shall be used unless employees temporarily declined to use under rare circumstances. PPE shall be repaired & replaced as needed to maintain its effectiveness.

• All contaminated materials shall be disposed of in proper containers marked “Bio-Hazard”.

• All equipment and tools shall be disinfected using bleach or other approved disinfectant using proper PPE.

• All required occupational exposures shall remain on file and maintained for at least the duration of employment plus 30 years.

• Hepatitis B vaccines shall be provided as needed or necessary. The Hepatitis B vaccine shall be made available to all employees that have occupational exposure at no cost to the employee(s).

• First aid kits shall be inspected frequently and consist of appropriate items which will be adequate for the environment in which they are used. For construction operations, items shall be stored in a weather proof container with individual sealed packages of each type of item located in all vehicles and designated office location clearly marked.

• Proper equipment for prompt transportation of the injured person to a physician or hospital or a communication system for contacting necessary ambulance service shall be provided.

• Eye wash stations shall be clearly marked and maintained at or near designated locations with ease of access.

• Hand washing facilities shall be clearly marked and maintained at or near designated locations with ease of access. Antiseptic wipes will be available in all mobile equipment to supplement hand washing facilities.

Axis Crane strongly recommends all employees to take a certified First Aid and CPR training course through American Red Cross as the knowledge will make our job sites safer places. The benefits from attending this class are tremendous for you, your coworkers, and the company. Axis Crane does not mandate that employees receive this training.

To promote attendance and to offset the time and cost involved, Axis Crane will pay for half of the fee to attend a Red Cross class. A valid certificate in first aid training must be obtained from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence upon completion.

**In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite, which is available for the treatment of injured employees, a person who has a valid certificate in first aid shall be available as needed to the worksite to render first aid.**

### 3.4 PERSONAL PROTECTIVE EQUIPMENT (PPE)
Axis Crane employees must wear required Personal Protective Equipment (PPE) at all times and the PPE shall be of safe design and construction for the work performed. This policy outlines the required PPE as well as requirements for use.

**Head Protection**
- MSA certified hard hat (Must be worn at all times)
- No damage, cracks, dents, deformities
- Proper fitting liner
- No metal hard hats
- Required to wear at all times on job site and when working in yard

**Eye Protection**
Wrap around sides or side guards;
**Required** to carry at all times and wear as dictated by site specific conditions and as required by site manager / customer

**Hearing Protection**
Molded ear plugs, self-molding ear plugs, ear muff
**Required** to carry at all times and wear as dictated by site specific conditions: 8 hours of exposure at 85 dB of noise or shorter periods of time at higher levels

A training program shall be provided for all employees who are exposed to action level noise. The training shall be repeated annually for each employee. Training shall be updated consistent to changes in PPE and work processes. The employer shall make available to affected employees copies of the noise exposure procedures and shall also post a copy in the workplace. The employer shall also allow the Assistant Secretary and the Director access to records.

- A continuing effective hearing conservation program shall be administered when employees are exposed to sound levels greater than 85 dBa on an 8 hour time-weighted average basis
- When information indicates that employee exposure may equal/exceed the 8 hr time-weighted avg. of 85 decibels, a monitoring program shall be implemented to identify employees to be included in the hearing conservation program.
- An audiometric testing program must be established and maintained by making audiometric testing available to all employees whose exposures equal or exceed an 8-hr. time-weighted avg. 85 decibels.
- Within 6 months of an employee's first exposure at or above the action level, a valid baseline audiogram shall be established against which future audiograms can be compared. When a mobile van is used, the baseline shall be established within 1 yr.
- Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement. Employees shall also be notified to avoid high levels of noise.
- At least annually after obtaining the baseline audiogram, the employer shall obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels. Each
employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. If

- a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed of this fact in writing, within 21 days of the determination.
- If a threshold shift has occurred, use of hearing protection shall be re-evaluated and/or refitted and if necessary a medical evaluation may be required.
- This is done at no cost to employee(s). Hearing protection shall be replaced as necessary. Employers shall ensure that hearing protectors are worn. Employees shall be properly trained in the use, care & fitting of protectors.
- The employer shall evaluate hearing protection for the specific noise environments in which the protector will be used.
- Accurate records of all employee exposure and audiometric measurements shall be maintained as required by the regulation

**Foot Protection**

- Sturdy work boot in good condition without holes
- Non-skid sole with adequate traction
- Safety-toe protective footwear (including steel-toe work boots) with ankle protection and laces must be worn on all job sites including work performed at any Axis Crane facility outside normal office/administration duties; Required to wear at all times

**Hand Protection**

- Work gloves, either leather or rubber – To be worn at all times while conducting work activities including but not limited to: All Rigging Operations, Loading/Unloading and Handling Material, Load Securement, Standing While Waiting, Maintenance, Assembly/Disassembly Operations and Signaling Operations (High Visibility Gloves Should be Worn by Signal Person)
- Exceptions may include the following:
  1. Driving a motor vehicle (does not include forklift)
  2. Crane operator while operating crane controls (unless otherwise specified by customer)
  3. Handling small objects or materials which gloves make the task unsafe or unable to perform. Examples include; installing small nuts and bolts or small pins.
  4. During normal office/administration related duties

**Clothing**

- High visibility vest/jacket (Must Be Worn At All Times When Working on Roadways)
- Shirt with 4 inch sleeves
- Pants made of a sturdy material

**Required** to wear these garments at all times
**Protective clothing for tasks such as welding, grinding, chop saw, or chain saw operations are to be worn. This includes but is not limited to: chaps, face shield, respirator, leathers etc…. Each job is specific and PPE should be worn to match the job

**Working Over or Near Water**

Employees working over or near water, where the danger of drowning exists, shall use a U.S. Coast Guard-approved life jacket or buoyant work vest

### 3.5 WELDING SAFETY

Any piece of equipment can be dangerous if not operated properly. The operator must carefully read and follow any warnings, safety signs and instructions provided with or located on the equipment. Do not remove, defeat, deface or render inoperable any of the safety devices or warnings on this equipment. If any safety devices or warnings have been removed, defeated, defaced or rendered inoperable, do not use the equipment.

- Always wear proper non-flammable clothing. Protect your body from welding splatter and arc flash with durable flame resistant clothing. Button the top button of your shirt in order to avoid neck burns.
- Never look at welding arc without eye protection. Always wear a shield with proper filter and cover plate.
- Never use welder around flammable materials. Welding sparks can cause fire or explosion. Have a fire extinguisher readily available at all times. Never weld fuel tanks or other containers with flammable materials or vapors.
- Be sure that adequate ventilation is available at all times. Since fumes and gases can be dangerous, avoid breathing them while welding.
- Be certain the area is clear of unauthorized bystanders. Never allow bystanders to look at arc without eye protection. Provide shielding barriers to limit arc and bright light exposure.
- Do not weld on hollow casings or closed containers. They may explode.
- Gas cylinders must be protected from heat, electrical circuitry and arcs and secured upright and placed so they will not fall.
- Never hook up to unlabeled cylinders. **DO NOT USE WELDERS IN WATER. ALWAYS USE PROPER INSULATING OR GROUNDING EQUIPMENT.**

### 3.6 GRINDER SAFETY

Safety precautions that must be followed when using a portable grinder

- Guards must be provided and adjusted to protect you. Replace damaged guards because if an abrasive wheel breaks while rotating, it can cause a serious injury.
- Clean and service grinders according to manufacturers' recommendations. Record all maintenance for grinders.
- Ensure that a machine will not operate when unattended by checking the dead-man (constant pressure) switch.
• Wear safety glasses or goggles, or a face shield (with safety glasses or goggles) to protect against flying particles. Gloves, aprons, metatarsal safety boots, and respiratory protection may be required, depending on the work.
• Ensure the floor around the work area is clean.
• Do not use wheels that are cracked or those that excessively vibrate.
• Do not operate grinder on wet floors.
• Use both hands when holding the grinder.
• Keep the power cord away from the grinding wheel and the material being ground.

When and how should you check the speed of the wheel?
• The maximum speed in revolutions per minute (rpm) is marked on every wheel. Never exceed this speed.
• Check that the wheel speed marked on the wheel is equal to or greater than the maximum speed of the grinder.
• Measure the speed of any new machine. Take several readings.
• Measure the speed of governor-controlled air-driven grinders after twenty hours of use or every week, whichever comes first. Measure the speed after any repairs.
• Measure the speed of electrically driven grinders monthly and after repairs.

What should you do when using portable grinders?
• Check that grinders do not vibrate or operate roughly.
• Use racks or hooks to store portable grinders.
• Stand away from the wheel when starting grinders. Warn co-workers to do the same.
• Inspect all wheels for cracks and defects before mounting.
• Ensure that the mounting flange surfaces are clean and flat.
• Ensure the wheel guard is in place while operating the grinder.
• Use the mounting blotters supplied.
• Run newly mounted wheels at operating speed for 1 minute before grinding.
• Wear appropriate eye, ear and face protection. Use other personal protective equipment or clothing, as required under the circumstances.

What should you avoid when using portable grinders?
• Avoid using grinders near flammable materials.
• Do not clamp portable grinders in a vise for grinding hand-held work.
• Do not use any liquid coolants with portable grinders.
• Do not force wheels onto a grinder that is the wrong size or change mounting hole sizes.
• Do not tighten the mounting nut excessively.
• Do not put the grinder on the floor or working surface until the wheel has stopped turning.
• Do not keep any materials close to the grinding wheel when it is not in use.

3.7 LADDER SAFETY

When at the top of a ladder, if working above 6 feet, a fall protection harness must be worn and tied off to a solid structure to protect the employee in the event of a fall.

Ladder Inspection

• Always check a ladder before using it. Check all ladders to see that steps or rungs are tight and secure. Be sure that all hardware and fittings are properly and securely attached. Test movable parts to see that they operate without binding or without too much free play. Inspect metal and fiberglass ladders for bends and breaks.

• Never use a damaged ladder. Tag it "Defective" and report it to a manager so that it may be removed from the job.

Ladder Setup

• Place ladder feet firmly and evenly on the ground or floor. Make sure the ladder is sitting straight and secure before climbing it.

• Do not try to make a ladder reach farther by setting it on something.

• Do not allow ladders to lean sideways. Level them before using.

• Secure the foot of the ladder with stakes or if on pavement solid footing is acceptable.

• First man up, using a second crew member to stabilize, secures at top using applicable materials such as rope or heavy wire.

• Never set up or use a ladder in a high wind.

• Never set up a ladder in front of a door unless the door is locked or a guard is posted.

• Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.

• The ladder side rails shall extend at least 3 feet (.9m) above the upper landing surface. When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.

• Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder. (The distance along the ladder between the foot and the top support.)
Ladder Climbing and Standing

- Keep the steps and rungs of ladders free of grease, oil, wet paint, mud, snow, ice, paper and other slippery materials. Also clean such debris off your shoes before climbing.
- Always face a ladder when climbing up or down. Use both hands and maintain a secure grip on the rails or rungs.
- Never carry heavy or bulky loads up a ladder. Climb up yourself first, and then pull up the material with a rope.
- Climb and stand on a ladder with your feet in the center of the steps or rungs.
- Do not overreach from a ladder, or lean too far to one side. A good rule is to always keep your belt buckle inside the rails of a ladder. Work as far as you can reach comfortably and safely, and then move the ladder to a new position.
- Never climb onto a ladder from the side, from above the top or from another ladder.
- Never slide down a ladder.

Proper Use of Ladders

- Never use metal ladders around exposed electrical wiring. Metal ladders should be marked with tags or stickers reading "CAUTION-Do Not Use Near Electrical Equipment" or similar wording.
- When using a ladder where there is traffic, erect warning signs or barricades to guide traffic away from the foot of the ladder. If this is not possible, have someone hold and guard the bottom of the ladder.
- If you get sick, dizzy or panicky while on a ladder, do not try to climb down in a hurry. Wait. Drape your arms around the rungs; rest your head against the ladder until you feel better. Then climb down slowly and carefully.
- Do not leave tools or materials on top of ladders.
- Never push or pull anything sideways while on a ladder. This puts a side load on the ladder and can cause it to tip out from under you.
- Allow only one person at a time on a ladder.
- Never use a ladder as a horizontal platform, plank, scaffold or material hoist.
- Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
- The ladder side rails shall extend at least 3 feet (.9m) above the upper landing surface. When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.
- Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder. (The distance along the ladder between the foot and the top support.)

Proper Ladder Care and Storage
• Maintain ladders in good condition.
• Keep all ladder accessories, especially safety shoes, in good condition.
• Never sit on ladder side rails.
• Never store materials on a ladder.
• Store fiberglass ladders where they will not be exposed to sunlight or other ultraviolet light sources.
• Be sure that ladders are properly supported and secured when in transit. Vibration and bumping against other objects can damage them.
• Store ladders on racks, which give them proper support when not in use.

3.8 FALL PROTECTION

• Employees shall use Personal Fall Arrest Systems (PFAS) with lanyard per OSHA standards
• Employees shall wear PFAS during all times when practical during assembly and dis-assembly of cranes of heights 10 feet and above in Oregon and in Washington
• PFAS shall be used during any operations or work conducted at heights 6 feet and above in Oregon and 4 feet and above in Washington with the exception of crane assembly and dis-assembly
• Re-training shall be provided when the following are noted:
  • Deficiencies in training
  • Work place changes.
  • Fall protection systems or equipment changes that render previous training obsolete.
• The fall protection plan shall be prepared by a qualified person for the specified work site and shall include proper harnessing devices
• The employer shall provide for prompt rescue of employees in the event of a fall or shall assure the employees are able to rescue themselves.
• Fall protection shall be inspected prior to each use, and removed from service when deficiencies are found. Example of deficiencies:
  • Missing or illegible tag
  • Rips, tears, or any damage to harness material
  • Cracked, worn, or damaged rings

3.9 HAND TOOLS

The following shall be observed while using hand tools/power tools/fuel operated tools
• Whether furnished by the employer or the employee, the tools shall be maintained in a safe condition and used for its intended purpose only
• Guards shall be in place and operable at all times while the tool is in use. The guard may not be manipulated in such way that will compromise its integrity or compromise the protection in which intended. Guarding shall meet the requirements set forth in ANSI B15.1.
• Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dust, fumes, mists vapors, or gases shall be provided with particular PPE necessary to protect them from the hazard.
• Damaged tools shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.
• Tools operated with fuel shall be serviced and re-fueled in locations away from any ignition source and immediate work areas
• Only fans and electrically operated equipment which are certified with ignition resistant components shall be used in areas where flammable materials/vapors, including vapors while painting, shall be used.
• GCFI’s shall be used at all times when available and during use of portable power generators
• Extension cords and power cords used with electric tools shall be inspected for deficiencies prior to use and removed from service when deficiencies are found. No alterations to power cords of any kind are allowed. Only qualified personnel are authorized to perform these tasks
• Pneumatic/Air Tools refers to all devices operated by use of compressed air
• All pneumatic tools whether furnished by employer or personal, shall be maintained in a safe condition and used for its intended purpose only
• Horseplay and use of compressed air for other than intended purpose shall not be tolerated. Serious injury and even death can occur.

3.10 HOUSEKEEPING

House Keeping is one of the most important factors for a safe jobsite.
• All debris should be cleared from work areas, passageways, and stairs.
• Excess materials should be stacked neatly, out of the way.
• Tools should be stored in the job trailer so they are available for all employees to use.
• Combustible scrap and debris should be removed at regular intervals during the course of the job.
• Containers with covers shall be provided for the collection and separation of waste, trash, oily and used rags, and other such refuse, which shall be removed safely and on a regular basis.

3.11 WASTE MANAGEMENT

All employees prior to assignment shall be instructed in proper waste disposal. Below are considerations to take prior to the start of any job. **The majority of waste generated by Axis Crane is general trash, recycled trash materials and scrap aluminum.
• Waste assignment will be specific to job site and noted prior to assignment on dispatch ticket as needed with estimated amount of waste that will be generated to determine proper containers and waste removal.
• Non-hazardous/ hazardous waste shall be disposed of in proper containers which are located in designated areas clearly marked in and around facilities, recycled materials and trash shall be kept separate, scrap metals and oils shall also have their own containers in accordance with state and local regulations to minimize environmental impact. Outdoor activities shall cover receptacles to prevent potential run-off (i.e. culverts, catch basins, water inlets)

### 3.12 HEAT HAZARDS

Being uncomfortable is not the major problem when working in high temperatures. Varying degrees of heat stress may also be experienced which increases the potential for accidents. The human body maintains a fairly constant internal temperature. When we become overheated, several reactions take place. First, the body rids itself of excess heat by increasing circulation in blood vessels close to the surface of your skin. This is why your face and hands turn red when you begin to overheat. Your brain may also signal your sweat glands to work harder. As the sweat evaporates, it cools the skin and removes large quantities of heat from your body.

Problems begin when outside temperatures are near your body temperature (98 degrees F). If the air temperature around you is warmer than your skin, blood that has been brought to the body surface cannot lose its heat. Also, if the humidity is high, your body will continue to sweat liquids containing electrolytes, but will not easily evaporate. Therefore, you can’t rid yourself of the excess heat that is building up. With so much blood being sent to the outer surface of your body, less is available for active muscles, your brain, and other internal organs. The following reactions take place:

- Your strength declines;
- Fatigue occurs sooner than it would otherwise;
- Alertness and mental capacity may also be affected. Workers who must perform delicate or detailed work may find they are less accurate. Others may find they have less ability to understand and retain information. The problem is you may not realize this is happening.

Heat stress may also produce heat cramps (the internal organs are not getting enough electrolytes due to profuse sweating). It may bring on heat exhaustion (caused by insufficient water intake and not being able to evaporate the sweat). Or, you may suffer heat stroke, which is when your body shuts down in an attempt to keep its internal organs from burning up. Without emergency treatment, the heat stroke victim lapses into shock, then a coma and death may follow. To control heat stress, remember these tips:

- Drink plenty of water before you get thirsty.
- Wear light, loose-fitting, breathable clothing.
- Take frequent short breaks in cool shade.
- Eat smaller meals before work activity.
- Avoid caffeine and alcohol or large amounts of sugar.
- Find out from your health-care provider if your medications and heat don’t mix.
• Know that equipment such as respirators or work suits can increase heat stress.

**Heat Illness Prevention**

The following procedures will be taken by the employer whenever possible in an effort to help control the effects of environmental factors that can contribute to heat related illness. The most common environmental factors are air temperature, humidity, radiant heat sources and air circulation. All supervisors and employees shall be trained upon initial assignment and at a minimum of once annually as necessary prior to supervising employees working in heat. Supervisors should be trained in the employer's heat illness procedures to prevent heat illness and procedures to follow when a employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

• Provide accessible potable water to all employees either through plumbed facilities or disposable/re-fillable drinking containers during the entirety of their work shift
• Supervisors must ensure personal factors that contribute to heat related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring. The most common personal factors that can contribute to heat related illness are age, weight/fitness, drug/alcohol use, prior heat-related illness, etc.
• Employees suffering from heat illness or believing a preventative recovery period is needed shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling. Such access to shade shall be permitted at all times.

Physical factors that contribute to heat related illness should be taken into consideration before performing a task. The most common physical factors that can contribute to heat related illness are type of work, level of physical activity and duration, and clothing color, weight and breathability.

All employees shall be trained in the following heat illness procedures when a employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

• Get victim to shady area, remove clothing, apply cool or tepid water to the skin, fan victim and place ice packs under armpits and groin
• If victim is able to drink liquids, have them drink cool water or beverage that does not contain alcohol or caffeine
• Monitor body temp and continue cooling efforts until body temp drops to 101 to 102
• Notify emergency services and management for further instructions

**3.13 COLD WEATHER SAFETY**

Even though it's cold outside we still have to work and get the job done. There are several things we can do to keep warm and prevent cold weather related accidents.

The first thing we want to do is to keep our body temperature at or about normal, 98.6F. This can be accomplished by wearing layers of clothing both inside and outdoors. Wear cotton or lightweight wool next to the skin, and wool layers over your underwear. Keep dry by having proper rain gear available and a pair of good, waterproof boots. An extra pair of clean, dry socks can really come in handy. Don't forget to protect your neck and ears; you can lose a lot of heat from these two areas, and a good pair of gloves is essential.

The signs of frostbite are, the skin will become white and minimal blood circulation. In the worst case, blisters will form but you won't feel any pain. First aid for frostbite is as follows: **NEVER RUB** the frozen
part of the body with snow -- Add extra clothing or use a blanket to cover the frozen area -- get out of the
cold and into a warm location -- the frozen area may be immersed in warm water but NEVER use hot water
-- if the condition does not improve seek professional medical attention.

Another area of concern during cold weather is the use of portable heaters. If they are not maintained
properly they can cause accidents. Carbon monoxide can result from defective ventilating and from
incomplete fuel burn. All portable heaters should be checked by a competent person before being put into
use. Locate fuel containers, regulators, piping and hose where they will not be subject to damage. LP gas
containers not in use should be stored upright, in a specified outside location and protected against damage.
Containers in use must be kept in an upright position and secured. Always be sure to protect the valves from
physical damage.

3.14 RESPIRATORY PROTECTION

Objective

Axis Crane employees do not use respirators in the regular course of business. Respirators are used
infrequently on a project specific basis as required by the site conditions or customer requirements. As
such, Axis Crane’s Respiratory Protection Program is designed to protect employees by establishing
accepted practices for respirator use, providing guidelines for training and respirator selection, and
explaining proper storage, use and care of respirators.

Assignment of Responsibility

Employer

Axis Crane is responsible for providing respirators to employees when they are necessary for health
protection. Axis Crane will provide respirators that are applicable and suitable for the intended purpose at
no charge to affected employees. Any expense associated with training, medical evaluations and respiratory
protection equipment will be borne by the company.

Project Manager

Respirators are not used in the normal course of business, only for specific jobs on an infrequent basis. As
such, the project manager will be responsible for administering the respiratory protection program. Duties
of the program administrator include:

- Identifying work areas, process or tasks that require workers to wear respirators
- Evaluating hazards
- Selecting respiratory protection options
- Monitoring respirator use to ensure that respirators are used within specifications
- Arranging for and/or conducting training and fit testing
- Ensuring proper storage and maintenance of respiratory protection equipment
- Administering the medical surveillance program
- Maintaining records required by the program

Employees
Each employee is responsible for wearing his or her respirator when and where required and in the manner in which they are trained. Employees must also:

- Care for and maintain their respirators as instructed, guard them against damage, and store them in a clean, sanitary location
- Inform their supervisor if their respirator no longer fits well, and request a new one that fits properly

Use the respiratory protection in accordance with the manufacturer’s instructions and the training received.

**Applicability**

This program applies to all employees who are required to wear respirators during a project as well as during some non-routine or emergency operations, such as a spill of a hazardous substance.

**Program**

**Hazard Assessment and Respirator Selection**

The Project Manager will select respirators to be used on site, based on the hazards to which workers are exposed and in accordance with the OSHA Respiratory Protection Standard. The Project Manager will conduct a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency.

**Training**

The Project Manager will provide training to respirator users covering the following topics:

- Axis Crane’s Respiratory Protection Program
- Potential respiratory hazards
- Proper selection and use of respirators
- Limitations of respirators
- Fit testing
- Emergency use procedures
- Maintenance and storage
- Medical signs and symptoms limiting the effective use of respirators

**Fit Testing**

Employees who are required to wear half-face piece APRs will be fit tested prior to being allowed to wear any respirator with a tight-fitting face piece or when there are changes in the employee’s physical condition that could affect respiratory fit (e.g., change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. All employees shall conduct user seal checks each time they wear their respirators. Employees shall use either the positive or negative pressure check (depending on which test works best for them) as specified in the OSHA Respiratory Protection Standard.

Before and after each use of a respirator, an employee or immediate supervisor must make an inspection of tightness or connections and the condition of the face piece, headbands, valves, filter holders and filters.

**Maintenance**
Respirators are to be regularly cleaned and disinfected at the designated respirator cleaning station. Respirators are to be properly maintained at all times in order to ensure that they function properly and protect employees adequately. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use.

**When to use a respirator:**

**PSM-Asbestos-Benzene-Lead and H2S Awareness**

**PSM** - The primary purpose of the PSM (Process Safety Management) Standard is to prevent or minimize the unwanted release of hazardous chemicals, especially into locations that would expose personnel to serious hazards. It is the company's intent to comply with all applicable regulations and to provide a workforce that is trained to safely perform their jobs with a full knowledge of the hazards and safe work practices associated with refining/chemical plant or other PSM regulated industry work. In accordance with the law, employees will receive initial and refresher training as required by each Axis Crane customer.

**Asbestos** - Asbestos that may exist in refineries includes certain gaskets, brake linings, valve packing and old insulation. Since non-asbestos insulation is being used in most refineries on new work installations, the highest probability for exposure will come during demolition or old insulation removal. Company employees are not to work on asbestos containing equipment or materials. If employees become aware of any potential exposure to asbestos, they are to immediately stop work and notify their supervisor/foreman. The supervisor/foreman is then responsible to inform the office for further information, but in no case allow work to proceed until the exposure to asbestos has been abated.

**Benzene** - Of all the hydrocarbons, Benzene poses the most serious long-term threat. Exposure over time, to even low levels of Benzene can cause leukemia, blood changes and aplastic anemia. Benzene is a cancer-causing agent in humans. All contact should be reduced to the lowest possible level.

**Lead** - Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). When lead is scattered in the air it can be inhaled and absorbed through your lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed.

**H2S** - Hydrogen sulfide is ever present in all refineries. In addition it is generated in many industrial processes as a by-product and also during the decomposition of organic matter containing sulfur. H2S CAN PARALYZE THE SENSE OF SMELL. DO NOT USE THE SENSE OF SMELL TO DETECT H2S.

**Exposure** – The above hazards are not typical exposures (further information on these hazards can be found under HAZCOM /Hazard Communications section) for Axis Crane however, on occasion many facilities contain the hazards listed. Protective measures should be taken in accordance with facility and OSHA requirements. Exposure to lead based materials may be considered the most likely hazard when working during construction, demolition or renovation processes. Special projects which require contact with lead based materials shall be done in clear open air environments only and not in facilities which involve mechanical ventilation. The following safety measures to limit exposure to employees shall be considered.

- No employee should be exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 µg/m³) averaged over an eight-hour period.
- If an employee is exposed to lead for more than eight hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula: Maximum permissible limit (in µg/m³) = 400 ÷ hours worked in the day.
- When respirators are used to supplement engineering and work practice controls to comply with the PEL and all the requirements have been met, employee exposure, for the purpose of determining
whether the employer has complied with the PEL, may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.

**Exposure/Monitoring**

- Respirators with P100 filters or equivalent shall be used at all times when lead based materials are present.
- Collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area as required with a measuring device if exposures are located in a location where open air ventilation is not available and mechanical ventilation is required.
- Exposure at or above action level; any information, observations, or calculations which would indicate employee exposure to lead; any previous measurements of airborne lead; and any employee complaints of symptoms which may be attributable to exposure to lead. Employee exposure at or above the action level, Axis Crane shall conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead.

**Respirators**

Respirators are used infrequently on a project specific basis as required by the site conditions or customer requirements. Employees are prohibited to enter areas which are confined spaces and limit abilities to allow for proper ventilation. These are not common practices for which the services provided, only specially trained persons are allowed to perform these duties.

Respiratory protection; where engineering and work practice controls do not reduce employee exposure to or below the 50 µg/m3 permissible exposure limit, Axis Crane shall supplement these controls with respirators. Air monitoring data which documents the source of lead emissions shall be conducted as required based on location of operation. Note; employees who may be exposed to or have contact with lead based materials shall be done in clear open air environments only. The following measure should be taken to reduce exposures;

- Respirators with P100 filters or equivalent shall be used at all times when lead based materials are present.
- Respirators shall be issued in accordance with the preceding Respiratory Policy and fit tests shall be done annually.
- Access to operations involving lead exposure shall be roped off with proper signs indicating hazards
- Only employees who have been properly trained and equipped with respirators shall enter exposure areas and must check in and out with site supervisor

**Personal Protective Equipment**

Employees shall be provided with disposable coveralls, when applicable, while conducting operations which involve lead and shall be worn at all times. When shift is completed, coveralls shall be stored in containers marked indicating “Lead contaminated clothing”. Coveralls may be used multiple times during the project as long as design and structure are not compromised.

Protective gloves, eye google, and boot protection shall be worn at all times during exposure operations.
Employees who are exposed to lead based products shall launder personal clothing separate from clothing which is not exposed. Disregard to this policy could result in exposure to lead particles which can spread to other clothing. Tools, equipment, clothing, and any other devices shall not be cleaned by blowing, shaking or any other means which may disperse lead particles in the air.

All surfaces shall be maintained as free as practicable of accumulations of lead. Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other equally effective measures have been not effective or impractical due to location.

**Disposal**

Lead dusts and other contaminated materials which cannot be cleaned for proper removal of lead particles shall be disposed of in accordance with local, state, and federal regulations.
4 HAZARD COMMUNICATION (HAZCOM)

4.1 HAZCOM POLICY

Company Policy
To ensure that information about the dangers of hazardous chemicals used by the company are known by all employees.

Container Labeling
The maintenance manager will verify that all containers received for use will be clearly labeled as to the contents, listing the hazard warning and name and address of the manufacturer per GHS requirements. Additionally, all secondary containers will be labeled with a manufactures label or with labels that have the identity of the product in the container with the appropriate hazard warning.

Safety Data Sheet (SDS) formally known as Material Safety Data Sheets (MSDS)
The documents formally called Material Safety Data Sheets (MSDS) are now known as Safety Data Sheets (SDS) under the Globally Harmonized System (GHS). A SDS identifies the substance and its hazardous properties, and outline appropriate safety precautions. A SDS is comprised of 16 standardized sections:

1. Identification of Substance
2. Hazard Identification
3. Composition of Ingredients
4. First-Aid Measures
5. Fire Fighting Measures
6. Accidental Release Measures
7. Handling & Storage
8. Exposure Controls and PPE
9. Physical Chemical Properties
10. Stability & Reactivity
11. Toxicological Information
12. Ecological Information
13. Disposal Considerations
14. Transport Information
15. Regulatory Information
16. Other Information

Copies of SDS’s for all hazardous chemicals in use will be kept in the office and will be available to all employees.

Every piece of equipment will be accompanied with an SDS for chemicals used in that pieces of equipment.

Employee Training and Information
The following Health and Safety information will be provided for all employees:

- An overview of the requirements contained in the HAZCOM Policy
- Hazardous chemicals present in the workplace
- Physical and health risks of the hazardous chemicals
- Symptoms of overexposure
- How to determine the presence or release of hazardous chemicals
- How to prevent or reduce exposure to hazardous chemicals through the use of proper procedures, work practices, and personal protective equipment
- Steps the company has taken to reduce or prevent exposure to hazardous chemicals
• Procedures to follow if employees are overexposed to hazardous chemicals
• How to read labels and review SDS’s to obtain hazard information
• Location of the SDS file and written hazard communication program
• A list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate Safety Data Sheet.
• Employees shall be trained in non-routine tasks as needed for job specifics and unmarked chemicals shall be identified or discarded as necessary
• While working on customer sites all employees shall identify locations of SDS for specific job locations

As new chemicals are introduced into the workplace, employees will be informed of their presence and the SDS will be on file for review.

4.2 FAST TRACK EMERGENCY DIRECTIONS

• Make sure everyone is safe and area is secure
• Identify Chemical through your SDS book located in field guide or training room and on server in main office
• Administer First/Aid Per SDS and notify 911 as needed for medical/fire assistance
• Notify management of situation ASAP (if you are in need of assistance advise management) be prepared to provide initial response information
• Apply PPE and contain materials as needed per SDS
• Follow up with management for instructions

4.3 ASBESTOS

This safety guideline is intended to provide safety information to all company employees regarding asbestos that adequate measures can be taken to limit exposures through controls in the workplace. NOTE: If company employees are to work in areas where the contracting company has identified asbestos, these areas will be disclosed to us and rendered safe before work will begin. Our company does not knowingly allow employees to work in areas where they will have exposure to asbestos. Any employee who knowingly enters a restricted asbestos area will be disciplined for their unsafe behavior.

General

Asbestos that may exist in refineries includes certain gaskets, brake linings, valve packing and old insulation.

Since non-asbestos insulation is being used in most refineries on new work installations, the highest probability for exposure will come during demolition or old insulation removal. However, Asbestos-containing material may be encountered in the following forms:

Valves, vessels, piping insulation, insulation cement, mastic, floor and roof tiling, transit wall siding, caulking, and automobile brake linings.
All asbestos removal within a refinery must be done by certified people who are licensed to remove asbestos. No company employee is to work on any piping or vessel that contains “asbestos containing materials” unless properly protected and/or the material is encapsulated and will not fragmentize or peel off when working on it.

Asbestos is widely used, mineral-based material that is resistant to heat and corrosive chemicals. Depending of the chemical composition, fibers may range in texture from coarse to silky. The properties which make asbestos fibers so valuable to industry are its high tensile strength, flexibility, heat and chemical resistance, and good frictional properties.

**Work practices**

Company employees are not to work on asbestos containing equipment or materials. If employees become aware of any potential exposure to asbestos, they are to immediately stop work and notify their supervisor/foreman. The supervisor/foreman is then responsible to inform the office for further information, but in no case allow work to proceed until the exposure to asbestos has been abated.

**Health hazards**

Asbestos fibers are carried into the body as airborne particles. These fibers can become embedded in the tissues of the lung and digestive system. Once the fibers become trapped in the lung’s alveoli (air sacs), they cannot be removed.

Years of exposure to asbestos can cause a number of disabling and fatal diseases. Among these is asbestosis, an emphysema-like condition, lung cancer; mesothelioma, a cancerous tumor that spreads rapidly in the cells of membranes covering the lungs and body organs; and gastrointestinal cancer which is caused by ingesting asbestos-contaminated food.

Recognizing the danger of asbestos levels in the workplace, the Occupational Safety and Health Administration developed a more protective regulation that reduces the permissible exposure limit and prescribes a separate standard for general industry and for construction.

**Short term affects (acute)**

May cause irritation and itching to the skin, coughing may occur.

**Long term effects**

Over exposure can result in lung cancer. Common symptoms include difficulty in breathing (if you climb a flight of steps and are out of breath) cough chest pains, clubbing of the fingers, (this common in advanced stages), risk for lung cancer is or multiplied if the worker exposed to asbestos also smokes.

**Work practices**

Company employees should be aware of the following safe practices. To help reduce worker exposure to airborne fibers, asbestos must be handled, mixed, applied, removed, cut, scored or otherwise worked in a wet state. This “wet” method must also be sued when products containing asbestos are removed from bags, cartons, or containers. If this not possible, removal must be done in an enclosed or well-ventilated area.

Asbestos containing materials must not be applied by spray methods. Compressed air can be used to remove asbestos containing materials only if the compressed air is used in conjunction with an enclosed ventilated system designed to capture the dust cloud created by the compressed air.

**Housekeeping**
All surfaces must be maintained as free as practicable of accumulations of asbestos containing dust and waste. Floors and other surfaces contaminated with asbestos should only be cleaned by vacuuming and/or wet cleaning methods. Where vacuuming and/or wet cleaning is not feasible, shoveling, dry sweeping and dry clean-up of asbestos may be used. The use of compressed air for cleaning purpose is prohibited. Asbestos waste, scrap, debris, bags, containers, and equipment must be disposed of in sealed impermeable bags or containers.

**Methods of compliance**

OSHA requires that to that extent feasible, engineering and work practice controls must be used to reduce employee exposure to Asbestos to within the PEL. Respirators may be used where engineering controls have been instituted but are insufficient to reduce exposure to the required level. Employers must establish and implement a written program to reduce employee exposure to or below the PEL by means of engineering and work practice controls and by the use of respirators.

OSHA also requires that a written asbestos safety program be available upon request to the Assistant Secretary for the Occupational Safety and Health Administration (OSHA), the Director of the National Institute for Occupational Safety and Health (NIOSH), employees and employee representatives. These plans must be reviewed and updated as necessary to reflect significant changes in the compliance program. Employee rotation cannot be used as a means to compliance with the permissible exposure limit.

### 4.4 BENZENE

This safety guideline is intended to provide suitable information to all company employees regarding the potential toxic effects of Benzene so that adequate measures can be taken to limit exposures through controls in the workplace.

**General**

Of all the hydrocarbons, Benzene poses the most serious long-term threat. Exposure over time, to even low levels of Benzene can cause leukemia, blood changes and aplastic anemia.

**Characteristics**

Benzene is a colorless to light-yellow liquid with a pleasant sweet odor.

**Formula** \((C_6H_6)\)

**CAS No.** 71-43-2

Benzene is a flammable liquid that can accumulate static electricity. Benzene vapors are heavier that air and may travel to a source of ignition and flash back. The vapors are readily dispersed by wind movement and/or air currents. Liquid benzene tends to float on water and may travel to a source of ignition and spread fire. Benzene is highly reactive with no oxidizing materials.

**Uses**

Benzene is a component of gasoline, both in the manufacturing process and found naturally in crude oil; Benzene is also used as a feed stock for chemical manufacturing.

**WARNING**
Health effects

Benzene is a cancer-causing agent in humans. All contact should be reduced to the lowest possible level. The above exposure limits are for air levels only. Skin contact may also cause overexposure.

Benzene is one of the most hazardous of all petroleum products because of its adverse health hazards and high flammability.

The following adverse health effects are important to remember where there may be a potential exposure to Benzene:

**Acute:** At high concentrations (1000 PPM) Benzene has an acute effect on the central nervous systems causing headaches, dizziness, drowsiness, unconsciousness, and possible death.

Acute exposure can also cause breathlessness, irritability, and giddiness.

**Chronic:** Benzene has the chronic exposure effect on bone marrow (aplastic anemia leukemia).

Chronic exposure can also cause convulsions, liver damage, heart damage, blood diseases (aplastic anemia), and cancer (leukemia). These symptoms can take months or years to surface and can develop without physical or visible indications.

Repeated skin contact leads to irritant contact dermatitis (rash); as with any petroleum solvent (which Benzene is also classified as), it will leach the natural oils out of the skin. Direct contact with the skin can cause erythema and/or blistering.

Benzene is irritating to eyes and mucous membranes.

Flammable/dangerous fire risk: benzene has a very low flash point making it dangerous to have any open flame, spark or source of ignition when vapors are present.

Explosive limits in air 1.5 to 8% by volume: benzene is highly flammable at low levels of vapor quantity in air.

**Personal protective measures**

Company employees are not permitted to work in areas where there may be a potential for Benzene exposure. It is the responsibility of the Contracting Company’s Project Manager and the on-site supervisor/foreman to see that any jobsite that may expose employees to Benzene is not manned with personnel until it is proven that it is safe to work within the acceptable OSHA limits without personal protective equipment.

**Special requirements**

If it is necessary to perform any work where the exposure to Benzene is above the OSHA acceptable limits, then the company must implement a comprehensive OSHA mandated special safety policy and procedure that includes special elements of exposure monitoring, formal medical program, special personal protective equipment, and much more.

**Training**

All employees will be provided awareness training in this program in order to be familiar with the potential hazards and proper safe work procedures to follow if exposed to this health hazard.

4.5 **CARBON MONOXIDE**
Carbon Monoxide (CO) is a poisonous, colorless, tasteless, odorless gas. CO gas is generated as a waste product of the incomplete combustion of coal, wood, oil, and other petroleum based fuels (e.g. gasoline, propane, etc). CO gas, although odorless, usually occurs in a combination of combustion by-products that have distinctive odors. The primary source of CO gas is the internal combustion engine. CO gas is also generated in industrial operations such as auto repair, oil refining, steel and chemical manufacturing.

**Health Hazards**

CO is a chemical asphyxiate which means that it reduces the blood’s ability to carry oxygen. Asphyxiation, or suffocation, occurs when the blood does not deliver enough oxygen to the body. CO gas is absorbed through the lungs into the bloodstream. Inhalation of CO gas may cause headaches, nausea, dizziness, weakness, rapid breathing, unconsciousness and death. High concentrations of CO may be rapidly fatal without producing significant warning symptoms. Exposure to this gas may aggravate preexisting heart and artery disease. As CO gas is odorless, there may be no odor warning if toxic concentrations are present. If you suspect CO poisoning, move the person immediately to the fresh air away from the source of the CO. Call 911 or your emergency number for medical assistance. CO poisoning can be reversed if caught in time.

**Safety Hazards**

CO gas mixes very well with air. CO gas penetrates easily through walls and ceilings. It is an extremely flammable gas. CO gas may react very strongly with oxygen, acetylene, chlorine, fluorine or nitrous oxide.

**Who is at Risk?**

Workers most likely to be exposed to carbon monoxide are welders, mechanics, firefighters, longshore workers, diesel engine operators, forklift drivers, toll booth or tunnel attendants, police, taxi drivers, shipping and receiving workers and warehouse personnel.

**Methods of Control of Carbon Monoxide**

- To reduce the chances of CO poisoning in the workplace:
  - Install a ventilation system that will effectively remove CO from the work area.
  - Properly maintain equipment that may produce CO to enhance safe operation and to reduce CO generation.
  - Consider switching from gasoline-powered equipment to battery or electric equipment.
  - Prohibit the use of gasoline-powered equipment indoors or in poorly ventilated areas.
  - Consider installing CO detectors with audible alarms.
  - Educate workers about the sources, hazards, and controls of CO.

**What Can You Do To Help?**

- Report any situation to your employer that might cause CO to build up.
- Pay attention to ventilation problems, especially in enclosed areas.
- Avoid the use of gas-powered equipment in enclosed spaces.

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4.6 **HYDROGEN SULFIDE (H₂S)**
This safety guideline is intended to provide suitable information to all company employees regarding the potential toxic effects of H₂S so that adequate measures can be taken to limit exposures through controls in the workplace.

**General**

Hydrogen sulfide is ever present in all refineries. In addition it is generated in many industrial processes as a by-product and also during the decomposition of organic matter containing sulfur.

Hydrogen sulfide (H₂S) is a colorless gas that at low concentrations has the odor of rotten eggs. At high concentrations, it kills your sense of smell.

- **Formula**: H₂S
- **CAS No.**: 7783-06-04

H₂S is a highly flammable and extremely toxic gas that can form an explosive mixture with air over a wide area.

**Characteristics of hydrogen sulfide**

When ignition occurs, the combustion produces irritants and toxic gases, including sulfur dioxide (SO₂). SO₂ has an irritating effect on the eyes and lungs and can be fatal at concentrations about 100PPM.

H₂S is heavier than air, has a tendency to settle in low-lying areas, and is readily dispersed by wind movements or currents.

H₂S attacks most metals, especially in the presence of water, forming sulfides that are usually insoluble precipitates. It is also very corrosive to plastics and tissue.

H₂S dissolves in water forming a weak acid (hydro sulfurous acid).

H₂S will be released when in water when agitated making it a dangerous hidden hazard.

**Health effects**

The following information outlines the symptoms of hydrogen sulfide at specific concentrations.

- **10 PPM (0.001% H₂S)**
  - Obvious and unpleasant odor.
  - Burning eye irritation.
  - Permissible exposure limit is eight hours.

- **200 PPM (0.02% H₂S)**
  - Kills smell quickly.
  - Stings eyes and throat.
  - Respiratory irritation.
  - Death after one to two hours of exposure.

- **500 PPM (0.05% H₂S)**
  - Dizziness. Breathing ceases within a few minutes.
• Requires prompt artificial respiration.
• Loss of muscle control, making self-rescue impossible.
1000 PPM (0.10% H₂S)
• Unconsciousness at once, followed by death within minutes.

Exposure warning
H₂S CAN PARALYZE THE SENSE OF SMELL. DO NOT USE THE SENSE OF SMELL TO DETECT H₂S.

H₂S detection and alarm systems
In most refineries emergency employee alarms are installed to meet the regulatory standards. The alarms provide warning for the necessary emergency action according to the site emergency action plan and provide time for employees to safely escape from the workplace or the immediate area.

Systems are also used on drilling locations, offshore platforms that produce H₂S, and some plants. It is not readily used on land production leases. Signs are and should be posted stating the presence of poison gas and urging caution

Warning conditions
There are three conditions that you must be aware of when working around H₂S. The following information identifies the level of danger and alarms associated with each condition.

Condition Green
• Possible Danger
• No Alarms

Condition Yellow
• Moderate Danger
• H₂S to 50 PPM
• Intermittent Audible Alarm and Yellow Flashing Light

Condition Red
• Extreme Danger
• H₂S at 50 PPM or Above
• Continuous Audible Alarm and a Red Flashing Light

Hydrogen sulfide detection devices
Fixed H₂S detection devices (monitor and indicator) are designed to detect H₂S concentrations in air and established TWA (time weighted average) (10 PPM) and STEL (15 PPM).

The alarm should be capable of being perceived above the ambient noise or light levels in the affected area. The alarm should be distinctive and recognizable as a sign to evacuate the area and to start emergency status emergency procedures.

Personal monitors
Personal monitors are also available in many types. They are also designed with the employee’s safety in mind. Familiarize yourself with the equipment available at your current work assignment.

**Plant monitors**

Plant monitors are available in many types and are designed with the employee’s safety in mind. Familiarize yourself with the equipment available at your current work assignment.

In order to respond effectively in an emergency situation, every individual at the site should know their specific responsibilities. Whether or not an individual has an assigned duty, each individual should know what to do in the event of an emergency.

**Evacuation**

Follow these procedures in the event of a hydrogen sulfide release that requires evacuation:

- Hold your breath and quickly leave the area containing H$_2$S. Do not inhale.
- Move quickly to the upwind “Safe Breathing Area” to receive instructions.
- Always be conscious of the wind and constantly monitor wind direction. Wind socks and streamers show which direction the wind is blowing so that you can determine the proper safe breathing area.

**SCBA escape**

- When in an area, on some client’s premises, which has required you to be trained to use or wear an escape respirator such as an SCBA, put on your SCBA and help anyone who appears to be affected by the gas.
- Before taking off your mask, ensure that the air you will breathe is safe.
- Always be conscious of the wind and constantly monitor wind direction. Wind socks and streamers show which direction the wind is blowing so that you can determine the proper safe breathing area.

**Emergency rescue and first aid**

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**WARNING**

To prevent risk and injury to other personnel, re-entry into an area of unknown concentration of H$_2$S will require the use of self-contained breathing equipment and backup personnel.

- Wear a full rescue unit (minimum 30-minute breathing apparatus) before attempting a rescue.
- Remove the victim immediately to fresh air.
- If breathing, maintain the victim at rest and administer respiration immediately.
- If the victim is not breathing, start artificial respiration immediately.
- Call an ambulance and get the victim medical treatment.
- Keep the victim lying down with a blanket or coat under the shoulders to keep airway passage open.
  Conserve the victim’s body heat and do not leave the victim unattended.
• If the eyes are affected by H₂S, wash them thoroughly with clear water. For slight eye irritation, cold compresses are helpful.
• A victim should not return to work until authorized to do so by a physician, even if the victim has had minor exposure and has not completely lost consciousness.

**PPE (personal protective equipment)**
Depending on the exposure i.e., the amount of gas in the air and the type of work, employees will be required to wear different levels of PPE. Examples of protection include:
• When the exposure level is near or above 10 PPM, you will be required to wear self-contained fresh air gear.
• Wear chemical goggles or a face shield when eye contact with this material is possible.
• Avoid skin contact. Wear proper clothing such as impervious gloves, long sleeves, apron, and boots.

**Ventilation (indoor)**
Use adequate general and local exhaust ventilation to keep atmospheric vapor concentrations below the occupational exposure limits.

**Eyewash and showers**
Safety showers and eyewash stations must be available in the vicinity of a potential exposure to the material. Familiarize yourself with the location of these facilities before starting the job.

**Training**
All employees will be provided awareness training in this program in order to be familiar with the potential hazards and proper safe work procedures to follow if exposed to this health hazard. The training will be provided prior to working in any job with potential exposure to H₂S operations.

The purpose of hydrogen sulfide training is to familiarize employees with the governmental regulations affecting H₂S operations. Employees will learn the necessary skills to recognize, detect, and use the proper safety equipment in the event of an H₂S incident.

### 4.7 LEAD

This safety guideline is intended to provide suitable information to all employees regarding the potential effects of Lead and where lead may be found so that adequate measures can be taken to limit exposures through controls in the workplace.

**General**
The objective of this guideline is to prevent absorption of harmful quantities of lead. The guideline is intended to protect employees from the immediate toxic effects of lead and from the serious toxic effects that may not become apparent until years of exposure have passed.

**Characteristics & where it can be found**
To understand why lead is so hazardous, it is important to know what it is, the hazardous effects on people, and which materials do or may contain lead. Once this is understood, employees will gain a respect for the safety guidelines set forth in this policy.
What Is It?

Pure lead (Pb) is a heavy metal and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

Where Can It Be Found?

Lead can be found in:

- Old glossy paints used on walls and pipe.
- Building and roof metal support frames.

Report to the Contracting Company’s Project Manager anytime you suspect lead-containing materials that may not have been disclosed:

- Cracked or peeling paint,
- Visible paint dust, grindings, or shavings.

Health effects

Ways in which lead enters your body.

Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). When lead is scattered in the air it can be inhaled and absorbed through your lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. Hazards encountered with lead occur when:

- Inhaling lead as a dust, fume or mist.
- Ingesting lead through food, cigarettes, and chewing tobacco when handled with contaminated hands.

Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume or mist it can be inhaled and absorbed through your lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up, which have lead on them or handle them with hands contaminated with lead, this will contribute to ingestion.

A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in your blood system, lead is circulated throughout your body and stored in various organs and body tissues. Some of this lead is quickly filtered out of your body and excreted, but some remains in the blood and other tissues. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

Effects of overexposure to lead –

- **Short-term (acute) overexposure.**

  Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from
cardiorespiratory arrest. A short-term dose of lead can lead to acute encephalopathy. Short-term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead and chronic effects, which take longer to acquire. Lead adversely affects numerous body systems and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

• **Long-term (chronic) overexposure.**

Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain.

Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal, form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, restlessness, irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy.

Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most likely permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression to kidney dialysis or death is possible.

Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, or behavioral disorders or to die during the first year of childhood.

Overexposure to lead also disrupts the blood-forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigue as a result of decreased oxygen-carrying capacity in the blood.

**Procedures**

Permissible Exposure Limit (PEL)

The current OSHA lead standard is 50 µg/m$^3$ as an 8-hour Time Weighted Average (TWA). The standard as it applies to construction is unique in that it groups tasks presumed to create employee exposures above the PEL of 50 µg/m$^3$ as an 8-hour TWA, as follows:
LEAD-RELATED CONSTRUCTION TASKS AND THEIR 8-HOUR TWA EXPOSURE LEVELS

<table>
<thead>
<tr>
<th>Exposure Level</th>
<th>Manual demolition</th>
<th>Dry manual scraping</th>
<th>Dry manual sanding</th>
<th>Heat gun use</th>
<th>Power tool cleaning with dust collection systems</th>
<th>Spray painting with lead paint</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 50 to 500 µg/m³</td>
<td>Using lead-containing mortar</td>
<td>Lead burning</td>
<td>Rivet busting</td>
<td>Power tool cleaning without dust detection systems</td>
<td>Cleanup of dry expendable abrasive blasting jobs</td>
<td>Abrasive blasting enclosure movement and removal</td>
</tr>
<tr>
<td>&gt; 500 µg/m³ to 2,500 µg/m³</td>
<td>Abrasive blasting</td>
<td>Welding</td>
<td>Torch cutting</td>
<td>Torch burning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 2,500 µg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Action Level

The standard also establishes an action level of 30 micrograms per cubic meter of air (30 µg/m³), time-weighted average, based on an 8-hour workday. The action level initiates several requirements of the standard, such as exposure monitoring, medical surveillance, and training and education.

Evaluation Process

The Contracting Company’s Project Manager will provide employees with results of any evaluation processes and a listing of lead containing material. The Contracting Company will provide all precautions and render the area safe for IPM employees before work begins.

Medical Surveillance

If it is found that employees have been exposed to lead levels above the PEL, they will be placed into a medical surveillance program. The medical surveillance program is part of the OSHA standard's comprehensive approach to the prevention of lead-related disease. Its purpose is to supplement the main thrust of the standard, which is aimed at minimizing airborne concentrations of lead and sources of ingestion. Only medical surveillance can determine if the other provisions of the standard have effectively protected you as an individual. Compliance with the standard's provisions will protect most workers from the adverse effects of lead exposure, but may not be satisfactory to protect individual workers:

- Who have high body burdens of lead acquired over past years,
- Who have additional uncontrolled sources of non-occupational lead exposure,
- Who exhibit unusual variations in lead absorption rates, or
- Who have specific non-work related medical conditions that could be aggravated by lead exposure (e.g., renal disease, anemia).
In addition, control systems may fail, or hygiene and respirator programs may be inadequate. Periodic medical surveillance of individual workers will help detect those failures. Medical surveillance will also be important to protect your reproductive ability regardless of whether you are a man or woman.

**Safety measures**

Employees are not permitted to work in areas where there may be a potential for Lead exposure. If it is necessary to perform any work where the exposure to Lead is above the OSHA acceptable limits, then the company must implement a comprehensive mandated safety policy and procedure that includes special elements of exposure monitoring, formal medical program, special personal protective equipment, and much more.

**Below are listed possible work controls and practices**

1. **Welding, burning, and torch cutting.**

   Welding and cutting activities that potentially involve exposure to lead can occur as part of a number of construction projects such as highway/railroad bridge rehabilitation (including elevated mass-transit lines), demolition, and indoor and outdoor industrial facility maintenance and renovation. Lead exposures are generated when a piece of lead-based painted steel is heated to its melting point either by an oxyacetylene torch or an arc welder. In this situation, lead becomes airborne as a volatilized component of the coating.

   The amount of time a worker may spend actually welding or cutting can vary from only a few minutes up to a full shift. In addition, the coating being worked on may consist of several layers of lead-based paint, each of which could contain as much as 50% lead. Taken together, these factors suggest that a worker's exposure to airborne lead during welding or cutting activities can vary widely and may be exceedingly high. Lead burning, a process by which virgin or alloyed lead is melted with a torch or otherwise fused to another lead object, is typically performed in maintenance operations on electrostatic precipitators or during the installation of lead shot, bricks, or sheets in the walls or floors of health-care x-ray units or industrial sites. Lead health hazards in this operation, as in welding and torch cutting, are from lead that is superheated and released into the worker's breathing zone in the form of a fume.

   - **Engineering Controls.** The engineering controls that can be used, depending on feasibility, are:

     - Local exhaust ventilation (LEV) that has a flanged hood and is equipped with HEPA filtration may be appropriate where the use of LEV does not create safety hazards. Use of a flexible duct system requires that the welder be instructed to keep the duct close to the emission source and to ensure the duct is not twisted or bent.

     - A fume-extractor gun that removes fumes from the point of generation is an alternative to an exhaust hood for gas-shielded arc-welding processes.

     - Such extraction systems can reduce breathing zone concentrations by 70% or more. These systems require that the gun and shielding gas flow rates be carefully balanced to maintain weld quality and still provide good exhaust flow.

     - A longer cutting torch can be used in some situations to increase the distance from the lead source to the worker's breathing zone.

     - Hydraulic shears can sometimes be used to mechanically cut steel that is coated with lead based-paint. The use of this method is limited by the ability of the shears to reach the cutting area.
• Whenever possible, pneumatic air tools should be used to remove rivets in lieu of burning and torch cutting.

• Work Practice Controls. The following work practice controls will help to reduce worker exposures to lead during welding, burning, and torch cutting:

• Strip back all lead-based paint for a distance of at least 4 inches in all directions from the area of heat application. Chemical stripping, vacuum-shrouded hand tools, vacuum blasting, or other suitable method may be used. However, in enclosed spaces, strip back or protect the workers with air-line respirators.

• Ensure that workers avoid the smoke plume by standing to the side or upwind of the cutting torch whenever the configuration of the job permits.

• Prohibit burning to remove lead-based paint. Paint should be removed using other methods, such as chemical stripping, power tools (e.g. needle guns) with vacuum attachments, etc.

2. **Manual scraping and sanding of lead-based paints.**

Hand scraping of lead-based paints involves the use of a hand-held scraping tool to remove paint from coated surfaces. The health hazards in this activity are caused by the lead dust and paint chips produced in the scraping process. Hand sanding can also produce excessive dust. These activities are typically performed during residential and commercial/institutional lead abatement projects.

• Engineering and Work Practice Controls. Controls that employers can implement to protect workers performing scraping and sanding of lead-based paints are:

• Use of wet-sanding and wet-scraping methods in conjunction with HEPA vacuuming or HEPA mechanical ventilation. Wet methods include misting of peeling paint with water before scraping, and sanding and misting of debris prior to sweeping or vacuuming.

• Use of shrouded power tools with HEPA vacuum attachments. The shroud must be kept flush with the surface.

• Use of techniques with known low exposure potential, such as encapsulation and removal or replacement instead of hand scraping and hand sanding.

**Regulated areas**

The Contracting Company will ensure a work plan is designed and implemented that will:

• Eliminate lead dust or fumes from exposing both work personnel and building occupants.

• Ensure that unauthorized persons cannot access the area.

• Use of signage - warning signs shall be provided and displayed at each regulated area, and is posted at all approaches to regulated areas.

**Training**

All employees will be provided awareness training in this program in order to be familiar with the potential hazards and proper safe work procedures to follow if exposed to this health hazard.

Training and information will be provided for all employees exposed to lead at or above the action level, or who may suffer skin or eye irritation from lead. The training will inform exposed employees of:
• Specific hazards associated with their work environment,
• Protective measures which can be taken,
• Danger of lead to their bodies (including their reproductive systems), and
• Their rights under the standard.

4.8 PROCESS SAFETY MANAGEMENT (PSM)

Purpose
The primary purpose of the PSM Standard is to prevent or minimize the unwanted release of hazardous chemicals, especially into locations that would expose personnel to serious hazards.

Policy
It is the company's intent to comply with all applicable regulations and to provide a workforce that is trained to safely perform their jobs with a full knowledge of the hazards, how to identify the hazards and safe work practices associated with refining/chemical plant or other PSM regulated industry work. In accordance with the law, employees will receive initial and refresher training in the following:

• An overview of the refinery/chemical plant/facility process and operating procedures for the process that employees will be working with or near, including the hazards of the chemicals used in the process. This will include a complete review of the company HazCom Program and all SDSs that are provided for each unit where the employees will be working;
• Specific safety and health hazards based on their severity;
• Identifying hazards and adopting procedures and safe work practices applicable to the employee's job tasks, including personal protective equipment, permits (confined space, hot work and general safe permits), job hazard analysis and auditing;
• Incident investigations are required for all incidents. When an incident occurs, an investigation will be immediately implemented, but not longer than 24 hours after the incident. Causal analysis and corrective actions will be documented and tracked for closure. Those records will be kept for a minimum of 5 years.
• The site-specific Emergency Action Plan.

Employees shall comply with established procedures and safe work practices, be on the alert for changing conditions and quickly report any accidental release or potential release of hazardous chemicals to a supervisor.

The company will promptly investigate every incident that results in, or could have resulted in, a dangerous release of a hazardous chemical.

All employees will attend the OWNER’s (refinery/chemical plant/facility) process overview and any site-specific training during the refinery/chemical plant/facility orientation, including the process overview and Emergency Action Plan. Attached is a summary of applicable information taken from the PSM standard.

Process Safety Management of Acutely Hazardous Materials
These regulations contain requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals. These regulations are intended to eliminate
to a substantial degree, the risks to which employees are exposed in petroleum refineries and chemical plants.

1. The employer (refinery/chemical plant/facility) shall develop and implement written procedures that provide clear instructions for safely conducting activities involved in each process.

   A. Steps for Each Operating Phase:
      1. Start-up
      2. Normal operation
      3. Temporary operations
      4. Emergency operations, including emergency shutdowns
      5. Normal shutdown
      6. Start-up following a turnaround, or after an emergency shutdown

   B. Operating Limits:
      1. Consequences of deviation
      2. Steps required to correct and/or avoid deviation
      3. Safety systems and their functions

   C. Safety and Health Considerations:
      1. Properties and hazards of the chemicals used in the process
      2. Hazard Identification
      3. Precautions necessary to prevent exposure, including PPE
      4. Control measures to be taken if physical contact or airborne exposure occurs
      5. Safety procedures for opening process equipment (such as pipeline breaking)
      6. Verification of raw materials and control of hazardous chemical inventory levels
      7. Any special or unique hazards

Note: If Hot Work is to be performed, as with any hot work, a “Hot Work” permit shall be obtained from the client before any work commences (refer to the company hot work/welding policy if applicable).

2. A copy of the operating procedures shall be readily accessible to employees who work in or near the process area or to any other person who works in or near the process area.

3. The operating procedures shall be reviewed as often as necessary to assure that they reflect safe operating practices, including changes that result from changes in process chemicals, technology and equipment and changes to facilities.

4. The employer shall develop and implement safe work practices to provide for the control of hazards during operations such as opening process equipment or piping and control over entrance into a facility by maintenance, contractor, laboratory or other support personnel. These safe work practices shall apply to employees and contractor employees.

Training
Initial training. Each employee presently involved in operating or maintaining a process, and each employee before working in a newly assigned process, shall be trained in an overview of the process and in the operating procedures. The training shall include emphasis on the specific safety and health hazards, procedures and safe practices applicable to the employee's job tasks.

Refresher and supplemental training. At least every three years, and more often if necessary, refresher and supplemental training shall be provided to each maintenance or operating employee and other workers necessary to ensure safe operation of the facility. The employer in consultation with employees involved in operation or maintenance of a process shall determine the appropriate frequency of refresher training.

Training certification. The employer shall ensure that each employee involved in the operation or maintenance of a process has received and successfully completed training. The employer, after the initial or refresher training shall prepare a certification record which contains the identity of the employee, the date of training, and the signatures of the persons administering the training.

Testing procedures shall be established by each employer to ensure competency in job skill levels and safe and healthy work practices.

Contractors
The employer shall inform contractors performing work on, or near, a process of the known potential fire, explosion or toxic release hazards related to the contractor's work and the process, and require that contractors have trained their employees to a level adequate to safely perform their jobs. The employer shall also inform contractors of any applicable safety rules of the facility, and assure that the contractors have so informed their employees.

The employer shall explain to contractors the provisions of the emergency action plan.

Contractors shall assure that each of their employees have received training to safely perform their job and that the contract employees shall comply with all applicable work practices and safety rules of the facility.

Trade Secrets
Company employees will respect and maintain the confidentiality of all “Trade Secret” information received and/or gathered from our clients (Owner Facilities). Any and all proprietary information obtained including but not limited to the following is governed by this policy:

- Development of the process hazard analysis
- Development of operating procedures
- Involvement in incident investigations
- Involvement in emergency response or emergency planning
- Involvement in compliance auditing

Management of Change (MOC)
The OWNER (refinery/chemical plant/facility) that is covered by the standard will typically handle all MOC situations, but we need to be aware of the program and be mindful that if we get involved with any changes, the necessary steps will need to take place. The company will establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and, changes to facilities that affect a covered process.

Prior to the change, address the following considerations:
The technical basis for the proposed change;
Impact of change on safety and health;
Modifications to operating procedures;
Necessary time period for the change; and,
Authorization requirements for the proposed change.

The Company will train affected employees and contract employees in the change prior to start-up of the process or affected part of the process.

The Company will update Process Safety Information (PSI), Process Hazard Analysis (PHA) and Operating Procedures as applicable.
5 CRANE SAFETY

5.1 GENERAL CRANE SAFETY

Many crane accidents occur because the crane was used to lift more than its rated capacity. Crane accidents are generally serious and always expensive. The following information is intended to highlight the value of safety devices and help you avoid accidents:

- Every crane is required to have load charts and the operator is expected to know how to use them. Be sure to study the charts before setting up to make a pick.

- Knowing the weight of the load is the single most important part of making a safe pick. If the weight of the load is unknown, you will be unable to set the crane up in the proper configuration. Use your load indicator during your pre-lift to determine the weight of the lift.

- Boom angle indicators are an absolute must as you review your load charts.

- You must set the crane up level and on solid ground. If the crane is not set up level, or is set up on loose or unstable soil, the tipping moment can change.

- Increasing counterweight or securing the crane with cables to avoid tipping is never an acceptable practice. When you increase counterweights to avoid a tipping situation, you risk the possibility of structural failure. If these operations continue long enough, the repeated stress placed on the boom is certain to result in a boom failure.

- Inspect your rigging daily, or more frequently under more demanding conditions. Ensure all hooks have safety latches. Lifting beams and spreader bars must have their rated capacities marked on them.

- Only employees who have been properly trained and qualified shall operate cranes and equipment.

- All operators, equipment, special instructions, and load charts shall remain inside the operator cab for the specific equipment for which it was designed.

- All manufactures procedures applicable to equipment and operation shall be complied with.

- Operator shall stop any operations when a safety concern has been identified until a qualified person has assured all safety concerns.

- All manufacturers procedures and prohibitions shall be complied during assembly and dis-assembly while being directed by a qualified/competent person.

- Equipment must not be assembled or used unless ground conditions are firm, drained and graded to the extent so that manufactures specifications are met.

- All safety devices shall be in proper working order; i.e. jib stops, alarms etc. and shall be placed out of service until repairs have been made.

- The work zone shall be identified by demarcating boundaries such as flag and range limiting devices, or defining the work zone as 360 degrees around the equipment up to the maximum working radius. The hazard assessment must determine if any part of the equipment could get closer than 20 feet to a power line.
• If it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line then at least one of the following measures must be taken:
  1. Ensure the power lines have been de-energized and visibly grounded
  2. Ensure no part of the equipment, load line or load gets closer than 20 feet to the power line
  3. Determine the line's voltage and minimum approach distance permitted in Table A
• A competent person must conduct a visual inspection of equipment prior to each shift. The inspection must consist of observation for apparent deficiencies. Some inspection items shall include control mechanisms, pressurized lines, hooks and latches, wire rope, electrical apparatus, tires (when used), and ground conditions
• Equipment must be inspected monthly by a competent person. The inspection must be documented. Documentation must include the following: items checked, results of inspection, and name and signature of the inspector. Documentation must be retained for 3 months. (Documented monthly inspection not required if the daily inspection is documented and records are retained for 3 months)
• The manufacturer must approve all modifications/additions in writing. A registered professional engineer must be qualified with respect to the equipment involved, and must ensure the original safety factor of the equipment is not reduced.
• Employer shall keep & maintain certification record(s) which include the date(s) of inspection & the signature of person(s) who performed inspection. The same records must be kept on inspections of all other ropes
• A signal person must be provided if:
  1. The point of operation is not in full view of the operator
  2. The view is obstructed when the equipment is traveling
  3. It has been determined necessary due to site conditions

5.2 CRANE DANGER SIGNS

When working around cranes, you should be on the lookout for the following danger signs of improper operation. If you see any of these occurring on the jobsite, immediately inform a supervisor before a catastrophe takes place:

**Outriggers, crawler tracks, or tires raised off the ground while operating.** This is an extremely dangerous condition which indicates the crane is being overloaded and may tip over or collapse.

**Operating close to power lines or other dangerous objects.** Electrocution due to contact with power lines is the leading cause of crane related fatalities. Detailed federal regulations for proximity to high voltage sources must be strictly followed.

**Riding the load or crane hook.** This is a serious violation of federal, state, and company regulations. Workers must never be suspended from a crane boom unless an approved personnel basket with mandatory safety equipment is used, and the proper lifting procedures are strictly followed.
Visible structural damage on the crane or rigging. There is little or no backup system in the load-supporting components of most cranes. A damaged component can fail completely and without warning, causing the boom or load to fall.

Modifications made by adding extra counterweight or holding down the rear of the crane. If not approved by the crane manufacturer in writing, the above mentioned modifications are illegal.

A crane operating near a trench or excavation. Cranes exert extremely high pressure loads on the soil near the tracks, outriggers, or tires, especially near excavation sites.

The crane is noticeably out of level while operating. There is no faster way to collapse a crane boom than to impose a side force on the boom. Working out of level creates a dynamic side force which means a crane collapse may be imminent.

The crane’s hoist line is not vertical at all times during operation. This indicates improper operation. A hoist line which is not vertical obviously indicates that the load is not hanging straight down. Out of plumb loads can cause collapse by generating side forces on the boom. In some instances, the crane may tip over if the load swings.

### 5.3 OVERHEAD AND GANTRY CRANE / RIGGING

Axis Crane typically operates using mobile cranes. On occasion the use of an overhead or gantry crane may be necessary. The following shall apply when overhead and gantry cranes are necessary.

- A preventive maintenance program based upon the crane manufacturer's recommendations shall be established
- Placement of Warning or "Out of Order" signs on the crane prior to repairs
- Monthly inspection records shall be made and kept on critical items in use such as brakes, crane hooks, and ropes
- Written reports shall be made and maintained on rated load tests showing the test procedures and confirming the adequacy of any repairs or alterations
- Monthly inspection must be conducted & records must be kept of all hooks with deformation or cracks. The certification records must include:
  1. Date of inspection
  2. Signature of person performing inspection
  3. The serial number of other identifier of hook inspected
- Employers must make a monthly inspection & keep a record of hoist chains (including end connections) for excessive wear, twist, distorted links interfering with proper function, and stretch beyond manufacturer's recommendation. The certification records must include:
  1. Date of inspection,
  2. Signature of person performing inspection
  3. Identifier of chain inspected
- Rope inspection shall be performed once a month and certify the date, signature of person performing the inspection
• All rope which has been idle for a period of a month or more due to shut down or storage of a crane on which it is installed shall be given a thorough inspection before it is used. This inspection shall be for all types of deterioration and shall be performed by an appointed or authorized person whose approval shall be required for further use of the rope.

• Operator should be trained in safe work standards

• The rated load of the crane shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block and this marking shall be clearly legible from the ground or floor. The rated load marking on a hoist must be located and arranged so that it is evident to the personnel responsible for the safe operation of the hoisting unit.

• A CO2 or dry chemical fire extinguisher shall be kept in the crane cab or vicinity of the crane

• Using guidelines of 1910.333(c)(3) energized parts shall be de-energized or grounded or other protective measures shall be provided before work is started.

5.4 OUTRIGGERS

The key to lifting a maximum capacity load with any crane is the outriggers. They provide a solid platform for the crane's safe operation and efficient use. Operators and workers within a crane's radius must always be aware of how critical the placement and use of outriggers are to the crane's performance.

Statistics show that at least 50% of crane incidents occur because the outriggers are not set-up properly. Specific hazards that can cause or contribute to failure or collapse include: • Failure to extend the outriggers fully

• Not extending all outriggers

• Failure to get completely "off-rubber"

• Not accounting for poor ground conditions

• Failure to level the crane

Use the Correct Load Chart. The purpose of outriggers is to improve the stability of the crane. Accurate use of the "on-outriggers fully extended" load chart, requires that outriggers be fully extended and they must bring the rig completely off-rubber. If the tires are touching the ground, then the "on-rubber" load chart is the only one that can be used. Manufacturers do not recommend extending only one or two of the outriggers. If outriggers are to be used, fully extend all of them and get the tires off the ground. Accidents commonly occur because the operator is lifting from only one side of the rig, with only two outriggers extended. Then, later in the day, this same operator is asked to swing the boom to the other side of the rig for a pick. He does this without thinking and topples the crane. (Note: The load charts of some manufacturers now permit partially-extended outriggers, so always refer to the correct load chart)

Outrigger Pads and Floats. The pads found on all crane outriggers are designed for good ground conditions. Poor conditions reduce the amount of load a crane can safely place on the outrigger pad. Because of this, many crane operations require additional support or "floats." Supplemental floats are made of substantial material and must always be larger than the outrigger pad. These floats disperse the weight of the crane and its load over more ground area than does the pad. Any float or cribbing which is smaller than...
the pad, actually increases the pressure placed on the ground. This increase in pressure, particularly in poor ground conditions, can cause an outrigger to "punch through," and bring about an accident.

**Leveling.** Also be aware that all floats and cribbing must be level. If the outrigger pad is set down on an unleveled float, the outrigger pad may slide off when under load, causing the crane to tip. Many manufacturers stipulate that the crane must be within 1% of level before their load chart applies. In a 20-foot span this is only 2 inches off-level! Past this point, the crane can lose 15% - 20% or more of its rated capacity. So, keep the crane on solid level footing.

**5.5 CRANE COUNTERWEIGHTS**

Although it seems like everyone knows of the danger of being struck by a crane’s counterweight, this type of accident still persists in the industry. The following incidents illustrate the hazards faced by employees working near cranes:

- An ironworker was tying rebar for a column in the close proximity of a crawler crane. The crane was moving other material on the job site. The ironworker stepped backwards just as the crane swung its load. The ironworker was struck by the crane’s counterweight.
- A laborer who was carrying a bag of cement inadvertently walked behind a crane. The crane swung and the worker was pinned between the counterweight and an adjacent pier.
- A foreman stopped briefly between a lumber pile and the crane to watch its operation. As the crane turned, the foreman stepped back to provide additional room for the swing of the counterweight. The foreman tripped and fell over a pile of lumber.

A common element in all of the above incidents was the failure to keep the swing area of the crane’s counterweight clear of workers and materials or equipment that must be retrieved. Several solutions to this problem are:

- Eliminate the problem – Locate the crane in a position where there will be no pinch points created between the counterweights and nearby objects. The operator should only operate the equipment when the crane’s swing area is clear.
- Guard or warn of the hazard – The counterweight’s swing area can be barricaded to keep workers out of the hazard zone. Caution signs attached to yellow rope or caution/danger warning tape can be used to identify the swing area. For crawler cranes, traffic candles stick with caution or danger tape shall be used as required
- Eye to eye contact – All workers in the area should be told to keep clear of the swing area. If material or equipment must be retrieved from within the counterweight swing area, the worker should make positive visual contact with the operator prior to entering the hazard zone. Once the worker is done, the operator and worker should once again make positive visual contact so that the operator knows it is now safe to continue full operation.

**5.6 ANTI-TWO BLOCKING DEVICE**

Two blocking is defined as, “the condition in which the lower load block (or hook assembly) comes in contact with the upper load block (or boom point sheave assembly), seriously interfering with safe operation of the crane.” When two blocking occurs, life threatening forces can be applied to the hoist or hook
arrangement, either breaking the hoist line or disengaging the load straps from the hook. This may cause the load hook to fall or lose the load, which may imperil the lives of those working or standing directly below.

When using a man-basket to perform work, the following steps should be taken before workers are lifted:

- Assure that the Anti-Two Blocking device is in place and working.
- Check to assure the basket is properly constructed and connected according to OSHA requirements for suspended personnel platforms.
- Inspect wire ropes and slings for wear or frayed areas to be sure they are capable of supporting at least 7 times the intended load.
- Assure that the crane is within 1% of level and located on firm footing.
- Check the area for electrical lines that could be contacted by the crane.
- Conduct a proof test of the system. The crane must lift the personnel platform from where workers will enter to where they will be operating, with a fully anticipated load. This step must be completed for every work position and each time the crane is moved.
- Assure that proper fall protection is utilized by employees working in the basket.

Anti-Two Blocking devices are electrical sensing devices. They are installed on the crane to prevent the “headache ball” from hitting the sheave. If such contact causes the line to break, the man-basket can tip or fall. The Anti-Two Blocking device consists of a weighted ring around the hoist line; the ring is suspended on a chain from the limit switch that is attached to the boom tip. When the “headache ball” or hook assembly touches the suspended weighted ring, the switch opens and an alarm in the cab warns the operator to stop hoisting. **These Anti-Two Blocking devices are standard equipment on all cranes that are intended to lift personnel.**

### 5.7 SAFETY PINS

Axis Crane’s policy is that only manufacturer approved safety pins are to be used. Unapproved or improvised safety pins such as nails, bolts, welding rod, wire, etc. are not acceptable and create unsafe working conditions. It is the responsibility of all employees to correctly use approved safety pins and to inspect the condition of existing safety pins.

Safety pins are used extensively in the construction industry and throughout most of Axis’ equipment. For the safety of our employees, our customers, and our job sites you must always observe the following rules and never use less than what is recommended.

- NEVER use anything other than manufacturer approved safety pins
- Routinely check the condition of all safety pins and look for excessive wear or damage
- Replace any worn or missing safety pins per manufacturer recommendations
- Notify a supervisor of missing or broken safety pins immediately

Axis maintains an inventory of various types of safety pins. All employees are encouraged to carry spare safety pins incase existing ones are damaged or misplaced after removal.

These pictures show improper safety pins that are unsafe and unacceptable. Never us nails.
5.8 CRANE SUSPENDED PERSONNEL – MAN BASKETS

Everyone involved with operations that use cranes to hoist workers must be aware of the dangers of this procedure. The following are a few specific requirements must be met before a personnel basket can be used:

- Riding the hook or load is expressly forbidden!
- The personnel platform and suspension system must meet or exceed the design criteria for such equipment, and be designed by a qualified person who is competent in structural design.
- Cranes used for personnel lifting must be de-rated 50%, i.e. all capacities shown in the load chart must be halved
- Cranes equipped with outriggers must have all outriggers fully deployed when hoisting employees, following the manufacture’s specifications.
- The platform’s lifting bridle must consist of four legs to ensure stability. The bridle must be secured with shackles or hooks with safety latches. It is not to be used for any other purpose.
- The platform must be capable of supporting four times the intended load. It must have a guardrail system including a top rail at approximately 42”, a mid-rail, and a toe-board. Access gates should not swing outward and must be equipped with a restraining device to prevent accidental opening.
- The number of employees being hoisted must be kept to a minimum and never more than four at one time. To figure platform capacity, assume each worker weighs 250 pounds.
• Except over water, employees must use a personal fall arrest system with shock absorbing lanyard, attached to the lower load block or a structural member of the platform that is capable of supporting a fall impact.

• A pre-lift meeting must be held prior to the trial lift at each location. The meeting to review the safety procedures to be followed should include the crane or derrick operator, any signal persons necessary to the lift, and employees to be lifted.

• When lowering the platform, “free-falling” is prohibited. The platform must be powered down in a slow, controlled manner.

• Never use crane suspended personnel platforms during adverse weather conditions.

**IT IS REQUIRED TO COMPLETE THE PERSONNEL LIFT FORM PRIOR TO ANY LIFTING OF PERSONNEL**

### 5.9 CRANES & OVERHEAD POWER LINES

In a recent four-year review of work-related crane fatalities, 312 people died and only 30 of these were crane operators, the other unfortunate people were working on or near the crane-laborers, riggers, welders, iron workers, carpenters or truck drivers. 72 people, or 23% died when the crane contacted an energized overhead power line. Guiding the load, walking the load in a pick-and-carry operation, or contacting the wire rope when the crane touched the power lines were the most common ways electricity found a path to a worker. Overhead power lines kill! For this reason everyone in proximity to a crane, when energized lines are near, must stay alert. It takes employee teamwork to successfully and safely operate under this combination of conditions.

Power lines can be hard for the crane operator to see. They sometimes appear to be either further away, or much closer than they really are. It is difficult for the human eye to accurately judge the clearance between the crane’s boom or line, and a power line. A designated observer can help assure that safe clearances are being maintained between the crane, the line, the load and the overhead power line. The table below, expressed as power line voltage – minimum clearance, shows basic clearance minimums, which apply to all areas around the power line.

**Voltage Clearance**

<table>
<thead>
<tr>
<th>Voltage (kV)</th>
<th>Minimum clearance distance (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50</td>
<td>10</td>
</tr>
<tr>
<td>&gt;50 to 200</td>
<td>15</td>
</tr>
<tr>
<td>&gt; 200 to 350</td>
<td>20</td>
</tr>
<tr>
<td>&gt;350 to 500</td>
<td>25*</td>
</tr>
<tr>
<td>&gt;500 to 750</td>
<td>35*</td>
</tr>
<tr>
<td>&gt;750 to 1,000</td>
<td>45*</td>
</tr>
<tr>
<td>&gt; 1,000</td>
<td>Determined by the utility/owner</td>
</tr>
</tbody>
</table>

This is what you can do to help ensure safe operations around energized power lines:

• Before the crane comes to the project, determine where it will sit and where it will travel. Avoid areas with power lines if possible. If not possible, mark and flag the area as a last resort and clearly identify the power lines.
• Consider any overhead line “hot” until the utility company verifies that it is not energized and is visibly grounded. The line must be “cold” if minimum clearance cannot be met.
• Place an elevated warning line or line of signs 20 feet from the power line.
• Never store materials that must be accessed by a crane beneath a power line.
• If you are on the crane when contact is made, stay with the crane. If you must get off, jump as far from the crane as possible, keep your legs together and “hop” away from the area.

**THE ABOVE CHART IS A REFERENCE WHEN VOLTAGES ARE PROVIDED BY POWER COMPANIES ONLY. IT IS THE POLICY OF AXIS CRANE TO REMAIN A MINIMUM OF 20 FEET FROM ANY POWER LINES UNLESS OTHERWISE COORDINATED AND AUTHORIZED WITH POWER UTILITY OWNER**

### 5.10 DESIGNATED OBSERVER AROUND POWER LINES

Axis Crane’s policy and OSHA regulations mandate that anytime you must operate near power lines and are unable to clearly and consistently see the power line, you must use a designated observer. The designated observer’s responsibility is to assist the operator to observe clearance of the equipment and should not have any other responsibilities that interfere with the ability to observe the operations and give timely warnings to the crane operator. The designated observer must be positioned in a location to give optimal view of the crane’s proximity to the overhead power lines.

Power lines have a small profile and are difficult to see and judge distances relative to other objectives or the crane in operation. Additionally, sun, rain, trees, and many other objects can block or distort the view of a crane operator. Making it even more difficult, these variables constantly change as the operator’s cab or load moves. Using a designated observer is critical to maintaining a safe operating distance, as such if the designated observer leaves his post then **ALL CRANE OPERATIONS MUST STOP IMMEDIATELY.**

**Guideline for working around power lines:**

- Whenever possible, have the utility company de-energize the overhead power lines. This is the most effective means of eliminating the potential hazard.
- If de-energizing is not possible and there is any chance whatsoever that the crane might breach the established minimum distance as required by Axis Crane’s policy and OSHA regulations, further precautions which may include use of a designated observer must be taken.
- When using a designated observer:
  1. Mark the minimum distance that must be maintained between the crane and the overhead power lines. This can be done with flags, cones, tape, or other similar devices.
  2. Establish an operating plan designating the area where the crane will operate within, how the lifted will be executed, and when the movements will occur.
  3. Establish an observation area which provides the best viewing point of the power lines relative to the crane, crane boom, hoist line, and object being lifted.
  4. Establish a communication plan between the operator and designated observer for how and when signals will be given.
5. Stop operations if the designated observer needs to perform any task other than observing the crane and power lines.

6. Stop operations if the crane movement, lift, designated observers view, or communication between the designated observer and operator cannot be performed safely.

**OSHA Regulation § 1926.1408(b)(4)(ii)** – A dedicated spotter who is in continuous contact with the operator. Where this measure is selected, the dedicated spotter must:

A. Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to: a clearly visible line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks (such as fence posts behind the dedicated spotter and a building corner ahead of the dedicated spotter).

B. Be positioned to effectively gauge the clearance distance.

C. Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.

D. Give timely information to the operator so that the required clearance distance can be maintained.

### 5.11 WORKING UNDER THE LOAD

Crane operations bring many dangers into play. First, the load is being lifted by a mechanical device operated by a human being, so the human error element comes into play. Second, we know that both man and machine are subject to limitations and failures. Something can go wrong despite our best intentions. Third, loads are heavy, difficult to rig, and are subject to unexpected movement. There is only one sure way to avoid injury – stay clear of the load!

Crane movements should always be considered prior to set up. Every effort should be made to avoid having to move the load over the work area. If this cannot be done, work should be temporarily halted and the area cleared while the pick is taking place.

Be aware of what is happening around you and above you.

Others may not be as conscientious as they should. An operator may not even think of the danger of moving a load over your head. If you see a load coming, get out of the way. Don’t forget to look out for your co-worker as well.

Riggers and others may have to work near a suspended load in order to guide it into position. The use of tag lines can help keep you out of harm’s way. The tag line will put distance between yourself and the load in the event the load shifts or moves unexpectedly. Tag lines can help keep a load under control but remember, your weight is no match against a load that has started to swing or spin and develop momentum. Let it settle down on its own.

When tending to any tag lines never loop the line around your hand, arm, or body. This could cause you to be dragged along with the load. Always wear gloves to help avoid rope burns or wire cuts.

Lastly, be sure if you are guiding a load with a tag line that your travel path is clear and safe before the load is suspended. You will be spending a lot of time watching the load, rather than where you are going. It would be a shame to take all of the precautions to avoid being caught by the load, only to be injured in a fall.
5.12 DAILY RIGGING INSPECTIONS

All rigging shall be inspected at least “once each working day” and prior to each shift. Normally, this inspection involves a visual examination of key rigging points without physically opening the wire or fiber rope with a marlin spike or dismantling blocks, shackles and other appendages for inspection. Some of the key safety features or practices that are most often overlooked by those who work with the gear on a daily basis include the following:

- The load hook should be checked for cracks or wear in the saddle, excessive opening of the throat, cracks or twisting of the neck and make sure that the safety latch is in place and that it will close as designed.
- Wedge sockets are very convenient at the job site because they can be easily changed. However, this type of fitting is rated at 70% less than the safe working load of the wire rope it is attached to. Therefore, it is necessary to ensure that it has been fitted onto the rope correctly. The wire rope end should always protrude at least 6 to 9 inches beyond the socket, and then be doubled back on itself and wire clipped into a loop. Or, you may simply place the clip on the bitter end without a loop. Do not wire clip the dead end of the rope to the load carrying part of the rope as this will transfer any load to the dead end of the rope.
- Where you have poured zinc or swaged sockets associated with your rigging, closely inspect the base of the socket or swag where the wire rope enters the fitting. Broken wires or excessive corrosion are signs that the fitting should be replaced prior to use.
- Wire rope that is protruding from the last tuck in a splice should be cut off close to the body of the splice, the ends should be filed round, and the splice should be seized with wire. The potential for a protruding strand of wire to jab someone in the eye is a real hazard for the person who is holding the hook with one hand while guiding it to make a connection with the load to be lifted.
- All running wire rope should be inspected for evidence of kinking, crushing, bird caging, core protrusion and broken wires or strands.
- Crane rigging incidents can be very serious so inspect your rigging and gear often!

5.13 SLING INSPECTION

An inspection of your synthetic web slings prior to use is one of the easiest ways to prevent a serious accident from occurring. By adhering to the following suggestions, you can spot potential problems before they occur.

- Inspect your rigging equipment before, during, and after use. This increases your chance of catching a defective sling before anyone uses it.
- What do you look for when you inspect a sling? Look for obvious abnormalities in the integrity of the material. Run your hands along the fabric and feel for irregularity such as tears, holes, snags, and frayed areas. If your sling is exposed to sharp edges, broken and/or worn stitches may be evident. Most slings are made with a red warning string in the core of the material. If the sling is heavily worn, the warning string will show through. Also, check the fittings to make sure they are not distorted out of normal shape.
• What if you find something defective about a sling? Take it out of service immediately. Don’t use it for even one more pick. Cut it into pieces and throw it away!

• Chemicals and heat affect slings. Slings can be affected by chemicals without showing any real signs of wear. This is where a good visual and hands-on inspection can pay off. Know what chemicals your slings are contacting and how they affect the material your slings are made of. Check for burns or melted areas when working around hot work operations. Remember, your sling is made from man-made materials, and all synthetics break down after prolonged exposure to the ultraviolet rays of the sun. Always inspect for damage carefully.

• Know the rating of your sling. Your sling is marked to show the trademark or name of the manufacturer, the stock number and most importantly, the load rating and types of hitches to be used. If the specifications on the sling do not match what you will be doing with it, this sling is not rated for your purpose. Do not use the sling if the rating does not meet your capacity needs.

• Document your sling inspections. Maintain documentation on all sling inspections that you perform while the sling is in use. This assures that inspections take place as scheduled and lessens the chance of an accident due to sling failure.

Slings are expected to wear out and be replaced at regular intervals. How heavily they are used, and how they are used, should indicate how often they need to be replaced. A good sling inspection program will assure that slings with the potential of causing an accident are not being used. Don’t risk damaging goods, or injuring workers due to a worn out sling. Take good care of your equipment!
6.1 CREW LOGS

1. All crew logs submitted must have a customer name. Do not write down Axis Crane as the customer unless instructed to do so, find out who the customer is.
2. Get project name on the crew log as we do multiple projects for the same customer.
3. Break out your time, travel in, tasks performed, travel out, set ups, loading, waiting, driving must all be written down.
4. If you are on standby for any reason please say what you did for Axis Crane while you waited. Wipe down crane, grease organize are some of the things that can be done, if you are unsure call the office.
5. All crew logs must have the correct day and date.
6. All crew logs must have a pre lift and maintenance log number for crane and truck if used.
7. Crane #, Tractor & Trailer #, Support equipment# / Permit# must be filled out.
8. Odometer readings for crane and trucks must be filled out. PROPERLY.
9. Crew logs must be signed by the customer.
10. Crew time must be written down.
11. If crew time is more than crane time, tell us why.
12. Crew logs without required info will be returned to you for completion.
13. Crew logs should be turned in daily. All crew logs must be received by 10:00 AM Monday morning. If any of the prior weeks’ logs have not been turned in by that time they will be included in the following week’s payroll. If working out of town, pictures of crew logs will work but must be legible and hard copies must be delivered to the office as soon as possible.

All Other Paperwork (inspections, pre lifts, safety forms, etc.)

Follow the directions on all forms to fill them out. If forms should not have directions on them; fill in all blanks, check all boxes that are satisfactory, and make notes communicating all deficiencies.
1. Equipment #’s, correct date, hours/odometer readings must be used.
2. All “other paperwork” should be turned in daily. If unable to do so refer to #13 above.

6.2 RECORD KEEPING

Axis Crane shall keep records of fatalities, injuries, and illnesses and must record each fatality, injury and illness that:
- Is work-related; and
- Is a new case; and
- Meets one or more of the general recording criteria
- Each recordable injury or illness must be entered on an OSHA 300 Log and 301 Incident Report, or other equivalent form, within seven (7) calendar days of receiving information that a recordable injury or illness has occurred.
• A company executive must certify that he or she has examined the OSHA 300 Log and that he or she reasonably believes, based on his or her knowledge of the process by which the information was recorded, that the annual summary is correct and complete.

• A copy of the annual summary must be posted in each establishment in a conspicuous place or places where notices to employees are customarily posted. You must ensure that the posted annual summary is not altered, defaced or covered by other material.

• The annual summary must be posted no later than February 1st of the year following the year covered by the records and the posting kept in place until April 30th.

The OSHA 300 Log, the privacy case list (if one exists), the annual summary, and the OSHA 301 Incident Report forms must be retained for five (5) years following the end of the calendar year that these records cover.

All pre-operational inspections will be kept on file for a minimum of 90 days per OSHA standard.

All training of personnel will be kept on file for a minimum of 3 years per OSHA standard.
7 FORMS

7.1 DISCLOSURE

The following forms are examples of the forms used at Axis Crane. At times, some of these forms may change slightly. However, the sample forms in this manual are to be used as a guide when looking for the proper forms, please do not remove forms from this manual. If you are unable to locate the form(s) needed, please ask your supervisor or the safety department.

Many job sites require their forms to be completed, the customers’ forms do not take the place of Axis Crane forms unless prior authorization has been made through your supervisor.

7.2 FORM EXAMPLES

The following pages are the example forms.

- Incident Report Short Form
- Pre-Lift Safety Meeting
- Hoisting Personnel/Personnel Platform
- Daily Forklift & Aerial Inspection
- Daily Crane Inspection
- JHA Worksheet
- JHA (Fillable)
- Diesel Daily Hammer Checklist
- Vibratory Daily Hammer Checklist
- Employee Evaluation Form
- Disciplinary Action
- Site Specific Info
- Service Request
- Crane & Crew log
# Incident Report Short Form

<table>
<thead>
<tr>
<th>Employee Name</th>
<th>Phone Number</th>
<th>Date</th>
</tr>
</thead>
</table>

### Type (circle one)
- Accident
- Incident
- Near Miss
- Safety Concern

### Information
- **Date and Time Employee Began Work**
- **Time of Incident**
- **Date and Time Reported**
- **Person Reported To**
- **Witness Name**
- **Witness Phone Number**
- **Location**
- **Customer (if applicable)**

### Description
Describe how it happened, any injuries, damage inflicted to equipment or property, and what could have prevented it. Take pictures and send to the Safety Department. Draw pictures if applicable. Use the back as necessary to include as much detail as possible.

---

**Signature**

---

2016 Release  
Axis Crane LLC.  
Page 99
# PRE-LIFT SAFETY MEETING

## Job Information (TURN IN WITH CREW LOGS)

<table>
<thead>
<tr>
<th>Crane</th>
<th>Job #</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signalman</td>
<td>Certified</td>
<td>Rigger(s)</td>
</tr>
<tr>
<td>Yes / No</td>
<td>Yes / No</td>
<td></td>
</tr>
</tbody>
</table>

## Lift Information

<table>
<thead>
<tr>
<th>Lift Radius</th>
<th>Safe operating capacity of crane</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Weight</td>
<td>Personal platform work</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Weight Deductions</td>
<td>Signal Type</td>
<td>Hand / Radio</td>
</tr>
<tr>
<td>Capacity of line pull</td>
<td>Power lines</td>
<td>Yes / No</td>
</tr>
<tr>
<td>Capacity of rigging</td>
<td>Power line distance from radius</td>
<td>Feet</td>
</tr>
</tbody>
</table>

PPE required above basic PPE (hard hats, gloves, safety glasses, high vis clothing or vests)

## Awareness

- Stop work
- Pinch Points
- Fall Zone
- Traffic/Pedestrians
- Ground conditions
- Weather
- Tag Lines

Additional hazards, roles, and responsibilities

## Attendees (Please Print)

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Name</th>
<th>Company</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
**Describe the rational for selecting a personnel platform and explain why conventional methods were not used:**

*1926.1431(a) The use of equipment to hoist employees is prohibited except where the employer demonstrates that the erection, use, and dismantling of conventional means of reaching the work area, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold, would be more hazardous, or is not possible because of the project's structural design or worksite conditions

<table>
<thead>
<tr>
<th>Personnel Platform Type:</th>
<th>Unit #:</th>
<th>Platform Capacity:</th>
<th>Workers in Platform (#):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Intended Load ÷ Crane Capacity = <strong>Crane Rated Capacity (%):</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**1926.1431(d)(1) Capacity: Use of suspended personnel platforms. The total load (with the platform loaded, including the hook, load line and rigging) must not exceed 50 percent of the rated capacity for the radius and configuration of the equipment, except during proof testing.

**Proof Testing to 125% of the platform Capacity:**

<table>
<thead>
<tr>
<th>Fall Protection</th>
<th>Personal Fall Arrest System Type:</th>
</tr>
</thead>
</table>

**Primary Method of Communication:** Hand / Radio / Cell

**Pre-Lift Meeting:**

<table>
<thead>
<tr>
<th>Time:</th>
<th>Form #:</th>
</tr>
</thead>
</table>

**Inspections:**

<table>
<thead>
<tr>
<th>Crane Competent Person:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigging Competent Person:</td>
</tr>
<tr>
<td>Personnel Platform Competent Person:</td>
</tr>
</tbody>
</table>

**Approvals:**

<table>
<thead>
<tr>
<th>Print</th>
<th>Sign</th>
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<tbody>
<tr>
<td>Customer:</td>
<td></td>
</tr>
<tr>
<td>Crane Operator:</td>
<td></td>
</tr>
<tr>
<td>Job Site Name/Location:</td>
<td>Job #:</td>
</tr>
</tbody>
</table>
DAILY FORKLIFT & AERIAL INSPECTION

Unit #: ___________________________ Inspector: ___________________________

Job #: ___________________________ Work Week: ___________________________

Instruction:
Each forklift will be operationally tested and visually inspected each day. Check any defective item and give details under “Remarks”. Immediately notify the Foreman of any aerial lift deficiencies. The Foremen will forward this inspection form to the Safety Dept. at the end of each week.

<table>
<thead>
<tr>
<th>Operating Controls (Operational)</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Emergency Stop &amp; Brakes</td>
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<td>Operation Levers &amp; Controls</td>
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<tr>
<td>Foot Controls (if applicable)</td>
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<tr>
<td>Safety Signs &amp; Load Charts</td>
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<td>Boom &amp; Forks</td>
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<td>Hydraulic Leaks</td>
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<td>Extension Cylinders &amp; Chains</td>
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<tr>
<td>Pivot Pins</td>
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<td>Electrical Lines</td>
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<tr>
<td>Vert. Mast Sliding &amp; Rolling Parts</td>
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<tr>
<td><strong>Base</strong> (Visual)</td>
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<tr>
<td>Broken, Cracked or Loose Parts</td>
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<td>Lights, Mirrors &amp; Windows Clean</td>
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<tr>
<td>Seat Belt &amp; It’s Mounts</td>
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<tr>
<td>Tires &amp; Outriggers</td>
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<tr>
<td>Back Up Alarm, Horn &amp; Manual</td>
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<tr>
<td><strong>Engine Compartment</strong> (Visual)</td>
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<td>Oil Level</td>
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<td>Fuel Level</td>
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<td>Belt, Hose &amp; Motor Condition</td>
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<tr>
<td>Battery &amp; Electrical</td>
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<td><strong>Inspector Initials</strong></td>
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</tbody>
</table>

Addition Notes: ____________________________________________________________

______________________________________________________________________

Foreman Signature: ____________________________________________ Date: __________
### Crane Pre-Operational Daily Inspection

For OSHA 1926.550(a)(5)

<table>
<thead>
<tr>
<th>Manufacture:</th>
<th>Serial #:</th>
<th>Machine Hours:</th>
<th>Date: <em><strong>/</strong></em>/20___</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Number:</td>
<td>Model #:</td>
<td>Inspector/Operator:</td>
<td></td>
</tr>
</tbody>
</table>

Check the Appropriate Box:

- **S** = Satisfactory
- **U** = Unsatisfactory
- **NA** = Not Applicable

- Crankcase Oil/Hydraulic Oil
- Coolant
- Service/Parking Brake/Swing Brake
- Housekeeping/Windows/Mirrors
- Gauges/Electrical/Lights/Locks/Buzzers
- Fire extinguishers/First Aid Kit/Spill kit
- Tires/Inflation/Shoes/Tracks/Chain
- Travel/Steering/Back-up Alarm/Horn
- Swing/Swing Brake/House Lock
- Load Chart
- Outriggers/Cribbing
- Boom Up/Down/In/Out/Boom Kick Out
- Hoist(s) Up/Down/Load Brake(s)
- Load Block/Ball/Hook(s)
- Wedge Socket(s)
- Sheaves
- Wire Rope Retainer
- Main Boom/Job Extension
- Carrier Car Body
- Machine Guards
- Anti-Two-Block
- LMI/Load Wt. Indicator/Radius Indicators
- Boom Length Indicators/Angle Indicators
- Wire Rope Reeling/Wrapping on Drum
- Lift Cylinders/Hoses/Tubing
- Rigging
- Safety Latches

**Additional Comments:**

______________________________

☐ Condition of Crane Is Satisfactory: ___________________________ ___/___/20___

Inspector/Operator’s Signature

☐ Above Defects Corrected

☐ Above Defects Need Not Be Corrected For Safe Operation of Crane

______________________________ ___/___/20___

Maintenance Signature

______________________________ ___/___/20___

Safety Signature
# JOB HAZARD ANALYSIS WORKSHEET

## Job Information

<table>
<thead>
<tr>
<th>Location</th>
<th>Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Team</td>
<td>Date and Time</td>
</tr>
</tbody>
</table>

## Job Site

- All Federal & State required warnings are posted
- Inspected job site for hazards
- Safety meeting held with all contractors
- Emergency phone numbers available

## House Keeping & Sanitation

- Working area neat and orderly
- Waste containers provided and used
- Lighting adequate for all work tasks
- Passageways, walkways, & stairs clear of slip hazards
- Potable water available for drinking
- Container for trash disposal handy

## Fire Prevention

- Fire instruction provided to all personnel
- Fire extinguisher accessible
- Hydrants open to access
- Good housekeeping in work areas
- Temporary heating devices safe
- Adequate ventilation

## Electrical Installations

- Adequate wiring, insulated, grounded, damage free
- Assure grounding program followed
- Ground fault circuit interrupters in place

## Power Tools

- Good housekeeping where tools are used
- Tools & cords in good condition
- Proper grounding or double insulation of tools
- All mechanical safeguards in use
- Tools neatly stored when not in use
- Right tool being used for the job
## JOB HAZARD ANALYSIS WORKSHEET

**THIS DOCUMENT IS REQUIRED DAILY**

<table>
<thead>
<tr>
<th>Job:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job/Project #:</td>
<td>Supervisor/Foreman:</td>
</tr>
<tr>
<td>Job Location</td>
<td>Completed by:</td>
</tr>
</tbody>
</table>

**PPE Required:**
- Hardhat □
- Gloves □
- Eye Protection □
- Safety Boots □
- High-visibility Clothing □
- Life Vest □
- Fall Protection □
- Hearing Protection □
- Other: __________________________

<table>
<thead>
<tr>
<th>Sequence of Basic Job Steps</th>
<th>Potential Hazards of Each Job Step</th>
<th>Plan of Action to Control or Eliminate any Hazard(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
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<tr>
<td>4.</td>
<td></td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
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<tr>
<td>6.</td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
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</tr>
</tbody>
</table>

**Signatures of Employees Verifying the Review of Potential Hazards:**

<table>
<thead>
<tr>
<th>Print Name</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Print Name</th>
<th>Signature</th>
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<tbody>
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</tbody>
</table>

**HAZARDS TYPES:** Impact, Penetration, Crush/Pinch, Harmful Dust, Chemical, Thermal (hot/cold), Noise, Electrical, Ergonomic, Light (optical) radiation,

Revised 10/15
Diesel Hammer Daily Checklist

Daily maintenance required on all hammers prior to operation

Check off each day when the check has been completed and turn in with crew logs at end of each week.

*Note: Always refer to equipment manual for full startup, shutdown, and maintenance procedures.

Equipment Model _______________________________ Job # ___________________________

1. Visually inspect the hammer for loose nuts or bolts.
   Notes

2. Check fuel and oil.
   Notes

3. Check cables, ropes and knots on Kill and Trip.
   Notes

   Notes

5. Check rigging to hammer and make sure it is in good condition and properly tagged. Replace if necessary.
   Notes

6. Check cable clamps and follower cable.
   Notes

7. Check hammer for proper oil lubrication and grease hammer every 20 minutes of drive time.
   Notes

8. Check overall wear of hammer.
   Notes

________________________________________________________________________

Dates

Check by (initials)

Signature ____________________________ Date ________________

________________________________________________________________________

2016 Release

Axis Crane LLC.

Page 106
**Vibratory Hammer Daily Checklist**

Daily maintenance required on all hammers prior to operation  
*Check off each day when the check has been completed and turn in with crew logs at end of each week.*  
*Note: Always refer to equipment manual for full startup, shutdown, and maintenance procedures.*

<table>
<thead>
<tr>
<th>Equipment Model</th>
<th>Job #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

1. Visually inspect the entire hammer for loose nuts or bolts. Put a wrench on the clamp bolts and check them for tightness.  
   Notes

2. Grease the Jaw Plunger on the clamp housing.  
   Notes

3. Check the oil level in the vibrator. Hang Vibro from crane and look at sight gauge. Make sure the oil is half way up gauge. If you cannot read it then you cannot run the vibro. Remove the gauge and clean it. **YOU MUST KNOW THE LEVEL!** If the oil is milky or black then change it.  
   Notes

4. Check the fluid level in the power unit hydraulic tank.  
   Notes

5. Look at all the hoses for leaks. Check for cuts or other damage that might cause an oil leak. Be sure all connections are tight, especially quick disconnects.  
   Notes

6. Any time the clamp assembly is changed or hydraulic hoses have been disconnected and reconnected the lines may need to be bled for air. **See operations manual for equipment requirements.**  
   Notes

7. Check the rubbers in the suppressor housing. Look for cracks.  
   Notes
8. Make a “walk-around” inspection of the engine and components for oil, water or fuel leaks and general appearance. Correct minor adjustments before they develop into major repairs

Notes

9. Check the power unit crankcase oil level.

Notes

10. WHEN COLD Check the power unit engine coolant level.

Notes

11. Check inside the Power Unit. Check all hoses and valves for leaks.

Notes

12. Check filter indicator with engine running at full rpm. Replace if necessary.

Notes

13. Check wire rope sling and make sure it is in good condition and properly tagged. Replace if necessary.

Notes

14. Check jaws for wear. Replace if necessary.

Notes

15. Close jaws, make sure clamp light comes on.

Notes

Dates

Checked by (Initials)

Signature Date
## Employee Evaluation Form

<table>
<thead>
<tr>
<th>Performance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reports to Work On Time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Personal Presentation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Up Keep of Assigned Equipment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Cleanliness of Equipment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Mechanic Ability to Fix/Repair Equipment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Operational Skill on Equipment</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Safety Performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Customer Presentation/Representation of Axis Crane</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Communication with Management</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Communication with Co-Workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Keeps to Task Assigned</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Works as Part of Team</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Follows Plan as Directed</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Company Paperwork</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Offers/Presents Ideas for Improvement</td>
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<td>5</td>
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<table>
<thead>
<tr>
<th>Total Poss. Points</th>
<th>Total Points Scored</th>
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<tr>
<td>75</td>
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<tr>
<td>Strengths</td>
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<th>Weaknesses</th>
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<th>Concerns or Issues</th>
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<tr>
<th>Feedback/Suggestions</th>
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Assessor’s Signature   Date

Employee’s Signature   Date

Manager's Signature   Date
## DISCIPLINARY ACTION

### Employee Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
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</table>

<table>
<thead>
<tr>
<th>Position</th>
<th>Manager</th>
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<tbody>
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</tbody>
</table>

### Type of Infraction

- [ ] Minor- 1 Point
- [ ] Moderate- 2 Points
- [ ] Major- 3 Points

- [ ] Tardiness
- [ ] Performance
- [ ] Behavior
- [ ] Absenteeism
- [ ] Attitude
- [ ] Company Policy
- [ ] Other:

### Description of Infraction


### Immediate Consequences and Potential Future Consequences

By signing this form, you confirm that you understand the information in this warning. You also confirm that you and your manager have discussed the warning and a plan for improvement. Signing this form does not necessarily indicate that you agree with this warning.

<table>
<thead>
<tr>
<th>Employee Name</th>
<th>Manager Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Signature</th>
<th>Signature</th>
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<table>
<thead>
<tr>
<th>Date</th>
<th>Date</th>
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<tbody>
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</table>

Total points __ out of 12 for a 36 month period
## GENERAL SITE INFO/CONTACT INFO

<table>
<thead>
<tr>
<th>Contract #</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Order #</td>
<td></td>
</tr>
<tr>
<td>Project Name</td>
<td></td>
</tr>
<tr>
<td>General Contractor</td>
<td>Axis Crane, LLC</td>
</tr>
<tr>
<td>Contractor Project #</td>
<td></td>
</tr>
<tr>
<td>Project Location</td>
<td></td>
</tr>
<tr>
<td>Project Start/End dates</td>
<td></td>
</tr>
<tr>
<td><strong>Customer:</strong></td>
<td>*Email and Phone</td>
</tr>
</tbody>
</table>

**In Case of Emergency**

- Call 911

**Fire, Police, Ambulance**

- Call 911

**Directions to Hospital**

**Clinic/Occupational Medicine location**

**Axis Crane Contacts**

- Email and Phone

**Notes:**

- All Axis Crane employees on site will have access to or carry this information.
- SDS forms are located in all equipment
Service Request

Use this form to request parts or repairs for all Axis equipment. Axis must comply with all DOT and OSHA documentation requirements. What this means is we cannot effectively perform repairs or obtain parts without the proper documentation, it’s the law. Verbalizing your repair needs should be done only in an emergency. Our ability to read and understand your service request definitely contributes to how fast we can take care of it. We ask that you continue to repair the items that you are capable of. We will obtain the parts for you. The care of our equipment and the success of the company depend on your help and participation. We are a team of the best in the business, please be patient, help when you can and lend your knowledge to your coworkers. Remember to keep your rig properly inspected, adjusted and in DOT compliance.

<table>
<thead>
<tr>
<th>Your Name:</th>
<th>Equipment #:</th>
<th>Request Date:</th>
</tr>
</thead>
</table>

On a scale of 1 to 5, with 5 being the greatest level of urgency, please check the appropriate box

<table>
<thead>
<tr>
<th>Description Of Part Or Repair:</th>
</tr>
</thead>
</table>

If possible please include a Part number - Brand name – Size (tire) – Quantity or amount – Other

<table>
<thead>
<tr>
<th>Part#</th>
<th>Brand</th>
<th>Size</th>
<th>Amount</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Your Signature upon request □ Supervisor approval Signature to repair □ Mechanics Signature, date of completed repair □

Contact Matt Case with all Maintenance concerns or Information Call: (971) 276-1442 or Email matt@axiscrane.com. Note: photos of your issue help as a description. Please avoid contacting other maintenance employees as it will only slow maintenance progress down.
## CRANE & CREW LOG

**800-585-AXIS**  
[www.axiscrane.com](http://www.axiscrane.com)

### Form Information

- **Company**
- **Project - Job #**
- **Contact**
- **Day**
- **Date**
- **City, State**
- **County**
- **Pre-Lift Safety Log #**
- **Maintenance Log #**
- **Rigging Used**
- **Permit #s**

### Form Sections

#### Start Time
- A/P

#### Stop Time
- A/P

#### Activity
- A/P
- A/P
- A/P
- A/P
- A/P

#### Crane Time

#### Crew Time

### Customer Agreement

Customer agrees to the specifics of TERMS AND CONDITIONS detailed on reverse side.

#### Authorization to Start Work

**Authorized Signature**

**Name/Title**

#### Have Signed at End of Day

**Authorized Signature**

**Name/Title**

#### Unit #s

- Oregon Odometer Start
- Oregon Odometer Stop
- Total Oregon Miles Driven

#### Washington Odometer Start

#### Washington Odometer Stop

#### Total Wash. Miles Driven

#### Grand Total Miles

### Home Terminal Address

2500 Industrial Ave., Hubbard, OR 97032

### REMARKS

**SHIPLER**  
**AXIS CRANE**

### Row 1
- **FROM:**
- **TO:**

### Certification

I Certify That These Entries Are True And Correct:

### Recap

- **On duty hrs:**
  - **Total Liner 38A:**
  - **70 hr/7 days:**
  - **70 hr/7 days including today:**
  - **60 hr/6 days:**
  - **60 hr/6 days including today:**
  - **56 hrs A:**
  - **56 hrs A including today:**

### TOTAL

**TOTAL HOURS**

ROW 1

ROW 2

ROW 3

ROW 4

### Notes

- If you took 38 consecutive hrs off duty, you have 60/76 hrs available again.

---

**2016 Release**  
**Axis Crane LLC.**  
**Page 114**
8 REFERENCES

8.1 BRAKE ADJUSTMENTS

**Brake Adjustment After Installation**

Adjust the brakes as follows:

1. Rotate the hex extension clockwise until the brake linings contact the brake drum. Back off the slack by rotating the hex counterclockwise 1/2 turn.

2. Backing off the slack will require more than 25-30 ft lb of torque. When backing off the slack, a rattling sound will be heard.

3. Using a ruler, measure the distance from the face of the air chamber to the center of the large pin in the clevis (A) (see fig. 5). Make an 0.05 psi brake application and allow the chamber push rod to travel its maximum stroke. Measure to the center of the large pin (B). The difference between (A) and (B) is the push rod stroke. Check the following chart for proper maximum stroke after adjustment of the brakes.

<table>
<thead>
<tr>
<th>&quot;STANDARD&quot; CLAMP TYPE BRAKE CHAMBER DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>24</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>30&quot;</td>
</tr>
</tbody>
</table>

*N: Note: If type 36 chamber is used, slack length should be less than 6".

<table>
<thead>
<tr>
<th>&quot;LONG STROKE&quot; CLAMP TYPE BRAKE CHAMBER DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>24</td>
</tr>
<tr>
<td>30&quot;</td>
</tr>
</tbody>
</table>

*N: Note: Identified by square air port bosses.

**Measuring the Free Stroke**

4. Free stroke is the amount of movement of the slack slack required to move the brake shoes against the drum. With brakes released, measure from the face of the chamber to the center of the clevis pin (see fig. 6). Apply pressure using a lever to activate the slack adjuster until the brake shoes contact the brake drum. Measure the movement of the slack adjuster when the brake shoes have made contact with the drum. The difference between the released and applied measurements is the free stroke. The free stroke should be 3/8" - 5/8".

If the free stroke is good, but the applied stroke is too long, there is a problem with the foundation brake. Check the foundation brake for missing or worn components, cracked brake drums, or improper lining to drum contact.

If the free stroke is greater than the recommended distance (3/8" - 5/8"), a function test of the slack adjuster should be performed.

If the free stroke is less than 3/8", a dragging brake can occur. Check to see that the normal adjustment procedure was followed correctly. Manually readjust the brake following the "Brake Adjustment After Installation" procedure on this page.

**Lubrication**

The Gunite slack adjusters are factory lubricated and externally sealed to protect against dirt, water, salt and other corrosive elements. However, periodic lubrication is recommended every 6 months or 50,000 miles.

---

**Fleet Line Products**
301 Peoples Ave. • Rockford, IL 61104-7092
Phone (815) 964-3501 • Toll-Free (800) 677-3768 • Fax (815) 965-9197
www.gunite.com

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Axis Crane LLC.
8.2 ASME HAND CRANE SIGNALS AND SLING CHART

Standard ASME Crane Hand Signals

- **Hoist**
- **Lower**
- **Use Main Hoist**

- **Raise Boom**
- **Lower Boom**
- **Use Whipline**

- **Move Slowly**
- **Raise Boom and Lower Load**
- **Lower Boom and Raise Load**

- **Swing**
- **Stop**
- **Emergency Stop**

- **Dog Everything**
- **Extend Boom**
- **Retract Boom**

- **Travel**
- **Extend Boom**
- **Retract Boom**

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Rated Load for Grade 80 Alloy Steel Chain Slings - Vertical and Bridle Hitches

<table>
<thead>
<tr>
<th>Grade 80 Alloy Chain</th>
<th>90°</th>
<th>60°</th>
<th>45°</th>
<th>30°</th>
<th>60°</th>
<th>45°</th>
<th>30°</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/32</td>
<td>2100</td>
<td>3600</td>
<td>3000</td>
<td>2100</td>
<td>5600</td>
<td>4400</td>
<td>3200</td>
</tr>
<tr>
<td>1/4</td>
<td>3500</td>
<td>6100</td>
<td>4900</td>
<td>3500</td>
<td>9100</td>
<td>7400</td>
<td>5200</td>
</tr>
<tr>
<td>5/16</td>
<td>4500</td>
<td>7800</td>
<td>6400</td>
<td>4500</td>
<td>11700</td>
<td>9500</td>
<td>6800</td>
</tr>
<tr>
<td>3/8</td>
<td>7100</td>
<td>12300</td>
<td>10000</td>
<td>7100</td>
<td>18400</td>
<td>15100</td>
<td>10600</td>
</tr>
<tr>
<td>1/2</td>
<td>12000</td>
<td>20800</td>
<td>17000</td>
<td>12000</td>
<td>31200</td>
<td>25500</td>
<td>18000</td>
</tr>
<tr>
<td>5/8</td>
<td>18100</td>
<td>31300</td>
<td>25600</td>
<td>18100</td>
<td>47000</td>
<td>38400</td>
<td>27100</td>
</tr>
<tr>
<td>3/4</td>
<td>28300</td>
<td>49000</td>
<td>40000</td>
<td>28300</td>
<td>73500</td>
<td>60000</td>
<td>42400</td>
</tr>
<tr>
<td>7/8</td>
<td>34200</td>
<td>59000</td>
<td>48400</td>
<td>34200</td>
<td>88500</td>
<td>72500</td>
<td>51300</td>
</tr>
<tr>
<td>1</td>
<td>47700</td>
<td>82600</td>
<td>67400</td>
<td>47700</td>
<td>123900</td>
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<td>71500</td>
</tr>
<tr>
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<td>112500</td>
<td>102200</td>
<td>172300</td>
<td>187500</td>
<td>163400</td>
<td>108400</td>
</tr>
</tbody>
</table>

The design factor of 4 to 1 on Alloy Chain agrees with the design factor used by the International Standards Organization (I.S.O.) and ANSI B30.9 is the preferred set of Working Load Limit values.

Published by ©TheCraneStore.com 775-630-4656 2006-2010
### Standard eye and eye web slings - Capacities rated in (lbs).

<table>
<thead>
<tr>
<th>Width, In.</th>
<th>Vertical</th>
<th>Choker</th>
<th>Basket</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,600</td>
<td>1,250</td>
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</tr>
<tr>
<td>2</td>
<td>3,200</td>
<td>2,500</td>
<td>6,400</td>
</tr>
<tr>
<td>3</td>
<td>4,800</td>
<td>3,800</td>
<td>9,600</td>
</tr>
<tr>
<td>4</td>
<td>6,400</td>
<td>5,000</td>
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</tr>
<tr>
<td>5</td>
<td>8,000</td>
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<tr>
<td>6</td>
<td>9,600</td>
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</tr>
<tr>
<td>8</td>
<td>12,800</td>
<td>10,200</td>
<td>25,600</td>
</tr>
<tr>
<td>10</td>
<td>16,000</td>
<td>12,800</td>
<td>32,000</td>
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<tr>
<td>12</td>
<td>19,200</td>
<td>15,400</td>
<td>38,400</td>
</tr>
</tbody>
</table>

Single ply / calculate capacities of 2, 3, or 4 ply slings by multiplying figures above by number of plies.

### Endless Round Slings / Polyester Type - Capacities rated in (lbs).

<table>
<thead>
<tr>
<th>Color</th>
<th>Vertical</th>
<th>Choker</th>
<th>Basket</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purple</td>
<td>2600</td>
<td>2100</td>
<td>5200</td>
</tr>
<tr>
<td>Green</td>
<td>5300</td>
<td>4200</td>
<td>10600</td>
</tr>
<tr>
<td>Yellow</td>
<td>8400</td>
<td>6700</td>
<td>16800</td>
</tr>
<tr>
<td>Tan</td>
<td>10600</td>
<td>8500</td>
<td>21200</td>
</tr>
<tr>
<td>Red</td>
<td>13200</td>
<td>10600</td>
<td>26400</td>
</tr>
<tr>
<td>White</td>
<td>16800</td>
<td>13400</td>
<td>33600</td>
</tr>
<tr>
<td>Blue</td>
<td>21200</td>
<td>17000</td>
<td>42400</td>
</tr>
<tr>
<td>Grey</td>
<td>31000</td>
<td>24800</td>
<td>62000</td>
</tr>
<tr>
<td>Brown</td>
<td>53000</td>
<td>42400</td>
<td>106000</td>
</tr>
<tr>
<td>Olive</td>
<td>66000</td>
<td>52800</td>
<td>132000</td>
</tr>
</tbody>
</table>

### Hitch Type - 1 part mechanical splice IPS IWRC 6x9 & 6x37 - Rated capacities in lbs.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Vertical</th>
<th>Choker</th>
<th>Basket</th>
<th>60°</th>
<th>46°</th>
<th>30°</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>4,400</td>
<td>3,200</td>
<td>8,800</td>
<td>7,600</td>
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<td>4,400</td>
</tr>
<tr>
<td>3/4</td>
<td>9,800</td>
<td>7,200</td>
<td>16,400</td>
<td>16,800</td>
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<td>9,800</td>
</tr>
<tr>
<td>7/8</td>
<td>13,200</td>
<td>9,600</td>
<td>26,000</td>
<td>22,000</td>
<td>18,600</td>
<td>13,200</td>
</tr>
<tr>
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<td>17,000</td>
<td>12,600</td>
<td>34,000</td>
<td>30,000</td>
<td>24,000</td>
<td>17,000</td>
</tr>
<tr>
<td>1-1/8</td>
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<td>15,800</td>
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<td>20,000</td>
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<td>1-1/4</td>
<td>26,000</td>
<td>19,200</td>
<td>52,000</td>
<td>44,000</td>
<td>36,000</td>
<td>26,000</td>
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<td>1-3/8</td>
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<td>52,000</td>
<td>44,000</td>
<td>30,000</td>
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<td>28,000</td>
<td>74,000</td>
<td>64,000</td>
<td>52,000</td>
<td>36,000</td>
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<tr>
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<td>86,000</td>
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<td>128,000</td>
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Multiplier = 1.00 - .75

### Crosby Shackles

<table>
<thead>
<tr>
<th>Nominal Shackle size in inches</th>
<th>Inside Length inches</th>
<th>Inside Width inches</th>
<th>W.L.L. in Tons</th>
<th>Inside Length inches</th>
<th>Inside Width inches</th>
<th>W.L.L. in Tons</th>
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<td>1/2</td>
<td>1-1/8</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
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<td>3/4</td>
<td>1-7/32</td>
<td>17/32</td>
<td>3/4</td>
</tr>
<tr>
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<td>21/32</td>
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</tr>
<tr>
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<td>1-1/2</td>
<td>1-11/16</td>
<td>23/32</td>
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<td>13/16</td>
<td>2</td>
<td>1-7/8</td>
<td>13/16</td>
</tr>
<tr>
<td></td>
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<td>2-3/8</td>
<td>1-1/16</td>
<td>3-3/4</td>
<td>2-3/8</td>
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<td>1-1/4</td>
<td>4-3/4</td>
<td>2-13/16</td>
<td>1-1/4</td>
</tr>
<tr>
<td></td>
<td>7/8</td>
<td>3-5/16</td>
<td>1-7/16</td>
<td>6-1/2</td>
<td>3-5/16</td>
<td>1-7/16</td>
</tr>
<tr>
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<td>1</td>
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<td>1-11/16</td>
<td>8-1/2</td>
<td>3-3/4</td>
<td>1-11/16</td>
</tr>
</tbody>
</table>
9 SIGNATURE PAGES

9.1 DRUG AND ALCOHOL POLICY

Consequences

Under normal circumstances, employees violating this policy or federal regulations will be suspended from performing any safety-sensitive functions with a commercial motor vehicle as defined by this policy and will be subject to disciplinary action up to and including termination of employment. Under some circumstances, however, we may agree to return an employee to performing these functions following treatment and rehabilitation. Where that occurs, the employee must pay the cost of the pre-treatment evaluation and any treatment. The Company medical plan may cover a portion of the pre-treatment evaluation and treatment cost however the uncovered costs remain the employee’s responsibility. The Company will pay the cost of any follow-up controlled substances or alcohol testing required by 49 CFR Part 382.

Where, at the Company’s discretion, an employee is returned to work, the driver will be required to enter into a Last Chance Agreement and to submit to unannounced follow-up testing for controlled substances and/or alcohol as directed by the Substance Abuse Professional in order to continue to perform safety-sensitive functions and operating a commercial motor vehicle requiring a CDL.

The Company reserves the right to take disciplinary action up to and including termination for violation of the Company drug and alcohol policy where and when we deem it appropriate.

CERTIFICATE OF RECEIPT

I hereby certify that on the date shown below I received and read a copy of Axis Crane, Inc. Drug and Alcohol Policy for Use With FMCSA/DOT-Regulated Employees, consisting of fifteen (15) pages including these Certificates of Receipt, and a copy of drug and alcohol awareness training materials. I understand and agree to comply with this policy, including any required alcohol or controlled substance testing.

__________________________________________
EMPLOYEE – PRINT NAME

__________________________________________
EMPLOYEE – SIGNATURE

DATED: _________________________________

* THIS COPY MUST BE SIGNED UPON COMPLETION OF COMPANY ORIENTATION AND FILED WITH EMPLOYEE FILE*
9.2 SAFETY PROGRAM SIGNATURE PAGE

I have received a copy of the Axis Crane Safety Program and I understand it is my responsibility to read the program. I also understand, and agree with Axis Crane’s Safety Program and I will adhere to those policies.

__________________________________   ______________ ___
Signature        Date

__________________________________
Employee Name

This employee has been briefed on Axis Crane’s Safety Program and has demonstrated an understanding of its elements.

__________________________________   ______________ ___
Signature        Date

__________________________________
Management Name

THIS COPY MUST BE SIGNED UPON COMPLETION OF COMPANY ORIENTATION AND FILED WITH EMPLOYEE FILE*