



# Pannier Corporation

## Health and Safety Handbook

### Marking System Group



#### Overhead & Gantry Crane/Rigging

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#### Crane and Sling Safety Requirements

##### 1. OSHA rules help assure that cranes and slings move material safely

OSHA requires cranes and slings to be:

- Designed and maintained to meet detailed safety standards.
- Inspected thoroughly and regularly to assure that they're in top condition.
- Taken out of service if they're damaged or not working properly.
- Operated and inspected only by trained, qualified employees.

##### 2. Slings are selected carefully to match load and work conditions.

- Each sling has a listed rated capacity-the maximum load it can handle safely.
- Some sling hitches also have their own rated capacity.
- Ratings may include temperatures or conditions the sling can handle.
- Alloy steel chain is strong and can handle heat and different load shapes; but sudden shock can damage it.
- Wire rope is more flexible when it has a fiber core, but generally it is stronger and more heat-resistant with a wire rope core.
- Fiber and synthetic rope cannot be used around acids or caustics.

##### 3. Thorough Inspection and Maintenance are part of crane and sling safety.

Specific daily, monthly, and periodic OSHA inspection schedules assure proper maintenance and prevent accidents by removing damaged parts from use.

- All rigging equipment shall be inspected to ensure it is safe. Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe.
- Defective crane hooks, load attachment chains, and rope slings, or cracked, broken, bent, or excessively worn critical parts must be discarded and replaced.
- The use of hoist chains to lift loads is strictly prohibited.
- Defective equipment shall not be used and removed from service immediately. Broken, crushed, corroded, severely worn, and damaged ropes shall not be used and must be removed from service immediately, discarded and replaced.
- Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.
- Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.
- The employer shall keep and maintain certification records which include the dates of inspection and the signature of the person who performed the inspection. The same records must be kept on the inspection of all other ropes.
- Monthly inspection records shall be made and kept on critical items in use, such as, brakes, crane hooks, and ropes. Crane hooks are to be checked for deformation and cracks. The inspection records must include, the date of inspection, the signature of the person conducting the inspection and the serial number or other identification of the hook inspected.
- Written reports shall be made and maintained on rated load tests showing the test procedures and confirming the adequacy of any repairs or alterations.
- Rope inspections shall be performed once a month certifying them for use. The date of the inspection and signature of the person inspecting the ropes shall be recorded.
- All ropes that have been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed, shall be given a thorough inspection before it is used. The inspection shall be for all types of deterioration and shall be performed by an appointed or authorized person whose approval shall be required before the ropes can be used.

##### 4. Crane safety features and procedures protect operators and others.

- Rated capacity is marked on the crane's side, in the cab, and sometimes on the hoist or load block.
- Guards protect electrical equipment and moving parts.



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- Operating handles are in easy reach of the operator.
- Automatic shutoffs respond quickly to malfunctions and power failures.
- Operators must keep belongings, tools, wast, etc. out of the way.
- A CO2 or dry chemical fire extinguisher shall be kept in the crane cab or vicinity of the crane
- Electrical equipment shall be so located or enclosed that live parts will not be exposed to accidental contact under normal operating conditions.
- When a crane is shut down for maintenance or repair, Lock Out/Tag Out procedures will be in effect and signage showing that the crane is “Out of Order” will be used.

#### 5. Crane Operators prepare, load and move to avoid accidents.

Before loading, operators make sure:

- All employees shall be kept clear of loads about to be lifted and of suspended loads.
- Loads are within equipment’s rated capacity.
- Rigging equipment shall not be loaded beyond its recommended safe working load. (Identification markings, indicating rated capacity for the type(s) of hitch(es) used, the angle upon which it is based, and the number of legs if more than one, shall be permanently affixed to the rigging.)
- Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.
- Tag lines shall be used unless there use creates an unsafe condition.
- The hook moves directly over the load’s center, without swinging.
- Any sharp load edges are padded.

When loading, operator’s make sure:

- The sling sits squarely in the hook bowl and then attaches to the load.
- The chain or rope has no kinks or twists and doesn’t wrap the load.

Before lifting and moving, operators make sure:

- No person or obstruction is on or under the load or hooks, or in its path.
- All employees shall be kept clear of loads about to be lifted and or suspended loads.

While lifting and moving, they make sure:

- The load is not left suspended or raised higher than necessary.
- The loaded sling doesn’t drag on the ground.
- The sling isn’t pulled out from under the resting load.

#### 6. People working near cranes must be alert to avoid accidents.

- Move to a safe place when operators and signalpersons use hand signals to announce a crane’s movement.
- Don’t stand or walk under a load, even when it’s not moving.
- Don’t distract the operators or signal persons while they’re working.
- Don’t try to operate a crane or give signals if you’re not authorized.



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#### 7. Preventive Maintenance

- A preventative maintenance program, based upon the crane manufacturer's recommendation shall be established and adhered to.
- The maintenance department shall keep and maintain all certification records for Cranes and Rigging, which include the dates of inspection, signature of the person inspecting the equipment. The same type of certification records are to be kept for all ropes.