

ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 48: [Industrial Trucks](#)

## Quick Start Summary

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### 1 Who needs to know about these requirements

The requirements of Industrial Trucks apply to workers (as *operators*, *spotters*, and *receivers*), *custodians*, supervisors, and Fleet Services. They cover selecting, inspecting, maintaining, and using forklifts and other *industrial trucks* and associated attachments.

### 2 Why

The misuse of industrial trucks can result in property damage, severe injury, or death from equipment roll-overs or from personnel or property being caught in between the equipment and a solid object.

### 3 What do I need to know

Only workers who are physically fit and qualified may operate this equipment and handle the loads. Qualification includes thorough training, both classroom and practical, the latter emphasizing experience with specific models of industrial trucks.

Industrial trucks themselves must meet applicable standards, be maintained and stored properly, and pass an initial inspection, conducted by a *custodian*, when first brought on-site and a pre-use inspection, conducted by the *operator*, before each shift.

Special requirements apply for use of industrial trucks on roadways. A *spotter* is required when the operator's view is obstructed by the load or when operating in a congested area; a *receiver* is required when the load is to be lifted to or from a second floor or higher. If a spotter or receiver is required, the operator and spotter or receiver must conduct a pre-lift review.

### 4 When

These requirements take effect 21 November 2022.

### 5 Where do I find more information

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 48, "Industrial Trucks"](#)

Or contact the [program manager](#).



## Chapter 48

# Industrial Trucks

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## 1 Purpose

The purpose of this program is to ensure *industrial trucks* meet applicable standards, are kept in good working order, and are used safely and properly. It covers selection, inspection, maintenance, and use of industrial trucks and associated attachments. It applies to workers (as *operators*, *spotters*, and *receivers*), *custodians*, supervisors, the industrial trucks program manager, and Fleet Services.

Additional requirements may apply to a task involving industrial trucks. For example, fall protection requirements for a man lift using an industrial truck are in [Chapter 45, “Fall Protection”](#), while use of an industrial truck indoors is covered under [Chapter 13, “Traffic and Vehicular Safety”](#).

Excluded from this chapter are requirements for mobile cranes, human-powered pallet movers (jacks), extensible and/or articulating boom aerial devices, and approved rigging gear used in conjunction with forklifts (see [Chapter 41, “Hoisting and Rigging”](#), and [Chapter 47, “Mobile Elevating Work Platforms”](#)).

## 2 Roles and Responsibilities

Functional roles and general responsibilities for each under this program are listed below. More detailed responsibilities and when they apply are provided in the procedures and requirements.

The roles may be performed by one or more individuals and one individual may play more than one role, depending on the structure of the organizations involved. Responsibilities may be delegated.

### 2.1 Operator

- Has a valid California driver’s license or a California-recognized license issued by another state or by a foreign jurisdiction of which the operator is a resident if driving on-site (see [Traffic and Vehicular Safety: Traffic Safety Requirements](#))
- Completes required training and demonstrates proficiency in safe operation
- Reviews [Industrial Trucks: Operating Requirements](#) when first assigned as an operator, then annually, as prompted by the industrial trucks program manager
- Inspects industrial truck before use
- Conducts pre-lift review with spotter and receiver, if required
- Ensures the area beneath the load is secured, using such means as warning tape, cones, or barriers, when the load is to be lifted to or from a second floor or higher

- Is knowledgeable of safety requirements and operation instructions and adheres to them
- Reports operating malfunctions or problems to the custodian immediately and ensures equipment is tagged out of service

## 2.2 Spotter

- Is required during the use of industrial trucks when the operator's view is obstructed by the load or when operating in a congested area
- Participates in pre-lift review with operator
- Communicates with the operator on hazards in the path
- Ensures no unauthorized personnel encroach on the work area

## 2.3 Receiver

- Is required when the load is to be lifted to or from a second floor or higher
- Participates in pre-lift review with operator
- Communicates with the operator on hazards and directs load to destination
- Removes load safely at destination

## 2.4 Custodian

- Completes required training
- Secures industrial trucks to prevent unauthorized use
- Conducts initial inspection when industrial truck is first brought on-site and after service, maintenance, or repair
- Maintains a supply of blank inspection checklists in a weatherproof container on each industrial truck
- Maintains completed inspection checklists for 12 months
- Ensures industrial trucks that do not pass inspection are tagged out and removed from service
- Works with Fleet Services to ensure industrial trucks are properly serviced and maintained

## 2.5 Supervisor

- Assigns training and authorizes workers to operate only industrial trucks they are qualified to operate
- Revokes an operator's authorization if he or she violates safety requirements. Operators in violation of safety requirements are not to be allowed to continue the operation of industrial trucks until retrained and reauthorized.
- Designates qualified operators to provide on-the-job training
- Designates a person to act as spotter and/or receiver if required
- Designates industrial truck custodians and ensures that they maintain the necessary skills required for custodianship

- Considers using professional riggers from Facilities move any expensive, delicate, large, or otherwise difficult to lift or move load

## 2.6 Fleet Services

- Performs or arranges for all procurement, maintenance, and servicing of SLAC-owned industrial trucks
- Ensures maintenance and usage records are kept and available upon request

## 2.7 Industrial Trucks Program Manager

- Assists in the interpretation of standards in support of compliance and safety improvement efforts
- Identifies, develops, and maintains appropriate training
- Sends a reminder to all operators to review [Industrial Trucks: Operating Requirements](#) when first assigned as an operator, then annually
- Assists with the qualification and authorization of trainers
- Maintains this chapter and associated documents
- Periodically assesses program
- Ensures that subcontractors have a compliant program
- Ensure that operating rules are posted in accordance with Cal/OSHA ([8 CCR 3664](#))

# 3 Procedures, Processes, and Requirements

These documents describe the detailed requirements for this program and how to implement them:

- [Industrial Trucks: Operating Requirements](#) (SLAC-I-730-0A21S-011). Describes requirements for use of industrial trucks
- [Industrial Trucks: Equipment Requirements](#) (SLAC-I-730-0A21S-057). Describes requirements for industrial trucks
- [Industrial Trucks: Inspection Procedures](#) (SLAC-I-730-0A21C-009). Describes process for initial and pre-use inspections of industrial trucks

These are the forms and tools for this program:

- [Industrial Trucks: Inspection Checklist](#) (SLAC-I-730-0A21J-012). Checklist for guiding and documenting required inspections of industrial trucks
- [Industrial Trucks: Taylor-Dunn C-425 Electric Tow Tractor Inspection Checklist](#) (SLAC-I-730-0A21J-049). Checklist for guiding and documenting required inspections for subject industrial trucks
- [Industrial Trucks: EnerSys Enforcer Battery Charging Trailer Inspection Checklist](#) (SLAC-I-730-0A21J-050). Checklist for guiding and documenting required inspections for subject industrial trucks
- [Industrial Trucks: Powered Pallet Jack Inspection Checklist](#) (SLAC-I-730-0A21J-051). Checklist for guiding and documenting required inspections for subject industrial trucks

## 4 Training

### 4.1 Operator

An operator must be authorized by his or her supervisor and complete all required classroom, on-the-job and practical training before using a industrial truck. Classroom training and hands-on, equipment-specific operational proficiency testing must be completed a minimum of once every three years to maintain qualification.

#### 4.1.1 Classroom and Web-based

The classroom portion is required initially for all forklift operators and can either be taken via classroom or web-based thereafter.

- ESH Course 283, Forklift Operator Training ([ESH Course 283](#)) (every 36 months)
- ESH Course 168, Powered Pallet Jack Operator Training ([ESH Course 168](#)) (every 36 months)

#### 4.1.2 On-the-Job

Newly assigned operators will receive on-the-job training (OJT) as directed by their supervisor and will be instructed by a qualified industrial truck operator who has been specifically designated by line management. This training should only occur after the operator has completed a classroom session of Forklift Operator Training ([ESH Course 283](#)). When the operator and the OJT instructor agree that the new operator is ready, the performance evaluation ([ESH Course 283PRA](#)) may be scheduled.

#### 4.1.3 Practical

The hands-on performance evaluation is performed by a trainer qualified on the type of forklift the operator will use. The practical session should only occur after the operator has completed Forklift Operator Training ([ESH Course 283](#)). The following courses are available:

- ESH Course 283PRA, Forklift Operator Practical ([ESH Course 283PRA](#)) (every 36 months)
- ESH Course 168PRA, Powered Pallet Jack Operator Practical ([ESH Course 168PRA](#)) (every 36 months)

To arrange practical training contact the industrial truck program manager or one of the other trainers listed under [ESH Course 283PRA](#).

#### 4.1.4 Refresher

Refresher training outside the usual schedule for [ESH Course 283](#) and [ESH Course 283PRA](#) is required when an operator is observed operating in an unsafe manner, involved in a near miss or accident, or an evaluation that notes unsafe operating practices, or when there is change in workplace safety condition and/or a new assignment.

## 4.1.5 Review of Operating Requirements

Operators must review the [Industrial Trucks: Operating Requirements](#) when first assigned as an operator, then annually, as prompted by the industrial trucks program manager.

## 4.2 Custodian

Custodians must complete the classroom or web-based training above for the device in question but are not required to pass a performance evaluation.

## 5 Definitions

*custodian.* A person who is responsible for a industrial truck (whether SLAC-owned, rented, or leased)

*industrial forklift truck.* A high-lift truck with load carriage and forks for transporting and stacking loads. Industrial forklift trucks may be powered by gasoline, diesel fuel, batteries, or propane (LP gas)

*industrial truck.* A mobile power-driven truck used for hauling, pushing, lifting, or tiering materials where normal work is normally confined within the boundaries of a place of employment ([8 CCR 3649](#))

*pre-use inspection.* A thorough inspection of equipment and area conducted before each shift, before using equipment

*receiver.* Designated person assisting a vehicle operator / driver when the load is to be lifted to or from a second floor or higher

*removable attachment.* An attachment that can be mounted on the forks or on the carriage in place of the forks by means of such conventional fasteners as bolts and pins and that does not require disassembling any other portion of the lifting system for installation or removal

*spotter.* Designated person assisting a vehicle operator / driver reverse his or her vehicle safely

*stability.* A condition of a load in which the sum of the moments, which tends to overturn the unit is less than the sum of the moments tending to resist overturning

## 6 References

### 6.1 External Requirements

The following are the external requirements that apply to this program:

- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 4, “General Mobile Equipment and Auxiliaries”, Article 25, “Industrial Trucks, Tractors, Haulage Vehicles, and Earthmoving Equipment” ([8 CCR 3649–3669](#))

- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 16, “Control of Hazardous Substances”
  - Article 109, “Hazardous Substances and Processes”, Section 5185, “Changing and Charging Storage Batteries” ([8 CCR 5185](#))
- Department of Energy Standard 1090, “Hoisting and Rigging” ([DOE-STD-1090](#))

## 6.2 Related Documents

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 13, “Traffic and Vehicular Safety”](#)
- [Chapter 41, “Hoisting and Rigging”](#)
- [Chapter 30, “Air Quality”](#)
- [Chapter 45, “Fall Protection”](#)
- [Chapter 47, “Mobile Elevating Work Platforms”](#)

Other

- [California Department of Industrial Relations. Operating Rules for Industrial Trucks \(S-503\)](#)

Chapter 48: [Industrial Trucks](#)

## Operating Requirements

Product ID: [290](#) | Revision ID: 2526 | Date published: 21 November 2022 | Date effective: 21 November 2022

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### 1 Purpose

The purpose of these requirements is to ensure *industrial trucks* are operated safely. They cover the use of industrial trucks. They apply to workers (as *operators*, *spotters*, and *receivers*), and supervisors.

### 2 Requirements

Industrial trucks must be operated in accordance with [8 CCR 3649–3669](#) and the requirements below.

#### 2.1 Personnel

Only qualified and authorized workers may operate an industrial truck. A *spotter* is required when the operator's view is obstructed by the load or when operating in a congested area. A *receiver* is required when the load is to be lifted to or from a second floor or higher. Operators must review these requirements when first assigned as an operator, then annually as prompted by the industrial trucks program manager.

#### 2.2 Pre-use Inspection

- Before each shift conduct a pre-use *inspection* (see [Industrial Trucks: Inspection Procedures](#)).

#### 2.3 Pre-lift Review

- Review the lift with spotter and receiver (if required), evaluate and resolve any concerns, and establish a means of communication to be used during the lift

#### 2.4 Loading

- Stay within the rated capacity
- Keep the heavy end of load toward the backrest
- Tip the load back slightly and check load stability before travel
- Do not exceed two layers of a loose load
- Know what's behind the load
- Keep forks as wide as possible under a load

- Assess the lift to be performed and determine if the load needs to be secured
- Secure load to pallet rest or backrest if traveling on SLAC roadways or if needed to move load safely
- Secure the area beneath the load, using such means as warning tape, cones, or barriers, when the load is to be lifted to or from a second floor or higher

## 2.5 Using Lifting Fixtures and Extensions

- Use lifting fixtures according to manufacturer's instructions
- Include fixture (except fork extensions) when calculating total mass of load
- When a lift truck is used to elevate personnel, comply with [8 CCR 3657](#)

## 2.6 Using Pallet Movers (Jacks)

- Push (rather than pull) loads
- Avoid pinching yourself or others between load and wall
- Enter tight spaces load first

## 2.7 Using

### 2.7.1 With or without a Load

- Wear seatbelt
- Travel with forks just high enough to clear obstructions
- Make sure hands are clean and dry
- Stay three truck lengths behind other vehicles
- Avoid and warn pedestrians
- Avoid approaching folks near fixed objects
- Keep hands and feet inside the forklift
- Do not exceed the authorized or safe speed and always maintain a safe distance from other vehicles. A safe distance may be considered to be approximately 3 truck lengths or preferably a time lapse of 3 seconds passing the same point.
- Do not exceed 2.5 miles per hour horizontal speed when the operator's platform exceeds 36 inches
- Do not operate a truck when the operator's platform is elevated more than 152 inches
- Only use steering knobs if the truck is equipped with power steering

### 2.7.2 Without a Load

- Going uphill or downhill, travel with forks pointed in direction of travel
- Carry no passengers
- Limit speed to about five miles per hour in buildings; 15 on roadways

### 2.7.3 With a Load

- Going downhill, travel in reverse, with forks pointed uphill and load tilted back
- Limit speed to about five miles per hour
- With a vision-blocking load, drive in reverse or use a spotter (see Section 2.7.4)
- Be careful to keep load below overhead obstacles like doorways, roll-up doors, and sprinklers
- Do not raise or lower load while traveling
- Allow plenty of room to maneuver and brake
- When on traveling SLAC roadways, secure load to the truck
- When the load is to be lifted to or from a second floor or higher, make sure receiver has removed load before moving the truck

### 2.7.4 To Open Doors

When using an industrial truck to open and close doors, the following must be in place:

- A device specifically designed for opening and closing doors must be attached to the truck. The force applied by the device to the door should be applied parallel to the direction of travel of the door.
- The entire door opening operation must be in full view of the operator.
- The truck operator and other personnel must be clear of the area where the door might fall while being opened.
- If loads are lifted by two or more trucks working in unison, the total weight of the load must not exceed the combined rated lifting capacity of all trucks.

### 2.7.5 On Roadways

- Consider having the load transported by Facilities, if it is expensive, delicate, large, or otherwise difficult to lift or move
- Evaluate the travel path and ensure roadway conditions and other factors that may cause problems are assessed. The roads and pathways at SLAC are variable, and may be steep, uneven, potholed, or paved with asphalt. Consider current road closure status, the location of blind spots, narrow roads/pathways, and construction projects that may cause damage or restrict movement.
- Transport the load on a flatbed or other vehicle instead of transporting it by forklift, if possible and appropriate (contact Fleet Services). Use of a truck over a forklift may be a better option when the load
  - Would affect the drivability of the forklift
  - Is not easily secured to the forklift
  - Could possibly be damaged due to road conditions or travel path
- Consider moving the materials/equipment during off hours to avoid interactions with vehicles or pedestrians and bicyclists
- Use an escort/pilot vehicle when the load
  - Obscures the operator's vision

- Can endanger pedestrians and/or bicyclists or vehicles because of its size (for example, extends the width of a lane)
- Requires the forklift to travel very slowly to transport the item safely
- Consider using an escort/pilot vehicle when the forklift needs to be driven backwards either because the operator's vision is obstructed or the grade requires it

*Note* An escort/pilot vehicle in both the front and back is desirable. If only one is available, position it in front. The travel path must be clearly understood by both drivers, a method of communication agreed to before moving the load, and the escort/pilot vehicle should have flashing lights. SLAC Site Security can provide this service.

- Select a forklift appropriate for the task. Forklifts operated on shared roadways must have appropriate tires (not designed for warehouse use only and with treads); brake lights; turn signals; and if operating at dusk or night front and rear headlights
- Forklift operators driving on roadways must not wave vehicles by. If determined appropriate, they should pull over and stop so vehicles can safely pass.
- A spotter is required when
  - The operator's view is obstructed by the load or
  - Operating in a congested area

*Note* The spotter does not need to be an additional person with the sole purpose of spotting. Spotters should wear high visibility safety clothing, for example, a safety yellow or orange vest or jacket. A handheld stop/yield sign can help the spotter communicate with pedestrians, bicyclists, and other vehicles.

## 2.7.6 Indoors

There are restrictions on what types of industrial trucks may be used indoors. (See [Traffic and Vehicular Safety: Indoor Vehicle Use Requirements](#).)

## 2.7.7 In Hazardous Areas

### 2.7.7.1 Hazardous Atmospheres

When operating an industrial truck in a hazardous atmosphere, the requirements of [NFPA 505](#) will be met, including keeping the source of the hazard below 20 percent of its *lower explosive limit (LEL)*.

### 2.7.7.2 Low Light

When industrial trucks operate in areas where general lighting is less than 2 foot candles per square foot, directional lighting will be provided on the truck.

### 2.7.7.3 Elevators and Confined Areas

Industrial trucks may not be run onto any elevator unless the driver is specifically authorized to do so. Before entering the elevator, the driver must determine that the capacity of the elevator will not be

exceeded. Once on an elevator, the industrial truck's power must be shut off and the brakes set. Motorized hand trucks must enter elevators or other confined areas with the load end forward.

#### 2.7.7.4 At Heights

Where a clearance restriction or the nature of the work prohibits the use of standard guardrails, and the operator is exposed to a fall of 4 feet or more, a personal fall arrest, a personal fall restraint, or positioning device system as defined in [8 CCR 3207](#) must be used. The lanyard length for a personal fall arrest system must be such that the operator has freedom of movement in the working area but must be rigged such that the operator can neither free fall more than 4 feet nor contact any lower level. Lanyards must be arranged as to not cause a condition where the operator could trip on the lanyard. (See [Chapter 45, "Fall Protection"](#).)

## 2.8 If the Truck Starts to Tip

- DO NOT JUMP from an industrial truck during a tip-over
- Press the wheel hard to press yourself in your seat
- Brace yourself with your feet
- Go with the tip

## 2.9 Parking

- Park forklifts
  - Without a load
  - Out of traffic
  - With the tips of the tines directly on the ground
- After parking an industrial truck
  - Neutralize the controls
  - Apply parking break
  - Chock wheels (when on incline)
  - Remove and secure keys

## 2.10 No Idling

Diesel-fueled off-road vehicles and equipment, including industrial trucks, may not idle for more than five consecutive minutes. The idling limit does not apply to idling

- When queuing
- To verify the vehicle is in safe operating condition, to ensure safe operation of the vehicle, or to bring the machine system to operating temperature;
- For testing, servicing, repairing or diagnostic purposes;
- Necessary to accomplish work for which the vehicle was designed (such as operating a crane).

(See [Chapter 30, “Air Quality”](#).)

## 3 Forms

The following forms and systems are required by these requirements:

- None

## 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 48, “Industrial Trucks”](#)
  - [Industrial Trucks: Inspection Procedures](#) (SLAC-I-730-0A21C-009)
- [Chapter 13, “Traffic and Vehicle Safety”](#)
  - [Traffic and Vehicular Safety: Indoor Vehicle Use Requirements](#) (SLAC-I-720-0A21S-001).
- [Chapter 30, “Air Quality”](#)
- [Chapter 45, “Fall Protection”](#)

### Other Documents

- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 4, “General Mobile Equipment and Auxiliaries”, Article 25, “Industrial Trucks, Tractors, Haulage Vehicles, and Earthmoving Equipment” ([8 CCR 3649–3669](#))
- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 1, “General Physical Conditions and Structures”, Article 2, “Standard Specifications”, Section 3207, “Definitions” ([8 CCR 3207](#))
- National Fire Protection Association (NFPA) 505, “Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations” ([NFPA 505](#))

Chapter 48: [Industrial Trucks](#)

## Equipment Requirements

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### 1 Purpose

The purpose of these requirements is to ensure that *industrial trucks* meet applicable standards and are maintained in good working order. They cover inspection, storage, maintenance, marking, and modification of industrial trucks and associated attachments. They apply to workers (as *operators*), *custodians*, and Fleet Services.

### 2 Requirements

Industrial trucks must be designed and manufactured in accordance with applicable standards (such as [ASME B56.1](#)) and marked, stored, and maintained following [8 CCR 3649–3669](#) and the requirements below.

#### 2.1 Inspection

Industrial trucks must pass an initial inspection, conducted by a *custodian*, when first brought on-site and a pre-use inspection, conducted by the operator, before each shift (see [Industrial Trucks: Inspection Procedures](#)).

#### 2.2 Storage

Unattended industrial trucks must be parked away from high traffic areas and effectively barricaded where necessary. The fork tines will be lowered with tips on the floor or ground. The keys must not be left in parked trucks.

#### 2.3 Maintenance

Custodians in coordination with Fleet Services will establish and follow a program of regular maintenance to ensure that industrial trucks remain in a safe operating condition.

Only employees of Fleet Services or a third-party approved by it are permitted to maintain or repair industrial trucks.

Repair operations involving open flames or that may produce sparks or other sources of ignition may not be performed in Class I (flammable and combustible gases and vapors), II (combustible dust), and III

(ignitable fibers and combustible flyings) locations per NFPA 70 unless and until tests show that atmospheric concentrations of flammable or combustible vapors do not exceed 20 percent of the *lower explosive limit (LEL)* of such flammable or combustible materials and until precautions, such as removal of flammable material and provisions for adequate ventilation, are taken to maintain the atmosphere at or below 20 percent LEL.(See [NFPA 505](#).)

Batteries on all powered trucks must be disconnected during repairs to the primary electrical system unless power is necessary for the testing and repair. On trucks equipped with systems capable of storing residual energy, that energy must be safely discharged before work on the primary electrical system begins. (See [Chapter 51, “Control of Hazardous Energy”](#).)

### 2.3.1 Battery-charging Stations

Battery-charging stations for use with industrial trucks must meet the requirements of Cal/OSHA ([8 CCR 5185](#)) except that no eye wash or emergency shower is required since no battery maintenance is conducted in these areas.

## 2.4 Marking

Each industrial truck will have a conspicuously displayed, legible plate or other legible marking verifying that it is designed and manufactured in accordance with applicable standards. At a minimum, the marking must contain the following data:

1. Make, model, and manufacturer’s serial number
2. Rated capacity
3. Caution and/or restriction of operation

### 2.4.1 Seat Belts

Per [8 CCR 3653](#), seat belts installed after June 26, 1998, must be labeled as meeting the design requirements of [SAE J386-1993](#). Seat belt assemblies installed on or before June 26, 1998, must be labeled as meeting either the design requirements of the SAE standard indicated or above the [SAE J386-1985](#) standard.

## 2.5 Modification

No modifications or additions to industrial trucks will be performed without written authorization from the manufacturer.

## 2.6 Attachments

Some attachments mount on the forks and others mount directly on the back rest. Modifications and additions including attachments that affect capacity and safe operation may not be performed without the manufacturer’s prior written approval. In the event the forklift manufacturer responds in the negative or does not respond, a qualified engineer can evaluate the attachment and determine if it can be used (see [8 CCR 3650](#)). Capacity, operation, and maintenance instruction plates, tags, or decals must be changed to

reflect the change in truck weight, capacity, and center of gravity. The markings will show the approximate weight of the truck and attachment combination at maximum elevation with load laterally centered.

## 2.6.1 Fork Extensions

Manufacturer-approved fork extensions are only appropriate for specific tasks. The use of non-factory installed extensions requires the approval of the manufacturer or, as stated above, a qualified engineer. A rated load test will be documented and conducted every two years, and will be marked with the date of the last inspection. (See [Chapter 41, “Hoisting and Rigging”](#), for lifting devices and inspection criteria.)

Extensions must be inspected before use for

- Bending
- Overloading
- Excess corrosion
- Cracking
- Other deterioration

## 2.7 Non-SLAC Equipment

Before bringing a leased or rented industrial truck onto SLAC property, the custodian will verify that the vehicle meets the minimum requirements of this program.

## 3 Forms

The following forms and systems are required by these requirements:

- None

## 4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- The custodian will ensure maintenance records are kept and made available for inspection upon request.

## 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 48, “Industrial Trucks”](#)
  - [Industrial Trucks: Inspection Procedures](#) (SLAC-I-730-0A21C-009)
  - [Industrial Trucks: Operating Requirements](#) (SLAC-I-730-0A21S-011)

- [Chapter 41, “Hoisting and Rigging”](#)
- [Chapter 51, “Control of Hazardous Energy”](#)

#### Other Documents

- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 4, “General Mobile Equipment and Auxiliaries”, Article 25, “Industrial Trucks, Tractors, Haulage Vehicles, and Earthmoving Equipment” ([8 CCR 3649–3669](#))
  - Section 3650, “Industrial Trucks – General” ([8 CCR 3650](#))
  - Section 3650, “Seat Belts” ([8 CCR 3653](#))
- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 16, “Control of Hazardous Substances”, Article 109, “Hazardous Substances and Processes”, Section 5185, “Changing and Charging Storage Batteries” ([8 CCR 5185](#))
- American Society of Mechanical Engineers (ASME) B56.1, “Safety Standard for Low Lift and High Lift Trucks” ([ASME B56.1](#))
- National Fire Protection Association (NFPA) 505, “Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations” ([NFPA 505](#))
- SAE International (SAE) J386-1993, “Operator Restraint System for Off-Road Work Machines” ([SAE J386-1993](#))
- SAE International (SAE) J386-1985, “Operator Restraint System for Off-Road Work Machines” ([SAE J386-1985](#))

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# Inspection Procedures

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URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/indtruckProcedInspect.pdf>

## 1 Purpose

The purpose of these procedures is to ensure that an *industrial truck* is safe to operate before it is used. They cover initial inspections, when the truck is first brought on-site and immediately after service, maintenance, or repair, and pre-use inspections before each shift. They apply to workers (as *operators*) and *custodians*.

## 2 Procedures

### 2.1 Initial

Step	Person	Action
1.	Custodian	Conducts initial inspection when truck is first brought on-site and after service, maintenance, or repair, using the <a href="#">Industrial Trucks: Inspection Checklist</a> or a device-specific checklist
2.	Custodian	If the PIV does not pass inspection <ul style="list-style-type: none"> <li>▪ Tags it DANGER – DO NOT OPERATE</li> <li>▪ Removes it immediately from service</li> <li>▪ Contacts Fleet Services for repair</li> </ul>
3.	Custodian	Keeps checklist for a minimum of one year and makes available upon request

### 2.2 Pre-use

Step	Person	Action
1.	Operator	Before using checks if truck has been inspected this shift, and if no inspection has been done, conducts one using the <a href="#">Industrial Trucks: Inspection Checklist</a> or a device-specific checklist <ul style="list-style-type: none"> <li>▪ If truck passes inspection, places completed checklist in a weatherproof enclosure on the truck, where it must remain throughout the shift, and skips to step 4.</li> <li>▪ If the truck does not pass inspection, tags it DANGER – DO NOT OPERATE, removes it immediately from service, and contacts the custodian</li> </ul>

Step	Person	Action
2.	Custodian	Checks that truck has been properly tagged out and contacts Fleet Services for repair
3.	Custodian	Conducts initial inspection after repair
4.	Operator	Performs work and returns completed checklist to custodian once work or shift is completed
5.	Custodian	Keeps checklist for a minimum of one year and makes available upon request

### 3 Forms

The following forms and systems are required by these procedures:

- [Industrial Trucks: Inspection Checklist](#) (SLAC-I-730-0A21J-012). Checklist for guiding and documenting required inspections of industrial trucks
- [Industrial Trucks: Taylor-Dunn C-425 Electric Tow Tractor Inspection Checklist](#) (SLAC-I-730-0A21J-049). Checklist for guiding and documenting required inspections for subject industrial truck
- [Industrial Trucks: EnerSys Enforcer Battery Charging Trailer Inspection Checklist](#) (SLAC-I-730-0A21J-050). Checklist for guiding and documenting required inspections for subject industrial truck
- [Industrial Trucks: Powered Pallet Jack Inspection Checklist](#) (SLAC-I-730-0A21J-051). Checklist for guiding and documenting required inspections for subject industrial truck

### 4 Recordkeeping

The following recordkeeping requirements apply for these procedures:

- The custodian keeps inspection checklists for a minimum of one year and makes them available upon request.

### 5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 48, “Industrial Trucks”](#)



# Chapter 48: [Industrial Trucks](#) Inspection Checklist

Product ID: [291](#) | Revision ID: 2293 | Date Published: 26 July 2021 | Date Effective: 26 July 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/indtruckChecklistInspect.pdf>

**ENVIRONMENT, SAFETY & HEALTH DIVISION**

Industrial trucks must be inspected by either the custodian or operator before each shift and by the custodian when the truck is first brought on-site and immediately after service, maintenance, or repair (see [Industrial Trucks: Inspection Procedures](#) [SLAC-I-730-0A21C-009]). This checklist is to be completed to document the inspection. The completed checklist is to be kept in a weatherproof enclosure on the truck, where it must remain throughout the shift, and delivered to the custodian at the end of the shift. The custodian keeps it for one year from date of inspection.

Custodian name: _____	Truck type: _____	Date/time: _____
Custodian number: _____	Model #: _____	Shift: _____
Inspected by: _____	Vehicle #: _____	Hours metered: _____

Inspection Item	Result	Comment	Reported to (name)
Fluid levels: oil, radiator, fuel	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Tires: condition and pressure	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Forks, top clip retaining pin and heel: condition	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Load backrest extension: solid attachment	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Finger guards: attached	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Safety warnings: attached and legible	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Operator's manual: located on vehicle and legible	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Sample form, see URL at top of page	
Capacity plate: attached, information matches model and serial numbers and attachments	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Seat belt: buckle and retractor working smoothly	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Operational inspection: report all unusual noises	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Accelerator linkage	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Parking brake: forward and reverse	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Tilt control: forward and back –interlocks and safety devices are in place for lifts capable of tilting forward for transportation purposes	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Hoist and lowering control	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Attachment control	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Horn	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Lights	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Back-up alarm	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Fuel/battery charge sufficient?	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Steering work?	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Hour meter	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		





Chapter 48: [Industrial Trucks](#)

# Taylor-Dunn C-425 Electric Tow Tractor Inspection Checklist

**ENVIRONMENT, SAFETY & HEALTH DIVISION**

Product ID: [650](#) | Revision ID: 2294 | Date Published: 26 July 2021 | Date Effective: 26 July 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/pivChecklistInspectTDC425.pdf>

Industrial trucks must be inspected by either the custodian or operator before each shift and by the custodian when the truck is first brought on-site and immediately after service, maintenance, or repair (see [Industrial Trucks: Inspection Procedures](#) [SLAC-I-730-0A21C-009]). This checklist is to be completed to document the inspection. The completed checklist is to be kept in a weatherproof enclosure on the truck, where it must remain throughout the shift, and delivered to the custodian at the end of the shift. The custodian keeps it for one year from date of inspection.

Custodian name: _____	Truck type: <u>Electric Tow Tractor</u>	Date/time: _____
Custodian number: _____	Model #: <u>Taylor-Dunn C-425</u>	Shift: _____
Inspected by: _____	Vehicle #: _____	Hours metered: _____

Inspection Item	Result	Comment	Reported to (name)
Visual walk-around: dents, scratches, damage	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Rear wheels: chocked	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Tires: condition and pressure	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Operator's manual: located on vehicle and legible	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Capacity plate: attached, information matches model and serial numbers and attachments	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Driver's seat: adjusted properly	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Seat belt: buckle and retractor working smoothly	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Parking brake: forward and reverse	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Interlock key and seat switches: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Instrument gauges: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Battery charge: sufficient (minimum for limited use, 15-30 minutes' drive time, is 25% or 3 bars)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Lights/turn signals	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Hazard lights	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Horn	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Pedal operation: brake and accelerator	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Back-up alarm	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Steering: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Fluids or grease: leaking	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Tow hitch/coupler and hitch safety pin and lock	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		

Sample form, see URL at top of page





Chapter 48: [Industrial Trucks](#)

# EnerSys Enforcer Battery Charging Trailer Inspection Checklist

**ENVIRONMENT, SAFETY & HEALTH DIVISION**

Product ID: [653](#) | Revision ID: 2295 | Date Published: 26 July 2021 | Date Effective: 26 July 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/indtruckChecklistInspectBatteryCharger.pdf>

Industrial trucks, including battery charging trailers, must be inspected by either the custodian or operator before each shift and by the custodian when the truck is first brought on-site and immediately after service, maintenance, or repair (see [Industrial Trucks: Inspection Procedures](#) [SLAC-I-730-0A21C-009]). This checklist is to be completed to document the inspection. The completed checklist is to be kept in a weatherproof enclosure on the truck, where it must remain throughout the shift, and delivered to the custodian at the end of the shift. The custodian keeps it for one year from date of inspection.

Custodian name: _____	Truck type: <u>Battery Charging Trailer</u>	Date/time: _____
Custodian number: _____	Model #: <u>EnerSys Enforcer</u>	Shift: _____
Inspected by: _____	Vehicle #: <u>(circle one) PC23625 or PC23626</u>	

Inspection Item	Result	Comment	Reported to (name)
Visual walkaround of charger for dents, scratches, damage	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Wheels chocked	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Tires: condition/pressure	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Operator's manual: located on vehicle and legible	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Manufacturer nameplate and safety labels: attached and legible	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Area temperature and relative humidity: starting temp <90 °F and RH <70%	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	Temp ___°F and RH ___%	
Charging location: away from flammable materials (25 feet)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Charging location: away from liquid drips or running water	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Charging location: adequately ventilated (for hydrogen production during late-stage battery charging)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Electrical plug connector: housing intact (no chips or cracks in plastic parts)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Electrical plug connector: pins/sockets in serviceable condition (all pins/sockets present with no burn markings, discoloration or damage)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Trailer flashing light: operates when input power connected	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Trailer audible alarm: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Instrument gauges/indicator lights: working properly	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		



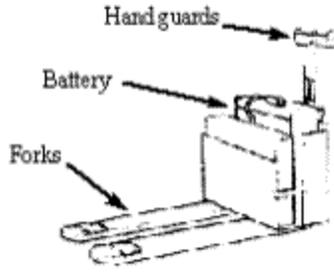
# Powered Pallet Jack Inspection Checklist

Product ID: [654](#) | Revision ID: 2292 | Date Published: 26 July 2021 | Date Effective: 26 July 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/indruckChecklistInspectPalletJack.pdf>

**ENVIRONMENT, SAFETY & HEALTH DIVISION**

Industrial trucks must be inspected by either the custodian or operator before each shift and by the custodian when the truck is first brought on-site and immediately after service, maintenance, or repair (see [Industrial Trucks: Inspection Procedures](#) [SLAC-I-730-0A21C-009]). This checklist is to be completed to document the inspection. The completed checklist is to be kept in a weatherproof enclosure on the truck, where it must remain throughout the shift, and delivered to the custodian at the end of the shift. The custodian keeps it for one year from date of inspection.



Custodian name: _____	Truck type: <u>Powered Pallet Jack</u>	Date/time: _____
Custodian number: _____	Model #: _____	Shift: _____
Inspected by: _____	Vehicle #: _____	Hours metered: _____

Inspection Item	Result	Comment	Reported to (name)
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**Motor Off Checks**

Sample form, see URL at top of page

Fluid leaks on floor below vehicle	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Forks: condition	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Tires/wheels: condition/pressure			
Hand guards: attached	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Safety warnings: attached	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Operator's manual: located on vehicle and legible	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Capacity plate: attached	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		

**Motor On Checks**

Unusual noises	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Brakes: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Drive operations: forward and reverse	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Horn: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Hour meter: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Hoist and lowering control: functional, smooth	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Battery discharge indicator: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		
Lights and alarms: functional	<input type="checkbox"/> Pass <input type="checkbox"/> Fail		

