

BEST MANAGEMENT PRACTICE FOR THE MANAGEMENT OF POWERED INDUSTRIAL TRUCKS



PREPARED BY THE BREWERS ASSOCIATION SAFETY SUBCOMMITTEE



TABLE OF CONTENTS

Purpose3

Summary3

Frequently Asked Questions4

PIT Training Program Requirements6

 PIT Inspection8

 Safe Operating Practices.....8

 PIT Operations Hazard Assessment 13

Appendix A - Example PIT Operator’s Test 16

Appendix B - Example PIT Operator Evaluation Form..... 19

Appendix C - Example Forklift Operator Permit 22

Appendix D - Example PIT Pre-Use Checklist 23



PURPOSE

The purpose of this document is to provide a helpful, consistent guideline for Brewers Association (BA) members to use when developing their safety programs and policies to comply with OSHA standards. This BMP is based on Federal OSHA requirements. If your state has an OSHA-approved state plan, you should review any state-specific requirements that may differ.

Employers and employees have to work together to ensure a safe workplace. Employers have a duty to perform workplace hazard assessments, develop engineering controls and safe work practices, and provide training and equipment to manage these hazards.

Employees have the responsibility to conduct themselves in a safe manner according to the equipment and training they have received. This best practice document is not intended to be an instructional guide on how to operate a powered industrial truck (PIT).

SUMMARY

The recommendations herein are based on the experiences and expertise of BA Safety Subcommittee members, contributing BA members, best practices utilized in environments with hazards similar to those found in breweries, and other resources including the Occupational Safety and Health Administration (OSHA), trade journals, and safety professionals. This BMP is not itself a regulation, but is designed to lead breweries towards the development of their own standard operating procedures (SOPs) in order to comply with OSHA standards.

The Safety Subcommittee and the BA believe the recommendations in this BMP are appropriate and essential for protecting the health and safety of the craft beer industry's hardworking, dedicated employees. Working in a brewery presents many inherent dangers and should not be taken lightly. Proper management of hazards in the brewery can prevent serious injury and death.



FREQUENTLY ASKED QUESTIONS

1. What is a powered industrial truck?

Powered Industrial Truck (PIT) is the terminology used by OSHA to encompass mobile equipment covered under the 29CFR1910.178 OSHA standard. OSHA defines a PIT as any mobile power-propelled truck used to carry, push, pull, lift, stack or tier materials. PITs can be ridden or controlled by a walking operator. PITs are commonly referred to as forklifts.

OSHA categorizes PITs into seven classes:

- Class I: Electric Motor Rider Trucks
- Class II: Electric Motor Narrow Aisle Trucks
- Class III: Electric Motor Hand Trucks or Hand/Rider Trucks
- Class IV: Internal Combustion Engine Trucks (Solid/Cushion Tires)
- Class V: Internal Combustion Engine (Pneumatic Tires)
- Class VI: Electric and Internal Combustion Engine Tractors
- Class VII: Rough Terrain Forklift Trucks.



(Class III)



(Class I)

2. What training is required when an operator will operate different types of PITs?

The OSHA PIT standard requires operators to be trained and evaluated in the safe operation of each type of PIT the operator will be assigned to operate in the workplace. For example, if an operator is assigned to operate a sit-down, counterbalanced rider truck then the operator must be trained and evaluated in the safe operation for that type of truck. If an operator is also assigned to operate a motorized pallet jack, the operator must be trained and evaluated in the safe operation for that type of truck as well.

Drivers must be trained and evaluated in each area in which they will be working and have to demonstrate proficiency in tasks representative of what they are required to do as part of their job. Additionally, each driver must be trained and evaluated with any rented PIT, and all accessories, such as extended forks, manufacturer approved working platforms, chains/rigging, etc.

Classroom training needs to be combined with hands-on skill practice and evaluation of the operator's competence in operating the PIT.

Initial hands-on training and skill practice must be supervised by a person authorized by the employer. Training must take place in a manner that eliminates the possibility of operator, trainer or bystander injury. The possibility of PIT damage should also be prevented.

3. How often must operators be trained?

Operators must be trained before they are assigned to operate each type of PIT in a given area. This is referred to as Initial Operator Training (see Section 1 of PIT Program Requirements below). In addition, refresher training is required:

- when unsafe operation is observed; for example: speeding, damage to product or equipment, etc.
- when a near miss or accident occurs
- when operator evaluation reveals unsafe operation
- when assigned to a new type of PIT
- when area or site conditions affecting PIT operations change.

The employer is required to evaluate the performance of each PIT operator at least once every 3 years, and the evaluation must be documented. If an operator has previously received training appropriate to the specific model truck and the environment where it will be operated, additional training is not required as long as the operator is evaluated and found competent to operate the PIT safely. As best practice, many breweries provide refresher training on an annual basis. It is important to cover the specific hazards and operating conditions that occur in the work areas in your facility.

4. Can PIT operator training be performed in-house or is a certified trainer required?

Training can be performed in-house as long as the trainer has knowledge of the subject matter, training on the subject matter, experience operating PITs and the ability to evaluate the competence of the operators being trained. Many companies have an employee who has been through train-the-trainer courses to provide training in-house. The National Safety Council offers an instructor development course for PITs and your local chapter may be a good source for this training. Your PIT supplier may also be able to provide the training. Third party trainers may be utilized to provide PIT operator training and provide subject matter expertise to employers, including evaluations; however, the employer is required to be involved in the evaluation and certify their operators.

5. Is classroom training sufficient for PIT operators?

No. PIT operator training has to include both a classroom session and a hands-on driving test. The operator's knowledge of the material must be assessed through successful completion of a written test. Then, the PIT operator is required to demonstrate proficiency in operating the PIT. First, the employee should successfully demonstrate competence while operating the PIT, typically through an obstacle course that requires actions such as driving, lifting and placing a load. The second step involves observing the PIT operator while performing assigned duties to ensure they demonstrate competence operating the PIT while on the job.

6. Are PIT operators required to wear seat belts?

Yes. When a PIT tips, the operator will often try to jump off if not wearing a seatbelt. This can lead to serious injury or death if they are crushed by the PIT or the overhead cage. For this reason, OSHA will cite employers for not requiring operators to wear seatbelts under the OSHA 5(a)(1) general duty clause. The general duty clause requires employers to provide a workplace free of recognized hazards.

The safest place to be when operating a PIT is in the seat and properly secured by a seatbelt so that the overhead protective structure can properly protect the operator, regardless of whether the PIT is being operated on flat surfaces or on elevated loading docks or ramps. If a seat belt is provided by the equipment manufacturer it must be used during PIT operation.

7. Can we use a work platform with our PIT to lift employees for elevated work?

The OSHA PIT standard does allow for these types of cages; however, they may not be used unless the PIT manufacturer provides written approval of the specific equipment with their lift. The OSHA standard states: "Modifications and additions which affect capacity and safe operation must not be performed by the customer or user without manufacturer's prior written approval.

Capacity, operation, and maintenance instruction plates, tags, or decals must be changed accordingly." The employer must obtain new load rating tags and labels from the PIT manufacturer. The cage must also have railings, protect employees from contact with the PIT mast and be secured to the PIT. If a cage is used, the PIT may not be moved while the cage is elevated and the operator needs to remain at the controls of the PIT. From a practical standpoint, it is much safer to utilize a scissor lift or boom lift when lifting employees for elevated work.

Workers should never be elevated by a PIT while standing on a pallet. This practice is extremely unsafe!

8. Are visitors allowed to operate our PITs? Are we allowed to lend out our PITs for others to use?

Letting personnel who are not employees of the brewery operate PITs is not recommended. If there is some valid business need for this to occur, anyone who uses a brewery PIT should have exactly the same training as the brewery PIT operators. The brewery should provide training on the hazards particular to the brewery environments where the PIT will be operated and on the operation of the specific PIT type that will be used. The operator should be evaluated to ensure their ability and competence to operate the PIT safely and the evaluation must be documented.

9. Do our PITs have to be inspected daily? What about ongoing maintenance and inspections?

PITs must be inspected at the beginning of each shift to ensure they are safe to operate. These inspections may be performed by authorized PIT operators as long as they are trained on how to properly inspect the PIT. These inspections should be documented and there are many example inspection checklists available on-line. If any deficiencies that affect the safety of the PIT are identified, the PIT must be removed from service until repairs can be made.

Proper personal protective equipment (PPE) must be worn when inspecting PITs to prevent injury in the event of exploding batteries, release of pressurized hydraulic fluid, leaking fluids or any other hazards that may occur.

Ongoing maintenance and more comprehensive inspections should be performed as required by the PIT manufacturer. The PIT operator's manual from the manufacturer should be used to identify ongoing maintenance and inspection requirements. This type of maintenance and inspection is typically performed by a qualified PIT mechanic.

PIT OPERATOR TRAINING PROGRAM REQUIREMENTS

1. Initial Operator Training

The assessment of this knowledge is usually in the form of a written test (see Appendix A). Once the

employee successfully completes the classroom portion of the training, he or she is required to demonstrate operational proficiency. This is a two-step process. First, the employee must successfully navigate a PIT driving obstacle course. The employee must then be evaluated while performing his or her PIT related job assignments by an authorized evaluator (see Appendix B). Once the evaluator deems the employee competent to operate their assigned PIT, the employee will be issued a PIT driver's certificate (Appendix C).

Operator certification is site-specific as well as PIT specific. It is the responsibility of the employer to certify that each operator has been trained and evaluated as required by the standard.

Outside sources may be used to deliver training or even develop the PIT program, but only the employer is allowed to certify their PIT operators. The certification documentation often takes the form of a wallet card or badge. Information that should be listed on the certificate includes:

- operator's name
- training date
- evaluation date
- trainer/evaluator's name

See Appendix C for a sample certificate. It is best practice to list the PITs that the operator is qualified to drive. In terms of the current OSHA PIT standard, there is no such thing as a "universal PIT operator's license."

A qualified trainer has to deliver the PIT training. The trainer's qualifications, according to 29 CFR 1910.178(l)(2)(iii), are:

- knowledge of the subject matter
- training on the subject matter
- experience with PITs

The qualified trainer may also perform the function of authorized evaluator. However, it is often the employee's supervisor who evaluates the employee's performance of PIT related job assignments, since it is the supervisor who is most familiar with the employee's work area and functional job assignments.

Operator Refresher Training

Operator refresher training is mandatory and it must be delivered according to the following criteria:

- when unsafe operation is observed; for example: speeding, damage to product or equipment, etc.
- when a near miss or accident occurs

- when an operator evaluation reveals unsafe operation
- when assigned to a new type of PIT
- when area or site conditions affecting PIT operations change.

New Hire Training

New hire training may be handled in two different ways. New hires that have no experience operating PITs must successfully complete the entire training course, including both the classroom and hands-on portions.

New hires that have experience and training in PIT operation may receive a shorter course that discusses general safety, specific equipment training, site-specific hazards and rules of operation and a driving skills evaluation.

Classroom Training

The classroom portion of PIT operator training may be delivered through formal instruction including: lecture, video, written material, and interactive computer learning. Training topics should include, but not be limited to the following:

A. Truck-Related Topics

- operating instructions, warnings, and precautions (PIT-type specific)
- differences between PIT and auto/car
- PIT controls and instrumentation:
 - where they're located
 - what they do
 - how they work
- engine or motor operation
- steering and maneuvering
- visibility
- forks and other load engaging attachments:
 - adaptation
 - operation
 - use limitations
- vehicle capacity
- vehicle stability
- operator-performed vehicle inspection and maintenance

- procedure for initiating repairs when truck defects are found
- refueling and/or battery charging
- general truck loading practices
- PIT rules including:
 - traveling speeds
 - cornering speeds
 - pedestrian safety
- truck and load clearances
- back-up procedures
- mandatory use of seat belts and/or personal fall arrest system
- determining whether a load is safe to handle
- correct piling/stacking of materials
- procedure to follow when leaving a PIT unattended
- working in hazardous environments or with hazardous materials
- specific hazards of the PIT operators' prospective tasks

B. Workplace-Related Topics

- surface conditions where the PIT will be operated
- nature of loads being carried
- weight and load stability
- load manipulation, stacking and unstacking
- pedestrian traffic in areas where PIT will be operated
- narrow aisles or other restricted places such as trailers in which PIT are operated
- hazardous locations where PITs are operated
- ramps and other sloped surfaces that may affect PIT stability
- closed areas where PIT operation could lead to build-up of carbon monoxide or exhaust

- other unique or potentially hazardous conditions in the work place that could affect safe operation

Since the observance of PIT safety practices is critical to the well-being of all employees, individuals who violate safe operating rules for PITs, who drive PITs without authorization or supervisors who allow unauthorized employees to drive PITs should be subject to strict disciplinary action, up to and including termination, depending upon the severity of the infraction.

Hands-on Training

The hands-on portion of the PIT operator evaluation must be documented and should include, but not be limited to, the following skills:

- proper pre-use inspection of the PIT and documentation of the inspection
- familiar and competent with PIT controls



- check weight of loads before lifting
- picking-up and setting-down loads
- proper stacking and unstacking
- safe operation when moving the PIT between locations
- proper use of dock plates and wheel chocks, where needed
- follow site specific safe operating precautions
- parking the PIT
- proper fueling and battery recharging depending on type of PIT



2. PIT INSPECTION

PITs should be examined before being placed in service and should not be used if the inspection finds any condition adversely affecting the safety of the vehicle. Such examination must be completed at least daily before each shift. Industrial trucks used on a round-the-clock basis need to be examined before each shift. Defects, when found, must be immediately reported and corrected. Proper PPE should be utilized when performing PIT inspections.

Among the items to check (see Appendix D for sample inspection checklist) are:

- operator controls
- brakes
- fluid lines and levels
- lights
- filters
- safety devices
(horn, fire extinguisher, seat belts, etc.)
- backup horns or strobes
- movement of the forks

Unless qualified, the operator should not attempt to make any repairs. Only qualified and authorized personnel should be permitted to maintain, repair, and adjust PITs.

If the PIT is equipped with front-end attachments, other than factory installed attachments, the employer needs to request that the truck be marked to identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation, with load laterally centered. The user must ensure that all nameplates and markings are in place and are maintained in a legible condition. Attachments reduce load capacity and change the PIT's load center of gravity.

Addressing Defective PITs

A PIT inspection checklist can be found in Appendix D. Any PIT not in safe operating condition must be removed from service. All repairs must be made by authorized personnel. Keep the PIT out of service until the defect can be repaired or the truck can be replaced.

PIT Maintenance

Establish and implement an inspection and preventive maintenance program to minimize the possibility of employees using unsafe PITs. Operation and safety instructions outlined in manufacturer's manuals must be followed. PIT dealers also can provide advice on proper lubricants, parts, tools, and procedures, and may also perform truck maintenance under contract. PITs should be kept in a clean condition, free of lint, excess oil, and grease. No repairs should be done in hazardous locations, for example where excessive grain dust is present.

No PIT should be operated with a leak in the fuel system until the leak has been corrected. Repairs to the fuel and ignition systems of PITs which involve fire hazards should be conducted only in locations designated for such repairs. Fuel tanks must not be filled while the engine is running. Spillage of oil or fuel should be avoided and must be carefully removed and the fuel tank cap replaced before restarting the engine. Open flames cannot not be used for checking gasoline level in fuel tanks or for checking electrolyte levels in storage batteries.

When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle must be removed from service. The truck must not be returned to service until the cause for such overheating has been eliminated.

Industrial trucks originally approved for the use of gasoline for fuel may be converted to liquefied petroleum gas fuel provided the complete conversion results in a truck which embodies the features specified for LP or LPS designated trucks. The conversion equipment must be approved in writing by the manufacturer.

PITs in need of repairs to the electrical system must have the battery disconnected prior to such repairs. Be sure to follow your lock-out/tag-out procedures. All parts of any such PIT requiring replacement must be replaced only by manufacturer approved replacement parts.

3. SAFE OPERATING PRACTICES

Only trained employees are permitted to operate a PIT. To obtain a PIT operator's certificate each operator must demonstrate knowledge of general PIT safety information as well as site-specific information that is contained in their employer's written PIT program.

General Safety Considerations

A PIT operator is required to:

- maintain a safe distance (recommended 3–5 feet) from the edge of ramps or platforms while on any elevated dock, platform, or freight car
- ensure sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
- observe all traffic safety rules, including authorized facility speed limits
- maintain a safe distance, approximately three truck lengths, from the truck ahead
- keep the truck under control at all times
- yield the right-of-way to pedestrians
- yield the right-of-way to ambulances, fire trucks, or other vehicles in emergency situations
- slow down and sound the horn at cross aisles, corners, doors and other locations where vision is obstructed
- look in the direction of, and keep a clear view of, the path of travel



- never drive forward with a load obstructing the operator's view
- travel with the load trailing if the load being carried obstructs forward view
- cross railroad tracks diagonally wherever possible
- ascend or descend grades slowly

Additional Safety Considerations

A PIT operator is required to:

- operate at a speed, under all travel conditions, that will permit the PIT to be brought to a stop in a safe manner
- slow down for wet and slippery floors



- be aware that PIT outriggers can interfere with setting pallets on the ground and can hit pallet rack legs
- properly secure dock boards or bridge plates before they are driven over
- drive over dock plates or bridge plates carefully and slowly, while never exceeding their rated capacity
- approach elevators slowly, and then enter squarely after the elevator car is properly leveled
 - on the elevator, the controls must be neutralized, power shut off, and the brakes set
 - motorized hand trucks must enter elevator or other confined areas with load end forward
- note any oil or fuel leakage from any PIT and report the deficiency to super-visors immediately

An overhead guard should be used as protection against falling objects. Overhead guards are 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.

When ascending or descending grades in excess of 10%:

- loaded trucks should be driven with the load upgrade
- unloaded trucks should be driven with the forks pointed downgrade

On all grades, the load and forks (or other load engaging attachments) must be tilted back, if applicable, and raised only as far as necessary to clear the road surface.

The PIT operator **should never**:

- operate a PIT under the influence of prescription or over-the-counter medications that may interfere with safe operation of the PIT in any manner (i.e., drowsy, dizzy, loss of attention)
- drive PITs up to anyone standing in front of a fixed object
- run over loose objects on the driving surface
- allow persons to stand or pass under the elevated portion of any truck, whether loaded or empty
- park closer than eight feet from the center of railroad tracks
- allow any other person to ride on PIT, unless the PIT has provisions for passengers (such as additional seating authorized by the manufacturer)
- place arms or legs between the uprights of the mast or outside the running lines of the truck
- use a PIT for opening or closing freight car doors or moving freight cars
- block fire aisles, access to stairways, or fire equipment with the PIT or the load being handled
- pass other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations
- participate in stunt driving or horseplay
- push or tow other PITs

General Safe Loading Practices

Only stable and safely arranged loads should be handled. Only loads within the rated capacity of the PIT must be handled. Caution needs to be exercised when handling off-center loads which cannot be centered. Long or high (including multiple-tiered) loads may affect load capacity.

PITs equipped with attachments must be operated as partially loaded trucks when not handling a load. Forks or other load engaging attachments must be placed under the load as far as possible, and the mast must be carefully tilted backward to stabilize the load.

Extreme care must be used when tilting the load forward or backward, particularly when high stacking. Tilting forward with forks (or other load engaging attachments) elevated must be prohibited except to pick up a load. Only tilt the load forward when it is in position over the spot where the load will be placed. When stacking, only tilt the forks back enough to stabilize the load while you place it.

Correct Piling/Stacking of Materials



The following steps should be taken when stacking a load:

- approach to within a foot or so of a stack or tier with load held low
- stop truck and raise load slowly while inching forward
- when load reaches desired height, tilt upright forward until it is vertical

- position load over stack so it lines up squarely
- lower the load slowly
- when the load is resting solidly on the stack and forks are free, check behind the PIT and back machine away slowly

Extreme care must be taken when the mast and load are raised high. The higher a load is raised, the higher a PIT's center of gravity is raised. Heavy loads raise the PIT's center of gravity significantly, and reduce the stability of the PIT. When lifting a load, always check for any overhead obstructions that might be damaged, or cause the load to spill or topple the truck.

Always heed the following instructions about stacking height:

- stacking right to the ceiling may block the sprinkler system and may overload the floor
- allow 18 inches clearance below sprinkler heads or piping
- allow 24 inches clearance below roof if not equipped with sprinklers
- never allow other workers to stand nearby when you stack materials
- do not stack material in aisles or roadways
- stacks of palletized kegs, cans or bottles can be unstable, especially when empty

Precautions When Leaving a PIT Unattended

A PIT is considered unattended when:

- the operator is 25 feet or more away from the vehicle which remains in his view, or
- the operator leaves the vehicle and it is not in his view

To prepare a PIT for being left unattended:

- fully lower the fork (or other load engaging attachments)
- neutralize controls
- shut off power
- set brakes
- block wheels if the truck is parked on an incline

When the operator of an industrial truck is dismounted and within 25 feet of the truck still in his view:

- the forks (or other load engaging attachments) must be fully lowered
- controls should be neutralized
- brakes should be set to prevent movement

If the load needs to remain elevated, the operator must remain on the PIT at the controls.

Loading/Unloading Operating Rules

Portable and powered dock plates must be strong enough to carry the load imposed on them. Evaluate load ratings at your facility. Portable dock plates must be secured in position, either by being anchored or equipped with devices that will prevent slippage. Handholds, or other effective means, must be provided on portable dock plates to permit safe handling. Follow these guidelines for safe loading/unloading of vehicles:

- Positive protection must be provided to prevent railroad cars, trucks or trailers from being moved while dock plates or bridge plates are in position.
- Wheel stops or other recognized positive protection must be provided to prevent railroad cars, trucks or trailers from moving during loading or unloading operations.
- The brakes of highway trucks must be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.
- Nose jacks must be used to support a semi-trailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.
- Brakes must be set and wheel blocks must be in place to prevent movement of railroad cars while loading or unloading.
- The flooring of trucks, trailers, and railroad cars must be checked for breaks and weakness before they are driven onto.

PIT Alterations

PITs should not be altered in a way that the relative positions of the various parts are different from what they were when originally received from the manufacturer. PITs must not be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts without the manufacturer's written authorization. Additional counterweighting of PITs must not be done unless approved by the PIT manufacturer.

PIT operators should know the weight of the load prior to moving the load. Super sacks can weigh in excess of 2,000 pounds. A pallet of 8 full ½ barrel kegs can weigh 1,320 pounds. Double stacked pallets of kegs can weigh 2,640 pounds.



Standing on a truck or adding counterweights to compensate for an overload is not permitted. Operators should never attempt to operate a truck with an overload. Such a load is dangerous because it removes weight from the steering wheels, which affects the steering.

When lifting personnel with a PIT the following additional precautions must be taken for the protection of the personnel being elevated:

- Modifications and additions which affect capacity and safe operation must not be performed by the employer or user without manufacturer's prior written approval.
- Capacity, operation, and maintenance instruction plates, tags, or decals on the PIT must be changed to the manufacturer's guidelines for that use.
- Firmly secure the safety platform to the lifting carriage and/or forks.
- Personnel on the safety platform must be provided with a means of shutting off the power to the truck as an emergency precaution.
- The driver of the truck must remain at the controls of the truck as long as personnel are occupying the elevated platform.
- Protection from falling objects, as needed or necessary for the operating conditions must be provided.
- Employees working from an elevated platform must have fall protection in the form of railings that meet OSHA requirements, or wear a properly anchored personal fall arrest harness and lanyard.

- Hard hats may be required for employees working in the platform if there are overhead hazards.
- In no case should an employee be elevated while standing on a pallet or other unapproved work platform.

Working in Hazardous Environments or With Hazardous Materials

Only approved industrial trucks must be used in hazardous locations. In a brewery, areas with excessive grain dust could be considered a hazardous atmosphere.

Concentration levels of carbon monoxide gas created by powered industrial truck operations must not exceed the levels specified in 29 CFR 1910.1000. The OSHA Permissible Exposure Limit (PEL) for carbon monoxide is 50 ppm.

Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting must be provided on the truck.

Refueling or Recharging Operations

Battery charging installations must be located in areas designated for that purpose. Facilities and equipment must be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.

A conveyor, overhead hoist, or equivalent material handling equipment (such as a properly equipped PIT) must be provided for handling batteries.

Reinstalled batteries must be properly positioned and secured in the truck. A carboy tilter or siphon must be provided for handling electrolyte. When topping off batteries, acid must be poured into water; water must not be poured into acid. Trucks must be properly positioned and brakes applied before attempting to change or charge batteries.

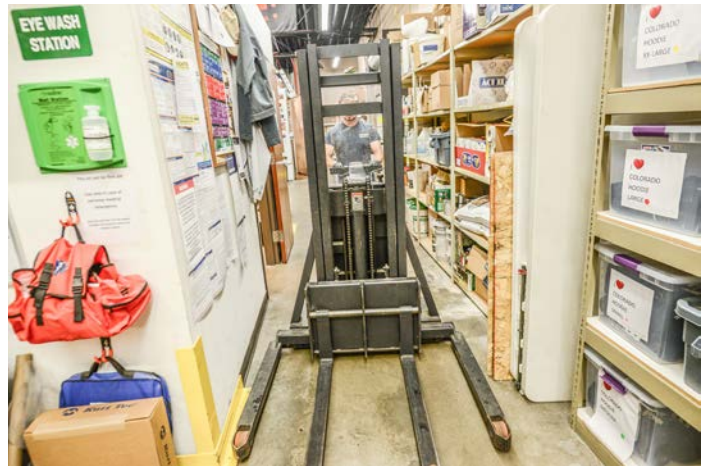
Care must be taken to assure that vent caps are functioning. Battery compartment covers must be open to dissipate heat and hydrogen gas. Smoking must be prohibited in charging and refueling areas, and "No Smoking" signs posted in these areas. Precautions must be taken to prevent open flames, sparks, or electric arcs in battery charging areas. Tools and other metallic objects must be kept away from the top of uncovered batteries.

4. PIT OPERATIONS HAZARD ASSESMENT

A PIT operations hazard assessment should be completed for the brewery to evaluate whether the equipment being utilized or considered for purchase will be suitable for the intended uses.

- What are you going to be using the truck for?
 - Glass, keg, pallet, material handling?
 - Vessel installation/ construction?
- Is the truck suitable for the tasks you plan on doing (data plate info)?
 - Rated to lift the associated loads?
 - Stable enough to make the required maneuvers?
 - Able to reach the height at which you plan to load, unload or stack materials?
- Is the surface where you will be loading, unloading, or storing rated to support the load?
- Are there any safety limitations to the truck? Look for:
 - non-standard operating features
 - counterbalance vs non-counterbalance
 - post-market modifications
 - lack of safety equipment like:
 - » seatbelts
 - » overhead guard
 - » warning Lights
 - » horns
 - » back up alarms
- Where will you be using the truck? Identify areas, such as:
 - general production area
 - cooler/warehouse
 - loading dock/shipping trailers
 - areas where non-employees have access
 - indoors vs. outdoors
- Identify hazards or limitations. Look for:
 - ramps
 - overhead clearance
 - » low ceilings, fire sprinklers, hard-piping, auger tubing systems
 - limited visibility
 - » corners

- » intersections
- » building exit or entry
- » poor lighting
- narrow aisle-ways



- uneven ground/rough terrain like:
 - » floor drains
 - » damaged grates over drains
- regularly slick/wet floors
- floor load limits in areas like:
 - » elevators
 - » "mezzanine" flooring
 - » dock boards
 - » bridge plates
 - » truck floors
- tight/limited operation space
- shelving/storage limitations (can the shelf support the loads)
- traffic
- pedestrians
- other warning signs or safety hazards
- Are you going to be using any after-market accessories? What are their limitations? The following require special consideration:
 - elevated worker platform
 - fork extensions

- Identify and develop the following:
 - written program
 - » clearly state OSHA compliance information
 - » clearly define program requirements and expectations
 - training and evaluation program/materials
 - » initial training
 - » refresher training
 - » evaluation course set-up/procedures
 - » records/documentations
 - pre-use inspection program
 - » pre-use checklist
 - » removal from service procedure
 - maintenance program
 - » define maintenance
 - » assign workers who are qualified or designate a certified service company to call
 - » make a maintenance log
 - * problem identification and work done
 - » return to service procedure
 - designate a parking/storage area
 - » parking procedures
 - » maintenance area
 - incident reports/emergency procedures
 - other procedures
 - » fueling procedures
 - » charging/battery procedures
 - select PPE for PIT related operations
 - develop consequences for violations

Roles and Responsibilities of All Employees

Know and understand:

- PIT safety rules
- PIT tasks/operations

- task/equipment limitations
- safety features
- area and equipment hazards

Stay accountable and look out for each other. Call a stop work if you see unsafe conditions, equipment, or behavior. Call a stop work if you're uncomfortable with the task.

Roles and Responsibilities of Operators

Operate equipment in a safe manner that is consistent with OSHA regulations and brewery policies. Operators should only work within the scope of training and their experience.

Always follow safe rules of operation and monitor performance and the performance of colleagues. PIT operators should report out-of-tolerance conditions to their supervisor, and make other operators aware of hazards, such as:

- unsafe conditions
- equipment failures or maintenance requests
- accidents, incidents, near-misses.

Roles and Responsibilities of Supervisors

Supervisors should monitor operator performance daily. It is also their responsibility to ensure that operator training is up-to-date and that certification is complete. Additional duties include:

- mandating/scheduling refresher training
- monitoring and enforcing safe PIT operation, including:
 - driver performance
 - equipment maintenance
 - » checking that pre-use checklists and maintenance logs are done
 - » ensuring unfit equipment is taken out of service and repaired by qualified staff
 - performing Job Hazard Analyses (JHAs) for non-routine tasks
 - scheduling to:
 - » minimize distractions
 - » ensure workers have enough time to complete tasks
 - housekeeping

RESOURCES

<https://www.osha.gov/SLTC/powerindustrialtrucks/index.html>

<https://www.osha.gov/SLTC/etools/pit/>

https://www.osha.gov/dte/library/pit/daily_pit_checklist.html

<https://www.osha.gov/dcsp/smallbusiness/>

https://www.osha.gov/dcsp/compliance_assistance/quickstarts/general_industry/index.html



APPENDIX A - EXAMPLE - POWERED INDUSTRIAL TRUCK OPERATOR'S TEST

____ Dept. _____ Date: ____/____/____
(PLEASE PRINT NAME)

- | | | |
|---|---|--|
| T | F | 1. Before moving or stacking a lift truck operator shall survey the path of travel in order to avoid obstacles. |
| T | F | 2. Starts, stops and turns shall be made in manner that will prevent a load from shifting or overturning the truck. |
| T | F | 3. A powered industrial truck operator shall drive at a slow speed over wet or slippery floors. |
| T | F | 4. Because the sulfuric acid electrolyte solution in batteries is corrosive, there must be an eyewash facility within close proximity of the battery charging area. |
| T | F | 5. As long as a semi-truck has a tractor attached to the trailer and the driver is in the cab, it is not required to have two (2) wheels blocked if the dock restraint fails to engage properly. |
| T | F | 6. An employee shall not be lifted in the air by a powered industrial truck while standing on the forks or pallet. |
| T | F | 7. Before using the ramp, a lift truck operator shall survey the path of travel in order to avoid obstacles. |
| T | F | 8. Driving down a ramp with a load requires the forks to be facing up grade. |
| T | F | 9. Driving up a ramp without a load requires the forks to be facing down grade. |
| T | F | 10. If two forklifts are approaching the ramp and neither has a load, it's OK to both use the ramp as long as you drive slowly. |
| T | F | 11. It is acceptable to use a pallet jack on the ramp if no forklift traffic is present. |
| T | F | 12. Making a 180 turn on a ramp when driving a forklift is never allowed. |

SELECT THE ANSWER WHICH IS MOST CORRECT

13. Employees operating a powered industrial truck shall not place their arms or legs in either of the following positions:
 - a. Between the uprights of the mast
 - b. Outside the running lines of a moving truck
 - c. Both a and b
14. If mechanical trouble develops with a powered industrial truck, you should:
 - a. Fix it yourself, if minor in nature
 - b. Drive until repairs can be made
 - c. Report the trouble to your employer
15. Forks on empty, parked powered industrial trucks must always be:
 - a. Two inches from the floor
 - b. Four inches from the floor
 - c. On the floor, tips touching
16. Your powered industrial truck permit must be:
 - a. Filed with the State of Michigan
 - b. Secured to the back of your truck
 - c. Be carried or made available for inspection during working hours

17. When driving on a ramp with an obstructed view, it is recommended that you:
 - d. Try to see around the load
 - e. Use a spotter to assist
 - f. Never drive with an obstructed view on a ramp
18. If a spill occurs on the ramp you should:
 - a. Alert the adjacent staff
 - b. Block off the top and bottom of the ramp
 - c. Clean up the spill immediately, then dry the floor
 - d. All of the above
19. When encountering pedestrian traffic you should:
 - a. Yell, "Look out!"
 - b. Allow them to cross after you have come to a stop and made eye contact
 - c. Drive faster to get ahead of them
20. Your powered industrial truck permit must be:
 - a. Filed with the State of Michigan
 - b. Secured to the back of your truck
 - c. Be carried or made available for inspection during working hours

OPERATOR SELECTION REQUIREMENTS:

Y / N Do you have vision/hearing that meets the same requirements as those for a driver's license?

Do you wear any of the following? (Check all that apply):

☐ Corrective lenses

☐ Hearing aid

Y / N Do you have effective use of all 4 limbs?

Y / N Are you of height sufficient to operate the controls and to have an unobstructed view over the controls and dashboard?

Y / N Do you have coordination between eyes, hands and feet?

Y / N Are you free from known convulsive disorders and episodes of unconsciousness for a period of one year?

Y / N Do you have the ability to understand signs, labels, and instructions in English?

PASS FAIL

_____ _____ Written Test

_____ _____ Operator Selection Requirements/Restrictions?

Employee May Operate the following PIT types:

Date Employee Authorized: ____/____/____ Restrictions: ____ Glasses

Permit Expires: ____/____/____ ____ Hearing Aid

Class Room Instructor Print Name/Signature:

_____ Date: ____/____/____

APPENDIX B - PIT OPERATOR EVALUATION CHECKLIST

Operator Name:				Evaluator Name:
Operator Facility:				Evaluator Name:
Operator Supervisor:				Evaluation Date:
PIT Model:				
Evaluation Item	Pass	No Pass	N/A	Comments
<i>Pre-Use/Inspection</i>				
Conducts pre-use inspection				
Follows daily checklist				
Looks for damage or unsafe conditions				
Documents all findings on checklist				
Initiates process for taking truck out of service/ repair				
<i>Start-Up</i>				
Get on PIT properly				
Puts on and adjusts seatbelt				
Performs function checks				
Accelerates smoothly				
<i>Load Pick-Up</i>				
Clear personnel from the area near the load				
Aligns PIT/squares up on center of load				
Stops with fork tips about 1 foot from load				
Levels the forks; then slowly drives forward until the load contacts the carriage				
Lifts the load carefully and smoothly until load is clear				
Tilts mast back slightly to stabilize the load				
Looks over both shoulders before and during backing up; backs up slowly				
After out and stopped, lowers load to travel height (approx. 6")				
<i>Traveling</i>				
Operator does not raise/lower the forks while traveling				
Maintains a safe speed				
Observes all traffic rules, warning signs, floor load limits, and overhead clearances				
Keeps arms and legs inside the PIT while operating				
Follows other vehicles at a safe distance				
Slows down when turning or cornering				
Uses horn to alert others				
Travels with the load facing uphill while on a ramp or incline				
Stops smoothly				

Evaluation Item	Pass	No Pass	N/A	Comments
<i>Putting Down a Load</i>				
Makes sure there is sufficient clearance for the load				
Clears personnel from area near the load/drop-off				
Squares up to the location; then stops about 1 foot away				
Raises the load to placement level				
Moves forward slowly				
If the load is on a pallet, lowers it into position and then lowers forks further				
Looks over both shoulders before and during backing up				
Backs straight out until forks have cleared				
Lowers forks to traveling position				
<i>Parking</i>				
Fully lowers forks				
Sets controls to neutral				
Sets the brakes				
Turns off the power				
If parked on an incline, blocks the wheels				
Parks only in authorized areas				
Knows procedure for leaving vehicle unattended (more than 25 feet or out of sight)				
<i>Fueling/Recharging</i>				
Engine off				
Fire extinguisher near by				
Proper PPE worn				
Safe fueling and battery recharging procedures followed				
Spills cleaned up immediately				
<i>Final Evaluation</i>				
Based on my evaluation, the operator has successfully completed the evaluation and is qualified to operate the following equipment:			Evaluator Signature	_____ Date: _____
Based on my evaluation, the operator has successfully completed the evaluation and is qualified to operate the following equipment:			Evaluator Signature	_____ Date: _____
Equipment Type _____ Operator Signature _____ Date _____				

APPENDIX C - EXAMPLE FORKLIFT OPERATOR PERMIT

AUTHORIZED FORKLIFT DRIVER

This is to certify that

has successfully completed
Forklift Driver Training

Authorized Signature

Date _____



APPENDIX D - PRE-USE INSPECTION CHECKLIST

Record of Fluid Added

Truck# _____ Serial# _____ Hydraulic Oil _____

North _____ South _____ Hours _____ Battery Water _____

SAFETY AND OPERATIONAL CHECKS (COMPLETED PRIOR TO EACH SHIFT/ USE)

Report any problem immediately so a qualified mechanic corrects them.

Motor Off Checks

	ok!	Re-paired
Leaks - Hydraulic Oil, Battery _____		
Tires - Condition and Pressure _____		
Forks, Top Clip Retaining Pin and Heel - Condition _____		
Carriage Side Shift _____		
Load Backrest Extension - Attached _____		
Hydraulic Hoses, Mast Chains, Cables & Stops - Check Visually _____		
Safety Warnings - Legible (Refer to Parts Manual for Location) _____		
Battery - Water/Electrolyte Level and Charge _____		
Brake Fluid - Check level _____		
Hydraulic Fluid Level - Dipstick _____		
Transmission Fluid Level - Dipstick _____		
Operator's Manual, Inspection Reports in Container _____		
Capacity Plate - Includes Model, Serial Number and Attachments _____		
Battery Restraint System - Adjust and Fasten _____		

Operator Protection:

Sitdown Truck - Seat Belt - Functioning Smoothly _____		
Overhead Guard - Attached _____		

Motor On Checks

(Unusual Noises Investigated and Corrected Immediately)

Accelerator Linkage - Functioning Smoothly _____		
Parking Brake - Functioning Smoothly _____		
Brake - Functioning Smoothly _____		
Steering Operation - Functioning Smoothly _____		
Drive Control - Forward/Reverse - Functioning Smoothly _____		
Tilt Control - Forward and Back - Functioning Smoothly _____		
Hoist Raise/ Lowering Control - Functioning Smoothly to Full Height _____		
Recheck Mast Hydraulic Hoses, Chains, etc. with Mast Full Height _____		
Attachment Control - Operation _____		
Horn - Functioning _____		
Lights & Alarms (where present) - Functioning _____		
Hour Meter - Functioning _____		
Battery Discharge Indicator - Functioning _____		
Instrument Monitors - Functioning _____		
No Unusual Noises _____		

