



Powered Industrial Truck Safety Program

**Environmental Health and Safety
Adopted: September 2023**

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Chapter 1: Introduction

The purpose of this program is to promote the safe use of Powered Industrial Trucks (PITs) and prevent accidents, personal injuries, and property damage resulting from their use. This document provides the requirements for PITs application, inspection, training, maintenance, repair, and safe operation as well as the responsibilities of users, operators, and supervisors.

1.1 Scope and Applicability

This program applies to all personnel at Purdue University facilities and operations.

It is the policy of Purdue University to take every reasonable precaution to provide a work environment free from recognized hazards for its employees in accordance with the General Duty Clause of the OSHA act (Public Law 91-596 Section 5(a)(1) and in accordance with specific OSHA standards. The University's policy document is entitled Environmental Health and Safety Compliance (IV.A.4).

1.2 Enforcement and Regulatory Requirements

Failure to follow the Purdue University PIT Program can result in life threatening or serious injury situations. Failure to follow the PIT Program may result in the following disciplinary action. Regulatory requirements and guidance are available from the following resources:

OSHA 1910 Subpart N: Materials Handling and Storage

- 29 CFR 1910.178 Powered Industrial Trucks

ANSI B56.1-2020: Safety Standard for Low Lift and High Lift Trucks

NFPA 505-2018: Fire Safety Standard for Powered Industrial Trucks

- Type Designations
- Areas of Use
- Conversions
- Maintenance
- Operation

1.3 Definitions

Attachment – Any equipment, device, or tool designed and manufactured to attach to a powered industrial truck. Examples include personnel baskets or cages, carriage side shifter, height extender, backrest extender, drum lifter, or other. Attachments must be provided by, or approved in writing by, the PIT manufacturer.

Fork Truck – A fork truck is a small vehicle with two power-operated prongs at the front that can be slid under heavy loads and then raised for moving and stacking. Fork Trucks can be powered by electricity, compressed natural gas, liquid petroleum gas, diesel fuel or gasoline.

Name Plate – An information plate or card mounted to the PIT at the operator station which provides important operator information such as lift category, lifting capacity and load center (with and without attachments), PIT dimensions, swing radius, counterweight mass, fuel source, etc.

Powered Industrial Truck – Any mobile power propelled truck used to carry, push, pull, lift, stack, or tier materials. Powered industrial trucks (PIT) can be ridden or controlled by a walking operator. (See Appendix A)

Chapter 2: Roles and Responsibilities

2.1 Environmental Health and Safety (EHS)

Environmental Health and Safety (EHS) is responsible for establishing and maintaining the PIT Safety Program.

2.2 Deans, Directors, and Department Heads

- Ensure supervisor(s) understand their responsibilities for the preparation and implementation of the program within each work unit.
- Actively support this program within individual units.
- Ensure an environment where all personnel are required to follow this program. The specific duties and responsibilities of the Laser Safety Committee shall include, but are not limited to, the following:

2.3 Supervisors

- Implement and ensure procedures are followed in accordance with this program.
- Ensure that staff is aware of this program, instructed on the details of implementation and training.
- Evaluate and document any site-specific hazards associated with operation of the PIT by departmental personnel. (See Appendix 2).
- Contact EHS to request technical assistance, and to evaluate health and safety concerns within their department.

2.4 Employees

- • Comply with this program and any further safety recommendations provided by supervisors and/or EHS regarding the program.
- • Contact supervisor or EHS to request technical assistance, and to evaluate health and safety concerns within their department.

Chapter 3: Training and Operation

3.1 General Requirements

- Only PIT trained and authorized personnel are permitted to operate PITs. Personnel should not attempt to complete any operation or operate any PIT for which they have not been trained.
- If, at any time, the operator feels unable to operate the equipment due to illness, medication, physical or mental complications contact your supervisor and do not operate the equipment.
- The operator will inspect each PIT prior to use. Any conditions affecting the safety of the PIT are found, the matter must be reported immediately to your supervisor, and the PIT cannot be used again until it has been made safe. A checklist must be completed on each PIT before the use on every shift or before use that day (See Appendix 3).
- If there is any problem concerning proper operation or load handling that you feel there is a potential for injury to yourself, or other employees contact your supervisor. Remove the PIT from service until the problem is corrected.
- Remove the key from unattended PIT to prevent unauthorized use of PITs.
- PITs may not be altered without prior written approval from the manufacturer of the equipment.
- Riders are not permitted on PITs for any reason.
- Operators shall not permit their PITs to be used by unauthorized people without the proper training and certification.

3.2 Training

Training shall consist of a combination of formal instruction (e.g., lecture, discussion, interactive computer learning, video tape, written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace. Employees shall not attempt to complete any operation or operate any PIT without direct supervision until they have successfully completed training.

- Formal Instruction shall either be conducted in the classroom or via online training.
- Practical training shall be conducted under the direct supervision of personnel knowledgeable and experienced with the PIT in the department. Also, practical training will be conducted so as not to endanger the trainee or other personnel. Departments should contact the EHS department for guidance in setting up their practical training.
- In-person competency demonstration and performance evaluation. This evaluation is done by EHS or by personnel designated by EHS. Employees must successfully complete an operator evaluation demonstrating appropriate skill level for classification of powered industrial truck evaluated. (See Appendix 4).
- Refresher training, including an evaluation of each operator's performance, shall be conducted at least every 3 years.

- Refresher training shall also be required if:
 - The operator has been observed to operate the vehicle in an unsafe manner.
 - The operator has been involved in an accident or near-miss incident.
 - The operator has received an evaluation that reveals that the operator is not operating the truck safely.
 - The operator is assigned to operate a different vehicle or a condition in the workplace changes in a manner that could affect safe operation.
 - Operators on elevating PITs, including those operating order pickers, shall be authorized to work at elevation, trained, provided appropriate PPE, and shall operate in accordance with the EHS (Fall Protection) program.
- Departments are responsible for maintaining operator training and retention of their training records.

3.3 General Operation

- PITs must be operated at a safe speed (8 – 10 mph indoors), always keeping the truck under control. All established traffic regulations must be observed. For trucks traveling in the same direction, a safe distance is approximately three PIT lengths. Always face the direction and keep a clear view of the direction you are traveling.
- Operators must never place any part of their body outside the running lines of the PIT or between mast uprights or other parts of the truck where shear or crushing hazards exist.
- PITs must not be loaded more than their rated capacity or load center rating. The operator must understand the rated capacity and load center rating of the truck prior to using the equipment.
- Only stable or safely arranged loads within the rated capacity of the PIT may be managed. PITs must not be moved until the load is safe and secure. Extreme care must be used when tilting the load forward or backward, particularly when “high stacking”.
- Pedestrians have the right-of-way. Operators must not move a PIT until certain that all persons are in the clear. Always look and sound your horn prior to operation in areas of obstructed view or congestion. The operator shall give the right of way to pedestrians, ambulances, or other emergency vehicles.
- PITs must avoid anyone standing in front of a bench or other fixed object.
- Pedestrians will avoid standing, passing, or working under the elevated portion of any PIT, whenever loaded or empty. Ask them to move away from the PIT if necessary.
- PITs must avoid operating on floors, sidewalks, ramps, platforms or locked down dock plates that may not safely support the loaded equipment.
- Slow down for hazardous conditions such as wet or slippery floors and avoid these areas if possible. Contact your supervisor to correct the condition.
- Never drive over objects lying on the floor. This could damage equipment, topple the load, or shoot out and strike another person.
- Operators must avoid elevating anyone with a PIT unless an ANSI/ASME approved safety platform is used and all rules for lifting personnel in a cage are followed.

- The forks and loads must always be carried as low as possible, consistent with safe operation. When the forks are raised make sure to avoid overhead obstructions.
- PITs traveling in the same direction shall never pass other trucks at intersections, narrow aisle ways, doorways, or other dangerous locations.
- Make a complete stop when exiting aisles, at all doorways, corners and building exits, then sound your horn and proceed cautiously.
- If the load being carried obstructs forward view, the operator will travel with the load trailing. If you must travel with the load forward, then use a fellow employee as a spotter.
- Operate fork trucks with forks or pallet approximately four inches from the floor. All loads or forks are to be raised and lowered at the point of loading or unloading, but not during travel.
- When PITs are equipped with horns as safety and warning devices, these horns are required to be used, and shall be used at cross aisles, and doorways when operating near pedestrian work areas or pedestrian walkways.
- Extreme care must be taken when tilting loads. Elevated loads will never be tilted forward except when the load is being deposited onto a storage rack or equivalent. When stacking, only use enough backward tilt to stabilize the load.
- Never attempt to straighten pallets or stacks of material by hitting or shoving with forks or the fork truck. At no time are pallets of material to be pushed or dragged along the floor.
- The forks or load-engaging device shall be placed in such a manner that the load will be securely held or supported. The load shall be centered, forks evenly spread and all reach or turret mechanisms retracted prior to moving equipment. The forks should extend under the load at least two-thirds of the load length. If the load is too long, approved long fork extensions may be needed, but they may not exceed the original fork length by more than 50%.
- Special precautions must be taken in the securing and handling of loads by fork trucks equipped with attachments.
- Operators shall ensure clear access to fire aisles, exits, stairways, and fire equipment when depositing loads.
- Operators shall report all accidents involving injury to a pedestrian, employee, or damage to buildings and equipment to their Supervisor.
- Watch overhead doors when approaching, driving through, or leaving doors. Be certain loads are completely through before closing door. Report any door malfunction immediately to your supervisor. Watch the rear-end swing of your truck, fork trucks steer from the rear. Make sure you have enough clearance before turning.
- Under all travel conditions the PITs shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- The operator shall drive to the right in all aisle ways, roads, etc. whenever possible.
- The operator shall avoid distracted driving with electronic devices.
- Raising or lowering forks while traveling is prohibited. The load shall be raised or lowered after the PIT has ceased its forward or reverse travel.

- Forks shall be spaced evenly from the center and spread wide enough to safely support the load.
- Painting, lettering, posting signs or otherwise defacing fork trucks is prohibited.
- All safety devices (Examples: seatbelts and fall protection) must be worn any time you are moving or operating any PIT equipped with them.

3.4 Loading Dock Operation

- Do not enter trucks, trailers, or rail cars unless brakes are set, and restraints have been engaged, or wheel chocks are in place to prevent movement of the PIT while loading or unloading. Fixed jacks shall be used to support a semi-trailer during loading or unloading when the trailer is not coupled to a supporting tractor. It is the PIT operator's responsibility to ensure that all dock procedures are followed.
- Dock board or bridge plates must be checked to be sure that they are fastened in position, or prior to use. Never exceed the rated capacity of a dock board or plate. Never park or operate a PIT on a dock plate when it is in the locked down position for storage.
- Prior to driving onto trucks and trailers, the trailer flooring must be checked for holes, breaks and structural weaknesses. Operators must additionally check to make sure the dock door is raised fully for proper clearance. Never use PIT to open or close dock, trailer, or railcar doors.
- A safe distance must be maintained from the edge of elevated docks, ramps, platforms, truck beds or freight cars. One tire width of the PIT shall be the minimum distance maintained from the edge of the truck while it is on any elevated dock, platform, or freight car.

3.5 Grade or Ramp Operation

- Grades shall be ascended or descended slowly.
 - Make certain the PIT is intended for use on grade (see data plate on equipment) or refer to the operator's manual for your truck.
 - When ascending or descending grades greater than 10%, loaded PITs shall be driven with the load upgrade. Unloaded PITs should keep the counterweight pointed up hill when operating on ramps or grades.
 - On all grades, the load and load engaging means (forks) shall be tilted back and raised only as far as necessary to clear the road surface.
 - Do not turn on a grade or an incline. Proceed straight up and down.
 - Motorized hand and hand/rider jacks shall be operated on all grades with the load-engaging means (forks) downgrade.
- Do not park PITs on an incline. If you must park on an incline the wheels of the truck will be chocked.

3.6 Elevator Operation

Before entering elevators or other restricted areas make certain the equipment is authorized in the area or elevator. When entering an elevator, make certain all personnel have left elevator, enter elevator load first, slowly, and squarely. Make sure forks are only raised enough to clear.

Motorized hand trucks shall enter elevators or other confined areas with the load end forward. These areas shall be approached slowly then entered squarely. Elevators will be entered only after the elevator car is properly leveled. Once in the elevator, the controls shall be neutralized, power shut off and brakes set.

Do not exceed the loading or rated capacity of any elevator, factor in your PIT, the load, and your weight, plus anything else present.

3.7 Personnel Lift Cages

Make sure the PIT is designed to be used with a personnel lift. When elevating employees:

- Use a securely attached personnel lift and close the gate or chain.
- The capacity of the truck must be at least double the capacity of the platform.
- Use fall protection harness and self-retracting lanyard.
- Make sure the truck is in neutral, and the brake is set.
- Never tilt or move when elevated.
- Lift and lower smoothly.
- Watch for overhead obstructions.
- Never transport personnel from one location to another in the personnel lift.
- The PIT operator must always be at the controls when personnel lift is elevated.

Personnel shall never try to gain additional height by climbing the rails of the cage or standing on an object inside the cage.

3.8 PIT Parking

PITs will be parked in designated areas during all breaks and lunch periods.

- Lift and lower forks slowly, stop gradually. Always bring equipment to a complete stop before departing or stepping from any piece of equipment.
- When leaving a PIT unattended (No more than 20 feet away), the power must be shut off, brakes set, the mast brought to the vertical position and forks left in the down position and tilted forward when possible. Never leave an unattended PIT with the forks raised. Keys shall be removed.
- Never leave PITs in the middle of the aisle. Always park the truck to the side so traffic will be unobstructed. Avoid parking near exits or block safety equipment such as fire extinguishers.

3.9 Battery Operated Equipment

Only PIT trained and authorized personnel shall perform battery changing and charging operations.

- Assigned safety equipment must be utilized when managing industrial batteries.
- PITs will be properly positioned, brake applied and key switch off and removed before attempting to charge or change batteries. Reinstalled batteries must be properly positioned and secured in the truck.
- Smoking is prohibited in the battery charging area. Take precautions to prevent open flames, sparks, or electric arcs in charging area.
- No jewelry should be worn when disconnecting or connecting battery to truck or charger.
- Only trained and authorized personnel may repair PITs.

3.10 Internal Combustion Equipment

For liquid propane, gasoline, and/or diesel operated equipment:

- Only PIT trained and authorized personnel may refuel PITs.
- Equipment will be refueled in designated locations only.
- Proper protective equipment must be worn during refueling.
- The engine will be stopped, key removed, and the operator must be off the truck before refueling.
- Smoking is prohibited during refueling.
- Only trained and authorized personnel may repair PITs.

3.11 Narrow Aisle Trucks

- In narrow aisles make sure the aisle is clear of pallets and loose material. No pallets or products should be extended out of the rack locations. Only one piece of equipment is permitted in a narrow aisle at a time.
- Before moving or stacking, an operator shall survey the path of travel to avoid obstacles such as but not limited to pipes, light fixtures, and sprinkler systems.
- Loads must be retracted to the normal travel position before traveling.
- Never put loose stock or material on upper rack locations. Be sure the material is properly secured before racking.

Appendix A:

Powered Industrial Trucks

Class I: Electric motor rider trucks

Class II: Electric motor narrow aisle trucks

Class III: Electric Motor Hand Trucks or Hand Truck Riders

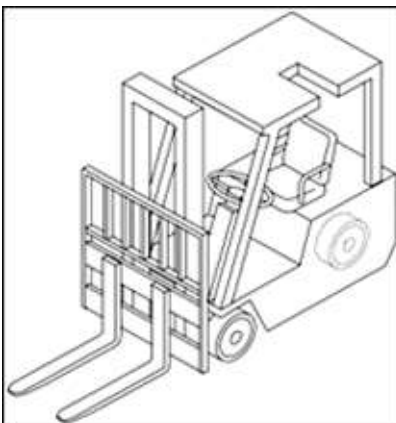
Class IV: Internal Combustion Engine Trucks (Solid/Cushion Tires)

Class V: Internal Combustion Engine Trucks (Pneumatic Tires)

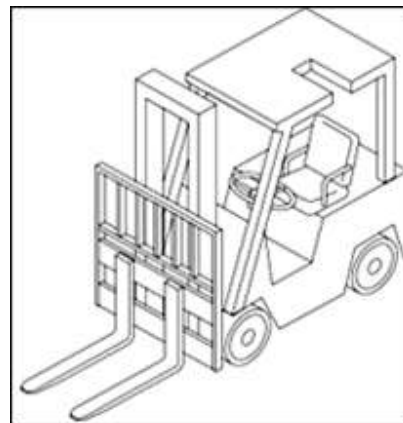
Class VI: Electric and Internal Combustion Engine Tractors

Class VII: Rough Terrain PIT Trucks

Class I: Electric Motor Rider Trucks

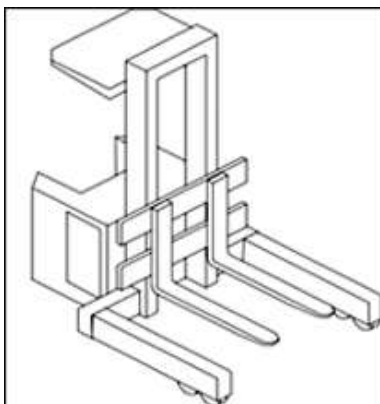


Three Wheel Electric Trucks, Sit Down

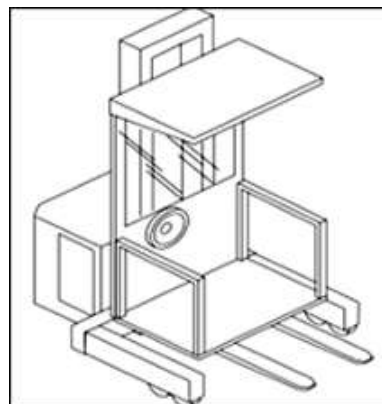


Counterbalanced Rider, Pneumatic or Either Type Tire, Sit Down

Class II: Electric Motor Narrow Aisle Trucks

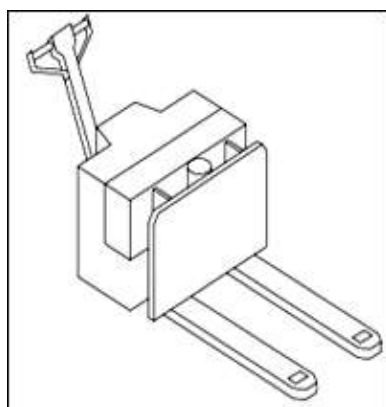


High Lift Straddle

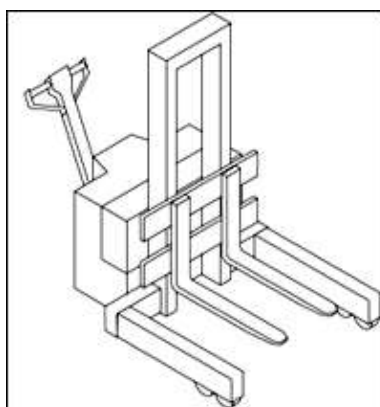


Order Picker

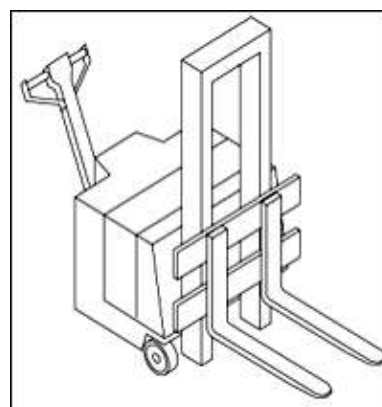
Class III: Electric Motor Hand Trucks or Hand Truck Riders



Low Lift Walkie Pallet

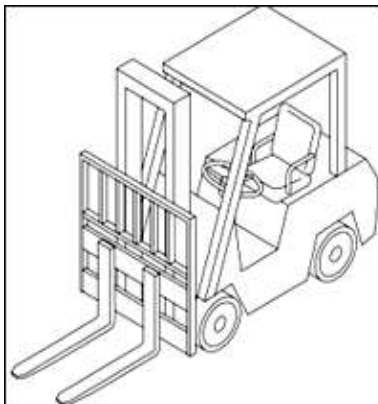


High Lift Straddle



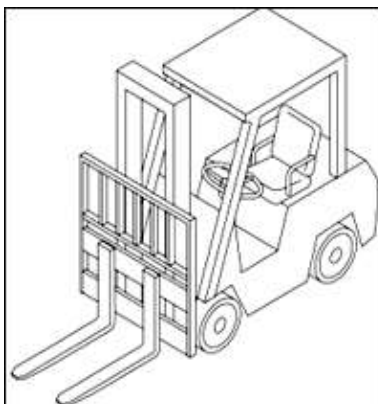
High Lift Counterbalance

Class IV: Internal Combustion Engine Trucks (Solid/Cushion Tires)



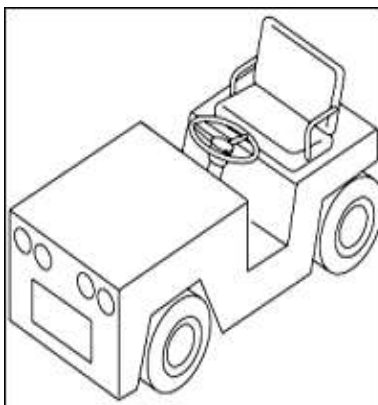
*Fork, Counterbalanced
(Cushion Tire)*

Class V: Internal Combustion Engine Trucks (Pneumatic Tires)



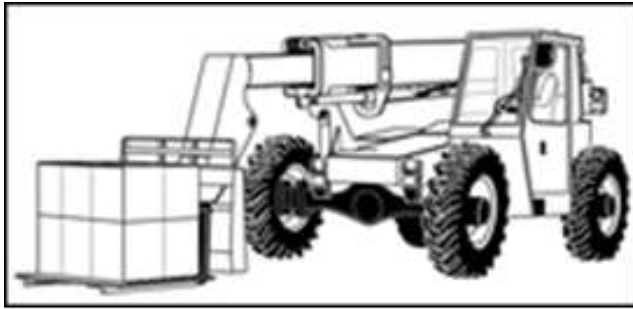
*Fork, Counterbalance
(Pneumatic Tires)*

Class VI: Electric and Internal Combustion Engine Tractors

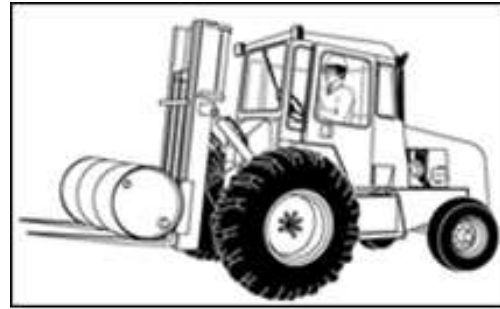


*Sit-Down Rider
(Draw Bar Pull > 999 lbs.)*

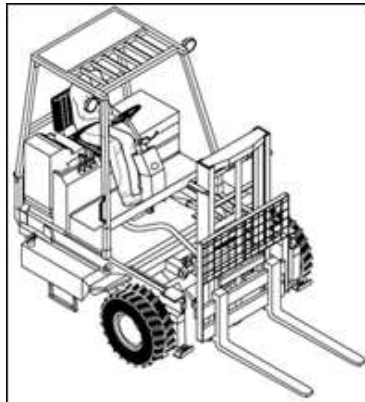
Class VII: Rough Terrain PIT Trucks



Vertical Reach



Vertical Mast Type



Truck/Trailer Mounted

Appendix B:

Powered Industrial Truck Forms

See the **EHS Forms** webpage (<https://www.purdue.edu/ehps/rem/forms/allforms.html>) for usable copies of the following Powered Industrial Truck forms.

PIT-1 – Hands-On Skills Evaluation

PIT-2 – Routine Pre-Use Checklist

PIT-3 – Powered Industrial Truck (PIT) Information

PIT-1 – Hands-On Skills Evaluation

Form PIT-1

PURDUE UNIVERSITY Powered Industrial Truck Safety Program Hands-On Skills Evaluation

Operator: _____ Date: _____

Company: _____ Department: _____

	Point Deductions	Point					
		SD/C	SD/E	PJ	Reach	Picker	Other
Pre-Use							
Seat belt not used (Sit down rider)	10						
Required other PPE used if applicable	10						
Travel							
No look before backing up	2						
Excess repositioning	2						
Dragged forks or load	2						
Forks tilted forward	2						
Unfamiliar with controls	5						
Forks too high	5						
Improper speed	10						
Did not stop/slow at intersection	10						
Struck object	5 to 20						
Load Handling							
Poor load placement	2						
Load not fully engaged by forks	2						
Load too high during travel	5						
Load shifted on pick up or deposit	5						
Turned with load elevated	5						
Load dropped, damaged, crushed	5 to 20						
Basic Safety							
Failure to sound horn	5						
Hand/Foot/Head placed outside forklift	5						
Did not keep people at safe distance	10						
Parking							
Did not put forklift in neutral	2						
Did not set parking brake	2						
Did not put fork tips flush with floor	2						
Did not shut power off when required	2						
Did not use a 3-point dismount	2						
Other							
Unspecified minor safety violation	5						
Unspecified major safety violation	20						
Total Deductions							
Final Score (Minimum 85 required to pass.)							
Results: P = Pass, NMP = Needs More Practice, NR = Not Ready							

Training Disclaimer and Operator Acknowledgment

We reserve the right to not issue certification, regardless of score, if the instructor feels the operator has not demonstrated the ability to safely operate a particular piece of equipment. By signing below the operator acknowledges they have been made aware of any deductions as well as their current status.

Operator's Signature: _____

Trainer's Name: _____

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PIT-3 – Powered Industrial Truck (PIT) Information

Form PIT-3

PURDUE UNIVERSITY
Powered Industrial Truck Safety Program
Powered Industrial Truck (PIT) Information

Site -Specific Information

Department: _____

Location/Building: _____

Types of PIT: (electric, LP, gas, etc.)

Hazardous Location Designations. (flammables, dust, etc.)

Loads (oversized, hazardous materials, etc.)

Refueling/ Recharging Locations:

Supervisor's Acknowledgement

Note: Any additions/deletions to this document must be reviewed with all operators.

Name: _____ Signature: _____ Date: _____

Revised: June 5, 2025

Appendix C: Summary of Changes

June 11, 2025

- Not Applicable, New Document