



UAF Facilities Services

Job Hazard Analysis Manual

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CERTIFICATION OF HAZARD ASSESSMENTS

This manual contains hazard assessments for routine tasks and the use of general and specific tools and equipment for all employees of the University of Alaska Fairbanks, Facilities Services. The hazard assessments contained in this manual were initially performed by the FS Safety Officer in May 2004 and have been amended as required due to changes in equipment and methods of performing maintenance tasks throughout the UAF campus and all remote sites and campus'.

Hazard Analysis

Abrasive Cutoff Saw

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators, automatic vacuum machine |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, point of operation, ingoing nip joints, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Safety shoes |
| | Hand Injury | Point of Operation, ingoing nip points, rotating parts, flying chips and sparks | Machine guards, situational awareness |
| | Head Protection | Projectiles | Face Shield |
| | Fire | Heat, sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |
| | Electrical Shock | Improper grounding, improper operations and maintenance | Lockout/tagout, proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

Safety Shoes/Boots
 Safety glasses/goggles
 Face Shield (optional)
 Disposable Respirators (optional)
 Hearing Protection

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
3. All belts, pulleys, gears, shafts shall be guarded in accordance with specific requirements of OSHA 29 CFR 1910.219
4. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
5. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
6. All portions of the blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide and the table.
7. Report any observed defect or safety hazard to your supervisor immediately.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Air Compressor

| TASK | HAZARD | CAUSE | PREVENTION |
|----------------------------|-------------------------------|------------------------------------|--|
| Shutdown and Isolate Unit | Unit Activation during repair | Auto start and/or human error | Lockout/Tagout |
| | Noise | Equipment Operation | Use Hearing Protection |
| Routine Maintenance/Repair | Hand Injury | Confined work areas, sharp edges | Gloves |
| | Eye Injury | Residual air pressure | Goggles, safety glasses with side shields |
| | Electric Shock | Improper operation and maintenance | Manufacturers instructions strictly followed, lock-out/tag-out |
| | Noise | Equipment Operation | Use hearing protection |
| Routine Operation | Noise | Equipment Operation | Use hearing protection |
| | Eye Injury | Blowing debris | Use safety glasses w/side shields or goggles |

PPE REQUIRED:

Goggles/Safety Glasses with side shield
Hearing Protection
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Hearing Protection must be worn upon entering compressor area.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Never use compressed air to clean your body or clothes.
6. If using compressed air to blow debris, use only approved nozzle (30 psi maximum cutoff) and effective chip guarding/PPE will be used.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Air Compressor, Portable, Electric

| TASK | HAZARD | CAUSE | PREVENTION |
|----------------------------|----------------|--|---|
| Routine Maintenance/Repair | Electric Shock | Improper operation and maintenance | Unplug electrical cord and retain control of plug during repair/maintenance |
| Routine Operation | Noise | Equipment operation | Use hearing protection |
| | Trauma | Improper use, uncontrolled release of compressed air | Use appropriate nozzle for specific work activity, situational awareness |
| | Eye Injury | Projectiles, flying debris | Goggles or safety glasses with side shields |

PPE REQUIRED:

Goggles or Safety glasses with side shield
Hearing Protection

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Hearing Protection must be worn when using compressor.
4. When used for cleaning purposes, air pressure must be adjusted to less than 30 psi, and effective chip guarding and PPE must be used.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Never use compressed air to clean your body or clothing.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Air Sprayer

| TASK | HAZARD | CAUSE | PREVENTION |
|----------------------------|-------------------------------|------------------------------------|--|
| Shutdown and Isolate Unit | Unit Activation during repair | Auto start and/or human error | Lockout/Tagout |
| | Noise | Equipment Operation | Use Hearing Protection |
| Routine Maintenance/Repair | Hand Injury | Confined work areas, sharp edges | Gloves |
| | Eye Injury | Residual air pressure | Goggles, safety glasses with side shields |
| | Electric Shock | Improper operation and Maintenance | Manufacturers instructions strictly followed, lock-out/tag-out |
| | Noise | Equipment Operation | Use hearing protection |
| Routine Operation | Noise | Equipment operation | Use hearing protection |

PPE REQUIRED:

Safety Glasses with side shield
Hearing Protection
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Hearing Protection must be worn upon entering compressor area.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Never spray material toward any individual.

Hazard Analysis

Arc Welder, Electric

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Hazardous fumes, gases, dusts | Appropriate ventilation, as required appropriate respirators |
| | Eye Injury | Projectiles, fumes, dusts, flashes | Helmets, goggles, appropriate noncombustible or flame-proof screens |
| | Trauma | Projectiles, burns | Situational awareness, PPE, protective clothing, switch guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from welding area |
| | Electrical Shock | Improper grounding, improper operations and maintenance, improper switching device | Lockout/tagout, proper grounding of secondary and case portable welding transformers, manufacturers instructions strictly followed, proper switching for shutting down machine |

PPE REQUIRED:

Eye Safety Shield/Helmet with Filter Lens

Protective Clothing*

*Full sleeves, no front pockets, no cuffs, shirt left outside of trousers, made of clean fire-resistant materials

Fire Resistant Gauntlet Gloves

Safety Shoes/Boots

Disposable respirator (optional)

Goggles/Safety Glasses

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Before cutting or welding is permitted the area shall be inspected by an individual responsible for authorizing cutting and welding operations.
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Employee's assigned to operate equipment will be familiar with the OSHA requirements outlined in 29 CFR 1910.252 and 1910.254.
4. Only authorized users may operate equipment.
5. Connections and machine grounding shall be checked prior to use.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

ATV 4-Wheeler

| TASK | HAZARD | CAUSE | PREVENTION |
|----------------------------|------------------------|--|---|
| Routine Maintenance/Repair | Hand Injury | Confined work areas, sharp edges/objects, rotating parts | Gloves, situational awareness |
| | Foot Injury | Equipment rolls over foot, object drops on foot | Wear safety shoes |
| | Trauma | Rotating parts | Situational awareness, appropriate clothing |
| | Muscle/Ligament Strain | Awkward working positions | Position body to avoid strains, take appropriate breaks |
| | Eye Injury | Flying Particles | Goggles/Safety Glasses w/side shields |
| | Noise | Equipment Operation | Use hearing protection |
| Routine Operation | Noise Head Injury | Equipment Operation Fall from 4-Wheeler, accident | Use hearing protection Wear helmet |

PPE REQUIRED:

Helmet
 Safety glasses, goggles or helmet face shield
 Gloves
 Hearing Protection
 Safety Shoes/boots
 Protective clothing (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate or perform routine maintenance and repairs on equipment.
3. All controls shall be in neutral position with the motor stopped and brakes set, unless work being performed requires otherwise.
4. Whenever equipment is parked, the parking brake shall be set.
5. All authorized personnel shall have received training in the safe operation of equipment.
6. Report any observed defect or safety hazard to your supervisor immediately.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

- Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
- Never fuel the engine while running or in the presence of an open flame.
- Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
- Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
- Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
- Keep all guards and shields in place.
- Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Auger (Post Hole), Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-------------|--|---|
| General Use | Inhalation | Dust/particles generated during machine operation, exhaust fumes | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, point of operation, flying debris & sparks, improper use and operation, loose clothing becoming entangled | Situational awareness, PPE, machine guards, Manufacturers instructions followed, do not wear loose clothing |
| | Noise | Engine | Ear plugs/ear muffs |
| | Foot Injury | Drop object on foot, impact of auger | Safety shoes |
| | Hand Injury | Point of operation, in-going nip points, rotating parts, flying debris and sparks | Gloves, machine guards, situational awareness |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards |

PPE REQUIRED:

Gloves (leather)
 Goggles/Safety Glasses w/side shield
 Disposable respirator (optional)
 Safety Shoes/boots
 Hearing Protection

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions
2. Only authorized users can operate equipment.
3. One or more methods of machine guarding shall be provided to protect the operator and others in the area from hazards such as those created by point of operation, rotating parts and sparks.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Keep all guards and shields in place.
6. Keep hands, hair and clothing away from moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting.
6. The ignition system should be disabled to prevent accidental start of the engine.

Hazard Analysis

Band Saw

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|---|
| General Use | Inhalation | Hazardous fumes, gases, dusts | Appropriate ventilation, as required disposable respirators |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, point of operation, ingoing nip points, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Sharp objects | Gloves as appropriate for task |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards |
| | Electrical Shock | Improper grounding, improper operations and maintenance | Proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

Protective Clothing (optional)
Goggles/Safety Glasses w/side shield
Face Shield
Safety Shoes/Boots
Disposable Respirator (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
4. All belts, pulleys, gears, shafts shall be guarded in accordance with the requirements of OSHA 29 CFR 1910.219.
5. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
6. One or more methods of machine guarding shall be provided to protect the operator and others in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
7. All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table. Band saw wheels shall be fully encased.
8. Each band saw shall be provided with a tension control device to indicate proper tension for the standard blades used on the machine.
9. Feed rolls of band saws shall be protected with a suitable guard to prevent the hands of the operators from coming in contact with the in-running rolls at any point.
10. Report any observed defect or safety hazard to your supervisor immediately.
11. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
12. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
13. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Battery Charger

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Foot Injury | Drop object on foot | Wear safety shoes |
| | Trauma (Burns) | Batty acid spills | Goggles, apron, gloves, proper battery handling procedures |
| | Eye Injury | Battery acid splashes | Goggles, appropriate battery handling procedures |
| | Electrical Shock | Improper operation and maintenance, battery condition | Lockout/tagout, manufacturers instructions strictly followed |
| | Fire | Sparks, improper storage of flammables, combustibles | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Explosion | Spark/poor ventilation, smoking, improper procedures | Adequate ventilation, no smoking, follow manufacturers instructions |

PPE REQUIRED:

Apron
Gloves
Safety Shoes/Boots
Goggles

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.

Hazard Analysis

Belt Sander

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, point of operation, ingoing nip points, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of Operation, ingoing nip points, rotating parts, flying chips & sparks | Machine guards, situational awareness |
| | Fire/Explosion | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Electrical Shock | Improper grounding, Improper operation and maintenance | Lockout/tagout, proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

Protective Clothing (optional)
 Goggles/Safety Glasses w/side shield
 Safety Shoes/Boots
 Disposable Respirators (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. Hook up vacuum unit to minimize dust recommended.
4. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
5. Guards shall be provided at each nip point where the sanding belt runs on to a pulley. These guards shall effectively prevent the hands and fingers of an operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against accidental contact.
6. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
7. Report any observed defect or safety hazard to your supervisor immediately.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Bench Grinder

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|---|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Impact, penetration, compression | Gloves, situational awareness |
| | Head Protection | Projectiles | Face Shield |
| | Fire | Heat, sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from grinding/buffing area |
| | Electrical Shock | Improper grounding, Improper operations and maintenance | Lockout/tagout, proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

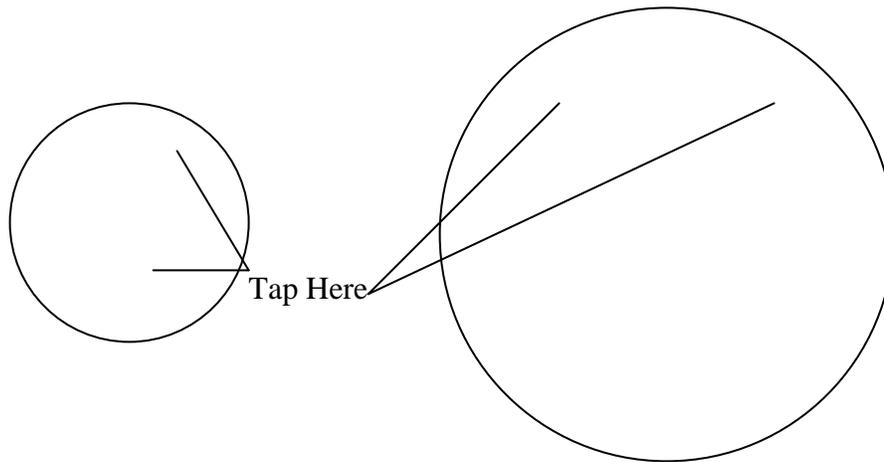
Protective Clothing (optional)
 Goggles/Safety Glasses w/side shield
 Face Shield
 Safety Shoes/Boots
 Disposable Respirators (optional)
 Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.215.
2. Only authorized users can operate equipment.
3. Properly adjust guards in accordance with OSHA 1910.215 (adjust work rest to within 1/8" of the wheel; adjust tongue guard to within 1/4" of the wheel; adjust tongue guard such that angular exposure has not exceeded 90° and exposure begins at a point not more than 65° above the horizontal plane of the wheel spindle).
4. Abrasive wheels shall be used only machines provided with safety guards as defined in 29 CFR 1910.215.
5. Immediately before mounting, wheels shall be inspected and sounded by the user (Ring Test) to make sure they have not been damaged in transit, storage or otherwise, in accordance with OSHA 29 CFR 1910.215. Ring Test procedures are attached.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Ring Test

To sound wheels using the Ring Test, tap the wheels gently using with a light nonmetallic implement, such as the handle of a screwdriver for a light wheel, or a wooden mallet for heavier wheels. The wheels should be tapped about 45 degrees each side of the vertical centerline and about 1 or 2 inches from the periphery. Then rotate the wheel 45 degrees and repeat the test (see figures below). An undamaged wheel will give you a clear metallic tone. A cracked wheel will have a dead sound and not a clear ring. If the wheels sound cracked (dead) when tapped, they shall not be used. Ensure you document the ring test and its results for future reference.



Hazard Analysis

Blower, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|----------------|--|---|
| General Use | Eye Injury | Flying debris | Safety glasses, goggles or face shield |
| | Trauma | Flying debris, Rotating parts, Burns | Protective clothing (long pants), situational awareness, appropriate guards in place, adequate clearance(s) |
| | Foot Injury | Equipment dropped on foot | Safety toe shoes |
| | Noise | Equipment Operation | Hearing protection |
| | Rotating parts | Loose clothing, jewelry, long hair caught in machinery | Wear close fitting clothing, do not wear jewelry that can become entangled in moving parts, secure long hair so it will not come in contact with moving parts or air intake |

PPE REQUIRED:

Safety Glasses/Goggles/Face Shield

Hearing Protection

Protective Clothing (long pants, gloves, close fitting clothing)

Safety Shoes

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts and air intakes.
7. Stop the unit immediately if it suddenly begins to vibrate or shake.
8. Always turn off the engine before setting the unit down.
9. Never insert any foreign object into the air intake or outlet openings.
10. Operate the blower only when there is adequate clearance from people, buildings, vehicles or other obstructions.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open, well-ventilated area.
2. Never fuel the engine while running, hot, or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Ensure gas/oil mixture is in correct proportions.
5. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
6. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
7. Keep all guards and shields in place.
8. Keep hands, hair and clothing away from moving parts and air intakes.

Hazard Analysis

Brush Mower/Trimmer, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--------------------------------------|---|
| General Use | Eye Injury | Flying debris | Safety glasses, face shield |
| | Trauma | Flying debris, Rotating parts, Burns | Protective clothing, situational awareness, appropriate guards in place |
| | Foot Injury | Equipment rolls over foot | Safety shoes |
| | Noise | Equipment Operation | Hearing protection |

PPE REQUIRED:

Safety Glasses
Face Shield
Protective Clothing (optional)
Hearing Protection

EQUIPMENT PROCEDURES/REQUIREMENTS:

11. Operate equipment in strict accordance with Manufacturer's instructions.
12. Only authorized users can operate equipment.
13. Report any observed defect or safety hazard to your supervisor immediately.
14. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
15. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
16. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

9. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
10. Never fuel the engine while running or in the presence of an open flame.
11. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
12. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
13. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
14. Keep all guards and shields in place.
15. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

“Brush hog” Mower, Tractor attachment

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--------------------------------------|---|
| General Use | Eye Injury | Flying debris | Safety glasses, face shield |
| | Trauma | Flying debris, Rotating parts, Burns | Protective clothing, Situational awareness, appropriate guards in place |
| | Foot Injury | Equipment rolls over foot | Safety shoes |
| | Noise | Equipment Operation | Hearing protection |

PPE REQUIRED:

Safety Glasses
Face Shield
Protective Clothing (optional)
Hearing Protection

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer’s instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Maintain tractor and equipment in safe operating condition, including original safety-related features and any retrofits designed and recommended by the equipment manufacturer.
5. Only operate tractor with ROPS (roll over protection structure) in place.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor’s discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.
8. Inspect areas in which mobile equipment is to be operated prior to performing the work to identify and control actual and potential hazards.
9. Ensure that other workers maintain a safe distance from area while mower equipment is in operation.
10. Always use seat belts provided with tractor.

Hazard Analysis

Buffer (Floor)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|---------------------------------------|---|
| General Use | Eye Injury | Splashes | Goggles (for splash hazards) |
| | Trauma | Projectiles, impact, vibration, burns | Situational awareness, gloves, protective clothing, switch guards |
| | Foot Injury | Dropped object on foot | Wear safety shoes |
| | Ingestion | Dust, chemicals | Wear respirator or dust mask if needed, rubber gloves |

PPE REQUIRED:

Goggles
Gloves
Safety Shoes
Protective Clothing (long pants)
Respirator or dust mask (as needed)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. For chemical contact, see JHA for chemicals.
2. Ensure buffer cord is not damaged and has an intact plug ground pin.
3. Keep cord clear of rotating brush.
4. Use caution on wet surfaces.
5. Do not let go of buffer until it comes to a complete stop to avoid injury.
6. Do not use a device to hold the safety lever in the on position (stops when you let go).
7. Use 2 people to lift the buffer.
8. Wear long pants to avoid chemicals splashing on bare legs.
9. Take occasional breaks to avoid repetitive motion injury from vibration.
10. Operate equipment in strict accordance with Manufacturer's instructions.
11. Only authorized users can operate equipment.
12. Report any observed defect or safety hazard to your supervisor immediately.
13. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
14. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
15. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Chain Hoist

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-----------------|----------------------------------|-------------------------------|
| General Use | Foot Injury | Drop object on foot | Wear Safety shoes |
| | Hand Injury | Impact, burns | Gloves, Situational awareness |
| | Head Protection | Swinging chain/hoisted equipment | Hard hat |

PPE REQUIRED:

Gloves
Safety Shoes/Boots
Hard Hat

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. DO NOT overload hoist beyond its rated capacity.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Verify hoist has a current inspection certificate (good for 1 year from last inspection date).

Hazard Analysis

Chain Saw, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-----------------|---|--|
| General Use | Inhalation | Dust/particles generated during machine operation, exhaust fumes | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Head Protection | Projectiles | Face shields |
| | Trauma | Projectiles, point of operation, flying chips & sparks, falling objects, improper use and operation | Situational awareness, PPE, hardhat, protective clothing (chaps, long pants, long sleeve shirt), machine guards, Manufacturers instructions followed |
| | Noise | Engine | Ear plugs/ear muffs |
| | Foot Injury | Drop object on foot, impact of saw blade | Safety shoes (cut resistant) |
| | Hand Injury | Point of operation, in-going nip points, rotating parts, flying chips and sparks | Gloves, machine guards, situational awareness |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards |

PPE REQUIRED:

Protective Clothing (chaps, long pants, long sleeve shirt)
 Goggles/Safety Glasses w/side shield
 Face Shield/screen
 Hearing Protection

Gloves (leather)
 Disposable respirator (optional)
 Safety Shoes/boots (cut resistant)
 Hardhat

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. One or more methods of machine guarding shall be provided to protect the operator and others in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Keep all guards and shields in place.
6. Keep hands, hair and clothing away from moving parts.
7. User must have had OSHA approved training prior to operating any chain saw.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting.
6. The ignition system should be disabled to prevent accidental start of the engine.

Hazard Analysis

Chemicals (Pouring/Handling)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|--|----------------------|--|
| General Use | Eye Injury | Splash, fumes | Goggles |
| | Contact irritation, burn or absorption | Splash, skin contact | Gloves (appropriate type for chemical), apron (if necessary), long sleeves |
| | Ingestion | Breathing fumes | Wear respirator if needed |
| | Face | Splash | Wear Face Shield (if necessary) |

PPE REQUIRED:

Goggles
Gloves
Protective Clothing (apron)
Respirator (as needed)
Face shield (if necessary)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Read and understand Material Safety Data Sheet on chemical(s) being handled.
2. Know where the nearest emergency eye wash/shower is located and the path is clear.
3. Contact EH&S Industrial Hygienist for proper respirator and filter required for chemical.
4. For caustics/acids/reactive chemicals, use face shield in addition to goggles.
5. Mark all secondary chemical vessels with contents in permanent marker when filled.
6. Use a funnel for pouring into a vessel with a small diameter opening to prevent spill/splash.
7. Do not allow chemicals to enter a drain unless approved by HAZMAT.
8. Do not allow chemicals to enter the environment (ground, watershed, etc).
9. Do not mix incompatible chemicals as injury, illness or death may result.
10. Transfer chemicals only in a well ventilated area.
11. Never leave containers open unless pouring or receiving chemicals during transfer.
12. Wash hands thoroughly after handling chemicals and before smoking, eating or drinking.
13. Report any observed defect or safety hazard to your supervisor immediately.
14. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
15. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).

Hazard Analysis

Cleaning (Body Fluid Clean-Up)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-------------|---|--|
| General Use | Eye Injury | Fumes, splashes and dusts (cleaning agents) | Goggles, face shield |
| | Trauma | Sharp objects, impact | Situational awareness, gloves |
| | Foot Injury | Dropped object on foot | Wear safety shoes (if necessary) |
| | Ingestion | Chemicals, body fluids | Wear respirator or dust mask (if needed), gloves |

PPE REQUIRED:

Goggles
Face shield
Safety Shoes/boots (if necessary)
Gloves (chemical/biological resistant)
Protective Clothing (Apron)
Respirator or dust mask (as needed)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Use Blood Borne Pathogen (BBP) procedures to clean up body fluids.
2. Contact HAZMAT and/or Industrial Hygienist if you have any questions on clean-up or disposal.
3. If in doubt about substance, use BBP procedures.
4. Wash hands thoroughly after task and before eating, drinking or smoking.
5. Operate equipment in strict accordance with Manufacturer's instructions.
6. Only authorized and trained employees may handle BBP materials.
7. Report any observed defect or safety hazard to your supervisor immediately.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Cleaning (Sweeping/Mopping/Buffering)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|---------------------------------------|--|
| General Use | Trauma | Projectiles, impact, chemical contact | Situational awareness, gloves, protective clothing |
| | Foot Injury | Dropped object on foot | Wear safety shoes |
| | Ingestion | Chemicals, dust | Wear respirator or dust mask if needed |

PPE REQUIRED:

Safety Shoes/boots

Gloves (optional)

Protective Clothing (long pants recommended to prevent chemical splash on skin)

Respirator or dust mask (as needed)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. For use of chemicals, see JHA for chemicals.
2. Gloves will prevent blisters and abrasions from mops/brooms.
3. Use proper body mechanics to ease fatigue and mitigate repetitive motion effects.
4. Reduce weight of mop buckets by partially emptying them before lifting them to drain.
5. Use caution on wet floors to avoid slips, trips and falls.
6. Use caution not to trip on electrical cords.
7. Do not mix incompatible cleaning agents.
8. Wash hands thoroughly after task and before eating, drinking or smoking.
9. Take occasional breaks to avoid repetitive motion injury.
10. Operate equipment in strict accordance with Manufacturer's instructions.
11. Only authorized users can operate equipment.
12. Report any observed defect or safety hazard to your supervisor immediately.
13. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
14. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
15. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Compound Miter Saw

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, point of operation, ingoing nip points, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of Operation, ingoing nip points, rotating parts, flying chips & sparks | Machine guards, situational awareness |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards |
| | Electrical Shock | Improper grounding, Improper operation and maintenance | Proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

Protective Clothing (optional)
 Goggles/Safety Glasses w/side shield
 Safety Shoes/Boots
 Disposable Respirators (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
4. All belts, pulleys, gears, shafts shall be guarded in accordance with the specific requirements of OSHA 29 CFR 1910.219.
5. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
6. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
7. All portions of the blade shall be enclosed or guarded, except for the working portion of the blade.
8. Report any observed defect or safety hazard to your supervisor immediate
9. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
10. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
11. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Ditchwitch Trencher

| TASK | HAZARD | CAUSE | PREVENTION |
|----------------------------|-------------|--|---|
| Routine Maintenance/Repair | Hand Injury | Confined work areas, sharp edges/objects, rotating parts | Gloves, situational awareness |
| | Foot Injury | Equipment rolls over foot, object drops on foot | Wear safety shoes |
| | Trauma | Rotating parts | Situational awareness, appropriate clothing |
| | Eye Injury | Flying particles | Safety glasses |
| | Noise | Equipment Operation | Use hearing protection |
| Routine Operation | Noise | Equipment Operation | Use hearing protection |
| | Head Injury | Bump head, objects fall on head | Wear hard hat (as necessary) |
| | Foot Injury | Equipment rolls over foot, object drops on foot | Wear safety shoes |
| | Hand Injury | Sharp edges/objects | Wear Gloves |

PPE REQUIRED:

| | |
|---------------------|--------------------|
| Protective Clothing | Safety Shoes/Boots |
| Safety Glasses | Hard Hat |
| Gloves | Hearing Protection |

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. All controls shall be in a neutral position with the motors stopped and brakes set, unless work being performed requires otherwise.
3. Whenever equipment is parked, the parking brake shall be set.
4. All authorized personnel shall have training in the safe operation of equipment.
5. Only authorized users can operate or perform routine maintenance and repairs on equipment.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Drill Bit Sharpener

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|---|
| General Use | Eye Injury | Projectiles, filings | Safety glasses with side shield or appropriate safety goggles |
| | Hand Injury | Point of operation, ingoing nip points, rotating parts, flying chips and sparks | Situational awareness |
| | Electrical Shock | Improper grounding, improper operations and maintenance | Proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

Safety Glasses w/side shield

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.

Hazard Analysis

Drill Press

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Filings/particles generated during machine operation | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles, flying sparks | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, point of operation, ingoing nip points, flying chips & sparks | Situational awareness |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of operation, ingoing nip points, rotating parts, flying chips & sparks | Gloves (optional), machine guards, situational awareness |
| | Head Protection | Projectiles | Face shield (if necessary) |
| | Fire | Sparks, friction | Appropriate placed fire extinguisher, remove all combustibles and fire hazards |
| | Electrical Shock | Improper grounding, improper operations and maintenance | Proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

| | |
|--------------------------------------|-----------------------------------|
| Protective Clothing (optional) | Safety Shoes/Boots |
| Goggles/Safety Glasses w/side shield | Disposable Respirators (optional) |
| Face shield | Gloves (optional) |

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212.
2. Only authorized users can operate equipment.
3. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
4. All operators must be trained and instructed in the safe method of work. The employer shall ensure by adequate supervision that the correct operating procedures are being followed.
5. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
6. Every point of operation guard shall prevent entry of hands or fingers into point of operation and shall conform to all requirements as outlined in 29 CFR 1910.217.
7. Report any observed defect or safety hazard to your supervisor immediately.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Driving

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|---------------------------------------|--|
| General Use | Trauma | Projectiles, impact, vibration, burns | Situational awareness, gloves (optional), seat belts |
| | Noise | Engine, impact | Wear hearing protection for noise level over 85db |

PPE REQUIRED:

Hearing Protection
Gloves (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate vehicle/equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Use a spotter where reduced visibility is experienced.
4. Drive at speeds consistent with conditions.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.

Hazard Analysis

Drum, 30-55 Gal (Handling)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|------------------------|--|
| General Use | Eye Injury | Splashes | Goggles (for handling exposed chemicals) |
| | Trauma | Impact | Situational awareness, gloves |
| | Foot Injury | Dropped object on foot | Wear safety shoes |

PPE REQUIRED:

Goggles
Safety Shoes/boots
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Use two people to move/lift heavy drums.
2. Read and understand Material Safety Data Sheet for chemical being handled.
3. Know where the nearest emergency eye wash/shower is and ensure a clear path.
4. Plan movement route to avoid hazards and minimize exposure to chemicals.
5. Use mechanical means to handle drums if available.
6. Secure drums when in transit to avoid tipping and spilling contents.
7. Be aware of drains along travel path to avoid any chemical entering the waste system in case of a spill.
8. Use proper body mechanics when handling heavy/awkward loads.
9. Only move drums when properly closed (unless empty and purged).
10. Push drums versus pulling them on a dolly to prevent them from falling on worker in case of a fall.
11. Operate all equipment in strict accordance with Manufacturer's instructions.
12. Only authorized users can operate equipment.
13. Report any observed defect or safety hazard to your supervisor immediately.
14. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
15. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
16. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Dust Collector, Vacuum

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|----------------|--|--|
| General Use | Foot Injury | Drop object on foot | Wear safety shoes |
| | Electric Shock | Improper operation and maintenance, improper grounding | Manufacturers instructions strictly followed, proper grounding |
| | Eye Injury | Flying Debris | Wear safety glasses w/side shields |
| | Noise | Equipment Operation | Use hearing protection |

PPE REQUIRED:

Safety Glasses with side shield
Hearing Protection
Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Report any observed defect or safety hazard to your supervisor immediately.
3. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
4. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
5. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Engine Stand, Manual

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------------------|--|--|
| General Use | Foot Injury Trauma | Improper placement of load Overloading engine stand beyond rated capacity | Situational awareness, wear safety shoes Follow manufacturer's instructions. Ensure that rated load is legibly and permanently on engine stand, and rated capacity is not exceeded. |

PPE REQUIRED:

Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. DO NOT overload engine stand beyond its rated capacity.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Floor Jack, Hydraulic

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------------------|--|--|
| General Use | Foot Injury Trauma | Roll jack over foot Overloading jack beyond rated capacity, using jack for support rather than just lifting | Wear safety shoes Follow manufacturer's instructions. Ensure that rated load is legibly and permanently marked in a prominent location on jack, and rated capacity is not exceeded. Immediately support load once it is lifted. |

PPE REQUIRED:

Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. DO NOT use jacks for supporting loads (vehicles). Jack is designed for lifting only. Immediately after jacking, support load (vehicle) with car/truck stands.
4. DO NOT overload jack beyond its rated capacity.
5. In the absence of a firm foundation, the base of the jack shall be blocked. If there is the possibility of slippage of the cap, a block shall be placed between the cap and the load.
6. The operator shall watch the stop indicator, which shall be kept clean, to determine the limit of travel. The indicated limit shall not be overrun.
7. After the load has been raised, it must be blocked, cribbed, or otherwise secured at once.
8. Hydraulic jacks exposed to freezing temperatures shall be supplied with an adequate antifreeze liquid.
9. Jacks shall be properly lubricated at regular intervals.
10. Jacks shall be thoroughly inspected depending on service conditions, but less than:
 - every 6 months for jacks used constantly or intermittently at one locality;
 - when sent out and returned for jacks taken out of the shop for special work; and,
 - immediately before and after use for jacks subjected to an abnormal load or shock.
11. Repair or replacement parts shall be examined for possible defects.
12. Jacks that are out of order shall be tagged accordingly, and shall not be used until repairs are made.
13. Report any observed defect or safety hazard to your supervisor immediately.
14. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
15. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
16. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Forklift

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|---------------------------------------|--|
| General Use | Trauma | Projectiles, impact, vibration, burns | Situational awareness, gloves, switch guards |
| | Foot Injury | Dropped object on foot | Wear safety shoes |
| | Noise | Engine, impact | Wear hearing protection |
| | Eye | Fluid splash when servicing | Wear safety goggles |

PPE REQUIRED:

Safety goggles
Safety Shoes/boots
Hearing Protection
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Use spotters when visibility is restricted.
2. Use caution when mounting/exiting forklift to avoid falls and actuating controls.
3. Do not overload rated capacities and operating limits of forklift.
4. Ensure load is stable and secure prior to lifting/movement.
5. Operate equipment in strict accordance with Manufacturer's instructions.
6. Only authorized users can operate equipment.
7. Report any observed defect or safety hazard to your supervisor immediately.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.

Hazard Analysis

Framing Nailer, Paslode Impulse

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-------------|---------------------|--|
| General Use | Inhalation | Exhausts | Use only in well ventilated areas |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Noise | Machine operation | Hearing protection |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of operation | Situational awareness |
| | Fire | Hot exhaust gases | Appropriate placed fire extinguisher, remove all combustibles and fire hazards |

PPE REQUIRED:

Safety Glasses with side shields/Safety Goggles
Hearing Protection
Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.243(d).
2. Only authorized users can operate equipment.
3. Follow manufacturer's operating instructions.
4. Before using, the operator must inspect the tool to make sure that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions.
5. Never assume tool is empty.
6. Never point tool at anyone.
7. Never carry tool with your finger on or depressing the trigger.
8. Never operate a tool that is malfunctioning. If tool develops a defect during use, immediately cease to use it until it has been properly repaired.
9. Do not load tool unless being prepared for immediate use.
10. No not leave loaded tool unattended.
11. Never leave tool in a place where it would be available to unauthorized users.
12. Never disable or remove the work-contacting element.
13. Do not load fasteners with trigger.
14. Never attempt to clear jams before removing the fuel cylinder.
15. Keep the tool clean.
16. Keep your hands away from the area being fastened.
17. Fasteners shall not be driven into very hard or brittle materials.
18. Driving into materials easily penetrated shall be avoided unless materials are backed by a substance that would prevent the fastener from passing completely through and creating a flying missile hazard.
19. Never puncture, incinerate, crush or refill fuel cells. Do not store fuel cells above 120°F.
20. Always remove fuel, battery cell, & fasteners before storage.
21. Report any observed defect or safety hazard to your supervisor immediately.
22. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
23. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
24. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Fuel Transfer Pump

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-----------------|---|--|
| General Use | Eye Injury | Fuel splashes | Goggles |
| | Hand Injury | Fuel contact in sub-zero weather | Gloves |
| | Fire, Explosion | Smoking, sparks, improper grounding and bonding | No smoking or exposure to sparks or open flame during fueling. Fill stem shall be bonded to the container during filling operations by means of a bond wide. Appropriate placed fire extinguisher. |

PPE REQUIRED:

Goggles
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL HANDLING OPERATIONS:

1. Always operate in an open well-ventilated area.
2. Never transfer fuel while engine is running or in the presence of an open flame.
3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Fill stem shall be bonded to the container during filling operations by means of a bond wire.
5. Be aware of fuel contact frostbite hazards during cold weather.

Hazard Analysis

Hand Held Pneumatic Tools

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--------------------------------------|---|
| General Use | Eye Injury | Residual air pressure, flying debris | Goggles/safety glasses with side shields, situational awareness |
| | Trauma | Air pressure, ejection of tool | Situational awareness, tool retainer |
| | Noise | Equipment Operation | Use hearing protection |
| | Hands | Vibration | Wear anti-vibration gloves for impact tools |

PPE REQUIRED:

Safety Glasses with side shield/Goggles
Hearing Protection
Gloves, Anti Vibration

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. A tool retainer shall be installed on each piece of utilization equipment, which, without such retainer, may eject tool.
4. Hose and hose connections used for conducting compressed air to utilization equipment must be designed for the pressure and service to which they are subjected.
5. Hearing protection must be worn upon when operating pneumatic tools.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. At a minimum, use of anti-vibration gloves will be worn for use of impact tools. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Hand Held Portable Power Tools

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators, automatic vacuum machine |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of operation, ingoing nip points, rotating parts, flying chips & sparks | Machine guards, situational awareness Wear anti-vibration gloves for impact type tool use. |
| | Head Protection | Projectiles | Face Shield |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Noise | Machine operation | Hearing protection |
| | Electrical Shock | Improper grounding, improper operations and maintenance | Proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

| | |
|---------------------------------------|-----------------------------------|
| Protective Clothing (optional) | Safety Shoes/Boots |
| Goggles/Safety Glasses w/side shields | Disposable Respirators (optional) |
| Face shield, as appropriate | Hearing Protection |

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.242.
2. Only authorized users can operate equipment.
3. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, in-going nip points, rotating parts, flying chips and sparks.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
6. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
7. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

High Pressure Washer, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|----------------|--|--|
| General Use | Trauma | Flying debris, contact with high pressure stream | Situational awareness, protective clothing |
| | Hand Injury | Flying debris, contact with high pressure stream | Situational awareness, gloves |
| | Head Injury | Flying debris | Situational awareness, face shield, hard hat (as necessary) |
| | Foot Injury | Drop object on foot, contact with high pressure stream | Wear safety shoes |
| | Eye Injury | Flying debris | Goggles/safety glasses with side shields, face shield |
| | Electric Shock | Improper operation and maintenance | Manufacturers instructions strictly followed |
| | Fire | Smoking, sparks | No smoking or exposure to sparks or open flame during fueling. Appropriate placed fire extinguisher. |
| | Noise | Equipment Operation | Use hearing protection |

PPE REQUIRED:

Protective Clothing (optional)
Goggles
Face shield
Hearing Protection

Safety Shoes/Boots
Hard Hat (as necessary)
Gloves
Apron (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Contact with high pressure stream may cause severe injury. Use extreme caution to prevent body contact with pressure stream. Maximum pressure at nozzle is 3400 psi.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
6. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
7. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Heat Gun

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Fumes, vapors and gases generated during use | Properly ventilated work area, use disposable respirators |
| | Burns | Hot air, contact with heat gun | Situational awareness, gloves |
| | Electrical Shock | Improper operation & maintenance | Manufacturers instructions strictly followed, replace worn parts |

PPE REQUIRED:

Gloves

Disposable Respirators (optional, if appropriate)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Follow manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Hoist (Electric/Manual)/Slings

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|------------------------|--|
| General Use | Trauma | Impact | Situational awareness, gloves, hardhat |
| | Foot Injury | Dropped object on foot | Wear safety shoes |

PPE REQUIRED:

Safety Shoes/boots
Gloves
Hard hat

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Ensure current certification of hoist (good for 1 year from date of last inspection).
4. Do not overload or exceed any design specification of hoist/sling.
5. Keep all body parts out of danger areas to avoid pinch/crush injuries.
6. Use 2 people to control awkward loads.
7. Use a spotter as necessary for lifting loads that create reduced visibility.
8. Use a hard hat when any portion of load rises above shoulder level.
9. Use tag lines to control loads when necessary.
10. Inspect sling and hoist prior to use.
11. Report any observed defect or safety hazard to your supervisor immediately.
12. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
13. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
14. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Hydraulic Press

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-----------------|---|---|
| General Use | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, moving parts, point of operation, pinch points, flying items | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of operation, pinch points, moving parts, flying items. | Gloves, machine guards, situational awareness |
| | Head Protection | Projectiles | Face Shield (as necessary) |

PPE REQUIRED:

| | |
|--------------------------------------|--------------------|
| Protective Clothing (optional) | Safety Shoes/Boots |
| Goggles/Safety Glasses w/side shield | Gloves |
| Face shield (as necessary) | |

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212.
2. Only authorized users can operate equipment.
3. All operators must be trained and instructed in the safe method of work. The employer shall ensure by adequate supervision that the correct operating procedures are being followed.
4. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
5. Every point of operation guard shall prevent entry of hands or fingers into point of operation and shall conform to all requirements as outlined in 29 CFR 1910.217.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Ice Chipping

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--------------------------------------|---|
| General Use | Eye Injury | Projectiles | Safety glasses w/side shields or goggles |
| | Trauma | Projectiles, impact, vibration, cold | Situational awareness, gloves, protective clothing, |
| | Foot Injury | Dropped object on foot | Wear safety shoes/boots |
| | Noise | Impact | Wear hearing protection (optional) |

PPE REQUIRED:

Safety Glasses w/side shields or Goggles
Safety Shoes/boots
Hearing Protection (optional)
Gloves
Protective Clothing (cold weather)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Take occasional breaks to avoid repetitive motion injury from vibration.
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Be aware of frostbite and cold contact hazards to avoid injury.
4. Use proper lifting techniques, avoid twisting and over extending when lifting load.
5. Ensure firm footing during operations.
6. Avoid overheating, dress in layers and properly vent clothing.
7. Use caution on stairs, ramps and icy surfaces.
8. Stretch prior to physical activity to warm up muscles.
9. Report any observed defect or safety hazard to your supervisor immediately.
10. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
11. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).

Hazard Analysis

Jack Stands, Manual

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------------------|---|---|
| General Use | Foot Injury Trauma | Improper placement of load Overloading vehicle stand beyond rated capacity | Situational awareness, wear safety shoes Follow manufacturer's instructions. Ensure that rated load is legibly and permanently marked in a prominent location on vehicle stand, and rated load capacity is not exceeded. |

PPE REQUIRED:

Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. DO NOT overload vehicle stand beyond its rated capacity.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Joiner

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators, use vacuum unit |
| | Eye Injury | Projectiles | Safety glasses with side shields or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, points of operation, ingoing nip points, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of Operations, ingoing nip points, rotating parts, flying chips and sparks | Machine guards, situational awareness |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Electrical Shock | Improper grounding, improper operation and maintenance | Lockout/tagout, proper grounding of frame, manufacturers instructions followed |

PPE REQUIRED:

Protective Clothing (optional) Safety Shoes/Boots (optional)
 Goggles/Safety Glasses w/side shield Disposable Respirators

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. Use vacuum unit when in use if available
4. The jointer shall have an automatic guard, which will cover all the section of the head on the working side of the fence. The guard shall effectively keep the operator's hand from coming in contact with the revolving knives. The guard shall automatically adjust itself to cover the unused portion of the head and shall remain in contact with the material at all times. A guard shall also cover the section of the head back of the gage or fence.
5. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
6. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
7. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
8. Report any observed defect or safety hazard to your supervisor immediately.
9. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
10. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
11. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Joiner/Planner

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators, use vacuum unit |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, points of operation, ingoing nip points, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of Operations, ingoing nip points, rotating parts, flying chips and sparks | Machine guards, situational awareness |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Electrical Shock | Improper grounding, improper operation and maintenance | Lockout/tagout, proper grounding of frame, manufacturers instructions followed |

PPE REQUIRED:

Protective Clothing (optional) Safety Shoes/Boots (optional)
 Goggles/Safety Glasses w/side shield Disposable Respirators

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. Use vacuum unit when in use if available.
4. The jointer shall have an automatic guard, which will cover all the section of the head on the working side of the fence. The guard shall effectively keep the operator's hand from coming in contact with the revolving knives. The guard shall automatically adjust itself to cover the unused portion of the head and shall remain in contact with the material at all times. A guard shall also cover the section of the head back of the gage or fence.
5. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
6. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
7. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
8. Report any observed defect or safety hazard to your supervisor immediately.
9. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
10. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
11. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Lawn Mower/Trimmer, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--------------------------------------|---|
| General Use | Eye Injury | Flying debris | Safety glasses w/side shields/Goggles |
| | Trauma | Flying debris, rotating parts, burns | Protective clothing, Situational awareness, appropriate guards in place |
| | Foot Injury | Equipment rolls over foot | Safety shoes |
| | Noise | Equipment Operation | Hearing protection |

PPE REQUIRED:

Safety Glasses w/side shields/Goggles
Protective Clothing (optional)
Hearing Protection
Safety Shoes

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts

Hazard Analysis

Lifting/Carrying Objects

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|------------------------|---|
| General Use | Trauma | Impact | Situational awareness, gloves, back brace/belt (optional) |
| | Foot Injury | Dropped object on foot | Wear safety shoes/boots |

PPE REQUIRED:

Safety Shoes/boots
Gloves
Back brace/belt (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Use two people to move/lift heavy/awkward objects
2. Take occasional breaks to avoid repetitive motion injury.
3. Use proper lifting techniques.
4. Use mechanical means to lift/transport objects if available.
5. Operate equipment in strict accordance with Manufacturer's instructions.
6. Only authorized users can operate equipment.
7. Report any observed defect or safety hazard to your supervisor immediately.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Loft/Mezzanine Operations

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|------------------------|--|
| General Use | Trauma | Impact, falls | Situational awareness, gloves, fall protection (restraint) |
| | Foot Injury | Dropped object on foot | Wear safety shoes |

PPE REQUIRED:

Safety Shoes/boots
Fall Protection (restraint)
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Inspect fall protection/restraint equipment for proper operation and fit prior to use.
2. Don fall protection/restraint equipment PRIOR to entering danger area or removing edge protection.
3. Only 1 person allowed in danger area at a time.
4. Ensure personnel below hazard area are clear of any falling object hazard.
5. Maintain visual contact with lift truck operator at all times when moving cargo.
6. Operate equipment in strict accordance with Manufacturer's instructions.
7. Only authorized users can operate equipment.
8. Report any observed defect or safety hazard to your supervisor immediately.
9. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
10. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
11. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

LP Gas Torch (14oz to 20oz Propane Cylinder)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|------------------------------------|--|
| General Use | Inhalation | Hazardous fumes, gases, dusts | Appropriate natural or mechanical ventilation, and disposable respirators, as required |
| | Eye Injury | Projectiles, fumes, dusts, flashes | Goggles/safety glasses w/side shields, appropriate noncombustible or flame-proof screens |
| | Trauma | Projectiles, burns | Situational awareness, gloves |
| | Foot Injury | Equipment Operation | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |

PPE REQUIRED:

Safety Shoes/Boots

Gloves

Goggles/Safety Glasses w/side shields

Disposable respirator (optional)

Protective Clothing (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Before use, inspect the work area to ensure all fire hazards have been removed or guarded, and appropriate fire extinguisher is readily available.
2. Only authorized users can operate equipment.
3. Operate equipment in strict accordance with Manufacturer's instructions.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
6. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
7. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Miter Saw

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, points of operation, ingoing nip points, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of Operations, ingoing nip points, rotating parts, flying chips and sparks | Machine guards, situational awareness |
| | Head Protection | Projectiles | Face Shield (as necessary) |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Electrical Shock | Improper grounding, improper operation and maintenance | Proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

Safety Shoes/Boots
 Goggles/Safety Glasses w/side shield
 Face Shield (as necessary)
 Disposable Respirators

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. A mechanical or electrical power control shall provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
4. All belts, pulleys, gears, shafts shall be guarded in accordance with the specific requirements of OSHA 29 CFR 1910.219.
5. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
6. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
7. All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade.
8. Report any observed defect or safety hazard to your supervisor immediately.
9. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
10. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
11. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Oxygen-Acetylene Torch

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|------------------------------------|---|
| General Use | Inhalation | Hazardous fumes, gases, dusts | Appropriate mechanical ventilation, as required, respirator |
| | Eye Injury | Projectiles, fumes, dusts, flashes | Helmets, safety glasses w/side shields/goggles, appropriate noncombustible or flame-proof screens |
| | Trauma | Projectiles, burns | Situational awareness, PPE, protective clothing |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from welding area |

PPE REQUIRED:

Protective Clothing
Disposable Respirators
Safety Shoes/Boots
Goggles/Safety Glasses w/side shields

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Before cutting or welding is permitted the area shall be inspected by an individual responsible for authorizing cutting and welding operations;
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Employees assigned to operate equipment will be familiar with the OSHA requirements outlined in 29 CFR 1910.255 and 1910.252.
4. Only authorized users can operate equipment.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Paint Conditioner/Shaker

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|----------------|--|--|
| General Use | Foot Injury | Drop object on foot | Safety shoes |
| | Electric Shock | Improper operation and maintenance, improper grounding | Manufacturers instructions strictly followed, proper grounding |
| | Hand Injury | Point of Operation, rotating parts | Situational awareness |

PPE REQUIRED:

Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Report any observed defect or safety hazard to your supervisor immediately.
3. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
4. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
5. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Paint Stripper

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Fumes, vapors and gases generated during use | Properly ventilate work area, use disposable respirators |
| | Burns | Hot surface of paint stripper, contact with paint stripper element | Situational awareness, gloves |
| | Electrical Shock | Improper operation & maintenance | Manufacturers instructions strictly followed, replace worn parts |

PPE REQUIRED:

Gloves
Disposable Respirators (optional, if appropriate)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Follow manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Pallet Jack & Dolly, Hydraulic

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--|---|
| General Use | Foot Injury | Roll jack over foot | Wear safety shoes |
| | Trauma | Overloading jack beyond rated capacity, using jack for support rather than just lifting, sharp objects | Follow manufacturers instructions, gloves |

PPE REQUIRED:

Safety Shoes/Boots
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Only authorized users can operate equipment.
2. Jack is designed for lifting only- do not use for supporting loads.
3. DO NOT allow jack alone to support load.
4. DO NOT overload jack beyond its rated capacity.
5. Keep hands/feet clear when lifting/lowering device.
6. Maintain control of loaded device when traveling.
7. Ensure load is stable and secure before lifting/transporting it.
8. Be aware that small debris in travel path can cause device to stop abruptly.
9. Report any observed defect or safety hazard to your supervisor immediately.
10. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
11. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
12. Keep hands, hair and loose clothing clear of all moving parts.
13. Operate equipment in strict accordance with Manufacturer's instructions as listed.

Hazard Analysis

Parts Cleaner, Vat

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|----------------------------|---|--|
| General Use | Inhalation | Organic vapors, hydrocarbons | Appropriate ventilation, disposable respirators |
| | Eye Injury | Chemical splash, fumes | Goggles AND face shield |
| | Skin Irritation/Absorption | Chemical splash, contact with vat liquids | Situational awareness, gloves, protective clothing |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |

PPE REQUIRED:

Protective Clothing (Rubber Apron)
Safety Shoes/Boots
Goggles AND Face Shield
Disposable Respirator (Optional)
Rubber gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Review Material Safety Data Sheet (MSDS) for solvent prior to using parts cleaner vat.
3. Dispose of spent solvent in accordance with EPA requirements.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
6. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
7. Keep hands, hair and loose clothing clear of all moving parts.
8. Know the location of emergency eye wash/shower.

Hazard Analysis

Pipe Threader

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|----------------|--|---|
| General Use | Foot Injury | Drop object on foot | Safety Shoes |
| | Electric Shock | Improper operation and maintenance, improper grounding | Manufactures instructions strictly followed, proper grounding |
| | Hand Injury | Point of operation, rotating parts | Gloves, situational awareness |
| | Eye Injury | Flying particles | Safety glasses w/side shields |
| | Noise | Running equipment | Hearing protection for noise in excess of 85db |

PPE REQUIRED:

Safety Glasses w/side shields
Safety Shoes/ Boots
Gloves
Hearing Protection

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Report any observed defect or safety hazard to your supervisor immediately.
3. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
4. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
5. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Plate Compactor

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-------------|---------------------------------------|--|
| General Use | Eye Injury | Projectiles, fumes, dusts | Safety glasses w/side shields or goggles |
| | Trauma | Projectiles, impact, vibration, burns | Situational awareness, anti-vibration gloves, protective clothing, back brace/belt (optional), switch guards |
| | Foot Injury | Dropped object on foot | Wear safety shoes |
| | Noise | Engine, impact | Wear hearing protection |
| | Ingestion | Dust | Wear respirator or dust mask if needed |

PPE REQUIRED:

Safety Glasses w/side shields or Goggles
Safety Shoes/boots
Hearing Protection
Gloves, Anti-Vibration
Protective Clothing (long pants)
Respirator or dust mask (as needed)
Back brace/belt (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Use two people to move/lift compactor.
2. Take occasional breaks to avoid repetitive motion injury from vibration.
3. Operate equipment in strict accordance with Manufacturer's instructions.
4. Only authorized users can operate equipment.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. At a minimum, anti-vibration gloves will be worn for use of impact tools. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.

Hazard Analysis

Pneumatic Nail Gun

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-------------|---|---|
| General Use | Eye Injury | Projectiles, residual air pressure, flying debris | Safety glasses with side shields, situational awareness |
| | Trauma | Air Pressure, ejection of tool | Situational awareness, tool retainer |
| | Noise | Equipment Operation | Use hearing protection |
| | Foot Injury | Drop object on foot | Safety shoes |
| | Hand Injury | Point of Operation | Situational awareness |

PPE REQUIRED:

Safety Glasses with side shields
Hearing Protection
Safety Shoes/ Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. A tool retainer shall be installed in each piece of utilization equipment, which, without such retainer, may eject tool.
4. Hose and hose connections used for conducting compressed air to utilization equipment must be designed for the pressure and service to which they are subjected.
5. Hearing Protection must be worn upon when operating pneumatic tools.
6. Always wear eye protection.
7. Do not hold the trigger down unless you are purposefully firing the tool.
8. Never point the tool at anyone.
9. Never assume the tool is empty.
10. Disconnect the air hose before clearing a jam or making adjustments.
11. Do not fire the tool unless the nose is firmly pressed against a work piece.
12. Use only compressed air to power the tool, not bottled gas.
13. Do not exceed the manufacturer's specified air pressure for the tool, and never exceed 120 psi.
14. Keep your free hand out of the way of the tool.
15. Do not operate tools around flammables.
16. Nail top to bottom when nailing wall sheathing in a vertical position.
17. Nail from eaves to the ridge when nailing roof sheathing so that you do not back off the edge of the roof.
18. Move forward not backwards when nailing in horizontal areas.
19. Secure the hose when working on scaffolding to prevent the weight of the hose from dragging the tool off the scaffold if you set the tool down.
20. Keep people out of the range of fire. Exercise extreme caution when using tool around other worker.
21. Report any observed defect or safety hazard to your supervisor immediately.
22. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
23. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
24. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Portable Generator, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|---|
| General Use | Inhalation | Exhaust | Appropriate ventilation |
| | Trauma | Burns | Situational awareness, PPE, protective clothing |
| | Foot Injury | Roll over foot, drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |
| | Electrical Shock | Improper operations and maintenance, improper switching device | Strictly follow manufacturers instructions, proper switching for starting up/ shutting down machine |

PPE REQUIRED:

Leather Gloves
Safety Shoes/ Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Set up mechanical ventilation when used in an enclosed area. When used outdoors, situate portable generator so that exhaust is directed away from the work area.
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Only authorized users can operate equipment.
4. Connections and machine grounding shall be checked prior to use.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Portable Heater, Electric Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|---|
| General Use | Trauma | Burns | Situational awareness, PPE, protective clothing |
| | Foot Injury | Roll over foot, drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |
| | Electrical Shock | Improper operations and maintenance, improper switching device | Strictly follow manufacturers instructions, proper switching for starting up/ shutting down machine |

PPE REQUIRED:

Leather Gloves
Safety Shoes/ Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Set up mechanical ventilation when used in an enclosed area.
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Only authorized users can operate equipment.
4. Connections and machine grounding shall be checked prior to use.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from hot parts.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Portable Heater, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|---|
| General Use | Inhalation | Exhaust | Appropriate ventilation |
| | Trauma | Burns | Situational awareness, PPE, protective clothing |
| | Foot Injury | Roll over foot, drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |
| | Electrical Shock | Improper operations and maintenance, improper switching device | Strictly follow manufacturers instructions, proper switching for starting up/ shutting down machine |

PPE REQUIRED:

Leather Gloves
Safety Shoes/ Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Set up mechanical ventilation when used in an enclosed area. When used outdoors, situate portable heater so that exhaust is directed away from the work area.
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Only authorized users can operate equipment.
4. Connections and machine grounding shall be checked prior to use.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting.
4. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
5. Keep all guards and shields in place.
6. Keep hands, hair and clothing away from hot or moving parts.

Hazard Analysis

Power Hacksaw

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-----------------|--|---|
| General Use | Inhalation | Dust/particles generated during machine operation, exhaust fumes | Appropriate natural ventilation, disposable respirators |
| | Eye Injury | Projectiles, burns | Safety glasses with side shield or appropriate safety goggles |
| | Head Protection | Projectiles | Face shield (as necessary) |
| | Trauma | Projectiles, point of operation, flying chips & sparks, improper use and operation | Situational awareness, PPE, protective clothing, machine guards, Manufacturers instructions strictly followed |
| | Foot Injury | Drop object on foot | Safety shoes |
| | Hand Injury | Point of operation, in-going nip points, rotating parts, flying chips and sparks | Machine guards, situational awareness |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |

PPE REQUIRED:

Protective Clothing (optional)

Goggles/Safety Glasses w/side shield

Face Shield (as necessary)

Safety Shoes/ Boots

Disposable Respirators (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. One or more methods of machine guarding shall be provided to protect the operator and others in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
6. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
7. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Pressurized Cooling System Tester

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-----------------------------|------------------|---|
| General Use | Eye Injury, Skin irritation | Coolant splashes | Goggles, face shield, apron, gloves, proper operation of coolant tester |

PPE REQUIRED:

Apron
Gloves
Goggles
Face Shield

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Portable Gasoline Driven Arc Welder

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Hazardous fumes, gases, dusts | Appropriate ventilation, respirator as required |
| | Eye Injury | Projectiles, fumes, dusts, flashes | Helmets, goggles/safety glasses, appropriate noncombustible or flame-proof screens |
| | Trauma | Projectiles, burns | Situational awareness, PPE, protective clothing, switch guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Electrical Shock | Improper grounding, improper operations and maintenance, improper switching device | Lockout/tagout, proper grounding of secondary and case portable welding transformers, manufacturers instructions strictly followed, proper switching for shutting down machine |

PPE REQUIRED:

Safety Shield/Helmet with Filter Lens

Fire resistant gauntlet gloves

Safety shoes/boots

Respirator

Safety glasses w/side shields or Goggles

Protective Clothing *

*Full sleeves, no front pockets, no cuffs, Shirt left outside of trousers, made of clean fire-resistant materials

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Before cutting or welding is permitted the area shall be inspected by an individual responsible for authorizing cutting and welding operations;
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Employee's assigned to operate equipment will be familiar with OSHA requirements outlined in 29 CFR 1910.252 and 1910.254.
4. Only authorized users can operate equipment.
5. Connections and machine grounding shall be checked prior to use.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Portable Generator, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Exhaust | Appropriate ventilation |
| | Trauma | Burns | Situational awareness, PPE, protective clothing |
| | Foot Injury | Roll over foot, drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |
| | Electrical Shock | Improper grounding, improper operations and maintenance, improper switching device | Strictly follow manufacturers instructions, proper switching for starting up/shutting down machine |

PPE REQUIRED:

Leather Gloves
Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Set up mechanical ventilation when used in an enclosed area. When used outdoors, situate portable generator so that exhaust is directed away from the work area.
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Only authorized users can operate equipment.
4. Connections and machine grounding shall be checked prior to use.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well- ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Propane Torch (14oz to 20oz Propane Cylinder)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-------------|------------------------------------|--|
| General Use | Inhalation | Hazardous fumes, gases, dusts | Appropriate natural or mechanical ventilation, and disposable respirators, as required |
| | Eye Injury | Projectiles, fumes, dusts, flashes | Goggles, face shield, appropriate noncombustible or flame-proof screens |
| | Trauma | Projectiles, burns | Situational awareness, PPE |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area |

PPE REQUIRED:

Gloves
Safety Shoes/Boots
Goggles/Safety Glasses
Disposable respirator (optional)
Protective Clothing (optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Before use, inspect the work area to ensure all fire hazards have been removed or guarded, and appropriate fire extinguisher is readily available.
2. Only authorized users can operate equipment.
3. Operate equipment in strict accordance with Manufacturer's instructions.
4. Report any observed defect or safety hazard to your supervisor immediately.
5. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
6. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
7. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Radial Arm Saw

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Inhalation | Dust/particles generated during machine operation | Appropriate natural ventilation, disposable respirators, automatic vacuum machine |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, point of operation, in-going nip points, flying chips & sparks | Situational awareness, PPE, protective clothing, machine guards, |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of Operation, in-going nip points, rotating parts, flying chips & sparks | Gloves, machine guards, situational awareness |
| | Head Protection | Projectiles | Face Shield (optional) |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Noise | Machine operation | Hearing protection |
| | Electrical Shock | Improper grounding, improper operations and maintenance | Proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

| | |
|---------------------------------------|-----------------------------------|
| Protective Clothing (optional) | Safety Shoes/ Boots |
| Safety Glasses w/side shields/Goggles | Disposable Respirators (optional) |
| Face Shield (optional) | Gloves |
| Hearing Protection | |

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
4. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
5. One or more methods of machine guarding shall be provided to protect the operator and other employees in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
6. All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table.
7. Report any observed defect or safety hazard to your supervisor immediately.
8. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
9. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
10. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Sewer Snake

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|--------------------|--|--|
| General Use | Trauma | Contact with moving parts | Situational awareness, safety shoes |
| | Electrical Shock | Improper operations and maintenance, improper grounding | Strictly follow manufacturers instructions, proper grounding |
| | Hand Injury | Point of operation, moving parts | Gloves, situational awareness |
| | Eye Injury | Flying particles | Goggles/Safety glasses w/side shields |
| | Noise | Equipment operation | Hearing Protection |
| | Atmospheric hazard | Methane gas, hydrogen sulfide, oxygen deficient atmosphere | Follow Permit-Required Confined Space Alternate Entry Procedures when entering sewer manholes or lift stations |

PPE REQUIRED:

Safety Glasses w/side shields or Goggles
 Safety Shoes/Boots
 Gloves
 Hearing Protection

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only employees trained in Confined Spaces may enter sewage manholes or lift stations.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Shop Vac(s)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Foot Injury | Drop object on foot | Wear safety shoes |
| | Electrical Shock | Improper operations and maintenance, improper grounding | Manufacturers instructions strictly followed, proper grounding |
| | Eye Injury | Flying debris | Wear safety glasses w/side shields |
| | Noise | Equipment Operation | Use hearing protection |

PPE REQUIRED: (PPE required to be worn during the vacuuming task when it poses a specific hazard to the user)

Safety Glasses with side shields
Hearing Protection
Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Report any observed defect or safety hazard to your supervisor immediately.
3. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
4. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
5. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Snow Blower, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|---|--|
| General Use | Eye Injury | Flying debris (ice, rocks, snow, etc) | Safety glasses w/side shields |
| | Trauma | Flying debris, Rotating parts, Burns, frostbite | Situational awareness, protective clothing, gloves |
| | Foot Injury | Equipment rolls over/drops on foot | Safety shoes/boots |
| | Noise | Equipment Operation | Hearing protection |

PPE REQUIRED:

Safety Glasses w/side shields (only when frostbite hazard does not present a greater hazard)
Protective Clothing
Hearing Protection
Safety shoes/boots
Gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Use 2 people to lift snow blower.
2. Take occasional breaks to avoid injury from cold, vibration and repetitive motion.
3. Be aware of discharge direction and distance to avoid injury and damage to property.
4. Wear proper clothing in layers and vent clothing to avoid overheating or cold injury.
5. Do not touch bare metal with bare skin to avoid contact frostbite.
6. Use caution on icy/slippery surfaces, stairs and ramps.
7. Operate equipment in strict accordance with Manufacturer's instructions.
8. Only authorized users can operate equipment.
9. Report any observed defect or safety hazard to your supervisor immediately.
10. Always stop engine and disconnect spark plug wire before performing maintenance of any kind or placing hands into auger or chute assemblies.
11. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
12. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
13. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well- ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Snow Shovel(ing)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|---|---|
| General Use | Trauma | Projectiles, impact, slip/trip/fall, cold | Situational awareness, gloves, positive traction sole footwear, protective clothing |
| | Foot Injury | Dropped object/impact on foot | Wear safety shoes/boots |

PPE REQUIRED:

Safety Shoes/boots (when chipping snow/ice with shovel or chipper)

Gloves

Protective Clothing (cold weather)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Take occasional breaks to avoid repetitive motion injury.
2. Ensure snow load on shovel is not too heavy or back injury may result.
3. Be aware of frostbite and cold contact hazards to avoid injury.
4. Use proper lifting techniques, avoid twisting and over extending when lifting load.
5. Ensure firm footing during operations.
6. Avoid overheating, dress in layers and properly vent clothing.
7. Use caution on stairs, ramps and icy surfaces.
8. Stretch prior to physical activity to warm up muscles.
9. Report any observed defect or safety hazard to your supervisor immediately.
10. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
11. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).

Hazard Analysis

Soldering Guns/Irons

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|--|--|--|
| General Use | Inhalation | Fumes, vapors and gases generated during soldering | Properly ventilate work area, use respirator |
| | Eye Injury | Spattering | Safety glasses w/side shields/Goggles |
| | Skin irritation/burning | Chemical cleaner use, hot soldering iron | Review MSDS, substitute cleaner with non-toxic product, use appropriate PPE/protective clothing |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Hot soldering iron | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from soldering area |
| | Electrical Shock | Improper operation and maintenance | Manufacturers instructions strictly followed, replace worn parts |
| | Residual surface contamination | Soldering with lead containing solders | Wipe down work area when finished |
| | Some fluxes contain toxic compounds (i.e. cadmium and fluorides) | Toxic compounds in fluxes | Review MSDS, substitute with non-toxic compounds if available |

PPE REQUIRED:

Safety glasses w/side shields/Goggles
 Safety Shoes/Boots (for protection against dropped objects when necessary)
 Protective Clothing
 Respirators (Optional)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Review applicable MSDS when using toxic fluxes to determine PPE requirements.
2. Only authorized users can equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Spark Plug Service/Tester

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Electrical Shock | Improper grounding, improper operations and maintenance | Appropriate placed fire extinguisher, proper grounding, manufacturers instructions strictly followed |

PPE REQUIRED:

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Steam Cleaner

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|-----------------------------------|---|
| General Use | Trauma | Flying debris, contact with steam | Rotating parts, burns, situational awareness, protective clothing |
| | Hand Injury | Flying Debris, Contact with steam | Situational awareness, gloves |
| | Eye Injury | Flying debris | Full face shield |
| | Fire | Smoking, sparks | No smoking or exposure to sparks or open flame during fueling. Appropriate placed fire extinguisher |

PPE REQUIRED:

Full Face Shield
Gloves
Apron

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Table Saw

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Dust/particles generated during machine operation, exhaust fumes | Appropriate natural ventilation, disposable respirators, automatic vacuum machine |
| | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Trauma | Projectiles, rotating parts, point of operation, ingoing nip points, flying chips & sparks, loose clothing | Situational awareness, PPE, protective clothing, machine guards, rolled up sleeves, appropriate clothing, remove jewelry |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Point of operation, in-going nip points, rotating parts, flying chips and sparks, rings | Gloves, machine guards, situational awareness, remove jewelry |
| | Head Protection | Projectiles | Face Shield (optional) |
| | Fire | Sparks | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area |
| | Electrical Shock | Improper grounding, improper operations and maintenance | Lockout/ tag out, proper grounding of frame, manufacturers instructions strictly followed |

PPE REQUIRED:

Safety Glasses w/side shields or Goggles
Face Shield (optional)

Safety Shoes/ Boots
Disposable Respirators

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer’s instructions and in accordance with OSHA 29 CFR 1910.212 and 1910.213.
2. Only authorized users can operate equipment.
3. A mechanical or electrical power control shall be provided to make it possible for the operator to cut off power without leaving his position at the point of operation.
4. All belts, pulleys, gears, shafts shall be guarded in accordance with the specific requirements of OSHA 29 CFR 1910.219.
5. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
6. One or more methods of machine guarding shall be provided to protect the operator and others in the area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.
7. All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table.
8. Do not wear gloves, jewelry, or loose fitting clothing.
9. Always use push sticks when required as for ‘non-thru’ cuts and when ripping narrow work.
10. Never reach in front of or over saw blade.
11. Do not remove jammed or cut off pieces until blade has stopped.
12. Report any observed defect or safety hazard to your supervisor immediately.
13. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
14. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor’s discretion).
15. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Tire Changer

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--|--|
| General Use | Foot Injury | Drop object on foot | Wear safety shoes |
| | Trauma | Over-inflated tires, bent rims, not properly secured within restraining device | Follow manufacturers instructions |
| | Eye Injury | Flying Debris | Safety glasses with side shields or safety goggles |

PPE REQUIRED:

Safety Shoes/ Boots
Safety Glasses with side shield

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions as listed.
2. Only authorized users can operate equipment.
3. Never stand with any part of the body over tire changer during inflation process.
4. Never exceed industry recommendations for inflation (psi).
5. During inflation, observe pressure frequently and avoid distraction to prevent over-inflation.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Torch, Oxygen- Acetylene

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|---|--|
| General Use | Inhalation | Hazard fumes, gases, dusts Drop object on foot | Appropriate mechanical ventilation, as required, respirator |
| | Eye Injury | Projectiles, fumes, dusts, flashes | Helmets, Safety glasses w/side shields or goggles, appropriate noncombustible or flame-proof screens |
| | Trauma | Projectile, burns | Situational awareness, PPE, protective clothing |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from the area |

PPE REQUIRED:

Protective Clothing (full sleeves, no front pockets, no cuffs, shirt left outside of pants, made of clean fire-resistant materials)

Eye Safety Shield/Helmet with filter lens

Respirator (Optional)

Safety Shoes/ Boots

Goggles/ Safety Glasses w/side shields

Fire resistant gauntlet gloves

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Before cutting or welding is permitted the area shall be inspected by an individual responsible for authorizing cutting and welding operations.
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Employees assigned to operate equipment will be familiar with the OSHA requirements outlined in 29 CFR 1910.255 and 1910.252.
4. Only authorized users can operate equipment.
5. Report any observed defect or safety hazard to your supervisor immediately.
6. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
7. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
8. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Tractor

| TASK | HAZARD | CAUSE | PREVENTION |
|----------------------------|-------------|--|---|
| Routine Maintenance/Repair | Hand Injury | Confined work areas, sharp edges/objects, rotating parts | Gloves, situational awareness |
| | Head Injury | Bump head, objects fall on head | Wear hard hat (if necessary) |
| | Foot Injury | Equipment rolls over foot, object drops on foot | Wear safety shoes |
| | Trauma | Rotating parts | Situational awareness, appropriate clothing |
| | Eye Injury | Flying Particles | Safety glasses w/side shields |
| | Noise | Equipment Operation | Use hearing protection |
| Routine Operation | Noise | Equipment Operation | Use hearing protection |
| | Foot Injury | Equipment rolls over foot | Wear safety shoes |

PPE REQUIRED:

Protective Clothing
Safety Glasses
Gloves
Hearing Protection

Safety Shoes/ Boots
Hard Hat (if necessary)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Rollover protective structures must be in accordance with 29 CFR 1926.1001.
4. Attached equipment shall be either fully lowered or blocked when being repaired or when not in use.
5. All controls shall be in a neutral position with the motors stopped and brakes set, unless work being performed requires otherwise.
6. Whenever equipment is parked, the parking brake shall be set.
7. All cab glass shall be safety glass that introduces no visible distortion affecting the safe operation of equipment.
8. All authorized personnel shall have received training in the safe operation of equipment.
9. Report any observed defect or safety hazard to your supervisor immediately.
10. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
11. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
12. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Valves (Operating)

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|----------------------------|---|
| General Use | Eye Injury | Projectiles, fumes, dusts | Safety glasses w/side shields or goggles (for chemical piping), face shield (if needed) |
| | Trauma | Projectiles, impact, burns | Situational awareness, gloves, protective clothing (long sleeves/pants) |
| | Foot Injury | Dropped object on foot | Wear safety shoes |

PPE REQUIRED:

Safety Glasses w/side shields or Goggles

Safety Shoes/boots

Gloves

Protective Clothing (long sleeves/pants)

Face Shield (if needed)

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Identify proper valve and ensure pipe contents and connected systems will not be damaged by activating valve.
2. Remain in contact with other workers to ensure they are prepared when the valve is actuated.
3. DO NOT operate valve that has a lock-out/tag-out device installed unless it is yours.
4. If valve is stuck or hard to actuate, obtain assistance.
5. Use proper body mechanics to avoid muscle strains.
6. Verify valve is not leaking after actuating it.
7. Operate all equipment in strict accordance with Manufacturer's instructions.
8. Only authorized users can operate equipment.
9. Report any observed defect or safety hazard to your supervisor immediately.
10. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
11. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
12. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Vehicle Lift

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|-------------|---|---|
| General Use | Foot Injury | Drop object on foot | Wear safety shoes |
| | Trauma | Overloading lift beyond rated capacity. Operator error. Not following manufacturer's instruction or safety warnings | Never exceed loading capacity. Ensure that rated load is legibly and permanently marked in a prominent location. Ensure each operator has received adequate training on operation of lift. Follow manufacturer's instructions and warnings. |
| | Eye Injury | Debris Fluids | Safety glasses with side shield/goggles Goggles |

PPE REQUIRED:

Safety Shoes/Boots
Safety glasses with side shield
Goggles

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. DO NOT USE this lift, or any portion thereof, unless it is firmly seated on its fully engaged safety devices. Always stand clear of lift and associated equipment whenever safety latches are released. Any unusual noise, hydraulic oil leakage or signs of excess wear must be fully examined and the cause determined and corrected before use of the equipment may continue. It is the users responsibility to ensure that the lift and associated equipment is maintained and used in a safe manner and that untrained or unauthorized persons are NOT allowed near the lift.
2. Report any observed defect or safety hazard to your supervisor immediately.
3. Inspect lift prior to use. Never operate if it malfunctions or has broken or damaged parts.
4. Operating controls are designed to close when released. Do NOT block open or override.
5. Never overload your lift. Manufacturer's rated capacity is shown on nameplate affixed to lift.
6. Positioning of vehicle and operation of lift should only be done by trained and authorized personnel.
7. Never raise vehicle with anyone inside of it. By-standers should not be in lift area during operation.
8. Always keep lift area free of obstructions, grease, oil, trash and other debris.
9. Before driving vehicle over lift, position arms and supports to provide unobstructed clearance. Do not hit or run over lift arms, adapters or axle supports.
10. Load vehicle on lift carefully. Position lift supports to contact vehicle at manufacturers recommended lifting points. Raise lift until supports contact vehicle. Check supports for secure contact with vehicle. Raise lift to desired working height. CAUTION: If you are working on vehicle, lift will be raised high enough for locking device to be engaged.
11. Note that with some vehicles, the removal or installation of components may cause a critical shift in the center of gravity and results in raised vehicle instability. Refer to the vehicle manufacturer service manual for recommended procedures when components are removed.
12. Before lowering lift, be sure tool trays, stands, etc are removed from under vehicle. Release locking devices before attempting to lower lift.
13. Before removing vehicle from lift area, position lift arms and supports to provide for an unobstructed exit. (see item #10).
14. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
15. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
16. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Vise

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|----------------------------------|---|
| General Use | Eye Injury | Projectiles | Safety glasses with side shield or appropriate safety goggles |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Hand Injury | Impact, penetration, compression | Gloves, situational awareness |

PPE REQUIRED:

Goggles/ Safety Glasses w/ side shield

Gloves

Safety Shoes/Boots

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Report any observed defect of safety hazard to your supervisor immediately.
3. PPE is dependent on job being done in/on vise (hammering, chiseling, etc).
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Weed/Brush Trimmer, Hand-held, Gasoline Powered

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|---------------|--------------------------------------|---|
| General Use | Eye Injury | Flying Debris | Safety glasses w/side shields/Goggles, face shield (optional) |
| | Trauma | Flying debris, Rotating parts, Burns | Protective clothing, situational awareness, appropriate guards in place |
| | Foot Injury | Equipment contacts foot | Safety shoes |
| | Noise | Equipment Operation | Hearing protection |

PPE REQUIRED:

Safety Glasses w/side shields/Goggles
Face Shield (optional)
Hearing Protection
Protective Clothing (optional)
Safety Shoes

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.

ADDITIONAL PRECAUTIONS FOR FUEL POWERED ENGINES:

1. Always operate in an open well-ventilated area or vent the engine exhaust directly outdoors.
2. Never fuel the engine while running or in the presence of an open flame.
3. Wipe up spilled fuel immediately and wait for fumes to disperse before starting the engine.
4. Never remove the radiator pressure cap from liquid cooled engines while they are hot to prevent scalding.
5. Stop the engine before performing any maintenance or troubleshooting. The ignition system should be disabled to prevent accidental start of the engine.
6. Keep all guards and shields in place.
7. Keep hands, hair and clothing away from moving parts.

Hazard Analysis

Wire Feed Welder, Electric

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|--|--|
| General Use | Inhalation | Hazardous fumes, gases, dusts | Appropriate ventilation, as required disposable respirators |
| | Eye Injury | Projectiles, fumes, dusts, flashes | Helmet, safety glasses w/side shields/ goggles, appropriate noncombustible or flame-proof screens |
| | Trauma | Projectiles, burns | Situational awareness, PPE, protective clothing, switch guards |
| | Foot Injury | Drop object on foot | Wear safety shoes |
| | Fire | Heat, sparks, slag | Appropriate placed fire extinguisher, remove all combustibles and fire hazards from welding area |
| | Electrical Shock | Improper grounding, improper operations and maintenance, improper switching device | Lockout/ tag-out, proper grounding of secondary and case portable welding transformers, manufacturers instructions strictly followed, proper switching for shutting down machine |

PPE REQUIRED:

Eye Safety Shield/Helmet with Filter Lens

Protective Clothing*

*Full sleeves, no front pockets, no cuffs, Shirt left outside of trousers, made of clean fire-resistant materials

Fire resistant Gauntlet Gloves

Safety Shoes/ Boots

Disposable respirator (optional)

Goggles/ Safety Glasses w/side shields

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Before cutting or welding is permitted the area shall be inspected by an individual responsible for authorizing cutting and welding operations;
2. Operate equipment in strict accordance with Manufacturer's instructions.
3. Employee's assigned to operate equipment will be familiar with the OSHA requirements outlined in 29 CFR 1910.252 and 1910.254.
4. Only authorized users can operate equipment.
5. Connections and machine grounding shall be checked prior to use.
6. Report any observed defect or safety hazard to your supervisor immediately.
7. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
8. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
9. Keep hands, hair and loose clothing clear of all moving parts.

Hazard Analysis

Wire Wrap

| TASK | HAZARD | CAUSE | PREVENTION |
|-------------|------------------|---|--|
| General Use | Electrical Shock | Faulty electrical cord, improper grounding, improper operations and maintenance | Inspect tool/ cord prior to use, proper grounding, manufacturers instructions strictly followed, appropriate placed fire extinguisher. |

PPE REQUIRED:

EQUIPMENT PROCEDURES/REQUIREMENTS:

1. Operate equipment in strict accordance with Manufacturer's instructions.
2. Only authorized users can operate equipment.
3. Report any observed defect or safety hazard to your supervisor immediately.
4. Where any object handled would possibly cause injury to feet if dropped, safety shoes will be worn.
5. Where any object handled could possibly cause cuts, punctures or abrasions to hands, appropriate gloves will be worn. (Exception: where rotating machinery presents a greater hazard of entangling gloves, they are optional at the supervisor's discretion).
6. Keep hands, hair and loose clothing clear of all moving parts.