WESTERN School Division
Morden, Manitoba
"Rooted In Caring; Committed to Learning"

Job Hazard Analysis

Analysis by: Jason L'Heureux, Sergiy Yashnikov
Reviewed by: **Approved by: Roger Worms**

Department: Plumbing & Piping Trades

Date: June, 2019

Possible Hazards or Task	**Describe Harm that could occur**	**Hazard Rating (Low/ Medium/High)**	**Control Action**	**Personal Protective Equipment (PPE)**	**Frequency of Monitoring**
Abrasive Cut Off Saw • Projectile work pieces from improper clamping • Debris irritation • Sparks • Noise • Heat hazard	• Cuts, lacerations, and amputations • Musculoskeletal injury from manoeuvring long stock • Hearing loss • Burns	Medium	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. With the power OFF make adjustments to the abrasive cut off. If cutting long stock, ensure it is out of traffic path. Use two people to move heavier or bulky pieces. 5. Ensure guard is in place and cutting wheel is free from cracks and chips. Do not use if damaged. 6. Clamp work piece firmly against the fence and align with blade. Ensure cord is out of cutting path. 7. Turn saw ON; wait for blade to reach maximum speed before using. 8. Cut work piece at slow/moderate speed. 9. Turn saw OFF and let blade come to a stop before raising.	Safety guard Face shield Safety glasses Hearing protection Appropriate footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			10. Remove work piece. CAUTION – work pieces may be hot and have sharp edges. 11. Clean up debris with power OFF. Use a brush; never use your hands. • Teacher supervision required. • Never leave machine running unattended. • Never walk away from machine until blade stops completely. *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		

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Angle Grinders • Debris irritation • Sparks • Noise • Heat	• Cuts and lacerations • Hearing loss • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Setup welding screens or similar devices, to contain flying sparks to the work area. 5. Inspect tool for damaged electrical cords and switch. 6. Ensure grinding wheel is in proper working condition – no cracks or damage. 7. Ensure that guards are properly secured and oriented for the required work. 8. Secure work piece in proper vice or clamped securely to appropriate work surface. 9. Cutting disks are NOT to be used – serious kickbacks and shattering disks pose too high a risk – *find another way*.	Safety Glasses Appropriate footwear Face Shield Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

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			10. Assure grinder switch is in OFF position, and power cord is clear of work path before plugging in. 11. Turn power ON and allow motor to come to full speed – anticipate the torque of the motor on start-up. 12. Perform grinding operation at a safe and moderate speed. Caution as pieces will get hot from grinding operation. 13. Turn power OFF and allow grinder to come to a complete stop before setting down grinder. 14. Clean-up debris with power OFF. Use a brush, never your hands. Use only with instructor's permission. *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step**		

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			away from out-of-service equipment, a lock box or other lockout means must be used.		
Brazing	• Burns • Fumes • Chemical Burns and Irritations	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Inspect torch, hose, connections, B-tank, and regulators for proper operation and leaks. 5. Work area must be well ventilated. 6. Clean joints. 7. Fit the joints and support the joints. 8. Apply proper flux (where required). 9. Heat to correct temperature. 10. Apply brazing material. 11. Shut off torch and cool the joint. 12. After the assembly has cooled, clean the joint thoroughly.	Welding glasses (#5 shade) Leather welding gloves Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			13. Ensure work area is clean and equipment is properly stored. • Teacher supervision required • Read and understand Compressed Gas Regulators SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Cementing Plastic Pipe • Fume inhalation • Flammable • Eye Contact • Skin contact • Ingestion	• Internal & external burns • Skin irritation	Low	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings.	Safety glasses Gloves	This safe work procedure will be reviewed any time the task, equipment, or

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			4. Ensure area is adequately ventilated, clear of open flames/sparks. 5. Square pipe ends, chamfer, and remove all dirt. 6. Check dry fit of pipe/fitting connection. 7. Clean pipe/fitting with listed primer (not for ABS). 8. Apply a liberal coat of cement to the pipe. Apply thin coat of cement to the inside of the fitting. Apply second coat to the pipe. 9. Assemble parts quickly. Push pipe FULLY into fitting using a ¼ turning motion until pipe bottoms. 10. Hold pipe/fitting assembly together for 30 seconds (or more in cold weather). Clean excess glue with rag. 11. Close the cement container completely. 12. Clean up work area. • Demonstration by instructor • Supervision by instructor • Use only as intended		materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure. When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.		
Closet Auger	Slip/Trip	Low	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Ensure handle of tool is intact and free of grease dirt or other substances hindering proper grip of the tool. 5. Inspect the tool before each use. 6. Make sure area around your work station is clean from trip hazard or debris.	Safety glasses Gloves Appropriate footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

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			7. Always retrieve the subsistence first before flushing down into the sewer. 8. Clean up job site and tools. • Teacher demonstration • Teacher supervision required *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Compressed Gas Regulators	• Burns • Fumes • Explosion • Fire	Medium	Prohibited Activities: 1. No smoking 2. Do not drop compressed gas tanks or handle roughly. 3. Never use a leaking tank. 4. Never use a flame to test for leaks.	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task,

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			5. Never attempt to repair compressed gas tanks. 6. Never use a tank as a roller or support. 7. Never use a hammer, wrench, or pliers on a tank equipped with a handwheel. 8. Never allow full tank pressure to enter hose; *always use a regulator*. 9. Never open an acetylene tank valve more than one full turn; in case of fire, valve can be closed immediately. Procedure: 1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Secure the tank properly. Remove valve cap, open valve away from your body for a moment to clear the opening of dust or debris.		equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			5. Attach regulator to tank and securely tighten with a wrench. 6. Attach hose to regulator outlet and to torch. Securely tighten all connection nuts with a wrench. 7. Back off adjusting screw of the regulator before opening cylinder valve. 8. Always keep the acetylene key or wrench on the cylinder valve while in use. 9. Before regulator is removed from a cylinder, close the cylinder valve, back off the adjusting screw, and release all pressure in hose/regulator. Testing for Leaks: 1. Turn pressure adjusting screw in all the way. 2. Brush leak detection solution onto tank valve, regulator connections, torch, and vent hole on regulator.		

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			3. If there is a leak on a connector, try to tighten the connection. If the vent hole is leaking, the regulator is faulty. Do not use regulator and inform instructor of fault. 4. If the valve stem leaks, notify instructor and tag it to indicate leaking valve stem. • Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.*		
Corded Hammer Drill • Foreign materials in concrete • Dust/debris irritation • Noise	• Cuts, lacerations, and amputations • Electrical shock • Hearing loss	Low	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs).	Safety glasses Proper footwear Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Select appropriate drill bit for work. Secure in chuck. 5. Ensure switch is in the OFF position before plugging in. 6. Hold hammer drill by insulated gripping surfaces and auxiliary handle. 7. Position drill/drill bit at the center of the hole. Squeeze trigger switch ON, allow motor to come to full speed. 8. Apply moderate downward pressure. Anticipate possible torque from drill bit engaging work piece. 9. Release trigger switch. Remove drill bit from hole. 10. Do not touch drill bit, it may be hot. 11. Unplug hammer drill, remove bit, store tools correctly. 12. Clean up debris – do not blow dust. • Teacher supervision required		materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			• Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Corded Hand Drill • Loose knots or foreign materials in wood • Dust/debris irritation • Noise	• Cuts, lacerations, and amputations • Electrical Shock • Hearing loss	Low	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Ensure equipment is in proper working order – cord, switch, handle, chuck.	Safety glasses Proper footwear Hearing Protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			5. Make all adjustments/bit changes with cord unplugged. 6. Assure bit is secure in in chuck. Remove chuck key (*for keyed chucks*). 7. Assure switch is off before plugging in cord. 8. Mark hole location with center punch. 9. Clamp/secure material. 10. Lubricate drill bit with cutting oil if drilling iron or steel. Use coolant for non-ferrous metals. 11. Turn power ON and allow motor to come to full speed before applying pressure to drill. 12. Perform drilling operation at moderate pace. Turn power OFF. 13. Do not touch work piece immediately after operation, it may be very hot. 14. Clean-up debris with brush. Never use hands. ▪ Teacher supervision required ▪ Read and understand General Safety SWP		every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure. **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Cordless Hammer Drill • Foreign materials in concrete • Dust/debris irritation • Noise • Vibration	• Cuts, lacerations, and amputations • Hearing loss	Low	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Ensure equipment is in proper working order – switch, handle, chuck, battery firmly attached. 5. Make all adjustments/bit changes with switch locked or battery removed. 6. Assure bit is secure in in chuck.	Safety glasses Proper footwear Hearing Protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			7. Mark hole location. 8. Clamp/secure material where needed. 9. Switch drill to "hammer" mode. 10. Turn power ON and allow motor to come to full speed before applying pressure to drill. 11. Perform drilling operation at moderate pace. Turn power OFF. 12. Do not touch drill bit immediately after operation, it may be very hot. 13. Clean-up debris with brush. Never use compressed air to clean. ▪ Teacher supervision required ▪ Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from**		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			out-of-service equipment, a lock box or other lockout means must be used.		
Cordless Hand Drill • Loose knots or foreign materials in wood • Dust/debris irritation • Noise	• Cuts, lacerations, and amputations • Hearing loss	Low	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Ensure equipment is in proper working order – switch, handle, chuck, battery firmly attached. 5. Make all adjustments/bit changes with switch locked or battery removed. 6. Assure bit is secure in chuck. 7. Mark hole location with center punch. 8. Clamp/secure material. 9. Lubricate drill bit with cutting oil if drilling ferrous materials. Use coolant for non-ferrous metals. 10. Turn power ON and allow motor to come to full speed before applying pressure to drill.	Safety glasses Proper footwear Hearing Protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

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			11. Perform drilling operation at moderate pace. Turn power OFF. 12. Do not touch work piece immediately after operation, it may be very hot. 13. Clean-up debris with brush. Never use hands. • Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Cordless Impact Driver • Foreign materials in concrete	• Cuts, lacerations, and amputations • Hearing loss	Low	1. Inspect required Personal Protective Equipment (PPEs) and replace if required.	Safety glasses Proper footwear	This safe work procedure

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
• Dust/debris irritation • Noise • Vibration			2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Ensure equipment is in proper working order – switch, handle, chuck, battery firmly attached. 5. Make all adjustments/bit changes with switch locked or battery removed. 6. To start the tool, pull the trigger. 7. To vary the driving speed, simply increase or decrease pressure/travel on the trigger. Further the trigger is pulled, the faster the greater the tool speed. 8. To stop the tool, release the trigger. The electric break of the tool will stop the rotation. 9. CAUTION when handling removed fasteners, they may be very hot. 10. Clean-up debris with brush. Never use compressed air to clean. • Teacher supervision required	Hearing Protection	will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			• Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Extension Ladder • Fall due to lose of balance • Fall due to improper set up of ladder • Electrical wires • Weather conditions – snow, ice, etc. • Heavy lifting • Slippery/muddy footwear	• Cuts, lacerations, and amputations • broken bones	Low	Pre-Operational Checks: 1. Ensure ground is level. 2. Inspect ladder for damage. 3. Get assistance when required. 4. Keep ladder away from electrical wires and identify overhead hazards. 5. Use proper length of ladder. 6. Tie off ladder at top and secure bottom to prevent slipping. 7. Extension ladders must be overlapped a minimum of three rungs.	Safety glasses Proper footwear Hard hat, as required Fall protection as required	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum

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			8. Make sure the ladder hardware is fully engaged and locked securely in place. Safe Work Procedure: 1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Self-check – are you alert, feeling well, muscles warmed up? 4. Complete pre-operational safety checks. Setup barricades and warning signs. 5. Get assistance if ladder is too heavy or long to handle alone. Ladders more than 25kg, or where conditions complicate the task, have two persons set up ladder: *Two Person Setup:* • Lay ladder on ground close to the intended location • Brace ladder base using helper's feet		every three years.

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			• Grasp the top rung with both hands, raise the top end over your head and walk towards the base of ladder. Grasp the center of the rungs to maintain stability. • Move the upright ladder to the desired location. Lean it forward against resting point. 6. If ladder is short, one person can erect the ladder: *One Person Setup:* • Place the bottom of ladder firmly against the base of the building or a stationary object. • Lift the top of ladder and pull upwards to raise to a vertical position. • Transfer ladder to its required position when it is erect • Keep ladder upright and close to the body with a firm grip. • Leave all tie-off devices until they must be removed.		

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			7. Place ladder feet ¼ of ladder's working length away from the base of the structure (*ex: 12ft ladder – 3ft away*). 8. Erect ladder so that a minimum of 1m (3ft) extends above landing platform. Tie top at support points. 9. Raise and lower ladder from the ground. Ensure that locking ladder hooks are secured before climbing. 10. Erect extension ladder so that the upper section rests on the bottom section. 11. Place ladder on firm, level surface and ensure a secure footing. 12. Maintain three point contact – both feet and one hand, two hands and one foot. Grasp rungs when climbing/descending and keep body within side rails. 13. Always face the ladder. 14. Ensure that all electrical equipment used during ladder work is in good condition and properly grounded. 15. When the ladder cannot be tied off at the top, ensure a person is at the foot of the ladder securing it to prevent it from		

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			slipping. This is only effective for ladders up to 5m (16ft) long. The person at the foot of the ladder must face the ladder with each hand on a side rail and one foot resting on the bottom rung • Teacher supervision required • Read and understand General Safety SWP • Extension ladder training *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Hammers • Projectile pieces	• Cuts, lacerations	Low	1. Inspect required personal protective equipment and replace if required.	Safety glasses	This safe work

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• Noise • Musculoskeletal injury			2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Inspect hammer for defects before using – handle in good condition; head firmly attached; face without dents, cracks, chips, mushrooming, or excessive wear. 5. Keep non-hammer gripping hand clear of trajectory. 6. Do not leave hammer where it could fall from a height and injure people below. 7. Avoid awkward positions to avoid strains. 8. Be aware of electrical hazards – hammering on, or getting caught in electrical conductors. 9. Look behind and above before swinging the hammer – keep adequate clearance from other workers.	Appropriate footwear	procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

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			10. Maintain secure footing and good balance. Use only as intended *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Milwaukee Hole Hawg • Foreign materials in concrete • Dust/debris irritation • Noise	• Cuts, lacerations and amputations • Electrical shock • Hearing loss	Low	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings.	Safety glasses Proper footwear Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			4. Select appropriate drill bit for work. Secure in chuck. 5. Ensure switch is in the OFF position before plugging in. 6. If drilling metal, mark center location with center punch. Lubricate bit – cutting oil for ferrous metals, coolant for non-ferrous metals. 7. Secure material to be drilled as needed. 8. Brace the Hole Hawg against a solid fixed object, use auxiliary pipe handle – in FOR (forward) brace against counter-clockwise reaction and in REV (reverse) brace against clockwise reaction. Anticipate the torque of the bit engage the material. 9. Squeeze trigger switch ON, allow motor to come to full speed. Drill hole. 10. Release trigger switch. Remove drill bit from hole. 11. Do not touch drill bit, it may be hot. 12. Unplug Hole Hawg, remove bit, store tools correctly. 13. Clean up debris – do not blow dust.		a minimum every three years.

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			• Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Hole Saw • Foreign materials in concrete • Dust/debris irritation • Noise	• Cuts, lacerations and amputations • Electrical shock • Hearing loss	Low	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make sure all guards are in place, properly adjusted, and secured.	Safety glasses Proper footwear Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum

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			5. Mark the center of the hole to be drilled with a center punch. 6. Place the hole-cutting tool onto the pipe. Hook the chain around the pipe and insert it into the chain slot on the side of the tool's base. 7. Raise the drill motor to its highest position and insert arbour into the chuck of the drill's motor. Tighten the chuck securely with the chuck key. 8. Align the hole saw's drill bit with the center punch mark and tighten the chain around the pipe to secure the hole-cutting tool. 9. Make sure the switch is in the "forward" position. 10. Set the speed control dial (on the topside of the drill motor's handle) for the correct application. 11. Turn ON hole-saw and feed the saw into the cut at a moderate rate to maintain good cutting action. 12. After completing the cut, turn OFF hole-saw and retract the hole-saw.		every three years.

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			13. Unplug the tool from the electrical source. Remove the coupon from the hole saw by using the coupon removal tool. 14. Support the tool. Loosen the vise handle. 15. Continue to support the tool. Unhook the chain from the slot. Remove the tool from the pipe. 16. Use a file, if necessary, to remove burrs or scratches from the gasket sealing area. 17. Clean up dust and debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.*		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.		
Milwaukee Sawzall Reciprocating Saw • Foreign objects in materials • Dust/debris irritation • Noise	• Cuts, lacerations and amputations • Electrical shock • Hearing loss	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Ensure switch is in the OFF position before plugging in. Check that cord is clear of path of the tool. 5. Make all adjustments and blade changes with power off. Select the correct blade for the material. 6. Clamp down material securely, where needed. 7. Hold saw firmly with both hands.	Safety glasses Proper footwear Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			8. Keep in mind the cutting actions pulls the sawblade towards the tools (*the up stroke*). 9. Keep the base or shoe of the saw in firm contact with the material being cut. 10. Start saw and allow to come to full speed before staring cut. 11. Do not force a saw along a curve. Allow machine to turn with ease. 12. Do not insert or withdraw the blade form the cut or a lead hole with the blade in motion. 13. Be aware of what is behind the material being cut (*plumbing, electrical, finishes*) – the blade will protrude. 14. Avoid cutting above shoulder height. 15. Do not put down the saw until the motor has stopped. 16. Clean up dust and debris. Do not use your bare hand. • Teacher supervision required		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			• Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Mitre Saw • Loose knots or foreign materials in wood • Projectile work pieces from improper clamping • Dust/debris irritation • Noise	• Cuts, lacerations and amputations • Hearing loss	Medium	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Open dust chute and turn on dust collector, if applicable. 5. Make adjustments to the mitre saw with the power OFF.	Safety glasses Hearing protection Appropriate footwear Dust collector	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			6. Ensure guard is in place and operates freely. 7. Clamp wood piece firmly against the fence (where possible) and align with blade. 8. Ensure hands are at least 6" or 150mm away from blade. 9. Turn saw ON, wait for blade to reach maximum speed before using. 10. Cut work piece at slow/moderate speed. 11. Turn off saw and let blade come to a rest before allowing blade to return to raised position. 12. Clean up dust and debris with power off. • Instructor supervision required • Place jointed edge squarely against the fence (ensure piece is not bowed) • Never leave machine running unattended ***Note:*** *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the*		every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			emergency stop and follow the lock out procedure. **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
PEX Crimpers • Crushing hazard – fingers	Cuts/lacerations – copper shards	Low	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Inspect crimp profile of tool daily before use. 5. Insert desired fitting into PEX pipe. 6. Slide the copper crimp ring around the base of the pipe/crimp ring – at the fitting. 7. Clamp/secure the assembly in a manner that the ring is easily accessible from all sides.	Safety glasses Gloves	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			8. Open the jaws of the crimpers and wrap the jaws around the crimp ring. 9. Ensure fingers are clear, and compress the handles of the crimpers until the jaws fully close. 10. Open handles/jaws of the crimper. Rest the crimpers in a safe location with the handles/jaws closed. 11. Clean up work area. • Demonstration by instructor • Supervision by instructor *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		

WESTERN School Division
Morden, Manitoba
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Job Hazard Analysis

Analysis by: Jason L'Heureux, Sergiy Yashnikov
Reviewed by: **Approved by: Roger Worms**

Department: Plumbing & Piping Trades

Date: June, 2019

Possible Hazards or Task	**Describe Harm that could occur**	**Hazard Rating (Low/ Medium/High)**	**Control Action**	**Personal Protective Equipment (PPE)**	**Frequency of Monitoring**
Rigid Pipe Hole Cutting Tool • Dust/debris irritation • Noise • Heat	• Cuts, lacerations and amputations • Electrical shock • Burns – hot surfaces • Musculoskeletal Injuries – lifting • Hearing loss	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make sure all guards are in place, properly adjusted, and secured. 5. Mark the center of the hole to be drilled with a center punch. 6. Place the hole-cutting tool onto the pipe. Hook the chain around the pipe and insert it into the chain slot on the side of the tool's base. Firmly tighten the vise handle. Always keep one hand on the tools while adjusting the position. 7. Raise the drill motor to its highest position and insert arbour into the chuck of the drill's motor. Tighten the chuck securely with the chuck key.	Safety glasses Proper footwear Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			8. Align the hole saw's drill bit with the center punch mark and tighten the chain around the pipe to secure the hole-cutting tool. 9. Make sure the switch is in the "forward" position. 10. Set the speed control dial (on the topside of the drill motor's handle) for the correct application. 11. Turn ON hole-saw and feed the saw into the cut at a moderate rate to maintain good cutting action. 12. After completing the cut, turn OFF hole-saw and retract the hole-saw. 13. Unplug the tool from the electrical source. Remove the coupon from the hole saw by using the coupon removal tool. 14. Support the tool. Loosen the vise handle. 15. Continue to support the tool. Unhook the chain from the slot. Remove the tool from the pipe.		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			16. Clean up dust and debris with POWER OFF • Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Portable Band Saw • Foreign materials in materials • Dust/debris irritation • Noise	• Cuts, lacerations and amputations • Electrical shock • Hearing loss	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings.	Safety glasses Proper footwear Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or materials

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			4. Ensure switch is in the OFF position before plugging in. Check that cord is clear of path of the tool. 5. Clamp down material securely. 6. Keep blade clear of material until motor has reached set speed. 7. Start cut on surface where the greatest number of blade teeth will be in contact with the work piece at one time. 8. Place the *work steady rest* against the work piece and lower the moving saw blade to start the cut. 9. Do not bear force the tool. The weight of the tool will supply adequate force for efficient cutting. 10. When nearing end of cut, hold the tool firmly so it will not fall at the end of the cut. 11. Turn OFF the tool. Allow the blade to come to a stop before setting down. 12. Do not touch the work piece immediately, the surface may be very hot and cause burns.		change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			13. Clean up debris. Do not use your bare hands. • Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Propane Torch • Fires • Fumes • Flammable/Explosive Gas	• Burns	Medium	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Only work in well ventilated area.	Safety glasses Gloves	This safe work procedure will be reviewed any time the task, equipment, or materials

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			5. Check cylinder and torch head seals. Never use with damaged or missing seals. 6. With torch head turned off, attach to cylinder making sure to hold upright. Hand tighten only. Check for leaks. 7. Inspect area to be used for flammable/combustible materials. Protect these areas if at risk of ignition. 8. Partially open torch valve. Ignite with approved igniter only. 9. Be aware that the tip portion of the torch will be extremely hot during use, and for some time afterwards. 10. Turn off torch with valve. Place on a level surface when connected to torch. 11. Store with torch head removed from cylinder. • Demonstration by instructor • Supervision by instructor • Use only as intended • Fire extinguisher on hand		change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure. **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Rigid 300 Power Drive – Cutting Pipe w/ Hand Cutter • Dust/debris irritation • Noise • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Position the pipe cutter on the mounted work piece with the cutter wheels facing up. Use pipe stands to support	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			pipe that extends beyond the machine more than 1.2 meters (4ft). 6. Align the cutter wheels with the mark on the pipe and rest the pipe cutter's body on the left support bar. 7. Hand-tighten the pipe cutter to the work piece using the feedscrew handle while keeping the cutter wheels aligned with the mark. 8. Flip the *directional switch* to FOR (*Forward*). 9. Grasp the pipe cutter's feedscrew handle with both hands and depress and hold down the footswitch with left foot. *Maintain a firm grip on the pipe cutter and assure it is resting on the support bar.* 10. Tighten the feedscrew handle slowly and continuously until the pipe is cut. Careful of the off cut pipe falling. 11. Release the foot switch and remove your foot from the housing. 12. Clean up debris with POWER OFF. • Teacher supervision required		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			• Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Rigid 300 Power Drive – Reaming with Hand Reamer • Dust/debris irritation • Hot materials • Noise • Projectile work pieces/tools from	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs).	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
improper set up or speed cutting			3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Use pipe stands to support pipe that extends beyond the machine more than 1.2 meters. 6. Place the reamer on the end of the pipe. 7. Assume correct/stable operating posture. 8. Rest handle on the left support bar and hold the reamer handgrip with the right hand. To avoid pinch point injuries, keep fingers from coming between the reamer and the support bar. 9. Flip the directional switch to FOR (*Forward*). 10. Firmly grasp the reamer with the left hand and depress and hold down the footswitch with left foot. *Maintain a firm grip on the reamer and assure it is resting on the support bar*.		materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			11. Release the foot switch and remove your foot from the housing. Rest the reamer carefully on the ground. 12. Clean up debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		

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Reviewed by: **Approved by: Roger Worms**

Department: Plumbing & Piping Trades

Date: June, 2019

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
Rigid 300 Power Drive – Threading with Hand Threader • Dust/debris irritation • Hot materials • Noise • Fumes • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Use pipe stands to support pipe that extends beyond the machine more than 1.2 meters (4ft). 6. Place the die head of the threader on the end of the pipe. 7. Position the ratchet handle on the hand threader with so the arrow on the knob points up. *Keep fingers away from pinch point between support bar and hand threader handle*. 8. Apply cutting oil to the end of the pipe. Ensure the directional switch is in FOR (*Forward*) position.	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			9. Hold die head against the pipe using the palm of the right hand until the die engages the pipe. 10. With right hand away from the dies, liberally apply cutting oil to the dies while threading. 11. Release the foot switch and remove your foot from the housing when pipe reaches the end of the dies. 12. Lift the threader handle slightly with right hand while sliding the left support bar all the way toward the rear of the drive. Reverse the ratchet knob. 13. Slide support bar in. Lower the threader handle below the height of the left support bar. Return support bar to extended position. 14. Hold threader against support bar. Flip direction switch to REV (reverse). Depress and hold foot switch until threader has unscrewed itself from workpiece. Release footswitch and remove foot from housing.		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			15. Set threader down carefully. Wipe oil from pipe with dry rag. Careful not cut hand on sharp threads or debris. 16. Clean up debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		

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Possible Hazards or Task	**Describe Harm that could occur**	**Hazard Rating (Low/ Medium/High)**	**Control Action**	**Personal Protective Equipment (PPE)**	**Frequency of Monitoring**
Rigid 535/300 Threading Machine – Cutting Pipe with No. 820 Cutter • Dust/debris irritation • Hot materials • Noise • Fumes • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Use pipe stands to support pipe that extends beyond the machine more than 1.2 meters (4ft). 6. Swing reamer and die head to UP position. Move pipe cutter DOWN onto pipe and move carriage with handwheel to line up cutter wheel with mark on pipe. 7. Tighten cutter feed screw handle on pipe, keeping wheel aligned with the pipe. 8. Flip the directional switch to FOR (Forward).	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			9. Grasp the pipe cutter's feedscrew handle with both hands. Depress and hold the foot switch with left foot. 10. Tighten the feedscrew handle slowly and continuously until the pipe is cut. Do not force the cutter into the workpiece. 11. Release the foot switch and remove your foot from the housing. 12. Swing pipe cutter back to UP position. 13. Clean up debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.*		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.		
Rigid 535/300 Threading Machine – Installing Geared Threaders on Universal Drive Shaft • Dust/debris irritation • Hot materials • Noise • Fumes • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Adjust the threader being used. 6. Slide long hexagon end of the universal drive shaft into rear centering device head and through to front chuck of Rigid 535/300 Threading Machine®. 7. Make certain that universal drive shaft is centered in centering device head and front chuck jaws; tighten securely.	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			8. Locate chain vise in line, on same level, and approximately length of universal drive shaft away from centering head device. 9. Tightly secure pipe in Rigid No. 460 Tristand Chain Vice®. 10. Support long piece of pipe with pipe support. 11. Using two persons, position workholder so that a jaw is on top center and slide threader onto pipe. 12. Carefully center end of pipe in throat of dies. 13. Tighten workholder clamp screw securely. 14. Slip square socket of Rigid No. 840A Universal Drive Shaft® over square end of threader drive shaft and tighten two set screws. 15. Position Rigid No. 418 Oiler® directly under threader. 16. Clean up debris with POWER OFF. • Teacher supervision required		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			• Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Rigid 535/300 Threading Machine – Installing Pipe • Dust/debris irritation • Hot materials • Noise • Fumes	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs).	Safety glasses Proper footwear Hand Protection	This safe work procedure will be reviewed any time the task, equipment, or

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
• Projectile work pieces/tools from improper set up or speed cutting			3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Assure the cutter, reamer, and threading head are swung to UP position. 6. Mark the pipe at the desired length if it is being cut. 7. Insert pipe into the Threading Machine so the end to be worked or the cutting mark is located about 30cm (12 inches) to the front of the speed chuck. 8. Insert pipe less than 2 feet long from the front of the machine. Insert longer lengths of pipe through either end so the longer section extends out beyond the rear of the Threading Machine. 9. CAUTION: To avoid equipment from tipping over, use pipe supports under longer work piece. 10. Tighten the rear-centering device around the pipe by using a counter	may be necessary	materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			clockwise rotation of the handwheel at the rear of the Threading Machine. This prevents movement of the pipe that can result in poor thread quality. 11. Secure the pipe by using repeated and forceful counter clockwise spins of the speed chuck handwheel at the front of the Threading Machine. This action "hammers" the jaws tightly around the pipe. 12. Clean up debris with POWER OFF. • Safety glasses • Proper footwear • Hand Protection may be necessary *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from**		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			out-of-service equipment, a lock box or other lockout means must be used.		
Rigid 535/300 Threading Machine – No. 810 Nipple Chuck • Dust/debris irritation • Hot materials • Noise • Fumes • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Grip pipe in machine chuck. Thread and ream one end and cut nipple to desired length. 6. Place nipple chuck body in Threading Machine chuck, gripping jaw grooves. Tighten chuck with snap spin of handwheel. 7. Position insert with small end toward chuck body for ⅛" to ¾" pipe, large end toward chuck body for 1", no insert required for 1 ¼" pipe and up.	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			8. Select proper size nipple chuck adapter and screw into nipple chuck by hand. Tighten with wrench provided with nipple chuck. 9. Screw nipple threaded on one end into adapter by hand. Turn directional switch to ON and press down on foot switch. Ream and thread nipple. 10. Insert pin on end of wrench into one of the holes in the nipple chuck release collar and turn. Remove threaded nipple by hand. 11. Clean up debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the*		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			emergency stop and follow the lock out procedure. **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Rigid 535/300 Threading Machine – Reaming Pipe • Dust/debris irritation • Hot materials • Noise • Fumes • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Move reamer arm into DOWN position. 6. Check the directional switch to insure it is in the FOR (Forward) position. Depress and hold the foot switch down with left foot.	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			7. Position reamer into pipe and complete reaming by exerting pressure on handwheel. 8. Retract reamer bar and return reamer to UP position. 9. Release foot switch and remove your foot from the housing. 10. Clean up debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from**		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			out-of-service equipment, a lock box or other lockout means must be used.		
Rigid 535/300 Threading Machine – Threading Pipe or Rod • Dust/debris irritation • Hot materials • Noise • Fumes • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Install die set. Refer to die installation procedure. 6. Swing die head to DOWN position with throwout lever set to CLOSE position. 7. Check directional switch to insure it is in the FOR (Forward) position. Depress and hold the foot switch down with left foot. 8. Turn carriage handwheel to bring dies against end of pipe. Slight pressure on handwheel will start dies.	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			9. Release the foot switch and remove your foot from the housing. 10. Swing die head back to UP position. 11. Clean up debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		

WESTERN School Division
Morden, Manitoba
"Rooted In Caring; Committed to Learning"

Job Hazard Analysis

Analysis by: Jason L'Heureux, Sergiy Yashnikov
Reviewed by: **Approved by: Roger Worms**

Department: Plumbing & Piping Trades

Date: June, 2019

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
Rigid 535/300 Threading Machine – Threading Using No. 141 Geared Threader • Dust/debris irritation • Hot materials • Noise • Fumes • Projectile work pieces/tools from improper set up or speed cutting	• Cuts, lacerations and amputations • Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Make all adjustments with POWER OFF. 5. Install geared threader and pipe. 6. Turn Threading Machine directional switch to FOR (Forward) position. 7. Depress and hold the foot switch with left foot. 8. Flood dies with cutting oil during threading operation to assure long die life and quality threads. 9. Release the foot switch when red STOP line appears on pinion sleeve. 10. Place directional switch to REV (Reverse) position. 11. Step on foot switch and back threader off the pipe.	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			12. Using the socket wrench, loosen clamp screw, turn workholder to OPEN position and remove pipe. 13. Put directional switch into OFF position. 14. Clean up debris with POWER OFF. • Teacher supervision required • Read and understand General Safety SWP • Read and understand Rigid 535/300 Installing Pipe SWP • Read and understand Rigid 535/300 Removing Pipe SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		

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Possible Hazards or Task	**Describe Harm that could occur**	**Hazard Rating (Low/ Medium/High)**	**Control Action**	**Personal Protective Equipment (PPE)**	**Frequency of Monitoring**
Rigid Soil Pipe Cutter – No. 206 • Dust/debris irritation • Striking injuries	• Cuts and lacerations	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Keep others out of the work area while cutting - may cause pieces of pipe to be thrown with considerable force. 5. Inspect pipe to be cut – size, type, pipe contents if already in service. 6. Clean excessive mud and/or corrosion off of pipe. 7. Have a plan to safely deal with pipe contents where pipe is/has been in service 8. When cutting short section of pipe, restrain the small piece by inserting a smaller pipe or lumber inside the pipe. 9. Lift and turn the ratchet knob to the neutral position (pin out to grove). Grip	Safety glasses Proper footwear	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			the adjusting knob of the soil pipe cutter and fully open. 10. When possible, stand straddling the longer section of pipe – with shorter section away from you. 11. Place cutter chain around pipe with wheels aligned to cut mark. Both hooks must contact the pipe, open side up. 12. Snug chain, and place the nearest chain pin into the hooks. 13. Assure the cutter wheels are square to the pipe. Turn the adjusting knob to firmly tighten the chain. DO NOT use the adjusting knob to cut the pipe. 14. Turn the ratchet knob in the CLOSE direction – *arrow points to* CUT on ratcheting housing. 15. Assume a stable stance, with a firm grip on the handle, move the handle towards the pipe. Continue until the pipe is cut. 16. Clean up debris. Put tools away. • Teacher supervision required		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			• Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Sabre, Jig, & Reciprocating Saw • Foreign objects in materials • Dust/debris irritation • Noise • Electrical shock	• Cuts, lacerations and amputations	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs). 3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Ensure switch is in the OFF position before plugging in. Check that cord is clear of path of the tool.	Safety glasses Proper footwear Hearing protection	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			5. Make all adjustments and blade changes with power off. Select the correct blade for the material. 6. Clamp down material securely, where needed. 7. Hold saw firmly with both hands. 8. Keep in mind the cutting actions pulls the sawblade towards the tools (*the up stroke*). 9. Keep the base or shoe of the saw in firm contact with the material being cut. 10. Start saw and allow to come to full speed before staring cut. 11. Do not force a saw along a curve. Allow machine to turn with ease. 12. Do not insert or withdraw the blade form the cut or a lead hole with the blade in motion. 13. Be aware of what is behind the material being cut (*plumbing, electrical, finishes*) – the blade will protrude. 14. Avoid cutting above shoulder height.		every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			15. Do not put down the saw until the motor has stopped. 16. Clean up dust and debris. Do not use your bare hand. • Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Soldering – Joint Sweating • Sparks • Fumes • Hot metals	• Burns	Medium	1. Inspect required Personal Protective Equipment (PPEs) and replace if required. 2. Put on all required personal protective equipment (PPEs).	Safety glasses Proper footwear	This safe work procedure will be reviewed any

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			3. Remove jewellery, eliminate loose clothing, and tie back long hair. Secure hoodie drawstrings. 4. Ensure pipe/fittings are secured using a bench vise or by clamping in place. 5. Lightly clean the pipe using emery cloth. Clean inside of fitting with appropriate size fitting brush. 6. Apply a thin film of flux to the clean end of the pipe and inside the fitting with a brush. 7. Assemble pipe/fitting joint – press firmly and twist. 8. Wipe excess flux with a dry cloth/rag. 9. Carefully heat pipe assembly with torch. Apply heat to pipe first, then the fitting. Alternate between the two in a fanning motion to heat the assembly uniformly. 10. Apply solder to the fitting cup. Larger fittings may require solder to be applied at several locations. 11. Shut off the torch, drain hose, back off regulator.	Hand Protection may be necessary	time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			12. After assembly has cooled, remove excess flux with a damp cloth. 13. Ensure work area is clean and equipment stored. • Teacher supervision required • Read and understand General Safety SWP *If an emergency situation occurs while conducting this task, or if there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. cleaning), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Spiral Pipe Reamer • Sharp edges • Pinch hazards	Cuts, lacerations	Low	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE).	Safety glasses Gloves	This safe work procedure will be reviewed any

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Inspect reamer for chips or dents, and for any broken pieces – broken reamers must be removed from service. 5. Hold the reamer handle in one hand, press reamer cone lightly into the properly secured pipe against the burr, and begin cranking the ratchet handle with the other hand. The spiral flutes will draw the reamer in automatically. 6. Reamer must only be turned in one direction – even while withdrawing. 7. To remove the reamer from the pipe, move the reamer handle down – causing it to be off center. Make a final crank of the ratchet handle. Remove from pipe. 8. Set the reamer down carefully. Always clean the tool and return it to the proper storage location. 9. Clean up your work location. • Demonstration by instructor	Proper foot wear	time the task, equipment or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			• Supervision by instructor *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Rigid Power Spin with AUTOFEED (Top Snake) • Biological substances • Musculoskeletal injuries	• Chemical burns	Low	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Inspect the tool for damaged/twisted or broken cables; broken, missing or misaligned parts.	Safety glasses Drain Cleaning Gloves Latex gloves, worn *under* drain cleaning gloves	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			5. If needed, take appropriate steps to access drained to be cleaned. Keep the Top Snake within 4" (100mm) of drain opening. Use an extension pipe on drain if necessary. 6. Assume a proper/stable stance. 7. Pull cable out of the drum, and push into drain as far as it will go – minimum 12" (300mm) of cable must be in the drain to operate properly. 8. Place one hand on the drain cleaner grip with one or two fingers on the trigger. The other hand placed on the crank handle. 9. Turn the crank clockwise (CW) and squeeze the trigger – allows the cable to advance in the drain. 10. Continue advancing cable until resistance is encountered. Carefully work the cable through blockage. Do not force the cable – forcing does not clean the blockage and could break the cable. Back off, spin the crank, advance the cable slowly.	Proper foot wear	every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			11. If cable becomes stuck, stop turning. Try pulling the cable out by hand. 12. Once drain is cleaned, turn the drum/crank handle counter clockwise (CCW) while squeezing the trigger to retract the cable. 13. Release trigger and stop turning the drum/crank when cable nears the drain opening. 14. Remove the cable from the drain. 15. Rest tool. Clean up work area. • Demonstration by instructor • Supervision by instructor *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a**		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			lock box or other lockout means must be used.		
Pipe and Tube Cutters • Crushing hazard – fingers • Pinch points	Cuts/lacerations – sharp blade, pipe shards	Low	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Assure you have the correct pipe cutter for the size and type of tube/pipe. 5. Open the cutter by turning the feed handle counter clockwise (CCW), and place cutter on the solidly held pipe, making the rollers contact the pipe. 6. Turn the feed handle clockwise (CW) until the cutter wheel contacts the tube/pipe at the marked location. 7. Turn the feed handle one quarter (1/4) turn and rotate the cutter 360° so the wheel cuts a light groove. Care needs to be taken to maintain the cutter perpendicular to the pipe.	Safety glasses Gloves	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			8. Repeat advancing the cutter one quarter (1/4) turn clockwise and rotate the cutter 360° until the tube/pipe is cut through. 9. Rest tool in safe location. 10. Clean up work area. Use only for intended purpose *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.**		
Oxy-Acetylene Welding • Sparks • Explosive gasses/gas leaks	• Burns	Medium	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE).	Welding goggles Localized ventilation	This safe work procedure will be reviewed any

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• Cylinders under pressure			3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Regulators will be set according to required pressures before starting welding. Check that hoses, connections and equipment are in proper working order. Insure exhaust fan is on. 5. Slightly open acetylene torch valve and ignite torch with striker. Adjust acetylene gas until black soot disappears. Always use a sparker. Never use a match or lighter to ignite torch. 6. Slowly open oxygen torch valve and adjust oxygen gas until flame become blue, round and more defined. Inside feather will disappear. 7. Perform operation slowly and carefully. Pay attention to hot surfaces. Ensure that work piece(s) is/are properly supported.	Leather gloves and jacket For cutting operations: leggings and foot spats required Appropriate footwear	time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			8. Close acetylene torch valve completely. Flame will go out. Close oxygen torch valve. 9. Close acetylene cylinder valve, then close oxygen cylinder valve. 10. Open both torch valves to release gas line pressure. Do this until regulators read zero. (0). Close torch valves. 11. Clean up welding station and put away all equipment. Allow hot metal to cool adequately before handling. • Instructor checks/sets tank and regulator's pressures • Instructor supervision required • Acetylene regulator shall not exceed 15 psi ***Note:*** *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be**		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			disconnected. If the operator must step away from out-of-service equipment, a lock box or other lockout means must be used.		
Wheelbarrow • Slip/Trip hazards •	Musculoskeletal injuries – off balance loads, excessive weight	Low	1. Inspect required personal protective equipment and replace if required. 2. Put on all required personal protective equipment (PPE). 3. Remove hanging jewellery, eliminate loose clothing, and tie back hair. Secure hoodie drawstrings. 4. Always inspect wheelbarrow before each use – (tire pressure, frame for bends/cracks, bucket for dents). 5. Do not exceed the capacity of the wheelbarrow. 6. Use proper lifting technique – hands grasping handles, arms and back straight, lift using leg muscles. 7. Avoid twisting and sharp turns. 8. Plan/check the route – planks wide enough and clean, doorways wide enough,…	Gloves Safety boots – steel toe	This safe work procedure will be reviewed any time the task, equipment, or materials change and at a minimum every three years.

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			9. Maintain forward momentum while moving wheelbarrow. 10. Cross over obstacles at a right angle, especially over rails or planks which may divert the wheel causing the load to spill or fall. 11. To dump load, maintain forward momentum, lift handles higher when at desired location, using the wheel guard to rest the wheelbarrow while tipping the load. 12. Return the wheelbarrow to its proper storage place. • Teacher demonstration • Teacher supervision required *If an emergency situation occurs while conducting this task, or there is an equipment malfunction, engage the emergency stop and follow the lock out procedure.* **When servicing equipment (e.g. Changing a blade), power must be disconnected. If the operator must step**		

Possible Hazards or Task	Describe Harm that could occur	Hazard Rating (Low/ Medium/High)	Control Action	Personal Protective Equipment (PPE)	Frequency of Monitoring
			away from out-of-service equipment, a lock box or other lockout means must be used.		