
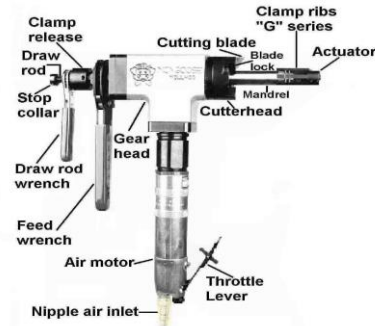





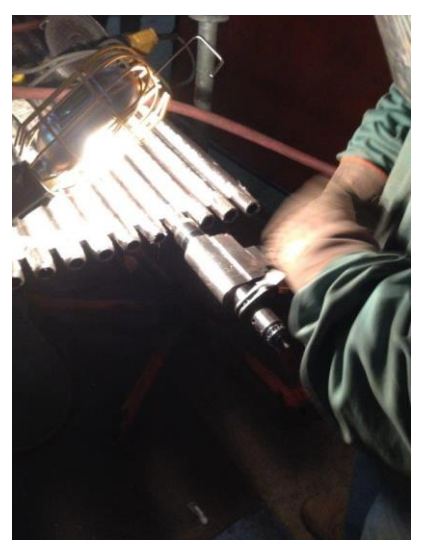
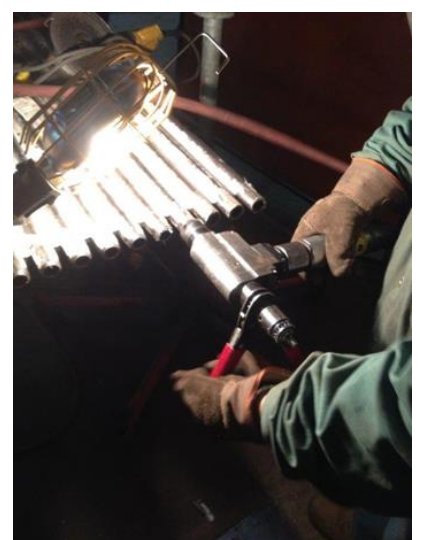


The following are guidelines. Client or Project Specifics may superseded this document. Consult Project Manager with conflicts.

Task Step	Step Hazard	Hazard Mitigation	Picture
<p>Safety precautions. Review owner’s manual. Do not use tool in a manner other than stated. Use other than stated in the instructions is forbidden.</p> <p>Tool must not be used in an explosive atmosphere.</p>			
<p>Inspect equipment</p>  <p>Prior to machine setup physically inspect the machine and its accessories. Look for:</p> <ol style="list-style-type: none"> for worn tool slides, loose bolts or nuts, lubricant leakage, Excessive rust, etc. Broken or chipped cutting blades Air connections 		<p>Reading the setup and operating instructions prior to beginning the setup procedures can save valuable time and help prevent injury to operators or damage to machines.</p> <p>Never use a milling machine cutter with even one damaged cutting blade</p>	
<p>Required P.P.E.</p> 	<ol style="list-style-type: none"> Cutting blades are sharp and produce hot chips. Foreign bodies to eyes exposure to debris, dust and flying particles. Caught between/Pinch points 	<ol style="list-style-type: none"> Cover all exposed skin before operating. Impact resistant eye protection and face shield must be worn while operating or working near this tool. Personal hearing protection is required when operating or working near this tool 	
<p>Prepare Area</p> <p>KEEP WORK AREA CLEAR!</p>	<ol style="list-style-type: none"> Tripping hazards 	<ol style="list-style-type: none"> Be sure to keep the work area free of clutter and nonessential materials. Only allow those personnel directly associated with the work being performed to have access to the area if possible. 	
<p>Set up tool</p> <p>Cutter head selection</p> <ol style="list-style-type: none"> Measure the outside diameter of the tube or pipe. Select a cutter head that either matches the outside diameter or is at least one size larger than the outside diameter. Ensure cutter is in good condition and securely mounted <p>Cutting blade selection</p> <ol style="list-style-type: none"> Measure the wall thickness of the tube or pipe. Select a blade that is wider than the wall thickness. Cutting blade configuration should be matched to your welding specification. <p>Select and install correct expander</p> <ol style="list-style-type: none"> Do not connect air until tool is securely fastened to the inside diameter of a pipe or tube. <p>Air connection</p> <ol style="list-style-type: none"> Use the hose supplied with the tool. This hose has a valved quick connect coupler which will hold back all air that is in the supply hose. <ol style="list-style-type: none"> This feature allows the air supply to be safely removed from the tool at any time. 	<ol style="list-style-type: none"> Cuts to hands/fingers Unexpected start up Pinch points 	<ol style="list-style-type: none"> When installing or removing milling cutters, always wear gloves to prevent cutting your hands. Use caution when handling, <u>disconnect air</u> before removing from work, changing blades, performing maintenance or breaking down. 	

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<p>b. Connect the air supply.</p>			
<p>Mounting the tool to the work. Using the feed wrench extend the mandrel all the way forward (this moves clamp ribs away from cutterhead. b. Retract the mandrel two turns of the feed wrench. c. Insert the clamp rib portion of the tool into the end of tube or pipe. d. While positioning the cutting blade away, at least 1/4" from the work, tighten the draw rod wrench. e. Be sure cutterhead can rotate freely, without coming into contact with the tube or pipe, when first starting tool.</p>	<p>A. Pinch Points B. Cuts to hands C. Unexpected start up</p>	<p>a. Handle milling cutters carefully - they have sharp edges b. Disconnect from air source before making any adjustments or measurements</p>	
<p>Operation of tool</p>  <p>a. Engage the throttle lever, this will activate the tool. b. Using the feed wrench advance the cutting blade towards the work. c. Use a steady constant feed creating a continuous chip. d. Using a constant feed allows the heat generated by the cutting action to be removed by the chip. Heat build up is a primary failure mode for cutting tools. e. Engaging a rotating cutting blade with the work surface without feed (rubbing), creates excessive heat build up. f. When the desired end prep is accomplished, quickly reverse the feed wrench by reversing the directional pawl, and retract the cutting blade from the work. g. Release the throttle lever, this will stop the tool. h. Disconnect the air supply. i. Release the clamp wrench and remove the tool from the work.</p>	<ul style="list-style-type: none"> Sharp cutters Moving components - hair/clothing entanglement Eye injury Pinch Points Metal splinters and burrs Flying debris Chips can be hot and sharp. Be careful when clearing from tool. Do not make contact with the revolving cutter. Moving and stationary parts can pinch or cause serious injury. Pay extra attention to rotating cutting blades as they can not be adequately guarded. <i>Injuries incurring when head is engaged and hand was holding head. Pinched fingers between reaction arm and stud.</i> 	<ul style="list-style-type: none"> KEEP CLEAR OF ROTATING PARTS! Keep hands, arms and fingers clear of all rotating or moving parts. Always turn machine off before attempting any adjustments requiring contact with the machine or it's accessories SECURE LOOSE CLOTHING & JEWELRY! Loose fitting clothing, jewelry; long, unbound hair can get caught in the rotating parts on machines. By keeping these things secure or removing them you can greatly reduce the chance for injury. Chips should be removed from the work piece with an appropriate rake brush. Before making adjustments and measurements or before cleaning shaving accumulations switch off and bring the tool to a complete standstill. 	 



TASK SAFETY PROCESS



INDUSTRIAL-STRENGTH CONSTRUCTION


Title: Milling tubes with Series – “Mongoose”
Millhog
Revision Date: N/A

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Reviewed By: Doug Patton, Ron Beverly, Chad Smit, Brad Bechinske

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<p>Continue to next tube A. Repeat steps</p>			
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An instructional video is available at:

<http://www.youtube.com/watch?v=NGMf0zwQmx8&feature=plcp>