

**flex**  **Power**

by mountz

**Mountz Power Tools**  
**Preventative**  
**Maintenance**  
**Hydraulic Pulse Tools**



**mountz**<sup>®</sup>  
the torque tool specialists<sup>®</sup>

# Safety

U.S. Department of Labor  
Elaine L. Chao, Secretary

Occupational Safety and Health Administration  
John L. Henshaw, Assistant Secretary

OSHA 3080  
2002 (Revised)

This informational booklet is intended to provide a generic, non-exhaustive overview of a particular standards-related topic. This publication does not itself alter or determine compliance responsibilities, which are set forth in OSHA standards themselves and the *Occupational Safety and Health Act*. Moreover, because interpretations and enforcement policy may change over time, for additional guidance on OSHA compliance requirements, the reader should consult current and administrative interpretations and decisions by the Occupational Safety and Health Review Commission and the courts.

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Appropriate personal protective equipment such as safety goggles and gloves must be worn to protect against hazards that may be encountered while using power tools.

Workplace floors shall be kept as clean and dry as possible to prevent accidental slips with or around power tools.

Power tools must be fitted with guards and safety switches; they are extremely hazardous when used improperly. The types of power tools are determined by their power source: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated.

To prevent hazards associated with the use of power tools, workers should observe the following general precautions:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords and hoses away from heat, oil, and sharp edges.
- Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits, and cutters.
- Keep all people not involved with the work at a safe distance from the work area.
- Secure work with clamps or a vise, freeing both hands to operate the tool.
- Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
- Maintain tools with care; keep them sharp and clean for best performance.
- Follow instructions in the user's manual for lubricating and changing accessories.
- Be sure to keep good footing and maintain good balance when operating power tools.
- Wear proper apparel for the task. Loose clothing, ties, or jewelry can become caught in moving parts.
- Remove all damaged portable electric tools from use and tag them: "Do Not Use."

## Air quality (Compressor)

Life of tools depend a lot on the quality of your compressor. Separating humidity from the air prevents corrosion on your air power tools. Air filter regulators and lubricators are an important factor to keep your tools at a high performance.

ISO 8573-1, indicates:

	Class	Residue of Oil Content		Residue of Dust			Residue of Water		
		mg/m <sup>3</sup>	oz./cu. ft	particle size mm	mg/m <sup>3</sup>	oz./cu. ft	pressure dew-point °C	g/m <sup>3</sup>	oz./cu. ft
Dry Air	3	1	$1.03 \cdot 10^{-6}$	5	5	$5.14 \cdot 10^{-6}$	-20	0.88	$0.90 \cdot 10^{-3}$
Lubrication Air	4	5	$5.14 \cdot 10^{-6}$	15	8	$8.22 \cdot 10^{-6}$	+3	6	$6.17 \cdot 10^{-3}$

Because of Hydraulic Pulse Tools Mechanism, the type of joint directly affects performance and maintenance periods. Just to give an example, Shut Off Hydraulic Pulse Tools might pulse for (1) second on a hard joint and (2) seconds on a soft joint. These pulses inside pulse unit wears out Hydraulic Fluid and it loses consistency and begins to turn dark. The longer the tool pulses on every run down, the faster the Fluid wears out.

The number of pulses/second determines the number of cycles; the number of cycles will determine the time frame for an oil change. Pulsing time must be calculated for each individual application.

**For Shut Off Tools**, simply, chronometer the time the tool shuts off right after the bolt or nut is seated. What ever that time was, divide it by 250,000 Pulses/Second (Mountz Hydraulic Pulse Tools Recommended Factor) to get the number of cycles on the ones the tool will need an oil change.

**For Non Shut Off Tools**, the pulsing time is calculated almost the same way. It only defers from the time you release the trigger as this tool wont stop by itself. So instead of monitoring the time the tool shuts off by itself, monitor the time you release the trigger so the tools stops.



Example:

### Cycles Calculation

If the joint chronometers 1.5 seconds pulsing time, than:

$250,000 \text{ pulses per second} / 1.5 \text{ seconds} = 166,666 \text{ cycles or rundowns (bolts or nuts)}$ . It means that this tool, for this specific application, must have an oil change every 166,666 cycles.

### Number of Days before an oil change calculation

From the example above, divide 166,666 by the number of bolts or nuts fasten per day in your process to obtain number of days before an oil change.

Say you have to fasten 2,500 bolts per day, than:

$166,666 / 2,500 = 66 \text{ days for an oil change}$ .

Notes:

1. The harder the joint is, the less pulsing time you will notice.
2. The softer the joint is, the longer pulsing time you will notice and for instance, the number of cycles for an oil change will be less. A sooner oil change!
3. To perform the oil change, please follow the instructions on Hydraulic Pulse Tools Operation Manual and pulse unit oil change process video by clicking the links below..

[Flex Power Pulse Tools Operation Manual by Mountz](#)

[Sample of a Pulse Unit Oil Change & Withdraw Process Using Vacuum Tank System](#)

Other Considerations

A good rule of thumb to consider an oil change, without knowing the number of cycles a tool has been running:

1. For Shut Off tools, you will notice the tool is pulsing for more than 4 seconds to shut off.
2. For Non shut off tools, you notice that pauses between pulses become longer and longer.
3. Or, with the use of a Torque Tester that has pulse counting features such as Mountz FTA-100 Torque Tester, adjust the tool to it's max capacity and verify if is reaching what ever is stated on the catalog for that model. If the tool is adjusted to it's max power and can't reach the stated max torque capacity, it might mean the oil needs to be changed.



**Maintenance Intervals:**

Interval	Recommended Preventive Maintenance
Fluid – Oil Change	<ul style="list-style-type: none"> <li>• According to cycles, as described above. Only use: 63-Pulse Tool Fluid (Mountz)</li> </ul>
Weekly	<p>Operator Safety Inspection:</p> <ul style="list-style-type: none"> <li>• Check condition of all air hoses and connections</li> <li>• Check tool suspension components and/or reaction devices</li> <li>• Check air lubrication and filter unit</li> <li>• Run tool in the air without load to make sure it reaches 85 PSI.</li> </ul>
First 500,000 pulses / second	<p>After Oil Change, and with the use of a Torque Tester that has pulse-counting features such as Mountz FTA-100 Torque Tester, verify that tool is reaching max torque output and max RPM. If tool doesn't reach max torque and RPM:</p> <ul style="list-style-type: none"> <li>• Minor Pulse Unit Service: Replace parts included on “Repair Kit” listed on the tools part list breakdown.</li> <li>• Verify max output torque and max RPM</li> <li>• Any other part for the pulse tool not indicated above doesn't need PM and needs to be replaced as required.</li> </ul>
Every 1,000,000 pulses / second	<ul style="list-style-type: none"> <li>• Minor Pulse Unit Service: Replace parts included on “Repair Kit” listed on the tools part list breakdown.</li> <li>• Major Pulse Unit Service: Replace parts included on “Service Kit” listed on the tools part list breakdown.</li> <li>• Verify max output torque and max RPM</li> <li>• Any other part for the pulse tool not indicated above doesn't need PM and needs to be replaced as required.</li> </ul>

**Mountz Web Site Important Links:**

[Flex Power by Mountz Pulse Tools Section](#)

[Mountz Torque Tester FTA-100 \(Pulse Counting Capability\)](#)

**NOTE: Preventative Maintenance may vary depending on the usage and care of the tool. Life Cycle of the tool and schedule for replacing parts replacement depend on the tool usage.**

**Service**

Mountz Inc. features an experienced calibration and repair staff. Our trained technicians can calibrate and repair most any tool. Mountz provides rapid service with quality that you can trust as we offer three state-of-the-art calibration lab and repair facilities that can calibrate up to 20,000 lbf.ft.

With over 45 years of experience, Mountz’s in-depth knowledge of torque is reflected in our tool’s craftsmanship and our ability to provide solutions to both common and uncommon torque applications. We perform calibrations in accordance with ANSI/NCSL-Z540. Mountz is dedicated solely to the manufacturing, marketing and servicing of high quality torque tools.

**Tool Service & Repair Capability**

Torque Wrenches: Click, Dial, Beam, Cam-Over & Break-Over

Torque Screwdrivers: Dial, Micrometer, Preset & Adjustable

Torque Analyzers/Sensors: All brands

Electric Screwdrivers: All brands

Air Tools: All brands

Impact Wrenches, Drills, Pulse Tools, Grinders, Percussive Tools,  
Air Screwdrivers, Nutrunners, DC Controlled Nutrunners

Torque Multipliers: All brands

**Mountz Service Locations**

**Eastern Service Center**

19051 Underwood Rd.  
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**Western Service Center**

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**Twitter: @mountztorque**

Download a “Service Form” and include a copy when you send the tools in to be serviced.

Looking for fasteners?  
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