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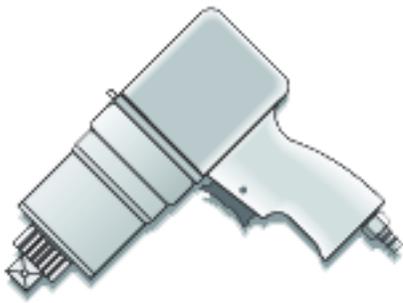
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Pneumatic Multipliers Operating Instructions

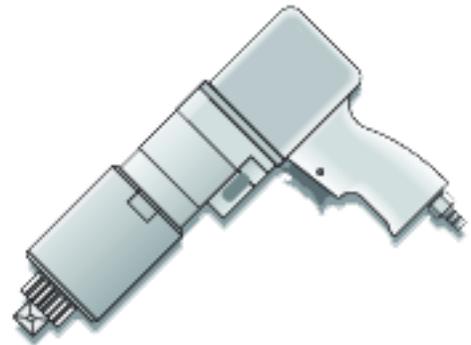
Rev 1.0

The manual is a guide for operating the following Eliminator Series Pneumatic Multiplier models:

Eliminator-CLD, Eliminator-CLD Plus, Eliminator-CLS, and Eliminator-RCL



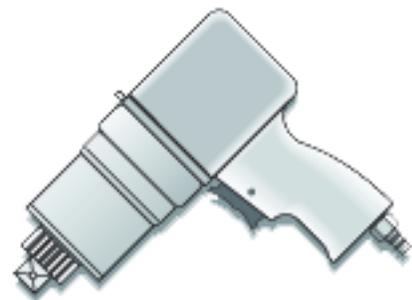
Eliminator-CLD



Eliminator-CLS



Eliminator-RCL



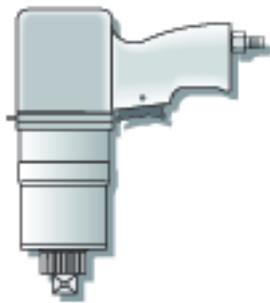
Eliminator-CLD Plus

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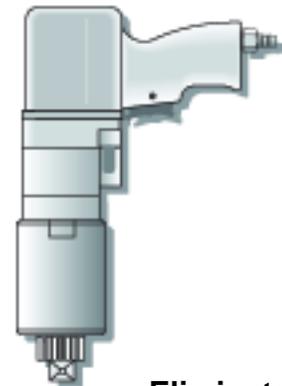
General Description of the Pneumatic Multipliers

Designed to deliver smooth torque control, with "continuous" rotation, these pneumatic multipliers are less expensive than hydraulic wrenches and ergonomically safer than impact wrenches. Torque multipliers replace impact wrenches, pipe extensions and other inadequate and sometimes unsafe fastening methods. These continuous rotation torque multipliers eliminate the slow ratcheting process of hydraulic wrenches and the harmful hammering of the impact wrenches, by producing correct torque output through smooth constant gear manipulation. The Mountz multipliers achieve precision torque in a quick, cost-efficient manner



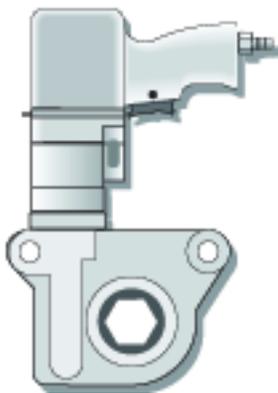
Eliminator-CLD

Single speed in-line tool. CW/CCW direction. Compact design is safe, easy, and simple to handle.



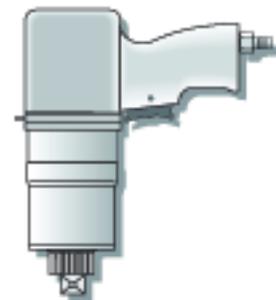
Eliminator-CLS

Two speed in-line tool. CW/CCW direction. Capable of handling high torque applications efficiently and accurately.



Eliminator-RCL

Two speed radial tool. CW/CCW direction. Designed with a low radial head, it can slide into areas where clearance is limited. Commonly used in applications like Heat Exchangers, Food Processing Plants or Mining.



Eliminator-CLD Plus

Two speed gear box in-line tool. CW/CCW direction. The multiplier's unique motor design allows fast operation while maintaining high power output.

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The Eliminator Torque Multiplier is a precision tool for tightening bolts to a predetermined torque or loosening those within its torque output capabilities. Connect a ½" NPTM coupling to the base of the handle of the Eliminator motor. Connect the coupling to the hose of the Lubro Control Unit (LCU). The control unit is made up of an air filter pressure regulator and lubricator. The lubricator is filled with any engine oil, such as Shell Tellus 32. With the output side of the LCU connected to the air supply and the correct size socket fitted on the square drive, the tool is ready to use.

Setting the Correct Air Pressure



Note: Full airline pressure should never be applied directly to the tool unless it is below the maximum air pressure stamped on the tool. If maximum air pressures are exceeded breakage can occur.

1. Air pressure should be set with the Eliminator torque multiplier connected and free running. Air consumption is a maximum of 40 c.f.m. with tool free running at maximum air pressure.
2. Consult the air pressure to torque reference graph that is supplied with each tool and determine pressure by reading up from the required torque figure to the "torque air pressure" line. Then read off of the required pressure on the left of the graph.



Note: The graphs are produced under factory conditions and should be used as a guide only. Torque output can vary depending on the length of the air hose used, whether the bolted joint is soft (including gasket) or a hard pull up (solid material to metal contact), pressure regulator accuracy, etc. (See page 4 for sample flow chart graphs).

The Mountz Lubro Control Unit (LCU) is recommended for pressure regulating and tool lubrication. Set the correct pressure by testing on the actual assembly under conditions that the wrench will be operated. It is recommended that an air hose with a minimum ½" internal diameter and 10ft maximum length be used between the tool and the Lubro Control Unit (LCU).



Model	Item #	Pipe Size	Approx. Weight
LCU-1	060005	½"	15 lbs.

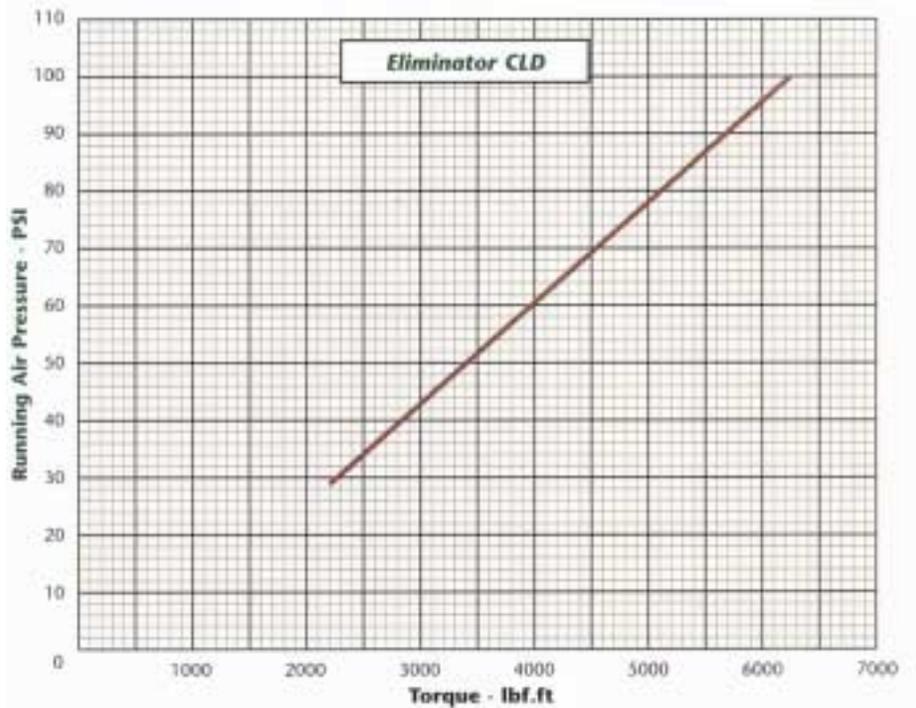
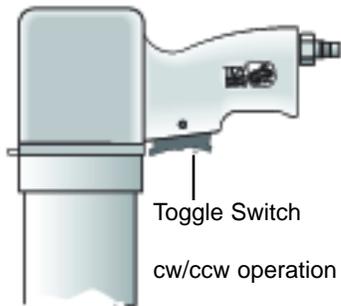
3. Once set, the torque multiplier will consistently stall within +/- 5% of the same torque figure.

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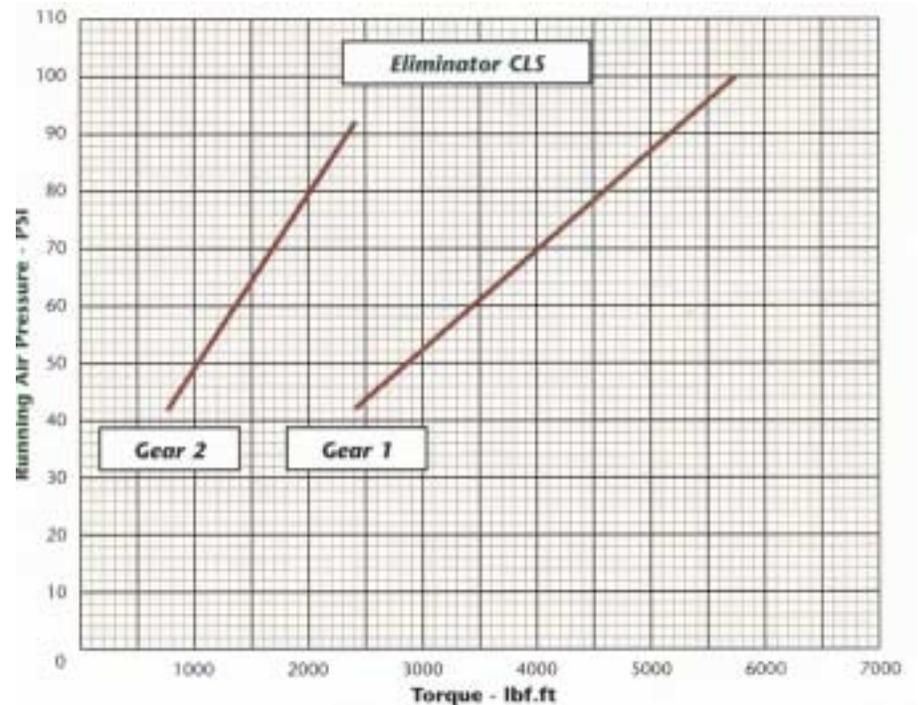
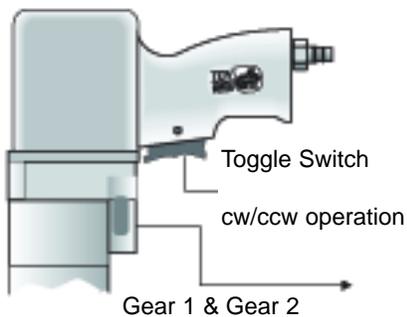
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All pneumatic torque multipliers are supplied with an air torque output chart. All curves are approximate values. Many factors such as differences in compressed air supplies, joint characteristics and other application related variables can cause deviations from reported torque output.

The chart on the left is a sample for a CLD or CLD Plus torque multiplier.



The chart on the left is a sample for a CLS or RCL torque multiplier.



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Using the Torque Multiplier for Tightening

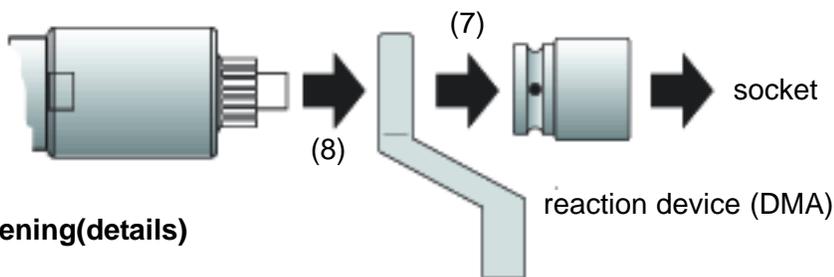
1. Place reaction bar onto the unit and then place the appropriate socket onto the square drive. Engage the socket onto the fastener to be tightened; making sure that the reaction bar has something solid and square to the reaction plane to react against.



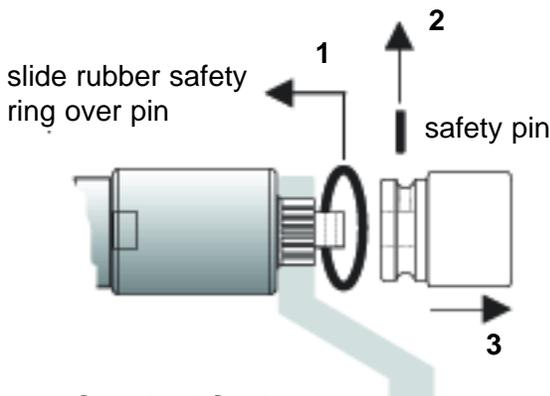
Note: Reaction bar rotation moves in opposite direction to the rotation of the square drive.

Preparation for Fastening

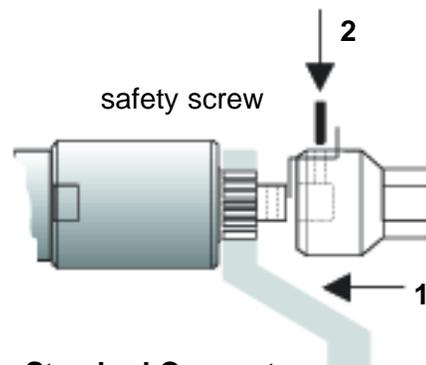
- Place Pneumatic Multiplier on flat surface
- Insert reaction device onto spline (8)
- Place standard socket onto square drive (7)



Preparation for Fastening(details)



Standard Socket



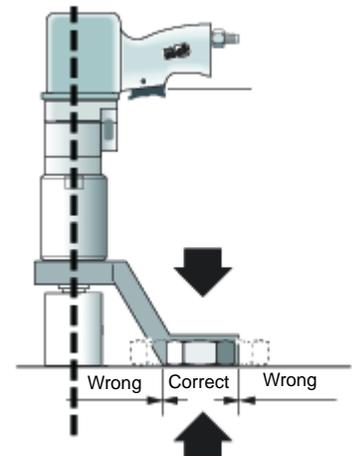
Standard Connector

2. Press top of the trigger for tightening.
3. Reaction forces decrease the further the reaction point is away from the center of the square drive. Reaction may be taken by the reaction bar resting against a solid projection, or by a socket fitting over the head of an adjacent fastener. Reaction forces work in the opposite direction to fastener rotation and would be, for example, at 2,000 lbf.ft.
Output 2000 lbs at 1 ft. radius
Output 4000 lbs at 6 in. radius
Output 6000 lbs at 4 in. radius



Note: Always take torque reaction as far away from the tool as possible to reduce excessive side loads.

Keep tool perpendicular to the fastener's axis.



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Continued: Using the Torque Multiplier for Tightening

4. Where it is necessary to use an extension drive between the output square drive of the tool and the socket, you must provide a balanced reaction. A double sided reaction bar with both sides taking equal load serves this purpose, otherwise the tool either forces itself sideways off the fastener or the gears are damaged by the leverage exerted to twist under these conditions.
5. It is also advisable to have a special reaction bar to cope with torque in excess of 2,000 lbf.ft when the reaction point of contact is less than 4 inches from the center of the square drive. Pieces may be welded onto the standard reaction bar to overcome this problem without detriment.



Note: The CLS & RCL tools are fitted with two speeds and it can be used in the fast gear modes to run down the nut. In this position the tool runs 3 times as fast at 1/3 of the normal torque output. When the tool stalls, release the trigger before the gears are shifted into the "Slow" gear mode to achieve the required torque. The motor will stall signaling final torque is achieved.

5. To remove the tool from the nut after tightening it is necessary to put the motor in reverse momentarily to unlock the reaction forces holding it in position.



Note: In the case of some tightening applications involving gaskets it is advisable to make several tightening cycles at a low torque figure, i.e. in fast position, to pull the joint together evenly before applying the full torque. This will avoid possible gasket damage and flange distortion. A lower air pressure can be used for this purpose if the tools is not fitted with a two-speed gear box (CLS or RCL).

Using the Torque Multiplier for loosening bolts.

1. Press bottom of the trigger for loosening.
2. Set air pressure to maximum permissible and use the tool in the "Slow" position if a two-speed gearbox is fitted (CLS & RCL). If the bolt does not loosen with the full torque applied, a sharp tap on the socket while it is under load will sometimes shock it free. Fast speed can then be engaged to the run the nut off 3 times more quickly.



Note: Although most of the Eliminator Torque Multipliers are protected against overloading by a square drive designed to shear if overloaded, it is dangerous to exceed the stated maximum air pressure and a larger capacity tool should be used if the nut fails to break free.

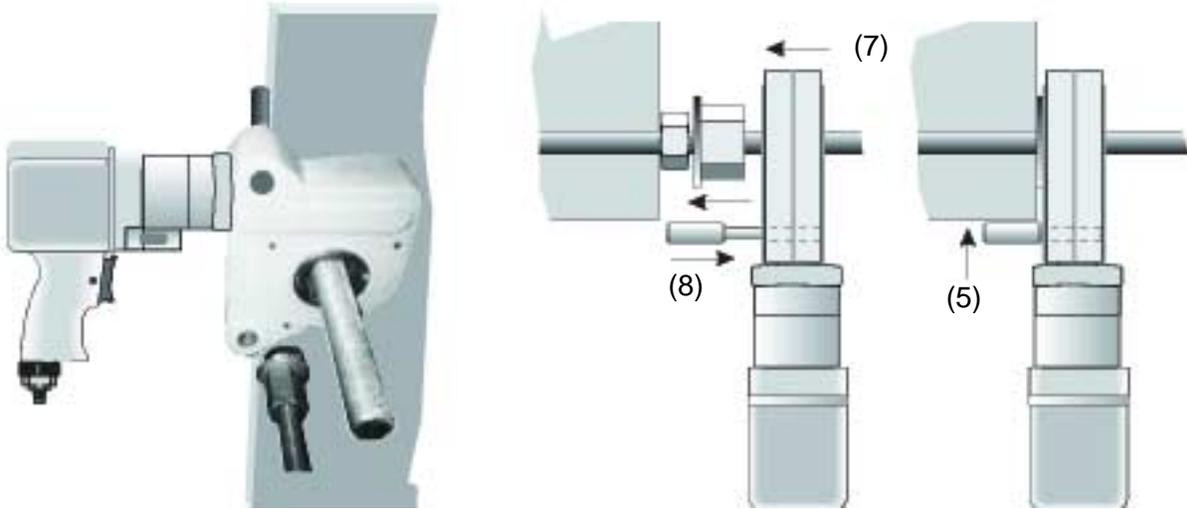


Be aware of rotating support arms or impact sockets. Keep clothing, hair, or any loose objects clear of moving parts. Always wear proper protective clothing such as glasses, ear protection and gloves during tool operation.

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Mounting RCL (Radial Torque Multiplier)

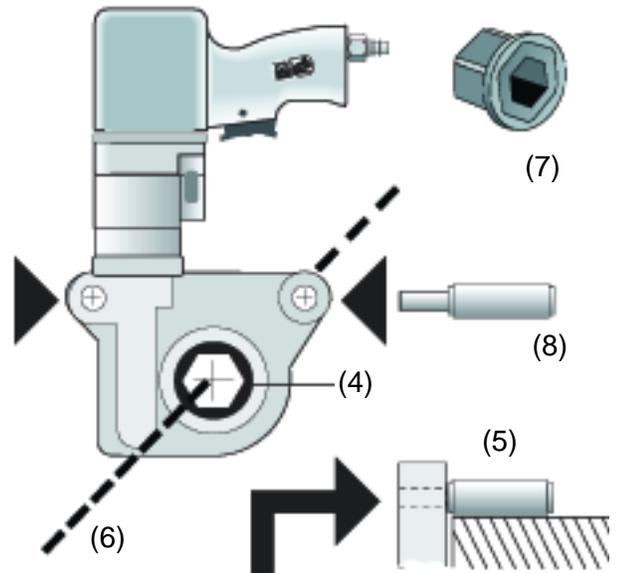
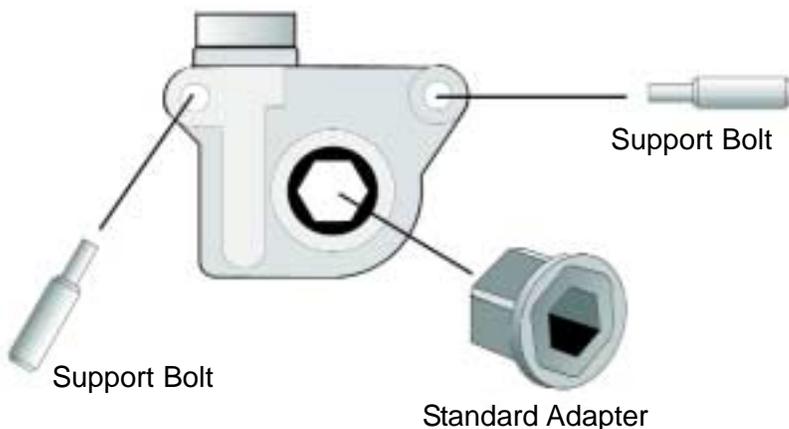


To avoid rupture of the equipment casing insert the Support Bolt(s) (8) completely into the designated holes.

Due to the radial drive of the RCL, the tool needs to be held perpendicular to the screw axis (6). For reduction to smaller spanner widths (4) the STA (Standard Adapter (7) is needed. To take up a reactive torque use the Support Bolt (8). A safe and stable counter mounting (5) is essential.



Do not place your hands between support bolt and exchanger plate by switching on the tool.





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Care & Maintenance

1. Keep gear unit as close to the fastener as possible.
2. Use close fitting sockets.
3. If the tool will not free a frozen fastener when the maximum safe air pressure is applied, a small lug welded to the side of the socket, which can be struck with a hammer while the maximum torque is being applied by the tool, will usually shock the fastener free.
4. Try to use a tool that has capacity to spare, in case the torque specification is increased.
5. Return the tool to Mountz, Inc. for service & repair.
6. Oiler of LCU should apply 2-3 drops per minute in constant operation.
7. Reaction arm material is 16Mn Cr5, if modification is needed.

Mountz Calibration & Repair Services

With over 39 years of experience, Mountz features an experienced calibration and repair staff that delivers rapid service and provides quality that you can trust. Mountz features a new state-of-the-art calibration lab and a repair facility. The Calibration Lab can calibrate up to 20,000 lbf.ft. Our certified technicians can calibrate & repair most any tool and our calibration standards are traceable to NIST (National Institute of Standards and Technology). Mountz factory service provides current upgrades for all digital torque analyzers at time of service.

Mountz Service Centers

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