CE

PL3000

PORTABLE LATHE

OPERATING MANUAL

ORIGINAL INSTRUCTIONS

CLIMAX
Portable Machining & Welding Systems

PN: 31041 March 2023 Revision 5

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- Machine model
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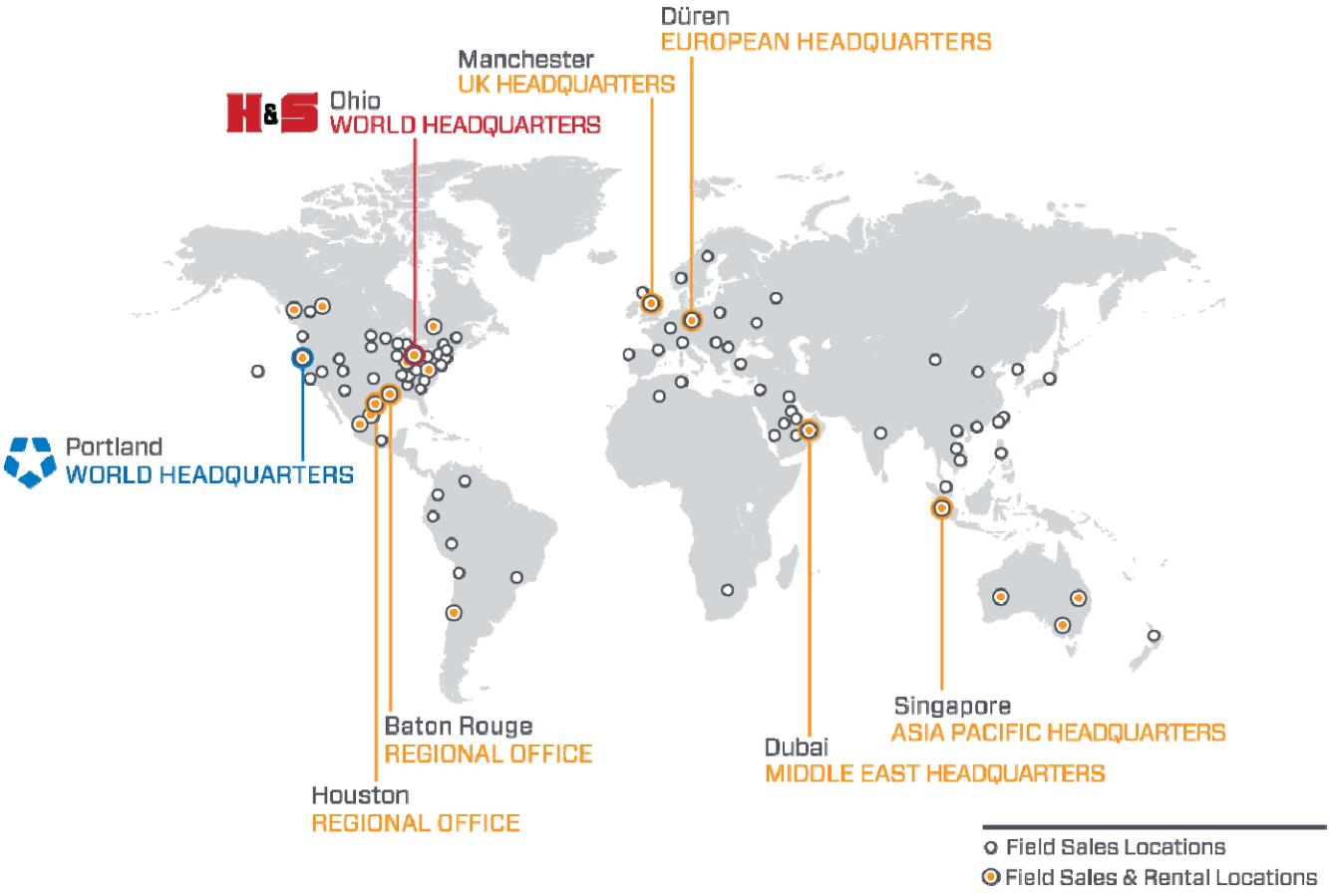
CLIMAX WORLDWIDE LOCATIONS



LIMITED WARRANTY

CLIMAX Portable Machine Tools, Inc. (hereafter referred to as “CLIMAX”) warrants that all new machines are free from defects in materials and workmanship. This warranty is available to the original purchaser for a period of one year after delivery. If the original purchaser finds any defect in materials or workmanship within the warranty period, the original purchaser should contact its factory representative and return the entire machine, shipping prepaid, to the factory. CLIMAX will, at its option, either repair or replace the defective machine at no charge and will return the machine with shipping prepaid.

CLIMAX warrants that all parts are free from defects in materials and workmanship, and that all labor has been performed properly. This warranty is available to the customer purchasing parts or labor for a period of 90 days after delivery of the part or repaired machine or 180 days on used machines and components. If the customer purchasing parts or labor finds any defect in materials or workmanship within the warranty period, the purchaser should contact its factory representative and return the part or repaired machine, shipping pre- paid, to the factory. CLIMAX will, at its option, either repair or replace the defective part and/ or correct any defect in the labor performed, both at no charge, and return the part or repaired machine shipping prepaid.

These warranties do not apply to the following:

- Damage after the date of shipment not caused by defects in materials or workmanship
- Damage caused by improper or inadequate machine maintenance
- Damage caused by unauthorized machine modification or repair
- Damage caused by machine abuse
- Damage caused by using the machine beyond its rated capacity

All other warranties, express or implied, including without limitation the warranties of merchantability and fitness for a particular purpose are disclaimed and excluded.

Terms of sale

Be sure to review the terms of sale which appear on the reverse side of your invoice. These terms control and limit your rights with respect to the goods purchased from CLIMAX.

About this manual

CLIMAX provides the contents of this manual in good faith as a guideline to the operator. CLIMAX cannot guarantee that the information contained in this manual is correct for applications other than the application described in this manual. Product specifications are subject to change without notice.

CE DATA

Recommended air pressure:	90 psi **(DO NOT EXCEED 120 psi)**
Noise level:	84 dB(A) – Hearing protection required
Sound Power Level:	93.3 dB(A) (Pneumatic)
Operator Sound Pressure Level:	87.3 dB(A) (Pneumatic)
Bystander Sound Pressure Level:	86.9 dB(A) (Pneumatic)

P/N 59035

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INTRODUCTION

How to use this manual

This manual describes information necessary for the setup, operation, maintenance, storage, shipping, and decommissioning of the PL3000.

The first page of each chapter includes a summary of the chapter contents to help you locate specific information. The appendices contain supplemental product information to aid in setup, operation, and maintenance tasks.

Read this entire manual to familiarize yourself with the PL3000 before attempting to set it up or operate it.

Labeling Guidelines

The purpose of product safety signs and labels is to increase the level of awareness to possible dangers.

Safety alert symbols indicate **DANGER**, **WARNING** or **CAUTION**. These symbols may be used in conjunction with other symbols or pictographs. Failure to obey safety warnings can result in serious injury. Always follow safety precautions to reduce the risk of hazards and serious injury:

	**DANGER** **Indicates a hazardous situation that could be fatal or cause serious injury.**
	**WARNING** **Indicates a potentially hazardous situation that could be fatal or cause serious injury.**
	**CAUTION** **Indicates a potentially hazardous situation that could result in minor to moderate injury, damage to the machine or interruption of an important process.**
	**IMPORTANT** **Provides critical information for the completion of a task. There is no associated hazard to people or the machine.**
	**NOTE** **Provides important information regarding the machine.**

Safety Guidelines

The primary challenge for most on-site maintenance is that repairs are often done under difficult conditions.

CLIMAX leads the way in promoting the safe use of portable machine tools. Safety is a joint effort. As the operator of this machine, you are expected to do your part by closely examining the job site and following the operating procedures outlined in this manual, your own company rules, and local regulations.

WARNING

For maximum safety and performance, read and understand the entire manual and all other related safety instructions before using this equipment. Failure to follow the instructions and guidelines in this manual could cause personal injury, fatalities or property damage.

QUALIFIED PERSONNEL

Before operating this machine, you must receive training specific to this machine from a qualified trainer. If you are not familiar with the proper and safe operation, do not use the machine.

OBEY WARNING LABELS

Obey all warnings and warning labels. Failure to follow instructions or heed warnings could result in injury, or even be fatal. Proper care is your responsibility. Contact CLIMAX immediately for replacement of damaged or lost manuals or safety decals.

INTENDED USE

Only use the machine according to the instructions in this operating manual. Do not use this machine for any purpose other than the intended use as described in this manual. When using the tools, machine, accessories and/or tool bits, you must determine the proper working conditions and the work to be performed.

STAY CLEAR OF MOVING PARTS

Keep clear of the machine during operation. Never lean toward or reach into the machine to remove chips or to adjust the machine while it is running. Keep bystanders away while operating this machinery.

ROTATING MACHINERY

Rotating machinery can seriously injure an operator. Lock out all power sources before you interact with the machine.

KEEP YOUR WORK AREA CLEAN AND TIDY

Keep all cords and hoses away from moving parts during operation. Do not clutter the area around the machine. Keep the work area clean and well lit.

AMBIENT LIGHTING

Do not operate this machine in ambient lighting that is less than normal intensity.

SECURE LOOSE CLOTHING AND LONG HAIR

Rotating machinery can seriously injure an operator as well as others close by. Don’t wear loose fitting clothing or jewelry. Tie back long hair or wear a hat.

HAZARDOUS ENVIRONMENTS

Do not use the machine in a hazardous environment, such as near explosive chemicals, flammable liquids, gasses, toxic fumes, or inappropriate radiation hazards.

HOSES, PENDANT AND ELECTRICAL CABLES

Do not abuse the pendant cable as this can damage the cable and pedant. Never use the cord for carrying, pulling or unplugging. Remove any and all kinks before straightening the cable. Keep cords and hoses away from heat, oil, sharp edges or moving parts. Plugs must match the outlet. Never modify the plugs in any way. Do not use an adapter plug with grounded power tools. Do not expose the machine to rain or wet conditions. Always examine hoses and cables for damage before use. Be cautious and never drop electrical equipment, this will damage the components.

REPETITIVE MOTION

Individuals can be susceptible to disorders of the hands and arms when exposed to tasks that involve highly repetitive motions and/or vibration.

STAY ALERT

Stay alert, watch what you are doing and use common sense when operating machinery. Do not operate machinery while you are tired or under the influence of drugs, alcohol or medical.

Safety Practices

All aspects of the machine have been designed with safety in mind. Rotating parts are not always shielded by machine components or by the work-piece. Do not force the machine.

PERSONAL PROTECTIVE EQUIPMENT

Eye and hearing protection must be worn while using the machine. These safety items do not impose constraints to the safe operation of the machine.

OPERATING CONDITIONS

Do not operate the machine if it is not mounted to the workpiece as described in this manual.

TOOLING

The machine is provided with all the tools for the setup and operation of the machine. Remove all adjustment tools before starting the machine.

LIFTING

Most of the machine components are heavy and must be moved or lifted with approved rigging and practices. CLIMAX accepts no responsibility for the selection of lifting equipment. Always follow your plant's procedures for lifting heavy objects. Do not lift heavy objects by yourself as serious injury can result.

CUTTING TOOLS AND FLUIDS

There are no cutting or cooling fluids supplied with this machine. Keep cutting tools sharp and clean.

CONTROLS

The machine controls are designed to withstand the rigors of normal use and external factors. The on-off switches are clearly visible and identifiable. If hydraulic power supply failure occurs, be sure to turn off the supply before leaving the machine.

DANGER ZONE

The operator and other persons can be anywhere in the vicinity of the machine. The operator must ensure there are no other persons in danger from the machine.

METAL FRAGMENT HAZARD

The machine produces metallic fragments during normal operation. You should wear eye protection at all times when working with the machine. Only remove fragments with a brush after the machine has stopped completely.

HAZARDOUS ENVIRONMENTS

Do not use the machine in a hazardous environment, such as near explosive chemicals, toxic fumes, or a radiation hazard.

RADIATION HAZARDS

There are no systems or components on this machine that are capable of producing hazardous EMC, UV or other radiation hazards. The machine does not use lasers nor does it create hazardous materials such as gasses or dust.

ADJUSTMENTS AND MAINTENANCE

All adjustments, lubrication and maintenance should be done with the machine stopped, and locked out from all power sources. The shut-off valves should be locked and tagged out before performing any maintenance. Do not operate the machine if moving parts are misaligned, binding or broken. If the machine or parts are damaged, have the machine repaired before use.

WARNING LABELS

Warning labels are already attached to your machine. Contact CLIMAX immediately if replacements are required.

MAINTENANCE

Be sure the machine components are free of debris and properly lubricated prior to use. Have your machine serviced by a qualified repair person using only identical replacement parts

NOISE LEVEL

84 dB(A) – Hearing Protection is required

STORED ENERGY

Hydraulic fluids could still be under pressure! Make sure the HPU is shut off and locked out properly.

MSDS

Material Data Safety Sheets are included in the maintenance manual.

UNINTENTIONAL STARTING

Prevent unintentional starting. The machine must be properly locked out and/or shut down before maintenance.

OPERATING CONDITIONS

Do not operate this machine in inclement weather or provide adequate cover to keep the machine from exposure to the elements.

Risk Assessment and Hazard Mitigation

Machine Tools are specifically designed to perform precise material-removal operations.

Stationary Machine Tools include lathes and milling machines and are typically found in a machine shop. They are mounted in a fixed location during operation and are considered to be a complete, self-contained machine. Stationary Machine Tools achieve the rigidity needed to accomplish material-removal operations from the structure that is an integral part of the machine tool.

In contrast, Portable Machine Tools are designed for on-site machining applications. They typically attach directly to the workpiece itself, or to an adjacent structure, and achieve their rigidity from the structure to which it is attached. The design intent is that the Portable Machine Tool and the structure to which it is attached become one complete machine during the material-removal process.

To achieve the intended results and to promote safety, the operator must under- stand and follow the design intent, set-up, and operation practices that are unique to Portable Machine Tools.

The operator must perform an overall review and on-site risk assessment of the intended application. Due to the unique nature of portable machining applications, identifying one or more hazards that must be addressed is typical.

When performing the on-site risk assessment, it is important to consider the Portable Machine Tool and the workpiece as a whole.

Risk Assessment Checklist

The following checklist is not intended to be an all-inclusive list of things to watch out for when setting up and operating this Portable Machine Tool. However, these checklists are typical of the types of risks the assembler and operator should consider. Use these checklists as part of your risk assessment:

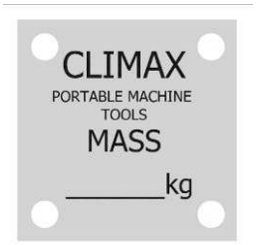
TABLE 1-1. RISK ASSESSMENT CHECKLIST BEFORE SET-UP

	Before set-up
☐	I took note of all the warning labels on the machine.
☐	I removed or mitigated all identified risks (such as tripping, cutting, crushing, entanglement, shearing, or falling objects).
☐	I considered the need for personnel safety guarding and installed any necessary guards.
☐	I read the machine assembly instructions.
☐	I created a lift plan, including identifying the proper rigging, for each of the setup lifts required during the setup of the support structure and machine.
☐	I located the fall paths involved in lifting and rigging operations. I have taken pre- cautions to keep workers away from the identified fall path.
☐	I considered how this machine operates and identified the best placement for the controls, cabling, and the operator.
☐	I evaluated and mitigated any other potential risks specific to my work area.

TABLE 1-2. RISK ASSESSMENT CHECKLIST AFTER SET-UP

	After set-up
☐	I checked that the machine is safely installed and the potential fall path is clear. If the machine is installed at an elevated position, I checked that the machine is safeguarded against falling.
☐	I identified all possible pinch points, such as those caused by rotating parts, and informed the affected personnel.
☐	I planned for containment of any chips or swarf produced by the machine.
☐	I followed the required maintenance with the recommended lubricants.
☐	I checked that all affected personnel have the recommended personal protective equipment, as well as any site-required or regulatory equipment.
☐	I checked that all affected personnel understand and are clear of the danger zone.
☐	I evaluated and mitigated any other potential risks specific to my work area.

Labels on the Machine



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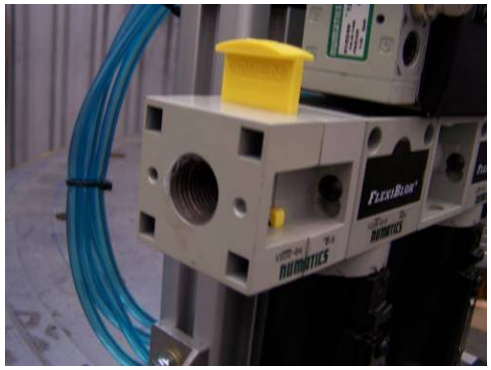
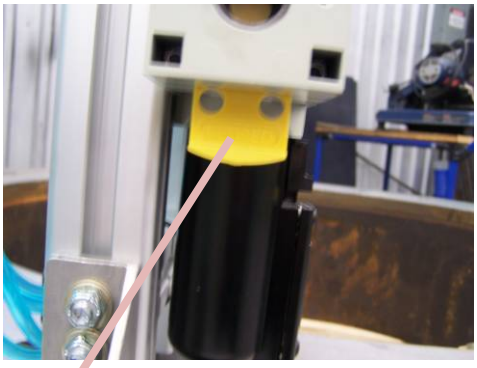
Machine Lock-Out

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Air shutoff in the operating position (UP)</td><td>To lockout the machine, Push down on the lockout and insert locks into the openings at the bottom of the air shutoff on the air intake side of the pneumatic conditioning unit.</td></tr>
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OVERVIEW

The Model PL3000 Portable Lathe mounts to the end of the shaft. With a choice of electric or pneumatic power, its compact size and light weight makes it an ideal tool for on-site maintenance. The machine will turn 8" to 11.25" (203.2 - 286 mm) diameter shafts. With optional tool holders, the machine can turn shafts as small as 4" (101.6 mm) in diameter. In standard configuration, the Model PL3000 has a reach of 16" (406.4 mm) and with a tool bar extension, a reach of up to 22" (558.8 mm).

Model PL3000 consists of:

- Main body assembly
- Mounting flange assembly
- Turning bar assembly
- Electric motor assembly (electric model only)
- Electric planetary housing assembly (electric model only)
- Air motor assembly (air model only)
- Pneumatic planetary housing assembly (air model only)
- Pneumatic conditioning unit (air model only)
- Tool kit

Electric lathe description

The electric PL3000 Portable Lathe has a 3.2 hp (2.4 kW) electric motor. The motor may be either 120 volt or 230 volt. Check the serial number plate on the motor to find the voltage. The motor operates on 50 or 60 cycle AC current. A speed control adjusts the motor speed.

Pneumatic lathe description

The pneumatic Portable Lathe has a 1.22 hp (.91 kW) air motor (60 rpm no-load). Operate the needle valve to adjust motor speed.

	CAUTION
	Recommended operating pressure is 90 psi (620 kPa). Do not exceed 120 PSI (827 KPA).

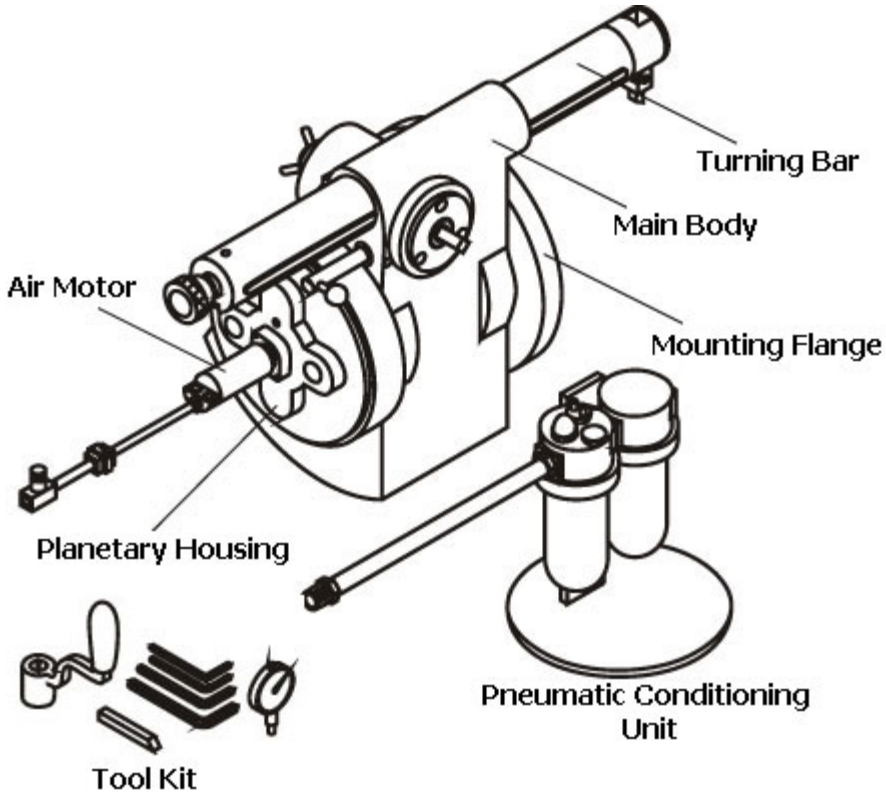

Figure 1 - Air powered PL3000 Portable Lathe

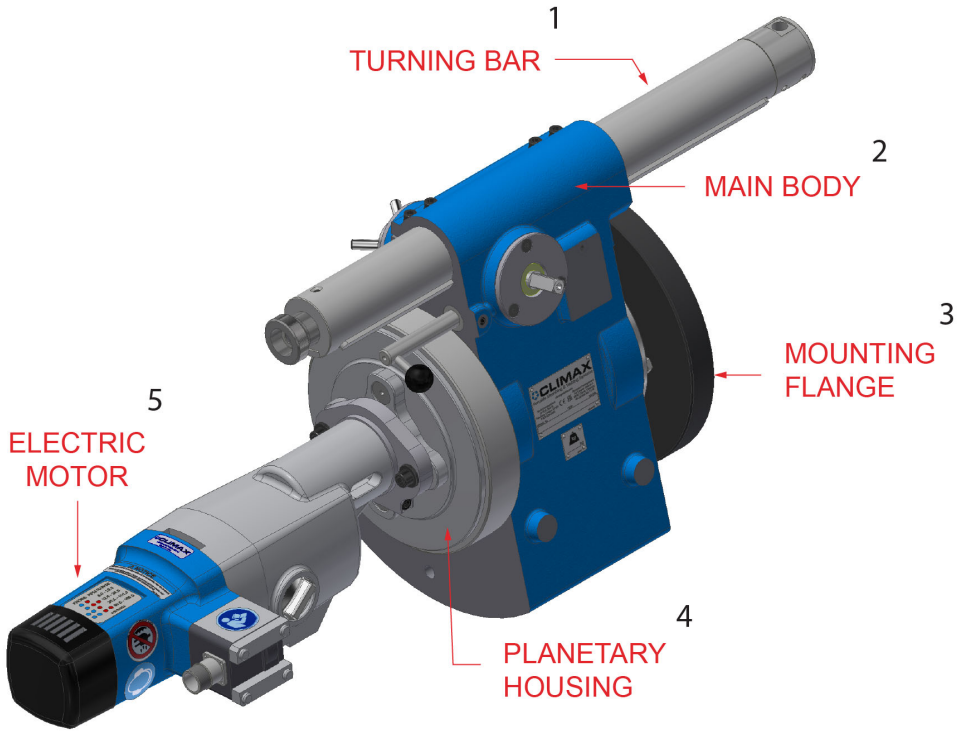

Figure 2 - Electric powered PL3000 Portable Lathe

Table 1. Electric PL3000 components

Number	Description
1	Turning bar
2	Main body
3	Mounting flange
4	Planetary housing
5	Electric motor

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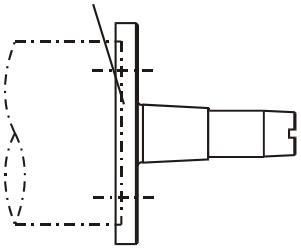
SETUP

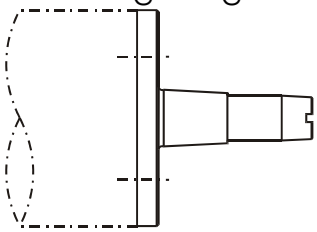
Machine setup

Counterbored mounting flange



When counterboring the mounting flange to fit over the shaft, use the short square head leveling screws.

End-mounted mounting flange



When mounting flush to the end of a shaft, use the long square head leveling screws.

WARNING

Avoid bodily injury from moving machinery! Turn off and disconnect all power cords and hoses before machine setup.

Preparing the mounting flange

Upon delivery, the tapered mounting flange normally is blank. If required, the flange can be machined to your specifications.

A pair of tapped jacking holes in the flange are used to move the machine from the flange. Two sets of four square-head leveling screws are included. These mount the flange to the work piece using mounting holes you must drill and tap in the flange.

When the mounting flange is to be mounted flat against the work piece, use the longer screws to level the machine. If the mounting flange will be counterbored to fit over the end of the work piece, use the shorter screws to level the machine.

1. If desired, counterbore the flange. Suggested diameter for the counterbore is about .100" (2.54 mm) larger than the diameter of the shaft and about 1/4" (6.35 mm) deep.
2. Drill clearance holes through the mounting flange to match the mounting holes in the shaft. You must supply your own mounting bolts. Drill and tap holes for the leveling screws near the mounting holes.
3. Clean the end of the shaft and the face of the mounting flange.
4. Loosely attach the flange to the end of the shaft. Snug up the mounting bolts. Do not tighten them.

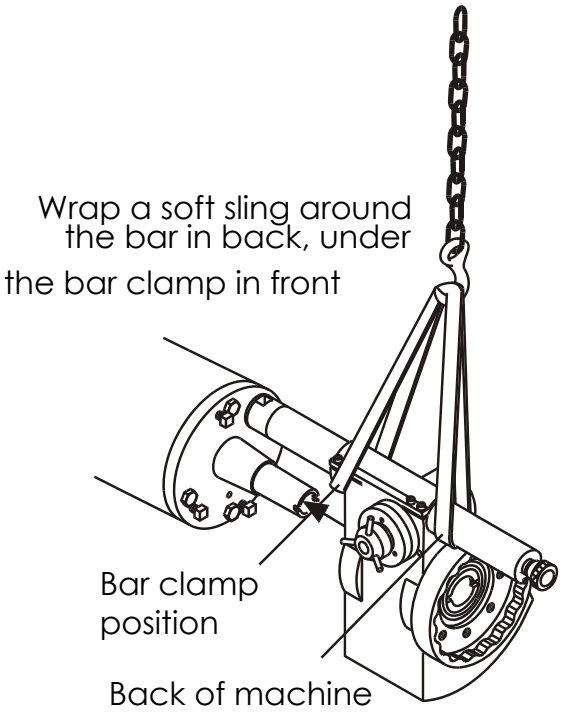
NOTE

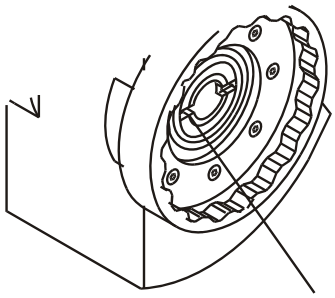
Dirt, burrs, and grease on either the end of the work piece or the face of the flange will prevent the flange from mounting properly.

Mounting the machine

	WARNING
	To avoid serious personal injury, keep clear of the hoist and the machine during setup.

1. Loop both ends of a lifting strap around the bar with the main body in between.





Mounting flange drive slots match up with the mounting hub inside the main body

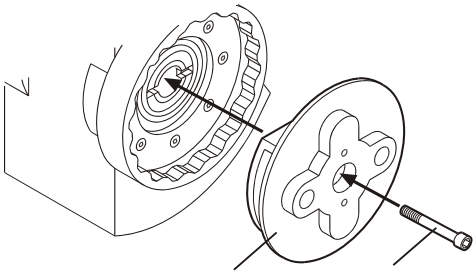
2. Using a hoist, lift the portable lathe up to the tapered mounting flange. Slide the machine loosely onto the tapered mounting flange.
3. Looking at the end of the tapered mounting flange from the back side of the machine, line up the slots on the mounting flange and the mounting hub.
4. Quickly push the main body snugly onto the mounting flange taper.
5. Check that the slots are still aligned. If not, the planetary housing keys will not lock into place.

	CAUTION
	To avoid machine damage, do not let the mounting hub collide into the mounting flange during assembly.

6. Pull the machine off the mounting flange, realign the slots and remount the machine.

Electric and pneumatic machines are each equipped with their own style of planetary housing. The air motor does not mount to the electric style machine; the electric motor does not mount to the air powered machine. Contact CLIMAX to acquire the applicable planetary housing.

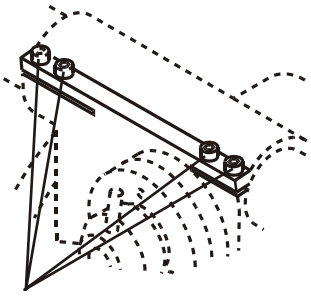
Align drive keys on planetary housing with drive key slots in the hub/mounting flange



Planetary housing Mounting screw

	NOTE
	The PL3000 Portable Lathe will not run if the planetary housing keys are not locked into the mounting slots.

7. Insert the planetary housing assembly into the internal ring gear of the main body. Be sure keys in the planetary housing lock into the slots in the mounting hub and mounting flange. It may be necessary to rotate the housing slightly to engage the gears before the housing will lock into the slots.
8. Lock the planetary housing in place by inserting and tightening one long socket-head cap screw located in the center.

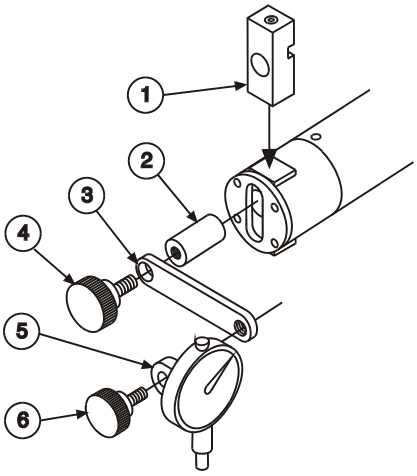


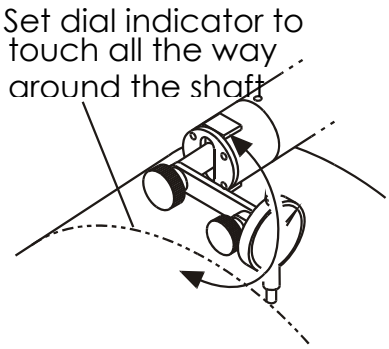
Do not loosen these four screws

	WARNING
	To avoid serious personal injury, the machine must be secured to the planetary housing with socket head cap screws before attempting to center or align the machine.

	NOTE
	The four turning bar clamp screws on top of the main body must NOT be adjusted. These screws are preset at the factory for proper bar alignment. Loosening these screws will cause the machine to cut a taper.

Centering the machine



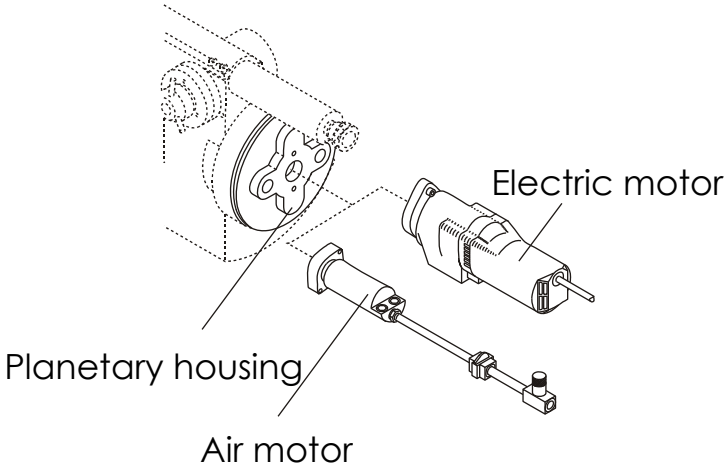


1. Crank the turning bar back until the tool head is as close as possible to the main body of the machine.
2. Attach the dial indicator assembly to the end of the turning bar (see dial indicator illustration at left).
3. Remove the cover plate from the depth adjustment housing.
4. Remove the tool holder.
5. Insert the dial indicator tool holder #1 into the slot in the depth adjustment housing. Be sure the rocker fits into the slot in the holder.
6. Replace the cover plate.
7. Slide the dial indicator stud #2 through the slot in the cover plate and into the holder #1.
8. Tighten the set screw in the bottom of the tool holder.
9. Use the large plastic knob #4 through the non-threaded end to attach the dial indicator holder #3 to the end of the stud #2.
10. Put the threaded part of the small knob #6 through the dial indicator #5 and screw it into the threaded end of the indicator holder #3.
11. Adjust the angle of the dial indicator so it will touch the shaft at all times when the machine is rotated around the shaft. Tighten both knobs.
12. Manually rotate the machine about the shaft. Using a soft mallet (rubber, plastic or leather), tap the tapered mounting flange until it is centered.
13. Crank the turning bar until the tool head and dial indicator are out as far as possible.
14. Manually rotate the machine about the shaft. Use the square headed leveling screws to center/level the machine to the shaft center.
15. Repeat the procedure with the dial indicator in several positions along the shaft until the machine is fully centered.

16. Tighten all mounting screws.
17. Remove the dial indicator assembly.

Motor mounting

1. Insert the motor assembly into the planetary gear housing. Be sure the pinion gear shaft and key engage with the planetary housing gears.
2. Tighten the two motor flange bolts.
3. The electric motor must be mounted to the planetary housing specific to the electric motor, and the air motor must be mounted to the air motor planetary housing specific to the air motor. The two cannot be interchanged.



Power connection

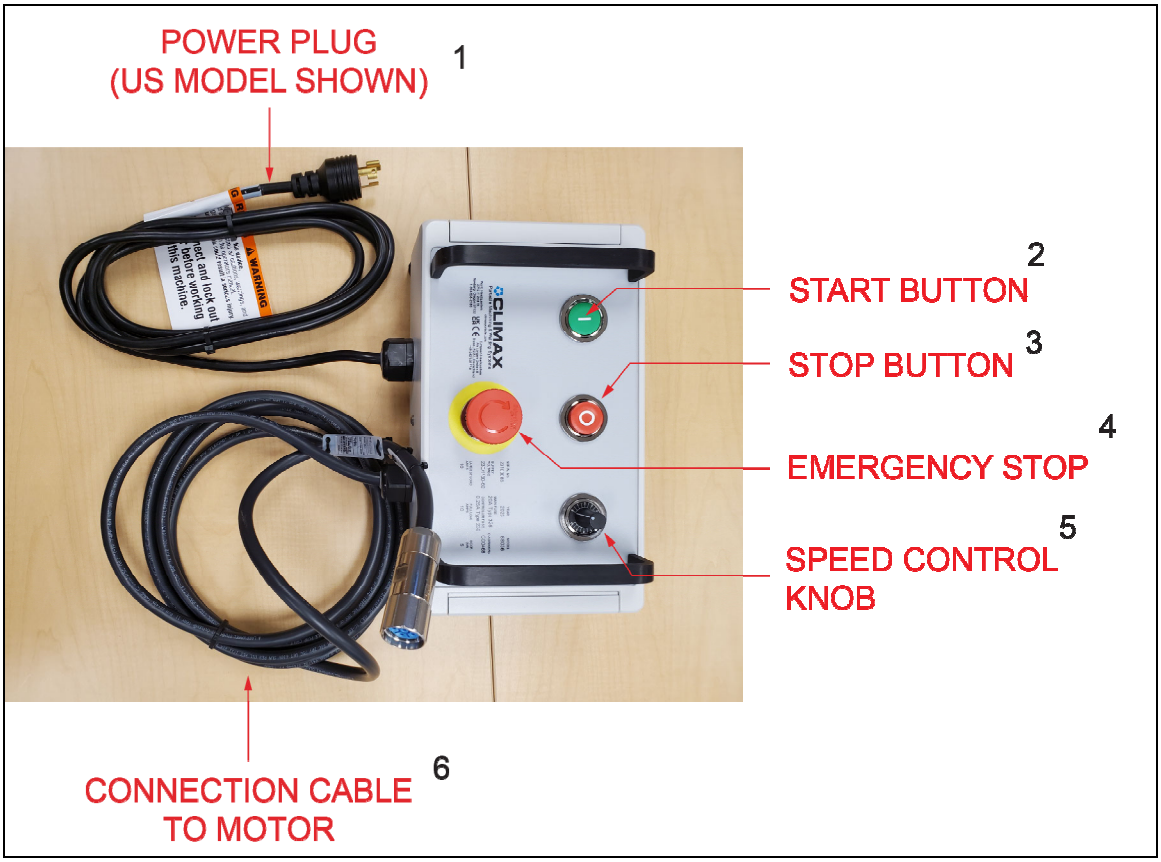


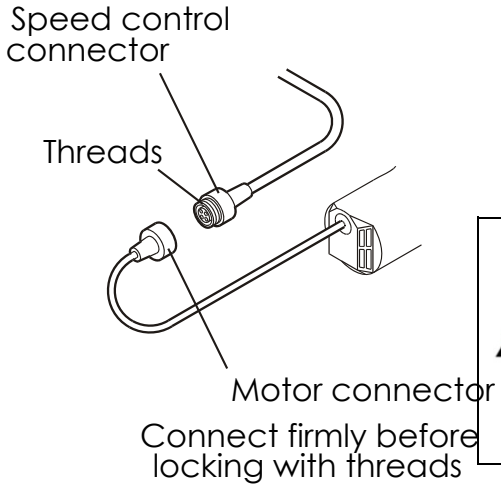
Figure 3. Electric motor controls and connections

Table 2. Electric motor controls identification

Number	Description
1	Power plug (US model shown)
2	Start button
3	Stop button
4	Emergency stop
5	Speed control knob
6	Connection cable to motor

Electric power connection

	WARNING
	To avoid serious personal injury from moving machinery, turn the motor OFF before plugging it in. Avoid explosions and electrical shock by not operating the machine in damp or explosive conditions.

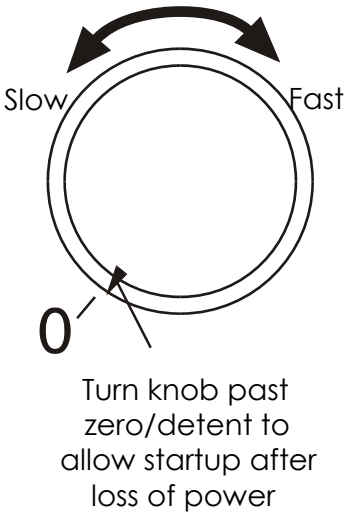


1. On the speed controller, make sure the toggle switch is in the OFF position.
2. Turn the variable speed controller all the way counter-clockwise.

	CAUTION
	To prevent damage, do not use the coupling threads to pull the connectors together. Engage the connectors firmly prior to screwing on the coupling.

3. Firmly push together the two connectors of the speed controller and the electric motor, then screw the coupling together. This is an all-weather connector and will create a seal. Do not use the threads to pull the connectors together, or they will strip.
4. Plug the machine into a properly grounded outlet.

Starting and stopping the electric machine



The electric powered machine is supplied with a safety device which protects against unintentional startup. If the speed controller loses input power at any time, a relay locks the machine out and you must manually reset it. The zero position on the dial has a detent “reset” position to make the startup sequence safer.

Do the following to start the machine:

1. Check that the speed control is connected to the motor and to mains power.
2. Turn the speed control knob to zero position past the detent.

	WARNING
	Rotating equipment can cause serious injury. Keep well clear while operating the machine.

3. Turn on power at the motor controller.
4. Turn the speed control knob clockwise past the detent to start the machine.
5. Adjust the bar rotation speed as required by the bore size, tooling, and material requirements.
6. Adjust the feed rate.
7. Continue turning the knob to increase the turning rpm, and turn it counter-clockwise to slow it down.

The motor has thermal and current overload protections built in. If the motor is pushed beyond its protected range, it will stop. To prevent this, install an amp meter and don not let the reading exceed the rated maximum amperage (10.5 amps for the 230V and 20 amps for the 120V).

This motor is also reversible, allowing it to change the bar rotation direction.

To stop the machine, switch the toggle to the OFF position.

	WARNING
	Do not rely on the zero/detent to stop the machine. Zero/detent only stops power to the speed controller. Use the toggle switch to stop power to the machine.

Air power connection

The PL3000 Portable Lathe has a 1.22 hp (.91 kW) air motor. Adjust motor speed by opening or closing the needle valve.

The air filter and lubricator supplied with the machine must be used or the warranty is void. The lubricator should be set to deliver oil at a rate of 2-4 drops per minute.

CLIMAX cannot be held responsible for customer supplied air.

Ensure the incoming air supply is a constant 90 psi at 95 ft3/min (620 kPa at 2.7 m^3/min)

Fill the lubricator oil cup with air tool oil before using the machine.

Use high-quality oil with rust inhibitors and emulsifiers such as Marvel Air Tool Oil or Mobil DTE 24 Anti-Wear hydraulic oil. The lubricator should oil the air at a rate of 2-4 drops per minute.

Position the pneumatic control stand with the filter and pressure regulator in an easy to access location.

Clean all fittings before connecting them. Check all lines for damage before operating the machine. Repair or replace all damaged air lines and fittings.

Support the hoses so they will not get caught in the turning arm during operation

Connecting pneumatic power

CAUTION

Keep the air circuit controls locked out whenever a person is or can be in contact with the machine.

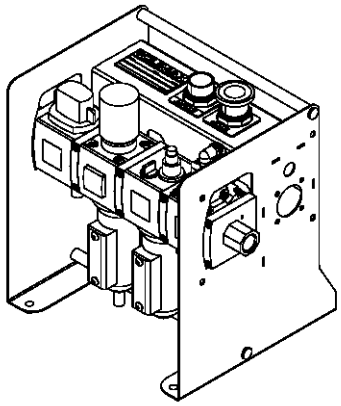
1. Check that the air supply line is adequate.
2. Close all ball valves.
3. Fill the air lubricator with air oil. Set the lubricator so it oils the air at a rate of 2-4 drops per minute.

NOTE

Hydraulic fittings are used in the air circuit. Do not use hydraulic oil in the circuit.

4. Connect the quick disconnect fittings to the rotary union.
5. Connect the small air hose to the pneumatic conditioning unit.
6. Connect the system to the incoming air supply.

Pneumatic conditioning unit (PCU)



See the PCU exploded view for P/N 101920 in Appendix A.

Component function:

Start: When this button is pushed, the machine is enabled to run. An audible "pop" is associated with this action to indicate the start command is activated. The system will only start if a) a pressurized air supply is supplied, b) the lockout/tagout valve is open, c) the E-stop push button is in its extended position, and d) the start button is pushed.

When the system is started, the machine should run in response to the position of the speed control valve.

WARNING

Before starting machine operation, ensure no persons are in proximity to the machine. Failure to clear any and all personnel from the area around the machine can cause severe injury or death.

Air filter: Check the filter regularly and drain accumulated condensation as required. At a minimum the filter should be drained once per shift.

Lubricator: Adjust the lubricator setting to provide a drip rate of approximately 1 drip for every 10 seconds. Check lubrication fluid level regularly and refill as required.

CAUTION

Failure to supply adequate air supply lubrication may result in premature wear and/or permanent damage to the air motors.

See the "Maintenance" chapter for information on maintaining your machine, including the air circuit system.

Adjusting the speed of the pneumatic motor

Adjust the speed of the air motors by resetting the ball valve.

WARNING

To prevent serious injury from moving machinery during setup or adjustment, use quick disconnects between the air supply line and the needle valve. Close and lock out all air valves before connecting the air supply line to the motor.

.

1. Push down and lock out the safety lockout valve. The valve is completely closed when the word CLOSED and the lockout hole is clearly seen underneath.
2. Screw the hose from the air lubricator into the safety lockout valve.
3. Screw a male quick disconnect fitting into the air filter port. Use a fitting that matches your shop air supply.

	CAUTION
	Rotating machinery can cause serious injury. Keep the air supply disconnected until about to use the machine.

Starting and stopping air machine - US style

	CAUTION
	**Using air that is not filtered or lubricated can damage the motor. When operating the machine, route the incoming air through the air filter and lubricator.**

The PL3000 Portable Lathe is equipped with a needle valve and lockout valve assembly.

	CAUTION
	Use only nonrestrictive air line fittings. Ensure that the needle valve is extended far enough from the machine for safe adjustment while in motion.

TDo the following to start the machine:

1. Push the lockout valve slide down until the word CLOSED and the lockout can be seen from the bottom of the valve. Be sure the slide is pushed all the way.
2. Turn the needle valve clockwise all the way. No colored bands will be visible when the valve is completely closed.

	WARNING
	To prevent serious injury from moving machinery, secure the machine to the work piece before connecting the air supply.

3. Connect the air supply line to air filter.
4. Push the emergency stop lever up until the word OPEN can be seen from the top of the valve. Be sure the lever is pushed all the way.

5. Slowly turn the needle valve counterclockwise until the machine is turning at the desired speed. The more colored bands you see, the faster the machine speed.

WARNING

In case of emergency, push the lockout valve slide down.

Stopping the machine:

1. Turn the needle valve clockwise all the way. No colored bands will be visible when the valve is completely closed.
2. Push the lockout valve slide down until the word CLOSED and the lockout can be seen from the bottom of the valve. Be sure the slide is pushed all the way. Lock out the machine with a padlock.
3. Disconnect the air supply line.

Starting and stopping air machine - CE compliant

The CE compliant portable lathe is equipped with a needle valve and emergency shutoff valve.

CAUTION

Use only nonrestrictive air line fittings.

Do the following to start the machine:

1. Check that the flow control needle valve is connected to the air motor.
2. Turn the needle valve clockwise all the way. No colored bands will be visible when the valve is completely closed.
3. Connect the pneumatic conditioning unit to the valve assembly.
4. Connect the air supply line to the air filter.
5. Slowly turn the needle valve counterclockwise until the machine rotate at the desired speed. The more colored bands you see the faster the machine rotation.

WARNING

In case of emergency, push the lockout valve slide down.

Do the following to stop the machine:

1. Push down the shutoff knob to close the valve.
2. Turn the needle valve clockwise all the way. No colored bands will be visible when the valve is completely closed.
3. Lock out the machine.
4. Disconnect the air supply line.

	CAUTION
	To prevent damage to the machine, use only the filter and lubricator provided.

Axial feed

	WARNING
	To prevent personal injury from moving machinery, turn off and disconnect power before making machine adjustments.

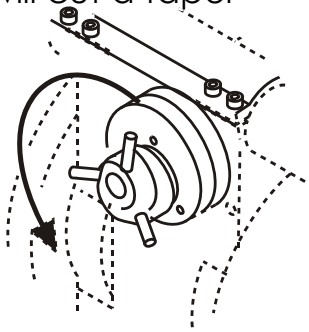
Manual axial feed

1. Loosen the feed locking hub to disengage automatic feed.

	NOTE
	The four turning bar clamp screws on top of the main body must NOT be adjusted. These screws are preset at the factory for proper bar alignment. Loosening these screws will cause the machine to cut a taper.

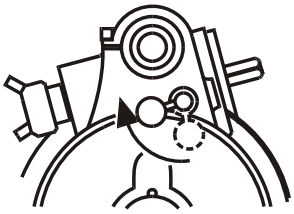
2. Using the crank handle, turn the gear shaft to feed the turning bar assembly along the shaft.

Do not loosen these screws or the machine will cut a taper



Turn locking hub counterclockwise to disengage auto feed

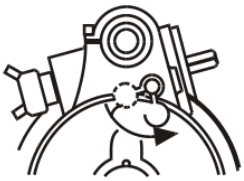
Automatic axial feed



Clockwise decreases the feed rate

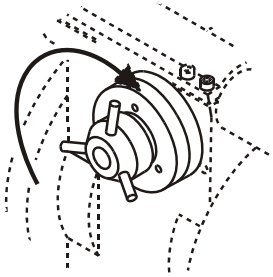
The PL3000 Portable Lathe will automatically feed along the shaft at 0.003–0.011" (0.08–0.28 mm) per revolution. Automatic feed moves the tool bit away from the main body. Use the manual feed to advance the tool toward the main body.

	WARNING
	To prevent serious bodily injury do not attempt to adjust the machine feed while the machine is running.



Counterclockwise increases feed rate

1. Remove the crank handle from the gear shaft.
2. Set the feed lever completely clockwise to feed the machine at the minimum 0.003" (0.08 mm) per revolution. Increase the feed rate by turning the feed lever to any of the seven detent positions. Turn the feed lever completely counterclockwise to feed at the maximum 0.011" (0.28 mm) per revolution.



Tap the feed hub clockwise to engage auto feed

3. Using a soft mallet (rubber, plastic, or leather), lightly tap the feed locking hub clockwise to engage the automatic feed.

	WARNING
	To prevent serious bodily injury from moving machinery, turn off and disconnect power before adjusting machine feeds.

	NOTE
	To maximize the pneumatic motor's performance, keep the air line pressure at 90 psi (620 kPa)

Start the machine and check the feed speed. Turn off the machine and readjust the feed lever, if necessary.

Setting the rotational speed

Rotational speed rate is variable up to 72 rpm. Rotational speed is variable from 3.5 to 71.5 no load rpm.

Table 3. Power rating

120V motor:	3.2 hp (2.4 kW) 20 Amps 60 Hz
230V motor:	3.2 hp (2.4 kW) 10.5 Amps 60 Hz

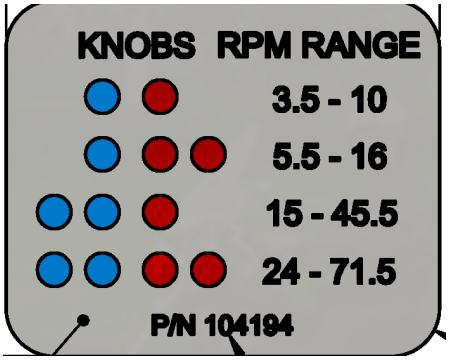


Figure: Electric motor RPM ranges (P/N 104194)

Both motors have a four-speed gearbox for maximum versatility. Table 4 specifies the operating range for each gear.

Table 4. Speed range and torque per gear

Gear	Knobs	RPM range	Bar torque
1	● ●	3.5–10 RPM	755 ft-lb (1,024 Nm)
2	● ●●	5.5–15 RPM	422 ft-lb (640 Nm)
3	●● ●	15–45.5 RPM	165 ft-lb (224 Nm)
4	●● ●●	24–71.5 RPM	106 ft-lb (144 Nm)

CAUTION

Before shifting gears, remove the cutting load from the motor and stop the motor rotation. Shifting gears while the machine is under load could damage the motor and gearbox components.

CLIMAX's portable machine tools require a three-wire extension cord. Extension cords of inadequate wire size may cause a significant drop in mains voltage with a consequent loss of power.

As the distance from the supply outlet increases, heavier gauge extension cords are required (see Table 5).

Table 5. Recommended wire gauge for extension cords

	Cord length					
	25 feet (7.6 m)	**50 feet (15.2 m)**	**75 feet (22.9 m)**	**100 feet (30.5 m)**	**150 feet (45.7 m)**	**200 feet (61 m)**
Nameplate amps	**Minimum wire gauge**					
0–5.0	16	16	16	14	12	12
5.1–8.0	16	16	14	12	10	
8.1–12.0	14	14	12	10		
12.1–15.0	12	12	10	10		
15.1–20.0	10	10	10			

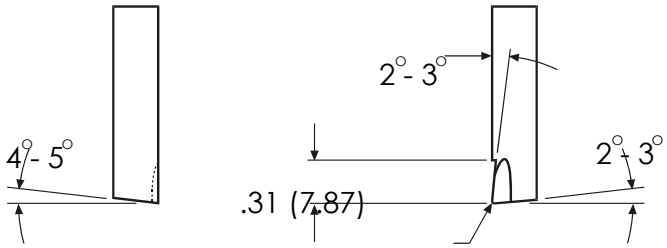
Electric speed adjustment

To adjust the speed on electric machines, slowly turn the speed control.

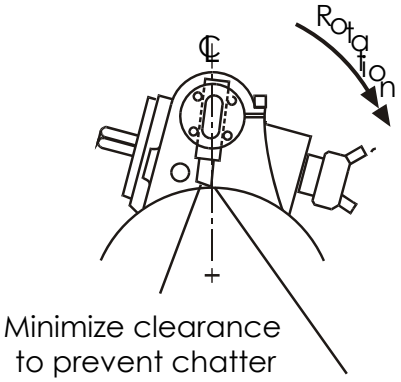
Pneumatic speed adjustment

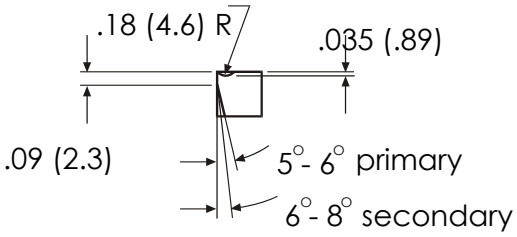
To adjust the speed on pneumatic machines, slowly open or close the needle valve.

Tool bit preparation

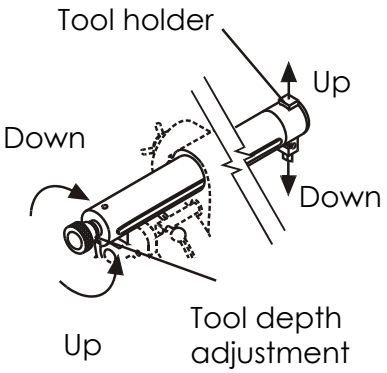


Geometry for cutting 1/8" (3 mm) deep in mild steel





1. Grind a 3/8" (10 mm) square HSS tool bit as shown above.



	NOTE
	High-speed tool bits may perform better than carbide tools. Carbide bits tend to ride up or skid on the surface.

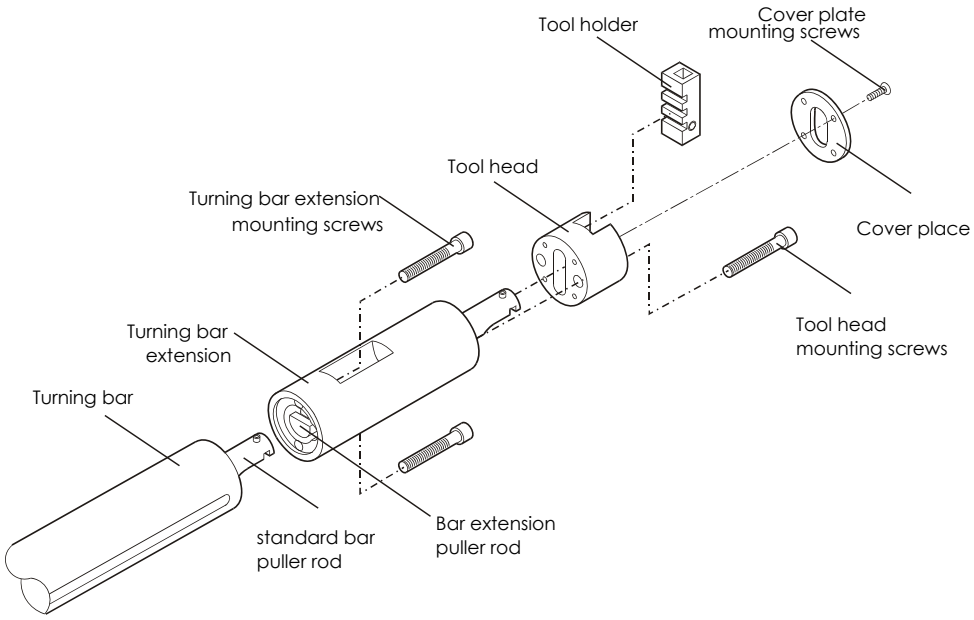
2. Secure the tool bit in the tool holder.
   The tool bit cutting face is intended to lag behind the center line of the shaft to prevent the tool from digging in. Due to the angle of the tool holder, the smaller the shaft diameter the further the tool cutting face will be behind the shaft center line.
3. Turn the depth adjustment knob counterclockwise to raise the tool bit.
4. Insert the tool holder and bit into the depth adjustment rocker. Select a depth adjustment slot that will allow the cutter to just clear the surface of the shaft. Mount the cover plate with flat head screws.

	CAUTION
	Correct tool bit geometry is critical to the performance of the machine. Never use tool bits without checking their geometry.

Optional Assemblies

Turning bar 22” (559 mm) extension

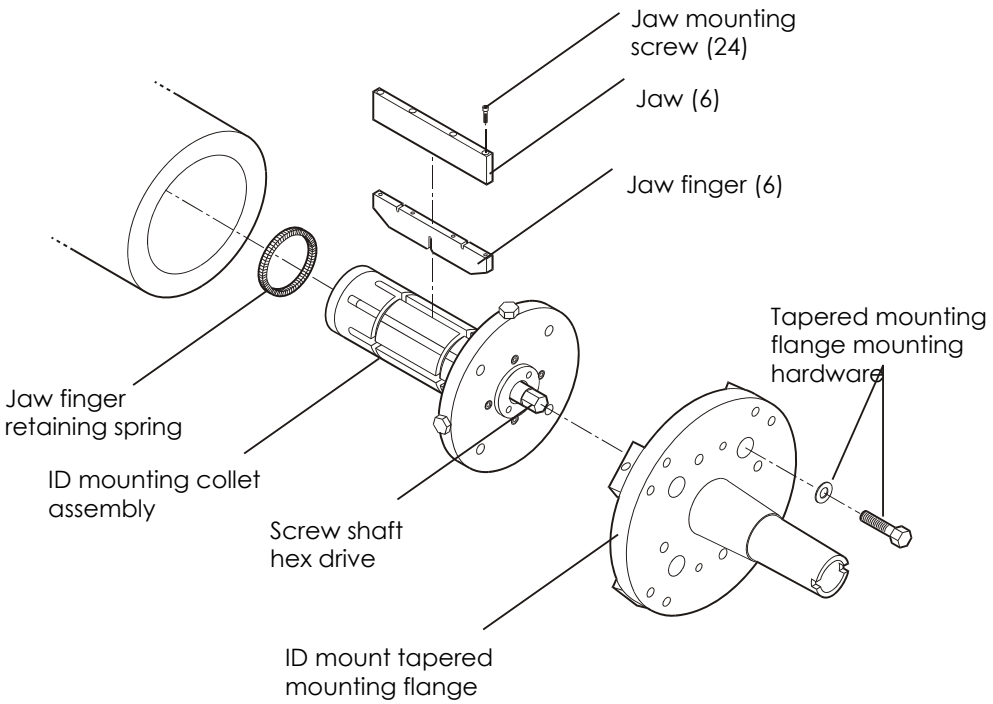
With the optional turning bar extension, the turning bar can reach 22" (558.8 mm). To add the extension:



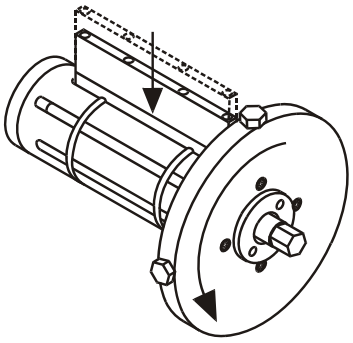
1. Unscrew two socket head cap screws and remove the tool head from the turning bar.
2. Hook the bar extension puller rod onto the standard bar’s puller rod.
3. Mount the tool head onto the bar extension with two extra-long socket-head cap screws. Reassemble the tool holder and cover plate to the housing.

ID mounting collet

The ID mounting collet assembly allows the PL3000 Portable Lathe to be mounted inside work piece diameters from 4” to 10-3/4” (102 to 273 mm). The work piece shaft must be at least 9” (228.6 mm) deep to secure the mounting collet.



	WARNING
	To avoid serious personal injury from moving machinery, turn off and disconnect power before setting up the machine.

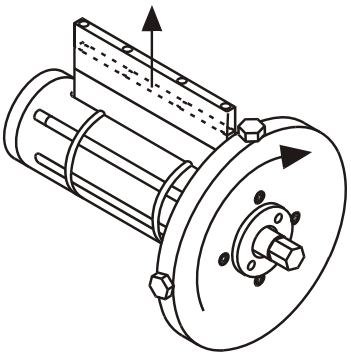


Turning counterclockwise releases the jaws

Do the following to set up the assembly:

1. Clean the work ID with solvent to remove grease, oil, and dirt.
2. Insert the six jaw fingers into the collet slots, and wrap the two retaining springs around them. There are two slots on the fingers for the springs to rest in.
3. Select a set of six jaws that will fit inside the workpiece diameter and attach them to the jaw fingers with the 24 socket head cap screws provided.
4. Turn the screw shaft hex counterclockwise until the jaws are small enough to fit inside the bore of the work piece.
5. Insert the ID mounting collet assembly inside the bore of the workpiece.
6. Turn the shaft screw hex clockwise until it is tight inside the bore.

	NOTE
	The ID mounting collet is self-centering.



Clockwise extends the jaws to grip the bore

7. Mount the tapered mounting flange to the collet assembly then mount the lathe to the assembly. See Section 3.1.2 "Mounting the machine" for instructions.
8. Operation is the same as for the standard machine.

OPERATION

	WARNING
	To protect yourself from flying chips and loud noise, wear eye and ear protection while operating the machine.

Pre-start checks

	WARNING
	To prevent serious bodily injury from moving machinery, turn off and disconnect the machine before performing pre-start checks.

General lathe pre-start checks

1. Check that tool bits are properly sharpened.
2. Check that all moving parts move freely.

Electric lathe pre-start checks

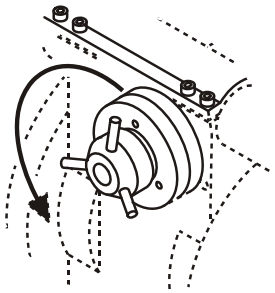
1. Inspect electrical parts for damage.
2. Be sure power is OFF before plugging unit in.
3. Plug the machine into a grounded outlet.

Pneumatic lathe pre-start checks

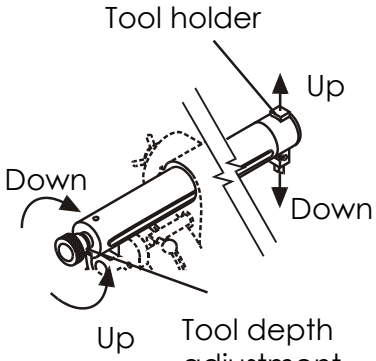
1. Fill the air lubricator with air oil. Use an air oil that has antioxidants and rust inhibitors such as Marvel Air Tool Oil. The lubricator should be set to deliver oil at a rate of 2-4 drops per minute.
2. Drain the air filter.
3. Push down the safety lockout slide (and the red emergency stop knob on CE machines) until the word CLOSED and the lockout can be seen from the bottom of the valve. Be sure the slide is pushed all the way.
4. Turn the needle valve clockwise all the way. No colored bands will be visible when the valve is completely closed.
5. Be sure the air lines are not obstructed or damaged and pressure is 90 psi (620 kPa).

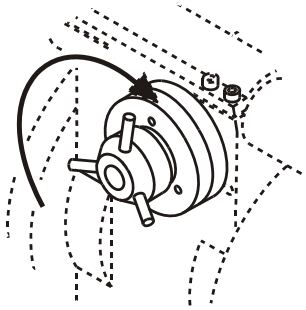
Operating

Do not loosen these screws or the machine will cut a taper



Turn locking hub counterclockwise to disengage auto feed





Tap the feed hub clockwise to engage auto feed

1. Check that the power is off.
2. Loosen the feed locking hub to disengage the power feed.

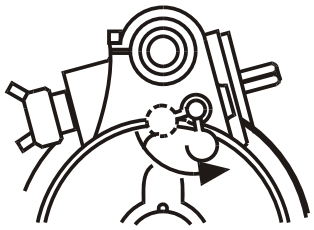
	NOTE
	Because the power feed moves the cutter away from the mounting flange, start the cut with the bar fully retracted.

3. Using the crank handle, retract the turning bar until the tool bit is over the end of the shaft.
4. Loosen the four flat head socket cap screws in the plate cover at the end of the turning bar.
5. Turn the depth adjustment knob clockwise until the cutter just touches the shaft.
6. Retract the turning bar until the cutter just clears the end of the shaft.
7. Turn the depth adjustment knob to set the tool bit. See "Tool bit preparation" for proper tooling geometry information. If a lot of material is to be removed, see "Heavy Cutting".
8. Tighten the cover plate to lock the tool holder in position.
9. Using a soft rubber mallet, lightly tap the feed locking hub to engage the automatic feed.
10. Set the axial feed lever to desired feed rate. See "Axial feed" for more information.
11. Remove the crank handle from the machine.
12. Start the machine. See "Setting the rotational speed" for more information.
13. After the desired length of shaft has been turned, slowly stop machine rotation.

14. Loosen the feed locking hub to disengage the power feed.

15. Using the crank handle, retract the cutter.

16. Repeat Steps until the shaft is turned to the required size and surface finish.



Counterclockwise increases feed rate

	NOTE
	For finer surface finish, set the tool bit for a shallower cut and select a slower rate of feed.

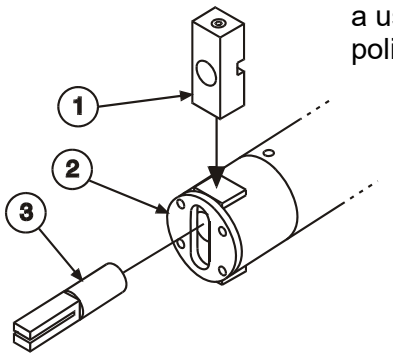
Heavy cutting

To make deep cuts, it is recommend that you make several passes, each about 1/8" (3.1 mm) deep. After making one 1/8" (3.1 mm) cut:

1. Turn off and disconnect the machine.
2. Loosen the feed locking hub to disengage the power feed.
3. Using the crank handle, retract the turning bar until the cutter is just past the shaft.
4. Loosen the cover plate.
5. Turn the depth adjustment knob clockwise to lower the tool bit an additional 1/8" (3.1 mm).
6. Tighten the cover plate.
7. Using a soft rubber mallet, lightly tap the feed locking hub to engage the automatic feed.
8. Set the axial feed lever to desired feed rate. See section 3.4 "Axial feed" for more information.
9. Remove the crank handle from the machine.
10. Reconnect and start the machine. See section 3.5 "Setting the rotational speed" for more information.
11. Slowly stop machine rotation.
12. Turn off and disconnect the machine.
13. Loosen the feed locking hub to disengage the power feed.

14. Using the crank handle, retract the cutter.
15. Repeat Steps #1 through #14 until less than 1/8" (3.1 mm) of metal needs to be removed.
16. Make a finish cut at the desired depth and at a slower feed rate. An abrasive belt may be used to smooth the shaft. See section 3.11 "Shaft polishing" for more information.

Shaft polishing

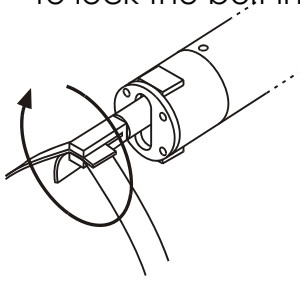


With the abrasive belt holder (included with the machine) and a user supplied abrasive belt, the PL3000 Portable Lathe can polish shafts.

	WARNING
⚠	To avoid serious personal injury from moving machinery, turn off and disconnect the power before setting up the abrasive belt.

1. Attach an abrasive belt holder to the end of the turning bar
2. Remove the cover plate (#2) from the depth adjustment housing.
3. Remove the tool holder.
4. Insert the dial indicator tool holder (#1) into the slot in the depth adjustment housing. Be sure the rocker fits into the slot in the holder.
5. Replace the cover plate (#2).

Rotate the belt holder to lock the belt in place



Slip both ends of the emery cloth through the slit in the belt holder then rotate the belt holder one half turn.

6. Slide the abrasive belt holder (#3) through the slot in the cover plate (#2) and into the holder (#1).
7. Wrap an abrasive belt around the shaft and through the slot into the holder (#3).
8. Twist the belt holder (#3) one half turn to lock the belt ends in place, then tighten the set screw in the top of the dial indicator holder (#1).
9. Turn the depth adjustment knob at the other end of the turning bar counterclockwise (raise the tool holder). This will tighten the abrasive belt holder against the work piece.

Spot polishing

1. Position the belt on the shaft.
2. Using a soft rubber mallet, lightly tap the feed locking hub counterclockwise to disengage the automatic feed.

3. Start the machine.
4. Run the machine until the shaft has the required surface finish.

Polishing the entire shaft

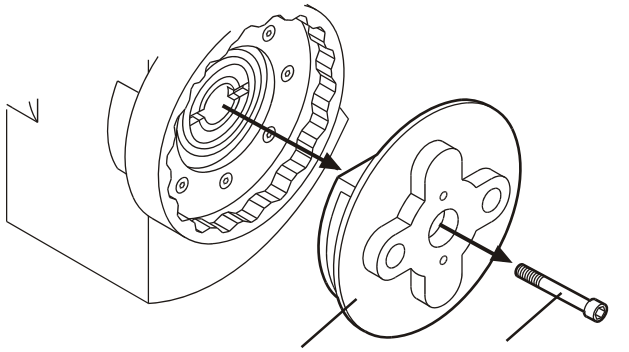
1. Using a soft rubber mallet, lightly tap the feed locking hub counterclockwise to disengage the automatic feed.
2. Retract the bar until the belt is at the end of the shaft.
3. Using a soft rubber mallet, lightly tap the feed locking hub clockwise to engage the automatic feed.
4. Start the machine. The belt will feed automatically along the shaft.

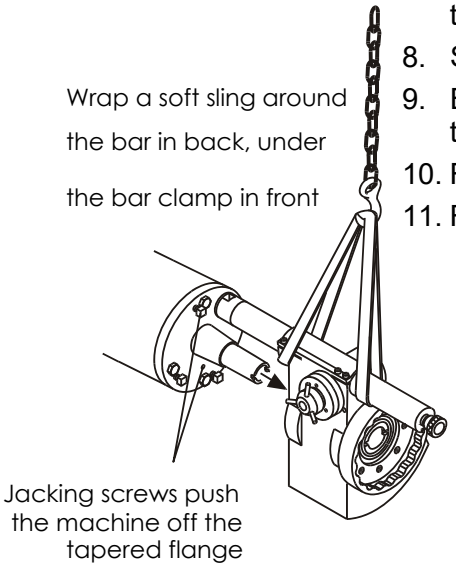
Disassembly

	WARNING
⚠	Prevent serious bodily injury from moving machinery, turn off and disconnect power before dismantling the machine.

Do the following to disassemble the PL3000 Portable Lathe:

1. Turn off and disconnect the power supply.
2. Loosen the cover plate.
3. Turn the depth adjustment knob counterclockwise to raise the cutter.
4. Take off the cover plate.
5. Remove the tool holder from the depth adjustment rocker.
6. Take the motor from the planetary housing.





7. Remove the planetary housing assembly by unscrewing the inner socket head cap screw.
8. Secure the machine with a hoist.
9. Back out the hex screws on the taper mounting flange until they push the main body loose.
10. Remove the machine from the mounting flange.
11. Remove the mounting flange from the shaft.

MAINTENANCE

Recommended lubricants

Lubricant	Brand	Where used
Gear grease	UNOBA EP#2	Planetary housing gears
Light oil	WD-40	Unpainted surfaces
Cutting oil	UNOCAL KOOLKUT	Tool bits, work piece
Lubricating oil	Marvel Air Tool Oil	Lubricator oil cup (pneumatic model)

Main body

Under normal conditions the main body is maintenance-free.

Mounting flange

Clean the flange before use. Spray WD-40 on all unpainted surfaces.

Turning bar assembly

Lightly oil the turning bar every time you use the lathe.

Electric motor

WARNING

Do not operate electric motors in damp or explosive conditions.

Check both brushes for excessive wear and replace if necessary by contacting CLIMAX. The brushes spare parts kit is P/N 82698.

Drain and refill the gear case every 6 months or 500 hours with 15 ounces of 30W non-detergent motor oil. **Do not disassemble the gears.**

Periodically inspect the brushes by doing the following:

- Unscrew the brush retainer caps on the motor housing.
- Pull out the retainer springs and brushes.

Replace brushes when they have worn down to 1/4" in depth (6 mm). Always replace the brushes in sets.

Air motor and pneumatic conditioning unit

- Route incoming air through the lubricator and air filter.
- Use nonrestrictive air lines and fittings.
- Check periodically that air pressure is 90 psi (620 kPa).
- Adjust air motor torque with the needle valve.

	NOTE
	DO NOT control motor speed by changing air pressure from 90 psi (620 kPa).

- Fill the air lubricator oil cup before each use.
- Set the lubricator to deliver oil at a rate of 2-4 drops per minute.
- Drain the air filter before and after using the machine.

	CAUTION
	Avoid machine damage. Never operate the machine without the air filter and lubricator

Planetary housing

As necessary, repack the gears with gear grease. Spray exposed housing surfaces with WD-40.

ID mounting collet

After operation, spray exposed surfaces with WD-40.

STORAGE

Proper storage of the PL3000 Portable Lathe Portable Lathe will prevent undue deterioration or damage.

Before storing the machine, clean it with solvent to remove grease, metal chips, and moisture.

Drain the air filter on pneumatic machines. Spray the machine with a moisture-protective material (LPS2 for short storage, LPS3 for long storage) to prevent rusting. Place the machine in the box provided with desiccant bags or vapor wrap to absorb moisture.

To replace a box, order part number 16783 by calling CLIMAX.

Spare Parts

Listed below are items most frequently replaced due to wear, loss, or damage. You are advised to maintain an inventory of these critical parts by calling CLIMAX.

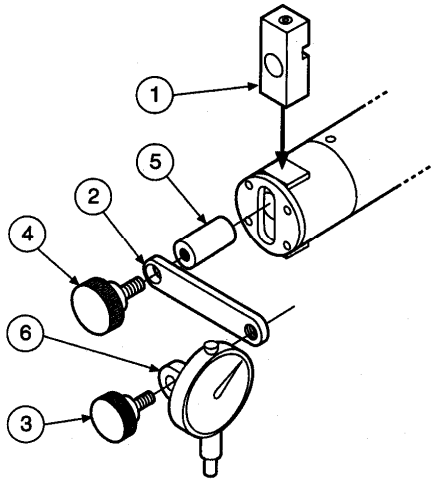
PART NO.	DESCRIPTION	QTY	WHERE USED
10637	Dial indicator	1	Tool kit
10600	5/32" hex wrench	1	
10200	1/8" hex wrench	1	
10199	1/4" hex wrench	1	
16807	5/16" hex x 6" T-handle wrench	1	
10549	3/8" Sq. HSS tool bit	1	
10632	Crank handle	1	
10547	Screw 5/16-18 X 1/4" SSS	1	Turning bar assembly
10559	Cover plate	1	
10560	Screw 10-32 X 3/8" FHSCS	6	
11053	Screw 3/8-16 X 2-3/4" SHCS	1	Main body assembly
10586	Holder belt abrasive	1	
11775	Hub assembly feed locking	1	
101920	Pneumatic conditioning unit	1	Air motor assembly
11139	Air motor	1	
10431	Screw 5/16-18 X 1" SHCS	2	
104044	120V Electric motor	1	Electric motor assembly
104047	230V electric motor	1	
88035	230V controller	1	
88037	120V controller	1	
10640	Blank mounting flange assembly	1	
10643	Holder tool extension 4"-6"	1	
10644	Holder tool extension 6"-8"	1	
18368	Holder tool extension 8"-11"	1	
31041	*Operating manual	1	

*This Manual is available electronically in Adobe Acrobat format.

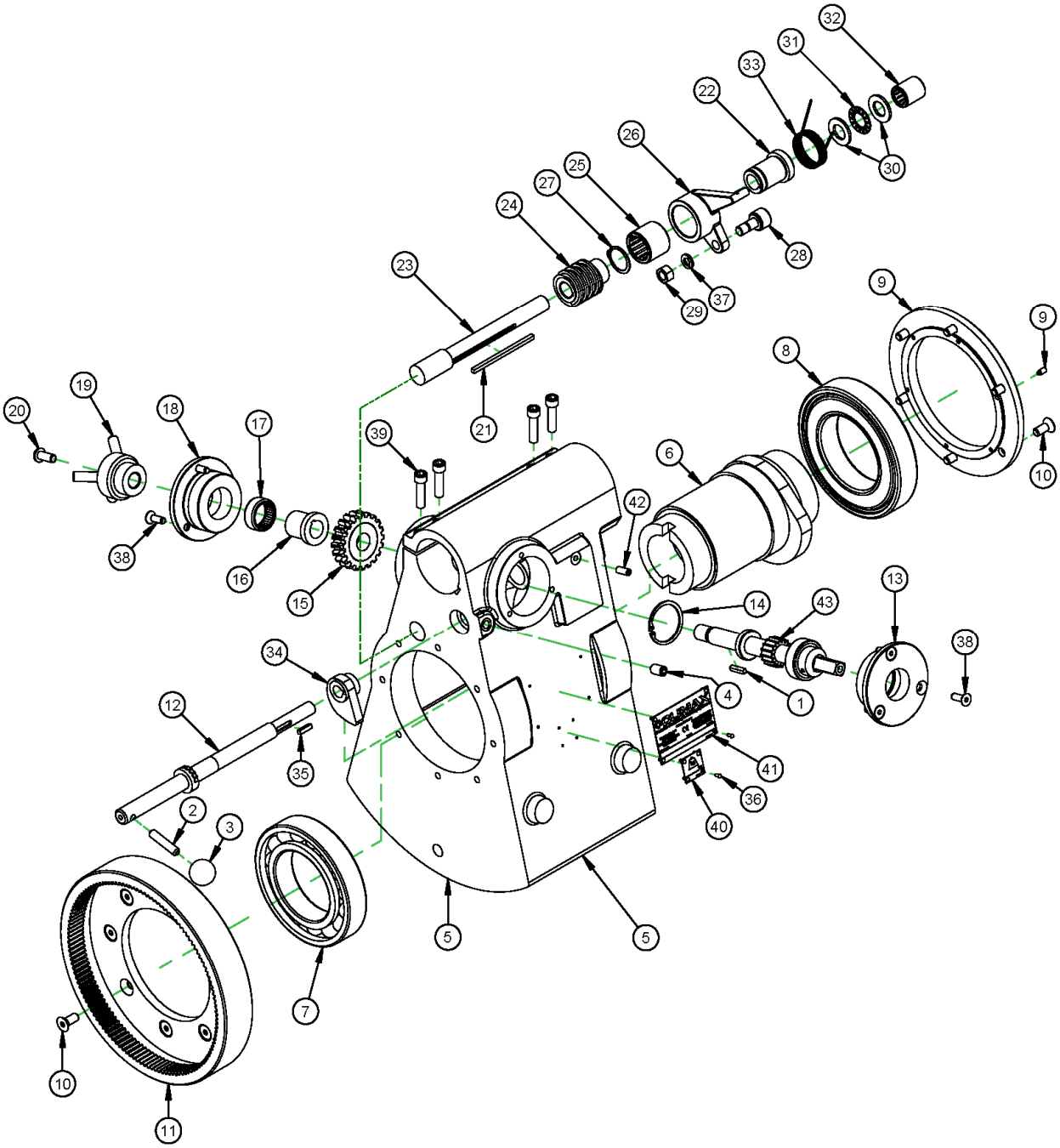
EXPLODED VIEWS AND PARTS LISTS

The following diagrams and parts lists are for your reference purposes only.

The machine Limited Warranty is void if the machine has been tampered with by anyone who has not been authorized in writing by CLIMAX.



TOOL KIT (P/N 13870)		
BALLOON No	**PART**	**DESCRIPTION**
1	10585	HOLDER TOOL DIAL INDICATOR
2	10584	HOLDER DIAL INDICATOR
3	10583	KNOB PLASTIC KNURLED
4	10582	KNOB PLASTIC KNURLED
5	10581	STUD DIAL INDICATOR
6	10580	INDICATOR DIAL
7	10546	SCREW 5/16-18 X 5/16 SSSNT
NOT SHOWN	10549	BIT TOOL 3/8 SQ X 3 HSS BLANK
NOT SHOWN	10632	CRANK JS
NOT SHOWN	10586	HOLDER ABRASIVE BELT
NOT SHOWN	16479	WRENCH END 9/16 COMBINATION LONG
NOT SHOWN	16807	WRENCH HEX 5/16 X 6 T-HANDLE
NOT SHOWN	32207	BIT TOOL HSS 3/8 X 3.0 NEG HEEL TC
NOT SHOWN	32208	BIT TOOL HSS 3/8 X 3.0 NEG HEEL SC
NOT SHOWN	33999	SET HEX WRENCH .050 - 3/8 BONDHUS BALL END
NOT SHOWN	55547	LABEL HAZARDOUS ROTATING MACHINERY
NOT SHOWN	59035	LABEL WARNING - WEAR EYE PROTECTION
NOT SHOWN	59037	LABEL WARNING - WEAR EAR PROTECTION



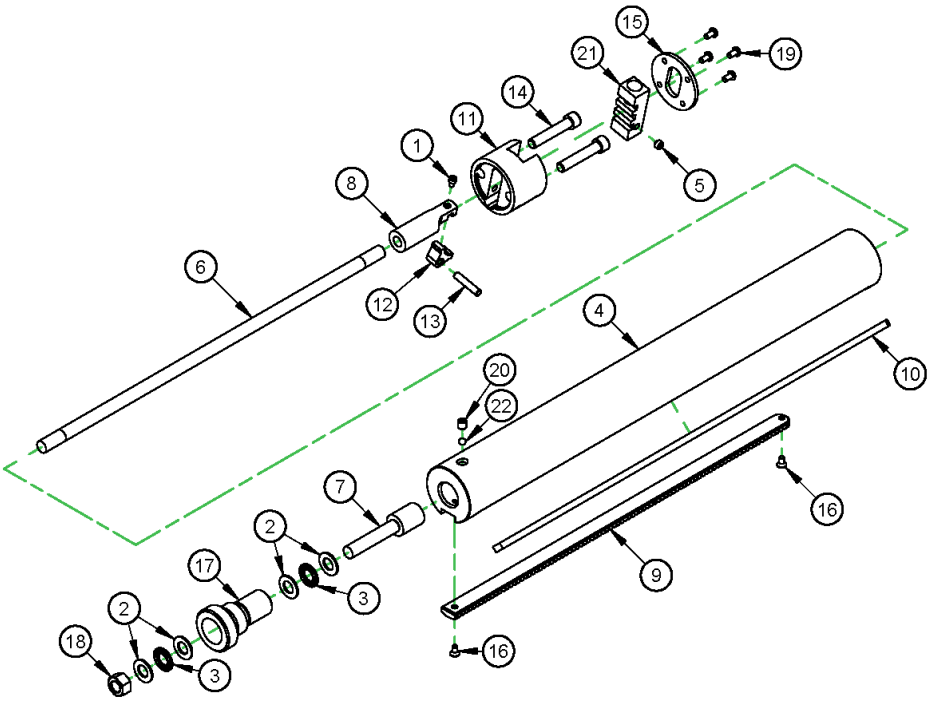
13871 - BODY MAIN ASSY PL3000 - REV A

FOR REFERENCE ONLY

PARTS LIST			
ITEM	QTY	P/N:	DESCRIPTION
1	1	10428	KEY 5/32 SQ X .75 SQ BOTH ENDS
2	1	10439	STUD 5/16-24 X 5/16-18 X 1-1/2
3	1	10440	BALL 1 DIA BLACK PLASTIC
4	1	10441	SPRING PLUNGER 3/8-16 HEAVY FORCE
5	1	10511	BODY MAIN PL3000
6	1	10512	HUB MOUNTING JS
7	1	10513	BRG BALL 2.9528 X 5.1181 X .9843
8	1	10514	BRG BALL 3.1496 X 5.5118 X 1.0236
9	1	10515	RING RETAINING BEARING PL3000
10	14	10516	SCREW 5/16-18 X 3/4 FHSCS
11	1	10517	GEAR RING INTERNAL JS & 618
12	1	10518	SHAFT FEED
13	1	10519	HOUSING BEARING
14	1	10521	RING SNAP 1.575 ID (40MM) .062 TH
15	1	10522	GEAR WORM GEAR JS
16	1	10523	CLAMP GEAR WORM JS
17	1	10524	BRG NEEDLE 1 ID X 1-1/4 OD X 1/2 OPEN
18	1	10525	HOUSING BEARING
19	1	10526	HUB LOCKING FEED JS
20	1	10527	SCREW 5/16-24 X 3/4 BHSCS
21	1	10528	KEY 5/32 SQ X 3.25 SQ BOTH ENDS
22	1	10529	BUSHING PL3000
23	1	10530	SHAFT FEED JS (KB)
24	1	10531	GEAR WORM
25	1	10532	BRG ROLLER CLUTCH 1 ID X 1-5/16 OD X 1.063
26	1	10533	RATCHET CAM FOLLOWER
27	1	10534	RING SNAP 1 OD
28	1	10535	BRG CAM FOLLOWER .750 OD X .500 WIDE W/ STUD
29	1	10536	NUT 3/8-24 STDN
30	2	10537	WASHER THRUST .625 ID X 1.125 OD X .092
31	1	10538	BRG THRUST .625 ID X 1.125 OD X .0781
32	1	10539	BRG ROLLER CLUTCH 5/8 ID X 7/8 OD X 1.000
33	1	10540	SPRING TORSION 1.34 ID X 0.615 WIRE 180 DEG
34	1	10541	CAM FEED MODEL PL3000
35	1	10542	KEY 5/32 SQ X .62 SQ BOTH ENDS
36	8	10588	SCREW DRIVE #2 x 1/4 HOLE SIZE .089
37	1	10595	WASHER 3/8 LOCW
38	6	10843	SCREW 1/4-20 X 3/4FHSCS
39	4	11735	SCREW 5/16-18 X 1-1/4 SHCS
40	1	29152	PLATE MASS CE
41	1	29154	PLATE SERIAL YEAR MODEL CE 2.0 X 3.0
42	1	43247	SCREW 1/4-20 X 5/8 SSSFP
43	1	74305	ASSY PINION FEED PL3000

- - REV A

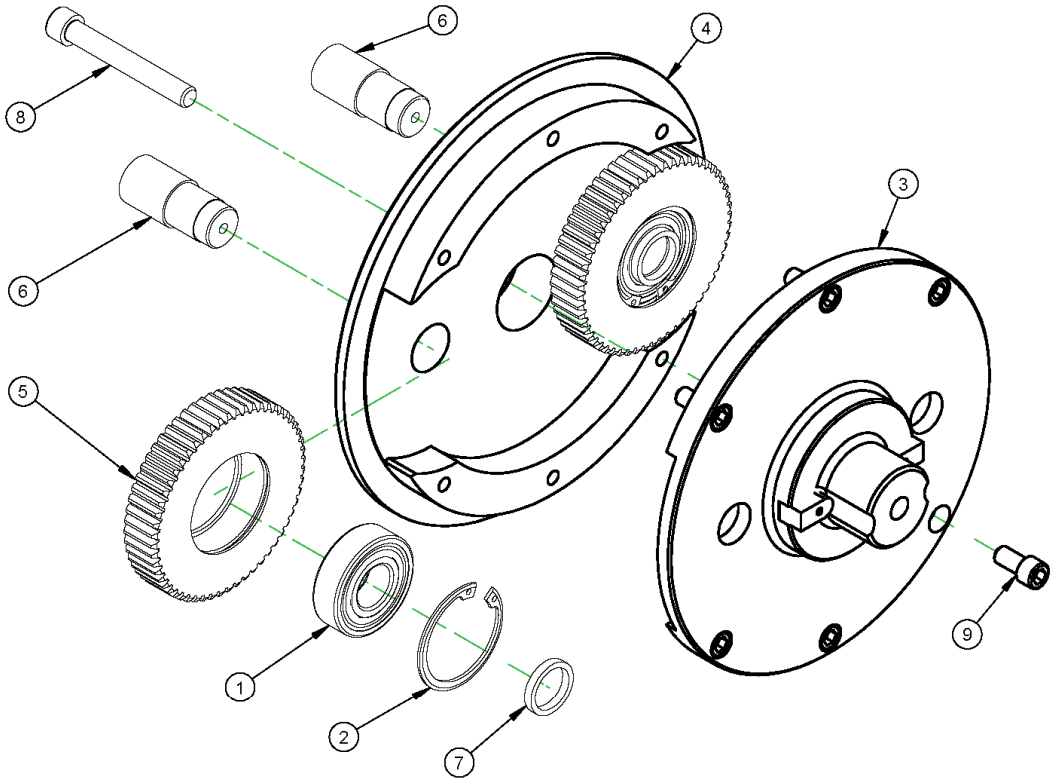
FOR REFERENCE ONLY



PARTS LIST			
ITEM	QTY	P/N:	DESCRIPTION
1	1	10226	SCREW 8-32 X 1/4 SHCS
2	4	10436	WASHER THRUST .500 ID X .937 OD X .060
3	2	10437	BRG THRUST .500 ID X .937 OD X .0781
4	1	10545	BAR TURNING PL3000
5	1	10547	SCREW 5/16-18 X 1/4 SSSCP
6	1	10548	ROD PULLER EXTENSION
7	1	10550	ROD PULLER #2
8	1	10551	ROD PULLER #3 PL3000
9	1	10552	RACK GEAR 18 IN
10	1	10553	KEY 1/4 X 3/8 X 20.85 IN. RADIUS BOTH ENDS
11	1	10554	HOUSING DEPTH ADJUSTING PL3000
12	1	10555	ROCKER DEPTH ADJUSTING
13	1	10556	PIN DOWEL 1/4 DIA X 1-1/4
14	2	10557	SCREW 3/8-16 X 2 SHCS
15	1	10559	PLATE COVER
16	2	10560	SCREW 10-32 X 3/8 FHSCS
17	1	10561	KNOB ADJUSTING DEPTH PL3000
18	1	10562	NUT 1/2-20 STDN
19	4	11678	SCREW 10-32 X 3/8 BHSCS
20	1	12324	SCREW 5/16-18 X 3/8 SSSCPPL
21	1	18368	HOLDER TOOL EXTENSION 8 TO 11 IN
22	1	19225	BALL NYLON 1/4 DIA

10635 - BAR TURNING ASSY PL3000 - REV A

FOR REFERENCE ONLY

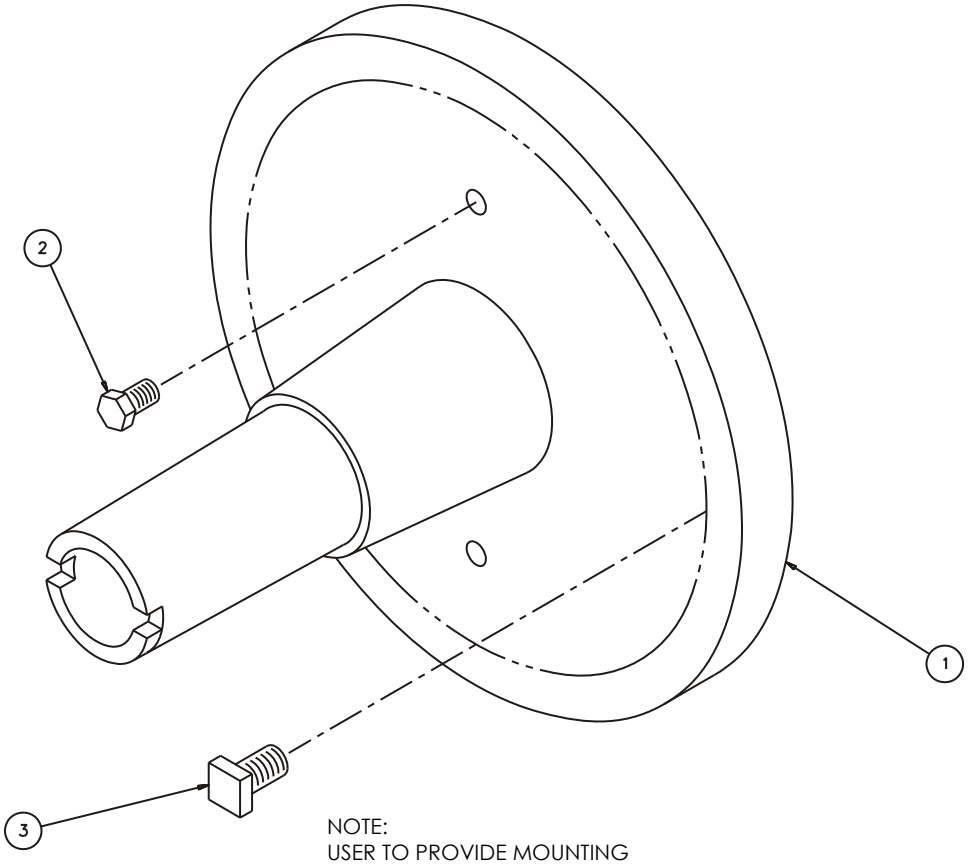


AVAILABLE CONFIGURATIONS			
P/N	DESCRIPTION	ITEM 4 PN	ITEM 4 DESCRIPTION
19246	ASSY HOUSING PLANETARY AIR PL3000	103711	COVER HOUSING PLANETARY AIR PL3000
19247	ASSY HOUSING PLANETARY ELEC PL3000	103712	COVER HOUSING PLANETARY ELEC PL3000

PARTS LIST			
ITEM	QTY	P/N:	DESCRIPTION
1	2	10150	BRG BALL .7874 X 1.8504 X .5512 2/SHLDS
2	2	10152	RING SNAP 1.850 ID (47MM) BEVELED .062 TH
3	1	102072	HOUSING PLANETARY PL3000
4	1	CHART	COVER HOUSING PLANETARY PL3000
5	2	10564	GEAR PLANETARY DRIVE PL3000
6	2	10565	SHAFT PLANETARY ASSY PL3000
7	2	10566	SPACER PLANETARY ASSY PL3000
8	1	11053	SCREW 3/8-16 X 2-3/4 SHCS
9	6	12432	SCREW 5/16-18 X 5/8 SHCS

15378 - CHART PLANETARY ASSY ELEC/AIR PL3000 - REV C

FOR REFERENCE ONLY

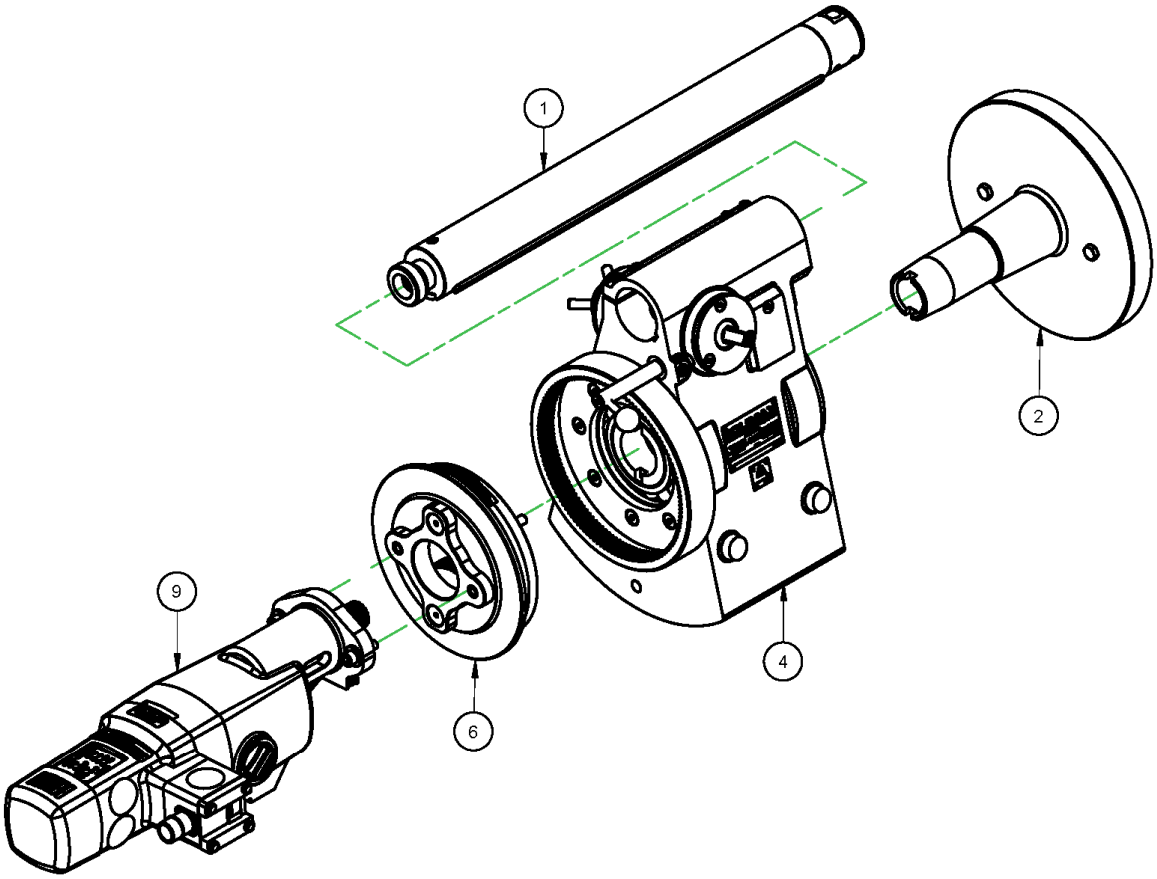


NOTE:
USER TO PROVIDE MOUNTING
HOLES TO MATCH WORKPIECE

MOUNTING FLANGE ASSEMBLY
(10640 - BLANK MOUNTING FLANGE)
(10642 - CUSTOM MOUNTING FLANGE)

10640 FLANGE MTG BLANK ASSY		
BALLOON	**PART**	**DESCRIPTION**
1	10578	FLANGE MTG TAPERED PL3000
2	10577	SCREW 3/8-16 X 3/4 HHCS
3	10579	SCREW 1/2-13 X 1 SQHSS
3	10599	SCREW 1/2-13 X 1-1/4 SQHSS

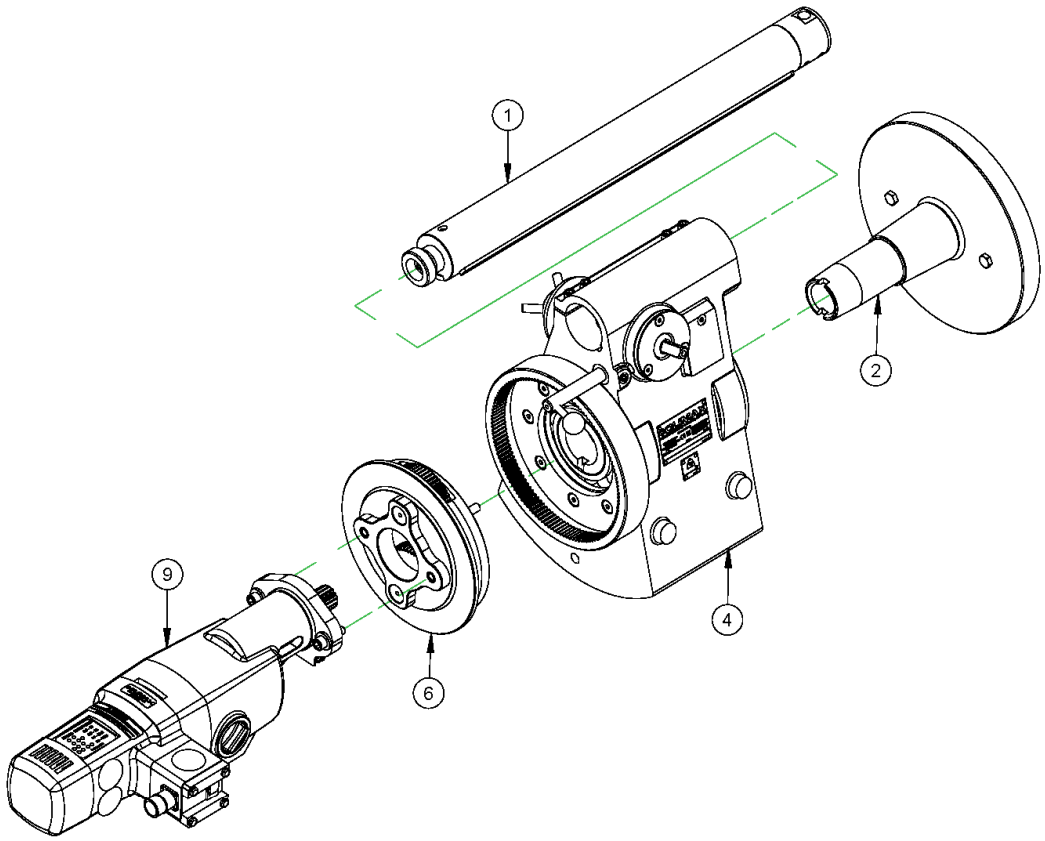
10642 FLANGE MTG CUSTOM ASSY		
BALLOON No	**PART**	**DESCRIPTION**
1	10578	FLANGE MTG TAPERED PL3000
2	10577	SCREW 3/8-16 X 3/4 HHCS
3	10579	SCREW 1/2-13 X 1 SQHSS
3	10599	SCREW 1/2-13 X 1-1/4 SQHSS



PARTS LIST			
ITEM	QTY	PART No.	DESCRIPTION
1	1	10635	BAR TURNING ASSY PL3000
2	1	10640	FLANGE MTG BLANK ASSY
3	1	13870	(NOT SHOWN) KIT TOOL PL3000
4	1	13871	BODY MAIN ASSY PL3000
5	1	16783	(NOT SHOWN) CRATE 19 X 32.5 X 12 PL3000 5/8 PLY
6	1	19247	ASSY HOUSING PLANETARY ELEC PL3000
7	1	31041	(NOT SHOWN) MANUAL INSTRUCTION PL3000 CE
9	1	104047	ASSY POWER UNIT 230V EIBENSTOCK PL3000 CE

104054 - MODEL PL3000 230V ELEC POWER EIBENSTOCK - REV A

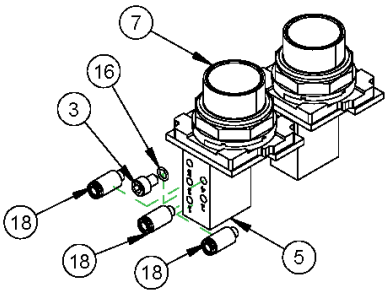
FOR REFERENCE ONLY



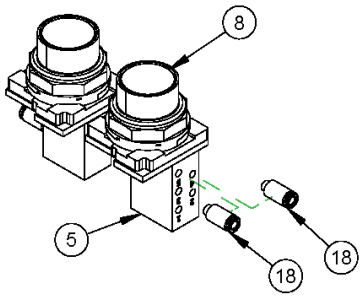
PARTS LIST			
ITEM	QTY	P/N:	DESCRIPTION
1	1	10635	BAR TURNING ASSY PL3000
2	1	10640	FLANGE MTG BLANK ASSY
3	1	13870	(NOT SHOWN) KIT TOOL PL3000
4	1	13871	BODY MAIN ASSY PL3000
5	1	16783	(NOT SHOWN) CRATE 19 X 32.5 X 12 PL3000 5/8 PLY
6	1	19247	ASSY HOUSING PLANETARY ELEC PL3000
7	1	31041	(NOT SHOWN) MANUAL INSTRUCTION PL3000 CE
8	1	34735	LABEL WARNING 3-1/2 X 4
9	1	104044	ASSY POWER UNIT 120V EIBENSTOCK PL3000 NEMA

104055 - MODEL PL3000 120V ELEC POWER EIBENSTOCK - REV A

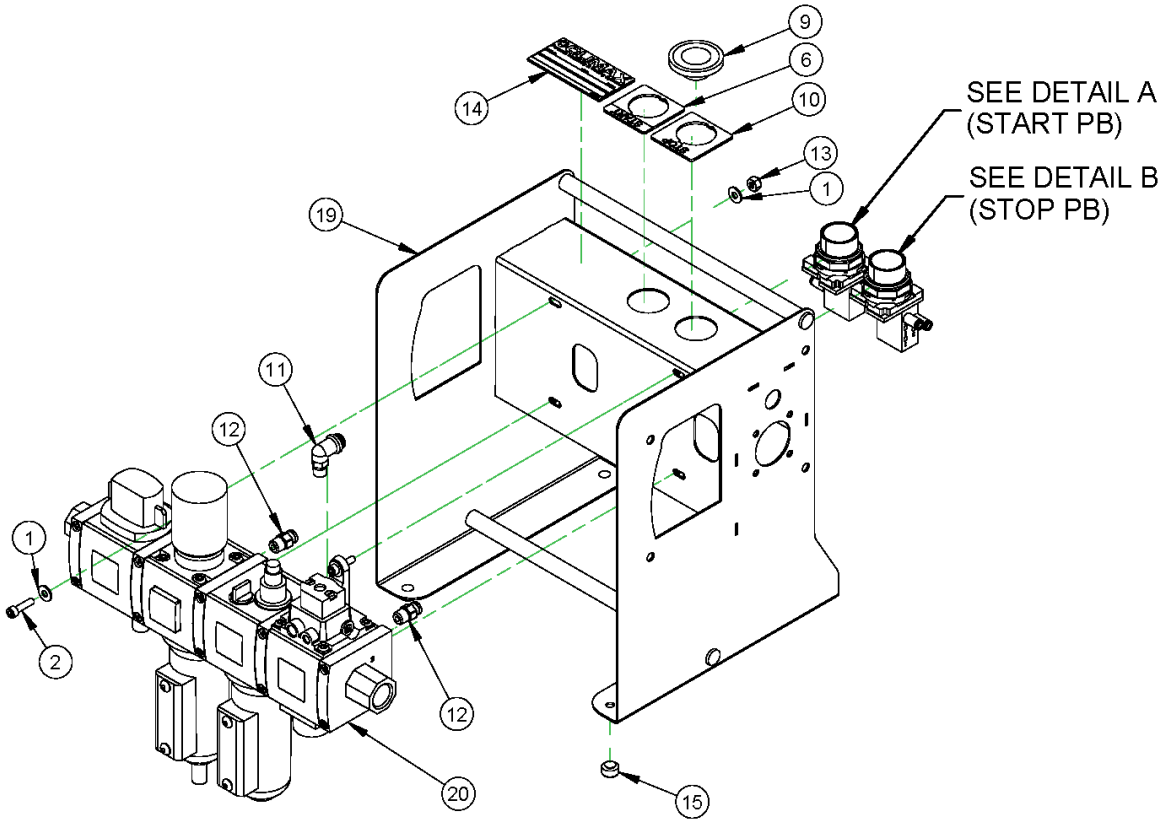
FOR REFERENCE ONLY



DETAIL A
SCALE 1/3

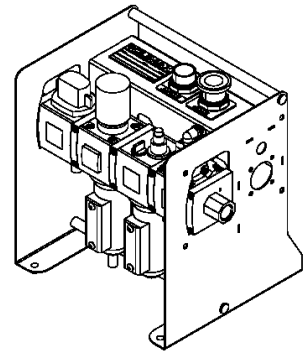


DETAIL B
SCALE 1/3

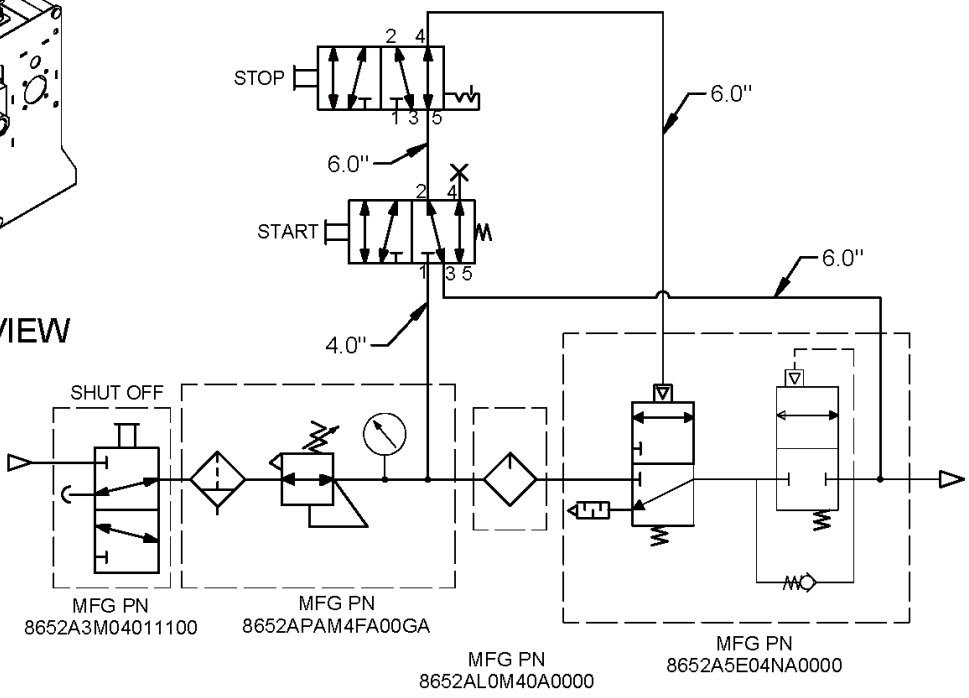


101920 - PNEUMATIC CONDITIONING UNIT CE UNIVERSAL - REV B

FOR REFERENCE ONLY



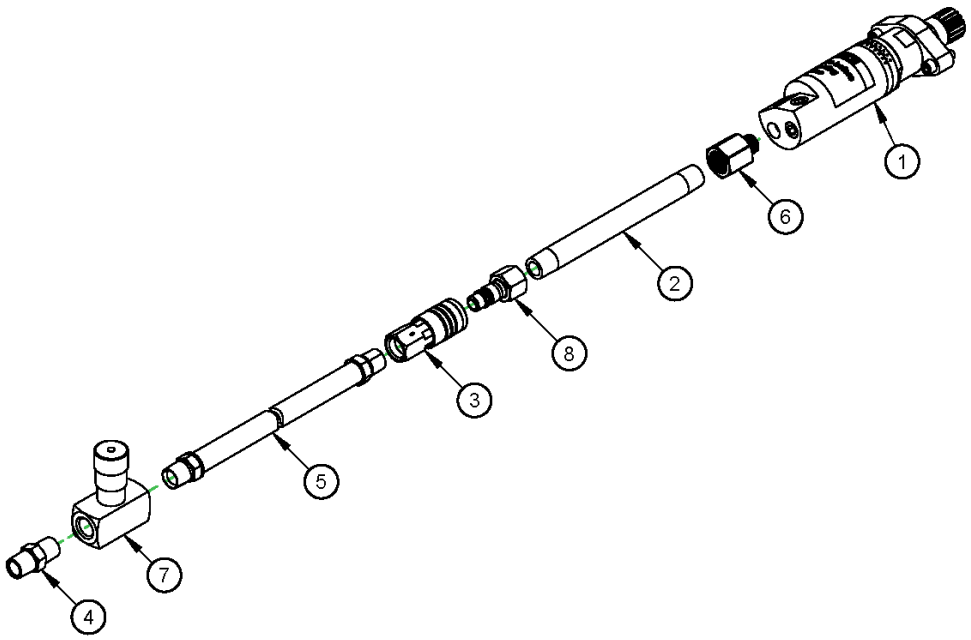
ASSEMBLED VIEW
SCALE 1 : 8



PARTS LIST			
ITEM	QTY	P/N:	DESCRIPTION
1	8	11315	WASHER #10 FLTW BLACK OXIDE
2	4	12648	SCREW 10-24 X 3/4 SHCS
3	1	14726	SCREW 10-32 X 1/4 SHCS
4	2	15285	(NOT SHOWN) FTG REDUCING ADAPTER 1 NPTF X 1/2 NPTM
5	2	46785	VALVE PUSHBUTTON 5 PORT PNEUMATIC
6	1	46797	LEGEND PLATE START 10250 SERIES
7	1	59458	PUSHBUTTON GREEN FLUSH
8	1	59459	PUSH BUTTON PUSH PULL MAINTAINED (M-M)
9	1	59462	PUSH BUTTON OPERATOR RED 1-5/8
10	1	59825	LEGEND PLATE STOP 10250SERIES YELLOW BACKGROUND
11	1	83517	FTG ELBOW 1/8 NPTM X 5/32 TUBE PRESTOLOK
12	2	83520	FTG, STRAIGHT, 1/8 NPTM X 5/32 TUBE PRESTOLOK
13	4	87533	NUT 10-24 STDNYLOC SS
14	1	91792	PLATE PART NO YEAR MODEL 1.5 X 3.0 ADHESIVE BACKED
15	4	96348	BUMPER RUBBER 1/4" ID X 1/2" OD 1/16" MATL THICKNESS
16	1	98553	O-RING 4.5MM ID X 6.5MM OD X 1MM W NITRILE 70A DUROMETER
17	24	98554	(NOT SHOWN) TUBING 5/32 OD POLYURETHANE (INCHES)
18	5	98555	FTG STRAIGHT SOCKET HEAD 5/32 TUBE PUSH LOCK 10/32UNF
19	1	101003	STAND PCU
20	1	101206	FILTER REGULATOR LUBRICATOR CONTROL VALVE W SEMI AUTO DRAIN
21	2	2151012	(NOT SHOWN) FTG COUPLER 1/2 NPTM X CHICAGO W/ SAFETY PIN & LANYARD

101920 - PNEUMATIC CONDITIONING UNIT CE UNIVERSAL - REV B

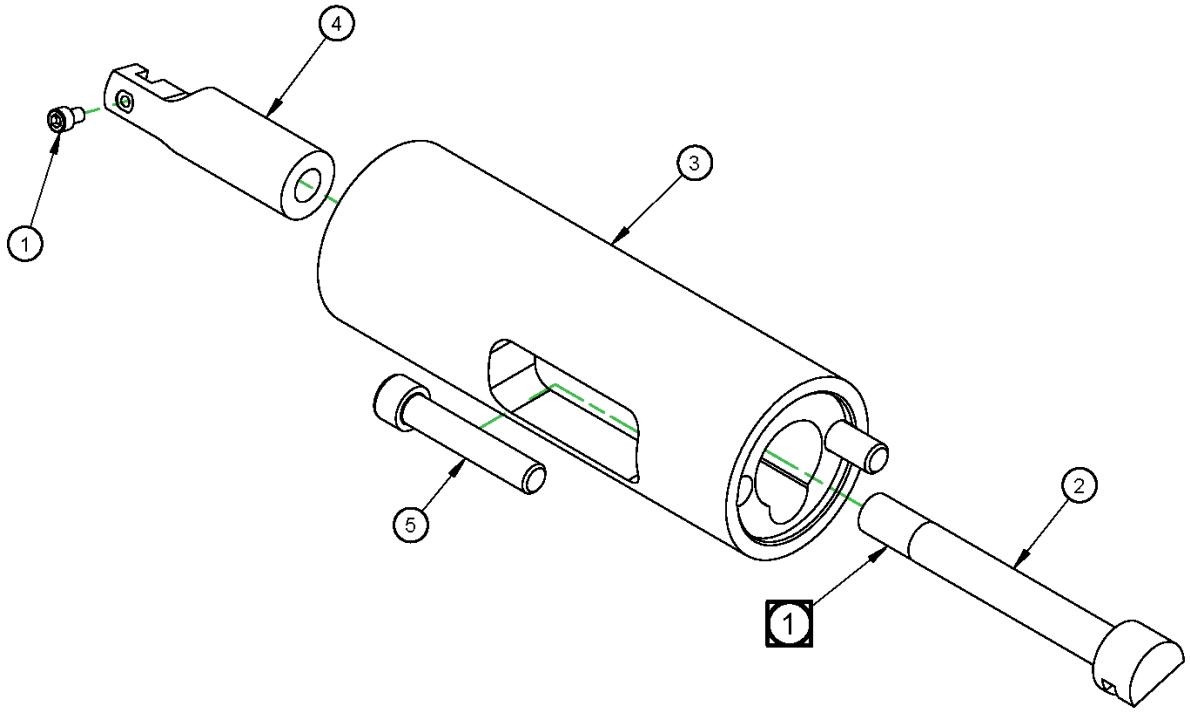
FOR REFERENCE ONLY



9	1	34866	(NOT SHOWN)OIL AIRTOOL COMPLETE
8	1	24851	FTG QUICK COUPLER 1/2B 1/2 NPTF MALE AIR
7	1	22229	VALVE NEEDLE 1/2 IN.
6	1	15970	FTG REDUCING ADAPTER 1/2 NPTF X 3/8 NPTM
5	1	15915	HOSE ASSY 801 1/2 X 1/2 NPTMS X 1/2 NPTMS X 72
4	1	14704	FTG NIPPLE 1/2 NPTM X 1/2 NPTM
3	1	13208	FTG QD COUPLER 1/2B 1/2 NPTF PNEUMATIC
2	1	12873	FTG NIPPLE 1/2 NPT X 8
1	1	11139	MOTOR AIR ASSY STANLEY
ITEM	QTY	PART No.	DESCRIPTION
PARTS LIST			

59839 - MOTOR AIR ASSY STANLEY WITH HOSE - REV A

FOR REFERENCE ONLY

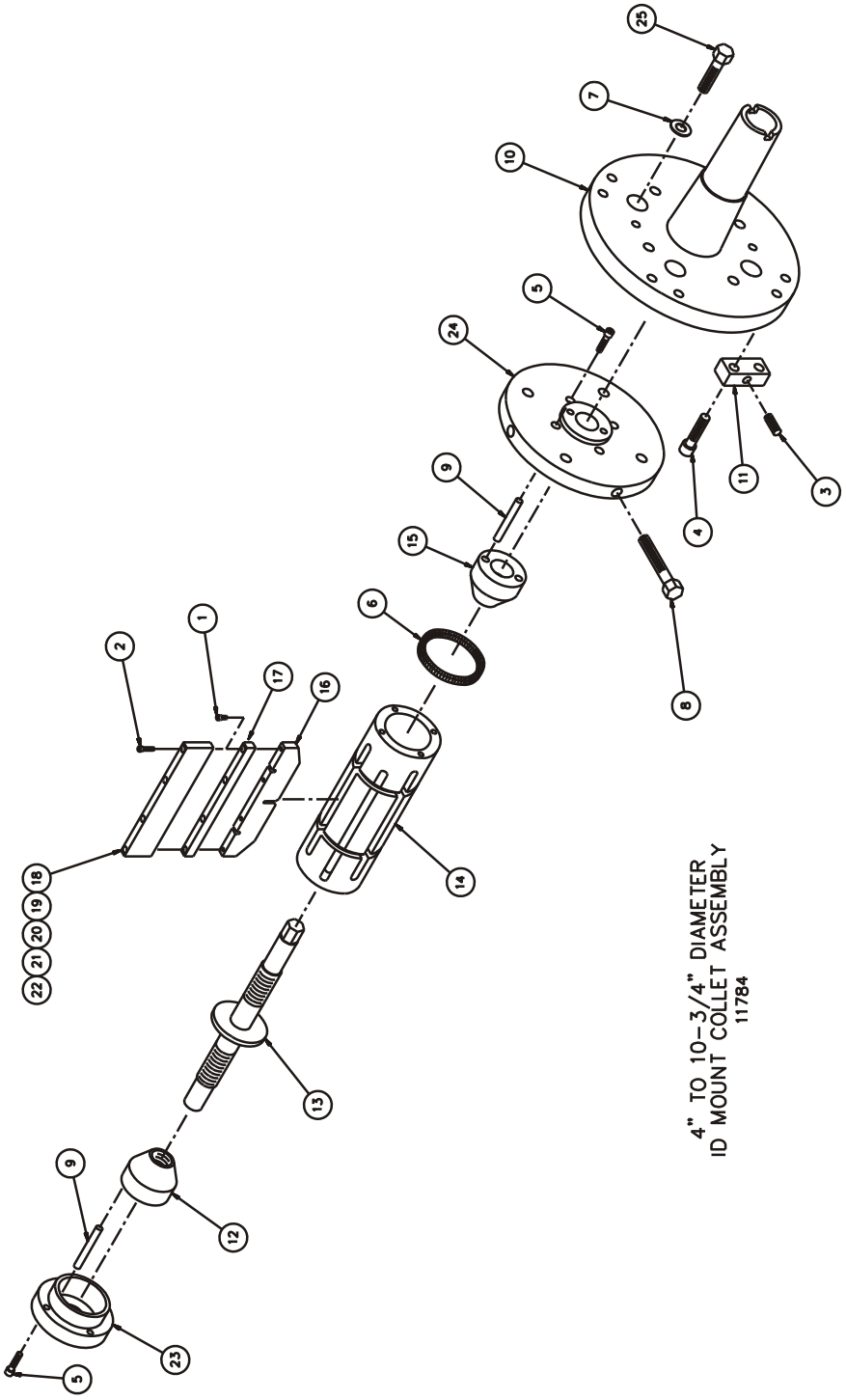


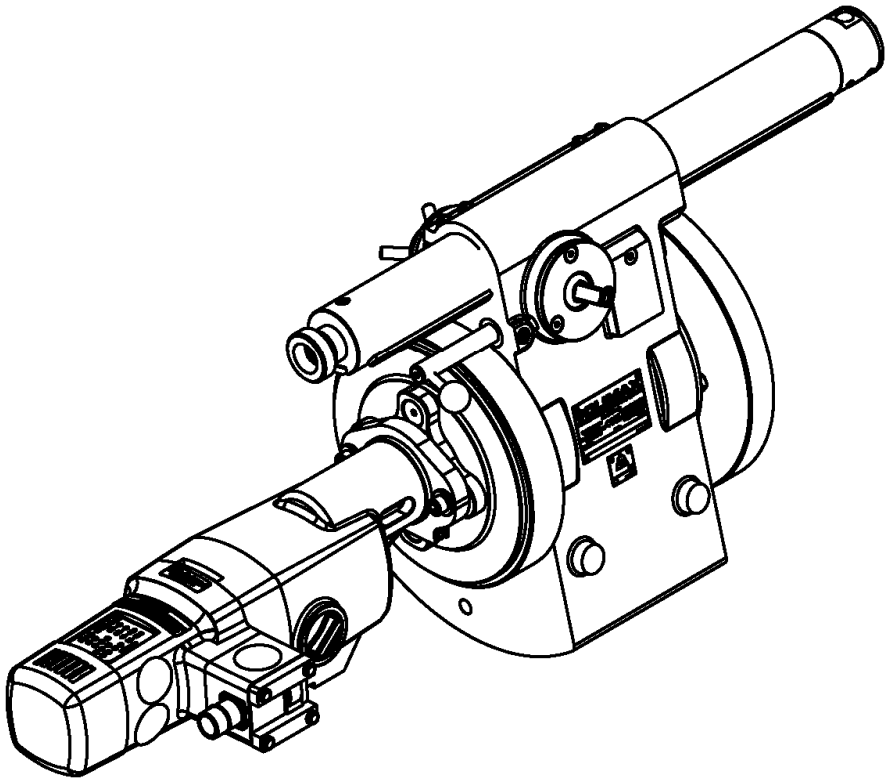
5	2	10557	SCREW 3/8-16 X 2 SHCS
4	1	10551	ROD PULLER #3 PL3000
3	1	10544	BAR TURNING EXTENSION PL3000
2	1	10543	ROD EXTENSION JS
1	1	10226	SCREW 8-32 X 1/4 SHCS
ITEM	QTY	PART No.	DESCRIPTION
PARTS LIST			

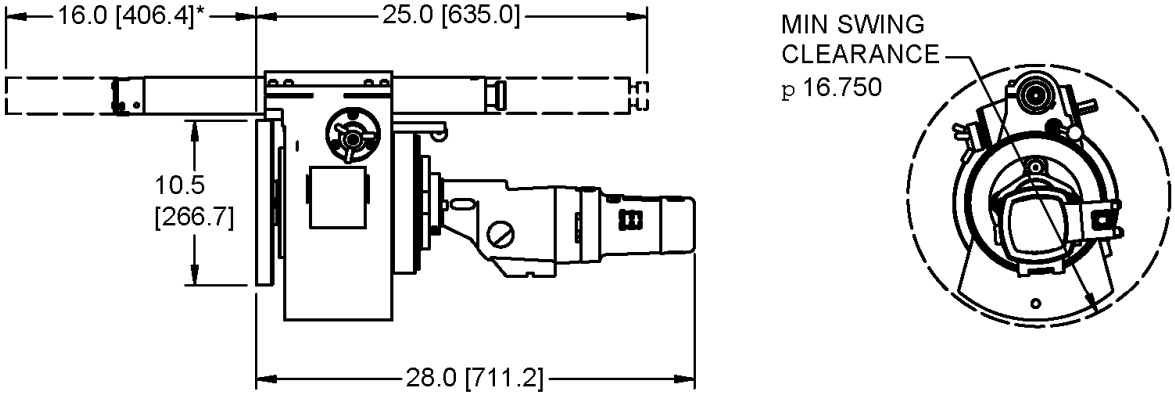
10636 - BAR TURNING EXTENSION 22 IN ASSY - REV A

FOR REFERENCE ONLY

11784 COLLET ID MOUNT JS 4 TO 10-3/4 ID		
BALLOON No	**PART**	**DESCRIPTION**
1	10877	SCREW 10-32 X 1/2 SHCS
2	10157	SCREW 10-32 X 5/8 SHCS
3	12969	SCREW 3/8-16 X 1 SSSHDPNI
4	13018	SCREW 7/16-14 X 1-1/4 SHCS
5	11777	SCREW 1/4-20 X 1-1/2 SHCS
6	11778	SPRING EXT .25 OD X .042 WIRE X 11 LONG
7	11779	WASHER 1/2 FLTW SAE
8	11780	SCREW 1/2-13 X 6 HHCS
9	11781	PIN DOWEL 5/16 DIA X 2-1/2
10	12971	FLANGE MTG ID COLLET
11	12970	BLOCK JACKING
12	11788	CONE RIGHTHAND THREAD
13	11789	SCREW SHAFT
14	11790	BODY COLLET
15	11791	CONE LEFTHAND THREAD
16	11793	FINDER ID COLLET
17	28539	JAW SET 1/2 IN 4.7 TO 5.95 ID PL3000
18	28540	JAW SET 1 IN 5.7 TO 6.95 ID PL3000
19	28541	JAW SET 1-1/2 IN 6.7 TO 7.95 ID PL3000
20	28542	JAW SET 2 IN 7.7 TO 8.95 ID PL3000
21	28543	JAW SET 2-1/2 IN 8.7 - 9.95 ID PL3000
22	28544	JAW SET 3 IN 9.7 TO 10.95 ID PL3000
23	11805	CAP END ASSY
24	11806	CAP ASSY FLANGE
25	11807	SCREW 1/2-13 X 1-3/4 HHCS


4" TO 10-3/4" DIAMETER
ID MOUNT COLLET ASSEMBLY
11784

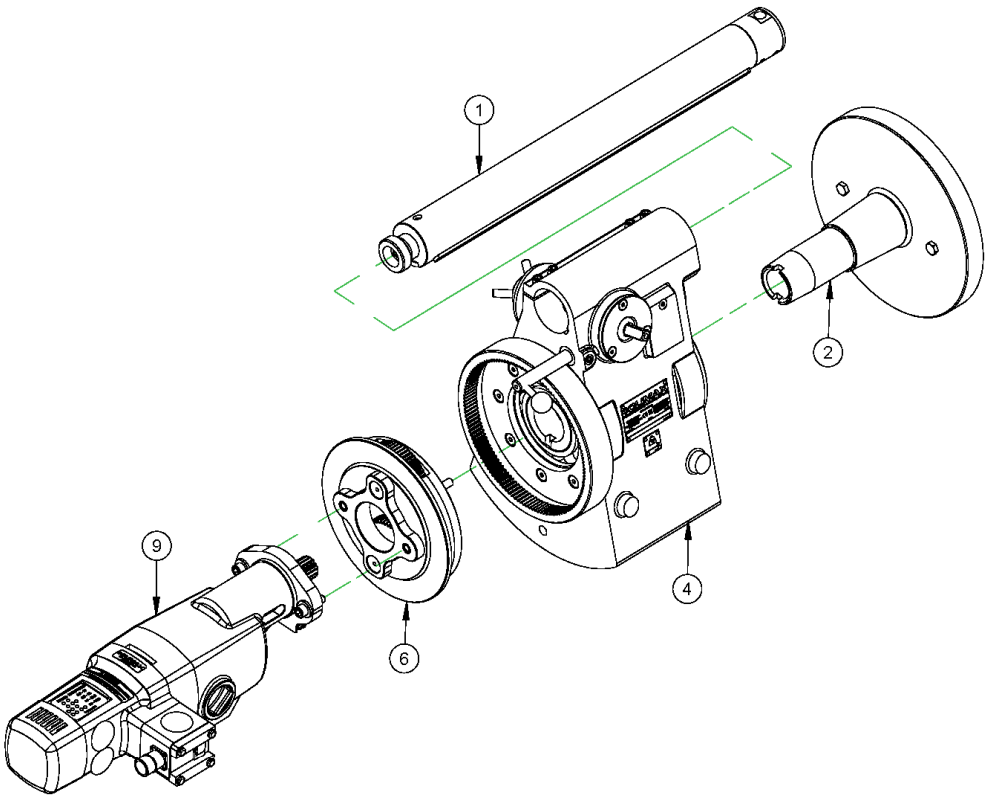




*16.0 [406.4] STANDARD, 22 [558.8] WITH OPTIONAL ATTACHMENT

104054 - MODEL PL3000 230V ELEC POWER EIBENSTOCK - REV A

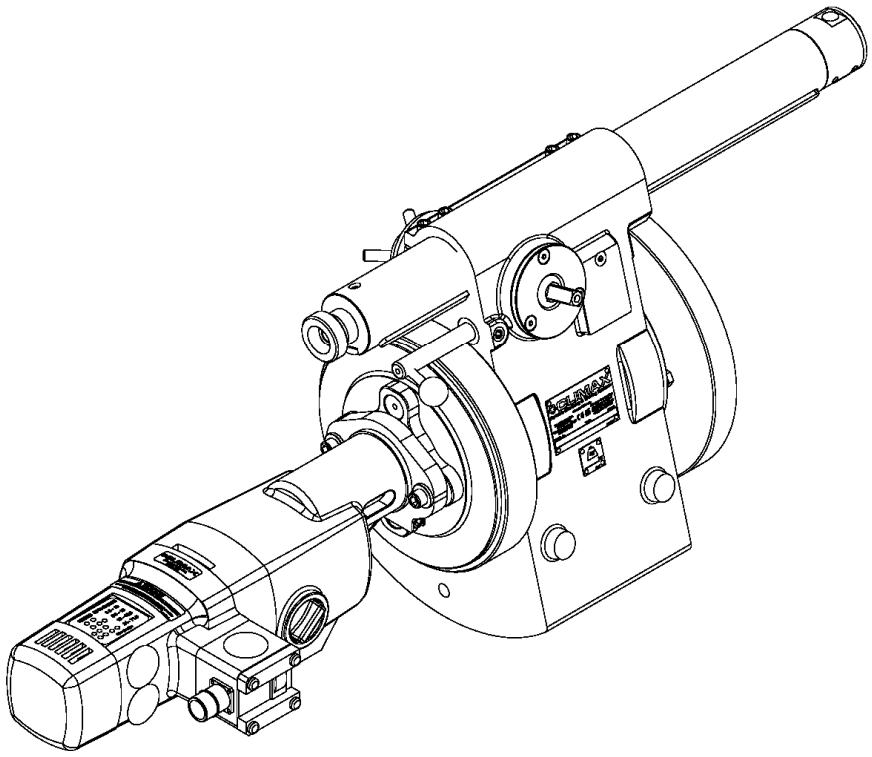
FOR REFERENCE ONLY

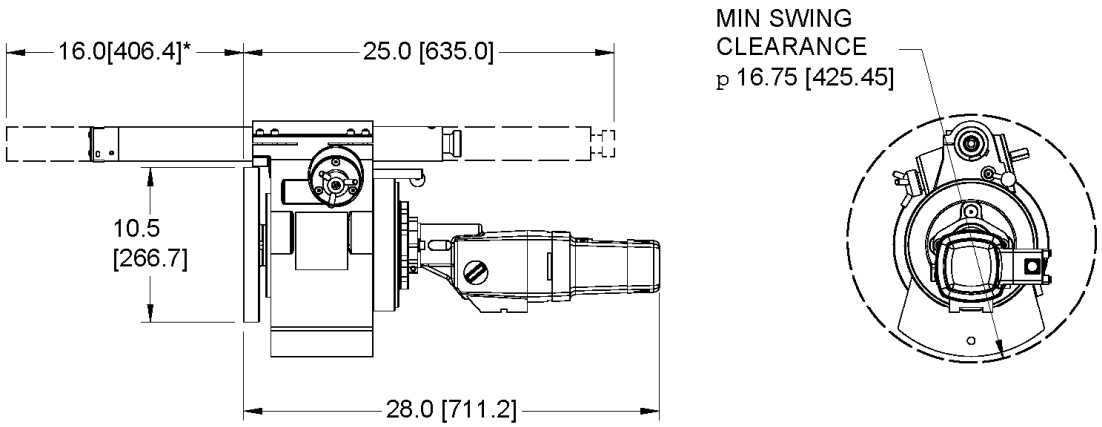


PARTS LIST			
ITEM	QTY	P/N:	DESCRIPTION
1	1	10635	BAR TURNING ASSY PL3000
2	1	10640	FLANGE MTG BLANK ASSY
3	1	13870	(NOT SHOWN) KIT TOOL PL3000
4	1	13871	BODY MAIN ASSY PL3000
5	1	16783	(NOT SHOWN) CRATE 19 X 32.5 X 12 PL3000 5/8 PLY
6	1	19247	ASSY HOUSING PLANETARY ELEC PL3000
7	1	31041	(NOT SHOWN) MANUAL INSTRUCTION PL3000 CE
8	1	34735	LABEL WARNING 3-1/2 X 4
9	1	104044	ASSY POWER UNIT 120V EIBENSTOCK PL3000 NEMA

104055 - MODEL PL3000 120V ELEC POWER EIBENSTOCK - REV A

FOR REFERENCE ONLY





* 16.0 [406.4] STANDARD, 22 [558.8] WITH OPTIONAL ATTACHMENT

104055 - MODEL PL3000 120V ELEC POWER EIBENSTOCK - REV A

FOR REFERENCE ONLY

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Schematics

See the schematics on the following pages.

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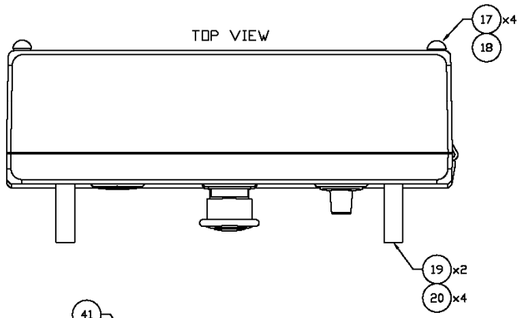
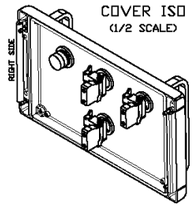
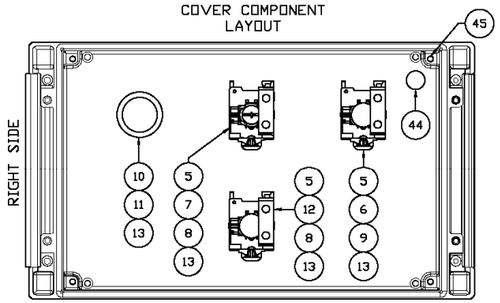
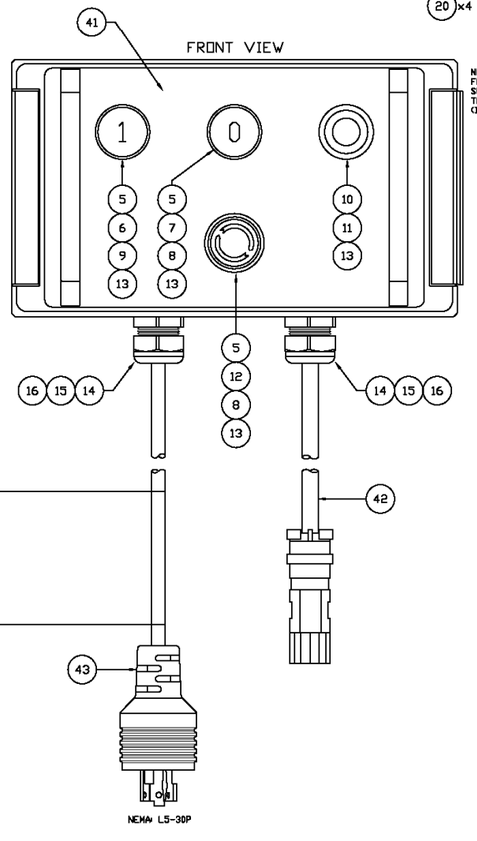
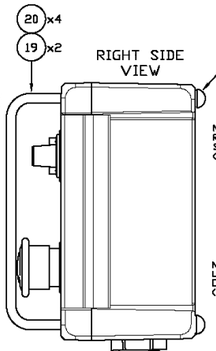








NOTE: 18 IN-LBS TORQUE FOR HANDLE SCREWS. BE SURE THE SCREWS HAVE THREAD-LOCKER APPLIED (ITEM 20)



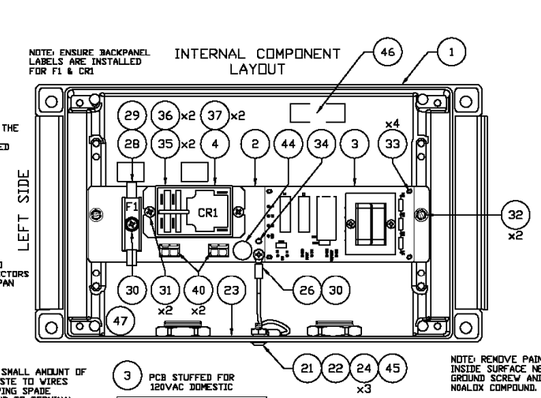
NOTE: CHECK THAT THE RIVET NUTS ARE SECURELY INSTALLED (ITEM 18)

NOTE: SECURE WAGO LEVER LOCK CONNECTORS ON ALUMINUM BACKPAN (ITEM 40)

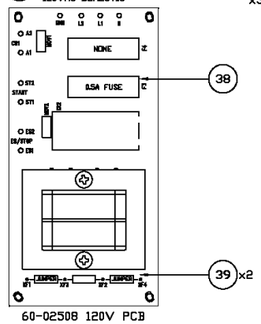
NOTE: APPLY A SMALL AMOUNT OF CONDUCTIVE PASTE TO WIRES PRIOR TO CRIMPING SPADE CONNECTORS, AND TO TERMINAL TABS PRIOR TO INSTALLING SPADE CONNECTOR (ITEMS 28, 29, 35, 36)

MAKE SURE SPADE CONNECTORS FIT TIGHTLY ON SPADES. CLAMP WITH PLIERS IF NECESSARY.

NOTE: ENSURE BACKPANEL LABELS ARE INSTALLED FOR F1 & CR1



NOTE: REMOVE PAINT ON INSIDE SURFACE NEAR GROUND SCREW AND APPLY NOALOX COMPOUND.



47	1	PLASTIC BAG, 2x3" FOR SPARE FUSES	McMASTER	1959T11
46	1	LABEL, FUSE REPLACEMANT	AUTOMATION SOLUTIONS	N00055
45	2	STAR WASHER FOR GND SCREW, #10	McMASTER	91114A011
44	2	STICKER, GND SYMBOL	PANDUIT	PESS-A-ES
43	1	ASSY POWER CORD, NEMA: L5-30P, 12/3, 20A, 15FT	AUTOMATION SOLUTIONS	E00172
42	1	ASSY MOTOR CABLE, 120V, 12AWG, 5 CONDR, 15FT	AUTOMATION SOLUTIONS	E00170
41	1	LABEL, LEGEND/SERIAL# - 120V DOMESTIC (88037)	AUTOMATION SOLUTIONS	G00245
40	2	COMPACT SPLICING CONNECTOR	WAGO	221-412
39	2	PCB JUMPER, ZERO OHM RESISTOR (OR WIRE JUMPER)	VISHAY	SFR2500Z0002R500
38	2	FUSE, 5x20mm, 0.5A SLO-BLO (1 SPARE)	LITTELFUSE	0239.500MXP
37	2	QUICK DISCONNECT, FEMALE, 18AWG	PANDUIT	EDNF18-250FBL
36	2	QUICK DISCONNECT, FEMALE, 12AWG	PANDUIT	EDNF10-250FI-Q
35	2	QUICK DISCONNECT w/PIGGYBACK, FEMALE, 18AWG	PANDUIT	EDV18-250FRL
34	1	STANDOFF, NYLON, 1/4", ADHESIVE BACKED	McMASTER	91443A220
33	4	STANDOFF, NYLON, 4.7MM	KEYSTONE	8889
32	2	SCREW, 8-32, 1/8" LONG	McMASTER	90096A191
31	2	SCREW, 6-32, 3/8" LONG	McMASTER	90087A146
30	2	SCREW, 6-32, 1/4" LONG	McMASTER	90087A144
29	2	FUSE, .25" x 1.25", 30A, SLO-BLO (1 SPARE)	LITTELFUSE	0326030.HXP
28	2	FUSEBLOCK, 1/4" x 1.25"	LITTELFUSE	03540901ZXGY
27	1	RING TERMINAL, 14-16AWG, #8 SCREW (LID NOT SHOWN)	PANDUIT	EV18-8RB-Q
26	1	RING TERMINAL, 14-16AWG, #6 SCREW (BACKPANEL)	PANDUIT	EV18-6RB-Q
25	*	*	*	*
24	3	RING TERMINAL, 22-18AWG, #10 SCREW (GND STUD)	PANDUIT	EV18-10RBL
23	1	STICKER, PROTECTIVE EARTH	PANDUIT	PESS-A-PE
22	1	GROUND NUT, 10-32	McMASTER	90480A195
21	1	GROUND SCREW, 10-32, 5/8", 18-8SS	McMASTER	97654A174
20	4	THREAD LOCKING SHCS SCREW, 8-32, W/WASHER HEAD	McMASTER	91205A192
19	2	HANDLES	McMASTER	15145A63
18	4	RIVET NUT, 8-32	McMASTER	94020A319
17	4	BUMPERS, SCREW-IN, 8-32	McMASTER	9541K2
16	2	CORD GRIP SEALING RING, 3/4"	SEALCON	SR-34-NY
15	2	CORD GRIP, LOCK NUT	SEALCON	NN-21-BK
14	2	CORD GRIP, 3/4" NPT	SEALCON	CD21NR-BK
13	4	FLUSH MOUNT KIT	SCHNEIDER	ZBHBZ021
12	1	E-STOP PB, MUSHROOM HEAD	SCHNEIDER	ZBHB5844
11	1	POTENTIOMETER, 100K, LINEAR	HONEYWELL	380C1100K
10	1	POTENTIOMETER OPERATOR	SCHNEIDER	ZBHBD922
9	1	N/O CONTACT BLK, 10A, SPRING CLAMP	SCHNEIDER	ZBE1015
8	2	N/C CONTACT BLK, 10A, SPRING CLAMP	SCHNEIDER	ZBE1025
7	1	PUSHBUTTON, RED, EXTENDED, NON-ILLUM, MOM, 22MM	SCHNEIDER	ZBHBL432
6	1	PUSHBUTTON, GREEN, NON-ILLUM, MOM, 22MM	SCHNEIDER	ZBHBA331
5	3	MOUNT BASE	SCHNEIDER	ZBHBZ009
4	1	RELAY, E-MECH DPST, 30A, 24VAC COIL	SCHNEIDER	9257A22D-24
3	1	UNIVERSAL STARTER CONTROLLER PCB ASSY - 120V	AUTOMATION SOLUTIONS	60-02508
2	1	BACKPANEL FOR STARTER CONTROLLER & RELAY	AUTOMATION SOLUTIONS	H00423
1	1	ENCLOSURE 11.77 x 6.81 x 3.54	ROSE-BOPLA	00126335
ITEM	QTY	DESCRIPTION	MFG	P/N

BILL OF MATERIALS

REF# 60-02405

120V DOMESTIC

PROJECT DRAWINGS	DRAWING #	CLIMAX PART #	NOTES
TOP LEVEL ASSEMBLY	*	*	*
SCHEMATIC	C00465	88037	*
LAYOUT: CONTROL PANEL	B00365	88037	*
LAYOUT: PENDANT	*	*	*
CABLE ASSY 1	E00170	*	MOTOR, 12AWG
CABLE ASSY 2	E00172	*	NEMA L5-30P POWER

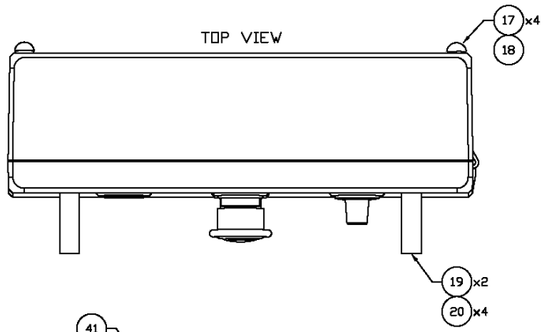
EXCEPT AS NOTED: DIMENSIONS ARE IN INCHES PER ASME Y14.5
.X ±.030
.XX ±.010
.XXX ±.005
ANGLES ±.5°
MATERIAL

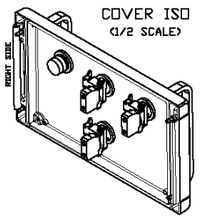
ADDITIONAL INFORMATION AND SPECIFICATIONS REQUIRED TO MANUFACTURE THIS PART ARE PROVIDED IN CLIMAX SPEC. P100

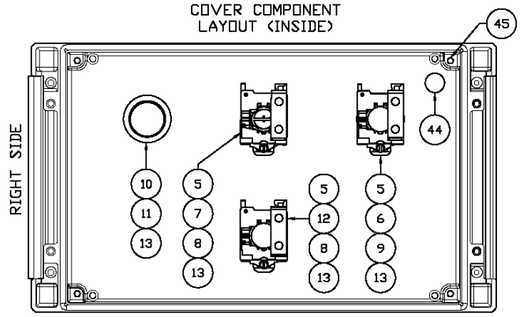
DRAWN RG DATE 8/20/16
CHECKED * DATE *
APPROVED DATE
COSMETIC CLASS EXCEPT AS NOTED A
CAD/CAM STD 4

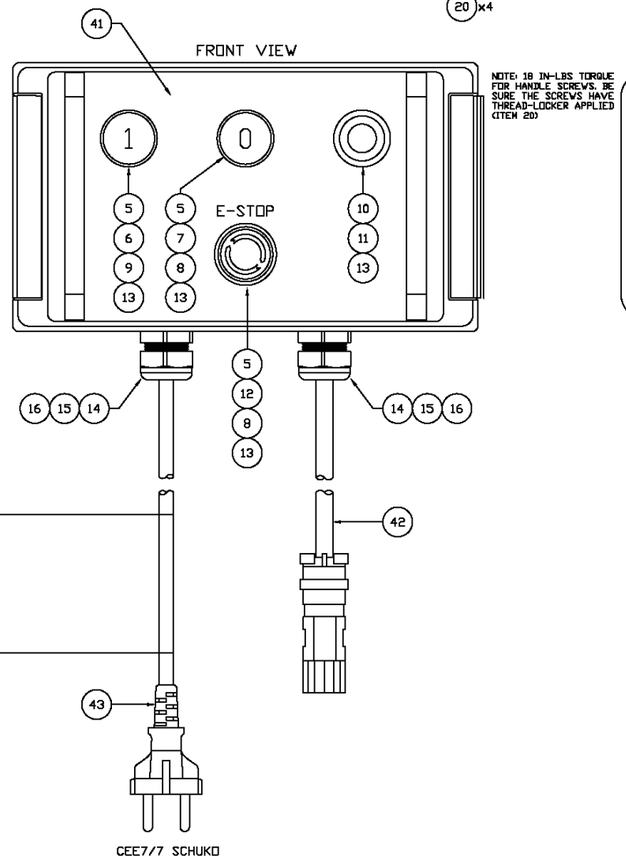
CLIMAX
Portable Machining & Welding Systems
P/N 88037 - 120V Domestic
Eibenstock BB5000 Controller

SIZE B | CAGE CODE 15509 | DWG NO. B00365 | REVISION B
SCALE NONE | PART NO. 88037 | SHEET 1 OF 1

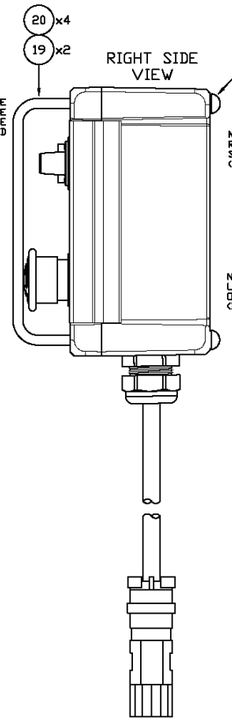








NOTE: 18 IN-LBS TORQUE FOR HANDLE SCREWS. BE SURE THE SCREWS HAVE THREAD-LOCKER APPLIED (ITEM 20)



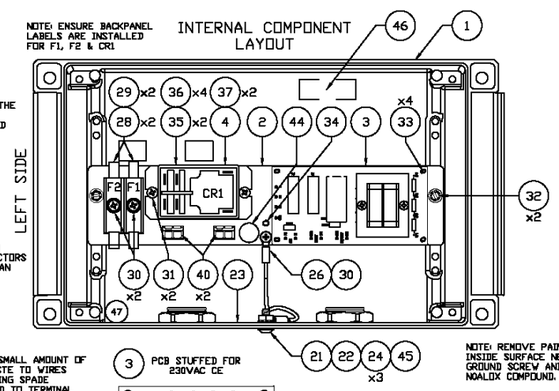
NOTE: CHECK THAT THE RIVET NUTS ARE SECURELY INSTALLED (ITEM 18)

NOTE: SECURE WAGO LEVER LOCK CONNECTORS ON ALUMINUM BACKPAN (ITEM 40)

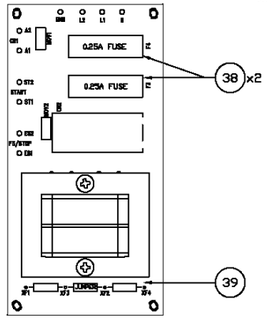
NOTE: APPLY A SMALL AMOUNT OF CONDUCTIVE PASTE TO WIRES PRIOR TO CRIMPING SPADE CONNECTORS, AND TO TERMINAL TABS PRIOR TO INSTALLING SPADE CONNECTOR (ITEMS 28, 29, 35, 36)

MAKE SURE SPADE CONNECTORS FIT TIGHTLY ON SPADES. CLAMP WITH PLIERS IF NECESSARY.

NOTE: ENSURE BACKPANEL LABELS ARE INSTALLED FOR F1, F2 & CR1



NOTE: REMOVE PAINT ON INSIDE SURFACE NEAR GROUND SCREW AND APPLY NOALOX COMPOUND.



47	1	PLASTIC BAG, 2x3" FOR SPARE FUSES		McMASTER	1959T11
46	1	LABEL, FUSE REPLACEMANT		AUTOMATION SOLUTIONS	N00055
45	2	STAR WASHER FOR GND SCREW, #10		McMASTER	91114A011
44	2	STICKER, GND SYMBOL		PANDUIT	PESS-A-ES
43	1	ASSY POWER CORD, CEE7/7 (SCHUKO), 1.5MM2, 115 IN		AUTOMATION SOLUTIONS	E00174
42	1	ASSY MOTOR CABLE, 230V, 14AWG, 5 CONDR, 15FT		AUTOMATION SOLUTIONS	E00171
41	1	LABEL, LEGEND/SERIAL# - 230V CE	(88035)	AUTOMATION SOLUTIONS	G00245
40	2	COMPACT SPLICING CONNECTOR		WAGO	221-412
39	1	PCB JUMPER, ZERO OHM RESISTOR (OR WIRE JUMPER)		VISHAY	SFR25002000ZR500
38	4	FUSE, 5x20mm, 0.25A SLO-BLO	(2 SPARE)	LITTELFUSE	0239.250MXP
37	2	QUICK DISCONNECT, FEMALE, 18AWG		PANDUIT	EDNF18-250FIBL
36	4	QUICK DISCONNECT, FEMALE, 12AWG		PANDUIT	EDNF10-250FI-Q
35	2	QUICK DISCONNECT w/PIGGYBACK, FEMALE, 18AWG		PANDUIT	EDV18-250FIL
34	1	STANDOFF, NYLON, 1/4", ADHESIVE BACKED		McMASTER	9144JA220
33	4	STANDOFF, NYLON, 4.7MM		KEYSTONE	8889
32	2	SCREW, 8-32, 1/8" LONG		MCMASTER	90096A191
31	2	SCREW, 6-32, 3/8" LONG		MCMASTER	90087A146
30	3	SCREW, 6-32, 1/4" LONG		MCMASTER	90087A144
29	4	FUSE, .25" x 1.25", 20A, SLO-BLO	(2 SPARE)	LITTELFUSE	0326020.HXP
28	2	FUSEBLOCK, 1/4" x 1.25"		LITTELFUSE	03540901ZXGY
27	1	RING TERMINAL, 14-16AWG, #8 SCREW (LID NOT SHOWN)		PANDUIT	EV18-8RB-Q
26	1	RING TERMINAL, 14-16AWG, #6 SCREW (BACKPANEL)		PANDUIT	EV18-6RB-Q
25	*	*		*	*
24	3	RING TERMINAL, 22-18AWG, #10 SCREW (GND STUD)		PANDUIT	EV18-10RB-L
23	1	STICKER, PROTECTIVE EARTH		PANDUIT	PESS-A-PE
22	1	GROUND NUT, 10-32		MCMASTER	90480A195
21	1	GROUND SCREW, 10-32, 5/8", 18-8SS		MCMASTER	97654A174
20	4	THREAD LOCKING SHCS SCREW, 8-32, WASHER HEAD		MCMASTER	91205A192
19	2	HANDLES		MCMASTER	15145A63
18	4	RIVET NUT, 8-32		MCMASTER	94020A319
17	4	BUMPERS, SCREW-IN, 8-32		MCMASTER	9541K2
16	2	CORD GRIP SEALING RING, 3/4"		SEALCON	SR-34-NY
15	2	CORD GRIP, LOCK NUT		SEALCON	NN-21-BK
14	2	CORD GRIP, 3/4" NPT		SEALCON	CD21NR-BK
13	4	FLUSH MOUNT KIT		SCHNEIDER	ZB4BZ021
12	1	E-STOP PB, MUSHROOM HEAD		SCHNEIDER	ZB4BS844
11	1	POTENTIOMETER, 100K, LINEAR		HONEYWELL	380C110K
10	1	POTENTIOMETER OPERATOR		SCHNEIDER	ZB4BD922
9	1	N/O CONTACT BLK, 10A, SPRING CLAMP		SCHNEIDER	ZBE1015
8	2	N/C CONTACT BLK, 10A, SPRING CLAMP		SCHNEIDER	ZBE1025
7	1	PUSHBUTTON, RED, EXTENDED, NON-ILLUM, MOM, 22MM		SCHNEIDER	ZB4BL432
6	1	PUSHBUTTON, GREEN, NON-ILLUM, MOM, 22MM		SCHNEIDER	ZB4BA331
5	3	MOUNT BASE		SCHNEIDER	ZB4BZ009
4	1	RELAY, E-MECH DPST, 30A, 24VAC COIL		SCHNEIDER	9S7A22D24
3	1	UNIVERSAL STARTER CONTROLLER PCB ASSY - 230V		AUTOMATION SOLUTIONS	60-02536
2	1	SUPPORT PLATE FOR STARTER CONTROLLER & RELAY		AUTOMATION SOLUTIONS	H00423
1	1	ENCLOSURE 11.77 x 6.81 x 3.54		ROSE-BOPLA	00126335
ITEM	QTY	DESCRIPTION		MFG	P/N

BILL OF MATERIALS

REF# 60-02481

230V CE

PROJECT DRAWINGS	DRAWING #	CLIMAX PART #	NOTES
TOP LEVEL ASSEMBLY	*	*	*
SCHEMATIC	C00467	88035	*
LAYOUT: CONTROL PANEL	B00367	88035	*
LAYOUT: PENDANT	*	*	*
CABLE ASSY 1	E00171	*	MOTOR, 14AWG
CABLE ASSY 2	E00174	*	CEE7/7 SCHUKO PWR

EXCEPT AS NOTED, DIMENSIONS ARE IN INCHES PER ASME Y14.5
X ± .010
XX ± .010
XXX ± .005
ANGLES ± 1°
MATERIAL
COSMETIC CLASS EXCEPT AS NOTED: A

ADDITIONAL INFORMATION AND SPECIFICATIONS REQUIRED TO MANUFACTURE THIS PART ARE PROVIDED IN CLIMAX SPEC. P100

DRAWN: RG DATE: 8/20/16
CHECKED: " DATE: "
APPROVED: DATE
CAD/CAM STD 4

CLIMAX
Portable Machining & Welding Systems
P/N 88035 - 230V CE
Eibenstock BB5000 Controller

SIZE B | CAGE CODE 15509 | DWG NO B00367 | REVISION A
SCALE NONE | PART NO. 88035 | SHEET 1 OF 1

SDS

Contact CLIMAX for the current list of Safety Data Sheets.

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CLIMAX
BORTECH
CALDER
H&S TOOL