MODEL G0996
22" POWER HAMMER
OWNER'S MANUAL
(For models manufactured since 09/24)

#CS23475 PRINTED IN CHINA V1.04.25

******Keep for Future Reference******

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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INTRODUCTION

Contact Info

We stand behind our machines! If you have questions or need help, contact us with the information below. Before contacting, make sure you get the **serial number** and **manufacture date** from the machine ID label. This will help us help you faster.

Grizzly Technical Support
1815 W. Battlefield
Springfield, MO 65807
Phone: (570) 546-9663
Email: techsupport@grizzly.com

We want your feedback on this manual. What did you like about it? Where could it be improved? Please take a few minutes to give us feedback.

Grizzly Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

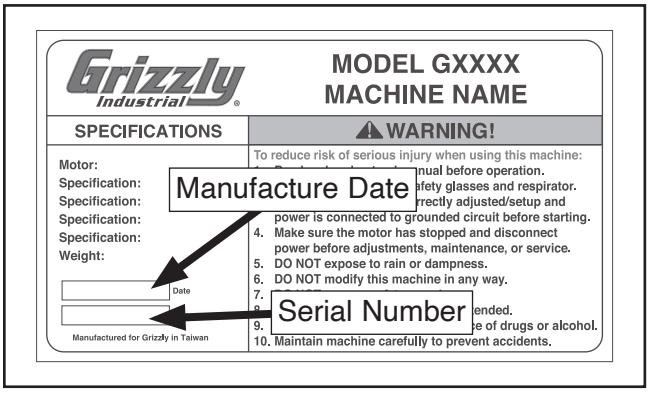
Manual Accuracy

We are proud to provide a high-quality owner's manual with your new machine!

We made every effort to be exact with the instructions, specifications, drawings, and photographs in this manual. Sometimes we make mistakes, but our policy of continuous improvement also means that **sometimes the machine you receive is slightly different than shown in the manual**.

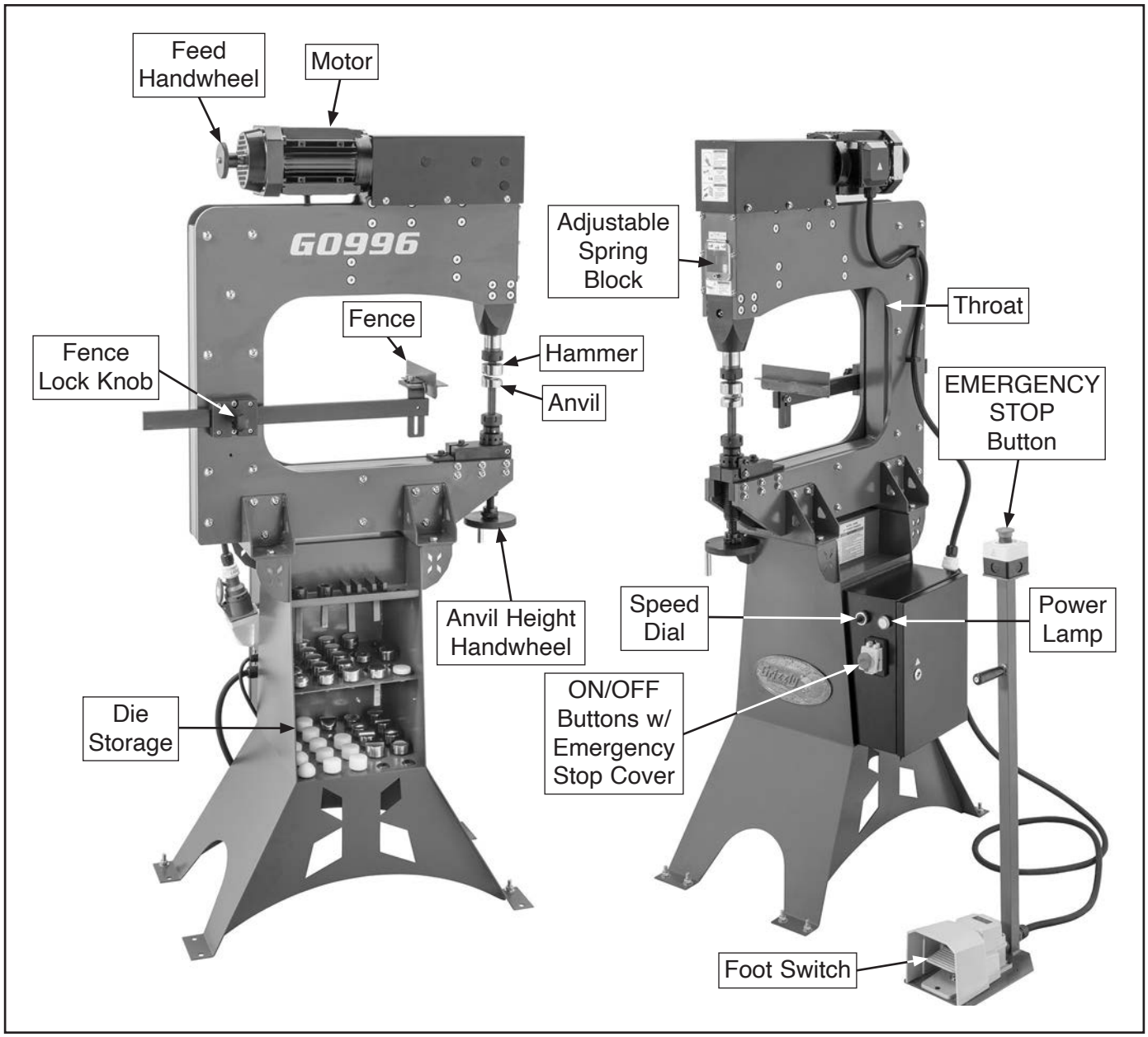
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

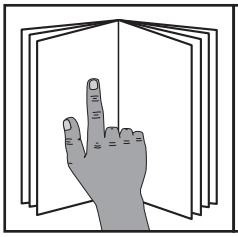
Alternatively, you can call our Technical Support for help. Before calling, make sure you write down the **manufacture date** and **serial number** from the machine ID label (see below). This information is required for us to provide proper tech support, and it helps us determine if updated documentation is available for your machine.



Identification

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.

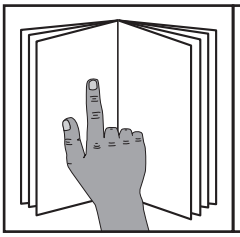




⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

Controls & Components



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

Refer to the following figures and descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and minimize your risk of injury when operating this machine.

Power Controls

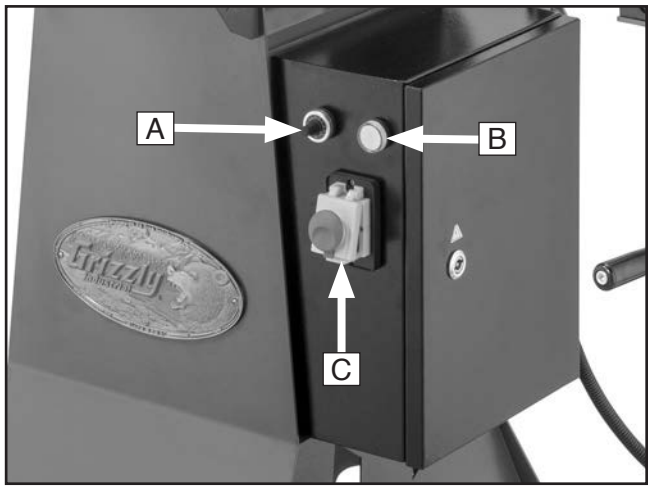


Figure 1. Control panel.

A. Speed Dial: Adjusts maximum hammer striking speed between 0–960 BPM (beats per minute).

Note: *Maximum striking speed is reached when foot switch is fully depressed.*

B. Power Lamp: Illuminates when machine is connected to power and ON button has been pressed.

C. ON/OFF Buttons w/E-Stop Cover: ON button enables foot switch control; OFF button disables foot switch control. Depressing E-Stop cover will disable machine and prevent motor start until released.

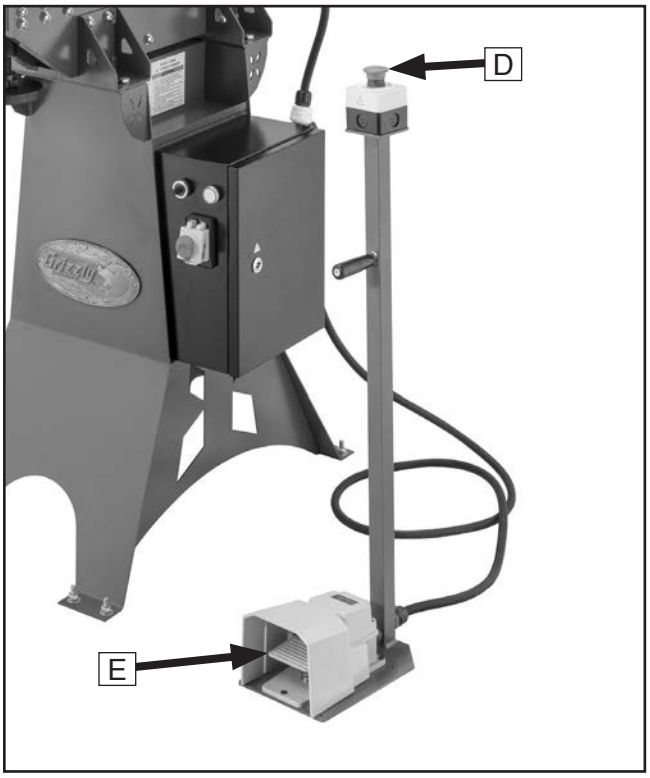


Figure 2. Mobile power controls.

D. EMERGENCY STOP Button: Stops machine and prevents machine from starting until reset. Twist button clockwise to reset.

E. Foot Switch: Starts hammer and controls hammer speed when ON button has been pressed. Speed depends on how far switch is depressed.

Manual Controls

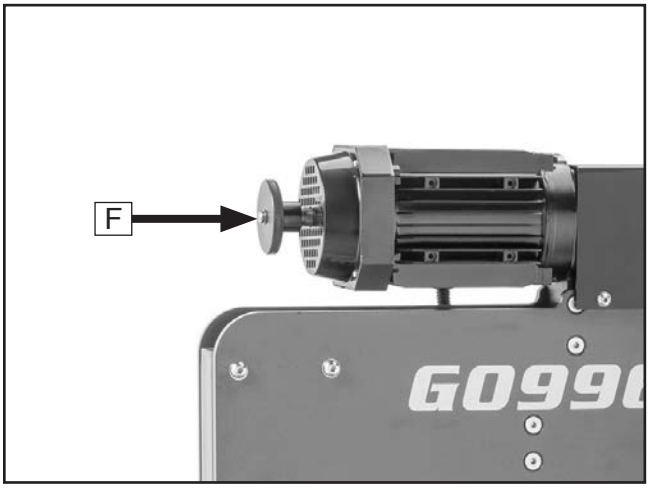


Figure 3. Feed handwheel.

F. Feed Handwheel: Manually moves hammer up and down when turned to aid in operation setup.

Hammer & Anvil

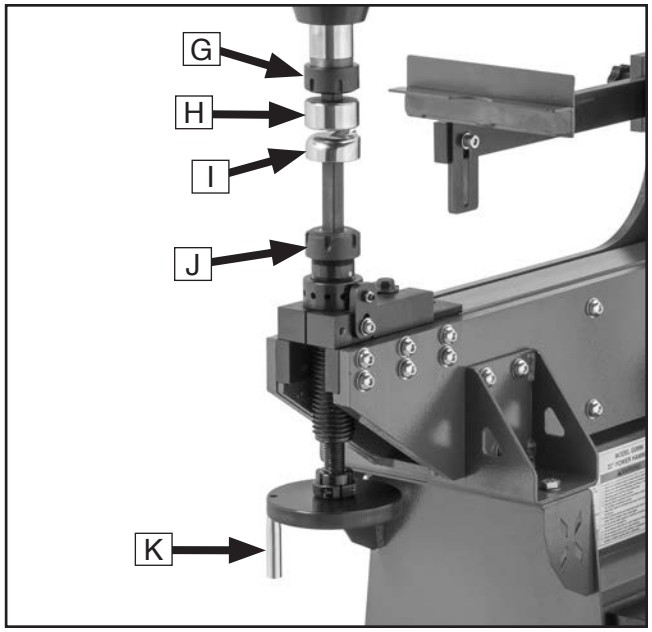


Figure 4. Hammer and anvil components.

G. Hammer Collet: Secures hammer die or tool holder to piston.

H. Hammer Die: Strikes workpiece against anvil die to form workpiece.

I. Anvil Die: Provides surface for hammer die to strike against.

J. Anvil Collet: Secures anvil die or tool holder.

K. Anvil Height Handwheel: Adjusts anvil down for die changes; adjusts anvil up for operation.

Fence

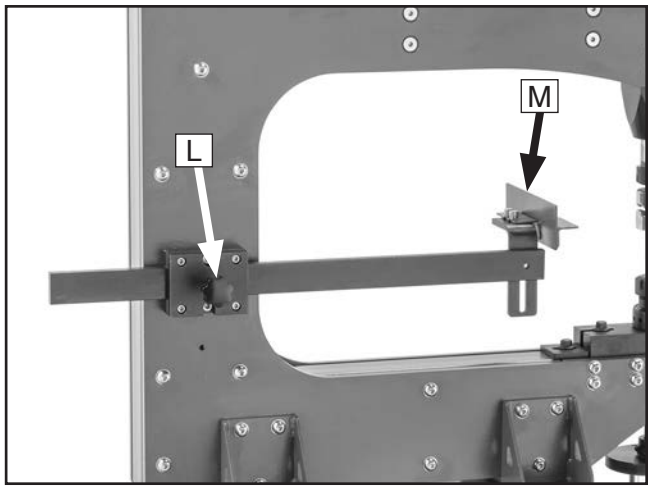


Figure 5. Fence components.

L. Fence Lock Knob: Loosens to adjust fence position; tightens to secure.

M. Straight Fence: Provides flat support for workpiece during operation.

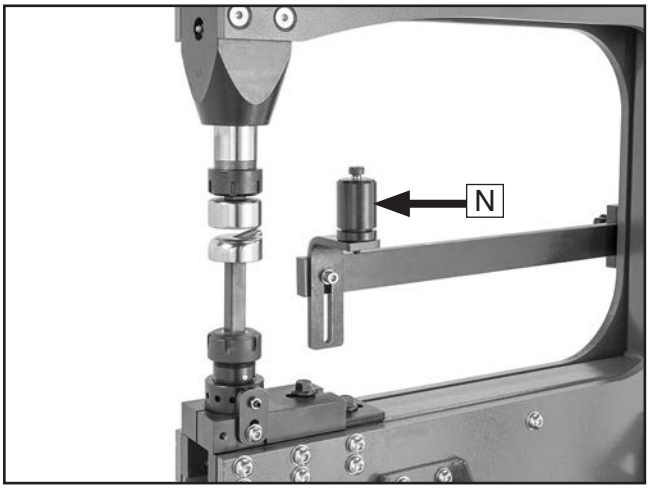


Figure 6. Roller fence.

N. Roller Fence: Provides curved support for workpiece during operation.

Hammer Rigidity

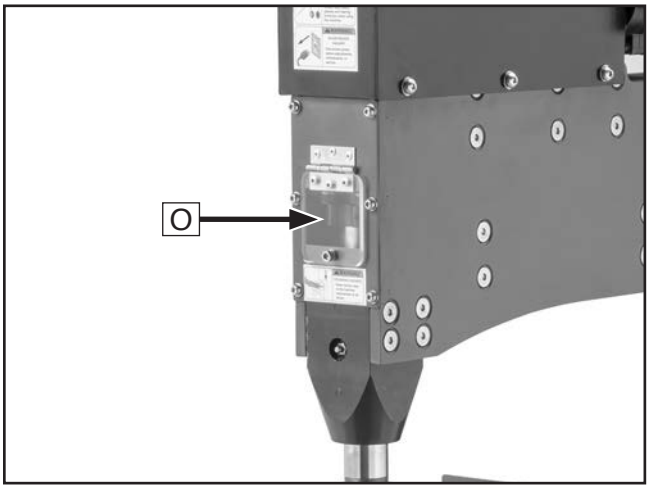


Figure 7. Adjustable spring block.

O. Adjustable Spring Block: Rotates between rigid and spring mode settings. Rigid mode is for high-speed operations (like when planishing) that require hammer depth consistency; spring mode is for slower-speed operations requiring more flexibility (like shrinking and stretching).

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 · To Order Call: (800) 523-4777 · Fax #: (800) 438-5901

MODEL G0996
22" POWER HAMMER

Product Dimensions:

Weight	365 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	21-1/2 x 49 x 71 in.
Footprint (Length x Width)	32 x 18-1/2 in.

Shipping Dimensions:

Type	Wood Crate
Content	Machine
Weight	450 lbs.
Length x Width x Height	35 x 34 x 41 in.
Must Ship Upright	Yes

Electrical:

Power Requirement	110V, Single-Phase, 60 Hz
Full-Load Current Rating	13A
Minimum Circuit Size	15A
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	120 in.
Power Cord Gauge	14 AWG
Plug Included	Yes
Included Plug Type	5-15
Switch Type	ON/OFF Push Button w/Foot Switch Controls
Inverter (VFD) Type	INVT GD20-1R1G-S12
Inverter (VFD) Size	1.5 HP

Motors:

Main

Horsepower	1.5 HP
Phase	3-Phase
Amps	2.8A
Speed	940 RPM
Type	TEFC Induction
Power Transfer	Direct
Bearings	Sealed & Permanently Lubricated

Main Specifications:

Operation Information

Throat Height	15-1/2 in.
Throat Depth	22 in.
Maximum Distance Between Hammer & Anvil	5-1/8 in.
Maximum Workpiece Thickness (Mild Steel)	18 Gauge (1.2mm)
Maximum Workpiece Thickness (Aluminum/Copper)	16 Gauge (1.6mm)
Stroke Speed	0 - 960 BPM
Stroke Length	1/4 in.
Anvil Travel	3-5/8 in.

Construction

Frame	Steel
Base	Steel
Drive Shafts	Steel
Backstop Arm	Steel
Guide Fence	Steel
Guide Roller	Steel
Dies	Cr12 Steel, Nylon
Paint Type/Finish	Powder Coated

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	20 Minutes
Serial Number Location	ID Label
ISO 9001 Factory	Yes

Features:

Variable Stroke Speed of 0–960 Beats Per Minute
15-1/2" x 22" Throat Capacity
Built-In Die Storage in Base
Mobile Foot Pedal Controls
Set of 20mm Round Holders for Round-Shafted Dies
Set of 5/8" Universal Tool Holders for Custom Tooling
(1) Steel Flat Hammer Die, (16) Steel Radius Anvil Dies
(1) Nylon Flat Hammer Die, (13) Nylon Radius Anvil Dies
Set of Steel Thumbnail Shrinking Dies
Set of Steel 3.1" Doming Dies
(1) Steel Linear Stretching Anvil Die
Set of Steel Louver Dies
(3) Steel Beading Die Sets

SECTION 1: SAFETY

For Your Own Safety, Read Instruction Manual Before Operating This Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures. Always use common sense and good judgment.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **Alerts the user to useful information about proper operation of the machine to avoid machine damage.**

Safety Instructions for Machinery

⚠WARNING

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make your workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are NOT approved safety glasses.

⚠WARNING

WEARING PROPER APPAREL. Do not wear loose clothing, gloves, neckties, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

HAZARDOUS DUST. Dust created by machinery operations may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material. Always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly BEFORE operating machine.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine ***OFF*** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

DAMAGED PARTS. Regularly inspect machine for damaged, loose, or mis-adjusted parts—or any condition that could affect safe operation. Immediately repair/replace BEFORE operating machine. For your own safety, DO NOT operate machine with damaged parts!

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

EXPERIENCING DIFFICULTIES. If at any time you experience difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (570) 546-9663.

Additional Safety for Power Hammers

⚠WARNING

Serious injury can occur from crushing and impact injuries if body parts are caught between hammer and anvil during operation. Sharp workpiece edges can cause lacerations. To minimize risk of injury, anyone operating machine MUST completely heed hazards and warnings below.

CRUSHING INJURIES. Hammer can quickly crush fingers, hands, or other body parts. Never place body parts between hammer and anvil during operation. Holding workpiece too close to dies during operation increases risk of impact and crushing injuries.

SECURING MACHINE. Before using, secure machine to floor so it can support weight and dynamic forces involved in forming sheet metal. Otherwise, machine may unexpectedly move or tip during operation, causing serious injury or property damage.

METAL WORKPIECES. Sharp edges on sheet metal can quickly produce severe cuts. Always wear protective gloves when handling metal. Chamfer/de-burr sharp edges before hammering workpiece with this machine. If workpiece should unexpectedly fall, laceration or impact injury could result. Wear steel-toed boots. Do not leave workpieces on floor where they present slip hazard.

DIE INSPECTION. Inspect dies for defects and replace broken die before use. A cracked die could shatter and eject projectiles when struck during operation.

FOOT PEDAL. Keep foot pedal protected from unintentional operation.

CAPACITY. Exceeding capacity of machine may result in sudden breakage that ejects dangerous projectiles, or causes machine damage. Machine is only intended to form ferrous and non-ferrous sheet metal. Do not attempt to process glass, ceramic, plastic, or other material not intended for this machine. Only use sheet metal that is within rated capacity of this machine (refer to **Machine Data Sheet**).

FORGING. This machine is not intended for forging operations. Do not use hammer to strike hot workpieces.

DIE SETUP. Manually feed hammer through full range of motion to check dies for clearance before operation. Dies are not designed for direct impact and could break apart, becoming dangerous projectiles.

COMBUSTIBLES. Hammer striking workpiece may produce sparks. Do not use machine around combustibles that could be ignited by sparks.

BODY POSITION. Losing your balance while forming could result in impact or crushing injuries. Make sure your body and footing are balanced and in good position to support your movement and momentum while operating.

⚠WARNING

Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

SECTION 2: POWER SUPPLY

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed. To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by an electrician or qualified service personnel in accordance with all applicable codes and standards.

⚠WARNING

Electrocution, fire, shock, or equipment damage may occur if machine is not properly grounded and connected to power supply.

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating at 110V ..... 13 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the specified circuit requirements.

⚠WARNING

Serious injury could occur if you connect machine to power before completing setup process. DO NOT connect to power until instructed later in this manual.

110V Circuit Requirements

This machine is prewired to operate on a power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage 110V, 115V, 120V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Power Supply Circuit ..... 15 Amps
Plug/Receptacle ..... NEMA 5-15

A power supply circuit includes all electrical equipment between the breaker box or fuse panel in the building and the machine. The power supply circuit used for this machine must be sized to safely handle the full-load current drawn from the machine for an extended period of time. (If this machine is connected to a circuit protected by fuses, use a time delay fuse marked D.)

⚠CAUTION

For your own safety and protection of property, consult an electrician if you are unsure about wiring practices or electrical codes in your area.

Note: *Circuit requirements in this manual apply to a dedicated circuit—where only one machine will be running on the circuit at a time. If machine will be connected to a shared circuit where multiple machines may be running at the same time, consult an electrician or qualified service personnel to ensure circuit is properly sized for safe operation.*

Grounding & Plug Requirements

This machine MUST be grounded. In the event of certain malfunctions or breakdowns, grounding reduces the risk of electric shock by providing a path of least resistance for electric current.

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug. Only insert plug into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances. DO NOT modify the provided plug!

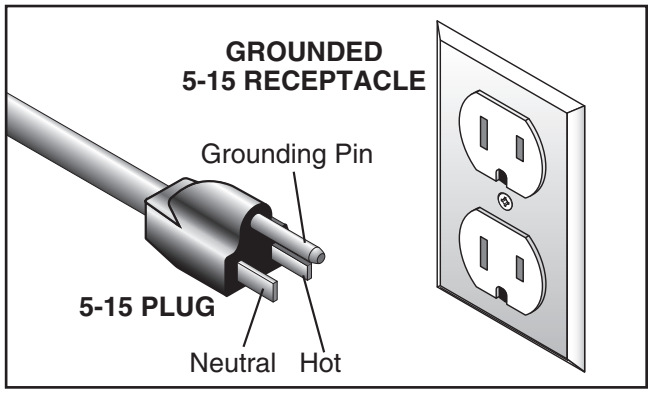
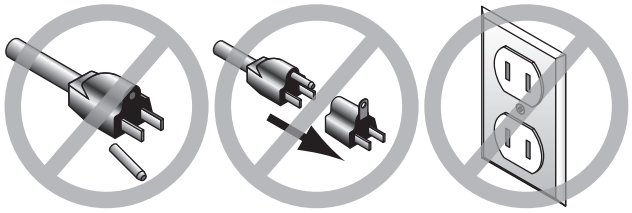


Figure 8. Typical 5-15 plug and receptacle.

⚠CAUTION



SHOCK HAZARD!

Two-prong outlets do not meet the grounding requirements for this machine. Do not modify or use an adapter on the plug provided—if it will not fit the outlet, have a qualified electrician install the proper outlet with a verified ground.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the machine is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

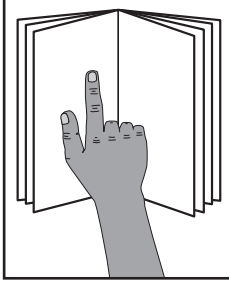
We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which can damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must be in good condition and contain a ground wire and matching plug/receptacle. Additionally, it must meet the following size requirements:

Minimum Gauge Size.....12 AWG
Maximum Length (Shorter is Better).....50 ft.

SECTION 3: SETUP

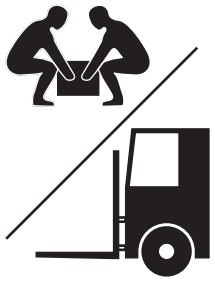


⚠WARNING

This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!

⚠WARNING

Wear safety glasses during the entire setup process!



⚠WARNING

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

Needed for Setup

The following items are needed, but not included, for the setup/assembly of this machine.

Description	Qty
• Safety Glasses (for each person)	1 Pr.
• Assistants	2
• Disposable Rags	As Needed
• Cleaner/Degreaser	As Needed
• Disposable Gloves	As Needed
• Lifting Sling (Rated for at least 575 lbs.)	1
• Lifting Equipment (Rated for at least 575 lbs.)	1
• Wrenches or Sockets 17mm	2
• Wrench or Socket 16mm	1
• Scissors/Utility Knife	1
• Crowbar	1
• Phillips Head Screwdriver #2 or Power Drill w/#2 Bit	1
• Mounting Hardware	As Needed

Unpacking

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. ***If items are damaged, please call us immediately at (570) 546-9663.***

IMPORTANT: Save all packaging materials until you are completely satisfied with the machine and have resolved any issues between Grizzly or the shipping agent. *You MUST have the original packaging to file a freight claim. It is also extremely helpful if you need to return your machine later.*

Inventory

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

Machine (Figure 9) **Qty**

A. Power Hammer..... 1
B. Steel Thumbnail Shrinking Dies (Preinstalled) .....1 Hammer, 1 Anvil
C. Straight Fence (Preinstalled)..... 1
D. Foot Switch Assembly..... 1
E. Machine Base..... 1

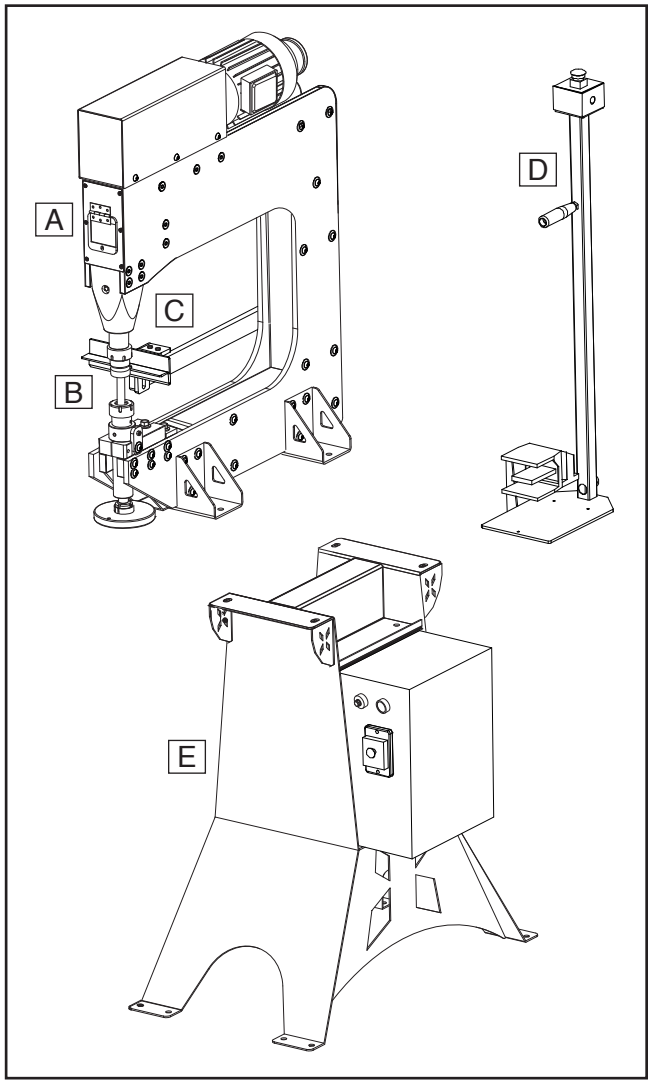


Figure 9. Machine inventory.

Loose Dies & Holders (Figure 10) **Qty**

F. Steel Flat Hammer Die..... 1
G. Steel Radius Anvil Dies (¾", ⅞", 1", 1⅛", 1½", 1⅞", 2", 3", 4", 5", 6" with 1/16" radius edge, 6" with ¼" radius edge, 8", 14½", 24", 36") 16
H. Nylon Flat Hammer Die..... 1
I. Nylon Radius Anvil Dies (¾", ⅞", 1⅛", 1½", 1⅞", 4", 5", 6" with 1/16" radius edge, 6" with ¼" radius edge, 8", 14½", 24", 36")..... 13
J. Steel Anvil Linear Stretching Die..... 1
K. Steel Louver Dies.....1 Hammer, 1 Anvil
L. Steel Hammer Beading Dies (½", ½", ⅜").....3 Hammer, 3 Anvil
M. Steel Doming Dies 3.1"....1 Hammer, 1 Anvil
N. Round Die Holders.....1 Hammer, 1 Anvil
O. Universal Holders ⅝" .....1 Hammer, 1 Anvil

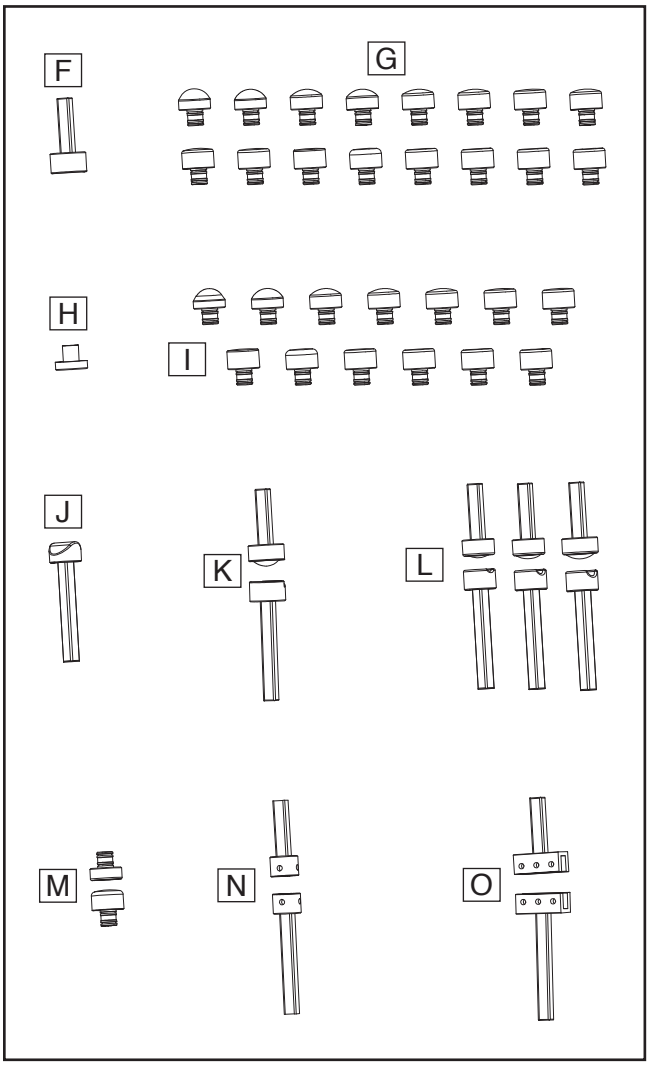


Figure 10. Loose dies and holders.

Other (Figure 11)	Qty
P. Roller Fence	1
Q. Shoulder Screw M8-1.25 x 80	1
R. Anvil Height Handwheel Handle	1
S. Shoulder Screw M8-1.25 x 74	1
T. Collet Wrench ER32	1
U. Hex Wrench Set 1.5–10mm (9-Pc.)	1
V. Control Box Key	1
W. Spanner Wrench 34–36mm	1
X. Combo Wrench 15mm	1
Y. Hex Bolts M10-1.5 x 25	4
Z. Flat Washers 10mm	9
AA. Lock Washers 10mm	4
AB. Hex Nuts M10-1.5	4

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

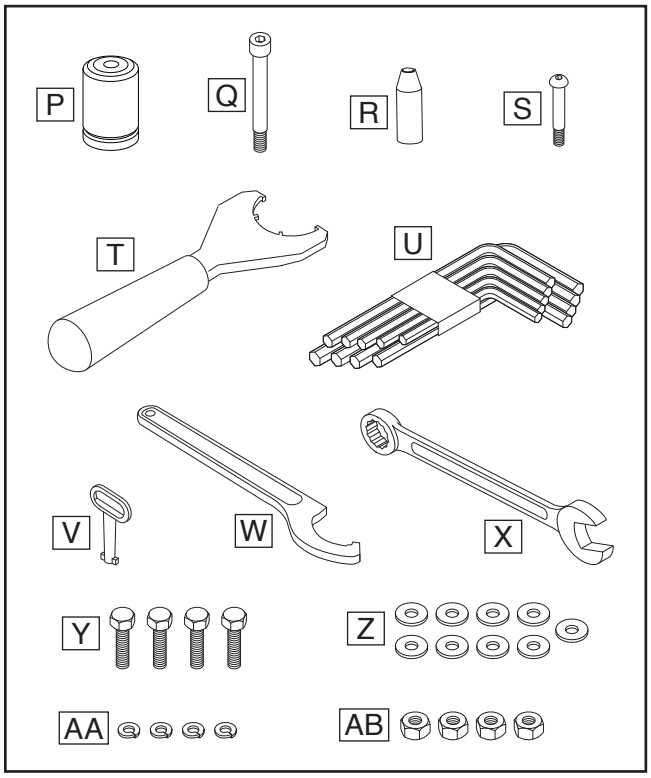
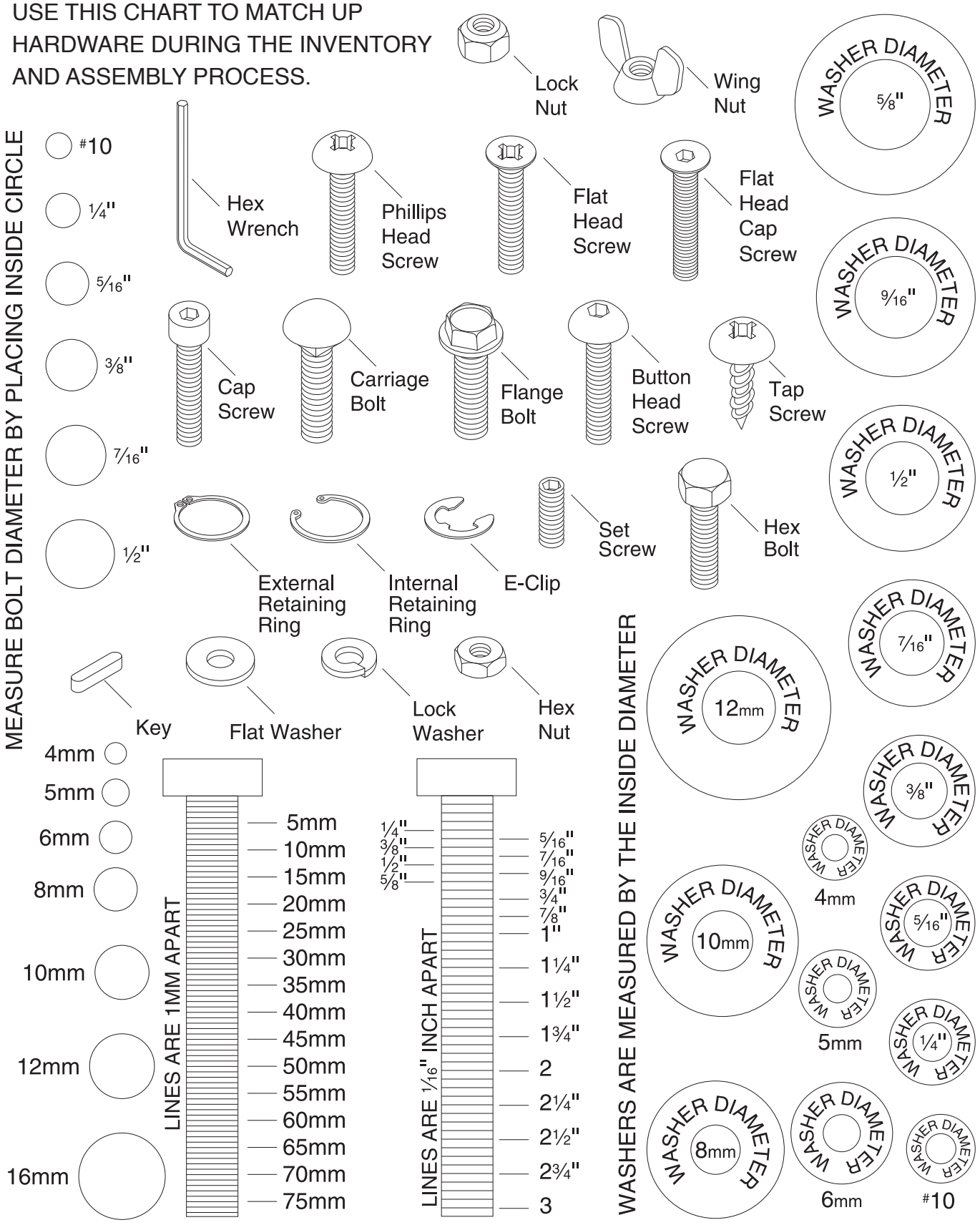


Figure 11. Other inventory.

Hardware Recognition Chart

USE THIS CHART TO MATCH UP HARDWARE DURING THE INVENTORY AND ASSEMBLY PROCESS.



Cleanup

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

Before cleaning, gather the following:
- Disposable rags
- Cleaner/degreaser (WD•40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

Basic steps for removing rust preventative:

1. Put on safety glasses.

2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.

3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. Avoid using these products to clean machinery.

⚠CAUTION

Many cleaning solvents are toxic if inhaled. Only work in a well-ventilated area.

NOTICE

Avoid harsh solvents like acetone or brake parts cleaner that may damage painted surfaces. Always test on a small, inconspicuous location first.

T23692—Orange Power Degreaser
A great product for removing the waxy shipping grease from the ***non-painted*** parts of the machine during clean up.

Figure 12. T23692 Orange Power Degreaser.

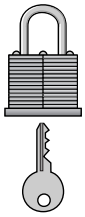
Site Considerations

Weight Load

Refer to the **Machine Data Sheet** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual. **See below for required space allocation.**



⚠CAUTION

Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.

Physical Environment

The physical environment where the machine is operated is important for safe operation and longevity of machine components. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature range exceeds 41°–104°F; the relative humidity range exceeds 20%–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave enough space around machine to disconnect power supply or apply a lockout/tagout device, if required.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

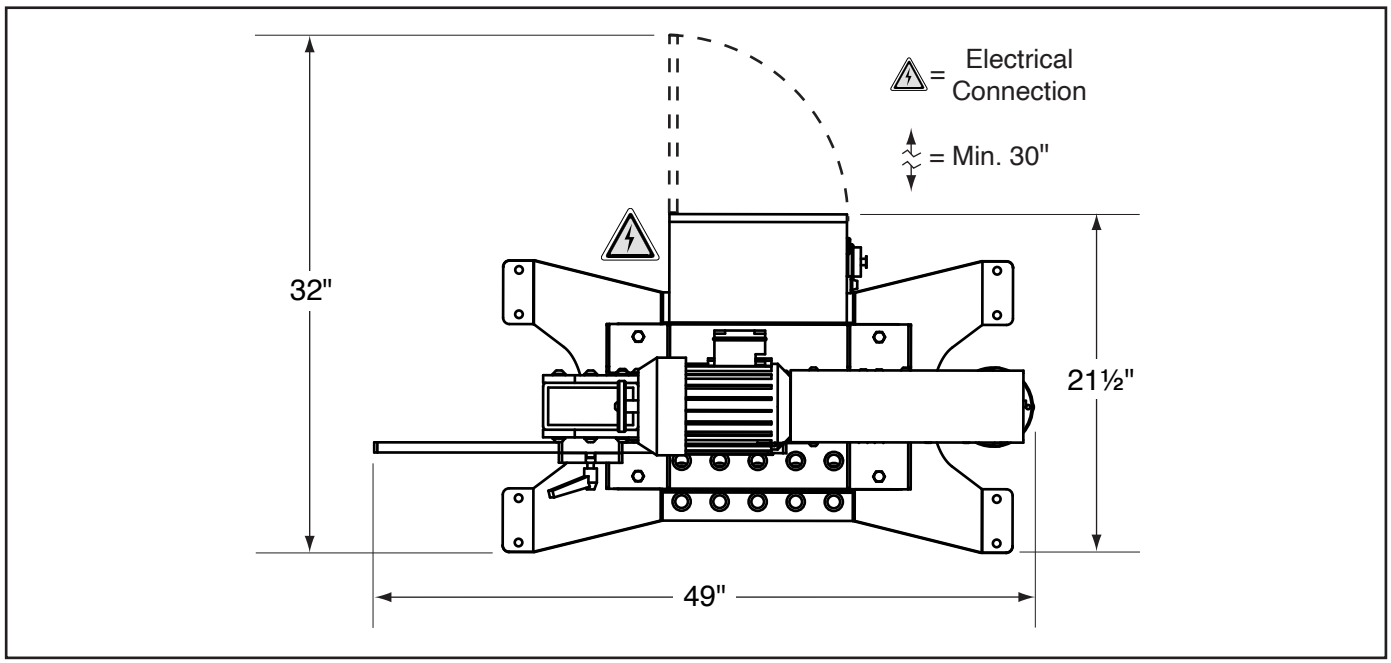


Figure 13. Minimum working clearances.

Assembly

The machine must be fully assembled before it can be operated. Before beginning the assembly process, refer to **Needed for Setup** and gather all listed items. To ensure the assembly process goes smoothly, first clean any parts that are covered or coated in heavy-duty rust preventative (if applicable).

To assemble machine:

1. Move crate near final machine mounting location.

2. Remove crate top and sides, remove packing materials, then place loose items aside.

3. Remove fasteners securing machine to pallet.

4. Place machine base in desired machine location.

5. Refer to **Anchoring to Floor** on **Page 20** to secure machine base to floor before proceeding with assembly.

6. Route lifting sling through hammer frame, as shown in **Figure 14** to best center weight, then attach sling ends to forklift or hoist.

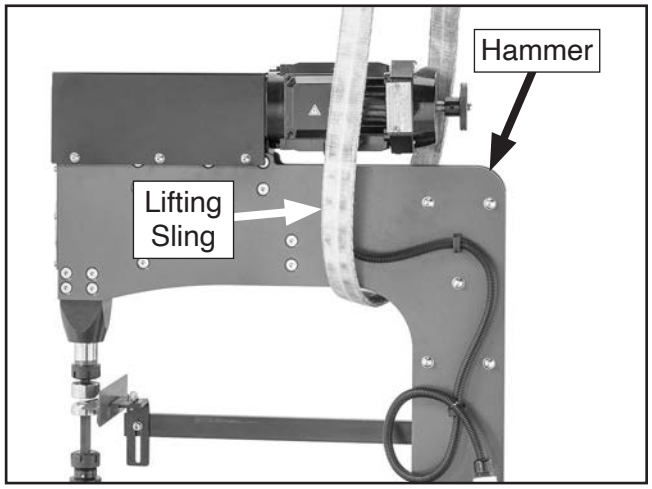
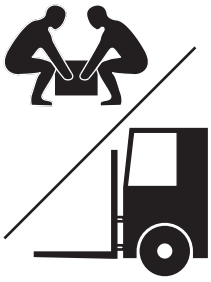


Figure 14. Lifting sling routed through hammer frame.



⚠WARNING

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

7. With (2) assistants to steady machine to prevent it sliding out of lifting sling, carefully lift hammer and place it onto machine base.

   IMPORTANT: Machine frame opening must be on same side as control panel controls (see **Figure 15**).

8. Attach machine to base with (4) M10-1.5 x 25 hex bolts, (8) 10mm flat washers, (4) 10mm lock washers, and (4) M10-1.5 hex nuts (see **Figure 15**).

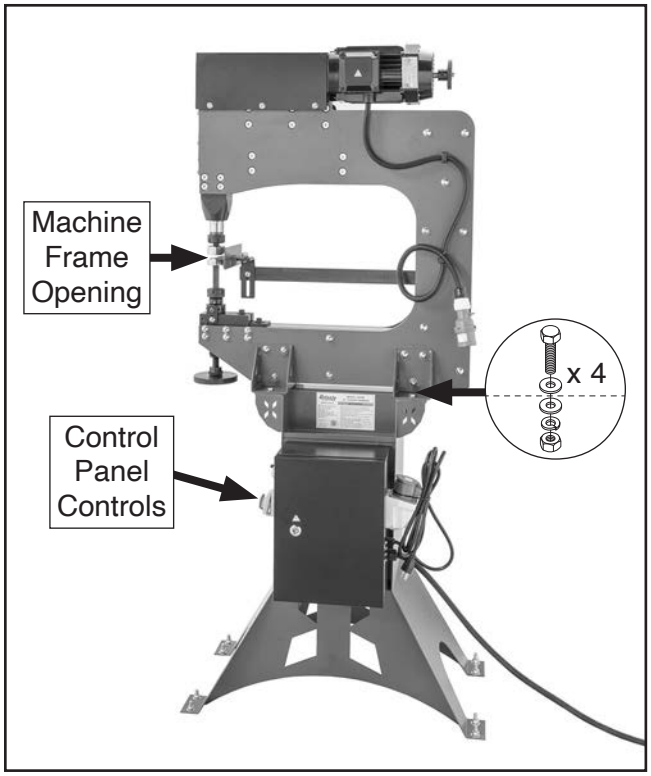


Figure 15. Hammer in correct orientation and attached to machine base.

9. Attach anvil height handwheel handle to anvil height handwheel with M8-1.25 x 74 shoulder screw (see **Figure 16**).

10. Remove cable ties from hammer power conduit and power cord, then connect conduit plug to rear of control box (see **Figure 16**).

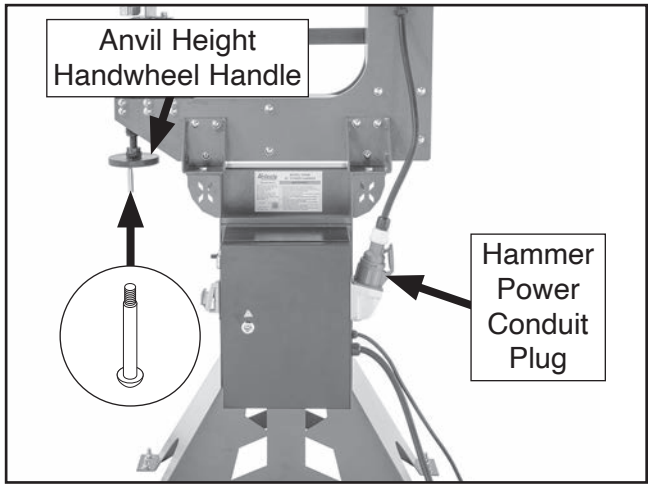


Figure 16. Anvil height handwheel handle installed and hammer power conduit connected.

11. Place foot switch assembly near hammer mechanism and control panel where it will be accessible during operations.

12. Place uninstalled dies and die/tool holders in storage holes on left side of machine (see **Figure 17**).

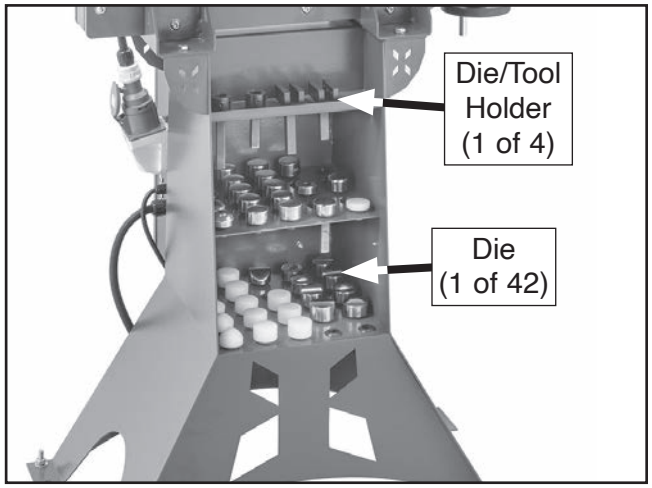


Figure 17. Example of uninstalled dies and die/tool holders stored in storage holes.

Anchoring to Floor

Number of Mounting Holes 8
Diameter of Mounting Hardware..... ½"

Anchoring machinery to the floor prevents the machine from tipping or shifting due to the dynamic forces on the machine while operating. It also reduces vibration that will occur during hammering operations, resulting in a machine that runs more quietly and feels more solid.

If the machine will be installed in a commercial or workplace setting, or if it is permanently connected (hardwired) to the power supply, local codes may require that it be anchored to the floor.

Anchoring to Concrete Floors

Lag shield anchors with lag screws (see below) are a popular way to anchor machinery to a concrete floor, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. However, anytime local codes apply, you MUST follow the anchoring methodology specified by the code.

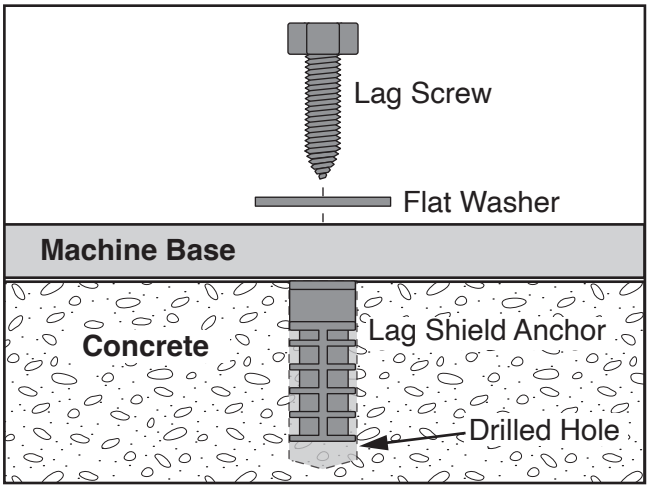


Figure 18. Popular method for anchoring machinery to a concrete floor.

Test Run

Once assembly is complete, test run the machine to ensure it is properly connected to power and safety components are functioning correctly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. The **Troubleshooting** table in the **SERVICE** section of this manual can help.

For issues concerning the VFD, refer to the INVT Goodrive 20-UL manual found at **https://www.invt.com**. All VFD servicing should be done by an authorized and trained technician. The machine operator will never need to adjust the VFD parameters and tampering with the VFD setting can void the warranty.

The Test Run consists of verifying the following: 1) The motor powers up and runs correctly, 2) the EMERGENCY STOP button disables the machine properly, and 3) the ON/OFF switch Emergency Stop cover disables the machine properly.

⚠WARNING

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, machine until the information is understood.

⚠WARNING

DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run machine:

1. Loosen fence lock knob (see **Figure 19**), and move fence away from installed dies.

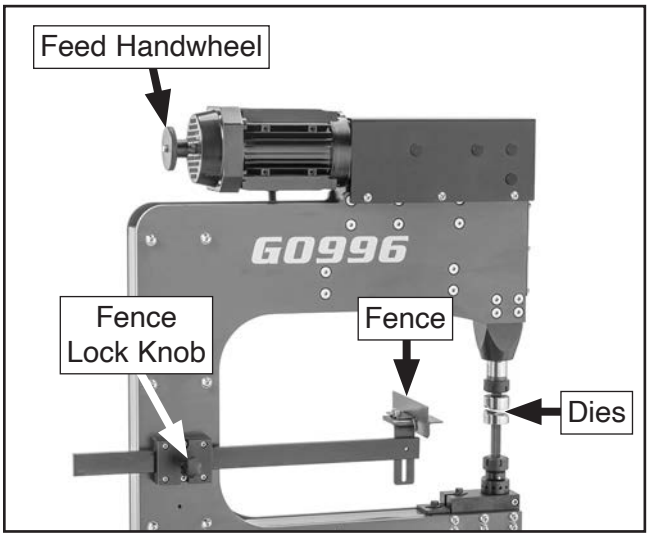


Figure 19. Location of fence components and feed handwheel.

2. Turn hammer collet counterclockwise (as viewed from above) to fully tighten collet and ensure hammer die (see **Figure 20**) will not come loose during following steps.

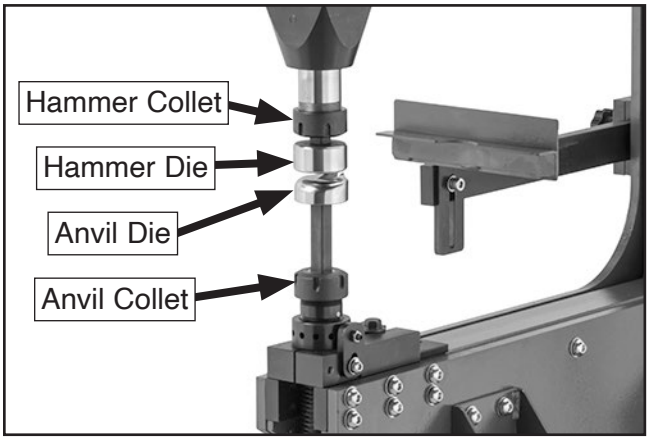


Figure 20. Location of hammer and anvil dies and collets.

3. Turn feed handwheel to move hammer through its full range of movement (see **Figure 19**).

   — If hammer moves through its full range of movement without hammer die contacting anvil die (see **Figure 20**), proceed to **Step 8**.

   — If hammer *does not* move through its full range of movement without hammer die contacting anvil die (see **Figure 20**), anvil height must be adjusted. Proceed to **Step 4**.

4. Loosen cap screw on anvil height lock collar shown in **Figure 21**.

5. Loosen anvil height lock collar and spanner nut (see **Figure 21**).

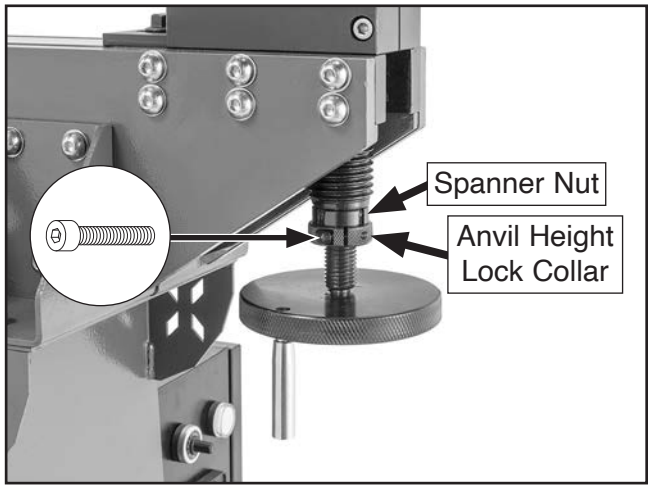


Figure 21. Location of anvil height lock collar and spanner nut.

6. Turn anvil collet counterclockwise (as viewed from above) a few turns to loosen it (see **Figure 22**).

7. Turn anvil height handwheel clockwise (as viewed from above) to lower anvil die out of hammer die path (see **Figure 22**).

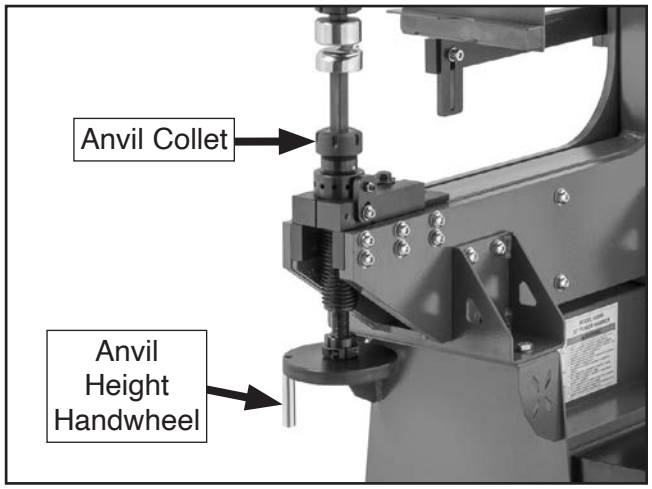


Figure 22. Location of anvil collet and anvil height handwheel.

8. Turn anvil collet clockwise (as viewed from above) to fully tighten collet.

9. Without moving anvil height handwheel, tighten anvil height lock spanner nut.

10. Tighten anvil height lock collar against spanner nut, then tighten cap screw to secure.

11. Clear all setup tools away from machine.

12. On foot switch assembly, press EMERGENCY STOP button (see **Figure 23**).

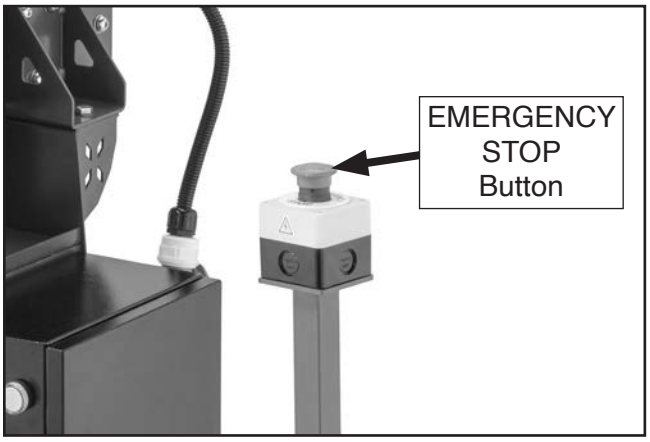


Figure 23. Location of EMERGENCY STOP button.

13. Turn speed dial all the way counterclockwise (see **Figure 24**).

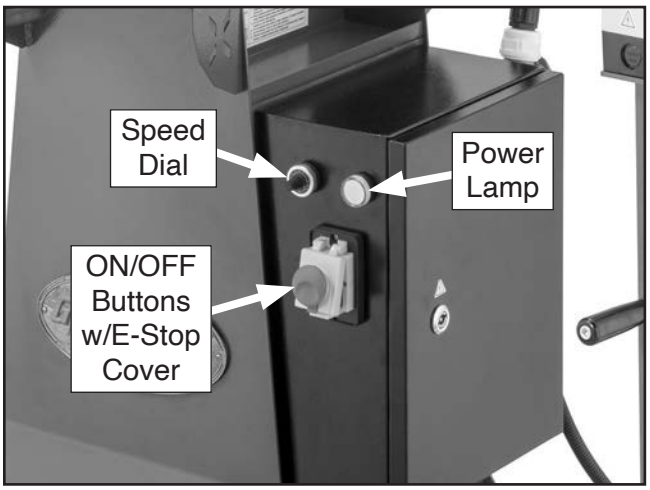


Figure 24. Location of control panel components.

14. Connect machine to power.

15. Twist EMERGENCY STOP button clockwise until it springs out (see **Figure 25**). This resets switch so machine can start.

Figure 25. Resetting EMERGENCY STOP button.

16. Lift Emergency Stop cover on ON/OFF buttons (see **Figure 24** on **Page 22**), then press ON button to enable foot switch control. Power lamp will illuminate.

17. Wait 10 seconds for VFD overcurrent safeguards to disengage, then, while keeping hands and fingers away from hammer and anvil dies, press and hold foot switch to start hammer (see **Figure 26**). Verify motor starts up and runs smoothly without any unusual problems or noises.

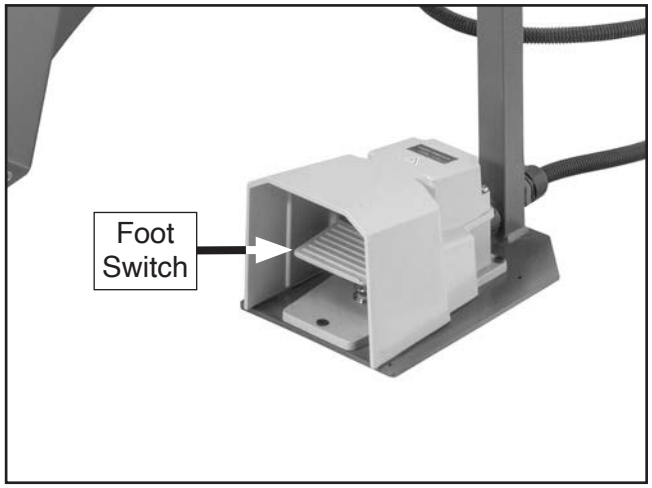


Figure 26. Location foot switch.

18. Slowly turn speed dial clockwise to test variable-speed function.

19. Without releasing foot switch, press EMERGENCY STOP button to stop hammer.

20. Release foot switch, then WITHOUT resetting EMERGENCY STOP button, try to start hammer by pressing foot switch. Hammer should not start.

— If hammer *does not* start, safety feature of EMERGENCY STOP button is working correctly.

— If hammer *does* start, immediately turn machine ***OFF*** and disconnect power. Safety feature of EMERGENCY STOP button is NOT working properly and must be replaced before further using machine.

21. Release foot switch, then reset EMERGENCY STOP button.

22. Press ON button, wait 10 seconds for VFD overcurrent safeguards to disengage, then press and hold foot switch to start hammer.

23. Without releasing foot switch, press Emergency Stop cover on ON/OFF buttons to stop hammer.

— If cover snaps closed and machine powers down, safety feature of Emergency Stop cover is working correctly. Congratulations! Test Run is complete.

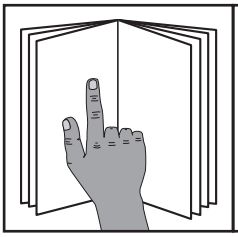
— If cover *does not* snap closed or machine *does not* power down, immediately turn machine ***OFF*** and disconnect power. Safety feature of Emergency Stop cover is NOT working properly and must be replaced. Contact Technical Support.

SECTION 4: OPERATIONS

Operation Overview

The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is **not** intended to be an instructional guide. To learn more about specific operations, read this entire manual, seek additional training from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

⚠WARNING

Body parts can be crushed by hammer or cut by sharp workpieces. Always wear safety glasses, protective gloves, and steel-toed footwear when operating machine or handling sheet metal.

NOTICE

If you are not experienced with this type of machine, WE STRONGLY RECOMMEND that you seek additional training outside of this manual. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

To complete a typical operation, the operator does the following:

1. Puts on safety glasses, protective gloves, and steel-toed footwear.
2. Deburrs any sharp workpiece edges.
3. Cleans workpiece and desired dies/tooling to prevent dirt and foreign objects from being embedded.
4. Installs appropriate dies for desired operation and adjusts anvil height for workpiece thickness.
5. Adjusts hammer rigidity, if necessary.
6. Uses feed handwheel to confirm there is clearance between hammer and anvil dies.
7. Installs appropriate fence and adjusts fence to best support workpiece.
8. Presses ON button to enable foot switch control and adjusts speed dial to desired maximum hammer speed.
9. Inserts workpiece between dies, then presses foot switch to start hammer.
10. While holding foot switch, moves workpiece between dies in order to strike workpiece for desired shrinking, stretching, beading, etc., effect.
11. Releases foot switch when operation is complete.
12. Waits for hammer to stop, then removes workpiece from between dies.
13. Turns machine ***OFF***.

Changing Dies

The hammer and anvil collets on the Model G0996 are designed to hold the square shaft dies included with the machine. To install one of the included round shaft dies, or custom tooling, a round die holder or universal holder must be installed in the collet as an adapter.

Tools Needed	Qty
Hex Wrench 4mm	1
Spanner Wrench 34–36mm	1
Wrench or Socket 15mm	1
Collet Wrench ER32	1
Straightedge 6"–9"	1

To change dies:

1. DISCONNECT MACHINE FROM POWER!

2. Move fence away from hammer and anvil dies (see **Adjusting Fence Depth** on **Page 31**).

3. Loosen cap screw on anvil height lock collar shown in **Figure 27**.

4. Loosen anvil height lock collar and spanner nut (see **Figure 27**).

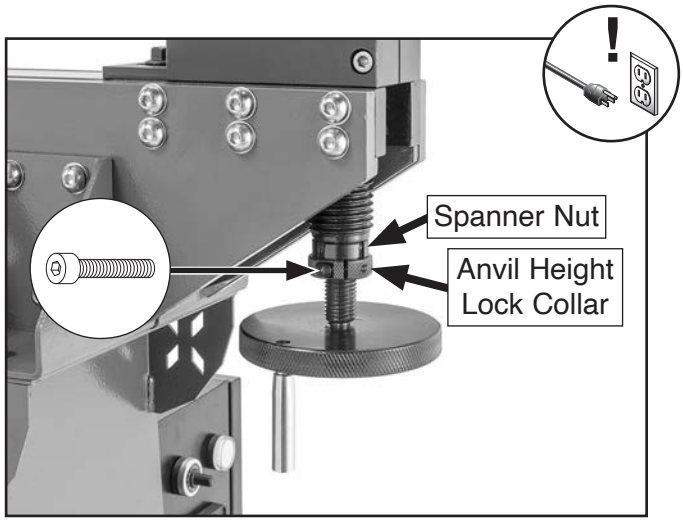


Figure 27. Location of anvil height lock collar and spanner nut.

5. Turn anvil collet counterclockwise (as viewed from above) a few turns to loosen it enough that anvil can be moved up and down in collet (see **Figure 28**).

6. Turn anvil height handwheel clockwise (as viewed from above) until anvil stops lowering (see **Figure 28**).

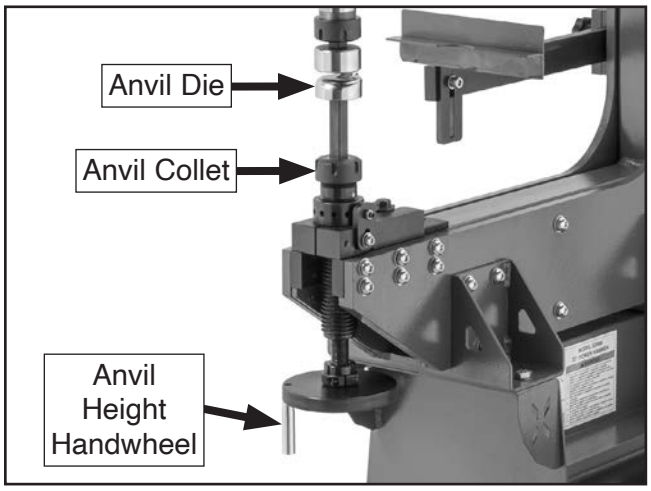


Figure 28. Location of anvil collet and anvil handwheel.

7. Loosen flange bolt shown in **Figure 29**, then slide anvil assembly toward you just enough so you can remove anvil die from collet, then slide assembly back into place.

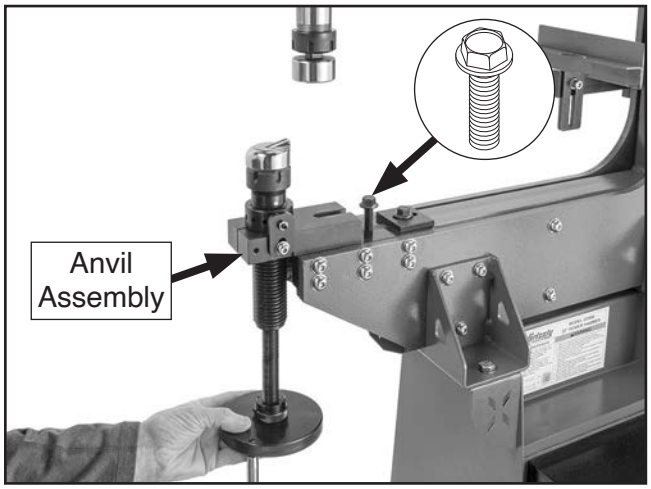


Figure 29. Anvil assembly moved toward operator for die removal.

8. Hold hammer die to prevent it from falling, and turn hammer collet clockwise (as viewed from above) until you can remove existing hammer die (see **Figure 30**).

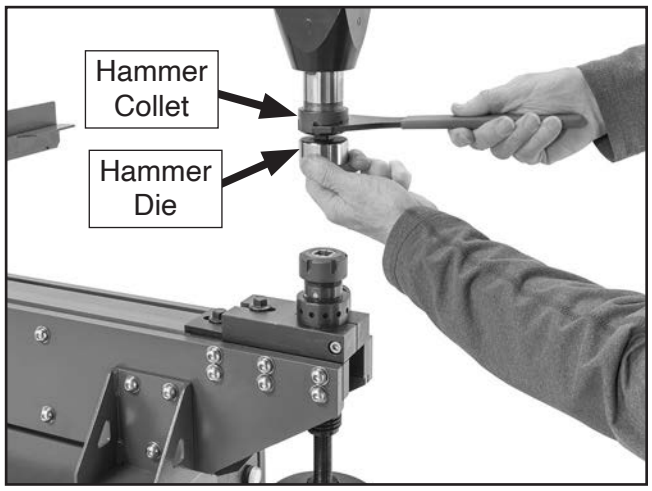


Figure 30. Removing hammer die from collet.

Note: *If there is not enough room to remove existing die, pull anvil assembly forward and out of the way.*

9. Insert desired hammer die as far into hammer collet as it will go, then tighten hammer collet to secure.

Note: *Some dies (thumbnail shrinking, beading, etc.) must be oriented a certain way for to function correctly.*

— If installing round-shafted die, secure die in short round die holder with (4) pre-installed set screws, then install holder in collet (see **Figure 31**).

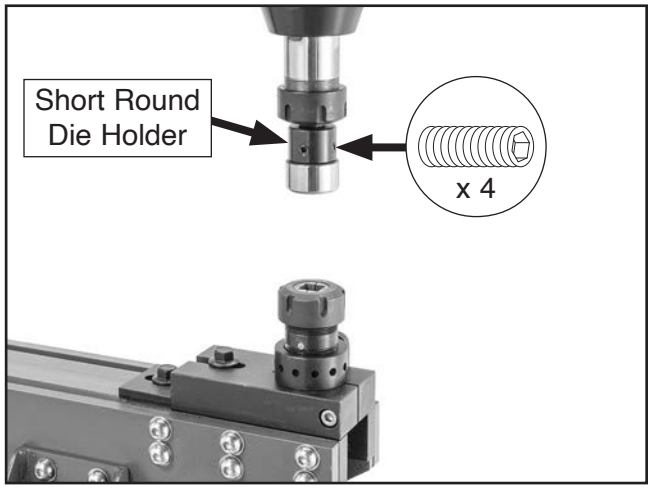


Figure 31. Example of round-shafted die installed in hammer collet.

— If installing custom tooling, secure tooling in short universal holder with (6) pre-installed set screws, then install holder in collet.

10. Slide anvil assembly forward just enough so you can insert desired anvil die as far into anvil collet as it will go, then slide assembly back into place.

Note: *Some dies (thumbnail shrinking, louver, beading, etc.) must be oriented to align with installed hammer die (see **Figure 32**).*

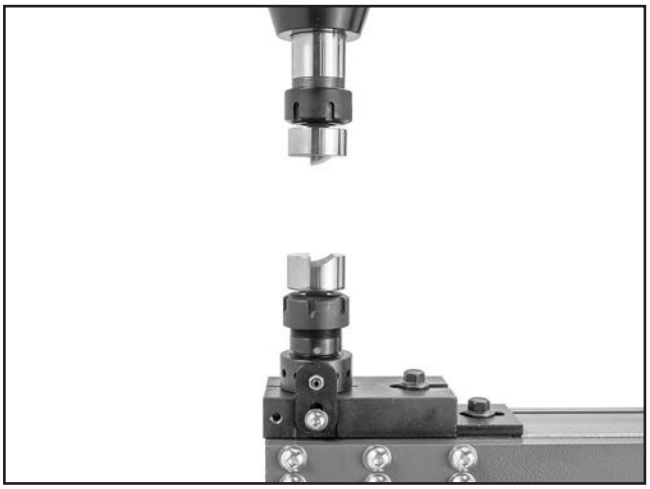


Figure 32. Anvil die oriented to align with hammer die (louver dies shown).

— If installing round-shafted die, secure die in long round die holder with (4) pre-installed set screws, then install holder in collet (see **Figure 33**).

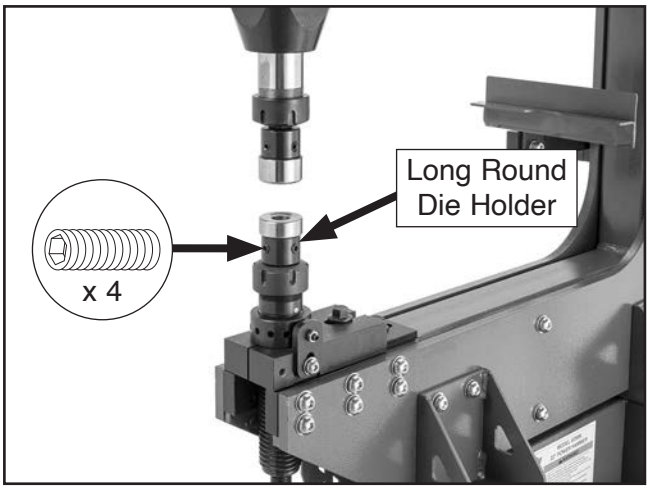


Figure 33. Example of round-shafted die installed in anvil collet.

— If installing custom tooling, secure tooling in long universal holder with (6) pre-installed set screws, then install holder in collet.

11. Push anvil assembly back so anvil adjustment block is flush against lock plate (see **Figure 34**), then tighten flange bolt loosened in **Step 7**.

12. Place straightedge against front and side of hammer and anvil collets (see **Figure 34**).

Note: *This alignment check will only be accurate for dies included with machine. Custom tooling may require different alignment methods.*

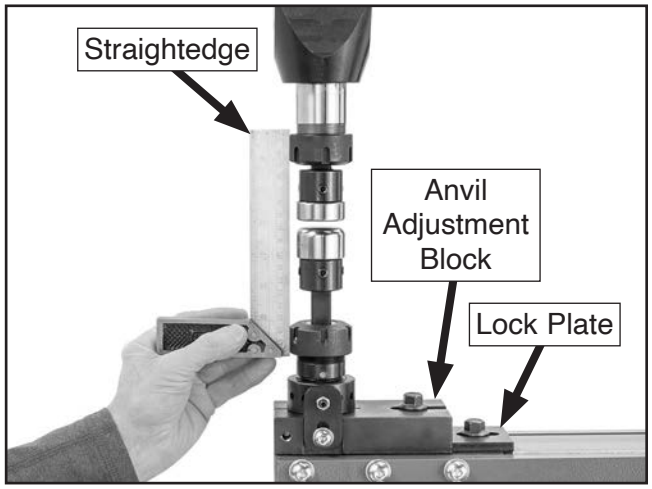


Figure 34. Checking collet alignment with anvil adjustment block flat against lock plate.

— If fronts and sides of collets *are* aligned, no adjustment is required. Proceed to **Step 13**.

— If fronts and sides of collets *are not* aligned, refer to **Aligning Anvil to Hammer** on **Page 36** before proceeding.

13. Adjust anvil height to workpiece thickness (see **Adjusting Anvil Height**).

14. Fully tighten anvil collet.

15. Without moving anvil height handwheel, tighten anvil height lock spanner nut.

16. Tighten anvil height lock collar against spanner nut, then tighten cap screw to secure.

Adjusting Anvil Height

Anytime the dies have been changed or you are introducing a new workpiece, the anvil height must be adjusted to the workpiece thickness. There must be clearance between the hammer and anvil dies to prevent direct contact between the two.

⚠WARNING

Direct contact of dies due to incorrect anvil height can damage dies and create dangerous projectiles. This risk is increased when hammer rigidity is set to rigid mode.

Use the anvil height handwheel, shown in **Figure 35**, to adjust the anvil die height in relation to the hammer die after you have installed the desired dies for your operation. Turning the handwheel clockwise (as viewed from above) will lower the anvil; turning the handwheel counterclockwise will raise the anvil.

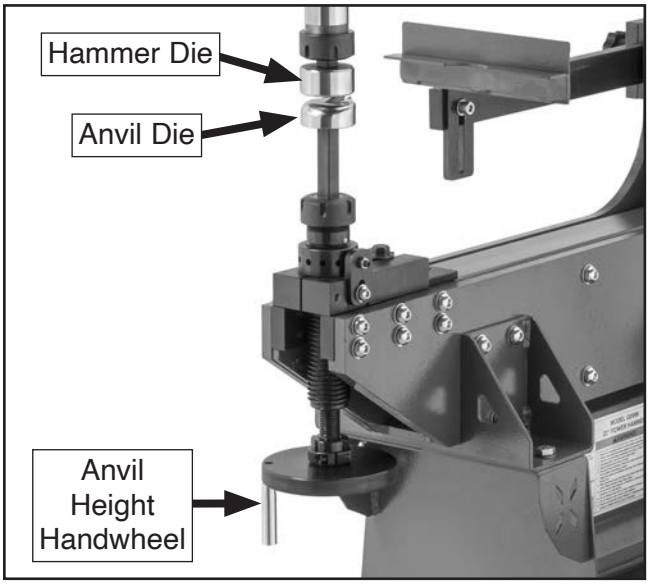


Figure 35. Location of dies and anvil height handwheel.

Some power hammer operations, like shrinking and stretching, will eventually flatten the workpiece enough that you need to use the anvil height handwheel to adjust the anvil die up as the workpiece is compressed.

To adjust anvil height:

1. DISCONNECT MACHINE FROM POWER!

2. Install desired dies as described in **Changing Dies** on **Page 25**.

3. Turn feed handwheel to move hammer die to its lowest point of travel (see **Figure 36**).

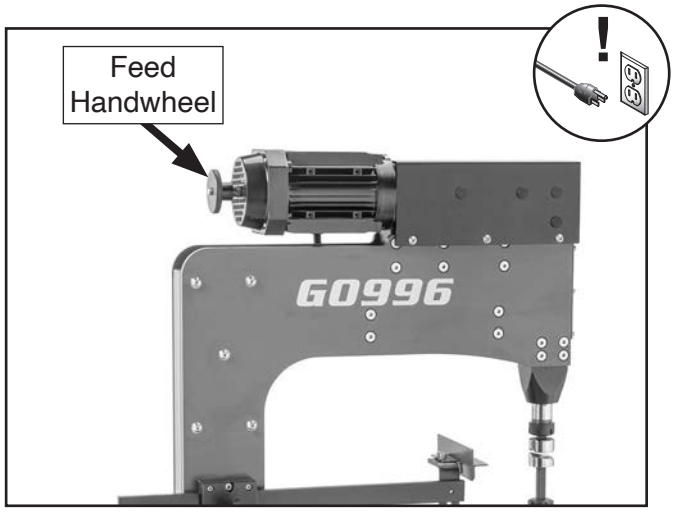


Figure 36. Location of feed handwheel.

4. Place workpiece between hammer and anvil dies, then use anvil height handwheel to adjust anvil up until workpiece has sliding clearance between hammer and anvil dies (see **Figure 37**).

   Note: *Dies should touch workpiece and inhibit up and down movement, but you should still be able to slide workpiece from side to side.*

Figure 37. Example of anvil die height adjusted to workpiece thickness.

Adjusting Hammer Rigidity

The position of the adjustable spring block on the Model G0996 switches the machine between rigid and spring action settings.

When the block is adjusted to disable piston spring movement, it removes play from the hammer dies to make the hammer travel consistent. This setting is best for high-speed planishing operations.

When the block is adjusted to allow piston springs to move up and down, there is play in the hammer travel. This setting is used for low-speed operations like shrinking or beading.

Tool Needed	**Qty**
Hex Wrench 5mm	1

To adjust hammer rigidity:

1. DISCONNECT MACHINE FROM POWER!

2. Fully loosen cap screw shown in **Figure 38**, and open clear block door.

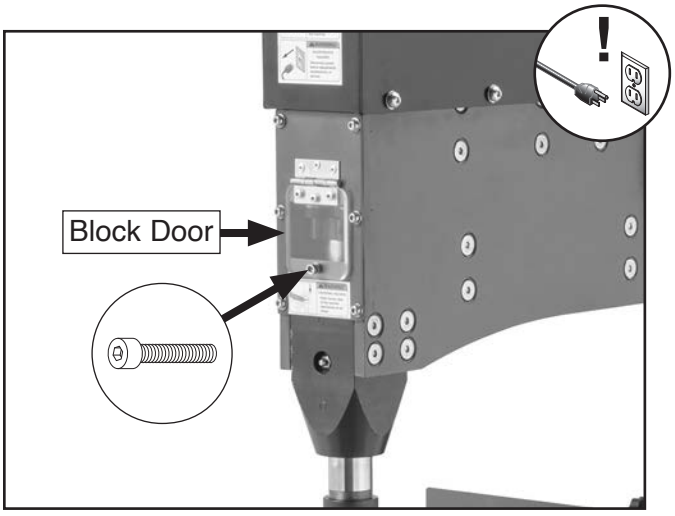


Figure 38. Location of block door and cap screw.

3. Rotate spring block (see **Figures 40–41**) to desired action setting.

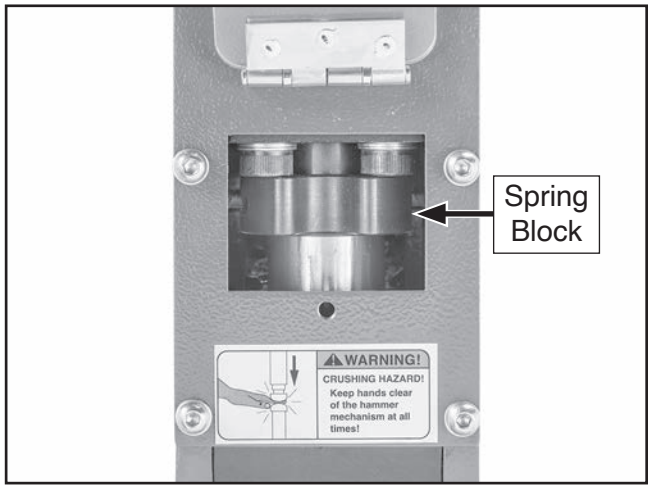


Figure 39. Spring block adjusted for rigid action.

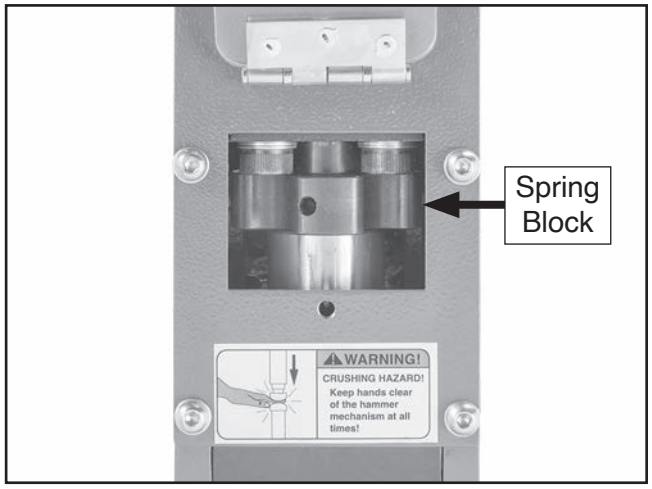


Figure 40. Spring block adjusted for spring action.

4. Close block door and secure with screw from **Step 2**.

Adjusting Fence

The Model G0996 comes with two fences: a straight fence for supporting workpieces with a straight edge requiring side-to-side, parallel movement (see **Figure 41**) and a roller fence for supporting workpieces with a concave or convex edge (see **Figure 42**) or some kind of curved movement.

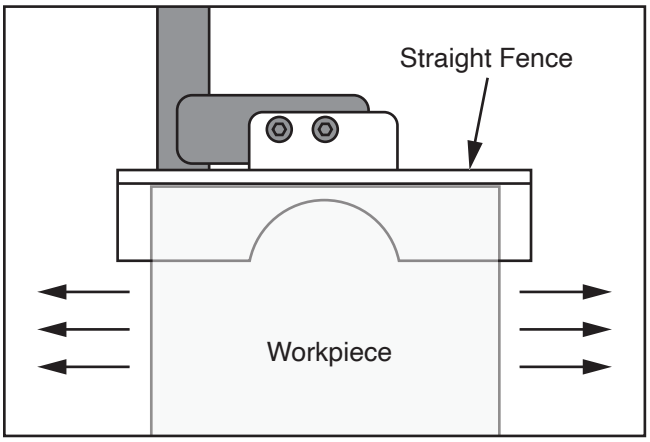


Figure 41. Straight fence support (viewed from above).

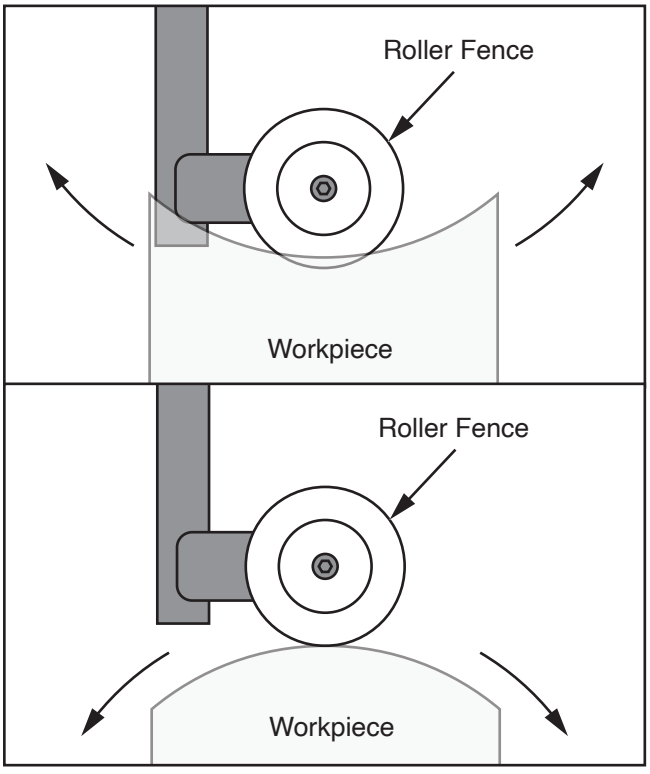


Figure 42. Roller fence support (viewed from above).

The fence arm allows the distance between the fence and the installed dies/tooling, or the fence "depth", to be adjusted.

There are a couple of adjustments for the fence assembly that give the fence a broad height adjustment to allow for the numerous workpiece and operation setups that the Model G0996 is capable of.

If the fence can be used for your operation, first install your desired dies/tooling, then install and adjust the appropriate fence to where it will best support your workpiece.

Installing Roller Fence

Items Needed	Qty
Roller Fence	1
Shoulder Screw M8-1.25 x 80	1
Flat Washer 10mm	1
Hex Wrenches 5, 6mm	1 Ea.

To install roller fence:

1. DISCONNECT MACHINE FROM POWER!

2. Remove (2) cap screws, lock washers, and flat washers shown in **Figure 43** to remove straight fence from fence mounting bracket.

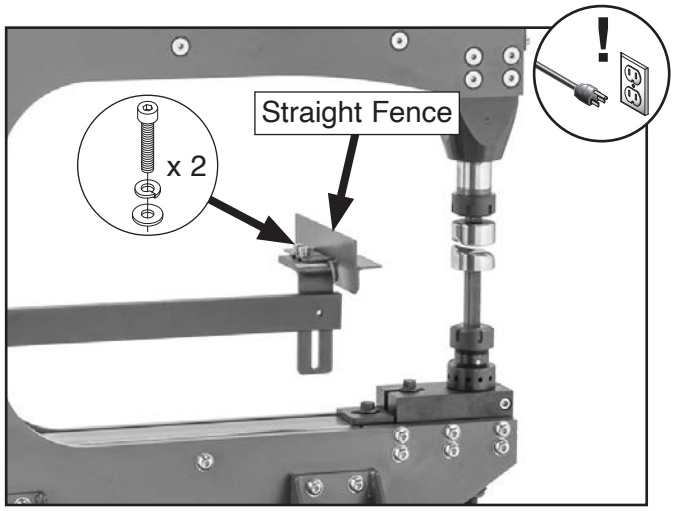


Figure 43. Location of straight fence cap screws and washers.

3. Attach roller fence to fence mounting bracket with (1) M8-1.25 x 80 shoulder screw and 10mm flat washer (see **Figure 44**) using bracket mounting hole that aligns roller with center of dies.

   Note: *Roller can be installed with guide slot (see **Figure 44**) on top or bottom, depending on your operation needs.*

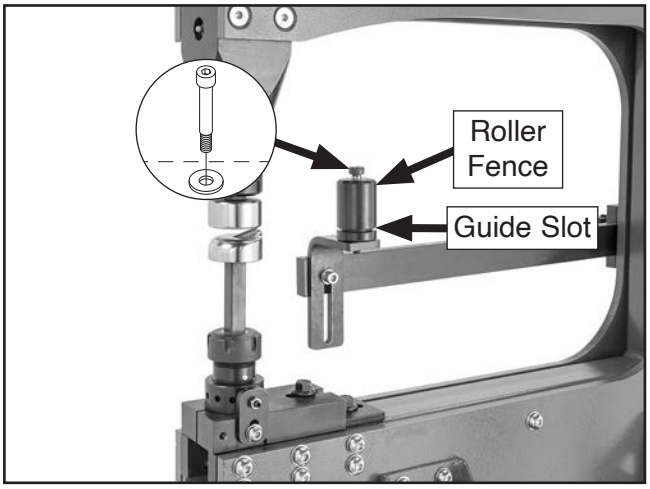


Figure 44. Roller fence attached to fence mounting bracket.

Installing Straight Fence

Items Needed	Qty
Straight Fence	1
Cap Screws M8-1.25 x 25	2
Lock Washers 8mm	2
Flat Washers 8mm	2
Hex Wrenches 5, 6mm	1 Ea.

To install straight fence:

1. DISCONNECT MACHINE FROM POWER!

2. Remove shoulder screw and flat washer shown in **Figure 44** to remove roller fence from fence mounting bracket.

3. Attach straight fence to fence mounting bracket with (2) M8-1.25 x 25 cap screws, 8mm lock washers, and 8mm flat washers (see **Figure 43**).

Adjusting Fence Height

Tool Needed **Qty**
Hex Wrench 6mm..... 1

To adjust fence height:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen cap screw shown in **Figure 45**, adjust fence up or down as desired.

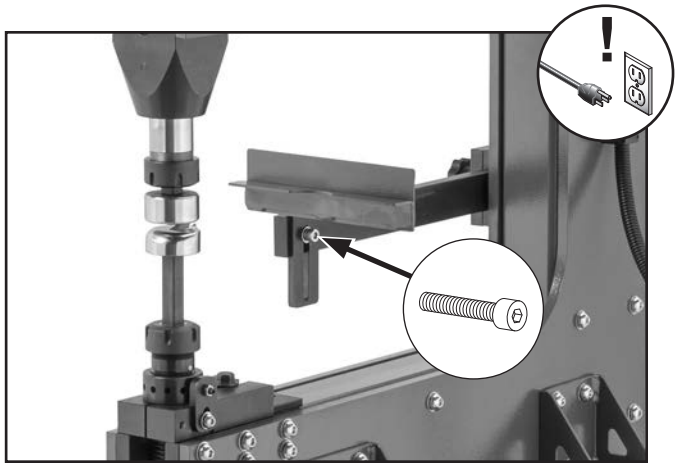


Figure 45. Fence height cap screw (straight fence shown installed).

— If this height adjustment brings fence in alignment with workpiece, tighten cap screw to secure.

— If this height adjustment is not enough for your operation, proceed to **Step 3**.

3. Remove (2) cap screws shown in **Figure 46** in order to remove fence assembly.

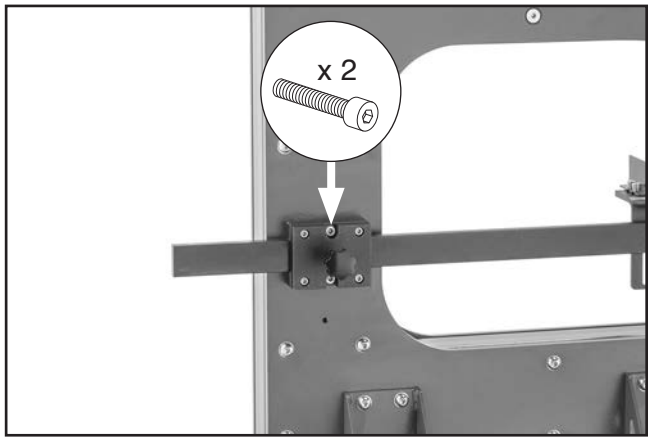


Figure 46. Location of fence assembly cap screws (assembly shown installed in upper position).

4. Install fence assembly in alternate mounting position with screws removed in **Step 3**.

— Upper fence position uses upper and middle mounting holes (see **Figure 47**).

— Lower fence position uses lower and middle mounting holes (see **Figure 47**).

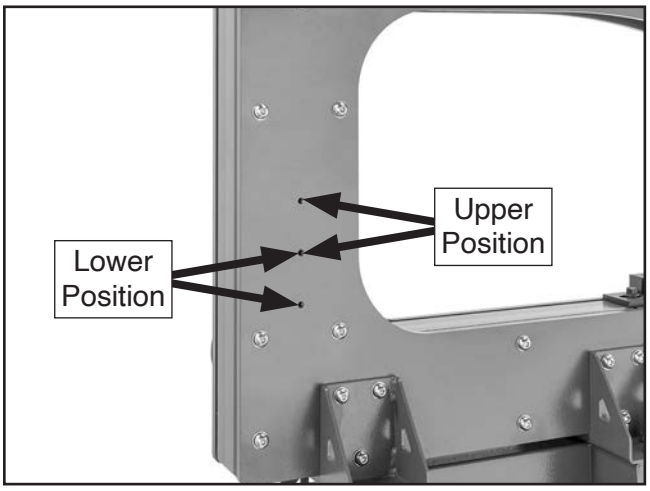


Figure 47. Location of fence assembly mounting holes.

5. Adjust fence up or down as desired, then tighten cap screw from **Step 2** to secure.

Adjusting Fence Depth

1. DISCONNECT MACHINE FROM POWER!

2. Loosen fence lock knob (see **Figure 48**), and adjust fence closer to or away from dies, as desired.

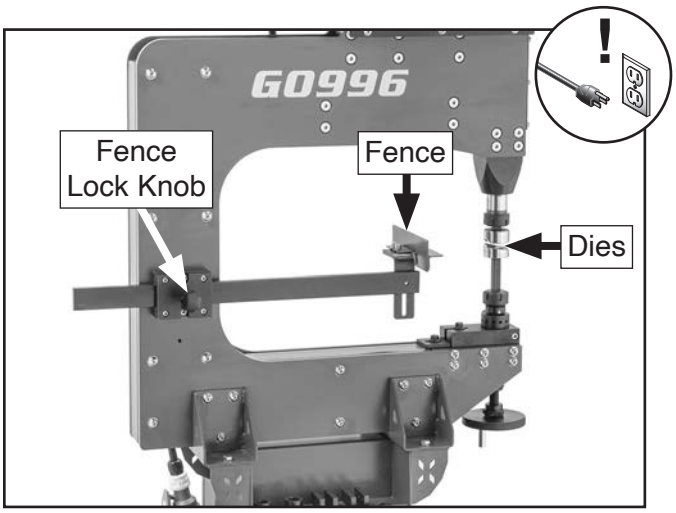


Figure 48. Location of fence lock knob.

3. Tighten fence lock knob.

SECTION 5: ACCESSORIES

⚠WARNING

Installing unapproved accessories may cause machine to malfunction, resulting in serious personal injury or machine damage. To reduce this risk, only install accessories recommended for this machine by Grizzly.

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

Universal Tool Holders

T34305—1" Wide
T34306—⅞" Wide
T34307—¾" Wide
These tool holders increase the versatility of your power hammer—use the tooling you have customized for your specific project needs.

Figure 49. T34306 Universal Tool Holder ⅞" Wide.

G5618—Deburring Tool w/Two Blades
The quickest tool for smoothing freshly sheared metal edges. Comes with two blades, one for steel and aluminum, and one for brass and cast iron.

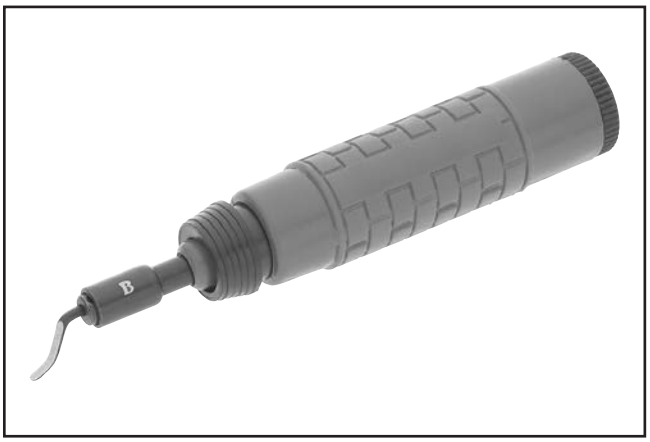
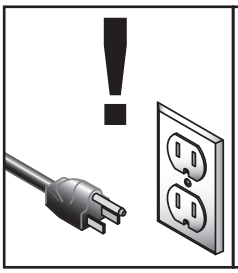


Figure 50. G5618 Deburring Tool.

H5503—Electric Sheet Metal Shear
This electric sheet metal shear features a ½ HP, 110V, 2500 RPM, 3.8 amp motor with a 360 degree adjustable swivel head and variable speed range from 0 to 2500 SPM. Cuts up to 14 gauge in mild steel and 18 gauge in stainless, at up to 150 inches per minute.

Figure 51. H5503 Electric Sheet Metal Shear.

SECTION 6: MAINTENANCE



⚠WARNING
To reduce risk of shock or accidental startup, always disconnect machine from power before adjustments, maintenance, or service.

Schedule

For optimum performance from this machine, this maintenance schedule must be strictly followed.

Ongoing
To minimize your risk of injury and maintain proper machine operation, shut down the machine immediately if you ever observe any of the items below, and fix the problem before continuing operations:

- Loose mounting bolts.
- Damaged dies.
- Worn or damaged wires.
- Any other unsafe condition.

Weekly Maintenance
- Clean machine.

Monthly Maintenance
- Lubricate grease fittings.
- Lubricate fence arm.
- Lubricate anvil leadscrew.

Cleaning & Protecting

Cleaning the Model G0996 is relatively easy. Periodically wipe down the dies to remove dust and debris—this ensures rust-promoting material does not remain on the bare metal surfaces and debris does not become embedded in the dies.

Protect the unpainted metal surfaces with regular applications of products like those shown in **Figure 52**.

Recommended Metal Protectants
G5562—SLIPIT® 1 Qt. Gel
G5563—SLIPIT® 11 Oz. Spray

Figure 52. Recommended products for protecting unpainted cast iron/steel parts on machinery.

Lubrication

An essential part of lubrication is cleaning the components before lubricating them. This step is critical because dust builds up on lubricated components, which makes them hard to move. Simply adding more grease to built-up grime will not result in smooth moving parts. Clean the components mentioned in this section with an oil/grease solvent cleaner or mineral spirits before applying lubrication.

Items Needed	Qty
Disposable Rags	As Needed
T26419 or NLGI#2 Equivalent	As Needed
Grease Gun	1
SB1365 or ISO 68 Equivalent	As Needed
Stiff Brushes	2
Mineral Spirits	As Needed

Grease Fittings

Lubrication Type ... T26419 or NLGI#2 Equivalent
Lubrication Amount ..... 1–2 Pumps
Lubrication Frequency .....Monthly

Disconnect the machine from power, then wipe the five grease fittings shown in **Figures 54–55** clean with a rag. Add 1–2 pumps of grease to each grease fitting.

Note: *Remove the (4) plugs in the crank shaft cover shown in **Figure 53** to access the crank shaft grease fittings.*

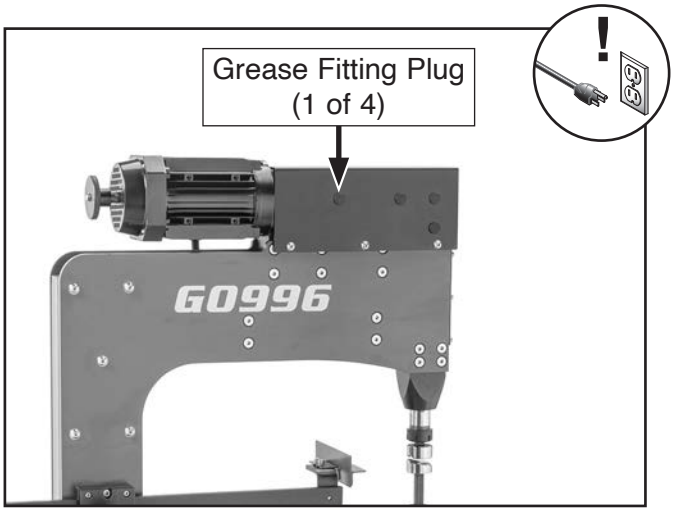


Figure 53. Location of crank shaft grease fittings (hidden behind plugs).

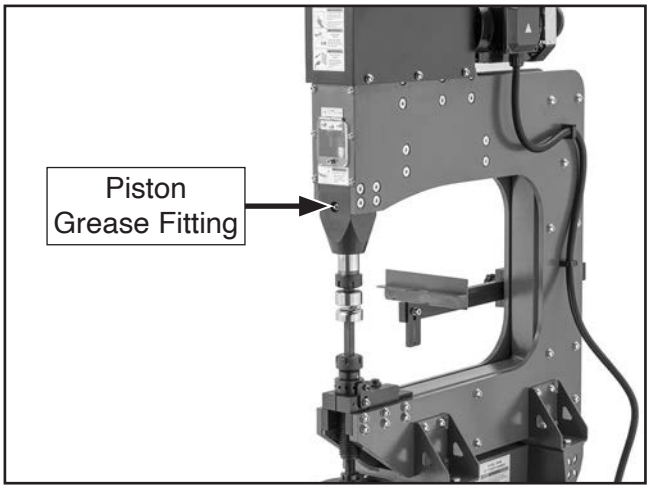


Figure 54. Location of piston grease fitting.

Fence Arm

Lubrication Type ... SB1365 or ISO 68 Equivalent
Lubrication Amount .....1–2 Drops
Lubrication Frequency .....Monthly

Place 1–2 drops of oil at the locations shown in **Figure 55**, then adjust the fence depth through its full range of travel.

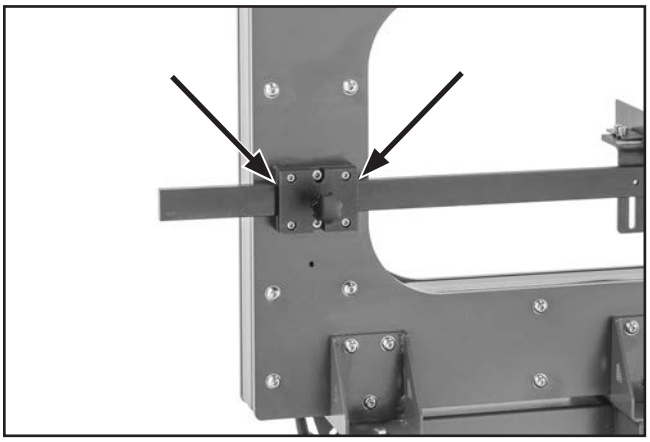


Figure 55. Fence arm lubrication locations.

Anvil Leadscrew

Lubrication Type ... T26419 or NLGI#2 Equivalent
Lubrication Amount .....Thin Coat
Lubrication Frequency .....Monthly

To lubricate anvil leadscrew:

1. DISCONNECT MACHINE FROM POWER!

2. Adjust anvil height handwheel as far down as it will go, then clean anvil leadscrew (see **Figure 56**) with brush and mineral spirits to remove grime and old lubrication.

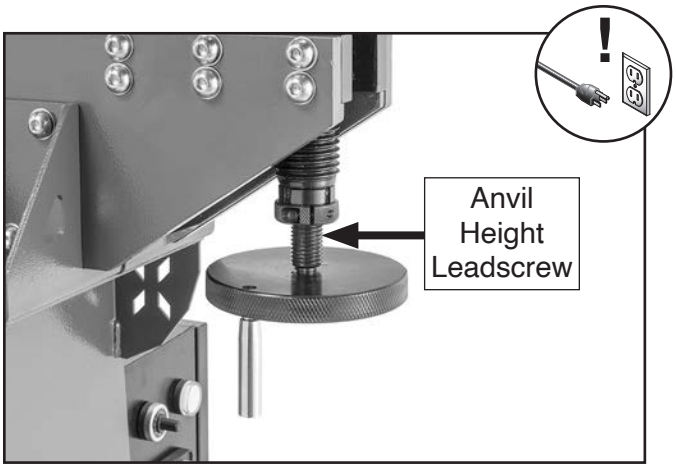


Figure 56. Location of anvil height leadscrew.

3. Use clean brush to wipe leadscrew threads with thin coat of NLGI#2 grease.

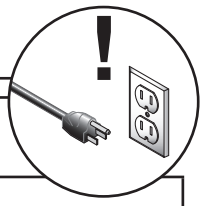
4. Adjust anvil through its full range of travel to distribute grease.

SECTION 7: SERVICE

Review the troubleshooting procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support. **Note:** *Please gather the serial number and manufacture date of your machine before calling.*

Use the table below for general troubleshooting of the Model G0996. For issues concerning the VFD, contact INVT to obtain a Goodrive 20-UL manual (or visit **https://www.invt.com**).

Troubleshooting



Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start, or power supply breaker immediately trips after startup.	1. EMERGENCY STOP button depressed. 2. ON/OFF switch Emergency Stop cover closed. 3. VFD overcurrent safeguards have not had time to disengage. 4. Incorrect power supply voltage or circuit size. 5. Power supply circuit breaker tripped or fuse blown. 6. Wiring broken, disconnected, or corroded. 7. Motor or motor bearings at fault.	1. Rotate EMERGENCY STOP button head to reset. 2. Open ON/OFF switch Emergency Stop cover. 3. After power has been connected, wait 10 seconds before pressing foot switch. 4. Ensure correct power supply voltage and circuit size. 5. Ensure circuit is free of shorts. Reset circuit breaker or replace fuse. 6. Fix broken wires or disconnected/corroded connections (**Page 37**). 7. Replace motor.
Machine stalls or is underpowered.	1. Wrong workpiece material (metal). 2. Motor overheated. 3. Extension cord too long. 4. Motor or motor bearings at fault.	1. Use correct type/size of metal (**Page 6**). 2. Clean motor, let cool, and reduce workload. 3. Move machine closer to power supply; use shorter extension cord. 4. Replace motor.
Machine has vibration or noisy operation.	1. Motor or component loose. 2. Motor mount loose/broken. 3. Motor fan rubbing on fan cover. 4. Motor bearings at fault.	1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Tighten/replace. 3. Fix/replace fan cover; replace loose/damaged fan. 4. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Operation

Symptom	Possible Cause	Possible Solution
Workpiece surface is marred or scratched.	1. Dies are dirty. 2. Die is damaged.	1. Clean dies (**Page 33**). 2. Replace die.
Workpiece will not stretch or shrink.	1. Anvil is not adjusted high enough. 2. Dies are not aligned. 3. Dies worn or damaged.	1. Adjust anvil height correctly for workpiece thickness and dies installed (**Page 27**). 2. Ensure anvil die is aligned with hammer die (**Page 36**). 3. Repair or replace dies.

Operation (Cont.)

Symptom	Possible Cause	Possible Solution
Beads are not crisp or louvers are not straight.	1. Workpiece thickness exceeds machine capacity. 2. Anvil is not adjusted high enough. 3. Dies are not aligned. 4. Dies worn or damaged.	1. Only use workpiece material that is within machine capacity (**Page 6**). 2. Adjust anvil height correctly for workpiece thickness and dies installed (**Page 27**). 3. Ensure anvil die is aligned with hammer die (**Page 36**). 4. Repair or replace dies.
Workpiece curve is too high or not high enough.	1. Die radius incorrect.	1. Use die with appropriate radius.

Aligning Anvil to Hammer

While the hammer and installed hammer die/tooling is fixed in place, the components shown in **Figure 57** can be used to adjust the anvil to bring the upper and lower dies/tooling into alignment.

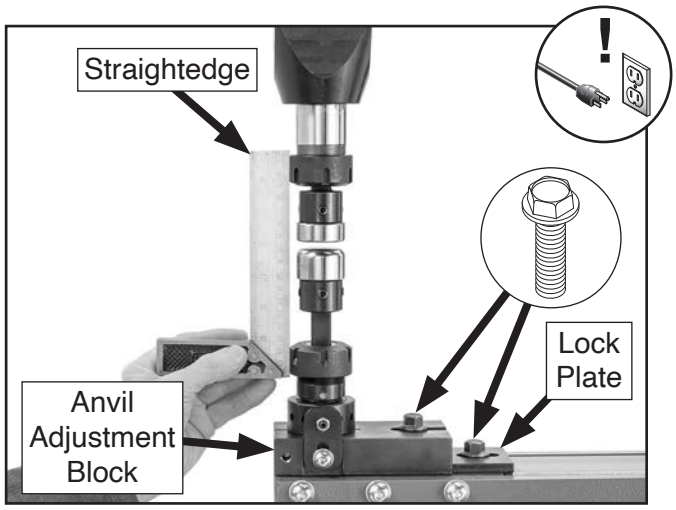


Figure 57. Anvil alignment components.

To align anvil to hammer:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen anvil adjustment block and lock plate flange bolts (see **Figure 57**).

3. Position anvil adjustment block (see **Figure 57**) as needed to bring anvil die/tooling into alignment with hammer die/tooling, then tighten adjustment block flange bolt to secure.

Note: *For matching die sets that have projections/reliefs that require exact alignment, or for custom tooling, it may be easiest to adjust anvil die/tooling flush against hammer die/tooling to dial in this adjustment (see **Figure 58**).*

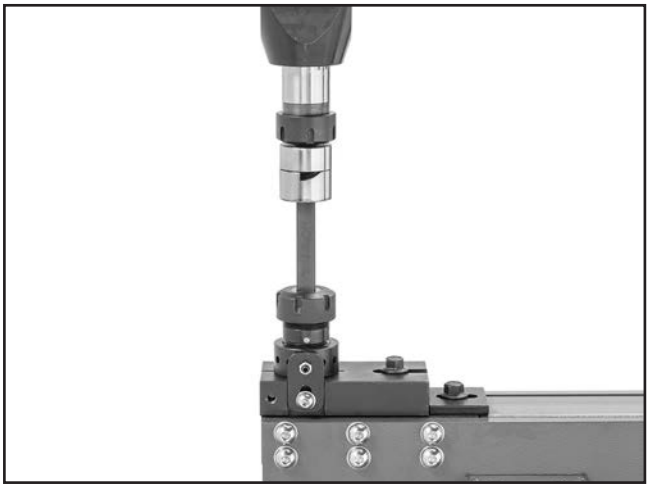


Figure 58. Anvil tooling adjusted flush against hammer tooling to dial in alignment (louver dies shown).

4. Slide lock plate (see **Figure 57**) against anvil adjustment block, then tighten lock plate flange bolt to secure.

SECTION 8: WIRING

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Compare the manufacture date of your machine to the one stated in this manual, and study this section carefully.

If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine. An updated wiring diagram may be available. **Note:** *Please gather the serial number and manufacture date of your machine before calling. This information can be found on the main machine label.*

⚠WARNING
Wiring Safety Instructions

SHOCK HAZARD. Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

MODIFICATIONS. Modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire. This includes the installation of unapproved aftermarket parts.

WIRE CONNECTIONS. All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

CIRCUIT REQUIREMENTS. You MUST follow the requirements at the beginning of this manual when connecting your machine to a power source.

WIRE/COMPONENT DAMAGE. Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components.

MOTOR WIRING. The motor wiring shown in these diagrams is current at the time of printing but may not match your machine. If you find this to be the case, use the wiring diagram inside the motor junction box.

CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

EXPERIENCING DIFFICULTIES. If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (570) 546-9663.

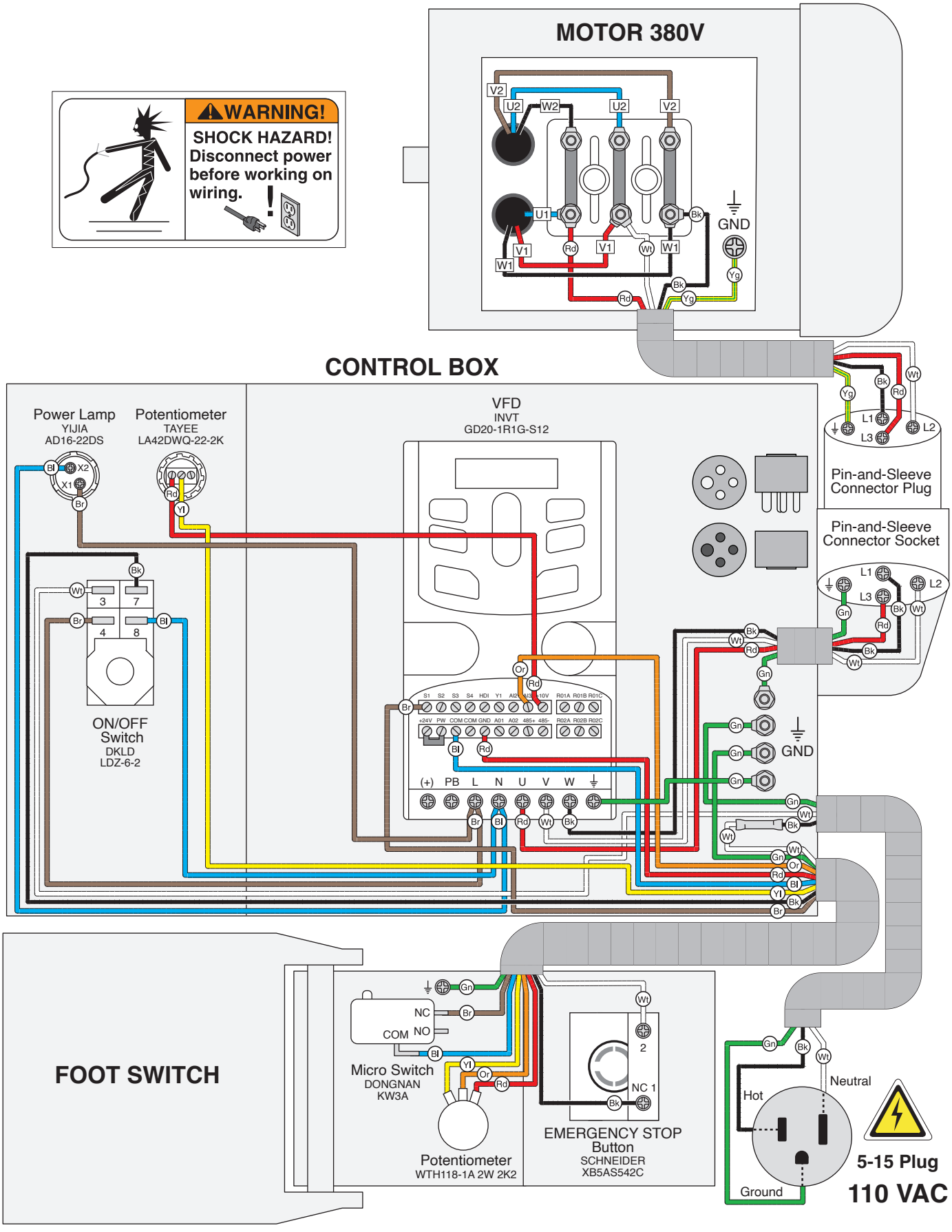
NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu	TURQUOISE	Tu
RED	Rd	ORANGE	Or	PINK	Pk		

Wiring Diagram



READ ELECTRICAL SAFETY ON PAGE 37!

Electrical Components

Figure 59. Control box wiring.

Figure 60. Control box controls wiring.

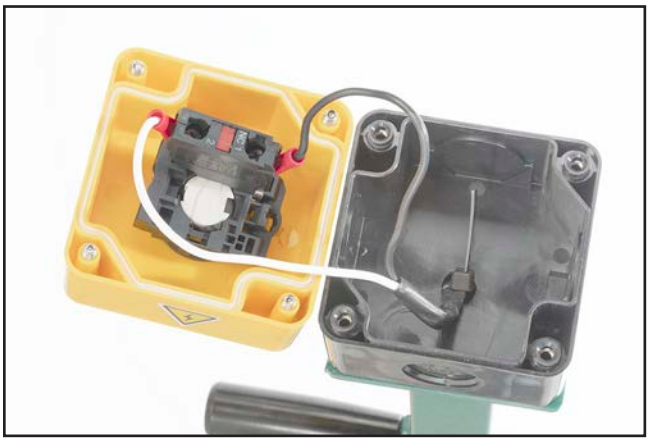


Figure 62. EMERGENCY STOP button wiring.

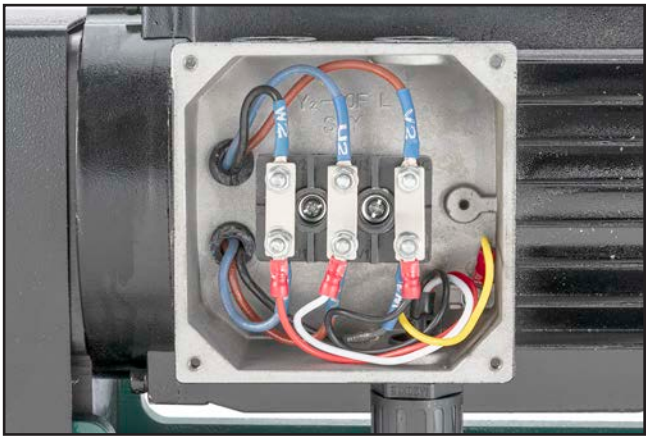


Figure 61. Motor junction box wiring.

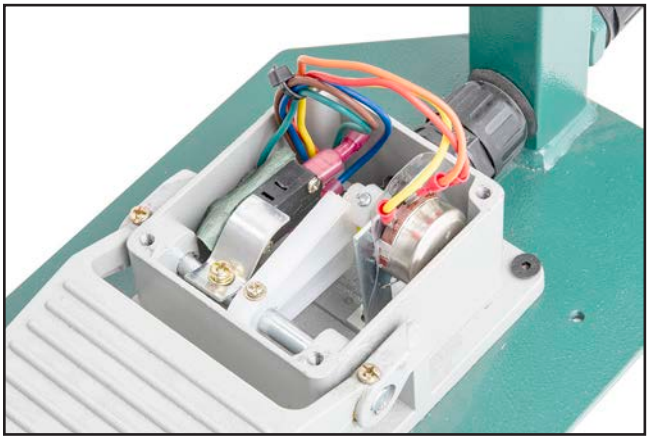
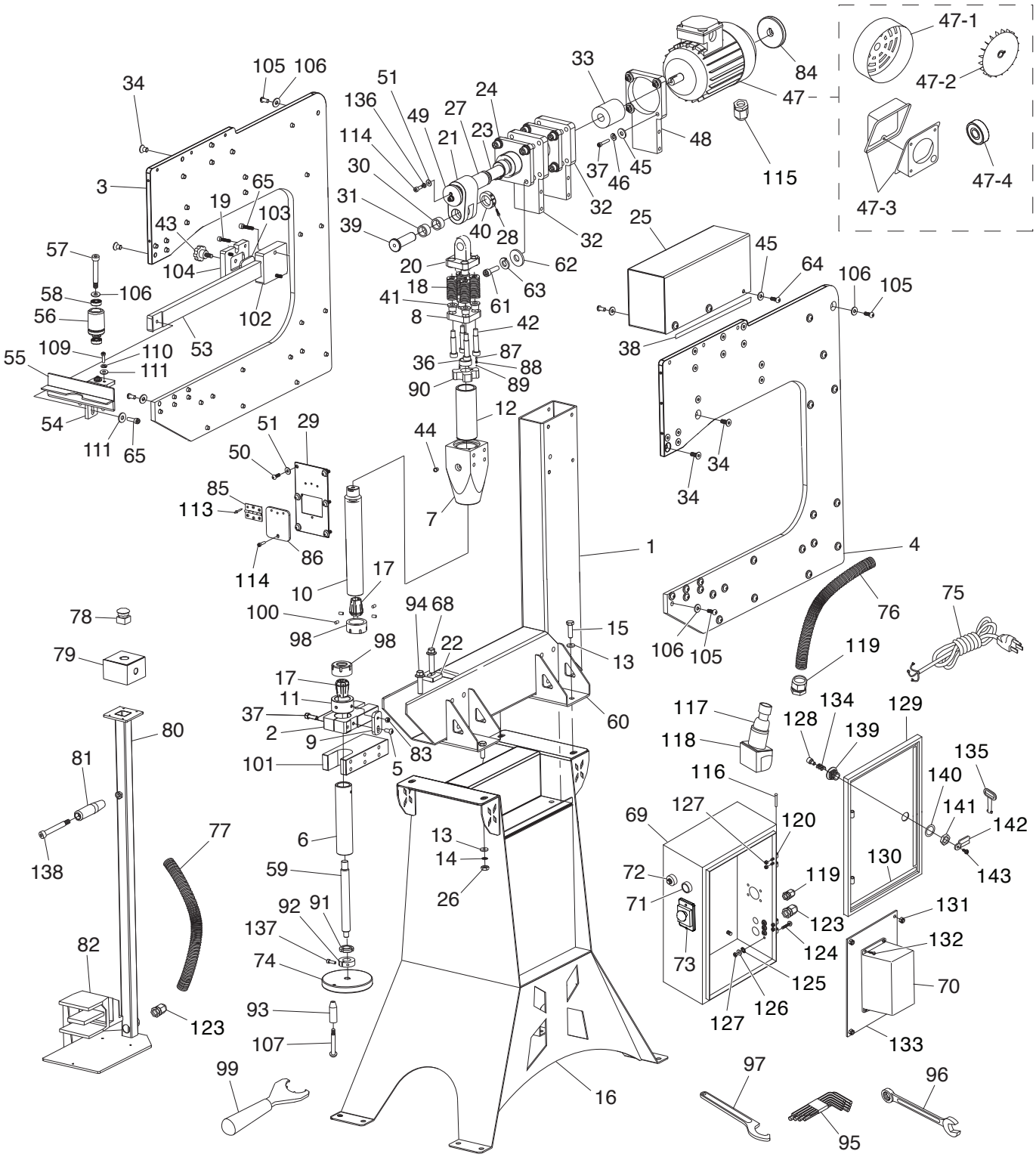


Figure 63. Foot switch wiring.

SECTION 9: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call **(800) 523-4777** or visit **www.grizzly.com/parts** to check for availability.

Main



Main Parts List

REF	PART #	DESCRIPTION
1	P0996001	FRAME MAIN
2	P0996002	ANVIL ADJUSTMENT BLOCK
3	P0996003	FRAME LEFT
4	P0996004	FRAME RIGHT
5	P0996005	BUTTON HD CAP SCR M8-1.25 X 16
6	P0996006	LEADSCREW SLEEVE
7	P0996007	HAMMER MOUNT
8	P0996008	SPRING SEAT LOWER
9	P0996009	COLLAR LOCK PLATE
10	P0996010	PISTON
11	P0996011	ANVIL LOCK COLLAR
12	P0996012	BUSHING 40 X 50 X 130
13	P0996013	FLAT WASHER 10MM
14	P0996014	LOCK WASHER 10MM
15	P0996015	HEX BOLT M10-1.5 X 25
16	P0996016	BASE
17	P0996017	COLLET ER32UM 16MM
18	P0996018	DIE SPRING 25 X 55
19	P0996019	CAP SCREW M6-1 X 16
20	P0996020	SPRING SEAT UPPER
21	P0996021	CAM
22	P0996022	LOCK PLATE
23	P0996023	CRANK SHAFT
24	P0996024	PILLOW BEARING UCF206
25	P0996025	CRANK SHAFT COVER
26	P0996026	HEX NUT M10-1.5
27	P0996027	BUSHING 25 X 32 X 48
28	P0996028	CAP SCREW M5-.8 X 20
29	P0996029	COVER PLATE
30	P0996030	BUSHING 20 X 26 X 20MM COPPER
31	P0996031	BUSHING 20 X 26 X 15MM COPPER
32	P0996032	BEARING SEAT
33	P0996033	SHAFT COUPLER
34	P0996034	FLAT HD CAP SCR M10-1.5 X 20
36	P0996036	BUSHING 25 X 30 X 11.5
37	P0996037	CAP SCREW M8-1.25 X 35
38	P0996038	GASKET 4 X 20 X 345MM RUBBER
39	P0996039	PIVOT PIN
40	P0996040	LOCK COLLAR
41	P0996041	FLANGED BUSHING COPPER
42	P0996042	SHOULDER SCREW M10-1.5 X 16, 12 X 70
43	P0996043	KNOB BOLT M10-1.5 X 40
44	P0996044	GREASE FITTING M8-1 STRAIGHT
45	P0996045	FLAT WASHER 8MM
46	P0996046	LOCK WASHER 8MM
47	P0996047	MOTOR 1.5HP 380V 3-PH
47-1	P0996047-1	MOTOR FAN COVER
47-2	P0996047-2	MOTOR FAN
47-3	P0996047-3	JUNCTION BOX
47-4	P0996047-4	BALL BEARING 6204ZZ
48	P0996048	MOTOR MOUNT
49	P0996049	CAM PLATE
50	P0996050	BUTTON HD CAP SCR M6-1 X 10

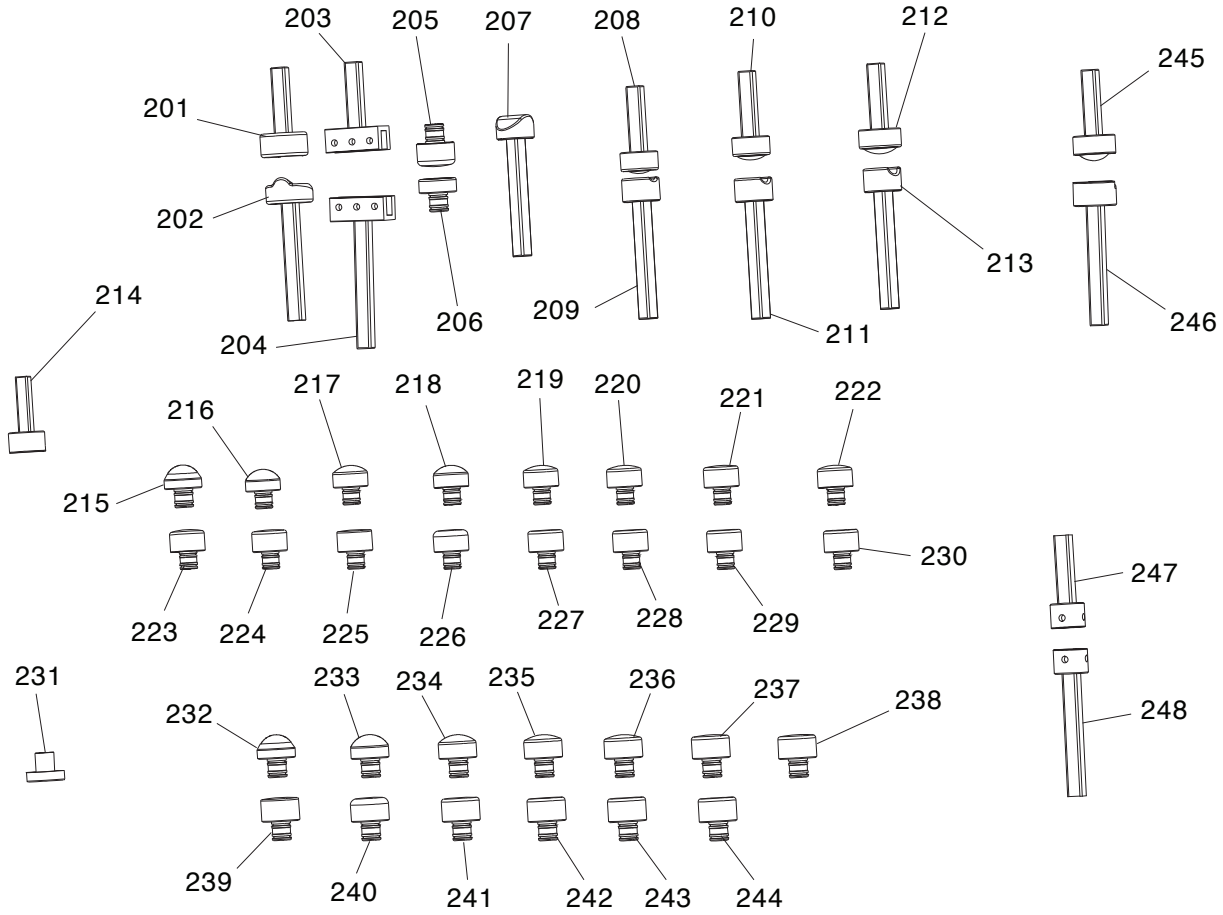
REF	PART #	DESCRIPTION
51	P0996051	FLAT WASHER 6MM
53	P0996053	FENCE ARM
54	P0996054	FENCE MOUNTING BRACKET
55	P0996055	STRAIGHT GUIDE FENCE
56	P0996056	ROLLER GUIDE FENCE
57	P0996057	SHOULDER SCREW M8-1.25 X 15, 10 X 65
58	P0996058	BALL BEARING 6000ZZ
59	P0996059	ANVIL LEADSCREW
60	P0996060	FRAME MOUNT
61	P0996061	CAP SCREW M12-1.75 X 30
62	P0996062	FLAT WASHER 12MM
63	P0996063	LOCK WASHER 12MM
64	P0996064	BUTTON HD CAP SCR M8-1.25 X 20
65	P0996065	CAP SCREW M8-1.25 X 25
68	P0996068	FLANGE BOLT M12-1.75 X 30
69	P0996069	CONTROL BOX
70	P0996070	VFD INVT GD20-1R1G-S12
71	P0996071	POWER LAMP YIJIA AD16-22DS
72	P0996072	POTENTIOMETER TAYEE LA42DWQ-22-2K
73	P0996073	ON/OFF SWITCH DKLD LDZ-6-2
74	P0996074	HANDWHEEL 12MM M8-1.25
75	P0996075	POWER CORD 14G 3W 120" 5-15P
76	P0996076	MOTOR CONDUIT
77	P0996077	FOOT SWITCH CONDUIT
78	P0996078	E-STOP BUTTON SCHNEIDER XB5AS542C
79	P0996079	E-STOP CONTROL BOX
80	P0996080	FOOT SWITCH PEDESTAL
81	P0996081	HOLLOW HANDLE
82	P0996082	FOOT SWITCH ASSEMBLY
83	P0996083	HEX NUT M6-1
84	P0996084	HANDWHEEL 19MM
85	P0996085	HINGE
86	P0996086	WINDOW ACRYLIC
87	P0996087	SET SCREW M6-1 X 6
88	P0996088	COMPRESSION SPRING 0.6 X 4 X 5
89	P0996089	STEEL BALL 4.94MM
90	P0996090	ADJUSTABLE SPRING BLOCK
91	P0996091	SPANNER NUT M20-2.5
92	P0996092	LEADSCREW COLLAR
93	P0996093	HOLLOW HANDLE
94	P0996094	FLANGE BOLT M12-1.75 X 50
95	P0996095	HEX WRENCH SET 1.5-10MM (9-PC)
96	P0996096	WRENCH 15MM COMBO
97	P0996097	SPANNER WRENCH 34-36MM
98	P0996098	COLLET CHUCK ER32
99	P0996099	COLLET WRENCH ER32
100	P0996100	DOWEL PIN 6 X 10
101	P0996101	ANVIL SEAT
102	P0996102	FENCE ARM MOUNT
103	P0996103	CLAMP PLATE
104	P0996104	FENCE ARM CLAMP
105	P0996105	BUTTON HD CAP SCR M10-1.5 X 25
106	P0996106	FLAT WASHER 10MM

Main Parts List (Cont.)

REF	PART #	DESCRIPTION
107	P0996107	SHOULDER SCREW M8-1.25 X 16, 8 X 58
109	P0996109	CAP SCREW M8-1.25 X 25
110	P0996110	LOCK WASHER 8MM
111	P0996111	FLAT WASHER 8MM
113	P0996113	RIVET 4 X 8MM BLIND, ALUMINUM
114	P0996114	CAP SCREW M6-1 X 16
115	P0996115	STRAIN RELIEF M22-1.5
116	P0996116	HEADED PIN 6 X 55
117	P0996117	P&S CONNECTOR PLUG IEC IP44
118	P0996118	P&S CONNECTOR SOCKET IEC IP44
119	P0996119	STRAIN RELIEF M16-1.5
120	P0996120	DOOR HINGE
123	P0996123	STRAIN RELIEF M20-1.5
124	P0996124	PHLP HD SCR M4-.7 X 12
125	P0996125	EXT TOOTH WASHER 4MM
126	P0996126	FLAT WASHER 4MM
127	P0996127	LOCK NUT M4-.7

REF	PART #	DESCRIPTION
128	P0996128	CAM LOCK INSERT TWO-WAY
129	P0996129	CONTROL BOX DOOR
130	P0996130	FOAM TAPE 15 X 12 X 250MM
131	P0996131	LOCK NUT M8-1.25
132	P0996132	PHLP HD SCR M5-.8 X 12
133	P0996133	ELECTRICAL MOUNTING PLATE
134	P0996134	COMPRESSION SPRING 1 X 14.5 X 8.6MM
135	P0996135	KEY FEMALE TWO-WAY
136	P0996136	LOCK WASHER 6MM
137	P0996137	CAP SCREW M5-.8 X 16
138	P0996138	SHOULDER SCREW M10-1.5 X 16, 10 X 78
139	P0996139	CAM LOCK BODY
140	P0996140	PROTECTIVE FILM
141	P0996141	SERRATED LOCK NUT M20-1.5
142	P0996142	CAM
143	P0996143	FLANGE BOLT M6-1 X 8 PHILLIPS

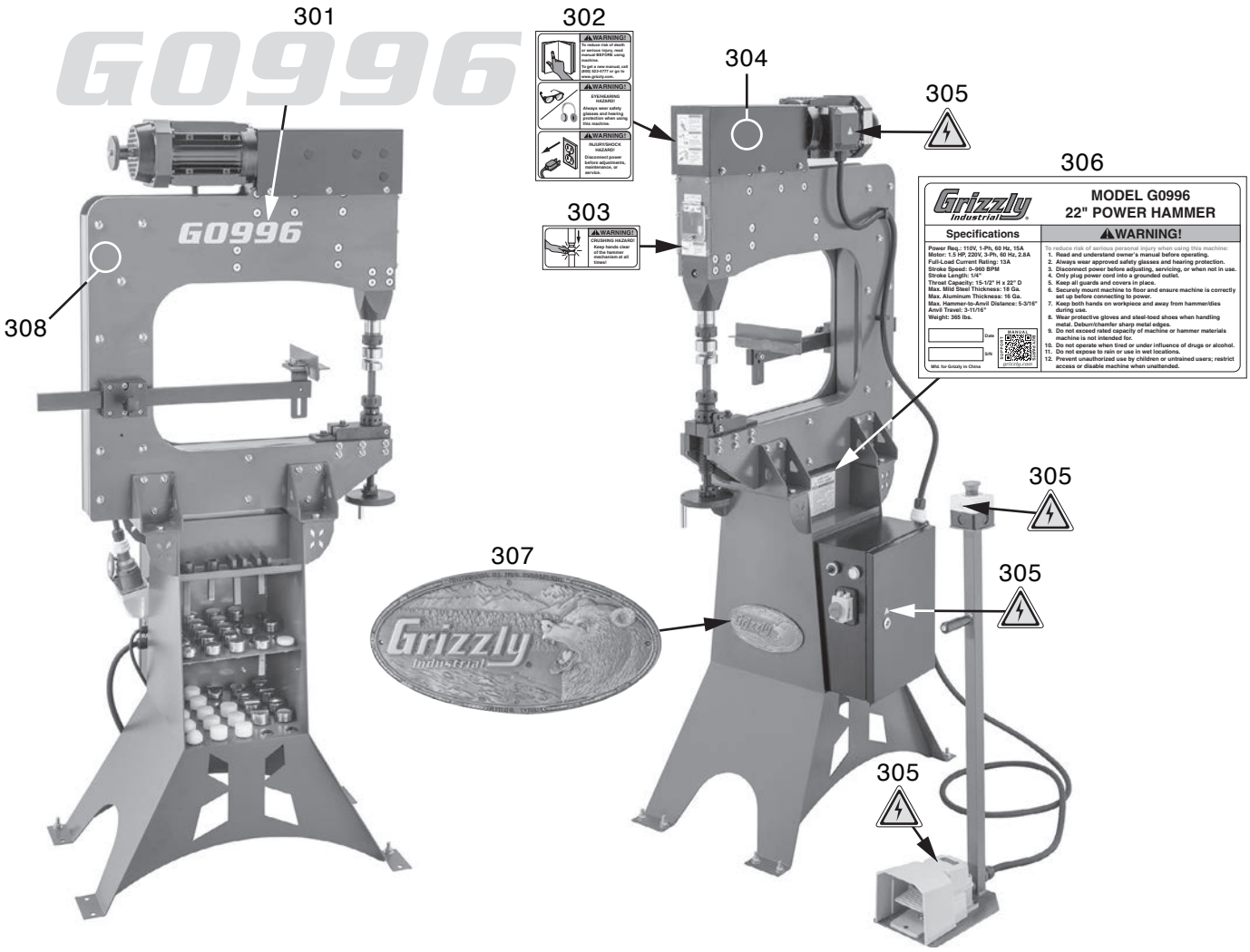
Dies & Holders



REF	PART #	DESCRIPTION
201	P0996201	THUMBNAIL SHRINKING DIE HAMMER STEEL
202	P0996202	THUMBNAIL SHRINKING DIE ANVIL STEEL
203	P0996203	UNIVERSAL TOOL HOLDER HAMMER STEEL
204	P0996204	UNIVERSAL TOOL HOLDER ANVIL STEEL
205	P0996205	DOMING DIE 3.1" HAMMER STEEL
206	P0996206	DOMING DIE 3.1" ANVIL STEEL
207	P0996207	LINEAR STRETCHING DIE ANVIL STEEL
208	P0996208	BEADING DIE 1/4" HAMMER STEEL
209	P0996209	BEADING DIE 1/4" ANVIL STEEL
210	P0996210	BEADING DIE 3/8" HAMMER STEEL
211	P0996211	BEADING DIE 3/8" ANVIL STEEL
212	P0996212	BEADING DIE 1/2" HAMMER STEEL
213	P0996213	BEADING DIE 1/2" ANVIL STEEL
214	P0996214	FLAT DIE HAMMER STEEL
215	P0996215	RADIUS DIE 3/4" ANVIL STEEL
216	P0996216	RADIUS DIE 7/8" ANVIL STEEL
217	P0996217	RADIUS DIE 1" ANVIL STEEL
218	P0996218	RADIUS DIE 1-1/8" ANVIL STEEL
219	P0996219	RADIUS DIE 1-1/2" ANVIL STEEL
220	P0996220	RADIUS DIE 1-7/8" ANVIL STEEL
221	P0996221	RADIUS DIE 2" ANVIL STEEL
222	P0996222	RADIUS DIE 3" ANVIL STEEL
223	P0996223	RADIUS DIE 4" ANVIL STEEL
224	P0996224	RADIUS DIE 5" ANVIL STEEL

REF	PART #	DESCRIPTION
225	P0996225	RADIUS DIE 6" X 1/16" ANVIL STEEL
226	P0996226	RADIUS DIE 6" X 1/4" ANVIL STEEL
227	P0996227	RADIUS DIE 8" ANVIL STEEL
228	P0996228	RADIUS DIE 14-1/2" ANVIL STEEL
229	P0996229	RADIUS DIE 24" ANVIL STEEL
230	P0996230	RADIUS DIE 36" ANVIL STEEL
231	P0996231	FLAT DIE HAMMER NYLON
232	P0996232	RADIUS DIE 3/4" ANVIL NYLON
233	P0996233	RADIUS DIE 7/8" ANVIL NYLON
234	P0996234	RADIUS DIE 1-1/8" ANVIL NYLON
235	P0996235	RADIUS DIE 1-1/2" ANVIL NYLON
236	P0996236	RADIUS DIE 1-7/8" ANVIL NYLON
237	P0996237	RADIUS DIE 4" ANVIL NYLON
238	P0996238	RADIUS DIE 5" ANVIL NYLON
239	P0996239	RADIUS DIE 6" X 1/16" ANVIL NYLON
240	P0996240	RADIUS DIE 6" X 1/4" ANVIL NYLON
241	P0996241	RADIUS DIE 8" ANVIL NYLON
242	P0996242	RADIUS DIE 14-1/2" ANVIL NYLON
243	P0996243	RADIUS DIE 24" ANVIL NYLON
244	P0996244	RADIUS DIE 36" ANVIL NYLON
245	P0996245	LOUVRE DIE HAMMER STEEL
246	P0996246	LOUVRE DIE ANVIL STEEL
247	P0996247	ROUND DIE HOLDER 20MM HAMMER
248	P0996248	ROUND DIE HOLDER 20MM ANVIL

Labels & Cosmetics



REF	PART #	DESCRIPTION
301	P0996301	MODEL NUMBER LABEL
302	P0996302	COMBO WARNING LABEL
303	P0996303	CRUSHING HAZARD LABEL
304	P0996304	TOUCH-UP PAINT, GRIZZLY BLACK

REF	PART #	DESCRIPTION
305	P0996305	ELECTRICITY LABEL
306	P0996306	MACHINE ID LABEL
307	P0996307	GRIZZLY NAMEPLATE SMALL
308	P0996308	TOUCH-UP PAINT, GRIZZLY GREEN

⚠WARNING

Safety labels help reduce the risk of serious injury caused by machine hazards. If any label comes off or becomes unreadable, the owner of this machine MUST replace it in the original location before resuming operations. For replacements, contact (800) 523-4777 or www.grizzly.com.

WARRANTY & RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

In the event you need to use this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

For further information about the warranty, visit **https://www.grizzly.com/forms/warranty** or scan the QR code below to be automatically directed to our warranty page.

WARRANTY

grizzly.com