MODEL G0988/G0989
EXTREME-SERIES PLANER
w/V-HELICAL CUTTERHEAD

OWNER'S MANUAL

(For models manufactured since 05/24)

#JA23274 PRINTED IN TAIWAN V1.06.25

******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

Machine Differences

G0988
- 32" Wide Workpiece Capacity
- 15 HP Main Motor
- V-Helical Cutterhead w/201 Indexable Inserts
- (2) 5" Dust Collection Ports
- 32"W x 39⅜"L Table

G0989
- 40" Wide Workpiece Capacity
- 20 HP Main Motor
- V-Helical Cutterhead w/249 Indexable Inserts
- (3) 5" Dust Collection Ports
- 40"W x 43⅝"L Table

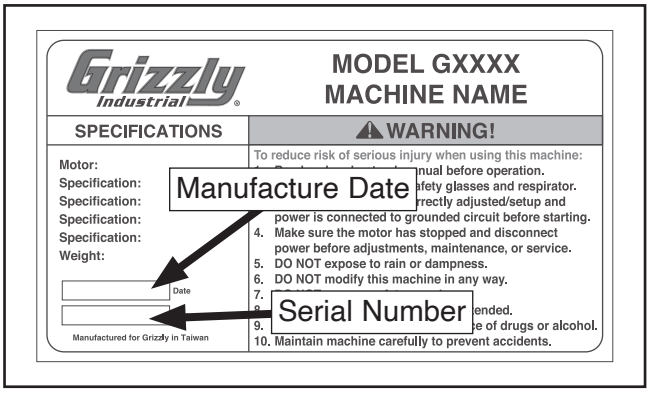
Manual Accuracy

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**.

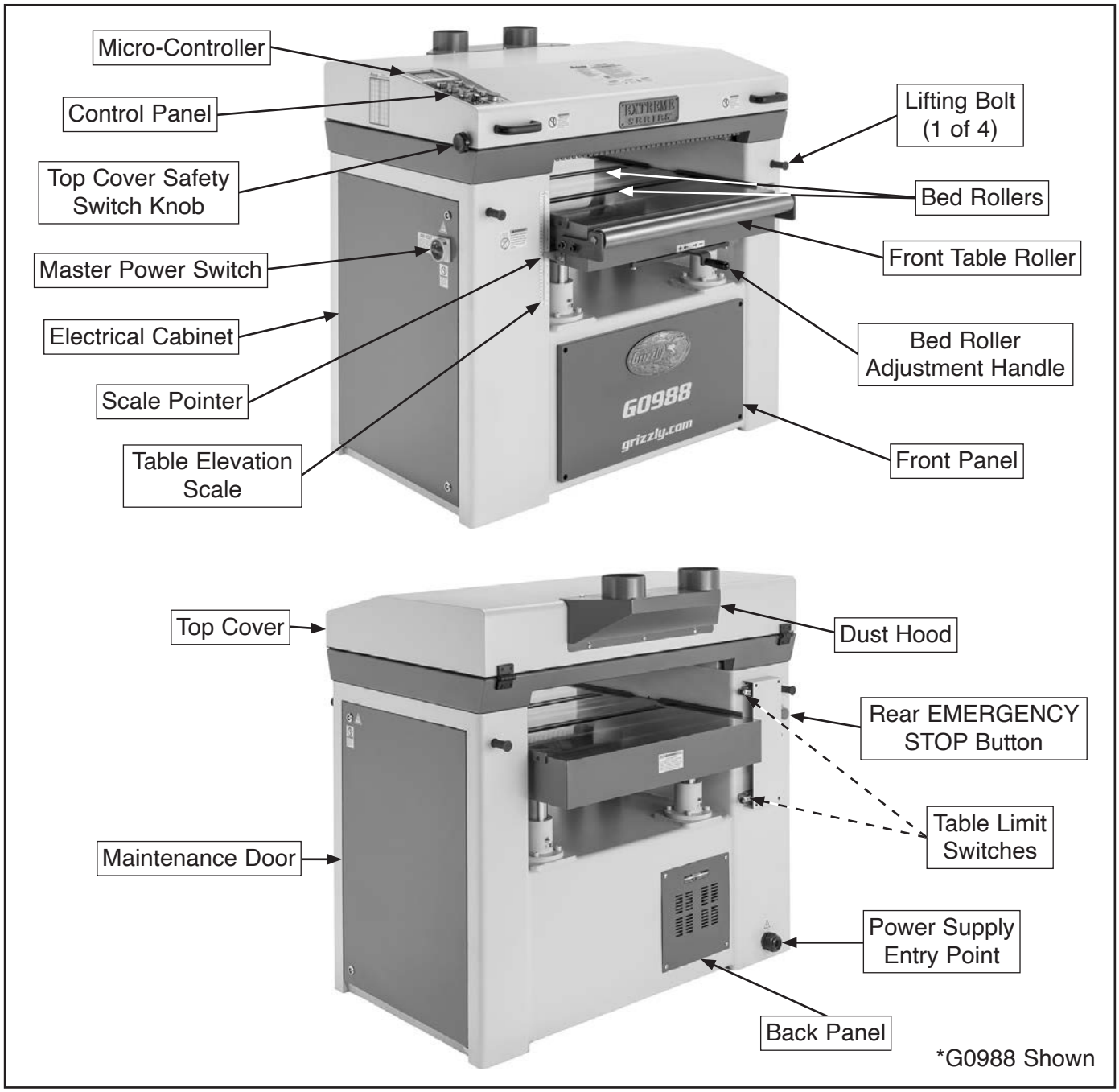
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

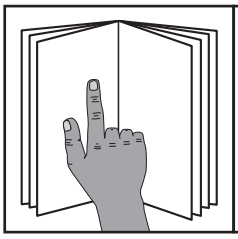
Alternatively, you can call our Technical Support for help. Before calling, make sure you write down the **manufacture date** and **serial number** from the machine ID label (see below). This information is required for us to provide proper tech support, and it helps us determine if updated documentation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

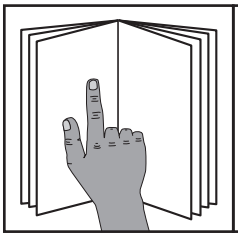




⚠WARNING

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.

⚠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.

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.

Main

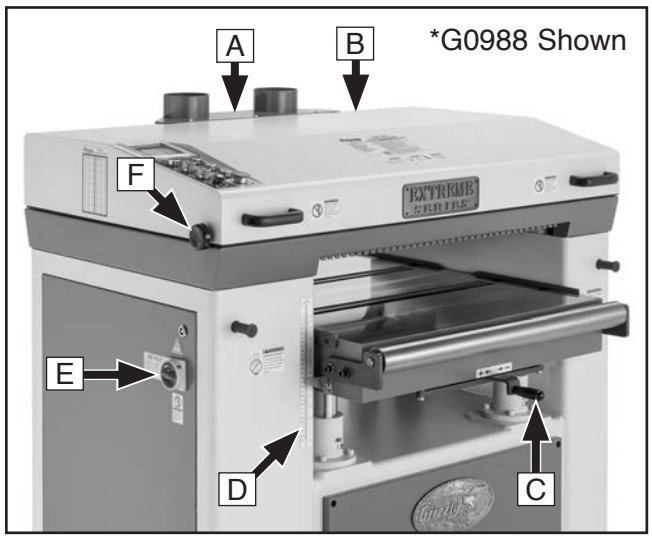


Figure 1. Main components.

A. Dust Hood: Allows connection of multiple 5" ducts to main dust port inlet. G0988 adapter has two ports and G0989 adapter has three ports.

B. Top Cover: Protects operator from moving cutterhead and feed rollers during operation. Open cover to access cutterhead, pressure bar, feed rollers, anti-kickback fingers, feed roller chain drive and chip breaker for maintenance.

C. Bed Roller Adjustment Handle: Raises and lowers bed rollers between 0.004" and 0.020" above table.

D. Table Elevation Scale & Scale Pointer: Shows elevation of table beneath cutterhead. Measurement indicated along top edge of scale pointer shows effective thickness of workpiece after planing.

E. Master Power Switch: Turns incoming power to machine ***ON*** and ***OFF***.

F. Top Cover Safety Switch Knob: Prevents user from opening top cover while cutterhead is still moving.

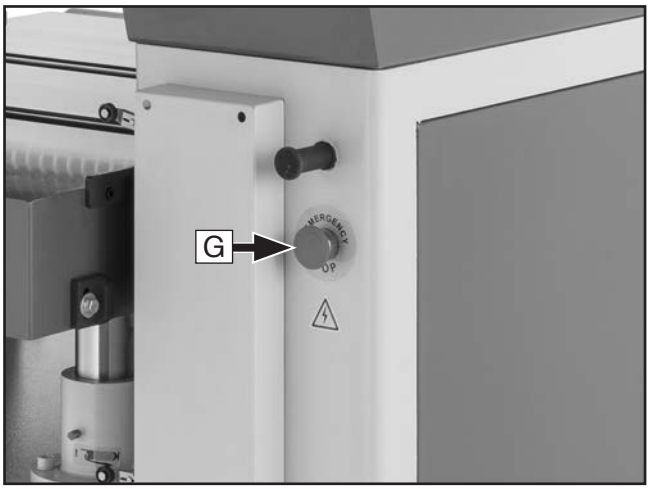


Figure 2. Rear EMERGENCY STOP button.

G. Rear EMERGENCY STOP Button: Stops all machine functions and prevents machine from starting. Twist clockwise to reset.

Micro-Controller

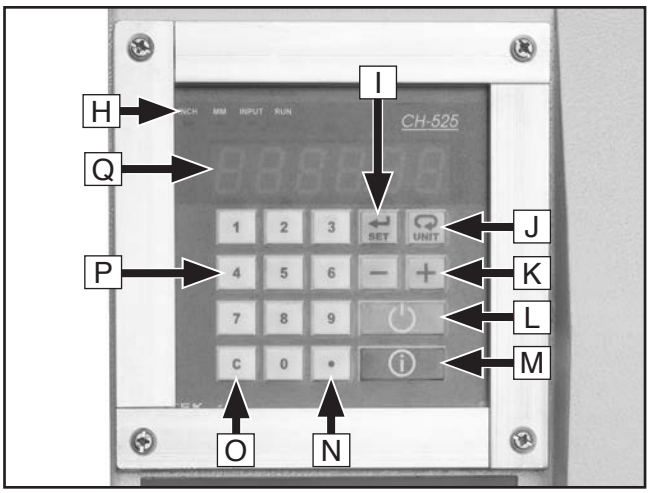


Figure 3. Micro-Controller.

H. Unit/Mode Display: Identifies active unit of measurement (INCH or MM) and mode (INPUT or RUN) of micro-controller.

I. SET Key [SET]: Enters Input mode. INPUT is highlighted in unit/mode display. Input mode must be active to enter final workpiece thickness value.

J. UNIT Key [UNIT]: Switches between inches or millimeters as unit of measurement. Selected unit (INCH or MM) is highlighted in unit/mode display.

K. Plus & Minus Keys [+] [−]: Quickly raise or lower table while in RUN or INPUT mode. Used to increase or decrease final workpiece thickness (i.e., distance from BDC of cutterhead to table). Push and hold buttons to raise or lower table steadily, or push and release buttons to raise or lower table in 0.01" or 0.1mm increments.

L. Start Key [⏻]: Enters Run mode. Table will move up or down, depending on inputted final workpiece thickness (i.e., distance from BDC of cutterhead to table).

M. Stop Key [ⓘ]: Immediately stops table when it is moving while in Run mode.

N. Decimal Button [.]: Sets input cursor to right of decimal point.

O. Clear Key [C]: Clears current final workpiece thickness value while in Input mode.

P. Numerical Key Pad: Enters specific values for final workpiece thickness. Press 0–9 and decimal keys as needed to enter desired final workpiece thickness. Displayed value flashes until [⏻] key is pressed.

Example: *To enter final workpiece thickness of 2½", press [SET] key, then press following keys: [2] [.] [5] [0], then press [⏻] key.*

Q. Digital Display: Shows current final workpiece thickness (i.e., distance from BDC of cutterhead to table).

Control Panel

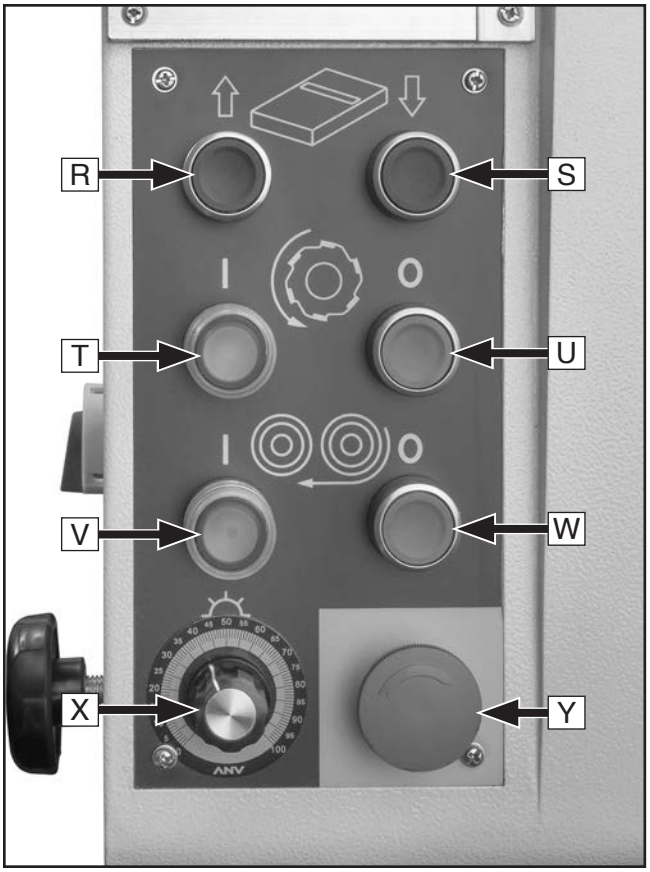


Figure 4. Control panel.

R. Table UP Button: Raises table.

S. Table DOWN Button: Lowers table.

T. Cutterhead Motor ON Button: Turns cutterhead motor ***ON***. Illuminates when cutterhead motor is running.

U. Cutterhead Motor OFF Button: Turns cutterhead and feed motors ***OFF***.

V. Feed Motor ON Button: Turns feed motor ***ON***. Illuminates when feed motor is running.

Note: *Feed motor will not turn **ON** unless cutterhead motor is running.*

W. Feed Motor OFF Button: Turns feed motor ***OFF***.

X. Feed Speed Control Dial: Controls speed at which workpiece moves past cutterhead from 0–100% (16–56 FPM). Turn clockwise to increase speed; turn counterclockwise to decrease speed.

Y. EMERGENCY STOP Button: Stops all machine functions and prevents machine from starting. Twist clockwise to reset.

Internal Components

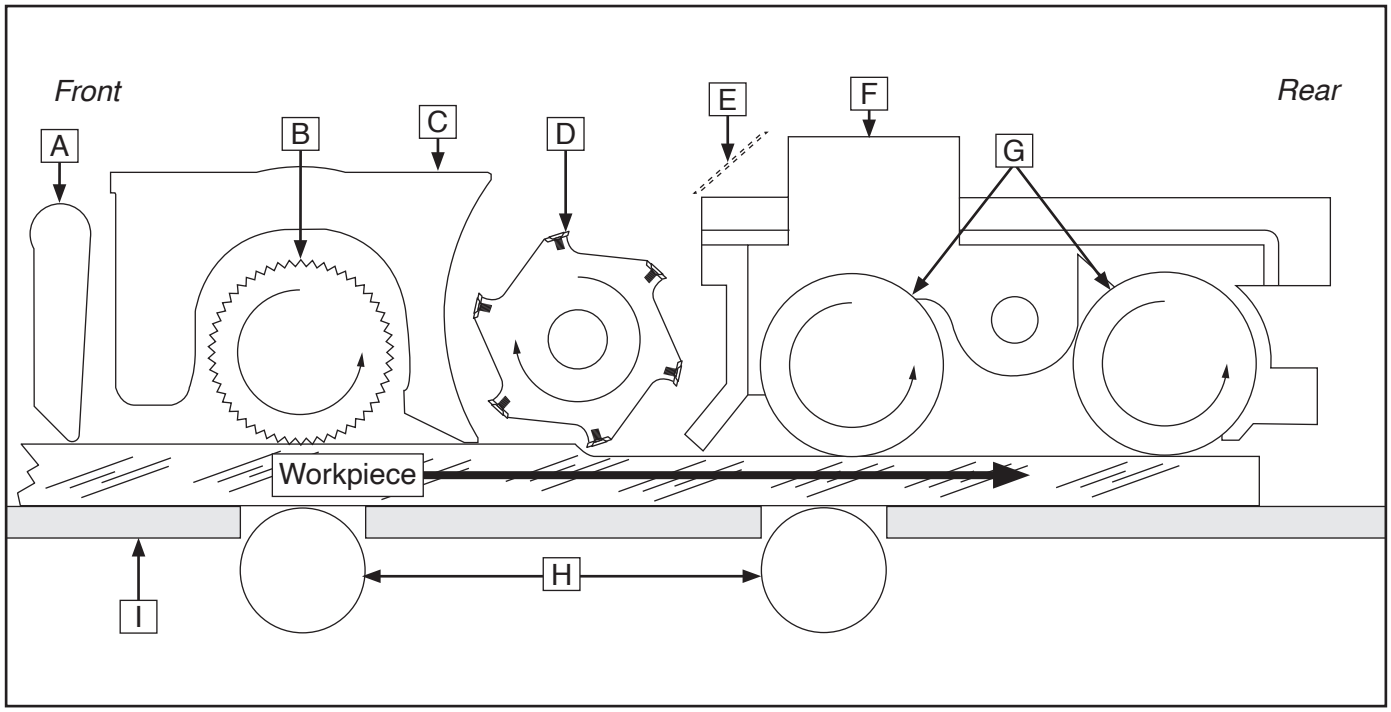


Figure 5. Workpiece path and major planing components (side cutaway view).

A. Anti-Kickback Fingers: Provide additional safety for operator.

B. Serrated Infeed Roller: Pulls workpiece toward cutterhead.

C. Chip Breakers: Break off chips created by cutterhead to prevent tearout and divert chips to dust hood.

D. V-Helical Cutterhead: Holds indexable carbide inserts that remove material from workpiece.

E. Chip Deflector: Deflects chips into dust hood.

F. Pressure Bar: Stabilizes workpiece as it leaves cutterhead and assists in deflecting wood particles toward dust hood.

G. Outfeed Rollers: Pull workpiece through planer.

H. Bed Rollers: Provide upward pressure on workpiece, enabling feed rollers to pull workpiece along.

I. Planer Table: Provides smooth and level path for workpiece as it moves through planer.

⚠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.

MACHINE DATA SHEET

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

MODEL G0988 32" EXTREME SERIES PLANER WITH V-HELICAL CUTTERHEAD

Product Dimensions:

Weight..... 2404 lbs.
Width (side-to-side) x Depth (front-to-back) x Height..... 53 x 43 x 51 in.
Footprint (Length x Width)..... 26-1/2 x 37 in.

Shipping Dimensions:

Type..... Wood Crate
Content..... Machine
Weight..... 2670 lbs.
Length x Width x Height..... 62 x 44 x 62 in.
Must Ship Upright..... Yes

Electrical:

Power Requirement..... 220V or 440V, 3-Phase, 60 Hz
Prewired Voltage..... 220V
Full-Load Current Rating..... 45A at 220V, 23A at 440V
Minimum Circuit Size..... 60A at 220V, 30A at 440V
Connection Type..... Permanent (Hardwire to Shutoff)
Switch Type..... Control Panel
Inverter (VFD) Type..... Delta VFD-MS
Inverter (VFD) Size..... 2 HP

Motors:

Main

Horsepower..... 15 HP
Phase..... 3-Phase
Amps..... 36.7A/18.4A
Speed..... 1750 RPM
Type..... TEFC Induction
Power Transfer ..... Belt
Bearings..... Shielded & Permanently Lubricated

Table Elevation

Horsepower..... 1/2 HP
Phase..... 3-Phase
Amps..... 2A/1A
Speed..... 1680 RPM
Type..... TEFC Induction
Power Transfer ..... Chain
Bearings..... Shielded & Permanently Lubricated

Feed

Horsepower..... 2 HP
Phase..... 3-Phase
Amps..... 6.1A/3.1A
Speed..... 1750 RPM
Type..... TEFC Induction
Power Transfer ..... Chain
Bearings..... Shielded & Permanently Lubricated

Main Specifications:

Main Specifications

Planer Size	32 in.
Max. Cut Width	32 in.
Min. Stock Length	16-1/2 in.
Min. Stock Thickness	1/4 in.
Max. Stock Thickness	11-3/4 in.
Number of Cuts Per Inch	163 - 44
Number of Cuts Per Minute	31,200
Cutterhead Speed	5200 RPM
Planing Feed Rate	16 - 59 FPM
Max. Cut Depth Planing Full Width	1/8 in.
Max. Cut Depth Planing 6-Inch Wide Board	1/4 in.

Cutterhead Info

Cutterhead Type	V-Helical
Cutterhead Diameter	5 in.
Number of Cutter Rows	6
Number of Indexable Cutters	201
Cutter Insert Type	Indexable Carbide
Cutter Insert Size Length	15mm
Cutter Insert Size Width	15mm
Cutter Insert Size Thickness	2.5mm

Table Info

Table/Headstock Movement	11-3/4 in.
Table Bed Size Length	39-3/8 in.
Table Bed Size Width	32 in.
Table Bed Size Thickness	5-1/4 in.
Number of Bed Rollers	2
Floor-to-Table Height	26-7/8 - 38-1/2 in.

Construction

Table	Precision-Milled Cast Iron
Body	Steel
Stand	Steel
Cutterhead Assembly	Steel
Infeed Roller	Steel
Outfeed Roller	Polyurethane-Coated Steel
Paint Type/Finish	Urethane

Other

Measurement Scale	Inch & Metric
Number of Dust Ports	2
Dust Port Size	5 in.

Other Specifications:

Country of Origin	Taiwan
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	Machine ID Label
Sound Rating	80 dB

MACHINE DATA SHEET

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

MODEL G0989 40" EXTREME SERIES PLANER WITH V-HELICAL CUTTERHEAD

Product Dimensions:

Weight	3034 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	61 x 47 x 51 in.
Footprint (Length x Width)	29 x 59-1/2 in.

Shipping Dimensions:

Type	Wood Crate
Content	Machine
Weight	3382 lbs.
Length x Width x Height	70 x 55 x 62 in.
Must Ship Upright	Yes

Electrical:

Power Requirement	220V or 440V, 3-Phase, 60 Hz
Prewired Voltage	220V
Full-Load Current Rating	58A at 220V, 29A at 440V
Minimum Circuit Size	75A at 220V, 40A at 440V
Connection Type	Permanent (Hardwire to Shutoff)
Switch Type	Control Panel
Inverter (VFD) Type	Delta VFD-MS
Inverter (VFD) Size	2 HP

Motors:

Main

Horsepower	20 HP
Phase	3-Phase
Amps	50.3A/25.2A
Speed	1760
Type	TEFC Induction
Power Transfer	Belt
Bearings	Shielded & Permanently Lubricated

Table Elevation

Horsepower	1/2 HP
Phase	3-Phase
Amps	2A/1A
Speed	1680
Type	TEFC Induction
Power Transfer	Chain
Bearings	Shielded & Permanently Lubricated

Feed

Horsepower	2 HP
Phase	3-Phase
Amps	6.1A/3.1A
Speed	1680
Type	TEFC Induction
Power Transfer	Chain
Bearings	Shielded & Permanently Lubricated

Main Specifications:

Main Specifications

Planer Size	40 in.
Max. Cut Width	40 in.
Min. Stock Length	16-1/2 in.
Min. Stock Thickness	1/4 in.
Max. Stock Thickness	11-3/4 in.
Number of Cuts Per Inch	163 - 44
Number of Cuts Per Minute	31,200
Cutterhead Speed	5200 RPM
Planing Feed Rate	16 - 59 FPM
Max. Cut Depth Planing Full Width	1/8 in.
Max. Cut Depth Planing 6-Inch Wide Board	1/4 in.

Cutterhead Info

Cutterhead Type	V-Helical
Cutterhead Diameter	5 in.
Number of Cutter Rows	6
Number of Indexable Cutters	249
Cutter Insert Type	Indexable Carbide
Cutter Insert Size Length	15mm
Cutter Insert Size Width	15mm
Cutter Insert Size Thickness	2.5mm

Table Info

Table/Headstock Movement	11-3/4 in.
Table Bed Size Length	43-5/16 in.
Table Bed Size Width	40 in.
Table Bed Size Thickness	5-1/4 in.
Number of Bed Rollers	2
Floor-to-Table Height	26-7/8 - 38-1/2 in.

Construction

Table	Precision-Milled, Chrome-Plated Cast Iron
Body	Steel
Stand	Steel
Cutterhead Assembly	Steel
Infeed Roller	Steel
Outfeed Roller	Polyurethane-Coated Steel
Paint Type/Finish	Urethane

Other

Measurement Scale	Inch & Metric
Number of Dust Ports	3
Dust Port Size	5 in.

Other Specifications:

Country of Origin	Taiwan
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	Machine ID Label
Sound Rating	80 dB

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 Planers

⚠WARNING

Amputation, serious cuts, entanglement, or death can occur from contact with rotating cutterhead or other moving parts! Flying chips can cause eye injuries or blindness. Workpieces or knives thrown by cutterhead can strike nearby operator or bystanders with deadly force. To reduce the risk of these hazards, operator and bystanders MUST completely heed hazards and warnings below.

KICKBACK. Know how to reduce risk of kickback and kickback-related injuries. "Kickback" occurs during operation when the workpiece is ejected back through infeed side of machine at a high rate of speed. Kickback is commonly caused by poor workpiece selection, unsafe feeding techniques, or improper machine setup/maintenance. Kickback injuries typically occur as follows: (1) operator/bystanders are struck by workpiece, resulting in impact injuries (i.e., blindness, broken bones, bruises, death); (2) operator's hands are pulled into blade from outfeed side, resulting in amputation or severe lacerations.

AVOID CONTACT WITH MOVING PARTS. Never remove guards/covers or reach inside planer during operation or while connected to power. You could be seriously injured if you accidentally touch spinning cutterhead or get entangled in moving parts. If a workpiece becomes stuck or sawdust removal is necessary, turn planer ***OFF***, allow cutterhead to stop, disconnect power before clearing.

DULL/DAMAGED KNIVES/INSERTS. Only use sharp, undamaged knives/inserts. Dull or damaged knives/inserts increase the risk of kickback.

INSPECTING STOCK. To reduce the risk of kickback injuries or machine damage, thoroughly inspect and prepare the workpiece before cutting. Verify workpiece is free of nails, staples, loose knots, or foreign material. Workpieces with minor warping should be jointed first or planed with the cupped side facing the table.

BODY PLACEMENT. Stand to one side of planer during entire operation to avoid getting hit if kickback occurs.

GRAIN DIRECTION. Planing across grain is hard on planer and may cause kickback. Plane in same direction or at a slight angle with wood grain.

PLANING CORRECT MATERIAL. Only plane natural wood stock with this planer. DO NOT plane MDF, OSB, plywood, laminates or other synthetic materials that can break up inside the planer and be ejected towards the operator.

LOOKING INSIDE PLANER. Wood chips fly around inside the planer at a high rate of speed during operation. To avoid injury from flying material, DO NOT look inside planer during operation.

CUTTING LIMITATIONS. To reduce the risk of kickback hazards or damage to the machine, do not exceed the maximum depth of cut or minimum board length and thickness found in the **Data Sheet**. Only feed one board at a time.

INFEED ROLLER CLEARANCE. The infeed roller is designed to pull material into the spinning cutterhead. To reduce the risk of entanglement, keep hands, clothing, jewelry, and long hair away from the infeed roller during operation.

FEED WORKPIECE PROPERLY. To reduce the risk of kickback, never start planer with workpiece touching cutterhead. Allow cutterhead to reach full speed before feeding, and do not change feed speed during cutting operation.

WORKPIECE SUPPORT. To reduce the risk of kickback, always make sure workpiece can move completely across table without rocking or tipping. Use auxiliary support stands for long stock.

SECURE KNIVES/INSERTS. Loose knives or improperly set inserts can become dangerous projectiles or cause machine damage. Always verify knives/inserts are secure and properly adjusted before operation.

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.

G0988 Full-Load Current Rating at 220V... 45A
G0988 Full-Load Current Rating at 440V... 23A

G0989 Full-Load Current Rating at 220V... 58A
G0989 Full-Load Current Rating at 440V... 29A

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.

Circuit Information

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.*

Circuit Requirements for 220V

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

Nominal Voltage 220V, 230V, 240V
Cycle ..... 60 Hz
Phase 3-Phase
Power Supply Circuit (G0988) ..... 60 Amps
Power Supply Circuit (G0989) ..... 75 Amps

Circuit Requirements for 440V

This machine can be converted to operate on a power supply circuit that has a verified ground and meets the requirements listed below. (Refer to **Voltage Conversion** instructions for details.)

Nominal Voltage 440V, 480V
Cycle ..... 60 Hz
Phase 3-Phase
Power Supply Circuit ..... 40 Amps

Connection Type

A permanently connected (hardwired) power supply is typically installed with wires running through mounted and secured conduit. A disconnecting means, such as a locking switch (see following figure), must be provided to allow the machine to be disconnected (isolated) from the power supply when required. This installation must be performed by an electrician in accordance with all applicable electrical codes and ordinances.

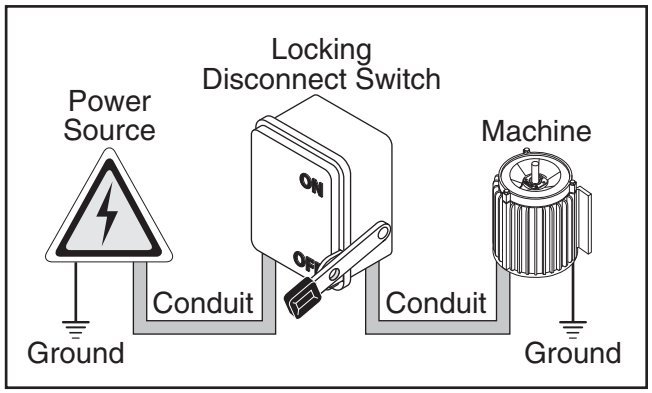


Figure 6. Typical setup of a permanently connected machine.

Grounding Instructions

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electrical current to reduce the risk of electric shock. A permanently connected machine must be connected to a grounded metal permanent wiring system; or to a system having an equipment-grounding conductor. All grounds must be verified and rated for the electrical requirements of the machine. Improper grounding can increase the risk of electric shock!

⚠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.

3-Phase Power

This machine requires 3-phase power. DO NOT use a static phase converter to create 3-phase power—it can quickly decrease the life of electrical components on this machine. If you must use a phase converter, only use a rotary phase converter.

G7978—15 HP Rotary Phase Converter
G7979—20 HP Rotary Phase Converter

These rotary phase converters allow you to operate 3-phase machinery from a single-phase power source at 100% power and 95% efficiency.

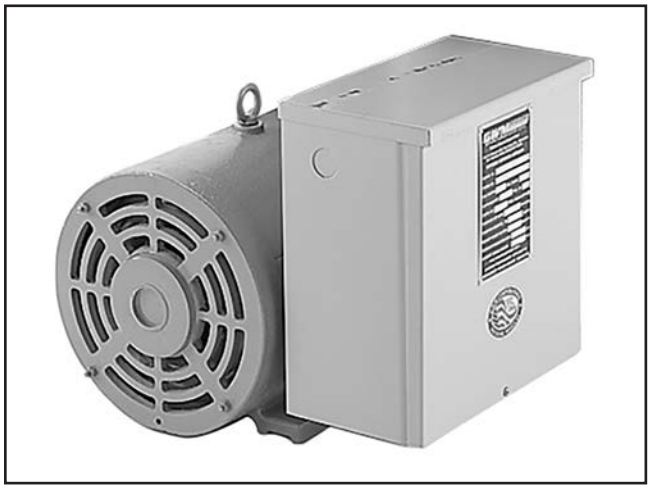


Figure 7. Model G7978 15 HP Rotary Phase Converter.

Converting Voltage to 440V

The voltage conversion MUST be performed by an electrician or qualified personnel.

To perform the voltage conversion, replace the inverter and overload relays, rewire the motors and transformer, then hardwire the machine to 440V power supply.

IMPORTANT: If the diagram included on the motor conflicts with the one in this manual, the motor may have changed since the manual was printed. Use the diagram provided on the motor.

Items Needed	Qty
Phillips Head Screwdriver #1	1
Phillips Head Screwdriver #2	1
Flat Head Screwdriver 3/32"	1
Hex Wrench 5mm	1
Open-End Wrenches 8, 10mm	1 Ea.
Inverter 440V C200-02400041A (P0988801X)	1
OL Relay LR3D06 (P0988814X)	1
OL Relay LR3D16 (G0988) (P0988815X)	1
OL Relay LR3D21 (G0989) (P0989815X)	1
Phillips Head Screws M6-1 x 12	3
Hex Nuts M6-1	3
Heat Transfer Tape	As Needed
Electrical Tape	As Needed

To convert machine to 440V operation:

1. DISCONNECT MACHINE FROM POWER!

2. Open electrical cabinet (see **Figure 8**).

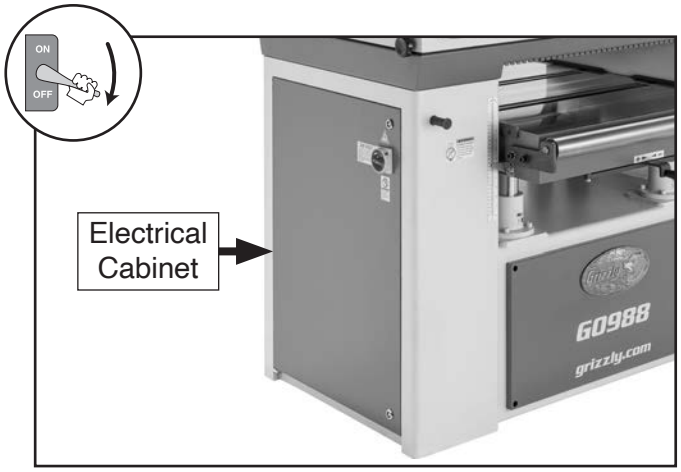


Figure 8. Location of electrical cabinet.

3. Disconnect wires from 220 inverter, and loosen (4) Phillips head screws in top and bottom corners (see **Figure 9**), then remove inverter.

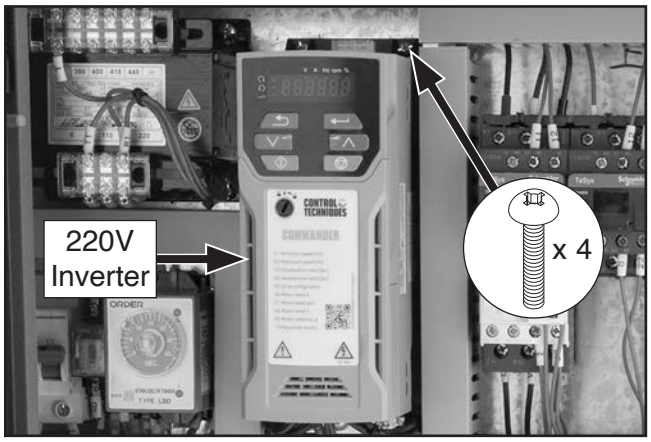


Figure 9. Location of 220V inverter.

4. Install 440V inverter with (4) Phillips head screws removed in **Step 3**, then connect wires to inverter terminals according to wiring section beginning on **Page 71**.

5. Disconnect wires from 220V table elevation motor overload relay, then loosen bottom three contactor terminals and remove overload relay (see **Figure 10**).

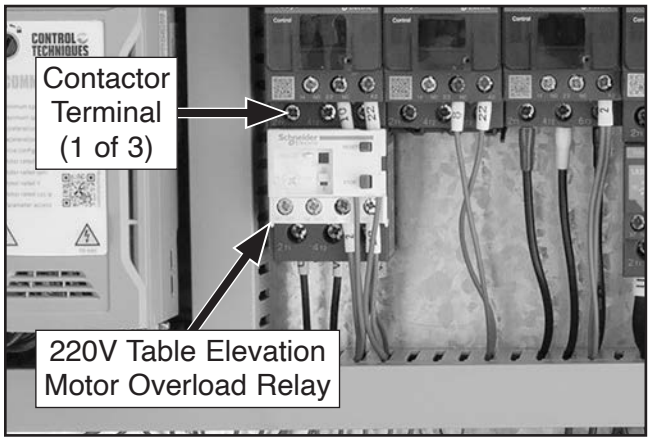


Figure 10. Location of table elevation motor overload relay (220V).

6. Secure 440V table elevation motor overload relay to contactor by tightening contactor terminals loosened in **Step 5**.

7. Set amperage dial to 1A and attach wires to 440V table elevation motor overload relay according to **Electrical Cabinet Schematic** on **Page 75**.

8. Disconnect wires from 220V cutterhead motor overload relay, then loosen bottom three contactor terminals and remove overload relay (see **Figure 11**).

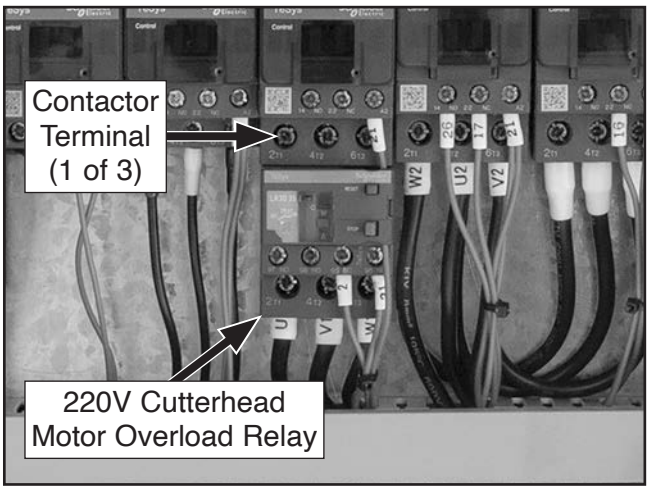


Figure 11. Location of cutterhead motor overload relay (220V).

9. Secure 440V cutterhead motor overload relay to contactor by tightening contactor terminals loosened in **Step 8**.

— For Model G0988, use LR3D16 OL relay and set amperage dial to 18.4A.

— For Model G0989, use LR3D21 OL relay and set amperage dial to 25.2A.

10. Attach wires to 440V cutterhead motor overload relay according to **Electrical Cabinet Schematic** on **Page 75**.

11. Disconnect R wire from 220V terminal on transformer (see **Figure 12**).

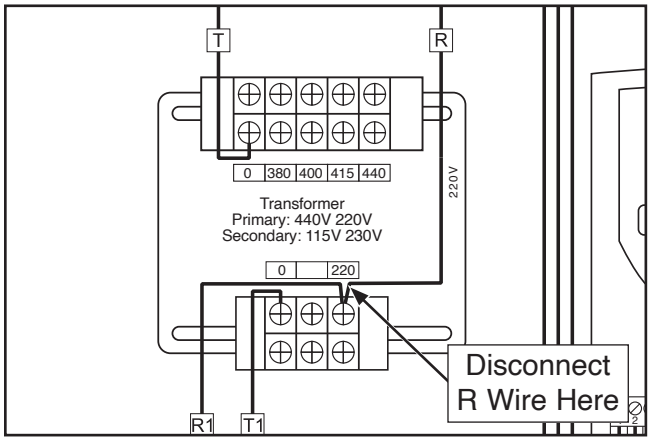


Figure 12. R wire connected to 220V transformer terminal.

12. Connect R wire to 440V terminal on transformer (see **Figure 13**).

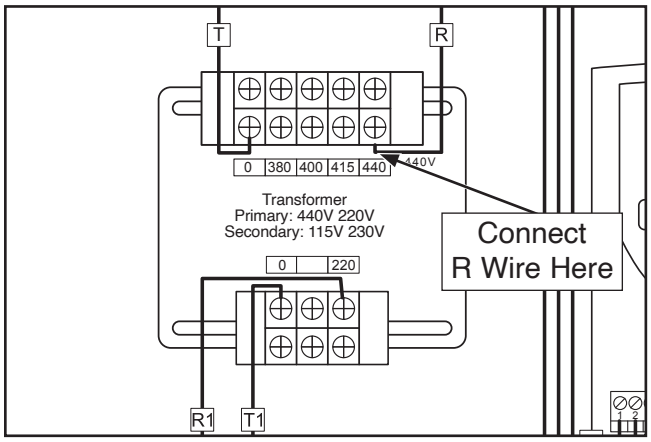


Figure 13. R wire connected to 440V transformer terminal.

13. Open feed motor junction box, as shown in **Figure 14**.

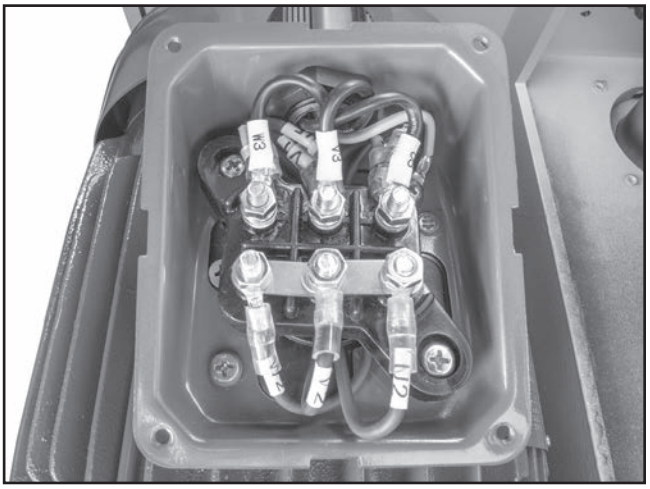


Figure 14. Feed motor wiring (220V).

14. Remove jumpers (see **Figure 15**).

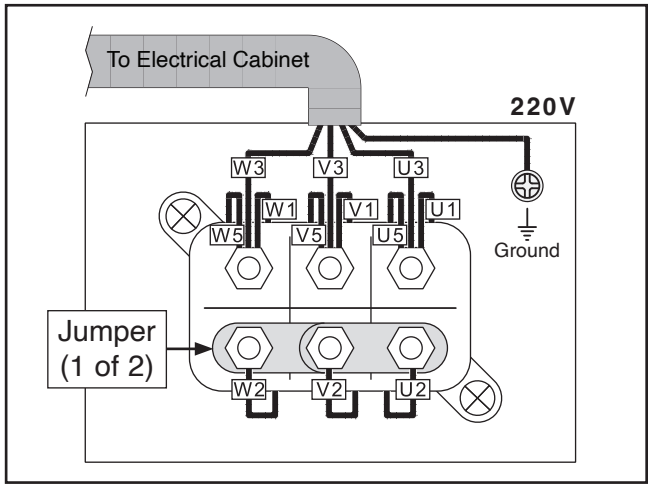


Figure 15. Feed motor wiring (220V).

15. Disconnect wire W5 and move to terminal with wire W2, as shown in **Figure 16**.

16. Disconnect wire V5 and move to terminal with wire V2, as shown in **Figure 16**.

17. Disconnect wire U5 and move to terminal with wire U2, as shown in **Figure 16**.

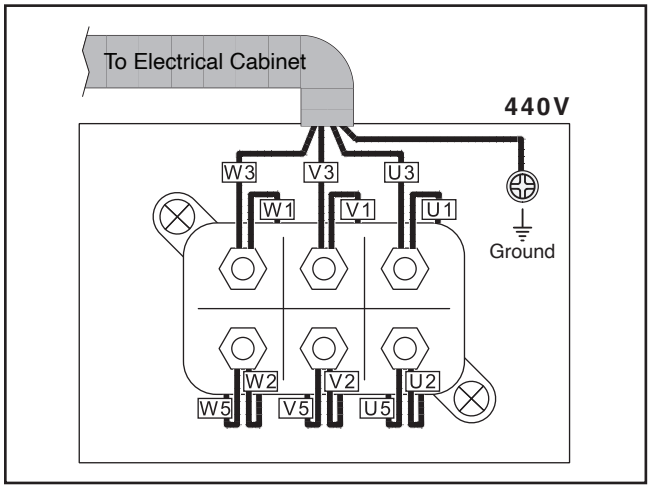


Figure 16. Feed motor wiring (440V).

18. Install feed motor junction box cover.

19. Remove front panel (see **Figure 17**).

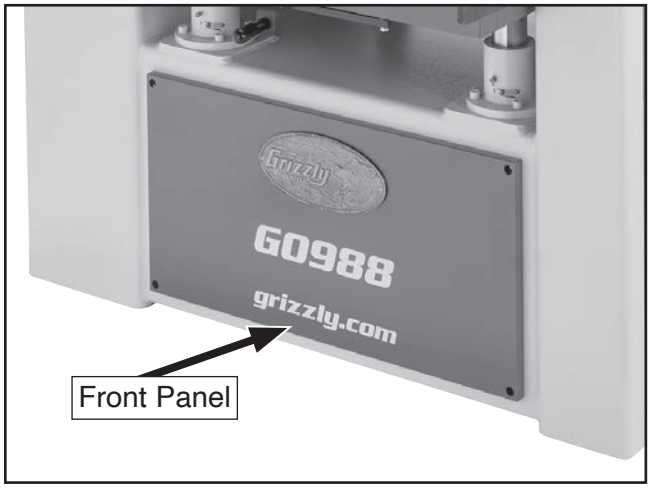


Figure 17. Location of front panel.

20. Open table elevation motor junction box, as shown in **Figure 18**.

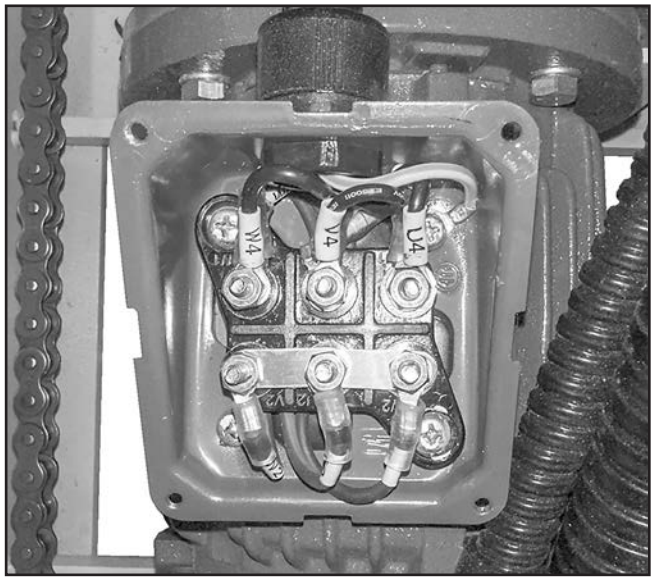


Figure 18. Table elevation motor wiring (220V).

21. Remove jumpers (see **Figure 19**).

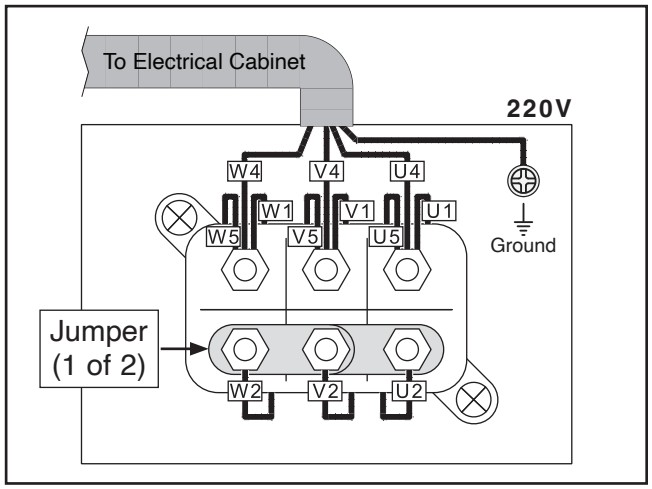


Figure 19. Table elevator motor wiring (220V).

22. Disconnect wire W5 and move to terminal with wire W2, as shown in **Figure 20**.

23. Disconnect wire V5 and move to terminal with wire V2, as shown in **Figure 20**.

24. Disconnect wire U5 and move to terminal with wire U2, as shown in **Figure 20**.

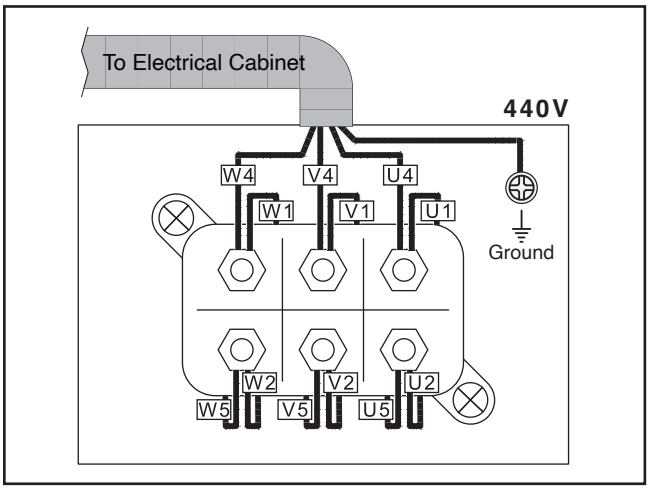


Figure 20. Table elevator motor wiring (440V).

25. Install table elevation motor junction box cover.

26. Open maintenance door (see **Figure 21**).

Figure 21. Location of maintenance door.

27. Open cutterhead motor junction box, as shown in **Figure 22**–**Figure 23**.

Figure 22. Cutterhead motor wiring (220V).

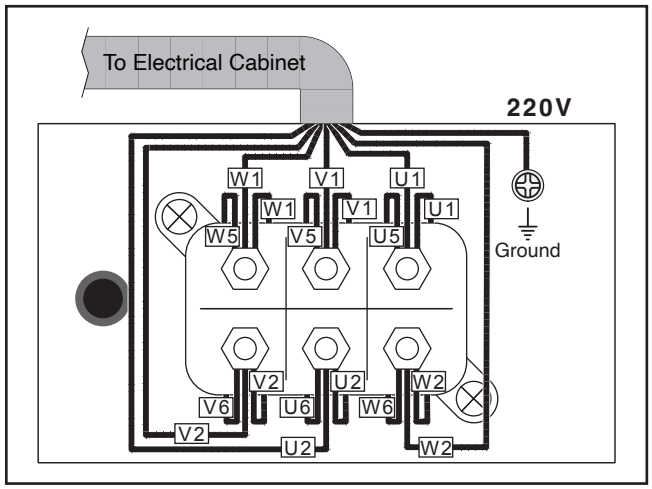


Figure 23. Cutterhead motor wiring (220V).

28. Connect wire U5 to wire U2 that disappears into motor with (1) M6-1 x 12 Phillips head screw and M6-1 hex nut, as shown in **Figure 24**, then wrap screw and nut with heat transfer tape and electrical tape.

29. Connect wire V5 to wire V2 that disappears into motor with (1) M6-1 x 12 Phillips head screw and M6-1 hex nut, as shown in **Figure 24**, then wrap screw and nut with heat transfer tape and electrical tape.

30. Connect wire W5 to wire W2 that disappears into motor with (1) M6-1 x 12 Phillips head screw and M6-1 hex nut, as shown in **Figure 24**, then wrap screw and nut with heat transfer tape and electrical tape.

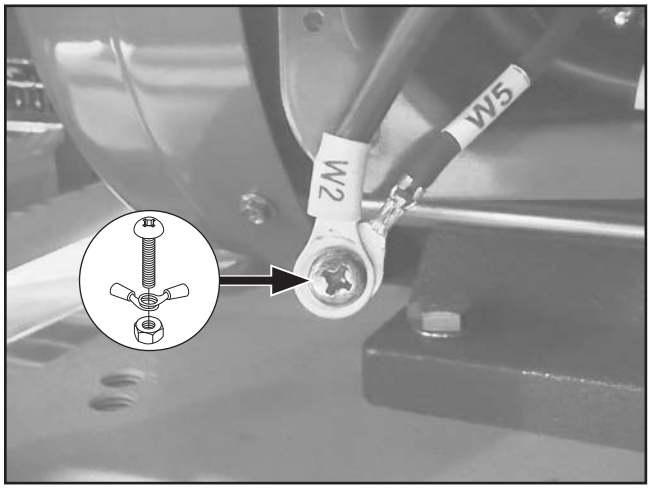


Figure 24. Wires W2 and W5 connected with (1) Phillips head screw and hex nut.

31. Final 440V cutterhead motor wiring should match **Figure 25**.

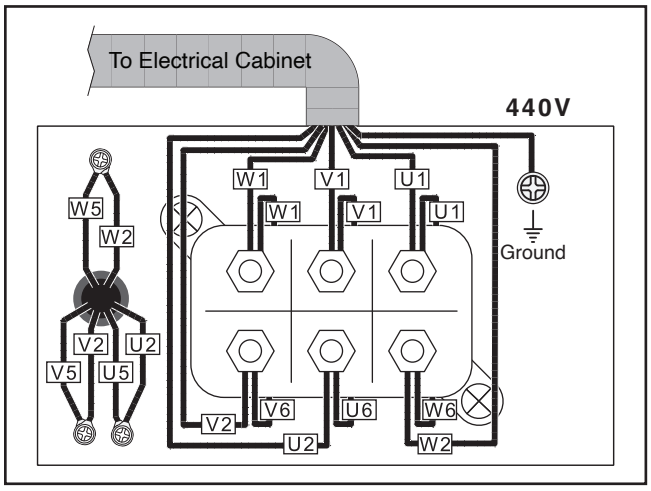
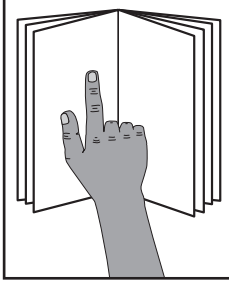


Figure 25. Cutterhead motor wiring (440V).

32. Install cutterhead motor junction box cover and front panel, then close maintenance door and electrical cabinet.

33. Prepare hardwire power source according to **Circuit Requirements for 440V** on **Page 17** and **Connection Type** on **Page 18**.

SECTION 3: SETUP

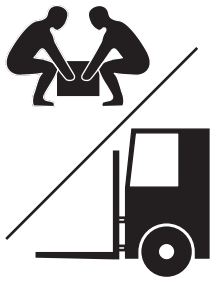


⚠WARNING

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
• Another Person	1
• Safety Glasses (for each person)	1
• Safety Hooks and Chains	
Rated for at least 3350 lbs. (G0988)	4
Rated for at least 4250 lbs. (G0989)	4
• Forklift	
Rated for at least 3350 lbs. (G0988)	1
Rated for at least 4250 lbs. (G0989)	1
• Phillips Head Screwdriver #2	1
• Open-End Wrench 14mm	1
• Open-End Wrenches 19mm	2
• Hex Wrench 6mm	1
• Machinist's Level	1
• Disposable Gloves	As Needed
• Gear Oil ISO 320	As Needed
• Cleaner/Degreaser	As Needed
• Shop Rags	As Needed
• Dust Collection System	1
• Dust Hoses 5"	
G0988	2
G0989	3
• Hose Clamps 5"	
G0988	2
G0989	2

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.

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.

Crated Inventory (Not Shown)	Qty
A. Dust Collection Adapter	1
B. Planer	1

Toolbox Inventory (Figure 26)	Qty
C. Toolbox	1
D. Door Key	1
E. Lifting Eye Bolt	1
F. Cutterhead Replacement Inserts	5
G. Drill Bits T20	6
H. Torque Driver	1
I. Torx Screwdrivers T20	3
J. Flat Head Torx Screws T20, M6-1 x 15 (P0988503)	20
K. Cast Iron Feet	4

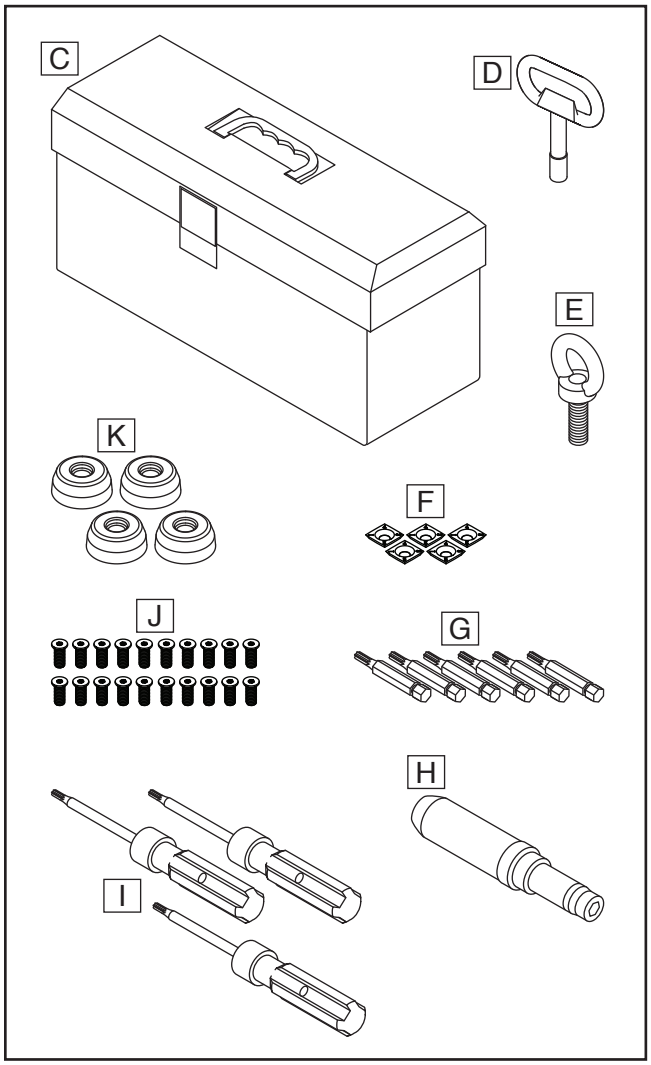


Figure 26. Toolbox inventory.

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.

Order online at www.grizzly.com OR Call 1-800-523-4777

Figure 27. T23692 Orange Power Degreaser.

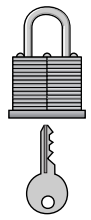
Site Considerations

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.

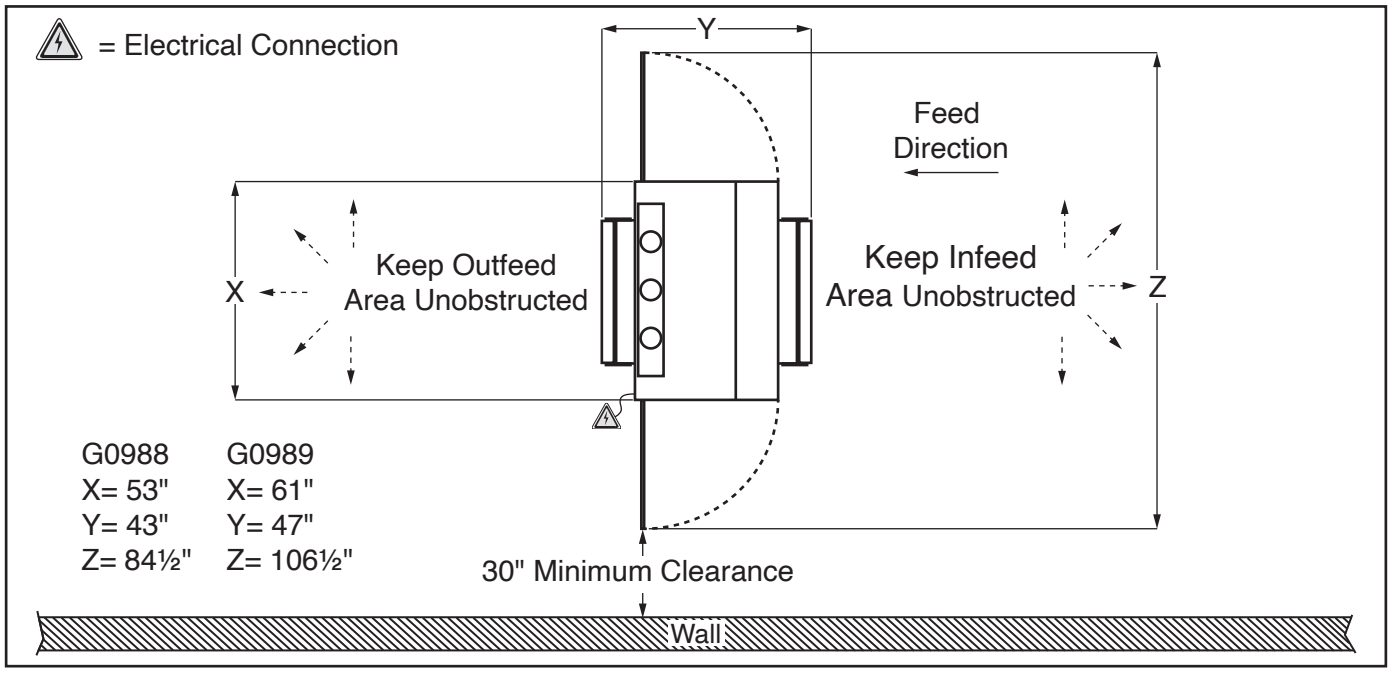
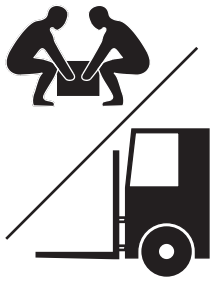


Figure 28. Minimum working clearances.

Lifting & Placing



⚠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.

DO NOT attempt to lift this machine without using the proper lifting equipment (such as a forklift or hoist) or the necessary assistance from other people. Each piece of lifting equipment must be rated for at least 3350 lbs. for Model G0988 and 4250 lbs. for Model G0989 to support dynamic loads that may be applied.

To lift and place machine:

1. Move pallet to desired location, then remove top crate from shipping pallet.
2. Remove loosely packed items.
3. Unbolt machine from pallet.
4. Place (4) safety hooks and chains under lifting bolts (see **Figure 29**). Make sure chains are not in contact with any controls or handles.

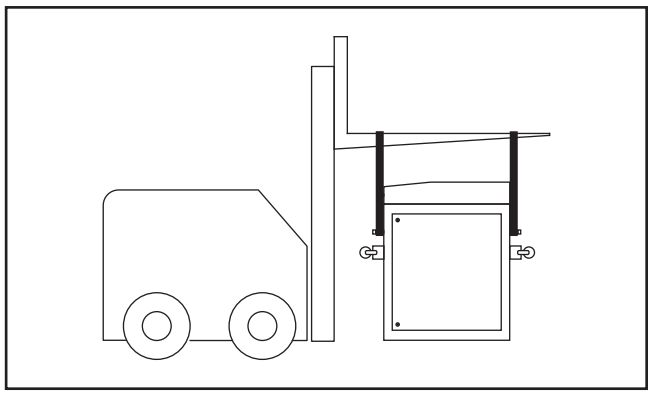


Figure 29. Example of lifting planer with forklift.

5. Raise machine enough to remove pallet, then proceed with leveling.

Leveling

The G0988/G0989 comes with four cast iron feet and four pre-installed hex bolts and hex nuts at each corner of the base for leveling the machine.

This type of mount offers certain advantages, such as ease of installation and easy leveling. It also makes it easier to move the machine later.

The disadvantage of this type of mount is that the machine can shift or move over time. For this reason, electrical codes in your region may limit their use since the machine must be hardwired to the power source. Consult a qualified electrician to determine local requirements.

To level machine:

1. Ensure pre-installed M12-1.75 x 30 leveling bolts and M12-1.75 jam nuts are threaded into base the same amount (see **Figure 30**).
2. Position (4) leveling feet beneath leveling bolts (see **Figure 30**) and slowly lower machine onto feet.

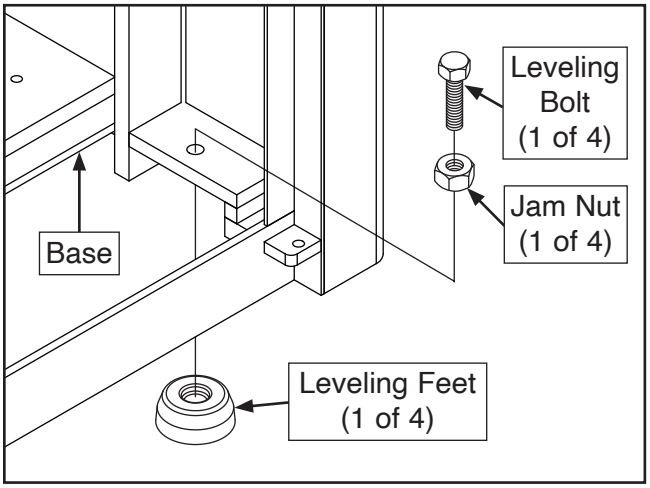


Figure 30. Location of leveling feet and fasteners (maintenance door removed for clarity).

3. Tighten or loosen leveling bolts as needed to level machine front to back and side to side.
4. Tighten jam nuts against base to secure leveling bolt position.

Anchoring to Floor

Number of Mounting Holes 4
Diameter of Mounting Hardware..... 3/8"

Anchoring machinery to the floor prevents tipping or shifting and reduces vibration that may occur during operation, resulting in a machine that runs slightly 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.

If not required by any local codes, fastening the machine to the floor is an optional step. If you choose not to do this with your machine, we recommend placing it on machine mounts, as these provide an easy method for leveling and they have vibration-absorbing pads.

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.

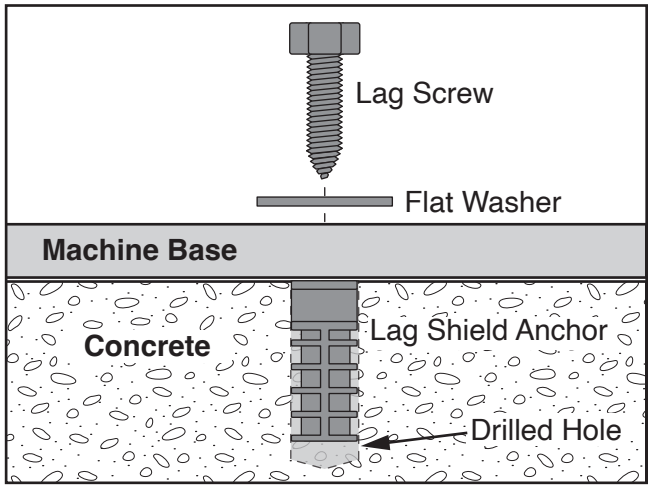


Figure 31. Popular method for anchoring machinery to a concrete floor.

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).

Attach the dust collection adapter to the top cover using pre-installed Phillips head screws (see **Figure 32**).

Note: *The Model G0988 uses (6) Phillips head screws, and the Model G0989 uses (10) Phillips head screws.*

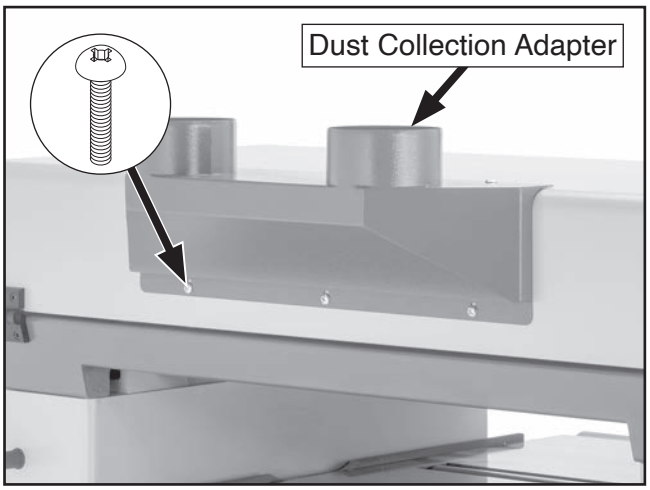


Figure 32. Dust collection adapter attached to top cover (G0988 shown).

Dust Collection

⚠CAUTION

This machine creates a lot of wood chips/dust during operation. Breathing airborne dust on a regular basis can result in permanent respiratory illness. Reduce your risk by wearing a respirator and capturing the dust with a dust-collection system.

Minimum CFM at Each Dust Port: 500 CFM
Do not confuse this CFM recommendation with the rating of the dust collector. To determine the CFM at the dust port, you must consider these variables: (1) CFM rating of the dust collector, (2) hose type and length between the dust collector and the machine, (3) number of branches or wyes, and (4) amount of other open lines throughout the system. Explaining how to calculate these variables is beyond the scope of this manual. Consult an expert or purchase a good dust collection "how-to" book.

To connect dust collection system to machine:

1. Fit (1) 5" dust hose over each dust port (see **Figure 33**), then secure each in place with a hose clamp.

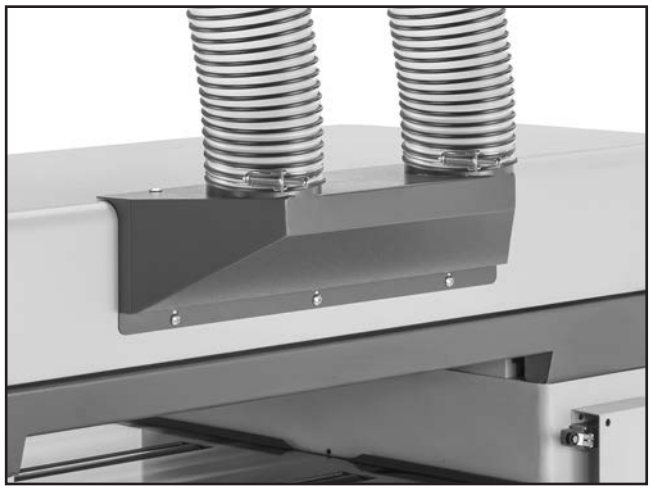


Figure 33. Dust hoses attached to dust ports (G0988 shown).

2. Tug hoses to make sure they do not come off.

   Note: *A tight fit is necessary and ensures proper performance during operation.*

Checking Gearbox Oil Level

Before starting your machine for the first time, check the oil level of the feed motor gearbox and table elevation motor gearbox. Each gearbox uses ISO 320 gear oil. DO NOT mix oil types.

Note: *We recommend replacing the gearbox oil after the first 20 hours of operation. This is a normal break-in procedure and will help maximize the service life of the machine by flushing away any particles from the break-in and manufacturing process.*

Feed Motor Gearbox

The feed motor gearbox has the proper amount of oil when the sight glass is filled approximately halfway.

To check feed motor gearbox oil level:

1. Open electrical cabinet door.

2. Locate sight glass on front of gearbox (see **Figure 34**).

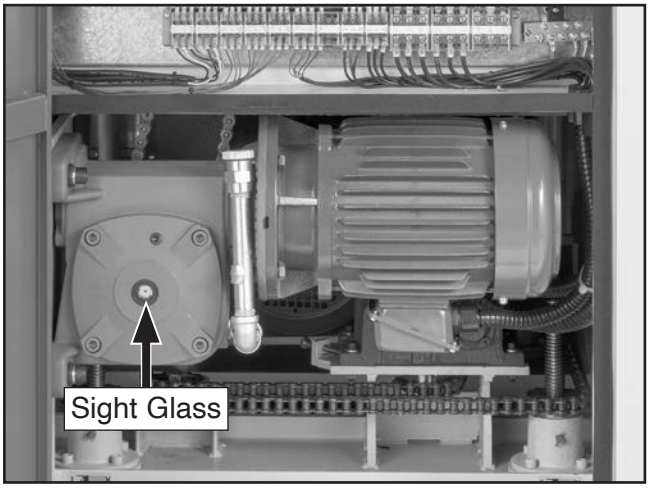


Figure 34. Location of feed motor gearbox sight glass.

   — If sight glass is filled halfway, gearbox oil level is okay.

   — If sight glass is below halfway, oil needs to be added. Refer to **Lubrication** beginning on **Page 48**.

3. Close electrical cabinet door.

Table Elevation Motor Gearbox

The table elevation motor gearbox has the proper amount of oil when the sight glass is filled approximately halfway.

To check table elevation motor gearbox oil level:

1. Remove front panel, and open maintenance door.

2. Locate sight glass (see **Figure 35**) on left side of gearbox.

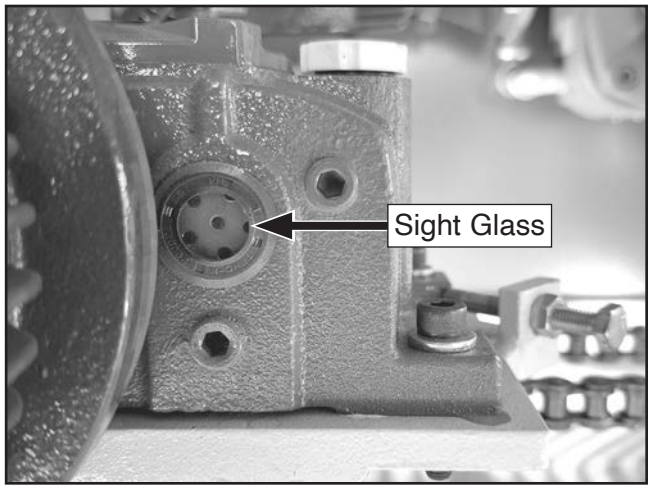


Figure 35. Location of table elevation motor gearbox sight glass (viewed from left side).

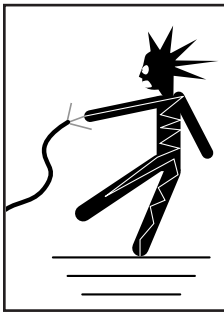
   — If sight glass is filled halfway, gearbox oil level is okay.

   — If sight glass is below halfway, oil needs to be added. Refer to **Lubrication** beginning on **Page 48**.

3. Install front panel and close maintenance door.

Power Connection

Before the machine can be connected to the power source, an electrical circuit and connection device must be prepared per the **POWER SUPPLY** section in this manual; and all previous setup instructions in this manual must be complete to ensure that the machine has been assembled and installed properly. The disconnect switch installed by the electrician (as recommended) is the primary means for disconnecting or connecting the machine to the power source.



⚠WARNING

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

⚠WARNING

DO NOT connect this machine to a static phase converter to supply 3-phase power as it could damage or decrease the life of sensitive electrical components. If a phase converter is needed, use a rotary phase converter.

NOTICE

The Model G0988/G0989 is prewired for 220V. If you plan to operate machine at 440V, you must refer to instructions on Page 19.

IMPORTANT: Due to the complexity required for planning, bending, and installing the conduit necessary for a code-compliant hardwire setup, an electrician or other qualified person MUST perform this type of installation. Hardwire setups typically require power supply wires to be enclosed inside of a solid or flexible conduit, which is securely mounted at both ends with the appropriate conduit fittings. All work must adhere to the required electrical codes.

Connecting Power Supply Wires

⚠WARNING

Connecting power supply wires to machine without first disconnecting power supply may result in serious injury or death.

To connect power supply wires:

1. DISCONNECT POWER SUPPLY WIRES FROM POWER SOURCE (LOCK DISCONNECT SWITCH BOX IN OFF POSITION)!

2. Open electrical cabinet.

3. Insert incoming power conduit through strain reliefs in electrical cabinet (see **Figure 36**).

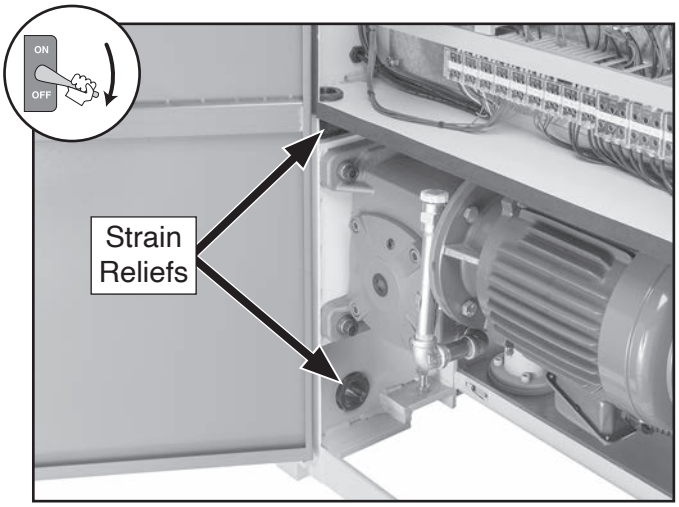


Figure 36. Strain relief and electrical cabinet.

⚠WARNING

During next step, make sure incoming ground wire is connected to correct terminal to ensure machine will be properly grounded (see "Ground Plate" in Figure 37). An ungrounded or improperly grounded machine can cause electrocution if live electrical wires make contact with frame or other parts touched by operator.

4. Attach incoming power wires to terminals R, S, and T (see **Figure 37**), then attach ground wire to ground plate.

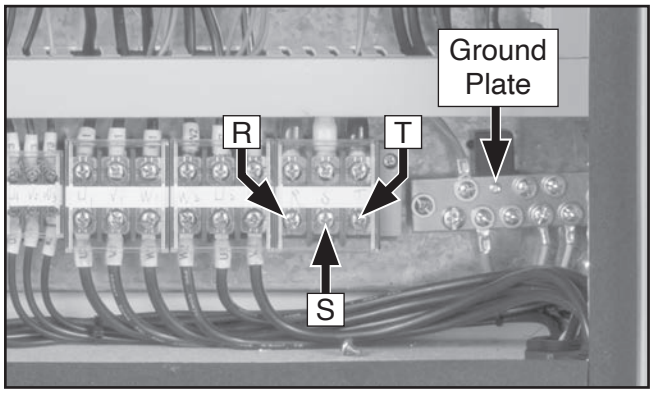


Figure 37. Location of R, S, T terminals.

5. Tighten strain reliefs and close electrical cabinet.

Connecting to Power Source

Move the disconnect switch handle to the ON position, as illustrated below. The machine is now connected to the power source.

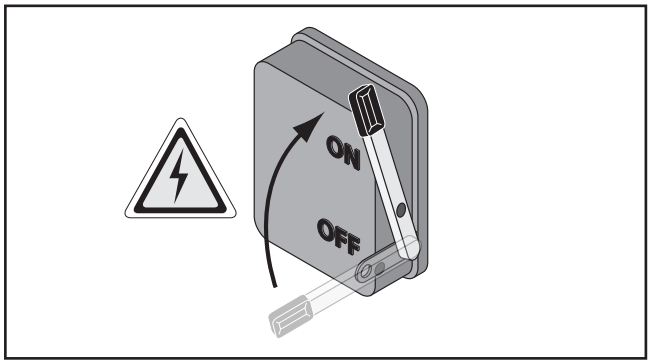


Figure 38. Connecting power to machine.

Disconnecting from Power Source

Move the disconnect switch handle to the OFF position, as illustrated below. The machine is now disconnected from the power source.

Note: *Lock the switch in the OFF position to restrict others from starting the machine.*

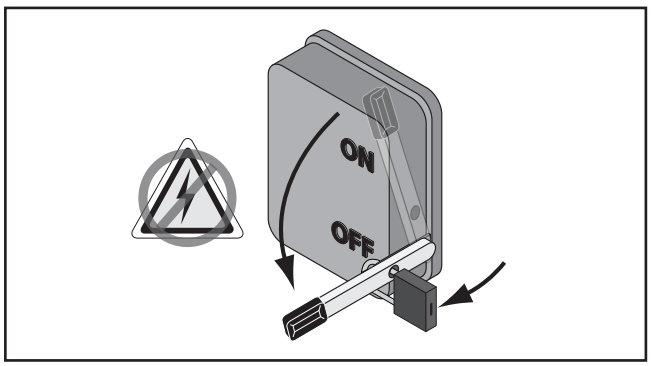


Figure 39. Disconnecting power from machine.

Correcting Phase Polarity

If you discover during the Test Run that the machine will not operate, or that the motor runs backwards, the incoming power wires may be wired "out of phase," meaning the polarity is incorrectly wired. This is a common situation with 3-phase power and it is easy to correct.

To correct phase polarity:

1. DISCONNECT MACHINE FROM POWER!

2. Open electrical cabinet and swap wires connected to R and T terminals (see **Figure 40**).

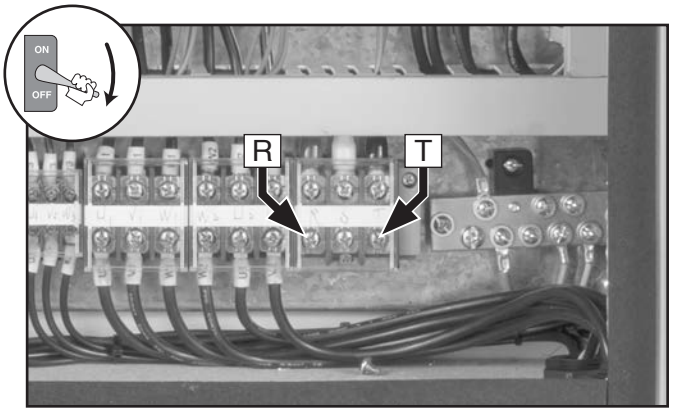


Figure 40. Location of R and T terminals.

3. Close and latch electrical cabinet and reconnect machine to power.

4. Follow **Test Run** to ensure that machine functions properly.

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 **Control Techniques C200 series** manual found at **ctmanuals.info**. All VFD servicing should be done by an authorized and trained technician. The VFD parameters have been set at the factory to optimize the performance of the machine and should not be adjusted unless instructed by Grizzly Tech Support. Improper adjustments can cause machine damage, disable important safety features, and may void the warranty.

⚠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.

The Test Run consists of verifying the following: 1) the power supply polarity is correct, 2) the table limit switches work correctly, 3) the motors power up and run correctly, 4) the top cover safety switch works correctly, and 5) the EMERGENCY STOP buttons work correctly.

To test run machine:

1. Clear all setup tools away from machine.

2. Press EMERGENCY STOP buttons in and turn master power switch to OFF position.

3. Connect machine to power supply.

4. Twist EMERGENCY STOP buttons clockwise until they pop out (see **Figure 41**). This resets buttons so machine can start.

Figure 41. Resetting EMERGENCY STOP buttons.

5. Turn master power switch to ON position.

6. Verify power supply is connected to machine with correct polarity by pressing table UP and table DOWN buttons on control panel (see **Figure 42**).

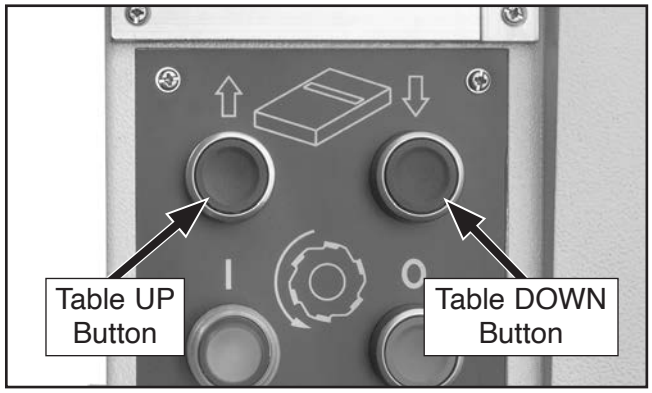


Figure 42. Location of table UP and DOWN buttons.

— If table *raises* when table UP button is pushed and *lowers* when table DOWN button is pushed, then phase polarity *is correct*. Proceed to **Step 7**.

— If table *lowers* when table UP button is pushed and *raises* when table DOWN button is pushed, then power phase polarity *is not correct*. Push both EMERGENCY STOP buttons and DISCONNECT MACHINE FROM POWER. Proceed to **Correcting Phase Polarity** on **Page 33**, then restart Test Run.

⚠WARNING

You MUST verify that table moves in expected direction according to buttons pressed on control panel, otherwise all controls will function in reverse. Cutterhead and feed rollers MUST rotate in correct direction or serious personal injury and machine damage could occur.

7. Press and hold table UP button. When table presses upper table limit switch, table movement should stop.

— If table *does* stop, table upper limit switch is working correctly.

— If table *does not* stop, immediately DISCONNECT MACHINE FROM POWER. Table upper limit switch is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

8. Press and hold table DOWN button. When table presses lower table limit switch, table movement should stop.

— If table *does* stop, table lower limit switch is working correctly.

— If table *does not* stop, immediately disconnect power to machine. Table lower limit switch is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

9. Press cutterhead motor ON button (see **Figure 43**) to turn cutterhead motor ***ON***. Verify motor starts up and runs smoothly without any unusual vibrations or noises.

10. Press cutterhead motor OFF button (see **Figure 43**) to turn cutterhead motor ***OFF***. Ensure cutterhead motor comes to a complete stop before proceeding to next steps.

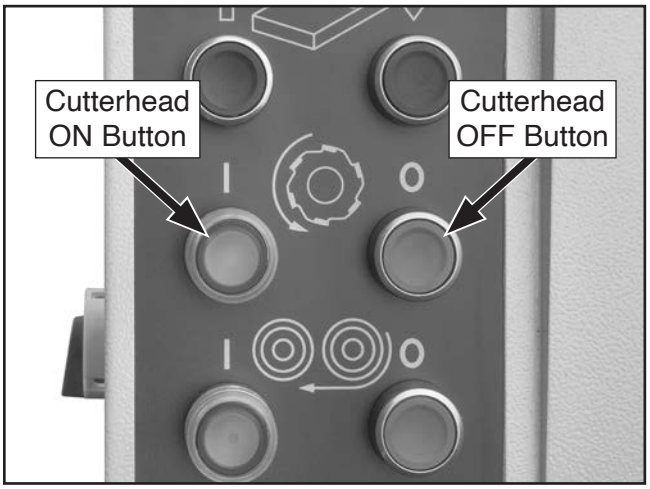


Figure 43. Location of cutterhead motor ON and OFF buttons.

11. Press feed motor ON button (see **Figure 44**) to turn feed motor ***ON***. Verify motor starts up and runs smoothly without any unusual vibrations or noises.

12. Slowly turn feed speed control dial (see **Figure 44**) back and forth to test variable feed speed function.

13. Press feed motor OFF button (see **Figure 44**) to turn cutterhead motor ***OFF***. Ensure feed motor comes to a complete stop before proceeding to next steps.

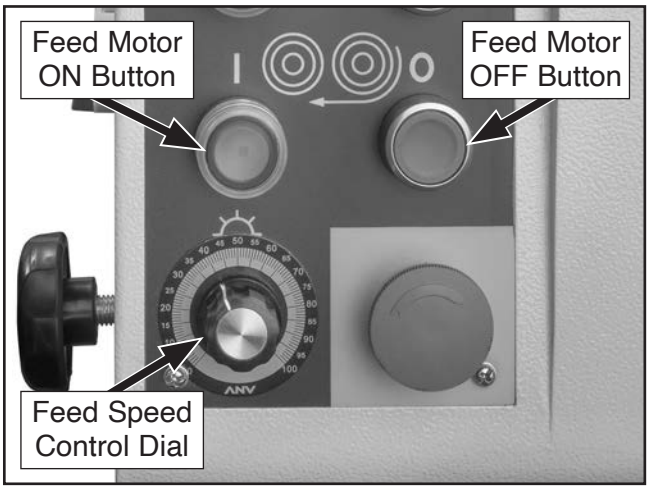


Figure 44. Location of feed motor ON and OFF buttons and feed speed control dial.

14. Loosen top cover safety switch knob (see **Figure 45**) as far as it will go, then press cutterhead ON button.

— If machine *does not* start, top cover safety switch is working correctly.

— If machine does start, immediately DISCONNECT MACHINE FROM POWER. Top cover safety switch is not working correctly and must be replaced before further using machine.

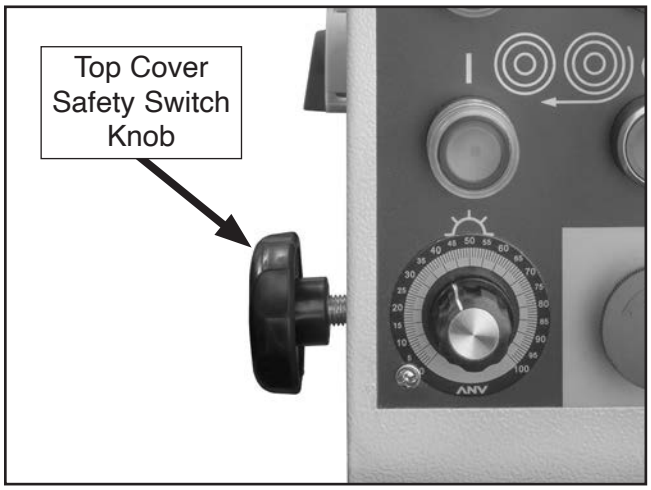


Figure 45. Location of top cover safety switch knob.

15. Tighten top cover safety switch knob all the way.

16. Start cutterhead and feed motors.

17. Press EMERGENCY STOP button on control panel (see **Figure 46**) to turn cutterhead motor and feed motor ***OFF***.

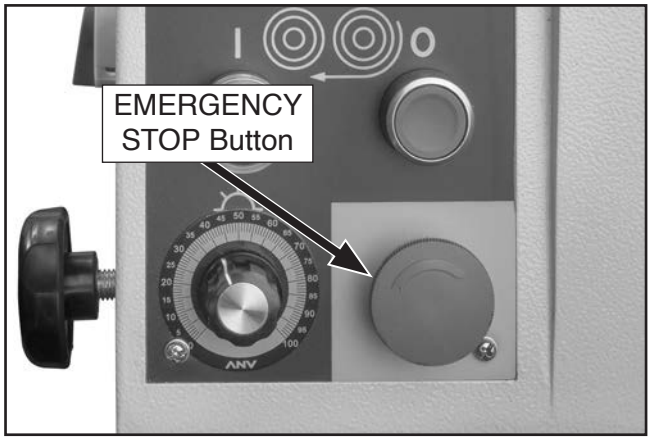


Figure 46. Location of EMERGENCY STOP button.

18. Without resetting EMERGENCY STOP button on control panel, try to start machine by pressing cutterhead motor ON button and feed motor ON button, then try to move table by pressing table UP button.

— If all motors *do not* start, then EMERGENCY STOP button safety feature is working correctly. Proceed to **Step 19**.

— If any motors *do* start, immediately DISCONNECT MACHINE FROM POWER. EMERGENCY STOP button safety feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

19. Twist EMERGENCY STOP button clockwise until it pops out.

20. Repeat **Steps 16–18** for rear EMERGENCY STOP button (see **Figure 47**).

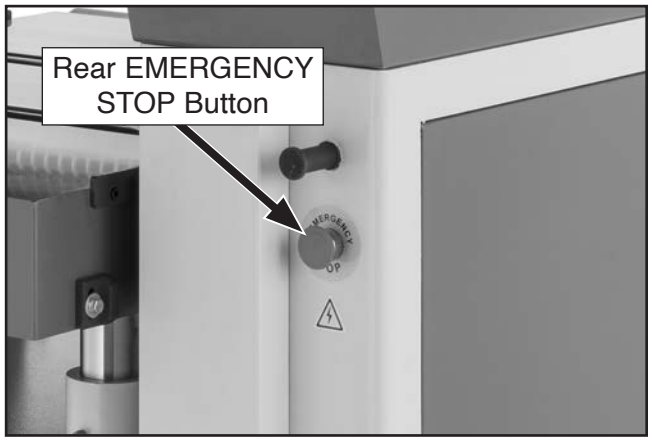


Figure 47. Location of rear EMERGENCY STOP button.

Congratulations! The Test Run is complete.

Recommended Adjustments

The adjustments listed below have been performed at the factory. However, because of the many variables involved with shipping, we recommend that you verify the adjustments to ensure the best possible results from your new machine.

Step-by-step instructions for these adjustments can be found in the **SERVICE** section starting on **Page 53**.

Factory adjustments that should be verified:

- V-belt tension (**Page 57**).
- Pulley alignment (**Page 60**).
- Table elevation scale calibration (**Page 61**).
- Table parallelism (**Page 63**).
- Infeed roller height (**Page 66**).
- Chip breaker height (**Page 67**).
- Pressure bar height (**Page 68**).
- Steel outfeed roller height (**Page 69**).
- Rubber outfeed roller height (**Page 70**).

NOTICE

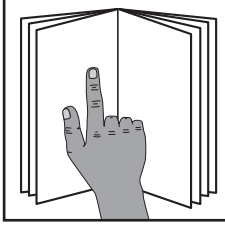
After approximately 16 hours of operation, V-belts will stretch and seat into pulley grooves and need to be properly tensioned to avoid severely reducing life of V-belts. Refer to Tensioning/Replacing V-Belts on Page 57 for detailed instructions.

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.

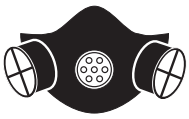


⚠WARNING

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

⚠WARNING

Eye injuries, respiratory problems, or hearing loss can occur while operating this tool. Wear personal protective equipment to reduce your risk from these hazards.



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. Examines workpiece to make sure it is suitable for planing.

2. Puts on safety glasses or face shield, a respirator, and hearing protection.

3. Places workpiece on table with flat side down and correctly adjusts bed roller height and table elevation for workpiece thickness and depth of cut.

   — If workpiece is bowed, operator surface planes workpiece on a jointer, with cupped side facing down, until one side is flat. Doing so ensures that it sits solidly on planer table during operation.

4. After all safety precautions have been taken, starts dust collector, then turns planer ***ON***.

5. Sets feed rate for planing operation.

6. Stands to one side of planer path to reduce risk of kickback injuries, then feeds workpiece into planer until infeed roller grabs it.

   Note: *Infeed and outfeed rollers control feed rate of workpiece as it passes through planer. Operator does not push or pull on workpiece.*

   — If cut is too deep and bogs down planer, operator immediately reduces depth of cut.

7. Once workpiece is clear of outfeed roller and stops moving, operator removes workpiece from outfeed table and measures workpiece thickness. If further planing is required, operator raises table slightly, then feeds workpiece into front of planer again.

8. Operator continues process until desired workpiece thickness is achieved, then turns planer ***OFF***.

Workpiece Inspection

Some workpieces are not safe to use or may require modification before they are. **Before cutting, inspect all workpieces for the following:**

- **Material Type:** This machine is only intended for workpieces of natural wood fiber. Attempting to use workpieces of any other material that may break apart during operation could lead to serious personal injury and property damage.

- **Foreign Objects:** Inspect lumber for defects and foreign objects (nails, staples, embedded gravel, etc.). If you have any question about the quality of your lumber, DO NOT use it. Remember, wood stacked on a concrete floor can have small pieces of stone or concrete pressed into the surface.

- **Large/Loose Knots:** Loose knots can become dislodged during operation. Large knots can cause kickback and machine damage. Always use workpieces that do not have large/loose knots.

- **Wet or "Green" Stock:** Avoid using wood with a high water content. Wood with more than 20% moisture content or wood exposed to excessive moisture (such as rain or snow), will cut poorly and cause excessive wear to the machine. Excess moisture can also hasten rust and corrosion of the machine and/or individual components.

- **Excessive Warping:** Workpieces with excessive cupping, bowing, or twisting are dangerous to cut because they are unstable and often unpredictable when being cut. DO NOT use workpieces with these characteristics!

- **Minor Cupping:** Workpieces with slight cupping can be safely supported if the cupped side is facing the table. On the contrary, a workpiece supported on the bowed side will rock during operation and could cause severe injury from kickback.

- **Dimension Requirements:** Make sure your workpiece exceeds the minimum dimension requirements shown below before processing it through the machine, or the workpiece may break or kick back during the operation.

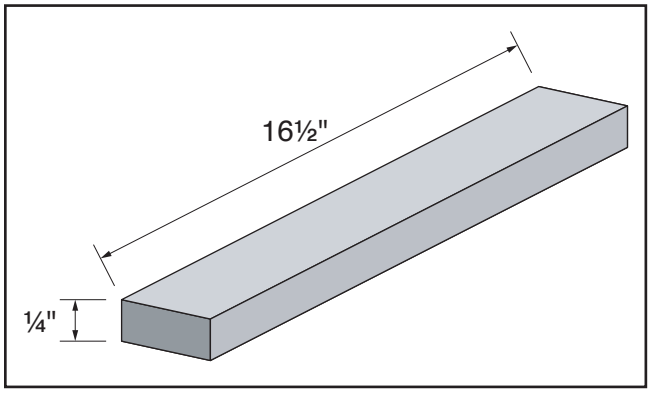


Figure 48. Minimum stock dimensions.

Wood Types

The species of wood, as well as its condition, greatly affects the depth of cut the jointer/planer can effectively take with each pass.

The chart in the figure below shows the Janka Hardness Rating for a number of commonly used species. The larger the number, the harder the workpiece, and the less material should be removed in any one pass for good results.

Note: *The Janka Hardness Rating is expressed in pounds of force required to embed a 0.444" steel ball into the surface of the wood to a depth equal to half the ball's diameter.*

Species	Janka Hardness
Ebony	3220
Red Mahogany	2697
Rosewood	1780
Red Pine	1630
Sugar Maple	1450
White Oak	1360
White Ash	1320
American Beech	1300
Red Oak	1290
Black Walnut	1010
Teak	1000
Black Cherry	950
Cedar	900
Sycamore	770
Douglas Fir	660
Chestnut	540
Hemlock	500
White Pine	420
Basswood	410
Eastern White Pine	380
Balsa	100

Planing Tips

- Inspect your lumber for twisting or cupping, and surface cupped side on a jointer if necessary before planing workpiece.
- Scrape off all glue when planing glued-up panels. Dried glue can quickly dull knives/inserts.
- DO NOT plane more than one piece at a time side by side.
- Never remove more than the recommended amount of material on each pass. Only remove a small amount of material on each pass when planing wide or dense stock.
- Support the workpiece on both ends. Get assistance from another person if you are planing long lumber, or use roller stands to support the workpiece.
- Measure the workpiece thickness with calipers to get exact results.
- Use a jointer on one side of the workpiece and the planer for the other.
- Carefully inspect all stock to make sure it is free of large knots or foreign objects that may damage your knives/inserts, cause kickback, or be ejected from the planer.
- Use the entire width of the planer to wear knives/inserts evenly. With narrow workpieces, alternate between far left, far right, and the middle of the table. Your knives/inserts will remain sharp much longer.
- To avoid "chip marks," always plane WITH the grain direction of the wood. Never plane cross-grain or end-grain.
- Plane ONLY natural wood fiber. Do not plane wood composites or other materials that could break up in the planer and cause operator injury or damage to planer.
- Always true cupped or warped stock on a jointer before planing.

Common Cutting Problems

Below is a list of wood characteristics you may encounter when planing. The following descriptions of defects will give you some possible answers to problems you may encounter while planing different materials. Possible solutions follow the descriptions.

Chipped Grain

Problem: Usually a result of cutting against the grain, planing lumber with knots or excessive amount of cross grain, or using dull knives/inserts.

Note: *Some amount of chipping is normal with highly figured wood.*

Solution: Decrease the depth of cut. Reduce the feed rate. Inspect your lumber and determine if its grain pattern is causing the problem. If the lumber does not show substantial crossgrain, inspect your knives/inserts.

Fuzzy Grain

Problem: Usually caused by surfacing lumber with too high of a moisture content. Sometimes fuzzy grain is an unavoidable characteristic of some woods, such as basswood. Fuzzy grain can also be caused by dull knives/inserts.

Solution: Check the lumber with a moisture meter. If moisture is greater than 20%, sticker the lumber and allow it to dry. Otherwise, inspect the knife/insert condition.

Snipe

Problem: Occurs when board ends have more material removed than the rest of the board. Usually caused when the workpiece is not properly supported as it goes through the machine. In many cases, however, a small amount of snipe is inevitable.

Solution: Hold workpiece up slightly as it leaves the outfeed end of the planer. The best way to deal with snipe is by planing lumber longer than your intended work length and then cutting off the excess after planing is completed.

Pitch & Glue Build-up

Problem: Glue and resin buildup on the rollers and cutterhead will cause overheating by decreasing cutting sharpness while increasing drag in the feed mechanism. The result can include scorched lumber, uneven knife/insert marks, and chatter.

Solution: Clean the rollers and cutterhead.

Chip Marks or Indentations

Problem: Chip indentation or chip bruising is the result of wood chips not being thrown away from the cutterhead and out of the machine. Instead they are carried around the cutterhead, deposited on the planed surface and crushed by the outfeed roller. Some of the causes of chip indentation are:

- Wood chips/sawdust not being properly expelled from the cutterhead.
- The type of lumber being planed. Certain species have a tendency to chip bruise.
- Dull knives/inserts.
- Excessive depth of cut.

Solutions:

- Use a proper dust-collection system.
- Lumber must be completely dry, preferably kiln-dried (KD). Air-dried (AD) lumber must be seasoned properly and have no surface moisture. DO NOT surface partially-air-dried (PAD) lumber.
- Make sure planer knives/inserts are sharp.
- Reduce depth of cut.

Rippled Cut

Problem: Regularly spaced indentations across face of workpiece are caused by excessive outfeed roller pressure or excessive feed rate.

Solution: Reduce outfeed roller pressure; reduce feed rate.

Adjusting Depth of Cut

Material Thickness Range
Minimum–Maximum Stock Thickness... ¼"–11¾"

The depth of cut on a planer means the amount of material that is removed from the top of the workpiece as it passes underneath the cutterhead.

The depth of cut is set by adjusting the distance of the table below the cutterhead. This distance is the thickness of the workpiece minus the depth of cut. The planing depth of cut is controlled by adjusting the height of the table using the table UP/DOWN buttons (refer to **Using Table UP/DOWN Buttons** on **Page 42**) or the micro-controller (refer to **Using Micro-Controller** on **Page 43**).

Although the correct depth of cut varies according to wood hardness and workpiece width, we recommend the maximum depth of cut (per pass) be no more than 1/16". A series of light cuts will give better end results and put less stress on the planer than trying to take off too much material in a single pass.

The table elevation can be referenced directly from the inch/millimeter scale on the front of the planer, as shown in **Figure 49**.

Note: *The scale functions as a general guide only, and is not intended for low-tolerance, precision results. To ensure accuracy use calipers to measure your workpiece thickness after each pass.*

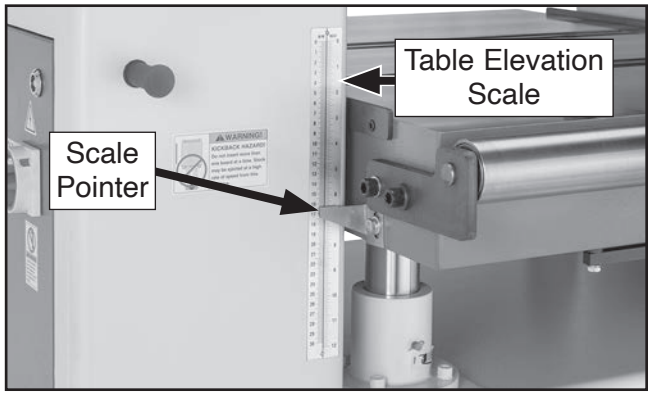


Figure 49. Table elevation scale and scale pointer.

Adjusting Bed Roller Height

Bed Roller Height Range .....0.004"–0.020"

The correct height of the bed rollers will vary, depending on the type of material you intend to plane.

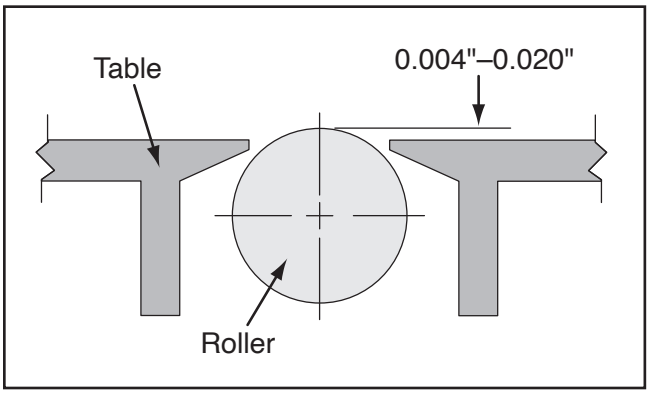


Figure 50. Recommended bed roller height above the table surface.

When planing rough stock, set the rollers high to keep the lumber from dragging along the bed. When planing milled lumber, set the rollers low to help minimize snipe.

To ensure accurate results and make the adjustment process quicker and easier, we recommend using a Rotacator (refer to **Accessories**) to gauge the bed roller height from the table surface. If a Rotacator is not available, a straightedge and feeler gauges can be used, but care must be taken to achieve accurate results.

IMPORTANT: Any time adjustments are made to the bed rollers, refer to **Calibrating Table Elevation Scale** and **Calibrating Micro Controller** on **Page 61**.

NOTICE

Bed rollers that are not adjusted to correct height can cause poor finishes, inconsistent planing thickness, and other undesirable results.

To adjust bed roller height:

1. DISCONNECT MACHINE FROM POWER!

2. Slide bed roller adjustment handle right to lower bed rollers (see **Figure 51**).

3. Slide bed roller adjustment handle left to raise bed rollers (see **Figure 51**).

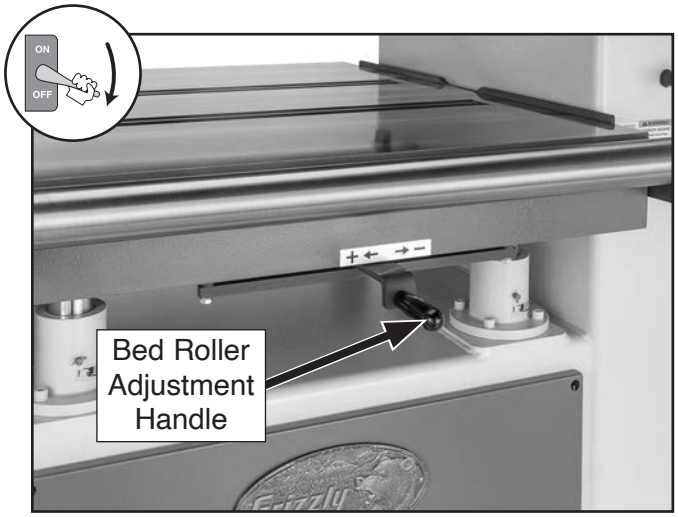


Figure 51. Bed roller height controls.

Using Table UP/ DOWN Buttons

The table UP/DOWN buttons are located on the control panel and can be used to raise and lower the table. The movement of the table will be shown on the digital display of the micro-controller.

To use table UP/DOWN buttons:

— Press and hold table UP button (see **Figure 52**) to raise table. Release button to stop movement.

— Press and hold table DOWN button (see **Figure 52**) to lower table. Release button to stop movement.

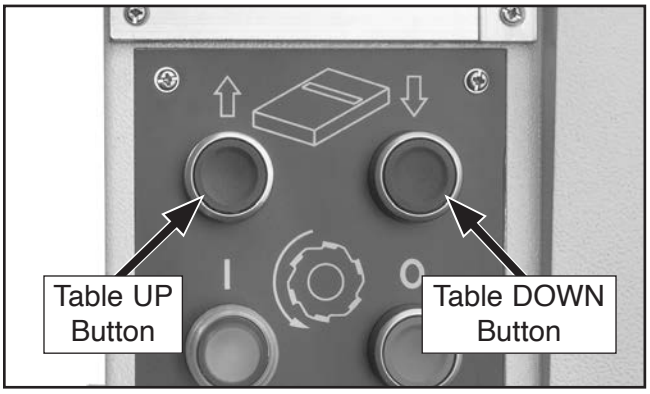


Figure 52. Location of table UP and table DOWN buttons.

Using Micro-Controller

The micro-controller (see **Figure 53**) is located on the left side of the top cover of the machine. The micro-controller is the primary tool for setting final workpiece thickness (i.e., the distance from the bottom dead center (BDC) of the cutterhead to the top of the bed rollers). Refer to **Micro-Controller** on **Page 7** for functional descriptions of each button on the pad.

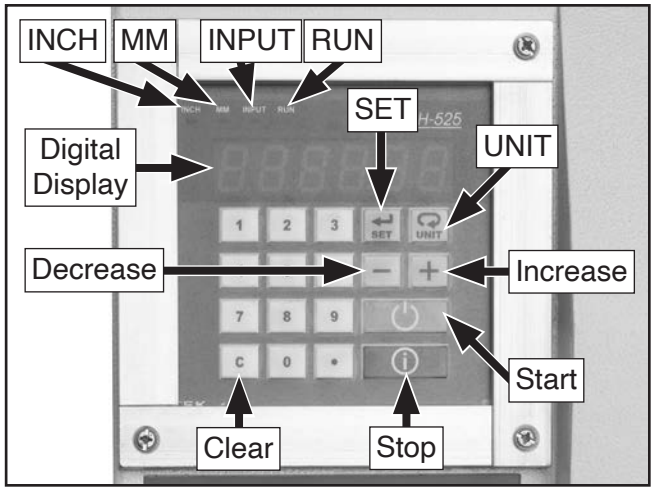


Figure 53. Micro-controller.

Using the digital control pad, you can quickly perform the following functions:

- Accurately enter a final workpiece thickness.
- Raise or lower (i.e., jog) table to quickly increase or decrease current final workpiece thickness.
- Enter a value to quickly increase or decrease current final workpiece thickness.
- Save and quickly access up to ten preset final workpiece thicknesses in digital memory.

Changing Unit of Measure

The micro-controller functions in standard and metric units of measure. Press the (UNIT) key to toggle between inches and millimeters. The active unit of measure (INCH or MM) is highlighted in the unit/mode display (see **Figure 53**).

Entering Final Workpiece Thickness

The simplest method to set final workpiece thickness is to use the micro-controller to enter a value and allow the machine to automatically set the table elevation.

The micro-controller remains in Input mode unless the table is moving, then it changes to Run mode. The active mode (INPUT or RUN) is highlighted in the digital controls (see **Figure 53**).

Using Control Pad

1. Connect machine to power and turn it ***ON***. Micro-controller displays value for last entered final workpiece thickness.

2. Press (SET) key. Micro-controller displays a flashing zero (0).

3. Use number (0–9) and decimal (.) keys to enter final workpiece thickness value.

   — For example, to enter a final workpiece thickness of 2½", press 2 . 5 0. Value flashes on micro-controller as it is entered.

4. Press key. Table automatically adjusts to entered final workpiece thickness, and micro-controller displays current value in real time.

   — If you need to cancel for any reason, press key and table will stop immediately. Micro-controller displays current final workpiece thickness value.

Using Plus/Minus Keys

1. Connect machine to power and turn it ***ON***. Micro-controller displays value for last entered final workpiece thickness.

2. Press + or − keys to raise or lower table in 0.01" or 0.1mm increments.

   Note: *Press UNIT key to switch between inches and millimeters.*

Using Control Pad to Add/Subtract Distance from Final Workpiece Thickness

1. Connect machine to power and turn it ***ON***. Micro-controller readout displays last value entered for final workpiece thickness.

2. Press [SET] (SET) key. Micro-controller displays a flashing zero (0).

3. Use number (0–9) and decimal (.) keys to enter value you wish to add/subtract from current height setting.

   — To increase current final workpiece thickness by entered value, press [+] key. Table automatically adjusts new final workpiece thickness, and micro-controller displays current value in real time.

   — To decrease final workpiece thickness by entered value, press [−] key. Table automatically adjusts new final workpiece thickness, and micro-controller displays current value in real time.

Creating & Using Presets

The digital control pad can save up to ten final workpiece thickness values. The saved values or "presets", allow you to quickly adjust the table elevation. Using presets is a convenient way to process batches of material to common final workpiece thicknesses.

Creating a Preset

1. Connect machine to power and turn it ***ON***. Micro-controller displays value for last entered workpiece thickness.

2. Press a number key (0–9) to identify preset. For example, press [2] key to create preset #2. Last entered value begins to flash.

3. Press [C] key to clear last entered value. Micro-controller displays a flashing zero (0).

4. Press and hold [SET] (SET) key for 3 seconds to save entered final workpiece thickness value. Micro-controller displays preset value.

5. Use number (0–9) and decimal [.] keys to enter desired preset value.

   For example, to enter final workpiece thickness of 2½", press the following keys: [2] [.] [5] [0]. Value flashes on micro-controller as it is entered.

Using Presets

1. Connect machine to power and turn it ***ON***. Micro-controller displays value last entered for workpiece thickness.

2. Press preset number key.

   For example, press [2] key for preset #2. Micro-controller displays preset value.

   — To set final workpiece thickness to preset value, Press [⏻] key. Table automatically adjusts to preset final workpiece thickness, and micro-controller displays current value in real time.

   — To increase final workpiece thickness by preset value, press [+] key. Table automatically adjusts new final workpiece thickness, and micro-controller displays current value in real time.

   — To decrease final workpiece thickness by preset value, press [−] key. Table automatically adjusts new final workpiece thickness, and micro-controller displays current value in real time.

Adjusting Feed Rate

Feed Rate.....16–59 FPM

The infeed and outfeed rollers move the workpiece through the planer while keeping it flat and providing a consistent rate of movement. The speed that these rollers move the workpiece through the planer is the feed rate.

Generally, high feed rates are used for dimensioning passes, while low feed rates are used for finishing passes.

Use the feed speed control dial (see **Figure 54**) to adjust the feed rate according to workpiece type and desired results.

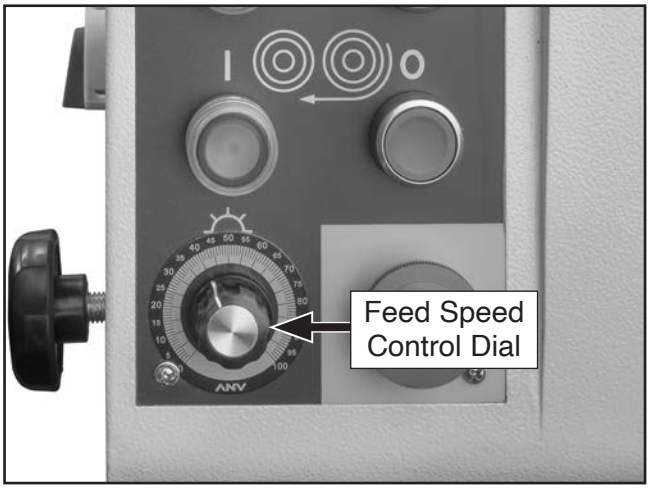


Figure 54. Location of feed speed control dial.

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.

G0862—3 HP Portable Cyclone Dust Collector
The capstone of our line of affordable, high-quality cyclones, the G0862 features a 3 HP motor, a whopping 1941 CFM of airflow capacity, and a 45-gallon collection capacity. It's packed with features like a quick-release collection drum, latching system, high-efficiency, two-stage separation driven by a 16" aluminum impeller, durable powder coated finish, and a heavy-duty steel frame and housing.

Figure 55. G0862 3 HP Portable Cyclone Dust Collector.

W1218A—Rotacator™ Precision Planer Tool
The Rotacator is a dial indicator on a magnetic base, designed for quickly and accurately setting the critical tolerances needed when making planer adjustments. Perfect for adjusting infeed/outfeed rollers, pressure bars, chip breakers, and bed rollers. Also a great setup tool for other machines! Accurate to 0.001". Indicator rotates 360°.

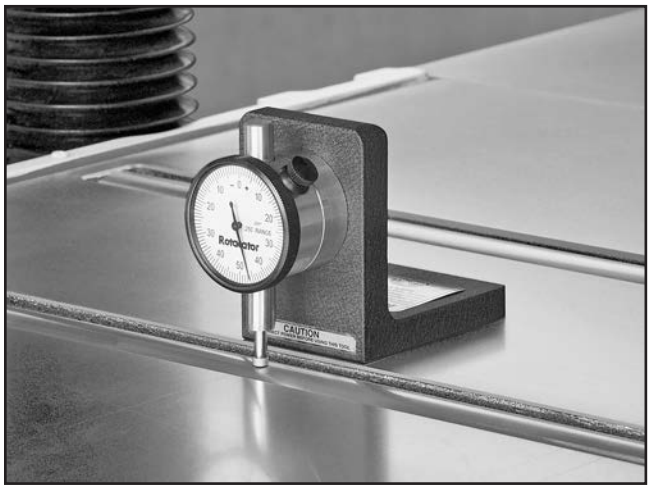


Figure 56. W1218A Rotacator™ Precision Planer Tool.

H9893—Indexable Carbide Inserts, 10-Pk.
These replacement carbide inserts measure 15 x 15 x 2.5mm and come in a 10-pack.

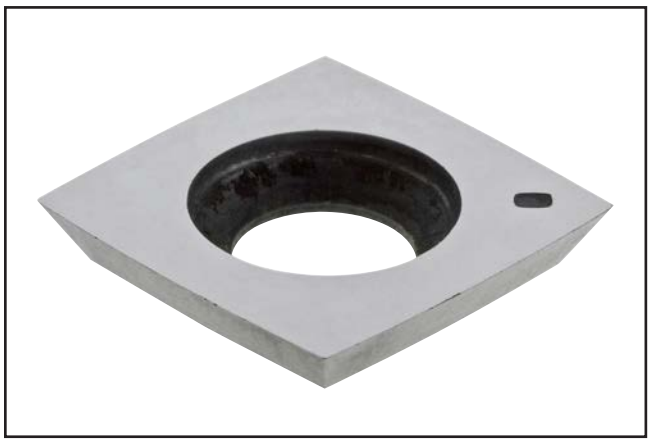
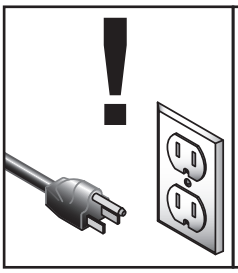


Figure 57. H9893 Indexable Carbide Inserts.

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:

- Excessive resin or wood chip build-up.
- Loose mounting bolts.
- Dull or damaged inserts (**Page 56**).
- Worn or damaged wires.
- Damaged or dirty anti-kickback fingers (**Page 52**).
- Any other unsafe condition.

Weekly
- Clean cutterhead, infeed and outfeed rollers, and inspect inserts.
- Lubricate table columns and ball screws (**Page 48**).

Monthly
- Clean/vacuum dust buildup from inside cabinet and off motors.
- Lubricate drive chains and sprockets (**Page 49**).
- Lubricate table elevation chain and sprockets (**Page 49**).
- Check/tension/replace V-belts (**Page 57**).

Every 6-Months
- Lubricate cutterhead bearings (**Page 50**).

Yearly
- Change gearbox oil (**Page 50**).

Cleaning & Protecting

Cleaning the Model G0988/G0989 is relatively easy. Vacuum excess wood chips and sawdust, and wipe off the remaining dust with a dry cloth. If any resin has built up, use a resin-dissolving cleaner to remove it.

Protect the unpainted cast iron table by wiping it clean after every use—this ensures moisture from wood dust does not remain on bare metal surfaces. Keep the table rust-free with regular applications of products like SLIPIT®.

Recommended Metal Protectants

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

Figure 58. Recommended products for protecting unpainted cast iron/steel parts on machinery.

Lubrication

NOTICE

Failure to follow reasonable lubrication practices as instructed in this manual for your machine could lead to premature failure of components and void the warranty.

Except for the bearings noted in this section, the bearings on this machine are lubricated and sealed at the factory. These bearing do not require any further attention unless they need to be replaced. If a bearing fails, your planer will probably develop a noticeable rumble or vibration, which will increase when the machine is under a load. The bearings are standard sizes and can be replaced through Grizzly.

Follow the maintenance schedule on this page and the procedures beginning on **Page 48** to properly lubricate the planer components, which are essential for long life and trouble-free operation of the planer.

Table Elevation Columns & Ball Screws

Grease Type ..... T26419 or NLGI#2 Equivalent
Amount ..... 1–2 Pumps
Frequency ..... Weekly

Items Needed	Qty
Phillips Screwdriver #2	1
Open-End Wrench 19mm	1

The table rides on four ball screws protected by table columns. With a grease gun, apply 1–2 pumps of grease to all eight grease fittings shown in **Figure 59**–**Figure 60**.

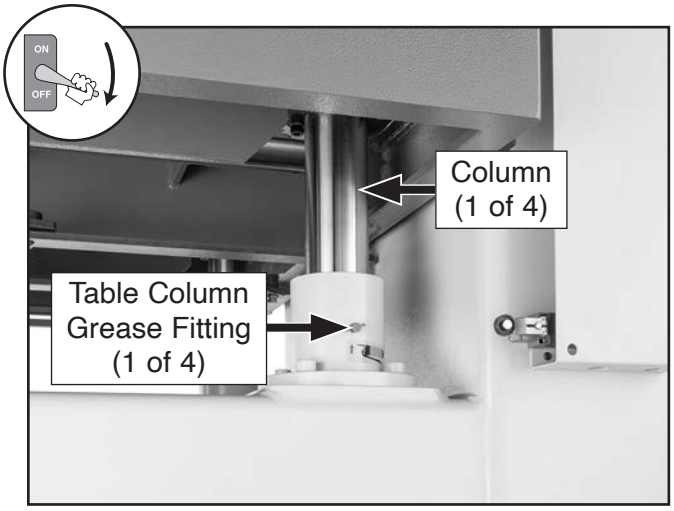


Figure 59. Location of table column grease fitting (1 of 4).

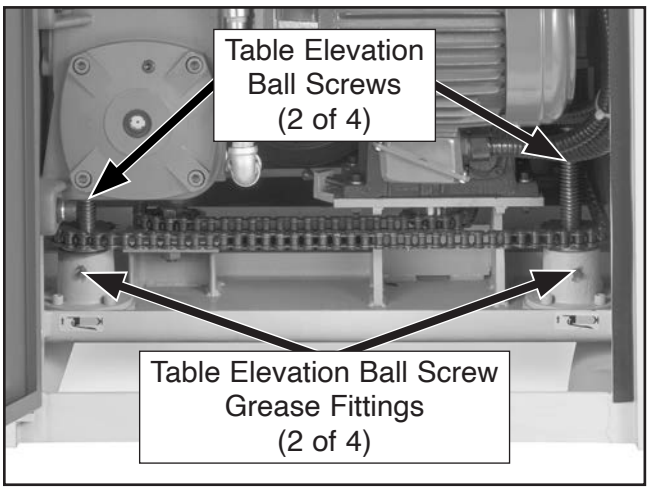


Figure 60. Location of table elevation ball screw grease fittings.

Use shop rags and mineral spirits to clean away any debris and grime, then brush a light coat of multi-purpose grease onto the columns (see **Figure 59**) and ball screw threads (see **Figure 60**). Move the table up and down to distribute the grease.

IMPORTANT: DO NOT over grease. This could make the table difficult to raise and lower, putting-stress on the table elevation motor.

Table Elevation Chain & Sprockets

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

The table elevation ball screws receive the transferred power from the table elevation motor through the table elevation chain system (see **Figure 61**).

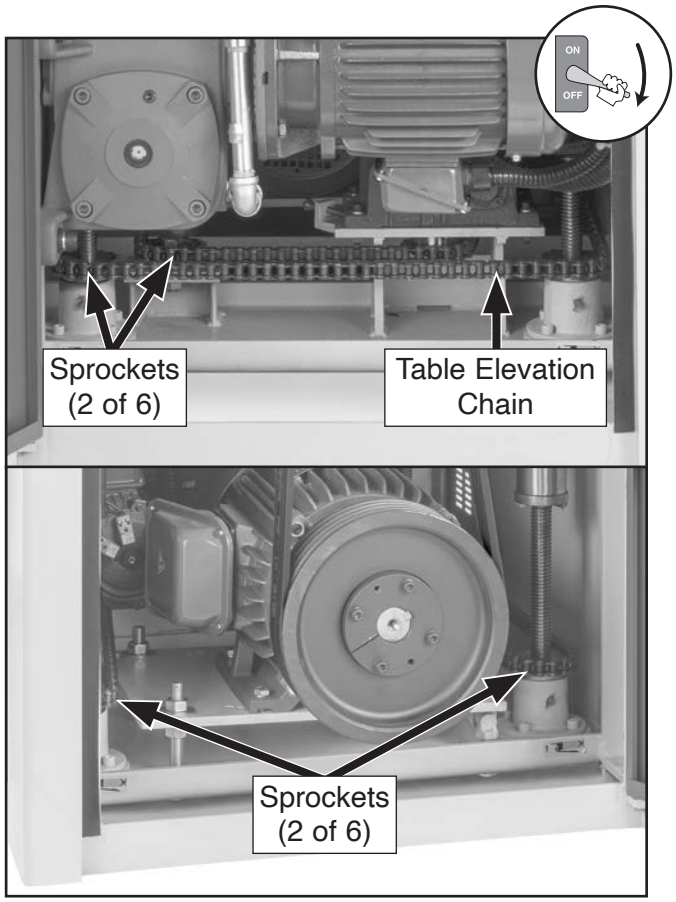


Figure 61. Location of table elevation chain and sprockets.

Use shop rags and mineral spirits to clean away any debris and grime, then brush a light coat of multi-purpose grease onto the chains and sprockets.

Drive Chains & Sprockets

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

The infeed and outfeed rollers receive the transferred power from the feed motor through the drive chain system on the left side of the machine, as shown in **Figure 62**.

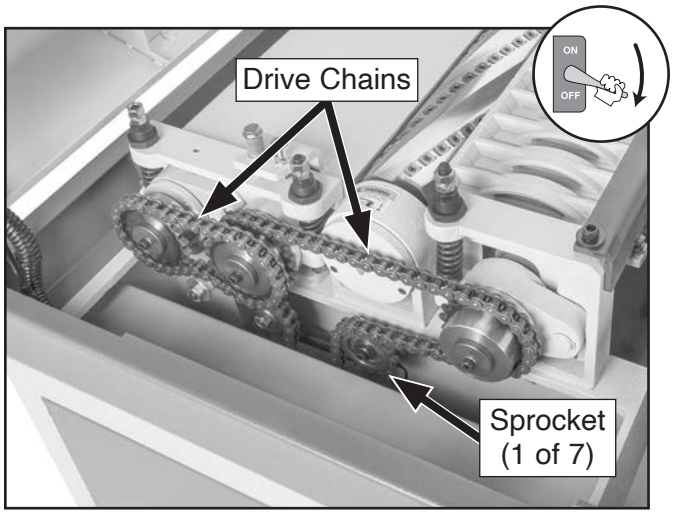


Figure 62. Location of feed roller chain drives.

Use shop rags and mineral spirits to clean away any debris and grime, then brush a light coat of multi-purpose grease onto the chains and sprockets.

Cutterhead Bearings

Lubrication Type ... T26419 or NLGI#2 Equivalent
Lubrication Amount ..... 1–2 Pumps
Frequency..... Every 6 Months

The cutterhead bearings should be lubricated every 6 months. With a grease gun, add 1–2 pumps of multi-purpose grease to the bearing housing grease fitting on each side of the cutterhead (see **Figure 63**–**Figure 64**).

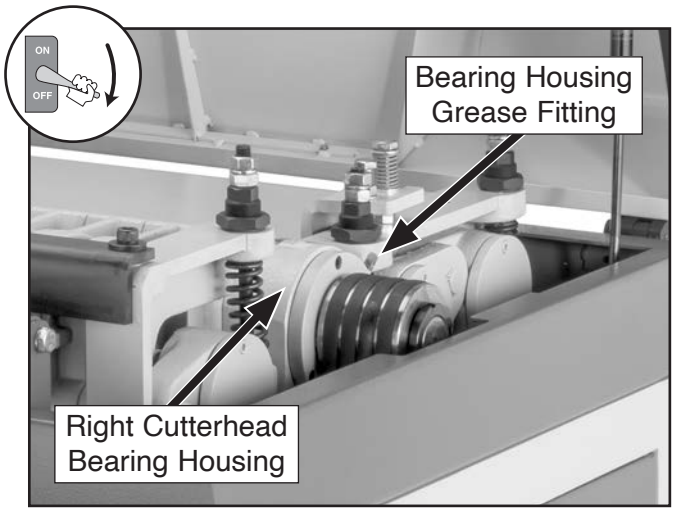


Figure 63. Location of right bearing housing.

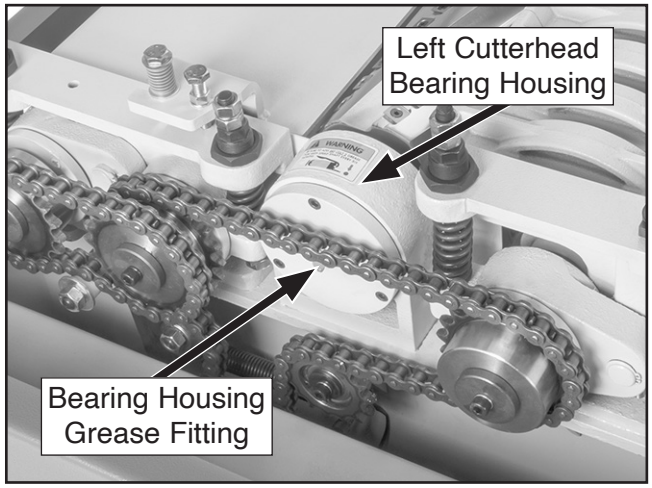


Figure 64. Location of left bearing housing.

IMPORTANT: DO NOT over grease cutterhead bearings. This could cause overheating and excess wear on bearing, which could cause bearing failure.

Feed Motor Gearbox

Oil Type .....T28042 or ISO 320 Equivalent
Oil Amount.....16.9 oz.
Frequency.....After First 20 Hours, Then Yearly

Items Needed	Qty
Hex Wrench 8mm	1
Drain Pan	1

Open the electrical cabinet on the left side of the machine. Remove the oil fill plug (see **Figure 65**), place a drain pan under the drain plug (**Figure 66**), then remove the drain plug to drain the oil into the pan. Re-install the drain plug, then add ISO 320 or equivalent oil. The gearbox has the proper amount of oil when the sight glass on the front of the gearbox is filled approximately halfway. When finished, re-install the fill plug and close the electrical cabinet.

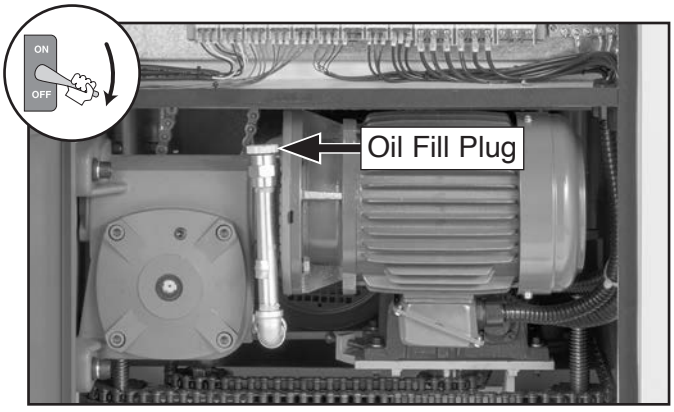


Figure 65. Location of gearbox fill plug.

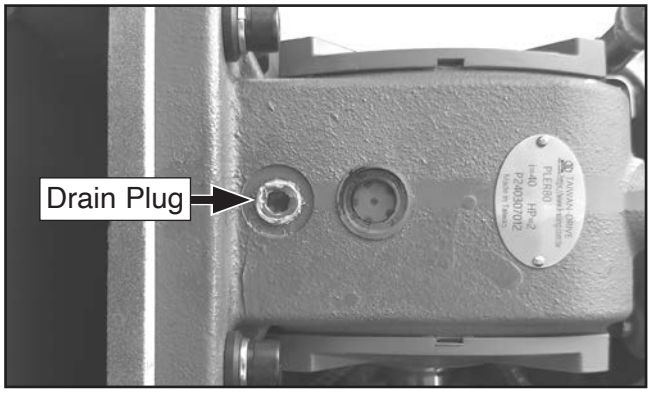


Figure 66. Location of gearbox drain plug (as viewed from below).

Note: *We recommend that you replace the gearbox oil after the first 20 hours of operation. This is a normal break-in procedure and will help maximize the service life of the machine by flushing away any particles from the break-in process.*

Elevation Motor Gearbox

Oil Type .....T28042 or ISO 320 Equivalent
Oil Amount.....33.8 fl. oz.
Frequency.....After First 20 Hours, Then Yearly

Items Needed	Qty
Hex Wrench 6mm	1
Phillips Head Screwdriver #2	1
Drain Pan	1

Remove the rear panel. Remove the oil fill plug (see **Figure 67**), place a drain pan under the drain plug (see **Figure 68**), then remove the drain plug to drain the oil into the pan. Re-install the drain plug, add ISO 320 or equivalent oil to fill plug hole until it just reaches the bottom of the fill plug hole threads. When finished, install the fill plug and the rear panel.

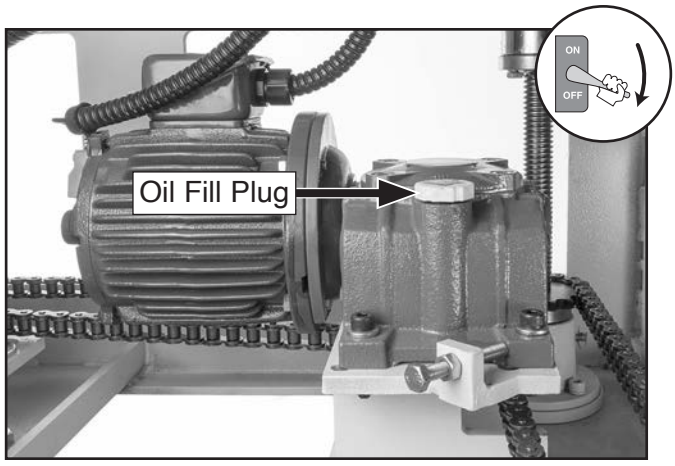


Figure 67. Location of gearbox fill plug.

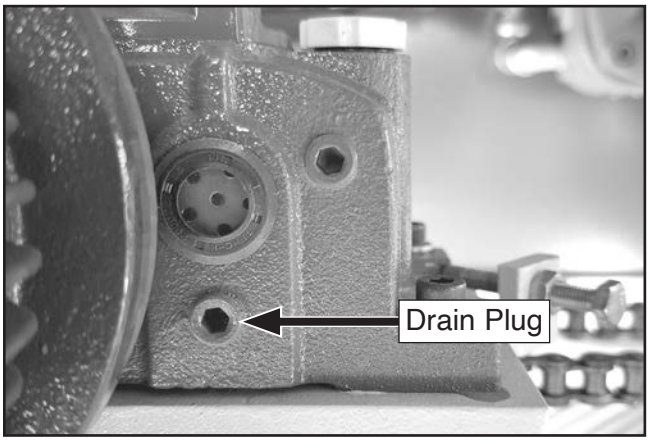


Figure 68. Location of gearbox drain plug.

Note: *We recommend that you replace the gearbox oil after the first 20 hours of operation. This is a normal break-in procedure and will help maximize the service life of the machine by flushing away any particles from the break-in process.*

Checking Anti-Kickback Fingers

The anti-kickback fingers are an important safety feature of your planer. The fingers hang from a rod suspended across the head casting and in front of the infeed roller, as shown. This design allows the workpiece to easily enter the planer but reduces the risk of kickback by digging into the workpiece if it moves backward.

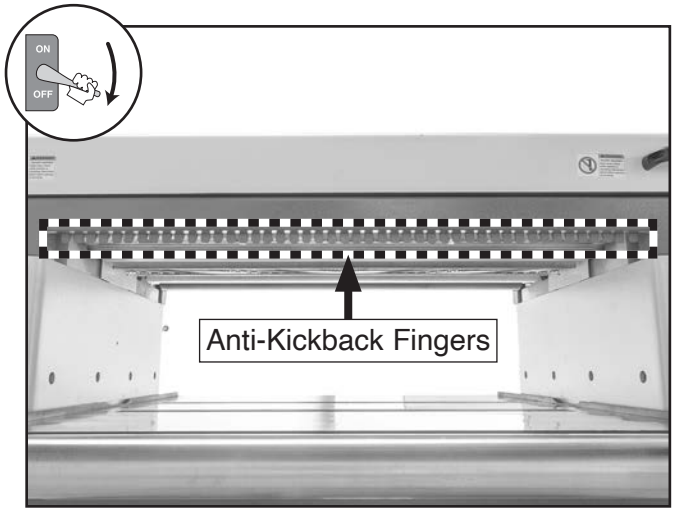


Figure 69. Location of anti-kickback fingers.

Check the anti-kickback fingers regularly to ensure they swing freely and easily. If the fingers do not swing freely and easily, first clean them with a wood-resin solvent, then inspect them for damage. If any of the fingers are damaged, the device must be replaced before using the machine.

Do not apply oil or other lubricants to the anti-kickback fingers that will attract dust and restrict free movement of the fingers.

⚠WARNING

Proper operation of anti-kickback fingers is critical for safe operation of this planer. DO NOT operate planer if anti-kickback fingers are not operating correctly. Failure to heed this warning could result in serious personal injury.

Cleaning Infeed & Outfeed Rollers

Saw dust and workpiece grime can accumulate on the infeed and outfeed rollers, creating inconsistent pressure on the workpiece as it is fed through the cutterhead.

Items Needed	**Qty**
Shop Rags	As Needed
Resin Cleaning Solvent	As Needed
Vacuum	1
Stiff Brush	1

To clean infeed and outfeed rollers:

1. Lower table completely to expose infeed and outfeed rollers (see **Figure 70**).

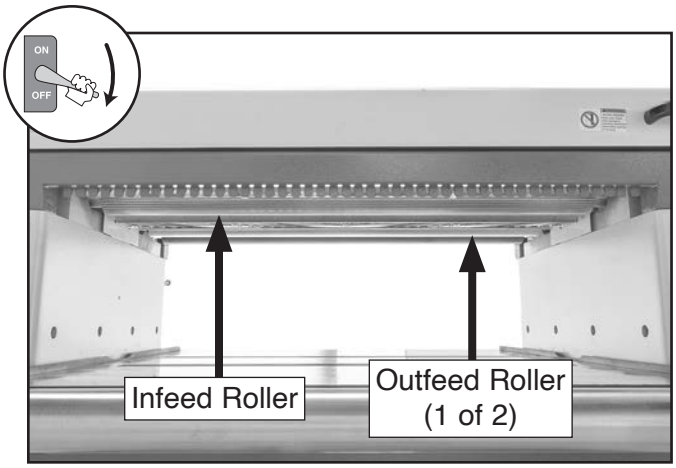


Figure 70. Location of infeed and outfeed rollers.

2. DISCONNECT MACHINE FROM POWER!

3. Clean rubber infeed and outfeed rollers with solvent to remove any pitch or stuck-on chips.

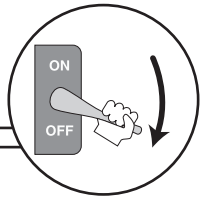
4. Use a vacuum and clean brush to remove any trapped material from between rollers and headstock.

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 G0988 and Model G0989. For issues concerning the VFD, contact Nidec to obtain a Control Techniques C200 series manual (or visit **ctmanuals.info**). All VFD servicing should be done by an authorized and trained technician. The VFD parameters have been set at the factory to optimize the performance of the machine and should not be adjusted unless instructed by Grizzly Tech Support. Improper adjustments can cause machine damage, disable important safety features, and may void the warranty.

Troubleshooting



Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start, or power supply breaker immediately trips after startup.	1. Master power switch in OFF position. 2. Emergency STOP button depressed. 3. Top cover safety switch knob removed. 4. Machine circuit breaker tripped or at fault. 5. Incorrect power supply voltage or circuit size. 6. Power supply circuit breaker tripped or fuse blown. 7. Motor wires connected incorrectly. 8. Wiring broken, disconnected, or corroded. 9. Table limit switch engaged. 10. Start delay module adjusted incorrectly. 11. Motor or motor bearings at fault.	1. Turn master power switch to ON position. 2. Rotate Emergency STOP button head to reset. 3. Install top cover safety switch knob. 4. Reset circuit breaker on switch. 5. Ensure correct power supply voltage and circuit size. 6. Ensure circuit is free of shorts. Reset circuit breaker or replace fuse. 7. Correct motor wiring connections (**Page 71**). 8. Fix broken wires or disconnected/corroded connections. 9. Adjust table to correct height (**Page 42**). 10. Adjust to correct delay. 11. Replace motor.
Machine stalls or is underpowered.	1. Workpiece material unsuitable for machine. 2. Gearbox at fault. 3. Belt(s) slipping/pulleys misaligned. 4. Motor wires connected incorrectly. 5. Pulley/sprocket slipping on shaft. 6. Machine undersized for task. 7. Motor overheated, tripping machine circuit breaker. 8. Motor or motor bearings at fault. 9. Start delay module adjusted incorrectly.	1. Only cut wood/ensure moisture is below 20% (**Page 38**). 2. Replace broken or slipping gears. 3. Clean/tension/replace belt(s) (**Page 57**); ensure pulleys are aligned. 4. Correct motor wiring connections. 5. Tighten/replace loose pulley/shaft. 6. Use sharp inserts; reduce feed rate/depth of cut (**Page 45**). 7. Clean motor, let cool, and reduce workload. Reset circuit breaker. 8. Replace motor. 9. Adjust to correct delay.

Motor & Electrical (Cont.)

Symptom	Possible Cause	Possible Solution
Machine has vibration or noisy operation.	1. Motor or component loose. 2. V-belt(s) worn, loose, pulleys misaligned or belt slapping cover. 3. Insert(s) at fault. 4. Pulley loose. 5. Motor mount loose/broken. 6. Bed rollers protruding unevenly. 7. Cutterhead bearings at fault. 8. Motor fan rubbing on fan cover. 9. Motor bearings at fault. 10. Gearbox at fault. 11. Elevation chain worn/damaged.	1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Inspect/replace belts with a new matched set (**Page 58**). Realign pulleys if necessary (**Page 59**). 3. Rotate/replace insert(s) (**Page 56**). 4. Secure pulley on shaft. 5. Tighten/replace. 6. Adjust bed rollers (**Page 41**). 7. Replace bearing(s)/realign cutterhead. 8. Fix/replace fan cover; replace loose/damaged fan. 9. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 10. Rebuild/replace gearbox for bad gear(s)/bearing(s). 11. Replace chain (**Page 62**).
Machine operates in reverse.	1. Power connections wired out of phase.	1. Correct phase polarity (**Page 33**).
Micro-controller does not work/ display is incorrect.	1. Micro-controller needs calibrating. 2. Wiring broken, disconnected, or corroded. 3. Micro-controller is at fault.	1. Calibrate micro-controller (**Page 61**). 2. Fix broken wires or disconnected/corroded connections. 3. Replace micro-controller.

Operation

Symptom	Possible Cause	Possible Solution
Excessive snipe (gouge in end of board that is uneven with rest of cut). **Note:** *A small amount of snipe is inevitable with all types of planers—the key is to minimize it.*	1. One or both bed rollers set too high. 2. Chip breaker/pressure bar set too high. 3. Workpiece not supported as it leaves planer. 4. Uneven feed roller pressure. 5. Some snipe is inevitable.	1. Lower bed rollers. 2. Lower height of chip breaker/pressure bar. 3. Hold workpiece up slightly as it leaves outfeed end of planer. 4. Adjust feed roller heights (**Page 66**). 5. Plane lumber longer than your intended workpiece length, then cut off excess after planing complete.
Workpiece stops/slows in middle of cut.	1. Excessive depth of cut. 2. One or both of bed rollers are set too low or too high. 3. Chip breaker/pressure bar set too low. 4. Feed rollers set too low or too high. 5. Pitch and glue buildup on planer components.	1. Reduce depth of cut (**Page 41**). (Reduce cutting depth when planing hard woods). 2. Lower/raise bed rollers (**Page 41**). 3. Raise height of chip breaker/pressure bar (**Page 67**). 4. Lower/raise feed rollers (**Page 66**). 5. Clean internal cutterhead components with pitch/resin dissolving solvent.

Operation (Cont.)

Symptom	Possible Cause	Possible Solution
Chipping (consistent pattern).	1. Knots or conflicting grain direction in wood. 2. Excessive depth of cut. 3. Feeding workpiece too fast. 4. Mis-adjusted chip breaker/pressure bar. 5. Nicked, chipped, or dull insert.	1. Inspect workpiece for knots and grain direction (**Page 38**); only use clean stock, and cut WITH the grain. 2. Reduce depth of cut (**Page 41**). (Reduce cutting depth when planing hard woods). 3. Reduce feed rate (**Page 45**). 4. Adjust height of chip breaker/pressure bar (**Page 67**). 5. Rotate/replace insert (**Page 56**).
Chipping/ indentation in workpiece surface (inconsistent pattern).	1. Chips are not being properly expelled from cutterhead. 2. Chip breaker not set correctly.	1. Use proper dust collection system. 2. Correctly adjust chip breaker (**Page 67**).
Fuzzy grain.	1. Wood may have high moisture content or surface wetness. 2. Dull insert(s).	1. Check moisture content is below 20% and allow to dry if moisture is too high (**Page 38**). 2. Rotate/replace insert(s) (**Page 56**).
Long lines or ridges that run along length of board.	1. Nicked or chipped insert(s).	1. Rotate/replace insert(s) (**Page 56**).
Uneven cutting marks, wavy surface, or chatter marks across face of board.	1. Feeding workpiece too fast. 2. Chip breaker/pressure bar set unevenly or not low enough. 3. Insert(s) not properly installed. 4. Worn cutterhead bearings.	1. Reduce feed rate (**Page 45**). 2. Adjust height of chip breaker/pressure bar (**Page 67**). 3. Remove insert(s), properly clean mounting pocket and re-install (**Page 56**). 4. Check/replace cutterhead bearings.
Glossy surface.	1. Dull insert(s). 2. Feeding workpiece too slow. 3. Cutting depth too shallow.	1. Rotate/replace insert(s) (**Page 56**). 2. Increase feed rate (**Page 45**). 3. Increase depth of cut (**Page 41**).
Workpiece twists in machine.	1. Pressure bar set unevenly.	1. Adjust height of pressure bar (**Page 68**).
Infeed/outfeed rollers not rotating.	1. Chain and sprockets are worn, misadjusted, disconnected, or broken.	1. Adjust chain and sprockets ; replace if necessary.
Vibration when running or cutting.	1. Loose/damaged cutterhead.	1. Tighten/replace cutterhead.
Fine serration on workpiece. **Note:** *A certain amount of serration is inevitable with steel outfeed rollers.*	1. Excessive outfeed roller spring pressure.	1. Reduce outfeed roller spring pressure (however, if reduced too much, workpiece may stop in middle of cut).
Final workpiece thickness does not match table elevation scale.	1. Table elevation scale is improperly calibrated.	1. Calibrate table elevation scale (**Page 61**).

Rotating/Replacing Cutterhead Inserts

The V-helical cutterhead is equipped with indexable carbide inserts that can be rotated to reveal any one of their four cutting edges. If one edge of the insert becomes dull or damaged, simply rotate it 90° to reveal a fresh cutting edge, as shown in **Figure 71**.

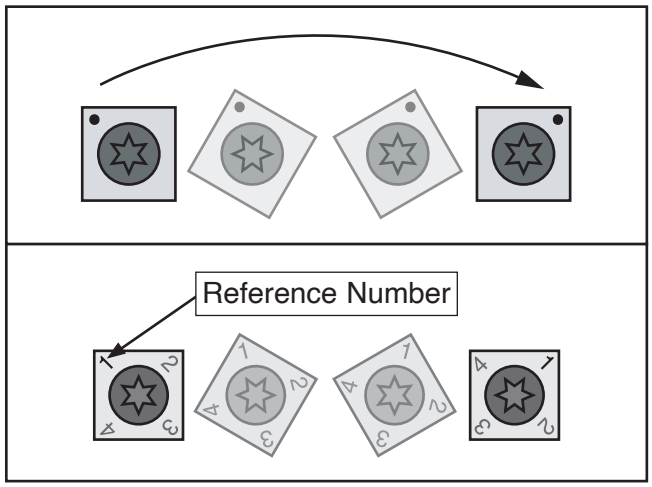


Figure 71. Insert rotating sequence.

The inserts have a dot or reference number on each corner. The position of the dot or reference number on installed inserts can be used to track which edges are sharp/unused and which edges are dull or damaged. Replace inserts once dot or reference number has been rotated back to its original position.

Items Needed	Qty
Torque Wrench	1
T-20 Drill Bit	1
Work Gloves	1 Pr.
Light Machine Oil	As Needed
Flat Head Torx Screws	
T20 M6-1 x 15	As Needed
Shop Rags	As Needed
Soft Bristle Brush	1
Degreaser	1
Replacement Inserts (P0988502)	As Needed

To rotate or replace cutterhead inserts:

1. DISCONNECT MACHINE FROM POWER!

2. Lift top cover to access cutterhead, then use V-belt to turn cutterhead until desired inserts are accessible.

3. Put on work gloves to protect your fingers and hands.

⚠CAUTION

Carbide inserts are very sharp and can quickly cut your hands. ALWAYS use caution and work gloves when handling these parts to reduce the risk of personal injury.

4. Remove any sawdust or debris from head of insert, Torx screw, and surrounding area.

5. Remove Torx screw and insert (see **Figure 72**), then clean all dust and debris from both parts and pocket they were removed from.

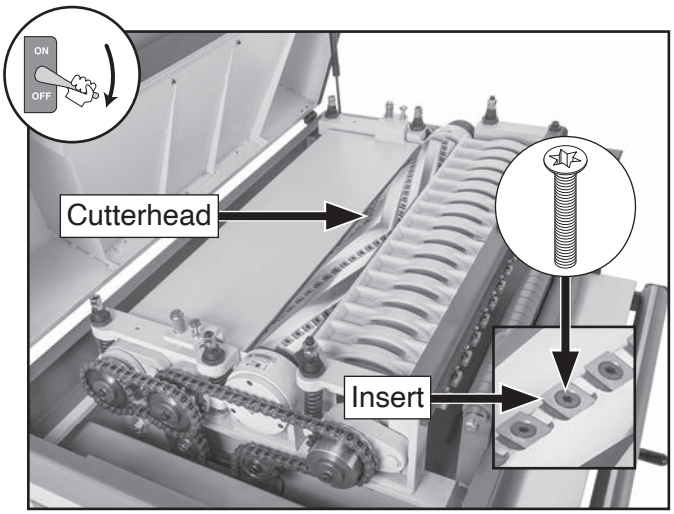


Figure 72. Cutterhead inserts and Torx screws.

Note: *Proper cleaning of insert, Torx screw, and cutterhead pocket is critical to achieving a smooth finish. Dirt or dust trapped between insert and cutterhead will raise insert, and make marks on your workpiece when planing.*

Tip: *Use low-pressure compressed air or a vacuum nozzle to clean out cutterhead pocket.*

6. Rotate insert 90° and install so that a fresh cutting edge faces outward (see **Figure 73**).

   — When all four insert cutting edges have been used, replace insert with a new one. Always position insert reference dot or number in same position when installing a new insert to aid in rotational sequencing.

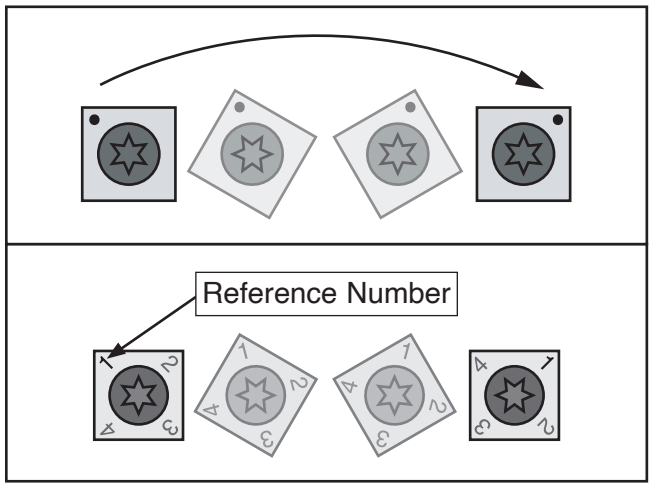


Figure 73. Insert rotating sequence.

7. Lubricate Torx screw threads with a very small amount of light machine oil, wipe excess off, and torque screw to 50–55 inch-pounds.

   Note: *If too much oil is applied to threads, excess oil will attempt to squeeze out of threaded hole and raise insert during installation, bringing it out of height alignment.*

8. Close top cover.

Tensioning/ Replacing V-Belts

NOTICE

After approximately 16 hours of operation, new V-belts will stretch and seat into pulley grooves and need to be properly tensioned to avoid severely reducing life of V-belts.

The Model G0988 and Model G0989 use four V-belts to transfer power from the cutterhead motor to the cutterhead. To ensure efficient transfer of power to this system, ensure the V-belts are always properly tensioned and in good condition.

If the V-belts are worn, cracked, or damaged, replace them. Always replace all V-belts at the same time with a matched set of four, or belt tension may not be even among the belts, causing premature belt failure or weakened power transfer.

Tools Needed	**Qty**
Open-End Wrenches 24mm	2
V-Belts (P0988530)	4

⚠CAUTION

V-belts and pulleys will be hot after operation. Allow them to cool before handling.

Tensioning V-Belts

1. DISCONNECT MACHINE FROM POWER!

2. Open maintenance door.

3. Check V-belt tension. Each belt is properly tensioned when there is approximately ¾" deflection when belt is pushed with moderate pressure, as shown in **Figure 74**.

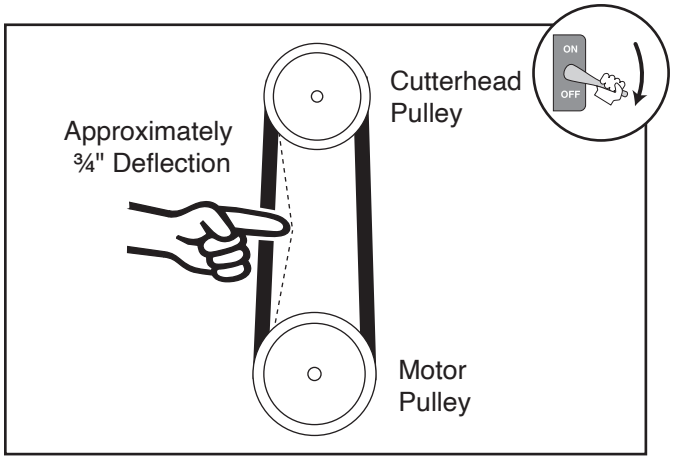


Figure 74. Belt deflection.

   — If there *is* approximately ¾" of deflection, no further adjustments are necessary. Proceed to **Step 7**.

   — If there *is not* approximately ¾" of deflection when checking belt tension, proceed to **Step 4**.

4. Loosen both top motor mount nuts (see **Figure 75**).

5. Rotate both bottom nuts (see **Figure 75**) until V-belts have approximately ¾" of deflection.

   — Rotate bottom nuts clockwise to increase V-belt tension.

   — Rotate bottom nuts counterclockwise to decrease V-belt tension.

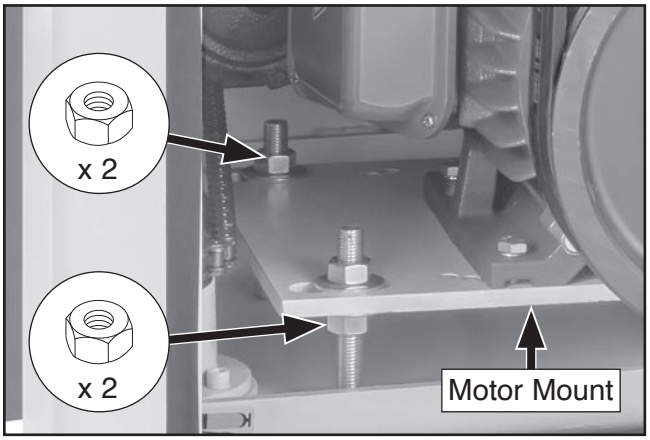


Figure 75. Location of motor mount nuts.

6. Tighten top nuts against motor mount to secure adjustments made in **Step 5**.

7. Close maintenance door.

Replacing V-Belts

1. DISCONNECT MACHINE FROM POWER!

2. Open top cover and maintenance door, as shown in **Figure 76**.

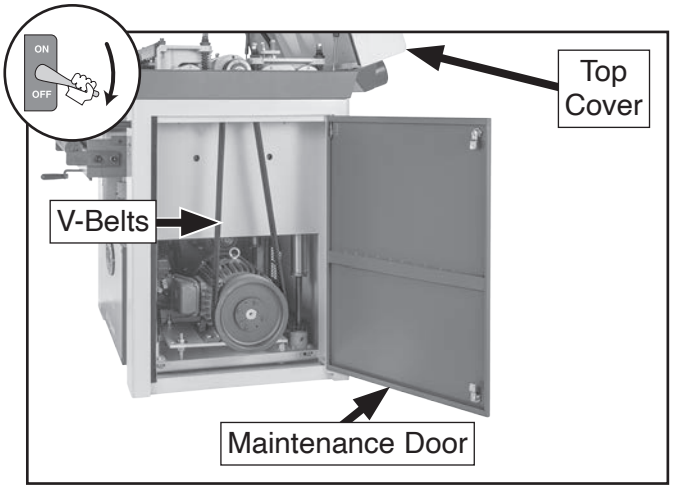


Figure 76. Top cover and maintenance door open.

3. Loosen (2) hex nuts on top of motor mount, then rotate (2) bottom nuts counter-clockwise to release belt tension (see **Figure 77**).

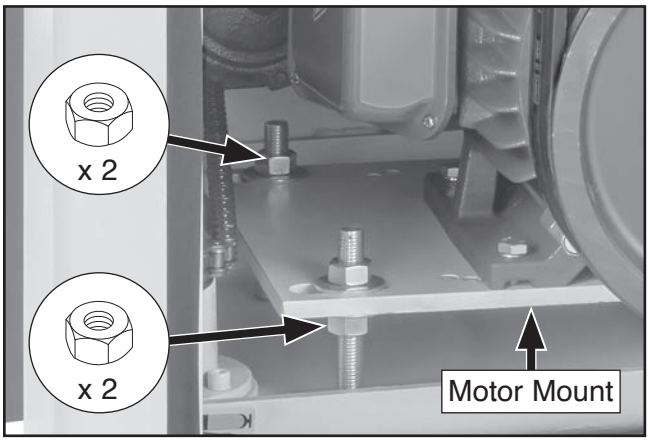


Figure 77. Location of motor mount nuts.

4. Roll V-belts off pulleys, then replace (4) V-belts as a set.

5. Perform **Steps 5–6** of **Tensioning V-belts** to adjust belt tension.

6. Close top cover and maintenance door.

Checking/Adjusting Pulley Alignment

Proper pulley alignment prevents premature V-belt wear and unnecessary load on the motor. The pulleys are properly aligned when they are coplanar (in the same plane and parallel to each other).

Checking Pulley Alignment

Items Needed	Qty
Plumb Bob	1
String 5'	1

To check pulley alignment:

1. DISCONNECT MACHINE FROM POWER!

2. Open maintenance door and top cover to expose cutterhead and motor pulleys (see **Figure 78**).

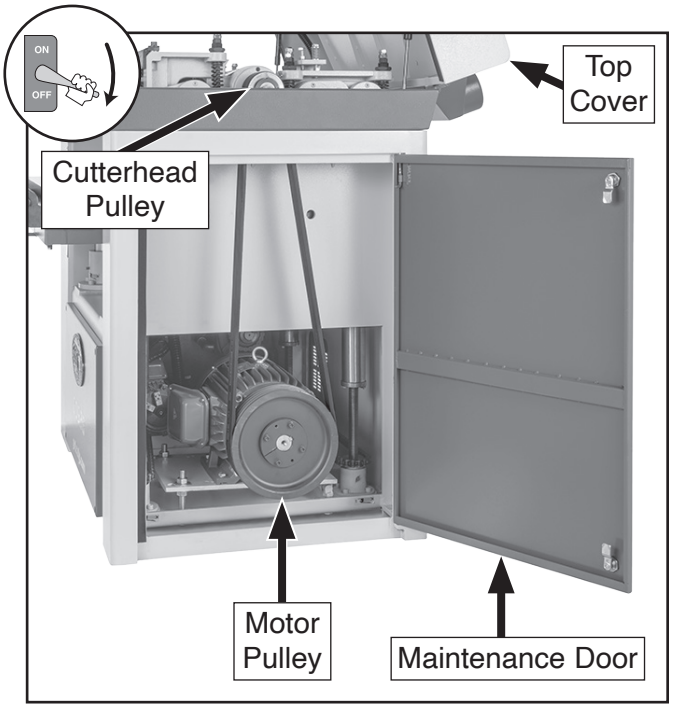


Figure 78. Covers/doors open to expose pulleys.

3. Press plumb bob string to outer face of cutterhead pulley to check if cutterhead and motor pulleys are coplanar (see **Figure 79**).

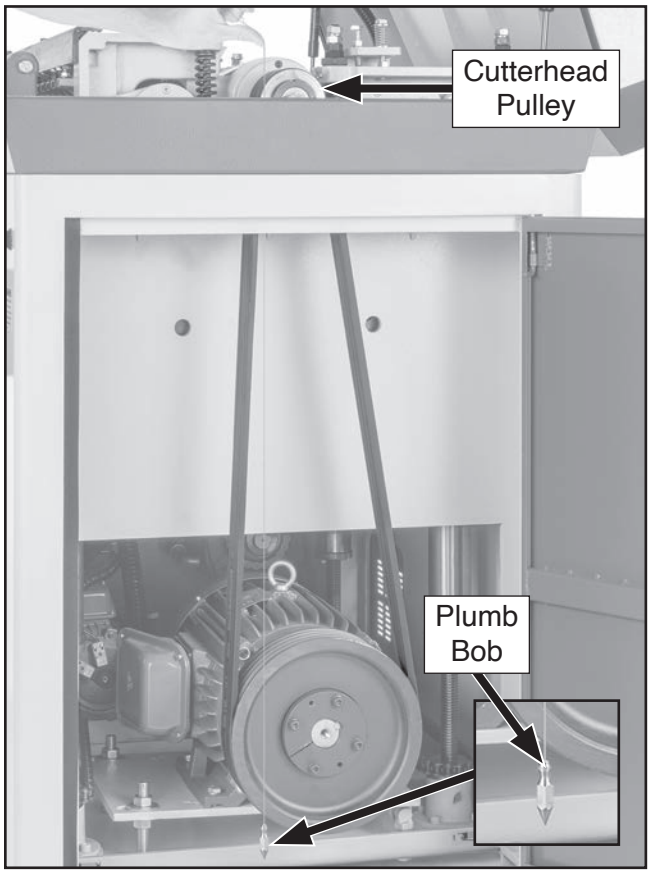


Figure 79. Example of checking pulley alignment with plumb bob.

— If pulleys *are* parallel and in the same plane, no adjustment is necessary. Close maintenance door and top cover.

— If pulleys *are not* parallel or *not* in the same plane, proceed to **Aligning Motor Pulley** on **Page 60**.

Aligning Motor Pulley

Items Needed	Qty
Hex Wrench 6mm	1
Cap Screws M8-1.25 x 25	2

Adjusting Motor Pulley Outward

1. DISCONNECT MACHINE FROM POWER!

2. Equally loosen (4) cap screws on motor pulley (see **Figure 80**).

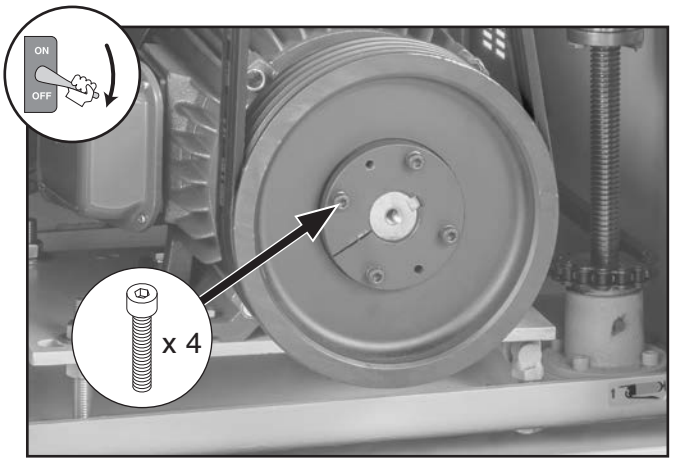


Figure 80. Location of motor pulley fasteners.

3. Thread (2) M8-1.25 x 25 cap screws into open holes in motor pulley (see **Figure 81**), then tighten installed cap screws equally to push motor pulley away from motor.

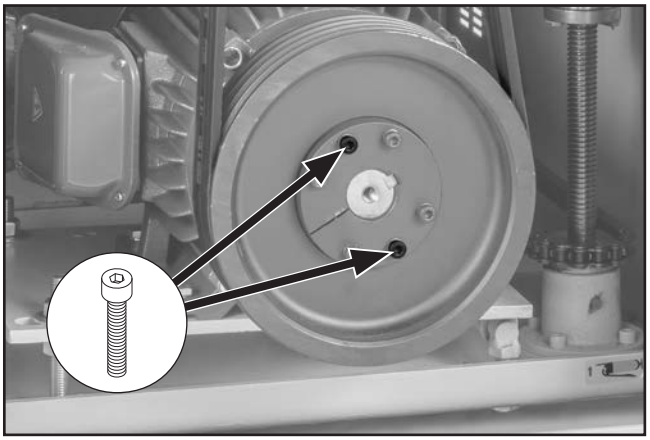


Figure 81. Cap screws installed in outward adjustment holes.

4. Remove (2) cap screws installed in **Step 3**, then tighten (4) cap screws just until cap screw heads contact face of motor pulley.

5. Perform **Steps 1–3** in **Checking Pulley Alignment** on **Page 59**.

Adjusting Motor Pulley Inward

1. DISCONNECT MACHINE FROM POWER!

2. Equally tighten (4) cap screws on motor pulley (see **Figure 82**) to pull motor pulley closer to motor.

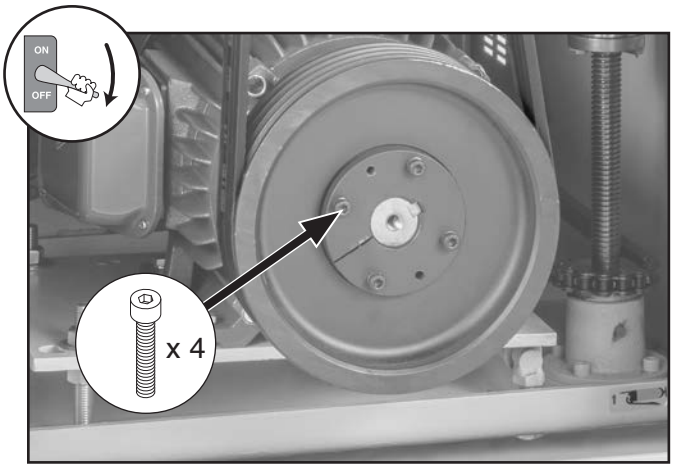


Figure 82. Location of motor pulley fasteners.

3. Perform **Steps 1–3** in **Checking Pulley Alignment** on **Page 59** to ensure pulley is properly aligned.

Calibrating Table Elevation Scale

Although correctly set at the factory, the table elevation scale can be adjusted for accuracy if necessary.

Items Needed	Qty
Wrench or Socket 13mm	1
Scrap Piece of Stock	1
Calipers	1

To calibrate table elevation scale:

1. Plane a scrap piece of stock until it is flat and of even thickness along its length.

   Note: *Turn board over between each pass.*

2. Use calipers to measure board thickness.

3. If there is a discrepancy between board thickness and reading on table elevation scale, loosen hex bolt shown in **Figure 83**, adjust scale indicator as necessary, then tighten hex bolt.

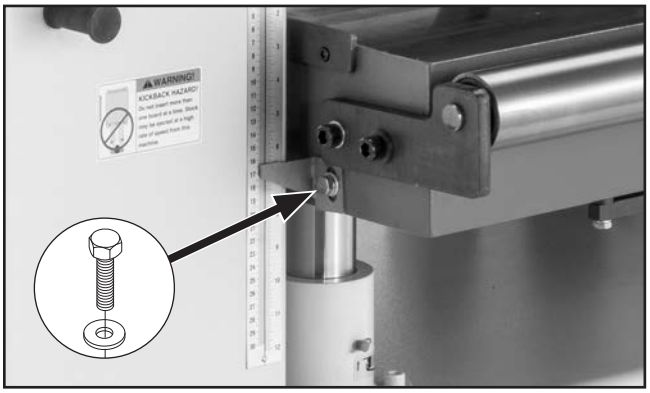


Figure 83. Location of adjustment hex bolt for table elevation scale.

Calibrating Micro-Controller

Calibrate the micro-controller any time the bed roller height is adjusted or a planed workpiece does not match the micro-controller settings.

Items Needed	Qty
Calipers	1
Scrap Workpiece	1

To calibrate micro-controller:

1. Complete **Steps 1–5** in **Adjusting Table Parallelism** beginning on **Page 63**.

2. Feed a scrap workpiece through planer, then measure thickness.

3. Workpiece thickness should match value on digital display.

   — If thickness of workpiece *does* match value on digital display, then micro-controller is properly calibrated.

   — If thickness of workpiece *does not* match value on digital display, then proceed to **Step 4**.

4. Press SET button on keypad (see **Figure 84**). Digital display should reset to zero.

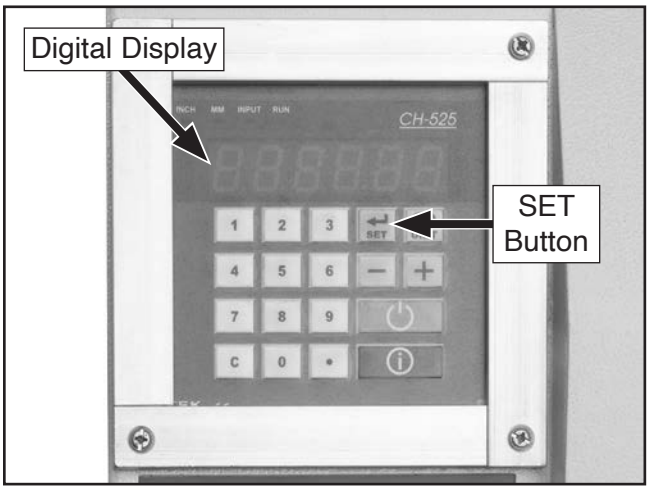


Figure 84. Location of SET button and digital display.

5. Type in value measured in **Step 2**, then press and hold SET button for 2–3 seconds.

6. Repeat **Steps 2–5** as needed to ensure correct calibration.

Replacing Elevation Chain

The table elevation chain is set at the factory, and should need very little maintenance, however, in the event the chain becomes damaged or unusable, the chain must be replaced.

Items Needed	Qty
Phillips Head Screwdriver #2	1
Needle Nose Pliers	1
Chain Puller	1
4x4 (48" Long)	1
Miter Saw	1
Replacement Chain (G0988) (P0988840)	1
Replacement Chain (G0989) (P0989840)	1

To replace elevation chain:

1. Remove front and rear covers, then open maintenance door and electrical cabinet.

⚠WARNING

Serious personal injury can occur when operating machine without safety covers. Use increased caution during operations without covers.

2. Raise or lower table to position elevation chain connecting link in an accessible location (see **Figure 85**).

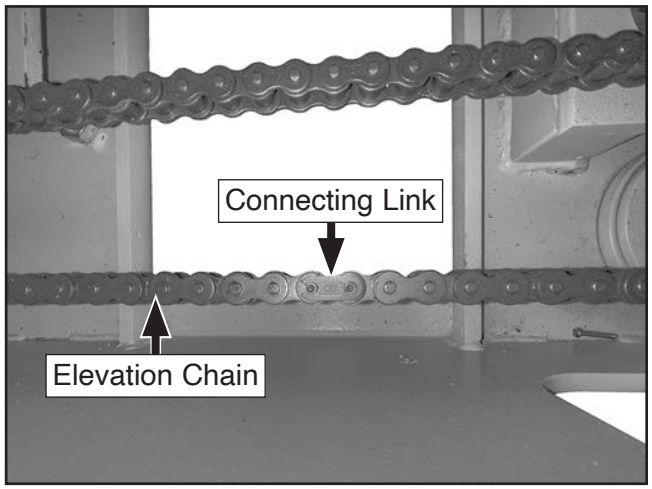


Figure 85. Location of elevation chain connecting link.

3. Measure distance from machine body to underside of table, then cut (4) 4x4 blocks measuring the length of the distance between table and machine body.

   IMPORTANT: Measure distance from machine body to flat underside of table, not support ridges.

4. Raise machine table slightly and place 4x4 blocks next to each table column, then lower table until it rests on blocks (see **Figure 86**).

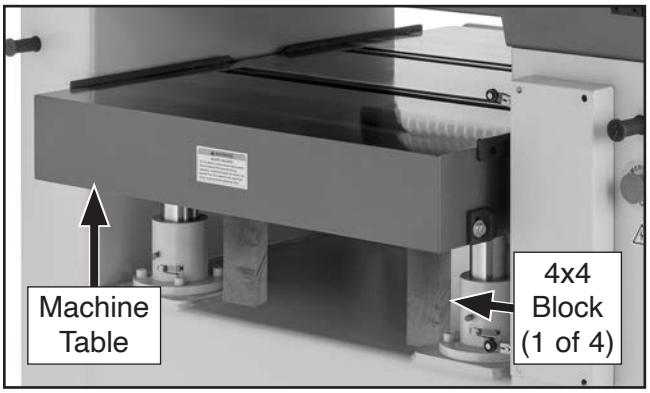


Figure 86. Table supported by 4x4s (shown from rear of machine).

5. DISCONNECT MACHINE FROM POWER!

6. Remove clip, connecting plate, and connecting link from chain, then remove chain from sprockets.

7. Remove clip, connecting plate, and connecting link from replacement chain.

8. Wrap center of chain around sprocket 1, then follow installation sequence illustrated in **Figure 87**.

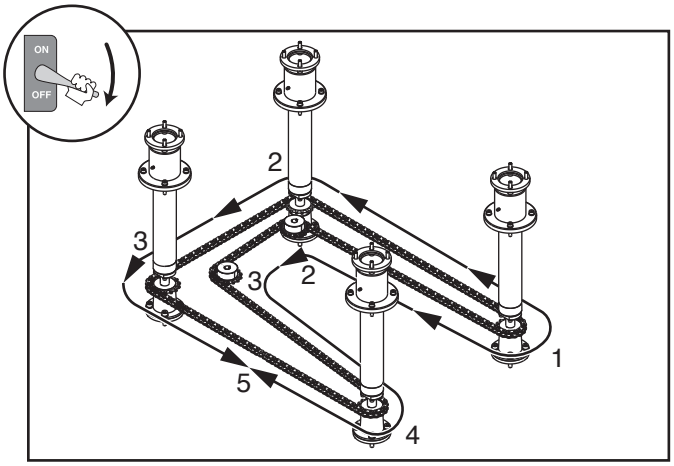


Figure 87. Elevation chain installation sequence.

IMPORTANT: Ensure each chain link properly meshes with sprocket teeth.

9. Connect ends of chain between two front columns (location of 5 in **Figure 87**) in the installation sequence, using connecting link removed in **Step 7**.

10. Connect machine to power, then raise machine table and remove 4x4 blocks.

11. Proceed to **Adjusting Table Parallelism**.

    Note: *This step is critical to ensure accurate planing results.*

Adjusting Table Parallelism

Table parallelism is set by the factory. Adjustments should only be necessary if elevation chain is replaced.

Maximum Allowable Tolerances
Cutterhead/Table Side-to-Side ..... 0.003"
Head Casting/Table Front/Back ..... 0.003"

Table parallelism is critical to the operation of the machine. As such, it is essential that the table is parallel with the cutterhead (within 0.003") from side-to-side and front-to-back, as illustrated in **Figure 88**–**Figure 89**.

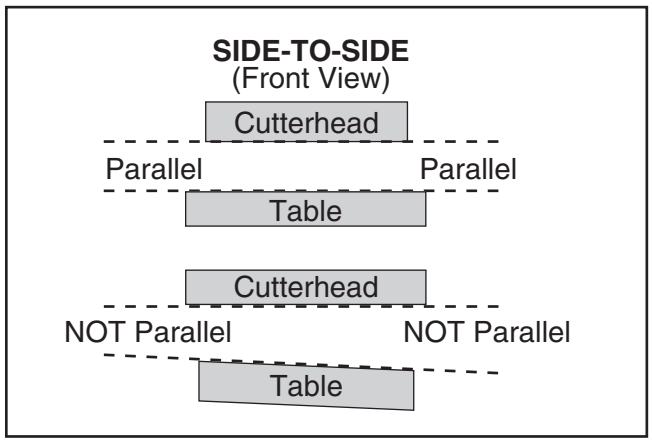


Figure 88. Side-to-side parallelism of table and cutterhead.

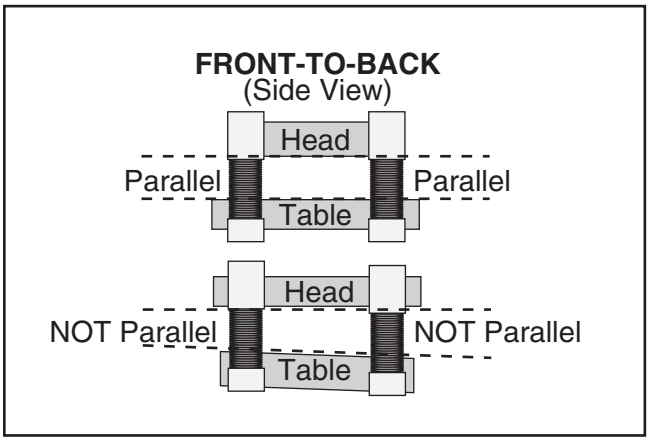


Figure 89. Front-to-back parallelism of table and head casting.

Table Parallelism Inspection

The easiest way to determine if your table has a parallelism problem is to plane a workpiece and measure the thickness in multiple locations. If the workpiece is tapered from left-to-right or from front-to-back, then parallelism may be a problem.

Adjusting Table Parallelism

The table is adjusted by rotating the table columns clockwise to raise or counterclockwise to lower each corner of the table.

Items Needed	Qty
Hex Wrenches 6mm	1
Rotacator or Dial Indicator w/Base (0.002mm)	1
Precision Machined Steel Block or Machinist Square	1

To adjust table parallelism:

1. Raise/lower table to 4" below headstock.

2. DISCONNECT MACHINE FROM POWER!

3. Place a precision machined steel block in gap on front left side of machine body, as shown in **Figure 90** on **Page 64**.

   Note: *A machinist squares may work in place of a machined steel block. Square must be able to lay flat on machine base with 1.5–2" of square body sticking out toward machine table.*

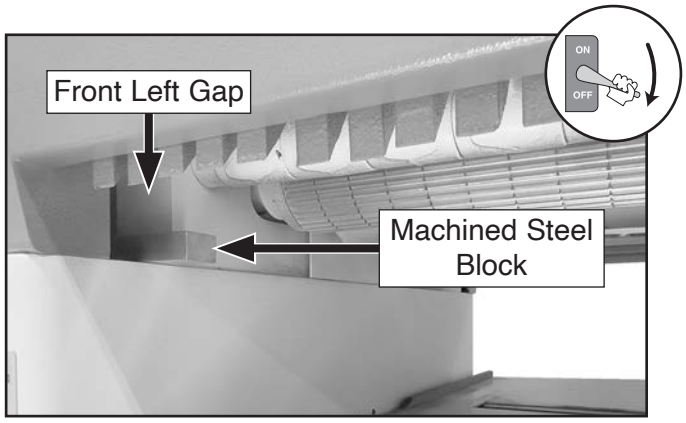


Figure 90. Steel block placed in front left gap of machine body.

4. Set Rotacator/dial indicator pin touching bottom of steel block (see **Figure 91**) and set indicator dial to "0".

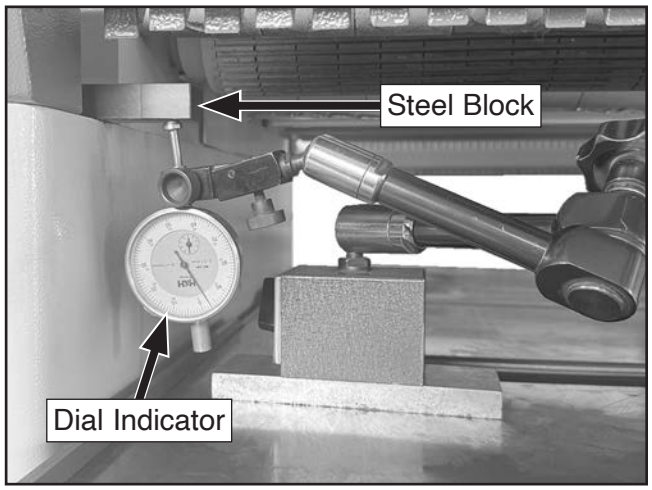


Figure 91. Example of using dial indicator to find reference for table parallelism.

5. Carefully remove steel block from front left gap and place in gap on rear left side of machine base (see **Figure 92**).

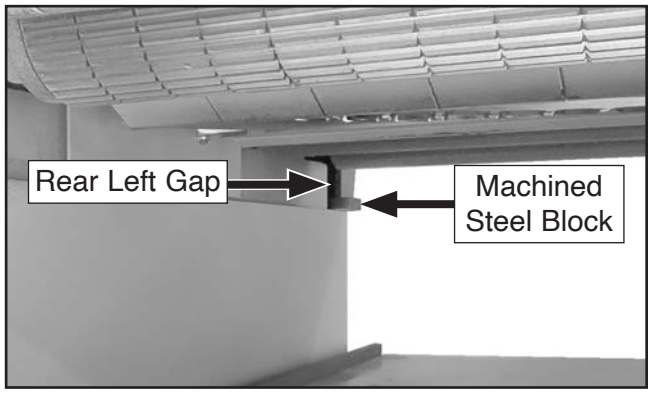


Figure 92. Steel block placed in rear left gap of machine body.

6. Move Rotacator/dial indicator and position under steel block. Indicator dial should touch bottom of steel block.

— If value of measurement on rear left differs *less than* 0.003" from front left, then front-to-back parallelism on left side is within tolerance and no adjustment is necessary. Proceed to **Step 9**.

— If value of measurement on rear left differs *more than* 0.003" from front left, then front-to-back parallelism on left side is out of tolerance and must be adjusted. Proceed to **Step 7**.

7. On left side of table, loosen (4) cap screws on rear left table column fixed ring (see **Figure 93**), then turn column as needed until value on Rotacator/dial indicator is within tolerance left side of table is parallel front-to-back.

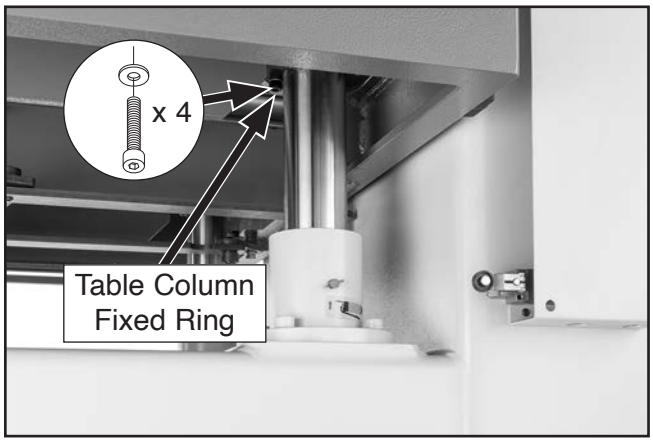


Figure 93. Location of rear left table column fixed ring.

8. Tighten cap screws loosened in **Step 7**.

9. Carefully remove steel block from rear left gap and place in gap on rear right side of machine base.

10. Move Rotacator/dial indicator and position under steel block. Indicator dial should touch bottom of steel block.

— If value of measurement on rear right differs *less than* 0.003" from front left, then table corner is within tolerance and no adjustment is necessary. Proceed to **Step 13**.

— If value of measurement on rear right differs *more than* 0.003" front left, then table corner is out of tolerance and must be adjusted. Proceed to **Step 11**.

11. On right side of table, loosen (4) cap screws on rear right table column fixed ring, then turn column as needed until value on Rotacator/dial indicator is within tolerance and rear right corner of table is parallel to left side of table.

12. Tighten cap screws loosened in **Step 11**.

13. Carefully remove steel block from rear right gap and place in gap on front right side of machine base.

14. Move Rotacator/dial indicator and position under steel block. Indicator dial should touch bottom of steel block.

— If value of measurement on front right differs *less than* 0.003" from front left, then table corner is within tolerance and no adjustment is necessary. Proceed to **Step 17**.

— If value of measurement on front right differs *more than* 0.003" from front left, then table corner is out of tolerance and must be adjusted. Proceed to **Step 15**.

15. On right side of table, loosen (4) cap screws on front right table column fixed ring, then turn column as needed until value on Rotacator/dial indicator is within tolerance and front right corner of table is parallel to left side of table.

16. Tighten cap screws loosened in **Step 15**.

17. Remove steel block and dial indicator and connect machine to power supply.

18. Plane a piece of scrap stock, then use calipers to verify machine is parallel side-to-side and front-to-back.

— If the stock is thicker on one side than the other by more than 0.003", then the table is not parallel side-to-side.

– If the stock has excessive snipe, then the table is not parallel front-to-back.

Note: *For more information about snipe, see* ***Common Cutting Problems*** *on* ***Page 40***.

— If one or both of these conditions exist, repeat **Steps 1–18** until table is parallel front-to-back and side-to-side.

Adjusting Feed Roller, Chip Breaker & Pressure Bar Height

It is essential that the feed rollers, chip breaker, and pressure bar are set at the correct distance below the cutterhead inserts at BDC (bottom dead center) to ensure that the workpiece moves through the planer evenly and the correct distance from the cutterhead inserts.

To ensure accurate results and make the adjustment process quicker and easier, we recommend using a dial indicator with 0.002mm graduations for these adjustments.

Dist. Below Cutterhead at BDC (see Figure 94)

A. Infeed Roller 0.10–0.20mm
B. Chip Breaker 0.10–0.20mm
C. Pressure Bar 0.10mm
D. Steel Outfeed Roller..... 0.40mm
E. Rubber Outfeed Roller 0.70–0.90mm

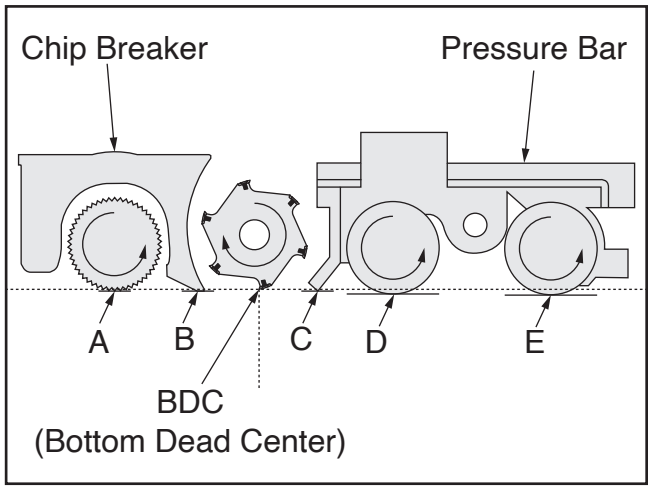


Figure 94. Planer component recommended clearances (illustration is not to scale).

Adjusting Infeed Roller Height

Items Needed	Qty
Wrenches 19mm	2
Rotacator or Dial Indicator w/Base (0.002mm)	1

To adjust infeed roller height:

1. Raise/lower table to 4" below headstock.

2. DISCONNECT MACHINE FROM POWER!

3. Ensure all inserts are properly installed (refer to **Rotating/Replacing Cutterhead Inserts** on **Page 56** for detailed instructions).

4. Lift top cover and open maintenance door.

5. Using Rotacator/dial indicator, find bottom dead center (BDC) of any insert edge by slowly rocking cutterhead pulley back and forth, then set Rotacator/dial indicator to "0" (see **Figure 95**).

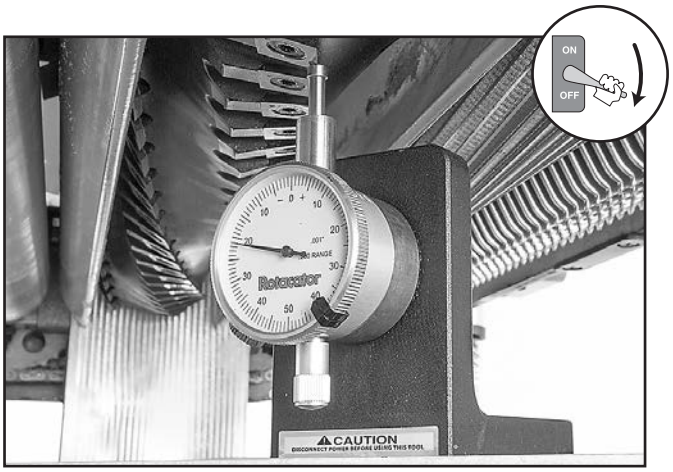


Figure 95. Example of using a Rotacator to find cutterhead BDC.

6. Position Rotacator/dial indicator under left side of infeed roller (**Figure 96**).

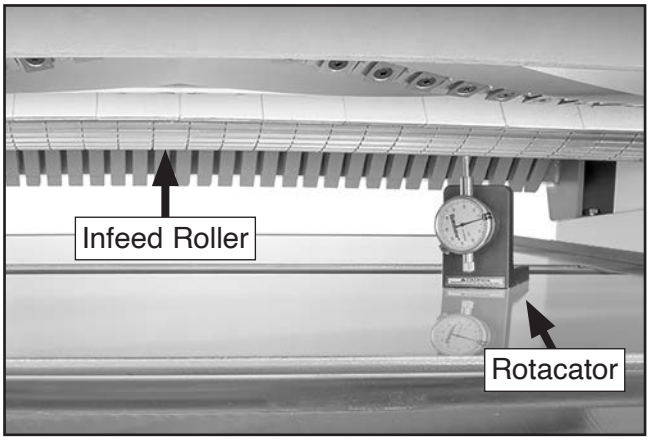


Figure 96. Rotacator placed underneath left side of infeed roller (shown from rear of machine).

— If infeed roller height *is* 0.10–0.20mm below cutterhead BDC, then no height adjustment is necessary. Proceed to **Step 9**.

— If infeed roller height *is not* 0.10–0.20mm below cutterhead BDC, then proceed to **Step 7**.

7. On left side of machine, loosen jam nut, then tighten or loosen roller height nut (see **Figure 97**) on adjustment stud to adjust infeed roller height so Rotacator/dial indicator reads between 0.10–0.20mm.

   — Rotate roller height nut clockwise to raise infeed roller, and counterclockwise to lower it.

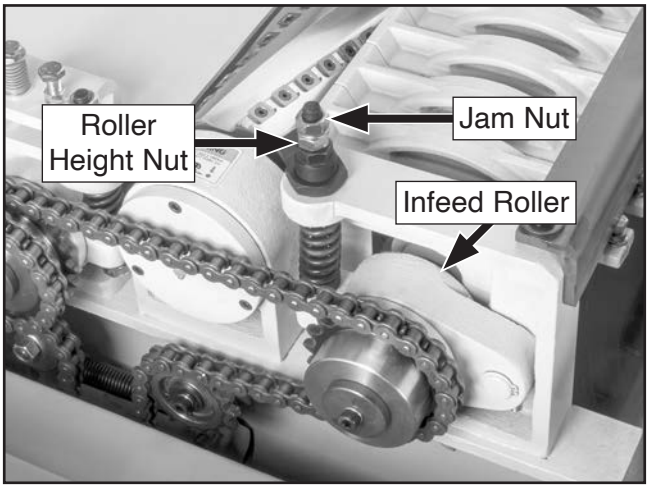


Figure 97. Location of infeed roller adjustments.

8. Tighten jam nut loosened in **Step 7**.

9. Repeat **Steps 6–8** on right side of infeed roller.

10. Remove Rotacator/dial indicator, then close top cover and maintenance door.

Adjusting Chip Breaker Height

Items Needed	Qty
Socket Wrench	1
Wrench Head 13mm	1
Socket Extension 2"	1
Socket Wrench	1
Rotacator or Dial Indicator w/Base (0.002mm)	1
Chalk or Pencil	1

To adjust chip breaker height:

1. Perform **Steps 1–5** of **Adjusting Infeed Roller Height** on **Page 66**.

2. Position Rotacator/dial indicator on table underneath chip breakers (see **Figure 98**).

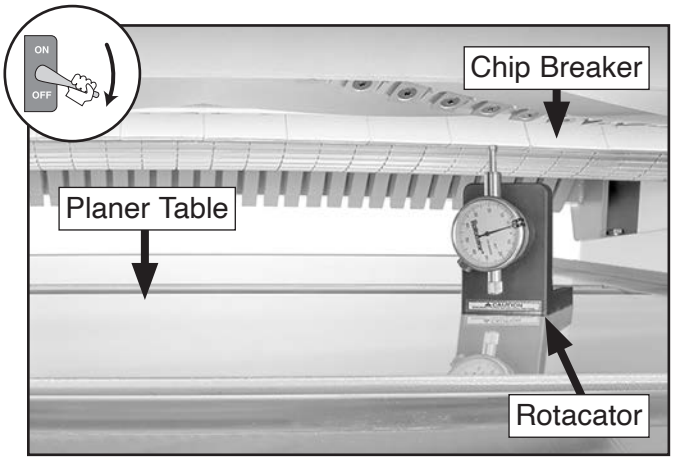


Figure 98. Rotacator placed underneath chip breaker (as viewed from rear) (G0988 shown).

3. Slide Rotacator/dial indicator back and forth across bottom of each chip breaker.

   — If height of ALL chip breakers *is* 0.10–0.20mm below cutterhead BDC, then no height adjustment is necessary. Proceed to **Step 7**.

   — If any chip breaker height *is not* 0.10–0.20mm below cutterhead BDC, mark chip breaker with chalk/pencil and proceed to **Step 4**.

4. On any chip breakers marked in **Step 3**, loosen chip breaker jam nut (see **Figure 99**).

5. On each chip breaker marked in **Step 3**, rotate adjustment bolt (see **Figure 99**) as needed to adjust chip breaker height so Rotacator/dial indicator reads between 0.10–0.20mm.

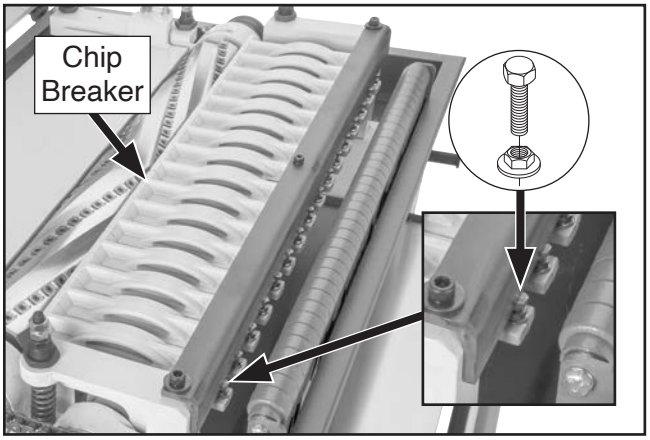


Figure 99. Location of chip breaker frame and adjustment components (G0988 shown)

Note: *Rotate adjustment bolt counterclockwise to raise chip breaker, and clockwise to lower it.*

6. Tighten any jam nuts loosened in **Step 4**.

7. Remove Rotacator/dial indicator, then close top cover and maintenance door.

Adjusting Pressure Bar Height

Items Needed **Qty**
Wrenches 14, 17mm.....1 Ea.
Rotacator or Dial Indicator w/Base (0.002mm) ... 1

To adjust pressure bar height:

1. Perform **Steps 1–5** of **Adjusting Infeed Roller Height** on **Page 66**.

2. Position Rotacator/dial indicator under left side of pressure bar, as shown in **Figure 100**.

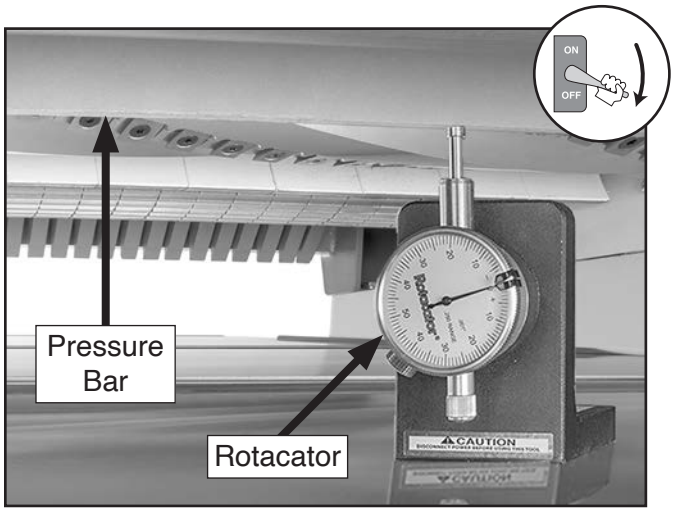


Figure 100. Rotacator placed underneath pressure bar (shown from rear of machine).

— If pressure bar height *is* 0.10mm below cutterhead BDC, then no height adjustment is necessary. Proceed to **Step 6**.

— If pressure bar height *is not* 0.10mm below cutterhead BDC, then proceed to **Step 3**.

3. On left side of machine, loosen jam nut, then tighten or loosen adjustment bolt (see **Figure 101**) so Rotacator/dial indicator reads 0.10mm.

— Rotate adjustment bolt clockwise to raise pressure bar, and counterclockwise to lower it.

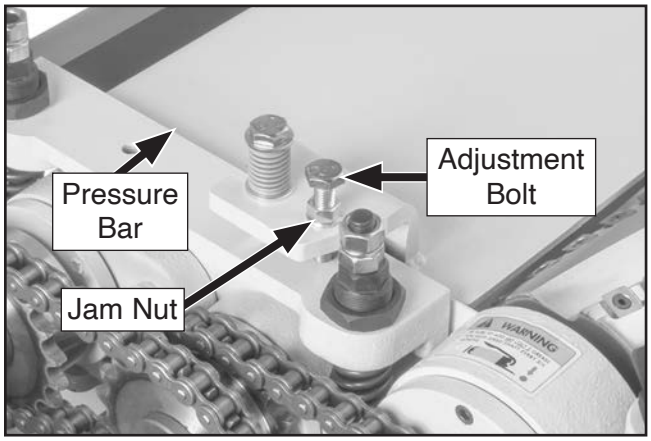


Figure 101. Location of pressure bar adjustment components.

4. Tighten jam nut loosened in **Step 3**.

5. Repeat **Steps 2–4** on right side of pressure bar.

6. Remove Rotacator/dial indicator, then close top cover and maintenance door.

Adjusting Steel Outfeed Roller Height

Items Needed	Qty
Wrenches 19mm	2
Rotacator or Dial Indicator w/Base (0.002mm)	1

To adjust steel outfeed roller height:

1. Perform **Steps 1–5** of **Adjusting Infeed Roller Height** on **Page 66**.

2. Position Rotacator/dial indicator under left side of steel outfeed roller (see **Figure 102**).

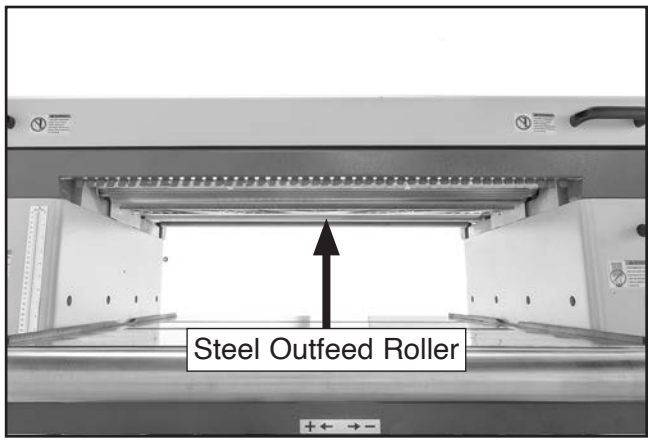


Figure 102. Location of steel outfeed roller.

— If steel outfeed roller height *is* 0.40mm below cutterhead BDC, then no height adjustment is necessary. Proceed to **Step 6**.

— If steel outfeed roller height *is not* 0.40mm below cutterhead BDC, then proceed to **Step 3**.

3. On left side of machine, loosen jam nut, then tighten or loosen roller height nut (see **Figure 103**) on adjustment stud to adjust steel outfeed roller height so Rotacator/dial indicator reads 0.40mm.

— Rotate roller height nut clockwise to raise steel outfeed roller, and counterclockwise to lower it.

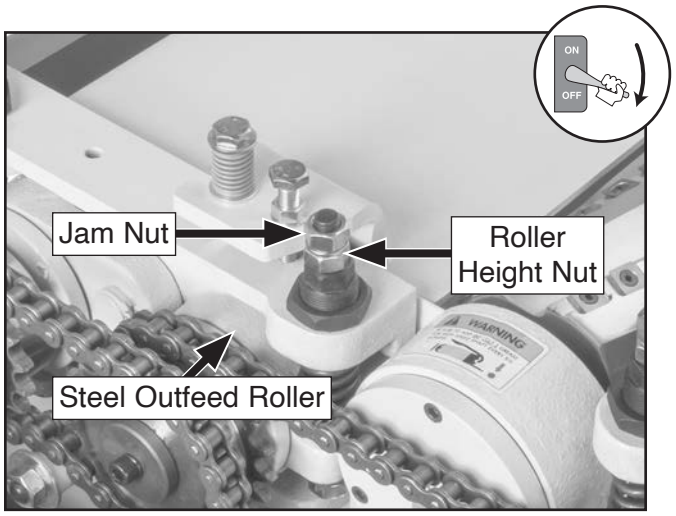


Figure 103. Location of steel outfeed roller adjustment components.

4. Tighten jam nut loosened in **Step 3**.

5. Repeat **Steps 2–4** on right side of steel outfeed roller.

6. Remove Rotacator/dial indicator, then close top cover and maintenance door.

Adjusting Rubber Outfeed Roller Height

Items Needed **Qty**
Wrenches 19mm 2
Rotacator or Dial Indicator w/Base (0.002mm) ... 1

To adjust rubber outfeed roller height:

1. Perform **Steps 1–5** of **Adjusting Feed Roller Height** on **Page 66**.

2. Position Rotacator/dial indicator under left-side of rubber outfeed roller (see **Figure 104**).

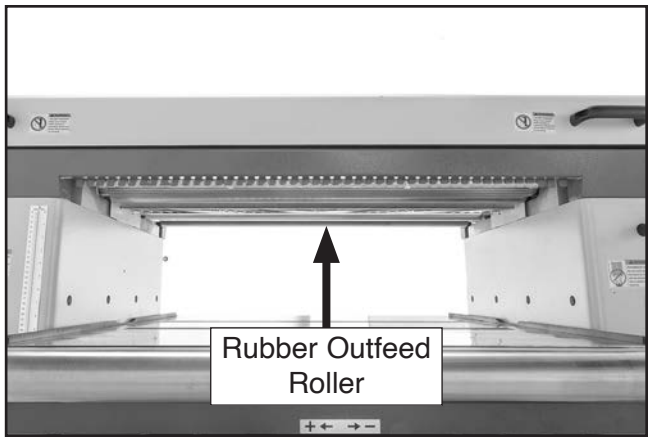


Figure 104. Location of rubber outfeed roller.

— If rubber outfeed roller height *is* 0.70–0.90mm below cutterhead BDC, then no height adjustment is necessary. Proceed to **Step 6**.

— If rubber outfeed roller height *is not* 0.70–0.90mm below cutterhead BDC, then proceed to **Step 3**.

3. On left side of machine, loosen jam nut, then tighten or loosen roller height nut (see **Figure 105**) on adjustment stud to adjust rubber outfeed roller height so Rotacator/dial indicator reads between 0.70–0.90mm.

— Rotate roller height nut clockwise to raise infeed roller, and counterclockwise to lower it.

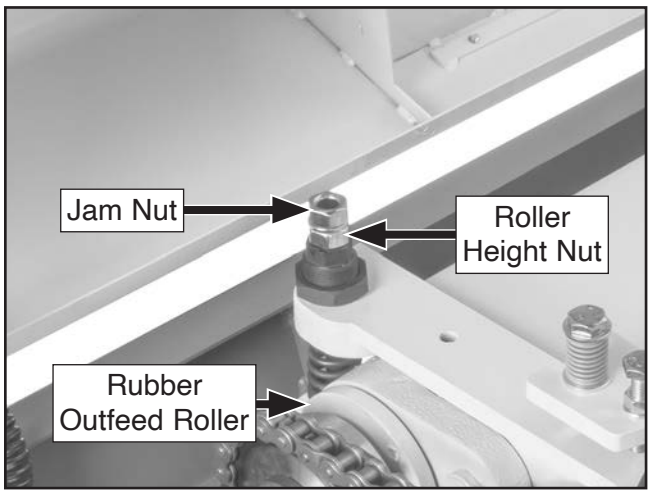


Figure 105. Location of rubber outfeed roller adjustment components.

4. Tighten jam nut loosened in **Step 3**.

5. Repeat **Steps 2–4** on right side of rubber outfeed roller.

IMPORTANT: Whatever value is chosen within approved range (0.70–0.90mm) for left side must be matched exactly on right side.

6. Remove Rotacator/dial indicator, then close top cover and maintenance door.

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.

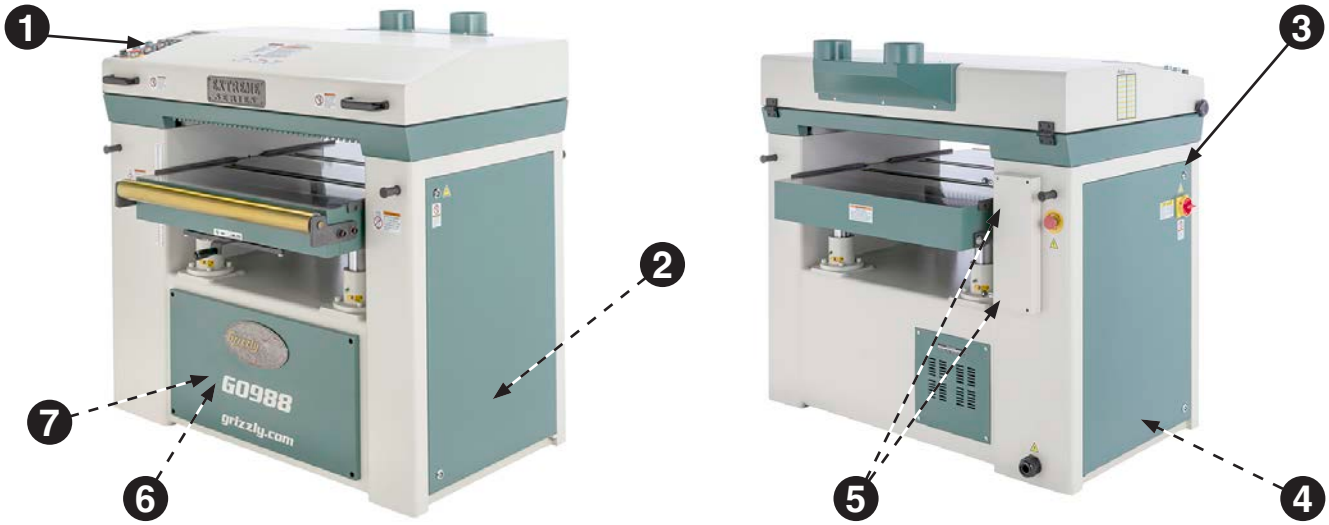
NOTICE

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		

Electrical Overview



1	Control Panel & Micro-Controller (**Page 76**)
2	Cutterhead Motor (**Page 78**)
3	Electrical Cabinet (**Page 73**)
4	Feed Motor (**Page 77**)
5	Table Limit Switches (**Page 73**)
6	Table Elevation Motor (**Page 79**)
7	Table Elevation Motor Sensors (**Page 73**)
8	Top Cover Limit Switch (**Page 76**)

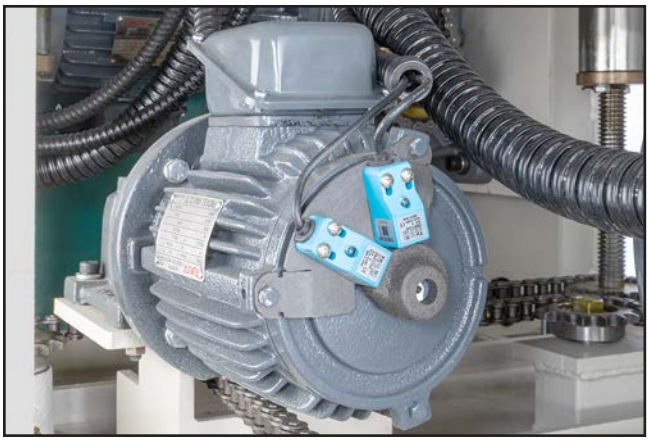
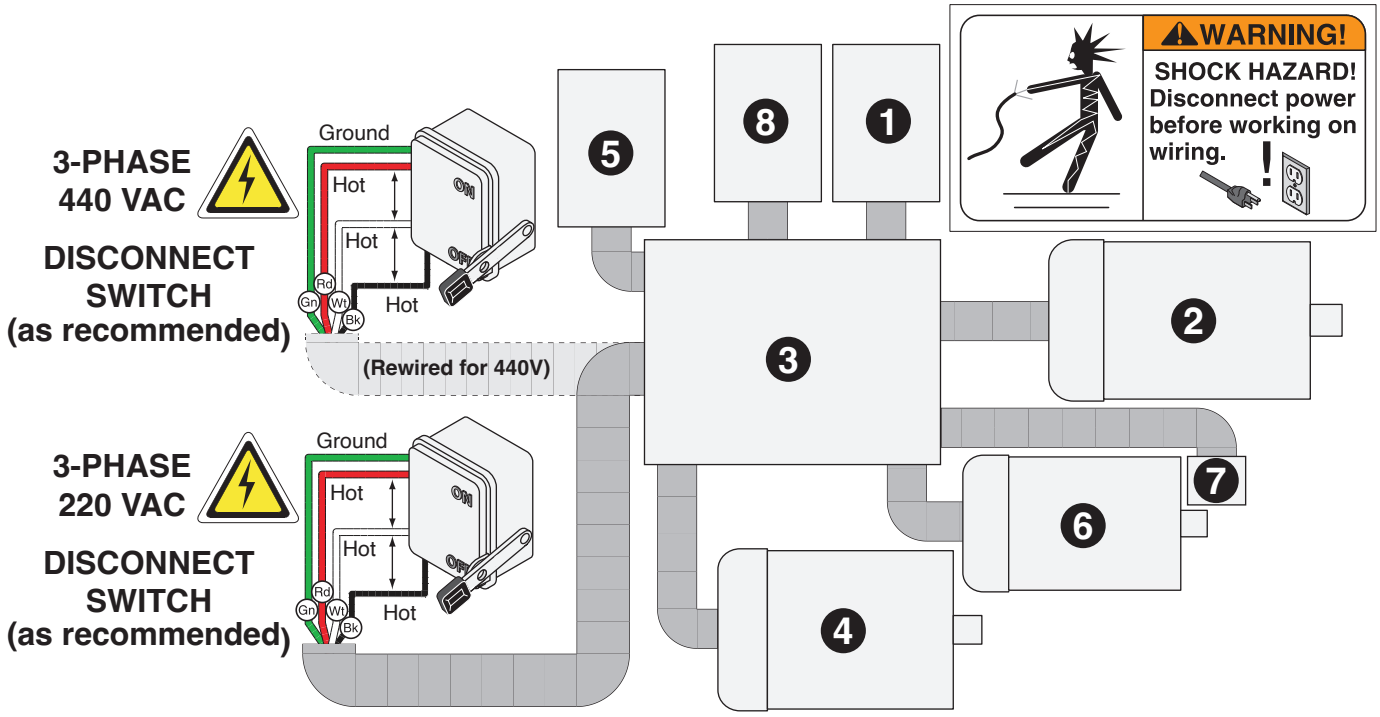
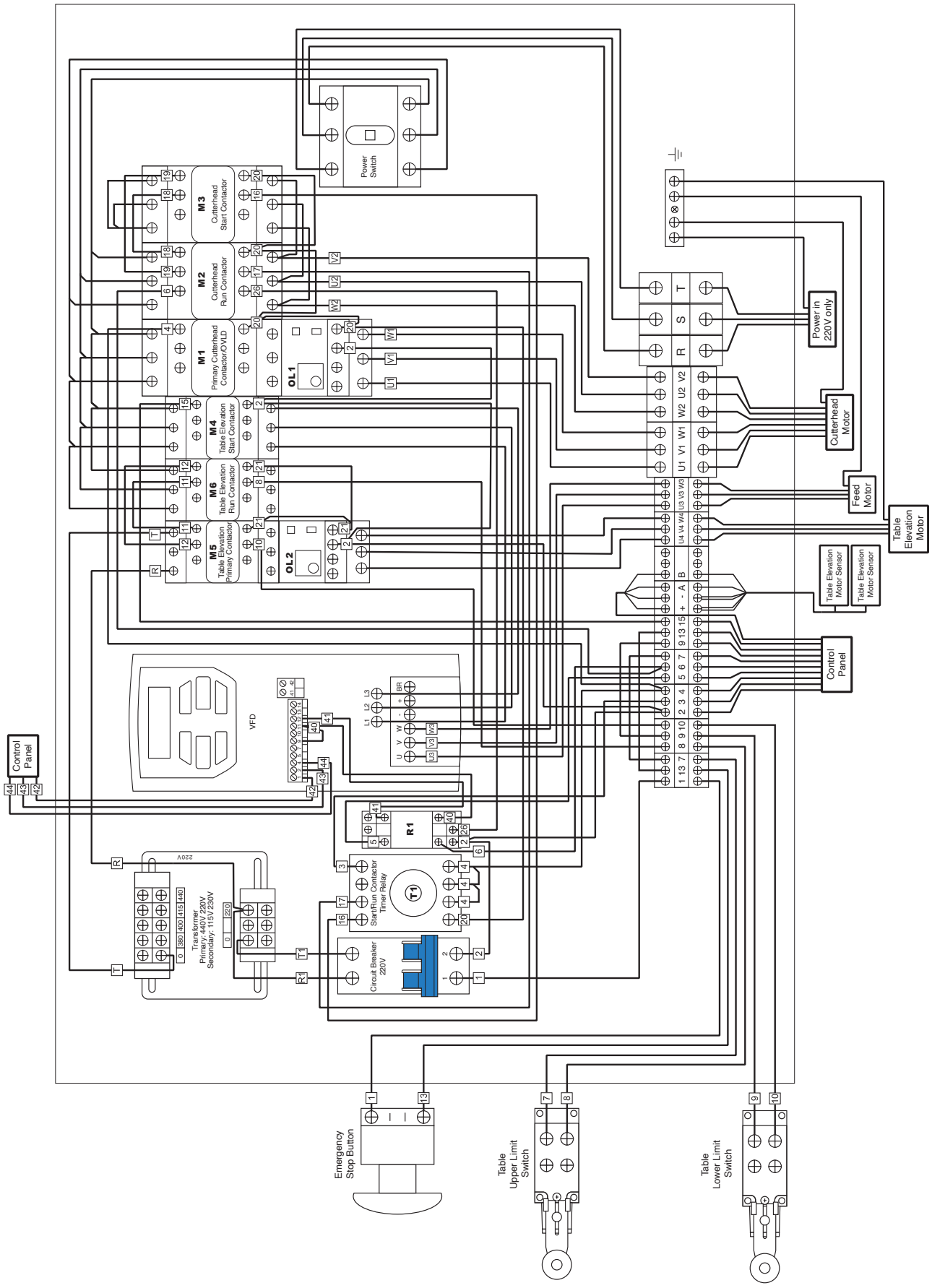


Figure 106. Table elevation motor sensor wiring.



STOP ***READ ELECTRICAL SAFETY ON PAGE 71!***

Electrical Cabinet Schematic 220V



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Electrical Cabinet (220V) & Limit Switches

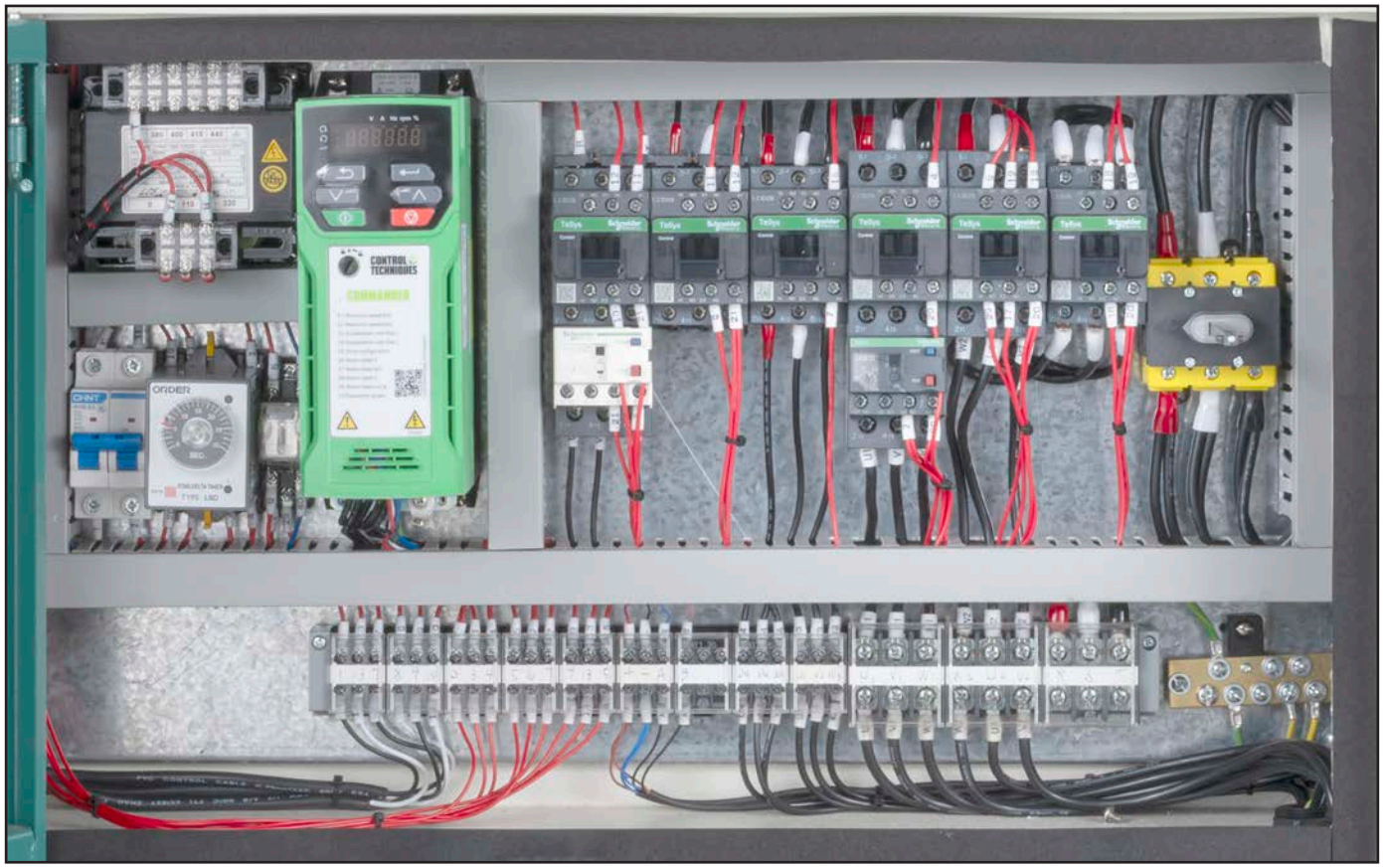

Figure 107. Electrical cabinet (220V).

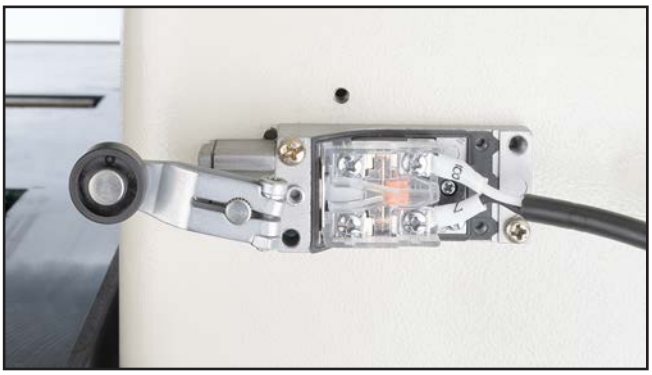

Figure 108. Table upper limit switch wiring.

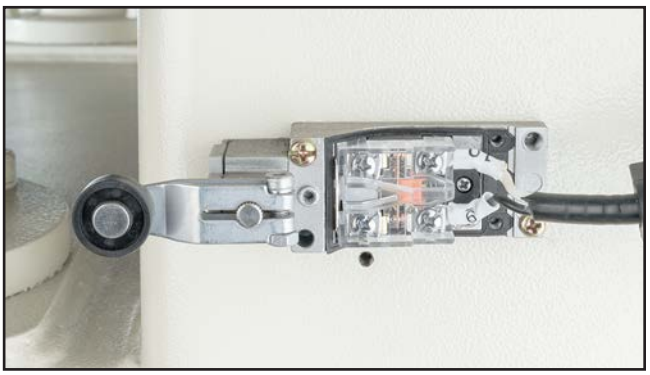

Figure 109. Table lower limit switch wiring.

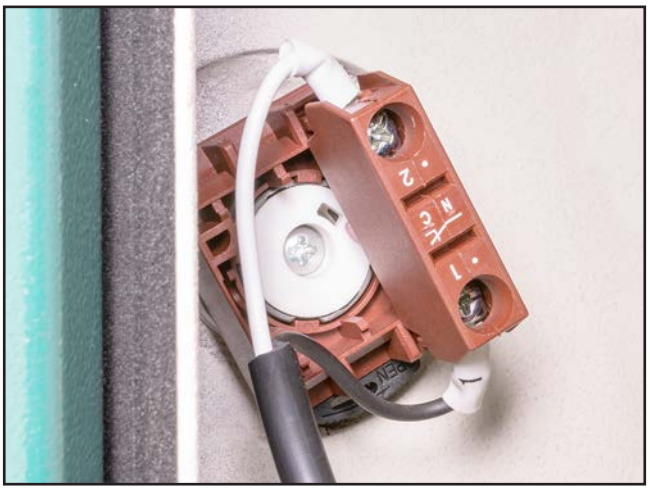

Figure 110. EMERGENCY STOP button wiring.

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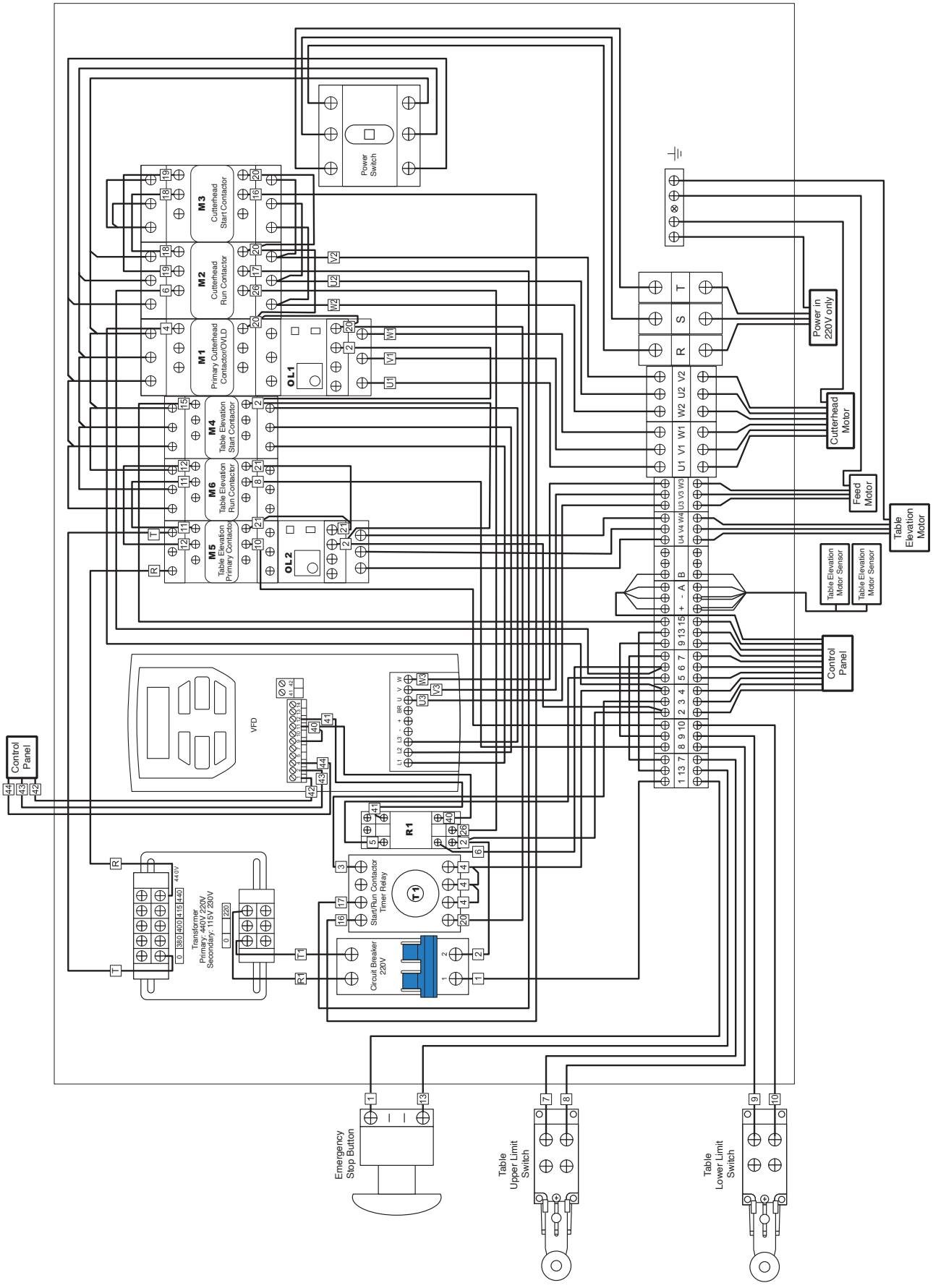
Electrical Cabinet Schematic 440V



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Control Panel & Micro-Controller

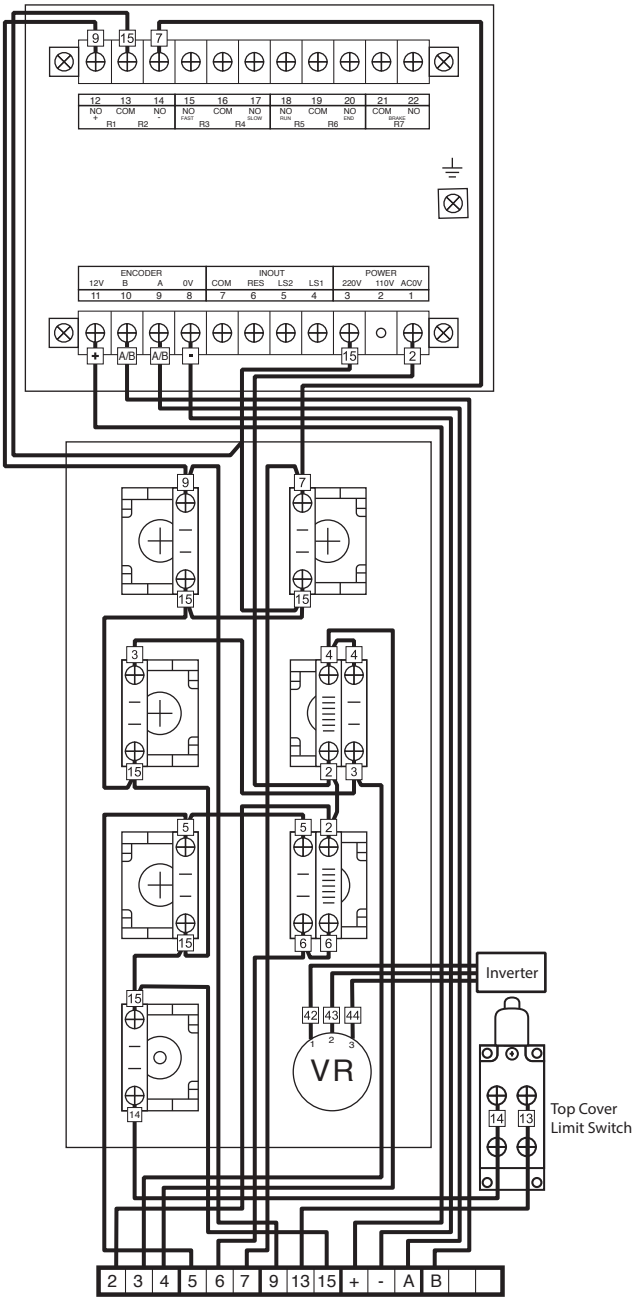

Figure 111. Top cover limit switch wiring.

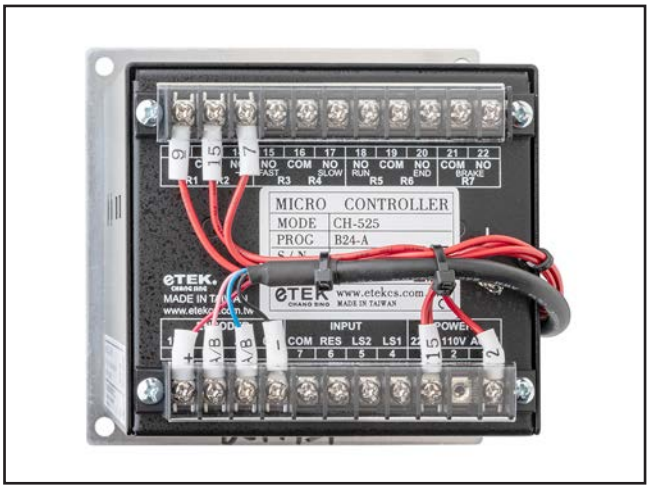

Figure 112. Micro-controller wiring.

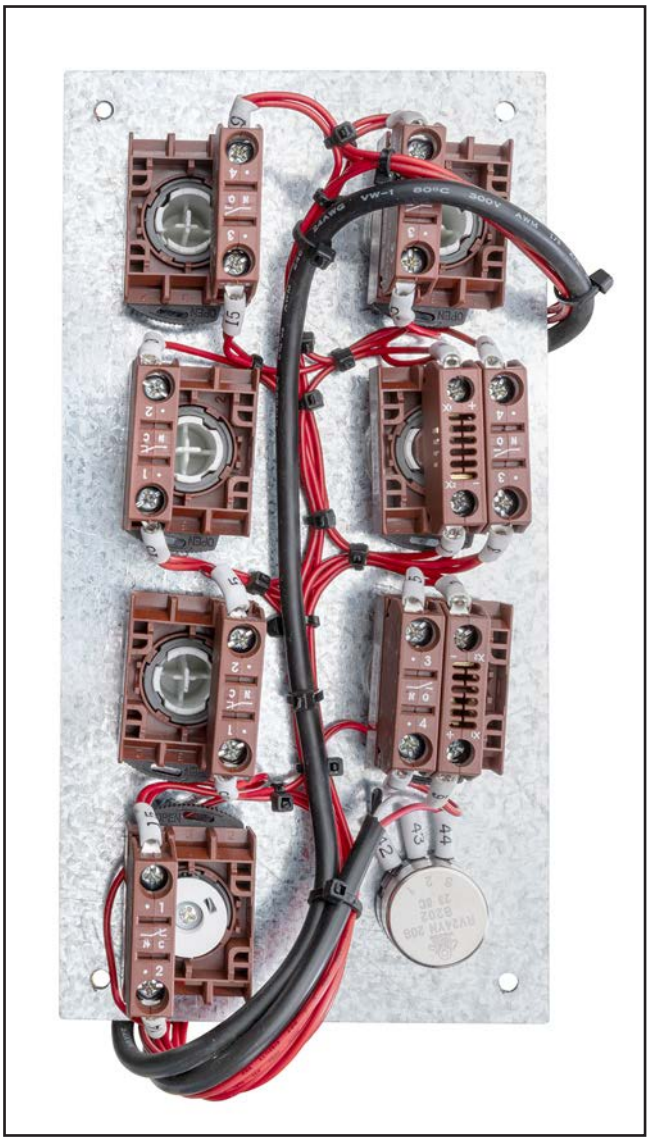

Figure 113. Control panel wiring.

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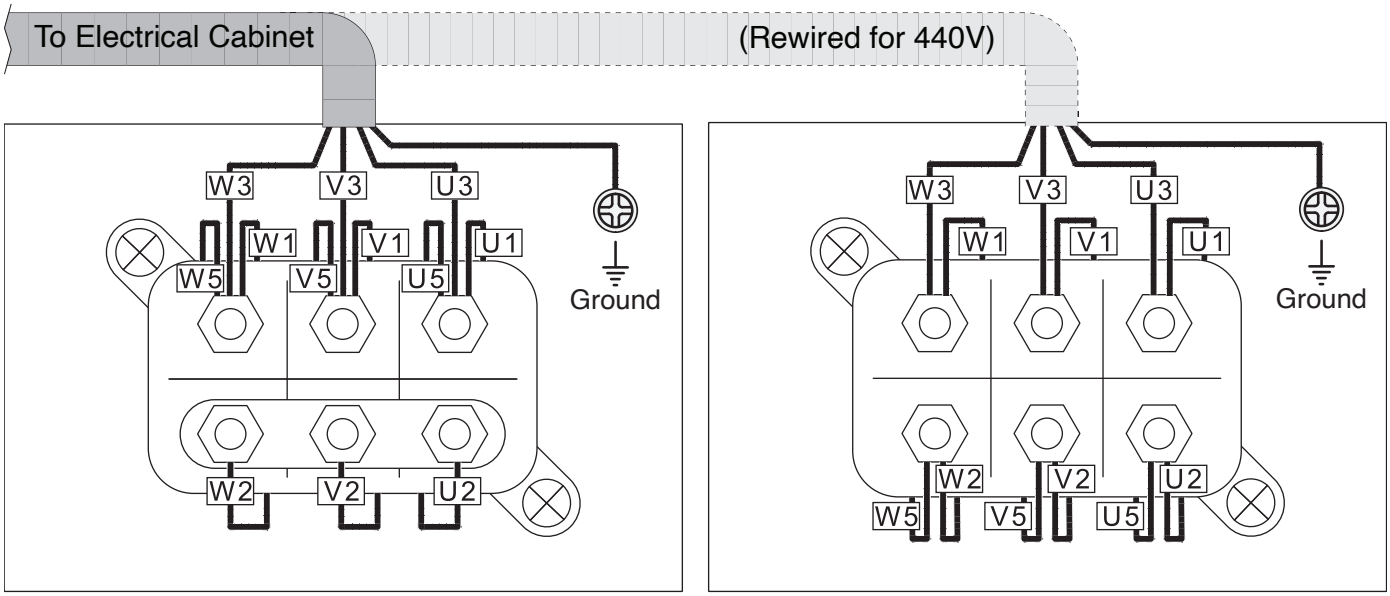
Feed Motor



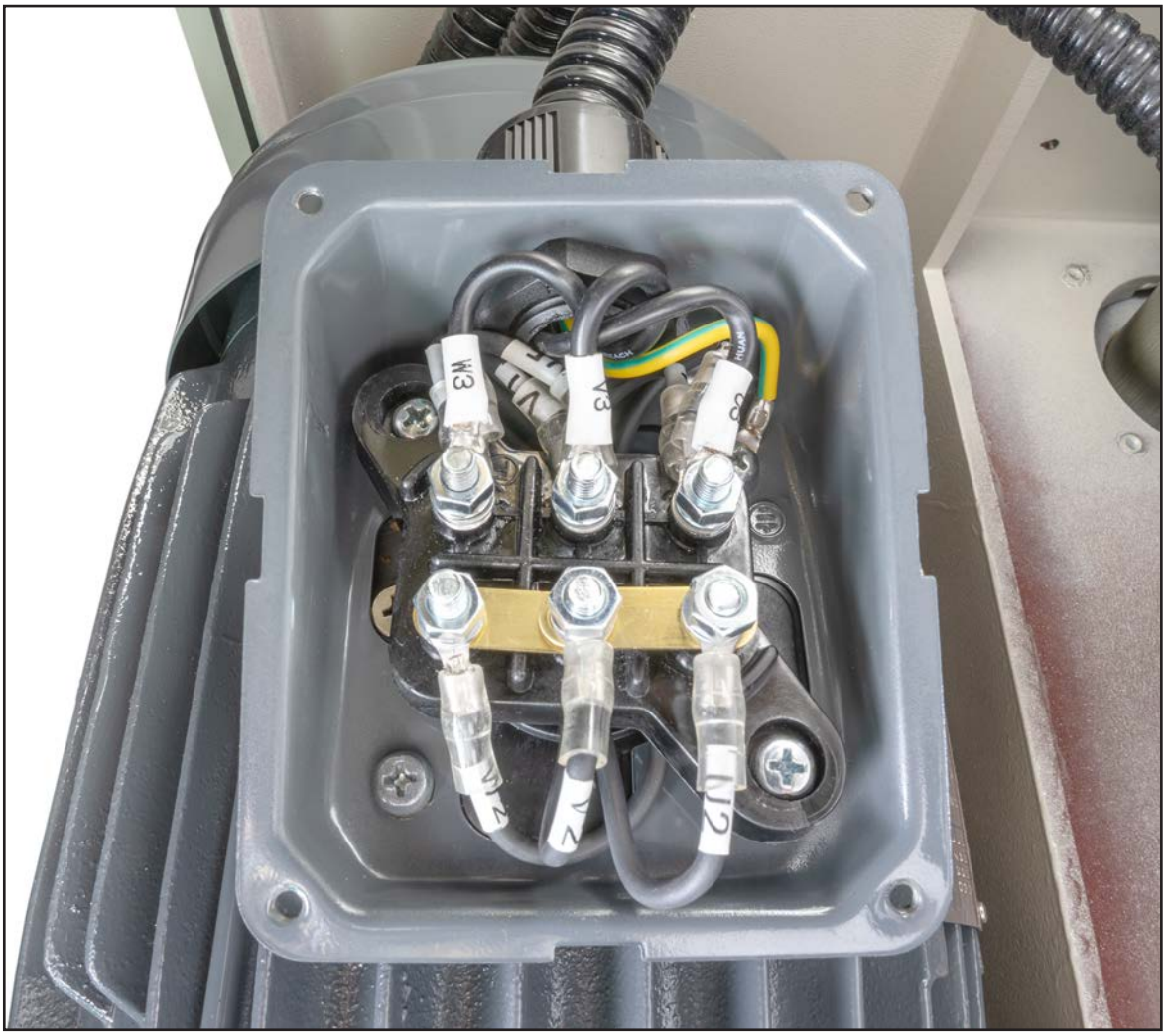


Figure 114. Feed motor wired for 220V operation.

Cutterhead Motor

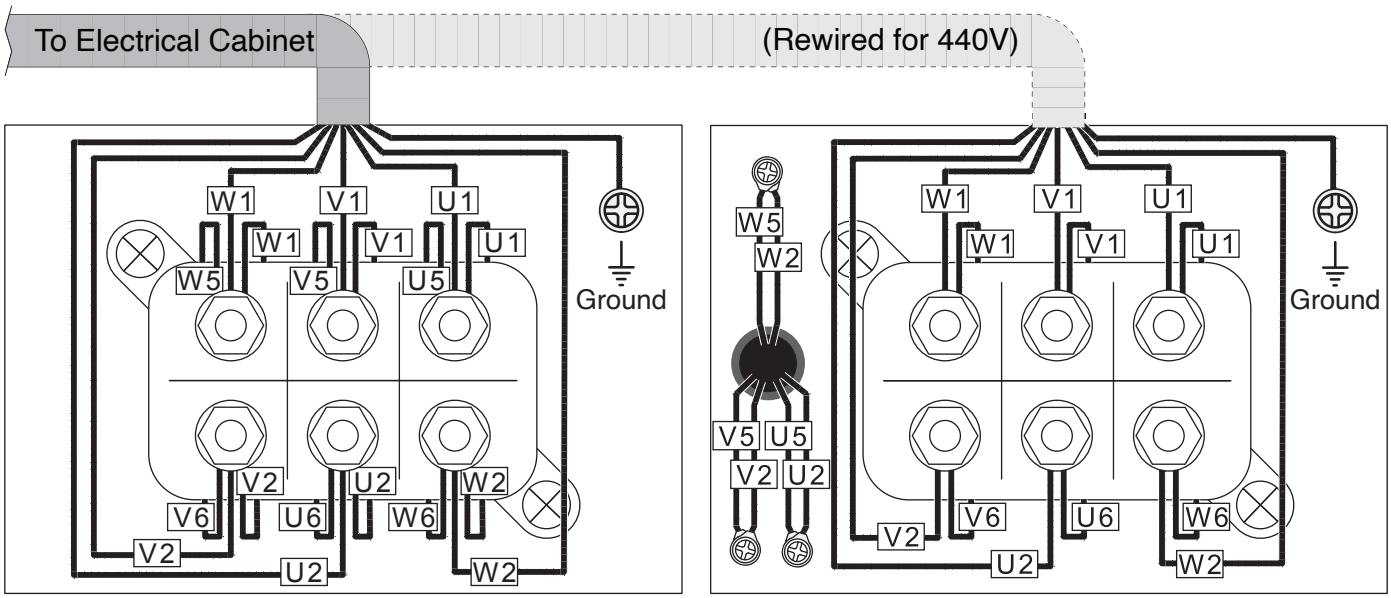
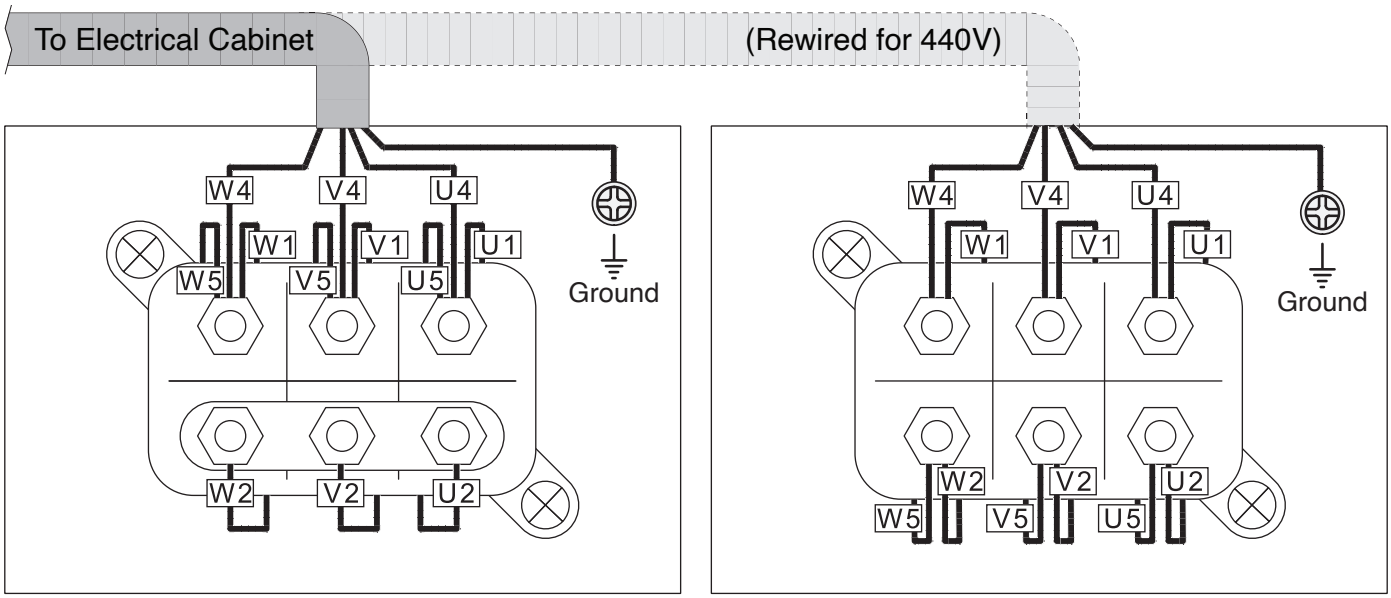


Figure 115. Cutterhead motor wired for 220V operation.

READ ELECTRICAL SAFETY ON PAGE 71!

Table Elevation Motor



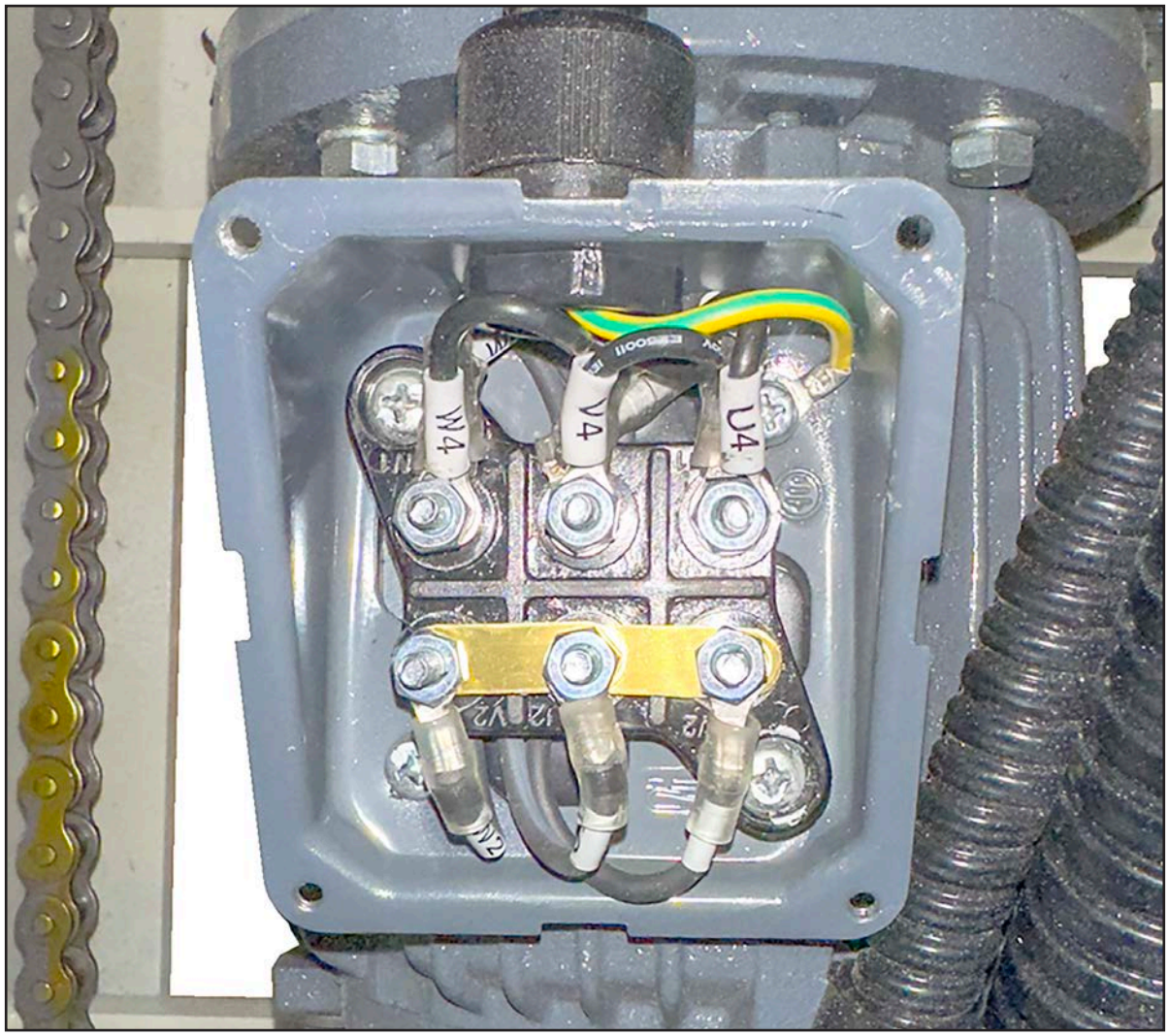
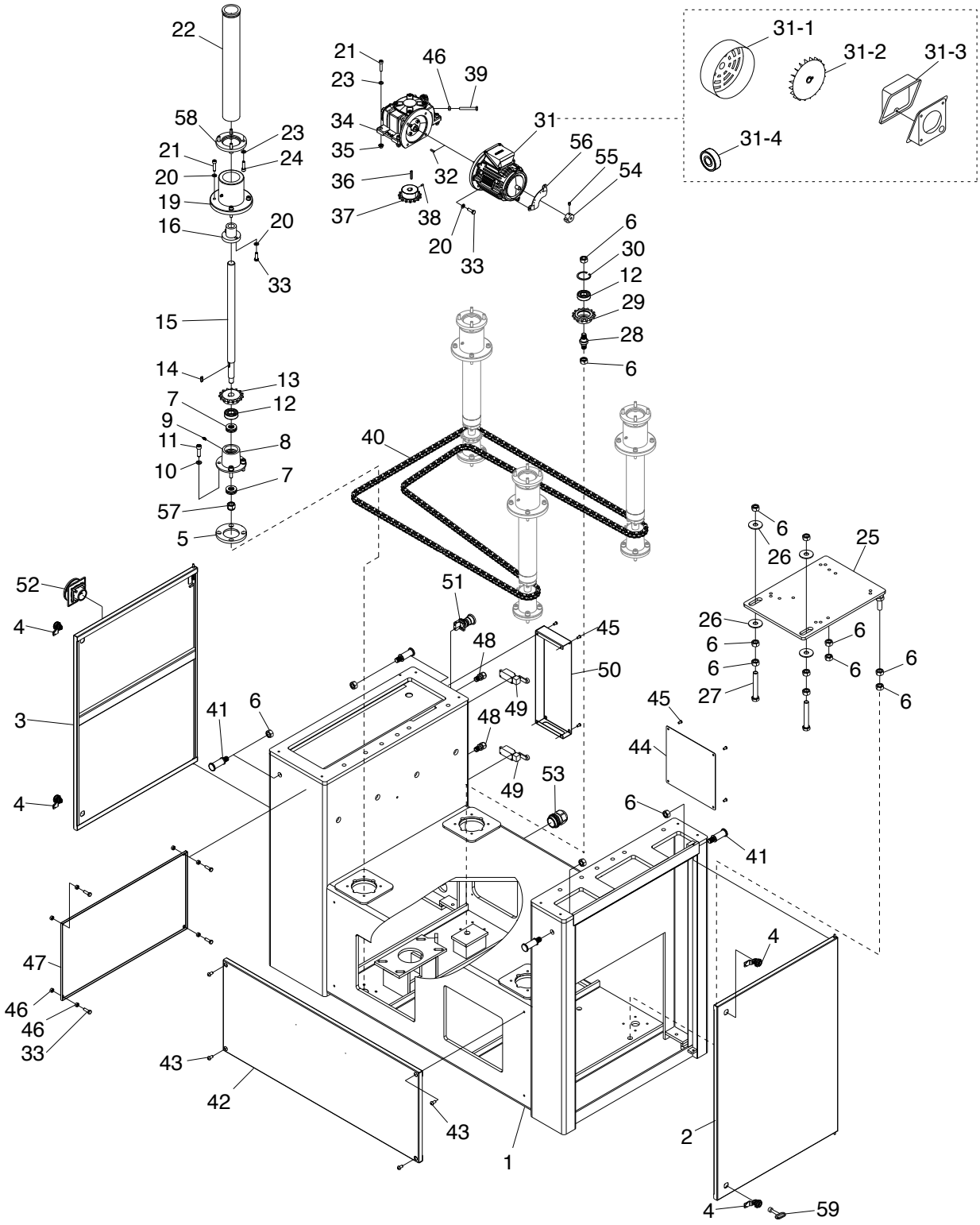


Figure 116. Table elevation motor wired for 220V operation.

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.

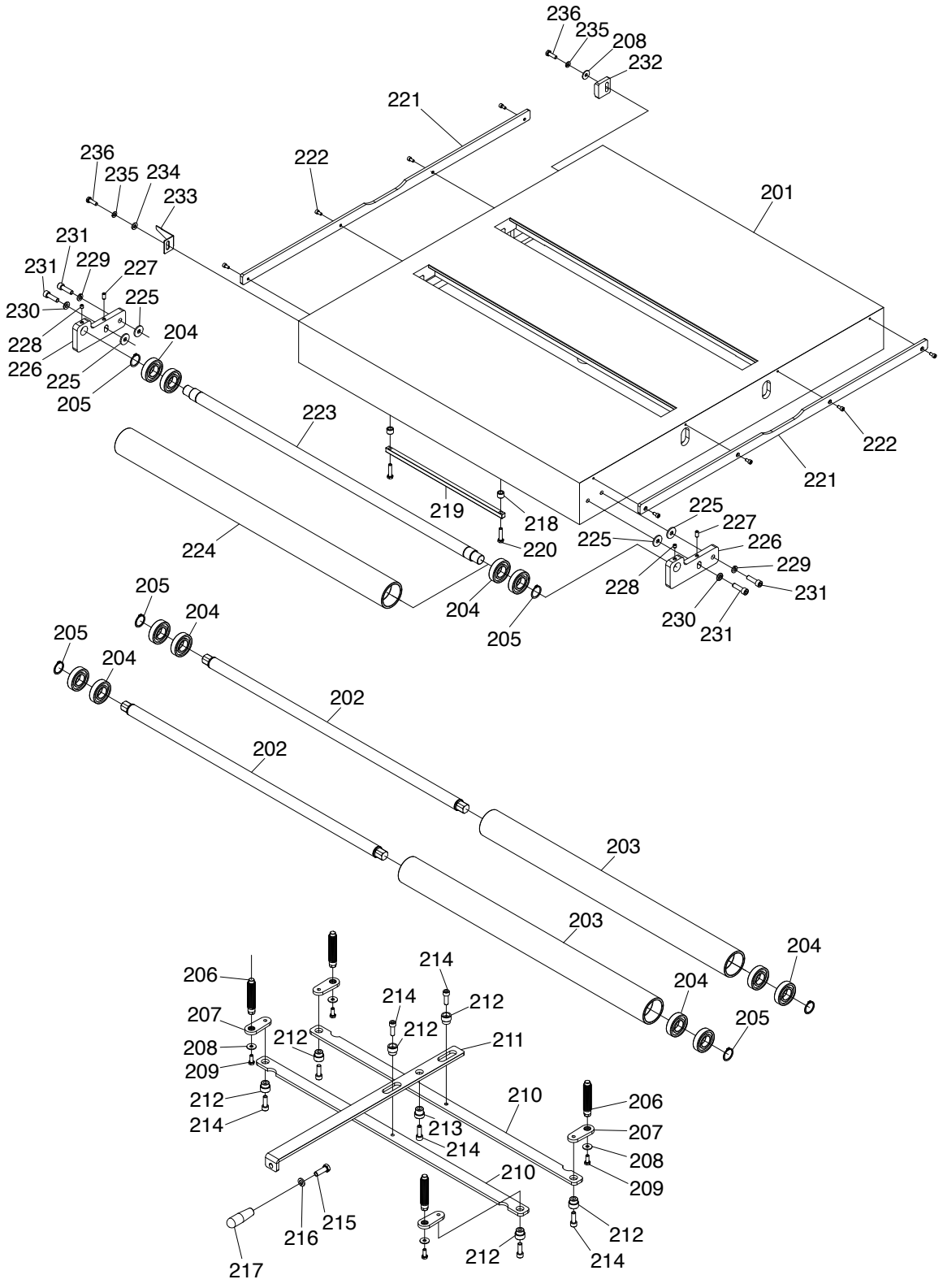
G0988 Base



G0988 Base Parts List

REF	PART #	DESCRIPTION
1	P0988001	BASE
2	P0988002	MAINTENANCE DOOR, RIGHT
3	P0988003	MAINTENANCE DOOR, LEFT
4	P0988004	DOOR LOCK
5	P0988005	BEARING HOUSING FLANGE
6	P0988006	HEX NUT M16-2
7	P0988007	THRUST BEARING 2904
8	P0988008	BEARING HOUSING
9	P0988009	GREASE FITTING M6-1 X 5 STRAIGHT
10	P0988010	LOCK WASHER 10MM
11	P0988011	CAP SCREW M10-1.5 X 35
12	P0988012	BALL BEARING 6204-OPEN
13	P0988013	SPROCKET 15T
14	P0988014	KEY 6 X 6 X 20
15	P0988015	BALL SCREW
16	P0988016	FLANGED BALL SCREW NUT
19	P0988019	TABLE COLUMN SUPPORT
20	P0988020	LOCK WASHER 8MM
21	P0988021	CAP SCREW M8-1.25 X 35
22	P0988022	TABLE COLUMN
23	P0988023	FLAT WASHER 8MM
24	P0988024	CAP SCREW M8-1.25 X 30
25	P0988025	MOTOR SHELF
26	P0988026	FENDER WASHER 16MM
27	P0988027	HEX BOLT M16-2 X 110
28	P0988028	SPROCKET SHAFT M16-2 X 16, M16-2 X 16
29	P0988029	SPROCKET 15T
30	P0988030	INT RETAINING RING 47MM
31	P0988031	TABLE ELEV MOTOR 1/2HP 220V/440V 3-PH
31-1	P0988031-1	MOTOR FAN COVER
31-2	P0988031-2	MOTOR FAN
31-3	P0988031-3	MOTOR JUNCTION BOX
31-4	P0988031-4	BALL BEARING 6201ZZ
32	P0988032	KEY 4 X 4 X 18
33	P0988033	HEX BOLT M8-1.25 X 25
34	P0988034	GEARBOX, SPEED REDUCER TABLE ELEV MOTOR
35	P0988035	FLANGE NUT M8-1.25
36	P0988036	KEY 5 X 5 X 35
37	P0988037	DRIVE SPROCKET 15T
38	P0988038	SET SCREW M6-1 X 8
39	P0988039	HEX BOLT M8-1.25 X 60
40	P0988040	TABLE ELEVATION CHAIN SC-RS50-1-233
41	P0988041	LIFTING BOLT M12-1.25 X 25
42	P0988042	COVER, FRONT
43	P0988043	BUTTON HD CAP SCR M8-1.25 X 16
44	P0988044	COVER, REAR
45	P0988045	BUTTON HD CAP SCR M6-1 X 12
46	P0988046	HEX NUT M8-1.25
47	P0988047	ELECTRICAL PANEL
48	P0988048	STRAIN RELIEF M16-1.5
49	P0988049	LIMIT SWITCH TELEMACANIQUE XCE118C
50	P0988050	LIMIT SWITCH COVER
51	P0988051	EMERGENCY STOP BUTTON RENY R2PNR6-1B-R
52	P0988052	MASTER POWER SWITCH AUSPICIOUS DS63BSRR2
53	P0988053	STRAIN RELIEF M40-1.6
54	P0988054	SENSING BLOCK
55	P0988055	SET SCREW M8-1.25 X 8
56	P0988056	BRACKET
57	P0988057	LOCK NUT M16-1.5
58	P0988058	FIXED RING
59	P0988059	KEY, MAINTENANCE DOOR

G0988 Table

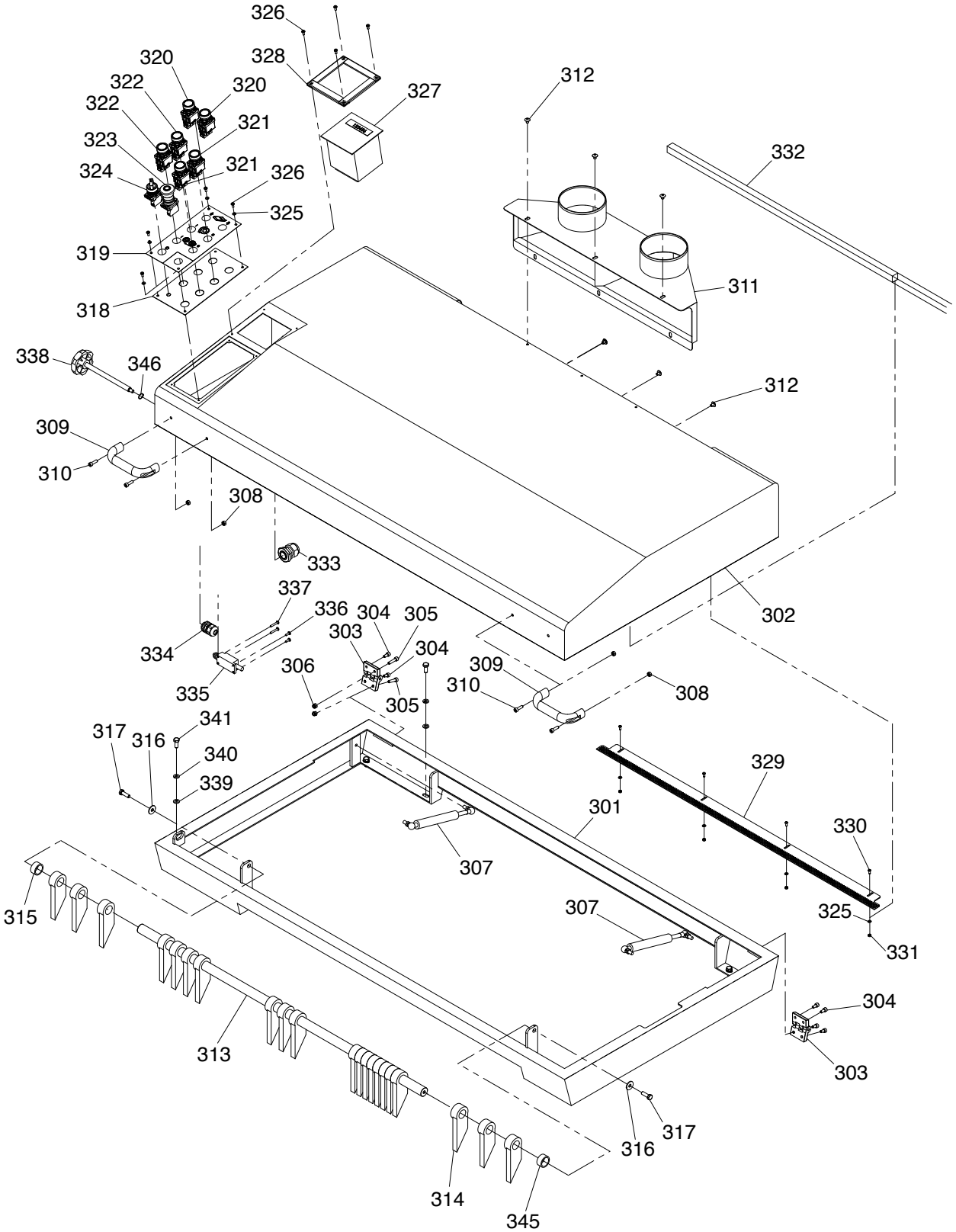


G0988 Table Parts List

REF	PART #	DESCRIPTION
201	P0988201	TABLE
202	P0988202	ROLLER SHAFT 30 X 736
203	P0988203	TABLE ROLLER 60 X 683
204	P0988204	BALL BEARING 6304ZZ
205	P0988205	EXT RETAINING RING 20MM
206	P0988206	ADJUSTMENT SCREW M20-2.5 X 104
207	P0988207	ADJUSTMENT PLATE
208	P0988208	FENDER WASHER 8MM
209	P0988209	HEX BOLT M8-1.25 X 20
210	P0988210	CONNECTING BAR
211	P0988211	BED ROLLER ADJUSTMENT BAR
212	P0988212	FLANGED BUSHING 10 X 20 X 23MM
213	P0988213	FLANGED BUSHING 10 X 20 X 23MM
214	P0988214	CAP SCREW M10-1.5 X 30
215	P0988215	HEX BOLT M12-1.75 X 35
216	P0988216	LOCK WASHER 12MM
217	P0988217	KNOB M12-1.75
218	P0988218	SPACER 9 X 17 X 14MM

REF	PART #	DESCRIPTION
219	P0988219	BRACKET 12.7 x 12.7 x 420
220	P0988220	HEX BOLT M8-1.25 X 35
221	P0988221	LIMIT BAFFLE
222	P0988222	CAP SCREW M6-1 X 12
223	P0988223	ROLLER SHAFT 30 X 862
224	P0988224	ROLLER 60 X 810
225	P0988225	FENDER WASHER 10MM
226	P0988226	ROLLER BRACKET
227	P0988227	SET SCREW M8-1.5 X 16
228	P0988228	SET SCREW M8-1.5 X 8
229	P0988229	LOCK WASHER 10MM
230	P0988230	CONICAL WASHER 10 X 20 X 4MM
231	P0988231	CAP SCREW M10-1.5 X 35
232	P0988232	PRESS BLOCK
233	P0988233	TABLE ELEVATION INDICATOR
234	P0988234	FLAT WASHER 8 X 18 X 3MM
235	P0988235	LOCK WASHER 8MM
236	P0988236	HEX BOLT M8-1.25 X 25

G0988 Cover

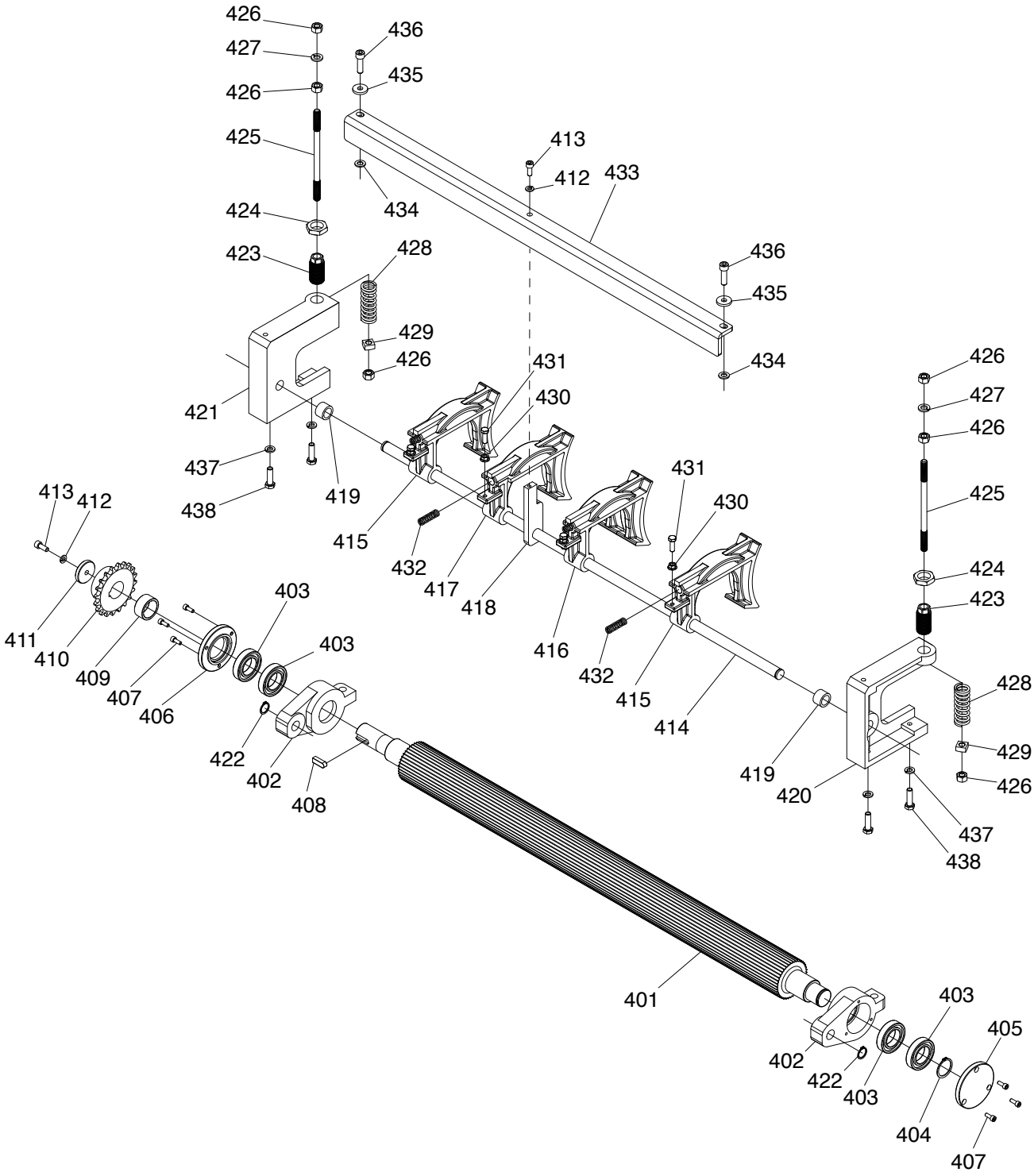


G0988 Cover Parts List

REF	PART #	DESCRIPTION
301	P0988301	COVER, MIDDLE
302	P0988302	COVER, TOP
303	P0988303	COVER HINGE
304	P0988304	CAP SCREW M6-1 X 12
305	P0988305	CAP SCREW M6-1 X 25
306	P0988306	LOCK NUT M6-1
307	P0988307	GAS SPRING W/BALL FITTING M8-1.25 X 14
308	P0988308	HEX NUT M6-1
309	P0988309	COVER HANDLE
310	P0988310	CAP SCREW M6-1 X 20
311	P0988311	DUST HOOD, 2 PORTS
312	P0988312	FLANGE SCREW M6-1 X 8
313	P0988313	ANTI-KICKBACK SHAFT
314	P0988314	ANTI-KICKBACK PAWL
315	P0988315	SPACER 25 X 34 X 10MM
316	P0988316	FENDER WASHER 8MM
317	P0988317	HEX BOLT M8-1.25 X 25
318	P0988318	CONTROL BOARD PLATE
319	P0988319	CONTROL BOARD LABEL
320	P0988320	PUSH BUTTON RENY R2PNF-1A-B
321	P0988321	PUSH BUTTON RENY R2PNF-1B-R
322	P0988322	PUSH BUTTON RENY R2PIF-1A-2-G

REF	PART #	DESCRIPTION
323	P0988323	EMERGENCY STOP BUTTON RENY R2PNR6-1B-R
324	P0988324	POTENTIOMETER W/DIAL TOCOS RV24YN-2K
325	P0988325	FLAT WASHER 4MM
326	P0988326	PHLP HD SCR M4-.7 X 10
327	P0988327	MICROCONTROLLER ETEK CH-525
328	P0988328	MICROCONTROLLER COVER
329	P0988329	CHIP DEFLECTOR
330	P0988330	BUTTON HD CAP SCR M4-.7 X 10
331	P0988331	HEX NUT M4-.7
332	P0988332	FOAM TAPE 2 X 2 X 1000MM
333	P0988333	STRAIN RELIEF PF 3/4"
334	P0988334	STRAIN RELIEF PG11
335	P0988335	LIMIT SWITCH MOUJEN ME-8111
336	P0988336	PHLP HD SCR M4-.7 X 25
337	P0988337	PHLP HD SCR M4-.7 X 25
338	P0988338	KNOB BOLT M12-1.75 X 173
339	P0988339	FLAT WASHER 8MM
340	P0988340	LOCK WASHER 8MM
341	P0988341	HEX BOLT M8-1.25 X 20
345	P0988345	SPACER 25 X 34 X 17MM
346	P0988346	EXT RETAINING RING 8MM

G0988 Infeed Roller

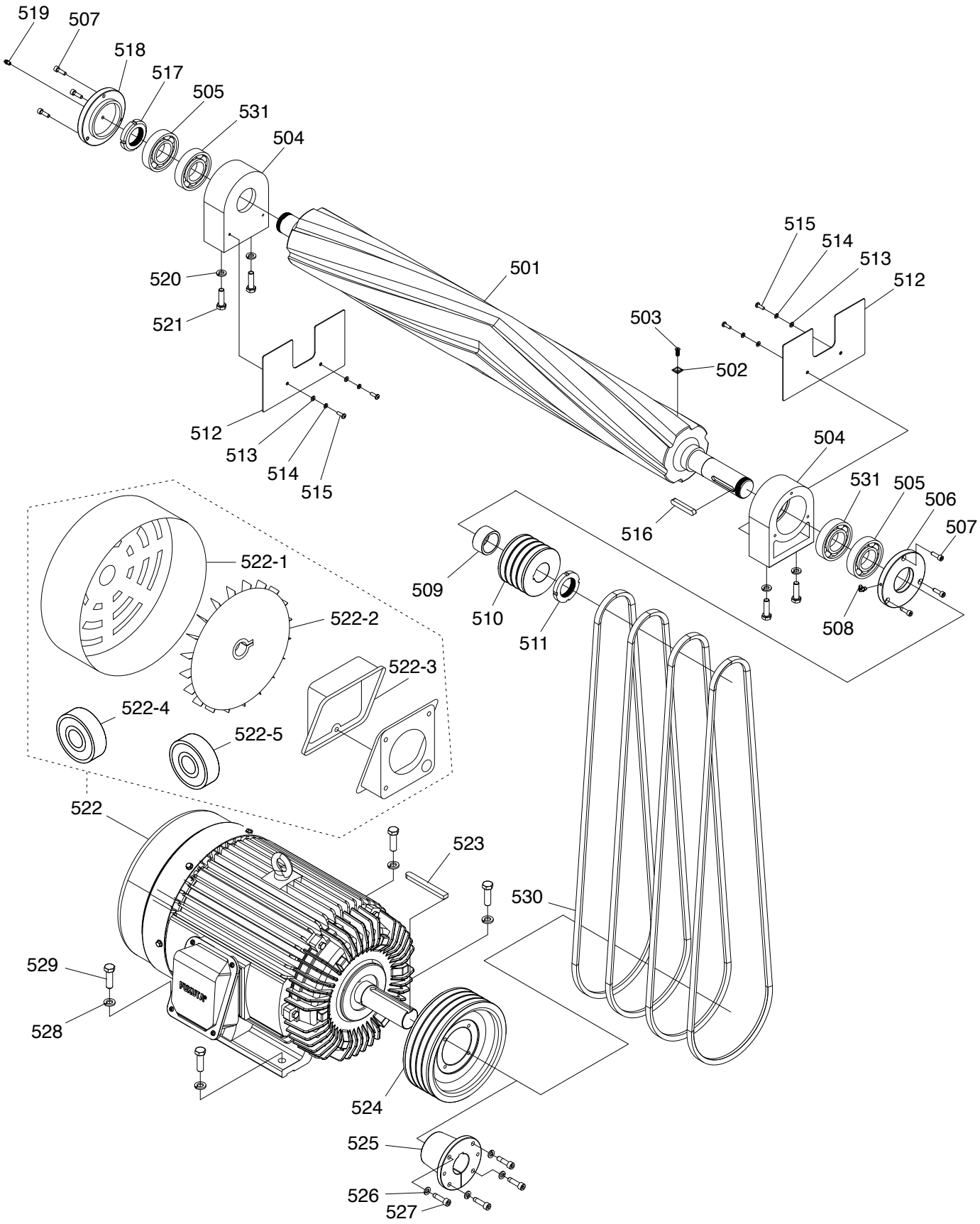


G0988 Infeed Roller Parts List

REF	PART #	DESCRIPTION
401	P0988401	INFEED ROLLER
402	P0988402	BEARING HOUSING
403	P0988403	BALL BEARING 6007ZZ
404	P0988404	EXT RETAINING RING 35MM
405	P0988405	BEARING CAP, RIGHT
406	P0988406	BEARING CAP, LEFT
407	P0988407	CAP SCREW M6-1 X 16
408	P0988408	KEY 10 X 8 X 32
409	P0988409	BUSHING 35 X 44 X 20.5MM
410	P0988410	SPROCKET 15T
411	P0988411	FLAT WASHER 9 X 45 X 8MM
412	P0988412	LOCK WASHER 8MM
413	P0988413	CAP SCREW M8-1.25 X 20
414	P0988414	CHIP BREAKER SHAFT
415	P0988415	CHIP BREAKER
416	P0988416	CHIP BREAKER W/CUTOUT, LEFT
417	P0988417	CHIP BREAKER W/CUTOUT, RIGHT
418	P0988418	INFEED FRAME, CENTER
419	P0988419	BUSHING 20 X 28 X 18.5MM

REF	PART #	DESCRIPTION
420	P0988420	INFEED FRAME, RIGHT
421	P0988421	INFEED FRAME, LEFT
422	P0988422	EXT RETAINING RING 20MM
423	P0988423	SPRING SCREW M27-1.5 X 59
424	P0988424	SPRING NUT M27-1.5
425	P0988425	STUD-DE M12-1.75 X 205
426	P0988426	HEX NUT M12-1.75
427	P0988427	LOCK WASHER 12MM
428	P0988428	COMPRESSION SPRING 4.5 X 29.5 X 60
429	P0988429	SQUARE NUT M12-1.75
430	P0988430	FLANGE NUT M8-1.25
431	P0988431	HEX BOLT M8-1.25 X 25
432	P0988432	COMPRESSION SPRING 1.8 X 13.32 X 60
433	P0988433	CHIP BREAKER FRAME
434	P0988434	FLAT WASHER 10 X 23 X 2.2MM
435	P0988435	FENDER WASHER 10MM
436	P0988436	CAP SCREW M10-1.5 X 35
437	P0988437	LOCK WASHER 10MM
438	P0988438	HEX BOLT M10-1.5 X 35

G0988 Cutterhead

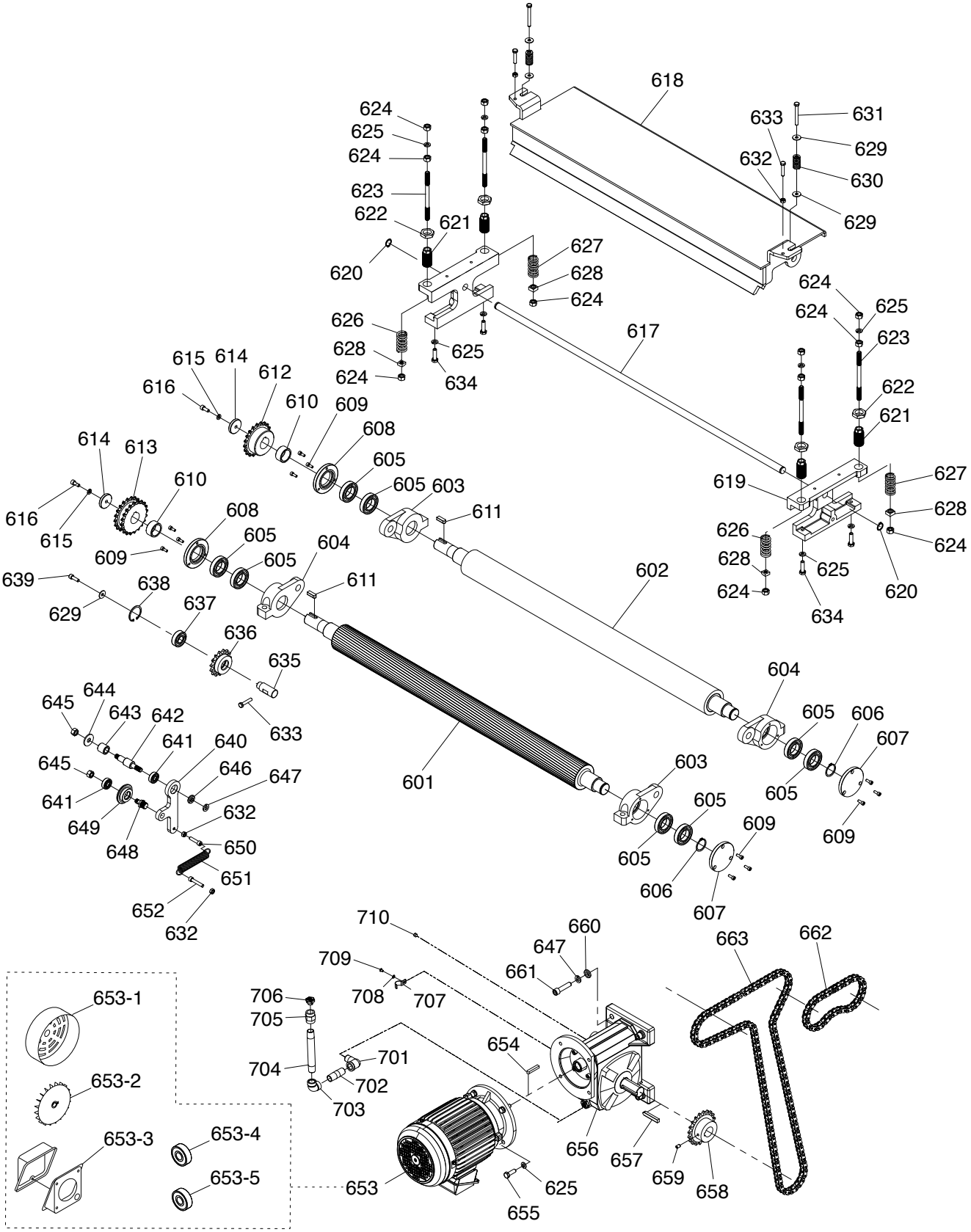


G0988 Cutterhead Parts List

REF	PART #	DESCRIPTION
501	P0988501	CUTTERHEAD 32" V-HELICAL
502	P0988502	INDEXABLE INSERT 15 X 15 X 2.5MM
503	P0988503	FLAT HD TORX SCR M6-1 X 15, T20
504	P0988504	BEARING HOUSING
505	P0988505	BALL BEARING 6208C3-OPEN
506	P0988506	BEARING COVER, RIGHT
507	P0988507	CAP SCREW M6-1 X 16
508	P0988508	GREASE FITTING M6-1 45-DEG
509	P0988509	BUSHING 40 X 50 X 25MM
510	P0988510	CUTTERHEAD PULLEY
511	P0988511	SPANNER NUT LH
512	P0988512	BAFFLE PLATE
513	P0988513	FLAT WASHER 5MM
514	P0988514	LOCK WASHER 5MM
515	P0988515	FLANGE SCREW M5-.8 X 15
516	P0988516	KEY 10 X 8 X 60
517	P0988517	SPANNER NUT RH
518	P0988518	BEARING COVER, LEFT

REF	PART #	DESCRIPTION
519	P0988519	GREASE FITTING M6-1 X 5 STRAIGHT
520	P0988520	LOCK WASHER 10MM
521	P0988521	HEX BOLT M10-1.5 X 35
522	P0988522	CUTTERHEAD MOTOR 15HP 220V/440V 3-PH
522-1	P0988522-1	MOTOR FAN COVER
522-2	P0988522-2	MOTOR FAN
522-3	P0988522-3	MOTOR JUNCTION BOX
522-4	P0988522-4	BALL BEARING 6308ZZ
522-5	P0988522-5	BALL BEARING 6306ZZ
523	P0988523	KEY 10 X 8 X 75
524	P0988524	MOTOR PULLEY
525	P0988525	SIT-LOCK 110 X 24
526	P0988526	LOCK WASHER 8MM
527	P0988527	CAP SCREW M8-1.25 X 25
528	P0988528	LOCK WASHER 12MM
529	P0988529	HEX BOLT M12-1.75 X 40
530	P0988530	V-BELT A84
531	P0988531	BALL BEARING 6208C3Z

G0988 Outfeed Roller

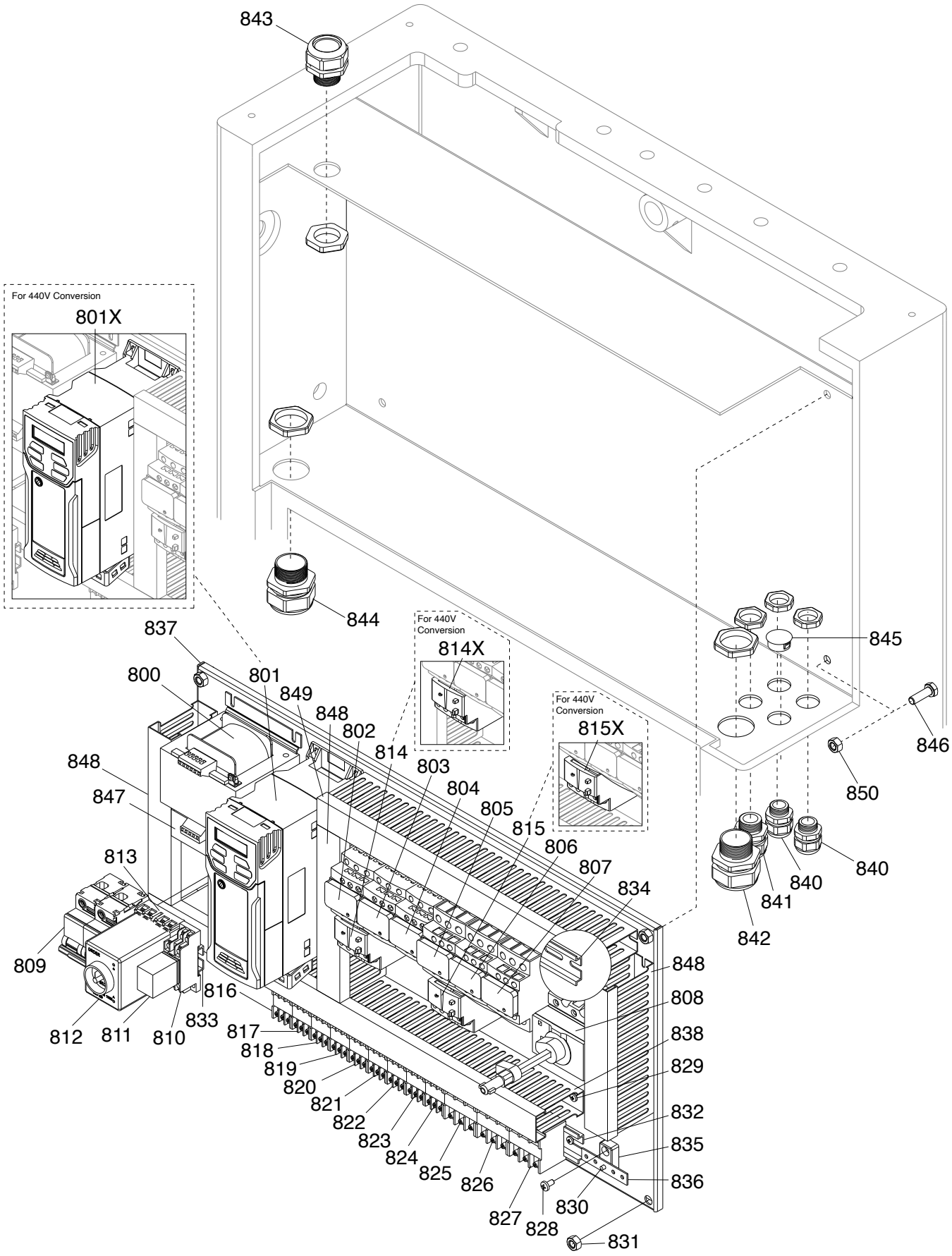


G0988 Outfeed Roller Parts List

REF	PART #	DESCRIPTION
601	P0988601	OUTFEED ROLLER, STEEL
602	P0988602	OUTFEED ROLLER, RUBBER
603	P0988603	BEARING HOUSING, FRONT RIGHT
604	P0988604	BEARING HOUSING, FRONT LEFT
605	P0988605	BALL BEARING 6007ZZ
606	P0988606	EXT RETAINING RING 35MM
607	P0988607	BEARING COVER, RIGHT
608	P0988608	BEARING COVER, LEFT
609	P0988609	CAP SCREW M6-1 X 16
610	P0988610	BUSHING 35 X 44 X 20.5MM
611	P0988611	KEY 10 X 8 X 32
612	P0988612	SPROCKET 20T
613	P0988613	DOUBLE SPROCKET 20T
614	P0988614	FLAT WASHER 8MM
615	P0988615	LOCK WASHER 8MM
616	P0988616	CAP SCREW M8-1.25 X 20
617	P0988617	PRESSURE BAR ROD
618	P0988618	PRESSURE BAR
619	P0988619	PRESSURE BAR END FRAME
620	P0988620	EXT RETAINING RING 20MM
621	P0988621	SPRING SCREW M24-3 X 58.5, M10-1.5
622	P0988622	SPRING NUT M24-3
623	P0988623	STUD-DE M10-1.5 X 170
624	P0988624	HEX NUT M10-1.5
625	P0988625	LOCK WASHER 10MM
626	P0988626	COMPRESSION SPRING 4.5 X 29.5 X 60
627	P0988627	COMPRESSION SPRING 4.5 X 29.5 X 60
628	P0988628	SQUARE NUT M12-1.75
629	P0988629	FENDER WASHER 8MM
630	P0988630	DIE SPRING 20 X 40MM
631	P0988631	HEX BOLT M8-1.25 X 70
632	P0988632	HEX NUT M8-1.25
633	P0988633	HEX BOLT M8-1.25 X 40
634	P0988634	HEX BOLT M10-1.5 X 35
635	P0988635	SPROCKET SHAFT
636	P0988636	SPROCKET 15T
637	P0988637	BALL BEARING 6204ZZ
638	P0988638	INT RETAINING RING 47MM
639	P0988639	CAP SCREW M8-1.25 X 25

REF	PART #	DESCRIPTION
640	P0988640	IDLER BRACKET
641	P0988641	BALL BEARING 6201ZZ
642	P0988642	IDLER SHAFT
643	P0988643	BUSHING 16 X 25 X 25MM, NYLON
644	P0988644	FENDER WASHER 12MM
645	P0988645	HEX NUT M12-1.75
646	P0988646	FLAT WASHER 12MM
647	P0988647	LOCK WASHER 12MM
648	P0988648	IDLER WHEEL SHAFT
649	P0988649	IDLER WHEEL
650	P0988650	CAP SCREW M8-1.25 X 35
651	P0988651	EXTENSION SPRING 2.3 X 20 X 106
652	P0988652	CAP SCREW M8-1.25 X 45
653	P0988653	FEED MOTOR 2HP 220V/440V 3-PH
653-1	P0988653-1	MOTOR FAN COVER
653-2	P0988653-2	MOTOR FAN
653-3	P0988653-3	MOTOR JUNCTION BOX
653-4	P0988653-4	BALL BEARING 6205ZZ
653-5	P0988653-5	BALL BEARING 6204ZZ
654	P0988654	KEY 8 X 7 X 45
655	P0988655	HEX BOLT M10-1.5 X 30
656	P0988656	GEARBOX, SPEED REDUCER
657	P0988657	KEY 10 X 8 X 60
658	P0988658	SPROCKET 20T
659	P0988659	SET SCREW M8-1.25 X 12
660	P0988660	CONICAL WASHER 12 X 25 X 5MM
661	P0988661	CAP SCREW M12-1.75 X 50
662	P0988662	ROLLER CHAIN #50 37LINK
663	P0988663	ROLLER CHAIN #50 142LINK
701	P0988701	ELBOW FITTING MF 90-DEG 15A 1/2 PT
702	P0988702	PIPE NIPPLE 60MM 15A 1/2 PT
703	P0988703	ELBOW FITTING F 90-DEG 15A 1/2 PT
704	P0988704	PIPE NIPPLE 150MM 15A 1/2 PT
705	P0988705	UNION PIPE FITTING 15A 1/2 PT
706	P0988706	OIL PLUG PF1/2"
707	P0988707	CORD CLAMP
708	P0988708	FLAT WASHER 5MM
709	P0988709	BUTTON HD CAP SCR M5-.8 X 8
710	P0988710	BREATHER

G0988 Electrical Components

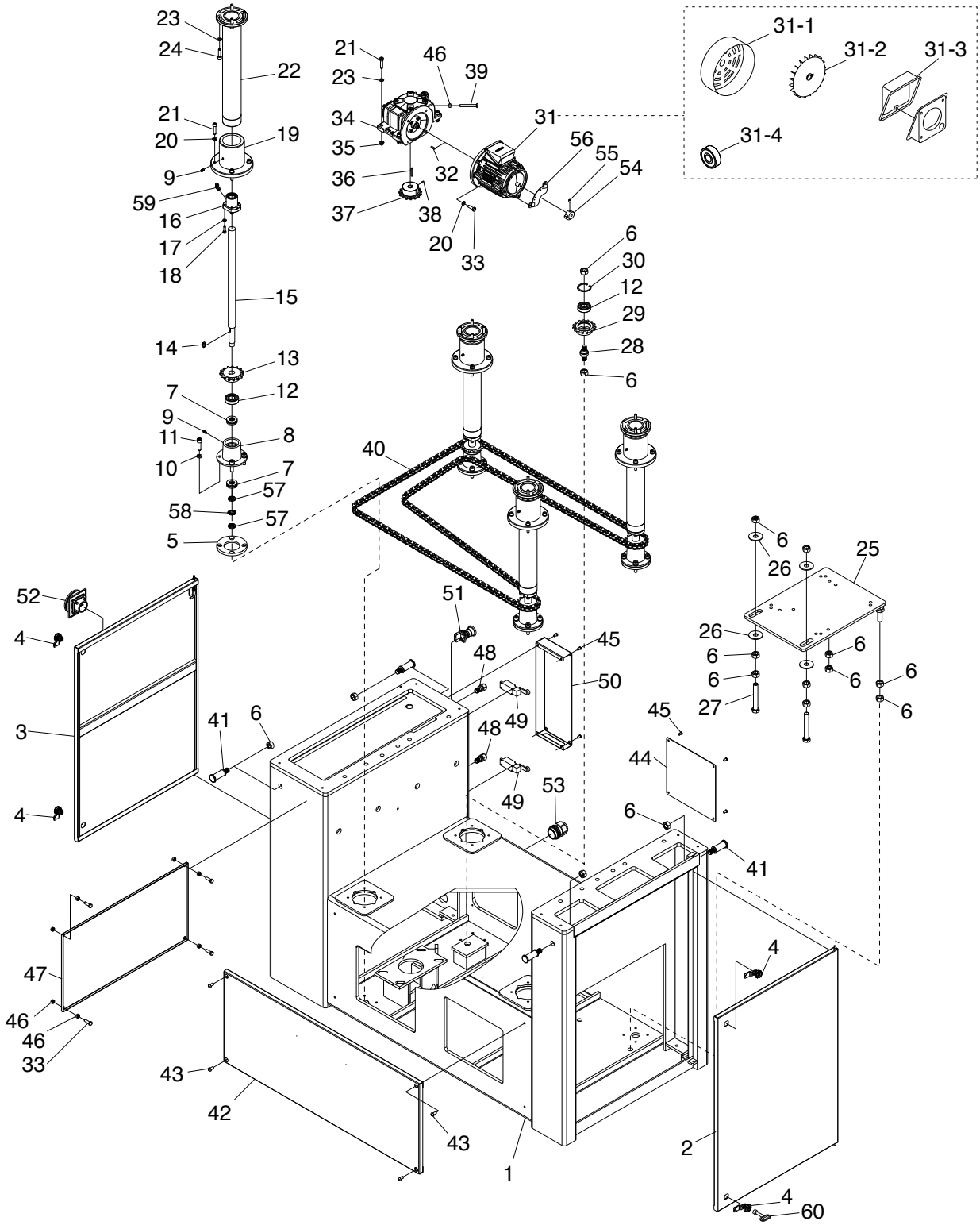


G0988 Electrical Components Parts List

REF	PART #	DESCRIPTION
800	P0988800	TRANSFORMER LCE LPAC-TBS-100250
801	P0988801	INVERTER 220V CT C200-02200075A
801X	P0988801X	INVERTER 440V CT C200-02400041A
802	P0988802	CONTACTOR SCHNEIDER LC1D09M7 220V
803	P0988803	CONTACTOR SCHNEIDER LC1D09M7 220V
804	P0988804	CONTACTOR SCHNEIDER LC1D09M7 220V
805	P0988805	CONTACTOR SCHNEIDER LC1D38M7 220V
806	P0988806	CONTACTOR SCHNEIDER LC1D38M7 220V
807	P0988807	CONTACTOR SCHNEIDER LC1D38M7 220V
808	P0988808	MASTER POWER AUSPICIOUS DS63BSRR2
809	P0988809	CIRCUIT BREAKER CHNT NXB-63 D3
810	P0988810	POWER RELAY SOCKET SCHNEIDER RXZE1M2C
811	P0988811	POWER RELAY OMCRON MY2-02
812	P0988812	CONTROL RELAY ORDER LSD-30S 220V
813	P0988813	CONTROL RELAY SOCKET ORDER 8PFA
814	P0988814	OL-RELAY SCHNEIDER LR3D07
814X	P0988814X	OL-RELAY SCHNEIDER LR3D06
815	P0988815	OL-RELAY SCHNEIDER LR3D22
815X	P0988815X	OL-RELAY SCHNEIDER LR3D16
816	P0988816	TERMINAL BLOCK AUSPICIOUS AT1.25-3
817	P0988817	TERMINAL BLOCK AUSPICIOUS AT1.25-3
818	P0988818	TERMINAL BLOCK AUSPICIOUS AT1.25-3
819	P0988819	TERMINAL BLOCK AUSPICIOUS AT1.25-3
820	P0988820	TERMINAL BLOCK AUSPICIOUS AT1.25-3
821	P0988821	TERMINAL BLOCK AUSPICIOUS AT1.25-3
822	P0988822	TERMINAL BLOCK AUSPICIOUS AT1.25-3
823	P0988823	TERMINAL BLOCK AUSPICIOUS AT1.25-3

REF	PART #	DESCRIPTION
824	P0988824	TERMINAL BLOCK AUSPICIOUS AT1.25-3
825	P0988825	TERMINAL BLOCK AUSPICIOUS AT8-3
826	P0988826	TERMINAL BLOCK AUSPICIOUS AT8-3
827	P0988827	TERMINAL BLOCK AUSPICOUS AT14-3
828	P0988828	PHLP HD SCR M4-.7 X 10
829	P0988829	PHLP HD SCR M4-.7 X 6
830	P0988830	PHLP HD SCR 10-24 X 3/8
831	P0988831	FLANGE NUT M8-1.25
832	P0988832	DIN RAIL 35 X 6 X 380MM
833	P0988833	DIN RAIL 35 X 6 X 125MM
834	P0988834	DIN RAIL 35 X 6 X 270MM
835	P0988835	GROUND ATTACHMENT
836	P0988836	GROUND PLATE
837	P0988837	ATTACHMENT PANEL 340 X 640MM
838	P0988838	WIRE DUCT 640 X 25 X 65MM
840	P0988840	STRAIN RELIEF 3/8"
841	P0988841	STRAIN RELIEF 1/2"
842	P0988842	STRAIN RELIEF 1"
843	P0988843	STRAIN RELIEF 3/4"
844	P0988844	STRAIN RELIEF M32-1.5
845	P0988845	HOLE PLUG 22MM
846	P0988846	HEX BOLT M8-1.25 X 25
847	P0988847	WIRE DUCT 120 X 25 X 65MM
848	P0988848	WIRE DUCT 200 X 25 X 65MM
849	P0988849	WIRE DUCT 380 X 25 X 65MM
850	P0988850	HEX NUT M8-1.25

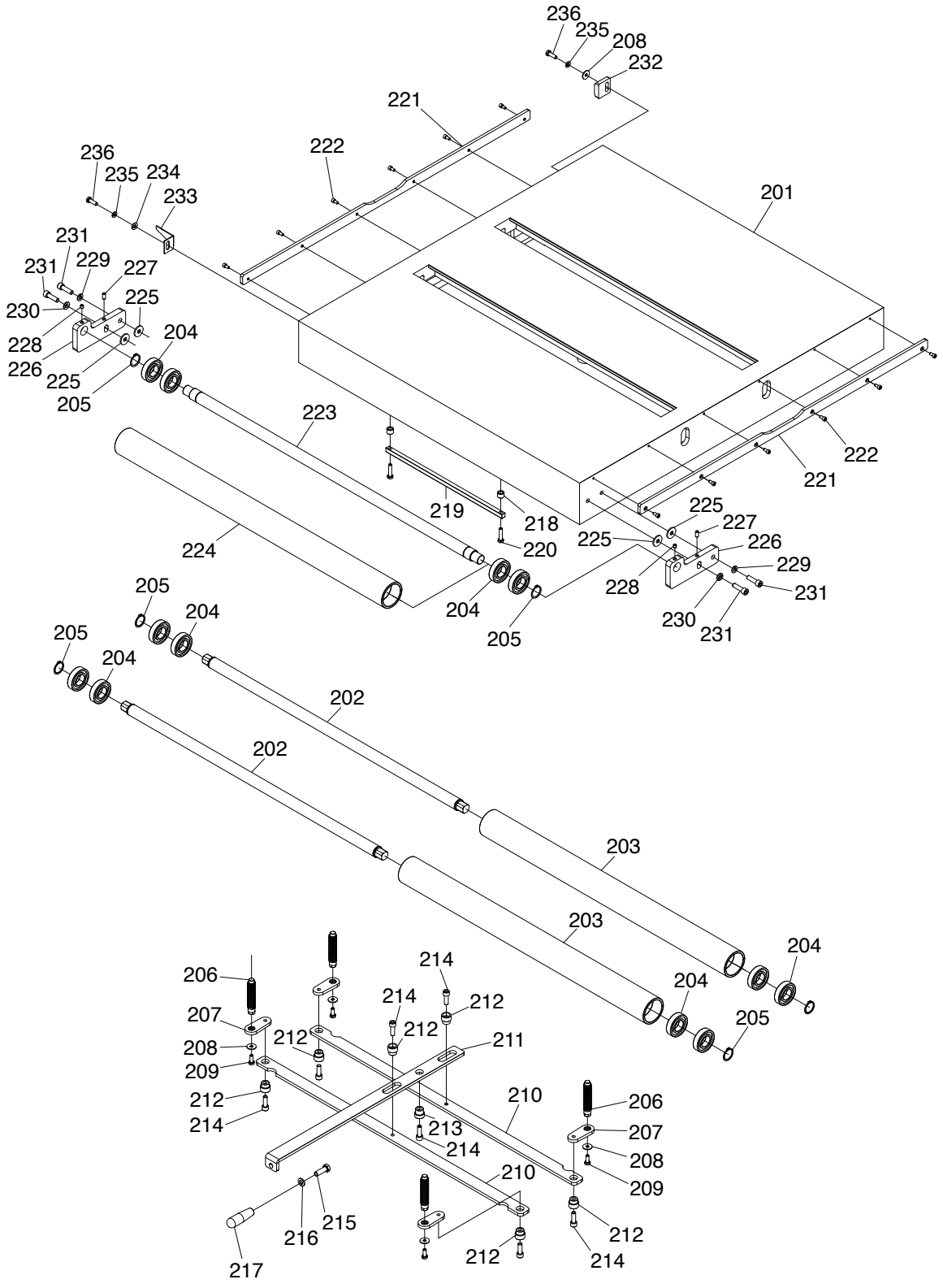
G0989 Base



G0989 Base Parts List

REF	PART #	DESCRIPTION
1	P0989001	BASE
2	P0989002	MAINTENANCE DOOR, RIGHT
3	P0989003	MAINTENANCE DOOR, LEFT
4	P0989004	DOOR LOCK
5	P0989005	BEARING HOUSING FLANGE
6	P0989006	HEX NUT M16-2
7	P0989007	THRUST BEARING 2904
8	P0989008	BEARING HOUSING
9	P0989009	GREASE FITTING M6-1 X 5 STRAIGHT
10	P0989010	LOCK WASHER 10MM
11	P0989011	CAP SCREW M10-1.5 X 35
12	P0989012	BALL BEARING 6204-OPEN
13	P0989013	SPROCKET 15T
14	P0989014	KEY 6 X 6 X 20
15	P0989015	BALL SCREW
16	P0989016	FLANGE BALL SCREW NUT
19	P0989019	TABLE COLUMN SUPPORT
20	P0989020	LOCK WASHER 8MM
21	P0989021	CAP SCREW M8-1.25 X 35
22	P0989022	TABLE COLUMN
23	P0989023	FLAT WASHER 8MM
24	P0989024	CAP SCREW M8-1.25 X 30
25	P0989025	MOTOR SHELF
26	P0989026	FENDER WASHER 16 X 50 X 3MM
27	P0989027	HEX BOLT M16-2 X 110
28	P0989028	SPROCKET SHAFT M16-2 X 16, M16-2 X 16
29	P0989029	SPROCKET 15T
30	P0989030	INT RETAINING RING 47MM
31	P0989031	TABLE ELEV MOTOR 1/2HP 220V/440V 3-PH
31-1	P0989031-1	MOTOR FAN COVER
31-2	P0989031-2	MOTOR FAN
31-3	P0989031-3	MOTOR JUNCTION BOX
31-4	P0989031-4	BALL BEARING 6201ZZ
32	P0989032	KEY 4 X 4 X 18
33	P0989033	HEX BOLT M8-1.25 X 25
34	P0989034	GEARBOX, SPEED REDUCER
35	P0989035	FLANGE NUT M8-1.25
36	P0989036	KEY 5 X 5 X 35
37	P0989037	DRIVE SPROCKET 15T
38	P0989038	SET SCREW M6-1 X 8
39	P0989039	HEX BOLT M8-1.25 X 60
40	P0989040	TABLE ELEVATION CHAIN SC-RS50-1-284
41	P0989041	LIFTING BOLT M12-1.25 X 25
42	P0989042	COVER, FRONT
43	P0989043	BUTTON HD CAP SCR M8-1.25 X 16
44	P0989044	COVER, REAR
45	P0989045	BUTTON HD CAP SCR M6-1 X 12
46	P0989046	HEX NUT M8-1.25
47	P0989047	ELECTRICAL PANEL
48	P0989048	STRAIN RELIEF M16-1.5
49	P0989049	LIMIT SWITCH TELEMACANIQUE XCE118C
50	P0989050	LIMIT SWITCH COVER
51	P0989051	EMERGENCY STOP BUTTON RENY R2PNR6-1B-R
52	P0989052	MASTER POWER SWITCH AUSPICIOUS DS63BSRR2
53	P0989053	STRAIN RELIEF M40-1.6
54	P0989054	SENSING BLOCK
55	P0989055	SET SCREW M8-1.25 X 8
56	P0989056	BRACKET
57	P0989057	SPANNER NUT M17-1
58	P0989058	EXT TOOTH LOCK WASHER 17MM
59	P0989059	GREASE FITTING M6-1 45-DEG
60	P0989060	KEY, MAINTENANCE DOOR

G0989 Table

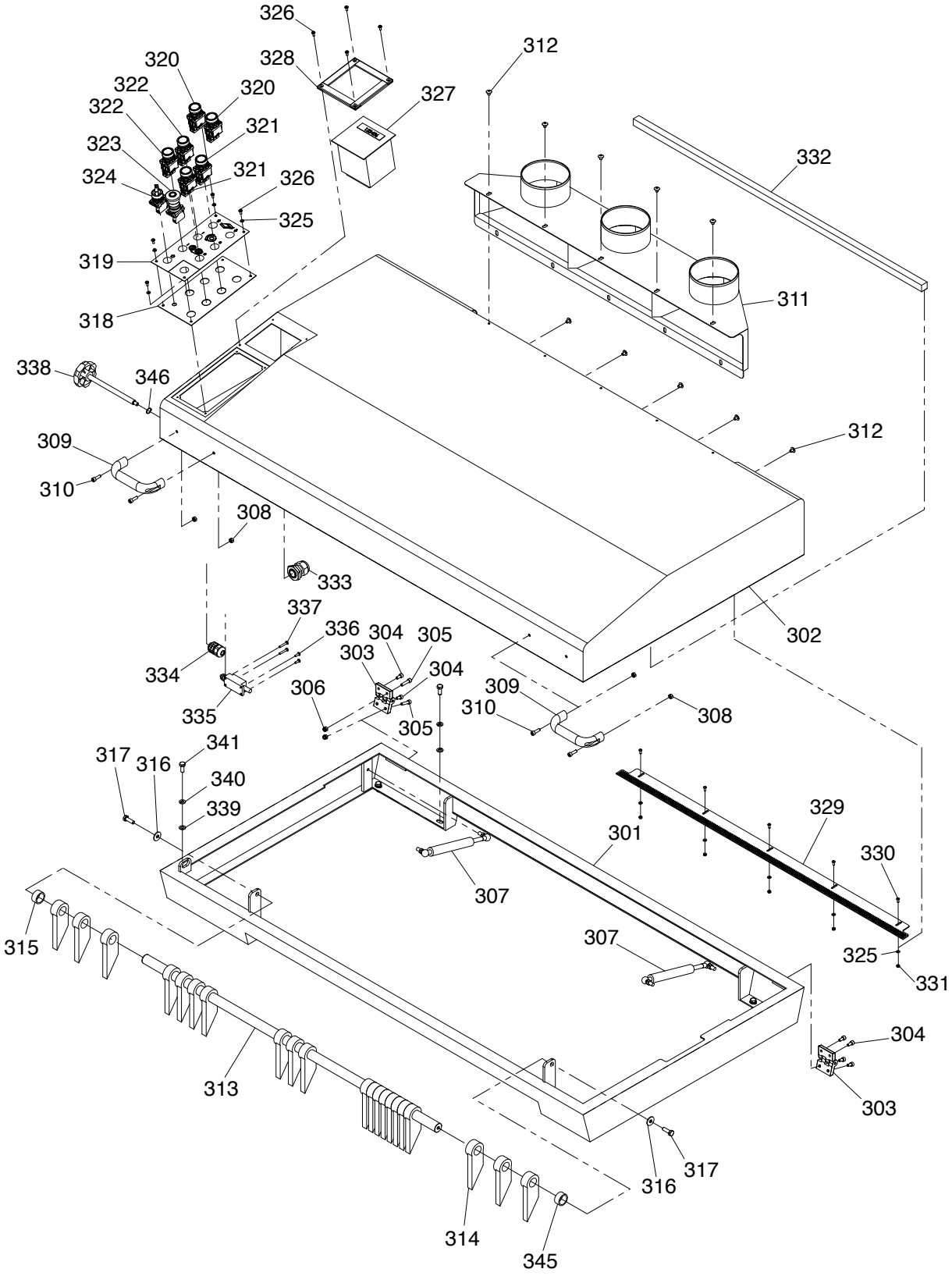


G0989 Table Parts List

REF	PART #	DESCRIPTION
201	P0989201	TABLE
202	P0989202	ROLLER SHAFT 30 X 943
203	P0989203	TABLE ROLLER 74 X 886
204	P0989204	BALL BEARING 6206ZZ
205	P0989205	EXT RETAINING RING 30MM
206	P0989206	ADJUSTMENT SCREW M20-2.5 X 104
207	P0989207	ADJUSTMENT PLATE
208	P0989208	FENDER WASHER 8MM
209	P0989209	HEX BOLT M8-1.25 X 20
210	P0989210	CONNECTING BAR
211	P0989211	BED ROLLER ADJUSTMENT BAR
212	P0989212	FLANGED BUSHING 10 X 20 X 23MM
213	P0989213	FLANGED BUSHING 10 X 20 X 23MM
214	P0989214	CAP SCREW M10-1.5 X 30
215	P0989215	HEX BOLT M12-1.75 X 35
216	P0989216	LOCK WASHER 12MM
217	P0989217	KNOB M12-1.75
218	P0989218	SPACER 9 X 17 X 14MM

REF	PART #	DESCRIPTION
219	P0989219	BRACKET 12.7 X 12.7 X 420
220	P0989220	HEX BOLT M8-1.25 X 35
221	P0989221	LIMIT BAFFLE
222	P0989222	CAP SCREW M6-1 X 12
223	P0989223	ROLLER SHAFT 74 X 966
224	P0989224	ROLLER SHAFT 30 X 1066
225	P0989225	FENDER WASHER 10MM
226	P0989226	ROLLER BRACKET
227	P0989227	SET SCREW M8-1.5 X 16
228	P0989228	SET SCREW M8-1.5 X 8
229	P0989229	LOCK WASHER 10MM
230	P0989230	CONICAL WASHER 10 X 20 X 4MM
231	P0989231	CAP SCREW M10-1.5 X 35
232	P0989232	PRESS BLOCK
233	P0989233	TABLE ELEVATION INDICATOR
234	P0989234	FLAT WASHER 8 X 18 X 3MM
235	P0989235	LOCK WASHER 8MM
236	P0989236	HEX BOLT M8-1.25 X 25

G0989 Cover

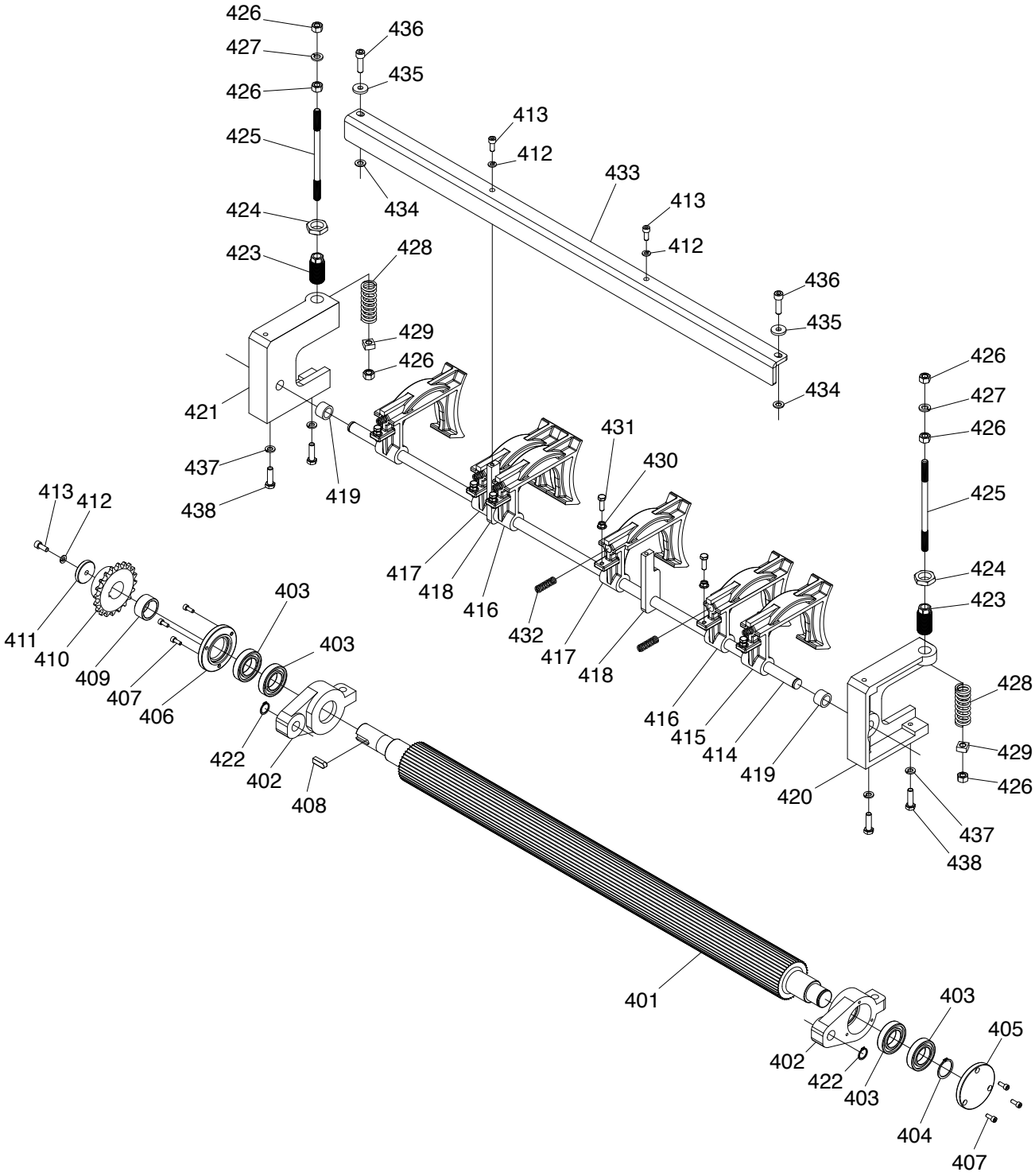


G0989 Cover Parts List

REF	PART #	DESCRIPTION
301	P0989301	COVER, MIDDLE
302	P0989302	COVER, TOP
303	P0989303	COVER HINGE
304	P0989304	CAP SCREW M6-1 X 12
305	P0989305	CAP SCREW M6-1 X 25
306	P0989306	LOCK NUT M6-1
307	P0989307	GAS SPRING W/BALL FITTING M8-1.25 X 14
308	P0989308	HEX NUT M6-1
309	P0989309	COVER HANDLE
310	P0989310	CAP SCREW M6-1 X 20
311	P0989311	DUST HOOD, 3 PORTS
312	P0989312	FLANGE SCREW M6-1 X 8
313	P0989313	ANTI-KICKBACK SHAFT
314	P0989314	ANTI-KICKBACK PAWL
315	P0989315	SPACER 25 X 34 X 13MM
316	P0989316	FENDER WASHER 8MM
317	P0989317	HEX BOLT M8-1.25 X 25
318	P0989318	CONTROL BOARD PLATE
319	P0989319	CONTROL BOARD LABEL
320	P0989320	PUSH BUTTON RENY R2PNF-1A-B
321	P0989321	PUSH BUTTON RENY RENY R2PNF-1B-R
322	P0989322	PUSH BUTTON RENY R2PIF-1A-2-G

REF	PART #	DESCRIPTION
323	P0989323	EMERGENCY STOP BUTTON RENY R2PNR6-1B-R
324	P0989324	POTENTIOMETER W/DIAL TOCOS RV24YN-2K
325	P0989325	FLAT WASHER 4MM
326	P0989326	PHLP HD SCR M4-.7 X 10
327	P0989327	MICROCONTROLLER ETEK CH-525
328	P0989328	MICROCONTROLLER COVER
329	P0989329	CHIP DEFLECTOR
330	P0989330	BUTTON HD CAP SCR M4-.7 X 10
331	P0989331	HEX NUT M4-.7
332	P0989332	FOAM TAPE 2 X 2 X 1000MM
333	P0989333	STRAIN RELIEF PF3/4"
334	P0989334	STRAIN RELIEF PG11
335	P0989335	LIMIT SWITCH MOUJEN ME-8111
336	P0989336	PHLP HD SCR M4-.7 X 25
337	P0989337	PHLP HD SCR M4-.7 X 25
338	P0989338	KNOB BOLT M10-1.5 X 173
339	P0989339	FLAT WASHER 8MM
340	P0989340	LOCK WASHER 8MM
341	P0989341	HEX BOLT M8-1.25 X 20
345	P0989345	SPACER 25 X 34 X 20MM
346	P0989346	EXT RETAINING RING 8MM

G0989 Infeed Roller

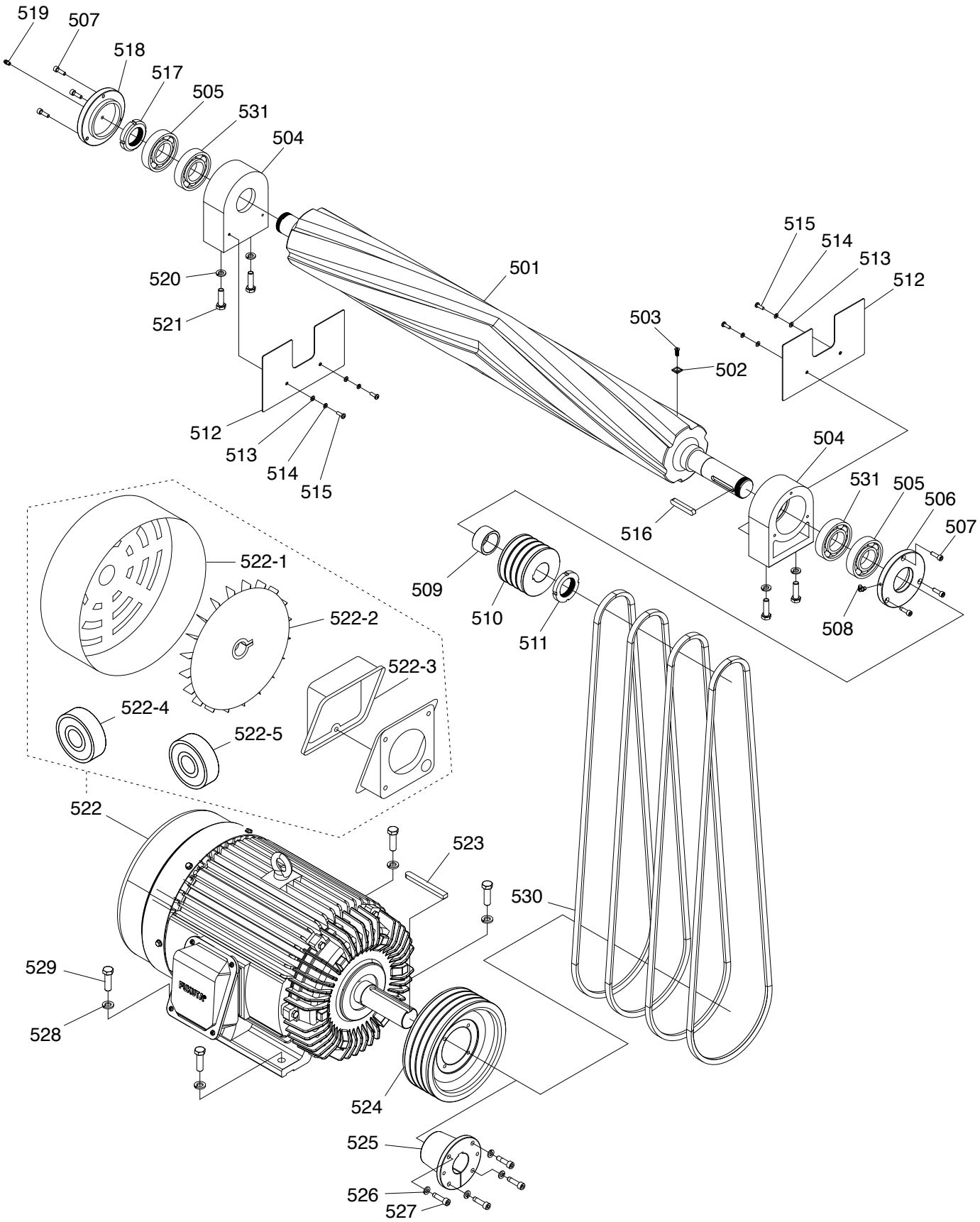


G0989 Infeed Roller Parts List

REF	PART #	DESCRIPTION
401	P0989401	INFEED ROLLER
402	P0989402	BEARING HOUSING
403	P0989403	BALL BEARING 6007ZZ
404	P0989404	EXT RETAINING RING 35MM
405	P0989405	BEARING CAP, RIGHT
406	P0989406	BEARING CAP, LEFT
407	P0989407	CAP SCREW M6-1 X 16
408	P0989408	KEY 10 X 8 X 32
409	P0989409	BUSHING 35 X 44 X 20.5MM
410	P0989410	SPROCKET 15T
411	P0989411	FLAT WASHER 9 X 45 X 8MM
412	P0989412	LOCK WASHER 8MM
413	P0989413	CAP SCREW M8-1.25 X 20
414	P0989414	CHIP BREAKER SHAFT
415	P0989415	CHIP BREAKER
416	P0989416	CHIP BREAKER W/CUTOUT, LEFT
417	P0989417	CHIP BREAKER W/CUTOUT, RIGHT
418	P0989418	INFEED FRAME
419	P0989419	SPACER 20 X 28 X 18.5MM

REF	PART #	DESCRIPTION
420	P0989420	INFEED FRAME, RIGHT
421	P0989421	INFEED FRAME, LEFT
422	P0989422	EXT RETAINING RING 20MM
423	P0989423	SPRING SCREW M27-1.5 X 59
424	P0989424	SPRING NUT M27-1.5
425	P0989425	STUD-DE M12-1.75 X 205
426	P0989426	HEX NUT M12-1.75
427	P0989427	LOCK WASHER 12MM
428	P0989428	COMPRESSION SPRING 4.5 X 29.5 X 60
429	P0989429	SQUARE NUT M12-1.75
430	P0989430	FLANGE NUT M8-1.25
431	P0989431	HEX BOLT M8-1.25 X 25
432	P0989432	COMPRESSION SPRING 1.8 X 13.32 X 60
433	P0989433	CHIP BREAKER FRAME
434	P0989434	FLAT WASHER 10 X 23 X 2.2MM
435	P0989435	FLAT WASHER 10 X 28 X 4.4MM
436	P0989436	CAP SCREW M10-1.5 X 35
437	P0989437	LOCK WASHER 10MM
438	P0989438	HEX BOLT M10-1.5 X 35

G0989 Cutterhead

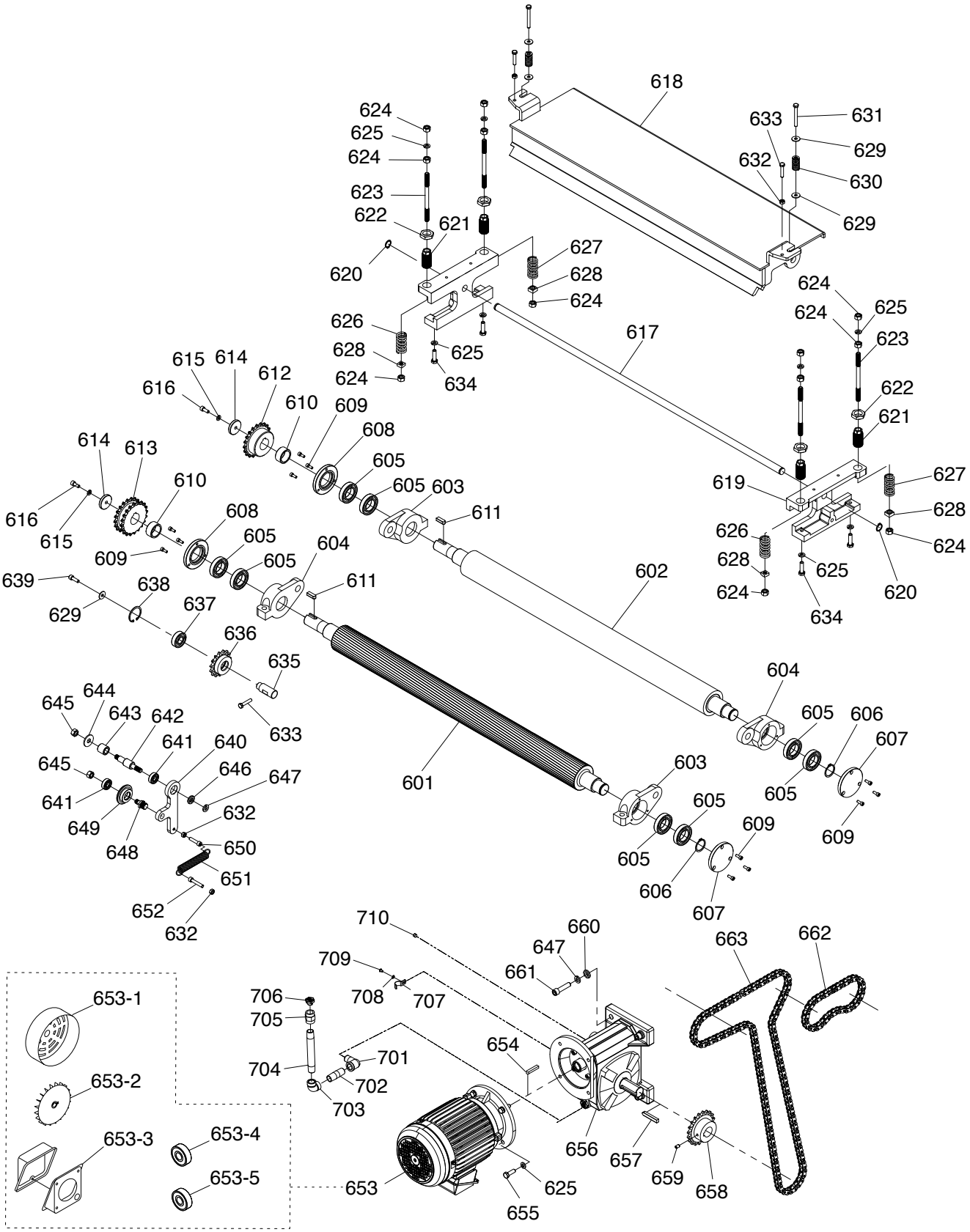


G0989 Cutterhead Parts List

REF	PART #	DESCRIPTION
501	P0989501	CUTTERHEAD 40" V-HELICAL
502	P0989502	INDEXABLE INSERTS 15 X 15 X 2.5MM
503	P0989503	FLAT HD TORX SCR M6-1 X 15, T20
504	P0989504	BEARING HOUSING
505	P0989505	BALL BEARING 6208C3-OPEN
506	P0989506	BEARING COVER, RIGHT
507	P0989507	CAP SCREW M6-1 X 16
508	P0989508	GREASE FITTING M6-1 45-DEG
509	P0989509	BUSHING 40 X 50 X 25MM
510	P0989510	CUTTERHEAD PULLEY
511	P0989511	SPANNER NUT LH
512	P0989512	BAFFLE PLATE
513	P0989513	FLAT WASHER 5MM
514	P0989514	LOCK WASHER 5MM
515	P0989515	FLANGE SCREW M5-.8 X 15
516	P0989516	KEY 10 X 8 X 60
517	P0989517	SPANNER NUT RH
518	P0989518	BEARING COVER, LEFT

REF	PART #	DESCRIPTION
519	P0989519	GREASE FITTING M6-1 X 5 STRAIGHT
520	P0989520	LOCK WASHER 10MM
521	P0989521	HEX BOLT M10-1.5 X 35
522	P0989522	CUTTERHEAD MOTOR 20HP 220V/440V 3-PH
522-1	P0989522-1	MOTOR FAN COVER
522-2	P0989522-2	MOTOR FAN
522-3	P0989522-3	MOTOR JUNCTION BOX
522-4	P0989522-4	BALL BEARING 6309ZZ
522-5	P0989522-5	BALL BEARING 6307ZZ
523	P0989523	KEY 10 X 8 X 105
524	P0989524	MOTOR PULLEY
525	P0989525	SIT-LOCK 110 X 24
526	P0989526	LOCK WASHER 8MM
527	P0989527	CAP SCREW M8-1.25 X 25
528	P0989528	LOCK WASHER 12MM
529	P0989529	HEX BOLT M12-1.75 X 40
530	P0989530	V-BELT A82
531	P0989531	BALL BEARING 6208C3Z

G0989 Outfeed Roller

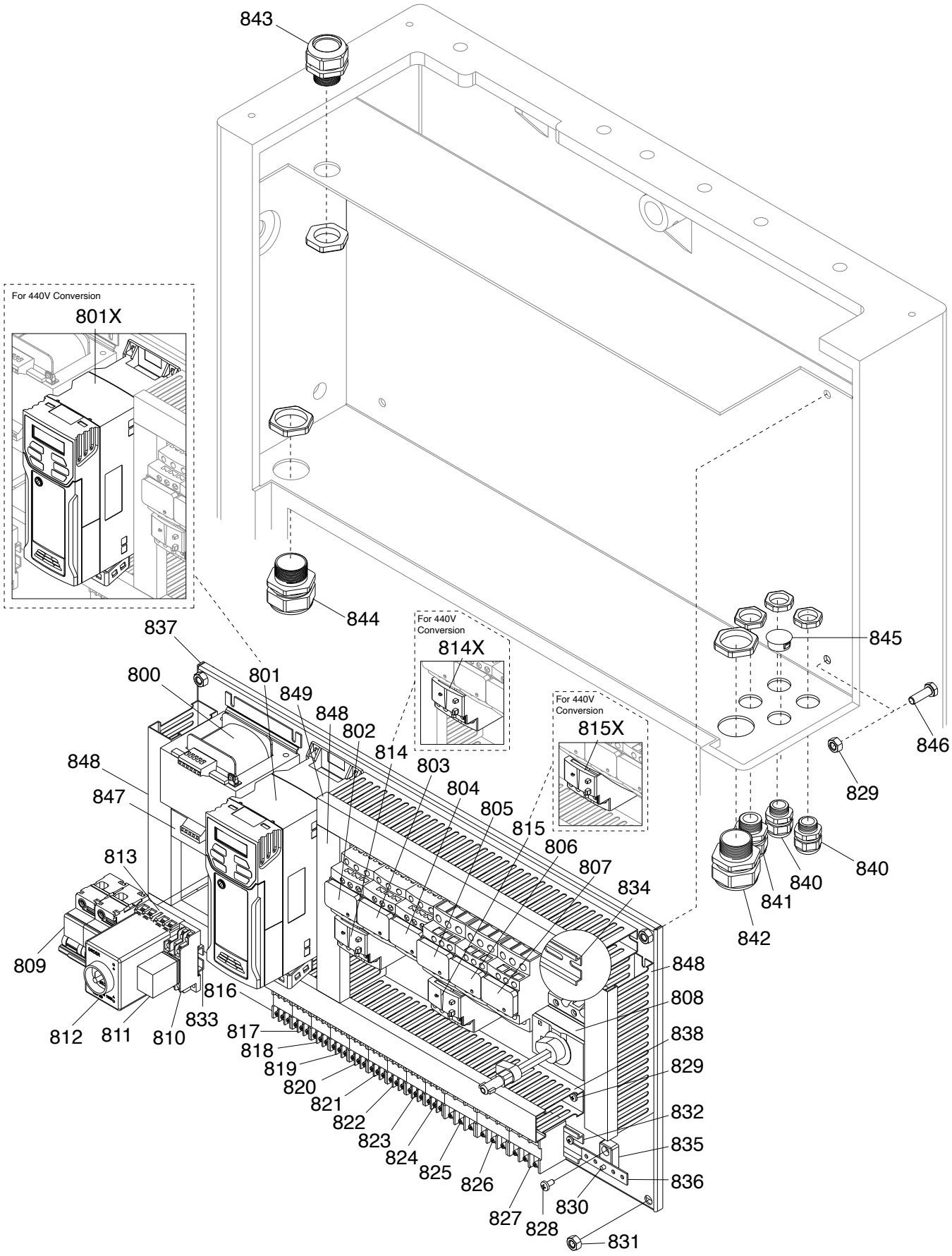


G0989 Outfeed Roller Parts List

REF	PART #	DESCRIPTION
601	P0989601	OUTFEED ROLLER, STEEL
602	P0989602	OUTFEED ROLLER, RUBBER
603	P0989603	BEARING HOUSING, FRONT RIGHT
604	P0989604	BEARING HOUSING, FRONT LEFT
605	P0989605	BALL BEARING 6007ZZ
606	P0989606	EXT RETAINING RING 35MM
607	P0989607	BEARING COVER, RIGHT
608	P0989608	BEARING COVER, LEFT
609	P0989609	CAP SCREW M6-1 X 16
610	P0989610	BUSHING 35 X 44 X 20.5MM
611	P0989611	KEY 10 X 8 X 32
612	P0989612	SPROCKET 20T
613	P0989613	DOUBLE SPROCKET 20T
614	P0989614	FLAT WASHER 8MM
615	P0989615	LOCK WASHER 8MM
616	P0989616	CAP SCREW M8-1.25 X 20
617	P0989617	PRESSURE BAR ROD
618	P0989618	PRESSURE BAR
619	P0989619	PRESSURE BAR END FRAME
620	P0989620	EXT RETAINING RING 20MM
621	P0989621	SPRING SCREW M24-3 X 58.5, M10-1.5
622	P0989622	SPRING NUT M24-3
623	P0989623	STUD-DE M10-1.5 X 170
624	P0989624	HEX NUT M10-1.5
625	P0989625	LOCK WASHER 10MM
626	P0989626	COMPRESSION SPRING 4.5 X 29.5 X 60
627	P0989627	COMPRESSION SPRING 4.5 X 29.5 X 60
628	P0989628	SQUARE NUT M12-1.75
629	P0989629	FENDER WASHER 8MM
630	P0989630	DIE SPRING 20 X 40MM
631	P0989631	HEX BOLT M8-1.25 X 70
632	P0989632	HEX NUT M8-1.25
633	P0989633	HEX BOLT M8-1.25 X 40
634	P0989634	HEX BOLT M10-1.5 X 35
635	P0989635	SPROCKET SHAFT
636	P0989636	SPROCKET 15T
637	P0989637	BALL BEARING 6204ZZ
638	P0989638	INT RETAINING RING 47MM
639	P0989639	CAP SCREW M8-1.25 X 25

REF	PART #	DESCRIPTION
640	P0989640	IDLER BRACKET
641	P0989641	BALL BEARING 6201ZZ
642	P0989642	IDLER SHAFT
643	P0989643	BUSHING 16 X 25 X 25MM, NYLON
644	P0989644	FENDER WASHER 12MM
645	P0989645	HEX NUT M12-1.75
646	P0989646	FLAT WASHER 12MM
647	P0989647	LOCK WASHER 12MM
648	P0989648	IDLER WHEEL SHAFT
649	P0989649	IDLER WHEEL
650	P0989650	CAP SCREW M8-1.25 X 35
651	P0989651	EXTENSION SPRING 2.3 X 20 X 106
652	P0989652	CAP SCREW M8-1.25 X 45
653	P0989653	FEED MOTOR 2HP 220V/440V 3-PH
653-1	P0989653-1	MOTOR FAN COVER
653-2	P0989653-2	MOTOR FAN
653-3	P0989653-3	MOTOR JUNCTION BOX
653-4	P0989653-4	BALL BEARING 6205ZZ
653-5	P0989653-5	BALL BEARING 6204ZZ
654	P0989654	KEY 8 X 7 X 45
655	P0989655	HEX BOLT M10-1.5 X 30
656	P0989656	GEARBOX, SPEED REDUCER
657	P0989657	KEY 10 X 8 X 60
658	P0989658	SPROCKET 20T
659	P0989659	SET SCREW M8-1.25 X 12
660	P0989660	CONICAL WASHER 12 X 25 X 5MM
661	P0989661	CAP SCREW M12-1.75 X 50
662	P0989662	ROLLER CHAIN RS50
663	P0989663	ROLLER CHAIN RS50 LP142
701	P0989701	ELBOW FITTING MF 90-DEG 15A 1/2 PT
702	P0989702	PIPE NIPPLE 60MM 15A 1/2 PT
703	P0989703	ELBOW FITTING F 90-DEG 15A 1/2 PT
704	P0989704	PIPE NIPPLE 150MM 15A 1/2 PT
705	P0989705	UNION PIPE FITTING 15A 1/2 PT
706	P0989706	OIL PLUG PT1/2"
707	P0989707	CORD CLAMP
708	P0989708	FLAT WASHER 5MM
709	P0989709	BUTTON HD CAP SCR M5-.8 X 8
710	P0989710	BREATHER

G0989 Electrical Components

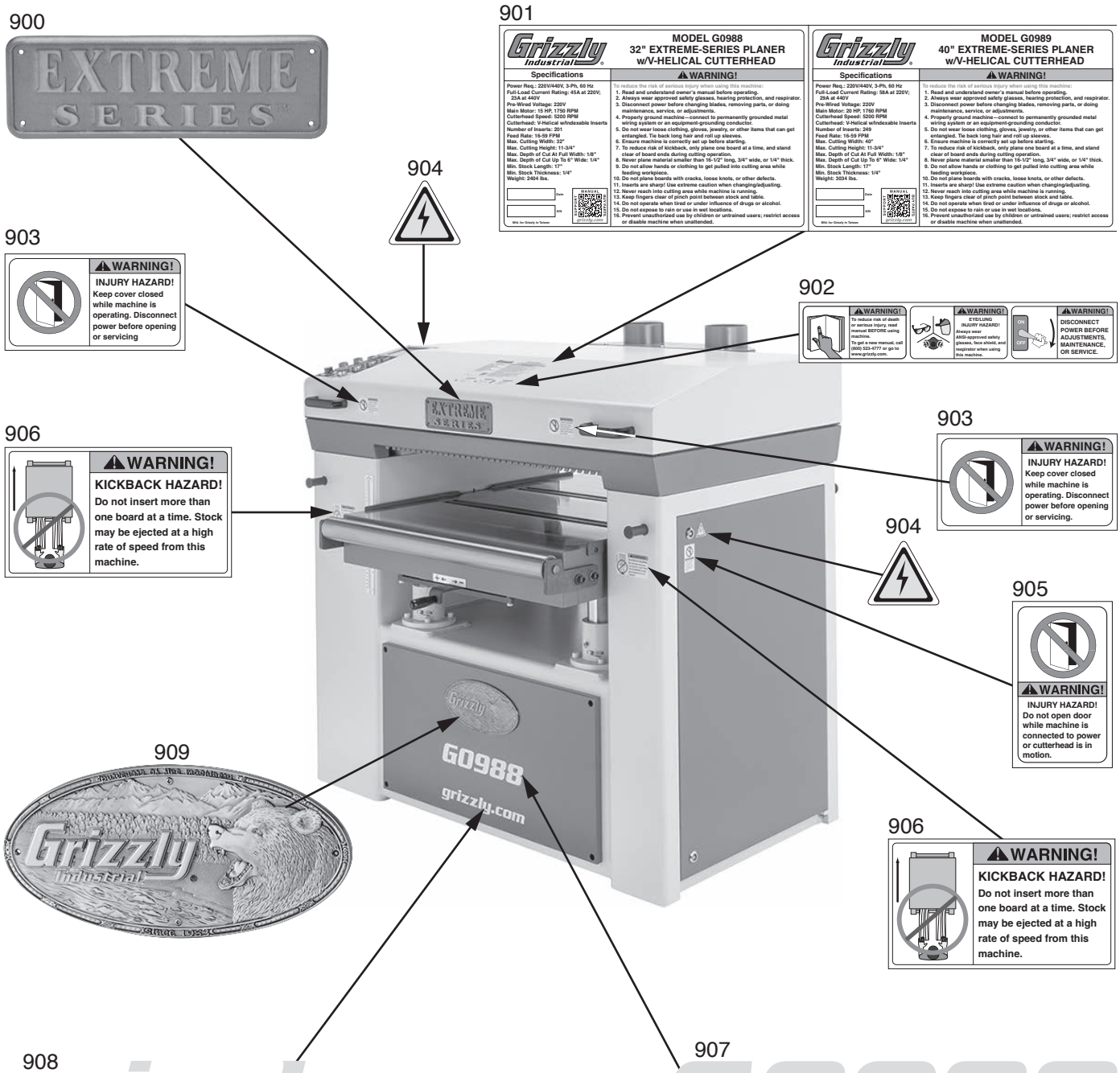


G0989 Electrical Components Parts List

REF	PART #	DESCRIPTION
800	P0989800	TRANSFORMER LCE LPAC-TBS-100440
801	P0989801	INVERTER 220V CT C200-02200075A
801X	P0989801X	INVERTER 440V CT C200-02400041A
802	P0989802	CONTACTOR SCHNEIDER LC1D09M7 220V
803	P0989803	CONTACTOR SCHNEIDER LC1D09M7 220V
804	P0989804	CONTACTOR SCHNEIDER LC1D09M7 220V
805	P0989805	CONTACTOR SCHNEIDER LC1D38M7 220V
806	P0989806	CONTACTOR SCHNEIDER LC1D38M7 220V
807	P0989807	CONTACTOR SCHNEIDER LC1D38M7 220V
808	P0989808	MASTER POWER AUSPICIOUS DS63BSRR2
809	P0989809	CIRCUIT BREAKER CHNT DZ47-60 D3
810	P0989810	POWER RELAY SOCKET SCHNEIDER RXZE1M2C
811	P0989811	POWER RELAY OMCRON MY2-02
812	P0989812	CONTROL RELAY ORDER LSD-30S 220V
813	P0989813	CONTROL RELAY SOCKET ORDER 8PFA
814	P0989814	OL-RELAY SCHNEIDER LR3D07
814X	P0989814X	OL-RELAY SCHNEIDER LR3D06
815	P0989815	OL-RELAY SCHNEIDER LR3D32
815X	P0989815X	OL-RELAY SCHNEIDER LR3D21
816	P0989816	TERMINAL BLOCK AUSPICIOUS AT1.25-3
817	P0989817	TERMINAL BLOCK AUSPICIOUS AT1.25-3
818	P0989818	TERMINAL BLOCK AUSPICIOUS AT1.25-3
819	P0989819	TERMINAL BLOCK AUSPICIOUS AT1.25-3
820	P0989820	TERMINAL BLOCK AUSPICIOUS AT1.25-3
821	P0989821	TERMINAL BLOCK AUSPICIOUS AT1.25-3
822	P0989822	TERMINAL BLOCK AUSPICIOUS AT1.25-3
823	P0989823	TERMINAL BLOCK AUSPICIOUS AT1.25-3

REF	PART #	DESCRIPTION
824	P0989824	TERMINAL BLOCK AUSPICIOUS AT1.25-3
825	P0989825	TERMINAL BLOCK AUSPICIOUS AT8-3
826	P0989826	TERMINAL BLOCK AUSPICIOUS AT8-3
827	P0989827	TERMINAL BLOCK AUSPICOUS AT14-3
828	P0989828	PHLP HD SCR M4-.7 X 10
829	P0989829	PHLP HD SCR M4-.7 X 6
830	P0989830	PHLP HD SCR 10-24 X 3/8
831	P0989831	FLANGE NUT M8-1.25
832	P0989832	DIN RAIL 35 X 6 X 380MM
833	P0989833	DIN RAIL 35 X 6 X 125MM
834	P0989834	DIN RAIL 35 X 6 X 270MM
835	P0989835	GROUND ATTACHMENT
836	P0989836	GROUND PLATE
837	P0989837	ATTACHMENT PANEL 340 X 640MM
838	P0989838	WIRE DUCT 640 X 25 X 65MM
840	P0989840	STRAIN RELIEF 3/8"
841	P0989841	STRAIN RELIEF 1/2"
842	P0989842	STRAIN RELIEF 1"
843	P0989843	STRAIN RELIEF 3/4"
844	P0989844	STRAIN RELIEF M32-1.5
845	P0989845	HOLE PLUG 22MM
846	P0989846	HEX BOLT M8-1.25 X 25
847	P0989847	WIRE DUCT 120 X 25 X 65MM
848	P0989848	WIRE DUCT 200 X 25 X 65MM
849	P0989849	WIRE DUCT 380 X 25 X 65MM
850	P0989850	HEX NUT M8-1.25

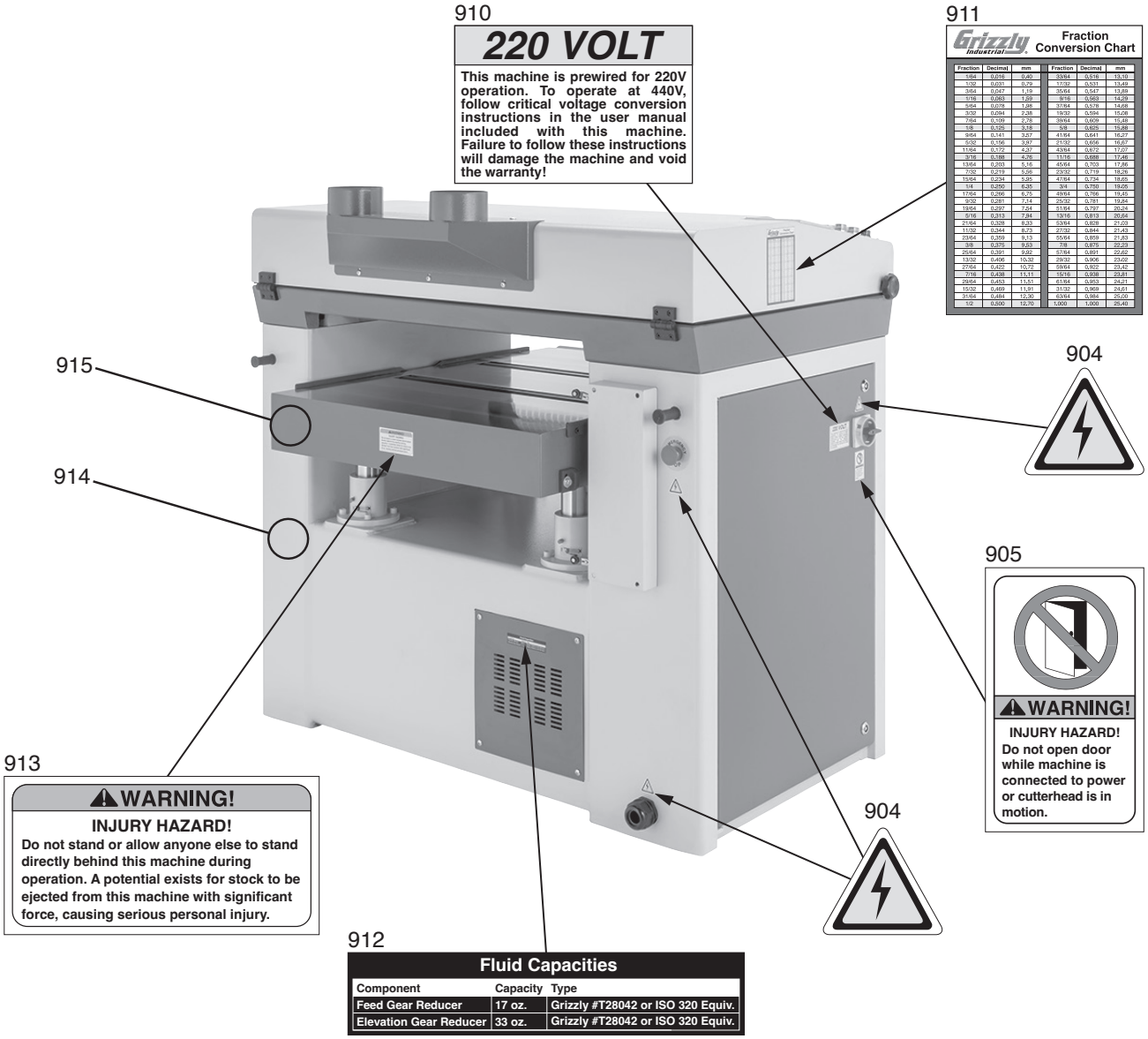
G0988/G0989 Labels & Cosmetics



⚠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.

G0988/G0989 Labels & Cosmetics (Cont.)



REF	PART #	DESCRIPTION
900	P0988900	EXTREME SERIES NAMEPLATE
901	P0988901	MACHINE ID LABEL (G0988)
901	P0989901	MACHINE ID LABEL (G0989)
902	P0988902	WARNING COMBO LABEL
903	P0988903	KEEP COVER CLOSED LABEL
904	P0988904	ELECTRICITY LABEL
905	P0988905	KEEP DOOR CLOSED LABEL
906	P0988906	KICKBACK HAZARD LABEL
907	P0988907	MODEL NUMBER LABEL (G0988)

REF	PART #	DESCRIPTION
907	P0989907	MACHINE NUMBER (G0989)
908	P0988908	GRIZZLY.COM LABEL
909	P0988909	GRIZZLY NAMEPLATE, LARGE
910	P0988910	PREWIRED 220V LABEL 3W X 2H
911	P0988911	FRACTION CONVERSION LABEL
912	P0988912	FLUID CAPACITIES LABEL
913	P0988913	STOCK EJECTION WARNING LABEL
914	P0988914	TOUCH-UP PAINT, GRIZZLY BEIGE
915	P0988915	TOUCH-UP PAINT, GRIZZLY GREEN

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