Grizzly Industrial, Inc.®

MODEL G3104/G3155
SURFACE GRINDER
OWNER'S MANUAL
(For models manufactured since 06/22)

#JA22990 PRINTED IN CHINA V1.08.25

******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

The Model G3104 and Model G3155 are surface grinders of similar construction, with the following differences:

- **Model G3104** is a single-phase, dual voltage 110V/220V machine with a 6" x 18" table.
- **Model G3155** is a three-phase, 220V machine with an 8" x 20" table.

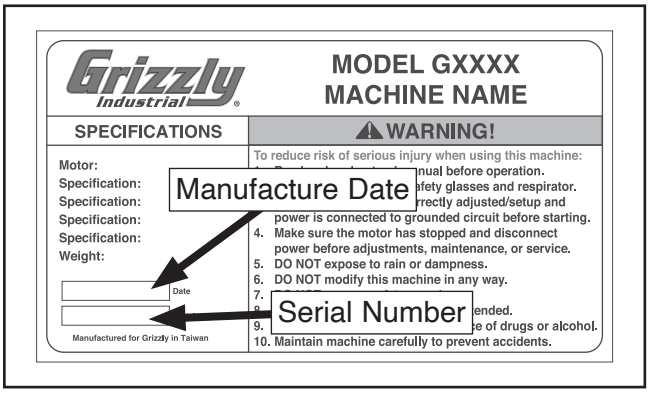
Manual Accuracy

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**.

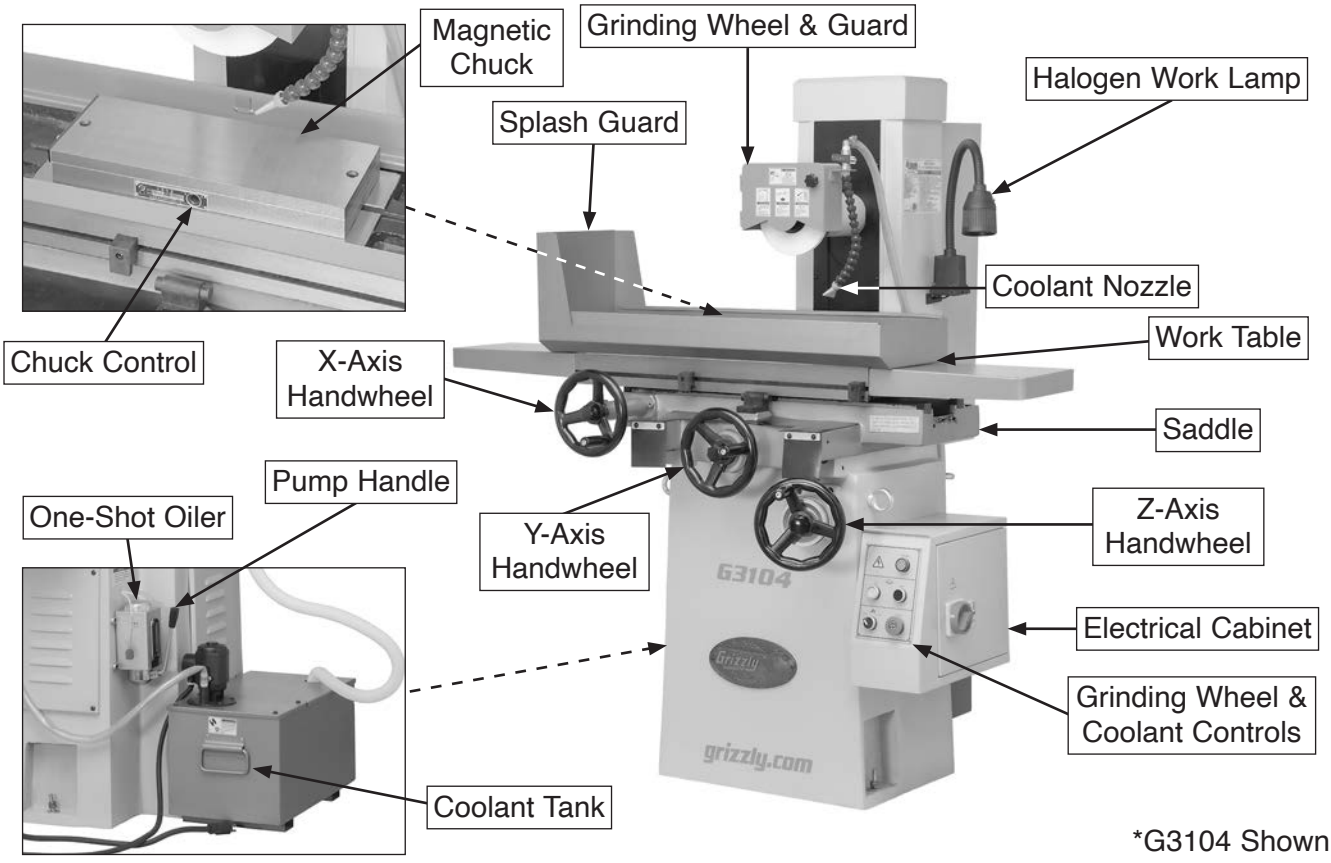
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

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.



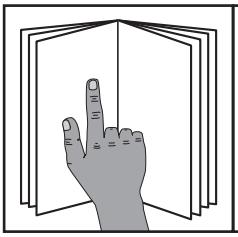
*G3104 Shown

⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating Grinder

a) Wear eye protection.
b) Use grinding wheel suitable for speed of grinder.
c) Replace cracked wheel immediately.
d) Always use guards and eye shields.
e) Do not overtighten wheel nut.
f) Use only flanges furnished with grinder.

Controls & Components



⚠WARNING

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

Refer to the following figures and descriptions to become familiar with the basic controls and components of this surface grinder. 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.

Grinding Wheel & Coolant Controls

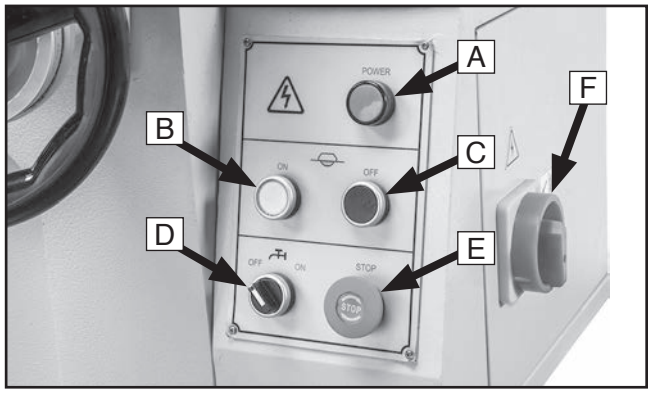


Figure 1. Control panel.

A. Power Lamp: Illuminates when machine is connected to power and master power switch is ***ON*** (I).

B. Motor ON Button: Turns motor ***ON***.

C. Motor OFF Button: Turns motor ***OFF***.

D. Coolant Pump ON/OFF Switch: Turns coolant pump ***ON*** and ***OFF***.

E. STOP Button: Disables power to motor and coolant pump. To reset, twist button clockwise until it pops out.

F. Master Power Switch: Turns incoming power to machine ***ON*** (I) and ***OFF*** (O).

Table Controls

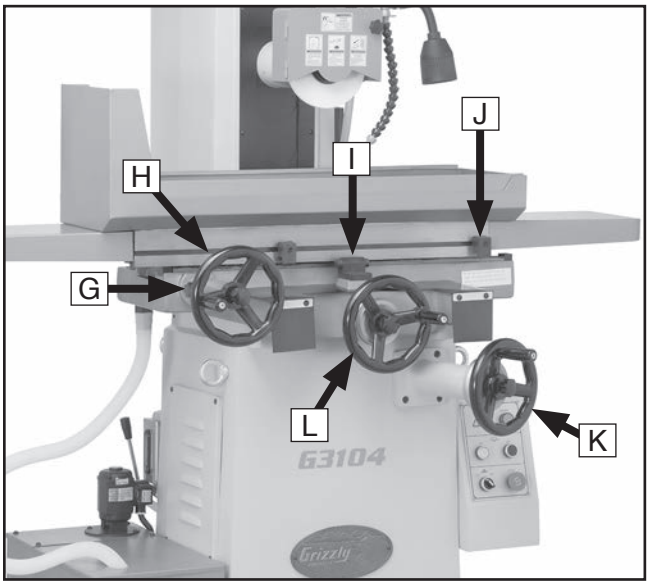


Figure 2. Table controls.

G. X-Axis Handwheel Lock Knob: Tightens to prevent X-axis handwheel movement for increased rigidity during operations when X-axis should not move.

H. X-Axis Handwheel: Moves table along X-axis (left and right).

I. Limit Block: Stops table movement when either limit stop reaches block.

J. Limit Stop (1 of 2): Restricts table movement along X-axis by positioning along front of table.

K. Z-Axis Handwheel: Moves table along Z-axis (up and down) and has a graduated dial measured in 0.0002" increments. One full rotation of handwheel equals 0.5" of table travel.

L. Y-Axis Handwheel: Moves table along Y-axis (back and forward) and has a graduated dial measured in 0.0005" increments. One full rotation of handwheel equals 0.10" of table travel.

Coolant & Lubrication Systems

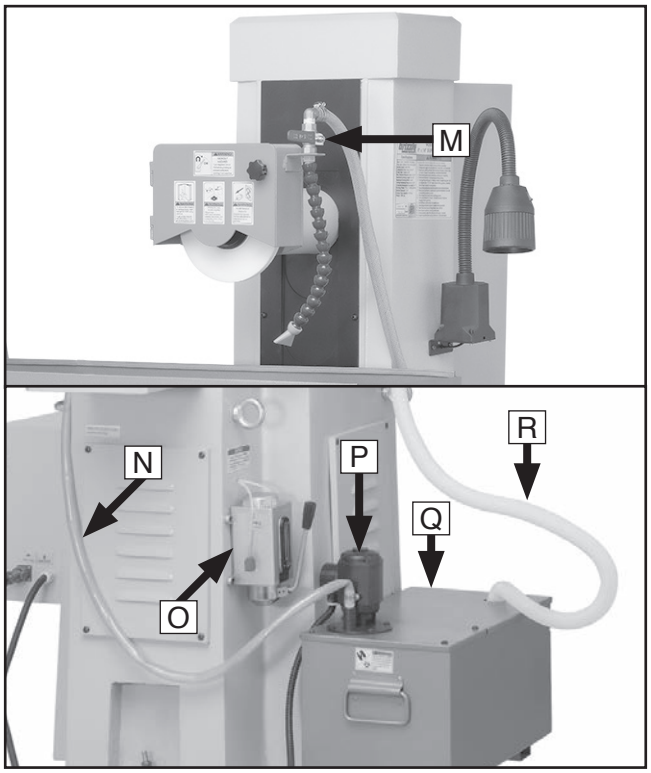


Figure 3. Handwheel controls.

M. Coolant Valve: Controls flow of coolant when coolant pump is turned ***ON***.

N. Coolant Feed Hose: Brings coolant from coolant tank to coolant valve.

O. One-Shot Oiler: Controls amount of lubricating oil on linear guide rails and ball screws.

P. Coolant Pump: Moves coolant from coolant tank to coolant valve.

Q. Coolant Tank: Holds nine gallons of coolant.

R. Coolant Return Hose: Brings used coolant back down to coolant tank.

Magnetic Chuck

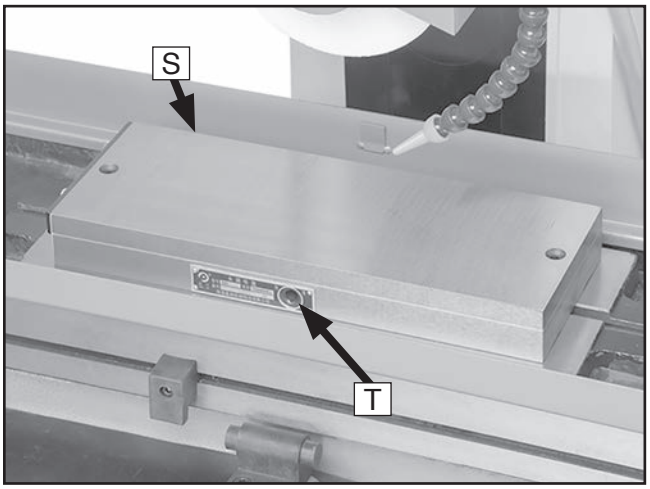


Figure 4. Magnetic chuck controls.

S. Magnetic Chuck: Holds workpiece in place during operations.

T. Chuck Control: Activates/deactivates magnetic chuck.

MACHINE DATA SHEET

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

MODEL G3104 6" X 18" SURFACE GRINDER

Product Dimensions:

Weight..... 1330 lbs.
Width (side-to-side) x Depth (front-to-back) x Height..... 61 x 43 x 63 in.
Footprint (Length x Width)..... 22 x 22 in.

Shipping Dimensions:

Type..... Wood Crate
Content..... Machine
Weight..... 1362 lbs.
Length x Width x Height..... 45 x 42 x 73 in.
Must Ship Upright..... Yes

Electrical:

Power Requirement..... 110V or 220V, Single Phase, 60 Hz
Prewired Voltage..... 110V
Full-Load Current Rating..... 19.1A at 110V, 9.5A at 220V
Minimum Circuit Size..... 20A at 110V, 15A at 220V
Connection Type..... Cord & Plug
Power Cord Included..... Yes
Power Cord Length..... 8 ft.
Power Cord Gauge..... 14 AWG
Plug Included..... Yes
Included Plug Type..... 5-15 for 110V
Recommended Plug Type..... 6-15 for 220V
Switch Type..... Control Panel w/Magnetic Switch Protection

Motors:

Main

Horsepower..... 2 HP
Phase..... Single Phase
Amps..... 18.2A/9.1A
Speed..... 3400 RPM
Type..... TEFC Capacitor-Start Induction
Bearings..... Shielded & Permanently Lubricated
Centrifugal Switch/Contacts Type..... Internal

Coolant Pump

Horsepower..... 4 W
Phase..... Single Phase
Amps..... 0.9A/0.45A
Speed..... 3360 RPM
Type..... TEFC Induction
Bearings..... Shielded & Permanently Lubricated

Main Specifications:

Operation Info

Max. Distance Wheel to Table	10-3/4 in.
Max. Distance Table to Spindle Center	15-3/4 in.
Longitudinal Travel	20-1/2 in.
Cross Travel	6-7/8 in.
Spindle Diameter	1-1/4 in.
Spindle Speed	3400 RPM
Max. Grinding Length	20-1/2 in.
Max. Grinding Width	6-3/4 in.
Grinding Wheel Bore	1-1/4 in.
Grinding Wheel Diameter	7 in.
Grinding Wheel Width	3/4 in.
Downfeed Range	0.0001 - 0.0002 in.
Vertical Handwheel Graduation	0.0002 in.
Vertical Handwheel Revolution	0.05 in.
Crossfeed Handwheel Graduation	0.0005 in.
Crossfeed Handwheel Revolution	0.1 in.
Crossfeed of Saddle Range	7-1/4 in.

Table Info

Table Size Length	18 in.
Table Size Width	6 in.
Floor to Table Height	38-1/2 in.
T-Slot Size Width	1/2 in.
T-Slot Size Height	3/8 in.
Stud Size	1/2 in.
Head Size	7/8 in.

Magnetic Chuck Info

Magnetic Chuck Size Length	15-3/4 in.
Magnetic Chuck Size Width	5-7/8 in.

Construction

Table	Cast Iron
Body	Cast Iron
Base	Cast Iron
Spindle Bearing Type	Shielded and Permanently Lubricated
Paint Type/Finish	Epoxy

Other

Column Size Width	7-1/2 in.
Column Size Length	12 in.
Coolant Tank Width	11 in.
Coolant Tank Length	19-1/2 in.
Coolant Tank Height	9-7/8 in.
Coolant Tank Capacity	9.17 Gal.
Mobile Base	D2058A

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	ID Label

MACHINE DATA SHEET

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

MODEL G3155 8" X 20" SURFACE GRINDER

Product Dimensions:

Weight..... 1620 lbs.
Width (side-to-side) x Depth (front-to-back) x Height..... 66 x 43 x 64 in.
Footprint (Length x Width)..... 26-1/2 x 27 in.

Shipping Dimensions:

Type..... Wood Crate
Content..... Machine
Weight..... 1898 lbs.
Length x Width x Height..... 44 x 54 x 75 in.
Must Ship Upright..... Yes

Electrical:

Power Requirement..... 220V, 3-Phase, 60 Hz
Full-Load Current Rating..... 7.7A
Minimum Circuit Size..... 15A
Connection Type..... Cord & Plug
Power Cord Included..... Yes
Power Cord Length..... 8 ft.
Power Cord Gauge..... 14 AWG
Plug Included..... No
Recommended Plug Type..... 15-15
Switch Type..... Control Panel w/Magnetic Switch Protection
Recommended Phase Converter..... G5844

Motors:

Main

Horsepower..... 2 HP
Phase..... 3-Phase
Amps..... 7.3A
Speed..... 3360 RPM
Type..... TEFC Induction
Bearings..... Shielded & Permanently Lubricated

Coolant Pump

Horsepower..... 40 W
Phase..... 3-Phase
Amps..... 0.42A
Speed..... 3360 RPM
Type..... TEFC Induction
Bearings..... Shielded & Permanently Lubricated

Main Specifications:

Operation Info

Max. Distance Wheel to Table	13-7/8 in.
Max. Distance Table to Spindle Center	17 in.
Longitudinal Travel	23-1/8 in.
Cross Travel	9-1/8 in.
Spindle Diameter	1-1/4 in.
Spindle Speed	3360 RPM
Max. Grinding Length	21-1/2 in.
Max. Grinding Width	10 in.
Grinding Wheel Bore	1-1/4 in.
Grinding Wheel Diameter	8 in.
Grinding Wheel Width	3/4 in.
Downfeed Range	0.0001 - 0.0002 in.
Vertical Handwheel Graduation	0.0002 in.
Vertical Handwheel Revolution	0.05 in.
Crossfeed Handwheel Graduation	0.0005 in.
Crossfeed Handwheel Revolution	0.1 in.
Crossfeed of Saddle Range	10 in.

Table Info

Table Size Length	19-3/4 in.
Table Size Width	8 in.
Floor to Table Height	38-1/2 in.
T-Slot Size Width	1/2 in.
T-Slot Size Height	1 in.
Stud Size	1/2 in.
Head Size	7/8 in.

Magnetic Chuck Info

Magnetic Chuck Size Length	15-3/4 in.
Magnetic Chuck Size Width	7-7/8 in.

Construction

Table	Cast Iron
Body	Cast Iron
Base	Cast Iron
Spindle Bearing Type	Shielded and Permanently Lubricated
Paint Type/Finish	Epoxy

Other

Column Size Width	9-1/4 in.
Column Size Length	12-3/4 in.
Coolant Tank Width	11 in.
Coolant Tank Length	19-1/2 in.
Coolant Tank Height	9-7/8 in.
Coolant Tank Capacity	9.17 Gal.
Mobile Base	D2058A

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	ID Label

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 Surface Grinders

⚠WARNING

Serious injury or death can occur from impact injuries if grinding wheel breaks apart during use. Entanglement/amputation injuries can occur from being caught in moving parts or in-running pinch points. Flying sparks can ignite explosive or flammable materials. Rotating grinding wheels can quickly remove skin. To minimize risk of getting hurt or killed, anyone operating machine MUST completely heed hazards and warnings below.

WHEEL SPEED RATING. Wheels operated at speeds faster than they are rated for may break or fly apart. Before mounting a new wheel, be sure wheel RPM rating is equal to or higher than speed of grinder. Never use unmarked wheels or wheels rated for lower speed than grinder.

WHEEL ATTACHMENT. Only use flanges included with grinder when mounting wheels. Other flanges may not properly secure wheel and cause an accident. Do not use warped or damaged flanges, and always use paper discs (blotters) between wheels and flanges to reduce risk of flanges cracking wheel when tightened. Only tighten wheel enough to prevent slippage.

WHEEL INSPECTION. Verify grinding wheel is free of cracks, chips, or dents in wheel surface before installing. Do not use wheel if it has any of these problems or it could break apart during operation. Perform a "ring test" on grinding wheel before installation to ensure it is safe to use. A wheel that does NOT pass ring test may break or fly apart during operation.

STARTING GRINDER. If a wheel is damaged, it will usually fly apart shortly after start-up. To protect yourself, always stand away from grinding wheel when turning machine ***ON*** and allow wheel to gain full speed before beginning operations.

LUNG PROTECTION. Grinding produces hazardous dust, which may cause long-term respiratory problems if inhaled. Always wear a NIOSH-approved dust mask or respirator when grinding, and use coolant when possible to minimize this risk.

EYE PROTECTION. Grinding causes small particles to become airborne at a high rate of speed. ALWAYS wear ANSI-approved eye and face protection when using this machine.

SECURE WORKPIECE TO MAGNETIC CHUCK. Secure non-magnetic workpieces to chuck so workpiece cannot unexpectedly shift during operation. NEVER hold workpiece by hand during operation.

POWER DISRUPTION. In the event of a local power outage during operation, turn machine ***OFF*** and disconnect from power to avoid a possible sudden startup once power is restored.

GRINDING MAGNESIUM. Grinding material with magnesium content may increase risk of fire or explosion. Before grinding material with magnesium content, review all available safety information that pertains to grinding magnesium, including National Fire Protection Association standard NFPA 480 "Storage, Handling and Processing Magnesium."

HAND/WHEEL CONTACT. Grinding wheels can remove a lot of skin fast. Make sure workpiece is securely clamped to chuck, then position your hands a safe distance away when grinding.

COOLANT USAGE. Use the correct personal protective equipment when handling coolant. Follow federal, state, and fluid manufacturer's requirements for proper disposal.

SIDE GRINDING. Grinding on side of wheels can cause them to crack and burst—unless wheel is rated for side grinding.

SECTION 2: POWER SUPPLY

G3104 Power Supply

Availability

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

⚠WARNING

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

Full-Load Current Rating

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

Full-Load Current Rating at 110V ...19.1 Amps
Full-Load Current Rating at 220V .... 9.5 Amps

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

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

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 110V

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

Nominal Voltage 110V, 115V, 120V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Power Supply Circuit ..... 20 Amps
Plug/Receptacle (included) ..... NEMA 5-15

Circuit Requirements for 220V

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 208V, 220V, 230V, 240V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Power Supply Circuit ..... 15 Amps
Plug/Receptacle (recommended) .. NEMA 6-15

Grounding Requirements

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

For 110V operation: This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (see following figure). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

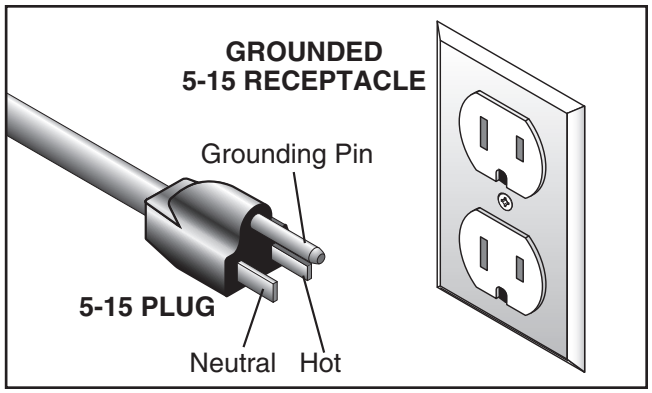


Figure 5. Typical 5-15 plug and receptacle.

For 220V operation: The plug specified under "Circuit Requirements for 220V" on the previous page has a grounding prong that must be attached to the equipment-grounding wire on the included power cord. The plug must only be inserted into a matching receptacle (see following figure) that is properly installed and grounded in accordance with all local codes and ordinances.

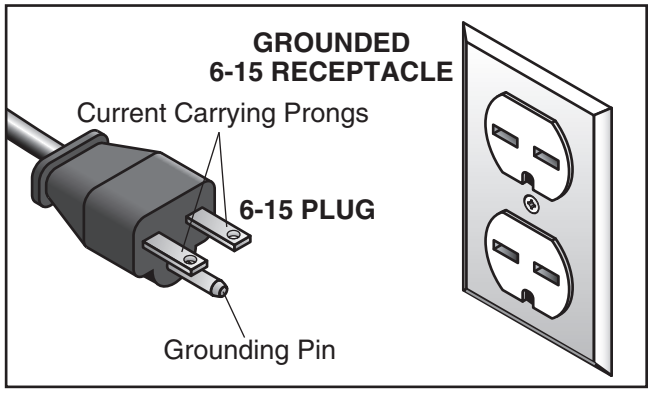
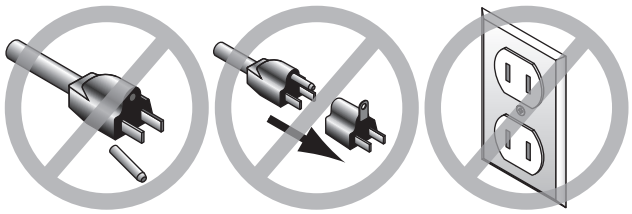


Figure 6. Typical 6-15 plug and receptacle.

⚠CAUTION



SHOCK HAZARD!

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

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

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

Extension Cords

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

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

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

Minimum Gauge Size.....12 AWG
Maximum Length (Shorter is Better).....25 ft.

Converting Voltage to 220V (G3104)

Voltage conversions MUST be performed by an electrician or qualified service personnel.

To perform the voltage conversion, rewire the transformer, motor, and coolant pump, then install the correct plug.

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**
Open-End Wrench 7mm	1
Phillips Head Screwdriver #2	1
NEMA 6-15 Plug	1

To convert voltage to 220V:

1. DISCONNECT MACHINE FROM POWER!

2. Cut 5-15 plug off end of power cord.

3. Open electrical cabinet on lower right hand side of machine and locate transformer (see **Figure 7**).

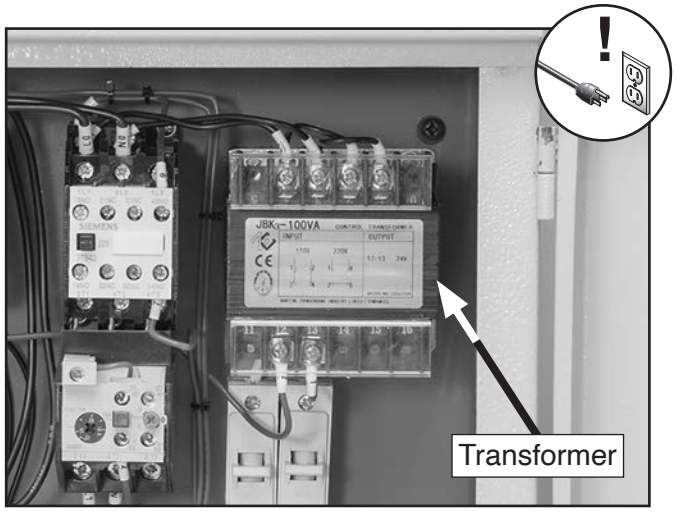


Figure 7. Location of transformer.

4. Remove jumper wire from transformer terminals 2 and 4 (see **Figure 8**).

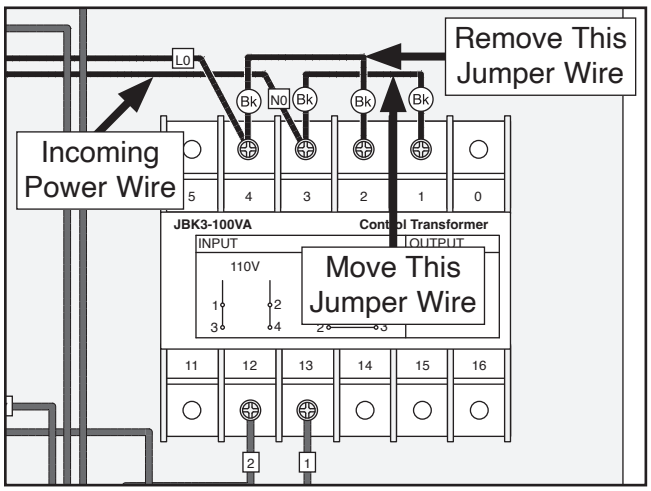


Figure 8. Transformer pre-wired for 110V.

5. Move jumper wire from terminal 1 to terminal 2 (see **Figures 8**–**9**).

6. Move incoming power wire (N0) from terminal 3 to terminal 1 (see **Figures 8**–**9**).

7. Verify all transformer wire connections match diagram shown in **Figure 9**, then close electrical cabinet.

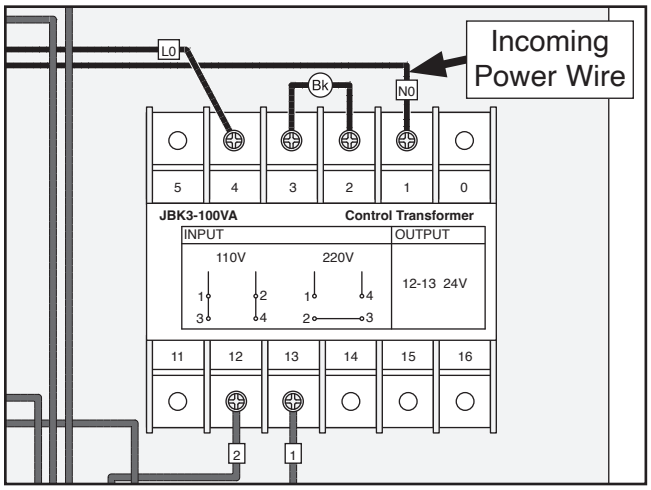


Figure 9. Transformer rewired for 220V.

8. Remove rear guard from machine column.

9. Open motor junction box (see **Figure 10**).

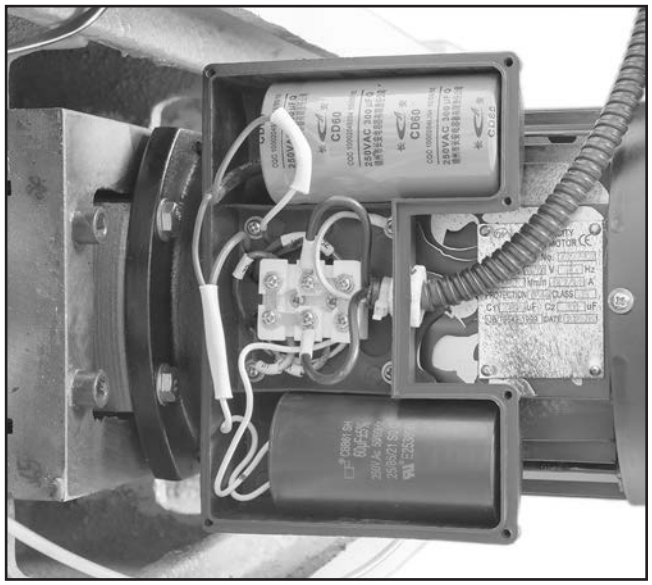


Figure 10. Motor pre-wired for 110V.

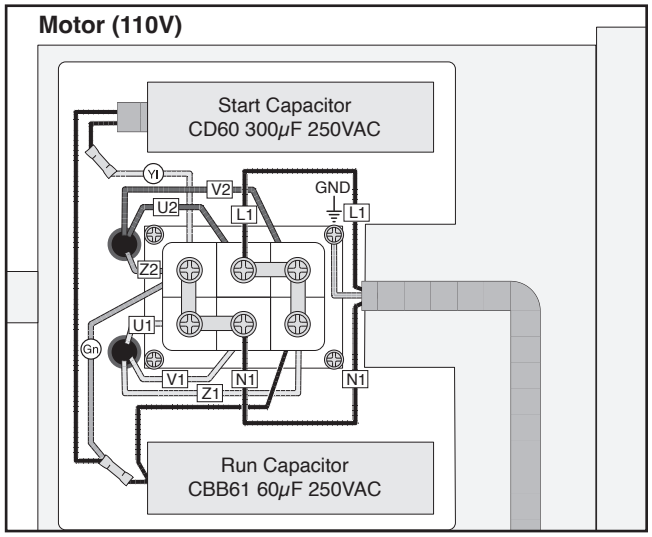


Figure 11. Motor pre-wired for 110V.

10. Move jumpers as indicated in **Figure 12**. One jumper will not be reused.

11. Move incoming power wire N1 to terminal with wire U1, as shown in **Figure 12**.

12. Move incoming power wire L1 to terminal with wire V2, as shown in **Figure 12**.

13. Completed 220V rewiring should match **Figure 12**.

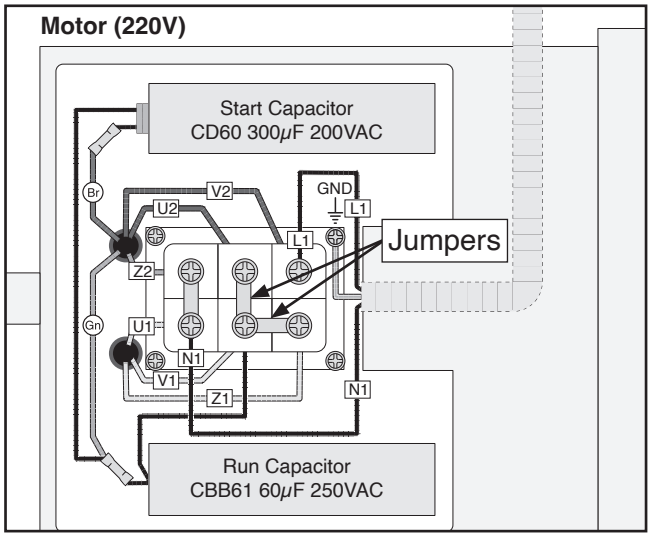


Figure 12. Motor rewired for 220V.

14. Close and secure motor junction box, and install rear guard.

15. Open coolant pump junction box (see **Figure 13**).

Figure 13. Coolant pump junction box.

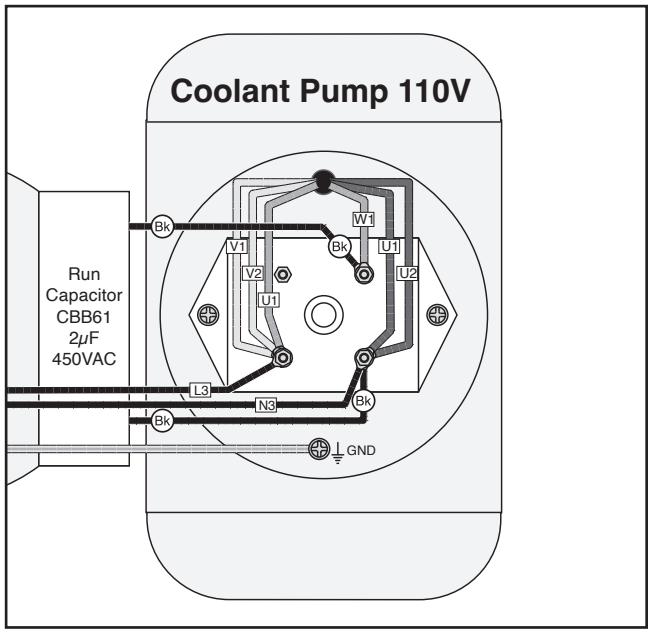


Figure 14. Coolant pump pre-wired for 110V.

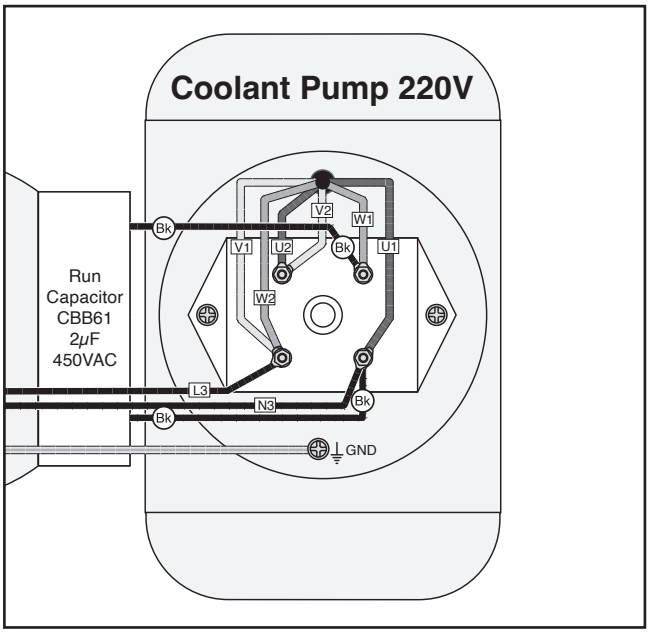


Figure 15. Coolant pump rewired for 220V.

16. Move U2 and V2 wires to open terminal on motor junction box (see **Figure 15**).

17. Coolant pump rewiring to 220V should match **Figure 15**.

18. Close and secure junction box cover.

19. After rewiring transformer, motor, and coolant pump, install 6-15 plug on end of power cord, according to plug manufacturer's instructions.

— If plug manufacturer did not include instructions, wiring of generic NEMA 6-15 plug is illustrated on **Page 52**.

G3155 Power Supply

Availability

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

⚠WARNING

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

Full-Load Current Rating

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

Full-Load Current Rating at 220V.....7.7 Amps

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

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

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

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

Nominal Voltage 208V, 220V, 230V, 240V
Cycle.....60 Hz
Phase..... 3-Phase
Power Supply Circuit ..... 15 Amps
Plug/Receptacle .....NEMA 15-15

Grounding Requirements

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

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

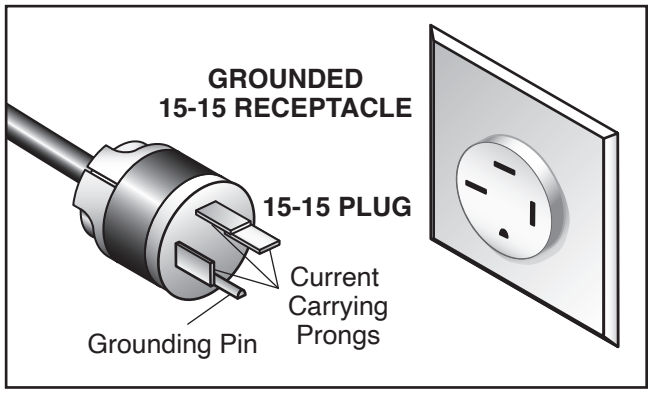
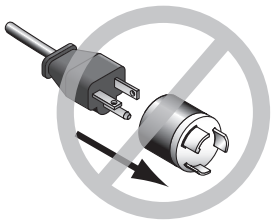


Figure 16. Typical 15-15 plug and receptacle.

⚠CAUTION



No adapter should be used with plug. If plug does not fit available receptacle, or if machine must be reconnected for use on a different type of circuit, reconnection must be performed by an electrician or qualified service personnel, and it must comply with all local codes and ordinances.

⚠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.

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

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

Extension Cords

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

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

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

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

Note About 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.*

G5844—5 HP Rotary Phase Converter
This rotary phase converter allows you to operate 3-phase machinery from a single-phase power source at 100% power and 95% efficiency.

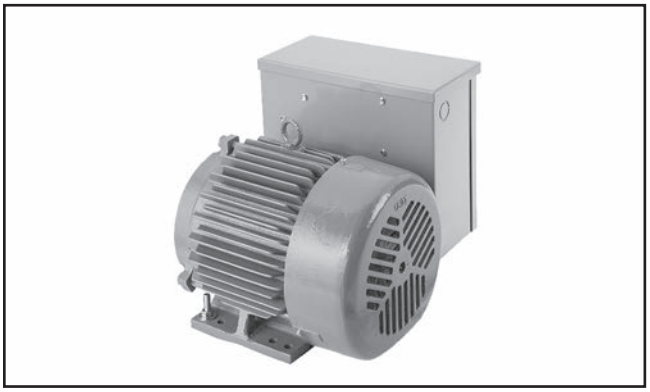
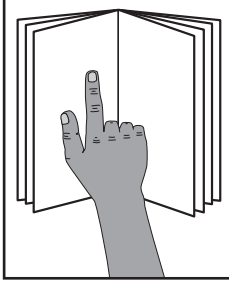


Figure 17. Model G5844 5 HP Rotary Phase Converter.

SECTION 3: SETUP

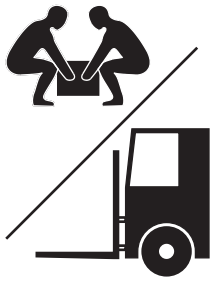


⚠WARNING

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
• Cleaner/Degreaser (**Page 23**)	As Needed
• Shop Rags	As Needed
• Lint-Free Cloth	As Needed
• Disposable Gloves	As Needed
• Additional Person	1
• Safety Glasses (per person)	1 Pr.
• Precision Level	1
• Safety Hooks & Chains (Rated for at least 2500 lbs. each)	4
• Forklift (Rated for at least 2500 lbs.)	1
• NLGI#2 Grease (**Page 43**)	As Needed
• Water-Soluble Coolant (**Page 48**)	9 Gal.
• ISO 32 Lubricant (**Page 43**)	1 Pint
• Wood Block 1" x 12"	2
• Deburring Stone	1

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.

Toolbox Inventory (Figure 18)	Qty
A. Toolbox	1
B. Diamond Dressing Tool	1
C. Open-End Wrenches —12/14, 17/19, 22/24mm	1 Ea.
D. Dressing Tool Base	1
E. Flat Head Screwdriver ¼"	1
F. Phillips Screwdriver #2	1
G. Spanner Wrench	1
H. Leveling Bolts	3
I. Hex Wrench Set 1.5–10mm	1
J. Wheel Balancing Arbor	1
K. Hose Clamps 1"	2
L. Fuses 2A 380V	2

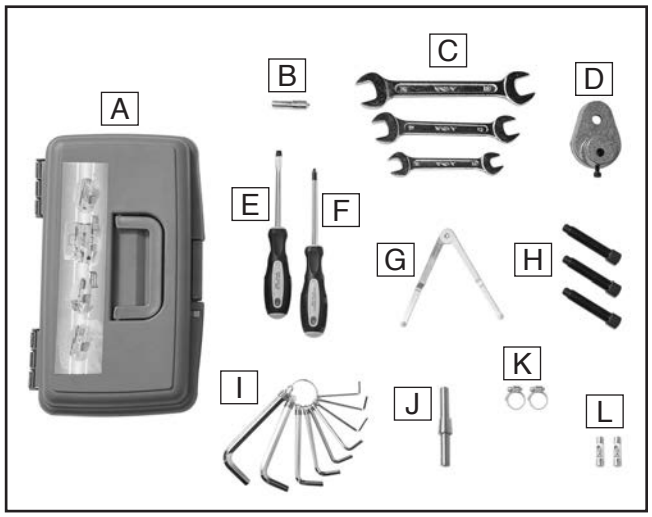


Figure 18. Toolbox inventory.

Boxed Inventory (Figure 19)	Qty
M. Wheel Balancing Base	1
N. Z-Axis Handwheel	1
O. Knob M10-1.5 x 40	1
P. Cap Screws M10-1.5 x 50	2
Q. Magnetic Chuck Key	1
R. T-Nuts M10-1.5	2
S. Rubber Seals	2
T. Jack Bolt	1
U. Grinding Wheel Bolt	1
V. Cap Screws M8-1.25 x 16	4
W. Splash Guard Sides	2
X. Table Extensions	2
Y. Magnetic Chuck	1
Z. Coolant Return Hose	1
AA. Leveling Pads	3
AB. Grinding Wheel Assembly	1
AC. Table Ball Bearing Strips	2
AD. Coolant Feed Hose	1

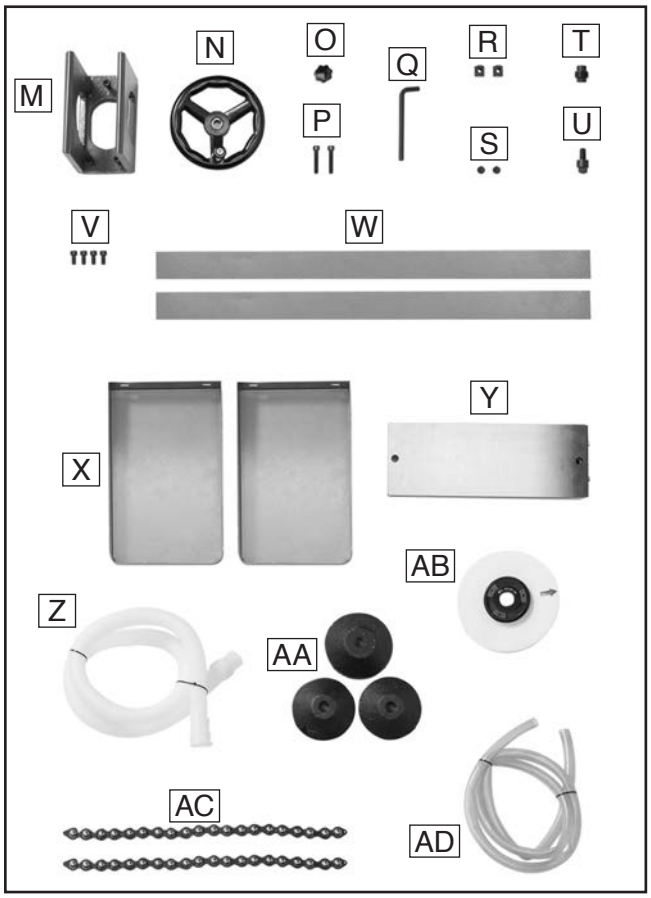
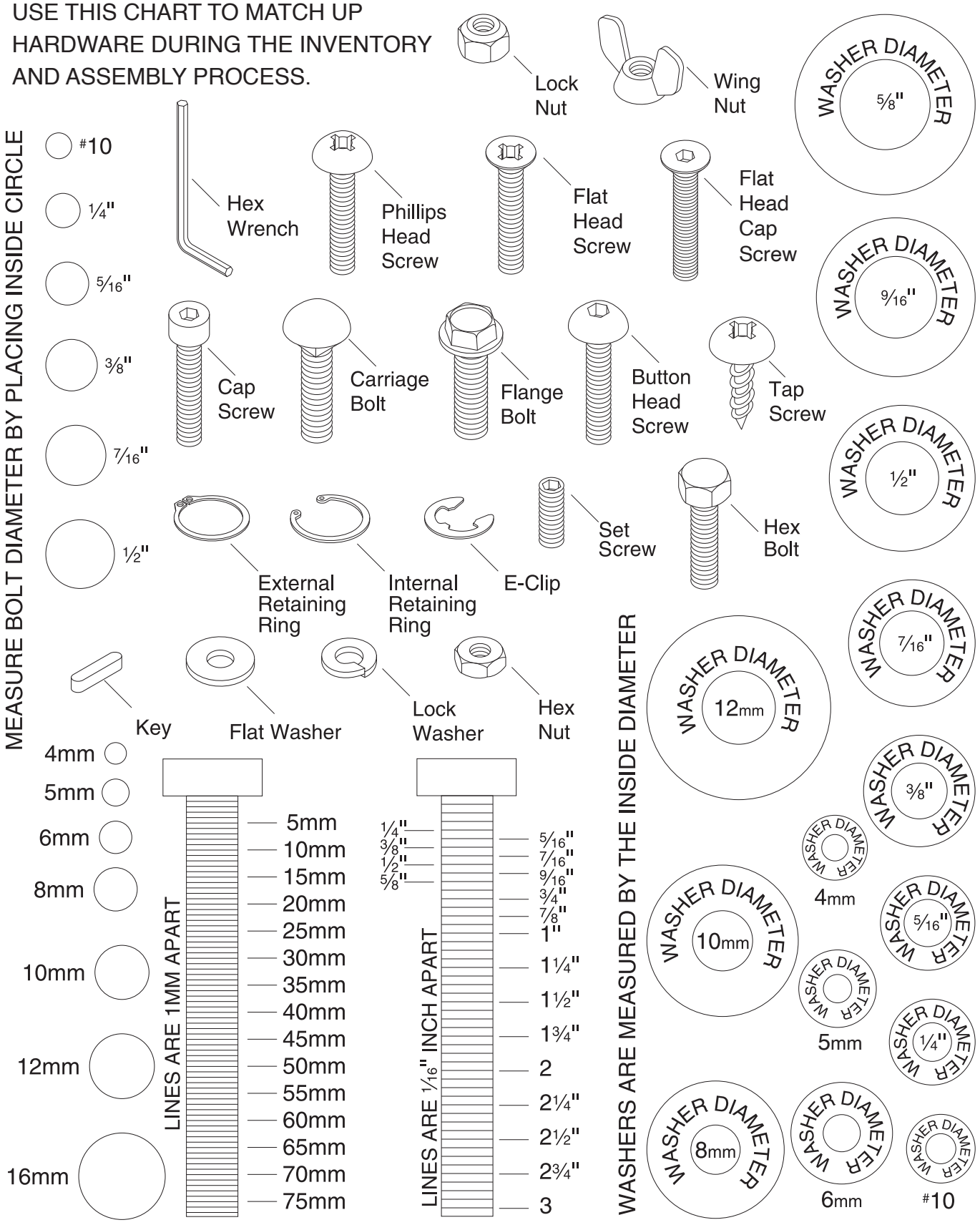


Figure 19. Boxed inventory.

Hardware Recognition Chart

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



Cleanup

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

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

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

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

Basic steps for removing rust preventative:

1. Put on safety glasses.

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

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

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

⚠WARNING

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

⚠CAUTION

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

NOTICE

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

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

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

Figure 20. T23692 Orange Power Degreaser.

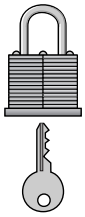
Site Considerations

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.

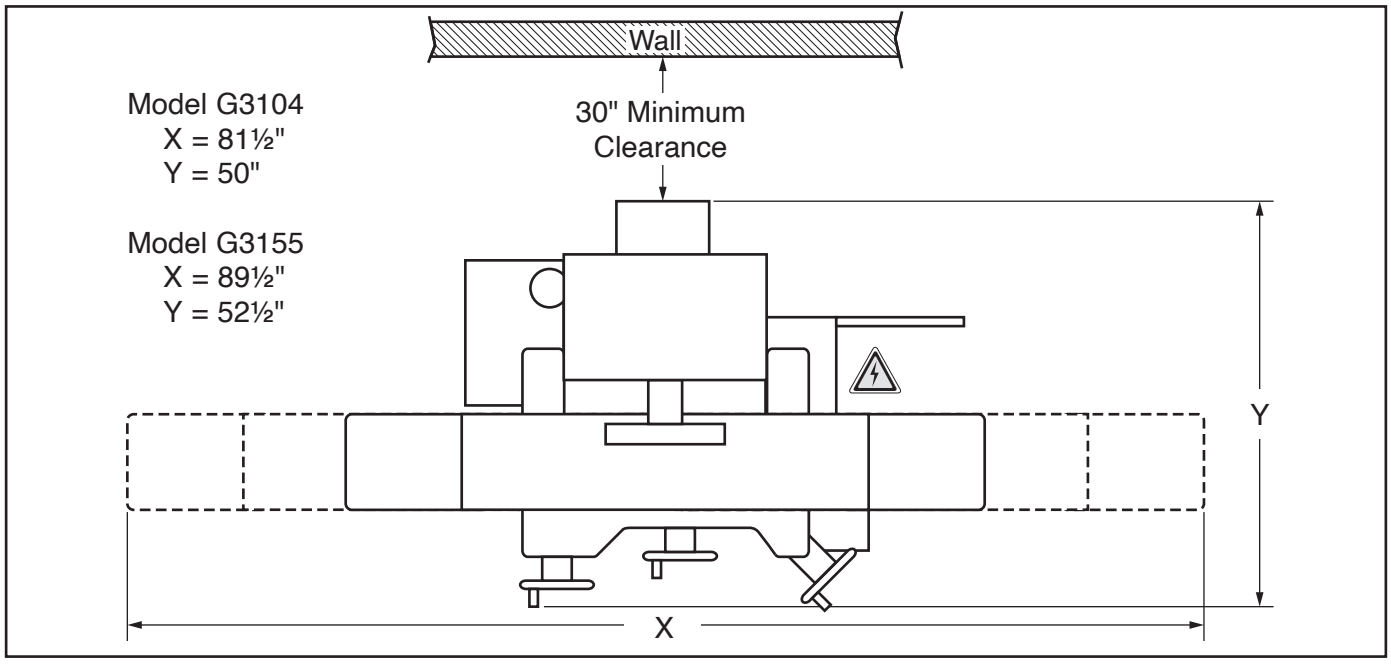


Figure 21. Minimum working clearances.

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 or move 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 2500 lbs. to support dynamic loads that may be applied while lifting.

To lift and place machine:

1. Remove top crate from shipping pallet.
2. Remove loosely packed items.
3. Move pallet and machine to desired location.
4. Disconnect coolant pump power cord from electrical cabinet (see **Figure 22**).

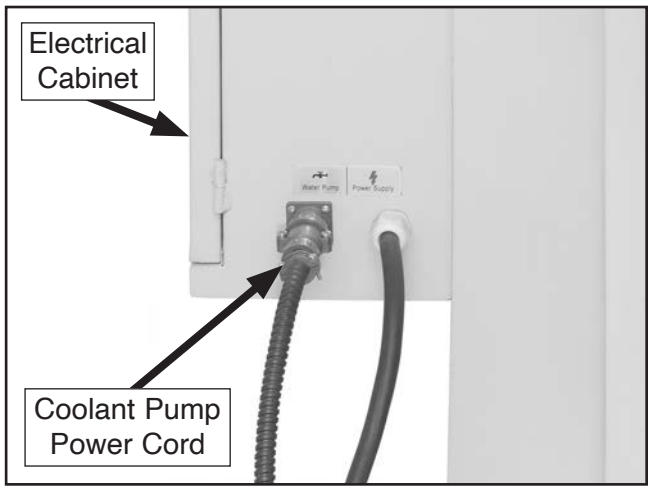


Figure 22. Coolant pump electrical connection with electrical cabinet.

5. Set coolant tank assembly aside.
6. Turn Y-axis handwheel until saddle is centered equally between lifting eye bolts (see **Figure 23**).

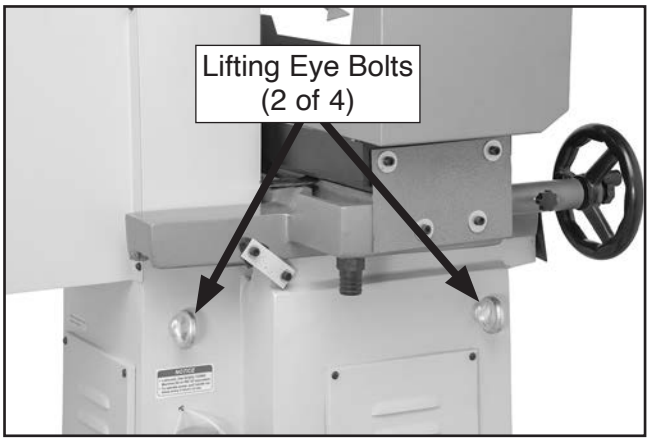


Figure 23. Lifting eye bolts (2 of 4 shown).

7. Unbolt machine from shipping pallet.
8. Secure (1) safety hook and chain to each of the (4) lifting eye bolts.

   Note: *Place padding between chains and machine to avoid scratching paint finish.*

9. With help from an assistant, steady load and lift machine just enough to remove pallet.
10. With machine suspended, thread leveling bolts into machine base (see **Figure 24**).
11. Position leveling pads underneath leveling bolts, then lower machine until bolts rest on center of pads (see **Figure 24**).

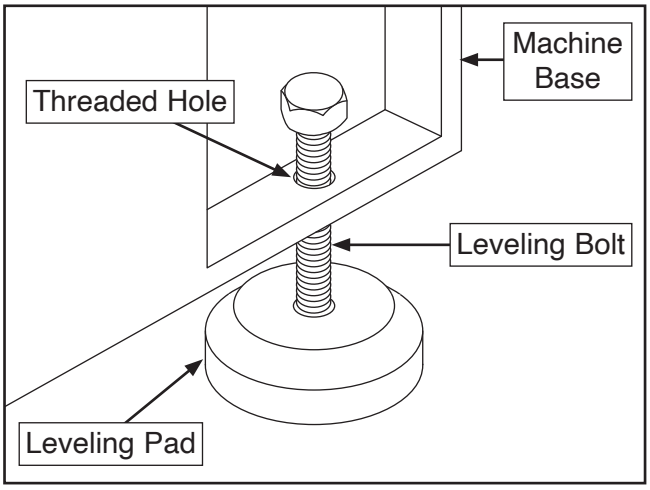


Figure 24. Leveling pad and bolt installed.

NOTICE

For accurate results and to prevent warping cast iron ways, table MUST be level side to side and front to back. Recheck ways 24 hours after installation, two weeks after that, and then annually to make sure they remain level.

12. Remove (3) table restraints from machine (see **Figure 25**).

Note: *Keep (4) M8-1.25 x 16 cap screws and 8mm flat washers from table restraints on left side of table (see **Figure 25**). These will be used to attach table extensions.*

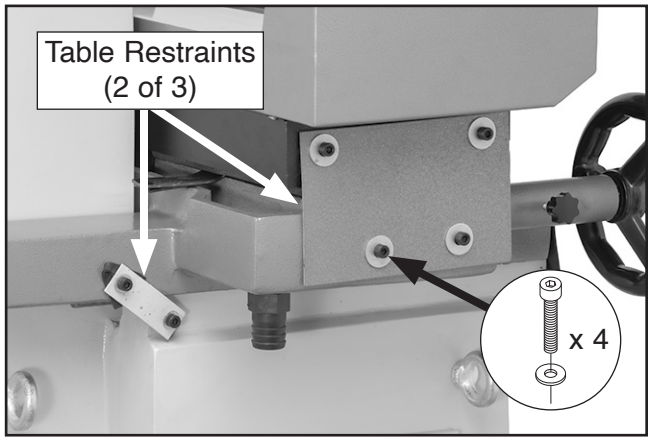


Figure 25. Location of table restraints, cap screws, and flat washers.

13. Using a precision level (see **Figure 26**) on unpainted table surface without magnetic chuck, adjust leveling pad bolts until table is level from side to side and front to back.

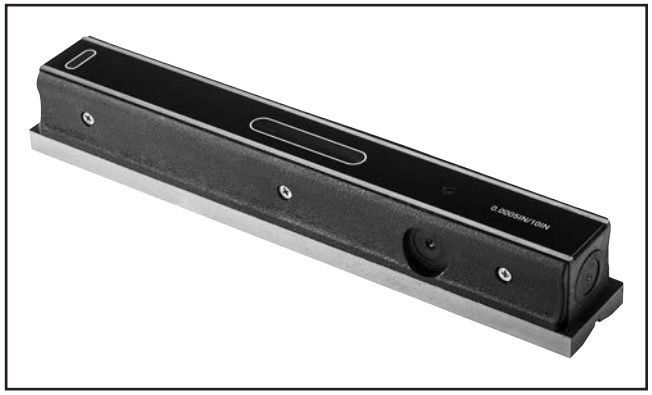


Figure 26. Example of precision level.

14. Reconnect coolant pump power cord.

Assembly

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

To assemble machine:

1. Inventory all parts in shipping container.

2. Install Z-axis handwheel and knob on Z-axis leadscrew (see **Figure 27**).

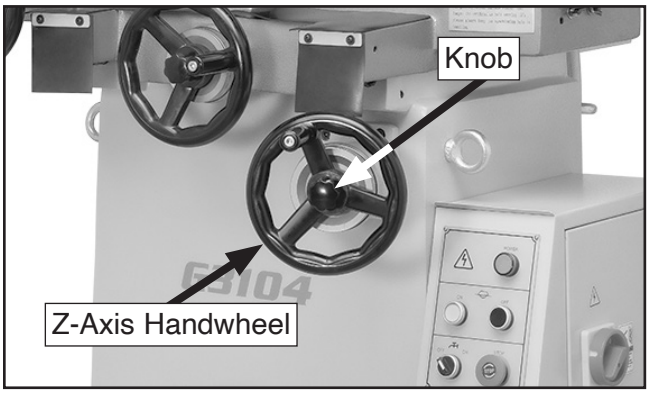


Figure 27. Z-axis handwheel installed.

3. Loosen wing nuts on right side of table to create slack in timing belt (see **Figure 28**).

Note: *Loosen wing nuts equally several turns, but DO NOT remove them.*

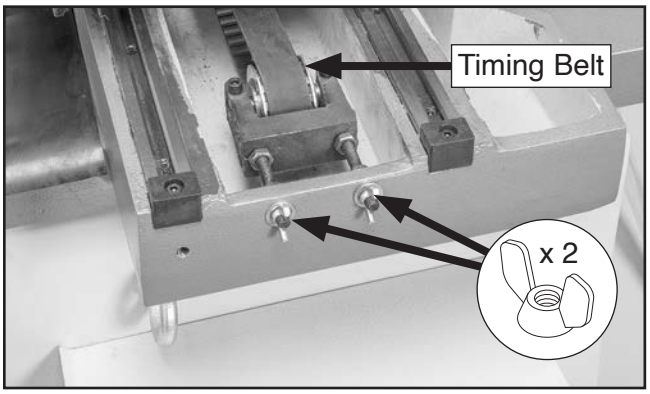


Figure 28. Timing belt and wing nuts.

4. With assistance, lift right side of table and place (1) 1" x 12" wood block perpendicular to table ways (see **Figure 29**). Table must be centered on saddle.

   Note: *Ensure wooden block is long enough to bridge both table ways.*

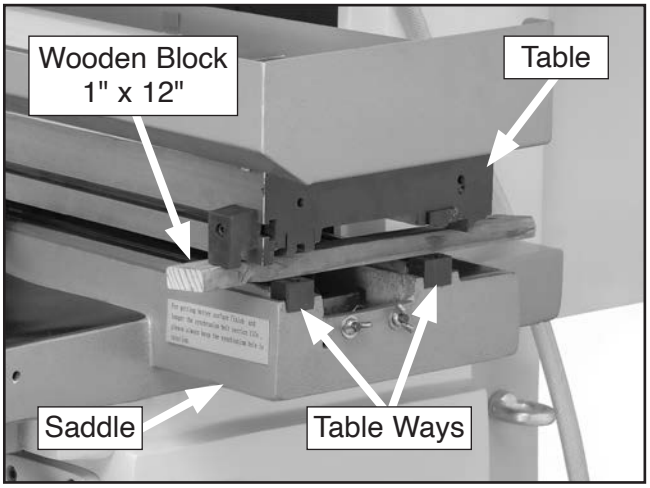


Figure 29. Table supported with wooden block.

5. Repeat **Step 4** on left side of table.

NOTICE

Take care not to damage table ways. Any damage to these surfaces will be permanent and result in poor finishes.

6. Remove and store rubber spacer straps (see **Figure 30**).

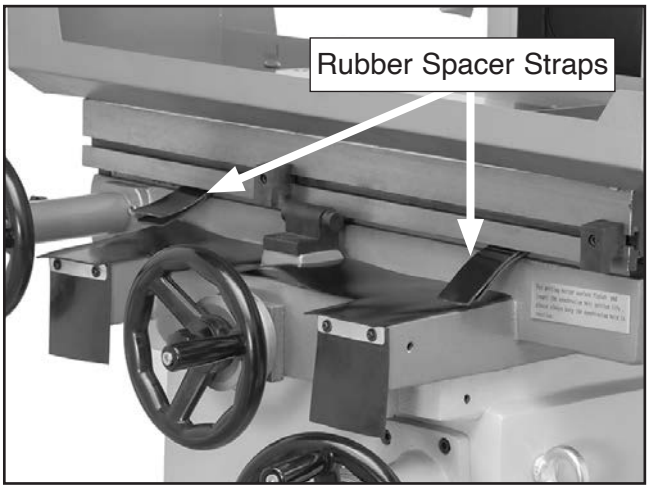


Figure 30. Rubber spacer straps.

7. Ensure table and table ways are free of any debris or grime.

8. Apply a light coat of NLGI#2 grease to ball bearing strips. Use fingers to ensure each bearing is completely coated.

9. Feed (1) ball bearing strip onto front table way, as shown in **Figure 31**.

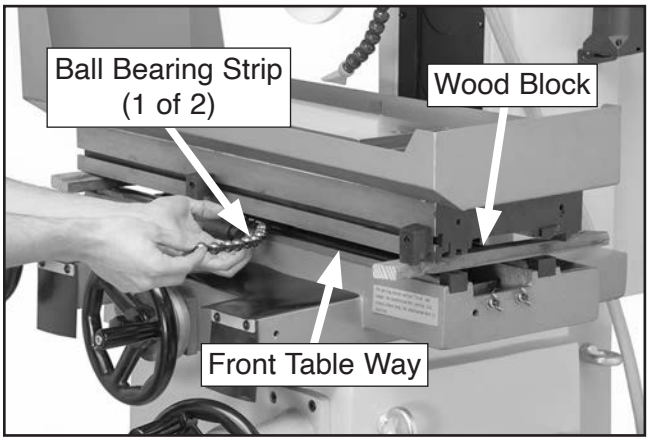


Figure 31. Installing ball bearing strip on front table way.

10. Repeat **Step 9** on rear table way.

    Note: *Take care not to overshoot table ways. Ball bearings may fall into saddle, and retrieving them will require table removal.*

11. With help from an assistant, remove wood blocks and gently lower table onto ball bearing strips.

12. Tighten wing nuts from **Step 3** equally several turns until slack is gone from timing belt.

    Note: *Timing belt does not need to be under tension.*

13. Verify correct table movement by sliding (1) table stop to each side of table and using X-axis handwheel to move table full left and full right.

14. Install grinding wheel assembly, (see **Mounting/Removing Wheel** on **Page 38**).

15. Stone and clean any burrs from unpainted table surface and bottom of magnetic chuck, then apply a thin coat of ISO 32 oil to both surfaces.

16. Position magnetic chuck in center of table with chuck control facing forward, as shown in **Figure 32**.

17. Secure magnetic chuck to table with (2) M10-1.5 x 50 cap screws and (2) M10-1.5 T-nuts, as shown in **Figure 32**.

18. Insert (1) rubber seal into each hole on top of magnetic chuck (see **Figure 32**).

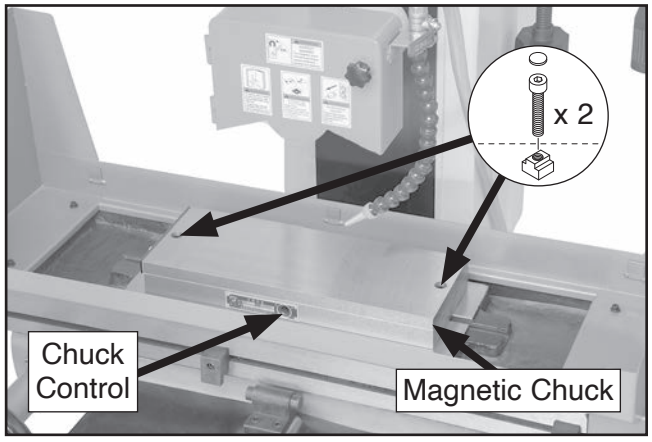


Figure 32. Magnetic chuck centered on table.

19. Insert splash guard sides into slots on each side of splash guard base, as shown in **Figure 33**.

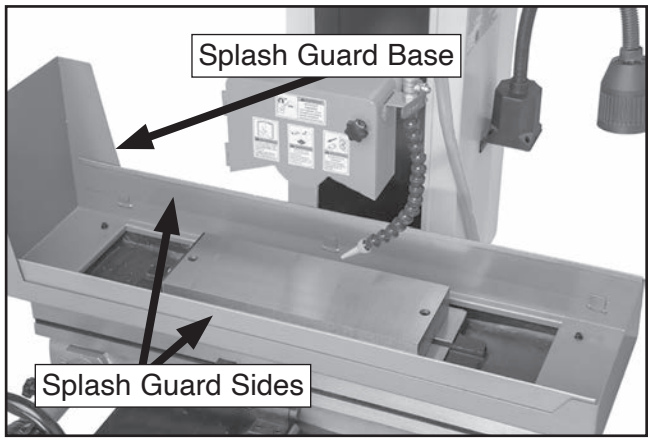


Figure 33. Splash guard sides installed.

20. Attach table extensions to right and left sides of table with (4) M8-1.25 x 16 cap screws and 8mm flat washers from **Step 12** of **Lifting & Placing** on **Page 26** (see **Figure 34**).

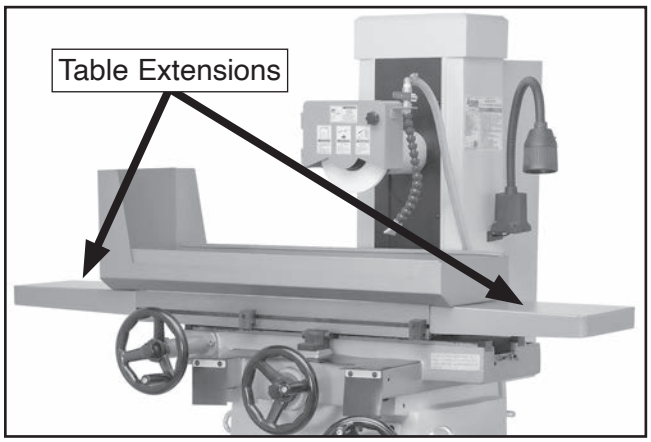


Figure 34. Table extensions installed.

21. Connect coolant return hose to downspout on left side of table and feed into coolant tank (see **Figure 35**).

22. Connect coolant feed hose to coolant nozzle and coolant pump, then secure coolant feed hose with hose clamps. (see **Figure 35**).

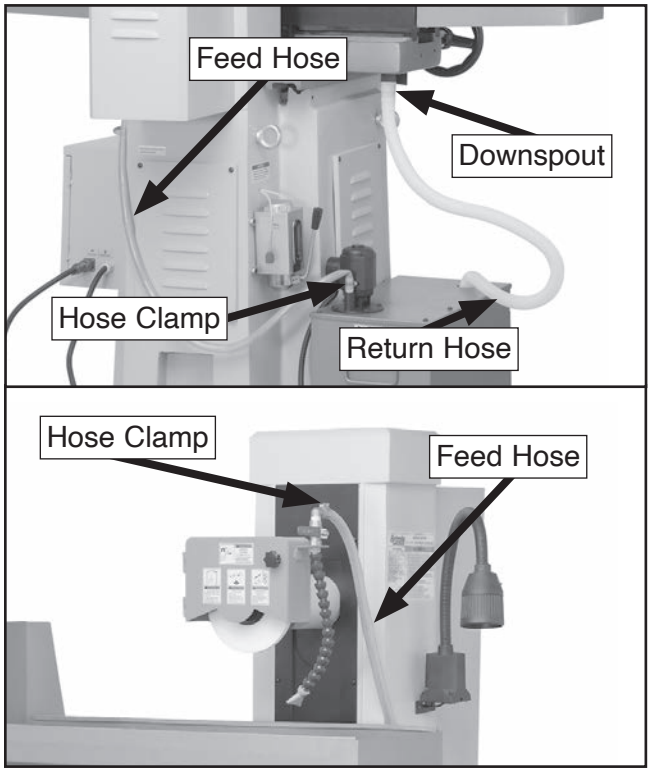


Figure 35. Coolant hoses installed.

Power Connection (G3155)

Before the machine can be connected to the power supply, 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.

Always make sure the master power switch on the machine is in the OFF position (1) and the STOP button is pushed in before connecting power.

⚠WARNING

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

Connecting Plug to Power Cord

To connect plug to power cord, install 15-15 plug on end of power cord per plug manufacturer's instructions. If no instructions were included, use **G3155 Wiring Diagram** on **Page 61**.

NOTICE

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.

Correcting Phase Polarity

This section is provided for troubleshooting Model G3155 3-phase power connections. If you discover during the test run that the machine will not operate, or that the motor runs backwards, the plug may be wired "out of phase," meaning that 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 **L1** and **L3** terminals (see **Figure 36**).

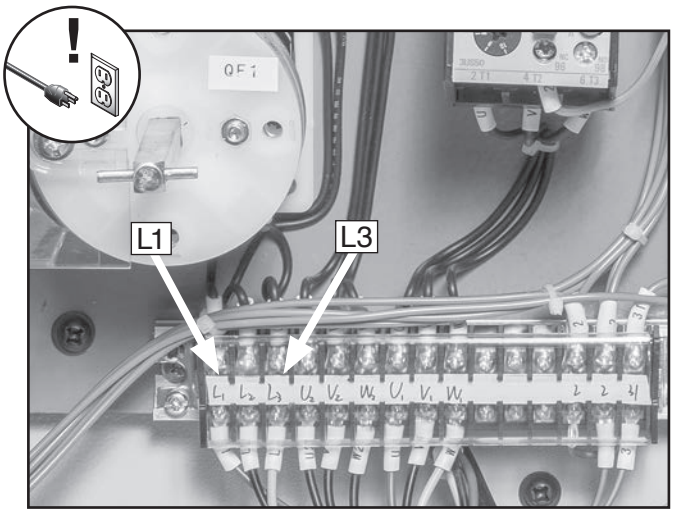


Figure 36. Location of **L1** and **L3** terminals.

3. Close 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.

⚠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 motor powers up and runs correctly, 2) the STOP button safety feature functions properly, and 3) the coolant pump powers up and runs correctly.

To test run machine:

1. Clear all setup tools away from machine.
2. Turn master power switch to OFF (0) position.
3. Turn coolant pump ON/OFF switch to OFF position.
4. Press STOP button in.
5. Fill coolant tank with approximately 9 gallons of water-soluble coolant (refer to **Coolant System** on **Page 47** for instructions).
6. Verify grinding wheel is properly mounted, and wheel guard is secure (refer to **Mounting/Removing Wheel** on **Page 38**).

   Note: *Grinding wheel does not need to be mounted to perform test run.*
7. Connect machine to power.
8. Turn master power switch to ON (1) position. Control panel power lamp will illuminate.
9. Twist STOP button clockwise until it pops out—this resets button so machine can start.

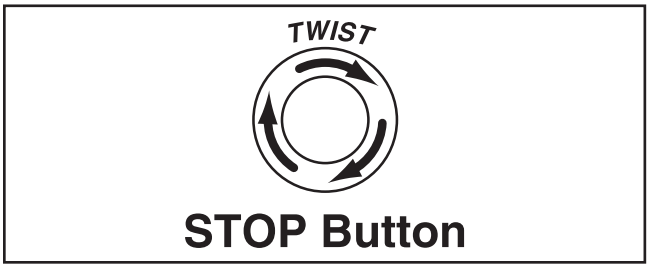


Figure 37. Resetting STOP button.

10. Ensure grinding wheel and guard are safely above magnetic chuck but low enough for coolant to flow onto chuck without excessive splashing.
11. Press motor ON button. Verify motor starts up and runs smoothly without any unusual problems or noises.
12. **G3104 Only:** Proceed to **Step 14**.
13. **G3155 Only:** Verify power supply is connected to machine with correct polarity by starting motor and closely watching direction of wheel rotation.

    – If wheel turns *clockwise*, it is turning in correct direction.

    – If wheel turns *counterclockwise*, it is turning in wrong direction. Stop motor, disconnect machine from power. Refer to **Correcting Phase Polarity** on **Page 29**.
14. Press STOP button to turn machine ***OFF***.

15. WITHOUT resetting STOP button, try to start machine by pressing ON button. Machine should not start.

- If machine *does not* start, safety feature of STOP button is working correctly. Proceed to **Step 16**.

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

16. Twist STOP button clockwise until it pops out.

17. Make sure coolant nozzle is positioned close to table and pointing left, then open coolant valve.

NOTICE

Operating coolant pump on this surface grinder without the correct amount of coolant in the coolant tank could damage it and void the warranty. ALWAYS make sure there is the correct amount of coolant in the coolant tank before using pump.

18. Press coolant pump ON button. Coolant should flow from coolant nozzle.

19. Press coolant pump OFF button and close coolant valve. Coolant flow should stop.

20. Press STOP button in and turn master power switch to OFF position (0).

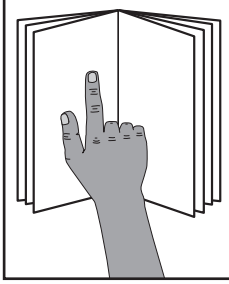
21. Congratulations! **Test Run** is complete.

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.

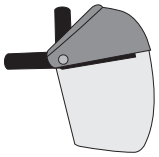


⚠WARNING

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

Eye and face injuries and respiratory problems can occur while operating this tool. Wear personal protective equipment to reduce your risk from these hazards.



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

1. Examines workpiece to make sure it is suitable for grinding.
2. Selects correct grinding wheel for type of workpiece, inspects wheel, performs a "ring test," and installs wheel.
3. Secures workpiece to magnetic chuck.
4. Uses handwheels to correctly position workpiece and grinding wheel for operation. Grinding wheel should just clear surface of workpiece.
5. Puts on personal protective equipment.
6. Directs nozzle toward workpiece, opens coolant valve, and turns coolant pump ***ON***.
7. Turns grinder ***ON***, and allows wheel to reach full speed to ensure integrity of grinding wheel.
8. Performs grinding operation.
9. When grinding operation is complete, turns grinder and coolant pump ***OFF***, closes coolant valve, and allows grinding wheel to come to a complete stop.
10. Removes workpiece from table.

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.

Workpiece Inspection

Some workpieces are not suitable for grinding on a surface grinder. **Before grinding, inspect all workpieces for the following:**

- ***Hard Workpiece:*** Workpieces that are made of carbide, stainless steel, or have hardened welds will wear out most general-grade grinding wheels quickly. If hard materials are to be ground, you must install the correct type of grinding wheel.

- ***Soft Workpiece:*** Workpieces that are made of aluminum, brass, lead, and other nonferrous metals will load up in the grinding wheel and render the abrasive useless and increase the risk of wheel bursting. To restore a loaded grinding wheel surface, redress with a dressing tool.

- ***Nonferrous Workpieces:*** Workpieces that are made of nonferrous metals must be secured to magnetic chuck with a ferrous jig/vise to prevent workpiece ejection.

- ***Flexible/Unstable Workpiece:*** Grinding on the side or the ends of cable, chain, or round workpieces creates the hazard of workpiece twist or grab, leading to entanglement with the wheel or shaft. This hazard must be avoided.

- ***Loose Parts:*** Make sure that the workpiece is free of any parts like springs, pins, balls, or other components that may loosen or dislodge during grinding, and hit the operator.

- ***Strength:*** Make sure that the workpiece is strong enough to be ground. Should it break, the broken piece may dig into the wheel and cause kickback or severe injury.

Wheel Selection

Most grinding wheels from major manufacturers are marked in a somewhat uniform manner. Understanding these markings will help you understand the capabilities of various wheels. Always refer to the manufacturer's grinding recommendations when selecting a wheel for your project.

The grinding wheel you choose will depend on several factors related to the operation you plan to perform. The hardness of the material you will be grinding and the surface finish you desire are the two primary factors to consider when selecting a grinding wheel.

An example of the basic format for wheel numbering is shown below. The wheel in this example is a "36A60LV".

Prefix	Abrasive Type	Grit Size	Grade	Bond Type
36	A	60	L	V

The prefix is a manufacturer-specific designation and will vary depending on the manufacturer.

Use the charts below as a basic wheel selection outline for most grinding operations.

Abrasive Type

Abrasive Type	Application
A	**Aluminum Oxide.** For grinding common steel.
WA	**White Aluminum Oxide.** For grinding harder metals (heat treated steel, carbon steel, alloy steel, etc.).
H	For grinding high speed steel.
C	**Silicon Carbide.** For grinding cast iron and non-ferrous metals.
CG	**Ceramic Grain.** For extremely hard metals, such as tungsten carbide.

Grit Size

The ideal grit for an operation depends on a number of considerations. Use the table below to choose a grit suitable for your desired results.

	Results	
Operation Consideration	**Coarse Grit (10–46)**	**Fine Grit (54–180)**
Material Removal	Increased	Decreased
Surface Finish	Rough	Smooth
Workpiece Hardness	Soft	Hard
Width of Cut	Wide	Narrow

Grade

The grade of a wheel is an indicator of its hardness based on an alphabetical scale in which **A** is the softest and **Z** is the hardest.

	Wheel Hardness	
Operation Consideration	Soft A–M	Hard N–Z
Workpiece Hardness	Hard	Soft
Width of Cut	Wide	Narrow
Feed Rate	Slow	Fast
Wheel Speed	Fast	Slow

Bond Type

This refers to the type of bonding material used to hold the abrasive material. Most general purpose wheels will have a **V** indicating vitrified clay is used, providing high strength and good porosity. The other most common is **B** where synthetic resins are used. These are used to grind cemented carbide and ceramic materials.

Wheel Care

When grinding, your safety depends, to a large degree, on the condition of the wheel. A wheel in poor condition presents the possibility of breaking apart during rotation and injuring the operator and others in the area.

Here are some tips to help you avoid breaking the wheel:

- Always transport, store and handle wheels with care. Wheels may be damaged if they are dropped or if heavy objects are stacked on them.
- Select the right grinding wheel for the job. DO NOT grind material inappropriate for the wheel type.
- Only use wheels that are rated for the RPM of the grinder.
- Mount the wheel properly (see **Mounting/ Removing Wheel** on **Page 38**).
- Do not lower the wheel onto the workpiece with such force that it causes the grinder to bog down. And do not apply pressure to stop the wheel after turning the grinder ***OFF***.
- Dress the wheel when necessary. Do not allow it to become glazed (see **Wheel Dressing** on **Page 40**).
- Do not store wheels in damp or wet locations.
- Do not overtighten the jack bolt when mounting the wheel.

Wheel Inspection

Do not assume that a wheel is in sound condition just because it is new—damage can often occur during shipping, with age, with prolonged exposure to moisture, or because of improper storage.

To inspect wheel:

1. Remove wheel flange and sleeve, then look for any cracks, chips, nicks, or dents in wheel surface. If you see any of these, DO NOT attempt to use wheel.

2. Do a ring test. This test will give you an indication of any internal damage that may not be obvious during a visual inspection.

3. Inspect blotters on both sides of grinding wheel (see **Figure 38**).

   These blotters are cushions between the wheel sleeve, flange, and grinding wheel. Without blotters, cracks can be spawned from center of wheel when the arbor nut is tightened. Over time, these cracks can radiate outward, which may cause the wheel to explode during operation, possibly causing injury.

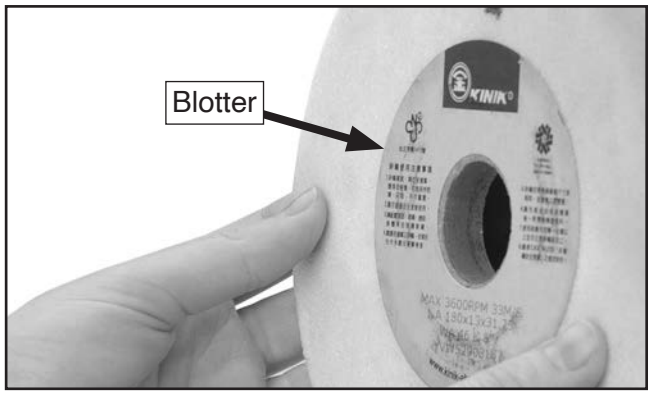


Figure 38. Important wheel blotter.

Note: *If you need to replace or install new blotters, replacements can be cut out of any thick construction paper or card stock. Regular notebook paper or paper from a copy machine is not acceptable, as it is too thin to provide required cushion. Be sure to transfer any RPM limitations and wheel type information to the new paper washers.*

Ring Test

This test will give you an indication of any internal damage that may not be obvious during a visual inspection.

To perform ring test:

1. Make sure wheel is clean and dry; otherwise, you may get false results.

   Note: *If wheel is wet with coolant, hang it in a dry location until it is dry (usually overnight).*

2. Remove wheel flange and sleeve.

3. Hang wheel in air with a piece of cord or string looped through wheel bore (see **Figure 39**).

4. At locations shown with an arrow in **Figure 39** gently tap wheel with a light non-metallic device such as handle of a screwdriver or a wooden mallet.

   — An undamaged wheel will emit a clear metallic ring or “ping” sound in each of these spots. A damaged wheel will respond with a dull thud that has no clear tone. If you determine from ring test that wheel is damaged, DO NOT use it!

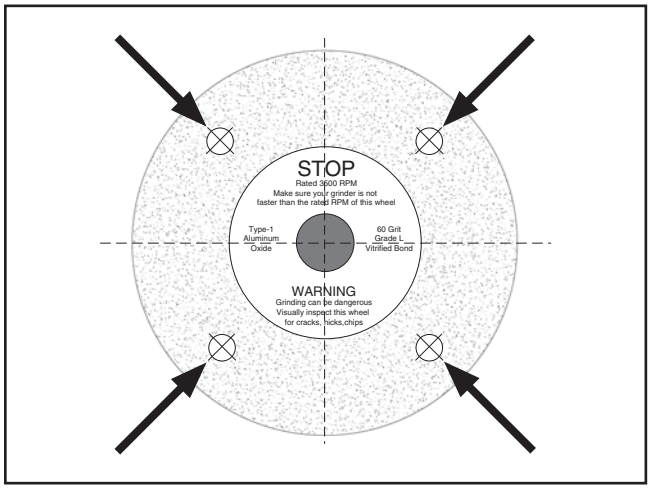


Figure 39. Tapping locations when performing a ring test.

Balancing Wheel Assembly

An unbalanced wheel can result in wheel damage and poor finishes because the edge of the wheel does not contact the workpiece evenly.

Although a new wheel will have typically been balanced by the manufacturer, the addition of the sleeve and flange will require that each wheel be rebalanced. Additionally, the wheel can become unbalanced with wear.

Correctly balancing the wheel assembly will require trial-and-error and patience.

Tools Needed	Qty
Hex Wrench 3mm	1
Pencil or Marker	1
Wheel Balancing Arbor	1
Wheel Balancing Base	1
Lint-Free Cloth	As Needed
Light Machine Oil	As Needed

To balance wheel assembly:

1. Make sure wheel is clean and dry.

   Note: *If wheel is wet with coolant, hang it in a dry location until it is dry (usually overnight).*

2. Clean imperfections from edges of wheel balancing base (see **Figure 40**).

3. Using a precision level and leveling bolts (see **Figure 40**), make sure edges of balancing base are level from front to back and side to side.

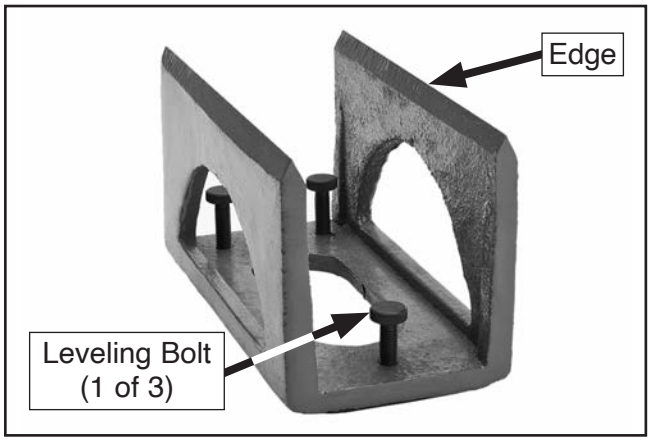


Figure 40. Wheel balancing base.

4. Attach wheel sleeve and flange to wheel, as instructed in **Mounting/Removing Wheel** on **Page 38**.

5. Loosen (3) balancing weight set screws, position weights evenly around wheel sleeve groove, then tighten set screws (see **Figure 41**).

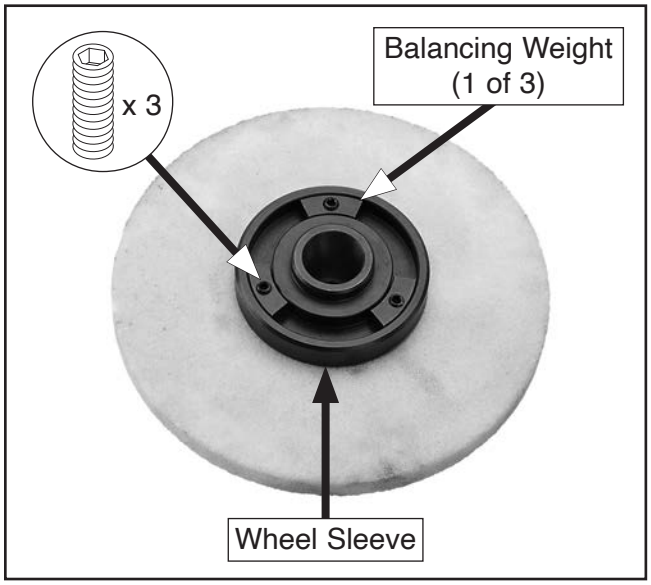


Figure 41. Weights evenly distributed around wheel sleeve groove.

6. With fingers, clean mating surfaces of balancing arbor and internal sleeve taper until completely clear of debris and imperfections, then push them together.

7. Place assembly on balancing base and wait until wheel settles (see **Figure 42**). Make sure balancing arbor is perpendicular to balancing base.

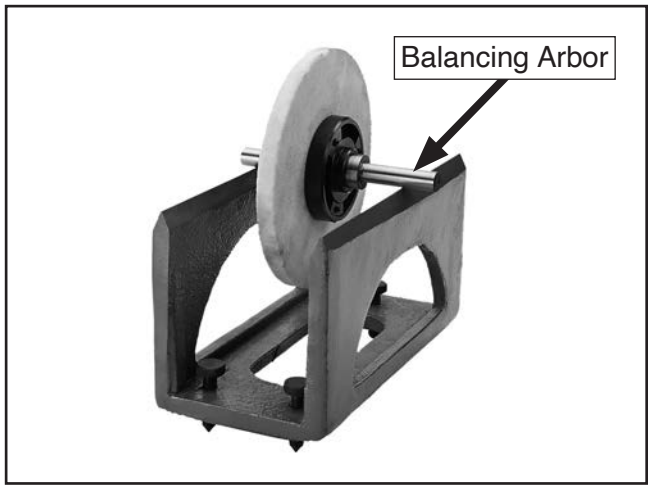


Figure 42. Wheel assembly on balancing base.

8. Mark a line on wheel at six o'clock position to mark heaviest side of wheel assembly.

9. Center nearest weight with line from **Step 8** and secure it in place. This weight will remain in place during following steps.

10. Position remaining two weights evenly spaced around sleeve groove.

11. Place wheel assembly on balancing base. Wheel assembly should not rotate if weights are balanced.

    — If wheel assembly *does* rotate, reposition two weights from **Step 10** and repeat this step until wheel assembly no longer rotates when placed on balancing base.

12. When you are satisfied with wheel balancing, remove arbor, install wheel assembly on machine, and test run for 5 minutes to verify balance.

    — If any wobble is detected in wheel as it rotates on machine, repeat **Steps 5–12** until there is no wobble.

13. To make sure entire width of wheel edge is parallel to table, redress wheel as instructed in **Wheel Dressing** on **Page 40**.

Mounting/Removing Wheel

⚠CAUTION

ALWAYS visually inspect and perform a "ring test" on a wheel before assembly. DO NOT use damaged wheels!

Before mounting a grinding wheel (new or used), perform the following procedures:

- Wheel Inspection (**Page 35**)
- Ring Test (**Page 35**)
- Wheel Balancing (**Page 36**)

Do not use a wheel that is suspected of having cracks, or if you can see chips, nicks, or dents in the wheel surface. These conditions can lead to wheel failure where the wheel flies apart at operating speed. Always be sure to use a wheel that is rated for operating at speeds of at least 3360 RPM.

Mounting Wheel

Items Needed	Qty
Grinding Wheel 7" D x ½" W x 1¼" Bore	1
Wheel Sleeve	1
Wheel Flange	1
Spanner Wrench	1
Grinding Wheel Bolt	1
Open-End Wrench 14/17mm	1

To mount wheel:

1. DISCONNECT MACHINE FROM POWER!

Note: *Model G3104 and Model G3155 grinding wheels have sleeve and flange already installed. If wheel assembly is already assembled, proceed to* ***Step 4****.*

2. Insert wheel sleeve into wheel and thread wheel flange onto wheel sleeve (see **Figure 43**), then tighten with spanner wrench until snug.

Note: *Wheel flange has left-hand threads and tightens counterclockwise.*

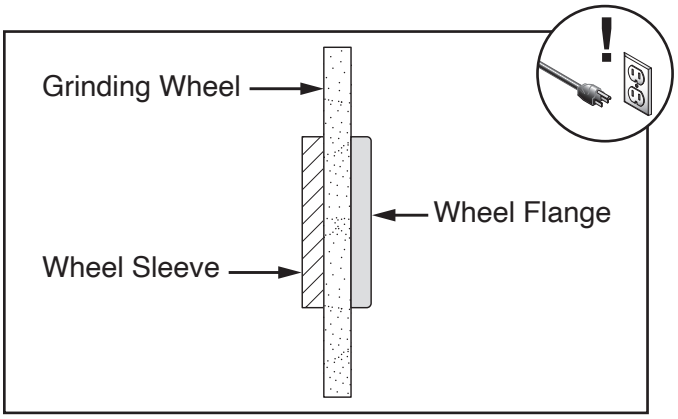


Figure 43. Wheel assembly components.

⚠CAUTION

Overtightening may stress and crack wheel.

3. Loosen knob shown in **Figure 44**, then open wheel guard front cover.

Figure 44. Wheel guard components.

4. With fingers, clean mating surfaces of machine arbor and internal sleeve taper until completely clear of debris and imperfections.

5. Carefully mount wheel assembly on arbor and secure with grinding wheel bolt (see **Figure 45**).

   Note: *Grinding wheel bolt has left-hand threads and tightens counterclockwise.*

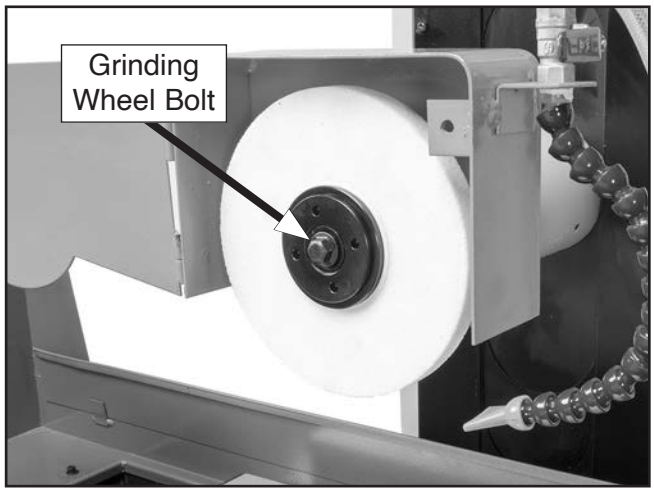


Figure 45. Wheel and grinding wheel bolt installed.

6. Close wheel guard cover and secure before connecting machine to power.

Removing Wheel

Items Needed	Qty
Open-End Wrench 14/17mm	1
Jack bolt	1

To remove wheel:

1. DISCONNECT MACHINE FROM POWER!

2. Open wheel guard front cover.

3. Remove grinding wheel bolt.

   Note: *Grinding wheel bolt has left-hand threads and loosens clockwise.*

4. Thread jack bolt into wheel assembly (see **Figure 46**) and tighten to separate wheel assembly from arbor.

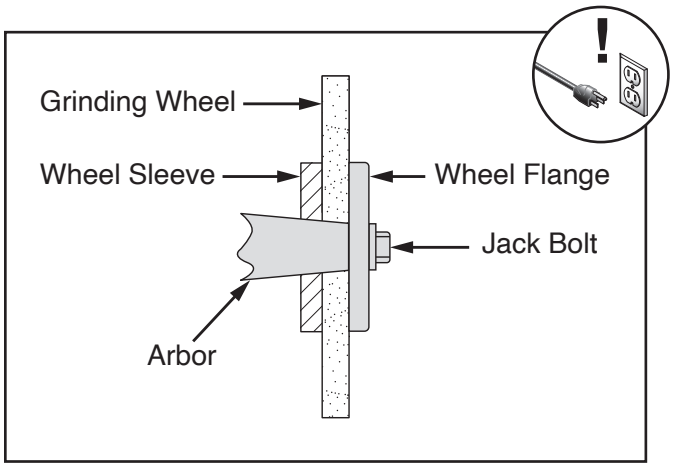


Figure 46. Jack bolt threaded into wheel assembly and arbor.

5. Leave jack bolt in place to protect threads of grinding wheel assembly.

   — If storing wheel, follow **Wheel Storage** instructions on **Page 40**.

Wheel Dressing

Superior grinding results can only be achieved with a properly balanced and dressed wheel. Do not assume that a wheel will run true on the spindle just because it is new, or if it has not been separated from the sleeve and flange.

IMPORTANT: Balance wheel as instructed on **Page 36** before dressing it.

Dressing the wheel correctly will save you from wasting grinding abrasive and shattering the dressing tool diamond. Additionally, with a properly balanced and dressed wheel you can rest assured that if you have finish problems, the grinding wheel is not the culprit.

Depending on the finish required, varying degrees of roughness can be obtained. For example: A fast dressing at a depth of 0.03mm will prepare a wheel surface for rough cuts; or a slow dressing with multiple light passes of the diamond at a depth of 0.01mm will prepare the same wheel for finish cuts.

Positioning is critical for the dressing tool so you will not shatter the diamond or have poor dressing results. For best results and safe use, the dressing tool must be positioned in the trailing zone of the wheel, as shown in **Figure 47**. If the tool is positioned on the leading side of the wheel, the diamond will be shattered or even grabbed by the wheel and drawn under the grinding wheel, causing severe damage or injury to the operator or bystanders.

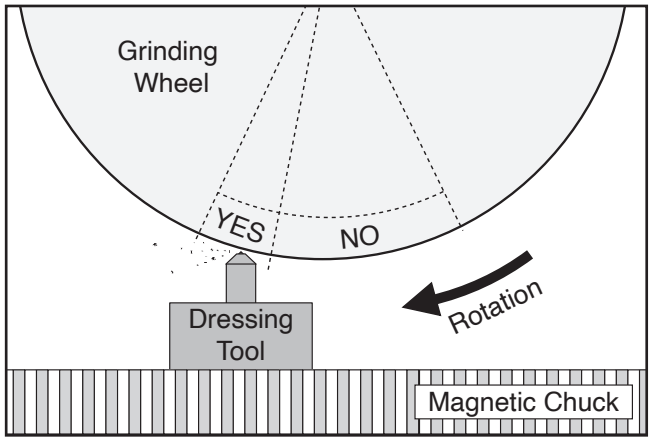


Figure 47. Wheel dressing setup.

Mounting Diamond Dressing Tool

Items Needed	Qty
Dressing Tool Base	1
Diamond Dressing Tool	1

To mount diamond dressing tool:

1. DISCONNECT MACHINE FROM POWER!
2. Place dressing tool base in center of magnetic chuck, then insert diamond dressing tool in base.
3. Activate magnetic chuck.

Storing Wheel

Grinding wheels can be easily damaged,so it is important to store them properly.

Store grinding wheels in a dry area that is not subject to extreme temperature changes or freezing. Some abrasive bonds may be adversely affected by excessive humidity, dampness, extreme temperature changes, or exposure to solvents.

Store the wheels on edge (vertically) in racks that provide a cushioned two-point cradle support to prevent rolling. Also, provide partitions that prevent the wheels from tipping over.

Store wheels in a location protected from falling objects that could cause damage to wheel.

Adjusting Limit Stops

The Model G3104/G3155 is equipped with (2) adjustable rubber limit stops and a limit block. These components work together to restrict the movement of the table along the X-axis. These components also provide additional safety by acting as a physical barrier to prevent the table from sliding off the ways (see **Figure 48**).

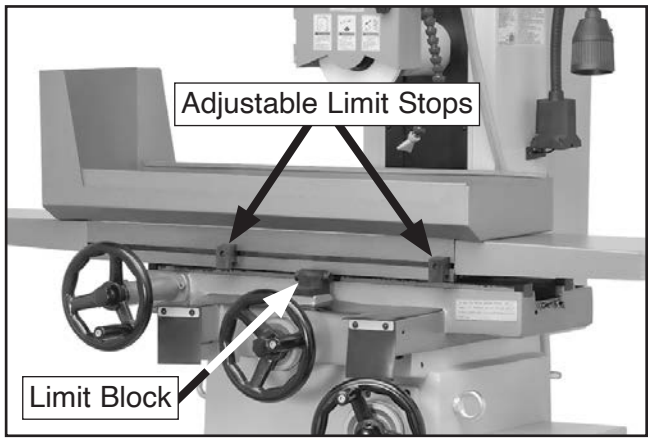


Figure 48. Limit stop identification.

Item Needed	Qty
Hex Wrench 5mm	1

To adjust limit stops:

1. Loosen cap screw on each limit stop (see **Figure 48**).
2. Move each limit stop to desired position.
3. Tighten cap screws until limit stops are snug.

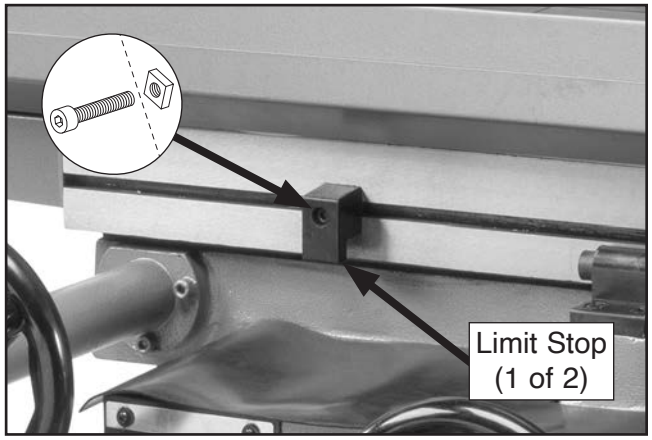


Figure 49. Location of limit stop fastener.

Using Magnetic Chuck

⚠WARNING

ALWAYS activate magnetic chuck before grinding. Failure to activate magnetic chuck will cause workpiece to be ejected from machine, potentially causing serious personal injury.

The Model G3104/G3155 is equipped with a dense magnetic chuck for mounting workpieces (see **Figure 50**). Ferrous workpieces can be mounted directly to magnetic chuck, while non-ferrous workpieces require a jig or vice that can be magnetically secured to chuck.

Item Needed	Qty
Magnetic Chuck Key	1

To use magnetic chuck:

1. DISCONNECT MACHINE FROM POWER!
2. Position workpiece in center of magnetic chuck.
3. Insert chuck key into chuck control and rotate clockwise to activate magnetic surface (see **Figure 50**).

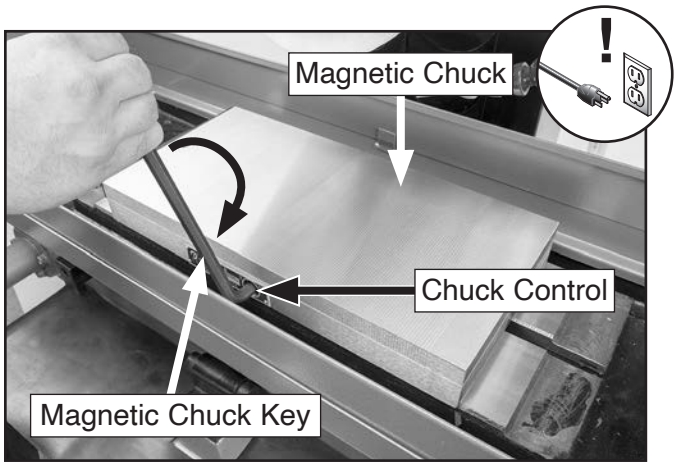


Figure 50. Activating magnetic chuck.

4. Gently rock workpiece to make sure it is secure.

Basic Grinding Operations

Grinding with a surface grinder is a delicate process that takes practice, skill, and knowledge. In addition to this, the method used for any one procedure will depend on a number of factors, including, but not limited to, the material being ground, the grinding wheel being used, the quality and calibration of measuring tools, and the finish that is desired.

For these reasons, specific techniques are not outlined in this manual. We recommend consulting books, metalworking experts, and other reliable resources for techniques pertaining to the specific tasks you wish to perform.

The information that follows serves as a general outline to help familiarize you with the basic grinding technique.

Using the Surface Grinder

Operation of the grinder is controlled by the movement of three handwheels. The elevation handwheel (Z-axis) controls up and down movement of the grinding head. It is this axis that governs the amount of stock removal. Never attempt to remove too much material in one pass. The best results are achieved with multiple light passes.

The longitudinal travel (X-axis) handwheel rapidly moves the table from left to right. This allows the operator to move the workpiece back and forth underneath the grinding wheel.

The cross travel handwheel (Y-axis) controls the front-to-back movement of the table and is only to be used between longitudinal passes to expose a new area of the workpiece to the grinding wheel. Slightly overlap passes to ensure complete coverage.

When grinding, sweep the table back and forth under the wheel in the longitudinal direction until no further sparks emerge from the workpiece. Turn Y-axis handwheel to expose a new portion of the workpiece to the wheel, then take another sweep in the longitudinal direction. Repeat until the entire surface is ground. See **Figure 51** for an illustration of this process.

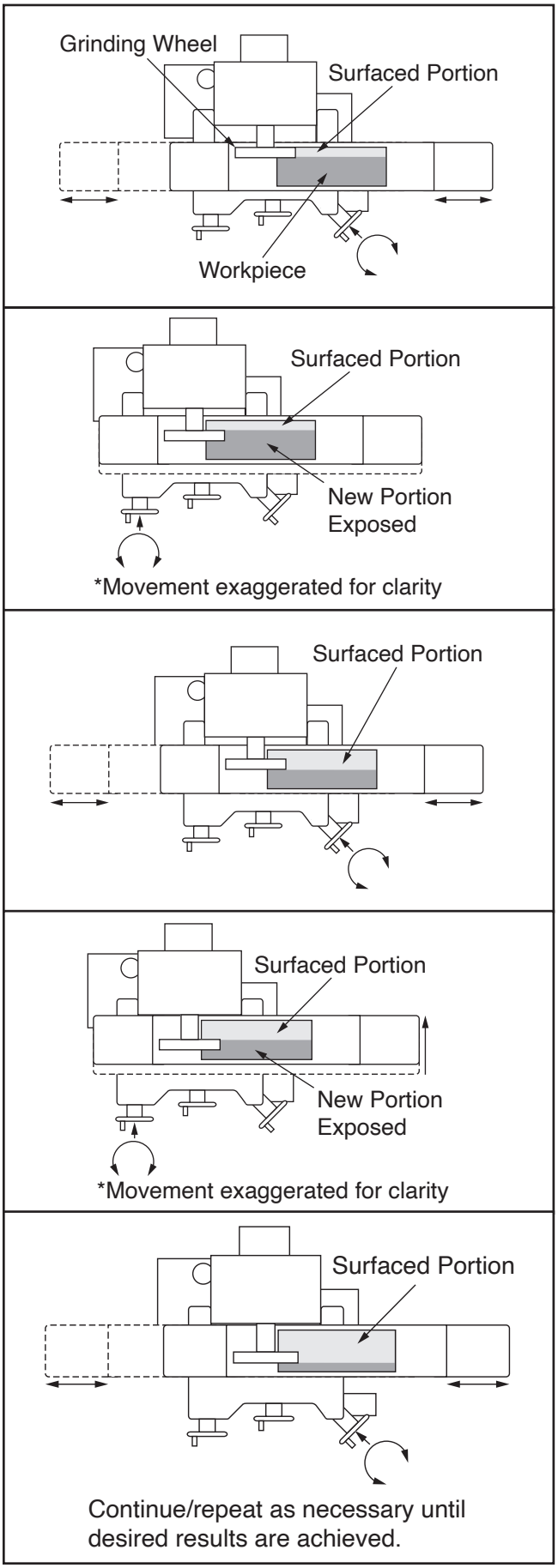


Figure 51. Grinding process illustrated.

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.

SB1365—South Bend Lathe Way Oil, 12 Oz.
T23962—ISO 68 Moly-D Machine/Way Oil 5 Gal.
T23963—ISO 32 Moly-D Machine Oil 5 Gal.

Moly-D oils are some of the best we've found for maintaining the critical components of machinery because they tend to resist run-off and maintain their lubricity under a variety of conditions—as well as reduce chatter or slip. Buy in bulk and save with 5-gallon quantities.

Figure 52. SB1365 way oil and T23963 machine oil.

Aluminum Oxide Grinding Wheels

Model	Size	Bore	Grit	Type
G7433	7" x ½"	1¼"	46	1
G7434	7" x ½"	1¼"	60	1

T26419—Syn-O-Gen Synthetic Grease (NLGI#2 Equivalent)

Syn-O-Gen 777 Synthetic Grease is a 100% pure synthetic grease for a wide-range of multi-purpose applications.

Figure 53. T26419 Syn-O-Gen 777 Synthetic Grease.

H2683—Master Machinist's Level

This level can be used for setting up surface grinders, lathes, milling machines and other fine machinery. It measures .0005" (half a thousandth of an inch) within a 10" span.

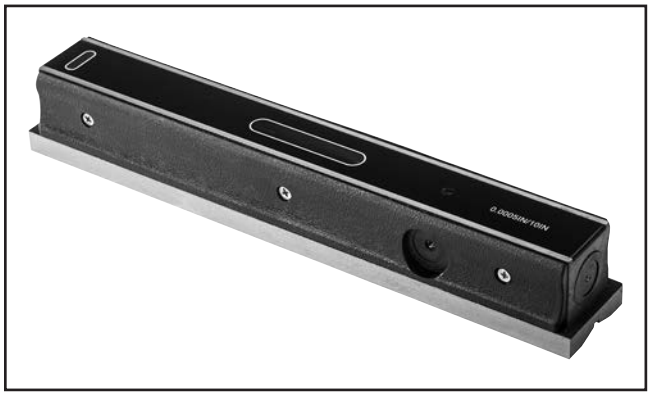


Figure 54. H2683 Master Machinist's Level.

T24799—iGAGING 1-2-3 Block Set
The six-sided T24799 iGAGING 1-2-3 Block Set is useful for machining, indexing, and inspection jobs, as well as anchoring elevated workpieces. Five 3/8"-16 TPI tapped holes and eighteen plain holes are provided for clamping operations.

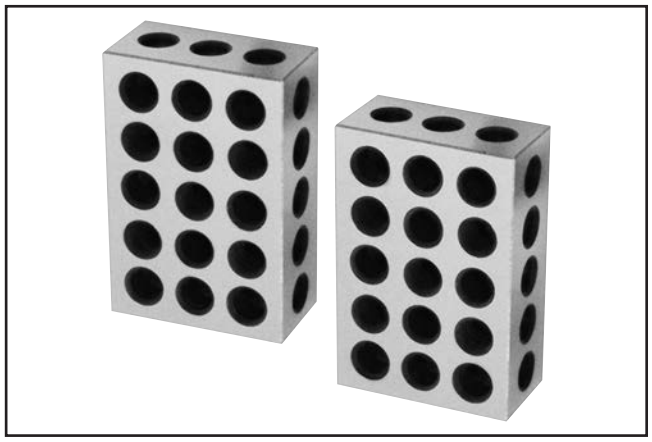


Figure 55. T24799 iGAGING 1-2-3 Block Set.

T10077—Pair of Small Angle Plates 2" x 2" x 2"
Ideal for making jigs and fixtures on your milling machine, these precision made 90° Angle Plates measure 2" x 2" x 2". Plate thickness is a full 1/2" and a cast center gusset adds additional strength.

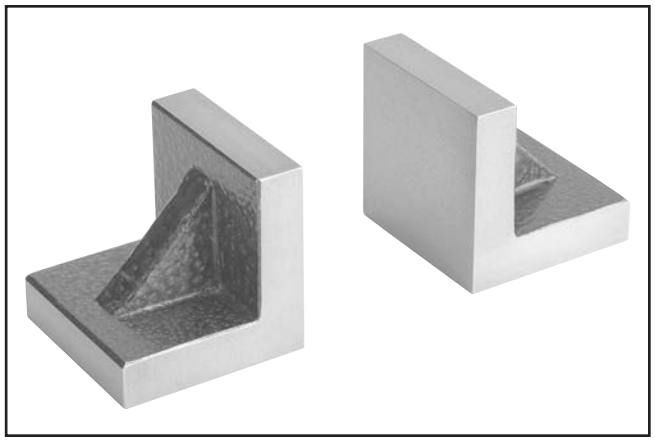


Figure 56. T10077 Pair of Small Angle Plates.

H5620—Combo V-Block & Parallel Set
This Combination V-Block and Parallel Set is engineered to distribute the magnetic power of your chuck to make sure your part stays put. V-blocks have 2" and 1/2" round capacity and measure 2 3/8" x 2" x 2". Parallels measure 1" x 2" x 4".

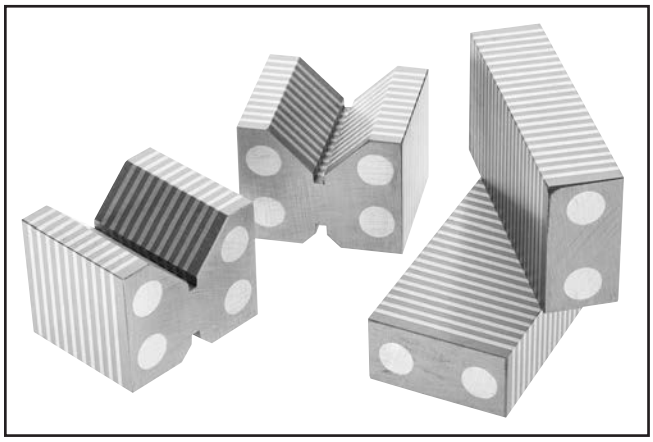
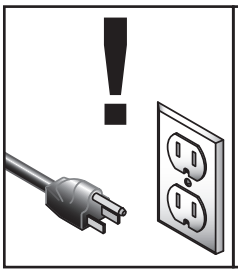


Figure 57. H5620 Combo V-Block & Parallel Set.

H9240—Water Soluble Machining Oil
Rustlick water soluble machining oil contains effective chlorinated E.P. additive to provide excellent tool life. Guaranteed to protect neoprene seals. Great for general purpose or heavy duty applications. Can be used on all metals except titanium.

Figure 58. H9240 Rustlick Machining Oil.

SECTION 6: MAINTENANCE



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

Schedule

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

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

- Loose mounting bolts.
- Damaged or cracked grinding wheel (**Page 35**).
- Worn or damaged wires.
- Any other unsafe condition.

Daily
- Use/fill one-shot oiler (**Page 46**).
- Check/fill coolant tank (**Page 47**).
- Clean and protect machine.

Monthly
- Drain oil pan (**Page 46**).
- Lubricate ball bearing strips (**Page 46**).

Quarterly
- Clean coolant tank and replace coolant (**Page 48**).

Cleaning & Protecting

Typically, the easiest way to clean swarf from the table is to use a wet/dry shop vacuum that is dedicated for this purpose only. The small chips left over after vacuuming can be wiped up with a slightly oiled rag. Avoid using compressed air to blow off chips, as it may drive them deeper into moving surfaces, and could cause sharp chips to fly into your face or hands.

The magnetic chuck and the unpainted table surface underneath the chuck should be wiped down daily to keep them rust-free and in top condition. Then apply a thin film of ISO 32 oil to provide rust protection.

Lubrication

The surface grinder has numerous moving metal-to-metal contacts that require regular and proper lubrication to ensure efficient and long-lasting operation.

Use the information below as a daily guide for lubrication tasks.

Other than the lubrication points covered in this section, all other bearings are internally lubricated and sealed at the factory. Simply leave them alone unless they need to be replaced.

DISCONNECT MACHINE FROM POWER before performing any lubrication task!

IMPORTANT: Before adding lubricant, clean all debris and grime from part and nearby area to prevent contamination of new lubricant.

NOTICE

The recommended lubrication schedule is based on light-medium usage. Keeping in mind that lubrication helps to protect the value and operation of the machine, these lubrication tasks may need to be performed more frequently depending on usage.

One-Shot Oiler

Oil Type ..... Model T26419 or ISO 32 Equivalent
Oil Amount..... 6 Pumps
Lubrication Frequency .....4 Hrs. of Operation

The one-shot oiler is connected to a series of tubes that carry the lubricant to the vertical leadscrew, cross feed ways, and cross feed leadscrew.

To use the one-shot oiler, pull the pump handle down. Move the grinding head up and down a few times along the full Z-axis path to distribute oil on the leadscrew. Repeat with the Y-axis handwheel.

Use the sight glass (see **Figure 59**) to check the oil level and fill when needed.

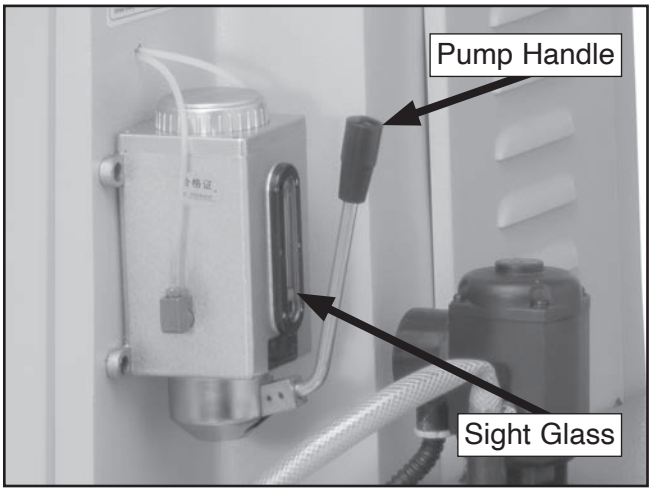


Figure 59. One-shot oiler.

Oil Pan

Excess oil exits tubes in the rear, draining into an oil pan. Check and drain the oil pan at least once a month to avoid overflow.

To access the oil pan, remove the lower rear panel from the machine column (see **Figure 60**).

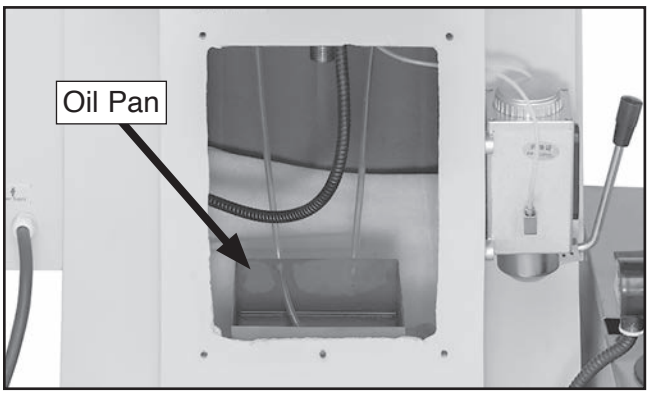


Figure 60. Location of oil pan.

Wipe up any spilled oil from the machine and floor before continuing operation.

⚠CAUTION

Spilled oil left on the floor can become a slipping hazard. Always clean up spilled oil promptly.

Table Ball Bearing Strips

Grease Type .....T23964 or NLGI#2 Equivalent
Amount ..... As Needed
Lubrication Frequency .....Monthly

To lubricate table ball bearing strips:

1. DISCONNECT MACHINE FROM POWER!

2. Perform **Steps 4–6** of **Assembly** on **Page 27** to expose ball bearing strips.

3. Carefully remove ball bearing strips from saddle ways (see **Figure 61**).

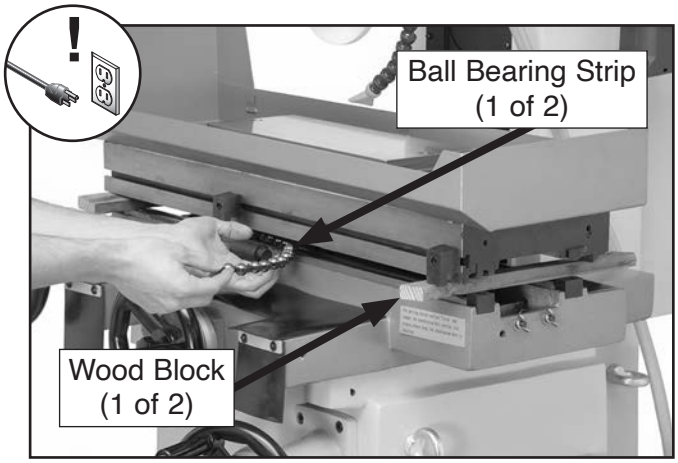


Figure 61. Table ball bearing strips being removed.

4. Use mineral spirits, stiff brush, and shop rags to clean old grease and grime from strips and table ways.

5. Wipe ball bearing strips dry, then apply a light coat of NLGI#2 lubricant.

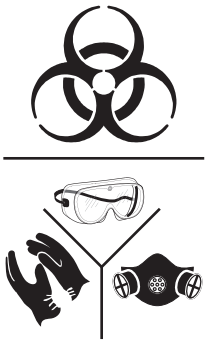
6. Perform **Steps 9–13** of **Assembly** on **Page 27** to install table, then move table back and forth several times to distribute lubricant.

Coolant System

Hazards

As some coolant ages, dangerous microbes can proliferate and create a biological hazard. The risk of exposure to this hazard can be greatly reduced by replacing the old coolant on a regular basis, as indicated in the maintenance schedule.

The important thing to keep in mind when working with the coolant is to minimize exposure to your skin, eyes, and respiratory system by wearing the proper PPE (personal protective equipment), such as splash-resistant safety glasses, long-sleeve gloves, protective clothing, and a NIOSH approved respirator.



⚠WARNING

BIOLOGICAL & POISON HAZARD!

Use the correct personal protection equipment when handling coolant. Follow federal, state, and fluid manufacturer requirements for proper disposal.

A small amount of coolant is lost during normal operation. Check the coolant tank regularly and fill if necessary. We recommend changing the coolant every three months or sooner if it develops an unpleasant odor. However, be sure to follow the coolant manufacturer's instructions when checking, adding, or changing coolant.

Coolant Type ..... H9240 or Water-Soluble Equiv.
Coolant Amount.....9.17 Gallons
Check/Add Frequency ..... 3 Months

NOTICE

Running the coolant pump without adequate coolant in the tank may permanently damage the coolant pump, which will not be covered by the warranty.

Checking/Adding Coolant

Items Needed	Qty
Goggles	1 Per Person
Gloves	1 Per Person
Respirator	1 Per Person
New Coolant	As Needed
Disposable Shop Rags	As Needed

Lift the coolant tank lid shown in **Figure 62** to check the coolant level. If necessary, add coolant until the level is a couple of inches from the top of the tank.

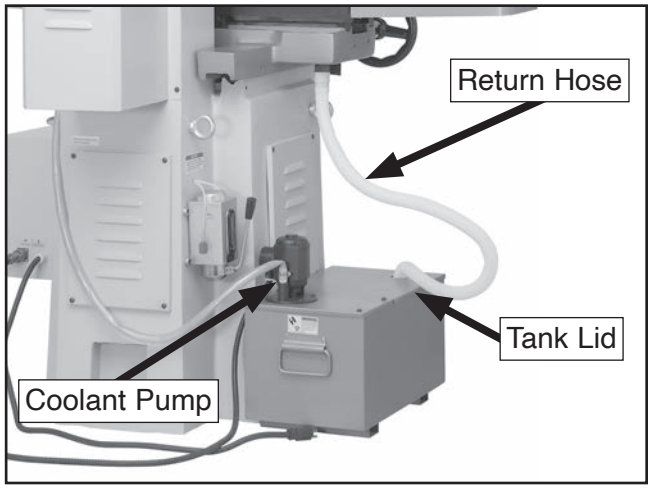


Figure 62. Coolant tank components.

Changing Coolant

Items Needed	Qty
Goggles	1 Per Person
Gloves	1 Per Person
Respirator	1 Per Person
New Coolant	As Needed
Disposable Shop Rags	As Needed
5 Gallon Buckets w/Lids	2
Hex Wrench 5mm	1
New Coolant	Approx. 9 Gallons

NOTICE

Use a high-quality, water-soluble oil coolant that is non-flammable. Generally, synthetics last longer.

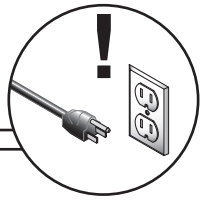
To change coolant:

1. DISCONNECT MACHINE FROM POWER!
2. Remove return hose and lid from tank.
3. Empty tank contents into buckets and dispose of fluid following federal, state, and fluid manufacturer's requirements.
4. Thoroughly clean tank and pump with hot soapy water.
5. When dry, fill tank with approximately 9 gallons of coolant.
6. Install lid and return hose.

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.*

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. Blown fuse. 3. Incorrect power supply voltage or circuit size. 4. Plug/receptacle at fault/wired incorrectly. 5. Power supply circuit breaker tripped or fuse blown. 6. Motor wires connected incorrectly. 7. Contactor not energized/at fault. 8. Wiring broken, disconnected, or corroded. 9. Motor or motor bearings at fault.	1. Turn master power switch to ON position. 2. Replace fuse/ensure no shorts. 3. Ensure correct power supply voltage and circuit size. 4. Test for good contacts; correct the wiring. 5. Ensure circuit is free of shorts. Reset circuit breaker or replace fuse. 6. Correct motor wiring connections. 7. Test all legs for power; replace if necessary. 8. Fix broken wires or disconnected/corroded connections. 9. Replace motor.
Motor stalls or is underpowered.	1. Motor is being overloaded. 2. Motor wires connected incorrectly. 3. Plug/receptacle at fault/wired incorrectly. 4. Machine undersized for task. 5. Motor overheated. 6. Extension cord too long. 7. Motor or motor bearings at fault.	1. Reduce depth of cut. 2. Correct motor wiring connections. 3. Test for good contacts/correct wiring. 4. Use new grinding/buffing wheel; reduce feed rate. 5. Clean motor, let cool, and reduce workload. 6. Move machine closer to power supply; use shorter extension cord. 7. Replace motor.
Machine has vibration or noisy operation.	1. Motor or component loose. 2. Feet not adjusted properly. 3. Grinding wheel at fault/arbor hole not round. 4. Spindle loose, improperly installed or damaged. 5. Motor fan rubbing on fan cover. 6. Spindle bearings at fault. 7. Centrifugal switch needs adjustment/at fault (G3104 only). 8. Motor shaft bent. 9. Motor bearings at fault.	1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Adjust stand feet to stabilize machine. 3. Inspect, ring test, balance, dress, or replace grinding wheel (**Page 35**). 4. Tighten loose spindle, re-install spindle ensuring mating surfaces are clean, replace spindle if damaged. 5. Fix/replace fan cover; replace loose/damaged fan. 6. Test by rotating spindle; rotational grinding/loose shaft requires bearing replacement. 7. Adjust/replace if at fault. 8. Test with dial indicator and replace motor. 9. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.
Machine operates in reverse (G3155 only).	1. Power connections wired out of phase.	1. Correct phase polarity (**Page 29**).

Operation

Symptom	Possible Cause	Possible Solution
Work light does not illuminate.	1. Power will not turn ON. 2. Bulb burned out. 3. Wiring broken, disconnected, corroded. 4. ON/OFF switch at fault.	1. Use ON/OFF switch to turn lamp ON. 2. Replace bulb. 3. Fix broken wires or disconnected/corroded connections. 4. Test/replace switch.
Vibration when grinding, poor surface finish, or incorrect final dimensions.	1. Grinding wheel is out-of-round, loaded up with material, or damaged. 2. Missing or torn grinding wheel blotters. 3. Incorrect grinding wheel hardness or grit rating. 4. Improperly installed magnetic chuck. 5. Workpiece is loose. 6. Loose machine component. 7. Ways/ball bearing strips need lubrication. 8. Grinding wheel has varying densities, or is of poor quality. 9. Coolant is incorrect or incorrectly mixed. 10. Motor or motor bearings at fault.	1. Inspect, ring test, balance, dress, or replace grinding wheel (**Page 35**). 2. Remove and replace blotters. 3. Match wheel grade and grit rating with workpiece hardness. 4. Stone table and chuck surfaces, and remove all burrs and foreign material from mating surfaces, and reinstall the chuck. 5. Replace or repair chuck for poor holding power. 6. Inspect all machine connections, and tighten any loose fasteners. 7. Lubricate ways/ball bearing strips (**Page 46**). 8. Replace grinding wheel with acceptable brand. 9. Refer to coolant manufacturer's workpiece verses coolant type recommendations and correct coolant. 10. Replace motor or replace bearings.
Wheel dulls quickly, grit falls off.	1. Depth of cut is too great. 2. Improper grinding wheel for task. 3. Bad wheel dress. 4. Defective wheel bonding.	1. Reduce depth of cut; take multiple light passes. 2. Use correct grinding wheel for task (**Page 33**). 3. Dress grinding wheel (**Page 40**). 4. Consult manufacturer of grinding wheel.
Lack of power at spindle.	1. Incorrect power supply voltage.	1. Ensure power supply meets correct circuit requirements (**Pages 13–19**).
Table hard to move.	1. Debris loaded up on ways. 2. Ways and leadscrew need lubrication. 3. Table limit stops interfering. 4. X-/Y-axis leadscrews binding.	1. Frequently clean ways during operations. 2. Lubricate ways and leadscrews (**Page 46**). 3. Adjust table limit stops out of the way (**Page 41**). 4. Clean and lubricate leadscrews.
Saddle hard to move.	1. Debris loaded up on ways. 2. Ways and leadscrews need lubrication. 3. Y-axis leadscrew binding.	1. Frequently clean ways during operations. 2. Lubricate ways and leadscrews (**Page 46**). 3. Clean and lubricate leadscrew.
Headstock hard to move.	1. Ways and leadscrews need lubrication. 2. Z-axis leadscrew binding.	1. Lubricate ways and leadscrews (**Page 46**). 2. Clean and lubricate leadscrew.

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.

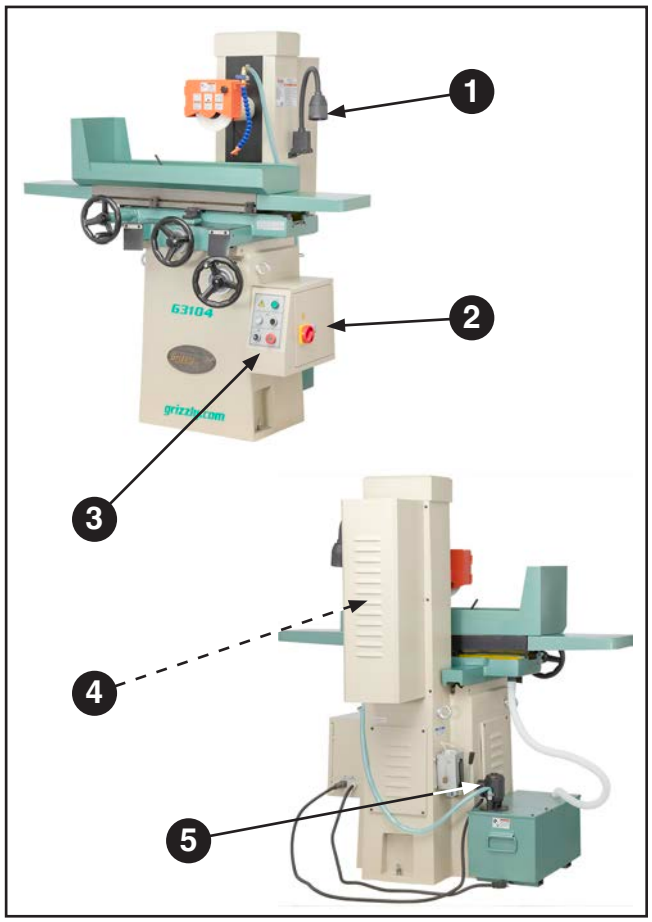
NOTICE

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		

G3104 Wiring Overview



1	Work Lamp
2	Electrical Cabinet
3	Control Panel
4	Motor
5	Coolant Pump

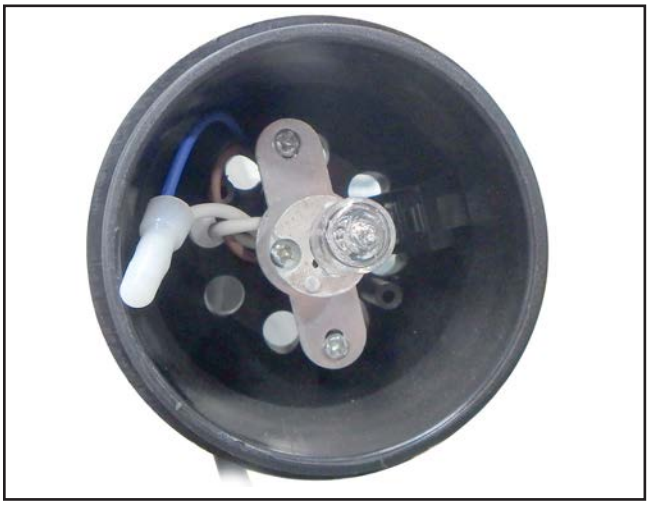
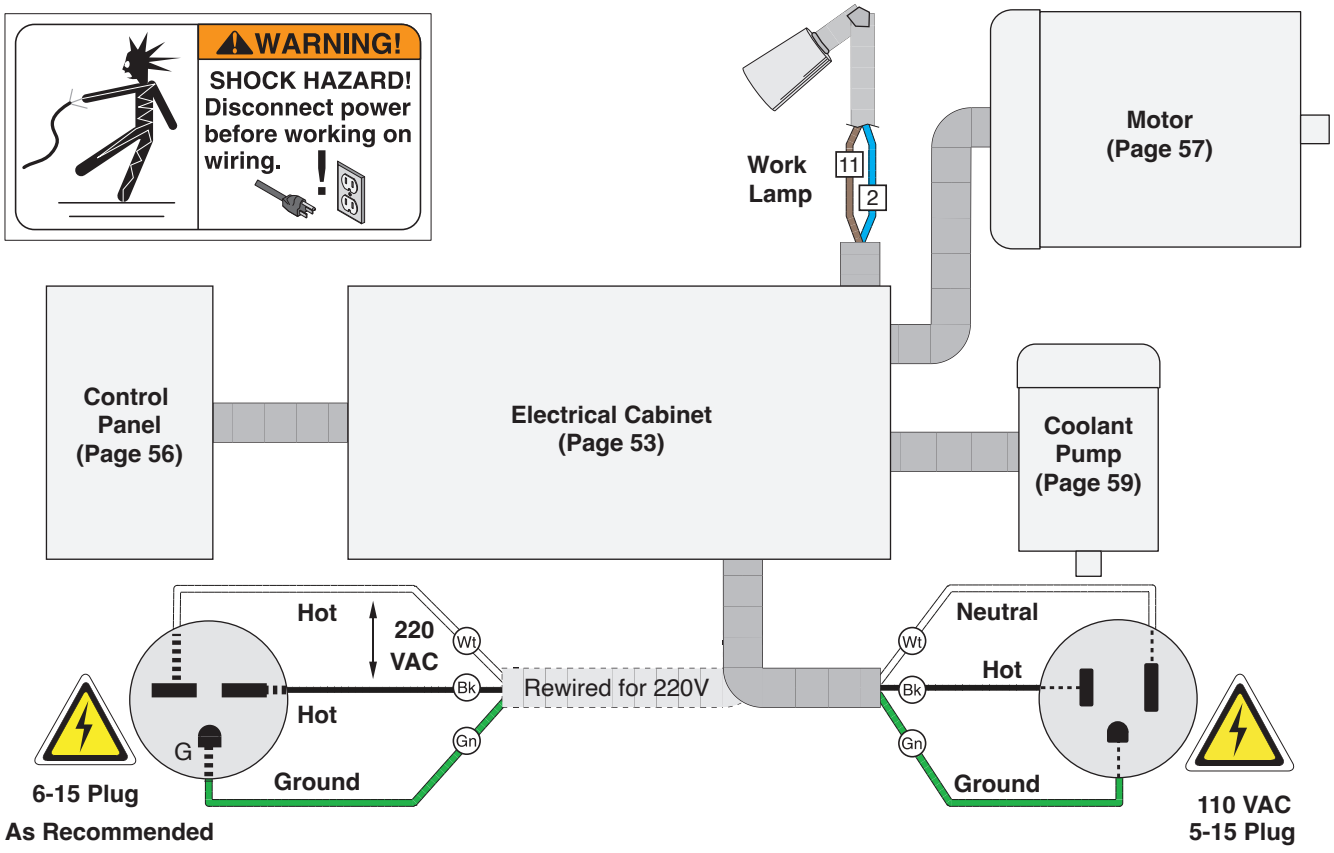
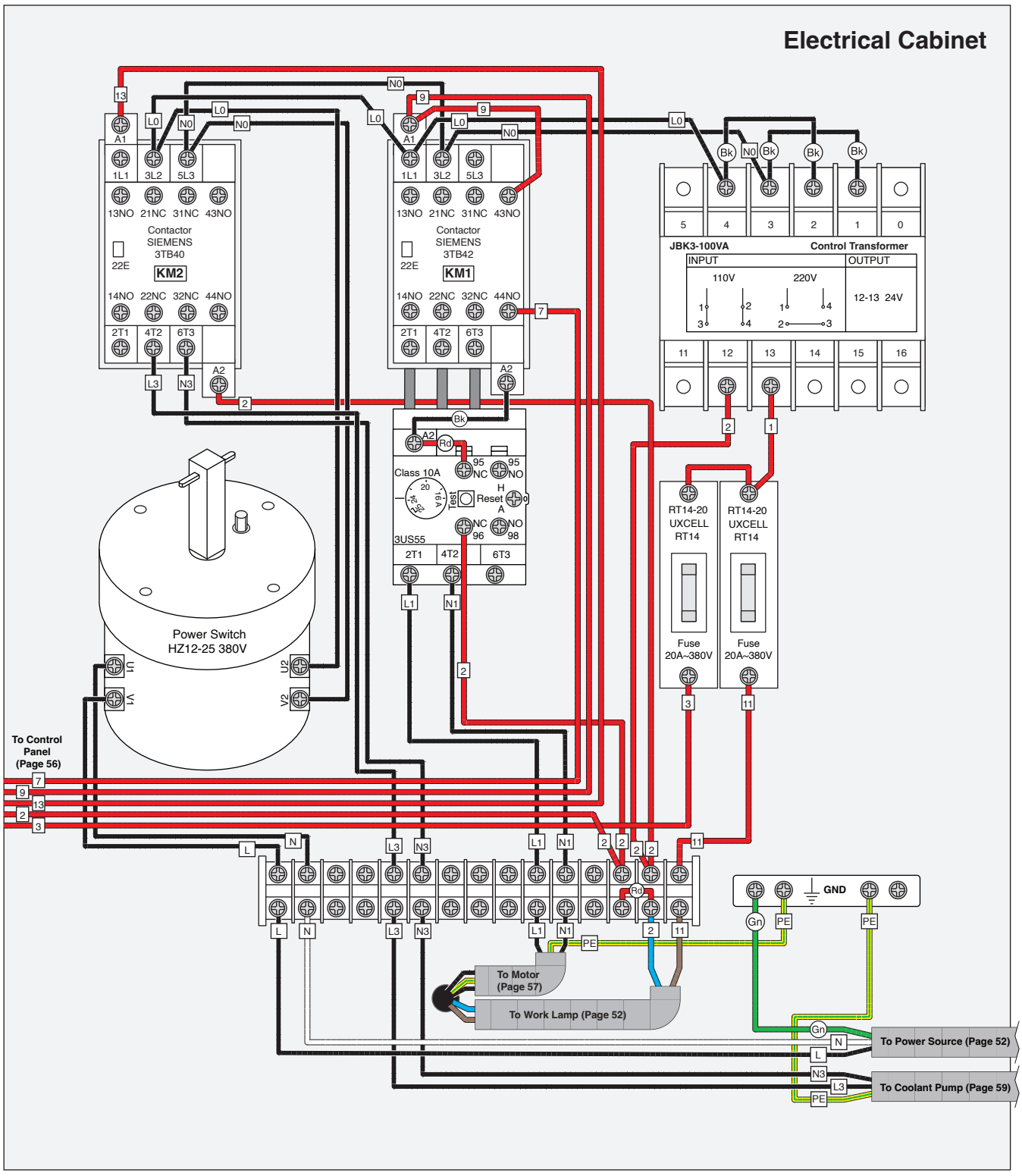


Figure 63. Work Lamp Wiring.



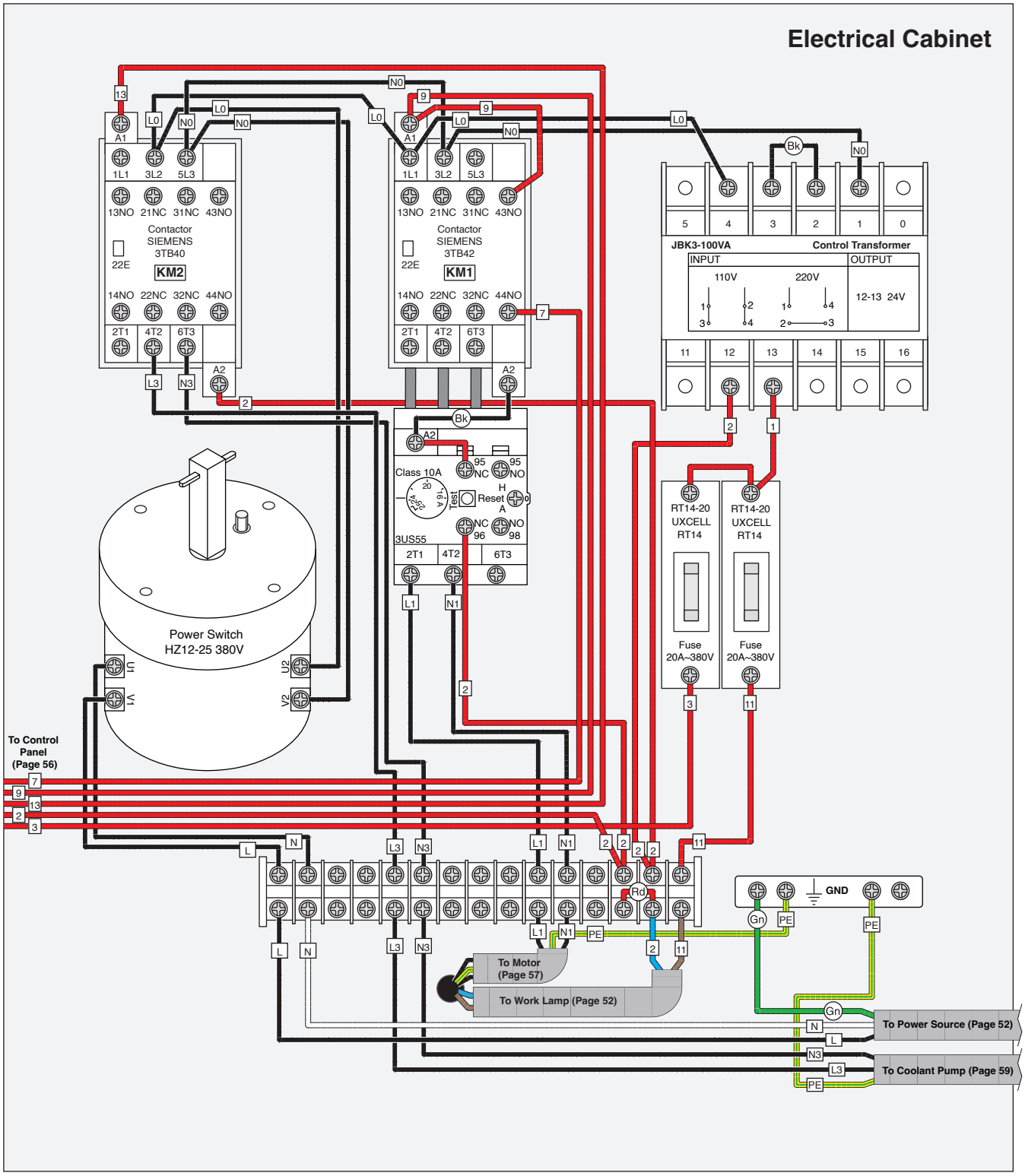
STOP ***READ ELECTRICAL SAFETY ON PAGE 51!***

G3104 Wiring Diagram 110V



STOP READ ELECTRICAL SAFETY ON PAGE 51!

G3104 Wiring Diagram 220V



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G3104 Electrical Cabinet

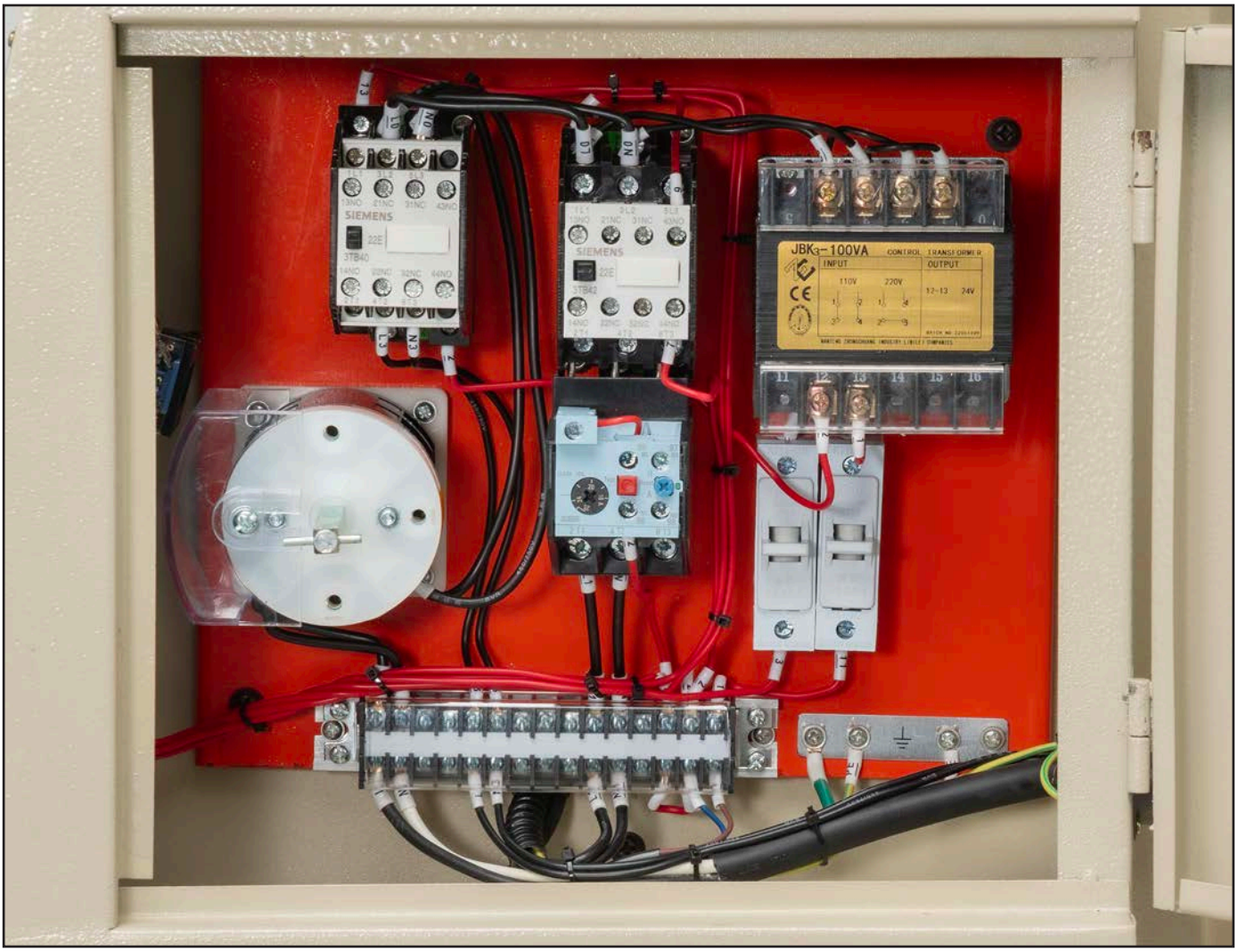
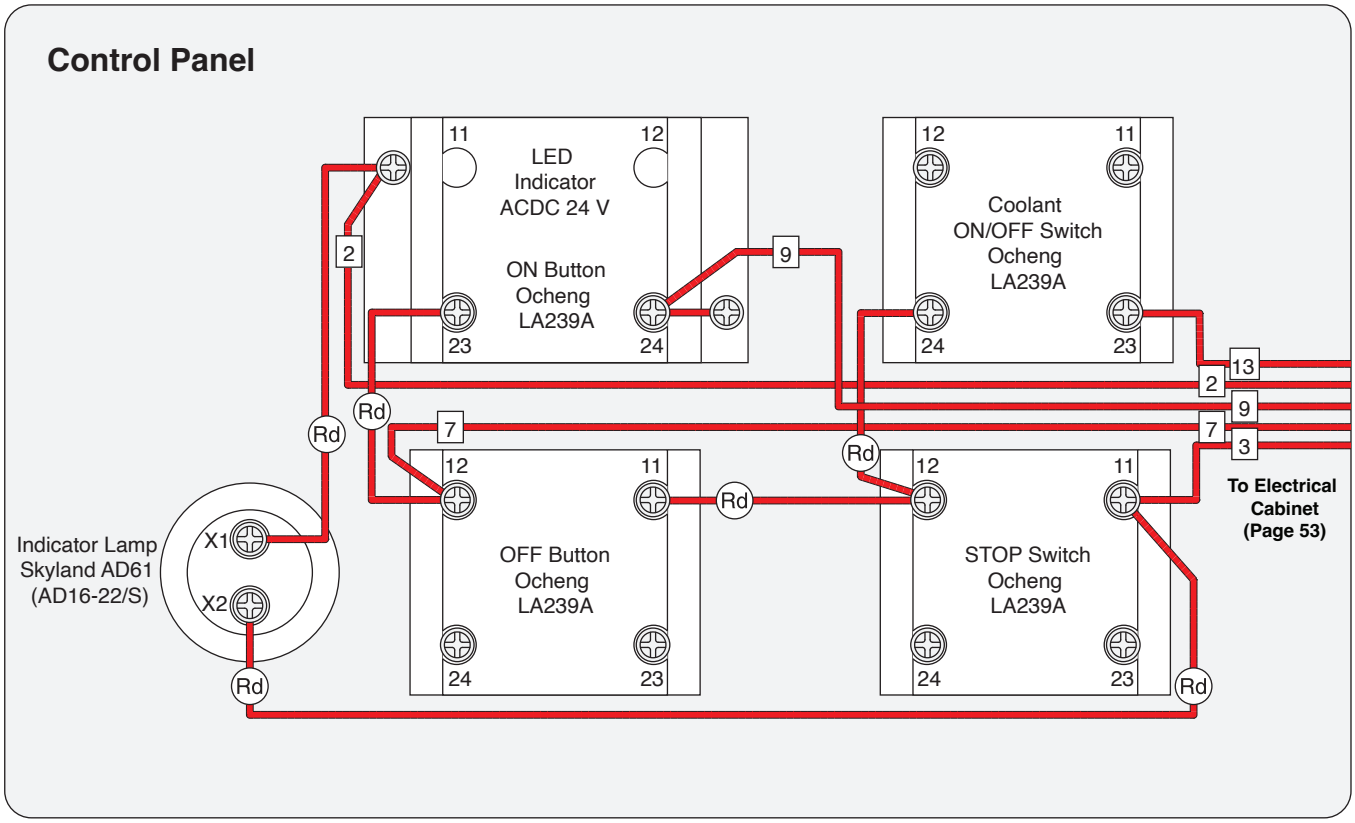


Figure 64. G3104 electrical cabinet wired for 110V.

G3104 Control Panel Wiring Diagram



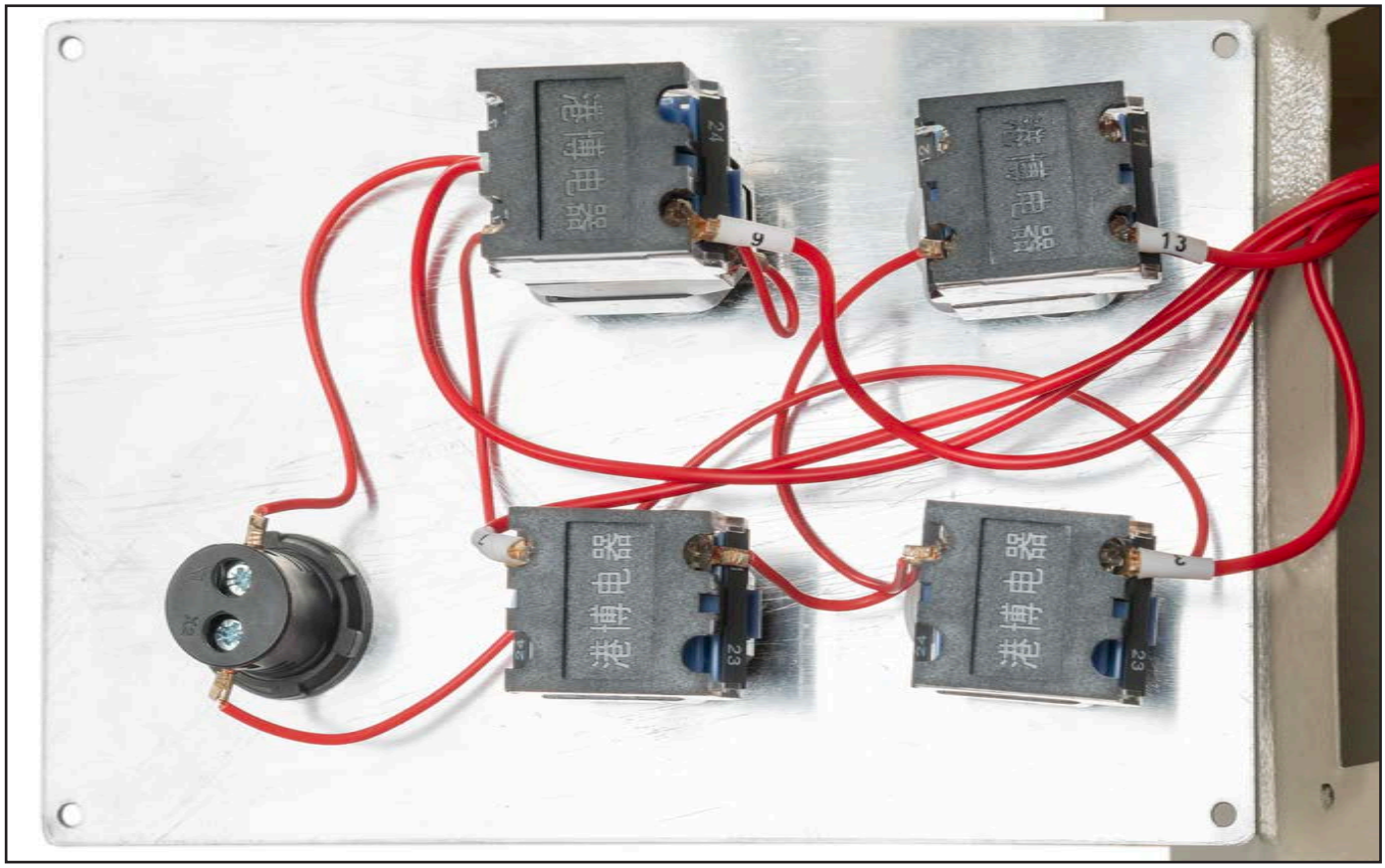
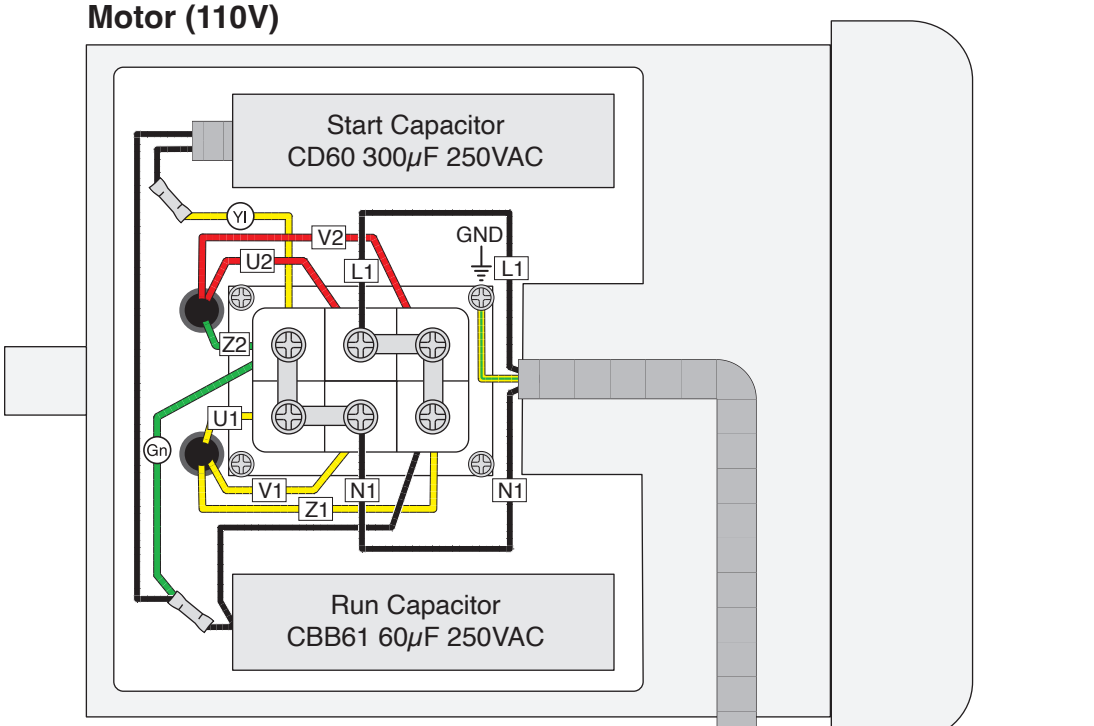


Figure 65. G3104 control panel wiring.

STOP *READ ELECTRICAL SAFETY ON PAGE 51!*

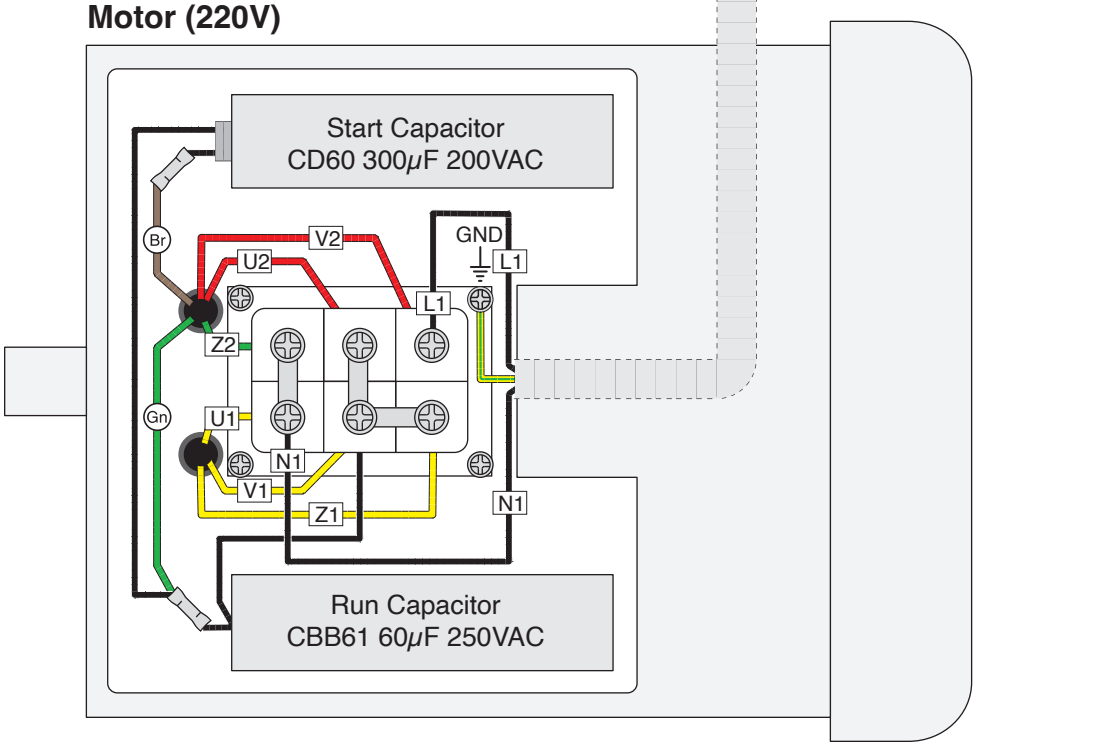
G3104 Motor Wiring Diagram

Motor (110V)



To Electrical Cabinet (Page 53)

Motor (220V)



G3104 Motor

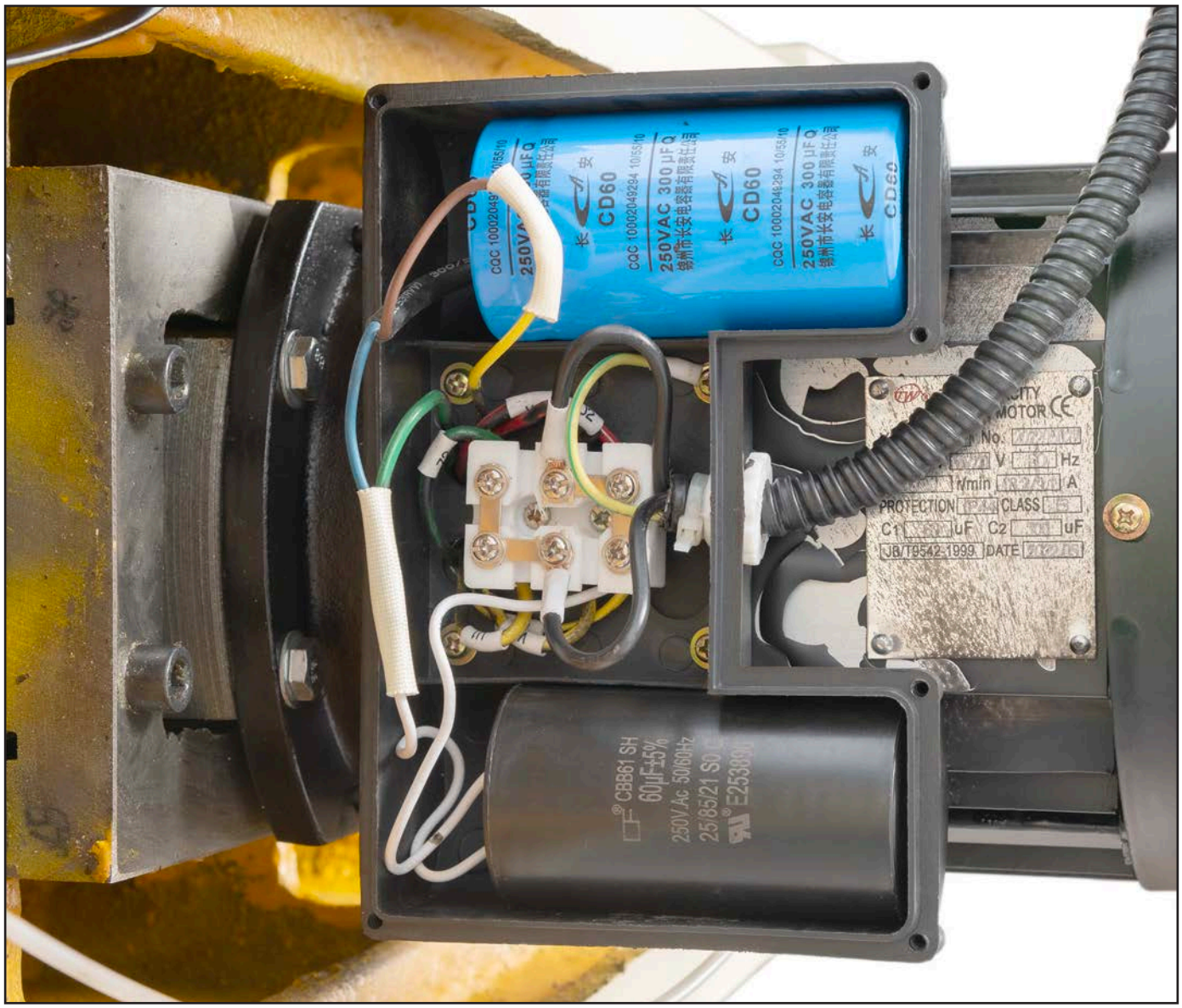
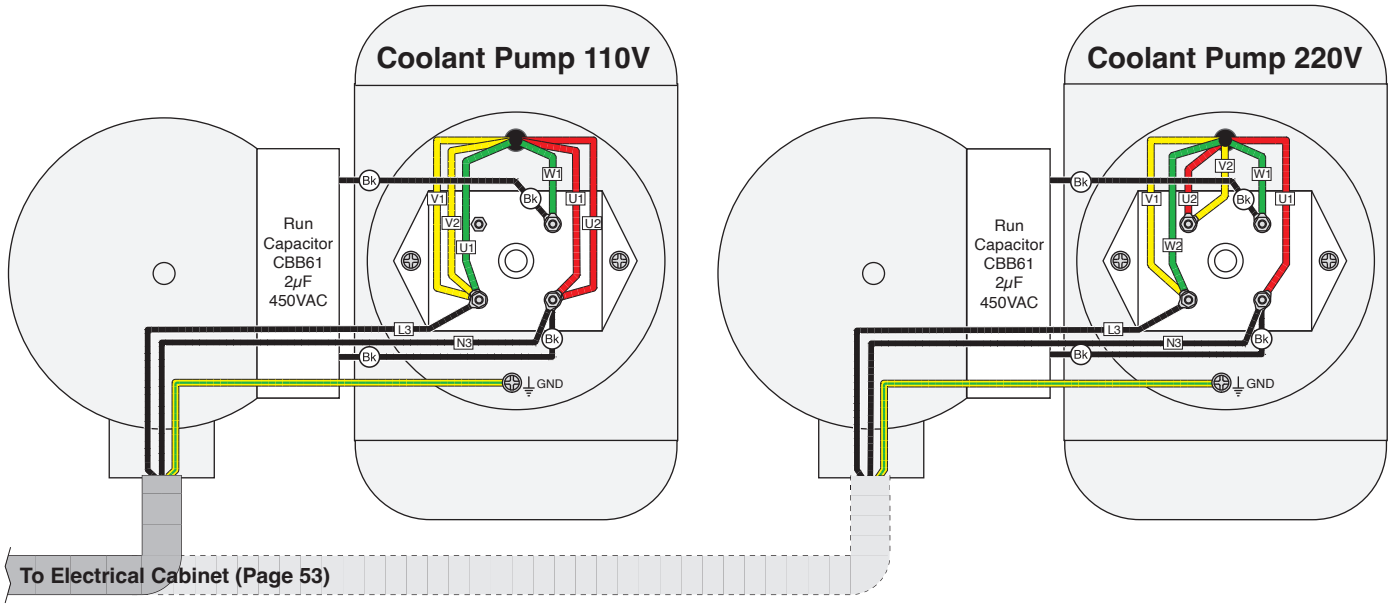


Figure 66. G3104 motor wired for 110V.

G3104 Coolant Pump Wiring Diagram



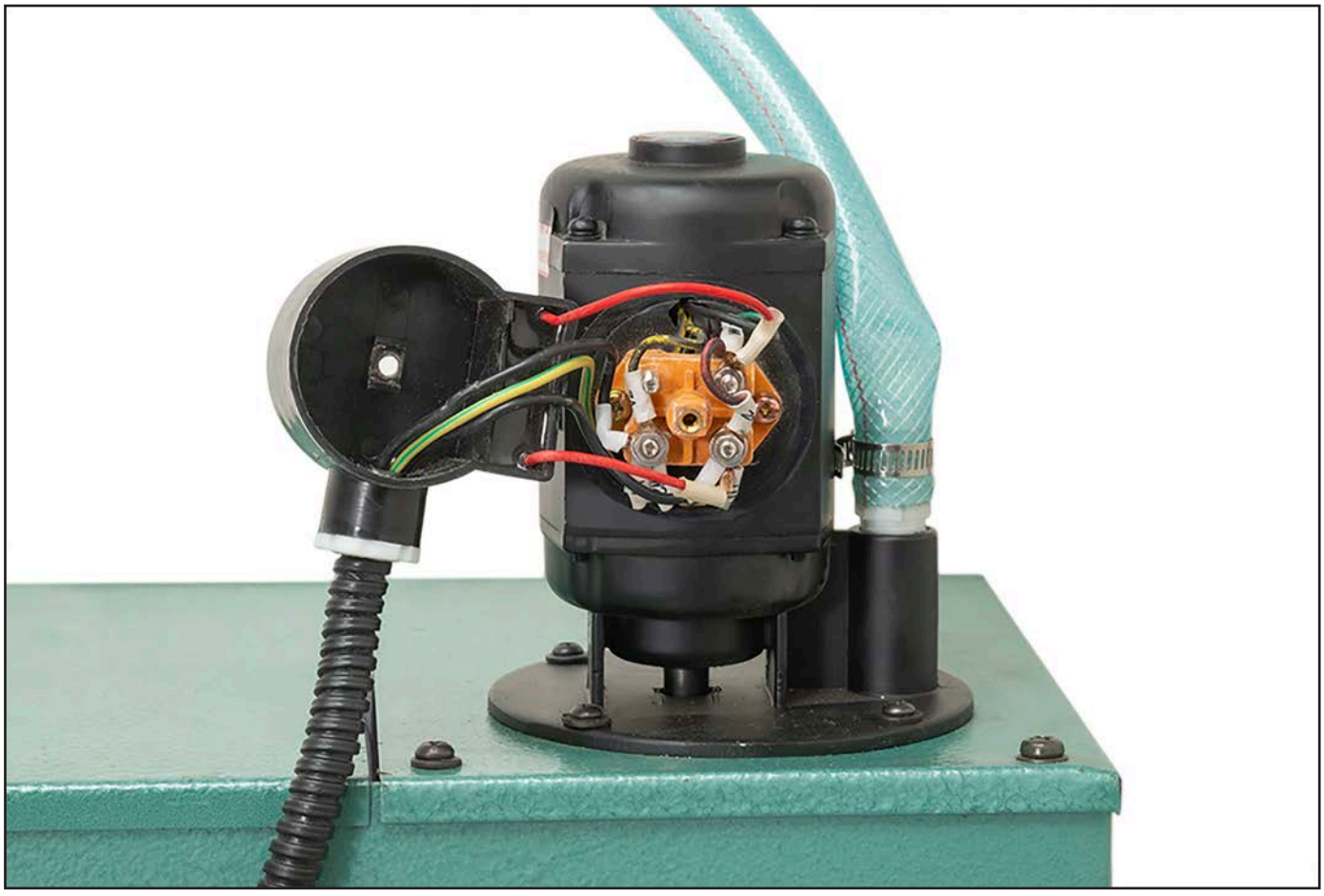
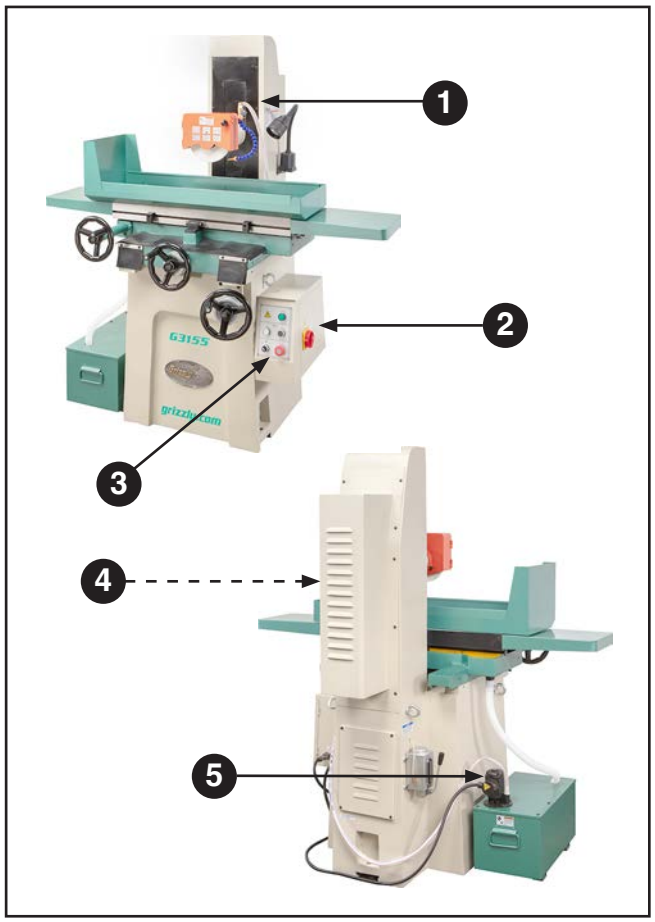


Figure 67. G3104 coolant pump wired for 110V.

G3155 Wiring Overview



1	Work Lamp
2	Electrical Cabinet
3	Control Panel
4	Motor
5	Coolant Pump

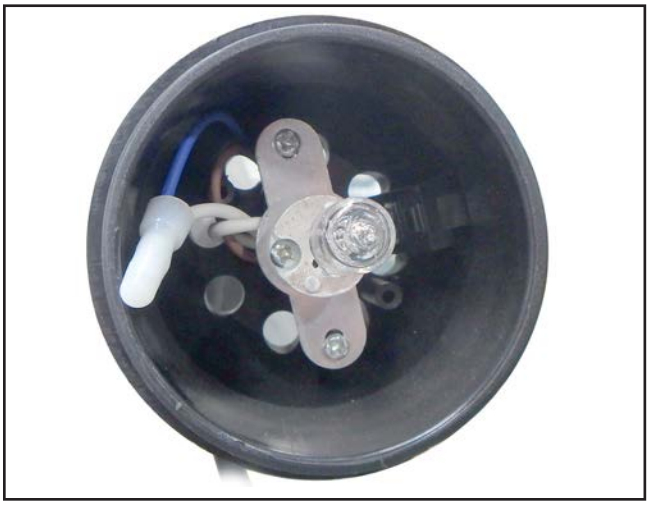
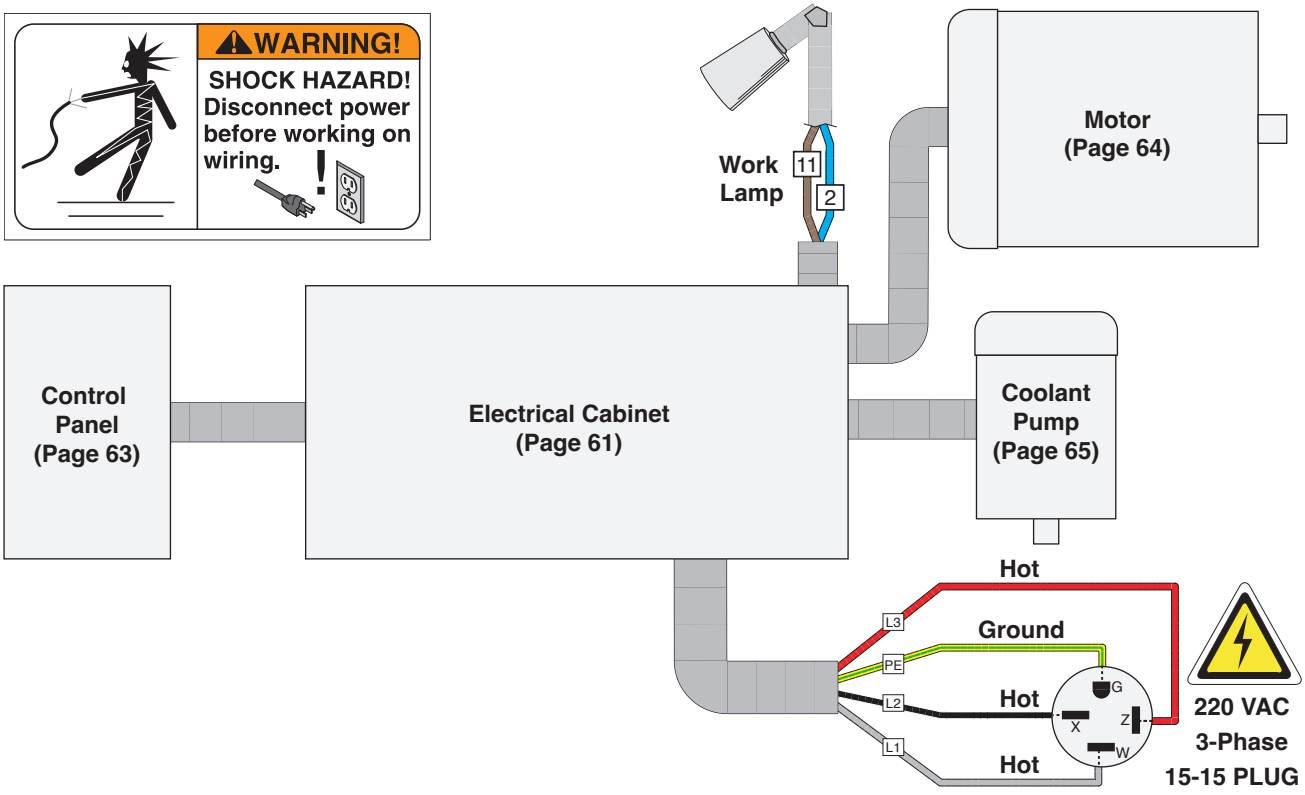


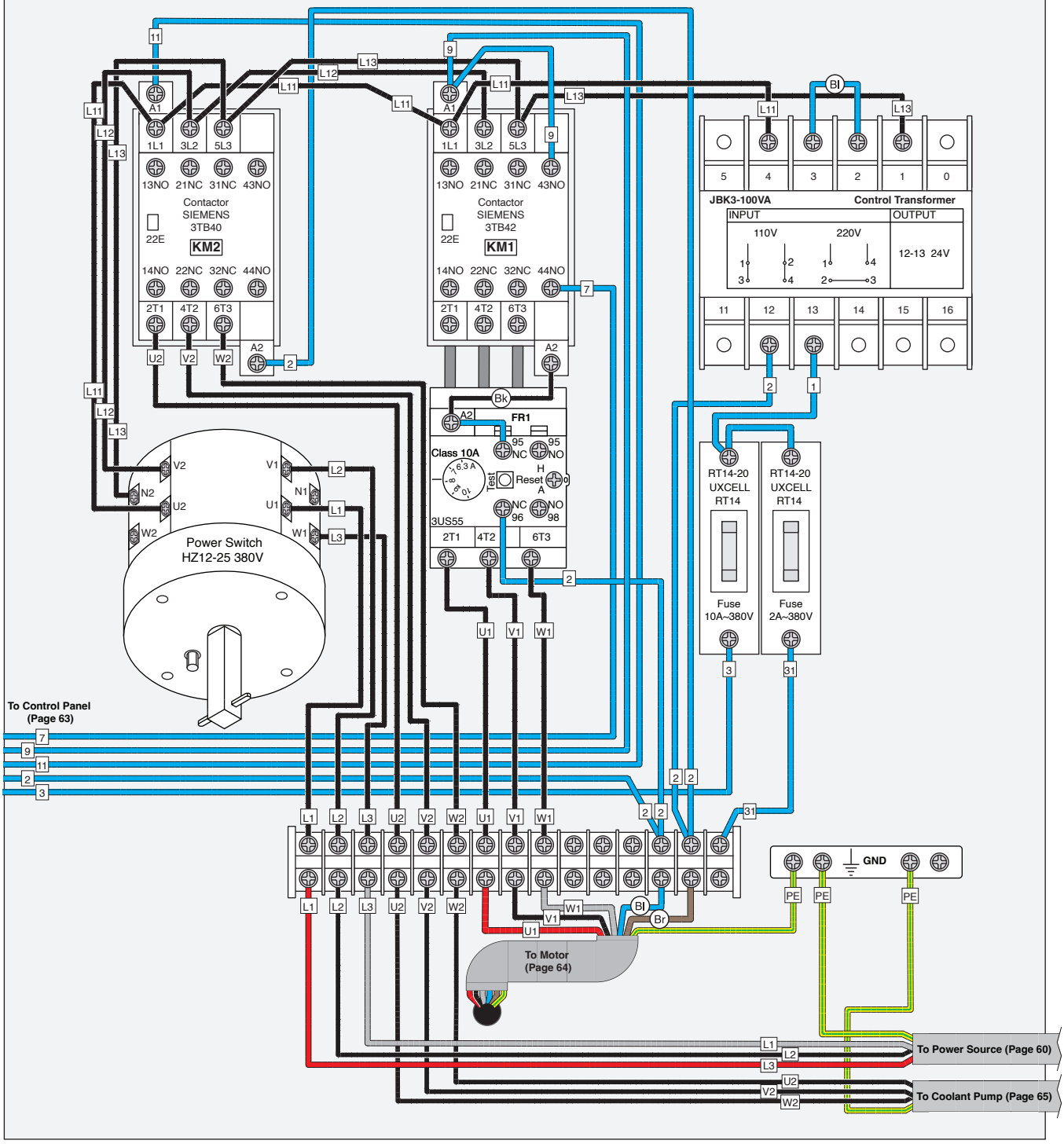
Figure 68. Work lamp wiring.



STOP ***READ ELECTRICAL SAFETY ON PAGE 51!***

G3155 Wiring Diagram

Electrical Cabinet



G3155 Electrical Cabinet

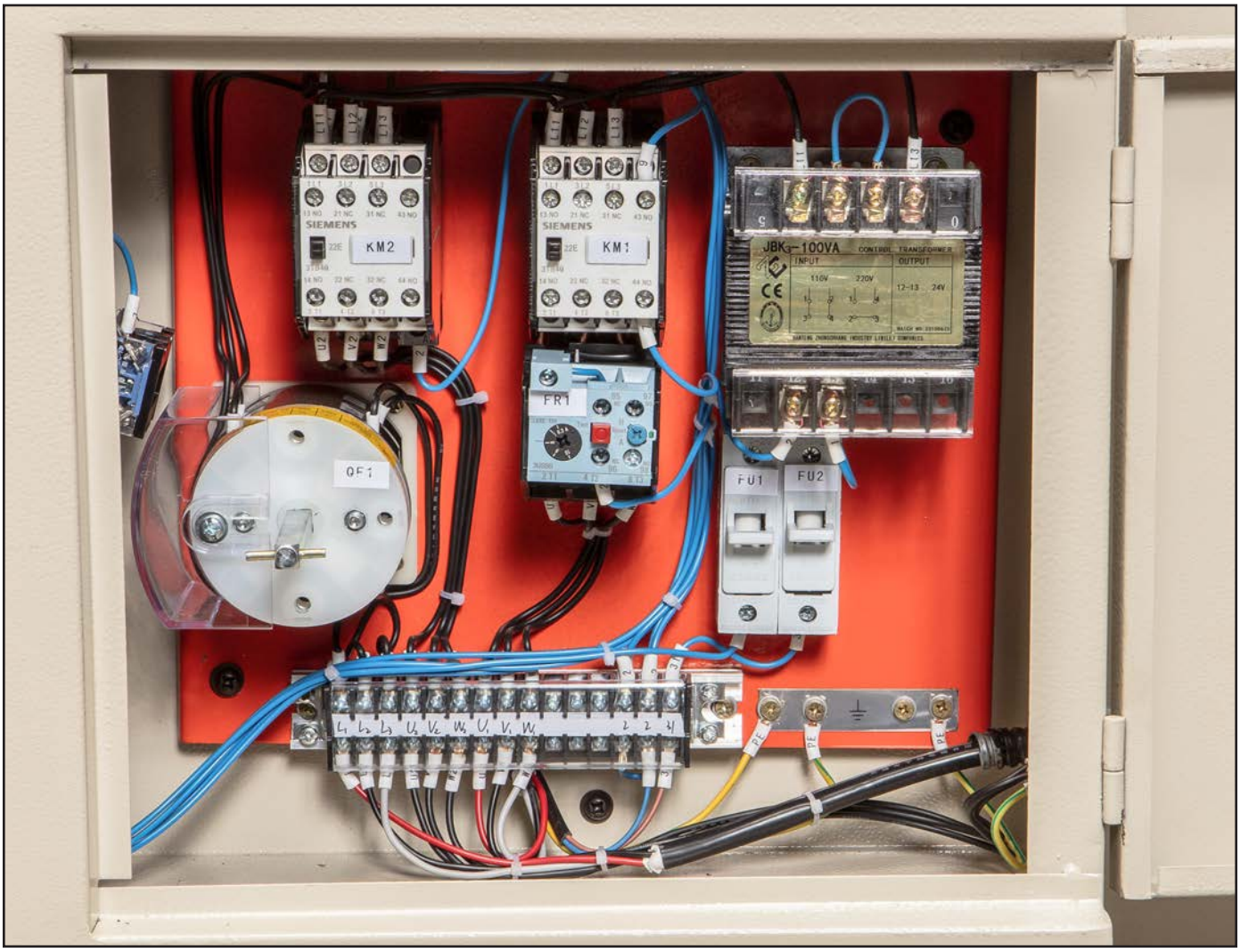
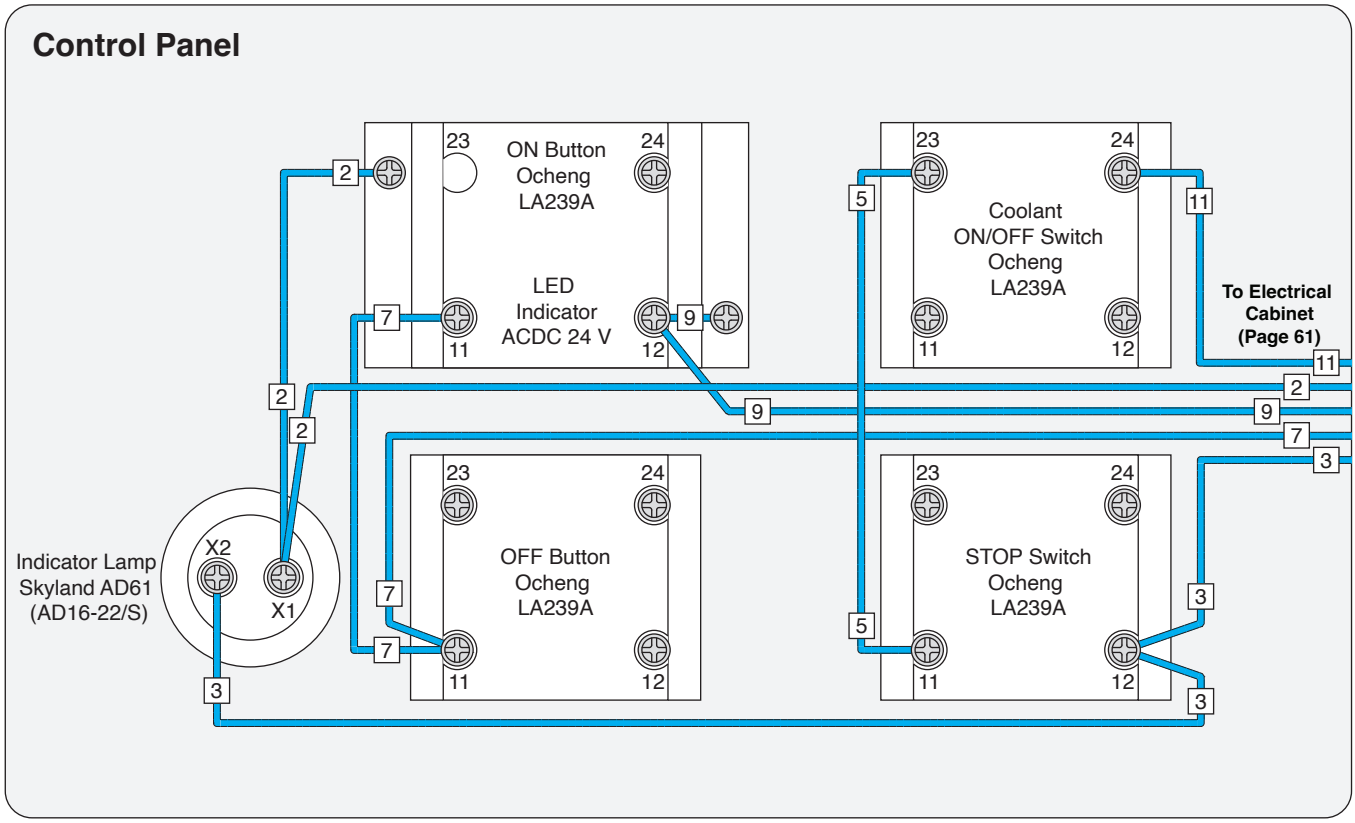


Figure 69. G3155 electrical cabinet wiring.

STOP *READ ELECTRICAL SAFETY ON PAGE 51!*

G3155 Control Panel Wiring Diagram



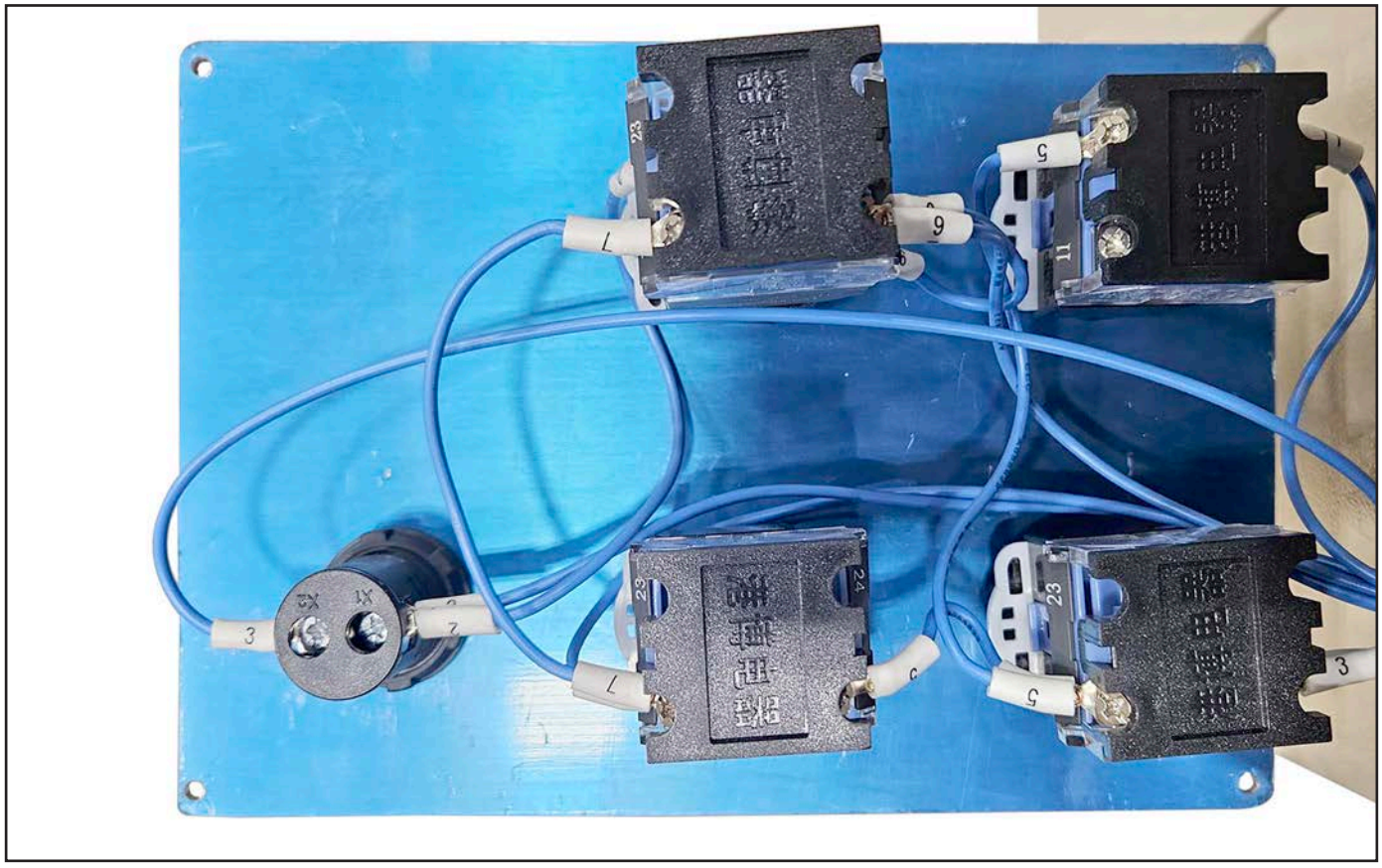
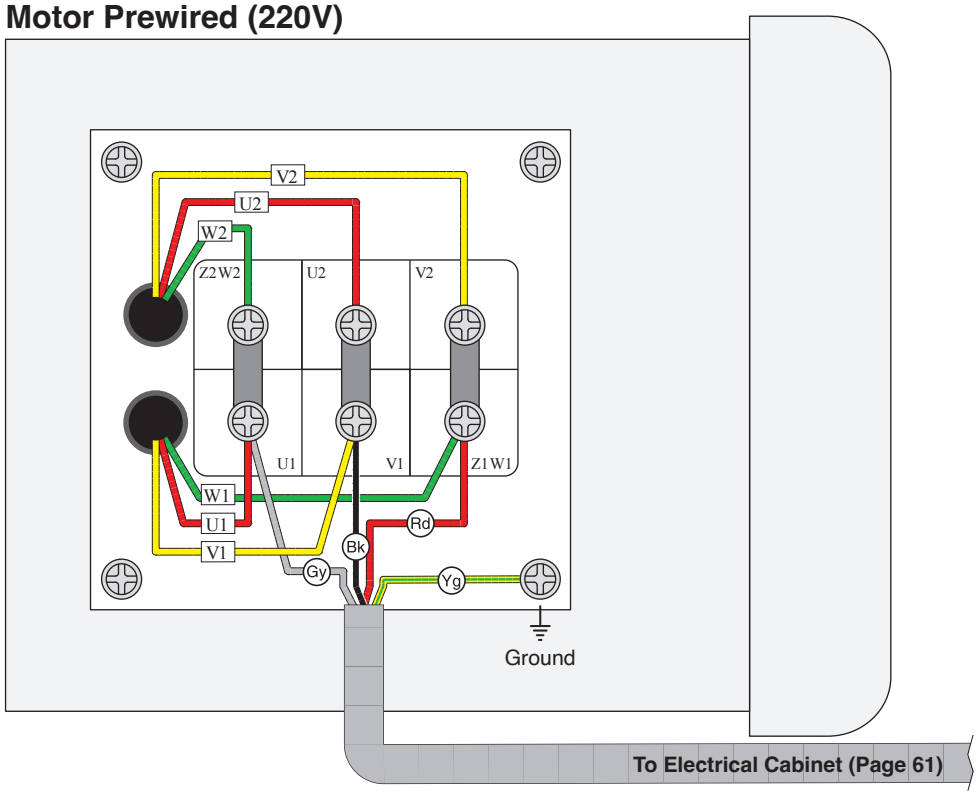


Figure 70. G3155 control panel wiring.

G3155 Motor Wiring Diagram

Motor Prewired (220V)



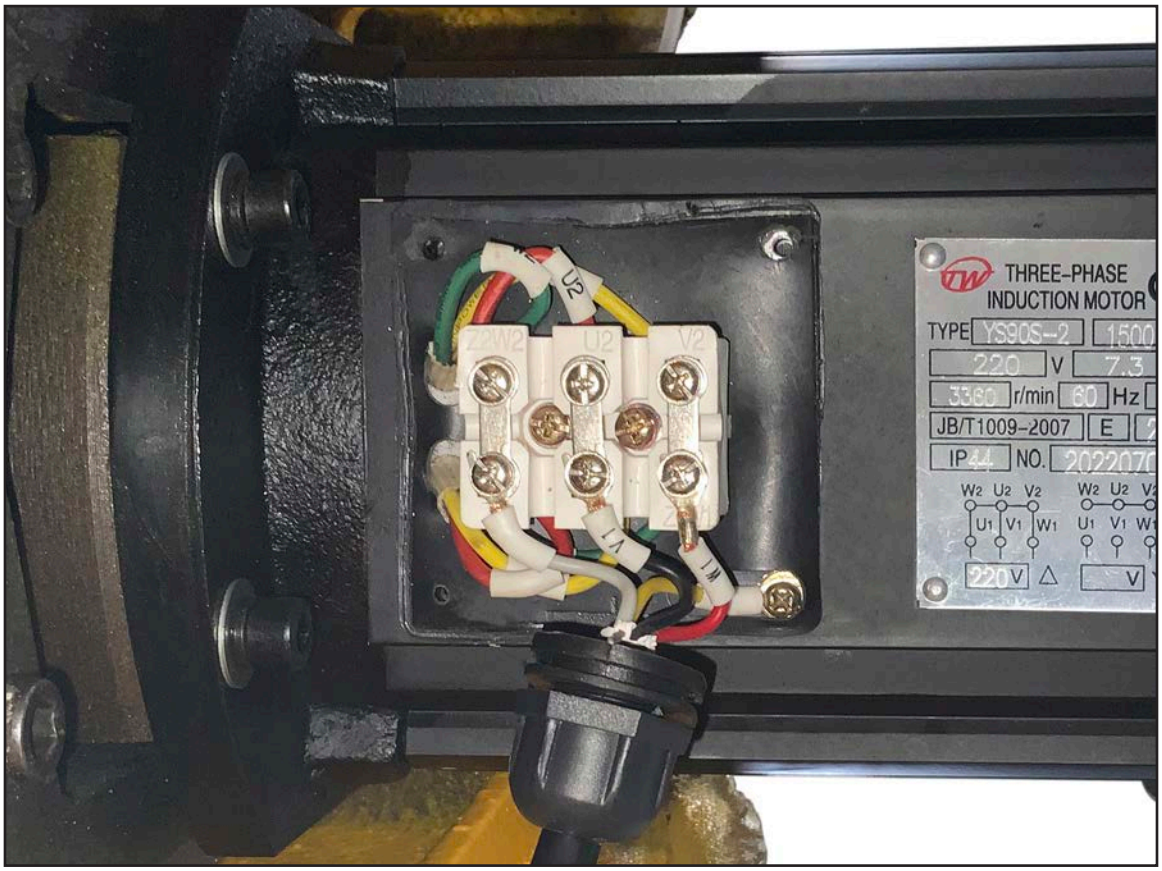
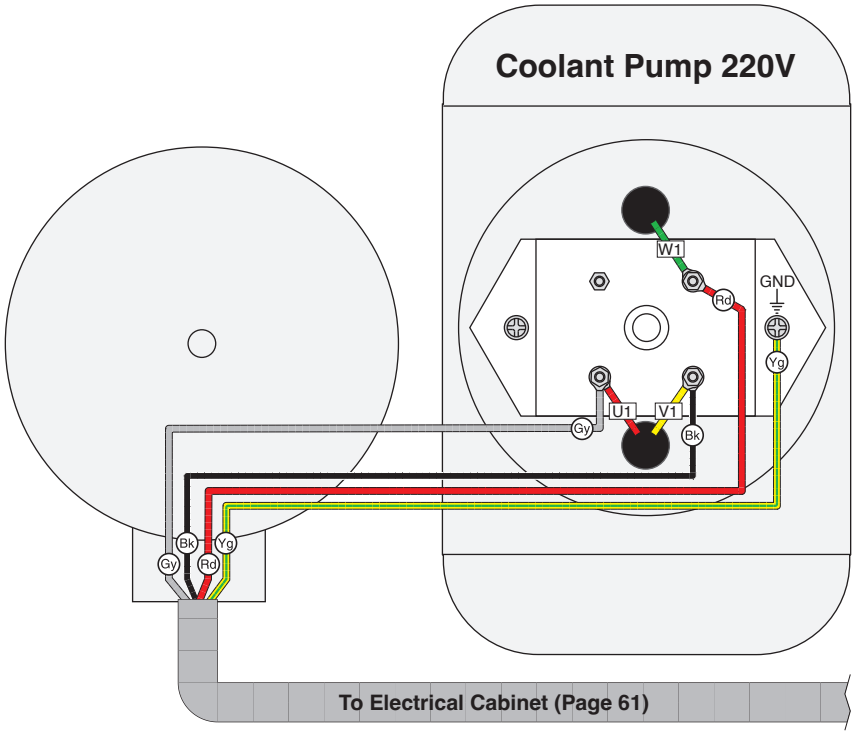


Figure 71. G3155 motor wiring.

G3155 Coolant Pump Wiring Diagram



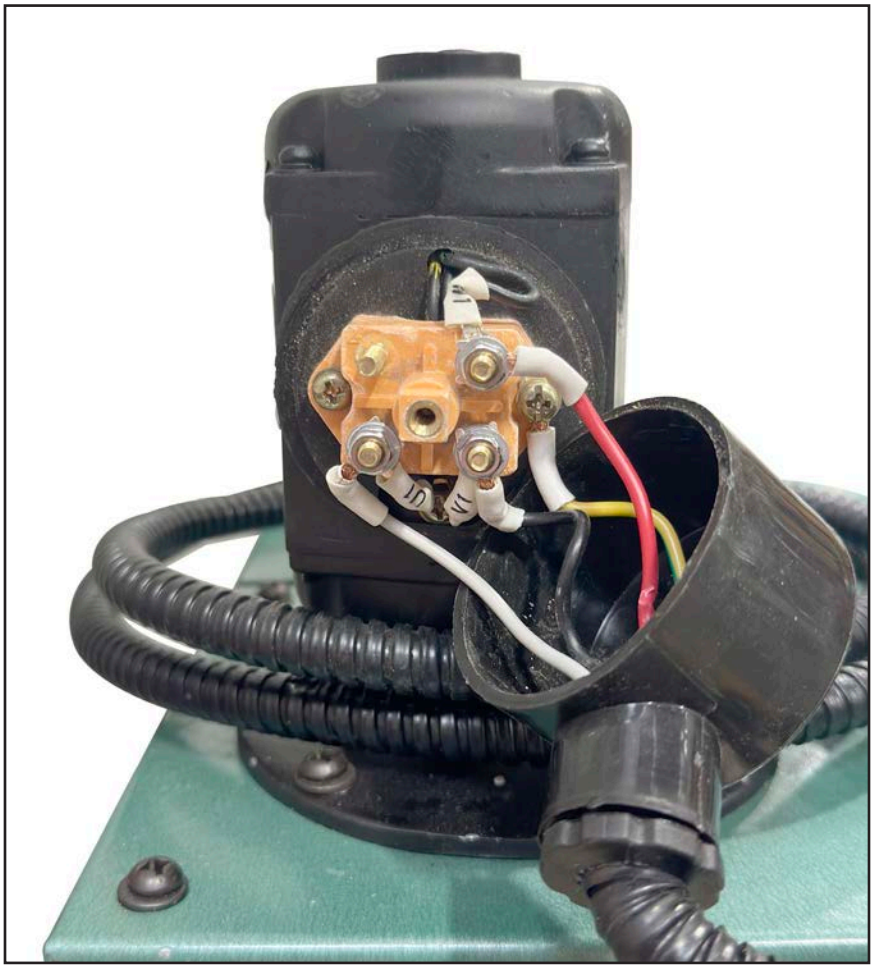
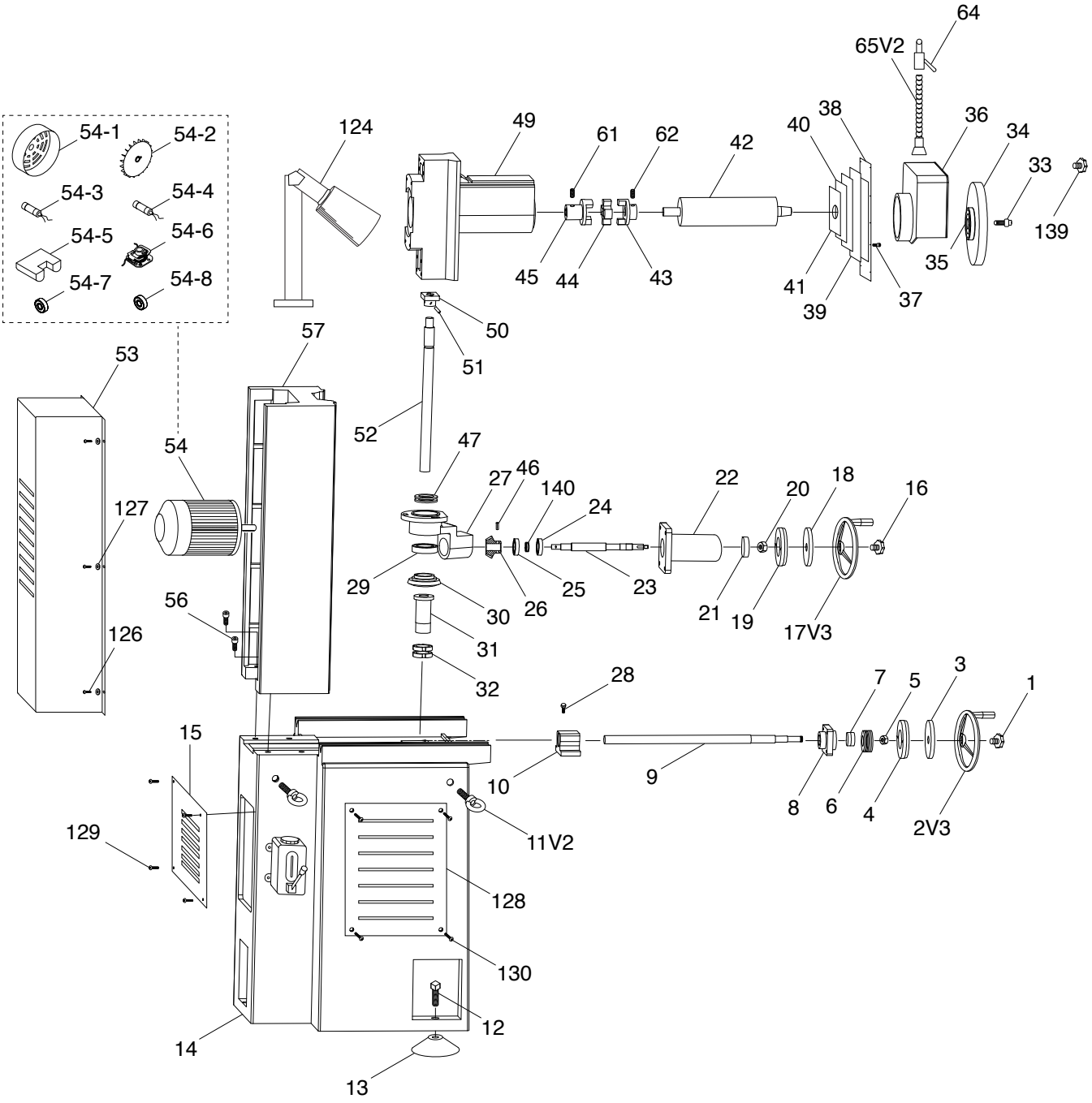


Figure 72. G3155 coolant pump wiring.

SECTION 9: PARTS

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

G3104 Base

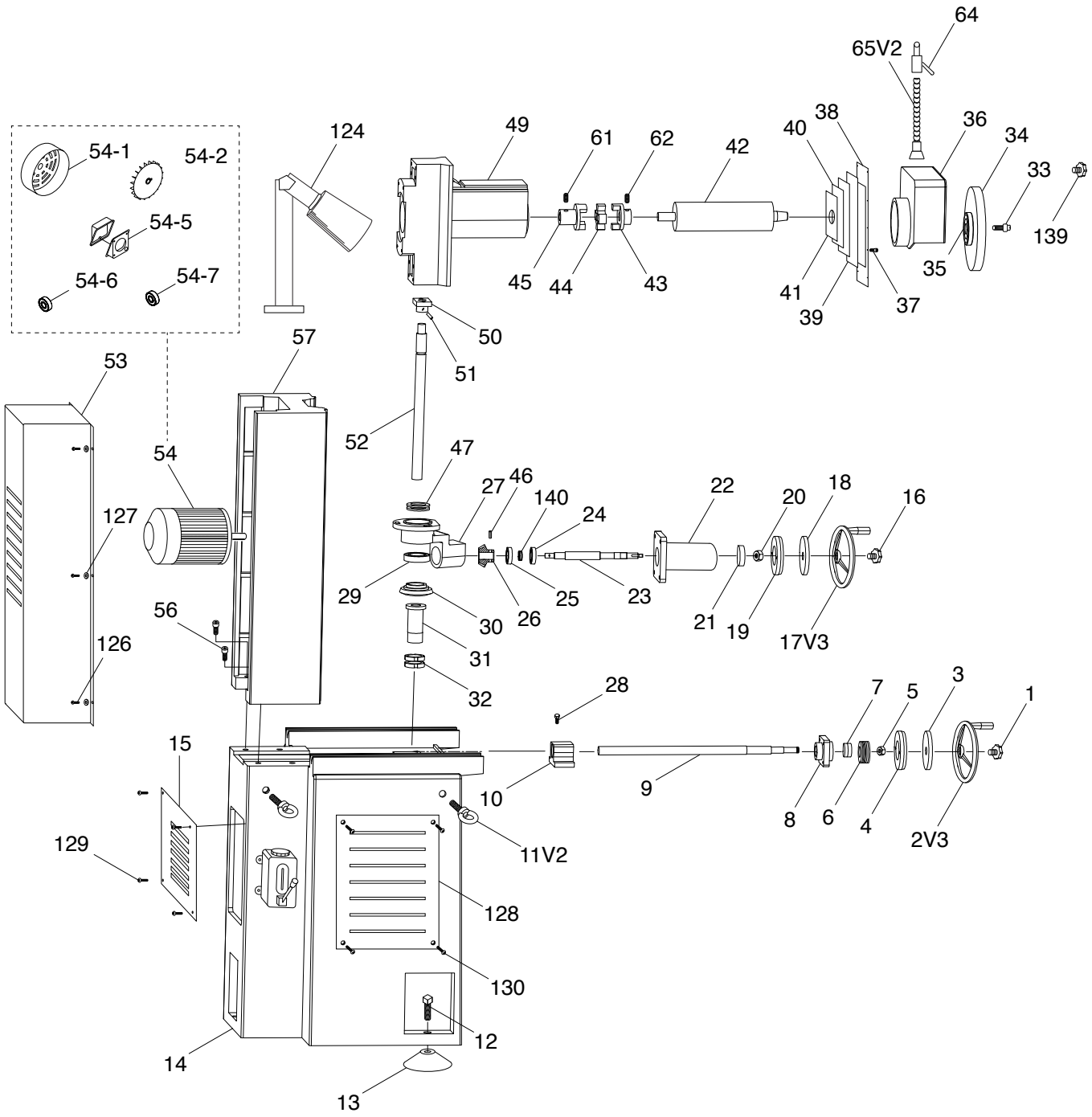


G3104 Base

REF	PART #	DESCRIPTION
1	P3104016	KNOB M10-1.5, 7 LOBE, D40
2	P3155017V2	HANDWHEEL W/HANDLE, CHROME
3	P3104003	GRADUATED DIAL
4	P3104004	INDICATOR RING
5	PN15M	HEX NUT M18-1.5
6	P3104006	SPANNER NUT M40-1.5
7	P6103ZZ	BALL BEARING 6003ZZ
8	P3104008	BEARING HOUSING
9	P3104009	LEADSCREW
10	P3104010	LEADSCREW NUT 27-601/1
11	P3104011	LIFTING NUT M30-2.5
12	P3104012	SQUARE HEAD BOLT M20-2.5 X 90 DOG-PT
13	P3104013	FOOT PAD
14	P3104014	BED
15	P3104015	REAR COVER
16	P3104016	KNOB M10-1.5, 7 LOBE, D40
17	P3155017V2	HANDWHEEL W/HANDLE, CHROME
18	P3104018	GRADUATED DIAL
19	P3104019	INDICATOR RING
20	PN15M	HEX NUT M18-1.5
21	P6201ZZ	BALL BEARING 6201ZZ
22	P3104022	BEARING HOUSING
23	P3104023	SHAFT
24	P6201ZZ	BALL BEARING 6201ZZ
25	P6201ZZ	BALL BEARING 6201ZZ
26	P3104026	BEVEL GEAR
27	P3104027	GEAR HOUSING
28	PB26M	HEX BOLT M8-1.25 X 30
29	P8108	THRUST BEARING 8108
30	P3104030	BEVEL GEAR
31	P3155031	VERTICAL LEADSCREW NUT
32	P3104032	SPANNER NUT M39-1.5
33	P3104033	GRINDING WHEEL BOLT
34	P3104034	GRINDING WHEEL 24 GRIT
35	P3104035	GRINDING WHEEL HUB ASSY
36	P3104036	GRINDING WHEEL GUARD

REF	PART #	DESCRIPTION
37	PCAP04M	CAP SCREW M6-1 X 10
38	P3104038	CHIP GUARD PLATE
39	P3104039	LARGE CHIP GUARD
40	P3104040	MEDIUM CHIP GUARD
41	P3104041	SMALL CHIP GUARD
42	P3104042	SPINDLE
43	P3104043	CLUTCH
44	P3104044	CROSS PAD
45	P3104045	CLUTCH
46	PRP08M	ROLL PIN 6 X 30
47	P6008ZZ	BALL BEARING 6008ZZ
48	PRP32M	ROLL PIN 6 X 40
49	P3104049	SPINDLE HOUSING
50	P3104050	LEADSCREW SLEEVE
51	PRP05M	ROLL PIN 5 X 30
52	P3104052	VERTICAL LEADSCREW
53	P3104153	REAR GUARD
54	P3104054	MOTOR 2HP 110/220V 1PH
54-1	P3104054-1	MOTOR FAN COVER
54-2	P3104054-2	MOTOR FAN
54-3	P3104054-3	S CAPACITOR 200M 250V 2 X 3-3/4
54-4	P3104054-4	R CAPACITOR 30M 450V 2 X 4
54-5	P3104054-5	MOTOR WIRING JUNCTION BOX
56	PCAP13M	CAP SCREW M8-1.25 X 30
57	P3104057	COLUMN
61	PSS01M	SET SCREW M6-1 X 10
62	PSS04M	SET SCREW M6-1 X 12
63	PK07M	KEY 6 X 6 X 20
64	P3104064	COOLANT VALVE
65	P3104065	COOLANT NOZZLE
66	PCAP02M	CAP SCREW M6-1 X 20
67	PCAP02M	CAP SCREW M6-1 X 20
68	P3104068	COOLANT NOZZLE SUPPORT
124	P3104124	WORK LAMP ASSY
601	P3104601	ONE-SHOT OILER

G3155 Base

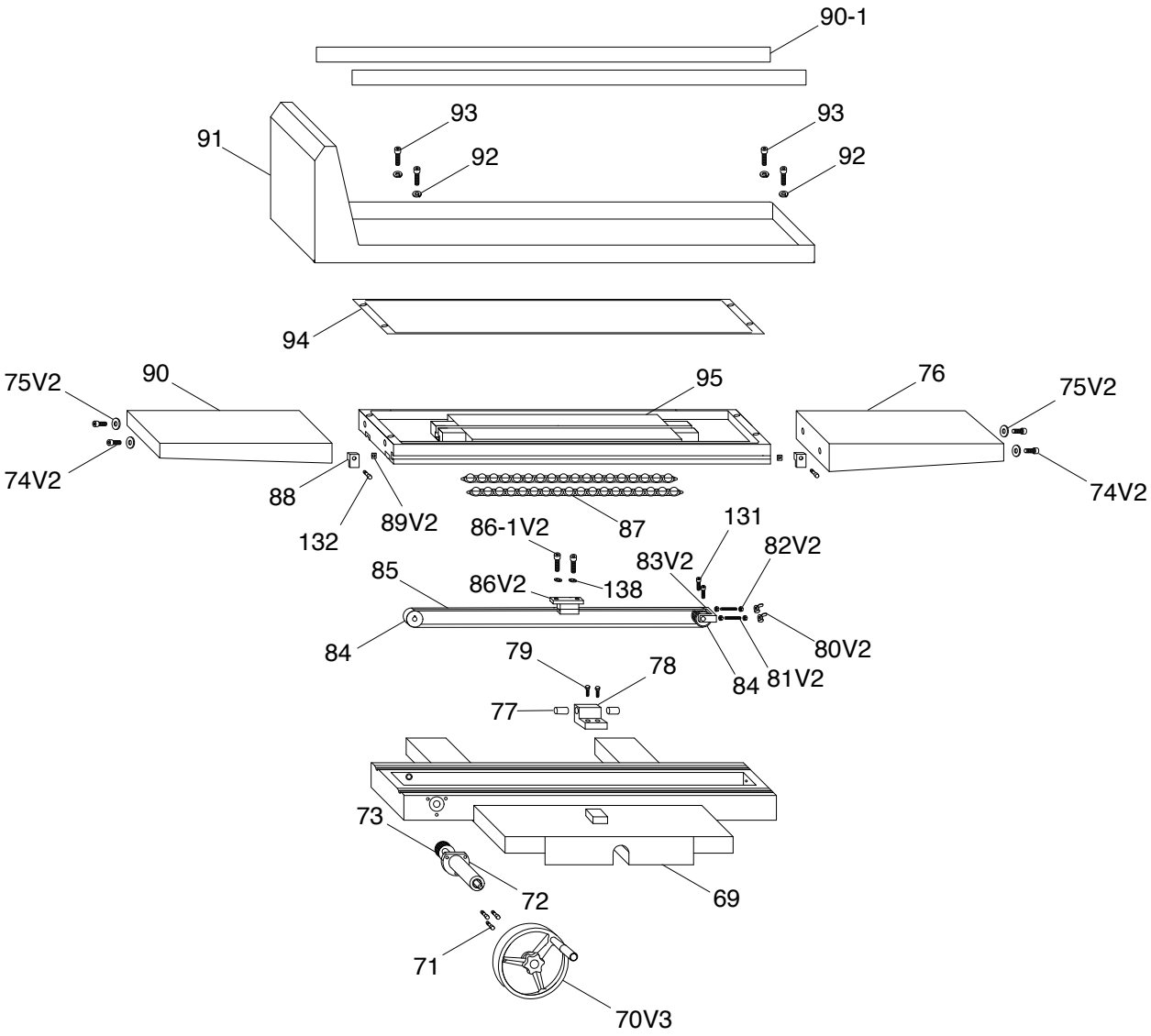


G3155 Base

REF	PART #	DESCRIPTION
1	P3155001	KNOB M10-1.5, 7 LOBE, D40
2V3	P3155002V3	HANDWHEEL W/HANDLE, PLASTIC V3.06.22
3	P3155003	GRADUATED DIAL
4	P3155004	INDICATOR RING
5	P3155005	HEX NUT M18-1.5
6	P3155006	SPANNER NUT M40-1.5
7	P3155007	BALL BEARING 6201ZZ
8	P3155008	BEARING HOUSING
9	P3155009	LEADSCREW
10	P3155010	LEADSCREW NUT M22 X 2.5
11V2	P3155011V2	EYE BOLT 1-1/4", M20-2.5 X 30 V2.07.14
12	P3155012	SQUARE HEAD BOLT M20-2.5 X 90 DOG-PT
13	P3155013	FOOT PAD
14	P3155014	BED
15	P3155015	REAR COVER
16	P3155016	KNOB M10-1.5, 7 LOBE, D40
17V3	P3155017V3	HANDWHEEL W/HANDLE, PLASTIC V3.06.22
18	P3155018	GRADUATED DIAL
19	P3155019	INDICATOR RING
20	P3155020	HEX NUT M16-1.5
21	P3155021	BALL BEARING 6103ZZ
22	P3155022	BEARING HOUSING
23	P3155023	SHAFT
24	P3155024	BALL BEARING 6201ZZ
25	P3155025	BALL BEARING 6201ZZ
26	P3155026	BEVEL GEAR
27	P3155027	GEAR HOUSING
28	P3155028	HEX BOLT M8-1.25 X 30
29	P3155029	THRUST BEARING 8108
30	P3155030	BEVEL GEAR
31	P3155031	VERTICAL LEADSCREW NUT
32	P3155032	SPANNER NUT M39-1.5
33	P3155033	GRINDING WHEEL BOLT
34	P3155034	GRINDING WHEEL 24 GRIT
35	P3155035	GRINDING WHEEL HUB ASSY
36	P3155036	GRINDING WHEEL GUARD

REF	PART #	DESCRIPTION
37	P3155037	CAP SCREW M6-1 X 10
38	P3155038	CHIP GUARD PLATE
39	P3155039	LARGE CHIP GUARD
40	P3155040	MEDIUM CHIP GUARD
41	P3155041	SMALL CHIP GUARD
42	P3155042	SPINDLE
43V2	P3104043V2	CLUTCH V2.11.13
44V2	P3104044V2	CROSS PAD 20MM V2.11.13
45V2	P3104045V2	CLUTCH V2.11.13
46	P3155046	ROLL PIN 6 X 30
47	P3155047	BALL BEARING 6008ZZ
49	P3155049	SPINDLE HOUSING
50	P3155050	LEADSCREW SLEEVE
51	P3155051	ROLL PIN 5 X 30
52	P3155052	VERTICAL LEADSCREW
53	P3155053	REAR GUARD
54	P3155054	MOTOR 2HP 110/220V 3PH
54-1	P3155054-1	MOTOR FAN COVER
54-2	P3155054-2	MOTOR FAN
54-5	P3155054-5	MOTOR WIRING JUNCTION BOX
54-6	P3155054-6	BALL BEARING 6204ZZ
54-7	P3155054-7	BALL BEARING 6205ZZ
56	P3155056	CAP SCREW M8-1.25 X 30
57	P3155057	COLUMN
61	P3155061	SET SCREW M6-1 X 10
62	P3155062	SET SCREW M6-1 X 12
64	P3155064	COOLANT VALVE
65V2	P3155065V2	ADJUSTABLE COOLANT NOZZLE V2.07.14
124	P3155124	WORK LAMP ASSY
126	P3155126	PHLP HD SCR M6-1 X 12
127	P3155127	FLAT WASHER 6MM
128	P3155128	SIDE GRATE
129	P3155129	PHLP HD SCR M6-1 X 20
130	P3155130	PHLP HD SCR M6-1 X 20
139	P3155139	KNOB BOLT M8-1.25 X 25, 7 LOBE, D40
140	P3155140	SPACER 20.5 X 28MM

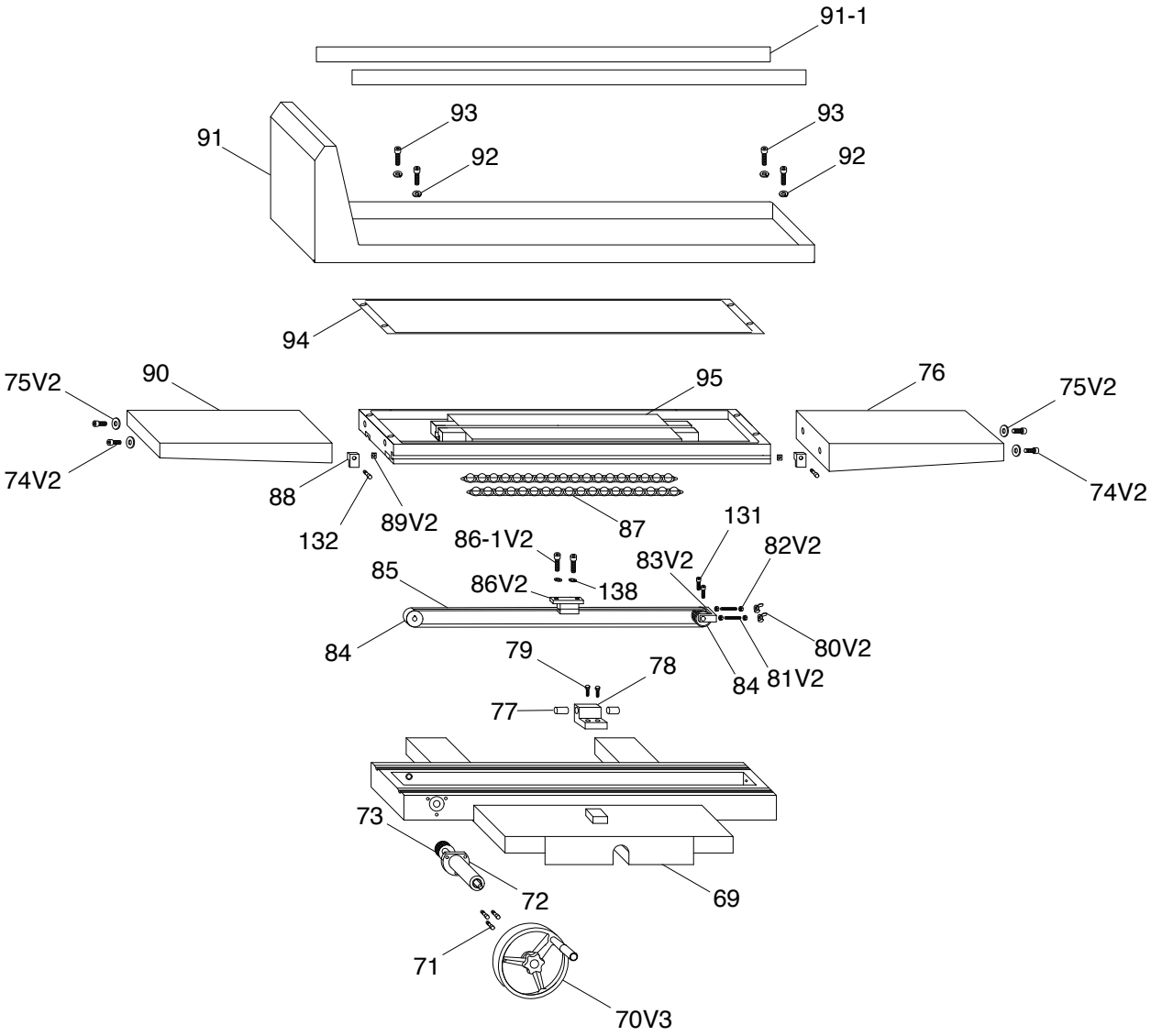
G3104 Table



REF	PART #	DESCRIPTION
69	P3104069	CROSS SLIDE
70V3	P3104070V3	HANDWHEEL W/HANDLE, PLASTIC V3.06.22
71	P3104071	KEY 6 X 6 X 20
72	P3104072	HANDWHEEL SUPPORT
73	P3104073	BUSHING
74V2	P3104074V2	CAP SCREW M8-1.25 X 16 V2.07.14
75V2	P3104075V2	FLAT WASHER 8MM V2.07.14
76	P3104076	RIGHT EXTENSION WING
77	P3104077	TRIP DOG
78	P3104078	LIMIT BLOCK
79	P3104079	HEX BOLT M8-1.25 X 25
80V2	P3104080V2	WING NUT M8-1.25 V2.07.14
81V2	P3104081V2	STUD-FT M8-1.25 X 70 V2.07.14
82V2	P3104082V2	HEX NUT M8-1.25 V2.07.14
83V2	P3104083V2	PULLEY SUPPORT V2.07.14
84	P3104084	PULLEY

REF	PART #	DESCRIPTION
85	P3104085	TIMING BELT 4 X 114 X 25
86V2	P3104086V2	BELT CLAMP V2.07.14
86-1V2	P3104086-1V2	CAP SCREW M8-1.25 X 30 V2.07.14
87	P3104087	TABLE BALL BEARING ASSY
88	P3104088	LIMIT STOP
89V2	P3104089V2	SQUARE NUT M6-1.25 V2.07.14
90	P3104090	LEFT EXTENSION WING
90-1	P3104090-1	SPLASH PAN SIDE GUARD
91	P3104091	SPLASH PAN
92	P3104092	LOCK WASHER 6MM
93	P3104093	CAP SCREW M6-1 X 12
94	P3104094	RUBBER GASKET
95	P3104095	TABLE
131	P3104131	CAP SCREW M5-.8 X 16
132	P3104132	CAP SCREW M6-1 X 30
138	P3104138	FLAT WASHER 8MM

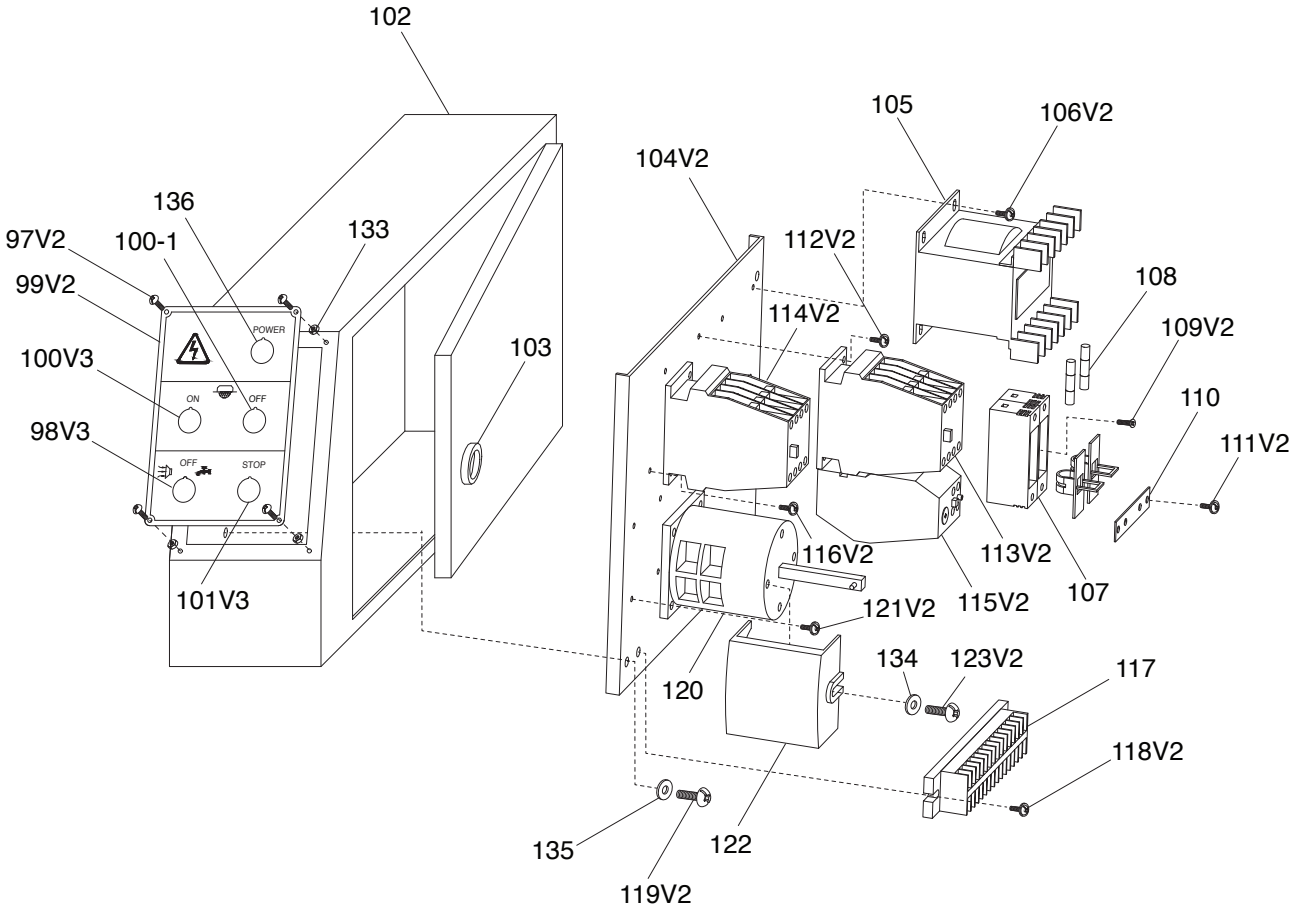
G3155 Table



REF	PART #	DESCRIPTION
69	P3155069	CROSS SLIDE
70V3	P3155070V3	HANDWHEEL W/HANDLE, PLASTIC V3.06.22
71	P3155071	KEY 6 X 6 X 20
72	P3155072	HANDLE WHEEL SUPPORT
73	P3155073	BUSHING
74V2	P3155074V2	CAP SCREW M8-1.25 X 16 V2.07.14
75V2	P3155075V2	FLAT WASHER 8MM V2.07.14
76	P3155076	RIGHT EXTENSION WING
77	P3155077	TRIP DOG
78	P3155078	LIMIT BLOCK
79	P3155079	HEX BOLT M8-1.25 X 25
80V2	P3155080V2	WING NUT M8-1.25 V2.07.14
81V2	P3155081V2	THREADED STUD M8-1.25 X 70 V2.07.14
82V2	P3155082V2	HEX NUT M8-1.25 V2.07.14
83V2	P3155083V2	PULLEY SUPPORT V2.07.14
84	P3155084	PULLEY

REF	PART #	DESCRIPTION
85	P3155085	TIMING BELT 4 X 120 X 25
86V2	P3155086V2	BELT CLAMP V2.07.14
86-1V2	P3155086-1V2	CAP SCREW M8-1.25 X 30 V2.07.14
87	P3155087	TABLE BALL BEARING ASSY
88	P3155088	LIMIT STOP
89V2	P3155089V2	SQUARE NUT M6-1.25 V2.07.14
90	P3155090	LEFT EXTENSION WING
91	P3155091	SPLASH PAN
91-1	P3155091-1	SPLASH PAN SIDE GUARD
92	P3155092	LOCK WASHER 6MM
93	P3155093	CAP SCREW M6-1 X 12
94	P3155094	RUBBER GASKET
95	P3155095	TABLE
131	P3155131	CAP SCREW M5-.8 X 16
132	P3155132	CAP SCREW M6-1.25 X 30
138	P3155138	FLAT WASHER 8MM

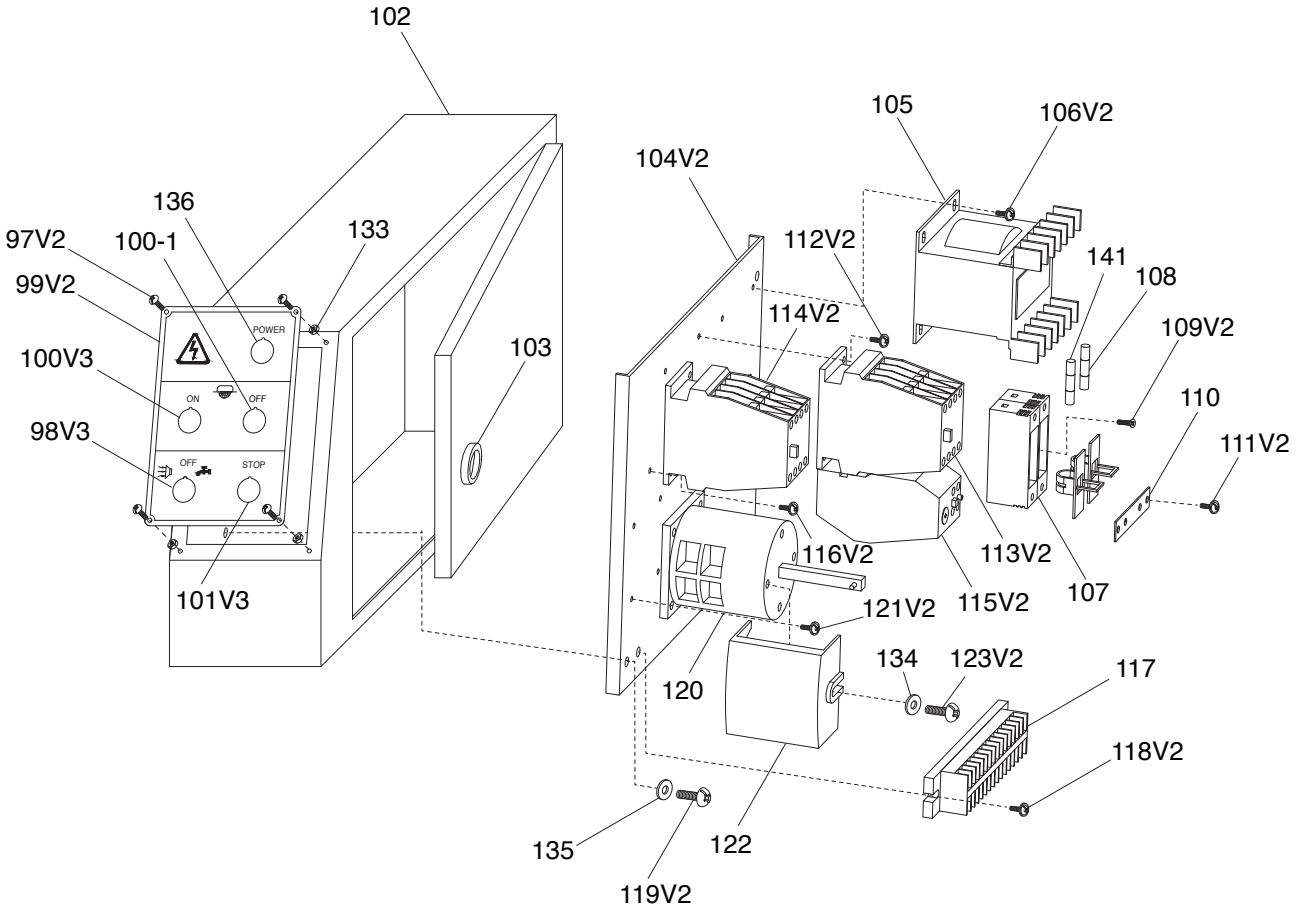
G3104 Electrical Cabinet



REF	PART #	DESCRIPTION
97V2	P3104097V2	PHLP HD SCR M3-.5 X 10 V2.07.14
98V3	P3104098V3	COOLANT PUMP SWITCH V3.06.22
99V2	P3104099V2	ELECTRICAL PANEL V2.07.14
100V3	P3104100V3	SPINDLE MOTOR ON SWITCH V3.06.22
100-1	P3104100-1	SPINDLE MOTOR OFF SWITCH
101V3	P3104101V3	E-STOP BUTTON OCHENG LA239A V3.06.22
102	P3104102	ELECTRICAL CABINET
103	P3104103	MAIN POWER SWITCH COVER
104V2	P3104104V2	MOUNTING PLATE V2.07.14
105	P3104105	TRANFORMER TENGEN JBK3-100VA
106V2	P3104106V2	FLANGE SCREW M4-.7 X 8 V2.07.14
107	P3104107	FUSE HOLDER ASSY
108	P3104108	FUSE 2A 380V CERAMIC
109V2	P3104109V2	FLAT HD SCR M4-.7 X 8 V2.07.14
110	P3104110	GROUNDING STRAP
111V2	P3104111V2	FLANGE SCREW M4-.7 X 8 V2.07.14

REF	PART #	DESCRIPTION
112V2	P3104112V2	FLANGE SCREW M4-.7 X 12 V2.07.14
113V2	P3104113V2	CONTACTOR SIEMENS 3BT42 17-0A V2.06.22
114V2	P3104114V2	CONTACTOR SIEMENS 3BT40 22-0X V2.06.22
115V2	P3104115V2	OL RELAY SIEMENS 3US55 40-2C V2.06.22
116V2	P3104116V2	FLANGE SCREW M4-.7 X 12 V2.07.14
117	P3104117	TERMINAL BLOCK 10-POST
118V2	P3104118V2	FLANGE SCREW M4-.7 X 8 V2.07.14
119V2	P3104119V2	PHLP HD SCR M6-1 X 12 V2.07.14
120	P3104120	MAIN POWER SWITCH HZ12-25
121V2	P3104121V2	FLANGE SCREW M4-.7 X 12 V2.07.14
122	P3104122	POWER SWITCH COVER
123V2	P3104123V2	PHLP HD SCR M5-.8 X 20 V2.07.14
133	P3104133	HEX NUT M3-.5 THIN
134	P3104134	FLAT WASHER 5MM
135	P3104135	FLAT WASHER 6MM
136	P3104136	INDICATOR LAMP SKYLAND AD61

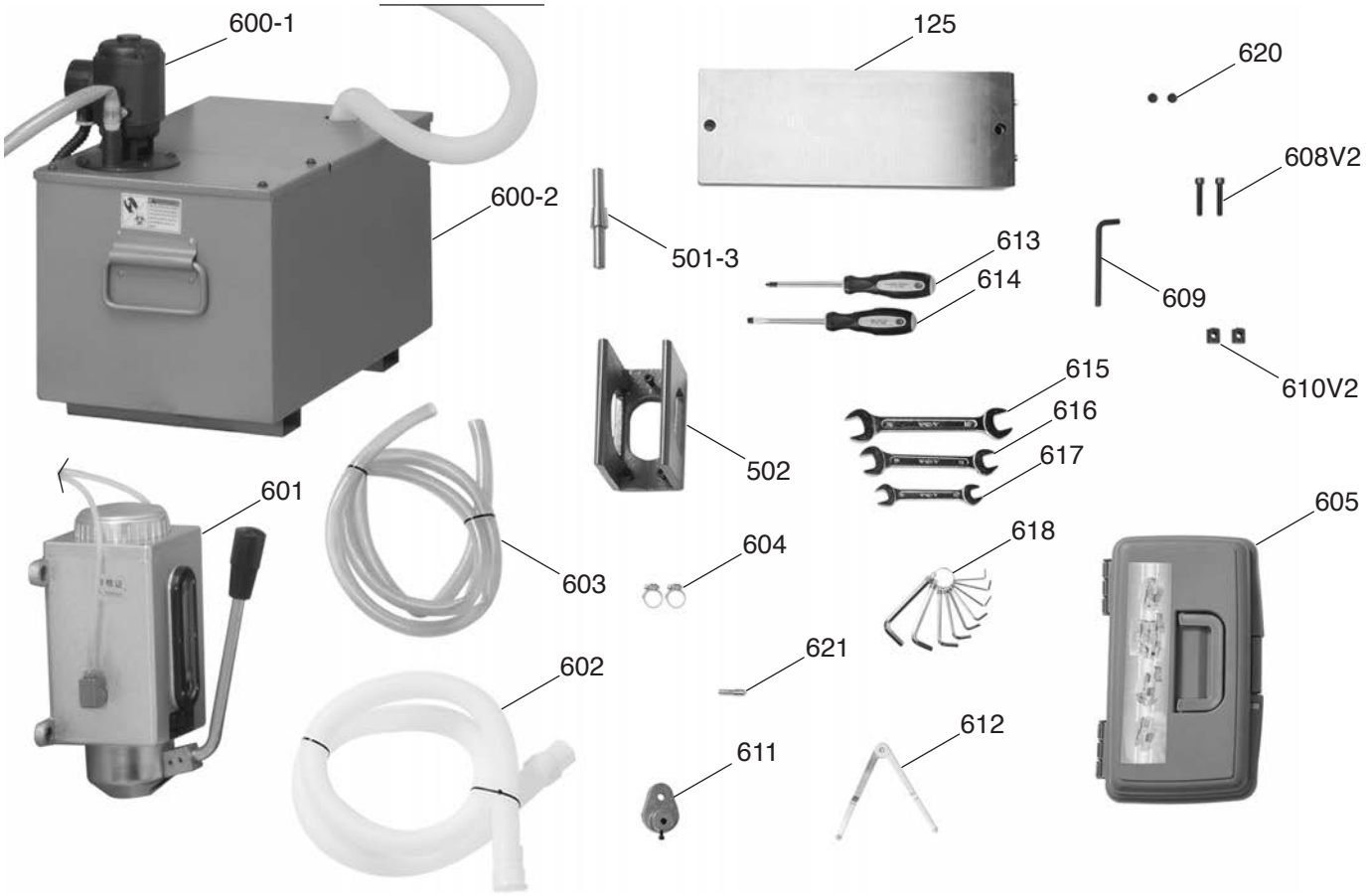
G3155 Electrical Cabinet



REF	PART #	DESCRIPTION
97V2	P3155097V2	PHLP HD SCR M3-.5 X 10 V2.07.14
98V3	P3155098V3	COOLANT PUMP SWITCH V3.06.22
99V2	P3155099V2	ELECTRICAL PANEL V2.05.15
100V3	P3155100V3	SPINDLE MOTOR ON SWITCH V3.06.22
100-1	P3155100-1	SPINDLE MOTOR OFF SWITCH
101V3	P3155101V3	E-STOP BUTTON OCHENG LA239A V3.06.22
102	P3155102	ELECTRICAL CABINET
103	P3155103	MAIN POWER SWITCH COVER
104V2	P3155104V2	MOUNTING PLATE V2.07.14
105	P3155105	TRANFORMER TENGEN JBK3-100VA
106V2	P3155106V2	FLANGE SCREW M4-.7 X 8 V2.07.14
107	P3155107	FUSE HOLDER ASSY
108	P3155108	FUSE 2A 380V
109V2	P3155109V2	FLAT HD SCR M4-.7 X 8 V2.07.14
110	P3155110	GROUNDING STRAP
111V2	P3155111V2	FLANGE SCREW M4-.7 X 8 V2.07.14
112V2	P3155112V2	FLANGE SCREW M4-.7 X 12 V2.07.14

REF	PART #	DESCRIPTION
113V2	P3155113V2	CONTACTOR SIEMENS 3BT42 17-0A V2.06.22
114V2	P3155114V2	CONTACTOR SIEMENS 3BT40 22-0X V2.06.22
115V2	P3155115V2	OL RELAY SIEMENS 3US55 40-2C V2.06.22
116V2	P3155116V2	FLANGE SCREW M4-.7 X 12 V2.07.14
117	P3155117	TERMINAL BLOCK 10-POST
118V2	P3155118V2	FLANGE SCREW M4-.7 X 8 V2.07.14
119V2	P3155119V2	PHLP HD SCR M6-1 X 12 V2.07.14
120	P3155120	MAIN POWER SWITCH
121V2	P3155121V2	FLANGE SCREW M4-.7 X 12 V2.07.14
122	P3155122	POWER SWITCH COVER
123V2	P3155123V2	PHLP HD SCR M5-.8 X 20 V2.07.14
133	P3155133	HEX NUT M3-.5 THIN
134	P3155134	FLAT WASHER 5MM
135	P3155135	FLAT WASHER 6MM
136	P3155136	INDICATOR LAMP SKYLAND AD61
141	P3155141	FUSE 10A 380V

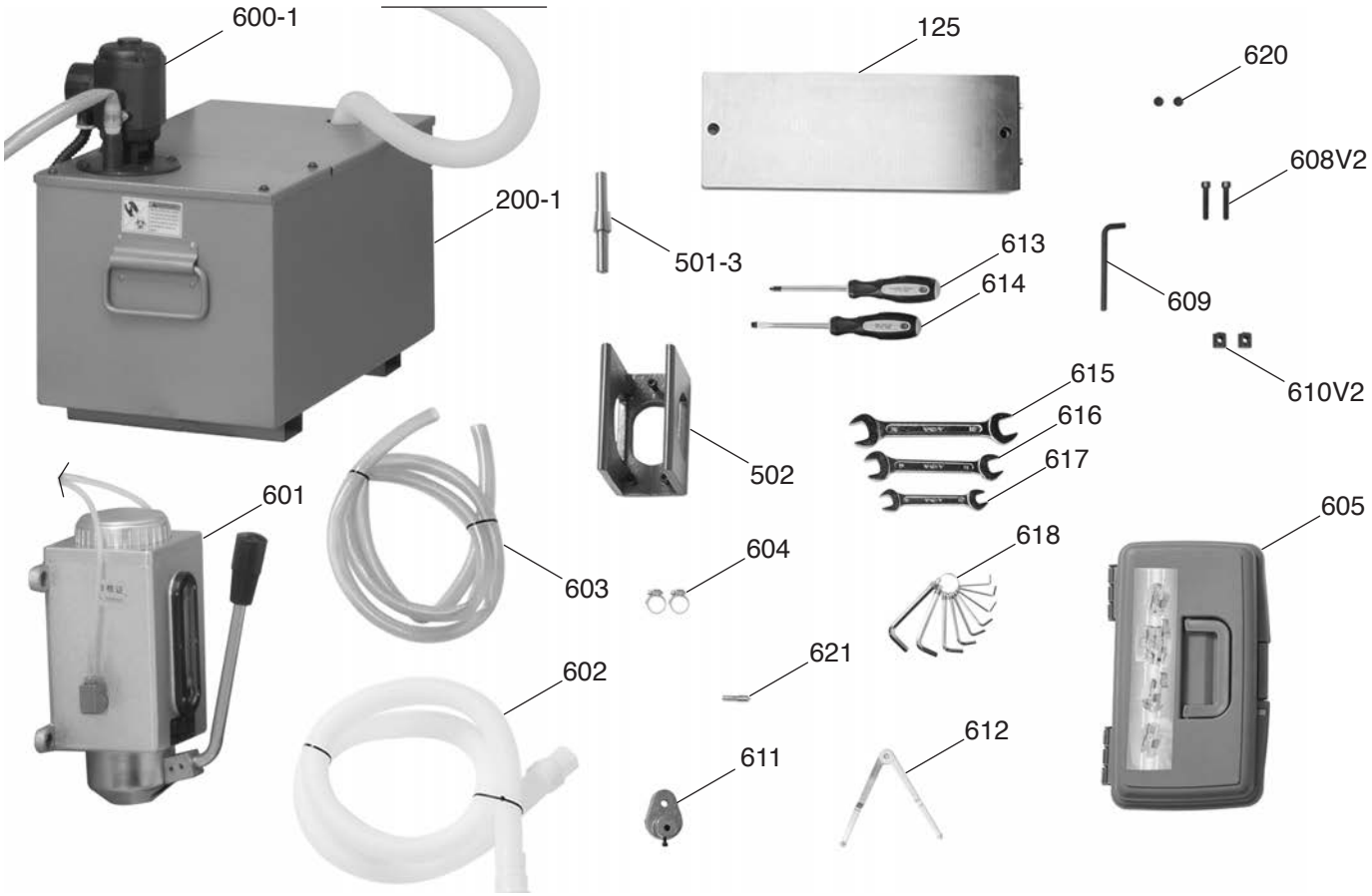
G3104 Accessories



REF	PART #	DESCRIPTION
125	P3104125	MAGNETIC CHUCK ASSY
501-3	P3104501-3	WHEEL BALANCING ARBOR 5:1 TPR
502	P3104502	WHEEL BALANCING BASE
600-1	P3104600-1	COOLANT PUMP
600-2	P3104600-2	COOLANT TANK
601	P3104601	ONE-SHOT OILER
602	P3104602	COOLANT RETURN HOSE
603	P3104603	COOLANT FEED HOSE
604	P3104604	HOSE CLAMP 1"
605	P3104605	TOOL BOX
608V2	P3104608V2	CAP SCREW M10-1.5 X 50 V2.07.14
609	P3104609	MAGNETIC CHUCK HEX WRENCH

REF	PART #	DESCRIPTION
610V2	P3104610V2	T-NUT M10-1.5 V2.07.14
611	P3104611	DRESSER HOLDER
612	P3104612	SPANNER WRENCH
613	P3104613	SCREWDRIVER PHILLIPS #2
614	P3104614	SCREWDRIVER FLAT #2
615	P3104615	WRENCH 22/24MM
616	P3104616	WRENCH 17/19MM
617	P3104617	WRENCH 12/14MM
618	P3104618	HEX WRENCH SET 1.5-10MM
620	P3104620	RUBBER SEAL
621	P3104621	DIAMOND DRESSER

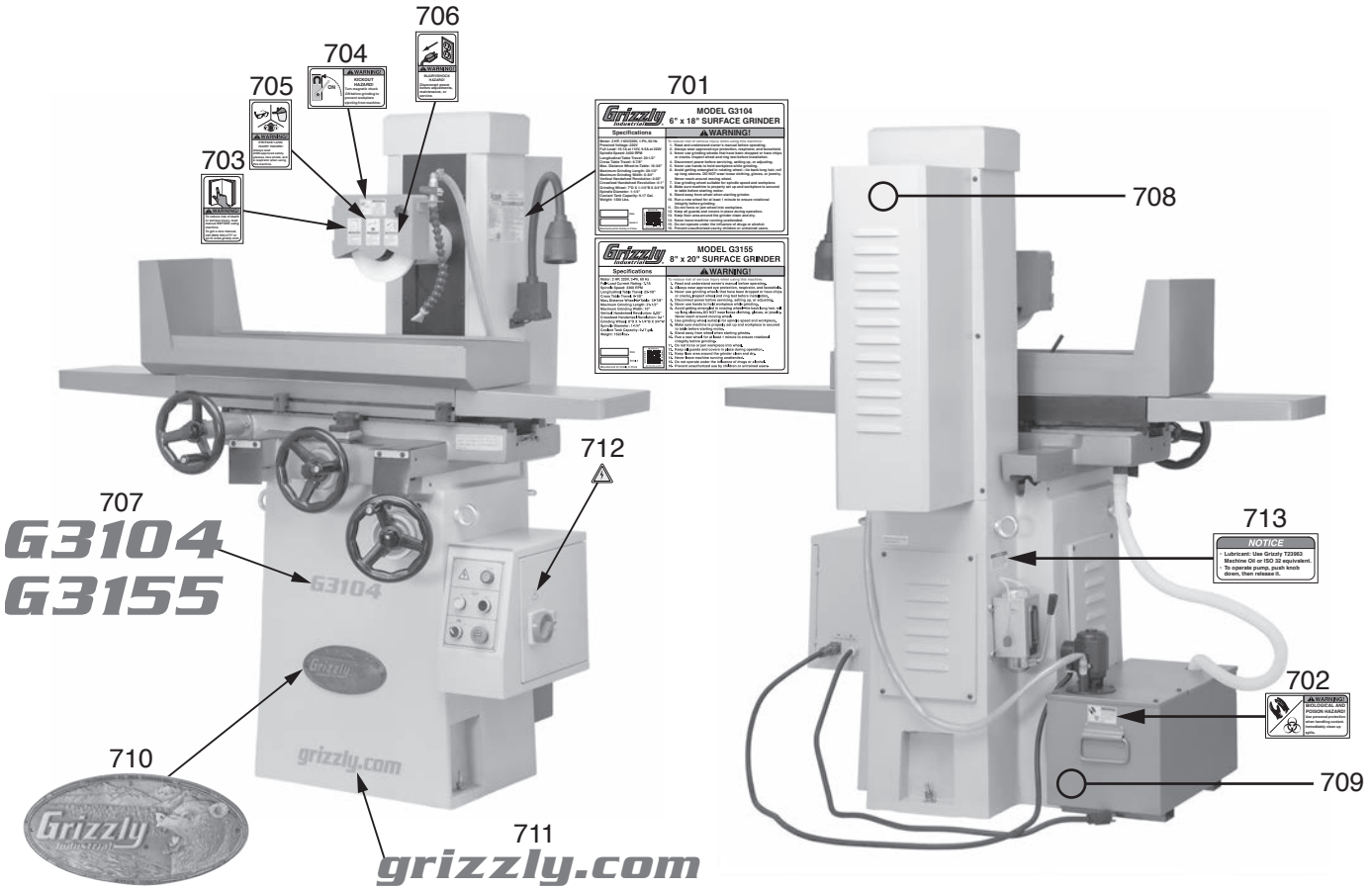
G3155 Accessories



REF	PART #	DESCRIPTION
125	P3155125	MAGNETIC CHUCK ASSY
200-1	P3155200-1	COOLANT TANK
501-3	P3155501-3	WHEEL BALANCING ARBOR 5:1 TPR
502	P3155502	WHEEL BALANCING BASE
600-1	P3155600-1	COOLANT PUMP 3-PHASE
601	P3155601	ONE-SHOT OILER
602	P3155602	COOLANT RETURN HOSE
603	P3155603	COOLANT FEED HOSE
604	P3155604	HOSE CLAMP 1"
605	P3155605	TOOL BOX
608V2	P3155608V2	CAP SCREW M10-1.5 X 50 V2.07.14
609	P3155609	MAGNETIC CHUCK HEX WRENCH

REF	PART #	DESCRIPTION
610V2	P3155610V2	T-NUT M10-1.5 V2.07.14
611	P3155611	DRESSER HOLDER
612	P3155612	SPANNER WRENCH
613	P3155613	SCREWDRIVER PHILLIPS #2
614	P3155614	SCREWDRIVER FLAT #2
615	P3155615	WRENCH 22/24MM
616	P3155616	WRENCH 17/19MM
617	P3155617	WRENCH 12/14MM
618	P3155618	HEX WRENCH SET 1.5-10MM
619	P3155619	DIAMOND DRESSER
620	P3155620	RUBBER SEAL
621	P3155621	DIAMOND DRESSER

Labels & Cosmetics



REF	PART #	DESCRIPTION
701	P3104701	MACHINE ID LABEL (G3104)
701	P3155701	MACHINE ID LABEL (G3155)
702	P3104702	COOLANT HAZARD LABEL
703	P3104703	READ MANUAL LABEL
704	P3104704	KICKOUT HAZARD LABEL
705	P3104705	EYE/FACE/LUNG LABEL
706	P3104706	DISCONNECT 110V LABEL
707	P3104707	MODEL NUMBER LABEL (G3104)

REF	PART #	DESCRIPTION
707	P3155707	MODEL NUMBER LABEL (G3155)
708	P3104708	TOUCH UP PAINT, GRIZZLY PUTTY
709	P3104709	TOUCH UP PAINT, GRIZZLY GREEN
710	P3104710	GRIZZLY NAMEPLATE - SMALL
711	P3104711	GRIZZLY.COM LABEL
712	P3104712	ELECTRICITY LABEL
713	P3104713	NOTICE LABEL

⚠WARNING

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

WARRANTY & RETURNS

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

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

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

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

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

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

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

WARRANTY

grizzly.com