

# OPERATOR'S MANUAL

## Bedknife Grinder

**BG1000**



**FRONTIER**  
EQUIPMENT™

This book consists of three manuals:

The OPERATORS MANUAL in ENGLISH which contains all the information on operating and doing routine daily maintenance on this equipment.

The ASSEMBLY and SERVICE MANUAL which is used by the maintenance department to install the equipment and to do all maintenance except routine daily maintenance.

The OPERATORS MANUAL in FRENCH is the same as the English version only translated into French.

# SAFETY INSTRUCTIONS



**Safety Awareness Symbols** are inserted into this manual to alert you to possible **Safety Hazards**. Whenever you see these symbols, follow their instructions.



The **Warning Symbol** identifies special instructions or procedures which, if not correctly followed, could result in personal injury.

The **Caution Symbol** identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of equipment.

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE WRENCHES AND OTHER TOOLS.**
3. **KEEP WORK AREA CLEAN.**
4. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use Grinder in damp or wet locations. Machine is for indoor use only. Keep work area well lit.
5. **KEEP ALL VISITORS AWAY.** All visitors should be kept a safe distance from work area.
6. **MAKE WORK AREA CHILD-PROOF** with padlocks or master switches.
7. **DON'T FORCE THE GRINDER.** It will do the job better and safer if used as specified in this manual.
8. **USE THE RIGHT TOOL.** Don't force the Grinder or an attachment to do a job for which it was not designed.
9. **WEAR PROPER APPAREL.** Wear no loose clothing, gloves, neckties, or jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
10. **ALWAYS USE SAFETY GLASSES.**
11. **SECURE YOUR WORK.** Make certain that the bedknife is securely fastened with the mounts provided before operating.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN GRINDER WITH CARE.** Follow instructions in service section of the Manual for lubrication and preventive maintenance.
14. **DISCONNECT POWER BEFORE SERVICING,** or when changing the grinding wheel.
15. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure all switches are OFF before plugging in the Grinder.
16. **USE RECOMMENDED ACCESSORIES.** Consult the manual for recommended accessories. Using improper accessories may cause risk of personal injury.
17. **CHECK DAMAGED PARTS.** A guard or other part that is damaged or will not perform its intended function should be properly repaired or replaced.
18. **NEVER LEAVE GRINDER RUNNING UNATTENDED. TURN POWER OFF.** Do not leave grinder until it comes to a complete stop.
19. **KNOW YOUR EQUIPMENT.** Read this manual carefully. Learn its application and limitations as well as specific potential hazards.
20. **KEEP ALL SAFETY DECALS CLEAN AND LEGIBLE.** If safety decals become damaged or illegible for any reason, replace immediately. Refer to replacement parts illustrations in this Manual for the proper location and part numbers of safety decals.
21. **DO NOT OPERATE THE GRINDER WHEN UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION.**

## SAFETY INSTRUCTIONS



**IMPROPER USE OF GRINDING WHEEL MAY CAUSE BREAKAGE AND SERIOUS INJURY.**



**Grinding is a safe operation if the few basic rules listed below are followed. These rules are based on material contained in the ANSI B7.1 Safety Code for "Use, Care and Protection of Abrasive Wheels". For your safety, we suggest you benefit from the experience of others and carefully follow these rules.**

### DO

1. **DO** always **HANDLE AND STORE** wheels in a **CAREFUL** manner.
2. **DO VISUALLY INSPECT** all wheels before mounting for possible damage.
3. **DO CHECK MACHINE SPEED** against the established maximum safe operating speed marked on wheel.
4. **DO CHECK MOUNTING FLANGES** for equal and correct diameter.
5. **DO USE MOUNTING BLOTTERS** when supplied with wheels.
6. **DO** be sure **WORK REST** is properly adjusted.
7. **DO** always **USE A SAFETY GUARD COVERING** at least one-half of the grinding wheel.
8. **DO** allow **NEWLY MOUNTED WHEELS** to run at operating speed, with guard in place, for at least one minute before grinding.
9. **DO** always **WEAR SAFETY GLASSES** or some type of eye protection when grinding.
10. **DO TURN OFF COOLANT** before stopping to avoid creating an out of balance condition.

### DON'T

1. **DON'T** use a cracked wheel or one that **HAS BEEN DROPPED** or has become damaged.
2. **DON'T FORCE** a wheel onto the machine **OR ALTER** the size of the mounting hole - if the wheel won't fit the machine, get one that will.
3. **DON'T** ever **EXCEED MAXIMUM OPERATING SPEED** established for the wheel.
4. **DON'T** use mounting flanges on which the bearing surfaces **ARE NOT CLEAN, FLAT AND FREE OF BURNS**.
5. **DON'T TIGHTEN** the mounting nut excessively.
6. **DON'T** grind on the **SIDE OF THE WHEEL** (see Safety Code B7.2 for exception).
7. **DON'T** start the machine until the **WHEEL GUARD IS IN PLACE**.
8. **DON'T JAM** work into the wheel.
9. **DON'T STAND DIRECTLY IN FRONT** of a grinding wheel whenever a grinder is started.
10. **DON'T FORCE GRINDING** so that motor slows noticeably or work gets hot.



**AVOID INHALATION OF DUST** generated by grinding and cutting operations. Exposure to dust may cause respiratory ailments. Use approved NIOSH or MSHA respirators, safety glasses or face shields, and protective clothing. Provide adequate ventilation to eliminate dust, or to maintain dust level below the Threshold Limit Value for nuisance dust as classified by OSHA.

# SAFETY INSTRUCTIONS

PLEASE TAKE SPECIAL NOTE OF THE FOLLOWING WARNING DECALS LOCATED ON THE FRONT AND SIDES OF THE GRINDER.

## GENERAL INFORMATION

**GRINDING WHEEL RPM**

<b>⚠ CAUTION</b>	<b>⚠ ATENCIÓN</b>
<b>To Avoid Injury:</b> -Do not exceed grinding wheel maximum operating speed of 3600 revolutions per minute.	<b>Para evitar lesiones:</b> -No exceda la velocidad de funcionamiento máxima, de 3600 revoluciones por minuto, de la rueda rectificadora.

<b>⚠ CAUTION</b>
<b>To Avoid Injury:</b> -Read Operator's Manual before operating, servicing, or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.) -Keep bystanders away from equipment during operation. Keep all shields in place and in good condition. -Wear all of the appropriate safety equipment specified in the Operator's Manual while operating this machine. -Always make sure machine is off and all machine movement has stopped before leaving machine. -Never allow children or untrained persons to operate equipment.
<b>⚠ ATENCIÓN</b>
<b>Para evitar lesiones:</b> -Lea el manual del operador antes de la puesta en funcionamiento, del mantenimiento o de la reparación del equipo. Siga todas las reglas e instrucciones de seguridad. (Los manuales se encuentran disponibles a través de su distribuidor.) -Mantenga al personal ajeno alejado del equipo durante el funcionamiento. Mantenga todos los protectores en su lugar y en buenas condiciones. -Durante el funcionamiento de esta máquina, utilice todos los equipos de seguridad correspondientes especificados en el manual del operador. -Asegúrese siempre de que la máquina se encuentre apagada y haya dejado de moverse antes de abandonarla. -Nunca permita que un niño o una persona sin capacitación pongan la máquina en funcionamiento.

**ELECTRICITY**

<b>⚠ CAUTION</b>

<b>To Avoid Injury:</b> -Make sure all electrical power to this machine has been disconnected before removing any electrical panels or covers for maintenance.
<b>⚠ ATENCIÓN</b>
<b>Para evitar lesiones:</b> -Asegúrese de que se haya desconectado por completo el suministro eléctrico de esta máquina antes de retirar los paneles eléctricos o las cubiertas para el mantenimiento.

**SHARP OBJECTS**

<b>⚠ CAUTION</b>	<b>To Avoid Injury:</b> -Keep hands away from rotating objects		<b>⚠ ATENCIÓN</b>
			<b>Para evitar lesiones:</b> -Mantenga las manos alejadas de los objetos giratorios



**BG1000**



Label Sheet  
 (English and Spanish)  
 Part Number 5NT120300  
 (English and French)  
 Part Number 5NT120301



## SPECIFICATIONS

Overall Width	84" [213 cm]
Overall Height	62" [155 cm]
Overall Depth	24" [61 cm]
Weight	310 lbs. [340 kg]
Base Construction	Precision heavy duty steel base
Carriage Rails	Precision Ground, Hard Chrome Rails
Grind Head Motor	1/2HP AC Motor, 3450 RPM
Sound Level	Less than 75 Dba,
Tooling	Adjustable Center Supports with Adjustable Alignment Stops
Traverse	Manual Traverse

# ASSEMBLY

## UPON ARRIVAL . . . .

### Packing List

- 1 BG1000 Grinder
- 2 5NT20028 Rails
- 1 Carriage Assembly
- 1 Parts Box (See Service Manual)

### Site Requirements

- Indoors
- Dry
- Reasonably level - cement floor
- Good Lighting
- 115 Volts, 50/60 Hertz, 15 Amp outlet (see service manual for power requirements)
- Adequate access to the front of the machine for the operator.
- **Move the machine to the site, then proceed with assembly.**

## ASSEMBLY

The RG1000 is shipped on a pallet, assembled, except for the rails, carriage, and a few small attachments.

1. Remove from pallet and set on floor.



**THE MAIN BASE ASSEMBLY WEIGHS 250 LBS (122 KG).  
TO LIFT, USE POWER EQUIPMENT OR GET ADEQUATE HELP.**

2. Remove the rails from the paper tubes and install in the mounting brackets. Rail extension from the brackets to the end of the rails is 24" [61 cm] the left and 13" [33 cm] to the right.
5. Install the ring stops, one on each end of the rails to prevent the carriage from rolling off the ends of the rails.
6. Remove the carriage from the base and set on top of the rails.
7. Install the center bedknife support from the parts box.
8. Install the bedknife "hold down" from the parts box.

# WIRING INFORMATION

To convert this grinder to operate on 220 V, 50/60 Hz phase current, cut the plug off from the cord and replace it with the appropriate plug for your locality. For plug and circuit breaker sizing, see motor nameplate ratings.



**USE A QUALIFIED ELECTRICIAN TO MAKE THE CHANGE TO 220V.**

YELLOW (MOTOR WIRE)

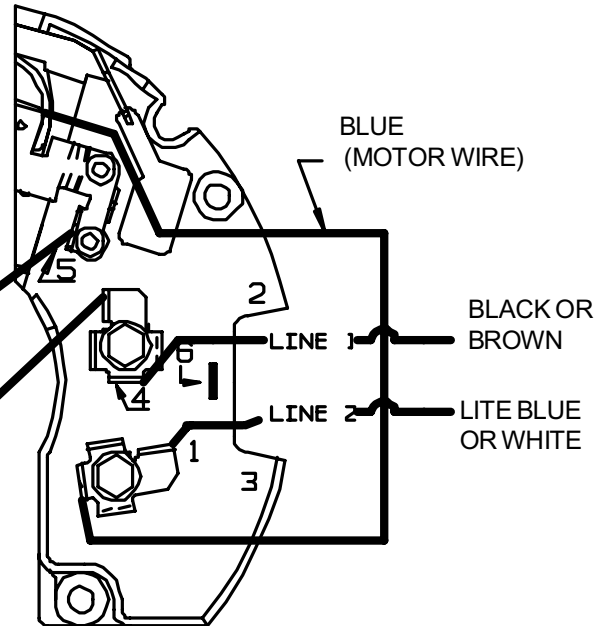
ORANGE (MOTOR WIRE)

BLUE (MOTOR WIRE)

BLACK OR BROWN

LITE BLUE OR WHITE

**NOTE: This motor will operate correctly on 60 Hz or 50 Hz power.**

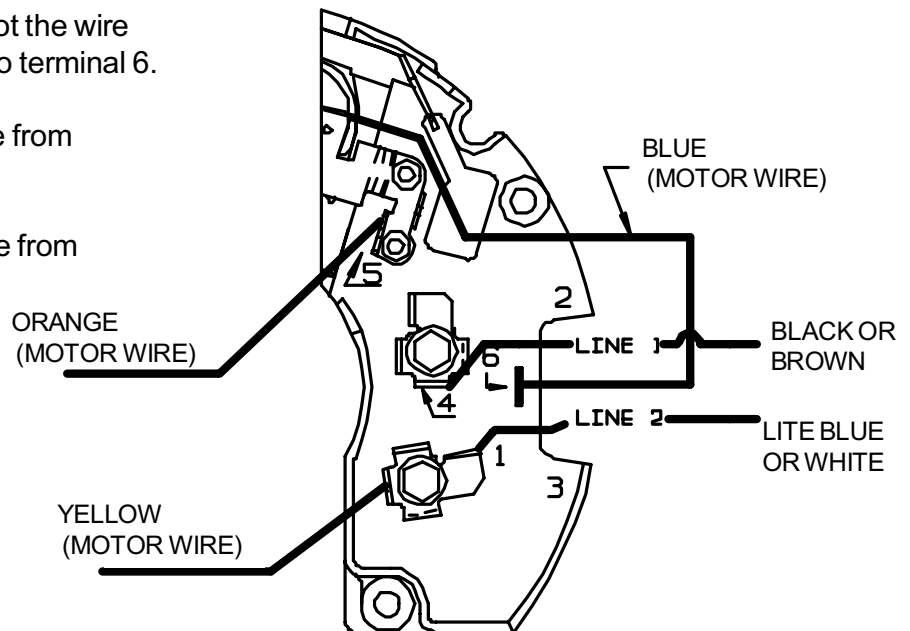


## CONVERTING MOTOR TO 220 VAC

## WIRING FOR 115 VAC

To convert motor to 220 VAC move the following wires:

1. Move the BLUE motor wire (not the wire from the plug.) from terminal 1 to terminal 6.
2. Move the YELLOW motor wire from terminal 5 to terminal 1.
3. Move the ORANGE motor wire from terminal 4 to terminal 5.



## WIRING FOR 220 VAC

# OPERATING INSTRUCTIONS

## WHEN TO SHARPEN THE BEDKNIFE

When the grass is not being cut cleanly, or the cut ends of the grass appear torn or ragged, the edges of the reel blade and bedknife have become rounded and need sharpening. See FIG. 1A. The purpose of sharpening is to restore the sharp edges to the reel and bedknife.

**IMPORTANT:** To fully sharpen a reel mower, you need to grind the reel blades (using a Reel Grinder) and reshape the cutting edge of the bedknife.

**NOTE:** New bedknives should be ground before being put into use. New bedknives deform and move to match the shape of the bedbar at the time of installation and therefore **MUST** be ground to a straight surface after installation.

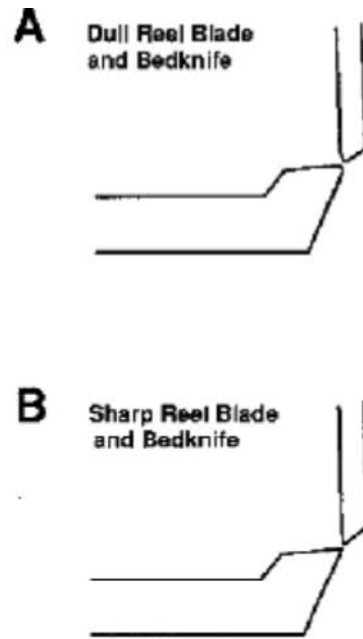


FIG. 1

## BEDKNIFE GRINDING ANGLES

The bedknife has two faces that normally need to be ground, the top face and the front face (on some models, the front face may be curved and may not need grinding).

The proper grinding angles for the two faces will vary depending on the model. **Always follow the manufacturer's recommended specifications for bedknife angles.**

Typical Bedknife angles:

- There will be a +4 to -10 degrees clearance angle ground on the top face. The angle is **usually** measured relative to the bedknife mounting surface. See FIG. 2A.
- There will be a 0-30 degrees clearance angle ground on the front face. The angle is **usually** measured relative to a line **perpendicular** to the bedknife mounting surface. See FIG. 2B.

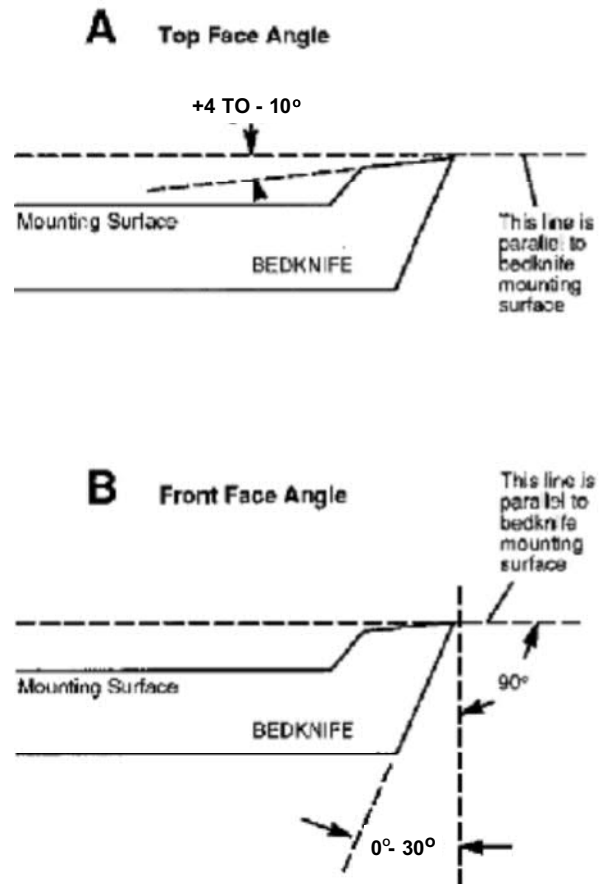


FIG. 2



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