



# MODEL 200 Bed Knife Grinder

## OPERATOR'S MANUAL



### **WARNING**

You must thoroughly read and understand this manual before operating the equipment, paying particular attention to the Warning & Safety Instructions.

# 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

## DON'T

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.
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 the work gets excessively 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.

# TABLE OF CONTENTS



This machine is intended for reel mower bedknife grinding **ONLY**. Any use other than this may cause personal injury and void the warranty.

To assure the quality and safety of your machine and to maintain the warranty, you **MUST** use original equipment manufactures replacement parts and have any repair work done by a qualified professional.

**ALL** operators of this equipment must be thoroughly trained **BEFORE** operating the equipment.

Do not use compressed air to clean grinding dust from the machine. This dust can cause personal injury as well as damage to the grinder. Machine is for indoor use only. Do not use a power washer to clean the machine.



## TABLE OF CONTENTS

Safety Instructions.....	Page 4 - 7
Daily Maintenance.....	Page 6
Machine Specifications.....	Page 8
Assembly .....	Page 9
Conversion to 220 VAC .....	Page 10
Operating Instructions.....	Page 11-21

### OPERATING CONDITIONS:

AMBIENT TEMPERATURE:

RELATIVE HUMIDITY:

ALTITUDE:

TRANSPORTATION AND STORAGE:

THIS MACHINE IS INTENDED FOR INDOOR USE ONLY.

+5°C/ 40°F to +40°C/ 100°F

50% RH, +40°C / 100°F.

Higher RH may be allowed at lower temperatures.

- no condensation must be present.

up to 1000m/ 3280 ft. above mean sea level.

-25°C/-15°F to +55°C / 130°F

Means must be provided to prevent damage from humidity, vibration and shock.

## DAILY MAINTENANCE BY THE OPERATOR

On a daily basis, clean the machine by wiping it off.

On a daily basis, remove all grinding grit from the traverse shafts and tooling bar area.

On a daily basis, inspect the machine for loose fasteners or components.

Contact your company's Maintenance Department if damaged or defective parts are found.



**DO NOT USE COMPRESSED AIR TO CLEAN GRINDING DUST FROM GRINDER.**

# SAFETY INSTRUCTIONS

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



Symbol for *wear safety glasses*



Symbol for *disconnect power and read Service Manual before servicing.*



Symbol for *Sharp object which will cause serious injury.*

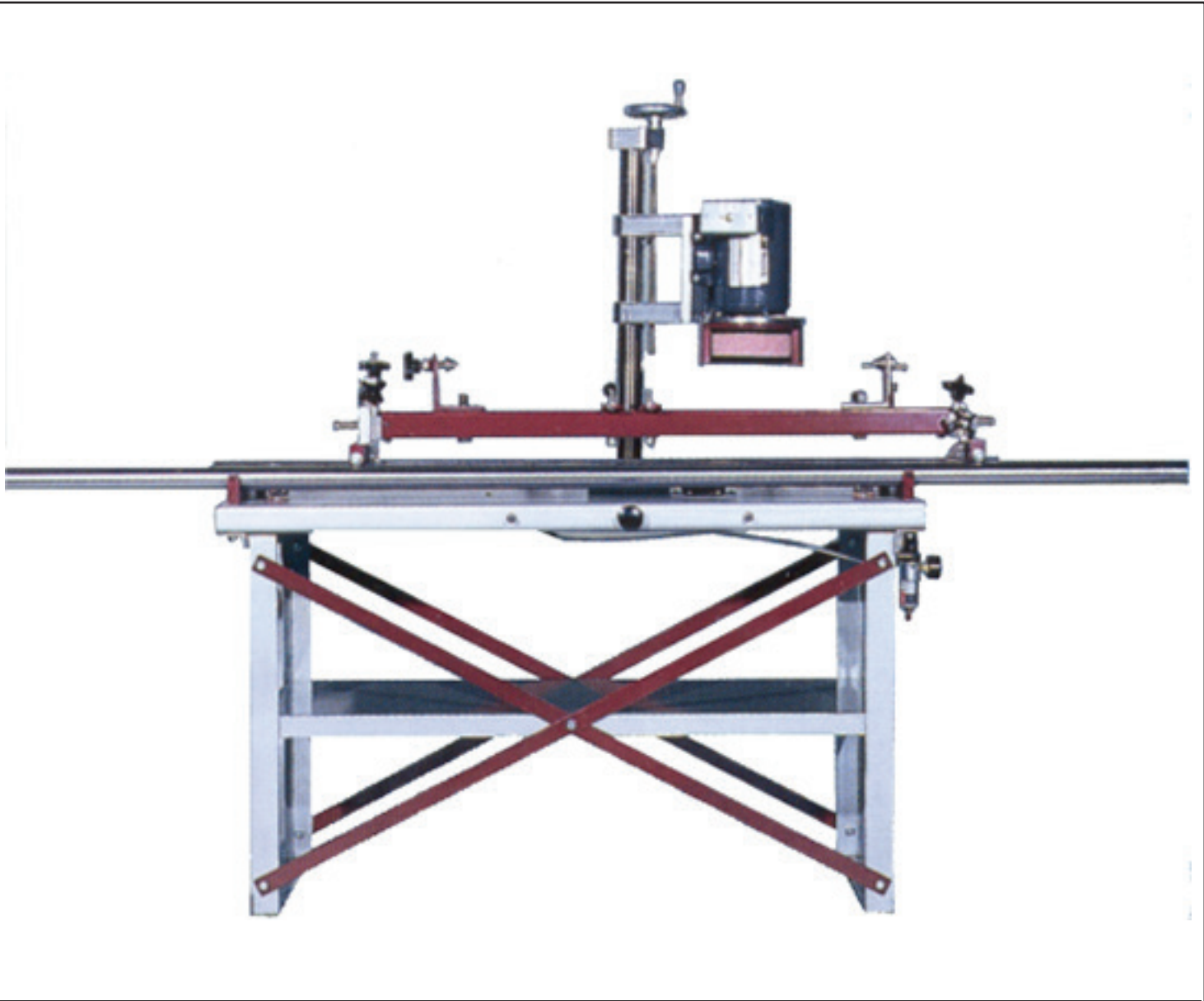


Symbol identifying a panel, cover, or area as having live electrical components within.



Symbol to *Keep visitors at a safe distance away from the grinder.*

# SPECIFICATIONS



## 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
- ..... \*Optional Pneumatic Traverse Kit 20520 Available

# ASSEMBLY

## UPON ARRIVAL

### Packing List

- 1 Model 200 Grinder
- 2 20028 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 Model 200 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).  
USE POWER EQUIPMENT TO LIFT 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.**

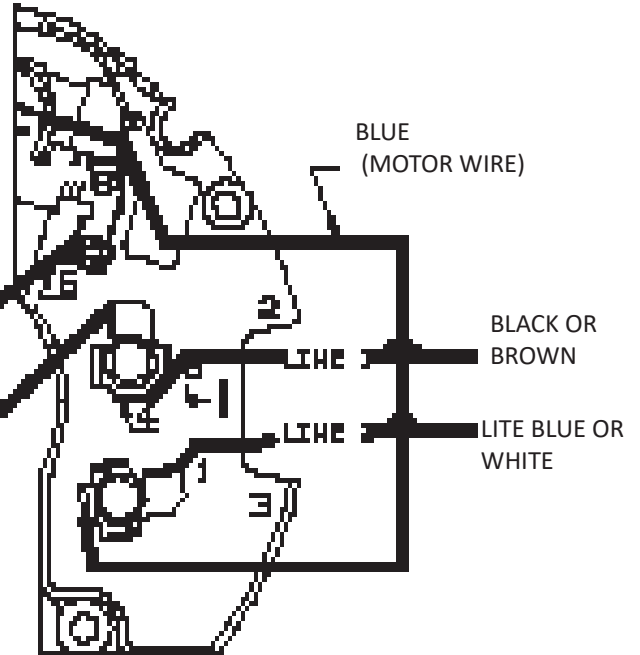
YELLOW (MOTOR WIRE)

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

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 115 VAC

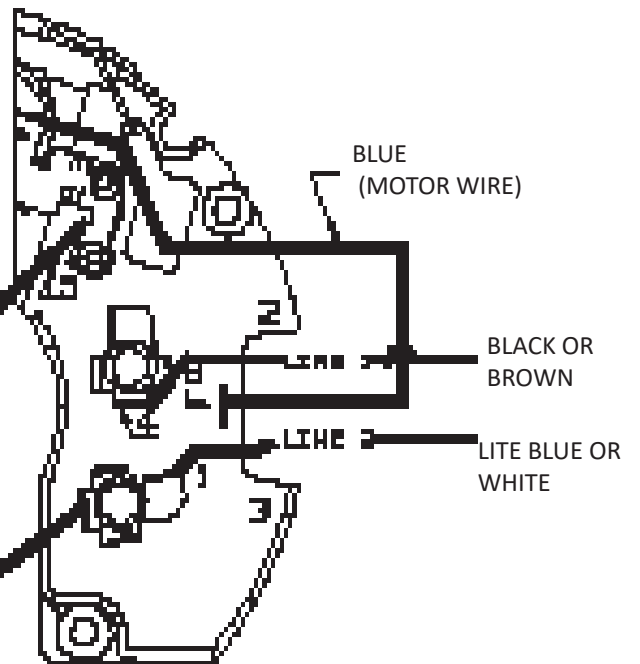
ORANGE (MOTOR WIRE)

YELLOW (MOTOR WIRE)

BLUE (MOTOR WIRE)

BLACK OR BROWN

LITE BLUE OR WHITE



## 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 with a bedknife grinder.

**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.

## 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.

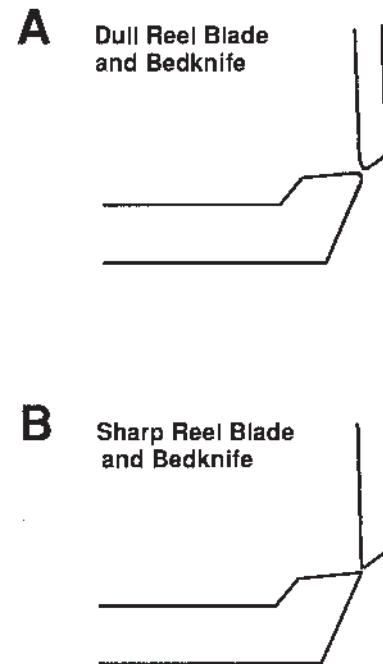


FIG. 1

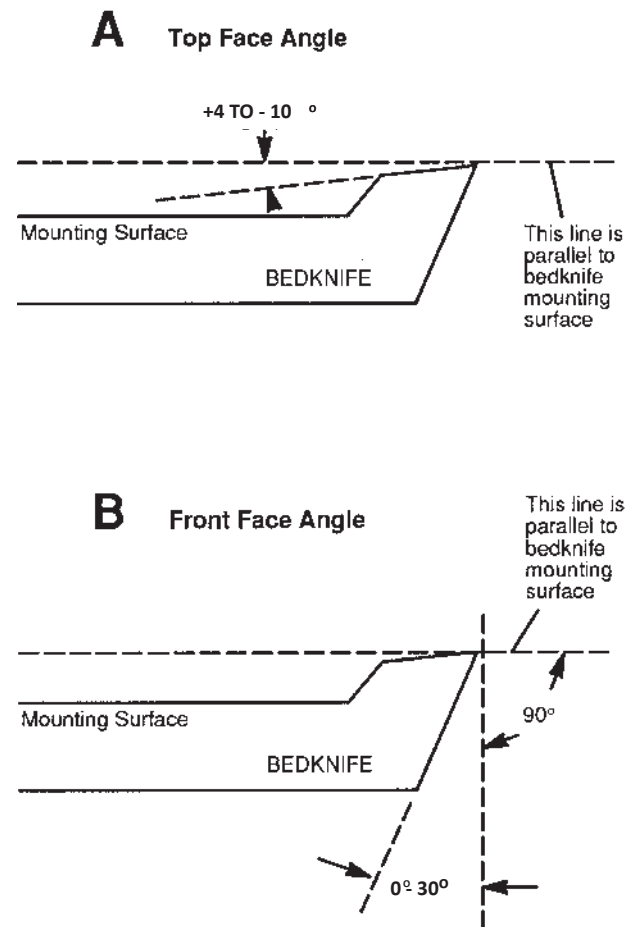


FIG. 2

# OPERATING INSTRUCTIONS (CONTINUED)

## Terminology

**Bedknife** - the stationary blade in a reel mower.

**Bedknife Support or bedbar** - the bedknife is mounted to this frame member with screws or rivets.

**Top Face** - the horizontal, ground surface of the bedknife.

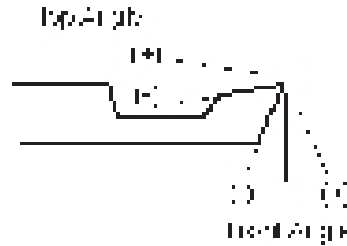
**Front Relief Angle** - the angle between vertical and the manufacturer's recommended sharpening angle.

**Top Relief Angle** - the angle between horizontal and the manufacturer's recommended sharpening angle.

## Recommended Face & Top Angles

Manufacturers recommend that bedknife relief angles should always be maintained to original manufacturer's specifications. Neary Technologies has compiled these angles in a chart below. Angles vary depending on the manufacturer and model. We have included many of the popular models in the chart. If your model is not listed, consult the manual for the mower.

Some units do not have the front face ground. For example: Some Toro units (such as the 70" Pro) have a "stellite" hard coated surface. The Toro Turf Pro 84 has a factory ground front face. Consult the bedknife manufacturer when in doubt as to grinding the front face.



BEDKNIFE GRIND ANGLES			
Make	Model	Top Angle in Degrees	Front Angle in Degrees
Jacobsen	19" x 22" Greens Mower	-8 to -10	0 to -5
	Blitzer, F133, Fairway	+4 to +6	0 to -5
	Greens King 418, 518, 422, 522	-8 to -10	0 to -5
	Greens King 426, 526	-8 to -10	0 to -5
	Greens King II, IV, IV Plus, V	-8 to -10	0 to -5
	HF5, HM11	+4 to +6	0 to -5
	LF100, 123, 128, 3810	-8 to -10	0 to -5
	Ranger, ST5111	+4 to +6	0 to -5
	TF60	-8 to -10	0 to -5
	Tri King 1671, 1672, 1684, 1900	+4 to +6	0 to -5
Trim King, Turf King II, 76, 84	+4 to +6	0 to -5	
John Deere	All Models	-5	-5
Lesco	All Models	-6	-5
National	All Models	-5	-5
Ransomes	G-Plex	-8 to -10	0 to -5
	Fairway, 250, 305, 405	-3	0
	Motor 180, 350D, T-Plex, 185	-3	0
Toro	GR500, 1000, 3000, HTM 175	-5	-15**
	RM5100, 5300, 6500	-5	-15**
	RM108, 216, 2300, 3500, 4500	-5	-15**
	RM5, RM7, RMII, Spartan, Turf Pro	-5	-15**
**If height of cut is less than 1/2", increase angle up to -30 degrees			

## OPERATING INSTRUCTIONS (CONTINUED)

### THE CONTROLS FOR THE MODEL 200

#### ON/OFF CONTROL

This toggle switch on top side of the grind motor is used to turn the grind motor ON or OFF.



**ALWAYS WEAR PROPER SAFETY EYEWEAR AND RESPIRATOR EQUIPMENT WHEN OPERATING YOUR GRINDER. NEVER TURN ON YOUR GRINDER WITHOUT FIRST PUTTING ON THIS EQUIPMENT.**

GRIND MOTOR ON/OFF SWITCH



FIG. 3

#### INFEEED HANDWHEEL

Turning the handle counterclockwise infeds the grinding wheel, while turning the knob clockwise will move the grinding wheel away from the bedknife.



**THE MAXIMUM RECOMMENDED INFEEED IS .003". THIS IS APPROXIMATELY 1/24TH OF A TURN OF THE KNOB, OR A ROTATION OF 15 DEGREES.**



FIG. 4

## OPERATING INSTRUCTIONS (CONTINUED)

### MOUNTING A GRINDING WHEEL

To replace the grinding wheel: See FIG. 5.

**VERIFY THAT THE WHEEL TO BE INSTALLED IS IN GOOD CONDITION. SEE PAGES 4 AND 5 FOR SAFETY INFORMATION ON GRINDING WHEELS.**

1. First, turn the power off by pushing in the Emergency Stop button.
2. Use the grinding wheel wrench supplied with the grinder to unscrew the mounting flange that holds the grinding wheel.

**THE LOCK FLANGE HAS A LEFT HANDED THREAD, HOLD THE WHEEL AND TURN THE WRENCH CLOCKWISE WHILE LOOKING AT THE LOCK FLANGE TO LOOSEN.**

3. Remove the old wheel and install the new one.
4. Screw on the flange finger tight, then tighten approximately 1/8 turn further with the wrench. The flange will self-tighten when motor is turned on.

**IF THE WHEEL FLANGE IS OVERTIGHTENED, THE GRINDING WHEEL MAY CRACK AND FLY APART.**

5. After you install a new or different wheel, it is recommended that you dress it before grinding. (See next page) Dressing the wheel trues the grinding surface of the wheel and removes the hard glaze sometime remaining from the manufacturing process. Dressing the wheel properly prepares the wheel for grinding.

### REPLACING THE WHEEL

A new vitrified grinding wheel is 2" [51 mm] deep. Replace the wheel when it wears down to a depth of 0.75" [19 mm].

See FIG. 6.

GRINDING WHEEL SHAFT HAS A LEFT HAND THREAD-  
TURN CLOCKWISE TO LOOSEN

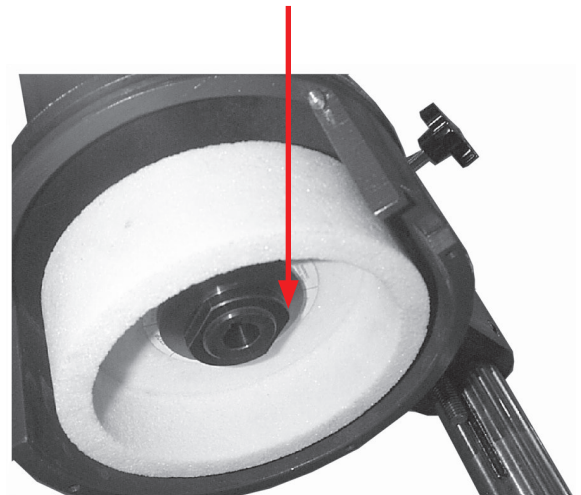


FIG. 5

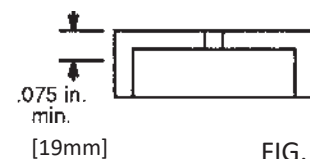


FIG. 6

## OPERATING INSTRUCTIONS (CONTINUED)

### DRESSING THE GRINDING WHEEL

Dress the grinding wheel whenever there is any glazing. Glazing is the buildup of stone dust and grinding grit on the face of the wheel. For best results, dress the wheel before making the final grind.



FIG. 7



**REFER ALSO TO THE SAFETY RULES ON PAGES 4 AND 5.  
ALWAYS USE SAFETY GLASSES, DUST PROTECTION AND  
PROPER HAND PROTECTION WHEN DRESSING THE WHEEL  
OR GRINDING A BEDKNIFE.**

To dress the grinding wheel:

1. Move the carriage to one end.
2. Carefully hold the dressing brick against the grinding wheel while the grinding wheel is rotating.



**KEEP HANDS AND FINGERS AWAY FROM THE  
GRINDING WHEEL.**

**FOR MAXIMUM DRESSER LIFE, ROTATE THE  
DRESSER OFTEN.**

## OPERATING INSTRUCTIONS (CONTINUED)

### INSPECT THE BEDKNIFE

Inspect the bedknife for damage (cracks, warping, bushing wear, excessive bedknife wear). Replace or repair if necessary, see the mowing unit manual for additional information. Thoroughly clean the bedknife prior to grinding. Replace any loose rivets, and tighten any loose screws.

### MOUNTING THE BEDKNIFE ON THE BEDKNIFE SUPPORT

1. Use the center cone to mount the bedknife. Move the center supports to the width needed to accept the bedknife. Place the bedknife in the fixed center cone and turn the knob on the adjustable center cone until there is no side to side free play.

**!**  
**●**

**THE CENTER SHOULD NOT LOAD THE BEDBAR IN ANY DIRECTION. THE CENTER CONE SHOULD BE TIGHTENED ONLY ENOUGH TO HOLD THE BEDBAR RIGID.**



FIG. 8

Use this knob to tighten the bedknife between the centers.

Middle bedknife support.

Use these knobs to move the center supports back and forth on the trunnion bar.

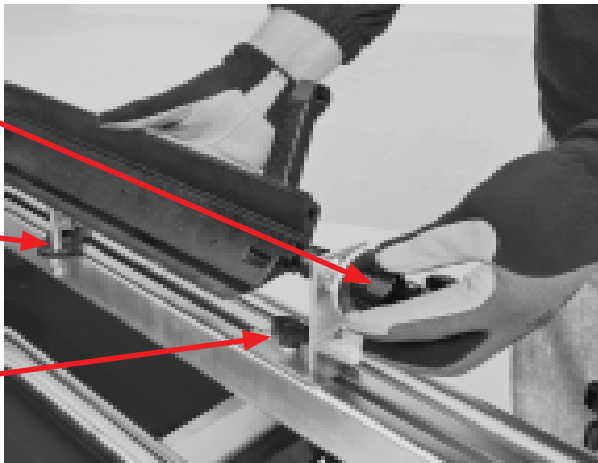


FIG. 9

2. Use the center locking knob to secure the adjustable center cone in place.

**!**  
**●**

**IF THE LOCK KNOB IS NOT TIGHT, THE CENTER CONE COULD LOOSEN. THIS WILL RESULT IN A POOR GRIND.**



FIG. 10

## OPERATING INSTRUCTIONS (Continued)

### MOUNTING THE BEDKNIFE ON THE BEDKNIFE SUPPORT (Continued)

3. Adjust the position of the middle bedknife support if necessary. (See Fig 8) Use the top support bracket to trap the bedknife against the bedknife support.

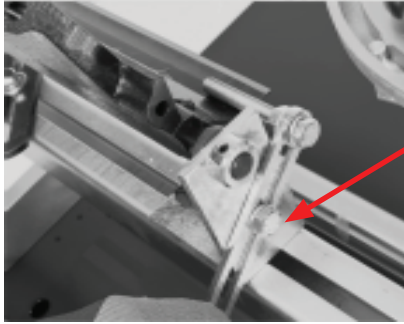


FIG. 11

Use the top support bracket to hold the front of the bedknife against the middle bedknife support. Lay it in the gutter of the bedknife and tighten.

4. Use the gauge to adjust the bedknife **in and out** by touching the front of the center on one end, then lift the rod, move the carriage and compare to the front of the cylinder on the other end. Repeat! This must be checked several times because when you move one end, the other end moves as well.



FIG. 12

Use this knob to adjust the bedknife **in or out** to make it travel true to the grinding wheel.

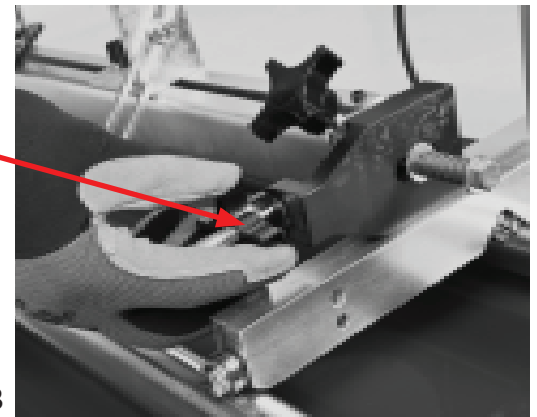


FIG. 13

5. Use the gauge to adjust the bedknife **up and down** by touching the top of the center on one end, then lift the rod, move the carriage and compare to the top of the cylinder on the other end. Repeat! This must be checked several times because when you move one end, the other end moves as well.

Use this knob to adjust the bedknife **up or down** to make the bedknife travel true to the grinding wheel.

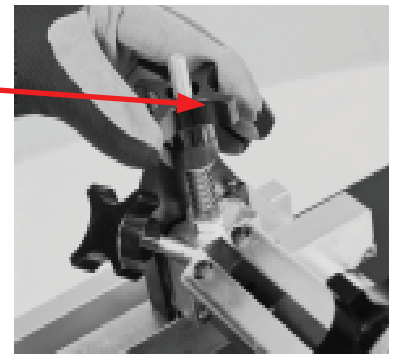


FIG. 14

6. Loosen the two rotate lock knobs and rotate the trunnion ar with the bedknife assembly to the manufacturer recommended bedknife angle. Use the angle gauge to help determine the angle of the bedknife.

Loosen knobs at both ends of trunion bar to rotate the bedknife.



FIG. 15

## OPERATING INSTRUCTIONS (Continued)

### POSITIONING THE GRINDING HEAD

To move the grinding head into proper position to grind, loosen the grinding head rotate lock lever. The grinding head can now be rotated on the base to bring the grinding wheel toward or away from the bedknife.

Grinding head rotate  
lock lever

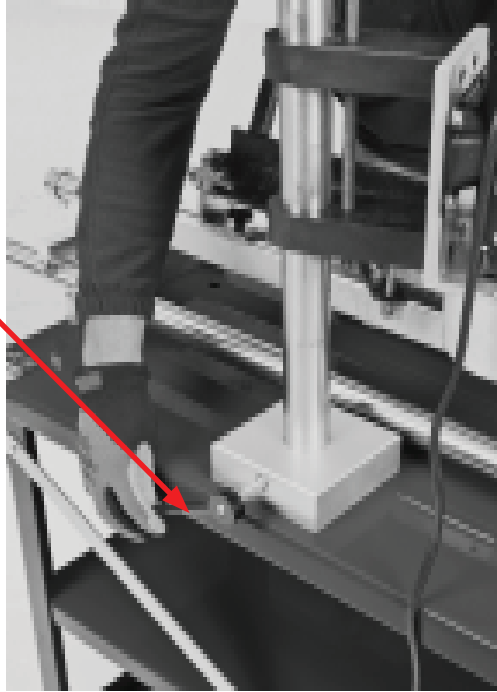
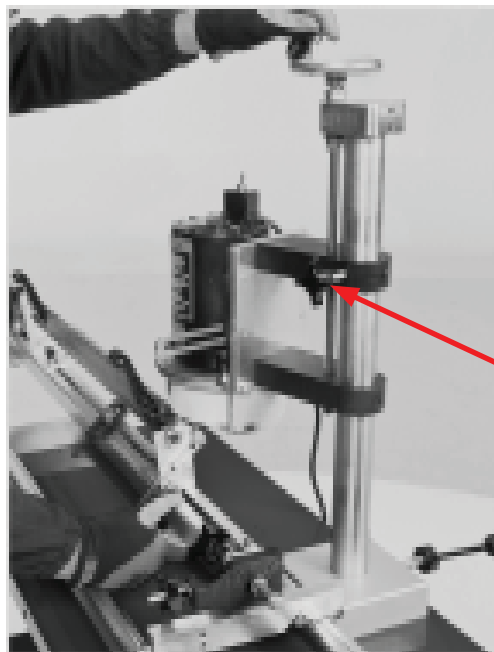


FIG. 16

To lock the position of the grinding head while grinding, tighten the lock knob on the grinding head assembly. Loosen the knob when you need to move the grinding head up or down.



Grinding head lock  
knob.

FIG. 17



## OPERATING INSTRUCTIONS (Continued)

### BEDKNIFE ALIGNMENT (TOUCH METHOD)

After securing the bedknife on the tooling support assembly, the bedknife face must be aligned to the grinding head. Using the gauge as described on the previous pages will get the alignment very close. For maximum bedknife life use the following touch method to finish the alignment of the bedknife to the grinding head.

#### Alignment is accomplished by touching the grinding wheel to the bedknife.

With the bedknife set to the correct angle, move the grinding head to the right end of the bedknife. Now, rotate the infeed handwheel until the wheel *just* touches the bedknife at the end nib of the knife face on a used bedknife, or the full knife face on a new bedknife. On used bedknife if you wish to grind to match the worn bedknife, then touch the grinding wheel inside the end nib. See FIG. 18.

Next, move the grinding head to the left end of the bedknife. Now without moving the grinding head infeed, adjust the tooling bar left side adjuster until the grinding wheel *just* touches the bedknife end nib or the knife face on a used bedknife, or the full knife face on a new bedknife. Again, on a used bedknife if you wish to grind to match the worn bedknife, touch the grinding wheel inside the end nib. See FIG.19. Because when you adjust the left side, the right side also moves a small amount, you should go to the right and left sides several times to verify that you *just* contact the knife at both ends. This can be done while grinding the knife.

NOTE: These adjustments are done on the carriage, NOT at the infeed handwheel on the grinding head.

NOTE: The recommended method is to use the end nib. Using the end nibs will help keep the bedknife true to the mounting holes in the bedbar.

GRINDING WHEEL AT RIGHT END OF BEDKNIFE

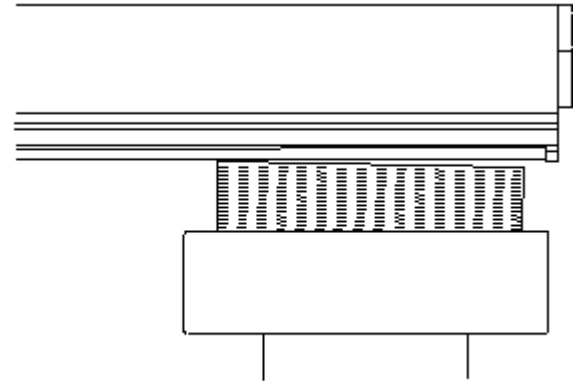


FIG. 18

GRINDING WHEEL AT LEFT END OF BEDKNIFE

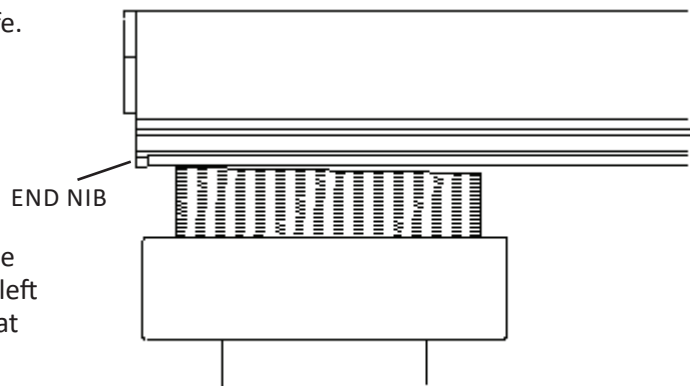


FIG. 19

# OPERATING INSTRUCTIONS (Continued)

## Top Face Grinding



REFER TO THE "SAFETY RULES WHEN GRINDING" ON PAGE 4 AND 5.

1. Mount the bedknife between the centers.
2. Rotate the bedknife and bedknife support forward until the angle finder reads the correct angle for grinding the top face. Firmly tighten all knobs to assure the angle of the support and bedknife does not change during grinding.
3. The front of the wheel must extend into the gutter of the bedknife. If it does not extend into the gutter, the ground surface may not be flat after grinding. If necessary, rotate the grinding head to assure that the edge of the wheel extends into the gutter of the bedknife. Infeed the grinding wheel until it is a few thousandths of an inch away from the bedknife surface.
4. If the wheel does not clear the entire length of the bedknife, or if the bedknife is not aligned with the grinding wheel, it may be necessary to align the bedknife using the gauge and the adjustments for up & down and in & out.
5. When you have completed the set up, check to assure that all knobs and stops are secure, then with the grinder turned off, travel the carriage from end to end to assure that the grinding wheel will grind only the bedknife and clears all other parts of the machine and the bedknife.
6. Turn on the grinding motor switch and slowly infeed the wheel to the bedknife until there is a light grind. Turn the infeed handwheel **counterclockwise** to infeed the grinding wheel. Manually traverse the carriage back and forth. When infeeding, only infeed a maximum of approximately .002-.003" [.05-.075mm] .  
**IMPORTANT! NEVER ALLOW THE BEDKNIFE EDGE TO CHANGE COLOR OR YOU MAY LOSE THE TEMPER IN THE BEDNIFE EDGE.**

**!** **IMPORTANT!** When manually traveling the carriage on the Model 200, it is very important to use consistent speed and pressure. Do not lean on the machine or bump the rails.

**!** **NOTE:** During the grinding process, watch the spark pattern for the full length of grind. The sparks should look equal for the full length of grind.

**NOTE:** If an excessive amount of metal stock will have to be removed on one end of the bedknife, recheck your setup first and then the straightness of the bedknife. If it is bowed or twisted, replace it.

7. Continue grinding the bedknife in this manner until you are satisfied with the top face grind. Dress the wheel when necessary.
8. Dress the wheel before the final **spark out** grind. On the spark out passes, infeed the grinding wheel only about .001" [.025 mm] and then let the grinding wheel spark out. For sparking out, always traverse the grinding head 10 to 20 passes without infeeding the grinding head. To get the finest top-face grind, traverse at a slow speed for this final grinding sparkout. This process improves the surface finish of the grind and improves the grind quality.

**NOTE:** What you are looking for is a "near sparkout" - about a 99% reduction in grinding spark from a normal grind. Don't continue sparking out until you have **no sparks**, because this could be an extremely long time.

By partially grinding both surfaces, the top face and the front face, you will sharpen a used bedknife with the least metal removal. Partially grinding both surfaces is the preferred method for life utilization of the bedknife. See Fig 20.



FIG. 20

## OPERATING INSTRUCTIONS (Continued)

### Front Face Grinding

**NOTE:** Some bedknives require front face grinding. Check with the bedknife manufacturer to determine if front face grinding is required.

1. Rotate the bedknife and bedknife support back to the desired angle.
2. Infeed the grinding wheel until it is a few thousandths of an inch away from the bedknife front surface.
3. If the grinding wheel does not clear the entire length of the bedknife, or if the bedknife is not aligned with the grinding wheel it may be necessary to align the bedknife.
4. Turn on the grinding motor switch and slowly infeed the wheel to the bedknife until there is a light grind. Turn the infeed handwheel **counterclockwise** to infeed the grinding wheel. Manually traverse the carriage back and forth. When infeeding, only infeed a maximum of approximately .002-.003" [.05-.075mm] .



**IMPORTANT! NEVER ALLOW THE BEDKNIFE EDGE TO CHANGE COLOR OR YOU MAY LOSE THE TEMPER IN THE BEDKNIFE EDGE.**



**IMPORTANT!** When manually traveling the carriage on the Model 200, it is very important to use consistent speed and pressure. Do not lean on the machine or bump the rails.

**NOTE:** During the grinding process, watch the spark pattern for the full length of grind. The sparks should look equal for the full length of grind.

**NOTE:** If an excessive amount of metal stock will have to be removed on one end of the bedknife, recheck your setup first and then the straightness of the bedknife. If it is bowed or twisted, replace it.

5. Continue grinding the bedknife in this manner until you are satisfied with the front face grind. Dress the wheel when necessary.
6. Dress the wheel before the final **spark out** grind.



**WHEN REMOVING THE BEDKNIFE FROM THE MACHINE TAKE CARE AS THE CUTTING EDGE OF THE BEDKIFE IS EXTREMELY SHARP.**