



*Setting the Standard With the
World's Most Valued Grinders.*

384 MANUAL BEDKNIFE GRINDER

This book consists of two manuals:

The OPERATORS MANUAL 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.



Setting the Standard With the World's Most Valued Grinders.

We are committed to:

Providing superior customer support, training, and service.

Manufacturing the highest quality products at an unequaled value.

Setting the industry standard by investing in technological product innovation.

Manufacturing products specifically designed to maintain original equipment manufacturers' specifications.

Interacting with and supporting all original equipment manufacturers.

384 MANUAL BEDKNIFE GRINDER

OPERATORS 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. Grinder 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 clamps provided before operating.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN GRINDER WITH CARE.** Follow instructions in Assembly and Service 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 the switch is 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 Assembly & Service 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.

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 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 BURRS.**
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.

OPERATING INSTRUCTIONS



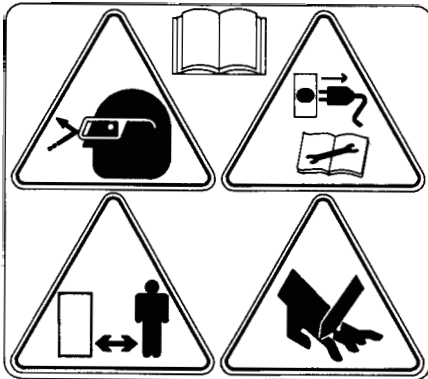
This machine is intended for manual reel mower bedknife grinding **ONLY**. Any use other than this may cause personal injury and void the warranty.

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 used compressed air to clean grinding dust from the machine. This dust can cause personal injury as well as damage to the grinder.

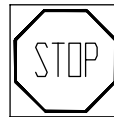
Grinder is for indoor use **ONLY**. Do not powerwash grinder.



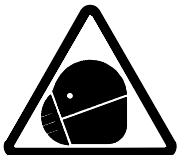
Symbols for Read Operators manual, wear safety glasses, disconnect power before servicing, sharp objects which will cause injury and keep visitors a safe distance away.



Symbol for starting or running the machine. Flip the toggle switch to this side.



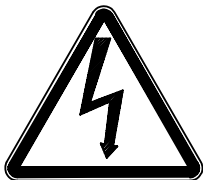
Symbol for emergency stopping the machine. Flip the toggle switch to this side.



Symbol that operators and visitors in the close proximity must wear respirators or have adequate ventilation systems



Symbol for caution relating to RPM of the motor and minimum safe rated RPM of the grinding wheel.



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

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SPECIFICATIONS AND DAILY MAINTENANCE

SPECIFICATIONS

Electrical Requirements	120V 60 Hz 13-amp or 220 VAC 50Hz 7 Amp circuit
Net Weight	230 lbs [104 kg]
Shipping Weight	250 lbs [113 kg]
Maximum Grinding Length	34 in. [864 mm]
Sound Level	Less than 75 Dba

DAILY MAINTENANCE

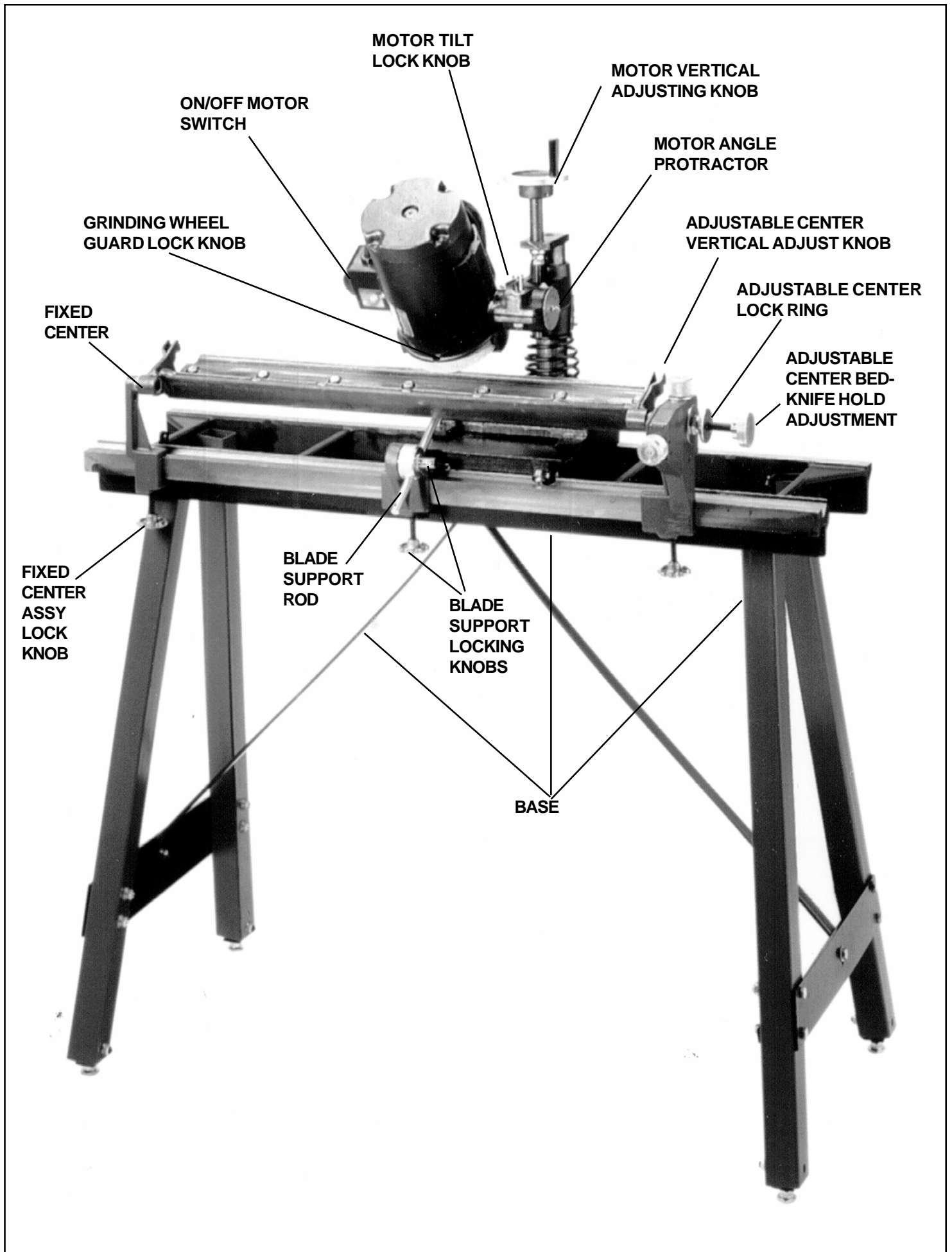
On a daily basis, clean the grinder by wiping all areas down.

On a daily basis, inspect the grinder for loose fasteners or components and tighten.

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



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



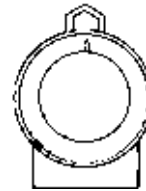
GETTING TO KNOW YOUR GRINDER

OPTIONAL TOOLS

Angle Finder (optional)

Measures the mounting angles of the bedknife and the grinding wheel motor, so they can be matched (for proper grinding angle). Has a magnetic base.

Angle
Finder



GRIND HEAD ADJUSTMENTS

1. Vertical handwheel

Moves the grinding head up and down.
See FIG. 1

2. Horizontal Adjustment

Moves the grinding head forward and back.
See FIG. 8

GRINDING HEAD

Head Lock Lever

Allows you to pivot the complete grinding head (wheel and motor). See FIG. 2



THE HEAD IS HEAVY AND MUST BE SUPPORTED WHEN THE LOCK IS RELEASED.

Wheel Guard Lock Screws

One thumb screw which holds the guard in position. Loosen it to pivot the guard when the wheel orientation is changed. See FIG. 3

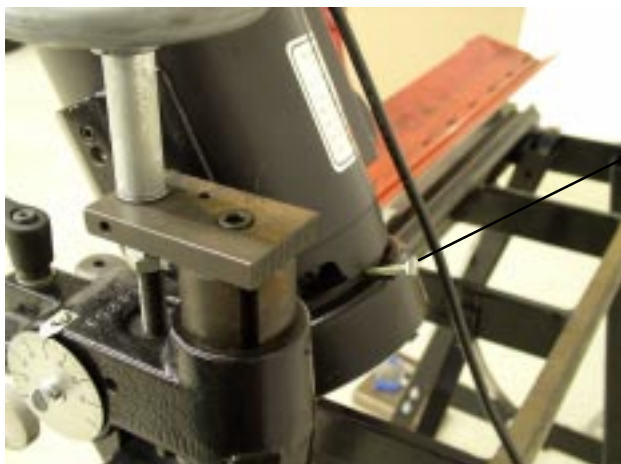


FIG. 3

VERTICAL
HANDWHEEL



FIG. 1

HEAD LOCK
LEVER

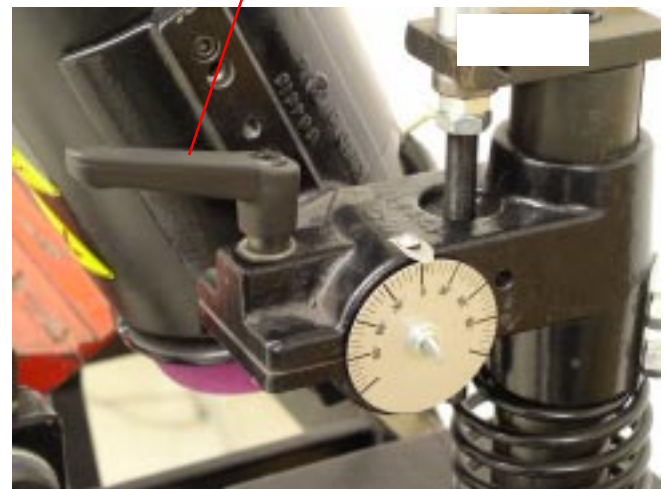


FIG. 2

THUMB
SCREW

GETTING TO KNOW YOUR GRINDER (Continued)

FIXED BEDKNIFE SUPPORT

Handwheel locks the center in position on the base. See FIG. 4

FIXED SUPPORT



FIG. 4

CENTER BEDKNIFE SUPPORT

- Lower Handwheel locks the center support in position on the base. See FIG.
- Center Support Lock Handle Bedknife in rotational position to the grinding wheel. See FIG. 5

MIDDLE SUPPORT



LOCK HANDLE

FIG. 5

LOWER HANDWHEEL

ADJUSTABLE BEDKNIFE SUPPORT

- Lower Handwheel locks the Center Assy in position on Adjustable Base. See FIG. 6
- Side Handwheel for in/out positioning of the center to the bedbar, with lock ring. See FIG. 6
- Horizontal and Vertical Knobs are adjusted for Bedknife Centers Alignment. See FIG. 6

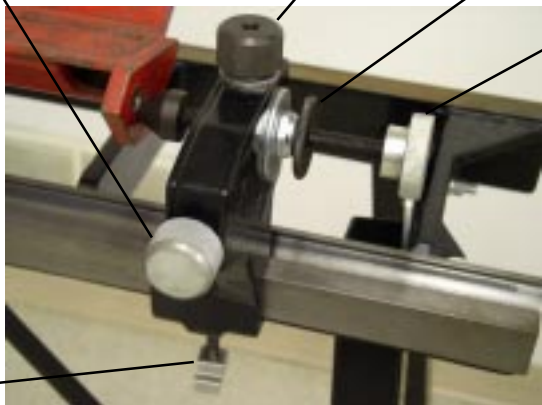
ADJUSTABLE SUPPORT

HORIZONTAL ADJUSTMENT KNOB

VERTICAL ADJUSTMENT KNOB

LOCK RING

SIDE HANDWHEEL



LOWER HANDWHEEL

FIG. 6

DIAMOND DRESSER

OPTIONAL Diamond Dresser allows you to dress the grinding wheel to remove any buildup. See page 13 for more information. See FIG. 7



FIG. 7

GENERAL OPERATING INFORMATION

WHEN TO SHARPEN THE BEDKNIFE

NOTE: 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 (using the 384 Bedknife Grinder).

NOTE: New bedknives should be ground before being put into use.

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. 8A. The purpose of sharpening is to restore the match between the reel blades and the cutting edge of the bedknife. See Fig. 8B.

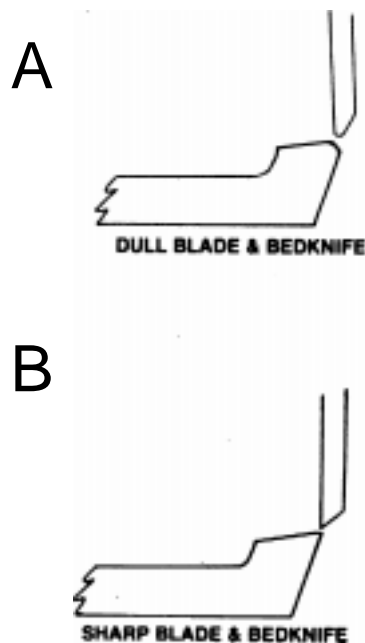


FIG. 8

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 not need grinding.)

The proper grinding angles for the two faces will vary, depending on the reel manufacturer - **always follow** the manufacturer's recommended specifications for these angles.

Typically however,

** There will be a 5-7 degree clearance angle ground on the top face. It will **usually** be measured relative to the bedknife mounting surface. See Fig. 9A.

** There will be a 10-30 degrees clearance angle ground on the front face. It will **usually** be measured relative to a line **perpendicular** to the bedknife mounting surface. See Fig. 9B.

NOTE: If the manufacturer measures the clearance angle relative to some **other** surface, you will have to adjust our calculations accordingly.

Obtaining these angles is discussed in more detail in the operating instructions.

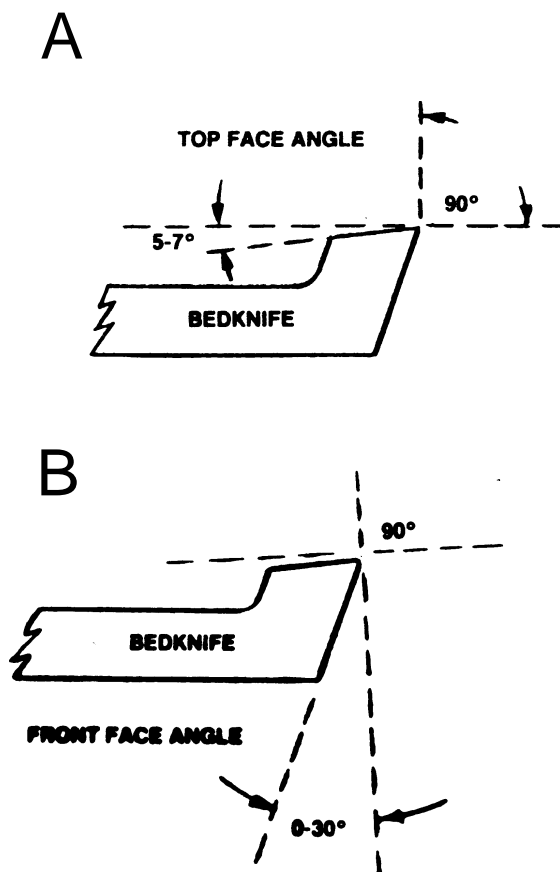


Fig. 9

GENERAL OPERATING INFORMATION (Continued)

MOUNTING A GRINDING WHEEL

To replace the grinding wheel: See FIG. 10.

1. Turn the GRINDING WHEEL switch OFF.
2. Remove two of the three screws that hold the wheel cover guard.
3. Unscrew the mounting flange that holds the grinding wheel - use a 3/4" open-end wrench.
4. Remove the old wheel and install the new one.
5. Screws on the flange finger tight, then tighten 1/8 turn further with the wrench. It will self-tighten when the motor is turned on.

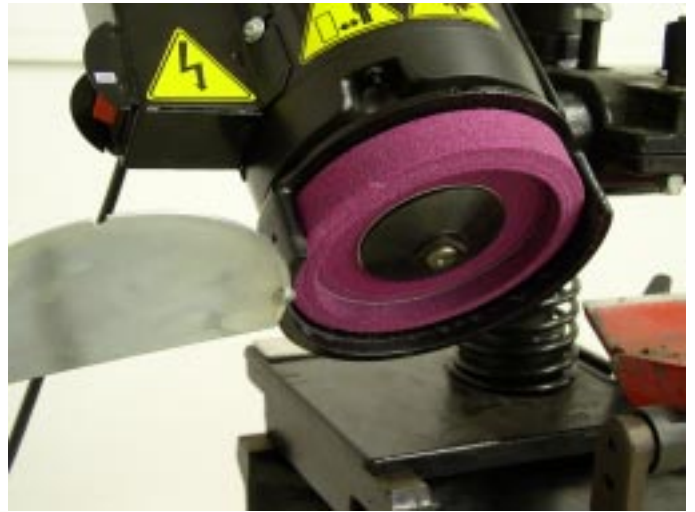


FIG. 10



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

6. Reattach the wheel cover guard.
7. After you install a new or different wheel, we recommend that you dress it before grinding. See Page 10.

GRINDING WHEELS FOR MODEL 384

WHEEL PART NO.	COLOR/DESCRIPTION/SIZE	GRIT	USE FOR GRINDING
3700067	6/4 x 1 x 1.25 Bore Flaring Cup Ruby	60	Flaring Cup for clearance
3700265	6 x 1 x 1.25 Bore Straight Cup Ruby	60	Finer Grit Strait Cup STANDARD
3700266	6 x 1 x 1.25 Bore Straight Cup Gray	46	Coarser Grit Strait Cup

GENERAL OPERATING INFORMATION (Continued)

DRESSING THE GRINDING WHEEL

There are two methods to dress the grinding wheel, the dressing brick which comes standard with the grinder and the diamond dresser which is optional for the grinder. 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, also dress the wheel before making the final grind.



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

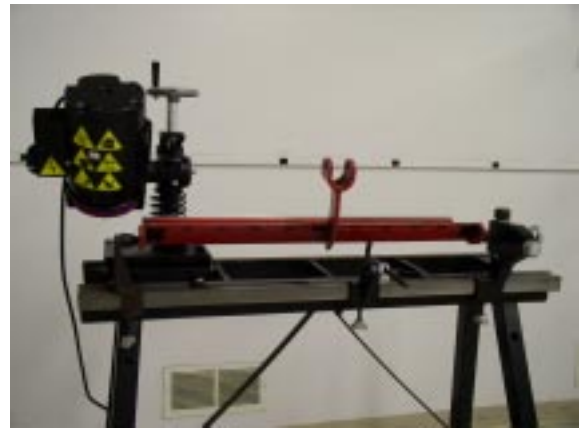


FIG. 11

For dressing, move the grinding head to the left hand side of the machine as shown in FIG. 11, so you are clear of the bedknife. **Don't change** the angle of the grinding head when dressing. With the wheel spinning, use the dressing brick to dress the face of the wheel, See FIG. 12, or with the diamond dresser, move the grinding head and grinding wheel over the dresser and turn the dresser adjusting screw until the diamond point just touches the wheel. It may be necessary to loosen the horizontal slide and move the grinding head to the diamond dresser. See FIG. 13.



FIG. 12

NOTE: Excessive dressing will shorten the life of the wheel. The grinding wheel can only be dressed with the diamond dresser in the top face grinding position.

Replacing the Wheel

A new grinding wheel is 1" [25 mm] deep. When it wears down to a depth of 0.62" [15 mm], it should be replaced. See FIG. 14.

.62 [15mm] minimum

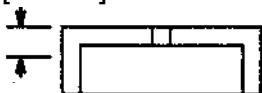


FIG. 14

CONTROLLING TEMPERATURE

There are two suggested methods for controlling the temperature of the grinding wheel during the grinding process in order to avoid heat distortion and achieve optimum results:

- A. Begin by dry grinding the bedknife. Then allow the bedknife to cool completely before doing the final grind. **NOTE:** It may be necessary to wait an hour between grinds for the bedknife to cool completely).
- B. The second method would be to use a spray bottle with water or a wet rag or sponge to cool the bedknife between grinding passes.



FIG. 13

GENERAL OPERATING INSTRUCTIONS (Continued)

USING A FLARE CUP WHEEL FOR ADDED CLEARANCE

The shape of some bed bars requires using an **optional** flare-cup grinding wheel to clear the end supports. See FIG. 15.

Flare-cup wheels can be ordered in 6 [150 mm] diameter. For Part No. and description, refer to the Grinding Wheels list on Page 12.

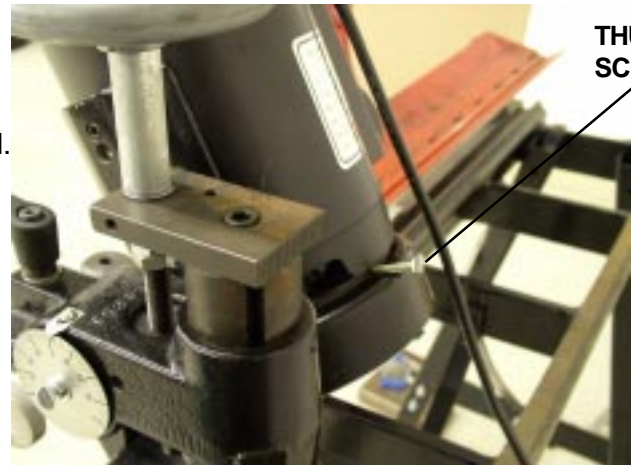


FLARE CUP

FIG. 15

ROTATING THE GRINDING WHEEL GUARD

The grinding wheel guard is held in position with a locking T-knob. Loosen the T-knob to rotate the guard. See FIG. 16



THUMB SCREW

FIG. 16

LINK MOUNTING

Some bedknives require extra support because of the weight of their center bracket or because of excessive imbalance in the weight of the knife.

Link components for providing this support are supplied with the Grinder in a separate bag. Attach the links to the bedknife bracket and to the bar on the middle support, then adjust their length as required. See FIG. 17.



FIG. 17

OPERATING INSTRUCTIONS

INSTALL THE BEDKNIFE

1. **Inspect the Bedknife:** Inspect the bedknife and bar for damage (cracks, warpage, bushing wear, excessive knife wear.) Replace or repair as required. (See Manufacturer's Manual.) Thoroughly clean the bedknife, especially on the bottom where the middle support's will contact.

Prepare the Machine for Mounting

Pivot the grinding head to the vertical position. Move it all the way to the left, then crank it up (so the adjustable center stand will be easier to reposition). Always wipe any grindings, dirt, etc. from the base before moving the center stands.

2. **Mount the bedknife:** Mount the bedknife assembly between the centers on the bedknife grinder. Adjust the blade support bar so the top face to be ground is held at an angle of approximately 30 degrees from horizontal plane. With the blade at this angle, there will be very little vertical or horizontal adjustments required as the motor is pivoted to grind both surfaces. This position is arbitrary. The grinding head clearance to motor base will determine final adjustments. NOTE: The 30 degree angle may be less for some bedknife faces that are close to the pivot mounting position, so there will be clearance between the grinding head and the adjustable center assembly.



The center stands must be locked securely in place. Any looseness will adversely affect grind quality.

ALIGN THE CENTERS

Place the alignment gauge onto the base and adjust the alignment gauge so the projecting edge is touching the top diameter and side of the fixed center as shown in FIG. 18 and FIG. 19.

Without moving any of the adjustments made on the alignment gauge, place the alignment gauge over the adjustable center and adjust the adjustable center accordingly until it is just touching the alignment gauge top and side. See FIG. 20.

Your bedknife mounting holes are now in line with carriage travel. For accuracy of setup always adjust the vertical and horizontal adjustment so you adjust up to the alignment gauge edge.

The adjustable center lock must be securely tightened and the fixed and adjustable center must be securely tightened to the base. Any looseness will adversely affect grind quality.



DON'T FORCE THE CENTER TIGHTLY INTO THE BEDBAR. THIS COULD DISTORT AND MISALIGN THE ADJUSTABLE SUPPORT. LEAVE THE CENTER LOOSE BY .005 - .015" [.15-.40mm], THEN REMOVE THIS LOOSENESS AS EXPLAINED BELOW.

With your hand turn the center on the adjustable center stand until the bedbar is held snugly with zero free play.

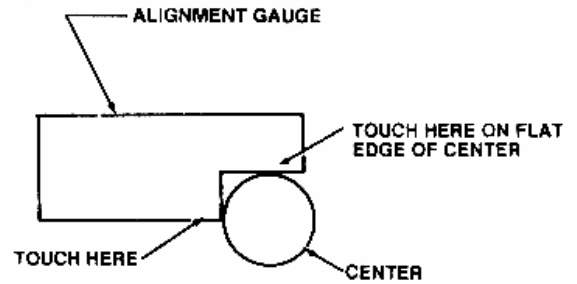


FIG. 18



FIG. 19



FIG. 20



SOME BEDKNIVES REQUIRE EXTRA SUPPORT BECAUSE OF THEIR IMBALANCE. REFER TO "LINK MOUNTING" ON PAGE 14.

OPERATING INSTRUCTIONS (Continued)

GRINDING THE TOP FACE

NOTE: The following instructions presume that you have already studied "General Operating Information" starting on Page 11.

Loosen the thumbscrew on the wheel guard and rotate to the rear and lock in place.

If you want to **match the existing angle**, place the Angle Finder on the bedknife as shown in FIG. 21A. Read the angle indicated on the magnetic bubble indicator to which the bedknife is mounted. Then place the bubble indicator on top of the motorhead as shown in FIG. 22.

Adjust the motor head until it is positioned at the same angle as the bedknife face. You have now matched the motorhead angle to the top face of the bedknife.



THE HEAD IS HEAVY AND MUST BE SUPPORTED WHEN THE LOCK IS RELEASED.

NOTE: The bedknife may have been excessively adjusted and lapped since its last grind. In these cases, establish the bedknife angle from the small top surface outside the wear area as shown in FIG. 21A. If you want to set the angle to the **manufacturer's specifications**, measure the mounting surface angle at the top or bottom of the bedknife as shown in FIG. 21B and then get the correct working angle from page 21 of this manual. Then add or subtract the relief angle to determine the grinding wheel angle.

When you have the motor head angle set, adjust the motorhead protractor angle scale to 0 degrees. See FIG. 24.

Handcrank the vertical feed adjustment knobs and move the horizontal adjustment until grinding wheel just touches the face of the bedknife and covers the surface to be ground. At this point the grinding wheel rim is to extend over the bedknife top surface being ground by 1/2" whenever possible. See FIG. 23.

! If the grinding wheel rim does not extend over the bedknife face, it will wear unevenly and cause grooves across the surface of bedknife.

When the grinding wheel cannot extend over the bedknife surface, dress the grinding wheel more often.

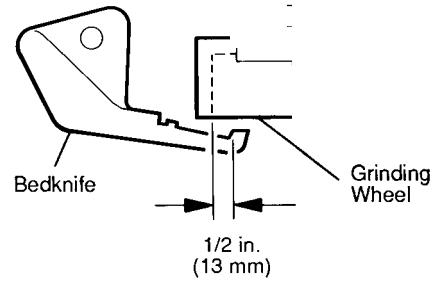


FIG. 23

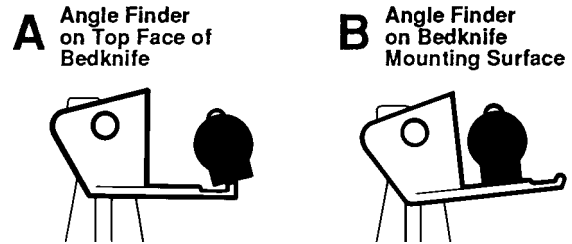


FIG. 21

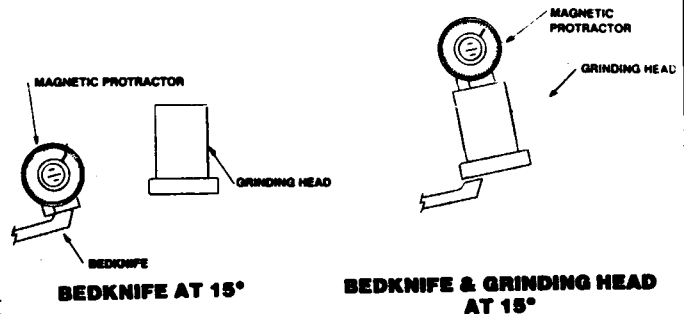


FIG. 22

If you don't have the optional angle finder, you will have to adjust the grinding head angle to match the bedknife angle by visually matching the wheel angle to the bedknife angle.

For final adjustments, turn the GRINDING WHEEL switch OFF and manually touch the wheel to the bedknife top face to where it is contacting. Look at the scratch marks to determine that they go fully across the bedknife face. If not, adjust the angle of the motor head until they match.

OPERATING INSTRUCTIONS (Continued)

TOP FACE GRINDING (continued)

Next, back off the grinding wheel only enough so that it is no longer touching the bedknife face. Move the carriage down to the end of the bedknife that is supported by the adjustable center stand until the contact area of the grinding wheel is beyond the end of the bedknife. See note below on contact area. Check for clearance between the grinding wheel, the bedbar and the adjustable center stand assembly. If there is interference, reposition the components or change to the flared cup grinding wheel as described on Page 14.

Move the length of the bedknife and watch the grinding head to ensure that the grinding wheel is traveling the complete length of the bedknife. Move to the fixed center end of the knife and verify clearance as the head comes off the knife as shown in FIG. 25.

When satisfied with the grinding head travel, crank the vertical feed adjustment knob down until the grinding wheel is removing metal lightly from the bedknife. Now travel the full length of the bedknife to determine the high point. If the high point is excessive to the low point, reverify the centers alignment before proceeding.

When you are satisfied with the grinding head travel, begin grinding. Set the GRINDING WHEEL switch at ON.

NOTE: At this point you won't know the condition of the grinding wheel after the previous job. Always dress the wheel before grinding. See Page 13.

It is recommended to take off approximately .002" per pass. Rotating the vertical feed handwheel 7 degrees of a turn will remove approximately .002" per pass. Continue grinding the bedknife in this manner until the grinding process is complete.

! BEDKNIFE COOLING IS CRITICAL TO A QUALITY GRIND. DURING THE GRIND AND SPARKOUT PROCESS, COOL THE BEDKNIFE FOLLOWING THE OPTIONS LISTED ON PAGE 13.

When the grind is complete, dress the grinding wheel, cool the knife and spark out.

Infeed the grinding head for only approximately .002" stock removal in final passes and let the grinding wheel spark out. For sparking out in grinding process, always traverse grinding head 10 or more passes with no grinding head infeed.

NOTE: This process refers to sparkout, but what we are looking for is a near spark out, approximately a 99% reduction in grinding spark from normal grind. Do not run sparkout until you have no sparks, because this could be an extremely extended period. Watch the sparks grinding pattern for the full length of grind. The sparks should look equal for the full length.



FIG. 24

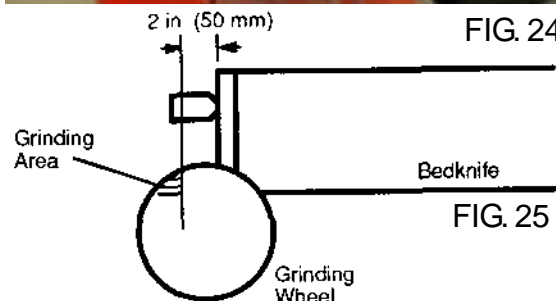


FIG. 25

NOTE: The area of the grinding wheel which contacts the bedknife is on the left side of the motor. The area of the wheel which doesn't contact will still be over the bedknife. See FIG. 25. (When you go to the right end of the Grinder, the wheel traverses completely off the bedknife.)

OPERATING INSTRUCTIONS (Continued)

GRINDING THE FRONT FACE

NOTE: On some mower bedknives, the front face is curved and therefore may not have to be sharpened.

Reposition the Head for Front-Face Grinding

Set the head angle protractor to zero (if not already at zero) after the top face is ground. Then pivot the grinding head so it is in position to grind the front face. Move the grinding head to the right end of the carriage (beyond the end of the bedknife). See FIG. 26. Loosen the grinding head lock lever and rotate the head to the manufacturer's angle specified on page 21 using the head angle protractor. See FIG. 27.

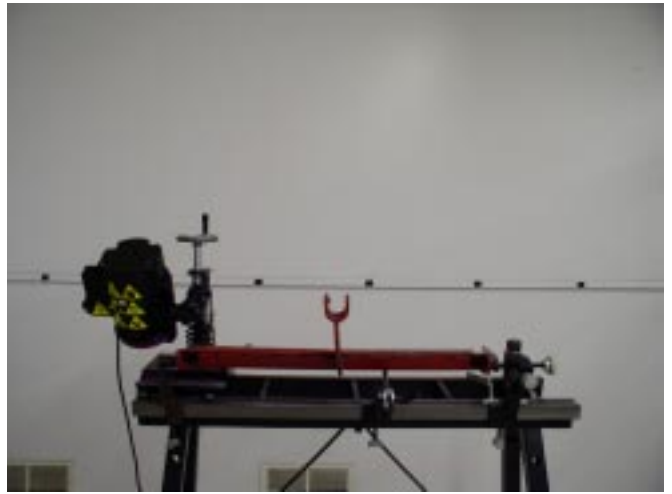


FIG. 26



THE HEAD IS HEAVY AND MUST BE SUPPORTED WHEN THE LOCK LEVER IS RELEASED.

Reset the wheel guard as shown by loosening the T-knobs and swinging the guard around 180 degrees so the wheel can grind the front face of the bedknife. See FIG. 16.

If you want to **match the existing angle**, place the Angle Finder on the bedknife. Read the angle indicated on the magnetic bubble indicator to which the bedknife is mounted. Then place the bubble indicator on end of the motorhead. Adjust the motor head until it is positioned at the same angle as the bedknife face. You have now matched the motorhead angle to the top face of the bedknife.



FIG. 27



THE HEAD IS HEAVY AND MUST BE SUPPORTED WHEN THE LOCK LEVER IS RELEASED.

If you don't have the optional angle finder, you will have to adjust the grinding head angle to match the bedknife angle by visually matching the wheel angle to the bedknife angle.

For final adjustments, turn the GRINDING WHEEL switch OFF and manually touch the wheel to the bedknife top face to where it is contacting. Look at the scratch marks to determine that they go fully across the bedknife face. If not, adjust the angle of the motor head until they match.

OPERATING INSTRUCTIONS (Continued)

GRINDING THE FRONT FACE (Continued)

Hand crank the vertical feed adjustment knobs and move the horizontal adjustment until grinding wheel just touches the face of the bedknife and covers the surface to be ground. At this point the grinding wheel rim is to extend over the bedknife surface being ground by 1/2" whenever possible. See FIG. 28.

Grind the Bedknife



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

Next, back off the grinding wheel only enough so that it is no longer touching the bedknife face. Move the carriage down to the end of the bedknife that is supported by the adjustable center stand until the contact area of the grinding wheel is beyond the end of the bedknife. See note below on contact area. Check for clearance between the grinding wheel, the bedbar and the adjustable center stand assembly. If there is interference, reposition the components or change to the flared cup grinding wheel as described on Page 14.

Move the length of the bedknife and watch the grinding head to ensure that the grinding wheel is traveling the complete length of the bedknife. Move to the fixed center end of the knife and verify clearance as the head comes of the knife as shown in FIG. 29.

When satisfied with the grinding head travel, crank the vertical feed adjustment knob down until the grinding wheel is removing metal lightly from the bedknife. Now travel the full length of the bedknife to determine the high point.

When you are satisfied with the grinding head travel, begin grinding. Set the GRINDING WHEEL switch at ON.

Crank the head until the wheel is removing metal lightly from the bedknife. We recommend taking off about .002 to .003" [.05 to .075 mm] per pass. When the head is horizontal, rotating the horizontal handwheel 7 degrees will remove about .002 per pass.



BEDKNIFE COOLING IS CRITICAL TO A QUALITY GRIND. DURING THE GRIND AND SPARKOUT PROCESS, COOL THE BEDKNIFE FOLLOWING THE OPTIONS LISTED ON PAGE 13.

Continue grinding the bedknife in this manner until you are satisfied with the front face grind.



FIG. 28

REMOVING THE BEDKNIFE

Screw back the adjustable centers. If the next bedknife is the same length, just mount it and screw out the adjustable center to secure it. Don't move the adjustable (right) support unless the next bedknife is a different length.

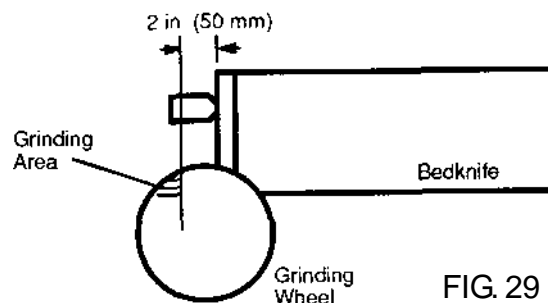


FIG. 29

NOTE: The area of the grinding wheel which contacts the bedknife is on the left side of the motor. The area of the wheel which doesn't contact will still be over the bedknife. See FIG. 29. (When you go to the right end of the Grinder, the wheel traverses completely off the bedknife.)

MOUNTING BEDKNIVES WITHOUT CENTERING HOLES

TORO MOUNTING KIT (OPTIONAL)

Use Kit #3840553 shown in FIG. 30. When the kit is not available, drill a 1/4" diameter hole in each end of the bedknife about 1/4" deep. It only has to be deep enough for the centers to go into. When using this procedure you cannot use the alignment gauge. The blade has to be lined up by using a corner of the grinding wheel. This is to be done by moving the adjustable center back and forth until the grinding wheel rubs the same on both ends of the blade.

Kit No. 3840553 for bed bars using slots for pivot washers. The kit provides slugs with centers and clamps to allow mounting the bed bars in the grinder centering holes in the bed bars.

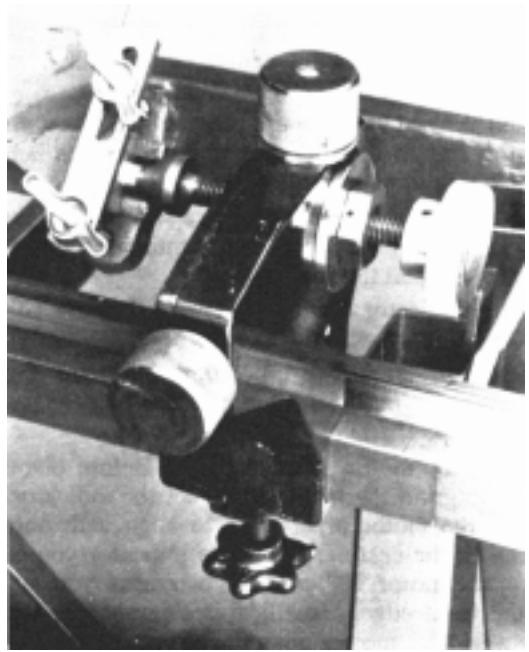
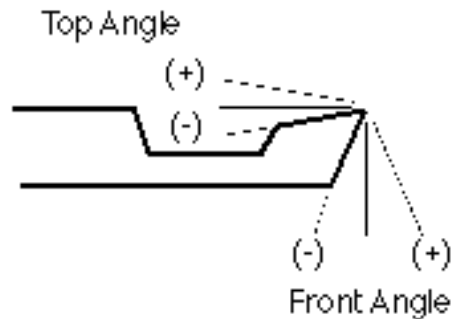


FIG. 30



Bed Knife Grind Angles

Make	Model	Top Angle in Degrees	Front Angle in Degrees
Jacobsen	19" & 22" Greens Mower	-8 to -10	0 to -5
Jacobsen	Blitzer, F133, Fairway	+4 to +6	0 to -5
Jacobsen	Greens King 418, 518, 422, 522	-8 to -10	0 to -5
Jacobsen	Greens King 426, 526	-8 to -10	0 to -5
Jacobsen	Greens King II, IV, IV Plus, V	-8 to -10	0 to -5
Jacobsen	HFS, HM11	+4 to +6	0 to -5
Jacobsen	LF1000, 123, 128, 3810	-8 to -10	0 to -5
Jacobsen	Ranger, ST5111	+4 to +6	0 to -5
Jacobsen	TF60	-8 to -10	0 to -5
Jacobsen	Tri King 671, 1672, 1684, 1900	+4 to +6	0 to -5
Jacobsen	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 160	-8 to -10	0 to -5
Ransomes	Fairway, 250, 305, 405	-3	0
Ransomes	Motor 180, 350D, T-Plex 185	-3	0
Toro	GR500, 1000, 3000, HTM 175	-5	-15**
Toro	RM5100, 5300, 6500	-5	-15**
Toro	RM108, 216, 2300, 3500, 4500	-5	-15**
Toro	RM5, RM7, RMII, Spartan, Turf Pro	-5	-15**