

384 MANUAL BEDKNIFE GRINDER

ASSEMBLY AND SERVICE 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 lighted.
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 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. **KNOW YOUR EQUIPMENT.** Read this manual carefully. Learn its application and limitations as well as specific potential hazards.
19. **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 Service.
20. **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.

SAFETY INSTRUCTIONS - TABLE OF CONTENTS



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.

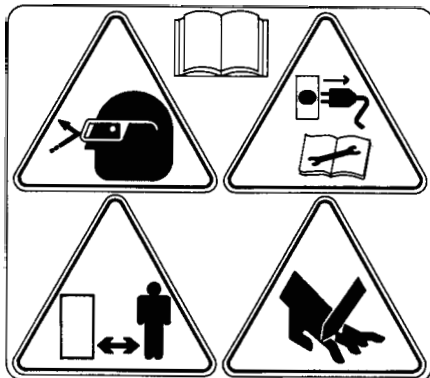
Do not used compressed air to clean grinding dust from the machine. This dust can cause personal injury as well as damage to the grinder.

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



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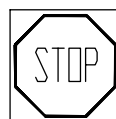
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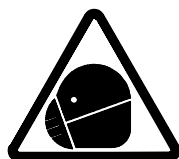
Symbols for Read Operators manual, wear safety glasses, disconnect power before servicing, sharp objects which will cause injury and keep visitors a safe distance away.



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.

SKILL AND TRAINING REQUIRED FOR SERVICING - SPECIFICATIONS

This Service Manual is designed for technicians who have the necessary mechanical and electrical knowledge and skills to reliably test and repair the 384 Grinder. For those without that background, service can be arranged through a local distributor.

This Manual presumes that you are already familiar with the normal operation of the grinder. If not, you should read the Operators Manual, or do the servicing in conjunction with someone who is familiar with its operation.



PERSONS WITHOUT THE NECESSARY KNOWLEDGE AND SKILLS SHOULD NOT REMOVE THE CONTROL BOX COVER OR ATTEMPT ANY INTERNAL TROUBLE-SHOOTING, ADJUSTMENTS, OR PARTS REPLACEMENT!

If you have questions not answered in this manual, please call your distributor. They will contact the manufacturer as necessary.

TORQUE REQUIREMENTS

Throughout this manual we refer to torque requirements as "firmly tighten" or the like. For more specific torque values, refer to the information below.

Bolts Going into a Nut, or Into a Thread Hole in Steel

Refer to table at the right.

Bolts Going into a Thread Hole in Aluminum




Use the Grade 2 values in the table at the right.

Socket-Head Screws

Use the Grade 8 values in the table at the right.

Machine Screws

- No. 6 Screws: 11 in.-lbs (0.125 kg-m)
- No. 8 Screws: 20 in.-lbs (0.23 kg-m)
- No.10 Screws: 32 in.-lbs (0.37kg-m)

| | GRADE 2 | GRADE 5 | GRADE 8 |
|------------------------|--|--|--|
| |  SMOOTH HEAD |  3 MARKS on HEAD |  6 MARKS on HEAD |
| 1/4 In. thread | 6 ft-lbs (0.8 kg-m) | 9 ft-lbs (1.25 kg-m) | 13 ft-lbs (1.8 kg-m) |
| 5/16 In. thread | 11 ft-lbs (1.5 kg-m) | 18 ft-lbs (2.5 kg-m) | 28 ft-lbs (3.9 kg-m) |
| 3/8 In. thread | 19 ft-lbs (2.6 kg-m) | 31 ft-lbs (4.3 kg-m) | 46 ft-lbs (6.4 kg-m) |
| 7/16 In. thread | 30 ft-lbs (4.1 kg-m) | 50 ft-lbs (6.9 kg-m) | 75 ft-lbs (10.4 kg-m) |
| 1/2 In. thread | 45 ft-lbs (6.2 kg-m) | 75 ft-lbs (10.4 kg-m) | 115 ft-lbs (15.9 kg-m) |

SPECIFICATIONS

- Electrical Requirements 120V 60Hz, 15-amp or 220V 50Hz, 8 amp circuit
- Net Weight 230 lbs (104 kg)
- Shipping Weight 250 lbs (113 kg)
- Maximum Grinding Length 34 in. (863 mm)
- Sound Level Less than 75 Db

ASSEMBLY INSTRUCTIONS

UNPACK THE CARTONS

Use care when unpacking. Double-check the packing cartons for any miscellaneous items before discarding.

Inspect all items for shipping damage as they are removed from the shipping containers. If you find any damage, notify the carrier's claims agent and do not proceed further until the damage has been inspected by the agent. Refer also to the "Shipping and Receiving Instructions" packed with the unit.



THE GRINDER BASE WEIGHS 90 LBS [41 KG]. TO LIFT, GET ADEQUATE HELP.

NOTE: Before you assemble and install the machine, read the following assembly procedure completely. Then study the Operators Manual.

BASE AND LEG ASSEMBLY

Put the base on the floor on a piece of cardboard with the machined surface down.

1. Bolt four legs to inside of base casting using four 3/8-16 x 1-1/2 long bolts, washers, lockwashers and hex nuts. See FIG. 2. Leave the nuts loose until assembly is complete.
2. Loosely attach the leg support plates to the outside of the legs with four 3/8-16 x 2-3/4 long bolts, lockwashers and hex nuts. See FIG. 3.
3. Loosely attach the leg braces to the leg supports using two 3/8-16 x 1 bolts, washers, lockwashers and hex nuts. Attach leg braces to base with one 3/8-16 x 1-1/2 bolt, washers, lockwasher and hex nut. See FIG. 3.
4. Bolt four Leveling Screw Brackets inside the bottom of legs using four 3/8 lockwashers and hex nuts, tighten.
5. Run a 1/2-13 hex nut about halfway down each leveling screw. Insert a leveling screw in each bracket and turn in until the jam nut contacts the leveling screw bracket.
7. Now stand the base assembly on the legs.
8. Remove the hex nuts and lockwashers from each of the screws holding the **front** legs to the base casting, add the carriage stops and replace the fasteners. Add the rubber bumpers to the stops. See FIG. 4.
9. Adjust the legs until they are symmetrical and the top surfaces indicated in FIG. 6A are level. Then tighten all fasteners.



FIG. 2



FIG. 3



FIG. 4

ASSEMBLY INSTRUCTIONS (Continued)

LOCATE AND LEVEL THE GRINDER

Set the Grinder on a level concrete floor, on a single uncracked slab of concrete.

PLACING THE GRINDER ON A FLOOR THAT IS BADLY OUT OF LEVEL OR BROKEN WILL AFFECT GRINDING QUALITY.

If the unit must be located near a wall, allow adequate space for operating and servicing. Refer to FIG. 5A and 5B for recommended and alternate locations near a wall.

Place a level on the front carriage surface near the center of the machine and check the level from left to right. See FIG. 6A. Adjust the leveling feet until the machine is level.

Place the level across the front and rear carriage surfaces near the left end of the machine. See FIG. 6B. Adjust the two leveling feet on the left end until level.

Place the level across the front and rear carriage rails near the right end of the carriage bed. Level the right end in the same way as the left end.

Recheck the level in both directions. When satisfactory, tighten the hex jam nuts on the leveling feet securely against the nuts welded to the leg brackets. Don't turn the leveling feet when tightening.

Again recheck the level after the nuts are firmly tightened.

INSTALL THE SPINNING HANDLE

Install the spinning handle on the vertical handwheel. See FIG. 7. Handle parts are packed in an envelope taped to the wheel.

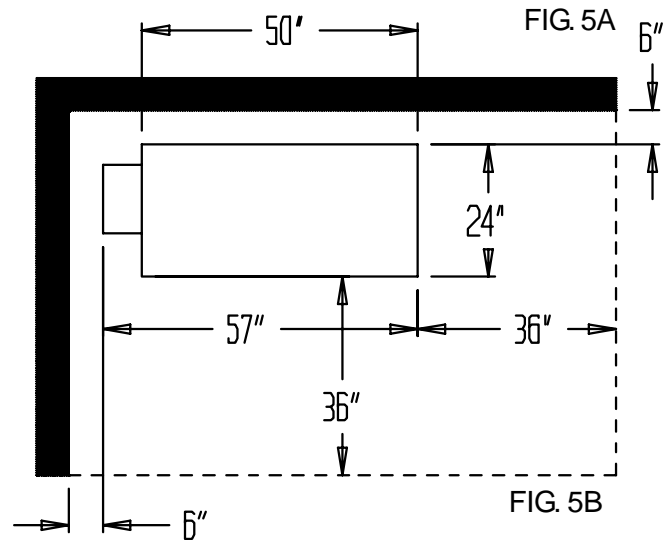
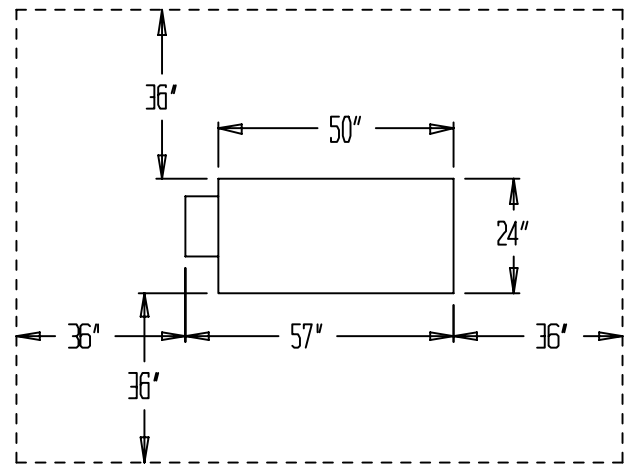
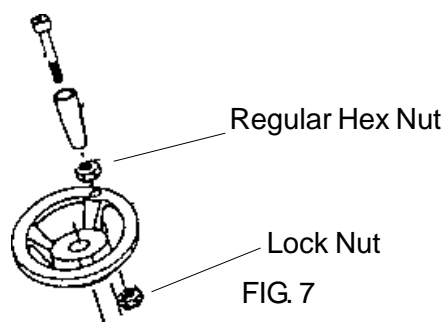


FIG. 6A

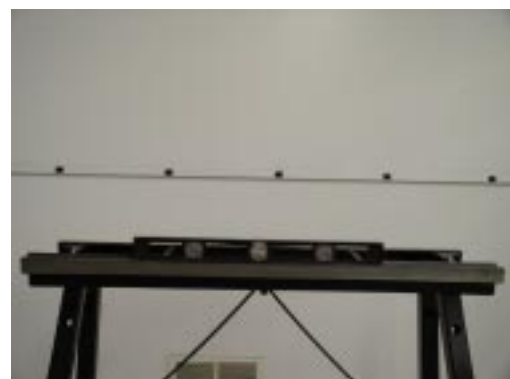


FIG. 6B

ASSEMBLY INSTRUCTIONS (Continued)

APPLY POWER

120 Volt Model Only. For 120VAC 60 HZ application, order Part No. 3840901. Plug the power cord into a standard 120 VAC 15 Amp grounded receptacle. See FIG. 8. For 120 VAC wiring diagram, See FIG. 9.



FIG. 8

PARTS LIST INFORMATION

Motor Part No. 3559560
Switch Part No 3707952

NOTE: This unit is supplied with a power cord with no plug on the end of the cord. Purchase and install an appropriate plug for your locality. For plug and circuit breaker sizing, see motor nameplate rating. Use only a qualified electrician.

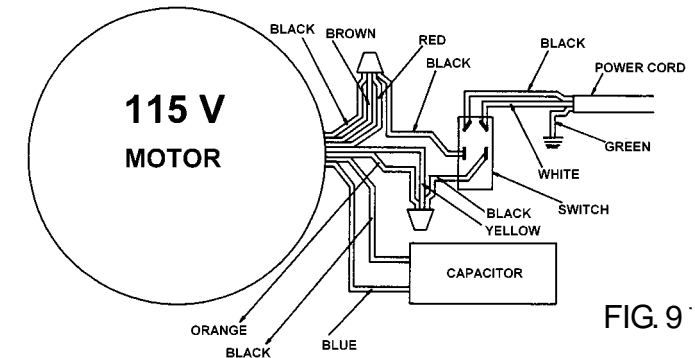


FIG. 9

220 Volt Model Only. For 220 VAC 50HZ application, order Part No. 3840951. The power cord has no connector. A connector which is appropriate for your locality and 220 VAC, 50HZ, 7 amp application should be installed. For plug and circuit breaker sizing, see motor nameplate. Use only a qualified electrician. For 220 VAC wiring diagram, See FIG. 10.

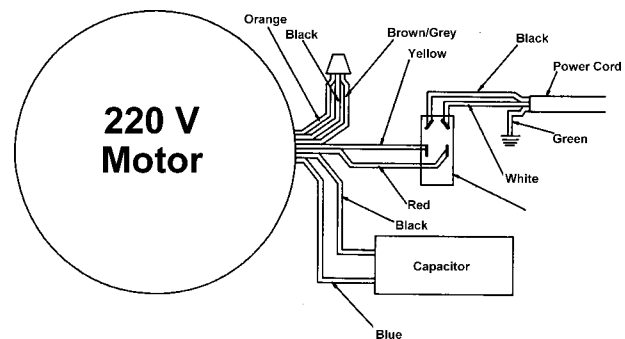


FIG. 10



BEFORE YOU APPLY POWER TO THE GRINDER, REFER TO THE "IMPORTANT GROUNDING INSTRUCTIONS" BELOW.

IMPORTANT GROUNDING INSTRUCTIONS

In case of a malfunction or breakdown, grounding reduces the risk of electrical shock by providing a path of least resistance for electrical current.

This Grinder has an electrical cord with an equipment grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded according to all local or other appropriate electrical codes and ordinances.

Before plugging in the Grinder, make sure it will be connected to a supply circuit protected by a properly-sized circuit breaker or fuse.

Never modify the plug provided with the machine--if it won't fit the outlet, have a proper outlet and circuit installed by a qualified electrician.



ALWAYS PROVIDE A PROPER ELECTRICAL GROUND FOR YOUR MACHINE. AN IMPROPER CONNECTION CAN CAUSE A DANGEROUS ELECTRICAL SHOCK. IF YOU ARE UNSURE OF THE PROPER ELECTRICAL GROUNDING PROCEDURE, CONTACT A QUALIFIED ELECTRICIAN.

MAINTENANCE

DAILY MAINTENANCE IS SPECIFIED ON PAGE 7 OF THE OPERATOR'S MANUAL, AND IS TO BE PERFORMED BY THE OPERATOR. LISTED BELOW ARE PERIODIC MAINTENANCE ITEMS TO BE PERFORMED BY YOUR COMPANY'S MAINTENANCE DEPARTMENT:

Vertical Adjustment Screws

Spray WD-40 or an equivalent lubricant along vertical adjustment screws while moving. Wipe of all excess lubricant. Do this every 3 months. See FIG. 11.

Horizontal Adjustment Slide

Loosen the horizontal adjustment lock handle, spray the contact surfaces with WD40 or an equivalent lubricant while moving the horizontal adjustment. Wipe of all excess lubricant. Do this every 3 months. See FIG. 11.

Base Traversing Surfaces

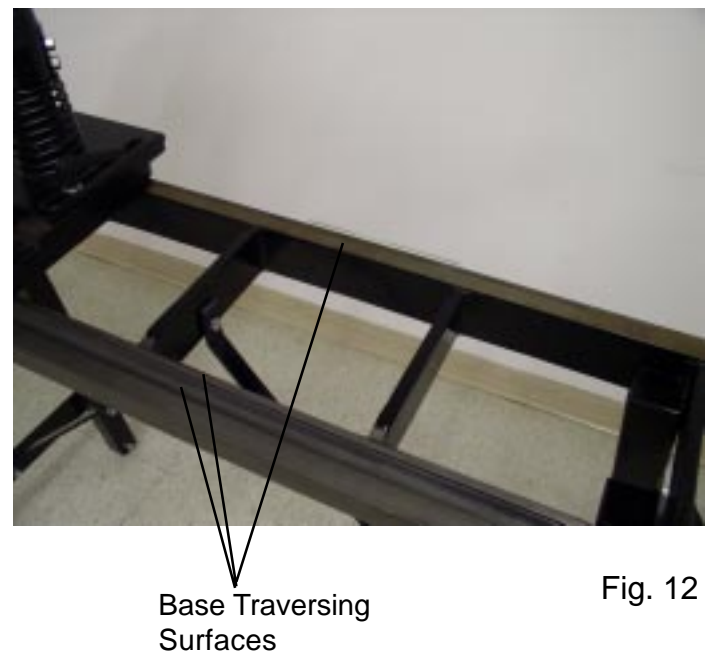
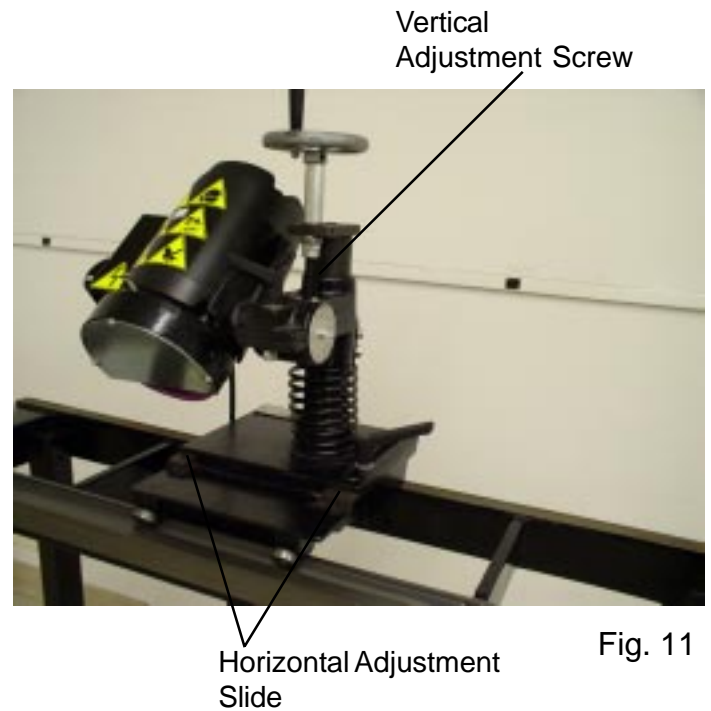
Clean all machined surfaces of the base traversing surfaces by spraying with WD 40 or an equivalent lubricant. Wipe off all excess lubricant. Do this every 3 months. See FIG. 12.

Centers

Screw out the centers on the fixed and adjustable supports and spray the threads with WD-40 or an equivalent lubricant. Wipe off all excess lubricant. Do this every 3 months.

Grinder Storage

If the machine will be shut down for more than four weeks, flood the shafts and other appropriate parts with lubricant as outlined above, and leave the lubricant in place until the unit will be used again. Also cover the grinder with some form of cover. Then, remove the cover and repeat the above lubrication procedure before operating.



MAINTENANCE (Continued)

ADJUSTMENTS

CARRIAGE

The grinding carriage runs on six shielded ball bearings. These bearings were adjusted at the factory so that both rear bearings contact the machined ways of the base. If adjustment is required to stabilize the carriage, the right rear bearing has an eccentric bolt. Loosen the nut and turn the bolt for proper adjustment of the bearing and re-tighten the nut. See FIG. 13.

VERTICAL POST

Any play between the grinding head assembly and the post may be adjusted out by tightening the brass set screws which run in the V groove in the post. See FIG. 14.

ADJUSTABLE CENTERS

Two adjustments are provided to remove any play in the adjustable center--See Exploded diagram ON PAGE 14. The 3/4" nut, Item No. 85, can be tightened to remove play between the sliding parts of the assembly. Tighten the socket head set screws, Item No. 63 and 93, to push the nylon ball, Item No. 92, and remove any play in the threads of the adjustable center.

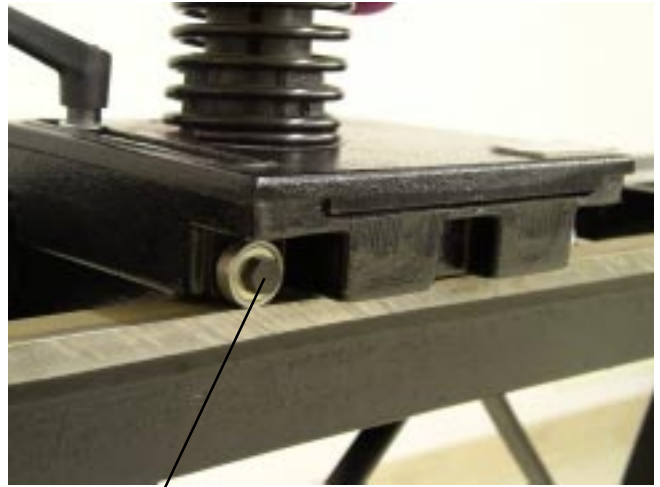


FIG. 13

Eccentric Bolt



FIG. 14

Brass Cone Point
Setscrews

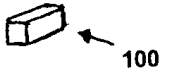
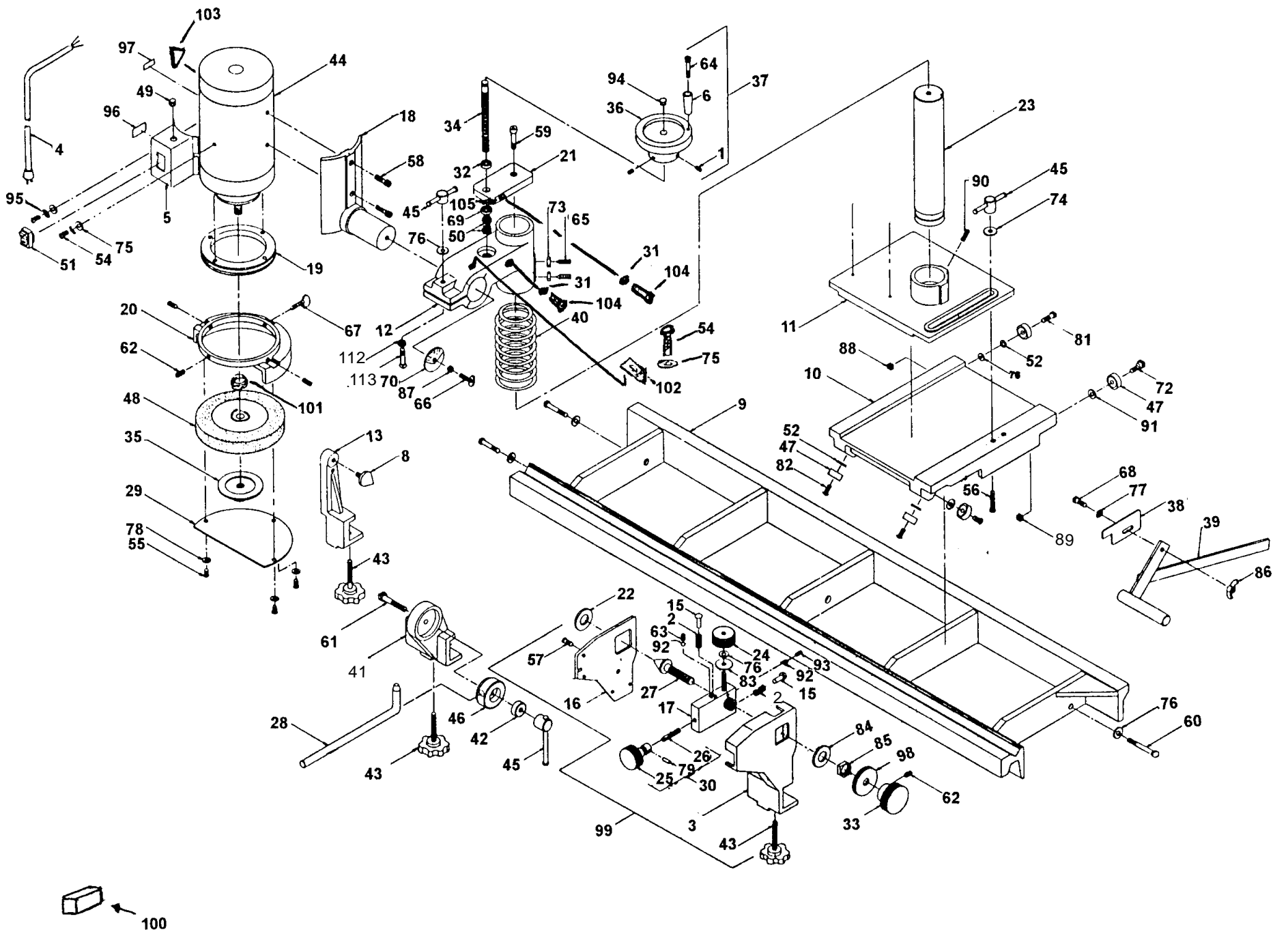
TROUBLESHOOTING

| --ELECTRICAL-- | | | |
|--|---|---|--|
| --PROBLEM-- | --POSSIBLE CAUSE-- | --REMEDY-- | --REASON-- |
| Grinding motor does not function (no apparent power to machine). | A-- Grinding Motor Switch (GMS) is not on. | Turn switch on. | |
| | B-- Main power source breaker is tripped or grinder is not plugged in. | Reset breaker and plug machine in. | |
| --MECHANICAL-- | | | |
| Top face of bedknife is ground in a concave shape (low in the center) | A-- Bedknife isn't held rigid by the centers (centers not tensioned properly). | Screw in the centers on the supports until the bedknife is held tightly. Check that the lock lever is tight on adjustable support. Refer also to Operators Manual. | When the centers aren't tight, the bedknife can move under pressure from the grinding wheel. As the wheel passes over the rigid middle support it grinds full-depth; then as it progresses to the ends the bedknife moves away from the wheel. |
| | B-- Grinding wheel loading up with grinding grit. | Dress the wheel prescribed in the Operators Manual. | A loaded wheel creates undue pressure on the surface being ground. Both ends of bedknife move because of this pressure, allowing bedknife to rock on the middle support. |
| | E-- Too heavy a grind on the final grinding pass. | Follow the procedures in the Operators Manual. On the final pass, crank down only about .001" [.025 mm]. Let the wheel spark out for 10 passes with no additional infeed. | For precise grinding, sparking-out process is critical. It eliminates excessive final-grinding pressure on centers and middle support, which helps maintain grinding straightness. |
| | F-- Loose lock handles or knobs. | Tighten lock handles and knobs to prevent movement. | A loose lock handle or knob allows grinding head or bedknife to move when grinding. |
| The top face of the bedknife is ground unevenly across the width. | A-- Grinding wheel rim is not completely over the top face being ground. | The wheel rim must extend over the bedknife top face by 1/2" [13 mm] whenever possible. See Operators Manual. If not possible, dress the wheel more often. | When the rim doesn't extend over the top face, it wears unevenly and causes grooves across the bedknife. |
| | B-- Loose lock handles or knobs. | Tighten lock handles and knobs to prevent movement. | A loose lock handles or knobs allows grinding head or bedknife to move when grinding. |

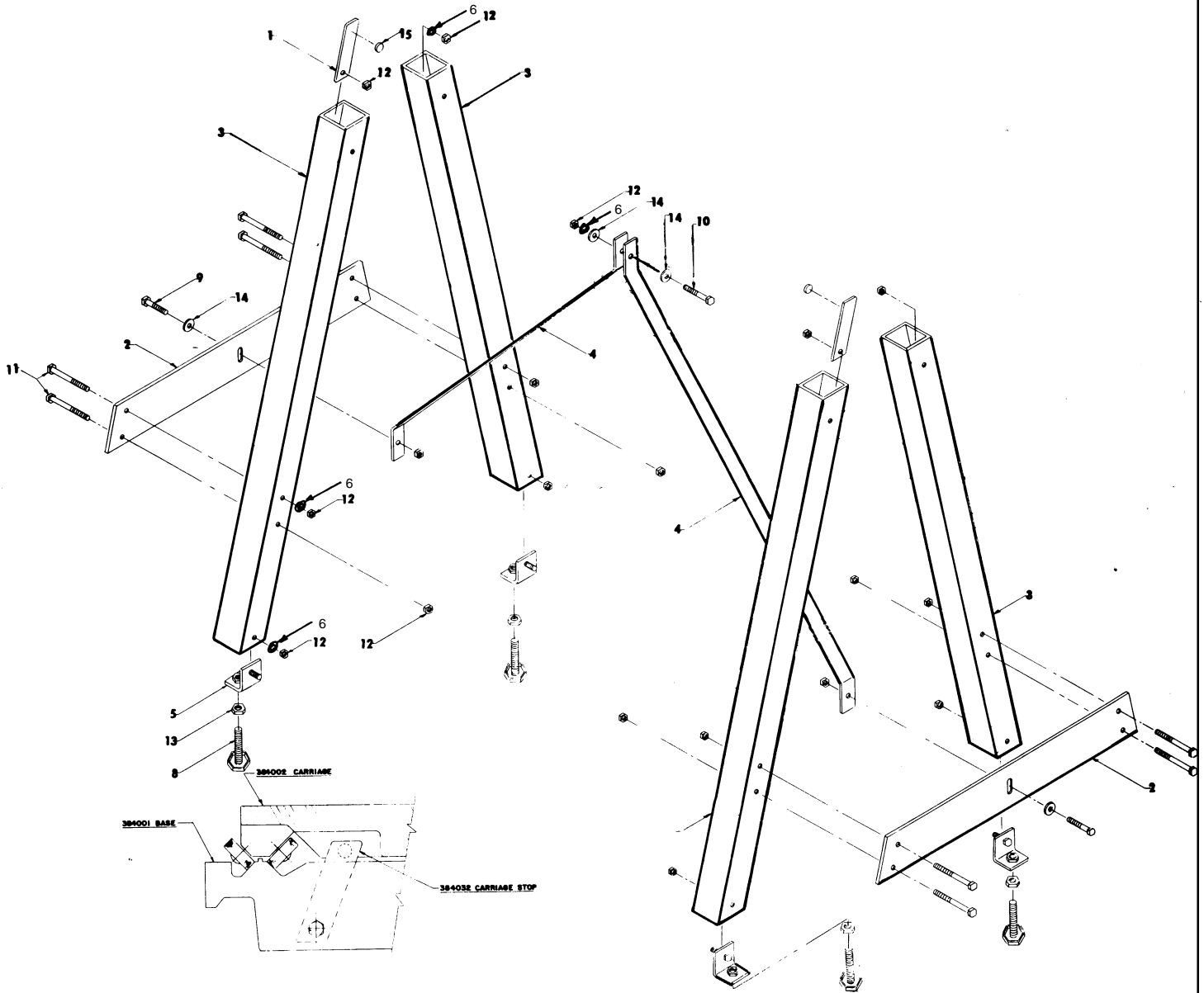
TROUBLESHOOTING (Continued)

| --PROBLEM-- | --POSSIBLE CAUSE-- | --REMEDY-- | --REASON-- |
|---|---|---|---|
| <p>The top face of the bedknife shows burn marks from being too hot.</p> | <p>A--Coolant not directed onto the bedknife and grinding wheel.</p> | <p>Direct coolant into the grinding wheel, at the point of the grind. See Operators Manual.</p> | <p>When the front face of the bedknife gets too hot, the steel loses its temper (softens).</p> |
| | <p>B--Too heavy stock removal during grinding.</p> | <p>Take off about .002 to .003" [.05 to .075mm] per pass during rough grind. See Operators Manual.</p> | <p>Too much stock removal in one pass creates too much heat and softens the steel.</p> |
| | <p>C--Grinding wheel is glazing.</p> | <p>Dress the wheel before the finish-grinding pass on each bedknife. See Operators Manual.</p> | <p>Wheel will glaze if not dressed often enough. Also, as a general rule, use a higher traverse speed for the heavy grind.</p> |
| <p>Grinding wheel is glazing too quickly.</p> | <p>A--Wheel needs dressing.</p> | <p>Dress the wheel before the finish-grinding pass on each bedknife. See Operators Manual.</p> | <p>Wheel will glaze if not dressed often enough. If grinding wheel is not extended 1/2" [12 mm] over bedknife, it will glaze more quickly because there is less dressing.</p> |
| | <p>B--Too light a cut when rough grinding.</p> | <p>Take off about .002 to .003" [.05 to .075 mm] per pass during rough grind. See Operators Manual.</p> | <p>Too light a grinding cut doesn't permit enough dressing action on the wheel, so it glazes.</p> |
| | <p>C--Grinding head is traversing too slow.</p> | <p>Speed up manual traverse.</p> | <p>Too slow a traverse speed can cause excessive heat buildup in the grinding wheel, which glazes the wheel.</p> |
| <p>Grinding motor vibrates excessively.</p> | <p>Grinding wheel is out of balance.</p> | <p>Visually check the outside-diameter runout while slowly rotating the wheel. Also check the motor without a wheel installed. Replace the wheel if out-of-round.</p> | <p>A grinding wheel which isn't properly trued up on outside or inside diameters can vibrate excessively and transfer that vibration to the motor.</p> |

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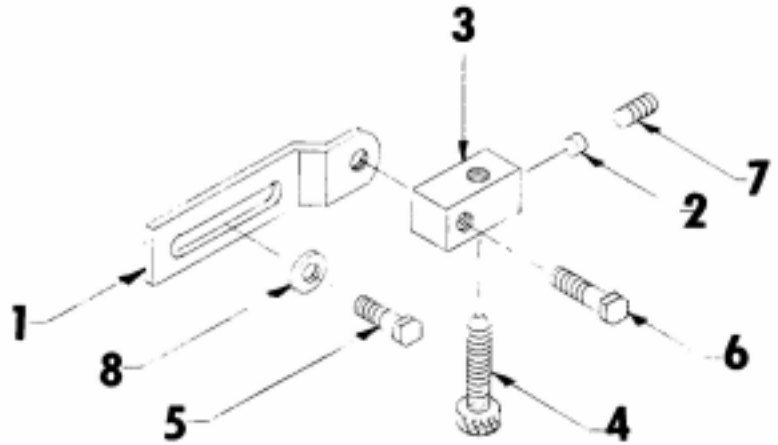
| DIA. NO. | PART NO. | PART DESCRIPTION | DIA. NO. | PART NO. | PART DESCRIPTION |
|----------|-------------|--|----------|-------------|--|
| 1 | C310420 | Soc. Set Screw 5/16-18 x 1/4 Long | 57 | B251202 | Round Hd Cap Screw 1/4-20 x 3/4" Long |
| 2 | 3529093 | Spring - Compression | 58 | B251011 | Socket Head Cap Screw 1/4-20 x 5/8" Long |
| 3 | 3849560 | Adj. Center Assembly | 59 | B371211 | Socket Head Cap Screw 3/8-16 x 3/4" Long |
| 4 | 3709034 # | Cord Set | 60 | B372401 | Hex Cap Screw 3/8-16 x 1-1/2" Long |
| 5 | 3559590 # | Switch Box Weldment 120V 60HZ | 61 | B373201 | Hex Cap Screw 3/8-16 x 2" Long |
| 5 | 3559585 @ | Switch Box Weldment 220V 50HZ | 62 | C190820 | Socket Set Screw 10-24 x 1/2" Long |
| 6 | 3709370 | Handle - Spinning | 63 | C190320 | Socket Set Screw 10-24 x 3/16" Long |
| 8 | 6009517 | Center - Fixed | 64 | B255011 | Sock. Hdad Cap Screw 1/4-20 x 3-1/8 Long |
| 9 | 3849001 | Base | 65 | 3849056 | Socket Set Screw Brass 3/8-16 x 1" Long |
| 10 | 3849002 | Carriage | 66 | E190609 | Thumb Screw 10-24 x 3/8" Long |
| 11 | 3849003 | Carriage Slide | 67 | E192409 | Thumb Screw 10-24 x 1-1/2" Long |
| 12 | 3849251 | Motor Slide | 68 | B251001 | Hex Cap Screw 1/4-20 x 5/8" Long |
| 13 | 3849005 | Center Stand | 69 | 3709042 | Thrust Bearing |
| 15 | 3709889 | Rivet | 70 | 3559023 | Quadrant Scale |
| 16 | 3849202 | Cover | 71 | 3709343 | Spacer Washer |
| 17 | 3849562 | Adj. Center Block & Stud Assembly | 72 | 3559016 | Eccentric Bolt |
| 18 | 3559003 | Motor Mount | 73 | J371000 | Hex Nut 3/8-16 |
| 19 | 3849011 | PivotPlate | 74 | R000454 | Flat Washer .437 ID x 1" OD x .08 Thick |
| 20 | 3849012 | Guard | 75 | K190001 # @ | Plain Washer #10 |
| 21 | 3849210 | End Cap Vert. Feed | 76 | K370001 | Plain Washer 3/8 |
| 22 | 3849208 | Rubber Washer | 77 | K250201 | Lockwasher 1/4 Ext. Teeth |
| 23 | 3849018 | Support Post | 78 | K160001 | Plain Washer #8 |
| 24 | 3849206 | Knob | 79 | H181002 | Rollpin 3/16 Diameter x 5/8" Long |
| 25 | 3849207 | Horizontal Adj. Knob | 81 | B372001 | Hex Cap Screw 3/8-16 x 1-1/4 Long |
| 26 | 3849205 | Stud | 82 | B371216 | Button Head Cap Screw 3/8-16 x 3/4" Long |
| 27 | 3849514 | Center - Adjustable | 83 | 3589106 | Plain Washer 1.38 OD x .39 ID x .125 Thick |
| 28 | 3849025 | Support Bar | 84 | 3709886 | Plain Washer 2-1/4 OD x 13/16 ID |
| 29 | 3849030 | Guard Cover | 85 | 3709887 | Nylok Jam Nut 3/4-16 |
| 30 | 3849563 | Horizontal Adj. Knob & Stud Assembly | 86 | J253000 | Wing Nut 1/4-20 |
| 31 | 3579109 | Nylon Plug 3/16 Dia. | 87 | J191000 | Hex Nut 10-24 |
| 32 | 3849211 | Spacer | 88 | R000554 | Hex Nut 3/8-16 |
| 33 | 3849036 | Knob | 89 | R000552 | Hex Nut 1/4-20 |
| 34 | 3849250 | Vertical Adjusting Screw | 90 | C250820 | Socket Set Screw 1/4-20 x 1/2" Long |
| 35 | 3559022 | Flange-Outside | 91 | K250001 | Plain Washer 1/4 |
| 36 | 3708155 | Handwheel | 92 | 3709852 | 1/8 Nylon Ball |
| 38 | 3849233 | Alignment Gage | 93 | C190620 | Soc. Set Screw 10-24 x 3/8 Long |
| 39 | 3849565 | Alignment Gauge Weldment | 94 | 3709372 | Hole Plug |
| 40 | 3849209 | Compression Spring | 95 | K191501 # @ | Lock Washer #10 |
| 41 | 3849019 | Pivot Cup Base | 96 | 3708459 # @ | Decal - Stop |
| 42 | 3849064 | Support Bar Lock | 97 | 3708460 # @ | Decal - Start |
| 43 | 3849567 | T - Knob Assembly | 98 | 3849265 | Locking Collar - Tapered |
| 44 | 3559540 | Motor Assembly 120V 60HZ includes items marked # | 99 | 3849500 | Adjustable Center Stand Assembly |
| 44 | 3559560 | Motor Assembly 220V 50HZ includes items marked @ | 100 | 3702508 | Dressing Stick |
| 45 | 3709437 | Adjustable Handle 3/8-16 | 101 | 3700409 | Reducer Bushing |
| 46 | 3849065 | Pivot Cup | 102 | 3559024 | Pointer |
| 47 | 3709257 | Bearing | 103 | 3708448 # @ | Decal - Warning Electrical |
| 48 | 3700265 | Grinding Wheel - Straight Cup, 60 Grit | 104 | C250420 | Soc. Set Screw 1/4-20 x 1/4 Long |
| 49 | 3707416 # @ | Strain Relief | 105 | 3709027 | Thrust Washer |
| 50 | 3709197 | Hex Jam Nut 1/2-20 L.H. Thd. | 106 | 3708461 # @ | Decal - Warning 3600 RPM (Not Shown) |
| 51 | 3707952 # @ | Rocker Switch | 107 | 3708604 # @ | Decal - Warning Safety (Not Shown) |
| 52 | 3709216 | Washer - Tinnerman | 108 | 3707678 # | Capacitor - Motor 120V 60HZ (Not Shown) |
| 54 | B190602 # @ | Round Hd Mach. Screw 10-24 x 3/8 Long | 108 | 3707674 @ | Capacitor - Motor 220V 50HZ (Not Shown) |
| 55 | B160802 | Round Hd Mach. Screw 8-32 x 3/8 Long | 109 | 3702707 | Angle Finder - Magnetic (Not Shown) |
| 56 | A372802 | Round Hd Mach. Screw 3/8-16 x 1-3/4 Long | 111 | 3708605 # @ | Decal - Warning Respirator (Not Shown) |
| | | | 112 | J377100 | Lock Nut 3/8-16 |
| | | | 113 | C374020 | Soc. Set Screw 3/8-16 x 2-1/2 Long |



| DIA. NO. | PART NO. | PART DESCRIPTION |
|----------|----------|------------------------------------|
| 1 | 3849032 | Carriage Stop |
| 2 | 3849040 | Leg Support |
| 3 | 3849041 | Leg |
| 4 | 3849042 | Leg Brace |
| 5 | 3849566 | Leveling Screw Bracket Weldment |
| 6 | K371501 | Lockwasher 3/8 |
| 8 | 3709563 | Leveling Screw |
| 9 | B371601 | Hex Cap Screw 3/8-16 x 1" Long |
| 10 | B372401 | Hex Cap Screw 3/8-16 x 1-1/2" Long |
| 11 | B374401 | Hex Cap Screw 3/8-16 x 2-3/4" Long |
| 12 | J371000 | Hex Nut 3/8-16 |
| 13 | J501000 | Hex Nut 1/2-13 |
| 14 | K370001 | Plain Washer 3/8 |
| 15 | 3709259 | Rubber Bumper |

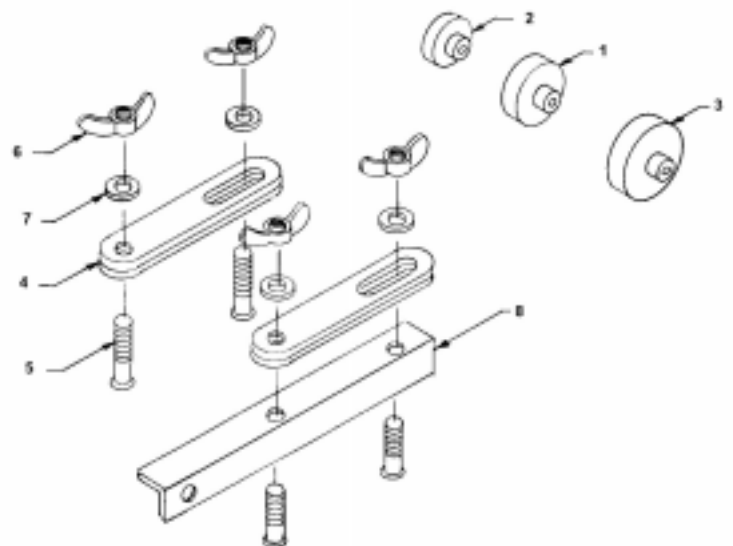
PARTS LIST FOR 3550519 OPTIONAL DIAMOND DRESSER ATTACHMENT

| DIA. NO. | PART NO. | PART DESCRIPTION |
|----------|----------|-------------------------------------|
| 1 | 3559052 | Bracket-Diamond Dresser |
| 2 | 3579109 | Nylon Plug |
| 3 | 3849074 | Dresser Arm |
| 4 | 6109015 | Diamond Dresser |
| 5 | B371201 | Hex Cap Screw 3/8-16 x 3/4" Long |
| 6 | B311601 | Hex Cap Screw 5/16-18 x 1" Long |
| 7 | C250620 | Socket Set Screw 1/4-20 x 3/8" Long |
| 8 | K370001 | Washer -Flat 3/8 |

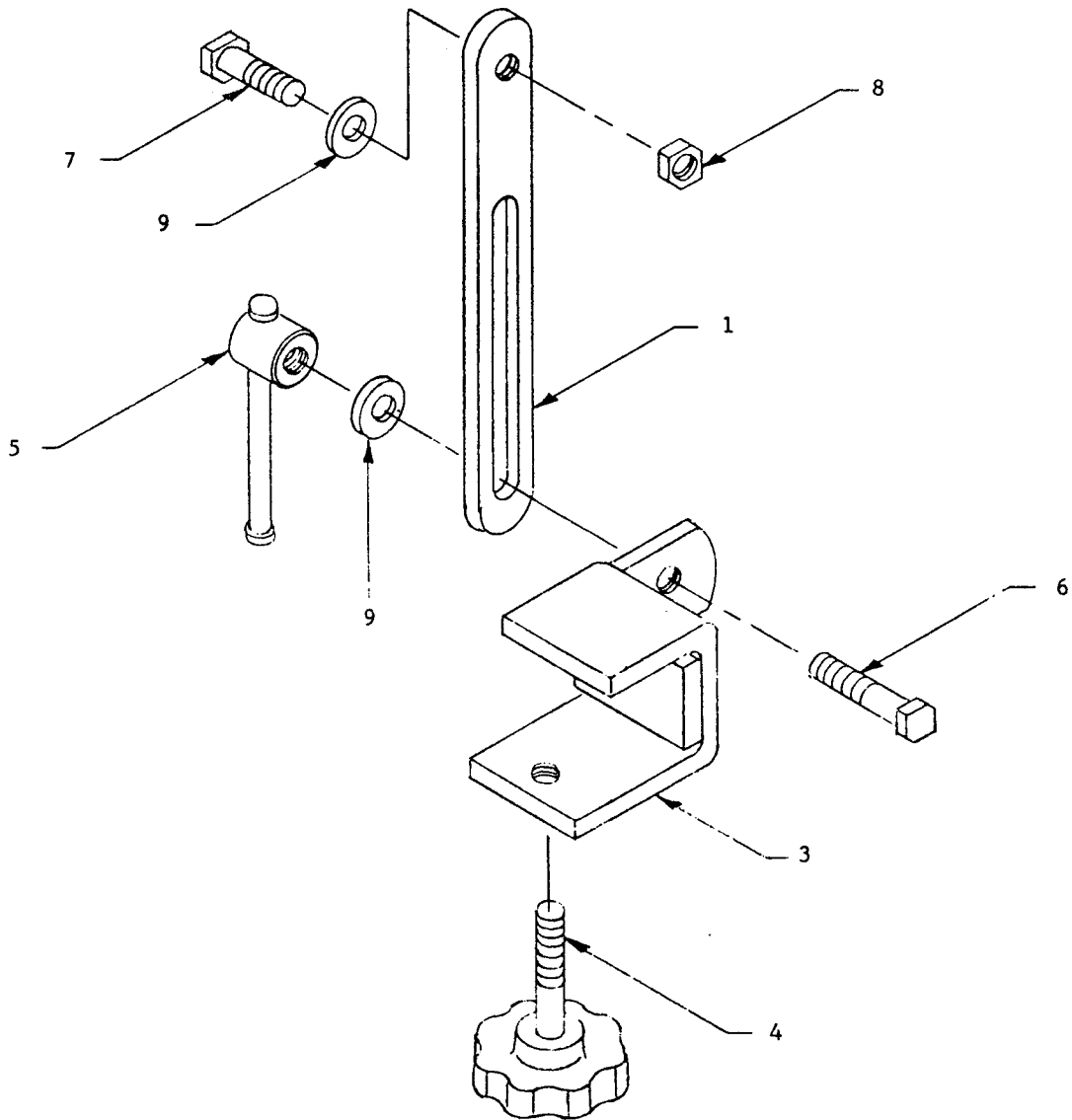


PARTS LIST FOR 3840553 OPTIONAL MOUNTING KIT TORO BEDKNIFE WITHOUT CENTERS

| DIA. NO. | PART NO. | PART DESCRIPTION |
|----------|----------|---|
| 1 | 3849061 | 1" Diameter Center |
| 2 | 3849062 | 7/8" Diameter Center |
| 3 | 3849063 | 1-3/8" Diameter Center |
| 4 | 3849530 | Center Clamp Weldment |
| 5 | A254802 | Round Head Machine Screw 1/4-20 x 3" Long |
| 6 | J253000 | Wing Nut 1/4-20 |
| 7 | K250001 | Plain Washer 1/4 |
| 8 | 3849058 | Support Bracket |



PARTS LIST: 3840540 SUPPORT BRACE ATTACHMENT



PARTS LIST FOR 3840540 SUPPORT BRACE ATTACHMENT

| DIAGRAM NUMBER | PART NUMBER | PART DESCRIPTION |
|----------------|---------------|--|
| 1 | 3849092 | Knife Support |
| 3 | 3849590 | Support Brace Weldment |
| 4 | 3849567 | Knob Assembly |
| 5 | 3709437 | Lock Handle |
| 6 | B371601 | Hex Cap Screw 3/8-16 UNC x 1" Long |
| 7 | B372001 | Hex Cap Screw 3/8-16 UNC x 1-1/4" Long |
| 8 | J371000 | Hex Nut 3/8-16 UNC |
| 9 | K370001 | Plain Washer 3/8 |
| 10..... | K371501 | Lockwasher 3/8 |