

# **355 MANUAL KNIFE GRINDER**

## **OWNERS 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.** Do not wear 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 knife 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 this 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 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.

**This machine is intended for manual knife 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.**

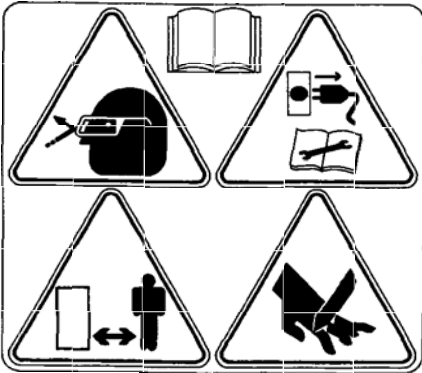


**ALL operators of this equipment must be thoroughly trained BEFORE operating the equipment.**

**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 powerwash machine.**

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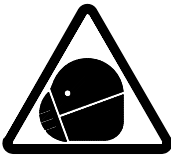
Symbols for Read Operators manual, wear safety glasses, disconnect power before servicing, sharp objects which will cause injury and keep visitors a safe distance away.



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.



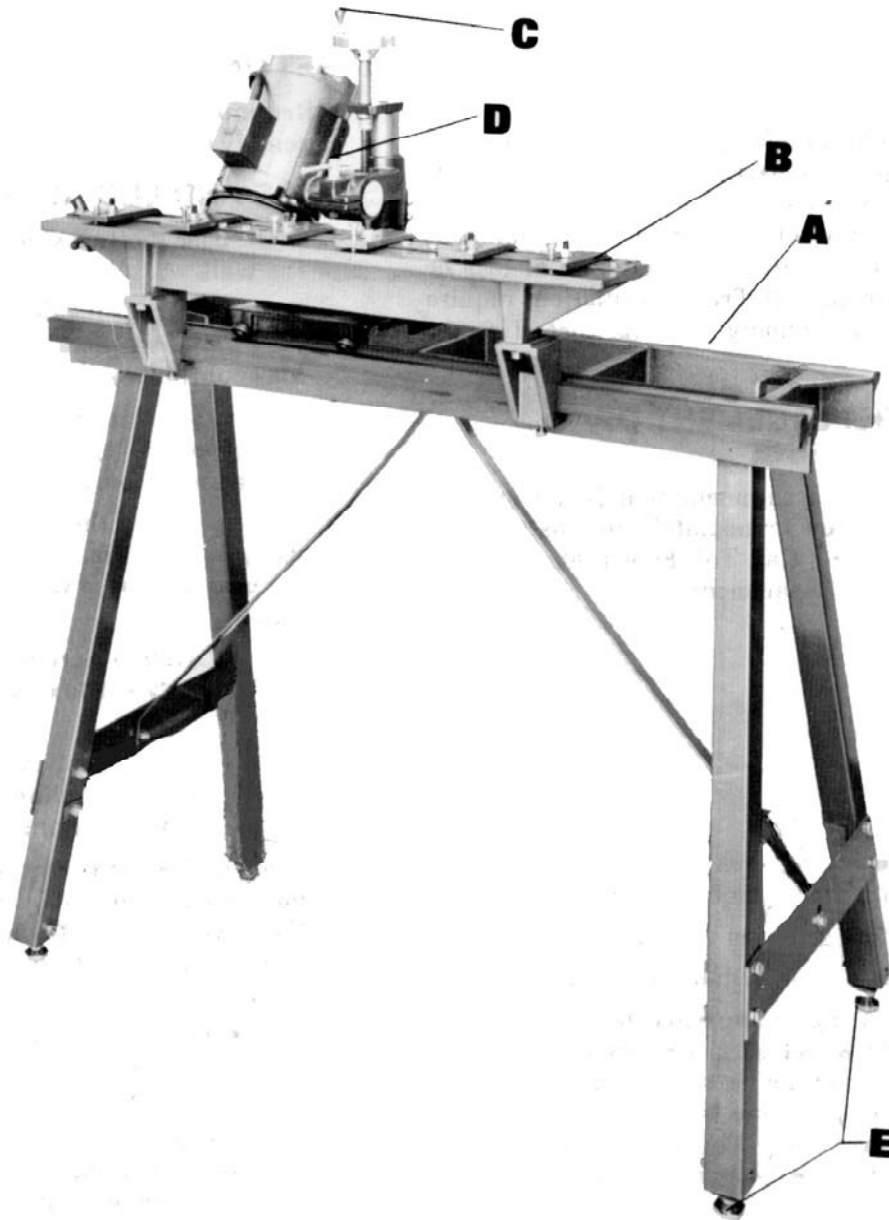
Symbol that operators and visitors in the close proximity must wear respirators or have adequate ventilation systems



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

## MODEL 355 KNIFE GRINDER

General View Showing Design Features and Points of Adjustment



A. BASE

B. RIGID KNIFE HOLDER

C. MOTOR VERTICAL ADJ. KNOB

D. MOTOR PIVOT LOCK KNOB

E. LEG LEVELING SCREWS

# GENERAL INSTRUCTIONS FOR USE AND OPERATION OF MODEL 355 KNIFE GRINDER

## IMPORTANT

IT IS VERY SIMPLE TO OPERATE THE KNIFE GRINDER. ALL YOU NEED TO DO IS LEARN THE ADJUSTMENTS BEFORE STARTING TO GRIND YOUR FIRST KNIFE. THIS WILL SAVE YOU TIME AND TROUBLE. FIRST READ ALL THE GENERAL INSTRUCTIONS GIVEN IN THE MANUAL.

### CHECKING SHIPMENT OF MACHINE FOR DAMAGE AND COMPLETENESS

Examine Shipment: Carefully inspect the machine for in-transit damage. Look particularly for cracked castings, bent or broken parts. Any loss of, or damaged parts should be reported to the freight agent immediately. **See separate sheet.**

### SAFETY FIRST

**SEE PAGE 3 FOR GRINDING  
WHEEL SAFETY.**

### SETTING UP THE GRINDER

After unpacking the carton and checking the contents, assembly will be easier if done in the following order.

### BASE AND LEG ASSEMBLY

Lean the base (bottom side out) against a sturdy bench or a wall.

1. Bolt four legs to inside of base casting using 3/8-16 x 1.25 long bolts, washers and hex nuts. Leave the nuts loose until assembly is complete.
2. Loosely - attach the leg support plates to the outside of the legs with 3/8-16 x 2.75 long bolts through the top holes only.
3. Loosely attach the leg braces to the leg supports using 3/8-16 x1 bolts, plain washers and nuts. Attach leg braces to base with 3/8-16 x 1 1/2 bolts, washers and nuts.
4. Bolt 4 leveling Screw Brackets inside bottom of legs using 3/8-16 nuts - tighten.
5. Run a 1/2-13 nut about halfway down each leveling screw. Insert a leveling screw in each bracket and secure with another nut.
6. Now stand the base assembly on the legs.
7. Remove the nuts from each of the screws holding the front legs to the base casting, add the carriage stops and replace nuts.
8. Adjust the legs until they are symmetrical and tighten all screws.

### COMPLETE THE ASSEMBLY

1. Set the carriage assembly on the base and check to see that it moves freely.
2. Level the machine in both directions and lock the leveling screws.
3. Assemble the knife holder and the knife holder

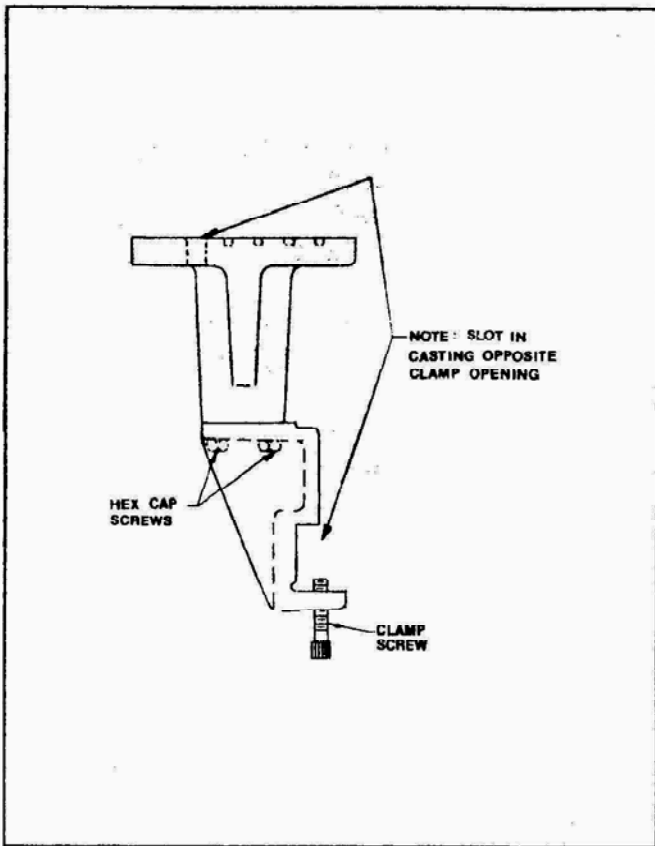


ILLUSTRATION NO. 1

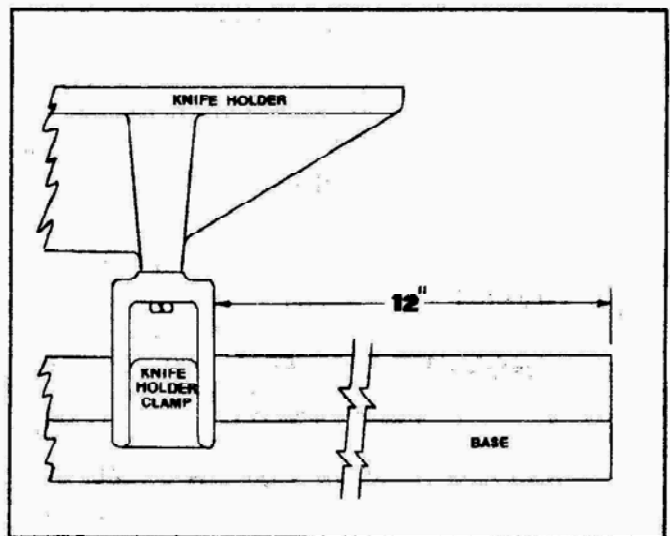


ILLUSTRATION NO. 2

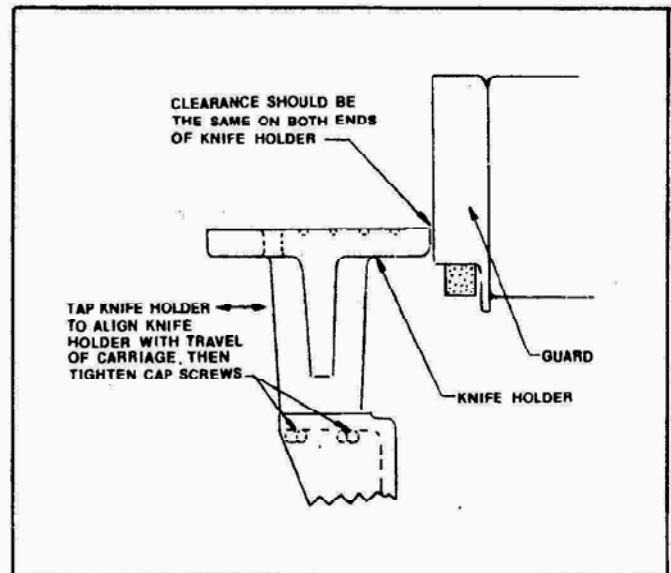


ILLUSTRATION NO. 3

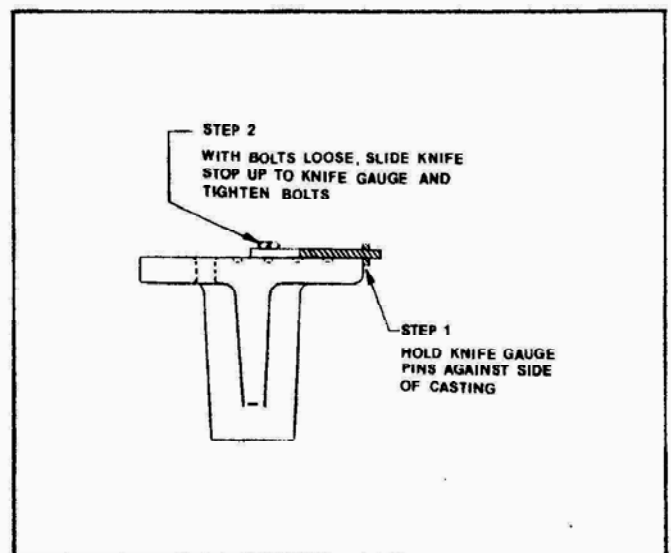


ILLUSTRATION NO. 4

4. Clamp the assembly to the base 12" from the right end of the base to the knife holder clamp. See Illustration No. 2. Tighten clamps securely.

5. Snug up cap screws and align the inside edge of the knife holder with the travel of the carriage. A dial indicator clamped to the wheel guard or elsewhere on the carriage would be most helpful. If an indicator is unavailable, alignment can be accomplished by taking the guard cover off, and by sliding the grinding head assembly toward the knife holder so the guard almost touches the knife holder (See Illustration No. 3), then traverse the carriage the length of the knife holder checking the clearance on each end with a feeler gauge.

6. Position the knife stops on the knife holder and using the knife stop gauge to position each knife stop, tighten the cap screws. See Illustration No. 4.



## **DRESSING WHEEL**

The grinding wheel should be free cutting, reducing the tendency to glaze to a minimum. Do not allow the face of the wheel to fill up and become glazed. When a wheel is used in this condition it is impossible to avoid drawing the temper at the cutting edge. A glazed place in a wheel, when in contact with the knife bevel, generates heat rapidly, due to the fact that it rubs without cutting. Under such a condition, the edge of the knife cannot be kept sufficiently cool by liquid to prevent drawing the temper. A wheel that continues to glaze after being redressed is either too hard or too fine for the work and should be replaced. It is important to keep the wheel true and free cutting by proper dressing. The most satisfactory method is by use of the diamond tool fastened to the fixed center so that it passes the wheel in position as does the knife edge. With diamond tool locked into position, 1/4 turn on the tool is usually all that is needed to restore free cutting. (See Illustration No. 5)

## **GRINDING INSTRUCTIONS**

1. Loosen the "T" nut on the right side of the post and move the motor slide back.
2. Mount the knife, or set of knives, on the Knife Holder. Make sure all knives are flush with the Knife Stop. Use precision ground spacers on narrow knives to avoid grinding Knife Holder.
3. Slide the motor forward, position the guard, and swing the wheel into position to match the face angle of the knife. (See illustration NO. 8) By rubbing the knife with the wheel you can quickly determine if the minor adjustments are required.  
A useful aid is an angle finder with a magnetic base such as catalogue No. 3702707. By positioning the angle finder on the surface of the knife to be ground (See Illustration No. 7), one can readily determine the knife angle. Then put the angle finder on top of the motor and pivot the motor to the same angle (See Illustration NO. 8).
4. Turn on the motor, grind the face. Before pivoting the motor to grind the second bevel (if knife has a second bevel) - set the indicator on the end of the motor pivot shaft to align with one of the marks on the casting. Using the indicator you can now swing the motor to desired angle. Usually this clearance is about 30°, however, the manufacturers specify angles ranging from 0° to 30° depending on the particular knife. Angles should be noted before grinding.

## **GRINDING WHEEL CLEARANCE**

With the motor in a horizontal position, the angle between the front edge of the knife holder and the plane of the grinding wheel should be about 1-1/2° to 2° (See Illustration No. 6). This alignment was pre-set during assembly and should not have to be made unless the support post has been rotated in the carriage slide casting.

## **MAINTENANCE**

### **CARRIAGE**

The grinding carriage runs on six sealed 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 (viewed from operator's position) has an eccentric bolt. Loosen the nut and turn the bolt for proper adjustment of the bearing and re-tighten the nut. 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.

### **GENERAL**

Wipe off the ways of the base casting occasionally as a build-up of grinding dust will affect the accuracy of the grind.

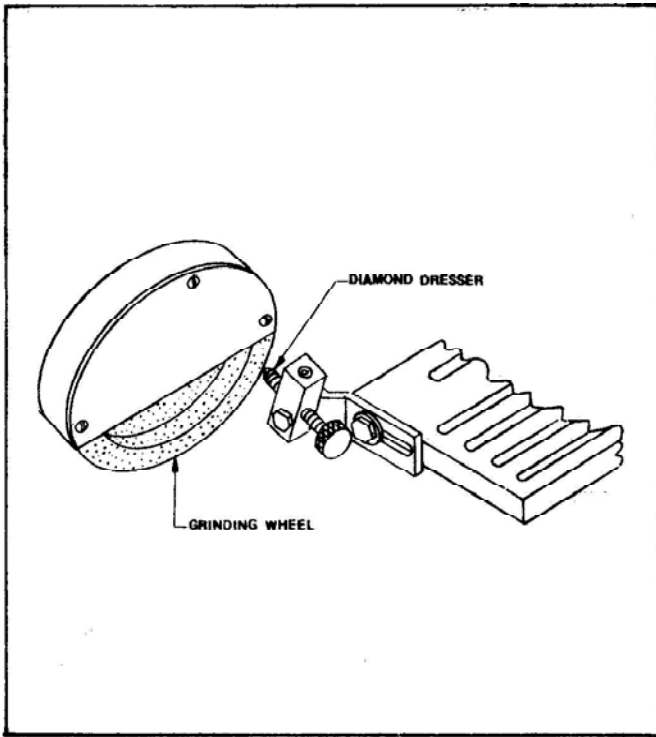


ILLUSTRATION NO. 5

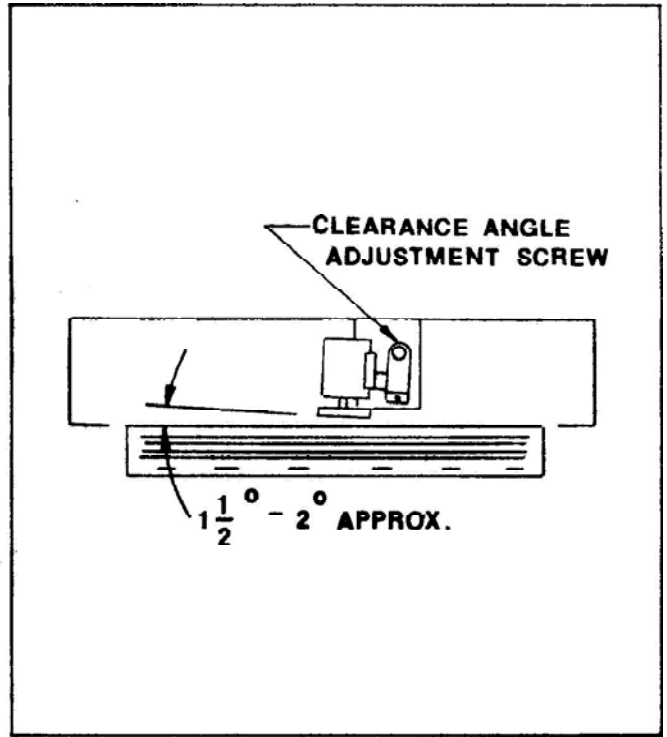


ILLUSTRATION NO. 6

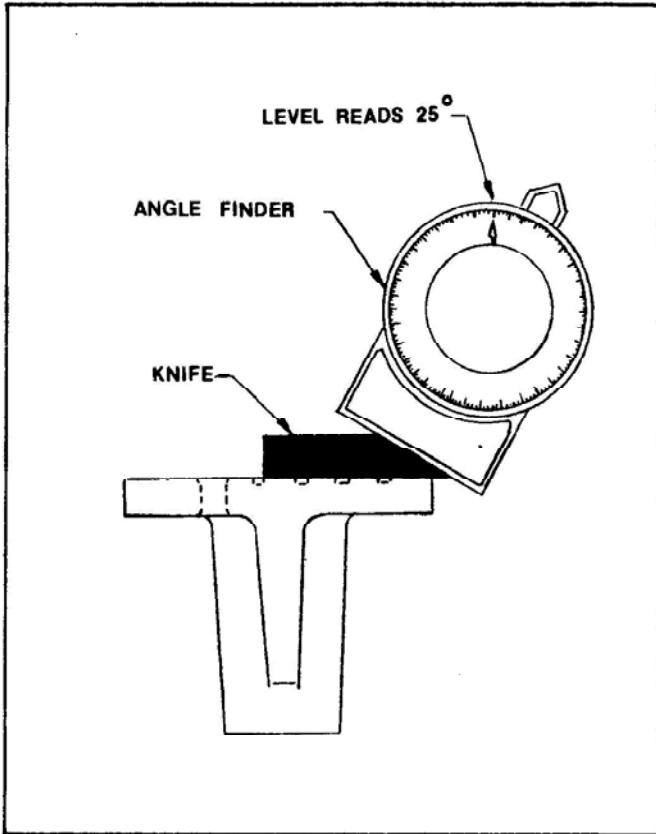


ILLUSTRATION NO. 7

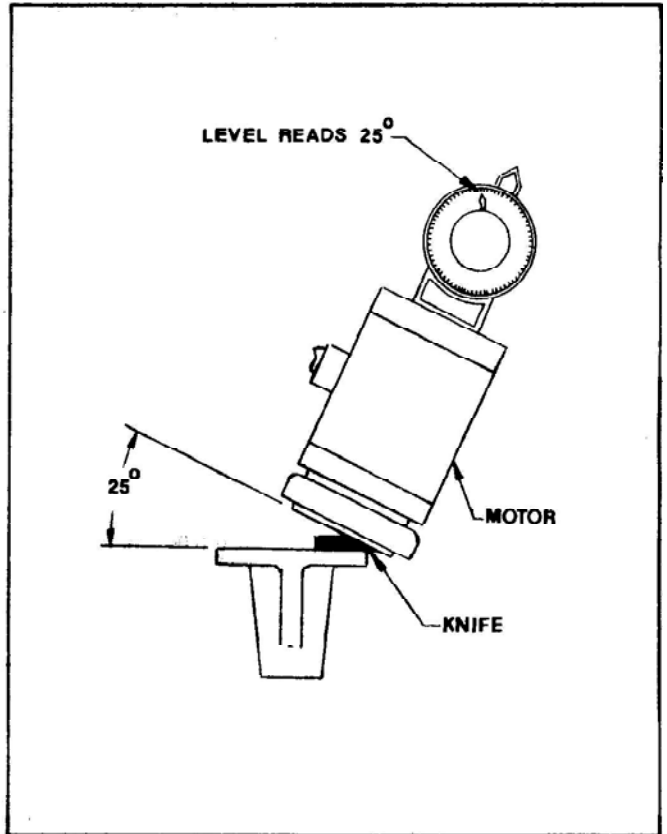
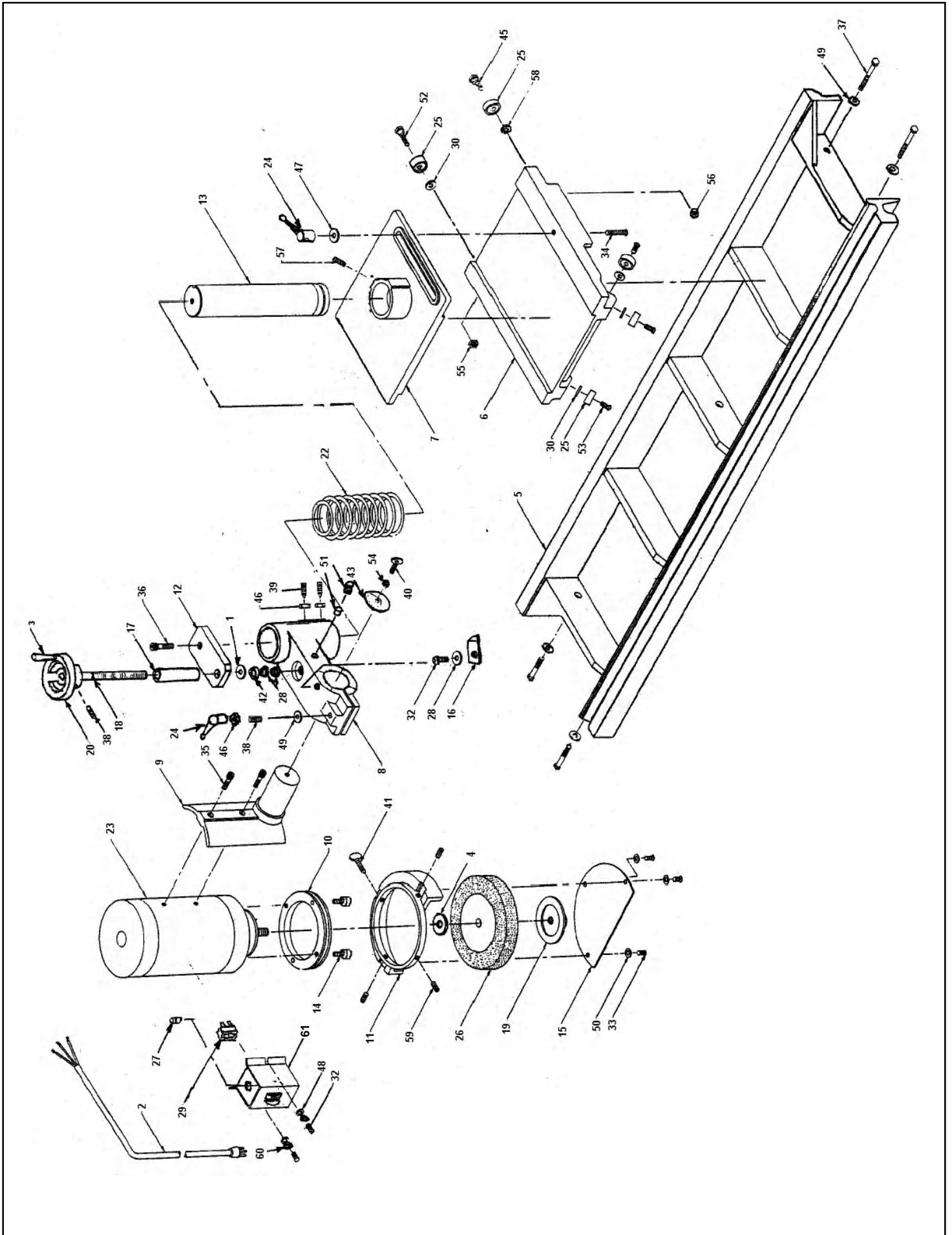


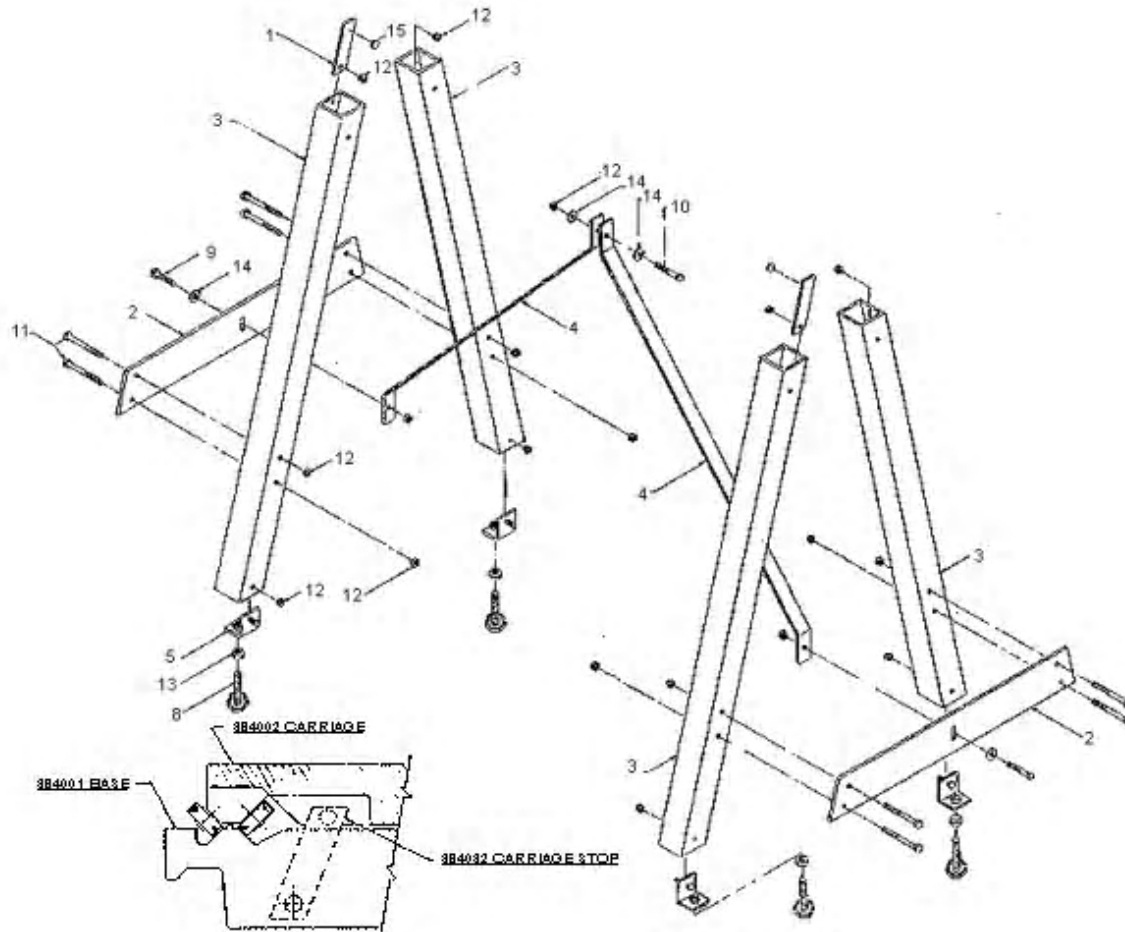
ILLUSTRATION NO. 8

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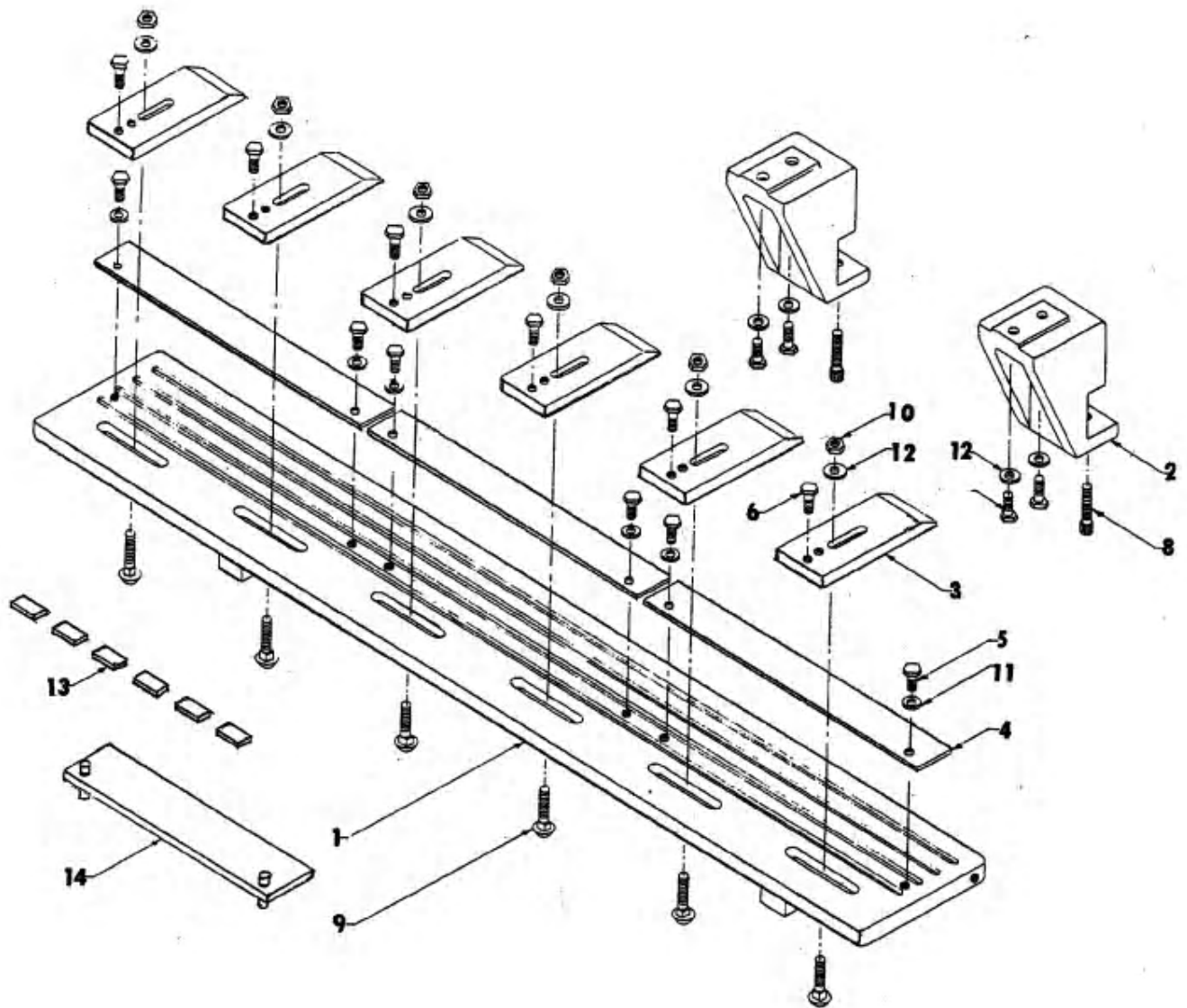
# PARTS LIST: 355 KNIFE GRINDER

DIA. NO.	PART NO.	DESCRIPTION
1	3709027	Thrust Washer
2	3707034	Cord Set
3	3707370	Spinning Handle
	J257000	1/4-20 Locknut - Jam
	J252000	1/4-20 Hex Nut - Jam
	B255011	1/4-20 x 3-1/8 Socket Head Cap Screw
4	3700409	Reducer Bushing
5	3849001	Base
6	3849002	Carriage
7	3849003	Carriage Slide
8	3849251	Motor Slide
9	3559003	Motor Mount
10	3849011	Pivot Plate
11	3849012	Guard
12	3849210	End Cap Vertical Feed
13	3849018	Support Post
14	B190811	Socket Head Cap Screw 10-24 x 1/2" Long
15	3849030	Guard Cover
16	3559024	Pointer
17	3849211	Spacer
18	3849250	Vertical Adjusting Screw
19	3559022	Flange - Outside
20	3708155	Handwheel - 4.5" Diameter
21	3707614	Capacitor - Motor (Not Shown)
22	3849209	Compression Spring
23	3559540	Motor Assy 115/230V 50/60 Hz w/ Switch, Cord, Switch Box & Capacitor
	3559930	Motor Assembly - Basic
24	3709437	Adjustable Handle - 3/8-16 Female
25	3709257	Bearing
26	3700265	Grinding Wheel 6 x 1 x 1
27	3707416	Strain Relief
28	3709197	Hex Nut 1/2-20 L.H. Thread
29	3707952	Rocker Switch
30	3709216	Tinnerman Washer
31	3708459	Decal - Stop (Not Shown) Motor Switch
32	B190602	Round Head Machine Screw 10-24 NC x 3/8" Long
33	B160602	Round Head Machine Screw 8-32 NC x 3/8" Long
34	A372802	Round Head Machine Screw 3/8-16 NC x 1-3/4" Long
35	B251011	Socket Head Cap Screw 1/4-20 NC x 5/8" Long
36	B371211	Socket Head Cap Screw 3/8-16 NC x 1-3/4" Long
37	B372401	Hex Cap Screw 3/8-16 NC x 1-1/2" Long
38	C374020	Socket Set Screw 3/8-16 x 2-1/2" Long
39	3849056	Socket Set Screw Brass 3/8-16NC x 1" Long
40	E190609	Thumb Screw 10-24 NC x 3/8" Long
41	E192409	Thumb Screw 10-24 NC x 1-1/2" Long
42	3709042	Thrust Bearing
43	3559023	Quadrant Scale
44	3708460	Decal - Start (Not Shown) Motor Switch
45	3559016	Eccentric Bolt
46	J371000	Hex Nut 3/8-16 NC
47	R000454	Cut Washer 3/8" ID x 1" OD
48	K190001	Plain Washer #10
49	K370001	Plain Washer 3/8
50	K160001	Plain Washer #8
51	3579109	Nylon Plug
52	B372001	Hex Cap Screw 3/8-16 NC x 1-1/4" Long
53	B371216	Button Head Cap Screw 3/8-16 NC x 3/4" Long
54	J191000	Hex Nut 10-24 NC
55	R000554	Kep Nut 3/8-16 NC
56	R000552	Kep Nut 1/4-20 UNC
57	C250820	Socket Set Screw 1/4-20 x 1/2" Long
58	K250001	Plain Washer 1/4"
59	C190820	Socket Set Screw 10-24 UNC x 1/2" Long
60	K191501	Lockwasher #10 Split
61	3559585	Switch Box
	B190402	10-24 x 1/4 Rd Head Mach Screw (Not Shown) for ground wire.
	R000465	Lockwasher #10 External Tooth (Not Shown) for ground wire.
	3708448	Decal - Electric Warning (Not Shown)
	3708461	Decal - Warning 3600 RPM (Not Shown)
	3708605	Decal - Warning Respirator (Not Shown)
	3708702	Decal - Safety Symbol (Not Shown)



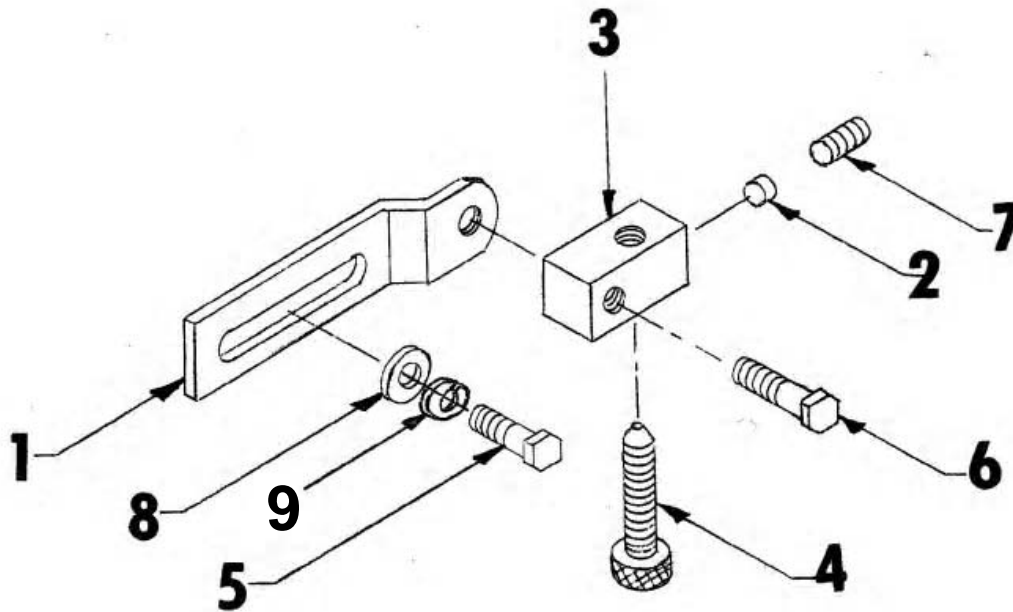
**EXPLODED VIEW**

<b>DIAGRAM NUMBER</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>
1	3849032	Carriage Stop
2	3849040	Leg Support
3	3849041	Leg
4	3849042	Leg Brace
5	9849566	Leveling Screw Bracket Weldment
8	3709563	Leveling Screw
9	B371601	Hex Cap Sc. 3/8-16 UNC 1" Long
10	B372401	Hex Cap Sc. 3/8-16 UNC x 1-1/2" Long
11	B374401	Hex Cap Sc. 3/8-16 UNC x 2-3/4" Long
12	J371000	Hex Nut 3/8-16 UNC
13	J501000	Hex Nut 1/2-13 UNC
14	K370001	Plain Washer 3/8
15	3709259	Rubber Bumper



DIA.	No.	DESCRIPTION
	1	3559006 ..... Knife Holder
	2	3559007 ..... Knife Holder Clamp
	3	3559080 ..... Knife Clamp
	4	3559081 ..... Knife Stop
	5	B250601 ..... Hex Cap Screw 1/4-20 NC x 3/8"
	6	B372001 ..... Hex Cap Screw 3/8-16 NC x 1-1/4"
	8	B372811 ..... Socket Cap Screw 3/8-16 NC x 1-1/4"
	9	E373200 ..... Carriage Bolt 3/8-16 NC x 2" Long
	10	J371000 ..... Hex Nut 3/8-16 UNC
	11	K250001 ..... Washer 1/4
	12	K370001 ..... Washer 3/8
	13	3849580 ..... Spacer Assembly (Set of 6)
	14	3559510 ..... Knife Gauge Assembly

**PARTS LIST FOR 3550519 DIAMOND DRESSER ATTACHMENT**



**DIAGRAM  
NUMBER**

**PART NUMBER**

**DESCRIPTION**

1 .....	3559052 .....	Bracket - Diamond Dresser
2 .....	3579109 .....	Nylon Plug
3 .....	3849074 .....	Dresser Arm
4 .....	6109015 .....	Diamond Dresser
5 .....	B311201 .....	Hex Cap Screw 5/16-18 NC x 3/4" Long
6 .....	B311601 .....	Hex Cap Screw 5/16-18 NC x 1" Long
7 .....	C250620 .....	Socket Set Screw 1/4-20 NC x 3/8" Long
8 .....	K310001 .....	Washer 5/16
9 .....	K311501 .....	Lockwasher 5/16