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\$10.00

SERIAL NO —

MODEL —

### SAFETY ALERT



This safety alert symbol means CAUTION OR WARNING-PERSONAL SAFETY INSTRUCTION. Personal injury may result if safety precautions are not carefully read before attempting to operate or repair this machine. See SAFETY PRECAUTIONS, page 1.

- This machine is designed for **ONE PERSON OPERATION ONLY!**
- Always **DISCONNECT THE POWER** before working on this machine.
- **DO NOT OPERATE WITH ANY GUARDS REMOVED!** Replace all guards before operating.
- **CRUSH HAZARD** – Keep hands, hair, cleaning rags & loose clothing away from drills.

# Instruction Manual



## Model JF Paper Drilling Machine

This manual covers serial numbers 53919 & up.  
ALWAYS GIVE THE SERIAL NUMBER OF YOUR MACHINE WHEN WRITING.

*Sold and serviced by*

**THE CHALLENGE MACHINERY COMPANY**

1433 Fulton Avenue • Grand Haven, Michigan 49417-1594 U.S.A. • Fax: 616/842-6511 • Phone: 616/842-8300

**F. 330-H**

**NOTICE: UNSUPPORTED PRODUCT!  
NO TECHNICAL SUPPORT AVAILABLE!  
NO REPAIR PARTS AVAILABLE!**

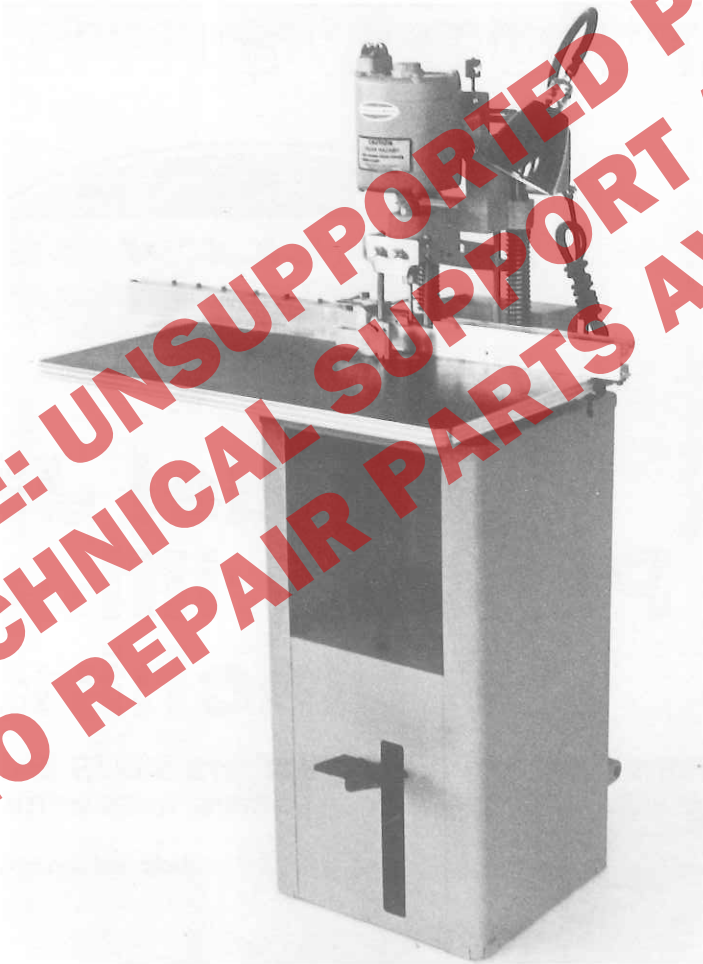
## FOR YOUR CONVENIENCE

This manual is provided for your convenience. In it are instructions for installing, operating, and maintaining your new Challenge Paper Drill. These instructions are intended to help you install this drill in a minimum of time and the least effort, operate it in the most efficient manner, and maintain it so that it will provide you with years of trouble free operation.

Contained in this book also, is a complete list of parts indicated by number to make it easy for you to correctly identify and order spare or replacement parts. It may be a long time before you need this information so it's suggested that it be kept with the machine so that it is available when required.

When ordering parts, be sure to give part numbers **and** the machine's model and serial number. This information is essential and will enable us to fill your requirements quickly and help keep your equipment in efficient operation.

Remember: your authorized dealer is interested in seeing that you get the best performance possible from your machine. Rely on him for parts and service.



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### SAFETY PRECAUTIONS



**SEVERE LACERATIONS** - Contact with high speed drill could cause severe injury. Always turn machine off and wait for drill to stop before removing drill bits. Keep hands away from drill when lowering drill head.



**SHOCK HAZARD** - Always disconnect power cord before cleaning, lubricating or servicing this machine.



**HIGH SPEED DRILL** - Keep rags, loose clothing and long hair away from rotating drill. Personal injury could result from items being caught on drill.



**GUARDING** - Do not operate drill with any covers removed. They are for your protection and must not be altered.

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LIMITED WARRANTY

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**PLEASE SEE ENCLOSED WARRANTY**

IT IS VERY IMPORTANT THAT YOU READ AND UNDERSTAND THE CONDITIONS OF IT.

THE WARRANTY INFORMATION SHEET MUST BE FILLED IN CORRECTLY, COMPLETELY  
AND BE ON FILE AT THE CHALLENGE MACHINERY COMPANY IN ORDER FOR WARRANTY TO BE ISSUED ON YOUR MACHINE.

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**PACKING LIST FOR JF PAPER DRILL**

Part No.	Description	Quantity
-----	Basic machine _____	1
A-6050-1	Backgage assembly _____	1
A-3975	Cutting stick knockout _____	1
A-4690-3	Table _____	1
CD-4	1/4" Hollow drill _____	1
4685	Drill cleaner _____	1
4687	Drill drift _____	1
4688	Lubrication stick _____	1
W-154	3/32" Allen wrench _____	1
F-330-H	Parts manual and instruction book _____	1
A-4682	Cutting blocks (1 doz.) _____	1
3949	Paper shims (cutting block) _____	2

# INSTALLATION INSTRUCTIONS

Refer to the parts lists and drawings in the back of this manual for part identification and orientation, as necessary.

All guards and instruction plates are installed for your safety and information and must remain on the machine as shipped from the factory.

## Uncrating The Paper Drill

Unless otherwise specified, this machine is shipped in a wooden crate with the cutting stick knockout, backgage, and table removed. These items are packed in a separate box. The machine should be unpacked by carefully removing the crate so as not to damage any of the machine parts.

Immediately after uncrating, check off parts received against the packing list. Also, examine for any physical signs of damage incurred during shipment. The machine is inspected before and after crating at our plant. The responsibility for filing a claim against the carrier for damages incurred during shipment rests with the receiver of the goods (FOB our factory).

The machine is held in place on its shipping skid by means of wooden blocks. Remove these blocks and then carefully position the machine on the floor.

Clean all parts with a commercial cleaning solvent (such as C.R.C.) before installing or using the machine.

## Installing The Table

The table is held in place with four filister head

machine screws and washers provided. Simply position the table, line up the holes, and tighten the screws.

## Installing The Backgage

To install the backgage you must first remove the pressure foot assembly (held in place with two knurled screws). While facing the front of the machine, hold the backgage with the opening toward you and slip it on the front of the table. Then slide the gage back on the table and fasten to the table with the two thumb screws provided. (See drawing for identification of parts.)

## Final Installation

Attach the pressure foot assembly in place with the two knurled screws provided.

Place the cutting stick knockout in position. Place the drill block in the table.

Insert the tapered head of the hollow drill into the spindle. Be sure the drift hole cover is in place before operation.

## Hooking Up The Power Line

The JF Paper Drill is factory wired to 115 volt specifications. It is important that the power source complies with the electrical specifications of the machine. We recommend that this machine be plugged into a 15 amp circuit.

# OPERATION INSTRUCTIONS

## Starting The Machine

The power for this machine is supplied by a single motor which directly drives the spindle. It is started and stopped by a toggle type switch located on the top of the motor. The "on" and "off" position is so indicated. The switch is protected by a channel type guard to reduce the possibility of accidental contact. Be sure that the motor is operating before trying to drill paper.

## Lighting The Machine

The table light for this machine is on a flexible neck which allows you to position the light for maximum illumination of the working area. The light is turned on by means of a push type switch located in the socket.

## Operating The Drill

First, be sure that the switch is turned on. Depressing the foot treadle brings the drill down through the lift of stock. After the drill reaches the bottom of its stroke, release the treadle and the drill will return to its top position.

By releasing the treadle, the operator can stop the drill in its downward stroke allowing it to return to the normal up position, thus preventing costly errors. Never rest your foot on the treadle without intending to bring down the drill.

## Using The Auto-Trip Side Guide

As each hole is drilled, the side guide is automatically tripped, and as soon as the drill clears the  
(continued next page)

stock on its upstroke, the guide is free to move to its next stop. This is accomplished by pushing the stock to the left and moving the guide at the same time. When drilling only one hole jobs, when doing slothole work or when cornering, the automatic trip arm should be locked in its up position by tightening the thumbscrew.

### Setting The Side Guide Stops

First set the rear gage to the desired back margin. Be sure both sides are set to the same dimension and tighten the two thumbscrews. Next, loosen the set screws which hold the stops in place and slide the stops to the desired dimension between holes (a scale in the backgage is provided for this purpose). The first stop is always set for the distance from the edge of the sheet to the center of the first hole. Final adjusting or centering of the holes is accomplished with the knurled screw at the left end of the side

guide arm. Loosening the finger screw on the top of the side guide arm allows the knurled screw to be turned in or out thus increasing or decreasing the distance to the centerline of the drill (and hole). Before drilling a full lift of stock, it is recommended that a sample sheet be drilled and measured to check this fine adjustment. Be sure that the finger screw is retightened before drilling.

The automatic trip gage comes equipped with seven stops. Additional stops can be purchased at a very nominal price. Challenge fixed index gages are recommended where the same job is to be handled over and over again. They are easily and quickly attached and removed. See page # 5 for details and description.

**NOTE:** *When drilling narrow strips, the side guide roller assembly should be mounted on inside of side guide assembly.*

## ROUTINE ADJUSTMENTS

### Adjusting The Vertical Stroke

Always turn the spindle adjusting locknut to an extreme down position (thus raising the head to an extreme up position) when changing drills. Adjust the spindle so that the drill will just cut through the bottom sheet of a lift before reaching the bottom of its stroke.

This adjustment is controlled by the spindle adjusting locknut located on the top of the guide rods, just behind the motor. Turning the nut clockwise raises the spindle while turning it counter-clockwise lowers the spindle. Do not set the spindle so low that the drill "burns" into the cutting block at the bottom of its stroke.

**NOTE:** *When changing drills or to do slotting or cornering, be sure to change the stroke adjustment to prevent the drill or knife from cutting too deep into the cutting block.*

It is also necessary to check the adjustment of the locknut located on the spindle adjusting screw, just

under the guide rod bracket assembly. This locknut should be adjusted so that there is 2" between the table and the pressure foot and so that the foot treadle does not hit the stand at its maximum up position.

### Removing The Cutting Block

To remove the cutting block, simply reach under the table and push up on the cutting stick knockout.

### Removing Drills From The Chuck

Insert the drill drift, flat side down, into the hole in the chuck and lift upward. The upward movement forces the drill down and releases it from the chuck. The spring clip on the end of the chuck is provided to cover the drift hole and prevent paper chips from flying out when drilling small diameter holes.

**NOTE:** *Sometimes the drills become so firmly seated in the chuck that it is necessary to tap on the drift to get the drill to release.*

## ROUTINE MAINTENANCE

### Service Checklist

#### Daily

1. Sharpen the hollow drill often and reset the spindle adjusting locknut if needed.
2. Lubricate the hollow drill frequently with the Drill-ease provided.
3. For better hollow drill life, remove the drill

when not in use and soak in light oil or kerosene.

#### Weekly

1. Clean guide bar shafts around frame and oil with No. 30 oil.
2. Clean side guide shaft and oil with light oil.
3. Clean clevis pins and oil with light oil.

# TROUBLE SHOOTING

(Refer to parts lists, pages 5 thru 7, for part location, number, and description.)

Problem	Area to Check	Solution
1. Lack of power	Check voltage at machine - may be low.	Remove other machinery on line or provide a separate branch circuit.
	Check for bind in treadle assembly.	Free bind, clean and oil.
2. Drill head won't return.	Check lift springs - may be broken or stuck.	Pry up head, clean and oil shafts. (Replace springs if necessary.)
	Pull down shafts froze in frame.	ditto
3. Drill head will not come down.	Check for broken lift spring - may be jammed.	Replace spring.

## DRILLING TIPS

**Important** — Always avoid drilling too slowly. The spindle should be brought down as rapidly as the drill will easily cut through the paper. Also, the spindle should return to the up position as rapidly as possible to avoid the spinning of the drill in the stock on the upstroke.

Instead of punching slotted holes for five and seven hole universal binding work, save time and cost by drilling a 1/2 inch diameter hole in place of the slot. The slot is only intended to allow the post or ring to be used in either location and the large hole permits this.

Having fixed gages for all frequently repeated standard jobs, or even special ones, is a good way to save set-up time and assure that all runs will have identical hole spacing.

Drilling holes for plastic bindings, instead of punching them, is practical and saves a great deal of time, particularly on long run jobs.

The proper care of hollow drills is important. Follow these seven suggestions for trouble free operation.

1. **Keep Drills Sharp** — A dull drill is the major cause of drill breakage and production tie-ups. Usually after three hours of drilling, depending on the type of paper being processed, the drill should be sharpened. A dull drill results in poor quality work.

2. **Keep Drills Clean** — A dirty and rusty drill will not permit the free upward passage of the drill chips. Pressure built up by a clogged drill will split or break the drill. To keep it free from dirt or rust, clean the drill of all chips after each use and apply a light oil to the inside and outside. Drills should be cleaned out immediately after each use. This is particularly true if a coated

stock has been drilled. On these jobs the chips are frequently compacted into one solid mass when the drill cools - causing breakage the next time the drill is used.

3. **Lubricate Drills** — Lubrication assists in the passage of the chips and helps avoid overheating of the drills. Use readily available stick lubricants for this purpose. Hold the end of the stick against the side of the rotating drill. Be sure to touch the cutting edge with the lubricant also.

4. **Keep Spindle Clean** — Clean out the drill spindle frequently. This will prevent any buildup in the spindle of the drill.

5. **Set The Drills Correctly** — Do not cut too deeply into the cutting block. The drill should just touch the block and cleanly cut through the bottom sheet. During drilling, do not set the drill deeper into the block but change the position of the block frequently. Drilling deeper into the block dulls the drills quickly.

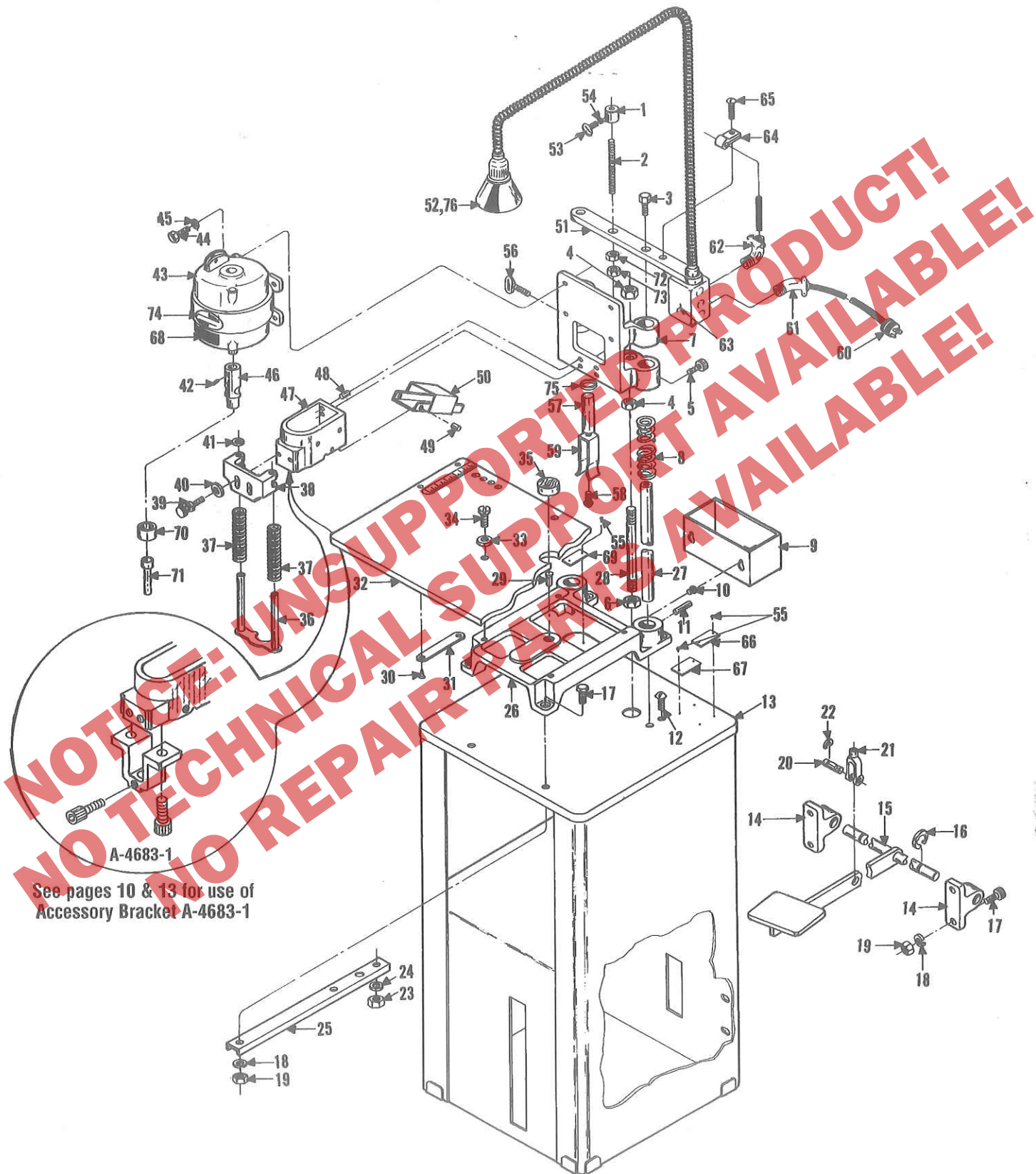
6. **Check For Drill Wobble** — If spindles are badly worn or bent through misadjustment, have them replaced immediately. A wobbly or loosely held drill will break.

7. **Check Your Drill Sharpener** — The cutting edge of the sharpening bit should be inspected frequently to make certain that it is sharp and free of nicks. Never let a drill drop onto the sharpening bit. It will chip the sharpening edge. Use gentle pressure when sharpening - let the sharpening bit do the work. Check the sharpness of the drill after sharpening. The cutting edge should be razor sharp.

Just a little time and effort taken with each use of your paper drilling machine should result in trouble free operation over many years.



# JF PAPER DRILL MAIN ASSEMBLY A-4620-3



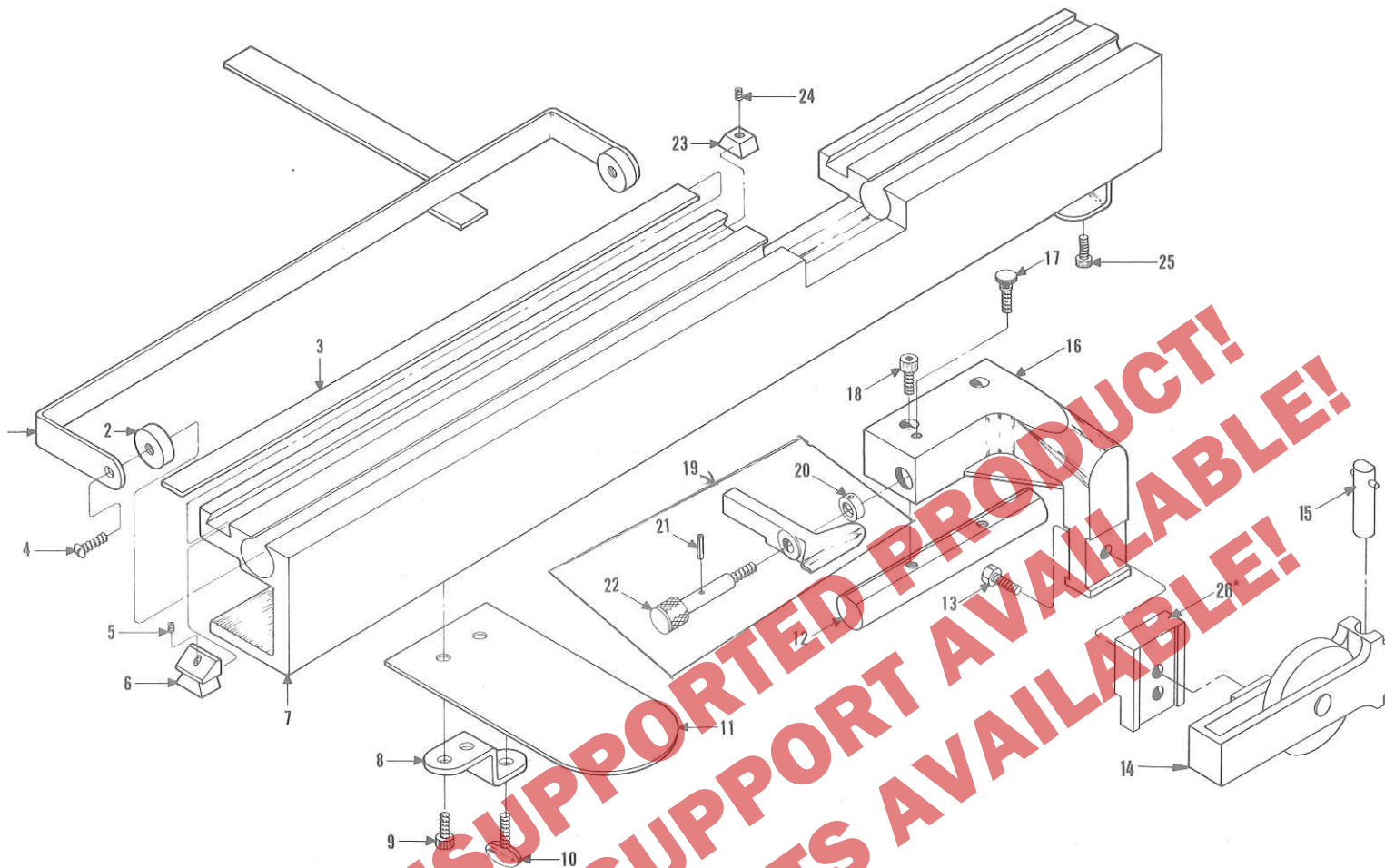
# JF PAPER DRILL MAIN ASSEMBLY

## A-4620-3

Ref. Part No. No.	Part Name	Qty.	Ref. Part No. No.	Part Name	Qty.		
1.	4619	Spindle Lock Nut .....	1	38.	4631	Pressure Foot Guide .....	1
2.	4618-1	Spindle Adjusting Screw .....	1	39.	4632-1	Pressure Foot Adjusting Screw .....	2
3.	H-6913-608	3/8-16 x 1" Hex Hd. Cap Screw .....	2	40.	H-7322-4	1/4" Polished Washer .....	2
4.	H-6428-8	1/2-20 Hex Jam Nut .....	2	41.	S-1518-37	3/8" Retaining Ring .....	2
5.	H-6918-506	5/16-18 x 3/4" Soc. Hd. Cap Scrw .....	2	42.	H-6938-102406	#10-24 x 3/8" Soc. Hd. Set Screw .....	2
6.	H-6428-7	7/16-20 Hex Jam Nut .....	1	43.	E-1600-21	Motoe, 1/4HP .....	1
7.	4605-1	Motor Bracket .....	1		E-792	Switch Only .....	1
8.	4613-2	Lift Spring .....	2	44.	H-6913-504	5/16-18 x 1/2" Hex Hd. Cap Screw .....	4
9.	A-4608	Chip Box .....	1	45.	H-7322-5	5/16" Polished Washer .....	4
10.	H-6923-406	1/4-20 x 3/8" Rd. Hd. Mach. Screw .....	2	46.	4607	Spindle .....	1
11.	H-6633-616	#6 x 2" Taper Pin .....	2	47.	4606	Chip Shute .....	1
12.	H-6923-412	1/4-20 x 3/4" Rd. Hd. Mach. Screw .....	2	48.	H-21S-187-0750	3/16 x 3/4" Sel Lok Pin .....	2
13.	A-4656	Stand Assembly .....	1	49.	H-21S-187-0500	3/16 x 1/2" Sel Lok Pin .....	2
14.	4668	Treadle Bracket .....	2	50.	A-4622	Chip Chute Assembly .....	1
15.	A-4672	Treadle Assembly .....	1	51.	A-4638-3	Guide Rod Bracket Assembly .....	1
16.	S-1193-75	.750 Truarc Retaining Ring .....	2	52.	EE-796-3	Flexolite Assembly .....	1
17.	H-6913-610	3/16 x 1-1/4" Hex Hd. Cap Screw .....	8		K-137	Shade Only .....	1
18.	H-7325-12	3/8" Lockwasher .....	8	53.	H-6955-404	1/4-20 x 1/2" Thumb Screw .....	1
19.	H-6423-6	3/8-16 Hex Nut .....	8	54.	303-5255	3/16 x 3/32" Brass Button .....	1
20.	S-1482	Pin .....	1	55.	H-6924-004	#0 x 1/4" Rd. Hd. Drive Screw .....	6
21.	4669	Clevis .....	1	56.	H-6955-102406	#10-24 x 3/4" Thumb Screw .....	1
22.	S-1193-37	.375 Truarc Retaining Ring .....	2	57.	6068	Trip Arm Pickup Rod .....	1
23.	H-6423-4	1/4-20 Hex Nut .....	2	58.	H-6923-102406	#10-24 x 3/8" Rd. Hd. Mach. Screw .....	1
24.	H-7325-8	1/4" Lockwasher .....	2	59.	6073	Spring Clip .....	1
25.	4770	Top Brace .....	2	60.	KK-299-2C	Power Cord .....	1
26.	A-4601-5	Base Assembly .....	1	61.	E-913	45° Conduit Clamp .....	1
	4602-2	Frame Only .....	1	62.	S-887	90° Conduit Connector (Clamp) .....	1
27.	4603-2	Guide Rod .....	2	63.	E-1369-3	Cover .....	1
28.	4671-1	Treadle Rod .....	1		S-1781-12	Caution Label .....	1
29.	A-3975	Cutting Block Riser .....	1	64.	E-968-3	Wire Clip .....	2
30.	H-6961-605	#6-32 x 5/8" Flat Hd. Wood Screw .....	4	65.	H-6923-102406	#10-24 x 3.8" Rd. Hd. Mach. Screw .....	2
31.	4635	Table Side Strip .....	2	66.	E-1504-19	Electrical Sped. Plate .....	1
32.	A-4690-3	Table Assembly .....	1	67.	5177	U.L. Listed Plate .....	1
	4636	Scale .....	2	68.	S-1781-3M	Caution Plate .....	1
	4691-3	Table (only) .....	1	69.	S-1236-6	Name Plate .....	1
	S-1792	Nails .....	4	70.	K-85	Drift Hole Cover .....	1
33.	H-7322-#10	3/16" Standard Washer .....	4	71.	CD-4	1/4" Hollow Drill .....	1
34.	H-6921-102416	#10-24 x 1" Fillister Hd. Mach. Screw .....	4	72.	H-5247-5	5/16-18 Flex-Lox Nut .....	1
35.	4681	Cutting Block .....	1	73.	H-6424-5	5/16-18 Hex Jam Nut .....	1
36.	A-4625	Pressure Foot Assembly (complete) .....	1	74.	S-1076-2	Decal .....	1
	A-4626	Pressure Foot Assembly .....	1	75.	S-1193-43	7/16" Truarc Retaining Ring .....	1
37.	4629-1	Pressure Foot Spring .....	2	76.	E-933-2	Light Bulb .....	ref.

NO TECHNICAL SUPPORT AVAILABLE!  
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# AUTO TRIP GAGE ASSEMBLY

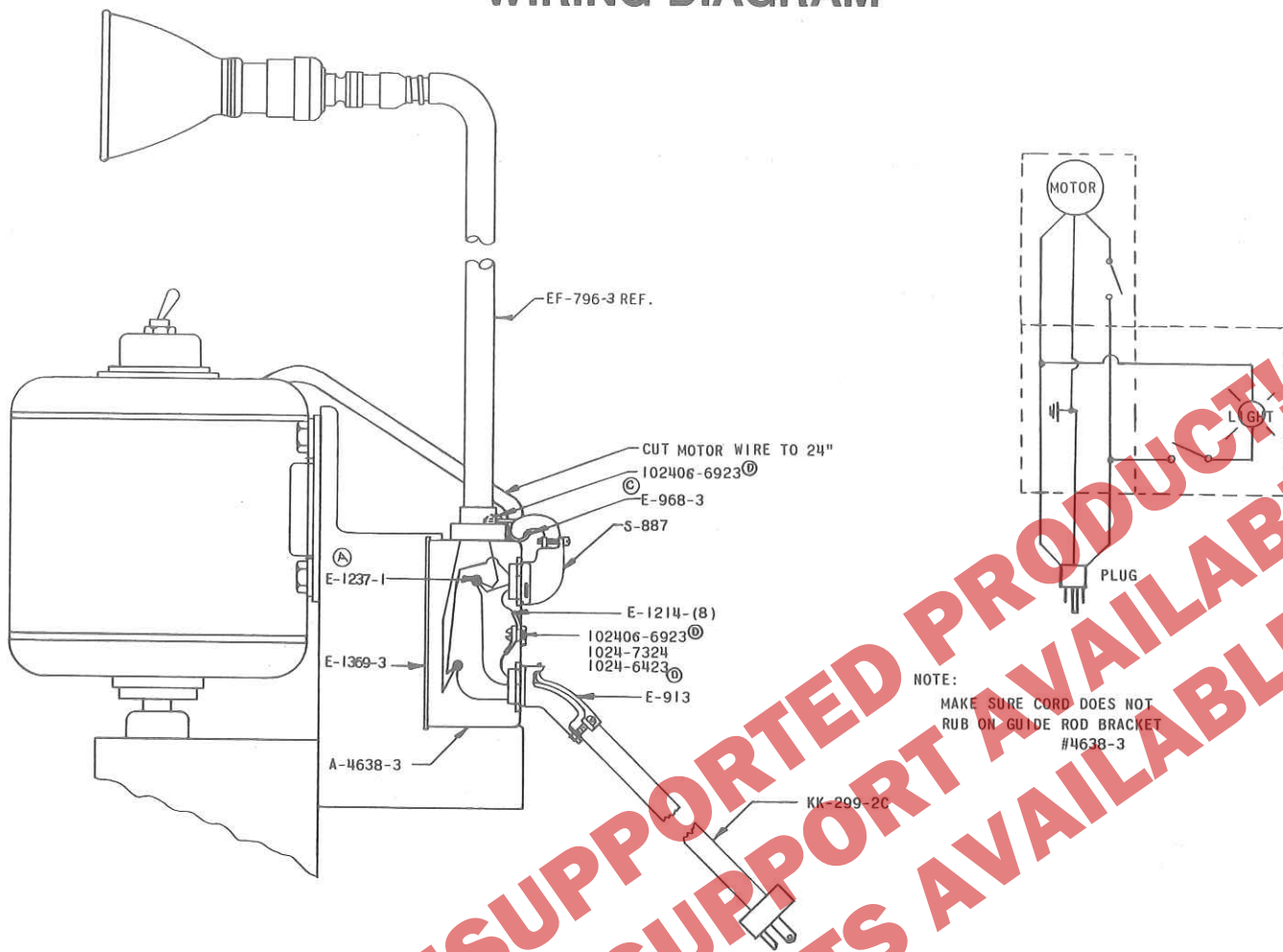


Always Give SERIAL NUMBER When Writing – When Ordering Parts, Give PART NUMBER  
**AUTO TRIP GAGE ASSEMBLY**  
**A-6050-1**

Ref. No.	Part No.	Part Name	Qty.
1.	A-6070	Trip Bracket Assembly.....	1
2.	6069	Trip Bracket Roller.....	1
3.	4599	Backgage Strip Plate.....	1
4.	H-6923-102406	#10-24 x 3/8" Rd. Hd. Mach. Screw.....	2
5.	H-6952-102406	#10-24 x 3/8" Nylon Pt. Soc. Set Screw.....	7
6.	S-1611-1	Side Guide Stop.....	7
7.	6051-1	Backgage.....	1
8.	4655	Backgage Clamp.....	2
9.	H-6918-405	1/4-20 x 5/8" Soc. Hd. Cap Screw.....	2
10.	H-6955-508	5/16-18 x 1" Thumb Screw.....	2
11.	4794	Rear Gage Guide Plate.....	1
12.	6063	Side Guide Slide.....	1
13.	H-6913-407	1/4-20 x 7/8" Hx. Hd. Cap. Screw.....	1
14.	A-4785	Assembled Side Guide Roller.....	1
15.	A-4791	Side Guide Face Assembly.....	1
16.	6055-1	Side Guide Arm.....	1
17.	6067	#8-32 x 3/8" Brass Finger Screw.....	1
18.	H-6918-102408	#10-24 x 1" Soc. Hd. Cap Screw.....	2
19.	A-6060-1	Adj. Screw and Trip Assembly.....	1
	6056-1	Trip Lever Only.....	1
	6057	Collar.....	1
20.	H-21S-187-0625	1/8 x 5/8" Sel-Lok Pin.....	1
21.	6058	Finger Screw.....	1
22.	6058	Finger Screw.....	1
23.	H-6423-#10	#10-24 Hex Nut.....	1
24.	H-6940-102404	#10-24 x 1/4" Flt. Pt. Soc. Set Screw.....	1
25.	H-6918-404	1/4-20 x 1/2" Soc. Hd. Cap. Screw.....	2
26.*	4827-2	Shim.....	1

\* This shim comes with Cornering Attachment Kit No. A-6411 and must be installed as shown in the drawing when using the cornering attachment. It can be left in place for normal drilling operations but must be removed for drilling narrow strips..

# WIRING DIAGRAM



NOTE:  
MAKE SURE CORD DOES NOT  
RUB ON GUIDE ROD BRACKET  
#4638-3

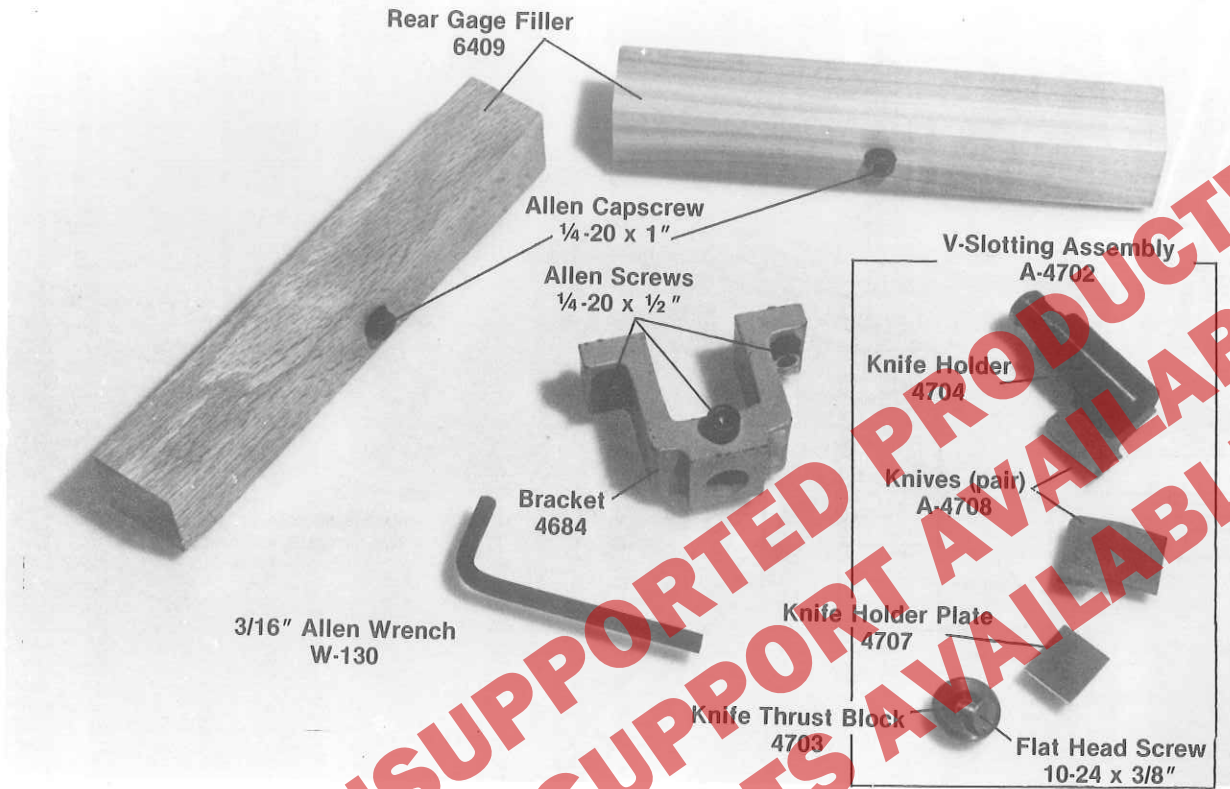
**NOTICE: UNSUPPORTED PRODUCT!  
NO TECHNICAL SUPPORT AVAILABLE!  
NO REPAIR PARTS AVAILABLE!**

## WIRING DIAGRAM EE-1368

Ref. No.	Part No.	Part Name	Qty.
1.	H-7324-#10	#10 Shakeproof Lockwasher.....	1
2.	H-6923-102406	#10-24 x 3/8" Rd. Hd. Mach. Screw.....	3
3.	H-6423-#10	#10-24 Hex Nut.....	1
4.	E-968-3	Wire Clip.....	2
5.	A-4638-3	Guide Rod & Elec. Box Assembly.....	1
6.	E-1237-1	Wire Nut.....	2
7.	E-1214-8	Eyelet.....	1
8.	E-1369-3	Box Cover.....	1
9.	E-913	45° Conduit Clamp.....	1
10.	S-887	90° Conduit Connector.....	1
11.	KK-299-2C	Power Cord.....	1

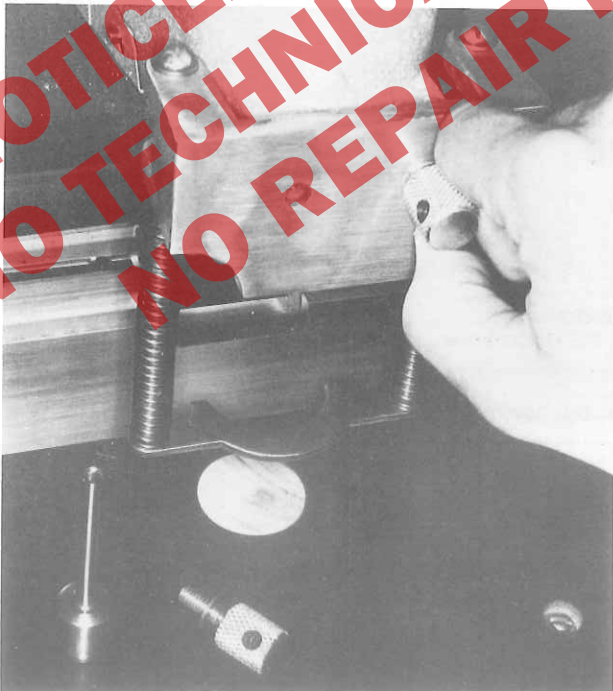
# SLITTING AND SLOTTING ATTACHMENTS FOR JF & CENTURY DRILLS

## V-SLOTTING AND SLITTING ATTACHMENT (A-6410)

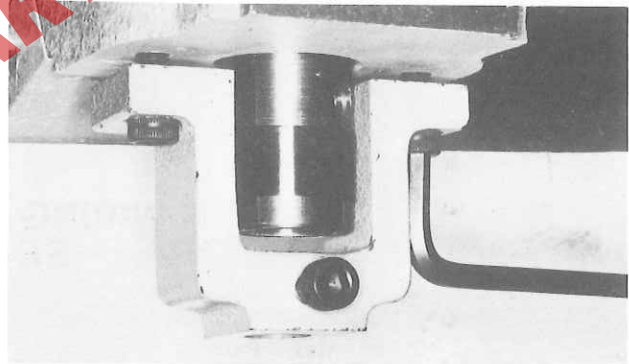


### V-Slotting

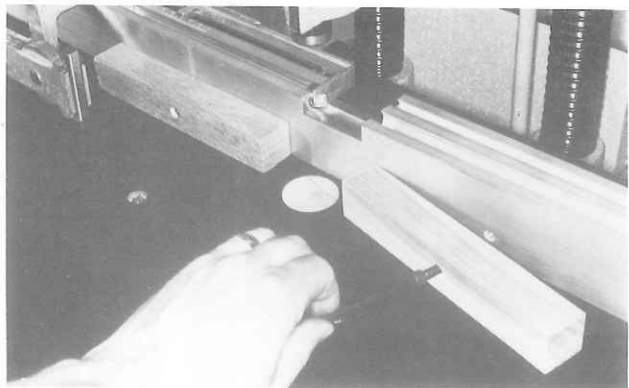
To cut V-slot holes, first drill the round holes. Turn off the power and remove the drill.



Remove the pressure foot by unscrewing the knurled nuts and install the Mounting Bracket with the Holder Socket Screw facing the operator.

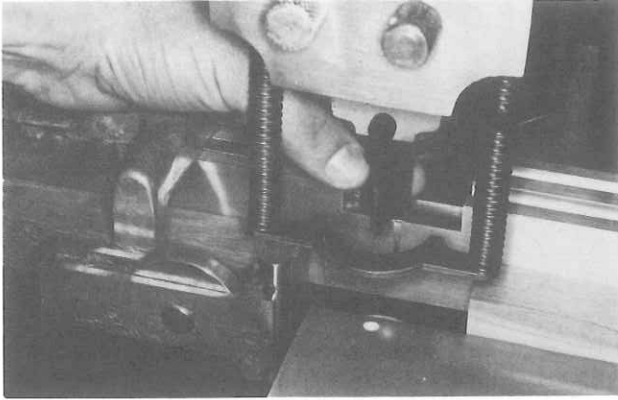


Attach the Backgauge Fillers and replace the Pressure Foot.

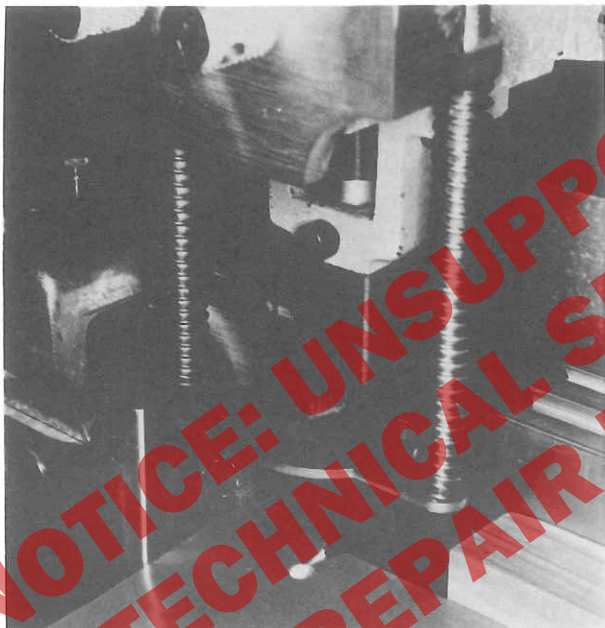


Next, attach the Knife Assembly. Align the Blades to

the already drilled holes and tighten the Holder Socket Screw.

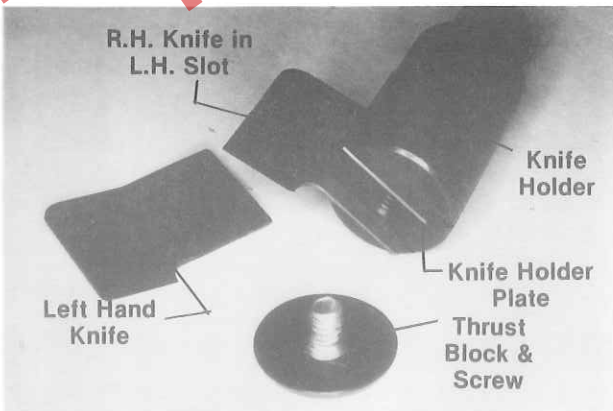


For best results, lay a sheet of chipboard underneath your work and set the depth-of-cut so it just makes it through the chipboard. The blades should not cut into the wood block when slotting or slitting.

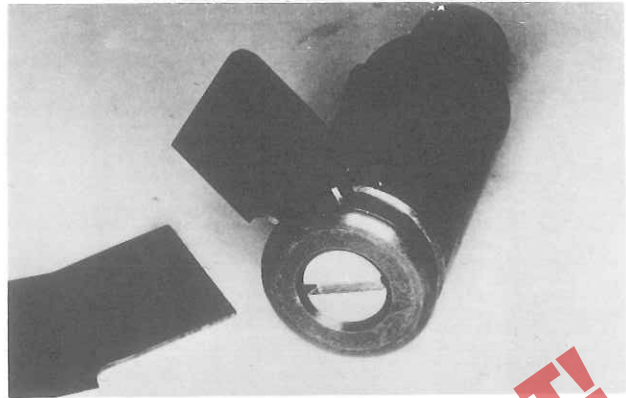


### Slitting

For slitting work, remove the Knife Thrust Block, take out the Left Hand Knife and set it aside.



Remove the Right Hand Knife and position it in the left hand knife slot.

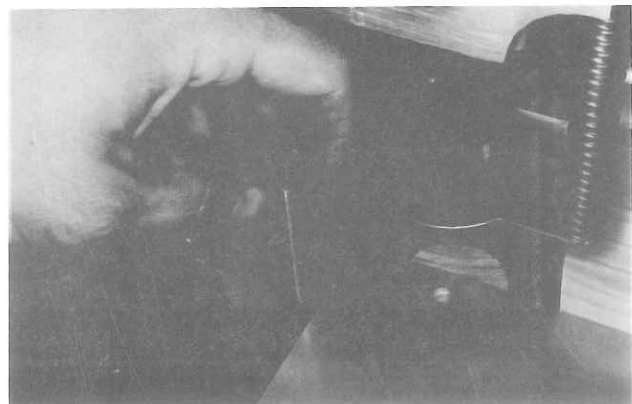


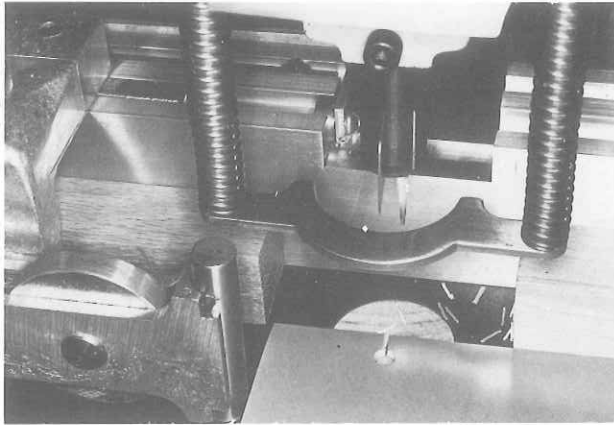
Place the Knife Holder Plate in the right hand knife slot and replace the Thrust Block and Screw. Replace the Knife Holder in the Mounting Bracket and turn the holder in the bracket to cut a straight slit.



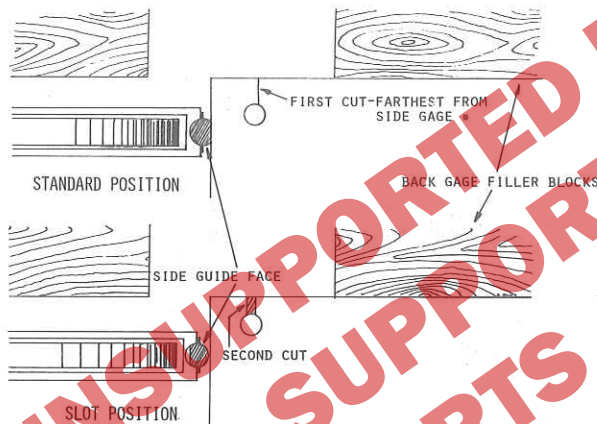
Make your first slit farthest from the side guide\* then slit the other side of the hole and proceed to the next slot position.

For narrow slots, position the side guide stops for the first cut farthest from side gage\*. Leaving the side gage at the same position, lift the Side Guide Face and turn it around.





Jog the stock square against the back and side gages and make the second cut. Your Slot is now complete.



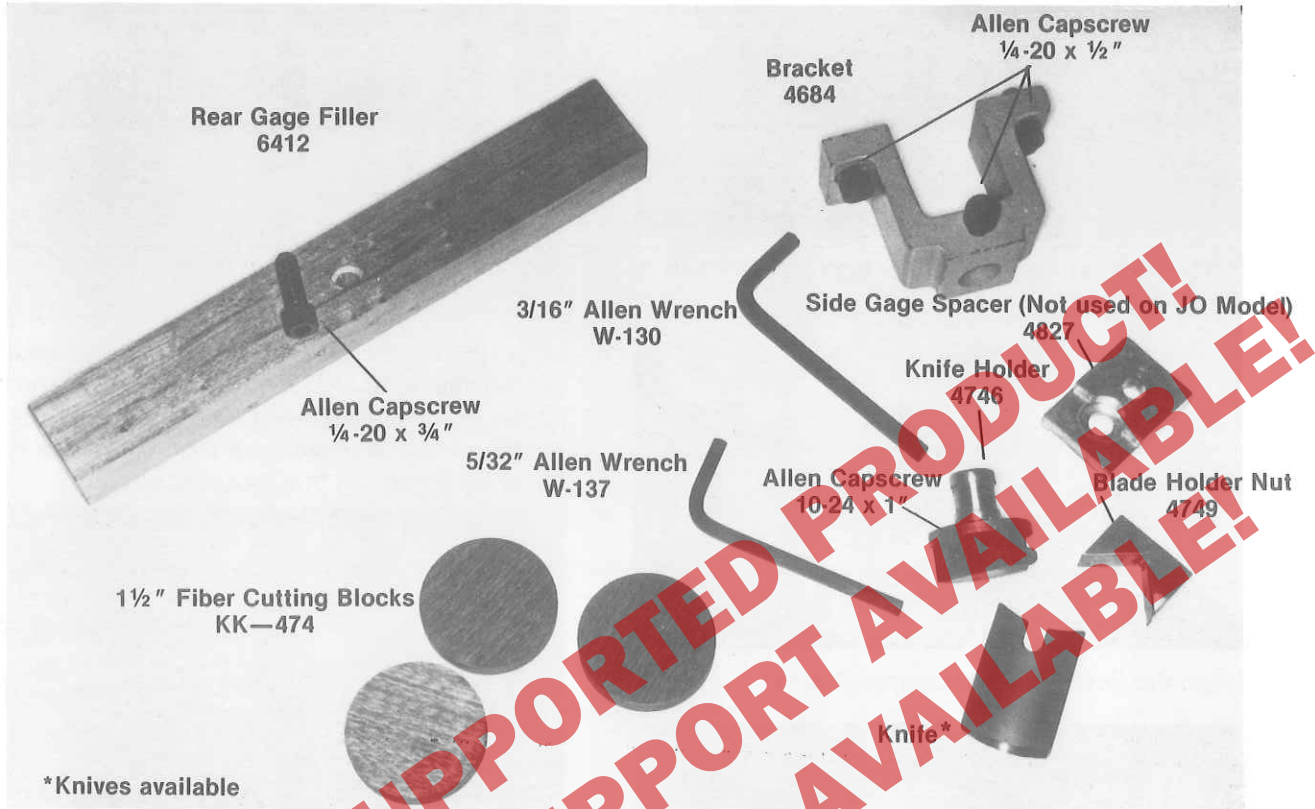
Remember to return the Side Guide Face to the Standard Position before making the next slot.

\*First cut is always made farthest from the side gage. This prevents draw on the paper that would give irregular cuts.

**IMPORTANT — MAXIMUM CAPACITY OF SLITTING AND SLOTTING ATTACHMENTS IS ONE-HALF INCH (13mm).**

**NOTICE: UNSUPPORTED PRODUCT!  
NO TECHNICAL SUPPORT AVAILABLE!  
NO REPAIR PARTS AVAILABLE!**

**LIGHT DUTY CORNERING ATTACHMENT FOR JF & CENTURY DRILLS**  
**CORNERING ATTACHMENT (A-6411)**

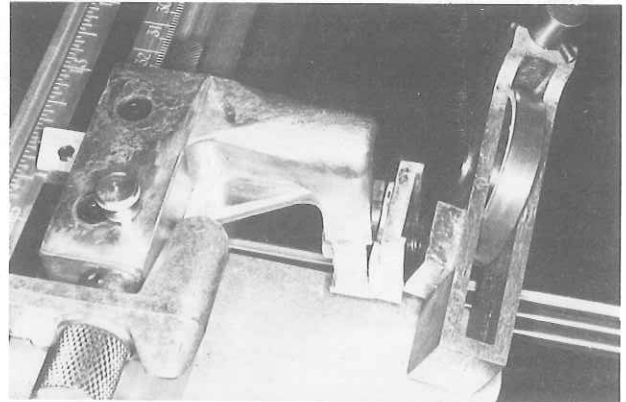


To install the Cornering Attachment, make sure the power is locked out and then remove the hollow drill.

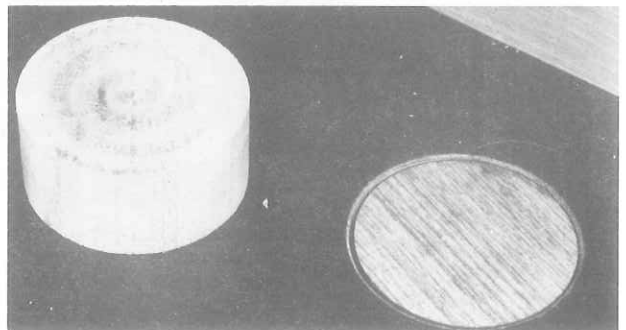


Next, remove the pressure foot by unscrewing the two knurled nuts.

Now install the Side Gage Spacer; this part is not used on the JO drill and may be discarded. The spacer may be left in place for normal drilling

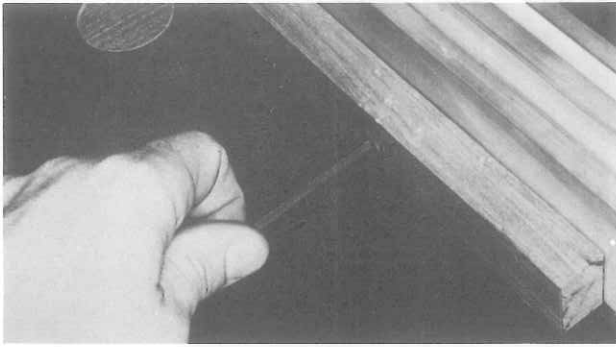


operation, but must be removed for drilling narrow strips.

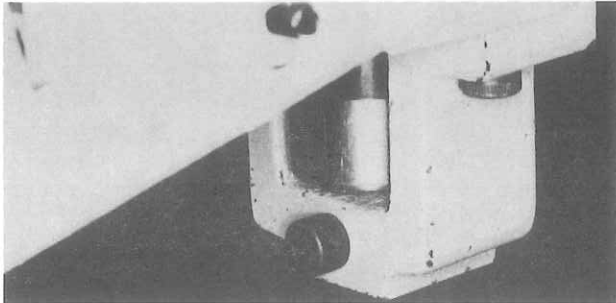


Replace the wooden drill block with the three Fiber Blocks included.

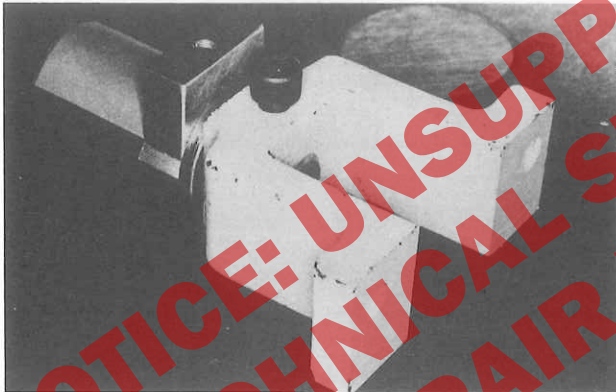




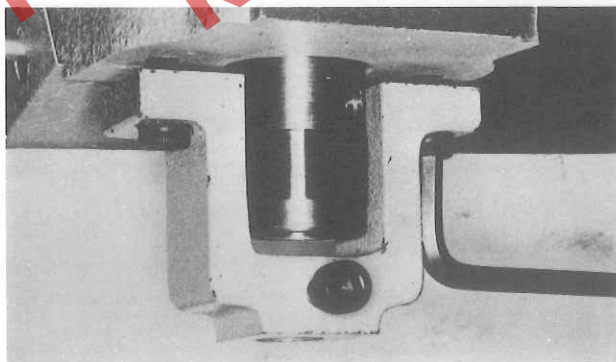
Install the Rear Gage Filler Block on the right side of the backage.



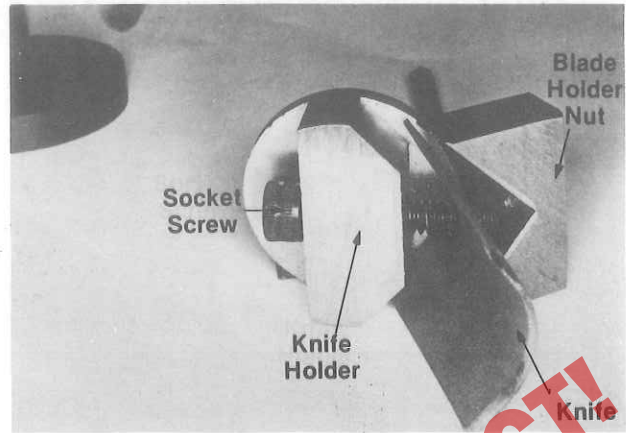
Install the Cornering Attachment Bracket.



NOTE: When using the cornering knives, the Knife Holder Socket Screw should face the rear of the machine; this puts the bracket mounting holes in the rear position and centers the knife on the cutting block.



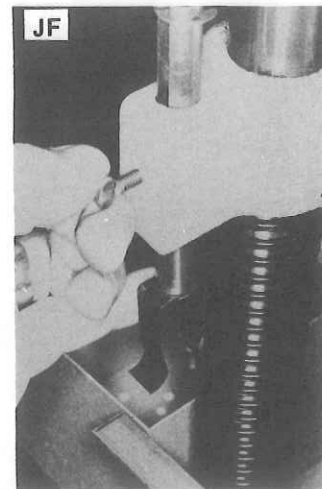
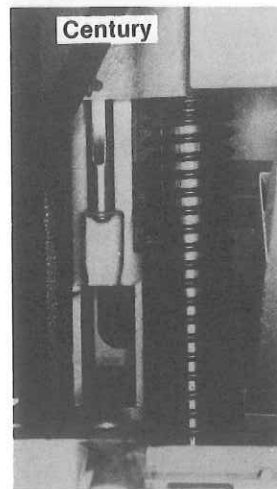
When using the Straight Diagonal Knife, the bracket is reversed, with the holder socket screw facing the operator. The holder mounting screws are then in the forward position.



Install the Knife Holder Assembly in the Bracket and tighten the Knife Holder Socket Screw. The knife holder comes assembled with the knife installed, double check to make sure the knife blade is held firmly by tightening the socket screw.



Adjustments to the paper are made by positioning the side and back gages. The knife is squared to the paper by loosening the Knife Holder Socket Screw and rotating the Knife Holder Assembly so that the knife edges match up to the sides of the paper.



Raise the Auto Trip Mechanism and lock it out of the way with the thumb screw.

Your Challenge paper drill is now ready to corner.

**NOTE: Maximum cutting capacity is one-half inch (13mm).** Be sure to check the stroke adjustment to prevent the knife from cutting too deep into the cutting block.

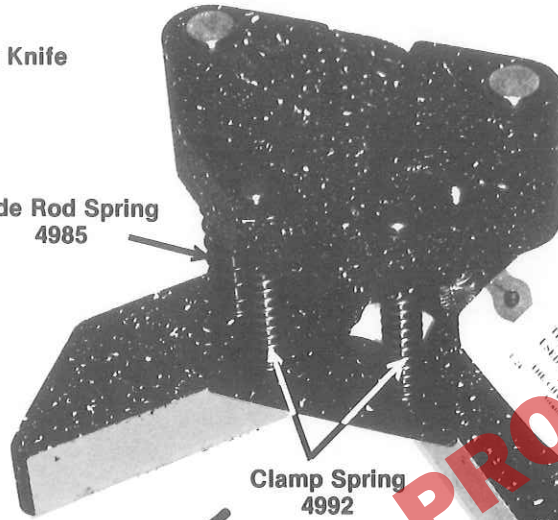
**CORNER-MATIC HEAVY DUTY CORNERING ATTACHMENT (A-4980) for JF & CENTURY DRILLS**

**7/16" (11mm) Cornering Knife Supplied**



**4981-7**

**Slide Rod Spring 4985**



**Knife Holder Assembly A-4980**

**Clamp Spring 4992**

**1/8" Allen Wrench W-141**

**5/32" Allen Wrench W-137**

**3/16" Allen Wrench W-130**



**1-1/2" Fiber Cutting Blocks KK-474\*\***



**\*Other Knives Available**

4981-2 1/8" (3mm) Radius

4981-4 1/4" (6mm) Radius

4981-6 3/8" (9.5mm) Radius

**\*\*Sold in Dozen Lots Only on Reorders.**

4981-7 7/16" (11mm) Radius

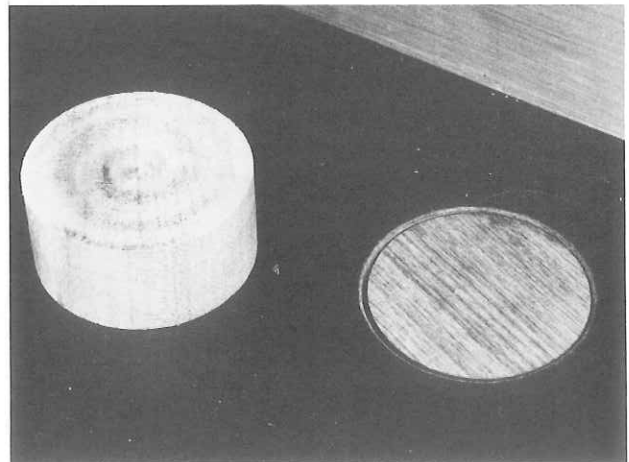
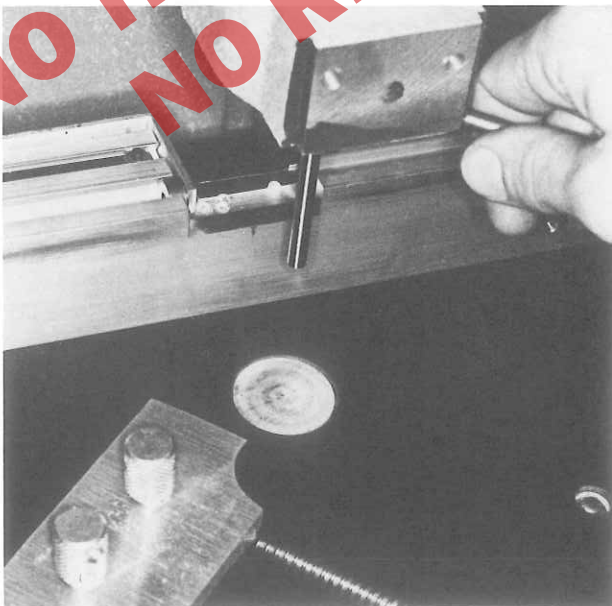
4981-8 1/2" (13mm) Radius

4982 Straight Diagonal

**IMPORTANT: MAXIMUM LIFT CAPACITY IS 1" (25mm).**

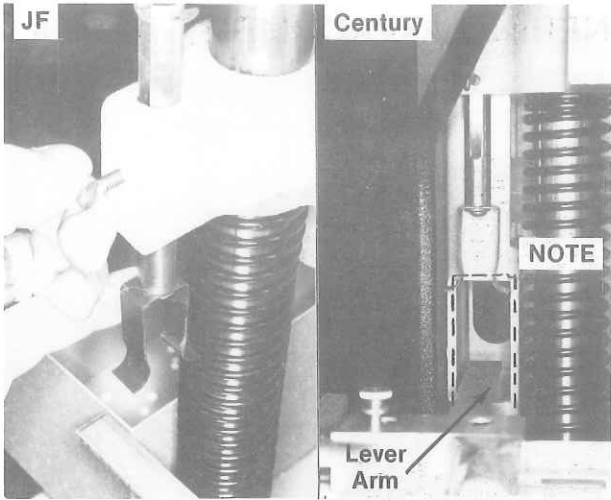
For safety, lock out power at the power box while installing attachments.

Remove the pressure foot by unscrewing the two knurled nuts and remove the hollow drill.

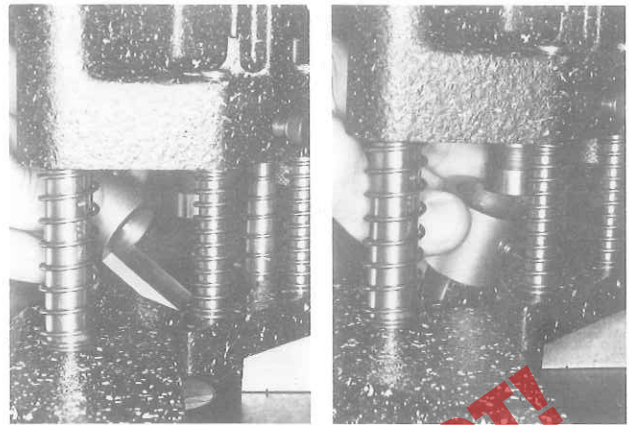


Remove the wood cutting block and replace with the three fiber blocks supplied.

Move the backgage to the rear of the table and position the Side Gage to the far left of the table. You



may also want to lock the Auto. Trip Mechanism out of the way. NOTE: On the Century Drill, be careful not to damage the Backgag Trip Lever when moving the backgag to the rear of the table. Lever arm may have to be lifted up to clear opening in frame.



Install the Knife Blade from the rear of the attachment, slide it up into position and



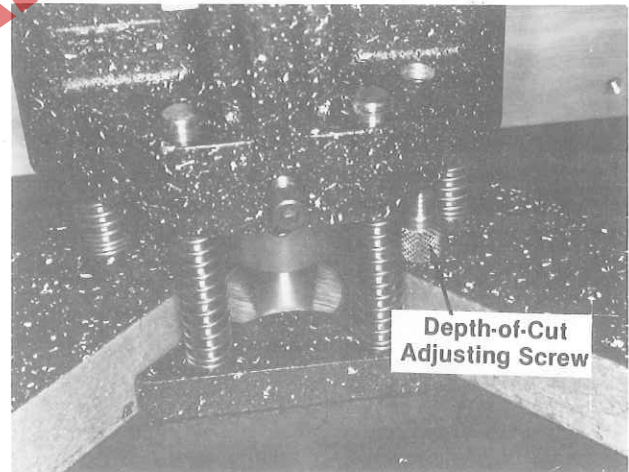
tighten the socket screw to hold it in place.



Align the Knife Holder to the holes for the pressure foot, press down on the holder and slide it into place.



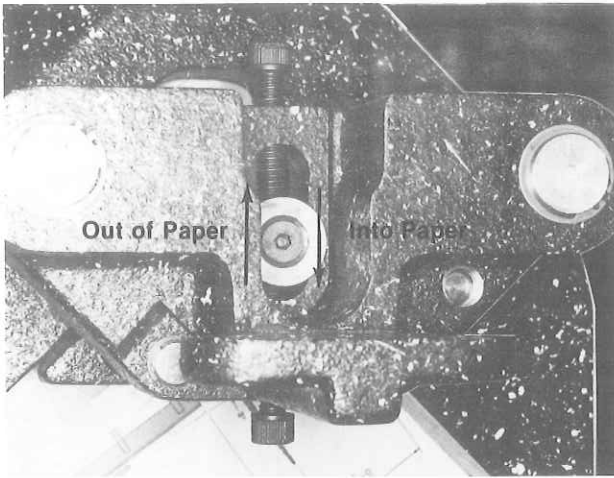
Attach the holder to the drill with the knurled nuts that held the pressure foot in position.



The Depth-of-Cut may be adjusted with the knurled screw on the right side of the attachment (indicated with a tag when shipped). The knife blade should just make it through the stock and not cut into the fiber block.

The blade can be squared to the paper by loosening the socket screw in the knife itself and rotating the blade until the edges of the knife match the edges of the paper.

The blade can also be adjusted into or out of the paper, depending on which blade you are using, by



loosening the socket screw on the front and tightening the socket screw in the rear of the attachment to bring the knife forward, or by loosening the rear socket screw and tightening the front screw you can move the knife farther back.

Turn the power on (Century only) and your Challenge Paper Drill is now ready to corner.



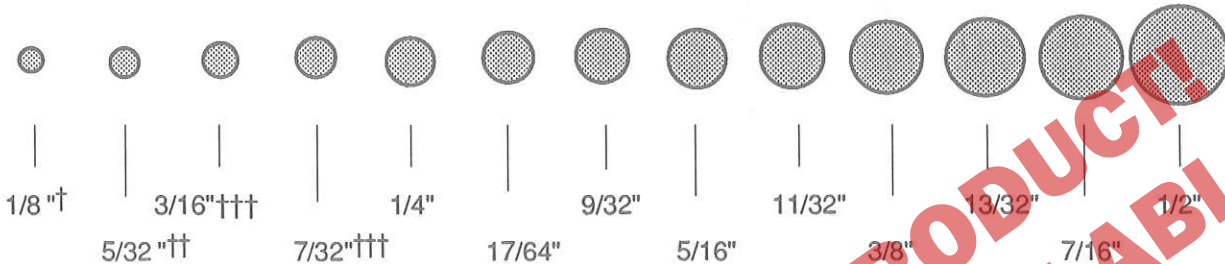
**NOTICE: UNSUPPORTED PRODUCT!  
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NO REPAIR PARTS AVAILABLE!**

# ACCESSORIES FOR CHALLENGE PAPER DRILLING MACHINES

## Genuine Challenge Hollow Drills

In 13 Standard Sizes For Every Drilling Need

(2" drill capacity unless otherwise noted.)



17/32" & 9/16" available by special order

Drill Capacity: †=5/8"; ††=1-1/8"; †††=1-5/8"

This wide range of standard drill sizes is available to meet your every ordinary drilling need. Carried in stock by local Challenge dealers.

### Challenge Drill-Ease Lubricant Stick Cat. No. 4688

This lubricating stick provides a dry stainless lubricant which has many uses throughout the printing plant. It is specially recommended for use on hollow drills for easier drilling, particularly when drilling clay coated stock. It eliminates binding and excessive heating of the drill. It can also be used along the beveled edge of a paper cutter knife to make it cut easier. Will not discolor the stock.

### Challenge Drilling Blocks Cat. No. A-4682

These Challenge 1-1/2" End-Wood Drilling Blocks are for round hole drilling operations. Sold in lots of 12.

### Sharp-Eze I Drill Sharpener Cat. No. 11900

The rugged Sharp-Eze I drill sharpener is the perfect accessory for your Lincoln Drill. Of durable chrome plated, die-cast construction, this tool will sharpen 1/8" to 1/2" bits without having to remove them from the drill. The spring loaded, diamond sharpening head provides the proper pressure and has a built-in chip removing pin. The Sharp-Eze comes with a magnetic base and a two foot attached chain for easy storage and quick access.

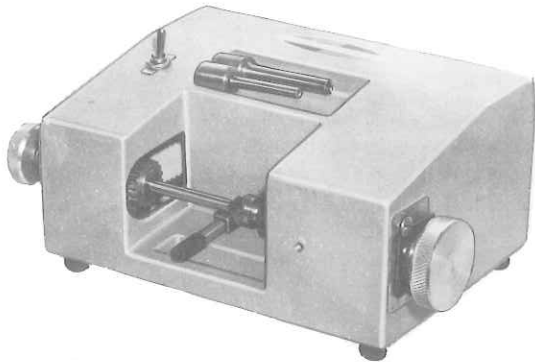
### Extra Backgape Stops

In addition to the stops supplied with each Challenge Paper Drilling Machine, extra stops are available at a nominal price.

In ordering, be sure to specify the model and serial number of your machine.

## Challenge Power Drill Sharpener

Cat. No. A-6450



A new moderate-cost power drill sharpener. Plugs into any standard 115 volt, 60 cycle, AC outlet. Handles Challenge and other taper shank drills. Adaptors also available for handling practically all other makes.

Item	Cat. No.
Replacement Cutting Bit	6469
Resharpener Service - Your Old Bit	6469-R

## HOLLOW DRILL SHARPENER

*For fast . . . easy . . . drill sharpening*



Here's a unit that really makes drill sharpening easy. All you do is place the hollow drill in the tapered end of the drill holder . . . insert the unit on the cylinder . . . then turn two or three times . . . and you have a perfectly sharpened drill.

This Challenge Hollow Drill Sharpener can pay for itself many times over through longer drill life . . . easier, faster drilling . . . and less sharpening time. All sizes of drills from 1/8 to 1/2 inch in diameter can be handled.

Important, too, the drill sharpener automatically puts just the right amount of bevel on the hollow drill for best drilling results. It's self centering, too, so that the center of the sharpening bit exactly meets the center of the hollow drill. The drill sharpener also has a replaceable sharpening bit.

Items	Part No.
Challenge Hollow Drill Sharpener	A-4950
Extra Cutting Bit	4952

### Instructions:

**NOTE:** Always handle carefully

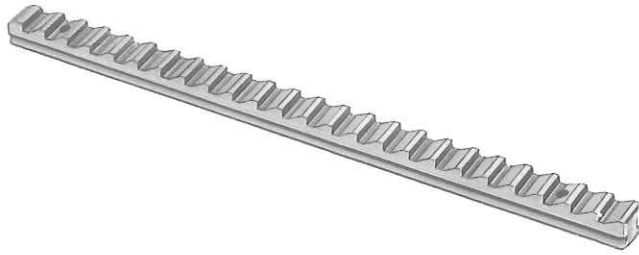
1. Be sure to wipe off all grease before using the sharpener.
2. Remove any paper chips from the hollow drill.
3. Place the hollow drill in the drillholder section. Insert the sharpening section, being very careful to bring the drill and cutting tool together without bumping.

**CAREFUL:** The cutting tool is made of a glass hard material and may be chipped by careless handling.

4. Turn the cutting unit clockwise, maintaining an even pressure until the hollow drill is sharpened (usually two or three turns). The cutting tool seldom requires regrinding, but when this does become necessary, the bit should be sent to the factory as regrinding must be done on a diamond wheel.

# FIXED GAGES and EXTRA STOPS

## Challenge Standard Fixed Gages



These fixed gages with pre-cut hole spacings fit on the side guide in place of the movable stops. To use, simply loosen the set screws holding the adjustable stops and slide them out of the way. They may either be removed from the backgage or slid to the extreme right end of the scale where they will be out of the way and cannot become lost. Slide the fixed gage into the backgage from the left end making sure that the slanted lead for the stops is to the left. Position the gage so that the right end lines up with the dimension on the scale for the centerline of the first hole to be drilled. Tighten in place with the two set screws. Actual operational use of the stops on the fixed gage is the same as using the adjustable stops.

These fixed gages are available from stock in the following standard types:

- 22-stop Gage, 1/2" centers for Multi-Ring Binders
- 25-stop Gage, 3/8" centers
- 25-stop Gage, 1/4" centers
- 34-stop Gage, 1/2" centers
- 46-stop Gage, 3/8" centers
- 50-stop Gage, 1/4" centers

**Special Fixed Gages** with any desired hole spacing can also be supplied. In ordering be sure to specify the number of stops (holes) and the hole spacing. A sample of the job to be drilled or drawing of the hole spacings is helpful. Also, specify machine model and serial number.

**Extra Stops** In addition to the stops supplied with each Challenge Paper Drilling Machine, extra stops are available at a nominal price.

In ordering, be sure to specify the model and serial number of your machine.

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