

# USP 13

# UNIVERSAL SPEED PUNCH



## Operator Manual



# **USP 13**

## **UNIVERSAL SPEED PUNCH**

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# USP 13 Universal Speed Punch Operating Instructions

The Universal Speed Punch from GBC Automated Finishing Division is specially designed to punch various weight paper sheets and cover stock. The machine has a variable speed control which can be adjusted from 70-110 cycles per minute.

The thickness of individual layers being punched is adjustable, but should not exceed a maximum of .080" per lift. Depending on the quality and weight of the material being processed, it may be necessary to adjust the lift to less than maximum. .070" is a good operating lift to avoid excessive wear on the punch pins and to maintain a quality hole.

With proper maintenance the Universal Speed Punch will provide troublefree, continuous operation for many years.

**Important:** Only a sharp, well-lubricated and properly installed die set will have a long life and give good quality punching. Clean punching without paper welding yields more efficient binding. Punching dies should be sharpened every 100 hours of operation or when the punched holes begin to get ragged. This, too, will depend on the type of stock being punched, i.e. hard finish, coated, etc.

**REPLENISH THE SUPPLY HOPPER  
CONTINUOUSLY TO OBTAIN  
MAXIMUM PRODUCTION.**



**USP 13**

# Service And Equipment Maintenance Agreement

By purchasing the USP 13 you have invested in a highly capable punching machine that will give you years of reliable service. To help protect this investment be certain to take advantage of the GBC Equipment Maintenance Agreement (EMA). The EMA provides your USP 13 with proper ongoing maintenance and care, helping to ensure the years of quality performance and long life built into the machine. Without an EMA, a charge for parts and labor would result from every normal maintenance or repair service call. An EMA for your USP 13 eliminates this possibility by providing you with a low, fixed annual cost for protecting your valuable machine investment. For full details about purchasing an EMA, consult with your GBC Sales Representative or contact:

General Binding Corporation  
500 Bond Street  
Lincolnshire, IL 60069

Or Call: 1-800-790-7787

A GBC Authorized Technician must perform all service and maintenance unless it is operator maintenance in accordance with the USP 13 Operator Manual. Use of the USP 13 in any manner not in accordance with the GBC USP 13 Operator Manual is not recommended and may void your warranty or maintenance contract

Trained operators and regular operator maintenance of the USP 13 can optimize performance and minimize service calls.

# SELECTING KNIFE SET-UP

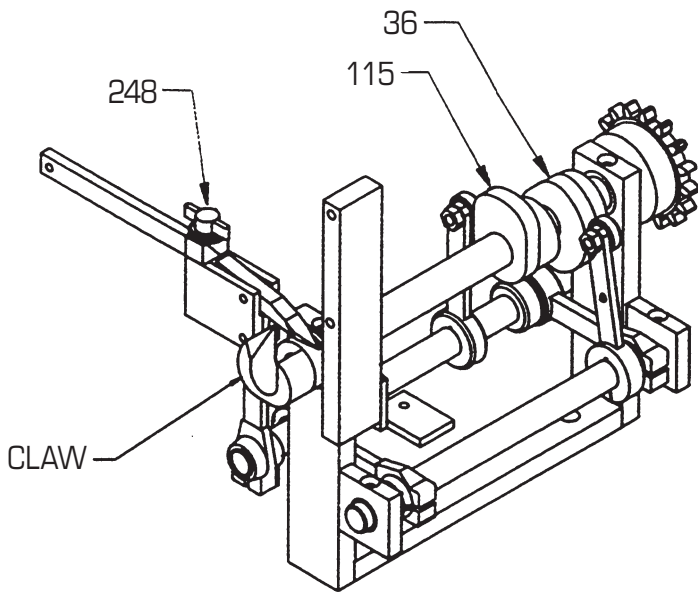


Figure 1

1. Turn power off.
2. Cycle the machine with the hand wheel until the claw reaches between 10 and 11 o'clock. (Figure 2)
3. Cam #115 sets when the separating knife will go into the stack. Adjust the cam so that the tip of the knife is about 1/8" (.13) from the trailing edge of the claw. (Figure 2)
4. Cam #36 sets when the selecting knife will lift. Adjust the cam to get a lift of about 1/8" (.13). (Figure 3)
5. The separating knife should now enter the stack, then raise, support the stack and the claw will then select the lift. (Figure 3)
6. To adjust the thickness of the lift, turn the T-knob (#248, Figure 1) clockwise for thicker lifts and counterclockwise for thinner lifts.

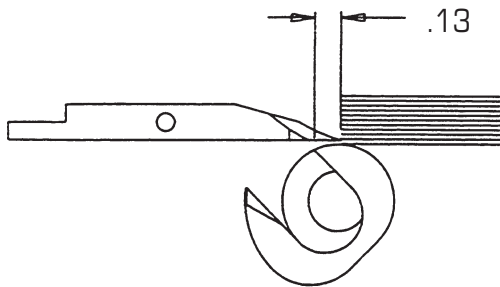


Figure 2

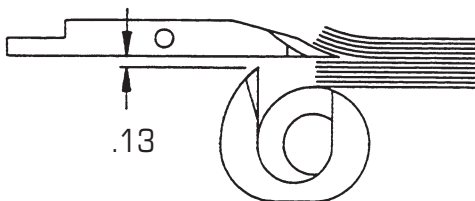


Figure 3

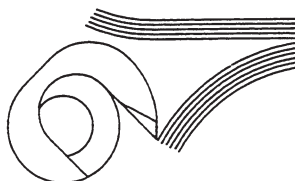


Figure 4

# USP 13

## Installation of Punching Dies

### Using Quick Release Die Clamp Assembly

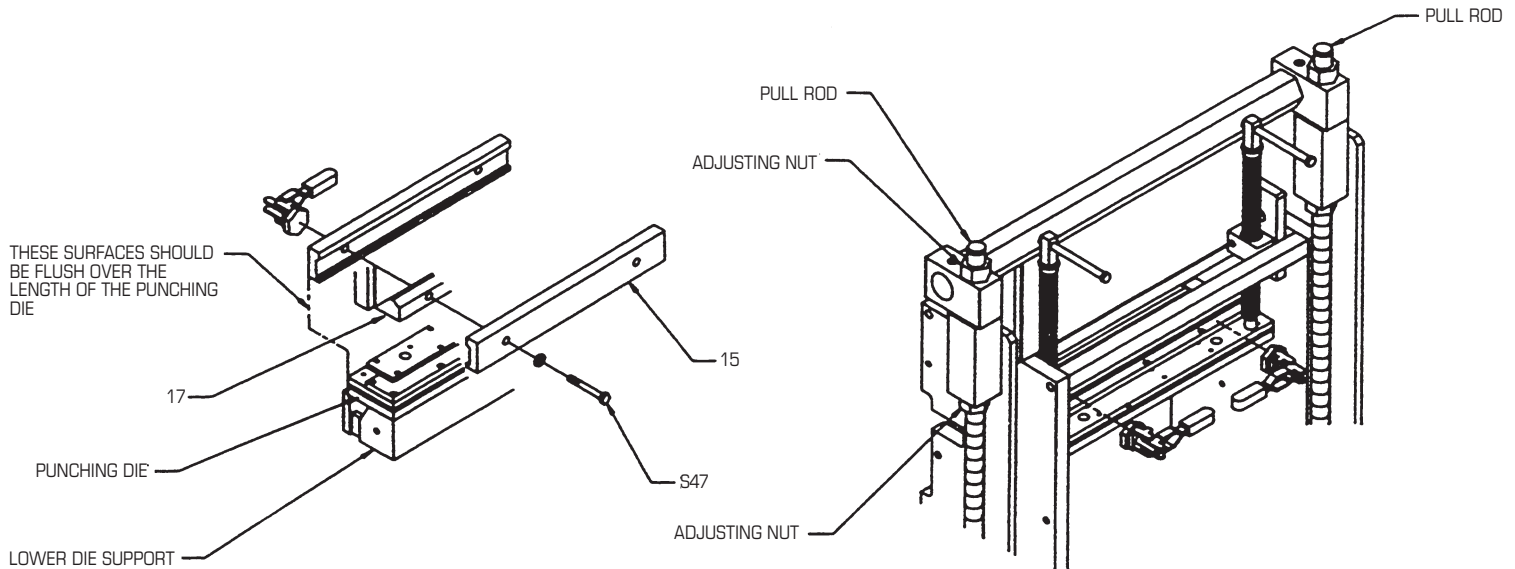


Figure 5

Figure 6

When installing a punching die, be sure that the lower die support is wiped clean of dirt and paper chips. The bottom of the die itself should be cleaned likewise. Wiping the top and bottom of the die with a thin coating of oil is advisable.

Place the die into the machine and align the three holes in the die with the three holes in the lower die support bar.

By turning the hand wheel, bring the punch head (#17) down until it touches the top of the die. At this point the top of the punching die should be aligned with the punch head. This is most easily done by making sure that the top of the head is flush over the entire length of the die. Make sure die clamps are in position to clamp the die top plate, then clamp die with clamp handles. Both handles should be facing inward toward each other.

Use the two quick release lock down bolts to secure the base of the punching tool to the lower die support. Once the lock down bolts are tight, remove block of wood and bring head down to bottom of stroke. Loosen both lock down bolts and then retighten the lock down bolts. This assures the alignment between the top and the bottom of the punching dies.

Check to eliminate the possibility of any movement between the bottom of the punching die and the lower die support.

Cycle the machine manually by turning the hand wheel to check for any binding or misalignment.

The shortest pin should enter the die by .040. Adjust the depth by rotating the nuts on the pull rod (Fig. 6). One turn of the nut equals .100 up or down. **NOTE: Both nuts must be adjusted equally, otherwise the parallel in between the punch head and the punching die will be upset. This will cause damage to the punching die should the punching head not be parallel.**

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## SET-UP INSTRUCTIONS:

After the punching die is properly installed, position the back gauge rail (#108, Figure 7) slightly ahead of the punch die back gauge so that a piece of paper can slide freely into the throat of the die and not hit the back gauge of the punch die.

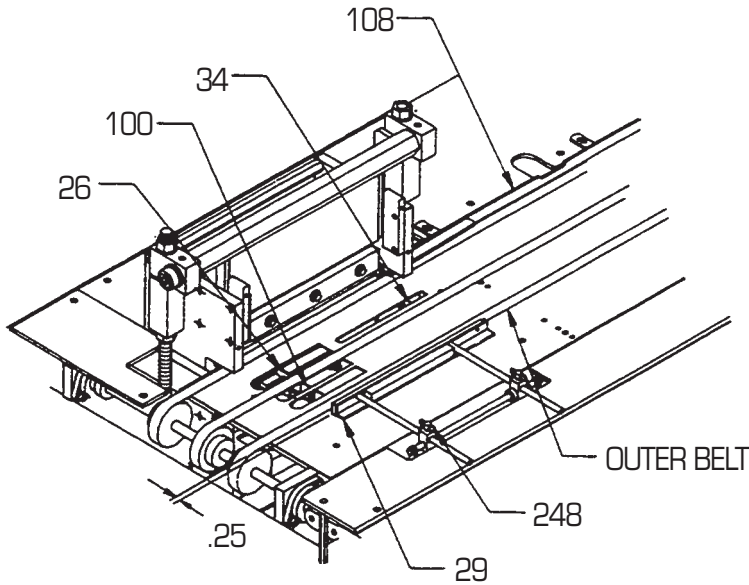


Figure 7

Cam (#37) activates the rear jogger (#34) and the side jogger (#29). Adjust the cam so that when the longest punch pin appears in the throat of the punching die, the rear jogger (#34) should have just reached the full vertical position.

Cam (#44) activates the front stop (#26). Adjust the cam so that when the front stop finger (#100) reaches the full vertical position, the side jogger (#29) starts its cycle inward.

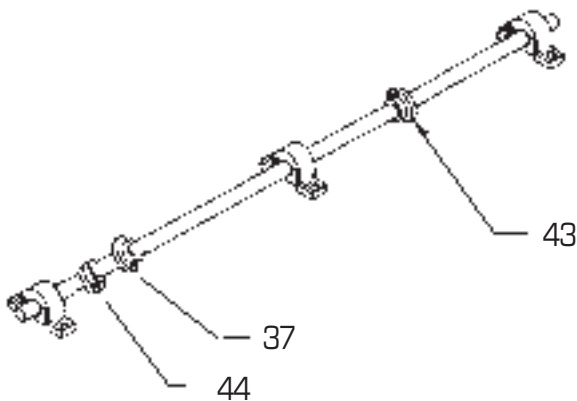


Figure 8

### SETTING REGISTRATION

Loosen locking bolt (S40) under front bearing block (#93, Figure 9) prior to setting registration. Position the front stop (#26) so it is in its full up position. Place a sample sheet of paper against the front stop and punch paper. If the punch pattern is not centered on the paper, adjust the front stop by turning the front stop adjustment rod (#117) until the punch pattern is centered. Once the front stop is set properly, adjust the rear jogger so that it touches the paper. To do this, turn the rear jogger stop adjustment (#118).

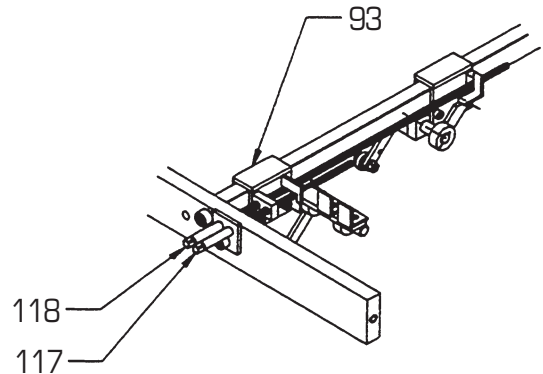


Figure 9

When registration is set, lock in place by tightening locking bolt. (S40, Ref. Page 30).

### CONVEYOR SYSTEM

Cycle this machine manually by turning the hand wheel until the rear jogger is in its full up position. Install side jogger (#29) to slightly buckle a sheet of paper. Lock in place with T-knobs (#248, Figure 7). Adjust the outer transfer belt (#255, Figure 7) so that it sets about 1/4" (.25) away from fully jogged side jogger.

Place a sheet of paper against pusher (#111) in its home position (rear). Install the three paper support straps (#127 & #83, Figure 10) 1" away from the edge of the paper. Straps must be on top of transfer belts.

Cycle the machine by hand until the pusher has pushed the paper to its furthest point. Install long small roller assembly (#170, Figure 10) so that the small pulley is top of paper.

Adjust pusher again to its home position. Place a sheet of paper against pusher. Adjust the punch cam (#43, Figure 8) so that when the machine is cycled by hand, the paper is about 1" away from the front stop as it just reaches it full up position (Figure 11). There must be an O-ring on the paper at all times. Wheel (#167) is set on the edges of the paper so that they turn even when the paper is being punched.

### SUPPLY STACK GUIDE

Cycle the machine by hand until the claw (#103) is in the 5 o'clock position. Position the disks as shown in Figure 12. Disks should not be over-tightened to where they cannot be moved by hand. Turn hand wheel to retract the knife and load paper square to the corner stack guide (#46).

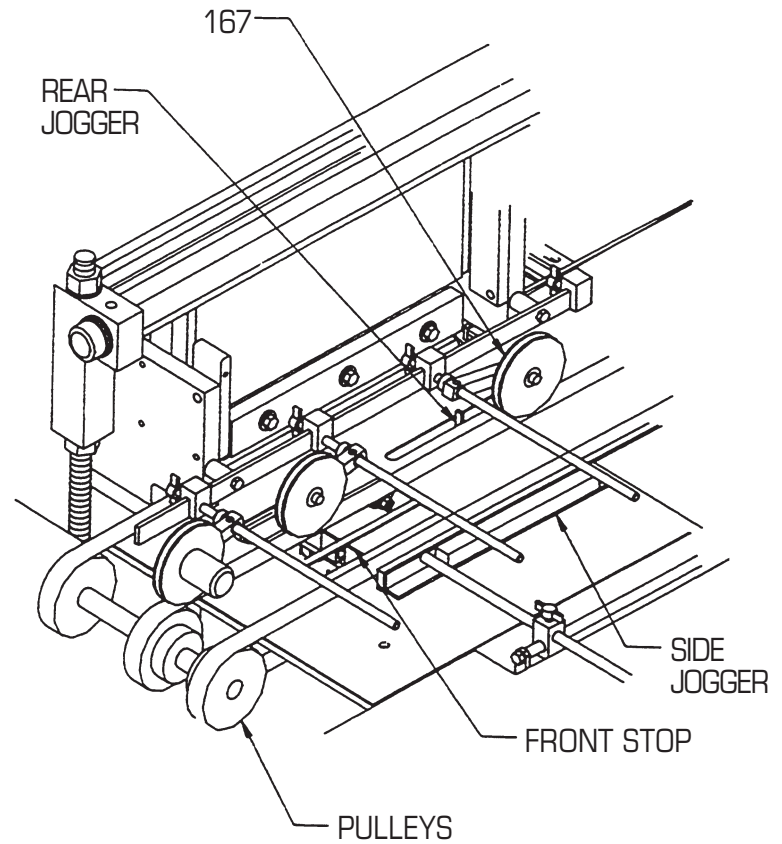


Figure 11

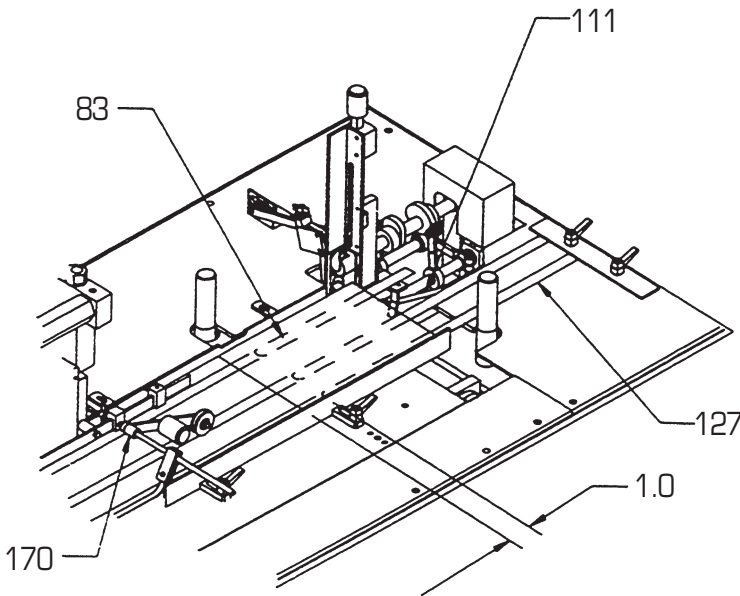


Figure 10

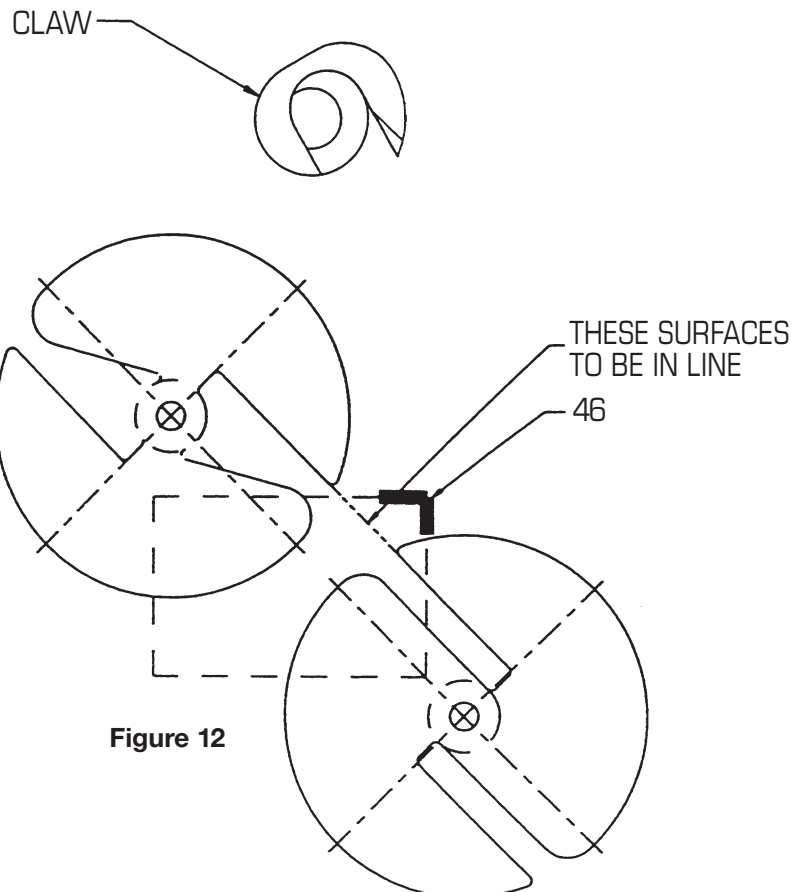


Figure 12



Position front (#49) and rear (#56 & #48) supply stack guides so that the posts clear the paper stack by about 1/16". A stack of 2 to 3 inches is required.

Locate adjustable stack guide post (#59) so that the post is in line with the separating knife. (Figure 13).

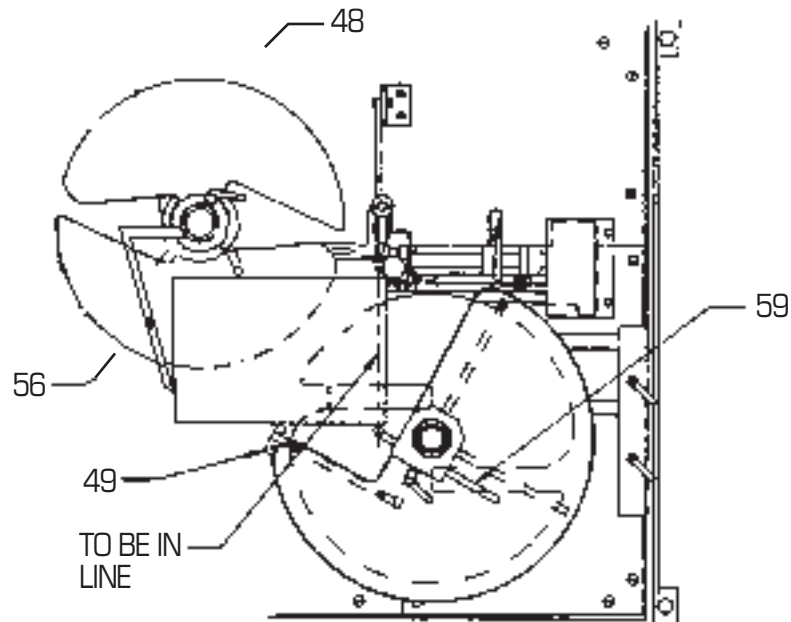


Figure 13

Install front guide rail (#55) so that there is about 1/8" to 1/4" clearance between the lift being transferred and the front guide rail.

Cycle machine and check results.

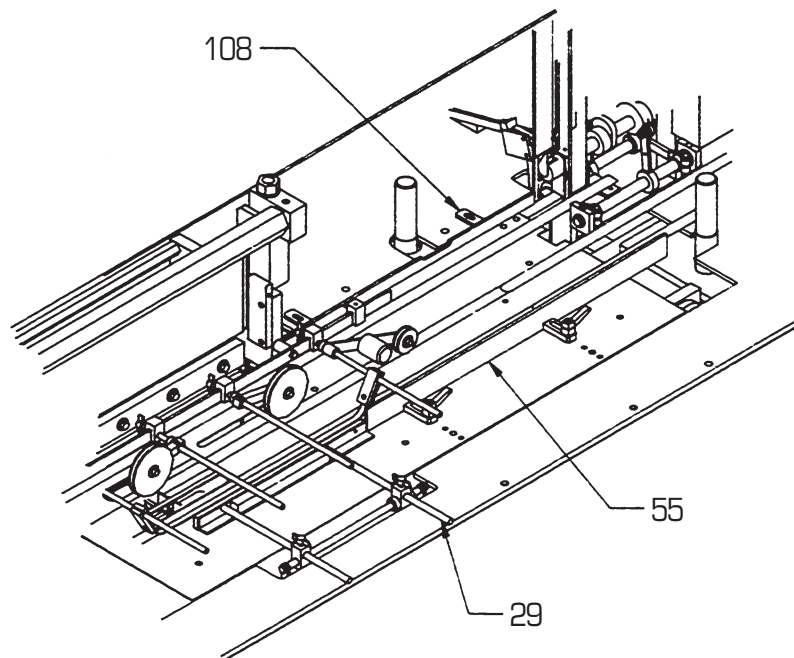


Figure 14

# USP 13 Universal Speed Punch

## QUICK REFERENCE INSTRUCTIONS

### 1. DIE REPLACEMENT

BLOCK UP DIE WITH STICK PROVIDED  
LOWER DIE  
CLAMP STICK  
REMOVE DIE CLAMPS - FRONT & REAR  
REMOVE BOTTOM BOLTS  
RELEASE CLAMP - RELAX PRESSURE WITH HAND WHEEL  
SLIDE DIE OUT  
REPLACE DIE WITH STICK IN PLACE  
REPLACE BOTTOM BOLTS LOOSELY  
ATTACH CLAMPS  
TIGHTEN BOLTS  
REMOVE STICK  
LOWER RAM - TO ALIGN PUNCH PINS  
TIGHTEN BOTTOM BOLTS

2. ADJUST BACK RAIL TO DIE BACK GAGE
3. SET PUNCHING DEPTH OF SHORTEST PIN
4. SET BACK JOGGER PULL UP JUST AS LONGEST PUNCH PIN APPEARS
5. SET FRONT STOP TO REAR JOGGER - FRONT STOP COMES TO FULL UP JUST AS SIDE AND REAR JOGGER START TO MOVE
6. SET REGISTRATION WITH SAMPLE STOCK
7. LOCK FRONT STOP IN PLACE
8. SET SIDE JOGGER TO SLIGHTLY BUCKLE A SHEET OF PAPER.  
SET OUTER BELT TO 1/4" OF FULLY JOGGED LIFT
9. SET UP TRANSPORT WHEELS AND BELTS
10. POSITION LONG SMALL ROLLER ASSEMBLY
11. ATTACH SKID STRAPS - END OF STRAPS 1" SHORT OF LEADING EDGE OF LIFT
12. SET PUSHER SO THAT LEADING EDGE OF LIFT ARRIVES WITHIN 1" FROM FRONT STOP AS IT STOPS IN FULL UP POSITION
13. INSTALL DISKS. ALIGN DISKS WHEN CLAW IS AT 5 O'CLOCK
14. RETRACT KNIFE - LOAD PAPER - ALIGN MATERIAL WITH REAR GUIDE
15. INSTALL STACK GUIDES
16. SET FRONT GUIDE RAIL TO GUIDE LIFT INTO DIE
17. CHECK EVERYTHING FOR TIGHTNESS
18. MAKE FINAL ADJUSTMENT ON RECEIVING TRAY
19. CYCLE MACHINE AND CHECK RESULTS

# USP 13 Universal Speed Punch

## MAINTENANCE INSTRUCTIONS

It is recommended that the machine be lubricated once every two weeks. Lubricate by putting a few drops of machine oil in the lubricating holes, which are marked with red paint.

All gears in the main body of the machine run in pans, which are partially filled with a special gear lubricating grease. This grease should be replenished occasionally, as required, with Lubriplate 630AA, obtainable at any Lubriplate dealer.

### **IMPORTANT!**

All punching tools should be lubricated daily.

AT THE BEGINNING OF EACH SHIFT, IT IS SUGGESTED TO GREASE THE PUNCHING PINS OF EACH TOOL BY APPLYING GEAR GREASE WITH A SMALL BRUSH. "PAINT" THE GREASE ON THE FRONT AND THE REAR OF THE TOOL ACROSS ALL THE PUNCHING PINS.

**IT IS ESSENTIAL THAT ONLY  
SHARP PUNCHING TOOLS  
BE OPERATED IN A  
PUNCHING MACHINE**

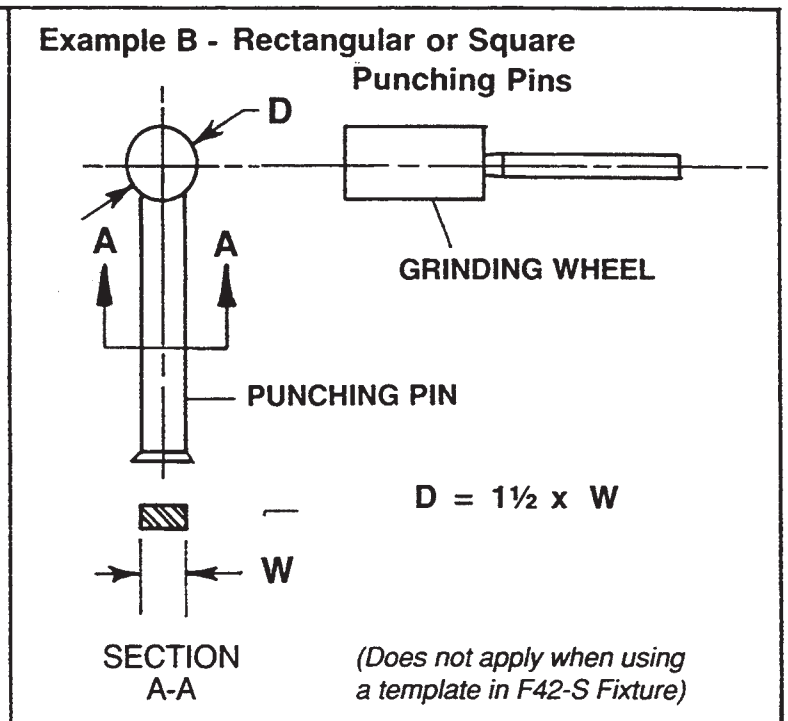
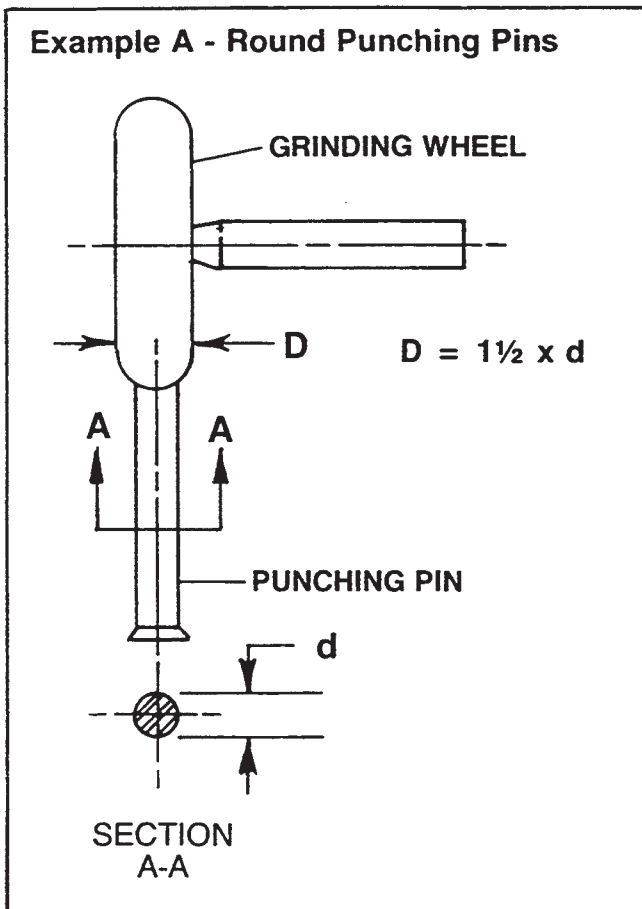
# GENERAL RULES FOR GRINDING PUNCHING PINS OF PUNCHING TOOLS

## IMPORTANT

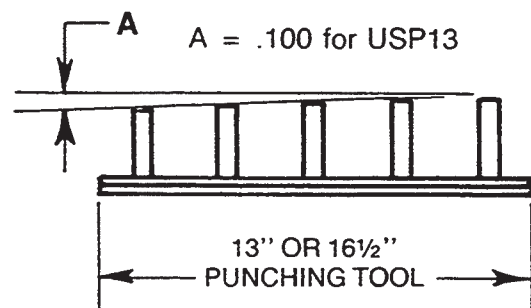
All punching tools must be sharpened every 100 hours of operation or sooner, depending on abrasiveness of stock being punched.

Sharp punching tools are necessary to produce clean holes, which are essential to maintain high binding production and the prevention of premature wear of punching tools.

In general, the diameter of the grinding wheel surface should equal approximately  $1\frac{1}{2}$  times the diameter of round punching pins; or,  $1\frac{1}{2}$  times the widest cutting surface of rectangular punching pins. (See diagrams below).



## TAPER



IT IS ALSO NECESSARY TO SHARPEN THE FEMALE PORTION (BOTTOM PLATE) OF THE PUNCHING TOOL. SURFACE GRIND THE TOP OF THE BOTTOM PLATE UNTIL THE EDGES OF THE HOLES ARE SHARP. THIS WILL REQUIRE APPROXIMATELY .005" OF STOCK REMOVAL. NOTE: IF THE PINS ARE SHARPENED EVERY 100 HOURS, THE BOTTOM PLATE MAY ONLY HAVE TO BE SHARPENED EVERY SECOND OR THIRD TIME THE PINS ARE SHARPENED.

# USP 13

## OPTIONS & ACCESSORIES

The Universal Speed Punch comes equipped with all the tools and parts necessary to run standard size sheets of paper. Additional accessories are included to run some of the more non-standard sizes of paper.

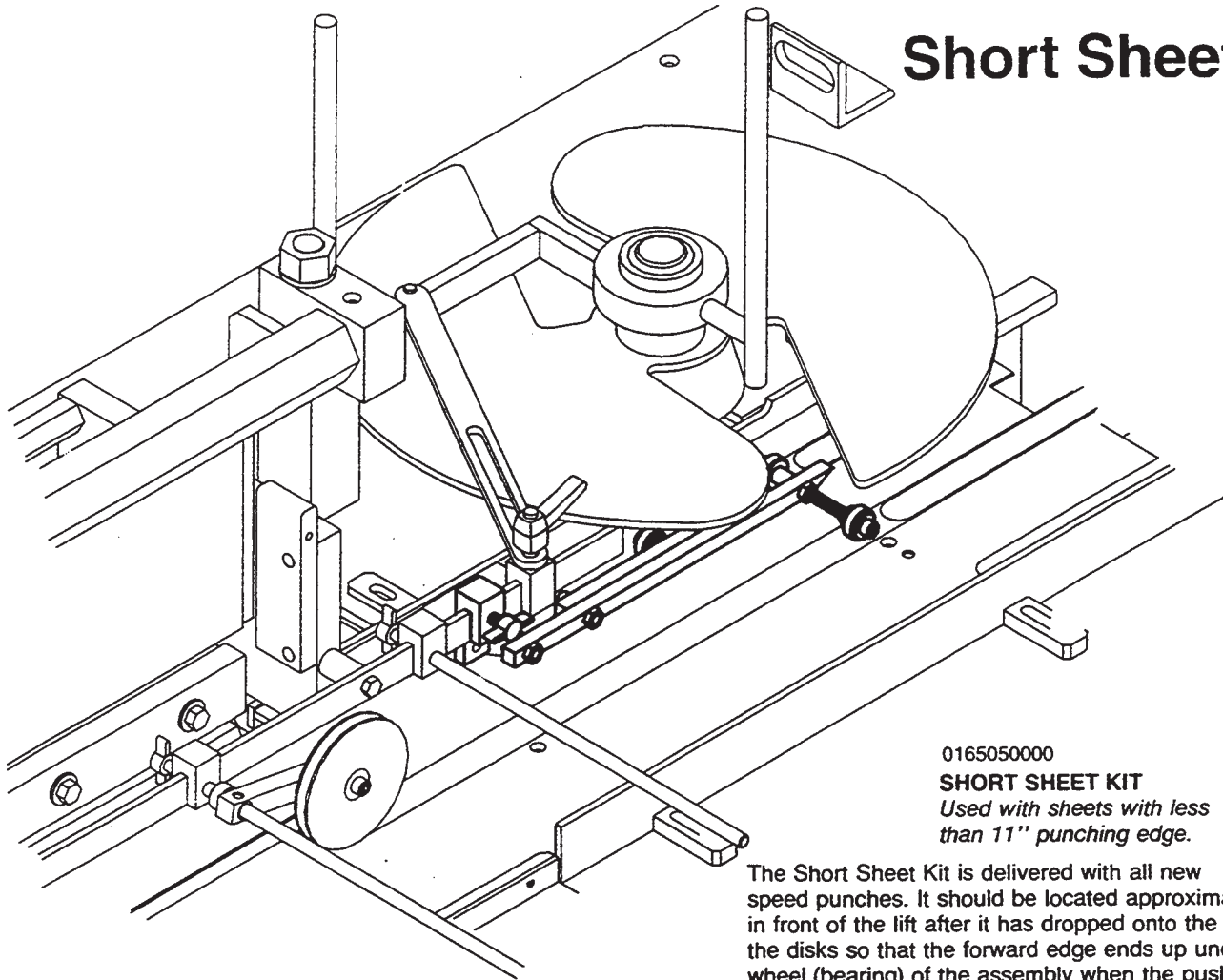
*They include:*

1. Short Sheet Assembly
2. Front and Rear Cradle Bracket Assemblies
3. Long Small Roller Assembly
4. Stack Guider Adaptor
5. Auxiliary Pusher

*Optional assemblies that can be purchased separately include:*

1. Small Roller Assembly
2. Small Sheet Jog Adaptor
3. Tabbed Stock Jog Adaptor R.H. 0165036200 + L. H. 0165036300
4. Light Weight Paper Support Assembly

## Short Sheet Kit



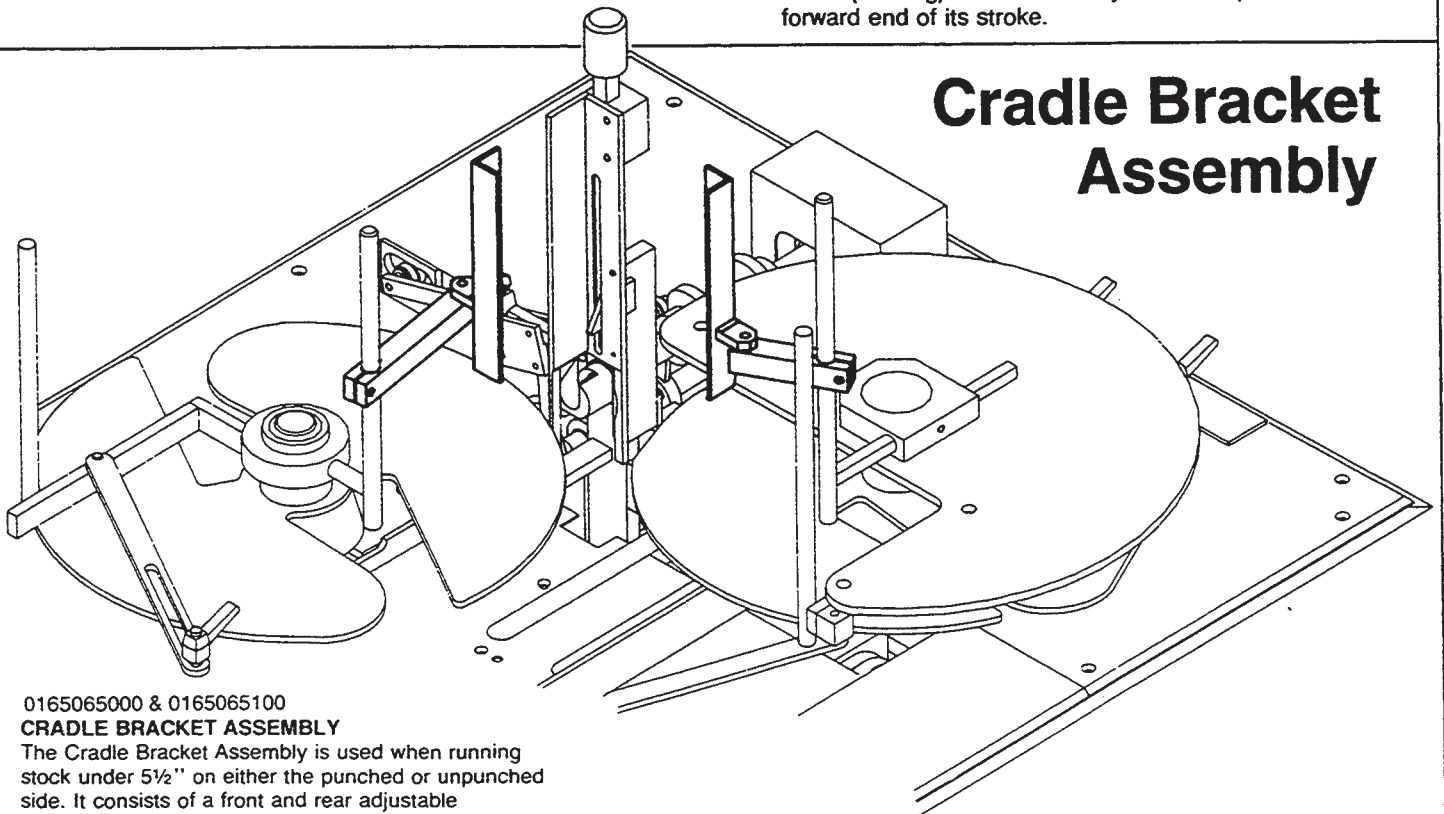
0165050000

### SHORT SHEET KIT

*Used with sheets with less than 11" punching edge.*

The Short Sheet Kit is delivered with all new speed punches. It should be located approximately 1" in front of the lift after it has dropped onto the belts below the disks so that the forward edge ends up under the first wheel (bearing) of the assembly when the pusher is at the forward end of its stroke.

## Cradle Bracket Assembly

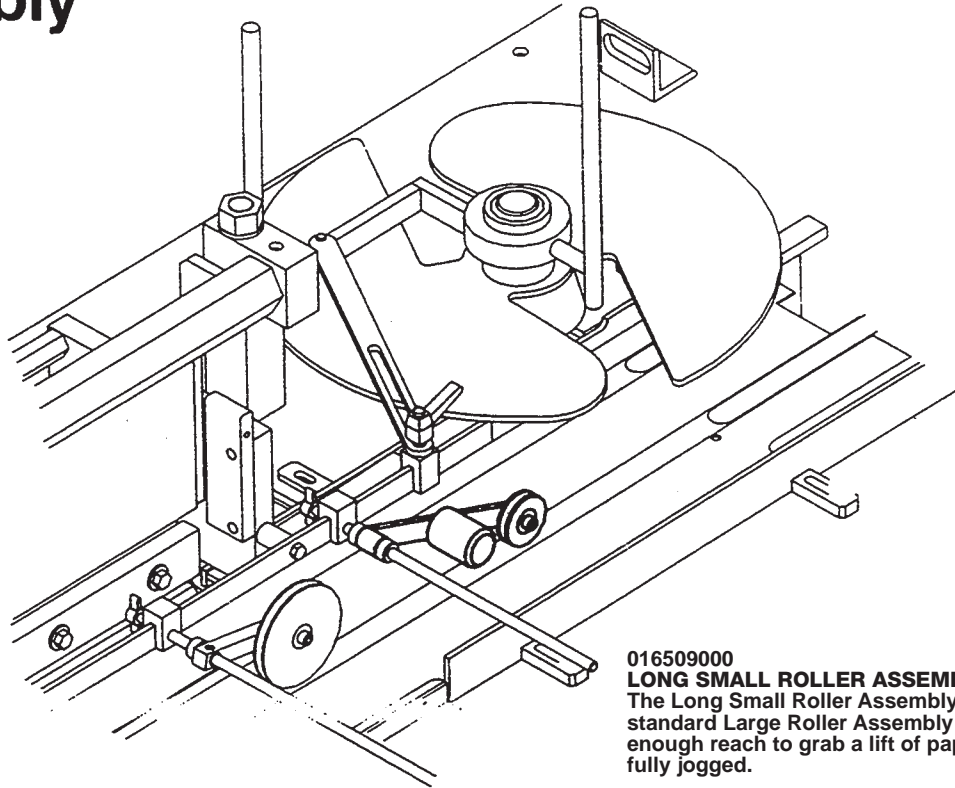


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### CRADLE BRACKET ASSEMBLY

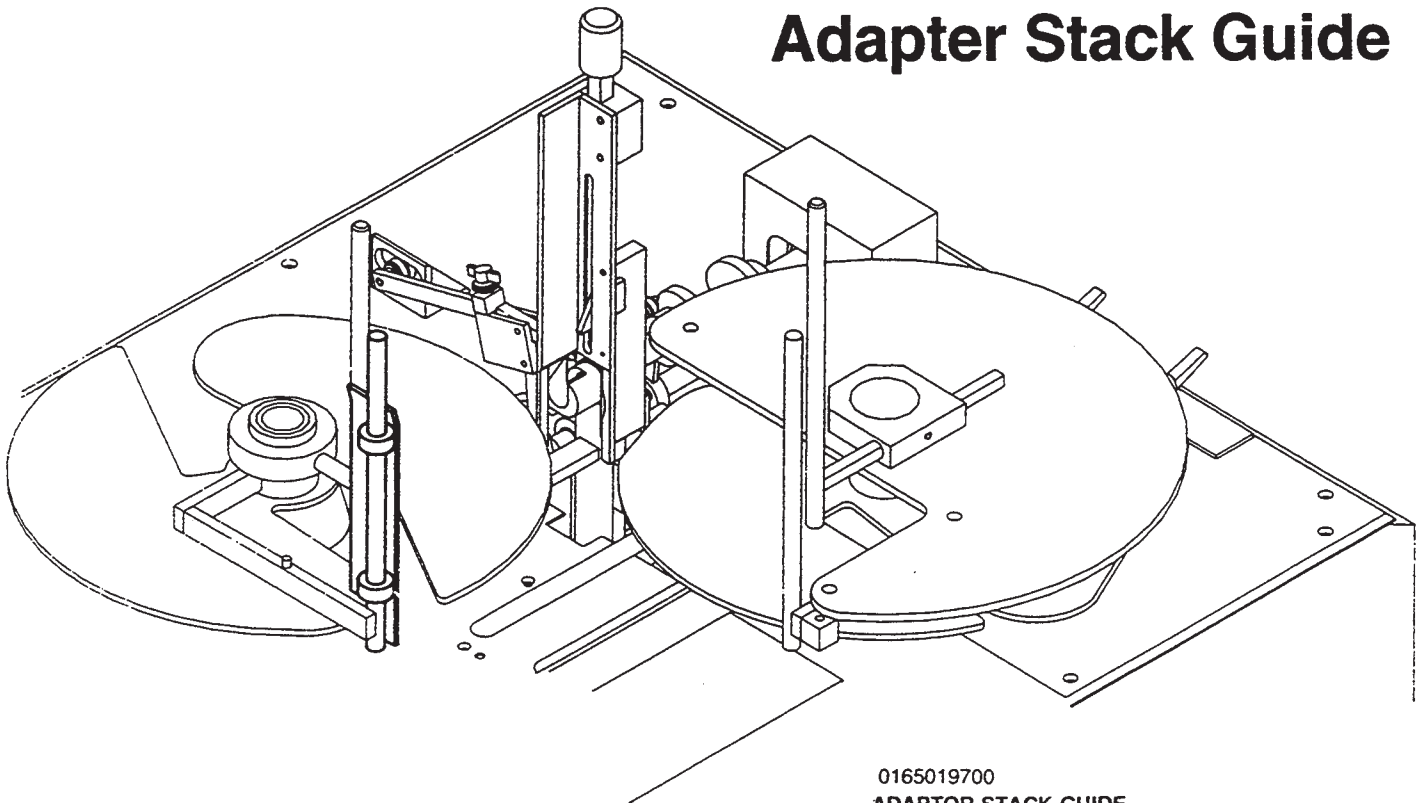
The Cradle Bracket Assembly is used when running stock under 5½" on either the punched or unpunched side. It consists of a front and rear adjustable linkage assembly. The corners of the angles on the Cradle Assembly should be square with the sides of the Corner Stack Guide.

## Long Small Roller Assembly

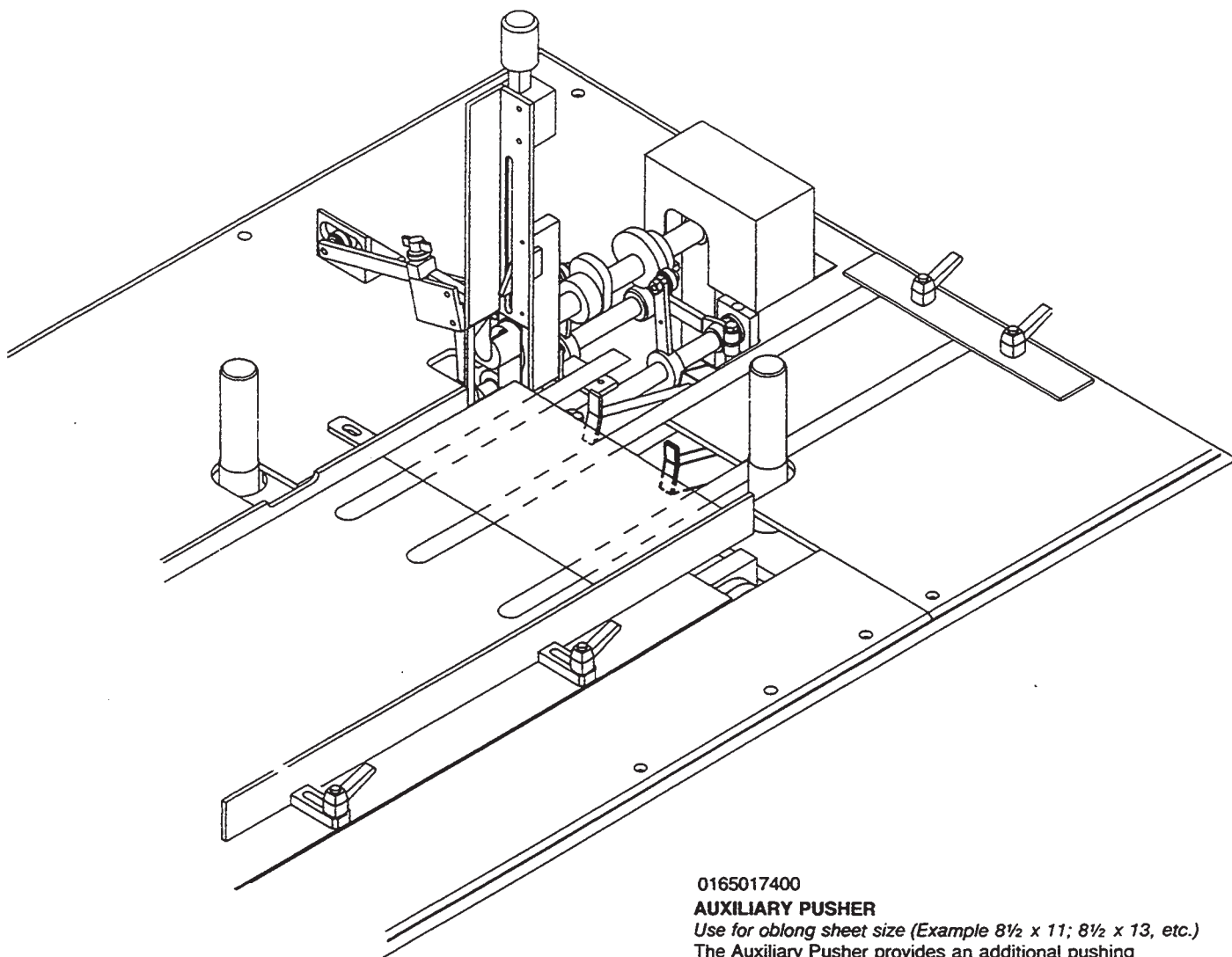


016509000  
**LONG SMALL ROLLER ASSEMBLY**  
The Long Small Roller Assembly is used when the standard Large Roller Assembly does not allow enough reach to grab a lift of paper when it is fully jogged.

## Adapter Stack Guide



0165019700  
**ADAPTOR STACK GUIDE**  
The Adaptor Stack Guide is generally used when stock is so soft that the front stack guide marks the page or when a sheet size is run where the unpunched side will just reach the edge of the Stack Guide.



0165017400

**AUXILIARY PUSHER**

*Use for oblong sheet size (Example 8½ x 11; 8½ x 13, etc.)*

The Auxiliary Pusher provides an additional pushing surface for guiding the oblong product onto the transport belt. The side guide should be adjusted with no more than 1/8" clearance between guide and product. The front of the standard and auxiliary pushers must both touch the page at the same time when pushing on center line of travel.

## Auxiliary Pusher





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Northbrook, IL 60062-4195  
<http://www.GBC.com>

PN 0165999900 Rev B

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