DeLuxe Stitcher

COMPANY INC.

ISP Stitching & Bindery Products

solving your wire stitching needs for 125 years...

INSTRUCTION MANUAL

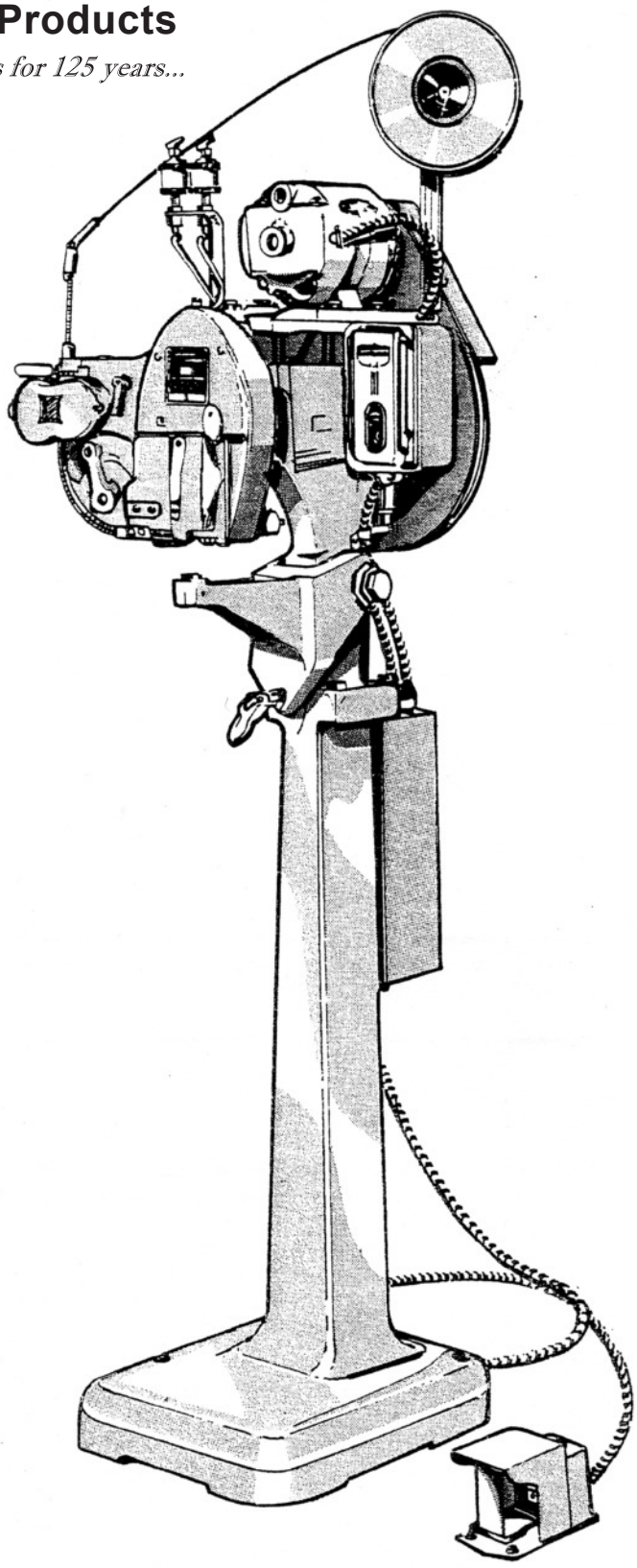
MODEL S2 METAL STITCHER

(HEAVY DUTY)

(TAKEN FROM MODEL N2)

Installation / Operation

Maintenance / Parts List



Specifications

Weight

Shipping Weight . . . . . 490 lbs. [222.3 kg]
Wire Spool . . . . . 10 lbs. [4.6 kgs]
Foot Switch . . . . . 4.5 lbs. [2.0 kgs]
Skid Size 40” x 48” x 78” [101.6cm x 121.92cm x 198.12cm]

Physical Dimensions (working)

Height . . . . . 70” [177.8 cm]
Width . . . . . 22” [55.88 cm]
Depth . . . . . 33” [83.82 cm]

Stitching Capacity . . . . . .[SEE TABLE pg.6]

Wire Types . . . . . .
. . . . . 17ga, 18ga, 20ga

Throat Depth

Flat only . . . . . 8”

Power Requirements

S2F8-AST . . . . . 115VAC 60 Hz
S2F8-BST . . . . . 230VAC 50 Hz
Motor Size. . . . . 1/3 HP

Minimum Recommended Circuit Capacity

S2F8-AST . . . . . 10.7 A
S2F8-BST . . . . . 7.1 A

Cycle Speed . . . . . 125 Cycles/Minute (when running continuously)

Here are the instructions on
how to install,
operate, maintain and make
repairs on the...

MODEL S2 METAL STITCHER
(HEAVY DUTY)

Serial Number_____ **Model Number**_____

Wire_____ **Crown Width**_____

Arm Number_____ **Clincher**_____

When ordering parts, please state; quantity required, part number, part name, model, wire size, crown width and serial number of your stitcher. For example: One D-30751-F Cut-off die for Model N2A (OR S2) Stitcher, wire size #18, crown width 7/16" Serial No. 1666.

Your Model S2 Metal Stitcher has been engineered and developed to provide you with the finest stitching equipment available for your metal fastening needs. With proper care and maintenance it will give you years of satisfactory, efficient service. This manual shows you how to get top performance from your stitcher. Read it thoroughly. Study it carefully. Best stitching performance will be assured, if all the adjustments are made as instructed, so that you get the following desired results.

1. Good cut off
2. Uniform wire draw
3. Equal leg length
4. Proper clincher alignment
5. Sufficient compression

Use only GENUINE Replacement Parts

Designed and Manufactured

Specifically for YOUR STITCHER

CONTENTS

Section 1

INSTALLATION

INSTALLATION INSTRUCTIONS

These instructions must be followed to insure proper installation, efficient operation and the prevention of serious damage to your Stitcher.

Before Uncrating. Examine your S2 Stitcher crate for any visible damage. If damaged, DO NOT UNCRATE THE MACHINE. Notify transportation officials.

After Uncrating: Examine your stitcher carefully for damage in transit. If damaged DO NOT INSTALL THE MACHINE. Notify transportation officials and your local representative listed on back cover.

Location of Machine: Your Stitcher should be placed on a level floor. Better performance can be obtained by fastening the machine to the floor.

Location of Foot Treadle: The foot treadle is strapped to the stitcher column for safe shipment. Cut and remove the strap and unwrap the cable from column. The foot treadle should be located on the floor within comfortable reach of the operator's foot. Your stitcher is controlled by an electric solenoid, non-repeat trip which is energized by the micro switch in the foot treadle.

Clean the Machine: When shipped from our factory, your machine is coated with a rust-resistant compound. Remove this coating with a grease and oil solvent before operating.

Required Lubrication: After cleaning, your stitcher should be lubricated at the oiling points indicated in figures 1 and 2. Use SAE-20 oil at index A, B, and C and fill sight oiler, index D, with Texaco Meropa #3 or its equivalent. Do not use ordinary greases as these will interfere with proper lubrication.

Oiling Schedule

Motor	**Consult manufacture recommendation or as necessary**
Points B & C	**Twice every eight hours of operation Use SAE-20**
Point D	**Keep filled with Texaco Meropa #3 or equivalent**

NOTE

A can of Texaco Meropa #3 is furnished with your stitcher. Use it, or an equivalent oil, such as Socony Vacuum-Gargoyle Compound #3, Mobil-Compound D.D., or Standard Oil-Pen-O-led EP #3.

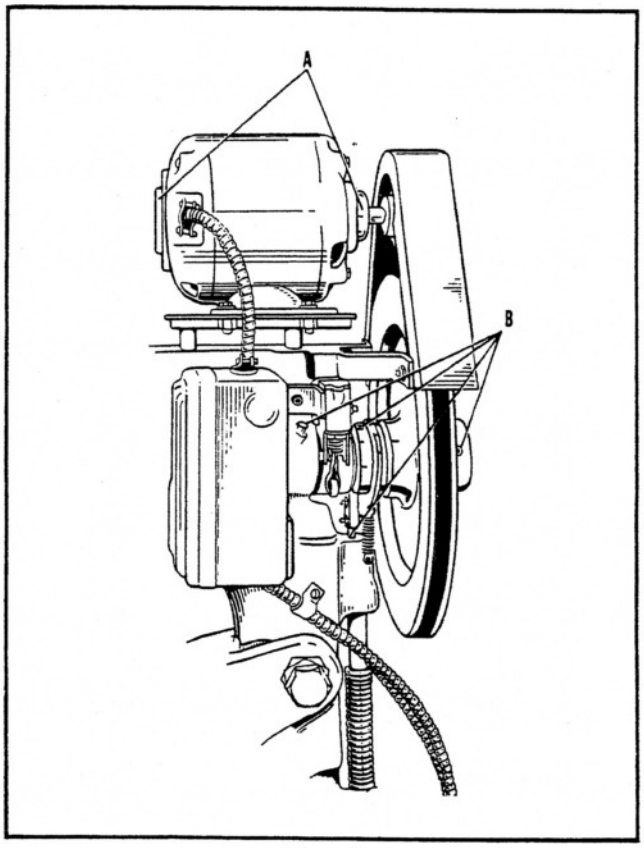


Figure 1

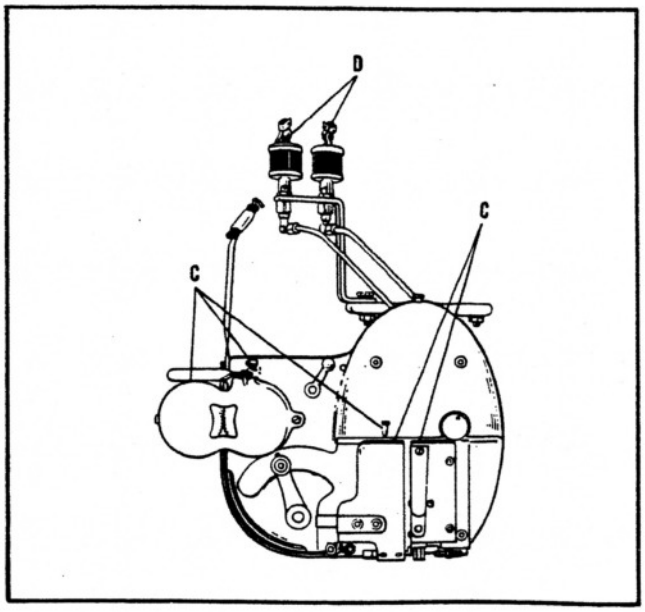


Figure 2

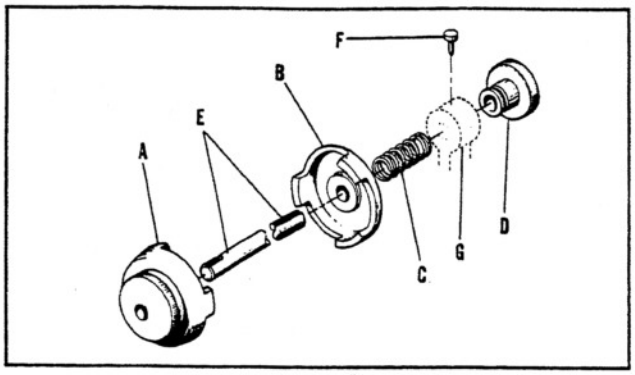


Figure 3

Check Motor: The motor of your machine is specified on your purchase order. Those specifications are noted on a tag and attached to your stitcher. Check this tag before connecting the machine to your electrical power supply. Stitchers equipped with 110-volt or 220-volt motors require only one power supply line. If your stitcher is equipped with a 440-volt motor, the electric trip solenoid and magnetic contactor is wired for 110-volt. Therefore 2 power supply lines are required, 1—440-volt outlet for the motor and 1—110-volt outlet for the electric trip solenoid and magnetic contactor.

NOTE

Before operating stitcher by motor power, depress the trip rod lever (Index 95 figures 25 and 26) and turn flywheel (Index 71 figure 23) by hand to make sure that the stitcher head will complete its cycle without interference.

Mount Coil Holder Shaft Assembly: The wire coil holder shaft and friction disc assembly furnished with your stitcher is packed for safe shipment in a carton with the tools. To assemble follow the procedure listed below.

1. Loosen set screw (Index F, figure 3) on top of coil holder bracket.
2. Place the rear friction disc (Index B, figure 3) and spring (Index C, figure 3) on the threaded end of spindle (Index E, figure 3). Insert the threaded end through the hole in the bracket (Index G, figure 3).
3. Turn knurled adjusting screw (Index D, figure 3) on the end of the spindle until the end is flush with the back side of the adjusting screw.
4. Note the groove in the adjusting screw. Push the adjusting screw and spindle forward until the front portion of the adjusting screw is in the counter sunk hole of the bracket.
5. Turn the set screw (Index F, figure 3) down, making sure that the set screw engages in the groove of the adjusting screw. Tighten set screw.

Mounting Wire Coil: A ten pound coil holder with a detachable front plate is furnished with your stitcher. Unless your application requires a very special wire, a ten pound coil of the recommended wire is also furnished. To properly place the coil of wire on the coil holder, follow the steps listed below.

1. Remove front plate of the coil holder by unscrewing plate COUNTER-CLOCKWISE.
2. Place coil of wire on the hub of the coil holder. DO NOT REMOVE THE WIRE BINDING TIES. Make sure that the starting end of the wire is on top of the coil facing so that the coil unwinds COUNTER CLOCKWISE.

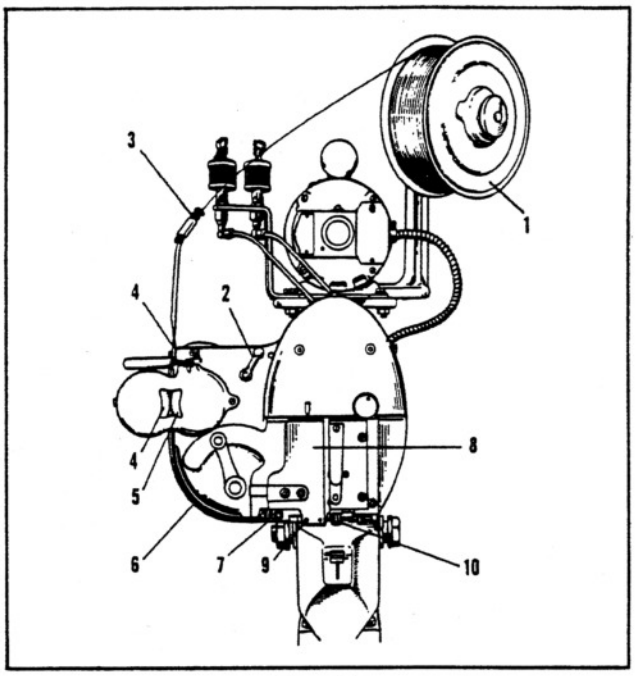


Figure 4

3. Replace the front plate of the coil holder. Tighten securely.
4. Place the coil holder with the wire on the bracket spindle, align the pin in the front friction disc (Index A, figure 3) with the bayonet slot, push the disc and coil holder back on the spindle and turn front disc to the left until the pin engages in the bayonet lock.
5. Adjust the spring tension on the coil holder with the adjusting knob (first loosen set screw Index F, figure 3) so that the coil will turn freely yet will not over run. Tighten the set screw and lubricate both front and rear friction discs so that the rotating parts will turn freely with the coil holder. Once the spring tension is adjusted, no additional adjustments are required when reloading the holder.

Threading the Wire: To thread the wire into your stitcher, follow the steps listed below.

1. Cut all binding ties that hold the wire on the coil holder EXCEPT the tie that holds the starting end.
2. While holding the starting end cut the last binding tie.

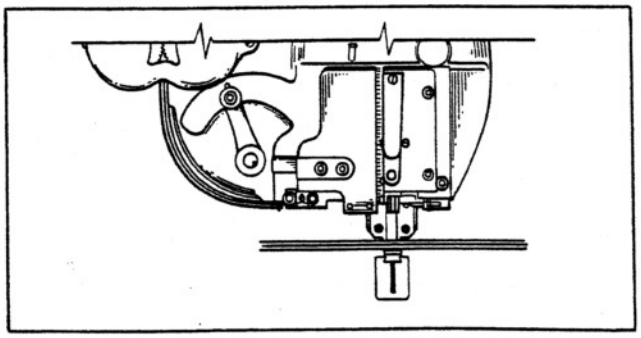


Figure 5

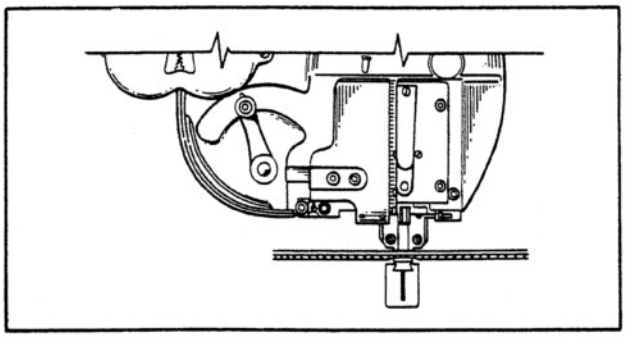


Figure 6

3. Turn the feed control lever (Index 2, figure 4) COUNTER CLOCKWISE and up, to open the wire feed gears (Index 4 & 5, figure 4).

4. Straighten a section of wire 6" to 8" long. Cut off any bent portion at the starting end of the wire.

5. Thread the wire through the loop on the tension spring (Index 3, figure 4).

6. Thread the wire down into the upper wire tube (Index 4, figure 4) and through the wire feed gears and down through the lower tube (Index 6, figure 4) until the wire is seen at the tube exit.

7. Guide the wire through the wire straightener (Index 7, figure 4) and into the cutter block (Index 8, figure 4) until it passes through the cut off die (Index 9, figure 4).

8. Turn wire feed control lever CLOCKWISE to close the wire feed gears.

Adjust Wire Straightener: To make sure that the wire will enter the mandrel (Index 10, figure 4) properly, it may be necessary to adjust the wire straightener (Index 7, figure 4). See adjustment Section K, page 13.

Setting Up Machine for Stitching: To set your stitcher properly, follow these six important steps:

1. Lower the clincher as far as possible.

2. Open the wire feed gears. Depress the trip rod lever (Index 95, figures 25 & 26) through the opening in the electric trip box and turn the flywheel by hand until the formers are at the lowest part of their stroke.

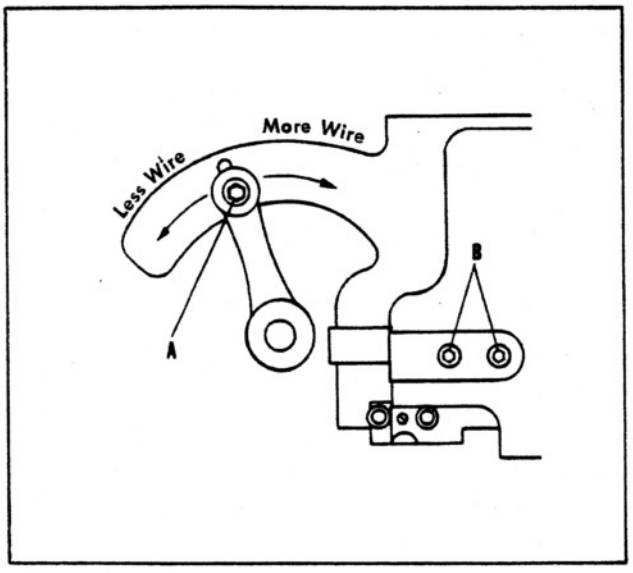


Figure 7

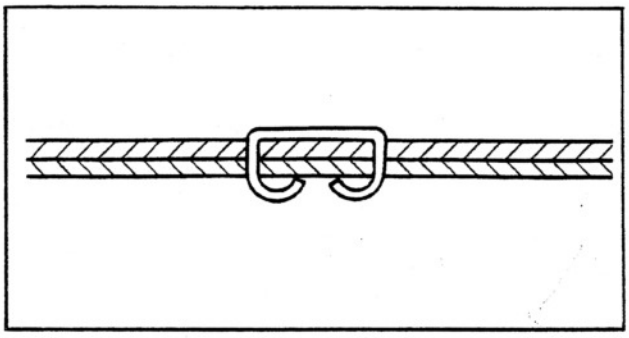


Figure 8

3. Place the material to be stitched over the clincher. If the work material is metal and is not compressible, adjust the clincher upward until the material is held firmly between the clincher and the formers. See figure 5. If the work material is not metal and is compressible, adjust clincher upward until the formers and clincher make a slight depression in the work material. See figure 6.

4. Turn flywheel by hand to complete the cycle and return the formers to the highest point of their stroke.

5. Close wire feed gears. Operate the stitcher under motor power, driving several stitches into material of the same thickness as the work to be stitched. Examine resulting stitches to determine if the correct amount of wire is being used (figure 8 shows what the stitch should look like.)

6. To increase or decrease the leg length of the stitches, loosen the screw of the wire feed index lever (Index A, figure 7) and the cutter block (Index B, figure 7). Move the wire feed index lever to the right for more leg length—to the left for less leg length. Tighten screws of index lever and cutter block. Repeat step 5.

7. If one stitch leg is longer than the other the stitch legs should be equalized. See adjustment section "O".

The height adjustment of the clincher in step #3 is only approximate. For finer adjustment it may be necessary to raise or lower the clincher slightly to obtain the desired amount of compression. See adjustment section "B" for compression adjustments.

The lateral adjustment of the clincher is set at the factory, however, it should be checked when stitcher is set up. See adjustment section "A".

Section **2**

OPERATION

OPERATING INSTRUCTIONS

Your S2 Metal Stitcher is now set up and ready to operate. The foot switch should be placed in a convenient place for the operator.

Turn the power on and place the work material over the clincher. Make sure that the material is in the correct position for stitching. Press down on the foot treadle and drive the stitch. The stitcher is equipped with an electrical non-repeat device and is set to drive only one stitch with each depression of the foot treadle. See section V, page 16 for repeat and non-repeat stitching.

CAUTION

DO NOT DRIVE A STITCH WITHOUT WORK MATERIAL OVER THE CLINCHER. DO NOT DRIVE ONE STITCH ON TOP OF ANOTHER. PREVENT ACCIDENTS BY FOLLOWING THESE RULES . . .

1. DO NOT PUT YOUR HANDS NEAR AREA TO BE STITCHED WHEN MACHINE IS OPERATING.

2. TURN THE MOTOR OFF WHEN THE STITCHER IS NOT IN USE.

Limitations: Your S2 Metal Stitcher has been tested and recommended for a specific job. Like any other piece of production machinery, it has its limitations and maximum capacity. These factors should be considered before changing and attempting to stitch other jobs.

STITCHABLE MATERIALS

Metal Stitchers are frequently used in attaching one section of metal to another but the majority of applications, and those on which the largest economies are effected, are attaching non-metallic materials to metal. The most frequently stitched materials are listed in the table and the thickness given for each is the recommended maximum. In certain cases these maximums may be exceeded, and in others cannot be stitched. Material hardness, grain structure, machine condition and shape of application may change these estimates to some extent.

Combinations of dissimilar metals and non-metallic materials are too many and varied to list all. The maximum capacity of a Metal Stitcher is ¾" and this thickness can be attained with some combinations. Here, material hardness and shape of application are determining factors. Most figures are obtained with No. 18 type 330 wire (No. 18 gauge, 330,000 P.S.I., tensile strength), but where the factors permit, use the lowest tensile wire possible.

STITCHABLE MATERIALS

Metal	Metal to Metal 1 pc to 1 pc		Metal to Non-metal 1 pc to Non-Metallic	
SO Aluminum	.093"	.093" (1)	.125"	
24 ST/or Alclad	.040"	.040" (1)	.064"	½" Sheet Cork
Aluminum Extrusion	.062"	.062" (1)	.093"	⅜" Leather
1010 Cold Rolled Steel	.050"	.050" (2)	.078"	¼" Sheet Asbestos
Hot Rolled Steel	.050"	.037" (2)	.062"	½" Fibre
Galvanized	.037"	.037" (2)	.050"	½" sponge rubber
Stainless—Full Hard	.010"	.010"	.020"	¼" solid rubber
Stainless ½ Hard	.012"	.012"	.025"	⅛" Phenolics (3) 3/16" Plastic (3)
Stainless ¼ Hard	.015"	.015"	.030"	⅜" Standard Masonite
Stainless Annealed	.020"	.020"	.040"	¼" Tempered Masonite
Sheet Brass (soft)	.030"	.030"	.050"	⅜" Wood (4)
Sheet Copper	.035"	.035"	.064"	

1. **Flat or Loop Clinch—all other Loop Clinch only. Flat clinch not recommended for over ¼" total thickness.**
2. **Rockwell 50 on B Scale or softer.**
3. **Must be soft enough to penetrate without cracking.**
4. **Grain structure may cause leg to wander over ⅜" thickness.**

If you are planning to stitch a new product or change the material specifications on your present product, we suggest that you send a sample. It will be tested in our modern product laboratories and the result will be sent to you with the least possible delay.

Section 3 MAINTENANCE TROUBLE SHOOTING ADJUSTMENTS

GENERAL

The Maintenance, Trouble Shooting and Adjustment information in this section plays a very important role in eliminating or reducing production line shut-down time. A careful study of the items mentioned will assure proper performance of the machine.

The illustration of your stitcher (shown at right) is divided into three sections for the purpose of identifying mechanical troubles and listed as follows under Trouble Shooting.

1. HEAD 2. REAR 3. BASE

Like any equipment that has moving parts, certain parts of your stitcher will be subjected to more wear than others and require replacement. For this reason the following listing was prepared in two groups. Either group of parts should be kept in stock according to your preference.

Group 1. Includes all the parts required for minimum maintenance and good operation of your metal stitcher.

Group 2. Includes all parts in group 1, plus parts for emergency servicing where a part is likely to be damaged inadvertently as well as by normal wear.

Group 1	
Part Name	**Quantity**
Knives	2
Knifescrew	1
Cut-off dies	2
Driver	1
Clutch Bolt	1
Main Cam Roller	1

Group 2	
Part Name	**Quantity**
Formers D.E.	2
Former screws	2
Clutch Face Pins	2
Clutch Face Screws	2
Gripper Lifter Assy.	1

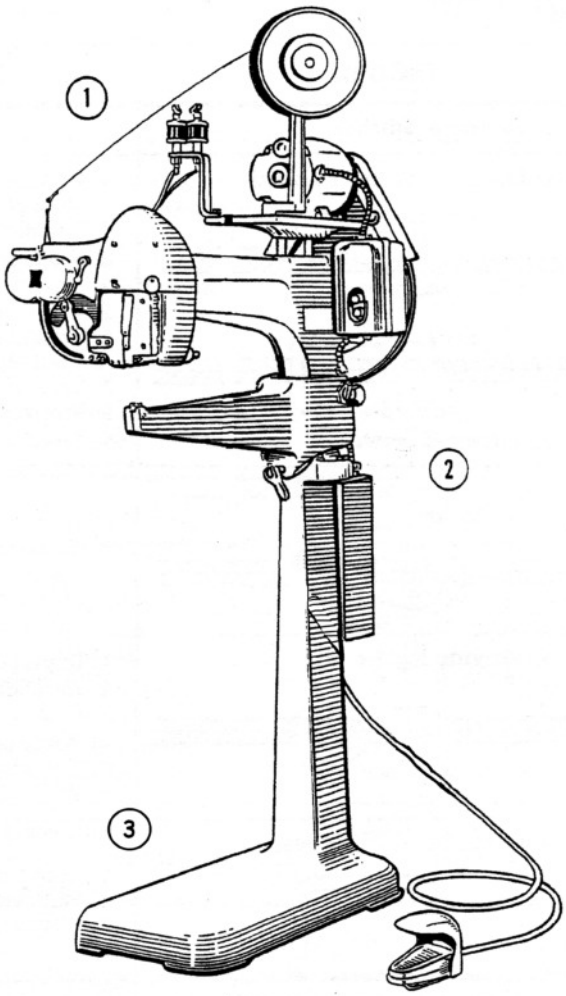


Figure 9

The part numbers for the spare parts items may be found in Section 4, pages 17 to 24.

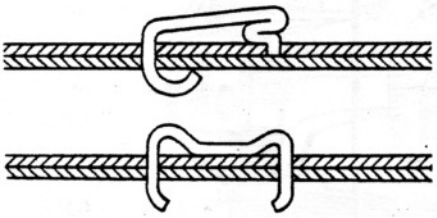
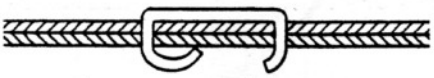
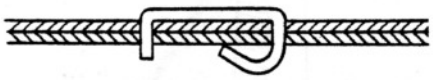
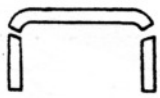
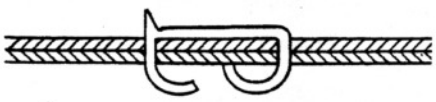
Lubrication

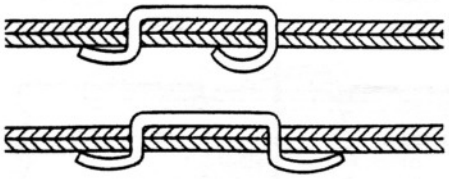
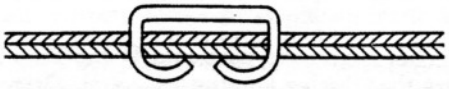
For efficient operation, your machine must be oiled every day. See oiling schedule page 3.

When ordering parts, please state; quantity required, part number, part name, model, wire size, crown width and serial number of your stitcher. For example: One D-30751-F Cut-off die for Model N2A (OR S2) Stitcher, wire size #18, crown width 7/16" Serial No. 1666.

Various kinds of mechanical trouble that may occur in your stitcher are described below. Possible causes and remedies are given for each kind of mechanical trouble and are listed under each section. The remedies are indexed to the Adjustment Section which gives more detailed information about your stitcher, the mechanical trouble that may occur and suggested remedies.

1 HEAD

TROUBLE	POSSIBLE CAUSE	REMEDY
A. Defective Stitches		
1. One or both legs buckled 	1. Clincher block is worn or improperly aligned	see A, page 10
	2. Insufficient compression	see B, pages 10-11
	3. Worn formers	see C, page 11
	4. Improper wire cut-off	see E, page 12
	5. Wire too light for material being stitched	see F, page 12
	6. Unequal leg length	see G, J, K, O, Q, R pages 12, 13, 14, 15
2. Wrinkled crown	7. Lack of shoe support	see M, page 14
	8. Worn clincher	see A, page 10
	9. Worn mandrel	see G, page 12
3. One leg is consistently too short or too long 	1. Cutter block improperly positioned	see O, pages 14-15
4. Varying leg length 	1. Improper brake tension on coil holder	see J, page 13
	2. Insufficient tension on idler gear	see Q, page 15
	3. Slippage in wire feed clutch	see R, page 15
	4. Weak mandrel gripping spring	see G, pages 12-13
	5. Too much tension on wire straightener	see K, page 13
	6. Wire stop screw not adjusted properly	see P, page 15
5. Stitch breaks in pieces 	1. Mandrel assembly is improperly adjusted	see G, pages 12-13
	2. Wrong wire size	see F, page 12
6. Corner of crown distorted or fractured 	1. Too much compression	see B, page 10
	2. Clincher block out of line	see A, page 10
	3. Improper mandrel alignment	see G, page 12
	4. Worn or broken formers	see C, page 11
	5. Worn or broken drive	see D, page 11
	6. Edges of the mandrel are worn	see G, page 12
	7. Driver comes down too far	see N, page 14
	8. Corners of the shoe are nicked or too sharp	see M, page 14
	9. Worn clincher	see A, page 10
	10. Spread former slide	see D, pages 11-12

TROUBLE	POSSIBLE CAUSE	REMEDY
7. One or both legs turn out 	1. Improper wire cut-off 2. Clincher block out of line 3. Worn mandrel 4. Worn formers 5. Wire straightener is improperly adjusted	see E, page 12 see A, page 10 see G, page 12 see C, page 11 see K, page 13
8. Crown of stitch not flush with surface of work material 	1. Driver does not come down far enough 2. Lack of compression	see N, page 14 see B, page 10
B. Wire is blocked causing the feed wheels to slip		
1. Wire does not feed	1. Wire straightener slide is improperly adjusted 2. Broken mandrel gripper 3. Worn or broken gripper lifting crank assembly 4. Improper wire cut-off 5. Flat knife travels too far down or sticks in down position 6. Weak or broken mandrel spring 7. Wire tangled on coil holder	see K, page 13 see G, pages 12-13 see I, page 13 see E, page 12 see E, page 12 see H, page 13 see J, page 13
2 REAR		
1. Stitcher repeats without pressure on the foot treadle	1. Brake strap too loose 2. Flywheel frozen on the shaft 3. Worn or broken clutch bolt 4. Broken or weak trip spring 5. Vertical trip rod binding	see L, page 14 see S, page 16 see T, page 16 see U, page 16 see U, page 16
2. Clicking noise	1. Brake is functioning improperly 2. Worn or broken clutch bolt	see L, page 14 see T, page 16
3. Formers are not at top of stroke when stitcher is in neutral position	1. Brake improperly adjusted 2. Broken taper pin in clutch coupling collar	see L, page 14 see L, page 14
3 BASE		
1. Stitcher won't stitch when foot treadle is pressed as far down as possible	1. Clutch bolt binding or weak or broken clutch bolt springs 2. Worn clutch bolt and/or clutch face 3. Worn or broken switch in foot treadle 4. Worn or broken micro switch in non-repeat switch mounted on clutch hub (N2A and N2F models) 5. Solenoid coil burned out	see T, page 16 see T, page 16 see V, page 16 see V, page 16 see V, page 16
2. Stitcher repeats when foot switch is held in depressed position	1. Switch in solenoid box is not in off position for non-repeat stitching	see V, page 16

ADJUSTMENTS

CAUTION

Turn the MOTOR OFF before making any adjustments.

A. Clincher Adjustments

The purpose of the clincher is to turn the legs of the stitch back after they have penetrated the work material. To do this, there are several types of clincher profiles used.

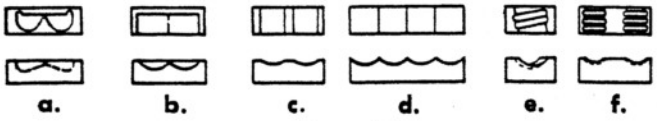


Figure 10

Each was designed for a specific purpose depending upon the stitching application and the type of material to be stitched.

- **a.** Tear Drop. For stitching metal to metal.
- **b.** Two Grooved with one end closed. For all purpose stitching such as metal to metal, and metal to non-metallic material.
- **c,d.** Two and Four groove, open ends. For stitching metal to non-metallic materials and where the clinch must be imbedded in the non-metallic material.
- **e.** By Pass. For ¼" crown metal stitchers. Used for metal to metal and for attaching rods or metal tubes (up to ¼" diameter) to flat metal or non-metallic material.
- **f.** Outward Clinch. For ¼" crown stitcher for non-metallic material.

The proper alignment of the clincher under the formers is one of the MOST CRITICAL adjustments on the metal stitcher. Therefore extreme care must be used to align the clincher so that both legs of the stitch strike the clincher at the same time equal distance from the sides. For the Tear Drop profile the legs MUST strike the grooves in the deepest part of the clincher from the front to the rear. See figure 11.

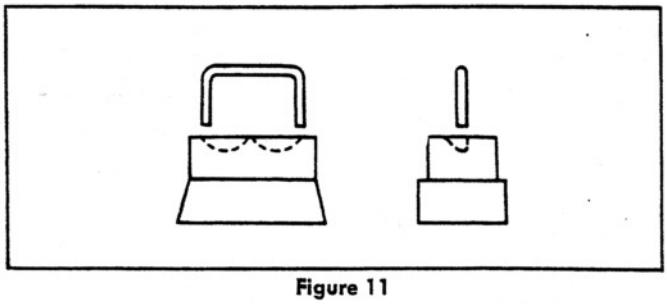


Figure 11

If the clincher is out of alignment, any of the following troubles may develop:

1. Stitch legs buckle.
2. Wrinkled stitch crown.
3. Corners become distorted or fractured.
4. One leg turns outward.

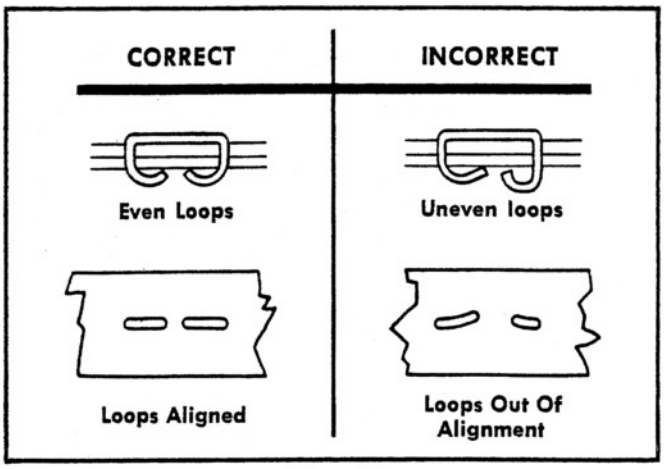


Figure 12

To test the clincher alignment, particularly the Tear Drop type, make sure that the leg lengths are equal. Drive several stitches into a section of the same material that is to be stitched. The clinched loops of both legs should be identical and aligned with each other. If one loop is larger than the other or the loops are not in alignment, the clincher needs adjustment.

The grooves in the clincher should be smooth. Any interference (particularly worn grooves), which change the original radii, will cause the stitch legs to buckle and/or the corners of the crown to fracture.

Adjustment: (1) Depress the trip rod lever (Index 95, figures 25 & 26) and turn flywheel by hand until legs of the stitch appear just below the formers. (2) Turn the adjusting screw (Index 80, figure 23) to raise the clincher until it is approximately ⅛" from the legs of the stitch. (3) To move clincher to the right, loosen both lock nuts and the left adjusting bushing (Index 85 & 84, figure 23) and draw up the right adjusting bushing until the clincher is centered. To move clincher to the left, loosen both lock nuts and the right adjusting bushing (Index 85 & 84, figure 23) and draw up the left adjusting bushing. After both adjusting bushings are drawn up snug, tighten both lock nuts.

The clincher can be repositioned from back to front to obtain the proper alignment. Simply loosen the set screw and move the clincher forward or backward. Tighten set screw.

B. Insufficient or Excessive Compression

Proper compression of work material between the clincher and the formers is necessary so that the stitch penetrates the work material and clinches correctly. Insufficient compression causes buckled legs, a wrinkled crown or the crown to be above the work surface. Excessive compression cannot always be detected by a faulty stitch, therefore care should be taken when making compression adjustments. If the stitcher is operated for any length of time with excessive compression, it will cause excessive wear and possibly break the main cam (Index 89, figure 24), main cam roller (Index 45, figure 21) and stud, also the driver bar connecting link assembly (Index 43, figure 21). Excessive compression will also damage or mutilate the work being stitched.

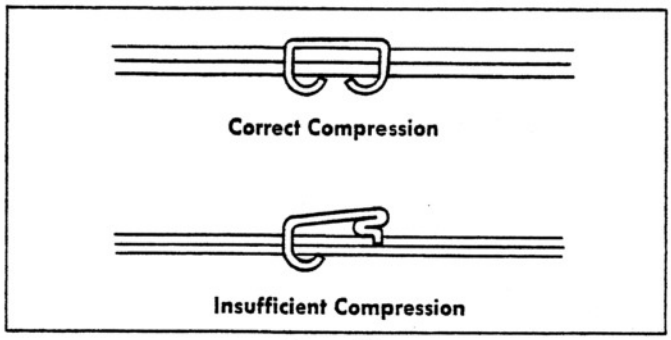


Figure 13

When proper compression is obtained, the formers will leave a slight impression on top of the work material. To obtain correct compression, place work material on the clincher block. Then raise or lower the clincher so that the work material is held firmly between the clincher and the formers when the formers are at the lowest point of their stroke (turn flywheel by hand to lower formers). Final adjustment should then be made with the stitcher under motor power until the stitch has the correct compression. See figure 13.

C. Formers

The formers (Index 34, figure 20) perform two functions. (1) They bend the wire over the mandrel and form it into a stitch. (2) They guide and support the stitch as it is driven through the work material. The legs of an unclinched stitch should be perpendicular to the crown. When the formers become worn, the legs tend to flare out. This causes the legs to strike the clincher improperly. As a result, one or both legs will crumple and a broken driver or a broken former can result. If the lower end of the former groove becomes chipped, it will not support the wire and may cause the stitch to break at the crown.

Each former is reversible. When both ends are worn or chipped, it must be replaced.

To replace a former: (1) Remove the front block (Index 11, figure 17). If left former must be replaced, remove cutter block (Index 9, figure 18). (2) Remove screws from broken or worn former. (3) Slide former down and out. (4) Insert new former from the bottom and push up to shoulder on the former slide. (5) Replace and tighten screws after reading break-in instructions which follow. (6) Replace cutter block and front block. (7) Tighten screws. Since the formers and driver function together, read the following section on driver.

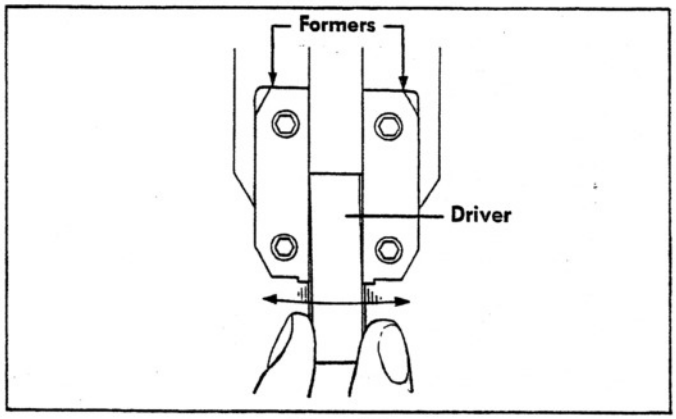


Figure 14

Break-in Instructions For New Formers and Drivers

NOTE

When replacing both former and driver with new parts the new replacement parts will fit very tight. It is recommended that they be run-in for about two minutes. The former screws should NOT be tight at this time, merely snugged into position. With the front block removed and the wire feed control turned OFF run the stitcher under power, stopping and tightening former screws about every half minute until they are tight. Keep the parts well oiled during break-in period.

D. Driver

The function of the driver (Index 33, figure 20) is to exert pressure on the crown of the stitch to force it through the work material. A chipped driver allows the leg of the stitch to back up into the broken area. This causes the corner of the crown to fracture or a "spike" section to protrude above the crown. A chipped driver is usually the result of driving a stitch on top of another stitch. A worn driver often causes deformed stitches or fracturing at the corners of the crown. The driver is reversible for longer wear.

To replace or reverse a driver: (1) Remove front block (Index 11, figure 18). (2) Remove the screws from the right former (Index 34A, figure 20). (3) Slide former down and out. (4) Slide driver to right and out. (5) Reverse old driver or use a new driver. Replace by inserting key in driver bar slot. (6) Insert right former from bottom and push up to shoulder on former side. (7) Replace and tighten screws after reading break-in instructions above.

For metal stitching it is very important that the driver fits snugly between the formers. If the driver is loose and can be moved from side to side, .005" or more, the former slide (Index 30, figure 20) is probably spread at the point where the formers are fastened. To check this, depress the trip rod lever (Index 95, figure 25) and turn the flywheel by hand until the driver extends about an inch below the formers. Exert pressure on the driver from side to side. See figure 14.

If the former slide is spread, it should be replaced with a new one. However, a temporary repair can be made by placing a shim between the former and the shoulder of the former slide. Start with a .003" shim and shim up one of the formers. If more shimming is necessary, shim up both sides equally. To insert shim, loosen the former

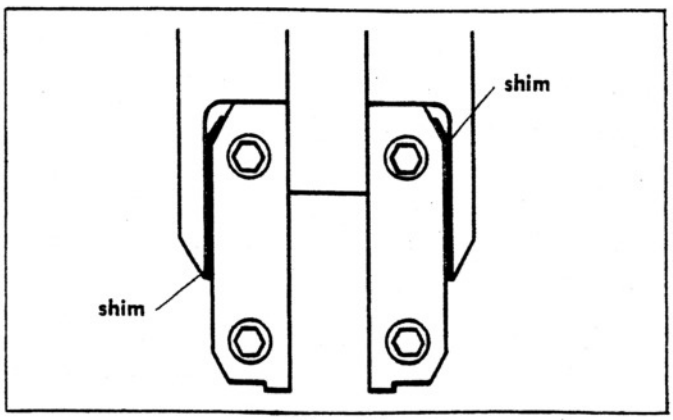


Figure 15

screws and slip shim in place between the former and former slide shoulder (see figure 15). Tighten the screws gradually, applying pressure on all screws until tight.

CAUTION

After shimming be sure to check and see that the mandrel (Index 61 figure 22) and the shoe (Index 32 figure 20) enter between the formers properly without interference.

The common cause for a spread former slide are—

1. Driving one stitch on top of another
2. Misaligned clincher
3. Worn clincher
4. Excessively worn formers

Any one of the above will allow the wire to wedge between the driver and formers, damaging the parts and spreading the former slide.

E. Wire Cut-Off Die and Flat Knife

The purpose of the cut-off die and knife (Index 54 & 57, figure 22) is to shear the wire cleanly. If the travel of the knife is insufficient, the wire may not be cut off or it may be broken off roughly. The resulting burr may cause (1) short wire feed, (2) the stitch legs to buckle because of the excessive resistance encountered when penetrating the work material, (3) a stitch leg to wander in the work material and miss the clincher. If the knife travels too far, the left leg of the stitch may be deformed and buckle. If the knife binds and sticks in the down position, it will block the wire exit in the cut-off die and prevent the wire from feeding.

To determine if the wire has been cut off properly, remove a straight piece from the mandrel (Index 61, figure 22). Draw the wire between your thumb and index finger. If you feel burrs on the wire ends, the knife and/or the cut-off die are dull or improperly adjusted. The travel of the flat knife is satisfactory when the knife, at the lowest part of its stroke, stops just below the cutting edge of the cut-off die.

Interlake Metal Stitchers have a double end reversible notched flat knife. It has 12 cut-off positions. To replace or change cutting position: (1) Remove screw (Index 58, figure 22). (2) Change or re-position the knife so that the notch in the knife is aligned with the opening in the cut-off die. (3) Replace and tighten screw.

The cut-off die is held in position by two set screws (Index 54A, figure 22). To replace the cut-off die: (1) Loosen set screws. (2) Remove cut-off die and insert new one. (3) Tighten flat knife in proper position as described above and apply pressure on left end of cut-off die, forcing it securely against the flat knife. (4) Tighten set screws.

CAUTION

If excessive pressure is applied to the cut-off die, the flat knife will bind in its downward position. If too little pressure is applied, a poor cut-off will result and decrease the life of the die and knife.

To lengthen or shorten the travel distance of the knife: (1) Remove the cutting block (Index 9, figure 18). (2) Loosen lock nut (Index 31A, figure 20. (3) Turn the adjusting screw (Index 31, figure 20) clockwise to shorten the travel of the knife; counterclockwise to lengthen the travel. (4) Tighten lock nuts securely.

F. Proper Wire

The correct wire size and tensile strength varies with the type of material being stitched. Metal stitching wire is furnished in different tensile strengths to penetrate different hardness and thickness of material. The more difficult the material is to penetrate the higher the tensile strength required. Tensile strength ranges from 200,000 p.s.i. to 330,000 p.s.i.

If there are any questions about the correct wire and stitcher set-up to accommodate a change in your material specifications, send sample of the material to us.

DO NOT ATTEMPT
TO USE A DIFFERENT SIZE WIRE.

If the wire used is larger than the formers were designed for, it will fracture and come out in pieces. Also serious damage to the stitcher may result. If the wire used is smaller than the formers were designed for, it will lose some of its driving strength. The size and tensile strength of the wire appears on the shipping case and inside the individual case liners. Stitcher parts are also marked to show the wire size for which they were made.

G. Mandrel

The mandrel (Index 61, figure 22) performs three functions. (1) It receives wire from the cut-off die (Index 54, figure 22) and holds the wire while it is being cut. (2) It carries the straight, cut-to-length, piece of wire under the formers (Index 34, figure 20). (3) It supports the wire while it is being formed into a "U" shaped stitch.

The edges of the mandrel determine a definite angle at which the wire is bent to form a stitch. If these edges become worn, the legs of the stitch will flare out and miss the grooves in the clincher. This causes a buckled leg and possibly a broken driver or former. A worn mandrel can also cause the stitch crown to fracture.

When the wire in the mandrel is carried under the formers, its alignment with the former grooves is insured by the mandrel eccentric and roller (Index 64 & 65, fig. 22). The roller rides against the right former and limits the inward travel of the mandrel. If the eccentric and roller are improperly adjusted, the wire in the mandrel will not be aligned with the former grooves. This causes the descending formers to break the wire into pieces or to nick or fracture the crown of the stitch. An improperly aligned mandrel can also cause the wire to be retained in the mandrel. This prevents the feeding of the next piece of wire into the mandrel, or permits two or more pieces of wire to jam in the mandrel which can result in a broken mandrel.

To Adjust the Mandrel: (1) Loosen eccentric screw (Index 66, figure 17). (2) Turn eccentric bushing (Index 65, figure 17) to change the inward position of the mandrel. (3) Tighten eccentric screw. (4) Check, and repeat if necessary until wire is in alignment.

NOTE

If your stitcher is equipped with a 1/4" crown Friction Grip mandrel (See figure 22) no adjustment is required to align the wire blank with the former grooves. The straight flat section of the mandrel serves the same purpose as the eccentric and limits the inward travel of the mandrel.

The mandrel contains a spring actuated gripper (Index 63, figure 22) which holds the wire in the mandrel while it is being cut off and continues to hold the wire to insure alignment for forming. This gripper is raised while the wire is being fed into the mandrel. If the gripper is broken, it cannot be raised. As a result, the wire will strike the side of the gripper and cause the wire to buckle between the wire straightener and the cutter block. If the gripper spring becomes weak or broken, the wire can jump in the mandrel as it is cut. This makes the wire off center in the mandrel and results in unequal leg length. A weak or broken gripper spring can also cause the wire to be improperly positioned in the mandrel for alignment with the former grooves. The former will either break the wire into pieces or will nick or fracture the crown of the stitch.

To Check for Broken Gripper or Weak or Broken Gripper Spring: (1) Remove the front block. (2) Raise the gripper by pushing up on the gripper lifter crank roller (Index 60, figure 22). If the gripper can't be raised, it is broken and must be replaced. (3) To check the gripper spring, raise the gripper and place a piece of wire in the mandrel. Release the gripper. If the wire moves from side to side by pushing on it with the thumb and forefinger, the gripper spring must be replaced.

To Replace Broken Gripper or Weak or Broken Gripper Spring: (1) Remove the mandrel pivot screw (Index 62, figure 22). Depress the mandrel and slide it out from under the gripper lifter crank. (2) Remove the spring retaining block (Index 63, figure 22) by driving out the pin (Index 61A, figure 22) which is located below the eccentric. Close inspection will be required to find this pin because the surface of the mandrel is polished after the pin is inserted. (3) Replace the spring and/or gripper. (4) Reverse this procedure for assembly. To check the alignment of the wire in the mandrel with the former grooves, depress the trip rod lever (Index 95, figure 25), and turn the flywheel by hand until the formers have descended to a point just above the wire in the mandrel. The wire should be directly in line with the grooves in the former (a small pocket mirror will be helpful for observation). If the wire is not directly in line with the former grooves, an adjustment of the eccentric and rollers must be made.

H. Mandrel Spring

The mandrel spring (Index 13, figure 18) exerts pressure on the mandrel (Index 61, figure 22) so that it carries the wire under the formers. If the mandrel spring is weak or broken, or the mandrel spring binding screw (Index 13A, figure 18) is loose, the mandrel will return to its original position still holding the wire. This usually prevents feeding of the next piece of wire into the mandrel. If a second piece of wire is fed into the mandrel alongside the first piece, a broken mandrel may result.

To Check for a Weak Mandrel Spring: (1) Make sure that the mandrel screw is tight. (2) Depress the trip rod lever and turn the flywheel by hand, observing the movement of the mandrel. The eccentric roller should contact the right former before the formers have started to form the stitch. If additional pressure is needed on the mandrel spring in order for the roller to contact the right former, replace the spring.

I. Gripper Lifter Crank

The gripper lifter crank (Index 60, figure 22) raises the gripper so that the wire can be fed into the mandrel. If the gripper lifter crank is worn or broken, the gripper cannot be raised. As a result, the wire strikes the side of the gripper and causes a short wire feed.

NOTE

The gripper lifter crank is NOT used with the 1/4" crown Friction Grip Mandrel, shown in figure 22.

To replace the Gripper Lifter Crank: (1) Remove the front block. (2) Remove the crank screw and pull out the gripper lifter crank.

J. Coil Holder Brake Tension

The purpose of the coil holder brake tension is to permit the wire to be unwound without tangling. A smooth flow of wire is essential for good stitching. If the tension is too loose, the coil will continue to rotate after the machine stops. This causes the wire to tangle. If the tension is too tight, a full length of wire will not be fed for each stitch. This causes variation in leg length.

To Adjust the Tension on the Coil Holder: (1) Loosen lock screw (Index F figure 3) one turn. (2) Turn adjusting knob (Index D figure 3) clockwise to increase tension and counter-clockwise to decrease tension. (3) Tighten lock screw.

K. Wire Straightener

All coils of stitching wire have a certain amount of bundle curve. The purpose of the wire straightener is to remove this curve. If the wire is not straightened sufficiently, it will often miss the slot in the mandrel and cause short wire feed. Improper straightening of the wire can also cause the stitch legs to buckle or turn out because they strike the clincher improperly. If there is too much tension on the straightener, the wire will not feed properly. This causes variation in leg length.

To determine if the Straightener is Adjusted Properly: (1) Remove the front block (Index 11, figure 18). (2) Depress the trip rod lever (Index 95, figure 25) and slowly turn the flywheel over by hand. The wire should come out of the cut-off die horizontally. (3) If the wire turns

up, loosen set screw (Index 8, figure 18) and move adjusting slide upward. If the wire curves down, move adjusting slide down. (4) Tighten set screw. (5) Check wire as it comes out of cut-off die to determine if further adjustment is necessary.

L. Brake Strap

The function of the brake (Index 87, figure 23) is to stop the machine at the proper point in the stitching cycle. If the brake strap is too loose, the machine will continue to stitch after pressure is removed from the foot treadle. If there is excessive brake tension, the clutch bolt is not retracted completely and will cause a clicking noise. (When the flywheel is turned over by hand, the clicking noise will often occur after the motor has been turned on. Driving a single stitch will eliminate the clicking noise.)

The brake is properly adjusted when the stitcher stops at neutral—the point where the formers (Index 34, figure 20) stop above the level of the straight piece of wire held in the mandrel. If the formers descend to a point where they start to bend the wire over the mandrel, the brake is too loose. Too much oil on the strap will cause it to slip.

To Replace a Worn or Broken Brake Strap: (1) Remove the strap by removing the anchor screw and unhooking from spring (Index 88, figure 23). (2) Replace with a new strap or clean the old one in a grease solvent. (3) Readjust the brake tension until the machine stops at neutral. (4) Tighten set screw.

If the stopping position of the formers cannot be adjusted by adjusting the brake, look for a broken taper pin in the clutch coupling collar (Index 74, figure 23). Under normal conditions the oil cups on the clutch coupling collar and main shaft collar should be in line and parallel to the shaft. If they are not, the taper pin is broken and must be replaced.

M. Shoe

The shoe (Index 32, figure 20) supports the inside surfaces of the stitch as it is being driven into the work material. A lack of (or insufficient) shoe support will often cause the stitch crown to wrinkle or the legs of the stitch to buckle. If the corners on the top surface of the shoes are too sharp, or nicked, the corners of the stitch crown will fracture.

To Inspect the Shoe: (1) Depress the trip rod lever and turn the flywheel by hand, until the formers touch the work material and the legs of the stitch are about to leave the formers. At this point, the shoe should be touching the underside of the crown. (2) Continue turning the flywheel until the stitch is completely driven. While the shoe is gradually retracted by the driver, it should remain under the crown of the stitch until the last instant before the crown touches the work material.

If the shoe support is insufficient, loosen lock screw in lock nut and back off the adjusting nuts (Index 17B & 17C, figure 19). This permits the plunger roller to push the shoe further to the front of the stitcher. Make certain that the shoe does not come so far forward that it strikes the mandrel (Index 61, figure 22). This condition can damage the shoe and/or mandrel. If the corners of the shoe over which the stitch rides are square and sharp, round off slightly with fine emery cloth.

NOTE

The top surface of the shoe should be kept free of metal deposits which accumulate due to friction with the wire. This can be accomplished by occasionally cleaning with fine emery cloth and polishing with crocus cloth.

N. Adjustable Drive Bar Link

The adjustable drive bar link (Index 43, figure 21) controls the point at which the driver will stop at the lowest part of its travel. This makes it possible to bury the stitch in spongy material or elevate it above the work surface.

WARNING

If an attempt is made to bury the crown too deeply in hard material, the corner of the crown will fracture or the driver will break.

At the lowest part of its stroke, the driver end should be approximately .020″ below the ends of the formers.

To Adjust Drive Bar Link: (1) Remove the face plate assembly (Index 1, figure 18). (2) Remove the former slide assembly (Index 30, figure 21) from the face plate. (3) Remove the driver bar and drive bar link (Index 43, figure 21) by sliding from the face plate. Be careful not to let the two pieces become disengaged. (4) If the drive bar link is not already marked for locating make a mark on the drive bar link opposite the mark on the eccentric (Index 43A, figure 21) so there will be a locating point from which to gauge the amount of adjustment. Some machines already have marks that can be used as reference points in making necessary adjustments. Alignment of these marks does not necessarily indicate a correct setting because of certain other factors which may have caused a change in the relative position. (The outer surface of the eccentric and the inner surface of the hole in the drive bar link are serrated. Changing the position of these two parts by moving one serration to the right or left, results in raising or lowering the driver in relation to the ends of the formers by approximately .005″.) (5) Remove the drive bar link from the drive bar stud. Slip the eccentric from the drive bar link. (6) To make the driver descend further, turn the eccentric one or more serrations in the direction which brings its thinnest section toward the stud in the drive bar link (this shortens the distance from the center of the hole in the eccentric to center of the drive bar link stud). To decrease the downward travel of the driver, turn the eccentric one or more serrations in the direction which brings its thickest section toward the stud in the drive bar link. (7) Reassemble parts. Check your results. Repeat above steps if necessary.

O. Cutter Block Adjusting Slide

The cutter block (Index A, figure 16) contains the cut-off die, flat knife and the parts required to equalize the stitch length. The adjusting slide (Index B, figure 16), is directly connected to the wire draw linkage in back of the

stitcher head. The cutter block is adjusted on this slide to move the cut-off position in relation to the center of the stitch (this adjustment does not alter the amount of wire feed). The length of the shorter leg is increased by decreasing the length of the longer leg. Any adjustment made should therefore be one half of the original stitch leg variation. Check for improper adjustment of the cutter block by driving several stitches into the work material. Adjustment is required if one leg is consistently short.

Another way to check the stitch leg lengths is to turn a stitch out by hand: (1) Turn off motor. (2) Depress the trip rod lever and turn the flywheel slowly by hand until the formers are at their lowest point and the driver pushes the stitch partially out of the formers. Note which leg is short (as you face the stitcher) right or left. Complete the stitch cycle before making adjustments by turning the flywheel by hand until it rotates freely.

To Equalize the Legs: (1) Make certain that the index lever set screw (Index 6, figure 18) is tight. (2) Loosen the cutter block screws (Index C, figure 16) one-half turn and the set screw (Index D, figure 16) not more than one-eighth turn. (3) To increase the length of a short right leg, turn the adjusting screw (Index E, figure 16) clockwise. For a short left leg turn the adjusting screw counterclockwise. (4) Press the cutter block to the left as far as possible. Tighten the cutter block screws and set screw. (5) Drive several stitches (the new adjustment will not show up until after the third stitch). (6) Repeat above steps if necessary.

P. Wire Stop Screw

NOTE

Adjust Wire Stop Screw (Index F, figure 16) after the leg lengths are equalized.

The wire blank for the stitch is properly centered in the mandrel at the time of cut-off. The purpose of the wire stop screw is to keep the wire centered and to prevent it from the jumping in the mandrel gripper (Index G, figure 16) while it is being cut off. If the wire blank is not kept centered in the mandrel as the formers descend, the formed stitch will not have equal legs.

To Adjust Stop Screw: (1) Back off the wire stop screw to allow enough clearance for the wire blank to enter the mandrel. (2) Drive 3 or 4 stitches under power into some soft material. (3) Turn off motor switch. (4) Turn wire stop screw in until it pushes the wire blank against the cut-off die. (5) Then back-off the wire stop screw ½ turn and lock in place with lock nut.

CAUTION

The wire stop screw should not stop the wire at anytime while the wire is being fed. This causes excessive wear on the feed wheels.

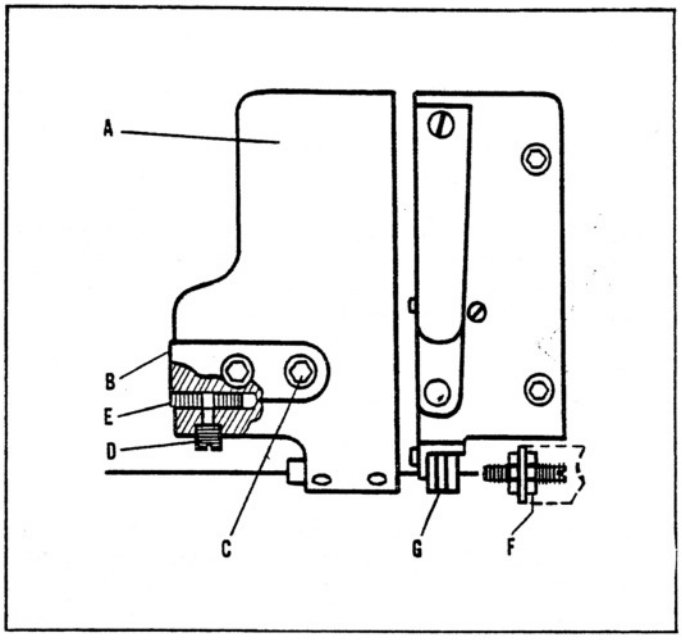


Figure 16

Q. Wire Feed Idler Gear

The wire feed idler gear provides the pressure to feed the wire. Too much pressure causes excessive wear on parts—occasionally slippage of the wire feed clutch. Insufficient pressure will cause variation in the amount of wire feed for each stitch.

To Check for Proper Amount of Tension: (1) Remove the front block assembly (Index 11, figure 18) and lower the arm. (2) With stitcher under power, trip the foot treadle and cut 20 to 30 pieces of wire and catch them in a piece of cloth held under the formers. (3) Check length variation. If the longest and shortest pieces vary by more than .025", adjust the tension on idler. (4) To increase the tension on the feed lever assembly (Index 23, figure 21) turn the set screw (Index 37A, figure 21) clockwise.

R. Wire Feed Clutch

The function of the wire feed clutch assembly (Index 41, figure 21) is to feed the same amount of wire for each stitch. This assembly consists of an outer ring and internal spider which contains six rollers (each roller is backed by a light compression spring). When the outer ring is turned clockwise (facing this part from the back of the stitcher) the rollers are wedged between the spider and outer ring, causing the feed gear to turn. When turned counterclockwise, the outer ring moves independent of the spider and the feed gear remains stationary. The most common causes of slippage are (1) too much oil and/or dirt, (2) a broken spring or outer ring or (3) a worn spider.

Since it is difficult to determine if the wire feed clutch is causing variation in the stitch leg length, check all other possible causes for this condition first. If the trouble persists, remove and inspect the clutch.

To Clean or Repair the Clutch: (1) Remove wire feed guard (Index 3, figure 18). (2) Loosen set screw (Index 38A, figures 17 & 21). (3) Remove feed set screw (Index 38, figure 21) and slide clutch from shaft. (4) Remove three screws (Index 41A, figure 21) and lift off front plate. (5) Dip parts in a grease solvent and wipe dry. (6) Inspect the springs for signs of wear along the sides which contact the front and back plates. (7) Inspect the spider for wear in the bottom of the grooves which hold the rollers. (8) Inspect the rollers for wear. If these parts are worn, the wedging action of the rollers against the outer ring is lost. (9) Replace worn parts. (10) Oil parts lightly and reassemble. The wire feed clutch brake assembly (Index 41, figure 21) prevents over feed. Keep this part clean and free of oil.

S. Flywheel

The power from the motor is transmitted from the flywheel (Index 71, figure 23) through the clutch bolt (Index 75, figure 23) and the clutch coupling collar (Index 74, figure 23) to the drive shaft. The flywheel turns independently on the drive shaft except when the clutch is engaged. It must be kept well lubricated.

If the stitcher repeats when the clutch bolt (Index 75, figure 23) is withdrawn from contact with the clutch face the flywheel has seized on the drive shaft. Lack of oil reaching the shaft causes this condition. To correct, remove belt guard (Index 69, figure 23). Then remove the taper pin and the main shaft collar (Index 72, figure 23) and pull the flywheel with a wheel-puller if necessary. If not scored too severely, smooth part with fine emery cloth and reassemble. Make certain that the oil holes in the clutch coupling collar and flywheel retaining collar are open and free of dirt. If the scoring is severe, the shaft and flywheel should be replaced.

T. Clutch

The purpose of the spring-actuated, bolt type clutch (Index 75, figure 23) is to furnish a positive link between the flywheel and the drive shaft.

The clutch bolt will not engage with the clutch face (Index 73, figure 23) on the flywheel, if (1) the clutch bolt binds in the clutch coupling collar (Index 74, figure 23), (2) the clutch spring breaks, (3) the end of the clutch bolt or the clutch face becomes worn. A clicking sound will result or the stitcher will fail to operate when the foot switch is depressed. When pressure is removed from the clutch treadle, the clutch throwout (Index 76, figure 23) is pushed upward into a groove in the clutch bolt. This action disengages the bolt from the clutch face. If the bolt breaks, it is always the end which engages the clutch face. The clutch throwout retracts the main body of the bolt, but the broken end often remains in contact with the clutch face. This causes the stitcher to stitch continuously. If the clutch bolt is not retracted completely, a clicking noise will result. This can be caused by a worn groove in the clutch bolt or a worn clutch throwout. Wear on the groove in the clutch bolt and clutch throwout will be at the point where they contact each other. The clutch face and the end of the clutch bolt wear at the point they engage each other.

To Check Condition of the Bolt and Spring or to Replace: (1) Remove belt guard (Index 69, figure 23) and V-Belt. (2) Remove the taper pin (Index 72A, figure 23) and main shaft collar (Index 72, figure 23). (3) Slide flywheel (Index 71, figure 23) off. (4) Remove bolt by pulling down on the clutch throwout (Index 76, figure 23). (5) If the bolt is binding, clean and remove burrs.

U. Trip Rod and Spring

The purpose of the trip rod (Index 78, figure 23) is to transfer the downward pull of the solenoid to the clutch throwout (Index 76, figure 23). This permits the clutch bolt (Index 75, figure 23) to engage the clutch face (Index 73, figure 23).

The purpose of the spring (Index 77, figure 23) is to return the trip rod upward when the solenoid is de-energized. If the trip rod binds in the body casting or if the spring is weak or broken, the clutch throwout cannot disengage the clutch bolt. As a result, the stitcher will continue to stitch after pressure is removed from the foot treadle. To remedy this condition: (1) Remove any binding if present. (2) If the trip rod is free and the clutch throwout does not return enough to disengage the clutch bolt, try to move the trip rod up by hand. (3) If the trip rod spring is weak, insert a spacer at the bottom of the spring. If the trip rod is broken, it must be replaced. (This requires removal of the cam and shaft assembly).

V. Electric Trip and Non-Repeat Device

The electric trip on the metal stitcher is equipped with a non-repeat mechanism (Index 79, figure 25). Only one stitch is driven with each depression of the foot switch no matter how long the foot switch is held in a depressed position. This safety feature prevents damage to the stitcher which can result when one stitch is inadvertently driven on top of another. On model N2A and N2F the non-repeat is wired through a toggle switch (Index 99, figure 25) inside the electric trip box. For non-repeat stitching the switch should be set in the OFF position. The ON position can be used where repeat stitching is required. Models N2B, N2C and N2D do not have a toggle switch and are set for Non-Repeat Stitching ONLY.

The micro-switch in the foot treadle activates the solenoid to release the clutch bolt (Index 75, figure 23) causing it to become engaged with the drive pins in the flywheel. The non-repeat micro-switch (Index 79 , figure 25) opens the circuit to the solenoid through a magnetic contactor (Index 100, figure 25) causing the clutch bolt to retract and become disengaged from the flywheel.

If the stitcher will not stitch when the foot switch is depressed, check for a faulty micro-switch in the foot treadle or a loose connection. Also check the arm on the non-repeat, it may be set too close to the clutch hub which would keep the circuit open. If both micro-switches are operating properly, check for faulty solenoid and loose wire connections.

PARTS LIST

Section **4**

NOTE

The exploded view illustrated on this page contains all the parts in the stitching head of your Metal Stitcher. These parts and index numbers are duplicated in Figures 17 to 22 along with a complete listing containing part numbers and part names.

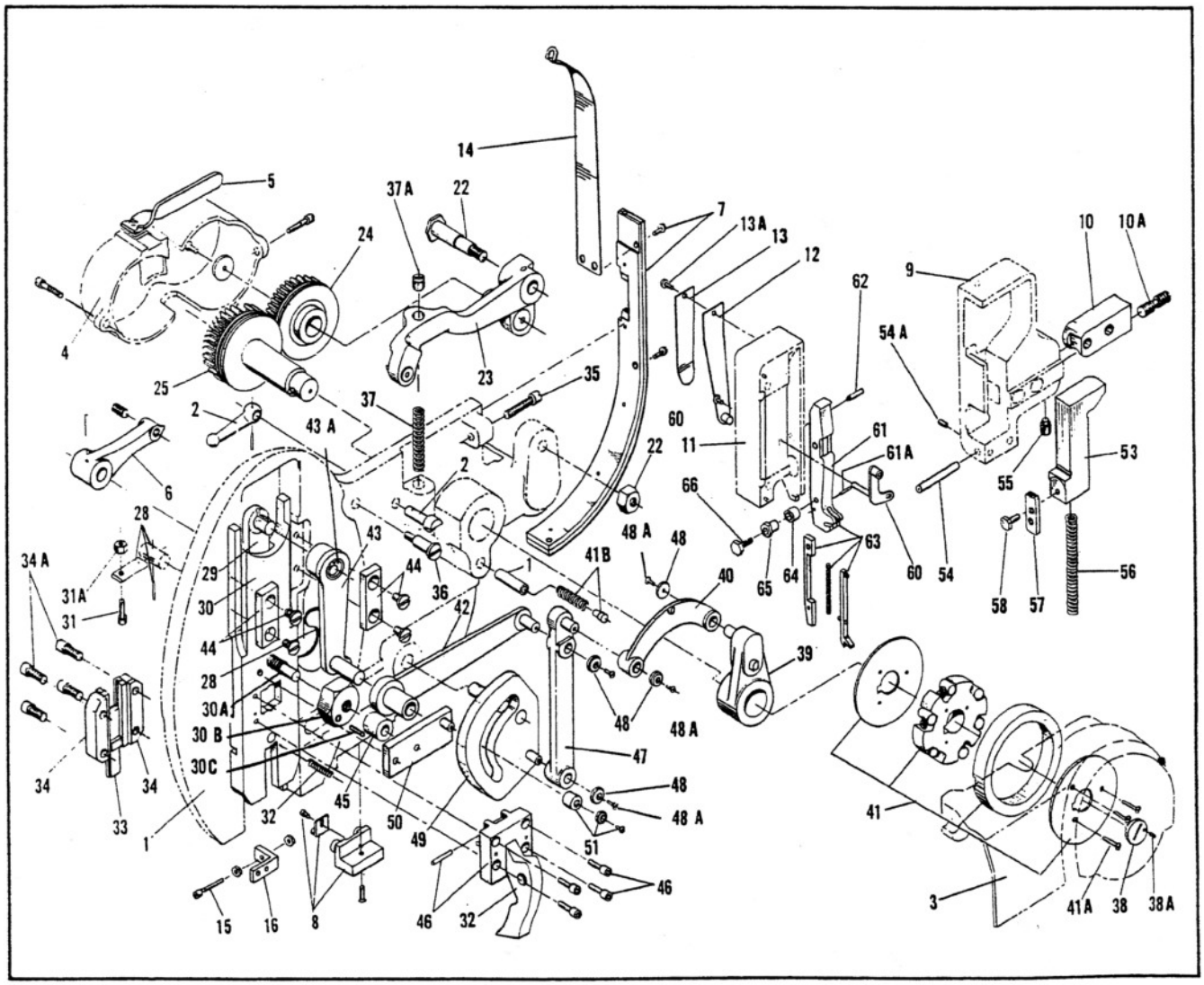


Figure 17

How To Order Replacement Parts...

(DO NOT ORDER BY INDEX NUMBER)

When ordering parts, please state; quantity required, part number, part name, model, wire size, crown width and serial number of your stitcher. For example: One D-30751-F Cut-off die for Model N2A (OR S2) Stitcher, wire size #18, crown width 7/16" Serial No. 1666.

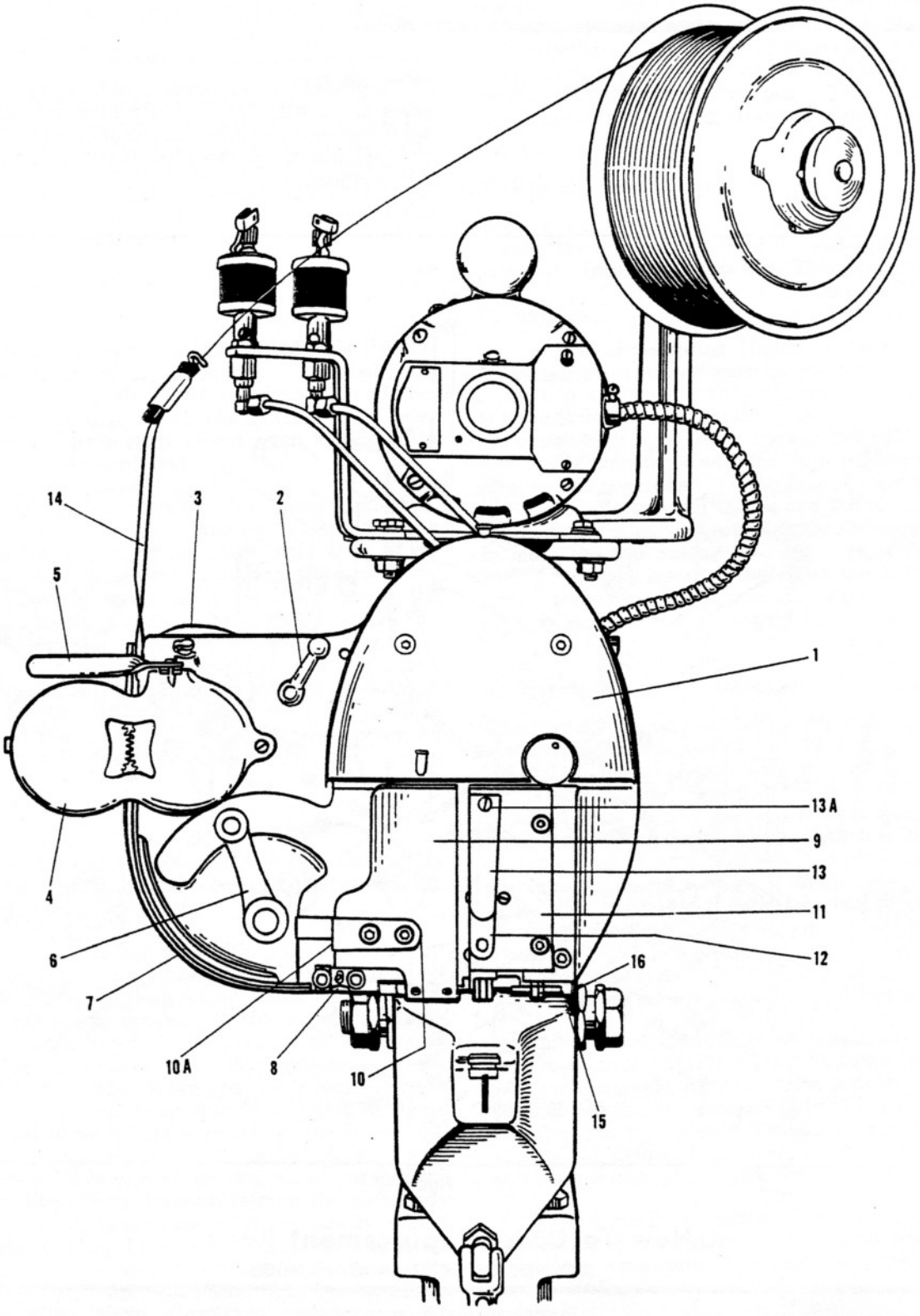


Figure 18

NOTE

Indented part numbers are components of the assembly listed above them. They may be ordered separately, or ordered as a complete assembly when using the part number identifying the assembly.

Index Number	Part Number	Part Name
1	D-30193-A	Face Plate Assy.
	D-30611	Friction Spring Tube
	D-30580	Dowel Pin
	D-30610	Dowel Pin
	D-30084	Former Slide Gib (see Index 44, Fig. 21)
	D-44257	Nameplate
	D-30612	Cover
	D-30543	Gits Oiler (No. 1202)
	D-30483	Face Plate Screw
	D-30575	Hex Nut (5/16 — 18)
	D-13260	Lock Washer (5/16")
	D-8520	Flat Head Screw (1 1/4 —20 x 1/2")
2	D-30238-A	Feed Control Lever Assembly
	D-30210	Feed Control Spindle
	D-30090	Feed Control Lever
	D-30468	Taper Pin
3	C-8003-F	Wire Feed Guard
	D-30586	Wire Feed Guard Screw
4	C-8001-F	Feed Gear Guard
	D-30605	Feed Gear Guard Screw
5	D-31264	Hand Wire Cutter Handle
	D-30099	Cutter Knife
	D-30421	Cutter Knife Screw
6	B-6109-A	Wire Feed Index Lever Assy.
	D-30083-F	Wire Feed Index Lever
	D-37751	Roll Pin
	D-30680	Set Screw (3/8 — 16 x 3/4")
7	C-8144-A	Wire Feed Tube Assy. (No. 18 & 20 Wire)
	D-30618	Wire Feed Tube Attaching Screw
8	D-31259-A	Wire Straightener Assy.
	D-30213	Body (only)
	D-30616	Roller
	D-30010	Roller Stud
	D-30618	Attaching Screw
	D-30200	Wire Straightener Slide
	D-43086	Wire Straightener Slide Screw
9	C-8117-F	Cutting Block (only) see Fig. 22, for parts and assembly
	D-32122	Cutting Block Binding Screw
10	D-30915	Cutting Block Adjusting Slide
10A	D-30593	Adjusting Screw (see Fig. 16)
11	B-6078-A	Front Block (only) Assembly (see Fig. 22)
	D-30422	Dowel Pin
	D-38144	Front Block Binding Screw
12	D-30049A	Mandrel Spring Assembly
13	D-31269	Mandrel Auxiliary Spring
13A	D-30591	Mandrel Spring Screw
14	D-30019A	Spring Wire Guide Assy.
15	D-38190-F	Wire Stop Screw
	D-11791	Wire Stop Screw Lock Nut
16	D-31014	Wire Stop Bracket
	D-4722	Bracket Mounting Screws

Shoe Plunger Assembly
Face Plate Assemblies

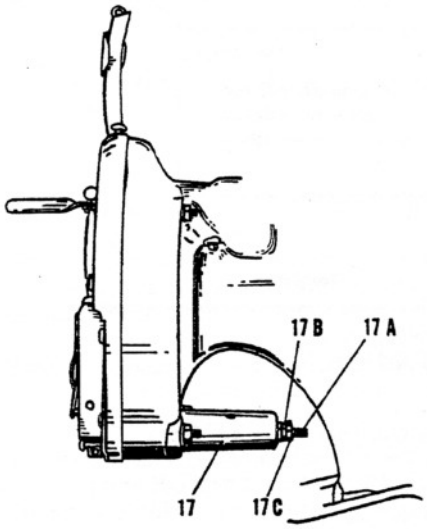


Figure 19

Shoe Plunger Assembly

Index Number	Part Number	Part Name
17	B-6117-A	*Shoe Plunger Bracket Assy. (for long type shoe)
17	B-31279-A	**Shoe Plunger Bracket Assy. (for short type shoe)
	D-30161-F	Shoe Plunger Bracket
	D-31310	Shoe Plunger
	D-38065	Shoe Plunger Guide Pin
	D-31903	Shoe Plunger Roller
	D-31904	Shoe Plunger Roller Pin
17A	D-31302	Plunger Stud
	D-30609	Plunger Stud Pin
17B	D-13931	Jam Nut (5/16 —18)
17C	D-37650	Jam Nut with Set Screw
	D-31300	*Plunger Spring (for long type shoe)
	D-31298	**Plunger Spring (for short type shoe)

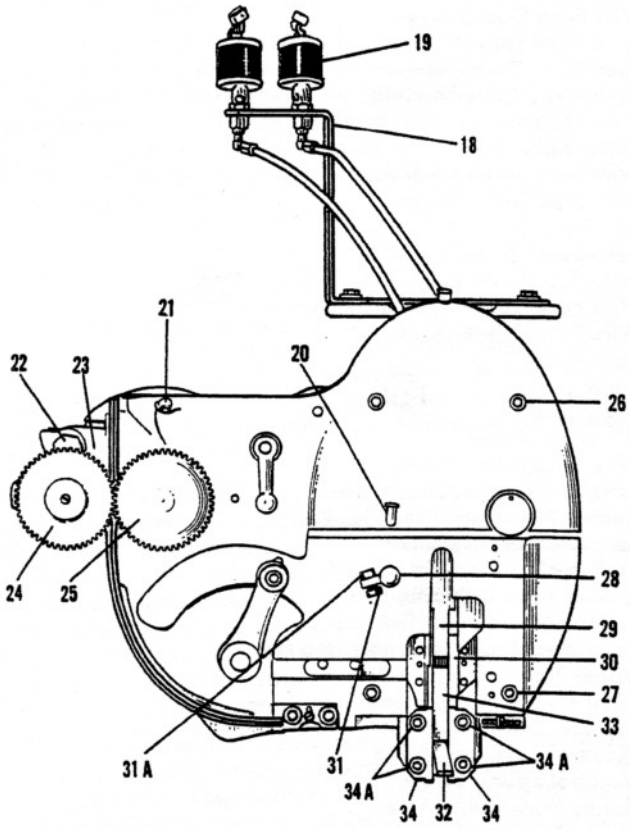


Figure 20

Face Plate Assemblies (with guard and blocks removed)

Index Number	Part Number	Part Name
18	C-8233	Oil Bracket Assy.
19	D-32116	Sight Feed Oiler
20	D-30543	Oiler
21	D-30542	Oiler
22	D-30016	Idler Lever Fulcrum Stud
	D-30541	Idler Lever Fulcrum Stud Nut
23	D-30231-A	Wire Feed Lever Assy.
24	D-31263	Idler Gear
	D-30015	Washer
	D-30602	Screw
25	D-31262-A	Wire Feed Gear and Shaft Assy.
26	D-38178	Face Plate Screw
27	D-33841	Face Plate Screw
28	D-31217-A	Cutting Block Tilter Crank Assy.
29	C-8147-F	Driver Bar 7/16" Crown
	C-8936-F	Driver Bar 1/4" Crown
30	C-8145-A	Former Slide Assembly 7/16" & 1/4" Crowns
	C-8146-F	Former Slide only
30A	D-30191	Former Slide Stud
30B	D-30626	Former Slide Stud Nut
30C	D-30609	Dowel Pin
31	D-30614	Adjusting Screw
31A	D-30085	Adjusting Screw Lock Nut
32	D-31926	Shoe (long type) 7/16" Crown
	D-32108	Shoe (short type) 7/16" Crown
	D-37738	Shoe (long type) 1/4" Crown
	D-38191	Shoe (short type) 1/4" Crown
	D-31956	Shoe Spring
33	D-30671	Driver D.E. 7/16" Crown #18 Wire
	D-31089	Driver D.E. 7/16" Crown #20 Wire
	D-37463	Driver D.E. 1/4" Crown #18 Wire
	D-37462	Driver D.E. 1/4" Crown #20 Wire
34	D-31082	Former D.E. 7/16" Crown #18 Wire
	D-31150	Former D.E. 7/16" Crown #20 Wire
	D-37464	Former D.E. 1/4" Crown #18 Wire
	D-37461	Former D.E. 1/4" Crown #20 Wire
34A	D-3051	Former Screw

Note: Index 33 & 34 D.E. denotes Double End Drivers & Formers

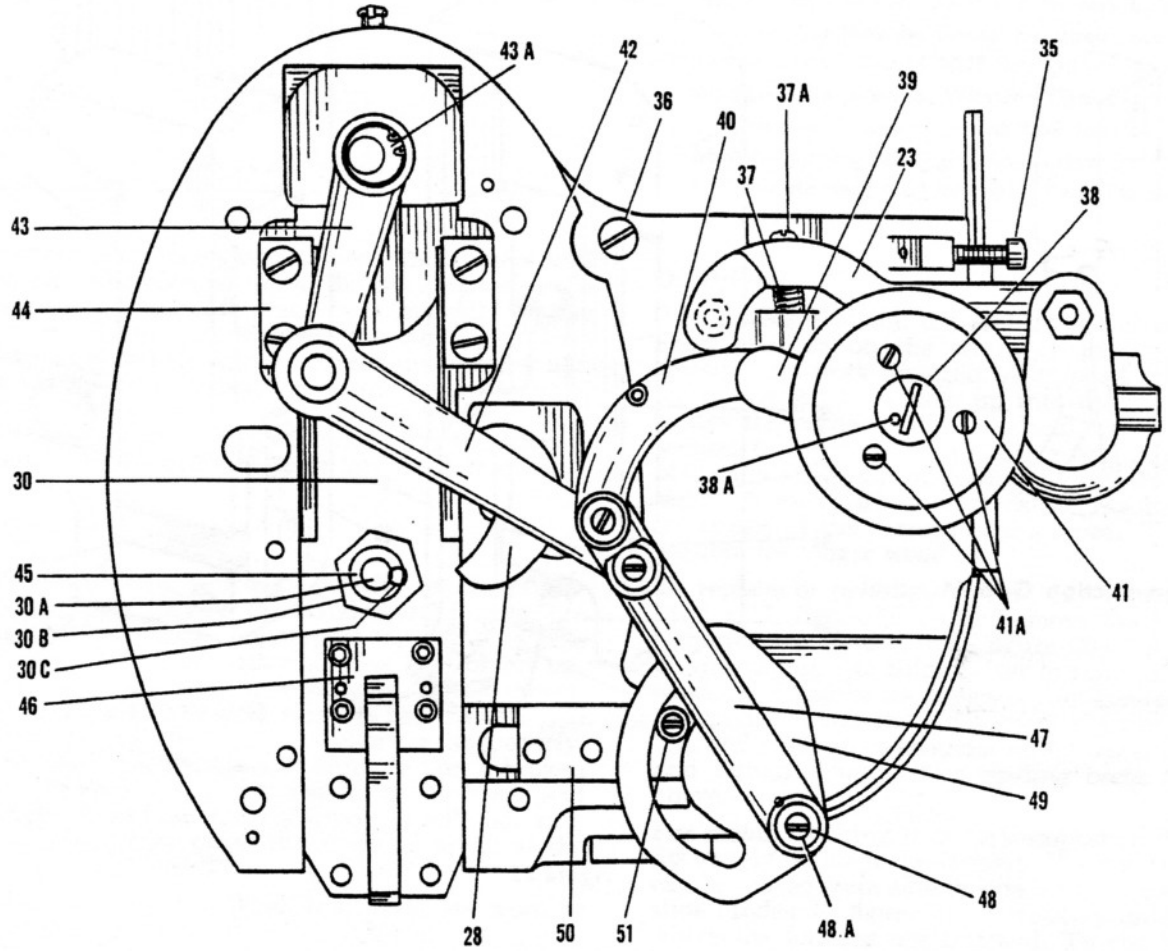
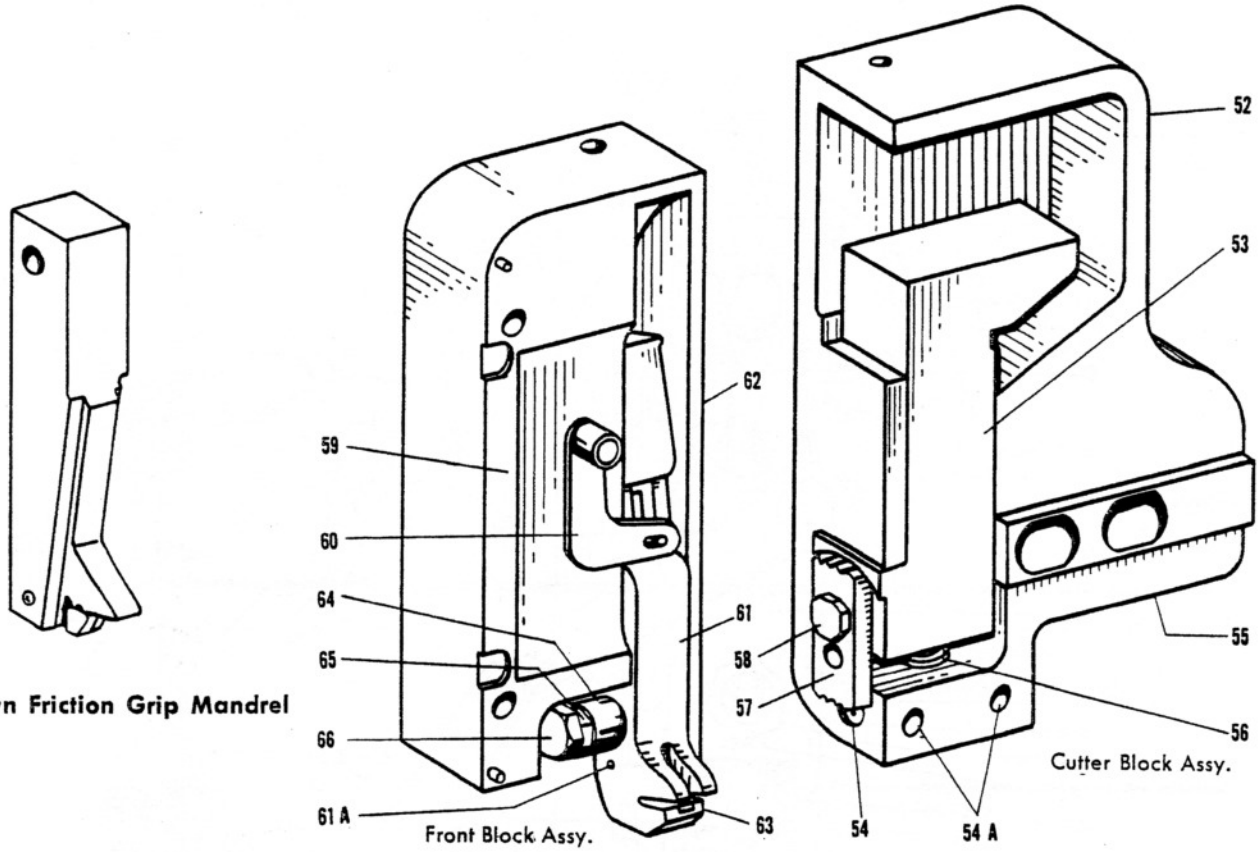


Figure 21

Index Number	Part Number	Part Name
35	D-30586	Wire Feed Guard Screw
36	D-30203	Wire Feed Guard Screw
37	D-30472	Idler Lever Spring
37A	D-30613	Idler Lever Spring Adjusting Screw
38	D-30190	Feed Clutch Screw
38A	D-30538	Lock Set Screw
39	D-30235-A	Feed Clutch Arm Assy.
40	D-30095-F	Third Wire Draw Bar
41	D-30115-A	Feed Clutch Assy.
	D-30106	Feed Clutch Ring
	D-30107	Feed Clutch Spider
	D-30625	Feed Clutch Roller
	D-30440	Feed Clutch Springs
	D-30098	Back Plate
	D-30097	Front Plate
41A	D-30539	Clutch Plate Screw
41B	D-30236-A	Clutch Brake Spring Assy.
42	D-30114-A	First Wire Draw Bar Assy.

Index Number	Part Number	Part Name
43	D-30237-A	Driver Bar Connecting Link Assy.
43A	D-30208	Driver Bar Connecting Link Eccentric
44	D-30084	Former Slide Gib
	D-8520	Former Slide Gib Screw
45	D-30087	Main Cam Roller
46	D-31980	Shoe Bracket
	D-32109	Shoe Fulcrum Pin
	D-31956	Shoe Spring
	D-11790	Shoe Bracket Screw
	D-30609	Dowel Pin
47	D-30198-A	Intermediate Wire Draw Bar
48	D-30601	Wire Draw Bar Washer
48A	D-30338	Wire Draw Bar Screws
49	D-30223-A	Cutting Block Control Cam Assy.
50	D-31223-A	Cutting Block Slide Assy.
51	D-30088	Cutting Block Slide Roller
	D-30599	Slide Roller Washer
	D-30518	Slide Roller Washer Screws

Cutting and Front Block Assemblies



* ¼" Crown Friction Grip Mandrel

Figure 22

Index Number	Part Number	Part Name	Index Number	Part Number	Part Name
52	B-6080-A	Cutter Block Assy.		D-38769-A	Mandrel Bar Assy. (¼" Crown)
53	D-30118-F	Flat Knife Holder		C-8935	Mandrel Bar (only) (¼" Crown)
54	D-30751	Cut-off Die	61A	D-30631	Pin
54A	D-5252	Cut-off Die Lock Screws (See Fig. 17)	62	D-30635	Mandrel Bar Pivot Screw
55	D-30594	Lock Screw	63	D-30117-A	Gripper Assy. (7/16" Crown)
56	D-30425	Knife Spring		D-36420-A	Gripper Spring & Plug Assy.
57	D-31992	Flat Knife		D-30034	Spring Retaining Block
58	D-31267	Flat Knife Screw		D-30749-A	Gripper Assembly (¼" Crown)
10	D-30915	Cutting Block Adjustment Slide (Fig. 18)	64	D-30936	Roller
59	B-6111-A	Front Block Assy.	65	D-30931	Eccentric Bushing
60	D-30222-A	Gripper Lifting Crank Assy.	66	D-36460	Screw
	D-30592	Gripper Lifter Screw	*	D-38322-A	Friction Grip Mandrel (¼" Crown)
61	D-37202-A	Mandrel Bar Assy. (7/16" Crown)			
	C-8087-F	Mandrel Bar (only) (7/16" Crown)			

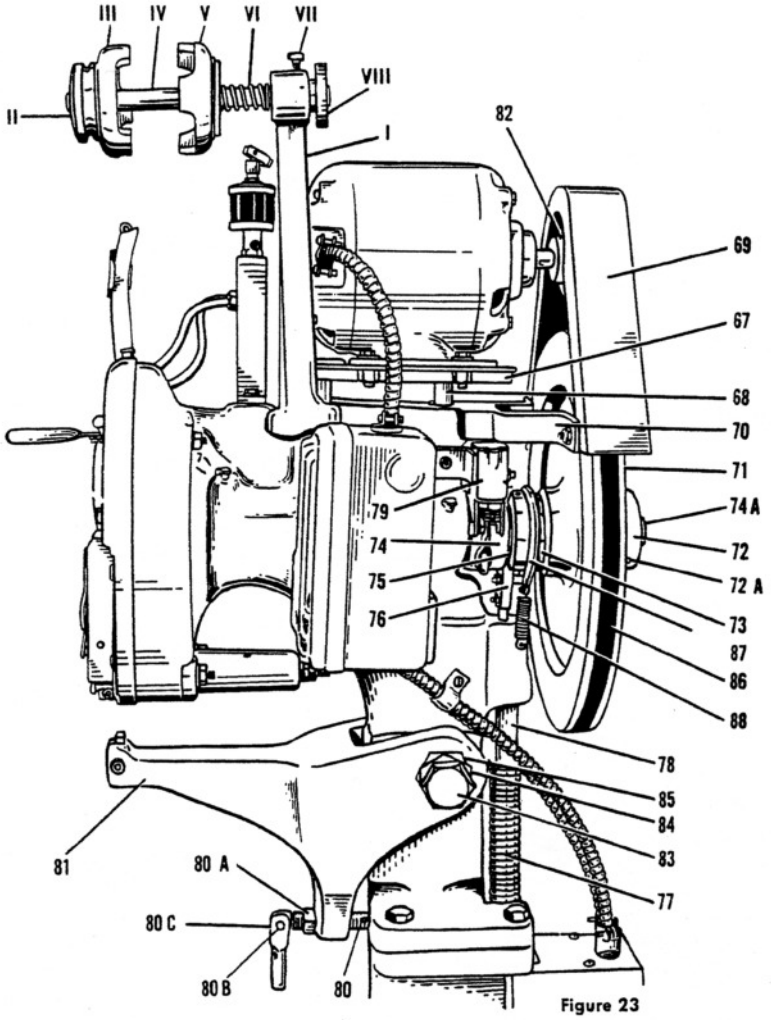
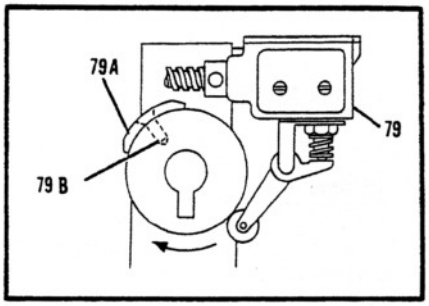


Figure 23

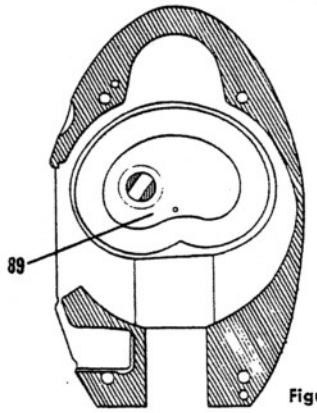
Index Number	Part Number	Part Name
I.	B-6235-A	Wire Spool Bracket Assembly, includes:
	B-6118-F	Wire Spool Bracket
II.	B-6039-A	Front Wire Spool Friction Assembly, includes:
	D-30349	Knob Pin
III.	C-8027-F	Wire Spool Friction Disc
	D-30345	Spool Retaining Knob
	D-30311	Bushing Snap Ring
IV.	D-30344	Spool Spindle
V.	B-6044-A	Rear Spool Friction Assembly, includes:
	C-8027-F	Wire Spool Friction Disc
	D-30347	Bushing
	D-30311	Bushing Snap Ring
VI.	D-30310	Wire Spool Spring
VII.	D-30341	Lock Screw
VIII.	D-30670	Adjusting Knob



Index Number	Part Number	Part Name
67	B-7007-F	Motor Platform
68	D-38586	Motor Platform Posts
	D-3064	Motor Platform Post Lock Washers
	D-5343	Motor Platform Post Washers
	D-15177	Motor Platform Nuts
69	B-7012-A	Belt Guard
70	C-9197	Belt Guard Bar Bracket
71	B-7006F	Flywheel
72	D-31120	Main Shaft Collar
	D-30558	Gits Oiler
72A	D-30296	Taper Pin
73	D-1111	Clutch Face
	D-30604	Clutch Face Pins
	D-30649	Clutch Face Screws
74	D-31315	Clutch Coupling Collar
	D-31803	Taper Pin
	D-30558	Gits Oiler
74A	C-8240	Main Cam Shaft (only) 8" Throat
	C-8153	Main Cam Shaft (only) 20" Throat
	C-8437	Main Cam Shaft (only) 25" Throat
75	D-30992	Clutch Bolt
	D-30480	Clutch Bolt Spring
	D-30645	Clutch Bolt Spring Backing
76	D-30199	Clutch Throw-out
	D-30890	Clutch Throw-out Screw
	D-11791	Nuts
77	D-32111	Trip Rod Spring
78	D-31308	Trip Rod

Index Number	Part Number	Part Name
79	C-9095-A	Non-Repeat Micro-Switch Complete Assy.
	D-38335	Micro-Switch (only)
79A	D-38364	Micro-Switch Cam
79B	D-38366	Cam Screw
80	D-31891	Arm Adjusting Screw for 8" & 20" Solid Arm
	D-33280	Arm Adjusting Screw for 8" Drop Gooseneck Arm
	D-31213	Arm Adjusting Screw for 20" Drop Gooseneck Arm
	D-31891	Arm Adjusting Screw for 8" Spring Mounted Arm
80A	D-5894	Arm Adjusting Screw Lock Nut
80B	D-30669	Arm Adjusting Screw Handle Pin
80C	D-30139	Arm Adjusting Screw Handle
81	Reference	See pages 26 and 27 for various types of Arms
82	D-38595	Standard Motor Pulley (1725 R.P.M. Motor)
83	D-32358	Pivot Bolt (8" Arm)
	D-31255	Pivot Bolt (20" Arm)
	D-33609	Pivot Bolt Nut
84	D-31316	Clincher Arm Adjusting Bushing
85	D-31973	Bushing Lock Nut
86	D-30570	V-Belt
87	D-39572F	Brake Strap
88	D-30473	Brake Spring

Cam and Shaft Assembly
Electric Trip Assembly

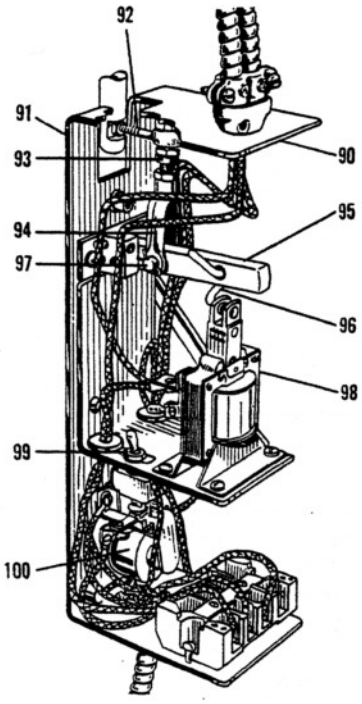


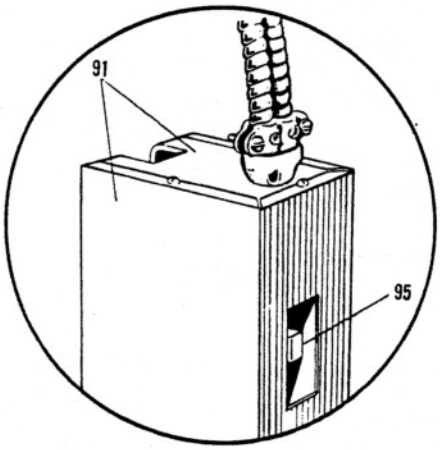
(Approximate position of cam in neutral position)

Figure 24

Cam and Shaft Assembly

Index Number	Part Number	Part Name
89	B-6231-A	Cam and Shaft Assy. for 8″ Throat
	B-6245-A	Cam and Shaft Assy. for 20″ Throat
	B-6356-A	Cam and Shaft Assy. for 25″ Throat
	C-8031-F	Main Cam only
	D-32113	Main Cam Taper Pin





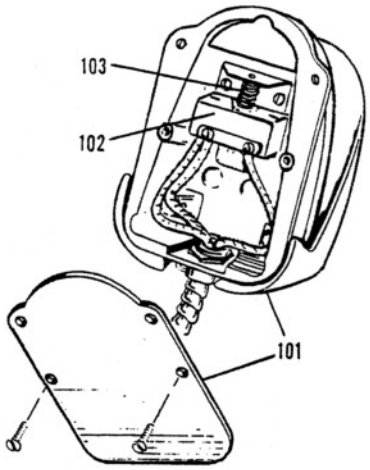


Figure 25

Electric Trip Assembly

Index Number	Part Number	Part Name
90	B-6119-A	Electric Trip Assy. (Complete)
91	B-6153	Electric Trip Box Mounting Frame
	B-6152	Electric Trip Box Cover
92	D-32130-F	Trip Rod Stud
	D-7849	Jam Nut (⅜ —24)
93	D-32131	Hex Head Screw (5/16 —24 x 1 ¾″)
	D-7403	Hex Jam Nut
94	D-39762-F	Trip Rod Connecting Yoke
95	D-31982	Trip Rod Lever
96	D-37611	Solenoid Link (Used with Wesco Solenoid)
	D-31981	Solenoid Strap (Old style—not illustrated) (Used with Cutler-Hammer Solenoid)
97	D-38086	Trip Rod Lever Pin

Electric Trip Assembly

Index Number	Part Number	Part Name
	D-14531	Cotter Pin (1/16″ x ½″)
98	D-36371	Solenoid (4# pull)
	D-45452	Solenoid Coil only (4# pull)
	*D-45451	T-Plunger (4# pull)
	D-37469	Solenoid (6# pull)
99	D-32132	Toggle Switch
100	D-33023	Magnetic Contactor
101	C-9002-A	Treadle Assembly
102	D-40297	Micro Switch
103	D-42314	Return Spring

REPLACED BY CBBB3000K7

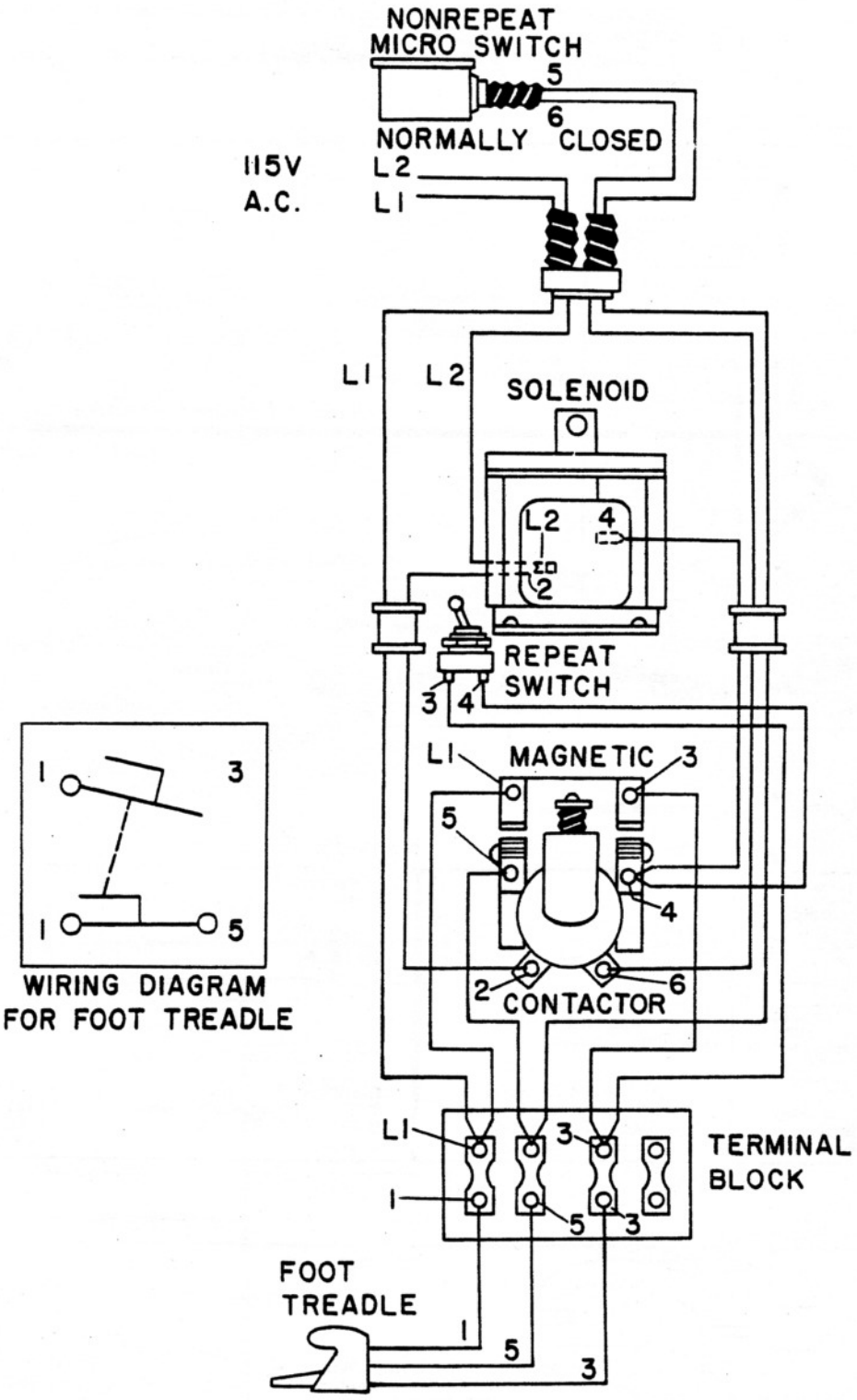

NONREPEAT
MICRO SWITCH
5
6
NORMALLY CLOSED
115V
A.C.
L2
L1
L1
L2
SOLENOID
L2
4
2
REPEAT
SWITCH
3
4
L1
MAGNETIC
3
5
4
2
6
CONTACTOR
L1
3
1
5
3
TERMINAL
BLOCK
FOOT
TREADLE
1
5
3
1
3
1
5
WIRING DIAGRAM
FOR FOOT TREADLE

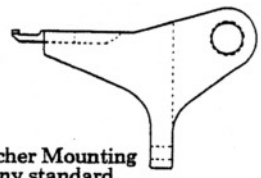
Figure 26

The listing of Straight Arms below, are shown according to size 8", 20" or 25" arms and the type, solid or special designs. Two part numbers are shown with each straight arm, one is the part number for the arm assembly and the other is the part number for the arm ONLY. The assembly number includes the arm, arm adjusting bushing, lock nuts and arm adjusting screw, as indicated in Fig. 23, Index 80, 83, 84 and 85.

N2A—8" Solid Arms

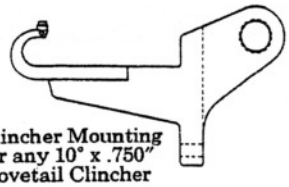
Clincher Mounting for any 10° x .750" Dovetail Clincher

B-7020-A Straight Arm Assy.
B-7017-F Offset Straight Arm Only with D-38607 Clincher Adaptor.



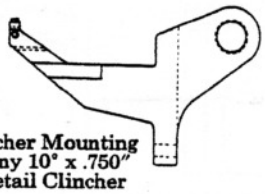
Clincher Mounting for any standard Bar Type Clincher

A-7932-A Straight Arm Assy.
B-6944-F Straight Arm



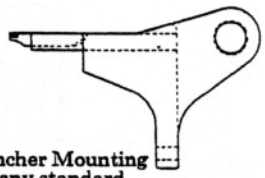
Clincher Mounting for any 10° x .750" Dovetail Clincher

B-6494-A 2" Drop Straight Arm Assy.
B-6203-F 2" Drop Straight Arm with C-8120 Reverse Gooseneck Clincher Adaptor



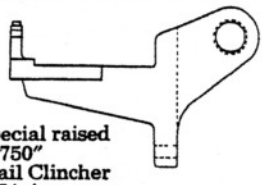
Clincher Mounting for any 10° x .750" Dovetail Clincher

B-7004-A 2" Drop Straight Arm Assy.
B-7003-F 2" Drop Straight Arm Only with D-38566 Gooseneck Clincher Adaptor



Clincher Mounting for any standard Bar Type Clincher

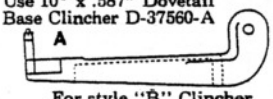
B-6953-A Straight Arm Assy.
B-6953-F Straight Arm with D-38193 Clincher Adaptor



For special raised 10° x .750" Dovetail Clincher D-38774-A (Tear-Drop) D-38889-A (2-Groove)

B-6203-F 2" Drop Straight Arm with D-38772 Clincher Adaptor

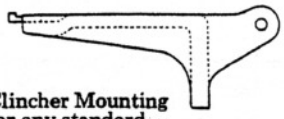
N2A—20" Solid Arms



For style "A" Clincher Adaptor Base D-38545, Clincher Column D-38544, Use 10° x .587" Dovetail Base Clincher D-37560-A

For style "B" Clincher Adaptor Base D-31290, Clincher Column D-38134 Use large Dovetail Base Clincher

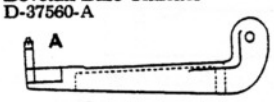
B-6502-A 20" Throat, 3" Drop Straight Arm Assy.
B-6185-F 20" Throat, 3" Drop Straight Arm Only.



Clincher Mounting for any standard Bar Type Clincher

A-7933-A 20" Solid Straight Arm Assy.
B-6945-F 20" Solid Straight Arm Only

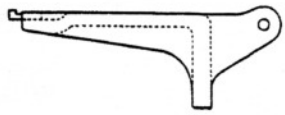
N2A—25" Solid Arms



For Style "A" Clincher Adaptor use 10° x .587" Dovetail Base Clincher D-37560-A

For Style "B" Clincher Adaptor Use Large Dovetail Base Clincher

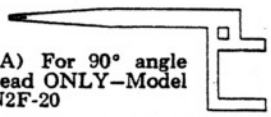
B-6939-A 25" Throat 3" Drop Straight Arm Assy.
B-6938-F 25" Throat 3" Drop Straight Arm Only



Clincher Mounting for any standard Bar Type Clincher

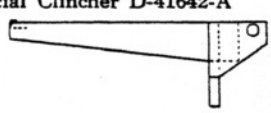
A-7934-A Solid Straight Arm Assy.
B-6946-F Solid Straight Arm Only

Special Arms

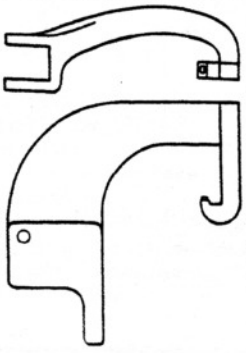


(A) For 90° angle head ONLY—Model N2F-20

Clincher Mounting for special Clincher D-41642-A

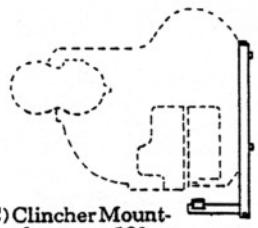


B-12274-A 20" Solid Straight Arm Assy. For Model N2F-20 ONLY use Clincher D-41642-A



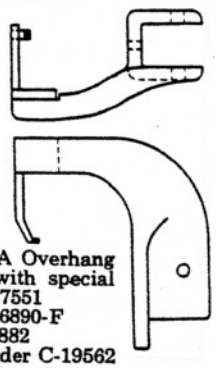
(B) Overhang Arm with Clincher Adaptor C-8074 for any 10° x .750" Dovetail Base

N2A-8" Assy. A-2109-A
8" Arm only B-6205-F
N2A-20" Assy. B-6499-A
20" Arm only B-6777-A



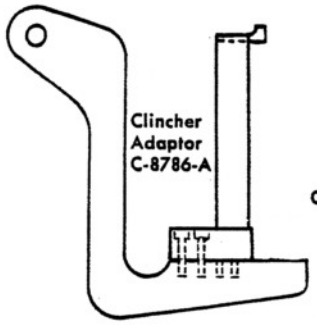
(C) Clincher Mounting for any 10° x .750" Dovetail Base Clincher

B-7034-A Overhang Offset Arm with D-38871 Clincher Adaptor

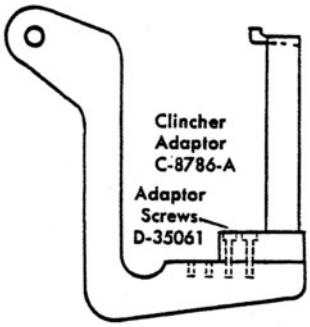


(D) A-2219-A Overhang Arm Assy. with special Clincher D-37551 Arm only B-6890-F Adaptor B-6882 Clincher Holder C-19562

Clincher Mounting for any 30° x 1.048" Dovetail Base



Clincher to front



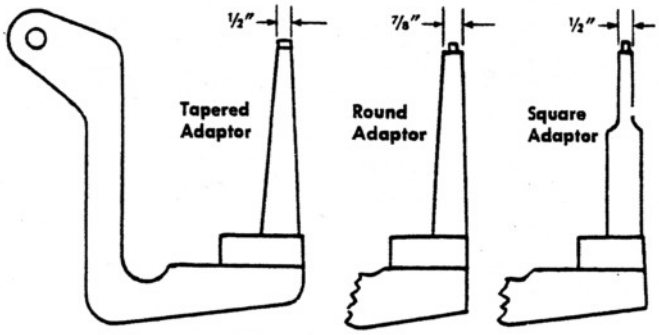
Clincher to rear

Drop Gooseneck Clincher Arms

B-6062-A	8" Throat (N2A-8) Drop Gooseneck Arm Assembly
B-6188-F	8" Arm only
B-6204-A	20" Throat (N2A-20) Drop Gooseneck Arm Assembly
B-6186-F	20" Arm only
B-6769-A	25" Throat (N2A-25) Drop Gooseneck Arm Assembly
B-6550-F	25" Arm only

When ordering a Drop Gooseneck Arm Assembly, give the following information:

1. Machine serial number
2. Arm assembly number
3. Clincher adaptor number
4. If clincher adaptor C-8786-A is ordered, state whether the clincher should be mounted to the front or rear.



Narrow Clincher Adaptors

A. Tapered Adaptor, C-9227-A
B. Round Adaptor, C-8779-A
C. Square Adaptor, C-8787-A

"A" and "B" use Small Dovetail Clincher D-37560-A (10° x .587") "C" uses any Dovetail Clincher with 10° x .750" Base

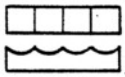
NOTE

Where a clincher adaptor is required, the assembly number does not include the adaptor. Specify both the arm number and adaptor number, when required.

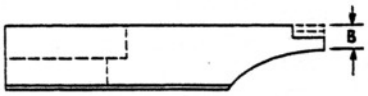
The Clinchers for the various arms are shown on pages 28 and 29. The Clinchers are made with several types of bases to fit a certain type of mounting on the arm. Note the type of clincher mounting on the straight arm when ordering the clincher you need.

The purpose of the Clincher is to turn the legs of the stitch back after they have penetrated the work material. To do this, there are several types of clinchers and clincher profiles designed for your needs. They are included in the illustrated material below.

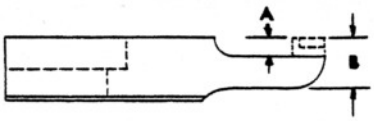
Carboloy Inserts with various types of Profiles

Profile Index	Application	Profile	Part Number	Depth
a.	Tear Drop: For clinching on the metal side		D-37235 D-38826	.094" .075"
b.	Two Groove with one End Closed: For all-purpose use.		D-37556 D-37786	.094" .062"
c.	Two Groove Open: For imbedding the Clinch in non-metallic material		D-37760	.056"
d.	Four Groove Open: For imbedding clinch in non-metallic material		D-37758	.056"
e.	By-pass		D-43831	.109"

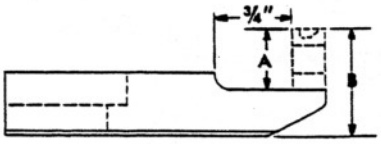
The following types of clincher mountings were designed for specific uses and are adaptable to several styles of arm or clincher holders (see details of clincher arms on pages 26 and 27)



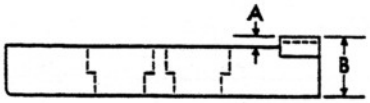
Holder D-37787



Holder D-38007



Holder D-37557



Holder and Clincher D-31344

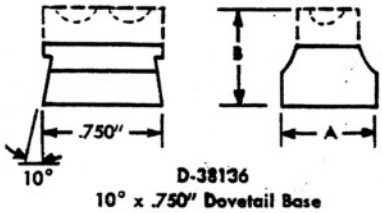
Standard Bar Type Clincher with Carboloy inserts

CLINCHER Complete Assembly	INCLUDES Clincher Holder	INCLUDES Clincher Insert	Profile Index	Dimensions A	Dimensions B	Crown Size
D-37847-A	D-37787	D-37786	b	0"	.250"	7/16"
D-38008-A	D-38007	D-37556	b	.190"	.533"	7/16"
D-38848-A	D-38007	D-37235	a	.190"	.533"	7/16"
D-37558-A	D-37557	D-37556	b	.190"	.643"	7/16"
D-38845-A	D-37557	D-38826	a	.190"	.643"	7/16"
D-38014-A	D-37557	D-37235	a	.190"	.643"	7/16"
D-38654-A	Same as D-38014-A Except exit side of profile is to the rear					
D-38703-A	D-37557	D-37235	a	.315"	.768"	7/16"
D-38584-A	D-37557	D-37235	a	.503"	.956"	7/16"
D-38825-A	D-37557	D-37235	a	.625"	1.0781"	7/16"
D-40709-A	D-37557	D-37556	b	.690"	1.1406"	7/16"
D-31344	One piece holder and clincher		d	.125"	.750"	7/16"

Small Dovetail Clincher Holders with Carboloy Inserts

10° x .750" Dovetail Base

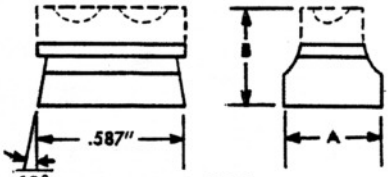
CLINCHER Complete Assembly	INCLUDES Clincher Holder	INCLUDES Clincher Insert	Profile Index	Dimensions A	Dimensions B	Crown Size
D-37236-A	D-38136	D-37235	a	.500"	.500"	7/16"
D-38792-A	D-38136	D-37235	a	.375"	.500"	7/16"
D-38502-A	D-38136	D-38826	a	.500"	.500"	7/16"
D-37762-A	D-38136	D-37760	c	.500"	.500"	7/16"



D-38136
10° x .750" Dovetail Base

10° x .587" Dovetail Base

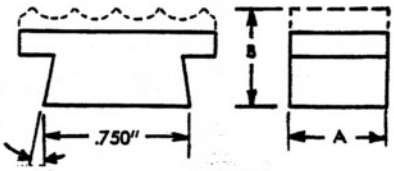
D-37560-A	D-38135	D-37235	a	.500"	.500"	7/16"



D-38135
10° x .587" Dovetail Base

10° x .750" Dovetail Base

D-37640-A	D-37759	D-37758	d	.500"	.500"	7/16"

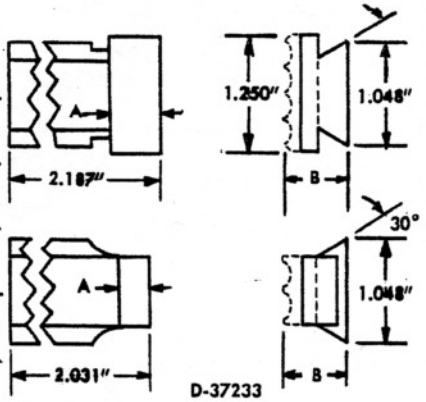


D-37759
10° x .750" Dovetail Base

Large Dovetail Clincher with Carboloy Inserts

30° x 1.048" Dovetail Base

D-38012-A	D-38013	D-37758	d	.500"	.655"	7/16"
D-37234-A	D-37233	D-37235	a	.312"	.632"	7/16"
D-38407-A	D-37233	D-37235	a	.312"	.935"	7/16"
D-38826-A	D-37233	D-38826	a	.312"	.632"	7/16"
D-38902-A	Same as D-38826-A Except the exit side of profile is to the rear.					
D-38843-A	D-43832 Mfd. from D-37233	D-43831	e	.330"	.655"	1/4"



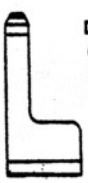
D-37233
30° x 1.048" Dovetail Base

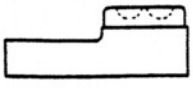
Special Clinchers

10° x .750" Dovetail


D-37551
Overhang Clincher
For use with A-2219-A Overhang Arm


D-38774-A
(tear drop)
For 2" Drop Arm B-6203-F
Use with D-38772 Clincher Adaptor


D-38889-A
(2 groove)


D-41642-A
For N2F-20" with 90° Angle Head

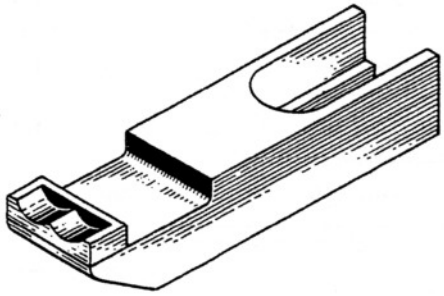
COMMON CLINCHERS

For A-7932-A Straight Solid Arms

Standard Bar Type Clinchers — 7/16" Stitch Crown

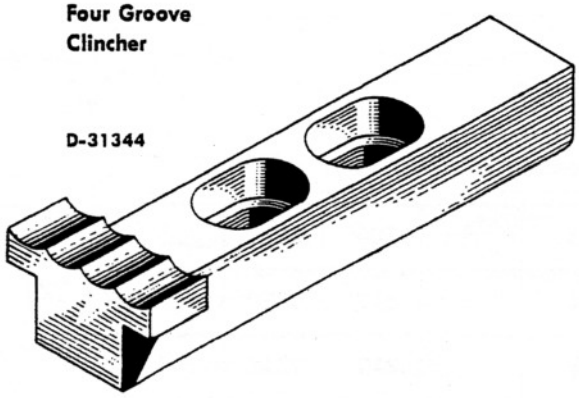
Two Groove Clincher

D-37558-A



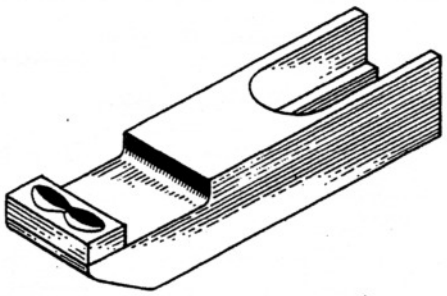
Four Groove Clincher

D-31344



Teardrop Clincher

D-38014-A



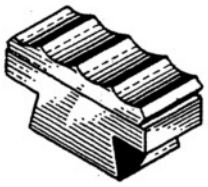
COMMON CLINCHERS

For Straight Solid Arms, (Except A-7932-A), Overhang Arms, Reverse Gooseneck Arms and Drop Gooseneck Arms with C-8787-A Adaptor.

Small Dovetail — 7/16" Stitch Crown

D-37236-A
(teardrop)

D-37762-A
(two groove)



D-37640-A
(four groove)

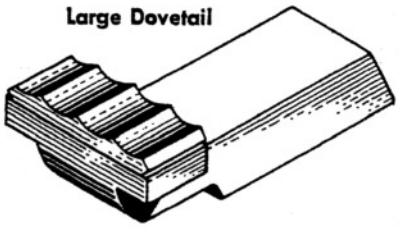
For Drop Gooseneck Arms with
Tapered Adaptor C-9227-A
Round Adaptor C-8779-A

Small Dovetail
7/16" Stitch Crown

D-37560-A
(teardrop)

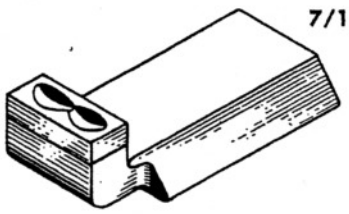
For Drop Gooseneck Arms with
Square Adaptor C-8786-A

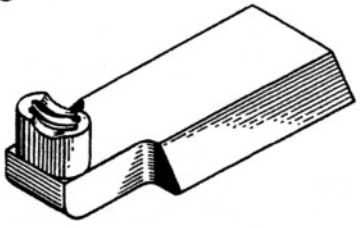
Large Dovetail



D-38012-A
7/16" Stitch Crown
(four groove)

D-37234-A
7/16" Stitch Crown
(teardrop)





D-38843-A
(¼" Stitch Crown)
(by pass)

Proper types of wire for all applications are available, including stainless and hi-carbon. Finishes available include tinned, galvanized, liquor and bright in all commercial standards.

First Step:

To determine if this advanced fastening method is applicable to your operations, take this first logical step. Simply send a sample of materials (within the range shown in the chart below) fastened by your present methods—and several more pieces of the same materials *not* joined—to our Wire Stitching Laboratory. Specialists will determine if your product can be stitched. If your product is adaptable to this method, they will work with your samples and return them stitched. You will also receive a full report on type of equipment required and its estimated cost, and the cost of assembling your units with Wire Stitching. Naturally, there is no obligation.

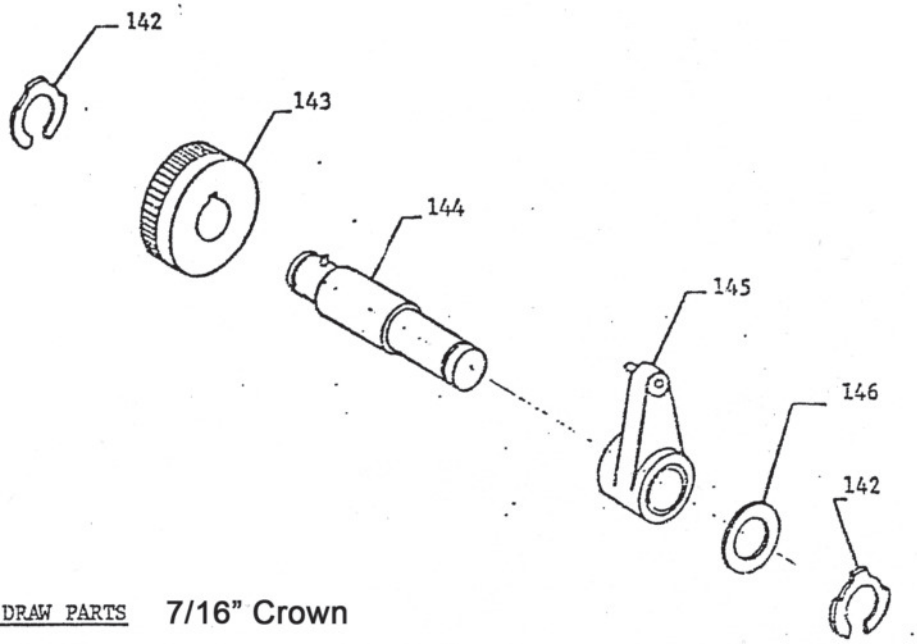
STITCHABLE MATERIALS

Metal	Metal to Metal 1 Pc. to 1 Pc.		Metal to Non-metal	
			one piece of this thickness..	can be stitched to any one of these pieces in thickness shown below.
SO Aluminum	.093"	.093"	.125"	½" Sheet Cork; ⅜" Leather; ¼" Sheet Asbestos; ½" Fibre; ½" Sponge Rubber; ¼" Solid Rubber; ⅛" Phenolics; 3/16" Plastic; ⅜" Standard Masonite; ¼" Tempered Masonite: ⅜" Wood.
24 ST/or Alclad	.040"	.040"	.064"	
Soft Aluminum Extrusion	.062"	.062"	.093"	
1010 Cold Rolled Steel	.050"	.050"	.078"	
Hot Rolled Steel	.050"	.037"	.062"	
Galvanized	.037"	.037"	.050"	
Stainless—Full Hard	.010"	.010"	.020"	
Stainless—½ Hard	.012"	.012"	.025"	
Stainless—¼ Hard	.015"	.015"	.030"	
Stainless—Annealed	.020"	.020"	.040"	
Sheet Brass (soft)	.030"	.030"	.050"	
Sheet Copper	.035"	.035"	.064"	

Basic Advantages Of Wire Stitching

- Metallic materials (similar and dissimilar) that cannot be readily welded are easily stitched.
- Efficient method for joining nonmetallic materials (similar and dissimilar) that are not suited to characteristics of other methods.
- No special skills required. Quality of joint is not dependent on operator's proficiency.
- No time-consuming job preparation, such as prepunching, critical hole alignment for riveting, or cleaning of work (before and after) as with welding.
- Low cost per stitch. Material cost averages 3¢ to 30¢ per thousand stitches—depending on application, type of wire and stitch size.
- Wire Stitchers have few wearing parts, naturally require little "down time." Operator's entire time can be devoted to production.
- Low power requirements and consumption. Most powerful motor needed is ½ H.P. Most Wire Stitchers can be operated from available circuits without special wiring.
- High speeds of 200 to 300 stitches per minute are possible.
- No backing material is needed in assembling work.
- Wire Stitches give warning when overstressed . . . open or loosen gradually, will not yield instantly.
- Strength of a Wire Stitch in tension is 30% to 50% of its normal shear strength.
- Flange distances can be reduced to ¼" on all gauges of stitchable materials.
- High resistance to fatigue and vibration. The tight joint produced by wire making its own hole, and the effective clinching action, restricts movement of parts being joined. Clean punching avoids "notch" effects that may lead to failure from fatigue.
- Only visual inspection is required to determine proper fastening.
- Stitching does not disturb most finishes.

• • •



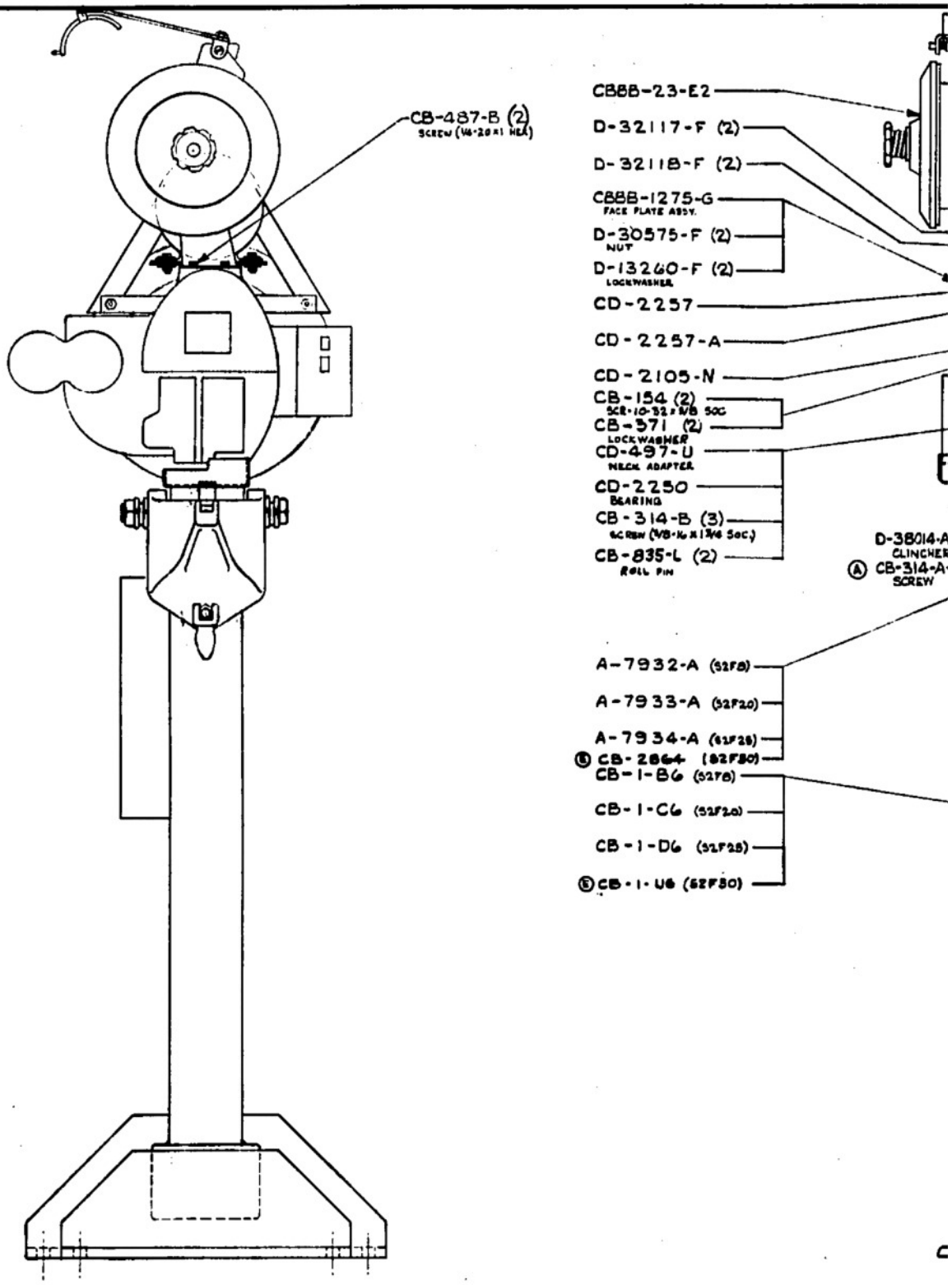
WIRE DRAW PARTS **7/16" Crown**

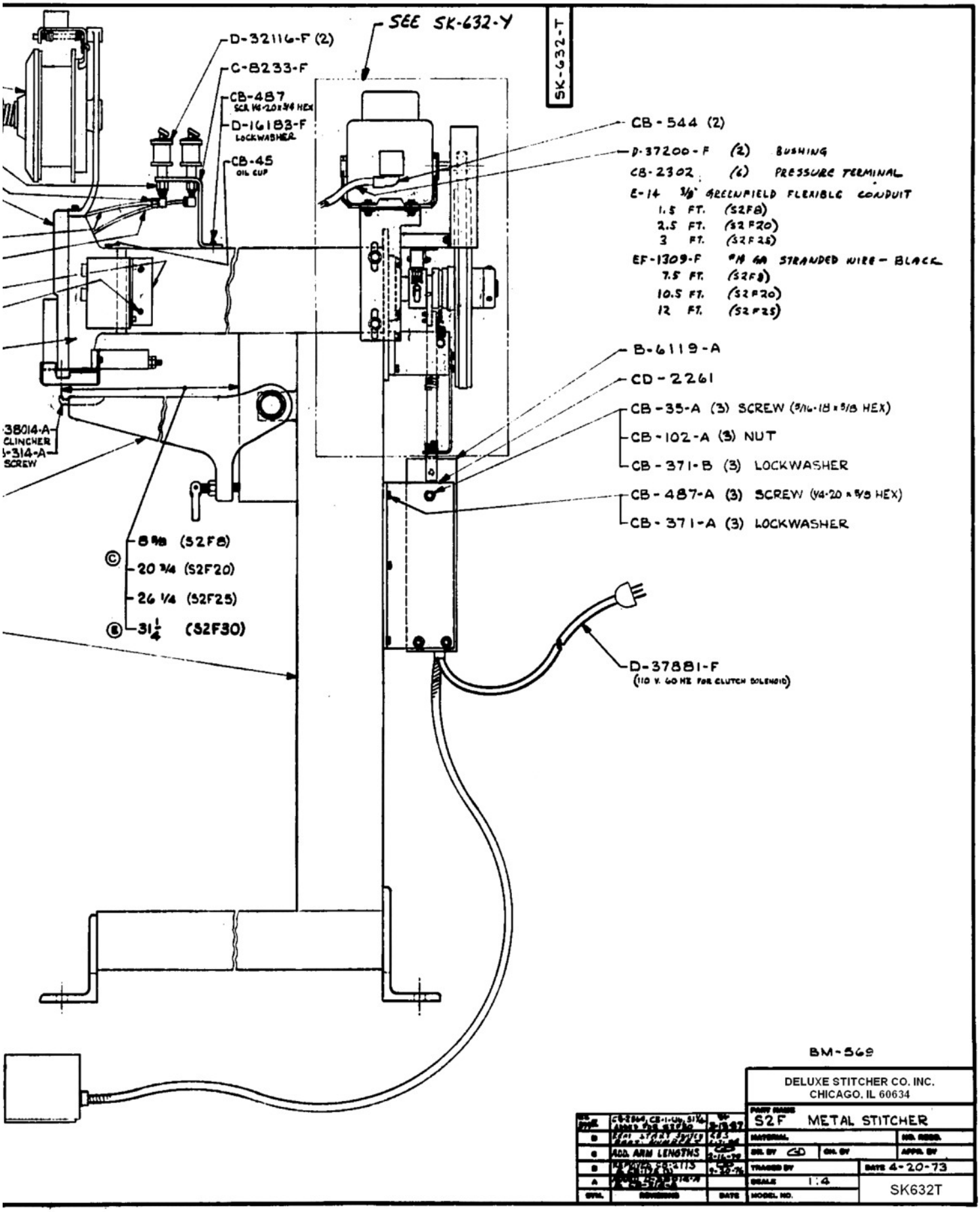
Use Index numbers 25, 38, 38-A, 39, 41, 41-A for machines equipped with one piece feed gear and shaft assembly.

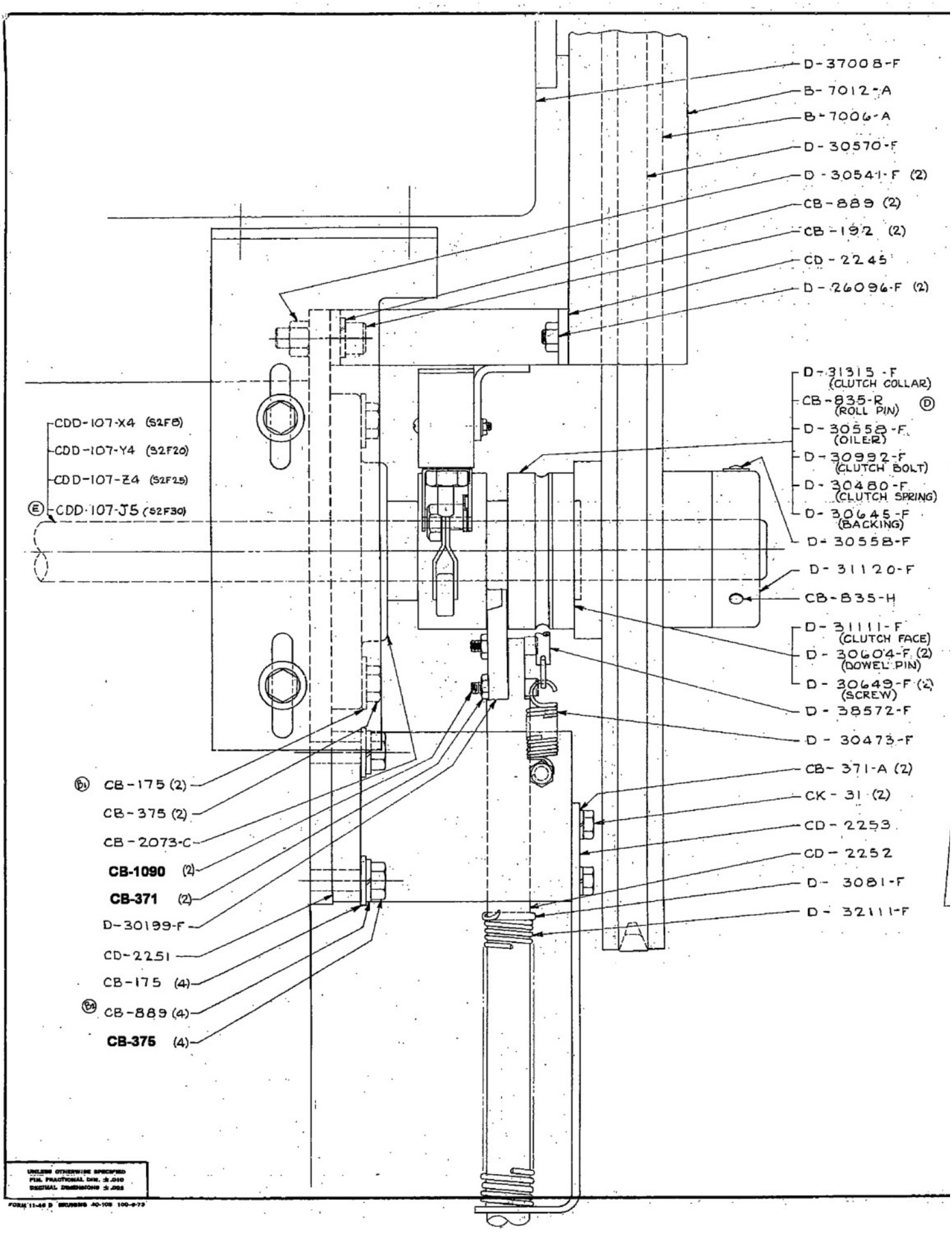
Use index numbers 142,143, 144, 145, 146 for machines equipped with 2 piece feed wheel and shaft.

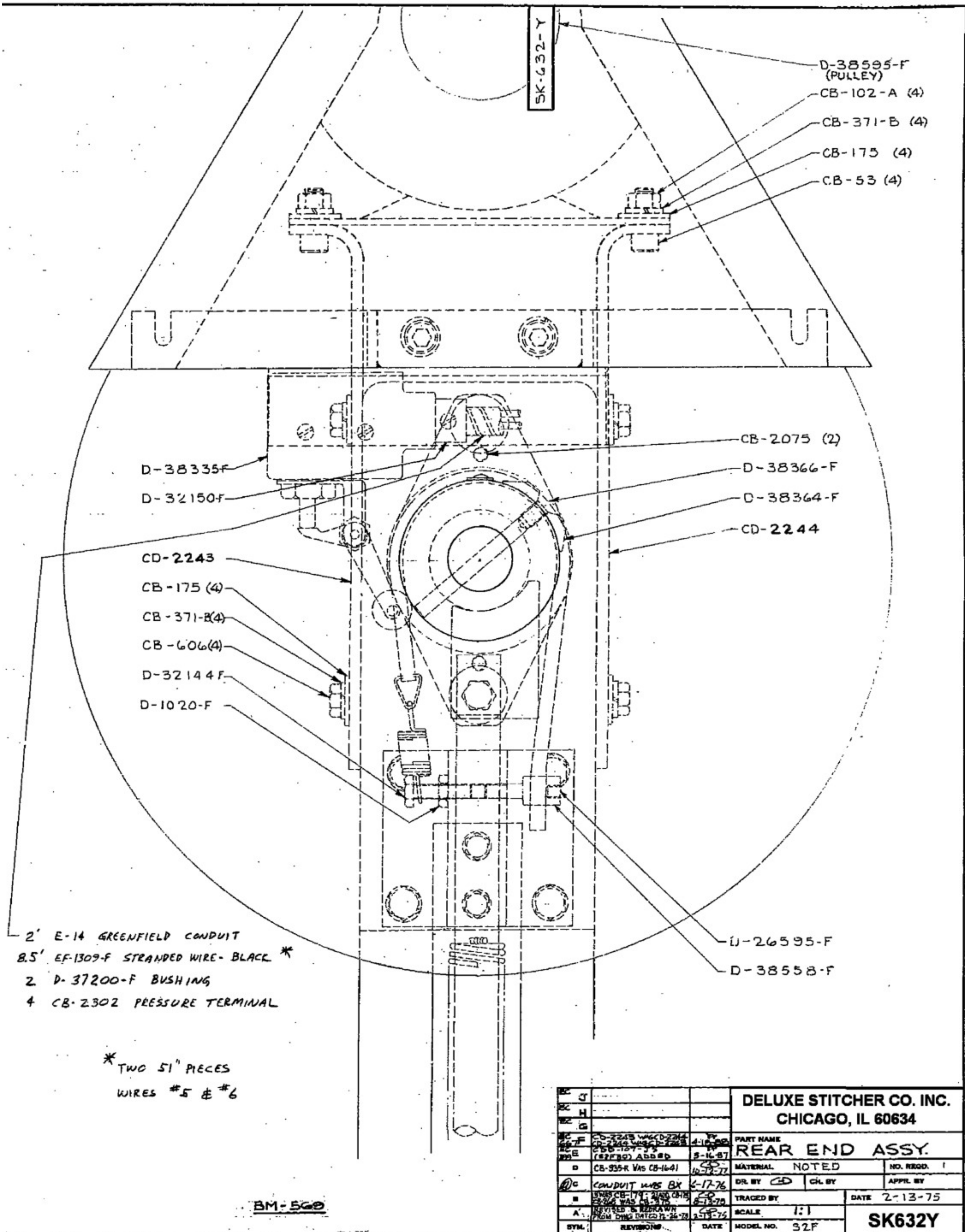
142	CD-2391 Klip Ring	2
143	CD-2347-A S5F Arcuate Feed Wheel	1
	CD-2347-C S5F Flat Feed Wheel	
	CD-2347-D S2F Feed Wheel	
144	CDD-2345-B Shaft & Pin Assy.	1
145	CDD-1283-A Arm & Clutch Assy.	1
146	CB-2063 Thrust Washer	1

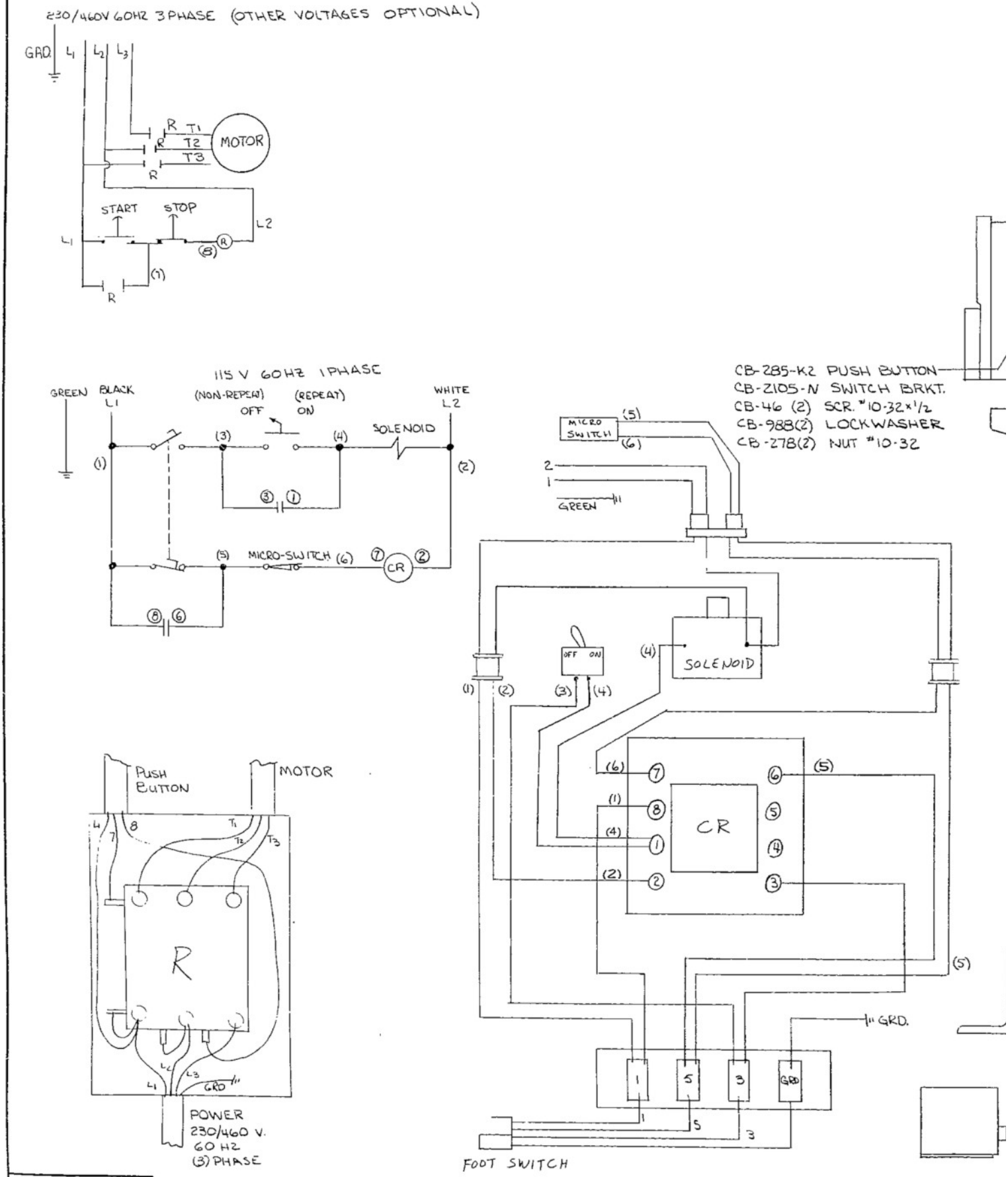
SK-745-C


CB-487-B (2)
SCREW (1/4-20 x 1 HEX)
CB8B-23-E2
D-32117-F (2)
D-32118-F (2)
CB8B-1275-G
FACE PLATE ASSY.
D-30575-F (2)
NUT
D-13260-F (2)
LOCKWASHER
CD-2257
CD-2257-A
CD-2105-N
CB-154 (2)
SCR-10-32 x 3/8 SOC
CB-371 (2)
LOCKWASHER
CD-497-U
NECK ADAPTER
CD-2250
BEARING
CB-314-B (3)
SCREW (5/8-11 x 1 3/16 SOC.)
CB-835-L (2)
ROLL PIN
D-38014-A
CLINCHER
Ⓐ CB-314-A-
SCREW
A-7932-A (32F8)
A-7933-A (32F20)
A-7934-A (32F28)
Ⓑ CB-2864 (32F30)
CB-1-B6 (32F8)
CB-1-C6 (32F20)
CB-1-D6 (32F28)
Ⓑ CB-1-U6 (32F30)


SEE SK-632-Y
SK-632-T
D-32116-F (2)
C-8233-F
CB-487
SCR. 1/4-20 x 3/4 HEX
D-16183-F
LOCKWASHER
CB-45
OIL CUP
CB-544 (2)
D-37200-F (2) BUSHING
CB-2302 (6) PRESSURE TERMINAL
E-14 3/8" GREENFIELD FLEXIBLE CONDUIT
1.5 FT. (S2F8)
2.5 FT. (S2F20)
3 FT. (S2F25)
EF-1309-F #14 GA STRANDED WIRE - BLACK
7.5 FT. (S2F8)
10.5 FT. (S2F20)
12 FT. (S2F25)
B-6119-A
CD-2261
CB-35-A (3) SCREW (5/16-18 x 5/8 HEX)
CB-102-A (3) NUT
CB-371-B (3) LOCKWASHER
CB-487-A (3) SCREW (1/4-20 x 5/8 HEX)
CB-371-A (3) LOCKWASHER
38014-A
CLINCHER
-314-A
SCREW
8 5/8 (S2F8)
20 1/4 (S2F20)
26 1/4 (S2F25)
31 1/4 (S2F30)
D-37881-F
(110 V. 60 HZ FOR CLUTCH SOLENOID)
BM-569
DELUXE STITCHER CO. INC.
CHICAGO, IL 60634
PART NAME
S2F METAL STITCHER
MATERIAL
NO. REQD.
DR. BY
CH. BY
APPR. BY
TRACED BY
DATE 4-20-73
SCALE 1:4
MODEL NO.
SK632T
SYM.
REVISIONS
DATE
ADDED ARM LENGTHS


D-37008-F
B-7012-A
B-7006-A
D-30570-F
D-30541-F (2)
CB-889 (2)
CB-192 (2)
CD-2245
D-26096-F (2)
D-31315-F (CLUTCH COLLAR)
CB-835-R (ROLL PIN) (D)
D-30558-F (OILER)
D-30992-F (CLUTCH BOLT)
D-30480-F (CLUTCH SPRING)
D-30645-F (BACKING)
D-30558-F
D-31120-F
CB-835-H
D-31111-F (CLUTCH FACE)
D-30604-F (2) (DOWEL PIN)
D-30649-F (2) (SCREW)
D-38572-F
D-30473-F
CB-371-A (2)
CK-31 (2)
CD-2253
CD-2252
D-3081-F
D-32111-F
CDD-107-X4 (S2F8)
CDD-107-Y4 (S2F20)
CDD-107-Z4 (S2F25)
(E) CDD-107-J5 (S2F30)
(B1) CB-175 (2)
CB-375 (2)
CB-2073-C
CB-1090 (2)
CB-371 (2)
D-30199-F
CD-2251
CB-175 (4)
(B4) CB-889 (4)
CB-375 (4)

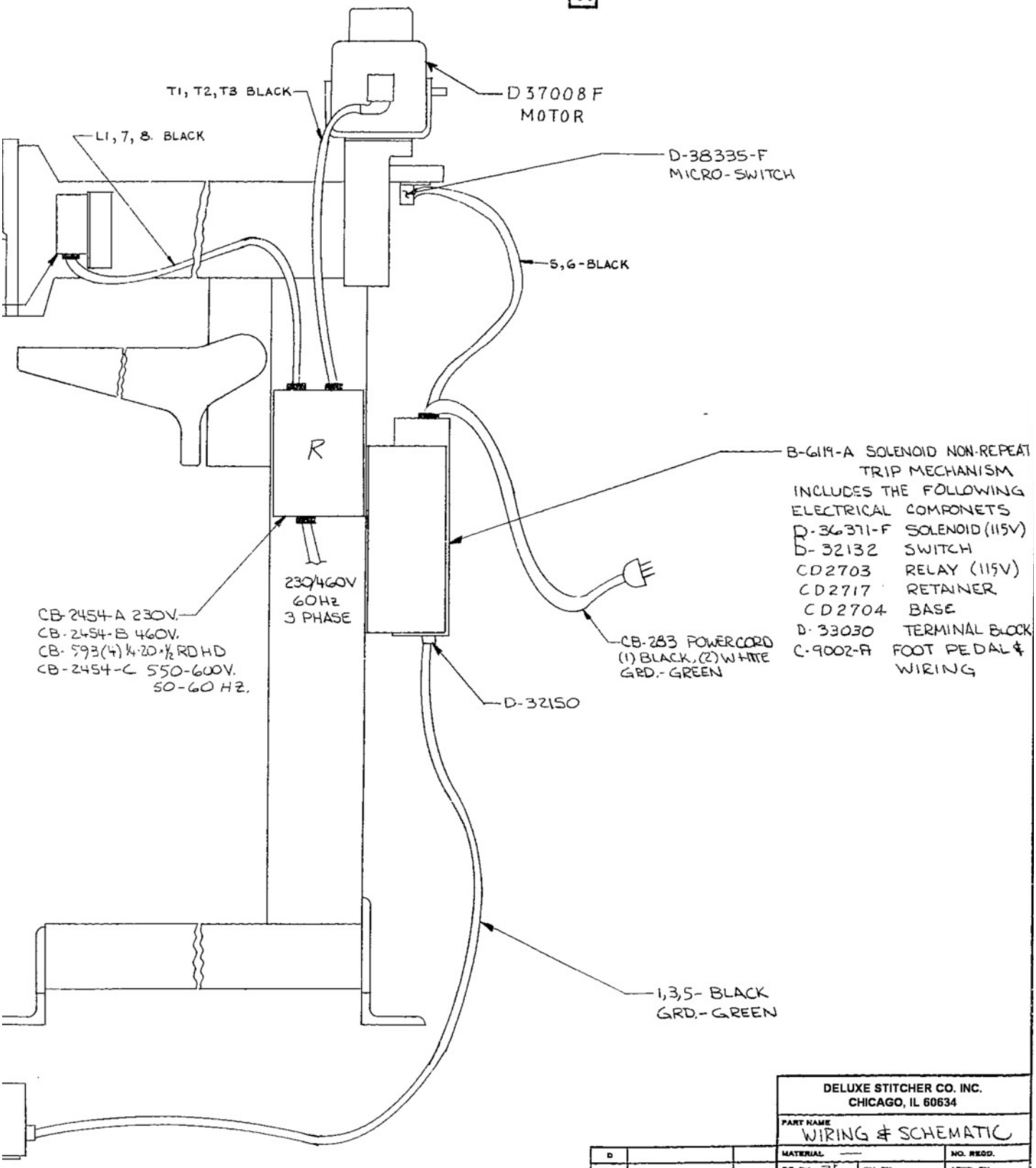

SK-632-Y
D-38595-F (PULLEY)
CB-102-A (4)
CB-371-B (4)
CB-175 (4)
CB-53 (4)
CB-2075 (2)
D-38335F
D-38366-F
D-32150-F
D-38364-F
CD-2244
CD-2243
CB-175 (4)
CB-371-B(4)
CB-606(4)
D-32144F
D-1020-F
D-26595-F
D-38558-F
2' E-14 GREENFIELD CONDUIT
8.5' EF-1309-F STRANDED WIRE- BLACK *
2 D-37200-F BUSHING
4 CB-2302 PRESSURE TERMINAL
* TWO 51" PIECES WIRES #5 & #6
BM-560
DELUXE STITCHER CO. INC.
CHICAGO, IL 60634
PART NAME REAR END ASSY.
MATERIAL NOTED
NO. REQD. 1
DR. BY
CH. BY
APPR. BY
TRACED BY
DATE 2-13-75
SCALE 1:1
MODEL NO. 32F
SK632Y
D CB-935-R WAS CB-1641 10-12-77
C CONDUIT WAS BX 6-17-76
A REVISED & REDRAWN FROM DWG DATED 11-26-73 2-13-75
SYM. REVISIONS DATE
PRINTED IN U.S.A.



UNLESS OTHERWISE SPECIFIED
FIN. FRACTIONAL DIM. ±.010
DECIMAL DIMENSIONS ±.003

FORM 11-48 D BRUNING 40-103 280-7-77

SK737T2

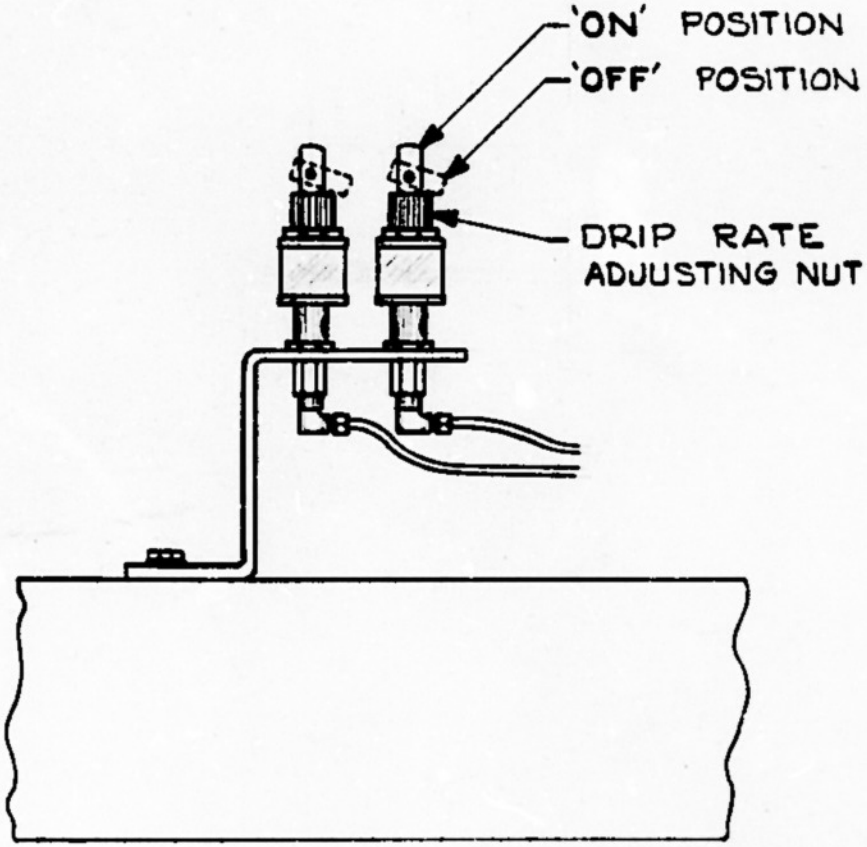


DELUXE STITCHER CO. INC.
CHICAGO, IL 60634

PART NAME WIRING & SCHEMATIC

D			MATERIAL —		NO. REQD.
C			DR. BY BF	CH. BY	APPR. BY
B			TRACED BY		DATE 6-24-94
A			SCALE —		SK737T2
STM.	REVISIONS	DATE	MODEL NO.		

SK - 696



CAUTION

TURN ON OILERS BEFORE RUNNING STITCHER. THE DRIP RATE WAS ADJUSTED AT THE FACTORY, BUT THE OILERS WERE TURNED OFF FOR SHIPPING. KEEP THE OILERS FILLED WITH TEXACO MEROPA #3 OR EQUIVALENT.

OILER INSTRUCTION		
DR. BY CD	DATE 4-29-77	SK - 696
MODEL NO. S2F		

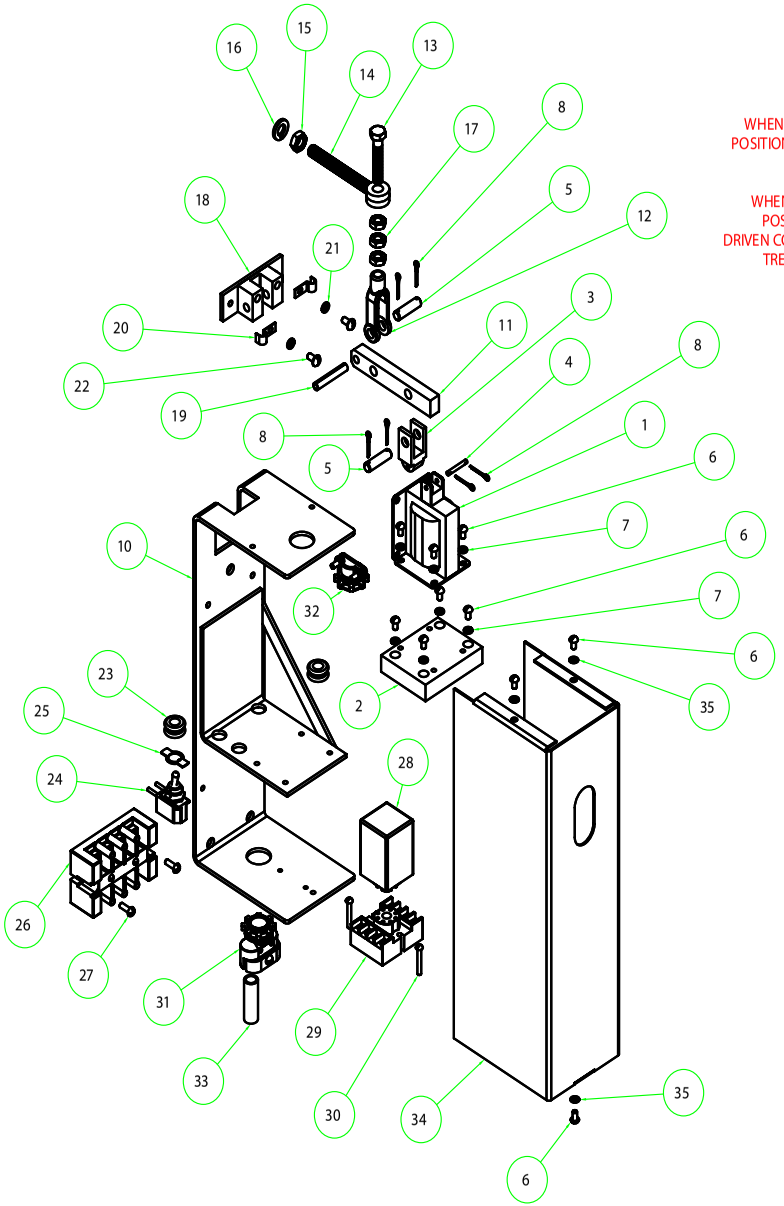
NEWER MACHINES
BUILT 2009 OR NEWER

Item	Qty.	Part Number	Description
1	1	CD3040	SOLENOID, 120V AC LAMINATE
2	1	CD3041	BLOCK, SOLENOID
3	1	CD3042	YOKE, SOLENOID
4	1	CD3043	PIN, SOLENOID
5	2	D31955F	PIN, YOKE
6	11	D32125F	SCREW, #8-32 x 5/16" ROUND HEAD
7	8	D14267F	LOCKWASHER, #8
8	6	CB451	COTTER PIN, Ø1/16 x 1/2"
9	2	CB2302W	CONNECTOR, 2 & 3 WIRE (NOT SHOWN)
10	1	CDD2679	WELDMENT, SWITCH BOX & BRACKET
11	1	D31982F	ROD, LEVER TRIP
12	1	D30762F	YOKE, ELECTRIC TRIP
13	1	D32131F	SCREW, Ø5/16-24 HEX HEAD
14	1	D32130F	STUD, TRIP ROD
15	1	D7849F	NUT, Ø3/8-24 HEX JAM
16	1	D3064F	LOCKWASHER, Ø3/8
17	3	D7403F	NUT, Ø5/16-24 HEX JAM
18	1	D37006A	WELDMENT, BRACKET ASSEMBLY
19	1	D38086F	ROLL PIN, Ø1/4 x 1-1/2"
20	2	CB730	CORD CLIP
21	2	CB371	LOCKWASHER, #10
22	2	D1021F	SCREW, #10-24 x 3/8" ROUND HEAD
23	2	D37199F	GROMMET
24	1	D32132F	SWITCH, TOGGLE
25	1	CB677	ON/OFF SWITCH PLATE
26	1	D33030F	WIRE TERMINAL BLOCK, HEAVY DUTY
27	2	D32129F	SCREW, #8-32 x 1/2" ROUND HEAD
28	1	CD2703	RELAY
29	1	CD2704	SOCKET, RELAY
30	2	CB650	SCREW, #6-32 x 1" ROUND HEAD
31	1	D38384F	BOX CONNECTOR
32	1	CB429	CORD GRIP
33	1	C9002A	ELECTRIC TREADLE ASSEMBLY
34	1	B6152	COVER, SWITCH BOX
35	3	CB988A	LOCKWASHER, #8 SHAKEPROOF

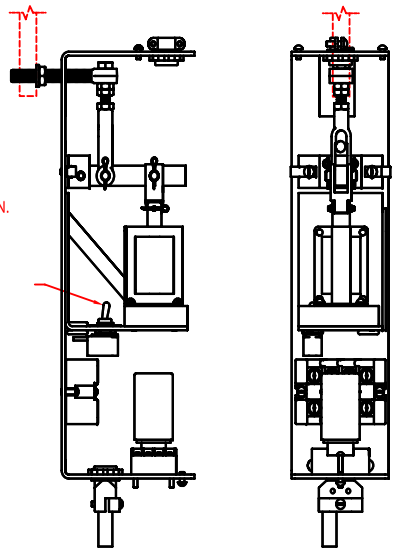
NOTES:

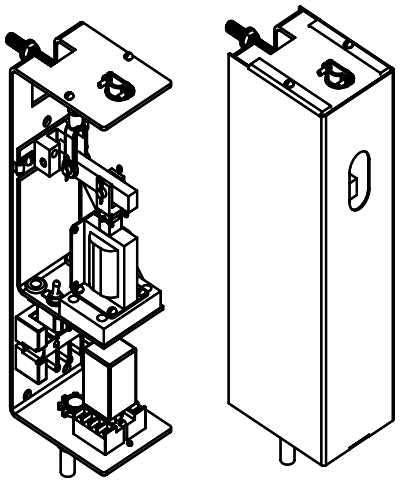
1) REFER TO SCHEMATIC & WIRING DIAGRAM SK737T2.

2) SOLENOID RETROFIT KIT: CBBB3000K7 INCLUDES ITEMS 1-9.



WHEN SWITCH IS IN "OFF" POSITION, ONLY ONE STITCH WILL BE DRIVEN PER TREADLE OPERATION. WHEN SWITCH IS IN "ON" POSITION, STITCHES ARE DRIVEN CONTINUOUSLY WHILE TREADLE IS DEPRESSED.





WHEN ORDERING PARTS, PLEASE STATE: QUANTITY REQUIRED, PART NUMBER, PART NAME, WIRE SIZE, CROWN WIDTH AND SERIAL NUMBER OF YOUR STITCHER.

DeLuxe Stitcher
COMPANY INC.
ISP Stitching & Bindery Products

3747 Acorn Lane, Franklin Park, Illinois 60131
Phone: 847-455-4400 800-634-0810
Fax: 847-455-4900 800-417-9251
http://www.deluxestitcher.com

FORM 1056 10-19