



DELUXE STITCHER

COMPANY INC.

ISP Stitching & Bindery Products

solving your wire stitching needs for 125 years...

Machine Model : _____ Serial Number : _____

Head Serial Number : _____

Date Purchased/Installed : _____

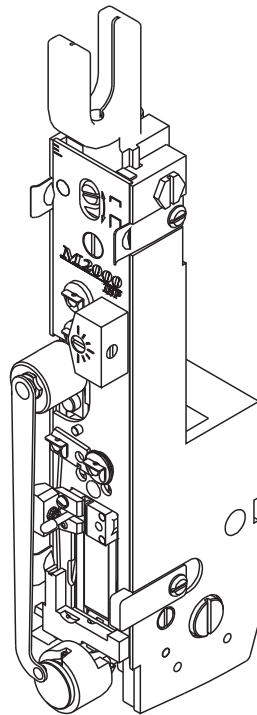
M2000

OPERATION AND MAINTENANCE MANUAL

Wire Sizes: 22-30 Ga. Round, 21x25 Flat

Crown Sizes: 1/2" (13 mm), Other Crown Sizes Available

Capacity: 2 sheets to 1/4" (6 mm)



**INCLUDES PARTS
FOR THE CTTT2606R3**

Before using this Stitcher, all operators must study this manual and follow the safety warnings and instructions. Keep these instructions with the Stitcher for future reference. If you have any questions, contact your local DeLuxe Stitcher Representative or Distributor.

WARNING!

M2000 Stitcher Head

Machine operators and others in the work area should always wear safety glasses to prevent serious eye injury from fasteners and flying debris when loading, operating, or unloading the stitcher machine.

Do not operate this stitcher head without all stitcher machine guards in place. Do not modify the guards in any way. Always disconnect the power supply before removing any guards for servicing.

Never operate the machine with wire feeding through the head unless there is stock above the clinchers, otherwise serious damage may result.

Always turn power off when making adjustments. Always disconnect the power cord before any disassembly work.

EYEWEAR



REQUIRED

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**USE ONLY REPLACEMENT PARTS DESIGNED AND
MANUFACTURED BY DELUXE STITCHER INC.
SPECIFICALLY FOR YOUR M2000 STITCHER**

Introduction

The M2000 Stitching Head has been engineered and developed to provide you with the finest equipment available for your stitching 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.

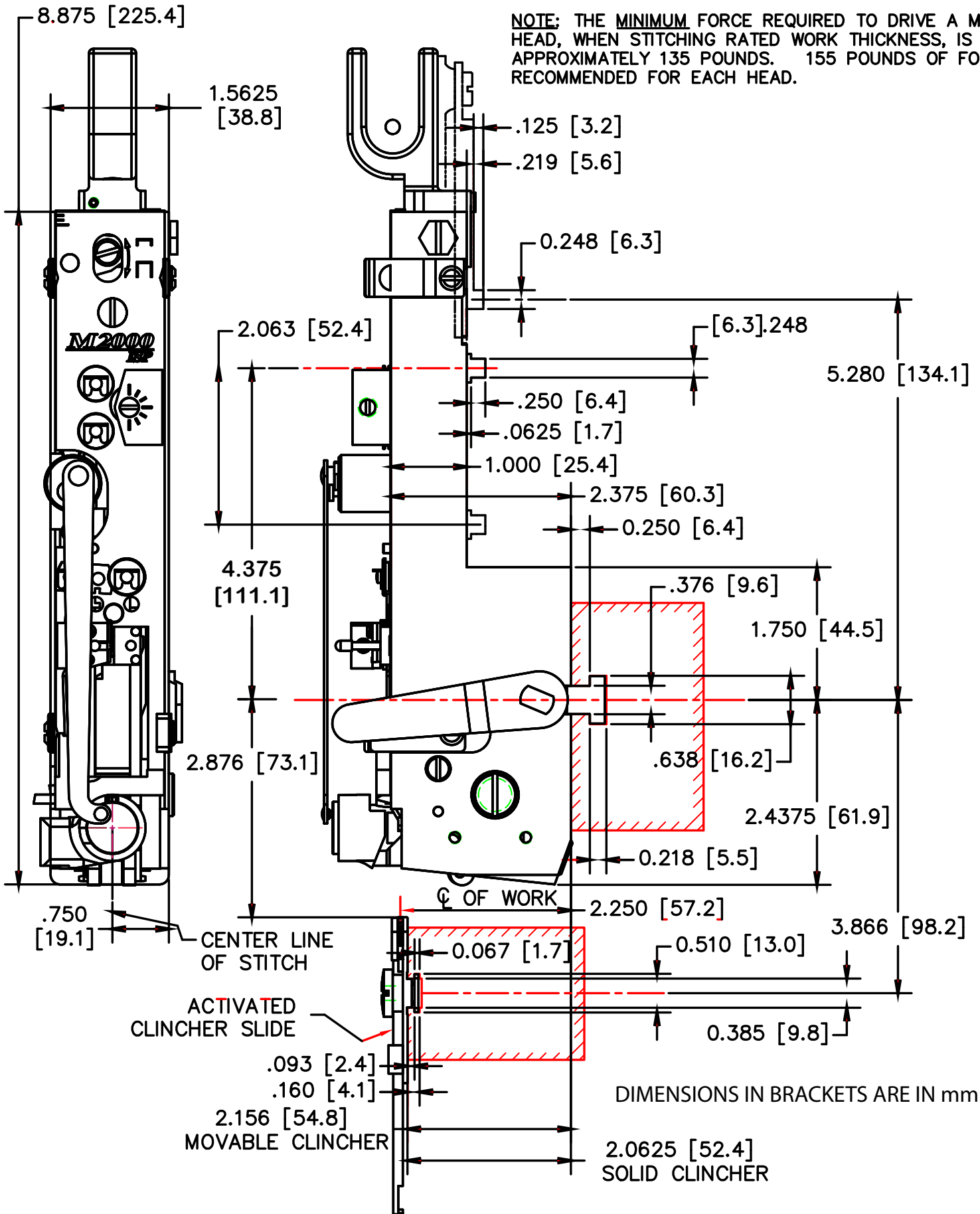
Read the M2000 Manual thoroughly. Study it carefully. Best stitching performance will be assured, if all the adjustments are made as instructed.

Product Specifications

Unit Weight:	Lbs.		
	7 lbs. [3.2 kg]		
Unit Envelope Size:	Height	Length	Width
Packaging Dimensions with Wire Guide	16in. [41cm]	8in. [20 cm]	3in. [7.6 cm]

Notes

Mounting Arrangement of the Stitching Machine Head



Safety Precautions And Procedures

SAFETY

1. Make sure electrical power is turned off before performing any adjustment or maintenance.
2. Keep hand, tools, hair, and clothing clear of stitching area.
3. Become familiar with the moving components of your machine. Keep fingers away from areas that could pinch or cut.
4. Wear adequate safety equipment for eye and face protection. Observe your plant safety rules.
5. Practice “good housekeeping” in your work area. Keep it as clean and uncluttered as possible.
6. A well maintained machine is a safer machine. Clean and lubricate the machine at regular intervals. Check machine daily for broken or worn parts. Replace as necessary. **DO NOT** attempt to operate the machine if a part is broken.
7. Route all electrical cables away from pedestrian transportation lanes.
8. Make sure adequate safety guards and covers are in place. If you are unsure how to safely operate or maintain your Stitcher, contact your Service Representative.

 **CAUTION**

**KEEP HANDS CLEAR OF
STITCHING AREA**

 **CAUTION**

**FOR YOUR SAFETY, MAKE
SURE ALL COVERS ARE
PROPERLY IN PLACE BEFORE
OPERATING MACHINE**

Assembly, Lubrication, Installation

NOTE:

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

Before Unpacking:

Examine the outside of the crate or carton for any visible damage. If damaged DO NOT UNPACK THE STITCHER. Notify the carrier who delivered the stitcher.

After Unpacking:

Examine your stitcher carefully for any damage in transit. If damaged, DO NOT INSTALL THE STITCHER. Notify your nearest representative and the carrier who delivered your stitcher.

Make certain that you get a signed copy of the Carrier Inspector's Report of the damage incurred.

Assembly

1. Clamp or bolt the M2000 head to your machine
2. Install Wire Guide Spring into wire guide bracket of M2000 Head.

Threading Wire And Adjusting Wire Straighteners (See Fig. 1)

1. Draw wire (Index A) by hand, from the coil.
2. Thread the wire through the slot (Index B) at the end of the wire guide spring, through the wire guides (Index C), between the thin and thick felt wire wipes (Index D), through the upper wire straightener (Index E), and through the lower wire straightener (Index F).

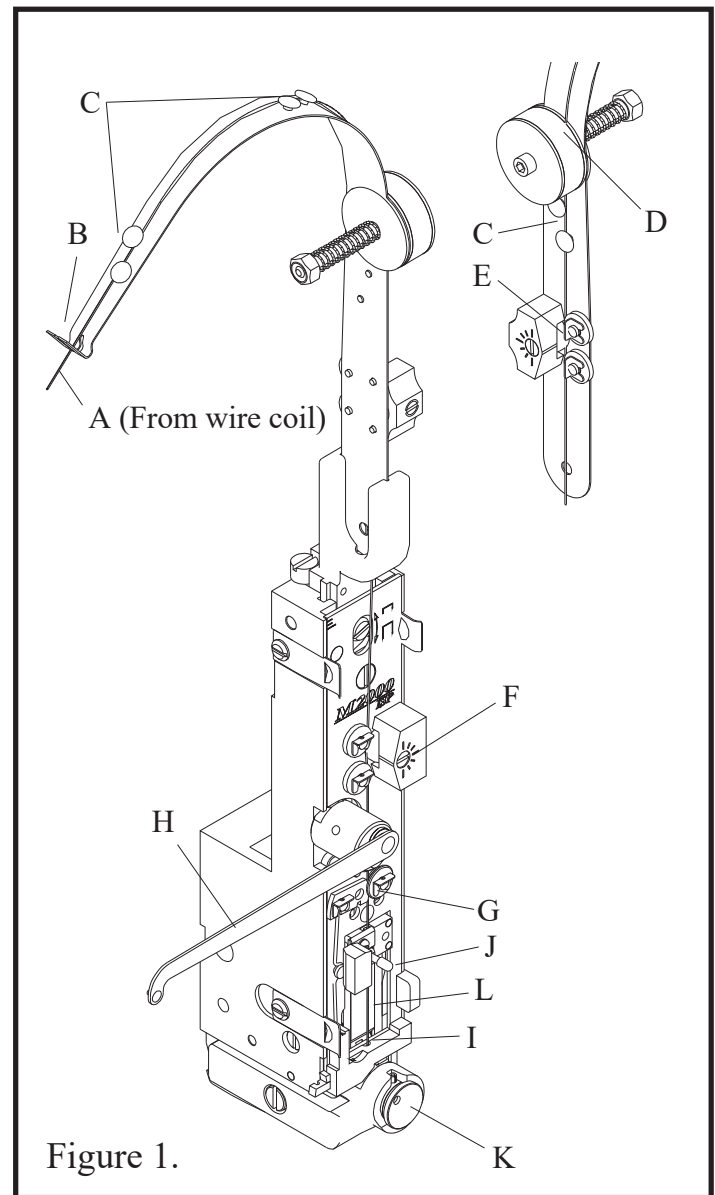


Figure 1.

3. Release the rotator operating spring (Index H) from the rotator and swing it to the left. Remove Rotator (Index K).
4. Thread the wire between the tension pawl and tension roll (Index G). Feed the wire through the wire cutter lead-in hole (Index I) in the bottom of the face plate.
5. Push grip post to left to open the grip (Index J). Insert wire and release the post so that the grip engages the wire for feeding into the rotator.
6. To check adjustment, hold open grip (Index J) and pull about 1 1/2 feet of wire from below face plate. Cycle machine once by hand to cut wire. Cycle machine again by hand to observe wire straightness. The wire (Index L) should point straight down, prior to being cut.

7. Adjust the upper wire straightener, beginning at position shown, (Index E) so that the wire points straight down. Adjust the lower wire straightener, beginning at the 3:00 o'clock position, (Index F) so that the wire (Index L) feeds straight down.
8. Replace the rotator and rotator operating spring.

NOTE:

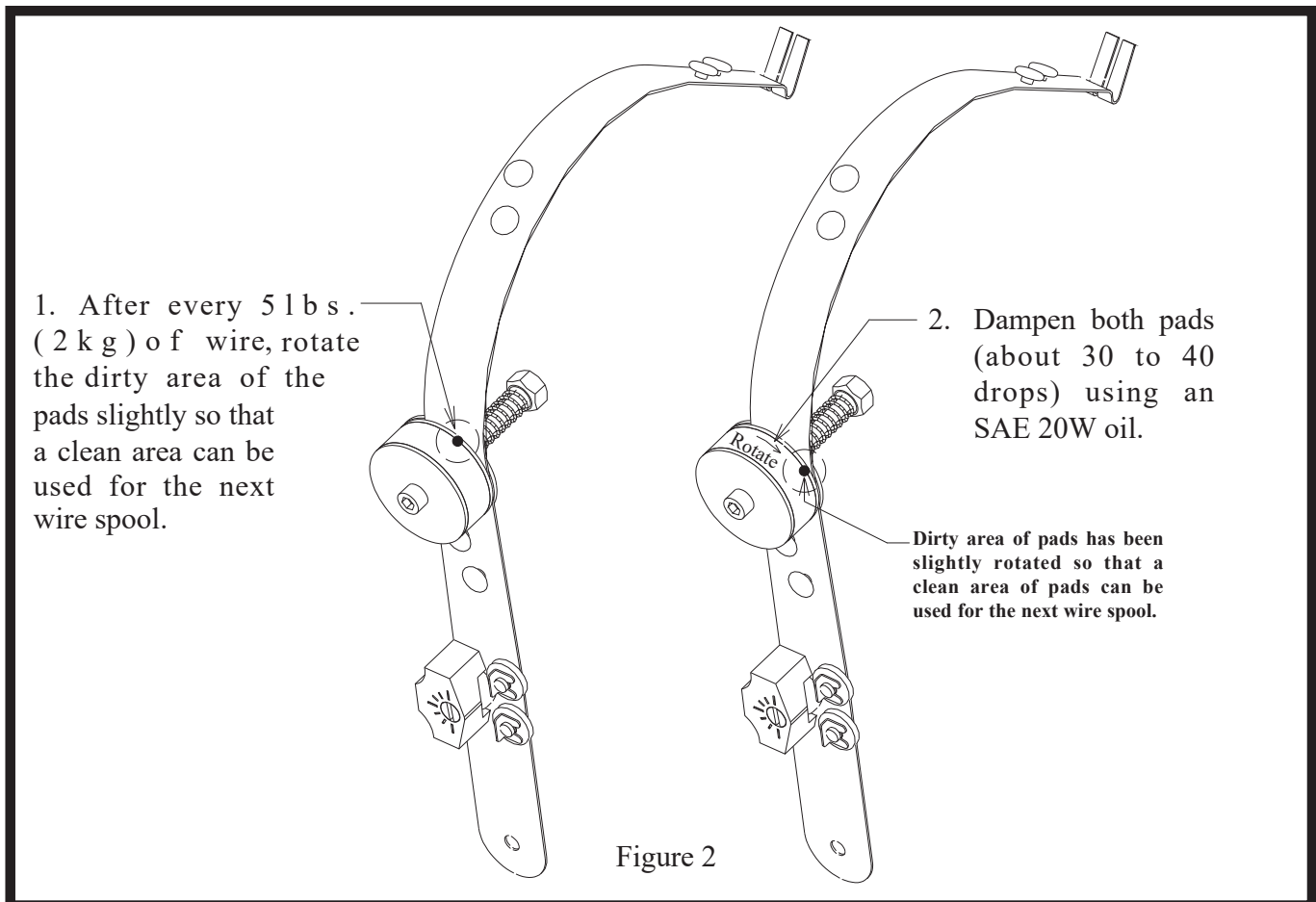
When changing coils or wire sizes, check straighteners to insure proper wire feed.

CAUTION

Do not operate stitcher until operating instructions have been read and understood-do not operate stitcher at anytime without work under the head.

**Felt Wipe Pads
Lubrication
And Maintenance:
(Fig. 2)**

IMPORTANT! In order for the stitchers to operate properly, the felt wire wipes **MUST** be rotated and dampened with SAE 20W oil before each new spool of wire (50,000 to 70,000 stitches). Replace felt pads when they become so dirty that they cannot be rotated to a clean spot.



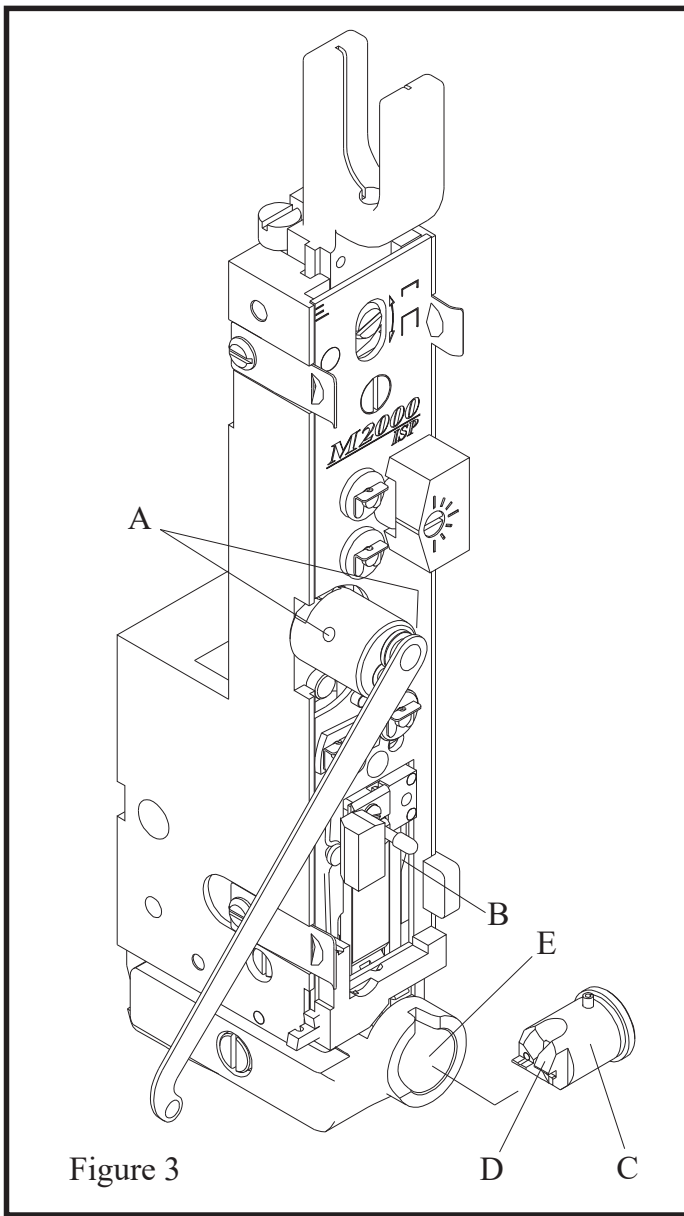


Figure 3

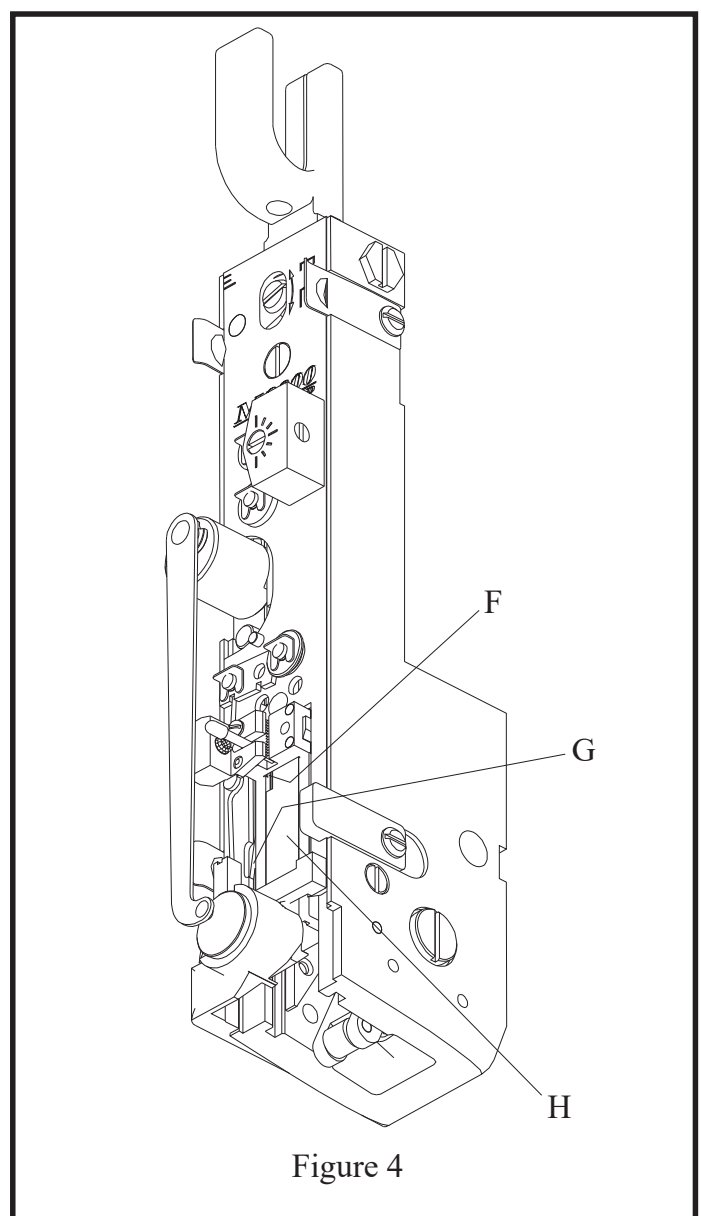


Figure 4

Stitching Head Lubrication: (Figures 3 & 4)

Typically, the 1/2 inch crown stitcher will run for 1,000,000 cycles without additional lubrication. However, the following procedure used after each spool of wire will assure optimum life and performance. Use **ISP** lubricant #CA9641.

- A. Inject lube into hole, or remove and lube shafts.
- B. Wipe area clean and inject a small amount of lube into cam area.
- C. Remove rotator, wipe rotator clean and lube rotator body.
- D. Apply lube to rotator ramp.

- E. Wipe clean inside of rotator holder.
- F. Inject a small amount of lube into cam area of driver bar.
- G. Inject lube into cutter operating slide.
- H. Wipe driver clean, and apply a light coating of lube.

After prolonged use (or storage) accumulations of wire dust, dirt, or other contaminants can mix with the stitcher lubricant. This will reduce the lubricant's effectiveness. The following procedure is recommended every 1,000,000 cycles.

1. Disassemble the head and clean all parts.
(See Maintenance Section p. 24-25.)
2. Lightly lube all sliding surfaces using **ISP** lubricant #CA9641.
3. Double check lube points A through H.

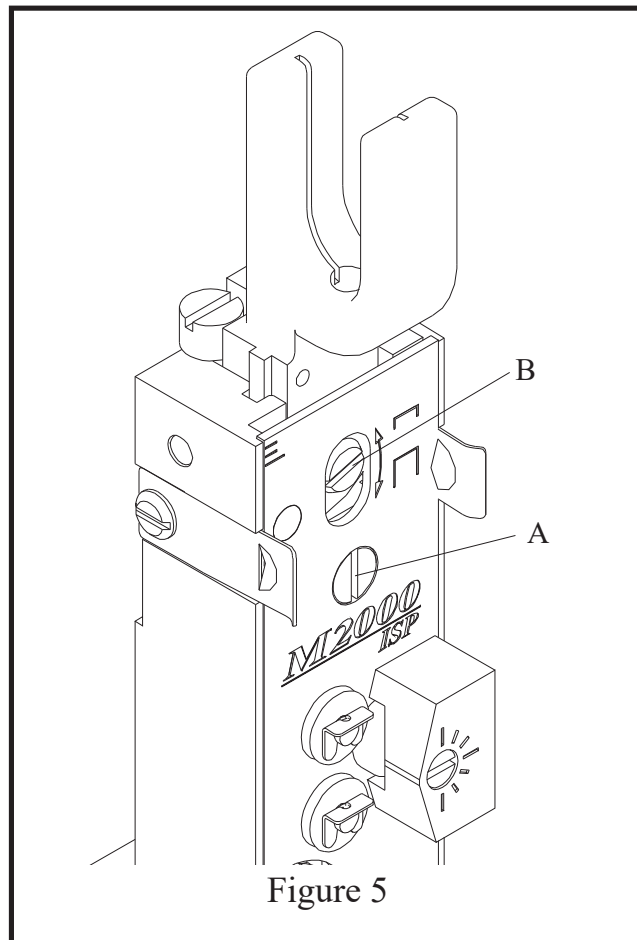
Operation

Changing Work Thickness

Adjusting the Wire Draw (Figure 5)

The overall length of the stitch is controlled by the amount of wire that is drawn from the spool after each stroke of the StitchMaster. To change the overall length of the stitch, loosen the Face Plate Adjusting Lock Screw (Index A) on the front of the Head. Turn the Grip Release Lever (Index B) clockwise to raise the Face Plate which draws more wire - making the overall length of the stitch longer. If the overall length is too long, turn the Grip Release Lever counter-clockwise to lower the Face Plate and decrease the draw of wire pulled from the Wire Spool. Once the correct length of wire has been achieved, tighten the Face Plate Adjusting Lock Screw. As a rough gauge, the distance the Face Plate is above the Bonnet (CT2604) should be equal to the work thickness.

Note: If the Face Plate is adjusted too high (turning the Face Plate Adjustment Knob too far clockwise) the Grip (CA9015D) will lock in an open position and draw no more wire. The StitchMaster has a capacity of 1/4" and will allow no more than that amount of wire to be drawn from the spool.



Maintenance Troubleshooting Adjustments

General

The M2000 Stitcher is a friction-type head which depends on smooth sliding friction and proper timing to function correctly. Preventative maintenance will go far to insure trouble-free operation. Avoid production down time by keeping your stitcher lubricated and in top working condition at all times.

Recommended Spare Parts

Like any equipment that has moving parts, certain parts wear more than others and require replacement. The following listing includes all the parts required for minimum maintenance and good operation.

<u>PART NAME</u>	<u>QTY.</u>
Wire Cutters (CA9048)	2
Grip (CA9015D)	1
Grip Spring (CA168)	1
Tension Roll Clip (CA9024)	2
Rotator (CAA9038E)	1
Clincher Points (CA9083A)	2

⚠ CAUTION

MAKE ALL ADJUSTMENTS WITH THE POWER OFF AND THE STITCHING HEAD IN NEUTRAL POSITION! (Fig. 6)

In neutral position, the wire grip assembly (Index A) is stopped at the top of the slot in the face plate.

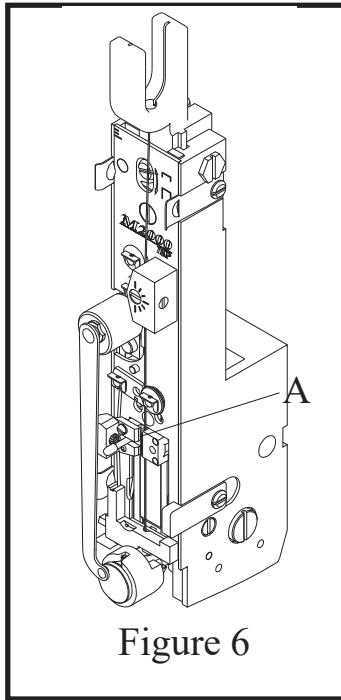


Figure 6

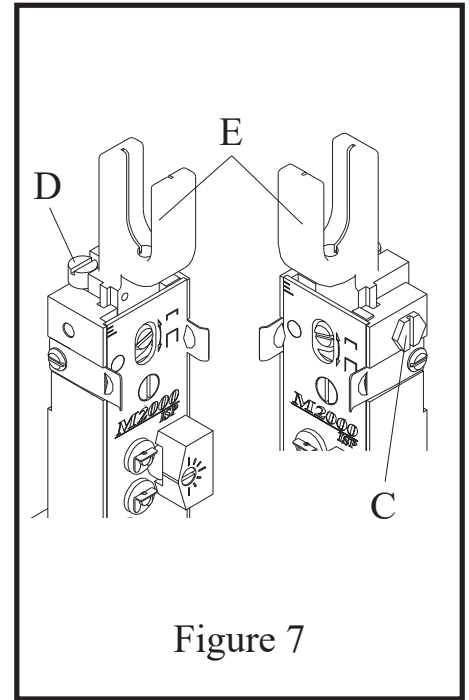


Figure 7

Stitching Adjustments

Best stitching performance will be assured if all adjustments are made so that you get the following results:

1. Good Cut-Off
2. Uniform Wire Draw
3. Equal Leg Length
4. Proper Clincher Alignment
5. Sufficient Compression

To Equalize Both Legs of Stitch (Fig. 7)




1. Loosen the wire guide locking bolt (Index C).
2. Turn adjusting screw (Index D) clockwise to shorten left leg of stitch; counter clockwise to lengthen left leg.
3. Tap bracket (Index E) down before tightening screw (Index C).

M2000 Head Troubleshooting

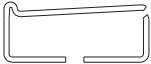



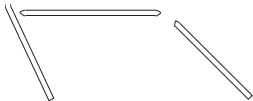

HERE'S HOW A PERFECT STITCH LOOKS



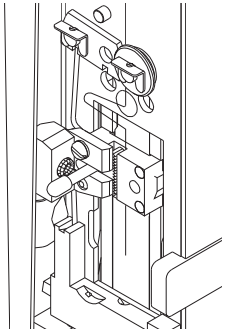
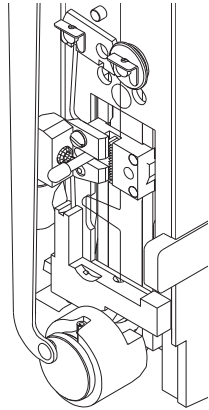
Should stitches appear in any form other than illustrated, one or more kinds of mechanical trouble may have caused the malformation. The possible causes and remedies are given for each kind of mechanical trouble and are listed under each section. The remedies are indexed to the Adjustments Section which gives more detailed information about your stitcher, the mechanical trouble that may occur and suggested remedies. Unless you recognize the correct cause, check each possible cause given.

TROUBLE	POSSIBLE CAUSE	REMEDY
A. Defective Stitches		
<p>1. One or both legs buckled.</p>  <p>NOTE: Since buckled legs are often concealed in the work and may appear the same as a short leg, always remove two or more stitches to see which is occurring.</p>  <p>2. Wrinkled crown.</p>	<ol style="list-style-type: none"> 1. Clincher is worn or improperly aligned. 2. Insufficient compression. 3. Unequal leg length 4. Burred stitch leg. 5. Incorrect wire size. 6. Worn bender bar. 	<p>"B,C" Page 16,17</p> <p>"A" Page 16</p> <p>See "To Equalize Both Legs of Stitch" Page 12</p> <p>"I" Page 20</p> <p>"K" Page 21</p> <p>"D" Page 17</p>
<p>3. Length of one leg varies</p> 	<ol style="list-style-type: none"> 1. Leg Lengths not adjusted properly 2. Gripper is worn or dirty 3. Grip release slide is worn 4. Broken wire guide spring (Figs 20 page 22) 5. Excessive tension on wire straightener 6. Worn Driver bar 7. Worn Tension Pawl or weak tension pawl spring 8. Weak or broken grip spring 	<p>See "To Equalize Both Legs of Stitch" Page 12</p> <p>"H" Page 19</p> <p>"H" Page 19</p> <p>Replace</p> <p>"M" Page 22</p> <p>"F" Page 18</p> <p>"O" Page 23</p> <p>"H" Page 19</p>

M2000 Head Troubleshooting

TROUBLE	POSSIBLE CAUSE	REMEDY
4. Corner of crown distorted or fractured 	1. Excessive compression 2. Broken driver end 3. Worn bender bar 4. Clincher improperly aligned or worn 5. Incorrect wire size	"A" Page 16 "G" Page 19 "D" Page 17 "B,C" Page 16,17 "K" Page 21
5. Stitch crown not flat and legs not bent into work 	1. Insufficient compression	"A" Page 16
6. One or both legs turn out 	1. Clincher improperly aligned 2. Dull cutters	"C" Page 17 "I" Page 20
7. Flat piece of wire 	1. Rotator is dirty 2. Improperly adjusted lower wire straightener 3. Broken or worn rotator 4. Improperly aligned rotator	"L" Page 21 "M" Page 22 "L" Page 21 "L" page 21
8. Stitches come out in pieces 	1. Improperly aligned rotator 2. Weak rotator operating spring 3. Improperly adjusted upper wire straightener 4. Incorrect wire size 5. Wire jammed in bender bar grooves	"L" Page 21 "L" Page 21 "M" Page 22 "K" Page 21 "D" Page 17
9. Both sticher legs are either too long or too short 	Face plate not adjusted properly	See "Changing Work Thickness" Page 11

M2000 Head Troubleshooting

TROUBLE	POSSIBLE CAUSE	REMEDY
B. WIRE BUCKLES		
<p>1. Wire buckles above the grip and below the tension pawl</p> 	<ol style="list-style-type: none"> 1. Worn driver bar 2. Worn bender bar latch 3. Worn or broken bender bar friction plug and/or spring 	<p>"F" Page 18</p> <p>"G" Page 19</p> <p>"E" Page 18</p>
<p>2. Wire Buckles above the wire cutters and below the grip</p> 	<ol style="list-style-type: none"> 1. Improperly aligned rotator 2. Worn or broken wire cutters 3. Burrs on rotator 4. Improperly adjusted lower wire straightener 5. Worn or broken wire cutter operating slide 6. Wire cutter slot in face plate worn 	<p>"L" Page 21</p> <p>"I" Page 20</p> <p>"L" Page 21</p> <p>"M" Page 22</p> <p>"J" Page 21</p> <p>"I" Page 20</p>
C. GRIP		
<p>1. Grip does not close</p>	<ol style="list-style-type: none"> 1. Face plate is too high 	<p>See "Changing Work Thickness" Page 11.</p>

CAUTION

**Turn Power OFF Before
making Any Adjustments**

A. Insufficient or Excessive Compression

Proper compression of work between the clincher and the bender bars is necessary so that the stitch penetrates the work material and clinches correctly. To test for compression, drive several stitches into sample work material. With proper compression, stitches hold the work together firmly and the clinched legs do not overlap. In the following instances, either one or all of the conditions may exist: with insufficient compression, stitch legs overlap, crown of the stitch is fractured, and the work mutilated. The method for obtaining proper wire draw and compression is detailed in the Operation Section on Page 11 under the heading, "Changing Work Thickness".

B. Clincher (Fig. 8)

The purpose of the clincher is to turn the legs of the stitch back after they have penetrated the work material. There are two types of clinchers:

1. Solid (stationary) Type-makes a loop clinch.
2. Activated (moving) Type-makes a flat clinch.

With the Solid (stationary) Type clincher, the legs of the stitch must strike the clincher at the same time and with equal spacing from the outside edges of the grooves. The grooves in the clincher should be smooth. Any interference (particularly worn or pitted grooves), which change the original radii, will cause the stitch legs to buckle and/or the corners of the crown to fracture.

With the Activated (moving) Type clincher, the stitch legs must enter the clincher at the same time

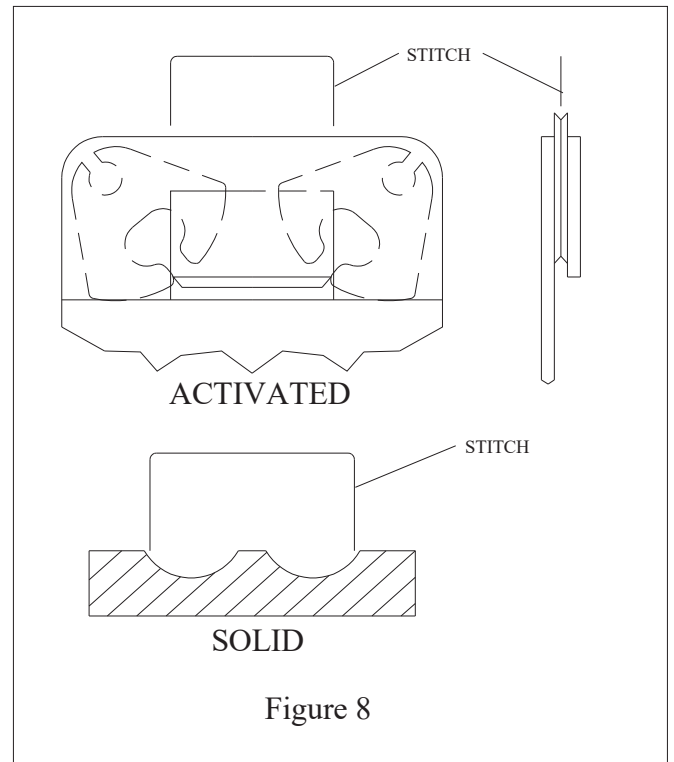


Figure 8

and with equal spacing from each side. When the stitch legs have penetrated the work material, the moving clinchers are raised to bend the legs towards each other and up flat against the work. The clincher points must bend both legs of the stitch against the work with the same force. Clincher points must always move freely and not bind. Dirt, wire chips, etc. will cause the points to bind.

The clincher points are in a retracted position in the clincher box until the stitch legs penetrate the work material. After the legs penetrate, the clincher points move upward to give a neat, flat clinch against the bottom surface of the work material. If the clincher points remain in the up position, the legs of the next stitch cannot penetrate the work material, causing the stitch legs to buckle and/or the corners of the crown to fracture. Examine the clincher points, clincher slide for possible binding. Clean and oil.

If clincher points rise to high, they fracture the stitch legs and/or mar the work. If the points do not rise high enough, the legs will not clinch flat. Adjust the height of the clincher points. For most work the clincher points should rise to be level with the top of the clincher housing.

Inject lube into cutter operating slide.

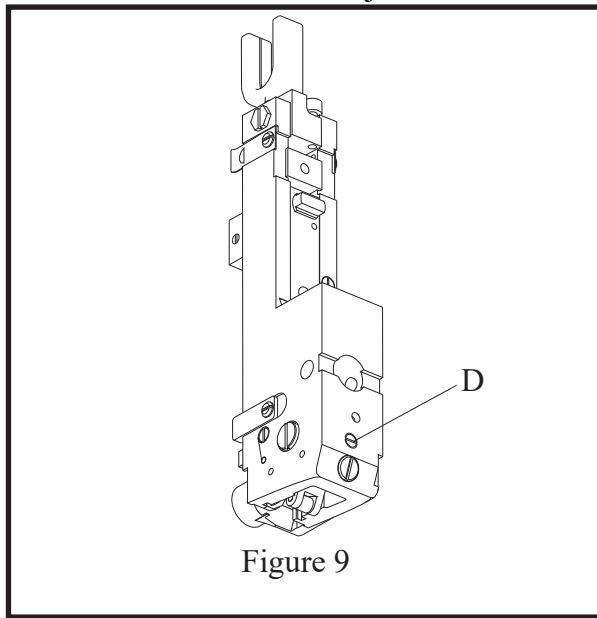


Figure 9

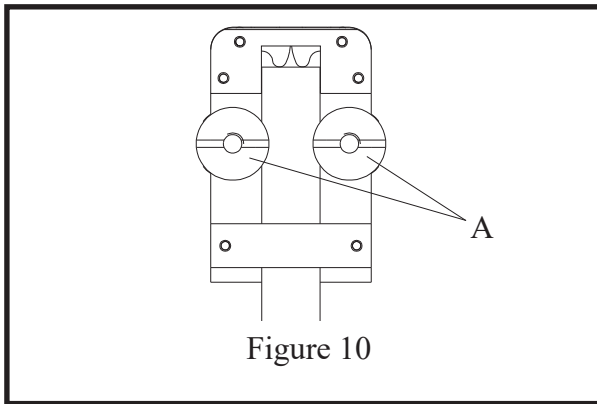


Figure 10

C. Head/Clincher Alignment (Fig. 9, 10)

To test alignment: Drive several stitches into a section of material identical to that which is to be stitched. The clinched legs should be identical and aligned with each other. If the legs are not in alignment make one of the following adjustments:

1. To adjust for front-to-rear alignment: (Fig. 9)
 - a. Turn power off. Cycle the stitcher by hand until legs of the stitch appear just below the bender bar to determine if the head should be moved to the front or rear.
 - b. Remove stitcher from machine.
 - c. Turn the head aligning screw (Index D) clockwise to move the head backward; counterclockwise to move the head forward.
 - d. Install stitcher head on machine.

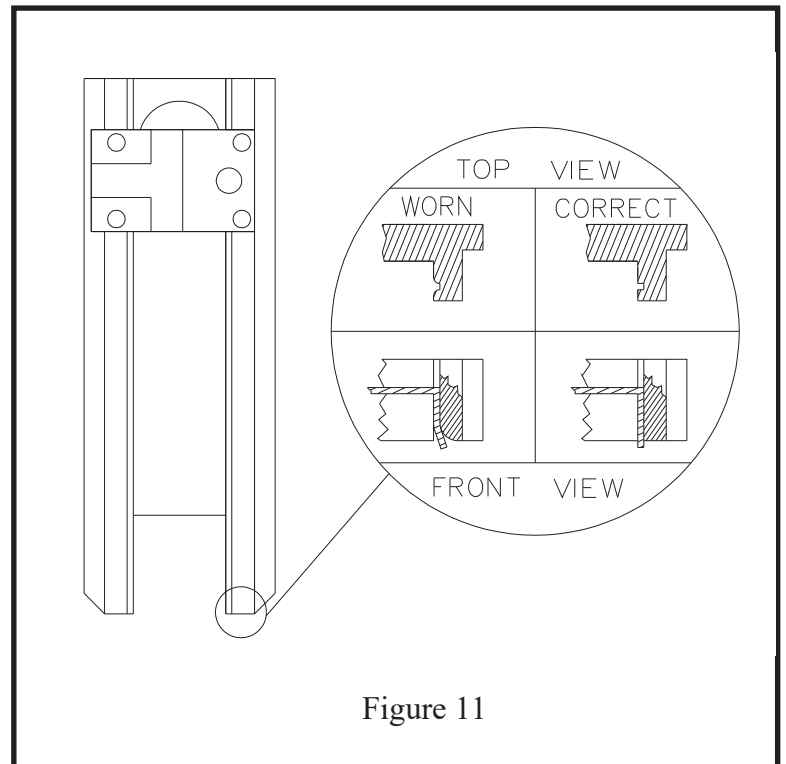


Figure 11

2. To adjust for side-to-side alignment: (Fig. 10)
 - a. Turn power off. Cycle the stitcher by hand until legs of the stitch appear just below the bender bar to determine how far the head or clincher should be moved to the side.
 - b. Loosen clincher plate binder nuts (Index A).
 - c. Move clincher to left or right as required.
 - d. Tighten binder nuts.

D. Bender Bar (Fig. 11)

The bender bar bends the wire over the rotator and forms it into an unclinched stitch. The legs of the stitch are guided towards the work material by the bender bar grooves. The legs of the unclinched stitch should be perpendicular to the crown. When the bender bar grooves become worn, the legs tend to flare out (Fig. 11) as they emerge from the grooves. This causes the legs to strike the clincher improperly. As a result, one or both legs will crumple and a broken driver bar or a broken bender bar can result. If the lower end of the bender bar grooves become chipped, it will not support the wire and may cause the stitch to break at the crown. Replace the bender bar assembly (See "G" page 19 or Fig. 12). Other bender bar functions are related to wire cutting ("I" page 20), and driving ("F" page 18).

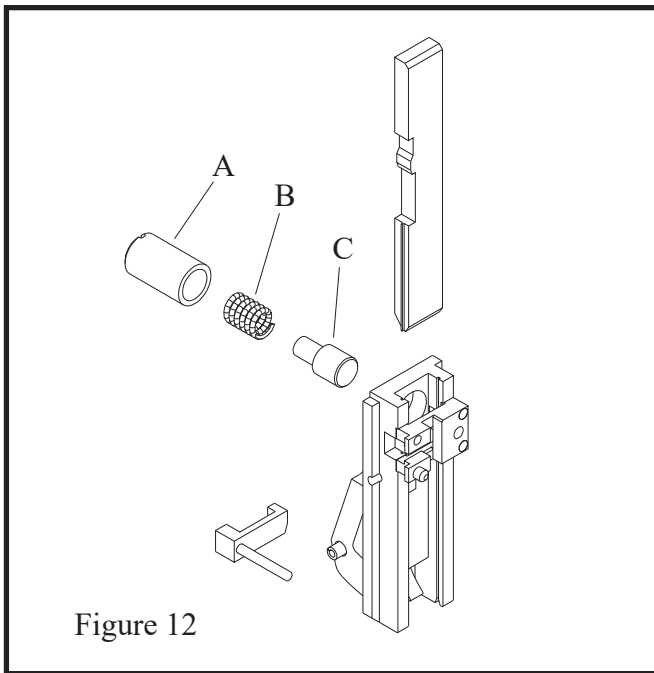


Figure 12

E. Bender Bar Friction Plug And/Or Spring (Fig.12)

Two parts furnish pressure to coordinate movement of driver bar and bender bar. If pressure is insufficient, proper timing is not maintained for the action of the grip. As a result, wire feeds backwards. Replace the plug and/or spring.

To replace bender bar friction plug and/or bender bar friction spring:

1. Remove bender bar assembly by following steps 1 through 18 of "Dismantling M2000 Stitching Head", Pages 24 and 25.
2. Remove bender bar friction bushing (Index A). Bender bar friction plug (Index C) and spring (Index B) will be released forward from bender bar assembly.
3. Replace plug and/or spring and reassemble.

F. Driver Bar (Fig. 13)

The driver bar (Index A) has several functions:

1. It imparts the downward thrust from the driving slide assembly (Index B) to the bender bar assembly (Index C).
2. It returns these parts to the neutral position on the upstroke.

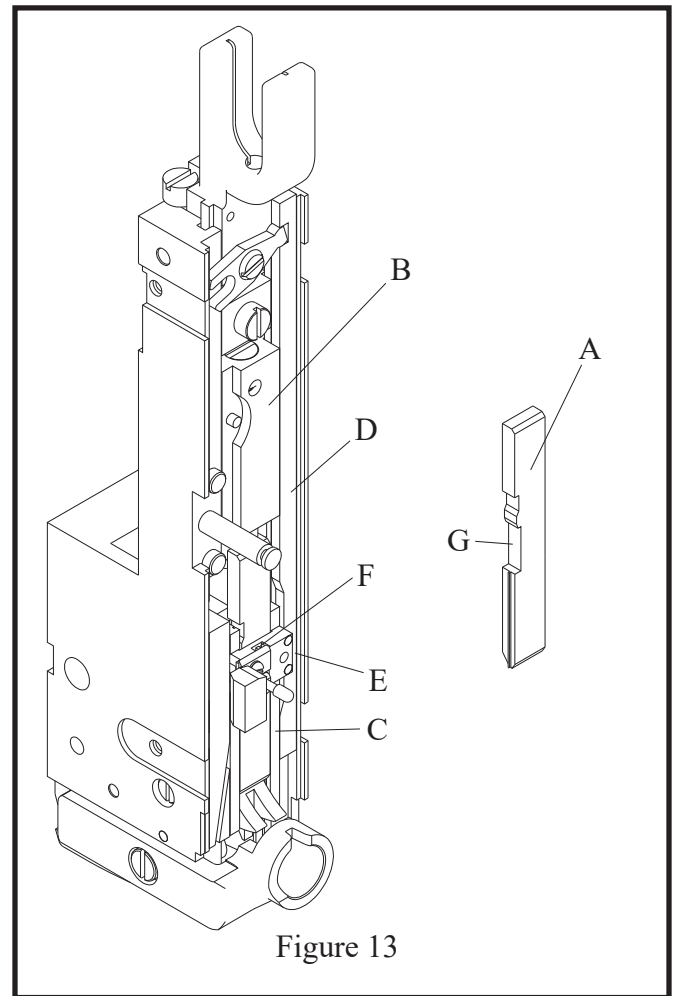


Figure 13

3. In conjunction with the grip release slide (Index D), it controls the movement of the bender bar latch (Index E) that opens and closes the grip (Index F).

If the notches (Index G) at the top left side of the driver bar become worn, the grip will not remain open on the upstroke. As a result the wire feeds backwards and buckles above the grip and below the tension pawl. Worn notches can also cause uneven wire draw. Replace the driver bar.

The notches shown on left side of driver bar play an important part in function of bender bar assembly therefore, corners should be free of dirt and notches not marred.

The driver bar rides within the bender bar grooves as part of the bender bar assembly. As this assembly reaches the lower contact point of the cam in the grip release slide, the bender bar latch is forced inward, releasing the wire grip and permitting the bender bar assembly to continue downward with the end of the driver riding on top of the formed

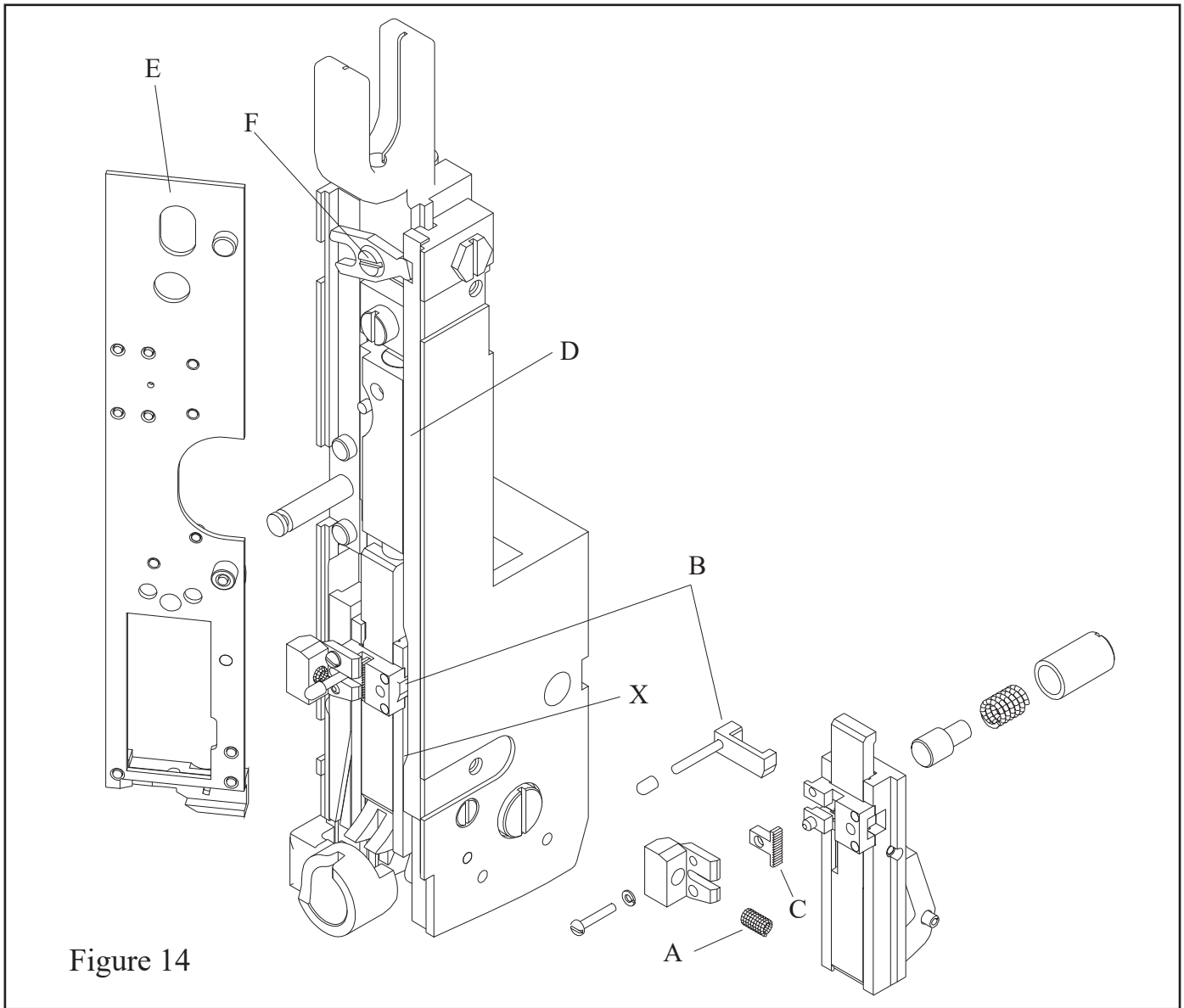


Figure 14

stitch. When the bender bar is stopped against the work material, the driver bar continues downward to exert pressure on the crown of the stitch, driving it through the work material.

If the end of the driver bar is chipped it allows the legs 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 bar 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.

G. Bender Bar Latch

The bender bar latch opens and closes the grip and is actuated by the grip release slide and driver bar. If the contact points of the latch become worn, tim-

ing of the grip is erratic and uneven wire feed results. A dirty latch will decrease pressure of the grip on the wire. This causes wire slippage. Clean or replace the latch.

H. Grip, Grip Release Slide and Face Plate: (Fig. 14)

The grip spring (Index A) exerts pressure on the benderbar latch (Index B) to close the grip (Index C) at the start of the down stroke. The grip release slide (Index D) actuates the bender bar latch at point X to open the grip after the correct amount of wire has been fed to make a stitch. The serrated teeth on the grip must be sharp or slippage will occur, producing uneven wire draw.

When the face plate (Index E) is adjusted (See "Changing Work Thickness", page 11) a pivotal action (at point F) changes the position of the grip slide. When the face plate is raised, it moves the grip release slide down. The gripper can then remain closed longer, on the down stroke, feeding more wire for the stitch. When the face plate is lowered, it moves the grip release slide up. The gripper will open sooner on the down stroke, feeding less wire for the stitch.

If the grip is weak, uneven wire draw will result. Replace the grip spring. If the contact points on the grip release slide and/or the bender bar latch are worn, wire adjustment will not remain accurate.

The face plate stops the bender bar assembly at the top of its stroke and allows the bender bar latch to close the grip. When the face plate is too high, too much of the upstroke has been used before the bender bar hits the face plate. In the remaining portion of the upstroke, the driver bar cannot continue upward enough to release the bender bar latch so that it can close the grip.

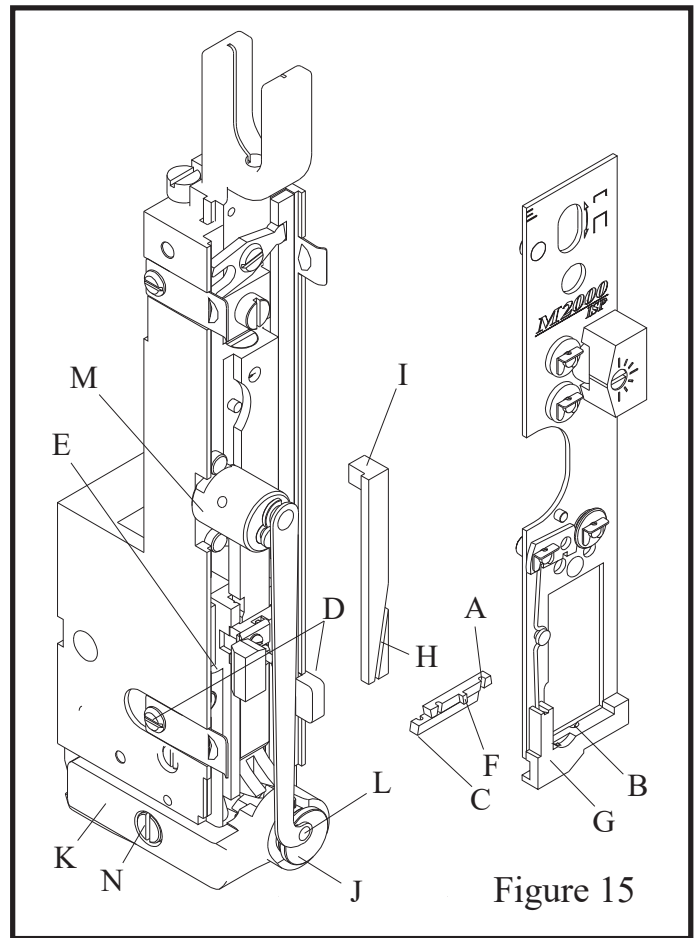


Figure 15

I. Wire Cutters: (Fig. 15)

The purpose of the wire cutters is to shear the wire cleanly. There are two wire cutters, upper and lower. The upper wire cutter (Index A) receives wire from the grip through the wire cutter lead-in hole (Index B). It also serves as the cutoff die. The lower wire cutter (Index C) is the cutting knife. If the cutter breaks, it will cover the lead-in hole. This prevents the wire from feeding into the rotator. If the cutting surfaces become worn, burrs will result on the end of the wire. This prevents the wire from feeding into the rotator. As a result, the wire buckles between the cutters and the wire grip. Reverse, interchange or replace the cutters.

To Reverse, Interchange or Replace the Wire Cutters:

1. Loosen both face plate retaining clips (Index D) at bottom of bonnet.
2. Spring the face plate out 1/8" while holding the cutter slide in position (Index E).
3. Slide the cutters out to the left.

4. Reverse, interchange or replace the cutters.

NOTE

While installing the cutters, make sure that (1): lip on upper cutter (Index F) fits into the recess behind the face plate (Index G) and (2): that the lip on the bottom cutter fits into the slot (Index H) in the wire cutter operating slide (Index I).

The wire cutter operating slide actuates the lower wire cutter. If the slide is worn or broken, the wire cutter is not actuated. Replace the operating slide. The slot in the lower part of the face plate contains the wire cutter and maintains a close fit for wire shearing. If this slot becomes oversized, the wire will not be cut off. Replace face plate. **To Replace Face Plate (See Steps 1 through 10, "J" page 21).**

NOTE: (Fig. 16)

The lug (Index C) in the faceplate must match the slot (Index D) in the grip release adjusting lever (Index E) or damage to the head may result.

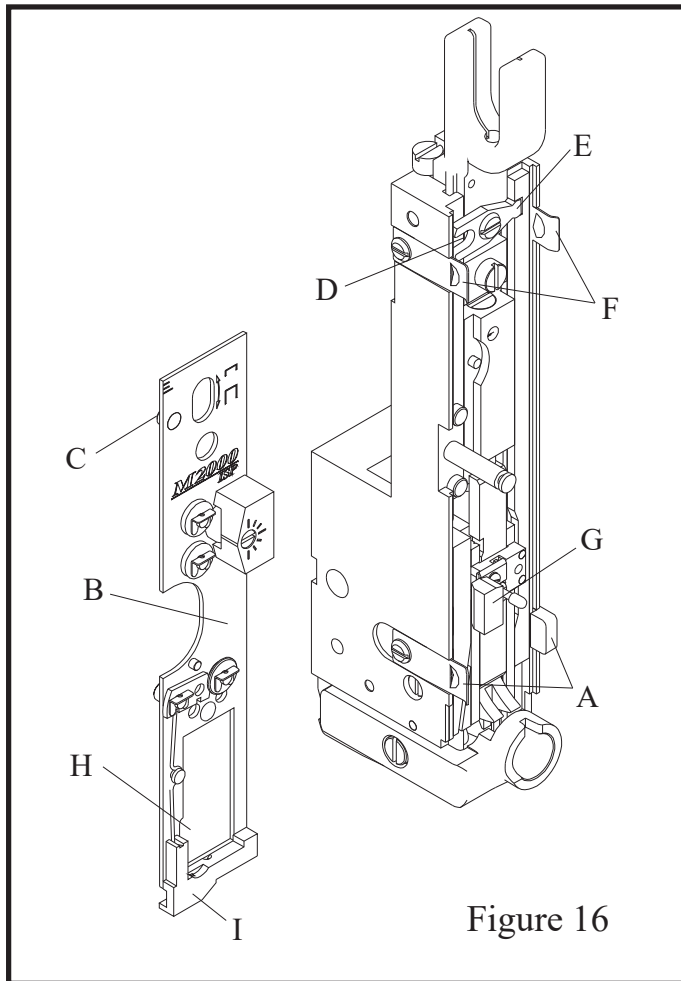


Figure 16

J. Wire Cutter Operating Slide

The wire cutter operating slide actuates the lower wire cutter which acts as the cutting knife. If the slide is worn or broken, the wire cutter is not actuated. Replace the operating slide.

To Replace The Wire Cutter Operating Slide:

1. Cut the wire at the bracket and pull the loose end out.
2. Remove the stitcher head assembly.
3. Lift end of spring (Index L, Figure 15) out of rotator.
4. Swing the spring up to disengage it and lift out.
5. Slip the rotator operating cam (Index M, Figure 15) forward and off the stud.
6. Pull the rotator forward.
7. Loosen the two face plate retaining clips (Index A, Figure 16) and rotate them downward.

8. Push two face plate retaining clips (Index F) outward while lifting face plate up, or remove retaining clips to release face plate.
9. Position grip spring housing (Index G) between tension pawl spring retainer (Index H) and cutter housing (Index I).
10. Remove face plate (Index B) by sliding face plate to the left and lifting up.
11. Remove the cutter operating slide (Index I, Figure 15).
12. Insert a new cutter operating slide.
13. Reassemble

K. Proper Wire

Depending on which M2000 head is being used the wire range may be: 25 to 30 gauge round; 24 gauge round; 20x25 or 21x25 flat. 120,000 to 159,000 psi tensile strength bookbinders wire should be used.

If the wire used is larger than the bender bar grooves were designed for, it will fracture at the stitch corners and come out in pieces. Also, serious damage to the stitcher may result. If the wire used is smaller than the bender bar grooves were designed for, the legs of the stitch do not fit snugly in the grooves and may tend to buckle when they strike the work material because they are not fully supported.

L. Rotator (Figure 15)

The rotator (Index J) (1) receives the wire from the cutoff die, (2) holds the wire while it is being cut, then (3) turns it to a horizontal position, moves it under the bender bar grooves and (4) supports the wire while it is being formed into a "U-shaped" stitch.

The wire lead-in-funnel of the rotator must be aligned with the wire as it comes through the wire cutters. If the rotator is improperly aligned, the wire hits the rotator and buckles. Adjust upper two wire straighteners until wire slips past rotator. Burrs on the rotator prevent the wire from entering the rotator. This causes wire buckling. Remove the rotator and polish the lead-in radius.

The magnets in the rotator hold the wire firmly in the rotator. If a magnet is broken or chipped the wire may fall out. To determine if the rotator has the proper holding strength, remove the rotator and insert a cut length of wire in the rotator. Hold rotator between thumb and forefinger. Attempt to jar wire loose by hitting heel of hand on top of table or against other hand. With proper magnetic holding force wire will remain in rotator. With insufficient holding force wire will fall from rotator. Replace the rotator.

The rotator holder and rotator operating spring are responsible for alignment of the wire beneath the bender bar grooves. The position of the rotator holder determines how far the rotator is pushed forward under the bender bar by the rotator operating spring (Index L, Figure 15). A weak spring will not push the rotator in far enough and with this improper alignment the bender bar will knock the wire from the rotator or will shear the wire into pieces. To secure proper alignment, check the position of the rotator holder and the tension applied by the rotator operating spring. Make any necessary adjustment of the rotator holder or replace the rotator operating spring if weak.

The wire is fed into the rotator and held for forming. If the rotator is dirty, the wire is not gripped securely enough and drops out. Remove and clean the rotator. If the edges over which the wire is formed are sharp, the corners of the stitch crown will fracture. Remove the rotator and polish the edges with a fine emery cloth.

To remove, Adjust or Replace the Rotator Holder:

1. Swing the rotator operating spring to the left.
2. Remove the rotator.
3. Loosen the rotator holder screw (Index N, Figure 15).
4. Adjust the rotator holder.
5. Reassemble.

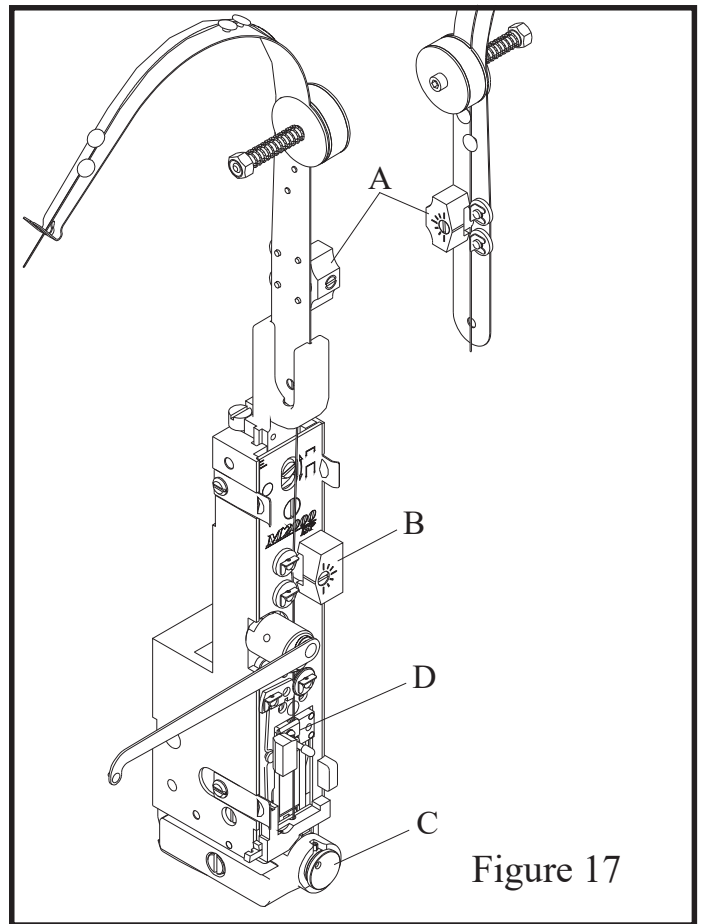


Figure 17

M. Wire Straighteners: (Figure 17)

All coils of stitching wire have a certain amount of bundle curve. The purpose of a wire straightener is to remove this curve. There is both an upper wire straightener (Index A) and a lower wire straightener (Index B) on all M2000 Model Stitchers. See "Threading Wire and Adjusting Wire Straighteners" page 4.

The upper wire straightener should feed wire parallel to the faceplate. This insures that the wire will properly enter the rotator and will be aligned with the grooves in the bender bar.

If the wire is not parallel to the face plate the wire is sheared in the rotator as the bender bar descends. Adjust the upper wire straightener.

The lower wire straightener directs the wire straight down so that it enters the rotator (Index C). If the wire is not straight enough it hits the rotator and buckles. Adjust the lower wire straightener so that

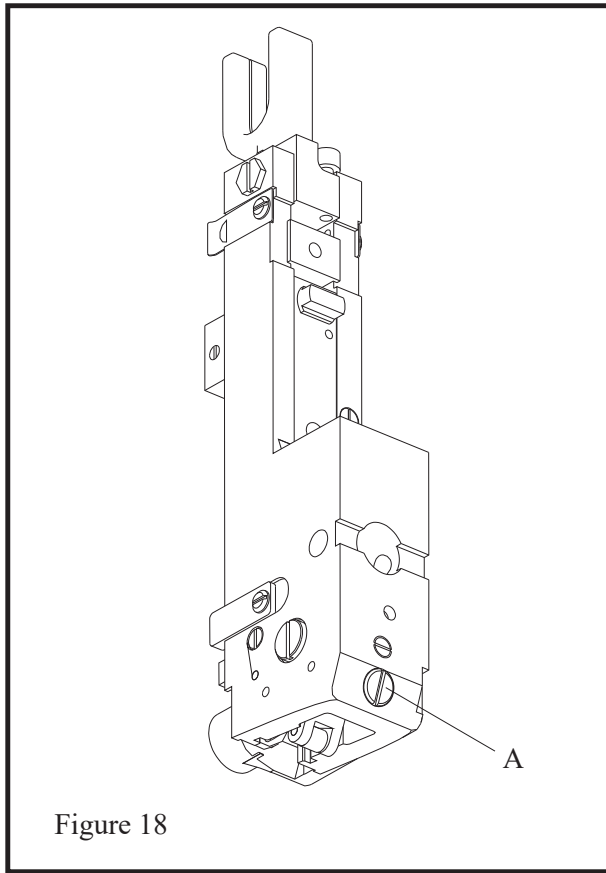


Figure 18

the wire points straight down as in fig. 17. Improper straightening of the wire can also cause the stitch legs to buckle or turn out because they strike the clincher improperly. Excessive tension on the wire straightener prevents the grip (Index D) from feeding the wire smoothly. This causes variation in leg length.

NOTE:

Check the wire straighteners when changing the coils to insure the accurate feeding of wire.

N. Supporter

The supporter furnishes the necessary support to the inside surface of the stitch so that it does not buckle as it is being driven into the work material. A lack of (or insufficient) support will often cause the stitch crown to wrinkle or the legs of the stitch to buckle. Tighten the supporter spring bushing (Index A, Fig. 18) or replace the spring.

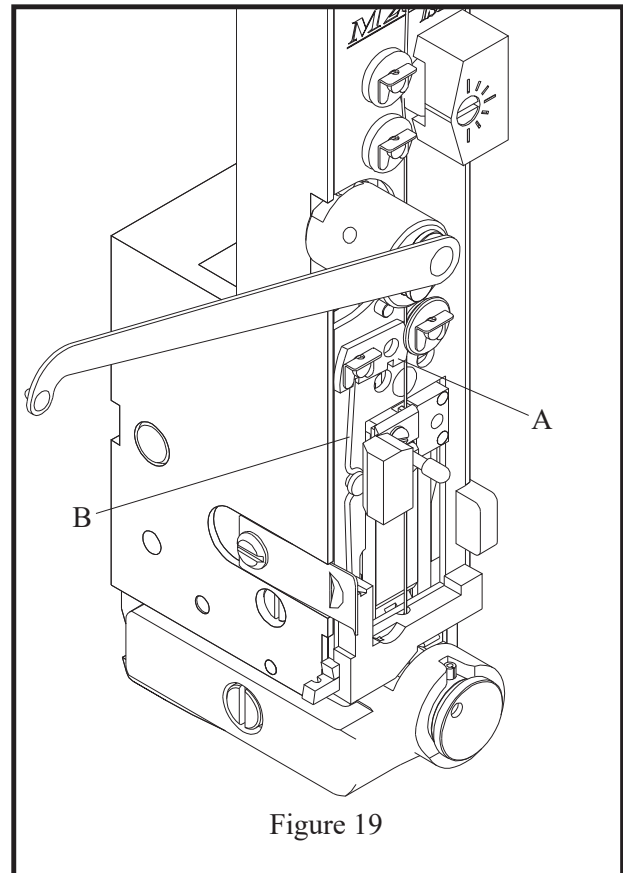


Figure 19

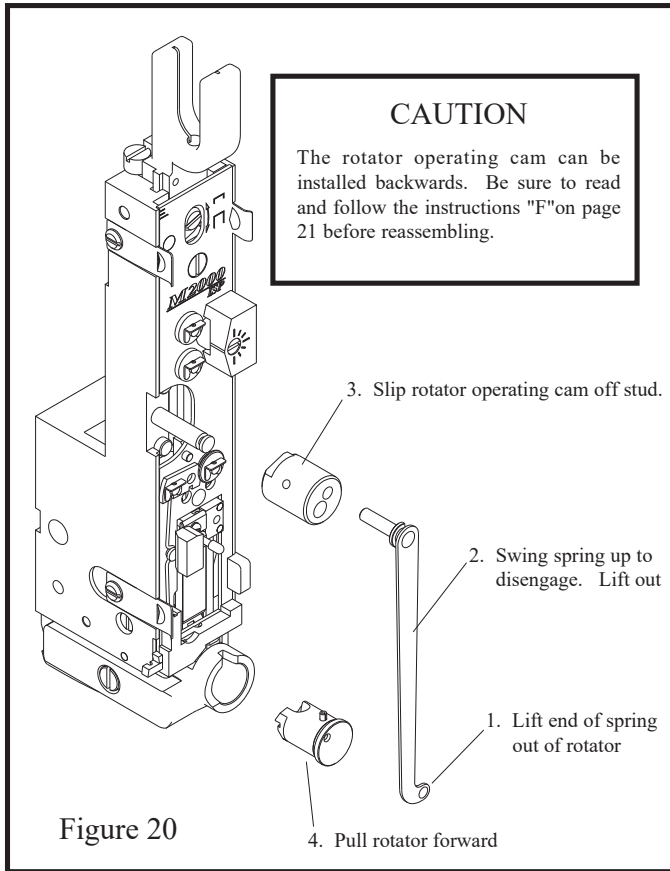
If the corners of the top surface of the supporter are too sharp, or nicked, the corners of the stitch crown will fracture. If operating properly the supporter should function as follows:

1. When the bender bar touches the work material and the legs of the stitch are about to leave the bender bar grooves the supporter should be touching the underside of the crown.
2. As the stitch is driven through the work the supporter 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.

O. Tension Pawl: (Fig. 19)

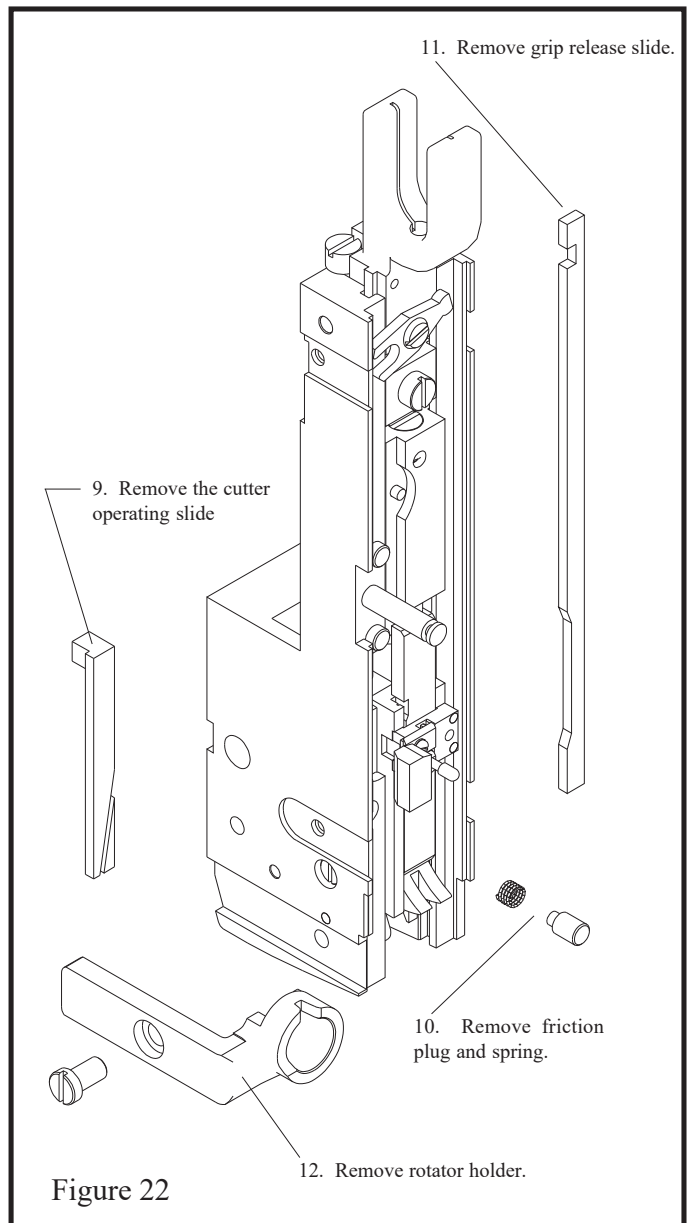
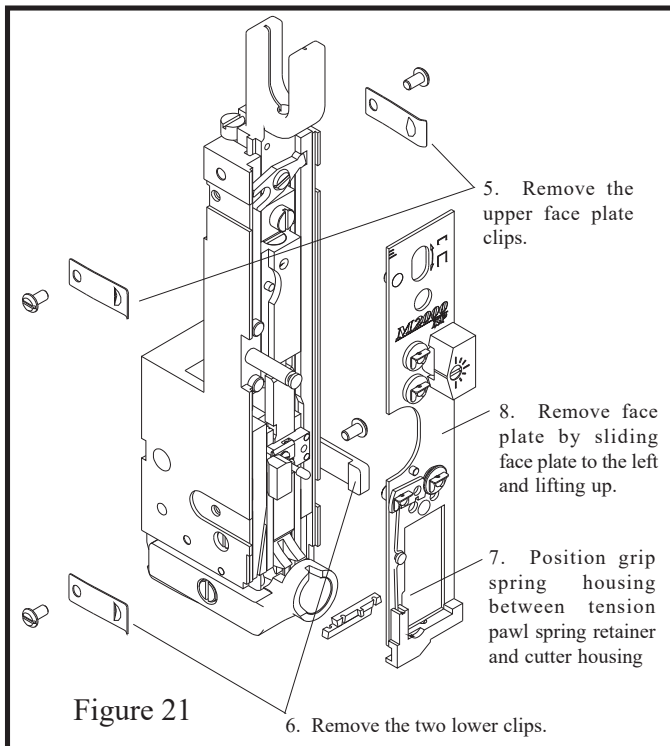
The tension pawl (Index A) and spring (Index B) apply pressure on the wire to prevent back feed. If the pawl becomes worn or the spring becomes weak, the wire feeds backwards resulting in a short wire draw. Reverse or replace the tension pawl and/or spring.

Dismantling M2000 Stitching Head

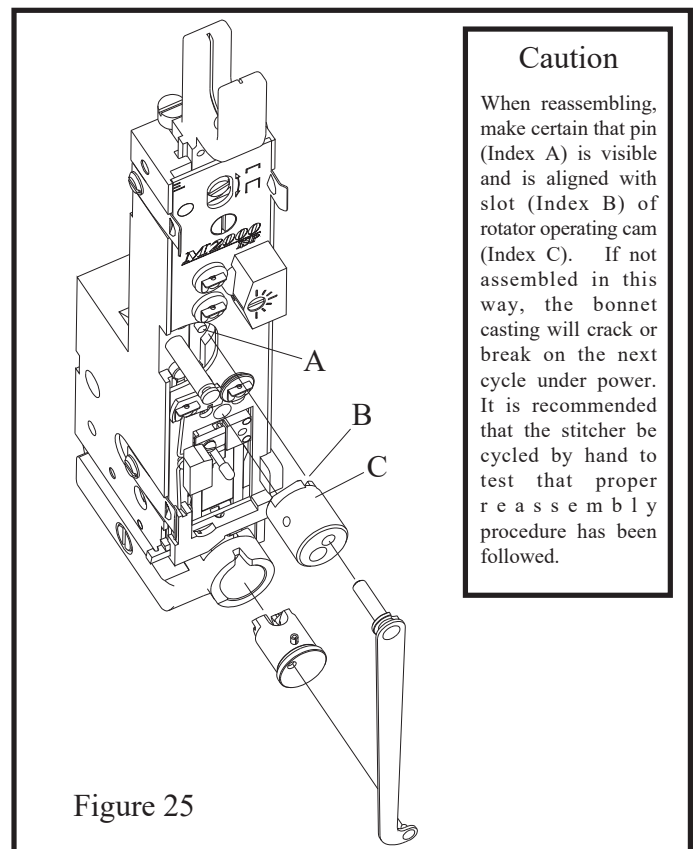
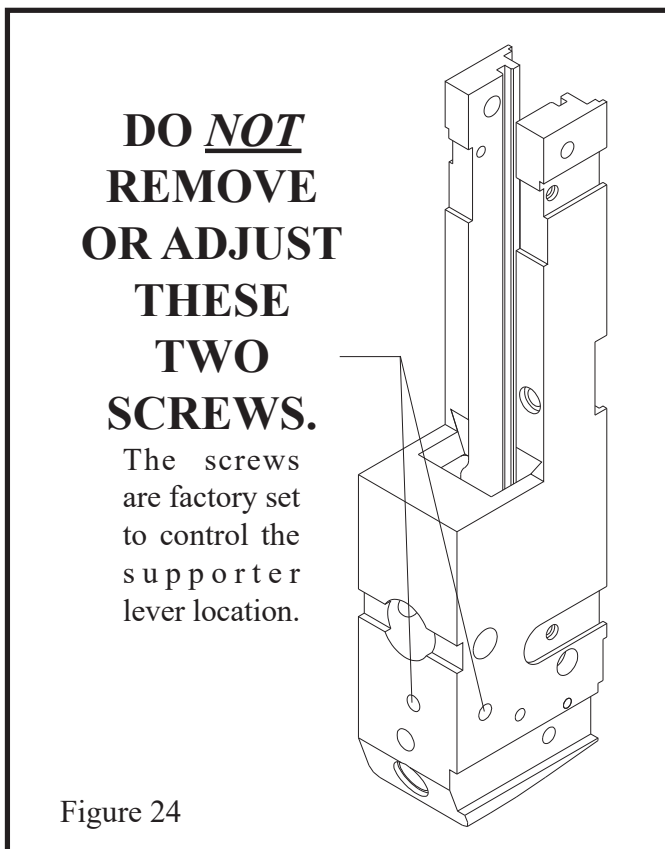
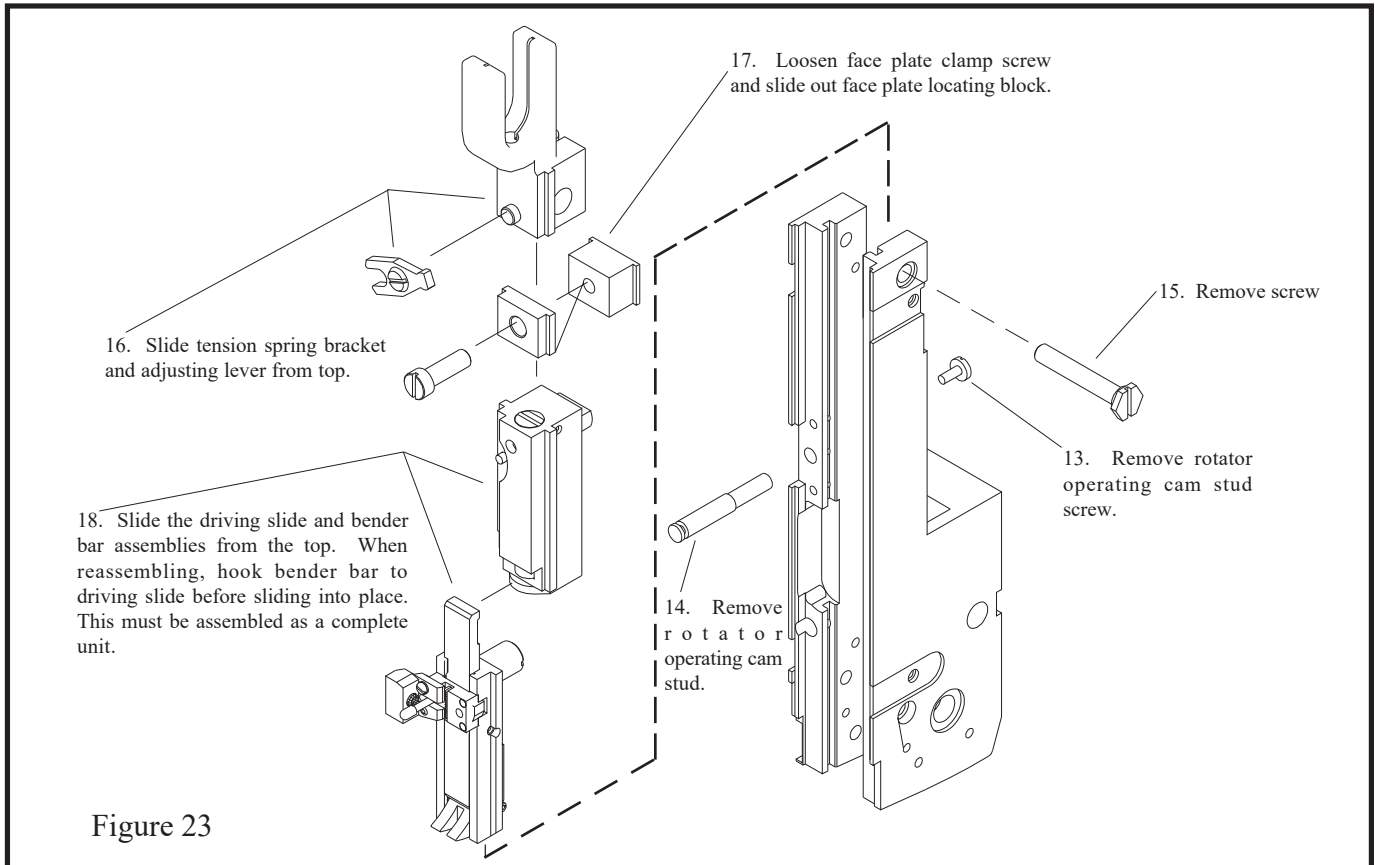


⚠ CAUTION

As a precautionary measure-When removing the head from any stitching machine make SURE that the power to the machine has been turned OFF or disconnected.



Dismantling/Reassembling M2000 Head



Parts List

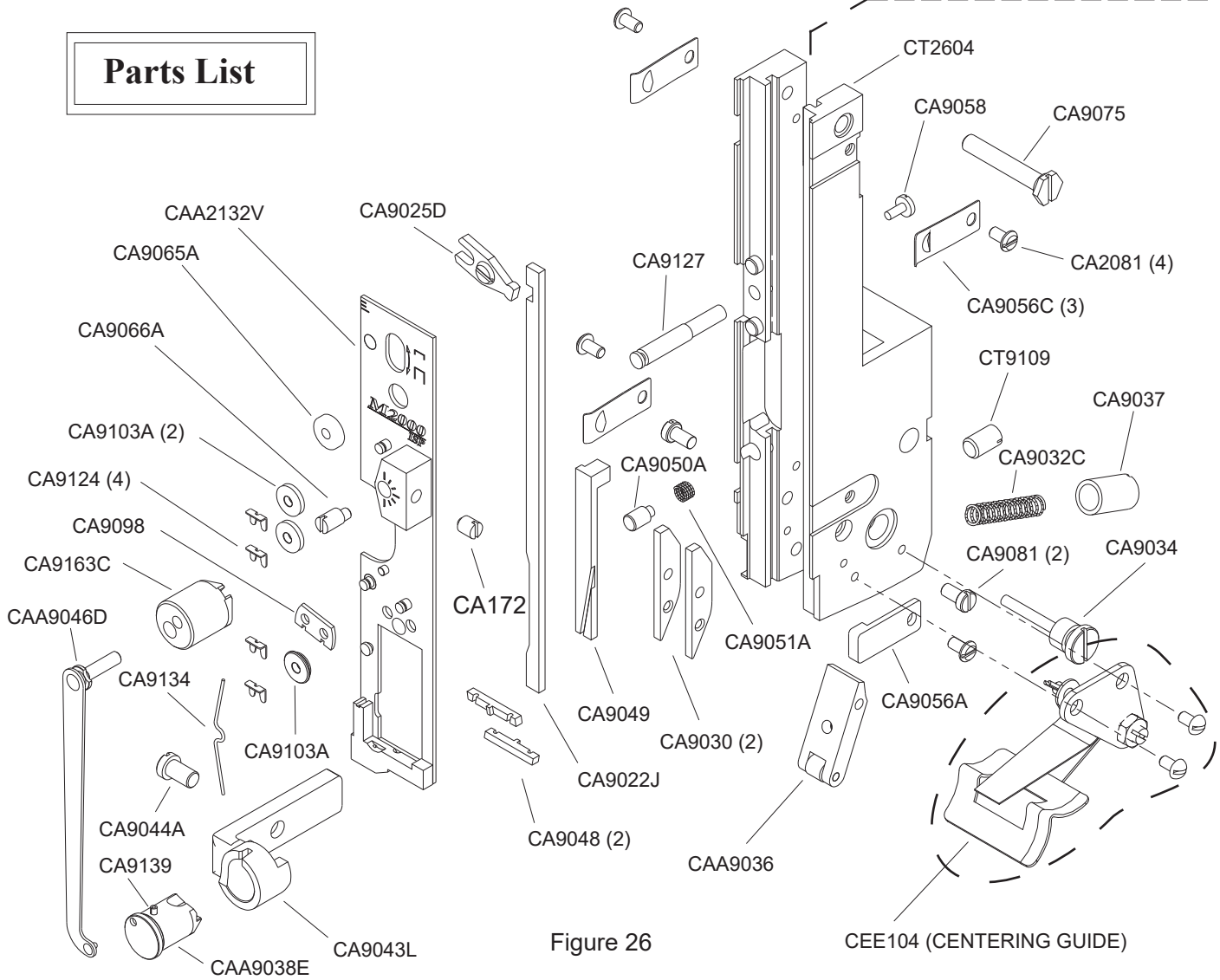
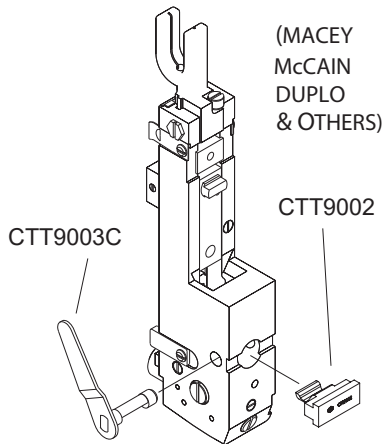


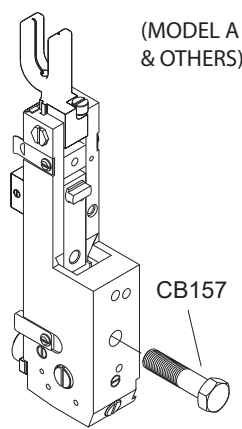
Figure 26

Bolt-On and Clamp-On Heads Figures 27

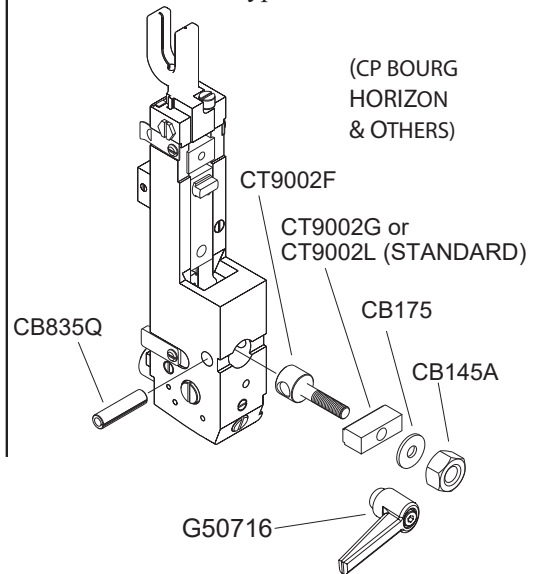
Clamp-On-Type Head

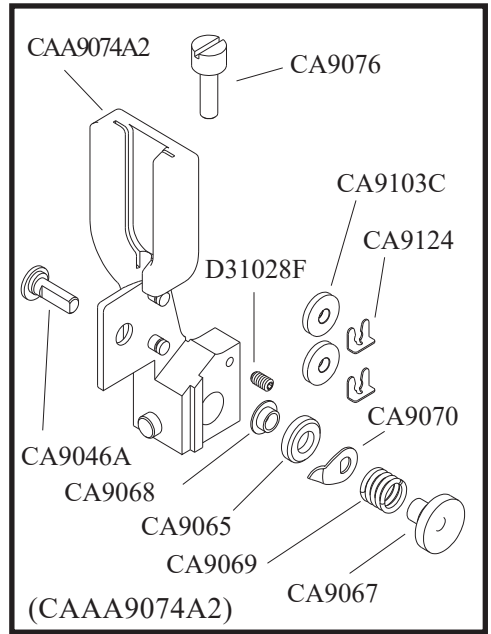
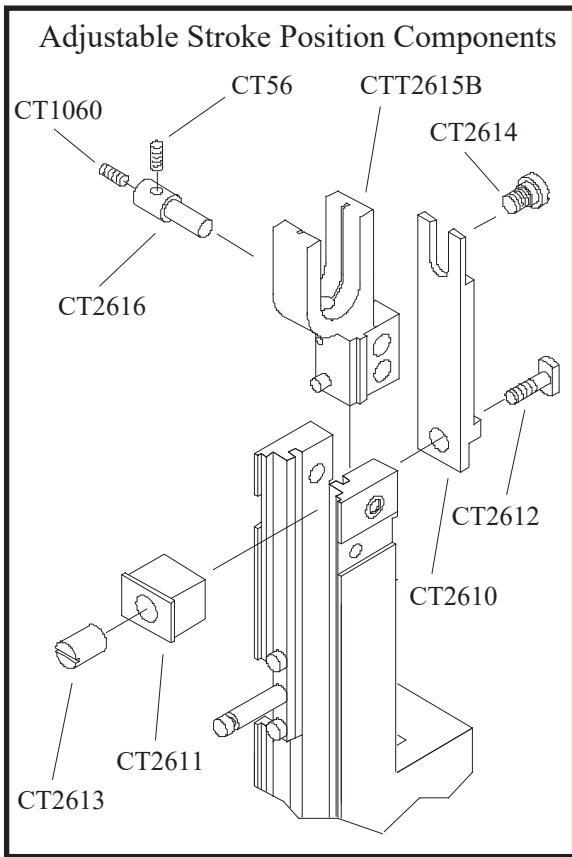
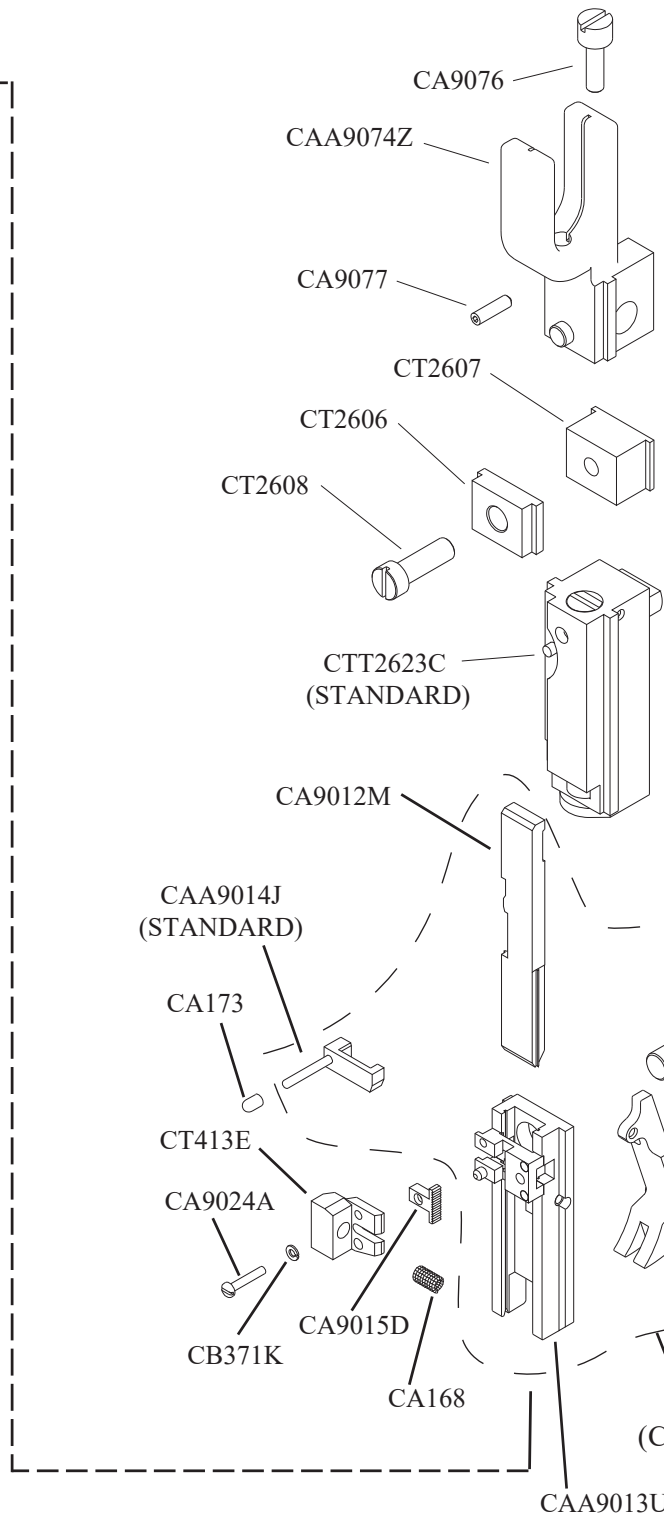


Bolt-On-Type Head

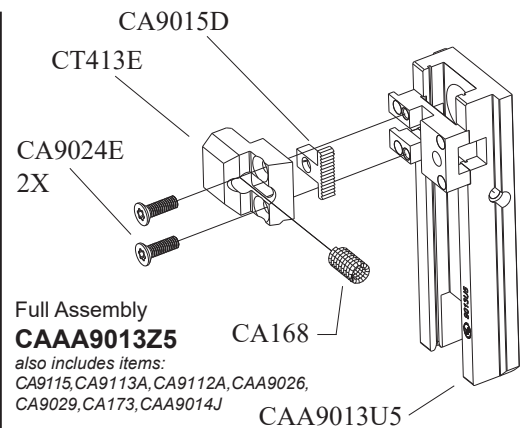
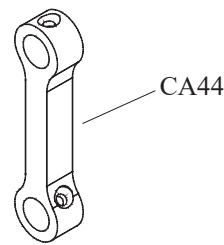
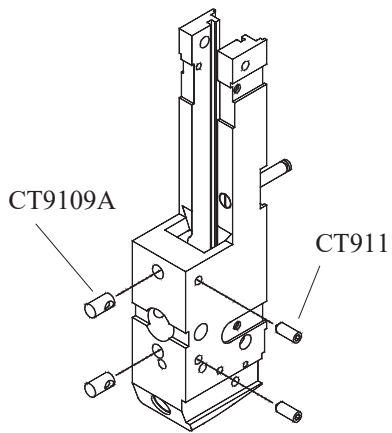


Bolt-On-Type Head





Special Components Figures 28



Assembly Parts

CA44	HEAD OPERATING LINK	(1)
CA168	GRIP SPRING	1
CA172	SCREW, SET, NYLON TIP	1
CA173	CAP	1
CA2081	FACE PLATE CLIP SCREW	4
CA9012M	DRIVER BAR, M2000	1
CA9013U	BENDER BAR ASSEMBLY	1
CA9015D	GRIP	1
CA9022J	GRIP RELEASE SLIDE - 1/2 CR.	1
CA9024A	GRIP RETAINING CLIP SCREW	1
CA9024E	GRIP HOUSING SCREW, M2.5	(2)
CA9025	GRIP RELEASE SLIDE ADJ LEVER	1
CA9029	SUPPORTER PIVOT PIN	1
CA9030	SUPPORTER GUIDE PLATE	2
CA9032C	COMPRESSION SPRING	1
CA9034	SUPPORTER SPING LEVER SCREW	1
CA9037	SUPPORTER SPRING LEVER BUSHING	1
CA9043L	ROTATOR HOLDER, M2000	1
CA9044A	SWIVEL HOLDER SCREW	1
CA9046A	SWIVEL OPERATING SPRING	1
CA9048	WIRE CUTTER	1
CA9049	WIRE CUTTER OPERATING SLIDE	1
CA9050A	FRICTION PLUG	1
CA9051A	FRICTION SPRING	1
CA9056A	FACE PLATE RETAINING CLIP	1
CA9056C	FACE PLATE RETAINING CLIP	3
CA9058	SWIVEL OPERATING LEVER SCREW	1
CA9065	WIRE STRAIGHTENER ECCENTRIC ROLL	1
CA9065A	WIRE STAIGHTENER ROLL	1
CA9066A	WIRE STAIGHTENER ECCENTRIC	1
CA9067	WIRE STRAIGHTENER ECCENTRIC NUT	1
CA9068	WIRE STRAIGHTENER ECCENTRIC BUSHING	1
CA9069	WIRE STRAIGHTENER ECCENTRIC SPRING	1
CA9070	WIRE STRAIGHTENER ECCENTRIC POINTER	1
CA9074Z	WIRE GUIDE SPRING BRACKET	1
CA9075	WIRE GUIDE SPRING BRACKET SCREW	1
CA9076	WIRE GUIDE SPRING BRACKET ADJUSTING SCREW	1
CA9077	SET SCREW	1
CA9081	SUPPORTER GUIDE PLATE SCREW	2
CA9098	TENSION PAWL	1
CA9103A	WIRE STRAIGHTENER ROLL	2
CA9103C	WIRE STRAIGHTENER ROLL	1
CA9112A	BENDER BAR FRICTION PLUG	1
CA9113A	BENDER BAR FRICTION SPRING	1
CA9115	BENDER BAR FRICTION BUSHING	1
CA9123	WIRE STRAIGHTENER ROLL STUD	2
CA9124	WIRE STRAIGHTENER ROLL CLIP	1
CA9127	SWIVEL OPERATINIG CAM STUD	1
CA9134	TENSION PAWL SPRING	1
CA9163C	SWIVEL OPERATING LEVER CAM	1
CAA2132V	FACE PLATE SUB ASSEMBLY, 1/2 CR.	1

Assembly Parts

CAA9014J	BENDER BAR LATCH ASSEMBLY	1
CAA9026	SUPPORTER ASSEMBLY 1/2" CR	1
CAA9036	SUPPORTER SPRING LEVER ASSEMBLY	1
CAA9038E	ROTATOR ASSEMBLY 1/2 CR, M2000	1
CAA9046D	ROTATOR OPERATING SPRING ASSEMBLY	1
CB145A	HEX NUT, 1/2-13	(1)
CB157	HEX CAP SCREW, 1/2-13 x 2.00	(1)
CB175	WASHER	(1)
CB371K	LOCK WASHER, NO. 2	1
CB835Q	ROLL PIN	(1)
CEE104	WORK ALIGNMENT GAUGE ASSEMBLY	(1)
CT56	CUTTER BLADE SCREW 7/16	1
CT413E	SPRING HOUSING	1
CT1060	SCREW, 8/32X5/16	1
CT2604	BONNET	1
CT2606	FACE PLATE LOCK CLAMP	1
CT2607	FACE PLATE LOCKING BLOCK	1
CT2608	FACE PLATE LOCATING SCREW	1
CT2610	FACE PLATE ADJUSTING SLIDE	1
CT2611	FACE PLATE ADJUSTING SIDE BLOCK	1
CT2612	FACE PLATE ADJUSTING SLIDE STUD	1
CT2613	FACE PLATE LOCATING BLOCK NUT	1
CT2614	FACE PLATE ADJUSTING SLIDE	1
CT2616	WIRE GUIDE SPRING BRACKET ADJUSTING SCREW	1
CT413A	HOUSING, SPRING	1
CT9002F	BONNET CLAMP STUD	(1)
CT9002G	TEE BAR	(1)
CT9002L	TEE BAR	(1)
CT9109	BONNET ALIGNING SCREW	1
CT9109A	BONNET ALIGNMENT PIN	2
CT911	CONE POINT SET SCREW, M6x16	2
CTT2615B	WIRE GUIDE SPRING ASSEMBLY	1
CTT9002	BONNET CLAMP ASSEMBLY	1
CTT9003C	BONNET CLAMP ECCENTRIC HANDLE	(1)
CTT2623C	DRIVING SLIDE ASSEMBLY, RAIL STYLE	1
D31028F	SET SCREW, 6/32 X 1/4	1
G50716	MOUNTING BLOCK HANDLE	(1)
MG10001	WIRE GUIDE SPRING BRACKET BLANK	1
MG10001A	WIRE GUIDE SPRING BRACKET ASSEMBLY	1
MG10011BA	FACE PLATE ADJUSTMENT SLIDE ASSEMBLY	1
MG10013	FACE PLATE ADJUSTMENT NUT	1

NUMBERS IN PARENTHESIS ARE OPTIONAL AND AVAILABLE.

Wire Guide Spring Assemblies And Components

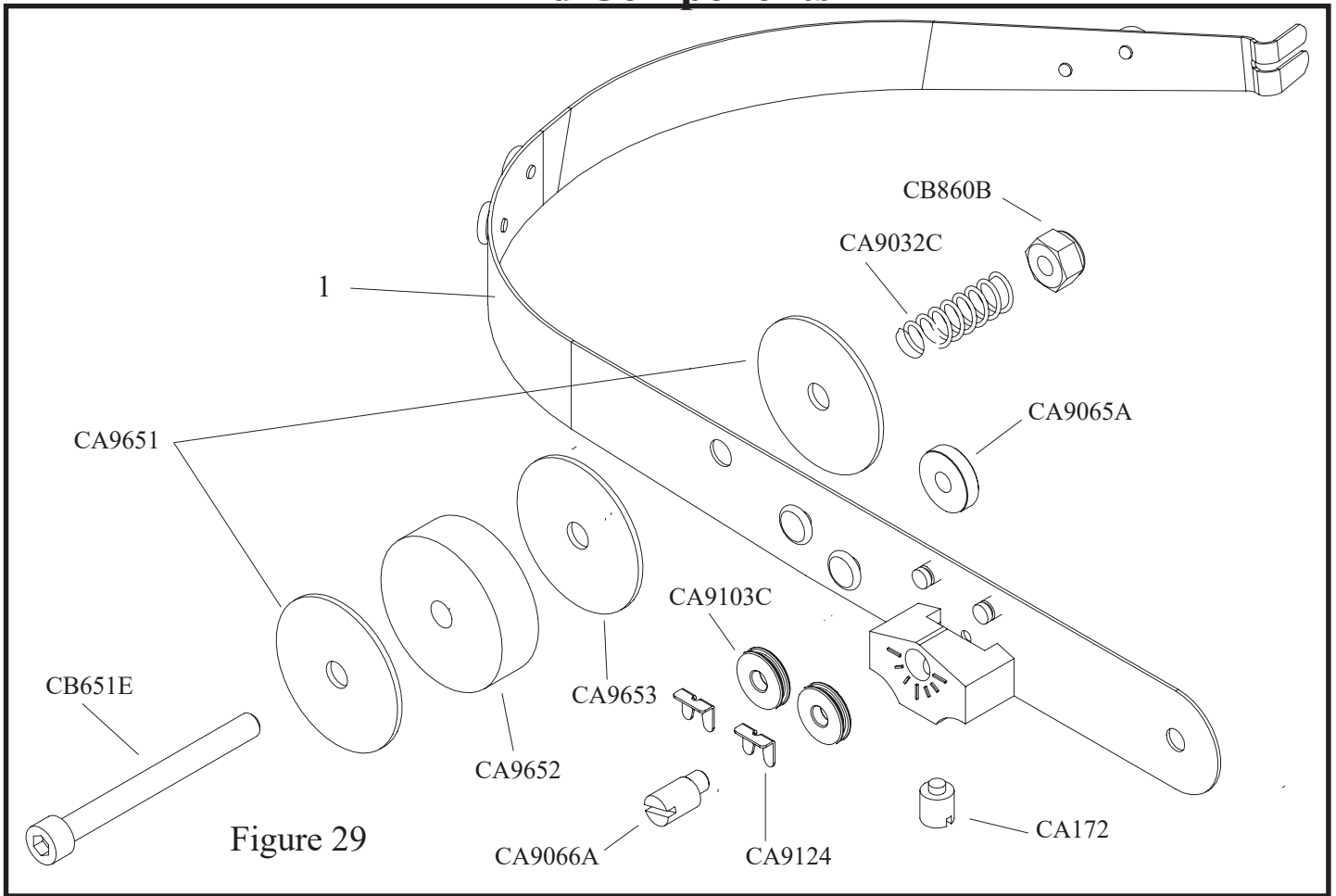
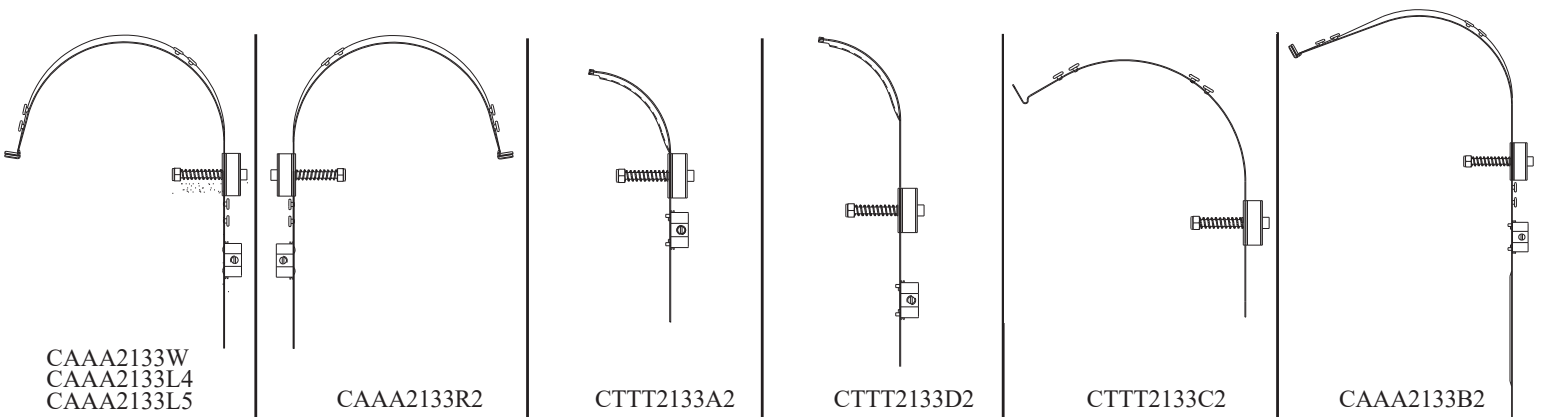


Figure 29

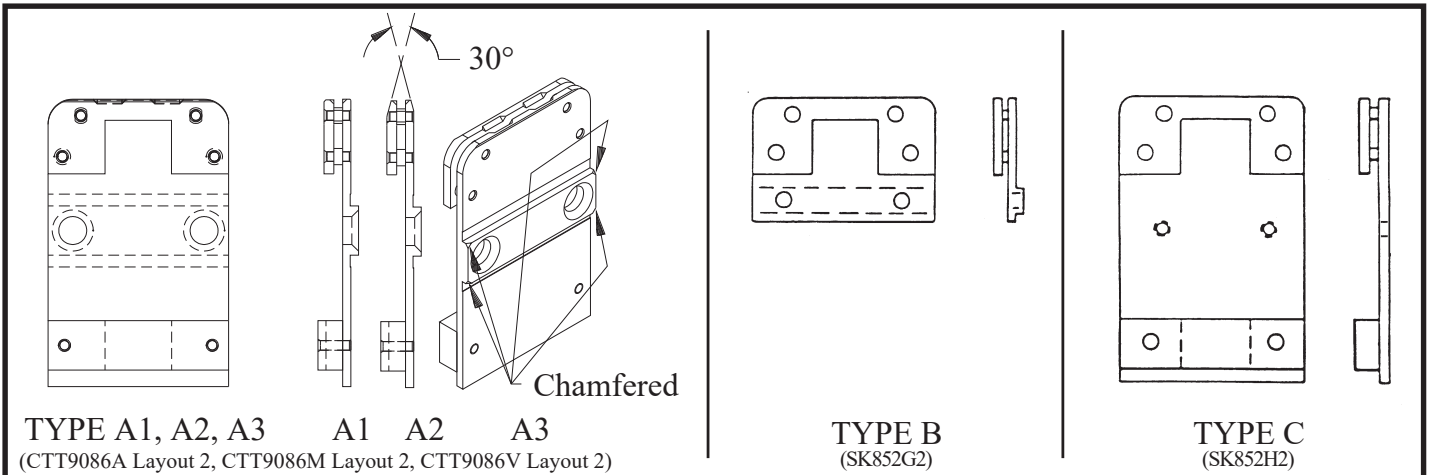
ITEM	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
1	See Figures 20	WIRE GUIDE SPRING ASSEMBLY	1	CB651E	SCREW, 10-32 x 2.00	1
a	CAA2133W			CA9651	WASHER	2
b	CAA2133L4			CA9652	FELT WASHER, THICK	1
c	CAA2133B2			CA9653	FELT WASHER, THIN	1
d	CAA2133L5			CA9032C	SPRING, COMPRESSION	1
e	CAA2133R2			CB860B	NUT, 10-32, ELASTIC STOP	1
f	CTTT2133A2			CA9065A	ROLLER, ECCENTRIC	1
g	CTTT2133C2			CA172	SCREW, NYLON TIP	1
h	CTTT2133D2			CA9103C	ROLLER, WIRE STRAIGHTENER	2
				CA9124	CLIP, ROLLER	2
				CA9066A	ECCENTRIC	1

NOTE: Most of the above Wire Guide Spring Assemblies include the following parts through 12:

ITEM	PART NO.	DESCRIPTION	QTY
	CAA2133W	WIRE GUIDE SPRING SUB. ASSY.	1
a,b,d	CAA2133W	f	CTT2133A2
c	CAA2133B2	g	CTT2133C2
e	CAA2133R2	h	CTT2133D2



Clincher Plate Assemblies

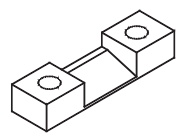


TYPE A1, A2, A3 (CTT9086A Layout 2, CTT9086M Layout 2, CTT9086V Layout 2)

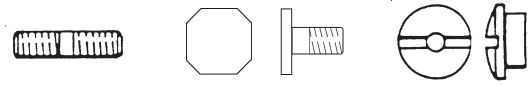
TYPE B (SK852G2)

TYPE C (SK852H2)

CROWN SIZE	CLINCHER POINT	TYPE	CLINCHER PLATE ASSY.
1/2	CA-9083 Thin	A1	CTT-9086
1/2	CA-9083-A Thick	A1	CTT9086-A
1/2	CA-9083 Thin	A1	CTTT-9086*
1/2	CA-9083-A Thick	A1	CTTT9086-A**
1/2	CA-9083-A Thick	A2	CTTT9086-M***
1/2	CA-9083-A Thick	A2	CTT9086-M
1/2	CA-9083-A Thick	A3	CTTT9086-V****
1/2	CA-9083-A Thick	A3	CTT9086-V
1/2	CA-9083 Thin	B	CTT-9086-B
1/2	CA-9083-A Thick	B	CTT9086-F
1/2	CA-9083 Thin	C	CAA-2089
1/2	CA-9083-A Thick	C	CAA-2089-A

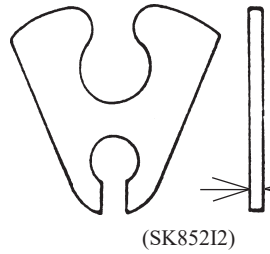


CA9085A
Clincher Guide Plate
(CA9085A Layout 2)



CA-2090 Stud CT-9088 Binderbolt CA-2091 Nut

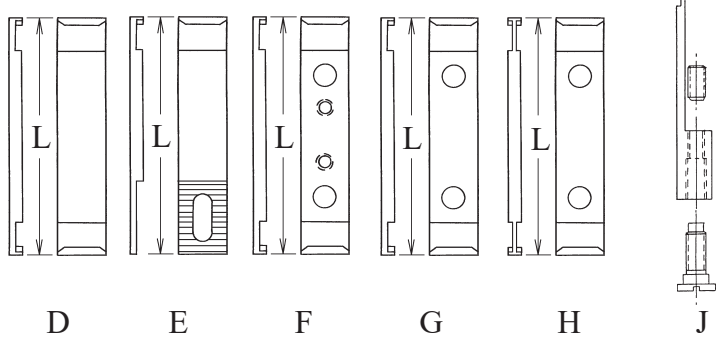
* Includes CA-9083, CTT-9086, CT-9093, CA-2091, CT-9088.
 ** Includes CA-9083-A, CTT-9086-A, CT-9093-A, CA-2091, CT-9088.
 *** Includes CA-9083-A, CTT-9086-M, CT-9093-A, CA-2091, CT-9088.
 **** Includes CA-9083-A, CTT-9086-V, CT-9093-A.



CLINCHER POINT

1/16 Nominal, CA-9083-A, Thick, 1/2 Crown
 1/32 Nominal, CA-9083, Thin, 1/2 Crown

CLINCHER SLIDES



TYPE	L	CLINCHER SLIDE	CLINCHER POINT
D	3-17/32	CT-9093	Thin
D	3-37/64	CT-9093-A	Thick
E	5-9/16	CT-9093-R	Thin
E	5-9/16	CT-9093-S	Thick
F	3-31/64	CA-2095-G	Thick
G	12-25/32	CA-2095-A	Thick
H	12-25/32	CA-2095	Thin
J	3-17/32 Adjustable	CTT-9093-Y	Thin/Thick

LIMITED WARRANTY

DeLuxe Stitcher Company, Inc. warrants to the original retail purchaser that this product is free from defects in material and workmanship and agrees to repair or replace, at DeLuxe Stitcher's option, any defective product within 90 days from the date of purchase. This warranty is not transferable. It covers damage resulting only from defects in material or workmanship and does not cover conditions or malfunctions resulting from normal wear, neglect, abuse or accident.

This warranty is in lieu of all other express warranties. Any warranty of merchantability or fitness for a particular purpose is limited to the duration of this warranty. DeLuxe Stitcher shall not be liable for any incidental or consequential damages.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

To obtain warranty service you must return the product, at your expense, together with proof of purchase to an authorized DeLuxe Stitcher Company Graphic Arts Dealer. Always use genuine DeLuxe Stitcher parts.

When ordering parts, please identify the part number, the part name, the wire size and crown size of your Stitcher.

REGISTRATION

To better service your wire stitching needs, please take a moment to fill out and return this registration card.

Name: _____
(First) (Middle Initial) (Last)
Company: _____
Street Address: _____
City: _____ State/Province: _____ Zip: _____
Country: _____
Phone: _____ Fax: _____ E-mail: _____

CUSTOMER

Machine(s) Purchased: _____
Serial Number(s): _____
With Head(s): _____
(Type/Quantity Purchased)
Serial Number(s): _____
Head(s) Purchased: _____
Serial Number(s): _____

PRODUCT

Date Received: _____
Dealer Name: _____
Dealer Street Address: _____
City: _____ State/Province: _____ Zip: _____
Country: _____
Dealer Phone: _____

DEALER

Other Bindery Products Used: _____

Please take a moment to fill out the attached card and mail it to DeLuxe Stitcher Company, Inc.. In addition, duplicate the information for your records to assist when making further inquiries.

PRODUCT

Machine(s) Purchased: _____
Serial Number(s): _____
With Head(s): _____
(Type/Quantity Purchased)
Serial Number(s): _____
Head(s) Purchased: _____
Serial Number(s): _____

DELUXE STITCHER GRAPHIC ARTS REPRESENTATIVE

Date Received: _____
Dealer Name: _____
Dealer Street Address: _____
City: _____ State/Province: _____ Zip: _____
Country: _____
Dealer Phone: _____

Would you like information sent to you about new products that would benefit your company? Yes No

**PLACE
STAMP
HERE**

DELUXE STITCHER
COMPANY, INC.
3747 N. Acorn Lane
Franklin Park, IL 60131.
Attn: Customer Service



COMPANY INC.

ISP **Stitching & Bindery Products**

3747 Acorn Lane • Franklin Park • Illinois 60131

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