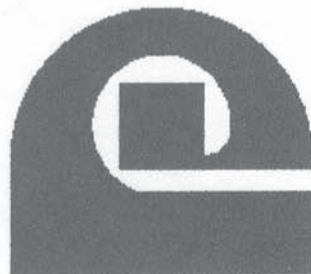
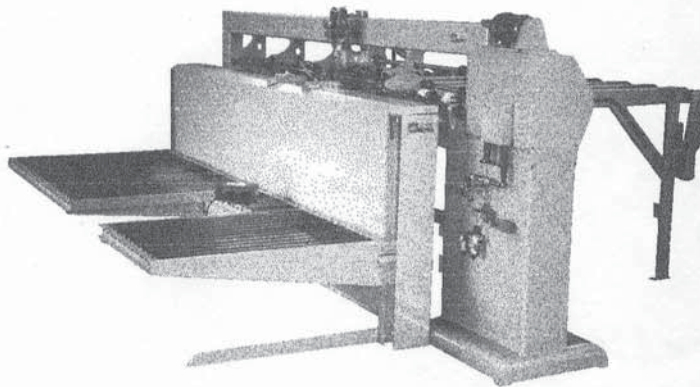


OPERATING, MAINTENANCE & PARTS MANUAL

FOR

CRITTENDEN 700 SERIES STITCHER



CRITTENDEN
CONVERSION
CORPORATION

145 N. HAMILTON ROAD
FAX (509) 764-1688

MOSES LAKE, WA 98837
1-800-755-7894



INTRODUCTION

Crittenden Conversion, founded 1971, began by making improved parts for existing box-making machinery. We sought the highest grade of materials to make lasting parts; a higher quality of parts than the original manufacturer's. These were not merely spare parts. We converted machines, one part at a time, into better, longer-lasting equipment. Therefore, our name *Crittenden Conversion*.

While making parts for other manufacturers' equipment, we learned their weaknesses. We learned what breaks down and why. Applying those insights to our own equipment, we have improved longevity, efficiency, and safety.

Throughout the world Crittenden Conversion's machines are meeting today's demands for faster, more reliable and economical production. No matter what industry we serve, we want to provide the highest level in service, product availability and quality. The 700 series stitchers are an example of this effort. These stitchers are designed, engineered and manufactured to provide trouble free operation.

I believe the integrity of the people behind the parts determines the integrity of the parts. We won't settle for anything less than your complete satisfaction.

You have my word on it.

O. D. Crittenden

2

**145 N. HAMILTON ROAD
FAX (509) 764-1688**

**MOSES LAKE, WA 98837
1-800-755-7894**

TABLE OF CONTENTS

STITCHER OPERATING AND MAINTENANCE INSTRUCTIONS

Setup and Operation of the 700 Series Stitcher	1
Troubleshooting the 700 Series Stitcher.....	2

STITCH HEAD OPERATING AND MAINTENANCE INSTRUCTIONS

Operating Adjustments

1. How to Thread Wire on Head.....	4
2. How to Straighten Wire on Head.....	5
3. How to Determine Correct Wire Draw and Make Adjustments.....	5

Wire Draw Adjustments

4. How to Adjust Length of Staple Left Leg.....	9
5. How to Set Movable Cutter.....	9
6. How to Align Gripper Bar and Formers.....	9
7. How to Adjust Tension of Wire Feed Gears.....	10
8. How to Adjust Wire Feed Brake Tension.....	10
9. How to Adjust Wire Guide.....	10

Maintenance

Lubrication	11
Inspection and Replacement of Worn Parts.....	12
Conversion to Arc'd Wire	15
Troubleshooting	15
Parts Ordering Information	19

DRAWINGS AND TABLES

	<u>DWG. NO.</u>	
STITCH HEAD ASSEMBLY	10I001-A	24
OPENHEAD ASSEMBLY	10I002-A	27
WIRE SPOOL ASSEMBLY	20I002-A	29
DRIVE/FEED ASSEMBLY	20I003-A	30
DRIVE/TRIP ASSEMBLY	20I004-A	33



SETUP AND OPERATION OF CRITTENDEN 700 SERIES STITCHER

When wiring 3-phase power to machine, phasing is correct when motor is running counter clockwise as viewed from drive end of machine. Main incoming air regulator should be set at 60-70 psi. The small regulator that controls the auxiliary brake caliper pressure should be set to indicate 40-60 psi. Always keep psi setting as low as possible to reduce load on drive clutch. On large, heavy boxes the setting might need to be increased to prevent coasting.

When stitching small boxes (less than 15 stitches), the stitch counter should always be operated with count/limit switch in count position. Enter the desired number of stitches on push button switches then press reset button once. The red LED above reset button will flash once per revolution, indicating that the magnetically operated reed switch (RSI) has closed, telling the counter that a stitch has been driven into box. When the number of switch closures equals the preset number on counter, the counter will emit a momentary signal on terminal 4 which feeds to the stop coil on the 4-way air valve. Note: the above described reed switch is very fragile and must be handled with care.

The spacing between stitches can be adjusted over a range of about 5/8" to 2 3/8" depending on feed roll size, wear, etc. To adjust, loosen lower screw on stitch space lever. Move T-slot nut closer to clutch to increase spacing, move nut away from clutch to decrease spacing. After adjusting, tighten screw securely. Lubrication is very important. Head should be lubricated after each 8 hour shift. Oil cups for turning shafts should be filled about once per week. Use light motor oil for above. The step feed clutch should be lubed only with approved greases that contain **no** slippery additives -*see clutch bulletin!* Lubricate every 4 - 6 weeks only add grease until you see old lubricant coming out around seal. The grease zerk on connecting rod should be lubed daily.

To setup machine, set counter and adjust spacing as previously described. Adjust trip gate assembly by loosening 3-socket head screws on side, move assembly, in or out to attain a measurement from trip gate to center of clincher in shoe equivalent to the distance you want the pattern of stitches to begin from leading edge of box. The self adhesive arrow should be placed in appropriate location on trip block pointing to correct dimension on scale. The flow control valve on the latch cylinder should be set to restrict the air flow to allow the gate to remain closed until the first stitch has been driven into box. Once it has been set initially it should not need further adjustment, if opened too far, the pattern placement will not be consistent. If closed too far, the second stitch will be too close to the first or even on top of it.

The distance between top and bottom feed rolls must be adjusted as follows:

- ◆ with the machine off, place the box between the rolls.
- ◆ Loosen the handle on the lift cylinder rod.

Adjust by turning knob to cause the rolls contact box with enough pressure so that you cannot pull the box back out by hand. Too much pressure will result in roller impressions on finished box. To little pressure will result in inconsistent spacing between stitches due to slippage on box. After all adjustments above have been made you are ready to stitch boxes!

Fold box panels and feed through open head shoe until feed rolls grab box. Box will be pulled through until leading edge of box contacts the hinged trip gate which is in the latched position.

TROUBLE SHOOTING THE 700 SERIES STITCHER

Machine Will Not Start Stitching

1. Check N.O. LS1 micro switch and wiring to junction box.
2. Check solenoid valve for excessive oil, foreign matter, or defective coil.
3. Check wiring to solenoid valve.
4. Check for sticking bottom rail on trip frame.
5. Check for 110 VAC across terminals 1 and 4. This should be a momentary signal only. A constant signal will prevent stitcher from starting as this is the stop circuit.

Machine Will Not Stop Stitching

1. Check RS1 N.O. reed switch (count input).
2. Be sure counter switch is in **ON** position.
3. Be sure counter mode switch is in count position.
4. Check for 110 VAC output between terminals 1 & 4 (stop circuit). NOTE: This should be a momentary signal at end of each stitch cycle.
5. Check solenoid valve & wiring.
6. Check for loose magnet disc or missing magnet.
7. Check to see that N.O. LS1 micro switch is not stuck closed due to mechanical or electrical failure.

After Stitching, Box Does Not Eject

1. Check high speed clutch adjustment. **Caution:** Do not overtighten, as this will cause erratic stopping. Tighten only to the point where box ejects properly, without hesitation.
2. Be sure trip is not set too low, causing excessive drag between gate & box.
3. Check auxiliary brake regulator for sticking open.
4. Check for box obstructions.

Placement Of First Stitch Erratic

1. Restrictor valve on trip open too far.
2. Feed rolls too loose.
3. Check trip catch mechanism for wear or misadjustment.

First Two Staples Too Close Together Or On Top Of One Another

1. Restrictor valve on trip closed too far.
2. Faulty step-feed clutch.

Feed Rolls Stop & Fail To Eject Box After Completing The Stitching Cycle & The Stitcher Motor Is Still Running

1. Check shifting linkage of missing or broken parts.
2. Check auxiliary brake regulator for sticking open.
3. High speed clutch worn or misadjusted.

Front End Of Boxes Being Excessively Broken Down Due To Impact With Trip Gate

1. Feed rolls too tight.
2. Restrictor valve on trip is closed too far and not allowing gate to open fast enough.
3. Trip rail return spring is adjusted incorrectly.

Boxes Show Stitch Deformation or Tearing

1. Check mechanical timing (head drive cam with respect to crank shaft). Refer to timing diagram.

Boxes Come Out Of Machine With No Staples

1. Check head for faulty wire feed mechanism or wire may be tangled on spool.

TROUBLE SHOOTING THE 700 SERIES STITCHER (Cont'd)

<p><u>Machine Stops & Cannot Be Turned Over By Hand</u></p> <ol style="list-style-type: none"> 1. Check Stitch Head for wire jamming or broken parts. 2. Check to see that connecting rod is not frozen to eccentric. 3. Check for sticking auxiliary brake regulator (rare). 	<p><u>Machine Stops Consistently With Former In Wrong Position (Down)</u></p> <ol style="list-style-type: none"> 1. Loosen magnet disc & rotate CW or CCW until desired stopping position of head is attained. Be sure to firmly tighten disc retaining bolt.
<p><u>Machine Stops Mid-Cycle & Ejects Box / Head Stops In Wrong Position</u></p> <ol style="list-style-type: none"> 1. This is usually caused by arcing switch contacts on stitcher, lift counter ejector or other equipment using same 117 VAC power source. Install a quench arc suppressor in parallel across offending coil wires. In some cases we have found that the NC stop switch contacts in the start/stop push-button station are causing the problem. The contacts become contaminated by an oxide buildup over the years, when machine is running, the vibration causes them to make and break contact creating an arc which causes the counter to react by emitting a stop signal. Contacts can be cleaned on some machines, on others, they must be replaced. To check contacts, by-pass with a jumper wire temporarily and see if problem diminishes. 	<p><u>Erratic Stopping Of Machine (More Than A Total Of Approximately 20 Degrees)</u></p> <ol style="list-style-type: none"> 1. High speed clutch too tight. 2. Grease or oil on main brake lining. 3. Binding in main shifting air cylinder. 4. Loose main brake disc.
<p><u>Machine Puts In First Stitch OK, Then Skips A Few Inches Before Putting In Second Stitch</u></p> <ol style="list-style-type: none"> 1. Replace SL-16 or equivalent bearing in high speed sprocket as it is locking up momentarily. 	<p><u>Machine Puts In Wrong Number Of Staples</u></p> <ol style="list-style-type: none"> 1. Check counter settings. 2. Check for faulty RS1 N.O. reed switch. 3. Check for loose magnet disc & adjustment of reed switch position with respect to magnet. 4. Check for faulty counter of plug in modules.
	<p><u>Erratic Placement Of Stitches</u></p> <ol style="list-style-type: none"> 1. Feed rolls too loose. 2. Auxiliary brake not holding properly due to low air pressure, worn discs or oil on brake disc. 3. Faulty step-feed clutch. 4. Grease, wax or oil on feed rolls. 5. Box guides set too high, which usually shows up by a gradual increase in stitch spacing towards back of box.

OPERATING AND MAINTENANCE INSTRUCTIONS

The stitching heads supplied with the various models of Crittenden Wire Stitchers are essentially identical with variations in some of the component parts, depending whether the head is a standard or long draw model.

The Crittenden Stitch Heads are designed to accommodate a number of wire types and sizes as well as different crown widths. When the work to be stitched requires a wire type and/or size of staple crown not within the capacity of the head being used it may be possible to changeover the head to meet the required specifications. In this event please contact Crittenden Conversion for information on how to accomplish the changeover.

All Crittenden Stitch Heads are interchangeable between any model of Crittenden Stitchers, however many parts are not interchangeable between different models of heads.

Refer to Drawing No. 101001-A

All heads are equipped with a wire feed brake tension device on the wire feed idler gear (P/N 53). Long draw heads are equipped with a wire straightener assembly (P/N 152). A wire guide (P/N 77) and wire guide plate (P/N 78) is optional on long draw models only.

Operating adjustments are similar on all heads and are easily accomplished. Oil cups, ball oilers and oil holes are provided on all of the Crittenden Stitch Heads for easy lubrication of hidden moving parts. All parts are easily removed for service or replacement.

CAUTION: DISCONNECT POWER TO THE STITCHER BEFORE ANY WORK IS PREFORMED!

OPERATING ADJUSTMENTS

The quality and quantity of work that can be produced by a Crittenden Stitch Head is dependent upon the operator making the various operating adjustments as accurately as possible. The following illustrated instructions are provided so that the operator will clearly understand how to make the various required adjustments.

1. How to Thread Wire on Head (See Figure 1).

A. Disengage the wire feed gears by raising the gear throw-out handle (1) to its open position.

B. Draw wire from the wire spool, if the end of the wire is twisted or bent, cut off the damaged portion.

C. Straighten the end of the wire (about 6") by drawing it through your fingers. The end portion that is to be threaded into the head must be as straight as possible.

D. Thread the wire through the oiler felt and retainer (2) and into the upper wire tube.

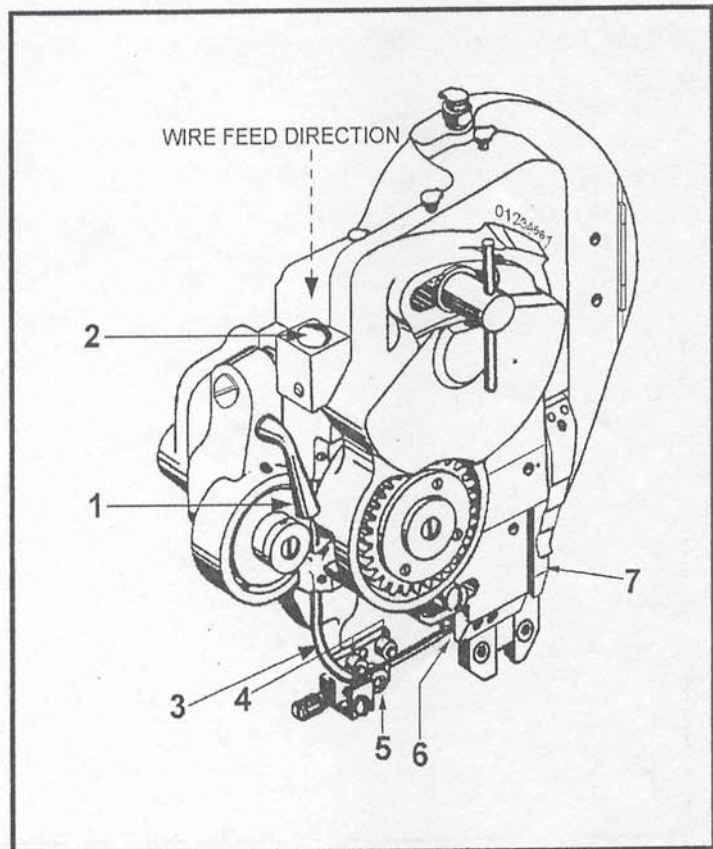


Figure 1-Threading Wire on Head

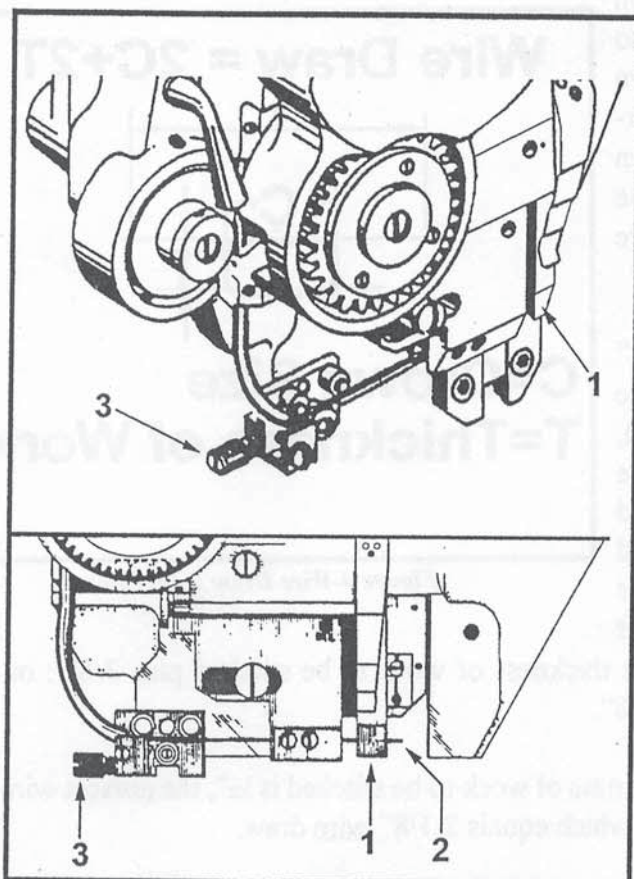


Figure 2-Straightening Wire on Head

Type of Head	Wire Draw Limits	
	Minimum	Maximum
Standard Wire Draw	7/8"	1-1/2"
Long Wire Draw	15/16"	2-3/8"

Figure 3-Wire Draw Table

ward or downward, turn the wire straightener adjustment screw (3) clockwise or counter-clockwise until this condition is remedied.

3. How to Determine Correct Wire Draw and Make Necessary Adjustments

A. DETERMINING WIRE DRAW - The Crittenden Stitcher Heads are divided into two types, based upon the wire draw (amount of wire being fed per stitch) capacity of the head.

The table in Fig. 3 lists the two wire draw types of heads and gives the minimum and maximum wire draw for each type.

In order to insure perfect stitching, it is essential that the wire draw be the correct length for the work to be stitched.

The length of the wire draw is dependent upon the crown size of the staple to be used and the thickness of the work to be stitched.

In the corrugated box-making industry, the most common crown size is 7/16". In some cases, 3/4" crown size is used with a special heavier wire such as .037 x .088".

E. Push the wire down through the upper wire tube, past the wire feed gears and into and through the lower wire tube (3) until the wire appears at the bottom opening of the lower wire tube.

F. Thread the wire between the upper wire straightener rolls (4) and lower adjustable roll (5); then enter and fish end of wire into the stationary cutter (6) in cutter block. *Note: The standard draw head is not supplied with the wire straightener device.* When threading this head, the wire is drawn through the lower wire tube and inserted directly into the stationary cutter.

G. Re-engage wire feed gears by lowering the gear throw-out handle (1) into its locked position. Turn the machine over by hand and observe that the wire is feeding freely and is being fed into the gripper (7) in a straight line.

2. How to Straighten Wire on Head (See Fig. 2).

In order to insure perfect stitching, it is essential that the wire enters the gripper in as close to a straight line as possible. To check this condition and make the necessary adjustments, proceed as follows:

A. After wire has been threaded into head, turn over machine by hand until the wire has been cut and is being held by the gripper (1). Observe that the wire length being held by the gripper does not curl upward or downward; the cut piece should be as close to a straight line as possible as shown at (2) in insert of Figure 2. If wire tends to curl up

As a general rule, stitches having a crown size of 7/16" should have sufficient wire draw so that the clinched legs just about meet, as shown in Fig. 4. For 7/16" crown size stitches, the correct length of wire draw would be twice the crown size plus twice the thickness of work to be stitched, or, when reduced to a formula: Wire Draw = 2C + 2T.

For example: with crown size being 7/16" and thickness of work to be stitched is 3/16", the correct wire draw would be: 2x 7/16", (or 7/8"), plus 2x 3/16", or 3/8", which equals 1-1/4" wire draw. Stitches having a crown size of 3/4" should have sufficient wire draw so that each clinched leg of the staple is approximately 3/16" long, as shown in Fig. 5. For 3/4" crown size the correct wire draw would be: crown size plus twice the thickness of work to be stitched plus 3/8" : or when reduced to a formula: Wire Draw = C+2T + 3/8".

For example : with 3/4" crown size and thickness of work to be stitched is 1/2", the correct wire draw would be: 3/4" plus 2 x 1/2", (or 1"), plus 3/8", which equals 2 1/8" wire draw.

The above formulas do not take into consideration the type of material to be stitched. Some materials might require staple leg lengths different than those shown in Figs. 5 and 6. However, as a general rule the formulas shown can be used.

Wire Draw Adjustments

After determining the correct length of wire draw for the particular work to be stitched, make head wire draw adjustments as follows:

1. Check that the wire feed guard lock screw (1) and cutter block holding screw (2), Fig. 6, are in the correct head plate holes for the desired wire draw. The standard and long wire draw head plates have two tapped holes, (A) and (B), Fig. 6.

2. Both types of head plates have two tapped holes, (D) and (E), for insertion of the cutter block holding screw.

3. If the desired length of wire draw approaches the minimum or maximum limits for the head being operated (refer to Wire Draw Table, Fig. 3), it may be necessary to relocate the wire feed guard lock screw and cutter block holding screw.

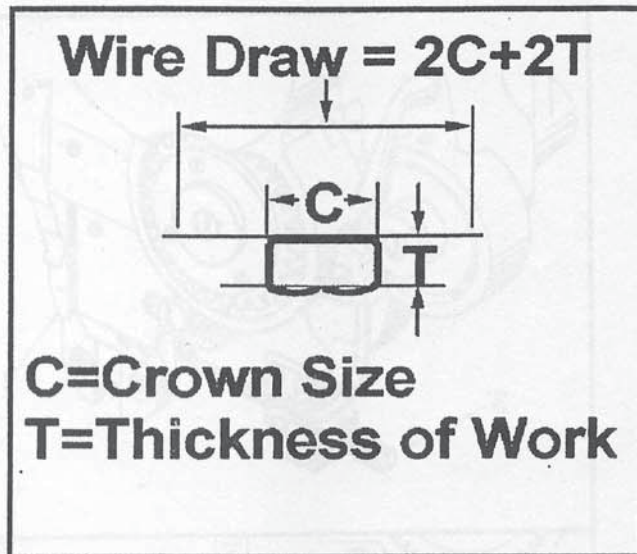


Figure 4-Wire Draw Dimensions

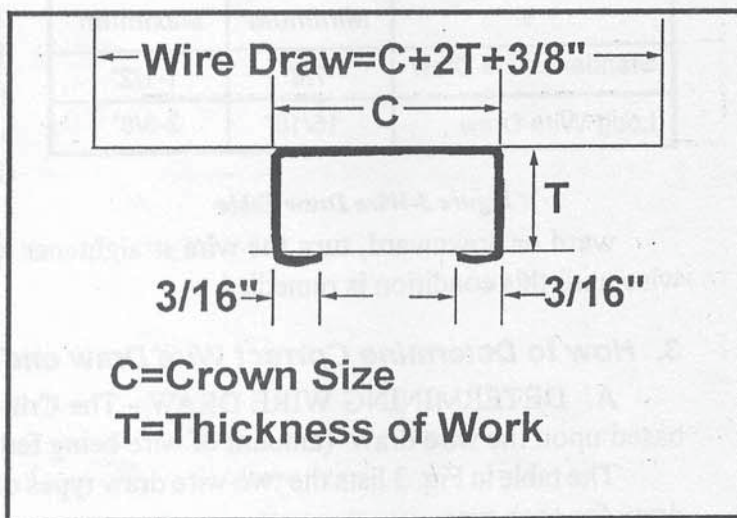


Figure 5-Wire Draw Dimensions

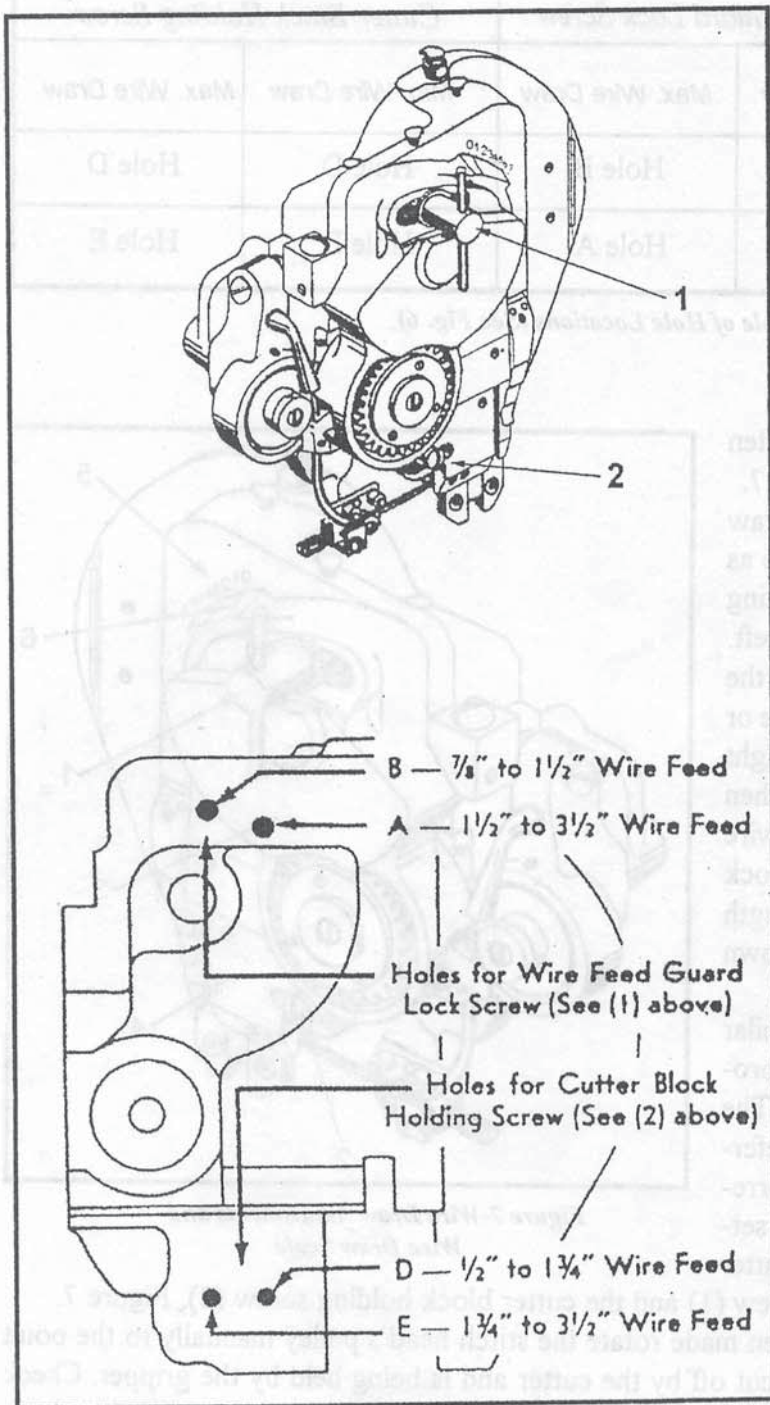


Figure 6-Positioning Wire Feed Lock Screw and Cutter Block Holding Screw

9. To increase or decrease the wire draw on the standard wire draw head shift the wire feed guard casting (3), Figure 7, to the right or left. As mentioned in the step above any shifting of the wire feed guard casting automatically adjusts the position of the cutter block so that both legs of the staple are increased or decreased an equal amount.

10. The standard wire draw heads are equipped with a 'length of wire draw' scale (5), Figure 7, on the head plate and an alignment marker (6), Figure 7, on the wire feed guard casting. The scale and marker provide a means of setting the wire draw according to the desired length. The 'length of wire draw' scale is used for a reference point only. The larger numbers correspond a to longer leg length.

4. The following table (Figure 6A) indicates the correct hole locations for the two screws to obtain the minimum or maximum wire draw for each type of head.

5. The diagram in Figure 6 shows the four holes and gives the obtainable wire draw range for each hole.

6. If it is found necessary to relocate the wire feed guard lock screw (1) and the cutter block holding screw (2) remove both screws and then shift the wire feed guard casting sufficiently to the left or right, as required, so that the wire feed guard lock screw (1) can be inserted into the alternate hole, A or B. Do Not tighten the screw at this point.

7. The standard wire draw head is so designed that the cutter block (4), Figure 7, automatically shifts to the left or right when the wire feed guard is shifted. If the head being operated is this type relocate the cutter block holding screw (2) in the alternate hole, D or E, Figure 6, and tighten the screw at this point. If the head being operated is the long wire draw type the cutter block must be shifted manually. Move the cutter block as required and relocate the holding screw (2) with its washer. Do Not tighten the screw at this point.

8. If it is not necessary to relocate the wire feed guard lock screw (1) and the cutter block holding screw (2), and the head being operated is the standard wire draw type loosen (do not remove) only the wire feed guard lock screw (1). If the head is the long wire draw type loosen (do not remove) both screws.

Type of Head	Wire Feed Guard Lock Screw		Cutter Block Holding Screw	
	Min. Wire Draw	Max. Wire Draw	Min. Wire Draw	Max. Wire Draw
Standard Wire Draw	Hole B	Hole B	Hole D	Hole D
Long Wire Draw	Hole B	Hole A	Hole D	Hole E

Figure 6A-Table of Hole Locations (See Fig. 6)

11. After the setting has been made tighten the wire feed guard lock screw (1), Figure 7.

On the long wire draw heads wire draw is increased or decreased exactly the same as for the standard wire draw heads, by shifting the wire feed guard casting to the right or left. However the cutter block is not linked to the wire feed guard casting so that any increase or decrease of wire draw affects only the right leg of the staple. It is necessary therefore, when changing the wire draw setting on the long wire draw heads to manually move the cutter block to the left or right, thereby adjusting the length of the staple's legs for equal length. As shown in Step 4-2.

12. A 'length of wire draw' scale, similar to that on the standard wire draw heads, is provided on the long wire draw head plates. The 'length of wire draw' scale is used for a reference point only. The larger numbers corresponding to longer right leg lengths. After setting the wire feed guard casting and the cutter block tighten the wire feed guard lock screw (1) and the cutter block holding screw (2), Figure 7.

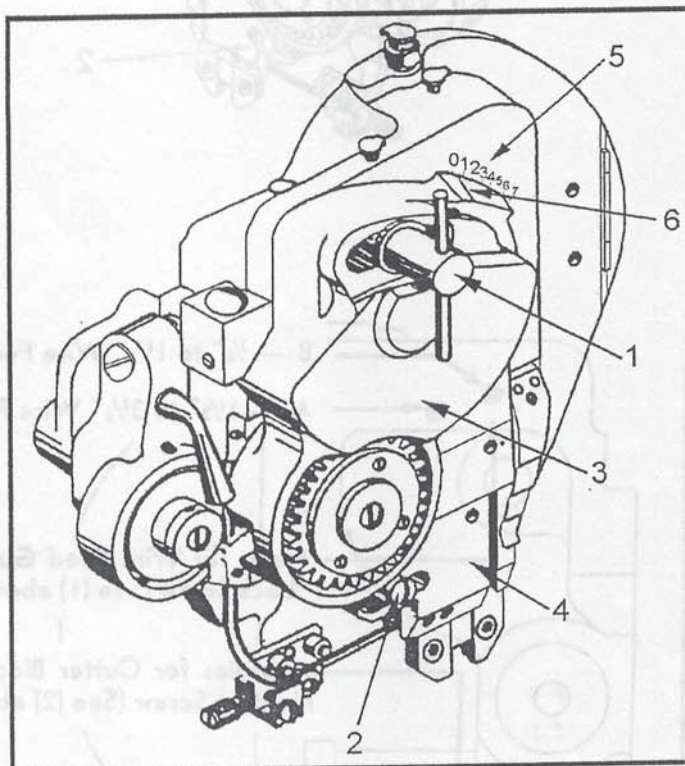


Figure 7-Wire Draw Adjustments and Wire Draw Scale

13. After the above settings have been made rotate the stitch head's pulley manually to the point where the new wire length has just been cut off by the cutter and is being held by the gripper. Check that the wire is the desired length, then continue rotating the pulley manually until the staple legs have been formed but not clinched. Check that both legs of staple are of equal length.

14. If head being operated is the standard wire draw type and the legs are of equal length securely tighten wire feed guard lock screw (1).

15. If head being operated is the standard wire draw type and the legs are not of equal length proceed to Step 4-1.

16. If head being operated is the long wire draw type and the legs are of equal length securely tighten wire feed guard lock screw (1) and cutter block holding screw (2).

17. If head being operated is the long wire draw type and the legs are not of equal length proceed to Step 4-2.

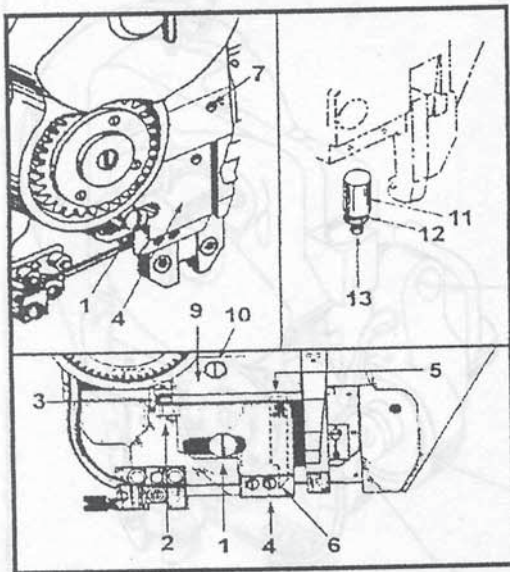


Figure 8-Staple Left Leg and Movable Cutter Adjustment

4. How to Adjust the Staple's Left Leg Length (See Figure 8)

If the staple legs are not equal proceed as follows:

1. If head being operated is the standard wire draw type loosen (do not remove) the adjusting screw lock screw (2). To lengthen the left leg turn cutter block adjusting screw (3) clockwise (moving the cutter block away from the gripper). To shorten the left leg turn the cutter block adjusting screw (3) counterclockwise (moving the cutter block toward gripper). After the adjustment has been made securely tighten the adjusting screw lock screw (2).

2. If the head being operated is the long wire draw type loosen (do not remove) the cutter block holding screw (1). To lengthen the left leg manually move the cutter block (4) to the left (away from the gripper). To shorten the left leg manually move the cutter block to the right (toward gripper). After the adjustment has been made securely tighten the cutter block holding screw (1).

5. How to Set the Movable Cutter (See Figure 8)

The cutter block movable cutter (5) is activated by an adjustable plunger in the head plate. The plunger adjustment should be such that when the movable cutter has reached the limit of its down stroke the cutting edge of the cutter should be just below the wire opening in the stationary cutter (6). If the movable cutter continues down past that point the cut off wire length may be bent downward.

If it is found necessary to adjust the stroke of the cutter proceed as follows:

1. Remove the cutter block holding plate (9) and the cutter block (4). The operating plunger (11) will slide down and out of the head plate.

2. Loosen the plunger adjusting screw nut (12) and adjust the plunger adjusting screw (13) clockwise to raise the cutter stroke or adjust the plunger adjusting screw (13) counterclockwise to lower the cutter stroke. Once the cutter stroke is adjusted properly tighten the plunger adjusting screw nut (12) and repeat Step 1 in reverse.

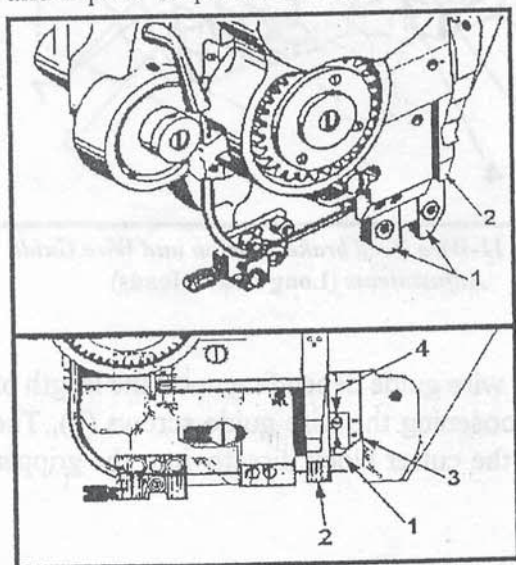


Figure 9-Adjustments for aligning Gripper Bar and Formers

6. How to Align the Gripper Bar and Formers (See Figure 9)

A. Rotate the stitch head's pulley manually as the formers (1) descend check that the groove in the formers are in exact alignment with the wire length being held by the gripper bar (2).

B. If they are not in exact alignment, usually resulting in a deformed crown surface, loosen the clamp block holding screw (3). Adjust the gripper bar adjusting screw (4) clockwise or counterclockwise until the alignment is correct and then tighten the clamp block holding screw (3).

7. How to Adjust the Tension of the Wire Feed Gears (See Figure 10)

The wire feed idler gear (1) operates with the drive gear located behind the wire feed guard (2) to feed the wire into the head. The tension of the two wire feed gears is adjustable by means of the tension adjustment screw (3). Adjusting the tension adjustment screw (3) clockwise will increase the tension and counterclockwise will decrease the tension.

The tension of the wire feed gears should be such that the wire feeds freely without slipping or binding. If the tension is too loose the wire will slip, usually resulting in varying leg lengths. If the tension is too tight the wire will bind and may be rolled out of shape, causing wire curvature and preventing proper handling in the gripper.

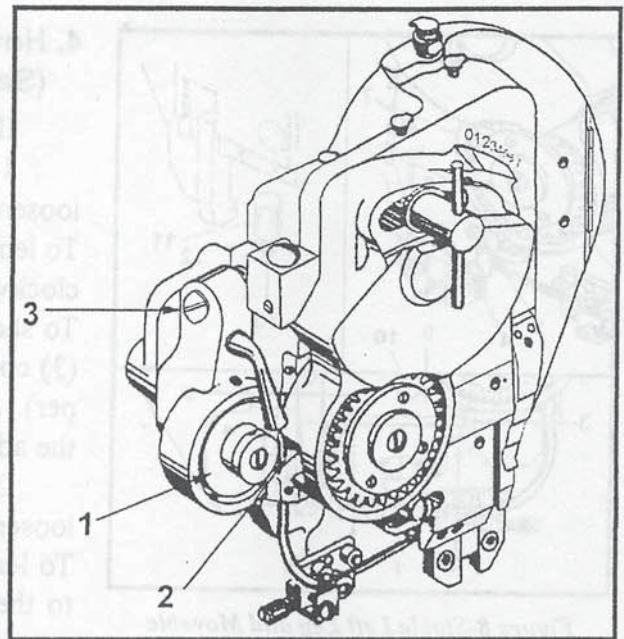


Figure 10-Wire Fed Gear Tension Adjustment

8. How to Adjust the Wire Feed Brake Tension (See Figure 11)

The Crittenden Stitch Heads are equipped with a friction braking device (1) to prevent wire feed overrun. Due to normal wear of the friction brake (2) it may be necessary to increase the tension of the friction spring (3). This is accomplished by means of the brake tension nut (4).

To check the spring tension turn the brake friction spring (3) by hand. If the spring turns too freely tighten the brake tension nut (4), clockwise. If the spring cannot be turned by hand loosen the brake tension nut (4), counterclockwise.

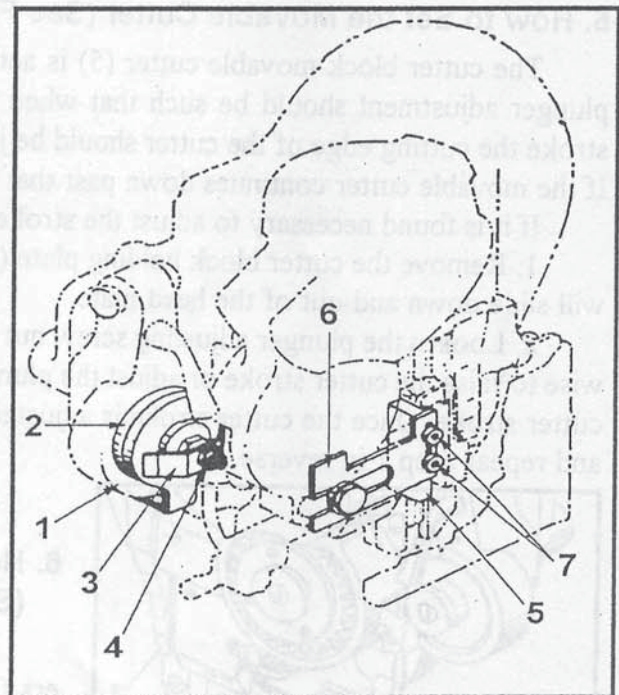


Figure 11-Wire Feed brake Tension and Wire Guide Adjustments (Long Draw Heads)

9. How to Adjust the Wire Guide (See Figure 11)

Because of the wide gap between the cutter block and the gripper bar on the long wire draw heads we can equip these heads with a wire guide (5). The guide serves to lead the wire into the gripper bar slot.

The wire guide plate (6), which supports the wire guide, is adjustable to the left or right for positioning the wire guide depending upon the length of wire draw. The wire guide can be adjusted up or down by loosening the wire guide screws (7). The wire guide should be so positioned that the wire is fed from the cutter block directly into the gripper bar.

MAINTENANCE

To insure continuous operation of Crittenden Stitch Heads the operator should be sure that the head is regularly lubricated and carefully maintained. The operator should periodically inspect all moving parts for signs of wear and, when required, replace any worn part.

The following instructions are provided so that the operator will clearly understand how to lubricate the head, and how to check and replace worn parts.

CAUTION

After replacing any part(s) rotate the stitch head's pulley manually to check that it operates freely and is adjusted properly, per previous instructions. **Do Not operate the machine under power until you are certain that these conditions are met.**

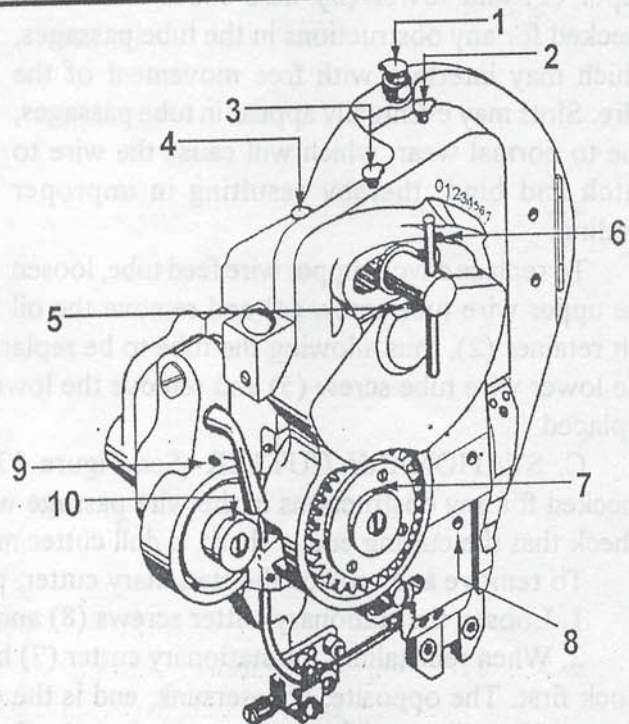
1. LUBRICATION (See Fig. 12)

Use an S.A.E. No. 10 oil for lubricating the Stitch Head. Machines that are in constant operation should be lubricated daily. Machines that are operated periodically should be lubricated just prior to running a job.

Usually, only a drop of oil is required at each point of lubrication.

Depending upon the type of work being stitched care must be taken that those parts of the head that contact the work are free of oil. Lubricate regularly instead of excessively. After lubricating the head wipe off any excess oil.

- 1-Oil cup in the top of the head plate lubricates the former slide, driver bar, and other internal parts.
- 2-Oil cup in the top of the head plate lubricates the wire feed operating link.
- 3-Oil cup in the top of the head plate lubricates the wire feed operating lever and sliding head.
- 4-Oil cup in the top of the head plate lubricates the wire feed operating lever pivot stud.
- 5-Ball oiler in the wire feed guard lubricates the wire feed guard crank stud.
- 6-Ball oiler in the wire feed guard lubricates the wire feed crank sector.
- 7-Oil hole in the retaining washer lubricates the wire feed drive gear stud.
- 8-Oil hole in the cutter block lubricates the movable cutter.
- 9-Ball oiler in the wire feed idler gear casting lubricates the wire feed idler gear.
- 10-Oil hole in the retaining washer lubricates the wire feed idler gear stud.
- 11-Apply a few drops of oil to the wire oiler felt to clean and lubricate stitching wire.



Friction points of all sliding, rotating or oscillating parts, for which oil cups or holes are not provided, should be oil moistened just prior to running a job. It is recommended that a tooth pick or matchstick tipped with oil moistened cotton dressing be used to lubricate these parts.

Figure 12-Lubrication Points

2. INSPECTION AND REPLACEMENT OF WORN PARTS

All moving parts may eventually require replacement due to normal wear of the parts. However, regular lubrication will aid in lengthening the life of the parts. Usually those parts that are in actual contact with the wire during feeding, cutting, forming and clinching of the wire will be the first parts to show signs of wear. Imperfect stitching, not caused by incorrect machine settings or adjustments, is usually due to the normal wear of the wire feed gears, wire tubes, stationary and moving cutters, gripper parts, formers, driver or supporter. These parts should be regularly inspected for signs of wear and replaced when required, as directed in the following instructions.

A. WIRE FEED GEARS (See Fig. 13)-The wire feed gears (Fig. 13 shows the left, or idler, gear (1), the right, or drive gear (5) being located behind the wire feed guard casting) should be checked for a smooth and parallel wire gripping surface. Worn surfaces may result in wire slipping thereby not feeding properly. If surfaces are not parallel the wire may be rolled on one side causing wire curvature and resulting in imperfect stitches.

If the head being checked is equipped with a grooved wire feed drive gear (5), right, check that the groove is clean (not clogged) and not worn.

B. WIREFEED TUBES (See Figure 13)-The upper (2) and lower (3) wire tubes should be checked for any obstructions in the tube passages, which may interfere with free movement of the wire. Slots may eventually appear in tube passages, due to normal wear, which will cause the wire to catch and bind, thereby resulting in improper feeding.

To replace a worn upper wire feed tube, loosen the upper wire tube screw (4) and remove the oil felt retainer (2), thus allowing the tube to be replaced. To replace a worn lower wire feed tube, loosen the lower wire tube screw (5) and remove the lower wire tube clamp (6), thus allowing the tube to be replaced.

C. STATIONARY CUTTER (See Figure 13)-The stationary cutter (7) should be periodically checked for any obstructions in the wire passage which may interfere with the free movement of wire. Check that the cutting end is sharp, a dull cutter may be resharpened but eventually must be replaced.

To remove and replace the stationary cutter, proceed as follows:

1. Loosen the stationary cutter screws (8) and withdraw the cutter (7) from the cutter block.
2. When reinstalling the stationary cutter (7) be sure that the cutting end is inserted into the cutter block first. The opposite, countersunk, end is the end which protrudes from the left side of the cutter block. If installing a ribbon wire cutter face the flat side of the cutter toward the front of the head.
3. With the cutter positioned as directed above slide the cutter into the cutter block until the cutting end contacts and is parallel with the flat cutting surface of the movable cutter (9). Upon contact, with the stationary cutter fully inserted in cutter block and aligned with movable cutter, tighten the cutter holding screws (8). Then rotate the stitch head's pulley by hand and check that the movable cutter operates freely.

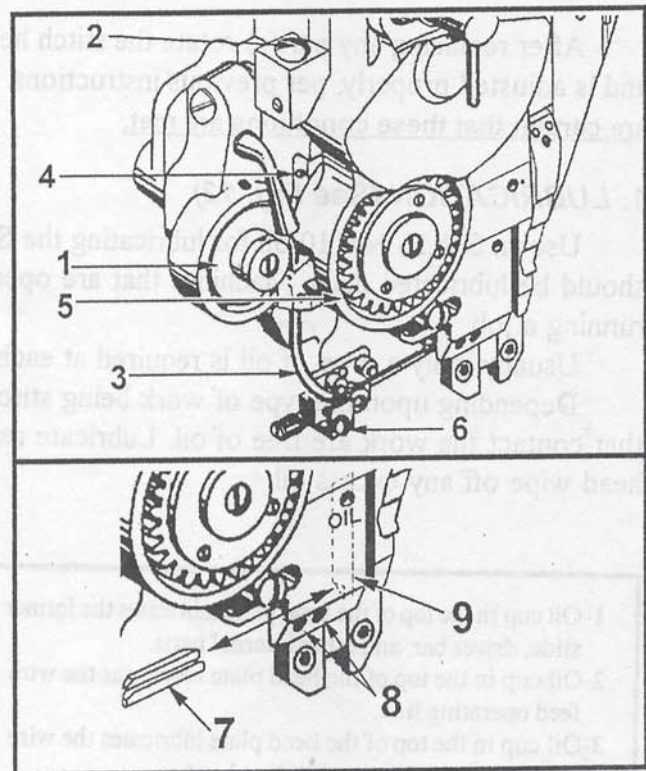


Figure 13-Inspecting Wire Feed Gears, Tubes and Stationary Cutter

D. MOVABLE CUTTER (See Figure 14)-The cutting edge of the movable cutter should be periodically checked for sharpness. A dull cutter can be resharpened but eventually must be replaced.

To remove and reinstall the movable cutter for sharpening or replacing proceed as follows:

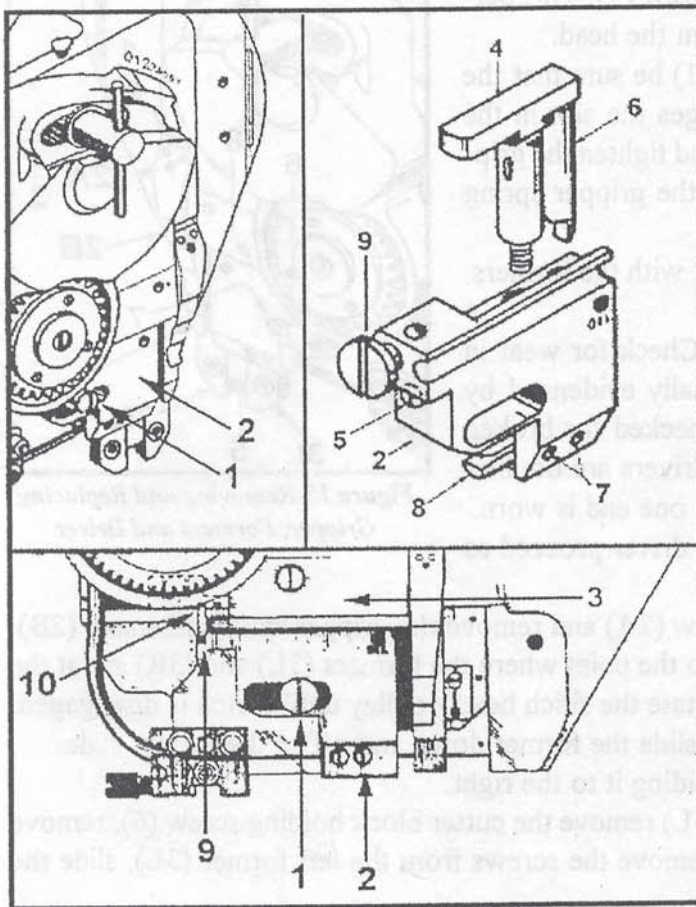


Figure 14-Removing and Replacing
The Movable Cutter

1. Remove the cutter block holding screw (1), the cutter block holding plate (3) and the cutter block (2), also loosen the stationary cutter holding screws (7) and slightly back-out the stationary cutter.

2. While manually holding the cutter plunger (4) under spring tension back-out plunger holding screw (5) until the plunger is free. Slide the movable cutter (6) off of the plunger (4) and replace or sharpen the movable cutter.

3. Slide the top of the movable cutter (6) into the groove in the cutter plunger (4) with the flat cutting surface of cutter turned toward plunger.

4. Slide the movable cutter (6) and the cutter plunger (4) into their holes in the cutter block (2). Then compress the plunger by hand until the top of the plunger is just below the top of cutter block body. Then tighten the plunger holding screw (5) until it engages the slot in the side of cutter plunger. Note: If the plunger holding screw (5) protrudes from its hole in the cutter block body (2) it is not correctly engaged with slot in plunger.

5. Slide the stationary cutter (8) back into the cutter block body until its cutting end surface contacts and is parallel with cutting surface of movable cutter (6). The stationary cutter (8) will align the movable cutter (6) automatically with slight pressure. When the cutters are correctly aligned tighten stationary cutter holding screws (7).

6. Reinstall the cutter block (2) onto its holding plate (3). Be sure to position the cutter block (2) so that the cutter block adjusting screw head (9) engages in the first (left side) slot in the cutter block control slide (10). With the cutter block (2) correctly positioned replace and tighten cutter block holding screw (1).

7. Rotate the stitch head's pulley by hand and check that the movable cutter (6) operates freely. Check that cutter stroke is correct. If the movable cutter (6) has been resharpened or a new cutter has been installed the cutter stroke may need resetting, refer to Step 5-How to Set the Movable Cutter.

E. GRIPPER (See Figure 15)-Check for excessive wear on the edges of the gripper bar anvil (1), the surface upon which the staples are formed, usually evidenced by rounded corners on a formed staple. Also check for signs of wear on the surface of the gripper bar that contacts the gripper bar clamp piece spring (2) and for sufficient tension applied to the gripper bar (1) from the gripper bar clamp piece spring (2). If the clamp piece spring is overly worn or the spring tension is not sufficient the wire will slip while being held in the gripper, usually resulting with one-legged staple(s).

To remove and reinstall gripper assembly proceed as follows:

1. Rotate the stitch head's pulley to the neutral (stop) position.
2. Unscrew the gripper spring screw (2) and remove the gripper spring (9) from the head.
3. Unscrew and remove the gripper pivot screw (4). This permits the gripper assembly (1) to be removed from the head.
4. When reinstalling the gripper assembly (1) be sure that the upper stud in the gripper bar clamp piece engages the slot in the gripper clamp piece control slide. Then replace and tighten the gripper pivot screw (4), the gripper spring (9) and the gripper spring screw (2).
5. Check that the gripper bar is in alignment with the formers.

F. FORMERS AND DRIVER (See Figure 15)-Check for wear in the grooves of the formers (3L) and (3R), usually evidenced by buckled staple legs. The driver (5) should be checked for broken tips or worn ends and/or sides. Some types of drivers are double-ended and can be reversed in the drive bar when one end is worn.

To remove and reinstall the formers and/or driver proceed as follows:

1. Remove the gripper spring assembly screw (2A) and remove the gripper spring assembly (2B).
2. Manually rotate the stitch head's pulley to the point where the formers (3L) and (3R) are at the lower end of their stroke and then continue to rotate the stitch head's pulley until clutch is disengaged. Remove the screws from the right former (3R), slide the former down and off of the former slide.
3. The driver (5) can now be removed by sliding it to the right.
4. If it is desired to remove the left former (3L) remove the cutter block holding screw (6), remove the cutter block (7) from its holding plate (8), remove the screws from the left former (3L), slide the former down and off of the former slide.
5. To reinstall the left former (3L) slide it up back on the former slide and securely tighten the attaching screws. Reinstall the cutter block (7) into its holding plate (8), in reverse of Step 4.
6. Slide the driver (5) left into place with the driving boss of the driver bar keyed into the slot of the former slide and the left side of the driver (5) is engaged in the groove of the left former (3L).
7. Slide the right former (3R) up into position on the former slide making sure that the driver (5) is engaged in former groove, securely tighten the attaching screws and replace the gripper spring assembly, in reverse of Step 1.
8. Manually rotate the stitch head's pulley and check that the parts operate freely. If new formers and/or driver have been installed oil them and the run machine for a short time, using oiled wire, in order to wear-in former grooves, thereby preventing binding of wire.

G. SUPPORTER (See DWG# 10I001-A)-If the legs of the staple buckle it may be caused by a worn supporter (28). Examine the supporter for signs of excessive wear on the surface that first contacts the wire. Due to the wire always striking the supporting surface at the same point a slight groove may eventually develop at this point causing the wire to jump when it contacts the groove.

The supporter should also be checked for worn (sharp) edges, which may cause wire breakage.

Staple crown buckling may be caused by the supporter retracting too easily due to insufficient tension of the supporter spring, this necessitates replacement of the spring.

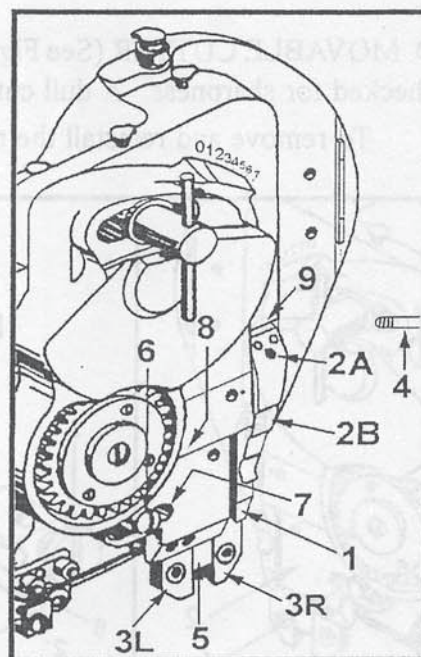


Figure 15-Removing and Replacing Gripper, Formers and Driver

H. WIRE FEED CLUTCH (See Figure 16)-The wire feed clutch (1) is a friction roller type of clutch that operates (grips) on the wire feed stroke, counter-clockwise rotation of the clutch ring gear (2), and slips on the return stroke. If the clutch slips on the wire feed stroke, causing uneven wire feed, it is probably due to excessive clutch lubrication. In this event the clutch assembly should be removed and washed with solvent. Be sure to relubricate clutch after clutch is reassembled in head. The clutch is lubricated by an oil hole in the retaining washer (3).

To remove/reinstall the clutch assembly proceed as follows:

1. Remove the retaining washer screw (4) and the retaining washer (3). Slide the clutch assembly from the wire feed drive gear stud (hidden).

2. If clutch is disassembled make sure that clutch rollers and springs, (5) and (6), are reassembled in the clutch spider (7) as shown in the lower portion of Figure 16.

CONVERSION TO ARC'D WIRE

(See Drawing Number 10I001-A)

Remove the present Wire Feed Idler Gear (53), Wire Feed Drive Gear (51), Wire Feed Pressure Tension Spring (39), Formers and Drivers (103, 104 & 105), Movable Cutter (68), Stationary Cutter (64) and Lower Wire Tube (47 or 57). Note: the upper portion of the lower wire tube needs to be ground to clear the wire feed gears.

1. After the arc'd wire forming parts have been installed and all standard adjustments have been made, manually rotate the stitch head's pulley by hand to make sure that all parts move freely.

2. Thread the wire between the Wire Feed Gears and turn the throw-out handle to the close gears. Rotate the stitch head's pulley until the wire passes through the cutter block and is being cut off. Check the wire to see that there is the proper amount of arc, the wire should have an arc of .026 to .029.

3. If there is not enough arc in the wire increase the wire feed pressure by turning the wire feed pressure adjusting screw (37) clockwise one or two turns. The Stitcher is now converted for arc'd wire stitching.

TROUBLE SHOOTING

The quality and quantity of work that can be produced with Crittenden Stitch Heads are dependent upon the operator making all adjustments as accurately as possible and carefully maintaining the heads.

The cause of staple imperfections usually can be traced to inaccurate settings or adjustments, or normal wear of parts. If stitch problems do occur the operator can, by referring to the following Trouble Shooting Chart, quickly locate and remedy the cause(s) of the trouble(s), shortening down-time.

The first column of the chart illustrates perfect and imperfect stitches, the second column describes the imperfections, the third column lists the probable cause(s), and the fourth column lists the remedy(ies), as well as to the paragraph in this book were detailed information for making the necessary remedial adjustments will be found.

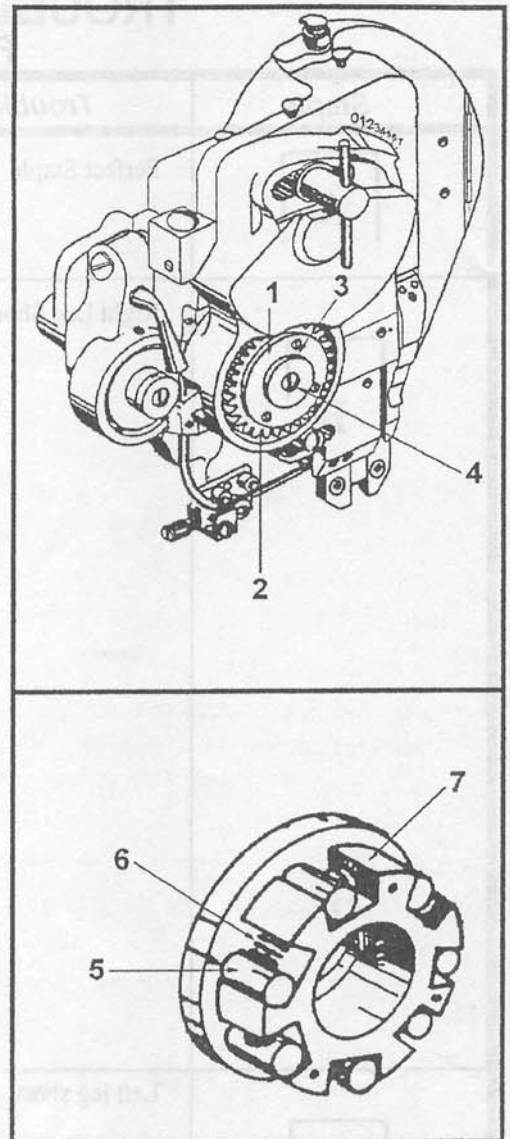


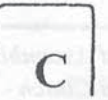
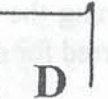


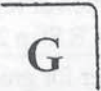






Figure 16-Removing and Assembling the Wire Feed Clutch











TROUBLE SHOOTING CHART FORMED STAPLES

<i>Staple</i>	<i>Trouble</i>	<i>Cause</i>	<i>Remedy</i>
	Perfect Staple		
	Right Leg Short	Wire spool dragging	Adjust wire spool tension
		Wire slipping in wire feed gears	OPERATING ADJUSTMENTS Step 7 MAINTENANCE Step 2-A
		Upper and/or lower wire tube clogged or worn	Clean and/or Tube(s)
		Cutter block not properly positioned with relation to gripper	OPERATING ADJUSTMENTS Step 5
		Improper wire feed due to over lubricated or worn wire feed clutch	Check operation of wire feed clutch MAINTENANCE Step 2-H
		Wire slipping in gripper due to normal wear of gripper bar clamp piece or insufficient tension in clamp piece spring	Check gripper bar clamp piece and spring MAINTENANCE Step 2-E
	Left leg short	Cutter block not properly positioned with relation to gripper	Adjust length of left leg OPERATING ADJUSTMENTS Steps 4 & 5
		Wire slipping in gripper due to normal wear of gripper bar clamp piece or insufficient tension in clamp piece spring	Check gripper bar clamp piece and spring MAINTENANCE Step 2-E
	Staple corner buckled	Chipped or broken driver	Check driver ends for signs of damage, reverse or replace driver MAINTENANCE Step 2-F
	Either or both legs buckled	Wrong size wire being used for work being stitched	Check wire size for work being stitched Step 3 of OPERATING ADJUSTMENTS
		Dull wire cutters	Check movable and stationary cutters; sharpen or replace cutters MAINTENANCE Step 2-C
		Worn supporter, or supporter retracts too easily due to insufficient spring tension	Check for worn supporter and broken or weak supporter spring MAINTENANCE Step 2-G

TROUBLE SHOOTING CHART (Cont'd) FORMED STAPLES

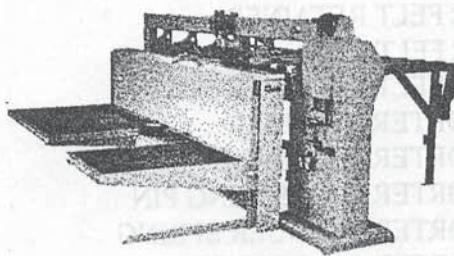
Staple	Trouble	Cause	Remedy
	Bent Crown	Wrong size wire being used for work being stitched	Check wire size for work being stitched
		Supporter retracts too easily	Check for weak supporter spring MAINTENANCE Step 2-G
		Wrong setting of stitcher adjustment for thickness of work being stitched	Check stitcher adjustment for thickness of work being stitched OPERATING ADJ. Step 3
	Left leg missing	Wire slipping in gripper due to normal wear of gripper bar clamp piece or clamp piece spring	Check gripper bar clamp piece and clamp piece spring MAINTENANCE Step 2-E
		Gripper out of alignment with formers	Check to see that formers and gripper are in proper alignment OPERATING ADJ. Step 6
	Right leg missing	Wire slipping in wire feed gears	Check tension setting of wire feed gears, check for worn gears OPERATING ADJ. Step 7 MAINTENANCE Step 2-A
		Refer to causes for "Left leg missing"	Refer to Remedies for "Left leg missing"
		Gripper not operating properly due to broken or weak gripper bar holding springs	Check for broken or weak gripper springs MAINTENANCE Step 2-E
	Staple comes out in pieces	See Causes for Left and Right legs missing	Refer to Remedies for Left and Right legs missing
		Supporter edges worn sharp	Check for worn supporter MAINTENANCE Step 2-G
		Wire too hard	Check wire being used
	Corner of staple broken or nearly broken thru	Wire too hard	Check wire being used
		Supporter edges worn sharp	Check for worn supporter MAINTENANCE Step 2-G
		Driver corners too sharp or worn formers	Check for worn driver or formers MAINTENANCE Step 2-F
	Corner of staple rounded	Worn anvil surface of gripper bar	Check for worn gripper bar MAINTENANCE Step 2-E

TROUBLE SHOOTING CHART (Cont'd) FORMED STAPLES

Staple	Trouble	Cause	Remedy
 	<p>Perfect Stitch (.175 to 1/2" Crown Width)</p> <p>Perfect Stitch (Crown Widths greater than 1/2"</p>		
	Loose clinch	Wrong setting of stitche adjustment for thickness of work and clinchers set too low	Check setting of Stitche for thickness of work being stitched and raise clinchers OPERATING ADJ. Step 3
	Legs spread	Worn wire cutters	Check movable and stationary cutters, sharpen or replace MAINTENANCE Step 2-C
		Former grooves worn	Check former for grooves MAINTENANCE Step 2-F
		Wire straightener not properly adjusted	Check setting of wire strightener OPERATING ADJ. Step 2
		Thickness of work beyond capacity of machine	Check thickness capacity of Stitche OPERATING ADJ. Step 3
	Staple legs contracted	Worn wire cutters	Check movable and stationary cutters; sharpen or replace OPERATING ADJ. Step 5 MAINTENANCE Step 2-C
		Wire straightener not properly adjusted	Check setting of wire straightener OPERATING ADJ. Step 2
	Crown buckled, tearing work	Wrong setting of machine adjustment for thickness of work	Check setting of Stitche for thickness of work being stitched OPERATING ADJ. Step 3
	Only one leg clinched in	Clincher not in alignment with driver	Align clincher and driver OPERATING ADJ. Step 6
	Short legs	Insufficient wire draw	Increase amount of wire draw OPERATING ADJ. Step 3
	Legs cross	Wire draw too great	Decrease amount of wire draw OPERATING ADJ. Step 3
	Uneven clinching	Clincher not level and parallel with formers	Adjust clincher setting

PARTS ORDERING INFORMATION

FOR CRITTENDEN 700 SERIES STITCHER



Refer to the corresponding assembly drawing, identify the part and reference number. Then refer to the part assembly table for a part description and part number.

To order parts please phone or fax your information to the following:

Crittenden Conversion Corporation

145 N. Hamilton Road

Moses Lake, WA 98837

Ph: (509) 764-1747

Ph: (800) 755-7894

Fax: (509) 764-1688

e-mail: mbyrd@crittendenconversion.com

WEB: www.crittendenconversion.com

- Date of Order
- Your Name
- Phone/Fax Number
- Company Name
- Billing Address
- Shipping Address
- Purchase Order Number
- How you would like your order shipped
- Part Number(s)
- Description of Part(s)
- Quantity of each part

REF NO	PART NUMBER	QTY	DESCRIPTION	STITCH HEAD ASSEMBLY
001	C1001S	1	HEAD PLATE-STANDARD DRAW	
001	C1001LD	1	HEAD PLATE-LONG DRAW	
002	C1002	1	HEAD PLATE KEY	
003	C1003	1	UPPER WIRE TUBE-RIBBON TYPE	
004	C1004	2	HEAD LOCATING DOWEL	
005	C1005	1	OILER CUP-LARGE	
006	C1006	2	OILER CUP-SMALL	
007	C1007	2	HEAD PLATE KEY SCREW	
008	C1008	1	OILER FELT RETAINER	
009	C1009	1	OILER FELT	
010	C1010	1	OILER FELT RETAINER SCREW	
011	C1011	1	SUPPORTER PLUNGER	
012	C1012	1	SUPPORTER CAM-RAMP	
013	C1013	2	SUPPORTER CAM SPRING PIN	
014	C1014	1	SUPPORTER PLUNGER SPRING	
015	C1015	1	SUPPORTER CAM SCREW	
016	C1016	1	SUPPORTER PLUNGER SHOE STUD NUT	
017	C1017	1	SUPPORTER PLUNGER SHOE STUD LOCK WASHER	
018	C1018	1	SUPPORTER BRACKET-LEFT HAND	
019	C1019	4	SUPPORTER BRACKET SCREW	
020	C1020	1	SUPPORTER PLUNGER SHOE STUD	
021	C1021	1	SUPPORTER PLUNGER SHOE	
022	C1022	1	SUPPORTER BRACKET-RIGHT HAND	
023	C1023	1	SUPPORTER PLUNGER SHOE STOP	
024	C1024	2	SUPPORTER PLUNGER SHOE STOP LOCK WASHER	
025	C1025	2	SUPPORTER PLUNGER SHOE STOP SCREW	
026	C1026	1	SUPPORTER ROLL	
027	C1027	1	SUPPORTER ROLL STUD	
028	C1028	1	SUPPORTER 7/16" CROWN WITH ROLL AND STUD	
029	C1029	1	SUPPORTER PIVOT PIN	
030	C1030	2	GEAR ARM HOLDING PLATE SCREW	
031	C1031	1	GEAR ARM HOLDING PLATE ROD PIN	
032	C1032	1	GEAR ARM HOLDING PLATE	
033	C1033	1	GEAR ARM PIVOT LOCK SCREW	
034	C1034	1	GEAR ARM HOLDING PLATE ROD	
035	C1035	1	GEAR ARM HOLDING PLATE LOCATING PIN	
036	C1036	1	WIRE FEED IDLER GEAR ARM WITH STUD (ALL MODELS)	
037	C1037	1	WIRE FEED PRESSURE ADJUSTING SCREW	
038	C1038	1	OILER-BUTTON TYPE	
039	C1039	1	WIRE FEED PRESSURE TENSION SPRING	
040	C1040	1	WIRE FEED DRIVE GEAR STUD NUT	
041	C1041	1	THROWOUT HANDLE STOP PIN	
042	C1042	1	LOWER WIRE TUBE HOLDING CLAMP NUT	
043	C1043	1	WIRE FEED IDLER GEAR THROWOUT HANDLE	
044	C1044	2	WIRE TUBE SCREW-1/4-28 SOC. SET	
044	C1044B	2	WIRE TUBE SCREW-1/4-24 SLOTTED	
045	C1045	1	WIRE FEED IDLER GEAR ARM PIVOT	
046	C1046	1	WIRE FEED IDLER GEAR ARM STUD-W/WASHER & SCREW-S.D.	
046	C1046LD	1	WIRE FEED IDLER GEAR ARM STUD ONLY-LONG DRAW	

STITCH HEAD ASSEMBLY

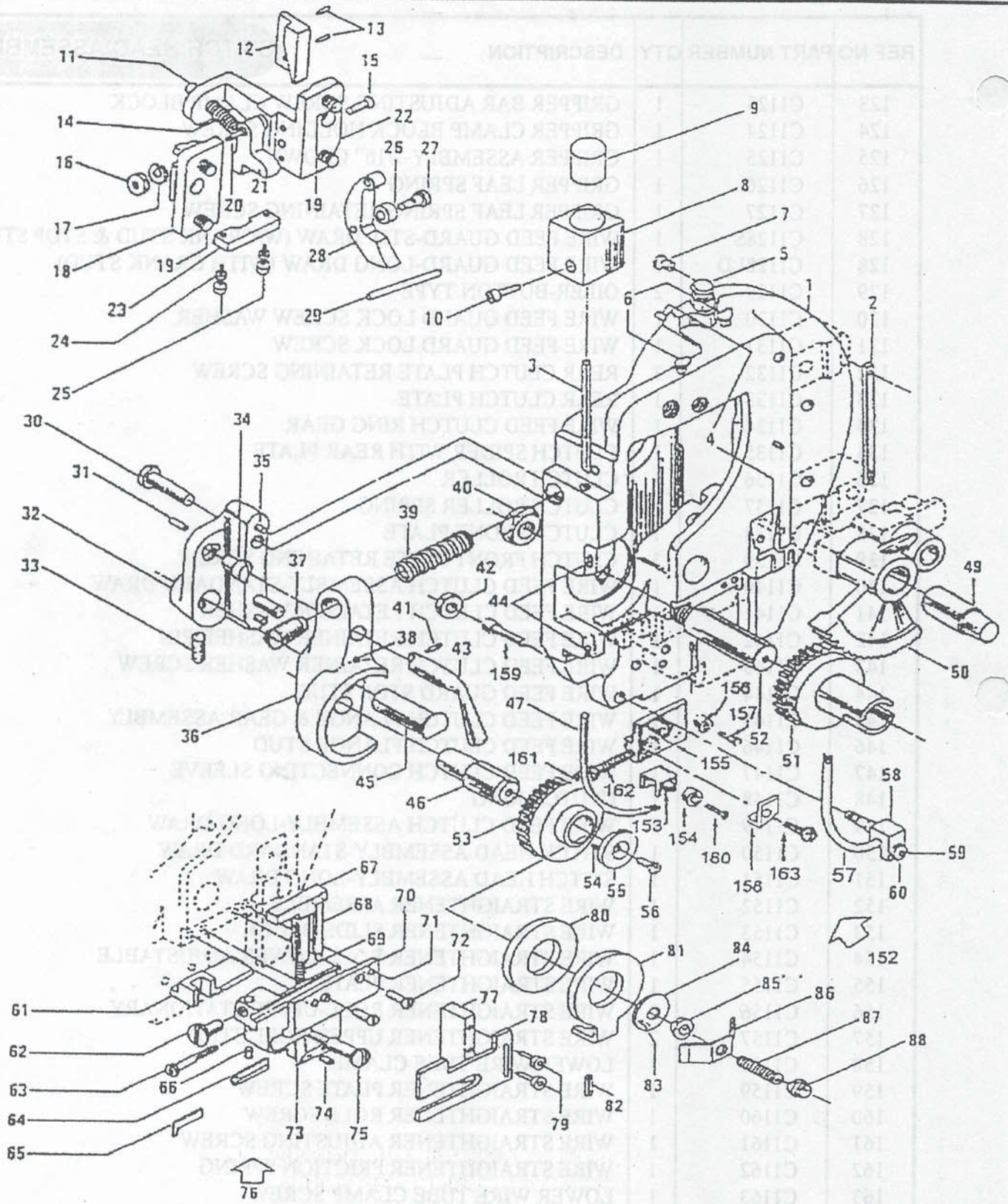
REF NO	PART NUMBER	QTY	DESCRIPTION
047	C1047	1	LOWER WIRE TUBE-RW-USUED WITH WIRE STRAIGHTENER
048	C1048	1	WIRE FEED DRIVE GEAR STUD PIN
049	C1049	1	WIRE FEED GUARD CRANK STUD
050	C1050	1	WIRE FEED CRANK SECTOR-STANDARD DRAW
050	C1050LD	1	WIRE FEED CRANK SECTOR-LONG DRAW
051	C1051S	1	WIRE FEED DRIVE GEAR-RIBBON WIRE-STANDARD DRAW
051	C1051LD	1	WIRE FEED DRIVE GEAR -RIBBON WIRE-LONG DRAW
051	C1051AS	1	WIRE FEED DRIVE GEAR -ARC'D WIRE-STANDARD DRAW
051	C1051ALS	1	WIRE FEED DRIVE GEAR -ARC'D WIRE-LONG DRAW
052	C1052S	1	WIRE FEED DRIVE GEAR STUD-STANDARD DRAW
052	C1052LD	1	WIRE FEED DRIVE GEAR STUD-LONG DRAW
053	C1053	1	WIRE FEED IDLER GEAR-RIBBON WIRE
053	C1053A	1	WIRE FEED IDLER GEAR-ARC'D WIRE
054	C1054	1	WIRE FEED IDLER GEAR RETAINER WASHER PIN
055	C1055	1	WF IDLER GEAR RETAINER WASHER-WO/ FRICTION BRAKE
056	C1056	1	WIRE FEED IDLER GEAR RETAINER WASHER SCREW-F.H.C.S.
057	C1057	1	LOWER WIRE TUBE-RIBBON WIRE
058	C1058	1	LOWER WIRE TUBE HOLDING CLAMP
059	C1059	1	LOWER WIRE TUBE RETAINING SCREW
060	C1060	1	LOWER WIRE TUBE RETAINING SCREW NUT
061	C1061	1	CUTTER BLOCK CONTROL SLIDE
062	C1062	1	CUTTER BLOCK ADJUSTING SCREW
063	C1063	1	CUTTER PLUNGER HOLDING SCREW
064	C1064	1	STATIONARY CUTTER-RW-SQUARE CUTOFF
064	C1064-15	1	STATIONARY CUTTER-RW-15 DEGREE ANGLE CUTOFF
064	C1064A	1	STATIONARY CUTTER-ARC'D WIRE
065	C1065	1	STATIONARY KNIFE PLATE
066	C1066	1	CUTTER BLOCK ADJUSTING SCREW LOCK SCREW-1/4-28 SOC.
066	C1066B	1	CUTTER BLOCK ADJUSTING SCREW LOCK SCREW-1/4-24
067	C1067	1	CUTTER PLUNGER
068	C1068	1	MOVEABLE CUTTER-RIBBON WIRE
068	C1068A	1	MOVEABLE CUTTER-ARC'D WIRE
069	C1069	1	CUTTER PLUNGER SPRING
070	C1070S	1	CUTTER BLOCK HOLDING PLATE-STANDARD DRAW
070	C1070LD	1	CUTTER BLOCK HOLDING PLATE-LONG DRAW
071	C10771	2	CUTTER BLOCK HOLDING PLATE DOWEL
072	C1072	2	CUTTER BLOCK HOLDING PLATE SCREW
073	C1073	1	CUTTER BLOCK BODY
074	C1074	2	STATIONARY CUTTER SCREW-1/4-28 SOC. SET
074	C1074B	2	STATIONARY CUTTER SCREW-1/4-24 SLOTTED
075	C1075	1	CUTTER BLOCK HOLDING SCREW
076	C1076	1	CUTTER BLOCK ASSY.-SPECIFY WIRE TYPE & CUTOFF STYLE
077	C1077	1	WIRE GUIDE
078	C1078	1	WIRE GUIDE PLATE
079	C1079	1	WIRE GUIDE SCREW
080	C1080	1	FRICTION BRAKE
081	C1081	1	FRICTION BRAKE PLATE
082	C1082	1	FRICTION BRAKE PLATE SPRING PIN
083	C1083	1	RETAINING GEAR WASHER PIN

STITCH HEAD ASSEMBLY

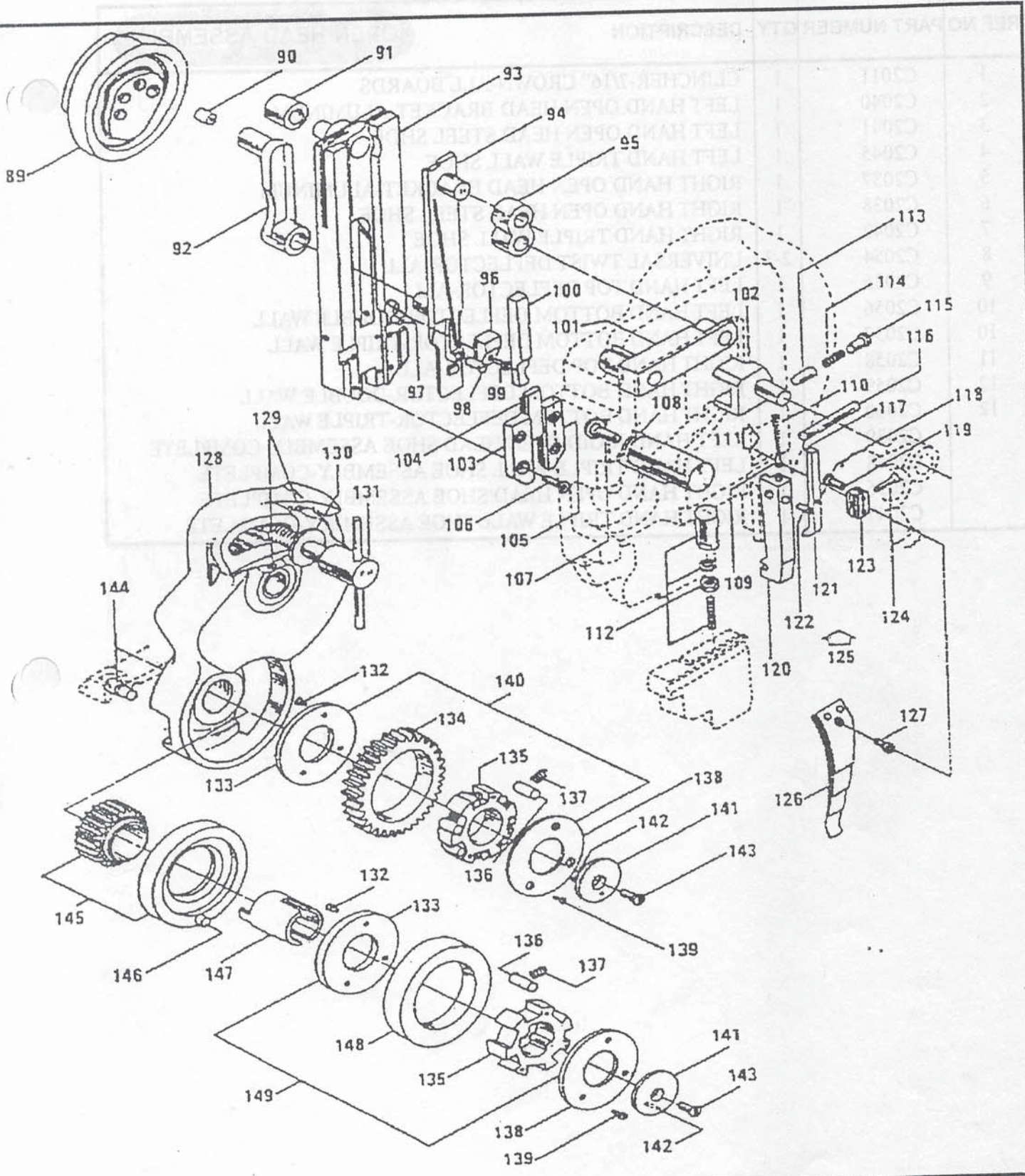
REF NO	PART NUMBER	QTY	DESCRIPTION
084	C1084	1	RETAINING GEAR WASHER-USED WITH FRICTION BRAKE
085	C1085	1	WIRE FEED IDLER GEAR STUD SCREW NUT
086	C1086	1	FRICTION BRAKE SPRING
087	C1087	1	WIRE FEED IDLER GEAR STUD SCREW
088	C1088	1	FRICTION BRAKE TENSION NUT
089	C1089	1	HARDENED DRIVE CAM-ALL MODELS
090	C1090	1	OILITE CAM BUSHING
091	C1091	1	FORMER SLIDE ROLLER-DRIVE CAM FOLLOWER
092	C1092	1	DRIVER BAR LINK
093	C1093	1	FORMER SLIDE-.190-7/16" CROWN
094	C1094	1	DRIVER BAR 3/8" THRU 1-3/8" CROWN
095	C1095S	1	WIRE FEED OPERATING LINK-STANDARD DRAW 3/4"
095	C1095LD	1	WIRE FEED OPERATING LINK-LONG DRAW 1"
096	C1096	1	GRIPPER THROWOUT CAM BLOCK .175-1/2" CROWN
097	C1097	2	FORMER SLIDE THROWOUT CAM DOWEL
098	C1098	1	DRIVER BAR LOCK STUD
099	C1099	1	GRIPPER THROWOUT CAM BLOCK SCREW
100	C1100	1	GRIPPER CLAMP PIECE CONTROL SLIDE
101	C1101	1	WIRE FEED OPERATING LEVER-WITH STUDS
102	C1102	1	WIRE FEED OPERATING LEVER SLIDING HEAD
103	C1103-020	1	LEFT HAND FORMER .020 RIBBON WIRE
103	C1103-023	1	LEFT HAND FORMER .023 RIBBON WIRE
103	C1103-028	1	LEFT HAND FORMER .028 RIBBON WIRE
103	C1103A	1	LEFT HAND FORMER ARC'D WIRE
104	C1104-020	1	DRIVER .020 RIBBON WIRE
104	C1104-023	1	DRIVER .023 RIBBON WIRE
104	C1104-028	1	DRIVER .028 RIBBON WIRE
104	C1104A	1	DRIVER ARC'D WIRE
105	C1105-020	1	RIGHT HAND FORMER .020 RIBBON WIRE
105	C1105-023	1	RIGHT HAND FORMER .023 RIBBON WIRE
105	C1105-028	1	RIGHT HAND FORMER .028 RIBBON WIRE
105	C1105A	1	RIGHT HAND FORMER ARC'D WIRE
106	C1106	4	FORMER SCREW
107	C1107	1	CUTTER BLOCK TRIP CRANK HOLDING SCREW
108	C1107	1	CUTTER BLOCK TRIP CRANK
109	C1109	1	GRIPPER BAR CLAMP PIECE SPRING PLUG
110	C1110	1	GRIPPER BAR CLAMP PIECE SPRING
111	C1111	1	GRIPPER BAR CLAMP PIECE SPRING-ASSEMBLY
112	C1112	1	CUTTER BLOCK OPERATING PLUNGER-ASSEMBLY ONLY
113	C1113	1	GRIPPER CLAMP PIECE CONTROL SLIDE FRICTION BOLT
114	C1114	1	GRIPPER CLAMP PIECE CONTROL SLIDE FRICTION SPRING
115	C1115	1	FRICTION BOLT SCREW
116	C1116	1	GRIPPER PIVOT SCREW
117	C1117	1	GRIPPER BAR CLAMP PIECE STUD-UPPER
118	C1118	1	GRIPPER BAR CLAMP PIECE STUD-LOWER
119	C1119	1	GRIPPER BAR ADJUSTING SCREW
120	C1120	1	GRIPPER BAR-7/16" CROWN
121	C1121	1	GRIPPER BAR CLAMP ASSEMBLY
122	C1122	1	GRIPPER BAR CLAMP PIECE SPRING RETAINING SCREW

STITCH HEAD ASSEMBLY

REF NO	PART NUMBER	QTY	DESCRIPTION
123	C1123	1	GRIPPER BAR ADJUSTING SCREW CLAMP BLOCK
124	C1124	1	GRIPPER CLAMP BLOCK HOLDING SCREW
125	C1125	1	GRIPPER ASSEMBLY-7/16" CROWN
126	C1126	1	GRIPPER LEAF SPRING
127	C1127	1	GRIPPER LEAF SPRING RETAINING SCREW
128	C1128S	1	WIRE FEED GUARD-STD. DRAW (W/CRANK STUD & STOP STUD)
128	C1128LD	1	WIRE FEED GUARD-LONG DRAW (WITH CRANK STUD)
129	C1129	2	OILER-BUTTON TYPE
130	C1130	1	WIRE FEED GUARD LOCK SCREW WASHER
131	C1131	1	WIRE FEED GUARD LOCK SCREW
132	C1132	3	REAR CLUTCH PLATE RETAINING SCREW
133	C1133	1	REAR CLUTCH PLATE
134	C1134	1	WIRE FEED CLUTCH RING GEAR
135	C1135	1	CLUTCH SPIDER WITH REAR PLATE
136	C1136	1	CLUTCH ROLLER
137	C1137	1	CLUTCH ROLLER SPRING
138	C1138	1	CLUTCH FRONT PLATE
139	C1139	3	CLUTCH FRONT PLATE RETAINING SCREW
140	C1140	1	WIRE FEED CLUTCH ASSEMBLY-STANDARD DRAW
141	C1141	1	WIRE FEED CLUTCH RETAINER WASHER
142	C1142	1	WIRE FEED CLUTCH RETAINER WASHER PIN
143	C1143	1	WIRE FEED CLUTCH RETAINER WASHER SCREW
144	C1144	1	WIRE FEED GUARD STOP STUD
145	C1145	1	WIRE FEED CLUTCH FLANGE & GEAR ASSEMBLY
146	C1146	1	WIRE FEED CLUTCH FLANGE STUD
147	C1147	1	WIRE FEED CLUTCH CONNECTING SLEEVE
148	C1148	1	CLUTCH RING
149	C1149	1	WIRE FEED CLUTCH ASSEMBLY-LONG DRAW
150	C1150	1	STITCH HEAD ASSEMBLY-STANDARD DRAW
151	C1151	1	STITCH HEAD ASSEMBLY-LONG DRAW
152	C1152	1	WIRE STRAIGHTENER ASSEMBLY
153	C1153	1	WIRE STRAIGHTENER SLIDE BLOCK
154	C1154	1	WIRE STRAIGHTENER ROLL-LOWER ADJUSTABLE
155	C1155	1	WIRE STRAIGHTENER PLATE
156	C1156	2	WIRE STRAIGHTENER ROLL-UPPER STATIONARY
157	C1157	2	WIRE STRAIGHTENER UPPER ROLL STUD
158	C1158	1	LOWER WIRE TUBE CLAMP
159	C1159	1	WIRE STRAIGHTENER PLATE SCREW
160	C1160	1	WIRE STRAIGHTENER ROLL SCREW
161	C1161	1	WIRE STRAIGHTENER ADJUSTING SCREW
162	C1162	1	WIRE STRAIGHTENER FRICTION SPRING
163	C1163	1	LOWER WIRE TUBE CLAMP SCREW



FIGSH_A.TIF

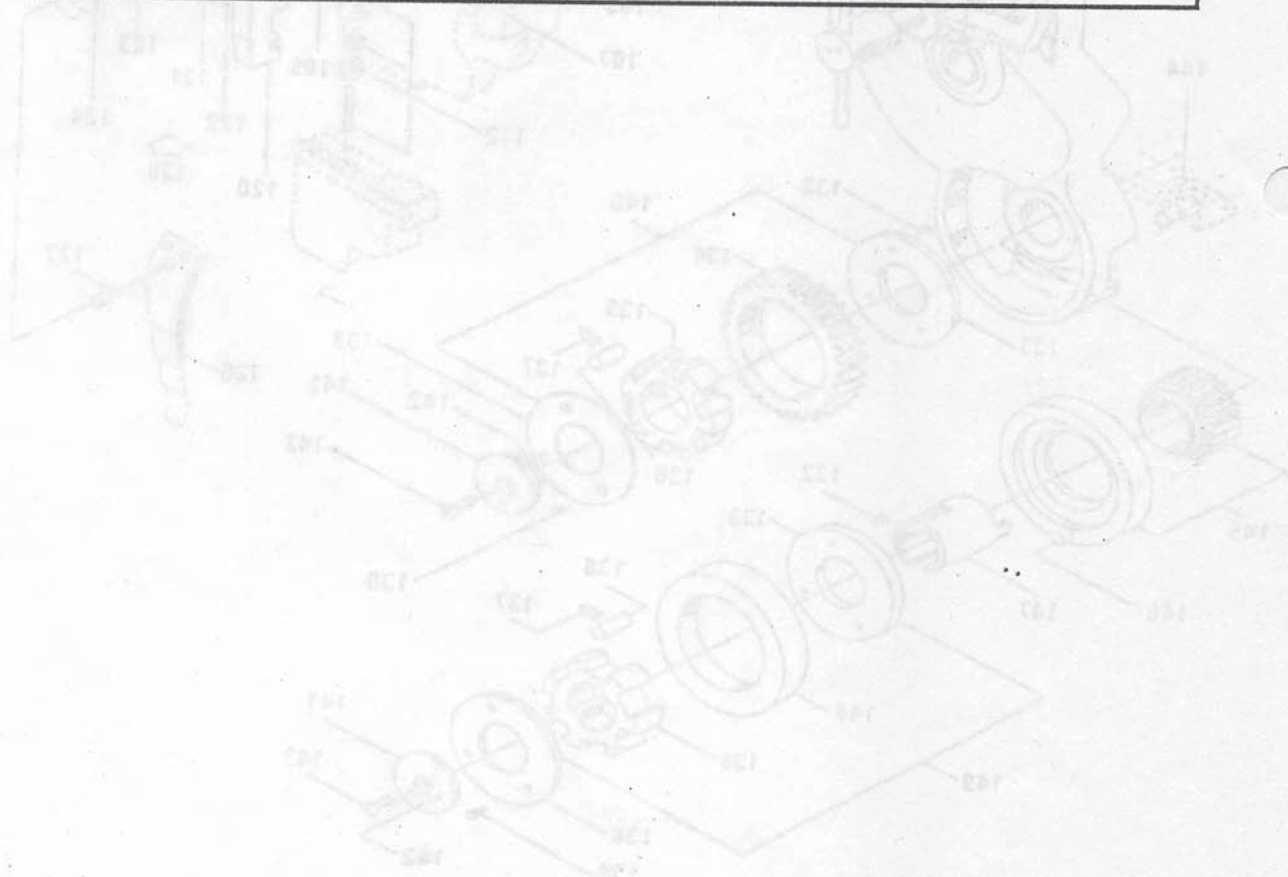


STITCH HEAD ASSEMBLY
DRAWING NUMBER 10I001-A
FIGSH_A.TIF & FIGSH_B.TIF

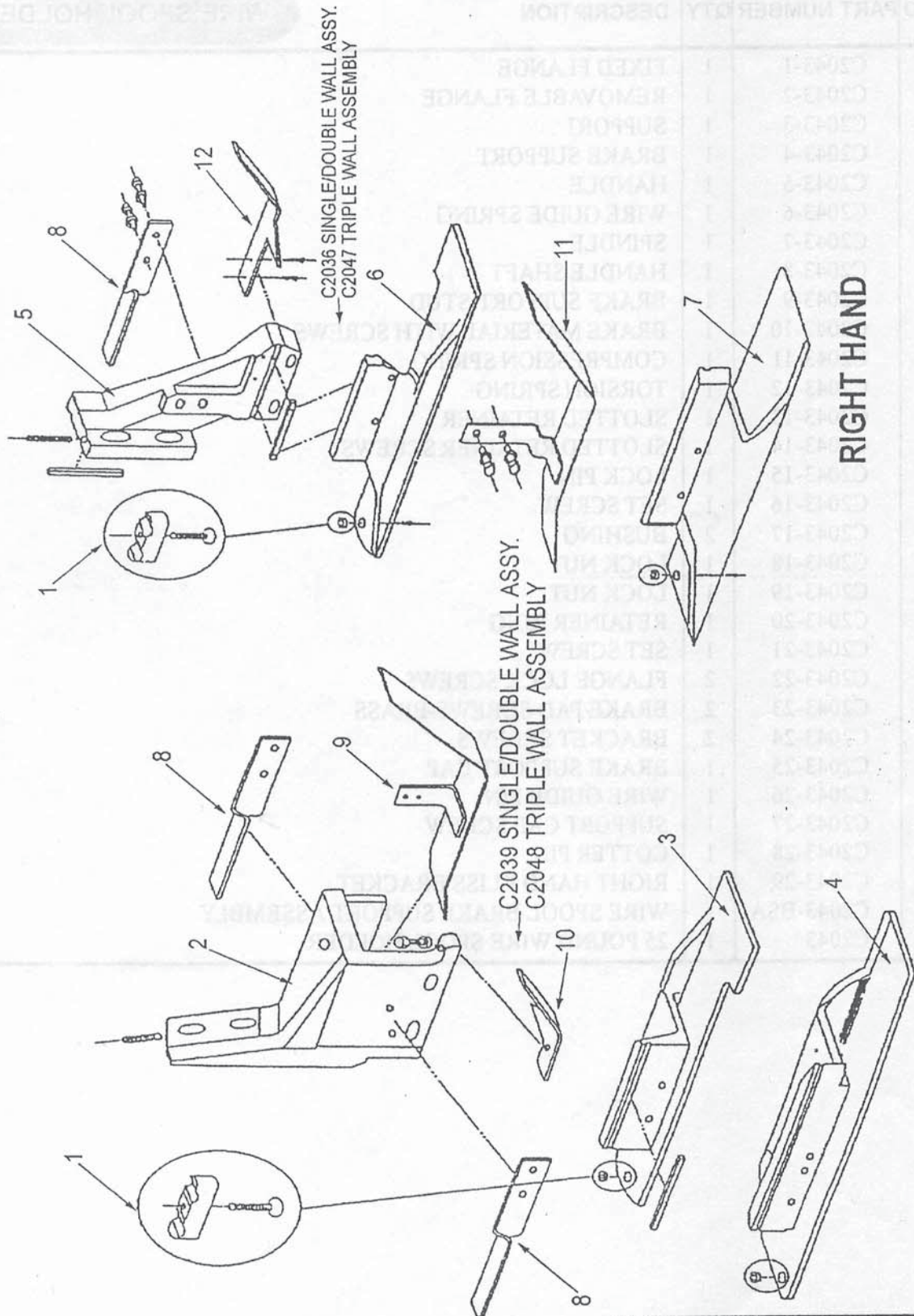
FIGSH_B.TIF

OPEN HEAD ASSEMBLY

REF NO	PART NUMBER	QTY	DESCRIPTION
1	C2011	1	CLINCHER-7/16" CROWN-ALL BOARDS
2	C2040	1	LEFT HAND OPEN HEAD BRACKET-ALUMINUM
3	C2041	1	LEFT HAND OPEN HEAD STEEL SHOE
4	C2045	1	LEFT HAND TRIPLE WALL SHOE
5	C2037	1	RIGHT HAND OPEN HEAD BRACKET-ALUMINUM
6	C2038	1	RIGHT HAND OPEN HEAD STEEL SHOE
7	C2042	1	RIGHT HAND TRIPLE WALL SHOE
8	C2054	2-3	UNIVERSAL TWIST DEFLECTOR-ALL
9	C2055	1	LEFT HAND TOP DEFLECTOR-ALL
10	C2056	1	LEFT HAND BOTTOM DEFLECTOR-DOUBLE WALL
10	C2057	1	LEFT HAND BOTTOM DEFLECTOR-TRIPLE WALL
11	C2058	1	RIGHT HAND TOP DEFLECTOR-ALL
12	C2059	1	RIGHT HAND BOTTOM DEFLECTOR-DOUBLE WALL
12	C2060	1	RIGHT HAND BOTTOM DEFLECTOR-TRIPLE WALL
	C2039	1	LEFT HAND RIGID OPEN HEAD SHOE ASSEMBLY-COMPLETE
	C2048	1	LEFT HAND TRIPLE WALL SHOE ASSEMBLY-COMPLETE
	C2036	1	RIGHT HAND OPEN HEAD SHOE ASSEMBLY-COMPLETE
	C2047	1	RIGHT HAND TRIPLE WALL SHOE ASSEMBLY-COMPLETE



STITCH HEAD ASSEMBLY
 DRAWING NUMBER 1000-4
 MADE IN THE U.S.A.



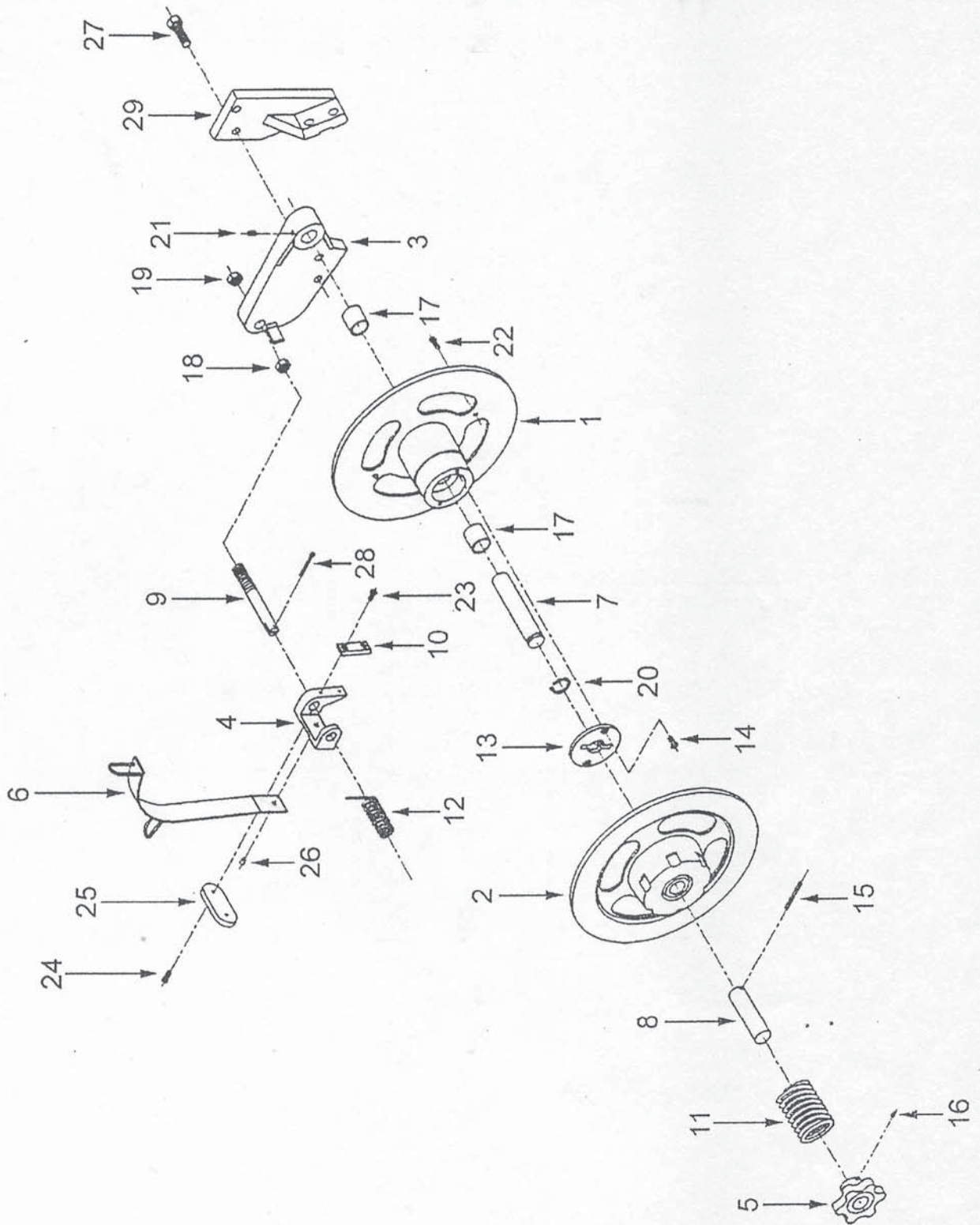
OPEN HEAD SHOE ASSY.

DRAWING NUMBER 10I002-A

10I002-A.TIF

WIRE SPOOL HOLDER

REF NO	PART NUMBER	QTY	DESCRIPTION
1	C2043-1	1	FIXED FLANGE
2	C2043-2	1	REMOVABLE FLANGE
3	C2043-3	1	SUPPORT
4	C2043-4	1	BRAKE SUPPORT
5	C2043-5	1	HANDLE
6	C2043-6	1	WIRE GUIDE SPRING
7	C2043-7	1	SPINDLE
8	C2043-8	1	HANDLE SHAFT
9	C2043-9	1	BRAKE SUPPORT STUD
10	C2043-10	1	BRAKE MATERIAL WITH SCREWS
11	C2043-11	1	COMPRESSION SPRING
12	C2043-12	1	TORSION SPRING
13	C2043-13	1	SLOTTED RETAINER
14	C2043-14	1	SLOTTED RETAINER SCREWS
15	C2043-15	1	LOCK PIN
16	C2043-16	1	SET SCREW
17	C2043-17	2	BUSHING
18	C2043-18	1	LOCK NUT
19	C2043-19	1	LOCK NUT
20	C2043-20	1	RETAINER RING
21	C2043-21	1	SET SCREW
22	C2043-22	2	FLANGE LOCK SCREWS
23	C2043-23	2	BRAKE PAD SCREWS-BRASS
24	C2043-24	2	BRACKET SCREWS
25	C2043-25	1	BRAKE SUPPORT CAP
26	C2043-26	1	WIRE GUIDE PIN
27	C2043-27	1	SUPPORT CAP SCREW
28	C2043-28	1	COTTER PIN
29	C2043-29	1	RIGHT HAND BLISS BRACKET
	C2043-BSA	1	WIRE SPOOL BRAKE SUPPORT ASSEMBLY
	C2043	1	25 POUND WIRE SPOOL HOLDER



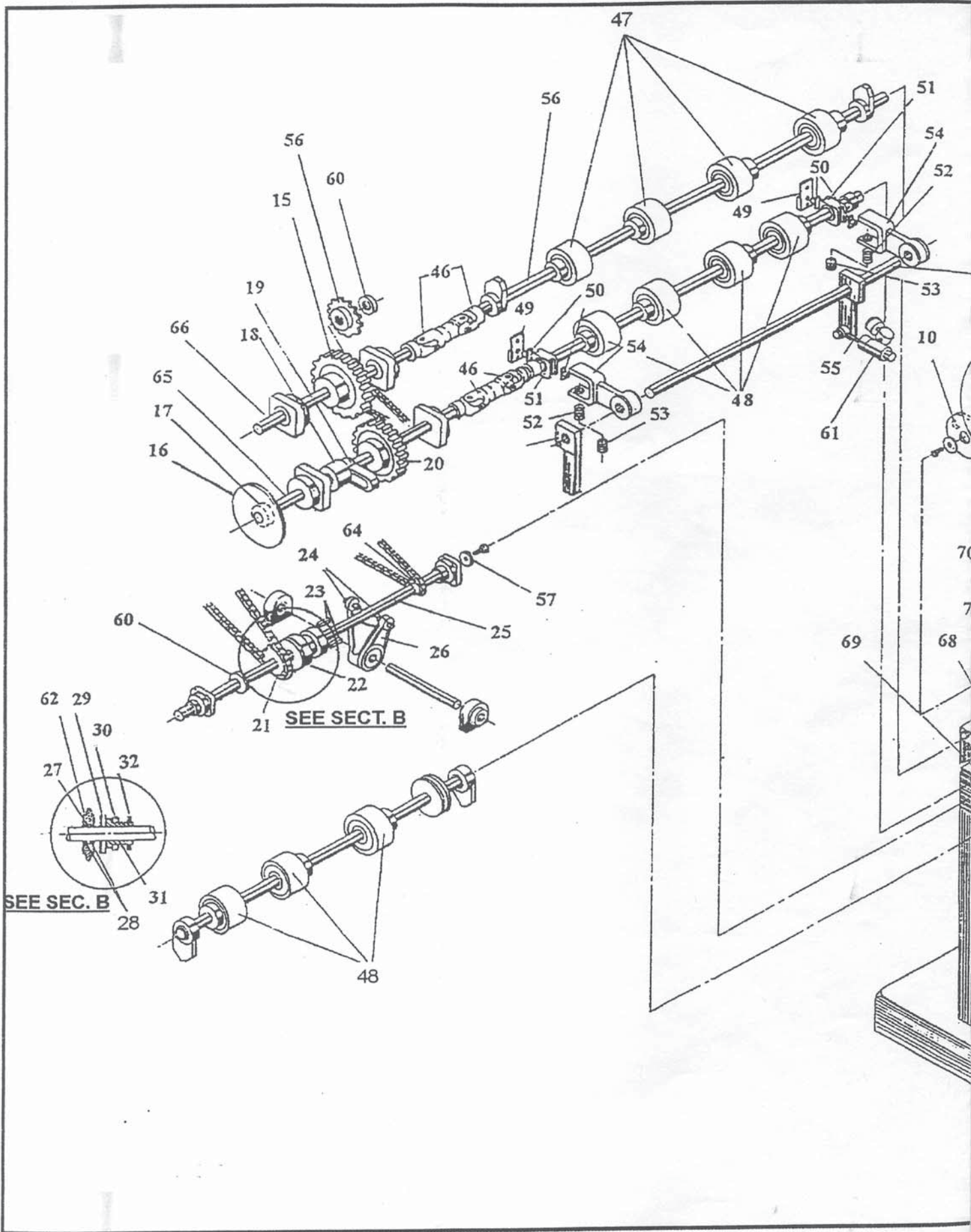
WIRE SPOOL HOLDER
DRAWING NUMBER 20I002-A
20I002-A.TIF

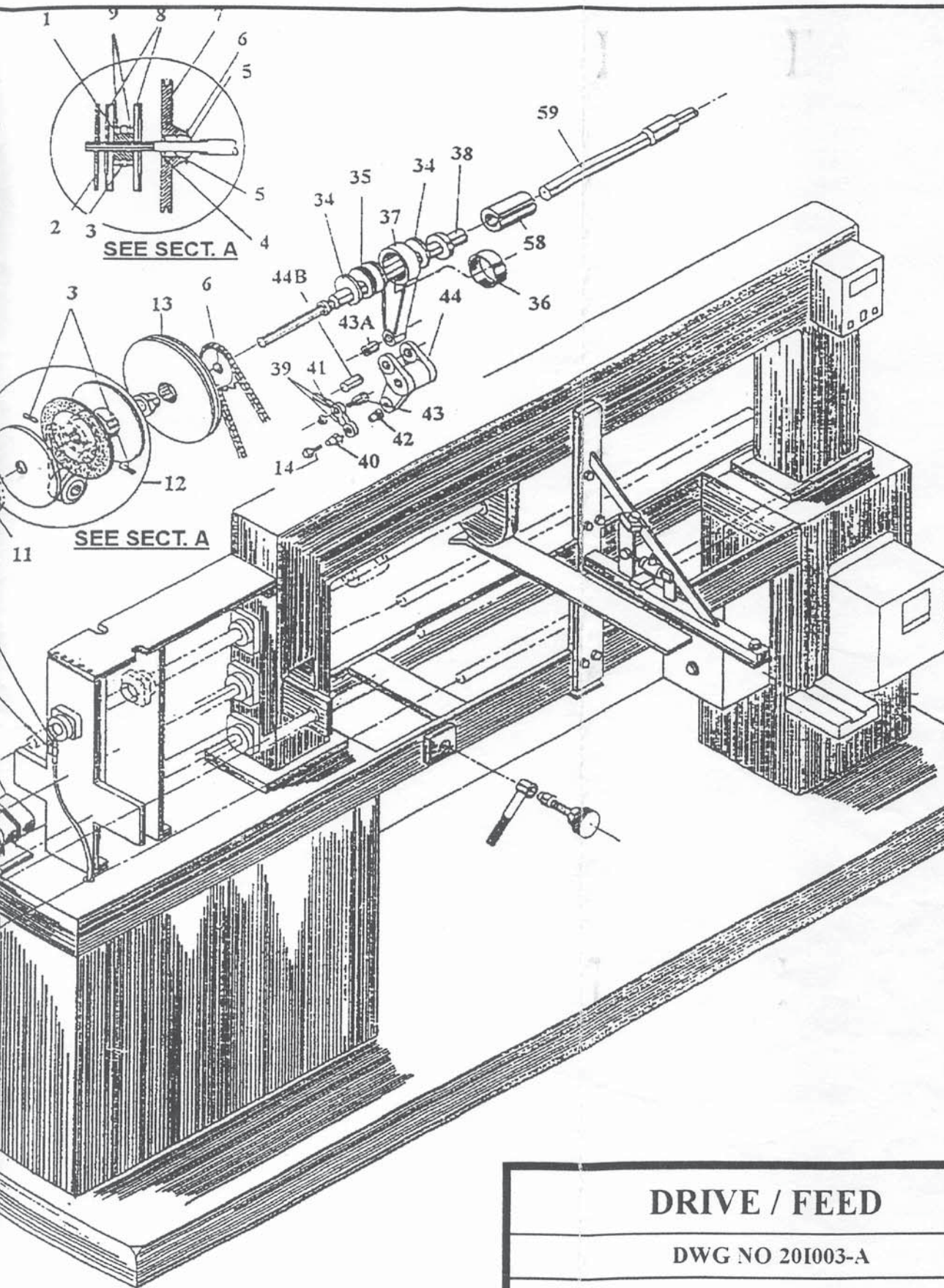
DRIVE / FEED ASSEMBLY

REF NO	PART NUMBER	QTY	DESCRIPTION
01	740A	1	CLUTCH-BRAKE SLEEVE
02	742	1	STATIONARY BRAKE PLATE
03	740B	1	CLUTCH-BRAKE COLLAR
04	735C	1	SNAP RING
05	735B	1	BEARING - SL-15
06	735A	1	FLYWHEEL SPKT-#50-24T
07	735F	1	FLYWHEEL
08	740D	2	CLUTCH-BRAKE DISC W/FACING
09	740C	2	THRUST BEARING-E-25
10	750A	1	MAGNET
11	750	1	MAGNET DISC
12	740	1	CLUTCH-BRAKE ASSY
13	735	1	FLYWHEEL ASSY COMPLETE
14	762	1	SCREW
15	705	1	TOP REVERSE GEAR 48T
16	712A	1	AUX BRAKE ROTOR/DISC
17	712	1	AUX BRAKE HUB
18	711	1	OVERRUNNING CLUTCH
19	765	1	OVERRUNNING CLUTCH HUB CASTING
20	706	1	BOTTOM REVERSE GEAR 54T
21	726A	1	HIGHSPEED SPROCKET ASSY
22	725	1	HIGHSPEED CLUTCH ASSY
23	721	2	KEY-H.S. SHAFT
24	779	2	HIGHSPEED CLUTCH YOKE SCREW
25	716	1	HIGHSPEED SHAFT
26	OC1-4	1	H.S. CLUTCH SHIFTING YOKE
27	728	1	BEARING-SL-16
28	727	2	SNAP RING
29	725C	1	HIGHSPEED CLUTCH DISC W/FACING
30	725B	1	THRUST BEARING
31	725A	1	HIGHSPEED CLUTCH SLEEVE
32	722	1	LOCK COLLAR-H.S. CLUTCH
34	C-2030	1	ECCENTRIC SIDE PLATE
35	C-2029	1	ECCENTRIC
36	C-2031	1	ECCENTRIC BUSHING-LARGE
37	C-2028	1	CONN ROD
38	730	1	CRANKSHAFT
39	758A	2	BUSHING-SPACE LEVER
40	764A	1	FLANGED BUSHING
41	758	1	STITCH SPACE LEVER
42	761	1	T-SLOT NUT
43	759	1	SHOULDER SCREW
44	756	1	BELL CRANK
46	702	6	UNIVERSAL JOINT

DRIVE / FEED ASSEMBLY

REF NO	PART NUMBER	QTY	DESCRIPTION
47	C-2034	10	4" DIA TOP FEED ROLLS
48	C-2035	10	4 1/2" DIA BOTTOM FEED ROLL
49	C-2017	10	ROCKER ARM BEARING COVER
50	C-2018	20	ROCKER ARM BEARING SLIDE
51	C-2014	10	ROCKER ARM BEARING BLOCK
52	C-2015	10	ROCKER ARM BEARING SPRING
53	C-2016	10	ROCKER ARM SPRING ADJ SCREW
54	C-2013	10	ROCKER ARM CASTING
55	780	1	TURN BUCKLE ASSY COMPLETE
58	7107	1	COUPLER
59	7108	1	DRIVE SHAFT
60	720	0	SQUEEZE LOCK-1"
62	726	1	HIGH SPEED SPROCKET
57	718	1	THRUST WASHER
64	715	1	SPROCKET-#40-12, 1"
65	707	1	STEP FEED SHAFT 23 1/8
66	704	1	REVERSE GEAR SHAFT
56	701	1	TFR SPROCKET #40-16
68	713	1	AUX BRAKE CALIPER ASSEM.
69	714	1	AUX BRAKE MOUNT
70	791	1	REED SWITCH
71	792	1	REED SWITCH ADJ. CLAMP
43A	C2032	1	CONN ROD BUSHING-SMALL
43B	7106	1	BELLCRANK PIN
33	795	1	CHAIN - #40 (NOT SHOWN)
45		1	CHAIN - #50 (NOT SHOWN)
61	790	1	LATCH PADDLE CYL - 1"X1"
63		0	PART NOT SHOWN
67		0	PART NOT SHOWN
33A		1	CHAIN - #40 (NOT SHOWN)
33B		1	CHAIN - #40 (NOT SHOWN)





DRIVE / FEED

DWG NO 20I003-A

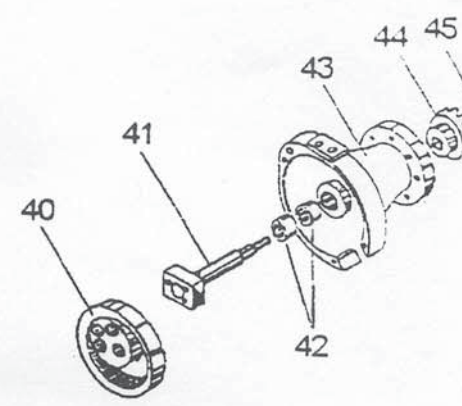
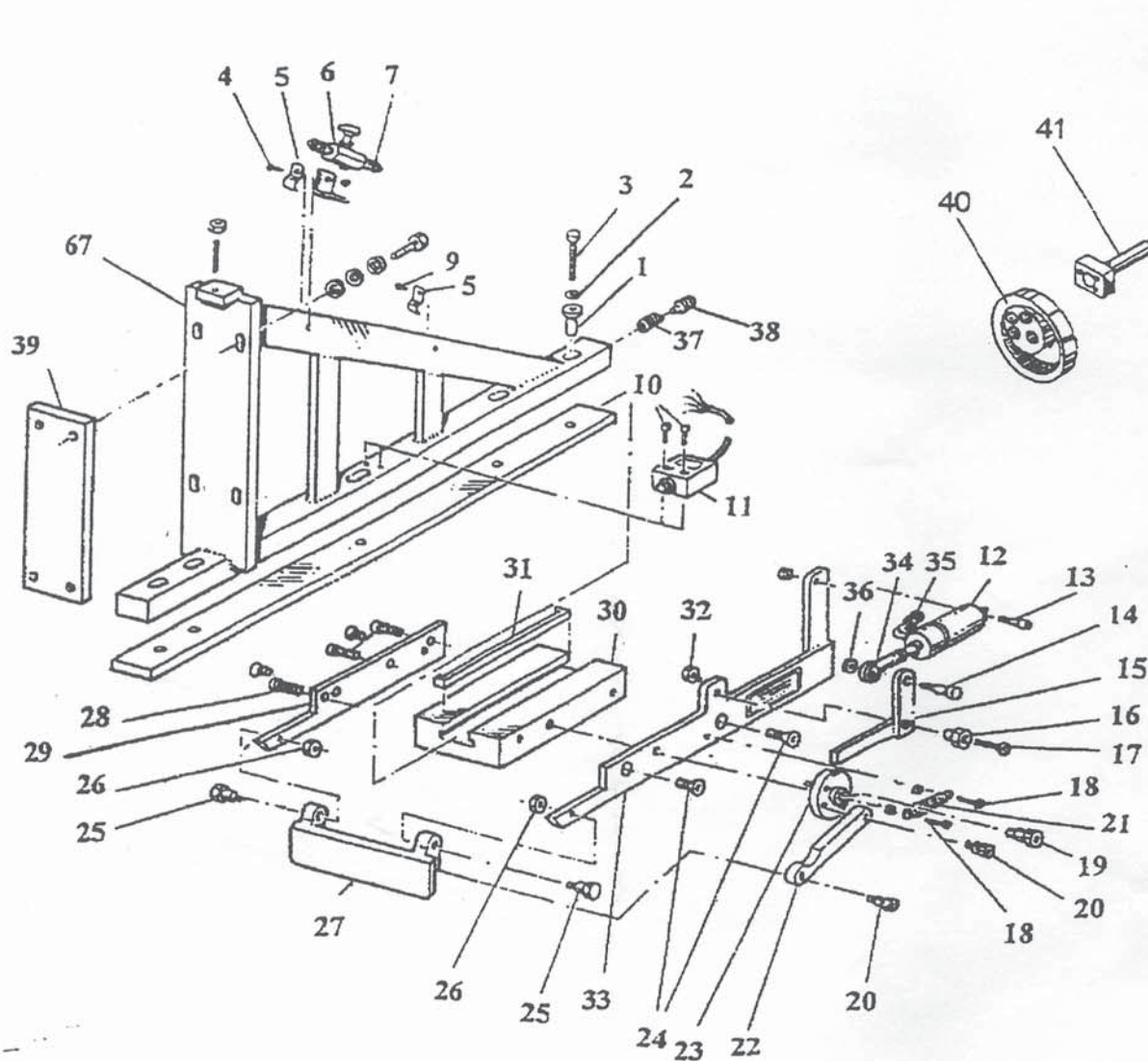
DRVFED.TIF/DRVFED.PM6

DRIVE / TRIP ASSEMBLY

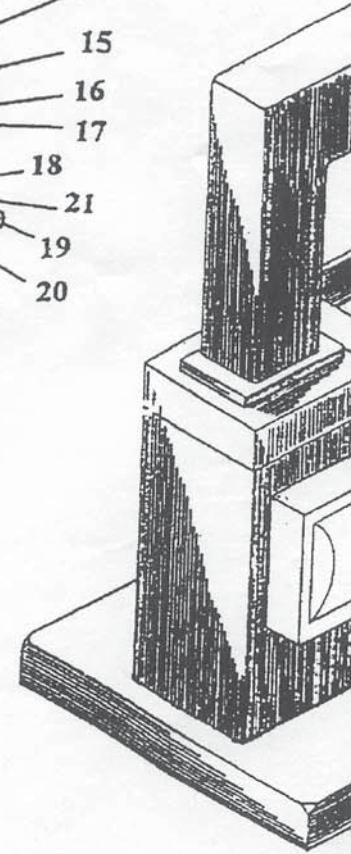
REF NO	PART NUMBER	QTY	DESCRIPTION
44	C2002	1	HEAD CAMSHAFT GEAR
45	C2003	1	HEAD CAMSHAFT GEAR WASHER
46	C2005	1	NUT 5/8"
47	C2046	1	45 DEG GOOSENECK
48	C2006	1	DRIVE BEVEL GEAR
49	C2004	1	LOCK WASHER 5/8"
50		1	KEY
51	7101	1	COUPLER
52	745	1	SHEAVE-3V-3.0"
53		1	BELT
54	787	1	MAIN AIR CYLINDER CLEVIS
55	797	1	4-WAY MAIN AIR CYL VALVE
56		1	SHAFT
57		1	SHAFT
58	OC1-2	1	CLUTCH-BRAKE SHIFTING ARM
59	OC1-15	1	
60	787-A	1	MAIN CLEVIS PIN
61	783	1	MAIN AIR CYL-2X2"
62	780	1	TURN BUCKLE ASSEM. COMPLETE
63		1	KEY
64		1	BOLT
65		1	MOTOR
66	AU200-02GBK	1	SMC FRL ASSEMBLY
67	9101	1	TRIP FRAME

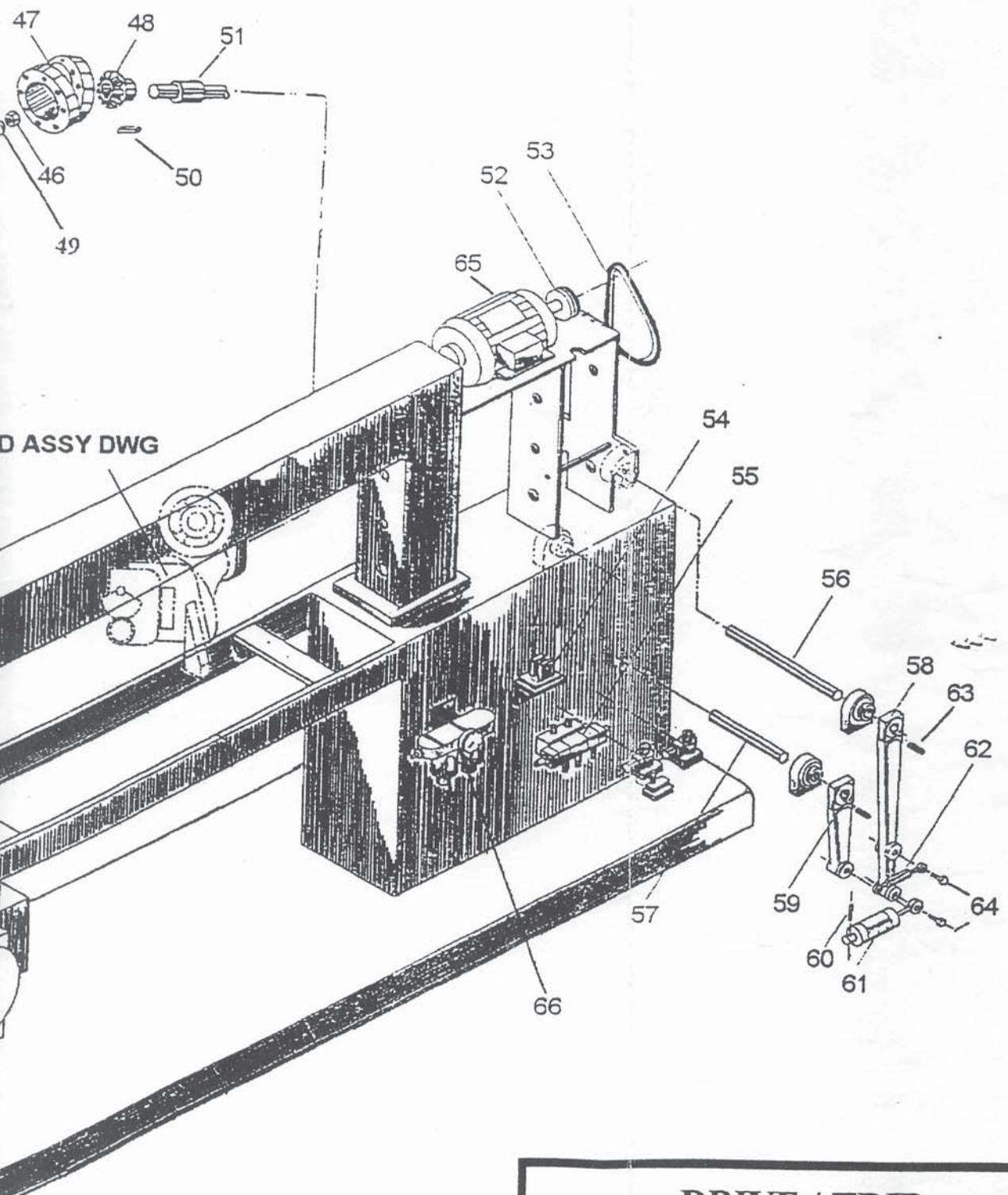
DRIVE / TRIP ASSEMBLY

REF NO	PART NUMBER	QTY	DESCRIPTION
1	1	5	TRIP SPACER
2	2	5	LOCK WASHER
3	3	5	SCREW
4	4	1	SCREW
5	5	1	CABLE CLAMP #115
6	6	1	RESTRICTOR FLOW CONTROL VALVE
7	7	3	POLYFLO 1/8X1/4XSTR
9	9	1	SCREW
10	10	1	SCREW
11	11	1	OCT-35 START SWITCH
12	28	1	LATCH CYL. 1 1/16 X 1/2 S
13	29	1	SCREW
14	30	1	SCREW
15	31	1	RH TRIP LATCH
16	32	1	LATCH ECCENTRIC
17	33	1	SCREW
18	34	2	SCREW
19	35	1	SHOULDER SCREW
20	36	1	SHOULDER SCREW
21	37	1	LATCH CAM RETURN SPRING
22	38	1	LINK
23	39	1	LATCH CAM
24	40	4	SCREW
25	41	2	SHOULDER SCREW
26	42	2	FLANGED JAM NUT
27	43	1	TRIP GATE-6.5 WIDE
28	44	1	LOCK SCREW
29	45	1	SIDE RAIL-SHORT
30	46	1	TRIP BLOCK-STD 3.937 WIDE
31	47	1	TRIP BLOCK KEY
32	48	1	NUT
33	49	1	SIDE RAIL LONG
34	50	1	ROD END PF-5
35	51	1	POLY-FLO FITTING 1/8X1/4-90
36	52	1	NUT
37	53	1	SLIDE RAIL RETURN SPRING
38	54	1	RETURN SPRING ADJ SCREW
39	55	1	SPACER PLATE
40	C1089	1	HARDENED DRIVE CAM
41	C2001	1	HEAD CAM SHAFT
42	C2049	2	HEAD CAM SHAFT BUSHING
43	C2008-700	1	BELL CASTING



SEE STITCH HE





D ASSY DWG

DRIVE / TRIP

DWG NO 20I004-A

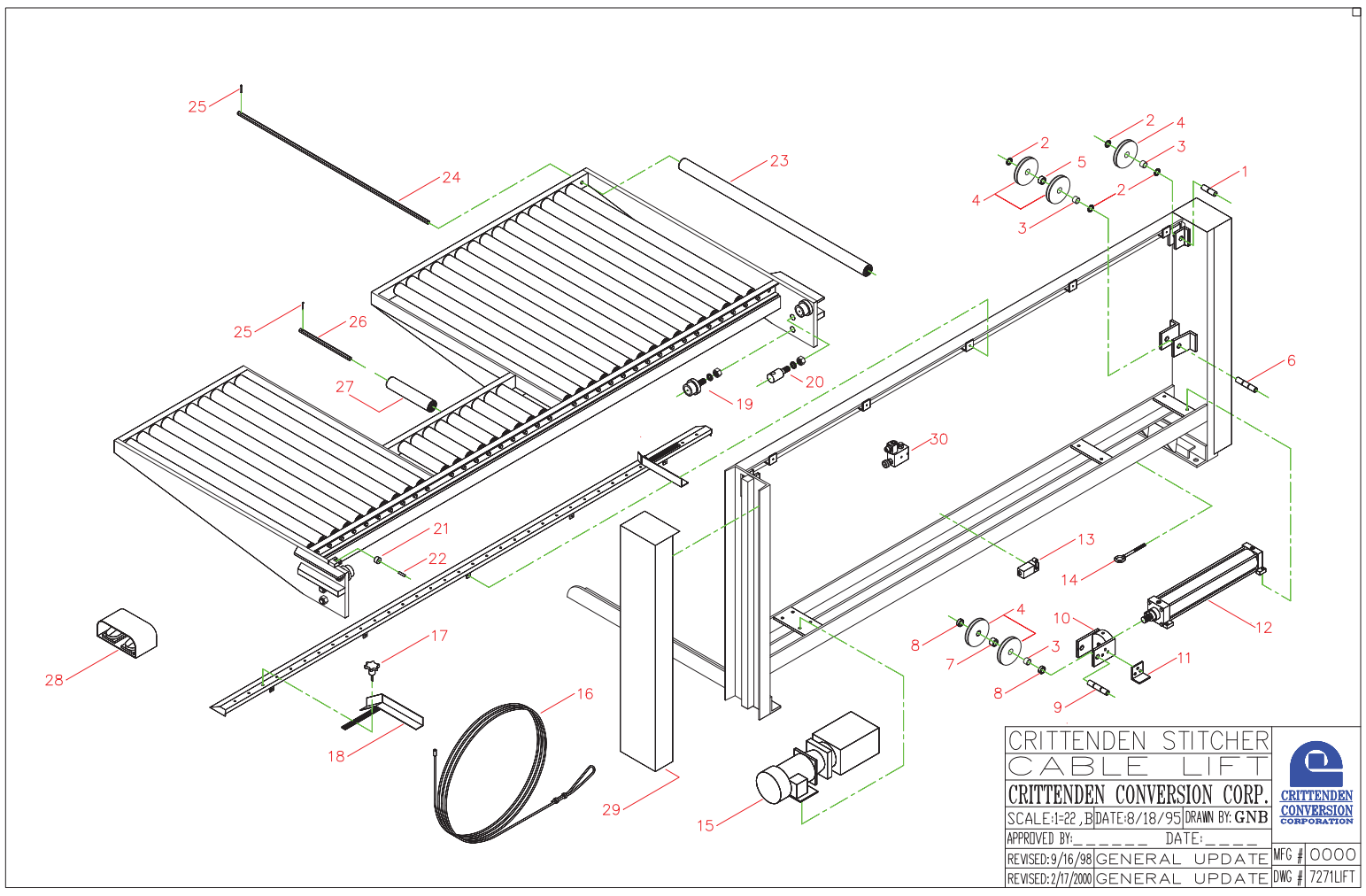
DRIVTRP.TIF/DRIVTRP.PM6

**CRITTENDEN CONVERSION CORPORATION
INVENTORY ITEM LISTING**

STITCHER CABLE LIFT

REF. DRAWING: 30I005-A

REF. NO.	PART NO.	DESCRIPTION
	C3500	60 X 120 ROLLER PLATFORM LIFT
1	C3501	ROLLER PIN. SINGLE
2	C3502	SPACER, 1/8"
3	C3503	BEARING/RACE ASSY, MR20N/MI16N
4	C3504	CABLE PULLEY ASSY W/BEARINGS
5	C3505	SPACER, 3/4"
6	C3506	ROLLER PIN, DOUBLE, 5-1/4"
7	C3507	CLEVIS SPACER, 1"
8	C3508	CLEVIS SPACER, 1/2"
9	C3509	CLEVIS PIN, 5-1/4"
10	C3510	CYLINDER ROD CLEVIS
11	C3511	CLEVIS GUIDE
12	C3512	CYLINDER, HYDRAULIC 4" X 24"
13	C3513	LIMIT SWITCH, TRAVEL
14	C3514	EYE BOLT, CABLE ADJUSTING
15	C3515	HYDRAULIC POWER UNIT
16	C3530	CABLE ASSEMBLY, 3/8" X 46'
17	C3516	START KNOB
18	C3517	BOX GUIDES, SET W/KNOBS
19	C3518	ROLLER ASSEMBLY, VERTICAL
20	C3519	CABLE ANCHOR
21	C3520	ROLLER, HORIZONTAL
22	C3521	PIN, HORIZONTAL ROLLER
23	C3522	CONVEYOR ROLLER ASSY. W/BNGS.
24	C3523	HEX ROD, LONG
25	C3524	COTTER PIN
26	C3525	HEX ROD, SHORT
27	C3526	CONVEYOR ROLLER ASSY. W/BRNS.
28	C3527	FOOT PEDAL ASSY.
29	C3528	GUARD, LEFT OR RIGHT
30	C3529	HYDRAULIC CONTROL VALVE



CRITTENDEN STITCHER
CABLE LIFT
CRITTENDEN CONVERSION CORP.
 SCALE: 1-22, B | DATE: 8/18/95 | DRAWN BY: GNB
 APPROVED BY: _____ DATE: _____
 REVISED: 9/16/98 | GENERAL UPDATE
 REVISED: 2/17/2000 | GENERAL UPDATE



CRITTENDEN
CONVERSION
CORPORATION

MFG #	0000
DWG #	7271LIFT