

BOSTITCH®

OPERATION and MAINTENANCE MANUAL

for

BLISS WIRE STITCHER HEAD

FOR AUTOMATIC STITCHERS AND RSCA MACHINES

FOREWORD

This instruction book and parts catalog is provided for operators of single stitch wire stitching machines equipped with the following models of BOSTITCH Bliss Wire Stitcher Heads:

<i>Model Symbol</i>	<i>Description of Model</i>
BHO	Openhead — Standard Wire Draw
BHOL	Openhead — Long Wire Draw
BH485	Head for Automatic Stitcher — Standard Wire Draw
BHL485	Head for Automatic Stitcher — Long Wire Draw

In preparing this manual, the aim has been to give the essential details covering the operation and maintenance of the Stitcher Head, and to provide a complete breakdown of component parts of the head for the purpose of ordering repair parts.

Part I includes Description, Operating Adjustments, Maintenance Instructions, and Trouble Shooting. Part II includes illustrated parts list with other pertinent information for ordering repair parts.

The first section of Part I gives a general description of the BOSTITCH Bliss Stitcher Heads, and includes a table listing the full range of wire types and sizes handled by the heads.

The second section, Operating Adjustments, gives detailed instructions, with accompanying illustrations, for making the various required adjustments for the proper operation of the heads. These instructions include simple formulas for calculating the wire draw (length of wire to be fed) for any thickness of work within the stitching capacity of the heads.

The third section of Part I, Maintenance, gives detailed instructions, with accompanying illustrations, covering procedures for properly maintaining the head. A Trouble Shooting Chart, which illustrates perfect and imperfect stitches, and lists the causes of imperfect stitching with instructions for remedying the imperfections, is also included in this section.

In order to expedite the ordering of repair parts, fully illustrated parts lists covering component parts of the above listed models of BOSTITCH Bliss Stitcher Heads are provided in Part II of this book. Instructions on how to order a part, as well as complete instructions for disassembling and reassembling the head, are included in this section. In addition, a Numerical Index (all parts numbers listed in numerical order and cross referenced to the Parts List and illustrations) is provided at the back of the book.

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PART I—OPERATING AND MAINTENANCE INSTRUCTIONS DESCRIPTION

The stitching heads supplied with the many models of BOSTITCH Bliss Heavy Duty Wire Stitchers are basically identical heads. Variations occur in some of the component parts due to the basic head being adapted to standard, or long wire draw operation. In addition, other variations occur in some of the parts due to the head being adapted to a particular model of Stitcher, such as the Automatic Stitcher or the RSCA machine.

The BOSTITCH Bliss Heads are designed to accommodate a range of wire types and sizes, and staple crown sizes. Figure 1 lists the complete range of wire sizes, with obtainable crown sizes, handled by the single stitch BOSTITCH Bliss Stitcher Heads. When work to be stitched requires a wire type or size, and/or size of staple crown, not within the capacity of the particular model of Stitcher Head to be used, it is possible to change-over the head to meet the required

specifications. If it is desired to change-over a particular model of Stitcher Head, consult your BOSTITCH distributor, or BOSTITCH factory, for list of necessary parts and/or cost to make the desired change.

Each of the many models of BOSTITCH Bliss Wire Stitchers is so designed that the head can be easily removed, and another head, of different wire draw capacity, substituted for it, thereby increasing the work thickness range of the machine.

All heads, excepting Model BH485, are equipped with a wire straightener device.

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

TYPE OF WIRE	WIRE GAUGE	WIRE SIZE AND TOLERANCE	TENSILE STRENGTH P. S. I.	OBTAINABLE CROWN SIZE
Ribbon	.028 (.71mm)	.099 ±.004 x .028 ±.0005	80,000 to 105,000	7/16 (11.1mm) 7/16 (11.1mm) (ARC'D)
	.023 (.58mm)	.099 ±.004 x .023 ±.0005	80,000 to 105,000	
	.020 (.51mm)	.103 ±.002 x .020 ±.0005	80,000 to 105,000	
	.017 (.43mm)	.099 ±.004 x .017 ±.0005	80,000 to 105,000	
	.014 (.36mm)	.099 ±.004 x .014 ±.0005	80,000 to 105,000	
	9040 (2.3mm X 1.01mm)	.090 +.002 -.004 x .0375 ±.0005	85,000 to 95,000	3/4

Figure 1 — Table of recommended Wire Sizes, Tolerances and Tensile Strengths for best stitching performance

Note: Wires of tensile strength other than those listed may be available and used as required to suit the particular application.

OPERATING ADJUSTMENTS

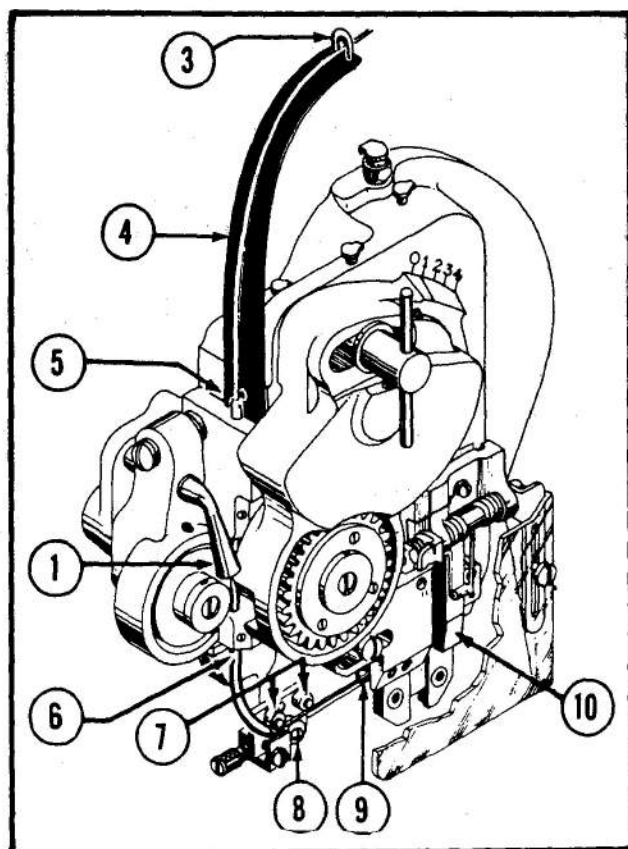


Figure 2—Threading Wire on Head

The quality and quantity of work that can be produced by a BOSTITCH Bliss Stitcher 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 Fig. 2)

- a. Raise oiler retainer (not shown) on spring wire guide and disengage wire feed gears by raising (to the left) the gear throwout handle (1) to its open position.
- b. Draw wire from wire spool, and if end of wire is twisted or bent, cut off twisted or bent portion.
- c. Straighten out end of wire (about 6" (152.4mm)) by drawing wire through fingers. The end portion of wire to be threaded into the head must be as straight as possible.
- d. Thread the wire through the spring wire guide loop (3), down over the spring wire guide (4), through oiler felt in retainer and then insert end of wire into the upper wire tube (5).
- e. Push the wire down through the upper wire tube, past the wire feed gears, and into and through the lower wire tube (6) until the wire appears at the bottom opening of the lower wire tube.

(Continued on page 5)

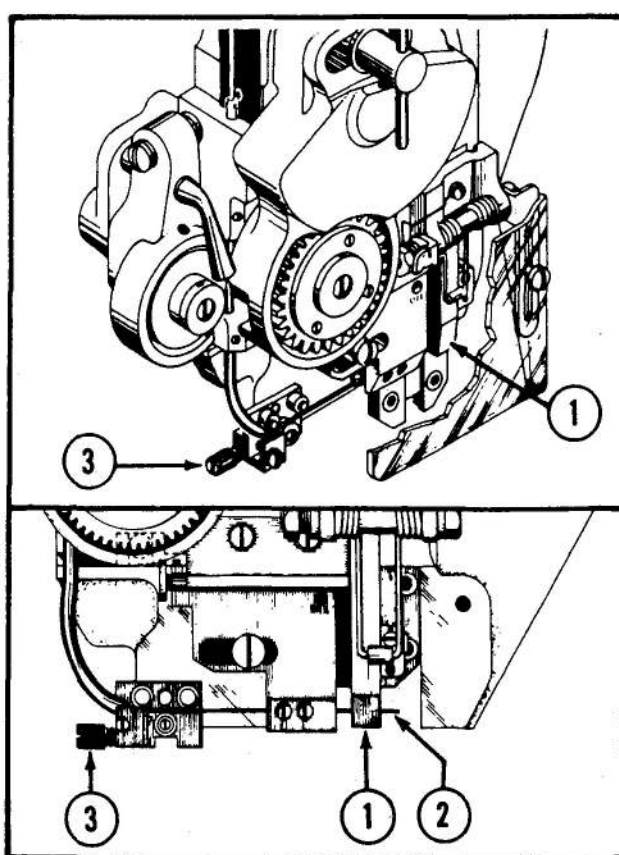


Figure 3—Straightening Wire on Head

Type of Head	Wire Draw Limits	
	Minimum	Maximum
Standard Wire Draw	7/8" (22.2mm)	1-1/2" (38.1mm)
Long Wire Draw	15/16" (23.8mm)	2-3/8" (60.3mm)

Figure 4—Wire Draw Table

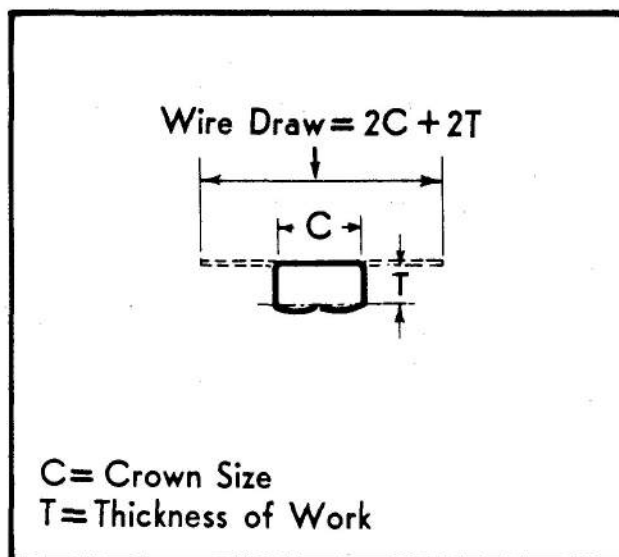


Figure 5—Wire Draw Dimensions and Formula for .175 (4.4mm) thru 1/2" (12.7mm) Crowns

f. Thread the wire between the upper wire straightener rolls (7) and lower adjustable roll (8); then enter and push end of wire into the stationary cutter (9) in cutter block.

NOTE

The head supplied on the Model BH 485 Bostitch Stitcher is not equipped with the wire straightener device. When threading this head, the wire must be drawn from the lower wire tube and inserted directly into the stationary cutter.

g. Lower oiler retainer top position above end of upper wire tube. Reengage wire feed gears by lowering the gear throwout handle (1) to its locked position. Place a piece of work to be stitched into the machine; then turn over machine by hand, and observe that the wire is feeding freely and is being fed into the gripper (10) in a straight line. (Refer to para. 2, immediately following).

2. HOW TO STRAIGHTEN WIRE ON HEAD

(See Fig. 3)

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, as directed in para. 1, immediately preceding, turn over machine by hand until 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 wire length should be as close to a straight line as possible, as shown at (2) in insert in Fig. 3.

If wire tends to curl upward or downward, turn the wire straightener adjusting screw (3) clockwise or counter-clockwise, as required, until this condition is remedied. (Model BH485 is not equipped with the wire straightener device.)

3. HOW TO DETERMINE CORRECT WIRE DRAW AND MAKE NECESSARY ADJUSTMENTS

a. DETERMINING WIRE DRAW—The BOSTITCH Bliss Stitcher Heads are divided into two types based upon the wire draw (amount of wire fed for each stitch) capacity of the head. The table in Fig. 4 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.

As a general rule, stitches having a crown width size within the range of .175" (4.4mm) through 1/2" (12.7mm) should have sufficient wire draw so that the clinched legs of the staple just about meet, as shown in Fig. 5. For stitches in this range of crown sizes 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: If crown size of stitch is 7/16" (11.1mm) and thickness of work to be stitched is 3/16" (4.7mm), the correct wire draw would be: $2 \times 7/16"$ (50.8mm x 11.1mm), (or 7/8" (22.2mm)), plus $2 \times 3/16"$ (50.8mm x 4.7mm), (or 3/8" (9.5mm)), which equals 1-1/4" (31.8mm) wire draw.

(Continued on page 6)

Stitches having crown sizes greater than 1/2" (12.7mm) should have sufficient wire draw so that each clinched leg of the staple is 3/16" (4.7mm) in length, as shown in Fig. 6. For stitches in this range of crown sizes the correct wire draw would be: Crown size plus twice the thickness of work to be stitched plus 3/8" (9.5mm); or, when reduced to a formula: $\text{Wire Draw} = C + 2T + 3/8"$ (9.5mm).

For example: If crown size of stitch is 1-1/8" (28.6mm) and thickness of work to be stitched is 1/2" (12.7mm), the correct wire draw would be: 1-1/8" (28.6mm), plus $2 \times 1/2"$ (50.8mm \times 12.7mm), (or 1" (25.4mm)), plus 3/8" (9.5mm), which equals 2-1/2" (63.5mm) 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 formula given in Fig. 5 can be used for stitches having crown sizes within the range of .175" (4.4mm) thru 1/2" (12.7mm) while the formula given in Fig. 6 can be used for stitches having crown sizes greater than 1/2" (12.7mm).

b. WIRE DRAW ADJUSTMENTS — After determining the correct length of wire draw for the particular work to be stitched, as directed in para. a. immediately preceding, make head wire draw adjustments as follows:

1—Check that the wire feed guard lock screw (1) and cutter block holding screw (2), Fig. 7, 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. 7. Both types of head plates have two tapped holes, (D) and (E), for insertion of the cutter block holding screw. If the desired length of wire draw approaches the minimum or maximum limits for the head being operated (refer to Wire Draw Table, Fig. 4) it may be necessary to relocate the wire feed guard lock screw and cutter block holding screw.

The following table (Fig. 8) indicates the correct hole locations for the two screws to obtain the minimum or maximum wire draw for each type of head. The diagram in Fig. 7 shows the four holes and gives the obtainable wire draw range for each hole.

2—If it is found necessary to relocate the wire feed guard lock screw, (1) Fig. 9, and cutter block holding screw (2), remove both screws, and then shift the wire feed guard casting, (3) 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, Fig. 7); do not tighten screw at this point.

3—The standard wire draw head is so designed that the cutter block, (4) Fig. 9, automatically shifts to the left or right when the wire feed guard is shifted. If head being operated is this type, relocate the cutter block holding screw (2) in its alternate hole (D or E, Fig. 7), and tighten screw securely. If head being operated is the long type (Model BHOL or BHL485), the cutter block must be shifted manually. Move cutter block, as required, and relocate holding screw and washer (hex head screw and washer used on long draw heads only); do not tighten screw at this point.

4—If it is not found necessary to relocate the wire feed guard lock screw, (1) Fig. 9, and cutter block holding screw (2), and head being operated is the standard wire draw type, loosen (do not remove) only the wire feed guard lock screw (1); if head is the long draw type, loosen (do not remove) both screws.

(Continued on page 7)

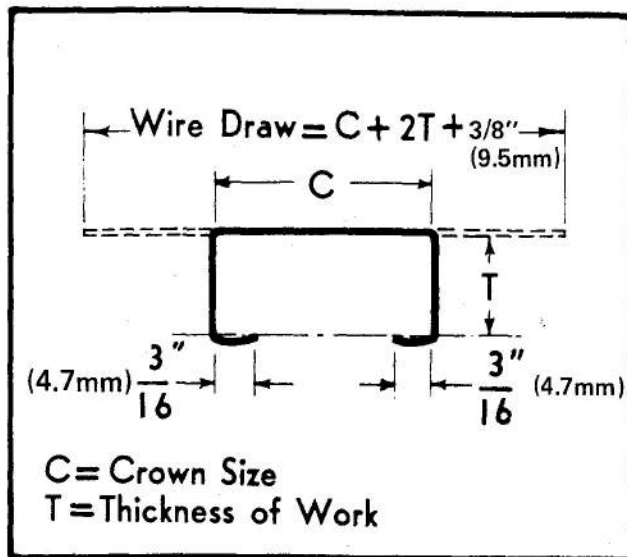


Figure 6—Wire Draw Dimensions and Formula for Crowns Greater than 1/2" (12.7mm)

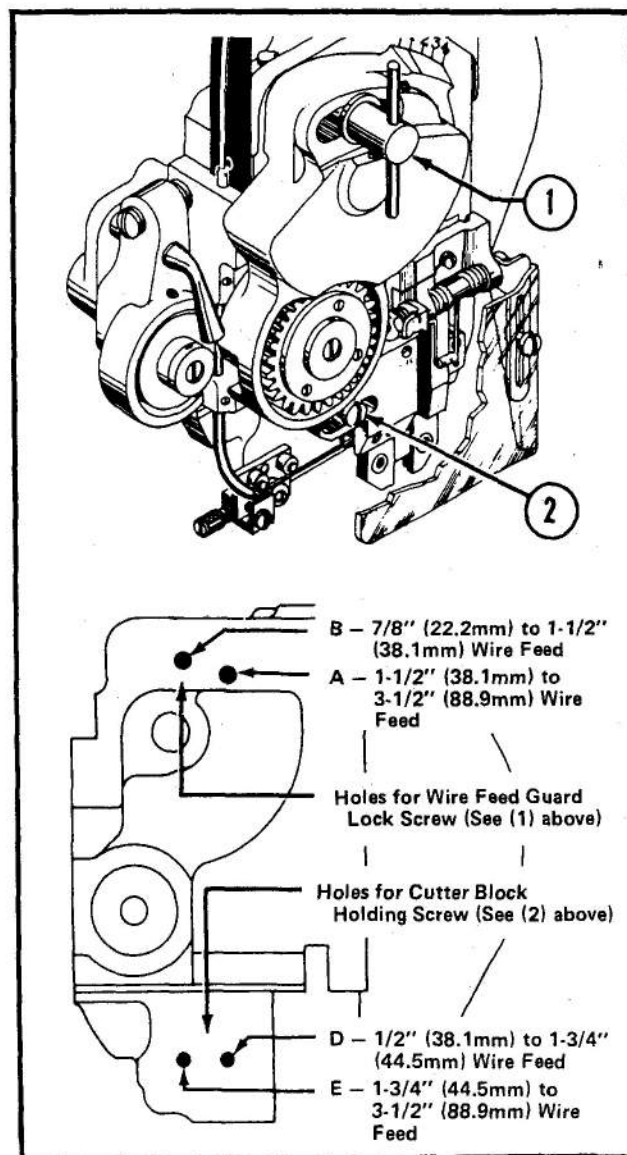


Figure 7—Positioning Wire Feed Lock Screw and Cutter Block Holding Screw

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 8—Table of Hole Locations for Wire Feed Guard Lock Screw and Cutter Block Holding Screw (See Fig. 7)

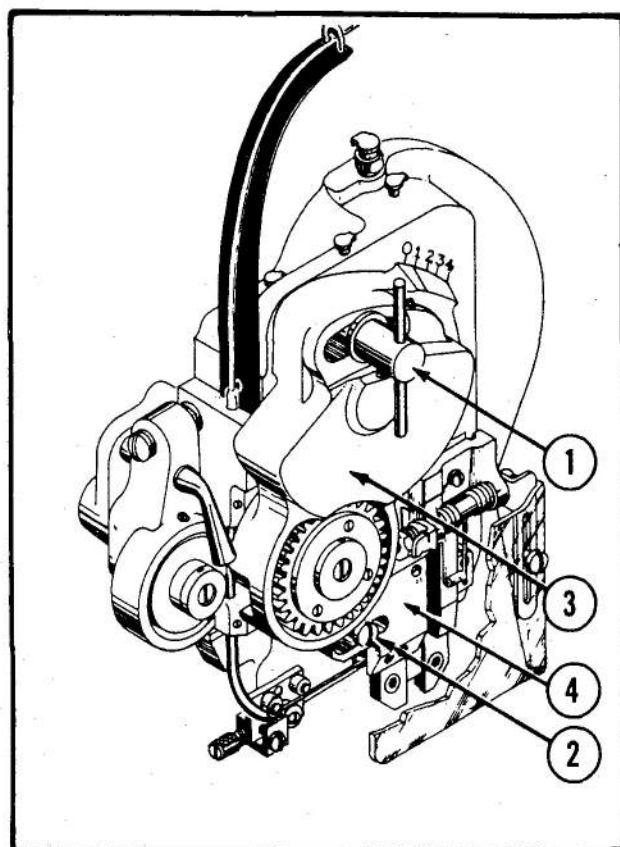


Figure 9—Wire Draw Adjustments

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

The standard wire draw heads are equipped with a length of wire draw scale. (1) Fig. 10, on the head plate, and an alignment marker (2) on the wire feed guard. The scale and marker provide a means of setting the wire draw according to the desired length. On the standard draw head the "0" marking represents 1" (25.4mm) of wire draw. Each of the other graduations in the scale on both heads represent approximately 1/8" (3.2mm) additional wire draw. Thus, if the head being operated is a standard wire draw head, a setting on the "3" (76.2mm) marking will result in a wire draw of 1-3/8" (34.9mm).

After the setting has been made, tighten the wire feed guard lock screw, (1) Fig. 9.

6—On the long wire draw heads (BHOL and BHL485) wire draw is increased or decreased exactly the same as for the standard 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, 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 either of these heads, to manually move the cutter block to the left or right, thereby adjusting the length of the staple left leg.

A length of wire draw scale, similar to that on the standard wire draw heads, is provided on the long wire draw head plates. In addition, another scale corresponding to the wire draw scale is provided on the cutter block and its holding plate, (1) Fig. 11. This scale provides a means of adjusting the staple left leg (positioning the cutter block) according to the wire setting. On these two scales the extreme right hand mark represents the maximum length of wire draw — i.e., on long wire draw head 2-3/8" (60.3mm). The other graduations in the scale do not represent any definite length of wire draw, but are used for setting the cutter block to coincide with the setting of the wire feed guard. If the wire feed guard is set at maximum wire draw—extreme right hand marking—the cutter block must be set at the same marking, etc.

After setting the wire feed guard and cutter block, tighten the wire feed guard lock screw and cutter block holding screw, (1) and (2) Fig. 9.

7—After the above settings have been made, turn over the machine manually to the point where the new wire length has been cut off by the cutters and is being held by the gripper; check that wire is the desired length (wire draw setting). Then continue turning over machine manually until staple legs have been formed but not clinched; check that both legs of staple are of equal length.

If left leg is too short or too long, make left leg adjustment, as directed in para. 4, pg. 8.

If head being operated is the standard wire draw type, and right leg is not the correct length, make left leg the same length as the right one (refer to para. 4, pg. 8); then, increase or decrease the wire draw, as directed in step (5), pg. 7, until both legs are the correct length.

If head being operated is the long wire draw type, and right leg is not the correct length, increase or decrease the wire draw (shift wire feed guard) to approximate length of wire draw required. Shift cutter block to the point where the left leg of staple is the (Continued on page 8)

desired length; then, equalize both legs of staple by readjusting wire draw (shifting wire feed guard).

After correct staple leg length is obtained, securely tighten wire feed guard lock screw and cutter block holding screw.

4. HOW TO ADJUST LENGTH OF STAPLE LEFT LEG (See Fig. 12)

If staple is off center (one leg longer than the other) the length of the staple left leg can be changed as follows:

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

b. If head being operated is the long wire draw type, (Model BHOL or BHL485) loosen (do not remove) cutter block holding screw (1). To lengthen leg, manually move the cutter block (4) to the left (away from gripper); to shorten leg, move cutter block to the right (toward gripper). After adjustment has been made, securely tighten cutter block holding screw (1).

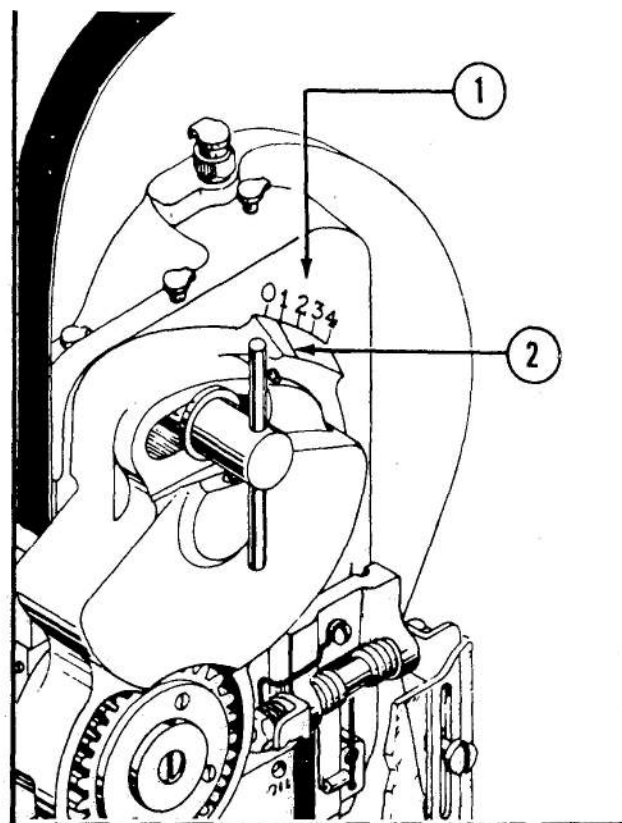


Figure 10—Wire Draw Scale

5. HOW TO SET MOVABLE CUTTER (See Fig. 12)

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 by the continued downward movement of the cutter.

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

a. Unscrew the gripper spring bracket screw (7), and remove the gripper spring and finger guard assembly (8).

b. Remove the cutter block holding screw (1), permitting the removal of the cutter block assembly (4) from its holding plate (9).

c. Remove the two screws (10) in the cutter block holding plate, allowing the holding plate and cutter block operating plunger (11) to be removed from the head plate.

d. Loosen the plunger adjusting screw nut (12), and then move the plunger adjusting screw (13) in or out, as required, to raise or lower the cutter stroke. After the adjustment has been made, tighten the adjusting screw nut (12) and replace the parts and assemblies removed.

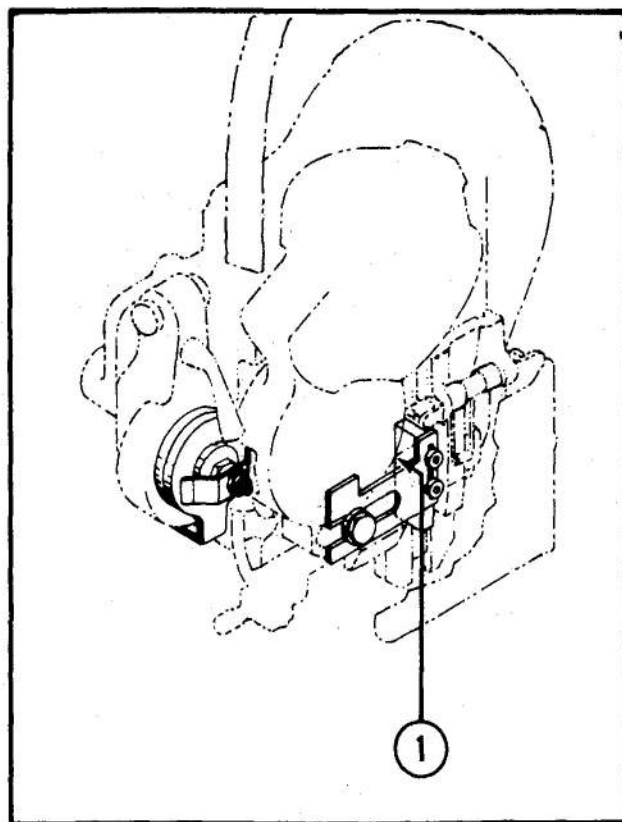


Figure 11—Cutter Block Scale
(Long Draw Heads)

(Continued on page 9)

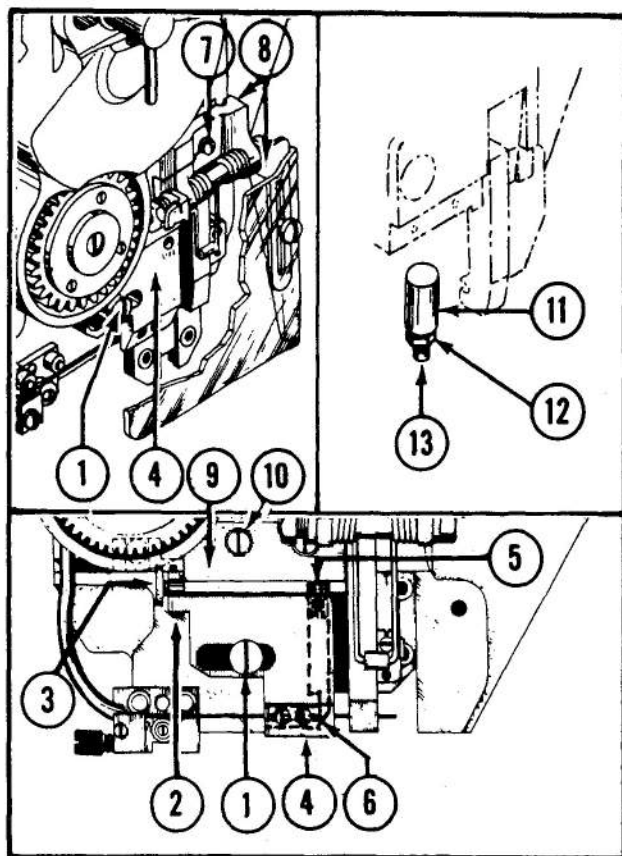


Figure 12—Staple Left Leg and Movable Cutter Adjustments

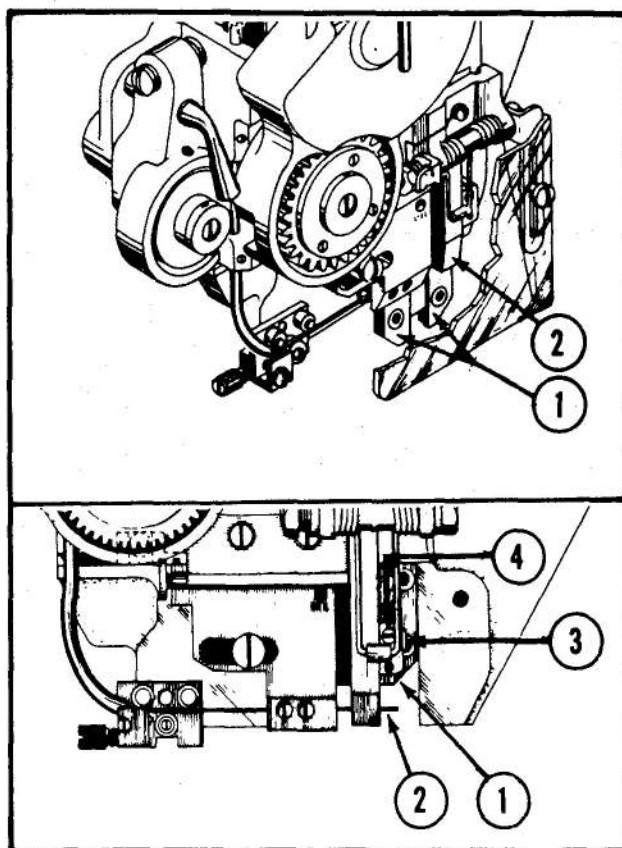


Figure 13—Adjustments for Aligning Gripper Bar and Formers

6. HOW TO ALIGN GRIPPER BAR AND FORMERS

(See Fig. 13)

a. Turn over the machine manually and, as the formers (1) descend, check that the grooves in the formers are in exact alignment with the wire length being held by the gripper bar (2).

b. If they are not in alignment, (usually resulting in deformed crown surface), loosen the clamp block holding screw (3). Then turn gripper bar adjusting screw (4) in or out, as required, until alignment is correct. After adjustment has been made, tighten clamp block holding screw (3).

7. HOW TO ADJUST TENSION OF WIRE FEED GEARS (See Fig. 14)

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).

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

8. HOW TO ADJUST WIRE FEED BRAKE TENSION

— Models BHOL and BHL485 Only (See Fig. 15)

—refer to BSA 1116 insert and figure 22 for Model BHL485 friction brake which is mounted on wire feed clutch).

Models BHOL and BHL485 are equipped with a friction braking device (1) to prevent wire feed over-run. Due to normal wear of the leather brake friction (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 spring turns too freely, tighten brake tension nut (4); if spring cannot be turned by hand, loose tension nut.

9. HOW TO ADJUST WIRE GUIDE. — Models BHOL and BHL485 Only (See Fig. 15)

Because of the wide gap between the cutter block and the gripper bar on the long wire draw heads, these heads are equipped 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 length of wire draw. The wire guide can also 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 the BOSTITCH Bliss Stitcher Head 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. Included in this section is a Trouble Shooting Chart which provides a quick means of remedying any troubles that may occur due to incorrect settings or adjustments, or normal wear of the head.

CAUTION

After replacing the above mentioned parts, or after installing a new part, turn over machine *manually* and check that head operates freely. Do not operate machine under power until certain that head is operating freely

1. LUBRICATION (See Fig. 16)

Use an S.A.E. No. 10 oil for lubricating the BOSTITCH Bliss Stitcher 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.

2. INSPECTION AND REPLACEMENT OF WORN PARTS

Obviously, 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 normal wear of 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. 17)—The wire feed gears (Fig. 17 shows the left, or idler, gear (1), the right, or drive, gear being located behind the wire feed guard) should be checked for smooth and parallel wire gripping surface. Worn surfaces may result in wire slipping thereby not feeding properly; if surfaces are not parallel, wire may be rolled on one side causing wire curvature and resulting in imperfect stitches.

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

(Continued on page 11)

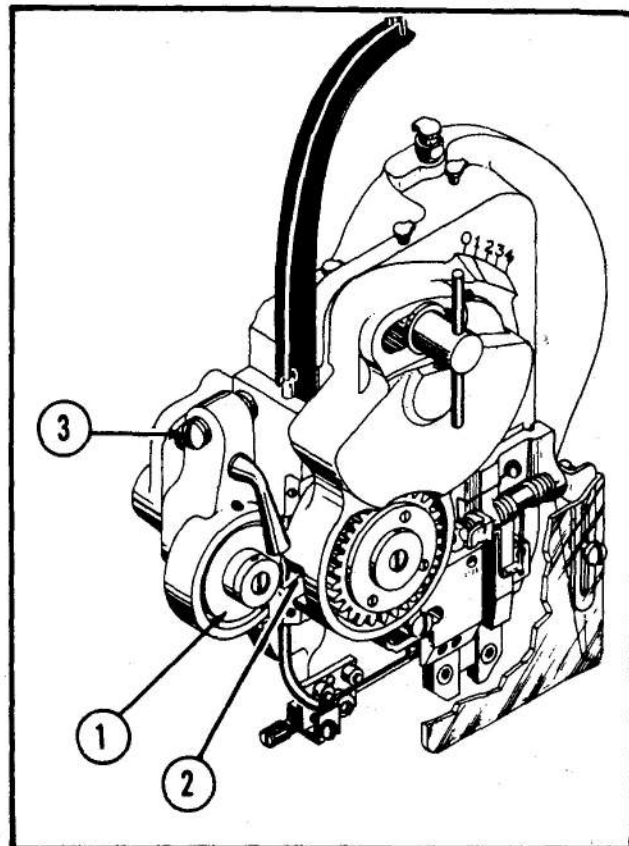


Figure 14—Wire Fed Gear Tension Adjustment

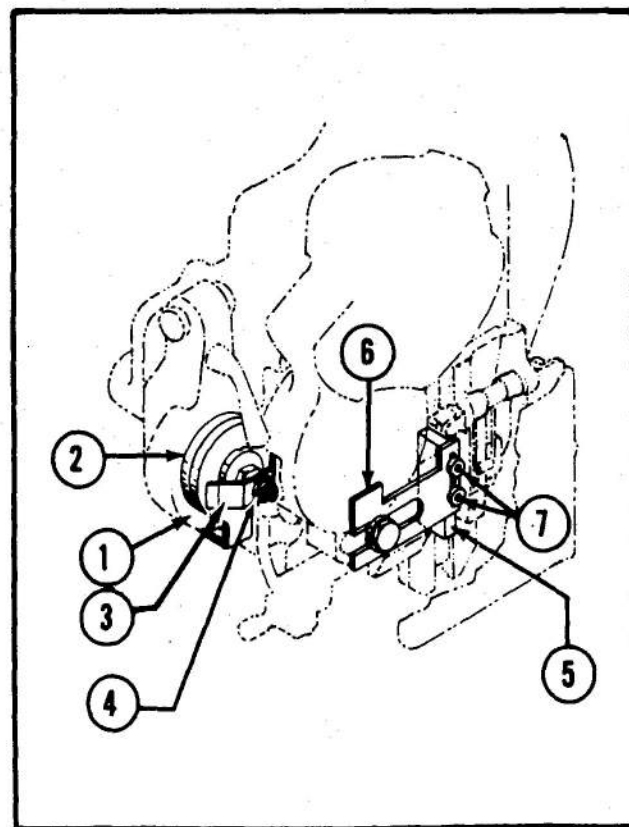
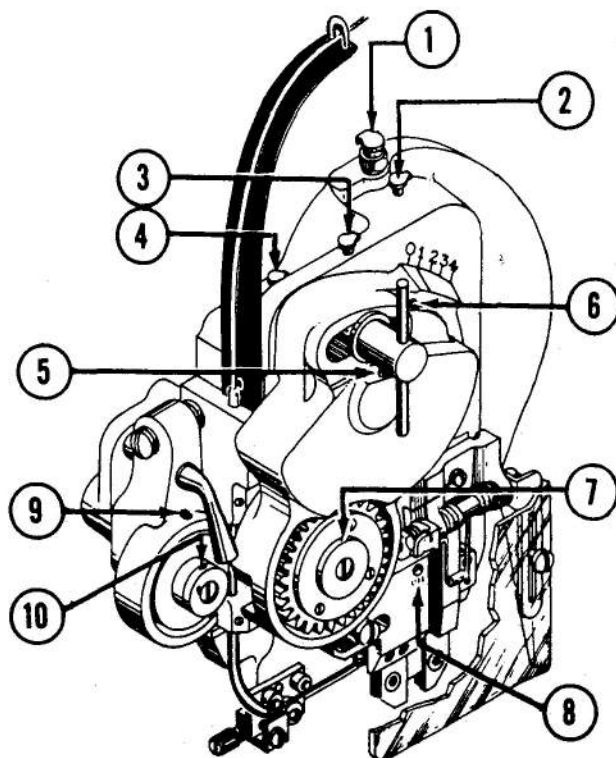


Figure 15—Wire Feed Brake Tension and Wire Guide Adjustments (Long Draw Heads)

- 1—Oil cup in top of head plate for former slide, driver bar, and other internal parts
- 2—Oil cup in top of head plate for wire feed operating link
- 3—Oil cup in top of head plate for wire feed operating lever and sliding head
- 4—Oil cup in top of head plate for wire feed operating lever pivot stud
- 5—Ball oiler in wire feed guard for wire feed guard crank stud
- 6—Ball oiler in wire feed guard for wire feed crank sector
- 7—Oil hole in retaining washer for wire feed drive gear stud
- 8—Oil hole in cutter block for movable cutter
- 9—Ball oiler in wire feed idler gear arm for wire feed idler gear
- 10—Oil hole in retaining washer for wire feed idler gear stud



In addition to the above lubricating points, apply a few drops of oil as required to wire oiler felt (not shown in illustration) 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 16—Lubrication Points

For instructions on removing the wire feed gears, refer to How To Disassemble and Reassemble Head, para. 1, pg. 17.

b. WIRE FEED TUBES (See Fig. 17) The upper and lower wire tubes, (2) and (3), should be checked for any obstructions in the tube passages which may interfere with free movement of 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 remove worn tubes, loosen the upper and lower wire tube screws, (4) and (5). Remove the lower wire tube clamp (6), (all heads other than Model BH485) and withdraw the tubes from the head plate.

c. STATIONARY CUTTER (See Fig. 17)—The stationary cutter (7) should be periodically checked for any obstructions in the wire passage which may interfere with free movement of wire. Check that cutting end is sharp; dull cutter may be resharpened, but eventually must be replaced.

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

1—Loosen stationary cutter screws (8) and withdraw cutter block.

2—When reinstalling cutter be sure that cutting end is inserted into cutter block. (Opposite, (countersunk) end is the end which protrudes from the cutter block) If installing a ribbon wire cutter, face flat side of cutter toward front of head.

3—With cutter positioned as directed above, slide cutter into cutter block until cutting end contacts and is parallel with flat cutting surface of movable cutter (9). Upon contact with stationary cutter, movable cutter cutting face will automatically align itself with cutting surface of stationary cutter.

4—With stationary cutter fully inserted in cutter block and aligned with movable cutter, tighten cutter holding screws (8). Then turn over machine by hand and check that movable cutter operates freely.

d. MOVABLE CUTTER (See Fig. 18)—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 movable cutter for sharpening or replacing, proceed as follows:

1—Unscrew and remove cutter block holding screw, (1) and remove the cutter block (2) from its holding plate (3).

(Continued on page 12)

2—Manually holding cutter plunger (4) under spring tension, back-out cutter plunger holding screw (5) sufficiently to release plunger (4) and cutter (6) from cutter block.

3—To replace cutter into cutter block, first loosen stationary cutter holding screws (7) and back-out stationary cutter (8) slightly.

4—Fit top of movable cutter (6) into groove in plunger (4), with flat cutting surface of cutter turned toward plunger. Slide cutter and plunger into their holes in cutter block, and then compress plunger by hand until top of plunger is just below the top of cutter block body; then, tighten plunger holding screw (5) until it engages slot in side of plunger, thereby holding plunger in place. (If plunger holding screw (5) protrudes from its hole in cutter block body, it is not correctly engaged with slot in plunger.)

5—Slide stationary cutter (8) back into cutter block body until its cutting end surface contacts and is parallel with cutting surface of movable cutter. (Upon contact with stationary cutter, movable cutter will automatically align itself with stationary cutter.) When cutters are correctly aligned, tighten stationary cutter holding screws (7).

6—Reinstall cutter block (2) onto its holding plate (3). On all heads other than Models BHOL and BHL485 be sure to position cutter block so that the cutter block adjusting screw head (9) engages in the first (left side) slot in the cutter block control slide (10). (Models BHOL and BHL485 are not equipped with this control slide). With cutter block correctly positioned, replace and tighten cutter block holding screw (1).

7—Turn over machine by hand and check that movable cutter operates freely; check that cutter stroke is correct. If cutter has been resharpened, or a new cutter has been installed, cutter stroke may need resetting. (Refer to para. 5, pg. 8)

e. GRIPPER (See Fig. 19)—Check for excessive wear at edges of gripper bar (1) anvil (surface upon which staples are formed), usually evidenced by rounded corners on formed staple.

Check for signs of wear on gripping surface of gripper bar clamp piece (see Index No. 152 in Fig. 23); check for sufficient tension in gripper bar clamp piece spring. If clamp piece is overly worn, or spring tension is not sufficient, wire will slip while being held in the gripper usually resulting in a one-legged staple.

To remove and reinstall gripper assembly, proceed as follows:

1—Turn over machine to neutral (stop) position.

2—Unscrew gripper spring bracket screw (2), and remove gripper spring bracket and finger guard assembly (3) from head.

3—Unscrew and remove gripper pivot screw (4), permitting gripper assembly to be removed from head.

4—When reinstalling gripper assembly in head, be sure that upper stud in gripper bar clamp piece, (153), Fig. 23, engages in slot in gripper clamp piece control slide, (167), Fig. 23; then replace and tighten gripper pivot screw, (4), Fig. 19.

(Continued on page 13)

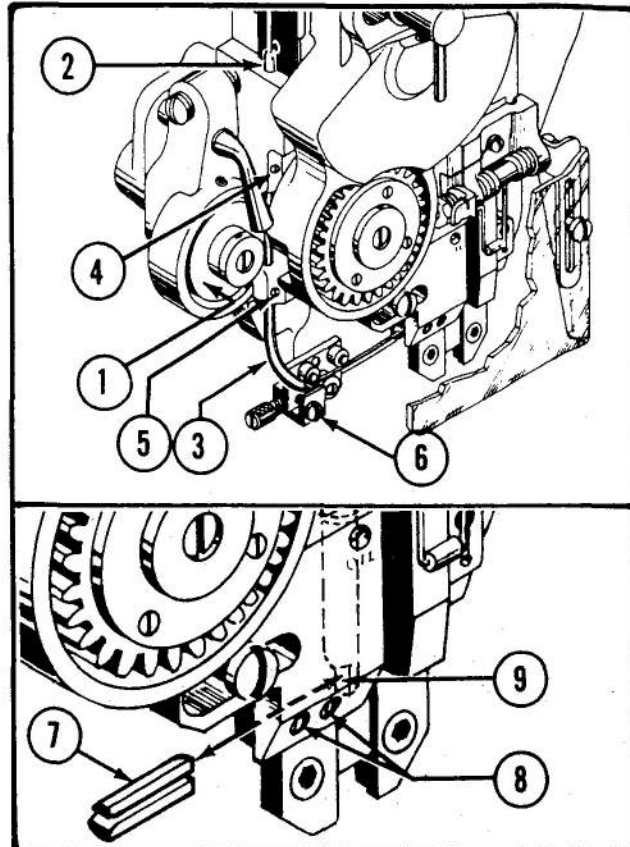


Figure 17—Inspecting Wire Feed Gears, Tubes, and Stationary Cutter

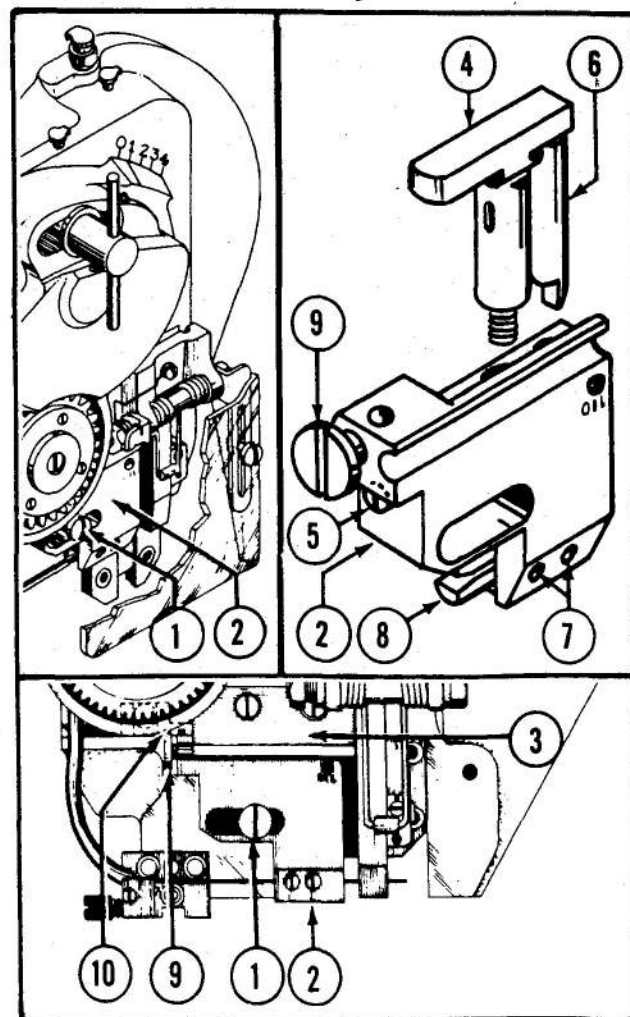


Figure 18—Removing and Replacing Movable Cutter

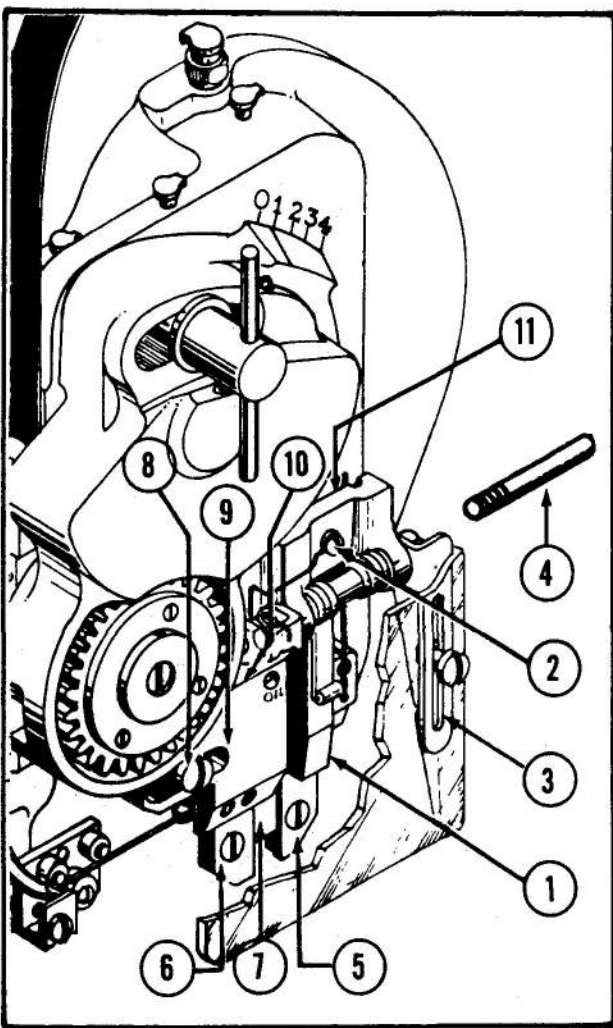


Figure 19—Removing and Replacing Gripper, Formers and Driver

5—Check that gripper bar is in alignment with formers (refer to para. 6, pg. 9).

f. FORMERS AND DRIVER (See Fig. 19)—Check for wear in grooves of formers (5) and (6), usually evidenced by buckled staple legs.

The driver (7) should be checked for broken tips, or worn ends or sides. Some types of drivers are double-ended and can be reversed in the formers when one end is worn.

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

1—Disconnect Stitcher machine power cord from power outlet.

2—Unscrew gripper spring bracket screw (2) and remove gripper spring and finger guard assembly (3).

3—Manually rotate Stitcher clutch pulley to the point where the formers (5) and (6) are at the lower end of their stroke. Remove gripper throwout cam block. (See (175) Fig. 23.)

4—Further rotate clutch pulley until clutch is disengaged. Remove screws from right former, (5) slide former down and off former slide. The driver (7) can now be removed by sliding driver to the right.

5—If it is desired to remove the left former (6), unscrew and remove the cutter block holding screw (8) and remove the cutter block (9) from its holding plate

(10). Remove the screws from the left former, slide former down and off former slide.

6—To replace the formers and driver, first check that clutch is disengaged and then reinstall left former (6) on former slide and securely tighten attaching screws. Reinstall cutter block, as directed in step (6) of para. d., on page 12.

7—Slide driver (7) into place on the driver bar, with driving boss of driver bar keyed into slot in rear face of driver, and left side of driver engaged in groove of left former.

8—Slide right former (5) up into position on former slide, making sure that driver is engaged in former groove; then replace and securely tighten right former screws.

9—Manually rotate Stitcher clutch pulley to the point where the formers are at the lower end of their stroke. Reinstall gripper throwout cam block, (175) Fig. 23, on former slide, making sure that attaching screw is securely tightened.

10—Reinstall gripper spring and finger guard assembly making sure that gripper spring bracket (11) fits squarely in slot in head plate; tighten attaching screw (2) securely.

11—Manually turn over machine and check that parts operate freely. If new formers have been installed, run machine for a short time using oiled wire, in order to wear-in former grooves, thereby preventing binding of wire.

g. SUPPORTER (See (196) Fig. 23)—If legs of staple buckle, it may be caused by a worn supporter, (196), Fig. 23. Examine 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, resulting in staple legs buckling.

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

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

For instructions on removing the supporter assembly, refer to para. b, steps (12) thru (15), pg. 18.

h. WIRE FEED CLUTCH (See Fig. 20)—The wire feed clutch (1) is a friction roller type of clutch that operates (grips) on the wire feed stroke (counterclockwise rotation of 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. (Clutch is lubricated at oil hole in retaining washer (3).) In this event, the clutch assembly should be removed and washed with gasoline. (Be sure to relubricate clutch after clutch is reassembled in head.)

To remove the clutch assembly, remove the retaining washer screw (4) and retaining washer (3) permitting the removal of the clutch assembly from the wire feed drive gear stud.

If clutch is disassembled, make sure that clutch rollers and springs, (5) and (6), are reassembled in the clutch spider (7) as shown in Fig. 20.

3. CONVERSION TO ARC'D WIRE

Remove the present wire Feed Idler Gear (115), Wire Feed Drive Gear (61), Wire Feed Pressure Tension Spring (113), Formers and Drivers (184), Movable Cutter (40), Stationary Cutter (41), Lower Wire Tube (18) or (19), and Clinchers (not shown). On Model BH485 only, remove the retaining washer (116). Refer to page 10 para. 2 for instructions for replacement of parts and installing arc'd parts.

After the arc'd wire forming parts have been installed and all standard adjustments have been made, turn drive pulley by hand to make sure all parts move freely. Thread wire between Wire Feed Gears. Turn throwout handle to close gears. Then operate the machine until wire passes through the cutter block and is being cut off. Check the wire to see that there is the right amount of arc. Wire should have an arc of .026 to .029 (.66mm to .74mm).

If there is not enough arc in the wire, increase the wire feed pressure by turning the wire feed pressure adjusting screw 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 BOSTITCH Bliss Wire Stitcher 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. In the event of trouble of this nature occurring, the operator can, by referring to the following Trouble Shooting Chart, quickly locate and remedy the cause, or causes, of the trouble, thereby reducing to a minimum the time the Stitcher is non-operative.

The first column of the chart illustrates perfect and imperfect stitches; the second column describes the imperfections (troubles); the third column lists the probable cause, or causes, for the given trouble, while the fourth column lists the remedy, or remedies, for the troubles. Reference is also made in the fourth column to the paragraph in this book in which will be found detailed information for making the necessary remedial adjustments.

If stitching is defective, the operator can compare

the staple produced with the stitches illustrated in the chart and, by carefully reading the information given for each type of imperfect stitch, remedy the cause of the imperfection.

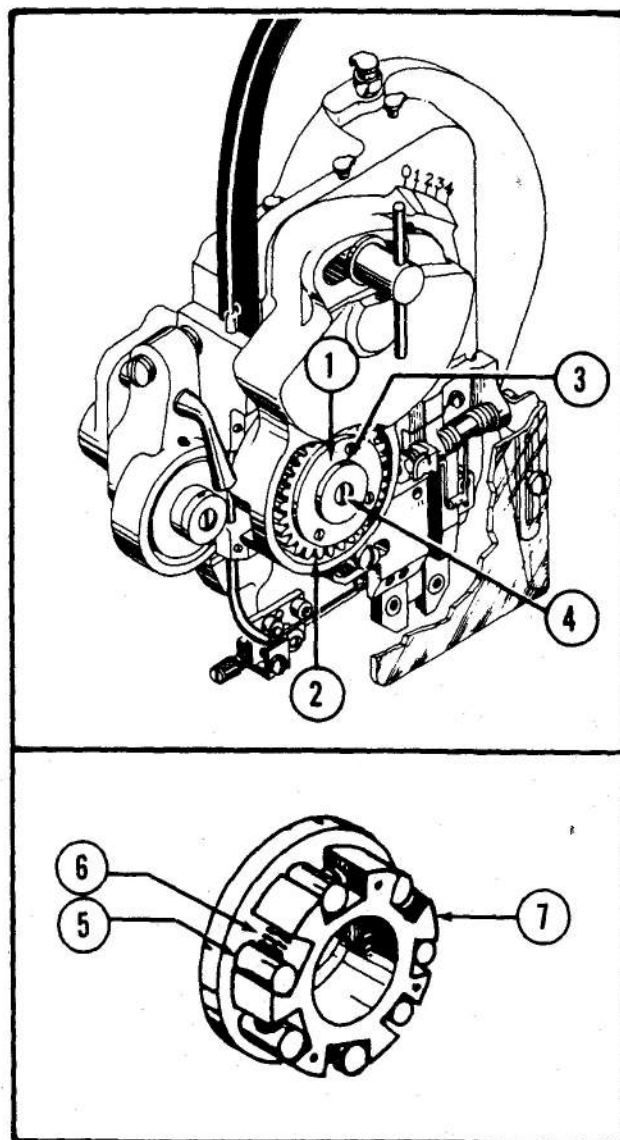

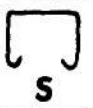









Figure 20—Removing and Assembling Wire Feed Clutch

Staple	Trouble	Cause	Remedy
 R	Only one leg clinched in	Clincher not in alignment with driver	Align clincher and driver
 S	Short legs	Insufficient wire draw	Increase amount of wire draw (refer to para. 3 page 5).
 T	Legs cross	Wire draw too great	Decrease amount of wire draw (refer to para. 3 page 5).
 U	Uneven clinching	Clincher not level and parallel with formers	Adjust clincher setting


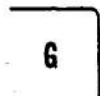

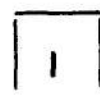
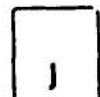
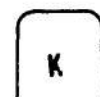
TROUBLE SHOOTING CHART

FORMED STAPLES


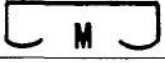




<i>Staple</i>	<i>Trouble</i>	<i>Cause</i>	<i>Remedy</i>
 A	Perfect staple		
 B	Right leg short	Wire spool dragging	Adjust wire spool tension
		Wire slipping in wire feed gears	Check tension setting of wire feed gears (refer to para. 7 page 9).
		Upper and/or lower wire tube clogged or worn	Check wire feed tubes (refer to para. b. page 11).
		Cutter block not properly positioned with relation to gripper	Make adjustments as directed in step (7) of Wire Draw Adjustments in page 7.
		Improper wire feed due to over lubricated or worn wire feed clutch	Check operation of wire feed clutch (refer to para. h. page 13).
		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 (refer to para. e. page 12).
 C	Left leg short	Cutter block not properly positioned with relation to gripper	Adjust length of left leg (refer to para. 4 page 8).
		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 (refer to para. e page 12).
 D	Staple corner buckled	Chipped or broken driver.	Check driver ends for signs of damage; reverse or replace driver (refer to para. f. page 13)
 E	Either or both legs buckled	Wrong size wire being used for work being stitched	Check wire size for work being stitched
		Dull wire cutters	Check movable and stationary cutters; sharpen or replace cutters (refer to para. c. and d. page 11).
		Worn supporter, or supporter retracts too easily due to insufficient spring tension	Check for worn supporter and broken or weak supporter spring (refer to para. g. page 13).

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 (refer to para. g. page 13).
		Wrong setting of Stitcher adjustment for thickness of work being stitched	Check Stitcher adjustment for thickness of work being stitched
	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 (refer to para. e. page 12).
		Gripper out of alignment with formers	Check to see that formers and gripper are in proper alignment (refer to para. 6 page 9).
	Right leg missing	Wire slipping in wire feed gears	Check tension setting of wire feed gears (refer to para. 7 page 7); check for worn gears (refer to para. a. page 10).
		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 (see Index Nos. 140 and 141 in Fig. 22).
	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 (refer to para. g. page 13).
		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 (refer to para. g. page 13).
		Driver corners too sharp; or worn formers	Check for worn formers and driver (refer to para. f. page 13).
	Corner of staple rounded	Worn anvil surface of gripper bar	Check for worn gripper bar (refer to para. e. page 12).

DRIVEN AND CLINCHED STAPLES

Staple	Trouble	Cause	Remedy
	Perfect Stitch (.175 (4.4mm) to 1/2" (12.7mm) Crown Width)		
	Perfect Stitch (Crown Widths greater than 1/2" (12.7mm))		
	Loose clinch	Wrong setting of Stitcher adjustment for thickness of work, and clinchers set too low	Check setting of Stitcher for thickness of work being stitched, and raise clinchers.
	Legs spread	Worn wire cutters	Check movable and stationary cutters; sharpen or replace cutters (refer to para. c. and d., page 11).
		Former grooves worn	Check formers; replace if grooves are worn (refer to para. f. page 13).
		Wire straightener not properly adjusted.	Check setting of wire straightener (refer to para. 2 page 5).
		Thickness of work beyond capacity of machine	Check thickness capacity of Stitcher
	Staple legs contracted	Worn wire cutters	Check movable and stationary cutters; sharpen or replace (refer to para. c. and d. page 11).
		Wire straightener not properly adjusted	Check setting of wire straightener (refer to para. 2 page 5).
	Crown buckled, tearing work	Wrong setting of machine adjustment for thickness of work	Check setting of Stitcher for thickness of work being stitched

PARTII—PARTS CATALOG

The instructions, illustrations and parts lists included in the following pages are provided to expedite the ordering of repair parts for the BOSTITCH Bliss Stitcher Heads.

1. HOW TO DISASSEMBLE AND REASSEMBLE STITCHER HEAD (See Fig. 21)

NOTE

Figure 21 illustrates the disassembling and re-assembling procedures only and is not intended to identify parts for purposes of ordering parts. For ordering parts see Fig. 22 and 23, and the accompanying Parts List.

Always disconnect Stitcher machine power cord from power outlet before disassembling head.

a. HOW TO REMOVE WIRE FEED, WIRE CUTTING, AND GRIPPER ASSEMBLIES (See Fig. 21).

1—Remove gripper spring bracket screw (1), and remove bracket and finger guard unit (2).

2—Remove wire feed guard lock screw (3).

3—Remove wire feed clutch retaining washer screw (4) and retaining washer (5), permitting the removal of the wire feed guard (6) and wire feed clutch assembly (7). On Model BHL485, friction brake assembly must be removed before retaining washer.

4—Remove the wire crank sector (8) and wire feed operating lever sliding head. (9).

5—Disengage wire feed gears by raising the gear throwout handle (10) to its open position.

6—Remove lower wire tube clamp (11) and loosen the two wire tube screws (12).

7—Withdraw upper and lower wire tubes, (13) and (14), sufficiently so that the wire feed drive gear (15) can be slipped off from its stud (16).

8—Remove wire feed idler gear retaining washer screw (17) and retaining washer (18), permitting the removal of the wire feed idler gear (19) from its stud (20).

If head being disassembled is a long draw type of head (Model BHOL), remove the brake tension nut (21), brake friction spring (22), and idler gear stud nut and retaining washer (23) and (24); then loosen brake friction plate screw (25), and remove the brake friction plate (26) and brake friction (27); the idler gear (19) can now be removed from its stud.

9—Remove the cutter block holding screw (28), permitting the removal of the cutter block assembly (29) from its holding plate (30).

10—Remove the two screws (31) from the cutter block holding plate (30) permitting the holding plate to be removed from the head plate; the removal of the cutter block holding plate (30) releases the cutter block operating plunger (32) and control slide (33). (The long wire draw heads (Models BHOL and BHL485) are not equipped with the control slide).

11—Unscrew and withdraw the gripper pivot screw (34), permitting the removal of the gripper assembly (35) from the head plate.

The preceding steps outline the procedure for removing wire feed, wire cutting, and gripper assemblies. For removal of wire forming and driving assemblies, proceed as per the following instructions.

b. HOW TO REMOVE WIRE FORMING AND DRIVING ASSEMBLIES (See Fig. 21).

12—Remove the three screws securing the head to the machine frame, and carefully remove head from frame; remove driver bar link (36) and former slide roller (37).

13—Remove supporter spring bracket screws (38), and remove supporter spring bracket (39) from head plate.

If head being disassembled is the Automatic Stitcher Head (Model BH485 or BHL485), remove the attaching screws (43) and remove the left and right hand supporter brackets (44) and (45) from the head plate. in para. 8 on page 9).

14—Remove cutter block trip crank holding screw (46), and withdraw trip crank (47) from head plate.

15—The former slide (48), driver bar (49), and gripper clamp piece control slide (50), can now be removed from the head plate. The supporter (55) and (56), is removed from the former slide (48) by driving out the supporter pivot pin (57) and (58).

16—To remove the driver bar (49) from the former slide (48), remove the left hand former (51) and driver (52), permitting the driver bar to be separated from the former slide.

17—Remove the wire feed operating link (53) from the operating lever (54); swing the wire feed operating lever (54) to its vertical position and remove the lever from the front of the head plate.

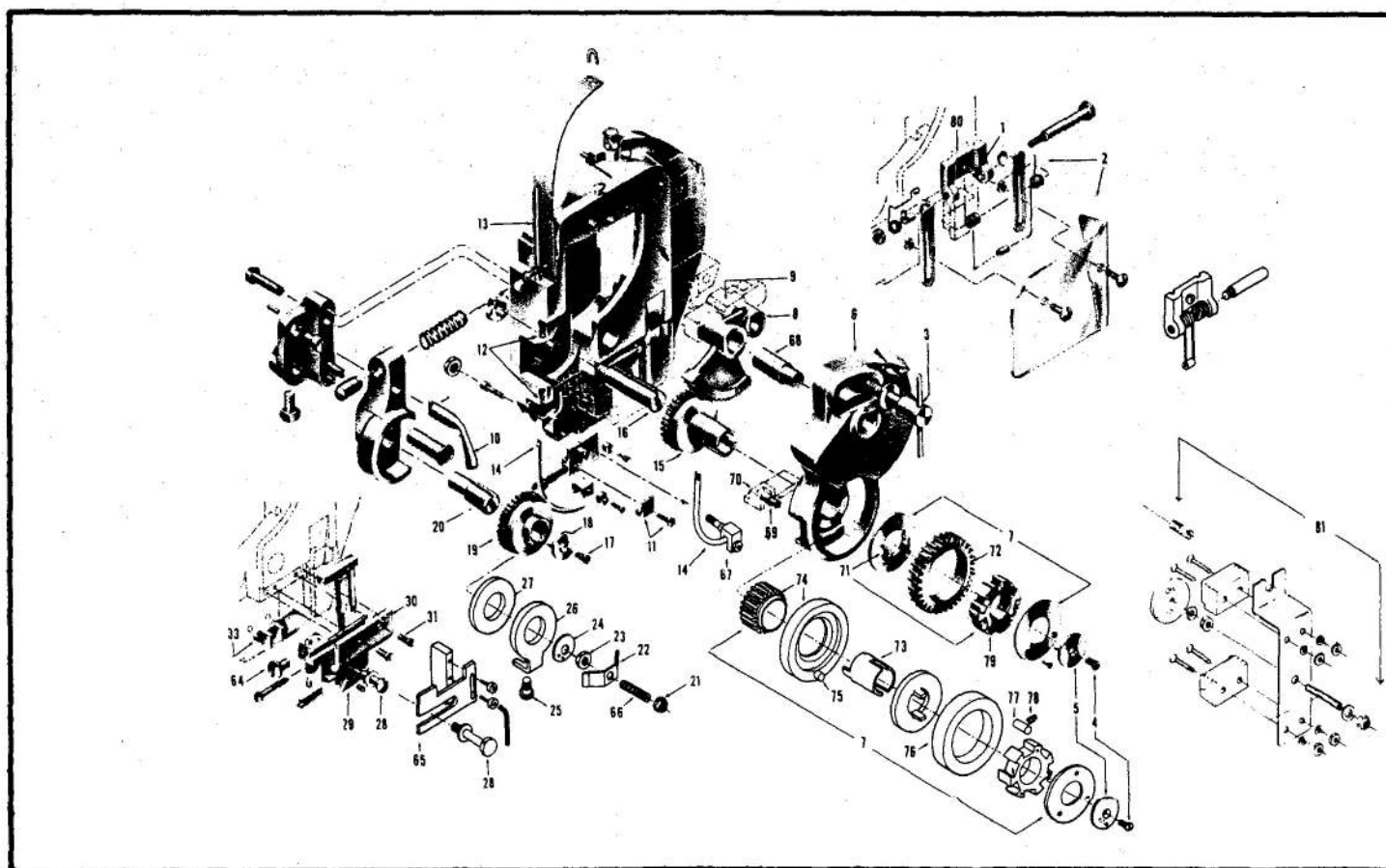


Figure 21—Disassembling and Reassembling Stitcher Head

c. HOW TO REINSTALL WIRE FORMING AND DRIVING ASSEMBLIES (See Fig. 21).

1—Replace wire feed operating lever (54) thru front opening of head plate with pivot stud (59) inserted in hole in head plate; swing operating lever to horizontal position and replace operating link (53) on operating lever crank stud (60).

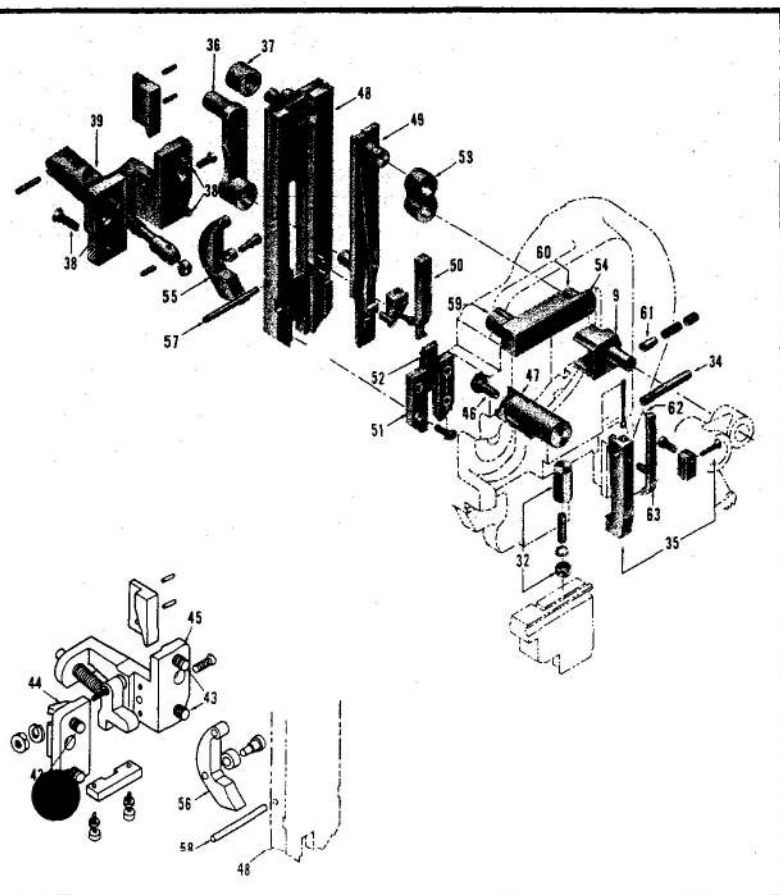
2—Insert gripper clamp piece control slide (50) into its slot in rear of head plate with slide upper notch engaged with friction bolt (61).

3—If driver bar has been removed from former slide, reassemble driver bar (49), formers (51), and driver (52) on former slide (48), if supporter, (55) or (56), has been removed from former slide (48), reinstall supporter and its pivot pin, (57) or (58), in former slide, install the assembled unit in rear of head plate, with driver bar (49) upper stud engaged in wire feed operating link (53).

4—Insert cutter block trip crank (47) into its hole in rear of head plate, and then replace and tighten trip crank holding screw (46).

5—Install supporter spring bracket (39), or supporter left and right hand brackets (44) and (45), on rear of plate; tighten the four attaching screws securely.

6—Place former slide roller (37) on former slide (48) stud, and driver bar link (36) on driver bar (49) lower stud. With stitcher machine in stop position, position head on machine frame so that driver bar link (36) enters hole in stitcher machine drive cam, and former slide roller (37) enters groove in drive cam. Make sure that head locating dowels are engaged in corresponding holes in machine frame, and then replace and securely tighten the three attaching screws.



If the wire feed, wire cutting, and gripper assemblies have been removed from the head, reinstall those parts as follows:

d. HOW TO REINSTALL WIRE FEED, WIRE CUTTING, AND GRIPPER ASSEMBLIES (See Fig. 21).

7—Position gripper assembly (35) in its opening in front of head plate, making sure that upper stud (62) of gripper clamp piece (63) engages in slot in clamp piece control slide (50); then, insert and tighten gripper pivot screw (34).

8—Insert cutter block operating plunger (32) into its hole in head plate, and, if head being assembled is the standard wire draw head, place cutter block control slide (33) into its slot in head plate then, replace the cutter block holding plate (30) onto the head plate, and replace and tighten the two holding screws (31).

9—Install the cutter block assembly (29) onto its holding plate (30). If head being assembled is the standard wire draw head, position the cutter block assembly so that the head of the cutter block adjusting screw (64) engages in the first (left) slot in the cutter block control slide (33). Replace and tighten cutter block holding screw (28). If head assembled is the long wire draw type (Model BHOL or BHL485), place the wire guide unit (65) into position on the cutter block and then replace its holding screw and washer.

10—Slip wire fed idler gear (19) onto its stud (20), and replace retaining washer (18) and screw (17). If head being assembled is either the long wire draw type (Model BHOL), slip wire feed idler gear (19) onto its stud (20). If idler gear stud screw (66) has been removed, replace and tighten screw. Then, slip brake friction (27) and friction plate (26) onto idler gear hub, and tighten friction plate screw (25). Replace retaining washer (24) and nut (23), and tighten nut securely. Slip brake friction spring (22) onto idler gear stud screw, and replace and tighten brake tension nut (21). (After head has been completely assembled, adjust brake tension as directed in para. 8 on page 9.)

11—Slip wire feed drive gear (15) onto its stud (16), making sure that gear is in complete engagement with idler gear (19).

12—Push the upper and lower wire tubes, (13) and (14), into operating position, and then tighten the two wire tube screws (12).

13—Replace the lower wire tube clamp (11) on wire straightener, and tighten its holding screw. (Since the Model BH485 is not equipped with a wire straightener, the lower wire tube clamp is of a different type, as shown at (67). This clamp does not require removal for disassembly of the head.)

14—Place wire feed operating lever sliding head (9) onto the operating lever (54); install wire feed crank sector (8), with sliding head pin engaged in crank hole of wire feed crank sector.

15—Slip wire feed guard (6) onto wire feed drive gear (15) hub, with guard stud (68) inserted into wire feed crank sector (8). If head is the standard draw, make sure that guard stop stud (69) engages in cutter block control slide (33), as shown at (70).

16—Slip wire feed clutch assembly (7) onto drive gear (15) hub, with clutch spider (71) keying into notch in hub of drive gear (15), and clutch ring gear (72) meshing with crank sector (8). Then, replace retaining washer and screw (5) and (4).

If head being assembled is the long draw type (Model BHOL or BHL485), slip wire feed clutch connecting sleeve (73) onto drive gear stud (16), making sure that it keys into notch in hub of drive gear (15). Slip wire feed clutch flange and gear (74) onto connecting sleeve (73) and hub of drive gear (15), so that gear meshes with crank sector (8). Then slip remaining parts of wire feed clutch assembly (7) onto wire feed clutch connecting sleeve (73), with clutch flange stud (75) engaged in hole in clutch ring (76). Replace retaining washer and screw (5) and (4). On Model BHL485 replace friction brake assembly (81) and adjust.

NOTE

If clutch assembly (7) has been disassembled, make sure that clutch rollers and springs (77) and (78) are reassembled in spider as shown in illustration at (79).

17—Replace and tighten wire feed guard lock screw and washer (3).

18—Replace gripper spring bracket and finger guard unit (2), making sure that bracket (80) keys into slot in head plate; tighten holding screw (1) securely.

This unit on the Model BH485 or BHL485 is not equipped with the finger guard parts.

19—After the head has been completely reassembled, as directed in the above instructions, turn over machine by hand and check that all parts operate freely. After making certain that parts operate freely, connect stitcher power cord, thread wire on head, and make a check run of the stitcher head.

2. COMPONENT PARTS

The Parts List and accompanying exploded views of the head, Fig. 22 and 23, identify all component parts of the following models of BOSTITCH Bliss Stitcher Heads:

Model Symbol	Description of Model
BHO	Openhead—Standard Wire Draw
BHOL	Openhead—Long Wire Draw
BH485	Head for Automatic Stitcher—Standard Wire Draw
BHL485	Head for Automatic Stitcher—Long Wire Draw

As previously explained in the Description section of this book, all BOSTITCH Bliss Stitcher Heads are basically similar. However, variations do occur in some of the component parts, due to adapting the basic head to the two different wire draw types of heads, as well as adapting the head for use on particular models of Stitchers.

All parts listed are common to all of the above models of heads except where otherwise noted in the Parts List and accompanying illustrations. Those parts illustrated in line drawing in the accompanying illustrations, Fig. 22 and 23, are parts or assemblies used in heads other than the Standard Wire Draw head.

The component parts illustrated in the exploded views, Fig. 22 and 23, are identified by "Index Num-

bers" (circled numbers); these numbers are listed numerically in the first column of the accompanying Parts List.

NOTE

The Index Numbers are not to be confused with the Parts Numbers, and serve only as a means of keying the illustrations to the Parts Lists. When ordering parts, order the required part by Part Number and not by Index Number.

The second column of the Parts List gives the Name and description of the parts. Where there is more than one Part Number listed for a given Index Number, the Description (wire draw, type or size of wire, width of crown, or other identifying characteristics serves to locate the required part number.

It will be noted that in the Name and Description column (second column) of the parts list, certain parts are designated as an Assembly, as for instance, "Wire Feed Clutch Assembly" (Refer to Index Number 89 in the Parts List.) All those parts immediately following the part designated as an assembly, and indented in the Name and Description column, make up the assembly; if the Assembly part number is ordered, all of those parts will be shipped assembled. In the case of this assembly, all those parts listed from Index No. 90 to 95 would be shipped assembled if the Assembly part number, 75H2, were ordered. However, any one of the individual parts of the assembly may be purchased separately, if desired.

Some parts, while not designated as assemblies, are made up of two or more parts, as in the case of the "Gear Arm Holding Plate," Index No. 101. If the "Gear Arm Holding Plate" part number were ordered (Part No. 58H), those parts immediately following and indented in the Name and Description column (Index Nos. 102 to 104), would be shipped attached to the Gear Arm Holding Plate. However, any one of the individual parts may be purchased separately, if desired.

NOTE

Those parts designated by an asterisk (*) preceding the name of the part are parts that, due to their nature or setting requirements, should be installed by a BOSTITCH service man.

The third column of the Parts List gives the Part Numbers of all procurable parts, and it is this number that must be specified when ordering a required part.

3. HOW TO IDENTIFY AND ORDER A PART

a. Locate the required part in the exploded views of the head, Fig. 22 and 23, and note the Index No. (circled number) identifying the part in the illustration.

b. Locate the part Index No. in the first column of the Parts List.

c. Copy the Part Number listed for that particular part as given in the Part No. column (third column) of the Parts List.

d. When more than one Part Number is listed for a given Index Number, locate the part description, in the Name and Description (second) column of the Parts List, that conforms with the specifications of the required part; then copy the Part No. given for that particular part description.

e. Order the required part, or assembly, by specifying the Part Number exactly as given in the Parts List.

PARTS LIST

For parts identified by Index Nos. 1 to 149 inclusive
see Fig. 22 on pages 24 and 25

Index No.	Name and Description	Part Number	Index No.	Name and Description	Part Number
2	Head Plate —		28	Wire Straightener Slide Block	947H
	Models BHO and BH485	50H2	29	Wire Straightener Roll — Lower	
	Model BHOL	50H17		Adjustable	936H3
	Model BHL485	50H26	30	Wire Straightener Roll Screw	UA2308.2
3	Head Plate Key —		31	Wire Straightener Adjusting	
	Models BHO, BHOL,			Screw — All Models except	
	BH485 and BHL485	50X2H2		BH485 and BHL485	UA4016.2
4	Head Plate Key Screw —			Model BHL485	252783
	Models BHO, BHOL,		32	Wire Straightener Adjusting	
	BH485 and BHL485	UA1408.1		Screw Friction Spring — All	
5	Head Locating Dowel	BD350		Models except BH485	9069
6	Wire Feed Guard Stop Pin	184-291	33	Lower Wire Tube Clamp — All	
11	Spring Wire Guide —			Models except BH485 &	
	All Models except BH485			BHL485 — BH485 (see	
	and BHL485	88H		Index No. 20)	946H2
12	Spring Wire Guide Loop..	BF50		BHL485	252784
13	Spring Wire Guide Screw	UA3308.2	34	Lower Wire Tube Clamp Screw	
*13A	Oiler Felt Retainer	2166		All Models except BH485..	UA2210.1
*13B	Oiler Felt	2167	35	Cutter Block Assembly—Ribbon	
*13C	Oiler Felt Retainer	69H		Wire — Square Cut Off	100H44
*13D	Oiler Felt	70H		.103 x .017 Arc'd wire..	100H79
*13E	Oiler Screw	UA3820	36	Cutter Block Body	101H25
14	Oiler	85220	37	Cutter Plunger	102H25
16	Oiler	85202	38	Cutter Plunger Spring	103H2
17	Upper Wire Tube —		39	Cutter Plunger Holding Screw ..	UA4021
	Ribbon Wire	87H	40	Movable Cutter — For Arc'd	
18	Lower Wire Tube — Ribbon			Wire	104H27
	Wire — All Models except			For Ribbon Wire	104H25
	BH485 (see Index No. 19)....	85H8	41	Stationary Cutter (Ribbon Wire)	
	Arc'd Wire — BH485.....	85H13		— Square Cut Off	105H44
	Arc'd Wire BHL485	85H12		.103 x .028 BHOL	105H71
19	Lower Wire Tube — Ribbon			Arc'd Wire	105H79
	Wire—Model BH485 Only..	85H		.103 x .088 }	
20	Lower Wire Tube Holding			.088 x .037 }	105H83
	Clamp — Model BH485		41A	Stationary Knife Plate All Models	108H32
	Only	251424	43	Stationary Cutter Screw	SB403
20A	Lower Wire Tube Retaining		44	Cutter Block Adj. Screw	SB601
	Screw — Model BH485		45	Cutter Block Adjusting Screw	
	Only	UA3808.5		Lock Screw	SB401
21	Lower Wire Tube Retaining		46	Cutter Block Holding Screw All	
	Screw Nut — Model BH485			Models except BHOL and	
	Only	HN1032		BHL485	SB407
22	Lower Wire Tube Holding		48	Cutter Block Holding Plate — All	
	Clamp Nut — Model BH485			Models except BHOL and	
	Only	HN1420.2		BHL485	106H
23	Wire Tube Screw	SB401		Models BHOL and	
24	Wire Straightener Plate	931H3		BHL485	106H2
	BHL485 Only	252782A	49	Cutter Block Holding Plate	
25	Wire Straightener Roll —			Dowel	BD301
	Upper Stationary	935H3	50	Cutter Block Holding Plate Screw	UA3408.1
26	Wire Straightener Upper		51	Cutter Block Control Slide —	
	Roll Stud	938H2		Models BHO and BH485	107H3
27	Wire Straightener Plate Screw	UA4812.2			

*Not shown on fig. 21 & 22.

Index No.	Name and Description	Part Number
Used only on Models BHOL and BHL485	52 Wire Guide	45H3
	53 Wire Guide Plate	44H
	54 Wire Guide Screw	UA2801.1
	55 Wire Guide Screw Wrench	BSA52
	56 Cutter Block Holding Screw	UA4024.1
	57 Cutter Block Holding Screw Washer	C496
	58 Wire Feed Drive Gear Stud — Models BHO and BH485	78H
	Models BHOL and BHL485	78HS2
	59 Wire Feed Drive Gear Stud Pin ..	BD75
	60 Wire Feed Drive Gear Stud Nut ..	HN1213.2
	61 Wire Feed Drive Gear — Models BHO and BH485	80H
	Models BHOL and BHL485	80H3
	Arc'd Wire BH485	80H5
	Arc'd Wire BHL485	80H6
	62 Wire Feed Guard — Models BHO and BH485	51H6
	63 Wire Feed Guard Stop Stud	BF402
	64 Wire Feed Guard Crank Stud	BF902
	65 Oiler	85225
	67 Wire Feed Guard Stop Stud	BF402
	68 Wire Feed Guard Crank Stud	BF902
	69 Oiler	85225
	72 Wire Feed Guard — Model BHOL	51HS3
	Model BHL485	51H22
	73 Wire Feed Guard Crank Stud	BF902
	74 Oiler	85225
	75 Wire Feed Crank Sector Models BHO and BH485	53H
	Models BHOL and BHL485	53HS2
	76 Wire Feed Clutch Assembly Models BHO and BH485	75H
	77 Clutch Ring Gear — Models BHO and BH485	71H
	78 Clutch Spider	72H
	79 Clutch Roller	73H
	80 Clutch Roller Spring	74H
	81 Clutch Front Plate	76H
	82 Clutch Front Plate Screw	UA1404.1
	83 Wire Feed Clutch Retainer Washer	77H
	Model BHL485	77H2
	84 Wire Feed Clutch Retainer Washer Pin	BD75
	85 Wire Feed Clutch Retainer Washer Screw	UA3408.1
	86 Wire Feed Clutch Flange and Gear — Models BHOL and BHL485	49HS

Index No.	Name and Description	Part Number
87	Wire Feed Clutch Flange Stud ..	BF218
88	Wire Feed Clutch Connecting Sleeve — Models BHOL BHOL and BHL485	47HS2
89	Wire Feed Clutch Assembly — Models BHOL and BHL485	75H2
90	Clutch Ring — Models BHOL and BHL485	71HS
91	Clutch Spider	72H
92	Clutch Roller	73H
93	Clutch Roller Spring	74H
94	Clutch Front Plate	76H
95	Clutch Front Plate Screw	UA1404.1
96	Wire Feed Clutch Retainer Washer — Model BHOL only	77H
97	Wire Feed Clutch Retainer Washer Pin	BD75
98	Wire Feed Clutch Retainer Washer Screw — Model BHOL only	UA3408.1
99	Wire Feed Guard Lock Screw ..	52H
100	Wire Feed Guard Lock Screw Washer	BG1114
101	Gear Arm Holding Plate	58H
*102	Gear Arm Holding Plate Locating Pin	BD300
*103	Gear Arm Holding Plate Rod ..	BF602
*104	Gear Arm Holding Plate Rod Pin ..	UB3104.1
105	Gear Arm Pivot Lock Screw	UA6510.1
106	Gear Arm Holding Plate Screw ..	UA6120.1
107	Wire Feed Idler Gear Arm — All Models except BHOL	54H
	Model BHOL	54H2
108	Wire Feed Idler Gear Arm Stud All Models except BHOL	56H
	Model BHOL	56H2
109	Oiler	85225
*110	Wire Feed Idler Gear Throwout Handle	55H
111	Throwout Handle Stop Pin	BD150
112	Wire Feed Pressure Adjusting Screw	59H
113	Wire Feed Pressure Tension Spring	60H
	Arc'd wire	60H2
114	Wire Feed Idler Gear Arm Pivot ..	57H
115	Wire Feed Idler Gear	81H2
	Arc'd wire	81H3
116	Wire Feed Idler Gear Retaining Washer—All Models except BHOL	82H
	Arc'd wire BHL485	82H2
117	Gear Retaining Washer Pin	BD75
118	Wire Feed Idler Gear Retaining Washer Screw	85308

*Part should be installed by Bostitch service man.

	Index No.	Name and Description	Part Number		Index No.	Name and Description	Part Number
Used only on Model BHOL	119	Brake Friction	1003H		154	Gripper Bar Clamp Piece Stud ..	BF51
	120	Brake Friction Plate	1006H		155	Gripper Bar Clamp Piece Spring Assembly	122H
	121	Brake Friction Plate Screw	1008H		156	Gripper Bar Clamp Piece Spring..	122XIH
	122	Wire Feed Idler Gear Retaining Washer	82H2		157	Gripper Bar Clamp Piece Spring Plug	BG150
	123	Gear Retaining Washer Pin	BD75		158	Gripper Bar Adjusting Screw Clamp Block	125H
	124	Wire Feed Idler Gear Stud Screw Nut	HN1428.2		160	Gripper Bar Adjusting Screw ..	124H
	125	Brake Friction Spring	1007H		161	Gripper Bar Clamp Piece Spring Retaining Screw	SB301
	126	Wire Feed Idler Gear Stud Screw	UA4820.4		162	Gripper Clamp Block Holding Screw	SB315
	127	Brake Tension Nut	HN1428.3		163	Gripper Pivot Screw	SB406
	128	Gripper Spring Bracket	129H4		164	Gripper Clamp Piece Control Slide Friction Bolt	127H
	129	Gripper Spring Bracket Screw ...	UA3314.1		165	Gripper Clamp Piece Control Slide Friction Spring	128H
	130	Gripper Spring Bracket Screw Washer	LW104		166	Gripper Clamp Piece Control Slide Friction Adjusting Screw	SB602
All Models except BH485 and BHL485	131	Gripper Spring Pivot	UA4041.1		167	Gripper Clamp Piece Control Slide	126H2
	132	Finger Guard Bracket — R.H.	1000HR		168	Driver Bar — 7/16 Crown	113H21B
	133	Finger Guard Bracket — L.H.	1000HL			.088 x .037 3/4 Crown	113H21C
	134	Gripper Spring Pivot Bushing	7242		169	Driver Bar Lock Stud	BF311
	135	Finger Guard Spring	1002H		170	Wire Feed Operating Link All Models except BHOL and BHL485	66H
	136	Gripper Spring Pivot Nut	HN1420.2			Models BHOL and BHL485 ..	66H2
	137	Finger Guard	1001H		171	Wire Feed Operating Lever	67H
	138	Finger Guard Screw	UA3008.4		172	Wire Feed Operating Lever Crank Stud	BF702
	139	Finger Guard Screw Nut	HN1032		173	Wire Feed Operating Lever Pivot Stud	BF903
	140	Gripper Spring R. H.	129H3R		174	Wire Feed Operating Lever Sliding Head	68H
	141	Gripper Spring L. H.	129H3L		175	Gripper Throwout Cam Block — 7/16 Crown	123H10
	142	Gripper Spring Roll	129H6			3/4 Crown	123H16
	143	Gripper Spring Bracket—Models BH485 and BHL485	129H4		176	Gripper Throwout Cam Block Screw — 7/16 Crown	UA3806.3
	144	Gripper Spring Bracket Screw — Models BH485 and BHL485	UA3314.1			3/4 Crown	SB316
	145	Gripper Spring Bracket Screw Washer — Models BH485 and BHL485	LW10.4		177	Former Slide — All Models 7/16 Crown	110H13
	146	Gripper Spring Pivot—Used only on Models BH485 and BHL485	129H5			3/4 Crown	110H12
	147	Gripper Spring R.H. — Model BH485 and BHL485	129H3R		178	Former Slide Dowel	BD250
	148	Gripper Spring L.H. — Model BH485 and BHL485	129H3L		183	Former Slide Roller	111H2B
	149	Gripper Spring Roll — Model BH485 and BHL485	129H6			Former Slide Roller	111H2B
Following parts, Index Nos. 150 to 248, inclusive, are shown in Fig. 23, page 27							
	*150	Gripper Assembly — 7/16"	119H				
		3/4"	119M				
	151	Gripper Bar — 7/16"	120H				
		3/4"	120M				
	152	Gripper Bar Clamp Piece—7/16"	121H				
		3/4"	121M				
	153	Gripper Bar Clamp Piece Stud ..	BF53				
*Gripper assembly includes all parts complete items 151 thru 162 inclusive. Individual parts can be ordered separately.							

This illustration shows component parts of Wire Feeding and Cutting Units, Index Nos. 1 thru 149. For following numbers, Gripper, Forming, and Driving Units, see Fig. 23.

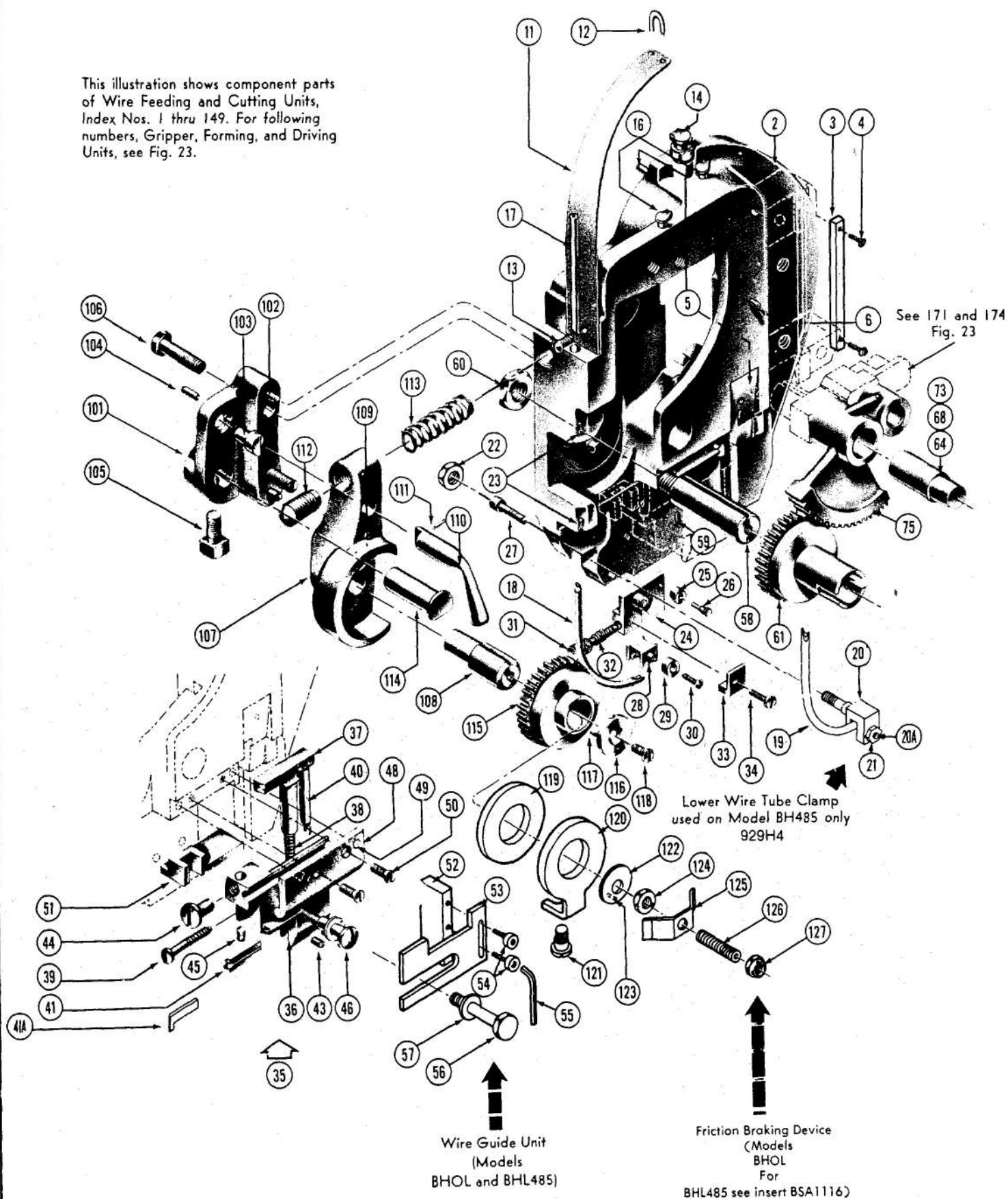
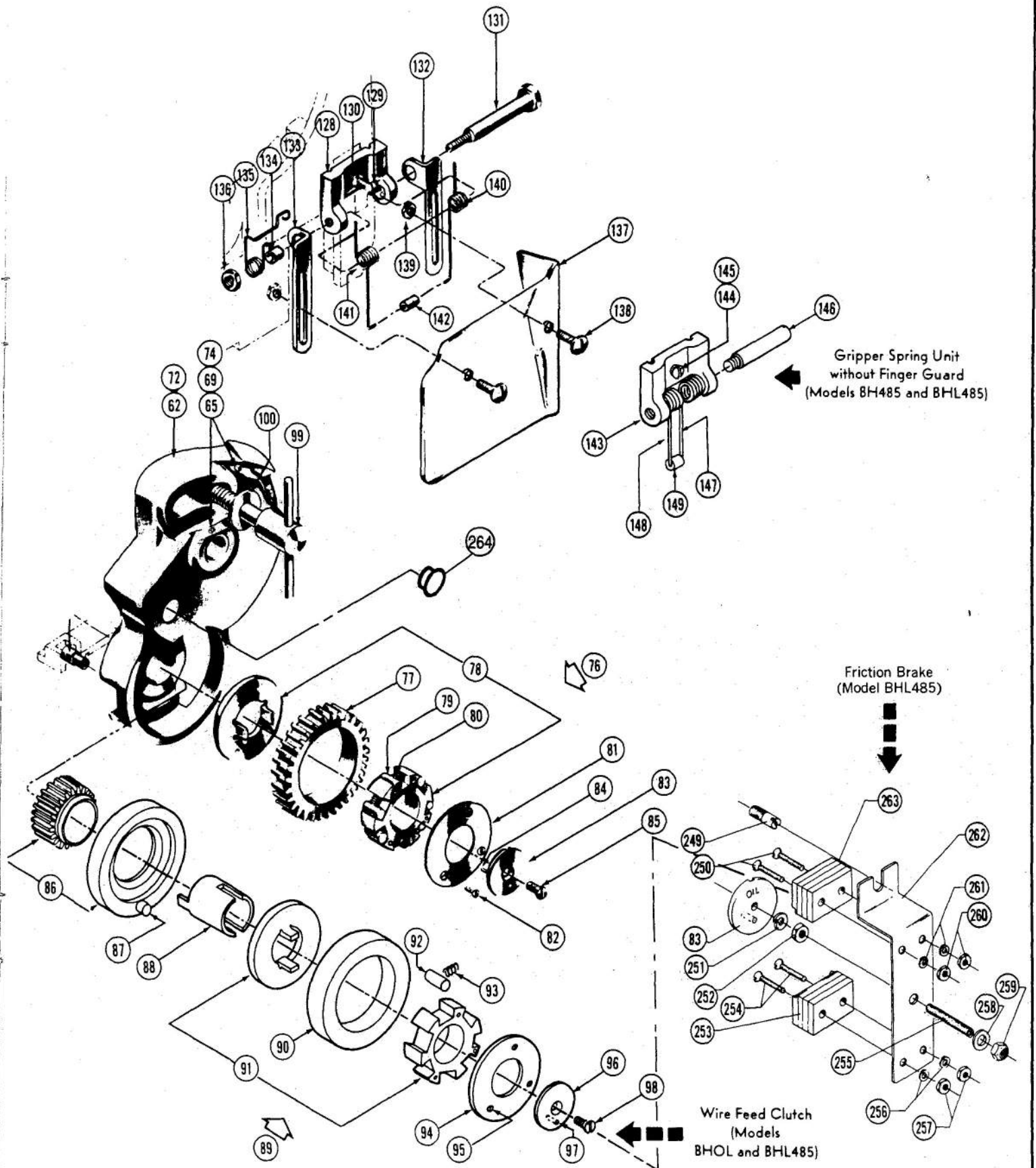


Figure 22—Stitcher Head Component Parts



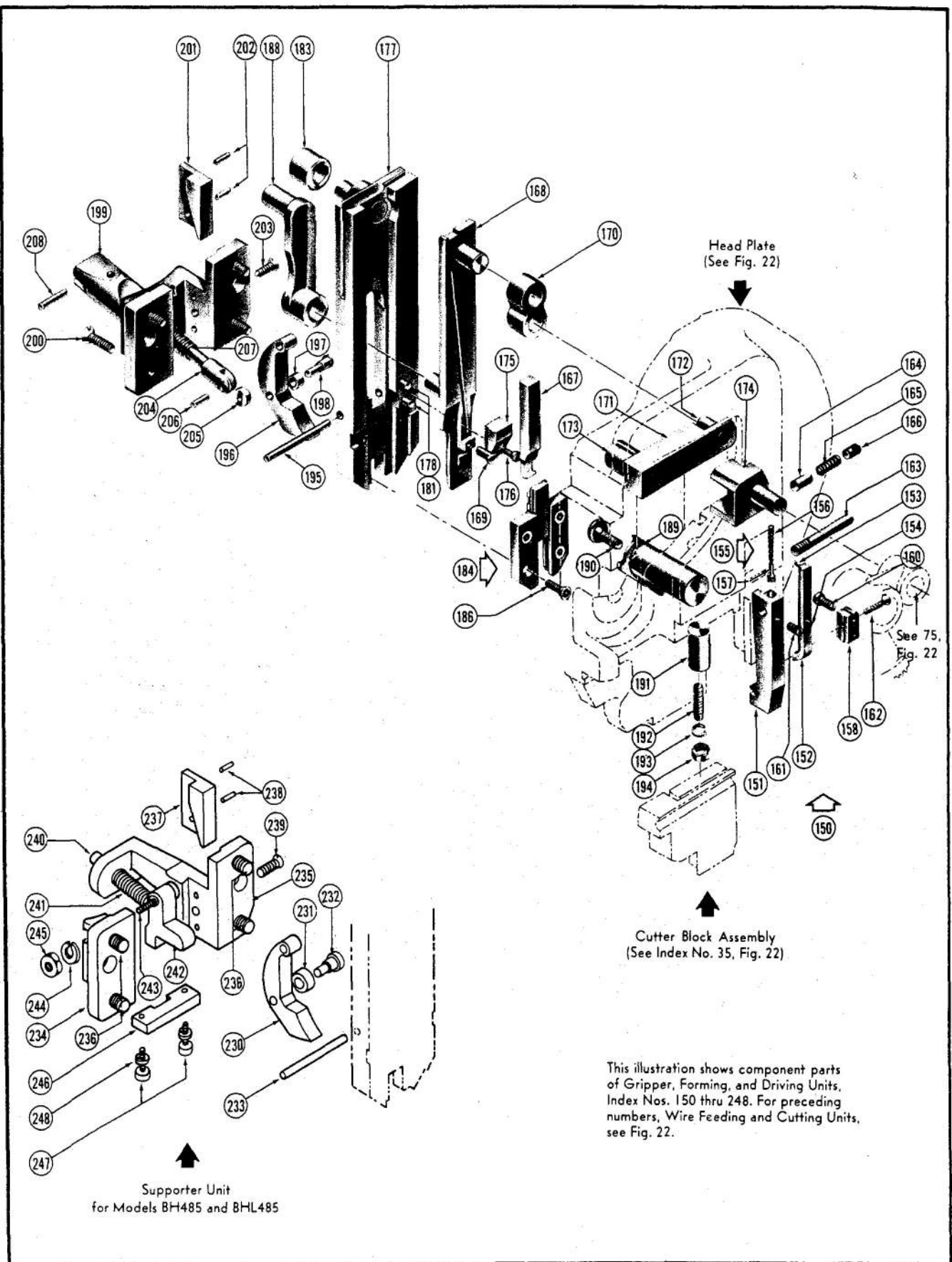
—Wire Feeding and Cutting Assemblies

<i>Index No.</i>	<i>Name and Description</i>	<i>Part Number</i>		
184	Formers and Driver —			
	Ribbon Wire	<i>L. H. Former</i>	<i>Driver</i>	<i>R. H. Former.</i>
	.103 x .028 Wire 7/16 Crown	116H135	117H135	115H135
	.103 x .023 Wire 7/16 Crown	116H55	117H108	115H55
	.103 x .020 Wire 7/16 Crown	116H34	117H150	115H34
	.103 x .017 Wire 7/16 Crown	116H34	117H150	115H34
	.103 x .014 Wire 7/16 Crown	116H32	117H136	115H32
	.088 x .037 Wire 3/4 Crown	116H246	117H246	115H246
	Arc'd Wire			
	.014 & .017 Ribbon Wire 7/16 Crown	116H213	117H213	115H213

<i>Index No.</i>	<i>Name and Description</i>	<i>Part Number</i>	<i>Index No.</i>	<i>Name and Description</i>	<i>Part Number</i>
186	Former Screw —		238	Supporter Cam Dowel	184-557
	For use with Former Slides		239	Supporter Cam Screw	UA3408.1
	Nos. 110H6, 110H7, 110H12,		240	Supporter Plunger	25623
	and 110H13	UA3410.4	241	Supporter Plunger Spring	141H3
188	Driver Bar Link	114H	242	Supporter Plunger Shoe	25621
189	Cutter Block Trip Crank	97H	243	Supporter Plunger Shoe Stud	25622
190	Cutter Block Trip Crank Holding		244	Supporter Plunger Shoe Stud	
	Screw	SB405		Lock Washer	LW10
191	Cutter Block Operating Plunger ..	98H2	245	Supporter Plunger Shoe Stud Nut	HN1032
192	Cutter Block Operating		246	Supporter Plunger Shoe Stop	252162
	Plunger Adjusting Screw	SB416	247	Supporter Plunger Shoe Stop	
193	Adjusting Screw Lock Washer	LW14		Screw	UA3810.1
194	Adjusting Screw Nut	BG612	248	Supporter Plunger Shoe Stop	
195	Supporter Pivot Pin	BD342		Screw Washer	SW10C
196	Supporter .088 x .037 Wire —		249	Brake Spring Locating Screw	168
	3/4 Crown only	64M	250	#6—32 x 1" Socket Set Screw	UA1410.1
196	Supporter — 7/16 Crown Only		251	#10 Lockwasher	LW10
	(For Model BH485 see Index		252	#10—32 Hex Nut	HN1032
	No. 230.)	64H	253	Wire Feed Brake Shoe	1017H
197	Supporter Roll	BG408	254	#6—32 x 5/8 Flat Hd. Mach.	
198	Supporter Roll Stud	BF222		Screw	UA1410.1
199	Supporter Spring Bracket	61H2	255	#10—32 x 1" Socket Set Screw ..	UA3816.1
200	Supporter Spring Bracket Screw..	UA4412.1	256	#6 Lockwasher	LW6
201	Supporter Cam	63H2	257	#6—32 Hex Nut	HN632
202	Supporter Cam Dowel	184-557	258	#10 Plain Washer	PW10
203	Supporter Cam Screw	UA3408.1	259	#10—32 Hex Nut	HN1032.2
204	Supporter Plunger	65H2	260	#6—32 Hex Nut	HN632
205	Supporter Plunger Roll	BG653	261	#6 Lockwasher	LW6
206	Supporter Plunger Roll Pin	BD341	262	Wire Feed Brake Spring	1016H
207	Supporter Plunger Spring		263	Wire Feed Brake Shoe	1017H
	(Std.)	141H3	264	Nylon Hole Plug.....	850945
	(Heavy)	141H6			
208	Supporter Plunger Cross Pin	184-573			
230	Supporter 7/16 Crown	64H			
231	Supporter Roll	BG408			
232	Supporter Roll Stud	BF222			
233	Supporter Pivot Pin	BD342			
234	Supporter Bracket — L.H. —	25618			
235	Supporter Bracket — R.H. —	25619			
	Supporter Bracket — R.H. —				
	.088 x .037 Wire 3/4 Crown	25619B			
236	Supporter Bracket Screw —	UA4414.1			
237	Supporter Cam	63H2			
	Supporter Cam .088 x .037 Wire				
	3/4 Crown	63H4			

Used only for 7/16 Crown

Models BH485 and BHL 485



**Figure 23—Sticher Head Component Parts
Gripper, Wire Forming, Driving Assemblies**

CROSS REFERENCE FORM **PART NUMBER TO INDEX NUMBER**

Part Number	Index No.	Part Number	Index No.	Part Number	Index No.	Part Number	Index No.
44H	53	85H	19	123H10	175	BD150	111
45H3	52	85H8	18	123H16	175	UB3104.1	104
47HS2	88	85H12	18	124H	160	BD250	178
49HS	86	85H13	18	125H	158	BD300	102
50H2	2	87H	17	126H2	167	BD301	49
50H17	2	88H	11	127H	164	BD341	206
50H26	2	97H	189	128H	165	BD342	195, 233
50X2H2	3	98H2	191	129H3L	141, 148	BD350	5
51H6	62	100H44	35	129H3R	140, 147	BF50	12
51HS3	72	100H79	35	129H4	128, 143	BF51	154
51H22	72	101H25	36	129H5	146	BF53	153
52H	99	102H25	37	129H6	142, 149	BF218	87
53H	75	103H2	38	141H3	207, 241	BF222	198, 232
53HS2	75	104H25	40	141H6	207	BF311	169
54H	107	104H27	40	931H3	24	BF402	63, 67
54H2	107	105H44	41	935H3	25	BF602	103
55H	110	105H71	41	936H3	29	BF702	172
56H	108	105H79	41	938H2	26	BF902	64, 68, 73
56H2	108	105H83	41	946H2	33	BF903	173
57H	114	106H	48	947H	28	BG150	157
58H	101	106H2	48	1000HL	133	BG408	197, 231
59H	112	107H3	51	1000HR	132	BG612	194
60H	113	108H32	41A	1001H	137	BG653	205
60H2	113	110H12	177	1002H	135	BG1114	100
61H2	199	110H13	177	1003H	119	BSA52	55
63H2	201, 237	111H2B	183	1006H	120	C496	57
63H4	237	111H2	183	1007H	125	HN632	257, 260
64H	196, 230	113H21B	168	1016H	262	HN1032	21
64M	196	113H21C	168	1008H	121	HN1032	139
65H2	204	114H	188	1017H	253, 263	HN1032.2	259
66H	170	115H32	184	2166	13A	HN1032	252, 245
66H2	170	115H34	184	2167	13B	HN1213.2	60
67H	171	115H55	184	7242	134	HN1420.2	136
68H	174	115H213	184	9069	32	HN1420.2	22
69H	13C	115H135	184	25618	234	HN1428.2	124
70H	13D	115H246	184	25619	235	HN1428.3	127
71H	77	116H32	184	25619B	235	LW6	256, 261
71HS	90	116H34	184	252162	246	LW10	244, 251
72H	78, 91	116H55	184	25621	242	LW10.4	130, 145
73H	79, 92	116H135	184	25622	243	LW14	193
74H	80, 93	116H213	184	25623	240	PW10	258
75H	76	116H246	184	252782A	24	SB301	161
75H2	89	117H108	184	252783	31	SB315	162
76H	81, 94	117H135	184	252784	33	SB316	176
77H	83, 96	117H136	184	85202	16	SB401	23
77H2	83	117H150	184	85220	14	SB401	45
78H	58	117H213	184	85225	65, 69, 74, 109	SB403	43
78HS2	58	117H246	184	85308	118	SB405	190
80H	61	119H	150	251424	20	SB406	163
80H6	61	119M	150	168	249	SB407	46
80H3	61	120H	151	184-291	6	SB416	192
80H5	61	120M	151	184-557	202, 238	SB601	44
81H2	115	121H	152	184-573	208	SB602	166
81H3	115	121M	152	BD75	59	SW10C	248
82H	116	122H	155	BD75	84, 97	UA1404.1	82, 95
82H2	116, 122	122X1H	156	BD75	117, 123	UA1408.1	4

<i>Part Number</i>	<i>Index No.</i>
UA1410.1	250, 254
UA2210.1	34
UA2308.2	30
UA2808.1	54
UA3008.4	138
UA3308.2	13
UA3314.1	129, 144
UA3408.1	50
UA3408.1	85, 98
UA3408.1	203, 239
UA3410.4	186
UA3806.3	176
UA3808.5	20A
UA3810.1	247
UA3816.1	255
UA3820	13E
UA4016.2	31
UA4021	39
UA4024.1	56
UA4041.1	131
UA4412.1	200
UA4414.1	236
UA4812.2	27
UA4820.4	126
UA6120.1	106
UA6510.1	105