INSTRUCTIONS AND PARTS LIST

FOR THE

BOSTITCH

BLISS WIRE STITCHER HEAD

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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:

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Symbol	Description of Model
BHS	Short Wire Draw — $\frac{1}{2}$ " to $1\frac{1}{2}$ "
BH	Standard Wire Draw — 7/8" to 11/2"
BHL	Long Wire Draw — $\frac{15}{16}''$ to $2\frac{3}{8}''$
BHX	Extra Long Wire Draw — 1 ⁵ / ₈ " to 3 ¹ / ₂ "
BHN	Narrow Crown — Short Wire Draw
BHO	Openhead — Standard Wire Draw
BHOL	Openhead — Long Wire Draw
BHM	S13E Metal Stitcher — Standard Wire Draw
BHMB	S13E Metal Stitcher with Bracket Type Clincher — Standard Wire Draw
BHC	Caddy Stitcher — Standard Wire Draw
BH485	Head for #485 Stitcher — Standard Wire Draw
BHL485	Head for #485 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 lists 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.

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 short, standard, long, and extra 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 S13E Metal Stitcher and the RSCA #485 machine.

The BOSTITCH Bliss Heads are designed to accommodate a wide 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 full range of models of 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, (RSCA #485 Stitcher Head), are equipped with a wire straightener device and adjustable finger guard.

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 SIZE	OBTAINABLE CROWN SIZE
Ribbon	.103 x .028 .103 x .023 .103 x .020 .103 x .017 .103 x .014	$\begin{array}{c} 3_{8} \\ 1_{4}, 3_{8}, \frac{1}{16}, 5_{8}, 3_{4} \\ 1_{4}, 3_{8}, \frac{1}{16}, 5_{8}, 3_{4}, 13_{8} \\ 3_{8}, \frac{1}{16}, 1_{2}, 5_{8}, 3_{4}, 11_{4}, 13_{8} \\ 3_{8}, \frac{1}{16}, \frac{1}{2}, 5_{8}, 3_{4}, 11_{4}, 13_{8} \\ .290, \frac{1}{16}, \frac{1}{2}, 5_{8}, 11_{4} \end{array}$
Hybar	#3 (.060 x .028) #2 (.060 x .024) #1 (.060 x .020) #000 (.060 x .017)	$\frac{3}{8}, \frac{7}{16}$.190, 1/4, .290, $\frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{1}{18}$.190, 1/4, .290, $\frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{1}{18}$ 1/4, .290, $\frac{3}{8}, \frac{7}{16}$
Flat Bookbinder's	$\begin{array}{c} 18 \times 20 & (.0475 \times .035) \\ 19 \times 211 / 2 & (.041 \times .030) \\ 20 \times 23 & (.035 \times .025) \\ 20 \times 24 & (.035 \times .023) \\ 20 \times 25 & (.035 \times .0204) \\ 22 \times 26 & (.028 \times .018) \end{array}$.290, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$ $\frac{7}{16}$.290, $\frac{3}{8}$, $\frac{7}{16}$.290, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$.175, $\frac{1}{4}$, .290, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$ $\frac{3}{8}$
Round Bookbinder's	$\begin{array}{c} \# 16 \ (.063) \\ \# 18 \ (.0475) \\ \# 19 \ (.041) \\ \# 20 \ (.035) \\ \# 23 \ (.026) \\ \# 25 \ (.0204) \end{array}$	$ \frac{1}{4}, \frac{3}{8}, \frac{7}{16}, \frac{3}{4} \\ \frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{5}{8} \\ \frac{3}{8}, \frac{7}{18} \\ .175, \frac{1}{4}, \frac{3}{8}, \frac{7}{16} \\ \frac{7}{16}, \frac{3}{4} \\ .175, \frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{3}{4} $
Flat Bookbinder's— Shopping Bag Handles	20 x 24 (.035 x .023)	3/8
Flat Bookbinder's Glove Stitch	19 x 211/2 (.041 x .030) .078 x .028 .078 x .022 .077 x .023 .073 x .024	$\frac{1/4}{1/4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$
Flat—Stockinette Stitch	18 x 20 (.0475 x .035) 20 x 25 (.035 x .0204)	.175, \$% .175
Hybar-Stockinette Stitch	#1 (.060 x .020)	3/8
Round—Metal Stitch	.051 #18 (.0475)	3/8 3/8
Flat—Box Stay	.088 x .037	11/4

OPERATING ADJUSTMENTS



Figure 2—Threading Wire on Head



Figure 3—Straightening 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 operating 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") 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.

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 #485 Bostitch Stitcher (Model BH485) 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 to 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: (Cont'd on pg. 6)

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 four types based upon the wire draw (amount of wire fed for each stitch) capacity of the head. The table in Fig. 4 lists the four 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" through 1/2" 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 $\frac{7}{16}$ " and thickness of work to be stitched is $\frac{3}{16}$ ", the correct wire draw would be: $2 \times \frac{7}{16}$ ", (or $\frac{7}{8}$ "), plus $2 \times \frac{3}{16}$ ", (or $\frac{3}{8}$ "), which equals $1\frac{1}{4}$ " wire draw.

Stitches having crown sizes greater than $\frac{1}{2}''$ should have sufficient wire draw so that each clinched leg of the staple is $\frac{3}{16}''$ 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 $\frac{3}{6}''$; or, when reduced to a formula: Wire Draw = C + 2T + $\frac{3}{6}''$

For example: If crown size of stitch is 11/8''and thickness of work to be stitched is 1/2'', the correct wire draw would be: 11/8'', plus 2 x 1/2'', (or 1''), plus 3/8'', which equals 21/2'' wire draw.

The above formulas do not take into consideration the type of material to be stitched. Some (Cont'd on pg. 7)

	Wire Draw Limits		
Type of Head	Minimum	Maximum	
Short Wire Draw	1⁄2″	l 1⁄2″	
Standard Wire Draw	⁷ ⁄8″	l 1⁄2″	
Long Wire Draw	18 ″	23/8″	
Extra Long Wire Draw	15/8″	31/2"	

Figure 4-Wire Draw Table



Figure 5—Wire Draw Dimensions and Formula for .175 thru ½" Crowns



Figure 6—Wire Draw Dimensions and Formula for Crowns Greater Than ½"



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

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" thru $\frac{1}{2}$ ", while the formula given in Fig. 6 can be used for stitches having crown sizes greater than $\frac{1}{2}$ ".

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, long, and extra long wire draw head plates have two tapped holes, (A) and (B), Fig. 7, while the short wire draw head plate has an additional (third) hole (C) for insertion of the wire feed guard lock screw. All four 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. $4\overline{)}$ 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 five 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)

(Cont'd on pg. 8)

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

WIRE DRAW ADJUSTMENTS (Cont'd)

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, B, or C, Fig. 7); do not tighten screw at this point.

3—The short and standard wire draw heads are 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 either of these two types, relocate the cutter block holding screw (2) in its alternate hole (D or E, Fig. 7), and tighten screw securely. If head is of the Metal Stitcher type (Model BHM or BHMB), relocate the cutter block holding screw (2) with washer, in its alternate hole (D or E, Fig. 7), but do not tighten. If head being operated is either the long or extra long draw type (Model BHL, BHX, 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 and extra 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 either the short or standard wire draw type, loosen (do not remove) only the wire feed guard lock screw (1); if head is either the metal stitcher type or long or extra long draw type, loosen (do not remove) both screws.

5—To increase or decrease the wire draw on the short and standard wire draw heads, 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 short and 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 (If head being operated is the short draw type, there may be two alignment markings on the wire feed guard, in which case use the right hand marking). The scale and marker provide a means of setting the wire draw according to the desired length. On the short wire draw head the "O" scale marking represents $\frac{1}{2}$ " of wire draw; on the standard draw head the "O" marking represents 1" of wire draw. Each of the other graduations in the scale on both heads represent approximately $\frac{1}{8}$ " additional wire draw. Thus, if

(Cont'd on pg. 9)



Figure 9-Wire Draw Adjustments



Figure 10-Wire Draw Scale

the head being operated is a standard wire draw head, a setting on the "3" marking will result in a wire draw of $13\frac{8}{8}$ ", whereas the same setting on the short draw head will result in a wire draw of $7\frac{8}{8}$ ".

After the setting has been made, tighten the wire feed guard lock screw, (1) Fig. 9. If head is of the metal stitcher type (Model BHM or BHMB), also tighten the cutter block holding screw, (2) Fig. 9.

6—On the long and extra long wire draw heads (BHL, BHX, BHOL and BHL485) wire draw is increased or decreased exactly the same as for the short and standard draw heads: by shifting the wire feed guard casting to the right or left. However, on these two types of heads 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 short and standard wire draw heads, is pro-



Figure 11—Cutter Block Scale (Long and Extra Long Draw Heads)

vided on the long and extra 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 draw setting. On these two scales the extreme right hand mark represents the maximum length of wire draw-i.e., on long wire draw head 23%", and on extra long wire draw head 31/2". 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. 10.

If head being operated is either the short or 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. 10); then, increase or decrease the wire draw, as directed in step (5), pg. 8, until both legs are the correct length.

If head being operated is either the long or extra 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 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.

9

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 either the short or 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 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 either the long or extra long wire draw type, (Model BHL, BHX, 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).

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

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 12—Staple Left Leg and Movable Cutter Adjustments



Figure 13—Adjustments for Aligning Gripper Bar and Formers

954-971-617



Figure 14—Wire Feed Gear Tension Adjustment



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

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 BHL, BHX, BHOL and BHL485 Only (See Fig. 15)

Models BHL, BHX, BHOL and BHL485 are equipped with a friction braking device (1) to prevent wire feed overrun. 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, loosen tension nut.

9. HOW TO ADJUST WIRE GUIDE – Models BHL, BHX, BHOL and BHL485 Only (See Fig. 15)

Because of the wide gap between the cutter block and the gripper bar on the long and extra 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); an Allen wrench for these screws is supplied with the head.

The wire guide should be so positioned that the wire is fed from the cutter block directly into the gripper bar.

To insure continuous operation of the BOS-TITCH 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—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
- 11-Oil cup in head plate, directly over gripper pivot screw-Model BHS only
- 12-Three oil holes in front face of head plate-Model BHC only

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.

Except for Lubrication Point #1 on Models BHM and BHMB, usually only a drop of oil is required at each point of lubrication. Lubrication Point #1 on Models BHM and BHMB is a wick type oil cup which requires a greater quantity of oil in order to keep the wick saturated.

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.



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

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



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

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.

For instructions on removing the wire feed gears, refer to How To Disassemble and Reassemble Head, para. 1, pg. 20.

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 from 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. If installing a round wire 30° or 45° sharp stitch cutter (side not flattened), face angled end cutting surface toward back 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).

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 BHL, BHX, 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 BHL, BHX, 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. 10)



Figure 18—Removing and Replacing Movable Cutter

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:

l-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. (Cont'd on next page)



Figure 19—Removing and Replacing Gripper, Formers and Driver

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.

5-Check that gripper bar is in alignment with formers (refer to para. 6, pg. 11).

f. FORMERS AND DRIVER (See Fig. 19) —Check for wear in grooves of formers (5) and (6), usually evidenced by buckled staple legs. The formers supplied with Models BHM and BHMB are double-ended, thereby permitting these formers to be reversed when one end is worn.

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 14.

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.

15

ومستخدمات فللمركز والمركزة والمنافع منتشر ومنتاج والمركز والمركز والمركز والمركز والمنافع والمركز والمركز والمركز والمركز

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. 21.

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 (counter-clockwise 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.



Figure 20—Removing and Assembling Wire Feed Clutch

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 per-

fect 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.

TROUBLE SHOOTING CHART

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FORMED STAPLES

Staple	Trouble	Cause	Remedy
A	Perfect staple		
	Right leg short	Wire spool dragging	Adjust wire spool tension
B '		Wire slipping in wire feed gears	Check tension setting of wire feed gears (refer to para. 7 page 11).
		Upper and/or lower wire tube clogged or worn	Check wire feed tubes (refer to para. b page 13).
		Cutter block not properly posi- tioned with relation to gripper	Make adjustments as directed in step (7) of Wire Draw Ad- justments on page 9
	- 	Improper wire feed due to over lubricated or worn wire feed clutch	Check operation of wire feed clutch (refer to para. <i>h</i> page 16)
		Wire slipping in gripper due to normal wear of gripper bar clamp piece or insufficient ten- sion in clamp piece spring	Check gripper bar clamp piece and spring (refer to para. <i>e</i> page 14).
C	Left leg short	Cutter block not properly posi- tioned with relation to gripper	Adjust length of left leg (refer to para. 4 page 10).
		Wire slipping in gripper due to normal wear of gripper bar clamp piece or insufficient ten- sion in clamp piece spring	Check gripper bar clamp piece and spring (refer to para. <i>e</i> page 14).
	Staple corner buckled	Chipped or broken driver	Check driver ends for signs of damage; reverse or replace driv- er (refer to para. f page 15)
۲. ۲.	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 13 and 14).
		Worn supporter, or supporter retracts too easily due to in- sufficient spring tension	Check for worn supporter and broken or weak supporter spring (refer to para. g page 16).

(Cont'd on pg. 18)

FORMED STAPLES				
Staple	Trouble	Cause	Remedy	
$\sum_{i=1}^{n}$	Bent crown	Wrong size wire being used for work being stitched	Check wire size for work being stitched	
r ·		Supporter retracts too easily .	Check for weak supporter spring (refer to para. g page 16).	
		Wrong setting of Stitcher ad- justment for thickness of work being stitched	Check Stitcher adjustment for thickness of work being stitched	
6	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. <i>e</i> page 14).	
·		Gripper out of alignment with formers	Check to see that formers and gripper are in proper align- ment (refer to para. 6 page 11).	
H	Right leg missing	Wire slipping in wire feed gears	Check tension setting of wire feed gears (refer to para. 7 page 11); check for worn gears (refer to para. <i>a</i> page 13).	
		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 grip- per 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 (re- fer to para. g page 16)	
		Wire too hard	Check wire being used	
	Corner of staple	Wire too hard	Check wire being used	
1	broken or nearly broken thru	Supporter edges worn sharp	Check for worn supporter (re- fer to para. g page 16).	
		Driver corners too sharp; or worn formers	Check for worn formers and driver (refer to para. f page 15).	
K	Corner of staple rounded	Worn anvil surface of gripper bar	Check for worn gripper bar (re- fer to para. <i>e</i> page 14).	

TROUBLE SHOOTING CHART (Cont'd)

DRIVEN AND CLINCHED STAPLES

Staple	Trouble	Cause	Remedy
	Perfect Stitch (.175 to Perfect Stitch (Crown	1/2" Crown Width) Widths greater than 1/2")	
	Loose clinch	Wrong setting of Stitcher ad- justment for thickness of work, and clinchers set too low	Check setting of Stitcher for thickness of work being stitch- ed, and raise clinchers.
(0)	Legs spread	Worn wire cutters	Check movable and stationary cutters; sharpen or replace cut- ters (refer to para. c and d , page 13 and 14)
	-	Former grooves worn	Check formers; replace if grooves are worn (refer to para. f page 15).
		Wire straightener not properly adjusted	Check setting of wire straight- ener (refer to para. 2 page 5).
		Thickness of work beyond cap- acity of machine	Check thickness capacity of Stitcher
P	Staple legs contracted	Worn wire cutters	Check movable and stationary cutters; sharpen or replace (re- fer to para. <i>c</i> and <i>d</i> page 13 and 14).
	·	Wire straightener not properly adjusted	Check setting of wire straight- ener (refer to para. 2 page 5)
	Crown buckled, tearing work	Wrong setting of machine ad- justment for thickness of work	Check setting of Stitcher for thickness of work being stitched
R	Only one leg clinched in	Clincher not in alignment with driver	Align clincher and driver
ر آ د	Short legs	Insufficient wire draw	Increase amount of wire draw (refer to para. 3 page 6).
∏, T	Legs cross	Wire draw too great	Decrease amount of wire draw (refer to para. 3 page 6).
	Uneven clinching	Clincher not level and paralle with formers	l Adjust clincher setting

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 reassembling 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).

4-Remove the wire feed 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 s.ud (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 either a long or extra long draw type of head (Model BHL, BHX, BHOL or BHL485), 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



Figure 21—Disassembling and Reassembling Stitcher Head

control slide (33). (The long and extra long wire draw heads (Models BHL, BHX, 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 equipped with wide crown type of supporter unit, remove screws (81) and remove former slide plates (82) and (83) from head plate.

If head being disassembled is the RSCA #485 Stitcher Head (Model BH485 or BHL 485), remove the attaching screws (43) and remove the left and right hand supporter brackets (44) and (45) from the head plate.



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).

If head is equipped with the wide crown supporter unit, remove the attaching screws (40) and (41), and remove supporter box (42) from the former slide.

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.

c. HOW TO REINSTALL WIRE FORM-ING 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, or if head is for a wide crown staple, assemble supporter box (42)to former slide (48) with screws (40) and (41); 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), former slide plates (82) and (83), or supporter left and right hand brackets (44) and (45), (depending upon type of head being assembled), on rear of head 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 ASSEM-BLIES (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 either the short or 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 either the short or 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 being assembled is either the long or extra long wire draw type (Model BHL, BHX, 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 feed idler gear (19) onto its stud (20), and replace retaining washer (18) and screw (17). If head being assembled is either the long or extra long wire draw type (Model BHL, BHX, BHOL or BHL485), 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 11.)

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 RSCA #485 Stitcher head (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 either the short or 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 either the long or extra long draw type (Model BHL, BHX, 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 spider keying into notch in connecting sleeve, and clutch flange stud (75) engaged in hole in clutch ring (76). Replace retaining washer and screw (5) and (4).

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 RSCA #485 Stitcher head (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
BHS	Short Wire Draw-1/2" to 11/2"
BH	Standard Wire Draw—7/8" to 11/2"
BHL	Long Wire Draw— $^{15}/_{16}$ " to 23/8"
BHX	Extra Long Wire Draw-1 ⁵ / ₈ " to 3 ¹ / ₂ "
BHN	Narrow Crown—Short Wire Draw
BHO	Openhead—Standard Wire Draw
BHOL	Openhead—Long Wire Draw
BHM	S13E Metal Stitcher—Standard Wire
	Draw
BHMB	S13E Metal Stitcher with Bracket Type
	Clincher—Standard Wire Draw
BHC	Caddy Stitcher—Standard Wire Draw
BH485	Head for #485 Stitcher—Standard Wire
	Draw

BHL485 Head for #485 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 four 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 Numbers" (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 List. 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.



Figure 22—Stitcher Head Component Par



-Wire Feeding and Cutting Assemblies

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	Pari Number	Index No.	Name and Description	Part Number
	1	Head Plate— Model BHN and I Model BH and B	BHS50H20 HM50H	20	Lower Wire Tube Clamp—Model B Only	Holding 9H485 251424
		Model BHL and (3%" thru 11%" Model BHL and	BHX Crown)50H16 BHX	20A	Lower Wire Tube R Screw—Model B Only	letaining H485 UA3808.5
		(1¼" Crown). Models BHL and (1¾" crown). Model BHMB	BHX 	21	Lower Wire Tube F Screw NutMoo BH485 Only	Retaining del HN1032
	2	Model BHC Head Plate— Models BHO and Models PHOL and	50H3 BH48550H2	22	Lower Wire Tube ing Clamp Nut- BH485 Only	e Hold- –Model HN1420.2
	3	Head Plate Key Models BHO, BH	IOL,	23	Wire Tube Screw	SB401
	A	BH485 and BE	IL485 50X2H2	24	Wire Straightener	Plate931H3
	4	Models BHO, B BH485 and BH	HOL, 1L485 UA1408.1	25 58	Wire Straightene Upper Statior	er Roll— hary935H3
	5	Head Locating Do	wel BD350 Stop Pin 184-201	H 26	Wire Straighten Roll Stud	er Upper 938H2
tept L485	11	Spring Wire Guide— All Models excep	- pt BH485	lodel 10	Wire Straightener Screw	Plate UA4812.2
els exc id BH	12	and BHL485 Spring Wire	Guide	u 28	Wire Straightene Block	er Slide 947H
Mod 5 ar	13	Loop Spring Wire Guide	BF50 Screw 11A 3308 9	95 <u>29</u>	Wire Straightene	r Roll
III J	*13A	Oiler Felt Retainer	2166	ot	Lower Adju Bibbon Hv	istable bar and
BE	*13B	Oiler Felt			Flat Wire	
85	*13C	Oiler Felt Retainer.	69H		Round Wire	936H4
BH4 BHL4	*13D *13E	Oiler Felt Oiler Screw		50	Wire Straighten Screw	er Roll UA2308.2
Aodels and]	14 15	Oiler-Model BHI BHMB Only		31	Wire Straightener	Adjusting
4	16	Oiler			All Models exce	ept BH485
	17	Ribbon Wire	 		and BHL485 Model BHL485	
	10	Hybar, Flat, an Wire	d Round 87H2	32	Wire Straightener	Adjusting
	18	Ribbon Wire – Models excep (see Index N	 - All t BH485 o. 19) 85H8		All Models en BH485	xcept
	Hybar, Flat, and Round Wire85H9	d Round 85H9	33	Lower Wire Tub All Models e	e Clamp— xcept BH- w No. 20), 046H2	
	19	Lower Wire Tube Wire—Model	EH485	.34	405 (see Inde Lower Wire Tu	be Clamp
	*Not	Unly shown on Fig. 21 & 2	22.		Screw—Ali M cept BH485	Models ex- UA2210.1

When ordering part specify Part Number

Name and Part Description Number Cutter Block Assembly— All Models except BHX, BHS, and BHN-Ribbon Wire— Square Cut Off 100H44 45° Sharp Stitch 100H45 Hybar and Flat Wire-Square Cut Off 100H47 45° Sharp Stitch 100H54 #16 (.063) Wire----Square Cut Off 100H59 45°Sharp Stitch 100H43 30° Sharp Stitch 100H58 #18 (.0475) and .051 Round Wire-Square Cut Off 100H41 #19 (.041) thru #21 -(.032) Round Wire -Square Cut Off 100H49 #22 (.029) thru #27 (.017) Round Wire ----Square Cut Off..... 100H50 Model BHX---Ribbon Wire — Square Cut Off100H63 45° Sharp Stitch 100H64 Hybar and Flat Wire-Square Cut Off100H65 45° Sharp Stitch100H67 #16 (.063) Wire-Square Cut Off 100H68 45° Sharp Stitch 100H69 30° Sharp Stitch 100H70 #18 (.0475) Wire---Square Cut Off 100H66 .088 x .037 Wire Square Cut Off 100H80 Model BHS and BHN Ribbon Wire-Square Cut Off100H44B Cutter Block Body 101H25 Cutter Plunger102H25 Cutter Plunger Spring 103H2 Cutter Plunger Holding Movable Cutter-For #18 (.0475) Wire......104H23 For all Ribbon, Hybar, Flat and Round Bookbinders

Wire other than #18

(.0475) Wire.....104H25

Index

No.

35

36 37

38

39

40

Name and Part Index Number No. Description Cutter Block Ass'y (Cont'd)-41 Stationary Cutter (Ribbon, Hybar, and Flat Wire)-All Models except BHX— Ribbon Wire-Square Cut Off 105H44 45° Sharp Stitch 105H45 Hybar and Flat Wire-Square Cut Off 105H47 45° Sharp Stitch 105H54 Model BHX-Ribbon Wire— Square Cut Off 105H63 45° Sharp Stitch 105H64 Hybar and Flat Wire-Square Cut Off 105H65 45° Sharp Stitch 105H67 .088 x .037 Wire Square Cut Off ...105H80 Stationary Knife Plate 41A All Models 108H32 42 Stationary Cutter (Rd. Wire) All Models except BHX #16 (.063) Wire-Square Cut Off 105H59 45° Sharp Stitch 105H43 30° Sharp Stitch 105H58 #18 (.0475) and .051 Round Wire-Square Cut Off 105H41 #19 (.041) thru #21 (.032) Round Wire ----Square Cut Off 105H49 #22 (.029) thru #27 (.017) Round Wire Model BHX-#16 (.063) Wire-Square Cut Off 105H68 45° Sharp Stitch 105H69 30° Sharp Stitch 105H70 #18 (.0475) Wire-Square Cut Off 105H66 43 Stationary Cutter Screw......SB403 44 Cutter Block Adj. Screw......SB601 45 Block Cutter Adjusting Screw Lock ScrewSB401 46 Cutter Block Holding Screw All Models except BHL, BHX, BHOL and BHL485 SB407 Cutter Block Holding Screw 47 Washer-Model BHM and BHMB only228-69

When ordering part specify Part Number

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PARTS LIST (Cont'd)

	Index No.	Name and Description	Pari Number	
	48	Cutter Block Holding Plate All Models except BH BHX, BHOL and BHL485 Models BHL, BHX,	нц, 106Н	
	49	BHOL and BHL485 Cutter Block Holding Plate Dowel	106H2 BD301	
	50	Cutter Block Holding P Screw	late UA3408.1	
1.2	51	Cutter Block Control Slid Models BH, BHC, BH BHMB, BHO and BH485	е <u>—</u> IM, 107Н3	
sed only on Models BHI HX, BHOL and BHL48	52 53 54 55 56 57	Models BHS and BHN Wire Guide Wire Guide Plate Wire Guide Screw Wire Guide Screw Wren Cutter Block Holding Screw Cutter Block Holding Screw Washer	V 107H20 45H3 44H UA2808.1 nchBSA52 UA4024.1 C496	
μ Π Π	58	Wire Feed Drive Gear Str Models BH, BHC, B BHMB, BHN, BHO BHS and BH485	ud—- HM, D, 78H	
		Models BHL, BHX, BHOL and BHL48	578HS2	
	59	Wire Feed Drive Gea	ar 	
	60	Wire Feed Drive Gear	Stud	
	61	Wire Feed Drive Gear- Models BH, BHC, I BHO, BHS and BI —Ribbon, Hybar Flat Wire, or R Wire .032 and sma Models BHL, BHX, B and BHL485—Rit Hybar and Flat Wi Round Wire .032 smaller Models BHL, BHX BHOL — Round #20 (.035) and lat Models BH, BHM, BH BHN, BHO and B Round Wire #20 (.035)	BHN, H485 and ound aller80H HOL obon, re, or and 80H3 and Wire rger80H4 HMB, HS 	
	62	Wire Feed Guard— Models BH, BHC, BHMB, BHO and BH485	BHM, 1 	

Index No.	Name and Description	Part Number
63	Wire Feed Guard	i Stop
64	Stud Wire Feed Guard Stud	BF402 Crank BF902
65	Oiler	
66	Wire Feed Guard-M	Models
67	Wire Feed Guard S Stud	51H20 htop BF402
68	Wire Feed Guard Stud	Crank BF902
69	Oiler	
70	Flange Extension only on Model and BHN)	(Used s BHS 945H
71	Flange Extension (Used only on) BHS and BHN)	Screw Models UA3306.1
72	Wire Feed Guard— Models BHL, BHX BHOL and BHL	, 48551HS3
73	Wire Feed Guard Stud	Crank BF902
74	Oiler	
75	Wire Feed Crank Se	ector—
•	Models BHS and BJ Models BH, BHO, and BH485	HN53H20 BHC, 53H
	Models BHL, BHC BHL485)L and 53HS2
	Model BHX Models BHM and I	53HS5 3HMB 53H3
76	Wire Feed Clutch A	ssembly
	BHO BHC and B	N, BH, .H485-75H
	Models BHM and	
	BHMB	75H3
77	Clutch Ring Gear-	
	Models BHS, BH BHO BH	IC and
	BH485	
	Models BHM a	nd 71119
	внив	/1H3
78	Clutch Spider	
79	Clutch Roller Sr	oring74H
81	Clutch Front Plate	e
82	Clutch Front Plate	e ScrewUA1404.1
83	Wire Feed Clutch	Retainer
	Washer	
84	er Washer Pin	BD75
85	Wire Feed Clutch	Retainer
	washer berew	

When ordering part specify Part Number

Index	Name and	Part Number	I	ndex No.	Name and Description	Part Number
N0. 86	Wire Feed Clutch	Flange		112	Wire Feed Pressu	ire Adjust-
00	and Gear-				ing Screw	
	Models BHL, BHO	L and		113	wire Feed Fres	sure 1 en-
	BHL485	49HS		114	Wire Feed Idler	Gear Arm
	Model BHX Only	49HS2		115	Wire Feed Idler	Gear81H2
87	Wire Feed Clutch	Flange		116	Wire Feed Idler G	ear
	Stud	BF218			Retaining Wash	ner—
88	Wire Feed Clutch Co	onnecting			All Models exce	pi BHL,
	Sleeve-	TV			BHL485	82H
	BHOL and BH	1A85 47HS2		117	Gear Retaining W	asher Pin BD75
89	Wire Feed Clutch A	ssembly—		118	Wire Feed Idler	Gear Re-
07	Models BHL, BH	Х,	2001	. 110	taining Washer	Screw 85308
	BHOL and BH	L48575H2	H#	119	Brake Friction P	late
90	Clutch Ring—	v	ΒĻ	121	Brake Friction Pl	ate Screw. 1008H
	Models BHL, BH BHOL and BH	LA, I 485 71HS	Bles	122	Wire Feed Idler	Gear Re-
91	Clutch Spider	72H	op pi	100	taining Washe	er
99	Clutch Roller	73H	23	123	Gear Ketaining w	asner Pin BD/5
92	Clutch Roller Sn	ring 74H	ōŌ	124	Screw Nut	Gear Stud HN1428.2
94	Clutch Front Pla	te	E B	125	Brake Friction Sp	ring 1007H
95	Clutch Front Plat	e Screw. UA1404.1	хğ	126	Wire Feed Idler	Gear Stud
96	Wire Feed Clutch	Retainer	ЯЩ	107	Screw Brake Tension N	
	Washer			128	Gripper Spring B	racket129H4
97	Wire Feed Clutch	n Ketain-		129	Gripper Spring B	racket
98	Wire Feed Clutch	Retainer		190	Screw	UA3314.1
	Washer Screw	UA3408.1		130	Screw Washer	TACKEL
99	Wire Feed Guard Lo	ock Screw52H	2	131	Gripper Spring Piv	votUA4041.1
100	Wire Feed Guard	Lock	48 48	132	Finger Guard Bra	cket-R. H1000HR
101	Screw Wasner		HLXC	133	Finger Guard Bra	cket-L. H 1000HL
102	*Gear Arm Holdir	ng Plate	B	134	Gripper Spring Piv	ot Bushing 7242
	Locating Pin	BD300	la del	135	Finger Guard Spr	ing1002H
103	*Gear Arm Holding	PlateRodBF602	5 8	136	Gripper Spring Pr	vot NutHN1420.2
104	*Gear Arm Holdir	ig Plate	11 148	137	Finger Guard	
105	Rod Pin	UB3104.1	A H	139	Finger Guard Scre	w NutHN1032
105	Gear Arm Holding	Plate Screw IIA61201		140	Gripper Spring R.	H129H3R
107	Wire Feed Idler Gea	r Arm		141	Gripper Spring L	. H129H3L
	All Models exce	pt BHL,		142	Gripper Spring R	oll
	BHX, BHOL and	E ATT		143	BU/85 and BU	$1 \wedge 95 \qquad 1 \wedge 95 \qquad 1$
	BHL485	34H V		144	Gripper Spring Bra	icket
	RHOL and BHI 4	A, 85 54H2		I , i	Screw – Models	BH485
108	Wire Feed Idler Gea	r Arm			and BHL485	UA3314.1
100	Stud—			145	Gripper Spring Bra	acket Modele
	All Models except	t BHL,			BH485 and BH	L485 LW10.4
	BHX, BHOL and	5611		146	Gripper Spring Piv	ot-Used
	Models BHI BH	5011 X	ł		only on Model	ls BH485
	BHOL and BHL	485 56H2		1.47	and BHL485	
109	Oiler			147	el BH485 and B	1.—MOQ- HI 485 129H3R
110	*Wire Feed Idler G	çar		148	Gripper Spring L.H	H.—Mod-
	Throwout Handl	e		1.40	el BH485 and B	HL485129H3L
111	Throwout Handle S	top PinBD150	I	149	Gripper Spring RC	011—-MOO- HI 185 12046
* Pa	rt should be installed h	w BOSTITCH service	man		CIDE 40J and B.	

PARTS LIST Continued on page 31

When ordering part specify Part Number

29

Part Number



Figure 23—Stitcher Head Component Parts Gripper, Wire Forming, and Driving Assemblies

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PARTS LIST (Cont'd)

Following parts, Index Nos. 150 to 248, inclusive, are shown in Fig. 23, page 30

Index	Name and		Part	3 1 3 -		n .
No.	Description	N	umber	Index	Name and Description	Pars Number
		All wires except	Round Wire #16.	140.	Gripper Assembly	(Cont'd)
		#16, 18,	18, & 19	170	Culumon Bor	Adjusting
150	Gripper Assembly-	— & 19 Rd.		159	Gripper Dar	Block
	.175 Crown .	119H7	119H7C		Screw Clamp	r 11/ 11/
	.190 "	119H21			spacer (ru	$(1)_{8}, 1_{4}, 1_{5}$
	1/4 "	119H13	119H13B	l	& 1% CIO	
	.290 "	119H3	119H3B	160	Gripper Bar	Adjusting
	3/8	119H2	119H2B		Screw	124H
	18	119H	119HB	161	Gripper Bar Cl	amp Piece
	1/2 "	119H6	119H6B		Spring Retain	ing ScrewSB301
	5/8		II9HIZB	169	Cripper Clan	an Block
	3/4		119МВ	102	Holding Scre	w (For all
	11/8		<u></u>		Crowns other	than $1\frac{1}{2}$
	11/4		088 x 1		11/2 & 13/2	SB315
	11/4		3 .037 Wire]	162	Grinner Clamp	Block
	13/8			102	Holding Screy	V (For $11/8$
151	Gripper Bar—				11/4 & 13/4 C	rowns
	.175 Crown	120H7	120H7C		Only	UA3014.1
	.190 "	120H21		169	Cripper Bivot Sc	sB406
	1/4 "	120H13	120H13B	105	Gripper Flvor Sc	16w
	.290 "		120H3B	164	Gripper Clamp	Piece Con-
	3/8		120H2B	1	troi Slide Fri	ction Bolt127H
	า์ส		120HB	165	Gripper Clamp	Piece Con-
	1/2		120000		trol Slide	Friction
	5/8	190 1	1201120		Spring	128H
	3/4		120MD	166	Gripper Clamp	Piece Con-
	11/8				trol Slide F	riction Ad-
	11/4	120115	$B(\frac{.088 \text{ x}}{.088 \text{ x}})$		justing Screw	wSB602
	11/4	190110	D (.037 Wire)	167	Cripper Clamp	Piece Con-
	13/8			107	trol Slide	126H2
152	Gripper Bar Cla	amp Piece-	191170	169	Driver Bar	
	.175 Crown			100	All Models ex	CEDI BHM
	.190	191H18	121H18B		and BHMB	copt man
	¹ /4 900 "	191H8	121H3B		.175 (Crown113H7
	.290	191H9	121H2B		.190	"
	⁹ /8 "	191H	121HB		1/4	"113H41
	T6 1/ "	121H	121HB		.290	"113H41
	1/2	121H12	121H12		3% th	ru 13/8 113H21B
	² /8	121M	121MB		Models BHM	and BHMB
	³ /4 11/ "	121M			only	113H21C
	$\frac{14}{8}$	121M		100	Diana Den La	ak Stud BF311
•	14	121H10)	169	Driver Bar LC	CK StuuDI SII
	1 78			170	Wire Feed Opera	ating Link
153	Gripper	Bar Clamp			All Models e	xcept BHL,
	Piece Stu	1d H	3F53		BHX, BHOL	and
154	Gripper	Bar Clamp			BHL485	66Н
101	Piece Stu	ud H	BF51		Models BHL,	BHX,
155	Gripper Bar	Clamp Piece			BHOL and B	HL48566H2
100	Spring Ass	sembly]	22H	171	Wire Feed Oper	ating Lever 67H
156	Gripper B	ar Clamp			TAT' Eard	Operating
100	Piece Si	pring	22X1H	172	wire reed	v peraung k stud RF709
157	Grinner	Bar Clamp			Lever Gran	
157	Piece Sr	pring Plug	BG150	173	Wire Feed	Operating
		A 1'			Lever Pivol	5tudBryus
158	Gripper Ba	ir Adjusting	19514			(Cont'd on pg. 32)
	Screw Cla	тр вюск	14311	•		

When ordering part specify Part Number

31

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PARTS LIST (Cont'd)

Index No.	Name and Description	Pars Number	Index No.	Name and Description	·	Part Number
174	Wire Feed Operating L Sliding Head	ever 68H	177	Former Slide- except BHN .175 Cr	—All Models 4 and BHM own	s B 110H7
175	Gripper Throwout Can Block—	1		.190 thr 1/2 Crov	ru_{16}^{7} Crown.	110H13 110H6
	.175 thru 1/2 Crow	n123H10		$\frac{5}{8}$ and $\frac{11}{8}$ Cro	$\frac{3}{4}$ CIOWI	110X1H8
	5% and 3/4 "	123M		11⁄4 and	l 13⁄8 Crown.	110X1H10
	11/8 "	123H9	178	Former Slid	le Dowel	BD250
	11/4 and 13/8 "	123H8	179	Former Shad	ed as part of	ia of
				Former S	lide)	BF1102
176	Gripper Throwout Cam	1	180	Former Slide -	-Model BH	X
	Block Screw-		190	11/4	% Crown	110H25
	.175 thru 1/2 Crow	nUA3806.3	180	BHM and B	- Models	110H21
	$\frac{5}{8}$ and $\frac{3}{4}$ "	SB316	181	Former Slie	ie Dowel	BD250
	11/8 "	UA3210.1	182	Former Slic	le Driving	
	11/4 and 13/8 "	UA2210.1		Stud—(Su	pplied as pa	rt DE1109
			188	of Former Former Slide	Slide) Roller	BF1102 111H9
lndex No.	Name and Description	1	105	Former Shue	Roner	
184	Formers and Driver-All	Models except BH	M and	L.H. Former	— Parl Number Driver	R.H. Former
	Ribbon Wire BHMB,	and Specials listed	below		200000	
	.103 x .028 Wire					
	$\frac{1}{16}$ Crown	••••••	• • • • • • • • • • • • • • • • • • • •	116H135	117H135	115H135
	$105 \times .025$ wire			1164178	11711178	1154178
	3/8 "		•••••••••••••••••••••••		117H107	115H57
	$\frac{7}{16}$ "			116H55	117H108	115H55 🌾
	5/8 "	******	••••••	116H193	117H193	115H193
	$\frac{3}{4}$		•••••••••••••••••		117H106	115H106
	1⁄2 Crown	******		116H173	117H173	115H173
	3/8 "			116H26	117H151	115H26
				116H34	117H150	115H34
•	5/8 ······	•••••			117H164 .	115H164
	13% "	*****	•••••••		117H179	115H179
<u>.</u>	.103 x .017 Wire					, include the second se
	3/8 Crown	••••••	••••••	116H26	117H151	115H26
	176 ·······	****		116H34	117H150	115H34
N	5/6 "	***************************************	••••••	110H07	117H164	115H164
¢.	3/4 "	••••••	••••••	116H179	117H179	115H179
	11/4 "	****		116H113	117H113	115H113
·	$\frac{13}{8}$	*************************************	••••••	116H10	117H98	115H10
	.105 X .014 Wile			116H75	117H64	115H75
	$\frac{7}{16}$			116H32	117H136	115H32
	1/2 "			116H87	117H87	115H87
	5/8	••••••••••••••••		116H99	117H99	115H99
	Flat Wire	************************************		110H113	117H113	115H113
	.088 x .037 Wire					
	11/4 Crown			116H216	117H216 C	115H216
1	Hybar Wire					
-	#3 (.000 x .028) W	Ire		1161171	1170111	1151171
	78 CIOWII			116H62	117H138	115H62

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When ordering part specify Part Number

		-	— Part Number ·	
Index -	Name and Description	L.H. Former	Driver 1	R.H. Former
IN <i>0.</i> 104	Formers and Driver (Cont'd)			
10 1	Ilabor Wine (Cont'd)			
(Cont a)	Hybar whe (Cont d)		•	
	#2 (.060 x .024) Wire	11077161	11011171	11577171
	.190 Crown	116H171	117H171	115H171
	1/4 "	116H154	117H154	115H154
	.290 "	116H56	117H56	115H56
	3/2 4	116H71	117H111	115H71
	78 1 "	116H62	117H138	115H62
		116H81	117H65	115H81
	$\frac{1}{2}$	116H102	117H102	115H102
	$(1 1)_{0}$			
	#1 (.000 x .020) wire	116H171	11711171	115H171
	.190 Crown	1164115	117H115	115H115
	1/4 Crown	1161154	117154	115454
	.290 **	1101134	11/11/1	1151154
	3/8 "		117H123	1151159
			117H139	115H33
	16 "	116H81	117H65	115H81
		116H209	117H209	115H209
	11/ "	116H102	117H102	115H102
	$\frac{178}{4000}$ (060 v 017) Wire			
	$\frac{1}{1000}$ (.000 x .017) with $\frac{1}{1000}$	116H115	117H115	115H115
	1/4 CIOWII	116H59	117H52	115H52
		116498	117488	115488
	3/8	1161159	1171159	1151165
	$\frac{7}{16}$		1171155	1151155
	Flat Bookbinder's Wire			
	$18 \ge 20$ (.0475 \ge .035) Wire		11770000	1157700
	.290 Crown		117H3S2G	115H92
	3/2 "	116H79	117H124	115H79
	ブロ ゴー ゴー ゴー ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	116H67	117H140	115H67
	16 14	116H61	117 H 6S2B	115H61
Ń			117H170	115H170
•	$\frac{34}{10} = \frac{34}{211}$ (041 x 030) Wire			
		116H68	117H1S4H	115H68 💳
	16 GIUWII			
	$20 \times 23 (.055 \times .025)$ wite	116H76	1174359	115H76
	.290 (_rown	116170	1171195	115474
	3/8	116TICO	11711125	1151174
	$\frac{7}{16}$		11/11/41	1151105
	$20 \times 24 (.035 \times .023)$ Wire	1107780	11811900	1151176
	.290 Crown		117H352	115H/0
	3/8	116H74	117H125	115H/4
		116H69	117H141	115H69
	$1/_{\alpha}$	116 H6 5	117H6S2C	115H65
	1 Z 4 3/2 4	116H158	117H158	115H158
	20 x 25 (085 x 0204) Wing			
	$= 175 \operatorname{Crown}$		117H101	115H101
یت ، سر ا		116H117	117H117	115H117
		116H88	117H3S2B	115H88
		116474	1174195	115474
	3/8	1161160	11711145	1151173
	7 ··· 16 ····		11/11/11	1151105
	1/2 "		117H052G	115H05
	3 <u>/</u> 4 "	116H158	117H158	115H158
	22 x 26 (.028 x .018) Wire			
	3% Crown	116H73	117H126	115H73
	Round Bookbinder's Wire			
	++16 (.063) Wire			
	1/ Crown		117H191	115H191
	*/4 CIC (111		117H2S5F	115H80
	∛8 ····································	116H97	117H1S4F	115H37
	16 ·····	1164174	117H175	115H174
	%			
	·		Cont'd on fo	llowing page)

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PARTS LIST (Cont'd)

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			— Part Number -	
Index	Mana and Description	L.H. Former	Driver 1	R.H. Former
NO.	Name and Description			· · ·
184	Formers and Driver (Cont d)			
(Cont'd)	Round Bookbinder's Wire (Cont'd)			
(00 0)	(10, 10, 10475) This	and a Mith Made and a second	the second s	··
	#18 (.0475) WITE	1.101704	110TTOCETT	ILEUGA -
	3% Crown METAL 71 ICH CIL		117H255H	115H04
	76	<u>116H60</u>	117H1S4D	115H60
		116104	117H6S2D	115H94
	1/2		117110060	1151105
	5/0 "	116H105	117H105	115H105
	$+10^{\prime}$ (041) Wire			
		1161180	117H2S5I	115H89
	5/8 Crown	1101105	11711200	1151159
		110H58	11/H149	1151156
	++ 20 (.035) Wire			
		1161482	117H7S2D	115H82
	.1/3 GIOWII	1101104	1171104	1154104
	1/4		11/1104	11511101
	3/ "	116H72	117H129	115H72
	78 11	116H29	117H146	115H29
	#21 (.032) Wire			
	1 Crown	116H95	117H95	115H95
	498 (096) Wire			
	# 40 (.040) WILC	1161109	117111948	115H93
	$\frac{7}{16}$ Crown	1101133	11/11/04/	11211100
	3 /	116H172	117H172	115H17Z
	$+95^{74}$ (0904) Wire			
	$\frac{1}{2}$	1161160	11711160	115H160
	.175 Crown		11/11/00	11511100
	3/6 "	116.H41	117H131	115F141
	78 11	116H30	117H148	115H30
	16	116106	117H689F	115H96
	1/2		117110041	1151196
	3/4 "	H6H186	117H180	115H160
	Special_Shopping Bag Handles			
	The Tribula bug Transies			
	Flat Wire	·		•
	20×24 (.035 x .023) Wire			· · · · · · · · · · · ·
	\$4 Crown	116H74	117H114	115H74
			•	
	Special-Glove Stitch			
	Flat Wire			
	19×2116 (.041 x .030) Wire			
		116H84	117H7S2E	115H84
	1/4 LTOWN			
	.078 x .028 Wire Size			
	1/ Crown	116H165	117H7S2J	115H165
	079 - 099 Mine Size		·	
	.076 X .022 WITE 512C	116179	1171759B	115478
	1/4 Crown	1101170	П/П/52Б	1151178
	.077 x .023 Wire Size			
		116H78	117H7S2B	115H78
	.073 x .024 Wire Size			
	1/ Crown	116H78	117H7S2B	115H78
	Special Stockinette Stitch			
	Flat Wire			
	18 x 20 (.0475 x .035) Wire			
	175 Crown	116H7S1	117H7S2	115H7S1
	.175 010 11	·····116H79	117H7S2F	115H79
	5/8	1101175	11/11/041	11011,5
	20×25 (.035 x .0204) Wire			
	175 Crown	116H7S1B	117H7S1B	115H7SIB
	Hydar wire			
	#1 (.060 x .020) Wire			
	34 Crown	116H39	117H7S2H	115H39
105	78 CIONA Madala DIIM J DIIMD O-1-			
185	Formers and Driver-Models Brim and Drivid Only		1171140	
	Round Wire		11/H109	
	051 Wire Size		(Standard)	
		1151160	1171174	115H169
	% GIOWII		/6%	
			(SHOIL)	
	#18 (.0475) Wire		117H183	
	1/ Crown]] គឺជា 19.9	(Standard)	115H188
	% Crown		11777104	A LUALAUU
			117H184	
			(Short)	
			· · ·	

When ordering part specify Part Number

Index No.	Name and Description	Pars	ł
186	Former Screw	14 47710 87	L
100	For use with F	OTTUET	l
	Slides Nos.	110H6	Ł
	110H7, 110H	[12, and	l
	110H13		ļ
	For use with 1	Former	ĺ
	Slides Nos 11	0H8 and	ĺ
187	TIUHIU	UA2808.1	
107	Former Slide N	T use with	
188	Driver Bar Link		
189	Cutter Block Trin	Crank 97H	
190	Cutter Block Tri	p Crank	Ι,
	Holding Screw	SB405	
191	Cutter Block Ope	rating	
109	Plunger		ł
192	Dutter Block ()	perating	Ę.
	Screw	ng	2
193	Adjusting Screw		ļ
	Washer	LW14	4
194	Adjusting Screw	NutBG612	Ę
(195	Supporter Pivot Pi	nBD342	~
190	Supporter-175 tl		۲e
	Model BUASE	(For	7
	dex No. 230 F	see In-	
Į	er Crown Siz	es see	
vhs	Index No. 214		
rov	.175 Cro	wn64H7	
Ö	.190	64H21	7
16	¹ /4 200 ·	·······64H13	
n	3/6	······04F13	
th	70 7 16	·	
<u>197</u>	Supporter Roll .	BG408	ľ
- 198	Supporter Roll S	tudBF222	
199 199	Supporter Spring B	racket61H2	
- 200 >	Supporter Spring	Bracket	ģ
ਤਿ 201	Supporter Cam	UA4412.1	ù
· v 202	Supporter Cam Dow	el 184.557	H
త్ల 203	Supporter Cam Sci	ew UA3408.1	5
7 204	Supporter Plunger		81
205	Supporter Plunge	r RollBG653	ŝ
206	Supporter Plunger	Roll	4 T
207	Supporter Plupger 6	BD341	р 2
	(Std.)	1/1U2	Ë,
	(Heavy)	141H6	<u>S</u>
208	Supporter Plunger	Cross	۹. !
(-00	Pin	184 579	
a 209	Former Slide Plate-	95H	
린 <u>홍</u> 210	Former Slide Plate	DowelBD302	
ارد ک	Former Still Di		2
×(Former Shae Plate	— 96H	`

	Inde No	X Name and Description	Part Number
	212	Former Slid	e Plate
l	918	Dowel	BD302
ļ	213	Supporter 1/	state Screw UA4412.1
ļ		Crowns-	taru 13/8
	1	1/2 Cr	own136H6
Í	Í	5/8	"
ĺ		3/4	"
		11/8	"
	4	11/4	"
	\$ 215	13/8	···
	0 215	Supporter Pin	
	0 210	Screw	Folding
	217	Supporter Box	
	z 218	Supporter Box L	ocating Dowel., UB3104 1
	- <u>중</u> 219	Supporter Box S	Screw-ShortSB305
	×220	Supporter Box S	Screw-LongSB314
	221	Supporter Box Sp	ring End Štud., BF401
	¥ 222	Supporter Spr.	Lever-R.H139H
	223	Supporter Spr.	Lever-L.H140H
,	o 224	Supporter_Spi	ing Lever
	8 99K	Spring End	StudBF300
1		Supporter Spr	ing Lever
	226	Supporter Spr	ing Lever
		Roller Stud	BF200
	227	Supporter Sprin	g
	228	Supporter Pin C	Cross Bar 138H
	229	Supporter Pin (Cross Bar
	(980	Cotter Pin	UB2908.1
	250	Supporter 3% Crox	
		78 0101	64H
	231	Supporter Rol	l
	232	Supporter Rol	l StudBF222
	233	Supporter Pivot	PinBD342
	234	Supporter Bracke	t—L.H.— 25618
0	-235 + 99c	Supporter Bracket	—R.H.— 25619
	1987	Supporter Bracke	t Screw— UA4414.1
1	238	Supporter Cam	
ς	239	Supporter Cam	Dowel 184-557
6 6	240	Supporter Plung	95693
ŕ	3 2 4 1	Supporter Plunge	r Spring 141H3
J	242	Supporter Plunge	r Shoe25621
r	243	Supporter Plunge	r Shoe
ί		Stud	25622
j	244	Supporter Plunge	r Shoe
2	945	Stud Lock Was	herLW10
	243	Stud Nut	r Shoe
	946	Supportor DL	HN 1032
	- 10	Stop	r Snoe
	247	Supporter Plunge	22020 r. Shoe
	· · · -	Stop Screw	ΓΙΔ <u>8</u> Ω10 τ
	248	Supporter Plunge	r Shoe
1		Stop Screw Wa	sher LW10
		-	

When ordering part specify Part Number

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	Sleeve—Models BHL, BHX	• J	59U	Wire Feed Idler Gear Ar	mPivot114
	BHOL and BHL485	. 88	501	Gear Arm Holding Pla	te 101
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5 411		79 1	1312	Models BUI BUV	BHOI
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92H	Wire Feed Idler Gear Throw out Handle	v- 110		Models BH, BHC, BH BHN, BHO, BHS and	IM, BHMB, BH485 58

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	Pari Numbeř	Name and Description	Index No.	Part Number	Name and Description	Index No.
	78HS2	Wire Feed Drive Gear Stud- Models BHL, BHX, BH and BHL485	- OL 58	× 100H47	Cutter Block Assembly- and Flat Wire—Squa	–Hybar ire Cut
	80H	Wire Feed Drive Gear-Model BHC, BHN, BHO, BHS and Ribbon Hyber and Flat Wi	sBH, BH485–	100H49 3 Hg 3 Hg	Cutter Block Assembly (.041) thru #21 (.03 Bound Wire—Source	
	80H2	Round Wire.032 and smal Wire Feed Drive Gear-Moo	ler 61 iels	ਤੂ ਸੂ 100H50	Cutter Block Assembly (.029) thru #27 (.01	
		BH, BHM, BHMB, BHN, BHO and BHS—Round W #20 (.035) and larger	/ire 61	W Ha 100H54	Round Wire—Square Cutter Block Assembly-	Cut Off 35 –Hybar
	80H3	Wire Feed Drive Gear-Models BHX, BHOL and BHL485- Bibbon Hubon and Elot Win	BHL,	100H58	and Flat Wire—45° Stitch Cutter Block Assembl	Sharp
	80144	Round Wire.032 and smalle Wire Feed Drive Gear-Models	e, or xr61 BHI	100H59	(.063) Wire—30° Shar Cutter Block Assembly	p Stitch 35 y—#16
		BHX and BHOL – Round W #20 (.035) and larger	Vire 61	(100H63	(.063) Wire—Square (Cutter Block Assembly— bon Wing Source Co	Cut Off 35 -Rib-
	81H2 82H	Wire Feed Idler Gear Wire Feed Idler Gear Retaini	115 ng	100 H64	Cutter Block Assembly– Ribbon Wire–45° Sl	
	82H2	BHX, BHOL and BHL485 Wire Feed Idler Gear Retain	BHL, 116 ing	100H65	Stitch Cutter Block Assembly- bar and Elat Wire Sci	
	85 H	Washer—Models BHL, BH BHOL and BHL485	IX, 122	¥ 100H66	Cut Off Cutter Block Assembly	y-#18
	85H8	Wire—Model BH485 or LowerWireTube-RibbonW	nly 19 /ire–	역 고 100H67	(.0475) Wire-Square Cutter Block Assembly-	Cut Off 35 -Hy-
	85H9	All Models except BH485 Lower Wire Tube—Hybar	18 	0 ∑ 100H68	bar and Flat Wire— Sharp Stitch Cutter Block Assembly	45°
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		Models except BHX, BI and BHN—#18 (.0475)- Rd Wire—Square Cut Of	HS, 051 7 85	104H23	Movable Cutter— For #18 (.0475) Wire	
-	100H43	Cutter Block Assembly—Al Models except BHX, BH and BHN—#16 (.063)	1 S,	104H25	Movable Cutter—For all Hybar, Flat and Round	Ribbon, I Book-
ВНХ	100H44	Wire-45° Sharp Stitch Cutter Block Assembly-Al	35 I	C	(.0475) Wire	an #18 40
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표 역 북 105 <u>円50</u>		42	110X1H8	Former Slide—11/8 Crown— All Models except BHM and	L L
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	•	•		Hybar Wire <u>7</u> Crown	184

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	Part Number	Name and Description	Index No.	Part Number	Name and Description	Index No.
	115H64	Former—R.H.—#18 Rd. Wire—3% Crow	(.0475) m 184	(115H95	Former—R.H.—#21 (Rd. Wire—1 Crown	.032)
	115H65	Former — R.H. 20 x 20×25 (.035 x	24 and .023 and .024	115H96	Rd. Wire-1/2 Crow	(.0204) n 184
	115H67	Former—R.H.—18 x	Crown 184 20 (.0475	115H101	Ribbon Wire— $5/8$ Ci Former—R.H.— $20 \ge 2$	rown 184 5 (.035 x
	115H68	x .035) Wire— $\frac{1}{18}$ Cr Former—R.H.—19 x	$211/_2$	115H102	.0204) Wire—.175 C Former—R.H.—#1 at	rown 184 nd $\#2$
	115H69	Former— $R.H.$ —20 x 2 and 20 x 25 (035 x	3, 20 x 24		(.060 x .020 and .024 11/8 Crown) Wire— 184
	1151171	and .0204) Wire— Former— $B H -= #2 a$	r_{rg}^{2} Crown 184	H 115H104 ∑	Former—R.H.—#20 Rd. Wire—1/4 Crown	(.035) n 184
	11511/1	$(.060 \times .024 \text{ and } .02$ Wire— $\frac{3}{8}$ Crown	28) 184	H 115H105 H 115H106	Rd. Wire5% Crow	(.0475) n 184 · 028
	115H72	FormerR.H#20 Rd. Wire3% Crow	(.035) /n 184	₹ 115H113	Ribbon Wire—34 Co Former—R.H.—.103 x	rown 184 .017 and
	115H73	Former—R.H.—22 x x .018) Wire—3/8 Cr	26 (.028 rown 184	BHN	.103 x .014 Ribbon 11/4 Crown	Wire—
BHN	115H74	and 20 x 25 (.035 x and 0204) Wire	.025, .023	ಕ್ಷ 115H115 ಕ್ಷ	Former-R.H#1 an (.060 x .020 and .0	nd #000 17) Wire
and	115H75	Former—R.H.—.103 Ribbon Wire—.290	x .014 Crown 184	ប <u>ទ</u> ្ធ 115H117	$-\frac{1}{4}$ Crown Former-R.H20 x 2	
3HM	115H76	Former	23 and 24 3) Wire—	No. 115H135	Former—R.H.—.103 x Ribbon Wire—¼ C	.028 rown 184
cept]	-115H78	.290 Crown Former—R.H.—.078 3	184 < .022,	₹ 115H154	Former—R.H.—#2 (. .024) Wire—1/4 Crow	.060 x wn 184
ls exc	115479	$Wire - \frac{1}{4}$ Crown	24 Flat 	115H158	Former—R.H.—20 x 2 (.035 x .023 and .02	4 and 25 04) Wire
Mode	115H80	x .035) Flat Wire- Former-R.H#16	% Crown 184 (.063)	115H160	Former—R.H.— #25	(.0204) 184
-VII	115H81	Rd. Wire-3% Crow Former-R.H#1 a	n 184 nd #2	115H164	Former-R.H	.020 and
	1151199	(.060 x 020 and .024 1/2 Crown	4) Wire— 	115H165	5/8 Crown FormerR.H078 x	
	115H83	Rd. Wire—.175 Cro Former—R.H.—#000	own 184 (.060 x	115H169	Flat Wire—1/4 Crown Former—R.H. and L.	n 184 H.—
	115H84	.017) Wire—3/8 Cro Former—R.H.—19 x	wn 184 211/2	(Models BHM and B Only—.051 Rd. Wir	HMB c—3/8
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