



*Union Special*<sup>®</sup>  
LEWIS<sup>®</sup> • COLUMBIA<sup>®</sup>

INDUSTRIAL  
SEWING  
MACHINES

**STYLES**

**63400 LB**

**63400 LC**

**63400 LY**



**CLASS 63400**

**STREAMLINED**

**HIGH SPEED LOCKSTITCH MACHINES**

**WITH**

**PNEUMATIC "KLIPP-IT"® THREAD TRIMMER**

**CATALOG**

**No.**

**121 LB**

***UNION SPECIAL CORPORATION***

**CHICAGO**

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C a t a l o g   N o .   1 2 1   L B  
( S u p p l e m e n t   t o   C a t a l o g   N o .   1 2 1   M )

I N S T R U C T I O N S

F O R

A D J U S T I N G   A N D   O P E R A T I N G

L I S T   O F   P A R T S

C L A S S   6 3 4 0 0

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S e c o n d   E d i t i o n

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by

U n i o n   S p e c i a l   C o r p o r a t i o n  
R i g h t s   R e s e r v e d   i n   A l l   C o u n t r i e s

***UNION SPECIAL CORPORATION***

I N D U S T R I A L   S E W I N G   M A C H I N E S

**CHICAGO**

P r i n t e d   i n   U . S . A .

March, 1980

## IDENTIFICATION OF MACHINES

Each UNION SPECIAL machine is identified by a Style number which is stamped into the name plate on the machine. Style numbers are classified as standard and special. Standard Style numbers have one or more letters suffixed, but never contain the letter "Z". Example: "Style 63400 LB". Special Style numbers contain the letter "Z". When only minor changes are made in a standard machine a "Z" is suffixed to the standard Style number. Example: "Style 63400 LBZ".

Styles of machines similar in construction are grouped under a class number which differs from the style number, in that it contains no letters. Example: "Class 63400".

## APPLICATION OF CATALOG

This catalog is a supplement to Catalog No. 121 M and should be used in conjunction therewith. Only those parts which are used on Styles 63400 LB, LC and LY, but not used on Style 63400 B are illustrated and listed at the back of this book. For clarity, certain 63400 B parts are shown in phantom to help locate the 63400 LB, LC and LY.

Opposite the illustration page, parts are identified by detail number, part number description, and amount required.

NOTE: When ordering repair parts always use the part number listed in the second column.

Adjusting and operating instructions for Styles 63400 LB, LC and LY are similar to those in Catalog No. 121 M for Style 63400 B. The only instructions included in this catalog are the ones that are different from Style 63400 B or are additional instructions that pertain specifically to Styles 63400 LB, LC and LY.

This catalog applies specifically to the Standard Styles of machines as listed herein. It can also be applied with discretion to some Special Styles of machines in this class. Reference to direction, such as right, left, front back, etc., are given from the operator's position while seated at the machine. Operating direction of handwheel is toward the operator.

## STYLES OF MACHINES

High speed Streamlined Long Arm Lockstitch Machines, with Air Operated Thread Undertrimmer and Air Thread Wiper. Prepared for Needle Positioner, One Needle, Light, Medium and Heavy Duty, Drop Feed, Rotary Hook, Horizontal Hook Shaft, Push Button Stitch Regulator, Stitch Length Indicator, One Reservoir, Enclosed Automatic Lubricating System, Head Oil Siphon, Adjustable Hook Oil Control, Automatic Head Oiling, Needle Bearing Adjustable Feed Eccentric, Needle Bearings for Take-up Lever and Needle Bar Driving Link, Feed Timing on Lower Mainshaft, Maximum Work Space to Right of Needle Bar 11 1/8 inches (282.58 mm).

63400 LB Medium throw machine, for miscellaneous plain seaming operations on medium and medium heavy weight work, 1 13/64 inch (30.56 mm) needle bar travel. Type 180 GXS or 180 GYS needle. Specify presser foot, throat plate, feed dog, stitches per inch, thread size, needle type and size, attachments and guides. Maximum recommended speed 5500 R.P.M. - depending on operation.

63400 LC High throw machine, for miscellaneous plain seaming operations on medium and heavy weight work, 1 1/2 inch (38.10 mm) needle bar travel. Type 180 GXS or 180 GYS needle. Specify presser foot, throat plate, feed dog, stitches per inch, thread size, needle type and size, attachments and guides. Maximum recommended speed 5000 R.P.M. - depending on operation.

63400 LY Medium throw machine, for miscellaneous plain seaming operations on light to medium weight work, reverse feed, 1 13/64 inch (30.56 mm) needle bar travel. Type 180 GXS or 180 GYS needle. Specify presser foot, throat plate, feed dog, stitches per inch, thread size, needle type and size, attachments and guides. Maximum recommended speed 5500 R.P.M. - depending on operation.

## NEEDLES

Each UNION SPECIAL needle has both a type number and size number. The type number denotes the kind of shank, point, length, groove, finish and other details. The size number, stamped on the needle shank, denotes largest diameter of the blade measured in thousandths of an inch across the eye. Collectively, the type number and the size number represent the complete symbol.

Needle Type 180 GXS or 180 GYS is recommended for Styles 63400 LB, LC and LY. For heavy duty, use needle Type 185 GAS and 185 GBS. Their description and the sizes available are listed on the following page.

## NEEDLES (Continued)

| <u>Type No.</u> | <u>Description and Sizes</u>  |
|-----------------|---|
| 180 GXS         | Round shank, round point, lockstitch, short length, ball eye, single groove, wide angle groove, struck groove, deep spot, ball point, chromium plated - sizes 075/029, 080/032, 090/036, 100/040, 110/044, 125/049, 140/054, 150/060.                   |
| 180 GYS         | Round shank, round point, lockstitch, short length, ball eye, single groove, wide angle groove, struck groove, deep spot, chromium plated sizes - 075/029, 080/032, 090/036, 100/040, 110/044, 125/049, 140/054, 150/060.                               |
| 185 GAS         | Round shank, round point, lockstitch, short length, reinforced blade, ball eye, single groove, wide angle groove, struck groove, deep spot, ball point, chromium plated - sizes 075/029, 080/032, 090/036, 100/040, 110/044, 125/049, 140/054, 150/060. |
| 185 GBS         | Round shank, round point, lockstitch, short length, reinforced blade, ball eye, single groove, wide angle groove, struck groove, deep spot, chromium plated - sizes 075/029, 080/032, 090/036, 100/040, 110/044, 125/049, 140/054, 150/060.             |

To have needle orders promptly and accurately filled, an empty package, a sample needle, or the type and size number should be forwarded. Use description on label. A complete order would read: "1000 Needles, Type 180 GYS, Size 090/036".

Selection of proper needle size should be determined by the size of thread used. Thread should pass freely through the needle eye in order to produce a good stitch formation.

### SELECTING THE SIZE OF THE NEEDLE

The strength requirement of the seam produced is largely dependent upon the size of the thread employed. The quality of the work desired is largely dependent upon the size of the needle employed.

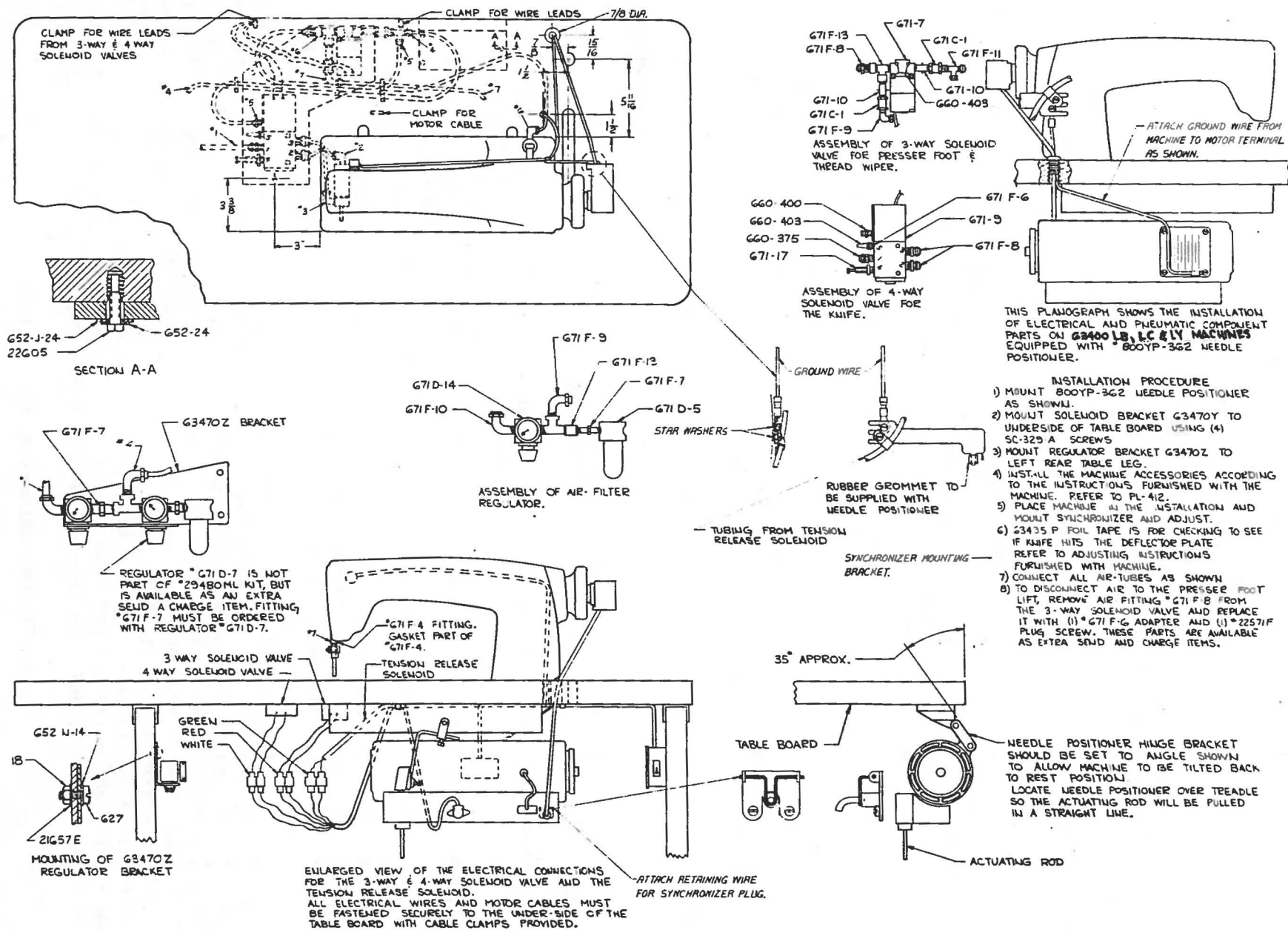
The following table shows the preferred size of needle for a given size and kind of thread. The choice, however, should give consideration to factors referred to above, which may dictate the selection of a needle size slightly larger or smaller than the size specified.

| <u>Cotton Thread<br/>Size</u> | <u>Mercerized Thread<br/>Size</u> | <u>Needle<br/>Size</u> |
|-------------------------------|-----------------------------------|------------------------|
| 0                             | -                                 | 150/060                |
| 30                            | B                                 | 140/054 to 150/160     |
| 36                            | A                                 | 125/049 to 140/054     |
| 40                            | A                                 | 110/044 to 125/049     |
| 50                            | 0                                 | 110/044 to 125/049     |
| 60                            | 00                                | 100/040 to 110/044     |
| 70                            | 000                               | 090/036 to 100/040     |
| 80                            | 0000                              | 080/032 to 090/036     |
| 90                            | 0000                              | 080/032 to 090/036     |
| 100                           | -                                 | 075/029 to 080/032     |

### INSTALLING

**CAUTION!** When unpacking, DO NOT lift machine out of box by placing one hand on handwheel. Using both hands on bed casting, lift gently.

Before leaving factory, each UNION SPECIAL machine is sewed off, inspected and carefully packed. After the machine and accessories have been removed from the packing box, the following steps should be followed:



## PREPARATION OF MACHINE AND TABLING

Included with each machine is a box of STANDARD ACCESSORIES-containing one bobbin winder assembly, the machine mounting frame, one oil drain jar and its clamp spring, one knee lifter assembly and its rubber pad, bed positioning spring and screw, four isolator pads and clips, one machine rest pin and pneumatic accessories kit for "KLIPP-IT" thread trimmer, also included is a bag of assembly parts, consisting of one frame thread eyelet, one eyelet attaching screw, one extra bobbin, two hinge studs, two screws for holding miscellaneous attachment to the bed plate, one synchronizer bracket, one synchronizer lead wire clamp, one screw for synchronizer lead wire clamp and clamp for tension release solenoid lead wire.

1. Preparation of Electro Drive and Pneumatic Accessories Kit with a suitable tabling, turn up side down and install the following.
  - (a) Fasten the solenoid valves and filter regulator assemblies to the table as per (Fig. 1).
  - (b) Cut length of air tubing desired and connect all solenoid valves and air cylinders as per (Fig. 1).
  - (c) Wire leads with stripped ends to switch box and mount switch box to right front leg of table frame.
  - (d) Attach electro drive to underside of table.
  - (e) Attach wire coming from switch box to electric drive as outlined in instructions that come with electro drive.
  - (f) Secure electrical cable and leads to underside of tableboard and to table frame using clamps and screws provided. Insert all plugs (Fig. 1).
2. Machine Mounting Frame Installation.
  - (a) On a suitable tableboard, turn right side up place machine mounting frame (21393 N) in the machine cut-out with the hinge lugs to the rear (Fig. 1A). Insert the countersunk wood screw through left hinge pad and tighten securely. Assemble bed positioning spring (63474 A) over right hinge pad; insert round head wood screw and tighten securely. Assemble the retaining plate (21393 R) to outside front of pan section, as shown, and snug up nuts lightly (Fig. 1A).
  - (b) Insert hinge studs in holes provided for them in rear of cloth plate.
  - (c) Assemble the upper frame eyelet to top of arm.
  - (d) Place sewing head in the frame mounting, and after being sure there is about 1/16 inch (1.59 mm) clearance between the cloth plate edge and the frame sides, rap the retaining plate smartly upward with a hammer to insure a good grip on the underside of the board and tighten locking nuts securely.
  - (e) Tip the machine back against the rest pin, and assemble the knee press assembly as shown. All end play of the cross shaft should be taken up by the cone bearings, but must not bind (Fig. 1A).
  - (f) Before the machine is put into production, the bell crank (21665 J) of the knee lifter rod should be adjusted. The left stop screw (22597 F) should be set so that the maximum lift of the presser bar and its parts do not interfere with moving parts within the head. This may be done by setting the stop screw so that the presser bar raises approximately 5/16 inch (7.93 mm) on 63400 LB, LY and 1/2 inch (12.70 mm) on 63400 LC.

NOTE: If this can not be obtained check Presser Bar Connection page 9.

- (g) These machines are equipped to use either #1 "Vee" or round belts. Install belt and adjust electro drive as shown on (Fig. 1).

## PREPARATION OF MACHINE AND TABLING (Continued)

- (h) Connect trimmer harness leads to cutting solenoid valve (white leads), tension release solenoid (green leads) and foot lifting solenoid valve (red leads), connect air hoses to air wiper and presser foot lift and secure air hose and wires to underside of tabling with clamps and screws provided as shown (Fig. 1).

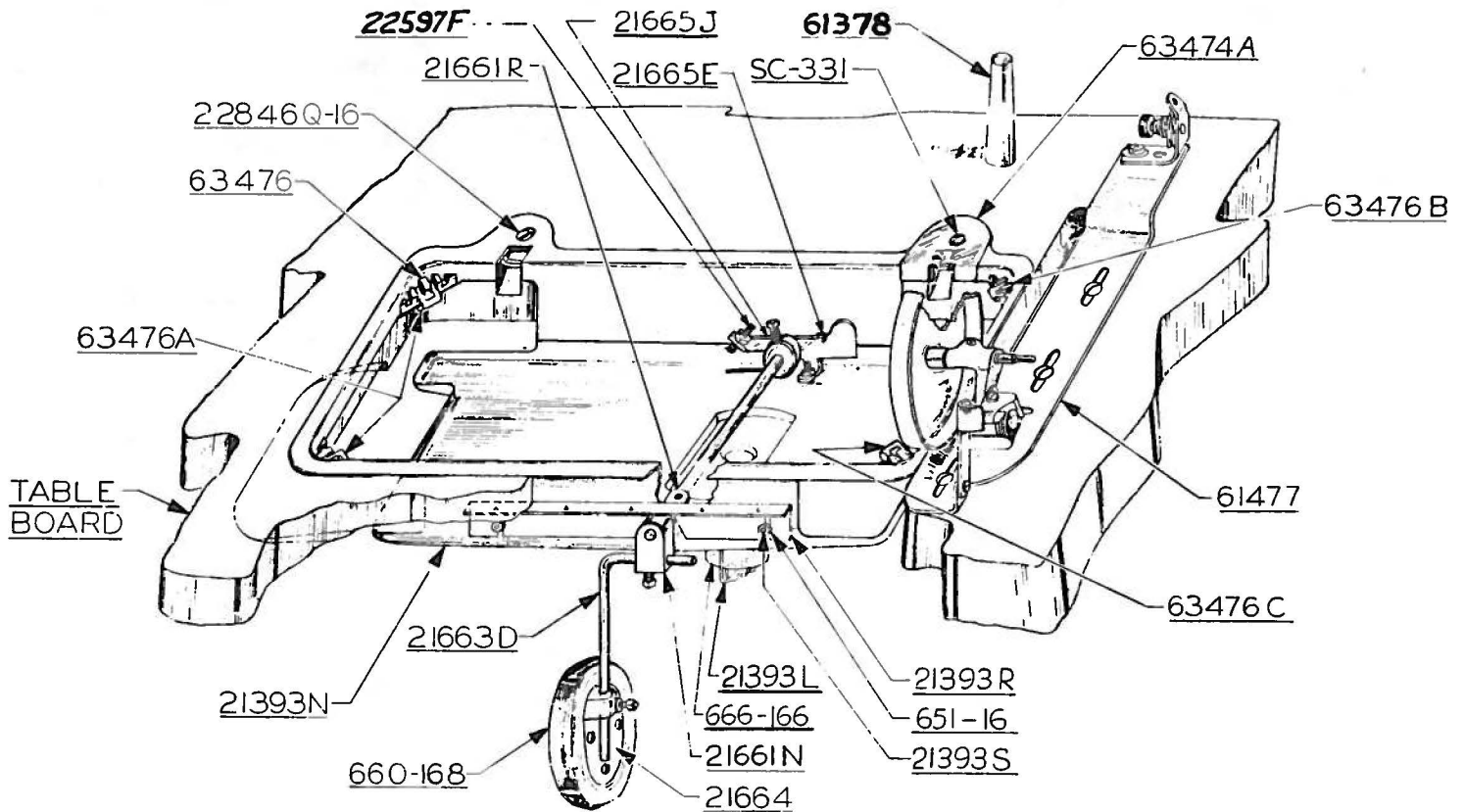


Fig. 1A

### 3. BOBBIN WINDER

The bobbin winder should be secured to the table top so that its pulley will be located directly in front of the sewing machine belt and will bear against the belt when in operation. The base of the winder has two elongated attaching holes, which allow the mechanism to be moved closer to or farther away from belt as needed. The pulley of the winder, when in operation, should exert only enough pressure against the belt to wind the bobbin. Regulation and operation of the bobbin winder is described under "Winding the Bobbin", under OPERATOR'S INSTRUCTIONS in Catalog No. 121 M.

### 4. PRELIMINARY SOLENOID VALVE ADJUSTMENT FOR PRESSER FOOT ASSIST

Turn both needle valves (A, B, Fig. 2) clockwise (closed) until further instructions.

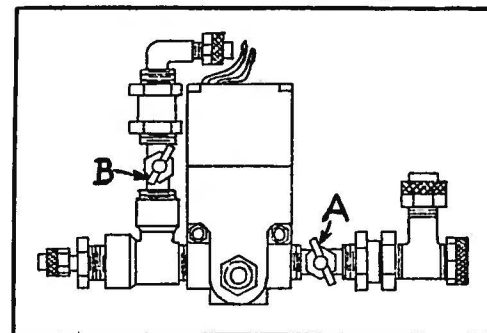


Fig. 2

## PREPARATION OF MACHINES AND TABLING (Continued).

### 5. PRELIMINARY TRIMMER VALVE ADJUSTMENT

Turn flow control valve adjusting screw (A, Fig. 3) completely counter clockwise (out) until it stops. Place a mark on the head for future adjustment.

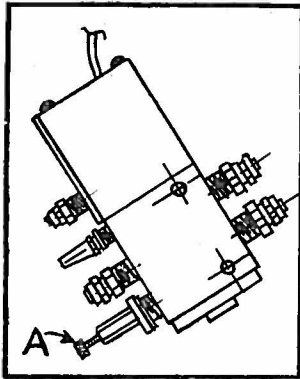


Fig. 3

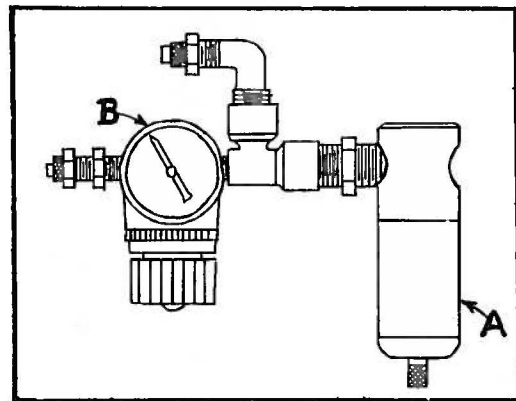


Fig. 4

### 6. REGULATOR ADJUSTMENT

After the air line has been connected to air filter (A, Fig. 4) adjust regulator (B) to 12-18 P.S.I. Do not exceed 20 P.S.I. since this will result in damage to component parts.

### 7. OILING

**CAUTION:** Oil has been drained from the main reservoir before shipment and the reservoir must be filled before starting to operate.

Fill main reservoir at plug screw (A, Fig. 5) and check oil level at gauge (B). Oil is at maximum safe operating level when needle of oil gauge is to the black line, located to the right of "OPERATE" zone, marked "FULL". Oil should be added when needle is to the black line, located to the left of "OPERATE" zone, marked "LOW". Use a stainless water-white straight mineral oil of a Saybolt viscosity of 90 to 125 seconds at 100°Fahrenheit in the main reservoir. This is equivalent to UNION SPECIAL specification No. 175.

Oil May be drained from main reservoir by removing plug screw (C, Fig. 5).

The quantity of oil supplied to the hook is controlled by dial (D). Turning the dial in the direction of the arrow (counterclockwise) increases the oil flow and in a clockwise direction decreases the flow of oil.

It is recommended that a new machine, or one that has been out of service for a long period, be lubricated by removing the head cover and oiling the moving parts. After oiling, replace head cover as no further hand oiling will be required. Run machine slowly for several minutes to distribute oil to the various parts. Full speed operation can then be expected without damage.

### THREADING

Thread machine as indicated in Fig. 5. Threading at check spring has been enlarged for clarity. Needle is threaded from left to right.

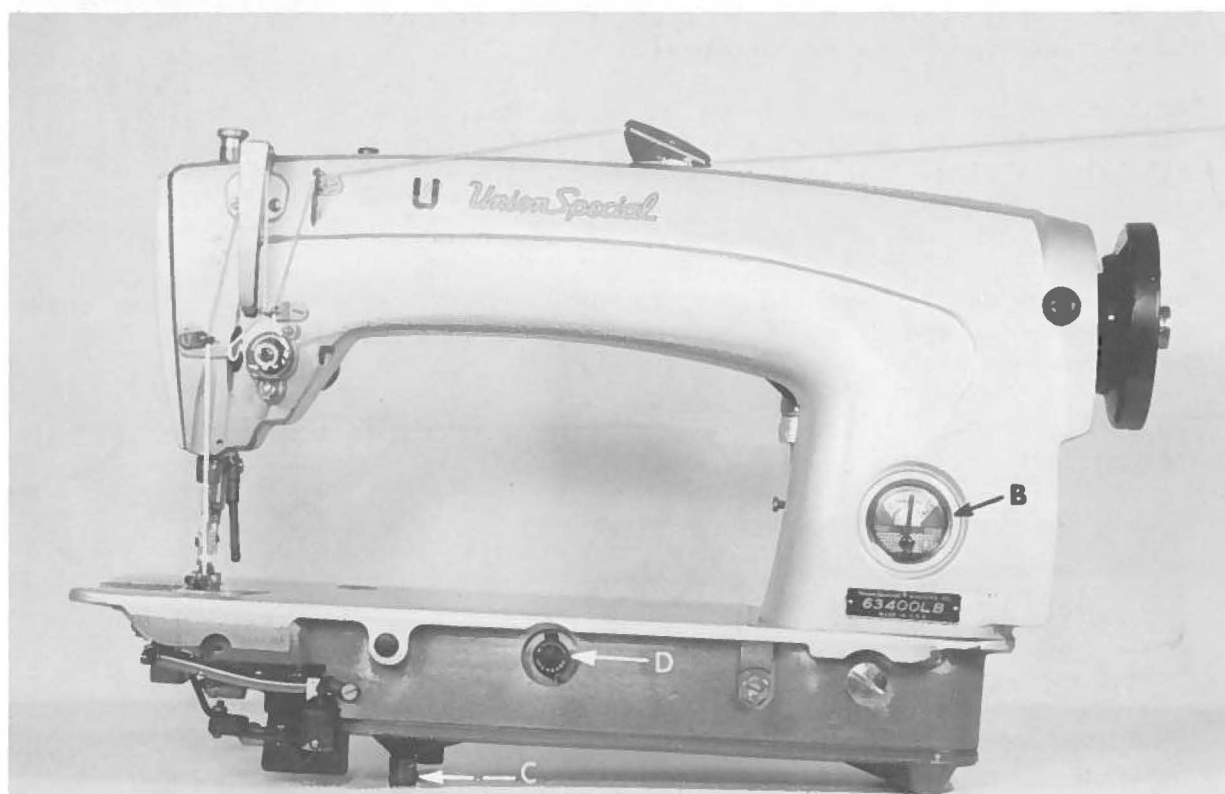
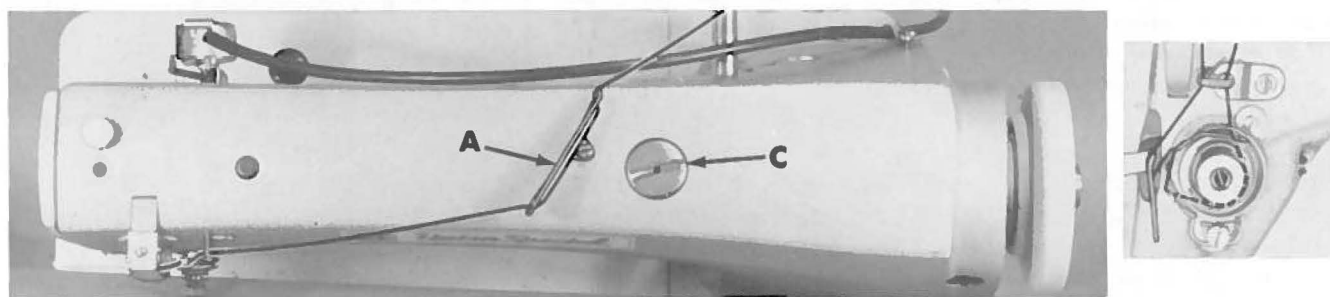


Fig. 5

#### INSTRUCTIONS FOR MECHANICS

The adjusting instructions for Styles 63400 LB, LC and LY are the same as for Style 63400 B, covered in Catalog No. 121 M, with the following exceptions and additions. The instructions that are different from the ones covered in Catalog No. 121 M.

#### PRESSER BAR CONNECTION

The presser bar connection (A, Fig. 6) should be set so that it is about 7/16 inch (11.11 mm) above the lower presser bar bushing (Fig. 6). This is accomplished by tipping the machine back against the rest pin, loosening the lock nut (A, Fig. 7) and relocating the stop screw (B) on the lifter lever bell crank (C). By turning the stop screw to the right or left, the proper setting of the presser bar connection is accomplished. Tighten the lock nut (A) to lock the stop screw in place.

## PRESSER BAR GUIDE

When locating the presser bar guide (B, Fig. 6), the presser foot must rest directly against the throat plate with the feed dog in its lowest position. The guide is set properly when there is a 1/16 inch (1.59 mm) space between guide (B) and presser bar connection (A, Fig. 6).

To obtain this setting, remove the pressure from the presser spring (C) and loosen set screw (D). Tap on presser foot to insure its being down on the throat plate. Set the guide to the 1/16 inch (1.59 mm) dimension, center the foot by turning it so that the needle enters the middle of its slot and retighten screw (D) in guide. Now, apply pressure to the presser foot by turning the regulator (J, Fig. 6) clockwise.

Set the needle thread take-up wire (A, Fig. 8) so that the underside of the wire is 4 3/4 inches (121.00 mm) above the throat plate.

## ADJUSTING THE NEEDLE AND HOOK

1. Insert a new needle Type 180 GXS, 180 GYS, 185 GAS or 185 GBS of the proper size with the needle eye at 90 degrees to the line of feed and the spot or scarf to the right.
2. The needle must be in the center of the needle hole in throat plate and slot in presser foot.



Fig. 7

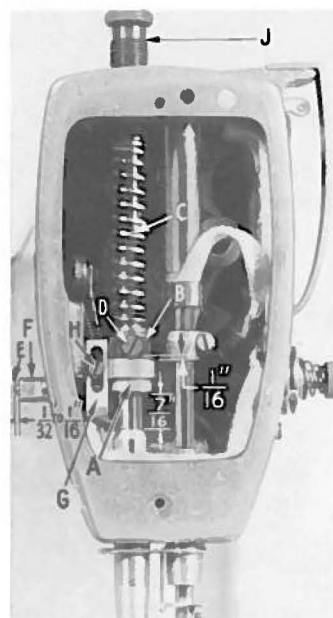


Fig. 6

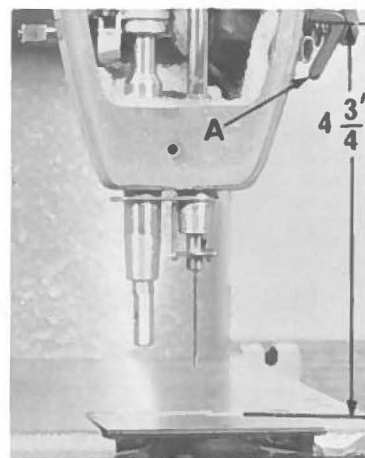


Fig. 8

3. The needle bar height is correct when the upper timing mark on the bar is even with the lower edge of the needle bar bushing with the bar at the bottom of its stroke. The lower pair of lines are used with needle Type 180 or 185 for Styles 63400 LB, LC and LY (upper pair are used with needle Type 183 for low throw machines).
4. To set the hook, tip the machine back so that it rests on the support pin, loosen the two set screws and hold the hook and bobbin case holder in such a position as to prevent interference with the needle. Turn the handwheel in operating direction until needle bar is at its lowest position. Continue to turn handwheel until the needle bar is ascending and its lower timing mark is even with the lower edge of the needle bar bushing.

## ADJUSTING THE NEEDLE AND HOOK (Continued)

### 4. Continued.

Turn the hook on the hook shaft until its point is even with the center of the needle and as close to the needle as possible without deflecting it. A spacing of .003 to .005 inch (.076 to .127 mm) between the point of hook and the needle will be satisfactory. With the hook in this position, tighten the screw opposite the hook point securely, then tighten the other screw and recheck the clearance between hook point and needle. Set the hook positioning collar (63432) against the hook and tighten in place.

5. Adjust the hook positioning finger by turning the bobbin case holder until the finger recess is at the top. Place the projection on the finger into the case holder recess and tighten the finger attaching screws, allowing 1/32 inch (.79 mm) clearance between the outside edge of the projection and the inside edge of the recess.
6. A needle guarding surface, located on the right side of the needle hole in the bobbin case holder, has been provided in this hook.

The purpose of this guarding surface is to prevent the hook point from coming in contact with the needle at loop-taking time should the needle be deflected toward the hook. With a properly timed hook, the needle guard will deflect the needle slightly when the needle is at the bottom of its travel. At loop-taking time, there should be little or no deflection of the needle by the needle guard.

It will be necessary in some cases to remove some of the needle guarding surface for additional needle clearance. This is especially true when size 125/049 and larger needles are used.

Before removing any material from the guard, all related settings should be checked as follows:

- a) See that the needle bar is set to the correct height.
- b) Check for proper hook timing.
- c) Turn the handwheel in the operating direction by hand and check for excessive needle deflection.
- d) If needle deflection is judged excessive, with the bobbin case holder pulled towards the needle, remove the bobbin case holder from the hook and remove excess material from needle guard surface. This may be done by using a 1/8 inch (3.17 mm) strip of fine emery cloth (#320) with one end secured to the bench and rubbing the guard surface back and forth until sufficient material is removed. CAUTION! Care must be taken so as not to remove too much metal as this will reduce the effectiveness of the guard and damage to the hook point may result.

The bobbin case holder should be thoroughly cleaned before reassembling in the hook.

It is suggested that the hook not be removed from the machine or disturbed from its timed position if altering of the needle guard is required. The bobbin case holder only may be removed by removing the gib screws and gib and by pulling on the bobbin case holder stem while rocking the handwheel backward and forward slightly. As metal is removed from the guard, the bobbin case holder may be re-inserted and tested frequently with the needle as a means of preventing too much guarding surface from being removed.

## ADJUSTING THE NEEDLE AND HOOK (Continued)

### HOOK OILING

1. Check oil flow to hook.

**CAUTION!** Do not run the machine without the bobbin case in the hook as hook damage may result, and needle positioner adjusted for proper top speed.

2. With the bobbin case in the hook, run the machine one full minute. Place a 2 x 4 inch (50.80 x 101.60 mm) piece of white paper directly under the hook and continue running the machine. After about five seconds, remove the paper and a definite and distinct pattern of oil spots should be observed.
3. Should more or less oil be required turn the hook oil control, located on the front of the machine just below the cloth plate surface, in the direction of the change required. After a change in the hook oil flow, the machine should be run for about one minute before checking for desired oil flow.

### ADJUSTING FEED MECHANISM, For Styles 63400 LB and LC

1. Check height of feed dog. Feed dogs having twenty two teeth per inch should rise .040 to .045 inch (1.02 to 1.14 mm) above throat plate. Those having sixteen or less teeth to the inch should rise the depth of the teeth above the throat plate.

At their maximum height, feed dogs should be level in both directions, across the line of feed as well as in the line of feed.

2. Adjust presser foot pressure for good feeding action.
3. Set stitch to required length. To change stitch length:
  - a) Press plunger all the way in until it stops.
  - b) Holding the plunger down, turn the handwheel in operating direction until the teeth regulating finger is felt to snap into the slot in the adjustable eccentric.
  - c) Lengthening the stitch is accomplished by turning the handwheel in the operating direction with the plunger held down.
  - d) Shortening the stitch is accomplished by turning the handwheel in the opposite direction.
  - e) Release plunger.

### ADJUSTING THE REVERSE FEED MECHANISM, FOR STYLE 63400 LY

1. The reverse feed is actuated by pushing down on the feed control lever (C, Fig. 9) and the reverse feed will continue to operate as long as the control lever is held down.
2. Set the stitch length at 12 stitches per inch, on both the forward and reverse feed. This can be checked using heavy paper or very light cardboard. To attain 12 stitches per inch on the forward and reverse feed, it may require adjustments of both mechanisms

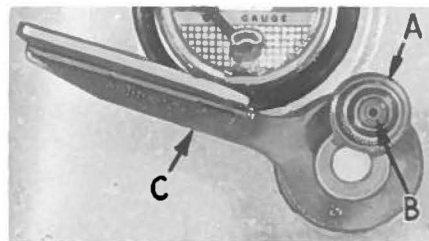


Fig. 9

## ADJUSTING THE REVERSE FEED MECHANISM, FOR STYLE 63400 LY (Continued)

### 2. Continued

After making an adjustment to one feed, check the stitches per inch in both directions, because an adjustment to one feed will affect the travel of the other. To change the stitch length of the forward feed refer to paragraph on "Adjusting Feed Mechanism" part 3.

3. The reverse feed travel can be changed by adjusting the stitch control lever (A, Fig. 10). This can be accomplished by tipping the machine back against the rest pin and loosening clamp screw (B). When the machine is in this position move the control lever (A) toward you to increase the reverse feed travel or away from you to decrease the travel. Retighten clamp screw (B) after making an adjustment and check the stitch length in both directions.
4. Once the forward and reverse feed has been set at 12 stitches per inch, a change in stitch length can be made as described under "Adjusting Feed Mechanism" part 3, the reverse feed will not have to be adjusted. You should get approximately the same number of stitches in both direction.

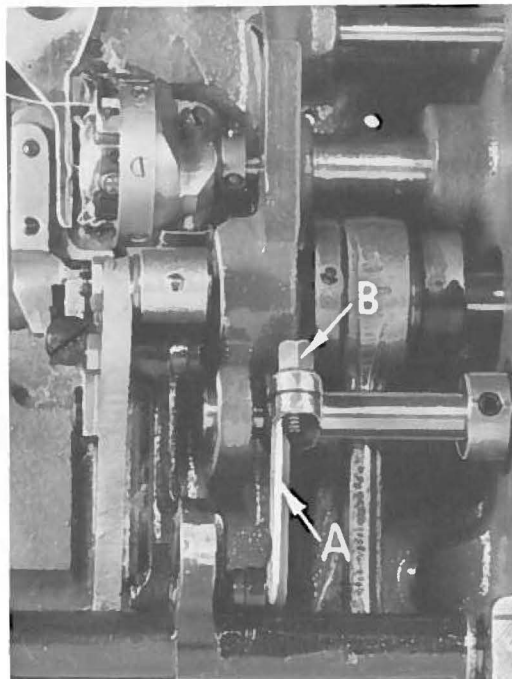


Fig. 10

**CAUTION!** On machines equipped with a treadle control reverse feed lever (A, Fig. 11) remove this lever before tipping machine against the rest pin.

5. If equal stitch length, forward and reverse can not be obtained by adjusting the stitch length control lever adjustment should be made to the feed linkage located inside the machine. The feed linkage is pre-set at the factory and may be checked as per paragraph 6.
6. Drain machine of oil and remove the bottom reservoir cover. Set the machine at zero stitches per inch. Loosen holding screw (A, Fig. 12) and move the stitch regulator plunger lever (B), so the center of screw (C) is  $23/32$  inch above the bottom of the base. Retighten holding screw (A) and replace the bottom reservoir cover. Now. Adjustment can be made to the feed reverse feed control lever as described earlier.

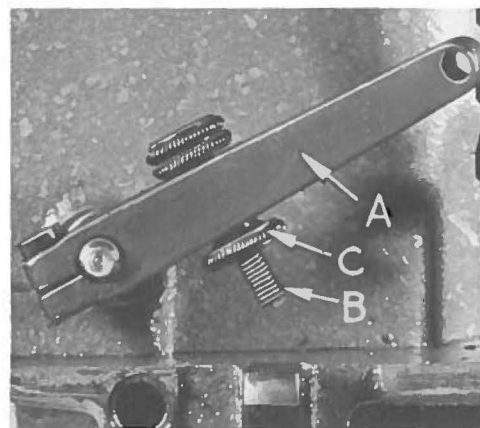


Fig. 11

## ADJUSTING THE REVERSE FEED MECHANISM, FOR STYLE 63400 LY (Continued)

7. On machines equipped with a treadle control reverse feed lever (A, Fig. 11), hold down the reverse feed control lever (B, Fig. 9) and adjust the stop screw (B, Fig. 11) to stop against the bed casting. Lock stop screw (B) in this position with lock nut (C). This is to prevent damage to the feed adjusting screw, when reverse feed is actuated by stepping on the treadle.

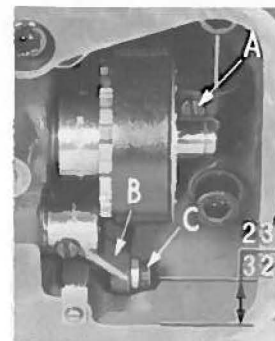
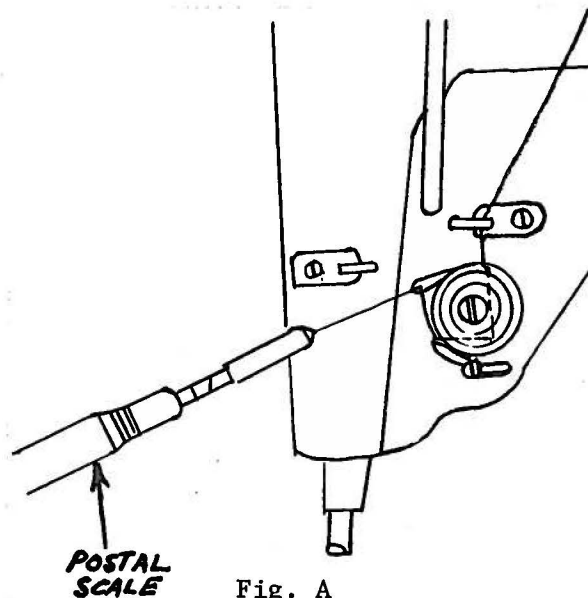


Fig. 12

## THREAD CONTROL

1. Check the adjustment of tension assembly.
  - a) Check spring tension. There should be enough tension to insure a good returning snap when the spring is depressed and released. The check spring tension is adjusted from about 1 to 1 1/4 ounces (28.35 to 35.44 gm) when measured as shown. This is measured when the check spring is 1/32 to 1/16 inch (.79 to 1.59 mm) from its stop.
  - b) The tension post set screw should be drawn up snugly but not forcefully tightened.
  - c) The tension release pin should move freely in the tension post.
2. The check spring eyelet located just below the tension disc should be set for correct height as follows:



- a) With thread running from the tension post to the thread wire in a straight line the check spring eyelet should be set at 1/16 to 1/8 inch (1.59 to 3.17 mm) below the thread line.

Be sure the eyelet is set close to the tension discs so that the check spring will pass freely over it without obstructions.

- b) After making this setting, proceed to thread machine as per threading diagram.

3. Sew slowly on a piece of material and observe the action of the check spring. The thread from the check spring to the take-up wire should be taut when the take-up is at the bottom of its stroke.

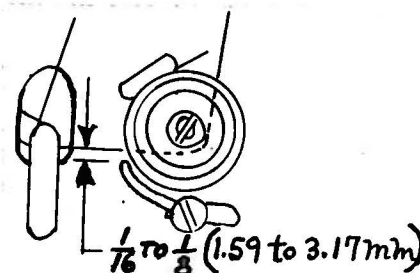


Fig. B

## THREAD CONTROL (Continued)

### 3. Continued

Slight changes in needle thread tension may be necessary at this point but a reasonable tension should be used to maintain a uniform and consistent stitch. The machines are sewn off at 3 to 4 ounces (85.05 to 113.40 gm) needle thread tension on 70-2 cord or similar thread. Depress check spring when checking the tension. The check spring will feel heavy to you when compared to 61400 adjustment, but this is a required setting for the 63400 and as a result, the disc tension can be reduced.

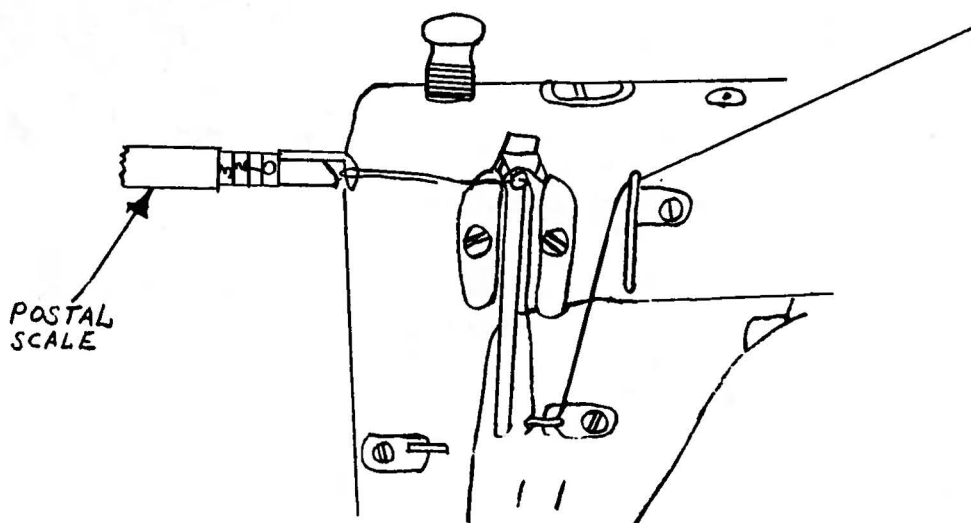


Fig. C

### PRESSURE ON MATERIAL

The presser spring should exert only enough pressure to make the work feed uniformly. To increase the pressure on the presser foot, turn the spring regulator (61457 B or 63457 N) in a clockwise direction. Turning the regulator counterclockwise decreases the pressure.

### TENSION RELEASE

1. Set the tension assembly so that the tension discs are centered on the check spring eyelet (A, Fig. 13).
2. Solenoid plunger pin (E, Fig. 14) must touch tension release pin and the end of solenoid plunger pin must protrude a minimum of 1/32 inch (.79 mm) to a maximum of 1/16 inch (1.59 mm). If adjustment is required move tension post assembly in or out by loosening set screw located under machine arm and moving stop screw (B, Fig. 13) as required.
3. Tension release solenoid is secured to flat of bushing (F, Fig. 14) with a set screw in bracket. Solenoid plunger pin (E) is to have approximately .005 inch (.127 mm) clearance between it and the tension release pin without thread in the tension disc.



Fig. 13

## TENSION RELEASE (Continued)

### 3. Continued

This can be accomplished by placing a .005 inch (.127 mm) spacer between the head of solenoid plunger pin and the end of tension release pin. The tension release solenoid should then be slipped onto bushing and moved in until it contacts the solenoid plunger pin. Care should be taken not to exert too much pressure thereby opening the tension disc. After tightening set screw remove spacer.

4. The manual tension release cam (G, Fig. 14) should be set so that it will not release thread tension when the presser foot is raised for back tacking.

The tension cam can be positioned by loosening screw (H) and then raising or lowering to suit the sewing conditions. The average tension released point is between 1/4 to 5/16 inch (6.35 to 7.94 mm) of presser foot lift above the throat plate. Tighten screw securely.

NOTE: Head oiler bracket must locate the needle bar link oil wick in the center of the slot in the connecting rod. The wick must contact the needle bearings. Check the oil gauge to be sure it reads full and operates freely.

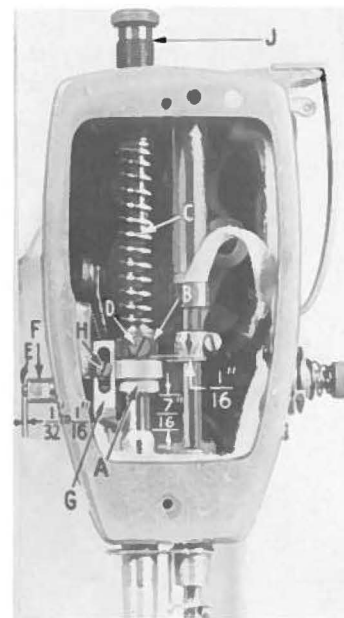


Fig. 14

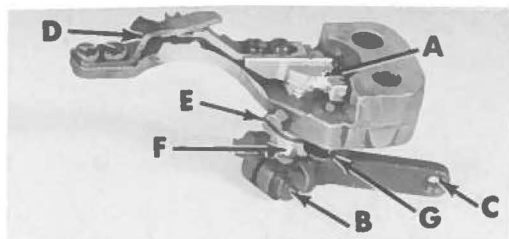


Fig. 15

## TRIMMER ADJUSTMENTS

Remove the positioning finger and knife assembly from machine and proceed as follows:

1. There should be no bind or shake in lower knife pivot carrier (A, Fig. 15). This adjustment can be made by loosening screw (B) on the pivot release lever (C) and taking up the excessive end play or relieving the bind as the case may be.
2. Position upper knife (D) parallel with the left side of the arm of the positioning finger. Check to see that the lower knife is parallel with the upper knife. If this is not so, loosen the finger set screw (E) and turn the eccentric bushing (F) until the knives are parallel. A good starting point would be to have the pin hole in the eccentric bushing (F) located approximately 90° to the right side of the arm of the positioning finger (Fig. 17).

Adjust lower knife until it just contacts the upper knife. To adjust the lower knife turn flange screw (G, Fig. 15) clockwise to lower knife and counterclockwise to raise it.

## TRIMMER ADJUSTMENTS (Continued)

### 2. Continued

**CAUTION!** Be sure bushing is not turned while making this adjustment or parallel adjustment will have to be checked.

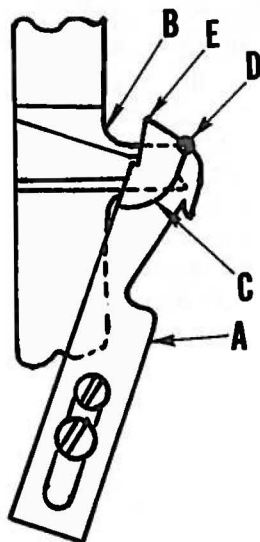


Fig. 16

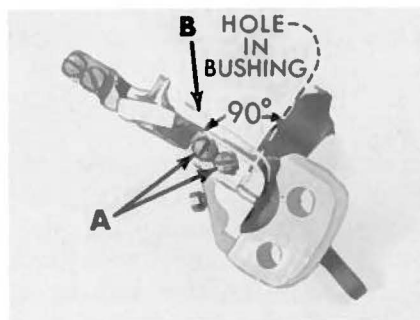


Fig. 17

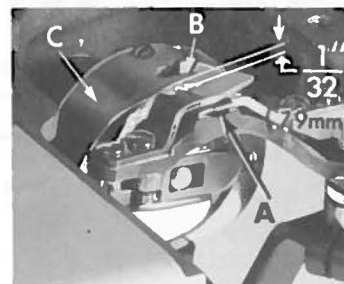


Fig. 18

The lower knife (A, Fig. 16) in its extreme left position should not extend beyond the left side of the arm of the positioning finger (B). If lower knife extends beyond this point adjustment will need to be made to the trimmer and air cylinder after the trimmer has been assembled to the machine (See Item #5). As the lower knife moves to the right, the run out of the cutting edge (C) must coincide at a point of the positioning finger as indicated at point (D). To make these adjustments loosen screws (A, Fig. 17) and position knife.

3. Assemble positioning finger and knife assembly into machine. Adjust the bobbin case holder positioning finger and knife assembly by turning the bobbin case holder until the finger recess is at the top. Place the projection (A, Fig. 18) on the positioning finger into the bobbin case holder recess (B) and tighten the finger and knife assembly attaching screw securely, allowing 1/32 inch (.79 mm) clearance between the outside edge of projection and the inside edge of bobbin case recess (Fig. 18).

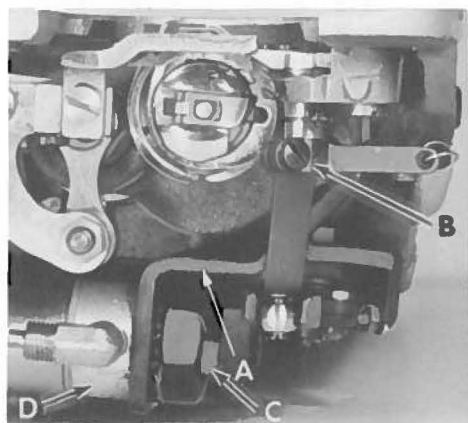


Fig. 19

4. Locate the knife cylinder bracket (A, Fig. 19) as far back as possible and parallel with the line of feed.

5. If the lower knife (A, Fig. 16) extends beyond the left side of the arm of the positioning finger, the following adjustment will need to be made to the trimmer and air cylinder.

- With air to the machine on and electrical power off.
- Tip machine back.
- Loosen screw (B, Fig. 19.)
- Adjust piston rod (C, Fig. 20) to stop internally by leaving .005 inch (.127 mm) minimum between nut (C, Fig. 19) and air cylinder (D). This is done by loosening nut (C) and turning the piston rod in or out. Retighten nut after .005 (.127 mm) space has been obtained.
- Position lower knife (A, Fig. 16) in its extreme left position to line up with the left side of the arm of the positioning finger (B) While holding in place tighten screw (B, Fig. 19).

## TRIMMER ADJUSTMENTS (Continued)

6. Adjust the lower knife stop screw (B, Fig. 20) so when the lower knife is in its extreme right hand position, the left corner (E, Fig. 16) is in line with the left side of the needle slot in the bobbin case holder. CAUTION! Be sure knife does not hit the hook point.
7. Be sure the spring retainer wire (B, Fig. 17) enters the bobbin case holder cut-out when the lower knife is in its extreme right hand position. If the spring wire does not make contact, bend retainer wire to suit.
8. The knife return spring (A, Fig. 20) may be removed when bobbin over-spinning has become critical. The spring itself is a safety device to prevent the knife from opening up and interfering with the hook (if the air compressor should be off). To adjust for the slowest knife return, see Final Trimmer Valve and Presser Foot Assist Adjustment. NOTE: Knife return spring on 63400 LB, LC and LY are not the same as used on 63400 KA, KB and KC.

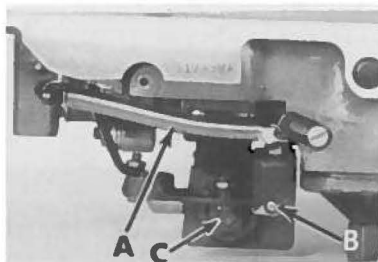


Fig. 20

## 800 YP-362 NEEDLE POSITIONER SETTINGS

### TRANSFORMER CONNECTIONS

1. Measure line voltage with voltmeter.
2. Disconnect unit from power source.
3. Remove bottom cover from control box.

CAUTION! Transformer taps (A, Fig. 21) are very flexible and care should be taken when removing or replacing connectors (B or C).

NOTE: Dummy connector (B) MUST remain on the transformer tap marked 175-199 when not being used, to prevent any possible damage to unit.

4. Connector and lead (C) must be connected to the proper transformer tap corresponding to line voltage. Examples: If line voltage measured 219 VAC, (C) should be connected to the tap marked 215-229 as shown. Should line voltage measure between 175-199 VAC, remove dummy connector (B) and connect (C) to tap.

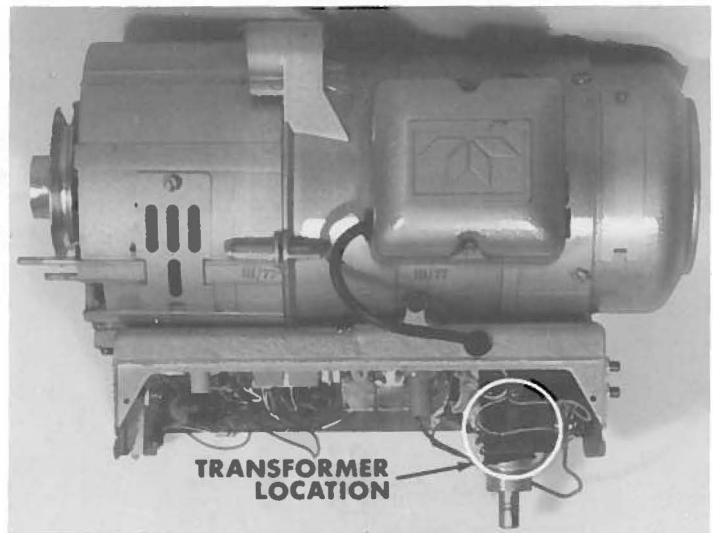
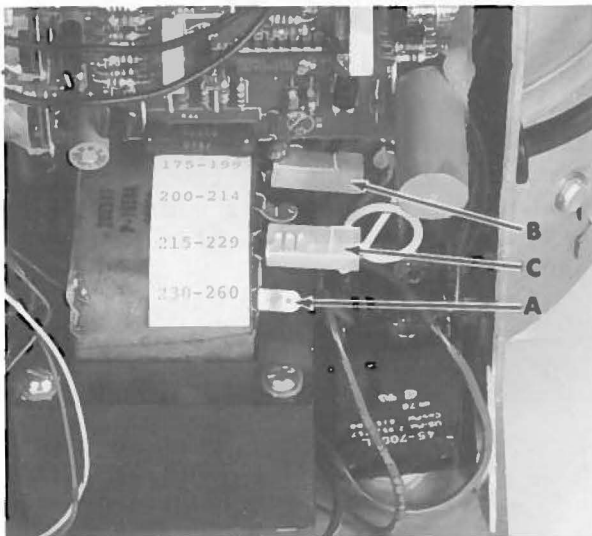


Fig. 21

### INSTALLATION OF THE SYNCHRONIZER

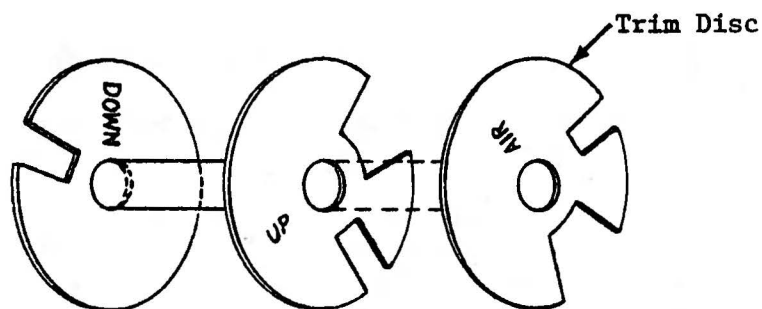
1. Attach the synchronizer mounting bracket (63495 R), ground wire, clamp and tubing from tension release solenoid to the back of machine, as shown in Figure 1. Place rubber grommet over the end of synchronizer mounting bracket. Assemble synchronizer onto the adaptor of handwheel assembly, aligning the slot of front bearing plate over grommet on synchronizer bracket to stabilize same and tighten the two set screws in synchronizer. Tighten screws holding the synchronizer bracket, securely. (Position of the synchronizer on handwheel adaptor is of no importance).
2. Pneumatic "KLIPP-IT" Thread Trimmer Adjustment Of Discs

NOTE: Synchronizer comes from factory set for electric "Klipp-It" thread trimmer. Remove the trim disc marked "electric" from the synchronizer and replace it with trim disc marked "air".

NOTE: These settings are made looking from the right end of machine.

## NEEDLE-DOWN POSITION

- a) With power off, turn the handwheel in operating direction until hook is at loop taking time, with needle on upstroke. Rotate the needle-down disc (A, Fig. 22) until its opening is centered in the synchronizer head.



NOTE: All printed words on discs should face away from the handwheel.

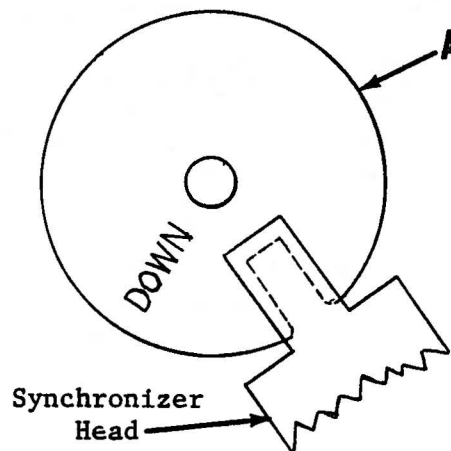


Fig. 22

## NEEDLE-UP POSITION

- b) With power off, turn the handwheel in operating direction until thread take-up is 1/8 inch (3.18 mm) before top dead center, OR leading edge of the first screw (A, Fig. 23) in the hook deflector (B) aligns with front edge of positioning finger (C) with needle in the up position. Rotate the needle-up disc (D) until its smaller opening is centered in the synchronizer head.

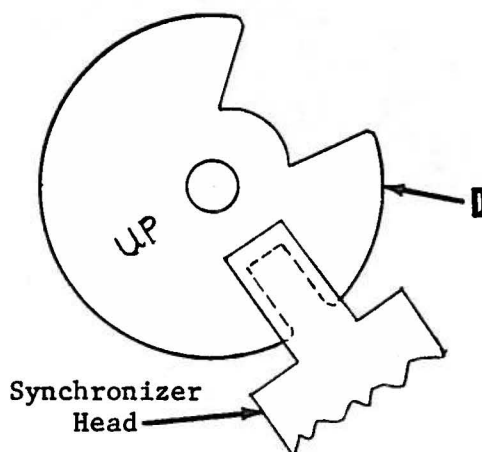
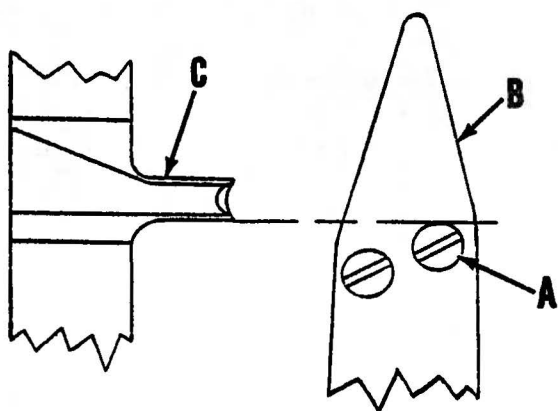


Fig. 23

## TRIM

- c) Turn handwheel in operating direction until tip of finger on thread deflector plate (A, Fig. 24) is 1/32" (.79 mm) to the rear of the rear edge of the positioning finger (B, Fig. 15) (needle on upstroke). Then rotate the trim disc (C, Fig. 24) until its small gap is centered in the synchronizer head.

NOTE: Since "up" and "trim" discs are in constant contact, recheck "up" disc setting as stated in b) Needle-Up Position.

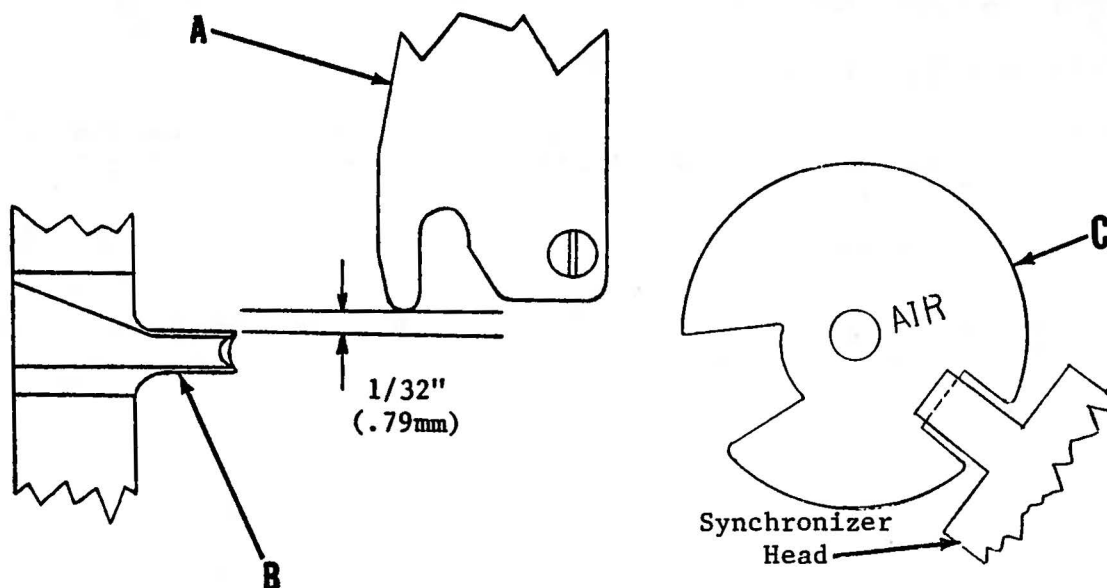
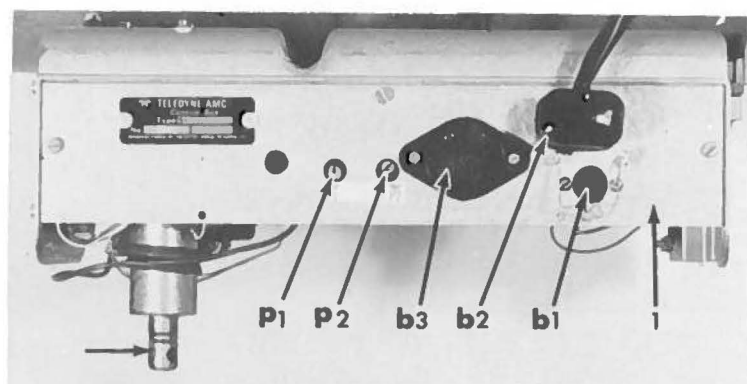


Fig. 24

# CONTROL PANEL SETTINGS



- 1 - Control box
- 5 - Actuating shaft
- b1 - Synchronizer receptacle
- b2 - Clutch and brake
- b3 - Accessory Connections
- Thread trimmer 1 & 2
- Thread wiper 1 & 3
- Foot lift 9 & 10
- 24 vdc, 0.5A 6 & 10 (10=+)

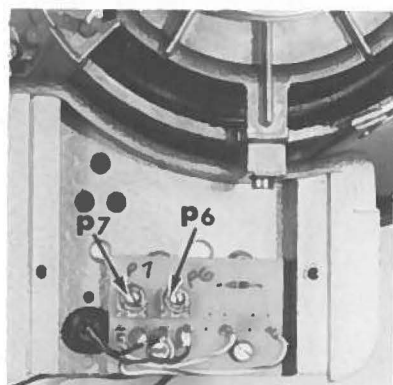


Fig. 25

- P1 - Potentiometer for setting positioning speed
- P2 - Potentiometer for setting intermediate speeds
- P3 - Potentiometer for limiting top speed
- P6 - Potentiometer for adjusting thread tension release
- P7 - Potentiometer for adjusting presser foot lift
- Both P6 and P7 are accessible by removing cover on right side of control box.

## CONTROL PANEL SETTINGS (Continued)

### 1. POSITIONING RPM'S FOR THREAD TRIMMING

Independent of motor rpm or pulley diameter, adjustable via potentiometer P1 (Fig. 25), should be adjusted to 200 RPM. Setting beyond this speed will lead to malfunctioning of thread trimmer mechanism.

### 2. INTERMEDIATE SPEED RANGES

P2 - Intermediate speeds 2 to 9. These speeds cannot be independently adjusted. They can be either condensed or expanded. P2 turned to the left stop will condense the speeds leaving a larger rpm difference between step 9 and step 10. This should be adjusted according to the sewing requirements.

### 3. TOP SPEED

P3 - Maximum speed limitation. By turning P3 against the left stop, step 10 is reduced to that of step 9. Further adjustment is then controlled by the setting of P2. NOTE: Maximum speed adjustment is recommended only for exceptional cases such as operator training, not for continued use.

Use the following chart to select the correct pulley size for the desired machine speed.

| <u>MACHINE SPEED</u> | <u>60 CYCLE ONLY<br/>PULLEY SIZE (U.S. PART NO.)</u> |
|----------------------|--|
| 3900 RPM             | 28602 AR-21  |
| 4100 RPM             | 28602 AR-22  |
| 4300 RPM             | 28602 AR-23  |
| 4700 RPM             | 28602 AR-25  |
| 4900 RPM             | 28602 AR-26  |
| 5200 RPM             | 28602 AR-28  |
| 5600 RPM             | 28602 AR-30  |

### 4. THREAD TENSION RELEASE & PRESSER FOOT LIFT

Adjustment for the length of thread tension release is controlled via potentiometer P6 (Fig. 25). The potentiometer should be set so that the tension discs are open until the trim knife has finished cutting.

Adjustment for the presser foot signal after trimming is controlled via potentiometer P7 (Fig. 25) and should be adjusted so that the foot lifts after the thread wiper has returned to its rest position.

## FINAL TRIMMER ADJUSTMENTS

### FINAL TRIMMER VALVE AND PRESSER FOOT ASSIST ADJUSTMENTS

1. With the bed slide cover removed, sew on a piece of material.

## FINAL TRIMMER ADJUSTMENTS (Continued)

2. Turn the flow control adjusting screw (A, Fig. 26) in three complete turns. While heeling back, observe the return action of the lower knife. If needed to overcome bobbin overspin, flow control valve adjusting screw can be turned in two more complete turns. If more than two additional turns are required, then the check for detecting the knife hitting the deflector plate will need to be made.

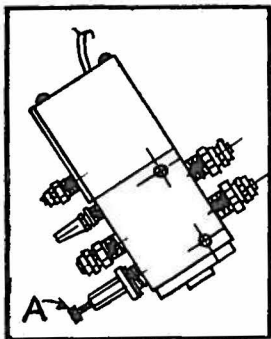


Fig. 26

NOTE: To reduce bobbin spinning on light weight threads you may need to remove the return spring (A, Fig. 20).

3. While heeling back observe the presser foot rise, the foot should rise smoothly. If adjustment is needed, adjust needle valve (A, Fig. 27).

NOTE: Do not open further than necessary since noise and wear will increase.

4. Now observe knife return and foot raising time. If presser foot raises too soon (before knife has returned and cut) or too late (after knife has cut) adjust P-7 on control box Fig. 25 so that foot comes up after knife has come to its at rest position.

### AIR WIPER ADJUSTMENT

Sew on a piece of material and trim. Leave foot up and remove material to rear. Now open needle valve (B, Fig. 27) until the air blows the trimmed needle thread over the top of the presser foot. It may be necessary to rotate mounting collar or position wiper tube up or down to obtain proper air flow to the needle thread.

NOTE: Do not open needle valve more than necessary since this will increase air consumption and operating cost.

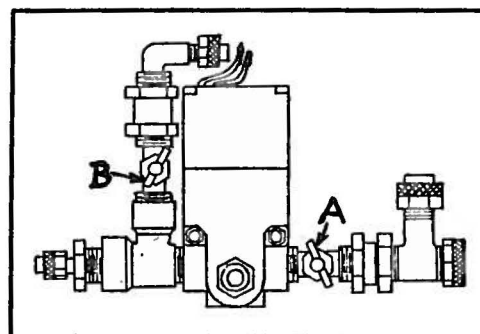


Fig. 27

### TENSION RELEASE "ON TIME" ADJUSTMENT

Tension release P-6 on control box has been factory preset and should not need to be moved. This control has been provided to increase or decrease the tension release on time for certain applications and threads being sewn.

### KNIFE INTERFERENCE CHECK

This check must be made if:

1. Flow control valve adjusting screw is turned in more than five turns.
2. The 180-200 R.P.M. position speed is not maintained.

### PROCEDURE:

1. Remove needle, presser foot, throat plate and feed dog.

#### KNIFE INTERFERENCE CHECK (Continued)

2. The precut aluminum foil tape is attached to the hook. The right side of the tape is aligned with the right side of the deflector plate and the wide edge of the tape is aligned to the trailing edge of the deflector plate. Fold left side of the tape along left side of deflector plate.
3. With ohm-meter check to see if this is properly isolated from the machine. Attach one probe to the thread eyelet of the machine and place the other on top of the tape. Slowly rotate handwheel allowing probe to ride on top of tape checking for continuity. If meter indicates a short, replace the tape.
4. Check to see that when the knife comes in contact with the deflector plate that the meter will indicate a short.
5. Apply power to the machine.
6. At positioning speed only go through the trim cycle.
7. If meter pointer moves more than 1/64 inch (.40 mm) the knife and deflector plate have come in contact with each other. Readjust flow control valve (or, if white potentiometer has been adjusted, readjust it).
8. Go through check again to see if needle moves.

Before this machine left the factory, it was adjusted and inspected so as to give the utmost satisfaction and durability at all times. If, however, the trimmer has been readjusted and is not trimming properly, see the chart below for suggestions which may prove beneficial to you.

#### TRIMMER TROUBLESHOOTING

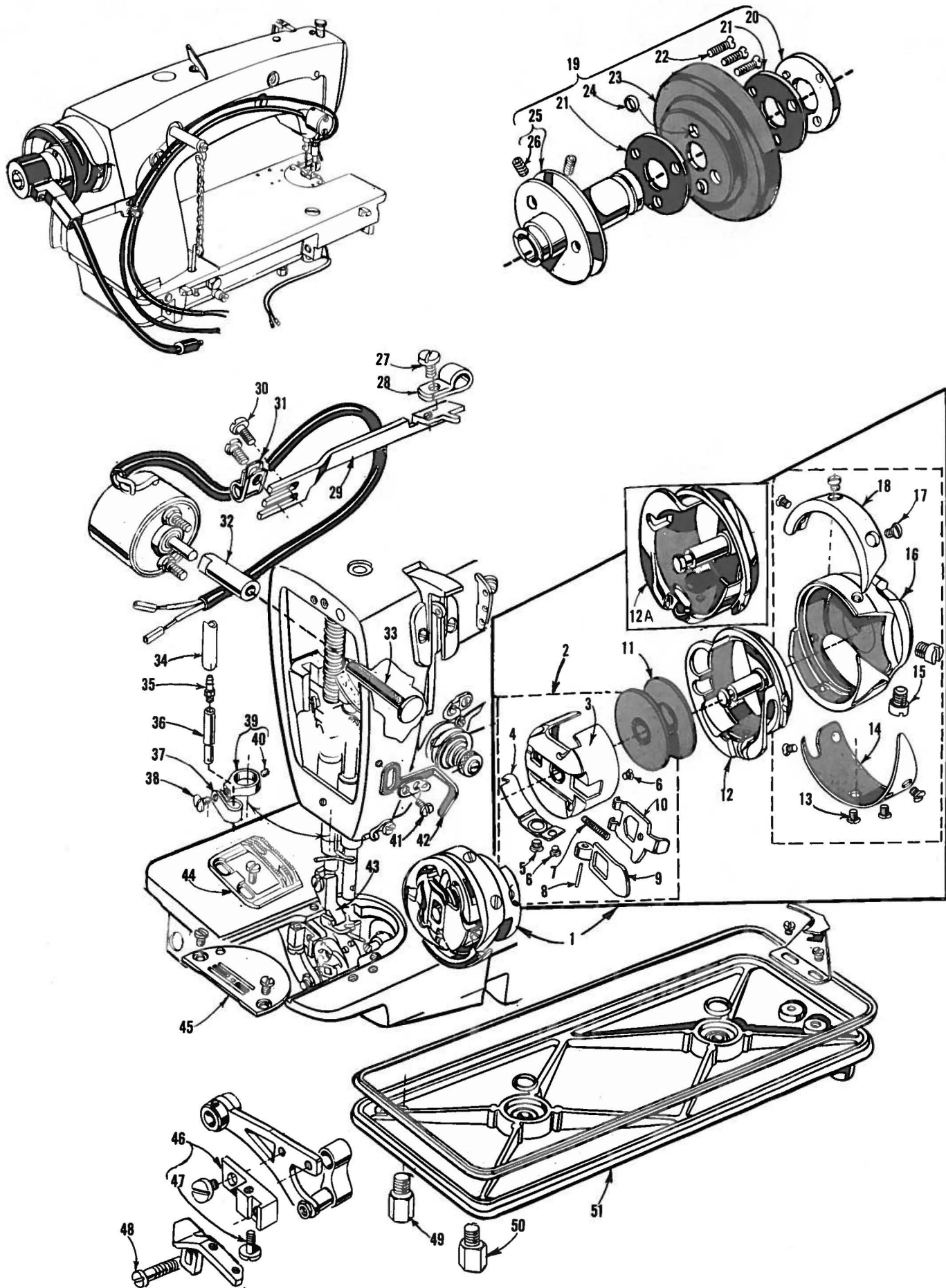
| Condition  | Causes  | Cures  |
|--|---|--|
| Both threads not trimmed                                       | Circuit breakers on control box open  | Reset circuit breakers   |
|  | Improper shear angle on knives  | Reset knives   |
|  | Knife air cylinder not moving   | Check knife air cylinder regulator for correct pressure, 12 to 20 P.S.I.   |
|  |   | Check air lines for cracks, kinks and leaks  |
|  |   | Check wire leads from needle positioner to 4-way solenoid valve. Make continuity check                                     |
|  |   | Check 4-way solenoid valve. Press test button on solenoid. If knife moves, make voltage check during trim cycle 48.0 volts |
|  | Lower knife not moving far enough to the right  | Check knife air cylinder regulator for correct pressure, 12 to 20 P.S.I.   |
|  |   | Reset stop screw   |
|  | Lower Knife too far forward, wipes thread behind knife  | Relocate knife, check for nicks on radius  |
| Needle thread not cut, but bobbin thread cut                   | Lower Knife too far back, thread slips off when knife returns                                   | Relocate knife   |
|  | Knife coming too late or too early  | Reset synchronizer disc  |
|  |   |  |
| Bobbin thread not cut, but needle thread cut                   | Spring retainer wire not contacting bobbin case holder when in catching position                | Bend spring retainer wire to suit  |
|  | Spring retainer wire missing  | Replace spring retainer wire   |
|  |   |  |
| Needle thread tears and leaves random lengths on starting tail | Incorrect hook  | On 63400 LB, LY use 29474 T or 29474 V, on 63400 LC use only 29474 V   |
|  | Bobbin thread not threaded through hole in bobbin case  | Thread properly  |
|  | Needle hole in throat plate is too big or has been altered                                      | Use throat plate with smaller needle hole or unaltered hole  |
| Needle thread tears and leaves random lengths on starting tail | Knife returns too fast  | Decrease knife return rate   |
|  | Excessive friction in needle thread eyelets and in thread pull-off at cone                      | Unthread some of the eyelets to the right of the tension post  |
|  | Tension disc not opening  | Check setting of tension release solenoid and potentiometer  |
|  | Sharp edges on T.C.S. of lower knife (front point and back edges are the T.C.S. of lower knife) | Stone sharp edges of T.C.S. of lower knife   |

# TRIMMER TROUBLESHOOTING

| Condition  | Causes  | Cures  |
|--|---|--|
| Needle unthreads when starting or does not sew   | Needle thread take-up not positioned properly at top of stroke                                    | Check position of needle thread take-up, must be within 1/8 inch (3.17 mm)   |
|  | Tension disc staying open   | Check setting of tension release potentiometer   |
|  | Bobbin thread too short   | See "Bobbin Thread Breaks"   |
| Bobbin thread breaks                             | Overspin on bobbin thread, knife returning too fast   | Adjust flow control on 4-way solenoid valve to bring knife back slower   |
|  |   | Reduce pressure but not lower than 12 P.S.I.   |
|  |   | Remove safety return spring  |
|  | Sharp edges on T.C.S. of lower knife (front, point, and back edges are the T.C.S. of lower knife) | Stone sharp edges of T.C.S. of lower knife   |
| Needle thread not wiped                          | Air wiper misaligned. No air from wiper, but P.F.A. works   | Readjust wiper:<br>(a) Check air lines for leaks or kinks<br>(b) Readjust needle valves  |
| Needle thread not wiped. P.F.A. does not come up | Neither wiper or P.F.A. works   | Check air lines for leaks or kinks   |
|  |   | Check wire leads from needle positioner to 3-way solenoid valve  |
|  |   | Check 3-way solenoid valve. Check by pressing test button on solenoid valve. If wiper and P.F.A. work, make voltage check with heel depressed 48.0 volts |

NOTE: Refer to Amco Variostop Catalogs furnished with each needle positioner for guardian maintenance and other information regarding the needle positioner and electric circuitry.

EXPLODED VIEWS  
AND  
DESCRIPTION OF PARTS  
PECULIAR TO  
STYLES 63400 LB, LC and LY  
HIGH SPEED LOCKSTITCH MACHINES

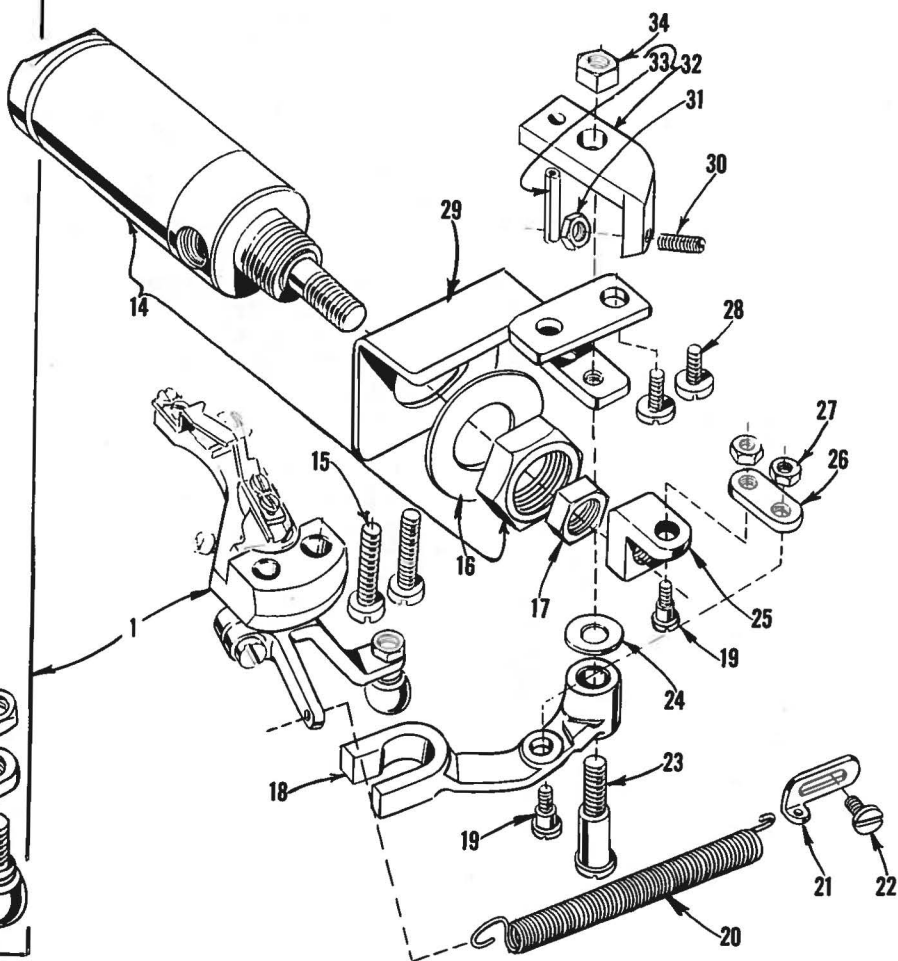
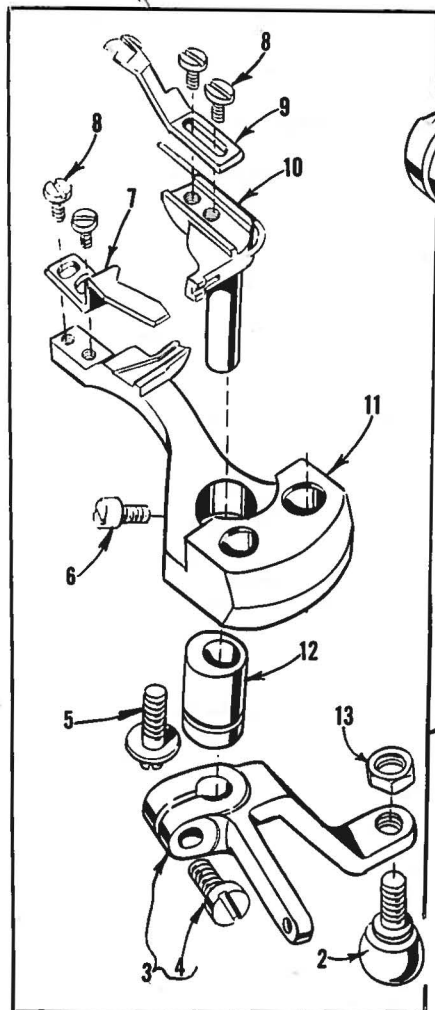
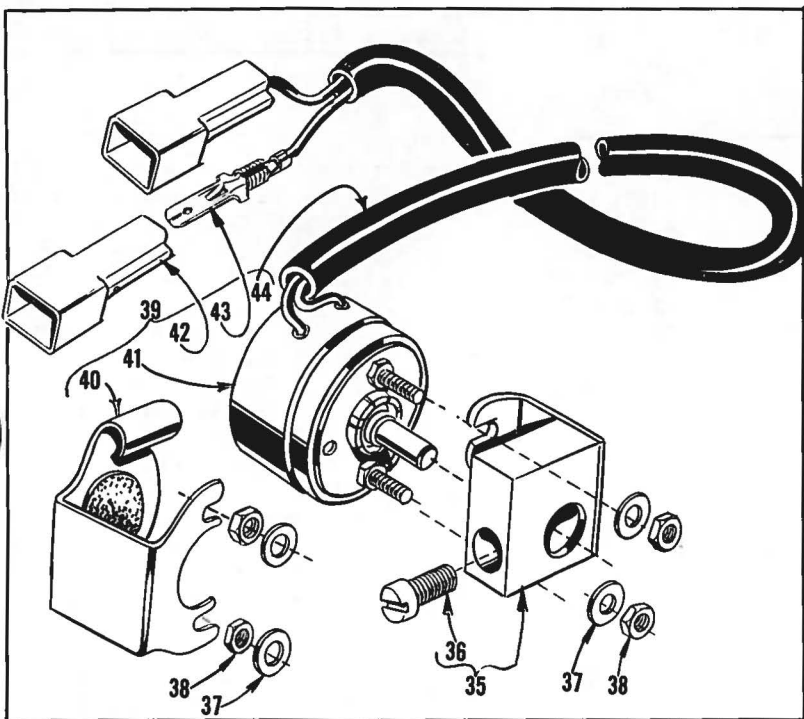
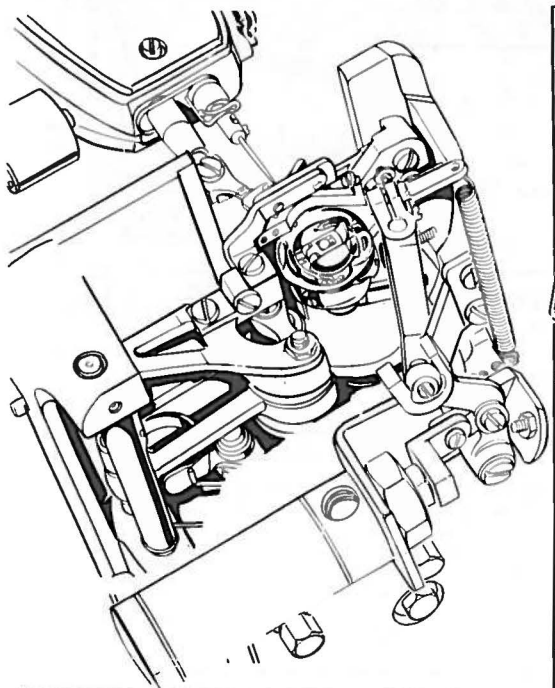


ROTATING HOOK ASSEMBLY, NEEDLE POSITIONER ASSEMBLY,  
HANDWHEEL ASSEMBLY AND MISCELLANEOUS PARTS

| Ref.<br>No. | Part<br>No. | Description   | Amt.<br>Req. |
|-------------|-------------|---|--------------|
| 1           | 29474 T     | Rotating Hook Assembly, for Styles 63400 LB and LY-----                               | 1            |
| -           | 29474 V     | Rotating Hook Assembly, for Style 63400 LC-----                                       | 1            |
| 2           | 63913 A     | Bobbin Case Assembly-----   | 1            |
| + -         | 63913 B     | Bobbin Case Assembly-----   | 1            |
| 3           | 63913       | Bobbin Case-----  | 1            |
| 4           | 61414 C     | Bobbin Case Tension Spring-----   | 1            |
| 5           | 22716 B     | Tension Regulating Screw-----   | 1            |
| 6           | 22564 E     | Screw-----  | 2            |
| 7           | 61216 N     | Bobbin Case Latch Spring-----   | 1            |
| 8           | 61216       | Bobbin Case Latch Hinge Pin-----  | 1            |
| 9           | 61415 A     | Bobbin Case Latch Lever-----  | 1            |
| 10          | 61415       | Bobbin Case Latch-----  | 1            |
| 11          | 61212       | Bobbin-----   | 1            |
| 12          | 63414       | Bobbin Case Holder, for Styles 63400 LB and LY-----                                   | 1            |
| 12A         | 63414 C     | Bobbin Case Holder, for Style 63400 LC-----   | 1            |
| 13          | 22716 A     | Screw-----  | 4            |
| 14          | 63410       | Hook Thread Deflector-----  | 1            |
| 15          | 22569 H     | Screw-----  | 2            |
| 16          | 63408       | Hook-----   | 1            |
| 17          | 22716 H     | Screw-----  | 3            |
| 18          | 61411 A     | Hook Thread Retainer-----   | 1            |
| 19          | 63421 A     | Handwheel Assembly-----   | 1            |
| 20          | 61321 L     | Retainer Plate-----   | 1            |
| 21          | 61421 E     | Handwheel Isolator-----   | 2            |
| 22          | 22574 C     | Screw-----  | 3            |
| 23          | 61421 C     | Handwheel-----  | 1            |
| 24          | 660-254 D   | Isolator Washer-----  | 3            |
| 25          | 63421 C     | Pulley-----   | 1            |
| 26          | 22894 V     | Set Screw-----  | 2            |
| 27          | J87 J       | Screw, for synchronizer lead wire clamp-----  | 1            |
| 28          | 660-356     | Synchronizer Lead Wire Clamp-----   | 1            |
| 29          | 63495 R     | Synchronizer Bracket-----   | 1            |
| 30          | 376 A       | Screw, for synchronizer bracket-----  | 2            |
| 31          | 660-352     | Tension Release Solenoid Lead Clamp-----  | 3            |
| 32          | 63492 E     | Bushing, for tension release plunger pin-----   | 1            |
| 33          | 63492 D     | Tension Release Plunger Pin-----  | 1            |
| 34          | RM-2997 D   | Tubing, specify 56 inch (1422.40 mm) length-----                                      | 1            |
| 35          | 671 F-4     | Barbed Fitting-----   | 1            |
| 36          | 63470 X     | Wiper Tube-----   | 1            |
| 37          | 660-473     | Clamp, for wiper tube -----   | 1            |
| 38          | 22516 D     | Screw, for clamp-----   | 1            |
| 39          | 63470 H     | Thread Wiper Mounting Collar-----   | 1            |
| 40          | 22743       | Screw-----  | 1            |
| 41          | 22766       | Screw-----  | 1            |
| 42          | 63970 A     | Needle Thread Pull-up Bracket-----  | 1            |
| 43          |             | Presser Foot (See Page 41)-----   | 1            |
| 44          |             | Feed Dog (See Pages 37, 39)-----  | 1            |
| 45          |             | Throat Plate (See Pages 37, 39)-----  | 1            |
| 46          | 63439 B     | Feed Dog Holder Support-----  | 1            |
| 47          | 22775 A     | Screw-----  | 1            |
| 48          | 22874 J     | Screw, for feed dog holder support-----   | 1            |
| 49          | 22571 G     | Plug Screw-----   | 1            |
| 50          | 22841 L     | Stud Screw-----   | 1            |
| 51          | 63982 C     | Oil Reservoir Cover-----  | 1            |
| *           | 800 YP-362  | Needle Positioner Assembly, complete, although only the<br>synchronizer is shown----- | 1            |

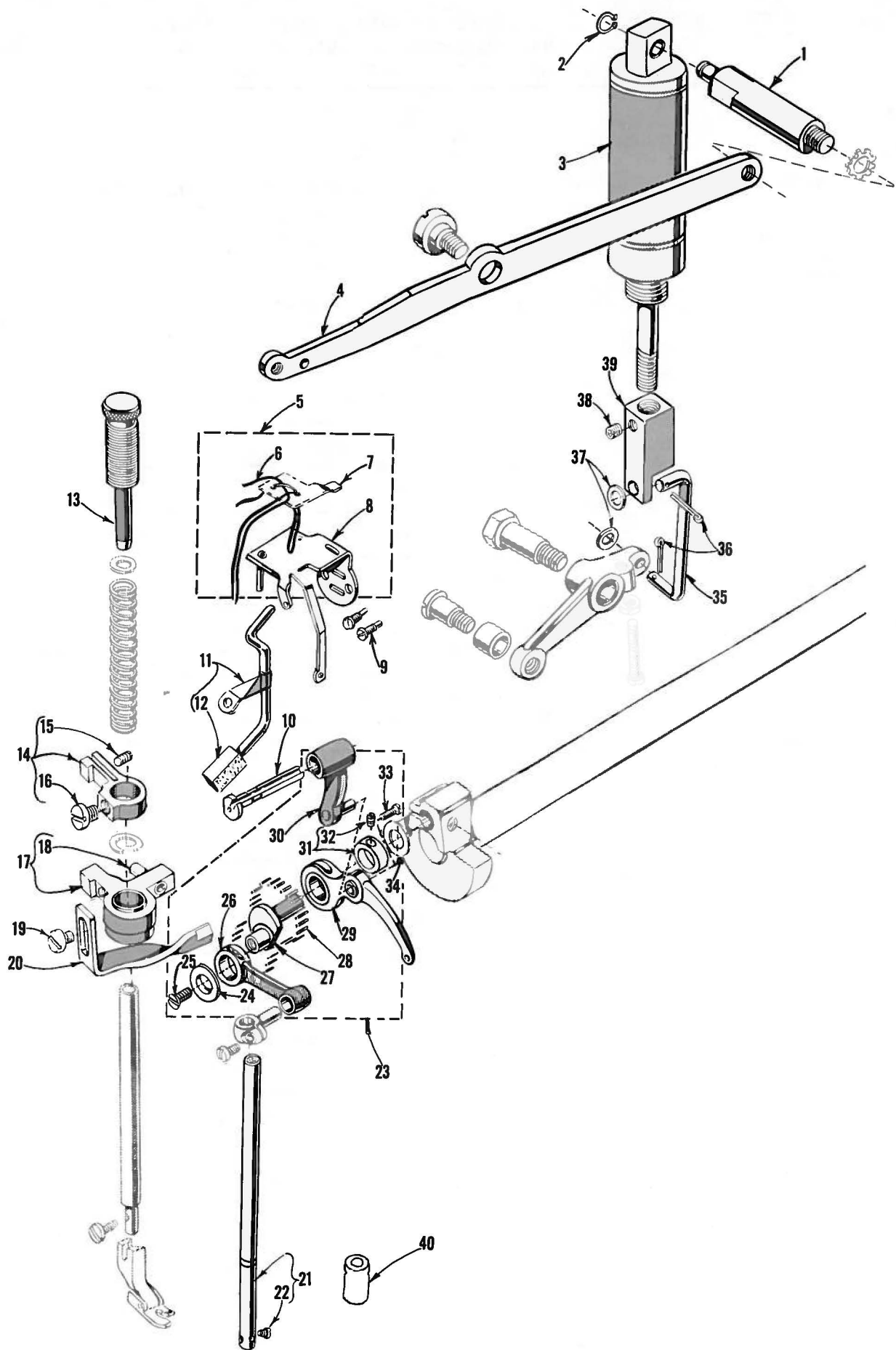
\* Refer to insert sheet with needle positioner for repair parts and order under the Union Special number, if available. Also refer to insert sheet for guardian maintenance and other information regarding the needle positioner and electrical circuitry.

+ Available as extra send and charge item, component parts are the same as No. 63913 A except for one each Nos. G22564 F, G22716 B, G61414 C and two No. G22564 E.



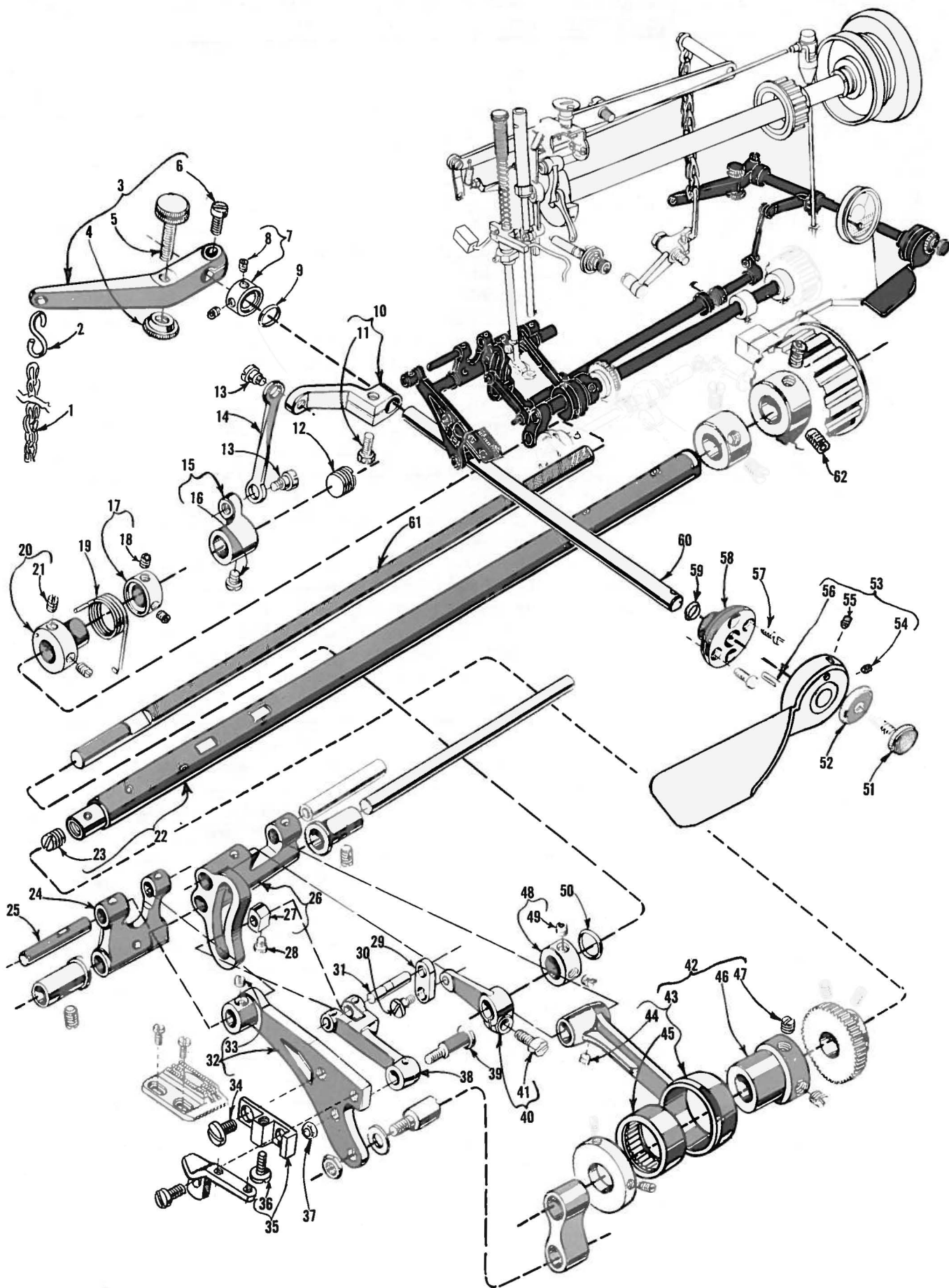
THREAD WIPER, CUTTING SOLENOID, TENSION RELEASE  
SOLENOID, MOUNTING BRACKET, BOBBIN CASE HOLDER  
POSITIONING FINGER AND KNIFE ASSEMBLY

| Ref.<br>No. | Part<br>No. | Description  | Amt.<br>Req. |
|-------------|-------------|--|--------------|
| 1           | 29475 BJ    | Bobbin Case Holder Positioning Finger and Knife<br>Assembly----- | 1            |
| 2           | 706 A       | Ball Stud-----   | 1            |
| 3           | 63495 J     | Pivot Release Lever-----   | 1            |
| 4           | 22585       | Screw-----   | 1            |
| 5           | 22863 D     | Screw-----   | 1            |
| 6           | 77          | Screw-----   | 1            |
| 7           | 63470 W     | Upper Knife, marked "AF"-----                                    | 1            |
| 8           | 73 A        | Screw, for knives-----   | 4            |
| 9           | 63449 A     | Finger Knife and Thread Holder, marked "AE"-----                 | 1            |
| 10          | 63471 B     | Lower Knife Carrier, marked "E"-----                             | 1            |
| 11          | G61414 KX   | Positioning Finger, marked "A"-----                              | 1            |
| 12          | G61441 KX   | Eccentric Bushing-----   | 1            |
| 13          | 907         | Nut-----   | 1            |
| 14          | 671 A-3     | Knife Air Cylinder-----  | 1            |
| 15          | 22874       | Screw, for positioning finger and knife assembly-----            | 2            |
| 16          | 652 S-40    | Washer-----  | 1            |
| 17          | 21233 FB    | Nut-----   | 1            |
| 18          | 63495 N     | Knife Driving Lever-----   | 1            |
| 19          | 22760 C     | Screw-----   | 2            |
| 20          | 63495 B     | Knife Return Spring-----   | 1            |
| 21          | 63495 E     | Return Spring Positioner-----                                    | 1            |
| 22          | 22585 A     | Screw, for return spring positioner-----                         | 1            |
| 23          | 22777 A     | Screw, for knife driving lever-----                              | 1            |
| 24          | 61434 G     | Washer-----  | 1            |
| 25          | 671 G-1     | Clevis, for knife air cylinder-----                              | 1            |
| 26          | 63495 L     | Link-----  | 1            |
| 27          | 41071 G     | Nut-----   | 2            |
| 28          | 22585 B     | Screw, for mounting bracket-----                                 | 2            |
| 29          | 63495 K     | Mounting Bracket-----  | 1            |
| 30          | 22575       | Screw-----   | 1            |
| 31          | 41071 G     | Nut-----   | 1            |
| 32          | 63495 M     | Cylinder Stop-----   | 1            |
| 33          | 660-219 N   | Roll Pin-----  | 1            |
| 34          | 18          | Nut-----   | 1            |
| 35          | 63470 T     | Thread Wiper Solenoid Mounting Bracket-----                      | 1            |
| 36          | 22596 D     | Set Screw-----   | 1            |
| 37          | 660-113     | Washer, brass-----   | 4            |
| 38          | 651 J-12    | Nut-----   | 4            |
| 39          | 29480 FM    | Rotary Tension Release Solenoid Assembly-----                    | 1            |
| 40          | 63458 H     | Rotary Solenoid Cover-----                                       | 1            |
| 41          | 660-360     | Rotary Solenoid-----   | 1            |
| 42          | 670 G-18    | Female Connector Sleeve, green-----                              | 2            |
| 43          | 670 G-23    | Male Wire Terminal-----  | 2            |
| 44          | 660-347     | Solenoid Lead Cover-----   | 1            |



FOOT LIFTER LEVER MECHANISM, NEEDLE BAR, LIFTER LEVER  
HEAD OILER AND OIL SIPHON HEAD TUBE

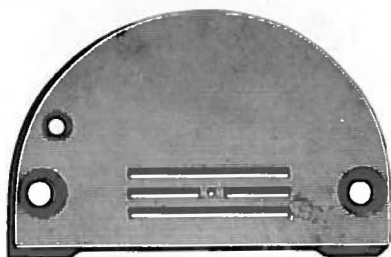
| Ref.<br>No. | Part<br>No. | Description  | Amt.<br>Req. |
|-------------|-------------|--|--------------|
| 1           | 63468 B     | Lifter Lever Extension Stud-----                                       | 1            |
| 2           | 660-245     | Retaining Ring-----  | 2            |
| 3           | 660-397     | Air Cylinder-----  | 1            |
| 4           | 63466 A     | Lifter Lever, for Style 63400 LC-----                                  | 1            |
| 5           | 63493 HA    | Head Oiler Assembly, for Style 63400 LC-----                           | 1            |
| 6           | WI-30       | Oil Wick, 15 inches (381 mm) long-----                                 | 1            |
| 7           | 666-191     | Oil Distribution Felt-----   | 1            |
| 8           | 27-876 Blk. | Oil Shut-off Bracket-----  | 1            |
| 9           | 22784 K     | Screw, for head oiler assembly-----                                    | 2            |
| 10          | 63451 B     | Take-up Lever Pin, for Style 63400 LC-----                             | 1            |
| 11          | 63494 S     | Oil Siphon Head Tube, for Style 63400 LC-----                          | 1            |
| 12          | 666-214     | Oil Felt-----  | 1            |
| 13          | 63457 N     | Presser Spring Regulator, for Style 63400 LC-----                      | 1            |
| 14          | 63459 A     | Presser Bar Guide-----   | 1            |
| 15          | 73 C        | Set Screw-----   | 1            |
| 16          | 22570       | Screw-----   | 1            |
| 17          | 63458 B     | Presser Bar Connection, for Styles 63400 LB and LY----                 | 1            |
| -           | 63458 L     | Presser Bar Connection, for Style 63400 LC-----                        | 1            |
| 18          | 660-219     | Roll Pin-----  | 1            |
| -           | 51-454 Blk. | Pin-----   | 1            |
| 19          | 22513       | Screw, for tension release cam-----                                    | 1            |
| 20          | 63458 D     | Tension Release Cam, for Styles 63400 LB and LY-----                   | 1            |
| -           | 63458 DA    | Tension Release Cam, for Style 63400 LC-----                           | 1            |
| 21          | 63417 A     | Needle Bar, marked "EW", for Style 63400 LC-----                       | 1            |
| 22          | 22768 A     | Screw, for needle-----   | 1            |
| 23          | 29486 U     | Take-up Lever and Needle Bar Link Assembly, for Style<br>63400 LC----- | 1            |
| 24          | 63455       | Thrust Washer-----   | 1            |
| 25          | 22757 D     | Screw-----   | 1            |
| 26          | 63455 A     | Needle Bar Link-----   | 1            |
| 27          | 63452 B     | Take-up Lever Crank Pin, marked "K"-----                               | 1            |
| 28          | 61451 D-625 | Needle Bearing, .0625 inch (1.588 mm) diameter----                     | 38           |
| -           | 61451 D-626 | Needle Bearing, .0626 inch (1.590 mm) diameter----                     | 38           |
| -           | 61451 D-627 | Needle Bearing, .0627 inch (1.593 mm) diameter----                     | 38           |
| 29          | 61451       | Take-up Lever-----   | 1            |
| 30          | 63451 A     | Take-up Lever Link-----  | 1            |
| 31          | 460         | Collar-----  | 1            |
| 32          | 88          | Screw-----   | 1            |
| 33          | 22784 E     | Screw-----   | 1            |
| 34          | 61351 C     | Thrust Washer-----   | 1            |
| 35          | 63468 C     | Air Cylinder Link-----   | 1            |
| 36          | 660-142     | Cotter Pin, for air cylinder link-----                                 | 2            |
| 37          | 53634 C     | Washer-----  | 2            |
| 38          | 22894 W     | Set Screw, for clevis-----   | 1            |
| 39          | 63468 A     | Clevis-----  | 1            |
| 40          | 63454       | Needle Bar Bushing, for Style 63400 LC-----                            | 1            |



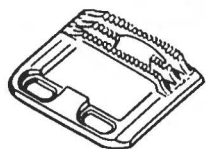
REVERSE FEED MECHANISM PARTS (FOR STYLE 63400 LY)

| Ref.<br>No. | Part<br>No. | Description   | Amt.<br>Req. |
|-------------|-------------|---|--------------|
| * 1         | 421 D-28    | Treadle Chain, 28 inches (711.20 mm) long-----  | 1            |
| * 2         | 660-264     | "S" Hook, for treadle chain-----  | 2            |
| * 3         | 63444 A     | Reverse Feed Foot Control Operating Lever-----  | 1            |
| 4           | 64 B        | Lock Nut, for stop screw-----   | 1            |
| 5           | 64 A        | Stop Screw, foot control operating lever-----   | 1            |
| 6           | 22517       | Clamp Screw-----  | 1            |
| 7           | 63444 C     | Collar, for reverse feed control shaft-----   | 1            |
| 8           | 22894 W     | Set Screw-----  | 2            |
| 9           | 660-206     | "O" Ring, for reverse feed control shaft-----   | 1            |
| 10          | 63444 D     | Reverse Feed Control Shaft Rocker Lever-----  | 1            |
| 11          | 22519 H     | Screw-----  | 1            |
| 12          | 22539 M     | Plug Screw, for reverse feed shaft-----   | 1            |
| 13          | 86          | Screw, for reverse feed control connecting link-----                                  | 2            |
| 14          | 63444 E     | Reverse Feed Control Connecting Link-----   | 1            |
| 15          | 63444 F     | Reverse Feed Shaft Lever, right-----  | 1            |
| 16          | 22570 A     | Screw-----  | 1            |
| 17          | 63432 H     | Collar, right, for reverse feed shaft return spring-----                              | 1            |
| 18          | 22894 W     | Set Screw-----  | 2            |
| 19          | G61447      | Reverse Feed Shaft Return Spring-----   | 1            |
| 20          | G61448      | Collar, left, for reverse feed shaft return spring-----                               | 1            |
| 21          | 531         | Screw-----  | 2            |
| 22          | 63432 F     | Feed Driving Shaft-----   | 1            |
| 23          | 22586       | Plug Screw-----   | 1            |
| 24          | G61436      | Feed Rocker-----  | 1            |
| 25          | 63435       | Feed Rocker Shaft-----  | 1            |
| 26          | G61436 A    | Reverse Feed Rocker, with drive crank-----  | 1            |
| 27          | G61436 C    | Sliding Block-----  | 1            |
| 28          | 22830       | Screw, for sliding block (used in place of screw No. 88 B)-----                       | 1            |
| 29          | 63433 B     | Reverse Feed Lever Link-----  | 1            |
| 30          | 99284       | Screw, for left reverse feed shaft lever-----   | 1            |
| 31          | 96505       | Link Pin, for reverse feed rocker link-----   | 1            |
| 32          | 63434 B     | Feed Bar-----   | 1            |
| 33          | 88          | Set Screw-----  | 1            |
| 34          | 88 D        | Screw, feed dog holder support-----   | 1            |
| 35          | 63439 B     | Feed Dog Holder Support-----  | 1            |
| 36          | 22775 A     | Screw, for feed dog holder support-----   | 1            |
| 37          | 12934 A     | Nut, for reverse feed rocker link stud-----   | 1            |
| 38          | G61436 B    | Reverse Feed Rocker Link-----   | 1            |
| 39          | 99285       | Reverse Feed Rocker Link Stud-----  | 1            |
| 40          | 63436 U     | Reverse Feed Shaft Lever, left-----   | 1            |
| 41          | 22519 H     | Clamp Screw-----  | 1            |
| 42          | 29126 EF    | Feed Driving Eccentric Assembly-----  | 1            |
| 43          | 61438 A     | Connecting Rod-----   | 1            |
| 44          | 88          | Set Screw-----  | 1            |
| 45          | 660-225     | Needle Bearing-----   | 1            |
| 46          | 63437 C     | Feed Driving Eccentric-----   | 1            |
| 47          | 95          | Set Screw-----  | 2            |
| 48          | 63432 H     | Thrust Collar, left, for reverse feed shaft-----                                      | 1            |
| 49          | 22894 W     | Set Screw-----  | 2            |
| 50          | 660-207     | "O" Ring, for reverse feed shaft-----   | 1            |
| 51          | 99282       | Adjusting Screw, for adjusting stitch length-----                                     | 1            |
| 52          | 99283       | Lock Nut, for adjusting screw-----  | 1            |
| 53          | 63444 G     | Reverse Feed Hand Control Operating Lever-----  | 1            |
| 54          | 22894 P     | Set Screw-----  | 1            |
| 55          | 22894 U     | Spot Screw-----   | 1            |
| 56          | 1246 L-1/2  | Drive Pin-----  | 1            |
| 57          | 97          | Screw, for reverse feed stitch control flange-----                                    | 2            |
| 58          | 63449       | Reverse Feed Stitch Control Flange-----   | 1            |
| 59          | 660-206     | "O" Ring, for reverse feed stitch control flange-----                                 | 1            |
| 60          | 63444 B     | Reverse Feed Control Shaft-----   | 1            |
| 61          | 63432 G     | Reverse Feed Shaft-----   | 1            |
| 62          | 22651 CD-5  | Screw, for feed driving shaft sprocket (used in place of screw No.<br>22653 D-6)----- | 2            |

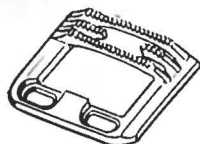
\* Not furnished with machine, available as an extra send and charge item, where a foot treadle is desirable for operating the reverse feed mechanism.



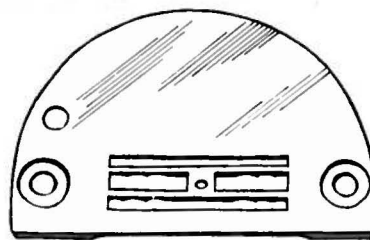
61224 C  
Specify Diameter  
of Needle Hole



63405 K



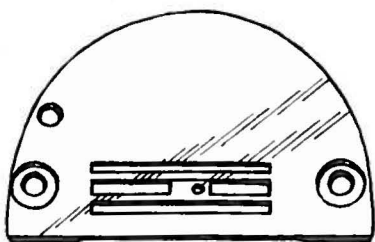
63405 G



61224 F  
Specify Diameter  
of Needle Hole



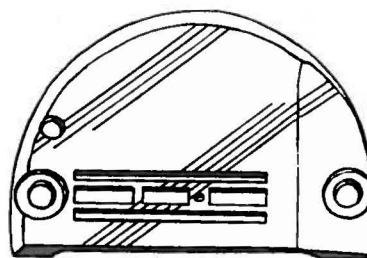
63405 E



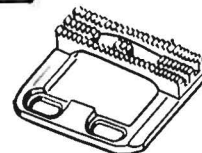
61424 Y  
Specify Diameter  
of Needle Hole



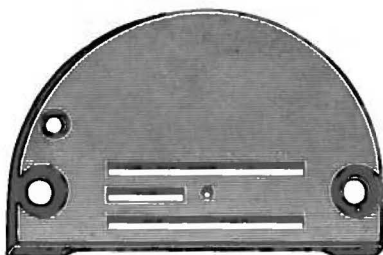
63405 D



61424 AB  
Specify Diameter  
of Needle Hole



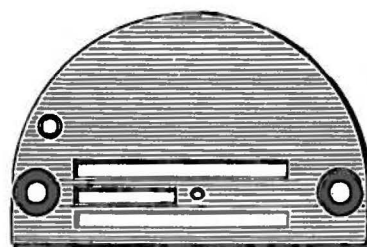
63405 F



61324 A  
Specify Diameter  
of Needle Hole



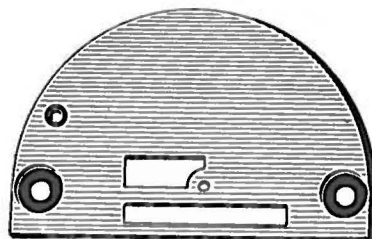
63405 M



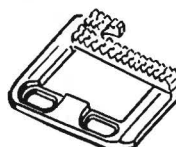
61324 C  
Specify Diameter  
of Needle Hole



63405 N



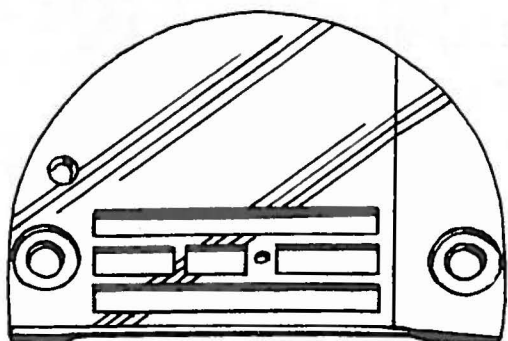
61324 B  
Specify Diameter  
of Needle Hole



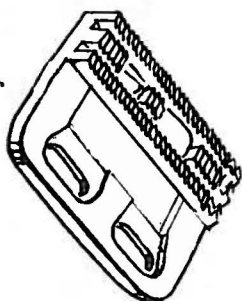
63405 J

# THROAT PLATE AND FEED DOG COMBINATIONS

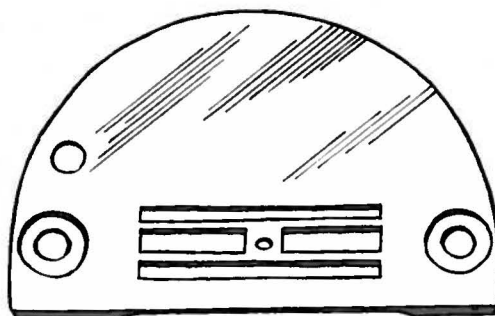
| <u>Part No.</u> | <u>Description</u>   |
|-----------------|--|
| 61224 C-043     | With .043 inch (1.09 mm) needle hole,for seaming and hemming silk and rayon; .063 inch (1.59 mm) needle hole, for seaming dresses;also in sizes .073 and .083 inch (1.85 and 2.11 mm) needle holes,for seaming work shirts and dress pants; feed dog Nos. 63405 G, 63405 K; presser feet Nos. 61220 C, 61220 J, 61320 AB, .085 inch (2.11 mm) thick. Stitch Range 6 to 18 S.P.I. |
| 61224 F-063     | With .063 inch (1.59 mm) needle hole, for setting pockets of dress shirts, also in sizes .083 and .093 inch (2.11 and 2.36 mm) needle holes, for work shirts; feed dog No. 63405 E, presser feet Nos. 61320 AH, 61320 AJ,.085 inch (2.16 mm) thick. Stitch Range 6 to 18 S.P.I.  |
| 61324 A-063     | With .063 inch (1.59 mm) needle hole, for miscellaneous operations on pants, dungarees and overalls; also in size .093 inch (2.36 mm) needle hole; feed dog No. 63405 M; presser foot No. 61220 P, .125 inch(3.18 mm) thick. Stitch Range 6 to 18 S.P.I.   |
| 61324 B-063     | With .063 inch (1.59 mm) needle hole, for edge stitching on suit coats and vests; also in sizes .073, .083 and .093 inch (1.85, 2.11 and 2.36 mm) needle holes; feed dog No. 63405 J; presser foot No. 61320,.085 inch (2.16 mm) thick. Stitch Range 6 to 18 S.P.I.  |
| 61324 C-083     | With .083 inch (2.11 mm) needle hole, for hemming work pants; also in size .093 inch (2.36 mm) needle hole, for hemming high back overall suspenders; feed dog No. 63405 N; presser foot No. 61320 C, .125 inch (3.18 mm) thick. Stitch Range 6 to 18 S.P.I.   |
| 61424 Y-053     | With .053 inch (1.37 mm) needle hole, for seaming and hemming shirts;also in sizes .063 and .073 inch(1.59 and 1.85 mm)needle holes;feed dog No.63405 D; presser foot No. 61220 J, .085 inch (2.16 mm) thick. Stitch Range 7 1/2 to 18 S.P.I.  |
| 61424 AB-053    | With .053 inch (1.37 mm) needle hole,for miscellaneous seaming operations on medium weight wash and wear materials; also in size .063 inch (1.59 mm) needle hole; feed dog No. 63405 F; presser foot No. 61420 BV, .125 inch (3.18 mm) thick. Stitch Range 7 1/2 to 18 S.P.I.  |
| 63405 D         | Marked "JB", teeth cut 22 per inch (1.15 mm per tooth), for seaming and hemming shirts; throat plate No. 61424 Y-053; presser foot No. 61220 J.  |
| 63405 E         | Marked "HX", teeth cut 16 per inch (1.59 mm per tooth), for setting pockets on shirts; throat plate No. 61224 F-063;presser feet Nos. 61320 AH,61320 AJ  |
| 63405 F         | Marked "CU", teeth cut 22 per inch (1.15 mm per tooth), for miscellaneous seaming operations on medium weight wash and wear materials; throat plate No. 61424 AB-053; presser foot No. 61420 BV.   |
| 63405 G         | Marked "HW", teeth cut 22 per inch (1.15 mm per tooth),for plain seaming and hemming on dress shirts, blouses, dresses and other light material; throat plate No. 61224 C-043; presser feet Nos. 61220 C, 61220 J, 61320 AB.   |
| 63405 J         | Marked "CW", teeth cut 16 per inch (1.59 mm per tooth),for edge stitching on suit coats and vests; throat plate No. 61324 B-063; presser foot No. 61320.   |
| 63405 K         | Marked "HU", teeth cut 16 per inch (1.59 mm per tooth), for plain seaming on work shirts, dress and semi-dress pants; throat plate No. 61224 C-073, presser feet Nos. 61220 C, 61220 J, 61320 AB.  |
| 63405 M         | Marked "HY", teeth cut 14 per inch (1.81 mm per tooth), for miscellaneous operations on work pants, dungarees and overalls, throat plate No. 61324 A-063; presser foot No. 61220 P.  |
| 63405 N         | Marked "HZ", teeth cut 14 per inch (1.81 mm per tooth),for hemming high back overall suspenders; throat plate No. 61324 C-083; presser foot No. 61320 C.   |



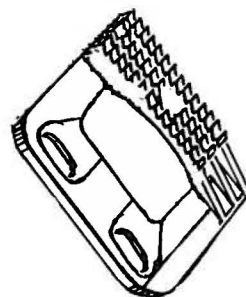
61424 AA-063  
Specify Diameter  
of Needle Hole



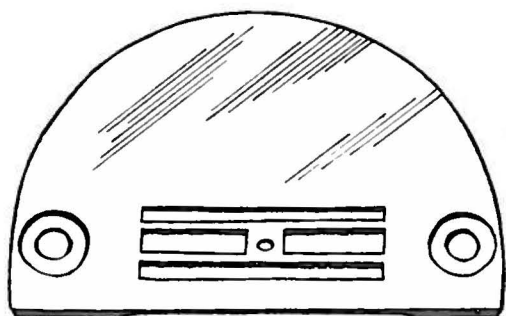
63405 AA



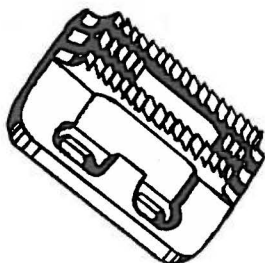
61424 AT-053



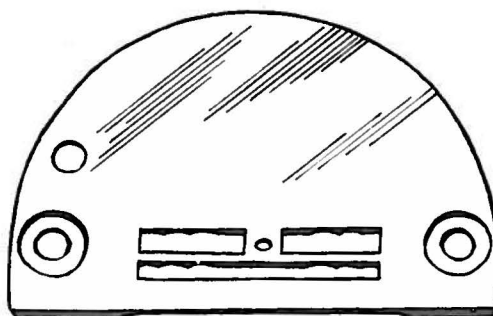
63405 V



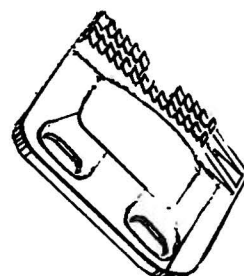
61324 L-093



63405 AC



61424 AU-053



63405 W

THROAT PLATE AND FEED DOG COMBINATIONS

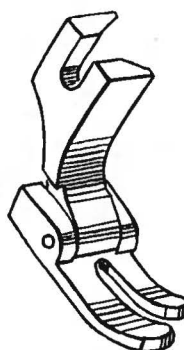
| <u>Part No.</u> | <u>Description</u>  |
|-----------------|---|
| 61324 L-093     | With .093 inch (2.36 mm) needle hole, for seaming heavy coats and trousers, also in size .063 inch (1.59 mm) needle hole; feed dog No. 63405 AC, presser foot No. 61320 S, .085 inch (2.16 mm) thick, Stitch Range 6 to 18 S.P.I.   |
| 61424 AA-063    | With .063 inch (1.59 mm) needle hole, for miscellaneous seaming operations on medium weight wash and wear materials, also in size .053 inch (1.37 mm) needle hole; feed dog No. 63405 AA, presser foot No. 61420 BU, .125 inch (3.18 mm) thick. Stitch Range 9 to 18 S.P.I. |
| 61424 AT-053    | With .053 inch (1.37 mm) needle hole, for top stitching collars made of wash and wear material; feed dog No. 63405 V, presser foot No. 61420 CN, .085 inch (2.16 mm) thick. Stitch Range 10 to 18 S.P.I.  |
| 61424 AU-053    | With .053 inch (1.37 mm) needle hole, for top stitching collars made of wash and wear material; feed dog No. 63405 W, presser foot No. 61420 CP, .085 inch (2.16 mm) thick. Stitch Range 11 to 18 S.P.I.  |
| 63405 V         | Marked "EC", teeth cut 22 per inch (1.15 mm per tooth), for top stitching collars made of wash and wear material; throat plate No. 61424 AT-053, presser foot No. 61420 CN.   |
| 63405 W         | Marked "ED", teeth cut 22 per inch (1.15 mm per tooth), for top stitching collars made of wash and wear material; throat plate No. 61424 AU-053, presser foot No. 61420 CP.   |
| 63405 AA        | Marked "ET", teeth cut 22 per inch (1.15 mm per tooth), for miscellaneous seaming operations on medium weight wash and wear materials; throat plate No. 61424 AA-063, presser foot No. 61420 BU.  |
| 63405 AC        | Marked "PW", teeth cut 12 per inch, (2.13 mm per tooth), for seaming heavy coats and trousers; throat plate No. 61324 L-093, presser foot No. 61320 S.  |



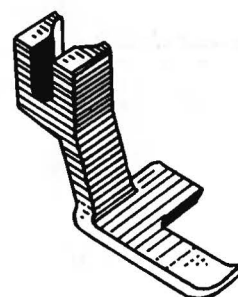
61220 C  
Specify Width



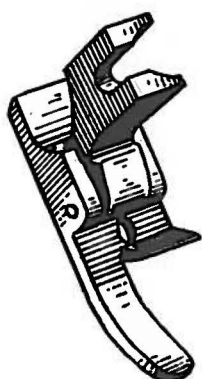
61220 J



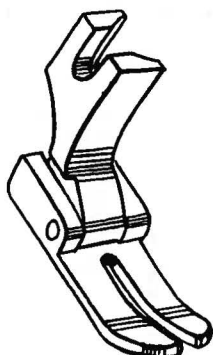
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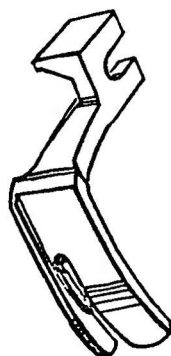
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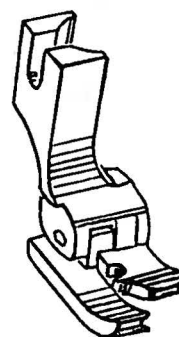
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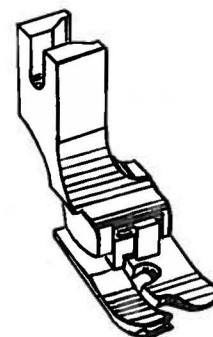
61320 S



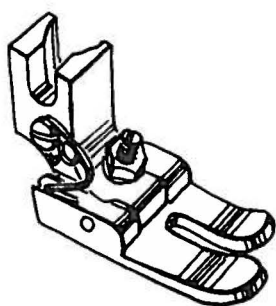
61320 AB



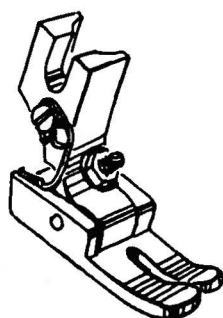
61320 AH



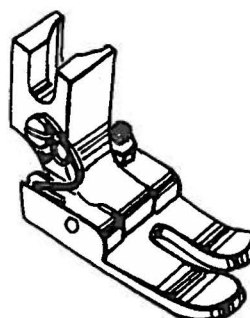
61320 AJ



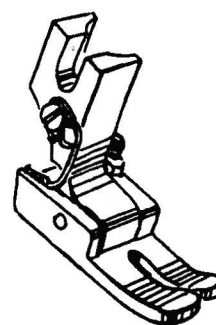
61420 BU



61420 BV



61420 CN



61420 CP

PRESSER FEET

| <u>Part No.</u> | <u>Description</u>  |
|-----------------|---|
| 61220 C-1/8     | For hemming shirts, 1/8 inch (3.18 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)  |
| 61220 C-5/32    | For hemming shirts, 5/32 inch (3.97 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)   |
| 61220 C-3/16    | For hemming shirts, 3/16 inch (4.76 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)   |
| 61220 C-1/4     | For hemming shirts, 1/4 inch (6.35 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)  |
| 61220 J         | For seaming light and medium weight woven materials; has spring for raising toe; feed dog Nos. 63405 D, 63405 G, 63405 K; throat plate Nos. 61224 C-043, 61424 Y-053 (spring No. 61230 AK, shank No. 61330, hinge pin No. 61330 B-31, bottom No. 61330 Z)             |
| 61220 P         | For miscellaneous operations on medium weight materials; has spring for raising toe, feed dog No. 63405 M; throat plate No. 61324 A-063 (spring No. 51930, shank No. 61330, hinge pin No. 61330 B-35, bottom No. 61330 AG)  |
| 61320           | For edge stitching on suit coats and vests; feed dog No. 63405 J; throat plate No. 61324 B-063  |
| 61320 C         | For hemming high back overall suspenders; feed dog No. 63405 N; throat plate No. 61324 C-083 (shank No. 61330, bottom No. 61330 C, hinge pin No. 61330 B-39)  |
| 61320 S         | For seaming heavy coats and trousers; feed dog No. 63405 AC, throat plate No. 61324 L-093 (shank No. 61330, bottom No. 61330 T, hinge pin No. 61330 B-39)   |
| 61320 AB        | For edge stitching on pants flies, guide 1/16 inch (1.59 mm) to right of needle; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-073   |
| 61320 AH        | For edge stitching shirt pockets, left side yielding; feed dog No. 63405 E; throat plate No. 61224 F-063 (spring No. 51930, hinge pin No. 61330 B-31, bottom No. 61330 AM, yielding section, left No. 61330 AN, shank No. 61330 AP)                                   |
| 61320 AJ        | For edge stitching shirt pockets, left side yielding; feed dog No. 63405 E, throat plate No. 61224 F-063 (spring No. 51930, shank No. 61230 X, hinge pin No. 61330 B-35, bottom No. 61330 AR, yielding section, left No. 61330 AS)                                    |
| 61420 BU        | For miscellaneous seaming operations on medium weight wash and wear materials; feed dog No. 63405 AA, throat plate No. 61424 AA-063 (screw No. 226, hinge adjusting screw No. 22565 E, nut No. 51430 F, shank No. 61430 AA, bottom No. 61430 AB, spring No. 61430 BB) |
| 61420 BV        | For miscellaneous seaming operations on wash and wear shirts and pants; feed dog No. 63405 F; throat plate No. 61424 AB-053 (screw No. 226, hinge adjusting screw No. 22565 E, nut No. 51430 F, shank No. 61430 AA, bottom No. 61430 AC, spring No. 61430 BB)         |
| 61420 CN        | For top stitching collars made of wash and wear materials; feed dog No. 63405 V, throat plate No. 61424 AT-053 (screw No. 226, hinge adjusting screw No. 22565 D, nut No. 51430 F, shank No. 61430 CM, bottom No. 61430 CN, spring No. 61430 BB)                      |
| 61420 CP        | For top stitching collars made of wash and wear materials; feed dog No. 63405 W, throat plate No. 61424 AU-053 (screw No. 226, hinge adjusting screw No. 22565 D, nut No. 51430 F, shank No. 61430 CM, bottom No. 61430 CP, spring No. 61430 BB)                      |



From the library of: Superior Sewing Machine & Supply LLC

# Tools & Gauges

| Description   | Order Number | Description  | Order Number |
|---|--------------|--|--------------|
| <b>KITS:</b>  |              | <b>SCALE:</b>  |              |
| Floor Mechanics Tool Kit includes TTC Nos. 4, 5, 10-13, 15-20, 22, 23, 27, 28, 30, 33, 35, 36, 37-42, 48, 57, 58, 72, 73  | TTC-1        | Metal scale $\frac{1}{2}$ " x 6"   | TTC-15       |
| Traveling Mechanics Tool Kit same as TTC-1 plus Nos. 7, 43, 44, 49-56   | TTC-2        | Metal scale $\frac{1}{2}$ " x 6", inches and metric  | TTC-86       |
|   |              | Metal scale $\frac{1}{4}$ " x 6"   | TTC-66       |
| <b>ALLEN WRENCHES:</b>  |              | <b>SCISSORS:</b>   |              |
| Screwdriver handle and 4 Allen Bits   |              | 8"   | TTC-32       |
| Sizes $\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ "   | TTC-4        | <b>SCREWDRIVERS:</b>   |              |
| Set Standard 'L' shape Allen Wrenches   | TTC-57       | Set various size wood handled screwdrivers: 4", 10", 2-8", 6", 14", 12"  | TTC-5        |
| Set Metric 'L' shape Allen Wrenches   | TTC-8        | 10" x $\frac{3}{16}$ " blade   | TTC-24       |
| Allen Cluster   | TTC-62       | 8" x $\frac{3}{16}$ " blade, plastic handle Stanley  | TTC-73       |
|   |              | 6" x $\frac{3}{16}$ " blade  | TTC-25       |
| <b>BAGS:</b>  |              | 3" x $\frac{3}{16}$ " blade  | TTC-26       |
| Union Special Tool Pouch  | TTC-30       | 2" x $\frac{1}{8}$ " blade   | TTC-27       |
| <b>BRASS ROD:</b>   |              | 8" x $\frac{1}{8}$ " blade   | TTC-28       |
| 4 x $\frac{5}{16}$ "  | TTC-19       | Quickwedge screw starter 5"  | TTC-11       |
| <b>BRUSH:</b>   |              | Quickwedge screw starter 3"  | TTC-65       |
| Cleaning brush 6"   | TTC-23       | <b>SOCKETS:</b>  |              |
| <b>BUCKLE:</b>  |              | T-Handle, 6" extension $\frac{9}{32}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ " and $\frac{1}{2}$ " sockets all $\frac{1}{4}$ " drive | TTC-37       |
| Union Special metal belt buckle   | TTC-31       | $\frac{1}{2}$ " socket, $\frac{1}{4}$ " drive  | TTC-46       |
| <b>CLAMP:</b>   |              | $\frac{5}{16}$ " socket, $\frac{1}{4}$ " drive   | TTC-47       |
| C-Clamp 6"  | TTC-53       | Screwdriver handle for sockets $\frac{1}{4}$ " drive   | TTC-48       |
| <b>CUTTER:</b>  |              | T-Handle $\frac{1}{4}$ " drive   | TTC-63       |
| Side cutters 5"   | TTC-50       | <b>STONES:</b>   |              |
| <b>EMBLEMS:</b>   |              | Triangle India Stone 4"  | TTC-20       |
| TTC emblem for coat   | TTC-64       | Round India Stone 4"   | TTC-21       |
| <b>FILES:</b>   |              | <b>TACHOMETER:</b>   |              |
| Round 8"  | TTC-55       | Handheld digital tach 1-20,000 RPM   | TTC-67       |
| Flat 8"   | TTC-56       | <b>TEST LEADS:</b>   |              |
| Handles for files (not shown)   | TTC-77       | Red Pomona type clip   | TTC-70       |
| Diamond file for lockstitch needle guards   | TTC-60       | Black Pomona type clip   | TTC-71       |
| <b>FLASHLIGHT:</b>  |              | <b>TIMING LIGHT:</b>   |              |
| Pocket flashlight with clip   | TTC-76       | Strobe light   | TTC-75       |
| <b>GAUGES:</b>  |              | <b>TWEEZERS:</b>   |              |
| Feeler or thickness gauge, .001 thru .015   | TTC-22       | Sharp point  | TTC-16       |
| Looper Gauges set of 10 sizes: $\frac{1}{16}$ ", $\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " | TTC-33       | <b>WISE GRIPS:</b>   |              |
| Synchronizing gauge for flatbed machines (not shown)  | TTC-34       | Small 7"   | TTC-51       |
| $\frac{4}{16}$ " gauge for flatbed machines (not shown)   | TTC-35       | Large 10"  | TTC-52       |
| Needle height gauge for 39800 machines  | TTC-61       | <b>VOLT-OHM METERS:</b>  |              |
| Spreader height gauge for 52800, 52900, 57800 and 57900 machines (not shown)  | TTC-68       | Pocket VOM Multitester   | TTC-6        |
| <b>GRINDER:</b>   |              | Large VOM Multitester  | TTC-7        |
| Handee grinder kit  | TTC-74       | Case—small (not shown)   | TTC-8        |
| <b>HAMMER:</b>  |              | Case—large (not shown)   | TTC-9        |
| 4 oz. ball peen hammer  | TTC-38       | <b>WRENCHES:</b>   |              |
| <b>MAGNET:</b>  |              | Needle wrench $\frac{9}{32}$ " open end, curved for needle and looper nuts   | TTC-17       |
| Pocket magnet 8"  | TTC-10       | Looper avoid wrench for classes 35800 and 36200 (not shown)  | TTC-85       |
| <b>PLIERS:</b>  |              | $\frac{9}{32}$ " x $\frac{1}{4}$ " curved box end  | TTC-18       |
| Slip joint pliers 6"  | TTC-12       | $\frac{1}{2}$ " open and box end   | TTC-39       |
| Needle nose pliers 6" (serrated jaws)   | TTC-13       | $\frac{3}{8}$ " open and box end   | TTC-40       |
| Needle nose pliers 6" (smooth jaw)  | TTC-49       | $\frac{5}{16}$ " open and box end  | TTC-41       |
| Plastic grips for pliers  | TTC-14       | $\frac{1}{4}$ " open and box end   | TTC-81       |
| Snap ring pliers  | TTC-69       | $\frac{7}{16}$ " open and box end  | TTC-42       |
| Grooved pliers HL-14P   | TTC-84       | $\frac{5}{8}$ " x $\frac{9}{16}$ " open end  | TTC-43       |
| <b>PUNCH:</b>   |              | $1\frac{1}{16}$ " x $\frac{3}{4}$ " open end   | TTC-44       |
| Center punch 4"   | TTC-54       | $\frac{3}{16}$ " x $\frac{7}{32}$ " open end   | TTC-45       |
| Drift punch   | TTC-82       | $\frac{1}{4}$ " x $\frac{7}{32}$ " open end  | TTC-72       |
| <b>SANDING CLOTH:</b>   |              | 6" adjustable  | TTC-36       |
| Emery cloth (not shown)   | TTC-78       | 8" adjustable  | TTC-59       |
| Crocus cloth (not shown)  | TTC-79       | Adjustable torque wrench 0-75 in. lb. dial indicator with screwdriver bit & $\frac{1}{4}$ " drive adapter                        | TTC-3        |
| Roll emery cord (not shown)   | TTC-80       | Rod wrench for use with above torque wrench on flatbed machines  | TTC-29       |
|   |              | Adjustable torque wrench 0-36 in. lb. with bits  | TTC-83       |



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