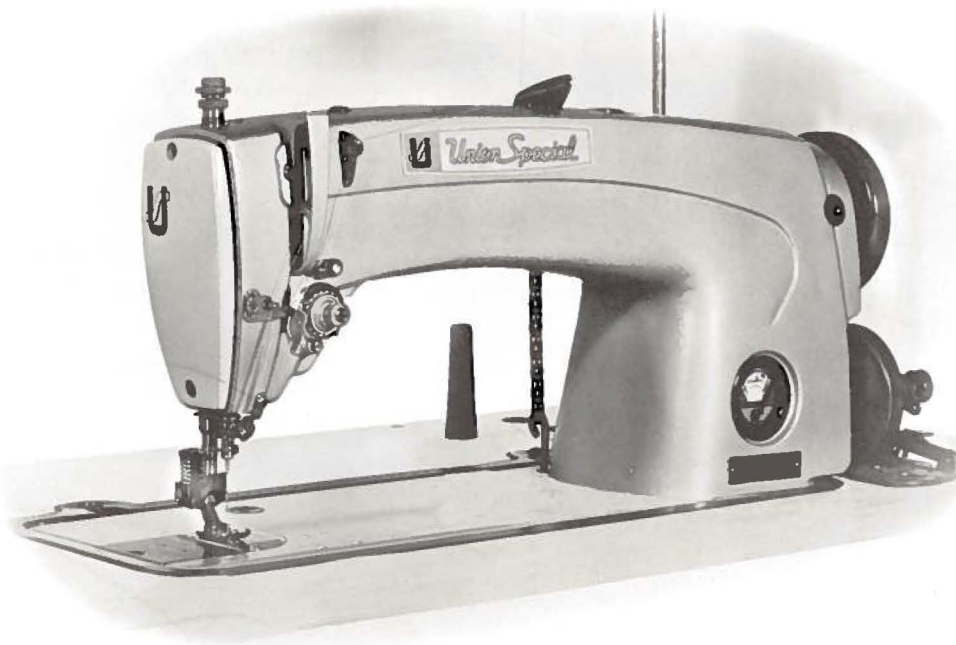


FINEST QUALITY

Union Special[®]
LEWIS • COLUMBIA

**INDUSTRIAL
SEWING
MACHINES**

**STYLES
63400AF
63400BF**



CLASS 63400

**STREAMLINED
HIGH SPEED LOCKSTITCH MACHINE
WITH
FEEDING PRESSER FOOT**

**CATALOG
No.
121AF**

Union Special **MACHINE COMPANY**

CHICAGO

From the library of: Superior Sewing Machine & Supply LLC

Catalog No. 121 AF
(Supplement to Catalog No. 121 M)

INSTRUCTIONS
FOR
ADJUSTING AND OPERATING
LIST OF PARTS

CLASS 63400

Streamlined Lockstitch

Styles

63400 AF

63400 BF

First Edition

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Union Special
MACHINE COMPANY
INDUSTRIAL SEWING MACHINES
CHICAGO

Printed in U. S. A.

July, 1971

IDENTIFICATION OF MACHINES

Each Union Special machine is identified by a Style number on a 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 AF". 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 AFZ".

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 AF and BF, but not used on Styles 63400 A and B are illustrated and listed at the back of this book.

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 AF and BF are similar to those in Catalog No. 121 M for Styles 63400 A and B respectively. The only instructions included in this catalog are the ones that are different from Styles 63400 A and B, or are additional instructions that pertain specifically to Styles 63400 AF and BF.

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, 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 Main Shaft, Equipped with Feeding Presser Foot and Rotary Needle Thread Tension, Maximum Work Space to Right of Needle Bar 11 1/8 Inches.

63400 AF For miscellaneous plain seaming operations on light and medium weight work, 1 9/64 inch needle bar travel. Type 180 GXS or 180 GYS needle. Specify stitches per inch, thread size, needle type and size and edge guide. Maximum recommended speed 5500 R. P. M.

63400 BF For miscellaneous plain seaming operations on medium and medium heavy weight work, 1 13/64 inch needle bar travel. Type 180 GXS or 180 GYS needle. Specify stitches per inch, thread size, needle type and size and edge guide. Maximum recommended speed 5500 R. P. M.

NEEDLES

Each Union Special needle has both a type and a 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, which is given on the label of all needles packaged and sold by Union Special.

Needle Type 180 GXS or 180 GYS are recommended for Styles 63400 AF and BF. The description and sizes available are listed below.

<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 029, 032, 036, 040, 044, 049, 054, 060.
180 GYS	Round shank, round point, lockstitch, short length, ball eye, single groove, wide angle groove, struck groove, deep spot, chromium plated - sizes 029, 032, 036, 040, 044, 049, 054, 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 GXS, Size ".036".

Selection of the 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 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 Size</u>	<u>Mercerized Thread Size</u>	<u>Needle Size</u>
0	-	060
30	B	054 to 060
36	A	048 to 054
40	A	044 to 048
50	0	044 to 048
60	00	040 to 044
70	000	036 to 040
80	0000	032 to 036
90	0000	032 to 036
100	-	028 to 032

IDENTIFYING PARTS

Where the construction permits, each part is stamped with its part number. Parts too small for a complete catalog stamping are identified by letter symbols which distinguish one part from another that is similar in appearance.

Part numbers represent the same part, regardless of the catalog in which they appear.

IMPORTANT! ON ALL ORDERS, PLEASE INCLUDE PART NAME AND STYLE OF MACHINE FOR WHICH PART IS ORDERED.

ORDERING OF REPAIR PARTS

The arrangement of this catalog is to facilitate easy and accurate ordering of replacement parts for Styles 63400 AF and BF.

An exploded view plate at the back, covers the differences between the Standard Styles listed in this catalog and Styles 63400 A and B covered in Catalog No. 121 M. The plate presents a sector of the machine, parts being aligned as in their assembled position. On the page opposite the illustration will be found a listing of the parts with their part numbers, descriptions and the number of pieces required in the particular view being shown.

Numbers in the first column are reference numbers only, and merely indicate the position of the part in the illustration. Reference numbers should never be used in ordering parts. Always use the part number listed in the second column. The exploded view plate carries a reference number for each part available for sale.

Sub-assemblies, which are sold complete, or by separate part, are in a bracket or a solid line box on the picture plate. Component parts of sub-assemblies, which can be furnished for repairs, are indicated by indenting their descriptions under the description of the main sub-assembly.

USE GENUINE NEEDLES AND REPAIR PARTS

Success in the operation of these machines can be secured only with genuine Union Special Needles and Repair Parts as furnished by the Union Special Machine Company, its subsidiaries and authorized distributors. They are designed according to the most approved scientific principles, and are made with utmost precision. Maximum efficiency and durability are assured.

Genuine needles are packaged with labels marked *Union Special*. Genuine repair parts are stamped with the Union Special trade mark. Each trade mark is your guarantee of the highest quality in materials and workmanship.

TERMS

Prices are strictly net cash and subject to change without notice. All shipments are forwarded f.o.b. shipping point. Parcel Post shipments are insured unless otherwise directed. A charge is made to cover the postage and insurance.

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 FOR INSTALLATION

A bag of assembly parts, consisting of one frame thread eyelet, one eyelet attaching screw, one extra bobbin, two hinge studs and two screws for holding miscellaneous attachments to the bed plate, is packed with each machine.

Insert hinge studs in holes provided for them in rear of cloth plate. Assemble the upper frame eyelet (A, Fig. 2A).

STANDARD ACCESSORIES

Included also 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, and one machine rest pin. These parts are essential when setting up the machine.

TABLE TOPS

Lockstitch machines are installed in table tops, prepared with cut-out, so that the bed plate is FLUSH with the top of the machine mounting frame.

MACHINE MOUNTING FRAME INSTALLATION

On a suitable tableboard, place machine mounting frame (21393 N) in the machine cut-out with the hinge lugs to the rear (Fig. 1). 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.

Place sewing head in the frame mounting, and after being sure there is about 1/16 inch 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.

Tip machine back against 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.

MACHINE MOUNTING FRAME INSTALLATION (Continued)

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.

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.

BELTS

These machines are equipped to use either #1 "Vee" or round belts.

THREADING

Thread machine as indicated in Fig. 2A. Check spring threading with dimensional requirements, has been enlarged for clarity and described under paragraph on "THREAD CONTROL". Needle is threaded from left to right.

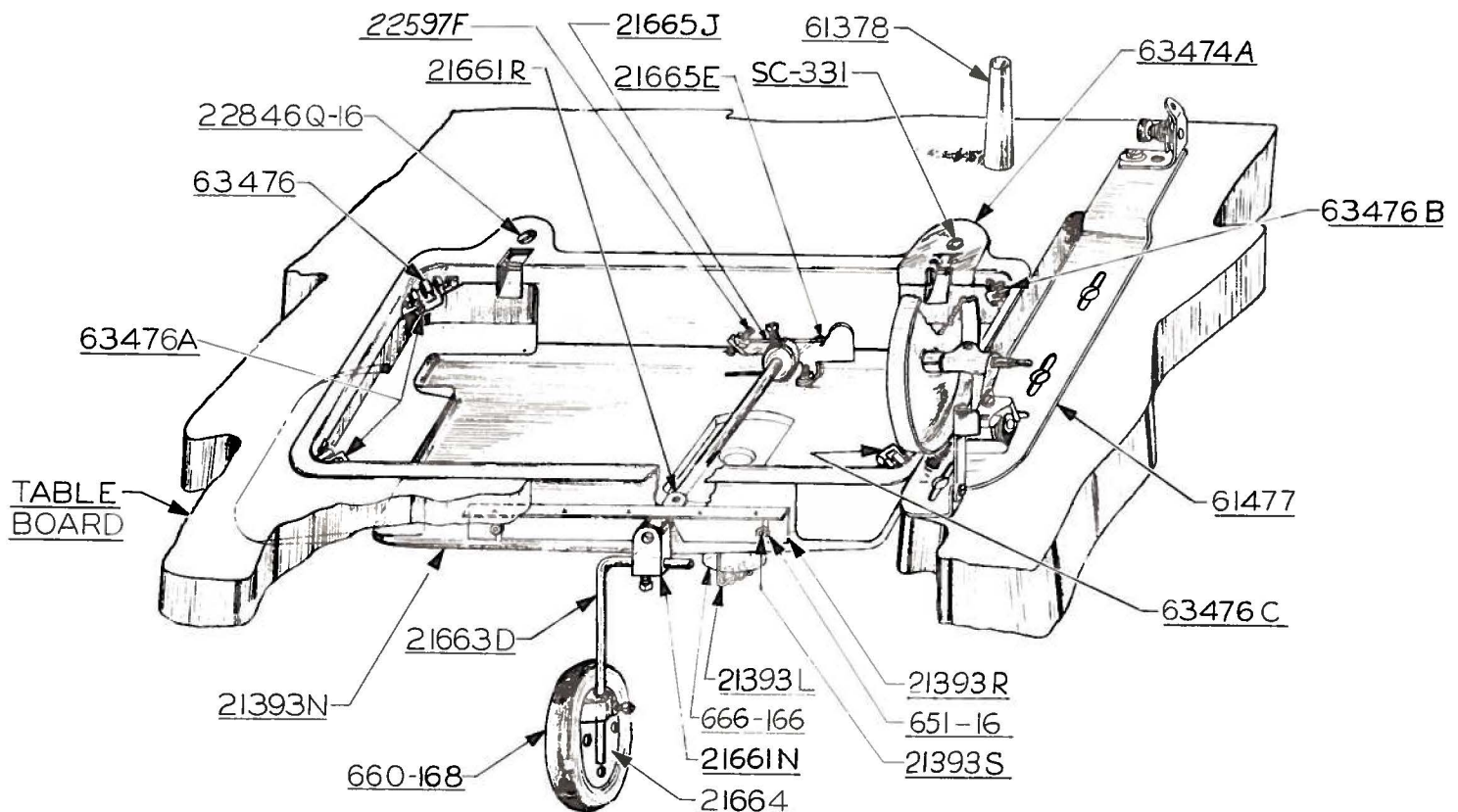


Fig. 1

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 (B, Fig. 2A) and check oil level at gauge (C); oil is at maximum level when needle is in yellow band marked "FULL". Oil should be added when needle is in yellow band 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 located on the left in the oil reservoir cover.

The quantity of oil supplied to the hook is controlled by dial located on the front of the machine just below the cloth plate. 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 all 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.

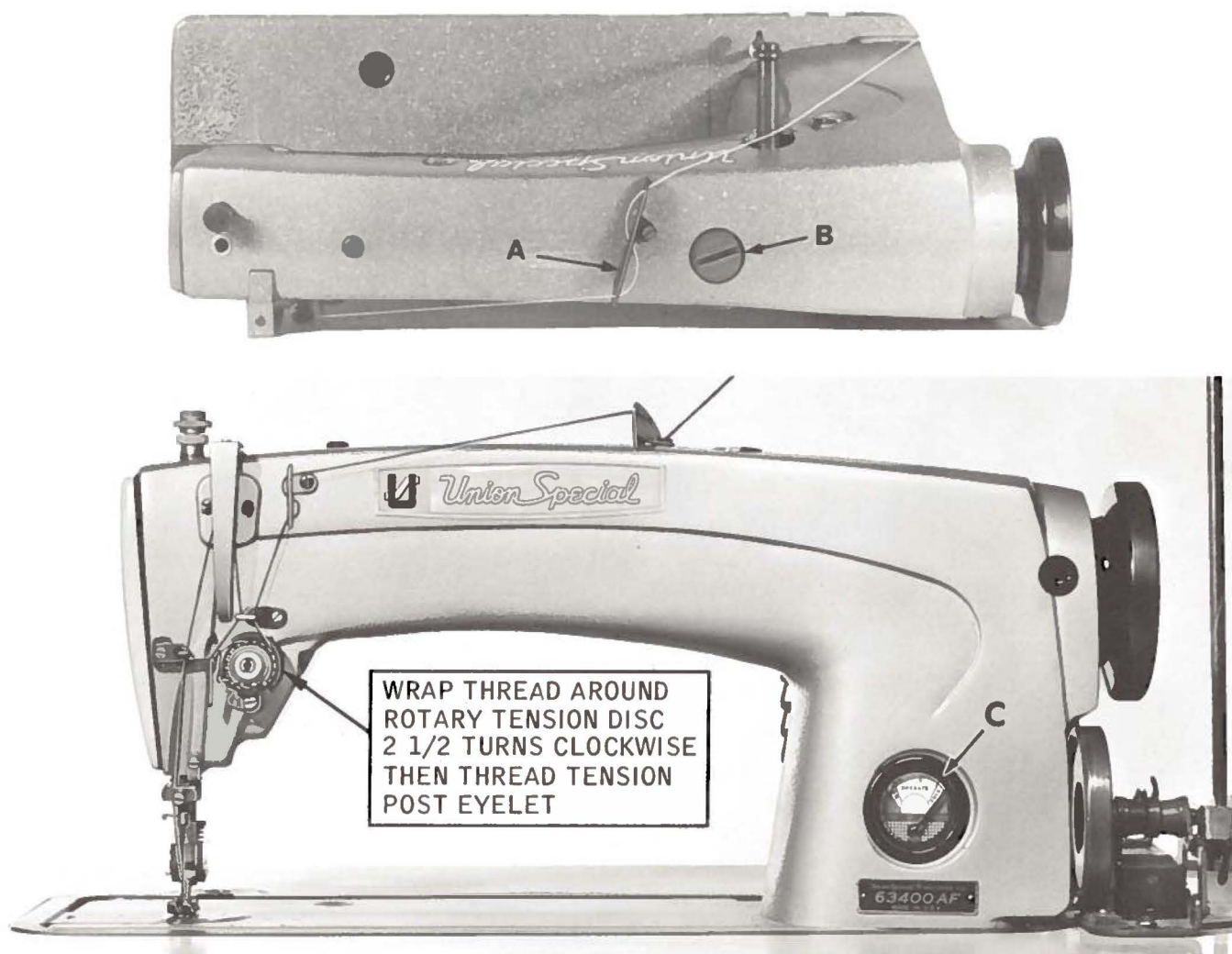


Fig. 2A

INSTRUCTIONS FOR MECHANICS

The adjusting instructions for Styles 63400 AF and BF are the same as for Styles 63400 A and B covered in Catalog No. 121 M, with the additions as follows:

TO SET THE FEED TIMING

NOTE: The feed eccentric timing line to be set at "9".

To reset the feed timing, remove needle and large plug screw located below the oil gauge. Loosen the lower sprocket screws through the hole below the oil gauge. Turn the handwheel until the needle bar is at the top of its stroke. Hold the handwheel securely and turn the lower main shaft until the timing mark "9" on the adjustable feed driving eccentric lines up with the timing line on the bed casting wall. Retighten the screws in the lower sprocket, being sure that there is no end play in the lower main shaft. Recheck the hook timing.

ADJUSTING FEED MECHANISM

The feed dog must be centered in the feed slots of the throat plate and leveled in both directions, across the line of feed as well as in the line of feed. It should rise approximately $\frac{3}{64}$ inch above the throat plate at the top of its stroke. To change the stitch length, press plunger (located in the bed base to the right and rear of needle bar) in firmly. While holding plunger down, turn handwheel in operating direction until stitch regulating finger is felt to drop into the slot of feed eccentric. Continuing to hold plunger down, turn handwheel in operating direction to increase the stitch length and in opposite direction to decrease the stitch length. Release plunger.

Stitch lengths are indicated by graduations on the indicator dial and are viewed through the window in the belt guard next to the handwheel.

ADJUSTING THE FEEDING PRESSER FOOT

Adjust the presser spring regulator (A, Fig. 16A) so that approximately three (3) threads are visible above the bed casting.

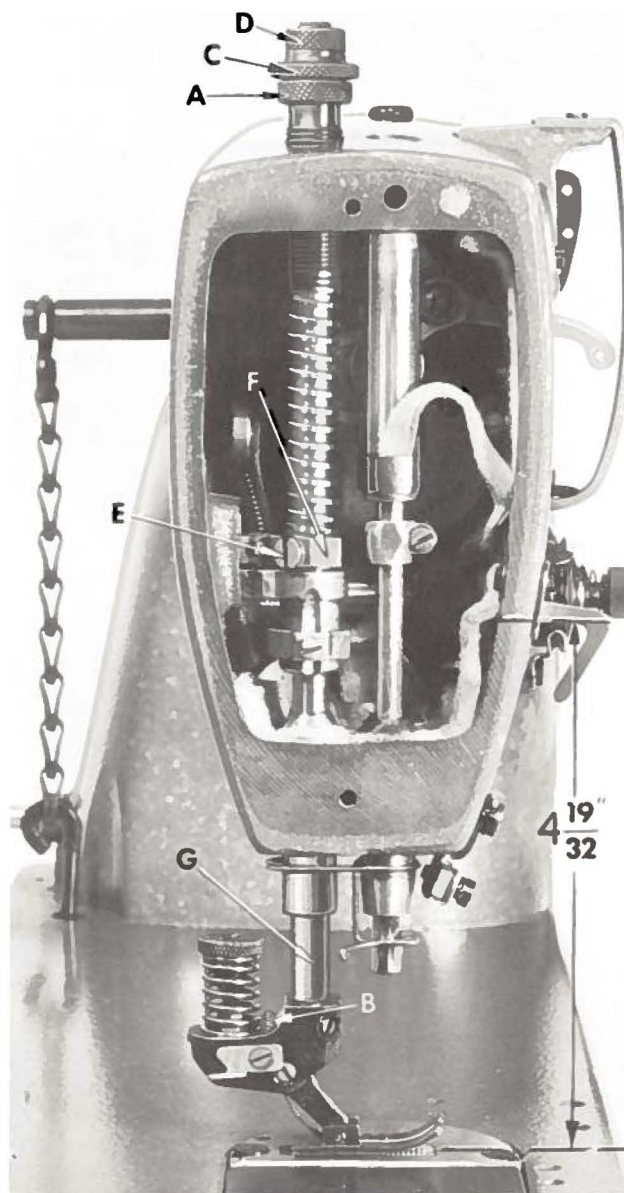


Fig. 16A

ADJUSTING THE FEEDING PRESSER FOOT (Continued)

Back off stop screw (B) in feeding presser foot. With the presser foot resting flat on the throat plate and feed dog down, adjust stop nut (C, Fig. 16A) until the adjusting lines on the presser foot bottom, line up with the centerline of the needle. Tighten lock nut (D).

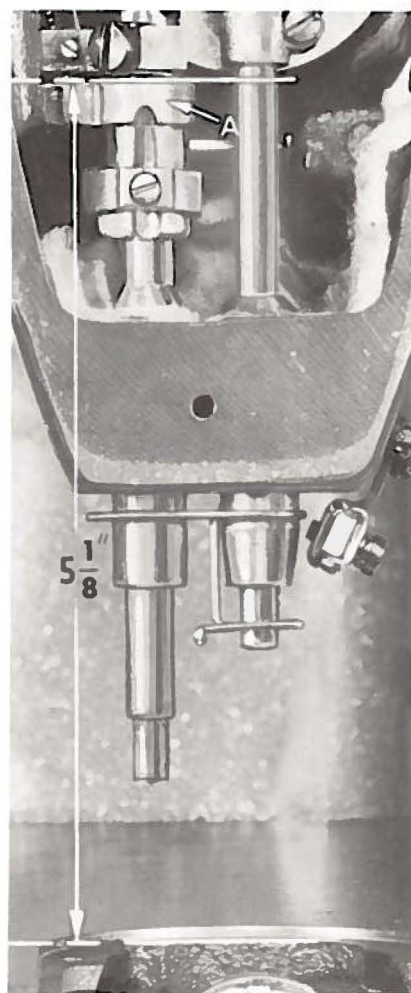


Fig. 16B

Loosen screw (E, Fig. 16A) in presser bar guide (F), while holding down on presser bar (G), depress presser foot lifter lever and retighten screw (E). Release lifter lever.

Set the presser bar connection (A, Fig. 16B) so its top surface is $5 \frac{1}{8}$ inch above the throat plate seat (See Fig. 16B). This is accomplished by tipping the machine back against the rest pin, loosening the lock nut and relocating the stop screw in the lifter lever bell crank (61468 F). By turning the stop screw to the right or left, the proper setting for the presser bar connection is accomplished. Retighten the lock nut to lock the stop screw in place. Release pressure on presser spring as required to reset the presser bar guide (F, Fig. 1) allowing a $\frac{1}{16}$ inch space between the guide and presser bar connection, be sure the presser foot is in alignment with the needle before tightening screw (E).

Remove nut (A, Fig. 18C) and presser spring (B) of the feeding presser foot and adjust stop nut (C) so that when the presser foot is pushed forward, the rear of the needle slot will not touch the needle. Lock in position with lock nut (D). Replace

ADJUSTING THE FEEDING PRESSER FOOT (Continued)

presser spring (B) and adjusting nut (A) on presser foot, and adjust to $\frac{45}{64}$ inch between the top of the yoke (E) and top of spring (B) with the feed dog down. Adjust stop screw (F) in feeding foot so that presser foot bottom slides rearward a maximum of $\frac{1}{64}$ inch on throat plate when foot is lifted with feed dog down.

Lift feeding presser foot and check to see if bottom is parallel to throat plate. Should adjustment be necessary, remove the presser foot from the machine and loosen screw in bottom of presser foot shank to reposition leveling spring (G, Fig. 18C) as required to obtain proper position. Retighten screw.

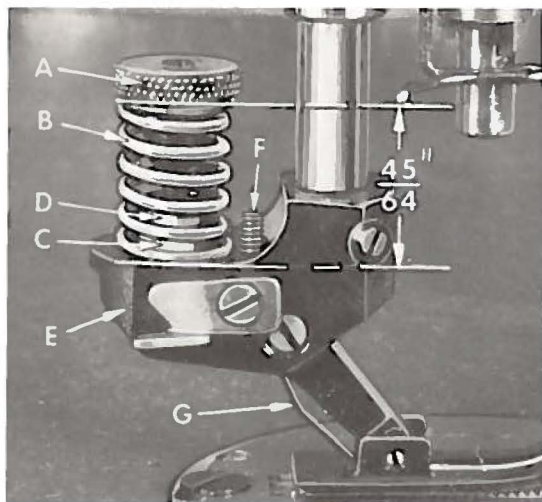


Fig. 18C

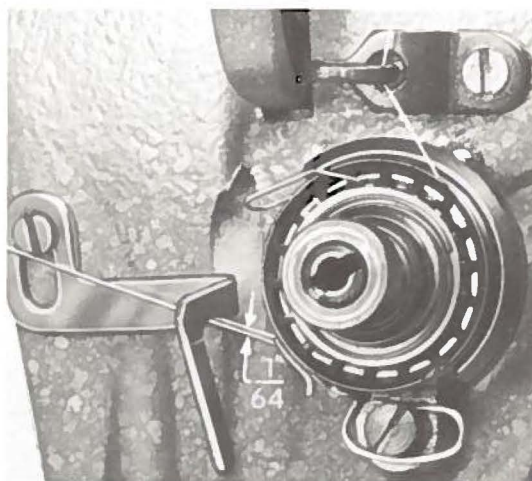


Fig. 18D

THREAD CONTROL

Set needle thread pull-up bracket $4 \frac{19}{32}$ inch from bottom (underside) of bracket to top of cloth plate (See Fig. 16A).

Set tension post eyelet so there is a $\frac{1}{64}$ inch clearance between it and the thread running from the rotary tension to the thread pull-up bracket, with the check spring not threaded (See Fig. 18D). Set check spring $\frac{1}{2}$ inch above bottom of thread pull-up bracket (See Fig. 18E). Thread machine as shown. Wind needle thread $2 \frac{1}{2}$ times clockwise around rotary tension disc.

Set check spring tension so that check spring overthrows threadline slightly at bottom of check spring motion when machine is at speed.

Set needle and bobbin thread tension as light as possible to produce a good stitch being sure check spring is acting properly.

When sewing various materials, the pressure of the feeding foot presser spring may have to be changed to get good ply matching. Increasing the pressure will tend to feed the bottom ply faster and vice-versa.

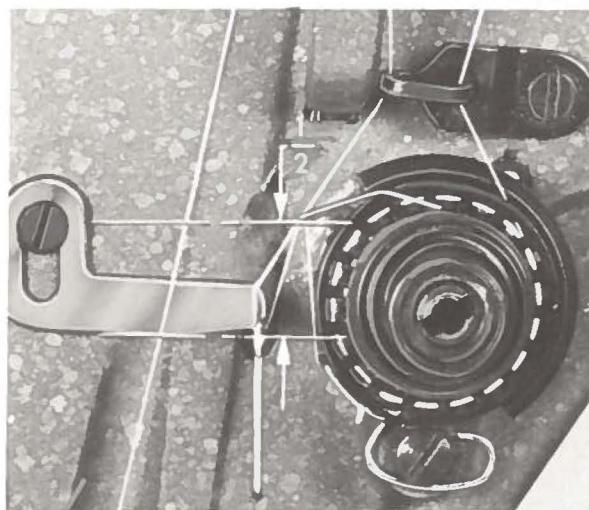
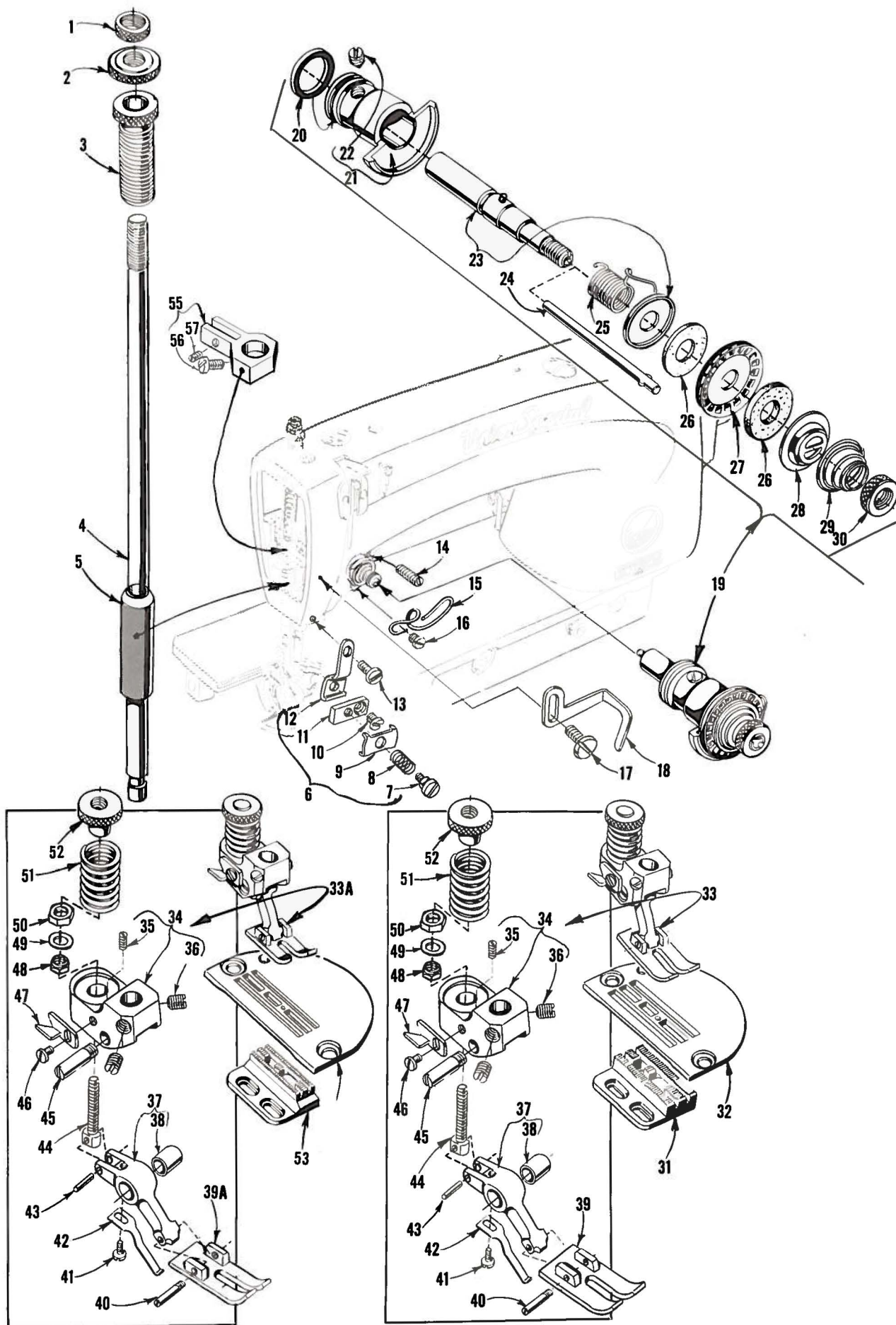


Fig. 18E



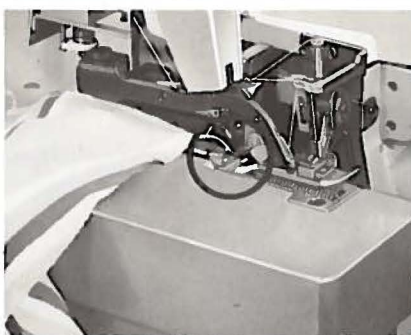
The parts illustrated on the opposite page and described on this page, represent the parts that are used on Styles 63400 AF and BF, but not used on Styles 63400 A or B respectively.

Use Catalog No. 121 M (Styles 63400 A or B) for all parts not illustrated or described in this catalog.

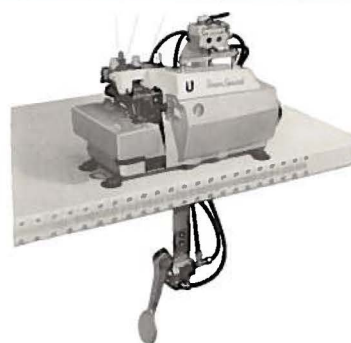
Reference numbers that are inside a bracket or box on the picture plate and have indented descriptions, indicate they are component parts of a complete part or assembly.

Ref. No.	Part No.	Description	Amt. Req.
1	63457 M	Lock Nut -----	1
2	63457 L	Stop Nut -----	1
3	61257 G	Presser Spring Regulator and Bushing -----	1
4	51257 G	Presser Bar -----	1
5	63957 A	Presser Bar Bushing, lower -----	1
6	21390 BE	Nipper Spring Assembly -----	1
7	57 WD	Screw, for nipper spring -----	1
8	57 WC	Nipper Spring -----	1
9	57 WB	Nipper Spring Plate -----	1
10	22564 B	Screw -----	1
11	63471	Nipper Base -----	1
12	63471 A	Nipper Spring Mounting Bracket -----	1
13	90	Screw, for nipper spring assembly -----	1
14	12935 A	Screw, for tension assembly -----	1
15	63992 A	Tension Post Socket Eyelet -----	1
16	HS24 C	Screw -----	1
17	22513	Screw, for thread pull-up bracket -----	1
18	63970 A	Thread Pull-up Bracket -----	1
19	29475 BE	Rotary Needle Tension Assembly -----	1
20	660-269 A	Quad Ring -----	1
21	63992	Tension Post Socket -----	1
22	22560 G	Set Screw -----	1
23	63492 A	Tension Post -----	1
24	63492 B	Tension Release Pin -----	1
25	63453 N	Take-up Spring -----	1
26	61492 T	Felt Washer -----	2
27	61492 S	Rotary Tension Disc -----	1
28	61492 H	Tension Release Washer -----	1
29	63492 C-4	Tension Spring -----	1
30	61292 C	Tension Nut -----	1
31	61405 AA	Feed Dog, 22 teeth per inch, for wide feed combination -----	1
32	61424 AA-063	Throat Plate, .063 inch needle hole, for wide feed combination -----	1
33	63420 J	Presser Foot, for wide feed combination -----	1
33A	63420 H	Presser Foot, for narrow feed combination -----	1
34	63430 U	Yoke -----	1
35	22785	Screw -----	1
36	22560 B	Screw -----	2
37	63430 T	Presser Foot Link, marked "C" -----	1
38	56330 AP	Bushing -----	1
39	63430 W	Presser Foot Bottom, marked "BV", for presser foot No. 63420 J -----	1
39A	63430 S	Presser Foot Bottom, marked "BU", for presser foot No. 63420 H -----	1
40	22799 AB	Hinge Pin Screw -----	1
41	22798 A	Screw, for hinge spring -----	1
42	56330 AS	Hinge Spring -----	1
43	56330 AJ	Hinge Pin -----	1
44	56330 AG	Regulating Screw -----	1
45	56330 AF	Link Hinge Screw -----	1
46	604	Screw, for chain cutting knife -----	1
47	52930 AC	Chain Cutting Knife, marked "D" -----	1
48	51430 F	Nut -----	1
49	61377 Q	Washer -----	1
50	41071 G	Lock Nut -----	1
51	56330 AD	Compression Spring -----	1
52	63430 V	Regulating Nut -----	1
53	61405 AB	Feed Dog, 22 teeth per inch, for narrow feed combination -----	1
54	61424 AB-063	Throat Plate, .063 inch needle hole, for narrow feed combination -----	1
55	63459 B	Presser Bar Guide -----	1
56	22570	Screw -----	1
57	73 C	Screw -----	1

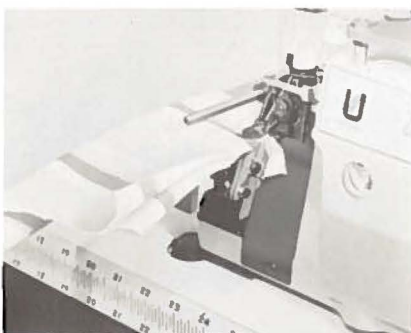
BOOST PRODUCTION WITH THESE WORK AIDS FROM UNION SPECIAL



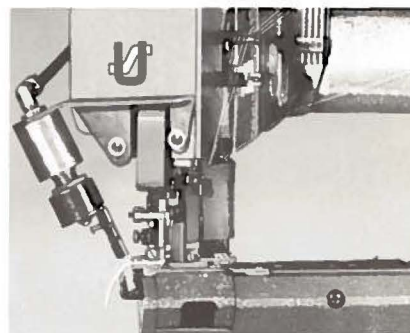
PNEUMATIC CHAIN-CUTTER—for use on conventional Class 39500 and 39600 is a durable scissor-action mechanism that makes a clean positive cut. Style 2899 A-1



PNEUMATIC FOOT LIFTER—The air-operated foot lifter for use on Class 39500 machines allows the operator to raise the foot simply by knee-touching an actuating switch.



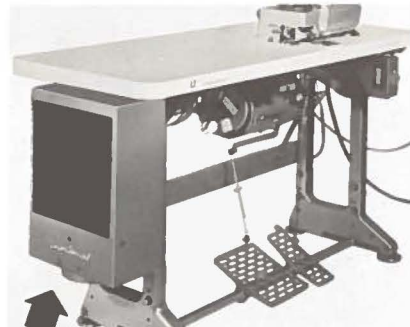
AIR FABRIC UNCURLER—This unit, designed for Class 39500 machines, uses air jets to remove curls from top and bottom plies of flat knit materials as fabric passes through sewing area. Style 2899 B-1



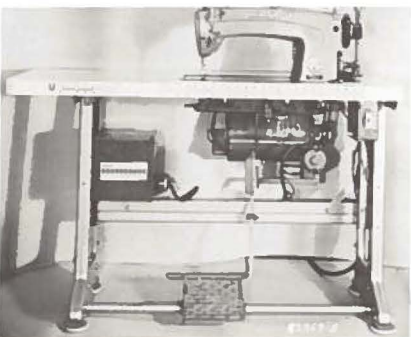
CHAIN CUTTER—The above photo shows the small pneumatic chain cutter that is available for installation as an accessory unit on Class 36200 Flatseamers. Style 2899A-6



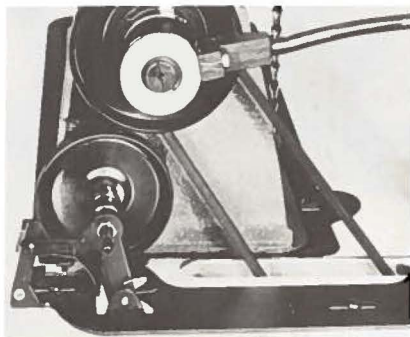
KNIFE GRINDER sharpens straight or angle type knives, is simple and easy to operate, eliminates defective garments caused by dull knives.



HEAT DISPELLER—Union Special's auxiliary unit (arrow) is an effective means for reducing oil temperature where heavy duty service requires it. Style 2899 E-1



AMCO ELECTRONIC NEEDLE POSITIONERS eliminate the necessity of reaching for the hand-wheel to move the needle up or down . . . this allows the operator to keep both hands on the work, insuring better control, uniform quality and increased production.



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FINEST QUALITY MACHINE COMPANY

Helpful, authoritative information on the most efficient types of equipment for making virtually any machine sewed article is available from Union Special's Sales Promotion Department. Among the many interesting, illustrated bulletins that are available without obligation are the following:



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- No. 249, "Rainwear"
- No. 250, "Men's Dress Shirts"
- No. 251, "Service Shirts and Pants"
- No. 252, "Men's Shorts and Pajamas"
- No. 253, "Overalls, Coveralls, and Dungarees"
- No. 254, "Men's Knit Underwear"
- No. 256, "Knit Outerwear"
- No. 259, "Men's Sports Shirts"
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- No. 273, "Curtains & Drapes"
- No. 610, "Klipp-it"
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- No. 730, "MCS Automatic Dual Underfront Shirt Hemmer"
- No. 740, "MCS Automatic Rib-Knit Cuff Machine"
- No. 750, "Fusing Presses"
- No. 1100, "Lewis Blindstitch, Chainstitch, Lockstitch, Machines"
- No. 1105, "Button Sewers—Ticket Tackers"
- "Columbia Blindstitch, Saddle Stitch, and Tie Closing Machines"
- No. 1500, "Alteration Department Machines"

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